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RESULTS OF THIN SKIN THERMOCOUPLE TESTS CONDUCTED IN THE AEDC VKF TUNNEL A TO DETERMINE HEAT TRANSFER RATES ON A .0275 SCALE SSV ET FOREBODY (FH15)

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by

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Prepared under NASA Contract Number NAS9-13247

by

Data Management Services
Chrysler Corporation Michoud Defense-Space Division
New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	AEDC V41A-20
NASA Series Number:	FH15
Model Number:	--
Test Dates:	May 1-5, 1978
Occupancy Hours:	60 Hours

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Harry R. Carroll* and Dwayne Carver**

ABSTRACT

An existing $10^o/40^o$ spike on the nose of a .0275 scale thin skin ET forebody heat transfer model was modified in an effort to improve wind vector sensoring for the Shuttle Ascent Air Data System (AADS). The change truncated 7.635 inches full scale of the 10° cone and replaced it with a 30° cone, thus, causing the differential pressures to be higher and more sensitive for the AADS angle-of-attack and side-slip flight evaluation. The model was instrumented with 250 thermocouples (T/C) to obtain complete heating data around the forward fairing and the brackets that support the trays and GO_2 pressurization line. The Mach range tested was 3, 4, and 5.5 at Reynolds Number/foot of 3.7×10^6 to 5.0×10^6, at selected $\alpha = 0, \pm 5$ and $\beta = 0, \pm 3, \pm 6, \pm 9, \pm 11$. The test conditions were repeated with protuberances on and off to provide a matrix of heating interference factors on the skin around all perturbed flow areas. The temperature recovery factors were computed according to a method provided by Rockwell International/Space Division.

The data results indicate that the shock from the 30° cone is stronger than that from the 10° cone and impinges further downstream on the 40° cone area (vent cap). The bracket induced heat factors are similar over the full length of the ogive.

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NOMENCLATURE

a_1, a_2, a_3	Denote constant terms used to calculate R
ALPHA, α	Model angle of attack, deg
ALPHA-PREBEND, α_{PB}	Sting prebend, deg
ALPHA-SECTOR, α_s	Tunnel sector angle, deg
b	Model wall thickness, in.
CONFIG	Configuration number 1. ET NOSE - Model with hardware on 2. ET NOSE/CLEAN - Model with hardware off 3. ET NOSE/T - Same as 1 but using boundary layer trips
c_p	Model wall specific heat, $\frac{\text{Btu}}{\text{lbm-°R}}$
DELY, ΔY	Lateral distance along an arc sector relative to cable tray, θ = 31.5 deg
DTWDT, dTW/dt	Derivative of the model wall temperature with respect to time, °R/sec
FIT LENGTH	Time span in seconds over which a linear least-squres curve fit of $\ln\left[\frac{0.95\ TO - TW_i}{0.95\ TO - TW}\right]$ vs time was applied
GROUP	Identification number for each tunnel injection
H(TAW)	Heat-transfer coefficient, $\frac{QDOT}{TAW - TW}, \frac{\text{Btu}}{\text{ft}^2\text{-sec-°R}}$

NOMENCLATURE (Continued)

H(TO) Heat-transfer coefficient,

$$\frac{QDOT}{TO - TW}, \quad \frac{Btu}{ft^2\text{-}sec\text{-}°R}$$

H(9TO) Heat-transfer coefficient,

$$\frac{QDOT}{(0.90TO)-TW}, \quad \frac{Btu}{ft^2\text{-}sec\text{-}°R}$$

H/HREF H(R) divided by HREF where

R = 1.0 for H(TO)

R = 0.9 for H(9TO)

R = TAW/TO for H(TAW)

HREF, HREF-FR Reference heat-transfer coefficient based on Fay-Riddell theory, $Btu/ft^2\text{-}sec\text{-}°R$

$$HREF = \frac{8.1717\ (PO1)^{0.5}(MU\text{-}0)^{0.4}[1-(P\text{-}INF/PO1)]^{0.25}}{(RN)^{0.5}\ (TO)^{0.15}}$$

$$\times\ [0.2235 + 0.0000135\ [TO + 560]]$$

where PO1 ≈ stagnation pressure downstream of a normal shock, psia

MU-0 ≈ air viscosity based on TO, $lbf\text{-}sec/ft^2$

RN ≈ reference nose radius, (0.0275 ft)

LREF	Axial reference length, (50.752 in.)
MACH, M_∞	Free-stream Mach number
MODEL	Model configuration
MU, μ_∞	Free-stream viscosity, lb-sec/ft^2
P, P_∞	Free-stream pressure, psia
PO, P_o	Tunnel stilling chamber pressure, psia
QDOT	Heat-transfer rate, wbc_p (DTWDT), Btu/ft^2-sec
Q, q_∞	Free-stream dynamic pressure, psia
r, R	Recovery factor
RN/FT, Re_∞	Free-stream Reynolds number per foot, ft^{-1}
RHO	Free-stream density, slug/ft^3
ROLL-MODEL	Model roll angle, positive for clockwise rotation looking upstream (=0 for $\theta = 0$ facing top of tunnel), deg
STNO	Theoretical stagnation point Stanton number for a 0.0275-ft (1 scale foot) radius sphere calculated from Fay-Riddell theory

$$\text{STNO} = \frac{\text{HREF}}{(\text{RHO})(\text{V})\,[0.2235 + 0.0000135(\text{TO} + 560)](32.174)}$$

SWITCH POSITION	Designates the position of the thermocouple selector switch
t	Time from start of model injection cycle, sec
TR	Analytical temperature ratio, TAW/TO

NOMENCLATURE (Concluded)

T	Temperature, °R
TAW	Adiabatic wall temperature, °R
TC-NO(T/C)	Thermocouple Number
T, T_∞	Free-stream temperature, °R
TO, T_o	Tunnel stilling chamber temperature, °R
T(w)	Model wall temperature, °R
V, V_∞	Free-stream velocity, ft/sec
w	Model wall density, lbm/ft^3
x_m	Model axial distance measured from 10-deg cone apex (see Fig. 2b), in.
X/L	Thermocouple axial location ratioed to the reference length, L ($X/L = x_m/L - 0.0027$)
ψ, PSI	Model yaw angle, deg
β, BETA	Angle of sideslip, equal to negative yaw angle, deg
γ	Ratio of specific heat, 1.4 for air
δ	Local surface angle of attack, deg
ε	Combination of model roll angle and θ, deg
θ, THETA	External tank angular measurement, deg
λ	Local model deflection angle, deg

SUBSCRIPTS

e	Flow properties at boundary layer edge
i	Initial conditions
∞	Free-stream flow properties

INTRODUCTION

A spike on the nose of the Space Shuttle External Tank serves both as a lighting arrestor and as a probe to measure pressures utilized in the Ascent Air Data System (AADS). A feasibility test for the AADS was conducted as IA137 (Reference 1). A special treatment of that data was performed by the Data Management System and is given in Reference 2. The probe configuration of a sharp $10^{\circ}/40^{\circ}$ conical spike was causing some variations in static pressure measurements and it was felt by Rockwell International that a more blunt spike would stabilize the bow shock location over the attitude range of interest and give more reliable pressure readings. Therefore, it was proposed to truncate the forward 7.635 inches (full scale) of the 10° cone and replace it with a 30° cone 2.418 inches in length yielding a $30^{\circ}/10^{\circ}/40^{\circ}$ conical spike configuration as can be seen in Figures 1 and 2. This wind tunnel test (FH15) and a companion test in the Ames 3.5 foot Hypersonic Facility, (FH16) Reference 3, were proposed to:

1. determine the change in heating, if any, due to the small change in the nose spike configuration;
2. measure the interference heating on the surface around the forward fairing, trays, GOX line and brackets with these protuberances both present and removed.

The FH15 test results are contained in this report and were obtained using the thin-skin thermocouple technique to collect heat transfer data, and shadowgraphs and oil flow photographs to visualize the flow field. Data were obtained in Mach numbers 3, 4, and 5.5 at freestream Reynolds numbers of 3.7 and 5.0 million per foot. Model angle of attack was 0° and $\pm 5^{\circ}$ at sideslip angles from -11° to 11°. Sample T/C data plots and complete tabulation are included herein. Shadowgraph and oil flow photographs are retained by the author and are available on request.

CONFIGURATIONS INVESTIGATED

The heat flux model utilized in this test was a .0275 scale, thin skin (t = .030 inch ±.005 inch) ET forebody designated as the $30^{\circ}/10^{\circ}/40^{\circ}$ cone - ogive. The model was tested previously with a $10^{\circ}/40^{\circ}$ spike in test series FH14, Reference 4. Constructed of 304 stainless steel, spot check measurements using ultrasonic thickness measuring instruments revealed excellent agreement of material thickness, typically within .001 inch. Figure 1 shows the model overall configuration with principle dimensions, bracket numbers and peripheral notations of the ogive. Figure 3 depicts the modification made to the old $10^{\circ}/40^{\circ}$ spike to make the new $30^{\circ}/10^{\circ}/40^{\circ}$ spike which is the current baseline configuration for the AADS system.

Two configurations were tested, one with all ET nose hardware, or protuberances on, the other with the hardware removed. Boundary layer trips were added during the test to verify that the boundary layer was naturally turbulent. The trips were formed from either twisted wires or commercial carborundum grit. Two 0.004-inch diameter wires were twisted together and spot welded to the model surface for the first type trip. The second type was formed with #60 carborundum grit, about ¼-inch wide. In each case the trip was located just behind the fairing. Data taken with a trip attached are identified in Table III.

TEST FACILITY DESCRIPTION

Tunnel A is a continuous, closed-circuit, variable density wind tunnel with an automatically driven flexible-plate-type nozzle and a 40- by 40-in. test section. The tunnel can be operated at Mach numbers from 1.5 to 6 at maximum stagnation pressures from 29 to 200 psia, respectively, and stagnation temperatures up to 750°R ($M_\infty = 6$). Minimum operating pressures range from about one-tenth to one-twentieth of the maximum at each Mach number. The tunnel is equipped with a model injection system which allows removal of the model from the test section while the tunnel remains in operation. A description of the tunnel and airflow calibration information may be found in Reference 6.

INSTRUMENTATION

The original 150 T/Cs utilized during test FH14 were 40 AWG Cromel-Constantan (Type E) cross-welded to the inner surface of the .030 inch thick model stainless steel skin, as described in Reference 5. The 40 AWGs were twist-spliced to 30 AWG Type E glass on glass insulated lead wire, 40 ft. long. The splices were unsoldered, but fitted with heat shrunk Teflon insulators. Due to age and shipping and handling, some of these were coming loose and were repaired using solder on all splices. An additional 10 ft. of 26 AWG was soldered onto the 150 30 AWG leads to reach the junction box at Tunnel "A".

To more adequately define the heating rates around the protuberances, 100 new 40 AWG thermocouples were added, but the junctions were beaded and then welded to the inner surface of the skin, forming a stronger connection and more definite body location. No change in millivolt output or rates were detected between the two junction techniques for gages as close, physically, as 0.10 inch. The 40 AWGs were solder-spliced to 26 AWG Type E leads with a much improved Kapton insulated lead wire 50 ft. long.

Six new T/Cs were installed on the cable tray fairing in areas of the leading edge and corners to measure the high heating typical of these type of protuberances. The remaining new gages were systematically distributed around all the brackets except at the forebody parting section Xm = 7.502 (X/L = .1451), Bracket 7, and Bracket 11 at the end of the model ogive, Xm = 12.062 inches (X/L = .2350).

Figure 4 depicts the T/C locations along the ET nose in the region of the protuberances while Table II gives the pertinent dimensional information.

DATA REDUCTION

The reduction of thin-skin thermocouple data normally involves only the calorimetric heat balance which, in coefficient form is:

$$H(TAW) = wbc_p \frac{dTW/dt}{TAW-TW} \tag{1}$$

For this test a value of 0.95 TO was selected for TAW and equation (1) can be written

$$H(0.95TO) = wbc_p \frac{dTW/dt}{0.95TO-TW} \tag{2}$$

Radiation and conduction losses are neglected in this heat balance and data reduction simply requires evaluation of dTW/dt from the temperature-time data and determination of model material properties. For the present tests, radiation effects were negligible; however, conduction effects can be significant in several regions of the model. To permit identification of these regions and to improve evaluation of the data, the following procedures were used.

Separation of variables and integration of Equation (2) assuming constant w, b, c_p, and TO yields

$$\frac{H(0.95TO)}{wbc_p} (t - t_i) = \ell n \left[\frac{0.95TO - TW_i}{0.95TO - TW}\right] \tag{3}$$

Differentiation of Equation (3) with respect to time gives

$$\frac{H(0.95TO)}{wbc_p} = \frac{d}{dt} \ell n \left[\frac{0.95TO - TW_i}{0.95TO - TW}\right] \tag{4}$$

Since the left side of Equation (4) is a constant, plotting $\ln \left[\frac{0.95TO - TW_i}{0.95TO - TW}\right]$ versus time will give a straight line if <u>conduction is negligible</u>. Thus, deviation from a straight line can be interpreted as conduction effects.

The data were evaluated in this manner, and generally a linear portion of the curve was used for all thermocouples. A linear least-square curve fit of $\ln \left[(0.95TO - TW_i)/(0.95TO - TW)\right]$ versus time was applied to the data. Data reduction was started as soon as the model reached the tunnel centerline and the curve fit extended for a time span which was a function of the heating rate, as shown in the following list.

Range	No. of Points (Fit Length)
$\frac{dTW}{dt} > 32$	5
$16 < \frac{dTW}{dt} \leqq 32$	7
$8 < \frac{dTW}{dt} \leqq 16$	9
$4 < \frac{dTW}{dt} \leqq 8$	13
$2 < \frac{dTW}{dt} \leqq 4$	17
$1 < \frac{dTW}{dt} \leqq 2$	25
$\frac{dTW}{dt} \leqq 1$	41

The above time spans were generally adequate to keep the evaluation of the right side of Equation (4) within the linear region. The linearity of the fit was substantiated by visual inspection of the cases in question. This visual check of the data was done on the VKF graphics terminal. Strictly speaking, the value of c_p for the material was not constant, and the following relation

$$c_p = 0.0825 + (6.5 \times 10^{-5})\ TW, \text{ (304 stainless steel)} \qquad (5)$$

was used with the value of TW at the midpoint of the curve fit. The maximum variation of c_p over any curve fit was less than 0.5 percent. The value of density used for 304 stainless steel was $w = 488.0\ lbm/ft^3$, and the skin thickness, b, was 0.030 in.

The maximum available tunnel stagnation temperature for each Mach number tested is listed in Table I. With these relatively low stagnation temperatures, the difference between the model wall temperature and recovery temperature was generally small in regions of peak heating. This small temperature difference causes the calculation of the heat-transfer coefficient to be very sensitive to deviations from the actual adiabatic wall temperature. Two values of the heat-transfer coefficient have been calculated based on an assumed constant recovery temperature, namely H(TO) and H(0.90TO). To account for changes in the recovery temperature, a third value of the heat-transfer coefficient has been tabulated based on an analytical temperature ratio, TR = TAW/TO.

An analytical method for determining TR was developed by Rockwell International and has been used to calculate H(RTO). In this method, the following relationships were assumed:

$$TR = \frac{TAW}{TO} \qquad (6)$$

and

$$TAW = T_e \left(1 + \frac{\gamma-1}{2} r M_e^{\,2}\right) \tag{7}$$

$$r = 0.898 \text{ for turbulent flow}$$

with r being the recovery factor and the subscript e identifying local properties at the boundary-layer edge. From these relationships, the temperature ratio can be defined as:

$$TR = \frac{1 + 0.2\, r\, M_e^{\,2}}{1 + 0.2\, M_e^{\,2}} \tag{8}$$

which is a function of the recovery factor and the local Mach number. The local Mach number can be written

$$M_e = M_e\,(M_\infty, \delta)$$

where ∞ identifies the free-stream property and δ is the local surface angle of attack. Standard matrix techniques were used to derive the following relationship for δ.

$$\delta = \arcsin\,(\sin\lambda \cos\alpha_s + \cos\lambda \cos\varepsilon \sin\alpha_s) \tag{10}$$

where α_s = alpha-sector, deg

ε = roll model + (θ + 180), deg

λ = local model deflection angle, deg

$= \sin^{-1}\left(\frac{12.062 - x_m}{16.876}\right)$, deg for thermocouple on the ogive section $x_m > 1.355$ in.

(X/L > 0.0238)

= 39.38 deg for thermocouples on the cone section, $x_m < 1.355$ in. $(X/L < 0.0238)$

= 55 deg for all thermocouples on the fairing

The edge conditions were computed from M_∞ and δ using the tangent cone flow theory. The following relationship was used to calculate the temperature ratio:

$$(TR)\ (M_\infty, \delta) = a_1 + a_2 \cdot (\sin \delta)^{a_3} \tag{11}$$

The value of the constants used for this test are:

M_∞	a_1	a_2	a_3
3.0	0.9345	0.1004	2.165
4.0	0.922	0.1004	1.965
5.5	0.910	0.1004	1.686

The method used to calculate the analytical temperature ratio, TR, has been applied to all of the tabulated data. The method represents a simplified approach to present a more realistic evaluation of TAW. However, in regions of separated flow or complex interaction, the values calculated for TR may no longer apply and should be used with extreme care.

DATA PRECISION

An evaluation of the influence of random measurement errors is presented in this section to provide a partial measure of the uncertainty of the final test results presented in this report. Although evaluation of the systematic measurement error (bias) is not included, it should be noted that the instrumentation precision values used in this evaluation represent a total uncertainty combination of both systematic and two-sigma random error contributions.

Uncertainties in the basic tunnel parameters P_o and T_o and the two-sigma deviation in Mach number determined from test section flow calibrations were used to estimate uncertainties in the other free-stream properties, using the Taylor series method propagation, i.e.

$$(\Delta F)^2 = \frac{\partial F}{\partial Q_1} \Delta Q_1 \quad ^2 + \frac{\partial F}{\partial Q_2} \Delta Q_2 \quad ^2 + \frac{\partial F}{\partial Q_3} \Delta Q_3 \quad ^2 \quad \ldots . \\ + \frac{\partial F}{\partial Q_n} \Delta Q_n \quad ^2 \tag{12}$$

where ΔF is the absolute uncertainty in the dependent parameter $F = F(Q_1, Q_2, Q_3 \ldots Q_n)$ and Q_n is the independent parameter (or basic measurement). ΔQ_n is the uncertainty (error) in the independent measurement (or variable).

These results are tabulated in the following chart.

DATA PRECISION (Concluded)

Tunnel Condition		Measurement Uncertainty (± Percent)			
M_∞	RN/L x 10^{-6}, ft^{-1}	M_∞	P_o	T_o	RN/L
3.02	3.7	±0.6	±0.2	±0.5	±1.2
4.02	3.7	±0.4	±0.2	±0.5	±1.2
5.5	3.7	±0.3	±0.2	±0.5	±1.1
5.5	5.0	±0.3	±0.2	±0.5	±1.1

The uncertainty in model angle of attack and sideslip angle is estimated to be ±0.2 deg.

Estimated uncertainties for the individual terms in Equation (2) were used in the Taylor series method of error propagation to obtain uncertainty in values of heat-transfer coefficient as given below:

Magnitude of H(T0), (Btu/ft^2-sec-°R)	Uncertainty, (±) Percent
10^{-4}	10
10^{-3}	7
10^{-2}	5

The data for thermocouples which consistently exceeded the above quoted uncertainties were deleted from the results.

DATA RESULTS

This test was conducted to investigate the effects of a blunter, shorter, nose spike ($30^o/10^o/40^o$ configuration) on the ET nose aerodynamic heating. Therefore, the data were compared to previous data from FH-13 and FH-14 (References 4 and 5) at $\alpha = \beta = 0$. The results indicate an increased peak heating due to the new nose spike, displaced downstream approximately $X/L \simeq .005$, but never off of the 40° vent cap, or into the ogive.

The $\theta_T = 90^o$, 180°, 270° data (which yield results for the undisturbed stream lines) at the lowest Mach Number, lowest Re/ft, and for $\alpha = \beta = 0^o$ show the separated zone under the 30° tip cone shock extending from the base of the 10° cone to $X/L \simeq .0125$. The subsequent flow tends to be laminar after reattachment and then transitions to turbulent about the end of the 40° cone. Some concern about tripping the flow was resolved by using a grit strip, 0.375 inches wide of #60 grit epoxied on, out of the potential separated flow but before the end of the vent cap. There was no increase in heating after the grit. This demonstrated that the flow was naturally turbulent and that the grit strip negated a number of measurements where it was applied. Twisted wires were tested earlier with the same results but fewer gages were negated by the wires. Since the natural transition was nearly complete by the end of the 40° cone, it was decided to forego trips and use natural transition. This permitted a statistical evaluation of a boundary layer transition criterion during analysis of the ET forebody.

Figures 1 thru 3 are examples of the data plots made by Chrysler Data Management System (DMS) for data analysis. The complete set was considered too voluminous for publication but are available on request from the DMS. Figure 1 depicts the heating ratios existing along the ET body at some common ray for flow conditions of Mach 4.02, Reynolds Number per unit length of 3.7×10^6, angle of attack -5°; and angle of sideslip -11°. The undisturbed and interference heating coefficients

are given ratioed to the reference value and then the HI/HU ratio is also shown. In Figure 2 only the HI/HU values are plotted, but they are depicted for one thermocouple exposed to varying flow conditions (angle of attack and sideslip). Both test and theoretical values are shown for comparison. Figure 3 summarizes the data for several flow conditions showing HU/HREF in Figure 3A; HI/HREF in Figure 3B; and HI/HU in Figure 3C. The nose profile has been added to this plot for visual assistance.

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3. "Results of Thin Skin Thermocouple Test Conducted in the NASA/ARC 3.5 Ft. Hypersonic Tunnel to Determine Heat Transfer Rates on a 0.0275 Scale SSV ET Forebody (FH16)," Chrysler DMS-DR-2423, NASA CR-151,768.

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6. Test Facilities Handbook (Tenth Edition) "Von Karman Gas Dynamics Facility, Vol. 4" Arnold Engineering Development Center, May, 1974.

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TABLE I.

TEST : FH-15

DATE :

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	TOTAL PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
3.02	3.7×10^6	36	260
4.02	3.7×10^6	63	260
4.02	3.7×10^6	65	280
5.5	3.7×10^6	127	260
5.5	5.0×10^6	172	260
5.5	5.0×10^6	174	270

BALANCE UTILIZED: None

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF			
SF			
AF			
PM			
RM			
YM			

COMMENTS: See Data Precision Section for measurement uncertainties.

TABLE II. THERMOCOUPLE DIMENSIONAL LOCATIONS

TC NO.	THETA	X/L	DEL Y
1	0.0000	0.0091	N/A
2	0.0000	0.0111	
3	0.0000	0.0131	
4	0.0000	0.0150	
5	0.0000	0.0170	
6	0.0000	0.0190	
7	0.0000	0.0209	
8	45.0000	0.0229	
9	0.0000	0.0249	
10	0.0000	0.0269	
11	0.0000	0.0288	
12	0.0000	0.0328	
13	0.0000	0.0367	
14	0.0000	0.0406	
15	0.0000	0.0485	
16	0.0000	0.0564	
17	0.0000	0.0761	
18	0.0000	0.0958	
19	0.0000	0.1155	
20	0.0000	0.1648	
21	0.0000	0.1845	
22	0.0000	0.2140	
23	180.0000	0.0091	
24	180.0000	0.0111	
25	180.0000	0.0131	
26	180.0000	0.0150	
27	180.0000	0.0170	
28	180.0000	0.0190	

TC NO.	THETA	X/L	DEL Y
29	180.0000	0.0209	N/A
30	225.0000	0.0229	
31	180.0000	0.0249	
32	180.0000	0.0288	
33	180.0000	0.0328	
34	180.0000	0.0367	
35	180.0000	0.0406	
36	180.0000	0.0485	
37	180.0000	0.0564	
38	180.0000	0.0761	
39	180.0000	0.0958	
40	180.0000	0.1155	
41	180.0000	0.1648	
42	180.0000	0.1845	
43	180.0000	0.2140	
44	90.0000	0.0091	
45	90.0000	0.0111	
46	90.0000	0.0131	
47	90.0000	0.0150	
48	90.0000	0.0170	
49	135.0000	0.0190	
50	90.0000	0.0209	
51	135.0000	0.0229	
52	90.0000	0.0249	
53	90.0000	0.0269	
54	90.0000	0.0288	
55	90.0000	0.0328	
56	90.0000	0.0367	

NOTES: Data were recorded on three different switch positions
Switch Position 1 - TC No. 12-81
Switch Position 2 - TC No. 1-11, 82-160
Switch Position 3 - TC No. 161-250
See Fig. 5b-5g for TC locations

TABLE II. - **THERMOCOUPLE DIMENSIONAL LOCATIONS** - Continued.

TC NO.	THETA	X/L	DEL Y
57	90.0000	0.0406	N/A
58	90.0000	0.0485	
59	90.0000	0.0564	
60	90.0000	0.0761	
61	90.0000	0.0958	
62	90.0000	0.1155	
63	270.0000	0.0091	
64	270.0000	0.0111	
65	270.0000	0.0131	
66	315.0000	0.0150	
67	270.0000	0.0170	
68	315.0000	0.0190	
69	270.0000	0.0209	
70	315.0000	0.0229	
71	270.0000	0.0249	
72	270.0000	0.0269	
73	270.0000	0.0288	
74	270.0000	0.0328	
75	270.0000	0.0367	
76	270.0000	0.0406	
77	270.0000	0.0485	
78	270.0000	0.0564	
79	270.0000	0.0761	
80	270.0000	0.0958	
81	270.0000	0.1155	
82	31.5000	0.0091	
83	31.5000	0.0111	
84	31.5000	0.0142	
85	31.5000	0.0160	N/A
86	31.5000	0.0176	
87	31.5000	0.0194	
88	10.0000	0.0229	
89	20.0000	0.0249	
90	10.0000	0.0269	
91	20.0000	0.0288	
92	10.0000	0.0308	
93	20.0000	0.0328	
94	10.0000	0.0347	
95	33.9000	0.0338	0.0500
96	33.7000	0.0367	0.0500
97	33.6000	0.0383	0.0500
98	27.4000	0.0401	-0.1000
99	33.5000	0.0401	0.0500
100	39.7000	0.0401	0.2000
101	19.8000	0.0408	-0.2900
102	27.6000	0.0416	-0.1000
103	33.5000	0.0416	0.0500
104	39.3000	0.0416	0.2000
105	23.0000	0.0420	-0.2200
106	18.5000	0.0442	-0.3500
107	22.4000	0.0442	-0.2500
108	44.6000	0.0442	0.3500
109	48.4000	0.0442	0.4500
110	28.0000	0.0468	-0.1000
111	33.2000	0.0468	0.0500
112	38.5000	0.0468	0.2000

NOTES: Data were recorded on three different switch positions
Switch Position 1 - TC No. 12-81
Switch Position 2 - TC No. 1-11, 82-160
Switch Position 3 - TC No. 161-250
See Fig. 5b-5g for TC locations

TABLE II. - THERMOCOUPLE DIMENSIONAL LOCATIONS - Continued.

TC NO.	THETA	X/L	DEL Y	TC NO.	THETA	X/L	DEL Y
113	33.2000	0.0483	0.0500	141	38.9000	0.0822	0.3500
114	28.4000	0.0535	-0.1000	142	41.1000	0.0822	0.4500
115	33.0000	0.0535	0.0500	143	29.5000	0.0925	-0.1000
116	37.6000	0.0535	0.2000	144	32.5000	0.0925	0.0500
117	28.7000	0.0586	-0.1000	145	35.3000	0.0925	0.2000
118	32.9000	0.0586	0.0500	146	29.7000	0.1000	-0.1000
119	37.1000	0.0586	0.2000	147	32.4000	0.1000	0.0500
120	23.4000	0.0596	-0.2900	148	35.1000	0.1000	0.2000
121	24.8000	0.0604	-0.1000	149	27.2000	0.1027	-0.2500
122	32.9000	0.0604	0.0500	150	37.8000	0.1027	0.3500
123	37.0000	0.0604	0.2000	151	12.0000	0.0121	
124	25.5000	0.0507	-0.2200	152	12.0000	0.0176	
125	22.2000	0.0629	-0.3500	153	13.0000	0.0194	
126	24.9000	0.0629	-0.2500	154	51.0000	0.0121	
127	40.9000	0.0629	0.3500	155	51.0000	0.0176	
128	43.6000	0.0629	0.4500	156	50.0000	0.0194	
129	29.0000	0.0657	-0.1000	157	9.0000	0.0150	
130	32.6000	0.0657	0.0500	158	9.0000	0.0176	
131	36.6000	0.0657	0.2000	159	9.0000	0.0194	
132	32.7000	0.0674	0.0500	160	35.3000	0.0221	0.0500
133	29.2000	0.0724	-0.1000	161	35.2000	0.0239	0.0500
134	32.7000	0.0724	0.0500	162	65.2000	0.0247	0.4500
135	36.2000	0.0724	0.2000	163	53.2000	0.0247	0.4000
136	29.3000	0.0795	-0.1000	164	9.9000	0.0247	-0.3000
137	32.6000	0.0795	0.0500	165	2.0000	0.0247	-0.4000
138	35.9000	0.0806	0.2000	166	33.4000	0.0428	0.0500
139	24.1000	0.0822	-0.3500	167	47.7000	0.0408	0.4000
140	25.4000	0.0822	-0.2500	168	43.2000	0.0420	0.3000

NOTES: Data were recorded on three different switch positions
Switch Position 1 - TC No. 12-81
Switch Position 2 - TC No. 1-11, 82-160
Switch Position 3 - TC No. 161-250
See Fig. 5b-5g for TC locations

TABLE II. - **THERMOCOUPLE DIMENSIONAL LOCATIONS** - Continued.

TC NO.	THETA	X/L	DEL Y	TC NO.	THETA	X/L	DEL Y
169	14.6000	0.0442	-0.4500	197	32.3000	0.1210	0.0500
170	51.9000	0.0448	0.5500	198	29.9000	0.1210	-0.1000
171	32.9000	0.0613	0.0500	199	26.7000	0.1210	-0.3000
172	42.6000	0.0595	0.4000	200	36.3000	0.1220	0.3000
173	41.1000	0.0607	0.3500	201	26.3000	0.1220	-0.2000
174	46.1000	0.0629	0.5500	202	40.2000	0.1244	0.5500
175	19.6000	0.0629	-0.4500	203	38.6000	0.1244	0.4500
176	32.6000	0.0608	0.0500	204	37.0000	0.1244	0.3500
177	40.1000	0.0795	0.4000	205	27.6000	0.1244	-0.2500
178	25.0000	0.0795	-0.3000	206	26.0000	0.1244	-0.3500
179	38.9000	0.0803	0.3000	207	24.4000	0.1244	-0.4500
180	27.2000	0.0803	-0.2000	208	32.3000	0.1273	0.0500
181	43.4000	0.0822	0.5500	209	32.3000	0.1342	0.0500
182	21.8000	0.0822	-0.4500	210	32.8000	0.1668	0.1000
183	32.5000	0.0858	0.0500	211	36.9000	0.1648	0.4000
184	32.4000	0.1011	0.0500	212	34.9000	0.1648	0.2500
185	38.7000	0.1000	0.4000	213	32.2000	0.1648	0.0500
186	25.3000	0.1000	-0.3500	214	30.2000	0.1648	-0.1000
187	36.9000	0.1011	0.3000	215	27.4000	0.1648	-0.3000
188	27.9000	0.1011	-0.2000	216	35.6000	0.1658	0.3000
189	42.3000	0.1027	0.6000	217	26.8000	0.1658	-0.2000
190	39.5000	0.1027	0.4500	218	39.6000	0.1681	0.6000
191	25.3000	0.1027	-0.3500	219	37.6000	0.1681	0.4500
192	22.6000	0.1027	-0.5000	220	36.2000	0.1681	0.3500
193	32.4000	0.1063	0.0500	221	28.2000	0.1681	-0.2500
194	32.3000	0.1230	0.0500	222	26.3000	0.1681	-0.3500
195	37.9000	0.1210	0.4000	223	24.3000	0.1681	-0.5000
196	35.5000	0.1210	0.2500	224	32.2000	0.1786	0.0500

NOTES: Data were recorded on three different switch positions
Switch Position 1 - TC No. 12-81
Switch Position 2 - TC No. 1-11, 82-160
Switch Position 3 - TC No. 161-250
See Fig. 5b-5g for TC locations

TABLE II. - THERMOCOUPLE DIMENSIONAL LOCATIONS - Concluded.

TC NO.	THETA	X/L	DEL Y	TC NO.	THETA	X/L	DEL Y
225	32.8000	0.1888	0.1000				
226	36.7000	0.1870	0.4000				
227	34.7000	0.1870	0.2500				
228	32.2000	0.1870	0.0500				
229	30.2000	0.1870	-0.1000				
230	27.6000	0.1870	-0.3000				
231	35.4000	0.1880	0.3000				
232	28.9000	0.1880	-0.2000				
233	39.9000	0.1904	0.6500				
234	37.3000	0.1904	0.4500				
235	36.0000	0.1904	0.3500				
236	28.3000	0.1904	-0.2500				
237	27.0000	0.1904	-0.3500				
238	24.4000	0.1904	-0.5500				
239	32.6000	0.2117	0.1000				
240	34.7000	0.2101	0.2500				
241	32.1000	0.2101	0.0500				
242	30.3000	0.2101	-0.1000				
243	27.7000	0.2101	-0.3000				
244	29.0000	0.2111	-0.2000				
245	40.3000	0.2131	0.7000				
246	37.2000	0.2131	0.4500				
247	35.9000	0.2131	0.3500				
248	28.4000	0.2131	-0.2500				
249	27.1000	0.2131	-0.3500				
250	23.9000	0.2131	-0.6000				

NOTES: Data were recorded on three different switch positions
Switch Position 1 - TC No. 12-81
Switch Position 2 - TC No. 1-11, 82-160
Switch Position 3 - TC No. 161-250
See Fig. 5b-5g for TC locations

TABLE III.

JEV

TEST: FH15 (V41A-20)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: 5/24/78

DATA SET IDENTIFIER	CONFIGURATION	α	β		RN	φ	MACH SW. POS.	3.02 1	3.02 2	3.02 3	4.02 1	4.02 2	4.02 3	5.50 1	5.50 2	5.50 3	
R4K 001	PROTUBERANCES ON	-5	-11		3.7	0					112	113	114				
02			-9								115	116	117				
03			-6					25	26	27	92	93	94	194	195	196	
04			-3					29	30	31	96	97	98				
05			0					21	22	23	88	89	90	198	199	200	
06			3					32	33	34	99	100	101				
07			6					35	36	37	102	103	104	201	202	203	
08			9								105	106	107				
09			11								111	109	110				
10		0	-11								131	132	133				
11			-9								63	64	65	160	182	184	
12			-6					6	7	8	66	67	68	185	186	187	
13			-3					12	13	14	74	75	76				
14			0			-31.5		2	3	4	71*	72*	73*	159	157	158	
15			3			0		15	16	17	77	78	79				
16			6					28	19	20	80	81	82	188	189	190	
17			9								83	84	87	191	192	193	
18			11								134	135	136				

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

* φ = 0°

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TABLE III. - Continued.

JEW

TEST: FH15 (V41A-20)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: 5/24/78

DATA SET IDENTIFIER	CONFIGURATION	α	β		RN	Φ	MACH SW. POS.	3.02 1	3.02 2	3.02 3	4.02 1	4.02 2	4.02 3	5.50 1	5.50 2	5.50 3	
R4K019	PROTUBERANCES ON	5	-11		3.7	0					124	125	126				
20			-9								128	129	130				
21			-6					42	43	44	142	143	144	204	205	206	
22			-3					45	46	47	145	146	147				
23			0					38	39	40	138	139	140	207	208	209	
24			3					48	49	50	148	149	150				
25			6					51	52	53	151	152	153	210	211	212	
26			9								118	119	120				
27			11								121	122	123				
28		0	-9		5.0									167	170	169	
29			-6											171	172	174	
30			0			-31.5								165	163	164	
31			6			0								175	176	177	
32			9			0								178	179	181	
33	w/grit		0		3.7	0		56	55	57							
34	w/wire trip		0		3.7	0		9	10	11							

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

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TABLE III.- Continued.

JEV

TEST: FH15 (V41A-20)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: 5/24/78

DATA SET IDENTIFIER	CONFIGURATION	α	β		RN	φ	MACH SW. POS.	3.02 1	3.02 2	3.02 3	4.02 1	4.02 2	4.02 3	5.50 1	5.50 2	5.50 3	
R4K101	PROTUBERANCES OFF	-5	-11		3.7	0					300	301	302				
02			-9								303	304	305				
03			-6					325	326	327	282	283	284	229	230	231	
04			-3					328	329	330	285	286	287				
05			0					331	332	333	306	307	308	232	233	234	
06			3					334	335	336	288	289	290				
07			6					337	338	339	291	292	293	235	236	237	
08			9								294	295	296				
09			11								297	298	299				
10		0	-11								258	259	260				
11			-9								273	274	275	217	218	219	
12			-6					313	314	315	276	277	278	220	221	222	
13			-3					316	317	318	279	280	281				
14			0			-31.5		310	311	312	255	256	257	214	215	216	
15			3			0		319	320	321	264	265	266				
16			6			0		322	323	324	267	268	269	223	224	225	
17			9			0					270	271	272	226	227	228	
18			11			0					261	262	263				

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

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TABLE III. - Concluded.

JEV

TEST: FH15 (V41A-20)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: 5/24/78

DATA SET IDENTIFIER	CONFIGURATION	α	β		RN	φ	MACH SW.	POS.	3.02 1	3.02 2	3.02 3	4.02 1	4.02 2	4.02 3	5.50 1	5.50 2	5.50 3	
R4K128	PROTUBERANCES OFF	0	-9		5.0	0									241	242	243	
29			-6			0									244	245	246	
30			0			-31.5									238	239	240	
31			6			0									247	248	249	
32			9			0									250	251	252	
R4K205	PROTUBERANCE ON	-5	0		3.7	180			24			91						
14		0	0		3.7	148.5			5			62						
23		5	0		3.7	180			41			141						
30		0	0		5.0	148.5									166			
31	PROTUBERANCE OFF	0	6		5.0	0									253			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

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NOTES:
1. All linear dimensions in inches
2. Model reference length, L = 50.752 in.
3. x_m = 0.00 at 10° cone apex.
4. $X/L = x_m/L - 0.0027$

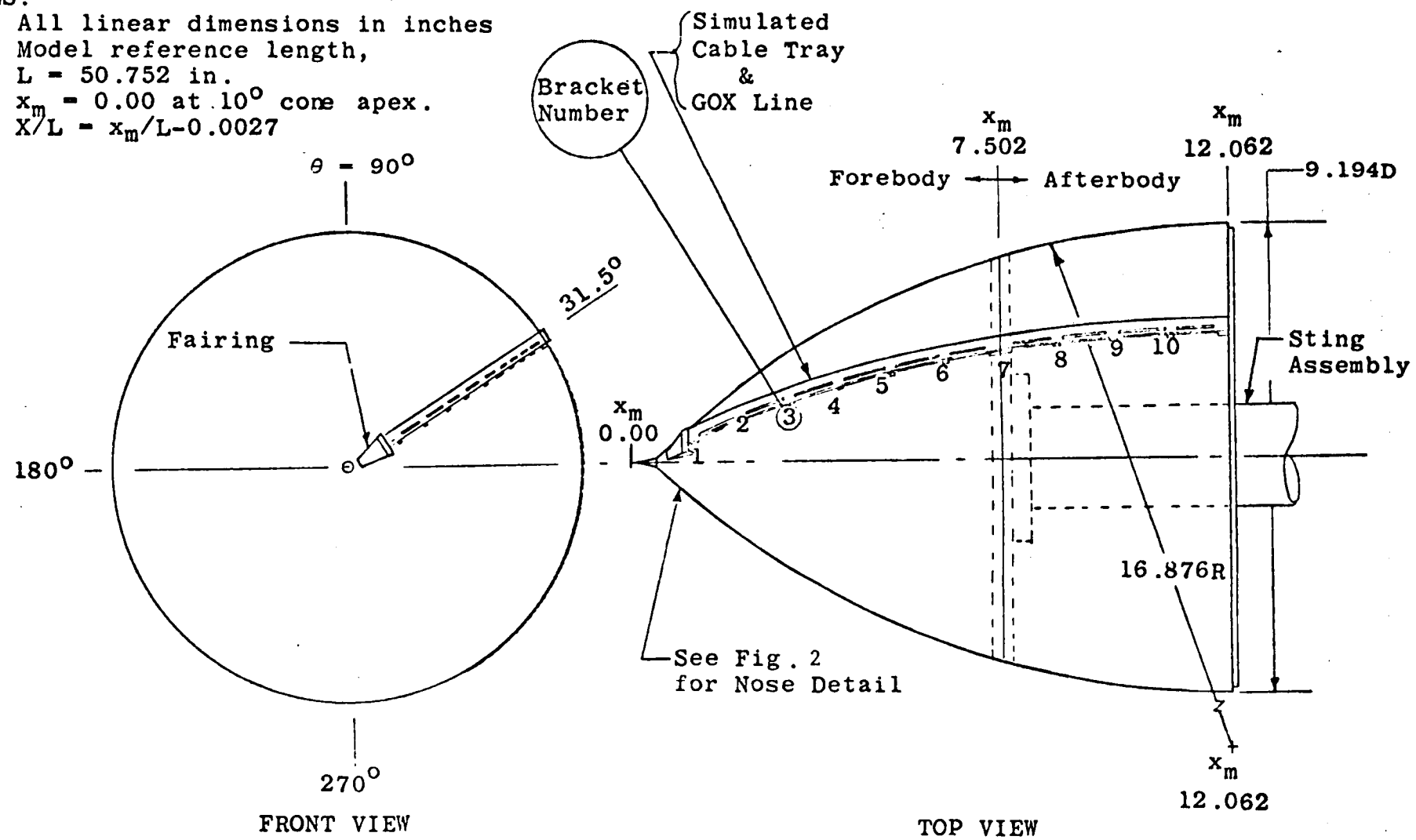
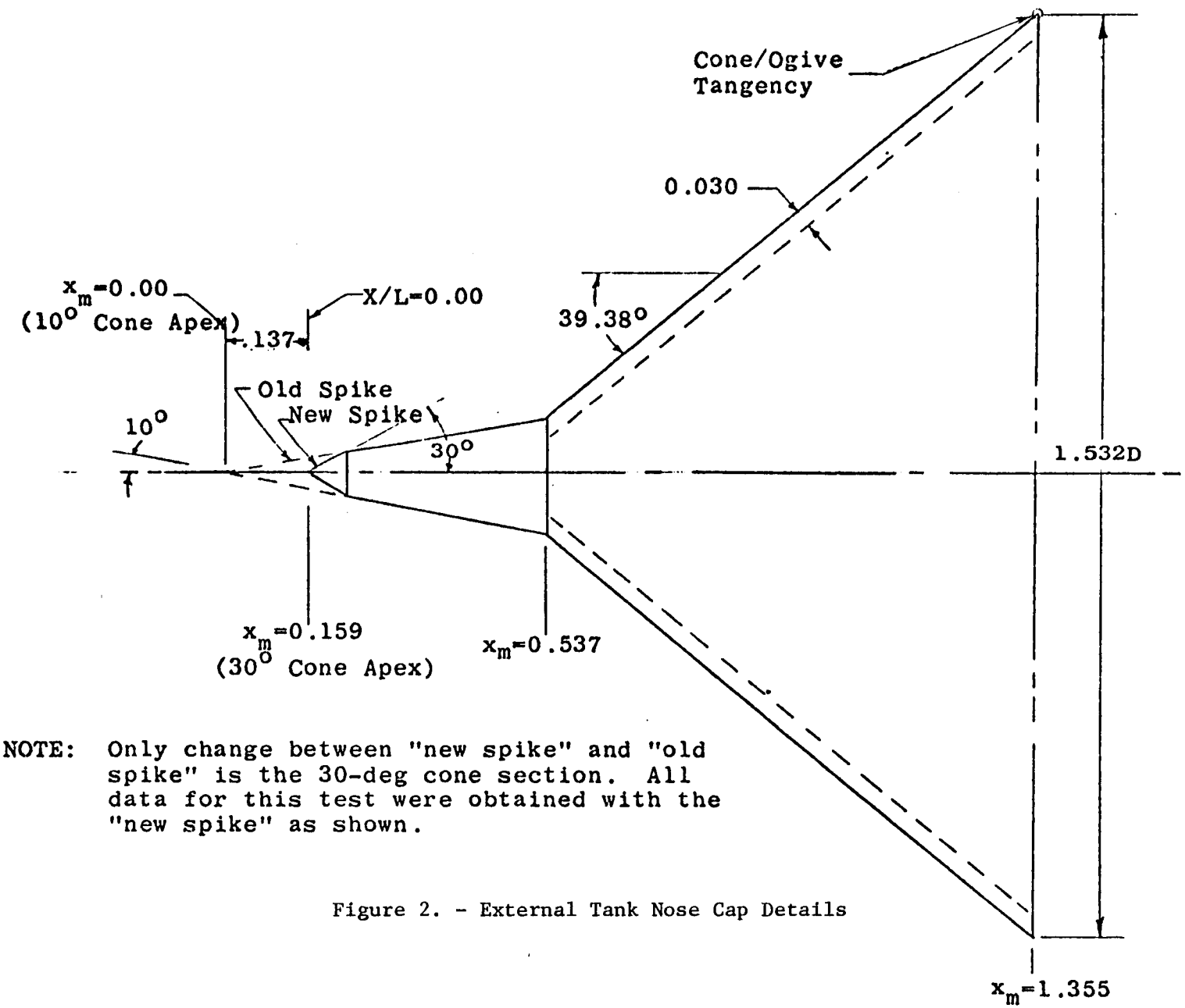


Figure 1. - Model Overall Geometry



NOTE: Only change between "new spike" and "old spike" is the 30-deg cone section. All data for this test were obtained with the "new spike" as shown.

Figure 2. - External Tank Nose Cap Details

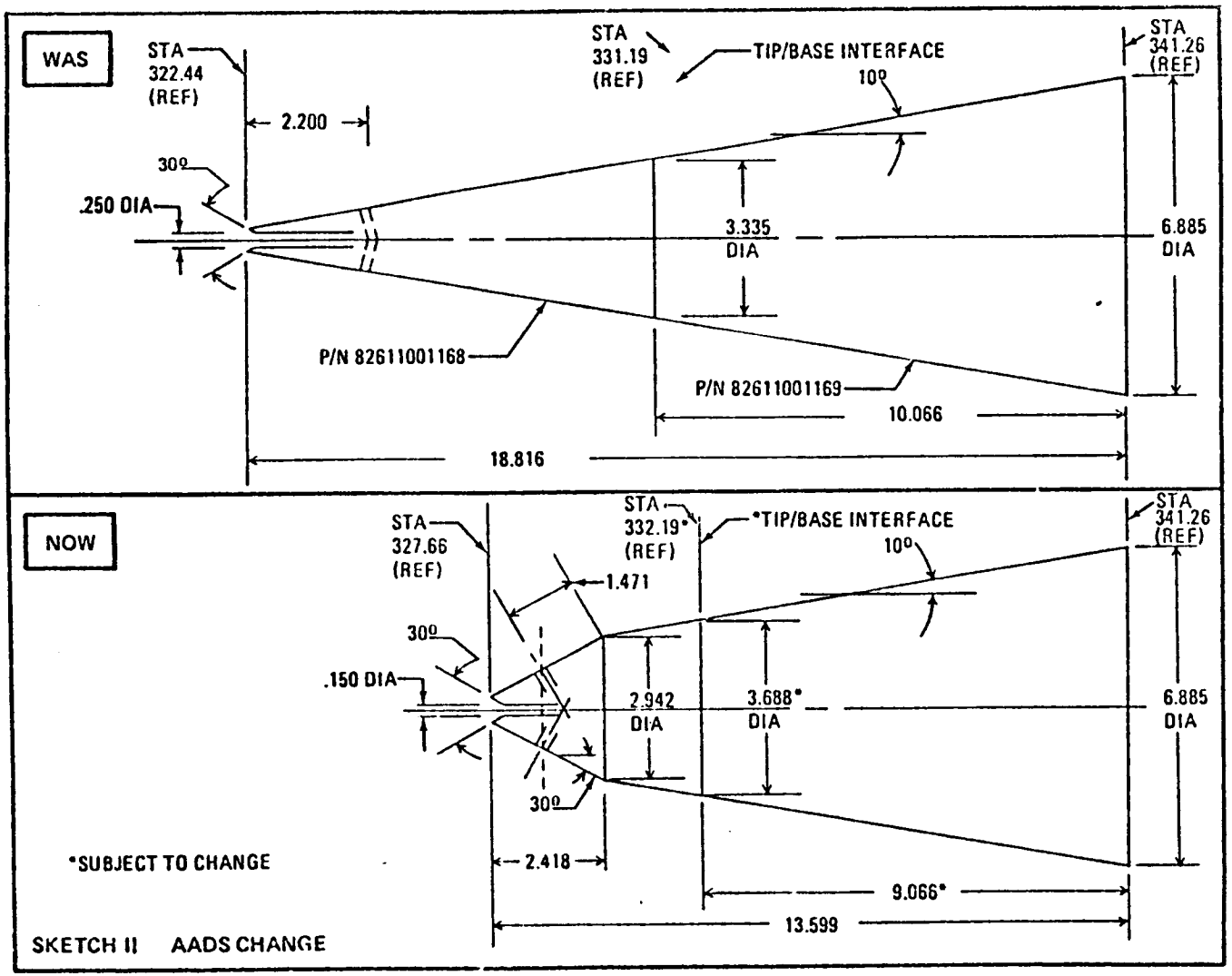
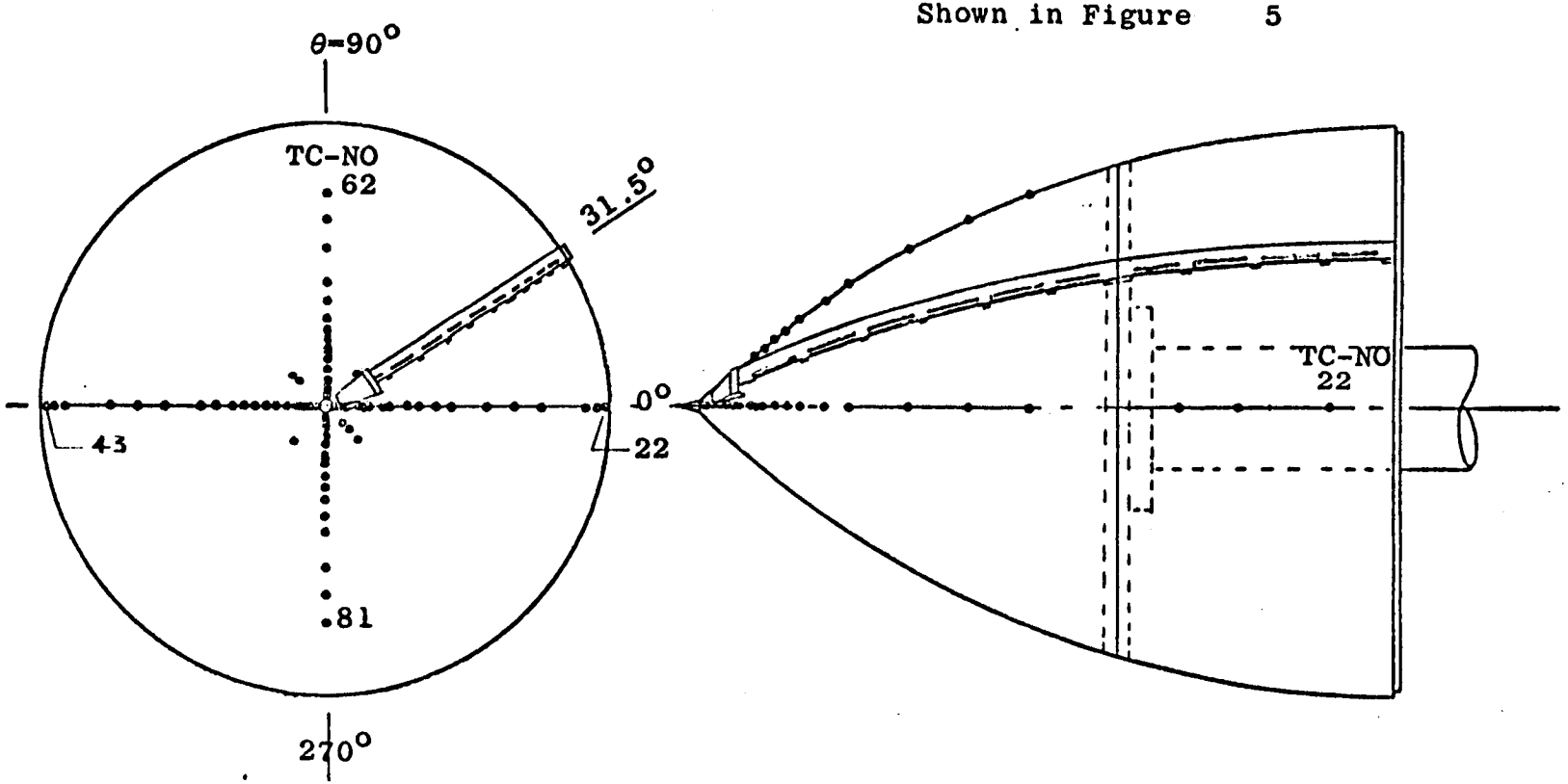


Figure 3. - AADS Probe Geometry

Notes: 1. See Table 1 for Coordinate Information

2. Thermocouples in the Vicinity of the Fairing, Cable Tray and GOX Line are Shown in Figure 5



FRONT VIEW

TOP VIEW

Figure 4. - Thermocouple Locations in Undisturbed Flow Areas

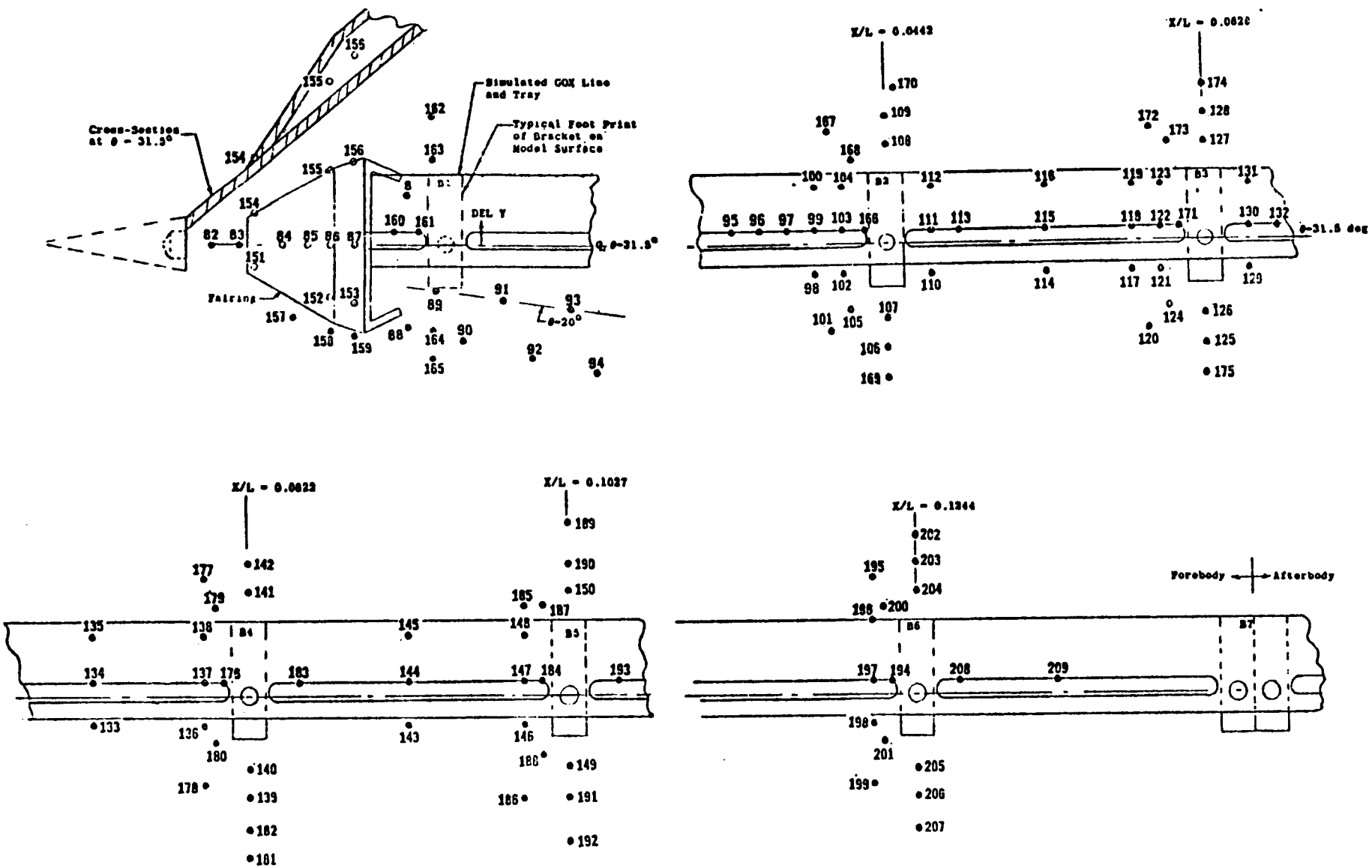


Figure 5. - Thermocouple Locations in the Vicinity of Protuberances

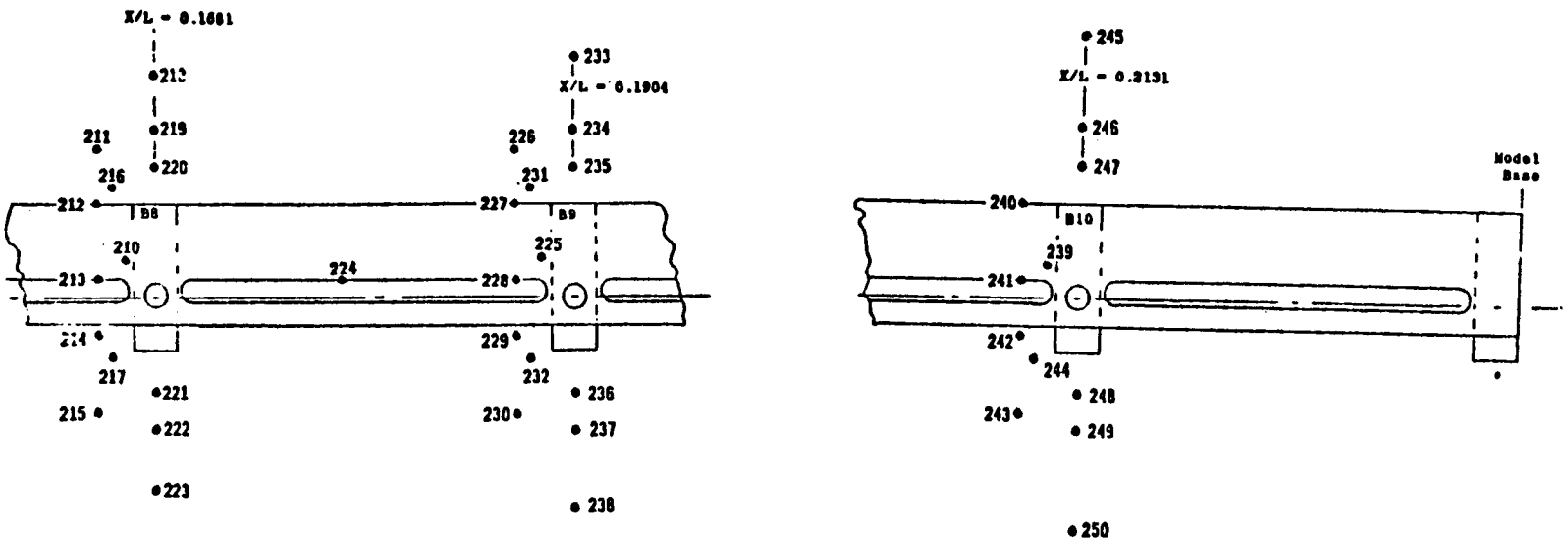


Figure 5. - Concluded

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT
(V9LT01)	△	FH15 THEORETICAL DATA OGIVE	HU/HREF	-5.000	-11.000	3.700
(V4KU01)	◗	FH15, E.T. NOSE (CLEAN)	HU/HREF	-5.000	-11.000	3.700
(V4K001)	□	FH15, E.T. NOSE (W/PROTUBERANCES)	HI/HREF	-5.000	-11.000	3.700
(V4KS01)	◇	FH15 (W/L TEST) V4K001/V4KU01	HI/HU	-5.000	-11.000	3.700
(V9LS01)	△	FH15 (TEST/THEORY) V4K001/V9LT01	HI/HU	-5.000	-11.000	3.700

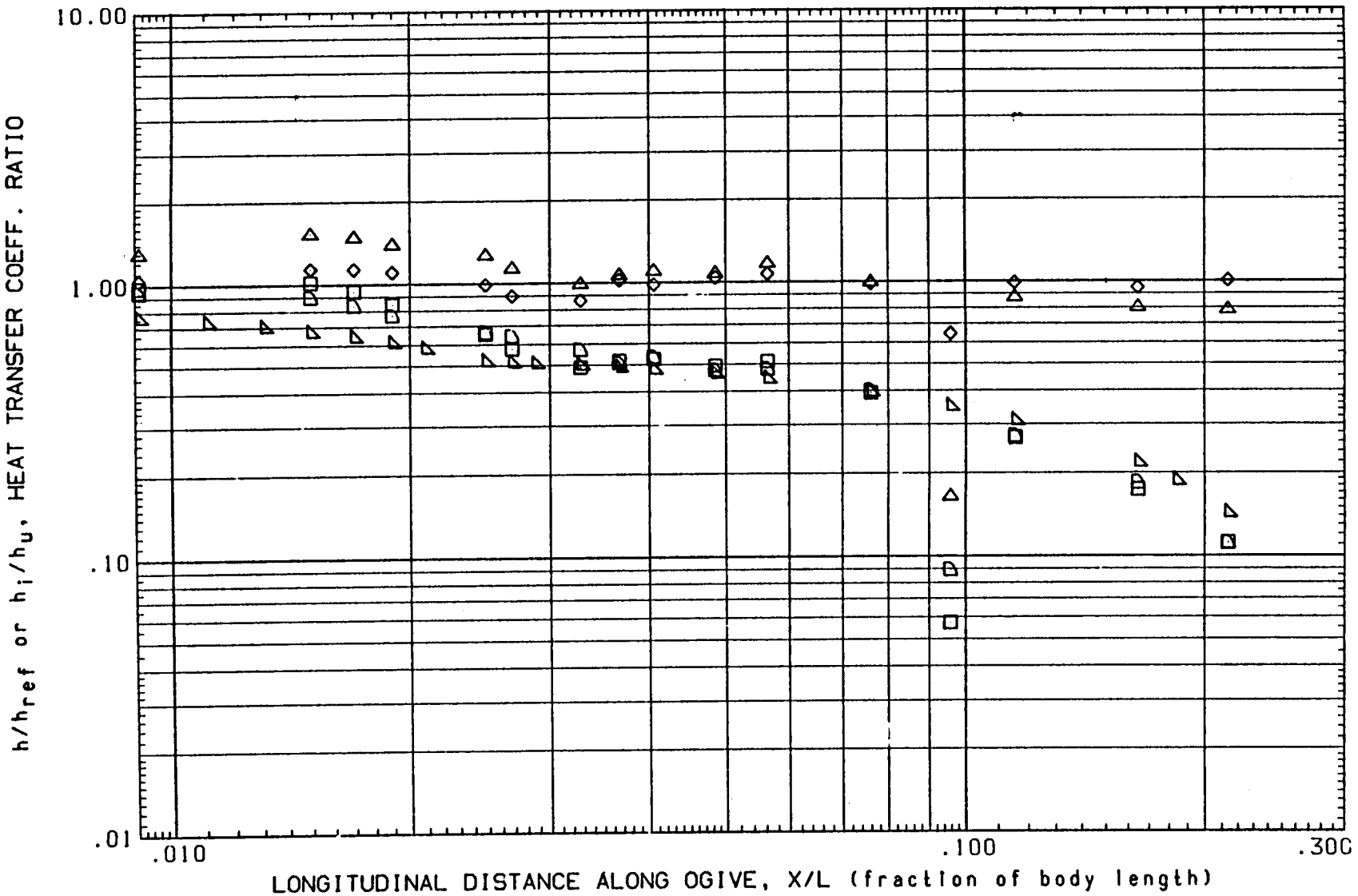


FIG. 1 LONG. DISTRIBUTION OF HEATING RATE ON ET OGIVE - MACH= 4.02
ALPHA= -5, BETA= -11, RN/FT=3.7

MACH = 4.020 ALPHA = -5.000 THETA = .000 DATE 29 SEP 78 PAGE 681

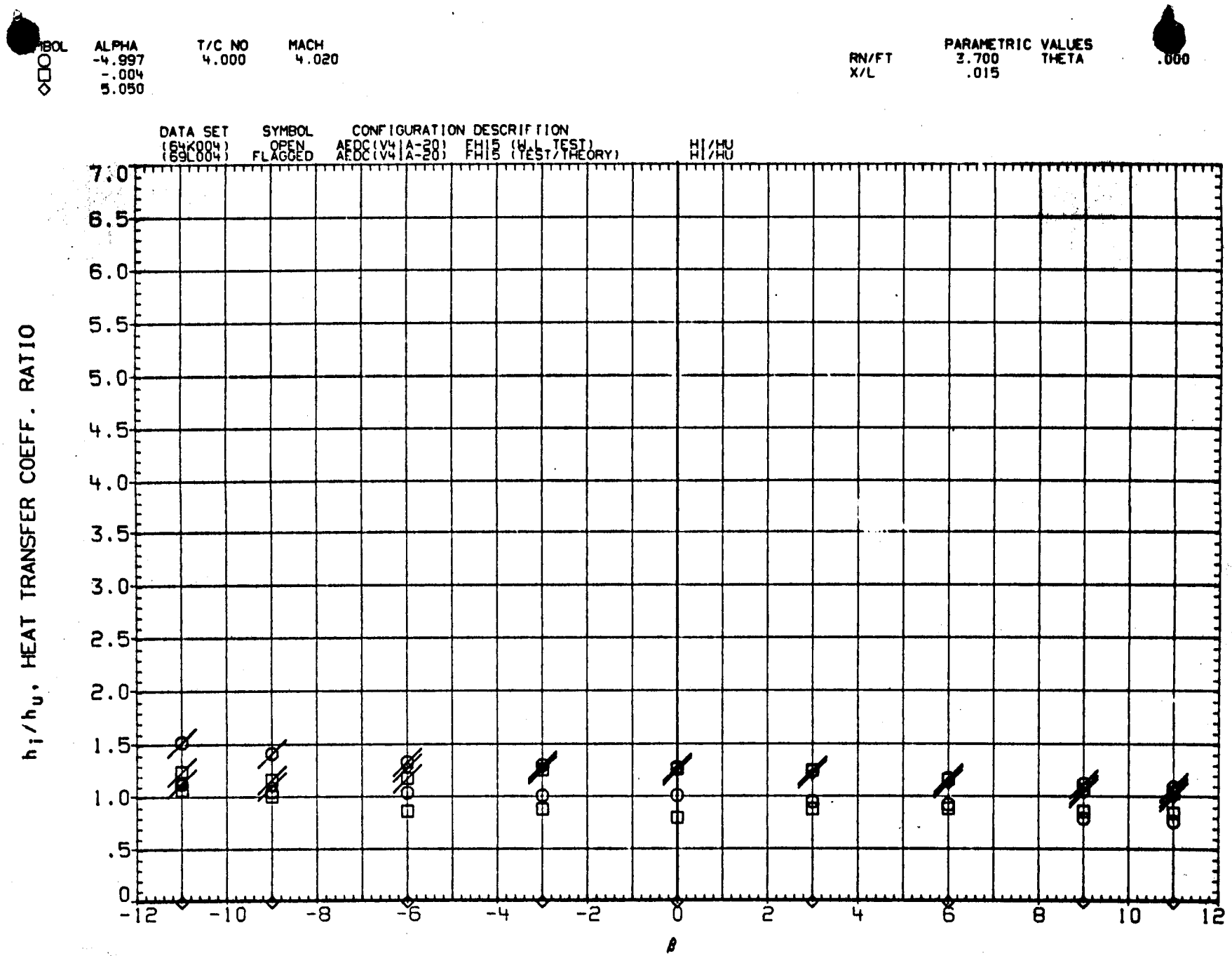


FIG. 12 EFFECT OF BETA ON ET OGIVE HEATING RATE - MACH= 4.02
RN/FT = 3.7

DATE 07 OCT 78

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DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT
(O4K114)	○	FH15 EXTERNAL TANK OGIVE PROFILE				
(V4K101)	□	FH15, E.T. NOSE (CLEAN)	HU/HREF	-5.000	-11.000	3.700
(V4K102)	◇	FH15, E.T. NOSE (CLEAN)	HU/HREF	-5.000	-9.000	3.700
(V4K103)	△	FH15, E.T. NOSE (CLEAN)	HU/HREF	-5.000	-6.000	3.700
(V4K104)	▷	FH15, E.T. NOSE (CLEAN)	HU/HREF	-5.000	-3.000	3.700
(V4K105)	D	FH15, E.T. NOSE (CLEAN)	HU/HREF	-5.000	.000	3.700

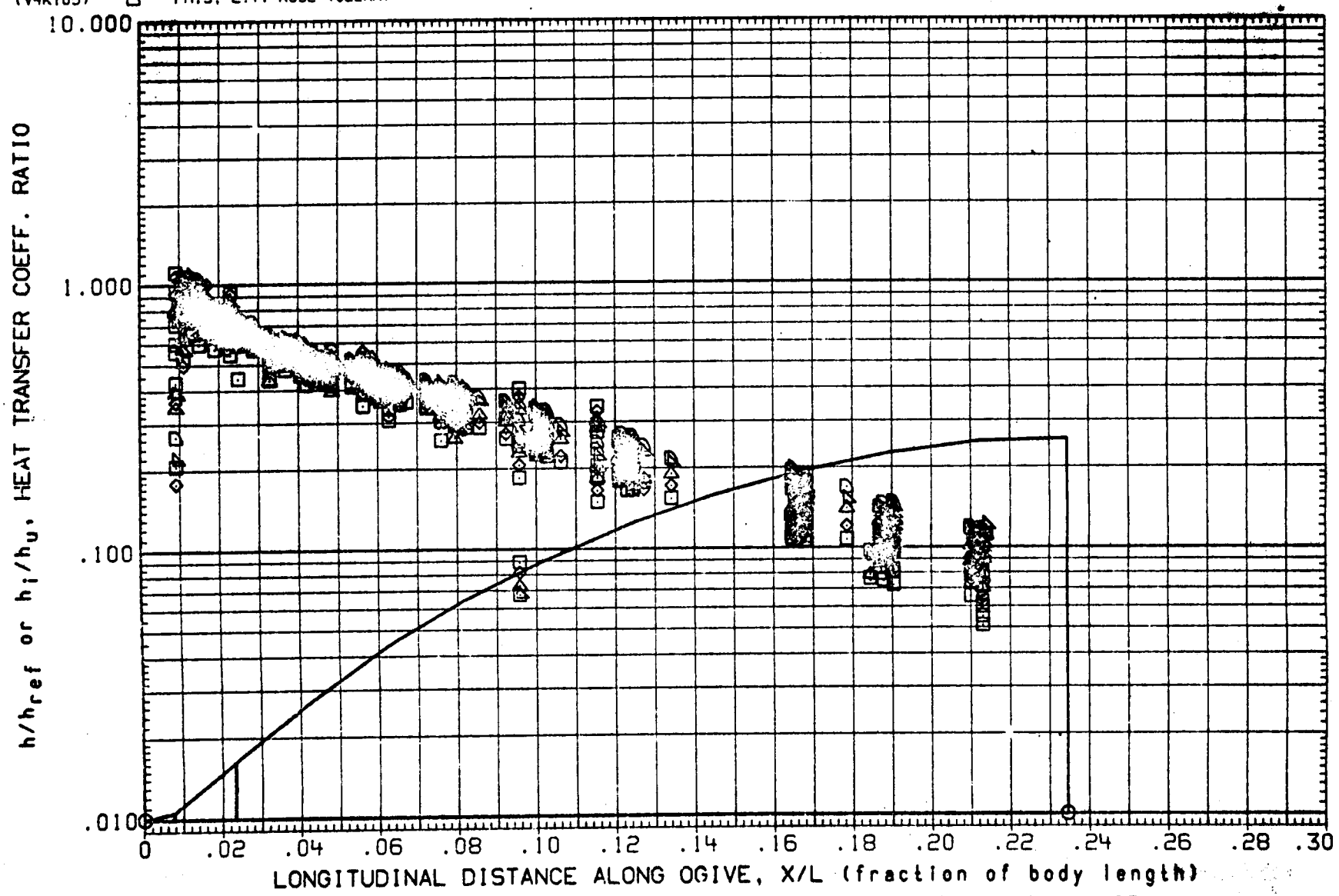

FIG. 3A LONG. DISTRIBUTION OF HEATING RATE ON ET OGIVE - MACH= 4.02
ALPHA= -5, BETA= -11, -9, -6, -3, 0, RN/FT= 3.7

MACH = 4.020 ALPHA = -5.000 THETA = 360.000 DATE 13 JUL 78 PAGE 2837

DATA	SYMBOL	CONFIGURATION DESCRIPTION		ALPHA	BETA	RN/FT
(O4K!)	○	FH15 EXTERNAL TANK OGIVE PROFILE				
(V4K001)	□	FH15, E.T. NOSE (W/PROTUBERANCES)	HI/HREF	-5.000	-11.000	3.700
(V4K002)	◇	FH15, E.T. NOSE (W/PROTUBERANCES)	HI/HREF	-5.000	-9.000	3.700
(V4K003)	△	FH15, E.T. NOSE (W/PROTUBERANCES)	HI/HREF	-5.000	-6.000	3.700
(V4K004)	◁	FH15, E.T. NOSE (W/PROTUBERANCES)	HI/HREF	-5.000	-3.000	3.700
(V4K005)	D	FH15, E.T. NOSE (W/PROTUBERANCES)	HI/HREF	-5.000	.000	3.700

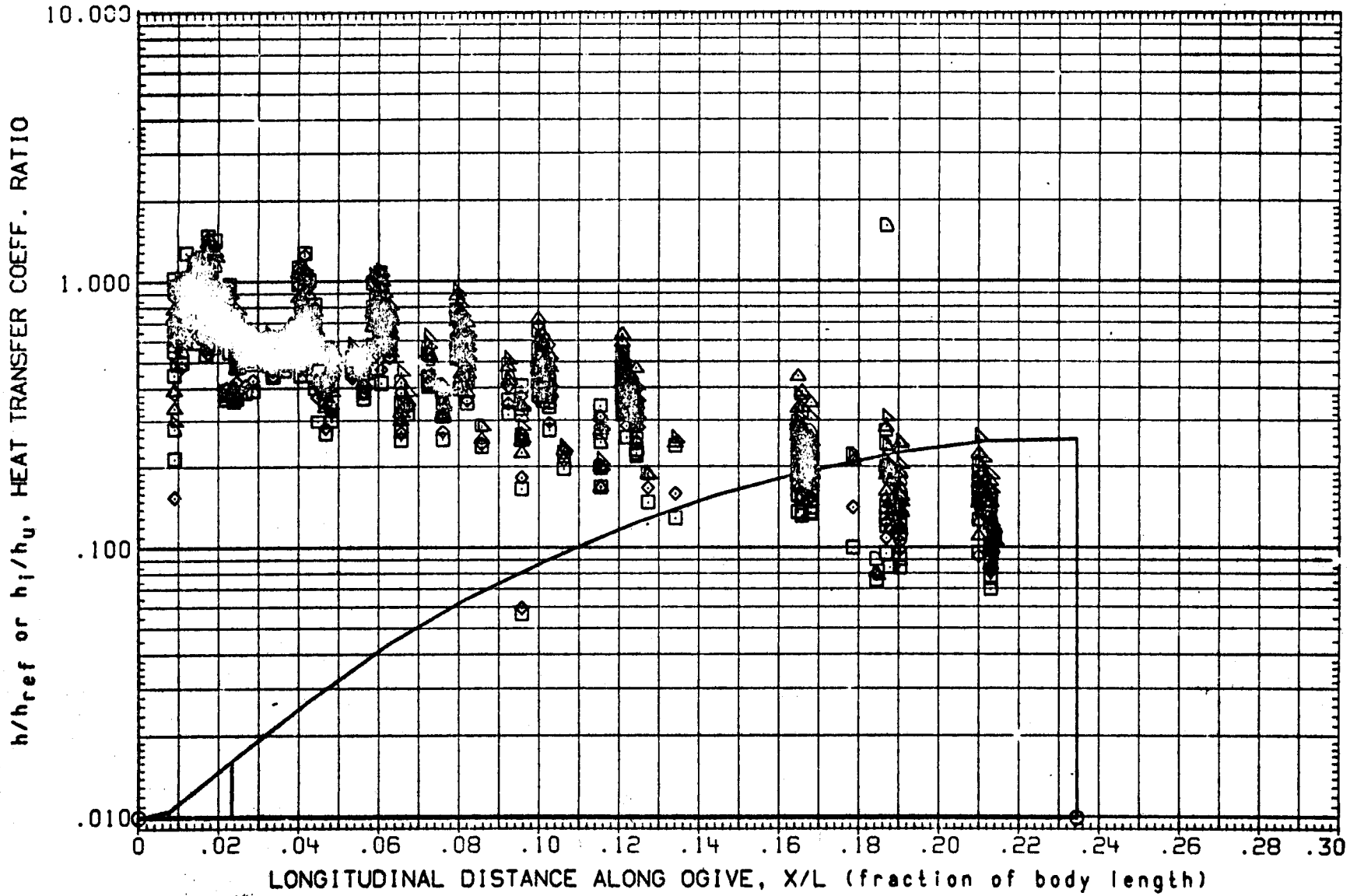

FIG. 13B LONG. DISTRIBUTION OF HEATING RATE ON ET OGIVE - MACH= 4.02
ALPHA= -5, BETA= -11, -9, -6, -3, 0, RN/FT= 3.7

MACH = 4.020 ALPHA = -5.000 ◇THETA = 360.000 DATE 13 JUL 78 PAGE 2841

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION			ALPHA	BETA	RN/FT
(V4K114)	○	FH15 EXTERNAL TANK OGIVE PROFILE					
(V4KR01)	□	FH15 (W/W TEST)	V4K001/V4K101	HI/HU	-5.000	-11.000	3.700
(V4KR02)	◇	FH15 (W/W TEST)	V4K002/V4K102	HI/HU	-5.000	-9.000	3.700
(V4KR03)	△	FH15 (W/W TEST)	V4K003/V4K103	HI/HU	-5.000	-6.000	3.700
(V4KR04)	◺	FH15 (W/W TEST)	V4K004/V4K104	HI/HU	-5.000	-3.000	3.700
(V4KR05)	D	FH15 (W/W TEST)	V4K005/V4K105	HI/HU	-5.000	.000	3.700

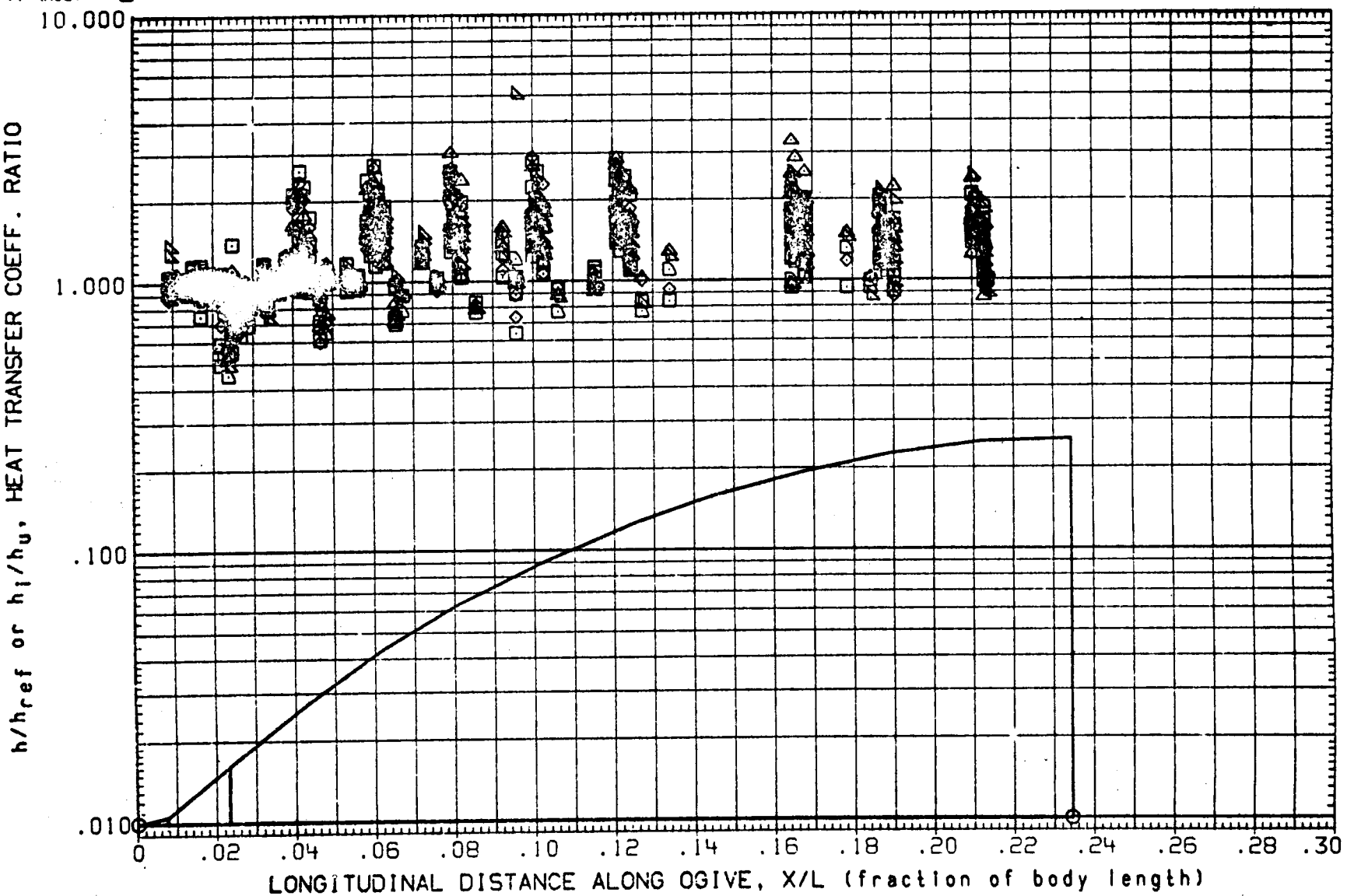

FIG. 3 LONG. DISTRIBUTION OF HEATING RATE ON ET OGIVE - MACH= 4.02
ALPHA= -5, BETA= -11, -9, -6, -3, 0, RN/FT= 3.7

MACH = 4.020 ALPHA = -5.000 THETA = 360.000 DATE 13 JUL 78 PAGE 2847

APPENDIX

TABULATED SOURCE DATA

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K001)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
112	4.020	-4.997	11.04	64.86	737.7	.4159	174.3	65.94	2602.	.6441-02	.1403-06	3.713
113	4.020	-5.012	11.03	64.83	738.7	.4158	174.5	65.86	2604.	.6429-02	.1405-06	3.704
114	4.020	-5.005	11.02	64.90	738.7	.4162	174.5	65.86	2604.	.6436-02	.1405-06	3.708

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
112	.3866-01	.9573-02
113	.3866-01	.9583-02
114	.3869-01	.9578-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
113	.00000	.91000-02	1.0000	.8371	1.583	.9751	.9700	.6122-01	.3770-01	5.073	34.56	581.9
113	.00000	.15000-01	4.0000	.8756	1.596	1.013	.9700	.6172-01	.3916-01	5.538	37.86	575.1
113	.00000	.17000-01	5.0000	.8170	1.441	.9392	.9700	.5573-01	.3631-01	5.386	36.97	568.2
113	.00000	.19000-01	6.0000	.7316	1.276	.8391	.9700	.4933-01	.3244-01	4.899	33.67	565.5
113	.00000	.24900-01	9.0000	.5690	.9555	.6492	.9695	.3694-01	.2510-01	4.018	27.76	556.0
113	.00000	.26900-01	10.000	.5024	.8308	.5733	.9687	.3212-01	.2216-01	3.630	25.14	551.8
112	.00000	.32800-01	12.000	.4167	.7430	.4885	.9665	.2873-01	.1889-01	2.707	18.56	569.7
112	.00000	.36700-01	13.000	.4379	.7687	.5152	.9651	.2972-01	.1992-01	2.903	19.94	566.2
112	.00000	.40600-01	14.000	.4381	.7845	.5216	.9637	.3033-01	.2017-01	2.830	19.40	570.6
112	.00000	.48500-01	15.000	.4084	.7205	.4915	.9610	.2786-01	.1900-01	2.689	18.46	567.4
112	.00000	.56400-01	16.000	.4185	.7386	.5107	.9583	.2856-01	.1975-01	2.754	18.91	567.4
112	.00000	.76100-01	17.000	.3114	.5393	.3905	.9520	.2085-01	.1510-01	2.102	14.46	563.1
112	.00000	.95800-01	18.000	.4548-01	.7341-01	.5716-01	.9463	.2838-02	.2210-02	.3409	2.371	543.8
112	.00000	.11550	19.000	.2024	.3469	.2692	.9411	.1341-01	.1037-01	1.387	9.556	560.5
112	.00000	.16480	20.000	.1255	.2087	.1734	.9307	.8070-02	.6705-02	.8985	6.220	552.6
112	.00000	.21400	22.000	.8022-01	.1269	.1112	.9243	.4905-02	.4298-02	.6223	4.344	537.0
114	2.0000	.24700-01	165.00	.4624	.7585	.5265	.9688	.2934-01	.2037-01	3.385	23.47	549.5
113	9.0000	.15000-01	157.00	.7863	1.419	.9233	.9667	.5487-01	.3570-01	5.037	34.48	573.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K001)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
113	9.0000	.17600-01	158.00	.6994	1.195	.8112	.9667	.4619-01	.3137-01	4.818	33.21	560.5
114	9.8000	.24700-01	164.00	.4873	.8059	.5629	.9660	.3118-01	.2178-01	3.523	24.39	551.8
113	10.000	.22900-01	88.000	.5394	.9052	.6243	.9664	.3500-01	.2414-01	3.813	26.34	555.9
113	10.000	.26900-01	90.000	.3360	.5448	.3878	.9651	.2106-01	.1499-01	2.504	17.39	545.9
113	10.000	.34700-01	94.000	.4525	.7401	.5301	.9623	.2862-01	.2050-01	3.325	23.07	548.6
113	12.000	.17600-01	152.00	1.374	3.412	1.490	.9870	.1319	.5760-01	6.569	43.96	615.0
113	12.000	.12100-01	151.00	1.165	4.409	1.289	.9870	.1705	.4983-01	4.524	29.91	638.3
113	13.000	.19400-01	153.00	1.330	3.254	1.441	.9870	.1258	.5570-01	6.424	43.02	613.7
114	14.600	.44200-01	169.00	.4844	.7921	.5805	.9574	.3064-01	.2246-01	3.564	24.72	548.5
113	18.500	.44200-01	106.00	.5712	.9480	.6922	.9560	.3665-01	.2676-01	4.105	28.41	552.8
114	19.600	.62900-01	175.00	.4304	.6922	.5316	.9497	.2678-01	.2057-01	3.252	22.62	543.4
113	19.800	.40800-01	101.00	.6754	1.148	.8219	.9567	.4440-01	.3178-01	4.684	32.30	559.3
113	20.000	.24900-01	89.000	.4300	.7044	.5041	.9623	.2724-01	.1949-01	3.153	21.87	549.0
113	20.000	.28800-01	91.000	.3344	.5416	.3933	.9609	.2094-01	.1521-01	2.496	17.34	545.6
113	20.000	.32800-01	93.000	.4328	.7163	.5156	.9594	.2770-01	.1994-01	3.124	21.63	552.0
113	22.200	.62900-01	125.00	.4892	.8062	.6125	.9488	.3117-01	.2368-01	3.554	24.62	550.8
113	22.400	.44200-01	107.00	.6761	1.127	.8258	.9547	.4358-01	.3193-01	4.825	33.37	554.1
114	22.600	.10270	192.00	.2125	.3350	.2748	.9380	.1296-01	.1063-01	1.660	11.59	536.7
113	23.000	.42000-01	105.00	.8519	1.492	1.054	.9552	.5768-01	.4077-01	5.672	38.96	566.5
113	23.400	.59600-01	120.00	.6414	1.072	.8049	.9494	.4145-01	.3112-01	4.560	31.52	554.8
114	23.900	.21310	250.00	.5258-01	.7854-01	.7071-01	.9225	.3039-02	.2735-02	.4546	3.212	515.2
113	24.100	.82200-01	139.00	.3904	.6290	.4988	.9427	.2432-01	.1928-01	2.941	20.45	543.9
114	24.400	.19040	238.00	.6782-01	.1026	.9142-01	.9238	.3968-02	.3537-02	.5720	4.030	520.6
114	24.400	.12440	207.00	.1686	.2700	.2254	.9329	.1045-01	.8720-02	1.282	8.926	542.1
114	24.800	.16810	223.00	.9868-01	.1543	.1346	.9260	.5968-02	.5207-02	.7826	5.474	533.7
113	24.900	.62900-01	126.00	.5834	.9819	.7397	.9480	.3796-01	.2860-01	4.106	28.36	556.6
114	25.000	.79500-01	178.00	.4080	.6580	.5203	.9432	.2546-01	.2013-01	3.069	21.34	544.2
114	25.300	.10270	191.00	.2619	.4174	.3417	.9373	.1615-01	.1322-01	2.010	14.01	540.3
114	25.300	.10000+00	186.00	.3280	.5325	.4306	.9379	.2060-01	.1666-01	2.441	16.95	546.3
113	25.500	.60700-01	124.00	.7508	1.309	.9623	.9484	.5059-01	.3721-01	5.030	34.57	565.4
114	26.000	.12440	206.00	.1723	.2778	.2317	.9325	.1075-01	.8962-02	1.297	9.016	544.2
113	26.300	.82200-01	140.00	.4784	.7716	.6134	.9421	.2983-01	.2371-01	3.595	25.00	544.3
114	26.700	.12100	199.00	.2733	.4562	.3736	.9330	.1765-01	.1445-01	1.948	13.47	554.4
114	26.800	.16810	222.00	.1036	.1626	.1418	.9257	.6289-02	.5487-02	.8162	5.705	535.0
114	27.000	.19040	237.00	.8329-01	.1271	.1131	.9235	.4917-02	.4375-02	.6907	4.856	524.3
114	27.100	.21310	249.00	.7388-01	.1113	.1000	.9223	.4307-02	.3869-02	.6276	4.425	519.1
114	27.200	.80300-01	180.00	.5275	.8727	.6834	.9423	.3376-01	.2644-01	3.811	26.39	551.9
113	27.400	.40100-01	98.000	.9042	1.627	1.134	.9544	.6291-01	.4385-01	5.813	39.80	572.4
114	27.400	.16480	215.00	.1137	.1823	.1576	.9260	.7052-02	.6097-02	.8645	6.018	542.2
113	27.600	.41C00-01	102.00	1.007	1.888	1.284	.9538	.7300-01	.4963-01	6.162	42.01	580.4
114	27.600	.12440	205.00	.2256	.3683	.3060	.9322	.1425-01	.1184-01	1.663	11.54	548.1
114	27.600	.18700	230.00	.9413-01	.1449	.1285	.9237	.5607-02	.4970-02	.7675	5.385	527.9
114	27.700	.21010	243.00	.9324-01	.1429	.1277	.9224	.5529-02	.4940-02	.7667	5.385	526.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K001)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
114	27.900	.10110	188.00	.3526	.5842	.4700	.9370	.2260-01	.1818-01	2.541	17.59	552.4
113	28.000	.46800-01	110.00	.2990	.4647	.3608	.9520	.1797-01	.1395-01	2.395	16.77	531.5
114	28.200	.16810	221.00	.9902-01	.1568	.1365	.9255	.6068-02	.5282-02	.7676	5.355	538.3
114	28.300	.19040	236.00	.1125	.1718	.1529	.9234	.6645-02	.5915-02	.9313	6.547	524.7
114	28.300	.12200	201.00	.2431	.3937	.3277	.9325	.1523-01	.1268-01	1.816	12.62	545.6
113	28.400	.53500-01	114.00	.3717	.5982	.4591	.9497	.2313-01	.1775-01	2.803	19.50	543.6
114	28.400	.21310	248.00	.1102	.1668	.1497	.9223	.6454-02	.5792-02	.9283	6.539	521.0
113	28.700	.58600-01	117.00	.7852	1.330	.9976	.9480	.5144-01	.3857-01	5.473	37.76	558.4
114	28.800	.16580	217.00	.1096	.1765	.1526	.9257	.6827-02	.5902-02	.8257	5.743	543.9
113	28.800	.60400-01	121.00	.8326	1.493	1.085	.9475	.5773-01	.4194-01	5.376	36.82	571.7
114	29.000	.21110	244.00	.1147	.1758	.1571	.9223	.6801-02	.6079-02	.9436	6.628	526.1
113	29.000	.65700-01	129.00	.2888	.4463	.3570	.9459	.1725-01	.1380-01	2.338	16.40	529.3
113	29.200	.72400-01	133.00	.3511	.5602	.4441	.9439	.2166-01	.1717-01	2.688	18.73	540.7
113	29.300	.79500-01	136.00	.5941	1.028	.7870	.9419	.3976-01	.3043-01	4.019	27.65	563.7
113	29.600	.92500-01	143.00	.2486	.3926	.3209	.9386	.1518-01	.1241-01	1.936	13.52	537.2
113	29.700	.10000+00	146.00	.4846	.8325	.6586	.9368	.3219-01	.2547-01	3.312	22.81	561.9
114	29.900	.12100	198.00	.3382	.5776	.4700	.9323	.2234-01	.1818-01	2.332	16.07	560.4
114	30.200	.16480	214.00	.1238	.2018	.1738	.9256	.7808-02	.6723-02	.9151	6.352	547.6
114	30.300	.21010	242.00	.1194	.1871	.1662	.9223	.7240-02	.6428-02	.9436	6.597	534.5
113	31.500	.91000-02	82.000	.5321	.9736	.6546	.9587	.3764-01	.2531-01	3.352	22.91	575.8
113	31.500	.11100-01	83.000	.6953	1.289	.8584	.9587	.4983-01	.3319-01	4.312	29.43	578.3
113	31.500	.14200-01	84.000	1.078	2.663	1.188	.9845	.1030	.4592-01	5.171	34.62	614.6
113	31.500	.16000-01	85.000	1.137	2.603	1.246	.9845	.1006	.4817-01	5.765	38.74	607.5
113	31.500	.17600-01	86.000	1.130	2.724	1.243	.9845	.1053	.4807-01	5.517	36.97	612.4
113	31.500	.19400-01	87.000	.9018	1.796	.9774	.9845	.6945-01	.3779-01	5.173	35.08	590.3
114	32.100	.21010	241.00	.1095	.1722	.1527	.9222	.6660-02	.5909-02	.8593	6.004	535.8
114	32.200	.16480	213.00	.1430	.2339	.2015	.9253	.9049-02	.7795-02	1.051	7.294	548.6
114	32.200	.17860	224.00	.7410-01	.1138	.1008	.9240	.4403-02	.3901-02	.6070	4.261	526.9
114	32.200	.18700	228.00	.6995-01	.1083	.9602-01	.9233	.4190-02	.3715-02	.5646	3.957	530.1
114	32.300	.12100	197.00	.3915	.6581	.5410	.9318	.2546-01	.2093-01	2.761	19.07	556.4
114	32.300	.12300	194.00	.2893	.4957	.4049	.9314	.1918-01	.1567-01	1.987	13.69	561.2
114	32.300	.12730	208.00	.1112	.1735	.1481	.9307	.6712-02	.5728-02	.8846	6.190	533.0
114	32.300	.13420	209.00	.9476-01	.1532	.1296	.9295	.5926-02	.5015-02	.7100	4.935	545.0
113	32.400	.10000+00	147.00	.3748	.6304	.5059	.9361	.2438-01	.1956-01	2.639	18.23	556.5
114	32.400	.10110	184.00	.4422	.7516	.6009	.9358	.2908-01	.2325-01	3.069	21.17	559.2
114	32.400	.10630	193.00	.1535	.2331	.1976	.9347	.9018-02	.7643-02	1.286	9.049	522.3
114	32.500	.85800-01	183.00	.1884	.2884	.2385	.9394	.1116-01	.9226-02	1.553	10.91	525.6
113	32.600	.79500-01	137.00	.5730	.9819	.7596	.9410	.3797-01	.2937-01	3.929	27.07	561.3
114	32.600	.80800-01	176.00	.4338	.7303	.5715	.9407	.2825-01	.2211-01	3.054	21.09	556.7
113	32.700	.67400-01	132.00	.2551	.3965	.3184	.9443	.1533-01	.1231-01	2.042	14.30	531.6
113	32.700	.72400-01	134.00	.3314	.5237	.4194	.9429	.2025-01	.1622-01	2.578	17.99	537.5
113	32.800	.65700-01	130.00	.2214	.3367	.2731	.9447	.1302-01	.1056-01	1.846	12.99	523.0
114	32.800	.16680	210.00	.1191	.1916	.1663	.9250	.7413-02	.6432-02	.8988	6.253	543.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K001)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
114	32.800	.18880	225.00	.1037	.1571	.1404	.9232	.6079-02	.5431-02	.8706	6.130	521.6
113	32.900	.58600-01	118.00	.5464	.9062	.6929	.9467	.3504-01	.2679-01	3.930	27.21	552.6
113	32.900	.60400-01	122.00	.4863	.7960	.6150	.9462	.3078-01	.2378-01	3.570	24.76	548.8
114	32.900	.61300-01	171.00	.6289	1.093	.8163	.9460	.4230-01	.3158-01	4.230	29.08	564.8
113	33.000	.53500-01	115.00	.3911	.6211	.4838	.9483	.2401-01	.1871-01	3.016	21.03	539.2
113	33.200	.48300-01	113.00	.2468	.3794	.2993	.9498	.1467-01	.1157-01	2.016	14.15	527.4
114	33.400	.42800-01	166.00	.8032	1.419	1.017	.9515	.5488-01	.3935-01	5.291	36.31	568.4
113	33.500	.40100-01	99.000	.7928	1.348	.9863	.9524	.5211-01	.3813-01	5.499	37.92	559.3
113	33.600	.38300-01	97.000	.5157	.8506	.6330	.9529	.3289-01	.2448-01	3.741	25.92	551.0
113	33.700	.36700-01	96.000	.3841	.6278	.4689	.9534	.2427-01	.1813-01	2.827	19.61	548.3
113	33.900	.33800-01	95.000	.3686	.5919	.4453	.9544	.2289-01	.1722-01	2.790	19.42	542.9
114	34.700	.21010	240.00	.6986-01	.1081	.9643-01	.9221	.4183-02	.3731-02	.5641	3.954	529.9
114	34.700	.18700	227.00	.8718-01	.1372	.1211	.9231	.5309-02	.4686-02	.6831	4.771	536.1
114	34.900	.16480	212.00	.9757-01	.1578	.1367	.9250	.6104-02	.5289-02	.7306	5.078	545.1
113	35.100	.10000+00	148.00	.2947	.4899	.3968	.9354	.1894-01	.1534-01	2.113	14.62	553.2
114	35.200	.23900-01	161.00	.3160	.4884	.3719	.9574	.1889-01	.1439-01	2.559	17.94	529.4
113	35.300	.92500-01	145.00	.2793	.4429	.3639	.9371	.1712-01	.1407-01	2.160	15.06	538.7
113	35.300	.22100-01	160.00	.3364	.5179	.3953	.9575	.2002-01	.1528-01	2.742	19.24	527.9
114	35.400	.18800	231.00	.6215-01	.9625-01	.8546-01	.9230	.3723-02	.3306-02	.5014	3.514	530.1
114	35.500	.12100	196.00	.2320	.3803	.3172	.9311	.1471-01	.1227-01	1.701	11.79	549.2
114	35.600	.16580	216.00	.9514-01	.1523	.1326	.9248	.5893-02	.5129-02	.7242	5.042	541.9
113	35.800	.80600-01	138.00	.3243	.5303	.4232	.9398	.2050-01	.1636-01	2.384	16.54	548.5
114	35.900	.21310	247.00	.5702-01	.8649-01	.7764-01	.9220	.3346-02	.3004-02	.4783	3.367	521.9
114	36.000	.19040	235.00	.6233-01	.9530-01	.8503-01	.9228	.3687-02	.3290-02	.5148	3.618	525.2
114	36.200	.16810	220.00	.1176	.1852	.1623	.9245	.7164-02	.6281-02	.9218	6.439	536.1
113	36.200	.72400-01	135.00	.3235	.5080	.4100	.9419	.1964-01	.1585-01	2.543	17.77	535.3
114	36.300	.12200	200.00	.1884	.3082	.2577	.9308	.1192-01	.9971-02	1.385	9.605	548.7
113	36.600	.65700-01	131.00	.2022	.3114	.2521	.9436	.1204-01	.9747-02	1.647	11.56	528.0
114	36.700	.18700	226.00	.1038	.1596	.1421	.9230	.6176-02	.5497-02	.8489	5.958	527.4
114	36.900	.16480	211.00	.1651	.2636	.2297	.9247	.1020-01	.8885-02	1.262	8.789	541.1
114	36.900	.10110	187.00	.2693	.4408	.3609	.9348	.1705-01	.1396-01	1.978	13.72	548.8
113	37.000	.60400-01	123.00	.4834	.8060	.6199	.9450	.3116-01	.2397-01	3.449	23.86	554.1
114	37.000	.12440	204.00	.1626	.2600	.2201	.9302	.1006-01	.8517-02	1.241	8.644	541.4
113	37.100	.58600-01	119.00	.4620	.7490	.5840	.9455	.2896-01	.2258-01	3.444	23.92	545.9
114	37.200	.21310	246.00	.7257-01	.1100	.9877-01	.9220	.4255-02	.3821-02	.6095	4.292	521.6
114	37.600	.16810	219.00	.1478	.2327	.2042	.9243	.9004-02	.7899-02	1.157	8.077	536.4
113	37.800	.10270	150.00	.2692	.4272	.3558	.9342	.1652-01	.1376-01	2.079	14.50	538.9
114	37.900	.12100	195.00	.3196	.5097	.4311	.9306	.1972-01	.1668-01	2.450	17.07	540.5
114	38.000	.80300-01	179.00	.3096	.4907	.3989	.9393	.1898-01	.1543-01	2.397	16.72	538.5
113	38.500	.46800-01	112.00	.2195	.3370	.2673	.9487	.1303-01	.1034-01	1.797	12.61	526.9
114	38.600	.12440	203.00	.1989	.3154	.2683	.9299	.1220-01	.1038-01	1.538	10.73	538.7
114	38.700	.10000+00	185.00	.2844	.4551	.3769	.9346	.1761-01	.1458-01	2.168	15.10	541.7
113	38.900	.82200-01	141.00	.3363	.5284	.4329	.9386	.2043-01	.1674-01	2.643	18.47	535.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K001)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
113	39.300	.41600-01	104.00	.5452	.9147	.6830	.9501	.3537-01	.2641-01	3.854	26.63	555.8
114	39.500	.10270	190.00	.3213	.5109	.4259	.9338	.1977-01	.1648-01	2.474	17.25	539.6
114	39.600	.16810	218.00	.1560	.2455	.2157	.9241	.9498-02	.8344-02	1.223	8.546	536.0
114	39.900	.19040	233.00	.8936-01	.1365	.1219	.9226	.5279-02	.4718-02	.7398	5.201	524.7
114	40.100	.79500-01	177.00	.4565	.7269	.5905	.9390	.2812-01	.2285-01	3.508	24.45	540.1
114	40.200	.12440	202.00	.2554	.4072	.3462	.9296	.1575-01	.1340-01	1.957	13.64	540.6
114	40.300	.21310	245.00	.6549-01	.9925-01	.8914-01	.9220	.3839-02	.3448-02	.5501	3.874	521.5
113	41.100	.82200-01	142.00	.4754	.7594	.6187	.9381	.2936-01	.2392-01	3.631	25.29	541.1
114	41.100	.60700-01	173.00	.3304	.5306	.4194	.9438	.2053-01	.1623-01	2.503	17.42	542.9
114	42.600	.59600-01	172.00	.3747	.6012	.4757	.9437	.2326-01	.1840-01	2.841	19.78	542.6
114	43.200	.42000-01	168.00	.4028	.6509	.5005	.9488	.2518-01	.1936-01	3.020	20.99	544.9
114	43.400	.82200-01	181.00	.2711	.4295	.3523	.9375	.1661-01	.1363-01	2.102	14.66	538.3
113	43.600	.62900-01	128.00	.4602	.7368	.5870	.9424	.2849-01	.2270-01	3.501	24.38	541.9
113	45.000	.22900-01	8.0000	.7833	1.406	.9814	.9544	.5436-01	.3794-01	5.051	34.59	571.9
114	46.100	.62900-01	174.00	.4761	.7667	.6109	.9418	.2966-01	.2363-01	3.590	24.97	543.8
114	47.700	.40800-01	167.00	.4124	.6701	.5158	.9479	.2592-01	.1995-01	3.065	21.28	546.6
113	48.400	.44200-01	109.00	.3241	.5185	.4052	.9466	.2005-01	.1567-01	2.469	17.20	541.6
113	50.000	.19400-01	156.00	.5941	1.239	.6676	.9788	.4789-01	.2581-01	3.260	22.03	596.7
113	51.000	.12100-01	154.00	.9071	2.177	1.037	.9785	.8417-01	.4009-01	4.442	29.77	612.0
113	51.000	.17600-01	155.00	.5129	1.013	.5737	.9785	.3917-01	.2218-01	2.967	20.13	589.1
114	51.900	.44800-01	170.00	.2417	.3745	.2996	.9455	.1449-01	.1159-01	1.949	13.66	530.3
114	53.200	.24700-01	163.00	.3039	.4829	.3701	.9517	.1868-01	.1432-01	2.342	16.33	539.4
114	65.200	.24700-01	162.00	.4414	.7241	.5517	.9488	.2801-01	.2134-01	3.231	22.40	549.5
112	90.000	.91000-02	44.000	.1583	.3087	.2163	.9450	.1194-01	.8361-02	.9267	6.298	586.3
112	90.000	.11100-01	45.000	.3683	.7239	.5046	.9450	.2799-01	.1951-01	2.138	14.52	587.5
112	90.000	.13100-01	46.000	.5639	1.098	.7700	.9450	.4246-01	.2977-01	3.306	22.47	586.0
112	90.000	.17000-01	48.000	.4036	.7415	.5386	.9450	.2867-01	.2082-01	2.525	17.26	575.8
112	90.000	.20900-01	50.000	.4818	.8771	.6406	.9450	.3391-01	.2477-01	3.049	20.86	574.0
112	90.000	.24900-01	52.000	.4672	.8483	.6221	.9446	.3280-01	.2405-01	2.966	20.30	573.5
112	90.000	.26900-01	53.000	.4468	.7953	.5923	.9439	.3075-01	.2290-01	2.908	19.94	569.3
112	90.000	.28800-01	54.000	.4251	.7516	.5639	.9433	.2906-01	.2180-01	2.791	19.16	567.8
112	90.000	.32800-01	55.000	.3928	.6748	.5182	.9421	.2609-01	.2004-01	2.681	18.47	561.2
112	90.000	.36700-01	56.000	.3767	.6476	.5003	.9409	.2504-01	.1934-01	2.568	17.69	561.3
112	90.000	.40600-01	57.000	.3336	.5826	.4491	.9398	.2253-01	.1737-01	2.227	15.31	565.0
112	90.000	.48500-01	58.000	.3441	.5954	.4670	.9377	.2302-01	.1806-01	2.325	16.01	562.9
112	90.000	.56400-01	59.000	.2704	.4611	.3684	.9356	.1783-01	.1425-01	1.865	12.86	559.3
112	90.000	.76100-01	60.000	.1830	.3081	.2538	.9313	.1191-01	.9814-02	1.286	8.883	556.0
112	90.000	.95800-01	61.000	.1174	.1982	.1654	.9278	.7663-02	.6432-02	.8207	5.668	556.8
112	90.000	.11550	62.000	.1173	.1977	.1687	.9251	.7644-02	.6521-02	.8230	5.685	556.2
112	135.00	.19000-01	49.000	.4321	.7865	.5756	.9447	.3041-01	.2226-01	2.735	18.71	574.0
112	135.00	.22900-01	51.000	.4126	.7556	.5510	.9447	.2922-01	.2130-01	2.592	17.72	575.2
112	180.00	.91000-02	23.000	.3571	.6505	.4519	.9535	.2515-01	.1747-01	2.258	15.45	574.1
112	180.00	.11100-01	24.000	.5898	1.206	.7737	.9535	.4664-01	.2991-01	3.291	22.28	593.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K001)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
112	180.00	.13100-01	25.000	.5170	.9890	.6645	.9535	.3824-01	.2569-01	3.090	21.04	583.1
112	180.00	.15000-01	26.000	.4664	.8813	.5971	.9535	.3408-01	.2309-01	2.825	19.25	581.0
112	180.00	.17000-01	27.000	.5314	1.002	.6799	.9535	.3873-01	.2629-01	3.229	22.01	580.5
112	180.00	.19000-01	28.000	.5662	1.067	.7243	.9535	.4125-01	.2800-01	3.441	23.46	580.5
112	180.00	.20900-01	29.000	.5619	1.037	.7142	.9535	.4011-01	.2761-01	3.497	23.89	576.7
112	180.00	.28800-01	32.000	.4442	.7886	.5630	.9517	.3049-01	.2177-01	2.901	19.90	568.8
112	180.00	.32800-01	33.000	.4109	.7058	.5185	.9503	.2729-01	.2005-01	2.805	19.33	561.1
112	180.00	.36700-01	34.000	.3859	.6737	.4933	.9491	.2605-01	.1907-01	2.577	17.72	565.0
112	180.00	.48500-01	36.000	.3254	.5578	.4213	.9454	.2157-01	.1629-01	2.228	15.36	560.6
112	180.00	.56400-01	37.000	.2984	.5058	.3893	.9431	.1956-01	.1505-01	2.076	14.33	557.8
112	180.00	.76100-01	38.000	.2350	.3918	.3128	.9378	.1515-01	.1209-01	1.674	11.58	553.4
112	180.00	.95800-01	39.000	.1866	.3086	.2533	.9334	.1193-01	.9794-02	1.346	9.324	551.1
112	180.00	.11550	40.000	.1435	.2379	.1990	.9297	.9198-02	.7695-02	1.031	7.139	551.8
112	180.00	.18450	42.000	.5407-01	.8637-01	.7616-01	.9224	.3339-02	.2945-02	.4123	2.873	540.4
112	225.00	.22900-01	30.000	.5812	1.078	.6787	.9688	.4168-01	.2624-01	3.596	24.55	577.6
112	270.00	.91000-02	63.000	.9280	2.191	1.037	.9818	.8471-01	.4008-01	4.592	30.82	609.7
112	270.00	.11100-01	64.000	.9411	2.085	1.045	.9818	.8062-01	.4042-01	4.893	32.95	603.2
112	270.00	.13100-01	65.000	.9195	1.971	1.018	.9818	.7621-01	.3937-01	4.915	33.17	599.4
112	270.00	.17000-01	67.000	.8818	1.775	.9706	.9818	.6863-01	.3753-01	4.997	33.87	591.1
112	270.00	.20900-01	69.000	.7006	1.389	.7699	.9818	.5369-01	.2977-01	4.033	27.37	588.8
112	270.00	.24900-01	71.000	.6425	1.256	.7070	.9813	.4857-01	.2733-01	3.751	25.48	586.7
112	270.00	.28800-01	73.000	.5289	.9913	.5838	.9799	.3833-01	.2257-01	3.234	22.06	579.5
112	270.00	.36700-01	75.000	.5373	1.010	.6024	.9769	.3906-01	.2329-01	3.274	22.32	580.1
112	270.00	.48500-01	77.000	.5015	.9200	.5729	.9726	.3557-01	.2215-01	3.145	21.50	575.5
112	270.00	.56400-01	78.000	.4681	.8577	.5425	.9698	.3316-01	.2097-01	2.939	20.09	575.3
112	270.00	.95800-01	80.000	.3329	.5857	.4095	.9567	.2265-01	.1583-01	2.200	15.11	566.8
112	270.00	.11550	81.000	.2726	.4754	.3452	.9507	.1838-01	.1335-01	1.823	12.53	564.7
112	315.00	.19000-01	68.000	.6446	1.216	.7029	.9823	.4700-01	.2718-01	3.914	26.68	580.6
112	315.00	.22900-01	70.000	.6382	1.244	.6983	.9823	.4812-01	.2700-01	3.737	25.40	586.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K002)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
115	4.020	-5.023	9.020	64.89	738.7	.4161	174.5	61.12	2604.	.6435-02	.1405-06	3.707
116	4.020	-5.002	9.013	64.92	738.7	.4163	174.5	61.20	2604.	.6438-02	.1405-06	3.709
117	4.020	-4.989	8.997	64.77	738.7	.4154	174.5	61.22	2604.	.6423-02	.1405-06	3.701

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
115	.3868-01	.9579-02
116	.3869-01	.9577-02
117	.3865-01	.9588-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
116	.00000	.91000-02	1.0000	.7577	1.521	.8891	.9705	.5884-01	.3440-01	4.316	29.25	591.5
116	.00000	.15000-01	4.0000	.8091	1.559	.9427	.9705	.6031-01	.3647-01	4.808	32.69	585.1
116	.00000	.17000-01	5.0000	.7819	1.458	.9056	.9705	.5642-01	.3504-01	4.818	32.87	579.4
116	.00000	.19000-01	6.0000	.7227	1.332	.8353	.9705	.5156-01	.3232-01	4.513	30.82	577.3
116	.00000	.24900-01	9.0000	.5551	.9780	.6377	.9700	.3784-01	.2468-01	3.669	25.19	567.8
116	.00000	.26900-01	10.000	.4847	.8394	.5570	.9693	.3248-01	.2155-01	3.279	22.56	563.8
115	.00000	.32800-01	12.000	.4495	.7682	.5205	.9671	.2972-01	.2013-01	3.095	21.33	560.6
115	.00000	.36700-01	13.000	.4533	.7623	.5265	.9657	.2949-01	.2037-01	3.196	22.07	556.4
115	.00000	.40600-01	14.000	.4550	.7800	.5345	.9643	.3017-01	.2068-01	3.120	21.49	561.4
115	.00000	.48500-01	15.000	.4373	.7390	.5189	.9615	.2859-01	.2007-01	3.061	21.13	557.7
115	.00000	.56400-01	16.000	.4244	.7154	.5098	.9588	.2767-01	.1972-01	2.981	20.58	557.1
115	.00000	.76100-01	17.000	.3328	.5465	.4088	.9524	.2114-01	.1581-01	2.431	16.86	549.8
115	.00000	.95800-01	18.000	.4844-01	.7632-01	.6017-01	.9466	.2952-02	.2328-02	.3788	2.646	536.5
115	.00000	.11550	19.000	.2219	.3601	.2853	.9414	.1393-01	.1107-01	1.652	11.48	546.2
115	.00000	.16480	20.000	.1405	.2243	.1894	.9309	.8678-02	.7328-02	1.074	7.480	541.1
115	.00000	.21400	22.000	.8537-01	.1268	.1134	.9243	.4906-02	.4388-02	.7460	5.279	512.8
117	2.0000	.24700-01	165.00	.4937	.8452	.5654	.9695	.3266-01	.2185-01	3.389	23.35	561.1
116	9.0000	.15000-01	157.00	.7500	1.428	.8851	.9678	.5525-01	.3424-01	4.515	30.74	583.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K002)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
116	9.0000	.17600-01	158.00	.6873	1.230	.8009	.9678	.4759-01	.3099-01	4.451	30.50	571.3
117	9.8000	.24700-01	164.00	.4831	.8333	.5604	.9672	.3220-01	.2166-01	3.282	22.59	562.9
116	10.000	.22900-01	88.000	.5233	.9176	.6081	.9675	.3550-01	.2353-01	3.481	23.91	566.8
116	10.000	.26900-01	90.000	.3551	.5994	.4117	.9663	.2319-01	.1593-01	2.491	17.20	557.4
116	10.000	.34700-01	94.000	.4527	.7802	.5348	.9634	.3019-01	.2069-01	3.082	21.22	562.7
116	12.000	.17600-01	152.00	1.338	3.911	1.463	.9870	.1513	.5660-01	5.810	38.65	626.4
116	12.000	.12100-01	151.00	.9475	4.586	1.056	.9870	.1774	.4087-01	3.413	22.48	645.6
116	13.000	.19400-01	153.00	1.251	3.384	1.362	.9870	.1309	.5271-01	5.670	37.82	621.5
117	14.600	.44200-01	169.00	.4942	.8434	.5961	.9587	.3259-01	.2304-01	3.407	23.49	560.3
116	18.500	.44200-01	106.00	.5671	.9911	.6930	.9575	.3835-01	.2681-01	3.789	26.03	566.0
117	19.600	.62900-01	175.00	.4209	.7024	.5235	.9511	.2714-01	.2023-01	2.998	20.73	554.4
116	19.800	.40800-01	101.00	.6910	1.250	.8494	.9583	.4838-01	.3286-01	4.415	30.21	573.5
116	20.000	.24900-01	89.000	.4067	.6900	.4773	.9640	.2670-01	.1847-01	2.831	19.53	558.8
116	20.000	.28800-01	91.000	.3654	.6173	.4314	.9625	.2388-01	.1669-01	2.560	17.67	557.6
116	20.000	.32800-01	93.000	.4440	.7742	.5324	.9611	.2996-01	.2060-01	2.975	20.45	565.5
116	22.200	.62900-01	125.00	.4844	.8372	.6125	.9504	.3239-01	.2370-01	3.285	22.60	563.4
116	22.400	.44200-01	107.00	.6551	1.146	.8056	.9564	.4433-01	.3117-01	4.372	30.04	566.2
117	22.600	.10270	192.00	.2265	.3697	.2962	.9392	.1429-01	.1145-01	1.669	11.58	548.0
116	23.000	.42000-01	105.00	.8386	1.567	1.048	.9569	.6063-01	.4056-01	5.156	35.17	579.8
116	23.400	.59600-01	120.00	.6212	1.096	.7883	.9510	.4239-01	.3050-01	4.100	28.14	568.1
117	23.900	.21310	250.00	.6145-01	.9290-01	.8324-01	.9227	.3590-02	.3217-02	.5182	3.651	520.5
116	24.100	.82200-01	139.00	.3877	.6547	.5019	.9442	.2533-01	.1942-01	2.717	18.76	557.5
117	24.400	.19040	238.00	.7273-01	.1116	.9883-01	.9242	.4315-02	.3820-02	.5957	4.183	526.7
117	24.400	.12440	207.00	.1822	.3029	.2472	.9340	.1171-01	.9555-02	1.305	9.029	553.3
117	24.800	.16810	223.00	.1120	.1795	.1547	.9266	.6939-02	.5979-02	.8500	5.917	542.3
116	24.900	.62900-01	126.00	.5469	.9673	.7003	.9496	.3742-01	.2710-01	3.597	24.68	568.7
117	25.000	.79500-01	178.00	.4064	.6832	.5238	.9447	.2640-01	.2024-01	2.863	19.78	556.4
117	25.300	.10270	191.00	.2885	.4777	.3812	.9386	.1846-01	.1473-01	2.081	14.40	552.1
117	25.300	.10000+00	186.00	.3312	.5621	.4413	.9392	.2172-01	.1706-01	2.301	15.88	558.9
116	25.500	.60700-01	124.00	.7457	1.380	.9677	.9501	.5341-01	.3744-01	4.634	31.64	578.0
117	26.000	.12440	206.00	.2078	.3484	.2838	.9336	.1347-01	.1097-01	1.469	10.15	555.7
116	26.300	.82200-01	140.00	.4739	.8010	.6157	.9436	.3099-01	.2382-01	3.317	22.90	557.8
117	26.700	.12100	199.00	.3337	.5877	.4663	.9342	.2271-01	.1802-01	2.204	15.13	567.7
117	26.800	.16810	222.00	.1342	.2164	.1863	.9264	.8362-02	.7200-02	1.009	7.017	544.1
117	27.000	.19040	237.00	.8790-01	.1363	.1204	.9240	.5268-02	.4653-02	.7066	4.951	530.7
117	27.100	.21310	249.00	.7315-01	.1115	.9971-01	.9225	.4308-02	.3854-02	.6072	4.271	523.9
117	27.200	.80300-01	180.00	.5308	.9193	.6957	.9439	.3553-01	.2689-01	3.585	24.66	563.9
116	27.400	.40100-01	98.000	.8904	1.732	1.130	.9563	.6702-01	.4374-01	5.236	35.58	586.7
117	27.400	.16480	215.00	.1482	.2457	.2090	.9267	.9497-02	.8077-02	1.066	7.378	552.6
116	27.600	.41600-01	102.00	.9793	1.991	1.264	.9557	.7704-01	.4889-01	5.507	37.28	593.3
117	27.600	.12440	205.00	.2539	.4325	.3503	.9333	.1671-01	.1354-01	1.755	12.10	559.8
117	27.600	.18700	230.00	.1110	.1741	.1530	.9242	.6727-02	.5913-02	.8745	6.113	534.8
117	27.700	.21010	243.00	.9025-01	.1403	.1247	.9226	.5423-02	.4818-02	.7218	5.054	531.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K002)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
117	27.900	.10110	188.00	.3818	.6620	.5165	.9384	.2559-01	.1996-01	2.575	17.71	564.2
116	28.000	.46800-01	110.00	.3134	.5038	.3796	.9539	.1949-01	.1469-01	2.369	16.48	543.3
117	28.200	.16810	221.00	.1421	.2324	.1993	.9262	.8983-02	.7701-02	1.044	7.239	548.6
117	28.300	.19040	236.00	.1062	.1647	.1455	.9239	.6364-02	.5624-02	.8533	5.978	530.7
117	28.300	.12200	201.00	.2589	.4375	.3551	.9337	.1691-01	.1372-01	1.811	12.50	557.7
116	28.400	.53500-01	114.00	.3547	.5946	.4409	.9516	.2301-01	.1706-01	2.513	17.36	555.6
117	28.400	.21310	248.00	.1010	.1548	.1382	.9225	.5981-02	.5342-02	.8290	5.822	526.2
116	28.700	.58600-01	117.00	.7721	1.391	.9938	.9499	.5382-01	.3845-01	4.960	33.96	572.6
117	28.800	.16580	217.00	.1620	.2708	.2300	.9264	.1046-01	.8888-02	1.151	7.954	554.8
116	28.800	.60400-01	121.00	.8336	1.607	1.103	.9493	.6219-01	.4267-01	4.949	33.65	585.2
117	29.000	.21110	244.00	.1026	.1594	.1417	.9225	.6162-02	.5478-02	.8212	5.751	531.5
116	29.000	.65700-01	129.00	.3129	.5006	.3893	.9476	.1937-01	.1506-01	2.384	16.60	541.7
116	29.200	.72400-01	133.00	.3475	.5808	.4446	.9456	.2247-01	.1720-01	2.471	17.09	554.8
116	29.300	.79500-01	136.00	.5968	1.104	.8057	.9436	.4272-01	.3117-01	3.712	25.34	577.9
116	29.600	.92500-01	143.00	.2686	.4461	.3526	.9401	.1726-01	.1364-01	1.928	13.34	553.1
116	29.700	.10000+00	146.00	.4918	.9095	.6866	.9382	.3519-01	.2656-01	3.060	20.89	577.8
117	29.900	.12100	198.00	.3853	.7015	.5500	.9336	.2711-01	.2126-01	2.440	16.69	574.8
117	30.200	.16480	214.00	.2045	.3464	.2929	.9263	.1339-01	.1132-01	1.426	9.836	558.3
117	30.300	.21010	242.00	.1079	.1718	.1516	.9225	.6639-02	.5859-02	.8291	5.779	539.9
116	31.500	.91000-02	82.000	.4985	.9587	.6134	.9610	.3709-01	.2373-01	2.968	20.19	584.8
116	31.500	.11100-01	83.000	.6915	1.373	.8577	.9610	.5312-01	.3318-01	3.982	27.01	589.8
116	31.500	.14200-01	84.000	1.033	2.993	1.130	.9869	.1158	.4372-01	4.511	30.01	625.8
116	31.500	.16000-01	85.000	1.103	2.839	1.199	.9869	.1098	.4637-01	5.154	34.44	617.9
116	31.500	.17600-01	86.000	1.028	2.696	1.118	.9869	.1043	.4327-01	4.749	31.71	619.3
116	31.500	.19400-01	87.000	.8714	1.864	.9365	.9869	.7212-01	.3623-01	4.677	31.55	600.0
117	32.100	.21010	241.00	.1029	.1645	.1450	.9224	.6357-02	.5605-02	.7855	5.471	541.2
117	32.200	.16480	213.00	.1598	.2710	.2294	.9261	.1047-01	.8864-02	1.111	7.668	558.7
117	32.200	.17860	224.00	.1033	.1623	.1423	.9246	.6271-02	.5500-02	.8121	5.675	535.3
117	32.200	.18700	228.00	.7875-01	.1243	.1092	.9238	.4804-02	.4222-02	.6134	4.282	537.1
117	32.300	.12100	197.00	.3768	.6670	.5316	.9331	.2578-01	.2054-01	2.472	16.96	568.9
117	32.300	.12300	194.00	.3061	.5531	.4377	.9327	.2137-01	.1691-01	1.957	13.40	573.2
117	32.300	.12730	208.00	.1245	.2002	.1677	.9319	.7736-02	.6480-02	.9399	6.539	543.3
117	32.300	.13420	209.00	.1150	.1930	.1598	.9306	.7460-02	.6176-02	.8112	5.604	556.1
116	32.400	.10000+00	147.00	.3291	.5922	.4553	.9376	.2291-01	.1762-01	2.117	14.50	572.4
117	32.400	.10110	184.00	.4327	.7731	.5975	.9374	.2988-01	.2309-01	2.806	19.23	570.9
117	32.400	.10630	193.00	.1638	.2552	.2124	.9362	.9864-02	.8207-02	1.306	9.138	532.4
117	32.500	.85800-01	183.00	.1923	.3025	.2448	.9411	.1169-01	.9461-02	1.507	10.53	535.9
116	32.600	.79500-01	137.00	.5167	.9459	.6990	.9428	.3660-01	.2701-01	3.255	22.25	575.8
117	32.600	.80800-01	176.00	.4138	.7310	.5517	.9424	.2825-01	.2132-01	2.723	18.68	568.4
116	32.700	.67400-01	132.00	.2724	.4417	.3433	.9461	.1709-01	.1328-01	2.031	14.11	545.9
116	32.700	.72400-01	134.00	.3275	.5436	.4198	.9447	.2103-01	.1624-01	2.354	16.29	552.9
116	32.800	.65700-01	130.00	.2438	.3839	.3028	.9466	.1485-01	.1172-01	1.909	13.34	536.3
117	32.800	.16680	210.00	.1271	.2106	.1801	.9258	.8137-02	.6959-02	.9152	6.335	552.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K002)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
117	32.800	.18880	225.00	.9590-01	.1476	.1309	.9236	.5703-02	.5059-02	.7819	5.487	527.7
116	32.900	.58600-01	118.00	.5517	.9658	.7072	.9487	.3737-01	.2736-01	3.677	25.26	566.4
116	32.900	.60400-01	122.00	.4691	.8125	.6007	.9482	.3144-01	.2324-01	3.173	21.83	563.9
117	32.900	.61300-01	171.00	.6353	1.169	.8337	.9479	.4519-01	.3222-01	3.971	27.13	576.9
116	33.000	.53500-01	115.00	.3583	.5921	.4459	.9503	.2291-01	.1725-01	2.594	17.96	551.6
116	33.200	.48300-01	113.00	.2677	.4260	.3260	.9519	.1648-01	.1261-01	2.060	14.36	539.8
117	33.400	.42800-01	166.00	.7611	1.426	.9710	.9536	.5512-01	.3753-01	4.658	31.76	580.3
116	33.500	.40100-01	99.000	.7834	1.413	.9826	.9545	.5468-01	.3802-01	5.025	34.40	572.9
116	33.600	.38300-01	97.000	.5547	.9670	.6860	.9551	.3741-01	.2654-01	3.718	25.55	565.4
116	33.700	.36700-01	96.000	.4237	.7267	.5198	.9556	.2812-01	.2011-01	2.904	20.00	561.5
116	33.900	.33800-01	95.000	.3661	.6132	.4437	.9566	.2373-01	.1717-01	2.596	17.94	555.4
117	34.700	.21010	240.00	.6728-01	.1058	.9380-01	.9223	.4088-02	.3625-02	.5277	3.687	535.7
117	34.700	.18700	227.00	.8901-01	.1428	.1250	.9236	.5520-02	.4830-02	.6742	4.692	542.7
117	34.900	.16480	212.00	.1168	.1951	.1664	.9258	.7541-02	.6431-02	.8315	5.749	554.5
116	35.100	.10000+00	148.00	.2651	.4687	.3649	.9370	.1814-01	.1412-01	1.743	11.96	568.7
117	35.200	.23900-01	161.00	.3458	.5485	.4062	.9598	.2120-01	.1570-01	2.672	18.64	538.7
116	35.300	.92500-01	145.00	.3076	.5156	.4086	.9388	.1995-01	.1581-01	2.180	15.06	555.5
116	35.300	.22100-01	160.00	.3429	.5410	.4020	.9598	.2093-01	.1555-01	2.675	18.68	537.0
117	35.400	.18800	231.00	.8452-01	.1334	.1174	.9235	.5154-02	.4538-02	.6587	4.599	537.0
117	35.500	.12100	196.00	.2413	.4143	.3361	.9325	.1601-01	.1299-01	1.650	11.36	561.8
117	35.600	.16580	216.00	.1093	.1803	.1546	.9256	.6967-02	.5975-02	.7925	5.490	551.1
116	35.800	.80600-01	138.00	.2964	.5112	.3926	.9417	.1978-01	.1519-01	2.016	13.88	562.9
117	35.900	.21310	247.00	.5936-01	.9132-01	.8157-01	.9222	.3529-02	.3152-02	.4842	3.398	527.6
117	36.000	.19040	235.00	.7685-01	.1195	.1059	.9233	.4620-02	.4091-02	.6144	4.302	531.8
117	36.200	.16810	220.00	.1382	.2238	.1935	.9252	.8649-02	.7479-02	1.031	7.164	545.6
116	36.200	.72400-01	135.00	.3481	.5737	.4469	.9438	.2220-01	.1729-01	2.530	17.53	550.8
117	36.300	.12200	200.00	.2059	.3522	.2867	.9321	.1361-01	.1108-01	1.415	9.753	560.8
116	36.600	.65700-01	131.00	.2141	.3427	.2690	.9456	.1326-01	.1041-01	1.630	11.35	541.8
117	36.700	.18700	226.00	.1396	.2200	.1938	.9235	.8500-02	.7489-02	1.091	7.616	536.5
117	36.900	.16480	211.00	.2003	.3315	.2840	.9255	.1281-01	.1098-01	1.446	10.01	552.0
117	36.900	.10110	187.00	.2929	.5039	.3993	.9364	.1947-01	.1543-01	1.997	13.75	562.3
116	37.000	.60400-01	123.00	.4442	.7843	.5765	.9471	.3035-01	.2231-01	2.928	20.09	568.3
117	37.000	.12440	204.00	.1817	.3018	.2498	.9315	.1166-01	.9652-02	1.304	9.024	553.0
116	37.100	.58600-01	119.00	.4455	.7598	.5688	.9476	.2940-01	.2201-01	3.078	21.22	560.1
117	37.200	.21310	246.00	.7668-01	.1179	.1054	.9222	.4558-02	.4073-02	.6258	4.392	527.5
117	37.600	.16810	219.00	.1686	.2725	.2360	.9251	.1053-01	.9122-02	1.263	8.777	544.9
116	37.800	.10270	150.00	.3061	.5153	.4140	.9358	.1994-01	.1602-01	2.155	14.89	556.7
117	37.900	.12100	195.00	.3692	.6166	.5077	.9320	.2383-01	.1962-01	2.627	18.17	554.5
117	38.000	.80300-01	179.00	.3893	.6493	.5091	.9412	.2509-01	.1968-01	2.775	19.19	554.2
116	38.500	.46800-01	112.00	.2305	.3661	.2817	.9509	.1416-01	.1090-01	1.779	12.40	539.2
117	38.600	.12440	203.00	.2493	.4117	.3421	.9313	.1591-01	.1322-01	1.803	12.49	551.5
117	38.700	.10000+00	185.00	.3426	.5757	.4618	.9362	.2225-01	.1785-01	2.415	16.68	556.2
116	38.900	.82200-01	141.00	.3682	.6110	.4822	.9405	.2364-01	.1866-01	2.648	18.33	552.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K002)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
116	39.300	.41600-01	104.00	.4964	.8762	.6254	.9524	.3390-01	.2420-01	3.272	22.46	568.3
117	39.500	.10270	190.00	.4306	.7221	.5823	.9355	.2791-01	.2250-01	3.045	21.04	555.7
117	39.600	.16810	218.00	.1649	.2662	.2309	.9249	.1029-01	.8924-02	1.236	8.594	544.7
117	39.900	.19040	233.00	.9816-01	.1527	.1354	.9230	.5901-02	.5232-02	.7844	5.492	531.9
117	40.100	.79500-01	177.00	.5471	.9191	.7190	.9409	.3552-01	.2779-01	3.858	26.65	556.2
117	40.200	.12440	202.00	.2885	.4789	.3976	.9310	.1851-01	.1537-01	2.071	14.33	552.9
117	40.300	.21310	245.00	.6162-01	.9473-01	.8468-01	.9221	.3661-02	.3272-02	.5033	3.533	527.3
116	41.100	.82200-01	142.00	.4682	.7897	.6196	.9400	.3056-01	.2397-01	3.287	22.69	557.2
117	41.100	.60700-01	173.00	.3690	.6199	.4724	.9459	.2396-01	.1826-01	2.603	17.98	556.1
117	42.300	.10270	189.00	.1113-05	.1308-05	.1233-05	.9349	.5054-07	.4763-07	.2139-04	.1786-03	241.5
117	42.600	.59600-01	172.00	.4216	.7099	.5404	.9459	.2744-01	.2088-01	2.963	20.46	556.8
117	43.200	.42000-01	168.00	.3756	.6340	.4688	.9512	.2450-01	.1812-01	2.632	18.17	557.4
117	43.400	.82200-01	181.00	.2774	.4543	.3629	.9395	.1756-01	.1403-01	2.035	14.11	548.9
116	43.600	.62900-01	128.00	.4330	.7334	.5599	.9447	.2838-01	.2166-01	3.022	20.85	558.3
116	45.000	.22900-01	8.0000	.7788	1.488	.9790	.9571	.5758-01	.3788-01	4.669	31.77	583.7
117	46.100	.62900-01	174.00	.5112	.8673	.6637	.9441	.3352-01	.2565-01	3.555	24.52	558.8
117	47.700	.40800-01	167.00	.3828	.6538	.4818	.9504	.2527-01	.1862-01	2.637	18.17	560.5
116	48.400	.44200-01	109.00	.4141	.7038	.5237	.9492	.2723-01	.2026-01	2.875	19.83	559.2
116	50.000	.19400-01	156.00	.7460	1.682	.8296	.9819	.6509-01	.3210-01	3.831	25.77	605.9
116	51.000	.12100-01	154.00	.7575	2.035	.8561	.9816	.7875-01	.3312-01	3.448	23.00	621.0
116	51.000	.17600-01	155.00	.4925	1.035	.5449	.9816	.4005-01	.2108-01	2.685	18.14	597.7
117	51.900	.44800-01	170.00	.3006	.4835	.3740	.9481	.1868-01	.1445-01	2.268	15.78	543.4
117	53.200	.24700-01	163.00	.3490	.5767	.4253	.9546	.2229-01	.1644-01	2.523	17.47	551.6
117	65.200	.24700-01	162.00	.4537	.7802	.5684	.9518	.3015-01	.2197-01	3.094	21.30	562.2
115	90.000	.91000-02	44.000	.1185	.2191	.1556	.9480	.8474-02	.6020-02	.7373	5.034	577.8
115	90.000	.11100-01	45.000	.3668	.6944	.4860	.9480	.2686-01	.1880-01	2.222	15.14	582.1
115	90.000	.13100-01	46.000	.6300	1.202	.8370	.9480	.4650-01	.3238-01	3.782	25.74	583.5
115	90.000	.17000-01	48.000	.4624	.8171	.5971	.9480	.3161-01	.2310-01	3.043	20.88	568.5
115	90.000	.20900-01	50.000	.5283	.9264	.6803	.9480	.3584-01	.2631-01	3.513	24.13	566.8
115	90.000	.24900-01	52.000	.4119	.7033	.5262	.9476	.2720-01	.2035-01	2.840	19.58	560.4
115	90.000	.26900-01	53.000	.4800	.8195	.6153	.9469	.3170-01	.2380-01	3.310	22.81	560.4
115	90.000	.28800-01	54.000	.4765	.8080	.6112	.9463	.3125-01	.2364-01	3.319	22.90	558.6
115	90.000	.32800-01	55.000	.4379	.7197	.5581	.9450	.2784-01	.2159-01	3.195	22.14	550.1
115	90.000	.36700-01	56.000	.3949	.6471	.5057	.9438	.2503-01	.1956-01	2.896	20.08	549.1
115	90.000	.40600-01	57.000	.3768	.6271	.4888	.9426	.2426-01	.1891-01	2.697	18.66	553.6
115	90.000	.48500-01	58.000	.3898	.6424	.5094	.9403	.2485-01	.1970-01	2.832	19.63	550.8
115	90.000	.56400-01	59.000	.2969	.4838	.3901	.9382	.1871-01	.1509-01	2.196	15.24	547.5
115	90.000	.76100-01	60.000	.2040	.3267	.2720	.9334	.1264-01	.1052-01	1.552	10.80	542.0
115	90.000	.95800-01	61.000	.1353	.2164	.1838	.9296	.8370-02	.7110-02	1.031	7.179	541.6
115	90.000	.11550	62.000	.1221	.1952	.1685	.9265	.7551-02	.6516-02	.9308	6.482	541.5
115	135.00	.19000-01	49.000	.5237	.9249	.6807	.9468	.3578-01	.2633-01	3.450	23.67	568.4
115	135.00	.22900-01	51.000	.4857	.8534	.6300	.9468	.3301-01	.2437-01	3.221	22.12	567.2
115	180.00	.91000-02	23.000	.3124	.5352	.3867	.9538	.2070-01	.1496-01	2.144	14.77	561.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K002)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
115	180.00	.11100-01	24.000	.4946	.9673	.6387	.9538	.3742-01	.2471-01	2.892	19.64	587.5
115	180.00	.13100-01	25.000	.5515	1.018	.6994	.9538	.3936-01	.2705-01	3.441	23.50	577.4
115	180.00	.15000-01	26.000	.5037	.9142	.6354	.9538	.3536-01	.2458-01	3.205	21.93	574.2
115	180.00	.17000-01	27.000	.5345	.9572	.6714	.9538	.3703-01	.2597-01	3.459	23.70	571.4
115	180.00	.19000-01	28.000	.5537	.9903	.6952	.9538	.3831-01	.2689-01	3.589	24.59	571.1
115	180.00	.20900-01	29.000	.5512	.9723	.6890	.9538	.3761-01	.2665-01	3.637	24.96	568.1
115	180.00	.28800-01	32.000	.4764	.8139	.5948	.9520	.3148-01	.2301-01	3.282	22.62	560.5
115	180.00	.32800-01	33.000	.4347	.7184	.5399	.9506	.2779-01	.2089-01	3.145	21.78	551.6
115	180.00	.36700-01	34.000	.4184	.7014	.5259	.9493	.2713-01	.2034-01	2.964	20.48	555.6
115	180.00	.48500-01	36.000	.3473	.5674	.4402	.9456	.2195-01	.1703-01	2.559	17.76	548.2
115	180.00	.56400-01	37.000	.3203	.5189	.4091	.9433	.2007-01	.1583-01	2.392	16.62	545.7
115	180.00	.76100-01	38.000	.2460	.3897	.3189	.9380	.1508-01	.1234-01	1.905	13.29	538.4
115	180.00	.95800-01	39.000	.2024	.3162	.2661	.9335	.1223-01	.1029-01	1.608	11.25	533.4
115	180.00	.11550	40.000	.1492	.2344	.2004	.9297	.9067-02	.7751-02	1.174	8.201	535.4
115	180.00	.18450	42.000	.5922-01	.9051-01	.8092-01	.9224	.3501-02	.3130-02	.4895	3.441	525.0
115	225.00	.22900-01	30.000	.5970	1.060	.6985	.9667	.4101-01	.2702-01	3.904	26.77	569.6
115	270.00	.91000-02	63.000	.8691	1.902	.9848	.9784	.7358-01	.3810-01	4.572	30.80	602.7
115	270.00	.11100-01	64.000	.8671	1.797	.9764	.9784	.6952-01	.3777-01	4.787	32.36	595.9
115	270.00	.13100-01	65.000	.8639	1.746	.9699	.9784	.6753-01	.3752-01	4.886	33.10	592.4
115	270.00	.17000-01	67.000	.8822	1.685	.9837	.9784	.6519-01	.3805-01	5.290	36.01	583.6
115	270.00	.20900-01	69.000	.6965	1.303	.7745	.9784	.5039-01	.2996-01	4.277	29.17	579.9
115	270.00	.24900-01	71.000	.6479	1.195	.7211	.9779	.4624-01	.2789-01	4.043	27.61	577.4
115	270.00	.28800-01	73.000	.5774	1.029	.6442	.9764	.3981-01	.2492-01	3.759	25.77	570.4
115	270.00	.36700-01	75.000	.5371	.9530	.6076	.9734	.3687-01	.2350-01	3.516	24.12	569.4
115	270.00	.48500-01	77.000	.4944	.8561	.5686	.9691	.3312-01	.2200-01	3.344	23.00	563.8
115	270.00	.56400-01	78.000	.4757	.8239	.5547	.9663	.3187-01	.2146-01	3.216	22.12	563.9
115	270.00	.95900-01	80.000	.3028	.5194	.3759	.9533	.2009-01	.1454-01	2.074	14.29	561.6
115	270.00	.11550	81.000	.2457	.4222	.3146	.9476	.1633-01	.1217-01	1.679	11.56	562.0
115	315.00	.19000-01	68.000	.6645	1.190	.7284	.9801	.4604-01	.2818-01	4.298	29.45	571.4
115	315.00	.22900-01	70.000	.6122	1.119	.6728	.9801	.4329-01	.2602-01	3.861	26.39	575.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
25	3.010	-5.015	6.015	36.09	721.7	.9679	256.6	50.32	2364.	.1018-01	.2050-06	3.648
26	3.010	-5.005	6.003	36.04	722.7	.9664	257.0	50.32	2365.	.1015-01	.2053-06	3.635
27	3.010	-5.001	5.999	36.08	721.7	.9677	256.6	50.32	2364.	.1018-01	.2050-06	3.647

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
25	.4396-01	.7587-02
26	.4394-01	.7599-02
27	.4396-01	.7588-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
26	.00000	.91000-02	1.0000	.8091	2.102	.9209	.9803	.9236-01	.4046-01	4.176	28.10	605.2
26	.00000	.11100-01	2.0000	.9268	2.312	1.051	.9803	.1016	.4618-01	4.912	33.10	602.1
26	.00000	.15000-01	4.0000	.7773	1.846	.8776	.9803	.8111-01	.3856-01	4.263	28.79	597.8
26	.00000	.17000-01	5.0000	.7581	1.737	.8529	.9803	.7630-01	.3748-01	4.272	28.91	594.4
26	.00000	.19000-01	6.0000	.7419	1.667	.8331	.9803	.7325-01	.3661-01	4.244	28.75	592.5
26	.00000	.24900-01	9.0000	.5991	1.210	.6673	.9797	.5317-01	.2932-01	3.767	25.70	579.5
26	.00000	.26900-01	10.000	.5526	1.092	.6167	.9790	.4799-01	.2710-01	3.551	24.27	576.4
25	.00000	.32800-01	12.000	.5655	1.194	.6445	.9767	.5248-01	.2833-01	3.409	23.19	584.6
25	.00000	.36700-01	13.000	.5116	1.039	.5851	.9752	.4567-01	.2572-01	3.198	21.81	579.5
25	.00000	.40600-01	14.000	.5435	1.149	.6306	.9738	.5053-01	.2772-01	3.271	22.25	584.8
25	.00000	.48500-01	15.000	.5021	1.022	.5892	.9710	.4494-01	.2590-01	3.131	21.35	579.8
25	.00000	.56400-01	16.000	.4632	.9323	.5514	.9682	.4098-01	.2424-01	2.921	19.94	578.2
25	.00000	.76100-01	17.000	.3778	.7325	.4633	.9619	.3220-01	.2037-01	2.474	16.94	572.7
25	.00000	.11550	19.000	.2643	.5088	.3454	.9511	.2237-01	.1519-01	1.745	11.96	571.5
25	.00000	.16480	20.000	.1727	.3171	.2354	.9415	.1394-01	.1035-01	1.203	8.279	563.2
25	.00000	.21400	22.000	.1173	.1973	.1583	.9361	.8673-02	.6961-02	.9184	6.389	543.6
27	2.0000	.24700-01	165.00	.4912	.9636	.5464	.9794	.4236-01	.2402-01	3.178	21.74	574.5
26	9.0000	.15000-01	157.00	.6833	1.570	.7784	.9784	.6896-01	.3420-01	3.843	26.00	594.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
26	9.0000	.17600-01	158.00	.6863	1.480	.7764	.9784	.6502-01	.3411-01	4.064	27.60	587.9
27	9.8000	.24700-01	164.00	.5067	1.020	.5706	.9777	.4483-01	.2508-01	3.194	21.80	578.3
26	10.000	.22900-01	88.000	.5680	1.143	.6381	.9781	.5023-01	.2804-01	3.584	24.45	579.1
26	10.000	.26900-01	90.000	.5016	.9715	.5649	.9769	.4269-01	.2482-01	3.294	22.54	573.2
26	10.000	.34700-01	94.000	.5443	1.073	.6246	.9739	.4714-01	.2744-01	3.507	23.97	576.0
26	12.000	.17600-01	152.00	1.354	-69.63	1.561	.9870	-3.059	.6859-01	4.218	27.69	651.8
26	12.000	.12100-01	151.00	.9919	-4.890	1.176	.9870	-.2148	.5166-01	2.618	17.09	662.6
26	13.000	.19400-01	153.00	1.331	-37.26	1.538	.9870	-1.637	.6757-01	4.080	26.77	652.9
27	14.600	.44200-01	169.00	.5227	1.012	.6133	.9695	.4451-01	.2696-01	3.427	23.47	572.5
26	18.500	.44200-01	106.00	.5950	1.172	.7037	.9686	.5148-01	.3092-01	3.838	26.23	575.8
27	19.600	.62900-01	175.00	.4681	.8901	.5704	.9622	.3913-01	.2507-01	3.132	21.48	569.5
26	19.800	.40800-01	101.00	.7247	1.546	.8647	.9695	.6794-01	.3799-01	4.331	29.43	586.7
26	20.000	.24900-01	89.000	.4725	.9249	.5372	.9754	.4064-01	.2360-01	3.067	20.97	574.9
26	20.000	.28800-01	91.000	.4944	.9601	.5661	.9739	.4218-01	.2487-01	3.236	22.14	573.7
26	20.000	.32800-01	93.000	.5706	1.164	.6641	.9724	.5115-01	.2918-01	3.553	24.22	580.9
27	21.800	.82200-01	182.00	.4210	.8005	.5319	.9560	.3519-01	.2338-01	2.817	19.32	569.4
26	22.200	.62900-01	125.00	.5479	1.083	.6761	.9616	.4758-01	.2971-01	3.522	24.06	576.4
26	22.400	.44200-01	107.00	.6046	1.203	.7201	.9678	.5285-01	.3164-01	3.859	26.36	577.4
27	22.600	.10270	192.00	.2872	.5297	.3711	.9506	.2329-01	.1631-01	1.990	13.69	564.1
26	23.000	.42000-01	105.00	.7809	1.758	.9474	.9684	.7723-01	.4163-01	4.462	30.22	592.6
26	23.400	.59600-01	120.00	.6648	1.372	.8245	.9624	.6027-01	.3623-01	4.096	27.89	582.5
27	23.900	.21310	250.00	.9567-01	.1552	.1273	.9352	.6822-02	.5596-02	.7912	5.534	533.5
26	24.100	.82200-01	139.00	.4795	.9142	.6078	.9556	.4017-01	.2671-01	3.202	21.94	570.7
27	24.400	.19040	238.00	.1241	.2073	.1665	.9366	.9111-02	.7317-02	.9811	6.831	541.8
27	24.400	.12440	207.00	.2277	.4258	.3048	.9456	.1872-01	.1340-01	1.552	10.66	566.6
27	24.800	.16810	223.00	.1601	.2821	.2178	.9388	.1240-01	.9573-02	1.174	8.114	554.9
26	24.900	.62900-01	126.00	.5873	1.218	.7357	.9611	.5353-01	.3232-01	3.600	24.51	583.1
27	25.000	.79500-01	178.00	.4809	.9337	.6107	.9562	.4104-01	.2685-01	3.146	21.54	572.9
27	25.300	.10270	191.00	.3788	.7220	.4964	.9502	.3174-01	.2182-01	2.528	17.34	569.8
27	25.300	.10000+00	186.00	.4139	.8183	.5469	.9508	.3597-01	.2404-01	2.657	18.16	575.7
26	25.500	.60700-01	124.00	.7562	1.730	.9645	.9616	.7602-01	.4238-01	4.265	28.86	594.3
27	26.000	.12440	206.00	.2831	.5418	.3829	.9454	.2382-01	.1683-01	1.880	12.89	570.6
26	26.300	.82200-01	140.00	.5577	1.066	.7093	.9552	.4684-01	.3117-01	3.713	25.44	571.1
27	26.700	.12100	199.00	.4717	.9916	.6502	.9460	.4359-01	.2093-01	2.854	19.42	584.0
27	26.800	.16810	222.00	.2114	.3770	.2895	.9386	.1657-01	.1273-01	1.527	10.54	557.4
27	27.000	.19040	237.00	.1700	.2883	.2300	.9364	.1267-01	.1011-01	1.314	9.127	545.8
27	27.100	.21310	249.00	.1347	.2237	.1816	.9351	.9831-02	.7981-02	1.074	7.486	540.2
27	27.200	.80300-01	180.00	.6007	1.239	.7793	.9555	.5445-01	.3426-01	3.700	25.21	581.6
26	27.400	.40100-01	98.000	.8674	2.109	1.068	.9681	.9267-01	.4694-01	4.678	31.56	599.9
27	27.400	.16480	215.00	.2482	.4655	.3472	.9389	.2046-01	.1526-01	1.687	11.59	567.1
26	27.600	.41600-01	102.00	.8804	2.322	1.103	.9675	.1020	.4846-01	4.503	30.27	606.3
27	27.600	.12440	205.00	.3555	.7046	.4881	.9452	.3097-01	.2146-01	2.276	15.56	576.0
27	27.600	.18700	230.00	.1710	.2960	.2334	.9367	.1301-01	.1026-01	1.285	8.907	550.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
27	27.700	.21010	243.00	.1597	.2732	.2186	.9352	.1201-01	.9608-02	1.220	8.466	547.9
27	27.900	.10110	188.00	.4806	.9952	.6477	.9501	.4374-01	.2847-01	2.948	20.08	582.1
26	28.000	.46800-01	110.00	.3819	.6718	.4484	.9656	.2952-01	.1970-01	2.810	19.42	555.2
27	28.200	.16810	221.00	.2630	.4845	.3660	.9385	.2130-01	.1609-01	1.825	12.56	563.8
27	28.300	.19040	236.00	.2136	.3624	.2892	.9364	.1593-01	.1271-01	1.651	11.47	545.8
27	28.300	.12200	201.00	.3344	.6502	.4547	.9455	.2858-01	.1999-01	2.184	14.95	573.1
26	28.400	.53500-01	114.00	.4752	.9015	.5749	.9633	.3961-01	.2526-01	3.190	21.88	569.9
27	28.400	.21310	248.00	.1572	.2614	.2121	.9351	.1149-01	.9325-02	1.252	8.723	540.6
26	28.700	.58600-01	117.00	.7795	1.711	.9855	.9616	.7519-01	.4330-01	4.546	30.83	589.9
27	28.800	.16580	217.00	.3054	.5891	.4334	.9387	.2589-01	.1905-01	2.011	13.78	571.8
26	28.800	.60400-01	121.00	.8148	2.010	1.061	.9610	.8832-01	.4660-01	4.351	29.33	601.1
27	29.000	.21110	244.00	.1843	.3156	.2525	.9351	.1387-01	.1110-01	1.405	9.746	548.3
26	29.000	.65700-01	129.00	.3752	.6509	.4532	.9594	.2860-01	.1991-01	2.813	19.48	552.1
26	29.200	.72400-01	133.00	.4759	.9015	.5959	.9573	.3961-01	.2618-01	3.201	21.95	569.6
26	29.300	.79500-01	136.00	.6757	1.506	.8965	.9553	.6616-01	.3939-01	3.892	26.38	591.6
26	29.600	.92500-01	143.00	.3975	.7437	.5123	.9519	.3268-01	.2251-01	2.712	18.62	567.4
26	29.700	.10000+00	146.00	.6112	1.375	.8460	.9500	.6041-01	.3717-01	3.494	23.67	592.6
27	29.900	.12100	198.00	.5116	1.142	.7317	.9455	.5018-01	.3216-01	2.941	19.94	590.9
27	30.200	.16480	214.00	.3551	.7079	.5115	.9387	.3112-01	.2248-01	2.260	15.44	576.9
27	30.200	.18700	229.00	.2574	.4705	.3613	.9365	.2068-01	.1588-01	1.802	12.41	562.4
27	30.300	.21010	242.00	.2116	.3763	.2955	.9351	.1654-01	.1299-01	1.533	10.59	556.8
26	31.500	.91000-02	82.000	.7029	1.721	.8356	.9732	.7561-01	.3671-01	3.774	25.45	600.5
26	31.500	.11100-01	83.000	.8978	2.376	1.078	.9732	.1044	.4736-01	4.583	30.81	606.5
26	31.500	.14200-01	84.000	1.243	-26.63	1.438	.9870	-1.170	.6320-01	3.770	24.72	653.6
26	31.500	.16000-01	85.000	1.218	21.30	1.388	.9870	.9357	.6100-01	4.103	27.01	646.0
26	31.500	.17600-01	86.000	1.092	8.645	1.232	.9870	.3798	.5411-01	3.967	26.20	640.0
26	31.500	.19400-01	87.000	.9608	3.419	1.060	.9870	.1502	.4657-01	4.243	28.29	622.2
27	32.100	.21010	241.00	.1402	.2470	.1950	.9351	.1086-01	.8571-02	1.029	7.116	554.7
27	32.200	.16480	213.00	.2743	.5317	.3907	.9385	.2337-01	.1717-01	1.798	12.31	572.6
27	32.200	.17860	224.00	.2038	.3545	.2782	.9371	.1558-01	.1223-01	1.521	10.53	551.9
27	32.200	.18700	228.00	.1527	.2669	.2098	.9364	.1173-01	.9222-02	1.133	7.837	553.0
27	32.300	.12100	197.00	.4332	.9107	.6081	.9451	.4003-01	.2673-01	2.621	17.84	584.0
27	32.300	.12300	194.00	.3550	.7572	.5024	.9448	.3328-01	.2208-01	2.120	14.41	585.8
27	32.300	.12730	208.00	.1519	.2674	.2004	.9440	.1175-01	.8808-02	1.116	7.713	554.6
27	32.300	.13420	209.00	.2327	.4487	.3212	.9428	.1972-01	.1412-01	1.534	10.51	571.7
26	32.400	.10000+00	147.00	.4184	.8560	.5637	.9496	.3761-01	.2477-01	2.599	17.71	581.3
27	32.400	.10110	184.00	.4851	1.038	.6645	.9493	.4563-01	.2921-01	2.889	19.64	586.2
27	32.400	.10630	193.00	.2163	.3661	.2745	.9482	.1609-01	.1207-01	1.676	11.65	545.3
27	32.500	.85800-01	183.00	.2533	.4365	.3155	.9530	.1919-01	.1387-01	1.915	13.28	549.7
26	32.600	.79500-01	137.00	.6374	1.374	.8418	.9547	.6035-01	.3699-01	3.777	25.65	587.8
27	32.600	.80800-01	176.00	.5154	1.079	.6769	.9543	.4744-01	.2975-01	3.130	21.30	583.5
26	32.700	.67400-01	132.00	.3344	.5914	.4088	.9581	.2599-01	.1796-01	2.443	16.87	556.4
26	32.700	.72400-01	134.00	.4382	.8121	.5474	.9566	.3568-01	.2405-01	3.022	20.77	565.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
26	32.800	.65700-01	130.00	.2801	.4698	.3364	.9586	.2064-01	.1478-01	2.204	15.33	543.6
27	32.800	.16680	210.00	.2194	.4054	.3062	.9382	.1782-01	.1346-01	1.517	10.43	564.4
27	32.800	.18880	225.00	.1295	.2146	.1734	.9362	.9435-02	.7620-02	1.035	7.218	539.8
26	32.900	.58600-01	118.00	.6069	1.264	.7627	.9607	.5555-01	.3351-01	3.706	25.22	583.7
26	32.900	.60400-01	122.00	.4900	.9576	.6083	.9602	.4208-01	.2673-01	3.186	21.79	574.7
27	32.900	.61300-01	171.00	.6261	1.397	.8041	.9599	.6140-01	.3535-01	3.600	24.40	590.9
26	33.000	.53500-01	115.00	.4722	.8769	.5717	.9623	.3853-01	.2512-01	3.249	22.33	566.1
26	33.200	.48300-01	113.00	.3375	.5775	.3970	.9640	.2537-01	.1744-01	2.580	17.89	548.7
27	33.400	.42800-01	166.00	.6885	1.570	.8523	.9658	.6901-01	.3747-01	3.890	26.34	593.1
26	33.500	.40100-01	99.000	.7227	1.541	.8780	.9667	.6770-01	.3858-01	4.322	29.37	586.6
26	33.600	.38300-01	97.000	.6218	1.263	.7456	.9673	.5550-01	.3276-01	3.888	26.51	580.3
26	33.700	.36700-01	96.000	.5258	1.041	.6253	.9678	.4572-01	.2747-01	3.375	23.06	576.6
26	33.900	.33800-01	95.000	.4429	.8308	.5184	.9688	.3650-01	.2278-01	3.012	20.68	567.9
27	34.700	.21010	240.00	.1041	.1802	.1435	.9350	.7919-02	.6308-02	.7828	5.424	550.7
27	34.700	.18700	227.00	.2017	.3579	.2795	.9362	.1573-01	.1229-01	1.467	10.13	556.2
27	34.900	.16480	212.00	.2367	.4542	.3361	.9382	.1996-01	.1477-01	1.568	10.74	571.0
26	35.100	.10000+00	148.00	.3979	.8013	.5349	.9491	.3521-01	.2350-01	2.510	17.12	579.1
27	35.200	.23900-01	161.00	.4686	.8490	.5353	.9722	.3732-01	.2353-01	3.317	22.86	560.6
26	35.300	.92500-01	145.00	.4445	.8301	.5760	.9509	.3647-01	.2531-01	3.038	20.86	567.1
26	35.300	.22100-01	160.00	.4530	.8073	.5158	.9723	.3547-01	.2266-01	3.278	22.62	558.0
27	35.400	.18800	231.00	.1490	.2611	.2053	.9361	.1147-01	.9024-02	1.101	7.619	553.5
27	35.500	.12100	196.00	.3632	.7375	.5050	.9447	.3242-01	.2220-01	2.271	15.49	579.5
27	35.600	.16580	216.00	.2350	.4426	.3312	.9381	.1945-01	.1456-01	1.589	10.91	567.8
26	35.800	.80600-01	138.00	.3992	.7565	.5106	.9538	.3324-01	.2244-01	2.684	18.40	569.7
27	35.900	.21310	247.00	.9823-01	.1645	.1332	.9348	.7230-02	.5854-02	.7736	5.384	542.5
27	36.000	.19040	235.00	.1404	.2405	.1914	.9359	.1057-01	.8415-02	1.069	7.417	548.4
27	36.200	.16910	220.00	.2009	.3644	.2787	.9378	.1602-01	.1225-01	1.421	9.794	560.8
26	36.200	.72400-01	135.00	.4771	.8813	.5978	.9560	.3872-01	.2627-01	3.303	22.70	565.1
27	36.300	.12200	200.00	.3209	.6383	.4436	.9444	.2806-01	.1950-01	2.048	13.99	576.5
26	36.600	.65700-01	131.00	.3245	.5670	.3959	.9578	.2491-01	.1740-01	2.408	16.66	553.7
27	36.700	.18700	226.00	.1750	.3037	.2400	.9361	.1335-01	.1055-01	1.310	9.075	551.4
27	36.900	.16480	211.00	.2590	.4909	.3661	.9381	.2158-01	.1609-01	1.739	11.93	568.9
27	36.900	.10110	187.00	.4700	.9749	.6405	.9486	.4285-01	.2816-01	2.878	19.60	582.3
26	37.000	.60400-01	123.00	.5337	1.102	.6754	.9593	.4843-01	.2968-01	3.285	22.37	582.6
27	37.000	.12440	204.00	.2895	.5486	.3939	.9439	.2412-01	.1732-01	1.944	13.34	568.9
26	37.100	.58600-01	119.00	.5890	1.166	.7351	.9598	.5124-01	.3230-01	3.779	25.81	576.7
27	37.200	.21310	246.00	.1148	.1928	.1559	.9348	.8476-02	.6853-02	.8994	6.257	543.4
27	37.600	.16810	219.00	.2119	.3821	.2933	.9377	.1679-01	.1289-01	1.509	10.40	559.7
26	37.800	.10270	150.00	.4226	.7987	.5594	.9481	.3509-01	.2458-01	2.850	19.55	569.2
27	37.900	.12100	195.00	.4377	.8355	.5954	.9444	.3673-01	.2617-01	2.916	19.99	570.1
27	38.000	.80300-01	179.00	.5952	1.216	.7807	.9535	.5344-01	.3431-01	3.699	25.22	580.3
26	38.500	.46800-01	112.00	.3413	.5891	.4036	.9633	.2588-01	.1773-01	2.576	17.85	550.9
27	38.600	.12440	203.00	.3286	.6221	.4476	.9436	.2735-01	.1967-01	2.209	15.15	568.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
27	38.700	.10000+00	185.00	.4748	.9424	.6376	.9485	.4142-01	.2803-01	3.035	20.74	576.2
26	38.900	.82200-01	141.00	.4798	.8999	.6154	.9528	.3954-01	.2704-01	3.264	22.40	567.9
26	39.300	.41600-01	104.00	.5300	1.080	.6455	.9649	.4747-01	.2836-01	3.303	22.52	580.8
27	39.500	.10270	190.00	.5288	1.056	.7150	.9478	.4641-01	.3143-01	3.360	22.95	577.1
27	39.600	.16810	218.00	.2143	.3845	.2962	.9375	.1690-01	.1302-01	1.536	10.59	558.6
27	39.900	.19040	233.00	.1308	.2229	.1781	.9357	.9796-02	.7827-02	1.004	6.973	547.0
27	40.100	.79500-01	177.00	.6762	1.379	.8875	.9533	.6062-01	.3901-01	4.208	28.70	580.1
27	40.200	.12440	202.00	.3190	.5999	.4339	.9434	.2637-01	.1907-01	2.161	14.84	567.6
27	40.300	.21310	245.00	.9203-01	.1535	.1246	.9347	.6748-02	.5476-02	.7289	5.077	541.5
26	41.100	.82200-01	142.00	.5205	.9984	.6741	.9524	.4387-01	.2962-01	3.453	23.65	571.7
27	41.100	.60700-01	173.00	.5344	1.058	.6731	.9584	.4652-01	.2959-01	3.425	23.41	575.9
27	42.300	.10270	189.00	.3897	.7285	.5160	.9474	.3202-01	.2268-01	2.658	18.26	566.5
27	42.600	.59600-01	172.00	.6259	1.296	.7975	.9584	.5699-01	.3505-01	3.838	26.14	582.2
27	43.200	.42000-01	168.00	.4671	.9081	.5664	.9639	.3992-01	.2490-01	3.051	20.88	573.1
27	43.400	.82200-01	181.00	.3292	.6048	.4214	.9520	.2659-01	.1852-01	2.292	15.77	563.3
26	43.600	.62900-01	128.00	.5681	1.093	.7149	.9572	.4801-01	.3141-01	3.758	25.73	572.1
26	45.000	.22900-01	8.0000	.8172	2.009	.9939	.9700	.8827-01	.4367-01	4.374	29.49	600.9
27	46.100	.62900-01	174.00	.5948	1.198	.7604	.9567	.5266-01	.3343-01	3.747	25.58	578.3
27	47.700	.40800-01	167.00	.5021	.9964	.6138	.9633	.4380-01	.2698-01	3.210	21.94	576.2
26	48.400	.44200-01	109.00	.4837	.9369	.5925	.9620	.4117-01	.2603-01	3.175	21.73	573.3
26	50.000	.19400-01	156.00	.8265	3.876	.9206	.9870	.1703	.4045-01	3.335	22.14	630.8
26	51.000	.12100-01	154.00	1.008	11.06	1.143	.9870	.4860	.5023-01	3.522	23.23	643.2
26	51.000	.17600-01	155.00	.7891	3.026	.8730	.9870	.1330	.3836-01	3.389	22.57	624.9
27	51.900	.44800-01	170.00	.4153	.7529	.5029	.9611	.3310-01	.2211-01	2.938	20.24	560.7
27	53.200	.24700-01	163.00	.5178	1.014	.6147	.9678	.4458-01	.2702-01	3.356	22.96	574.2
27	65.200	.24700-01	162.00	.5714	1.185	.6963	.9654	.5209-01	.3061-01	3.500	23.84	582.3
25	90.000	.91000-02	44.000	.5236	1.260	.6743	.9618	.5537-01	.2964-01	2.843	19.20	598.2
25	90.000	.11100-01	45.000	.6662	1.839	.8811	.9618	.8086-01	.3873-01	3.313	22.25	608.5
25	90.000	.13100-01	46.000	.6921	1.784	.9036	.9618	.7843-01	.3972-01	3.587	24.15	603.8
25	90.000	.17000-01	48.000	.5244	1.211	.6696	.9618	.5323-01	.2944-01	2.935	19.86	594.4
25	90.000	.20900-01	50.000	.5958	1.345	.7572	.9618	.5915-01	.3329-01	3.393	22.99	592.1
25	90.000	.24900-01	52.000	.5454	1.194	.6905	.9613	.5247-01	.3035-01	3.186	21.62	588.8
25	90.000	.26900-01	53.000	.5129	1.085	.6474	.9606	.4771-01	.2846-01	3.085	20.98	584.8
25	90.000	.28800-01	54.000	.5054	1.046	.6373	.9600	.4600-01	.2802-01	3.102	21.13	582.1
25	90.000	.32800-01	55.000	.4320	.8458	.5416	.9586	.3718-01	.2381-01	2.802	19.16	574.2
25	90.000	.36700-01	56.000	.4562	.8887	.5755	.9574	.3907-01	.2530-01	2.974	20.36	573.4
25	90.000	.40600-01	57.000	.4467	.8912	.5716	.9562	.3918-01	.2513-01	2.841	19.41	577.0
25	90.000	.48500-01	58.000	.4403	.8528	.5658	.9539	.3749-01	.2492-01	2.888	19.77	572.5
25	90.000	.56400-01	59.000	.3507	.6625	.4539	.9517	.2912-01	.1995-01	2.363	16.22	568.4
25	90.000	.76100-01	60.000	.2636	.4782	.3461	.9469	.2102-01	.1522-01	1.863	12.84	560.9
25	90.000	.95800-01	61.000	.2186	.3932	.2928	.9429	.1729-01	.1287-01	1.561	10.77	559.2
25	90.000	.11550	62.000	.1733	.3113	.2364	.9398	.1368-01	.1039-01	1.240	8.553	558.9
25	135.00	.19000-01	49.000	.5354	1.177	.6883	.9593	.5174-01	.3026-01	3.116	21.14	589.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
25	135.00	.22900-01	51.000	.5021	1.088	.6432	.9593	.4781-01	.2827-01	2.959	20.10	587.6
25	180.00	.91000-02	23.000	.4081	.8197	.5004	.9633	.3603-01	.2200-01	2.578	17.60	578.0
25	180.00	.11100-01	24.000	.5879	1.518	.7587	.9633	.6674-01	.3335-01	3.043	20.49	603.9
25	180.00	.13100-01	25.000	.6350	1.541	.8100	.9633	.6776-01	.3561-01	3.426	23.13	598.9
25	180.00	.15000-01	26.000	.6008	1.429	.7634	.9633	.6283-01	.3356-01	3.288	22.22	597.2
25	180.00	.17000-01	27.000	.5801	1.318	.7303	.9633	.5793-01	.3210-01	3.287	22.26	592.8
25	180.00	.19000-01	28.000	.6001	1.375	.7567	.9633	.6043-01	.3327-01	3.379	22.87	593.6
25	180.00	.20900-01	29.000	.5835	1.303	.7320	.9633	.5726-01	.3218-01	3.353	22.73	590.9
25	180.00	.28800-01	32.000	.5247	1.098	.6570	.9614	.4829-01	.2888-01	3.187	21.69	583.5
25	180.00	.32800-01	33.000	.4990	.9819	.6209	.9601	.4316-01	.2729-01	3.220	22.02	574.9
25	180.00	.36700-01	34.000	.4780	.9766	.6052	.9588	.4293-01	.2660-01	2.970	20.25	580.3
25	180.00	.56400-01	37.000	.4059	.7774	.5236	.9530	.3417-01	.2302-01	2.694	18.47	570.7
25	180.00	.76100-01	38.000	.2991	.5563	.3938	.9480	.2445-01	.1731-01	2.053	14.11	565.6
25	180.00	.95800-01	39.000	.2275	.4141	.3045	.9439	.1820-01	.1339-01	1.602	11.04	561.5
25	180.00	.11550	40.000	.1712	.3126	.2341	.9406	.1374-01	.1029-01	1.200	8.265	562.2
25	180.00	.18450	42.000	.8261-01	.1397	.1126	.9348	.6140-02	.4951-02	.6416	4.459	545.0
25	225.00	.22900-01	30.000	.6684	1.494	.7883	.9725	.6567-01	.3465-01	3.838	26.02	591.1
25	270.00	.91000-02	63.000	.7849	2.471	.8930	.9823	.1086	.3926-01	3.650	24.41	615.9
25	270.00	.11100-01	64.000	.8850	2.555	1.001	.9823	.1123	.4401-01	4.295	28.80	611.3
25	270.00	.13100-01	65.000	.8237	2.246	.9279	.9823	.9872-01	.4079-01	4.127	27.72	607.7
25	270.00	.17000-01	67.000	.9039	2.389	1.016	.9823	.1050	.4466-01	4.613	31.03	605.6
25	270.00	.20900-01	69.000	.7562	1.865	.8453	.9823	.8200-01	.3716-01	4.034	27.21	600.3
25	270.00	.24900-01	71.000	.6954	1.652	.7776	.9817	.7264-01	.3418-01	3.809	25.74	597.1
25	270.00	.28800-01	73.000	.5785	1.273	.6485	.9802	.5595-01	.2851-01	3.365	22.83	589.4
25	270.00	.36700-01	75.000	.5751	1.272	.6572	.9772	.5593-01	.2889-01	3.329	22.58	590.0
25	270.00	.46500-01	77.000	.5300	1.115	.6180	.9729	.4901-01	.2717-01	3.205	21.81	584.1
25	270.00	.56400-01	78.000	.4922	1.028	.5832	.9701	.4520-01	.2564-01	2.996	20.39	583.2
25	270.00	.95800-01	80.000	.3392	.6589	.4267	.9577	.2896-01	.1876-01	2.218	15.18	572.9
25	270.00	.11550	81.000	.2677	.5183	.3474	.9525	.2278-01	.1527-01	1.757	12.03	572.4
25	315.00	.19000-01	68.000	.6680	1.494	.7249	.9858	.6566-01	.3187-01	3.834	25.99	591.1
25	315.00	.22900-01	70.000	.7441	1.810	.8120	.9858	.7956-01	.3569-01	4.009	27.06	599.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
92	4.020	-4.977	5.969	64.96	739.7	.4166	174.8	50.32	2605.	.6434-02	.1406-06	3.704
93	4.020	-4.995	5.991	64.93	739.7	.4164	174.8	50.32	2605.	.6431-02	.1406-06	3.703
94	4.020	-5.012	6.003	65.10	739.7	.4175	174.8	50.28	2605.	.6447-02	.1406-06	3.712

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
92	.3871-01	.9582-02
93	.3870-01	.9584-02
94	.3875-01	.9572-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
93	.00000	.91000-02	1.0000	.6472	1.243	.7508	.9712	.4810-01	.2906-01	3.866	26.28	585.3
93	.00000	.11100-01	2.0000	.7871	1.488	.9107	.9712	.5757-01	.3525-01	4.786	32.59	582.6
93	.00000	.15000-01	4.0000	.7667	1.450	.8871	.9712	.5613-01	.3434-01	4.657	31.71	582.7
93	.00000	.17000-01	5.0000	.7650	1.403	.8803	.9712	.5432-01	.3407-01	4.814	32.88	577.1
93	.00000	.19000-01	6.0000	.7330	1.328	.8417	.9712	.5141-01	.3258-01	4.682	32.02	574.6
93	.00000	.24900-01	9.0000	.5536	.9510	.6309	.9707	.3681-01	.2442-01	3.792	26.10	562.7
93	.00000	.26900-01	10.000	.4978	.8363	.5668	.9699	.3237-01	.2194-01	3.521	24.32	556.9
92	.00000	.32800-01	12.000	.4929	.9023	.5777	.9677	.3493-01	.2236-01	3.111	21.26	576.6
92	.00000	.36700-01	13.000	.4717	.8449	.5544	.9662	.3271-01	.2146-01	3.059	20.95	572.2
92	.00000	.40600-01	14.000	.4899	.9004	.5836	.9648	.3486-01	.2259-01	3.077	21.01	577.4
92	.00000	.48500-01	15.000	.4597	.8332	.5542	.9620	.3226-01	.2145-01	2.937	20.09	574.7
92	.00000	.56400-01	16.000	.4205	.7556	.5133	.9592	.2925-01	.1987-01	2.715	18.59	572.9
92	.00000	.76100-01	17.000	.3138	.5485	.3933	.9528	.2123-01	.1522-01	2.100	14.43	566.8
92	.00000	.11550	19.000	.2090	.3608	.2771	.9416	.1397-01	.1073-01	1.422	9.781	563.9
92	.00000	.16480	20.000	.1341	.2242	.1856	.9310	.8680-02	.7186-02	.9559	6.606	555.6
92	.00000	.21400	22.000	.8716-01	.1346	.1188	.9243	.5209-02	.4601-02	.7084	4.966	529.7
94	2.0000	.24700-01	165.00	.4693	.7892	.5333	.9704	.3058-01	.2067-01	3.320	22.92	557.2
93	9.0000	.15000-01	157.00	.7235	1.360	.8447	.9693	.5265-01	.3269-01	4.424	30.14	581.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
93	9.0000	.17600-01	158.00	.6912	1.220	.7971	.9693	.4721-01	.3085-01	4.566	31.32	569.0
94	9.8000	.24700-01	164.00	.4846	.8231	.5560	.9688	.3190-01	.2155-01	3.378	23.29	559.8
93	10.000	.22900-01	88.000	.5307	.9078	.6088	.9691	.3513-01	.2356-01	3.658	25.19	561.6
93	10.000	.26900-01	90.000	.4444	.7292	.5082	.9679	.2822-01	.1967-01	3.257	22.57	550.3
93	10.000	.34700-01	94.000	.5056	.8558	.5903	.9650	.3312-01	.2285-01	3.538	24.41	558.9
93	12.000	.17600-01	152.00	1.305	3.787	1.426	.9870	.1466	.5520-01	5.698	37.90	626.8
93	12.000	.12100-01	151.00	.8651	3.989	.9632	.9870	.1544	.3728-01	3.163	20.83	645.2
93	13.000	.19400-01	153.00	1.206	3.237	1.313	.9870	.1253	.5084-01	5.506	36.71	621.8
94	14.600	.44200-01	169.00	.5283	.9035	.6318	.9606	.3502-01	.2448-01	3.646	25.12	561.6
93	18.500	.44200-01	106.00	.6059	1.050	.7304	.9597	.4062-01	.2827-01	4.104	28.22	564.7
94	19.600	.62900-01	175.00	.4693	.7951	.5807	.9532	.3081-01	.2251-01	3.284	22.65	559.1
93	19.800	.40800-01	101.00	.7350	1.329	.8921	.9606	.5143-01	.3453-01	4.709	32.22	574.1
93	20.000	.24900-01	89.000	.4243	.7028	.4895	.9664	.2720-01	.1894-01	3.065	21.21	553.0
93	20.000	.28800-01	91.000	.4237	.7024	.4922	.9649	.2718-01	.1905-01	3.058	21.16	553.2
93	20.000	.32800-01	93.000	.5172	.8871	.6102	.9634	.3434-01	.2362-01	3.550	24.44	562.3
94	21.800	.82200-01	182.00	.3994	.6695	.5085	.9468	.2595-01	.1971-01	2.837	19.60	556.4
93	22.200	.62900-01	125.00	.5439	.9414	.6800	.9526	.3644-01	.2632-01	3.687	25.36	564.5
93	22.400	.44200-01	107.00	.6449	1.132	.7837	.9588	.4380-01	.3033-01	4.292	29.46	567.7
94	22.600	.10270	192.00	.2917	.4790	.3790	.9411	.1856-01	.1469-01	2.139	14.82	550.5
93	23.000	.42000-01	105.00	.8275	1.572	1.024	.9595	.6085-01	.3964-01	5.001	34.04	583.5
93	23.400	.59600-01	120.00	.6789	1.211	.8537	.9534	.4688-01	.3304-01	4.423	30.30	571.3
94	23.900	.21310	250.00	.6523-01	.9701-01	.8719-01	.9231	.3759-02	.3379-02	.5709	4.037	513.9
93	24.100	.82200-01	139.00	.4769	.8023	.6095	.9464	.3105-01	.2359-01	3.366	23.24	557.3
94	24.400	.19040	238.00	.8776-01	.1331	.1179	.9250	.5158-02	.4569-02	.7384	5.197	522.6
94	24.400	.12440	207.00	.2144	.3586	.2892	.9356	.1390-01	.1121-01	1.529	10.56	555.7
94	24.800	.16810	223.00	.1286	.2053	.1762	.9277	.7958-02	.6829-02	.9861	6.867	541.8
93	24.900	.62900-01	126.00	.6073	1.088	.7706	.9520	.4210-01	.2982-01	3.937	26.96	572.2
94	25.000	.79500-01	178.00	.4732	.8126	.6078	.9470	.3149-01	.2356-01	3.247	22.35	562.6
94	25.300	.10270	191.00	.3793	.6340	.4982	.9406	.2457-01	.1931-01	2.706	18.70	555.6
94	25.300	.10000+00	186.00	.3826	.6543	.5059	.9413	.2536-01	.1961-01	2.641	18.19	561.6
93	25.500	.60700-01	124.00	.7568	1.428	.9737	.9526	.5528-01	.3769-01	4.609	31.39	582.3
94	26.000	.12440	206.00	.2755	.4679	.3752	.9354	.1813-01	.1454-01	1.921	13.24	559.8
93	26.300	.82200-01	140.00	.5534	.9385	.7113	.9459	.3633-01	.2753-01	3.861	26.63	559.4
94	26.700	.12100	199.00	.4293	.7746	.6007	.9360	.3002-01	.2328-01	2.761	18.89	573.7
94	26.800	.16810	222.00	.1887	.3049	.2607	.9275	.1181-01	.1010-01	1.419	9.864	545.6
94	27.000	.19040	237.00	.1399	.2161	.1904	.9248	.8375-02	.7379-02	1.138	7.977	529.8
94	27.100	.21310	249.00	.1100	.1665	.1489	.9230	.6452-02	.5771-02	.9282	6.535	521.8
94	27.200	.80300-01	180.00	.5895	1.046	.7639	.9463	.4052-01	.2984-01	3.874	26.56	570.1
93	27.400	.40100-01	98.000	.8733	1.728	1.095	.9591	.6689-01	.4237-01	5.054	34.28	590.1
94	27.400	.16480	215.00	.2134	.3558	.3000	.9279	.1379-01	.1162-01	1.528	10.56	554.9
93	27.600	.41600-01	102.00	.8823	1.847	1.126	.9586	.7150-01	.4358-01	4.835	32.65	598.1
94	27.600	.12440	205.00	.3470	.6057	.4800	.9351	.2347-01	.1860-01	2.329	16.00	566.5
94	27.600	.18700	230.00	.1475	.2296	.2015	.9251	.8898-02	.7808-02	1.183	8.276	532.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
94	27.700	.21010	243.00	.1294	.1992	.1771	.9231	.7719-02	.6864-02	1.059	7.432	528.5
94	27.900	.10110	188.00	.4702	.8394	.6368	.9405	.3253-01	.2468-01	3.065	21.00	571.5
93	28.000	.46800-01	110.00	.3725	.5934	.4442	.9567	.2297-01	.1719-01	2.865	19.96	541.0
94	28.200	.16810	221.00	.2540	.4200	.3563	.9273	.1628-01	.1381-01	1.841	12.75	552.6
94	28.300	.19040	236.00	.1811	.2799	.2467	.9247	.1085-01	.9560-02	1.472	10.31	530.0
94	28.300	.12200	201.00	.3068	.5250	.4191	.9355	.2035-01	.1624-01	2.117	14.58	561.7
93	28.400	.53500-01	114.00	.4204	.6939	.5127	.9543	.2686-01	.1985-01	3.054	21.15	552.0
94	28.400	.21310	248.00	.1309	.1992	.1779	.9229	.7719-02	.6895-02	1.094	7.693	524.0
93	28.700	.58600-01	117.00	.8186	1.537	1.052	.9526	.5949-01	.4070-01	5.014	34.16	581.4
94	28.800	.16580	217.00	.2753	.4692	.3929	.9276	.1818-01	.1523-01	1.910	13.17	560.6
93	28.800	.60400-01	121.00	.8215	1.630	1.078	.9520	.6308-01	.4173-01	4.742	32.16	590.5
94	29.000	.21110	244.00	.1420	.2192	.1948	.9230	.8494-02	.7550-02	1.155	8.098	529.7
93	29.000	.65700-01	129.00	.3450	.5454	.4221	.9503	.2111-01	.1634-01	2.688	18.75	538.4
93	29.200	.72400-01	133.00	.4200	.6975	.5291	.9482	.2700-01	.2048-01	3.023	20.91	553.7
93	29.300	.79500-01	136.00	.6690	1.259	.8953	.9461	.4874-01	.3465-01	4.086	27.83	581.9
93	29.600	.92500-01	143.00	.3345	.5481	.4313	.9424	.2121-01	.1669-01	2.458	17.04	549.8
93	29.700	.10000+00	146.00	.5332	.9889	.7348	.9405	.3827-01	.2844-01	3.313	22.60	579.1
94	29.900	.12100	198.00	.4490	.8356	.6400	.9355	.3238-01	.2480-01	2.782	18.97	579.8
94	30.200	.16480	214.00	.3091	.5372	.4463	.9276	.2082-01	.1730-01	2.086	14.34	565.5
94	30.200	.18700	229.00	.2038	.3267	.2841	.9249	.1266-01	.1101-01	1.552	10.80	543.1
94	30.300	.21010	242.00	.1630	.2563	.2265	.9230	.9931-02	.8777-02	1.284	8.966	536.4
93	31.500	.91000-02	82.000	.5197	.9428	.6191	.9642	.3649-01	.2396-01	3.315	22.67	574.0
93	31.500	.11100-01	83.000	.7655	1.488	.9264	.9642	.5759-01	.3586-01	4.513	30.66	587.3
93	31.500	.14200-01	84.000	1.084	3.074	1.184	.9870	.1190	.4582-01	4.795	31.91	625.4
93	31.500	.16000-01	85.000	1.121	2.835	1.216	.9870	.1097	.4708-01	5.306	35.47	617.3
93	31.500	.17600-01	86.000	1.095	2.840	1.190	.9870	.1099	.4605-01	5.100	34.06	619.3
93	31.500	.19400-01	87.000	.9564	2.020	1.027	.9870	.7819-01	.3974-01	5.199	35.09	599.2
94	32.100	.21010	241.00	.1073	.1678	.1486	.9229	.6503-02	.5760-02	.8542	5.972	534.3
94	32.200	.16480	213.00	.2383	.4069	.3409	.9274	.1577-01	.1321-01	1.648	11.35	561.2
94	32.200	.17860	224.00	.1551	.2434	.2124	.9256	.9432-02	.8232-02	1.226	8.568	535.7
94	32.200	.18700	228.00	.1193	.1875	.1643	.9247	.7268-02	.6367-02	.9392	6.559	536.5
94	32.300	.12100	197.00	.3739	.6684	.5236	.9351	.2590-01	.2029-01	2.433	16.66	571.8
94	32.300	.12300	194.00	.3173	.5771	.4495	.9347	.2237-01	.1742-01	2.020	13.81	575.4
94	32.300	.12730	208.00	.1416	.2293	.1896	.9338	.8885-02	.7348-02	1.061	7.372	546.3
94	32.300	.13420	209.00	.1783	.3047	.2477	.9324	.1181-01	.9601-02	1.231	8.481	561.4
93	32.400	.10000+00	147.00	.3563	.6136	.4762	.9400	.2375-01	.1843-01	2.433	16.74	563.3
94	32.400	.10110	184.00	.4153	.7483	.5676	.9397	.2900-01	.2200-01	2.675	18.30	573.5
94	32.400	.10630	193.00	.1811	.2825	.2325	.9384	.1095-01	.9010-02	1.446	10.12	533.6
94	32.500	.85800-01	183.00	.2038	.3204	.2564	.9437	.1242-01	.9935-02	1.606	11.22	536.4
93	32.600	.79500-01	137.00	.6023	1.106	.8014	.9454	.4279-01	.3102-01	3.788	25.87	577.2
94	32.600	.80800-01	176.00	.4849	.8812	.6440	.9451	.3415-01	.2496-01	3.091	21.13	575.2
93	32.700	.67400-01	132.00	.2938	.4688	.3629	.9490	.1815-01	.1405-01	2.253	15.69	541.6
93	32.700	.72400-01	134.00	.3733	.6130	.4698	.9475	.2372-01	.1818-01	2.733	18.94	550.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
93	32.800	.65700-01	130.00	.2482	.3843	.3023	.9495	.1488-01	.1170-01	2.006	14.06	530.8
94	32.800	.16680	210.00	.1906	.3163	.2684	.9270	.1226-01	.1040-01	1.374	9.508	553.6
94	32.800	.18880	225.00	.1049	.1601	.1418	.9245	.6203-02	.5495-02	.8720	6.128	525.1
93	32.900	.58600-01	118.00	.6158	1.101	.7825	.9517	.4263-01	.3029-01	3.998	27.39	571.9
93	32.900	.60400-01	122.00	.4970	.8608	.6264	.9511	.3332-01	.2425-01	3.366	23.14	564.7
94	32.900	.61300-01	171.00	.6232	1.233	.8234	.9508	.4778-01	.3191-01	3.613	24.50	590.1
93	33.000	.53500-01	115.00	.4274	.7015	.5228	.9533	.2715-01	.2023-01	3.132	21.71	550.3
93	33.200	.48300-01	113.00	.2962	.4629	.3534	.9550	.1792-01	.1368-01	2.354	16.46	534.3
94	33.400	.42800-01	166.00	.7159	1.374	.9024	.9568	.5323-01	.3497-01	4.286	29.14	585.2
93	33.500	.40100-01	99.000	.7202	1.290	.8854	.9577	.4993-01	.3427-01	4.668	31.97	572.2
93	33.600	.38300-01	97.000	.5834	1.002	.7062	.9584	.3877-01	.2733-01	4.000	27.54	562.5
93	33.700	.36700-01	96.000	.4874	.8201	.5849	.9589	.3174-01	.2264-01	3.439	23.74	557.4
93	33.900	.33800-01	95.000	.3973	.6494	.4706	.9599	.2514-01	.1821-01	2.930	20.32	549.1
94	34.700	.21010	240.00	.8125-01	.1257	.1118	.9228	.4872-02	.4332-02	.6585	4.614	530.5
94	34.700	.18700	227.00	.1484	.2360	.2062	.9245	.9148-02	.7990-02	1.145	7.978	540.5
94	34.900	.16480	212.00	.1850	.3121	.2631	.9271	.1209-01	.1020-01	1.302	8.989	558.0
93	35.100	.10000+00	148.00	.3254	.5542	.4338	.9395	.2145-01	.1679-01	2.257	15.55	560.5
94	35.200	.23900-01	161.00	.3399	.5330	.3921	.9632	.2066-01	.1520-01	2.690	18.80	535.5
93	35.300	.92500-01	145.00	.3739	.6151	.4856	.9413	.2381-01	.1879-01	2.731	18.92	551.0
93	35.300	.22100-01	160.00	.3162	.4880	.3631	.9633	.1889-01	.1405-01	2.571	18.03	529.6
94	35.400	.18800	231.00	.1078	.1697	.1489	.9244	.6577-02	.5769-02	.8467	5.912	537.0
94	35.500	.12100	196.00	.3017	.5287	.4195	.9346	.2049-01	.1626-01	2.013	13.82	567.4
94	35.600	.16580	216.00	.1771	.2951	.2503	.9269	.1144-01	.9701-02	1.270	8.778	554.7
93	35.800	.80600-01	138.00	.3565	.5976	.4594	.9445	.2313-01	.1778-01	2.530	17.47	556.3
94	35.900	.21310	247.00	.7484-01	.1141	.1020	.9226	.4420-02	.3953-02	.6238	4.385	524.6
94	36.000	.19040	235.00	.1022	.1587	.1400	.9241	.6148-02	.5425-02	.8224	5.758	531.9
94	36.200	.16910	220.00	.1580	.2576	.2207	.9265	.9984-02	.8554-02	1.171	8.124	548.4
93	36.200	.72400-01	135.00	.4356	.7162	.5504	.9467	.2772-01	.2130-01	3.183	22.05	550.9
94	36.300	.12200	200.00	.2646	.4589	.3667	.9343	.1778-01	.1421-01	1.792	12.32	564.9
93	36.600	.65700-01	131.00	.2665	.4208	.3283	.9487	.1629-01	.1271-01	2.080	14.51	538.0
94	36.700	.18700	226.00	.1370	.2155	.1891	.9244	.8351-02	.7327-02	1.078	7.528	536.6
94	36.900	.16480	211.00	.2034	.3402	.2881	.9269	.1318-01	.1117-01	1.450	10.02	555.7
94	36.900	.10110	187.00	.3605	.6323	.4889	.9389	.2451-01	.1895-01	2.403	16.50	567.6
93	37.000	.60400-01	123.00	.5019	.8791	.6392	.9502	.3403-01	.2470-01	3.348	22.99	567.3
94	37.000	.12440	204.00	.2291	.3865	.3139	.9337	.1498-01	.1216-01	1.613	11.13	558.0
93	37.100	.58600-01	119.00	.5493	.9360	.6895	.9508	.3623-01	.2669-01	3.806	26.23	560.6
94	37.200	.21310	246.00	.8952-01	.1368	.1223	.9225	.5302-02	.4738-02	.7424	5.216	525.7
94	37.600	.16810	219.00	.1676	.2727	.2340	.9264	.1057-01	.9069-02	1.248	8.661	547.6
93	37.800	.10270	150.00	.3135	.5201	.4152	.9383	.2013-01	.1607-01	2.259	15.63	553.5
94	37.900	.12100	195.00	.3079	.5233	.4222	.9342	.2028-01	.1636-01	2.144	14.78	560.0
94	38.000	.80300-01	179.00	.5082	.8894	.6682	.9441	.3447-01	.2589-01	3.399	23.34	567.1
93	38.500	.46800-01	112.00	.2873	.4478	.3435	.9543	.1733-01	.1330-01	2.294	16.05	533.4
94	38.600	.12440	203.00	.2557	.4319	.3511	.9334	.1674-01	.1361-01	1.797	12.40	558.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
94	38.700	.10000+00	185.00	.3853	.6606	.5171	.9388	.2560-01	.2004-01	2.651	18.25	562.2
93	38.900	.82200-01	141.00	.3609	.5934	.4637	.9434	.2297-01	.1795-01	2.638	18.28	550.8
93	39.300	.41600-01	104.00	.5144	.8902	.6320	.9559	.3445-01	.2446-01	3.489	24.00	564.4
94	39.500	.10270	190.00	.4019	.6910	.5426	.9380	.2678-01	.2103-01	2.754	18.96	562.9
94	39.600	.16810	218.00	.1505	.2450	.2104	.9262	.9493-02	.8153-02	1.118	7.762	547.9
94	39.900	.19040	233.00	.1026	.1593	.1408	.9239	.6174-02	.5455-02	.8267	5.788	531.8
94	40.100	.79500-01	177.00	.5444	.9592	.7186	.9439	.3717-01	.2785-01	3.608	24.76	568.6
94	40.200	.12440	202.00	.2564	.4323	.3521	.9332	.1675-01	.1365-01	1.805	12.46	557.9
94	40.300	.21310	245.00	.7247-01	.1105	.9885-01	.9224	.4282-02	.3831-02	.6037	4.243	524.7
93	41.100	.82200-01	142.00	.4428	.7400	.5743	.9430	.2864-01	.2223-01	3.157	21.81	555.5
94	41.100	.60700-01	173.00	.5232	.9127	.6678	.9493	.3537-01	.2588-01	3.515	24.15	566.3
94	42.300	.10270	189.00	.3165	.5285	.4223	.9376	.2048-01	.1636-01	2.262	15.63	555.3
94	42.600	.59600-01	172.00	.5935	1.049	.7612	.9493	.4067-01	.2950-01	3.916	26.86	569.4
94	43.200	.42000-01	168.00	.4326	.7278	.5294	.9549	.2820-01	.2052-01	3.058	21.11	557.3
94	43.400	.82200-01	181.00	.3045	.4998	.3926	.9426	.1937-01	.1522-01	2.234	15.48	550.4
93	43.600	.62900-01	128.00	.4946	.8393	.6287	.9481	.3249-01	.2433-01	3.448	23.78	559.6
93	45.000	.22900-01	8.0000	.7648	1.430	.9338	.9611	.5536-01	.3614-01	4.706	32.08	580.7
94	46.100	.62900-01	174.00	.5647	.9992	.7315	.9476	.3872-01	.2835-01	3.722	25.53	569.6
94	47.700	.40800-01	167.00	.4657	.7903	.5731	.9543	.3063-01	.2221-01	3.250	22.41	559.6
93	48.400	.44200-01	109.00	.4552	.7648	.5620	.9530	.2960-01	.2175-01	3.218	22.22	557.0
93	50.000	.19400-01	156.00	.6944	1.481	.7485	.9864	.5733-01	.2897-01	3.742	25.24	600.4
93	51.000	.12100-01	154.00	.8236	2.104	.8992	.9862	.8142-01	.3480-01	3.875	25.89	618.1
93	51.000	.17600-01	155.00	.6414	1.301	.6897	.9862	.5035-01	.2669-01	3.622	24.51	593.8
94	51.900	.44800-01	170.00	.3515	.5678	.4299	.9521	.2201-01	.1666-01	2.644	18.38	545.5
94	53.200	.24700-01	163.00	.4032	.6606	.4802	.9589	.2560-01	.1861-01	2.967	20.57	549.8
94	65.200	.24700-01	162.00	.4837	.8277	.5907	.9564	.3208-01	.2289-01	3.337	22.98	561.7
92	90.000	.91000-02	44.000	.3128	.5769	.3989	.9528	.2233-01	.1544-01	1.956	13.35	578.1
92	90.000	.11100-01	45.000	.4949	.9814	.6460	.9528	.3799-01	.2501-01	2.859	19.38	590.5
92	90.000	.13100-01	46.000	.6663	1.427	.8902	.9528	.5525-01	.3446-01	3.579	24.13	600.9
92	90.000	.17000-01	48.000	.6170	1.171	.7943	.9528	.4535-01	.3075-01	3.733	25.41	583.4
92	90.000	.20900-01	50.000	.5391	1.021	.6936	.9528	.3954-01	.2685-01	3.269	22.26	583.0
92	90.000	.24900-01	52.000	.5180	.9699	.6658	.9524	.3755-01	.2578-01	3.183	21.70	580.9
92	90.000	.26900-01	53.000	.5005	.9168	.6413	.9516	.3549-01	.2483-01	3.156	21.56	576.8
92	90.000	.28800-01	54.000	.4844	.8778	.6208	.9510	.3398-01	.2403-01	3.096	21.17	574.6
92	90.000	.32800-01	55.000	.4075	.7135	.5198	.9496	.2762-01	.2012-01	2.721	18.68	567.2
92	90.000	.36700-01	56.000	.4179	.7277	.5357	.9483	.2817-01	.2074-01	2.811	19.31	565.9
92	90.000	.40600-01	57.000	.4025	.7118	.5228	.9471	.2756-01	.2024-01	2.653	18.19	569.4
92	90.000	.48500-01	58.000	.3556	.6232	.4656	.9446	.2413-01	.1806-01	2.372	16.28	567.4
92	90.000	.56400-01	59.000	.3173	.5465	.4186	.9423	.2116-01	.1621-01	2.166	14.90	563.4
92	90.000	.76100-01	60.000	.2312	.3908	.3112	.9371	.1513-01	.1205-01	1.621	11.18	558.6
92	90.000	.95800-01	61.000	.1652	.2801	.2283	.9326	.1084-01	.8837-02	1.153	7.949	559.4
92	90.000	.11550	62.000	.1207	.2046	.1703	.9290	.7921-02	.6593-02	.8430	5.813	559.3
92	135.00	.19000-01	49.000	.5705	1.092	.7482	.9503	.4227-01	.2897-01	3.421	23.27	584.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
92	135.00	.22900-01	51.000	.5238	.9969	.6856	.9503	.3859-01	.2654-01	3.161	21.51	583.8
92	180.00	.91000-02	23.000	.2756	.4775	.3415	.9544	.1849-01	.1322-01	1.866	12.83	564.7
92	180.00	.11100-01	24.000	.4964	1.000	.6446	.9544	.3872-01	.2496-01	2.823	19.12	592.8
92	180.00	.13100-01	25.000	.6867	1.452	.9042	.9544	.5620-01	.3501-01	3.731	25.18	599.3
92	180.00	.15000-01	26.000	.6905	1.430	.9039	.9544	.5537-01	.3500-01	3.823	25.84	596.7
92	180.00	.17000-01	27.000	.6085	1.184	.7820	.9544	.4584-01	.3028-01	3.584	24.34	587.5
92	180.00	.19000-01	28.000	.5745	1.116	.7379	.9544	.4320-01	.2857-01	3.390	23.03	587.2
92	180.00	.20900-01	29.000	.5849	1.114	.7467	.9544	.4311-01	.2891-01	3.528	24.01	583.9
92	180.00	.28800-01	32.000	.5016	.9098	.6375	.9525	.3522-01	.2468-01	3.202	21.90	574.8
92	180.00	.32800-01	33.000	.4429	.7737	.5599	.9511	.2995-01	.2168-01	2.966	20.37	566.7
92	180.00	.36700-01	34.000	.4381	.7803	.5618	.9498	.3021-01	.2175-01	2.861	19.60	571.0
92	180.00	.56400-01	37.000	.3278	.5590	.4274	.9436	.2164-01	.1655-01	2.269	15.64	560.8
92	180.00	.76100-01	38.000	.2430	.4049	.3227	.9383	.1568-01	.1249-01	1.741	12.04	554.7
92	180.00	.95800-01	39.000	.1870	.3088	.2532	.9337	.1195-01	.9802-02	1.358	9.405	552.1
92	180.00	.11550	40.000	.1460	.2443	.2034	.9299	.9458-02	.7873-02	1.039	7.179	555.8
92	180.00	.18450	42.000	.5850-01	.9332-01	.8232-01	.9225	.3613-02	.3187-02	.4489	3.126	541.5
92	225.00	.22900-01	30.000	.6157	1.174	.7448	.9636	.4545-01	.2883-01	3.708	25.23	584.1
92	270.00	.91000-02	63.000	.6810	1.565	.8031	.9731	.6060-01	.3109-01	3.452	23.18	608.7
92	270.00	.11100-01	64.000	.7708	1.680	.9023	.9731	.6505-01	.3493-01	4.078	27.47	603.0
92	270.00	.13100-01	65.000	.7253	1.527	.8447	.9731	.5912-01	.3270-01	3.956	26.70	598.8
92	270.00	.17000-01	67.000	.6795	1.410	.7896	.9731	.5458-01	.3057-01	3.756	25.38	596.9
92	270.00	.20900-01	69.000	.7315	1.503	.8488	.9731	.5817-01	.3286-01	4.082	27.61	595.5
92	270.00	.24900-01	71.000	.5883	1.173	.6815	.9726	.4539-01	.2638-01	3.382	22.92	591.2
92	270.00	.28800-01	73.000	.5796	1.102	.6717	.9711	.4267-01	.2600-01	3.500	23.82	583.7
92	270.00	.36700-01	75.000	.5382	1.026	.6343	.9681	.3971-01	.2455-01	3.242	22.06	584.1
92	270.00	.46500-01	77.000	.4523	.8341	.5420	.9638	.3229-01	.2098-01	2.829	19.32	578.1
92	270.00	.56400-01	78.000	.4421	.8124	.5375	.9611	.3145-01	.2081-01	2.778	18.97	577.4
92	270.00	.95800-01	80.000	.2690	.4813	.3480	.9485	.1863-01	.1347-01	1.747	11.97	571.9
92	270.00	.11550	81.000	.2371	.4231	.3162	.9431	.1638-01	.1224-01	1.544	10.58	571.5
92	315.00	.19000-01	68.000	.6594	1.288	.7449	.9765	.4986-01	.2884-01	3.870	26.27	588.1
92	315.00	.22900-01	70.000	.6089	1.214	.6897	.9765	.4699-01	.2670-01	3.499	23.71	591.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
194	5.500	-4.983	5.972	126.8	719.7	.1363	102.1	50.30	2724.	.3604-02	.8214-07	3.715
195	5.500	-4.983	5.972	126.8	719.7	.1363	102.1	50.30	2724.	.3604-02	.8214-07	3.715
196	5.500	-4.983	5.972	126.9	719.7	.1364	102.1	50.30	2724.	.3606-02	.8214-07	3.717

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
194	.3016-01	.1276-01
195	.3016-01	.1276-01
196	.3017-01	.1276-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
195	.00000	.91000-02	1.0000	.5885	.9990	.6893	.9644	.3013-01	.2079-01	3.109	21.62	544.5
195	.00000	.15000-01	4.0000	.7089	1.225	.8338	.9644	.3694-01	.2515-01	3.653	25.34	548.8
195	.00000	.17000-01	5.0000	.7134	1.212	.8358	.9644	.3656-01	.2521-01	3.765	26.18	544.7
195	.00000	.19000-01	6.0000	.6811	1.161	.7984	.9644	.3501-01	.2408-01	3.578	24.87	545.5
195	.00000	.24900-01	9.0000	.5255	.8775	.6144	.9639	.2647-01	.1853-01	2.844	19.82	540.3
195	.00000	.26900-01	10.000	.4614	.7614	.5396	.9632	.2297-01	.1628-01	2.542	17.74	537.0
194	.00000	.32800-01	12.000	.4285	.7179	.5082	.9611	.2165-01	.1533-01	2.307	16.07	541.2
194	.00000	.36700-01	13.000	.4261	.7081	.5076	.9597	.2136-01	.1531-01	2.322	16.20	539.0
194	.00000	.40600-01	14.000	.4495	.7560	.5409	.9583	.2280-01	.1632-01	2.407	16.76	542.2
194	.00000	.48500-01	15.000	.4098	.6798	.4976	.9556	.2050-01	.1501-01	2.240	15.63	538.5
194	.00000	.56400-01	16.000	.4038	.6657	.4957	.9529	.2008-01	.1495-01	2.227	15.55	536.8
194	.00000	.76100-01	17.000	.2807	.4500	.3516	.9464	.1357-01	.1060-01	1.620	11.36	528.4
194	.00000	.11550	19.000	.1808	.2930	.2410	.9347	.8837-02	.7270-02	1.024	7.172	531.8
194	.00000	.16480	20.000	.1105	.1780	.1554	.9226	.5370-02	.4717-02	.6321	4.430	530.0
194	.00000	.21400	22.000	.6606-01	.9526-01	.8971-01	.9140	.2873-02	.2706-02	.4679	3.364	484.9
196	2.0000	.24700-01	165.00	.4436	.7165	.5151	.9636	.2162-01	.1554-01	2.532	17.74	530.6
195	9.0000	.15000-01	157.00	.7151	1.228	.8473	.9627	.3705-01	.2556-01	3.716	25.80	547.4
195	9.0000	.17600-01	158.00	.6272	1.050	.7382	.9627	.3166-01	.2227-01	3.383	23.57	540.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
196	9.8000	.24700-01	164.00	.4594	.7408	.5367	.9621	.2235-01	.1619-01	2.626	18.40	530.2
195	10.000	.22900-01	88.000	.5003	.8281	.5876	.9625	.2498-01	.1773-01	2.744	19.14	537.9
195	10.000	.26900-01	90.000	.3867	.6235	.4534	.9612	.1881-01	.1368-01	2.210	15.49	530.2
195	10.000	.34700-01	94.000	.4352	.6900	.5141	.9584	.2081-01	.1551-01	2.558	17.98	524.8
195	12.000	.17600-01	152.00	1.272	2.670	1.373	.9860	.8055-01	.4141-01	5.274	35.92	582.2
195	12.000	.12100-01	151.00	1.101	2.793	1.203	.9860	.8425-01	.3628-01	3.943	26.59	600.9
195	13.000	.19400-01	153.00	1.218	2.527	1.314	.9858	.7623-01	.3964-01	5.100	34.76	580.8
196	14.600	.44200-01	169.00	.5243	.8531	.6369	.9541	.2574-01	.1922-01	2.954	20.67	532.9
195	18.500	.44200-01	106.00	.5829	.9769	.7182	.9533	.2947-01	.2166-01	3.138	21.86	541.2
196	19.600	.62900-01	175.00	.4773	.7613	.5955	.9468	.2297-01	.1797-01	2.778	19.51	526.8
195	19.800	.40800-01	101.00	.6062	1.020	.7445	.9542	.3077-01	.2246-01	3.243	22.58	542.3
195	20.000	.24900-01	89.000	.3978	.6476	.4707	.9598	.1953-01	.1420-01	2.239	15.67	533.1
195	20.000	.28800-01	91.000	.3356	.5390	.3980	.9584	.1626-01	.1201-01	1.930	13.54	529.0
195	20.000	.32800-01	93.000	.4402	.7268	.5301	.9570	.2192-01	.1599-01	2.424	16.92	537.2
195	22.200	.62900-01	125.00	.5326	.8774	.6753	.9462	.2647-01	.2037-01	2.942	20.55	536.5
195	22.400	.44200-01	107.00	.6351	1.070	.7872	.9525	.3227-01	.2375-01	3.393	23.62	542.6
196	22.600	.10270	192.00	.2594	.4085	.3415	.9341	.1233-01	.1030-01	1.543	10.86	522.5
195	23.000	.42000-01	105.00	.7547	1.319	.9443	.9531	.3980-01	.2849-01	3.828	26.51	551.5
195	23.400	.59600-01	120.00	.6530	1.097	.8312	.9470	.3309-01	.2507-01	3.501	24.38	541.9
196	23.900	.21310	250.00	.3967-01	.5784-01	.5480-01	.9121	.1745-02	.1654-02	.2743	1.966	490.5
195	24.100	.82200-01	139.00	.4658	.7585	.6068	.9398	.2288-01	.1830-01	2.620	18.33	533.2
196	24.400	.19040	238.00	.6140-01	.9207-01	.8569-01	.9149	.2778-02	.2585-02	.4004	2.848	503.6
196	24.400	.12440	207.00	.1714	.2759	.2356	.9281	.8326-02	.7108-02	.9827	6.889	529.7
196	24.800	.16810	223.00	.1006	.1588	.1434	.9186	.4791-02	.4327-02	.5970	4.200	523.1
195	24.900	.62900-01	126.00	.6229	1.057	.8018	.9456	.3188-01	.2419-01	3.294	22.90	544.4
196	25.000	.79500-01	178.00	.3754	.6015	.4838	.9404	.1815-01	.1460-01	2.168	15.21	528.2
196	25.300	.10270	191.00	.3505	.5578	.4653	.9336	.1683-01	.1404-01	2.048	14.39	526.0
196	25.300	.10000+00	186.00	.3693	.5955	.4920	.9344	.1797-01	.1484-01	2.111	14.79	530.2
195	25.500	.60700-01	124.00	.7872	1.393	1.024	.9462	.4170-01	.3090-01	3.968	27.47	552.6
196	26.000	.12440	206.00	.2508	.4065	.3466	.9278	.1226-01	.1046-01	1.422	9.953	531.8
195	26.300	.82200-01	140.00	.4383	.7217	.5755	.9393	.2177-01	.1736-01	2.423	16.93	536.4
196	26.700	.12100	199.00	.3723	.6260	.5241	.9285	.1889-01	.1582-01	1.995	13.89	542.1
196	26.800	.16810	222.00	.1662	.2651	.2391	.9183	.8000-02	.7215-02	.9667	6.787	526.9
196	27.000	.19040	237.00	.1210	.1836	.1707	.9146	.5539-02	.5150-02	.7716	5.473	508.4
196	27.100	.21310	249.00	.8815-01	.1296	.1228	.9118	.3910-02	.3704-02	.5985	4.279	494.7
195	27.200	.80300-01	180.00	.5731	.9439	.7510	.9397	.2848-01	.2266-01	3.169	22.13	536.4
195	27.400	.40100-01	98.000	.6786	1.192	.8521	.9528	.3597-01	.2570-01	3.419	23.66	552.7
196	27.400	.16480	215.00	.1775	.2893	.2596	.9188	.8728-02	.7804-02	.9972	6.975	533.5
195	27.600	.41600-01	102.00	.7621	1.373	.9680	.9522	.4142-01	.2920-01	3.717	25.65	558.0
196	27.600	.12440	205.00	.3196	.5270	.4473	.9275	.1590-01	.1350-01	1.766	12.33	536.7
196	27.600	.18700	230.00	.9679-01	.1480	.1371	.9150	.4467-02	.4137-02	.6070	4.298	511.8
196	27.700	.21010	243.00	.1110	.1655	.1563	.9121	.4995-02	.4715-02	.7325	5.218	501.1
196	27.900	.10110	188.00	.4374	.7280	.5954	.9335	.2197-01	.1796-01	2.379	16.59	539.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
195	28.000	.46800-01	110.00	.3291	.5175	.4018	.9503	.1561-01	.1212-01	1.962	13.81	522.0
196	28.200	.16810	221.00	.1930	.3120	.2807	.9181	.9415-02	.8471-02	1.099	7.699	531.0
196	28.300	.19040	236.00	.1619	.2470	.2295	.9145	.7453-02	.6926-02	1.021	7.233	510.7
196	28.300	.12200	201.00	.2373	.3841	.3274	.9280	.1159-01	.9880-02	1.349	9.449	531.3
195	28.400	.53500-01	114.00	.3866	.6226	.4815	.9480	.1878-01	.1453-01	2.214	15.52	529.8
196	28.400	.21310	248.00	.1336	.1983	.1876	.9117	.5984-02	.5662-02	.8894	6.343	499.1
195	28.700	.58600-01	117.00	.8201	1.426	1.063	.9462	.4301-01	.3207-01	4.190	29.04	550.3
196	28.800	.16580	217.00	.2680	.4418	.3947	.9184	.1333-01	.1191-01	1.479	10.33	536.8
195	28.800	.60400-01	121.00	.8405	1.525	1.112	.9456	.4601-01	.3354-01	4.064	28.03	559.4
196	29.000	.21110	244.00	.1496	.2239	.2114	.9119	.6755-02	.6378-02	.9784	6.962	502.9
195	29.000	.65700-01	129.00	.3223	.5026	.4036	.9439	.1516-01	.1217-01	1.949	13.75	519.1
195	29.200	.72400-01	133.00	.3449	.5539	.4422	.9417	.1671-01	.1334-01	1.985	13.92	528.9
195	29.300	.79500-01	136.00	.7074	1.263	.9641	.9395	.3811-01	.2908-01	3.489	24.10	556.2
195	29.600	.92500-01	143.00	.2391	.3803	.3142	.9356	.1147-01	.9478-02	1.397	9.813	525.9
195	29.700	.10000+00	146.00	.5007	.8762	.7004	.9335	.2643-01	.2113-01	2.536	17.57	551.7
196	29.900	.12100	198.00	.3560	.6073	.5073	.9279	.1832-01	.1531-01	1.868	12.98	545.8
196	30.200	.16480	214.00	.2955	.4934	.4393	.9184	.1489-01	.1325-01	1.599	11.14	540.3
196	30.300	.21010	242.00	.1672	.2541	.2393	.9119	.7668-02	.7222-02	1.061	7.523	509.3
195	31.500	.11100-01	83.000	.7384	1.315.	.9063	.9578	.3966-01	.2734-01	3.657	25.28	555.5
195	31.500	.14200-01	84.000	1.200	2.561	1.325	.9822	.7725-01	.3998-01	4.905	33.37	584.2
195	31.500	.16000-01	85.000	1.134	2.252	1.244	.9822	.6794-01	.3752-01	4.960	33.92	574.7
195	31.500	.19400-01	87.000	.9209	1.623	.9975	.9822	.4897-01	.3009-01	4.620	31.97	553.4
196	32.100	.21010	241.00	.9896-01	.1495	.1410	.9118	.4510-02	.4255-02	.6358	4.515	506.7
196	32.200	.16480	213.00	.1980	.3279	.2930	.9181	.9893-02	.8841-02	1.085	7.569	538.0
196	32.200	.17860	224.00	.1113	.1724	.1587	.9158	.5202-02	.4787-02	.6820	4.816	516.6
196	32.200	.18700	228.00	.9664-01	.1501	.1390	.9145	.4530-02	.4193-02	.5891	4.157	517.7
196	32.300	.12100	197.00	.2728	.4536	.3837	.9275	.1369-01	.1158-01	1.487	10.37	539.1
196	32.300	.12300	194.00	.2056	.3462	.2922	.9270	.1045-01	.8817-02	1.099	7.649	542.5
196	32.300	.12730	208.00	.1289	.2037	.1770	.9260	.6148-02	.5342-02	.7617	5.357	523.8
196	32.300	.13420	209.00	.1505	.2490	.2148	.9244	.7514-02	.6481-02	.8262	5.766	537.8
195	32.400	.10000+00	147.00	.2822	.4701	.3855	.9329	.1418-01	.1163-01	1.532	10.68	539.6
196	32.400	.10110	184.00	.3337	.5572	.4572	.9326	.1681-01	.1380-01	1.806	12.59	540.3
196	32.400	.10630	193.00	.1516	.2315	.1998	.9312	.6986-02	.5998-02	.9540	6.758	511.1
196	32.500	.85800-01	183.00	.1667	.2548	.2132	.9370	.7688-02	.6433-02	1.048	7.420	511.4
195	32.600	.79500-01	137.00	.4577	.7910	.6167	.9388	.2386-01	.1860-01	2.358	16.35	548.9
196	32.600	.80800-01	176.00	.3890	.6482	.5161	.9384	.1956-01	.1557-01	2.113	14.73	539.7
195	32.700	.67400-01	132.00	.2514	.3929	.3171	.9425	.1185-01	.9564-02	1.516	10.69	519.7
195	32.700	.72400-01	134.00	.3271	.5227	.4198	.9409	.1577-01	.1266-01	1.897	13.32	527.4
195	32.800	.65700-01	130.00	.2086	.3198	.2601	.9430	.9647-02	.7846-02	1.301	9.209	512.8
196	32.800	.16680	210.00	.1487	.2424	.2181	.9177	.7313-02	.6580-02	.8353	5.843	533.5
196	32.800	.18880	225.00	.8719-01	.1323	.1233	.9142	.3993-02	.3719-02	.5549	3.936	508.7
195	32.900	.58600-01	118.00	.6696	1.132	.8623	.9453	.3414-01	.2601-01	3.560	24.77	543.4
195	32.900	.60400-01	122.00	.4892	.8202	.6297	.9447	.2474-01	.1899-01	2.631	18.33	541.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
196	32.900	.61300-01	171.00	.7447	1.348	.9913	.9444	.4067-01	.2991-01	3.613	24.93	558.9
195	33.000	.53500-01	115.00	.4164	.6732	.5221	.9469	.2031-01	.1575-01	2.370	16.60	531.0
195	33.200	.48300-01	113.00	.2603	.4046	.3187	.9486	.1220-01	.9613-02	1.585	11.18	517.8
196	33.400	.42800-01	166.00	.6300	1.074	.7920	.9505	.3239-01	.2390-01	3.311	23.01	545.5
195	33.500	.40100-01	99.000	.6112	1.027	.7610	.9514	.3099-01	.2296-01	3.275	22.80	542.0
195	33.600	.38300-01	97.000	.4922	.8086	.6060	.9520	.2439-01	.1828-01	2.731	19.08	535.7
195	33.700	.36700-01	96.000	.4003	.6506	.4897	.9525	.1962-01	.1477-01	2.260	15.81	532.6
195	33.900	.33800-01	95.000	.3082	.4904	.3725	.9535	.1479-01	.1124-01	1.800	12.65	526.0
196	34.700	.21010	240.00	.6338-01	.9536-01	.9011-01	.9116	.2877-02	.2719-02	.4103	2.916	505.1
196	34.700	.18700	227.00	.1185	.1853	.1715	.9143	.5590-02	.5174-02	.7144	5.036	519.9
196	34.900	.16480	212.00	.1441	.2369	.2126	.9178	.7149-02	.6416-02	.7992	5.583	535.9
195	35.100	.10000+00	148.00	.2233	.3679	.3041	.9324	.1110-01	.9172-02	1.233	8.607	536.7
196	35.200	.23900-01	161.00	.3157	.4823	.3711	.9568	.1455-01	.1120-01	1.985	14.06	511.3
195	35.300	.92500-01	145.00	.3020	.4852	.4013	.9345	.1463-01	.1210-01	1.736	12.17	529.1
195	35.300	.22100-01	160.00	.3348	.5149	.3943	.9569	.1553-01	.1189-01	2.078	14.70	513.9
196	35.400	.18800	231.00	.8823-01	.1367	.1269	.9140	.4125-02	.3829-02	.5403	3.815	516.7
196	35.500	.12100	196.00	.2389	.3944	.3356	.9269	.1190-01	.1013-01	1.315	9.182	537.2
196	35.600	.16580	216.00	.1334	.2174	.1958	.9175	.6558-02	.5908-02	.7502	5.249	533.3
195	35.800	.80600-01	138.00	.2700	.4398	.3553	.9378	.1327-01	.1072-01	1.518	10.62	533.3
196	35.900	.21310	247.00	.6374-01	.9499-01	.9004-01	.9112	.2866-02	.2717-02	.4208	2.998	500.9
196	36.000	.19040	235.00	.8467-01	.1298	.1210	.9137	.3916-02	.3650-02	.5288	3.743	512.7
196	36.200	.16810	220.00	.1267	.2034	.1844	.9170	.6137-02	.5504-02	.7301	5.121	528.7
195	36.200	.72400-01	135.00	.3651	.5838	.4705	.9402	.1761-01	.1419-01	2.116	14.85	527.5
196	36.300	.12200	200.00	.2065	.3416	.2911	.9265	.1031-01	.8782-02	1.133	7.909	537.7
195	36.600	.65700-01	131.00	.2375	.3698	.2994	.9422	.1115-01	.9032-02	1.442	10.17	518.4
196	36.700	.18700	226.00	.1121	.1735	.1611	.9140	.5236-02	.4862-02	.6881	4.860	516.3
196	36.900	.16480	211.00	.1510	.2460	.2216	.9175	.7422-02	.6687-02	.8491	5.940	533.3
196	36.900	.10110	187.00	.3099	.5078	.4222	.9318	.1532-01	.1274-01	1.727	12.07	535.0
195	37.000	.60400-01	123.00	.4410	.7363	.5693	.9438	.2221-01	.1717-01	2.387	16.64	540.2
196	37.000	.12440	204.00	.1886	.3079	.2647	.9258	.9291-02	.7986-02	1.057	7.392	533.9
195	37.100	.58600-01	119.00	.4509	.7343	.5742	.9444	.2215-01	.1732-01	2.536	17.74	533.2
196	37.200	.21310	246.00	.7063-01	.1055	.9998-01	.9111	.3182-02	.3017-02	.4643	3.306	501.8
196	37.600	.16810	219.00	.1293	.2070	.1880	.9168	.6245-02	.5672-02	.7483	5.251	527.9
195	37.800	.10270	150.00	.2632	.4269	.3577	.9311	.1288-01	.1079-01	1.491	10.44	532.0
196	37.900	.12100	195.00	.2428	.3897	.3359	.9265	.1176-01	.1014-01	1.399	9.811	528.7
195	38.000	.80300-01	179.00	.4655	.7607	.6148	.9374	.2295-01	.1855-01	2.604	18.21	534.3
195	38.500	.46800-01	112.00	.2727	.4242	.3349	.9480	.1280-01	.1010-01	1.657	11.69	518.2
196	38.600	.12440	203.00	.2170	.3526	.3041	.9255	.1064-01	.9176-02	1.226	8.580	532.5
196	38.700	.10000+00	185.00	.3525	.5737	.4785	.9317	.1731-01	.1444-01	1.985	13.89	533.0
195	38.900	.82200-01	141.00	.2661	.4272	.3496	.9367	.1289-01	.1054-01	1.532	10.74	528.8
195	39.300	.41600-01	104.00	.4200	.6950	.5247	.9496	.2096-01	.1583-01	2.304	16.08	537.8
196	39.500	.10270	190.00	.3677	.5985	.5015	.9308	.1806-01	.1513-01	2.071	14.49	533.0
196	39.600	.16810	218.00	.1104	.1761	.1603	.9166	.5314-02	.4837-02	.6417	4.505	526.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
196	39.900	.19040	233.00	.8298-01	.1271	.1187	.9133	.3836-02	.3583-02	.5190	3.674	512.4
196	40.100	.79500-01	177.00	.5337	.8685	.7041	.9372	.2621-01	.2125-01	3.007	21.04	533.0
196	40.200	.12440	202.00	.1979	.3218	.2779	.9253	.9710-02	.8384-02	1.117	7.814	532.7
196	40.300	.21310	245.00	.5473-01	.8163-01	.7747-01	.9109	.2463-02	.2337-02	.3606	2.568	501.3
195	41.100	.82200-01	142.00	.3326	.5447	.4425	.9362	.1643-01	.1335-01	1.855	12.97	534.8
196	41.100	.60700-01	173.00	.4557	.7404	.5841	.9428	.2234-01	.1762-01	2.573	18.01	532.5
196	42.600	.59600-01	172.00	.5168	.8438	.6638	.9429	.2546-01	.2003-01	2.895	20.25	534.0
196	43.200	.42000-01	168.00	.3728	.5972	.4621	.9486	.1802-01	.1394-01	2.154	15.11	528.2
196	43.400	.82200-01	181.00	.2914	.4584	.3805	.9358	.1383-01	.1148-01	1.737	12.23	522.1
195	43.600	.62900-01	128.00	.4639	.7654	.6026	.9416	.2309-01	.1818-01	2.557	17.85	536.9
195	45.000	.22900-01	8.0000	.6864	1.166	.8436	.9547	.3517-01	.2545-01	3.623	25.19	544.7
196	46.100	.62900-01	174.00	.5295	.8710	.6887	.9411	.2628-01	.2078-01	2.932	20.48	536.1
196	47.700	.40800-01	167.00	.3970	.6375	.4939	.9480	.1923-01	.1490-01	2.285	16.02	528.9
195	48.400	.44200-01	109.00	.3127	.5018	.3913	.9467	.1513-01	.1180-01	1.801	12.63	528.7
195	50.000	.19400-01	156.00	.3175	.5864	.3521	.9786	.1769-01	.1062-01	1.503	10.35	562.7
195	51.000	.12100-01	154.00	.9375	1.901	1.053	.9784	.5733-01	.3175-01	4.016	27.42	577.7
195	51.000	.17600-01	155.00	.7226	1.285	.7980	.9784	.3877-01	.2407-01	3.582	24.76	555.3
196	51.900	.44800-01	170.00	.2417	.3764	.2999	.9457	.1136-01	.9050-02	1.467	10.35	518.5
196	53.200	.24700-01	163.00	.3529	.5525	.4259	.9525	.1667-01	.1285-01	2.121	14.95	520.4
196	65.200	.24700-01	162.00	.4600	.7399	.5670	.9501	.2232-01	.1711-01	2.640	18.51	529.5
194	90.000	.91000-02	44.000	.1779	.2865	.2232	.9464	.8642-02	.6733-02	1.019	7.141	529.8
194	90.000	.11100-01	45.000	.3285	.5413	.4161	.9464	.1633-01	.1255-01	1.814	12.67	536.6
194	90.000	.13100-01	46.000	.6149	1.068	.7956	.9464	.3220-01	.2400-01	3.148	21.82	549.9
194	90.000	.17000-01	48.000	.6149	1.028	.7837	.9464	.3102-01	.2364-01	3.320	23.13	540.7
194	90.000	.20900-01	50.000	.5335	.8809	.6764	.9464	.2657-01	.2040-01	2.937	20.50	537.2
194	90.000	.24900-01	52.000	.4837	.7860	.6106	.9460	.2371-01	.1842-01	2.730	19.11	532.5
194	90.000	.26900-01	53.000	.5001	.8126	.6335	.9452	.2451-01	.1911-01	2.823	19.76	532.5
194	90.000	.28800-01	54.000	.4854	.7831	.6150	.9446	.2362-01	.1855-01	2.772	19.42	530.4
194	90.000	.32800-01	55.000	.3182	.4920	.3981	.9432	.1484-01	.1201-01	1.955	13.81	516.0
194	90.000	.36700-01	56.000	.3765	.5960	.4792	.9418	.1798-01	.1445-01	2.219	15.60	524.3
194	90.000	.40600-01	57.000	.3679	.5899	.4740	.9405	.1779-01	.1430-01	2.121	14.88	528.5
194	90.000	.48500-01	58.000	.3669	.5892	.4791	.9379	.1777-01	.1445-01	2.111	14.80	528.9
194	90.000	.56400-01	59.000	.3032	.4876	.4012	.9354	.1471-01	.1210-01	1.740	12.20	529.4
194	90.000	.76100-01	60.000	.1963	.3169	.2680	.9297	.9557-02	.8083-02	1.120	7.847	530.5
194	90.000	.95800-01	61.000	.1355	.2192	.1903	.9246	.6611-02	.5739-02	.7703	5.395	531.2
194	90.000	.11550	62.000	.9408-01	.1529	.1358	.9202	.4613-02	.4095-02	.5307	3.714	532.7
194	135.00	.19000-01	49.000	.6434	1.072	.8297	.9438	.3233-01	.2503-01	3.493	24.35	539.7
194	135.00	.22900-01	51.000	.5282	.8639	.6757	.9438	.2606-01	.2038-01	2.950	20.62	534.5
194	180.00	.91000-02	23.000	.2410	.3763	.2964	.9480	.1135-01	.8941-02	1.455	10.26	519.5
194	180.00	.11100-01	24.000	.3976	.6616	.5019	.9480	.1996-01	.1514-01	2.166	15.10	539.2
194	180.00	.13100-01	25.000	.6923	1.214	.8916	.9480	.3662-01	.2689-01	3.496	24.20	552.2
194	180.00	.15000-01	26.000	.7024	1.227	.9033	.9480	.3701-01	.2725-01	3.565	24.69	551.4
194	180.00	.17000-01	27.000	.6352	1.063	.8034	.9480	.3206-01	.2423-01	3.427	23.87	540.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K003)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
194	180.00	.19000-01	28.000	.5843	.9664	.7356	.9480	.2915-01	.2219-01	3.208	22.39	537.6
194	180.00	.20900-01	29.000	.5720	.9395	.7181	.9480	.2834-01	.2166-01	3.175	22.18	535.7
194	180.00	.28800-01	32.000	.4856	.7809	.6099	.9461	.2355-01	.1840-01	2.788	19.55	529.3
194	180.00	.32800-01	33.000	.4317	.6807	.5412	.9447	.2053-01	.1632-01	2.561	18.02	523.0
194	180.00	.36700-01	34.000	.4087	.6501	.5175	.9433	.1961-01	.1561-01	2.389	16.78	525.9
194	180.00	.48500-01	36.000	.3347	.5290	.4305	.9394	.1596-01	.1299-01	1.978	13.91	523.7
194	180.00	.56400-01	37.000	.2949	.4645	.3832	.9369	.1401-01	.1156-01	1.754	12.34	522.5
194	180.00	.76100-01	38.000	.2196	.3432	.2921	.9311	.1035-01	.8810-02	1.323	9.329	519.8
194	180.00	.95800-01	39.000	.1597	.2468	.2163	.9259	.7444-02	.6523-02	.9823	6.940	515.7
194	180.00	.11550	40.000	.1177	.1819	.1629	.9213	.5486-02	.4915-02	.7239	5.114	515.8
194	180.00	.18450	42.000	.3806-01	.5679-01	.5388-01	.9110	.1713-02	.1625-02	.2505	1.784	501.5
194	225.00	.22900-01	30.000	.5892	.9709	.7087	.9571	.2928-01	.2138-01	3.253	22.71	536.6
194	270.00	.91000-02	63.000	.6941	1.251	.8168	.9662	.3772-01	.2464-01	3.385	23.36	558.0
194	270.00	.11100-01	64.000	.7198	1.278	.8444	.9662	.3855-01	.2547-01	3.577	24.73	554.9
194	270.00	.13100-01	65.000	.7067	1.231	.8255	.9662	.3713-01	.2490-01	3.602	24.96	550.7
194	270.00	.17000-01	67.000	.7035	1.224	.8215	.9662	.3692-01	.2478-01	3.592	24.89	550.4
194	270.00	.20900-01	69.000	.6830	1.178	.7959	.9662	.3552-01	.2401-01	3.529	24.48	548.4
194	270.00	.24900-01	71.000	.6011	1.030	.7011	.9658	.3107-01	.2115-01	3.133	21.76	546.9
194	270.00	.28800-01	73.000	.5163	.8714	.6040	.9643	.2628-01	.1822-01	2.750	19.13	543.1
194	270.00	.36700-01	75.000	.5049	.8499	.5984	.9615	.2564-01	.1805-01	2.699	18.79	542.4
194	270.00	.48500-01	77.000	.4345	.7302	.5252	.9574	.2203-01	.1584-01	2.329	16.22	541.9
194	270.00	.56400-01	78.000	.3773	.6385	.4631	.9547	.1926-01	.1397-01	2.002	13.93	543.7
194	270.00	.95800-01	80.000	.2367	.4098	.3134	.9420	.1236-01	.9454-02	1.217	8.438	549.3
194	270.00	.11550	81.000	.1906	.3271	.2596	.9363	.9866-02	.7830-02	.9914	6.883	547.2
194	315.00	.19000-01	68.000	.6263	1.062	.7161	.9694	.3203-01	.2160-01	3.315	23.05	544.2
194	315.00	.22900-01	70.000	.5509	.9552	.6328	.9694	.2881-01	.1909-01	2.826	19.59	549.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
29	3.010	-4.982	2.989	36.12	721.7	.9687	256.6	31.02	2364.	.1019-01	.2050-06	3.651
30	3.010	-4.980	2.986	36.13	721.7	.9690	256.6	31.00	2364.	.1019-01	.2050-06	3.652
31	3.010	-4.978	2.984	36.06	721.7	.9671	256.6	31.00	2364.	.1017-01	.2050-06	3.645

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
29	.4398-01	.7584-02
30	.4399-01	.7583-02
31	.4394-01	.7590-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
30	.00000	.91000-02	1.0000	.7916	2.171	.9027	.9806	.9548-01	.3971-01	3.955	26.57	608.1
30	.00000	.11100-01	2.0000	.9256	2.486	1.054	.9806	.1094	.4635-01	4.680	31.46	606.7
30	.00000	.15000-01	4.0000	.7642	1.895	.8642	.9806	.8337-01	.3801-01	4.065	27.41	600.7
30	.00000	.17000-01	5.0000	.7618	1.828	.8589	.9806	.8041-01	.3778-01	4.146	28.00	597.9
30	.00000	.19000-01	6.0000	.7293	1.704	.8202	.9806	.7496-01	.3608-01	4.047	27.37	595.5
30	.00000	.24900-01	9.0000	.6153	1.290	.6867	.9801	.5675-01	.3021-01	3.733	25.41	583.7
30	.00000	.26900-01	10.000	.5857	1.217	.6561	.9793	.5354-01	.2886-01	3.583	24.40	582.6
29	.00000	.32800-01	12.000	.5776	1.168	.6534	.9770	.5135-01	.2874-01	3.627	24.75	578.9
29	.00000	.36700-01	13.000	.5284	1.030	.5998	.9756	.4528-01	.2638-01	3.445	23.58	573.4
29	.00000	.40600-01	14.000	.5540	1.116	.6371	.9741	.4907-01	.2802-01	3.492	23.84	578.3
29	.00000	.48500-01	15.000	.5055	.9775	.5871	.9712	.4299-01	.2582-01	3.323	22.75	572.2
29	.00000	.56400-01	16.000	.4589	.8788	.5403	.9685	.3865-01	.2376-01	3.048	20.89	570.6
29	.00000	.76100-01	17.000	.3928	.7249	.4755	.9621	.3189-01	.2091-01	2.721	18.72	564.1
29	.00000	.11550	19.000	.2716	.4945	.3491	.9512	.2175-01	.1531-01	1.912	13.17	561.6
29	.00000	.16480	20.000	.1792	.3109	.2382	.9416	.1367-01	.1047-01	1.343	9.302	551.3
29	.00000	.21400	22.000	.1240	.1966	.1623	.9361	.8648-02	.7138-02	1.065	7.481	526.3
31	2.0000	.24700-01	165.00	.5474	1.069	.6067	.9800	.4696-01	.2666-01	3.559	24.35	573.7
30	9.0000	.15000-01	157.00	.7258	1.742	.8238	.9796	.7562-01	.3624-01	3.950	26.67	598.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
30	9.0000	.17600-01	158.00	.6681	1.482	.7523	.9796	.6520-01	.3309-01	3.861	26.18	590.3
31	9.8000	.24700-01	164.00	.5377	1.078	.6007	.9791	.4737-01	.2640-01	3.402	23.23	577.7
30	10.000	.22900-01	88.000	.5724	1.191	.6407	.9795	.5240-01	.2818-01	3.497	23.81	582.8
30	10.000	.26900-01	90.000	.5406	1.096	.6078	.9782	.4822-01	.2674-01	3.386	23.10	579.3
30	10.000	.34700-01	94.000	.5559	1.151	.6376	.9752	.5061-01	.2805-01	3.413	23.25	582.1
30	12.000	.17600-01	152.00	1.169	-54.07	1.348	.9870	-2.378	.5928-01	3.631	23.85	651.0
30	12.000	.12100-01	151.00	.9043	-5.239	1.067	.9870	-.2304	.4693-01	2.448	16.00	660.1
30	13.000	.19400-01	153.00	1.227	-73.26	1.414	.9870	-3.222	.6220-01	3.831	25.16	650.7
31	14.600	.44200-01	169.00	.5149	.9836	.5971	.9711	.4322-01	.2624-01	3.426	23.49	570.2
30	18.500	.44200-01	106.00	.5785	1.171	.6796	.9706	.5149-01	.2989-01	3.630	24.77	579.0
31	19.600	.62900-01	175.00	.5116	.9850	.6184	.9641	.4328-01	.2717-01	3.375	23.12	571.5
30	19.800	.40800-01	101.00	.6793	1.491	.8034	.9716	.6557-01	.3534-01	3.962	26.88	589.1
30	20.000	.24900-01	89.000	.4674	.9350	.5264	.9776	.4113-01	.2315-01	2.967	20.26	577.4
30	20.000	.28800-01	91.000	.4834	.9582	.5484	.9761	.4215-01	.2412-01	3.097	21.16	576.0
30	20.000	.32800-01	93.000	.5481	1.161	.6331	.9746	.5106-01	.2785-01	3.296	22.42	584.9
31	21.800	.82200-01	182.00	.4717	.9064	.5911	.9579	.3983-01	.2537-01	3.119	21.37	571.2
30	22.200	.62900-01	125.00	.5609	1.179	.6927	.9637	.5187-01	.3047-01	3.396	23.11	584.0
30	22.400	.44200-01	107.00	.5558	1.127	.6553	.9700	.4959-01	.2882-01	3.479	23.74	579.3
31	22.600	.10270	192.00	.3406	.6264	.4353	.9523	.2752-01	.1913-01	2.367	16.28	563.5
30	23.000	.42000-01	105.00	.6997	1.595	.8372	.9707	.7016-01	.3683-01	3.957	26.79	593.1
30	23.400	.59600-01	120.00	.6686	1.485	.8300	.9646	.6534-01	.3651-01	3.859	26.17	590.4
31	23.900	.21310	250.00	.1079	.1689	.1406	.9356	.7421-02	.6180-02	.9484	6.678	521.7
30	24.100	.82200-01	139.00	.5237	1.058	.6663	.9576	.4652-01	.2931-01	3.293	22.47	578.7
31	24.400	.19040	238.00	.1333	.2153	.1751	.9372	.9460-02	.7696-02	1.109	7.764	532.3
31	24.400	.12440	207.00	.2695	.4993	.3562	.9471	.2194-01	.1565-01	1.857	12.77	564.9
31	24.800	.16810	223.00	.1839	.3141	.2452	.9397	.1380-01	.1077-01	1.408	9.772	547.5
30	24.900	.62900-01	126.00	.6271	1.397	.7857	.9633	.6143-01	.3456-01	3.613	24.49	590.7
31	25.000	.79500-01	178.00	.5279	1.038	.6642	.9583	.4562-01	.2919-01	3.406	23.29	574.9
31	25.300	.10270	191.00	.4092	.7677	.5275	.9520	.3373-01	.2318-01	2.779	19.08	567.1
31	25.300	.10000+00	186.00	.4588	.8985	.5972	.9527	.3948-01	.2624-01	2.973	20.34	574.2
30	25.500	.60700-01	124.00	.7825	1.968	.9994	.9640	.8655-01	.4396-01	4.124	27.79	601.9
31	26.000	.12440	206.00	.3053	.5755	.4065	.9470	.2529-01	.1786-01	2.062	14.15	568.0
30	26.300	.82200-01	140.00	.4959	1.006	.6328	.9573	.4424-01	.2784-01	3.105	21.18	579.3
31	26.700	.12100	199.00	.4292	.8761	.5858	.9476	.3850-01	.2574-01	2.669	18.20	580.2
31	26.800	.16810	222.00	.2233	.3855	.2995	.9396	.1694-01	.1316-01	1.684	11.67	550.1
31	27.000	.19040	237.00	.1848	.3027	.2448	.9371	.1330-01	.1075-01	1.504	10.51	536.4
31	27.100	.21310	249.00	.1680	.2684	.2214	.9355	.1179-01	.9729-02	1.424	9.985	528.8
31	27.200	.80300-01	180.00	.6453	1.353	.8295	.9577	.5948-01	.3641-01	3.911	26.62	583.7
30	27.400	.40100-01	98.000	.7431	1.807	.8976	.9708	.7949-01	.3948-01	4.006	27.04	599.1
31	27.400	.16480	215.00	.2532	.4588	.3464	.9400	.2016-01	.1522-01	1.792	12.35	560.6
30	27.600	.41600-01	102.00	.7030	1.798	.8589	.9702	.7906-01	.3778-01	3.665	24.68	603.2
31	27.600	.12440	205.00	.3529	.6814	.4746	.9468	.2994-01	.2086-01	2.322	15.90	572.0
31	27.600	.18700	230.00	.1881	.3147	.2514	.9374	.1383-01	.1105-01	1.482	10.32	542.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
31	27.700	.21010	243.00	.1977	.3262	.2649	.9356	.1434-01	.1164-01	1.592	11.11	538.4
31	27.900	.10110	188.00	.4695	.9491	.6195	.9521	.4170-01	.2722-01	2.947	20.11	578.8
30	28.000	.46800-01	110.00	.3846	.6860	.4469	.9683	.3018-01	.1966-01	2.779	19.19	557.4
31	28.200	.16810	221.00	.2254	.3994	.3062	.9395	.1755-01	.1345-01	1.641	11.34	556.0
31	28.300	.19040	236.00	.1866	.3045	.2467	.9370	.1338-01	.1084-01	1.529	10.68	535.3
31	28.300	.12200	201.00	.3468	.6636	.4636	.9472	.2916-01	.2037-01	2.304	15.79	570.5
30	28.400	.53500-01	114.00	.5119	1.014	.6158	.9659	.4461-01	.2709-01	3.281	22.42	576.0
31	28.400	.21310	248.00	.1666	.2665	.2198	.9354	.1171-01	.9658-02	1.408	9.875	529.3
30	28.700	.58600-01	117.00	.7952	1.916	1.006	.9642	.8428-01	.4424-01	4.315	29.14	598.3
31	28.800	.16580	217.00	.2811	.5180	.3880	.9397	.2276-01	.1705-01	1.949	13.41	563.9
30	28.800	.60400-01	121.00	.8252	2.301	1.076	.9636	.1012	.4735-01	4.084	27.42	609.2
31	29.000	.21110	244.00	.2023	.3326	.2706	.9355	.1461-01	.1189-01	1.637	11.43	537.5
30	29.000	.65700-01	129.00	.3798	.6703	.4549	.9619	.2948-01	.2001-01	2.782	19.23	555.2
30	29.200	.72400-01	133.00	.5122	1.026	.6413	.9598	.4511-01	.2821-01	3.248	22.18	577.5
30	29.300	.79500-01	136.00	.6918	1.712	.9250	.9577	.7532-01	.4069-01	3.684	24.85	600.6
30	29.600	.92500-01	143.00	.4201	.8320	.5438	.9541	.3659-01	.2392-01	2.694	18.41	575.9
30	29.700	.10000+00	146.00	.5346	1.207	.7290	.9521	.5310-01	.3207-01	3.046	20.63	592.1
31	29.900	.12100	198.00	.4416	.9358	.6120	.9473	.4112-01	.2689-01	2.652	18.04	585.0
31	30.200	.16480	214.00	.3039	.5739	.4241	.9398	.2522-01	.1864-01	2.049	14.06	568.2
31	30.200	.18700	229.00	.2548	.4429	.3473	.9373	.1946-01	.1526-01	1.902	13.17	551.8
31	30.300	.21010	242.00	.2053	.3483	.2792	.9355	.1531-01	.1227-01	1.585	11.01	545.9
30	31.500	.91000-02	82.000	.7256	1.940	.8518	.9763	.8534-01	.3747-01	3.679	24.74	606.4
30	31.500	.11100-01	83.000	.9131	2.722	1.084	.9763	.1197	.4766-01	4.362	29.22	613.1
30	31.500	.14200-01	84.000	1.093	-10.51	1.276	.9870	-.4624	.5611-01	3.142	20.57	656.3
30	31.500	.16000-01	85.000	1.113	25.07	1.271	.9870	1.103	.5590-01	3.697	24.34	646.2
30	31.500	.17600-01	86.000	.9918	8.086	1.120	.9870	.3557	.4924-01	3.589	23.71	639.4
30	31.500	.19400-01	87.000	.9459	3.577	1.046	.9870	.1573	.4600-01	4.082	27.19	623.6
31	32.100	.21010	241.00	.1629	.2715	.2195	.9355	.1193-01	.9646-02	1.291	8.988	541.3
31	32.200	.16480	213.00	.2656	.4951	.3688	.9396	.2176-01	.1621-01	1.817	12.49	566.0
31	32.200	.17860	224.00	.2138	.3584	.2851	.9380	.1575-01	.1253-01	1.680	11.69	542.8
31	32.200	.18700	228.00	.1645	.2739	.2196	.9372	.1203-01	.9650-02	1.306	9.100	541.0
31	32.300	.12100	197.00	.3887	.7796	.5293	.9470	.3426-01	.2326-01	2.459	16.79	577.7
31	32.300	.12300	194.00	.3180	.6369	.4340	.9466	.2799-01	.1907-01	2.014	13.75	577.5
31	32.300	.12730	208.00	.2117	.3663	.2745	.9458	.1610-01	.1206-01	1.590	11.02	550.7
31	32.300	.13420	209.00	.2499	.4759	.3395	.9444	.2091-01	.1492-01	1.669	11.45	569.7
30	32.400	.10000+00	147.00	.3832	.7829	.5082	.9518	.3444-01	.2235-01	2.382	16.24	580.3
31	32.400	.10110	184.00	.4132	.8298	.5460	.9515	.3646-01	.2399-01	2.610	17.82	577.9
31	32.400	.10630	193.00	.2293	.3817	.2851	.9503	.1677-01	.1257-01	1.821	12.69	540.9
31	32.500	.85800-01	183.00	.2691	.4586	.3297	.9555	.2015-01	.1449-01	2.064	14.33	547.1
30	32.600	.79500-01	137.00	.6193	1.438	.8185	.9572	.6323-01	.3600-01	3.454	23.36	594.9
31	32.600	.80800-01	176.00	.5686	1.203	.7360	.9569	.5286-01	.3234-01	3.420	23.26	584.8
30	32.700	.67400-01	132.00	.3402	.6086	.4113	.9608	.2677-01	.1809-01	2.449	16.90	558.0
30	32.700	.72400-01	134.00	.4704	.9119	.5858	.9593	.4011-01	.2577-01	3.084	21.12	572.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
30	32.800	.65700-01	130.00	.2915	.4968	.3470	.9613	.2185-01	.1526-01	2.240	15.55	547.0
31	32.800	.16680	210.00	.2148	.3807	.2920	.9393	.1673-01	.1283-01	1.564	10.80	556.0
31	32.800	.18880	225.00	.1457	.2306	.1897	.9370	.1013-01	.8337-02	1.257	8.829	525.5
30	32.900	.58600-01	118.00	.6370	1.426	.7978	.9636	.6274-01	.3509-01	3.654	24.77	591.3
30	32.900	.60400-01	122.00	.4982	1.012	.6134	.9630	.4452-01	.2698-01	3.114	21.24	579.6
31	32.900	.61300-01	171.00	.5987	1.368	.7575	.9627	.6010-01	.3329-01	3.376	22.86	593.3
30	33.000	.53500-01	115.00	.5223	1.013	.6280	.9652	.4456-01	.2762-01	3.422	23.43	572.7
30	33.200	.48300-01	113.00	.3432	.5932	.3987	.9670	.2609-01	.1754-01	2.586	17.92	550.4
31	33.400	.42800-01	166.00	.6268	1.348	.7521	.9689	.5923-01	.3305-01	3.715	25.24	586.8
30	33.500	.40100-01	99.000	.6460	1.385	.7701	.9698	.6094-01	.3387-01	3.842	26.11	586.5
30	33.600	.38300-01	97.000	.5964	1.246	.7051	.9704	.5483-01	.3101-01	3.630	24.71	583.3
30	33.700	.36700-01	96.000	.5246	1.078	.6163	.9710	.4740-01	.2711-01	3.244	22.11	581.1
30	33.900	.33800-01	95.000	.4139	.7837	.4768	.9720	.3447-01	.2097-01	2.785	19.11	568.7
31	34.700	.21010	240.00	.1278	.2113	.1716	.9354	.9283-02	.7539-02	1.026	7.157	539.0
31	34.700	.18700	227.00	.1409	.2387	.1899	.9371	.1049-01	.8343-02	1.091	7.579	545.5
31	34.900	.16480	212.00	.2220	.4068	.3062	.9395	.1788-01	.1346-01	1.550	10.67	562.8
30	35.100	.10000+00	148.00	.3654	.7456	.4855	.9515	.3280-01	.2135-01	2.274	15.51	580.2
31	35.200	.23900-01	161.00	.4268	.7436	.4763	.9756	.3267-01	.2093-01	3.177	21.99	552.3
30	35.300	.92500-01	145.00	.4482	.8791	.5811	.9533	.3867-01	.2556-01	2.903	19.85	574.4
30	35.300	.22100-01	160.00	.4333	.7647	.4843	.9757	.3364-01	.2130-01	3.174	21.94	555.1
31	35.400	.18800	231.00	.1503	.2509	.2012	.9369	.1103-01	.8842-02	1.189	8.282	541.6
31	35.500	.12100	196.00	.3331	.6545	.4512	.9467	.2876-01	.1983-01	2.152	14.71	574.7
31	35.600	.16580	216.00	.2135	.3828	.2919	.9393	.1682-01	.1282-01	1.530	10.56	558.5
30	35.800	.80600-01	138.00	.4479	.8746	.5686	.9565	.3847-01	.2501-01	2.915	19.94	573.7
31	35.900	.21310	247.00	.1164	.1864	.1538	.9352	.8191-02	.6757-02	.9818	6.883	529.6
31	36.000	.19040	235.00	.1384	.2261	.1834	.9367	.9934-02	.8060-02	1.131	7.906	535.6
31	36.200	.16910	220.00	.1910	.3308	.2574	.9390	.1454-01	.1131-01	1.433	9.928	550.9
30	36.200	.72400-01	135.00	.5074	.9815	.6334	.9588	.4317-01	.2786-01	3.334	22.83	572.3
31	36.300	.12200	200.00	.2946	.5666	.3967	.9464	.2490-01	.1743-01	1.946	13.33	571.3
30	36.600	.65700-01	131.00	.3444	.6120	.4157	.9608	.2692-01	.1828-01	2.500	17.26	556.7
31	36.700	.18700	226.00	.1766	.2932	.2357	.9370	.1288-01	.1036-01	1.409	9.820	540.1
31	36.900	.16480	211.00	.2161	.3893	.2960	.9393	.1711-01	.1301-01	1.540	10.62	559.5
31	36.900	.10110	187.00	.4322	.8726	.5742	.9510	.3834-01	.2523-01	2.715	18.53	578.7
30	37.000	.60400-01	123.00	.5764	1.271	.7255	.9624	.5589-01	.3191-01	3.348	22.72	589.6
31	37.000	.12440	204.00	.2621	.4844	.3488	.9458	.2129-01	.1533-01	1.811	12.45	564.4
30	37.100	.58600-01	119.00	.6756	1.441	.8412	.9629	.6337-01	.3700-01	4.039	27.45	585.8
31	37.200	.21310	246.00	.1200	.1925	.1587	.9352	.8460-02	.6975-02	1.010	7.078	530.1
31	37.600	.16810	219.00	.1928	.3327	.2595	.9389	.1462-01	.1140-01	1.454	10.08	550.1
30	37.800	.10270	150.00	.3747	.7261	.4928	.9505	.3194-01	.2168-01	2.458	16.83	572.5
31	37.900	.12100	195.00	.3406	.6371	.4539	.9464	.2800-01	.1994-01	2.323	15.96	566.5
31	38.000	.80300-01	179.00	.6146	1.284	.7961	.9563	.5641-01	.3498-01	3.740	25.46	583.2
30	38.500	.46800-01	112.00	.3743	.6613	.4376	.9667	.2909-01	.1925-01	2.737	18.92	555.4
31	38.600	.12440	203.00	.2817	.5168	.3742	.9457	.2271-01	.1644-01	1.964	13.52	563.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
31	38.700	.10000+00	185.00	.4502	.8856	.5930	.9510	.3892-01	.2606-01	2.904	19.86	574.9
30	38.900	.82200-01	141.00	.4470	.8634	.5687	.9556	.3798-01	.2502-01	2.942	20.15	572.0
30	39.300	.41600-01	104.00	.4784	.9900	.5720	.9683	.4354-01	.2516-01	2.939	20.02	582.0
31	39.500	.10270	190.00	.4595	.8850	.6039	.9503	.3889-01	.2654-01	3.031	20.77	571.6
31	39.600	.16810	218.00	.1676	.2873	.2250	.9387	.1262-01	.9888-02	1.276	8.850	548.4
31	39.900	.19040	233.00	.1529	.2483	.2022	.9365	.1091-01	.8887-02	1.263	8.830	533.8
31	40.100	.79500-01	177.00	.6122	1.223	.7837	.9562	.5376-01	.3444-01	3.886	26.54	577.2
31	40.200	.12440	202.00	.2723	.4941	.3604	.9455	.2171-01	.1584-01	1.923	13.25	560.9
31	40.300	.21310	245.00	.1212	.1933	.1599	.9351	.8494-02	.7027-02	1.031	7.237	528.1
30	41.100	.82200-01	142.00	.4311	.8420	.5513	.9553	.3704-01	.2425-01	2.804	19.18	573.8
31	41.100	.60700-01	173.00	.6302	1.313	.7871	.9617	.5769-01	.3459-01	3.843	26.17	582.9
31	42.300	.10270	189.00	.3437	.6214	.4427	.9499	.2730-01	.1945-01	2.439	16.81	560.2
31	42.600	.59600-01	172.00	.7408	1.624	.9353	.9618	.7136-01	.4110-01	4.320	29.32	589.0
31	43.200	.42000-01	168.00	.4886	.9387	.5787	.9675	.4125-01	.2543-01	3.232	22.15	571.1
31	43.400	.82200-01	181.00	.3678	.6743	.4624	.9550	.2963-01	.2032-01	2.565	17.66	562.9
30	43.600	.62900-01	128.00	.5927	1.182	.7376	.9606	.5197-01	.3244-01	3.775	25.79	576.9
30	45.000	.22900-01	8.0000	.8038	2.006	.9520	.9740	.8824-01	.4187-01	4.257	28.70	601.3
31	46.100	.62900-01	174.00	.6239	1.257	.7803	.9602	.5525-01	.3429-01	3.927	26.80	578.4
31	47.700	.40800-01	167.00	.5247	1.036	.6260	.9672	.4554-01	.2751-01	3.370	23.04	575.5
30	48.400	.44200-01	109.00	.4549	.8839	.5450	.9659	.3888-01	.2397-01	2.975	20.36	573.0
30	50.000	.19400-01	156.00	.8264	4.877	.9264	.9870	.2145	.4075-01	3.159	20.92	634.8
30	51.000	.12100-01	154.00	.9314	14.41	1.060	.9870	.6338	.4664-01	3.161	20.83	644.5
30	51.000	.17600-01	155.00	.8701	4.207	.9701	.9870	.1851	.4267-01	3.482	23.11	630.7
31	51.900	.44800-01	170.00	.3990	.7140	.4715	.9651	.3138-01	.2072-01	2.868	19.79	558.1
31	53.200	.24700-01	163.00	.5082	.9747	.5864	.9722	.4283-01	.2577-01	3.368	23.08	570.9
31	65.200	.24700-01	162.00	.5827	1.194	.6881	.9701	.5245-01	.3023-01	3.611	24.61	580.7
29	90.000	.91000-02	44.000	.6366	1.578	.7948	.9666	.6940-01	.3495-01	3.387	22.84	600.7
29	90.000	.11100-01	45.000	.8009	2.351	1.027	.9666	.1034	.4515-01	3.856	25.84	612.2
29	90.000	.13100-01	46.000	.7891	1.995	.9884	.9666	.8773-01	.4347-01	4.144	27.92	602.3
29	90.000	.17000-01	48.000	.7149	1.623	.8790	.9666	.7138-01	.3866-01	4.055	27.47	592.7
29	90.000	.20900-01	50.000	.6418	1.408	.7841	.9666	.6193-01	.3448-01	3.742	25.39	589.1
29	90.000	.24900-01	52.000	.5982	1.264	.7280	.9662	.5560-01	.3201-01	3.603	24.51	584.7
29	90.000	.26900-01	53.000	.5659	1.153	.6868	.9654	.5071-01	.3021-01	3.527	24.06	579.9
29	90.000	.28800-01	54.000	.5585	1.116	.6778	.9648	.4907-01	.2981-01	3.549	24.24	577.2
29	90.000	.32800-01	55.000	.4935	.9372	.5971	.9634	.4122-01	.2626-01	3.307	22.69	569.3
29	90.000	.36700-01	56.000	.4756	.9013	.5796	.9620	.3964-01	.2549-01	3.197	21.93	568.9
29	90.000	.40600-01	57.000	.4876	.9447	.6020	.9607	.4155-01	.2647-01	3.198	21.90	572.5
29	90.000	.48500-01	58.000	.3928	.7399	.4896	.9582	.3254-01	.2149-01	2.658	18.24	567.8
29	90.000	.56400-01	59.000	.3930	.7223	.4921	.9558	.3177-01	.2164-01	2.736	18.82	563.4
29	90.000	.76100-01	60.000	.3082	.5537	.3949	.9505	.2435-01	.1737-01	2.207	15.22	558.9
29	90.000	.95800-01	61.000	.2344	.4177	.3072	.9460	.1837-01	.1351-01	1.696	11.71	557.2
29	90.000	.11550	62.000	.1983	.3496	.2643	.9423	.1537-01	.1162-01	1.454	10.05	554.9
29	135.00	.19000-01	49.000	.6166	1.314	.7693	.9626	.5778-01	.3383-01	3.687	25.07	585.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
29	135.00	.22900-01	51.000	.5870	1.251	.7323	.9626	.5500-01	.3221-01	3.511	23.87	585.7
29	180.00	.91000-02	23.000	.4032	.7611	.4866	.9636	.3347-01	.2140-01	2.722	18.68	568.2
29	180.00	.11100-01	24.000	.6817	1.811	.8820	.9636	.7966-01	.3879-01	3.469	23.33	606.0
29	180.00	.13100-01	25.000	.7271	1.797	.9284	.9636	.7902-01	.4083-01	3.876	26.14	600.4
29	180.00	.15000-01	26.000	.7279	1.745	.9241	.9636	.7674-01	.4064-01	3.964	26.77	597.9
29	180.00	.17000-01	27.000	.6636	1.500	.8327	.9636	.6595-01	.3662-01	3.778	25.59	592.2
29	180.00	.19000-01	28.000	.6289	1.402	.7869	.9636	.6164-01	.3461-01	3.620	24.54	590.8
29	180.00	.20900-01	29.000	.6265	1.346	.7780	.9636	.5921-01	.3421-01	3.719	25.27	586.7
29	180.00	.28800-01	32.000	.5417	1.087	.6704	.9617	.4781-01	.2948-01	3.427	23.39	577.8
29	180.00	.32800-01	33.000	.5056	.9602	.6223	.9604	.4223-01	.2737-01	3.390	23.25	569.2
29	180.00	.36700-01	34.000	.4987	.9833	.6246	.9591	.4324-01	.2747-01	3.212	21.96	575.2
29	180.00	.56400-01	37.000	.3833	.7094	.4885	.9532	.3120-01	.2148-01	2.647	18.20	564.7
29	180.00	.76100-01	38.000	.3156	.5654	.4094	.9481	.2486-01	.1800-01	2.268	15.65	558.3
29	180.00	.95800-01	39.000	.2468	.4289	.3238	.9440	.1886-01	.1424-01	1.844	12.77	551.7
29	180.00	.11550	40.000	.1803	.3134	.2411	.9406	.1378-01	.1060-01	1.347	9.329	551.8
29	180.00	.18450	42.000	.8565-01	.1411	.1152	.9348	.6204-02	.5065-02	.6920	4.829	538.0
29	225.00	.22900-01	30.000	.6423	1.358	.7667	.9692	.5974-01	.3372-01	3.868	26.31	584.8
29	270.00	.91000-02	63.000	.7340	1.966	.8583	.9769	.8647-01	.3775-01	3.718	24.99	606.5
29	270.00	.11100-01	64.000	.8714	2.291	1.017	.9769	.1008	.4473-01	4.463	30.03	605.2
29	270.00	.13100-01	65.000	.8130	1.971	.9407	.9769	.8667-01	.4137-01	4.392	29.65	598.8
29	270.00	.17000-01	67.000	.7205	1.717	.8321	.9769	.7551-01	.3659-01	3.940	26.62	597.3
29	270.00	.20900-01	69.000	.7393	1.691	.8498	.9769	.7435-01	.3737-01	4.170	28.23	593.4
29	270.00	.24900-01	71.000	.6540	1.433	.7504	.9764	.6303-01	.3300-01	3.818	25.91	588.9
29	270.00	.28800-01	73.000	.6155	1.282	.7079	.9749	.5637-01	.3113-01	3.758	25.59	582.8
29	270.00	.36700-01	75.000	.5791	1.191	.6767	.9719	.5238-01	.2976-01	3.577	24.38	581.2
29	270.00	.46500-01	77.000	.4775	.9233	.5657	.9677	.4060-01	.2488-01	3.139	21.49	572.2
29	270.00	.56400-01	78.000	.4705	.9023	.5650	.9650	.3968-01	.2485-01	3.120	21.38	570.9
29	270.00	.95800-01	80.000	.2999	.5435	.3790	.9534	.2390-01	.1667-01	2.123	14.63	560.7
29	270.00	.11550	81.000	.2584	.4667	.3351	.9487	.2052-01	.1474-01	1.837	12.66	560.0
29	315.00	.19000-01	68.000	.6940	1.461	.7668	.9819	.6427-01	.3372-01	4.194	28.54	584.2
29	315.00	.22900-01	70.000	.6960	1.560	.7735	.9819	.6862-01	.3402-01	3.988	27.03	591.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
96	4.020	-5.013	3.008	64.95	742.7	.4165	175.5	31.02	2611.	.6406-02	.1412-06	3.681
97	4.020	-4.962	2.980	64.87	741.7	.4160	175.2	31.04	2609.	.6407-02	.1410-06	3.684
98	4.020	-4.956	2.974	64.86	739.7	.4159	174.8	31.02	2605.	.6423-02	.1406-06	3.698

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
96	.3874-01	.9607-02
97	.3871-01	.9605-02
98	.3868-01	.9589-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
97	.00000	.91000-02	1.0000	.6210	1.244	.7242	.9715	.4813-01	.2803-01	3.560	24.10	593.5
97	.00000	.15000-01	4.0000	.7431	1.475	.8653	.9715	.5709-01	.3349-01	4.299	29.12	592.2
97	.00000	.17000-01	5.0000	.7105	1.360	.8223	.9715	.5263-01	.3183-01	4.272	29.03	586.3
97	.00000	.19000-01	6.0000	.6842	1.296	.7904	.9715	.5017-01	.3059-01	4.161	28.30	584.6
97	.00000	.24900-01	9.0000	.5751	1.038	.6605	.9710	.4019-01	.2556-01	3.701	25.30	575.4
97	.00000	.26900-01	10.000	.5253	.9266	.6030	.9703	.3587-01	.2334-01	3.482	23.87	570.4
96	.00000	.32800-01	12.000	.5188	1.026	.6160	.9681	.3976-01	.2386-01	3.018	20.44	592.5
96	.00000	.36700-01	13.000	.4810	.9179	.5718	.9666	.3556-01	.2215-01	2.908	19.76	586.6
96	.00000	.40600-01	14.000	.4987	.9795	.6014	.9652	.3794-01	.2330-01	2.923	19.81	591.4
96	.00000	.48500-01	15.000	.4457	.8508	.5430	.9624	.3296-01	.2103-01	2.693	18.30	586.7
96	.00000	.56400-01	16.000	.4100	.7725	.5059	.9596	.2993-01	.1960-01	2.513	17.10	584.4
96	.00000	.76100-01	17.000	.3188	.5792	.4040	.9531	.2244-01	.1565-01	2.040	13.93	577.5
96	.00000	.95800-01	18.000	.2617	.4669	.3409	.9472	.1809-01	.1321-01	1.714	11.73	573.7
96	.00000	.11550	19.000	.2144	.3744	.2854	.9418	.1450-01	.1106-01	1.443	9.899	568.9
96	.00000	.16480	20.000	.1341	.2277	.1871	.9311	.8822-02	.7249-02	.9380	6.459	562.1
96	.00000	.21400	22.000	.7391-01	.1230	.1059	.9244	.4766-02	.4101-02	.5327	3.679	556.6
98	2.0000	.24700-01	165.00	.4868	.8711	.5585	.9709	.3370-01	.2161-01	3.157	21.62	572.0
97	9.0000	.15000-01	157.00	.7322	1.437	.8559	.9705	.5563-01	.3313-01	4.285	29.06	590.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
97	9.0000	.17600-01	158.00	.6472	1.191	.7478	.9705	.4609-01	.2894-01	4.070	27.77	579.2
98	9.8000	.24700-01	164.00	.4945	.8914	.5707	.9700	.3448-01	.2208-01	3.178	21.75	573.5
97	10.000	.22900-01	88.000	.5396	.9692	.6210	.9704	.3751-01	.2404-01	3.495	23.90	574.3
97	10.000	.26900-01	90.000	.4969	.8648	.5720	.9691	.3347-01	.2214-01	3.353	23.02	567.3
97	10.000	.34700-01	94.000	.5285	.9278	.6184	.9662	.3591-01	.2394-01	3.525	24.17	569.4
97	12.000	.17600-01	152.00	1.233	3.847	1.352	.9870	.1489	.5234-01	5.208	34.54	632.5
97	12.000	.12100-01	151.00	.9101	4.720	1.017	.9870	.1827	.3936-01	3.237	21.27	649.8
97	13.000	.19400-01	153.00	1.139	3.046	1.240	.9870	.1179	.4800-01	5.224	34.81	623.2
98	14.600	.44200-01	169.00	.5172	.9345	.6223	.9622	.3615-01	.2407-01	3.313	22.67	574.0
97	18.500	.44200-01	106.00	.5481	.9827	.6600	.9616	.3803-01	.2555-01	3.558	24.34	574.0
98	19.600	.62900-01	175.00	.5087	.9206	.6367	.9551	.3561-01	.2463-01	3.253	22.25	574.4
97	19.800	.40800-01	101.00	.6221	1.149	.7506	.9627	.4449-01	.2905-01	3.892	26.54	580.0
97	20.000	.24900-01	89.000	.4378	.7573	.5047	.9686	.2931-01	.1954-01	2.979	20.47	565.9
97	20.000	.28800-01	91.000	.4600	.8036	.5354	.9671	.3110-01	.2072-01	3.089	21.20	568.2
97	20.000	.32800-01	93.000	.5386	.9719	.6362	.9656	.3762-01	.2462-01	3.468	23.71	575.3
98	21.800	.82200-01	182.00	.4464	.7960	.5762	.9487	.3079-01	.2229-01	2.909	19.93	571.2
97	22.200	.62900-01	125.00	.5894	1.082	.7425	.9547	.4188-01	.2874-01	3.716	25.36	578.8
97	22.400	.44200-01	107.00	.5424	.9613	.6531	.9611	.3721-01	.2528-01	3.573	24.48	571.5
98	22.600	.10270	192.00	.2935	.5065	.3863	.9428	.1959-01	.1494-01	1.997	13.74	563.8
97	23.000	.42000-01	105.00	.6567	1.234	.7996	.9618	.4775-01	.3095-01	4.031	27.44	583.1
97	23.400	.59600-01	120.00	.6877	1.302	.8697	.9557	.5038-01	.3366-01	4.186	28.48	584.4
98	23.900	.21310	250.00	.7330-01	.1113	.9915-01	.9236	.4305-02	.3836-02	.6145	4.324	522.9
97	24.100	.82200-01	139.00	.4982	.8897	.6444	.9484	.3444-01	.2494-01	3.250	22.25	573.1
98	24.400	.19040	238.00	.9932-01	.1550	.1354	.9258	.5997-02	.5239-02	.7909	5.532	533.8
98	24.400	.12440	207.00	.2294	.3975	.3122	.9373	.1537-01	.1208-01	1.553	10.68	564.7
98	24.800	.16810	223.00	.1354	.2230	.1880	.9288	.8626-02	.7271-02	.9859	6.829	551.4
97	24.900	.62900-01	126.00	.6379	1.225	.8166	.9544	.4742-01	.3161-01	3.820	25.96	586.9
98	25.000	.79500-01	178.00	.5468	1.011	.7135	.9491	.3911-01	.2760-01	3.408	23.26	578.6
98	25.300	.10270	191.00	.3592	.6319	.4777	.9425	.2444-01	.1848-01	2.382	16.34	568.3
98	25.300	.10000+00	186.00	.3507	.6284	.4681	.9432	.2431-01	.1811-01	2.271	15.55	572.3
97	25.500	.60700-01	124.00	.7780	1.566	1.006	.9550	.6061-01	.3893-01	4.438	30.03	594.3
98	26.000	.12440	206.00	.2698	.4726	.3695	.9371	.1828-01	.1429-01	1.799	12.35	567.3
97	26.300	.82200-01	140.00	.4796	.8652	.6238	.9481	.3349-01	.2414-01	3.089	21.12	575.3
98	26.700	.12100	199.00	.3590	.6634	.5023	.9378	.2566-01	.1943-01	2.239	15.28	578.5
98	26.800	.16810	222.00	.1774	.2935	.2471	.9287	.1135-01	.9560-02	1.284	8.887	552.6
98	27.000	.19040	237.00	.1483	.2344	.2040	.9256	.9066-02	.7891-02	1.155	8.056	538.3
98	27.100	.21310	249.00	.1214	.1872	.1661	.9235	.7240-02	.6423-02	.9896	6.940	529.0
98	27.200	.80300-01	180.00	.6249	1.201	.8236	.9486	.4647-01	.3209-01	3.726	25.33	585.5
97	27.400	.40100-01	98.000	.6234	1.196	.7629	.9618	.4630-01	.2953-01	3.737	25.39	586.8
98	27.400	.16480	215.00	.1997	.3387	.2816	.9291	.1310-01	.1089-01	1.392	9.602	559.4
97	27.600	.41600-01	102.00	.6395	1.243	.7877	.9613	.4809-01	.3049-01	3.783	25.67	588.8
98	27.600	.12440	205.00	.2959	.5246	.4081	.9369	.2029-01	.1579-01	1.943	13.32	570.0
98	27.600	.18700	230.00	.1528	.2437	.2110	.9260	.9426-02	.8163-02	1.172	8.160	541.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
98	27.700	.21010	243.00	.1487	.2330	.2054	.9237	.9013-02	.7947-02	1.177	8.223	535.2
98	27.900	.10110	188.00	.4180	.7752	.5682	.9426	.2999-01	.2198-01	2.595	17.70	579.2
97	28.000	.46800-01	110.00	.3398	.5589	.4042	.9593	.2163-01	.1564-01	2.488	17.22	552.5
98	28.200	.16810	221.00	.2211	.3724	.3115	.9286	.1441-01	.1205-01	1.557	10.75	557.6
98	28.300	.19040	236.00	.1791	.2816	.2457	.9256	.1089-01	.9504-02	1.408	9.834	536.4
98	28.300	.12200	201.00	.2865	.5081	.3941	.9374	.1965-01	.1525-01	1.880	12.89	570.0
97	28.400	.53500-01	114.00	.4557	.7934	.5579	.9570	.3071-01	.2159-01	3.074	21.11	567.4
98	28.400	.21310	248.00	.1365	.2105	.1867	.9234	.8141-02	.7223-02	1.111	7.792	529.2
97	28.700	.58600-01	117.00	.8163	1.617	1.049	.9552	.6257-01	.4059-01	4.733	32.07	591.9
98	28.800	.16580	217.00	.2379	.4106	.3395	.9289	.1598-01	.1313-01	1.619	11.14	563.8
97	28.800	.60400-01	121.00	.8264	1.756	1.088	.9546	.6795-01	.4210-01	4.482	30.21	601.5
98	29.000	.21110	244.00	.1568	.2445	.2160	.9236	.9456-02	.8355-02	1.251	8.748	533.5
97	29.000	.65700-01	129.00	.3753	.6173	.4604	.9529	.2389-01	.1782-01	2.747	19.02	552.5
97	29.200	.72400-01	133.00	.4897	.8602	.6216	.9507	.3329-01	.2406-01	3.263	22.38	569.5
97	29.300	.79500-01	136.00	.6781	1.385	.9196	.9485	.5360-01	.3559-01	3.814	25.78	596.3
97	29.600	.92500-01	143.00	.3312	.5648	.4293	.9447	.2186-01	.1662-01	2.300	15.83	562.3
97	29.700	.10000+00	146.00	.4427	.8176	.6005	.9427	.3165-01	.2324-01	2.771	18.90	579.9
98	29.900	.12100	198.00	.3657	.6878	.5172	.9374	.2661-01	.2001-01	2.234	15.22	581.7
98	30.200	.16480	214.00	.2614	.4582	.3763	.9289	.1773-01	.1456-01	1.742	11.96	567.4
98	30.200	.18700	229.00	.2212	.3606	.3100	.9259	.1395-01	.1199-01	1.637	11.36	548.3
98	30.300	.21010	242.00	.1856	.2946	.2587	.9236	.1140-01	.1001-01	1.435	10.000	539.8
97	31.500	.91000-02	82.000	.5507	1.056	.6528	.9673	.4088-01	.2527-01	3.303	22.44	586.7
97	31.500	.11100-01	83.000	.8215	1.773	.9962	.9673	.6861-01	.3856-01	4.395	29.60	603.4
97	31.500	.14200-01	84.000	1.103	3.586	1.212	.9870	.1388	.4692-01	4.573	30.29	634.6
97	31.500	.16000-01	85.000	1.102	3.058	1.202	.9870	.1184	.4654-01	4.948	32.93	625.7
97	31.500	.17600-01	86.000	1.020	2.661	1.109	.9870	.1030	.4293-01	4.751	31.69	621.4
97	31.500	.19400-01	87.000	.8786	1.988	.9473	.9870	.7695-01	.3667-01	4.520	30.35	608.8
98	32.100	.21010	241.00	.1242	.1954	.1722	.9235	.7558-02	.6660-02	.9751	6.809	536.7
98	32.200	.16480	213.00	.2218	.3830	.3168	.9287	.1481-01	.1225-01	1.508	10.37	563.9
98	32.200	.17860	224.00	.1563	.2521	.2166	.9268	.9751-02	.8377-02	1.178	8.185	544.9
98	32.200	.18700	228.00	.1300	.2080	.1802	.9257	.8045-02	.6969-02	.9923	6.907	542.3
98	32.300	.12100	197.00	.3187	.5786	.4440	.9372	.2238-01	.1718-01	2.030	13.88	575.0
98	32.300	.12300	194.00	.2716	.4972	.3810	.9367	.1923-01	.1474-01	1.713	11.70	576.6
98	32.300	.12730	208.00	.1397	.2310	.1873	.9358	.8937-02	.7243-02	1.011	6.999	552.6
98	32.300	.13420	209.00	.1836	.3178	.2541	.9343	.1229-01	.9831-02	1.244	8.556	564.5
97	32.400	.10000+00	147.00	.3235	.5660	.4296	.9423	.2191-01	.1663-01	2.167	14.87	568.6
98	32.400	.10110	184.00	.3663	.6729	.4977	.9421	.2603-01	.1925-01	2.300	15.71	577.3
98	32.400	.10630	193.00	.1824	.2936	.2352	.9407	.1136-01	.9099-02	1.378	9.583	544.3
98	32.500	.85800-01	183.00	.2243	.3649	.2829	.9462	.1412-01	.1094-01	1.665	11.56	547.7
97	32.600	.79500-01	137.00	.5520	1.095	.7434	.9481	.4238-01	.2878-01	3.195	21.65	592.1
98	32.600	.80800-01	176.00	.5724	1.116	.7681	.9477	.4316-01	.2971-01	3.363	22.84	587.8
97	32.700	.67400-01	132.00	.3151	.5210	.3893	.9518	.2016-01	.1507-01	2.289	15.84	554.0
97	32.700	.72400-01	134.00	.4197	.7260	.5313	.9502	.2810-01	.2056-01	2.855	19.62	565.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
97	32.800	.65700-01	130.00	.2648	.4234	.3224	.9523	.1639-01	.1248-01	2.029	14.12	543.7
98	32.800	.16680	210.00	.1794	.3015	.2527	.9284	.1166-01	.9774-02	1.267	8.746	557.1
98	32.800	.18880	225.00	.1078	.1670	.1465	.9255	.6460-02	.5666-02	.8692	6.088	531.2
97	32.900	.58600-01	118.00	.6927	1.287	.8765	.9546	.4981-01	.3393-01	4.307	29.36	581.0
97	32.900	.60400-01	122.00	.5399	.9928	.6833	.9540	.3843-01	.2645-01	3.398	23.18	579.1
98	32.900	.61300-01	171.00	.6823	1.496	.9120	.9537	.5788-01	.3528-01	3.589	24.16	603.7
97	33.000	.53500-01	115.00	.4725	.8169	.5793	.9563	.3162-01	.2242-01	3.218	22.11	565.7
97	33.200	.48300-01	113.00	.3277	.5314	.3905	.9580	.2057-01	.1511-01	2.453	17.02	548.2
98	33.400	.42800-01	166.00	.5377	1.018	.6631	.9599	.3938-01	.2565-01	3.261	22.20	582.9
97	33.500	.40100-01	99.000	.5671	1.025	.6872	.9609	.3966-01	.2660-01	3.645	24.92	575.6
97	33.600	.38300-01	97.000	.5445	.9715	.6554	.9615	.3760-01	.2537-01	3.556	24.34	572.9
97	33.700	.36700-01	96.000	.5085	.9000	.6090	.9621	.3483-01	.2357-01	3.356	23.00	571.1
97	33.900	.33800-01	95.000	.3914	.6613	.4608	.9631	.2559-01	.1783-01	2.753	18.98	560.0
98	34.700	.21010	240.00	.9815-01	.1531	.1354	.9234	.5923-02	.5236-02	.7821	5.471	533.7
98	34.700	.18700	227.00	.1706	.2752	.2379	.9256	.1065-01	.9202-02	1.284	8.924	545.1
98	34.900	.16480	212.00	.1742	.2981	.2478	.9285	.1153-01	.9586-02	1.199	8.258	561.7
97	35.100	.10000+00	148.00	.3175	.5542	.4220	.9420	.2145-01	.1634-01	2.133	14.64	568.0
98	35.200	.23900-01	161.00	.3251	.5305	.3734	.9666	.2052-01	.1444-01	2.401	16.66	548.7
97	35.300	.92500-01	145.00	.3922	.6719	.5115	.9440	.2601-01	.1980-01	2.705	18.61	563.5
97	35.300	.22100-01	160.00	.3278	.5220	.3741	.9667	.2020-01	.1448-01	2.528	17.60	542.4
98	35.400	.18800	231.00	.1269	.2024	.1758	.9254	.7829-02	.6801-02	.9735	6.780	541.4
98	35.500	.12100	196.00	.2947	.5301	.4096	.9368	.2051-01	.1585-01	1.898	12.99	573.1
98	35.600	.16580	216.00	.1585	.2679	.2241	.9283	.1036-01	.8669-02	1.111	7.666	558.5
97	35.800	.80600-01	138.00	.4115	.7215	.5320	.9473	.2793-01	.2059-01	2.749	18.86	569.1
98	35.900	.21310	247.00	.8301-01	.1274	.1133	.9232	.4926-02	.4384-02	.6822	4.789	527.2
98	36.000	.19040	235.00	.1082	.1700	.1487	.9251	.6577-02	.5751-02	.8511	5.945	536.3
98	36.200	.16910	220.00	.1431	.2367	.2001	.9279	.9157-02	.7741-02	1.035	7.163	552.7
97	36.200	.72400-01	135.00	.4612	.7950	.5847	.9497	.3077-01	.2263-01	3.154	21.68	565.0
98	36.300	.12200	200.00	.2623	.4674	.3637	.9365	.1808-01	.1407-01	1.711	11.72	571.1
97	36.600	.65700-01	131.00	.2778	.4551	.3422	.9517	.1761-01	.1324-01	2.048	14.19	551.2
98	36.700	.18700	226.00	.1387	.2215	.1923	.9255	.8567-02	.7438-02	1.063	7.402	541.6
98	36.900	.16480	211.00	.1674	.2829	.2366	.9284	.1094-01	.9153-02	1.173	8.095	558.5
98	36.900	.10110	187.00	.3795	.6949	.5168	.9415	.2688-01	.1999-01	2.392	16.34	576.7
97	37.000	.60400-01	123.00	.5663	1.075	.7267	.9534	.4160-01	.2813-01	3.436	23.37	584.9
98	37.000	.12440	204.00	.2305	.4008	.3168	.9359	.1550-01	.1226-01	1.552	10.67	565.6
97	37.100	.58600-01	119.00	.6020	1.086	.7574	.9539	.4202-01	.2932-01	3.879	26.52	575.2
98	37.200	.21310	246.00	.9103-01	.1398	.1244	.9231	.5408-02	.4812-02	.7465	5.239	527.7
98	37.600	.16810	219.00	.1429	.2358	.1997	.9278	.9121-02	.7724-02	1.038	7.186	551.9
97	37.800	.10270	150.00	.3166	.5382	.4183	.9409	.2083-01	.1619-01	2.208	15.21	561.5
98	37.900	.12100	195.00	.2854	.4913	.3889	.9365	.1901-01	.1504-01	1.949	13.41	563.2
98	38.000	.80300-01	179.00	.5489	1.028	.7287	.9471	.3978-01	.2819-01	3.368	22.96	581.0
97	38.500	.46800-01	112.00	.3568	.5862	.4276	.9577	.2269-01	.1655-01	2.617	18.12	552.1
98	38.600	.12440	203.00	.2316	.3991	.3172	.9357	.1544-01	.1227-01	1.578	10.86	563.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
98	38.700	.10000+00	185.00	.4032	.7249	.5445	.9415	.2804-01	.2106-01	2.599	17.79	573.0
97	38.900	.82200-01	141.00	.3776	.6445	.4854	.9464	.2495-01	.1879-01	2.617	18.01	562.6
97	39.300	.41600-01	104.00	.4550	.8100	.5535	.9594	.3135-01	.2142-01	2.981	20.41	572.4
98	39.500	.10270	190.00	.3944	.7039	.5335	.9407	.2723-01	.2064-01	2.566	17.58	571.5
98	39.600	.16810	218.00	.1351	.2217	.1883	.9277	.8578-02	.7285-02	.9887	6.852	550.4
98	39.900	.19040	233.00	.1136	.1780	.1560	.9249	.6885-02	.6034-02	.8996	6.287	535.0
98	40.100	.79500-01	177.00	.5478	1.012	.7237	.9470	.3913-01	.2800-01	3.419	23.34	578.3
98	40.200	.12440	202.00	.2115	.3612	.2887	.9355	.1397-01	.1117-01	1.461	10.06	561.1
98	40.300	.21310	245.00	.8213-01	.1256	.1120	.9230	.4859-02	.4331-02	.6788	4.768	526.0
97	41.100	.82200-01	142.00	.4112	.7114	.5324	.9461	.2754-01	.2061-01	2.797	19.22	565.9
98	41.100	.60700-01	173.00	.5777	1.097	.7447	.9526	.4243-01	.2881-01	3.493	23.77	583.4
98	42.300	.10270	189.00	.2897	.4915	.3837	.9403	.1901-01	.1484-01	2.019	13.92	559.5
98	42.600	.59600-01	172.00	.6493	1.244	.8388	.9527	.4812-01	.3245-01	3.886	26.43	584.9
98	43.200	.42000-01	168.00	.4582	.8147	.5595	.9586	.3151-01	.2164-01	2.996	20.53	570.7
98	43.400	.82200-01	181.00	.3471	.6033	.4511	.9457	.2334-01	.1745-01	2.338	16.07	565.5
97	43.600	.62900-01	128.00	.4312	.7575	.5449	.9515	.2932-01	.2109-01	2.873	19.70	569.5
97	45.000	.22900-01	8.0000	.7500	1.484	.9067	.9651	.5743-01	.3509-01	4.354	29.51	591.7
98	46.100	.62900-01	174.00	.5547	1.021	.7140	.9511	.3950-01	.2762-01	3.475	23.72	577.7
98	47.700	.40800-01	167.00	.4920	.8896	.6048	.9583	.3441-01	.2340-01	3.150	21.55	574.2
97	48.400	.44200-01	109.00	.4182	.7177	.5098	.9570	.2778-01	.1973-01	2.877	19.79	563.9
97	50.000	.19400-01	156.00	.7216	1.666	.7790	.9870	.6449-01	.3015-01	3.654	24.51	610.8
97	51.000	.12100-01	154.00	.8744	2.482	.9548	.9870	.9608-01	.3696-01	3.875	25.77	627.2
97	51.000	.17600-01	155.00	.7429	1.652	.8001	.9870	.6393-01	.3097-01	3.876	26.05	606.9
98	51.900	.44800-01	170.00	.3388	.5702	.4121	.9562	.2206-01	.1594-01	2.388	16.49	557.4
98	53.200	.24700-01	163.00	.4017	.6940	.4754	.9632	.2685-01	.1839-01	2.729	18.78	564.0
98	65.200	.24700-01	162.00	.4964	.9028	.6015	.9612	.3492-01	.2327-01	3.155	21.57	575.4
96	90.000	.91000-02	44.000	.3843	.7566	.4854	.9577	.2931-01	.1880-01	2.247	15.23	591.7
96	90.000	.11100-01	45.000	.6002	1.395	.7910	.9577	.5405-01	.3064-01	3.030	20.31	612.3
96	90.000	.13100-01	46.000	.7177	1.726	.9534	.9577	.6685-01	.3693-01	3.534	23.65	615.5
96	90.000	.17000-01	48.000	.5958	1.246	.7646	.9577	.4825-01	.2962-01	3.285	22.16	600.3
96	90.000	.20900-01	50.000	.5564	1.145	.7112	.9577	.4437-01	.2755-01	3.113	21.02	598.3
96	90.000	.24900-01	52.000	.5164	1.041	.6586	.9572	.4034-01	.2551-01	2.947	19.93	595.3
96	90.000	.26900-01	53.000	.4892	.9601	.6221	.9565	.3719-01	.2410-01	2.870	19.45	591.2
96	90.000	.28800-01	54.000	.4887	.9514	.6227	.9558	.3686-01	.2412-01	2.891	19.61	590.0
96	90.000	.32800-01	55.000	.4354	.8158	.5531	.9543	.3160-01	.2143-01	2.686	18.28	583.4
96	90.000	.36700-01	56.000	.4550	.8464	.5814	.9530	.3279-01	.2252-01	2.831	19.28	582.1
96	90.000	.40600-01	57.000	.4188	.7939	.5428	.9517	.3075-01	.2102-01	2.543	17.33	585.5
96	90.000	.48500-01	58.000	.4022	.7525	.5272	.9491	.2915-01	.2042-01	2.486	16.92	583.1
96	90.000	.56400-01	59.000	.3435	.6299	.4537	.9466	.2440-01	.1758-01	2.174	14.83	579.3
96	90.000	.76100-01	60.000	.2601	.4607	.3502	.9409	.1785-01	.1356-01	1.719	11.77	572.1
96	90.000	.95800-01	61.000	.2065	.3592	.2836	.9360	.1392-01	.1099-01	1.397	9.586	568.0
96	90.000	.11550	62.000	.1515	.2586	.2111	.9319	.1002-01	.8175-02	1.053	7.243	563.3
96	135.00	.19000-01	49.000	.5781	1.196	.7608	.9535	.4634-01	.2947-01	3.219	21.73	599.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K004)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
96	135.00	.22900-01	51.000	.5257	1.072	.6888	.9535	.4154-01	.2668-01	2.966	20.04	597.0
96	180.00	.91000-02	23.000	.2378	.4250	.2973	.9546	.1646-01	.1152-01	1.553	10.62	574.1
96	180.00	.11100-01	24.000	.4487	.9158	.5841	.9546	.3547-01	.2263-01	2.531	17.10	597.1
96	180.00	.13100-01	25.000	.6914	1.656	.9404	.9546	.6416-01	.3643-01	3.415	22.85	615.2
96	180.00	.15000-01	26.000	.6950	1.624	.9391	.9546	.6290-01	.3638-01	3.495	23.42	612.8
96	180.00	.17000-01	27.000	.6550	1.427	.8686	.9546	.5529-01	.3365-01	3.482	23.42	605.4
96	180.00	.19000-01	28.000	.5969	1.265	.7854	.9546	.4899-01	.3042-01	3.251	21.91	602.0
96	180.00	.20900-01	29.000	.5619	1.143	.7308	.9546	.4428-01	.2831-01	3.180	21.49	596.6
96	180.00	.28800-01	32.000	.4844	.9457	.6297	.9527	.3663-01	.2439-01	2.857	19.37	590.4
96	180.00	.32800-01	33.000	.4455	.8338	.5762	.9513	.3230-01	.2232-01	2.752	18.73	583.2
96	180.00	.36700-01	34.000	.4221	.8107	.5553	.9500	.3140-01	.2151-01	2.533	17.20	587.7
96	180.00	.48500-01	36.000	.3619	.6732	.4819	.9462	.2608-01	.1867-01	2.252	15.34	582.0
96	180.00	.56400-01	37.000	.3356	.6121	.4498	.9438	.2371-01	.1742-01	2.137	14.59	578.3
96	180.00	.76100-01	38.000	.2509	.4429	.3424	.9384	.1716-01	.1326-01	1.666	11.41	571.3
96	180.00	.95800-01	39.000	.1836	.3169	.2545	.9338	.1227-01	.9858-02	1.256	8.628	566.1
96	180.00	.11550	40.000	.1422	.2434	.2007	.9299	.9429-02	.7773-02	.9832	6.763	564.1
96	180.00	.18450	42.000	.5462-01	.9060-01	.7893-01	.9224	.3510-02	.3058-02	.3957	2.734	555.7
96	225.00	.22900-01	30.000	.5688	1.157	.7127	.9603	.4480-01	.2761-01	3.220	21.77	596.5
96	270.00	.91000-02	63.000	.5933	1.392	.7271	.9679	.5391-01	.2816-01	2.976	19.93	613.2
96	270.00	.11100-01	64.000	.7515	1.884	.9309	.9679	.7298-01	.3606-01	3.597	24.02	619.1
96	270.00	.13100-01	65.000	.7269	1.662	.8869	.9679	.6438-01	.3435-01	3.716	24.93	610.7
96	270.00	.17000-01	67.000	.6051	1.330	.7332	.9679	.5151-01	.2840-01	3.194	21.48	606.4
96	270.00	.20900-01	69.000	.6530	1.416	.7894	.9679	.5485-01	.3058-01	3.486	23.46	604.9
96	270.00	.24900-01	71.000	.6532	1.405	.7910	.9674	.5443-01	.3064-01	3.511	23.64	603.9
96	270.00	.28800-01	73.000	.5440	1.102	.6574	.9659	.4270-01	.2546-01	3.090	20.89	596.0
96	270.00	.36700-01	75.000	.5052	1.008	.6196	.9630	.3905-01	.2400-01	2.914	19.72	593.8
96	270.00	.48500-01	77.000	.4438	.8486	.5523	.9588	.3287-01	.2139-01	2.676	18.18	587.0
96	270.00	.56400-01	78.000	.3997	.7620	.5051	.9561	.2952-01	.1957-01	2.419	16.44	586.5
96	270.00	.95800-01	80.000	.2631	.4672	.3481	.9441	.1810-01	.1349-01	1.732	11.86	572.7
96	270.00	.11550	81.000	.2088	.3638	.2821	.9390	.1409-01	.1093-01	1.409	9.672	568.4
96	315.00	.19000-01	68.000	.6095	1.251	.7080	.9729	.4845-01	.2743-01	3.421	23.10	597.8
96	315.00	.22900-01	70.000	.6053	1.322	.7097	.9729	.5119-01	.2749-01	3.213	21.61	605.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
21	3.010	-5.006	-.1571-01	36.06	719.7	.9671	255.9	-.1800	2361.	.1020-01	.2045-06	3.660
22	3.010	-4.992	-.1740-02	36.15	720.7	.9695	256.3	-.2000-01	2362.	.1021-01	.2047-06	3.661
23	3.010	-4.994	-.5223-02	36.01	721.7	.9658	256.6	-.6000-01	2364.	.1016-01	.2050-06	3.640

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
21	.4392-01	.7577-02
22	.4399-01	.7574-02
23	.4391-01	.7595-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
22	.00000	.91000-02	1.0000	.8530	2.355	.9721	.9808	.1036	.4276-01	4.239	28.48	607.7
22	.00000	.11100-01	2.0000	.9992	2.744	1.138	.9808	.1207	.5007-01	4.982	33.48	607.3
22	.00000	.15000-01	4.0000	.7584	1.880	.8566	.9808	.8270-01	.3768-01	4.030	27.19	599.9
22	.00000	.17000-01	5.0000	.7520	1.806	.8470	.9808	.7944-01	.3726-01	4.085	27.60	597.2
22	.00000	.19000-01	6.0000	.7230	1.698	.8127	.9808	.7469-01	.3575-01	3.991	27.00	595.2
22	.00000	.24900-01	9.0000	.6171	1.300	.6885	.9803	.5719-01	.3028-01	3.723	25.34	583.5
22	.00000	.26900-01	10.000	.6218	1.313	.6971	.9795	.5775-01	.3066-01	3.744	25.48	583.8
21	.00000	.32800-01	12.000	.6024	1.221	.6811	.9772	.5363-01	.2991-01	3.758	25.66	577.6
21	.00000	.36700-01	13.000	.5361	1.049	.6083	.9757	.4606-01	.2672-01	3.466	23.74	572.4
21	.00000	.40600-01	14.000	.5686	1.152	.6539	.9743	.5062-01	.2872-01	3.548	24.22	577.6
21	.00000	.48500-01	15.000	.4989	.9706	.5795	.9714	.4263-01	.2545-01	3.245	22.23	571.6
21	.00000	.56400-01	16.000	.4708	.9099	.5549	.9686	.3996-01	.2437-01	3.084	21.14	570.5
21	.00000	.76100-01	17.000	.4066	.7565	.4928	.9622	.3323-01	.2165-01	2.778	19.11	564.1
21	.00000	.11550	19.000	.2660	.4834	.3405	.9513	.2123-01	.1496-01	1.869	12.88	559.7
21	.00000	.16480	20.000	.1796	.3197	.2414	.9416	.1404-01	.1060-01	1.295	8.950	555.5
21	.00000	.21400	22.000	.1260	.2039	.1666	.9361	.8953-02	.7319-02	1.042	7.301	531.3
23	2.0000	.24700-01	165.00	.5455	1.124	.6069	.9803	.4936-01	.2665-01	3.358	22.88	581.5
22	9.0000	.15000-01	157.00	.7480	1.816	.8439	.9807	.7980 01	.3712-01	4.032	27.23	598.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
22	9.0000	.17600-01	158.00	.6622	1.476	.7411	.9807	.6490-01	.3260-01	3.808	25.83	589.9
23	9.8000	.24700-01	164.00	.5546	1.184	.6199	.9802	.5200-01	.2722-01	3.306	22.47	585.9
22	10.000	.22900-01	88.000	.5878	1.242	.6545	.9806	.5463-01	.2879-01	3.538	24.07	583.8
22	10.000	.26900-01	90.000	.5850	1.205	.6546	.9793	.5299-01	.2879-01	3.605	24.57	580.6
22	10.000	.34700-01	94.000	.5886	1.229	.6715	.9763	.5407-01	.2954-01	3.580	24.38	582.4
22	12.000	.17600-01	152.00	1.152	549.3	1.323	.9870	24.16	.5821-01	3.658	24.06	648.5
22	12.000	.12100-01	151.00	.9585	-6.182	1.128	.9870	-.2719	.4961-01	2.631	17.21	658.3
22	13.000	.19400-01	153.00	1.168	56.47	1.338	.9870	2.484	.5887-01	3.780	24.88	647.1
23	14.600	.44200-01	169.00	.5173	1.056	.6013	.9726	.4638-01	.2640-01	3.213	21.91	580.2
22	18.500	.44200-01	106.00	.5531	1.139	.6445	.9724	.5010-01	.2835-01	3.406	23.23	580.6
23	19.600	.62900-01	175.00	.5010	1.006	.6045	.9659	.4418-01	.2655-01	3.163	21.59	577.9
22	19.800	.40800-01	101.00	.6394	1.415	.7476	.9736	.6226-01	.3288-01	3.697	25.09	589.2
22	20.000	.24900-01	89.000	.5112	1.038	.5700	.9797	.4566-01	.2507-01	3.193	21.79	578.7
22	20.000	.28800-01	91.000	.5094	1.012	.5714	.9782	.4451-01	.2513-01	3.251	22.22	575.6
22	20.000	.32800-01	93.000	.5746	1.234	.6566	.9766	.5426-01	.2888-01	3.409	23.18	585.8
23	21.800	.82200-01	182.00	.4274	.8471	.5340	.9597	.3720-01	.2345-01	2.734	18.68	576.0
22	22.200	.62900-01	125.00	.5709	1.203	.6962	.9658	.5292-01	.3062-01	3.444	23.44	583.5
22	22.400	.44200-01	107.00	.5202	1.037	.6039	.9722	.4563-01	.2656-01	3.308	22.61	576.1
23	22.600	.10270	192.00	.3397	.6544	.4362	.9540	.2874-01	.1916-01	2.238	15.33	571.6
22	23.000	.42000-01	105.00	.6357	1.405	.7460	.9730	.6178-01	.3282-01	3.682	24.98	589.0
22	23.400	.59600-01	120.00	.6809	1.509	.8327	.9668	.6635-01	.3663-01	3.935	26.70	589.3
23	23.900	.21310	250.00	.1264	.2054	.1677	.9360	.9019-02	.7364-02	1.043	7.291	533.9
22	24.100	.82200-01	139.00	.4816	.9578	.6027	.9596	.4213-01	.2651-01	3.071	20.99	575.7
23	24.400	.19040	238.00	.1461	.2469	.1957	.9380	.1084-01	.8593-02	1.135	7.889	544.8
23	24.400	.12440	207.00	.2641	.5138	.3519	.9487	.2256-01	.1545-01	1.722	11.79	573.2
23	24.800	.16810	223.00	.1938	.3502	.2636	.9407	.1538-01	.1158-01	1.375	9.478	560.1
22	24.900	.62900-01	126.00	.6421	1.434	.7928	.9656	.6308-01	.3487-01	3.686	25.00	590.2
23	25.000	.79500-01	178.00	.4998	1.027	.6276	.9604	.4510-01	.2756-01	3.085	21.03	581.1
23	25.300	.10270	191.00	.3578	.7021	.4624	.9538	.3083-01	.2031-01	2.312	15.81	574.5
23	25.300	.10000+00	186.00	.4079	.8331	.5311	.9545	.3659-01	.2332-01	2.533	17.27	580.3
22	25.500	.60700-01	124.00	.7694	1.928	.9650	.9663	.8480-01	.4244-01	4.059	27.37	600.7
23	26.000	.12440	206.00	.2704	.5305	.3615	.9486	.2330-01	.1587-01	1.748	11.95	574.5
22	26.300	.82200-01	140.00	.4209	.8363	.5270	.9595	.3678-01	.2318-01	2.686	18.36	575.6
23	26.700	.12100	199.00	.3461	.7333	.4726	.9493	.3220-01	.2075-01	2.078	14.13	585.0
23	26.800	.16810	222.00	.1960	.3554	.2671	.9406	.1561-01	.1173-01	1.385	9.542	560.8
23	27.000	.19040	237.00	.1871	.3186	.2516	.9379	.1399-01	.1105-01	1.437	9.977	546.8
23	27.100	.21310	249.00	.1508	.2466	.2007	.9360	.1083-01	.8815-02	1.231	8.599	535.8
23	27.200	.80300-01	180.00	.5641	1.209	.7172	.9600	.5309-01	.3149-01	3.351	22.78	586.4
22	27.400	.40100-01	98.000	.6432	1.485	.7574	.9734	.6530-01	.3332-01	3.597	24.35	593.5
23	27.400	.16480	215.00	.2100	.3983	.2910	.9411	.1749-01	.1278-01	1.408	9.660	569.0
22	27.600	.41600-01	102.00	.6582	1.512	.7776	.9728	.6652-01	.3420-01	3.695	25.02	593.1
23	27.600	.12440	205.00	.2818	.5642	.3796	.9485	.2478-01	.1667-01	1.785	12.19	577.5
23	27.600	.18700	230.00	.1781	.3104	.2417	.9382	.1363-01	.1062-01	1.325	9.170	552.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
23	27.700	.21010	243.00	.1896	.3198	.2562	.9362	.1405-01	.1125-01	1.475	10.25	544.5
23	27.900	.10110	188.00	.3852	.8067	.5067	.9541	.3543-01	.2225-01	2.336	15.90	583.6
22	28.000	.46800-01	110.00	.3894	.6967	.4467	.9709	.3064-01	.1965-01	2.798	19.32	557.3
23	28.200	.16810	221.00	.2130	.3963	.2937	.9406	.1740-01	.1290-01	1.460	10.03	565.6
23	28.300	.19040	236.00	.1983	.3333	.2650	.9379	.1464-01	.1164-01	1.551	10.79	543.5
23	28.300	.12200	201.00	.3201	.6409	.4297	.9490	.2814-01	.1887-01	2.026	13.84	577.5
22	28.400	.53500-01	114.00	.5320	1.079	.6330	.9685	.4746-01	.2784-01	3.326	22.70	578.5
23	28.400	.21310	248.00	.1507	.2455	.2002	.9359	.1078-01	.8793-02	1.238	8.653	534.7
22	28.700	.58600-01	117.00	.7967	1.864	.9840	.9668	.8201-01	.4328-01	4.410	29.83	594.8
23	28.800	.16580	217.00	.2316	.4467	.3237	.9409	.1961-01	.1421-01	1.524	10.44	571.8
22	28.800	.60400-01	121.00	.8172	2.224	1.040	.9662	.9781-01	.4574-01	4.096	27.53	606.7
23	29.000	.21110	244.00	.1831	.3063	.2465	.9361	.1345-01	.1083-01	1.443	10.05	542.2
22	29.000	.65700-01	129.00	.3997	.7136	.4739	.9644	.3139-01	.2084-01	2.880	19.89	556.9
22	29.200	.72400-01	133.00	.6014	1.281	.7520	.9622	.5633-01	.3308-01	3.594	24.45	584.8
22	29.300	.79500-01	136.00	.6053	1.402	.7830	.9601	.6166-01	.3444-01	3.377	22.86	593.8
22	29.600	.92500-01	143.00	.4321	.8794	.5555	.9563	.3868-01	.2444-01	2.693	18.37	579.0
22	29.700	.10000+00	146.00	.4561	.9965	.6064	.9543	.4383-01	.2667-01	2.666	18.10	587.8
23	29.900	.12100	198.00	.3692	.8154	.5116	.9492	.3581-01	.2246-01	2.139	14.51	589.8
23	30.200	.16480	214.00	.2470	.4836	.3472	.9410	.2124-01	.1525-01	1.600	10.94	574.2
23	30.200	.18700	229.00	.2237	.3995	.3073	.9382	.1754-01	.1349-01	1.611	11.12	557.7
23	30.300	.21010	242.00	.2045	.3514	.2790	.9361	.1543-01	.1225-01	1.549	10.74	549.1
22	31.500	.91000-02	82.000	.8513	2.451	.9837	.9794	.1078	.4327-01	4.135	27.74	610.2
22	31.500	.11100-01	83.000	.9941	3.028	1.154	.9794	.1332	.5076-01	4.692	31.43	613.4
22	31.500	.14200-01	84.000	1.113	-12.07	1.297	.9870	-.5307	.5703-01	3.229	21.16	654.7
22	31.500	.16000-01	85.000	1.107	18.65	1.261	.9870	.8203	.5548-01	3.730	24.59	644.1
22	31.500	.17600-01	86.000	1.050	11.36	1.190	.9870	.4997	.5235-01	3.666	24.20	641.3
22	31.500	.19400-01	87.000	1.046	4.528	1.163	.9870	.1992	.5114-01	4.314	28.69	626.9
23	32.100	.21010	241.00	.1784	.3011	.2413	.9361	.1322-01	.1059-01	1.388	9.651	544.5
23	32.200	.16480	213.00	.2260	.4326	.3148	.9409	.1900-01	.1383-01	1.500	10.28	570.5
23	32.200	.17860	224.00	.2036	.3544	.2748	.9391	.1556-01	.1207-01	1.517	10.50	552.1
23	32.200	.18700	228.00	.1909	.3258	.2567	.9381	.1431-01	.1127-01	1.461	10.14	547.4
23	32.300	.12100	197.00	.3468	.7308	.4737	.9490	.3209-01	.2080-01	2.092	14.23	584.3
23	32.300	.12300	194.00	.2914	.6117	.3987	.9486	.2686-01	.1751-01	1.763	12.00	583.9
23	32.300	.12730	208.00	.1526	.2748	.1989	.9476	.1207-01	.8735-02	1.088	7.502	559.3
23	32.300	.13420	209.00	.2079	.4073	.2822	.9462	.1789-01	.1239-01	1.345	9.202	574.3
22	32.400	.10000+00	147.00	.3678	.7576	.4815	.9541	.3332-01	.2118-01	2.266	15.45	580.6
23	32.400	.10110	184.00	.3852	.8264	.5112	.9538	.3629-01	.2245-01	2.286	15.54	586.5
23	32.400	.10630	193.00	.2113	.3662	.2644	.9525	.1608-01	.1161-01	1.583	10.97	551.1
23	32.500	.85800-01	183.00	.2742	.4879	.3360	.9580	.2142-01	.1475-01	1.984	13.70	556.9
22	32.600	.79500-01	137.00	.4879	1.084	.6263	.9598	.4769-01	.2755-01	2.812	19.08	589.6
23	32.600	.80800-01	176.00	.5105	1.115	.6544	.9595	.4897-01	.2873-01	2.984	20.25	588.6
22	32.700	.67400-01	132.00	.3577	.6486	.4276	.9636	.2853-01	.1881-01	2.528	17.43	560.0
22	32.700	.72400-01	134.00	.5196	1.037	.6411	.9620	.4559-01	.2820-01	3.302	22.57	576.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
22	32.800	.65700-01	130.00	.3090	.5324	.3638	.9641	.2342-01	.1600-01	2.335	16.19	548.9
23	32.800	.16680	210.00	.1915	.3496	.2618	.9406	.1535-01	.1150-01	1.342	9.238	562.1
23	32.800	.18880	225.00	.1461	.2366	.1916	.9379	.1039-01	.8413-02	1.210	8.468	533.0
22	32.900	.58600-01	118.00	.7431	1.653	.9115	.9664	.7270-01	.4009-01	4.280	29.03	589.7
22	32.900	.60400-01	122.00	.5553	1.123	.6713	.9658	.4940-01	.2953-01	3.483	23.77	578.1
23	32.900	.61300-01	171.00	.6525	1.530	.8132	.9655	.6717-01	.3571-01	3.606	24.38	595.8
22	33.000	.53500-01	115.00	.5705	1.121	.6763	.9682	.4931-01	.2975-01	3.683	25.20	573.9
22	33.200	.48300-01	113.00	.3659	.6374	.4196	.9700	.2804-01	.1845-01	2.722	18.85	551.5
23	33.400	.42800-01	166.00	.5358	1.130	.6286	.9719	.4961-01	.2760-01	3.230	21.97	584.4
22	33.500	.40100-01	99.000	.5035	1.244	.6915	.9729	.5471-01	.3042-01	3.598	24.50	582.8
22	33.600	.38300-01	97.000	.5976	1.258	.6939	.9735	.5534-01	.3052-01	3.608	24.56	583.4
22	33.700	.36700-01	96.000	.5828	1.226	.6743	.9741	.5394-01	.2966-01	3.520	23.96	583.3
22	33.900	.33800-01	95.000	.4637	.8984	.5269	.9752	.3952-01	.2318-01	3.038	20.81	571.7
23	34.700	.21010	240.00	.1657	.2761	.2227	.9360	.1212-01	.9778-02	1.314	9.151	541.1
23	34.700	.18700	227.00	.2083	.3617	.2825	.9380	.1588-01	.1241-01	1.556	10.78	551.5
23	34.900	.16480	212.00	.2017	.3805	.2794	.9408	.1671-01	.1227-01	1.360	9.336	568.1
22	35.100	.10000+00	148.00	.3397	.6900	.4434	.9539	.3035-01	.1950-01	2.121	14.47	578.7
23	35.200	.23900-01	161.00	.4402	.8148	.4875	.9789	.3578-01	.2141-01	3.035	20.87	564.7
22	35.300	.92500-01	145.00	.3998	.7845	.5100	.9559	.3451-01	.2243-01	2.584	17.68	573.7
22	35.300	.22100-01	160.00	.4735	.8619	.5229	.9790	.3791-01	.2300-01	3.332	22.96	560.7
23	35.400	.18800	231.00	.1916	.3279	.2582	.9379	.1440-01	.1134-01	1.461	10.14	548.1
23	35.500	.12100	196.00	.3098	.6366	.4202	.9488	.2796-01	.1845-01	1.913	13.03	581.1
23	35.600	.16580	216.00	.1928	.3565	.2651	.9407	.1566-01	.1164-01	1.331	9.152	564.5
22	35.800	.80600-01	138.00	.4184	.6154	.5219	.9593	.3587-01	.2296-01	2.724	18.65	572.7
23	35.900	.21310	247.00	.1250	.2027	.1658	.9358	.8900-02	.7280-02	1.033	7.229	533.4
23	36.000	.19040	235.00	.1626	.2714	.2168	.9377	.1192-01	.9520-02	1.286	8.957	541.6
23	36.200	.16910	220.00	.1700	.3036	.2306	.9403	.1333-01	.1013-01	1.224	8.451	557.7
22	36.200	.72400-01	135.00	.4716	.9145	.5789	.9617	.4022-01	.2546-01	3.086	21.14	571.9
23	36.300	.12200	200.00	.2872	.5770	.3873	.9486	.2534-01	.1701-01	1.813	12.37	578.0
22	36.600	.65700-01	131.00	.3357	.6071	.4005	.9638	.2670-01	.1762-01	2.380	16.41	559.5
23	36.700	.18700	226.00	.1887	.3215	.2537	.9380	.1412-01	.1114-01	1.448	10.06	546.9
23	36.900	.16480	211.00	.1949	.3619	.2682	.9407	.1589-01	.1178-01	1.338	9.195	565.3
23	36.900	.10110	187.00	.3795	.7969	.5017	.9535	.3499-01	.2203-01	2.296	15.62	583.9
22	37.000	.60400-01	123.00	.6467	1.463	.8010	.9655	.6437-01	.3523-01	3.673	24.89	591.5
23	37.000	.12440	204.00	.2470	.4731	.3287	.9480	.2078-01	.1444-01	1.638	11.23	570.7
22	37.100	.58600-01	119.00	.6892	1.485	.8423	.9661	.6530-01	.3705-01	4.078	27.72	586.2
23	37.200	.21310	246.00	.1319	.2145	.1753	.9358	.9421-02	.7697-02	1.086	7.593	534.2
23	37.600	.16810	219.00	.1766	.3147	.2393	.9402	.1382-01	.1051-01	1.275	8.802	557.2
22	37.800	.10270	150.00	.3259	.6254	.4205	.9530	.2751-01	.1849-01	2.157	14.79	570.2
23	37.900	.12100	195.00	.3309	.6564	.4439	.9487	.2882-01	.1949-01	2.115	14.45	576.1
23	38.000	.80300-01	179.00	.4813	1.013	.6125	.9592	.4446-01	.2690-01	2.907	19.78	584.1
22	38.500	.46800-01	112.00	.3942	.7051	.4542	.9700	.3102-01	.1998-01	2.833	19.56	557.3
23	38.600	.12440	203.00	.2544	.4844	.3380	.9479	.2127-01	.1484-01	1.697	11.64	569.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
23	38.700	.10000+00	185.00	.3930	.8041	.5150	.9537	.3531-01	.2262-01	2.436	16.61	580.5
22	38.900	.82200-01	141.00	.3845	.7389	.4800	.9585	.3250-01	.2111-01	2.542	17.42	570.4
22	39.300	.41600-01	104.00	.4986	1.025	.5831	.9718	.4510-01	.2565-01	3.077	20.98	580.4
23	39.500	.10270	190.00	.3903	.7845	.5113	.9529	.3445-01	.2245-01	2.462	16.81	578.0
23	39.600	.16810	218.00	.1871	.3308	.2529	.9402	.1453-01	.1110-01	1.366	9.437	555.5
23	39.900	.19040	233.00	.1407	.2329	.1869	.9375	.1023-01	.8209-02	1.126	7.847	539.5
23	40.100	.79500-01	177.00	.4970	1.008	.6264	.9592	.4425-01	.2751-01	3.107	21.20	579.3
23	40.200	.12440	202.00	.2555	.4846	.3392	.9478	.2128-01	.1490-01	1.712	11.75	569.0
23	40.300	.21310	245.00	.1193	.1931	.1582	.9357	.8480-02	.6946-02	.9899	6.927	532.8
22	41.100	.82200-01	142.00	.3893	.7533	.4874	.9583	.3313-01	.2144-01	2.554	17.50	571.5
23	41.100	.60700-01	173.00	.6078	1.318	.7490	.9650	.5786-01	.3289-01	3.575	24.28	587.7
23	42.300	.10270	189.00	.3383	.6453	.4366	.9527	.2834-01	.1917-01	2.253	15.45	570.0
23	42.600	.59600-01	172.00	.6513	1.458	.8065	.9652	.6404-01	.3542-01	3.729	25.28	591.3
23	43.200	.42000-01	168.00	.4807	.9785	.5630	.9713	.4297-01	.2472-01	2.994	20.42	579.8
23	43.400	.82200-01	181.00	.3662	.7038	.4582	.9581	.3091-01	.2012-01	2.419	16.57	571.2
22	43.600	.62900-01	128.00	.5286	1.040	.6422	.9640	.4577-01	.2825-01	3.406	23.30	574.2
22	45.000	.22900-01	8.0000	.8181	2.024	.9414	.9780	.8902-01	.4141-01	4.353	29.37	599.7
23	46.100	.62900-01	174.00	.5457	1.120	.6702	.9638	.4919-01	.2943-01	3.373	22.99	580.9
23	47.700	.40800-01	167.00	.5209	1.099	.6140	.9712	.4827-01	.2696-01	3.138	21.35	584.5
22	48.400	.44200-01	109.00	.4633	.9066	.5434	.9699	.3988-01	.2390-01	3.004	20.56	573.3
22	50.000	.19400-01	156.00	.8933	5.798	1.004	.9870	.2550	.4415-01	3.347	22.16	635.5
22	51.000	.12100-01	154.00	.9937	19.96	1.134	.9870	.8778	.4987-01	3.315	21.84	644.8
22	51.000	.17600-01	155.00	.9276	4.871	1.037	.9870	.2143	.4560-01	3.632	24.10	631.7
23	51.900	.44800-01	170.00	.4030	.7587	.4708	.9693	.3331-01	.2068-01	2.724	18.70	567.7
23	53.200	.24700-01	163.00	.5122	1.042	.5815	.9766	.4576-01	.2553-01	3.192	21.77	579.7
23	65.200	.24700-01	162.00	.5794	1.271	.6708	.9749	.5580-01	.2946-01	3.375	22.90	589.0
21	90.000	.91000-02	44.000	.7641	2.154	.9347	.9717	.9458-01	.4105-01	3.744	25.15	608.1
21	90.000	.11100-01	45.000	.9162	2.776	1.130	.9717	.1219	.4965-01	4.323	28.97	612.2
21	90.000	.13100-01	46.000	.8349	2.084	1.005	.9717	.9154-01	.4416-01	4.403	29.71	599.6
21	90.000	.17000-01	48.000	.7192	1.662	.8566	.9717	.7298-01	.3762-01	4.008	27.14	592.8
21	90.000	.20900-01	50.000	.6748	1.490	.7984	.9717	.6546-01	.3507-01	3.897	26.46	588.2
21	90.000	.24900-01	52.000	.6063	1.278	.7144	.9712	.5614-01	.3138-01	3.645	24.82	582.8
21	90.000	.26900-01	53.000	.5901	1.207	.6950	.9705	.5300-01	.3052-01	3.650	24.90	578.8
21	90.000	.28800-01	54.000	.5973	1.198	.7041	.9697	.5261-01	.3093-01	3.766	25.74	576.1
21	90.000	.32800-01	55.000	.5408	1.030	.6367	.9683	.4522-01	.2796-01	3.600	24.71	568.1
21	90.000	.36700-01	56.000	.5293	1.003	.6274	.9669	.4404-01	.2755-01	3.544	24.33	567.2
21	90.000	.40600-01	57.000	.5168	1.003	.6206	.9655	.4407-01	.2726-01	3.369	23.08	571.3
21	90.000	.48500-01	58.000	.4745	.8911	.5742	.9628	.3914-01	.2522-01	3.208	22.05	565.7
21	90.000	.56400-01	59.000	.4197	.7688	.5120	.9603	.3377-01	.2249-01	2.921	20.13	561.2
21	90.000	.76100-01	60.000	.3376	.6011	.4216	.9545	.2640-01	.1852-01	2.434	16.82	555.5
21	90.000	.95800-01	61.000	.2952	.5206	.3777	.9495	.2287-01	.1659-01	2.154	14.90	553.5
21	90.000	.11550	62.000	.2289	.3982	.2983	.9453	.1749-01	.1310-01	1.701	11.79	550.5
21	135.00	.19000-01	49.000	.6426	1.393	.7872	.9659	.6119-01	.3458-01	3.770	25.62	586.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
21	135.00	.22900-01	51.000	.6229	1.340	.7620	.9659	.5885-01	.3347-01	3.680	25.02	585.2
21	180.00	.91000-02	23.000	.4303	.8024	.5177	.9636	.3524-01	.2274-01	2.933	20.17	564.5
21	180.00	.11100-01	24.000	.6922	1.837	.8952	.9636	.8069-01	.3932-01	3.511	23.63	604.2
21	180.00	.13100-01	25.000	.7195	1.765	.9172	.9636	.7754-01	.4028-01	3.839	25.92	598.2
21	180.00	.15000-01	26.000	.6946	1.661	.8810	.9636	.7295-01	.3870-01	3.774	25.51	596.0
21	180.00	.17000-01	27.000	.6571	1.490	.8248	.9636	.6544-01	.3622-01	3.715	25.19	590.9
21	180.00	.19000-01	28.000	.6324	1.424	.7927	.9636	.6254-01	.3482-01	3.596	24.39	590.2
21	180.00	.20900-01	29.000	.6310	1.360	.7839	.9636	.5974-01	.3443-01	3.721	25.30	585.4
21	180.00	.28800-01	32.000	.5604	1.128	.6938	.9618	.4952-01	.3047-01	3.522	24.06	576.6
21	180.00	.32800-01	33.000	.5080	.9686	.6258	.9604	.4254-01	.2748-01	3.377	23.17	568.3
21	180.00	.36700-01	34.000	.5014	.9939	.6287	.9591	.4365-01	.2761-01	3.198	21.88	574.4
21	180.00	.56400-01	37.000	.3934	.7307	.5018	.9532	.3209-01	.2204-01	2.693	18.53	563.8
21	180.00	.76100-01	38.000	.3073	.5537	.3994	.9482	.2432-01	.1754-01	2.182	15.06	558.0
21	180.00	.95800-01	39.000	.2496	.4379	.3288	.9440	.1923-01	.1444-01	1.835	12.70	552.3
21	180.00	.11550	40.000	.1948	.3424	.2618	.9406	.1504-01	.1150-01	1.428	9.883	552.7
21	180.00	.18450	42.000	.9420-01	.1549	.1265	.9348	.6801-02	.5558-02	.7603	5.311	535.9
21	225.00	.22900-01	30.000	.6327	1.338	.7716	.9659	.5878-01	.3389-01	3.793	25.82	583.2
21	270.00	.91000-02	63.000	.7316	1.851	.8829	.9717	.8131-01	.3878-01	3.823	25.78	600.7
21	270.00	.11100-01	64.000	.8373	2.240	1.018	.9717	.9837-01	.4471-01	4.227	28.44	604.7
21	270.00	.13100-01	65.000	.8243	2.061	.9933	.9717	.9053-01	.4362-01	4.342	29.29	599.7
21	270.00	.17000-01	67.000	.6621	1.518	.7880	.9717	.6667-01	.3461-01	3.711	25.14	592.0
21	270.00	.20900-01	69.000	.6946	1.558	.8240	.9717	.6841-01	.3619-01	3.963	26.88	589.8
21	270.00	.24900-01	71.000	.6461	1.408	.7657	.9712	.6185-01	.3363-01	3.774	25.64	586.7
21	270.00	.28800-01	73.000	.5447	1.124	.6455	.9697	.4935-01	.2835-01	3.341	22.79	580.0
21	270.00	.36700-01	75.000	.5604	1.140	.6741	.9668	.5007-01	.2961-01	3.484	23.78	578.1
21	270.00	.46500-01	77.000	.4763	.9063	.5783	.9628	.3980-01	.2540-01	3.173	21.78	568.0
21	270.00	.56400-01	78.000	.4172	.7814	.5121	.9603	.3432-01	.2249-01	2.830	19.45	565.2
21	270.00	.95800-01	80.000	.2859	.5065	.3665	.9495	.2225-01	.1610-01	2.075	14.35	554.4
21	270.00	.11550	81.000	.2410	.4253	.3160	.9453	.1868-01	.1388-01	1.758	12.16	553.6
21	315.00	.19000-01	68.000	.6373	1.321	.7191	.9780	.5802-01	.3159-01	3.892	26.53	580.6
21	315.00	.22900-01	70.000	.6194	1.362	.7038	.9780	.5983-01	.3091-01	3.590	24.38	587.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
88	4.020	-4.986	.0000	64.96	733.7	.4166	173.4	.0000	2595.	.6486-02	.1395-06	3.750
89	4.020	-4.996	-.6967-02	64.96	733.7	.4166	173.4	-.8000-01	2595.	.6486-02	.1395-06	3.750
90	4.020	-4.980	.0000	65.04	735.7	.4171	173.8	.0000	2598.	.6476-02	.1399-06	3.739

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
88	.3866-01	.9532-02
89	.3866-01	.9532-02
90	.3870-01	.9543-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
89	.00000	.91000-02	1.0000	.5917	1.151	.6859	.9717	.4448-01	.2652-01	3.455	23.53	582.6
89	.00000	.11100-01	2.0000	.8350	1.676	.9730	.9717	.6478-01	.3762-01	4.721	32.07	587.4
89	.00000	.15000-01	4.0000	.7342	1.422	.8505	.9717	.5495-01	.3288-01	4.307	29.34	581.9
89	.00000	.17000-01	5.0000	.7131	1.333	.8210	.9717	.5152-01	.3174-01	4.350	29.73	575.9
89	.00000	.19000-01	6.0000	.6790	1.254	.7802	.9717	.4849-01	.3016-01	4.198	28.72	573.7
89	.00000	.24900-01	9.0000	.5850	1.043	.6696	.9712	.4031-01	.2589-01	3.780	25.97	566.5
89	.00000	.26900-01	10.000	.5653	.9912	.6475	.9704	.3832-01	.2503-01	3.731	25.68	562.9
88	.00000	.32800-01	12.000	.5366	.9499	.6228	.9682	.3672-01	.2408-01	3.498	24.05	565.0
88	.00000	.36700-01	13.000	.4861	.8363	.5648	.9667	.3233-01	.2183-01	3.292	22.71	558.5
88	.00000	.40600-01	14.000	.4992	.8795	.5874	.9653	.3400-01	.2271-01	3.275	22.53	564.0
88	.00000	.48500-01	15.000	.4393	.7620	.5225	.9624	.2946-01	.2020-01	2.942	20.28	560.4
89	.00000	.56400-01	16.000	.4111	.7114	.4955	.9597	.2750-01	.1915-01	2.763	19.05	559.8
88	.00000	.76100-01	17.000	.3342	.5719	.4150	.9531	.2211-01	.1604-01	2.280	15.74	557.2
88	.00000	.11550	19.000	.2390	.4047	.3137	.9418	.1564-01	.1213-01	1.655	11.44	554.5
89	.00000	.16480	20.000	.1431	.2370	.1969	.9311	.9160-02	.7610-02	1.024	7.106	548.5
88	.00000	.21400	22.000	.8590-01	.1307	.1160	.9244	.5054-02	.4484-02	.7103	5.007	519.8
90	2.0000	.24700-01	165.00	.4654	.7911	.5278	.9713	.3061-01	.2043-01	3.218	22.22	557.0
89	9.0000	.15000-01	157.00	.7200	1.373	.8324	.9716	.5308-01	.3218-01	4.294	29.29	579.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
89	9.0000	.17600-01	158.00	.6318	1.137	.7229	.9716	.4394-01	.2795-01	4.033	27.68	568.5
90	9.8000	.24700-01	164.00	.4913	.8402	.5582	.9711	.3252-01	.2160-01	3.368	23.23	558.5
89	10.000	.22900-01	98.000	.5416	.9549	.6175	.9716	.3692-01	.2387-01	3.548	24.41	564.2
89	10.000	.26900-01	90.000	.5361	.9265	.6128	.9703	.3582-01	.2369-01	3.609	24.88	559.5
89	10.000	.34700-01	94.000	.5286	.9146	.6131	.9673	.3536-01	.2370-01	3.552	24.49	559.8
89	12.000	.17600-01	152.00	1.182	3.609	1.296	.9870	.1395	.5009-01	4.987	33.21	624.6
89	12.000	.12100-01	151.00	.8793	4.874	.9841	.9870	.1884	.3805-01	3.043	20.05	644.2
89	13.000	.19400-01	153.00	1.080	2.723	1.172	.9870	.1053	.4532-01	5.079	34.04	612.1
90	14.600	.44200-01	169.00	.4938	.8504	.5825	.9637	.3291-01	.2254-01	3.353	23.11	560.2
89	18.500	.44200-01	106.00	.5237	.9232	.6218	.9635	.3569-01	.2404-01	3.432	23.61	564.1
90	19.600	.62900-01	175.00	.4691	.8016	.5712	.9569	.3102-01	.2210-01	3.220	22.22	558.3
89	19.800	.40800-01	101.00	.5977	1.087	.7107	.9647	.4203-01	.2748-01	3.766	25.81	570.7
89	20.000	.24900-01	89.000	.4403	.7455	.5005	.9707	.2882-01	.1935-01	3.051	21.10	554.4
89	20.000	.28800-01	91.000	.4766	.8184	.5471	.9692	.3164-01	.2115-01	3.237	22.34	558.0
89	20.000	.32800-01	93.000	.5194	.9203	.6047	.9676	.3558-01	.2338-01	3.382	23.25	565.2
90	21.800	.82200-01	182.00	.3779	.6406	.4738	.9506	.2479-01	.1834-01	2.623	18.12	556.3
89	22.200	.62900-01	125.00	.5306	.9457	.6547	.9568	.3656-01	.2531-01	3.430	23.56	566.5
89	22.400	.44200-01	107.00	.4812	.8279	.5685	.9633	.3200-01	.2198-01	3.259	22.48	558.5
90	22.600	.10270	192.00	.2921	.4865	.3750	.9446	.1883-01	.1451-01	2.080	14.41	551.6
89	23.000	.42000-01	105.00	.5700	1.033	.6793	.9641	.3992-01	.2626-01	3.608	24.74	569.9
89	23.400	.59600-01	120.00	.6091	1.118	.7537	.9579	.4321-01	.2913-01	3.797	26.00	572.4
90	23.900	.21310	250.00	.9529-01	.1419	.1269	.9242	.5492-02	.4910-02	.8257	5.847	511.7
89	24.100	.82200-01	139.00	.4200	.7308	.5319	.9505	.2825-01	.2056-01	2.800	19.29	561.2
90	24.400	.19040	238.00	.1257	.1933	.1690	.9267	.7482-02	.6541-02	1.022	7.179	525.5
90	24.400	.12440	207.00	.2376	.4002	.3160	.9390	.1549-01	.1223-01	1.665	11.51	554.6
90	24.800	.16810	223.00	.1530	.2487	.2094	.9300	.9626-02	.8104-02	1.132	7.871	544.5
89	24.900	.62900-01	126.00	.5591	1.034	.6982	.9567	.3998-01	.2699-01	3.452	23.62	574.0
90	25.000	.79500-01	178.00	.4171	.7177	.5241	.9513	.2778-01	.2028-01	2.836	19.55	560.0
90	25.300	.10270	191.00	.3217	.5415	.4153	.9445	.2096-01	.1607-01	2.256	15.60	554.5
90	25.300	.10000+00	186.00	.3550	.6135	.4615	.9452	.2374-01	.1786-01	2.398	16.52	561.1
89	25.500	.60700-01	124.00	.7058	1.401	.8952	.9574	.5415-01	.3461-01	4.035	27.43	585.8
90	26.000	.12440	206.00	.2540	.4296	.3386	.9389	.1662-01	.1310-01	1.770	12.23	555.6
89	26.300	.82200-01	140.00	.3943	.6897	.5006	.9504	.2666-01	.1935-01	2.611	17.98	562.4
90	26.700	.12100	199.00	.3344	.5868	.4516	.9397	.2271-01	.1748-01	2.213	15.22	564.7
90	26.800	.16810	222.00	.1748	.2830	.2387	.9299	.1095-01	.9238-02	1.301	9.052	543.3
90	27.000	.19040	237.00	.1452	.2236	.1955	.9266	.8654-02	.7566-02	1.179	8.284	525.8
90	27.100	.21310	249.00	.1206	.1803	.1611	.9241	.6979-02	.6233-02	1.037	7.334	513.5
90	27.200	.80300-01	180.00	.5254	.9431	.6715	.9509	.3650-01	.2599-01	3.378	23.17	569.6
89	27.400	.40100-01	98.000	.5784	1.072	.6916	.9645	.4144-01	.2674-01	3.563	24.37	574.3
90	27.400	.16480	215.00	.1986	.3303	.2749	.9305	.1278-01	.1064-01	1.421	9.843	551.0
89	27.600	.41600-01	102.00	.5762	1.068	.6912	.9639	.4130-01	.2672-01	3.548	24.27	574.4
90	27.600	.12440	205.00	.2680	.4565	.3586	.9388	.1767-01	.1388-01	1.847	12.75	557.5
90	27.600	.18700	230.00	.2037	.3178	.2760	.9271	.1230-01	.1068-01	1.617	11.33	530.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
90	27.700	.21010	243.00	.1440	.2179	.1936	.9244	.8432-02	.7493-02	1.209	8.525	518.7
90	27.900	.10110	188.00	.3696	.6477	.4845	.9448	.2507-01	.1875-01	2.451	16.86	564.3
89	28.000	.46800-01	110.00	.3124	.5024	.3648	.9620	.1942-01	.1410-01	2.342	16.33	539.7
90	28.200	.16810	221.00	.2005	.3293	.2762	.9299	.1274-01	.1069-01	1.460	10.13	547.5
90	28.300	.19040	236.00	.1355	.2072	.1816	.9266	.8019-02	.7029-02	1.114	7.839	523.2
90	28.300	.12200	201.00	.2930	.5011	.3917	.9393	.1939-01	.1516-01	2.009	13.86	558.5
89	28.400	.53500-01	114.00	.4037	.6843	.4839	.9596	.2646-01	.1871-01	2.792	19.31	554.7
90	28.400	.21310	248.00	.1226	.1825	.1633	.9241	.7064-02	.6319-02	1.064	7.532	511.5
89	28.700	.58600-01	117.00	.6544	1.218	.8130	.9578	.4707-01	.3143-01	4.013	27.44	575.1
90	28.800	.16580	217.00	.2074	.3475	.2885	.9303	.1345-01	.1116-01	1.464	10.13	553.2
89	28.800	.60400-01	121.00	.7507	1.567	.9660	.9572	.6059-01	.3734-01	4.087	27.68	592.8
90	29.000	.21110	244.00	.1367	.2058	.1833	.9243	.7966-02	.7094-02	1.157	8.172	516.8
89	29.000	.65700-01	129.00	.3530	.5712	.4254	.9554	.2208-01	.1645-01	2.622	18.26	541.6
89	29.200	.72400-01	133.00	.4560	.7983	.5703	.9533	.3086-01	.2205-01	3.017	20.77	562.5
89	29.300	.79500-01	136.00	.6009	1.175	.7900	.9510	.4543-01	.3054-01	3.488	23.74	583.5
89	29.600	.92500-01	143.00	.3564	.6204	.4599	.9471	.2398-01	.1778-01	2.376	16.37	561.2
89	29.700	.10000+00	146.00	.4245	.7794	.5664	.9450	.3013-01	.2190-01	2.645	18.11	572.5
90	29.900	.12100	198.00	.3430	.6111	.4670	.9395	.2365-01	.1807-01	2.226	15.28	568.0
90	30.200	.16480	214.00	.2163	.3652	.3020	.9304	.1413-01	.1169-01	1.511	10.44	555.2
90	30.200	.18700	229.00	1.229	1.862	1.635	.9270	.7206-01	.6327-01	10.30	72.62	519.2
90	30.300	.21010	242.00	.1515	.2305	.2045	.9244	.8919-02	.7914-02	1.258	8.860	521.1
89	31.500	.91000-02	82.000	.5702	1.102	.6653	.9704	.4259-01	.2572-01	3.352	22.84	581.6
89	31.500	.11100-01	83.000	.8471	1.796	1.004	.9704	.6945-01	.3883-01	4.546	30.76	594.8
89	31.500	.14200-01	84.000	1.100	3.552	1.208	.9870	.1373	.4671-01	4.519	30.05	627.4
89	31.500	.16000-01	85.000	1.091	3.070	1.191	.9870	.1187	.4605-01	4.803	32.06	619.8
89	31.500	.17600-01	86.000	1.012	2.671	1.101	.9870	.1033	.4256-01	4.622	30.92	615.6
89	31.500	.19400-01	87.000	.9220	2.015	.9920	.9870	.7789-01	.3835-01	4.822	32.56	598.4
90	32.100	.21010	241.00	.1333	.2008	.1788	.9243	.7770-02	.6918-02	1.128	7.966	516.9
90	32.200	.16480	213.00	.2008	.3347	.2785	.9303	.1295-01	.1078-01	1.429	9.898	551.8
90	32.200	.17860	224.00	.1664	.2597	.2244	.9281	.1005-01	.8683-02	1.319	9.240	530.8
90	32.200	.18700	228.00	.1512	.2321	.2031	.9269	.8995-02	.7859-02	1.232	8.656	525.2
90	32.300	.12100	197.00	.3186	.5490	.4274	.9393	.2125-01	.1654-01	2.162	14.90	560.4
90	32.300	.12300	194.00	.2726	.4710	.3672	.9389	.1823-01	.1421-01	1.843	12.70	561.0
90	32.300	.12730	208.00	.1458	.2340	.1904	.9378	.9055-02	.7369-02	1.102	7.678	540.4
90	32.300	.13420	209.00	.1783	.3032	.2418	.9363	.1174-01	.9358-02	1.233	8.511	557.1
89	32.400	.10000+00	147.00	.3482	.6099	.4562	.9448	.2358-01	.1764-01	2.302	15.84	562.7
90	32.400	.10110	184.00	.3628	.6390	.4774	.9445	.2473-01	.1847-01	2.389	16.42	565.5
90	32.400	.10630	193.00	.1818	.2823	.2290	.9431	.1093-01	.8824-02	1.453	10.19	529.1
90	32.500	.85800-01	183.00	.2344	.3703	.2885	.9489	.1433-01	.1117-01	1.818	12.70	535.3
89	32.600	.79500-01	137.00	.4681	.8797	.6082	.9508	.3401-01	.2351-01	2.838	19.39	576.8
90	32.600	.80800-01	176.00	.4867	.8762	.6246	.9504	.3391-01	.2417-01	3.118	21.37	570.2
89	32.700	.67400-01	132.00	.2895	.4697	.3506	.9546	.1816-01	.1355-01	2.140	14.90	542.4
89	32.700	.72400-01	134.00	.4208	.7176	.5223	.9530	.2774-01	.2019-01	2.885	19.93	556.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
89	32.800	.65700-01	130.00	.2603	.4119	.3117	.9552	.1593-01	.1205-01	2.005	14.02	534.4
90	32.800	.16680	210.00	.1776	.2880	.2429	.9299	.1115-01	.9399-02	1.319	9.175	543.8
90	32.800	.18880	225.00	.1132	.1692	.1495	.9266	.6550-02	.5786-02	.9723	6.877	513.6
89	32.900	.58600-01	118.00	.6090	1.098	.7511	.9575	.4245-01	.2904-01	3.878	26.61	568.9
89	32.900	.60400-01	122.00	.4941	.8671	.6066	.9569	.3352-01	.2345-01	3.258	22.42	563.1
90	32.900	.61300-01	171.00	.5739	1.089	.7223	.9566	.4214-01	.2795-01	3.455	23.56	580.1
89	33.000	.53500-01	115.00	.4392	.7424	.5269	.9592	.2870-01	.2037-01	3.050	21.09	554.0
89	33.200	.48300-01	113.00	.2950	.4677	.3445	.9610	.1808-01	.1332-01	2.265	15.83	535.0
90	33.400	.42800-01	166.00	.4639	.8110	.5513	.9630	.3138-01	.2133-01	3.086	21.23	563.8
89	33.500	.40100-01	99.000	.5374	.9479	.6367	.9640	.3665-01	.2461-01	3.519	24.20	564.3
89	33.600	.38300-01	97.000	.5509	.9706	.6504	.9646	.3752-01	.2514-01	3.613	24.85	564.0
89	33.700	.36700-01	96.000	.5242	.9243	.6172	.9652	.3573-01	.2386-01	3.435	23.63	564.2
89	33.900	.33800-01	95.000	.4389	.7403	.5088	.9663	.2862-01	.1967-01	3.058	21.15	553.5
90	34.700	.21010	240.00	.1227	.1835	.1638	.9242	.7101-02	.6340-02	1.055	7.461	513.6
90	34.700	.18700	227.00	.1819	.2822	.2459	.9268	.1092-01	.9516-02	1.457	10.22	528.7
90	34.900	.16480	212.00	.1740	.2862	.2396	.9301	.1108-01	.9274-02	1.264	8.770	548.0
89	35.100	.10000+00	148.00	.3156	.5476	.4123	.9446	.2117-01	.1594-01	2.113	14.56	560.5
90	35.200	.23900-01	161.00	.3238	.5018	.3625	.9699	.1942-01	.1403-01	2.599	18.23	528.3
89	35.300	.92500-01	145.00	.3860	.6580	.4951	.9467	.2544-01	.1914-01	2.649	18.30	556.2
89	35.300	.22100-01	160.00	.3321	.5195	.3724	.9700	.2008-01	.1439-01	2.611	18.29	530.3
90	35.400	.18800	231.00	.1492	.2295	.2007	.9267	.8882-02	.7767-02	1.214	8.530	525.4
90	35.500	.12100	196.00	.2676	.4547	.3570	.9391	.1760-01	.1382-01	1.851	12.78	556.9
90	35.500	.16580	216.00	.1562	.2547	.2143	.9299	.9856-02	.8292-02	1.151	7.999	545.3
89	35.800	.80600-01	138.00	.4101	.7062	.5184	.9502	.2730-01	.2004-01	2.775	19.14	558.7
90	35.900	.21310	247.00	.1009	.1483	.1333	.9239	.5739-02	.5160-02	.9000	6.396	505.3
90	36.000	.19040	235.00	.1258	.1904	.1677	.9263	.7367-02	.6490-02	1.056	7.449	518.7
90	36.200	.16910	220.00	.1432	.2287	.1944	.9295	.8850-02	.7524-02	1.091	7.608	538.8
89	36.200	.72400-01	135.00	.4339	.7370	.5387	.9527	.2849-01	.2083-01	2.993	20.69	555.2
90	36.300	.12200	200.00	.2453	.4133	.3264	.9388	.1599-01	.1263-01	1.718	11.88	554.7
89	36.600	.65700-01	131.00	.2922	.4718	.3529	.9548	.1824-01	.1364-01	2.178	15.17	540.9
90	36.700	.18700	226.00	.1480	.2265	.1984	.9267	.8765-02	.7677-02	1.217	8.559	523.3
90	36.900	.16480	211.00	.1594	.2602	.2186	.9300	.1007-01	.8461-02	1.171	8.135	545.8
90	36.900	.10110	187.00	.3587	.6240	.4704	.9441	.2415-01	.1821-01	2.402	16.54	562.6
89	37.000	.60400-01	123.00	.5490	1.009	.6845	.9565	.3899-01	.2646-01	3.416	23.39	572.7
90	37.000	.12440	204.00	.2157	.3560	.2851	.9382	.1378-01	.1103-01	1.559	10.81	549.0
89	37.100	.58600-01	119.00	.6068	1.088	.7487	.9571	.4206-01	.2894-01	3.891	26.71	567.8
90	37.200	.21310	246.00	.1084	.1593	.1432	.9239	.6164-02	.5542-02	.9654	6.860	505.5
90	37.600	.16810	219.00	.1419	.2260	.1924	.9295	.8747-02	.7446-02	1.085	7.573	538.0
89	37.800	.10270	150.00	.3026	.5075	.3917	.9437	.1962-01	.1514-01	2.126	14.72	551.9
90	37.900	.12100	195.00	.2812	.4647	.3705	.9390	.1798-01	.1434-01	2.027	14.06	549.4
90	38.000	.80300-01	179.00	.4991	.8806	.6369	.9501	.3408-01	.2465-01	3.280	22.54	565.9
89	38.500	.46800-01	112.00	.3353	.5379	.3928	.9611	.2079-01	.1519-01	2.524	17.60	538.9
90	38.600	.12440	203.00	.2237	.3680	.2954	.9381	.1424-01	.1143-01	1.624	11.27	548.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
90	38.700	.10000+00	185.00	.3788	.6501	.4935	.9443	.2516-01	.1910-01	2.585	17.82	559.4
89	38.900	.82200-01	141.00	.3575	.6076	.4515	.9494	.2349-01	.1745-01	2.463	17.02	555.4
89	39.300	.41600-01	104.00	.4498	.7841	.5343	.9629	.3031-01	.2066-01	2.992	20.61	561.6
90	39.500	.10270	190.00	.3567	.6039	.4640	.9435	.2337-01	.1796-01	2.481	17.14	555.9
90	39.600	.16810	218.00	.1289	.2043	.1744	.9294	.7907-02	.6748-02	.9944	6.945	536.3
90	39.900	.19040	233.00	.1196	.1792	.1585	.9262	.6934-02	.6133-02	1.023	7.231	514.6
90	40.100	.79500-01	177.00	.4631	.7988	.5859	.9501	.3091-01	.2267-01	3.137	21.62	560.6
90	40.200	.12440	202.00	.2207	.3620	.2912	.9380	.1401-01	.1127-01	1.609	11.17	547.3
90	40.300	.21310	245.00	.9955-01	.1453	.1309	.9238	.5621-02	.5067-02	.9008	6.414	501.9
89	41.100	.82200-01	142.00	.3481	.5919	.4402	.9492	.2288-01	.1702-01	2.398	16.57	555.5
90	41.100	.60700-01	173.00	.5533	.9936	.6872	.9560	.3845-01	.2659-01	3.555	24.38	569.7
90	42.300	.10270	189.00	.2917	.4758	.3737	.9433	.1841-01	.1446-01	2.145	14.91	545.6
90	42.600	.59600-01	172.00	.6011	1.092	.7483	.9562	.4225-01	.2896-01	3.808	26.08	572.0
90	43.200	.42000-01	168.00	.4445	.7559	.5262	.9623	.2925-01	.2036-01	3.071	21.20	557.1
90	43.400	.82200-01	181.00	.3364	.5675	.4245	.9490	.2196-01	.1643-01	2.351	16.25	555.0
89	43.600	.62900-01	128.00	.4577	.7789	.5618	.9551	.3011-01	.2172-01	3.148	21.75	555.8
89	45.000	.22900-01	8.0000	.7472	1.448	.8790	.9690	.5599-01	.3398-01	4.378	29.82	582.1
90	46.100	.62900-01	174.00	.4701	.8082	.5798	.9548	.3128-01	.2244-01	3.200	22.06	559.8
90	47.700	.40800-01	167.00	.5004	.8664	.5953	.9622	.3353-01	.2304-01	3.372	23.23	561.5
89	48.400	.44200-01	109.00	.4444	.7570	.5298	.9610	.2926-01	.2048-01	3.053	21.09	556.0
89	50.000	.19400-01	156.00	.7188	1.669	.7763	.9870	.6452-01	.3001-01	3.581	24.10	604.8
89	51.000	.12100-01	154.00	.8901	2.579	.9729	.9870	.9971-01	.3761-01	3.855	25.71	621.6
89	51.000	.17600-01	155.00	.8040	1.834	.8673	.9870	.7092-01	.3353-01	4.059	27.34	603.1
90	51.900	.44800-01	170.00	.3638	.5915	.4294	.9603	.2289-01	.1662-01	2.691	18.71	544.6
90	53.200	.24700-01	163.00	.4225	.6940	.4839	.9676	.2686-01	.1873-01	3.075	21.34	547.6
90	65.200	.24700-01	162.00	.5268	.9109	.6151	.9660	.3525-01	.2380-01	3.557	24.51	561.2
88	90.000	.91000-02	44.000	.4639	.8478	.5580	.9628	.3277-01	.2157-01	2.906	19.91	571.6
88	90.000	.11100-01	45.000	.7628	1.623	.9504	.9628	.6274-01	.3674-01	4.082	27.61	595.2
88	90.000	.13100-01	46.000	.7919	1.581	.9726	.9628	.6111-01	.3760-01	4.500	30.58	586.7
88	90.000	.17000-01	48.000	.6266	1.169	.7575	.9628	.4520-01	.2928-01	3.829	26.17	575.6
88	90.000	.20900-01	50.000	.6250	1.140	.7514	.9628	.4406-01	.2905-01	3.925	26.89	571.2
88	90.000	.24900-01	52.000	.5622	1.011	.6754	.9623	.3909-01	.2611-01	3.591	24.64	568.4
88	90.000	.26900-01	53.000	.5473	.9659	.6568	.9615	.3734-01	.2539-01	3.581	24.63	564.4
88	90.000	.28800-01	54.000	.5478	.9584	.6584	.9608	.3705-01	.2545-01	3.627	24.97	562.4
88	90.000	.32800-01	55.000	.4815	.8139	.5774	.9593	.3146-01	.2232-01	3.344	23.13	554.0
88	90.000	.36700-01	56.000	.4557	.7649	.5491	.9579	.2957-01	.2123-01	3.198	22.14	552.1
88	90.000	.40600-01	57.000	.4455	.7591	.5430	.9566	.2935-01	.2099-01	3.059	21.13	556.1
88	90.000	.48500-01	58.000	.4283	.7203	.5269	.9538	.2785-01	.2037-01	2.996	20.74	552.7
88	90.000	.56400-01	59.000	.3717	.6199	.4619	.9512	.2396-01	.1786-01	2.634	18.25	550.4
88	90.000	.76100-01	60.000	.2914	.4784	.3708	.9452	.1850-01	.1433-01	2.114	14.69	546.0
88	90.000	.95800-01	61.000	.2586	.4230	.3374	.9399	.1635-01	.1304-01	1.888	13.12	544.9
88	90.000	.11550	62.000	.1865	.3039	.2487	.9352	.1175-01	.9614-02	1.370	9.527	543.7
88	135.00	.19000-01	49.000	.6137	1.124	.7628	.9570	.4346-01	.2949-01	3.834	26.26	572.1

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
88	135.00	.22900-01	51.000	.5887	1.078	.7316	.9570	.4167-01	.2828-01	3.680	25.20	572.0
88	180.00	.91000-02	23.000	.2320	.3756	.2806	.9547	.1452-01	.1085-01	1.720	11.98	541.9
88	180.00	.11100-01	24.000	.4465	.8055	.5595	.9547	.3114-01	.2163-01	2.841	19.49	569.1
88	180.00	.13100-01	25.000	.7573	1.607	.9959	.9547	.6212-01	.3850-01	4.062	27.48	594.9
88	180.00	.15000-01	26.000	.7458	1.542	.9736	.9547	.5960-01	.3764-01	4.097	27.77	591.6
88	180.00	.17000-01	27.000	.6799	1.310	.8694	.9547	.5065-01	.3361-01	4.008	27.32	581.2
88	180.00	.19000-01	28.000	.6424	1.206	.8150	.9547	.4662-01	.3151-01	3.900	26.64	576.6
88	180.00	.20900-01	29.000	.6028	1.100	.7582	.9547	.4254-01	.2931-01	3.781	25.91	571.4
88	180.00	.28800-01	32.000	.5102	.8920	.6394	.9528	.3448-01	.2472-01	3.381	23.28	562.3
88	180.00	.32800-01	33.000	.4814	.8115	.6000	.9514	.3137-01	.2319-01	3.357	23.23	553.3
88	180.00	.36700-01	34.000	.4548	.7808	.5746	.9501	.3018-01	.2221-01	3.090	21.32	557.9
88	180.00	.56400-01	37.000	.3573	.5871	.4579	.9439	.2270-01	.1770-01	2.588	17.98	546.3
88	180.00	.76100-01	38.000	.2725	.4386	.3554	.9385	.1696-01	.1374-01	2.042	14.23	539.9
88	180.00	.95800-01	39.000	.2007	.3180	.2655	.9338	.1229-01	.1026-01	1.544	10.80	534.7
88	180.00	.11550	40.000	.1493	.2391	.2025	.9300	.9242-02	.7830-02	1.127	7.863	538.4
88	180.00	.18450	42.000	.6801-01	.1027	.9214-01	.9225	.3970-02	.3562-02	.5711	4.033	516.4
88	225.00	.22900-01	30.000	.5855	1.051	.7234	.9570	.4064-01	.2797-01	3.747	25.72	568.1
88	270.00	.91000-02	63.000	.4881	.8989	.5882	.9628	.3475-01	.2274-01	3.029	20.74	573.1
88	270.00	.11100-01	64.000	.7110	1.495	.8835	.9628	.5778-01	.3415-01	3.846	26.03	593.7
88	270.00	.13100-01	65.000	.7910	1.605	.9752	.9628	.6204-01	.3770-01	4.424	30.02	589.0
88	270.00	.17000-01	67.000	.6989	1.327	.8484	.9628	.5128-01	.3280-01	4.189	28.59	578.6
88	270.00	.20900-01	69.000	.6811	1.281	.8250	.9628	.4952-01	.3189-01	4.125	28.18	577.0
88	270.00	.24900-01	71.000	.6270	1.157	.7580	.9623	.4472-01	.2930-01	3.883	26.57	573.5
88	270.00	.28800-01	73.000	.5430	.9707	.6563	.9608	.3753-01	.2537-01	3.495	24.00	567.2
88	270.00	.36700-01	75.000	.5175	.9071	.6316	.9579	.3507-01	.2442-01	3.417	23.52	562.9
88	270.00	.48500-01	77.000	.4335	.7277	.5330	.9538	.2813-01	.2060-01	3.042	21.06	552.2
88	270.00	.56400-01	78.000	.3821	.6339	.4739	.9512	.2451-01	.1832-01	2.728	18.92	549.0
88	270.00	.95800-01	80.000	.2449	.3945	.3172	.9399	.1525-01	.1226-01	1.831	12.76	540.3
88	270.00	.11550	81.000	.1884	.3049	.2503	.9352	.1179-01	.9678-02	1.398	9.736	541.7
88	315.00	.19000-01	68.000	.6136	1.108	.7121	.9690	.4284-01	.2753-01	3.899	26.74	569.3
88	315.00	.22900-01	70.000	.6529	1.222	.7631	.9690	.4725-01	.2950-01	3.975	27.17	576.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
198	5.500	-4.988	-.8695-02	127.0	719.7	.1365	102.1	-.1000+00	2724.	.3608-02	.8214-07	3.719
199	5.500	-5.000	-.6972-02	126.9	719.7	.1364	102.1	-.8000-01	2724.	.3606-02	.8214-07	3.717
200	5.500	-5.002	-.8719-02	126.8	719.7	.1363	102.1	-.1000+00	2724.	.3604-02	.8214-07	3.715

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
198	.3018-01	.1275-01
199	.3017-01	.1276-01
200	.3016-01	.1276-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
199	.00000	.91000-02	1.0000	.5203	.8717	.6059	.9649	.2630-01	.1828-01	2.802	19.52	541.2
199	.00000	.15000-01	4.0000	.6162	1.077	.7248	.9649	.3248-01	.2187-01	3.129	21.67	551.4
199	.00000	.17000-01	5.0000	.6425	1.110	.7538	.9649	.3348-01	.2274-01	3.313	22.98	548.8
199	.00000	.19000-01	6.0000	.6199	1.077	.7282	.9649	.3249-01	.2197-01	3.172	21.98	550.1
199	.00000	.24900-01	9.0000	.5530	.9529	.6499	.9645	.2875-01	.1961-01	2.862	19.86	548.2
199	.00000	.26900-01	10.000	.4995	.8481	.5870	.9637	.2559-01	.1771-01	2.638	18.34	544.6
198	.00000	.32800-01	12.000	.4697	.7738	.5533	.9616	.2336-01	.1670-01	2.596	18.13	536.5
198	.00000	.36700-01	13.000	.4120	.6710	.4868	.9602	.2025-01	.1469-01	2.318	16.22	533.2
198	.00000	.40600-01	14.000	.4250	.7001	.5071	.9588	.2113-01	.1531-01	2.348	16.40	536.6
198	.00000	.48500-01	15.000	.3796	.6238	.4586	.9560	.1883-01	.1384-01	2.106	14.71	535.9
198	.00000	.56400-01	16.000	.3964	.6578	.4867	.9533	.1986-01	.1469-01	2.166	15.11	538.6
199	.00000	.76100-01	17.000	.3339	.5514	.4226	.9468	.1664-01	.1276-01	1.838	12.83	537.2
198	.00000	.11550	19.000	.2103	.3526	.2852	.9349	.1064-01	.8607-02	1.132	7.883	541.3
198	.00000	.16480	20.000	.1164	.1917	.1671	.9227	.5786-02	.5044-02	.6432	4.492	536.5
198	.00000	.21400	22.000	.6089-01	.9076-01	.8492-01	.9140	.2739-02	.2563-02	.4018	2.862	501.0
200	2.0000	.24700-01	165.00	.4522	.7249	.5218	.9645	.2186-01	.1574-01	2.609	18.30	528.4
199	9.0000	.15000-01	157.00	.5934	1.036	.6983	.9648	.3126-01	.2107-01	3.015	20.89	551.3
199	9.0000	.17600-01	158.00	.5833	.9936	.6824	.9648	.2998-01	.2059-01	3.068	21.32	545.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
200	9.8000	.24700-01	164.00	.4578	.7324	.5283	.9644	.2209-01	.1594-01	2.651	18.60	527.7
199	10.000	.22900-01	88.000	.5025	.8544	.5877	.9648	.2578-01	.1773-01	2.649	18.42	544.9
199	10.000	.26900-01	90.000	.4387	.7290	.5131	.9636	.2199-01	.1548-01	2.392	16.68	538.9
199	10.000	.34700-01	94.000	.4121	.6691	.4853	.9608	.2019-01	.1464-01	2.330	16.31	532.3
199	12.000	.17600-01	152.00	1.168	2.569	1.257	.9870	.7752-01	.3793-01	4.651	31.58	587.7
199	12.000	.12100-01	151.00	1.052	2.805	1.146	.9870	.8464-01	.3456-01	3.657	24.61	604.5
199	13.000	.19400-01	153.00	1.062	2.171	1.138	.9870	.6551-01	.3433-01	4.517	30.82	578.7
200	14.600	.44200-01	169.00	.4717	.7654	.5643	.9572	.2309-01	.1702-01	2.669	18.68	532.1
199	18.500	.44200-01	106.00	.4868	.8339	.5927	.9571	.2516-01	.1788-01	2.539	17.63	546.8
200	19.600	.62900-01	175.00	.4457	.7109	.5463	.9506	.2144-01	.1648-01	2.593	18.21	526.8
199	19.800	.40800-01	101.00	.5374	.9295	.6524	.9582	.2804-01	.1968-01	2.766	19.18	549.1
199	20.000	.24900-01	89.000	.3820	.6338	.4459	.9639	.1912-01	.1345-01	2.088	14.56	538.5
199	20.000	.28800-01	91.000	.3568	.5886	.4186	.9625	.1776-01	.1263-01	1.968	13.74	536.9
199	20.000	.32800-01	93.000	.4115	.6938	.4890	.9611	.2093-01	.1475-01	2.196	15.28	542.8
199	22.200	.62900-01	125.00	.4920	.8313	.6166	.9505	.2508-01	.1860-01	2.617	18.21	543.3
199	22.400	.44200-01	107.00	.4523	.7632	.5487	.9569	.2303-01	.1656-01	2.410	16.77	543.0
200	22.600	.10270	192.00	.2452	.3926	.3196	.9380	.1184-01	.9640-02	1.418	9.947	528.0
199	23.000	.42000-01	105.00	.5530	.9649	.6752	.9576	.2911-01	.2037-01	2.813	19.49	551.1
199	23.400	.59600-01	120.00	.5617	.9618	.7036	.9515	.2902-01	.2123-01	2.931	20.36	546.7
200	23.900	.21310	250.00	.7069-01	.1034	.9721-01	.9138	.3120-02	.2932-02	.4847	3.470	492.3
199	24.100	.82200-01	139.00	.3847	.6465	.4972	.9441	.1951-01	.1500-01	2.063	14.36	542.0
200	24.400	.19040	238.00	.8671-01	.1329	.1217	.9173	.4008-02	.3670-02	.5418	3.835	512.5
200	24.400	.12440	207.00	.1974	.3229	.2685	.9319	.9738-02	.8097-02	1.102	7.705	534.5
200	24.800	.16810	223.00	.1203	.1939	.1713	.9215	.5848-02	.5167-02	.6876	4.819	530.1
199	24.900	.62900-01	126.00	.5264	.9044	.6644	.9503	.2729-01	.2005-01	2.735	18.98	547.5
200	25.000	.79500-01	178.00	.3582	.5749	.4520	.9449	.1734-01	.1363-01	2.062	14.46	528.8
200	25.300	.10270	191.00	.2836	.4563	.3709	.9379	.1376-01	.1119-01	1.627	11.41	529.5
200	25.300	.10000+00	186.00	.3050	.4967	.3996	.9386	.1498-01	.1205-01	1.715	12.00	533.2
199	25.500	.60700-01	124.00	.6618	1.184	.8444	.9510	.3573-01	.2548-01	3.257	22.50	556.6
200	26.000	.12440	206.00	.2152	.3520	.2928	.9318	.1062-01	.8832-02	1.201	8.398	534.6
199	26.300	.82200-01	140.00	.4013	.6772	.5200	.9440	.2043-01	.1569-01	2.138	14.88	543.1
200	26.700	.12100	199.00	.2906	.4855	.3983	.9326	.1464-01	.1201-01	1.572	10.95	540.4
200	26.800	.16810	222.00	.1405	.2266	.2003	.9214	.6835-02	.6042-02	.8027	5.625	530.3
200	27.000	.19040	237.00	.1088	.1670	.1529	.9172	.5036-02	.4612-02	.6780	4.797	513.1
200	27.100	.21310	249.00	.8672-01	.1267	.1191	.9137	.3821-02	.3593-02	.5969	4.275	491.5
200	27.200	.80300-01	180.00	.4795	.7894	.6130	.9445	.2381-01	.1849-01	2.651	18.51	536.4
199	27.400	.40100-01	98.000	.5265	.9264	.6432	.9580	.2795-01	.1941-01	2.649	18.33	552.9
200	27.400	.16480	215.00	.1554	.2549	.2233	.9221	.7688-02	.6736-02	.8647	6.043	535.2
199	27.600	.41600-01	102.00	.5395	.9523	.6616	.9574	.2873-01	.1996-01	2.703	18.70	553.6
200	27.600	.12440	205.00	.2359	.3876	.3220	.9317	.1169-01	.9711-02	1.308	9.139	535.8
200	27.600	.18700	230.00	.1196	.1852	.1688	.9178	.5587-02	.5091-02	.7328	5.175	516.5
200	27.700	.21010	243.00	.1049	.1550	.1452	.9141	.4675-02	.4380-02	.7048	5.032	496.9
200	27.900	.10110	188.00	.3339	.5530	.4423	.9382	.1668-01	.1334-01	1.829	12.76	538.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
199	28.000	.46800-01	110.00	.2542	.4019	.3038	.9556	.1213-01	.9165-02	1.502	10.56	523.9
200	28.200	.16810	221.00	.1527	.2485	.2191	.9213	.7495-02	.6609-02	.8593	6.012	533.1
200	28.300	.19040	236.00	.1079	.1645	.1509	.9171	.4962-02	.4553-02	.6803	4.820	510.6
200	28.300	.12200	201.00	.2513	.4127	.3418	.9323	.1245-01	.1031-01	1.395	9.745	535.7
199	28.400	.53500-01	114.00	.3036	.4920	.3698	.9532	.1484-01	.1116-01	1.721	12.05	531.7
200	28.400	.21310	248.00	.8882-01	.1294	.1218	.9137	.3904-02	.3674-02	.6147	4.406	490.2
199	28.700	.58600-01	117.00	.5684	.9726	.7119	.9515	.2935-01	.2148-01	2.969	20.62	546.5
200	28.800	.16580	217.00	.1678	.2767	.2424	.9218	.8347-02	.7312-02	.9249	6.457	536.9
199	28.800	.60400-01	121.00	.7063	1.294	.9092	.9509	.3905-01	.2743-01	3.375	23.25	561.3
200	29.000	.21110	244.00	.9534-01	.1399	.1313	.9139	.4219-02	.3961-02	.6500	4.649	493.6
199	29.000	.65700-01	129.00	.3124	.4938	.3843	.9491	.1490-01	.1159-01	1.847	12.99	523.7
199	29.200	.72400-01	133.00	.3801	.6316	.4820	.9469	.1906-01	.1454-01	2.073	14.46	538.9
199	29.300	.79500-01	136.00	.5454	.9787	.7225	.9446	.2953-01	.2180-01	2.674	18.47	557.1
199	29.600	.92500-01	143.00	.3232	.5407	.4247	.9406	.1631-01	.1281-01	1.744	12.15	540.8
199	29.700	.10000+00	146.00	.3647	.6457	.4984	.9384	.1948-01	.1504-01	1.820	12.58	554.3
200	29.900	.12100	198.00	.3038	.5106	.4182	.9324	.1540-01	.1261-01	1.628	11.34	542.0
200	30.200	.16480	214.00	.1756	.2913	.2545	.9219	.8785-02	.7675-02	.9593	6.692	538.5
200	30.200	.18700	229.00	.9595-05	.1129-04	.1095-04	.9176	.3405-06	.3302-06	.1380-03	.1160-02	240.0
200	30.300	.21010	242.00	.1062	.1570	.1471	.9140	.4735-02	.4437-02	.7123	5.085	497.3
199	31.500	.11100-01	83.000	.7188	1.332	.8634	.9636	.4020-01	.2605-01	3.389	23.32	563.4
199	31.500	.14200-01	84.000	1.108	2.545	1.196	.9870	.7680-01	.3608-01	4.260	28.86	592.2
199	31.500	.16000-01	85.000	1.089	2.338	1.170	.9870	.7055-01	.3531-01	4.426	30.10	585.0
199	31.500	.19400-01	87.000	.8431	1.536	.8957	.9870	.4636-01	.2702-01	4.057	27.96	560.2
200	32.100	.21010	241.00	.9428-01	.1380	.1296	.9140	.4162-02	.3909-02	.6460	4.624	492.5
200	32.200	.16480	213.00	.1576	.2583	.2267	.9218	.7791-02	.6838-02	.8781	6.138	535.0
200	32.200	.17860	224.00	.1168	.1819	.1644	.9191	.5485-02	.4959-02	.7095	5.005	518.4
200	32.200	.18700	228.00	.1086	.1659	.1518	.9176	.5003-02	.4579-02	.6825	4.833	511.3
200	32.300	.12100	197.00	.2701	.4436	.3674	.9323	.1338-01	.1108-01	1.499	10.47	535.7
200	32.300	.12300	194.00	.2254	.3720	.3084	.9318	.1122-01	.9301-02	1.241	8.667	537.1
200	32.300	.12730	208.00	.9557-01	.1511	.1283	.9306	.4559-02	.3870-02	.5642	3.967	524.0
200	32.300	.13420	209.00	.1437	.2379	.2001	.9289	.7177-02	.6034-02	.7870	5.491	538.0
199	32.400	.10000+00	147.00	.2958	.5064	.3982	.9382	.1528-01	.1201-01	1.544	10.72	546.7
200	32.400	.10110	184.00	.3365	.5564	.4461	.9378	.1678-01	.1346-01	1.848	12.90	537.6
200	32.400	.10630	193.00	.1575	.2411	.2021	.9363	.7273-02	.6096-02	.9855	6.976	512.2
200	32.500	.85800-01	183.00	.1963	.2978	.2442	.9424	.8982-02	.7367-02	1.251	8.871	508.5
199	32.600	.79500-01	137.00	.4412	.7791	.5815	.9444	.2351-01	.1754-01	2.209	15.28	553.7
200	32.600	.80800-01	176.00	.4389	.7215	.5623	.9440	.2176-01	.1696-01	2.433	17.00	535.9
199	32.700	.67400-01	132.00	.2522	.3980	.3112	.9483	.1201-01	.9389-02	1.495	10.52	523.2
199	32.700	.72400-01	134.00	.3469	.5680	.4379	.9466	.1714-01	.1321-01	1.935	13.53	534.8
199	32.800	.65700-01	130.00	.2387	.3696	.2916	.9488	.1115-01	.8797-02	1.464	10.34	516.4
200	32.800	.16680	210.00	.1316	.2122	.1876	.9214	.6401-02	.5660-02	.7521	5.271	530.2
200	32.800	.18880	225.00	.8011-01	.1204	.1108	.9172	.3630-02	.3341-02	.5200	3.697	504.5
199	32.900	.58600-01	118.00	.5157	.8629	.6418	.9512	.2604-01	.1936-01	2.783	19.39	540.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
199	32.900	.60400-01	122.00	.4481	.7428	.5574	.9506	.2241-01	.1682-01	2.453	17.11	538.3
200	32.900	.61300-01	171.00	.5742	.9676	.7198	.9503	.2919-01	.2171-01	3.065	21.33	542.7
199	33.000	.53500-01	115.00	.3489	.5668	.4261	.9529	.1710-01	.1286-01	1.970	13.79	532.5
199	33.200	.48300-01	113.00	.2285	.3580	.2733	.9547	.1080-01	.8247-02	1.371	9.661	520.8
200	33.400	.42800-01	166.00	.4605	.7492	.5530	.9566	.2260-01	.1668-01	2.593	18.15	532.9
199	33.500	.40100-01	99.000	.4947	.8391	.5992	.9575	.2532-01	.1808-01	2.617	18.20	544.3
199	33.600	.38300-01	97.000	.4681	.7900	.5643	.9581	.2384-01	.1703-01	2.494	17.35	543.1
199	33.700	.36700-01	96.000	.4517	.7659	.5438	.9587	.2311-01	.1641-01	2.390	16.62	544.3
199	33.900	.33800-01	95.000	.3641	.6022	.4331	.9597	.1817-01	.1307-01	2.000	13.96	537.6
200	34.700	.21010	240.00	.9504-01	.1377	.1296	.9139	.4153-02	.3910-02	.6658	4.780	487.4
200	34.700	.18700	227.00	.1186	.1829	.1671	.9174	.5517-02	.5041-02	.7331	5.182	514.8
200	34.900	.16480	212.00	.1297	.2101	.1852	.9217	.6337-02	.5587-02	.7362	5.155	531.5
199	35.100	.10000+00	148.00	.3004	.5085	.4026	.9379	.1534-01	.1215-01	1.593	11.08	543.8
200	35.200	.23900-01	161.00	.2787	.4189	.3178	.9632	.1264-01	.9585-02	1.806	12.84	504.7
199	35.300	.92500-01	145.00	.3202	.5324	.4205	.9402	.1606-01	.1269-01	1.744	12.16	539.1
199	35.300	.22100-01	160.00	.2710	.4235	.3122	.9633	.1278-01	.9420-02	1.634	11.52	519.8
200	35.400	.18800	231.00	.1054	.1601	.1470	.9172	.4830-02	.4433-02	.6694	4.747	509.1
200	35.500	.12100	196.00	.2293	.3733	.3108	.9321	.1126-01	.9374-02	1.291	9.032	533.1
200	35.600	.16580	216.00	.1222	.1961	.1736	.9214	.5916-02	.5237-02	.7030	4.930	528.9
199	35.800	.80600-01	138.00	.3468	.5762	.4468	.9439	.1739-01	.1348-01	1.891	13.19	539.0
200	35.900	.21310	247.00	.7930-01	.1139	.1076	.9134	.3434-02	.3244-02	.5672	4.083	482.5
200	36.000	.19040	235.00	.9373-01	.1407	.1298	.9168	.4245-02	.3916-02	.6092	4.331	504.2
200	36.200	.16810	220.00	.1061	.1680	.1497	.9209	.5067-02	.4516-02	.6253	4.396	524.3
199	36.200	.72400-01	135.00	.3821	.6230	.4821	.9463	.1880-01	.1455-01	2.145	15.01	533.6
200	36.300	.12200	200.00	.2057	.3351	.2794	.9317	.1011-01	.8426-02	1.156	8.090	533.3
199	36.600	.65700-01	131.00	.2207	.3460	.2713	.9485	.1044-01	.8185-02	1.323	9.321	520.9
200	36.700	.18700	226.00	.1044	.1584	.1454	.9173	.4778-02	.4385-02	.6638	4.708	508.8
200	36.900	.16480	211.00	.1192	.1913	.1692	.9215	.5770-02	.5105-02	.6862	4.813	528.8
200	36.900	.10110	187.00	.3174	.5167	.4183	.9375	.1559-01	.1262-01	1.787	12.50	533.1
199	37.000	.60400-01	123.00	.5016	.8480	.6297	.9502	.2559-01	.1900-01	2.667	18.55	543.5
200	37.000	.12440	204.00	.1792	.2890	.2428	.9310	.8718-02	.7324-02	1.023	7.172	530.3
199	37.100	.58600-01	119.00	.5261	.8802	.6560	.9508	.2656-01	.1979-01	2.840	19.79	540.8
200	37.200	.21310	246.00	.8541-01	.1226	.1158	.9134	.3697-02	.3494-02	.6114	4.401	482.4
200	37.600	.16810	219.00	.1078	.1703	.1519	.9208	.5135-02	.4582-02	.6378	4.487	523.5
199	37.800	.10270	150.00	.2474	.4095	.3297	.9369	.1235-01	.9947-02	1.358	9.474	537.8
200	37.900	.12100	195.00	.2112	.3354	.2824	.9319	.1012-01	.8519-02	1.237	8.693	525.4
200	38.000	.80300-01	179.00	.4533	.7322	.5771	.9437	.2208-01	.1741-01	2.583	18.10	530.7
199	38.500	.46800-01	112.00	.2695	.4268	.3235	.9547	.1288-01	.9761-02	1.587	11.16	524.4
200	38.600	.12440	203.00	.1834	.2950	.2483	.9309	.8898-02	.7490-02	1.053	7.383	529.3
200	38.700	.10000+00	185.00	.3285	.5322	.4315	.9377	.1605-01	.1301-01	1.863	13.04	531.7
199	38.900	.82200-01	141.00	.3244	.5305	.4167	.9430	.1601-01	.1257-01	1.814	12.68	534.4
199	39.300	.41600-01	104.00	.4262	.7208	.5185	.9564	.2175-01	.1564-01	2.265	15.75	543.6
200	39.500	.10270	190.00	.3087	.4953	.4052	.9368	.1494-01	.1222-01	1.778	12.47	528.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
200	39.600	.16810	218.00	.1036	.1631	.1458	.9207	.4918-02	.4397-02	.6174	4.346	522.2
200	39.900	.19040	233.00	.7896-01	.1174	.1087	.9166	.3542-02	.3277-02	.5231	3.728	500.0
200	40.100	.79500-01	177.00	.4237	.6714	.5347	.9437	.2025-01	.1613-01	2.492	17.52	524.6
200	40.200	.12440	202.00	.1796	.2880	.2429	.9308	.8688-02	.7327-02	1.036	7.268	528.4
200	40.300	.21310	245.00	.7260-01	.1034	.9790-01	.9132	.3119-02	.2953-02	.5289	3.817	478.1
199	41.100	.82200-01	142.00	.3348	.5496	.4312	.9428	.1658-01	.1301-01	1.860	12.99	535.6
200	41.100	.60700-01	173.00	.5172	.8378	.6404	.9497	.2527-01	.1932-01	2.934	20.55	531.6
200	42.600	.59600-01	172.00	.5621	.9188	.6977	.9499	.2771-01	.2105-01	3.144	21.98	534.3
200	43.200	.42000-01	168.00	.4173	.6629	.4988	.9559	.1999-01	.1504-01	2.445	17.18	525.4
200	43.400	.82200-01	181.00	.3027	.4849	.3860	.9426	.1462-01	.1164-01	1.748	12.27	528.1
199	43.600	.62900-01	128.00	.3454	.5658	.4316	.9487	.1707-01	.1302-01	1.925	13.45	534.9
199	45.000	.22900-01	8.0000	.6251	1.080	.7429	.9624	.3259-01	.2241-01	3.221	22.34	548.9
200	46.100	.62900-01	174.00	.4526	.7176	.5590	.9485	.2164-01	.1686-01	2.660	18.70	524.8
200	47.700	.40800-01	167.00	.4608	.7365	.5520	.9559	.2221-01	.1665-01	2.672	18.75	527.4
199	48.400	.44200-01	109.00	.4223	.7070	.5169	.9546	.2133-01	.1560-01	2.278	15.87	540.9
199	50.000	.19400-01	156.00	.7638	1.450	.8177	.9861	.4374-01	.2467-01	3.505	24.06	567.6
199	51.000	.12100-01	154.00	.9075	1.993	.9826	.9860	.6013-01	.2965-01	3.618	24.57	587.5
199	51.000	.17600-01	155.00	.6963	1.317	.7456	.9860	.3974-01	.2250-01	3.208	22.03	567.0
200	51.900	.44800-01	170.00	.3346	.5192	.4001	.9540	.1566-01	.1207-01	2.042	14.42	517.3
200	53.200	.24700-01	163.00	.3795	.5913	.4411	.9610	.1783-01	.1330-01	2.300	16.22	518.7
200	65.200	.24700-01	162.00	.5018	.8062	.5925	.9595	.2432-01	.1787-01	2.885	20.23	529.1
198	90.000	.91000-02	44.000	.3316	.5341	.3974	.9563	.1612-01	.1199-01	1.900	13.32	529.9
198	90.000	.11100-01	45.000	.6651	1.167	.8189	.9563	.3523-01	.2472-01	3.359	23.25	552.4
198	90.000	.13100-01	46.000	.7397	1.306	.9124	.9563	.3941-01	.2754-01	3.706	25.64	553.7
198	90.000	.17000-01	48.000	.7275	1.222	.8837	.9563	.3689-01	.2667-01	3.903	27.18	541.9
198	90.000	.20900-01	50.000	.6105	1.015	.7392	.9563	.3065-01	.2231-01	3.325	23.19	539.2
198	90.000	.24900-01	52.000	.4859	.7900	.5854	.9559	.2384-01	.1767-01	2.743	19.19	532.7
198	90.000	.26900-01	53.000	.5354	.8716	.6475	.9551	.2631-01	.1954-01	3.016	21.10	533.1
198	90.000	.28800-01	54.000	.5129	.8283	.6206	.9544	.2500-01	.1873-01	2.925	20.49	530.7
198	90.000	.32800-01	55.000	.3296	.5090	.3951	.9530	.1536-01	.1192-01	2.032	14.36	515.4
198	90.000	.36700-01	56.000	.4115	.6514	.5008	.9516	.1966-01	.1511-01	2.427	17.06	524.2
198	90.000	.40600-01	57.000	.4001	.6414	.4923	.9502	.1936-01	.1486-01	2.311	16.21	528.3
198	90.000	.48500-01	58.000	.3617	.5774	.4499	.9475	.1743-01	.1358-01	2.103	14.76	527.0
198	90.000	.56400-01	59.000	.3596	.5713	.4520	.9448	.1724-01	.1364-01	2.108	14.81	525.4
198	90.000	.76100-01	60.000	.2923	.4588	.3761	.9386	.1385-01	.1135-01	1.749	12.32	521.4
199	90.000	.95800-01	61.000	.2056	.3203	.2707	.9329	.9668-02	.8169-02	1.246	8.789	518.8
198	90.000	.11550	62.000	.1557	.2442	.2110	.9277	.7372-02	.6369-02	.9325	6.568	521.2
198	135.00	.19000-01	49.000	.6255	1.031	.7753	.9506	.3112-01	.2343-01	3.454	24.12	536.7
198	135.00	.22900-01	51.000	.5780	.9544	.7178	.9506	.2881-01	.2167-01	3.184	22.23	537.2
198	180.00	.91000-02	23.000	.1513	.2319	.1844	.9483	.7000-02	.5566-02	.9447	6.685	512.8
198	180.00	.11100-01	24.000	.2245	.3562	.2775	.9483	.1075-01	.8377-02	1.319	9.271	525.0
198	180.00	.13100-01	25.000	.6436	1.071	.8109	.9483	.3233-01	.2447-01	3.502	24.42	539.4
198	180.00	.15000-01	26.000	.7649	1.313	.9751	.9483	.3962-01	.2943-01	3.981	27.64	547.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K005)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
198	180.00	.17000-01	27.000	.7569	1.313	.9691	.9483	.3964-01	.2925-01	3.880	26.90	549.8
198	180.00	.19000-01	28.000	.6591	1.119	.8367	.9483	.3376-01	.2525-01	3.485	24.23	544.5
198	180.00	.20900-01	29.000	.6009	.9899	.7541	.9483	.2988-01	.2276-01	3.322	23.20	536.5
198	180.00	.28800-01	32.000	.5209	.8417	.6546	.9464	.2540-01	.1976-01	2.969	20.80	530.8
198	180.00	.32800-01	33.000	.4774	.7536	.5979	.9450	.2275-01	.1805-01	2.828	19.90	523.4
198	180.00	.36700-01	34.000	.4404	.7033	.5579	.9436	.2123-01	.1684-01	2.559	17.97	527.1
198	180.00	.48500-01	36.000	.3581	.5682	.4609	.9397	.1715-01	.1391-01	2.104	14.79	525.0
198	180.00	.56400-01	37.000	.3215	.5088	.4183	.9371	.1536-01	.1262-01	1.897	13.34	524.2
198	180.00	.76100-01	38.000	.2233	.3526	.2986	.9313	.1064-01	.9012-02	1.323	9.304	523.4
198	180.00	.95800-01	39.000	.1617	.2554	.2219	.9260	.7708-02	.6698-02	.9579	6.738	523.4
198	180.00	.11550	40.000	.1170	.1853	.1647	.9214	.5594-02	.4972-02	.6888	4.842	524.6
198	180.00	.18450	42.000	.4401-01	.6357-01	.6061-01	.9110	.1919-02	.1829-02	.3106	2.232	485.8
198	225.00	.22900-01	30.000	.5766	.9397	.7126	.9506	.2836-01	.2151-01	3.241	22.67	533.4
198	270.00	.91000-02	63.000	.3894	.6276	.4668	.9563	.1894-01	.1409-01	2.228	15.62	530.1
198	270.00	.11100-01	64.000	.6317	1.101	.7762	.9563	.3323-01	.2343-01	3.220	22.31	550.8
198	270.00	.13100-01	65.000	.7264	1.283	.8964	.9563	.3874-01	.2705-01	3.635	25.14	553.9
198	270.00	.17000-01	67.000	.5760	.9681	.6999	.9563	.2922-01	.2112-01	3.090	21.51	542.0
198	270.00	.20900-01	69.000	.6596	1.113	.8024	.9563	.3359-01	.2422-01	3.517	24.47	543.0
198	270.00	.24900-01	71.000	.6069	1.017	.7384	.9558	.3070-01	.2229-01	3.269	22.77	541.2
198	270.00	.28800-01	73.000	.5537	.9058	.6730	.9544	.2734-01	.2031-01	3.094	21.63	534.5
198	270.00	.36700-01	75.000	.4754	.7653	.5823	.9516	.2310-01	.1757-01	2.726	19.11	529.7
198	270.00	.48500-01	77.000	.3759	.5934	.4655	.9475	.1791-01	.1405-01	2.227	15.67	523.4
198	270.00	.56400-01	78.000	.3463	.5446	.4334	.9448	.1644-01	.1308-01	2.066	14.55	522.0
198	270.00	.95800-01	80.000	.1965	.3091	.2602	.9328	.9331-02	.7853-02	1.172	8.247	522.1
198	270.00	.11550	81.000	.1517	.2394	.2064	.9276	.7226-02	.6231-02	.8998	6.330	523.2
198	315.00	.19000-01	68.000	.5806	.9573	.6816	.9623	.2889-01	.2057-01	3.205	22.38	536.8
198	315.00	.22900-01	70.000	.6017	1.023	.7121	.9623	.3087-01	.2149-01	3.174	22.06	544.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
32	3.010	-4.983	-2.999	36.14	721.7	.9693	256.6	-31.10	2364.	.1019-01	.2050-06	3.653
33	3.010	-4.966	-2.977	36.10	721.7	.9682	256.6	-31.00	2364.	.1018-01	.2050-06	3.649
34	3.010	-4.977	-2.982	36.14	721.7	.9693	256.6	-30.98	2364.	.1019-01	.2050-06	3.653

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
32	.4399-01	.7581-02
33	.4397-01	.7586-02
34	.4399-01	.7581-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
33	.00000	.91000-02	1.0000	.8416	2.275	.9588	.9806	.1000	.4216-01	4.239	28.49	607.1
33	.00000	.11100-01	2.0000	.9889	2.637	1.125	.9806	.1159	.4948-01	5.021	33.76	606.2
33	.00000	.15000-01	4.0000	.7391	1.771	.8333	.9806	.7788-01	.3664-01	4.025	27.18	597.8
33	.00000	.17000-01	5.0000	.7515	1.753	.8452	.9806	.7709-01	.3716-01	4.173	28.22	595.4
33	.00000	.19000-01	6.0000	.7193	1.626	.8065	.9806	.7151-01	.3546-01	4.092	27.72	592.3
33	.00000	.24900-01	9.0000	.6227	1.272	.6932	.9801	.5594-01	.3048-01	3.870	26.39	580.3
33	.00000	.26900-01	10.000	.6271	1.284	.7014	.9793	.5644-01	.3084-01	3.891	26.52	580.6
32	.00000	.32800-01	12.000	.5697	1.159	.6451	.9770	.5101-01	.2838-01	3.557	24.26	579.8
32	.00000	.36700-01	13.000	.4983	.9760	.5660	.9756	.4294-01	.2490-01	3.232	22.11	574.2
32	.00000	.40600-01	14.000	.5499	1.117	.6332	.9741	.4914-01	.2786-01	3.439	23.46	579.5
32	.00000	.48500-01	15.000	.4675	.9124	.5437	.9712	.4014-01	.2392-01	3.043	20.82	573.7
32	.00000	.56400-01	16.000	.4671	.9102	.5518	.9685	.4004-01	.2427-01	3.046	20.85	573.4
32	.00000	.76100-01	17.000	.3935	.7404	.4786	.9621	.3257-01	.2106-01	2.667	18.31	567.6
32	.00000	.11550	19.000	.2613	.4893	.3391	.9512	.2153-01	.1487-01	1.780	12.22	566.8
32	.00000	.16480	20.000	.1808	.3268	.2447	.9416	.1438-01	.1076-01	1.284	8.852	560.2
32	.00000	.21400	22.000	.1210	.1970	.1606	.9361	.8668-02	.7064-02	.9946	6.952	534.8
34	2.0000	.24700-01	165.00	.5609	1.086	.6197	.9804	.4777-01	.2726-01	3.683	25.22	572.4
33	9.0000	.15000-01	157.00	.7306	1.723	.8184	.9814	.7578-01	.3598-01	4.024	27.20	596.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
33	9.0000	.17600-01	158.00	.6657	1.447	.7401	.9814	.6363-01	.3254-01	3.912	26.56	588.0
34	9.8000	.24700-01	164.00	.5779	1.145	.6378	.9810	.5037-01	.2806-01	3.704	25.32	576.0
33	10.000	.22900-01	88.000	.6098	1.244	.6734	.9815	.5470-01	.2961-01	3.794	25.87	580.1
33	10.000	.26900-01	90.000	.5804	1.153	.6439	.9801	.5069-01	.2831-01	3.709	25.34	576.3
33	10.000	.34700-01	94.000	.6024	1.228	.6819	.9771	.5401-01	.2938-01	3.750	25.57	580.1
33	12.000	.17600-01	152.00	1.128	19.41	1.285	.9870	.8534	.5651-01	3.799	25.03	645.1
33	12.000	.12100-01	151.00	.9187	-8.547	1.073	.9870	-.3758	.4719-01	2.632	17.24	656.5
33	13.000	.19400-01	153.00	1.119	16.89	1.274	.9870	.7426	.5600-01	3.803	25.06	644.4
34	14.600	.44200-01	169.00	.5519	1.062	.6310	.9739	.4671-01	.2776-01	3.649	25.00	571.4
33	18.500	.44200-01	106.00	.5648	1.128	.6489	.9740	.4957-01	.2853-01	3.591	24.53	577.1
34	19.600	.62900-01	175.00	.4493	.8311	.5281	.9675	.3656-01	.2323-01	3.106	21.36	564.6
33	19.800	.40800-01	101.00	.6434	1.372	.7403	.9754	.6032-01	.3255-01	3.844	26.13	585.8
33	20.000	.24900-01	89.000	.5114	1.013	.5631	.9815	.4455-01	.2476-01	3.276	22.39	576.0
33	20.000	.28800-01	91.000	.4844	.9278	.5358	.9799	.4079-01	.2356-01	3.217	22.05	570.7
33	20.000	.32800-01	93.000	.5741	1.182	.6459	.9784	.5198-01	.2840-01	3.542	24.14	581.4
34	21.800	.82200-01	182.00	.4120	.7689	.5018	.9614	.3382-01	.2208-01	2.818	19.36	566.2
33	22.200	.62900-01	125.00	.5026	.9944	.5985	.9676	.4372-01	.2632-01	3.225	22.04	575.7
33	22.400	.44200-01	107.00	.5056	.9728	.5772	.9742	.4277-01	.2538-01	3.340	22.89	571.4
34	22.600	.10270	192.00	.3316	.6054	.4150	.9556	.2663-01	.1826-01	2.328	16.03	562.1
33	23.000	.42000-01	105.00	.5944	1.243	.6836	.9750	.5466-01	.3005-01	3.614	24.60	583.4
33	23.400	.59600-01	120.00	.5576	1.138	.6634	.9687	.5004-01	.2917-01	3.469	23.66	580.2
34	23.900	.21310	250.00	.1513	.2426	.1988	.9365	.1067-01	.8744-02	1.276	8.941	530.0
33	24.100	.82200-01	139.00	.4449	.8487	.5448	.9615	.3731-01	.2395-01	2.967	20.34	570.0
34	24.400	.19040	238.00	.1759	.2919	.2326	.9387	.1284-01	.1023-01	1.406	9.797	540.1
34	24.400	.12440	207.00	.2635	.4872	.3416	.9502	.2143-01	.1503-01	1.821	12.52	564.5
34	24.800	.16810	223.00	.1948	.3406	.2595	.9418	.1499-01	.1142-01	1.445	10.00	553.1
33	24.900	.62900-01	126.00	.5324	1.065	.6351	.9677	.4682-01	.2792-01	3.379	23.08	577.3
34	25.000	.79500-01	178.00	.4769	.9174	.5823	.9623	.4036-01	.2562-01	3.154	21.61	571.4
34	25.300	.10270	191.00	.3375	.6247	.4240	.9556	.2748-01	.1865-01	2.330	16.02	564.7
34	25.300	.10000+00	186.00	.3983	.7659	.5039	.9564	.3369-01	.2217-01	2.635	18.05	571.3
33	25.500	.60700-01	124.00	.6142	1.312	.7382	.9684	.5768-01	.3246-01	3.664	24.90	586.0
34	26.000	.12440	206.00	.2703	.5057	.3519	.9502	.2225-01	.1548-01	1.844	12.67	566.6
33	26.300	.82200-01	140.00	.3731	.7059	.4558	.9615	.3104-01	.2004-01	2.511	17.23	568.6
34	26.700	.12100	199.00	.3481	.6905	.4598	.9510	.3038-01	.2023-01	2.229	15.23	576.1
34	26.800	.16810	222.00	.2244	.3966	.3003	.9418	.1745-01	.1321-01	1.640	11.34	555.5
34	27.000	.19040	237.00	.1931	.3233	.2563	.9387	.1422-01	.1128-01	1.522	10.60	542.5
34	27.100	.21310	249.00	.1673	.2704	.2207	.9365	.1190-01	.9709-02	1.392	9.743	532.5
34	27.200	.80300-01	180.00	.5208	1.020	.6394	.9621	.4488-01	.2813-01	3.377	23.10	574.3
33	27.400	.40100-01	98.000	.6216	1.360	.7157	.9758	.5981-01	.3147-01	3.633	24.65	588.8
34	27.400	.16480	215.00	.2567	.4750	.3494	.9423	.2090-01	.1537-01	1.774	12.20	564.6
33	27.600	.41600-01	102.00	.5975	1.289	.6891	.9752	.5670-01	.3030-01	3.533	24.00	587.2
34	27.600	.12440	205.00	.2833	.5396	.3710	.9502	.2374-01	.1632-01	1.893	12.98	569.8
34	27.600	.18700	230.00	.1869	.3199	.2502	.9392	.1407-01	.1101-01	1.426	9.896	548.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
34	27.700	.21010	243.00	.1992	.3323	.2667	.9368	.1462-01	.1173-01	1.579	10.99	541.5
34	27.900	.10110	188.00	.3569	.6970	.4543	.9561	.3066-01	.1998-01	2.322	15.89	573.8
33	28.000	.46800-01	110.00	.3754	.6582	.4239	.9733	.2894-01	.1864-01	2.772	19.17	553.7
34	28 200	.16810	221.00	.2070	.3748	.2799	.9418	.1649-01	.1232-01	1.467	10.11	560.5
34	28.300	.19040	236.00	.1705	.2806	.2245	.9388	.1234-01	.9874-02	1.380	9.632	537.7
34	28.300	.12200	201.00	.3136	.5934	.4083	.9508	.2610-01	.1796-01	2.112	14.49	568.6
33	28.400	.53500-01	114.00	.4978	.9777	.5806	.9709	.4299-01	.2553-01	3.218	22.01	574.6
34	28.400	.21310	248.00	.1584	.2548	.2085	.9365	.1121-01	.9171-02	1.329	9.313	530.9
33	28.700	.58600-01	117.00	.6117	1.272	.7283	.9692	.5594-01	.3202-01	3.738	25.45	582.7
34	28.800	.16580	217.00	.2545	.4772	.3487	.9422	.2099-01	.1534-01	1.732	11.89	567.0
33	28.800	.60400-01	121.00	.6352	1.406	.7674	.9686	.6180-01	.3374-01	3.677	24.94	590.0
34	29.000	.21110	244.00	.1953	.3216	.2599	.9367	.1415-01	.1143-01	1.578	11.01	538.0
33	29.000	.65700-01	129.00	.3451	.6009	.4019	.9668	.2642-01	.1767-01	2.572	17.81	552.2
33	29.200	.72400-01	133.00	.5355	1.060	.6492	.9646	.4660-01	.2855-01	3.434	23.47	575.8
33	29.300	.79500-01	136.00	.5274	1.115	.6579	.9624	.4904-01	.2893-01	3.174	21.59	584.8
33	29.600	.92500-01	143.00	.3865	.7570	.4851	.9585	.3328-01	.2133-01	2.506	17.14	574.2
33	29.700	.10000+00	146.00	.4280	.9055	.5558	.9564	.3981-01	.2444-01	2.575	17.51	584.8
34	29.900	.12100	198.00	.3600	.7388	.4807	.9510	.3250-01	.2115-01	2.229	15.19	580.9
34	30.200	.16480	214.00	.2560	.4826	.3511	.9423	.2123-01	.1545-01	1.731	11.88	567.9
34	30.200	.18700	229.00	.2210	.3832	.2976	.9392	.1686-01	.1309-01	1.657	11.48	551.2
34	30.300	.21010	242.00	.2054	.3467	.2767	.9368	.1525-01	.1217-01	1.600	11.12	544.6
33	31.500	.91000-02	82.000	.8794	2.570	.9960	.9822	.1130	.4379-01	4.242	28.44	612.0
33	31.500	.11100-01	83.000	1.003	2.917	1.135	.9822	.1283	.4992-01	4.848	32.50	611.7
33	31.500	.14200-01	84.000	1.104	-16.02	1.282	.9870	-.7045	.5637-01	3.277	21.48	654.2
33	31.500	.16000-01	85.000	1.135	21.86	1.294	.9870	.9613	.5689-01	3.797	25.01	645.6
33	31.500	.17600-01	86.000	1.138	12.49	1.290	.9870	.5490	.5674-01	3.973	26.21	642.3
33	31.500	.19400-01	87.000	1.068	4.965	1.189	.9870	.2183	.5230-01	4.318	28.67	629.7
34	32.100	.21010	241.00	.1956	.3252	.2615	.9368	.1431-01	.1150-01	1.558	10.86	540.6
34	32.200	.16480	213.00	.2347	.4311	.3184	.9423	.1897-01	.1401-01	1.636	11.26	563.2
34	32.200	.17860	224.00	.2174	.3686	.2880	.9403	.1622-01	.1267-01	1.683	11.69	545.7
34	32.200	.18700	228.00	.1955	.3273	.2589	.9392	.1440-01	.1139-01	1.541	10.72	542.5
34	32.300	.12100	197.00	.3653	.7239	.4823	.9510	.3185-01	.2122-01	2.341	16.00	576.0
34	32.300	.12300	194.00	.2993	.5875	.3951	.9506	.2585-01	.1738-01	1.936	13.24	574.6
34	32.300	.12730	208.00	.2062	.3584	.2624	.9496	.1577-01	.1154-01	1.542	10.68	551.7
34	32.300	.13420	209.00	.2243	.4262	.2975	.9481	.1875-01	.1309-01	1.503	10.31	569.3
33	32.400	.10000+00	147.00	.3936	.7990	.5055	.9564	.3513-01	.2222-01	2.461	16.79	579.4
34	32.400	.10110	184.00	.3914	.7918	.5031	.9561	.3484-01	.2213-01	2.457	16.76	579.0
34	32.400	.10630	193.00	.2206	.3695	.2699	.9547	.1626-01	.1187-01	1.739	12.10	542.5
34	32.500	.85800-01	183.00	.2857	.4919	.3425	.9605	.2164-01	.1507-01	2.164	15.00	549.5
33	32.600	.79500-01	137.00	.4286	.8915	.5327	.9624	.3920-01	.2342-01	2.619	17.83	582.7
34	32.600	.80800-01	176.00	.4739	.9425	.5843	.9620	.4146-01	.2571-01	3.026	20.67	576.5
33	32.700	.67400-01	132.00	.3454	.6128	.4051	.9662	.2694-01	.1781-01	2.511	17.35	556.3
33	32.700	.72400-01	134.00	.4585	.8663	.5503	.9646	.3809-01	.2419-01	3.091	21.21	568.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
33	32.800	.65700-01	130.00	.2973	.5065	.3446	.9668	.2227-01	.1515-01	2.285	15.86	546.9
34	32.800	.16680	210.00	.1948	.3420	.2596	.9420	.1505-01	.1142-01	1.437	9.940	554.0
34	32.800	.18880	225.00	.1539	.2442	.1987	.9389	.1074-01	.8743-02	1.321	9.274	526.6
33	32.900	.58600-01	118.00	.6189	1.274	.7355	.9692	.5600-01	.3234-01	3.820	26.03	581.3
33	32.900	.60400-01	122.00	.4558	.8579	.5346	.9686	.3772-01	.2350-01	3.086	21.18	567.7
34	32.900	.61300-01	171.00	.5101	.9919	.6031	.9683	.4364-01	.2653-01	3.334	22.82	573.1
33	33.000	.53500-01	115.00	.5105	.9659	.5915	.9709	.4247-01	.2601-01	3.436	23.58	568.6
33	33.200	.48300-01	113.00	.3383	.5790	.3814	.9728	.2546-01	.1677-01	2.582	17.92	548.1
34	33.400	.42800-01	166.00	.5042	.9796	.5743	.9748	.4310-01	.2527-01	3.298	22.58	573.0
33	33.500	.40100-01	99.000	.5933	1.205	.6764	.9758	.5300-01	.2974-01	3.707	25.29	579.6
33	33.600	.38300-01	97.000	.6316	1.319	.7199	.9765	.5800-01	.3165-01	3.845	26.18	583.2
33	33.700	.36700-01	96.000	.6154	1.312	.7006	.9771	.5767-01	.3080-01	3.679	25.01	585.7
33	33.900	.33800-01	95.000	.5258	1.040	.5893	.9782	.4571-01	.2591-01	3.375	23.07	575.7
34	34.700	.21010	240.00	.1640	.2707	.2184	.9368	.1191-01	.9610-02	1.321	9.217	538.5
34	34.700	.18700	227.00	.1551	.2625	.2065	.9392	.1155-01	.9085-02	1.204	8.368	545.2
34	34.900	.16480	212.00	.2158	.3921	.2914	.9423	.1725-01	.1282-01	1.524	10.50	561.2
33	35.100	.10000+00	148.00	.3626	.7296	.4646	.9564	.3208-01	.2043-01	2.288	15.62	578.2
34	35.200	.23900-01	161.00	.4543	.7967	.4922	.9821	.3505-01	.2166-01	3.356	23.22	553.8
33	35.300	.92500-01	145.00	.4233	.8257	.5308	.9585	.3630-01	.2334-01	2.757	18.86	573.6
33	35.300	.22100-01	160.00	.4447	.7909	.4824	.9822	.3477-01	.2121-01	3.224	22.27	556.8
34	35.400	.18800	231.00	.1930	.3238	.2561	.9390	.1424-01	.1126-01	1.517	10.56	543.0
34	35.500	.12100	196.00	.3256	.6350	.4276	.9510	.2794-01	.1881-01	2.121	14.51	573.6
34	35.600	.16580	216.00	.1884	.3360	.2526	.9421	.1478-01	.1111-01	1.362	9.406	557.3
33	35.800	.80600-01	138.00	.3937	.7464	.4799	.9620	.3282-01	.2110-01	2.644	18.14	568.9
34	35.900	.21310	247.00	.1385	.2224	.1821	.9365	.9784-02	.8011-02	1.165	8.163	530.4
34	36.000	.19040	235.00	.1639	.2687	.2153	.9387	.1182-01	.9473-02	1.334	9.318	536.6
34	36.200	.16910	220.00	.1898	.3275	.2514	.9418	.1441-01	.1106-01	1.434	9.941	550.0
33	36.200	.72400-01	135.00	.4380	.8323	.5264	.9646	.3659-01	.2314-01	2.933	20.12	569.4
34	36.300	.12200	200.00	.2963	.5665	.3872	.9508	.2492-01	.1703-01	1.972	13.52	570.4
33	36.600	.65700-01	131.00	.3290	.5892	.3857	.9667	.2591-01	.1696-01	2.364	16.31	558.2
34	36.700	.18700	226.00	.1971	.3281	.2604	.9391	.1443-01	.1146-01	1.568	10.92	540.9
34	36.900	.16480	211.00	.2088	.3730	.2799	.9423	.1641-01	.1231-01	1.506	10.39	557.8
34	36.900	.10110	187.00	.4092	.8206	.5248	.9561	.3610-01	.2309-01	2.591	17.69	577.7
33	37.000	.60400-01	123.00	.5383	1.099	.6413	.9685	.4834-01	.2820-01	3.346	22.82	580.3
34	37.000	.12440	204.00	.2578	.4730	.3334	.9502	.2081-01	.1467-01	1.800	12.39	563.0
33	37.100	.58600-01	119.00	.5865	1.197	.6961	.9691	.5264-01	.3061-01	3.647	24.87	580.2
34	37.200	.21310	246.00	.1371	.2206	.1804	.9365	.9705-02	.7938-02	1.149	8.049	531.1
34	37.600	.16810	219.00	.1884	.3238	.2491	.9418	.1424-01	.1096-01	1.431	9.922	549.1
33	37.800	.10270	150.00	.3352	.6323	.4236	.9556	.2780-01	.1862-01	2.263	15.54	568.1
34	37.900	.12100	195.00	.3262	.6071	.4219	.9510	.2671-01	.1856-01	2.238	15.38	565.7
34	38.000	.80300-01	179.00	.4790	.9311	.5871	.9621	.4096-01	.2583-01	3.131	21.43	573.1
33	38.500	.46800-01	112.00	.3669	.6409	.4143	.9733	.2818-01	.1822-01	2.724	18.85	552.8
34	38.600	.12440	203.00	.2646	.4806	.3410	.9502	.2114-01	.1500-01	1.869	12.88	561.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
34	38.700	.10000+00	185.00	.4000	.7821	.5085	.9563	.3441-01	.2237-01	2.600	17.79	573.9
33	38.900	.82200-01	141.00	.3448	.6489	.4208	.9614	.2853-01	.1850-01	2.334	16.02	567.7
33	39.300	.41600-01	104.00	.5195	1.032	.5927	.9751	.4537-01	.2606-01	3.320	22.68	576.3
34	39.500	.10270	190.00	.3987	.7573	.5049	.9556	.3331-01	.2221-01	2.673	18.33	569.3
34	39.600	.16810	218.00	.1686	.2880	.2223	.9417	.1267-01	.9780-02	1.292	8.965	547.6
34	39.900	.19040	233.00	.1569	.2549	.2053	.9387	.1121-01	.9031-02	1.296	9.064	533.9
34	40.100	.79500-01	177.00	.4498	.8435	.5459	.9623	.3711-01	.2402-01	3.059	21.01	567.1
34	40.200	.12440	202.00	.2609	.4714	.3356	.9501	.2074-01	.1476-01	1.855	12.78	560.1
34	40.300	.21310	245.00	.1368	.2189	.1796	.9365	.9631-02	.7899-02	1.157	8.110	529.4
33	41.100	.82200-01	142.00	.3517	.6591	.4289	.9614	.2898-01	.1886-01	2.392	16.43	566.9
34	41.100	.60700-01	173.00	.5291	1.028	.6252	.9683	.4520-01	.2750-01	3.463	23.71	572.9
34	42.300	.10270	189.00	.3115	.5657	.3894	.9555	.2488-01	.1713-01	2.201	15.17	561.0
34	42.600	.59600-01	172.00	.5774	1.150	.6842	.9686	.5061-01	.3010-01	3.680	25.14	576.8
34	43.200	.42000-01	168.00	.5039	.9620	.5724	.9749	.4232-01	.2518-01	3.360	23.04	570.1
34	43.400	.82200-01	181.00	.3943	.7303	.4797	.9613	.3213-01	.2110-01	2.721	18.71	564.8
33	43.600	.62900-01	128.00	.4818	.9058	.5684	.9675	.3983-01	.2499-01	3.266	22.42	567.5
33	45.000	.22900-01	8.0000	.7954	1.891	.8888	.9819	.8314-01	.3908-01	4.356	29.44	597.1
34	46.100	.62900-01	174.00	.4802	.9011	.5665	.9674	.3964-01	.2492-01	3.264	22.42	567.2
34	47.700	.40800-01	167.00	.5588	1.106	.6373	.9751	.4867-01	.2804-01	3.585	24.50	575.9
33	48.400	.44200-01	109.00	.4905	.9547	.5621	.9738	.4197-01	.2471-01	3.201	21.91	573.2
33	50.000	.19400-01	156.00	.8768	5.137	.9827	.9870	.2258	.4321-01	3.355	22.22	634.6
33	51.000	.12100-01	154.00	.9900	19.12	1.129	.9870	.8405	.4965-01	3.313	21.82	645.6
33	51.000	.17600-01	155.00	.9927	5.258	1.110	.9870	.2312	.4879-01	3.883	25.74	632.7
34	51.900	.44800-01	170.00	.4330	.7863	.4918	.9734	.3459-01	.2164-01	3.060	21.08	561.1
34	53.200	.24700-01	163.00	.5379	1.026	.5915	.9809	.4514-01	.2602-01	3.589	24.61	570.0
34	65.200	.24700-01	162.00	.6272	1.292	.6998	.9798	.5682-01	.3078-01	3.871	26.38	581.4
32	90.000	.91000-02	44.000	.8427	2.718	1.002	.9769	.1196	.4410-01	3.878	25.92	617.1
32	90.000	.11100-01	45.000	.9577	2.989	1.136	.9769	.1315	.4997-01	4.474	29.93	615.5
32	90.000	.13100-01	46.000	.8387	2.212	.9790	.9769	.9732-01	.4307-01	4.288	28.85	605.4
32	90.000	.17000-01	48.000	.6910	1.692	.8003	.9769	.7442-01	.3521-01	3.708	25.02	599.7
32	90.000	.20900-01	50.000	.6790	1.572	.7815	.9769	.6914-01	.3438-01	3.795	25.68	594.6
32	90.000	.24900-01	52.000	.6267	1.407	.7211	.9764	.6191-01	.3172-01	3.587	24.31	591.6
32	90.000	.26900-01	53.000	.6047	1.307	.6958	.9756	.5749-01	.3061-01	3.573	24.27	587.4
32	90.000	.28800-01	54.000	.6017	1.270	.6933	.9749	.5589-01	.3050-01	3.629	24.68	584.6
32	90.000	.32800-01	55.000	.5147	1.027	.5935	.9734	.4518-01	.2611-01	3.276	22.37	577.0
32	90.000	.36700-01	56.000	.5046	.9976	.5858	.9719	.4389-01	.2577-01	3.241	22.16	575.6
32	90.000	.40600-01	57.000	.5112	1.042	.6015	.9705	.4584-01	.2646-01	3.186	21.72	580.0
32	90.000	.48500-01	58.000	.4937	.9762	.5874	.9677	.4295-01	.2584-01	3.171	21.68	575.7
32	90.000	.56400-01	59.000	.4286	.8303	.5158	.9650	.3653-01	.2269-01	2.813	19.26	572.5
32	90.000	.76100-01	60.000	.3571	.6739	.4427	.9589	.2965-01	.1947-01	2.412	16.55	568.2
32	90.000	.95800-01	61.000	.3198	.5978	.4082	.9534	.2630-01	.1796-01	2.183	15.00	566.5
32	90.000	.11550	62.000	.2432	.4483	.3178	.9487	.1972-01	.1398-01	1.688	11.61	563.9
32	135.00	.19000-01	49.000	.6632	1.499	.8006	.9692	.6595-01	.3522-01	3.776	25.58	592.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
32	135.00	.22900-01	51.000	.6181	1.385	.7451	.9692	.6094-01	.32[illegible]8-01	3.543	24.02	591.4
32	180.00	.91000-02	23.000	.4572	.8930	.5560	.9636	.3928-01	.2446-01	2.974	20.35	573.8
32	180.00	.11100-01	24.000	.6556	1.800	.8532	.9636	.7917-01	.3753-01	3.274	21.99	608.1
32	180.00	.13100-01	25.000	.6908	1.773	.8883	.9636	.7802-01	.3908-01	3.592	24.19	603.5
32	180.00	.15000-01	26.000	.6608	1.656	.8460	.9636	.7285-01	.3722-01	3.491	23.53	601.6
32	180.00	.17000-01	27.000	.6500	1.527	.8219	.9636	.6717-01	.3616-01	3.594	24.30	596.0
32	180.00	.19000-01	28.000	.6307	1.465	.7958	.9636	.6444-01	.3501-01	3.517	23.79	594.9
32	180.00	.20900-01	29.000	.6142	1.376	.7693	.9636	.6052-01	.3384-01	3.522	23.87	591.3
32	180.00	.28800-01	32.000	.5230	1.086	.6524	.9617	.4776-01	.2870-01	3.204	21.82	582.4
32	180.00	.32800-01	33.000	.4778	.9333	.5923	.9604	.4106-01	.2606-01	3.108	21.27	573.8
32	180.00	.36700-01	34.000	.4743	.9618	.5984	.9591	.4231-01	.2632-01	2.971	20.27	579.3
32	180.00	.56400-01	37.000	.3743	.7106	.4809	.9532	.3126-01	.2116-01	2.511	17.22	569.2
32	180.00	.76100-01	38.000	.2970	.5459	.3889	.9481	.2401-01	.1711-01	2.068	14.23	563.4
32	180.00	.95800-01	39.000	.2309	.4139	.3069	.9440	.1821-01	.1350-01	1.658	11.44	558.5
32	180.00	.11550	40.000	.1844	.3323	.2506	.9406	.1462-01	.1103-01	1.316	9.073	559.5
32	180.00	.18450	42.000	.8908-01	.1502	.1213	.9348	.6607-02	.5335-02	.6952	4.834	544.3
32	225.00	.22900-01	30.000	.5459	1.176	.6828	.9626	.5175-01	.3004-01	3.233	21.96	587.0
32	270.00	.91000-02	63.000	.6220	1.510	.7739	.9666	.6644-01	.3405-01	3.357	22.66	599.0
32	270.00	.11100-01	64.000	.7315	2.040	.9308	.9666	.8974-01	.4095-01	3.621	24.31	609.2
32	270.00	.13100-01	65.000	.7510	1.991	.9480	.9666	.8758-01	.4171-01	3.828	25.75	605.8
32	270.00	.17000-01	67.000	.6378	1.497	.7889	.9666	.6584-01	.3471-01	3.529	23.86	595.9
32	270.00	.20900-01	69.000	.6261	1.424	.7701	.9666	.6263-01	.3388-01	3.549	24.03	592.8
32	270.00	.24900-01	71.000	.5657	1.246	.6940	.9661	.5483-01	.3053-01	3.289	22.31	589.5
32	270.00	.28800-01	73.000	.5017	1.045	.6144	.9647	.4598-01	.2703-01	3.064	20.86	582.9
32	270.00	.36700-01	75.000	.4991	1.025	.6199	.9620	.4509-01	.2727-01	3.088	21.05	581.0
32	270.00	.46500-01	77.000	.4394	.8464	.5499	.9582	.3724-01	.2419-01	2.901	19.87	571.6
32	270.00	.56400-01	78.000	.3754	.7112	.4743	.9558	.3129-01	.2087-01	2.524	17.32	568.8
32	270.00	.95800-01	80.000	.2610	.4672	.3427	.9460	.2055-01	.1508-01	1.878	12.96	558.1
32	270.00	.11550	81.000	.2115	.3813	.2846	.9423	.1677-01	.1252-01	1.507	10.39	559.6
32	315.00	.19000-01	68.000	.5698	1.196	.6596	.9740	.5261-01	.2902-01	3.455	23.51	583.8
32	315.00	.22900-01	70.000	.5554	1.227	.6475	.9740	.5399-01	.2848-01	3.221	21.85	589.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
99	4.020	-4.955	-2.968	64.86	740.7	.4159	175.0	-30.98	2607.	.6415-02	.1408-06	3.691
100	4.020	-4.960	-2.971	64.98	741.7	.4167	175.2	-30.98	2609.	.6418-02	.1410-06	3.690
101	4.020	-4.972	-2.979	64.86	742.7	.4159	175.5	-30.98	2611.	.6397-02	.1412-06	3.676

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
99	.3869-01	.9598-02
100	.3874-01	.9597-02
101	.3871-01	.9614-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
100	.00000	.91000-02	1.0000	.6329	1.220	.7333	.9715	.4724-01	.2841-01	3.780	25.67	587.5
100	.00000	.15000-01	4.0000	.7170	1.347	.8271	.9715	.5216-01	.3204-01	4.407	30.00	583.0
100	.00000	.17000-01	5.0000	.6826	1.241	.7829	.9715	.4808-01	.3033-01	4.357	29.76	576.9
100	.00000	.19000-01	6.0000	.6612	1.190	.7570	.9715	.4611-01	.2932-01	4.274	29.23	574.8
100	.00000	.24900-01	9.0000	.5798	1.007	.6611	.9710	.3901-01	.2561-01	3.926	26.97	566.9
100	.00000	.26900-01	10.000	.5782	.9936	.6603	.9703	.3849-01	.2558-01	3.973	27.32	564.3
99	.00000	.32800-01	12.000	.5423	.9345	.6264	.9680	.3616-01	.2424-01	3.703	25.47	564.2
99	.00000	.36700-01	13.000	.4904	.8240	.5672	.9665	.3188-01	.2195-01	3.471	23.96	557.7
99	.00000	.40600-01	14.000	.5289	.9123	.6197	.9651	.3530-01	.2398-01	3.606	24.80	564.5
99	.00000	.48500-01	15.000	.4609	.7809	.5452	.9623	.3021-01	.2109-01	3.223	22.22	559.9
99	.00000	.56400-01	16.000	.4518	.7631	.5412	.9595	.2953-01	.2094-01	3.174	21.89	559.1
99	.00000	.76100-01	17.000	.3733	.6136	.4575	.9530	.2374-01	.1770-01	2.732	18.92	551.5
99	.00000	.95800-01	18.000	.8229-01	.1302	.1022	.9471	.5039-02	.3955-02	.6406	4.467	539.5
99	.00000	.11550	19.000	.2502	.4104	.3239	.9417	.1588-01	.1253-01	1.838	12.73	550.9
99	.00000	.16480	20.000	.1512	.2447	.2054	.9310	.9469-02	.7946-02	1.134	7.876	546.8
99	.00000	.21400	22.000	.9058-01	.1346	.1204	.9243	.5209-02	.4658-02	.7935	5.611	514.3
101	2.0000	.24700-01	165.00	.4794	.8292	.5454	.9713	.3210-01	.2111-01	3.268	22.44	566.6
100	9.0000	.15000-01	157.00	.7153	1.331	.8205	.9723	.5156-01	.3178-01	4.442	30.27	581.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
100	9.0000	.17600-01	158.00	.6241	1.094	.7084	.9723	.4239-01	.2744-01	4.172	28.62	569.1
101	9.8000	.24700-01	164.00	.4859	.8472	.5519	.9719	.3279-01	.2136-01	3.275	22.47	568.5
100	10.000	.22900-01	88.000	.5303	.9122	.5997	.9724	.3534-01	.2323-01	3.638	25.02	564.5
100	10.000	.26900-01	90.000	.5291	.8967	.6003	.9711	.3473-01	.2325-01	3.709	25.56	560.7
100	10.000	.34700-01	94.000	.5133	.8686	.5903	.9681	.3365-01	.2287-01	3.606	24.85	560.3
100	12.000	.17600-01	152.00	1.126	3.112	1.228	.9870	.1205	.4755-01	5.067	33.72	625.5
100	12.000	.12100-01	151.00	.9412	4.200	1.047	.9870	.1627	.4055-01	3.485	22.95	646.1
100	13.000	.19400-01	153.00	.9955	2.349	1.076	.9870	.9098-01	.4168-01	4.964	33.26	612.9
101	14.600	.44200-01	169.00	.4654	.8078	.5467	.9649	.3127-01	.2116-01	3.157	21.67	567.5
100	18.500	.44200-01	106.00	.4874	.8358	.5704	.9651	.3238-01	.2210-01	3.360	23.12	563.7
101	19.600	.62900-01	175.00	.4004	.6828	.4831	.9586	.2643-01	.1870-01	2.783	19.16	563.1
100	19.800	.40800-01	101.00	.5700	1.007	.6674	.9664	.3901-01	.2585-01	3.774	25.87	570.7
100	20.000	.24900-01	89.000	.4359	.7258	.4900	.9724	.2811-01	.1898-01	3.136	21.67	555.9
100	20.000	.28800-01	91.000	.4610	.7724	.5223	.9709	.2992-01	.2023-01	3.285	22.68	557.7
100	20.000	.32800-01	93.000	.4906	.8383	.5620	.9694	.3247-01	.2177-01	3.398	23.39	562.9
101	21.800	.82200-01	182.00	.3377	.5753	.4203	.9524	.2227-01	.1627-01	2.350	16.18	562.9
100	22.200	.62900-01	125.00	.4206	.7236	.5087	.9587	.2803-01	.1970-01	2.885	19.84	564.6
100	22.400	.44200-01	107.00	.4376	.7356	.5094	.9652	.2849-01	.1973-01	3.104	21.41	558.6
101	22.600	.10270	192.00	.2851	.4805	.3647	.9463	.1860-01	.1412-01	2.016	13.90	560.0
100	23.000	.42000-01	105.00	.5307	.9348	.6220	.9660	.3621-01	.2409-01	3.527	24.18	570.1
100	23.400	.59600-01	120.00	.4579	.7948	.5520	.9598	.3079-01	.2138-01	3.104	21.32	566.7
101	23.900	.21310	250.00	.1100	.1664	.1476	.9249	.6442-02	.5713-02	.9323	6.558	523.7
100	24.100	.82200-01	139.00	.3722	.6324	.4627	.9524	.2450-01	.1793-01	2.598	17.90	561.5
101	24.400	.19040	238.00	.1359	.2121	.1836	.9277	.8209-02	.7106-02	1.087	7.592	536.0
101	24.400	.12440	207.00	.2219	.3756	.2931	.9406	.1454-01	.1135-01	1.559	10.74	561.2
101	24.800	.16810	223.00	.1652	.2683	.2245	.9313	.1039-01	.8692-02	1.236	8.569	549.4
100	24.900	.62900-01	126.00	.4335	.7509	.5251	.9587	.2909-01	.2034-01	2.947	20.25	566.2
101	25.000	.79500-01	178.00	.3997	.6948	.4986	.9533	.2690-01	.1930-01	2.706	18.58	567.8
101	25.300	.10270	191.00	.2877	.4875	.3687	.9464	.1887-01	.1427-01	2.017	13.90	561.5
101	25.300	.10000+00	186.00	.3482	.6057	.4491	.9472	.2345-01	.1738-01	2.355	16.16	568.0
100	25.500	.60700-01	124.00	.4860	.8704	.5920	.9595	.3371-01	.2293-01	3.162	21.64	573.7
101	26.000	.12440	206.00	.2357	.4016	.3123	.9406	.1555-01	.1209-01	1.640	11.29	562.9
100	26.300	.82200-01	140.00	.3038	.5130	.3768	.9525	.1987-01	.1460-01	2.140	14.75	559.8
101	26.700	.12100	199.00	.3077	.5486	.4140	.9415	.2124-01	.1603-01	2.014	13.78	573.6
101	26.800	.16810	222.00	.1894	.3104	.2587	.9313	.1202-01	.1002-01	1.398	9.678	552.1
101	27.000	.19040	237.00	.1508	.2368	.2045	.9277	.9168-02	.7917-02	1.193	8.324	538.3
101	27.100	.21310	249.00	.1181	.1789	.1585	.9249	.6924-02	.6137-02	.9981	7.018	524.3
101	27.200	.80300-01	180.00	.4382	.7768	.5508	.9531	.3007-01	.2132-01	2.890	19.79	572.3
100	27.400	.40100-01	98.000	.5485	.9877	.6434	.9668	.3826-01	.2492-01	3.543	24.23	574.9
101	27.400	.16480	215.00	.2064	.3459	.2846	.9319	.1339-01	.1102-01	1.471	10.15	558.5
100	27.600	.41600-01	102.00	.5461	.9822	.6423	.9663	.3805-01	.2488-01	3.534	24.17	574.6
101	27.600	.12440	205.00	.2490	.4297	.3318	.9407	.1664-01	.1284-01	1.702	11.69	566.1
101	27.600	.18700	230.00	.1796	.2857	.2450	.9282	.1106-01	.9483-02	1.391	9.678	542.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
101	27.700	.21010	243.00	.1487	.2299	.2021	.9252	.8901-02	.7823-02	1.210	8.466	532.5
101	27.900	.10110	188.00	.3174	.5567	.4113	.9469	.2155-01	.1592-01	2.122	14.55	569.9
100	28.000	.46800-01	110.00	.3041	.4814	.3500	.9644	.1865-01	.1356-01	2.372	16.53	540.3
101	28.200	.16810	221.00	.1774	.2957	.2446	.9313	.1144-01	.9470-02	1.275	8.801	557.0
101	28.300	.19040	236.00	.1399	.2180	.1888	.9277	.8438-02	.7309-02	1.123	7.845	535.4
101	28.300	.12200	201.00	.2803	.4856	.3729	.9413	.1880-01	.1444-01	1.906	13.09	567.0
100	28.400	.53500-01	114.00	.3918	.6582	.4630	.9620	.2550-01	.1793-01	2.781	19.19	558.4
101	28.400	.21310	248.00	.1191	.1809	.1602	.9249	.7003-02	.6202-02	1.003	7.048	525.2
100	28.700	.58600-01	117.00	.4984	.8664	.5997	.9602	.3356-01	.2323-01	3.371	23.15	567.1
101	28.800	.16580	217.00	.2159	.3667	.3002	.9317	.1420-01	.1162-01	1.509	10.39	562.1
100	28.800	.60400-01	121.00	.4982	.9068	.6090	.9596	.3513-01	.2359-01	3.176	21.69	577.1
101	29.000	.21110	244.00	.1334	.2051	.1807	.9251	.7939-02	.6994-02	1.096	7.684	530.3
100	29.000	.65700-01	129.00	.2834	.4512	.3361	.9578	.1748-01	.1302-01	2.190	15.25	542.2
100	29.200	.72400-01	133.00	.3989	.6821	.4890	.9556	.2642-01	.1894-01	2.759	18.99	563.1
100	29.300	.79500-01	136.00	.4401	.7966	.5562	.9533	.3086-01	.2155-01	2.825	19.31	576.0
100	29.600	.92500-01	143.00	.3249	.5560	.4115	.9494	.2154-01	.1594-01	2.246	15.45	563.2
100	29.700	.10000+00	146.00	.3747	.6753	.4899	.9472	.2616-01	.1898-01	2.418	16.53	575.1
101	29.900	.12100	198.00	.3203	.5826	.4347	.9415	.2255-01	.1683-01	2.045	13.96	577.7
101	30.200	.16480	214.00	.2153	.3674	.2998	.9319	.1422-01	.1161-01	1.496	10.29	563.2
101	30.300	.21010	242.00	.1518	.2365	.2073	.9252	.9156-02	.8026-02	1.219	8.521	535.2
100	31.500	.91000-02	82.000	.6650	1.316	.7672	.9731	.5100-01	.2972-01	3.861	26.16	591.8
100	31.500	.11100-01	83.000	.8783	1.816	1.020	.9731	.7034-01	.3951-01	4.888	33.01	598.0
100	31.500	.14200-01	84.000	1.151	3.628	1.263	.9870	.1405	.4893-01	4.844	32.11	633.0
100	31.500	.16000-01	85.000	1.211	3.461	1.323	.9870	.1341	.5125-01	5.353	35.59	627.6
100	31.500	.17600-01	86.000	1.030	2.626	1.118	.9870	.1017	.4330-01	4.865	32.48	619.7
100	31.500	.19400-01	87.000	.9054	1.934	.9727	.9870	.7493-01	.3768-01	4.890	32.95	602.2
101	32.100	.21010	241.00	.1345	.2082	.1829	.9252	.8061-02	.7082-02	1.092	7.642	532.9
101	32.200	.16480	213.00	.1910	.3203	.2634	.9319	.1240-01	.1020-01	1.360	9.380	558.7
101	32.200	.17860	224.00	.1631	.2606	.2216	.9295	.1009-01	.8578-02	1.253	8.717	544.2
101	32.200	.18700	228.00	.1573	.2483	.2135	.9282	.9613-02	.8265-02	1.234	8.599	540.1
101	32.300	.12100	197.00	.3249	.5779	.4367	.9415	.2237-01	.1690-01	2.133	14.60	573.0
101	32.300	.12300	194.00	.2698	.4786	.3633	.9410	.1853-01	.1406-01	1.778	12.18	572.4
101	32.300	.12730	208.00	.1741	.2835	.2266	.9400	.1097-01	.8772-02	1.298	8.995	550.1
101	32.300	.13420	209.00	.2036	.3481	.2737	.9383	.1348-01	.1060-01	1.410	9.704	563.7
100	32.400	.10000+00	147.00	.3566	.6313	.4630	.9472	.2445-01	.1794-01	2.355	16.14	571.2
101	32.400	.10110	184.00	.3609	.6527	.4733	.9469	.2527-01	.1832-01	2.320	15.85	576.6
101	32.400	.10630	193.00	.1865	.2973	.2341	.9454	.1151-01	.9061-02	1.438	10.01	543.4
101	32.500	.85800-01	183.00	.2356	.3793	.2898	.9514	.1468-01	.1118-01	1.788	12.42	546.6
100	32.600	.79500-01	137.00	.3637	.6536	.4586	.9533	.2532-01	.1776-01	2.355	16.11	574.5
101	32.600	.80800-01	176.00	.4244	.7588	.5354	.9530	.2937-01	.2072-01	2.769	18.94	574.1
100	32.700	.67400-01	132.00	.2754	.4423	.3283	.9573	.1713-01	.1272-01	2.096	14.57	545.2
100	32.700	.72400-01	134.00	.3465	.5770	.4211	.9556	.2235-01	.1631-01	2.492	17.21	556.0
100	32.800	.65700-01	130.00	.2513	.3939	.2966	.9578	.1526-01	.1149-01	1.994	13.92	536.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
101	32.800	.16680	210.00	.1666	.2732	.2274	.9315	.1058-01	.8802-02	1.228	8.500	552.3
101	32.800	.18880	225.00	.1177	.1802	.1569	.9279	.6974-02	.6075-02	.9765	6.850	528.4
100	32.900	.58600-01	118.00	.5386	.9363	.6480	.9602	.3627-01	.2510-01	3.643	25.02	567.1
100	32.900	.60400-01	122.00	.3967	.6642	.4738	.9596	.2573-01	.1835-01	2.830	19.54	557.5
101	32.900	.61300-01	171.00	.4076	.7195	.4949	.9593	.2785-01	.1916-01	2.704	18.52	571.3
100	33.000	.53500-01	115.00	.4104	.6810	.4833	.9620	.2638-01	.1872-01	2.966	20.50	555.1
100	33.200	.48300-01	113.00	.2763	.4332	.3179	.9639	.1678-01	.1232-01	2.192	15.30	536.9
101	33.400	.42800-01	166.00	.4631	.8186	.5437	.9659	.3169-01	.2104-01	3.065	21.00	571.7
100	33.500	.40100-01	99.000	.5610	.9746	.6529	.9668	.3775-01	.2529-01	3.798	26.08	566.9
100	33.600	.38300-01	97.000	.5910	1.041	.6876	.9675	.4031-01	.2664-01	3.930	26.94	570.0
100	33.700	.36700-01	96.000	.6055	1.080	.7042	.9681	.4184-01	.2728-01	3.958	27.09	572.9
100	33.900	.33800-01	95.000	.5128	.8783	.5882	.9692	.3402-01	.2279-01	3.540	24.36	563.5
101	34.700	.21010	240.00	.1259	.1938	.1706	.9252	.7503-02	.6605-02	1.034	7.243	530.6
101	34.700	.18700	227.00	.1431	.2273	.1950	.9282	.8800-02	.7548-02	1.111	7.731	542.2
101	34.900	.16480	212.00	.1800	.3000	.2474	.9319	.1161-01	.9578-02	1.293	8.930	557.1
100	35.100	.10000+00	148.00	.3505	.6160	.4539	.9472	.2386-01	.1758-01	2.336	16.02	569.6
101	35.200	.23900-01	161.00	.3201	.5103	.3560	.9730	.1976-01	.1378-01	2.468	17.17	543.5
100	35.300	.92500-01	145.00	.3666	.6284	.4647	.9493	.2434-01	.1800-01	2.529	17.40	563.6
100	35.300	.22100-01	160.00	.3341	.5193	.3696	.9731	.2011-01	.1432-01	2.691	18.82	533.7
101	35.400	.18800	231.00	.1326	.2088	.1799	.9280	.8084-02	.6963-02	1.044	7.282	539.2
101	35.500	.12100	196.00	.2915	.5143	.3905	.9415	.1991-01	.1512-01	1.935	13.26	571.2
101	35.600	.16580	216.00	.1693	.2793	.2316	.9317	.1081-01	.8965-02	1.235	8.543	554.1
100	35.800	.80600-01	138.00	.3772	.6421	.4681	.9530	.2487-01	.1813-01	2.627	18.09	561.9
101	35.900	.21310	247.00	.1049	.1587	.1407	.9249	.6143-02	.5448-02	.8904	6.263	523.4
101	36.000	.19040	235.00	.1279	.1989	.1724	.9277	.7698-02	.6672-02	1.030	7.198	534.6
101	36.200	.16810	220.00	.1490	.2419	.2024	.9313	.9362-02	.7836-02	1.116	7.741	549.2
100	36.200	.72400-01	135.00	.3734	.6264	.4551	.9556	.2427-01	.1763-01	2.657	18.33	558.0
101	36.300	.12200	200.00	.2658	.4641	.3549	.9412	.1796-01	.1374-01	1.788	12.27	568.9
100	36.600	.65700-01	131.00	.2968	.4817	.3542	.9578	.1866-01	.1372-01	2.221	15.41	548.5
101	36.700	.18700	226.00	.1492	.2353	.2024	.9282	.9107-02	.7835-02	1.173	8.180	539.6
101	36.900	.16480	211.00	.1626	.2688	.2225	.9319	.1041-01	.8614-02	1.183	8.182	554.7
101	36.900	.10110	187.00	.3654	.6535	.4773	.9468	.2530-01	.1848-01	2.383	16.30	574.2
100	37.000	.60400-01	123.00	.4634	.8078	.5599	.9596	.3129-01	.2169-01	3.122	21.43	567.7
101	37.000	.12440	204.00	.2313	.3934	.3062	.9406	.1523-01	.1185-01	1.614	11.11	562.4
100	37.100	.58600-01	119.00	.5299	.9280	.6390	.9602	.3595-01	.2475-01	3.548	24.34	568.8
101	37.200	.21310	246.00	.1072	.1624	.1439	.9249	.6285-02	.5572-02	.9075	6.382	524.0
101	37.600	.16810	219.00	.1450	.2346	.1966	.9312	.9082-02	.7611-02	1.091	7.566	548.3
100	37.800	.10270	150.00	.2924	.4928	.3740	.9464	.1909-01	.1449-01	2.066	14.25	559.3
101	37.900	.12100	195.00	.2580	.4381	.3397	.9415	.1696-01	.1315-01	1.804	12.42	562.0
101	38.000	.80300-01	179.00	.4089	.7130	.5113	.9530	.2760-01	.1979-01	2.756	18.91	568.5
100	38.500	.46800-01	112.00	.3098	.4898	.3566	.9643	.1897-01	.1381-01	2.422	16.89	539.8
101	38.600	.12440	203.00	.2286	.3865	.3019	.9406	.1496-01	.1169-01	1.609	11.09	560.9
101	38.700	.10000+00	185.00	.3467	.6088	.4489	.9471	.2357-01	.1738-01	2.315	15.87	570.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
100	38.900	.82200-01	141.00	.3075	.5134	.3800	.9524	.1989-01	.1472-01	2.203	15.21	556.7
100	39.300	.41600-01	104.00	.4770	.8159	.5549	.9662	.3161-01	.2150-01	3.298	22.70	563.2
101	39.500	.10270	190.00	.3206	.5530	.4140	.9463	.2141-01	.1602-01	2.194	15.08	565.9
101	39.600	.16810	218.00	.1341	.2164	.1816	.9312	.8377-02	.7030-02	1.014	7.037	547.4
101	39.900	.19040	233.00	.1124	.1737	.1510	.9276	.6725-02	.5844-02	.9159	6.411	532.2
101	40.100	.79500-01	177.00	.3762	.6454	.4674	.9532	.2498-01	.1809-01	2.594	17.83	564.6
101	40.200	.12440	202.00	.2192	.3697	.2892	.9406	.1431-01	.1119-01	1.549	10.68	560.2
101	40.300	.21310	245.00	.9743-01	.1469	.1304	.9249	.5685-02	.5048-02	.8321	5.858	522.0
100	41.100	.82200-01	142.00	.2954	.4940	.3654	.9523	.1914-01	.1416-01	2.111	14.58	557.2
101	41.100	.60700-01	173.00	.4626	.8151	.5611	.9594	.3155-01	.2172-01	3.075	21.07	571.0
101	42.300	.10270	189.00	.2566	.4288	.3272	.9463	.1660-01	.1266-01	1.836	12.68	557.8
101	42.600	.59600-01	172.00	.4869	.8641	.5808	.9597	.3345-01	.2287-01	3.207	21.96	572.5
101	43.200	.42000-01	168.00	.4703	.8175	.5499	.9659	.3165-01	.2129-01	3.184	21.86	567.8
101	43.400	.82200-01	181.00	.3249	.5518	.4042	.9523	.2136-01	.1565-01	2.272	15.64	562.0
100	43.600	.62900-01	128.00	.3412	.5668	.4086	.9585	.2196-01	.1583-01	2.462	17.02	555.4
100	45.000	.22900-01	8.0000	.7613	1.446	.8740	.9728	.5600-01	.3385-01	4.620	31.42	585.0
101	46.100	.62900-01	174.00	.3963	.6759	.4786	.9584	.2616-01	.1853-01	2.754	18.95	563.1
101	47.700	.40800-01	167.00	.5274	.9387	.6192	.9661	.3634-01	.2397-01	3.460	23.68	573.2
100	48.400	.44200-01	109.00	.4511	.7631	.5268	.9648	.2956-01	.2041-01	3.169	21.85	560.3
100	50.000	.19400-01	156.00	.8516	2.037	.9213	.9870	.7889-01	.3569-01	4.205	28.15	614.2
100	51.000	.12100-01	154.00	.9337	2.678	1.020	.9870	.1037	.3952-01	4.119	27.38	627.8
100	51.000	.17600-01	155.00	.9175	2.176	.9921	.9870	.8427-01	.3843-01	4.558	30.53	613.4
101	51.900	.44800-01	170.00	.3831	.6385	.4466	.9644	.2472-01	.1729-01	2.754	19.01	557.0
101	53.200	.24700-01	163.00	.4395	.7485	.4973	.9719	.2897-01	.1925-01	3.061	21.07	562.7
101	65.200	.24700-01	162.00	.5583	1.007	.6418	.9708	.3896-01	.2484-01	3.604	24.63	575.9
99	90.000	.91000-02	44.000	.5983	1.221	.7156	.9679	.4726-01	.2769-01	3.361	22.73	595.5
99	90.000	.11100-01	45.000	.8507	1.824	1.027	.9679	.7057-01	.3973-01	4.569	30.80	601.9
99	90.000	.13100-01	46.000	.7969	1.595	.9495	.9679	.6172-01	.3674-01	4.563	30.91	592.7
99	90.000	.17000-01	48.000	.6331	1.190	.7452	.9679	.4605-01	.2883-01	3.877	26.40	582.4
99	90.000	.20900-01	50.000	.6519	1.189	.7625	.9679	.4601-01	.2950-01	4.135	28.25	576.7
99	90.000	.24900-01	52.000	.6068	1.100	.7107	.9674	.4255-01	.2750-01	3.880	26.52	575.4
99	90.000	.26900-01	53.000	.5760	1.020	.6739	.9666	.3946-01	.2607-01	3.793	26.00	570.5
99	90.000	.28800-01	54.000	.5723	1.004	.6706	.9659	.3883-01	.2595-01	3.816	26.19	568.3
99	90.000	.32800-01	55.000	.4930	.8322	.5767	.9644	.3220-01	.2231-01	3.466	23.91	559.0
99	90.000	.36700-01	56.000	.4724	.7918	.5554	.9630	.3064-01	.2149-01	3.355	23.17	557.1
99	90.000	.40600-01	57.000	.4565	.7762	.5424	.9615	.3003-01	.2099-01	3.175	21.88	560.9
99	90.000	.48500-01	58.000	.4503	.7544	.5401	.9587	.2919-01	.2090-01	3.200	22.10	557.0
99	90.000	.56400-01	59.000	.3938	.6524	.4769	.9560	.2524-01	.1845-01	2.846	19.69	553.9
99	90.000	.76100-01	60.000	.3202	.5221	.3974	.9497	.2020-01	.1538-01	2.372	16.45	549.2
99	90.000	.95800-01	61.000	.2819	.4587	.3595	.9440	.1775-01	.1391-01	2.097	14.55	548.5
99	90.000	.11550	62.000	.2168	.3522	.2833	.9390	.1363-01	.1096-01	1.617	11.22	547.9
99	135.00	.19000-01	49.000	.6649	1.221	.8116	.9603	.4723-01	.3140-01	4.185	28.57	578.0
99	135.00	.22900-01	51.000	.6088	1.110	.7418	.9603	.4296-01	.2870-01	3.862	26.38	576.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K006)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
99	180.00	.91000-02	23.000	.2774	.4526	.3365	.9546	.1751-01	.1302-01	2.054	14.24	549.3
99	180.00	.11100-01	24.000	.5019	.9186	.6319	.9546	.3554-01	.2445-01	3.171	21.65	577.4
99	180.00	.13100-01	25.000	.7490	1.538	.9760	.9546	.5949-01	.3776-01	4.185	28.29	596.3
99	180.00	.15000-01	26.000	.7211	1.449	.9339	.9546	.5608-01	.3614-01	4.113	27.85	593.3
99	180.00	.17000-01	27.000	.6745	1.281	.8589	.9546	.4955-01	.3323-01	4.083	27.78	584.2
99	180.00	.19000-01	28.000	.6394	1.185	.8082	.9546	.4586-01	.3127-01	3.978	27.13	579.8
99	180.00	.20900-01	29.000	.5973	1.073	.7476	.9546	.4150-01	.2892-01	3.863	26.44	573.5
99	180.00	.28800-01	32.000	.5114	.8866	.6391	.9528	.3430-01	.2473-01	3.463	23.80	565.7
99	180.00	.32800-01	33.000	.4738	.7912	.5886	.9514	.3061-01	.2277-01	3.385	23.38	556.0
99	180.00	.36700-01	34.000	.4553	.7744	.5733	.9501	.2996-01	.2218-01	3.167	21.82	560.9
99	180.00	.48500-01	36.000	.3878	.6397	.4919	.9462	.2475-01	.1903-01	2.822	19.53	552.6
99	180.00	.56400-01	37.000	.3608	.5865	.4602	.9439	.2269-01	.1781-01	2.686	18.64	548.2
99	180.00	.76100-01	38.000	.2692	.4269	.3484	.9384	.1652-01	.1348-01	2.088	14.55	540.2
99	180.00	.95800-01	39.000	.2001	.3120	.2623	.9338	.1207-01	.1015-01	1.598	11.18	534.2
99	180.00	.11550	40.000	.1518	.2384	.2036	.9300	.9224-02	.7878-02	1.199	8.369	536.7
99	180.00	.18450	42.000	.6374-01	.9666-01	.8661-01	.9225	.3740-02	.3351-02	.5364	3.774	523.2
99	225.00	.22900-01	30.000	.5774	1.022	.7232	.9537	.3954-01	.2798-01	3.804	26.07	570.4
99	270.00	.91000-02	63.000	.4286	.7536	.5241	.9577	.2916-01	.2028-01	2.847	19.53	568.9
99	270.00	.11100-01	64.000	.5979	1.183	.7559	.9577	.4578-01	.2925-01	3.464	23.48	590.9
99	270.00	.13100-01	65.000	.7625	1.572	.9746	.9577	.6082-01	.3771-01	4.243	28.68	596.8
99	270.00	.17000-01	67.000	.7194	1.341	.8946	.9577	.5190-01	.3462-01	4.446	30.30	580.9
99	270.00	.20900-01	69.000	.6639	1.231	.8243	.9577	.4762-01	.3190-01	4.132	28.18	579.8
99	270.00	.24900-01	71.000	.6058	1.102	.7503	.9573	.4266-01	.2903-01	3.854	26.34	576.2
99	270.00	.28800-01	73.000	.5151	.9001	.6351	.9558	.3483-01	.2457-01	3.451	23.69	567.5
99	270.00	.36700-01	75.000	.4953	.8532	.6168	.9531	.3301-01	.2386-01	3.384	23.28	564.1
99	270.00	.48500-01	77.000	.4167	.6910	.5222	.9491	.2674-01	.2020-01	3.008	20.81	554.1
99	270.00	.56400-01	78.000	.3637	.5972	.4596	.9466	.2311-01	.1778-01	2.666	18.47	551.2
99	270.00	.95800-01	80.000	.2125	.3391	.2791	.9361	.1312-01	.1080-01	1.632	11.36	542.3
99	270.00	.11550	81.000	.1582	.2557	.2137	.9319	.9895-02	.8267-02	1.188	8.251	546.5
99	315.00	.19000-01	68.000	.6036	1.073	.7124	.9651	.4151-01	.2756-01	3.954	27.09	571.4
99	315.00	.22900-01	70.000	.6449	1.180	.7662	.9651	.4564-01	.2964-01	4.077	27.84	577.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
35	3.010	-5.021	-6.031	36.10	721.7	.9680	256.6	-50.36	2364.	.1018-01	.2050-06	3.649
36	3.010	-4.996	-6.005	36.07	721.7	.9672	256.6	-50.38	2364.	.1017-01	.2050-06	3.646
37	3.010	-4.989	-6.001	36.15	721.7	.9695	256.6	-50.40	2364.	.1020-01	.2050-06	3.654

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
35	.4396-01	.7586-02
36	.4395-01	.7589-02
37	.4400-01	.7581-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
36	.00000	.91000-02	1.0000	.8374	2.200	.9541	.9802	.9667-01	.4193-01	4.288	28.85	605.1
36	.00000	.11100-01	2.0000	.9271	2.335	1.052	.9802	.1026	.4625-01	4.877	32.87	602.0
36	.00000	.15000-01	4.0000	.7039	1.631	.7930	.9802	.7168-01	.3485-01	3.927	26.57	594.7
36	.00000	.17000-01	5.0000	.7236	1.639	.8133	.9802	.7201-01	.3574-01	4.110	27.84	592.4
36	.00000	.19000-01	6.0000	.6899	1.513	.7730	.9802	.6649-01	.3397-01	4.022	27.29	589.0
36	.00000	.24900-01	9.0000	.6192	1.248	.6897	.9797	.5487-01	.3031-01	3.896	26.59	578.5
36	.00000	.26900-01	10.000	.5919	1.181	.6613	.9789	.5188-01	.2906-01	3.764	25.71	576.9
35	.00000	.32800-01	12.000	.5602	1.109	.6331	.9767	.4876-01	.2784-01	3.591	24.54	575.9
35	.00000	.36700-01	13.000	.5353	1.025	.6071	.9753	.4505-01	.2669-01	3.556	24.38	570.6
35	.00000	.40600-01	14.000	.5724	1.140	.6582	.9738	.5012-01	.2894-01	3.647	24.92	576.7
35	.00000	.48500-01	15.000	.5003	.9590	.5810	.9710	.4216-01	.2554-01	3.319	22.75	570.8
35	.00000	.56400-01	16.000	.4789	.9137	.5642	.9682	.4017-01	.2480-01	3.194	21.90	570.0
35	.00000	.76100-01	17.000	.3693	.6730	.4460	.9619	.2959-01	.1961-01	2.596	17.88	561.8
35	.00000	.11550	19.000	.2543	.4636	.3253	.9511	.2038-01	.1434-01	1.787	12.31	561.8
35	.00000	.16480	20.000	.1606	.2850	.2156	.9415	.1253-01	.9480-02	1.168	8.067	556.3
35	.00000	.21400	22.000	.1151	.1857	.1520	.9361	.8162-02	.6683-02	.9611	6.729	531.8
37	2.0000	.24700-01	165.00	.5335	1.200	.5995	.9802	.5280-01	.2638-01	3.050	20.67	591.7
36	9.0000	.15000-01	157.00	.6750	1.549	.7516	.9819	.6806-01	.3303-01	3.795	25.69	593.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
36	9.0000	.17600-01	158.00	.6593	1.389	.7284	.9819	.6105-01	.3201-01	3.980	27.08	584.3
37	9.8000	.24700-01	164.00	.5244	1.212	.5854	.9816	.5332-01	.2576-01	2.935	19.86	594.5
36	10.000	.22900-01	88.000	.5700	1.130	.6254	.9821	.4965-01	.2748-01	3.648	24.93	576.0
36	10.000	.26900-01	90.000	.5232	1.011	.5767	.9808	.4445-01	.2534-01	3.438	23.55	572.2
36	10.000	.34700-01	94.000	.6158	1.242	.6933	.9778	.5456-01	.3047-01	3.874	26.44	578.5
36	12.000	.17600-01	152.00	1.072	9.608	1.213	.9870	.4222	.5328-01	3.829	25.28	640.4
36	12.000	.12100-01	151.00	.8948	-13.14	1.039	.9870	-.5775	.4566-01	2.657	17.42	654.1
36	13.000	.19400-01	153.00	1.072	9.662	1.212	.9870	.4246	.5325-01	3.822	25.24	640.5
37	14.600	.44200-01	169.00	.4714	1.049	.5467	.9750	.4617-01	.2405-01	2.718	18.43	590.6
36	18.500	.44200-01	106.00	.5165	.9936	.5851	.9756	.4367-01	.2571-01	3.411	23.37	571.4
37	19.600	.62900-01	175.00	.3917	.8309	.4682	.9691	.3656-01	.2060-01	2.353	16.00	585.1
36	19.800	.40800-01	101.00	.6054	1.235	.6858	.9770	.5427-01	.3014-01	3.766	25.68	580.1
36	20.000	.24900-01	89.000	.4846	.9434	.5279	.9832	.4146-01	.2320-01	3.160	21.63	573.3
36	20.000	.28800-01	91.000	.4427	.8293	.4842	.9816	.3644-01	.2128-01	3.011	20.68	566.9
36	20.000	.32800-01	93.000	.5701	1.155	.6342	.9801	.5076-01	.2787-01	3.571	24.36	579.2
37	21.800	.82200-01	182.00	.3586	.7668	.4462	.9631	.3374-01	.1963-01	2.138	14.53	586.1
36	22.200	.62900-01	125.00	.4250	.8058	.4968	.9694	.3541-01	.2183-01	2.852	19.56	569.0
36	22.400	.44200-01	107.00	.4950	.9376	.5580	.9761	.4120-01	.2452-01	3.326	22.82	568.8
37	22.600	.10270	192.00	.2988	.6159	.3833	.9572	.2710-01	.1686-01	1.842	12.55	581.5
36	23.000	.42000-01	105.00	.5524	1.108	.6245	.9770	.4867-01	.2744-01	3.495	23.86	577.7
36	23.400	.59600-01	120.00	.4699	.9085	.5473	.9707	.3992-01	.2405-01	3.087	21.14	572.2
37	23.900	.21310	250.00	.1428	.2552	.1975	.9371	.1123-01	.8690-02	1.030	7.106	557.8
36	24.100	.82200-01	139.00	.3903	.7268	.4701	.9634	.3194-01	.2066-01	2.674	18.37	565.8
37	24.400	.19040	238.00	.1683	.3141	.2339	.9396	.1382-01	.1029-01	1.151	7.911	566.2
37	24.400	.12440	207.00	.2656	.5365	.3511	.9517	.2360-01	.1545-01	1.670	11.39	578.8
37	24.800	.16810	223.00	.2021	.3857	.2776	.9429	.1697-01	.1221-01	1.349	9.247	570.0
36	24.900	.62900-01	126.00	.4515	.8776	.5293	.9697	.3857-01	.2326-01	2.949	20.18	573.0
37	25.000	.79500-01	178.00	.4278	.9406	.5313	.9643	.4138-01	.2337-01	2.492	16.91	589.3
37	25.300	.10270	191.00	.3155	.6586	.4053	.9574	.2898-01	.1783-01	1.923	13.09	583.2
37	25.300	.10000+00	186.00	.3487	.7669	.4517	.9582	.3374-01	.1987-01	2.030	13.78	589.3
36	25.500	.60700-01	124.00	.4779	.9571	.5606	.9705	.4206-01	.2464-01	3.027	20.67	577.5
37	26.000	.12440	206.00	.2627	.5353	.3480	.9519	.2355-01	.1531-01	1.638	11.17	580.0
36	26.300	.82200-01	140.00	.3624	.6667	.4347	.9636	.2930-01	.1910-01	2.518	17.33	563.6
37	26.700	.12100	199.00	.2939	.6342	.3937	.9528	.2790-01	.1732-01	1.739	11.81	587.2
37	26.800	.16810	222.00	.2007	.3854	.2761	.9430	.1696-01	.1215-01	1.330	9.116	571.0
37	27.000	.19040	237.00	.1748	.3278	.2433	.9397	.1442-01	.1070-01	1.190	8.170	567.0
37	27.100	.21310	249.00	.1373	.2455	.1899	.9372	.1080-01	.8353-02	.9899	6.832	557.8
37	27.200	.80300-01	180.00	.4047	.8995	.5038	.9642	.3957-01	.2216-01	2.336	15.84	590.5
36	27.400	.40100-01	98.000	.6603	1.401	.7464	.9782	.6155-01	.3280-01	3.962	26.94	585.1
37	27.400	.16480	215.00	.2215	.4416	.3081	.9436	.1943-01	.1355-01	1.411	9.637	576.9
36	27.600	.41600-01	102.00	.6068	1.289	.6883	.9776	.5665-01	.3025-01	3.636	24.73	585.3
37	27.600	.12440	205.00	.2520	.5178	.3344	.9520	.2278-01	.1471-01	1.558	10.62	581.1
37	27.600	.18700	230.00	.1505	.2883	.2108	.9402	.1268-01	.9273-02	1.000	6.855	570.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
37	27.700	.21010	243.00	.1617	.3002	.2272	.9375	.1321-01	.9996-02	1.113	7.652	565.2
37	27.900	.10110	188.00	.2990	.6466	.3859	.9581	.2845-01	.1698-01	1.766	11.99	587.4
36	28.000	.46800-01	110.00	.3453	.5968	.3846	.9757	.2623-01	.1690-01	2.599	18.01	550.4
37	28.200	.16810	221.00	.1886	.3683	.2611	.9431	.1620-01	.1149-01	1.227	8.397	573.8
37	28.300	.19040	236.00	.1546	.2834	.2129	.9398	.1247-01	.9366-02	1.080	7.436	562.8
37	28.300	.12200	201.00	.3081	.6458	.4095	.9526	.2841-01	.1802-01	1.870	12.73	583.7
36	28.400	.53500-01	114.00	.4481	.8562	.5133	.9734	.3763-01	.2256-01	2.982	20.44	570.3
37	28.400	.21310	248.00	.1276	.2265	.1758	.9372	.9966-02	.7734-02	.9283	6.412	556.4
36	28.700	.58600-01	117.00	.5453	1.092	.6357	.9716	.4797-01	.2794-01	3.456	23.60	577.4
37	28.800	.16580	217.00	.2067	.4157	.2887	.9435	.1829-01	.1270-01	1.305	8.910	578.1
36	28.800	.60400-01	121.00	.4780	.9782	.5613	.9710	.4299-01	.2467-01	2.965	20.21	580.5
37	29.000	.21110	244.00	.1415	.2582	.1973	.9374	.1136-01	.8679-02	.9945	6.849	561.9
36	29.000	.65700-01	129.00	.3398	.5884	.3907	.9692	.2586-01	.1717-01	2.551	17.67	550.9
36	29.200	.72400-01	133.00	.4674	.9027	.5559	.9670	.3967-01	.2443-01	3.074	21.05	572.0
36	29.300	.79500-01	136.00	.3519	.6873	.4251	.9647	.3020-01	.1868-01	2.286	15.64	573.8
36	29.600	.92500-01	143.00	.3868	.7459	.4769	.9607	.3278-01	.2096-01	2.548	17.45	571.8
36	29.700	.10000+00	146.00	.3641	.7310	.4597	.9586	.3212-01	.2020-01	2.301	15.71	577.9
37	29.900	.12100	198.00	.3149	.7074	.4260	.9530	.3112-01	.1874-01	1.802	12.22	591.6
37	30.200	.16480	214.00	.1986	.4002	.2771	.9437	.1761-01	.1219-01	1.252	8.542	578.4
37	30.200	.18700	229.00	.1872	.3661	.2643	.9403	.1611-01	.1163-01	1.216	8.320	574.0
37	30.300	.21010	242.00	.1545	.2905	.2183	.9376	.1278-01	.9603-02	1.048	7.194	567.5
36	31.500	.91000-02	82.000	.9260	2.716	1.028	.9850	.1194	.4516-01	4.456	29.87	612.2
36	31.500	.11100-01	83.000	.9842	2.729	1.089	.9850	.1199	.4785-01	4.882	32.78	608.8
36	31.500	.14200-01	84.000	1.155	-42.45	1.333	.9870	-1.866	.5857-01	3.565	23.41	651.4
36	31.500	.16000-01	85.000	1.190	22.07	1.357	.9870	.9697	.5962-01	3.988	26.27	645.4
36	31.500	.17600-01	86.000	1.158	9.257	1.307	.9870	.4068	.5744-01	4.199	27.75	639.2
36	31.500	.19400-01	87.000	1.040	4.649	1.157	.9870	.2043	.5084-01	4.250	28.24	628.7
37	32.100	.21010	241.00	.1521	.2839	.2141	.9376	.1249-01	.9420-02	1.040	7.149	566.2
37	32.200	.16480	213.00	.2025	.4033	.2811	.9438	.1775-01	.1237-01	1.291	8.819	576.7
37	32.200	.17860	224.00	.1878	.3539	.2588	.9416	.1557-01	.1139-01	1.271	8.724	567.9
37	32.200	.18700	228.00	.2118	.4027	.2953	.9404	.1772-01	.1299-01	1.419	9.729	569.4
37	32.300	.12100	197.00	.3746	.8395	.5059	.9531	.3694-01	.2226-01	2.148	14.56	591.3
37	32.300	.12300	194.00	.2936	.6420	.3952	.9527	.2825-01	.1739-01	1.718	11.66	588.7
37	32.300	.12730	208.00	.1940	.3638	.2505	.9516	.1600-01	.1102-01	1.319	9.059	567.1
37	32.300	.13420	209.00	.2242	.4466	.2985	.9500	.1965-01	.1313-01	1.429	9.764	576.8
36	32.400	.10000+00	147.00	.4252	.8774	.5399	.9588	.3856-01	.2373-01	2.616	17.83	581.6
37	32.400	.10110	184.00	.3990	.9356	.5238	.9584	.4116-01	.2305-01	2.209	14.93	595.8
37	32.400	.10630	193.00	.2324	.4331	.2902	.9570	.1906-01	.1277-01	1.592	10.94	565.9
37	32.500	.85800-01	183.00	.2819	.5503	.3440	.9630	.2421-01	.1514-01	1.835	12.56	573.7
36	32.600	.79500-01	137.00	.4723	.9407	.5721	.9650	.4134-01	.2514-01	3.008	20.55	576.7
37	32.600	.80800-01	176.00	.4260	.9981	.5347	.9645	.4391-01	.2353-01	2.360	15.96	595.8
36	32.700	.67400-01	132.00	.3770	.6712	.4364	.9689	.2950-01	.1918-01	2.727	18.83	557.1
36	32.700	.72400-01	134.00	.4535	.8472	.5349	.9673	.3723-01	.2351-01	3.095	21.26	566.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
36	32.800	.65700-01	130.00	.3158	.5367	.3611	.9695	.2359-01	.1587-01	2.433	16.90	546.4
37	32.800	.16680	210.00	.1817	.3496	.2493	.9435	.1538-01	.1097-01	1.202	8.232	571.4
37	32.800	.18880	225.00	.1456	.2591	.1973	.9401	.1140-01	.8681-02	1.055	7.282	557.0
36	32.900	.58600-01	118.00	.5046	1.019	.5878	.9720	.4476-01	.2583-01	3.172	21.65	578.6
36	32.900	.60400-01	122.00	.4280	.7998	.4938	.9713	.3515-01	.2170-01	2.920	20.06	566.4
37	32.900	.61300-01	171.00	.3908	.8751	.4655	.9710	.3850-01	.2048-01	2.242	15.20	591.3
36	33.000	.53500-01	115.00	.4767	.8903	.5428	.9738	.3913-01	.2386-01	3.254	22.35	566.3
36	33.200	.48300-01	113.00	.3372	.5754	.3750	.9757	.2529-01	.1648-01	2.584	17.94	547.3
37	33.400	.42800-01	166.00	.5821	1.423	.6705	.9777	.6262-01	.2950-01	3.128	21.10	599.6
36	33.500	.40100-01	99.000	.6487	1.301	.7261	.9787	.5716-01	.3191-01	4.104	28.02	577.7
36	33.600	.38300-01	97.000	.6904	1.415	.7718	.9794	.6219-01	.3392-01	4.276	29.15	580.7
36	33.700	.36700-01	96.000	.7180	1.537	.8035	.9800	.6753-01	.3531-01	4.274	29.05	586.2
36	33.900	.33800-01	95.000	.7034	1.454	.7792	.9812	.6389-01	.3424-01	4.322	29.44	581.9
37	34.700	.21010	240.00	.1597	.2972	.2244	.9377	.1308-01	.9874-02	1.096	7.535	565.7
37	34.700	.18700	227.00	.1854	.3573	.2599	.9404	.1572-01	.1143-01	1.224	8.384	571.7
37	34.900	.16480	212.00	.2271	.4585	.3167	.9439	.2017-01	.1393-01	1.428	9.748	578.7
36	35.100	.10000+00	148.00	.4491	.9350	.5709	.9589	.4109-01	.2509-01	2.741	18.67	582.8
37	35.200	.23900-01	161.00	.4295	.8624	.4641	.9851	.3794-01	.2042-01	2.717	18.55	577.9
36	35.300	.92500-01	145.00	.4117	.7974	.5070	.9611	.3504-01	.2228-01	2.699	18.48	572.5
36	35.300	.22100-01	160.00	.4326	.7568	.4617	.9853	.3326-01	.2029-01	3.202	22.15	553.2
37	35.400	.18800	231.00	.2074	.3955	.2896	.9403	.1740-01	.1274-01	1.385	9.500	569.9
37	35.500	.12100	196.00	.3563	.7931	.4795	.9533	.3489-01	.2110-01	2.054	13.92	590.6
37	35.600	.16580	216.00	.2294	.4558	.3182	.9438	.2005-01	.1400-01	1.467	10.02	576.4
36	35.800	.80600-01	138.00	.4242	.8248	.5116	.9648	.3624-01	.2248-01	2.770	18.96	573.1
37	35.900	.21310	247.00	.1315	.2342	.1812	.9374	.1031-01	.7974-02	.9516	6.570	557.2
37	36.000	.19040	235.00	.1651	.3068	.2284	.9400	.1350-01	.1005-01	1.135	7.801	565.4
37	36.200	.16910	220.00	.1958	.3731	.2678	.9434	.1641-01	.1178-01	1.308	8.971	569.8
36	36.200	.72400-01	135.00	.4334	.8175	.5115	.9675	.3592-01	.2248-01	2.925	20.08	568.1
37	36.300	.12200	200.00	.3363	.7338	.4508	.9531	.3229-01	.1983-01	1.971	13.38	588.5
36	36.600	.65700-01	131.00	.4060	.7369	.4698	.9698	.3238-01	.2064-01	2.867	19.75	561.0
37	36.700	.18700	226.00	.1951	.3659	.2702	.9405	.1610-01	.1189-01	1.328	9.117	567.0
37	36.900	.16480	211.00	.2162	.4245	.2981	.9440	.1868-01	.1311-01	1.399	9.566	574.6
37	36.900	.10110	187.00	.4141	.9718	.5427	.9587	.4275-01	.2388-01	2.291	15.49	595.9
36	37.000	.60400-01	123.00	.4980	.9943	.5803	.9716	.4370-01	.2550-01	3.164	21.61	577.1
37	37.000	.12440	204.00	.3061	.6287	.4046	.9526	.2766-01	.1780-01	1.895	12.91	581.0
36	37.100	.58600-01	119.00	.5342	1.056	.6192	.9722	.4642-01	.2721-01	3.428	23.43	575.7
37	37.200	.21310	246.00	.1338	.2392	.1848	.9374	.1052-01	.8129-02	.9647	6.658	557.8
37	37.600	.16810	219.00	.1943	.3672	.2648	.9435	.1615-01	.1165-01	1.311	8.995	568.4
36	37.800	.10270	150.00	.3683	.7003	.4590	.9583	.3077-01	.2017-01	2.464	16.90	569.4
37	37.900	.12100	195.00	.2739	.5547	.3584	.9534	.2441-01	.1577-01	1.718	11.72	579.1
37	38.000	.80300-01	179.00	.4202	.9444	.5214	.9650	.4155-01	.2294-01	2.404	16.29	591.6
36	38.500	.46800-01	112.00	.3842	.6719	.4270	.9766	.2953-01	.1877-01	2.845	19.69	553.1
37	38.600	.12440	203.00	.2810	.5613	.3680	.9526	.2469-01	.1619-01	1.786	12.20	577.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
37	38.700	.10000+00	185.00	.3685	.8129	.4746	.9591	.3576-01	.2088-01	2.141	14.52	589.7
36	38.900	.62200-01	141.00	.4318	.8119	.5179	.9645	.3568-01	.2276-01	2.925	20.08	567.5
36	39.300	.41600-01	104.00	.6047	1.227	.6786	.9785	.5392-01	.2982-01	3.781	25.80	579.4
37	39.500	.10270	190.00	.3718	.7980	.4781	.9584	.3511-01	.2103-01	2.210	15.02	586.6
37	39.600	.16810	218.00	.1773	.3354	.2416	.9435	.1476-01	.1063-01	1.194	8.191	568.6
37	39.900	.19040	233.00	.1468	.2695	.2019	.9401	.1186-01	.8882-02	1.024	7.049	563.1
37	40.100	.79500-01	177.00	.4426	.9722	.5455	.9654	.4277-01	.2400-01	2.580	17.51	589.2
37	40.200	.12440	202.00	.2709	.5367	.3538	.9527	.2361-01	.1557-01	1.737	11.87	575.9
37	40.300	.21310	245.00	.1235	.2199	.1701	.9375	.9675-02	.7486-02	.8950	6.180	557.0
36	41.100	.82200-01	142.00	.4272	.8141	.5137	.9646	.3578-01	.2257-01	2.851	19.55	569.8
37	41.100	.60700-01	173.00	.4527	1.008	.5364	.9717	.4435-01	.2360-01	2.609	17.69	590.7
37	42.300	.10270	189.00	.3782	.7973	.4838	.9585	.3508-01	.2128-01	2.285	15.54	584.4
37	42.600	.59600-01	172.00	.4840	1.110	.5743	.9721	.4886-01	.2527-01	2.724	18.44	593.7
37	43.200	.42000-01	168.00	.5906	1.403	.6744	.9785	.6173-01	.2967-01	3.238	21.88	597.0
37	43.400	.82200-01	181.00	.3412	.7157	.4186	.9646	.3149-01	.1842-01	2.070	14.09	583.8
36	43.600	.62900-01	128.00	.5404	1.031	.6267	.9710	.4529-01	.2754-01	3.604	24.71	569.9
36	45.000	.22900-01	8.0000	.7330	1.676	.7968	.9858	.7366-01	.3502-01	4.131	27.97	593.4
37	46.100	.62900-01	174.00	.4940	1.105	.5880	.9711	.4860-01	.2587-01	2.837	19.23	591.1
37	47.700	.40800-01	167.00	.6482	1.623	.7413	.9791	.7141-01	.3261-01	3.427	23.10	601.5
36	48.400	.44200-01	109.00	.5755	1.144	.6467	.9778	.5027-01	.2842-01	3.673	25.09	576.4
36	50.000	.19400-01	156.00	.7845	4.041	.8763	.9870	.1776	.3851-01	3.087	20.48	632.1
36	51.000	.12100-01	154.00	.9941	20.56	1.134	.9870	.9034	.4985-01	3.313	21.82	645.8
36	51.000	.17600-01	155.00	.9807	4.852	1.094	.9870	.2132	.4809-01	3.898	25.87	631.2
37	51.900	.44800-01	170.00	.4853	1.053	.5519	.9776	.4632-01	.2428-01	2.859	19.41	587.8
37	53.200	.24700-01	163.00	.5035	1.132	.5481	.9854	.4980-01	.2411-01	2.880	19.51	591.7
37	65.200	.24700-01	162.00	.6065	1.504	.6668	.9848	.6616-01	.2934-01	3.227	21.76	600.7
35	90.000	.91000-02	44.000	.9081	3.102	1.038	.9823	.1364	.4564-01	4.074	27.20	619.6
35	90.000	.11100-01	45.000	.9853	2.936	1.117	.9823	.1291	.4909-01	4.705	31.52	613.0
35	90.000	.13100-01	46.000	.8812	2.358	.9912	.9823	.1037	.4358-01	4.464	30.01	606.5
35	90.000	.17000-01	48.000	.7085	1.714	.7906	.9823	.7537-01	.3476-01	3.831	25.86	598.7
35	90.000	.20900-01	50.000	.7300	1.658	.8103	.9823	.7289-01	.3562-01	4.138	28.03	592.7
35	90.000	.24900-01	52.000	.6424	1.399	.7126	.9818	.6151-01	.3133-01	3.768	25.58	588.3
35	90.000	.26900-01	53.000	.6072	1.271	.6742	.9810	.5589-01	.2964-01	3.688	25.10	583.5
35	90.000	.28800-01	54.000	.6022	1.237	.6702	.9802	.5439-01	.2946-01	3.723	25.37	581.1
35	90.000	.32800-01	55.000	.5084	.9896	.5671	.9787	.4351-01	.2493-01	3.317	22.70	573.3
35	90.000	.36700-01	56.000	.5055	.9802	.5682	.9772	.4310-01	.2498-01	3.312	22.68	572.6
35	90.000	.40600-01	57.000	.5087	1.018	.5789	.9758	.4475-01	.2545-01	3.227	22.04	577.4
35	90.000	.48500-01	58.000	.5124	1.004	.5908	.9729	.4413-01	.2597-01	3.320	22.71	574.3
35	90.000	.56400-01	59.000	.4593	.8846	.5365	.9701	.3889-01	.2358-01	3.032	20.77	571.5
35	90.000	.76100-01	60.000	.3877	.7210	.4661	.9636	.3170-01	.2049-01	2.661	18.29	565.5
35	90.000	.95800-01	61.000	.3456	.6417	.4293	.9578	.2821-01	.1887-01	2.377	16.34	565.3
35	90.000	.11550	62.000	.2786	.5088	.3548	.9526	.2237-01	.1560-01	1.955	13.46	562.1
35	135.00	.19000-01	49.000	.6929	1.528	.8155	.9725	.6720-01	.3585-01	4.022	27.28	589.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R=. TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
35	135.00	.22900-01	51.000	.6353	1.372	.7454	.9725	.6032-01	.3277-01	3.754	25.50	587.3
35	180.00	.91000-02	23.000	.4747	.9341	.5794	.9633	.4106-01	.2547-01	3.062	20.94	574.9
35	180.00	.11100-01	24.000	.6156	1.506	.7865	.9633	.6620-01	.3458-01	3.304	22.29	599.6
35	180.00	.13100-01	25.000	.6425	1.500	.8133	.9633	.6594-01	.3576-01	3.566	24.12	595.4
35	180.00	.15000-01	26.000	.6123	1.387	.7705	.9633	.6098-01	.3387-01	3.478	23.56	592.5
35	180.00	.17000-01	27.000	.6110	1.335	.7630	.9633	.5868-01	.3354-01	3.575	24.26	588.6
35	180.00	.19000-01	28.000	.6160	1.345	.7693	.9633	.5914-01	.3382-01	3.606	24.48	588.5
35	180.00	.20900-01	29.000	.6042	1.286	.7504	.9633	.5653-01	.3299-01	3.617	24.59	585.5
35	180.00	.28800-01	32.000	.5305	1.061	.6571	.9614	.4663-01	.2889-01	3.367	22.99	577.3
35	180.00	.32800-01	33.000	.4738	.8972	.5837	.9601	.3944-01	.2566-01	3.185	21.85	568.8
35	180.00	.36700-01	34.000	.4751	.9330	.5954	.9588	.4102-01	.2618-01	3.071	21.00	574.6
35	180.00	.56400-01	37.000	.3756	.6930	.4787	.9529	.3047-01	.2105-01	2.602	17.89	564.1
35	180.00	.76100-01	38.000	.2899	.5182	.3761	.9480	.2278-01	.1653-01	2.087	14.40	557.9
35	180.00	.95800-01	39.000	.2300	.4009	.3024	.9439	.1763-01	.1329-01	1.712	11.85	552.4
35	180.00	.11550	40.000	.1787	.3120	.2396	.9406	.1372-01	.1053-01	1.327	9.187	552.7
35	180.00	.18450	42.000	.8618-01	.1425	.1161	.9348	.6267-02	.5106-02	.6915	4.822	539.2
35	225.00	.22900-01	30.000	.4973	1.023	.6291	.9592	.4498-01	.2766-01	3.071	20.92	581.2
35	270.00	.91000-02	63.000	.5036	1.104	.6360	.9617	.4854-01	.2796-01	2.938	19.94	589.0
35	270.00	.11100-01	64.000	.6123	1.478	.7892	.9617	.6498-01	.3470-01	3.316	22.39	598.5
35	270.00	.13100-01	65.000	.6367	1.517	.8185	.9617	.6672-01	.3598-01	3.480	23.51	597.3
35	270.00	.17000-01	67.000	.6878	1.515	.8695	.9617	.6661-01	.3823-01	3.996	27.11	589.5
35	270.00	.20900-01	69.000	.5950	1.283	.7486	.9617	.5641-01	.3291-01	3.520	23.91	587.1
35	270.00	.24900-01	71.000	.5377	1.136	.6755	.9613	.4994-01	.2970-01	3.239	22.03	584.6
35	270.00	.28800-01	73.000	.4893	.9864	.6131	.9599	.4337-01	.2695-01	3.080	21.02	578.5
35	270.00	.36700-01	75.000	.4686	.9319	.5946	.9574	.4097-01	.2614-01	2.990	20.43	576.5
35	270.00	.46500-01	77.000	.4191	.7910	.5353	.9538	.3477-01	.2353-01	2.829	19.41	568.2
35	270.00	.56400-01	78.000	.3965	.7375	.5107	.9516	.3242-01	.2245-01	2.721	18.70	565.6
35	270.00	.95800-01	80.000	.2217	.3855	.2928	.9429	.1695-01	.1287-01	1.656	11.47	551.8
35	270.00	.11550	81.000	.1521	.2655	.2048	.9398	.1167-01	.9004-02	1.131	7.825	552.6
35	315.00	.19000-01	68.000	.5771	1.165	.6800	.9700	.5120-01	.2990-01	3.630	24.77	578.6
35	315.00	.22900-01	70.000	.6590	1.404	.7838	.9700	.6174-01	.3446-01	3.940	26.78	585.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
102	4.020	-4.995	-5.983	64.71	742.7	.4150	175.5	-50.28	2611.	.6383-02	.1412-06	3.667
103	4.020	-5.007	-5.997	64.74	744.7	.4152	176.0	-50.28	2614.	.6368-02	.1416-06	3.654
104	4.020	-4.992	-5.980	64.78	744.7	.4155	176.0	-50.28	2614.	.6373-02	.1416-06	3.657

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
102	.3867-01	.9625-02
103	.3869-01	.9639-02
104	.3871-01	.9636-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
103	.00000	.91000-02	1.0000	.6646	1.256	.7688	.9712	.4860-01	.2975-01	4.066	27.63	586.5
103	.00000	.15000-01	4.0000	.6828	1.226	.7826	.9712	.4743-01	.3028-01	4.440	30.33	576.6
103	.00000	.17000-01	5.0000	.6727	1.183	.7682	.9712	.4579-01	.2972-01	4.491	30.76	572.1
103	.00000	.19000-01	6.0000	.6497	1.132	.7405	.9712	.4381-01	.2865-01	4.392	30.12	569.9
103	.00000	.24900-01	9.0000	.5677	.9559	.6443	.9707	.3698-01	.2493-01	4.028	27.75	561.3
103	.00000	.26900-01	10.000	.5716	.9580	.6505	.9699	.3707-01	.2517-01	4.084	28.15	560.0
102	.00000	.32800-01	12.000	.5190	.8742	.5974	.9677	.3380-01	.2310-01	3.669	25.29	559.9
102	.00000	.36700-01	13.000	.4905	.8106	.5659	.9663	.3134-01	.2188-01	3.568	24.67	554.6
102	.00000	.40600-01	14.000	.5257	.8898	.6140	.9648	.3441-01	.2374-01	3.688	25.41	561.2
102	.00000	.48500-01	15.000	.4504	.7480	.5306	.9620	.2892-01	.2052-01	3.250	22.46	556.0
102	.00000	.56400-01	16.000	.4257	.7055	.5077	.9593	.2728-01	.1963-01	3.082	21.30	555.4
102	.00000	.76100-01	17.000	.3502	.5700	.4281	.9528	.2204-01	.1655-01	2.607	18.07	550.1
102	.00000	.95800-01	18.000	.7161-01	.1132	.8895-01	.9469	.4376-02	.3439-02	.5598	3.901	540.5
102	.00000	.11550	19.000	.2444	.4008	.3165	.9416	.1550-01	.1224-01	1.798	12.45	552.4
102	.00000	.16480	20.000	.1379	.2206	.1861	.9310	.8528-02	.7194-02	1.057	7.352	544.4
102	.00000	.21400	22.000	.8274-01	.1224	.1096	.9243	.4733-02	.4238-02	.7332	5.187	513.5
104	2.0000	.24700-01	165.00	.4497	.7599	.5097	.9711	.2941-01	.1973-01	3.175	21.86	562.3
103	9.0000	.15000-01	157.00	.6402	1.144	.7271	.9729	.4426-01	.2813-01	4.190	28.64	575.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
103	9.0000	.17600-01	158.00	.5899	.9985	.6636	.9729	.3864-01	.2568-01	4.153	28.59	562.7
104	9.8000	.24700-01	164.00	.4632	.7855	.5220	.9725	.3040-01	.2020-01	3.254	22.39	563.2
103	10.000	.22900-01	88.000	.5049	.8387	.5656	.9730	.3245-01	.2188-01	3.655	25.23	557.6
103	10.000	.26900-01	90.000	.5057	.8312	.5686	.9718	.3216-01	.2200-01	3.720	25.72	554.5
103	10.000	.34700-01	94.000	.5089	.8317	.5789	.9688	.3218-01	.2240-01	3.778	26.15	552.8
103	12.000	.17600-01	152.00	1.073	2.660	1.163	.9870	.1029	.4501-01	5.184	34.61	619.8
103	12.000	.12100-01	151.00	.9102	3.309	1.005	.9870	.1280	.3888-01	3.617	23.87	641.9
103	13.000	.19400-01	153.00	.9653	2.126	1.039	.9870	.8227-01	.4020-01	5.094	34.21	608.3
104	14.600	.44200-01	169.00	.4389	.7358	.5086	.9660	.2848-01	.1969-01	3.135	21.61	560.1
103	18.500	.44200-01	106.00	.4711	.7748	.5421	.9666	.2998-01	.2097-01	3.464	23.95	554.7
104	19.600	.62900-01	175.00	.3531	.5803	.4184	.9602	.2246-01	.1619-01	2.600	17.98	554.5
103	19.800	.40800-01	101.00	.5573	.9446	.6414	.9680	.3655-01	.2482-01	3.917	26.96	563.0
103	20.000	.24900-01	89.000	.4272	.6925	.4744	.9740	.2680-01	.1836-01	3.214	22.27	550.3
103	20.000	.28800-01	91.000	.4395	.7140	.4914	.9725	.2763-01	.1901-01	3.294	22.82	551.0
103	20.000	.32800-01	93.000	.4961	.8248	.5608	.9710	.3191-01	.2170-01	3.586	24.75	557.8
104	21.800	.82200-01	182.00	.3210	.5328	.3926	.9541	.2062-01	.1520-01	2.327	16.06	557.4
103	22.200	.62900-01	125.00	.3682	.5992	.4343	.9605	.2319-01	.1681-01	2.752	19.06	551.5
103	22.400	.44200-01	107.00	.4271	.6936	.4889	.9671	.2684-01	.1892-01	3.203	22.20	550.8
104	22.600	.10270	192.00	.2776	.4592	.3494	.9480	.1777-01	.1352-01	2.023	13.97	556.4
103	23.000	.42000-01	105.00	.5112	.8632	.5879	.9680	.3340-01	.2275-01	3.611	24.86	562.1
103	23.400	.59600-01	120.00	.4299	.7079	.5058	.9618	.2739-01	.1957-01	3.154	21.80	555.0
104	23.900	.21310	250.00	.1218	.1821	.1616	.9256	.7047-02	.6254-02	1.061	7.481	519.6
103	24.100	.82200-01	139.00	.3626	.5879	.4395	.9544	.2275-01	.1700-01	2.727	18.90	550.3
104	24.400	.19040	238.00	.1461	.2251	.1949	.9287	.8712-02	.7542-02	1.201	8.407	532.3
104	24.400	.12440	207.00	.2361	.3934	.3069	.9423	.1523-01	.1188-01	1.702	11.74	558.4
104	24.800	.16810	223.00	.1823	.2927	.2445	.9326	.1133-01	.9464-02	1.393	9.669	547.3
103	24.900	.62900-01	126.00	.3778	.6244	.4469	.9608	.2416-01	.1729-01	2.756	19.04	556.1
104	25.000	.79500-01	178.00	.3718	.6263	.4543	.9553	.2424-01	.1759-01	2.638	18.17	561.4
104	25.300	.10270	191.00	.2837	.4709	.3571	.9483	.1823-01	.1382-01	2.056	14.19	557.4
104	25.300	.10000+00	186.00	.3338	.5673	.4224	.9491	.2196-01	.1635-01	2.338	16.08	563.7
103	25.500	.60700-01	124.00	.4292	.7236	.5086	.9616	.2800-01	.1968-01	3.039	20.93	561.7
104	26.000	.12440	206.00	.2360	.3945	.3070	.9424	.1527-01	.1188-01	1.694	11.68	559.3
103	26.300	.82200-01	140.00	.3756	.6052	.4537	.9546	.2342-01	.1756-01	2.852	19.79	548.4
104	26.700	.12100	199.00	.2760	.4745	.3617	.9434	.1837-01	.1400-01	1.902	13.06	566.6
104	26.800	.16810	222.00	.1951	.3145	.2621	.9327	.1217-01	.1014-01	1.481	10.27	548.6
104	27.000	.19040	237.00	.1584	.2455	.2119	.9288	.9502-02	.8202-02	1.287	8.999	534.7
104	27.100	.21310	249.00	.1214	.1823	.1614	.9258	.7057-02	.6248-02	1.046	7.364	522.0
104	27.200	.80300-01	180.00	.3847	.6539	.4716	.9553	.2531-01	.1825-01	2.694	18.53	563.8
103	27.400	.40100-01	98.000	.5986	1.040	.6887	.9692	.4025-01	.2665-01	4.061	27.85	569.3
104	27.400	.16480	215.00	.2150	.3531	.2908	.9334	.1367-01	.1125-01	1.584	10.96	554.3
103	27.600	.41600-01	102.00	.5431	.9436	.6265	.9686	.3651-01	.2424-01	3.687	25.29	569.2
104	27.600	.12440	205.00	.2327	.3902	.3029	.9426	.1510-01	.1173-01	1.661	11.45	560.2
104	27.600	.18700	230.00	.1431	.2244	.1923	.9294	.8687-02	.7443-02	1.138	7.934	539.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
104	27.700	.21010	243.00	.1511	.2305	.2026	.9261	.8920-02	.7842-02	1.264	8.864	528.5
104	27.900	.10110	188.00	.2731	.4611	.3448	.9490	.1785-01	.1335-01	1.931	13.29	562.0
103	28.000	.46800-01	110.00	.3119	.4813	.3532	.9668	.1862-01	.1367-01	2.553	17.87	533.1
104	28.200	.16810	221.00	.1733	.2825	.2342	.9328	.1094-01	.9064-02	1.293	8.950	552.0
104	28.300	.19040	236.00	.1384	.2126	.1841	.9289	.8231-02	.7125-02	1.141	7.993	531.5
104	28.300	.12200	201.00	.2756	.4677	.3594	.9432	.1810-01	.1391-01	1.934	13.31	563.3
103	28.400	.53500-01	114.00	.3844	.6251	.4454	.9644	.2419-01	.1723-01	2.877	19.93	551.3
104	28.400	.21310	248.00	.1203	.1801	.1596	.9258	.6970-02	.6177-02	1.043	7.352	520.5
103	28.700	.58600-01	117.00	.4679	.7810	.5502	.9627	.3022-01	.2129-01	3.363	23.20	558.9
104	28.800	.16580	217.00	.2017	.3336	.2741	.9332	.1291-01	.1061-01	1.471	10.16	556.3
103	28.800	.60400-01	121.00	.4487	.7679	.5327	.9621	.2971-01	.2061-01	3.110	21.37	565.5
104	29.000	.21110	244.00	.1311	.1986	.1751	.9261	.7688-02	.6777-02	1.110	7.801	525.8
103	29.000	.65700-01	129.00	.3052	.4724	.3551	.9603	.1828-01	.1374-01	2.484	17.37	534.3
103	29.200	.72400-01	133.00	.4060	.6686	.4861	.9580	.2587-01	.1881-01	2.978	20.58	555.1
103	29.300	.79500-01	136.00	.3782	.6342	.4604	.9557	.2454-01	.1781-01	2.699	18.60	560.2
103	29.600	.92500-01	143.00	.3265	.5323	.4015	.9517	.2060-01	.1553-01	2.434	16.85	552.1
103	29.700	.10000+00	146.00	.3268	.5477	.4105	.9495	.2119-01	.1588-01	2.335	16.10	560.0
104	29.900	.12100	198.00	.2865	.5003	.3775	.9436	.1936-01	.1461-01	1.933	13.25	570.4
104	30.200	.16480	214.00	.1973	.3266	.2678	.9335	.1264-01	.1037-01	1.437	9.922	556.6
104	30.300	.21010	242.00	.1379	.2123	.1859	.9262	.8216-02	.7197-02	1.135	7.942	532.1
103	31.500	.91000-02	82.000	.7440	1.485	.8461	.9758	.5744-01	.3274-01	4.297	29.06	595.4
103	31.500	.11100-01	83.000	.9027	1.843	1.030	.9758	.7131-01	.3985-01	5.098	34.41	598.7
103	31.500	.14200-01	84.000	1.231	3.741	1.348	.9870	.1447	.5217-01	5.285	35.02	633.7
103	31.500	.16000-01	85.000	1.252	3.379	1.364	.9870	.1307	.5276-01	5.731	38.12	626.4
103	31.500	.17600-01	86.000	1.033	2.438	1.117	.9870	.9432-01	.4322-01	5.169	34.59	615.4
103	31.500	.19400-01	87.000	.8651	1.830	.9287	.9870	.7080-01	.3593-01	4.727	31.83	603.4
104	32.100	.21010	241.00	.1317	.2014	.1768	.9263	.7796-02	.6844-02	1.097	7.692	529.5
104	32.200	.16480	213.00	.1801	.2959	.2433	.9336	.1145-01	.9418-02	1.326	9.172	554.4
104	32.200	.17860	224.00	.1743	.2744	.2329	.9310	.1062-01	.9015-02	1.377	9.594	540.6
104	32.200	.18700	228.00	.1644	.2573	.2204	.9296	.9960-02	.8531-02	1.312	9.152	538.5
104	32.300	.12100	197.00	.3149	.5474	.4137	.9438	.2119-01	.1601-01	2.136	14.65	569.4
104	32.300	.12300	194.00	.2505	.4321	.3290	.9433	.1673-01	.1273-01	1.719	11.80	567.5
104	32.300	.12730	208.00	.1850	.2968	.2366	.9421	.1149-01	.9156-02	1.416	9.834	546.9
104	32.300	.13420	209.00	.1997	.3336	.2625	.9404	.1291-01	.1016-01	1.434	9.893	559.1
103	32.400	.10000+00	147.00	.3422	.5789	.4303	.9497	.2240-01	.1667-01	2.412	16.60	562.5
104	32.400	.10110	184.00	.3220	.5621	.4109	.9493	.2176-01	.1591-01	2.172	14.89	570.4
104	32.400	.10630	193.00	.1881	.2955	.2321	.9478	.1144-01	.8986-02	1.492	10.40	539.7
104	32.500	.85800-01	183.00	.2411	.3831	.2907	.9540	.1483-01	.1125-01	1.875	13.04	543.8
103	32.600	.79500-01	137.00	.4369	.7391	.5327	.9560	.2860-01	.2061-01	3.079	21.19	562.5
104	32.600	.80800-01	176.00	.3905	.6810	.4818	.9556	.2636-01	.1865-01	2.639	18.09	570.1
103	32.700	.67400-01	132.00	.3178	.4980	.3715	.9600	.1927-01	.1438-01	2.530	17.64	538.9
103	32.700	.72400-01	134.00	.3773	.6106	.4488	.9583	.2363-01	.1736-01	2.846	19.73	549.7
103	32.800	.65700-01	130.00	.2720	.4154	.3148	.9606	.1607-01	.1218-01	2.270	15.92	529.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
104	32.800	.16680	210.00	.1570	.2533	.2104	.9333	.9805-02	.8145-02	1.191	8.262	548.7
104	32.800	.18880	225.00	.1222	.1850	.1608	.9293	.7162-02	.6224-02	1.038	7.292	525.3
103	32.900	.58600-01	118.00	.4394	.7381	.5167	.9630	.2856-01	.1999-01	3.128	21.56	560.7
103	32.900	.60400-01	122.00	.3959	.6425	.4626	.9624	.2486-01	.1790-01	2.972	20.60	550.6
104	32.900	.61300-01	171.00	.3893	.6641	.4618	.9621	.2571-01	.1787-01	2.711	18.64	564.7
103	33.000	.53500-01	115.00	.3975	.6394	.4585	.9648	.2474-01	.1774-01	3.028	21.02	547.8
103	33.200	.48300-01	113.00	.2839	.4342	.3209	.9667	.1680-01	.1242-01	2.362	16.56	529.6
104	33.400	.42800-01	166.00	.4842	.8459	.5591	.9687	.3274-01	.2164-01	3.264	22.37	570.5
103	33.500	.40100-01	99.000	.5808	.9763	.6620	.9697	.3778-01	.2562-01	4.132	28.47	560.8
103	33.600	.38300-01	97.000	.6195	1.054	.7056	.9704	.4079-01	.2730-01	4.329	29.77	564.1
103	33.700	.36700-01	96.000	.6355	1.108	.7252	.9710	.4287-01	.2806-01	4.294	29.44	570.0
103	33.900	.33800-01	95.000	.6081	1.041	.6879	.9721	.4027-01	.2662-01	4.213	28.96	565.6
104	34.700	.21010	240.00	.1290	.1963	.1726	.9264	.7596-02	.6679-02	1.086	7.625	527.2
104	34.700	.18700	227.00	.1070	.1680	.1437	.9297	.6503-02	.5560-02	.8486	5.916	539.7
104	34.900	.16480	212.00	.1908	.3152	.2584	.9337	.1220-01	.1000-01	1.393	9.627	556.0
103	35.100	.10000+00	148.00	.3530	.5957	.4436	.9499	.2305-01	.1717-01	2.497	17.20	561.8
104	35.200	.23900-01	161.00	.3287	.5176	.3603	.9759	.2003-01	.1395-01	2.596	18.09	540.6
103	35.300	.92500-01	145.00	.3616	.5923	.4445	.9521	.2292-01	.1720-01	2.674	18.50	553.5
103	35.300	.22100-01	160.00	.3243	.4946	.3534	.9761	.1914-01	.1367-01	2.714	19.04	528.4
104	35.400	.18800	231.00	.1482	.2318	.1986	.9296	.8970-02	.7688-02	1.184	8.263	538.2
104	35.500	.12100	196.00	.2951	.5125	.3871	.9440	.1984-01	.1498-01	2.006	13.76	569.1
104	35.600	.16580	216.00	.1752	.2869	.2363	.9336	.1111-01	.9147-02	1.296	8.968	553.5
103	35.800	.80600-01	138.00	.3658	.6061	.4433	.9559	.2345-01	.1715-01	2.657	18.35	556.9
104	35.900	.21310	247.00	.1156	.1732	.1533	.9260	.6702-02	.5933-02	1.002	7.059	520.7
104	36.000	.19040	235.00	.1339	.2062	.1781	.9292	.7982-02	.6894-02	1.100	7.697	532.4
104	36.200	.16810	220.00	.1676	.2690	.2240	.9331	.1041-01	.8672-02	1.281	8.893	547.2
103	36.200	.72400-01	135.00	.3983	.6485	.4741	.9586	.2509-01	.1834-01	2.976	20.61	551.6
104	36.300	.12200	200.00	.2716	.4686	.3557	.9437	.1814-01	.1377-01	1.862	12.79	567.5
103	36.600	.65700-01	131.00	.3591	.5704	.4200	.9608	.2207-01	.1625-01	2.793	19.43	543.7
104	36.700	.18700	226.00	.1580	.2464	.2112	.9298	.9537-02	.8175-02	1.269	8.859	537.1
104	36.900	.16480	211.00	.1769	.2883	.2377	.9338	.1116-01	.9199-02	1.318	9.128	552.1
104	36.900	.10110	187.00	.3482	.6080	.4437	.9496	.2353-01	.1717-01	2.348	16.10	570.4
103	37.000	.60400-01	123.00	.4539	.7621	.5346	.9627	.2949-01	.2069-01	3.234	22.29	560.5
104	37.000	.12440	204.00	.2412	.4055	.3134	.9431	.1570-01	.1213-01	1.715	11.82	560.9
103	37.100	.58600-01	119.00	.4849	.8082	.5683	.9633	.3127-01	.2199-01	3.493	24.10	558.5
104	37.200	.21310	246.00	.1198	.1797	.1590	.9261	.6955-02	.6153-02	1.035	7.287	521.4
104	37.600	.16810	219.00	.1567	.2505	.2090	.9332	.9698-02	.8090-02	1.206	8.380	545.8
103	37.800	.10270	150.00	.3074	.4987	.3818	.9492	.1930-01	.1477-01	2.309	16.00	550.6
104	37.900	.12100	195.00	.2371	.3928	.3046	.9441	.1520-01	.1179-01	1.723	11.90	556.9
104	38.000	.80300-01	179.00	.4021	.6845	.4911	.9561	.2650-01	.1901-01	2.809	19.32	564.2
103	38.500	.46800-01	112.00	.3263	.5047	.3685	.9676	.1953-01	.1426-01	2.659	18.60	534.0
104	38.600	.12440	203.00	.2321	.3855	.2999	.9432	.1492-01	.1161-01	1.681	11.60	557.6
104	38.700	.10000+00	185.00	.3218	.5477	.4053	.9500	.2120-01	.1569-01	2.248	15.46	564.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
103	38.900	.82200-01	141.00	.3617	.5835	.4353	.9555	.2258-01	.1684-01	2.742	19.02	548.7
103	39.300	.41600-01	104.00	.5179	.8713	.5910	.9695	.3371-01	.2287-01	3.680	25.35	561.1
104	39.500	.10270	190.00	.3080	.5185	.3879	.9493	.2007-01	.1501-01	2.186	15.06	561.3
104	39.600	.16810	218.00	.1452	.2321	.1936	.9333	.8986-02	.7493-02	1.117	7.761	545.9
104	39.900	.19040	233.00	.1216	.1866	.1613	.9293	.7224-02	.6244-02	1.005	7.037	531.1
104	40.100	.79500-01	177.00	.3956	.6699	.4815	.9564	.2593-01	.1864-01	2.784	19.17	562.8
104	40.200	.12440	202.00	.2218	.3673	.2861	.9433	.1422-01	.1107-01	1.614	11.15	556.6
104	40.300	.21310	245.00	.1056	.1579	.1398	.9261	.6111-02	.5411-02	.9186	6.475	519.9
103	41.100	.82200-01	142.00	.3682	.6014	.4447	.9556	.2327-01	.1721-01	2.735	18.93	552.7
104	41.100	.60700-01	173.00	.4363	.7461	.5161	.9628	.2888-01	.1998-01	3.029	20.82	565.3
104	42.300	.10270	189.00	.3170	.5312	.3983	.9494	.2056-01	.1542-01	2.266	15.62	560.0
104	42.600	.59600-01	172.00	.4540	.7790	.5364	.9632	.3015-01	.2076-01	3.136	21.55	566.2
104	43.200	.42000-01	168.00	.4963	.8496	.5683	.9695	.3288-01	.2200-01	3.440	23.64	565.6
104	43.400	.82200-01	181.00	.2981	.4899	.3607	.9557	.1896-01	.1396-01	2.195	15.18	554.5
103	43.600	.62900-01	128.00	.4579	.7495	.5371	.9621	.2900-01	.2078-01	3.392	23.47	553.2
103	45.000	.22900-01	8.0000	.7400	1.348	.8275	.9766	.5215-01	.3202-01	4.727	32.24	579.6
104	46.100	.62900-01	174.00	.4278	.7284	.5071	.9621	.2819-01	.1963-01	2.989	20.56	564.2
104	47.700	.40800-01	167.00	.5490	.9577	.6295	.9700	.3707-01	.2436-01	3.709	25.43	570.2
103	48.400	.44200-01	109.00	.4967	.8259	.5671	.9688	.3196-01	.2194-01	3.590	24.77	557.9
103	50.000	.19400-01	156.00	.8716	2.013	.9409	.9870	.7790-01	.3641-01	4.428	29.66	613.4
103	51.000	.12100-01	154.00	.9495	2.669	1.036	.9870	.1033	.4010-01	4.247	28.21	629.1
103	51.000	.17600-01	155.00	.8880	2.049	.9587	.9870	.7928-01	.3709-01	4.516	30.25	613.2
104	51.900	.44800-01	170.00	.4130	.6826	.4715	.9686	.2642-01	.1825-01	3.014	20.82	556.1
104	53.200	.24700-01	163.00	.4384	.7324	.4848	.9761	.2835-01	.1877-01	3.147	21.71	559.2
104	65.200	.24700-01	162.00	.5517	.9727	.6167	.9756	.3765-01	.2387-01	3.674	25.15	572.6
102	90.000	.91000-02	44.000	.7367	1.561	.8587	.9731	.6035-01	.3320-01	4.007	27.00	602.0
102	90.000	.11100-01	45.000	.8594	1.723	.9933	.9731	.6661-01	.3841-01	4.925	33.32	594.5
102	90.000	.13100-01	46.000	.8095	1.583	.9319	.9731	.6119-01	.3603-01	4.759	32.27	590.6
102	90.000	.17000-01	48.000	.7701	1.424	.8786	.9731	.5507-01	.3397-01	4.815	32.81	581.0
102	90.000	.20900-01	50.000	.6754	1.218	.7674	.9731	.4710-01	.2967-01	4.353	29.75	576.0
102	90.000	.24900-01	52.000	.6177	1.100	.7020	.9726	.4253-01	.2714-01	4.046	27.69	573.3
102	90.000	.26900-01	53.000	.5850	1.020	.6648	.9718	.3943-01	.2571-01	3.939	27.03	568.5
102	90.000	.28800-01	54.000	.5832	1.009	.6642	.9711	.3902-01	.2568-01	3.969	27.26	566.7
102	90.000	.32800-01	55.000	.4981	.8340	.5676	.9696	.3225-01	.2195-01	3.551	24.50	558.3
102	90.000	.36700-01	56.000	.4462	.7439	.5114	.9681	.2876-01	.1977-01	3.202	22.11	557.1
102	90.000	.40600-01	57.000	.4763	.8084	.5518	.9667	.3126-01	.2133-01	3.330	22.93	561.9
102	90.000	.48500-01	58.000	.3848	.6456	.4505	.9639	.2496-01	.1742-01	2.735	18.86	558.9
102	90.000	.56400-01	59.000	.4146	.6890	.4906	.9611	.2664-01	.1897-01	2.989	20.65	556.2
102	90.000	.76100-01	60.000	.3489	.5693	.4234	.9546	.2201-01	.1637-01	2.588	17.93	550.9
102	90.000	.95800-01	61.000	.2794	.4552	.3487	.9485	.1760-01	.1348-01	2.077	14.39	550.4
102	90.000	.11550	62.000	.2390	.3866	.3054	.9431	.1495-01	.1181-01	1.799	12.48	548.1
102	135.00	.19000-01	49.000	.6705	1.203	.7995	.9635	.4651-01	.3091-01	4.350	29.75	574.9
102	135.00	.22900-01	51.000	.6260	1.122	.7462	.9635	.4337-01	.2885-01	4.068	27.82	574.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
102	180.00	.91000-02	23.000	.3345	.5461	.4065	.9543	.2112-01	.1572-01	2.480	17.18	551.0
102	180.00	.11100-01	24.000	.5462	1.021	.6935	.9543	.3948-01	.2682-01	3.373	22.96	583.0
102	180.00	.13100-01	25.000	.6999	1.357	.8987	.9543	.5248-01	.3475-01	4.149	28.15	589.3
102	180.00	.15000-01	26.000	.7115	1.353	.9083	.9543	.5233-01	.3512-01	4.307	29.27	586.1
102	180.00	.17000-01	27.000	.6457	1.166	.8111	.9543	.4510-01	.3136-01	4.153	28.38	576.3
102	180.00	.19000-01	28.000	.6169	1.114	.7749	.9543	.4308-01	.2996-01	3.969	27.12	576.3
102	180.00	.20900-01	29.000	.6080	1.075	.7585	.9543	.4156-01	.2933-01	4.021	27.54	571.7
102	180.00	.28800-01	32.000	.5087	.8654	.6327	.9525	.3346-01	.2446-01	3.545	24.40	562.5
102	180.00	.32800-01	33.000	.4588	.7552	.5678	.9511	.2920-01	.2195-01	3.356	23.22	553.5
102	180.00	.36700-01	34.000	.4525	.7584	.5675	.9498	.2932-01	.2194-01	3.222	22.23	558.5
102	180.00	.48500-01	36.000	.3678	.5992	.4647	.9460	.2317-01	.1797-01	2.734	18.95	550.4
102	180.00	.56400-01	37.000	.3385	.5446	.4303	.9436	.2106-01	.1664-01	2.569	17.84	546.4
102	180.00	.76100-01	38.000	.2488	.3939	.3221	.9383	.1523-01	.1245-01	1.940	13.51	541.1
102	180.00	.95800-01	39.000	.1946	.3043	.2558	.9337	.1177-01	.9889-02	1.550	10.82	536.7
102	180.00	.11550	40.000	.1402	.2214	.1887	.9299	.8560-02	.7297-02	1.098	7.651	540.2
102	180.00	.18450	42.000	.6465-01	.9704-01	.8723-01	.9224	.3752-02	.3373-02	.5562	3.920	520.2
102	225.00	.22900-01	30.000	.5246	.9092	.6645	.9502	.3515-01	.2569-01	3.562	24.46	567.1
102	270.00	.91000-02	63.000	.3605	.6157	.4482	.9528	.2381-01	.1733-01	2.497	17.18	563.5
102	270.00	.11100-01	64.000	.5148	.9354	.6535	.9528	.3617-01	.2527-01	3.287	22.44	577.5
102	270.00	.13100-01	65.000	.6714	1.311	.8723	.9528	.5069-01	.3373-01	3.952	26.80	590.4
102	270.00	.17000-01	67.000	.5806	1.050	.7360	.9528	.4061-01	.2846-01	3.729	25.48	576.6
102	270.00	.20900-01	69.000	.5945	1.067	.7515	.9528	.4124-01	.2906-01	3.858	26.38	574.9
102	270.00	.24900-01	71.000	.5757	1.017	.7259	.9523	.3933-01	.2807-01	3.809	26.09	571.6
102	270.00	.28800-01	73.000	.5186	.8870	.6513	.9510	.3430-01	.2518-01	3.586	24.67	563.8
102	270.00	.36700-01	75.000	.4522	.7596	.5718	.9483	.2937-01	.2211-01	3.208	22.12	559.2
102	270.00	.48500-01	77.000	.3683	.5972	.4676	.9446	.2309-01	.1808-01	2.759	19.14	548.9
102	270.00	.56400-01	78.000	.3400	.5451	.4344	.9423	.2108-01	.1680-01	2.594	18.03	545.3
102	270.00	.95800-01	80.000	.1792	.2779	.2356	.9326	.1074-01	.9108-02	1.449	10.14	533.5
102	270.00	.11550	81.000	.1365	.2138	.1837	.9290	.8268-02	.7103-02	1.084	7.569	537.3
102	315.00	.19000-01	68.000	.5793	1.001	.6929	.9611	.3872-01	.2679-01	3.946	27.11	566.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
201	5.500	-4.975	-6.005	126.7	719.7	.1361	102.1	-50.50	2724.	.3600-02	.8214-07	3.710
202	5.500	-4.976	-5.998	126.7	719.7	.1362	102.1	-50.46	2724.	.3602-02	.8214-07	3.712
203	5.500	-4.982	-5.993	127.0	719.7	.1365	102.1	-50.40	2724.	.3609-02	.8214-07	3.720

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
201	.3014-01	.1277-01
202	.3015-01	.1276-01
203	.3018-01	.1275-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
202	.00000	.91000-02	1.0000	.6233	1.051	.7289	.9644	.3170-01	.2198-01	3.322	23.11	542.9
202	.00000	.15000-01	4.0000	.6616	1.104	.7717	.9644	.3329-01	.2327-01	3.582	24.97	540.1
202	.00000	.17000-01	5.0000	.6406	1.052	.7443	.9644	.3174-01	.2244-01	3.552	24.82	535.8
202	.00000	.19000-01	6.0000	.6146	1.008	.7138	.9644	.3040-01	.2152-01	3.416	23.87	535.3
202	.00000	.24900-01	9.0000	.5023	.8088	.5819	.9639	.2439-01	.1754-01	2.877	20.17	529.7
202	.00000	.26900-01	10.000	.4885	.7834	.5671	.9632	.2362-01	.1710-01	2.817	19.76	528.5
201	.00000	.32800-01	12.000	.4493	.7555	.5335	.9611	.2277-01	.1608-01	2.405	16.75	542.1
201	.00000	.36700-01	13.000	.4114	.6850	.4904	.9597	.2065-01	.1478-01	2.235	15.58	539.5
201	.00000	.40600-01	14.000	.4546	.7723	.5487	.9583	.2328-01	.1654-01	2.397	16.66	544.8
201	.00000	.48500-01	15.000	.4056	.6879	.4961	.9556	.2074-01	.1495-01	2.144	14.91	544.3
201	.00000	.56400-01	16.000	.3767	.6405	.4674	.9529	.1931-01	.1409-01	1.984	13.79	544.9
201	.00000	.76100-01	17.000	.2917	.4935	.3735	.9464	.1488-01	.1126-01	1.547	10.76	543.7
201	.00000	.11550	19.000	.1754	.3026	.2418	.9347	.9122-02	.7289-02	.9056	6.283	548.4
201	.00000	.16480	20.000	.1009	.1683	.1462	.9226	.5073-02	.4407-02	.5460	3.806	540.1
201	.00000	.21400	22.000	.5682-01	.8534-01	.7975-01	.9140	.2573-02	.2404-02	.3688	2.622	504.3
203	2.0000	.24700-01	165.00	.4164	.6443	.4765	.9644	.1945-01	.1438-01	2.558	18.07	516.1
202	9.0000	.15000-01	157.00	.6531	1.083	.7550	.9660	.3264-01	.2277-01	3.572	24.92	538.3
202	9.0000	.17600-01	158.00	.5349	.8605	.6140	.9660	.2595-01	.1851-01	3.068	21.51	529.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
203	9.8000	.24700-01	164.00	.4129	.6395	.4700	.9657	.1930-01	.1419-01	2.532	17.88	516.5
202	10.000	.22900-01	88.000	.4477	.7138	.5124	.9661	.2152-01	.1545-01	2.607	18.31	526.6
202	10.000	.26900-01	90.000	.4345	.6863	.4986	.9649	.2069-01	.1504-01	2.570	18.07	523.5
202	10.000	.34700-01	94.000	.4002	.6150	.4612	.9621	.1854-01	.1391-01	2.486	17.59	513.6
202	12.000	.17600-01	152.00	1.055	2.059	1.126	.9870	.6210-01	.3396-01	4.692	32.13	572.1
202	12.000	.12100-01	151.00	1.087	2.600	1.176	.9870	.7839-01	.3546-01	4.054	27.41	596.0
202	13.000	.19400-01	153.00	.9475	1.764	1.008	.9870	.5319-01	.3040-01	4.442	30.55	564.2
203	14.600	.44200-01	169.00	.4018	.6283	.4706	.9595	.1897-01	.1420-01	2.422	17.07	520.0
202	18.500	.44200-01	106.00	.4162	.6734	.4912	.9600	.2031-01	.1481-01	2.365	16.56	531.2
203	19.600	.62900-01	175.00	.3342	.5239	.4014	.9538	.1581-01	.1212-01	2.005	14.12	520.9
202	19.800	.40800-01	101.00	.5160	.8434	.6070	.9614	.2543-01	.1830-01	2.884	20.17	534.3
202	20.000	.24900-01	89.000	.3706	.5851	.4214	.9671	.1764-01	.1271-01	2.193	15.43	523.4
202	20.000	.28800-01	91.000	.3702	.5833	.4233	.9657	.1759-01	.1276-01	2.198	15.47	522.7
202	20.000	.32800-01	93.000	.4255	.6793	.4912	.9642	.2048-01	.1481-01	2.472	17.35	527.0
202	22.200	.62900-01	125.00	.3340	.5432	.4058	.9541	.1638-01	.1223-01	1.882	13.17	532.8
202	22.400	.44200-01	107.00	.3827	.6143	.4497	.9605	.1852-01	.1356-01	2.203	15.45	528.8
203	22.600	.10270	192.00	.2303	.3679	.2948	.9415	.1110-01	.8898-02	1.338	9.391	527.2
202	23.000	.42000-01	105.00	.4711	.7715	.5546	.9613	.2326-01	.1672-01	2.626	18.35	534.8
202	23.400	.59600-01	120.00	.3903	.6389	.4725	.9553	.1927-01	.1425-01	2.177	15.22	534.7
203	23.900	.21310	250.00	.8503-01	.1226	.1146	.9158	.3700-02	.3458-02	.6030	4.335	484.7
202	24.100	.82200-01	139.00	.2871	.4728	.3609	.9480	.1426-01	.1088-01	1.587	11.08	536.4
203	24.400	.19040	238.00	.1158	.1728	.1574	.9198	.5214-02	.4751-02	.7636	5.439	501.3
203	24.400	.12440	207.00	.1959	.3210	.2617	.9355	.9688-02	.7900-02	1.092	7.632	535.0
203	24.800	.16810	223.00	.1284	.2021	.1772	.9245	.6101-02	.5347-02	.7638	5.376	522.5
202	24.900	.62900-01	126.00	.3624	.5932	.4406	.9544	.1789-01	.1329-01	2.021	14.13	534.7
203	25.000	.79500-01	178.00	.3304	.5295	.4089	.9489	.1598-01	.1234-01	1.909	13.39	528.3
203	25.300	.10270	191.00	.2390	.3825	.3058	.9418	.1154-01	.9229-02	1.384	9.713	527.8
203	25.300	.10000+00	186.00	.2831	.4588	.3629	.9426	.1385-01	.1095-01	1.606	11.24	531.7
202	25.500	.60700-01	124.00	.3952	.6562	.4810	.9552	.1979-01	.1450-01	2.157	15.04	538.7
203	26.000	.12440	206.00	.1944	.3192	.2598	.9356	.9634-02	.7841-02	1.080	7.545	535.6
202	26.300	.82200-01	140.00	.2940	.4833	.3688	.9482	.1457-01	.1112-01	1.629	11.38	535.9
203	26.700	.12100	199.00	.2288	.3796	.3058	.9366	.1146-01	.9231-02	1.252	8.733	538.4
203	26.800	.16810	222.00	.1487	.2354	.2058	.9247	.7104-02	.6211-02	.8777	6.172	524.1
203	27.000	.19040	237.00	.1265	.1897	.1724	.9200	.5725-02	.5204-02	.8241	5.862	503.7
203	27.100	.21310	249.00	.9508-01	.1372	.1281	.9160	.4141-02	.3867-02	.6727	4.835	485.3
203	27.200	.80300-01	180.00	.3394	.5480	.4214	.9489	.1654-01	.1272-01	1.937	13.57	530.6
202	27.400	.40100-01	98.000	.5530	.9179	.6500	.9625	.2768-01	.1960-01	3.019	21.06	538.6
203	27.400	.16480	215.00	.1550	.2491	.2157	.9255	.7517-02	.6512-02	.8922	6.256	529.0
202	27.600	.41600-01	102.00	.5096	.8471	.6006	.9620	.2554-01	.1811-01	2.776	19.36	539.0
203	27.600	.12440	205.00	.1902	.3127	.2541	.9357	.9437-02	.7671-02	1.054	7.366	536.0
203	27.600	.18700	230.00	.1387	.2100	.1898	.9207	.6338-02	.5728-02	.8878	6.300	507.6
203	27.700	.21010	243.00	.1153	.1686	.1566	.9165	.5089-02	.4727-02	.7915	5.667	492.2
203	27.900	.10110	188.00	.2394	.3875	.3068	.9425	.1170-01	.9260-02	1.361	9.529	531.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
202	28.000	.46800-01	110.00	.2600	.4018	.3025	.9602	.1212-01	.9121-02	1.598	11.29	515.8
203	28.200	.16810	221.00	.1536	.2450	.2135	.9248	.7395-02	.6445-02	.8949	6.283	526.7
203	28.300	.19040	236.00	.1029	.1534	.1397	.9201	.4631-02	.4215-02	.6789	4.836	501.1
203	28.300	.12200	201.00	.2374	.3911	.3164	.9365	.1180-01	.9550-02	1.312	9.164	536.5
202	28.400	.53500-01	114.00	.3399	.5459	.4040	.9579	.1646-01	.1218-01	1.954	13.70	529.0
203	28.400	.21310	248.00	.9138-01	.1321	.1233	.9161	.3987-02	.3721-02	.6441	4.627	486.2
202	28.700	.58600-01	117.00	.4257	.6992	.5137	.9562	.2108-01	.1549-01	2.362	16.50	535.7
203	28.800	.16580	217.00	.1604	.2587	.2240	.9253	.7809-02	.6760-02	.9175	6.430	530.2
202	28.800	.60400-01	121.00	.4072	.6835	.4962	.9556	.2061-01	.1496-01	2.185	15.22	541.7
203	29.000	.21110	244.00	.1010	.1470	.1368	.9164	.4436-02	.4128-02	.7024	5.037	489.3
202	29.000	.65700-01	129.00	.2521	.3958	.3028	.9538	.1193-01	.9131-02	1.506	10.61	521.5
202	29.200	.72400-01	133.00	.3479	.5726	.4294	.9516	.1726-01	.1295-01	1.924	13.44	536.2
202	29.300	.79500-01	136.00	.3204	.5409	.4038	.9494	.1631-01	.1217-01	1.705	11.86	543.2
202	29.600	.92500-01	143.00	.2556	.4239	.3266	.9453	.1278-01	.9847-02	1.397	9.744	538.4
202	29.700	.10000+00	146.00	.2833	.4829	.3706	.9430	.1456-01	.1118-01	1.487	10.34	545.5
203	29.900	.12100	198.00	.2422	.4050	.3245	.9369	.1222-01	.9795-02	1.308	9.115	540.7
203	30.200	.16480	214.00	.1550	.2508	.2164	.9257	.7569-02	.6533-02	.8812	6.171	531.3
203	30.200	.18700	229.00	.6013-05	.7075-05	.6823-05	.9209	.2135-06	.2060-06	.8707-04	.7275-03	240.0
203	30.300	.21010	242.00	.1102	.1618	.1501	.9166	.4885-02	.4531-02	.7497	5.361	494.2
202	31.500	.11100-01	83.000	.7785	1.370	.9000	.9687	.4131-01	.2714-01	3.914	27.09	553.0
202	31.500	.14200-01	84.000	1.343	2.955	1.446	.9870	.8911-01	.4359-01	5.343	36.28	587.7
202	31.500	.16000-01	85.000	1.235	2.492	1.321	.9870	.7514-01	.3985-01	5.311	36.27	577.0
202	31.500	.19400-01	87.000	.8068	1.428	.8552	.9870	.4307-01	.2579-01	4.023	27.82	554.3
203	32.100	.21010	241.00	.1073	.1577	.1462	.9167	.4760-02	.4414-02	.7290	5.212	494.6
203	32.200	.16480	213.00	.1505	.2427	.2096	.9258	.7327-02	.6327-02	.8602	6.028	530.3
203	32.200	.17860	224.00	.1302	.2006	.1786	.9227	.6054-02	.5391-02	.8053	5.693	514.7
203	32.200	.18700	228.00	.1418	.2177	.1957	.9210	.6571-02	.5908-02	.8841	6.255	513.2
203	32.300	.12100	197.00	.2794	.4666	.3738	.9371	.1408-01	.1128-01	1.513	10.55	540.3
203	32.300	.12300	194.00	.2327	.3884	.3122	.9365	.1172-01	.9423-02	1.261	8.788	540.1
203	32.300	.12730	208.00	.1348	.2166	.1784	.9353	.6539-02	.5384-02	.7745	5.430	529.3
203	32.300	.13420	209.00	.1538	.2561	.2095	.9334	.7731-02	.6324-02	.8356	5.826	539.6
202	32.400	.10000+00	147.00	.3053	.5269	.4011	.9432	.1589-01	.1209-01	1.575	10.93	548.6
203	32.400	.10110	184.00	.2858	.4738	.3696	.9429	.1430-01	.1115-01	1.564	10.91	538.3
203	32.400	.10630	193.00	.1527	.2375	.1932	.9413	.7170-02	.5832-02	.9295	6.558	518.1
203	32.500	.85800-01	183.00	.1974	.3051	.2422	.9476	.9210-02	.7310-02	1.214	8.573	515.9
202	32.600	.79500-01	137.00	.3830	.6527	.4837	.9496	.1968-01	.1458-01	2.011	13.97	545.5
203	32.600	.80800-01	176.00	.3637	.5977	.4540	.9492	.1804-01	.1370-01	2.018	14.10	535.8
202	32.700	.67400-01	132.00	.2589	.4102	.3124	.9536	.1237-01	.9419-02	1.523	10.71	524.5
202	32.700	.72400-01	134.00	.3062	.4970	.3755	.9519	.1499-01	.1132-01	1.731	12.12	532.2
202	32.800	.65700-01	130.00	.2275	.3536	.2720	.9542	.1066-01	.8201-02	1.385	9.772	517.8
203	32.800	.16680	210.00	.1345	.2146	.1865	.9254	.6477-02	.5628-02	.7835	5.501	526.7
203	32.800	.18880	225.00	.9904-01	.1476	.1340	.9206	.4454-02	.4045-02	.6544	4.663	500.8
202	32.900	.58600-01	118.00	.3982	.6558	.4801	.9566	.1977-01	.1448-01	2.200	15.36	536.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
202	32.900	.60400-01	122.00	.3596	.5857	.4333	.9559	.1766-01	.1307-01	2.022	14.15	533.2
203	32.900	.61300-01	171.00	.3641	.5861	.4377	.9556	.1769-01	.1321-01	2.089	14.64	529.6
202	33.000	.53500-01	115.00	.3350	.5341	.3967	.9583	.1611-01	.1196-01	1.951	13.70	526.6
202	33.200	.48300-01	113.00	.2326	.3576	.2703	.9601	.1078-01	.8149-02	1.443	10.21	513.9
203	33.400	.42800-01	166.00	.4446	.7120	.5185	.9620	.2149-01	.1565-01	2.571	18.04	528.1
202	33.500	.40100-01	99.000	.5179	.8426	.6040	.9630	.2541-01	.1821-01	2.916	20.40	533.0
202	33.600	.38300-01	97.000	.5531	.9038	.6440	.9636	.2725-01	.1942-01	3.094	21.63	534.2
202	33.700	.36700-01	96.000	.5695	.9427	.6635	.9642	.2843-01	.2001-01	3.122	21.79	537.9
202	33.900	.33800-01	95.000	.5592	.9162	.6467	.9653	.2763-01	.1950-01	3.113	21.76	535.0
203	34.700	.21010	240.00	.1040	.1532	.1419	.9168	.4625-02	.4284-02	.7032	5.024	495.7
203	34.700	.18700	227.00	.1190	.1817	.1635	.9211	.5484-02	.4936-02	.7496	5.310	511.0
203	34.900	.16480	212.00	.1578	.2564	.2207	.9259	.7738-02	.6660-02	.8919	6.243	532.4
202	35.100	.10000+00	148.00	.2888	.4980	.3790	.9434	.1502-01	.1143-01	1.492	10.35	548.3
203	35.200	.23900-01	161.00	.2653	.3942	.2953	.9689	.1190-01	.8914-02	1.762	12.56	499.6
202	35.300	.92500-01	145.00	.2917	.4872	.3730	.9457	.1469-01	.1125-01	1.578	10.99	540.3
202	35.300	.22100-01	160.00	.2989	.4516	.3338	.9690	.1362-01	.1007-01	1.918	13.62	506.8
203	35.400	.18800	231.00	.1356	.2074	.1867	.9209	.6261-02	.5636-02	.8500	6.018	511.9
203	35.500	.12100	196.00	.2589	.4329	.3462	.9373	.1307-01	.1045-01	1.399	9.749	540.6
203	35.600	.16580	216.00	.1511	.2439	.2106	.9257	.7362-02	.6357-02	.8621	6.041	530.6
202	35.800	.80600-01	138.00	.3240	.5454	.4076	.9495	.1645-01	.1229-01	1.732	12.06	542.4
203	35.900	.21310	247.00	.9612-01	.1404	.1305	.9164	.4237-02	.3940-02	.6624	4.744	491.4
203	36.000	.19040	235.00	.1193	.1806	.1634	.9205	.5451-02	.4932-02	.7636	5.419	507.6
203	36.200	.16810	220.00	.1403	.2233	.1943	.9252	.6741-02	.5866-02	.8199	5.759	526.1
202	36.200	.72400-01	135.00	.3296	.5384	.4047	.9522	.1623-01	.1220-01	1.844	12.90	534.1
203	36.300	.12200	200.00	.2483	.4155	.3326	.9370	.1254-01	.1004-01	1.341	9.342	540.8
202	36.600	.65700-01	131.00	.3030	.4841	.3653	.9544	.1460-01	.1101-01	1.757	12.33	527.3
203	36.700	.18700	226.00	.1317	.2012	.1810	.9212	.6074-02	.5463-02	.8279	5.863	511.4
203	36.900	.16480	211.00	.1417	.2282	.1969	.9260	.6888-02	.5944-02	.8124	5.694	529.8
203	36.900	.10110	187.00	.3080	.5088	.3971	.9432	.1536-01	.1199-01	1.696	11.84	537.3
202	37.000	.60400-01	123.00	.4120	.6821	.4984	.9562	.2057-01	.1503-01	2.257	15.75	538.0
203	37.000	.12440	204.00	.2159	.3582	.2889	.9364	.1081-01	.8721-02	1.180	8.234	538.5
202	37.100	.56600-01	119.00	.4198	.6879	.5047	.9568	.2074-01	.1522-01	2.337	16.34	535.0
203	37.200	.21310	246.00	.9179-01	.1343	.1248	.9164	.4052-02	.3766-02	.6304	4.513	492.2
203	37.600	.16810	219.00	.1288	.2046	.1781	.9253	.6174-02	.5375-02	.7561	5.313	525.2
202	37.800	.10270	150.00	.2591	.4312	.3359	.9427	.1300-01	.1013-01	1.409	9.825	539.3
203	37.900	.12100	195.00	.1862	.3013	.2448	.9374	.9095-02	.7389-02	1.059	7.419	531.2
203	38.000	.80300-01	179.00	.3591	.5793	.4440	.9497	.1749-01	.1340-01	2.052	14.38	530.3
202	38.500	.46800-01	112.00	.2673	.4137	.3101	.9610	.1247-01	.9351-02	1.639	11.57	516.4
203	38.600	.12440	203.00	.2000	.3286	.2662	.9365	.9919-02	.8036-02	1.111	7.759	535.7
203	38.700	.10000+00	185.00	.2823	.4592	.3607	.9436	.1386-01	.1089-01	1.592	11.14	532.8
202	38.900	.82200-01	141.00	.2956	.4849	.3688	.9491	.1462-01	.1112-01	1.643	11.48	535.4
202	39.300	.41600-01	104.00	.4508	.7351	.5265	.9628	.2217-01	.1588-01	2.530	17.69	533.6
203	39.500	.10270	190.00	.2788	.4506	.3566	.9428	.1360-01	.1076-01	1.589	11.13	530.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
203	39.600	.16810	218.00	.1036	.1642	.1430	.9254	.4957-02	.4317-02	.6102	4.290	524.6
203	39.900	.19040	233.00	.9438-01	.1424	.1289	.9206	.4298-02	.3890-02	.6082	4.320	506.2
203	40.100	.79500-01	177.00	.3535	.5635	.4343	.9501	.1701-01	.1311-01	2.061	14.47	526.5
203	40.200	.12440	202.00	.1893	.3101	.2515	.9365	.9361-02	.7592-02	1.056	7.380	534.9
203	40.300	.21310	245.00	.7264-01	.1060	.9855-01	.9165	.3200-02	.2975-02	.5012	3.590	491.1
202	41.100	.82200-01	142.00	.3044	.5044	.3811	.9492	.1521-01	.1149-01	1.665	11.62	538.2
203	41.100	.60700-01	173.00	.4033	.6438	.4819	.9563	.1943-01	.1455-01	2.345	16.46	527.0
203	42.600	.59600-01	172.00	.4045	.6447	.4822	.9567	.1946-01	.1455-01	2.358	16.56	526.5
203	43.200	.42000-01	168.00	.4338	.6826	.5018	.9628	.2060-01	.1515-01	2.586	18.20	522.2
203	43.400	.82200-01	181.00	.2668	.4218	.3279	.9493	.1273-01	.9896-02	1.576	11.09	523.9
202	43.600	.62900-01	128.00	.4051	.6581	.4883	.9557	.1984-01	.1472-01	2.287	16.00	532.5
202	45.000	.22900-01	8.0000	.6762	1.138	.7719	.9695	.3432-01	.2328-01	3.615	25.16	542.4
203	46.100	.62900-01	174.00	.3979	.6332	.4763	.9557	.1911-01	.1438-01	2.326	16.34	526.0
203	47.700	.40800-01	167.00	.4787	.7575	.5533	.9634	.2286-01	.1670-01	2.824	19.86	524.2
202	48.400	.44200-01	109.00	.4330	.6990	.5058	.9622	.2108-01	.1525-01	2.469	17.30	530.6
202	50.000	.19400-01	156.00	.3077	.5854	.3280	.9870	.1765-01	.9889-02	1.408	9.664	567.9
202	51.000	.12100-01	154.00	1.031	2.257	1.109	.9870	.6807-01	.3344-01	4.115	27.95	587.2
202	51.000	.17600-01	155.00	.9375	1.778	.9989	.9870	.5362-01	.3012-01	4.303	29.55	567.4
203	51.900	.44800-01	170.00	.3684	.5704	.4258	.9620	.1722-01	.1285-01	2.260	15.96	516.4
203	53.200	.24700-01	163.00	.4099	.6308	.4597	.9691	.1904-01	.1387-01	2.543	17.98	514.1
203	65.200	.24700-01	162.00	.5265	.8340	.5954	.9686	.2517-01	.1797-01	3.102	21.81	524.5
201	90.000	.91000-02	44.000	.6943	1.303	.8241	.9663	.3928-01	.2484-01	3.224	22.16	565.6
201	90.000	.11100-01	45.000	.7818	1.410	.9200	.9663	.4251-01	.2773-01	3.806	26.27	558.2
201	90.000	.13100-01	46.000	.7571	1.339	.8870	.9663	.4036-01	.2674-01	3.780	26.15	554.0
201	90.000	.17000-01	48.000	.7552	1.313	.8814	.9663	.3957-01	.2657-01	3.857	26.74	550.2
201	90.000	.20900-01	50.000	.6233	1.057	.7234	.9663	.3187-01	.2181-01	3.294	22.90	544.3
201	90.000	.24900-01	52.000	.5413	.8969	.6262	.9658	.2704-01	.1888-01	2.962	20.67	538.1
201	90.000	.26900-01	53.000	.5257	.8728	.6104	.9651	.2631-01	.1840-01	2.867	20.00	538.7
201	90.000	.28800-01	54.000	.5135	.8481	.5974	.9644	.2557-01	.1801-01	2.824	19.71	537.2
201	90.000	.32800-01	55.000	.3138	.4945	.3630	.9630	.1491-01	.1094-01	1.863	13.11	522.7
201	90.000	.36700-01	56.000	.4141	.6703	.4854	.9616	.2021-01	.1463-01	2.350	16.46	531.4
201	90.000	.40600-01	57.000	.4246	.7014	.5037	.9602	.2114-01	.1518-01	2.334	16.29	537.3
201	90.000	.48500-01	58.000	.4040	.6637	.4847	.9574	.2001-01	.1461-01	2.240	15.65	535.7
201	90.000	.56400-01	59.000	.3589	.5875	.4356	.9547	.1771-01	.1313-01	2.001	13.99	534.7
201	90.000	.76100-01	60.000	.2880	.4690	.3599	.9482	.1414-01	.1085-01	1.619	11.33	533.2
201	90.000	.95800-01	61.000	.2541	.4062	.3244	.9421	.1224-01	.9780-02	1.472	10.33	527.5
201	90.000	.11550	62.000	.1979	.3242	.2631	.9364	.9774-02	.7932-02	1.101	7.697	535.0
201	135.00	.19000-01	49.000	.6484	1.096	.7859	.9571	.3303-01	.2369-01	3.445	23.96	543.4
201	135.00	.22900-01	51.000	.5900	.9890	.7134	.9571	.2981-01	.2150-01	3.173	22.10	541.3
201	180.00	.91000-02	23.000	.2697	.4271	.3336	.9480	.1287-01	.1006-01	1.588	11.16	524.4
201	180.00	.11100-01	24.000	.4007	.6731	.5075	.9480	.2029-01	.1530-01	2.148	14.96	541.8
201	180.00	.13100-01	25.000	.6519	1.149	.8413	.9480	.3465-01	.2536-01	3.268	22.61	553.4
201	180.00	.15000-01	26.000	.6773	1.201	.8758	.9480	.3619-01	.2640-01	3.371	23.31	554.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K007)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
201	180.00	.17000-01	27.000	.6345	1.076	.8067	.9480	.3244-01	.2432-01	3.354	23.32	544.3
201	180.00	.19000-01	28.000	.5827	.9759	.7371	.9480	.2942-01	.2222-01	3.137	21.85	541.1
201	180.00	.20900-01	29.000	.5662	.9402	.7139	.9480	.2834-01	.2152-01	3.087	21.53	538.8
201	180.00	.28800-01	32.000	.4713	.7660	.5946	.9461	.2309-01	.1792-01	2.658	18.60	532.6
201	180.00	.32800-01	33.000	.4325	.6880	.5442	.9447	.2074-01	.1641-01	2.526	17.75	525.9
201	180.00	.36700-01	34.000	.4120	.6648	.5251	.9434	.2004-01	.1583-01	2.350	16.47	530.5
201	180.00	.48500-01	36.000	.3313	.5298	.4286	.9394	.1597-01	.1292-01	1.919	13.47	527.6
201	180.00	.56400-01	37.000	.2935	.4692	.3843	.9369	.1414-01	.1158-01	1.700	11.93	527.5
201	180.00	.76100-01	38.000	.2120	.3414	.2870	.9311	.1029-01	.8651-02	1.214	8.506	529.8
201	180.00	.95800-01	39.000	.1502	.2436	.2099	.9259	.7345-02	.6326-02	.8499	5.950	532.0
201	180.00	.11550	40.000	.1090	.1778	.1567	.9213	.5361-02	.4724-02	.6110	4.273	533.7
201	180.00	.18450	42.000	.4319-01	.6335-01	.6027-01	.9110	.1910-02	.1817-02	.2943	2.105	493.6
201	225.00	.22900-01	30.000	.5137	.8453	.6590	.9438	.2548-01	.1986-01	2.840	19.84	536.2
201	270.00	.91000-02	63.000	.2583	.4185	.3250	.9464	.1262-01	.9797-02	1.463	10.25	531.7
201	270.00	.11100-01	64.000	.3335	.5535	.4238	.9464	.1668-01	.1277-01	1.820	12.69	538.6
201	270.00	.13100-01	65.000	.5604	.9650	.7229	.9464	.2909-01	.2179-01	2.900	20.13	548.0
201	270.00	.17000-01	67.000	.5970	1.031	.7709	.9464	.3107-01	.2324-01	3.077	21.34	548.7
201	270.00	.20900-01	69.000	.5671	.9610	.7268	.9464	.2897-01	.2191-01	3.002	20.87	544.1
201	270.00	.24900-01	71.000	.5481	.9288	.7042	.9459	.2800-01	.2123-01	2.901	20.18	544.1
201	270.00	.28800-01	73.000	.4323	.7159	.5541	.9445	.2158-01	.1670-01	2.368	16.52	538.0
201	270.00	.36700-01	75.000	.4153	.6814	.5375	.9418	.2054-01	.1620-01	2.307	16.12	535.4
201	270.00	.48500-01	77.000	.3314	.5332	.4332	.9379	.1607-01	.1306-01	1.899	13.32	529.5
201	270.00	.56400-01	78.000	.2774	.4447	.3665	.9354	.1341-01	.1105-01	1.599	11.22	528.4
201	270.00	.95800-01	80.000	.1428	.2273	.1984	.9246	.6853-02	.5982-02	.8325	5.847	526.2
201	270.00	.11550	81.000	.1025	.1642	.1465	.9202	.4951-02	.4415-02	.5919	4.153	528.1
201	315.00	.19000-01	68.000	.5431	.9062	.6636	.9547	.2732-01	.2001-01	2.940	20.49	540.1
201	315.00	.22900-01	70.000	.5063	.8631	.6231	.9547	.2602-01	.1878-01	2.657	18.46	545.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K008)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
105	4.020	-4.993	-8.981	64.84	741.7	.4158	175.2	-61.16	2609.	.6405-02	.1410-06	3 682
106	4.020	-5.011	-9.006	64.80	738.7	.4156	174.5	-61.14	2604.	.6426-02	.1405-06	3 702
107	4.020	-5.018	-9.018	64.84	736.7	.4158	174.1	-61.14	2600.	.6448-02	.1401-06	3 720

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
105	.3870-01	.9607-02
106	.3866-01	.9586-02
107	.3865-01	.9566-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG R /SEC	TW DEG R
106	.00000	.91000-02	1.0000	.7863	1.544	.9191	.9706	.5970-01	.3553-01	4 573	31 05	588 2
106	.00000	.15000-01	4.0000	.6480	1.186	.7479	.9706	.4584-01	.2891-01	4 080	27 00	575 8
106	.00000	.17000-01	5.0000	.6306	1.131	.7250	.9706	.4370-01	.2603-01	4 072	27 09	571 6
106	.00000	.19000-01	6.0000	.6040	1.070	.6928	.9706	.4135-01	.2678-01	3 961	27 17	569.0
106	.00000	.24900-01	9.0000	.5355	.9198	.6121	.9701	.3556-01	.2366-01	3 660	25 20	561 9
106	.00000	.26900-01	10.000	.5558	.9466	.6364	.9693	.3659-01	.2460-01	3 643	26 50	559 8
105	.00000	.32800-01	12.000	.4669	.8007	.5412	.9671	.3098-01	.2094-01	3 215	22 12	563 7
105	.00000	.36700-01	13.000	.4991	.8394	.5799	.9657	.3248-01	.2244-01	3 534	24 38	558.7
105	.00000	.40600-01	14.000	.5308	.9127	.6242	.9643	.3532-01	.2415-01	3 641	25 04	564 4
105	.00000	.48500-01	15.000	.4068	.6818	.4816	.9615	.2638-01	.1864-01	2 866	19 98	557 8
105	.00000	.56400-01	16.000	.3713	.6196	.4448	.9588	.2398-01	.1721-01	2 640	18 37	556.6
105	.00000	.76100-01	17.000	.2445	.3983	.2935	.9524	.1541-01	.1159-01	1 817	12.60	549 6
105	.00000	.95800-01	18.000	.4106-01	.6498-01	.5111-01	.9466	.2515-02	.1978-02	.3202	2.231	540 2
105	.00000	.11550	19.000	.1865	.3043	.2413	.9413	.1174-01	.9337-02	1 382	9 582	540 1
105	.00000	.16480	20.000	.1219	.1963	.1652	.9308	.7595-02	.6302-02	.9228	6 411	546.0
105	.00000	.21400	22.000	.8246-01	.1255	.1114	.9243	.4855-02	.4509-02	.6911	4 857	525.1
107	2.0000	.24700-01	165.00	.3812	.6417	.4327	.9707	.2480-01	.1672-01	2 674	18.49	555 2
106	9.0000	.15000-01	157.00	.6289	1.140	.7152	.9731	.4408-01	.2765-01	4.003	27.39	574 0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K008)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
106	9.0000	.17600-01	158.00	.5592	.9631	.6304	.9731	.3723-01	.2437-01	3.808	26.21	562.5
107	9.8000	.24700-01	164.00	.4151	.6975	.4663	.9729	.2696-01	.1802-01	2.919	20.18	554.7
106	10.000	.22900-01	88.000	.4393	.7450	.4932	.9734	.2880-01	.1907-01	3.057	21.09	558.7
106	10.000	.26900-01	90.000	.4574	.7664	.5154	.9721	.2963-01	.1992-01	3.239	22.39	555.5
106	10.000	.34700-01	94.000	.5637	.9502	.6445	.9692	.3673-01	.2491-01	3.957	27.32	557.1
106	12.000	.17600-01	152.00	.9754	2.449	1.058	.9870	.9466-01	.4090-01	4.629	30.96	615.9
106	12.000	.12100-01	151.00	.8564	3.180	.9463	.9870	.1229	.3658-01	3.347	22.13	637.6
106	13.000	.19400-01	153.00	.8748	2.004	.9439	.9870	.7746-01	.3649-01	4.433	29.78	607.6
107	14.600	.44200-01	169.00	.4201	.6972	.4837	.9669	.2695-01	.1869-01	3.010	20.85	551.3
106	18.500	.44200-01	106.00	.4515	.7607	.5194	.9678	.2940-01	.2008-01	3.171	21.90	556.9
107	19.600	.62900-01	175.00	.4927	.8235	.5826	.9616	.3183-01	.2252-01	3.492	24.16	553.3
106	19.800	.40800-01	101.00	.5751	1.005	.6618	.9694	.3895-01	.2558-01	3.839	26.38	566.0
106	20.000	.24900-01	89.000	.3858	.6402	.4277	.9753	.2475-01	.1653-01	2.773	19.19	552.7
106	20.000	.28800-01	91.000	.3934	.6562	.4394	.9739	.2537-01	.1698-01	2.805	19.40	554.2
106	20.000	.32800-01	93.000	.5052	.8691	.5713	.9724	.3360-01	.2208-01	3.446	23.73	562.2
106	22.200	.62900-01	125.00	.4915	.8421	.5835	.9621	.3255-01	.2256-01	3.371	23.22	561.3
106	22.400	.44200-01	107.00	.4518	.7589	.5172	.9687	.2933-01	.1999-01	3.188	22.02	556.1
107	22.600	.10270	192.00	.3356	.5551	.4191	.9496	.2146-01	.1620-01	2.417	16.75	550.4
106	23.000	.42000-01	105.00	.5214	.9117	.5993	.9697	.3524-01	.2316-01	3.478	23.90	566.1
106	23.400	.59600-01	120.00	.5060	.8743	.5979	.9635	.3380-01	.2311-01	3.429	23.60	563.3
107	23.900	.21310	250.00	.1290	.1945	.1714	.9265	.7517-02	.6626-02	1.091	7.699	517.9
106	24.100	.82200-01	139.00	.4812	.8133	.5862	.9561	.3144-01	.2266-01	3.366	23.23	557.7
107	24.400	.19040	238.00	.1752	.2738	.2344	.9298	.1058-01	.9061-02	1.385	9.693	532.2
107	24.400	.12440	207.00	.2807	.4711	.3629	.9439	.1821-01	.1403-01	1.977	13.67	554.5
107	24.800	.16810	223.00	.1767	.2877	.2372	.9339	.1112-01	.9168-02	1.305	9.065	545.7
106	24.900	.62900-01	126.00	.4171	.7168	.4943	.9627	.2771-01	.1911-01	2.849	19.62	562.0
107	25.000	.79500-01	178.00	.5042	.8561	.6119	.9572	.3309-01	.2365-01	3.493	24.12	557.4
107	25.300	.10270	191.00	.3659	.6092	.4569	.9501	.2355-01	.1766-01	2.609	18.06	552.2
107	25.300	.10000+00	186.00	.4202	.7155	.5269	.9509	.2766-01	.2037-01	2.898	20.00	558.2
106	25.500	.60700-01	124.00	.4356	.7674	.5171	.9635	.2967-01	.1999-01	2.877	19.75	567.8
107	26.000	.12440	206.00	.2954	.4991	.3825	.9442	.1929-01	.1478-01	2.061	14.24	556.1
106	26.300	.82200-01	140.00	.3523	.5891	.4268	.9566	.2277-01	.1650-01	2.503	17.30	554.9
107	26.700	.12100	199.00	.3546	.6181	.4627	.9452	.2389-01	.1788-01	2.369	16.30	563.8
107	26.800	.16810	222.00	.2037	.3329	.2736	.9342	.1287-01	.1058-01	1.494	10.38	546.9
107	27.000	.19040	237.00	.1648	.2580	.2205	.9301	.9971-02	.8521-02	1.299	9.087	532.8
107	27.100	.21310	249.00	.1313	.1981	.1744	.9267	.7656-02	.6740-02	1.110	7.829	518.1
107	27.200	.80300-01	180.00	.5418	.9319	.6596	.9574	.3602-01	.2549-01	3.686	25.40	560.7
106	27.400	.40100-01	98.000	.5423	.9716	.6212	.9712	.3756-01	.2401-01	3.505	24.01	571.5
107	27.400	.16480	215.00	.2201	.3671	.2977	.9349	.1419-01	.1151-01	1.565	10.83	552.7
106	27.600	.41600-01	102.00	.5254	.9476	.6041	.9707	.3663-01	.2335-01	3.367	23.05	572.9
107	27.600	.12440	205.00	.2843	.4819	.3682	.9445	.1863-01	.1423-01	1.975	13.64	557.0
107	27.600	.18700	230.00	.2224	.3534	.2993	.9307	.1366-01	.1157-01	1.708	11.92	537.9
107	27.700	.21010	243.00	.1599	.2454	.2143	.9272	.9485-02	.8281-02	1.307	9.187	525.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K008)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
107	27.900	.10110	188.00	.3656	.6211	.4578	.9510	.2400-01	.1769-01	2.530	17.47	557.6
106	28.000	.46800-01	110.00	.2847	.4485	.3211	.9689	.1734-01	.1241-01	2.225	15.54	536.4
107	28.200	.16810	221.00	.1907	.3154	.2576	.9343	.1219-01	.9956-02	1.374	9.523	550.3
107	28.300	.19040	236.00	.1343	.2083	.1786	.9302	.8051-02	.6901-02	1.075	7.539	529.4
107	28.300	.12200	201.00	.3620	.6211	.4692	.9452	.2400-01	.1814-01	2.470	17.03	560.1
106	28.400	.53500-01	114.00	.5236	.8952	.6078	.9666	.3461-01	.2349-01	3.601	24.81	560.8
107	28.400	.21310	248.00	.1275	.1916	.1688	.9268	.7406-02	.6524-02	1.084	7.655	516.6
106	28.700	.58600-01	117.00	.5533	.9668	.6511	.9649	.3737-01	.2517-01	3.694	25.38	566.0
107	28.800	.16580	217.00	.1957	.3289	.2658	.9349	.1271-01	.1027-01	1.377	9.519	554.7
106	28.800	.60400-01	121.00	.3943	.7014	.4675	.9643	.2711-01	.1807-01	2.572	17.63	569.9
107	29.000	.21110	244.00	.1406	.2137	.1873	.9271	.8261-02	.7238-02	1.169	8.231	521.5
106	29.000	.65700-01	129.00	.2989	.4704	.3463	.9625	.1818-01	.1339-01	2.341	16.36	536.0
106	29.200	.72400-01	133.00	.5027	.8599	.6020	.9603	.3324-01	.2327-01	3.455	23.81	560.9
106	29.300	.79500-01	136.00	.4569	.8074	.5589	.9580	.3121-01	.2160-01	3.005	20.62	568.5
106	29.600	.92500-01	143.00	.4303	.7334	.5315	.9539	.2835-01	.2055-01	2.973	20.50	559.9
106	29.700	.10000+00	146.00	.3856	.6792	.4875	.9517	.2626-01	.1884-01	2.547	17.48	567.8
107	29.900	.12100	198.00	.3650	.6473	.4782	.9457	.2502-01	.1848-01	2.382	16.35	567.8
107	30.200	.16480	214.00	.1775	.2994	.2411	.9352	.1157-01	.9317-02	1.242	8.581	555.7
107	30.300	.21010	242.00	.1526	.2352	.2049	.9274	.9092-02	.7918-02	1.237	8.686	526.9
106	31.500	.91000-02	82.000	.9499	1.979	1.071	.9782	.7652-01	.4141-01	5.215	35.24	596.7
106	31.500	.11100-01	83.000	.9575	2.026	1.082	.9782	.7830-01	.4182-01	5.184	35.00	598.6
106	31.500	.14200-01	84.000	1.211	3.750	1.328	.9870	.1450	.5134-01	5.109	33.93	629.6
106	31.500	.16000-01	85.000	1.182	3.172	1.287	.9870	.1226	.4975-01	5.380	35.89	620.9
106	31.500	.17600-01	86.000	.9571	2.328	1.036	.9870	.9000-01	.4006-01	4.641	31.09	613.2
106	31.500	.19400-01	87.000	.8853	1.914	.9518	.9870	.7399-01	.3679-01	4.703	31.70	601.2
107	32.100	.21010	241.00	.1895	.2933	.2549	.9275	.1133-01	.9850-02	1.525	10.70	528.5
107	32.200	.16480	213.00	.1994	.3351	.2700	.9355	.1295-01	.1044-01	1.403	9.697	554.7
107	32.200	.17860	224.00	.1797	.2871	.2402	.9327	.1110-01	.9283-02	1.368	9.540	539.7
107	32.200	.18700	228.00	.2663	.4298	.3608	.9312	.1661-01	.1394-01	1.993	13.87	543.0
107	32.300	.12100	197.00	.4400	.7731	.5732	.9461	.2988-01	.2215-01	2.907	19.98	565.7
107	32.300	.12300	194.00	.3784	.6697	.4959	.9455	.2589-01	.1917-01	2.477	17.01	567.3
107	32.300	.12730	208.00	.2199	.3572	.2797	.9444	.1381-01	.1081-01	1.629	11.32	545.0
107	32.300	.13420	209.00	.2456	.4156	.3210	.9426	.1606-01	.1241-01	1.709	11.80	556.6
106	32.400	.10000+00	147.00	.5111	.9250	.6506	.9521	.3576-01	.2515-01	3.261	22.31	573.6
107	32.400	.10110	184.00	.4924	.8809	.6255	.9518	.3405-01	.2418-01	3.180	21.81	569.6
107	32.400	.10630	193.00	.2407	.3802	.2945	.9502	.1470-01	.1138-01	1.867	13.04	536.0
107	32.500	.85800-01	183.00	.2912	.4656	.3479	.9565	.1799-01	.1345-01	2.213	15.43	540.0
106	32.600	.79500-01	137.00	.5529	1.007	.6802	.9585	.3893-01	.2629-01	3.501	23.94	574.9
107	32.600	.80800-01	176.00	.7202	1.313	.8882	.9581	.5075-01	.3433-01	4.543	31.09	573.5
106	32.700	.67400-01	132.00	.4061	.6586	.4741	.9626	.2546-01	.1833-01	3.024	21.01	546.0
106	32.700	.72400-01	134.00	.4598	.7715	.5461	.9609	.2982-01	.2111-01	3.249	22.45	555.9
106	32.800	.65700-01	130.00	.3457	.5406	.3986	.9632	.2090-01	.1541-01	2.737	19.14	533.8
107	32.800	.16680	210.00	.1901	.3132	.2552	.9351	.1210-01	.9863-02	1.377	9.551	549.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K008)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
107	32.800	.18880	225.00	.1704	.2616	.2245	.9309	.1011-01	.8676-02	1.391	9.774	525.4
106	32.900	.58600-01	118.00	.6087	1.061	.7133	.9656	.4103-01	.2757-01	4.075	28.01	565.5
106	32.900	.60400-01	122.00	.5344	.9118	.6250	.9650	.3525-01	.2416-01	3.686	25.41	560.2
107	32.900	.61300-01	171.00	.4152	.7138	.4871	.9647	.2759-01	.1883-01	2.826	19.48	560.5
106	33.000	.53500-01	115.00	.5101	.8531	.5870	.9674	.3298-01	.2269-01	3.623	25.04	554.9
106	33.200	.48300-01	113.00	.3080	.4832	.3466	.9693	.1868-01	.1340-01	2.426	16.95	534.9
107	33.400	.42800-01	166.00	.5087	.8912	.5800	.9714	.3444-01	.2242-01	3.375	23.20	565.0
106	33.500	.40100-01	99.000	.5720	.9852	.6470	.9723	.3808-01	.2501-01	3.894	26.81	562.6
106	33.600	.38300-01	97.000	.5938	1.027	.6701	.9730	.3971-01	.2590-01	4.018	27.64	563.6
106	33.700	.36700-01	96.000	.6768	1.195	.7641	.9736	.4618-01	.2954-01	4.457	30.59	568.3
106	33.900	.33800-01	95.000	.7085	1.231	.7935	.9747	.4758-01	.3067-01	4.766	32.77	564.7
107	34.700	.21010	240.00	.2303	.3588	.3108	.9277	.1387-01	.1201-01	1.831	12.82	531.0
107	34.700	.18700	227.00	.2396	.3862	.3240	.9314	.1493-01	.1252-01	1.798	12.51	542.6
107	34.900	.16480	212.00	.2588	.4409	.3523	.9357	.1704-01	.1362-01	1.784	12.31	558.3
106	35.100	.10000+00	148.00	.5580	1.012	.7093	.9525	.3912-01	.2742-01	3.552	24.30	574.0
107	35.200	.23900-01	161.00	.3204	.5016	.3471	.9787	.1939-01	.1341-01	2.525	17.67	532.8
106	35.300	.92500-01	145.00	.4371	.7421	.5369	.9548	.2869-01	.2075-01	3.036	20.94	559.0
106	35.300	.22100-01	160.00	.3215	.4986	.3476	.9788	.1927-01	.1344-01	2.584	18.11	530.7
107	35.400	.18800	231.00	.2631	.4236	.3557	.9313	.1637-01	.1375-01	1.977	13.76	542.3
107	35.500	.12100	196.00	.4564	.8121	.5962	.9465	.3139-01	.2304-01	2.967	20.36	568.5
107	35.600	.16580	216.00	.2412	.4074	.3272	.9356	.1575-01	.1265-01	1.684	11.64	556.1
106	35.800	.80600-01	138.00	.7121	1.287	.8734	.9586	.4975-01	.3376-01	4.552	31.15	573.3
107	35.900	.21310	247.00	.1829	.2777	.2432	.9274	.1073-01	.9401-02	1.526	10.75	520.8
107	36.000	.19040	235.00	.2142	.3381	.2868	.9309	.1307-01	.1109-01	1.663	11.62	535.7
107	36.200	.16810	220.00	.2402	.3959	.3224	.9352	.1530-01	.1246-01	1.740	12.06	549.3
106	36.200	.72400-01	135.00	.4877	.8164	.5774	.9614	.3156-01	.2232-01	3.459	23.91	555.2
107	36.300	.12200	200.00	.4561	.8132	.5969	.9463	.3143-01	.2307-01	2.958	20.29	568.9
106	36.600	.65700-01	131.00	.3708	.6016	.4307	.9637	.2325-01	.1665-01	2.760	19.17	546.1
107	36.700	.18700	226.00	.2274	.3628	.3054	.9315	.1402-01	.1181-01	1.736	12.11	539.2
107	36.900	.16480	211.00	.2210	.3698	.2978	.9359	.1429-01	.1151-01	1.564	10.82	553.6
107	36.900	.10110	187.00	.5320	.9526	.6736	.9524	.3682-01	.2603-01	3.431	23.52	569.8
106	37.000	.60400-01	123.00	.6397	1.147	.7544	.9656	.4433-01	.2916-01	4.131	28.30	571.6
107	37.000	.12440	204.00	.4061	.7011	.5262	.9457	.2710-01	.2034-01	2.747	18.92	561.6
106	37.100	.58600-01	119.00	.5923	1.023	.6904	.9663	.3956-01	.2669-01	4.015	27.63	563.3
107	37.200	.21310	246.00	.1897	.2879	.2521	.9274	.1113-01	.9745-02	1.584	11.16	520.7
107	37.600	.16810	219.00	.2012	.3291	.2688	.9353	.1272-01	.1039-01	1.474	10.23	547.2
106	37.800	.10270	150.00	.4055	.6863	.5046	.9520	.2653-01	.1950-01	2.829	19.53	558.1
107	37.900	.12100	195.00	.2988	.5009	.3805	.9468	.1936-01	.1471-01	2.108	14.58	554.1
107	38.000	.80300-01	179.00	.6117	1.068	.7414	.9591	.4127-01	.2865-01	4.078	28.05	564.2
106	38.500	.46800-01	112.00	.3251	.5150	.3645	.9707	.1991-01	.1409-01	2.518	17.57	538.3
107	38.600	.12440	203.00	.3399	.5758	.4367	.9459	.2225-01	.1688-01	2.363	16.32	556.8
107	38.700	.10000+00	185.00	.4246	.7302	.5287	.9529	.2822-01	.2043-01	2.888	19.90	560.7
106	38.900	.82200-01	141.00	.5190	.8820	.6258	.9585	.3409-01	.2419-01	3.600	24.83	559.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K008)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
106	39.300	.41600-01	104.00	.5742	1.000	.6499	.9727	.3867-01	.2512-01	3.848	26.45	565.3
107	39.500	.10270	190.00	.4283	.7298	.5336	.9522	.2821-01	.2062-01	2.952	20.37	558.3
107	39.600	.16810	218.00	.1579	.2579	.2106	.9355	.9966-02	.8139-02	1.160	8.052	546.7
107	39.900	.19040	233.00	.1417	.2210	.1882	.9312	.8541-02	.7273-02	1.125	7.881	531.3
107	40.100	.79500-01	177.00	.5109	.8720	.6136	.9596	.3370-01	.2372-01	3.513	24.23	558.8
107	40.200	.12440	202.00	.3024	.5093	.3872	.9461	.1968-01	.1496-01	2.119	14.65	555.3
107	40.300	.21310	245.00	.1207	.1816	.1594	.9276	.7021-02	.6161-02	1.024	7.228	517.2
106	41.100	.82200-01	142.00	.5023	.8600	.6062	.9588	.3324-01	.2343-01	3.448	23.76	561.1
107	41.100	.60700-01	173.00	.6365	1.120	.7457	.9661	.4327-01	.2882-01	4.201	28.87	565.9
107	42.300	.10270	189.00	.3394	.5681	.4196	.9525	.2196-01	.1622-01	2.401	16.61	553.7
107	42.600	.59600-01	172.00	.5750	.9986	.6698	.9666	.3860-01	.2589-01	3.859	26.56	563.0
107	43.200	.42000-01	168.00	.5215	.8904	.5871	.9730	.3442-01	.2269-01	3.584	24.72	558.9
107	43.400	.82200-01	181.00	.3834	.6309	.4567	.9591	.2439-01	.1765-01	2.783	19.30	548.9
106	43.600	.62900-01	128.00	.5147	.8772	.6001	.9656	.3391-01	.2320-01	3.555	24.51	560.0
106	45.000	.22900-01	8.0000	.7140	1.320	.7858	.9801	.5102-01	.3038-01	4.441	30.32	577.8
107	46.100	.62900-01	174.00	.5847	1.011	.6831	.9658	.3907-01	.2640-01	3.949	27.20	561.9
107	47.700	.40800-01	167.00	.5619	.9741	.6317	.9739	.3765-01	.2441-01	3.781	26.03	562.6
106	48.400	.44200-01	109.00	.5314	.9089	.5994	.9727	.3513-01	.2317-01	3.653	25.17	560.8
106	50.000	.19400-01	156.00	.8541	2.046	.9241	.9870	.7910-01	.3572-01	4.186	28.06	611.9
106	51.000	.12100-01	154.00	1.028	3.061	1.125	.9870	.1183	.4349-01	4.418	29.38	627.5
106	51.000	.17600-01	155.00	.9580	2.269	1.036	.9870	.8770-01	.4004-01	4.735	31.76	610.8
107	51.900	.44800-01	170.00	.4439	.7323	.4973	.9727	.2830-01	.1922-01	3.209	22.25	549.6
107	53.200	.24700-01	163.00	.4375	.7286	.4748	.9803	.2816-01	.1835-01	3.117	21.58	552.3
107	65.200	.24700-01	162.00	.5643	.9880	.6159	.9805	.3819-01	.2380-01	3.746	25.76	564.9
105	90.000	.91000-02	44.000	.9188	2.123	1.048	.9783	.8217-01	.4055-01	4.649	31.18	610.9
105	90.000	.11100-01	45.000	.9521	2.040	1.077	.9783	.7893-01	.4167-01	5.125	34.53	602.6
105	90.000	.13100-01	46.000	.8794	1.789	.9884	.9783	.6922-01	.3825-01	4.964	33.57	595.8
105	90.000	.17000-01	48.000	.7888	1.500	.8793	.9783	.5803-01	.3403-01	4.777	32.48	585.2
105	90.000	.20900-01	50.000	.6553	1.211	.7278	.9783	.4687-01	.2816-01	4.098	27.94	580.1
105	90.000	.24900-01	52.000	.5887	1.083	.6551	.9778	.4190-01	.2535-01	3.703	25.26	579.1
105	90.000	.26900-01	53.000	.5506	.9881	.6129	.9770	.3824-01	.2372-01	3.569	24.41	574.2
105	90.000	.28800-01	54.000	.5461	.9728	.6094	.9763	.3764-01	.2358-01	3.573	24.46	572.6
105	90.000	.32800-01	55.000	.4839	.8325	.5409	.9748	.3222-01	.2093-01	3.316	22.80	564.6
105	90.000	.36700-01	56.000	.4668	.8017	.5253	.9734	.3102-01	.2033-01	3.207	22.06	564.1
105	90.000	.40600-01	57.000	.4705	.8252	.5351	.9719	.3193-01	.2071-01	3.141	21.55	569.1
105	90.000	.48500-01	58.000	.3980	.6894	.4572	.9690	.2668-01	.1772-01	2.702	18.57	566.2
105	90.000	.56400-01	59.000	.4208	.7209	.4896	.9662	.2789-01	.1895-01	2.902	19.97	563.5
105	90.000	.76100-01	60.000	.3638	.6106	.4349	.9595	.2363-01	.1683-01	2.583	17.82	558.2
105	90.000	.95800-01	61.000	.2876	.4827	.3546	.9533	.1868-01	.1372-01	2.043	14.10	558.1
105	90.000	.11550	62.000	.2557	.4247	.3232	.9475	.1643-01	.1250-01	1.844	12.74	555.3
105	135.00	.19000-01	49.000	.6661	1.227	.7856	.9667	.4749-01	.3040-01	4.181	28.52	579.5
105	135.00	.22900-01	51.000	.5914	1.084	.6968	.9667	.4196-01	.2696-01	3.733	25.48	578.5
105	180.00	.91000-02	23.000	.3965	.6882	.4928	.9539	.2663-01	.1907-01	2.685	18.44	566.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K008)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
105	180.00	.11100-01	24.000	.5040	.9882	.6511	.9539	.3824-01	.2520-01	2.952	20.02	590.3
105	180.00	.13100-01	25.000	.5345	.9982	.6802	.9539	.3863-01	.2632-01	3.302	22.49	582.0
105	180.00	.15000-01	26.000	.5250	.9593	.6635	.9539	.3712-01	.2567-01	3.328	22.72	577.9
105	180.00	.17000-01	27.000	.4887	.8802	.6148	.9539	.3406-01	.2379-01	3.153	21.56	574.9
105	180.00	.19000-01	28.000	.5326	.9664	.6716	.9539	.3740-01	.2599-01	3.405	23.27	576.4
105	180.00	.20900-01	29.000	.5459	.9763	.6852	.9539	.3778-01	.2651-01	3.554	24.32	573.4
105	180.00	.28800-01	32.000	.4653	.8052	.5834	.9521	.3116-01	.2257-01	3.164	21.74	565.9
105	180.00	.32800-01	33.000	.4380	.7331	.5464	.9507	.2837-01	.2115-01	3.123	21.56	557.4
105	180.00	.36700-01	34.000	.4100	.6989	.5184	.9494	.2704-01	.2006-01	2.847	19.60	562.2
105	180.00	.48500-01	36.000	.3368	.5616	.4304	.9457	.2173-01	.1665-01	2.415	16.68	556.4
105	180.00	.56400-01	37.000	.3140	.5177	.4041	.9433	.2003-01	.1564-01	2.291	15.85	553.1
105	180.00	.76100-01	38.000	.2351	.3792	.3075	.9380	.1467-01	.1190-01	1.776	12.34	546.5
105	180.00	.95800-01	39.000	.1801	.2872	.2394	.9335	.1111-01	.9265-02	1.386	9.649	542.7
105	180.00	.11550	40.000	.1366	.2193	.1858	.9298	.8487-02	.7191-02	1.040	7.227	545.0
105	180.00	.18450	42.000	.5385-01	.8339-01	.7425-01	.9224	.3227-02	.2873-02	.4364	3.055	532.3
105	225.00	.22900-01	30.000	.4641	.8126	.6009	.9469	.3145-01	.2325-01	3.105	21.30	568.8
105	270.00	.91000-02	63.000	.2020	.3698	.2642	.9481	.1431-01	.1022-01	1.277	8.718	578.2
105	270.00	.11100-01	64.000	.3387	.6362	.4473	.9481	.2462-01	.1731-01	2.079	14.16	583.0
105	270.00	.13100-01	65.000	.5390	1.029	.7159	.9481	.3980-01	.2770-01	3.251	22.10	585.8
105	270.00	.17000-01	67.000	.5550	1.018	.7265	.9481	.3939-01	.2811-01	3.502	23.90	578.6
105	270.00	.20900-01	69.000	.5386	.9779	.7024	.9481	.3784-01	.2718-01	3.441	23.51	576.6
105	270.00	.24900-01	71.000	.4741	.8488	.6167	.9476	.3285-01	.2386-01	3.082	21.09	573.7
105	270.00	.28800-01	73.000	.4938	.8539	.6382	.9463	.3304-01	.2470-01	3.360	23.09	565.8
105	270.00	.36700-01	75.000	.4153	.7053	.5400	.9438	.2729-01	.2090-01	2.899	19.97	561.3
105	270.00	.48500-01	77.000	.3329	.5459	.4339	.9404	.2112-01	.1679-01	2.448	16.96	551.6
105	270.00	.56400-01	78.000	.3109	.5063	.4082	.9382	.1959-01	.1580-01	2.312	16.03	549.5
105	270.00	.95900-01	80.000	.1492	.2344	.2005	.9296	.9070-02	.7758-02	1.177	8.215	537.7
105	270.00	.11550	81.000	.1129	.1794	.1552	.9265	.6944-02	.6006-02	.8747	6.092	541.5
105	315.00	.19000-01	68.000	.4875	.8516	.5969	.9571	.3295-01	.2310-01	3.272	22.46	568.2
105	315.00	.22900-01	70.000	.5633	1.008	.6947	.9571	.3902-01	.2688-01	3.663	25.06	573.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K009)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
109	4.020	-5.016	-11.02	64.80	737.7	.4156	174.3	-65.82	2602.	.6435-02	.1403-06	3.710
110	4.020	-5.016	-11.02	64.80	737.7	.4156	174.3	-65.82	2602.	.6435-02	.1403-06	3.710
111	4.020	-5.020	-11.03	64.74	738.7	.4152	174.5	-65.82	2604.	.6420-02	.1405-06	3.699

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
109	.3865-01	.9577-02
110	.3865-01	.9577-02
111	.3864-01	.9590-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
109	.00000	.91000-02	1.0000	.8391	1.614	.9804	.9700	.6236-01	.3789-01	4.984	33.91	584.0
109	.00000	.15000-01	4.0000	.6316	1.125	.7274	.9700	.4347-01	.2811-01	4.106	28.16	569.4
109	.00000	.17000-01	5.0000	.6283	1.098	.7209	.9700	.4242-01	.2786-01	4.189	28.80	565.2
109	.00000	.19000-01	6.0000	.5706	.9829	.6526	.9700	.3798-01	.2523-01	3.878	26.71	561.8
109	.00000	.24900-01	9.0000	.5096	.8554	.5813	.9695	.3306-01	.2247-01	3.594	24.84	555.2
109	.00000	.26900-01	10.000	.5106	.8492	.5834	.9687	.3282-01	.2254-01	3.651	25.27	552.6
111	.00000	.32800-01	12.000	.4695	.7892	.5431	.9666	.3049-01	.2098-01	3.308	22.85	556.3
111	.00000	.36700-01	13.000	.5260	.8721	.6104	.9652	.3370-01	.2358-01	3.783	26.19	552.5
111	.00000	.40600-01	14.000	.5405	.9136	.6343	.9638	.3530-01	.2451-01	3.777	26.07	557.8
111	.00000	.48500-01	15.000	.3709	.6111	.4390	.9610	.2361-01	.1692-01	2.693	18.66	550.7
111	.00000	.56400-01	16.000	.3332	.5480	.3982	.9584	.2117-01	.1539-01	2.427	16.82	550.2
111	.00000	.76100-01	17.000	.2412	.3900	.2952	.9521	.1507-01	.1140-01	1.804	12.54	545.1
111	.00000	.95800-01	18.000	.4363-01	.6891-01	.5433-01	.9463	.2663-02	.2099-02	.3395	2.370	537.3
111	.00000	.11550	19.000	.2228	.3626	.2892	.9411	.1401-01	.1114-01	1.649	11.45	547.1
111	.00000	.16480	20.000	.1253	.2033	.1706	.9308	.7854-02	.6592-02	.9322	6.476	546.1
111	.00000	.21400	22.000	.7757-01	.1199	.1058	.9243	.4631-02	.4089-02	.6276	4.400	529.3
110	2.0000	.24700-01	165.00	.3450	.5707	.3910	.9703	.2206-01	.1511-01	2.486	17.22	551.2
109	9.0000	.15000-01	157.00	.5678	1.004	.6430	.9731	.3880-01	.2485-01	3.726	25.58	567.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K009)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
109	9.0000	.17600-01	158.00	.5328	.8979	.5983	.9731	.3470-01	.2312-01	3.736	25.81	556.2
110	9.8000	.24700-01	164.00	.3692	.6110	.4135	.9729	.2361-01	.1598-01	2.659	18.42	551.3
109	10.000	.22900-01	88.000	.3980	.6613	.4451	.9734	.2556-01	.1720-01	2.849	19.72	552.4
109	10.000	.26900-01	90.000	.4171	.6870	.4683	.9722	.2655-01	.1810-01	3.026	20.98	549.9
109	10.000	.34700-01	94.000	.6031	1.009	.6881	.9693	.3900-01	.2659-01	4.273	29.55	554.3
109	12.000	.17600-01	152.00	.9487	2.203	1.024	.9870	.8513-01	.3959-01	4.750	31.91	608.1
109	12.000	.12100-01	151.00	.9046	3.036	.9955	.9870	.1173	.3847-01	3.673	24.36	632.6
109	13.000	.19400-01	153.00	.8753	1.926	.9421	.9870	.7441-01	.3641-01	4.575	30.82	602.4
110	14.600	.44200-01	169.00	.3799	.6233	.4354	.9674	.2409-01	.1683-01	2.774	19.24	548.7
109	18.500	.44200-01	106.00	.4018	.6640	.4588	.9685	.2566-01	.1773-01	2.901	20.10	550.8
110	19.600	.62900-01	175.00	.4678	.7777	.5503	.9624	.3005-01	.2127-01	3.347	23.16	552.6
109	19.800	.40800-01	101.00	.5013	.8499	.5713	.9701	.3284-01	.2208-01	3.485	24.05	557.8
109	20.000	.24900-01	89.000	.3723	.6096	.4106	.9761	.2356-01	.1587-01	2.727	18.92	548.1
109	20.000	.28800-01	91.000	.4168	.6897	.4633	.9746	.2665-01	.1790-01	3.002	20.80	551.3
109	20.000	.32800-01	93.000	.5523	.9434	.6215	.9731	.3646-01	.2402-01	3.797	26.18	559.8
109	22.200	.62900-01	125.00	.4879	.8276	.5750	.9631	.3198-01	.2222-01	3.388	23.39	558.0
109	22.400	.44200-01	107.00	.3838	.6302	.4354	.9697	.2435-01	.1683-01	2.798	19.41	549.0
110	22.600	.10270	192.00	.3668	.6087	.4564	.9506	.2352-01	.1764-01	2.632	18.22	552.0
109	23.000	.42000-01	105.00	.4371	.7421	.4971	.9706	.2868-01	.1921-01	3.031	20.92	558.2
109	23.400	.59600-01	120.00	.5759	.9868	.6757	.9645	.3814-01	.2611-01	3.943	27.17	560.5
110	23.900	.21310	250.00	.1229	.1867	.1637	.9271	.7215-02	.6326-02	1.025	7.216	521.9
109	24.100	.82200-01	139.00	.5332	.9036	.6465	.9572	.3492-01	.2498-01	3.708	25.59	557.7
110	24.400	.19040	238.00	.1710	.2687	.2288	.9306	.1039-01	.8842-02	1.340	9.368	534.9
110	24.400	.12440	207.00	.2969	.4976	.3816	.9450	.1923-01	.1475-01	2.098	14.51	554.8
110	24.800	.16810	223.00	.2016	.3289	.2697	.9348	.1271-01	.1042-01	1.485	10.31	547.0
109	24.900	.62900-01	126.00	.4207	.7118	.4937	.9638	.2751-01	.1908-01	2.932	20.24	557.3
110	25.000	.79500-01	178.00	.5611	.9595	.6785	.9583	.3708-01	.2622-01	3.853	26.56	560.0
110	25.300	.10270	191.00	.3921	.6560	.4877	.9513	.2535-01	.1885-01	2.778	19.21	554.3
110	25.300	.10000+00	186.00	.4884	.8399	.6110	.9521	.3246-01	.2361-01	3.326	22.91	561.4
109	25.500	.60700-01	124.00	.4667	.8081	.5485	.9647	.3123-01	.2120-01	3.150	21.68	563.1
110	26.000	.12440	206.00	.3300	.5589	.4252	.9453	.2160-01	.1643-01	2.298	15.86	557.5
109	26.300	.82200-01	140.00	.5180	.8634	.6232	.9578	.3337-01	.2409-01	3.692	25.54	553.3
110	26.700	.12100	199.00	.3719	.6547	.4840	.9464	.2530-01	.1870-01	2.455	16.86	566.9
110	26.800	.16810	222.00	.2164	.3533	.2831	.9351	.1365-01	.1117-01	1.592	11.05	547.3
110	27.000	.19940	237.00	.1622	.2553	.2169	.9309	.9867-02	.8381-02	1.269	8.667	535.3
110	27.100	.21310	249.00	.1437	.2191	.1915	.9274	.8468-02	.7402-02	1.189	8.365	523.5
110	27.200	.80300-01	180.00	.5870	1.019	.7120	.9586	.3939-01	.2751-01	3.947	27.15	563.7
109	27.400	.40100-01	98.000	.5661	.9879	.6414	.9725	.3818-01	.2479-01	3.779	25.98	564.9
110	27.400	.16480	215.00	.2620	.4390	.3533	.9359	.1696-01	.1365-01	1.853	12.81	554.7
109	27.600	.41600-01	102.00	.4908	.8592	.5577	.9720	.3321-01	.2155-01	3.263	22.43	565.6
110	27.600	.12440	205.00	.2891	.4915	.3725	.9457	.1900-01	.1440-01	2.002	13.81	558.5
110	27.600	.18700	230.00	.2057	.3285	.2764	.9316	.1270-01	.1068-01	1.568	10.93	540.4
110	27.700	.21010	243.00	.1853	.2879	.2494	.9279	.1113-01	.9638-02	1.482	10.38	530.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K009)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
110	27.900	.10110	188.00	.3471	.5958	.4333	.9523	.2303-01	.1675-01	2.370	16.33	561.0
109	28.000	.46800-01	110.00	.3102	.4894	.3481	.9702	.1892-01	.1345-01	2.414	16.06	536.3
110	28.200	.16810	221.00	.1826	.3011	.2449	.9353	.1163-01	.9464-02	1.322	9.163	550.3
110	28.300	.19040	236.00	.1270	.1978	.1686	.9311	.7643-02	.6514-02	1.012	7.066	531.5
110	28.300	.12200	201.00	.4003	.6863	.5153	.9465	.2652-01	.1991-01	2.739	18.87	560.6
109	28.400	.53500-01	114.00	.6250	1.076	.7219	.9680	.4158-01	.2790-01	4.251	29.28	561.7
110	28.400	.21310	248.00	.1302	.1974	.1728	.9276	.7629-02	.6679-02	1.090	7.675	521.1
109	28.700	.58600-01	117.00	.5928	1.021	.6905	.9663	.3946-01	.2668-01	4.028	27.74	561.8
110	28.800	.16580	217.00	.2189	.3675	.2955	.9359	.1420-01	.1142-01	1.544	10.67	555.2
109	28.800	.60400-01	121.00	.4753	.8353	.5578	.9657	.3228-01	.2156-01	3.144	21.60	566.5
110	29.000	.21110	244.00	.1522	.2332	.2030	.9279	.9011-02	.7847-02	1.250	8.786	525.2
109	29.000	.65700-01	129.00	.3112	.4896	.3583	.9639	.1892-01	.1365-01	2.434	17.01	535.3
109	29.200	.72400-01	133.00	.5642	.9648	.6709	.9617	.3729-01	.2593-01	3.873	26.70	560.0
109	29.300	.79500-01	136.00	.5017	.8897	.6097	.9594	.3438-01	.2356-01	3.280	22.51	568.5
109	29.600	.92500-01	143.00	.5091	.8672	.6242	.9553	.3351-01	.2412-01	3.514	24.24	559.0
109	29.700	.10000+00	146.00	.4441	.7825	.5572	.9531	.3024-01	.2154-01	2.928	20.11	567.1
110	29.900	.12100	198.00	.3693	.6634	.4826	.9471	.2564-01	.1865-01	2.375	16.28	571.2
110	30.200	.16480	214.00	.2166	.3658	.2926	.9364	.1414-01	.1131-01	1.514	10.46	556.8
110	30.200	.18700	229.00	.3487	.5225	.4507	.9320	.2019-01	.1742-01	2.987	21.10	516.0
110	30.300	.21010	242.00	.1631	.2543	.2197	.9282	.9827-02	.8490-02	1.297	9.082	531.9
109	31.500	.91000-02	82.000	1.029	2.115	1.149	.9797	.8174-01	.4442-01	5.717	38.69	594.0
109	31.500	.11100-01	83.000	.9918	2.009	1.106	.9797	.7765-01	.4273-01	5.583	37.83	592.0
109	31.500	.14200-01	84.000	1.214	3.326	1.324	.9870	.1285	.5115-01	5.453	36.37	621.5
109	31.500	.16000-01	85.000	1.150	2.797	1.245	.9870	.1081	.4811-01	5.564	37.29	612.4
109	31.500	.17600-01	86.000	.9563	2.196	1.032	.9870	.8487-01	.3998-01	4.829	32.46	607.0
109	31.500	.19400-01	87.000	.8952	1.939	.9626	.9870	.7492-01	.3720-01	4.742	31.98	600.6
110	32.100	.21010	241.00	.2337	.3669	.3158	.9284	.1418-01	.1221-01	1.834	12.83	534.5
110	32.200	.16480	213.00	.2705	.4590	.3656	.9367	.1774-01	.1413-01	1.878	12.96	558.0
110	32.200	.17860	224.00	.2126	.3412	.2833	.9338	.1319-01	.1095-01	1.609	11.20	541.9
110	32.200	.18700	228.00	.3333	.5435	.4517	.9322	.2100-01	.1746-01	2.457	17.06	547.0
110	32.300	.12100	197.00	.4585	.8141	.5949	.9475	.3146-01	.2299-01	2.993	20.53	568.8
110	32.300	.12300	194.00	.3872	.6889	.5043	.9470	.2662-01	.1949-01	2.521	17.29	569.2
110	32.300	.12730	208.00	.2471	.4012	.3120	.9458	.1550-01	.1206-01	1.834	12.74	545.6
110	32.300	.13420	209.00	.2664	.4519	.3460	.9440	.1746-01	.1337-01	1.851	12.77	557.9
109	32.400	.10000+00	147.00	.5974	1.090	.7558	.9536	.4214-01	.2921-01	3.767	25.76	574.5
110	32.400	.10110	184.00	.5315	.9641	.6724	.9533	.3726-01	.2598-01	3.377	23.11	573.3
110	32.400	.10630	193.00	.2547	.4037	.3099	.9518	.1560-01	.1198-01	1.968	13.73	537.8
110	32.500	.85800-01	183.00	.3009	.4813	.3570	.9581	.1860-01	.1380-01	2.289	15.95	540.9
109	32.600	.79500-01	137.00	.7877	1.463	.9654	.9601	.5656-01	.3731-01	4.863	33.20	577.9
110	32.600	.80800-01	176.00	.8670	1.622	1.067	.9597	.6268-01	.4124-01	5.310	36.23	579.2
109	32.700	.67400-01	132.00	.4666	.7596	.5414	.9642	.2936-01	.2092-01	3.448	23.95	546.4
109	32.700	.72400-01	134.00	.5406	.9068	.6371	.9625	.3505-01	.2462-01	3.815	26.37	555.0
109	32.800	.65700-01	130.00	.3456	.5417	.3961	.9648	.2094-01	.1531-01	2.721	19.03	533.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K009)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
110	32.800	.16680	210.00	.2587	.4302	.3467	.9363	.1663-01	.1340-01	1.851	12.81	552.6
110	32.800	.18880	225.00	.2018	.3118	.2656	.9320	.1205-01	.1026-01	1.632	11.44	528.5
109	32.900	.58600-01	118.00	.5984	1.039	.6949	.9673	.4014-01	.2685-01	4.025	27.69	563.6
109	32.900	.60400-01	122.00	.6372	1.094	.7404	.9666	.4229-01	.2861-01	4.348	29.96	561.1
110	32.900	.61300-01	171.00	.4642	.8028	.5411	.9663	.3102-01	.2091-01	3.138	21.60	562.7
109	33.000	.53500-01	115.00	.5328	.8869	.6079	.9691	.3428-01	.2349-01	3.804	26.33	552.9
109	33.200	.48300-01	113.00	.3434	.5399	.3840	.9710	.2086-01	.1484-01	2.690	18.80	535.0
110	33.400	.42800-01	166.00	.4879	.8381	.5500	.9730	.3239-01	.2125-01	3.328	22.93	561.2
109	33.500	.40100-01	99.000	.5929	1.011	.6643	.9740	.3906-01	.2567-01	4.088	28.19	559.3
109	33.600	.38300-01	97.000	.5637	.9588	.6294	.9747	.3706-01	.2432-01	3.900	26.91	558.7
109	33.700	.36700-01	96.000	.5925	1.023	.6612	.9753	.3952-01	.2555-01	4.017	27.65	562.3
109	33.900	.33800-01	95.000	.6718	1.156	.7454	.9764	.4466-01	.2881-01	4.574	31.50	561.5
110	34.700	.21010	240.00	.2933	.4645	.3980	.9286	.1795-01	.1538-01	2.270	15.84	537.5
110	34.700	.18700	227.00	.2545	.4144	.3441	.9325	.1602-01	.1330-01	1.881	13.06	546.5
110	34.900	.16480	212.00	.3468	.5981	.4715	.9371	.2311-01	.1822-01	2.353	16.21	562.1
109	35.100	.10000+00	148.00	.6459	1.186	.8163	.9542	.4584-01	.3155-01	4.043	27.63	575.7
110	35.200	.23900-01	161.00	.3376	.5288	.3633	.9804	.2043-01	.1404-01	2.661	18.61	533.7
109	35.300	.92500-01	145.00	.4578	.7756	.5570	.9565	.2997-01	.2153-01	3.185	21.99	557.6
109	35.300	.22100-01	160.00	.3267	.5078	.3511	.9805	.1963-01	.1357-01	2.611	18.29	530.9
110	35.400	.18800	231.00	.3260	.5297	.4405	.9324	.2047-01	.1702-01	2.417	16.79	545.9
110	35.500	.12100	196.00	.5137	.9241	.6676	.9481	.3571-01	.2580-01	3.298	22.59	571.6
110	35.600	.16580	216.00	.3438	.5872	.4655	.9369	.2269-01	.1799-01	2.364	16.30	559.7
109	35.800	.80600-01	138.00	.7888	1.445	.9616	.9604	.5586-01	.3716-01	4.951	33.85	575.3
110	35.900	.21310	247.00	.2238	.3425	.2978	.9283	.1324-01	.1151-01	1.841	12.94	524.8
110	36.000	.19040	235.00	.2552	.4051	.3409	.9321	.1566-01	.1318-01	1.966	13.72	538.3
110	36.200	.16810	220.00	.2912	.4808	.3885	.9365	.1858-01	.1501-01	2.106	14.59	550.6
109	36.200	.72400-01	135.00	.5203	.8731	.6111	.9632	.3374-01	.2362-01	3.671	25.38	555.1
110	36.300	.12200	200.00	.5243	.9433	.6819	.9480	.3645-01	.2635-01	3.366	23.06	571.6
109	36.600	.65700-01	131.00	.4259	.6939	.4912	.9656	.2682-01	.1898-01	3.144	21.83	546.7
110	36.700	.18700	226.00	.2331	.3720	.3112	.9328	.1437-01	.1203-01	1.780	12.41	540.1
110	36.900	.16480	211.00	.2390	.3989	.3191	.9373	.1541-01	.1233-01	1.700	11.76	553.6
110	36.900	.10110	187.00	.5881	1.070	.7410	.9542	.4135-01	.2864-01	3.723	25.47	573.9
109	37.000	.60400-01	123.00	.7994	1.458	.9369	.9675	.5633-01	.3621-01	5.047	34.52	574.3
110	37.000	.12440	204.00	.4528	.7859	.5826	.9474	.3037-01	.2252-01	3.045	20.95	563.7
109	37.100	.58600-01	119.00	.7495	1.314	.8683	.9682	.5078-01	.3356-01	4.973	34.17	566.0
110	37.200	.21310	246.00	.1849	.2817	.2453	.9284	.1089-01	.9478-02	1.535	10.80	523.0
110	37.600	.16810	219.00	.2149	.3505	.2846	.9367	.1355-01	.1100-01	1.583	10.99	547.0
109	37.800	.10270	150.00	.4542	.7711	.5606	.9539	.2980-01	.2166-01	3.151	21.75	558.2
110	37.900	.12100	195.00	.3151	.5297	.3981	.9485	.2047-01	.1539-01	2.218	15.33	555.5
110	38.000	.80300-01	179.00	.6850	1.209	.8245	.9610	.4673-01	.3186-01	4.504	30.92	567.5
109	38.500	.46800-01	112.00	.3638	.5803	.4052	.9726	.2243-01	.1566-01	2.780	19.38	539.9
110	38.600	.12440	203.00	.3620	.6123	.4605	.9477	.2366-01	.1780-01	2.525	17.43	557.2
110	38.700	.10000+00	185.00	.4615	.7989	.5703	.9548	.3087-01	.2204-01	3.115	21.44	563.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K009)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
109	38.900	.82200-01	141.00	.5602	.9509	.6687	.9605	.3675-01	.2584-01	3.887	26.82	558.1
109	39.300	.41600-01	104.00	.5928	1.027	.6639	.9747	.3967-01	.2566-01	3.999	27.52	563.1
110	39.500	.10270	190.00	.4492	.7699	.5552	.9541	.2975-01	.2146-01	3.074	21.18	560.6
110	39.600	.16810	218.00	.1220	.1970	.1605	.9370	.7612-02	.6202-02	.9129	6.349	544.0
110	39.900	.19040	233.00	.1326	.2061	.1747	.9325	.7966-02	.6750-02	1.060	7.424	530.9
110	40.100	.79500-01	177.00	.5379	.9201	.6400	.9616	.3556-01	.2473-01	3.692	25.45	560.1
110	40.200	.12440	202.00	.3010	.5065	.3816	.9479	.1957-01	.1475-01	2.116	14.62	555.8
110	40.300	.21310	245.00	.1105	.1664	.1453	.9287	.6431-02	.5616-02	.9379	6.618	518.1
109	41.100	.82200-01	142.00	.5457	.9251	.6500	.9609	.3575-01	.2512-01	3.794	26.19	557.8
110	41.100	.60700-01	173.00	.7377	1.311	.8569	.9682	.5065-01	.3312-01	4.810	33.00	568.9
110	42.300	.10270	189.00	.1771-04	.2080-04	.1899-04	.9546	.8038-06	.7339-06	.3399-03	.2838-02	241.0
110	42.600	.59600-01	172.00	.6967	1.225	.8050	.9688	.4736-01	.3111-01	4.604	31.62	566.7
110	43.200	.42000-01	168.00	.5201	.8856	.5794	.9752	.3423-01	.2239-01	3.593	24.79	558.9
110	43.400	.82200-01	181.00	.4357	.7240	.5152	.9613	.2798-01	.1991-01	3.120	21.60	552.4
109	43.600	.62900-01	128.00	.6099	1.038	.7032	.9678	.4010-01	.2717-01	4.218	29.10	558.7
109	45.000	.22900-01	8.0000	.6914	1.237	.7498	.9823	.4779-01	.2898-01	4.470	30.65	570.4
110	46.100	.62900-01	174.00	.6237	1.079	.7204	.9682	.4171-01	.2784-01	4.213	29.00	562.9
110	47.700	.40800-01	167.00	.5654	.9786	.6282	.9763	.3782-01	.2428-01	3.817	26.27	563.0
109	48.400	.44200-01	109.00	.5195	.8825	.5785	.9752	.3411-01	.2236-01	3.600	24.84	558.4
109	50.000	.19400-01	156.00	.8241	1.891	.8893	.9870	.7308-01	.3437-01	4.164	27.99	606.9
109	51.000	.12100-01	154.00	1.093	3.071	1.193	.9870	.1187	.4612-01	4.841	32.26	623.1
109	51.000	.17600-01	155.00	.8765	1.973	.9447	.9870	.7624-01	.3651-01	4.496	30.25	604.9
110	51.900	.44800-01	170.00	.4419	.7278	.4893	.9754	.2813-01	.1891-01	3.207	22.23	549.9
110	53.200	.24700-01	163.00	.4268	.7064	.4577	.9829	.2730-01	.1769-01	3.075	21.30	551.3
110	65.200	.24700-01	162.00	.5503	.9505	.5912	.9836	.3673-01	.2285-01	3.726	25.65	562.5
111	90.000	.91000-02	44.000	1.014	2.304	1.129	.9818	.8902-01	.4362-01	5.168	34.74	606.7
111	90.000	.11100-01	45.000	1.047	2.184	1.156	.9818	.8439-01	.4468-01	5.736	38.76	596.8
111	90.000	.13100-01	46.000	.9465	1.858	1.039	.9818	.7177-01	.4015-01	5.508	37.40	588.1
111	90.000	.17000-01	48.000	.7100	1.302	.7740	.9818	.5032-01	.2991-01	4.455	30.44	576.3
111	90.000	.20900-01	50.000	.6674	1.197	.7258	.9818	.4625-01	.2804-01	4.304	29.48	571.8
111	90.000	.24900-01	52.000	.5784	1.031	.6301	.9813	.3985-01	.2435-01	3.758	25.76	570.5
111	90.000	.26900-01	53.000	.5414	.9455	.5905	.9806	.3653-01	.2282-01	3.616	24.85	565.8
111	90.000	.28800-01	54.000	.5389	.9363	.5893	.9798	.3618-01	.2277-01	3.623	24.92	564.6
111	90.000	.32800-01	55.000	.4941	.8345	.5420	.9783	.3224-01	.2094-01	3.458	23.87	557.6
111	90.000	.36700-01	56.000	.4884	.8263	.5393	.9769	.3192-01	.2084-01	3.409	23.52	558.0
111	90.000	.40600-01	57.000	.4705	.8155	.5250	.9755	.3151-01	.2029-01	3.175	21.84	564.1
111	90.000	.48500-01	58.000	.4763	.8222	.5383	.9726	.3177-01	.2080-01	3.231	22.24	563.1
111	90.000	.56400-01	59.000	.4346	.7456	.4973	.9698	.2881-01	.1921-01	2.974	20.48	561.6
111	90.000	.76100-01	60.000	.3753	.6385	.4428	.9630	.2467-01	.1711-01	2.599	17.92	559.5
111	90.000	.95800-01	61.000	.3335	.5699	.4067	.9566	.2202-01	.1571-01	2.295	15.82	560.6
111	90.000	.11550	62.000	.2733	.4609	.3419	.9507	.1781-01	.1321-01	1.916	13.23	557.2
111	135.00	.19000-01	49.000	.6637	1.183	.7691	.9688	.4571-01	.2972-01	4.316	29.58	570.4
111	135.00	.22900-01	51.000	.5764	1.023	.6674	.9688	.3953-01	.2579-01	3.768	25.84	569.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K009)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
111	180.00	.91000-02	23.000	.4626	.7985	.5752	.9535	.3085-01	.2223-01	3.139	21.60	563.1
111	180.00	.11100-01	24.000	.5992	1.142	.7695	.9535	.4413-01	.2973-01	3.598	24.49	583.3
111	180.00	.13100-01	25.000	.5321	.9553	.6703	.9535	.3691-01	.2590-01	3.428	23.48	571.9
111	180.00	.15000-01	26.000	.5102	.9065	.6405	.9535	.3502-01	.2475-01	3.330	22.84	569.7
111	180.00	.17000-01	27.000	.5415	.9576	.6788	.9535	.3700-01	.2623-01	3.557	24.41	568.7
111	180.00	.19000-01	28.000	.5946	1.055	.7462	.9535	.4077-01	.2883-01	3.887	26.66	569.5
111	180.00	.20900-01	29.000	.5672	.9855	.7069	.9535	.3808-01	.2731-01	3.814	26.23	564.6
111	180.00	.28800-01	32.000	.4517	.7582	.5615	.9516	.2929-01	.2169-01	3.189	22.04	555.9
111	180.00	.32800-01	33.000	.4157	.6789	.5149	.9503	.2623-01	.1990-01	3.061	21.24	548.1
111	180.00	.36700-01	34.000	.3979	.6599	.4989	.9490	.2550-01	.1928-01	2.861	19.80	552.6
111	180.00	.48500-01	36.000	.3249	.5306	.4123	.9453	.2050-01	.1593-01	2.393	16.60	548.1
111	180.00	.56400-01	37.000	.2967	.4799	.3792	.9430	.1854-01	.1465-01	2.218	15.42	545.2
111	180.00	.76100-01	38.000	.2280	.3634	.2968	.9378	.1404-01	.1147-01	1.747	12.17	540.4
111	180.00	.95800-01	39.000	.1723	.2723	.2281	.9334	.1052-01	.8814-02	1.338	9.341	537.6
111	180.00	.11550	40.000	.1326	.2115	.1798	.9297	.8172-02	.6946-02	1.014	7.068	540.7
111	180.00	.18450	42.000	.5431-01	.8425-01	.7497-01	.9224	.3255-02	.2897-02	.4361	3.055	530.8
111	225.00	.22900-01	30.000	.4690	.7941	.6063	.9447	.3068-01	.2343-01	3.270	22.56	558.2
111	270.00	.91000-02	63.000	.2221	.4024	.2947	.9450	.1555-01	.1139-01	1.414	9.678	573.8
111	270.00	.11100-01	64.000	.3626	.6657	.4837	.9450	.2572-01	.1869-01	2.273	15.53	576.4
111	270.00	.13100-01	65.000	.5264	.9578	.6997	.9450	.3701-01	.2703-01	3.335	22.81	574.7
111	270.00	.17000-01	67.000	.5889	1.033	.7712	.9450	.3990-01	.2980-01	3.911	26.86	566.8
111	270.00	.20900-01	69.000	.5016	.8701	.6539	.9450	.3362-01	.2527-01	3.381	23.26	564.2
111	270.00	.24900-01	71.000	.5220	.8984	.6798	.9446	.3471-01	.2627-01	3.555	24.48	562.4
111	270.00	.28800-01	73.000	.4572	.7686	.5934	.9433	.2970-01	.2293-01	3.221	22.25	556.4
111	270.00	.36700-01	75.000	.3898	.6457	.5089	.9409	.2495-01	.1966-01	2.807	19.43	552.3
111	270.00	.46500-01	77.000	.3098	.5001	.4061	.9377	.1932-01	.1569-01	2.323	16.15	544.6
111	270.00	.56400-01	78.000	.2847	.4559	.3754	.9357	.1762-01	.1451-01	2.164	15.07	541.9
111	270.00	.95800-01	80.000	.1344	.2104	.1819	.9278	.8130-02	.7026-02	1.062	7.429	534.1
111	270.00	.11550	81.000	.9893-01	.1559	.1362	.9251	.6024-02	.5262-02	.7727	5.396	536.5
111	315.00	.19000-01	68.000	.4213	.7156	.5184	.9544	.2765-01	.2003-01	2.923	20.16	559.1
111	315.00	.22900-01	70.000	.5555	.9610	.6877	.9544	.3713-01	.2657-01	3.757	25.85	563.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K010)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
131	4.020	-.3901-02	11.04	64.89	732.7	.4161	173.1	-90.02	2593.	.6488-02	.1393-06	3.753
132	4.020	.3899-02	11.03	64.93	733.7	.4164	173.4	-89.98	2595.	.6483-02	.1395-06	3.748
133	4.020	.3902-02	11.04	64.87	734.7	.4160	173.6	-89.98	2596.	.6469-02	.1397-06	3.737

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
131	.3863-01	.9530-02
132	.3865-01	.9534-02
133	.3864-01	.9547-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
132	.00000	.91000-02	1.0000	.5160	1.075	.6448	.9616	.4155-01	.2492-01	2.813	19.05	592.6
132	.00000	.15000-01	4.0000	.6372	1.428	.8094	.9616	.5519-01	.3128-01	3.263	22.00	601.2
132	.00000	.17000-01	5.0000	.6505	1.441	.8242	.9616	.5570-01	.3186-01	3.362	22.68	599.9
132	.00000	.19000-01	6.0000	.6342	1.349	.7963	.9616	.5213-01	.3078-01	3.395	22.96	595.2
132	.00000	.24900-01	9.0000	.5436	1.051	.6693	.9611	.4062-01	.2587-01	3.193	21.75	581.7
132	.00000	.26900-01	10.000	.4867	.8962	.5943	.9604	.3464-01	.2297-01	3.020	20.67	573.1
131	.00000	.32800-01	12.000	.3881	.7025	.4773	.9583	.2713-01	.1843-01	2.455	16.84	568.9
131	.00000	.36700-01	13.000	.3630	.6477	.4479	.9569	.2502-01	.1730-01	2.338	16.06	566.0
131	.00000	.40600-01	14.000	.3945	.7268	.4951	.9556	.2807-01	.1912-01	2.442	16.72	572.4
131	.00000	.48500-01	15.000	.3477	.6257	.4397	.9529	.2417-01	.1698-01	2.215	15.21	567.7
131	.00000	.56400-01	16.000	.3546	.6420	.4558	.9504	.2480-01	.1761-01	2.242	15.38	569.0
131	.00000	.76100-01	17.000	.2678	.4641	.3498	.9446	.1793-01	.1351-01	1.791	12.35	559.5
131	.00000	.95800-01	18.000	.1028	.1674	.1341	.9394	.6465-02	.5182-02	.7532	5.241	542.9
131	.00000	.11550	19.000	.1659	.2871	.2298	.9349	.1109-01	.8838-02	1.112	7.673	559.1
131	.00000	.16480	20.000	.9731-01	.1643	.1390	.9265	.6348-02	.5368-02	.6752	4.672	553.0
131	.00000	.21400	22.000	.5381-01	.8418-01	.7472-01	.9224	.3251-02	.2886-02	.4220	2.959	529.6
133	2.0000	.24700-01	165.00	.4494	.7905	.5416	.9605	.3054-01	.2093-01	2.957	20.33	564.4
132	9.0000	.15000-01	157.00	.6779	1.543	.8819	.9587	.5964-01	.3408-01	3.428	23.09	602.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K010)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
132	9.0000	.17600-01	158.00	.5902	1.228	.7511	.9587	.4744-01	.2903-01	3.224	21.84	592.4
133	9.8000	.24700-01	164.00	.4659	.8403	.5728	.9581	.3247-01	.2214-01	2.968	20.35	569.8
132	10.000	.22900-01	88.000	.5125	.9977	.6423	.9584	.3856-01	.2483-01	2.988	20.34	582.8
132	10.000	.26900-01	90.000	.4161	.7264	.5091	.9572	.2807-01	.1968-01	2.762	19.02	561.9
132	10.000	.34700-01	94.000	.3857	.6649	.4768	.9545	.2570-01	.1843-01	2.605	17.97	558.9
132	12.000	.17600-01	152.00	.9234	5.236	1.066	.9838	.2024	.4119-01	3.179	20.95	644.6
132	12.000	.12100-01	151.00	.5606	6.656	.6583	.9838	.2573	.2544-01	1.736	11.38	653.6
132	13.000	.19400-01	153.00	.8937	5.527	1.037	.9835	.2136	.4008-01	3.023	19.90	646.2
133	14.600	.44200-01	169.00	.4590	.7989	.5830	.9500	.3087-01	.2253-01	3.062	21.09	562.0
132	18.500	.44200-01	106.00	.4974	.9385	.6544	.9489	.3627-01	.2529-01	3.000	20.49	577.6
133	19.600	.62900-01	175.00	.3770	.6370	.4912	.9431	.2462-01	.1898-01	2.622	18.13	554.7
132	19.800	.40800-01	101.00	.5806	1.180	.7798	.9497	.4560-01	.3014-01	3.242	22.00	589.2
132	20.000	.24900-01	89.000	.3997	.7228	.5002	.9550	.2794-01	.1933-01	2.536	17.39	569.5
132	20.000	.28800-01	91.000	.3446	.5920	.4274	.9537	.2288-01	.1652-01	2.339	16.14	558.1
132	20.000	.32800-01	93.000	.3948	.7014	.4988	.9523	.2711-01	.1928-01	2.561	17.60	565.8
132	22.200	.62900-01	125.00	.4004	.7318	.5416	.9424	.2828-01	.2093-01	2.507	17.17	571.7
132	22.400	.44200-01	107.00	.4979	.9824	.6699	.9479	.3797-01	.2589-01	2.862	19.47	584.9
133	22.600	.10270	192.00	.1940	.3101	.2592	.9328	.1198-01	.1002-01	1.471	10.26	538.5
132	23.000	.42000-01	105.00	.6101	1.350	.8503	.9485	.5219-01	.3286-01	3.155	21.29	599.8
132	23.400	.59600-01	120.00	.4774	.9219	.6580	.9431	.3563-01	.2543-01	2.808	19.13	581.5
133	23.900	.21310	250.00	.4483-01	.6646-01	.6008-01	.9220	.2568-02	.2322-02	.3909	2.772	509.0
132	24.100	.82200-01	139.00	.3171	.5610	.4367	.9370	.2168-01	.1688-01	2.068	14.22	564.9
133	24.400	.19040	238.00	.5571-01	.8392-01	.7540-01	.9223	.3243-02	.2914-02	.4704	3.323	516.1
133	24.400	.12440	207.00	.1530	.2484	.2108	.9286	.9597-02	.8144-02	1.130	7.864	543.4
133	24.800	.16810	223.00	.8057-01	.1263	.1114	.9235	.4880-02	.4306-02	.6318	4.424	531.7
132	24.900	.62900-01	126.00	.4215	.8182	.5872	.9418	.3162-01	.2270-01	2.465	16.79	582.3
133	25.000	.79500-01	178.00	.3450	.5896	.4659	.9375	.2278-01	.1800-01	2.361	16.30	557.5
133	25.300	.10270	191.00	.2497	.4085	.3389	.9323	.1579-01	.1310-01	1.824	12.67	545.6
133	25.300	.10000+00	186.00	.2736	.4593	.3755	.9328	.1775-01	.1451-01	1.921	13.29	552.9
132	25.500	.60700-01	124.00	.5182	1.084	.7417	.9423	.4189-01	.2867-01	2.815	19.06	593.1
133	26.000	.12440	206.00	.1731	.2844	.2405	.9284	.1099-01	.9294-02	1.256	8.721	546.9
132	26.300	.82200-01	140.00	.2648	.4740	.3677	.9366	.1832-01	.1421-01	1.701	11.68	567.5
133	26.700	.12100	199.00	.2329	.4057	.3342	.9288	.1568-01	.1291-01	1.552	10.69	562.2
133	26.800	.16810	222.00	.9731-01	.1538	.1355	.9233	.5944-02	.5234-02	.7519	5.256	534.7
133	27.000	.19040	237.00	.6462-01	.9824-01	.8806-01	.9222	.3796-02	.3403-02	.5360	3.777	520.0
133	27.100	.21310	249.00	.5677-01	.8490-01	.7655-01	.9220	.3280-02	.2958-02	.4864	3.441	512.9
133	27.200	.80300-01	180.00	.4095	.7310	.5671	.9368	.2825-01	.2191-01	2.642	18.14	567.7
132	27.400	.40100-01	98.000	.6015	1.488	.8716	.9480	.5750-01	.3369-01	2.863	19.21	610.5
133	27.400	.16480	215.00	.1034	.1668	.1457	.9235	.6444-02	.5631-02	.7717	5.374	541.5
132	27.600	.41600-01	102.00	.6485	1.702	.9612	.9474	.6579-01	.3715-01	2.971	19.88	615.1
133	27.600	.12440	205.00	.1857	.3122	.2619	.9281	.1206-01	.1012-01	1.301	9.003	553.3
133	27.600	.18700	230.00	.6190-01	.9490-01	.8481-01	.9223	.3667-02	.3277-02	.5053	3.555	523.4
133	27.700	.21010	243.00	.6611-01	.1003	.9007-01	.9220	.3877-02	.3481-02	.5502	3.880	519.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K010)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
133	27.900	.10110	188.00	.2948	.5124	.4141	.9322	.1980-01	.1600-01	1.971	13.57	561.7
132	28.000	.46800-01	110.00	.3292	.5534	.4220	.9457	.2139-01	.1631-01	2.304	15.95	552.6
133	28.200	.16810	221.00	.9987-01	.1602	.1405	.9233	.6189-02	.5427-02	.7531	5.251	539.5
133	28.300	.19040	236.00	.6065-01	.9250-01	.8285-01	.9222	.3574-02	.3201-02	.4999	3.521	521.3
133	28.300	.12200	201.00	.2039	.3377	.2846	.9284	.1305-01	.1100-01	1.460	10.13	549.3
132	28.400	.53500-01	114.00	.3761	.6501	.4933	.9436	.2512-01	.1906-01	2.531	17.45	559.6
133	28.400	.21310	248.00	.5486-01	.8243-01	.7422-01	.9220	.3185-02	.2868-02	.4658	3.292	515.0
132	28.700	.58600-01	117.00	.5798	1.248	.8401	.9421	.4823-01	.3247-01	3.071	20.76	596.6
133	28.800	.16580	217.00	.1073	.1751	.1525	.9234	.6764-02	.5894-02	.7860	5.464	545.0
132	28.800	.60400-01	121.00	.5428	1.201	.7981	.9416	.4640-01	.3085-01	2.809	18.95	599.8
133	29.000	.21110	244.00	.6351-01	.9642-01	.8655-01	.9220	.3726-02	.3344-02	.5201	3.723	519.4
132	29.000	.65700-01	129.00	.2871	.4747	.3761	.9401	.1835-01	.1454-01	2.061	14.30	548.0
132	29.200	.72400-01	133.00	.3512	.6142	.4772	.9384	.2374-01	.1844-01	2.326	16.01	562.3
132	29.300	.79500-01	136.00	.4121	.8401	.6088	.9366	.3247-01	.2353-01	2.294	15.56	589.7
132	29.600	.92500-01	143.00	.1988	.3346	.2721	.9336	.1293-01	.1052-01	1.389	9.610	552.9
132	29.700	.10000+00	146.00	.3463	.6882	.5226	.9321	.2660-01	.2020-01	1.976	13.43	586.0
133	29.900	.12100	198.00	.2587	.4651	.3793	.9284	.1797-01	.1466-01	1.655	11.35	569.1
133	30.200	.16480	214.00	.1079	.1785	.1548	.9234	.6897-02	.5983-02	.7741	5.369	549.0
133	30.200	.18700	229.00	.6112-01	.9538-01	.8481-01	.9222	.3685-02	.3277-02	.4830	3.345	530.2
133	30.300	.21010	242.00	.6580-01	.1015	.9069-01	.9220	.3923-02	.3504-02	.5309	3.729	525.9
132	31.500	.91000-02	82.000	.4663	.8598	.5958	.9525	.3323-01	.2303-01	2.889	19.77	573.4
132	31.500	.11100-01	83.000	.5390	1.078	.7068	.9525	.4167-01	.2732-01	3.056	20.76	587.0
132	31.500	.14200-01	84.000	.7326	3.017	.8747	.9785	.1166	.3381-01	2.744	18.15	636.8
132	31.500	.16000-01	85.000	.8195	2.948	.9697	.9785	.1139	.3748-01	3.218	21.35	632.1
132	31.500	.17600-01	86.000	.8306	3.133	.9860	.9785	.1211	.3811-01	3.205	21.24	633.8
132	31.500	.19400-01	87.000	.7702	2.060	.8897	.9785	.7963-01	.3439-01	3.487	23.32	616.5
133	32.100	.21010	241.00	.7708-01	.1183	.1058	.9220	.4569-02	.4089-02	.6284	4.420	523.7
133	32.200	.16480	213.00	.1151	.1887	.1643	.9232	.7290-02	.6349-02	.8385	5.824	546.2
133	32.200	.17860	224.00	.7953-01	.1215	.1086	.9225	.4696-02	.4198-02	.6533	4.599	522.1
133	32.200	.18700	228.00	.8580-01	.1302	.1168	.9222	.5033-02	.4514-02	.7139	5.033	519.4
133	32.300	.12100	197.00	.2689	.4671	.3871	.9280	.1805-01	.1496-01	1.799	12.39	561.6
133	32.300	.12300	194.00	.2242	.3962	.3267	.9277	.1531-01	.1262-01	1.466	10.07	565.5
133	32.300	.12730	208.00	.1023	.1614	.1395	.9271	.6237-02	.5392-02	.7919	5.537	534.3
133	32.300	.13420	209.00	.9321-01	.1522	.1305	.9262	.5879-02	.5044-02	.6830	4.747	545.0
132	32.400	.10000+00	147.00	.2810	.5151	.4077	.9316	.1991-01	.1576-01	1.753	12.01	572.2
133	32.400	.10110	184.00	.3105	.5534	.4442	.9314	.2138-01	.1717-01	2.099	13.79	567.3
133	32.400	.10630	193.00	.1607	.2468	.2122	.9305	.9536-02	.8198-02	1.307	9.192	524.1
133	32.500	.85800-01	183.00	.1889	.2924	.2459	.9345	.1130-01	.9501-02	1.516	10.64	527.0
132	32.600	.79500-01	137.00	.3378	.6543	.4894	.9360	.2529-01	.1892-01	1.981	13.49	582.0
133	32.600	.80800-01	176.00	.3596	.6383	.5001	.9357	.2467-01	.1933-01	2.339	16.07	566.4
132	32.700	.67400-01	132.00	.2334	.3820	.3062	.9389	.1476-01	.1183-01	1.701	11.83	545.1
132	32.700	.72400-01	134.00	.2935	.5007	.3956	.9377	.1935-01	.1529-01	2.012	13.90	556.4
132	32.800	.65700-01	130.00	.2252	.3590	.2910	.9393	.1388-01	.1125-01	1.713	11.96	536.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K010)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT - DEG. R /SEC	TW DEG. R
133	32.800	.16680	210.00	.1059	.1702	.1493	.9231	.6575-02	.5768-02	.7958	5.546	540.2
133	32.800	.18880	225.00	.6641-01	.9962-01	.8970-01	.9221	.3849-02	.3466-02	.5655	3.999	514.3
132	32.900	.58600-01	118.00	.5417	1.070	.7633	.9412	.4137-01	.2950-01	3.110	21.15	585.1
132	32.900	.60400-01	122.00	.3529	.6430	.4817	.9407	.2485-01	.1862-01	2.218	15.20	571.1
133	32.900	.61300-01	171.00	.4189	.8196	.5909	.9405	.3167-01	.2283-01	2.433	16.55	584.4
132	33.000	.53500-01	115.00	.3668	.6367	.4847	.9426	.2461-01	.1873-01	2.454	16.91	560.6
132	33.200	.48300-01	113.00	.2778	.4509	.3537	.9441	.1743-01	.1367-01	2.051	14.28	542.6
133	33.400	.42800-01	166.00	.5517	1.155	.7700	.9457	.4462-01	.2975-01	3.000	20.30	594.0
132	33.500	.40100-01	99.000	.5575	1.157	.7710	.9465	.4470-01	.2980-01	3.051	20.67	592.0
132	33.600	.38300-01	97.000	.5027	.9688	.6744	.9471	.3744-01	.2606-01	2.963	20.20	581.2
132	33.700	.36700-01	96.000	.4510	.8231	.5911	.9476	.3181-01	.2284-01	2.829	19.38	571.4
132	33.900	.33800-01	95.000	.3337	.5729	.4252	.9485	.2214-01	.1643-01	2.267	15.65	557.9
133	34.700	.21010	240.00	.7700-01	.1155	.1041	.9220	.4464-02	.4021-02	.6555	4.634	514.4
133	34.700	.18700	227.00	.8467-01	.1308	.1168	.9221	.5056-02	.4512-02	.6810	4.782	526.5
133	34.900	.16480	212.00	.1199	.1933	.1694	.9231	.7469-02	.6545-02	.8962	6.242	541.2
132	35.100	.10000+00	148.00	.2468	.4386	.3530	.9312	.1695-01	.1364-01	1.600	10.99	565.9
133	35.200	.23900-01	161.00	.3448	.5582	.4232	.9515	.2157-01	.1635-01	2.560	17.82	542.5
132	35.300	.92500-01	145.00	.2696	.4642	.3757	.9327	.1794-01	.1452-01	1.823	12.58	558.7
132	35.300	.22100-01	160.00	.3638	.6029	.4502	.9516	.2330-01	.1740-01	2.601	18.04	548.7
133	35.400	.18800	231.00	.7927-01	.1201	.1078	.9221	.4640-02	.4166-02	.6623	4.672	518.5
133	35.500	.12100	196.00	.2322	.3884	.3275	.9276	.1501-01	.1266-01	1.640	11.35	551.9
133	35.600	.16580	216.00	.1196	.1909	.1679	.9230	.7375-02	.6488-02	.9103	6.352	537.8
132	35.800	.80600-01	138.00	.3074	.5429	.4278	.9351	.2098-01	.1653-01	2.010	13.82	564.5
133	35.900	.21310	247.00	.5869-01	.8676-01	.7857-01	.9220	.3352-02	.3036-02	.5201	3.694	506.1
133	36.000	.19040	235.00	.7439-01	.1114	.1004	.9220	.4306-02	.3880-02	.6354	4.494	513.6
133	36.200	.16810	220.00	.1116	.1755	.1552	.9228	.6781-02	.5998-02	.8698	6.086	532.9
132	36.200	.72400-01	135.00	.3334	.5746	.4533	.9370	.2221-01	.1752-01	2.252	15.53	558.9
133	36.300	.12200	200.00	.2192	.3647	.3086	.9274	.1409-01	.1193-01	1.560	10.81	550.5
132	36.600	.65700-01	131.00	.2209	.3568	.2883	.9386	.1379-01	.1114-01	1.644	11.45	541.1
133	36.700	.18700	226.00	.9386-01	.1423	.1277	.9221	.5497-02	.4935-02	.7830	5.522	518.8
133	36.900	.16480	211.00	.1315	.2122	.1860	.9230	.8198-02	.7186-02	.9821	6.840	541.4
133	36.900	.10110	187.00	.2761	.4645	.3840	.9307	.1795-01	.1484-01	1.932	13.37	553.5
132	37.000	.60400-01	123.00	.3836	.7022	.5274	.9399	.2714-01	.2038-01	2.397	16.42	572.0
133	37.000	.12440	204.00	.1932	.3142	.2688	.9270	.1214-01	.1039-01	1.424	9.904	543.9
132	37.100	.58600-01	119.00	.4397	.7903	.5979	.9404	.3055-01	.2311-01	2.811	19.29	568.3
133	37.200	.21310	246.00	.5562-01	.8202-01	.7427-01	.9220	.3169-02	.2870-02	.4906	3.484	506.4
133	37.600	.16810	219.00	.1157	.1827	.1614	.9227	.7058-02	.6238-02	.8967	6.270	534.2
132	37.800	.10270	150.00	.2407	.4142	.3399	.9303	.1601-01	.1314-01	1.630	11.24	558.5
133	37.900	.12100	195.00	.2519	.4188	.3546	.9273	.1618-01	.1370-01	1.793	12.43	550.4
133	38.000	.80300-01	179.00	.3714	.6313	.5076	.9348	.2440-01	.1962-01	2.561	17.69	556.2
132	38.500	.46800-01	112.00	.2636	.4237	.3352	.9434	.1638-01	.1296-01	1.978	13.79	539.5
133	38.600	.12440	203.00	.1944	.3179	.2716	.9268	.1228-01	.1050-01	1.420	9.867	545.6
133	38.700	.10000+00	185.00	.2887	.4812	.3995	.9307	.1860-01	.1544-01	2.048	14.19	551.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K010)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
132	38.900	.82200-01	141.00	.3020	.5200	.4169	.9343	.2010-01	.1611-01	2.042	14.09	558.7
132	39.300	.41600-01	104.00	.4294	.8020	.5773	.9448	.3099-01	.2231-01	2.621	17.91	575.7
133	39.500	.10270	190.00	.3016	.5069	.4208	.9301	.1959-01	.1626-01	2.114	14.63	553.3
133	39.600	.16810	218.00	.1113	.1756	.1553	.9226	.6786-02	.6001-02	.8629	6.034	534.0
133	39.900	.19040	233.00	.7148-01	.1071	.9649-01	.9220	.4137-02	.3728-02	.6106	4.319	513.6
133	40.100	.79500-01	177.00	.4063	.7081	.5632	.9347	.2736-01	.2176-01	2.707	18.64	562.3
133	40.200	.12440	202.00	.2102	.3484	.2965	.9266	.1346-01	.1146-01	1.505	10.43	549.4
133	40.300	.21310	245.00	.4694-01	.6894-01	.6250-01	.9220	.2664-02	.2415-02	.4174	2.968	504.5
132	41.100	.82200-01	142.00	.2969	.5308	.4189	.9339	.2051-01	.1619-01	1.911	13.12	567.1
133	41.100	.60700-01	173.00	.3976	.6737	.5299	.9391	.2603-01	.2048-01	2.754	19.03	555.4
133	42.600	.59600-01	172.00	.4326	.7461	.5814	.9391	.2883-01	.2246-01	2.923	20.15	559.8
133	43.200	.42000-01	168.00	.3911	.6581	.5062	.9440	.2543-01	.1956-01	2.736	18.93	553.6
133	43.400	.82200-01	181.00	.2398	.3846	.3198	.9336	.1486-01	.1236-01	1.807	12.60	539.6
132	43.600	.62900-01	128.00	.3518	.6287	.4837	.9381	.2430-01	.1870-01	2.265	15.55	567.1
132	45.000	.22900-01	8.0000	.6244	1.303	.8468	.9496	.5037-01	.3273-01	3.399	23.02	592.8
133	46.100	.62900-01	174.00	.4031	.7053	.5500	.9377	.2725-01	.2125-01	2.671	18.38	563.2
133	47.700	.40800-01	167.00	.4280	.7261	.5572	.9435	.2806-01	.2153-01	2.959	20.45	555.7
132	48.400	.44200-01	109.00	.3647	.6465	.4869	.9424	.2499-01	.1882-01	2.373	16.31	565.3
132	50.000	.19400-01	156.00	.6231	1.524	.7330	.9746	.5891-01	.2833-01	2.989	20.06	609.6
132	51.000	.12100-01	154.00	.4853	1.474	.5856	.9745	.5698-01	.2263-01	2.051	13.66	624.3
132	51.000	.17600-01	155.00	.6497	1.450	.7563	.9745	.5603-01	.2923-01	3.339	22.52	600.7
133	51.900	.44800-01	170.00	.3072	.4924	.3935	.9417	.1903-01	.1521-01	2.320	16.18	539.3
133	53.200	.24700-01	163.00	.3556	.5904	.4488	.9478	.2281-01	.1734-01	2.538	17.59	550.0
133	65.200	.24700-01	162.00	.3978	.6961	.5170	.9462	.2690-01	.1998-01	2.635	18.13	563.3
131	90.000	.91000-02	44.000	.4260	.7784	.5665	.9452	.3007-01	.2188-01	2.663	18.25	570.8
131	90.000	.11100-01	45.000	.4480	.8287	.5987	.9452	.3201-01	.2312-01	2.760	18.89	573.2
131	90.000	.13100-01	46.000	.4746	.9469	.6530	.9452	.3658-01	.2522-01	2.693	18.31	585.8
131	90.000	.17000-01	48.000	.4396	.8724	.6036	.9452	.3370-01	.2332-01	2.508	17.05	585.0
131	90.000	.20900-01	50.000	.4014	.7785	.5464	.9452	.3007-01	.2110-01	2.345	15.98	581.4
131	90.000	.24900-01	52.000	.4320	.8132	.5828	.9448	.3141-01	.2251-01	2.608	17.82	576.4
131	90.000	.26900-01	53.000	.3886	.7340	.5272	.9441	.2835-01	.2036-01	2.338	15.97	576.9
131	90.000	.28800-01	54.000	.3858	.7263	.5247	.9435	.2806-01	.2027-01	2.328	15.91	576.4
131	90.000	.32800-01	55.000	.3404	.6137	.4581	.9423	.2371-01	.1770-01	2.163	14.85	568.1
131	90.000	.36700-01	56.000	.3160	.5677	.4276	.9411	.2193-01	.1652-01	2.016	13.84	567.5
131	90.000	.40600-01	57.000	.3217	.5858	.4410	.9400	.2263-01	.1703-01	2.019	13.84	570.2
131	90.000	.48500-01	58.000	.2861	.5105	.3937	.9378	.1972-01	.1521-01	1.843	12.66	566.0
131	90.000	.56400-01	59.000	.2675	.4732	.3710	.9358	.1828-01	.1433-01	1.741	11.98	564.1
131	90.000	.76100-01	60.000	.1863	.3201	.2612	.9314	.1236-01	.1009-01	1.261	8.707	557.4
131	90.000	.95800-01	61.000	.1479	.2535	.2114	.9279	.9792-02	.8167-02	1.005	6.939	556.8
131	90.000	.11550	62.000	.9742-01	.1661	.1411	.9252	.6416-02	.5449-02	.6669	4.609	555.5
131	135.00	.19000-01	49.000	.4691	.9175	.6225	.9496	.3544-01	.2405-01	2.716	18.50	582.8
131	135.00	.22900-01	51.000	.4764	.9523	.6369	.9496	.3679-01	.2460-01	2.698	18.34	586.1
131	180.00	.91000-02	23.000	.4107	.8054	.5060	.9616	.3111-01	.1954-01	2.372	16.15	583.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K010)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
131	180.00	.11100-01	24.000	.5746	1.378	.7404	.9616	.5321-01	.2860-01	2.790	18.75	607.0
131	180.00	.13100-01	25.000	.5946	1.351	.7576	.9616	.5219-01	.2926-01	3.005	20.25	601.8
131	180.00	.15000-01	26.000	.5926	1.319	.7517	.9616	.5097-01	.2904-01	3.045	20.55	599.7
131	180.00	.17000-01	27.000	.5871	1.311	.7453	.9616	.5066-01	.2879-01	3.009	20.30	600.0
131	180.00	.19000-01	28.000	.5693	1.256	.7207	.9616	.4852-01	.2784-01	2.946	19.89	598.7
131	180.00	.20900-01	29.000	.5826	1.235	.7310	.9616	.4771-01	.2824-01	3.121	21.12	594.0
131	180.00	.28800-01	32.000	.5006	.9742	.6227	.9597	.3763-01	.2405-01	2.915	19.86	581.9
131	180.00	.32800-01	33.000	.4516	.8408	.5598	.9583	.3248-01	.2162-01	2.761	18.89	574.4
131	180.00	.36700-01	34.000	.4324	.8255	.5441	.9569	.3189-01	.2102-01	2.569	17.53	578.8
131	180.00	.48500-01	36.000	.3765	.6958	.4803	.9529	.2688-01	.1855-01	2.322	15.90	573.0
131	180.00	.56400-01	37.000	.3485	.6336	.4487	.9504	.2447-01	.1733-01	2.192	15.03	569.8
131	180.00	.76100-01	38.000	.2732	.4811	.3593	.9445	.1858-01	.1388-01	1.789	12.32	563.1
131	180.00	.95800-01	39.000	.2294	.3980	.3087	.9394	.1537-01	.1192-01	1.532	10.56	559.7
131	180.00	.11550	40.000	.1706	.2984	.2366	.9349	.1153-01	.9141-02	1.127	7.766	561.6
131	180.00	.18450	42.000	.8122-01	.1322	.1147	.9243	.5106-02	.4429-02	.5962	4.150	542.6
131	225.00	.22900-01	30.000	.6161	1.323	.7080	.9757	.5111-01	.2735-01	3.263	22.06	595.6
131	270.00	.91000-02	63.000	.5858	2.112	.6724	.9822	.8157-01	.2597-01	2.294	15.22	631.3
131	270.00	.11100-01	64.000	.7134	2.444	.8164	.9822	.9442-01	.3153-01	2.851	18.94	629.2
131	270.00	.13100-01	65.000	.7507	2.397	.8554	.9822	.9257-01	.3304-01	3.094	20.58	626.0
131	270.00	.17000-01	67.000	.6882	1.843	.7747	.9822	.7119-01	.2992-01	3.108	20.79	615.7
131	270.00	.20900-01	69.000	.7078	1.696	.7898	.9822	.6551-01	.3051-01	3.438	23.11	606.9
131	270.00	.24900-01	71.000	.6424	1.473	.7164	.9817	.5690-01	.2767-01	3.224	21.72	602.7
131	270.00	.28800-01	73.000	.5436	1.152	.6071	.9802	.4449-01	.2345-01	2.914	19.72	593.9
131	270.00	.36700-01	75.000	.5501	1.153	.6244	.9773	.4452-01	.2412-01	2.978	20.17	592.5
131	270.00	.48500-01	77.000	.4854	.9742	.5618	.9729	.3763-01	.2170-01	2.738	18.61	586.6
131	270.00	.56400-01	78.000	.4605	.9266	.5421	.9701	.3579-01	.2094-01	2.591	17.60	587.0
131	270.00	.95900-01	80.000	.3173	.5934	.3970	.9568	.2292-01	.1534-01	1.930	13.19	575.2
131	270.00	.11550	81.000	.2767	.5185	.3590	.9509	.2003-01	.1387-01	1.679	11.48	575.6
131	315.00	.19000-01	68.000	.6016	1.288	.6910	.9757	.4976-01	.2669-01	3.194	21.60	595.2
131	315.00	.22900-01	70.000	.5790	1.266	.6669	.9757	.4890-01	.2576-01	3.019	20.39	597.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
63	4.020	-.1262-01	8.962	64.92	738.7	.4163	174.5	-90.08	2604.	.6438-02	.1405-06	3.709
64	4.020	-.1273-01	9.040	64.98	740.7	.4167	175.0	-90.08	2607.	.6427-02	.1408-06	3.698
65	4.020	.1358-06	9.038	65.01	738.7	.4169	174.5	-90.00	2604.	.6447-02	.1405-06	3.714

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
63	.3869-01	.9577-02
64	.3873-01	.9589-02
65	.3872-01	.9570-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
64	.00000	.91000-02	1.0000	.4686	.9265	.5767	.9621	.3588-01	.2233-01	2.720	18.44	590.8
64	.00000	.11100-01	2.0000	.5714	1.207	.7139	.9621	.4673-01	.2765-01	3.113	21.00	600.0
64	.00000	.15000-01	4.0000	.6047	1.317	.7606	.9621	.5100-01	.2946-01	3.207	21.59	603.7
64	.00000	.17000-01	5.0000	.6367	1.365	.7981	.9621	.5287-01	.3091-01	3.423	23.07	601.9
64	.00000	.19000-01	6.0000	.6372	1.317	.7922	.9621	.5099-01	.3068-01	3.542	23.94	597.1
64	.00000	.24900-01	9.0000	.5591	1.047	.6809	.9616	.4054-01	.2637-01	3.441	23.44	581.7
64	.00000	.26900-01	10.000	.4968	.8971	.6019	.9609	.3474-01	.2331-01	3.193	21.84	574.7
63	.00000	.32800-01	12.000	.4083	.7135	.4958	.9587	.2761-01	.1918-01	2.728	18.74	566.0
63	.00000	.36700-01	13.000	.3908	.6743	.4761	.9574	.2609-01	.1842-01	2.656	18.28	563.0
63	.00000	.40600-01	14.000	.4224	.7473	.5223	.9560	.2891-01	.2021-01	2.776	19.05	568.8
63	.00000	.48500-01	15.000	.3837	.6654	.4782	.9533	.2575-01	.1850-01	2.590	17.81	564.2
63	.00000	.56400-01	16.000	.3824	.6672	.4841	.9508	.2582-01	.1873-01	2.560	17.59	565.7
63	.00000	.76100-01	17.000	.2794	.4702	.3599	.9449	.1819-01	.1393-01	1.968	13.59	556.6
63	.00000	.11550	19.000	.1768	.2954	.2392	.9350	.1143-01	.9255-02	1.259	8.707	554.6
63	.00000	.16480	20.000	.1004	.1642	.1405	.9266	.6352-02	.5435-02	.7387	5.125	548.5
63	.00000	.21400	22.000	.5846-01	.8944-01	.7995-01	.9224	.3461-02	.3093-02	.4828	3.392	525.3
65	2.0000	.24700-01	165.00	.4421	.7740	.5306	.9611	.2997-01	.2054-01	2.949	20.26	566.4
64	9.0000	.15000-01	157.00	.6286	1.375	.8044	.9597	.5325-01	.3115-01	3.321	22.35	604.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
64	9.0000	.17600-01	158.00	.5671	1.138	.7106	.9597	.4407-01	.2752-01	3.243	21.96	593.0
65	9.8000	.24700-01	164.00	.4606	.8236	.5619	.9591	.3189-01	.2175-01	2.988	20.48	571.1
64	10.000	.22900-01	88.000	.5126	.9663	.6330	.9595	.3742-01	.2452-01	3.131	21.32	582.9
64	10.000	.26900-01	90.000	.4283	.7377	.5191	.9583	.2857-01	.2010-01	2.929	20.15	564.1
64	10.000	.34700-01	94.000	.4537	.7881	.5593	.9555	.3052-01	.2166-01	3.067	21.07	566.1
64	12.000	.17600-01	152.00	.9644	5.378	1.097	.9852	.2083	.4250-01	3.371	22.14	650.4
64	12.000	.12100-01	151.00	.4836	3.394	.5537	.9852	.1314	.2144-01	1.618	10.61	654.3
64	13.000	.19400-01	153.00	.9418	3.888	1.063	.9850	.1506	.4115-01	3.565	23.51	642.9
65	14.600	.44200-01	169.00	.4796	.8242	.6028	.9511	.3191-01	.2334-01	3.281	22.60	562.0
64	18.500	.44200-01	106.00	.5210	.9557	.6733	.9503	.3701-01	.2607-01	3.285	22.43	577.8
65	19.600	.62900-01	175.00	.3886	.6508	.5011	.9443	.2520-01	.1940-01	2.759	19.07	555.3
64	19.800	.40800-01	101.00	.5940	1.144	.7768	.9511	.4432-01	.3008-01	3.543	24.07	586.7
64	20.000	.24900-01	89.000	.3930	.7015	.4858	.9566	.2717-01	.1881-01	2.563	17.55	572.2
64	20.000	.28800-01	91.000	.3731	.6397	.4588	.9552	.2477-01	.1777-01	2.567	17.67	563.0
64	20.000	.32800-01	93.000	.4516	.7994	.5654	.9538	.3096-01	.2190-01	2.978	20.41	570.4
65	21.800	.82200-01	182.00	.3307	.5484	.4372	.9386	.2123-01	.1693-01	2.383	16.49	552.6
64	22.200	.62900-01	125.00	.4494	.8054	.5981	.9437	.3119-01	.2316-01	2.916	19.96	573.1
64	22.400	.44200-01	107.00	.5294	1.007	.6965	.9494	.3898-01	.2697-01	3.203	21.79	584.4
65	22.600	.10270	192.00	.2355	.3795	.3145	.9338	.1469-01	.1218-01	1.774	12.34	544.1
64	23.000	.42000-01	105.00	.6654	1.408	.9038	.9500	.5452-01	.3500-01	3.620	24.42	600.2
64	23.400	.59600-01	120.00	.5260	.9868	.7101	.9445	.3822-01	.2750-01	3.231	22.01	582.1
65	23.900	.21310	250.00	.4541-01	.6852-01	.6162-01	.9220	.2653-02	.2386-02	.3852	2.716	519.6
64	24.100	.82200-01	139.00	.3683	.6446	.5009	.9382	.2496-01	.1940-01	2.465	16.92	567.9
65	24.400	.19040	238.00	.5841-01	.8946-01	.7991-01	.9225	.3464-02	.3094-02	.4813	3.381	525.8
65	24.400	.12440	207.00	.1808	.2944	.2485	.9294	.1140-01	.9620-02	1.341	9.308	547.2
65	24.800	.16810	223.00	.9474-01	.1505	.1319	.9239	.5827-02	.5109-02	.7313	5.099	539.3
64	24.900	.62900-01	126.00	.4482	.8399	.6096	.9432	.3253-01	.2361-01	2.756	18.78	581.9
65	25.000	.79500-01	178.00	.3876	.6554	.5170	.9387	.2538-01	.2002-01	2.713	18.72	557.9
65	25.300	.10270	191.00	.3014	.4970	.4086	.9334	.1924-01	.1582-01	2.191	15.18	551.0
65	25.300	.10000+00	186.00	.3158	.5328	.4320	.9339	.2063-01	.1673-01	2.217	15.30	557.4
64	25.500	.60700-01	124.00	.5819	1.187	.8159	.9437	.4597-01	.3160-01	3.274	22.14	595.4
65	26.000	.12440	206.00	.2262	.3749	.3145	.9292	.1452-01	.1218-01	1.631	11.29	552.4
64	26.300	.82200-01	140.00	.3162	.5587	.4331	.9378	.2164-01	.1677-01	2.090	14.33	570.0
65	26.700	.12100	199.00	.3270	.5798	.4715	.9297	.2245-01	.1826-01	2.144	14.71	569.3
65	26.800	.16810	222.00	.1332	.2145	.1874	.9238	.8306-02	.7254-02	1.005	6.992	543.8
65	27.000	.19040	237.00	.9462-01	.1468	.1307	.9224	.5685-02	.5059-02	.7612	5.332	530.9
65	27.100	.21310	249.00	.7203-01	.1099	.9849-01	.9220	.4254-02	.3813-02	.5980	4.204	524.3
65	27.200	.80300-01	180.00	.4605	.8173	.6309	.9381	.3165-01	.2443-01	3.017	20.69	569.5
64	27.400	.40100-01	98.000	.6575	1.471	.9111	.9497	.5698-01	.3528-01	3.409	22.92	606.8
65	27.400	.16480	215.00	.1505	.2475	.2143	.9240	.9583-02	.8298-02	1.098	7.607	550.3
64	27.600	.41600-01	102.00	.7070	1.727	1.011	.9491	.6688-01	.3914-01	3.434	22.98	615.3
65	27.600	.12440	205.00	.2591	.4423	.3670	.9290	.1713-01	.1421-01	1.789	12.33	560.4
65	27.600	.18700	230.00	.9443-01	.1474	.1309	.9225	.5709-02	.5068-02	.7510	5.254	533.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
65	27.700	.21010	243.00	.7802-01	.1206	.1076	.9220	.4668-02	.4168-02	.6324	4.434	529.3
65	27.900	.10110	188.00	.3561	.6284	.5009	.9333	.2433-01	.1939-01	2.350	16.13	568.2
64	28.000	.46800-01	110.00	.3147	.5201	.3972	.9474	.2014-01	.1538-01	2.286	15.82	553.1
65	28.200	.16810	221.00	.1637	.2693	.2336	.9237	.1043-01	.9045-02	1.195	8.280	550.2
65	28.300	.19040	236.00	.1021	.1591	.1415	.9224	.6161-02	.5477-02	.8142	5.698	532.7
65	28.300	.12200	201.00	.2528	.4209	.3522	.9293	.1630-01	.1364-01	1.811	12.53	553.7
64	28.400	.53500-01	114.00	.3646	.6169	.4697	.9453	.2389-01	.1819-01	2.556	17.63	559.6
65	28.400	.21310	248.00	.8099-01	.1243	.1112	.9220	.4811-02	.4305-02	.6653	4.672	526.5
64	28.700	.58600-01	117.00	.6169	1.230	.8575	.9437	.4764-01	.3321-01	3.550	24.05	592.1
65	28.800	.16580	217.00	.1806	.3029	.2608	.9238	.1173-01	.1010-01	1.280	8.846	555.6
64	28.800	.60400-01	121.00	.6143	1.330	.8848	.9432	.5149-01	.3427-01	3.275	22.06	603.0
65	29.000	.21110	244.00	.8389-01	.1302	.1161	.9220	.5042-02	.4496-02	.6743	4.723	531.1
64	29.000	.65700-01	129.00	.2877	.4692	.3716	.9417	.1817-01	.1439-01	2.134	14.80	549.2
64	29.200	.72400-01	133.00	.3397	.5804	.4527	.9398	.2248-01	.1753-01	2.350	16.18	562.1
64	29.300	.79500-01	136.00	.4823	.9662	.6996	.9380	.3742-01	.2709-01	2.762	18.71	592.8
64	29.600	.92500-01	143.00	.2308	.3868	.3130	.9349	.1498-01	.1212-01	1.642	11.34	557.0
64	29.700	.10000+00	146.00	.4135	.8151	.6160	.9333	.3157-01	.2386-01	2.407	16.32	590.3
65	29.900	.12100	198.00	.3403	.6213	.5002	.9293	.2405-01	.1937-01	2.153	14.72	575.3
65	30.200	.16480	214.00	.1877	.3196	.2738	.9238	.1237-01	.1060-01	1.300	8.963	559.7
65	30.200	.18700	229.00	.9442-01	.1513	.1333	.9224	.5859-02	.5161-02	.7181	4.999	542.2
65	30.300	.21010	242.00	.8226-01	.1297	.1151	.9220	.5021-02	.4456-02	.6434	4.493	536.6
64	31.500	.91000-02	82.000	.4185	.7519	.5243	.9545	.2912-01	.2030-01	2.708	18.53	573.6
64	31.500	.11100-01	83.000	.5663	1.123	.7312	.9545	.4348-01	.2832-01	3.278	22.22	591.2
64	31.500	.14200-01	84.000	.7407	2.947	.8646	.9809	.1141	.3348-01	2.838	18.73	641.7
64	31.500	.16000-01	85.000	.8445	3.053	.9803	.9809	.1182	.3797-01	3.349	22.14	638.3
64	31.500	.17600-01	86.000	.8564	3.148	.9951	.9809	.1219	.3854-01	3.375	22.30	638.9
64	31.500	.19400-01	87.000	.7924	2.026	.8969	.9809	.7847-01	.3474-01	3.732	24.93	619.0
65	32.100	.21010	241.00	.5514-01	.8570-01	.7639-01	.9220	.3318-02	.2957-02	.4421	3.096	531.6
65	32.200	.16480	213.00	.1451	.2434	.2098	.9237	.9425-02	.8122-02	1.028	7.103	555.7
65	32.200	.17860	224.00	.1147	.1790	.1587	.9228	.6931-02	.6146-02	.9127	6.386	533.1
65	32.200	.18700	228.00	.9037-01	.1395	.1244	.9224	.5403-02	.4817-02	.7335	5.144	529.0
65	32.300	.12100	197.00	.2942	.5111	.4210	.9290	.1979-01	.1630-01	1.982	13.63	564.6
65	32.300	.12300	194.00	.2424	.4281	.3509	.9287	.1657-01	.1359-01	1.598	10.96	568.4
65	32.300	.12730	208.00	.1186	.1881	.1615	.9280	.7282-02	.6254-02	.9175	6.399	538.8
65	32.300	.13420	209.00	.1330	.2197	.1868	.9270	.8507-02	.7232-02	.9636	6.674	551.5
64	32.400	.10000+00	147.00	.2711	.4858	.3854	.9329	.1882-01	.1493-01	1.760	12.04	573.1
65	32.400	.10110	184.00	.3088	.5480	.4374	.9327	.2122-01	.1693-01	2.023	13.87	569.5
65	32.400	.10630	193.00	.1682	.2591	.2213	.9316	.1003-01	.8567-02	1.371	9.622	528.1
65	32.500	.85800-01	183.00	.1820	.2817	.2353	.9360	.1091-01	.9111-02	1.471	10.31	530.0
64	32.600	.79500-01	137.00	.4076	.7828	.5821	.9374	.3032-01	.2254-01	2.439	16.58	586.2
65	32.600	.80800-01	176.00	.3886	.6888	.5353	.9371	.2667-01	.2073-01	2.551	17.50	569.2
64	32.700	.67400-01	132.00	.2384	.3870	.3090	.9405	.1499-01	.1197-01	1.781	12.36	547.8
64	32.700	.72400-01	134.00	.3060	.5170	.4069	.9392	.2002-01	.1576-01	2.150	14.82	559.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
64	32.800	.65700-01	130.00	.2169	.3421	.2767	.9410	.1325-01	.1072-01	1.701	11.87	538.2
65	32.800	.16680	210.00	.1241	.2035	.1769	.9235	.7879-02	.6850-02	.9105	6.314	549.2
65	32.800	.18880	225.00	.6722-01	.1025	.9174-01	.9223	.3967-02	.3552-02	.5588	3.930	523.9
64	32.900	.58600-01	118.00	.5508	1.078	.7493	.9429	.3982-01	.2902-01	3.403	23.19	581.1
64	32.900	.60+00-01	122.00	.3777	.6732	.5054	.9424	.2607-01	.1957-01	2.468	16.90	571.9
65	32.900	.61300-01	171.00	.4703	.9055	.6514	.9422	.3506-01	.2522-01	2.799	19.03	585.0
64	33.000	.53500-01	115.00	.3722	.6315	.4823	.9444	.2445-01	.1868-01	2.600	17.92	560.3
64	33.200	.48300-01	113.00	.2643	.4237	.3318	.9459	.1641-01	.1285-01	2.015	14.02	543.8
65	33.400	.42800-01	166.00	.5829	1.179	.7931	.9476	.4567-01	.3071-01	3.296	22.32	592.6
64	33.500	.40100-01	99.000	.5676	1.117	.7602	.9485	.4325-01	.2944-01	3.311	22.45	590.0
64	33.600	.38300-01	97.000	.5011	.9172	.6518	.9490	.3552-01	.2524-01	3.168	21.63	577.4
64	33.700	.36700-01	96.000	.4333	.7659	.5549	.9495	.2966-01	.2149-01	2.862	19.62	570.1
64	33.900	.33800-01	95.000	.3285	.5569	.4123	.9505	.2157-01	.1597-01	2.298	15.84	560.0
65	34.700	.21010	240.00	.6759-01	.1032	.9249-01	.9220	.3996-02	.3581-02	.5600	3.937	524.7
65	34.700	.18700	227.00	.7600-01	.1194	.1059	.9223	.4625-02	.4102-02	.5976	4.175	535.6
65	34.900	.16480	212.00	.1441	.2377	.2062	.9235	.9201-02	.7982-02	1.047	7.256	551.0
64	35.100	.10000+00	148.00	.2380	.4144	.3339	.9325	.1605-01	.1293-01	1.604	11.02	566.6
65	35.200	.23900-01	161.00	.3274	.5254	.3967	.9536	.2034-01	.1536-01	2.484	17.29	542.7
64	35.300	.92500-01	145.00	.3035	.5150	.4162	.9341	.1995-01	.1612-01	2.119	14.60	560.4
64	35.300	.22100-01	160.00	.3632	.5922	.4423	.9537	.2293-01	.1713-01	2.694	18.68	549.1
65	35.400	.18800	231.00	.9546-01	.1475	.1316	.9223	.5712-02	.5094-02	.7736	5.424	529.4
65	35.500	.12100	196.00	.2634	.4433	.3707	.9287	.1717-01	.1435-01	1.856	12.82	556.7
65	35.600	.16580	216.00	.1364	.2224	.1937	.9234	.8609-02	.7501-02	1.009	7.000	547.7
64	35.800	.80600-01	138.00	.2923	.5044	.3984	.9367	.1954-01	.1543-01	1.994	13.71	564.5
65	35.900	.21310	247.00	.6540-01	.9816-01	.8841-01	.9220	.3800-02	.3423-02	.5604	3.956	517.3
65	36.000	.19040	235.00	.8550-01	.1306	.1169	.9222	.5056-02	.4527-02	.7081	4.978	524.8
65	36.200	.16910	220.00	.1305	.2091	.1834	.9232	.8096-02	.7103-02	.9929	6.912	542.2
64	36.200	.72400-01	135.00	.3718	.6252	.4948	.9386	.2421-01	.1916-01	2.631	18.16	557.9
65	36.300	.12200	200.00	.2332	.3884	.3267	.9284	.1504-01	.1265-01	1.669	11.55	553.8
64	36.600	.65700-01	131.00	.2349	.3766	.3029	.9403	.1458-01	.1173-01	1.791	12.46	543.8
65	36.700	.18700	226.00	.1034	.1591	.1421	.9223	.6161-02	.5500-02	.8437	5.921	527.8
65	36.900	.16480	211.00	.1511	.2473	.2152	.9234	.9576-02	.8333-02	1.111	7.706	548.8
65	36.900	.10110	187.00	.3001	.5060	.4148	.9320	.1959-01	.1606-01	2.110	14.57	557.1
64	37.000	.60400-01	123.00	.4056	.7258	.5460	.9417	.2811-01	.2114-01	2.637	18.05	572.8
65	37.000	.12440	204.00	.2026	.3286	.2799	.9280	.1272-01	.1084-01	1.511	10.50	546.0
64	37.100	.58600-01	119.00	.4650	.8164	.6190	.9422	.3162-01	.2397-01	3.100	21.27	568.6
65	37.200	.21310	246.00	.6301-01	.9460-01	.8520-01	.9220	.3663-02	.3299-02	.5397	3.809	517.5
65	37.600	.16810	219.00	.1287	.2061	.1809	.9232	.7978-02	.7003-02	.9802	6.825	541.9
64	37.800	.10270	150.00	.2613	.4419	.3627	.9316	.1711-01	.1404-01	1.835	12.65	559.4
65	37.900	.12100	195.00	.2823	.4638	.3922	.9284	.1796-01	.1519-01	2.063	14.30	549.9
65	38.000	.80300-01	179.00	.4492	.7630	.6083	.9364	.2954-01	.2355-01	3.125	21.55	559.0
64	38.500	.46800-01	112.00	.2689	.4277	.3372	.9454	.1656-01	.1306-01	2.077	14.47	541.2
65	38.600	.12440	203.00	.2255	.3676	.3128	.9278	.1423-01	.1211-01	1.668	11.58	547.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
65	38.700	.10000+00	185.00	.3287	.5496	.4522	.9320	.2128-01	.1751-01	2.340	16.18	554.8
64	38.900	.82200-01	141.00	.3064	.5161	.4144	.9359	.1999-01	.1605-01	2.164	14.93	558.3
64	39.300	.41600-01	104.00	.4313	.7825	.5662	.9469	.3030-01	.2193-01	2.757	18.84	575.6
65	39.500	.10270	190.00	.3428	.5717	.4726	.9314	.2214-01	.1830-01	2.449	16.93	554.2
65	39.600	.16810	218.00	.1145	.1833	.1610	.9231	.7095-02	.6232-02	.8727	6.077	541.8
65	39.900	.19040	233.00	.7591-01	.1156	.1036	.9221	.4474-02	.4011-02	.6327	4.450	523.4
65	40.100	.79500-01	177.00	.4909	.8365	.6662	.9363	.3239-01	.2579-01	3.398	23.43	559.9
65	40.200	.12440	202.00	.2214	.3624	.3081	.9277	.1403-01	.1193-01	1.627	11.29	548.8
65	40.300	.21310	245.00	.5307-01	.7934-01	.7155-01	.9220	.3072-02	.2770-02	.4585	3.239	515.5
64	41.100	.82200-01	142.00	.3001	.5185	.4119	.9355	.2008-01	.1595-01	2.044	14.05	564.8
65	41.100	.60700-01	173.00	.4295	.7184	.5632	.9410	.2782-01	.2181-01	3.055	21.12	555.0
65	42.300	.10270	189.00	.2575	.4229	.3525	.9311	.1638-01	.1365-01	1.882	13.05	549.9
65	42.600	.59600-01	172.00	.5204	.8944	.6907	.9411	.3463-01	.2674-01	3.560	24.51	562.0
65	43.200	.42000-01	168.00	.4181	.7005	.5341	.9461	.2712-01	.2068-01	2.967	20.50	555.4
65	43.400	.82200-01	181.00	.2616	.4216	.3469	.9352	.1633-01	.1343-01	1.971	13.70	544.1
64	43.600	.62900-01	128.00	.3816	.6591	.5106	.9400	.2552-01	.1977-01	2.601	17.88	564.7
64	45.000	.22900-01	8.0000	.5770	1.190	.7665	.9520	.4607-01	.2968-01	3.214	21.72	596.8
65	46.100	.62900-01	174.00	.4515	.7699	.6017	.9397	.2981-01	.2329-01	3.122	21.52	560.1
65	47.700	.40800-01	167.00	.4620	.7837	.5941	.9458	.3034-01	.2300-01	3.220	22.21	558.7
64	48.400	.44200-01	109.00	.4208	.7325	.5503	.9447	.2837-01	.2131-01	2.836	19.48	566.6
64	50.000	.19400-01	156.00	.4744	1.028	.5396	.9776	.3982-01	.2090-01	2.526	17.01	603.2
64	51.000	.12100-01	154.00	.5004	1.576	.5916	.9774	.6105-01	.2291-01	2.103	13.95	632.2
64	51.000	.17600-01	155.00	.6453	1.369	.7327	.9774	.5300-01	.2838-01	3.502	23.62	600.5
65	51.900	.44800-01	170.00	.3216	.5129	.4064	.9440	.1986-01	.1574-01	2.465	17.18	540.7
65	53.200	.24700-01	163.00	.3819	.6332	.4755	.9504	.2452-01	.1841-01	2.752	19.05	552.6
65	65.200	.24700-01	162.00	.4464	.7789	.5706	.9490	.3016-01	.2209-01	2.990	20.55	565.7
63	90.000	.91000-02	44.000	.3763	.6624	.4843	.9484	.2563-01	.1874-01	2.490	17.09	567.6
63	90.000	.11100-01	45.000	.4418	.7869	.5711	.9484	.3044-01	.2210-01	2.879	19.74	570.2
63	90.000	.13100-01	46.000	.5916	1.137	.7865	.9484	.4400-01	.3043-01	3.524	23.97	584.7
63	90.000	.17000-01	48.000	.4729	.8908	.6241	.9484	.3447-01	.2415-01	2.880	19.63	581.2
63	90.000	.20900-01	50.000	.4773	.8851	.6264	.9484	.3425-01	.2423-01	2.961	20.21	578.3
63	90.000	.24900-01	52.000	.4547	.8433	.5983	.9479	.3263-01	.2315-01	2.819	19.24	578.4
63	90.000	.26900-01	53.000	.4396	.7997	.5766	.9472	.3094-01	.2231-01	2.790	19.08	574.6
63	90.000	.28800-01	54.000	.4301	.7762	.5645	.9466	.3003-01	.2184-01	2.757	18.87	573.0
63	90.000	.32800-01	55.000	.3773	.6576	.4920	.9453	.2544-01	.1904-01	2.530	17.39	565.4
63	90.000	.36700-01	56.000	.3476	.6017	.4550	.9441	.2328-01	.1761-01	2.352	16.18	563.8
63	90.000	.40600-01	57.000	.3647	.6417	.4841	.9429	.2483-01	.1873-01	2.414	16.57	567.6
63	90.000	.48500-01	58.000	.2873	.4970	.3835	.9406	.1923-01	.1484-01	1.946	13.39	563.6
63	90.000	.56400-01	59.000	.2910	.4985	.3914	.9384	.1929-01	.1514-01	1.998	13.77	561.2
63	90.000	.76100-01	60.000	.2174	.3623	.2960	.9336	.1402-01	.1145-01	1.554	10.75	554.0
63	90.000	.95800-01	61.000	.1554	.2585	.2160	.9297	.1000-01	.8357-02	1.114	7.708	553.4
63	90.000	.11550	62.000	.1097	.1816	.1546	.9266	.7025-02	.5983-02	.7928	5.489	552.0
63	135.00	.19000-01	49.000	.5680	1.089	.7370	.9521	.4214-01	.2852-01	3.393	23.08	584.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
63	135.00	.22900-01	51.000	.5444	1.044	.7064	.9521	.4040-01	.2733-01	3.250	22.11	584.3
63	180.00	.91000-02	23.000	.3518	.6525	.4263	.9621	.2525-01	.1650-01	2.182	14.89	578.4
63	180.00	.11100-01	24.000	.5550	1.295	.7086	.9621	.5011-01	.2742-01	2.776	18.63	609.4
63	180.00	.13100-01	25.000	.5640	1.193	.7050	.9621	.4617-01	.2728-01	3.057	20.64	598.6
63	180.00	.15000-01	26.000	.5377	1.118	.6695	.9621	.4325-01	.2591-01	2.961	20.02	596.3
63	180.00	.17000-01	27.000	.5575	1.148	.6927	.9621	.4442-01	.2680-01	3.098	20.96	595.0
63	180.00	.19000-01	28.000	.5991	1.224	.7430	.9621	.4734-01	.2875-01	3.355	22.71	593.9
63	180.00	.20900-01	29.000	.6146	1.212	.7559	.9621	.4688-01	.2925-01	3.565	24.19	588.8
63	180.00	.28800-01	32.000	.5410	1.001	.6623	.9601	.3871-01	.2562-01	3.367	22.99	577.8
63	180.00	.32800-01	33.000	.4889	.8669	.5963	.9587	.3354-01	.2307-01	3.204	21.98	569.3
63	180.00	.36700-01	34.000	.4798	.8730	.5940	.9573	.3378-01	.2298-01	3.045	20.82	574.7
63	180.00	.56400-01	37.000	.3680	.6418	.4660	.9507	.2483-01	.1803-01	2.466	16.95	565.5
63	180.00	.76100-01	38.000	.2891	.4901	.3737	.9448	.1896-01	.1446-01	2.015	13.90	558.6
63	180.00	.95800-01	39.000	.2372	.3951	.3127	.9396	.1529-01	.1210-01	1.695	11.73	553.9
63	180.00	.11550	40.000	.1790	.2988	.2420	.9350	.1156-01	.9365-02	1.276	8.821	554.4
63	180.00	.18450	42.000	.8366-01	.1323	.1159	.9244	.5118-02	.4483-02	.6506	4.540	537.7
63	225.00	.22900-01	30.000	.6379	1.277	.7356	.9735	.4942-01	.2846-01	3.642	24.69	591.1
63	270.00	.91000-02	63.000	.5123	1.654	.6010	.9786	.6398-01	.2325-01	2.121	14.07	631.6
63	270.00	.11100-01	64.000	.6773	2.086	.7917	.9786	.8073-01	.3063-01	2.866	19.04	629.3
63	270.00	.13100-01	65.000	.7104	2.021	.8248	.9786	.7820-01	.3191-01	3.131	20.84	624.8
63	270.00	.17000-01	67.000	.8731	2.120	.9987	.9786	.8202-01	.3864-01	4.243	28.42	613.1
63	270.00	.20900-01	69.000	.7444	1.646	.8431	.9786	.6367-01	.3262-01	3.885	26.15	603.8
63	270.00	.24900-01	71.000	.6549	1.377	.7399	.9781	.5330-01	.2863-01	3.568	24.10	597.8
63	270.00	.28800-01	73.000	.6279	1.243	.7100	.9766	.4808-01	.2747-01	3.627	24.61	589.4
63	270.00	.36700-01	75.000	.5516	1.085	.6338	.9736	.4199-01	.2452-01	3.206	21.76	588.5
63	270.00	.46500-01	77.000	.4960	.9378	.5799	.9693	.3628-01	.2244-01	3.010	20.50	581.9
63	270.00	.56400-01	78.000	.4996	.9353	.5920	.9665	.3619-01	.2291-01	3.065	20.90	580.1
63	270.00	.95800-01	80.000	.3008	.5306	.3768	.9534	.2053-01	.1458-01	1.986	13.63	568.1
63	270.00	.11550	81.000	.2481	.4393	.3214	.9476	.1700-01	.1243-01	1.630	11.18	568.9
63	315.00	.19000-01	68.000	.6503	1.303	.7498	.9735	.5040-01	.2901-01	3.711	25.15	591.2
63	315.00	.22900-01	70.000	.6979	1.428	.8073	.9735	.5526-01	.3124-01	3.901	26.40	594.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
160	5.500	.3174-02	9.018	129.9	700.7	.1396	99.39	-89.98	2688.	.3790-02	.7998-07	3.959
182	5.500	-.6341-02	9.008	129.8	727.7	.1395	103.2	-90.04	2739.	.3648-02	.8306-07	3.740
184	5.500	.6351-02	9.022	129.9	725.7	.1396	102.9	-89.96	2735.	.3661-02	.8283-07	3.757

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
160	.3038-01	.1240-01
182	.3058-01	.1270-01
184	.3057-01	.1268-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
182	.00000	.91000-02	1.0000	.4045	.7505	.5084	.9557	.2295-01	.1555-01	1.952	13.39	569.8
182	.00000	.15000-01	4.0000	.5639	1.143	.7273	.9557	.3496-01	.2224-01	2.475	16.84	584.1
182	.00000	.17000-01	5.0000	.5750	1.149	.7385	.9557	.3512-01	.2258-01	2.562	17.45	582.0
182	.00000	.19000-01	6.0000	.5832	1.151	.7464	.9557	.3518-01	.2282-01	2.632	17.94	580.1
182	.00000	.24900-01	9.0000	.5166	.9914	.6578	.9552	.3032-01	.2011-01	2.400	16.41	575.7
182	.00000	.26900-01	10.000	.4553	.8453	.5764	.9545	.2585-01	.1762-01	2.195	15.05	570.0
160	.00000	.32800-01	12.000	.3529	.6083	.4412	.9523	.1848-01	.1340-01	1.788	12.51	533.8
160	.00000	.36700-01	13.000	.3329	.5615	.4159	.9510	.1706-01	.1263-01	1.740	12.21	528.6
160	.00000	.40600-01	14.000	.3781	.6490	.4788	.9496	.1972-01	.1454-01	1.928	13.49	532.8
160	.00000	.48500-01	15.000	.3355	.5695	.4291	.9469	.1730-01	.1303-01	1.738	12.18	530.1
160	.00000	.56400-01	16.000	.3233	.5506	.4198	.9443	.1673-01	.1275-01	1.667	11.68	530.9
160	.00000	.76100-01	17.000	.2354	.3948	.3137	.9382	.1199-01	.9529-02	1.241	8.710	527.2
160	.00000	.95800-01	18.000	.1457	.2494	.2025	.9325	.7575-02	.6152-02	.7461	5.223	532.1
160	.00000	.11550	19.000	.1340	.2271	.1908	.9274	.6899-02	.5795-02	.6951	4.872	529.8
160	.00000	.16480	20.000	.7701-01	.1284	.1153	.9171	.3900-02	.3502-02	.4095	2.877	525.6
160	.00000	.21400	22.000	.5297-01	.8064-01	.7630-01	.9109	.2450-02	.2318-02	.3286	2.347	496.5
184	2.0000	.24700-01	165.00	.4307	.7342	.5299	.9547	.2244-01	.1620-01	2.312	16.03	550.1
182	9.0000	.15000-01	157.00	.5148	1.028	.6711	.9534	.3144-01	.2052-01	2.294	15.63	581.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
182	9.0000	.17600-01	158.00	.5190	1.002	.6695	.9534	.3064-01	.2047-01	2.395	16.36	576.8
184	9.8000	.24700-01	164.00	.4222	.7264	.5264	.9527	.2221-01	.1609-01	2.236	15.48	552.4
182	10.000	.22900-01	88.000	.4691	.8902	.6028	.9531	.2722-01	.1843-01	2.206	15.09	573.9
182	10.000	.26900-01	90.000	.3807	.6753	.4817	.9519	.2065-01	.1473-01	1.941	13.38	560.9
182	10.000	.34700-01	94.000	.3365	.5678	.4244	.9491	.1736-01	.1298-01	1.837	12.74	549.1
182	12.000	.17600-01	152.00	.9969	3.169	1.178	.9775	.9689-01	.3603-01	3.236	21.58	621.5
182	12.000	.12100-01	151.00	.6079	3.044	.7411	.9775	.9307-01	.2266-01	1.690	11.18	636.7
182	13.000	.19400-01	153.00	.9594	2.720	1.125	.9773	.8318-01	.3438-01	3.298	22.07	615.3
184	14.600	.44200-01	169.00	.4612	.7613	.5896	.9447	.2327-01	.1803-01	2.595	18.07	541.6
182	18.500	.44200-01	106.00	.4680	.8760	.6337	.9439	.2679-01	.1938-01	2.236	15.32	571.4
184	19.600	.62900-01	175.00	.3710	.5983	.4863	.9376	.1829-01	.1487-01	2.166	15.14	534.7
182	19.800	.40800-01	101.00	.5689	1.082	.7712	.9447	.3309-01	.2358-01	2.669	18.26	574.2
182	20.000	.24900-01	89.000	.3519	.6394	.4534	.9502	.1955-01	.1386-01	1.742	11.97	565.8
182	20.000	.28800-01	91.000	.2768	.4765	.3523	.9488	.1457-01	.1077-01	1.469	10.16	554.1
182	20.000	.32800-01	93.000	.3403	.6071	.4426	.9474	.1856-01	.1353-01	1.723	11.87	562.1
182	22.200	.62900-01	125.00	.4177	.7602	.5831	.9370	.2324-01	.1783-01	2.063	14.17	566.2
182	22.400	.44200-01	107.00	.4870	.9390	.6713	.9430	.2871-01	.2053-01	2.251	15.38	576.5
184	22.600	.10270	192.00	.2174	.3418	.2975	.9260	.1045-01	.9096-02	1.325	9.306	526.3
182	23.000	.42000-01	105.00	.6112	1.264	.8625	.9436	.3864-01	.2637-01	2.633	17.89	586.8
182	23.400	.59600-01	120.00	.5111	.9762	.7264	.9378	.2985-01	.2221-01	2.387	16.32	574.9
184	23.900	.21310	250.00	.2509-01	.3710-01	.3541-01	.9100	.1134-02	.1082-02	.1718	1.223	501.6
182	24.100	.82200-01	139.00	.3434	.6055	.4895	.9310	.1851-01	.1497-01	1.765	12.17	559.6
184	24.400	.19040	238.00	.3652-01	.5489-01	.5200-01	.9110	.1678-02	.1590-02	.2420	1.716	508.9
184	24.400	.12440	207.00	.1441	.2280	.2034	.9208	.6970-02	.6219-02	.8691	6.096	528.4
184	24.800	.16810	223.00	.6032-01	.9296-01	.8670-01	.9133	.2842-02	.2651-02	.3810	2.687	519.0
182	24.900	.62900-01	126.00	.4497	.8505	.6419	.9365	.2600-01	.1963-01	2.123	14.53	573.3
184	25.000	.79500-01	178.00	.3714	.6016	.5031	.9316	.1839-01	.1538-01	2.154	15.04	536.0
184	25.300	.10270	191.00	.2722	.4329	.3763	.9255	.1324-01	.1150-01	1.626	11.39	530.3
184	25.300	.10000+00	186.00	.2799	.4514	.3890	.9261	.1380-01	.1189-01	1.634	11.42	534.7
182	25.500	.60700-01	124.00	.5709	1.181	.8463	.9370	.3611-01	.2588-01	2.459	16.71	586.8
184	26.000	.12440	206.00	.1932	.3092	.2753	.9205	.9453-02	.8417-02	1.143	8.000	532.2
182	26.300	.82200-01	140.00	.3921	.6991	.5640	.9306	.2138-01	.1724-01	1.987	13.68	562.0
184	26.700	.12100	199.00	.3027	.5044	.4422	.9211	.1542-01	.1352-01	1.679	11.68	544.2
184	26.800	.16810	222.00	.1106	.1716	.1600	.9131	.5246-02	.4891-02	.6901	4.859	521.6
184	27.000	.19040	237.00	.6873-01	.1039	.9842-01	.9109	.3176-02	.3009-02	.4504	3.190	511.3
184	27.100	.21310	249.00	.4876-01	.7238-01	.6904-01	.9100	.2213-02	.2111-02	.3314	2.358	503.3
182	27.400	.40100-01	98.000	.6993	1.500	1.003	.9433	.4586-01	.3067-01	2.915	19.76	591.3
184	27.400	.16480	215.00	.1356	.2129	.1977	.9135	.6509-02	.6044-02	.8290	5.824	525.7
182	27.600	.41600-01	102.00	.6729	1.526	.9901	.9427	.4666-01	.3027-01	2.678	18.09	597.5
184	27.600	.12440	205.00	.2554	.4153	.3685	.9203	.1270-01	.1127-01	1.472	10.27	537.2
184	27.600	.18700	230.00	.5859-01	.8909-01	.8421-01	.9111	.2723-02	.2574-02	.3796	2.685	513.7
184	27.700	.21010	243.00	.5570-01	.8360-01	.7961-01	.9100	.2556-02	.2434-02	.3701	2.626	508.3
182	28.000	.46800-01	110.00	.2860	.4873	.3784	.9409	.1490-01	.1157-01	1.541	10.67	551.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
184	28.200	.16810	221.00	.1641	.2581	.2402	.9130	.7890-02	.7343-02	.9997	7.020	526.4
184	28.300	.19040	236.00	.1057	.1605	.1520	.9108	.4905-02	.4645-02	.6870	4.861	513.0
184	28.300	.12200	201.00	.1905	.3061	.2720	.9206	.9357-02	.8315-02	1.119	7.826	533.5
182	28.400	.53500-01	114.00	.3047	.5247	.4102	.9387	.1604-01	.1254-01	1.617	11.18	554.1
184	28.400	.21310	248.00	.7592-01	.1134	.1081	.9100	.3466-02	.3303-02	.5098	3.621	506.0
182	28.700	.58600-01	117.00	.5611	1.119	.8180	.9370	.3421-01	.2501-01	2.504	17.06	581.7
184	28.800	.16580	217.00	.1731	.2757	.2557	.9132	.8429-02	.7816-02	1.032	7.232	530.6
182	28.800	.60400-01	121.00	.6225	1.351	.9471	.9364	.4131-01	.2896-01	2.569	17.40	592.7
184	29.000	.21110	244.00	.7583-01	.1140	.1086	.9100	.3486-02	.3319-02	.5022	3.561	509.0
182	29.000	.65700-01	129.00	.2640	.4432	.3585	.9348	.1355-01	.1096-01	1.452	10.08	547.7
182	29.200	.72400-01	133.00	.2915	.5040	.4068	.9328	.1541-01	.1244-01	1.539	10.64	555.0
182	29.300	.79500-01	136.00	.4745	.9504	.7262	.9308	.2906-01	.2220-01	2.108	14.36	582.3
182	29.600	.92500-01	143.00	.1901	.3180	.2687	.9273	.9724-02	.8217-02	1.052	7.306	546.7
182	29.700	.10000+00	146.00	.3433	.6423	.5260	.9254	.1964-01	.1608-01	1.641	11.25	571.3
184	30.200	.16480	214.00	.1754	.2821	.2611	.9132	.8624-02	.7982-02	1.028	7.192	533.9
182	31.500	.11100-01	83.000	.4391	.8205	.5785	.9482	.2509-01	.1769-01	2.102	14.41	571.1
182	31.500	.14200-01	84.000	.8746	2.530	1.058	.9735	.7735-01	.3235-01	2.974	19.89	616.4
182	31.500	.16000-01	85.000	.9220	2.444	1.104	.9735	.7474-01	.3376-01	3.294	22.10	610.8
182	31.500	.19400-01	87.000	.7082	1.478	.8215	.9735	.4520-01	.2512-01	3.025	20.54	588.0
184	32.100	.21010	241.00	.4453-01	.6778-01	.6442-01	.9100	.2072-02	.1969-02	.2879	2.036	514.1
184	32.200	.16480	213.00	.1005	.1602	.1487	.9130	.4896-02	.4544-02	.5986	4.193	530.8
184	32.200	.17860	224.00	.7524-01	.1142	.1078	.9115	.3491-02	.3295-02	.4891	3.461	513.0
184	32.200	.18700	228.00	.7564-01	.1147	.1087	.9108	.3508-02	.3322-02	.4925	3.485	512.7
184	32.300	.12100	197.00	.2129	.3517	.3107	.9203	.1075-01	.9499-02	1.197	8.336	541.8
184	32.300	.13420	209.00	.1078	.1704	.1545	.9177	.5209-02	.4724-02	.6517	4.573	528.0
182	32.400	.10000+00	147.00	.2436	.4211	.3563	.9249	.1288-01	.1090-01	1.286	8.889	555.0
184	32.400	.10110	184.00	.2376	.3989	.3417	.9247	.1219-01	.1045-01	1.303	9.053	546.2
184	32.400	.10630	193.00	.1229	.1885	.1675	.9234	.5762-02	.5121-02	.7833	5.530	517.2
182	32.600	.79500-01	137.00	.4476	.8465	.6671	.9302	.2588-01	.2040-01	2.114	14.47	573.2
184	32.600	.80900-01	176.00	.3181	.5371	.4457	.9298	.1642-01	.1362-01	1.730	12.01	547.7
182	32.700	.67400-01	132.00	.2036	.3378	.2766	.9336	.1033-01	.8458-02	1.141	7.932	544.4
182	32.700	.72400-01	134.00	.2498	.4257	.3471	.9321	.1302-01	.1061-01	1.345	9.315	551.6
182	32.800	.65700-01	130.00	.2040	.3336	.2743	.9341	.1020-01	.8387-02	1.169	8.143	540.4
184	32.800	.16680	210.00	.7475-01	.1182	.1100	.9127	.3612-02	.3363-02	.4514	3.167	528.1
184	32.800	.18880	225.00	.5395-01	.8117-01	.7702-01	.9107	.2481-02	.2354-02	.3569	2.531	509.3
182	32.900	.58600-01	118.00	.4049	.7599	.5769	.9362	.2324-01	.1764-01	1.928	13.21	571.9
182	32.900	.60400-01	122.00	.3819	.6964	.5384	.9356	.2129-01	.1646-01	1.881	12.92	566.6
182	33.000	.53500-01	115.00	.3045	.5307	.4145	.9377	.1623-01	.1267-01	1.590	10.98	556.9
182	33.200	.48300-01	113.00	.2227	.3714	.2941	.9394	.1136-01	.8994-02	1.238	8.600	545.9
184	33.400	.42800-01	166.00	.5365	1.020	.7445	.9411	.3120-01	.2276-01	2.510	17.18	572.7
182	33.500	.40100-01	99.000	.5437	1.058	.7572	.9420	.3235-01	.2315-01	2.488	16.99	578.0
182	33.600	.38300-01	97.000	.4735	.8678	.6406	.9426	.2653-01	.1959-01	2.319	15.92	567.5
182	33.700	.36700-01	96.000	.3613	.6414	.4808	.9431	.1961-01	.1470-01	1.841	12.69	561.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
182	33.900	.33800-01	95.000	.2603	.4467	.3395	.9441	.1366-01	.1038-01	1.388	9.601	553.3
184	34.700	.21010	240.00	.4804-01	.7162-01	.6827-01	.9100	.2189-02	.2087-02	.3238	2.301	505.2
184	34.900	.16480	212.00	.1028	.1620	.1509	.9128	.4951-02	.4612-02	.6252	4.390	526.8
182	35.100	.10000+00	148.00	.2221	.3758	.3213	.9245	.1149-01	.9825-02	1.208	8.372	549.8
184	35.200	.23900-01	161.00	.2689	.4244	.3333	.9473	.1297-01	.1019-01	1.628	11.43	527.6
182	35.300	.92500-01	145.00	.2360	.3977	.3369	.9263	.1216-01	.1030-01	1.292	8.959	548.7
182	35.300	.22100-01	160.00	.2552	.4289	.3243	.9474	.1312-01	.9917-02	1.402	9.732	548.0
184	35.400	.18800	231.00	.8447-01	.1277	.1211	.9106	.3904-02	.3703-02	.5534	3.919	511.3
184	35.500	.12100	196.00	.1997	.3239	.2884	.9198	.9902-02	.8817-02	1.156	8.070	536.4
184	35.600	.16580	216.00	.1025	.1601	.1495	.9126	.4894-02	.4569-02	.6316	4.441	524.0
182	35.800	.80600-01	138.00	.2805	.4857	.3999	.9293	.1485-01	.1223-01	1.477	10.21	555.5
184	35.900	.21310	247.00	.5462-01	.8037-01	.7675-01	.9100	.2457-02	.2346-02	.3782	2.697	499.2
184	36.000	.19040	235.00	.7521-01	.1127	.1071	.9104	.3445-02	.3275-02	.5016	3.560	507.5
184	36.200	.16810	220.00	.1040	.1606	.1505	.9123	.4909-02	.4601-02	.6542	4.611	519.8
182	36.200	.72400-01	135.00	.2942	.5003	.4099	.9315	.1530-01	.1253-01	1.589	11.01	551.0
184	36.300	.12200	200.00	.1655	.2672	.2386	.9195	.8168-02	.7295-02	.9651	6.746	534.9
182	36.600	.65700-01	131.00	.2346	.3887	.3189	.9334	.1189-01	.9749-02	1.316	9.152	544.2
184	36.700	.18700	226.00	.9525-01	.1434	.1361	.9106	.4383-02	.4160-02	.6295	4.463	509.5
184	36.900	.16480	211.00	.1225	.1915	.1788	.9126	.5853-02	.5465-02	.7549	5.308	524.1
184	36.900	.10110	187.00	.2222	.3590	.3129	.9239	.1098-01	.9565-02	1.293	9.039	535.3
182	37.000	.60400-01	123.00	.3979	.7157	.5598	.9349	.2188-01	.1712-01	1.993	13.71	563.8
184	37.000	.12440	204.00	.1464	.2325	.2092	.9189	.7108-02	.6395-02	.8763	6.143	529.8
182	37.100	.58600-01	119.00	.4318	.7713	.6034	.9354	.2358-01	.1845-01	2.183	15.03	562.3
184	37.200	.21310	246.00	.5319-01	.7828-01	.7475-01	.9100	.2393-02	.2285-02	.3681	2.625	499.3
184	37.600	.16810	219.00	.9650-01	.1490	.1398	.9122	.4556-02	.4272-02	.6074	4.281	519.8
182	37.800	.10270	150.00	.1876	.3132	.2707	.9235	.9577-02	.8278-02	1.041	7.234	546.2
184	37.900	.12100	195.00	.2268	.3603	.3232	.9195	.1101-01	.9881-02	1.357	9.514	529.9
184	38.000	.80300-01	179.00	.3920	.6315	.5365	.9290	.1931-01	.1640-01	2.293	16.04	534.3
182	38.500	.46800-01	112.00	.2137	.3525	.2815	.9389	.1078-01	.8606-02	1.207	8.403	542.9
184	38.600	.12440	203.00	.1787	.2840	.2558	.9187	.8682-02	.7820-02	1.070	7.497	529.9
184	38.700	.10000+00	185.00	.2914	.4681	.4088	.9239	.1431-01	.1250-01	1.713	11.98	533.4
182	38.900	.82200-01	141.00	.2560	.4315	.3612	.9284	.1319-01	.1104-01	1.401	9.716	548.7
182	39.300	.41600-01	104.00	.4084	.7443	.5566	.9404	.2276-01	.1708-01	2.013	13.83	566.4
184	39.500	.10270	190.00	.3143	.5039	.4421	.9232	.1541-01	.1351-01	1.852	12.96	532.9
184	39.900	.19040	233.00	.5325-01	.7955-01	.7570-01	.9103	.2432-02	.2314-02	.3573	2.538	506.2
184	40.100	.79500-01	177.00	.4878	.7840	.6671	.9289	.2397-01	.2039-01	2.864	20.03	533.6
184	40.200	.12440	202.00	.1758	.2798	.2522	.9185	.8554-02	.7709-02	1.049	7.350	530.5
184	40.300	.21310	245.00	.4377-01	.6426-01	.6139-01	.9100	.1965-02	.1877-02	.3044	2.172	498.1
182	41.100	.82200-01	142.00	.2737	.4707	.3917	.9280	.1439-01	.1198-01	1.456	10.07	553.8
184	41.100	.60700-01	173.00	.3754	.6071	.5017	.9340	.1856-01	.1534-01	2.182	15.25	535.5
184	42.600	.59600-01	172.00	.4836	.7849	.6472	.9341	.2399-01	.1979-01	2.795	19.52	536.6
184	43.200	.42000-01	168.00	.3562	.5777	.4636	.9396	.1766-01	.1417-01	2.061	14.40	536.4
184	43.400	.82200-01	181.00	.2442	.3835	.3313	.9277	.1172-01	.1013-01	1.491	10.47	526.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
182	43.600	.62900-01	128.00	.3360	.5872	.4709	.9330	.1796-01	.1440-01	1.747	12.06	557.6
182	45.000	.22900-01	8.0000	.5526	1.100	.7575	.9456	.3364-01	.2316-01	2.470	16.83	581.5
184	46.100	.62900-01	174.00	.4216	.6896	.5712	.9326	.2108-01	.1746-01	2.407	16.79	538.9
184	47.700	.40800-01	167.00	.3890	.6351	.5088	.9392	.1942-01	.1555-01	2.227	15.54	538.4
182	48.400	.44200-01	109.00	.3938	.6977	.5393	.9381	.2133-01	.1649-01	2.012	13.87	560.6
182	50.000	.19400-01	156.00	.5191	1.109	.6158	.9705	.3392-01	.1883-01	2.171	14.72	590.9
182	51.000	.12100-01	154.00	.5482	1.696	.6859	.9703	.5187-01	.2097-01	1.802	12.03	620.2
182	51.000	.17600-01	155.00	.5663	1.173	.6690	.9703	.3586-01	.2045-01	2.437	16.56	586.9
184	51.900	.44800-01	170.00	.3049	.4765	.3938	.9373	.1457-01	.1204-01	1.877	13.20	524.2
184	53.200	.24700-01	163.00	.2692	.4292	.3403	.9440	.1312-01	.1040-01	1.603	11.23	531.0
184	65.200	.24700-01	162.00	.3514	.5735	.4520	.9426	.1753-01	.1382-01	2.013	14.05	538.3
160	90.000	.91000-02	44.000	.3097	.5382	.4114	.9418	.1635-01	.1250-01	1.553	10.85	535.6
160	90.000	.11100-01	45.000	.2720	.4703	.3605	.9418	.1429-01	.1095-01	1.373	9.596	534.5
160	90.000	.13100-01	46.000	.3282	.5730	.4369	.9418	.1741-01	.1327-01	1.635	11.42	536.7
160	90.000	.17000-01	48.000	.5054	.9074	.6811	.9418	.2757-01	.2069-01	2.428	16.90	542.5
160	90.000	.20900-01	50.000	.4660	.8251	.6242	.9418	.2506-01	.1896-01	2.279	15.89	539.7
160	90.000	.24900-01	52.000	.3060	.5274	.4060	.9413	.1602-01	.1233-01	1.552	10.85	533.7
160	90.000	.26900-01	53.000	.3872	.6729	.5178	.9406	.2044-01	.1573-01	1.941	13.56	535.6
160	90.000	.28800-01	54.000	.3934	.6815	.5272	.9399	.2070-01	.1602-01	1.981	13.84	534.9
160	90.000	.32800-01	55.000	.3535	.5967	.4715	.9386	.1813-01	.1432-01	1.846	12.95	528.8
160	90.000	.36700-01	56.000	.3369	.5667	.4519	.9373	.1722-01	.1373-01	1.769	12.41	527.8
160	90.000	.40600-01	57.000	.3137	.5325	.4256	.9360	.1617-01	.1293-01	1.625	11.39	530.1
160	90.000	.48500-01	58.000	.2761	.4620	.3769	.9335	.1404-01	.1145-01	1.460	10.25	526.6
160	90.000	.56400-01	59.000	.2348	.3911	.3239	.9311	.1188-01	.9840-02	1.250	8.785	525.4
160	90.000	.76100-01	60.000	.1703	.2822	.2414	.9257	.8573-02	.7334-02	.9145	6.431	523.9
160	90.000	.95800-01	61.000	.1060	.1760	.1546	.9210	.5347-02	.4695-02	.5675	3.990	524.5
160	90.000	.11550	62.000	.7661-01	.1287	.1153	.9171	.3909-02	.3503-02	.4031	2.829	527.5
160	135.00	.19000-01	49.000	.4999	.9078	.6615	.9456	.2758-01	.2010-01	2.368	16.46	544.7
160	135.00	.22900-01	51.000	.4906	.8945	.6503	.9456	.2717-01	.1975-01	2.313	16.07	545.5
160	180.00	.91000-02	23.000	.2803	.5068	.3496	.9557	.1539-01	.1062-01	1.335	9.286	543.9
160	180.00	.11100-01	24.000	.5749	1.281	.7608	.9557	.3890-01	.2311-01	2.220	15.19	573.5
160	180.00	.13100-01	25.000	.6157	1.285	.8003	.9557	.3898-01	.2431-01	2.520	17.31	566.0
160	180.00	.15000-01	26.000	.5925	1.210	.7658	.9557	.3675-01	.2326-01	2.472	17.01	563.3
160	180.00	.17000-01	27.000	.6075	1.206	.7789	.9557	.3665-01	.2366-01	2.604	17.96	559.5
160	180.00	.19000-01	28.000	.6217	1.211	.7927	.9557	.3678-01	.2408-01	2.719	18.78	556.7
160	180.00	.20900-01	29.000	.5810	1.095	.7337	.9557	.3326-01	.2229-01	2.636	18.26	551.3
160	180.00	.28800-01	32.000	.4835	.8704	.6085	.9538	.2644-01	.1849-01	2.315	16.11	543.0
160	180.00	.32800-01	33.000	.4380	.7644	.5499	.9523	.2322-01	.1670-01	2.184	15.25	536.6
160	180.00	.36700-01	34.000	.4283	.7577	.5443	.9510	.2302-01	.1654-01	2.098	14.62	539.5
160	180.00	.48500-01	36.000	.3429	.5942	.4421	.9469	.1805-01	.1343-01	1.726	12.06	535.0
160	180.00	.56400-01	37.000	.3206	.5509	.4179	.9443	.1674-01	.1269-01	1.632	11.42	533.1
160	180.00	.76100-01	38.000	.2476	.4183	.3312	.9382	.1271-01	.1006-01	1.292	9.061	528.9
160	180.00	.95800-01	39.000	.1881	.3159	.2587	.9325	.9596-02	.7860-02	.9901	6.949	527.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K011)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
160	180.00	.11550	40.000	.1361	.2310	.1939	.9274	.7017-02	.5891-02	.7054	4.944	530.1
160	180.00	.18450	42.000	.6653-01	.1048	.9695-01	.9140	.3183-02	.2945-02	.3880	2.752	508.7
160	225.00	.22900-01	30.000	.5688	1.090	.6766	.9667	.3311-01	.2055-01	2.532	17.51	554.1
160	270.00	.91000-02	63.000	.2631	.7245	.3214	.9715	.2201-01	.9764-02	.8794	5.962	590.6
160	270.00	.11100-01	64.000	.4316	1.154	.5253	.9715	.3506-01	.1596-01	1.467	9.959	588.8
160	270.00	.13100-01	65.000	.5351	1.342	.6457	.9715	.4078-01	.1962-01	1.894	12.89	584.2
160	270.00	.17000-01	67.000	.8381	1.863	.9939	.9715	.5658-01	.3019-01	3.243	22.20	573.3
160	270.00	.20900-01	69.000	.6444	1.328	.7552	.9715	.4034-01	.2294-01	2.665	18.33	564.5
160	270.00	.24900-01	71.000	.6094	1.221	.7128	.9710	.3709-01	.2165-01	2.590	17.85	560.8
160	270.00	.28800-01	73.000	.5783	1.112	.6769	.9696	.3377-01	.2056-01	2.565	17.74	554.6
160	270.00	.36700-01	75.000	.5076	.9680	.6027	.9668	.2941-01	.1831-01	2.272	15.72	553.3
160	270.00	.48500-01	77.000	.4465	.8096	.5361	.9627	.2459-01	.1629-01	2.119	14.73	544.4
160	270.00	.56400-01	78.000	.4400	.7867	.5342	.9600	.2390-01	.1623-01	2.125	14.80	541.7
160	315.00	.19000-01	68.000	.5844	1.115	.6946	.9667	.3387-01	.2110-01	2.614	18.08	553.4
160	315.00	.22900-01	70.000	.6607	1.276	.7872	.9667	.3876-01	.2391-01	2.916	20.16	555.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
6	3.010	-.8451-02	6.030	36.07	722.7	.9674	257.0	-90.08	2365.	.1016-01	.2053-06	3.639
7	3.010	-.8439-02	6.022	36.08	722.7	.9676	257.0	-90.08	2365.	.1016-01	.2053-06	3.640
8	3.010	-.8453-02	6.032	36.04	722.7	.9668	257.0	-90.08	2365.	.1015-01	.2053-06	3.636

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.02"5
6	.4396-01	.7596-02
7	.4396-01	.7595-02
8	.4394-01	.7599-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
7	.00000	.91000-02	1.0000	.5797	1.429	.6976	.9716	.6283-01	.3067-01	3.099	20.89	601.1
7	.00000	.11100-01	2.0000	.7534	2.165	.9248	.9716	.9517-01	.4066-01	3.671	24.61	611.8
7	.00000	.15000-01	4.0000	.6897	1.810	.8371	.9716	.7958-01	.3680-01	3.540	23.81	605.9
7	.00000	.17000-01	5.0000	.6886	1.767	.8333	.9716	.7770-01	.3663-01	3.584	24.13	604.3
7	.00000	.19000-01	6.0000	.6808	1.709	.8213	.9716	.7514-01	.3611-01	3.595	24.22	602.6
7	.00000	.24900-01	9.0000	.5773	1.264	.6851	.9711	.5559-01	.3012-01	3.375	22.90	589.7
7	.00000	.26900-01	10.000	.5509	1.141	.6509	.9703	.5018-01	.2862-01	3.384	23.04	583.0
6	.00000	.32800-01	12.000	.5070	1.194	.6208	.9681	.5250-01	.2729-01	2.799	18.91	597.1
6	.00000	.36700-01	13.000	.4819	1.075	.5902	.9668	.4724-01	.2594-01	2.776	18.81	591.6
6	.00000	.40600-01	14.000	.4947	1.145	.6158	.9654	.5033-01	.2707-01	2.768	18.72	595.4
6	.00000	.48500-01	15.000	.4507	.9999	.5667	.9627	.4395-01	.2491-01	2.607	17.67	591.1
6	.00000	.56400-01	16.000	.4206	.9158	.5360	.9602	.4026-01	.2356-01	2.472	16.77	589.0
6	.00000	.76100-01	17.000	.3398	.6795	.4400	.9544	.2987-01	.1934-01	2.160	14.74	578.1
6	.00000	.11550	19.000	.2208	.4133	.2954	.9452	.1817-01	.1303-01	1.506	10.34	567.5
6	.00000	.16480	20.000	.1376	.2420	.1880	.9379	.1064-01	.8264-02	1.013	7.002	555.2
6	.00000	.21400	22.000	.8345-01	.1397	.1132	.9347	.6143-02	.4977-02	.6582	4.579	543.3
8	2.0000	.24700-01	165.00	.4703	.9797	.5545	.9708	.4305-01	.2437-01	2.872	19.54	583.7
7	9.0000	.15000-01	157.00	.6330	1.611	.7741	.9700	.7082-01	.3403-01	3.313	22.31	603.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
7	9.0000	.17600-01	158.00	.6281	1.493	.7603	.9700	.6562-01	.3343-01	3.445	23.27	597.9
8	9.8000	.24700-01	164.00	.4813	1.031	.5751	.9694	.4529-01	.2527-01	2.868	19.48	587.1
7	10.000	.22900-01	88.000	.5437	1.179	.6495	.9698	.5185-01	.2855-01	3.205	21.76	588.6
7	10.000	.26900-01	90.000	.5124	1.031	.6087	.9686	.4532-01	.2676-01	3.238	22.09	579.0
7	10.000	.34700-01	94.000	.5205	1.032	.6269	.9657	.4537-01	.2756-01	3.336	22.79	576.9
7	12.000	.17600-01	152.00	1.005	-6.559	1.182	.9870	-.2884	.5197-01	2.769	18.10	660.0
7	12.000	.12100-01	151.00	.5979	-2.304	.7150	.9870	-.1013	.3143-01	1.508	9.832	665.3
7	13.000	.19400-01	153.00	1.006	-10.12	1.174	.9870	-.4449	.5163-01	2.908	19.04	656.9
8	14.600	.44200-01	169.00	.5162	1.073	.6440	.9618	.4715-01	.2830-01	3.159	21.50	583.4
7	18.500	.44200-01	106.00	.5482	1.165	.6900	.9612	.5120-01	.3034-01	3.291	22.37	586.1
8	19.600	.62900-01	175.00	.4246	.8265	.5425	.9553	.3632-01	.2384-01	2.773	18.97	574.0
7	19.800	.40800-01	101.00	.6171	1.419	.7853	.9621	.6239-01	.3453-01	3.469	23.47	594.8
7	20.000	.24900-01	89.000	.4532	.9167	.5418	.9676	.4030-01	.2382-01	2.847	19.42	579.8
7	20.000	.28800-01	91.000	.4508	.8923	.5413	.9662	.3923-01	.2380-01	2.895	19.78	576.6
7	20.000	.32800-01	93.000	.5012	1.034	.6123	.9648	.4545-01	.2692-01	3.091	21.05	582.4
3	21.800	.82200-01	182.00	.3383	.6393	.4426	.9499	.2809-01	.1945-01	2.281	15.65	569.2
7	22.200	.62900-01	125.00	.4671	.9410	.6042	.9550	.4137-01	.2656-01	2.947	20.11	579.2
7	22.400	.44200-01	107.00	.5050	1.073	.6382	.9606	.4719-01	.2806-01	3.030	20.59	586.2
8	22.600	.10270	192.00	.2629	.4716	.3468	.9453	.2072-01	.1524-01	1.886	13.01	559.4
7	23.000	.42000-01	105.00	.5966	1.521	.7806	.9612	.6685-01	.3432-01	3.120	21.00	603.7
7	23.400	.59600-01	120.00	.5345	1.161	.7022	.9557	.5103-01	.3087-01	3.147	21.36	588.7
8	23.900	.21310	250.00	.7886-01	.1244	.1037	.9345	.5468-02	.4558-02	.6837	4.804	525.4
7	24.100	.82200-01	139.00	.3863	.7420	.5091	.9497	.3262-01	.2238-01	2.560	17.54	571.9
8	24.400	.19040	238.00	.9983-01	.1627	.1333	.9350	.7150-02	.5857-02	.8203	5.731	535.7
8	24.400	.12440	207.00	.2099	.3783	.2841	.9413	.1662-01	.1248-01	1.496	10.31	560.4
8	24.800	.16810	223.00	.1303	.2238	.1776	.9363	.9833-02	.7802-02	.9905	6.867	549.7
7	24.900	.62900-01	126.00	.4749	1.029	.6285	.9546	.4523-01	.2763-01	2.802	19.02	588.4
8	25.000	.79500-01	178.00	.3894	.7599	.5142	.9502	.3339-01	.2260-01	2.536	17.35	574.5
8	25.300	.10270	191.00	.2913	.5402	.3901	.9451	.2374-01	.1714-01	2.008	13.80	565.8
8	25.300	.10000+00	186.00	.3193	.6157	.4326	.9456	.2706-01	.1901-01	2.106	14.42	572.6
7	25.500	.60700-01	124.00	.5503	1.389	.7548	.9551	.6109-01	.3318-01	2.894	19.50	603.0
8	26.000	.12440	206.00	.2338	.4327	.3204	.9412	.1901-01	.1408-01	1.615	11.10	565.5
7	26.300	.82200-01	140.00	.4437	.8638	.5885	.9494	.3798-01	.2587-01	2.899	19.83	574.1
8	26.700	.12100	199.00	.3009	.6105	.4274	.9417	.2683-01	.1878-01	1.885	12.85	580.1
8	26.800	.16810	222.00	.1562	.2732	.2149	.9362	.1201-01	.9443-02	1.157	8.004	554.0
8	27.000	.19040	237.00	.1320	.2199	.1784	.9350	.9664-02	.7838-02	1.049	7.303	541.9
8	27.100	.21310	249.00	.1094	.1762	.1456	.9345	.7743-02	.6396-02	.9166	6.417	532.0
8	27.200	.80300-01	180.00	.4269	.9043	.5810	.9498	.3973-01	.2553-01	2.568	17.46	585.8
7	27.400	.40100-01	98.000	.6269	1.659	.8263	.9612	.7295-01	.3633-01	3.201	21.52	606.5
8	27.400	.16480	215.00	.1769	.3195	.2469	.9364	.1404-01	.1085-01	1.259	8.673	560.8
7	27.600	.41600-01	102.00	.5737	1.666	.7729	.9607	.7325-01	.3398-01	2.780	18.63	612.5
8	27.600	.12440	205.00	.2504	.4775	.3479	.9411	.2098-01	.1529-01	1.671	11.46	570.7
8	27.600	.18700	230.00	.1476	.2509	.2014	.9351	.1102-01	.8851-02	1.139	7.910	547.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
8	27.700	.21010	243.00	.1366	.2266	.1846	.9345	.9959-02	.8112-02	1.092	7.608	540.8
8	27.900	.10110	188.00	.3169	.6381	.4378	.9451	.2804-01	.1924-01	1.999	13.63	579.1
7	28.000	.46800-01	110.00	.3648	.6418	.4433	.9590	.2821-01	.1949-01	2.685	18.56	555.2
8	28.200	.16810	221.00	.1629	.2918	.2269	.9362	.1282-01	.9971-02	1.172	8.083	559.0
8	28.300	.19040	236.00	.1346	.2240	.1818	.9350	.9843-02	.7989-02	1.071	7.461	541.6
8	28.300	.12200	201.00	.2698	.5118	.3733	.9414	.2249-01	.1640-01	1.813	12.43	569.8
7	28.400	.53500-01	114.00	.4766	.9424	.6058	.9569	.4143-01	.2663-01	3.063	20.93	576.5
8	28.400	.21310	248.00	.1124	.1818	.1499	.9345	.7990-02	.6587-02	.9356	6.545	533.3
7	28.700	.58600-01	117.00	.6032	1.453	.8166	.9553	.6389-01	.3590-01	3.276	22.11	599.1
8	28.800	.16580	217.00	.1813	.3356	.2564	.9363	.1475-01	.1127-01	1.252	8.607	565.5
7	28.800	.60400-01	121.00	.5542	1.546	.7805	.9548	.6798-01	.3432-01	2.744	18.41	610.0
8	29.000	.21110	244.00	.1278	.2119	.1727	.9345	.9311-02	.7589-02	1.024	7.132	540.5
7	29.000	.65700-01	129.00	.3452	.5998	.4305	.9533	.2637-01	.1893-01	2.584	17.88	552.4
7	29.200	.72400-01	133.00	.4367	.8652	.5747	.9515	.3804-01	.2527-01	2.801	19.13	576.8
7	29.300	.79500-01	136.00	.4534	1.094	.6426	.9497	.4810-01	.2825-01	2.460	16.60	599.3
7	29.600	.92500-01	143.00	.3696	.7090	.4961	.9467	.3117-01	.2181-01	2.454	16.81	571.7
7	29.700	.10000+00	146.00	.3446	.7395	.4873	.9452	.3251-01	.2142-01	2.050	13.93	587.3
8	29.900	.12100	198.00	.3238	.6808	.4674	.9414	.2991-01	.2054-01	1.961	13.34	584.8
8	30.200	.16480	214.00	.1920	.3635	.2745	.9363	.1597-01	.1206-01	1.293	8.866	569.5
8	30.200	.18700	229.00	.1475	.2588	.2047	.9350	.1137-01	.8995-02	1.089	7.532	554.6
8	30.300	.21010	242.00	.1332	.2265	.1824	.9345	.9951-02	.8015-02	1.027	7.132	547.2
7	31.500	.91000-02	82.000	.5972	1.350	.7350	.9664	.5935-01	.3231-01	3.403	23.04	593.1
7	31.500	.11100-01	83.000	.7060	2.226	.9164	.9664	.9787-01	.4029-01	3.285	21.96	616.8
7	31.500	.14200-01	84.000	.8791	-4.594	1.040	.9870	-.2020	.4573-01	2.344	15.31	662.0
7	31.500	.16000-01	85.000	.9689	-9.716	1.131	.9870	-.4271	.4970-01	2.799	18.33	657.0
7	31.500	.17600-01	86.000	.9709	52.61	1.113	.9870	2.313	.4893-01	3.143	20.66	649.0
7	31.500	.19400-01	87.000	.9852	4.439	1.096	.9870	.1951	.4819-01	4.023	26.72	629.8
8	32.100	.21010	241.00	.1153	.1915	.1559	.9345	.8414-02	.6852-02	.9207	6.414	541.0
8	32.200	.16480	213.00	.1785	.3313	.2528	.9362	.1456-01	.1111-01	1.228	8.441	566.0
8	32.200	.17860	224.00	.1434	.2442	.1955	.9354	.1073-01	.8592-02	1.102	7.651	547.7
8	32.200	.18700	228.00	.1324	.2217	.1794	.9350	.9742-02	.7882-02	1.044	7.264	543.2
8	32.300	.12100	197.00	.3176	.6340	.4494	.9412	.2786-01	.1975-01	2.020	13.79	577.9
8	32.300	.12300	194.00	.2570	.5081	.3630	.9409	.2233-01	.1595-01	1.652	11.29	576.4
8	32.300	.12730	208.00	.1460	.2503	.1944	.9403	.1100-01	.8541-02	1.112	7.713	549.3
8	32.300	.13420	209.00	.1761	.3238	.2434	.9394	.1423-01	.1070-01	1.226	8.430	564.3
7	32.400	.10000+00	147.00	.3149	.6175	.4314	.9449	.2715-01	.1896-01	2.042	13.96	575.2
8	32.400	.10110	184.00	.3368	.6901	.4698	.9447	.3032-01	.2064-01	2.088	14.23	581.5
8	32.400	.10630	193.00	.1995	.3328	.2576	.9437	.1462-01	.1132-01	1.582	11.01	542.2
8	32.500	.85800-01	183.00	.2482	.4222	.3161	.9479	.1855-01	.1389-01	1.913	13.28	547.3
7	32.600	.79500-01	137.00	.5192	1.170	.7228	.9494	.5144-01	.3178-01	2.965	20.08	592.8
8	32.600	.80800-01	176.00	.4448	.9680	.6139	.9490	.4254-01	.2698-01	2.614	17.74	589.0
7	32.700	.67400-01	132.00	.3313	.5754	.4151	.9524	.2529-01	.1825-01	2.482	17.18	552.3
7	32.700	.72400-01	134.00	.4232	.8062	.5512	.9511	.3544-01	.2423-01	2.831	19.40	570.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
7	32.800	.65700-01	130.00	.2977	.4950	.3666	.9529	.2176-01	.1612-01	2.372	16.52	541.4
8	32.800	.16680	210.00	.1567	.2807	.2184	.9361	.1234-01	.9597-02	1.127	7.774	559.0
8	32.800	.18880	225.00	.1049	.1692	.1393	.9349	.7433-02	.6122-02	.8761	6.131	532.5
7	32.900	.58600-01	118.00	.5569	1.282	.7482	.9548	.5638-01	.3289-01	3.128	21.16	594.9
7	32.900	.60400-01	122.00	.4492	.9042	.5833	.9543	.3975-01	.2565-01	2.836	19.35	579.1
8	32.900	.61300-01	171.00	.4676	1.134	.6406	.9540	.4984-01	.2815-01	2.526	17.04	599.7
7	33.000	.53500-01	115.00	.5022	.9995	.6418	.9563	.4394-01	.2822-01	3.207	21.90	577.4
7	33.200	.48300-01	113.00	.3378	.5743	.4088	.9578	.2525-01	.1797-01	2.606	18.09	547.2
8	33.400	.42800-01	166.00	.4802	1.191	.6332	.9595	.5235-01	.2782-01	2.554	17.22	601.6
7	33.500	.40100-01	99.000	.5423	1.199	.6926	.9604	.5272-01	.3045-01	3.145	21.33	590.7
7	33.600	.38300-01	97.000	.5343	1.105	.6693	.9610	.4860-01	.2942-01	3.286	22.37	582.8
7	33.700	.36700-01	96.000	.4956	.9915	.6138	.9615	.4359-01	.2699-01	3.148	21.49	578.2
7	33.900	.33800-01	95.000	.4048	.7410	.4879	.9624	.3258-01	.2145-01	2.834	19.50	563.4
8	34.700	.21010	240.00	.1108	.1806	.1483	.9345	.7935-02	.6518-02	.9107	6.363	535.6
8	34.700	.18700	227.00	.1428	.2446	.1958	.9350	.1075-01	.8605-02	1.090	7.559	549.0
8	34.900	.16480	212.00	.1585	.2884	.2225	.9361	.1267-01	.9777-02	1.118	7.696	562.2
7	35.100	.10000+00	148.00	.3176	.6127	.4330	.9447	.2694-01	.1904-01	2.095	14.34	572.6
8	35.200	.23900-01	161.00	.4279	.7944	.5083	.9657	.3491-01	.2233-01	2.946	20.24	566.0
7	35.300	.92500-01	145.00	.3390	.6427	.4547	.9462	.2826-01	.1999-01	2.279	15.63	569.7
7	35.300	.22100-01	160.00	.4115	.7424	.4854	.9659	.3264-01	.2134-01	2.933	20.22	560.5
8	35.400	.18800	231.00	.1183	.1980	.1603	.9349	.8702-02	.7044-02	.9325	6.488	543.2
8	35.500	.12100	196.00	.2632	.5058	.3671	.9410	.2222-01	.1613-01	1.743	11.94	572.0
8	35.600	.16580	216.00	.1465	.2618	.2039	.9361	.1150-01	.8961-02	1.057	7.289	558.6
7	35.800	.80600-01	138.00	.3753	.7215	.4976	.9488	.3172-01	.2188-01	2.485	17.02	572.0
8	35.900	.21310	247.00	.8857-01	.1407	.1170	.9345	.6183-02	.5139-02	.7589	5.326	527.7
8	36.000	.19040	235.00	.1107	.1816	.1485	.9348	.7978-02	.6524-02	.9010	6.289	537.5
8	36.200	.16910	220.00	.1314	.2283	.1805	.9359	.1003-01	.7933-02	.9830	6.805	552.4
7	36.200	.72400-01	135.00	.4156	.7951	.5434	.9507	.3495-01	.2389-01	2.767	18.96	571.3
8	36.300	.12200	200.00	.2334	.4406	.3235	.9408	.1936-01	.1421-01	1.577	10.82	569.0
7	36.600	.65700-01	131.00	.3480	.6047	.4361	.9524	.2658-01	.1917-01	2.604	18.03	552.4
8	36.700	.18700	226.00	.1249	.2092	.1693	.9349	.9191-02	.7438-02	.9842	6.847	543.3
8	36.900	.16480	211.00	.1425	.2547	.1983	.9361	.1119-01	.8715-02	1.027	7.081	558.7
8	36.900	.10110	187.00	.3192	.6362	.4419	.9443	.2796-01	.1942-01	2.035	13.89	577.6
7	37.000	.60400-01	123.00	.5186	1.159	.6962	.9538	.5096-01	.3061-01	2.981	20.20	591.9
8	37.000	.12440	204.00	.2020	.3671	.2760	.9404	.1613-01	.1213-01	1.427	9.827	561.9
7	37.100	.58600-01	119.00	.5829	1.285	.7767	.9543	.5649-01	.3415-01	3.389	22.98	590.4
8	37.200	.21310	246.00	.8861-01	.1411	.1172	.9345	.6202-02	.5149-02	.7561	5.304	528.5
8	37.600	.16810	219.00	.1234	.2139	.1694	.9358	.9397-02	.7443-02	.9270	6.419	551.8
7	37.800	.10270	150.00	.2677	.4952	.3606	.9439	.2177-01	.1585-01	1.852	12.73	565.4
8	37.900	.12100	195.00	.2572	.4866	.3567	.9408	.2138-01	.1567-01	1.732	11.88	569.4
8	38.000	.80300-01	179.00	.4201	.8932	.5772	.9486	.3925-01	.2536-01	2.519	17.12	586.2
7	38.500	.46800-01	112.00	.3449	.5924	.4191	.9576	.2604-01	.1842-01	2.623	18.19	549.7
8	38.600	.12440	203.00	.2037	.3712	.2788	.9403	.1631-01	.1225-01	1.433	9.866	562.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
8	38.700	.10000+00	185.00	.3120	.6109	.4287	.9444	.2685-01	.1884-01	2.025	13.85	575.0
7	38.900	.82200-01	141.00	.3397	.6426	.4497	.9481	.2825-01	.1977-01	2.290	15.71	569.3
7	39.300	.41600-01	104.00	.4660	.9708	.5915	.9592	.4268-01	.2601-01	2.847	19.38	583.7
8	39.500	.10270	190.00	.3105	.6023	.4267	.9438	.2646-01	.1875-01	2.035	13.93	573.5
8	39.600	.16810	218.00	.1211	.2081	.1655	.9358	.9144-02	.7274-02	.9198	6.376	549.8
8	39.900	.19040	233.00	.1026	.1676	.1373	.9348	.7364-02	.6034-02	.8397	5.864	536.4
8	40.100	.79500-01	177.00	.3996	.8295	.5447	.9496	.3645-01	.2393-01	2.448	16.67	583.2
8	40.200	.12440	202.00	.2102	.3834	.2880	.9402	.1685-01	.1265-01	1.477	10.17	562.7
8	40.300	.21310	245.00	.8611-01	.1362	.1134	.9345	.5985-02	.4985-02	.7435	5.222	526.2
7	41.100	.82200-01	142.00	.3661	.7094	.4895	.9479	.3119-01	.2152-01	2.403	16.45	573.3
8	41.100	.60700-01	173.00	.4921	1.088	.6613	.9533	.4780-01	.2906-01	2.854	19.35	590.7
8	42.300	.10270	189.00	.2872	.5320	.3879	.9436	.2338-01	.1704-01	1.981	13.62	565.7
8	42.600	.59600-01	172.00	.5121	1.204	.6992	.9534	.5293-01	.3073-01	2.829	19.11	597.0
8	43.200	.42000-01	168.00	.4417	.8929	.5586	.9586	.3923-01	.2454-01	2.776	18.93	579.6
8	43.400	.82200-01	181.00	.3099	.5606	.4046	.9477	.2463-01	.1778-01	2.201	15.17	561.1
7	43.600	.62900-01	128.00	.4259	.8531	.5590	.9524	.3751-01	.2458-01	2.702	18.44	578.4
7	45.000	.22900-01	8.0000	.7385	2.034	.9532	.9646	.8944-01	.4190-01	3.684	24.73	609.2
8	46.100	.62900-01	174.00	.4458	.9447	.5964	.9522	.4151-01	.2620-01	2.681	18.22	585.8
8	47.700	.40800-01	167.00	.4787	.9847	.6084	.9585	.4327-01	.2673-01	2.958	20.15	582.0
7	48.400	.44200-01	109.00	.4157	.8195	.5262	.9574	.3603-01	.2313-01	2.680	18.32	576.0
7	50.000	.19400-01	156.00	.7815	4.821	.8770	.9870	.2119	.3856-01	2.963	19.61	636.4
7	51.000	.12100-01	154.00	.7361	-73.06	.8473	.9870	-3.212	.3725-01	2.315	15.20	651.1
7	51.000	.17600-01	155.00	.7560	3.925	.8447	.9870	.1726	.3714-01	2.975	19.72	633.2
8	51.900	.44800-01	170.00	.3716	.6917	.4643	.9569	.3040-01	.2040-01	2.549	17.51	566.5
8	53.200	.24700-01	163.00	.4619	.9558	.5697	.9634	.4200-01	.2503-01	2.838	19.33	582.8
8	65.200	.24700-01	162.00	.5155	1.157	.6512	.9624	.5085-01	.2862-01	2.952	20.00	592.3
6	90.000	.91000-02	44.000	.6229	1.695	.8200	.9620	.7450-01	.3605-01	3.129	21.02	608.4
6	90.000	.11100-01	45.000	.6160	2.455	.8612	.9620	.1079	.3786-01	2.613	17.38	626.2
6	90.000	.13100-01	46.000	.5869	2.084	.8073	.9620	.9160-01	.3549-01	2.595	17.30	622.1
6	90.000	.17000-01	48.000	.5071	1.381	.6677	.9620	.6072-01	.2935-01	2.546	17.10	608.5
6	90.000	.20900-01	50.000	.5578	1.483	.7312	.9620	.6521-01	.3214-01	2.840	19.09	606.9
6	90.000	.24900-01	52.000	.5186	1.348	.6794	.9615	.5927-01	.2987-01	2.677	18.01	605.2
6	90.000	.26900-01	53.000	.5011	1.243	.6539	.9608	.5462-01	.2874-01	2.667	17.98	601.6
6	90.000	.28800-01	54.000	.5013	1.212	.6540	.9602	.5326-01	.2875-01	2.717	18.34	599.4
6	90.000	.32800-01	55.000	.4457	1.016	.5795	.9589	.4465-01	.2547-01	2.523	17.07	593.9
6	90.000	.36700-01	56.000	.4295	.9638	.5615	.9576	.4237-01	.2468-01	2.461	16.67	592.3
6	90.000	.40600-01	57.000	.4361	1.015	.5806	.9564	.4464-01	.2552-01	2.429	16.42	596.0
6	90.000	.48500-01	58.000	.3648	.8162	.4892	.9540	.3588-01	.2150-01	2.095	14.20	592.0
6	90.000	.56400-01	59.000	.3748	.8117	.5061	.9518	.3568-01	.2225-01	2.213	15.02	588.4
6	90.000	.76100-01	60.000	.2979	.5925	.4046	.9470	.2605-01	.1778-01	1.903	12.99	577.4
6	90.000	.95800-01	61.000	.2207	.4231	.3034	.9430	.1860-01	.1334-01	1.465	10.04	571.6
6	90.000	.11550	62.000	.1796	.3297	.2474	.9398	.1449-01	.1087-01	1.254	8.624	563.9
6	135.00	.19000-01	49.000	.6236	1.782	.8099	.9646	.7833-01	.3560-01	3.048	20.44	611.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
6	135.00	.22900-01	51.000	.5910	1.656	.7651	.9646	.7279-01	.3363-01	2.920	19.59	610.3
6	180.00	.91000-02	23.000	.4756	1.058	.5640	.9715	.4651-01	.2479-01	2.744	18.60	591.4
6	180.00	.11100-01	24.000	.6898	2.795	.8781	.9715	.1229	.3860-01	2.909	19.35	626.7
6	180.00	.13100-01	25.000	.7087	2.338	.8842	.9715	.1028	.3887-01	3.231	21.58	619.0
6	180.00	.15000-01	26.000	.7026	2.200	.8715	.9715	.9671-01	.3831-01	3.280	21.93	616.5
6	180.00	.17000-01	27.000	.6692	2.024	.8268	.9715	.8895-01	.3634-01	3.177	21.26	614.7
6	180.00	.19000-01	28.000	.6741	2.058	.8337	.9715	.9046-01	.3665-01	3.185	21.31	615.2
6	180.00	.20900-01	29.000	.6580	1.913	.8091	.9715	.8408-01	.3557-01	3.186	21.35	612.5
6	180.00	.28800-01	32.000	.5547	1.426	.6814	.9696	.6270-01	.2995-01	2.884	19.41	604.4
6	180.00	.32800-01	33.000	.5253	1.223	.6421	.9681	.5378-01	.2823-01	2.924	19.77	596.0
6	180.00	.36700-01	34.000	.5469	1.363	.6830	.9667	.5991-01	.3002-01	2.902	19.56	602.0
6	180.00	.56400-01	37.000	.4174	.9140	.5326	.9602	.4018-01	.2342-01	2.440	16.55	589.7
6	180.00	.76100-01	38.000	.3328	.6811	.4339	.9544	.2994-01	.1907-01	2.067	14.09	581.4
6	180.00	.95800-01	39.000	.2824	.5509	.3747	.9494	.2422-01	.1647-01	1.840	12.59	574.4
6	180.00	.11550	40.000	.2290	.4324	.3085	.9452	.1901-01	.1356-01	1.547	10.61	569.0
6	180.00	.18450	42.000	.1197	.2058	.1634	.9361	.9047-02	.7181-02	.9095	6.305	549.9
6	225.00	.22900-01	30.000	.6774	1.955	.7839	.9792	.8593-01	.3446-01	3.293	22.08	612.1
6	270.00	.91000-02	63.000	.5990	3.122	.6968	.9826	.1373	.3063-01	2.355	15.61	633.2
6	270.00	.11100-01	64.000	.7775	3.666	.9007	.9826	.1612	.3959-01	3.135	20.80	631.0
6	270.00	.13100-01	65.000	.7639	3.046	.8781	.9826	.1339	.3860-01	3.239	21.55	626.2
6	270.00	.17000-01	67.000	.8446	3.394	.9712	.9826	.1492	.4270-01	3.572	23.76	626.5
6	270.00	.20900-01	69.000	.7363	2.552	.8400	.9826	.1122	.3693-01	3.287	21.93	621.1
6	270.00	.24900-01	71.000	.7226	2.246	.8223	.9821	.9874-01	.3615-01	3.384	22.64	616.1
6	270.00	.28800-01	73.000	.6338	1.649	.7198	.9806	.7248-01	.3164-01	3.271	22.00	605.3
6	270.00	.36700-01	75.000	.5666	1.454	.6566	.9775	.6391-01	.2886-01	2.949	19.85	604.3
6	270.00	.48500-01	77.000	.5067	1.189	.5989	.9732	.5227-01	.2633-01	2.805	18.96	596.7
6	270.00	.56400-01	78.000	.5239	1.214	.6301	.9704	.5336-01	.2770-01	2.929	19.81	595.5
6	270.00	.95800-01	80.000	.3418	.6947	.4347	.9579	.3054-01	.1911-01	2.137	14.57	580.4
6	270.00	.11550	81.000	.2816	.5525	.3667	.9527	.2429-01	.1612-01	1.825	12.48	575.3
6	315.00	.19000-01	68.000	.5130	1.439	.5921	.9792	.6326-01	.2603-01	2.532	16.99	610.4
6	315.00	.22900-01	70.000	.7311	2.275	.8510	.9792	.9999-01	.3741-01	3.423	22.89	616.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
66	4.020	.2112-02	6.028	65.01	738.7	.4169	174.5	-89.98	2604.	.6447-02	.1405-06	3.714
67	4.020	.2117-02	6.042	64.93	737.7	.4164	174.3	-89.98	2602.	.6448-02	.1403-06	3.718
68	4.020	.2116-02	6.038	65.01	737.7	.4169	174.3	-89.98	2602.	.6456-02	.1403-06	3.722

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
66	.3872-01	.9570-02
67	.3869-01	.9567-02
68	.3871-01	.9562-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
67	.00000	.91000-02	1.0000	.3992	.7649	.4861	.9626	.2959-01	.1881-01	2.383	16.22	583.4
67	.00000	.11100-01	2.0000	.6516	1.396	.8140	.9626	.5402-01	.3149-01	3.487	23.53	599.4
67	.00000	.15000-01	4.0000	.6155	1.322	.7691	.9626	.5112-01	.2975-01	3.288	22.18	599.6
67	.00000	.17000-01	5.0000	.5967	1.252	.7418	.9626	.4842-01	.2870-01	3.254	21.99	596.7
67	.00000	.19000-01	6.0000	.6218	1.275	.7691	.9626	.4932-01	.2975-01	3.464	23.45	593.7
67	.00000	.24900-01	9.0000	.5573	1.036	.6756	.9621	.4009-01	.2614-01	3.441	23.49	578.1
67	.00000	.26900-01	10.000	.5187	.9297	.6255	.9614	.3597-01	.2420-01	3.348	22.95	570.8
66	.00000	.32800-01	12.000	.4674	.7982	.5625	.9592	.3091-01	.2178-01	3.225	22.23	560.4
66	.00000	.36700-01	13.000	.4551	.7635	.5486	.9578	.2956-01	.2124-01	3.222	22.26	555.8
66	.00000	.40600-01	14.000	.4591	.7822	.5599	.9564	.3028-01	.2168-01	3.179	21.92	559.8
66	.00000	.48500-01	15.000	.3959	.6603	.4860	.9537	.2557-01	.1882-01	2.828	19.56	554.2
66	.00000	.56400-01	16.000	.3946	.6601	.4912	.9511	.2556-01	.1902-01	2.806	19.40	555.0
66	.00000	.76100-01	17.000	.2888	.4677	.3655	.9451	.1811-01	.1415-01	2.159	15.00	545.6
66	.00000	.11550	19.000	.1912	.3046	.2520	.9352	.1180-01	.9756-02	1.468	10.23	540.4
66	.00000	.16480	20.000	.1056	.1698	.1462	.9266	.6573-02	.5659-02	.8000	5.567	543.1
66	.00000	.21400	22.000	.6163-01	.9381-01	.8398-01	.9224	.3632-02	.3252-02	.5138	3.615	523.3
68	2.0000	.24700-01	165.00	.4769	.8401	.5711	.9618	.3252-01	.2211-01	3.150	21.63	567.0
67	9.0000	.15000-01	157.00	.5998	1.270	.7551	.9610	.4912-01	.2921-01	3.245	21.91	597.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
67	9.0000	.17600-01	158.00	.5374	1.055	.6646	.9610	.4083-01	.2571-01	3.125	21.23	587.4
68	9.8000	.24700-01	164.00	.4392	.7827	.5314	.9605	.3030-01	.2057-01	2.858	19.60	569.6
67	10.000	.22900-01	88.000	.4819	.8976	.5886	.9608	.3472-01	.2277-01	2.969	20.27	578.4
67	10.000	.26900-01	90.000	.4370	.7509	.5258	.9596	.2905-01	.2034-01	2.983	20.55	561.2
67	10.000	.34700-01	94.000	.5111	.8896	.6263	.9568	.3442-01	.2423-01	3.428	23.58	564.3
67	12.000	.17600-01	152.00	.9135	4.879	1.021	.9870	.1887	.3952-01	3.208	21.11	646.9
67	12.000	.12100-01	151.00	.5476	6.456	.6216	.9870	.2498	.2405-01	1.708	11.18	657.1
67	13.000	.19400-01	153.00	.8898	3.333	.9841	.9869	.1289	.3807-01	3.464	22.91	637.0
68	14.600	.44200-01	169.00	.5022	.8682	.6272	.9527	.3361-01	.2428-01	3.401	23.41	562.7
67	18.500	.44200-01	106.00	.5312	.9676	.6775	.9521	.3743-01	.2621-01	3.361	22.99	574.1
68	19.600	.62900-01	175.00	.4091	.6792	.5209	.9460	.2629-01	.2016-01	2.938	20.34	552.2
67	19.800	.40800-01	101.00	.5739	1.078	.7354	.9531	.4172-01	.2845-01	3.501	23.88	580.0
67	20.000	.24900-01	89.000	.3694	.6530	.4501	.9587	.2526-01	.1741-01	2.427	16.66	567.8
67	20.000	.28800-01	91.000	.4031	.6912	.4905	.9572	.2674-01	.1897-01	2.760	19.02	560.7
67	20.000	.32800-01	93.000	.4900	.8657	.6063	.9558	.3349-01	.2345-01	3.222	22.12	567.7
68	21.800	.82200-01	182.00	.3491	.5750	.4560	.9403	.2226-01	.1765-01	2.537	17.58	549.9
67	22.200	.62900-01	125.00	.4368	.7653	.5697	.9457	.2961-01	.2204-01	2.904	19.96	565.8
67	22.400	.44200-01	107.00	.4982	.9235	.6414	.9515	.3573-01	.2481-01	3.088	21.08	577.5
68	22.600	.10270	192.00	.2503	.4028	.3316	.9353	.1559-01	.1283-01	1.888	13.14	542.8
67	23.000	.42000-01	105.00	.5967	1.207	.7872	.9522	.4671-01	.3045-01	3.367	22.81	591.8
67	23.400	.59600-01	120.00	.5078	.9248	.6693	.9465	.3578-01	.2589-01	3.214	21.99	574.1
68	23.900	.21310	250.00	.4744-01	.7147-01	.6429-01	.9221	.2767-02	.2489-02	.4027	2.841	518.3
67	24.100	.82200-01	139.00	.3897	.6689	.5198	.9400	.2588-01	.2011-01	2.664	18.36	560.9
68	24.400	.19040	238.00	.6959-01	.1067	.9511-01	.9229	.4131-02	.3682-02	.5713	4.014	525.6
68	24.400	.12440	207.00	.1889	.3074	.2577	.9307	.1190-01	.9976-02	1.398	9.709	546.4
68	24.800	.16810	223.00	.9165-01	.1457	.1273	.9246	.5640-02	.4926-02	.7054	4.920	538.8
67	24.900	.62900-01	126.00	.4652	.8549	.6198	.9453	.3307-01	.2398-01	2.913	19.91	575.8
68	25.000	.79500-01	178.00	.3911	.6560	.5144	.9406	.2539-01	.1991-01	2.766	19.12	555.0
68	25.300	.10270	191.00	.3085	.5077	.4142	.9350	.1965-01	.1603-01	2.246	15.57	549.6
68	25.300	.10000+00	186.00	.3237	.5442	.4381	.9356	.2106-01	.1696-01	2.282	15.77	555.6
67	25.500	.60700-01	124.00	.5736	1.146	.7863	.9459	.4435-01	.3042-01	3.277	22.22	590.0
68	26.000	.12440	206.00	.2392	.3961	.3299	.9306	.1533-01	.1277-01	1.724	11.94	551.5
67	26.300	.82200-01	140.00	.3254	.5656	.4373	.9398	.2188-01	.1692-01	2.187	15.05	563.9
68	26.700	.12100	199.00	.3303	.5809	.4699	.9311	.2249-01	.1819-01	2.186	15.02	566.7
68	26.800	.16810	222.00	.1321	.2125	.1849	.9245	.8225-02	.7158-02	.9963	6.933	542.8
68	27.000	.19040	237.00	.1058	.1644	.1460	.9228	.6363-02	.5651-02	.8488	5.947	530.5
68	27.100	.21310	249.00	.9146-01	.1395	.1250	.9220	.5399-02	.4840-02	.7586	5.336	523.4
68	27.200	.80300-01	180.00	.4794	.8459	.6473	.9401	.3274-01	.2505-01	3.160	21.69	567.4
67	27.400	.40100-01	98.000	.5586	1.172	.7453	.9522	.4535-01	.2883-01	3.045	20.58	596.8
68	27.400	.16480	215.00	.1370	.2254	.1943	.9248	.8725-02	.7522-02	.9975	6.916	549.6
67	27.600	.41600-01	102.00	.5954	1.320	.8107	.9516	.5107-01	.3136-01	3.095	20.84	603.3
68	27.600	.12440	205.00	.2750	.4668	.3851	.9304	.1807-01	.1491-01	1.912	13.19	558.1
68	27.600	.18700	230.00	.1042	.1632	.1444	.9230	.6318-02	.5591-02	.8234	5.759	533.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
68	27.700	.21010	243.00	.1026	.1589	.1417	.9221	.6149-02	.5485-02	.8265	5.794	529.5
68	27.900	.10110	188.00	.3442	.6022	.4769	.9350	.2331-01	.1846-01	2.294	15.76	565.5
67	28.000	.46800-01	110.00	.3195	.5226	.3968	.9498	.2022-01	.1535-01	2.346	16.28	547.9
68	28.200	.16810	221.00	.1586	.2598	.2248	.9244	.1005-01	.8700-02	1.163	8.069	548.2
68	28.300	.19040	236.00	.1056	.1645	.1460	.9227	.6368-02	.5651-02	.8421	5.897	531.7
68	28.300	.12200	201.00	.2524	.4188	.3481	.9308	.1621-01	.1348-01	1.814	12.56	552.0
67	28.400	.53500-01	114.00	.3715	.6232	.4711	.9477	.2411-01	.1823-01	2.626	18.15	555.0
68	28.400	.21310	248.00	.9729-01	.1492	.1335	.9220	.5776-02	.5169-02	.7982	5.608	525.7
67	28.700	.58600-01	117.00	.5524	1.049	.7418	.9461	.4058-01	.2870-01	3.330	22.68	581.9
68	28.800	.16580	217.00	.1730	.2886	.2478	.9246	.1117-01	.9594-02	1.234	8.540	553.4
67	28.800	.60400-01	121.00	.5952	1.253	.8337	.9455	.4847-01	.3225-01	3.236	21.86	597.1
68	29.000	.21110	244.00	.1046	.1625	.1448	.9220	.6290-02	.5607-02	.8387	5.877	530.6
67	29.000	.65700-01	129.00	.2980	.4808	.3788	.9439	.1860-01	.1465-01	2.237	15.56	543.7
67	29.200	.72400-01	133.00	.3640	.6148	.4767	.9420	.2378-01	.1844-01	2.546	17.58	556.8
67	29.300	.79500-01	136.00	.5198	1.030	.7391	.9401	.3984-01	.2859-01	2.996	20.33	588.7
67	29.600	.92500-01	143.00	.2733	.4552	.3655	.9368	.1761-01	.1414-01	1.951	13.50	553.1
67	29.700	.10000+00	146.00	.3626	.6858	.5224	.9351	.2653-01	.2021-01	2.196	14.97	581.1
68	29.900	.12100	198.00	.3250	.5845	.4690	.9308	.2262-01	.1815-01	2.090	14.32	571.5
68	30.200	.16480	214.00	.1769	.2994	.2557	.9246	.1159-01	.9899-02	1.234	8.518	557.4
68	30.200	.18700	229.00	.1155	.1851	.1627	.9229	.7164-02	.6296-02	.8770	6.108	541.5
68	30.300	.21010	242.00	.1041	.1647	.1460	.9220	.6375-02	.5650-02	.8079	5.640	537.2
67	31.500	.91000-02	82.000	.3741	.6630	.4593	.9574	.2565-01	.1777-01	2.450	16.81	568.4
67	31.500	.11100-01	83.000	.5993	1.194	.7607	.9574	.4621-01	.2943-01	3.432	23.29	589.6
67	31.500	.14200-01	84.000	.7788	3.662	.8904	.9841	.1417	.3444-01	2.823	18.61	644.0
67	31.500	.16000-01	85.000	.8553	3.297	.9695	.9841	.1275	.3751-01	3.296	21.79	638.1
67	31.500	.17600-01	86.000	.8146	2.515	.9128	.9841	.9728-01	.3531-01	3.439	22.85	628.6
67	31.500	.19400-01	87.000	.7570	1.875	.8364	.9841	.7253-01	.3236-01	3.623	24.26	613.9
68	32.100	.21010	241.00	.8159-01	.1274	.1134	.9220	.4930-02	.4388-02	.6483	4.538	532.4
68	32.200	.16480	213.00	.1414	.2375	.2036	.9245	.9195-02	.7881-02	.9982	6.899	555.3
68	32.200	.17860	224.00	.1249	.1952	.1725	.9234	.7557-02	.6678-02	.9890	6.920	533.0
68	32.200	.18700	228.00	.1005	.1552	.1381	.9228	.6009-02	.5344-02	.8135	5.706	528.5
68	32.300	.12100	197.00	.2770	.4778	.3910	.9306	.1849-01	.1514-01	1.882	12.96	562.1
68	32.300	.12300	194.00	.2222	.3884	.3167	.9303	.1504-01	.1226-01	1.483	10.19	565.3
68	32.300	.12730	208.00	.1345	.2135	.1819	.9295	.8264-02	.7043-02	1.038	7.240	538.3
68	32.300	.13420	209.00	.1601	.2669	.2244	.9284	.1033-01	.8687-02	1.143	7.910	553.3
67	32.400	.10000+00	147.00	.2433	.4246	.3371	.9348	.1643-01	.1304-01	1.626	11.18	564.9
68	32.400	.10110	184.00	.2623	.4583	.3642	.9346	.1774-01	.1410-01	1.751	12.04	565.2
68	32.400	.10630	193.00	.1736	.2672	.2253	.9335	.1034-01	.8762-02	1.415	9.932	527.1
68	32.500	.85800-01	183.00	.1964	.3042	.2516	.9381	.1178-01	.9737-02	1.581	11.08	529.6
67	32.600	.79500-01	137.00	.3847	.7244	.5363	.9397	.2802-01	.2075-01	2.341	15.96	580.4
68	32.600	.80800-01	176.00	.4106	.7291	.5585	.9394	.2822-01	.2162-01	2.684	18.42	568.8
67	32.700	.67400-01	132.00	.2617	.4210	.3337	.9430	.1629-01	.1291-01	1.974	13.74	542.7
67	32.700	.72400-01	134.00	.3577	.5983	.4676	.9416	.2315-01	.1809-01	2.539	17.56	554.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
67	32.800	.65700-01	130.00	.2438	.3805	.3060	.9434	.1472-01	.1184-01	1.937	13.56	532.3
68	32.800	.16680	210.00	.1251	.2051	.1775	.9243	.7938-02	.6870-02	.9163	6.357	548.5
68	32.800	.18880	225.00	.8325-01	.1268	.1133	.9227	.4908-02	.4387-02	.6921	4.870	522.9
67	32.900	.58600-01	118.00	.5358	.9787	.7112	.9455	.3786-01	.2751-01	3.378	23.10	574.7
67	32.900	.60400-01	122.00	.3843	.6735	.5032	.9450	.2606-01	.1947-01	2.5F3	17.54	565.9
68	32.900	.61300-01	171.00	.4621	.8814	.6270	.9447	.3412-01	.2427-01	2.773	18.88	582.6
67	33.000	.53500-01	115.00	.4254	.7189	.5427	.9470	.2781-01	.2100-01	2.973	20.53	557.0
67	33.200	.48300-01	113.00	.2949	.4680	.3640	.9487	.1811-01	.1408-01	2.275	15.87	538.2
68	33.400	.42800-01	166.00	.4840	.9444	.6382	.9504	.3655-01	.2471-01	2.835	19.27	586.3
67	33.500	.40100-01	99.000	.4900	.9353	.6379	.9513	.3618-01	.2468-01	2.937	20.00	582.7
67	33.600	.38300-01	97.000	.4493	.8152	.5730	.9519	.3154-01	.2217-01	2.856	19.55	573.3
67	33.700	.36700-01	96.000	.4218	.7405	.5304	.9524	.2865-01	.2052-01	2.797	19.21	566.3
67	33.900	.33800-01	95.000	.3021	.5036	.3714	.9534	.1948-01	.1437-01	2.155	14.91	553.3
68	34.700	.21010	240.00	.8378-01	.1281	.1148	.9220	.4960-02	.4442-02	.6909	4.857	524.6
68	34.700	.18700	227.00	.8122-01	.1280	.1132	.9228	.4954-02	.4380-02	.6347	4.434	535.8
68	34.900	.16480	212.00	.1454	.2399	.2071	.9244	.9287-02	.8016-02	1.054	7.304	550.4
67	35.100	.10000+00	148.00	.2416	.4142	.3322	.9345	.1602-01	.1285-01	1.655	11.40	560.6
68	35.200	.23900-01	161.00	.2862	.4556	.3410	.9568	.1763-01	.1320-01	2.198	15.32	539.3
67	35.300	.92500-01	145.00	.3346	.5654	.4523	.9362	.2187-01	.1750-01	2.338	16.15	557.0
67	35.300	.22100-01	160.00	.2918	.4648	.3475	.9569	.1798-01	.1344-01	2.237	15.59	539.5
68	35.400	.18800	231.00	.1138	.1761	.1566	.9227	.6816-02	.6064-02	.9195	6.448	529.0
68	35.500	.12100	196.00	.2688	.4529	.3750	.9304	.1753-01	.1451-01	1.888	13.04	556.2
68	35.600	.16580	216.00	.1394	.2274	.1972	.9243	.8801-02	.7632-02	1.029	7.141	547.0
67	35.800	.80600-01	138.00	.3239	.5523	.4330	.9391	.2137-01	.1675-01	2.234	15.41	559.3
68	35.900	.21310	247.00	.7989-01	.1197	.1079	.9220	.4633-02	.4175-02	.6859	4.846	515.8
68	36.000	.19040	235.00	.9306-01	.1423	.1271	.9226	.5506-02	.4920-02	.7684	5.403	524.4
68	36.200	.16910	220.00	.1239	.1986	.1735	.9240	.7688-02	.6714-02	.9408	6.552	541.5
67	36.200	.72400-01	135.00	.4132	.6917	.5414	.9412	.2676-01	.2095-01	2.929	20.25	554.5
68	36.300	.12200	200.00	.2408	.4017	.3344	.9301	.1555-01	.1294-01	1.716	11.87	553.5
67	36.600	.65700-01	131.00	.2614	.4153	.3314	.9430	.1607-01	.1282-01	2.012	14.03	538.7
68	36.700	.18700	226.00	.1080	.1663	.1481	.9227	.6436-02	.5734-02	.8798	6.176	527.2
68	36.900	.16480	211.00	.1359	.2226	.1927	.9243	.8615-02	.7459-02	.9964	6.913	548.3
68	36.900	.10110	187.00	.3132	.5318	.4295	.9341	.2059-01	.1662-01	2.176	15.01	558.2
67	37.000	.60400-01	123.00	.4411	.7899	.5844	.9445	.3056-01	.2261-01	2.851	19.54	570.6
68	37.000	.12440	204.00	.2137	.3481	.2934	.9296	.1348-01	.1136-01	1.579	10.97	546.7
67	37.100	.58600-01	119.00	.5094	.8973	.6683	.9450	.3471-01	.2586-01	3.363	23.10	567.0
68	37.200	.21310	246.00	.7506-01	.1125	.1014	.9220	.4355-02	.3924-02	.6442	4.550	516.0
68	37.600	.16810	219.00	.1165	.1870	.1633	.9240	.7238-02	.6321-02	.8826	6.145	542.0
67	37.800	.10270	150.00	.2687	.4495	.3664	.9337	.1739-01	.1417-01	1.907	13.18	554.3
68	37.900	.12100	195.00	.2879	.4732	.3963	.9302	.1832-01	.1534-01	2.099	14.56	549.3
68	38.000	.80300-01	179.00	.4921	.8435	.6601	.9389	.3265-01	.2555-01	3.373	23.24	560.6
67	38.500	.46800-01	112.00	.2974	.4706	.3670	.9485	.1821-01	.1420-01	2.305	16.09	537.3
68	38.600	.12440	203.00	.2253	.3683	.3102	.9295	.1426-01	.1201-01	1.658	11.51	547.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
68	38.700	.10000+00	185.00	.3521	.5945	.4812	.9342	.2301-01	.1863-01	2.466	17.03	556.7
67	38.900	.82200-01	141.00	.3218	.5400	.4286	.9383	.2089-01	.1658-01	2.272	15.71	555.1
67	39.300	.41600-01	104.00	.4096	.7338	.5256	.9501	.2839-01	.2033-01	2.646	18.14	570.7
68	39.500	.10270	190.00	.3493	.5860	.4774	.9336	.2268-01	.1848-01	2.469	17.07	555.1
68	39.600	.16810	218.00	.8879-01	.1424	.1244	.9239	.5511-02	.4816-02	.6736	4.691	541.7
68	39.900	.19040	233.00	.8224-01	.1253	.1121	.9225	.4852-02	.4341-02	.6827	4.803	523.2
68	40.100	.79500-01	177.00	.4900	.8367	.6561	.9389	.3239-01	.2540-01	3.376	23.28	559.7
68	40.200	.12440	202.00	.2039	.3338	.2812	.9294	.1292-01	.1088-01	1.497	10.38	548.1
68	40.300	.21310	245.00	.6073-01	.9081-01	.8189-01	.9220	.3515-02	.3170-02	.5236	3.701	515.0
67	41.100	.82200-01	142.00	.3026	.5157	.4066	.9381	.1995-01	.1573-01	2.090	14.42	559.1
68	41.100	.60700-01	173.00	.4951	.8485	.6460	.9439	.3285-01	.2501-01	3.394	23.39	560.6
68	42.300	.10270	189.00	.2288	.3779	.3104	.9333	.1463-01	.1202-01	1.655	11.47	550.7
68	42.600	.59600-01	172.00	.5946	1.043	.7828	.9441	.4038-01	.3030-01	3.948	27.13	566.1
68	43.200	.42000-01	168.00	.4176	.7086	.5270	.9495	.2743-01	.2040-01	2.904	20.04	558.0
68	43.400	.82200-01	181.00	.2765	.4455	.3618	.9379	.1724-01	.1400-01	2.092	14.49	543.2
67	43.600	.62900-01	128.00	.3673	.6287	.4814	.9430	.2432-01	.1862-01	2.521	17.38	560.2
67	45.000	.22900-01	8.0000	.6567	1.425	.8630	.9557	.5513-01	.3339-01	3.476	23.44	600.8
68	46.100	.62900-01	174.00	.4437	.7588	.5820	.9428	.2937-01	.2253-01	3.051	21.03	560.0
68	47.700	.40800-01	167.00	.4571	.7857	.5799	.9494	.3041-01	.2245-01	3.121	21.50	561.3
67	48.400	.44200-01	109.00	.3923	.6671	.4987	.9482	.2581-01	.1929-01	2.718	18.75	558.6
67	50.000	.19400-01	156.00	.6183	1.379	.6872	.9818	.5335-01	.2659-01	3.199	21.54	603.9
67	51.000	.12100-01	154.00	.6099	2.223	.7032	.9817	.8600-01	.2721-01	2.399	15.88	636.0
67	51.000	.17600-01	155.00	.6989	1.529	.7759	.9817	.5915-01	.3002-01	3.674	24.76	601.8
68	51.900	.44800-01	170.00	.3067	.4924	.3821	.9477	.1906-01	.1479-01	2.323	16.18	542.0
68	53.200	.24700-01	163.00	.3860	.6441	.4724	.9544	.2493-01	.1829-01	2.751	19.03	553.6
68	65.200	.24700-01	162.00	.4799	.8468	.6013	.9534	.3278-01	.2327-01	3.162	21.71	567.4
66	90.000	.91000-02	44.000	.3492	.5918	.4326	.9530	.2291-01	.1675-01	2.437	16.82	558.4
66	90.000	.11100-01	45.000	.4910	.8571	.6144	.9530	.3318-01	.2379-01	3.288	22.60	565.7
66	90.000	.13100-01	46.000	.6964	1.352	.9020	.9530	.5235-01	.3492-01	4.107	27.91	586.3
66	90.000	.17000-01	48.000	.6467	1.181	.8214	.9530	.4573-01	.3180-01	4.088	27.95	575.4
66	90.000	.20900-01	50.000	.5405	.9603	.6803	.9530	.3718-01	.2634-01	3.536	24.24	569.7
66	90.000	.24900-01	52.000	.5339	.9533	.6749	.9525	.3691-01	.2613-01	3.471	23.79	570.8
66	90.000	.26900-01	53.000	.5051	.8887	.6378	.9518	.3441-01	.2469-01	3.347	22.98	567.5
66	90.000	.28800-01	54.000	.5020	.8740	.6338	.9511	.3384-01	.2454-01	3.373	23.19	565.1
66	90.000	.32800-01	55.000	.4526	.7643	.5692	.9498	.2959-01	.2204-01	3.173	21.90	557.6
66	90.000	.36700-01	56.000	.4165	.7001	.5264	.9485	.2711-01	.2038-01	2.941	20.31	556.3
66	90.000	.40600-01	57.000	.4067	.6900	.5193	.9472	.2671-01	.2011-01	2.833	19.55	558.7
66	90.000	.48500-01	58.000	.3081	.5178	.3970	.9447	.2005-01	.1537-01	2.176	15.03	556.3
66	90.000	.56400-01	59.000	.3129	.5258	.4081	.9424	.2036-01	.1580-01	2.209	15.26	556.3
66	90.000	.76100-01	60.000	.2339	.3860	.3109	.9371	.1495-01	.1204-01	1.697	11.75	551.3
66	90.000	.95800-01	61.000	.1543	.2545	.2100	.9327	.9855-02	.8131-02	1.121	7.767	551.0
66	90.000	.11550	62.000	.1233	.2031	.1710	.9290	.7863-02	.6620-02	.8975	6.219	550.7
66	135.00	.19000-01	49.000	.5859	1.077	.7343	.9557	.4168-01	.2843-01	3.677	25.12	576.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
66	135.00	.22900-01	51.000	.5739	1.058	.7199	.9557	.4096-01	.2787-01	3.587	24.50	577.2
66	180.00	.91000-02	23.000	.2873	.4998	.3416	.9626	.1935-01	.1323-01	1.933	13.29	564.9
66	180.00	.11100-01	24.000	.6729	1.553	.8537	.9626	.6011-01	.3306-01	3.397	22.82	608.3
66	180.00	.13100-01	25.000	.6878	1.475	.8592	.9626	.5709-01	.3327-01	3.687	24.87	600.2
66	180.00	.15000-01	26.000	.6966	1.442	.8634	.9626	.5582-01	.3343-01	3.855	26.07	595.7
66	180.00	.17000-01	27.000	.6736	1.357	.8298	.9626	.5254-01	.3213-01	3.825	25.92	592.0
66	180.00	.19000-01	28.000	.6515	1.293	.7997	.9626	.5005-01	.3096-01	3.757	25.48	589.7
66	180.00	.20900-01	29.000	.6400	1.218	.7780	.9626	.4716-01	.3012-01	3.857	26.26	583.0
66	180.00	.28800-01	32.000	.5656	1.020	.6857	.9607	.3950-01	.2655-01	3.630	24.85	572.9
66	180.00	.32800-01	33.000	.5048	.8748	.6100	.9592	.3387-01	.2362-01	3.413	23.48	564.0
66	180.00	.36700-01	34.000	.4997	.8860	.6124	.9578	.3430-01	.2371-01	3.279	22.49	569.2
66	180.00	.56400-01	37.000	.3793	.6439	.4746	.9511	.2493-01	.1837-01	2.639	18.21	558.9
66	180.00	.76100-01	38.000	.2948	.4868	.3762	.9451	.1885-01	.1457-01	2.138	14.81	551.4
66	180.00	.95800-01	39.000	.2413	.3893	.3129	.9398	.1507-01	.1211-01	1.816	12.62	544.3
66	180.00	.11550	40.000	.1927	.3111	.2558	.9352	.1205-01	.9904-02	1.448	10.07	544.6
66	180.00	.18450	42.000	.9395-01	.1451	.1281	.9244	.5620-02	.4960-02	.7618	5.341	529.3
66	225.00	.22900-01	30.000	.6608	1.272	.7712	.9702	.4924-01	.2986-01	3.934	26.76	584.9
66	270.00	.91000-02	63.000	.3927	1.032	.4697	.9735	.3994-01	.1819-01	1.813	12.11	619.4
66	270.00	.11100-01	64.000	.5697	1.588	.6862	.9735	.6149-01	.2657-01	2.540	16.93	623.5
66	270.00	.13100-01	65.000	.6274	1.517	.7427	.9735	.5873-01	.2876-01	3.060	20.50	612.7
66	270.00	.17000-01	67.000	.6105	1.323	.7120	.9735	.5122-01	.2757-01	3.242	21.85	601.5
66	270.00	.20900-01	69.000	.7287	1.526	.8457	.9735	.5909-01	.3275-01	3.989	26.95	597.3
66	270.00	.24900-01	71.000	.6511	1.304	.7527	.9730	.5047-01	.2914-01	3.720	25.22	591.1
66	270.00	.28800-01	73.000	.6093	1.151	.7036	.9715	.4457-01	.2724-01	3.701	25.22	581.8
66	270.00	.36700-01	75.000	.5477	1.031	.6425	.9685	.3992-01	.2488-01	3.341	22.77	581.1
66	270.00	.46500-01	77.000	.4642	.8388	.5525	.9642	.3248-01	.2139-01	2.972	20.34	573.3
66	270.00	.56400-01	78.000	.4602	.8218	.5543	.9614	.3182-01	.2146-01	2.991	20.50	570.8
66	270.00	.95800-01	80.000	.2949	.5012	.3737	.9488	.1941-01	.1447-01	2.049	14.13	559.2
66	270.00	.11550	81.000	.3197	.5494	.4191	.9433	.2127-01	.1623-01	2.186	15.06	562.0
66	315.00	.19000-01	68.000	.6133	1.166	.7142	.9702	.4514-01	.2765-01	3.700	25.19	582.8
66	315.00	.22900-01	70.000	.6344	1.255	.7441	.9702	.4861-01	.2881-01	3.667	24.88	589.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
185	5.500	.8998-07	6.016	128.2	720.7	.1378	102.2	-90.00	2726.	.3638-02	.8226-07	3.747
186	5.500	.8989-07	6.010	126.6	720.7	.1360	102.2	-90.00	2726.	.3592-02	.8226-07	3.699
187	5.500	.8992-07	6.012	126.4	720.7	.1358	102.2	-90.00	2726.	.3586-02	.8226-07	3.694

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
185	.3033-01	.1270-01
186	.3014-01	.1278-01
187	.3012-01	.1279-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
186	.00000	.91000-02	1.0000	.3004	.4977	.3636	.9562	.1500-01	.1096-01	1.646	11.48	538.9
186	.00000	.15000-01	4.0000	.5440	1.007	.6811	.9562	.3034-01	.2053-01	2.571	17.69	563.9
186	.00000	.17000-01	5.0000	.5649	1.024	.7030	.9562	.3087-01	.2119-01	2.736	18.86	560.0
186	.00000	.19000-01	6.0000	.5570	1.013	.6939	.9562	.3054-01	.2091-01	2.686	18.51	560.6
186	.00000	.24900-01	9.0000	.5348	.9513	.6635	.9557	.2867-01	.2000-01	2.653	18.33	556.1
186	.00000	.26900-01	10.000	.4836	.8449	.5989	.9550	.2546-01	.1805-01	2.456	17.01	552.1
185	.00000	.32800-01	12.000	.4176	.6886	.5128	.9528	.2089-01	.1555-01	2.320	16.19	537.5
185	.00000	.36700-01	13.000	.3900	.6355	.4800	.9515	.1928-01	.1456-01	2.208	15.44	534.1
185	.00000	.40600-01	14.000	.4113	.6790	.5121	.9501	.2060-01	.1553-01	2.281	15.92	537.9
185	.00000	.48500-01	15.000	.3371	.5482	.4228	.9474	.1663-01	.1283-01	1.914	13.39	533.5
185	.00000	.56400-01	16.000	.3403	.5522	.4319	.9447	.1675-01	.1310-01	1.938	13.56	532.9
185	.00000	.76100-01	17.000	.2509	.3943	.3232	.9385	.1196-01	.9802-02	1.507	10.61	522.6
185	.00000	.11550	19.000	.1419	.2265	.1945	.9276	.6872-02	.5900-02	.8298	5.823	527.8
185	.00000	.16480	20.000	.7309-01	.1187	.1073	.9171	.3602-02	.3253-02	.4155	2.907	533.2
185	.00000	.21400	22.000	.3330-01	.5040-01	.4773-01	.9109	.1529-02	.1448-02	.2145	1.521	508.3
187	2.0000	.24700-01	165.00	.4409	.7204	.5331	.9554	.2170-01	.1606-01	2.466	17.24	534.9
186	9.0000	.15000-01	157.00	.5125	.9326	.6442	.9546	.2811-01	.1941-01	2.472	17.03	560.7
186	9.0000	.17600-01	158.00	.5194	.9206	.6474	.9546	.2775-01	.1951-01	2.589	17.89	555.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
187	9.8000	.24700-01	164.00	.4346	.7083	.5283	.9541	.2133-01	.1591-01	2.441	17.07	534.2
186	10.000	.22900-01	88.000	.4639	.8182	.5778	.9545	.2466-01	.1741-01	2.327	16.09	554.3
186	10.000	.26900-01	90.000	.4074	.6862	.5029	.9533	.2068-01	.1516-01	2.178	15.15	543.3
186	10.000	.34700-01	94.000	.4096	.6766	.5091	.9504	.2039-01	.1535-01	2.254	15.73	538.1
186	12.000	.17600-01	152.00	.9984	2.564	1.143	.9792	.7728-01	.3446-01	3.552	23.93	602.6
186	12.000	.12100-01	151.00	.7912	4.086	.9503	.9792	.1232	.2864-01	2.131	14.14	631.3
186	13.000	.19400-01	153.00	.9473	2.166	1.074	.9791	.6528-01	.3236-01	3.657	24.77	592.6
187	14.600	.44200-01	169.00	.4657	.7632	.5888	.9464	.2299-01	.1773-01	2.593	18.11	535.8
186	18.500	.44200-01	106.00	.4752	.8430	.6226	.9458	.2541-01	.1876-01	2.366	16.35	555.5
187	19.600	.62900-01	175.00	.3716	.5994	.4826	.9395	.1805-01	.1454-01	2.122	14.86	531.1
186	19.800	.40800-01	101.00	.4921	.8739	.6414	.9467	.2634-01	.1933-01	2.447	16.91	555.7
186	20.000	.24900-01	89.000	.3438	.5858	.4281	.9523	.1765-01	.1290-01	1.808	12.56	546.2
186	20.000	.28800-01	91.000	.3306	.5499	.4110	.9509	.1657-01	.1239-01	1.800	12.55	540.0
186	20.000	.32800-01	93.000	.4043	.6900	.5112	.9495	.2080-01	.1541-01	2.120	14.72	546.7
186	22.200	.62900-01	125.00	.3943	.6902	.5337	.9391	.2080-01	.1609-01	1.997	13.83	552.6
186	22.400	.44200-01	107.00	.4556	.8133	.6005	.9451	.2451-01	.1810-01	2.250	15.54	556.8
187	22.600	.10270	192.00	.2049	.3254	.2798	.9277	.9801-02	.8427-02	1.201	8.434	526.1
186	23.000	.42000-01	105.00	.5154	.9561	.6870	.9458	.2882-01	.2070-01	2.428	16.70	564.3
186	23.400	.59600-01	120.00	.4746	.8545	.6475	.9399	.2575-01	.1951-01	2.318	16.00	558.6
187	23.900	.21310	250.00	.2589-01	.3862-01	.3678-01	.9102	.1163-02	.1108-02	.1706	1.215	501.9
186	24.100	.82200-01	139.00	.3495	.6093	.4892	.9330	.1836-01	.1474-01	1.780	12.33	551.7
187	24.400	.19040	238.00	.4560-01	.6926-01	.6529-01	.9117	.2086-02	.1966-02	.2897	2.054	509.7
187	24.400	.12440	207.00	.1404	.2261	.1989	.9224	.6808-02	.5991-02	.8035	5.630	530.6
187	24.800	.16810	223.00	.6506-01	.1025	.9471-01	.9144	.3088-02	.2852-02	.3863	2.717	523.5
186	24.900	.62900-01	126.00	.4321	.7861	.5970	.9387	.2369-01	.1799-01	2.084	14.36	560.6
187	25.000	.79500-01	178.00	.3700	.6085	.4999	.9337	.1833-01	.1506-01	2.049	14.31	536.8
187	25.300	.10270	191.00	.2514	.4060	.3475	.9274	.1223-01	.1047-01	1.432	10.03	531.5
187	25.300	.10000+00	186.00	.2699	.4395	.3736	.9281	.1324-01	.1125-01	1.518	10.61	534.0
186	25.500	.60700-01	124.00	.5155	.9931	.7281	.9393	.2993-01	.2194-01	2.328	15.96	570.8
187	26.000	.12440	206.00	.1776	.2904	.2546	.9222	.8748-02	.7667-02	.9918	6.931	535.2
186	26.300	.82200-01	140.00	.4288	.7587	.6060	.9327	.2287-01	.1827-01	2.142	14.81	554.9
187	26.700	.12100	199.00	.2545	.4311	.3721	.9228	.1298-01	.1121-01	1.349	9.377	544.7
187	26.800	.16810	222.00	.9645-01	.1533	.1415	.9142	.4618-02	.4261-02	.5643	3.963	526.4
187	27.000	.19040	237.00	.6880-01	.1052	.9914-01	.9116	.3169-02	.2986-02	.4314	3.053	512.5
187	27.100	.21310	249.00	.4791-01	.7169-01	.6826-01	.9101	.2159-02	.2056-02	.3134	2.230	503.4
187	27.200	.80300-01	180.00	.4691	.8036	.6499	.9332	.2420-01	.1958-01	2.446	16.98	547.5
186	27.400	.40100-01	98.000	.4887	.9155	.6539	.9458	.2759-01	.1971-01	2.277	15.65	566.1
187	27.400	.16480	215.00	.1038	.1670	.1533	.9146	.5029-02	.4618-02	.5956	4.174	530.2
186	27.600	.41600-01	102.00	.4787	.9101	.6465	.9453	.2743-01	.1948-01	2.194	15.05	568.6
187	27.600	.12440	205.00	.2112	.3518	.3069	.9220	.1060-01	.9242-02	1.147	7.992	540.4
187	27.600	.18700	230.00	.8102-01	.1244	.1170	.9119	.3747-02	.3523-02	.5042	3.565	514.1
187	27.700	.21010	243.00	.5255-01	.7923-01	.7533-01	.9102	.2386-02	.2269-02	.3387	2.405	506.7
187	27.900	.10110	188.00	.3156	.5337	.4486	.9275	.1607-01	.1351-01	1.676	11.65	544.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
186	28.000	.46800-01	110.00	.2669	.4346	.3414	.9434	.1310-01	.1029-01	1.502	10.50	534.0
187	28.200	.16810	221.00	.1127	.1810	.1667	.9141	.5450-02	.5021-02	.6485	4.546	529.6
187	28.300	.19040	236.00	.7777-01	.1191	.1122	.9115	.3587-02	.3380-02	.4865	3.442	513.0
187	28.300	.12200	201.00	.1897	.3092	.2709	.9224	.9313-02	.8159-02	1.065	7.446	534.3
186	28.400	.53500-01	114.00	.2738	.4537	.3571	.9412	.1367-01	.1076-01	1.500	10.46	538.9
187	28.400	.21310	248.00	.6004-01	.9008-01	.8575-01	.9101	.2713-02	.2583-02	.3907	2.778	504.6
186	28.700	.58600-01	117.00	.4926	.9023	.6792	.9395	.2719-01	.2047-01	2.357	16.23	561.9
187	28.800	.16580	217.00	.1250	.2032	.1865	.9144	.6121-02	.5616-02	.7054	4.935	533.4
186	28.800	.60400-01	121.00	.5362	1.064	.7693	.9389	.3207-01	.2319-01	2.348	16.05	575.4
187	29.000	.21110	244.00	.5781-01	.8720-01	.8293-01	.9101	.2626-02	.2498-02	.3723	2.643	506.9
186	29.000	.65700-01	129.00	.2885	.4759	.3832	.9372	.1434-01	.1155-01	1.591	11.11	537.7
186	29.200	.72400-01	133.00	.2990	.5080	.4077	.9352	.1531-01	.1229-01	1.578	10.97	545.5
186	29.300	.79500-01	136.00	.4962	.9687	.7365	.9331	.2920-01	.2220-01	2.209	15.12	572.9
186	29.600	.92500-01	143.00	.2354	.3940	.3287	.9295	.1187-01	.9906-02	1.270	8.845	541.6
186	29.700	.10000+00	146.00	.3162	.5871	.4751	.9275	.1769-01	.1432-01	1.489	10.24	564.5
187	29.900	.12100	198.00	.2601	.4447	.3835	.9225	.1339-01	.1155-01	1.359	9.439	547.1
187	30.200	.16480	214.00	.1206	.1976	.1809	.9144	.5950-02	.5448-02	.6714	4.691	535.8
187	30.300	.21010	242.00	.5566-01	.8456-01	.8033-01	.9101	.2547-02	.2419-02	.3535	2.505	509.8
186	31.500	.11100-01	83.000	.4314	.7423	.5425	.9511	.2237-01	.1635-01	2.237	15.52	548.6
186	31.500	.14200-01	84.000	1.067	2.718	1.245	.9765	.8192-01	.3753-01	3.818	25.73	602.0
186	31.500	.16000-01	85.000	1.033	2.441	1.195	.9765	.7356-01	.3601-01	3.890	26.30	595.7
186	31.500	.19400-01	87.000	.6937	1.331	.7816	.9765	.4011-01	.2356-01	3.147	21.57	570.1
187	32.100	.21010	241.00	.4186-01	.6308-01	.6000-01	.9101	.1900-02	.1807-02	.2701	1.918	506.5
187	32.200	.16480	213.00	.9675-01	.1572	.1443	.9143	.4733-02	.4346-02	.5463	3.822	533.2
187	32.200	.17860	224.00	.7937-01	.1225	.1147	.9125	.3688-02	.3454-02	.4895	3.458	515.9
187	32.200	.18700	228.00	.6811-01	.1039	.9791-01	.9116	.3129-02	.2949-02	.4292	3.039	511.4
187	32.300	.12100	197.00	.2311	.3841	.3348	.9222	.1157-01	.1008-01	1.259	8.773	539.8
187	32.300	.12300	194.00	.2037	.3438	.2990	.9218	.1036-01	.9005-02	1.084	7.542	543.9
187	32.300	.12730	208.00	.1017	.1623	.1443	.9209	.4889-02	.4347-02	.5913	4.149	527.7
187	32.300	.13420	209.00	.1049	.1732	.1537	.9195	.5216-02	.4629-02	.5775	4.030	537.9
186	32.400	.10000+00	147.00	.2460	.4291	.3568	.9272	.1293-01	.1076-01	1.252	8.670	551.8
187	32.400	.10110	184.00	.2826	.4765	.4022	.9269	.1435-01	.1211-01	1.507	10.48	543.6
187	32.400	.10630	193.00	.1274	.1982	.1735	.9256	.5969-02	.5225-02	.7746	5.463	518.8
187	32.500	.85800-01	183.00	.1618	.2519	.2149	.9309	.7586-02	.6471-02	.9820	6.924	519.2
186	32.600	.79500-01	137.00	.4658	.8748	.6797	.9327	.2637-01	.2049-01	2.164	14.86	566.5
187	32.600	.80800-01	176.00	.4160	.7159	.5807	.9323	.2156-01	.1749-01	2.156	14.95	548.6
186	32.700	.67400-01	132.00	.2238	.3657	.2974	.9362	.1102-01	.8963-02	1.253	8.759	534.9
186	32.700	.72400-01	134.00	.2806	.4726	.3818	.9347	.1424-01	.1151-01	1.500	10.44	543.3
186	32.800	.65700-01	130.00	.2150	.3453	.2825	.9367	.1041-01	.8514-02	1.238	8.678	529.7
187	32.800	.16680	210.00	.8562-01	.1373	.1266	.9140	.4135-02	.3814-02	.4937	3.462	529.2
187	32.800	.18880	225.00	.5111-01	.7714-01	.7289-01	.9114	.2323-02	.2195-02	.3287	2.333	507.1
186	32.900	.58600-01	118.00	.4335	.7677	.5905	.9389	.2314-01	.1780-01	2.163	14.95	555.1
186	32.900	.60400-01	122.00	.3993	.7051	.5450	.9384	.2125-01	.1643-01	2.000	13.83	554.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
187	32.900	.61300-01	171.00	.5020	.9083	.6944	.9381	.2736-01	.2091-01	2.436	16.80	559.6
186	33.000	.53500-01	115.00	.3357	.5667	.4430	.9405	.1708-01	.1335-01	1.788	12.44	543.9
186	33.200	.48300-01	113.00	.2416	.3887	.3092	.9422	.1171-01	.9318-02	1.386	9.714	530.3
187	33.400	.42800-01	166.00	.4141	.7090	.5397	.9440	.2135-01	.1626-01	2.161	15.00	547.4
186	33.500	.40100-01	99.000	.4202	.7446	.5528	.9449	.2244-01	.1666-01	2.095	14.48	555.2
186	33.600	.38300-01	97.000	.3904	.6697	.5051	.9455	.2019-01	.1522-01	2.033	14.11	547.9
186	33.700	.36700-01	96.000	.3425	.5749	.4379	.9461	.1733-01	.1320-01	1.840	12.81	542.4
186	33.900	.33800-01	95.000	.2469	.4022	.3103	.9471	.1212-01	.9352-02	1.389	9.715	534.0
187	34.700	.21010	240.00	.5344-01	.7969-01	.7594-01	.9101	.2400-02	.2287-02	.3521	2.507	501.9
187	34.700	.18700	227.00	.7032-01	.1083	.1019	.9115	.3261-02	.3070-02	.4354	3.077	515.1
187	34.900	.16480	212.00	.9112-01	.1468	.1351	.9141	.4420-02	.4070-02	.5217	3.655	530.6
186	35.100	.10000+00	148.00	.2505	.4301	.3606	.9269	.1296-01	.1087-01	1.303	9.043	548.1
187	35.200	.23900-01	161.00	.2505	.3804	.3015	.9505	.1146-01	.9080-02	1.591	11.28	509.7
186	35.300	.92500-01	145.00	.2675	.4576	.3799	.9288	.1379-01	.1145-01	1.398	9.709	547.2
186	35.300	.22100-01	160.00	.2088	.3330	.2560	.9506	.1004-01	.7716-02	1.217	8.541	527.4
187	35.400	.18800	231.00	.6506-01	.9887-01	.9334-01	.9114	.2978-02	.2811-02	.4130	2.927	509.9
187	35.500	.12100	196.00	.2022	.3352	.2930	.9219	.1010-01	.8825-02	1.106	7.716	539.0
187	35.600	.16580	216.00	.8628-01	.1379	.1273	.9139	.4153-02	.3834-02	.5005	3.511	528.1
186	35.800	.80600-01	138.00	.3138	.5431	.4402	.9320	.1637-01	.1327-01	1.615	11.19	550.0
187	35.900	.21310	247.00	.4842-01	.7144-01	.6820-01	.9100	.2152-02	.2054-02	.3263	2.329	497.0
187	36.000	.19040	235.00	.6139-01	.9259-01	.8762-01	.9112	.2789-02	.2639-02	.3955	2.808	506.8
187	36.200	.16810	220.00	.8128-01	.1285	.1191	.9136	.3869-02	.3587-02	.4803	3.377	524.5
186	36.200	.72400-01	135.00	.3399	.5797	.4668	.9343	.1747-01	.1407-01	1.785	12.40	546.4
187	36.300	.12200	200.00	.1783	.2947	.2582	.9216	.8875-02	.7777-02	.9797	6.835	538.2
186	36.600	.65700-01	131.00	.2057	.3331	.2720	.9362	.1004-01	.8199-02	1.168	8.179	532.2
187	36.700	.18700	226.00	.6619-01	.1006	.9492-01	.9114	.3028-02	.2859-02	.4203	2.979	509.8
187	36.900	.16480	211.00	.8064-01	.1292	.1192	.9140	.3893-02	.3590-02	.4654	3.264	529.0
187	36.900	.10110	187.00	.2604	.4323	.3681	.9264	.1302-01	.1109-01	1.421	9.910	539.4
186	37.000	.60400-01	123.00	.4167	.7389	.5716	.9378	.2227-01	.1723-01	2.076	14.34	555.4
187	37.000	.12440	204.00	.1529	.2504	.2208	.9210	.7543-02	.6650-02	.8524	5.956	535.6
186	37.100	.58600-01	119.00	.4590	.8048	.6243	.9384	.2426-01	.1882-01	2.320	16.06	553.0
187	37.200	.21310	246.00	.4483-01	.6606-01	.6308-01	.9100	.1990-02	.1900-02	.3027	2.162	496.5
187	37.600	.16810	219.00	.7276-01	.1150	.1066	.9135	.3462-02	.3211-02	.4303	3.025	524.3
186	37.800	.10270	150.00	.1982	.3371	.2853	.9259	.1016-01	.8598-02	1.045	7.258	545.8
187	37.900	.12100	195.00	.1651	.2690	.2367	.9217	.8102-02	.7130-02	.9283	6.492	534.0
187	38.000	.80300-01	179.00	.3824	.6447	.5293	.9318	.1942-01	.1594-01	2.040	14.19	543.6
186	38.500	.46800-01	112.00	.2482	.4014	.3187	.9420	.1210-01	.9606-02	1.412	9.884	531.9
187	38.600	.12440	203.00	.1539	.2525	.2227	.9209	.7606-02	.6709-02	.8558	5.978	536.1
187	38.700	.10000+00	185.00	.2798	.4660	.3961	.9265	.1403-01	.1193-01	1.519	10.59	540.4
186	38.900	.82200-01	141.00	.2610	.4421	.3635	.9312	.1333-01	.1096-01	1.384	9.625	544.7
186	39.300	.41600-01	104.00	.3864	.6712	.5078	.9437	.2023-01	.1530-01	1.978	13.70	550.8
187	39.500	.10270	190.00	.2705	.4500	.3843	.9257	.1355-01	.1158-01	1.472	10.26	540.0
187	39.600	.16810	218.00	.5632-01	.8869-01	.8237-01	.9134	.2671-02	.2481-02	.3350	2.357	523.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
187	39.900	.19040	233.00	.4978-01	.7459-01	.7071-01	.9110	.2247-02	.2130-02	.3248	2.310	504.0
187	40.100	.79500-01	177.00	.3653	.6142	.5049	.9318	.1850-01	.1521-01	1.957	13.62	542.8
187	40.200	.12440	202.00	.1397	.2288	.2021	.9207	.6892-02	.6086-02	.7781	5.436	535.7
187	40.300	.21310	245.00	.3414-01	.4996-01	.4775-01	.9100	.1505-02	.1438-02	.2339	1.674	493.2
186	41.100	.82200-01	142.00	.3012	.5179	.4237	.9309	.1561-01	.1277-01	1.564	10.85	548.4
187	41.100	.60700-01	173.00	.4270	.7157	.5718	.9372	.2156-01	.1722-01	2.298	16.00	542.0
187	42.600	.59600-01	172.00	.4731	.8060	.6381	.9374	.2428-01	.1922-01	2.486	17.27	546.2
187	43.200	.42000-01	168.00	.3640	.5876	.4647	.9431	.1770-01	.1400-01	2.077	14.54	531.3
187	43.400	.82200-01	181.00	.2567	.4067	.3449	.9307	.1225-01	.1039-01	1.510	10.61	525.3
186	43.600	.62900-01	128.00	.2069	.5085	.4040	.9363	.1533-01	.1218-01	1.550	10.76	547.5
186	45.000	.22900-01	8.0000	.5471	1.030	.7174	.9493	.3104-01	.2162-01	2.535	17.41	566.9
187	46.100	.62900-01	174.00	.3669	.6131	.4938	.9360	.1847-01	.1487-01	1.984	13.82	541.2
187	47.700	.40800-01	167.00	.3888	.6291	.4971	.9430	.1895-01	.1497-01	2.210	15.47	532.0
186	48.400	.44200-01	109.00	.3509	.6002	.4629	.9417	.1809-01	.1395-01	1.835	12.74	547.1
186	50.000	.19400-01	156.00	.6039	1.175	.6896	.9744	.3541-01	.2078-01	2.698	18.48	572.4
186	51.000	.12100-01	154.00	.7160	2.178	.8651	.9743	.6566-01	.2607-01	2.317	15.52	613.3
186	51.000	.17600-01	155.00	.5966	1.154	.6811	.9743	.3479-01	.2053-01	2.682	18.37	571.5
187	51.900	.44800-01	170.00	.2842	.4498	.3627	.9412	.1355-01	.1092-01	1.675	11.77	525.0
187	53.200	.24700-01	163.00	.3340	.5231	.4112	.9481	.1576-01	.1238-01	2.005	14.12	521.4
187	65.200	.24700-01	162.00	.4318	.7036	.5428	.9471	.2119-01	.1635-01	2.426	16.97	534.1
185	90.000	.91000-02	44.000	.2372	.3727	.2943	.9466	.1130-01	.8926-02	1.426	10.04	522.5
185	90.000	.11100-01	45.000	.3076	.4912	.3842	.9466	.1490-01	.1165-01	1.799	12.62	527.9
185	90.000	.13100-01	46.000	.4669	.7777	.5934	.9466	.2359-01	.1800-01	2.553	17.79	540.4
185	90.000	.17000-01	48.000	.6773	1.232	.8914	.9466	.3736-01	.2704-01	3.290	22.67	560.6
185	90.000	.20900-01	50.000	.5237	.9084	.6766	.9466	.2756-01	.2052-01	2.704	18.74	550.5
185	90.000	.24900-01	52.000	.4694	.7928	.6015	.9462	.2405-01	.1825-01	2.515	17.49	544.0
185	90.000	.26900-01	53.000	.4789	.8110	.6167	.9454	.2460-01	.1871-01	2.557	17.77	544.7
185	90.000	.28800-01	54.000	.4584	.7723	.5911	.9448	.2343-01	.1793-01	2.465	17.15	543.4
185	90.000	.32800-01	55.000	.3196	.5096	.4052	.9433	.1546-01	.1229-01	1.874	13.15	527.4
185	90.000	.36700-01	56.000	.3771	.6206	.4882	.9420	.1883-01	.1481-01	2.101	14.67	537.0
185	90.000	.40600-01	57.000	.3533	.5875	.4627	.9407	.1782-01	.1404-01	1.937	13.50	539.9
185	90.000	.48500-01	58.000	.2873	.4731	.3797	.9381	.1435-01	.1152-01	1.600	11.17	537.1
185	90.000	.56400-01	59.000	.2621	.4307	.3505	.9356	.1306-01	.1063-01	1.464	10.22	536.5
185	90.000	.76100-01	60.000	.1902	.3129	.2624	.9298	.9490-02	.7960-02	1.060	7.400	536.9
185	90.000	.95800-01	61.000	.1364	.2255	.1942	.9247	.6839-02	.5890-02	.7549	5.267	538.2
185	90.000	.11550	62.000	.9319-01	.1565	.1376	.9202	.4746-02	.4173-02	.5037	3.506	542.5
185	135.00	.19000-01	49.000	.6260	1.108	.8029	.9493	.3360-01	.2436-01	3.147	21.76	554.9
185	135.00	.22900-01	51.000	.5444	.9416	.6923	.9493	.2856-01	.2100-01	2.821	19.56	549.8
185	180.00	.91000-02	23.000	.2214	.3496	.2638	.9562	.1060-01	.8002-02	1.321	9.287	524.0
185	180.00	.11100-01	24.000	.5622	1.013	.6983	.9562	.3072-01	.2118-01	2.763	19.06	558.7
185	180.00	.13100-01	25.000	.6365	1.206	.8026	.9562	.3659-01	.2434-01	2.945	20.21	568.1
185	180.00	.15000-01,	26.000	.6570	1.219	.8233	.9562	.3699-01	.2497-01	3.114	21.42	564.4
185	180.00	.17000-01	27.000	.6396	1.140	.7919	.9562	.3458-01	.2402-01	3.186	22.00	556.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K012)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
185	180.00	.19000-01	28.000	.6079	1.085	.7531	.9562	.3292-01	.2284-01	3.021	20.86	556.8
185	180.00	.20900-01	29.000	.6094	1.072	.7515	.9562	.3252-01	.2280-01	3.086	21.35	553.7
185	180.00	.28800-01	32.000	.5340	.9078	.6578	.9543	.2754-01	.1995-01	2.834	19.69	545.7
185	180.00	.32800-01	33.000	.4845	.7992	.5950	.9528	.2424-01	.1805-01	2.690	18.77	537.6
185	180.00	.36700-01	34.000	.4531	.7562	.5625	.9515	.2294-01	.1706-01	2.471	17.21	540.9
185	180.00	.48500-01	36.000	.3735	.6122	.4699	.9474	.1857-01	.1425-01	2.094	14.63	535.9
185	180.00	.56400-01	37.000	.3406	.5530	.4324	.9447	.1677-01	.1311-01	1.938	13.56	533.1
185	180.00	.76100-01	38.000	.2613	.4171	.3392	.9385	.1265-01	.1029-01	1.529	10.73	527.7
185	180.00	.95800-01	39.000	.2013	.3186	.2675	.9328	.9664-02	.8115-02	1.196	8.407	524.8
185	180.00	.11550	40.000	.1479	.2389	.2042	.9276	.7246-02	.6194-02	.8485	5.942	531.5
185	180.00	.18450	42.000	.6090-01	.9467-01	.8781-01	.9141	.2872-02	.2664-02	.3733	2.633	518.6
185	225.00	.22900-01	30.000	.6225	1.097	.7392	.9635	.3327-01	.2242-01	3.146	21.76	554.0
185	270.00	.91000-02	63.000	.4668	.8456	.5489	.9666	.2565-01	.1665-01	2.278	15.71	559.8
185	270.00	.11100-01	64.000	.5451	1.068	.6515	.9666	.3239-01	.1976-01	2.434	16.66	573.4
185	270.00	.13100-01	65.000	.5571	1.005	.6545	.9666	.3050-01	.1985-01	2.731	18.84	559.1
185	270.00	.17000-01	67.000	.4664	.8282	.5460	.9666	.2512-01	.1656-01	2.333	16.12	555.7
185	270.00	.20900-01	69.000	.6338	1.154	.7461	.9666	.3501-01	.2263-01	3.073	21.17	560.8
185	270.00	.24900-01	71.000	.6331	1.145	.7460	.9661	.3472-01	.2263-01	3.097	21.35	559.4
185	270.00	.28800-01	73.000	.5657	.9783	.6646	.9647	.2968-01	.2016-01	2.932	20.33	549.8
185	270.00	.36700-01	75.000	.5058	.8631	.6006	.9619	.2618-01	.1822-01	2.671	18.55	546.6
185	270.00	.48500-01	77.000	.4251	.7093	.5118	.9577	.2151-01	.1553-01	2.320	16.16	540.8
185	270.00	.56400-01	78.000	.3945	.6547	.4804	.9550	.1986-01	.1457-01	2.171	15.14	539.3
185	270.00	.95800-01	80.000	.2409	.3914	.3096	.9423	.1187-01	.9392-02	1.370	9.585	533.2
185	270.00	.11550	81.000	.1950	.3242	.2610	.9365	.9833-02	.7918-02	1.070	7.457	539.8
185	315.00	.19000-01	68.000	.5164	.8808	.6083	.9635	.2672-01	.1845-01	2.729	18.95	546.5
185	315.00	.22900-01	70.000	.5796	1.045	.6921	.9635	.3169-01	.2099-01	2.845	19.63	558.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
12	3.010	-.3189-02	3.042	36.06	721.7	.9671	256.6	-90.06	2364.	.1017-01	.2050-06	3.645
13	3.010	-.3195-02	3.048	36.11	721.7	.9685	256.6	-90.06	2364.	.1019-01	.2050-06	3.650
14	3.010	-.2120-02	3.034	36.02	721.7	.9661	256.6	-90.04	2364.	.1016-01	.2050-06	3.641

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
12	.4394-01	.7590-02
13	.4397-01	.7584-02
14	.4392-01	.7594-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
13	.00000	.91000-02	1.0000	.5035	1.199	.6016	.9719	.5275-01	.2646-01	2.753	18.60	597.3
13	.00000	.11100-01	2.0000	.8334	2.530	1.027	.9719	.1112	.4516-01	3.944	26.41	614.0
13	.00000	.15000-01	4.0000	.7036	1.799	.8490	.9719	.7912-01	.3733-01	3.667	24.70	603.2
13	.00000	.17000-01	5.0000	.7099	1.761	.8531	.9719	.7746-01	.3751-01	3.774	25.45	600.8
13	.00000	.19000-01	6.0000	.6829	1.668	.8188	.9719	.7333-01	.3601-01	3.670	24.77	599.5
13	.00000	.24900-01	9.0000	.5823	1.241	.6866	.9714	.5456-01	.3019-01	3.482	23.67	585.7
13	.00000	.26900-01	10.000	.5570	1.138	.6553	.9706	.5005-01	.2882-01	3.461	23.60	580.4
12	.00000	.32800-01	12.000	.5302	1.203	.6438	.9684	.5285-01	.2829-01	3.007	20.37	592.6
12	.00000	.36700-01	13.000	.4990	1.077	.6062	.9670	.4731-01	.2664-01	2.949	20.03	587.2
12	.00000	.40600-01	14.000	.5323	1.197	.6577	.9657	.5258-01	.2890-01	3.041	20.61	591.7
12	.00000	.48500-01	15.000	.4752	1.030	.5936	.9630	.4525-01	.2608-01	2.798	19.00	587.7
12	.00000	.56400-01	16.000	.4237	.8928	.5349	.9604	.3923-01	.2351-01	2.557	17.40	584.3
12	.00000	.76100-01	17.000	.3354	.6632	.4324	.9546	.2914-01	.1900-01	2.152	14.71	575.7
12	.00000	.11550	19.000	.2107	.3998	.2842	.9453	.1757-01	.1249-01	1.413	9.694	569.1
12	.00000	.16480	20.000	.1426	.2595	.1979	.9379	.1140-01	.8698-02	1.003	6.910	561.5
12	.00000	.21400	22.000	.8555-01	.1470	.1177	.9347	.6461-02	.5170-02	.6487	4.499	549.1
14	2.0000	.24700-01	165.00	.4499	.8933	.5247	.9713	.3923-01	.2305-01	2.873	19.63	576.3
13	9.0000	.15000-01	157.00	.6934	1.719	.8381	.9711	.7558-01	.3686-01	3.689	24.88	600.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
13	9.0000	.17600-01	158.00	.6185	1.424	.7395	.9711	.6262-01	.3252-01	3.470	23.48	594.1
14	9.8000	.24700-01	164.00	.4805	.9800	.5653	.9706	.4304-01	.2483-01	2.988	20.37	580.1
13	10.000	.22900-01	88.000	.5356	1.129	.6320	.9710	.4966-01	.2779-01	3.233	21.99	584.4
13	10.000	.26900-01	90.000	.5426	1.090	.6399	.9697	.4791-01	.2814-01	3.431	23.42	577.9
13	10.000	.34700-01	94.000	.5445	1.069	.6502	.9669	.4702-01	.2859-01	3.521	24.08	574.6
13	12.000	.17600-01	152.00	.9418	-9.451	1.099	.9870	-.4156	.4832-01	2.718	17.80	656.0
13	12.000	.12100-01	151.00	.6859	-2.756	.8189	.9870	-.1212	.3601-01	1.743	11.37	663.9
13	13.000	.19400-01	153.00	.8999	-14.67	1.044	.9870	-.6452	.4591-01	2.691	17.65	653.7
14	14.600	.44200-01	169.00	.5028	.9930	.6144	.9632	.4361-01	.2698-01	3.228	22.07	575.5
13	18.500	.44200-01	106.00	.5335	1.094	.6587	.9629	.4809-01	.2897-01	3.305	22.53	580.8
14	19.600	.62900-01	175.00	.4302	.8105	.5392	.9569	.3560-01	.2368-01	2.906	19.95	567.9
13	19.800	.40800-01	101.00	.6019	1.331	.7502	.9639	.5855-01	.3299-01	3.487	23.65	589.9
13	20.000	.24900-01	89.000	.4535	.9122	.5353	.9696	.4011-01	.2354-01	2.862	19.53	578.2
13	20.000	.28800-01	91.000	.4685	.9188	.5551	.9682	.4040-01	.2441-01	3.034	20.75	574.4
13	20.000	.32800-01	93.000	.5316	1.105	.6427	.9667	.4861-01	.2826-01	3.250	22.13	582.7
14	21.800	.82200-01	182.00	.3496	.6469	.4499	.9515	.2841-01	.1976-01	2.411	16.58	564.7
13	22.200	.62900-01	125.00	.4748	.9465	.6054	.9567	.4162-01	.2662-01	3.023	20.65	576.9
13	22.400	.44200-01	107.00	.4630	.9270	.5697	.9626	.4077-01	.2505-01	2.935	20.04	577.5
14	22.600	.10270	192.00	.2936	.5236	.3834	.9467	.2299-01	.1684-01	2.119	14.63	557.3
13	23.000	.42000-01	105.00	.5457	1.247	.6879	.9633	.5486-01	.3025-01	3.079	20.85	593.4
13	23.400	.59600-01	120.00	.5208	1.099	.6703	.9576	.4833-01	.2948-01	3.142	21.37	584.5
14	23.900	.21310	250.00	.9848-01	.1596	.1314	.9346	.7011-02	.5771-02	.8147	5.700	533.3
13	24.100	.82200-01	139.00	.3873	.6987	.4775	.9513	.3072-01	.2100-01	2.457	16.85	569.5
14	24.400	.19040	238.00	.1232	.2050	.1660	.9354	.9003-02	.7291-02	.9780	6.813	540.9
14	24.400	.12440	207.00	.2318	.4176	.3116	.9425	.1834-01	.1368-01	1.652	11.39	559.4
14	24.800	.16810	223.00	.1501	.2625	.2057	.9369	.1153-01	.9035-02	1.111	7.688	553.2
13	24.900	.62900-01	126.00	.4554	.9536	.5892	.9565	.4193-01	.2591-01	2.767	18.83	583.5
14	25.000	.79500-01	178.00	.4236	.8114	.5498	.9520	.3564-01	.2415-01	2.809	19.25	570.7
14	25.300	.10270	191.00	.2963	.5386	.3901	.9465	.2365-01	.1714-01	2.088	14.38	561.2
14	25.300	.10000+00	186.00	.3542	.6695	.4717	.9471	.2941-01	.2072-01	2.384	16.36	568.4
13	25.500	.60700-01	124.00	.5376	1.251	.7115	.9571	.5501-01	.3129-01	2.992	20.24	595.1
14	26.000	.12440	206.00	.2317	.4234	.3134	.9424	.1860-01	.1377-01	1.621	11.16	562.3
13	26.300	.82200-01	140.00	.3454	.6563	.4493	.9512	.2886-01	.1976-01	2.314	15.87	569.3
14	26.700	.12100	199.00	.2768	.5432	.3844	.9429	.2386-01	.1688-01	1.790	12.24	574.5
14	26.800	.16810	222.00	.1600	.2820	.2201	.9368	.1239-01	.9668-02	1.172	8.099	554.9
14	27.000	.19040	237.00	.1327	.2234	.1799	.9353	.9813-02	.7903-02	1.035	7.200	544.0
14	27.100	.21310	249.00	.1106	.1813	.1485	.9346	.7962-02	.6522-02	.9001	6.286	536.5
14	27.200	.80300-01	180.00	.4253	.8490	.5607	.9516	.3729-01	.2462-01	2.702	18.45	577.1
13	27.400	.40100-01	98.000	.5579	1.352	.7098	.9636	.5946-01	.3121-01	3.015	20.35	598.8
14	27.400	.16480	215.00	.1715	.3121	.2393	.9371	.1371-01	.1051-01	1.207	8.315	561.4
13	27.600	.41600-01	102.00	.5195	1.273	.6649	.9631	.5596-01	.2924-01	2.786	18.80	599.7
14	27.600	.12440	205.00	.2341	.4379	.3200	.9423	.1923-01	.1406-01	1.595	10.95	566.6
14	27.600	.18700	230.00	.1441	.2470	.1970	.9355	.1085-01	.8654-02	1.096	7.607	548.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
14	27.700	.21010	243.00	.1296	.2185	.1765	.9346	.9595-02	.7753-02	1.010	7.020	544.3
14	27.900	.10110	188.00	.3009	.5809	.4048	.9467	.2551-01	.1778-01	1.978	13.55	572.0
13	28.000	.46800-01	110.00	.3405	.6018	.4093	.9613	.2646-01	.1800-01	2.489	17.20	555.4
14	28.200	.16810	221.00	.1581	.2860	.2204	.9368	.1256-01	.9680-02	1.121	7.725	560.3
14	28.300	.19040	236.00	.1167	.1954	.1578	.9353	.8582-02	.6932-02	.9184	6.392	542.5
14	28.300	.12200	201.00	.2732	.5075	.3715	.9427	.2229-01	.1631-01	1.876	12.89	565.3
13	28.400	.53500-01	114.00	.5107	1.030	.6433	.9591	.4530-01	.2829-01	3.214	21.94	578.5
14	28.400	.21310	248.00	.1007	.1651	.1352	.9346	.7252-02	.5937-02	.8173	5.707	536.8
13	28.700	.58600-01	117.00	.5997	1.362	.7866	.9575	.5990-01	.3459-01	3.400	23.03	592.7
14	28.800	.16580	217.00	.1790	.3326	.2524	.9370	.1461-01	.1109-01	1.229	8.444	565.4
13	28.800	.60400-01	121.00	.5293	1.312	.7119	.9570	.5769-01	.3131-01	2.816	18.99	600.7
14	29.000	.21110	244.00	.1113	.1870	.1514	.9346	.8215-02	.6648-02	.8711	6.060	543.5
13	29.000	.65700-01	129.00	.3308	.5755	.4081	.9555	.2531-01	.1795-01	2.469	17.09	551.9
13	29.200	.72400-01	133.00	.5133	1.037	.6706	.9536	.4560-01	.2949-01	3.226	22.01	578.8
13	29.300	.79500-01	136.00	.4174	.9104	.5652	.9517	.4003-01	.2485-01	2.446	16.60	588.4
13	29.600	.92500-01	143.00	.3492	.6635	.4618	.9485	.2918-01	.2031-01	2.339	16.04	569.3
13	29.700	.10000+00	146.00	.3527	.7397	.4886	.9469	.3253-01	.2148-01	2.140	14.56	583.7
14	29.900	.12100	198.00	.2839	.5761	.3999	.9428	.2530-01	.1757-01	1.775	12.11	579.4
14	30.200	.16480	214.00	.1743	.3320	.2486	.9371	.1458-01	.1092-01	1.163	7.972	569.8
14	30.200	.18700	229.00	.1380	.2432	.1914	.9355	.1068-01	.8408-02	1.010	6.984	554.9
14	30.300	.21010	242.00	.1129	.1947	.1557	.9346	.8553-02	.6838-02	.8522	5.908	549.9
13	31.500	.91000-02	82.000	.5933	1.331	.7155	.9692	.5854-01	.3146-01	3.397	23.02	591.5
13	31 500	.11100-01	83.000	.8286	2.706	1.054	.9692	.1190	.4634-01	3.790	25.33	617.6
13	31.500	.14200-01	84.000	1.005	-4.757	1.193	.9870	-.2092	.5246-01	2.633	17.19	662.1
13	31.500	.16000-01	85.000	1.071	-9.478	1.252	.9870	-.4168	.5506-01	3.054	19.99	656.8
13	31.500	.17600-01	86.000	.9930	25.98	1.135	.9870	1.142	.4991-01	3.276	21.57	646.6
13	31.500	.19400-01	87.000	.8932	3.804	.9918	.9870	.1673	.4362-01	3.704	24.63	627.4
14	32.100	.21010	241.00	.1059	.1794	.1446	.9346	.7878-02	.6353-02	.8197	5.696	545.4
14	32.200	.16480	213.00	.1622	.3033	.2294	.9370	.1332-01	.1008-01	1.105	7.593	566.5
14	32.200	.17860	224.00	.1540	.2644	.2102	.9359	.1161-01	.9234-02	1.169	8.105	548.9
14	32.200	.18700	228.00	.1383	.2340	.1879	.9354	.1028-01	.8252-02	1.071	7.446	545.2
14	32.300	.12100	197.00	.2762	.5393	.3834	.9427	.2369-01	.1684-01	1.794	12.28	573.7
14	32.300	.12300	194.00	.2416	.4706	.3358	.9424	.2067-01	.1475-01	1.574	10.77	573.3
14	32.300	.12730	208.00	.1645	.2813	.2171	.9417	.1236-01	.9535-02	1.256	8.714	547.9
14	32.300	.13420	209.00	.1674	.3112	.2307	.9406	.1367-01	.1013-01	1.148	7.890	565.5
13	32.400	.10000+00	147.00	.3205	.6369	.4359	.9467	.2801-01	.1917-01	2.047	13.99	576.4
14	32.400	.10110	184.00	.3182	.6397	.4352	.9465	.2810-01	.1911-01	2.006	13.69	578.1
14	32.400	.10630	193.00	.1893	.3127	.2413	.9454	.1374-01	.1060-01	1.521	10.61	538.8
14	32.500	.85800-01	183.00	.2392	.4045	.3007	.9500	.1776-01	.1320-01	1.855	12.89	545.1
13	32.600	.79500-01	137.00	.4256	.9166	.5750	.9515	.4031-01	.2528-01	2.522	17.13	586.9
14	32.600	.80800-01	176.00	.4181	.8701	.5601	.9512	.3822-01	.2460-01	2.551	17.37	582.8
13	32.700	.67400-01	132.00	.3361	.5950	.4186	.9547	.2616-01	.1841-01	2.452	16.94	555.8
13	32.700	.72400-01	134.00	.4480	.8570	.5763	.9534	.3769-01	.2534-01	2.979	20.42	570.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

(R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
13	32.800	.65700-01	130.00	.2652	.4430	.3233	.9552	.1948-01	.1422-01	2.096	14.59	541.9
14	32.800	.16680	210.00	.1465	.2630	.2034	.9368	.1155-01	.8935-02	1.048	7.228	558.8
14	32.800	.18880	225.00	.1101	.1791	.1466	.9353	.7866-02	.6441-02	.9064	6.337	534.3
13	32.900	.58600-01	118.00	.5656	1.228	.7350	.9573	.5400-01	.3232-01	3.327	22.59	587.9
13	32.900	.60400-01	122.00	.4032	.7809	.5099	.9567	.3434-01	.2242-01	2.645	18.11	572.5
14	32.900	.61300-01	171.00	.3993	.8516	.5193	.9565	.3740-01	.2281-01	2.383	16.20	585.8
13	33.000	.53500-01	115.00	.4664	.8951	.5810	.9588	.3936-01	.2555-01	3.090	21.17	571.0
13	33.200	.48300-01	113.00	.3311	.5688	.3967	.9604	.2501-01	.1744-01	2.515	17.44	549.0
14	33.400	.42800-01	166.00	.4340	.9294	.5433	.9622	.4082-01	.2386-01	2.580	17.54	586.3
13	33.500	.40100-01	99.000	.5213	1.130	.6505	.9631	.4969-01	.2861-01	3.072	20.86	587.7
13	33.600	.38300-01	97.000	.5457	1.158	.6751	.9637	.5092-01	.2969-01	3.275	22.27	585.2
13	33.700	.36700-01	96.000	.5179	1.073	.6353	.9643	.4719-01	.2794-01	3.177	21.64	582.2
13	33.900	.33800-01	95.000	.4141	.7745	.4939	.9653	.3406-01	.2172-01	2.825	19.40	566.6
14	34.700	.21010	240.00	.1161	.1930	.1570	.9346	.8477-02	.6895-02	.9226	6.428	540.7
14	34.700	.18700	227.00	.1234	.2127	.1694	.9354	.9343-02	.7438-02	.9319	6.460	549.8
14	34.900	.16480	212.00	.1558	.2866	.2187	.9369	.1259-01	.9606-02	1.081	7.441	563.6
13	35.100	.10000+00	148.00	.2881	.5611	.3893	.9466	.2467-01	.1712-01	1.879	12.86	573.3
14	35.200	.23900-01	161.00	.3818	.6801	.4423	.9688	.2987-01	.1943-01	2.760	19.06	557.1
13	35.300	.92500-01	145.00	.3464	.6542	.4580	.9482	.2877-01	.2014-01	2.336	16.03	568.3
13	35.300	.22100-01	160.00	.4096	.7317	.4745	.9689	.3218-01	.2087-01	2.953	20.38	557.7
14	35.400	.18800	231.00	.1343	.2274	.1827	.9353	.9988-02	.8022-02	1.039	7.223	545.4
14	35.500	.12100	196.00	.2560	.4878	.3521	.9426	.2142-01	.1546-01	1.707	11.71	569.8
14	35.600	.16580	216.00	.1341	.2424	.1868	.9368	.1065-01	.8205-02	.9512	6.557	560.2
13	35.800	.80600-01	138.00	.3680	.7033	.4801	.9510	.3093-01	.2111-01	2.450	16.80	570.3
14	35.900	.21310	247.00	.9682-01	.1565	.1290	.9346	.6873-02	.5666-02	.8050	5.634	532.4
14	36.000	.19040	235.00	.1179	.1956	.1587	.9352	.8589-02	.6972-02	.9414	6.562	539.9
14	36.200	.16910	220.00	.1312	.2306	.1805	.9366	.1013-01	.7927-02	.9638	6.665	554.4
13	36.200	.72400-01	135.00	.3779	.7052	.4829	.9532	.3101-01	.2123-01	2.583	17.75	566.2
14	36.300	.12200	200.00	.2377	.4467	.3255	.9424	.1962-01	.1429-01	1.610	11.06	567.4
13	36.600	.65700-01	131.00	.3213	.5603	.3977	.9550	.2464-01	.1749-01	2.390	16.54	552.5
14	36.700	.18700	226.00	.1334	.2255	.1812	.9354	.9902-02	.7960-02	1.036	7.199	544.9
14	36.900	.16480	211.00	.1358	.2470	.1897	.9369	.1085-01	.8331-02	.9564	6.588	561.3
14	36.900	.10110	187.00	.3171	.6194	.4298	.9463	.2720-01	.1888-01	2.059	14.09	573.8
13	37.000	.60400-01	123.00	.4651	.9783	.6027	.9565	.4302-01	.2650-01	2.813	19.14	584.1
14	37.000	.12440	204.00	.2068	.3746	.2794	.9420	.1645-01	.1227-01	1.463	10.08	560.6
13	37.100	.58600-01	119.00	.5089	1.040	.6520	.9570	.4573-01	.2867-01	3.162	21.56	580.3
14	37.200	.21310	246.00	.9164-01	.1484	.1222	.9346	.6516-02	.5368-02	.7596	5.315	532.9
14	37.600	.16810	219.00	.1214	.2136	.1672	.9366	.9383-02	.7342-02	.8916	6.165	554.5
13	37.800	.10270	150.00	.2691	.4979	.3581	.9459	.2190-01	.1575-01	1.858	12.78	564.6
14	37.900	.12100	195.00	.2529	.4705	.3446	.9425	.2066-01	.1513-01	1.734	11.92	565.6
14	38.000	.80300-01	179.00	.3938	.7820	.5204	.9510	.3435-01	.2285-01	2.514	17.18	576.3
13	38.500	.46800-01	112.00	.3381	.5824	.4051	.9606	.2561-01	.1781-01	2.558	17.74	549.6
14	38.600	.12440	203.00	.2001	.3627	.2706	.9419	.1593-01	.1188-01	1.414	9.745	560.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
14	38.700	.10000+00	185.00	.3104	.5934	.4169	.9464	.2606-01	.1831-01	2.063	14.14	570.3
13	38.900	.82200-01	141.00	.3283	.6159	.4270	.9505	.2709-01	.1878-01	2.231	15.32	567.1
13	39.300	.41600-01	104.00	.4444	.9007	.5495	.9622	.3961-01	.2416-01	2.783	18.99	579.2
14	39.500	.10270	190.00	.2964	.5622	.3984	.9458	.2469-01	.1750-01	1.987	13.63	569.0
14	39.600	.16810	218.00	.1097	.1920	.1507	.9366	.8431-02	.6617-02	.8117	5.616	553.2
14	39.900	.19040	233.00	.1054	.1739	.1416	.9352	.7640-02	.6218-02	.8485	5.919	538.4
14	40.100	.79500-01	177.00	.3637	.7131	.4783	.9511	.3132-01	.2101-01	2.353	16.10	574.4
14	40.200	.12440	202.00	.1937	.3515	.2622	.9418	.1544-01	.1151-01	1.368	9.426	560.9
14	40.300	.21310	245.00	.9141-01	.1469	.1214	.9346	.6452-02	.5333-02	.7669	5.373	530.6
13	41.100	.82200-01	142.00	.2943	.5612	.3852	.9504	.2468-01	.1694-01	1.964	13.46	569.9
14	41.100	.60700-01	173.00	.4274	.8534	.5472	.9562	.3748-01	.2403-01	2.714	18.54	577.1
14	42.300	.10270	189.00	.2550	.4686	.3388	.9457	.2058-01	.1488-01	1.773	12.20	563.4
14	42.600	.59600-01	172.00	.4360	.8978	.5620	.9564	.3943-01	.2468-01	2.687	18.31	581.4
14	43.200	.42000-01	168.00	.4500	.8743	.5521	.9619	.3840-01	.2425-01	2.939	20.12	573.0
14	43.400	.82200-01	181.00	.3211	.5766	.4118	.9503	.2532-01	.1809-01	2.296	15.84	558.8
13	43.600	.62900-01	128.00	.3975	.7670	.5063	.9554	.3373-01	.2227-01	2.618	17.93	571.9
13	45.000	.22900-01	8.0000	.7736	2.151	.9709	.9683	.9457-01	.4270-01	3.835	25.75	609.0
14	46.100	.62900-01	174.00	.3832	.7568	.4918	.9553	.3324-01	.2160-01	2.460	16.82	575.5
14	47.700	.40800-01	167.00	.5054	1.003	.6228	.9620	.4405-01	.2735-01	3.229	22.07	576.2
13	48.400	.44200-01	109.00	.4307	.8241	.5297	.9608	.3624-01	.2329-01	2.863	19.62	570.5
13	50.000	.19400-01	156.00	.8717	7.302	.9844	.9870	.3211	.4329-01	3.141	20.75	639.7
13	51.000	.12100-01	154.00	.8497	-27.11	.9812	.9870	-1.192	.4315-01	2.615	17.16	651.7
13	51.000	.17600-01	155.00	.9729	6.813	1.095	.9870	.2996	.4815-01	3.602	23.82	637.5
14	51.900	.44800-01	170.00	.3767	.6811	.4575	.9605	.2991-01	.2009-01	2.672	18.42	560.2
14	53.200	.24700-01	163.00	.5069	1.017	.6060	.9674	.4467-01	.2662-01	3.203	21.87	577.8
14	65.200	.24700-01	162.00	.5781	1.255	.7038	.9669	.5514-01	.3091-01	3.396	23.06	587.9
12	90.000	.91000-02	44.000	.7003	1.896	.8855	.9668	.8329-01	.3891-01	3.522	23.67	607.2
12	90.000	.11100-01	45.000	.8045	3.048	1.064	.9668	.1339	.4677-01	3.466	23.09	623.6
12	90.000	.13100-01	46.000	.7814	2.630	1.019	.9668	.1156	.4477-01	3.525	23.54	619.0
12	90.000	.17000-01	48.000	.7385	2.066	.9385	.9668	.9076-01	.4124-01	3.645	24.47	609.3
12	90.000	.20900-01	50.000	.6417	1.753	.8125	.9668	.7701-01	.3570-01	3.211	21.57	607.8
12	90.000	.24900-01	52.000	.6191	1.627	.7822	.9663	.7151-01	.3437-01	3.169	21.32	605.2
12	90.000	.26900-01	53.000	.5898	1.458	.7416	.9656	.6406-01	.3259-01	3.141	21.19	600.5
12	90.000	.28800-01	54.000	.5752	1.382	.7233	.9649	.6073-01	.3178-01	3.125	21.10	598.1
12	90.000	.32800-01	55.000	.5047	1.119	.6310	.9635	.4917-01	.2773-01	2.915	19.77	590.2
12	90.000	.36700-01	56.000	.4770	1.046	.6005	.9622	.4596-01	.2639-01	2.781	18.87	589.0
12	90.000	.40600-01	57.000	.4888	1.118	.6267	.9609	.4911-01	.2754-01	2.755	18.65	593.4
12	90.000	.48500-01	58.000	.4270	.9449	.5534	.9583	.4152-01	.2432-01	2.471	16.76	590.0
12	90.000	.56400-01	59.000	.4087	.8829	.5353	.9559	.3879-01	.2352-01	2.413	16.39	587.3
12	90.000	.76100-01	60.000	.3118	.6285	.4152	.9506	.2762-01	.1824-01	1.963	13.40	578.4
12	90.000	.95800-01	61.000	.2507	.4916	.3408	.9461	.2160-01	.1497-01	1.623	11.10	574.4
12	90.000	.11550	62.000	.1968	.3724	.2703	.9423	.1636-01	.1188-01	1.324	9.085	568.6
12	135.00	.19000-01	49.000	.6661	1.844	.8355	.9683	.8105-01	.3671-01	3.307	22.20	608.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
12	135.00	.22900-01	51.000	.6418	1.729	.8018	.9683	.7599-01	.3523-01	3.236	21.75	606.9
12	180.00	.91000-02	23.000	.4244	.9332	.5013	.9719	.4101-01	.2203-01	2.469	16.75	589.3
12	180.00	.11100-01	24.000	.8070	3.555	1.031	.9719	.1562	.4532-01	3.311	22.00	628.3
12	180.00	.13100-01	25.000	.7831	2.787	.9817	.9719	.1225	.4314-01	3.454	23.04	621.3
12	180.00	.15000-01	26.000	.7581	2.499	.9429	.9719	.1098	.4143-01	3.451	23.06	618.1
12	180.00	.17000-01	27.000	.7090	2.136	.8731	.9719	.9384-01	.3836-01	3.366	22.54	613.6
12	180.00	.19000-01	28.000	.6830	2.027	.8396	.9719	.8905-01	.3689-01	3.267	21.89	612.8
12	180.00	.20900-01	29.000	.6926	1.925	.8447	.9719	.8458-01	.3712-01	3.430	23.03	608.9
12	180.00	.28800-01	32.000	.5806	1.417	.7061	.9699	.6227-01	.3103-01	3.120	21.05	599.4
12	180.00	.32800-01	33.000	.5234	1.163	.6334	.9684	.5109-01	.2783-01	3.019	20.47	590.4
12	180.00	.36700-01	34.000	.5350	1.272	.6613	.9670	.5589-01	.2906-01	2.928	19.78	597.1
12	180.00	.56400-01	37.000	.4357	.9337	.5523	.9604	.4103-01	.2427-01	2.591	17.61	586.4
12	180.00	.76100-01	38.000	.3456	.7017	.4491	.9546	.3083-01	.1973-01	2.160	14.73	579.5
12	180.00	.95800-01	39.000	.2849	.5566	.3779	.9496	.2446-01	.1660-01	1.850	12.66	573.8
12	180.00	.11550	40.000	.2335	.4467	.3160	.9453	.1963-01	.1388-01	1.551	10.63	570.5
12	180.00	.18450	42.000	.1193	.2112	.1652	.9362	.9281-02	.7259-02	.8695	6.008	555.8
12	225.00	.22900-01	30.000	.6853	1.862	.8098	.9757	.8184-01	.3558-01	3.438	23.10	607.5
12	270.00	.91000-02	63.000	.5902	2.674	.7169	.9773	.1175	.3150-01	2.402	15.95	629.1
12	270.00	.11100-01	64.000	.8704	4.328	1.063	.9773	.1902	.4671-01	3.455	22.93	631.3
12	270.00	.13100-01	65.000	.8200	3.218	.9868	.9773	.1414	.4336-01	3.489	23.23	624.8
12	270.00	.17000-01	67.000	.6624	2.174	.7865	.9773	.9554-01	.3456-01	3.021	20.19	617.9
12	270.00	.20900-01	69.000	.7260	2.251	.8578	.9773	.9892-01	.3769-01	3.398	22.74	615.1
12	270.00	.24900-01	71.000	.6597	1.854	.7757	.9768	.8147-01	.3408-01	3.248	21.80	609.6
12	270.00	.28800-01	73.000	.5346	1.334	.6276	.9753	.5861-01	.2758-01	2.830	19.08	601.2
12	270.00	.36700-01	75.000	.6046	1.514	.7252	.9723	.6651-01	.3187-01	3.192	21.52	601.5
12	270.00	.46500-01	77.000	.4991	1.127	.6071	.9680	.4950-01	.2668-01	2.841	19.25	592.1
12	270.00	.56400-01	78.000	.4626	1.028	.5715	554	.4517-01	.2511-01	2.667	18.09	590.5
12	270.00	.95800-01	80.000	.3106	.6237	.4048	.9536	.2741-01	.1779-01	1.962	13.39	577.9
12	270.00	.11550	81.000	.2613	.5169	.3498	.9488	.2271-01	.1537-01	1.675	11.45	575.7
12	315.00	.19000-01	68.000	.6496	1.663	.7625	.9757	.7306-01	.3351-01	3.381	22.77	603.2
12	315.00	.22900-01	70.000	.5970	1.708	.7092	.9757	.7505-01	.3116-01	2.910	19.52	610.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
74	4.020	-.3191-02	3.044	64.96	738.7	.4166	174.5	-90.06	2604.	.6442-02	.1405-06	3.712
75	4.020	-.4257-02	3.046	64.93	738.7	.4164	174.5	-90.08	2604.	.6439-02	.1405-06	3.710
76	4.020	-.3195-02	3.048	64.92	739.7	.4163	174.8	-90.06	2605.	.6429-02	.1406-06	3.702

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
74	.3870-01	.9573-02
75	.3870-01	.9576-02
76	.3870-01	.9585-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
75	.00000	.91000-02	1.0000	.3640	.6228	.4302	.9630	.2410-01	.1665-01	2.503	17.25	560.9
75	.00000	.11100-01	2.0000	.6101	1.225	.7494	.9630	.4739-01	.2900-01	3.474	23.55	591.5
75	.00000	.15000-01	4.0000	.6689	1.346	.8221	.9630	.5208-01	.3181-01	3.801	25.76	591.8
75	.00000	.17000-01	5.0000	.6362	1.238	.7759	.9630	.4791-01	.3003-01	3.740	25.41	586.7
75	.00000	.19000-01	6.0000	.6283	1.215	.7652	.9630	.4701-01	.2961-01	3.720	25.29	585.7
75	.00000	.24900-01	9.0000	.5496	.9904	.6599	.9625	.3833-01	.2554-01	3.530	24.17	572.7
75	.00000	.26900-01	10.000	.4998	.8805	.5990	.9617	.3407-01	.2318-01	3.305	22.68	567.8
74	.00000	.32800-01	12.000	.4796	.8425	.5809	.9595	.3261-01	.2249-01	3.184	21.86	567.2
74	.00000	.36700-01	13.000	.4595	.7887	.5569	.9581	.3053-01	.2155-01	3.148	21.68	561.7
74	.00000	.40600-01	14.000	.4690	.8200	.5757	.9567	.3174-01	.2228-01	3.133	21.52	566.1
74	.00000	.48500-01	15.000	.4164	.7156	.5156	.9540	.2770-01	.1996-01	2.847	19.61	562.0
74	.00000	.56400-01	16.000	.3788	.6502	.4752	.9514	.2517-01	.1839-01	2.594	17.87	561.7
74	.00000	.76100-01	17.000	.2701	.4535	.3467	.9453	.1755-01	.1342-01	1.909	13.19	556.0
74	.00000	.11550	19.000	.1719	.2914	.2340	.9353	.1128-01	.9056-02	1.199	8.271	558.5
74	.00000	.16480	20.000	.9576-01	.1594	.1354	.9267	.6170-02	.5241-02	.6855	4.742	553.7
74	.00000	.21400	22.000	.5588-01	.8502-01	.7612-01	.9224	.3290-02	.2946-02	.4663	3.281	523.1
76	2.0000	.24700-01	165.00	.4497	.7732	.5338	.9623	.2992-01	.2066-01	3.077	21.18	562.9
75	9.0000	.15000-01	157.00	.6291	1.231	.7720	.9621	.4763-01	.2987-01	3.678	24.98	587.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
75	9.0000	.17600-01	158.00	.5589	1.030	.6759	.9621	.3984-01	.2615-01	3.494	23.86	577.1
76	9.8000	.24700-01	164.00	.4396	.7583	.5240	.9616	.2934-01	.2028-01	2.994	20.60	563.7
75	10.000	.22900-01	88.000	.4844	.8674	.5819	.9621	.3356-01	.2252-01	3.136	21.48	571.4
75	10.000	.26900-01	90.000	.4573	.7776	.5454	.9608	.3009-01	.2110-01	3.174	21.89	559.3
75	10.000	.34700-01	94.000	.5160	.9074	.6304	.9579	.3511-01	.2439-01	3.420	23.48	567.4
75	12.000	.17600-01	152.00	.9711	3.411	1.071	.9870	.1320	.4143-01	3.880	25.69	635.4
75	12.000	.12100-01	151.00	.6029	4.138	.6782	.9870	.1601	.2624-01	2.017	13.24	652.2
75	13.000	.19400-01	153.00	.8805	2.390	.9592	.9870	.9250-01	.3712-01	3.984	26.57	621.7
76	14.600	.44200-01	169.00	.4964	.8471	.6125	.9542	.3278-01	.2370-01	3.432	23.65	561.0
75	18.500	.44200-01	106.00	.5061	.9083	.6359	.9539	.3515-01	.2461-01	3.267	22.37	571.9
76	19.600	.62900-01	175.00	.4037	.6693	.5093	.9477	.2590-01	.1971-01	2.912	20.15	553.3
75	19.800	.40800-01	101.00	.5668	1.056	.7162	.9550	.4085-01	.2771-01	3.499	23.87	579.1
75	20.000	.24900-01	89.000	.3763	.6442	.4498	.9607	.2493-01	.1741-01	2.586	17.82	561.1
75	20.000	.28800-01	91.000	.4106	.7011	.4941	.9592	.2713-01	.1912-01	2.833	19.53	560.4
75	20.000	.32800-01	93.000	.4701	.8307	.5756	.9578	.3214-01	.2227-01	3.096	21.24	568.5
76	21.800	.82200-01	182.00	.3116	.5101	.4024	.9420	.1974-01	.1557-01	2.292	15.89	549.6
75	22.200	.62900-01	125.00	.4365	.7664	.5638	.9475	.2966-01	.2182-01	2.898	19.90	567.1
75	22.400	.44200-01	107.00	.4411	.7791	.5523	.9536	.3015-01	.2137-01	2.906	19.94	568.4
76	22.600	.10270	192.00	.2519	.4047	.3309	.9368	.1566-01	.1280-01	1.910	13.29	543.7
75	23.000	.42000-01	105.00	.5329	1.011	.6799	.9543	.3913-01	.2631-01	3.220	21.93	582.5
75	23.400	.59600-01	120.00	.4857	.8812	.6318	.9485	.3410-01	.2445-01	3.093	21.16	574.1
76	23.900	.21310	250.00	.6822-01	.1028	.9238-01	.9222	.3977-02	.3575-02	.5809	4.095	519.7
75	24.100	.82200-01	139.00	.3295	.5632	.4343	.9419	.2179-01	.1680-01	2.270	15.64	560.6
76	24.400	.19040	238.00	.9083-01	.1395	.1240	.9233	.5397-02	.4798-02	.7455	5.232	527.6
76	24.400	.12440	207.00	.1991	.3244	.2699	.9321	.1256-01	.1045-01	1.475	10.23	548.3
76	24.800	.16810	223.00	.1246	.1995	.1731	.9254	.7720-02	.6698-02	.9497	6.610	542.7
75	24.900	.62900-01	126.00	.4550	.8300	.5970	.9474	.3212-01	.2310-01	2.879	19.68	575.2
76	25.000	.79500-01	178.00	.3581	.5959	.4647	.9425	.2306-01	.1798-01	2.569	17.76	554.3
76	25.300	.10270	191.00	.2734	.4470	.3627	.9366	.1730-01	.1404-01	2.016	13.98	549.1
76	25.300	.10000+00	186.00	.2895	.4831	.3867	.9373	.1870-01	.1497-01	2.067	14.29	555.1
75	25.500	.60700-01	124.00	.5411	1.057	.7251	.9480	.4088-01	.2806-01	3.170	21.53	587.3
76	26.000	.12440	206.00	.2187	.3616	.2991	.9320	.1399-01	.1158-01	1.585	10.97	552.4
75	26.300	.82200-01	140.00	.2852	.4900	.3771	.9417	.1896-01	.1459-01	1.951	13.43	561.9
76	26.700	.12100	199.00	.2719	.4713	.3803	.9326	.1824-01	.1472-01	1.840	12.65	564.8
76	26.800	.16810	222.00	.1404	.2261	.1958	.9253	.8749-02	.7579-02	1.061	7.378	544.4
76	27.000	.19040	237.00	.1063	.1645	.1459	.9233	.6365-02	.5646-02	.8604	6.029	530.5
76	27.100	.21310	249.00	.7947-01	.1206	.1082	.9222	.4668-02	.4187-02	.6668	4.692	522.9
76	27.200	.80300-01	180.00	.3954	.6803	.5218	.9422	.2633-01	.2019-01	2.703	18.60	563.0
75	27.400	.40100-01	98.000	.5078	.9834	.6506	.9546	.3805-01	.2518-01	3.001	20.40	585.9
76	27.400	.16480	215.00	.1497	.2469	.2116	.9257	.9553-02	.8189-02	1.089	7.541	551.7
75	27.600	.41600-01	102.00	.4960	.9704	.6396	.9541	.3755-01	.2475-01	2.900	19.69	587.6
76	27.600	.12440	205.00	.2303	.3872	.3181	.9319	.1499-01	.1231-01	1.626	11.23	557.2
76	27.600	.18700	230.00	.1244	.1946	.1718	.9235	.7531-02	.6649-02	.9880	6.908	534.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
76	27.700	.21010	243.00	.9345-01	.1438	.1284	.9223	.5566-02	.4970-02	.7637	5.357	528.5
76	27.900	.10110	188.00	.2904	.4967	.3937	.9368	.1922-01	.1523-01	2.002	13.79	561.5
75	28.000	.46800-01	110.00	.2882	.4632	.3516	.9523	.1793-01	.1361-01	2.180	15.17	543.2
76	28.200	.16810	221.00	.1522	.2485	.2142	.9253	.9617-02	.8291-02	1.124	7.798	548.8
76	28.300	.19040	236.00	.9195-01	.1417	.1259	.9233	.5486-02	.4872-02	.7492	5.253	529.1
76	28.300	.12200	201.00	.2492	.4138	.3410	.9323	.1601-01	.1320-01	1.794	12.41	553.7
75	28.400	.53500-01	114.00	.3993	.6804	.5031	.9500	.2633-01	.1947-01	2.762	19.04	559.9
76	28.400	.21310	248.00	.7022-01	.1066	.9559-01	.9222	.4124-02	.3700-02	.5895	4.148	522.8
75	28.700	.58600-01	117.00	.5515	1.039	.7277	.9484	.4021-01	.2816-01	3.359	22.89	581.3
76	28.800	.16580	217.00	.1566	.2611	.2231	.9255	.1010-01	.8635-02	1.120	7.743	554.9
75	28.800	.60400-01	121.00	.5507	1.120	.7493	.9478	.4333-01	.2900-01	3.097	20.97	593.3
76	29.000	.21110	244.00	.7253-01	.1112	.9945-01	.9222	.4305-02	.3849-02	.5965	4.187	527.2
75	29.000	.65700-01	129.00	.3037	.4914	.3822	.9462	.1902-01	.1479-01	2.273	15.80	545.3
75	29.200	.72400-01	133.00	.4225	.7404	.5555	.9442	.2865-01	.2150-01	2.813	19.32	566.6
75	29.300	.79500-01	136.00	.3928	.7460	.5407	.9422	.2887-01	.2092-01	2.372	16.15	582.7
75	29.600	.92500-01	143.00	.2743	.4682	.3674	.9388	.1812-01	.1422-01	1.892	13.04	560.4
75	29.700	.10000+00	146.00	.3113	.5752	.4378	.9370	.2226-01	.1694-01	1.940	13.24	577.6
76	29.900	.12100	198.00	.2775	.4899	.3924	.9324	.1896-01	.1519-01	1.832	12.57	569.1
76	30.200	.16480	214.00	.1521	.2570	.2185	.9256	.9948-02	.8456-02	1.067	7.362	558.4
76	30.200	.18700	229.00	.1246	.1968	.1732	.9235	.7615-02	.6704-02	.9730	6.790	537.9
76	30.300	.21010	242.00	.6666-01	.1036	.9226-01	.9222	.4011-02	.3571-02	.5347	3.742	532.4
75	31.500	.91000-02	82.000	.3591	.6011	.4275	.9603	.2326-01	.1654-01	2.549	17.62	555.2
75	31.500	.11100-01	83.000	.6028	1.221	.7545	.9603	.4723-01	.2920-01	3.404	23.06	592.7
75	31.500	.14200-01	84.000	.9183	3.436	1.015	.9870	.1330	.3928-01	3.582	23.69	637.9
75	31.500	.16000-01	85.000	1.011	3.282	1.111	.9870	.1270	.4299-01	4.176	27.70	631.9
75	31.500	.17600-01	86.000	.8816	2.423	.9611	.9870	.9377-01	.3719-01	3.961	26.40	622.6
75	31.500	.19400-01	87.000	.7932	1.762	.8543	.9870	.6818-01	.3306-01	4.124	27.76	604.3
76	32.100	.21010	241.00	.5996-01	.9227-01	.8240-01	.9222	.3571-02	.3189-02	.4902	3.439	528.4
76	32.200	.16480	213.00	.1347	.2252	.1922	.9255	.8715-02	.7439-02	.9591	6.628	555.7
76	32.200	.17860	224.00	.1182	.1851	.1629	.9241	.7165-02	.6305-02	.9366	6.546	535.0
76	32.200	.18700	228.00	.1047	.1617	.1434	.9234	.6260-02	.5551-02	.8498	5.956	529.9
76	32.300	.12100	197.00	.2553	.4367	.3551	.9323	.1690-01	.1374-01	1.759	12.11	561.7
76	32.300	.12300	194.00	.2060	.3538	.2879	.9319	.1369-01	.1114-01	1.412	9.719	562.6
76	32.300	.12730	208.00	.1201	.1906	.1611	.9311	.7376-02	.6236-02	.9293	6.478	539.7
76	32.300	.13420	209.00	.1470	.2466	.2051	.9299	.9543-02	.7936-02	1.042	7.199	556.5
75	32.400	.10000+00	147.00	.2586	.4546	.3554	.9368	.1759-01	.1375-01	1.715	11.78	567.3
76	32.400	.10110	184.00	.2717	.4691	.3706	.9366	.1815-01	.1434-01	1.849	12.72	563.9
76	32.400	.10630	193.00	.1610	.2467	.2075	.9354	.9546-02	.8032-02	1.326	9.313	526.8
76	32.500	.85800-01	183.00	.1997	.3084	.2528	.9404	.1194-01	.9785-02	1.621	11.36	529.9
75	32.600	.79500-01	137.00	.3867	.7198	.5285	.9420	.2785-01	.2045-01	2.389	16.30	579.0
76	32.600	.80800-01	176.00	.3891	.6828	.5194	.9417	.2643-01	.2010-01	2.590	17.78	567.7
75	32.700	.67400-01	132.00	.2713	.4396	.3429	.9455	.1701-01	.1327-01	2.025	14.07	545.8
75	32.700	.72400-01	134.00	.3713	.6347	.4837	.9440	.2456-01	.1872-01	2.558	17.63	560.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
75	32.800	.65700-01	130.00	.2353	.3680	.2923	.9460	.1424-01	.1131-01	1.865	13.04	533.8
76	32.800	.16680	210.00	.1157	.1888	.1627	.9253	.7305-02	.6298-02	.8548	5.930	548.7
76	32.800	.18880	225.00	.7753-01	.1175	.1049	.9233	.4545-02	.4059-02	.6528	4.596	522.1
75	32.900	.58600-01	118.00	.5342	.9767	.6983	.9481	.3780-01	.2702-01	3.369	23.03	575.7
75	32.900	.60400-01	122.00	.3970	.6902	.5107	.9476	.2671-01	.1976-01	2.671	18.37	564.8
76	32.900	.61300-01	171.00	.4579	.8367	.6015	.9473	.3238-01	.2328-01	2.895	19.78	576.3
75	33.000	.53500-01	115.00	.3978	.6710	.5001	.9497	.2596-01	.1935-01	2.792	19.28	557.3
75	33.200	.48300-01	113.00	.2741	.4339	.3339	.9514	.1679-01	.1292-01	2.128	14.85	538.0
76	33.400	.42800-01	166.00	.4004	.7257	.5066	.9532	.2808-01	.1961-01	2.557	17.49	574.7
75	33.500	.40100-01	99.000	.4706	.8552	.5928	.9542	.3309-01	.2294-01	2.991	20.46	574.4
75	33.600	.38300-01	97.000	.4729	.8418	.5898	.9548	.3257-01	.2282-01	3.084	21.14	570.1
75	33.700	.36700-01	96.000	.4419	.7729	.5465	.9553	.2991-01	.2115-01	2.950	20.27	566.2
75	33.900	.33800-01	95.000	.3331	.5477	.4018	.9563	.2120-01	.1555-01	2.429	16.84	550.2
76	34.700	.21010	240.00	.8908-01	.1353	.1213	.9222	.5236-02	.4695-02	.7465	5.252	523.1
76	34.700	.18700	227.00	.9291-01	.1453	.1284	.9234	.5623-02	.4968-02	.7377	5.158	534.5
76	34.900	.16480	212.00	.1251	.2060	.1769	.9254	.7973-02	.6846-02	.9116	6.314	551.4
75	35.100	.10000+00	148.00	.2282	.3946	.3113	.9367	.1527-01	.1204-01	1.547	10.64	563.5
76	35.200	.23900-01	161.00	.2807	.4370	.3277	.9599	.1691-01	.1268-01	2.246	15.71	532.9
75	35.300	.92500-01	145.00	.2778	.4702	.3712	.9385	.1819-01	.1436-01	1.941	13.39	558.1
75	35.300	.22100-01	160.00	.3038	.4756	.3551	.9600	.1840-01	.1374-01	2.405	16.82	534.1
76	35.400	.18800	231.00	.1086	.1679	.1490	.9233	.6499-02	.5766-02	.8809	6.173	530.2
76	35.500	.12100	196.00	.2210	.3693	.3037	.9322	.1429-01	.1175-01	1.576	10.89	555.4
76	35.600	.16580	216.00	.1147	.1867	.1611	.9253	.7225-02	.6234-02	.8514	5.908	547.9
75	35.800	.80600-01	138.00	.3207	.5526	.4249	.9415	.2138-01	.1644-01	2.184	15.03	562.7
76	35.900	.21310	247.00	.7761-01	.1159	.1045	.9221	.4485-02	.4043-02	.6726	4.752	515.7
76	36.000	.19040	235.00	.9665-01	.1475	.1315	.9231	.5708-02	.5089-02	.8026	5.641	525.1
76	36.200	.16910	220.00	.1044	.1671	.1452	.9250	.6468-02	.5621-02	.7956	5.537	542.7
75	36.200	.72400-01	135.00	.3324	.5577	.4301	.9438	.2158-01	.1664-01	2.352	16.25	555.8
76	36.300	.12200	200.00	.1981	.3289	.2716	.9320	.1273-01	.1051-01	1.426	9.868	553.6
75	36.600	.65700-01	131.00	.2734	.4392	.3439	.9457	.1700-01	.1331-01	2.069	14.40	543.1
76	36.700	.18700	226.00	.1056	.1628	.1445	.9233	.6301-02	.5593-02	.8603	6.032	529.2
76	36.900	.16480	211.00	.1079	.1765	.1520	.9254	.6829-02	.5881-02	.7950	5.513	549.3
76	36.900	.10110	187.00	.2648	.4451	.3568	.9364	.1722-01	.1381-01	1.871	12.92	557.1
75	37.000	.60400-01	123.00	.4664	.8419	.6038	.9473	.3258-01	.2360-01	2.989	20.46	573.0
76	37.000	.12440	204.00	.1758	.2863	.2390	.9315	.1108-01	.9251-02	1.304	9.049	548.0
75	37.100	.58600-01	119.00	.5038	.8958	.6528	.9478	.3466-01	.2526-01	3.291	22.57	569.9
76	37.200	.21310	246.00	.7322-01	.1094	.9862-01	.9221	.4233-02	.3817-02	.6340	4.479	515.9
76	37.600	.16810	219.00	.9427-01	.1511	.1313	.9250	.5847-02	.5081-02	.7175	4.993	543.0
75	37.800	.10270	150.00	.2032	.3420	.2746	.9359	.1323-01	.1063-01	1.431	9.884	556.7
76	37.900	.12100	195.00	.1993	.3255	.2706	.9321	.1260-01	.1047-01	1.472	10.21	548.8
76	38.000	.80300-01	179.00	.3682	.6241	.4844	.9415	.2415-01	.1875-01	2.570	17.72	559.3
75	38.500	.46800-01	112.00	.2986	.4751	.3642	.9515	.1838-01	.1409-01	2.297	16.01	539.8
76	38.600	.12440	203.00	.1726	.2817	.2350	.9314	.1090-01	.9096-02	1.275	8.847	548.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
76	38.700	.10000+00	185.00	.2795	.4656	.3746	.9365	.1802-01	.1450-01	2.003	13.85	554:5
75	38.900	.82200-01	141.00	.2670	.4520	.3521	.9409	.1749-01	.1362-01	1.864	12.86	558.2
75	39.300	.41600-01	104.00	.4228	.7466	.5303	.9532	.2889-01	.2052-01	2.786	19.12	568.4
76	39.500	.10270	190.00	.2507	.4158	.3364	.9359	.1609-01	.1302-01	1.807	12.50	553.4
76	39.600	.16810	218.00	.8538-01	.1366	.1188	.9250	.5285-02	.4597-02	.6521	4.539	542.3
76	39.900	.19040	233.00	.7688-01	.1169	.1044	.9231	.4523-02	.4038-02	.6433	4.525	523.5
76	40.100	.79500-01	177.00	.3413	.5769	.4482	.9416	.2233-01	.1735-01	2.393	16.51	558.5
76	40.200	.12440	202.00	.1589	.2609	.2172	.9313	.1010-01	.8405-02	1.163	8.057	550.5
76	40.300	.21310	245.00	.6244-01	.9272-01	.8374-01	.9221	.3588-02	.3241-02	.5473	3.872	513.2
75	41.100	.82200-01	142.00	.2298	.3912	.3040	.9408	.1514-01	.1176-01	1.591	10.97	559.7
76	41.100	.60700-01	173.00	.4560	.7795	.5847	.9469	.3017-01	.2263-01	3.145	21.66	561.5
76	42.300	.10270	189.00	.2042	.3344	.2724	.9357	.1294-01	.1054-01	1.502	10.41	549.6
76	42.600	.59600-01	172.00	.5003	.8746	.6464	.9472	.3385-01	.2501-01	3.346	22.98	566.9
76	43.200	.42000-01	168.00	.4213	.7103	.5213	.9529	.2749-01	.2017-01	2.963	20.45	557.9
76	43.400	.82200-01	181.00	.2800	.4501	.3609	.9407	.1742-01	.1397-01	2.122	14.76	543.9
75	43.600	.62900-01	128.00	.3630	.6238	.4685	.9461	.2414-01	.1813-01	2.482	17.09	562.0
75	45.000	.22900-01	8.0000	.7032	1.488	.8951	.9593	.5759-01	.3464-01	3.810	25.72	598.6
76	46.100	.62900-01	174.00	.3795	.6426	.4872	.9460	.2487-01	.1885-01	2.653	18.30	559.0
76	47.700	.40800-01	167.00	.4608	.7861	.5720	.9530	.3042-01	.2214-01	3.187	21.96	560.9
75	48.400	.44200-01	109.00	.3932	.6713	.4913	.9518	.2598-01	.1901-01	2.714	18.70	560.3
75	50.000	.19400-01	156.00	.5569	1.261	.6044	.9859	.4878-01	.2339-01	2.851	19.17	606.4
75	51.000	.12100-01	154.00	.6427	2.132	.7131	.9859	.8251-01	.2759-01	2.629	17.43	632.9
75	51.000	.17600-01	155.00	.7347	1.651	.7973	.9859	.6387-01	.3085-01	3.785	25.46	605.5
76	51.900	.44800-01	170.00	.3274	.5258	.4009	.9514	.2035-01	.1551-01	2.484	17.28	543.6
76	53.200	.24700-01	163.00	.4095	.6810	.4908	.9585	.2636-01	.1900-01	2.941	20.34	554.1
76	65.200	.24700-01	162.00	.5097	.8984	.6231	.9579	.3477-01	.2411-01	3.372	23.13	568.7
74	90.000	.91000-02	44.000	.3856	.6546	.4663	.9579	.2534-01	.1805-01	2.682	18.50	559.0
74	90.000	.11100-01	45.000	.5888	1.119	.7355	.9579	.4330-01	.2847-01	3.555	24.20	582.7
74	90.000	.13100-01	46.000	.7194	1.562	.9308	.9579	.6045-01	.3603-01	3.813	25.70	601.7
74	90.000	.17000-01	48.000	.6568	1.255	.8216	.9579	.4855-01	.3180-01	3.942	26.83	583.6
74	90.000	.20900-01	50.000	.5575	1.036	.6920	.9579	.4009-01	.2679-01	3.453	23.56	578.7
74	90.000	.24900-01	52.000	.5565	1.034	.6928	.9574	.4004-01	.2682-01	3.443	23.50	578.8
74	90.000	.26900-01	53.000	.5384	.9800	.6690	.9567	.3793-01	.2589-01	3.415	23.36	574.8
74	90.000	.28800-01	54.000	.5262	.9461	.6540	.9560	.3662-01	.2531-01	3.390	23.21	572.2
74	90.000	.32800-01	55.000	.4566	.7909	.5652	.9545	.3061-01	.2188-01	3.088	21.24	563.9
74	90.000	.36700-01	56.000	.4209	.7256	.5239	.9532	.2808-01	.2028-01	2.865	19.72	562.8
74	90.000	.40600-01	57.000	.4339	.7582	.5464	.9518	.2935-01	.2115-01	2.900	19.92	566.0
74	90.000	.48500-01	58.000	.3639	.6271	.4624	.9492	.2427-01	.1790-01	2.479	17.06	562.7
74	90.000	.56400-01	59.000	.3564	.6104	.4579	.9467	.2363-01	.1772-01	2.449	16.87	561.1
74	90.000	.76100-01	60.000	.2636	.4365	.3439	.9410	.1689-01	.1331-01	1.903	13.18	552.1
74	90.000	.95800-01	61.000	.1962	.3211	.2611	.9361	.1243-01	.1010-01	1.442	10.00	548.8
74	90.000	.11550	62.000	.1460	.2391	.1987	.9319	.9256-02	.7691-02	1.072	7.437	549.0
74	135.00	.19000-01	49.000	.6464	1.238	.8023	.9593	.4790-01	.3105-01	3.869	26.33	584.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K013)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
74	135.00	.22900-01	51.000	.6034	1.153	.7484	.9593	.4461-01	.2897-01	3.620	24.64	583.7
74	180.00	.91000-02	23.000	.2552	.4244	.2994	.9629	.1643-01	.1159-01	1.830	12.66	553.4
74	180.00	.11100-01	24.000	.6639	1.502	.8369	.9629	.5813-01	.3239-01	3.402	22.87	606.3
74	180.00	.13100-01	25.000	.7730	1.764	.9762	.9629	.6827-01	.3778-01	3.934	26.44	607.2
74	180.00	.15000-01	26.000	.7774	1.699	.9730	.9629	.6577-01	.3766-01	4.097	27.60	602.5
74	180.00	.17000-01	27.000	.6906	1.400	.8502	.9629	.5420-01	.3291-01	3.895	26.38	592.9
74	180.00	.19000-01	28.000	.6578	1.314	.8072	.9629	.5087-01	.3124-01	3.765	25.52	590.8
74	180.00	.20900-01	29.000	.6541	1.264	.7966	.9629	.4893-01	.3083-01	3.875	26.35	585.6
74	180.00	.28800-01	32.000	.5488	.9981	.6657	.9610	.3863-01	.2577-01	3.485	23.84	574.6
74	180.00	.32800-01	33.000	.5086	.8882	.6151	.9595	.3438-01	.2381-01	3.403	23.38	565.8
74	180.00	.36700-01	34.000	.5066	.9089	.6220	.9581	.3518-01	.2407-01	3.272	22.41	571.8
74	180.00	.56400-01	37.000	.3918	.6657	.4898	.9514	.2577-01	.1896-01	2.723	18.78	559.1
74	180.00	.76100-01	38.000	.3007	.4992	.3842	.9453	.1932-01	.1487-01	2.161	14.96	552.9
74	180.00	.95800-01	39.000	.2383	.3895	.3107	.9400	.1508-01	.1203-01	1.754	12.17	548.4
74	180.00	.11550	40.000	.1893	.3126	.2542	.9353	.1210-01	.9838-02	1.372	9.499	551.5
74	180.00	.18450	42.000	.8971-01	.1387	.1224	.9244	.5369-02	.4737-02	.7262	5.091	529.5
74	225.00	.22900-01	30.000	.6139	1.170	.7293	.9667	.4528-01	.2823-01	3.693	25.14	583.3
74	270.00	.91000-02	63.000	.4611	.9414	.5500	.9683	.3644-01	.2129-01	2.584	17.49	593.9
74	270.00	.11100-01	64.000	.6700	1.699	.8291	.9683	.6577-01	.3209-01	3.163	21.15	616.7
74	270.00	.13100-01	65.000	.7279	1.675	.8867	.9683	.6482-01	.3432-01	3.681	24.73	608.0
74	270.00	.17000-01	67.000	.6277	1.318	.7525	.9683	.5102-01	.2913-01	3.426	23.14	597.7
74	270.00	.20900-01	69.000	.6649	1.345	.7917	.9683	.5205-01	.3064-01	3.760	25.47	592.6
74	270.00	.24900-01	71.000	.6261	1.222	.7426	.9678	.4729-01	.2874-01	3.671	24.94	587.2
74	270.00	.28800-01	73.000	.5619	1.056	.6670	.9663	.4087-01	.2582-01	3.433	23.40	580.8
74	270.00	.36700-01	75.000	.5511	1.018	.6623	.9634	.3939-01	.2563-01	3.436	23.46	577.6
74	270.00	.46500-01	77.000	.4364	.7679	.5299	.9591	.2972-01	.2051-01	2.891	19.85	567.5
74	270.00	.56400-01	78.000	.4082	.7118	.5014	.9564	.2755-01	.1941-01	2.736	18.80	565.5
74	270.00	.95800-01	80.000	.2554	.4289	.3297	.9443	.1660-01	.1276-01	1.806	12.47	556.0
74	270.00	.11550	81.000	.2048	.3518	.2746	.9392	.1361-01	.1063-01	1.402	9.654	561.8
74	315.00	.19000-01	68.000	.5952	1.123	.7056	.9667	.4346-01	.2731-01	3.622	24.68	581.5
74	315.00	.22900-01	70.000	.5391	1.046	.6427	.9667	.4047-01	.2488-01	3.183	21.63	586.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
2	3.010	.1193-01	.7323-02	36.07	720.7	.9672	256.3	-31.54	2362.	.1019-01	.2047-06	3.653
3	3.010	.1534-01	.9416-02	36.07	720.7	.9674	256.3	-31.54	2362.	.1019-01	.2047-06	3.653
4	3.010	.2215-01	.1362-01	35.98	721.7	.9648	256.6	-31.58	2364.	.1015-01	.2050-06	3.636

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
2	.4393-01	.7583-02
3	.4394-01	.7582-02
4	.4389-01	.7599-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
3	.00000	.91000-02	1.0000	.5839	1.245	.6861	.9720	.5472-01	.3015-01	3.481	23.67	585.0
3	.00000	.11100-01	2.0000	.8212	2.384	1.006	.9720	.1047	.4420-01	3.967	26.61	610.7
3	.00000	.15000-01	4.0000	.7299	1.698	.8687	.9720	.7459-01	.3817-01	4.054	27.44	594.3
3	.00000	.17000-01	5.0000	.6893	1.572	.8181	.9720	.6905-01	.3594-01	3.888	26.34	592.3
3	.00000	.19000-01	6.0000	.6635	1.512	.7873	.9720	.6642-01	.3459-01	3.744	25.37	592.2
3	.00000	.24900-01	9.0000	.5995	1.209	.7002	.9715	.5310-01	.3077-01	3.767	25.72	577.7
3	.00000	.26900-01	10.000	.5975	1.199	.7005	.9707	.5270-01	.3078-01	3.770	25.75	577.1
2	.00000	.32800-01	12.000	.5336	1.295	.6549	.9685	.5692-01	.2877-01	2.873	19.40	598.1
2	.00000	.36700-01	13.000	.4911	1.132	.6035	.9671	.4973-01	.2651-01	2.747	18.60	593.4
2	.00000	.40600-01	14.000	.5356	1.312	.6718	.9657	.5762-01	.2951-01	2.866	19.35	598.9
2	.00000	.48500-01	15.000	.4664	1.067	.5889	.9630	.4688-01	.2587-01	2.624	17.77	592.6
2	.00000	.56400-01	16.000	.4235	.9453	.5416	.9605	.4153-01	.2380-01	2.429	16.47	590.1
2	.00000	.76100-01	17.000	.3469	.7155	.4527	.9547	.3144-01	.1989-01	2.132	14.54	580.8
2	.00000	.11550	19.000	.2310	.4431	.3128	.9454	.1947-01	.1374-01	1.528	10.48	570.1
2	.00000	.16480	20.000	.1427	.2550	.1964	.9379	.1120-01	.8629-02	1.026	7.088	557.0
2	.00000	.21400	22.000	.8281-01	.1414	.1135	.9347	.6213-02	.4987-02	.6326	4.393	546.8
4	2.0000	.24700-01	165.00	.4862	.9112	.5606	.9715	.3999-01	.2461-01	3.301	22.67	566.9
3	9.0000	.15000-01	157.00	.6760	1.534	.8017	.9720	.6738-01	.3522-01	3.828	25.94	591.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
3	9.0000	.17600-01	158.00	.6147	1.321	.7231	.9720	.5806-01	.3177-01	3.640	24.74	585.9
4	9.8000	.24700-01	164.00	.5159	.9994	.5983	.9715	.4386-01	.2626-01	3.378	23.13	572.5
3	10.000	.22900-01	88.000	.5599	1.133	.6525	.9720	.4980-01	.2867-01	3.505	23.92	578.2
3	10.000	.26900-01	90.000	.5663	1.147	.6649	.9707	.5040-01	.2922-01	3.541	24.17	578.3
3	10.000	.34700-01	94.000	.5606	1.117	.6677	.9678	.4910-01	.2934-01	3.563	24.35	576.0
3	12.000	.17600-01	152.00	1.010	11.84	1.146	.9870	.5201	.5034-01	3.495	23.06	641.9
3	12.000	.12100-01	151.00	.8306	-4.738	.9804	.9870	-.2082	.4308-01	2.238	14.63	659.4
3	13.000	.19400-01	153.00	1.023	9.671	1.157	.9870	.4249	.5084-01	3.621	23.91	640.1
4	14.600	.44200-01	169.00	.4889	.9116	.5854	.9645	.4001-01	.2569-01	3.340	22.95	566.0
3	18.500	.44200-01	106.00	.4073	.9788	.6026	.9645	.4301-01	.2648-01	3.201	21.89	574.2
4	19.600	.62900-01	175.00	.4115	.7454	.5056	.9585	.3272-01	.2219-01	2.909	20.05	560.6
3	19.800	.40800-01	101.00	.5881	1.232	.7169	.9657	.5415-01	.3150-01	3.563	24.26	582.8
3	20.000	.24900-01	89.000	.4734	.9323	.5508	.9715	.4096-01	.2420-01	3.046	20.84	574.2
3	20.000	.28800-01	91.000	.4959	.9637	.5805	.9700	.4234-01	.2550-01	3.234	22.15	572.2
3	20.000	.32800-01	93.000	.5204	1.038	.6174	.9685	.4562-01	.2713-01	3.304	22.58	576.2
4	21.800	.82200-01	182.00	.3343	.5958	.4212	.9530	.2615-01	.1849-01	2.412	16.65	557.3
3	22.200	.62900-01	125.00	.4363	.8435	.5457	.9585	.3706-01	.2398-01	2.861	19.60	571.4
3	22.400	.44200-01	107.00	.4557	.8594	.5470	.9645	.3776-01	.2403-01	3.072	21.10	567.2
4	22.600	.10270	192.00	.2672	.4649	.3430	.9480	.2040-01	.1506-01	1.991	13.78	551.9
3	23.000	.42000-01	105.00	.5490	1.134	.6690	.9652	.4984-01	.2940-01	3.369	22.96	581.0
3	23.400	.59600-01	120.00	.4895	.9829	.6145	.9595	.4319-01	.2700-01	3.088	21.09	577.1
4	23.900	.21310	250.00	.1197	.1835	.1548	.9348	.8053-02	.6796-02	1.092	7.720	513.9
3	24.100	.82200-01	139.00	.3438	.6446	.4404	.9530	.2832-01	.1935-01	2.333	16.03	566.2
4	24.400	.19040	238.00	.1552	.2458	.2033	.9358	.1079-01	.8925-02	1.334	9.374	525.8
4	24.400	.12440	207.00	.2230	.3908	.2942	.9437	.1715-01	.1291-01	1.645	11.38	553.6
4	24.800	.16810	223.00	.1603	.2676	.2139	.9376	.1175-01	.9387-02	1.267	8.822	541.6
3	24.900	.62900-01	126.00	.4232	.8186	.5294	.9585	.3597-01	.2326-01	2.775	19.01	571.5
4	25.000	.79500-01	178.00	.4040	.7480	.5132	.9537	.3283-01	.2253-01	2.783	19.13	564.7
4	25.300	.10270	191.00	.2837	.5013	.3664	.9480	.2200-01	.1608-01	2.070	14.31	555.4
4	25.300	.10000+00	186.00	.3099	.5655	.4036	.9486	.2482-01	.1772-01	2.172	14.96	562.0
3	25.500	.60700-01	124.00	.4770	.9813	.6038	.9591	.4312-01	.2653-01	2.939	20.04	580.4
4	26.000	.12440	206.00	.2335	.4139	.3095	.9437	.1816-01	.1358-01	1.697	11.72	556.1
3	26.300	.82200-01	140.00	.3207	.5977	.4100	.9530	.2626-01	.1801-01	2.192	15.07	565.1
4	26.700	.12100	199.00	.2911	.5491	.3944	.9443	.2410-01	.1731-01	1.963	13.47	568.0
4	26.800	.16810	222.00	.1895	.3196	.2541	.9376	.1403-01	.1115-01	1.475	10.25	544.4
4	27.000	.19040	237.00	.1667	.2667	.2196	.9358	.1171-01	.9637-02	1.407	9.867	529.3
4	27.100	.21310	249.00	.1328	.2047	.1723	.9348	.8985-02	.7562-02	1.198	8.464	516.1
4	27.200	.80300-01	180.00	.4129	.7769	.5279	.9535	.3410-01	.2317-01	2.792	19.16	567.6
3	27.400	.40100-01	98.000	.5728	1.242	.7017	.9659	.5458-01	.3083-01	3.366	22.87	586.9
4	27.400	.16480	215.00	.2106	.3670	.2864	.9379	.1611-01	.1257-01	1.565	10.83	552.3
3	27.600	.41600-01	102.00	.5652	1.213	.6934	.9654	.5330-01	.3047-01	3.351	22.78	585.7
4	27.600	.12440	205.00	.2434	.4382	.3247	.9437	.1923-01	.1425-01	1.734	11.96	559.3
4	27.600	.18700	230.00	.2180	.3553	.2897	.9360	.1560-01	.1271-01	1.787	12.49	534.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
4	27.700	.21010	243.00	.1661	.2622	.2182	.9348	.1151-01	.9577-02	1.434	10.08	524.9
4	27.900	.10110	188.00	.3053	.5644	.4001	.9484	.2477-01	.1756-01	2.106	14.48	564.5
3	28.000	.46800-01	110.00	.3359	.5807	.3968	.9636	.2552-01	.1743-01	2.522	17.48	549.8
4	28.200	.16810	221.00	.2215	.3821	.3003	.9376	.1677-01	.1318-01	1.669	11.57	550.0
4	28.300	.19040	236.00	.1575	.2486	.2060	.9358	.1091-01	.9041-02	1.360	9.562	524.8
4	28.300	.12200	201.00	.2714	.4938	.3628	.9441	.2168-01	.1592-01	1.909	13.15	561.4
3	28.400	.53500-01	114.00	.4836	.9626	.5986	.9614	.4230-01	.2630-01	3.077	21.03	575.9
4	28.400	.21310	248.00	.1296	.1988	.1677	.9348	.8726-02	.7359-02	1.178	8.331	514.5
3	28.700	.58600-01	117.00	.5340	1.093	.6723	.9598	.4804-01	.2954-01	3.306	22.54	579.8
4	28.800	.16580	217.00	.2133	.3775	.2924	.9378	.1657-01	.1283-01	1.553	10.73	555.8
3	28.800	.60400-01	121.00	.4768	1.001	.6064	.9592	.4400-01	.2664-01	2.883	19.62	583.1
4	29.000	.21110	244.00	.1387	.2168	.1813	.9348	.9517-02	.7955-02	1.218	8.579	521.5
3	29.000	.65700-01	129.00	.2938	.5023	.3565	.9576	.2207-01	.1566-01	2.241	15.56	547.1
3	29.200	.72400-01	133.00	.3803	.7166	.4802	.9557	.3149-01	.2110-01	2.566	17.62	567.1
3	29.300	.79500-01	136.00	.3948	.8048	.5166	.9537	.3536-01	.2270-01	2.454	16.74	579.2
3	29.600	.92500-01	143.00	.3212	.6019	.4179	.9504	.2644-01	.1836-01	2.182	14.99	566.1
3	29.700	.10000+00	146.00	.3204	.6527	.4338	.9486	.2868-01	.1906-01	1.993	13.59	579.1
4	29.900	.12100	198.00	.3025	.5853	.4139	.9443	.2569-01	.1817-01	1.983	13.58	572.3
4	30.200	.16480	214.00	.2109	.3747	.2895	.9379	.1645-01	.1271-01	1.528	10.55	556.6
4	30.200	.18700	229.00	.2021	.3334	.2702	.9360	.1463-01	.1186-01	1.625	11.33	538.5
4	30.300	.21010	242.00	.1558	.2481	.2057	.9348	.1089-01	.9027-02	1.327	9.311	527.7
3	31.500	.91000-02	82.000	.6436	1.439	.7617	.9720	.6323-01	.3347-01	3.687	25.00	590.3
3	31.500	.11100-01	83.000	.8400	2.839	1.047	.9720	.1248	.4599-01	3.777	25.24	618.3
3	31.500	.14200-01	84.000	1.007	-13.14	1.171	.9870	-.5773	.5145-01	2.962	19.42	653.7
3	31.500	.16000-01	85.000	1.074	65.11	1.232	.9870	2.861	.5411-01	3.458	22.75	647.4
3	31.500	.17600-01	86.000	1.009	7.937	1.138	.9870	.3487	.5002-01	3.661	24.21	638.1
3	31.500	.19400-01	87.000	1.029	3.602	1.134	.9870	.1583	.4984-01	4.561	30.45	619.8
4	32.100	.21010	241.00	.1373	.2160	.1800	.9348	.9481-02	.7902-02	1.193	8.394	523.6
4	32.200	.16480	213.00	.1951	.3395	.2651	.9379	.1490-01	.1164-01	1.453	10.06	552.0
4	32.200	.17860	224.00	.1813	.2952	.2400	.9366	.1296-01	.1053-01	1.487	10.40	534.7
4	32.200	.18700	228.00	.1592	.2567	.2103	.9360	.1127-01	.9231-02	1.327	9.294	531.7
4	32.300	.12100	197.00	.3057	.5735	.4132	.9443	.2517-01	.1814-01	2.074	14.24	567.1
4	32.300	.12300	194.00	.2571	.4761	.3465	.9439	.2089-01	.1521-01	1.771	12.18	564.7
4	32.300	.12730	208.00	.1304	.2158	.1683	.9431	.9474-02	.7386-02	1.043	7.273	539.4
4	32.300	.13420	209.00	.1952	.3463	.2613	.9420	.1520-01	.1147-01	1.417	9.787	556.3
3	32.400	.10000+00	147.00	.3090	.6096	.4138	.9486	.2678-01	.1818-01	1.985	13.57	574.5
4	32.400	.10110	184.00	.3309	.6369	.4401	.9484	.2796-01	.1931-01	2.181	14.95	571.5
4	32.400	.10630	193.00	.1994	.3224	.2497	.9472	.1415-01	.1096-01	1.656	11.59	532.5
4	32.500	.85800-01	183.00	.2420	.3990	.2983	.9521	.1751-01	.1309-01	1.948	13.59	538.3
3	32.600	.79500-01	137.00	.3334	.6851	.4373	.9537	.3010-01	.1921-01	2.056	14.02	580.3
4	32.600	.80800-01	176.00	.3956	.7604	.5097	.9534	.3338-01	.2237-01	2.612	17.90	571.2
3	32.700	.67400-01	132.00	.3025	.5275	.3702	.9571	.2318-01	.1627-01	2.246	15.56	551.7
3	32.700	.72400-01	134.00	.3621	.6582	.4523	.9557	.2892-01	.1987-01	2.549	17.57	560.5

FH15. E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
3	32.800	.65700-01	130.00	.2606	.4344	.3138	.9576	.1909-01	.1379-01	2.062	14.37	540.6
4	32.800	.16680	210.00	.1788	.3004	.2391	.9377	.1318-01	.1049-01	1.399	9.736	543.4
4	32.800	.18880	225.00	.1287	.1980	.1659	.9359	.8690-02	.7283-02	1.164	8.222	515.6
3	32.900	.58600-01	118.00	.5464	1.086	.6828	.9598	.4770-01	.3000-01	3.483	23.81	575.6
3	32.900	.60400-01	122.00	.3774	.6940	.4636	.9592	.3050-01	.2037-01	2.619	18.03	562.7
4	32.900	.61300-01	171.00	.3906	.7295	.4827	.9589	.3202-01	.2119-01	2.664	18.30	566.3
3	33.000	.53500-01	115.00	.4496	.8392	.5478	.9614	.3687-01	.2407-01	3.067	21.08	565.4
3	33.200	.48300-01	113.00	.3274	.5555	.3859	.9631	.2441-01	.1696-01	2.526	17.55	545.1
4	33.400	.42800-01	166.00	.4967	.9521	.5967	.9649	.4179-01	.2619-01	3.289	22.54	570.8
3	33.500	.40100-01	99.000	.5747	1.148	.6927	.9659	.5043-01	.3043-01	3.645	24.90	576.3
3	33.600	.38300-01	97.000	.5928	1.197	.7133	.9665	.5259-01	.3134-01	3.719	25.39	577.9
3	33.700	.36700-01	96.000	.6015	1.217	.7215	.9671	.5348-01	.3170-01	3.765	25.70	578.2
3	33.900	.33800-01	95.000	.4938	.9184	.5791	.9681	.4035-01	.2544-01	3.382	23.25	564.8
4	34.700	.21010	240.00	.1453	.2275	.1901	.9348	.9986-02	.8342-02	1.274	8.969	521.9
4	34.700	.18700	227.00	.2095	.3406	.2780	.9360	.1495-01	.1220-01	1.723	12.05	534.2
4	34.900	.16480	212.00	.1820	.3131	.2459	.9379	.1374-01	.1079-01	1.376	9.544	549.4
3	35.100	.10000+00	148.00	.3044	.5923	.4057	.9486	.2602-01	.1782-01	1.983	13.58	572.4
4	35.200	.23900-01	161.00	.4086	.6925	.4619	.9718	.3039-01	.2028-01	3.157	21.94	545.6
3	35.300	.92500-01	145.00	.3231	.6054	.4203	.9504	.2660-01	.1847-01	2.194	15.07	566.1
3	35.300	.22100-01	160.00	.3998	.6835	.4524	.9720	.3003-01	.1988-01	3.049	21.17	547.1
4	35.400	.18800	231.00	.1462	.2346	.1928	.9359	.1030-01	.8461-02	1.229	8.611	530.2
4	35.500	.12100	196.00	.2667	.4921	.3581	.9443	.2160-01	.1572-01	1.845	12.69	564.1
4	35.600	.16580	216.00	.1813	.3078	.2436	.9378	.1351-01	.1069-01	1.397	9.706	546.1
3	35.800	.80600-01	138.00	.3480	.6570	.4456	.9534	.2887-01	.1958-01	2.343	16.09	567.4
4	35.900	.21310	247.00	.1151	.1764	.1489	.9348	.7743-02	.6534-02	1.050	7.424	513.9
4	36.000	.19040	235.00	.1430	.2248	.1867	.9358	.9868-02	.8192-02	1.245	8.761	523.3
4	36.200	.16910	220.00	.1615	.2670	.2144	.9376	.1172-01	.9410-02	1.294	9.026	539.1
3	36.200	.72400-01	135.00	.3663	.6714	.4587	.9557	.2950-01	.2015-01	2.552	17.58	562.1
4	36.300	.12200	200.00	.2515	.4577	.3362	.9441	.2009-01	.1475-01	1.768	12.18	561.5
3	36.600	.65700-01	131.00	.2855	.5013	.3492	.9576	.2203-01	.1534-01	2.100	14.53	553.3
4	36.700	.18700	226.00	.1579	.2524	.2077	.9360	.1108-01	.9116-02	1.337	9.377	528.8
4	36.900	.16480	211.00	.1654	.2797	.2216	.9379	.1228-01	.9728-02	1.281	8.902	545.2
4	36.900	.10110	187.00	.3253	.6118	.4290	.9484	.2685-01	.1883-01	2.200	15.11	567.6
3	37.000	.60400-01	123.00	.4300	.8430	.5373	.9592	.3704-01	.2361-01	2.779	19.02	573.6
4	37.000	.12440	204.00	.2236	.3931	.2953	.9437	.1725-01	.1296-01	1.642	11.35	554.3
3	37.100	.58600-01	119.00	.4807	.9318	.5969	.9598	.4094-01	.2623-01	3.144	21.54	571.8
4	37.200	.21310	246.00	.1190	.1825	.1539	.9348	.8012-02	.6756-02	1.082	7.646	514.5
4	37.600	.1681[illegible]	219.00	.1477	.2431	.1956	.9376	.1067-01	.8586-02	1.193	8.322	537.7
3	37.800	.10270	150.00	.2519	.4557	.3282	.9480	.2002-01	.1442-01	1.783	12.30	559.6
4	37.900	.12100	195.00	.2496	.4412	.3293	.9443	.1936-01	.1445-01	1.820	12.58	555.5
4	38.000	.80300-01	179.00	.3758	.6956	.4780	.9535	.3053-01	.2098-01	2.589	17.81	564.7
3	38.500	.46800-01	112.00	.3535	.6105	.4175	.9636	.2683-01	.1834-01	2.659	18.44	549.5
4	38.600	.12440	203.00	.2139	.3719	.2812	.9437	.1632-01	.1234-01	1.595	11.04	551.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
4	38.700	.10000+00	185.00	.3174	.5807	.4138	.9486	.2549-01	.1816-01	2.218	15.27	562.5
3	38.900	.82200-01	141.00	.2921	.5257	.3692	.9530	.2310-01	.1622-01	2.082	14.37	558.5
3	39.300	.41600-01	104.00	.5049	.9903	.6081	.9654	.4351-01	.2672-01	3.262	22.32	573.6
4	39.500	.10270	190.00	.2935	.5232	.3803	.9480	.2296-01	.1669-01	2.118	14.62	557.3
4	39.600	.16810	218.00	.1345	.2209	.1780	.9376	.9694-02	.7811-02	1.090	7.611	537.0
4	39.900	.19040	233.00	.1258	.1968	.1638	.9358	.8638-02	.7189-02	1.105	7.784	521.5
4	40.100	.79500-01	177.00	.3545	.6332	.4452	.9537	.2779-01	.1954-01	2.551	17.60	557.7
4	40.200	.12440	202.00	.2067	.3564	.2708	.9437	.1564-01	.1188-01	1.559	10.81	549.8
4	40.300	.21310	245.00	.1036	.1581	.1337	.9348	.6938-02	.5867-02	.9527	6.744	512.2
3	41.100	.82200-01	142.00	.2932	.5321	.3716	.9530	.2338-01	.1633-01	2.068	14.26	560.1
4	41.100	.60700-01	173.00	.4294	.7940	.5286	.9591	.3485-01	.2320-01	2.963	20.37	564.5
4	42.300	.10270	189.00	.2521	.4309	.3215	.9480	.1891-01	.1411-01	1.925	13.36	547.7
4	42.600	.59600-01	172.00	.4745	.9103	.5888	.9595	.3995-01	.2584-01	3.139	21.51	570.9
4	43.200	.42000-01	168.00	.4830	.9146	.5778	.9652	.4014-01	.2536-01	3.242	22.24	568.7
4	43.400	.82200-01	181.00	.3286	.5835	.4135	.9530	.2561-01	.1815-01	2.383	16.46	556.4
3	43.600	.62900-01	128.00	.3462	.6392	.4276	.9585	.2808-01	.1879-01	2.391	16.45	563.5
3	45.000	.22900-01	8.0000	.7608	1.921	.9159	.9720	.8440-01	.4024-01	3.989	26.89	601.3
4	46.100	.62900-01	174.00	.4183	.7689	.5161	.9585	.3375-01	.2265-01	2.906	20.00	563.4
4	47.700	.40800-01	167.00	.5464	1.064	.6560	.9656	.4668-01	.2879-01	3.560	24.36	573.2
3	48.400	.44200-01	109.00	.4862	.9420	.5871	.9645	.4139-01	.2579-01	3.181	21.79	571.7
3	50.000	.19400-01	156.00	.7938	4.648	.8897	.9870	.2042	.3909-01	3.031	20.09	633.8
3	51.000	.12100-01	154.00	.9011	-475.2	1.036	.9870	-20.88	.4552-01	2.848	18.72	648.7
3	51.000	.17600-01	155.00	.8530	4.651	.9543	.9870	.2044	.4193-01	3.307	21.93	632.4
4	51.900	.44800-01	170.00	.4161	.7406	.4933	.9643	.3250-01	.2165-01	3.008	20.77	557.0
4	53.200	.24700-01	163.00	.5063	.9706	.5862	.9715	.4260-01	.2573-01	3.353	22.98	570.8
4	65.200	.24700-01	162.00	.5908	1.224	.6928	.9715	.5371-01	.3041-01	3.618	24.64	582.1
2	90.000	.91000-02	44.000	.6412	2.419	.8075	.9720	.1063	.3548-01	2.763	18.41	622.6
2	90.000	.11100-01	45.000	.7994	5.561	1.052	.9720	.2443	.4621-01	2.956	19.56	636.5
2	90.000	.13100-01	46.000	.7675	3.266	.9769	.9720	.1435	.4292-01	3.176	21.13	626.5
2	90.000	.17000-01	48.000	.7556	2.359	.9334	.9720	.1036	.4101-01	3.520	23.56	614.6
2	90.000	.20900-01	50.000	.6537	1.936	.8027	.9720	.8507-01	.3527-01	3.125	20.95	611.9
2	90.000	.24900-01	52.000	.6037	1.711	.7404	.9715	.7515-01	.3253-01	2.954	19.83	609.3
2	90.000	.26900-01	53.000	.5703	1.504	.6970	.9707	.6609-01	.3062-01	2.908	19.57	604.6
2	90.000	.28800-01	54.000	.5600	1.425	.6847	.9700	.6260-01	.3008-01	2.921	19.69	601.9
2	90.000	.32800-01	55.000	.5135	1.200	.6263	.9685	.5273-01	.2752-01	2.842	19.23	594.7
2	90.000	.36700-01	56.000	.5024	1.169	.6184	.9671	.5138-01	.2717-01	2.789	18.87	594.3
2	90.000	.40600-01	57.000	.5115	1.254	.6416	.9657	.5508-01	.2819-01	2.736	18.47	598.9
2	90.000	.48500-01	58.000	.4145	.9636	.5251	.9630	.4234-01	.2307-01	2.303	15.58	594.2
2	90.000	.56400-01	59.000	.4303	.9659	.5510	.9605	.4244-01	.2421-01	2.457	16.66	590.7
2	90.000	.76100-01	60.000	.3401	.7023	.4439	.9547	.3086-01	.1950-01	2.088	14.23	580.9
2	90.000	.95800-01	61.000	.2602	.5177	.3472	.9496	.2274-01	.1525-01	1.656	11.32	575.8
2	90.000	.11550	62.000	.2288	.4324	.3081	.9454	.1900-01	.1354-01	1.539	10.57	567.6
2	135.00	.19000-01	49.000	.6742	1.979	.8269	.9720	.8695-01	.3633-01	3.238	21.71	611.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
2	135.00	.22900-01	51.000	.6396	1.880	.7845	.9720	.8258-01	.3447-01	3.069	20.58	611.4
2	180.00	.91000-02	23.000	.3937	.8399	.4625	.9720	.3690-01	.2032-01	2.347	15.96	585.0
2	180.00	.11100-01	24.000	.6750	3.410	.8704	.9720	.1498	.3824-01	2.665	17.69	630.8
2	180.00	.13100-01	25.000	.7212	2.682	.9067	.9720	.1178	.3984-01	3.124	20.83	622.1
2	180.00	.15000-01	26.000	.7232	2.512	.9032	.9720	.1104	.3968-01	3.216	21.47	619.5
2	180.00	.17000-01	27.000	.6702	2.097	.8278	.9720	.9212-01	.3637-01	3.119	20.88	614.7
2	180.00	.19000-01	28.000	.6624	2.076	.8183	.9720	.9121-01	.3595-01	3.080	20.61	614.8
2	180.00	.20900-01	29.000	.6733	1.993	.8265	.9720	.8758-01	.3631-01	3.219	21.58	611.8
2	180.00	.28800-01	32.000	.6286	1.638	.7710	.9700	.7198-01	.3387-01	3.229	21.74	603.7
2	180.00	.32800-01	33.000	.5298	1.230	.6454	.9686	.5406-01	.2835-01	2.946	19.94	594.1
2	180.00	.36700-01	34.000	.5416	1.347	.6740	.9671	.5916-01	.2961-01	2.869	19.35	600.1
2	180.00	.56400-01	37.000	.4416	.9752	.5632	.9605	.4284-01	.2475-01	2.555	17.34	589.0
2	180.00	.76100-01	38.000	.3401	.7065	.4446	.9547	.3104-01	.1953-01	2.077	14.15	581.7
2	180.00	.95800-01	39.000	.2837	.5618	.3779	.9496	.2468-01	.1660-01	1.815	12.41	575.1
2	180.00	.11550	40.000	.2389	.4576	.3233	.9454	.2010-01	.1420-01	1.583	10.86	569.8
2	180.00	.18450	42.000	.1119	.1980	.1549	.9362	.8701-02	.6805-02	.8140	5.627	555.0
2	225.00	.22900-01	30.000	.6569	1.845	.8012	.9720	.8105-01	.3520-01	3.230	21.69	608.8
2	270.00	.91000-02	63.000	.5078	1.632	.6291	.9720	.7170-01	.2764-01	2.334	15.61	616.1
2	270.00	.11100-01	64.000	.7380	3.939	.9553	.9720	.1731	.4197-01	2.875	19.07	632.0
2	270.00	.13100-01	65.000	.7751	3.258	.9853	.9720	.1431	.4329-01	3.220	21.42	626.1
2	270.00	.17000-01	67.000	.6173	1.992	.7651	.9720	.8752-01	.3362-01	2.832	18.94	616.2
2	270.00	.20900-01	69.000	.6772	2.115	.8363	.9720	.9290-01	.3674-01	3.154	21.11	614.7
2	270.00	.24900-01	71.000	.6523	1.950	.8050	.9715	.8569-01	.3537-01	3.104	20.80	612.4
2	270.00	.28800-01	73.000	.5896	1.506	.7211	.9700	.6616-01	.3168-01	3.068	20.67	602.2
2	270.00	.36700-01	75.000	.5476	1.375	.6825	.9671	.6041-01	.2999-01	2.881	19.43	600.9
2	270.00	.46500-01	77.000	.4716	1.085	.5960	.9631	.4765-01	.2618-01	2.642	17.89	593.2
2	270.00	.56400-01	78.000	.4584	1.026	.5865	.9605	.4507-01	.2577-01	2.624	17.79	590.4
2	270.00	.95800-01	80.000	.2693	.5295	.3579	.9496	.2327-01	.1572-01	1.735	11.87	574.0
2	270.00	.11550	81.000	.2374	.4496	.3199	.9454	.1976-01	.1406-01	1.593	10.93	568.0
2	315.00	.19000-01	68.000	.6405	1.687	.7752	.9720	.7413-01	.3406-01	3.269	22.00	604.5
2	315.00	.22900-01	70.000	.6037	1.814	.7424	.9720	.7968-01	.3262-01	2.865	19.20	612.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
71	4.020	.1000-01	.3491-05	65.02	739.7	.4170	174.8	-.2000-01	2605.	.6440-02	.1406-06	3.708
72	4.020	.1200-01	.8378-05	65.04	739.7	.4171	174.8	-.4000-01	2605.	.6441-02	.1406-06	3.709
73	4.020	.1600-01	.2234-04	65.01	739.7	.4169	174.8	-.8000-01	2605.	.6438-02	.1406-06	3.707

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
71	.3873-01	.9577-02
72	.3874-01	.9576-02
73	.3873-01	.9578-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
72	.00000	.91000-02	1.0000	.3576	.5831	.4172	.9630	.2259-01	.1616-01	2.650	18.39	548.4
72	.00000	.11100-01	2.0000	.6620	1.264	.8035	.9630	.4898-01	.3112-01	3.982	27.09	584.4
72	.00000	.15000-01	4.0000	.6857	1.277	.8273	.9630	.4948-01	.3205-01	4.241	28.92	580.0
72	.00000	.17000-01	5.0000	.6313	1.148	.7573	.9630	.4447-01	.2933-01	4.018	27.47	575.3
72	.00000	.19000-01	6.0000	.6257	1.135	.7501	.9630	.4398-01	.2906-01	3.994	27.31	574.9
72	.00000	.24900-01	9.0000	.5282	.9154	.6277	.9625	.3546-01	.2431-01	3.578	24.60	564.8
72	.00000	.26900-01	10.000	.4960	.8511	.5901	.9618	.3297-01	.2286-01	3.406	23.45	562.4
71	.00000	.32800-01	12.000	.5008	.8835	.6070	.9596	.3422-01	.2351-01	3.312	22.72	568.9
71	.00000	.36700-01	13.000	.4622	.7941	.5601	.9582	.3076-01	.2169-01	3.167	21.80	562.7
71	.00000	.40600-01	14.000	.4789	.8410	.5893	.9568	.3257-01	.2279-01	3.186	21.87	567.9
71	.00000	.48500-01	15.000	.4305	.7472	.5346	.9541	.2894-01	.2071-01	2.909	20.00	565.2
71	.00000	.56400-01	16.000	.4026	.6949	.5060	.9514	.2692-01	.1960-01	2.742	18.87	563.8
71	.00000	.76100-01	17.000	.3091	.5226	.3978	.9454	.2024-01	.1541-01	2.167	14.95	558.6
71	.00000	.11550	19.000	.1960	.3254	.2639	.9353	.1261-01	.1022-01	1.412	9.768	553.7
71	.00000	.16480	20.000	.1128	.1824	.1566	.9267	.7063-02	.6066-02	.8478	5.891	545.7
71	.00000	.21400	22.000	.5886-01	.8958-01	.8020-01	.9224	.3469-02	.3106-02	.4923	3.462	523.8
73	2.0000	.24700-01	165.00	.4280	.7139	.5034	.9626	.2765-01	.1950-01	3.062	21.17	554.9
72	9.0000	.15000-01	157.00	.6423	1.174	.7714	.9630	.4547-01	.2988-01	4.065	27.77	576.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
72	9.0000	.17600-01	158.00	.5702	.9927	.6767	.9630	.3845-01	.2621-01	3.839	26.38	565.9
73	9.8000	.24700-01	164.00	.4376	.7291	.5145	.9626	.2824-01	.1993-01	3.136	21.68	554.6
72	10.000	.22900-01	88.000	.4734	.8132	.5599	.9630	.3150-01	.2169-01	3.246	22.35	562.7
72	10.000	.26900-01	90.000	.4653	.7784	.5499	.9618	.3015-01	.2130-01	3.315	22.90	555.8
72	10.000	.34700-01	94.000	.5056	.8725	.6113	.9589	.3380-01	.2368-01	3.445	23.70	563.8
72	12.000	.17600-01	152.00	.9653	2.555	1.050	.9870	.9898-01	.4068-01	4.445	29.66	620.8
72	12.000	.12100-01	151.00	.7438	3.510	.8287	.9870	.1360	.3210-01	2.704	17.81	645.8
72	13.000	.19400-01	153.00	.8829	1.985	.9516	.9870	.7690-01	.3686-01	4.556	30.63	606.5
73	14.600	.44200-01	169.00	.4609	.7728	.5617	.9555	.2993-01	.2175-01	3.271	22.59	556.4
72	18.500	.44200-01	106.00	.4700	.8159	.5792	.9555	.3160-01	.2244-01	3.177	21.84	565.2
73	19.600	.62900-01	175.00	.3501	.5763	.4369	.9494	.2232-01	.1692-01	2.555	17.70	551.2
72	19.800	.40800-01	101.00	.5360	.9583	.6623	.9567	.3712-01	.2565-01	3.484	23.87	571.8
72	20.000	.24900-01	89.000	.3906	.6481	.4589	.9625	.2510-01	.1778-01	2.817	19.49	553.5
72	20.000	.28800-01	91.000	.4344	.7304	.5157	.9611	.2829-01	.1998-01	3.070	21.20	557.2
72	20.000	.32800-01	93.000	.4741	.8179	.5711	.9596	.3168-01	.2212-01	3.231	22.23	563.7
73	21.800	.82200-01	182.00	.2704	.4421	.3461	.9436	.1712-01	.1341-01	1.994	13.82	549.3
72	22.200	.62900-01	125.00	.3888	.6656	.4926	.9494	.2578-01	.1908-01	2.679	18.45	561.8
72	22.400	.44200-01	107.00	.4203	.7076	.5129	.9555	.2741-01	.1987-01	2.967	20.48	557.5
73	22.600	.10270	192.00	.2046	.3296	.2671	.9383	.1277-01	.1035-01	1.545	10.74	544.7
72	23.000	.42000-01	105.00	.5133	.9151	.6351	.9563	.3545-01	.2460-01	3.349	22.95	571.2
72	23.400	.59600-01	120.00	.4188	.7299	.5311	.9504	.2827-01	.2057-01	2.816	19.35	566.1
73	23.900	.21310	250.00	.7308-01	.1071	.9694-01	.9225	.4146-02	.3754-02	.6595	4.683	506.6
72	24.100	.82200-01	139.00	.2893	.4836	.3740	.9436	.1873-01	.1449-01	2.064	14.26	555.6
73	24.400	.19040	238.00	.9395-01	.1421	.1266	.9239	.5501-02	.4902-02	.7948	5.598	521.2
73	24.400	.12440	207.00	.1676	.2721	.2252	.9334	.1054-01	.8720-02	1.250	8.677	547.1
73	24.800	.16810	223.00	.1139	.1793	.1558	.9262	.6942-02	.6034-02	.8949	6.248	536.8
72	24.900	.62300-01	126.00	.3846	.6574	.4869	.9494	.2547-01	.1886-01	2.655	18.29	561.4
73	25.000	.79500-01	178.00	.3270	.5480	.4215	.9444	.2122-01	.1632-01	2.322	16.04	556.3
73	25.300	.10270	191.00	.2185	.3533	.2858	.9383	.1368-01	.1107-01	1.640	11.39	545.9
73	25.300	.10000+00	186.00	.2385	.3943	.3143	.9389	.1527-01	.1217-01	1.729	11.97	552.4
72	25.500	.60700-01	124.00	.4261	.7535	.5442	.9501	.2919-01	.2108-01	2.810	19.27	569.4
73	26.000	.12440	206.00	.1806	.2939	.2429	.9334	.1138-01	.9408-02	1.341	9.310	547.8
72	26.300	.82200-01	140.00	.2493	.4137	.3212	.9436	.1602-01	.1244-01	1.798	12.44	553.5
73	26.700	.12100	199.00	.2388	.3972	.3239	.9341	.1538-01	.1254-01	1.715	11.86	554.2
73	26.800	.16810	222.00	.1370	.2159	.1875	.9262	.8359-02	.7262-02	1.074	7.494	537.3
73	27.000	.19040	237.00	.1183	.1790	.1595	.9239	.6933-02	.6176-02	1.000	7.045	521.4
73	27.100	.21310	249.00	.9373-01	.1374	.1244	.9225	.5322-02	.4818-02	.8445	5.996	507.0
73	27.200	.80300-01	180.00	.3356	.5644	.4338	.9442	.2186-01	.1680-01	2.372	16.37	557.2
72	27.400	.40100-01	98.000	.5321	.9734	.6610	.9570	.3771-01	.2561-01	3.363	22.97	576.5
73	27.400	.16480	215.00	.1526	.2450	.2110	.9267	.9489-02	.8170-02	1.159	8.062	543.6
72	27.600	.41600-01	102.00	.5217	.9574	.6507	.9564	.3709-01	.2520-01	3.284	22.43	577.2
73	27.600	.12440	205.00	.1991	.3257	.2686	.9334	.1261-01	.1040-01	1.467	10.17	549.4
73	27.600	.18700	230.00	.1361	.2078	.1843	.9242	.8047-02	.7137-02	1.129	7.937	525.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
73	27.700	.21010	243.00	.1094	.1620	.1461	.9226	.6273-02	.5659-02	.9661	6.841	511.7
73	27.900	.10110	188.00	.2573	.4261	.3398	.9387	.1650-01	.1316-01	1.860	12.87	553.0
72	28.000	.46800-01	110.00	.2910	.4613	.3495	.9546	.1787-01	.1354-01	2.258	15.74	539.4
73	28.200	.16810	221.00	.1694	.2683	.2327	.9262	.1039-01	.9011-02	1.316	9.178	539.1
73	28.300	.19040	236.00	.1086	.1624	.1452	.9239	.6288-02	.5623-02	.9387	6.629	516.4
73	28.300	.12200	201.00	.2109	.3456	.2840	.9339	.1338-01	.1100-01	1.550	10.75	549.9
72	28.400	.53500-01	114.00	.3778	.6410	.4696	.9524	.2483-01	.1819-01	2.637	18.18	559.5
73	28.400	.21310	248.00	.8981-01	.1309	.1187	.9225	.5071-02	.4598-02	.8190	5.823	504.2
72	28.700	.58600-01	117.00	.4538	.7978	.5762	.9507	.3090-01	.2232-01	3.016	20.70	568.1
73	28.800	.16580	217.00	.1664	.2673	.2303	.9265	.1035-01	.8919-02	1.263	8.785	543.7
72	28.800	.60400-01	121.00	.4256	.7676	.5471	.9502	.2973-01	.2119-01	2.737	18.73	573.6
73	29.000	.21110	244.00	.1035	.1521	.1375	.9225	.5889-02	.5326-02	.9279	6.583	508.1
72	29.000	.65700-01	129.00	.2628	.4185	.3251	.9485	.1621-01	.1259-01	2.024	14.10	540.8
72	29.200	.72400-01	133.00	.3152	.5304	.4027	.9465	.2054-01	.1560-01	2.226	15.37	557.3
72	29.300	.79500-01	136.00	.3475	.6094	.4566	.9444	.2360-01	.1769-01	2.316	15.90	567.6
72	29.600	.92500-01	143.00	.2538	.4210	.3317	.9409	.1631-01	.1285-01	1.830	12.66	553.4
72	29.700	.10000+00	146.00	.2890	.5021	.3900	.9390	.1945-01	.1511-01	1.951	13.41	565.4
73	29.900	.12100	198.00	.2515	.4228	.3430	.9341	.1637-01	.1328-01	1.778	12.27	557.1
73	30.200	.16480	214.00	.1774	.2853	.2455	.9267	.1105-01	.9507-02	1.343	9.338	544.2
73	30.200	.18700	229.00	.1397	.2130	.1890	.9242	.8249-02	.7320-02	1.163	8.172	524.8
73	30.300	.21010	242.00	.1162	.1720	.1552	.9226	.6662-02	.6010-02	1.026	7.265	511.7
72	31.500	.91000-02	82.000	.3642	.6000	.4261	.9630	.2324-01	.1650-01	2.655	18.39	551.5
72	31.500	.11100-01	83.000	.6972	1.434	.8606	.9630	.5554-01	.3334-01	3.888	26.29	595.7
72	31.500	.14200-01	84.000	1.038	3.575	1.144	.9870	.1385	.4431-01	4.193	27.76	635.4
72	31.500	.16000-01	85.000	1.073	3.093	1.173	.9870	.1198	.4542-01	4.708	31.32	626.4
72	31.500	.17600-01	86.000	.8957	2.225	.9711	.9870	.8619-01	.3762-01	4.295	28.73	615.9
72	31.500	.19400-01	87.000	.7796	1.609	.8356	.9870	.6231-01	.3237-01	4.334	29.30	596.1
73	32.100	.21010	241.00	.9693-01	.1426	.1289	.9226	.5524-02	.4992-02	.8666	6.146	508.8
73	32.200	.16480	213.00	.1474	.2357	.2032	.9267	.9127-02	.7871-02	1.128	7.850	542.1
73	32.200	.17860	224.00	.1291	.1967	.1739	.9250	.7617-02	.6735-02	1.076	7.567	524.4
73	32.200	.18700	228.00	.1093	.1646	.1466	.9242	.6373-02	.5679-02	.9335	6.582	519.2
73	32.300	.12100	197.00	.2365	.3917	.3200	.9341	.1517-01	.1239-01	1.711	11.84	552.9
73	32.300	.12300	194.00	.1979	.3270	.2681	.9337	.1267-01	.1038-01	1.436	9.942	552.3
73	32.300	.12730	208.00	.1144	.1795	.1512	.9329	.6953-02	.5856-02	.9022	6.303	535.9
73	32.300	.13420	209.00	.1367	.2257	.1872	.9315	.8739-02	.7251-02	.9928	6.874	552.1
72	32.400	.10000+00	147.00	.2529	.4328	.3389	.9390	.1676-01	.1313-01	1.743	12.00	561.8
73	32.400	.10110	184.00	.2707	.4579	.3613	.9387	.1773-01	.1399-01	1.896	13.08	558.8
73	32.400	.10630	193.00	.1437	.2200	.1835	.9374	.8520-02	.7106-02	1.186	8.328	526.5
73	32.500	.85800-01	183.00	.1799	.2793	.2261	.9426	.1082-01	.8754-02	1.449	10.15	531.7
72	32.600	.79500-01	137.00	.2729	.4818	.3595	.9444	.1866-01	.1393-01	1.803	12.37	569.1
73	32.600	.80800-01	176.00	.3116	.5351	.4066	.9440	.2072-01	.1575-01	2.137	14.71	562.6
72	32.700	.67400-01	132.00	.2318	.3724	.2884	.9480	.1443-01	.1117-01	1.758	12.23	543.8
72	32.700	.72400-01	134.00	.2785	.4603	.3532	.9465	.1783-01	.1368-01	2.020	13.98	552.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
72	32.800	.65700-01	130.00	.2220	.3476	.2728	.9485	.1347-01	.1057-01	1.760	12.30	535.0
73	32.800	.16680	210.00	.1305	.2046	.1779	.9264	.7925-02	.6891-02	1.031	7.207	535.6
73	32.800	.18880	225.00	.9047-01	.1330	.1195	.9240	.5149-02	.4627-02	.8110	5.754	508.2
72	32.900	.58600-01	118.00	.4717	.8213	.5969	.9507	.3181-01	.2312-01	3.175	21.82	565.9
72	32.900	.60400-01	122.00	.3097	.5279	.3901	.9502	.2045-01	.1511-01	2.147	14.80	560.7
73	32.900	.61300-01	171.00	.3325	.5689	.4200	.9499	.2203-01	.1627-01	2.292	15.79	561.7
72	33.000	.53500-01	115.00	.3658	.6070	.4511	.9524	.2351-01	.1748-01	2.637	18.24	553.6
72	33.200	.48300-01	113.00	.2693	.4242	.3235	.9541	.1643-01	.1253-01	2.113	14.75	537.1
73	33.400	.42800-01	166.00	.4235	.7311	.5197	.9560	.2831-01	.2013-01	2.884	19.84	563.9
72	33.500	.40100-01	99.000	.4874	.8577	.5986	.9570	.3322-01	.2319-01	3.234	22.19	568.4
72	33.600	.38300-01	97.000	.5144	.9048	.6296	.9576	.3505-01	.2439-01	3.416	23.44	568.2
72	33.700	.36700-01	96.000	.5214	.9172	.6363	.9582	.3553-01	.2465-01	3.462	23.76	568.3
72	33.900	.33800-01	95.000	.4310	.7224	.5159	.9592	.2798-01	.1998-01	3.062	21.15	556.3
73	34.700	.21010	240.00	.9180-01	.1348	.1219	.9226	.5219-02	.4720-02	.8248	5.854	507.7
73	34.700	.18700	227.00	.1193	.1803	.1605	.9242	.6983-02	.6214-02	1.010	7.110	521.1
73	34.900	.16480	212.00	.1258	.2001	.1729	.9267	.7749-02	.6694-02	.9700	6.759	540.5
72	35.100	.10000+00	148.00	.2350	.3990	.3137	.9390	.1545-01	.1215-01	1.638	11.30	559.7
73	35.200	.23900-01	161.00	.2859	.4370	.3280	.9629	.1692-01	.1270-01	2.369	16.65	525.7
72	35.300	.92500-01	145.00	.2559	.4236	.3341	.9409	.1641-01	.1294-01	1.851	12.81	552.9
72	35.300	.22100-01	160.00	.2842	.4370	.3264	.9630	.1693-01	.1264-01	2.329	16.34	528.1
73	35.400	.18800	231.00	.1056	.1588	.1416	.9241	.6149-02	.5484-02	.9042	6.378	518.6
73	35.500	.12100	196.00	.2014	.3308	.2713	.9341	.1281-01	.1051-01	1.474	10.22	550.6
73	35.600	.16580	216.00	.1162	.1831	.1588	.9265	.7091-02	.6151-02	.9110	6.359	537.2
72	35.800	.80600-01	138.00	.2627	.4464	.3412	.9441	.1729-01	.1322-01	1.830	12.61	559.9
73	35.900	.21310	247.00	.7762-01	.1123	.1021	.9225	.4350-02	.3953-02	.7199	5.131	500.2
73	36.000	.19040	235.00	.9717-01	.1441	.1292	.9239	.5581-02	.5004-02	.8544	6.047	512.6
73	36.200	.16910	220.00	.1070	.1657	.1449	.9262	.6417-02	.5610-02	.8664	6.070	530.7
72	36.200	.72400-01	135.00	.2884	.4761	.3655	.9465	.1844-01	.1416-01	2.095	14.51	552.1
73	36.300	.12200	200.00	.1839	.3008	.2475	.9339	.1165-01	.9583-02	1.356	9.405	549.3
72	36.600	.65700-01	131.00	.2478	.4015	.3086	.9485	.1555-01	.1195-01	1.854	12.88	546.5
73	36.700	.18700	226.00	.1095	.1633	.1459	.9242	.6322-02	.5651-02	.9521	6.729	515.1
73	36.900	.16480	211.00	.1226	.1925	.1671	.9267	.7456-02	.6471-02	.9660	6.747	536.1
73	36.900	.10110	187.00	.2492	.4156	.3302	.9387	.1609-01	.1279-01	1.782	12.32	555.0
72	37.000	.60400-01	123.00	.3509	.6180	.4473	.9502	.2394-01	.1732-01	2.326	15.96	568.5
73	37.000	.12440	204.00	.1581	.2540	.2111	.9334	.9835-02	.8177-02	1.199	8.340	543.8
72	37.100	.58600-01	119.00	.4064	.7039	.5133	.9507	.2727-01	.1988-01	2.755	18.94	564.7
73	37.200	.21310	246.00	.8220-01	.1187	.1079	.9225	.4597-02	.4180-02	.7657	5.460	499.1
73	37.600	.16810	219.00	.1090	.1680	.1471	.9262	.6504-02	.5697-02	.8904	6.245	528.8
72	37.800	.10270	150.00	.1912	.3108	.2508	.9383	.1204-01	.9713-02	1.425	9.891	547.3
73	37.900	.12100	195.00	.1941	.3073	.2562	.9341	.1190-01	.9924-02	1.510	10.53	538.8
73	38.000	.80300-01	179.00	.2827	.4695	.3634	.9442	.1818-01	.1407-01	2.035	14.08	553.8
72	38.500	.46800-01	112.00	.2842	.4525	.3419	.9546	.1753-01	.1324-01	2.189	15.25	540.8
73	38.600	.12440	203.00	.1613	.2569	.2144	.9334	.9948-02	.8302-02	1.241	8.648	540.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
73	38.700	.10000+00	185.00	.2563	.4205	.3365	.9390	.1628-01	.1303-01	1.879	13.02	550.3
72	38.900	.82200-01	141.00	.2169	.3559	.2781	.9436	.1378-01	.1077-01	1.592	11.03	550.2
72	39.300	.41600-01	104.00	.4070	.7128	.5006	.9564	.2761-01	.1939-01	2.719	18.67	567.2
73	39.500	.10270	190.00	.2281	.3681	.2981	.9383	.1426-01	.1154-01	1.718	11.94	545.2
73	39.600	.16810	218.00	.1058	.1621	.1422	.9262	.6278-02	.5508-02	.8714	6.118	526.9
73	39.900	.19040	233.00	.9181-01	.1344	.1210	.9239	.5203-02	.4684-02	.8305	5.900	506.1
73	40.100	.79500-01	177.00	.2792	.4527	.3548	.9444	.1753-01	.1374-01	2.086	14.48	546.7
73	40.200	.12440	202.00	.1611	.2550	.2134	.9334	.9877-02	.8265-02	1.253	8.738	538.9
73	40.300	.21310	245.00	.7478-01	.1069	.9750-01	.9225	.4140-02	.3776-02	.7128	5.099	493.5
72	41.100	.82200-01	142.00	.2301	.3737	.2937	.9436	.1448-01	.1138-01	1.715	11.91	547.2
73	41.100	.60700-01	173.00	.3518	.5909	.4409	.9501	.2288-01	.1707-01	2.491	17.20	556.9
73	42.300	.10270	189.00	.1954	.3076	.2522	.9383	.1191-01	.9766-02	1.535	10.71	536.9
73	42.600	.59600-01	172.00	.3925	.6639	.4923	.9504	.2571-01	.1907-01	2.750	18.97	558.7
73	43.200	.42000-01	168.00	.4181	.7088	.5094	.9563	.2745-01	.1973-01	2.920	20.14	559.3
73	43.400	.82200-01	181.00	.2753	.4517	.3530	.9436	.1749-01	.1367-01	2.020	14.00	550.2
72	43.600	.62900-01	128.00	.3194	.5292	.3996	.9494	.2050-01	.1548-01	2.307	15.97	553.1
72	45.000	.22900-01	8.0000	.7564	1.507	.9270	.9630	.5836-01	.3591-01	4.352	29.50	591.1
73	46.100	.62900-01	174.00	.3537	.5821	.4414	.9494	.2254-01	.1709-01	2.583	17.89	551.1
73	47.700	.40800-01	167.00	.4651	.7992	.5678	.9567	.3095-01	.2199-01	3.187	21.94	562.7
72	48.400	.44200-01	109.00	.4253	.7249	.5210	.9555	.2808-01	.2018-01	2.948	20.32	560.7
72	50.000	.19400-01	156.00	.7414	1.727	.8009	.9870	.6691-01	.3102-01	3.722	24.97	610.1
72	51.000	.12100-01	154.00	.7910	2.352	.8657	.9870	.9110-01	.3354-01	3.415	22.70	628.2
72	51.000	.17600-01	155.00	.7977	1.893	.8625	.9870	.7333-01	.3341-01	3.949	26.48	611.8
73	51.900	.44800-01	170.00	.3501	.5674	.4223	.9553	.2197-01	.1636-01	2.618	18.18	546.6
73	53.200	.24700-01	163.00	.4299	.7088	.5040	.9626	.2745-01	.1952-01	3.130	21.67	551.7
73	65.200	.24700-01	162.00	.5487	.9599	.6533	.9626	.3717-01	.2530-01	3.669	25.19	567.0
71	90.000	.91000-02	44.000	.3728	.6479	.4421	.9631	.2509-01	.1712-01	2.515	17.29	565.5
71	90.000	.11100-01	45.000	.7026	1.516	.8763	.9631	.5872-01	.3394-01	3.752	25.29	601.8
71	90.000	.13100-01	46.000	.8416	1.872	1.056	.9631	.7252-01	.4092-01	4.379	29.46	605.3
71	90.000	.17000-01	48.000	.6925	1.308	.8381	.9631	.5064-01	.3246-01	4.218	28.72	582.4
71	90.000	.20900-01	50.000	.6377	1.203	.7716	.9631	.4659-01	.2989-01	3.888	26.48	582.3
71	90.000	.24900-01	52.000	.6000	1.110	.7246	.9626	.4299-01	.2807-01	3.741	25.53	578.7
71	90.000	.26900-01	53.000	.5564	1.002	.6702	.9618	.3881-01	.2596-01	3.583	24.52	573.4
71	90.000	.28800-01	54.000	.5370	.9525	.6468	.9611	.3689-01	.2505-01	3.527	24.18	570.1
71	90.000	.32800-01	55.000	.4674	.7998	.5617	.9596	.3098-01	.2176-01	3.223	22.20	561.7
71	90.000	.36700-01	56.000	.4673	.7969	.5650	.9582	.3087-01	.2188-01	3.237	22.31	560.8
71	90.000	.40600-01	57.000	.4687	.8131	.5736	.9568	.3149-01	.2222-01	3.170	21.79	565.1
71	90.000	.48500-01	58.000	.3740	.6375	.4616	.9541	.2469-01	.1788-01	2.592	17.86	560.7
71	90.000	.56400-01	59.000	.3838	.6455	.4779	.9515	.2500-01	.1851-01	2.712	18.73	557.2
71	90.000	.76100-01	60.000	.2914	.4761	.3697	.9454	.1844-01	.1432-01	2.152	14.92	549.0
71	90.000	.95800-01	61.000	.2170	.3497	.2809	.9400	.1354-01	.1088-01	1.638	11.39	544.8
71	90.000	.11550	62.000	.1804	.2875	.2376	.9353	.1113-01	.9203-02	1.387	9.660	541.2
71	135.00	.19000-01	49.000	.6762	1.305	.8225	.9631	.5055-01	.3186-01	4.020	27.32	586.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
71	135.00	.22900-01	51.000	.6386	1.213	.7739	.9631	.4699-01	.2997-01	3.863	26.29	583.5
71	180.00	.91000-02	23.000	.1731	.2799	.2015	.9631	.1084-01	.7804-02	1.300	9.030	545.8
71	180.00	.11100-01	24.000	.5973	1.284	.7443	.9631	.4974-01	.2883-01	3.199	21.57	601.4
71	180.00	.13100-01	25.000	.7766	1.778	.9805	.9631	.6887-01	.3797-01	3.949	26.53	608.4
71	180.00	.15000-01	26.000	.7656	1.675	.9576	.9631	.6489-01	.3709-01	4.039	27.20	603.5
71	180.00	.17000-01	27.000	.6888	1.382	.8454	.9631	.5354-01	.3274-01	3.933	26.64	592.3
71	180.00	.19000-01	28.000	.6489	1.283	.7937	.9631	.4968-01	.3074-01	3.762	25.52	590.0
71	180.00	.20900-01	29.000	.6503	1.241	.7890	.9631	.4808-01	.3056-01	3.912	26.62	584.3
71	180.00	.28800-01	32.000	.5518	.9987	.6681	.9611	.3868-01	.2587-01	3.532	24.16	574.4
71	180.00	.32800-01	33.000	.4886	.8484	.5895	.9596	.3286-01	.2283-01	3.301	22.69	565.2
71	180.00	.36700-01	34.000	.5015	.8955	.6144	.9582	.3468-01	.2380-01	3.265	22.37	571.6
71	180.00	.56400-01	37.000	.3909	.6632	.4881	.9515	.2569-01	.1891-01	2.727	18.80	559.5
71	180.00	.76100-01	38.000	.2950	.4864	.3757	.9454	.1884-01	.1455-01	2.148	14.87	551.7
71	180.00	.95800-01	39.000	.2318	.3761	.3011	.9400	.1457-01	.1166-01	1.732	12.03	546.8
71	180.00	.11550	40.000	.1788	.2927	.2389	.9354	.1134-01	.9252-02	1.315	9.119	549.7
71	180.00	.18450	42.000	.9783-01	.1520	.1339	.9244	.5888-02	.5186-02	.7863	5.504	532.2
71	225.00	.22900-01	30.000	.6122	1.141	.7385	.9631	.4417-01	.2860-01	3.786	25.82	580.0
71	270.00	.91000-02	63.000	.3457	.5926	.4086	.9631	.2295-01	.1583-01	2.378	16.37	562.1
71	270.00	.11100-01	64.000	.6156	1.247	.7573	.9631	.4830-01	.2933-01	3.484	23.58	593.6
71	270.00	.13100-01	65.000	.8334	1.857	1.046	.9631	.7192-01	.4053-01	4.332	29.14	605.5
71	270.00	.17000-01	67.000	.6333	1.235	.7723	.9631	.4783-01	.2991-01	3.725	25.29	587.8
71	270.00	.20900-01	69.000	.6485	1.243	.7877	.9631	.4814-01	.3051-01	3.885	26.42	585.0
71	270.00	.24900-01	71.000	.6329	1.191	.7675	.9626	.4611-01	.2973-01	3.871	26.37	581.8
71	270.00	.28800-01	73.000	.5728	1.033	.6930	.9611	.4002-01	.2684-01	3.682	25.20	573.7
71	270.00	.36700-01	75.000	.5180	.9176	.6333	.9582	.3554-01	.2453-01	3.407	23.36	569.8
71	270.00	.46500-01	77.000	.4292	.7273	.5287	.9541	.2817-01	.2048-01	2.999	20.69	559.2
71	270.00	.56400-01	78.000	.4060	.6791	.5045	.9515	.2630-01	.1954-01	2.893	19.99	555.7
71	270.00	.95800-01	80.000	.2276	.3638	.2935	.9400	.1409-01	.1137-01	1.741	12.12	542.2
71	270.00	.11550	81.000	.2069	.3286	.2720	.9353	.1273-01	.1054-01	1.601	11.16	539.9
71	315.00	.19000-01	68.000	.6017	1.085	.7201	.9631	.4201-01	.2789-01	3.871	26.49	573.5
71	315.00	.22900-01	70.000	.5593	1.047	.6756	.9631	.4056-01	.2617-01	3.439	23.44	580.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
157	5.500	.1875-01	.1151-01	129.6	700.7	.1393	99.39	-31.54	2688.	.3783-02	.7998-07	3.952
158	5.500	.1875-01	.1151-01	129.7	701.7	.1394	99.53	-31.54	2690.	.3780-02	.8009-07	3.945
159	5.500	-.1534-01	-.9410-02	129.6	701.7	.1393	99.53	148.5	2690.	.3778-02	.8009-07	3.943

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
157	.3035-01	.1241-01
158	.3036-01	.1242-01
159	.3036-01	.1242-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
157	.00000	.91000-02	1.0000	.4310	.7094	.5195	.9566	.2153-01	.1577-01	2.336	16.44	522.1
157	.00000	.15000-01	4.0000	.7077	1.324	.8869	.9566	.4018-01	.2691-01	3.233	22.41	550.1
157	.00000	.17000-01	5.0000	.6058	1.082	.7489	.9566	.3285-01	.2273-01	2.926	20.37	541.5
157	.00000	.19000-01	6.0000	.6144	1.096	.7592	.9566	.3327-01	.2304-01	2.972	20.70	541.3
157	.00000	.24900-01	9.0000	.5126	.9110	.6344	.9561	.2765-01	.1925-01	2.492	17.36	540.5
157	.00000	.26900-01	10.000	.4880	.8538	.6034	.9554	.2591-01	.1831-01	2.423	16.91	537.1
159	.00000	.32800-01	12.000	.4220	.7089	.5205	.9533	.2152-01	.1580-01	2.221	15.58	528.3
159	.00000	.36700-01	13.000	.3589	.5870	.4415	.9519	.1782-01	.1340-01	1.967	13.86	521.1
159	.00000	.40600-01	14.000	.3468	.5708	.4304	.9505	.1733-01	.1307-01	1.882	13.25	522.9
159	.00000	.48500-01	15.000	.2889	.4673	.3609	.9477	.1418-01	.1095-01	1.612	11.37	517.9
159	.00000	.56400-01	16.000	.2883	.4661	.3647	.9451	.1415-01	.1107-01	1.609	11.36	517.8
159	.00000	.76100-01	17.000	.2503	.4052	.3268	.9388	.1230-01	.9919-02	1.395	9.846	518.0
159	.00000	.95800-01	18.000	.5725-01	.9689-01	.7886-01	.9330	.2941-02	.2394-02	.2980	2.088	530.2
159	.00000	.11550	19.000	.1771	.2892	.2459	.9278	.8779-02	.7465-02	.9725	6.851	520.7
159	.00000	.16480	20.000	.9062-01	.1478	.1333	.9172	.4485-02	.4046-02	.4991	3.517	520.2
159	.00000	.21400	22.000	.4156-01	.6221-01	.5901-01	.9109	.1889-02	.1791-02	.2667	1.912	490.3
158	2.0000	.24700-01	165.00	.3980	.6665	.4833	.9562	.2024-01	.1468-01	2.105	14.77	527.5
157	9.0000	.15000-01	157.00	.5232	.9399	.6479	.9566	.2852-01	.1966-01	2.509	17.47	542.6

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
157	9.0000	.17600-01	158.00	.5102	.8741	.6227	.9566	.2653-01	.1890-01	2.605	18.24	532.4
158	9.8000	.24700-01	164.00	.4032	.6687	.4882	.9562	.2030-01	.1482-01	2.164	15.21	524.9
157	10.000	.22900-01	88.000	.4173	.7168	.5098	.9566	.2175-01	.1547-01	2.123	14.86	533.0
157	10.000	.26900-01	90.000	.3894	.6474	.4737	.9554	.1965-01	.1437-01	2.077	14.60	524.9
157	10.000	.34700-01	94.000	.3852	.6487	.4772	.9525	.1969-01	.1448-01	2.017	14.15	528.2
157	12.000	.17600-01	152.00	.8488	1.964	.9473	.9817	.5961-01	.2875-01	3.178	21.71	577.3
157	12.000	.12100-01	151.00	1.093	5.823	1.284	.9817	.1767	.3897-01	2.862	19.16	614.4
157	13.000	.19400-01	153.00	.7935	1.645	.8766	.9817	.4991-01	.2660-01	3.260	22.41	565.3
158	14.600	.44200-01	169.00	.4168	.7031	.5256	.9492	.2135-01	.1596-01	2.180	15.29	529.4
157	18.500	.44200-01	106.00	.4577	.7912	.5825	.9492	.2401-01	.1768-01	2.309	16.14	534.4
158	19.600	.62900-01	175.00	.3246	.5263	.4156	.9429	.1598-01	.1262-01	1.805	12.73	518.6
157	19.800	.40800-01	101.00	.4979	.8555	.6283	.9504	.2596-01	.1907-01	2.532	17.72	533.1
157	20.000	.24900-01	89.000	.3440	.5686	.4161	.9561	.1725-01	.1263-01	1.852	13.03	523.3
157	20.000	.28800-01	91.000	.3451	.5642	.4188	.9547	.1712-01	.1271-01	1.889	13.31	520.3
157	20.000	.32800-01	93.000	.3638	.6126	.4492	.9532	.1859-01	.1363-01	1.905	13.36	528.2
157	22.200	.62900-01	125.00	.3343	.5636	.4354	.9429	.1710-01	.1321-01	1.747	12.25	528.5
157	22.400	.44200-01	107.00	.4056	.6896	.5130	.9492	.2093-01	.1557-01	2.094	14.67	530.5
158	22.600	.10270	192.00	.1588	.2612	.2176	.9311	.7931-02	.6607-02	.8631	6.074	522.7
157	23.000	.42000-01	105.00	.5142	.9025	.6554	.9499	.2739-01	.1989-01	2.541	17.73	537.8
157	23.400	.59600-01	120.00	.3734	.6357	.4857	.9440	.1929-01	.1474-01	1.924	13.48	530.9
158	23.900	.21310	250.00	.4642-01	.6917-01	.6564-01	.9110	.2100-02	.1993-02	.3008	2.158	488.3
157	24.100	.82200-01	139.00	.2674	.4498	.3594	.9369	.1365-01	.1091-01	1.403	9.842	527.9
158	24.400	.19040	238.00	.6304-01	.9588-01	.8966-01	.9133	.2911-02	.2723-02	.3922	2.800	496.8
158	24.400	.12440	207.00	.1177	.1978	.1685	.9256	.6006-02	.5116-02	.6195	4.346	528.4
158	24.800	.16810	223.00	.7802-01	.1244	.1132	.9166	.3777-02	.3438-02	.4459	3.154	513.5
157	24.900	.62900-01	126.00	.3397	.5719	.4422	.9429	.1736-01	.1342-01	1.779	12.48	528.1
158	25.000	.79500-01	178.00	.2645	.4350	.3500	.9377	.1321-01	.1063-01	1.438	10.12	522.6
158	25.300	.10270	191.00	.1691	.2779	.2316	.9311	.8439-02	.7033-02	.9201	6.476	522.5
158	25.300	.10000+00	186.00	.2075	.3457	.2853	.9318	.1050-01	.8662-02	1.107	7.773	526.1
157	25.500	.60700-01	124.00	.3984	.6865	.5219	.9436	.2083-01	.1584-01	2.019	14.12	533.7
158	26.000	.12440	206.00	.1239	.2084	.1775	.9256	.6329-02	.5389-02	.6509	4.565	528.7
157	26.300	.82200-01	140.00	.2757	.4610	.3694	.9369	.1399-01	.1121-01	1.458	10.24	526.4
158	26.700	.12100	199.00	.1811	.3072	.2596	.9264	.9329-02	.7881-02	.9402	6.587	530.7
158	26.800	.16810	222.00	.9776-01	.1568	.1425	.9166	.4760-02	.4326-02	.5534	3.911	515.2
158	27.000	.19040	237.00	.7652-01	.1174	.1096	.9133	.3564-02	.3327-02	.4684	3.338	500.1
159	27.100	.21310	249.00	.6975-01	.1048	.9930-01	.9110	.3181-02	.3015-02	.4446	3.184	491.8
158	27.200	.80300-01	180.00	.3191	.5282	.4241	.9375	.1604-01	.1288-01	1.717	12.07	524.4
157	27.400	.40100-01	98.000	.4795	.8436	.6095	.9506	.2560-01	.1850-01	2.363	16.48	538.3
158	27.400	.16480	215.00	.1049	.1704	.1539	.9172	.5174-02	.4672-02	.5812	4.098	519.2
157	27.600	.41600-01	102.00	.4414	.7837	.5645	.9501	.2378-01	.1713-01	2.149	14.98	540.3
158	27.600	.12440	205.00	.1432	.2415	.2055	.9256	.7334-02	.6239-02	.7494	5.254	529.3
158	27.600	.18700	230.00	.9479-01	.1466	.1364	.9138	.4453-02	.4141-02	.5711	4.063	503.2
158	27.700	.21010	243.00	.7323-01	.1109	.1048	.9112	.3367-02	.3183-02	.4594	3.284	495.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
158	27.900	.10110	188.00	.1911	.3185	.2632	.9315	.9672-02	.7992-02	1.017	7.145	526.3
157	28.000	.46800-01	110.00	.2327	.3675	.2872	.9483	.1115-01	.8715-02	1.349	9.564	509.6
158	28.200	.16810	221.00	.1012	.1636	.1484	.9166	.4969-02	.4506-02	.5645	3.983	517.9
158	28.300	.19040	236.00	.7923-01	.1216	.1135	.9133	.3691-02	.3446-02	.4847	3.455	500.2
158	28.300	.12200	201.00	.1508	.2534	.2152	.9261	.7696-02	.6533-02	.7932	5.564	528.4
157	28.400	.53500-01	114.00	.2749	.4545	.3494	.9460	.1379-01	.1060-01	1.479	10.40	523.4
158	28.400	.21310	248.00	.7544-01	.1138	.1078	.9110	.3456-02	.3273-02	.4767	3.410	493.5
157	28.700	.58600-01	117.00	.4024	.6851	.5225	.9443	.2079-01	.1586-01	2.074	14.53	530.9
158	28.800	.16580	217.00	.1159	.1894	.1710	.9170	.5751-02	.5191-02	.6364	4.483	520.9
157	28.800	.60400-01	121.00	.4296	.7500	.5656	.9437	.2276-01	.1717-01	2.139	14.94	536.6
158	29.000	.21110	244.00	.8057-01	.1221	.1155	.9111	.3708-02	.3506-02	.5046	3.606	495.4
157	29.000	.65700-01	129.00	.2268	.3614	.2893	.9420	.1097-01	.8780-02	1.295	9.162	512.6
157	29.200	.72400-01	133.00	.2740	.4577	.3612	.9399	.1389-01	.1096-01	1.452	10.20	526.0
157	29.300	.79500-01	136.00	.3207	.5549	.4351	.9377	.1684-01	.1320-01	1.615	11.29	534.7
157	29.600	.92500-01	143.00	.1930	.3259	.2642	.9339	.9891-02	.8018-02	1.006	7.053	528.9
157	29.700	.10000+00	146.00	.2332	.4091	.3299	.9318	.1242-01	.1001-01	1.153	8.046	537.7
158	29.900	.12100	198.00	.1938	.3305	.2787	.9264	.1004-01	.8462-02	.9983	6.989	532.0
158	30.200	.16480	214.00	.1236	.2032	.1829	.9172	.6170-02	.5555-02	.6719	4.728	522.6
158	30.300	.21010	242.00	.7524-01	.1147	.1083	.9112	.3482-02	.3289-02	.4662	3.327	497.6
157	31.500	.91000-02	82.000	.4633	.7598	.5578	.9566	.2306-01	.1693-01	2.525	17.78	521.1
157	31.500	.11100-01	83.000	.3717	.6663	.4600	.9566	.2022-01	.1396-01	1.788	12.45	542.2
157	31.500	.14200-01	84.000	.7429	1.978	.8388	.9817	.6002-01	.2545-01	2.530	17.17	588.5
157	31.500	.16000-01	85.000	1.024	2.479	1.147	.9817	.7525-01	.3481-01	3.707	25.26	581.3
157	31.500	.17600-01	86.000	.5397	1.213	.6007	.9817	.3682-01	.1823-01	2.067	14.14	574.5
157	31.500	.19400-01	87.000	.5787	1.116	.6346	.9817	.3386-01	.1926-01	2.556	17.67	555.1
158	32.100	.21010	241.00	.7197-01	.1097	.1036	.9112	.3330-02	.3145-02	.4462	3.185	497.5
158	32.200	.16480	213.00	.1087	.1777	.1602	.9172	.5394-02	.4863-02	.5961	4.199	521.0
158	32.200	.17860	224.00	.8874-01	.1390	.1281	.9150	.4220-02	.3891-02	.5230	3.712	507.6
158	32.200	.18700	228.00	.8466-01	.1318	.1224	.9138	.4001-02	.3716-02	.5046	3.585	505.4
158	32.300	.12100	197.00	.1884	.3178	.2690	.9264	.9649-02	.8168-02	.9854	6.909	529.4
158	32.300	.12300	194.00	.1699	.2877	.2439	.9259	.8737-02	.7407-02	.8839	6.194	530.3
158	32.300	.12730	208.00	.7844-01	.1292	.1113	.9249	.3923-02	.3379-02	.4254	2.993	523.1
158	32.300	.13420	209.00	.8877-01	.1519	.1303	.9233	.4612-02	.3957-02	.4551	3.185	532.8
157	32.400	.10000+00	147.00	.2298	.4000	.3237	.9318	.1214-01	.9824-02	1.148	8.017	536.1
158	32.400	.10110	184.00	.2567	.4322	.3556	.9315	.1312-01	.1080-01	1.347	9.449	528.8
158	32.400	.10630	193.00	.1041	.1652	.1404	.9301	.5016-02	.4263-02	.6002	4.249	511.8
158	32.500	.85800-01	183.00	.1401	.2202	.1828	.9358	.6686-02	.5549-02	.8204	5.818	508.8
157	32.600	.79500-01	137.00	.3768	.6524	.5114	.9377	.1980-01	.1552-01	1.897	13.26	534.8
158	32.600	.80800-01	176.00	.3044	.5078	.4064	.9373	.1542-01	.1234-01	1.619	11.37	526.5
157	32.700	.67400-01	132.00	.1875	.3011	.2407	.9415	.9137-02	.7304-02	1.057	7.473	514.9
157	32.700	.72400-01	134.00	.2324	.3811	.3036	.9399	.1156-01	.9214-02	1.267	8.925	521.0
157	32.800	.65700-01	130.00	.1885	.2969	.2392	.9420	.9012-02	.7258-02	1.098	7.784	508.8
158	32.800	.16680	210.00	.9837-01	.1595	.1444	.9168	.4844-02	.4385-02	.5466	3.855	518.7

FH15. E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
158	32.800	.18880	225.00	.7012-01	.1071	.9993-01	.9135	.3251-02	.3034-02	.4331	3.090	498.3
157	32.900	.58600-01	118.00	.3434	.5787	.4439	.9443	.1756-01	.1347-01	1.795	12.59	528.4
157	32.900	.60400-01	122.00	.3216	.5355	.4149	.9437	.1625-01	.1259-01	1.711	12.03	525.3
158	32.900	.61300-01	171.00	.3737	.6186	.4815	.9434	.1878-01	.1462-01	2.011	14.14	524.5
157	33.000	.53500-01	115.00	.3186	.5177	.4022	.9460	.1571-01	.1221-01	1.762	12.43	518.5
157	33.200	.48300-01	113.00	.2167	.3386	.2669	.9478	.1028-01	.8100-02	1.280	9.090	506.1
158	33.400	.42800-01	166.00	.4183	.7011	.5249	.9497	.2129-01	.1594-01	2.209	15.50	527.8
157	33.500	.40100-01	99.000	.5244	.8882	.6575	.9506	.2696-01	.1995-01	2.723	19.09	529.6
157	33.600	.38300-01	97.000	.5418	.9144	.6762	.9512	.2775-01	.2052-01	2.828	19.84	528.7
157	33.700	.36700-01	96.000	.5104	.8609	.6350	.9518	.2613-01	.1927-01	2.665	18.70	528.6
157	33.900	.33800-01	95.000	.3952	.6452	.4835	.9528	.1958-01	.1467-01	2.169	15.29	519.8
158	34.700	.21010	240.00	.6873-01	.1048	.9894-01	.9112	.3181-02	.3004-02	.4258	3.039	497.6
158	34.700	.18700	227.00	.8611-01	.1340	.1244	.9138	.4068-02	.3779-02	.5136	3.650	505.2
158	34.900	.16480	212.00	.9757-01	.1600	.1441	.9172	.4857-02	.4376-02	.5329	3.752	521.8
157	35.100	.10000+00	148.00	.2210	.3821	.3102	.9318	.1160-01	.9414-02	1.115	7.796	534.4
158	35.200	.23900-01	161.00	.2206	.3382	.2600	.9565	.1027-01	.7893-02	1.352	9.634	499.9
157	35.300	.92500-01	145.00	.2097	.3545	.2872	.9339	.1076-01	.8717-02	1.091	7.650	529.2
157	35.300	.22100-01	160.00	.2190	.3399	.2590	.9566	.1032-01	.7860-02	1.309	9.307	503.8
158	35.400	.18800	231.00	.6846-01	.1066	.9904-01	.9136	.3236-02	.3007-02	.4079	2.899	505.4
158	35.500	.12100	196.00	.1620	.2724	.2309	.9264	.8270-02	.7010-02	.8518	5.975	528.5
158	35.600	.16580	216.00	.8743-01	.1422	.1285	.9170	.4319-02	.3902-02	.4835	3.409	519.5
157	35.800	.80600-01	138.00	.2397	.4045	.3218	.9374	.1227-01	.9765-02	1.251	8.774	528.7
158	35.900	.21310	247.00	.5545-01	.8393-01	.7945-01	.9110	.2548-02	.2412-02	.3482	2.489	494.9
158	36.000	.19040	235.00	.6688-01	.1032	.9627-01	.9133	.3135-02	.2923-02	.4045	2.879	502.5
158	36.200	.16810	220.00	.7913-01	.1272	.1155	.9166	.3863-02	.3508-02	.4460	3.151	516.0
157	36.200	.72400-01	135.00	.2455	.4029	.3209	.9399	.1223-01	.9737-02	1.337	9.414	521.3
158	36.300	.12200	200.00	.1458	.2448	.2079	.9261	.7433-02	.6313-02	.7681	5.389	528.2
157	36.600	.65700-01	131.00	.2486	.3977	.3177	.9420	.1207-01	.9641-02	1.410	9.969	513.9
158	36.700	.18700	226.00	.7089-01	.1099	.1022	.9138	.3338-02	.3102-02	.4254	3.025	504.1
158	36.900	.16480	211.00	.8166-01	.1331	.1201	.9172	.4041-02	.3646-02	.4503	3.173	520.1
158	36.900	.10110	187.00	.2331	.3882	.3209	.9315	.1179-01	.9745-02	1.243	8.731	526.0
157	37.000	.60400-01	123.00	.3449	.5818	.4475	.9437	.1766-01	.1358-01	1.801	12.63	528.6
158	37.000	.12440	204.00	.1286	.2140	.1830	.9256	.6499-02	.5555-02	.6864	4.821	525.9
157	37.100	.58600-01	119.00	.3883	.6495	.5004	.9443	.1971-01	.1519-01	2.053	14.42	526.4
158	37.200	.21310	246.00	.5264-01	.7970-01	.7545-01	.9110	.2420-02	.2291-02	.3303	2.361	495.0
158	37.600	.16810	219.00	.7393-01	.1188	.1079	.9166	.3607-02	.3276-02	.4172	2.947	515.8
157	37.800	.10270	150.00	.1711	.2865	.2369	.9311	.8696-02	.7188-02	.9025	6.336	526.8
158	37.900	.12100	195.00	.1395	.2282	.1954	.9264	.6929-02	.5934-02	.7651	5.389	521.1
158	38.000	.80300-01	179.00	.2882	.4681	.3794	.9375	.1421-01	.1152-01	1.598	11.27	519.1
157	38.500	.46800-01	112.00	.2238	.3516	.2756	.9483	.1067-01	.8365-02	1.310	9.295	507.8
158	38.600	.12440	203.00	.1270	.2109	.1799	.9256	.6376-02	.5463-02	.6845	4.813	524.1
158	38.700	.10000+00	185.00	.2186	.36[illegible]	.2987	.9318	.1094-01	.9069-02	1.184	8.330	523.3
157	38.900	.82200-01	141.00	.2184	.3606	.2908	.9369	.1094-01	.8824-02	1.177	8.284	523.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
157	39.300	.41600-01	104.00	.3881	.6614	.4889	.9501	.2007-01	.1484-01	1.997	13.99	531.1
158	39.500	.10270	190.00	.1972	.3224	.2693	.9311	.9791-02	.8178-02	1.082	7.624	521.0
158	39.600	.16810	218.00	.6244-01	.1002	.9103-01	.9166	.3042-02	.2764-02	.3531	2.495	515.4
158	39.900	.19040	233.00	.5473-01	.8418-01	.7855-01	.9133	.2556-02	.2385-02	.3333	2.374	501.1
158	40.100	.79500-01	177.00	.2456	.3937	.3208	.9377	.1195-01	.9740-02	1.391	9.833	515.1
158	40.200	.12440	202.00	.1175	.1934	.1660	.9256	.5874-02	.5041-02	.6374	4.485	523.0
158	40.300	.21310	245.00	.3794-01	.5727-01	.5423-01	.9110	.1739-02	.1647-02	.2395	1.713	493.8
157	41.100	.82200-01	142.00	.2034	.3341	.2701	.9369	.1014-01	.8196-02	1.106	7.789	521.5
158	41.100	.60700-01	173.00	.3332	.5398	.4249	.9436	.1639-01	.1290-01	1.854	13.08	518.4
158	42.600	.59600-01	172.00	.3283	.5302	.4173	.9440	.1610-01	.1267-01	1.836	12.96	517.4
158	43.200	.42000-01	168.00	.3995	.6591	.4976	.9499	.2001-01	.1511-01	2.161	15.20	523.5
158	43.400	.82200-01	181.00	.2345	.3857	.3116	.9369	.1171-01	.9460-02	1.274	8.965	522.7
157	43.600	.62900-01	128.00	.3036	.4920	.3886	.9429	.1493-01	.1179-01	1.685	11.89	517.7
157	45.000	.22900-01	8.0000	.6900	1.281	.8629	.9566	.3889-01	.2619-01	3.179	22.05	548.9
158	46.100	.62900-01	174.00	.2814	.4490	.3576	.9429	.1363-01	.1086-01	1.606	11.36	513.7
158	47.700	.40800-01	167.00	.4338	.7191	.5402	.9504	.2183-01	.1640-01	2.330	16.38	524.8
157	48.400	.44200-01	109.00	.3851	.6427	.4836	.9492	.1950-01	.1468-01	2.043	14.35	525.9
157	50.000	.19400-01	156.00	.5035	1.042	.5561	.9817	.3163-01	.1688-01	2.071	14.24	565.1
157	51.000	.12100-01	154.00	.9601	3.073	1.098	.9817	.9326-01	.3333-01	2.969	20.04	598.8
157	51.000	.17600-01	155.00	.5674	1.190	.6275	.9817	.3612-01	.1904-01	2.306	15.84	566.8
158	51.900	.44800-01	170.00	.3149	.5001	.3883	.9490	.1518-01	.1179-01	1.812	12.83	512.2
158	53.200	.24700-01	163.00	.3987	.6577	.4819	.9562	.1997-01	.1463-01	2.158	15.18	523.5
158	65.200	.24700-01	162.00	.5304	.9201	.6513	.9562	.2794-01	.1978-01	2.668	18.64	536.0
159	90.000	.91000-02	44.000	.2040	.3259	.2435	.9566	.9892-02	.7391-02	1.162	8.214	514.1
159	90.000	.11100-01	45.000	.4643	.7817	.5636	.9566	.2373-01	.1711-01	2.436	17.08	528.9
159	90.000	.13100-01	46.000	.7694	1.490	.9737	.9566	.4524-01	.2956-01	3.388	23.40	556.6
159	90.000	.17000-01	48.000	.7116	1.281	.8815	.9566	.3888-01	.2676-01	3.411	23.72	543.8
159	90.000	.20900-01	50.000	.6054	1.048	.7411	.9566	.3180-01	.2250-01	3.055	21.34	535.5
159	90.000	.26900-01	53.000	.5444	.9220	.6660	.9554	.2799-01	.2022-01	2.831	19.84	530.4
159	90.000	.28800-01	54.000	.5218	.8760	.6388	.9547	.2659-01	.1939-01	2.749	19.28	528.1
159	90.000	.32800-01	55.000	.4459	.7282	.5445	.9533	.2210-01	.1653-01	2.449	17.26	520.7
159	90.000	.36700-01	56.000	.4242	.6926	.5215	.9519	.2102-01	.1583-01	2.331	16.43	520.6
159	90.000	.40600-01	57.000	.4111	.6830	.5121	.9505	.2073-01	.1554-01	2.200	15.46	525.4
159	90.000	.48500-01	58.000	.4067	.6697	.5117	.9477	.2033-01	.1553-01	2.206	15.52	523.0
159	90.000	.56400-01	59.000	.3453	.5634	.4385	.9451	.1710-01	.1331-01	1.900	13.39	520.4
159	90.000	.76100-01	60.000	.2538	.4089	.3305	.9388	.1241-01	.1003-01	1.424	10.06	516.7
159	90.000	.95800-01	61.000	.2010	.3250	.2700	.9330	.9866-02	.8196-02	1.122	7.914	517.8
159	90.000	.11550	62.000	.1446	.2333	.1993	.9278	.7081-02	.6050-02	.8099	5.717	517.1
159	135.00	.19000-01	49.000	.6188	1.072	.7578	.9566	.3255-01	.2300-01	3.117	21.78	535.7
159	135.00	.22900-01	51.000	.6102	1.062	.7483	.9566	.3223-01	.2271-01	3.055	21.33	536.7
159	180.00	.91000-02	23.000	.1355	.2101	.1602	.9566	.6378-02	.4862-02	.8119	5.773	504.2
159	180.00	.11100-01	24.000	.3422	.5618	.4121	.9566	.1705-01	.1251-01	1.865	13.13	522.2
159	180.00	.13100-01	25.000	.6166	1.140	.7701	.9566	.3461-01	.2338-01	2.860	19.84	548.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K014)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
159	180.00	.15000-01	26.000	.6554	1.217	.8196	.9566	.3695-01	.2488-01	3.024	20.97	549.7
159	180.00	.17000-01	27.000	.6597	1.166	.8130	.9566	.3541-01	.2468-01	3.235	22.55	540.1
159	180.00	.19000-01	28.000	.6070	1.059	.7450	.9566	.3215-01	.2262-01	3.029	21.15	537.3
159	180.00	.20900-01	29.000	.5827	1.005	.7128	.9566	.3052-01	.2164-01	2.952	20.64	534.8
159	180.00	.28800-01	32.000	.5437	.9180	.6670	.9547	.2787-01	.2025-01	2.840	19.91	529.6
159	180.00	.32800-01	33.000	.4702	.7729	.5757	.9532	.2346-01	.1748-01	2.558	18.00	522.5
159	180.00	.36700-01	34.000	.4474	.7494	.5553	.9518	.2275-01	.1686-01	2.365	16.60	527.5
159	180.00	.48500-01	36.000	.4004	.6624	.5048	.9477	.2011-01	.1532-01	2.156	15.16	524.3
159	180.00	.56400-01	37.000	.3607	.5927	.4596	.9450	.1799-01	.1395-01	1.962	13.81	522.5
159	180.00	.76100-01	38.000	.2735	.4460	.3584	.9387	.1354-01	.1088-01	1.506	10.61	520.3
159	180.00	.95800-01	39.000	.2010	.3277	.2713	.9330	.9947-02	.8235-02	1.107	7.799	520.3
159	180.00	.11550	40.000	.1488	.2439	.2072	.9277	.7405-02	.6289-02	.8122	5.718	521.8
159	180.00	.18450	42.000	.6095-01	.9463-01	.8779-01	.9141	.2873-02	.2665-02	.3648	2.594	504.5
159	225.00	.22900-01	30.000	.5410	.9258	.6601	.9566	.2810-01	.2004-01	2.773	19.40	532.8
159	270.00	.91000-02	63.000	.1899	.2988	.2255	.9566	.9069-02	.6847-02	1.110	7.868	509.2
159	270.00	.11100-01	64.000	.3050	.4964	.3663	.9566	.1507-01	.1112-01	1.685	11.88	519.7
159	270.00	.13100-01	65.000	.5653	1.013	.6995	.9566	.3076-01	.2123-01	2.723	18.95	543.0
159	270.00	.17000-01	67.000	.5757	1.006	.7068	.9566	.3053-01	.2146-01	2.868	20.02	537.5
159	270.00	.20900-01	69.000	.6015	1.052	.7389	.9566	.3195-01	.2243-01	2.990	20.87	537.9
159	270.00	.24900-01	71.000	.5368	.9374	.6607	.9561	.2846-01	.2006-01	2.675	18.67	537.5
159	270.00	.28800-01	73.000	.5105	.8706	.6283	.9547	.2643-01	.1907-01	2.629	18.40	532.0
159	270.00	.36700-01	75.000	.4733	.7937	.5875	.9518	.2409-01	.1784-01	2.497	17.52	527.9
159	270.00	.48500-01	77.000	.4233	.6917	.5311	.9477	.2100-01	.1612-01	2.324	16.37	520.8
159	270.00	.56400-01	78.000	.3616	.5864	.4581	.9450	.1780-01	.1391-01	2.008	14.16	518.7
159	270.00	.95800-01	80.000	.1975	.3232	.2671	.9330	.9812-02	.8109-02	1.081	7.613	521.3
159	270.00	.11550	81.000	.1511	.2476	.2104	.9278	.7517-02	.6386-02	.8260	5.816	521.6
159	315.00	.19000-01	68.000	.5214	.8791	.6332	.9566	.2669-01	.1922-01	2.730	19.14	529.2
159	315.00	.22900-01	70.000	.4981	.8698	.6114	.9566	.2640-01	.1856-01	2.482	17.33	537.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
15	3.010	.0000	-3.048	36.01	721.7	.9658	256.6	90.00	2364.	.1016-01	.2050-06	3.640
16	3.010	.0000	-3.036	36.17	721.7	.9700	256.6	90.00	2364.	.1020-01	.2050-06	3.656
17	3.010	.0000	-3.038	36.16	721.7	.9698	256.6	90.00	2364.	.1020-01	.2050-06	3.655

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
15	.4391-01	.7595-02
16	.4401-01	.7579-02
17	.4400-01	.7579-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
16	.00000	.91000-02	1.0000	.6343	1.638	.7664	.9719	.7209-01	.3373-01	3.287	22.13	603.9
16	.00000	.11100-01	2.0000	.8256	2.586	1.021	.9719	.1138	.4494-01	3.851	25.77	615.7
16	.00000	.15000-01	4.0000	.6935	1.645	.8283	.9719	.7240-01	.3645-01	3.808	25.73	596.9
16	.00000	.17000-01	5.0000	.6660	1.540	.7925	.9719	.6779-01	.3488-01	3.726	25.21	594.5
16	.00000	.19000-01	6.0000	.6430	1.481	.7647	.9719	.6518-01	.3365-01	3.609	24.42	594.1
16	.00000	.24900-01	9.0000	.5397	1.133	.6349	.9714	.4988-01	.2794-01	3.272	22.26	583.9
16	.00000	.26900-01	10.000	.5421	1.136	.6405	.9706	.5000-01	.2819-01	3.293	22.41	583.6
15	.00000	.32800-01	12.000	.5581	1.180	.6695	.9684	.5182-01	.2940-01	3.356	22.83	584.7
15	.00000	.36700-01	13.000	.5037	1.019	.6045	.9670	.4473-01	.2654-01	3.158	21.55	578.9
15	.00000	.40600-01	14.000	.5522	1.150	.6723	.9657	.5051-01	.2952-01	3.366	22.92	582.9
15	.00000	.48500-01	15.000	.4677	.9109	.5705	.9630	.4000-01	.2505-01	3.046	20.85	573.3
15	.00000	.56400-01	16.000	.4346	.8419	.5375	.9604	.3697-01	.2360-01	2.846	19.49	572.5
15	.00000	.76100-01	17.000	.3394	.6283	.4289	.9546	.2759-01	.1883-01	2.339	16.08	564.7
15	.00000	.11550	19.000	.2207	.4021	.2939	.9453	.1766-01	.1286-01	1.550	10.68	561.7
15	.00000	.16480	20.000	.1274	.2255	.1745	.9379	.9904-02	.7665-02	.9273	6.407	555.9
15	.00000	.21400	22.000	.7606-01	.1238	.1017	.9347	.5438-02	.4464-02	.6247	4.367	534.6
17	2.0000	.24700-01	165.00	.3375	.6733	.3931	.9716	.2963-01	.1730-01	2.149	14.68	577.0
16	9.0000	.15000-01	157.00	.6614	1.524	.7823	.9727	.6709-01	.3443-01	3.710	25.11	594.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
16	9.0000	.17600-01	158.00	.6131	1.329	.7189	.9727	.5850-01	.3163-01	3.614	24.55	587.7
17	9.8000	.24700-01	164.00	.4560	.9174	.5296	.9723	.4037-01	.2331-01	2.879	19.65	578.2
16	10.000	.22900-01	88.000	.5073	1.050	.5903	.9728	.4620-01	.2598-01	3.118	21.24	582.0
16	10.000	.26900-01	90.000	.5492	1.137	.6440	.9715	.5002-01	.2834-01	3.375	22.99	582.0
16	10.000	.34700-01	94.000	.5464	1.133	.6523	.9686	.4985-01	.2871-01	3.352	22.83	582.2
16	12.000	.17600-01	152.00	.9129	9.817	1.035	.9870	.4320	.4555-01	3.197	21.09	642.1
16	12.000	.12100-01	151.00	.8754	-5.362	1.031	.9870	-.2360	.4539-01	2.390	15.63	659.6
16	13.000	.19400-01	153.00	.8667	10.99	.9846	.9870	.4838	.4333-01	2.988	19.70	643.3
17	14.600	.44200-01	169.00	.4786	.9116	.5718	.9657	.4011-01	.2516-01	3.200	21.94	569.7
16	18.500	.44200-01	106.00	.4036	.9697	.5925	.9660	.4267-01	.2608-01	3.193	21.84	574.7
17	19.600	.62900-01	175.00	.3417	.6304	.4184	.9600	.2774-01	.1841-01	2.370	16.30	564.1
16	19.800	.40800-01	101.00	.5967	1.250	.7197	.9673	.5501-01	.3167-01	3.626	24.68	583.6
16	20.000	.24900-01	89.000	.4684	.9368	.5409	.9732	.4123-01	.2380-01	2.975	20.32	577.3
16	20.000	.28800-01	91.000	.4914	.9711	.5713	.9717	.4273-01	.2514-01	3.160	21.60	575.6
16	20.000	.32800-01	93.000	.5287	1.118	.6272	.9702	.4922-01	.2760-01	3.184	21.66	584.8
17	21.800	.82200-01	182.00	.3026	.5531	.3810	.9545	.2434-01	.1677-01	2.121	14.60	562.3
16	22.200	.62900-01	125.00	.3644	.7069	.4515	.9602	.3111-01	.1987-01	2.388	16.35	572.7
16	22.400	.44200-01	107.00	.4230	.8126	.5045	.9663	.3576-01	.2220-01	2.803	19.20	571.1
17	22.600	.10270	192.00	.2501	.4469	.3217	.9494	.1966-01	.1416-01	1.804	12.45	557.8
16	23.000	.42000-01	105.00	.5307	1.108	.6403	.9671	.4874-01	.2818-01	3.236	22.03	583.1
16	23.400	.59600-01	120.00	.4066	.8028	.5026	.9613	.3533-01	.2212-01	2.617	17.89	575.4
17	23.900	.21310	250.00	.1118	.1898	.1526	.9350	.8351-02	.6713-02	.8643	6.004	546.0
16	24.100	.82200-01	139.00	.3031	.5660	.3839	.9547	.2491-01	.1689-01	2.073	14.24	566.3
17	24.400	.19040	238.00	.1490	.2595	.2045	.9363	.1142-01	.9000-02	1.111	7.689	552.3
17	24.400	.12440	207.00	.2200	.3991	.2922	.9449	.1756-01	.1286-01	1.557	10.73	560.8
17	24.800	.16810	223.00	.1548	.2787	.2133	.9383	.1226-01	.9384-02	1.106	7.626	559.3
16	24.900	.62900-01	126.00	.3386	.6537	.4201	.9604	.2921-01	.1849-01	2.195	15.01	574.4
17	25.000	.79500-01	178.00	.3089	.5812	.3902	.9555	.2557-01	.1717-01	2.094	14.37	567.6
17	25.300	.10270	191.00	.2591	.4656	.3337	.9496	.2049-01	.1468-01	1.855	12.80	558.9
17	25.300	.10000+00	186.00	.2601	.4883	.3389	.9502	.2149-01	.1491-01	1.767	12.14	567.3
16	25.500	.60700-01	124.00	.4005	.8172	.4996	.9611	.3596-01	.2193-01	2.495	17.01	580.1
17	26.000	.12440	206.00	.2216	.4018	.2942	.9450	.1768-01	.1294-01	1.570	10.82	560.7
16	26.300	.82200-01	140.00	.2826	.5219	.3564	.9548	.2297-01	.1568-01	1.958	13.46	564.3
17	26.700	.12100	199.00	.2367	.4448	.3173	.9457	.1957-01	.1396-01	1.607	11.03	567.4
17	26.800	.16810	222.00	.1792	.3207	.2461	.9384	.1411-01	.1083-01	1.290	8.904	558.1
17	27.000	.19040	237.00	.1487	.2589	.2040	.9363	.1139-01	.8977-02	1.109	7.680	552.1
17	27.100	.21310	249.00	.1030	.1756	.1408	.9350	.7726-02	.6195-02	.7907	5.489	547.2
17	27.200	.80300-01	180.00	.3392	.6462	.4303	.9554	.2843-01	.1894-01	2.267	15.55	569.8
16	27.400	.40100-01	98.000	.5783	1.319	.7041	.9682	.5803-01	.3099-01	3.271	22.15	593.1
17	27.400	.16480	215.00	.1694	.3178	.2372	.9388	.1398-01	.1044-01	1.152	7.910	567.1
16	27.600	.41600-01	102.00	.5495	1.256	.6718	.9677	.5528-01	.2956-01	3.103	21.01	593.4
17	27.600	.12440	205.00	.2218	.4009	.2939	.9451	.1764-01	.1293-01	1.576	10.87	560.1
17	27.600	.18700	230.00	.1690	.3010	.2341	.9366	.1325-01	.1030-01	1.223	8.448	557.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
17	27.700	.21010	243.00	.1077	.1906	.1500	.9352	.8388-02	.6601-02	.7860	5.431	555.8
17	27.900	.10110	188.00	.2593	.4752	.3353	.9501	.2091-01	.1475-01	1.813	12.48	562.8
16	28.000	.46800-01	110.00	.3465	.6079	.4061	.9659	.2675-01	.1787-01	2.559	17.70	553.9
17	28.200	.16810	221.00	.2015	.3627	.2774	.9384	.1596-01	.1221-01	1.439	9.923	559.4
17	28.300	.19040	236.00	.1476	.2509	.2000	.9363	.1104-01	.8802-02	1.139	7.913	546.3
17	28.300	.12200	201.00	.2539	.4679	.3380	.9456	.2059-01	.1487-01	1.763	12.13	563.9
16	28.400	.53500-01	114.00	.4130	.8137	.5031	.9637	.3581-01	.2214-01	2.664	18.22	575.1
17	28.400	.21310	248.00	.1267	.2130	.1720	.9350	.9374-02	.7567-02	.9928	6.906	543.6
16	28.700	.58600-01	117.00	.4770	.9837	.5930	.9620	.4329-01	.2610-01	2.941	20.04	581.6
17	28.800	.16580	217.00	.1813	.3351	.2522	.9387	.1475-01	.1110-01	1.254	8.621	564.5
16	28.800	.60400-01	121.00	.4129	.8703	.5178	.9615	.3830-01	.2279-01	2.495	16.97	584.4
17	29.000	.21110	244.00	.1195	.2073	.1648	.9351	.9122-02	.7252-02	.8968	6.212	551.2
16	29.000	.65700-01	129.00	.3211	.5594	.3874	.9598	.2462-01	.1705-01	2.393	16.57	552.3
16	29.200	.72400-01	133.00	.3917	.7649	.4932	.9578	.3366-01	.2171-01	2.550	17.45	573.7
16	29.300	.79500-01	136.00	.3643	.7297	.4678	.9558	.3211-01	.2059-01	2.310	15.77	577.6
16	29.600	.92500-01	143.00	.3409	.6400	.4386	.9523	.2816-01	.1930-01	2.317	15.91	567.2
16	29.700	.10000+00	146.00	.2437	.4790	.3220	.9505	.2108-01	.1417-01	1.576	10.77	574.8
17	29.900	.12100	198.00	.2432	.4701	.3292	.9459	.2069-01	.1449-01	1.601	10.96	572.1
17	30.200	.16480	214.00	.1660	.3104	.2319	.9389	.1366-01	.1021-01	1.133	7.785	566.5
17	30.200	.18700	229.00	.1279	.2305	.1781	.9366	.1014-01	.7836-02	.9119	6.288	559.6
17	30.300	.21010	242.00	.9512-01	.1704	.1333	.9352	.7497-02	.5865-02	.6839	4.719	558.3
16	31.500	.91000-02	82.000	.5833	1.835	.7052	.9747	.8074-01	.3103-01	2.716	18.17	615.9
16	31.500	.11100-01	83.000	.8454	3.140	1.037	.9747	.1382	.4566-01	3.674	24.49	622.9
16	31.500	.14200-01	84.000	1.002	-11.79	1.167	.9870	-.5188	.5135-01	2.934	19.22	655.2
16	31.500	.16000-01	85.000	.9902	21.83	1.131	.9870	.9605	.4975-01	3.294	21.69	646.1
16	31.500	.17600-01	86.000	.9231	9.064	1.045	.9870	.3989	.4599-01	3.264	21.54	641.3
16	31.500	.19400-01	87.000	.9523	4.544	1.061	.9870	.2000	.4671-01	3.826	25.40	630.4
17	32.100	.21010	241.00	.6576-01	.1188	.9253-01	.9352	.5227-02	.4071-02	.4678	3.225	560.0
17	32.200	.16480	213.00	.1241	.2336	.1738	.9390	.1028-01	.7648-02	.8402	5.767	567.8
17	32.200	.17860	224.00	.1514	.2650	.2069	.9374	.1166-01	.9104-02	1.122	7.761	553.3
17	32.200	.18700	228.00	.1066	.1922	.1485	.9367	.8458-02	.6533-02	.7596	5.238	559.7
17	32.300	.12100	197.00	.2591	.5056	.3517	.9460	.2225-01	.1547-01	1.687	11.54	573.7
17	32.300	.12300	194.00	.2048	.3908	.2763	.9456	.1720-01	.1216-01	1.366	9.368	570.0
17	32.300	.12730	208.00	.1573	.2686	.2040	.9448	.1182-01	.8977-02	1.206	8.370	547.5
17	32.300	.13420	209.00	.1927	.3589	.2610	.9435	.1579-01	.1149-01	1.322	9.083	565.8
16	32.400	.10000+00	147.00	.2355	.4788	.3143	.9507	.2107-01	.1383-01	1.472	10.04	579.6
17	32.400	.10110	184.00	.2406	.4712	.3177	.9504	.2073-01	.1398-01	1.561	10.68	574.2
17	32.400	.10630	193.00	.1993	.3275	.2498	.9492	.1441-01	.1095-01	1.617	11.29	537.3
17	32.500	.85800-01	183.00	.2535	.4315	.3124	.9543	.1899-01	.1375-01	1.951	13.55	546.8
16	32.600	.79500-01	137.00	.2456	.5112	.3184	.9560	.2250-01	.1401-01	1.502	10.23	582.8
17	32.600	.80800-01	176.00	.3087	.6341	.3997	.9557	.2790-01	.1759-01	1.910	13.02	581.0
16	32.700	.67400-01	132.00	.3100	.5613	.3786	.9596	.2470-01	.1666-01	2.199	15.16	560.5
16	32.700	.72400-01	134.00	.3801	.7170	.4734	.9581	.3155-01	.2083-01	2.569	17.63	568.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
16	32.800	.65700-01	130.00	.2921	.5038	.3510	.9601	.2217-01	.1545-01	2.208	15.31	549.9
17	32.800	.16680	210.00	.1237	.2245	.1706	.9387	.9880-02	.7508-02	.8741	6.022	561.0
17	32.800	.18880	225.00	.1259	.2111	.1693	.9366	.9291-02	.7448-02	.9908	6.895	542.9
16	32.900	.58600-01	118.00	.5394	1.133	.6720	.9623	.4985-01	.2958-01	3.270	22.25	583.9
16	32.900	.60400-01	122.00	.3287	.6542	.4059	.9617	.2879-01	.1786-01	2.098	14.33	576.7
17	32.900	.61300-01	171.00	.3712	.7175	.4560	.9615	.3157-01	.2006-01	2.442	16.72	572.2
16	33.000	.53500-01	115.00	.4123	.7935	.4985	.9640	.3492-01	.2194-01	2.725	18.67	571.5
16	33.200	.48300-01	113.00	.3097	.5436	.3632	.9658	.2392-01	.1598-01	2.285	15.81	554.0
17	33.400	.42800-01	166.00	.4985	1.070	.6025	.9677	.4710-01	.2651-01	2.963	20.13	586.6
16	33.500	.40100-01	99.000	.5907	1.282	.7109	.9686	.5641-01	.3128-01	3.479	23.63	587.8
16	33.600	.38300-01	97.000	.6049	1.308	.7244	.9693	.5755-01	.3188-01	3.575	24.28	587.4
16	33.700	.36700-01	96.000	.6062	1.326	.7247	.9699	.5837-01	.3189-01	3.546	24.07	588.7
16	33.900	.33800-01	95.000	.4979	1.022	.5850	.9710	.4497-01	.2574-01	3.084	21.02	580.9
17	34.700	.21010	240.00	.6000-01	.1084	.8442-01	.9352	.4771-02	.3715-02	.4266	2.941	560.1
17	34.700	.18700	227.00	.9336-01	.1687	.1301	.9367	.7423-02	.5726-02	.6640	4.577	560.1
17	34.900	.16480	212.00	.1263	.2425	.1784	.9390	.1067-01	.7850-02	.8365	5.732	571.1
16	35.100	.10000+00	148.00	.2367	.4869	.3168	.9508	.2143-01	.1394-01	1.463	9.968	581.2
17	35.200	.23900-01	161.00	.3313	.5829	.3717	.9748	.2565-01	.1636-01	2.438	16.86	554.5
16	35.300	.92500-01	145.00	.3350	.6368	.4318	.9527	.2802-01	.1900-01	2.245	15.40	569.4
16	35.300	.22100-01	160.00	.3086	.5452	.3462	.9750	.2399-01	.1524-01	2.259	15.61	555.3
17	35.400	.18800	231.00	.1173	.2117	.1635	.9367	.9316-02	.7194-02	.8358	5.763	559.8
17	35.500	.12100	196.00	.2433	.4762	.3303	.9462	.2096-01	.1453-01	1.580	10.81	574.1
17	35.600	.16580	216.00	.1326	.2498	.1858	.9389	.1099-01	.8177-02	.8969	6.156	567.9
16	35.800	.80600-01	138.00	.2601	.5241	.3344	.9559	.2306-01	.1471-01	1.640	11.19	578.4
17	35.900	.21310	247.00	.7206-01	.1238	.9887-01	.9351	.5448-02	.4351-02	.5476	3.798	549.0
17	36.000	.19040	235.00	.1038	.1816	.1426	.9365	.7991-02	.6275-02	.7692	5.323	553.2
17	36.200	.16910	220.00	.1270	.2302	.1751	.9387	.1013-01	.7706-02	.8996	6.200	560.7
16	36.200	.72400-01	135.00	.4392	.8389	.5481	.9583	.3692-01	.2412-01	2.927	20.07	570.2
17	36.300	.12200	200.00	.2192	.4259	.2970	.9460	.1874-01	.1307-01	1.434	9.816	573.0
16	36.600	.65700-01	131.00	.3234	.5949	.3949	.9603	.2618-01	.1738-01	2.250	15.48	563.5
17	36.700	.18700	226.00	.1319	.2326	.1816	.9368	.1024-01	.7991-02	.9669	6.683	555.1
17	36.900	.16480	211.00	.1482	.2755	.2062	.9391	.1213-01	.9075-02	1.018	6.996	565.6
17	36.900	.10110	187.00	.2821	.5591	.3734	.9506	.2460-01	.1643-01	1.808	12.35	576.0
16	37.000	.60400-01	123.00	.3944	.8544	.4957	.9620	.3760-01	.2182-01	2.327	15.80	587.6
17	37.000	.12440	204.00	.1982	.3684	.2648	.9456	.1621-01	.1165-01	1.362	9.361	565.5
16	37.100	.58600-01	119.00	.5068	1.049	.6281	.9626	.4615-01	.2764-01	3.115	21.22	582.0
17	37.200	.21310	246.00	.1031	.1752	.1406	.9351	.7708-02	.6187-02	.7950	5.521	546.4
17	37.600	.16810	219.00	.1427	.2552	.1956	.9387	.1123-01	.8605-02	1.028	7.095	558.0
16	37.800	.10270	150.00	.2603	.4896	.3392	.9503	.2155-01	.1493-01	1.765	12.12	567.6
17	37.900	.12100	195.00	.2577	.4674	.3396	.9463	.2057-01	.1494-01	1.824	12.57	560.8
17	38.000	.80300-01	179.00	.3995	.7847	.5092	.9561	.3453-01	.2240-01	2.585	17.68	574.7
16	38.500	.46800-01	112.00	.3532	.6366	.4148	.9667	.2802-01	.1825-01	2.520	17.38	559.6
17	38.600	.12440	203.00	.2238	.4064	.2962	.9456	.1788-01	.1303-01	1.583	10.90	561.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
17	38.700	.10000+00	185.00	.3119	.5878	.4050	.9510	.2586-01	.1782-01	2.110	14.49	567.9
16	38.900	.82200-01	141.00	.3254	.6218	.4127	.9557	.2736-01	.1816-01	2.169	14.87	570.2
16	39.300	.41600-01	104.00	.5315	1.196	.6440	.9685	.5262-01	.2834-01	3.039	20.59	591.8
17	39.500	.10270	190.00	.3093	.5752	.4013	.9504	.2531-01	.1766-01	2.124	14.60	565.6
17	39.600	.16810	218.00	.1490	.2632	.2029	.9388	.1158-01	.8929-02	1.091	7.537	555.3
17	39.900	.19040	233.00	.1275	.2159	.1723	.9366	.9501-02	.7580-02	.9892	6.874	545.4
17	40.100	.79500-01	177.00	.4180	.7827	.5243	.9565	.3444-01	.2307-01	2.849	19.57	566.8
17	40.200	.12440	202.00	.2306	.4146	.3038	.9457	.1824-01	.1337-01	1.651	11.39	559.0
17	40.300	.21310	245.00	.9978-01	.1658	.1345	.9352	.7295-02	.5918-02	.7959	5.546	540.4
16	41.100	.82200-01	142.00	.3528	.6784	.4479	.9558	.2985-01	.1971-01	2.335	16.00	571.3
17	41.100	.60700-01	173.00	.4614	.9118	.5673	.9622	.4012-01	.2496-01	2.966	20.28	575.6
17	42.300	.10270	189.00	.3080	.5564	.3953	.9505	.2448-01	.1739-01	2.191	15.11	560.0
17	42.600	.59600-01	172.00	.5133	1.026	.6310	.9627	.4516-01	.2777-01	3.260	22.27	577.3
17	43.200	.42000-01	168.00	.5324	1.099	.6350	.9687	.4837-01	.2794-01	3.279	22.34	581.7
17	43.400	.82200-01	181.00	.2580	.4625	.3204	.9559	.2035-01	.1410-01	1.852	12.78	558.5
16	43.600	.62900-01	128.00	.3745	.7275	.4600	.9617	.3201-01	.2025-01	2.451	16.78	572.9
16	45.000	.22900-01	8.0000	.7563	1.896	.8858	.9757	.8345-01	.3898-01	3.995	26.93	601.6
17	46.100	.62900-01	174.00	.4633	.8981	.5684	.9618	.3952-01	.2501-01	3.039	20.81	572.6
17	47.700	.40800-01	167.00	.5935	1.257	.7078	.9694	.5531-01	.3115-01	3.570	24.28	585.0
16	48.400	.44200-01	109.00	.5315	1.084	.6343	.9682	.4771-01	.2791-01	3.312	22.58	580.1
16	50.000	.19400-01	156.00	.7882	5.104	.8855	.9870	.2246	.3897-01	2.960	19.59	636.3
16	51.000	.12100-01	154.00	.8775	-33.86	1.012	.9870	-1.490	.4456-01	2.716	17.84	651.3
16	51.000	.17600-01	155.00	.8319	5.247	.9341	.9870	.2309	.4111-01	3.140	20.78	635.9
17	51.900	.44800-01	170.00	.4477	.8345	.5251	.9682	.3672-01	.2311-01	3.068	21.08	566.0
17	53.200	.24700-01	163.00	.4947	.9980	.5636	.9758	.4392-01	.2480-01	3.115	21.26	578.6
17	65.200	.24700-01	162.00	.6007	1.313	.6891	.9764	.5777-01	.3032-01	3.516	23.87	588.6
15	90.000	.91000-02	44.000	.6557	3.145	.7991	.9773	.1381	.3509-01	2.625	17.42	630.5
15	90.000	.11100-01	45.000	.8902	3.911	1.079	.9773	.1718	.4739-01	3.652	24.27	628.2
15	90.000	.13100-01	46.000	.8366	2.680	.9912	.9773	.1177	.4352-01	3.855	25.77	616.7
15	90.000	.17000-01	48.000	.6948	1.916	.8122	.9773	.8412-01	.3567-01	3.455	23.20	608.4
15	90.000	.20900-01	50.000	.7326	1.852	.8489	.9773	.8134-01	.3728-01	3.841	25.88	602.3
15	90.000	.24900-01	52.000	.6301	1.483	.7272	.9768	.6514-01	.3193-01	3.472	23.47	596.2
15	90.000	.26900-01	53.000	.5955	1.338	.6869	.9760	.5875-01	.3016-01	3.401	23.05	591.6
15	90.000	.28800-01	54.000	.6077	1.328	.7017	.9753	.5829-01	.3081-01	3.552	24.11	588.6
15	90.000	.32800-01	55.000	.5154	1.057	.5955	.9738	.4643-01	.2615-01	3.187	21.72	580.9
15	90.000	.36700-01	56.000	.5487	1.120	.6390	.9723	.4917-01	.2806-01	3.410	23.25	580.2
15	90.000	.40600-01	57.000	.5532	1.161	.6527	.9709	.5096-01	.2866-01	3.350	22.79	583.8
15	90.000	.48500-01	58.000	.4983	1.016	.5952	.9681	.4462-01	.2614-01	3.099	21.14	580.0
15	90.000	.56400-01	59.000	.4593	.9141	.5550	.9654	.4014-01	.2437-01	2.926	19.99	576.6
15	90.000	.76100-01	60.000	.3716	.7184	.4629	.9591	.3155-01	.2033-01	2.439	16.70	572.2
15	90.000	.95800-01	61.000	.3059	.5896	.3938	.9536	.2589-01	.1729-01	2.015	13.80	571.7
15	90.000	.11550	62.000	.2336	.4441	.3083	.9489	.1950-01	.1354-01	1.561	10.71	569.5
15	135.00	.19000-01	49.000	.7448	1.868	.8723	.9757	.8202-01	.3831-01	3.926	26.46	601.6

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
15	135.00	.22900-01	51.000	.7015	1.709	.8188	.9757	.7503-01	.3596-01	3.771	25.45	599.2
15	180.00	.91000-02	23.000	.4384	.8985	.5121	.9719	.3946-01	.2249-01	2.713	18.49	580.8
15	180.00	.11100-01	24.000	.8179	2.798	1.021	.9719	.1229	.4484-01	3.663	24.45	619.7
15	180.00	.13100-01	25.000	.8111	2.326	.9930	.9719	.1021	.4361-01	3.947	26.47	610.9
15	180.00	.15000-01	26.000	.7841	2.154	.9549	.9719	.9460-01	.4193-01	3.907	26.24	608.2
15	180.00	.17000-01	27.000	.7230	1.858	.8730	.9719	.8158-01	.3833-01	3.751	25.26	603.5
15	180.00	.19000-01	28.000	.7306	1.860	.8811	.9719	.8170-01	.3869-01	3.812	25.68	602.8
15	180.00	.20900-01	29.000	.7083	1.707	.8478	.9719	.7496-01	.3723-01	3.837	25.91	598.3
15	180.00	.28800-01	32.000	.5803	1.264	.6932	.9699	.5552-01	.3044-01	3.399	23.08	588.3
15	180.00	.32800-01	33.000	.5239	1.060	.6234	.9684	.4656-01	.2738-01	3.281	22.39	579.0
15	180.00	.36700-01	34.000	.5723	1.218	.6936	.9670	.5348-01	.3046-01	3.422	23.26	585.5
15	180.00	.56400-01	37.000	.4477	.8682	.5539	.9604	.3813-01	.2432-01	2.929	20.05	572.7
15	180.00	.76100-01	38.000	.3468	.6465	.4392	.9546	.2839-01	.1929-01	2.371	16.29	566.0
15	180.00	.95800-01	39.000	.2828	.5107	.3649	.9496	.2243-01	.1602-01	2.008	13.84	560.0
15	180.00	.11550	40.000	.2181	.3943	.2886	.9453	.1731-01	.1267-01	1.546	10.66	560.2
15	180.00	.18450	42.000	.1257	.2131	.1703	.9362	.9359-02	.7479-02	.9718	6.753	545.7
15	225.00	.22900-01	30.000	.6482	1.472	.7883	.9683	.6466-01	.3461-01	3.670	24.86	592.7
15	270.00	.91000-02	63.000	.7208	1.717	.8926	.9668	.7540-01	.3920-01	3.937	26.60	597.3
15	270.00	.11100-01	64.000	.7943	2.390	1.020	.9668	.1050	.4481-01	3.770	25.25	613.6
15	270.00	.13100-01	65.000	.7924	2.228	1.008	.9668	.9786-01	.4426-01	3.897	26.15	609.7
15	270.00	.17000-01	67.000	.7827	1.918	.9739	.9668	.8423-01	.4277-01	4.190	28.27	599.8
15	270.00	.20900-01	69.000	.6682	1.568	.8252	.9668	.6884-01	.3624-01	3.690	24.95	595.9
15	270.00	.24900-01	71.000	.6433	1.474	.7939	.9663	.6474-01	.3486-01	3.617	24.48	593.6
15	270.00	.28800-01	73.000	.5295	1.138	.6518	.9649	.4999-01	.2862-01	3.138	21.32	586.7
15	270.00	.36700-01	75.000	.5355	1.148	.6708	.9622	.5040-01	.2946-01	3.181	21.62	586.4
15	270.00	.46500-01	77.000	.4660	.9365	.5894	.9583	.4113-01	.2588-01	2.940	20.07	578.0
15	270.00	.56400-01	78.000	.4384	.8681	.5607	.9559	.3812-01	.2462-01	2.807	19.18	575.9
15	270.00	.95800-01	80.000	.2589	.4776	.3439	.9461	.2097-01	.1510-01	1.792	12.32	564.1
15	270.00	.11550	81.000	.1934	.3560	.2625	.9423	.1563-01	.1153-01	1.341	9.227	563.7
15	315.00	.19000-01	68.000	.5910	1.274	.7121	.9683	.5595-01	.3127-01	3.493	23.73	587.1
15	315.00	.22900-01	70.000	.7022	1.631	.8571	.9683	.7161-01	.3764-01	3.908	26.44	594.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
77	4.020	.1066-02	-3.050	65.01	739.7	.4169	174.8	89.98	2605.	.6438-02	.1406-06	3.707
78	4.020	.1062-02	-3.038	64.95	739.7	.4165	174.8	89.98	2605.	.6432-02	.1406-06	3.703
79	4.020	.1062-02	-3.038	64.86	740.7	.4159	175.0	89.98	2607.	.6415-02	.1408-06	3.691

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
77	.3873-01	.9578-02
78	.3871-01	.9583-02
79	.3869-01	.9598-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
78	.00000	.91000-02	1.0000	.3558	.6465	.4269	.9629	.2503-01	.1653-01	2.265	15.49	575.2
78	.00000	.11100-01	2.0000	.6886	1.554	.8676	.9629	.6014-01	.3358-01	3.541	23.80	606.8
78	.00000	.15000-01	4.0000	.6657	1.339	.8180	.9629	.5182-01	.3167-01	3.791	25.68	592.6
78	.00000	.17000-01	5.0000	.6103	1.172	.7421	.9629	.4537-01	.2873-01	3.646	24.79	585.3
78	.00000	.19000-01	6.0000	.5742	1.095	.6970	.9629	.4238-01	.2698-01	3.457	23.53	584.1
78	.00000	.24900-01	9.0000	.4993	.9205	.6029	.9624	.3563-01	.2334-01	3.124	21.32	578.0
78	.00000	.26900-01	10.000	.4997	.9140	.6047	.9617	.3538-01	.2341-01	3.157	21.57	576.5
77	.00000	.32800-01	12.000	.5078	.9171	.6198	.9595	.3552-01	.2400-01	3.260	22.30	573.9
77	.00000	.36700-01	13.000	.4715	.8243	.5745	.9581	.3192-01	.2225-01	3.155	21.67	566.9
77	.00000	.40600-01	14.000	.5107	.9143	.6314	.9567	.3541-01	.2445-01	3.314	22.70	572.1
77	.00000	.48500-01	15.000	.4246	.7356	.5271	.9540	.2849-01	.2041-01	2.876	19.78	564.7
77	.00000	.56400-01	16.000	.3847	.6633	.4834	.9514	.2569-01	.1872-01	2.624	18.05	563.6
77	.00000	.76100-01	17.000	.3059	.5145	.3930	.9453	.1993-01	.1522-01	2.161	14.92	557.3
77	.00000	.11550	19.000	.1844	.3048	.2477	.9353	.1180-01	.9592-02	1.337	9.252	552.5
77	.00000	.16480	20.000	.1040	.1692	.1450	.9267	.6552-02	.5614-02	.7735	5.369	547.6
77	.00000	.21400	22.000	.5590-01	.8438-01	.7573-01	.9224	.3268-02	.2933-02	.4745	3.343	520.5
79	2.0000	.24700-01	165.00	.3928	.6753	.4655	.9627	.2613-01	.1801-01	2.691	18.52	563.6
78	9.0000	.15000-01	157.00	.5833	1.126	.7067	.9638	.4359-01	.2736-01	3.464	23.54	586.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
78	9.0000	.17600-01	158.00	.5345	.9701	.6384	.9638	.3755-01	.2471-01	3.409	23.31	574.9
79	9.8000	.24700-01	164.00	.3988	.6853	.4708	.9634	.2651-01	.1822-01	2.734	18.81	563.5
78	10.000	.22900-01	88.000	.4445	.8033	.5301	.9639	.3110-01	.2052-01	2.849	19.49	574.1
78	10.000	.26900-01	90.000	.4500	.7973	.5376	.9626	.3086-01	.2081-01	2.958	20.28	569.9
78	10.000	.34700-01	94.000	.4859	.8902	.5947	.9597	.3446-01	.2302-01	3.063	20.92	576.8
78	12.000	.17600-01	152.00	.8880	2.697	.9728	.9870	.1044	.3766-01	3.790	25.18	629.4
78	12.000	.12100-01	151.00	.7527	4.437	.8437	.9870	.1718	.3266-01	2.595	17.05	650.6
78	13.000	.19400-01	153.00	.7458	1.931	.8105	.9870	.7474-01	.3137-01	3.479	23.23	619.2
79	14.600	.44200-01	169.00	.3813	.6447	.4632	.9567	.2494-01	.1792-01	2.674	18.44	559.4
78	18.500	.44200-01	106.00	.4024	.7070	.4937	.9571	.2737-01	.1911-01	2.674	18.35	568.0
79	19.600	.62900-01	175.00	.3007	.5023	.3745	.9509	.1944-01	.1449-01	2.146	14.82	556.2
78	19.800	.40800-01	101.00	.5175	.9439	.6373	.9584	.3654-01	.2467-01	3.279	22.41	576.0
78	20.000	.24900-01	89.000	.3991	.6954	.4708	.9642	.2692-01	.1823-01	2.682	18.43	566.1
78	20.000	.28800-01	91.000	.4046	.7085	.4815	.9628	.2743-01	.1864-01	2.700	18.54	567.2
78	20.000	.32800-01	93.000	.4587	.8441	.5572	.9613	.3268-01	.2157-01	2.877	19.64	577.7
79	21.800	.82200-01	182.00	.2605	.4317	.3328	.9453	.1670-01	.1288-01	1.883	13.03	553.9
78	22.200	.62900-01	125.00	.3212	.5639	.4067	.9511	.2183-01	.1574-01	2.136	14.66	567.8
78	22.400	.44200-01	107.00	.3703	.6391	.4512	.9574	.2474-01	.1746-01	2.521	17.34	563.8
79	22.600	.10270	192.00	.2081	.3421	.2723	.9398	.1323-01	.1054-01	1.523	10.55	551.5
78	23.000	.42000-01	105.00	.4597	.8337	.5658	.9582	.3227-01	.2190-01	2.934	20.06	574.8
78	23.400	.59600-01	120.00	.3601	.6439	.4561	.9523	.2493-01	.1765-01	2.340	16.03	571.8
78	24.100	.82200-01	139.00	.2539	.4394	.3300	.9454	.1701-01	.1277-01	1.723	11.85	564.4
79	24.400	.12440	207.00	.1739	.2908	.2356	.9349	.1125-01	.9115-02	1.239	8.556	556.5
78	24.900	.62900-01	126.00	.3416	.5997	.4321	.9513	.2321-01	.1673-01	2.273	15.61	567.8
79	25.000	.79500-01	178.00	.2835	.4809	.3637	.9463	.1861-01	.1407-01	1.979	13.64	560.3
79	25.300	.10270	191.00	.2242	.3687	.2932	.9400	.1427-01	.1134-01	1.639	11.35	551.7
79	25.300	.10000+00	186.00	.2354	.4004	.3116	.9407	.1549-01	.1206-01	1.637	11.28	560.9
78	25.500	.60700-01	124.00	.3806	.6867	.4840	.9521	.2658-01	.1873-01	2.444	16.73	573.7
79	26.000	.12440	206.00	.1854	.3094	.2508	.9350	.1197-01	.9703-02	1.326	9.164	555.8
78	26.300	.82200-01	140.00	.2785	.4785	.3605	.9456	.1852-01	.1395-01	1.908	13.13	562.7
79	26.700	.12100	199.00	.1931	.3296	.2631	.9357	.1275-01	.1018-01	1.336	9.201	561.8
79	27.200	.80300-01	180.00	.3146	.5371	.4049	.9462	.2078-01	.1567-01	2.177	14.99	561.9
78	27.400	.40100-01	98.000	.5008	.9473	.6199	.9592	.3667-01	.2400-01	3.043	20.72	582.7
79	27.400	.16480	215.00	.1627	.2741	.2303	.9278	.1060-01	.8912-02	1.148	7.919	558.4
78	27.600	.41600-01	102.00	.4571	.8609	.5669	.9587	.3333-01	.2194-01	2.791	19.01	582.0
79	27.600	.12440	205.00	.2025	.3368	.2732	.9350	.1303-01	.1057-01	1.455	10.05	555.0
79	27.900	.10110	188.00	.2224	.3707	.2918	.9406	.1434-01	.1129-01	1.594	11.01	555.5
78	28.000	.46800-01	110.00	.2747	.4516	.3304	.9569	.1748-01	.1279-01	2.007	13.91	550.9
79	28.300	.12200	201.00	.2148	.3621	.2910	.9356	.1401-01	.1126-01	1.513	10.44	558.6
78	28.400	.53500-01	114.00	.3524	.6215	.4385	.9547	.2406-01	.1697-01	2.331	15.99	568.8
78	28.700	.58600-01	117.00	.4363	.7896	.5524	.9530	.3056-01	.2138-01	2.792	19.10	574.4
78	28.800	.60400-01	121.00	.3699	.6845	.4734	.9524	.2649-01	.1832-01	2.304	15.72	578.7
78	29.000	.65700-01	129.00	.2481	.4068	.3071	.9508	.1575-01	.1189-01	1.820	12.62	550.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
78	29.200	.72400-01	133.00	.3431	.6058	.4413	.9487	.2345-01	.1708-01	2.265	15.54	569.1
78	29.300	.79500-01	136.00	.3047	.5594	.4027	.9466	.2166-01	.1559-01	1.916	13.09	577.2
78	29.600	.92500-01	143.00	.2858	.5009	.3786	.9429	.1939-01	.1466-01	1.906	13.09	567.4
78	29.700	.10000+00	146.00	.1735	.3185	.2373	.9410	.1233-01	.9186-02	1.092	7.457	577.1
79	29.900	.12100	198.00	.1892	.3295	.2602	.9359	.1275-01	.1007-01	1.274	8.750	566.7
79	30.200	.16480	214.00	.1394	.2363	.1980	.9279	.9143-02	.7659-02	.9739	6.713	560.1
78	31.500	.91000-02	82.000	.3925	.7616	.4707	.9657	.2948-01	.1822-01	2.319	15.75	587.1
78	31.500	.11100-01	83.000	.6987	1.790	.8834	.9657	.6928-01	.3420-01	3.282	21.93	618.3
78	31.500	.14200-01	84.000	.8988	3.857	.9984	.9870	.1493	.3865-01	3.355	22.12	643.2
78	31.500	.16000-01	85.000	.9553	3.157	1.051	.9870	.1222	.4067-01	3.922	25.99	633.6
78	31.500	.17600-01	86.000	.8845	2.582	.9672	.9870	.9994-01	.3744-01	3.852	25.62	627.2
78	31.500	.19400-01	87.000	.7730	1.840	.8361	.9870	.7123-01	.3236-01	3.817	25.58	612.1
79	32.200	.16480	213.00	.8822-01	.1530	.1269	.9279	.5918-02	.4911-02	.5974	4.106	565.7
79	32.300	.12100	197.00	.1911	.3366	.2641	.9361	.1302-01	.1022-01	1.267	8.687	569.4
79	32.300	.12730	208.00	.1690	.2709	.2240	.9347	.1048-01	.8669-02	1.288	8.961	543.7
79	32.300	.13420	209.00	.1513	.2587	.2093	.9333	.1001-01	.8098-02	1.045	7.195	562.2
78	32.400	.10000+00	147.00	.1736	.3340	.2420	.9411	.1293-01	.9368-02	1.035	7.034	585.7
79	32.400	.10110	184.00	.2030	.3593	.2734	.9408	.1390-01	.1058-01	1.337	9.167	570.4
79	32.400	.10630	193.00	.1799	.2788	.2290	.9395	.1079-01	.8861-02	1.453	10.17	531.9
79	32.500	.85800-01	183.00	.2164	.3421	.2712	.9450	.1324-01	.1049-01	1.687	11.76	539.2
78	32.600	.79500-01	137.00	.2509	.4779	.3357	.9468	.1850-01	.1300-01	1.512	10.29	584.0
79	32.600	.80800-01	176.00	.2778	.5097	.3673	.9464	.1972-01	.1421-01	1.749	11.94	577.9
78	32.700	.67400-01	132.00	.2376	.3983	.2969	.9505	.1542-01	.1149-01	1.687	11.65	556.3
78	32.700	.72400-01	134.00	.2934	.5109	.3749	.9489	.1978-01	.1451-01	1.973	13.56	565.9
78	32.800	.65700-01	130.00	.2679	.4347	.3299	.9510	.1683-01	.1277-01	1.999	13.88	546.9
79	32.800	.16680	210.00	.1267	.2138	.1797	.9277	.8272-02	.6951-02	.8921	6.154	558.8
78	32.900	.58500-01	118.00	.4648	.8519	.5899	.9533	.3298-01	.2284-01	2.929	20.01	576.9
78	32.900	.60400-01	122.00	.3108	.5639	.3945	.9527	.2183-01	.1527-01	1.982	13.55	574.9
79	32.900	.61300-01	171.00	.2610	.4571	.3279	.9524	.1769-01	.1269-01	1.743	11.96	568.1
78	33.000	.53500-01	115.00	.3637	.6270	.4484	.9550	.2427-01	.1736-01	2.480	17.06	563.5
78	33.200	.48300-01	113.00	.2535	.4143	.3045	.9568	.1604-01	.1179-01	1.870	12.97	549.1
79	33.400	.42800-01	166.00	.3291	.5948	.4034	.9588	.2301-01	.1561-01	2.111	14.44	574.9
78	33.500	.40100-01	99.000	.4496	.8246	.5504	.9597	.3192-01	.2131-01	2.831	19.34	577.0
78	33.600	.38300-01	97.000	.5158	.9469	.6293	.9604	.3666-01	.2436-01	3.244	22.16	577.2
78	33.700	.36700-01	96.000	.5633	1.052	.6882	.9610	.4074-01	.2664-01	3.471	23.66	580.5
78	33.900	.33800-01	95.000	.5426	.9940	.6556	.9620	.3848-01	.2538-01	3.421	23.37	576.8
79	34.900	.16480	212.00	.1007	.1783	.1466	.9280	.6900-02	.5674-02	.6629	4.544	570.5
78	35.100	.10000+00	148.00	.1540	.2995	.2155	.9413	.1159-01	.8340-02	.9079	6.167	587.4
79	35.200	.23900-01	161.00	.2513	.4003	.2879	.9659	.1549-01	.1114-01	1.935	13.48	541.6
78	35.300	.92500-01	145.00	.2741	.4853	.3639	.9433	.1878-01	.1409-01	1.804	12.37	569.7
78	35.300	.22100-01	160.00	.2490	.4021	.2860	.9660	.1557-01	.1107-01	1.872	13.01	545.4
79	35.500	.12100	196.00	.1942	.3423	.2682	.9362	.1324-01	.1038-01	1.286	8.817	569.5
79	35.600	.16580	216.00	.9229-01	.1617	.1336	.9279	.6255-02	.5170-02	.6164	4.230	568.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
78	35.800	.80600-01	138.00	.2768	.5166	.3678	.9467	.2000-01	.1424-01	1.707	11.64	580.3
78	36.200	.72400-01	135.00	.3432	.6016	.4391	.9492	.2329-01	.1700-01	2.288	15.71	567.4
79	36.300	.12200	200.00	.1743	.3078	.2412	.9360	.1191-01	.9334-02	1.152	7.899	569.9
78	36.600	.65700-01	131.00	.2908	.4917	.3630	.9513	.1903-01	.1405-01	2.037	14.05	558.7
79	36.900	.16480	211.00	.1856	.3170	.2644	.9281	.1227-01	.1023-01	1.282	8.830	562.1
79	36.900	.10110	187.00	.2149	.3838	.2901	.9411	.1485-01	.1122-01	1.400	9.586	572.3
78	37.000	.60400-01	123.00	.3645	.6924	.4688	.9530	.2680-01	.1815-01	2.204	15.00	583.5
79	37.000	.12440	204.00	.1583	.2718	.2166	.9355	.1052-01	.8381-02	1.087	7.479	563.3
78	37.100	.58600-01	119.00	.4152	.7608	.5260	.9536	.2945-01	.2036-01	2.617	17.88	576.8
78	37.800	.10270	150.00	.1861	.3346	.2525	.9408	.1295-01	.9775-02	1.201	8.222	573.0
79	37.900	.12100	195.00	.2013	.3319	.2685	.9364	.1284-01	.1039-01	1.465	10.14	552.5
79	38.000	.80300-01	179.00	.3149	.5564	.4091	.9469	.2153-01	.1583-01	2.079	14.26	570.0
78	38.500	.46800-01	112.00	.2962	.4936	.3564	.9577	.1911-01	.1380-01	2.120	14.66	554.8
79	38.600	.12440	203.00	.1843	.3093	.2491	.9356	.1197-01	.9639-02	1.307	9.025	557.4
79	38.700	.10000+00	185.00	.2535	.4351	.3354	.9415	.1684-01	.1298-01	1.741	11.98	563.2
78	38.900	.82200-01	141.00	.2588	.4608	.3382	.9464	.1784-01	.1309-01	1.690	11.58	571.0
78	39.300	.41600-01	104.00	.4361	.8202	.5378	.9596	.3175-01	.2082-01	2.666	18.16	581.7
79	39.500	.10270	190.00	.2663	.4528	.3521	.9409	.1752-01	.1362-01	1.853	12.77	560.8
79	40.100	.79500-01	177.00	.3288	.5600	.4203	.9473	.2167-01	.1626-01	2.283	15.73	561.2
79	40.200	.12440	202.00	.2076	.3447	.2789	.9357	.1334-01	.1079-01	1.496	10.34	554.4
78	41.100	.82200-01	142.00	.3148	.5589	.4106	.9466	.2164-01	.1589-01	2.063	14.14	570.4
79	41.100	.60700-01	173.00	.3657	.6516	.4602	.9532	.2521-01	.1780-01	2.388	16.36	571.9
79	42.300	.10270	189.00	.2437	.3991	.3164	.9410	.1544-01	.1224-01	1.794	12.43	550.4
79	42.600	.59600-01	172.00	.4183	.7356	.5228	.9537	.2846-01	.2023-01	2.780	19.07	568.9
79	43.200	.42000-01	168.00	.4206	.7470	.5104	.9597	.2890-01	.1975-01	2.758	18.90	571.2
79	43.400	.82200-01	181.00	.2111	.3472	.2668	.9467	.1343-01	.1032-01	1.543	10.69	551.7
78	43.600	.62900-01	128.00	.3580	.6336	.4509	.9527	.2453-01	.1745-01	2.357	16.16	569.6
78	45.000	.22900-01	8.0000	.6926	1.469	.8404	.9667	.5685-01	.3253-01	3.753	25.32	599.7
79	46.100	.62900-01	174.00	.4151	.7139	.5172	.9528	.2762-01	.2001-01	2.842	19.55	563.7
79	47.700	.40800-01	167.00	.4568	.8280	.5552	.9605	.3204-01	.2148-01	2.920	19.96	575.5
78	48.400	.44200-01	109.00	.4830	.8770	.5911	.9593	.3395-01	.2288-01	3.078	21.05	575.0
78	50.000	.19400-01	156.00	.7837	2.238	.8560	.9870	.8662-01	.3313-01	3.453	22.98	625.8
78	51.000	.12100-01	154.00	.7574	2.999	.8390	.9870	.1161	.3248-01	2.902	19.16	640.7
78	51.000	.17600-01	155.00	.7845	2.281	.8577	.9870	.8829-01	.3320-01	3.424	22.77	626.9
79	51.900	.44800-01	170.00	.4223	.7087	.5054	.9593	.2742-01	.1955-01	2.994	20.67	557.4
79	53.200	.24700-01	163.00	.4637	.8060	.5399	.9668	.3118-01	.2089-01	3.129	21.50	566.3
79	65.200	.24700-01	162.00	.5773	1.061	.6782	.9674	.4104-01	.2624-01	3.631	24.78	578.1
77	90.000	.91000-02	44.000	.4961	1.025	.5930	.9683	.3970-01	.2297-01	2.754	18.62	596.3
77	90.000	.11100-01	45.000	.7107	1.781	.8778	.9683	.6899-01	.3399-01	3.387	22.65	616.6
77	90.000	.13100-01	46.000	.7674	1.723	.9309	.9683	.6674-01	.3605-01	3.963	26.64	606.3
77	90.000	.17000-01	48.000	.6792	1.366	.8078	.9683	.5289-01	.3128-01	3.870	26.22	592.5
77	90.000	.20900-01	50.000	.6448	1.241	.7604	.9683	.4804-01	.2945-01	3.846	26.15	585.7
77	90.000	.24900-01	52.000	.6113	1.159	.7210	.9678	.4489-01	.2792-01	3.705	25.22	583.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K015)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
77	90.000	.26900-01	53.000	.5922	1.100	.6984	.9671	.4260-01	.2705-01	3.675	25.07	579.4
77	90.000	.28800-01	54.000	.5811	1.066	.6861	.9663	.4127-01	.2657-01	3.660	25.00	577.0
77	90.000	.32800-01	55.000	.5139	.9049	.6060	.9648	.3504-01	.2347-01	3.407	23.38	568.5
77	90.000	.36700-01	56.000	.4856	.8507	.5761	.9634	.3294-01	.2231-01	3.241	22.25	567.3
77	90.000	.40600-01	57.000	.4747	.8462	.5699	.9620	.3277-01	.2207-01	3.097	21.22	571.2
77	90.000	.48500-01	58.000	.3812	.6684	.4624	.9591	.2588-01	.1791-01	2.542	17.45	567.5
77	90.000	.56400-01	59.000	.3823	.6644	.4691	.9564	.2573-01	.1817-01	2.579	17.72	565.5
77	90.000	.76100-01	60.000	.3090	.5292	.3901	.9501	.2050-01	.1511-01	2.127	14.65	561.9
77	90.000	.95800-01	61.000	.2297	.3950	.2995	.9443	.1530-01	.1160-01	1.572	10.82	562.9
77	90.000	.11550	62.000	.1969	.3411	.2650	.9392	.1321-01	.1026-01	1.334	9.171	564.7
77	135.00	.19000-01	49.000	.7053	1.389	.8435	.9667	.5379-01	.3266-01	4.105	27.85	589.4
77	135.00	.22900-01	51.000	.6343	1.219	.7547	.9667	.4721-01	.2923-01	3.788	25.75	585.5
77	180.00	.91000-02	23.000	.2566	.4237	.3005	.9630	.1641-01	.1164-01	1.864	12.91	552.1
77	180.00	.11100-01	24.000	.6414	1.385	.8007	.9630	.5363-01	.3101-01	3.423	23.07	601.9
77	180.00	.13100-01	25.000	.7626	1.662	.9539	.9630	.6438-01	.3694-01	4.036	27.18	603.0
77	180.00	.15000-01	26.000	.7583	1.593	.9410	.9630	.6169-01	.3644-01	4.146	27.99	598.5
77	180.00	.17000-01	27.000	.6988	1.385	.8559	.9630	.5365-01	.3315-01	4.040	27.39	590.4
77	180.00	.19000-01	28.000	.6880	1.353	.8413	.9630	.5241-01	.3258-01	4.009	27.20	589.2
77	180.00	.20900-01	29.000	.6680	1.269	.8102	.9630	.4916-01	.3138-01	4.039	27.49	583.5
77	180.00	.28800-01	32.000	.5613	1.007	.6785	.9610	.3901-01	.2628-01	3.631	24.86	572.6
77	180.00	.32800-01	33.000	.5168	.8929	.6231	.9595	.3458-01	.2413-01	3.515	24.18	564.1
77	180.00	.36700-01	34.000	.5255	.9280	.6422	.9581	.3594-01	.2487-01	3.470	23.81	569.1
77	180.00	.56400-01	37.000	.3977	.6648	.4942	.9514	.2575-01	.1914-01	2.835	19.59	555.6
77	180.00	.76100-01	38.000	.2943	.4815	.3738	.9453	.1865-01	.1447-01	2.169	15.04	549.4
77	180.00	.95800-01	39.000	.2505	.4037	.3244	.9400	.1563-01	.1256-01	1.892	13.15	544.7
77	180.00	.11550	40.000	.1926	.3121	.2560	.9353	.1209-01	.9914-02	1.441	10.01	546.5
77	180.00	.18450	42.000	.8745-01	.1362	.1199	.9244	.5275-02	.4643-02	.6996	4.895	533.1
77	225.00	.22900-01	30.000	.6060	1.110	.7432	.9593	.4299-01	.2878-01	3.823	26.12	576.9
77	270.00	.91000-02	63.000	.3714	.6212	.4471	.9579	.2406-01	.1732-01	2.645	18.28	555.8
77	270.00	.11100-01	64.000	.5678	1.036	.7013	.9579	.4013-01	.2716-01	3.598	24.59	576.1
77	270.00	.13100-01	65.000	.7800	1.709	1.012	.9579	.6618-01	.3917-01	4.110	27.68	603.6
77	270.00	.17000-01	67.000	.7395	1.432	.9285	.9579	.5544-01	.3596-01	4.382	29.77	586.7
77	270.00	.20900-01	69.000	.6276	1.190	.7836	.9579	.4609-01	.3035-01	3.803	25.89	583.2
77	270.00	.24900-01	71.000	.5792	1.083	.7224	.9574	.4194-01	.2798-01	3.567	24.31	580.7
77	270.00	.28800-01	73.000	.5262	.9518	.6552	.9560	.3686-01	.2537-01	3.371	23.06	574.2
77	270.00	.36700-01	75.000	.4794	.8606	.6049	.9532	.3333-01	.2342-01	3.100	21.23	572.7
77	270.00	.48500-01	77.000	.4036	.7029	.5150	.9492	.2722-01	.1994-01	2.715	18.66	566.0
77	270.00	.56400-01	78.000	.3910	.6767	.5045	.9467	.2621-01	.1954-01	2.653	18.25	564.5
77	270.00	.95800-01	80.000	.1951	.3284	.2634	.9361	.1272-01	.1020-01	1.377	9.505	557.4
77	270.00	.11550	81.000	.1569	.2652	.2173	.9319	.1027-01	.8417-02	1.100	7.590	558.6
77	315.00	.19000-01	68.000	.5715	1.030	.6979	.9593	.3990-01	.2703-01	3.677	25.16	573.6
77	315.00	.22900-01	70.000	.6466	1.214	.7983	.9593	.4701-01	.3092-01	3.963	27.01	581.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
19	3.010	.0000	-6.028	36.10	719.7	.9682	255.9	90.00	2361.	.1021-01	.2045-06	3.664
20	3.010	.0000	-6.028	36.05	719.7	.9668	255.9	90.00	2361.	.1020-01	.2045-06	3.658
28	3.010	.2111-02	-6.026	36.08	721.7	.9677	256.6	89.98	2364.	.1018-01	.2050-06	3.647

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
19	.4395-01	.7572-02
20	.4391-01	.7578-02
28	.4396-01	.7588-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
19	.00000	.91000-02	1.0000	.6246	1.764	.7653	.9715	.7752-01	.3363-01	3.058	20.54	608.3
19	.00000	.11100-01	2.0000	.8024	2.627	1.000	.9715	.1154	.4395-01	3.654	24.44	616.1
19	.00000	.15000-01	4.0000	.6614	1.615	.7950	.9715	.7096-01	.3494-01	3.543	23.93	597.8
19	.00000	.17000-01	5.0000	.6388	1.543	.7666	.9715	.6780-01	.3369-01	3.448	23.30	596.8
19	.00000	.19000-01	6.0000	.6038	1.458	.7246	.9715	.6409-01	.3184-01	3.259	22.02	596.9
19	.00000	.24900-01	9.0000	.5235	1.167	.6230	.9710	.5130-01	.2738-01	3.002	20.37	589.2
19	.00000	.26900-01	10.000	.5562	1.269	.6676	.9703	.5578-01	.2934-01	3.131	21.22	591.6
28	.00000	.32800-01	12.000	.5430	1.157	.6536	.9681	.5088-01	.2873-01	3.245	22.06	585.7
28	.00000	.36700-01	13.000	.5160	1.046	.6206	.9667	.4598-01	.2728-01	3.231	22.04	579.2
28	.00000	.40600-01	14.000	.5420	1.126	.6606	.9654	.4949-01	.2904-01	3.315	22.58	582.5
28	.00000	.48500-01	15.000	.4518	.8770	.5515	.9627	.3855-01	.2424-01	2.957	20.24	572.8
28	.00000	.56400-01	16.000	.4411	.8578	.5469	.9602	.3770-01	.2404-01	2.880	19.72	573.1
28	.00000	.76100-01	17.000	.3191	.5877	.4030	.9544	.2583-01	.1772-01	2.214	15.23	563.8
28	.00000	.11550	19.000	.1746	.3094	.2233	.9452	.1360-01	.1008-01	1.271	8.781	556.1
28	.00000	.16480	20.000	.1099	.1944	.1505	.9379	.8544-02	.6617-02	.8018	5.541	555.7
28	.00000	.21400	22.000	.8772-01	.1447	.1181	.9347	.6360-02	.5189-02	.7069	4.931	538.4
20	2.0000	.24700-01	165.00	.3773	.7892	.4433	.9715	.3466-01	.1946-01	2.284	15.56	581.8
19	9.0000	.15000-01	157.00	.6090	1.462	.7221	.9732	.6427-01	.3173-01	3.301	22.31	596.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
19	9.0000	.17600-01	158.00	.5631	1.277	.6624	.9732	.5611-01	.2911-01	3.186	21.60	590.9
20	9.8000	.24700-01	164.00	.4555	.9514	.5304	.9729	.4178-01	.2329-01	2.761	18.81	581.6
19	10.000	.22900-01	88.000	.4779	1.036	.5580	.9734	.4551-01	.2452-01	2.807	19.08	586.0
19	10.000	.26900-01	90.000	.5286	1.160	.6232	.9721	.5097-01	.2739-01	3.071	20.86	587.4
19	10.000	.34700-01	94.000	.5360	1.193	.6454	.9692	.5243-01	.2836-01	3.078	20.89	589.0
19	12.000	.17600-01	152.00	.8242	13.79	.9389	.9870	.6061	.4126-01	2.772	18.28	643.1
19	12.000	.12100-01	151.00	.8280	-4.296	.9800	.9870	-.1888	.4307-01	2.196	14.36	659.3
19	13.000	.19400-01	153.00	.7915	31.06	.9064	.9870	1.365	.3983-01	2.569	16.92	645.8
20	14.600	.44200-01	169.00	.4442	.8654	.5303	.9667	.3800-01	.2329-01	2.884	19.76	571.8
19	18.500	.44200-01	106.00	.4598	.9319	.5511	.9673	.4095-01	.2422-01	2.871	19.60	577.6
20	19.600	.62900-01	175.00	.4270	.8559	.5297	.9613	.3758-01	.2326-01	2.693	18.40	576.1
19	19.800	.40800-01	101.00	.5612	1.222	.6754	.9687	.5370-01	.2968-01	3.283	22.31	586.6
19	20.000	.24900-01	89.000	.4413	.9213	.5085	.9747	.4049-01	.2235-01	2.679	18.26	581.5
19	20.000	.28800-01	91.000	.4690	.9736	.5447	.9732	.4279-01	.2394-01	2.862	19.51	580.8
19	20.000	.32800-01	93.000	.5103	1.151	.6058	.9717	.5057-01	.2662-01	2.900	19.66	590.4
20	21.800	.82200-01	182.00	.3958	.7911	.5075	.9560	.3474-01	.2229-01	2.503	17.11	575.6
19	22.200	.62900-01	125.00	.4306	.9251	.5413	.9617	.4065-01	.2379-01	2.548	17.33	585.0
19	22.400	.44200-01	107.00	.4128	.8222	.4911	.9680	.3613-01	.2158-01	2.622	17.93	575.1
20	22.600	.10270	192.00	.3085	.5854	.4022	.9508	.2571-01	.1766-01	2.062	14.15	567.5
19	23.000	.42000-01	105.00	.4998	1.067	.5990	.9689	.4690-01	.2632-01	2.973	20.23	584.3
19	23.400	.59600-01	120.00	.4704	1.029	.5888	.9630	.4524-01	.2588-01	2.740	18.61	587.1
20	23.900	.21310	250.00	.1170	.2001	.1600	.9353	.8787-02	.7025-02	.8897	6.179	546.4
19	24.100	.82200-01	139.00	.4093	.8510	.5294	.9563	.3740-01	.2326-01	2.494	17.00	581.0
20	24.400	.19040	238.00	.1561	.2771	.2156	.9368	.1217-01	.9466-02	1.129	7.808	554.9
20	24.400	.12440	207.00	.2610	.4986	.3510	.9462	.2190-01	.1542-01	1.731	11.88	568.6
20	24.800	.16810	223.00	.1679	.3107	.2331	.9391	.1364-01	.1024-01	1.155	7.951	563.0
19	24.900	.62900-01	126.00	.4425	.9372	.5529	.9622	.4119-01	.2430-01	2.651	18.04	583.3
20	25.000	.79500-01	178.00	.4600	.9539	.5911	.9572	.4189-01	.2596-01	2.808	19.14	580.7
20	25.300	.10270	191.00	.3563	.6869	.4660	.9511	.3017-01	.2046-01	2.340	16.04	570.1
20	25.300	.10000+00	186.00	.3969	.8149	.5274	.9518	.3579-01	.2316-01	2.446	16.68	579.4
19	25.500	.60700-01	124.00	.4868	1.086	.6119	.9629	.4772-01	.2689-01	2.791	18.94	589.2
20	26.000	.12440	206.00	.2974	.5732	.4008	.9464	.2517-01	.1760-01	1.953	13.39	570.1
19	26.300	.82200-01	140.00	.3732	.7458	.4765	.9566	.3278-01	.2094-01	2.362	16.15	575.6
20	26.700	.12100	199.00	.3631	.7405	.4970	.9471	.3252-01	.2183-01	2.252	15.37	578.4
20	26.800	.16810	222.00	.1852	.3404	.2561	.9393	.1495-01	.1125-01	1.284	8.846	561.8
20	27.000	.19040	237.00	.1537	.2717	.2117	.9369	.1193-01	.9295-02	1.118	7.732	554.0
20	27.100	.21310	249.00	.1123	.1930	.1539	.9354	.8474-02	.6758-02	.8498	5.899	547.4
20	27.200	.80300-01	180.00	.4651	.9783	.5995	.9573	.4296-01	.2633-01	2.802	19.08	582.5
19	27.400	.40100-01	98.000	.5429	1.269	.6542	.9703	.5577-01	.2875-01	3.001	20.31	593.9
20	27.400	.16480	215.00	.1754	.3371	.2466	.9397	.1480-01	.1083-01	1.155	7.921	569.7
19	27.600	.41600-01	102.00	.4944	1.148	.5972	.9698	.5043-01	.2624-01	2.747	18.60	593.2
20	27.600	.12440	205.00	.2890	.5550	.3886	.9465	.2437-01	.1706-01	1.906	13.07	569.5
20	27.600	.18700	230.00	.1629	.2957	.2268	.9373	.1298-01	.9961-02	1.147	7.911	559.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
20	27.700	.21010	243.00	.1319	.2353	.1840	.9356	.1033-01	.8081-02	.9481	6.550	556.0
20	27.900	.10110	188.00	.3593	.7108	.4717	.9518	.3122-01	.2071-01	2.297	15.71	574.1
19	28.000	.46800-01	110.00	.3292	.6056	.3855	.9680	.2662-01	.1694-01	2.281	15.71	562.0
20	28.200	.16810	221.00	.1685	.3118	.2336	.9394	.1369-01	.1026-01	1.159	7.975	563.1
20	28.300	.19040	236.00	.1498	.2584	.2038	.9370	.1135-01	.8943-02	1.127	7.819	548.4
20	28.300	.12200	201.00	.3523	.7008	.4780	.9471	.3077-01	.2099-01	2.239	15.31	575.0
19	28.400	.53500-01	114.00	.4867	1.064	.5978	.9658	.4677-01	.2627-01	2.836	19.27	587.1
20	28.400	.21310	248.00	.1279	.2172	.1741	.9354	.9538-02	.7647-02	.9831	6.834	544.6
19	28.700	.58600-01	117.00	.5754	1.307	.7200	.9641	.5743-01	.3164-01	3.252	22.04	591.1
20	28.800	.16580	217.00	.1865	.3541	.2610	.9397	.1555-01	.1146-01	1.246	8.552	567.6
19	28.800	.60400-01	121.00	.4948	1.142	.6236	.9636	.5018-01	.2741-01	2.762	18.70	592.7
20	29.000	.21110	244.00	.1281	.2241	.1770	.9355	.9843-02	.7773-02	.9452	6.545	551.7
19	29.000	.65700-01	129.00	.3224	.5861	.3891	.9619	.2576-01	.1710-01	2.266	15.62	559.7
19	29.200	.72400-01	133.00	.4892	1.042	.6217	.9599	.4581-01	.2732-01	2.916	19.84	584.1
19	29.300	.79500-01	136.00	.4377	.9751	.5704	.9578	.4285-01	.2507-01	2.512	17.05	589.1
19	29.600	.92500-01	143.00	.4067	.8388	.5321	.9542	.3686-01	.2338-01	2.497	17.03	580.0
19	29.700	.10000+00	146.00	.4334	.9713	.5889	.9523	.4268-01	.2588-01	2.476	16.79	589.7
20	29.900	.12100	198.00	.3759	.7978	.5204	.9475	.3503-01	.2285-01	2.246	15.29	583.6
20	30.200	.16480	214.00	.1747	.3360	.2454	.9399	.1476-01	.1078-01	1.150	7.882	569.8
20	30.200	.18700	229.00	.1597	.2935	.2235	.9374	.1289-01	.9814-02	1.107	7.625	561.8
20	30.300	.21010	242.00	.1152	.2085	.1619	.9356	.9158-02	.7107-02	.8141	5.616	558.8
19	31.500	.91000-02	82.000	.6388	2.465	.7690	.9771	.1083	.3380-01	2.727	18.18	622.5
19	31.500	.11100-01	83.000	.8284	3.425	1.002	.9771	.1505	.4404-01	3.456	23.01	624.7
19	31.500	.14200-01	84.000	.9542	-6.947	1.120	.9870	-.3053	.4921-01	2.653	17.38	656.4
19	31.500	.16000-01	85.000	.9152	-76.93	1.054	.9870	-3.381	.4631-01	2.860	18.81	648.5
19	31.500	.17600-01	86.000	.8887	24.27	1.016	.9870	1.067	.4465-01	2.918	19.22	645.0
19	31.500	.19400-01	87.000	.8366	5.017	.9382	.9870	.2205	.4123-01	3.175	21.05	633.3
20	32.100	.21010	241.00	.1069	.1967	.1513	.9357	.8637-02	.6646-02	.7404	5.098	562.0
20	32.200	.16480	213.00	.1719	.3327	.2420	.9401	.1461-01	.1063-01	1.124	7.703	570.8
20	32.200	.17860	224.00	.1645	.2919	.2250	.9384	.1282-01	.9883-02	1.192	8.241	554.7
20	32.200	.18700	228.00	.1969	.3667	.2771	.9375	.1610-01	.1217-01	1.343	9.239	564.3
20	32.300	.12100	197.00	.4140	.8906	.5747	.9477	.3911-01	.2524-01	2.445	16.63	585.2
20	32.300	.12300	194.00	.3535	.7479	.4895	.9473	.3284-01	.2150-01	2.119	14.43	583.2
20	32.300	.12730	208.00	.2590	.4644	.3394	.9464	.2039-01	.1490-01	1.851	12.78	556.9
20	32.300	.13420	209.00	.2611	.5117	.3572	.9451	.2247-01	.1569-01	1.686	11.54	572.7
19	32.400	.10000+00	147.00	.4559	1.118	.6335	.9527	.4914-01	.2784-01	2.434	16.44	598.2
20	32.400	.10110	184.00	.4324	.9707	.5876	.9524	.4263-01	.2580-01	2.464	16.71	589.9
20	32.400	.10630	193.00	.2826	.4876	.3558	.9511	.2141-01	.1562-01	2.125	14.74	548.4
20	32.500	.85800-01	183.00	.3158	.5663	.3912	.9564	.2487-01	.1718-01	2.256	15.58	557.0
19	32.600	.79500-01	137.00	.4697	1.153	.6242	.9582	.5068-01	.2743-01	2.506	16.92	598.3
20	32.600	.80800-01	176.00	.4911	1.203	.6542	.9579	.5284-01	.2873-01	2.622	17.71	598.1
19	32.700	.67400-01	132.00	.3742	.7349	.4603	.9619	.3230-01	.2023-01	2.412	16.51	573.0
19	32.700	.72400-01	134.00	.4528	.9339	.5690	.9604	.4104-01	.2500-01	2.780	18.96	580.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
19	32.800	.65700-01	130.00	.3388	.6144	.4074	.9525	.2700-01	.1790-01	2.388	16.47	559.3
20	32.800	.16680	210.00	.1542	.2878	.2139	.9399	.1264-01	.9393-02	1.049	7.215	564.7
20	32.800	.18880	225.00	.1671	.2847	.2254	.9374	.1250-01	.9900-02	1.279	8.885	545.4
19	32.900	.58600-01	118.00	.5452	1.254	.6808	.9648	.5511-01	.2992-01	3.050	20.66	592.4
19	32.900	.60400-01	122.00	.4431	1.016	.5553	.9642	.4464-01	.2440-01	2.486	16.84	592.0
20	32.900	.61300-01	171.00	.3973	.8481	.4917	.9639	.3724-01	.2159-01	2.362	16.07	584.3
19	33.000	.53500-01	115.00	.4682	.9702	.5665	.9665	.4264-01	.2489-01	2.862	19.51	580.6
19	33.200	.48300-01	113.00	.3302	.6065	.3860	.9683	.2665-01	.1696-01	2.292	15.79	561.7
20	33.400	.42800-01	166.00	.4434	.9643	.5283	.9703	.4235-01	.2320-01	2.594	17.63	586.5
19	33.500	.40100-01	99.000	.5490	1.261	.6554	.9712	.5542-01	.2880-01	3.075	20.83	592.2
19	33.600	.38300-01	97.000	.5862	1.350	.6970	.9719	.5931-01	.3063-01	3.278	22.20	592.4
19	33.700	.36700-01	96.000	.5932	1.387	.7039	.9725	.6095-01	.3093-01	3.278	22.19	593.9
19	33.900	.33800-01	95.000	.5527	1.230	.6467	.9736	.5408-01	.2842-01	3.174	21.54	589.0
20	34.700	.21010	240.00	.1258	.2337	.1788	.9358	.1026-01	.7853-02	.8605	5.920	563.9
20	34.700	.18700	227.00	.1660	.3103	.2338	.9376	.1363-01	.1027-01	1.128	7.757	564.9
20	34.900	.16480	212.00	.2086	.4175	.2976	.9403	.1834-01	.1307-01	1.318	9.007	575.8
19	35.100	.10000+00	148.00	.4383	1.101	.6112	.9530	.4836-01	.2686-01	2.304	15.54	600.1
20	35.200	.23900-01	161.00	.3169	.5806	.3528	.9776	.2550-01	.1549-01	2.205	15.19	561.2
19	35.300	.92500-01	145.00	.4244	.8853	.5544	.9550	.3890-01	.2436-01	2.578	17.57	581.4
19	35.300	.22100-01	160.00	.3330	.6163	.3709	.9778	.2708-01	.1630-01	2.292	15.77	563.1
20	35.400	.18800	231.00	.1838	.3419	.2584	.9376	.1501-01	.1135-01	1.257	8.645	564.0
20	35.500	.12100	196.00	.4015	.8832	.5601	.9481	.3878-01	.2459-01	2.326	15.80	587.7
20	35.600	.16580	216.00	.1987	.3902	.2813	.9402	.1713-01	.1235-01	1.280	8.760	573.0
19	35.800	.80600-01	138.00	.5024	1.245	.6684	.9584	.5470-01	.2937-01	2.664	17.98	599.0
20	35.900	.21310	247.00	.1213	.2121	.1674	.9356	.9314-02	.7353-02	.8955	6.202	551.6
20	36.000	.19040	235.00	.1620	.2909	.2243	.9374	.1278-01	.9848-02	1.155	7.975	557.3
20	36.200	.16910	220.00	.1870	.3496	.2595	.9399	.1535-01	.1140-01	1.270	8.734	565.0
19	36.200	.72400-01	135.00	.4288	.8737	.5355	.9609	.3839-01	.2353-01	2.663	18.18	578.3
20	36.300	.12200	200.00	.3853	.8486	.5382	.9479	.3727-01	.2364-01	2.230	15.14	587.9
19	36.600	.65700-01	131.00	.3933	.7730	.4807	.9630	.3397-01	.2112-01	2.532	17.33	573.2
20	36.700	.18700	226.00	.1886	.3402	.2611	.9377	.1494-01	.1146-01	1.338	9.237	558.1
20	36.900	.16480	211.00	.1895	.3626	.2649	.9404	.1592-01	.1163-01	1.255	8.610	568.9
20	36.900	.10110	187.00	.4392	.9938	.5957	.9529	.4364-01	.2616-01	2.487	16.86	590.7
19	37.000	.60400-01	123.00	.4749	1.209	.6041	.9648	.5314-01	.2655-01	2.473	16.67	601.2
20	37.000	.12440	204.00	.3399	.6971	.4649	.9475	.3061-01	.2042-01	2.096	14.30	579.2
19	37.100	.58600-01	119.00	.5090	1.158	.6315	.9654	.5088-01	.2775-01	2.873	19.47	591.2
20	37.200	.21310	246.00	.1369	.2371	.1880	.9357	.1041-01	.8256-02	1.024	7.101	549.3
20	37.600	.16810	219.00	.1708	.3141	.2352	.9400	.1379-01	.1033-01	1.183	8.146	561.9
19	37.800	.10270	150.00	.3780	.7834	.5008	.9526	.3443-01	.2201-01	2.310	15.75	580.6
20	37.900	.12100	195.00	.2854	.5405	.3775	.9483	.2374-01	.1658-01	1.911	13.13	567.2
20	38.000	.80300-01	179.00	.4735	1.025	.6086	.9587	.4500-01	.2673-01	2.781	18.91	585.9
19	38.500	.46800-01	112.00	.3553	.6780	.4154	.9696	.2980-01	.1825-01	2.360	16.19	568.5
20	38.600	.12440	203.00	.2998	.5798	.4012	.9477	.2546-01	.1762-01	1.962	13.45	570.6

FH15. E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(STO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
20	38.700	.10000+00	185.00	.3893	.7902	.5098	.9534	.3470-01	.2239-01	2.425	16.55	577.8
19	38.900	.82200-01	141.00	.4585	.9737	.5884	.9583	.4279-01	.2586-01	2.741	18.65	583.7
19	39.300	.41600-01	104.00	.4996	1.190	.5983	.9716	.5231-01	.2629-01	2.723	18.41	595.7
20	39.500	.10270	190.00	.3822	.7581	.4989	.9528	.3329-01	.2191-01	2.436	16.66	574.5
20	39.600	.16810	218.00	.1450	.2603	.1973	.9401	.1143-01	.8664-02	1.034	7.136	557.3
20	39.900	.19040	233.00	.1301	.2230	.1759	.9375	.9794-02	.7724-02	.9872	6.855	546.9
20	40.100	.79500-01	177.00	.4337	.8578	.5431	.9592	.3767-01	.2385-01	2.772	18.96	574.1
20	40.200	.12440	202.00	.2604	.4901	.3447	.9478	.2152-01	.1514-01	1.756	12.06	566.1
20	40.300	.21310	245.00	.1044	.1752	.1410	.9358	.7692-02	.6190-02	.8160	5.682	541.6
19	41.100	.82200-01	142.00	.4072	.8433	.5182	.9586	.3706-01	.2277-01	2.490	16.97	580.5
20	41.100	.60700-01	173.00	.5013	1.093	.6175	.9652	.4799-01	.2712-01	2.927	19.89	586.7
20	42.300	.10270	189.00	.2859	.5268	.3639	.9531	.2313-01	.1598-01	1.976	13.60	562.3
20	42.600	.59600-01	172.00	.5045	1.085	.6175	.9658	.4765-01	.2711-01	2.979	20.26	585.2
20	43.200	.42000-01	168.00	.5346	1.165	.6301	.9720	.5115-01	.2767-01	3.123	21.22	586.7
20	43.400	.82200-01	181.00	.3511	.6815	.4386	.9588	.2993-01	.1926-01	2.289	15.68	571.2
19	43.600	.62900-01	128.00	.5161	1.072	.6312	.9648	.4712-01	.2774-01	3.147	21.45	580.9
19	45.000	.22900-01	8.0000	.7365	1.865	.8424	.9792	.8195-01	.3702-01	3.850	25.96	600.7
20	46.100	.62900-01	174.00	.4977	1.023	.6061	.9652	.4491-01	.2662-01	3.064	20.90	579.5
20	47.700	.40800-01	167.00	.5936	1.359	.6999	.9730	.5966-01	.3073-01	3.332	22.58	591.9
19	48.400	.44200-01	109.00	.5057	1.088	.5953	.9719	.4781-01	.2616-01	2.989	20.32	585.2
19	50.000	.19400-01	156.00	.8108	8.917	.9195	.9870	.3919	.4041-01	2.821	18.63	640.5
19	51.000	.12100-01	154.00	.8254	-8.489	.9628	.9870	-.3731	.4231-01	2.379	15.60	654.1
19	51.000	.17600-01	155.00	.9485	10.50	1.076	.9870	.4613	.4727-01	3.298	21.77	640.6
20	51.900	.44800-01	170.00	.4406	.8531	.5093	.9721	.3746-01	.2237-01	2.880	19.74	570.8
20	53.200	.24700-01	163.00	.5155	1.094	.5769	.9799	.4803-01	.2534-01	3.081	20.97	583.6
20	65.200	.24700-01	162.00	.6157	1.427	.6898	.9811	.6265-01	.3029-01	3.424	23.18	593.1
28	90.000	.91000-02	44.000	.6762	4.075	.7907	.9826	.1791	.3476-01	2.572	17.03	635.1
28	90.000	.11100-01	45.000	.8700	4.171	1.009	.9826	.1834	.4433-01	3.487	23.15	630.5
28	90.000	.13100-01	46.000	.8268	2.970	.9452	.9826	.1305	.4155-01	3.635	24.24	621.7
28	90.000	.17000-01	48.000	.8244	2.445	.9316	.9826	.1075	.4095-01	3.946	26.44	612.8
28	90.000	.20900-01	50.000	.7160	1.871	.8020	.9826	.8223-01	.3525-01	3.680	24.76	604.8
28	90.000	.24900-01	52.000	.6542	1.587	.7311	.9821	.6976-01	.3214-01	3.531	23.83	598.9
28	90.000	.26900-01	53.000	.6144	1.402	.6864	.9813	.6163-01	.3017-01	3.469	23.49	593.2
28	90.000	.28800-01	54.000	.6129	1.355	.6859	.9806	.5954-01	.3015-01	3.551	24.09	589.9
28	90.000	.32800-01	55.000	.5540	1.152	.6218	.9790	.5062-01	.2733-01	3.387	23.06	582.6
28	90.000	.36700-01	56.000	.5044	1.041	.5705	.9775	.4575-01	.2508-01	3.105	21.15	581.6
28	90.000	.40600-01	57.000	.5376	1.150	.6162	.9761	.5055-01	.2709-01	3.203	21.77	586.1
28	90.000	.48500-01	58.000	.4484	.9327	.5210	.9731	.4100-01	.2290-01	2.739	18.65	582.7
28	90.000	.56400-01	59.000	.4786	.9763	.5638	.9703	.4291-01	.2478-01	2.978	20.31	580.1
28	90.000	.76100-01	60.000	.4001	.7760	.4852	.9638	.3411-01	.2133-01	2.620	17.94	572.7
28	90.000	.95800-01	61.000	.3321	.6389	.4163	.9579	.2808-01	.1830-01	2.195	15.04	571.4
28	90.000	.11550	62.000	.2645	.4993	.3402	.9527	.2195-01	.1495-01	1.784	12.24	568.2
28	135.00	.19000-01	49.000	.7632	2.000	.8756	.9792	.8791-01	.3849-01	3.915	26.34	605.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
28	135.00	.22900-01	51.000	.6983	1.695	.7954	.9792	.7449-01	.3497-01	3.768	25.43	598.9
28	180.00	.91000-02	23.000	.4315	.9409	.5101	.9715	.4136-01	.2242-01	2.529	17.17	588.4
28	180.00	.11100-01	24.000	.8051	2.539	.9992	.9715	.1116	.4392-01	3.739	25.01	616.0
28	180.00	.13100-01	25.000	.7905	2.140	.9633	.9715	.9405-01	.4234-01	3.977	26.72	607.2
28	180.00	.15000-01	26.000	.7802	2.027	.9457	.9715	.8909-01	.4157-01	4.024	27.08	604.3
28	180.00	.17000-01	27.000	.7063	1.772	.8521	.9715	.7791-01	.3746-01	3.725	25.11	601.7
28	180.00	.19000-01	28.000	.6766	1.709	.8170	.9715	.7511-01	.3591-01	3.553	23.94	602.2
28	180.00	.20900-01	29.000	.6771	1.625	.8118	.9715	.7144-01	.3569-01	3.681	24.86	598.0
28	180.00	.28800-01	32.000	.5682	1.222	.6785	.9696	.5371-01	.2983-01	3.369	22.89	586.8
28	180.00	.32800-01	33.000	.5160	1.037	.6144	.9681	.4560-01	.2701-01	3.257	22.23	578.1
28	180.00	.36700-01	34.000	.5522	1.164	.6692	.9667	.5116-01	.2941-01	3.333	22.68	584.4
28	180.00	.56400-01	37.000	.4379	.8400	.5410	.9602	.3692-01	.2378-01	2.902	19.89	570.9
28	180.00	.76100-01	38.000	.3460	.6385	.4373	.9544	.2806-01	.1922-01	2.396	16.48	564.1
28	180.00	.95800-01	39.000	.2810	.4999	.3609	.9495	.2198-01	.1586-01	2.035	14.05	556.9
28	180.00	.11550	40.000	.2282	.4042	.2997	.9452	.1777-01	.1317-01	1.663	11.49	555.9
28	180.00	.18450	42.000	.1228	.2046	.1649	.9361	.8993-02	.7248-02	.9745	6.788	541.1
28	225.00	.22900-01	30.000	.6004	1.323	.7441	.9646	.5814-01	.3271-01	3.488	23.66	589.5
28	270.00	.91000-02	63.000	.6343	1.432	.8047	.9620	.6295-01	.3537-01	3.612	24.47	592.1
28	270.00	.11100-01	64.000	.7441	2.062	.9828	.9620	.9063-01	.4320-01	3.694	24.80	608.7
28	270.00	.13100-01	65.000	.7110	1.872	.9303	.9620	.8230-01	.4069-01	3.636	24.46	605.3
28	270.00	.17000-01	67.000	.5554	1.306	.7105	.9620	.5739-01	.3123-01	3.066	20.73	596.1
28	270.00	.20900-01	69.000	.5740	1.296	.7281	.9620	.5695-01	.3201-01	3.270	22.15	592.1
28	270.00	.24900-01	71.000	.5718	1.262	.7242	.9615	.5549-01	.3183-01	3.316	22.49	589.8
28	270.00	.28800-01	73.000	.4525	.9529	.5721	.9602	.4188-01	.2515-01	2.734	18.60	584.2
28	270.00	.36700-01	75.000	.4912	1.028	.6309	.9576	.4521-01	.2773-01	2.983	20.30	583.5
28	270.00	.46500-01	77.000	.3979	.7828	.5141	.9540	.3441-01	.2260-01	2.567	17.56	574.9
28	270.00	.56400-01	78.000	.3856	.7482	.5030	.9518	.3289-01	.2211-01	2.524	17.28	572.8
28	270.00	.95800-01	80.000	.2314	.4166	.3099	.9430	.1831-01	.1362-01	1.651	11.38	559.3
28	270.00	.11550	81.000	.1930	.3467	.2632	.9398	.1524-01	.1157-01	1.381	9.526	558.9
28	315.00	.19000-01	68.000	.5325	1.110	.6526	.9646	.4878-01	.2868-01	3.247	22.11	582.9
28	315.00	.22900-01	70.000	.5327	1.185	.6615	.9646	.5210-01	.2908-01	3.070	20.81	590.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
80	4.020	.2116-02	-6.038	65.01	740.7	.4169	175.0	89.98	2607.	.6429-02	.1408-06	3.699
81	4.020	.2114-02	-6.034	64.89	740.7	.4161	175.0	89.98	2607.	.6418-02	.1408-06	3.692
82	4.020	.2115-02	-6.036	64.81	740.7	.4157	175.0	89.98	2607.	.6410-02	.1408-06	3.688

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
80	.3874-01	.9587-02
81	.3870-01	.9595-02
82	.3868-01	.9601-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
81	.00000	.91000-02	1.0000	.4595	.8507	.5549	.9626	.3292-01	.2148-01	2.864	19.54	579.6
81	.00000	.11100-01	2.0000	.6847	1.508	.8603	.9626	.5836-01	.3329-01	3.595	24.18	605.0
81	.00000	.15000-01	4.0000	.6239	1.206	.7613	.9626	.4668-01	.2946-01	3.704	25.16	587.3
81	.00000	.17000-01	5.0000	.5908	1.095	.7137	.9626	.4239-01	.2762-01	3.676	25.07	579.9
81	.00000	.19000-01	6.0000	.5462	1.008	.6591	.9626	.3900-01	.2551-01	3.420	23.33	578.9
81	.00000	.24900-01	9.0000	.4816	.8661	.5790	.9621	.3352-01	.2241-01	3.109	21.27	573.9
81	.00000	.26900-01	10.000	.4936	.8877	.5958	.9614	.3436-01	.2306-01	3.188	21.81	573.8
80	.00000	.32800-01	12.000	.4820	.8497	.5854	.9592	.3291-01	.2268-01	3.196	21.92	569.5
80	.00000	.36700-01	13.000	.4969	.8511	.6027	.9578	.3297-01	.2335-01	3.425	23.58	562.7
80	.00000	.40600-01	14.000	.5168	.9003	.6346	.9564	.3488-01	.2458-01	3.481	23.91	566.8
80	.00000	.48500-01	15.000	.3915	.6579	.4818	.9537	.2549-01	.1866-01	2.774	19.15	557.7
80	.00000	.56400-01	16.000	.3638	.6104	.4533	.9511	.2365-01	.1756-01	2.584	17.84	557.3
80	.00000	.76100-01	17.000	.2640	.4327	.3359	.9451	.1676-01	.1301-01	1.944	13.47	550.6
80	.00000	.11550	19.000	.1289	.2066	.1705	.9352	.8004-02	.6604-02	.9840	6.844	543.7
80	.00000	.16480	20.000	.1000	.1599	.1379	.9266	.6195-02	.5343-02	.7658	5.329	543.0
80	.00000	.21400	22.000	.7571-01	.1138	.1023	.9224	.4408-02	.3961-02	.6493	4.578	519.3
82	2.0000	.24700-01	165.00	.3672	.6324	.4356	.9626	.2446-01	.1685-01	2.508	17.25	564.1
81	9.0000	.15000-01	157.00	.5542	1.030	.6639	.9642	.3985-01	.2569-01	3.440	23.46	580.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
81	9.0000	.17600-01	158.00	.5026	.6867	.5948	.9642	.3431-01	.2302-01	3.327	22.81	569.7
82	9.8000	.24700-01	164.00	.3868	.6653	.4556	.9640	.2573-01	.1762-01	2.648	18.21	563.7
81	10.000	.22900-01	88.000	.4227	.7448	.4996	.9644	.2882-01	.1933-01	2.802	19.22	569.4
81	10.000	.26900-01	90.000	.4224	.7300	.5000	.9632	.2825-01	.1935-01	2.873	19.75	564.9
81	10.000	.34700-01	94.000	.4818	.8760	.5866	.9603	.3390-01	.2270-01	3.069	20.97	576.1
81	12.000	.17600-01	152.00	.8403	2.410	.9181	.9870	.9329-01	.3553-01	3.698	24.59	627.0
81	12.000	.12100-01	151.00	.7274	3.893	.8134	.9870	.1507	.3148-01	2.564	16.85	649.6
81	13.000	.19400-01	153.00	.7037	1.765	.7633	.9870	.6830-01	.2954-01	3.355	22.42	617.5
82	14.600	.44200-01	169.00	.4056	.6910	.4914	.9577	.2673-01	.1901-01	2.813	19.38	561.3
81	18.500	.44200-01	106.00	.4180	.7881	.5460	.9584	.3050-01	.2113-01	2.975	20.41	569.1
82	19.600	.62900-01	175.00	.4122	.7041	.5138	.9523	.2723-01	.1987-01	2.848	19.61	562.0
81	19.800	.40800-01	101.00	.5921	1.095	.7262	.9598	.4239-01	.2810-01	3.695	25.20	579.4
81	20.000	.24900-01	89.000	.3681	.6211	.4279	.9657	.2404-01	.1656-01	2.591	17.87	558.8
81	20.000	.28800-01	91.000	.3778	.6445	.4434	.9642	.2494-01	.1716-01	2.617	18.02	561.7
81	20.000	.32800-01	93.000	.4574	.8299	.5493	.9627	.3212-01	.2126-01	2.922	19.97	575.6
82	21.800	.82200-01	182.00	.3501	.5997	.4498	.9467	.2320-01	.1740-01	2.409	16.58	562.7
81	22.200	.62900-01	125.00	.4146	.7351	.5222	.9527	.2845-01	.2021-01	2.726	18.68	570.8
81	22.400	.44200-01	107.00	.4129	.7137	.4990	.9590	.2762-01	.1931-01	2.808	19.31	564.9
82	22.600	.10270	192.00	.2604	.4398	.3425	.9412	.1701-01	.1325-01	1.829	12.61	559.1
81	23.000	.42000-01	105.00	.5188	.9552	.6351	.9599	.3697-01	.2458-01	3.255	22.21	578.6
81	23.400	.59600-01	120.00	.4788	.8610	.6017	.9540	.3332-01	.2328-01	3.091	21.15	573.8
81	24.100	.82200-01	139.00	.3620	.6313	.4675	.9471	.2443-01	.1809-01	2.433	16.71	567.0
82	24.400	.12440	207.00	.2214	.3794	.3014	.9363	.1468-01	.1166-01	1.523	10.48	562.8
81	24.900	.62900-01	126.00	.4101	.7226	.5143	.9531	.2796-01	.1990-01	2.718	18.64	569.4
82	25.000	.79500-01	178.00	.4170	.7305	.5367	.9480	.2825-01	.2076-01	2.783	19.10	568.1
82	25.300	.10270	191.00	.2955	.5014	.3887	.9416	.1939-01	.1503-01	2.061	14.21	560.3
82	25.300	.10000+00	186.00	.3316	.5843	.4418	.9423	.2260-01	.1709-01	2.197	15.07	569.4
81	25.500	.60700-01	124.00	.4791	.8716	.6044	.9540	.3373-01	.2339-01	3.050	20.84	576.2
82	26.000	.12440	206.00	.2435	.4166	.3309	.9365	.1612-01	.1280-01	1.678	11.55	562.5
81	26.300	.82200-01	140.00	.3696	.6317	.4728	.9474	.2445-01	.1830-01	2.554	17.59	562.1
82	26.700	.12100	199.00	.2664	.4691	.3654	.9373	.1814-01	.1413-01	1.766	12.11	569.3
82	27.200	.80300-01	180.00	.4397	.7736	.5666	.9481	.2992-01	.2191-01	2.918	20.02	569.1
81	27.400	.40100-01	98.000	.5564	1.063	.6820	.9613	.4113-01	.2639-01	3.347	22.76	585.2
81	27.600	.41600-01	102.00	.4966	.9519	.6111	.9608	.3684-01	.2365-01	2.977	20.23	585.8
82	27.600	.12440	205.00	.2480	.4229	.3360	.9366	.1636-01	.1300-01	1.717	11.82	561.7
82	27.900	.10110	188.00	.3192	.5493	.4208	.9424	.2125-01	.1627-01	2.183	15.01	563.9
81	28.000	.46800-01	110.00	.2846	.4625	.3378	.9591	.1790-01	.1307-01	2.120	14.71	548.2
82	28.300	.12200	201.00	.2764	.4810	.3770	.9373	.1860-01	.1458-01	1.862	12.79	566.5
81	28.400	.53500-01	114.00	.4582	.8154	.5651	.9568	.3156-01	.2187-01	2.998	20.54	571.6
81	28.700	.58600-01	117.00	.5305	.9754	.6669	.9552	.3775-01	.2581-01	3.334	22.75	578.3
81	28.800	.60400-01	121.00	.4755	.8876	.6026	.9546	.3435-01	.2332-01	2.936	20.01	581.1
81	29.000	.65700-01	129.00	.2819	.4571	.3440	.9529	.1769-01	.1331-01	2.107	14.63	547.5
81	29.200	.72400-01	133.00	.4219	.7441	.5361	.9508	.2880-01	.2075-01	2.792	19.15	569.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
81	29.300	.79500-01	136.00	.3933	.7172	.5120	.9487	.2776-01	.1982-01	2.496	17.05	576.7
81	29.600	.92500-01	143.00	.3643	.6366	.4765	.9449	.2464-01	.1844-01	2.441	16.76	567.5
81	29.700	.10000+00	146.00	.3017	.5579	.4089	.9429	.2159-01	.1583-01	1.884	12.85	579.4
82	29.900	.12100	198.00	.2555	.4616	.3539	.9377	.1785-01	.1369-01	1.639	11.21	574.8
81	31.500	.91000-02	82.000	.5079	1.067	.6096	.9682	.4131-01	.2359-01	2.777	18.74	599.4
81	31.500	.11100-01	83.000	.7027	1.683	.8627	.9682	.6512-01	.3339-01	3.459	23.17	613.5
81	31.500	.14200-01	84.000	.9106	3.771	1.010	.9870	.1459	.3910-01	3.441	22.69	643.0
81	31.500	.16000-01	85.000	1.023	3.485	1.127	.9870	.1349	.4361-01	4.153	27.49	635.8
81	31.500	.17600-01	86.000	.8912	2.652	.9754	.9870	.1027	.3775-01	3.847	25.56	629.1
81	31.500	.19400-01	87.000	.7731	1.850	.8364	.9870	.7159-01	.3237-01	3.807	25.50	613.4
82	32.300	.12100	197.00	.2585	.4749	.3604	.9380	.1837-01	.1394-01	1.625	11.10	578.1
82	32.300	.12730	208.00	.2139	.3505	.2842	.9365	.1356-01	.1099-01	1.572	10.89	550.6
82	32.300	.13420	209.00	.2131	.3702	.2942	.9350	.1432-01	.1138-01	1.439	9.890	566.1
81	32.400	.10000+00	147.00	.3124	.6117	.4325	.9433	.2367-01	.1674-01	1.831	12.42	589.3
82	32.400	.10110	184.00	.3278	.6121	.4459	.9430	.2368-01	.1725-01	2.022	13.78	581.2
82	32.400	.10630	193.00	.2334	.3710	.2979	.9416	.1435-01	.1152-01	1.804	12.57	540.9
82	32.500	.85800-01	183.00	.2639	.4276	.3307	.9473	.1654-01	.1279-01	1.976	13.72	547.1
81	32.600	.79500-01	137.00	.4297	.8405	.5718	.9491	.3253-01	.2213-01	2.520	17.10	589.1
82	32.600	.80800-01	176.00	.4736	.9258	.6318	.9487	.3581-01	.2444-01	2.778	18.85	589.0
81	32.700	.67400-01	132.00	.3353	.5676	.4154	.9529	.2197-01	.1607-01	2.348	16.19	559.7
81	32.700	.72400-01	134.00	.3711	.6454	.4679	.9513	.2498-01	.1811-01	2.503	17.20	566.4
81	32.800	.65700-01	130.00	.3252	.5258	.3954	.9535	.2035-01	.1530-01	2.443	16.97	546.5
81	32.900	.58600-01	118.00	.4519	.8332	.5664	.9558	.3225-01	.2192-01	2.830	19.31	578.8
81	32.900	.60400-01	122.00	.4492	.8405	.5676	.9552	.3253-01	.2197-01	2.766	18.84	581.6
82	32.900	.61300-01	171.00	.4148	.7468	.5188	.9549	.2889-01	.2007-01	2.673	18.29	574.1
81	33.000	.53500-01	115.00	.4129	.7187	.5039	.9575	.2781-01	.1950-01	2.781	19.10	566.6
81	33.200	.48300-01	113.00	.2749	.4465	.3258	.9594	.1728-01	.1261-01	2.049	14.22	548.0
82	33.400	.42800-01	166.00	.3878	.7231	.4726	.9613	.2797-01	.1828-01	2.396	16.33	580.9
81	33.500	.40100-01	99.000	.5507	1.030	.6678	.9623	.3986-01	.2584-01	3.392	23.11	581.5
81	33.600	.38300-01	97.000	.5887	1.088	.7092	.9630	.4212-01	.2745-01	3.675	25.07	579.4
81	33.700	.36700-01	96.000	.6111	1.144	.7359	.9636	.4427-01	.2848-01	3.760	25.62	581.7
81	33.900	.33800-01	95.000	.5789	1.064	.6899	.9647	.4116-01	.2670-01	3.641	24.85	578.1
81	35.100	.10000+00	148.00	.3349	.6684	.4660	.9436	.2587-01	.1803-01	1.924	13.03	592.2
82	35.200	.23900-01	161.00	.2822	.4511	.3197	.9686	.1745-01	.1237-01	2.158	15.02	542.9
81	35.300	.92500-01	145.00	.3364	.5956	.4404	.9457	.2305-01	.1705-01	2.215	15.18	570.5
81	35.300	.22100-01	160.00	.2676	.4264	.3028	.9688	.1650-01	.1172-01	2.059	14.34	541.8
82	35.500	.12100	196.00	.2598	.4827	.3632	.9383	.1867-01	.1405-01	1.612	10.99	580.2
81	35.800	.80600-01	138.00	.4695	.9312	.6274	.9492	.3604-01	.2428-01	2.715	18.40	591.3
81	36.200	.72400-01	135.00	.3565	.6194	.4481	.9518	.2397-01	.1734-01	2.408	16.54	566.2
82	36.300	.12200	200.00	.2580	.4816	.3619	.9382	.1863-01	.1400-01	1.593	10.85	581.1
81	36.600	.65700-01	131.00	.3310	.5574	.4070	.9540	.2157-01	.1575-01	2.335	16.11	558.3
82	36.900	.10110	187.00	.3410	.6419	.4637	.9435	.2483-01	.1794-01	2.084	14.19	582.7
81	37.000	.60400-01	123.00	.4805	.9426	.6134	.9558	.3648-01	.2374-01	2.810	19.06	589.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
82	37.000	.12440	204.00	.2644	.4756	.3655	.9377	.1839-01	.1414-01	1.706	11.67	573.8
81	37.100	.58600-01	119.00	.4379	.7975	.5450	.9564	.3086-01	.2109-01	2.783	19.02	576.4
81	37.800	.10270	150.00	.2860	.5176	.3834	.9432	.2003-01	.1484-01	1.832	12.52	575.2
82	37.900	.12100	195.00	.2132	.3622	.2852	.9386	.1401-01	.1103-01	1.485	10.23	560.6
82	38.000	.80300-01	179.00	.4268	.7726	.5510	.9496	.2988-01	.2131-01	2.732	18.68	575.2
81	38.500	.46800-01	112.00	.2997	.4964	.3550	.9607	.1921-01	.1374-01	2.168	14.99	553.8
82	38.600	.12440	203.00	.2670	.4655	.3632	.9379	.1801-01	.1405-01	1.794	12.32	567.0
82	38.700	.10000+00	185.00	.3102	.5475	.4095	.9441	.2118-01	.1584-01	2.051	14.06	569.7
81	38.900	.82200-01	141.00	.3760	.6841	.4876	.9492	.2648-01	.1887-01	2.393	16.35	576.2
81	39.300	.41600-01	104.00	.4865	.9452	.5942	.9627	.3658-01	.2299-01	2.874	19.51	588.0
82	39.500	.10270	190.00	.3143	.5523	.4156	.9434	.2136-01	.1607-01	2.089	14.33	568.8
82	40.100	.79500-01	177.00	.3611	.6288	.4584	.9502	.2432-01	.1773-01	2.430	16.69	566.7
82	40.200	.12440	202.00	.2503	.4293	.3375	.9381	.1660-01	.1305-01	1.720	11.84	563.0
81	41.100	.82200-01	142.00	.3905	.7002	.5029	.9495	.2710-01	.1946-01	2.531	17.33	573.2
82	41.100	.60700-01	173.00	.4719	.8576	.5873	.9563	.3317-01	.2272-01	3.005	20.54	576.0
82	42.300	.10270	189.00	.2281	.3807	.2945	.9438	.1472-01	.1139-01	1.631	11.27	555.8
82	42.600	.59600-01	172.00	.4297	.7655	.5300	.9569	.2961-01	.2050-01	2.806	19.22	571.8
82	43.200	.42000-01	168.00	.4934	.9073	.5934	.9631	.3509-01	.2295-01	3.099	21.15	578.3
82	43.400	.82200-01	181.00	.3022	.5120	.3805	.9498	.1980-01	.1472-01	2.113	14.57	559.9
81	43.600	.62900-01	128.00	.4239	.7524	.5250	.9559	.2912-01	.2032-01	2.783	19.07	571.0
81	45.000	.22900-01	8.0000	.6672	1.334	.7840	.9702	.5164-01	.3034-01	3.825	25.91	592.5
82	46.100	.62900-01	174.00	.4561	.8050	.5629	.9562	.3114-01	.2177-01	3.014	20.67	569.8
82	47.700	.40800-01	167.00	.5329	1.002	.6406	.9641	.3876-01	.2478-01	3.261	22.21	582.5
81	48.400	.44200-01	109.00	.4932	.8939	.5914	.9630	.3459-01	.2289-01	3.154	21.56	575.4
81	50.000	.19400-01	156.00	1.066	3.070	1.165	.9870	.1188	.4507-01	4.678	31.11	627.2
81	51.000	.12100-01	154.00	.7466	3.167	.8290	.9870	.1226	.3208-01	2.800	18.46	643.8
81	51.000	.17500-01	155.00	.8361	2.511	.9155	.9870	.9717-01	.3543-01	3.593	23.86	629.6
82	51.900	.44800-01	170.00	.4083	.6971	.4818	.9632	.2696-01	.1864-01	2.824	19.45	561.9
82	53.200	.24700-01	163.00	.4513	.7892	.5157	.9708	.3052-01	.1995-01	3.020	20.73	567.7
82	65.200	.24700-01	162.00	.5824	1.078	.6683	.9720	.4170-01	.2585-01	3.629	24.75	579.6
80	90.000	.91000-02	44.000	.4951	1.336	.5940	.9735	.5175-01	.2301-01	2.257	15.04	623.0
80	90.000	.11100-01	45.000	.6852	1.730	.8155	.9735	.6703-01	.3159-01	3.255	21.75	618.0
80	90.000	.13100-01	46.000	.7466	1.768	.8813	.9735	.6848-01	.3414-01	3.708	24.85	612.5
80	90.000	.17000-01	48.000	.6425	1.322	.7437	.9735	.5122-01	.2881-01	3.586	24.23	596.6
80	90.000	.20900-01	50.000	.7037	1.403	.8106	.9735	.5436-01	.3140-01	4.050	27.44	592.1
80	90.000	.24900-01	52.000	.6158	1.205	.7093	.9730	.4667-01	.2748-01	3.614	24.53	589.2
80	90.000	.26900-01	53.000	.5739	1.095	.6612	.9723	.4241-01	.2561-01	3.460	23.53	585.0
80	90.000	.28800-01	54.000	.5669	1.070	.6545	.9715	.4146-01	.2535-01	3.457	23.53	583.2
80	90.000	.32800-01	55.000	.4992	.9061	.5769	.9700	.3510-01	.2235-01	3.189	21.80	575.7
80	90.000	.36700-01	56.000	.4985	.9097	.5811	.9685	.3524-01	.2251-01	3.164	21.61	576.8
80	90.000	.40600-01	57.000	.5041	.9395	.5948	.9671	.3639-01	.2304-01	3.120	21.27	580.9
80	90.000	.48500-01	58.000	.4319	.7836	.5144	.9642	.3035-01	.1993-01	2.761	18.87	575.7
80	90.000	.56400-01	59.000	.4235	.7546	.5097	.9614	.2923-01	.1975-01	2.770	18.97	571.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
80	90.000	.76100-01	60.000	.3462	.5955	.4269	.9549	.2307-01	.1654-01	2.373	16.33	563.7
80	90.000	.95800-01	61.000	.2664	.4540	.3379	.9488	.1759-01	.1309-01	1.850	12.74	561.4
80	90.000	.11550	62.000	.2282	.3869	.2973	.9433	.1498-01	.1152-01	1.596	11.01	560.1
80	135.00	.19000-01	49.000	.6931	1.372	.8129	.9702	.5313-01	.3149-01	4.020	27.25	591.0
80	135.00	.22900-01	51.000	.6761	1.323	.7915	.9702	.5127-01	.3066-01	3.966	26.91	589.2
80	180.00	.91000-02	23.000	.3296	.5710	.3915	.9626	.2212-01	.1516-01	2.237	15.37	565.5
80	180.00	.11100-01	24.000	.6716	1.495	.8457	.9626	.5790-01	.3276-01	3.499	23.53	606.2
80	180.00	.13100-01	25.000	.6878	1.429	.8532	.9626	.5535-01	.3305-01	3.805	25.70	597.9
80	180.00	.15000-01	26.000	.6884	1.388	.8482	.9626	.5377-01	.3286-01	3.918	26.52	593.7
80	180.00	.17000-01	27.000	.6647	1.311	.8148	.9626	.5079-01	.3156-01	3.867	26.22	590.5
80	180.00	.19000-01	28.000	.6637	1.299	.8122	.9626	.5033-01	.3146-01	3.892	26.41	589.3
80	180.00	.20900-01	29.000	.6432	1.207	.7792	.9626	.4674-01	.3018-01	3.953	26.93	582.0
80	180.00	.28800-01	32.000	.5531	.9830	.6680	.9607	.3808-01	.2588-01	3.629	24.86	571.3
80	180.00	.32800-01	33.000	.5032	.8591	.6056	.9592	.3328-01	.2346-01	3.486	24.01	561.9
80	180.00	.36700-01	34.000	.4993	.8683	.6084	.9578	.3364-01	.2357-01	3.371	23.16	566.4
80	180.00	.56400-01	37.000	.3818	.6371	.4748	.9511	.2468-01	.1839-01	2.733	18.88	555.9
80	180.00	.76100-01	38.000	.2978	.4874	.3786	.9451	.1888-01	.1467-01	2.196	15.22	550.3
80	180.00	.95800-01	39.000	.2623	.4218	.3395	.9398	.1634-01	.1315-01	1.990	13.84	544.8
80	180.00	.11550	40.000	.1897	.3035	.2506	.9352	.1176-01	.9707-02	1.452	10.10	543.1
80	180.00	.18950	42.000	.8531-01	.1322	.1166	.9244	.5122-02	.4516-02	.6897	4.829	532.0
80	225.00	.22900-01	30.000	.5709	1.024	.7103	.9557	.3968-01	.2752-01	3.700	25.32	573.4
80	270.00	.91000-02	63.000	.3612	.5992	.4442	.9530	.2321-01	.1721-01	2.610	18.05	554.2
80	270.00	.11100-01	64.000	.4913	.8407	.6107	.9530	.3256-01	.2365-01	3.392	23.36	562.4
80	270.00	.13100-01	65.000	.7040	1.391	.9169	.9530	.5387-01	.3552-01	4.090	27.73	590.7
80	270.00	.17000-01	67.000	.7377	1.392	.9471	.9530	.5394-01	.3669-01	4.501	30.64	583.2
80	270.00	.20900-01	69.000	.6080	1.114	.7730	.9530	.4313-01	.2994-01	3.843	26.24	577.5
80	270.00	.24900-01	71.000	.5558	1.002	.7050	.9525	.3882-01	.2731-01	3.581	24.49	574.4
80	270.00	.28800-01	73.000	.4964	.8693	.6280	.9511	.3367-01	.2433-01	3.319	22.78	568.0
80	270.00	.36700-01	75.000	.4478	.7786	.5734	.9484	.3016-01	.2221-01	3.024	20.78	566.3
80	270.00	.48500-01	77.000	.3725	.6292	.4810	.9447	.2437-01	.1863-01	2.619	18.06	559.2
80	270.00	.56400-01	78.000	.3479	.5868	.4546	.9424	.2273-01	.1761-01	2.452	16.92	558.7
80	270.00	.95800-01	80.000	.1767	.2899	.2397	.9327	.1123-01	.9286-02	1.297	8.987	551.1
80	270.00	.11550	81.000	.1382	.2280	.1919	.9290	.8831-02	.7432-02	1.007	6.973	552.5
80	315.00	.19000-01	68.000	.5122	.9020	.6336	.9557	.3494-01	.2454-01	3.401	23.32	569.3
80	315.00	.22900-01	70.000	.6186	1.124	.7726	.9557	.4354-01	.2993-01	3.947	26.98	575.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
188	5.500	.2105-02	-6.008	126.8	720.7	.1363	102.2	89.98	2726.	.3600-02	.8226-07	3.708
189	5.500	.2106-02	-6.010	127.0	720.7	.1365	102.2	89.98	2726.	.3603-02	.8226-07	3.712
190	5.500	.2106-02	-6.010	126.7	720.7	.1362	102.2	89.98	2726.	.3595-02	.8226-07	3.703

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
188	.3017-01	.1277-01
189	.3019-01	.1276-01
190	.3016-01	.1278-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R.
189	.00000	.91000-02	1.0000	.3492	.5524	.4163	.9562	.1668-01	.1257-01	2.066	14.52	524.7
189	.00000	.15000-01	4.0000	.5785	.9756	.7041	.9562	.2945-01	.2126-01	3.092	21.51	543.6
189	.00000	.17000-01	5.0000	.5217	.8609	.6306	.9562	.2599-01	.1904-01	2.881	20.11	537.7
189	.00000	.19000-01	6.0000	.5166	.8573	.6256	.9562	.2588-01	.1888-01	2.829	19.72	539.3
189	.00000	.24900-01	9.0000	.4607	.7530	.5564	.9557	.2273-01	.1680-01	2.581	18.04	535.1
189	.00000	.26900-01	10.000	.4446	.7220	.5376	.9550	.2180-01	.1623-01	2.517	17.61	533.1
188	.00000	.32800-01	12.000	.4282	.7241	.5304	.9528	.2185-01	.1601-01	2.279	15.85	544.3
188	.00000	.36700-01	13.000	.4080	.6793	.5061	.9514	.2050-01	.1527-01	2.221	15.48	540.2
188	.00000	.40600-01	14.000	.4472	.7565	.5619	.9501	.2283-01	.1695-01	2.378	16.54	544.4
188	.00000	.48500-01	15.000	.3504	.5754	.4412	.9474	.1736-01	.1331-01	1.948	13.61	536.4
188	.00000	.56400-01	16.000	.3099	.5045	.3939	.9447	.1522-01	.1188-01	1.748	12.22	533.8
188	.00000	.76100-01	17.000	.2235	.3574	.2904	.9385	.1078-01	.8763-02	1.298	9.104	528.3
188	.00000	.11550	19.000	.1023	.1639	.1406	.9276	.4946-02	.4241-02	.5914	4.148	529.0
188	.00000	.16480	20.000	.6611-01	.1064	.9635-01	.9171	.3211-02	.2907-02	.3795	2.659	530.4
188	.00000	.21400	22.000	.4045-01	.5917-01	.5632-01	.9109	.1785-02	.1699-02	.2782	1.991	492.8
190	2.0000	.24700-01	165.00	.3722	.5892	.4440	.9561	.1777-01	.1339-01	2.197	15.44	525.0
189	9.0000	.15000-01	157.00	.5464	.8984	.6548	.9578	.2712-01	.1977-01	3.035	21.19	536.7
189	9.0000	.17600-01	158.00	.4582	.7343	.5447	.9578	.2217-01	.1644-01	2.651	18.59	529.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
190	9.8000	.24700-01	164.00	.3706	.5810	.4380	.9575	.1752-01	.1321-01	2.224	15.66	521.7
189	10.000	.22900-01	88.000	.4051	.6524	.4819	.9579	.1970-01	.1455-01	2.324	16.29	530.6
189	10.000	.26900-01	90.000	.3807	.6045	.4534	.9567	.1825-01	.1369-01	2.238	15.72	526.0
189	10.000	.34700-01	94.000	.3962	.6169	.4744	.9539	.1862-01	.1432-01	2.409	16.99	519.2
189	12.000	.17600-01	152.00	.8660	1.678	.9441	.9829	.5066-01	.2850-01	3.893	26.67	571.8
189	12.000	.12100-01	151.00	.9005	2.173	1.001	.9829	.6560-01	.3021-01	3.345	22.60	597.6
189	13.000	.19400-01	153.00	.7314	1.325	.7914	.9831	.3999-01	.2389-01	3.553	24.50	559.8
190	14.600	.44200-01	169.00	.3681	.5757	.4464	.9514	.1736-01	.1346-01	2.219	15.63	520.8
189	18.500	.44200-01	106.00	.4066	.6522	.4963	.9520	.1969-01	.1498-01	2.349	16.47	529.3
190	19.600	.62900-01	175.00	.3407	.5347	.4239	.9459	.1613-01	.1278-01	2.040	14.36	522.1
189	19.800	.40800-01	101.00	.5257	.8657	.6434	.9534	.2613-01	.1942-01	2.912	20.33	537.2
189	20.000	.24900-01	89.000	.3168	.4958	.3716	.9592	.1497-01	.1122-01	1.910	13.45	521.0
189	20.000	.28800-01	91.000	.3384	.5322	.4000	.9577	.1607-01	.1207-01	2.022	14.23	522.8
189	20.000	.32800-01	93.000	.3983	.6437	.4779	.9563	.1943-01	.1443-01	2.273	15.91	531.6
189	22.200	.62900-01	125.00	.3660	.5912	.4601	.9463	.1785-01	.1389-01	2.091	14.64	531.4
189	22.400	.44200-01	107.00	.3743	.5940	.4537	.9527	.1793-01	.1370-01	2.203	15.48	525.8
190	22.600	.10270	192.00	.2081	.3314	.2754	.9343	.9995-02	.8306-02	1.216	8.536	526.9
189	23.000	.42000-01	105.00	.4867	.7967	.5941	.9535	.2405-01	.1794-01	2.721	19.01	535.5
189	23.400	.59600-01	120.00	.3956	.6457	.4963	.9476	.1949-01	.1498-01	2.223	15.54	534.6
190	23.900	.21310	250.00	.5073-01	.7688-01	.7229-01	.9123	.2318-02	.2180-02	.3241	2.299	508.8
189	24.100	.82200-01	139.00	.3117	.5052	.4036	.9405	.1525-01	.1219-01	1.771	12.39	532.5
190	24.400	.19040	238.00	.7981-01	.1243	.1145	.9153	.3748-02	.3453-02	.4846	3.417	519.3
190	24.400	.12440	207.00	.1688	.2768	.2337	.9288	.8347-02	.7049-02	.9403	6.569	536.0
190	24.800	.16810	223.00	.8644-01	.1394	.1248	.9192	.4205-02	.3763-02	.4942	3.462	531.1
189	24.900	.62900-01	126.00	.3605	.5824	.4523	.9468	.1758-01	.1365-01	2.059	14.42	531.5
190	25.000	.79500-01	178.00	.3685	.5950	.4741	.9415	.1794-01	.1430-01	2.104	14.73	531.4
190	25.300	.10270	191.00	.2338	.3738	.3095	.9347	.1127-01	.9333-02	1.357	9.517	528.3
190	25.300	.10000+00	186.00	.2903	.4730	.3866	.9355	.1426-01	.1166-01	1.633	11.42	534.1
189	25.500	.60700-01	124.00	.4197	.6924	.5288	.9476	.2090-01	.1597-01	2.318	16.18	537.7
190	26.000	.12440	206.00	.1892	.3108	.2619	.9290	.9372-02	.7899-02	1.051	7.338	536.5
189	26.300	.82200-01	140.00	.2340	.3760	.3013	.9409	.1135-01	.9095-02	1.347	9.441	529.9
190	26.700	.12100	199.00	.2332	.3897	.3244	.9300	.1175-01	.9782-02	1.261	8.785	541.3
190	26.800	.16810	222.00	.1133	.1825	.1632	.9194	.5503-02	.4920-02	.6490	4.547	530.7
190	27.000	.19040	237.00	.1011	.1574	.1449	.9155	.4746-02	.4369-02	.6144	4.332	519.1
190	27.100	.21310	249.00	.6843-01	.1036	.9736-01	.9125	.3125-02	.2936-02	.4378	3.106	508.5
190	27.200	.80300-01	180.00	.3674	.5965	.4737	.9416	.1799-01	.1428-01	2.079	14.54	533.0
189	27.400	.40100-01	98.000	.5110	.8523	.6235	.9549	.2573-01	.1882-01	2.776	19.34	540.7
190	27.400	.16480	215.00	.1137	.1856	.1647	.9201	.5596-02	.4966-02	.6377	4.458	534.6
189	27.600	.41600-01	102.00	.5025	.8401	.6151	.9544	.2536-01	.1857-01	2.720	18.95	541.3
190	27.600	.12440	205.00	.2026	.3322	.2798	.9292	.1002-01	.8438-02	1.128	7.882	536.0
190	27.600	.18700	230.00	.1146	.1796	.1646	.9161	.5417-02	.4963-02	.6882	4.846	521.6
190	27.700	.21010	243.00	.7986-01	.1223	.1145	.9129	.3689-02	.3452-02	.5000	3.538	513.1
190	27.900	.10110	188.00	.2332	.3766	.3091	.9355	.1136-01	.9321-02	1.331	9.324	531.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
189	28.000	.46800-01	110.00	.2590	.3952	.3095	.9527	.1193-01	.9344-02	1.636	11.58	511.5
190	28.200	.16810	221.00	.1261	.2041	.1821	.9195	.6155-02	.5493-02	.7176	5.024	532.0
190	28.300	.19040	236.00	.8891-01	.1374	.1266	.9156	.4143-02	.3818-02	.5475	3.866	516.5
190	28.300	.12200	201.00	.2507	.4152	.3470	.9299	.1252-01	.1047-01	1.375	9.590	538.8
189	28.400	.53500-01	114.00	.3867	.6254	.4769	.9505	.1888-01	.1440-01	2.204	15.43	531.9
190	28.400	.21310	248.00	.7211-01	.1088	.1023	.9126	.3281-02	.3083-02	.4647	3.299	507.0
189	28.700	.58600-01	117.00	.4648	.7673	.5824	.9488	.2316-01	.1758-01	2.565	17.90	537.9
190	28.800	.16580	217.00	.1229	.2007	.1781	.9200	.6053-02	.5372-02	.6886	4.813	534.9
189	28.800	.60400-01	121.00	.4294	.7214	.5433	.9482	.2178-01	.1640-01	2.308	16.07	542.6
190	29.000	.21110	244.00	.7422-01	.1128	.1057	.9128	.3401-02	.3189-02	.4717	3.343	509.9
189	29.000	.65700-01	129.00	.2507	.3851	.3082	.9465	.1163-01	.9306-02	1.562	11.05	514.2
189	29.200	.72400-01	133.00	.3627	.5923	.4624	.9444	.1788-01	.1396-01	2.035	14.23	534.8
189	29.300	.79500-01	136.00	.3459	.5816	.4518	.9422	.1756-01	.1364-01	1.857	12.92	542.9
189	29.600	.92500-01	143.00	.2955	.4854	.3896	.9383	.1466-01	.1176-01	1.644	11.48	536.5
189	29.700	.10000+00	146.00	.2596	.4392	.3514	.9361	.1326-01	.1061-01	1.382	9.607	544.4
190	29.900	.12100	198.00	.2309	.3921	.3234	.9304	.1182-01	.9754-02	1.221	8.486	545.3
190	30.200	.16480	214.00	.1013	.1666	.1472	.9204	.5023-02	.4440-02	.5617	3.922	536.8
190	30.200	.18700	229.00	.7141-05	.8400-05	.8165-05	.9163	.2533-06	.2462-06	.1035-03	.8647-03	240.1
190	30.300	.21010	242.00	.6555-01	.1008	.9420-01	.9130	.3040-02	.2841-02	.4073	2.880	514.6
189	31.500	.11100-01	83.000	.6267	1.176	.7639	.9615	.3549-01	.2306-01	2.920	20.06	566.3
189	31.500	.14200-01	84.000	1.011	2.324	1.100	.9857	.7016-01	.3321-01	3.896	26.38	593.1
189	31.500	.16000-01	85.000	1.013	2.161	1.096	.9857	.6523-01	.3309-01	4.149	28.21	585.0
189	31.500	.19400-01	87.000	.7184	1.281	.7664	.9857	.3866-01	.2314-01	3.561	24.59	556.5
190	32.100	.21010	241.00	.5872-01	.9080-01	.8471-01	.9132	.2738-02	.2554-02	.3612	2.550	516.7
190	32.200	.16480	213.00	.8227-01	.1364	.1201	.9206	.4113-02	.3623-02	.4507	3.143	539.0
190	32.200	.17860	224.00	.1073	.1684	.1528	.9180	.5078-02	.4607-02	.6421	4.520	522.2
190	32.200	.18700	228.00	.1269	.2020	.1840	.9165	.6091-02	.5548-02	.7413	5.204	526.9
190	32.300	.12100	197.00	.2588	.4443	.3642	.9307	.1340-01	.1098-01	1.347	9.350	548.0
190	32.300	.12300	194.00	.2089	.3612	.2960	.9302	.1089-01	.8926-02	1.076	7.462	549.8
190	32.300	.12730	208.00	.1670	.2683	.2281	.9291	.8092-02	.6877-02	.9605	6.732	529.9
190	32.300	.13420	209.00	.1684	.2846	.2393	.9274	.8582-02	.7217-02	.8957	6.229	544.2
189	32.400	.10000+00	147.00	.2747	.4850	.3791	.9365	.1464-01	.1145-01	1.378	9.532	554.5
190	32.400	.10110	184.00	.2692	.4614	.3667	.9362	.1391-01	.1106-01	1.404	9.745	547.7
190	32.400	.10630	193.00	.1801	.2792	.2344	.9347	.8419-02	.7069-02	1.103	7.782	517.6
190	32.500	.85800-01	183.00	.2225	.3448	.2818	.9407	.1040-01	.8498-02	1.363	9.622	517.5
189	32.600	.79500-01	137.00	.3236	.5702	.4303	.9426	.1721-01	.1299-01	1.628	11.26	554.0
190	32.600	.80800-01	176.00	.4250	.7461	.5656	.9422	.2250-01	.1705-01	2.146	14.85	553.2
189	32.700	.67400-01	132.00	.2829	.4465	.3519	.9465	.1348-01	.1062-01	1.680	11.82	524.0
189	32.700	.72400-01	134.00	.3128	.5047	.3957	.9449	.1524-01	.1195-01	1.790	12.54	531.1
189	32.800	.65700-01	130.00	.2886	.4447	.3545	.9471	.1343-01	.1070-01	1.789	12.64	515.3
190	32.800	.16680	210.00	.8408-01	.1378	.1220	.9202	.4154-02	.3679-02	.4689	3.276	535.7
190	32.800	.18880	225.00	.9334-01	.1442	.1324	.9163	.4348-02	.3994-02	.5753	4.063	516.3
189	32.900	.58600-01	118.00	.4787	.7934	.5988	.9494	.2395-01	.1808-01	2.626	18.31	539.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
189	32.900	.60400-01	122.00	.4275	.7285	.5421	.9488	.2199-01	.1636-01	2.250	15.63	546.3
190	32.900	.61300-01	171.00	.3954	.6479	.4946	.9485	.1954-01	.1491-01	2.205	15.41	535.7
189	33.000	.53500-01	115.00	.3476	.5541	.4250	.9512	.1673-01	.1283-01	2.030	14.25	527.3
189	33.200	.48300-01	113.00	.2587	.3946	.3087	.9530	.1191-01	.9319-02	1.633	11.57	511.5
190	33.400	.42800-01	166.00	.4656	.7636	.5650	.9549	.2303-01	.1704-01	2.593	18.11	536.0
189	33.500	.40100-01	99.000	.5200	.8567	.6291	.9559	.2586-01	.1899-01	2.879	20.10	537.3
189	33.600	.38300-01	97.000	.5294	.8662	.6371	.9565	.2615-01	.1923-01	2.963	20.70	535.3
189	33.700	.36700-01	96.000	.5541	.9134	.6666	.9571	.2758-01	.2012-01	3.065	21.39	537.5
189	33.900	.33800-01	95.000	.4883	.7935	.5819	.9582	.2396-01	.1757-01	2.762	19.32	533.3
190	34.700	.21010	240.00	.1038	.1599	.1491	.9133	.4821-02	.4497-02	.6429	4.543	515.2
190	34.700	.18700	227.00	.7984-01	.1273	.1158	.9167	.3840-02	.3492-02	.4652	3.265	527.4
190	34.900	.16480	212.00	.9839-01	.1648	.1445	.9208	.4969-02	.4356-02	.5307	3.695	541.8
189	35.100	.10000+00	148.00	.2738	.4899	.3795	.9369	.1479-01	.1146-01	1.350	9.323	557.3
190	35.200	.23900-01	161.00	.2188	.3230	.2494	.9620	.9740-02	.7520-02	1.474	10.52	497.3
189	35.300	.92500-01	145.00	.2803	.4625	.3688	.9391	.1396-01	.1113-01	1.548	10.80	537.8
189	35.300	.22100-01	160.00	.2331	.3484	.2665	.9621	.1052-01	.8046-02	1.531	10.90	503.0
190	35.400	.18800	231.00	.1421	.2247	.2049	.9166	.6775-02	.6178-02	.8401	5.906	524.6
190	35.500	.12100	196.00	.2582	.4486	.3648	.9311	.1353-01	.1100-01	1.322	9.156	550.9
190	35.600	.16580	216.00	.1025	.1701	.1497	.9207	.5131-02	.4513-02	.5599	3.904	539.5
189	35.800	.80600-01	138.00	.4198	.7564	.5632	.9428	.2283-01	.1700-01	2.052	14.16	558.7
190	35.900	.21310	247.00	.8590-01	.1300	.1219	.9130	.3921-02	.3675-02	.5500	3.902	508.3
190	36.000	.19040	235.00	.1187	.1851	.1696	.9163	.5581-02	.5116-02	.7194	5.071	519.7
190	36.200	.16810	220.00	.1111	.1807	.1603	.9203	.5449-02	.4834-02	.6272	4.388	533.5
189	36.200	.72400-01	135.00	.3114	.5033	.3933	.9454	.1519-01	.1187-01	1.777	12.44	531.6
190	36.300	.12200	200.00	.2647	.4642	.3764	.9310	.1400-01	.1135-01	1.339	9.266	552.9
189	36.600	.65700-01	131.00	.3164	.5011	.3921	.9476	.1513-01	.1184-01	1.867	13.12	525.2
190	36.700	.18700	226.00	.1114	.1743	.1591	.9169	.5256-02	.4799-02	.6707	4.725	521.0
190	36.900	.16480	211.00	.1059	.1737	.1531	.9210	.5239-02	.4616-02	.5894	4.117	536.1
190	36.900	.10110	187.00	.2888	.4989	.3936	.9368	.1505-01	.1187-01	1.491	10.34	549.5
189	37.000	.60400-01	123.00	.4306	.7454	.5475	.9494	.2250-01	.1653-01	2.219	15.38	550.0
190	37.000	.12440	204.00	.2499	.4292	.3523	.9304	.1294-01	.1062-01	1.300	9.018	548.2
189	37.100	.58600-01	119.00	.3660	.5999	.4545	.9501	.1811-01	.1372-01	2.042	14.27	535.9
190	37.200	.21310	246.00	.8573-01	.1291	.1210	.9131	.3892-02	.3650-02	.5549	3.942	506.0
190	37.600	.16810	219.00	.1086	.1750	.1556	.9204	.5278-02	.4692-02	.6225	4.361	530.7
189	37.800	.10270	150.00	.2717	.4595	.3671	.9364	.1387-01	.1108-01	1.447	10.06	544.3
190	37.900	.12100	195.00	.1790	.2907	.2431	.9314	.8768-02	.7329-02	1.012	7.080	533.2
190	38.000	.80300-01	179.00	.3715	.6191	.4808	.9432	.1867-01	.1450-01	2.018	14.06	540.5
189	38.500	.46800-01	112.00	.3130	.4877	.3743	.9543	.1472-01	.1130-01	1.901	13.40	519.5
190	38.600	.12440	203.00	.2374	.3982	.3298	.9306	.1201-01	.9945-02	1.277	8.892	542.2
190	38.700	.10000+00	185.00	.2596	.4313	.3460	.9373	.1301-01	.1043-01	1.419	9.895	539.5
189	38.900	.82200-01	141.00	.3540	.5986	.4622	.9427	.1807-01	.1395-01	1.885	13.11	544.3
189	39.300	.41600-01	104.00	.4771	.8007	.5797	.9562	.2417-01	.1750-01	2.568	17.88	542.4
190	39.500	.10270	190.00	.2755	.4571	.3682	.9367	.1379-01	.1110-01	1.507	10.51	539.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
190	39.600	.16810	218.00	.9290-01	.1486	.1323	.9206	.4482-02	.3988-02	.5385	3.778	528.4
190	39.900	.19040	233.00	.7649-01	.1168	.1074	.9166	.3522-02	.3239-02	.4816	3.410	511.9
190	40.100	.79500-01	177.00	.3093	.4982	.3933	.9437	.1502-01	.1186-01	1.773	12.42	530.6
190	40.200	.12440	202.00	.2085	.3464	.2877	.9308	.1044-01	.8676-02	1.138	7.932	539.7
190	40.300	.21310	245.00	.5398-01	.7999-01	.7518-01	.9133	.2412-02	.2267-02	.3607	2.573	499.1
189	41.100	.82200-01	142.00	.3318	.5577	.4314	.9430	.1684-01	.1302-01	1.782	12.40	542.8
190	41.100	.60700-01	173.00	.3813	.6222	.4730	.9499	.1876-01	.1426-01	2.140	14.96	534.6
190	42.600	.59600-01	172.00	.3246	.5171	.3979	.9505	.1559-01	.1200-01	1.894	13.30	527.1
190	43.200	.42000-01	168.00	.4218	.6712	.5029	.9566	.2024-01	.1517-01	2.467	17.32	526.7
190	43.400	.82200-01	181.00	.2582	.4060	.3254	.9433	.1224-01	.9812-02	1.542	10.85	522.6
189	43.600	.62900-01	128.00	.3428	.5611	.4266	.9495	.1694-01	.1288-01	1.917	13.39	535.4
189	45.000	.22900-01	8.0000	.5852	1.025	.6939	.9635	.3094-01	.2095-01	2.968	20.54	552.7
190	46.100	.62900-01	174.00	.3470	.5588	.4285	.9498	.1685-01	.1292-01	1.989	13.94	530.6
190	47.700	.40800-01	167.00	.4478	.7139	.5318	.9576	.2153-01	.1604-01	2.611	18.33	527.3
189	48.400	.44200-01	109.00	.4593	.7544	.5535	.9565	.2278-01	.1671-01	2.555	17.84	536.4
189	50.000	.19400-01	156.00	.9216	1.795	.9838	.9870	.5419-01	.2970-01	4.120	28.21	572.6
189	51.000	.12100-01	154.00	.8901	2.134	.9630	.9870	.6442-01	.2907-01	3.322	22.45	597.0
189	51.000	.17600-01	155.00	.8686	1.716	.9282	.9870	.5181-01	.2802-01	3.826	26.17	574.8
190	51.900	.44800-01	170.00	.4033	.6399	.4802	.9567	.1930-01	.1448-01	2.371	16.66	525.7
190	53.200	.24700-01	163.00	.4339	.6795	.4987	.9641	.2049-01	.1504-01	2.609	18.38	521.3
190	65.200	.24700-01	162.00	.5610	.9153	.6483	.9652	.2760-01	.1955-01	3.149	22.02	534.5
188	90.000	.91000-02	44.000	.5428	1.027	.6442	.9666	.3100-01	.1944-01	2.502	17.18	567.9
188	90.000	.11100-01	45.000	.6358	1.219	.7566	.9666	.3678-01	.2283-01	2.890	19.81	570.0
188	90.000	.13100-01	46.000	.6917	1.257	.8139	.9666	.3793-01	.2456-01	3.344	23.06	560.4
188	90.000	.17000-01	48.000	.5770	1.031	.6764	.9666	.3111-01	.2041-01	2.848	19.67	557.1
188	90.000	.20900-01	50.000	.6853	1.210	.8013	.9666	.3650-01	.2418-01	3.438	23.78	554.4
188	90.000	.24900-01	52.000	.6284	1.061	.7290	.9661	.3201-01	.2200-01	3.352	23.31	543.9
188	90.000	.26900-01	53.000	.5468	.9248	.6369	.9654	.2790-01	.1922-01	2.909	20.22	544.4
188	90.000	.28800-01	54.000	.5249	.8783	.6118	.9647	.2650-01	.1846-01	2.837	19.75	541.6
188	90.000	.32800-01	55.000	.3786	.5974	.4375	.9633	.1803-01	.1320-01	2.248	15.81	523.9
188	90.000	.36700-01	56.000	.4446	.7265	.5218	.9619	.2192-01	.1574-01	2.491	17.41	535.0
188	90.000	.40600-01	57.000	.4524	.7537	.5373	.9605	.2274-01	.1621-01	2.461	17.15	540.4
188	90.000	.48500-01	58.000	.4283	.7130	.5153	.9577	.2151-01	.1555-01	2.333	16.26	540.2
188	90.000	.56400-01	59.000	.3816	.6327	.4646	.9550	.1909-01	.1402-01	2.090	14.58	539.1
188	90.000	.76100-01	60.000	.2978	.4903	.3734	.9484	.1479-01	.1127-01	1.650	11.52	537.1
188	90.000	.95800-01	61.000	.2644	.4341	.3414	.9423	.1310-01	.1030-01	1.470	10.27	536.3
188	90.000	.11550	62.000	.1912	.3146	.2546	.9365	.9492-02	.7683-02	1.060	7.404	536.9
188	135.00	.19000-01	49.000	.6680	1.173	.7926	.9635	.3539-01	.2392-01	3.373	23.34	553.3
188	135.00	.22900-01	51.000	.6450	1.124	.7639	.9635	.3391-01	.2305-01	3.291	22.80	551.5
188	180.00	.91000-02	23.000	.2517	.3951	.2993	.9562	.1192-01	.9031-02	1.508	10.61	522.1
188	180.00	.11100-01	24.000	.5752	1.024	.7118	.9562	.3090-01	.2148-01	2.854	19.71	556.2
188	180.00	.13100-01	25.000	.6168	1.119	.7677	.9562	.3376-01	.2316-01	2.988	20.60	560.1
188	180.00	.15000-01	26.000	.5866	1.036	.7242	.9562	.3125-01	.2185-01	2.942	20.34	554.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K016)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
188	180.00	.17000-01	27.000	.6186	1.066	.7580	.9562	.3216-01	.2287-01	3.206	22.23	548.9
188	180.00	.19000-01	28.000	.6312	1.095	.7750	.9562	.3303-01	.2338-01	3.242	22.47	550.5
188	180.00	.20900-01	29.000	.6092	1.043	.7450	.9562	.3147-01	.2248-01	3.185	22.11	547.4
188	180.00	.28800-01	32.000	.5331	.8835	.6512	.9543	.2666-01	.1965-01	2.923	20.39	539.0
188	180.00	.32800-01	33.000	.4650	.7495	.5664	.9528	.2262-01	.1709-01	2.664	18.66	530.8
188	180.00	.36700-01	34.000	.4534	.7374	.5576	.9515	.2225-01	.1683-01	2.559	17.90	533.6
188	180.00	.48500-01	36.000	.3694	.5933	.4609	.9474	.1790-01	.1391-01	2.128	14.92	529.7
188	180.00	.56400-01	37.000	.3433	.5488	.4329	.9447	.1656-01	.1306-01	1.994	13.99	528.2
188	180.00	.76100-01	38.000	.2687	.4263	.3478	.9385	.1286-01	.1049-01	1.581	11.11	525.7
188	180.00	.95800-01	39.000	.2033	.3205	.2695	.9328	.9670-02	.8133-02	1.209	8.505	523.6
188	180.00	.11550	40.000	.1503	.2391	.2056	.9276	.7214-02	.6202-02	.8802	6.181	526.6
188	180.00	.18450	42.000	.6199-01	.9296-01	.8685-01	.9141	.2805-02	.2621-02	.4045	2.876	504.4
188	225.00	.22900-01	30.000	.5509	.9214	.6918	.9494	.2780-01	.2087-01	2.979	20.75	541.4
188	270.00	.91000-02	63.000	.2218	.3422	.2730	.9467	.1032-01	.8238-02	1.370	9.680	515.9
188	270.00	.11100-01	64.000	.2840	.4428	.3512	.9467	.1336-01	.1060-01	1.722	12.14	519.7
188	270.00	.13100-01	65.000	.4657	.7567	.5859	.9467	.2283-01	.1768-01	2.634	18.43	533.2
188	270.00	.17000-01	67.000	.7524	1.366	.9895	.9467	.4121-01	.2986-01	3.644	25.12	560.2
188	270.00	.20900-01	69.000	.5978	1.037	.7723	.9467	.3129-01	.2330-01	3.068	21.26	550.6
188	270.00	.24900-01	71.000	.5315	.9121	.6855	.9462	.2752-01	.2068-01	2.770	19.22	547.9
188	270.00	.28800-01	73.000	.4538	.7616	.5842	.9448	.2298-01	.1763-01	2.441	16.99	542.4
188	270.00	.36700-01	75.000	.4087	.6791	.5314	.9420	.2049-01	.1603-01	2.232	15.56	539.7
188	270.00	.48500-01	77.000	.3360	.5482	.4419	.9381	.1654-01	.1333-01	1.887	13.20	534.5
188	270.00	.56400-01	78.000	.2993	.4881	.3986	.9356	.1473-01	.1203-01	1.683	11.77	534.3
188	270.00	.95800-01	80.000	.1397	.2289	.1978	.9247	.6907-02	.5967-02	.7802	5.451	535.6
188	270.00	.11550	81.000	.1037	.1699	.1505	.9202	.5125-02	.4540-02	.5796	4.050	535.5
188	315.00	.19000-01	68.000	.5207	.8715	.6540	.9493	.2629-01	.1973-01	2.813	19.59	541.6
188	315.00	.22900-01	70.000	.5499	.9516	.6994	.9493	.2871-01	.2110-01	2.832	19.63	550.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
83	4.020	.3181-02	-9.038	64.93	740.7	.4164	175.0	89.98	2607.	.6422-02	.1408-06	3.695
84	4.020	.3179-02	-9.030	65.01	741.7	.4169	175.2	89.98	2609.	.6421-02	.1410-06	3.692
87	4.020	.6357-02	-9.030	65.01	735.7	.4169	173.8	89.96	2598.	.6473-02	.1399-06	3.737

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
83	.3871-01	.9592-02
84	.3875-01	.9595-02
87	.3869-01	.9545-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
84	.00000	.91000-02	1.0000	.5017	.9974	.6182	.9621	.3864-01	.2395-01	2.901	19.65	592.4
84	.00000	.11100-01	2.0000	.6777	1.468	.8516	.9621	.5686-01	.3300-01	3.618	24.36	603.9
84	.00000	.15000-01	4.0000	.5714	1.099	.6987	.9621	.4260-01	.2707-01	3.419	23.22	587.2
84	.00000	.17000-01	5.0000	.5507	1.028	.6684	.9621	.3982-01	.2590-01	3.409	23.23	581.9
84	.00000	.19000-01	6.0000	.5161	.9591	.6258	.9621	.3716-01	.2425-01	3.212	21.89	581.1
84	.00000	.24900-01	9.0000	.4619	.8389	.5583	.9616	.3250-01	.2163-01	2.954	20.18	576.6
84	.00000	.26900-01	10.000	.4737	.8614	.5751	.9608	.3338-01	.2228-01	3.025	20.66	576.9
83	.00000	.32800-01	12.000	.4499	.8023	.5496	.9587	.3106-01	.2128-01	2.937	20.11	572.0
83	.00000	.36700-01	13.000	.4671	.8139	.5709	.9573	.3151-01	.2210-01	3.143	21.59	566.8
83	.00000	.40600-01	14.000	.4973	.8796	.6150	.9560	.3405-01	.2381-01	3.280	22.49	570.3
83	.00000	.48500-01	15.000	.3568	.6067	.4418	.9533	.2349-01	.1710-01	2.484	17.12	560.9
83	.00000	.56400-01	16.000	.3306	.5625	.4148	.9507	.2178-01	.1606-01	2.300	15.85	561.0
83	.00000	.76100-01	17.000	.2067	.3395	.2635	.9448	.1314-01	.1020-01	1.514	10.49	551.4
83	.00000	.11550	19.000	.1571	.2565	.2100	.9350	.9931-02	.8130-02	1.163	8.062	549.5
83	.00000	.16480	20.000	.9083-01	.1466	.1261	.9266	.5677-02	.4881-02	.6842	4.753	546.1
83	.00000	.21400	22.000	.6258-01	.9484-01	.8502-01	.9224	.3672-02	.3291-02	.5276	3.712	522.9
87	2.0000	.24700-01	165.00	.3218	.5862	.3880	.9622	.2268-01	.1501-01	2.031	13.91	572.5
84	9.0000	.15000-01	157.00	.5803	1.090	.6959	.9645	.4225-01	.2696-01	3.564	24.27	583.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
84	9.0000	.17600-01	158.00	.4894	.8771	.5805	.9645	.3398-01	.2249-01	3.182	21.77	573.9
87	9.8000	.24700-01	164.00	.3417	.6201	.4070	.9643	.2399-01	.1575-01	2.166	14.84	571.8
84	10.000	.22900-01	88.000	.3983	.7044	.4703	.9648	.2729-01	.1822-01	2.634	18.05	571.0
84	10.000	.26900-01	90.000	.4136	.7183	.4894	.9635	.2783-01	.1896-01	2.802	19.25	566.8
84	10.000	.34700-01	94.000	.4678	.8573	.5696	.9607	.3322-01	.2207-01	2.959	20.20	578.4
84	12.000	.17600-01	152.00	.8330	2.484	.9118	.9870	.9624-01	.3533-01	3.601	23.91	630.1
84	12.000	.12100-01	151.00	.7172	4.421	.8049	.9870	.1713	.3118-01	2.460	16.14	653.1
84	13.000	.19400-01	153.00	.6892	1.848	.7503	.9870	.7160-01	.2907-01	3.158	21.04	623.4
87	14.600	.44200-01	169.00	.3646	.6447	.4447	.9585	.2494-01	.1721-01	2.389	16.41	566.3
84	18.500	.44200-01	106.00	.3872	.6742	.4678	.9595	.2612-01	.1812-01	2.614	17.95	567.4
87	19.600	.62900-01	175.00	.3757	.6773	.4737	.9536	.2621-01	.1833-01	2.401	16.46	570.5
84	19.800	.40800-01	101.00	.5114	.9271	.6195	.9611	.3592-01	.2400-01	3.278	22.40	576.3
84	20.000	.24900-01	89.000	.3624	.6156	.4194	.9669	.2385-01	.1625-01	2.533	17.45	561.3
84	20.000	.28800-01	91.000	.4014	.6986	.4705	.9655	.2707-01	.1823-01	2.712	18.62	567.3
84	20.000	.32800-01	93.000	.4670	.8689	.5603	.9640	.3366-01	.2171-01	2.902	19.78	581.3
87	21.800	.82200-01	182.00	.3878	.7099	.5071	.9481	.2747-01	.1962-01	2.433	16.65	573.5
84	22.200	.62900-01	125.00	.3963	.7109	.4971	.9542	.2755-01	.1926-01	2.573	17.61	574.1
84	22.400	.44200-01	107.00	.3717	.6431	.4460	.9605	.2492-01	.1728-01	2.532	17.40	565.9
87	22.600	.10270	192.00	.2798	.4946	.3727	.9426	.1914-01	.1442-01	1.834	12.60	566.3
84	23.000	.42000-01	105.00	.4538	.8167	.5475	.9615	.3164-01	.2121-01	2.935	20.07	574.8
84	23.400	.59600-01	120.00	.4454	.8122	.5572	.9556	.3147-01	.2159-01	2.834	19.35	577.5
87	23.900	.21310	250.00	.8270-01	.1325	.1159	.9237	.5127-02	.4486-02	.6261	4.364	540.0
84	24.100	.82200-01	139.00	.4165	.7487	.5393	.9487	.2901-01	.2090-01	2.698	18.45	574.5
87	24.400	.19040	238.00	.1220	.2008	.1719	.9261	.7769-02	.6651-02	.8858	6.146	548.1
87	24.400	.12440	207.00	.2215	.3939	.3047	.9376	.1524-01	.1179-01	1.441	9.891	567.6
87	24.800	.16810	223.00	.1381	.2360	.1955	.9292	.9132-02	.7564-02	.9469	6.533	558.4
84	24.900	.62900-01	126.00	.3930	.6953	.4890	.9549	.2694-01	.1895-01	2.597	17.80	571.1
87	25.000	.79500-01	178.00	.4972	.9461	.6532	.9497	.3660-01	.2527-01	2.983	20.34	580.6
87	25.300	.10270	191.00	.3006	.5322	.3993	.9432	.2059-01	.1545-01	1.966	13.51	566.6
87	25.300	.10000+00	186.00	.3796	.7093	.5134	.9439	.2744-01	.1987-01	2.324	15.87	577.4
84	25.500	.60700-01	124.00	.4433	.8106	.5546	.9557	.3141-01	.2149-01	2.811	19.19	578.0
87	26.000	.12440	206.00	.2564	.4590	.3531	.9379	.1776-01	.1366-01	1.654	11.35	569.0
84	26.300	.82200-01	140.00	.3337	.5793	.4254	.9492	.2245-01	.1648-01	2.262	15.54	566.7
87	26.700	.12100	199.00	.3291	.6127	.4590	.9389	.2371-01	.1776-01	2.023	13.82	576.8
87	26.800	.16810	222.00	.1610	.2737	.2269	.9295	.1059-01	.8780-02	1.113	7.685	557.0
87	27.000	.19040	237.00	.1382	.2264	.1938	.9263	.8759-02	.7499-02	1.010	7.013	546.8
87	27.100	.21310	249.00	.1046	.1679	.1466	.9240	.6496-02	.5673-02	.7890	5.498	540.6
87	27.200	.80300-01	180.00	.5236	1.012	.6904	.9499	.3916-01	.2671-01	3.087	21.02	583.3
84	27.400	.40100-01	98.000	.4947	.9404	.5989	.9633	.3643-01	.2321-01	2.999	20.39	585.2
87	27.400	.16480	215.00	.1680	.2932	.2395	.9301	.1134-01	.9266-02	1.120	7.705	563.4
84	27.600	.41600-01	102.00	.4680	.8906	.5684	.9628	.3451-01	.2202-01	2.835	19.28	585.3
87	27.600	.12440	205.00	.2769	.4930	.3797	.9382	.1908-01	.1469-01	1.799	12.35	567.8
87	27.600	.18700	230.00	.1691	.2819	.2391	.9268	.1091-01	.9251-02	1.202	8.322	551.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
87	27.700	.21010	243.00	.1280	.2097	.1816	.9243	.8112-02	.7025-02	.9359	6.499	546.7
87	27.900	.10110	188.00	.3238	.5791	.4295	.9442	.2241-01	.1662-01	2.091	14.34	568.8
84	28.000	.46800-01	110.00	.3002	.4944	.3544	.9610	.1915-01	.1373-01	2.197	15.20	552.8
87	28.200	.16810	221.00	.1703	.2904	.2402	.9297	.1124-01	.9292-02	1.172	8.089	557.8
87	28.300	.19040	236.00	.1272	.2055	.1767	.9265	.7952-02	.6837-02	.9495	6.608	542.7
87	28.300	.12200	201.00	.3326	.6112	.4609	.9389	.2365-01	.1783-01	2.077	14.21	574.3
84	28.400	.53500-01	114.00	.5183	.9539	.6382	.9588	.3696-01	.2473-01	3.261	22.25	579.3
87	28.400	.21310	248.00	.1091	.1737	.1520	.9241	.6719-02	.5882-02	.8354	5.830	537.8
84	28.700	.58600-01	117.00	.5437	1.015	.6786	.9572	.3933-01	.2629-01	3.364	22.92	582.0
87	28.800	.16580	217.00	.1732	.3008	.2462	.9301	.1164-01	.9525-02	1.162	8.002	562.2
84	28.800	.60400-01	121.00	.4487	.8489	.5641	.9566	.3289-01	.2186-01	2.735	18.61	584.3
87	29.000	.21110	244.00	.1100	.1776	.1545	.9243	.6871-02	.5979-02	.8222	5.723	542.4
84	29.000	.65700-01	129.00	.2985	.4916	.3628	.9549	.1905-01	.1406-01	2.184	15.12	552.8
84	29.200	.72400-01	133.00	.5430	.9977	.6916	.9528	.3865-01	.2680-01	3.423	23.36	578.9
84	29.300	.79500-01	136.00	.4930	.9483	.6460	.9507	.3674-01	.2503-01	2.950	20.04	587.2
84	29.600	.92500-01	143.00	.4192	.7477	.5467	.9469	.2897-01	.2118-01	2.741	18.77	572.9
84	29.700	.10000+00	146.00	.3441	.6453	.4634	.9448	.2500-01	.1795-01	2.119	14.43	582.8
87	29.900	.12100	198.00	.3352	.6427	.4718	.9395	.2486-01	.1825-01	1.994	13.58	581.9
97	30.200	.16480	214.00	.1599	.2816	.2286	.9305	.1089-01	.8843-02	1.053	7.236	565.5
87	30.200	.18700	229.00	.1286	.2175	.1832	.9271	.8414-02	.7087-02	.8960	6.191	555.6
87	30.300	.21010	242.00	.9906-01	.1644	.1415	.9245	.6360-02	.5476-02	.7096	4.917	550.5
84	31.500	.91000-02	82.000	.5420	1.288	.6540	.9704	.4991-01	.2534-01	2.688	18.01	613.6
84	31.500	.11100-01	83.000	.7368	1.808	.8933	.9704	.7003-01	.3461-01	3.574	23.90	616.5
84	31.500	.14200-01	84.000	1.004	4.860	1.119	.9870	.1883	.4336-01	3.634	23.90	648.2
84	31.500	.16000-01	85.000	1.098	4.158	1.214	.9870	.1611	.4705-01	4.289	28.31	640.9
84	31.500	.17600-01	86.000	.9179	2.801	1.006	.9870	.1085	.3897-01	3.923	26.03	631.4
84	31.500	.19400-01	87.000	.7667	2.038	.8344	.9870	.7896-01	.3233-01	3.532	23.54	622.8
87	32.100	.21010	241.00	.1096	.1866	.1591	.9246	.7219-02	.6156-02	.7567	5.224	557.3
87	32.200	.16480	213.00	.1541	.2788	.2233	.9307	.1079-01	.8638-02	.9804	6.718	571.2
87	32.200	.17860	224.00	.1548	.2582	.2169	.9285	.9989-02	.8391-02	1.100	7.620	551.9
87	32.200	.18700	228.00	.1699	.2984	.2473	.9273	.1155-01	.9569-02	1.122	7.715	564.9
87	32.300	.12100	197.00	.3468	.6731	.4894	.9399	.2604-01	.1893-01	2.037	13.86	583.9
87	32.300	.12300	194.00	.2895	.5587	.4088	.9394	.2161-01	.1582-01	1.710	11.64	583.0
87	32.300	.12730	208.00	.1748	.2955	.2335	.9384	.1143-01	.9035-02	1.218	8.417	555.6
87	32.300	.13420	209.00	.2206	.3937	.3054	.9368	.1523-01	.1182-01	1.427	9.794	568.4
84	32.400	.10000+00	147.00	.3912	.7982	.5421	.9454	.3093-01	.2101-01	2.205	14.90	596.2
87	32.400	.10110	184.00	.3848	.7627	.5286	.9451	.2951-01	.2045-01	2.211	15.02	587.2
87	32.400	.10630	193.00	.2466	.4066	.3158	.9437	.1573-01	.1226-01	1.783	12.36	548.8
87	32.500	.85800-01	183.00	.2968	.5023	.3741	.9495	.1943-01	.1447-01	2.065	14.26	555.9
84	32.600	.79500-01	137.00	.4881	1.027	.6552	.9514	.3980-01	.2539-01	2.673	18.03	600.4
87	32.600	.80800-01	176.00	.6226	1.375	.8507	.9510	.5321-01	.3291-01	3.238	21.83	601.2
84	32.700	.67400-01	132.00	.3698	.6381	.4555	.9552	.2472-01	.1765-01	2.527	17.37	565.3
84	32.700	.72400-01	134.00	.4704	.8436	.5917	.9536	.3268-01	.2293-01	3.055	20.90	574.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
84	32.800	.65700-01	130.00	.3346	.5478	.4041	.9558	.2123-01	.1566-01	2.471	17.12	551.1
87	32.800	.16680	210.00	.1566	.2771	.2245	.9305	.1072-01	.8685-02	1.026	7.046	566.4
87	32.800	.18880	225.00	.1597	.2608	.2226	.9271	.1009-01	.8611-02	1.172	8.142	545.9
84	32.900	.58600-01	118.00	.6034	1.166	.7559	.9582	.4518-01	.2929-01	3.593	24.40	588.0
84	32.900	.60400-01	122.00	.4561	.8850	.5741	.9576	.3429-01	.2224-01	2.704	18.35	588.6
87	32.900	.61300-01	171.00	.4058	.7846	.5113	.9573	.3036-01	.1978-01	2.393	16.29	583.3
84	33.000	.53500-01	115.00	.4434	.7859	.5372	.9599	.3045-01	.2081-01	2.923	20.03	571.5
84	33.200	.48300-01	113.00	.3107	.5128	.3658	.9618	.1987-01	.1417-01	2.266	15.68	553.4
87	33.400	.42800-01	166.00	.4322	.8515	.5261	.9638	.3295-01	.2035-01	2.499	16.98	586.3
84	33.500	.40100-01	99.000	.4908	.9211	.5875	.9648	.3569-01	.2276-01	3.020	20.56	582.9
84	33.600	.38300-01	97.000	.5235	.9668	.6221	.9654	.3746-01	.2410-01	3.281	22.38	579.9
84	33.700	.36700-01	96.000	.5398	.9985	.6395	.9661	.3869-01	.2478-01	3.377	23.03	580.2
84	33.900	.33800-01	95.000	.5604	1.033	.6595	.9672	.4002-01	.2555-01	3.520	24.01	579.5
87	34.700	.21010	240.00	.1193	.2072	.1751	.9248	.8015-02	.6776-02	.8000	5.508	562.3
87	34.700	.18700	227.00	.1409	.2448	.2034	.9276	.9472-02	.7871-02	.9446	6.503	562.4
87	34.900	.16480	212.00	.1661	.3089	.2437	.9311	.1195-01	.9429-02	1.023	6.986	576.5
84	35.100	.10000+00	148.00	.4372	.9348	.6138	.9459	.3622-01	.2378-01	2.360	15.90	602.3
87	35.200	.23900-01	161.00	.3045	.5168	.3453	.9712	.1999-01	.1336-01	2.109	14.57	556.6
84	35.300	.92500-01	145.00	.3851	.6968	.5015	.9481	.2700-01	.1943-01	2.473	16.90	575.9
84	35.300	.22100-01	160.00	.3122	.5136	.3517	.9713	.1990-01	.1363-01	2.287	15.83	552.6
87	35.400	.18800	231.00	.1632	.2842	.2360	.9275	.1100-01	.9132-02	1.091	7.507	562.9
87	35.500	.12100	196.00	.3495	.6965	.4968	.9405	.2695-01	.1922-01	1.997	13.56	588.0
87	35.600	.16580	216.00	.1626	.2982	.2369	.9310	.1154-01	.9166-02	1.018	6.962	573.9
84	35.800	.80600-01	138.00	.5944	1.270	.7996	.9518	.4920-01	.3098-01	3.212	21.64	602.2
87	35.900	.21310	247.00	.1067	.1768	.1522	.9246	.6840-02	.5888-02	.7656	5.306	550.2
87	36.000	.19040	235.00	.1444	.2447	.2058	.9272	.9466-02	.7961-02	1.003	6.928	556.2
87	36.200	.16910	220.00	.1514	.2667	.2162	.9307	.1032-01	.8363-02	.9975	6.857	565.4
84	36.200	.72400-01	135.00	.4199	.7465	.5245	.9544	.2892-01	.2032-01	2.758	18.89	572.1
87	36.300	.12200	200.00	.3406	.6871	.4870	.9404	.2659-01	.1884-01	1.922	13.04	589.8
84	36.600	.65700-01	131.00	.3323	.5678	.4051	.9567	.2200-01	.1570-01	2.303	15.85	562.8
87	36.700	.18700	226.00	.1481	.2506	.2102	.9278	.9697-02	.8133-02	1.030	7.118	555.9
87	36.900	.16480	211.00	.1525	.2694	.2172	.9314	.1042-01	.8403-02	1.000	6.871	566.2
87	36.900	.10110	187.00	.4464	.9118	.6163	.9460	.3528-01	.2385-01	2.489	16.87	591.5
84	37.000	.60400-01	123.00	.5373	1.135	.6874	.9585	.4397-01	.2664-01	2.932	19.77	600.8
87	37.000	.12440	204.00	.3165	.6093	.4449	.9399	.2357-01	.1721-01	1.874	12.76	582.6
84	37.100	.58600-01	119.00	.5829	1.161	.7317	.9591	.4499-01	.2835-01	3.363	22.78	592.7
87	37.200	.21310	246.00	.1163	.1899	.1642	.9247	.7346-02	.6354-02	.8544	5.936	545.8
87	37.600	.16810	219.00	.1421	.2439	.1937	.9309	.9436-02	.7727-02	.9691	6.683	559.4
84	37.800	.10270	150.00	.3638	.6746	.4851	.9457	.2614-01	.1880-01	2.269	15.47	580.7
87	37.900	.12100	195.00	.2400	.4224	.3221	.9409	.1634-01	.1246-01	1.581	10.87	565.3
87	38.000	.80300-01	179.00	.5895	1.194	.7770	.9523	.4618-01	.3006-01	3.315	22.48	590.3
84	38.500	.46800-01	112.00	.3320	.5645	.3907	.9635	.2187-01	.1514-01	2.316	15.95	561.6
87	38.600	.12440	203.00	.2907	.5324	.3990	.9402	.2060-01	.1544-01	1.823	12.47	573.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
87	38.700	.10000+00	185.00	.3795	.7024	.5028	.9466	.2718-01	.1945-01	2.349	16.06	575.7
84	38.900	.82200-01	141.00	.4182	.7897	.5404	.9519	.3060-01	.2094-01	2.554	17.38	584.0
84	39.300	.41600-01	104.00	.4694	.9188	.5644	.9656	.3560-01	.2187-01	2.758	18.71	590.0
87	39.500	.10270	190.00	.3717	.6823	.4927	.9460	.2640-01	.1906-01	2.324	15.90	574.1
87	39.600	.16810	218.00	.1142	.1916	.1582	.9311	.7414-02	.6121-02	.8041	5.562	553.5
87	39.900	.19040	233.00	.1010	.1638	.1398	.9276	.6337-02	.5408-02	.7501	5.217	543.7
87	40.100	.79500-01	177.00	.4655	.8628	.5941	.9530	.3338-01	.2298-01	2.877	19.66	575.9
87	40.200	.12440	202.00	.2447	.4360	.3311	.9405	.1687-01	.1281-01	1.587	10.89	568.0
87	40.300	.21310	245.00	.7082-01	.1130	.9838-01	.9249	.4371-02	.3807-02	.5403	3.769	538.5
84	41.100	.82200-01	142.00	.4427	.8050	.5635	.9524	.3119-01	.2183-01	2.827	19.31	576.9
87	41.100	.60700-01	173.00	.5493	1.104	.6905	.9593	.4271-01	.2671-01	3.112	21.11	589.3
87	42.300	.10270	189.00	.2290	.3920	.2944	.9466	.1517-01	.1139-01	1.567	10.81	558.8
87	42.600	.59600-01	172.00	.5411	1.054	.6720	.9600	.4079-01	.2600-01	3.164	21.53	584.5
87	43.200	.42000-01	168.00	.4789	.9198	.5712	.9663	.3559-01	.2210-01	2.844	19.37	582.2
87	43.400	.82200-01	181.00	.3599	.6508	.4561	.9528	.2518-01	.1765-01	2.292	15.70	571.1
84	43.600	.62900-01	128.00	.4003	.7217	.4895	.9591	.2796-01	.1896-01	2.583	17.66	575.1
84	45.000	.22900-01	8.0000	.6177	1.222	.7106	.9736	.4735-01	.2753-01	3.589	24.32	591.7
87	46.100	.62900-01	174.00	.4821	.8989	.5932	.9596	.3478-01	.2295-01	2.959	20.21	577.0
87	47.700	.40800-01	167.00	.5149	1.010	.6118	.9677	.3907-01	.2367-01	2.990	20.33	585.6
84	48.400	.44200-01	109.00	.4939	.9058	.5825	.9666	.3510-01	.2257-01	3.122	21.30	578.6
84	50.000	.19400-01	156.00	.8948	2.698	.9800	.9870	.1045	.3797-01	3.847	25.54	630.7
84	51.000	.12100-01	154.00	.7608	3.824	.8493	.9870	.1482	.3291-01	2.729	17.94	649.1
84	51.000	.17600-01	155.00	.9084	2.775	.9955	.9870	.1075	.3857-01	3.881	25.75	631.4
87	51.900	.44800-01	170.00	.4227	.7599	.4952	.9670	.2940-01	.1916-01	2.712	18.59	569.9
87	53.200	.24700-01	163.00	.4514	.8353	.5106	.9748	.3232-01	.1976-01	2.795	19.10	575.6
87	65.200	.24700-01	162.00	.5438	1.071	.6145	.9766	.4145-01	.2377-01	3.144	21.36	586.3
83	90.000	.91000-02	44.000	.6145	1.934	.7187	.9787	.7485-01	.2782-01	2.583	17.13	632.1
83	90.000	.11100-01	45.000	.7557	2.062	.8733	.9787	.7984-01	.3381-01	3.421	22.79	623.8
83	90.000	.13100-01	46.000	.7685	1.926	.8810	.9787	.7458-01	.3411-01	3.666	24.50	617.4
83	90.000	.17000-01	48.000	.7464	1.603	.8421	.9787	.6206-01	.3260-01	4.006	26.99	602.1
83	90.000	.20900-01	50.000	.6716	1.342	.7513	.9787	.5194-01	.2909-01	3.856	26.12	592.4
83	90.000	.24900-01	52.000	.6011	1.178	.6727	.9782	.4559-01	.2604-01	3.521	23.89	589.4
83	90.000	.26900-01	53.000	.5792	1.112	.6492	.9775	.4305-01	.2513-01	3.466	23.56	586.1
83	90.000	.28800-01	54.000	.5653	1.075	.6353	.9768	.4161-01	.2460-01	3.419	23.26	584.4
83	90.000	.32800-01	55.000	.5109	.9370	.5757	.9752	.3627-01	.2229-01	3.221	21.99	577.8
83	90.000	.36700-01	56.000	.5448	1.007	.6194	.9738	.3897-01	.2398-01	3.405	23.23	579.2
83	90.000	.40600-01	57.000	.5049	.9588	.5810	.9723	.3712-01	.2249-01	3.058	20.81	584.2
83	90.000	.48500-01	58.000	.4971	.9261	.5791	.9694	.3585-01	.2242-01	3.077	20.97	580.8
83	90.000	.56400-01	59.000	.4335	.7965	.5113	.9666	.3083-01	.1980-01	2.728	18.62	578.1
83	90.000	.76100-01	60.000	.3560	.6342	.4321	.9599	.2455-01	.1673-01	2.327	15.94	571.8
83	90.000	.95800-01	61.000	.3177	.5597	.3975	.9536	.2167-01	.1539-01	2.107	14.45	569.4
83	90.000	.11550	62.000	.2504	.4341	.3215	.9477	.1681-01	.1245-01	1.697	11.66	565.6
83	135.00	.19000-01	49.000	.7198	1.452	.8304	.9736	.5621-01	.3215-01	4.093	27.70	593.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
83	135.00	.22900-01	51.000	.6458	1.262	.7414	.9736	.4884-01	.2870-01	3.793	25.74	588.9
83	180.00	.91000-02	23.000	.3877	.7168	.4695	.9621	.2775-01	.1818-01	2.422	16.52	579.3
83	180.00	.11100-01	24.000	.5929	1.276	.7439	.9621	.4938-01	.2880-01	3.176	21.40	602.3
83	180.00	.13100-01	25.000	.6010	1.185	.7392	.9621	.4590-01	.2862-01	3.495	23.70	590.4
83	180.00	.15000-01	26.000	.5850	1.138	.7172	.9621	.4406-01	.2777-01	3.452	23.43	588.3
83	180.00	.17000-01	27.000	.6216	1.202	.7609	.9621	.4652-01	.2946-01	3.692	25.08	587.2
83	180.00	.19000-01	28.000	.6304	1.223	.7723	.9621	.4735-01	.2990-01	3.730	25.33	587.8
83	180.00	.20900-01	29.000	.6255	1.178	.7609	.9621	.4560-01	.2946-01	3.825	26.04	582.7
83	180.00	.28800-01	32.000	.5195	.9239	.6293	.9601	.3577-01	.2436-01	3.404	23.32	571.4
83	180.00	.32800-01	33.000	.4587	.7870	.5542	.9587	.3047-01	.2145-01	3.153	21.70	563.1
83	180.00	.36700-01	34.000	.4487	.7852	.5491	.9573	.3040-01	.2126-01	3.002	20.61	567.8
83	180.00	.56400-01	37.000	.3647	.6166	.4566	.9507	.2387-01	.1768-01	2.559	17.65	559.4
83	180.00	.76100-01	38.000	.2909	.4817	.3723	.9448	.1865-01	.1441-01	2.106	14.57	553.7
83	180.00	.95800-01	39.000	.2483	.4041	.3237	.9396	.1565-01	.1253-01	1.847	12.81	548.5
83	180.00	.11550	40.000	.1855	.3014	.2473	.9350	.1167-01	.9573-02	1.383	9.597	548.1
83	180.00	.18450	42.000	.8272-01	.1296	.1139	.9244	.5017-02	.4408-02	.6559	4.582	535.9
83	225.00	.22900-01	30.000	.5306	.9611	.6760	.9520	.3721-01	.2617-01	3.397	23.23	575.3
83	270.00	.91000-02	63.000	.4066	.6910	.5167	.9482	.2675-01	.2000-01	2.833	19.52	560.7
83	270.00	.11100-01	64.000	.4682	.8054	.5978	.9482	.3118-01	.2314-01	3.207	22.06	563.8
83	270.00	.13100-01	65.000	.6398	1.203	.8443	.9482	.4656-01	.3269-01	3.919	26.69	582.4
83	270.00	.17000-01	67.000	.5490	1.031	.7243	.9482	.3991-01	.2804-01	3.368	22.94	582.2
83	270.00	.20900-01	69.000	.5106	.9367	.6679	.9482	.3626-01	.2586-01	3.219	21.98	577.8
83	270.00	.24900-01	71.000	.4562	.8251	.5951	.9478	.3194-01	.2304-01	2.926	20.01	575.0
83	270.00	.28800-01	73.000	.3993	.7047	.5198	.9465	.2728-01	.2012-01	2.641	18.11	569.8
83	270.00	.36700-01	75.000	.3997	.6994	.5260	.9440	.2708-01	.2037-01	2.675	18.36	567.8
83	270.00	.48500-01	77.000	.3421	.5832	.4538	.9405	.2258-01	.1757-01	2.373	16.35	561.5
83	270.00	.56400-01	78.000	.2890	.4896	.3868	.9383	.1895-01	.1497-01	2.023	13.95	559.9
83	270.00	.95800-01	80.000	.1553	.2576	.2155	.9296	.9975-02	.8344-02	1.120	7.748	554.3
83	270.00	.11550	81.000	.1146	.1902	.1619	.9265	.7365-02	.6266-02	.8258	5.710	554.5
83	315.00	.19000-01	68.000	.5067	.8915	.6392	.9520	.3452-01	.2474-01	3.366	23.09	569.1
83	315.00	.22900-01	70.000	.5534	1.002	.7049	.9520	.3878-01	.2729-01	3.546	24.25	575.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
191	5.500	.0000	-9.014	126.6	719.7	.1361	102.1	90.00	2724.	.3599-02	.8214-07	3.709
192	5.500	.3170-02	-9.006	126.8	719.7	.1363	102.1	89.98	2724.	.3603-02	.8214-07	3.714
193	5.500	.0000	-9.010	127.3	720.7	.1368	102.2	90.00	2726.	.3612-02	.8226-07	3.720

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
191	.3014-01	.1277-01
192	.3016-01	.1276-01
193	.3022-01	.1275-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
192	.00000	.91000-02	1.0000	.4375	.7328	.5327	.9557	.2210-01	.1607-01	2.356	16.41	541.1
192	.00000	.15000-01	4.0000	.5420	.9182	.6623	.9557	.2769-01	.1997-01	2.871	19.96	544.0
192	.00000	.17000-01	5.0000	.5077	.8435	.6166	.9557	.2544-01	.1860-01	2.768	19.31	538.9
192	.00000	.19000-01	6.0000	.4891	.8154	.5946	.9557	.2459-01	.1793-01	2.653	18.49	539.8
192	.00000	.24900-01	9.0000	.4228	.6966	.5132	.9552	.2101-01	.1548-01	2.334	16.30	536.6
192	.00000	.26900-01	10.000	.4090	.6713	.4976	.9544	.2025-01	.1501-01	2.272	15.88	535.5
191	.00000	.32800-01	12.000	.4114	.7012	.5123	.9523	.2113-01	.1544-01	2.159	15.00	545.6
191	.00000	.36700-01	13.000	.3977	.6689	.4964	.9510	.2016-01	.1496-01	2.128	14.81	542.2
191	.00000	.40600-01	14.000	.4355	.7427	.5501	.9496	.2239-01	.1658-01	2.283	15.86	545.7
191	.00000	.48500-01	15.000	.3335	.5513	.4219	.9469	.1662-01	.1272-01	1.831	12.78	537.5
191	.00000	.56400-01	16.000	.2829	.4622	.3608	.9443	.1393-01	.1087-01	1.581	11.06	534.2
191	.00000	.76100-01	17.000	.1793	.2856	.2329	.9382	.8608-02	.7020-02	1.046	7.343	526.2
191	.00000	.11550	19.000	.1205	.1926	.1655	.9274	.5806-02	.4989-02	.6988	4.905	527.3
191	.00000	.16480	20.000	.6234-01	.1009	.9129-01	.9171	.3042-02	.2752-02	.3536	2.477	531.5
191	.00000	.21400	22.000	.4193-01	.6282-01	.5958-01	.9109	.1893-02	.1796-02	.2735	1.946	503.3
193	2.0000	.24700-01	165.00	.3322	.5280	.3974	.9558	.1596-01	.1201-01	1.952	13.71	526.3
192	9.0000	.15000-01	157.00	.4691	.7781	.5631	.9580	.2347-01	.1698-01	2.564	17.89	538.4
192	9.0000	.17600-01	158.00	.4543	.7360	.5413	.9580	.2220-01	.1633-01	2.576	18.04	531.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
193	9.8000	.24700-01	164.00	.3462	.5461	.4094	.9578	.1650-01	.1237-01	2.060	14.49	523.8
192	10.000	.22900-01	88.000	.3720	.6021	.4426	.9583	.1816-01	.1335-01	2.113	14.80	531.3
192	10.000	.26900-01	90.000	.3542	.5662	.4221	.9571	.1708-01	.1273-01	2.053	14.41	527.5
192	10.000	.34700-01	94.000	.3971	.6269	.4770	.9543	.1891-01	.1439-01	2.351	16.54	523.3
192	12.000	.17600-01	152.00	.8729	1.715	.9525	.9830	.5171-01	.2873-01	3.860	26.42	573.1
192	12.000	.12100-01	151.00	.8894	2.409	.9963	.9830	.7265-01	.3005-01	3.060	20.58	605.6
192	13.000	.19400-01	153.00	.7602	1.425	.8247	.9832	.4298-01	.2487-01	3.536	24.30	565.4
193	14.600	.44200-01	169.00	.3433	.5422	.4163	.9522	.1639-01	.1258-01	2.038	14.33	524.2
192	18.500	.44200-01	106.00	.3578	.5772	.4353	.9532	.1741-01	.1313-01	2.043	14.32	530.3
193	19.600	.62900-01	175.00	.3851	.6195	.4813	.9472	.1872-01	.1455-01	2.216	15.53	530.3
192	19.800	.40800-01	101.00	.4732	.7813	.5762	.9547	.2356-01	.1738-01	2.605	18.18	537.2
192	20.000	.24900-01	89.000	.3012	.4746	.3522	.9604	.1431-01	.1062-01	1.790	12.60	522.7
192	20.000	.28800-01	91.000	.3474	.5556	.4105	.9590	.1676-01	.1238-01	2.012	14.12	527.6
192	20.000	.32800-01	93.000	.4387	.7290	.5280	.9575	.2199-01	.1592-01	2.391	16.68	538.9
192	22.200	.62900-01	125.00	.4227	.7029	.5337	.9478	.2120-01	.1609-01	2.301	16.04	539.2
192	22.400	.44200-01	107.00	.3282	.5225	.3957	.9541	.1576-01	.1193-01	1.916	13.46	526.1
193	22.600	.10270	192.00	.2345	.3795	.3107	.9358	.1147-01	.9389-02	1.336	9.352	532.1
192	23.000	.42000-01	105.00	.4097	.6724	.4970	.9551	.2028-01	.1499-01	2.277	15.91	535.4
192	23.400	.59600-01	120.00	.4712	.7916	.5932	.9492	.2387-01	.1789-01	2.527	17.60	541.8
193	23.900	.21310	250.00	.6062-01	.9175-01	.8597-01	.9131	.2773-02	.2598-02	.3892	2.761	508.3
192	24.100	.82200-01	.139.00	.3637	.6117	.4751	.9422	.1845-01	.1433-01	1.948	13.56	542.1
193	24.400	.19040	238.00	.9609-01	.1490	.1367	.9164	.4504-02	.4131-02	.5892	4.158	517.8
193	24.400	.12440	207.00	.1907	.3164	.2636	.9304	.9562-02	.7967-02	1.046	7.291	539.2
193	24.800	.16810	223.00	.1127	.1823	.1618	.9205	.5508-02	.4890-02	.6432	4.503	531.8
192	24.900	.62900-01	126.00	.4066	.6715	.5103	.9485	.2025-01	.1539-01	2.237	15.62	537.2
193	25.000	.79500-01	178.00	.4370	.7246	.5641	.9432	.2190-01	.1705-01	2.398	16.73	539.1
193	25.300	.10270	191.00	.2728	.4445	.3616	.9364	.1343-01	.1093-01	1.538	10.75	534.1
193	25.300	.10000+00	186.00	.3329	.5541	.4443	.9372	.1675-01	.1343-01	1.816	12.66	540.2
192	25.500	.60700-01	124.00	.4741	.8031	.5982	.9494	.2422-01	.1804-01	2.512	17.47	544.0
193	26.000	.12440	206.00	.2120	.3519	.2926	.9307	.1063-01	.8843-02	1.162	8.099	539.4
192	26.300	.82200-01	140.00	.4077	.6750	.5274	.9427	.2036-01	.1590-01	2.235	15.59	537.9
193	26.700	.12100	199.00	.2672	.4536	.3714	.9317	.1371-01	.1122-01	1.416	9.839	545.3
193	26.800	.16810	222.00	.1335	.2153	.1910	.9208	.6507-02	.5772-02	.7660	5.366	530.9
193	27.000	.19040	237.00	.1139	.1763	.1615	.9167	.5330-02	.4881-02	.7007	4.947	517.1
193	27.100	.21310	249.00	.8508-01	.1284	.1202	.9134	.3882-02	.3633-02	.5489	3.897	507.2
193	27.200	.80300-01	180.00	.4536	.7631	.5884	.9435	.2306-01	.1778-01	2.437	16.96	543.0
192	27.400	.40100-01	98.000	.4992	.8360	.6044	.9568	.2521-01	.1823-01	2.689	18.73	541.0
193	27.400	.16480	215.00	.1522	.2497	.2193	.9216	.7546-02	.6629-02	.8485	5.927	536.1
192	27.600	.41600-01	102.00	.4384	.7380	.5329	.9563	.2226-01	.1607-01	2.344	16.32	542.4
193	27.600	.12440	205.00	.2347	.3876	.3224	.9310	.1172-01	.9745-02	1.295	9.039	538.0
193	27.600	.18700	230.00	.1299	.2030	.1849	.9174	.6136-02	.5588-02	.7851	5.531	520.7
193	27.700	.21010	243.00	.1125	.1717	.1600	.9139	.5191-02	.4837-02	.7098	5.025	511.9
193	27.900	.10110	188.00	.3017	.4961	.3997	.9375	.1500-01	.1208-01	1.677	11.71	536.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
192	28.000	.46800-01	110.00	.2396	.3686	.2848	.9546	.1112-01	.8591-02	1.487	10.52	513.9
193	28.200	.16810	221.00	.1357	.2192	.1941	.9210	.6626-02	.5866-02	.7756	5.431	531.5
193	28.300	.19040	236.00	.1046	.1606	.1473	.9169	.4854-02	.4450-02	.6531	4.618	514.0
193	28.300	.12200	201.00	.2809	.4718	.3880	.9318	.1426-01	.1173-01	1.512	10.53	542.5
192	28.400	.53500-01	114.00	.3947	.6509	.4856	.9525	.1963-01	.1464-01	2.177	15.20	536.8
193	28.400	.21310	248.00	.8743-01	.1314	.1230	.9136	.3972-02	.3719-02	.5688	4.042	505.4
192	28.700	.58600-01	117.00	.4863	.8169	.6072	.9508	.2464-01	.1831-01	2.608	18.16	541.8
193	28.800	.16580	217.00	.1485	.2427	.2135	.9216	.7336-02	.6451-02	.8329	5.821	535.1
192	28.800	.60400-01	121.00	.4841	.8353	.6121	.9502	.2519-01	.1846-01	2.499	17.34	548.5
193	29.000	.21110	244.00	.9839-01	.1489	.1390	.9139	.4499-02	.4200-02	.6320	4.484	508.1
192	29.000	.65700-01	129.00	.2857	.4476	.3510	.9486	.1350-01	.1059-01	1.715	12.08	520.7
192	29.200	.72400-01	133.00	.4688	.7950	.6008	.9464	.2398-01	.1812-01	2.480	17.25	544.3
192	29.300	.79500-01	136.00	.4278	.7541	.5639	.9442	.2274-01	.1701-01	2.146	14.85	553.3
192	29.600	.92500-01	143.00	.3713	.6277	.4909	.9403	.1893-01	.1481-01	1.973	13.72	543.5
192	29.700	.10000+00	146.00	.3028	.5297	.4119	.9382	.1598-01	.1242-01	1.534	10.62	551.7
193	29.900	.12100	198.00	.2693	.4654	.3765	.9324	.1406-01	.1138-01	1.392	9.649	549.7
193	30.200	.16480	214.00	.1362	.2248	.1966	.9220	.6795-02	.5943-02	.7527	5.253	537.8
193	30.300	.21010	242.00	.9815-01	.1506	.1400	.9142	.4550-02	.4230-02	.6141	4.343	513.7
192	31.500	.11100-01	83.000	.7140	1.336	.8592	.9637	.4028-01	.2591-01	3.330	22.89	565.0
192	31.500	.14200-01	84.000	1.120	2.735	1.213	.9870	.8248-01	.3658-01	4.115	27.80	597.8
192	31.500	.16000-01	85.000	1.071	2.322	1.151	.9870	.7002-01	.3472-01	4.313	29.31	586.1
192	31.500	.19400-01	87.000	.7468	1.385	.7945	.9870	.4178-01	.2396-01	3.517	24.20	563.5
193	32.100	.21010	241.00	.1093	.1696	.1572	.9144	.5126-02	.4750-02	.6701	4.728	517.9
193	32.200	.16480	213.00	.1404	.2351	.2043	.9224	.7107-02	.6174-02	.7585	5.282	541.9
193	32.200	.17860	224.00	.1339	.2101	.1890	.9196	.6351-02	.5713-02	.8034	5.655	522.1
193	32.200	.18700	228.00	.1830	.2942	.2651	.9180	.8891-02	.8013-02	1.055	7.397	529.9
193	32.300	.12100	197.00	.2994	.5250	.4208	.9329	.1587-01	.1272-01	1.517	10.50	553.0
193	32.300	.12300	194.00	.2600	.4583	.3676	.9323	.1385-01	.1111-01	1.309	9.052	554.1
193	32.300	.12730	208.00	.1811	.2940	.2461	.9312	.8886-02	.7438-02	1.027	7.184	533.1
193	32.300	.13420	209.00	.1814	.3093	.2561	.9295	.9349-02	.7741-02	.9550	6.633	546.5
192	32.400	.10000+00	147.00	.3446	.6418	.4810	.9388	.1936-01	.1451-01	1.615	11.10	564.3
193	32.400	.10110	184.00	.3392	.5975	.4622	.9384	.1806-01	.1397-01	1.709	11.82	554.0
193	32.400	.10630	193.00	.2047	.3207	.2652	.9369	.9693-02	.8015-02	1.233	8.680	521.4
193	32.500	.85800-01	183.00	.2543	.4002	.3210	.9430	.1210-01	.9702-02	1.519	10.69	523.0
192	32.600	.79500-01	137.00	.5575	1.059	.7541	.9450	.3195-01	.2274-01	2.554	17.53	567.8
193	32.600	.80800-01	176.00	.5979	1.117	.8051	.9446	.3375-01	.2433-01	2.803	19.27	565.5
192	32.700	.67400-01	132.00	.3403	.5538	.4239	.9489	.1670-01	.1278-01	1.916	13.40	533.0
192	32.700	.72400-01	134.00	.3972	.6620	.5034	.9473	.1996-01	.1518-01	2.156	15.03	539.7
192	32.800	.65700-01	130.00	.3373	.5302	.4133	.9494	.1599-01	.1247-01	2.013	14.17	521.8
193	32.800	.16680	210.00	.1415	.2341	.2046	.9220	.7074-02	.6183-02	.7796	5.438	538.4
193	32.800	.18880	225.00	.1352	.2087	.1903	.9178	.6308-02	.5751-02	.8358	5.903	516.1
192	32.900	.58600-01	118.00	.4233	.7151	.5269	.9518	.2157-01	.1589-01	2.251	15.66	543.3
192	32.900	.60400-01	122.00	.5370	.9632	.6848	.9512	.2905-01	.2065-01	2.634	18.18	557.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
193	32.900	.61300-01	171.00	.4785	.8158	.6003	.9509	.2466-01	.1814-01	2.521	17.51	546.4
192	33.000	.53500-01	115.00	.3424	.5549	.4165	.9535	.1674-01	.1256-01	1.940	13.58	531.8
192	33.200	.48300-01	113.00	.2462	.3797	.2920	.9554	.1145-01	.8808-02	1.520	10.74	515.0
193	33.400	.42800-01	166.00	.3985	.6595	.4795	.9573	.1993-01	.1449-01	2.193	15.30	538.6
192	33.500	.40100-01	99.000	.4508	.7497	.5408	.9583	.2261-01	.1631-01	2.454	17.11	539.1
192	33.600	.38300-01	97.000	.4855	.8006	.5791	.9589	.2415-01	.1747-01	2.677	18.69	536.8
192	33.700	.36700-01	96.000	.5057	.8415	.6031	.9595	.2538-01	.1819-01	2.750	19.18	539.3
192	33.900	.33800-01	95.000	.5077	.8420	.6019	.9606	.2540-01	.1815-01	2.775	19.36	538.4
193	34.700	.21010	240.00	.1518	.2374	.2193	.9146	.7176-02	.6629-02	.9173	6.462	520.8
193	34.700	.18700	227.00	.1272	.2034	.1832	.9184	.6148-02	.5537-02	.7390	5.184	528.4
193	34.900	.16480	212.00	.1731	.2940	.2536	.9228	.8887-02	.7666-02	.9169	6.371	545.4
192	35.100	.10000+00	148.00	.3736	.7139	.5256	.9393	.2153-01	.1585-01	1.701	11.67	568.7
193	35.200	.23900-01	161.00	.2498	.3754	.2835	.9644	.1134-01	.8570-02	1.627	11.56	505.2
192	35.300	.92500-01	145.00	.3331	.5673	.4390	.9416	.1711-01	.1324-01	1.751	12.17	545.4
192	35.300	.22100-01	160.00	.2296	.3489	.2613	.9646	.1052-01	.7880-02	1.457	10.33	509.2
193	35.400	.18800	231.00	.1794	.2859	.2579	.9183	.8642-02	.7795-02	1.048	7.360	527.3
193	35.500	.12100	196.00	.2966	.5310	.4198	.9335	.1605-01	.1269-01	1.463	10.10	557.5
193	35.600	.16580	216.00	.1715	.2889	.2501	.9227	.8732-02	.7558-02	.9194	6.397	543.3
192	35.800	.80600-01	138.00	.5997	1.179	.8199	.9453	.3556-01	.2473-01	2.649	18.13	573.2
193	35.900	.21310	247.00	.1250	.1901	.1769	.9143	.5746-02	.5346-02	.7950	5.634	510.2
193	36.000	.19040	235.00	.1582	.2481	.2251	.9180	.7498-02	.6804-02	.9516	6.701	521.7
193	36.200	.16810	220.00	.1637	.2685	.2350	.9223	.8116-02	.7102-02	.9136	6.382	536.0
192	36.200	.72400-01	135.00	.3786	.6331	.4786	.9480	.1909-01	.1443-01	2.044	14.24	540.6
193	36.300	.12200	200.00	.3117	.5658	.4447	.9334	.1710-01	.1344-01	1.511	10.42	560.2
192	36.600	.65700-01	131.00	.3677	.5948	.4538	.9503	.1794-01	.1369-01	2.090	14.64	531.2
193	36.700	.18700	226.00	.1392	.2181	.1972	.9187	.6591-02	.5961-02	.8391	5.909	521.3
193	36.900	.16480	211.00	.1412	.2327	.2024	.9231	.7034-02	.6118-02	.7824	5.462	537.4
193	36.900	.10110	187.00	.3646	.6512	.4972	.9394	.1968-01	.1503-01	1.804	12.46	556.9
192	37.000	.60400-01	123.00	.5575	1.046	.7181	.9521	.3155-01	.2166-01	2.590	17.80	565.6
193	37.000	.12440	204.00	.2959	.5234	.4178	.9329	.1582-01	.1263-01	1.483	10.25	554.8
192	37.100	.58600-01	119.00	.4053	.6805	.5010	.9528	.2052-01	.1511-01	2.175	15.14	541.7
193	37.200	.21310	246.00	.1116	.1681	.1566	.9145	.5081-02	.4734-02	.7224	5.130	506.4
193	37.600	.16810	219.00	.1337	.2161	.1898	.9225	.6532-02	.5736-02	.7641	5.351	531.6
192	37.800	.10270	150.00	.3217	.5661	.4365	.9391	.1707-01	.1316-01	1.617	11.19	553.0
193	37.900	.12100	195.00	.1986	.3264	.2678	.9340	.9865-02	.8095-02	1.105	7.713	536.6
193	38.000	.80300-01	179.00	.5291	.9274	.6892	.9459	.2803-01	.2083-01	2.684	18.57	552.8
192	38.500	.46800-01	112.00	.2942	.4632	.3489	.9571	.1397-01	.1052-01	1.751	12.32	522.4
193	38.600	.12440	203.00	.2742	.4691	.3795	.9332	.1418-01	.1147-01	1.438	9.982	547.2
193	38.700	.10000+00	185.00	.3209	.5431	.4251	.9401	.1642-01	.1285-01	1.708	11.88	544.5
192	38.900	.82200-01	141.00	.5044	.8932	.6612	.9455	.2694-01	.1994-01	2.514	17.39	554.4
192	39.300	.41600-01	104.00	.4389	.7490	.5285	.9590	.2259-01	.1594-01	2.301	15.99	545.8
193	39.500	.10270	190.00	.3268	.5534	.4345	.9394	.1672-01	.1313-01	1.739	12.09	544.7
193	39.600	.16810	218.00	.9805-01	.1570	.1380	.9228	.4744-02	.4172-02	.5689	3.991	528.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
193	39.900	.19040	233.00	.8276-01	.1260	.1149	.9185	.3808-02	.3473-02	.5252	3.721	510.7
193	40.100	.79500-01	177.00	.4280	.7116	.5437	.9466	.2151-01	.1643-01	2.339	16.31	539.8
193	40.200	.12440	202.00	.2269	.3811	.3104	.9335	.1152-01	.9382-02	1.221	8.499	542.6
193	40.300	.21310	245.00	.5536-01	.8207-01	.7660-01	.9148	.2481-02	.2315-02	.3705	2.642	499.2
192	41.100	.82200-01	142.00	.4698	.8242	.6120	.9460	.2486-01	.1846-01	2.371	16.41	552.3
193	41.100	.60700-01	173.00	.5064	.8736	.6313	.9529	.2640-01	.1908-01	2.624	18.20	549.2
193	42.600	.59600-01	172.00	.3794	.6167	.4618	.9536	.1864-01	.1396-01	2.148	15.02	533.4
193	43.200	.42000-01	168.00	.4247	.6945	.5034	.9597	.2099-01	.1521-01	2.381	16.64	535.2
193	43.400	.82200-01	181.00	.3042	.4895	.3816	.9464	.1480-01	.1153-01	1.749	12.26	530.4
192	43.600	.62900-01	128.00	.4076	.6923	.5060	.9527	.2088-01	.1526-01	2.151	14.95	544.7
192	45.000	.22900-01	8.0000	.6113	1.066	.7127	.9666	.3214-01	.2149-01	3.112	21.56	550.9
193	46.100	.62900-01	174.00	.4229	.7006	.5192	.9532	.2117-01	.1569-01	2.324	16.21	538.9
193	47.700	.40800-01	167.00	.4706	.7720	.5549	.9611	.2333-01	.1677-01	2.625	18.34	536.1
192	48.400	.44200-01	109.00	.4364	.7253	.5191	.9600	.2187-01	.1566-01	2.378	16.58	539.0
192	50.000	.19400-01	156.00	.8684	1.729	.9285	.9870	.5216-01	.2800-01	3.786	25.88	575.1
192	51.000	.12100-01	154.00	.8949	2.345	.9731	.9870	.7073-01	.2935-01	3.141	21.15	603.3
192	51.000	.17600-01	155.00	.8231	1.662	.8809	.9870	.5012-01	.2657-01	3.540	24.18	577.1
193	51.900	.44800-01	170.00	.3694	.5906	.4337	.9604	.1785-01	.1311-01	2.148	15.07	528.2
193	53.200	.24700-01	163.00	.4124	.6510	.4676	.9678	.1968-01	.1413-01	2.451	17.23	524.0
193	65.200	.24700-01	162.00	.5128	.8369	.5814	.9696	.2529-01	.1757-01	2.885	20.17	534.5
191	90.000	.91000-02	44.000	.5918	1.258	.6970	.9715	.3792-01	.2101-01	2.424	16.50	583.8
191	90.000	.11100-01	45.000	.7585	1.494	.8823	.9715	.4503-01	.2659-01	3.342	22.87	573.5
191	90.000	.13100-01	46.000	.7735	1.507	.8981	.9715	.4542-01	.2707-01	3.447	23.61	571.8
191	90.000	.17000-01	48.000	.6787	1.240	.7792	.9715	.3739-01	.2349-01	3.251	22.40	560.8
191	90.000	.20900-01	50.000	.6380	1.113	.7263	.9715	.3355-01	.2189-01	3.243	22.46	551.0
191	90.000	.24900-01	52.000	.3841	.6496	.4357	.9710	.1958-01	.1313-01	2.039	14.18	543.6
191	90.000	.26900-01	53.000	.5490	.9343	.6256	.9703	.2816-01	.1886-01	2.887	20.07	545.2
191	90.000	.28800-01	54.000	.5358	.9048	.6115	.9696	.2727-01	.1843-01	2.849	19.82	543.2
191	90.000	.32800-01	55.000	.3888	.6171	.4406	.9682	.1860-01	.1328-01	2.279	16.02	525.2
191	90.000	.36700-01	56.000	.5058	.8362	.5820	.9668	.2520-01	.1754-01	2.776	19.38	537.6
191	90.000	.40600-01	57.000	.4670	.7889	.5436	.9655	.2378-01	.1638-01	2.483	17.27	543.3
191	90.000	.48500-01	58.000	.3586	.6064	.4230	.9627	.1828-01	.1275-01	1.903	13.24	543.6
191	90.000	.56400-01	59.000	.3786	.6438	.4532	.9600	.1940-01	.1366-01	1.994	13.86	545.0
191	90.000	.76100-01	60.000	.3175	.5523	.3958	.9534	.1665-01	.1193-01	1.620	11.22	550.4
191	90.000	.95800-01	61.000	.2280	.4030	.2959	.9471	.1215-01	.8919-02	1.139	7.877	553.9
191	90.000	.11550	62.000	.2158	.3791	.2890	.9412	.1143-01	.8711-02	1.086	7.518	552.7
191	135.00	.19000-01	49.000	.6676	1.183	.7810	.9667	.3565-01	.2354-01	3.324	22.98	554.5
191	135.00	.22900-01	51.000	.5894	1.013	.6849	.9667	.3052-01	.2064-01	3.059	21.23	547.5
191	180.00	.91000-02	23.000	.3532	.5799	.4272	.9557	.1748-01	.1288-01	1.959	13.69	535.6
191	180.00	.11100-01	24.000	.5930	1.128	.7510	.9557	.3401-01	.2264-01	2.711	18.61	568.0
191	180.00	.13100-01	25.000	.6360	1.148	.7928	.9557	.3460-01	.2390-01	3.093	21.34	558.3
191	180.00	.15000-01	26.000	.6629	1.185	.8239	.9557	.3572-01	.2483-01	3.263	22.54	556.3
191	180.00	.17000-01	27.000	.6231	1.106	.7727	.9557	.3335-01	.2329-01	3.094	21.39	554.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K017)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
191	180.00	.19000-01	28.000	.6122	1.084	.7586	.9557	.3267-01	.2287-01	3.052	21.10	554.3
191	180.00	.20900-01	29.000	.5952	1.029	.7321	.9557	.3102-01	.2207-01	3.062	21.24	549.0
191	180.00	.28800-01	32.000	.4775	.7958	.5858	.9538	.2398-01	.1766-01	2.590	18.05	539.7
191	180.00	.32800-01	33.000	.4132	.6736	.5065	.9523	.2030-01	.1527-01	2.318	16.21	533.5
191	180.00	.36700-01	34.000	.4243	.7026	.5266	.9510	.2118-01	.1587-01	2.324	16.22	538.0
191	180.00	.48500-01	36.000	.3503	.5735	.4415	.9469	.1729-01	.1331-01	1.953	13.65	534.7
191	180.00	.56400-01	37.000	.3263	.5307	.4153	.9443	.1600-01	.1252-01	1.837	12.86	532.8
191	180.00	.76100-01	38.000	.2476	.3976	.3229	.9382	.1198-01	.9734-02	1.424	9.986	528.9
191	180.00	.95800-01	39.000	.1940	.3097	.2594	.9325	.9334-02	.7818-02	1.127	7.913	527.0
191	180.00	.11550	40.000	.1462	.2343	.2011	.9274	.7063-02	.6062-02	.8428	5.912	528.4
191	180.00	.18450	42.000	.5570-01	.8618-01	.8003-01	.9140	.2598-02	.2412-02	.3415	2.412	516.2
191	225.00	.22900-01	30.000	.5032	.8570	.6188	.9456	.2583-01	.1956-01	2.644	18.37	545.4
191	270.00	.91000-02	63.000	.3016	.4741	.3827	.9418	.1429-01	.1153-01	1.799	12.67	521.8
191	270.00	.11100-01	64.000	.3092	.4887	.3933	.9418	.1473-01	.1185-01	1.826	12.84	523.7
191	270.00	.13100-01	65.000	.4014	.6489	.5159	.9418	.1956-01	.1555-01	2.282	15.99	531.0
191	270.00	.17000-01	67.000	.6807	1.246	.9249	.9418	.3755-01	.2788-01	3.255	22.43	561.0
191	270.00	.20900-01	69.000	.5597	.9903	.7494	.9418	.2985-01	.2259-01	2.792	19.31	554.2
191	270.00	.24900-01	71.000	.4645	.8107	.6198	.9413	.2444-01	.1868-01	2.359	16.34	551.2
191	270.00	.28800-01	73.000	.4265	.7279	.5676	.9400	.2194-01	.1711-01	2.234	15.52	545.9
191	270.00	.36700-01	75.000	.3570	.6010	.4789	.9373	.1812-01	.1444-01	1.907	13.27	542.5
191	270.00	.48500-01	77.000	.2808	.4630	.3803	.9335	.1396-01	.1146-01	1.548	10.81	536.8
191	270.00	.56400-01	78.000	.2675	.4388	.3658	.9311	.1323-01	.1103-01	1.486	10.38	535.4
191	270.00	.95800-01	80.000	.1123	.1859	.1634	.9210	.5602-02	.4924-02	.6159	4.298	537.8
191	270.00	.11550	81.000	.8504-01	.1412	.1269	.9171	.4255-02	.3824-02	.4640	3.237	538.6
191	315.00	.19000-01	68.000	.4777	.8089	.6145	.9456	.2438-01	.1852-01	2.531	17.61	543.9
191	315.00	.22900-01	70.000	.5624	.9819	.7325	.9456	.2959-01	.2208-01	2.855	19.78	551.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K018)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
134	4.020	.0000	-11.03	64.89	734.7	.4161	173.6	90.00	2596.	.6470-02	.1397-06	3.738
135	4.020	.0000	-11.03	64.83	734.7	.4158	173.6	90.00	2596.	.6464-02	.1397-06	3.734
136	4.020	.0000	-11.03	64.89	735.7	.4161	173.8	90.00	2598.	.6461-02	.1399-06	3.730

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
134	.3865-01	.9546-02
135	.3863-01	.9550-02
136	.3865-01	.9554-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
135	.00000	.91000-02	1.0000	.5300	1.122	.6647	.9616	.4333-01	.2568-01	2.851	19.28	595.4
135	.00000	.15000-01	4.0000	.5518	1.078	.6792	.9616	.4164-01	.2624-01	3.208	21.83	584.2
135	.00000	.17000-01	5.0000	.5230	.9877	.6384	.9616	.3815-01	.2466-01	3.155	21.53	578.5
135	.00000	.19000-01	6.0000	.5030	.9392	.6122	.9616	.3628-01	.2365-01	3.074	21.00	576.5
135	.00000	.24900-01	9.0000	.4469	.8117	.5416	.9611	.3135-01	.2092-01	2.823	19.34	571.2
135	.00000	.26900-01	10.000	.4617	.8409	.5621	.9604	.3248-01	.2171-01	2.905	19.90	571.7
134	.00000	.32800-01	12.000	.4447	.7972	.5454	.9583	.3081-01	.2108-01	2.855	19.59	568.5
134	.00000	.36700-01	13.000	.4634	.8208	.5704	.9569	.3172-01	.2204-01	3.021	20.76	566.0.
134	.00000	.40600-01	14.000	.4715	.8474	.5873	.9556	.3275-01	.2270-01	3.018	20.70	569.0
134	.00000	.48500-01	15.000	.2917	.4908	.3605	.9529	.1897-01	.1393-01	2.041	14.12	553.6
134	.00000	.56400-01	16.000	.2797	.4687	.3496	.9504	.1811-01	.1351-01	1.968	13.62	552.5
134	.00000	.76100-01	17.000	.2213	.3623	.2822	.9446	.1400-01	.1091-01	1.615	11.22	545.9
134	.00000	.95800-01	18.000	.2115	.3367	.2730	.9394	.1301-01	.1055-01	1.614	11.27	537.1
134	.00000	.11550	19.000	.1610	.2608	.2145	.9349	.1008-01	.8289-02	1.195	8.320	542.6
134	.00000	.16480	20.000	.9700-01	.1563	.1345	.9265	.6040-02	.5198-02	.7258	5.056	541.0
134	.00000	.21400	22.000	.5917-01	.8949-01	.8027-01	.9224	.3458-02	.3102-02	.4959	3.499	517.8
136	2.0000	.24700-01	165.00	.3363	.5885	.4021	.9618	.2275-01	.1554-01	2.231	15.35	564.0
135	9.0000	.15000-01	157.00	.5135	.9778	.6175	.9645	.3777-01	.2385-01	3.068	20.92	580.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K018)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
135	9.0000	.17600-01	158.00	.4735	.8518	.5620	.9645	.3290-01	.2171-01	3.025	20.75	569.3
136	9.8000	.24700-01	164.00	.3601	.6229	.4238	.9644	.2408-01	.1638-01	2.427	16.72	561.3
135	10.000	.22900-01	88.000	.3918	.6910	.4621	.9649	.2669-01	.1785-01	2.568	17.65	565.0
135	10.000	.26900-01	90.000	.4105	.7154	.4858	.9636	.2763-01	.1876-01	2.733	18.82	562.3
135	10.000	.34700-01	94.000	.4677	.8444	.5668	.9608	.3261-01	.2189-01	2.976	20.40	570.0
135	12.000	.17600-01	152.00	.8239	2.580	.9039	.9870	.9965-01	.3492-01	3.435	22.85	626.7
135	12.000	.12100-01	151.00	.7006	4.376	.7865	.9870	.1690	.3038-01	2.367	15.58	647.2
135	13.000	.19400-01	153.00	.7355	2.107	.8035	.9870	.8138-01	.3104-01	3.207	21.39	621.8
136	14.600	.44200-01	169.00	.3724	.6420	.4499	.9590	.2482-01	.1739-01	2.522	17.38	560.5
135	18.500	.44200-01	106.00	.3806	.6679	.4592	.9602	.2580-01	.1774-01	2.511	17.27	563.9
136	19.600	.62900-01	175.00	.3745	.6553	.4656	.9543	.2533-01	.1800-01	2.485	17.10	564.0
135	19.800	.40800-01	101.00	.4702	.8527	.5674	.9618	.3294-01	.2192-01	2.975	20.39	570.9
135	20.000	.24900-01	89.000	.3535	.6006	.4077	.9677	.2320-01	.1575-01	2.438	16.84	556.1
135	20.000	.28800-01	91.000	.4149	.7331	.4862	.9662	.2832-01	.1878-01	2.712	18.64	565.4
135	20.000	.32800-01	93.000	.4606	.8624	.5511	.9647	.3331-01	.2129-01	2.805	19.16	577.0
135	22.200	.62900-01	125.00	.4157	.7560	.5210	.9551	.2920-01	.2012-01	2.621	17.95	571.5
135	22.400	.44200-01	107.00	.3759	.6580	.4503	.9615	.2542-01	.1739-01	2.488	17.12	563.3
136	22.600	.10270	192.00	.3060	.5326	.4028	.9435	.2059-01	.1557-01	2.045	14.07	562.8
135	23.000	.42000-01	105.00	.4480	.8135	.5390	.9624	.3142-01	.2082-01	2.830	19.39	571.1
135	23.400	.59600-01	120.00	.4824	.8920	.6026	.9565	.3446-01	.2328-01	2.981	20.38	574.7
136	23.900	.21310	250.00	.8063-01	.1271	.1116	.9241	.4914-02	.4314-02	.6269	4.383	534.5
135	24.100	.82200-01	139.00	.4394	.8025	.5689	.9497	.3100-01	.2198-01	2.756	18.87	572.3
136	24.400	.19040	238.00	.1362	.2192	.1886	.9266	.8474-02	.7291-02	1.023	7.125	541.4
136	24.400	.12440	207.00	.2649	.4690	.3615	.9386	.1813-01	.1398-01	1.731	11.89	566.6
136	24.800	.16810	223.00	.1667	.2817	.2335	.9299	.1089-01	.9026-02	1.161	8.021	555.5
135	24.900	.62900-01	126.00	.4118	.7382	.5115	.9559	.2851-01	.1976-01	2.644	18.14	568.5
136	25.000	.79500-01	178.00	.5217	.9811	.6781	.9508	.3792-01	.2621-01	3.169	21.63	578.5
136	25.300	.10270	191.00	.3051	.5286	.3992	.9442	.2043-01	.1543-01	2.052	14.13	561.7
136	25.300	.10000+00	186.00	.3997	.7426	.5359	.9450	.2871-01	.2071-01	2.461	16.81	576.4
135	25.500	.60700-01	124.00	.4667	.8697	.5834	.9568	.3359-01	.2254-01	2.858	19.53	576.1
136	26.000	.12440	206.00	.2731	.4825	.3715	.9389	.1865-01	.1436-01	1.789	12.29	566.2
135	26.300	.82200-01	140.00	.4252	.7440	.5402	.9503	.2874-01	.2087-01	2.816	19.38	563.2
136	26.700	.12100	199.00	.3478	.6380	.4786	.9399	.2466-01	.1850-01	2.174	14.87	574.0
136	26.800	.16810	222.00	.2007	.3364	.2793	.9303	.1300-01	.1079-01	1.416	9.795	553.2
136	27.000	.19040	237.00	.1606	.2573	.2213	.9270	.9944-02	.8556-02	1.216	8.476	539.8
136	27.100	.21310	249.00	.1176	.1853	.1625	.9244	.7163-02	.6280-02	.9155	6.401	534.3
136	27.200	.80300-01	180.00	.5222	.9861	.6781	.9511	.3812-01	.2621-01	3.157	21.53	579.3
135	27.400	.40100-01	98.000	.5056	.9745	.6098	.9645	.3764-01	.2356-01	2.981	20.31	582.0
136	27.400	.16480	215.00	.2454	.4257	.3469	.9309	.1646-01	.1341-01	1.648	11.35	561.9
135	27.600	.41600-01	102.00	.4964	.9667	.6018	.9640	.3734-01	.2325-01	2.896	19.71	583.7
136	27.600	.12440	205.00	.2666	.4634	.3592	.9393	.1791-01	.1388-01	1.785	12.29	562.4
136	27.600	.18700	230.00	.2222	.3609	.3080	.9275	.1395-01	.1191-01	1.645	11.44	544.2
136	27.700	.21010	243.00	.1609	.2602	.2257	.9248	.1006-01	.8724-02	1.198	8.336	543.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K018)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
136	27.900	.10110	188.00	.3267	.5707	.4264	.9453	.2206-01	.1648-01	2.174	14.95	563.6
135	28.000	.46800-01	110.00	.3704	.6176	.4362	.9623	.2386-01	.1685-01	2.626	18.19	551.1
136	28.200	.16810	221.00	.2262	.3806	.3150	.9305	.1471-01	.1218-01	1.585	10.96	554.3
136	28.300	.19040	236.00	.1421	.2247	.1941	.9271	.8686-02	.7502-02	1.099	7.677	535.6
136	28.300	.12200	201.00	.3741	.6866	.5144	.9401	.2654-01	.1989-01	2.337	15.99	574.0
135	28.400	.53500-01	114.00	.5709	1.097	.7061	.9601	.4239-01	.2727-01	3.377	23.01	581.5
136	28.400	.21310	248.00	.1214	.1896	.1666	.9245	.7329-02	.6441-02	.9594	6.720	531.2
135	28.700	.58600-01	117.00	.5667	1.078	.7057	.9585	.4164-01	.2726-01	3.391	23.13	579.8
136	28.800	.16580	217.00	.2333	.4016	.3282	.9310	.1552-01	.1269-01	1.583	10.91	560.2
135	28.800	.60400-01	121.00	.4904	.9537	.6165	.9579	.3684-01	.2381-01	2.865	19.50	583.4
136	29.000	.21110	244.00	.1292	.2049	.1789	.9248	.7920-02	.6916-02	.9947	6.947	536.5
135	29.000	.65700-01	129.00	.3345	.5531	.4044	.9562	.2136-01	.1562-01	2.401	16.65	548.8
135	29.200	.72400-01	133.00	.5619	1.060	.7161	.9541	.4093-01	.2766-01	3.394	23.16	578.3
135	29.300	.79500-01	136.00	.4728	.9289	.6187	.9520	.3588-01	.2390-01	2.733	18.58	585.0
135	29.600	.92500-01	143.00	.4272	.7621	.5531	.9482	.2944-01	.2136-01	2.759	18.94	567.5
135	29.700	.10000+00	146.00	.3442	.6482	.4606	.9461	.2504-01	.1779-01	2.083	14.22	578.0
136	29.900	.12100	198.00	.3575	.6759	.4962	.9407	.2613-01	.1918-01	2.158	14.72	579.5
136	30.200	.16480	214.00	.2180	.3795	.3079	.9314	.1467-01	.1190-01	1.457	10.03	562.8
136	30.200	.18700	229.00	.1730	.2846	.2412	.9279	.1100-01	.9324-02	1.255	8.707	548.0
136	30.300	.21010	242.00	.1096	.1788	.1544	.9250	.6912-02	.5968-02	.8044	5.589	545.7
135	31.500	.91000-02	82.000	.5759	1.464	.6946	.9718	.5657-01	.2683-01	2.693	18.04	613.6
135	31.500	.11100-01	83.000	.7307	1.968	.8880	.9718	.7602-01	.3430-01	3.298	22.04	617.8
135	31.500	.14200-01	84.000	.9602	5.066	1.073	.9870	.1957	.4146-01	3.362	22.16	644.0
135	31.500	.16000-01	85.000	1.043	4.185	1.155	.9870	.1616	.4463-01	3.941	26.07	636.8
135	31.500	.17600-01	86.000	.8949	2.845	.9824	.9870	.1099	.3795-01	3.705	24.63	627.5
135	31.500	.19400-01	87.000	.7516	2.052	.8190	.9870	.7924-01	.3164-01	3.366	22.48	618.7
136	32.100	.21010	241.00	.1175	.1974	.1685	.9252	.7630-02	.6513-02	.8250	5.706	554.0
136	32.200	.16480	213.00	.2257	.4041	.3230	.9318	.1562-01	.1249-01	1.455	9.979	569.0
136	32.200	.17860	224.00	.1899	.3094	.2610	.9294	.1196-01	.1009-01	1.397	9.710	545.3
136	32.200	.18700	228.00	.1971	.3407	.2827	.9281	.1317-01	.1093-01	1.330	9.160	561.2
136	32.300	.12100	197.00	.3903	.7561	.5453	.9412	.2923-01	.2108-01	2.294	15.61	583.6
136	32.300	.12300	194.00	.3294	.6315	.4598	.9407	.2441-01	.1777-01	1.958	13.34	581.9
136	32.300	.12730	208.00	.1937	.3240	.2557	.9397	.1252-01	.9884-02	1.370	9.482	552.7
136	32.300	.13420	209.00	.2515	.4524	.3469	.9381	.1749-01	.1341-01	1.611	11.04	570.0
135	32.400	.10000+00	147.00	.4280	.9005	.5937	.9468	.3478-01	.2293-01	2.315	15.66	594.7
136	32.400	.10110	184.00	.3955	.7804	.5372	.9465	.3017-01	.2077-01	2.280	15.49	586.5
136	32.400	.10630	193.00	.2638	.4273	.3340	.9451	.1652-01	.1291-01	1.960	13.63	543.5
136	32.500	.85800-01	183.00	.3180	.5311	.3959	.9509	.2053-01	.1530-01	2.254	15.61	552.3
135	32.600	.79500-01	137.00	.5484	1.184	.7341	.9529	.4575-01	.2836-01	2.898	19.57	597.9
136	32.600	.80800-01	176.00	.5765	1.255	.7760	.9525	.4850-01	.3000-01	3.036	20.49	599.5
135	32.700	.67400-01	132.00	.4103	.7227	.5047	.9567	.2792-01	.1949-01	2.694	18.53	564.7
135	32.700	.72400-01	134.00	.5228	.9650	.6580	.9551	.3727-01	.2542-01	3.237	22.14	574.4
135	32.800	.65700-01	130.00	.3707	.6140	.4462	.9573	.2372-01	.1723-01	2.656	18.42	549.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K018)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
136	32.800	.16680	210.00	.2371	.4146	.3355	.9315	.1603-01	.1297-01	1.575	10.84	563.8
136	32.800	.18880	225.00	.1849	.2942	.2525	.9280	.1137-01	.9760-02	1.415	9.876	537.7
135	32.900	.58600-01	118.00	.6117	1.221	.7656	.9597	.4715-01	.2957-01	3.480	23.63	587.4
135	32.900	.60400-01	122.00	.5042	1.010	.6341	.9591	.3902-01	.2449-01	2.856	19.39	588.0
136	32.900	.61300-01	171.00	.4670	.8911	.5809	.9588	.3445-01	.2245-01	2.790	19.01	581.1
135	33.000	.53500-01	115.00	.5046	.9197	.6108	.9615	.3553-01	.2359-01	3.172	21.73	571.9
135	33.200	.48300-01	113.00	.3898	.6564	.4580	.9633	.2536-01	.1769-01	2.724	18.84	553.8
136	33.400	.42800-01	166.00	.4850	.9345	.5820	.9653	.3612-01	.2250-01	2.867	19.52	582.7
135	33.500	.40100-01	99.000	.5293	1.015	.6309	.9663	.3920-01	.2437-01	3.139	21.40	581.1
135	33.600	.38300-01	97.000	.5141	.9618	.6074	.9670	.3715-01	.2346-01	3.135	21.41	576.8
135	33.700	.36700-01	96.000	.5416	1.012	.6376	.9676	.3910-01	.2463-01	3.305	22.58	576.7
135	33.900	.33800-01	95.000	.4933	.8979	.5742	.9687	.3468-01	.2218-01	3.106	21.28	571.6
136	34.700	.21010	240.00	.1072	.1856	.1564	.9255	.7173-02	.6047-02	.7225	4.977	561.4
136	34.700	.18700	227.00	.2025	.3430	.2864	.9285	.1326-01	.1107-01	1.406	9.711	556.1
136	34.900	.16480	212.00	.2538	.4749	.3708	.9322	.1836-01	.1433-01	1.550	10.58	577.7
135	35.100	.10000+00	148.00	.4910	1.105	.6933	.9475	.4269-01	.2678-01	2.507	16.89	602.5
136	35.200	.23900-01	161.00	.3319	.5455	.3714	.9728	.2109-01	.1436-01	2.411	16.73	547.8
135	35.300	.92500-01	145.00	.4064	.7442	.5266	.9497	.2875-01	.2034-01	2.541	17.40	572.8
135	35.300	.22100-01	160.00	.3147	.5204	.3524	.9730	.2010-01	.1361-01	2.259	15.67	548.8
136	35.400	.18800	231.00	.1833	.3147	.2614	.9284	.1217-01	.1011-01	1.249	8.611	559.4
136	35.500	.12100	196.00	.4121	.8339	.5833	.9420	.3224-01	.2255-01	2.316	15.71	590.2
136	35.600	.16580	216.00	.2425	.4475	.3518	.9322	.1730-01	.1360-01	1.505	10.29	575.1
135	35.800	.80600-01	138.00	.5718	1.261	.7670	.9534	.4870-01	.2963-01	2.970	20.03	600.2
136	35.900	.21310	247.00	.1006	.1646	.1418	.9253	.6361-02	.5480-02	.7354	5.107	546.5
136	36.000	.19040	235.00	.1519	.2539	.2135	.9282	.9813-02	.8252-02	1.075	7.442	552.5
136	36.200	.16810	220.00	.2100	.3672	.2965	.9319	.1419-01	.1146-01	1.395	9.594	563.9
135	36.200	.72400-01	135.00	.4618	.8411	.5757	.9561	.3249-01	.2224-01	2.906	19.90	571.8
136	36.300	.12200	200.00	.4053	.8266	.5758	.9419	.3195-01	.2226-01	2.261	15.32	591.3
135	36.600	.65700-01	131.00	.3611	.6260	.4383	.9584	.2418-01	.1693-01	2.422	16.69	561.0
136	36.700	.18700	226.00	.1619	.2692	.2261	.9288	.1041-01	.8740-02	1.155	8.001	551.1
136	36.900	.16480	211.00	.2011	.3536	.2835	.9326	.1367-01	.1096-01	1.326	9.115	565.1
136	36.900	.10110	187.00	.4677	.9828	.6446	.9476	.3799-01	.2492-01	2.538	17.16	595.3
135	37.000	.60400-01	123.00	.5871	1.303	.7510	.9603	.5032-01	.2901-01	3.033	20.45	600.9
136	37.000	.12440	204.00	.3626	.6997	.5051	.9415	.2704-01	.1952-01	2.141	14.57	582.9
135	37.100	.58600-01	119.00	.5747	1.180	.7188	.9609	.4558-01	.2777-01	3.179	21.55	591.5
136	37.200	.21310	246.00	.1258	.2025	.1754	.9254	.7829-02	.6779-02	.9452	6.583	541.4
136	37.600	.16810	219.00	.1815	.3082	.2518	.9321	.1191-01	.9733-02	1.256	8.672	556.7
135	37.800	.10270	150.00	.3913	.7440	.5213	.9474	.2874-01	.2014-01	2.343	15.98	579.7
136	37.900	.12100	195.00	.2412	.4169	.3183	.9425	.1611-01	.1231-01	1.628	11.22	561.1
136	38.000	.80300-01	179.00	.5929	1.225	.7770	.9541	.4737-01	.3003-01	3.267	22.12	593.1
135	38.500	.46800-01	112.00	.3938	.6824	.4613	.9654	.2636-01	.1782-01	2.642	18.20	561.0
136	38.600	.12440	203.00	.3196	.5814	.4331	.9418	.2248-01	.1674-01	2.018	13.82	572.3
136	38.700	.10000+00	185.00	.4068	.7607	.5353	.9484	.2940-01	.2069-01	2.486	16.98	577.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K018)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
135	38.900	.82200-01	141.00	.5068	.9859	.6538	.9537	.3808-01	.2525-01	2.959	20.14	583.5
135	39.300	.41600-01	104.00	.5478	1.111	.6559	.9675	.4293-01	.2534-01	3.065	20.79	589.8
136	39.500	.10270	190.00	.3967	.7350	.5221	.9478	.2841-01	.2018-01	2.451	16.75	575.8
136	39.600	.16810	218.00	.1355	.2246	.1851	.9324	.8682-02	.7155-02	.9707	6.727	550.3
136	39.900	.19040	233.00	.1206	.1912	.1637	.9287	.7390-02	.6327-02	.9282	6.482	536.5
136	40.100	.79500-01	177.00	.4891	.9155	.6192	.9549	.3539-01	.2393-01	2.986	20.38	577.7
136	40.200	.12440	202.00	.2623	.4615	.3496	.9422	.1784-01	.1351-01	1.728	11.88	565.2
136	40.300	.21310	245.00	.8248-01	.1285	.1124	.9257	.4968-02	.4344-02	.6547	4.587	530.3
135	41.100	.82200-01	142.00	.5031	.9396	.6387	.9543	.3629-01	.2467-01	3.073	20.99	576.5
136	41.100	.60700-01	173.00	.5644	1.133	.7004	.9613	.4378-01	.2707-01	3.199	21.71	589.0
136	42.600	.59600-01	172.00	.5279	1.017	.6457	.9621	.3933-01	.2496-01	3.120	21.24	582.8
136	43.200	.42000-01	168.00	.4891	.9122	.5731	.9684	.3526-01	.2215-01	2.998	20.48	577.1
136	43.400	.82200-01	181.00	.3723	.6637	.4643	.9549	.2565-01	.1795-01	2.412	16.55	568.1
135	43.600	.62900-01	128.00	.4119	.7492	.4991	.9612	.2894-01	.1928-01	2.596	17.79	571.5
135	45.000	.22900-01	8.0000	.5725	1.152	.6522	.9757	.4451-01	.2519-01	3.229	21.92	588.7
136	46.100	.62900-01	174.00	.4751	.8752	.5755	.9618	.3383-01	.2225-01	2.956	20.21	574.7
136	47.700	.40800-01	167.00	.5241	.9882	.6100	.9700	.3820-01	.2358-01	3.173	21.65	579.0
135	48.400	.44200-01	109.00	.5116	.9523	.5974	.9689	.3678-01	.2308-01	3.137	21.44	575.9
135	50.000	.19400-01	156.00	.8036	2.483	.8811	.9870	.9591-01	.3403-01	3.372	22.43	626.0
135	51.000	.12100-01	154.00	.7832	5.124	.8802	.9870	.1979	.3400-01	2.624	17.26	647.9
135	51.000	.17600-01	155.00	.8342	2.734	.9171	.9870	.1056	.3542-01	3.407	22.64	628.9
136	51.900	.44800-01	170.00	.4266	.7479	.4907	.9696	.2891-01	.1897-01	2.823	19.42	564.4
136	53.200	.24700-01	163.00	.4691	.8418	.5215	.9773	.3254-01	.2016-01	3.013	20.66	569.5
136	65.200	.24700-01	162.00	.5557	1.054	.6147	.9797	.4074-01	.2376-01	3.342	22.79	580.1
134	90.000	.91000-02	44.000	.6426	2.262	.7367	.9822	.8741-01	.2847-01	2.549	16.90	632.0
134	90.000	.11100-01	45.000	.8124	2.516	.9239	.9822	.9722-01	.3570-01	3.406	22.66	626.2
134	90.000	.13100-01	46.000	.8119	2.217	.9153	.9822	.8567-01	.3537-01	3.637	24.29	618.7
134	90.000	.17000-01	48.000	.8000	1.782	.8872	.9822	.6885-01	.3428-01	4.123	27.79	601.3
134	90.000	.20900-01	50.000	.6561	1.338	.7217	.9822	.5169-01	.2789-01	3.657	24.80	590.5
134	90.000	.24900-01	52.000	.7864	1.512	.8623	.9817	.5845-01	.3332-01	4.652	31.69	581.6
134	90.000	.26900-01	53.000	.5686	1.103	.6265	.9809	.4261-01	.2421-01	3.334	22.70	583.0
134	90.000	.28800-01	54.000	.5769	1.105	.6372	.9802	.4270-01	.2463-01	3.428	23.36	580.9
134	90.000	.32800-01	55.000	.4986	.9096	.5517	.9787	.3515-01	.2132-01	3.133	21.45	572.1
134	90.000	.36700-01	56.000	.4704	.8607	.5245	.9772	.3326-01	.2027-01	2.944	20.16	572.7
134	90.000	.40600-01	57.000	.5122	.9627	.5777	.9758	.3720-01	.2232-01	3.108	21.22	577.7
134	90.000	.48500-01	58.000	.4059	.7468	.4632	.9729	.2886-01	.1790-01	2.524	17.27	573.7
134	90.000	.56400-01	59.000	.4457	.8075	.5147	.9701	.3121-01	.1989-01	2.824	19.35	570.7
134	90.000	.76100-01	60.000	.3896	.6894	.4637	.9633	.2664-01	.1792-01	2.544	17.48	565.7
134	90.000	.95800-01	61.000	.3138	.5500	.3852	.9568	.2126-01	.1489-01	2.074	14.27	563.6
134	90.000	.11550	62.000	.2742	.4715	.3452	.9508	.1822-01	.1334-01	1.861	12.84	559.0
134	135.00	.19000-01	49.000	.7093	1.480	.8120	.9757	.5720-01	.3138-01	3.867	26.18	593.6
134	135.00	.22900-01	51.000	.6376	1.276	.7258	.9757	.4931-01	.2805-01	3.618	24.57	587.8
134	180.00	.91000-02	23.000	.4527	.8676	.5546	.9616	.3353-01	.2143-01	2.688	18.32	581.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K018)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
134	180.00	.11100-01	24.000	.6104	1.356	.7739	.9616	.5240-01	.2991-01	3.152	21.25	601.0
134	180.00	.13100-01	25.000	.6208	1.275	.7732	.9616	.4929-01	.2988-01	3.433	23.27	591.5
134	180.00	.15000-01	26.000	.6258	1.282	.7789	.9616	.4953-01	.3010-01	3.471	23.53	591.1
134	180.00	.17000-01	27.000	.6048	1.231	.7516	.9616	.4756-01	.2905-01	3.376	22.89	590.2
134	180.00	.19000-01	28.000	.6039	1.223	.7497	.9616	.4727-01	.2897-01	3.387	22.98	589.5
134	180.00	.20900-01	29.000	.6016	1.165	.7388	.9616	.4501-01	.2855-01	3.533	24.06	582.7
134	180.00	.28800-01	32.000	.4953	.8914	.6034	.9597	.3445-01	.2332-01	3.165	21.71	569.3
134	180.00	.32800-01	33.000	.4087	.7084	.4964	.9583	.2738-01	.1918-01	2.743	18.90	561.0
134	180.00	.36700-01	34.000	.4428	.7842	.5451	.9569	.3031-01	.2106-01	2.887	19.84	565.9
134	180.00	.48500-01	36.000	.3686	.6311	.4583	.9529	.2439-01	.1771-01	2.515	17.36	558.1
134	180.00	.56400-01	37.000	.3470	.5853	.4349	.9504	.2262-01	.1680-01	2.420	16.74	554.2
134	180.00	.76100-01	38.000	.2766	.4547	.3533	.9446	.1757-01	.1366-01	2.005	13.92	547.1
134	180.00	.95800-01	39.000	.2400	.3879	.3122	.9394	.1499-01	.1206-01	1.788	12.45	541.9
134	180.00	.11550	40.000	.1827	.2940	.2425	.9349	.1136-01	.9372-02	1.370	9.543	540.7
134	180.00	.18450	42.000	.8355-01	.1293	.1141	.9243	.4996-02	.4409-02	.6705	4.707	527.0
134	225.00	.22900-01	30.000	.4698	.8522	.6072	.9496	.3293-01	.2347-01	2.973	20.38	570.9
134	270.00	.91000-02	63.000	.4476	.7769	.5829	.9452	.3002-01	.2253-01	2.998	20.66	561.3
134	270.00	.11100-01	64.000	.4916	.8672	.6445	.9452	.3351-01	.2491-01	3.223	22.16	565.0
134	270.00	.13100-01	65.000	.5265	1.005	.7122	.9452	.3885-01	.2752-01	3.139	21.40	580.4
134	270.00	.17000-01	67.000	.4238	.8069	.5727	.9452	.3118-01	.2213-01	2.535	17.29	579.9
134	270.00	.20900-01	69.000	.4530	.8377	.6052	.9452	.3237-01	.2339-01	2.801	19.15	574.7
134	270.00	.24900-01	71.000	.4135	.7534	.5506	.9448	.2911-01	.2128-01	2.602	17.82	571.8
134	270.00	.28800-01	73.000	.4175	.7405	.5539	.9436	.2862-01	.2140-01	2.717	18.67	566.2
134	270.00	.36700-01	75.000	.3638	.6380	.4870	.9411	.2466-01	.1882-01	2.404	16.54	563.7
134	270.00	.48500-01	77.000	.2960	.5009	.3970	.9378	.1936-01	.1534-01	2.055	14.21	555.0
134	270.00	.56400-01	78.000	.2675	.4485	.3610	.9358	.1733-01	.1395-01	1.881	13.02	552.7
134	270.00	.95900-01	80.000	.1420	.2294	.1958	.9279	.8864-02	.7566-02	1.058	7.364	541.9
134	270.00	.11550	81.000	.1053	.1706	.1476	.9252	.6594-02	.5704-02	.7814	5.438	542.7
134	315.00	.19000-01	68.000	.4481	.7939	.5742	.9496	.3068-01	.2219-01	2.921	20.07	566.0
134	315.00	.22900-01	70.000	.5079	.9236	.6570	.9496	.3569-01	.2539-01	3.204	21.95	571.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K019)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
124	4.020	5.050	11.04	64.89	738.7	.4161	174.5	-65.72	2604.	.6435-02	.1405-06	3.707
125	4.020	5.053	11.05	64.87	738.7	.4160	174.5	-65.72	2604.	.6434-02	.1405-06	3.707
126	4.020	5.051	11.04	64.86	738.7	.4159	174.5	-65.72	2604.	.6432-02	.1405-06	3.706

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
124	.3868-01	.9579-02
125	.3868-01	.9580-02
126	.3867-01	.9581-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
125	.00000	.91000-02	1.0000	.4648	.9213	.6044	.9534	.3563-01	.2338-01	2.680	18.18	589.6
125	.00000	.15000-01	4.0000	.5316	1.102	.7006	.9534	.4262-01	.2710-01	2.935	19.84	595.9
125	.00000	.17000-01	5.0000	.5003	1.043	.6605	.9534	.4034-01	.2555-01	2.747	18.57	596.7
125	.00000	.19000-01	6.0000	.5359	1.095	.7033	.9534	.4236-01	.2720-01	2.998	20.29	594.0
125	.00000	.24900-01	9.0000	.5091	.9850	.6590	.9529	.3810-01	.2549-01	3.011	20.47	585.8
125	.00000	.26900-01	10.000	.4716	.8774	.6053	.9522	.3394-01	.2341-01	2.913	19.87	579.0
124	.00000	.32800-01	12.000	.3731	.6410	.4710	.9503	.2480-01	.1822-01	2.550	17.56	562.0
124	.00000	.36700-01	13.000	.3189	.5334	.4013	.9490	.2063-01	.1552-01	2.267	15.67	555.0
124	.00000	.40600-01	14.000	.3324	.5640	.4233	.9477	.2182-01	.1637-01	2.313	15.96	558.8
124	.00000	.48500-01	15.000	.2989	.5011	.3836	.9453	.1938-01	.1484-01	2.116	14.62	555.6
124	.00000	.56400-01	16.000	.2904	.4867	.3772	.9430	.1883-01	.1459-01	2.058	14.22	555.5
124	.00000	.76100-01	17.000	.2211	.3618	.2917	.9378	.1399-01	.1128-01	1.624	11.27	548.7
124	.00000	.95800-01	18.000	.5709-01	.8979-01	.7540-01	.9333	.3473-02	.2916-02	.4480	3.130	535.8
124	.00000	.11550	19.000	.1324	.2151	.1816	.9296	.8322-02	.7023-02	.9846	6.838	546.5
124	.00000	.16480	20.000	.6872-01	.1121	.9759-01	.9236	.4337-02	.3775-02	.5074	3.521	547.8
124	.00000	.21400	22.000	.3247-01	.4994-01	.4466-01	.9220	.1932-02	.1727-02	.2652	1.862	527.5
126	2.0000	.24700-01	165.00	.4129	.7514	.5255	.9524	.2906-01	.2032-01	2.619	17.91	574.7
125	9.0000	.15000-01	157.00	.4604	.9768	.6215	.9510	.3778-01	.2404-01	2.488	16.79	599.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K019)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
125	9.0000	.17600-01	158.00	.4973	1.003	.6607	.9510	.3879-01	.2555-01	2.818	19.09	592.2
126	9.8000	.24700-01	164.00	.4121	.7683	.5353	.9504	.2971-01	.2070-01	2.540	17.33	579.3
125	10.000	.22900-01	88.000	.4431	.8606	.5823	.9507	.3329-01	.2252-01	2.609	17.73	586.4
125	10.000	.26900-01	90.000	.3971	.7020	.5085	.9496	.2715-01	.1967-01	2.612	17.92	568.6
125	10.000	.34700-01	94.000	.3472	.5960	.4458	.9470	.2305-01	.1724-01	2.376	16.37	561.7
125	12.000	.17600-01	152.00	.6752	3.178	.8323	.9760	.1229	.3219-01	2.449	16.14	644.9
125	12.000	.12100-01	151.00	.3387	1.919	.4220	.9760	.7421-01	.1632-01	1.175	7.724	649.0
125	13.000	.19400-01	153.00	.6619	2.814	.8124	.9758	.1088	.3142-01	2.473	16.31	642.1
126	14.600	.44200-01	169.00	.3864	.6700	.5092	.9430	.2591-01	.1969-01	2.608	17.94	564.2
125	18.500	.44200-01	106.00	.4261	.7779	.5768	.9422	.3009-01	.2231-01	2.692	18.41	575.3
126	19.600	.62900-01	175.00	.3182	.5385	.4287	.9370	.2082-01	.1658-01	2.222	15.34	558.1
125	19.800	.40800-01	101.00	.5205	1.028	.7244	.9430	.3976-01	.2802-01	3.013	20.45	589.0
125	20.000	.24900-01	89.000	.3510	.6368	.4580	.9480	.2463-01	.1771-01	2.235	15.29	574.1
125	20.000	.28800-01	91.000	.3073	.5236	.3941	.9467	.2025-01	.1524-01	2.125	14.65	559.9
125	20.000	.32800-01	93.000	.3610	.6353	.4724	.9454	.2457-01	.1827-01	2.389	16.40	567.6
125	22.200	.62900-01	125.00	.3382	.6052	.4697	.9365	.2341-01	.1817-01	2.190	15.00	571.2
125	22.400	.44200-01	107.00	.4375	.8245	.6031	.9415	.3189-01	.2333-01	2.663	18.15	581.3
126	22.600	.10270	192.00	.1683	.2746	.2328	.9284	.1062-01	.9004-02	1.242	8.618	547.9
125	23.000	.42000-01	105.00	.5535	1.171	.7973	.9420	.4530-01	.3084-01	2.999	20.24	598.6
125	23.400	.59600-01	120.00	.4172	.7836	.5908	.9372	.3031-01	.2285-01	2.549	17.38	580.7
126	23.900	.21310	250.00	.2877-01	.4279-01	.3865-01	.9220	.1655-02	.1495-02	.2510	1.776	513.1
125	24.100	.82200-01	139.00	.2835	.4926	.3987	.9319	.1905-01	.1542-01	1.908	13.12	564.7
126	24.400	.19040	238.00	.4384-01	.6719-01	.6014-01	.9220	.2598-02	.2326-02	.3603	2.531	526.2
126	24.400	.12440	207.00	.1178	.1950	.1673	.9253	.7542-02	.6470-02	.8496	5.882	552.2
126	24.800	.16810	223.00	.6368-01	.1020	.8998-01	.9222	.3944-02	.3480-02	.4843	3.372	542.0
125	24.900	.62900-01	126.00	.3796	.7150	.5420	.9361	.2765-01	.2096-01	2.312	15.76	581.2
126	25.000	.79500-01	178.00	.2859	.4855	.3960	.9324	.1878-01	.1531-01	1.987	13.70	559.0
126	25.300	.10270	191.00	.2173	.3625	.3051	.9281	.1402-01	.1180-01	1.549	10.71	554.3
126	25.300	.10000+00	186.00	.2400	.4071	.3396	.9286	.1574-01	.1313-01	1.670	11.52	558.8
125	25.500	.60700-01	124.00	.4693	.9684	.6973	.9366	.3746-01	.2697-01	2.601	17.59	595.4
126	26.000	.12440	206.00	.1710	.2890	.2463	.9251	.1118-01	.9524-02	1.196	8.257	557.8
125	26.300	.82200-01	140.00	.3347	.5879	.4743	.9316	.2274-01	.1835-01	2.220	15.25	567.1
126	26.700	.12100	199.00	.2275	.4060	.3384	.9255	.1570-01	.1309-01	1.478	10.13	570.7
126	26.800	.16810	222.00	.9827-01	.1593	.1401	.9221	.6161-02	.5416-02	.7327	5.090	545.9
126	27.000	.19040	237.00	.6213-01	.9623-01	.8586-01	.9220	.3722-02	.3321-02	.5008	3.509	530.2
126	27.100	.21310	249.00	.4863-01	.7274-01	.6559-01	.9220	.2813-02	.2537-02	.4192	2.961	515.8
126	27.200	.80300-01	180.00	.3591	.6461	.5148	.9319	.2499-01	.1991-01	2.309	15.81	572.4
125	27.400	.40100-01	98.000	.6315	1.512	.9551	.9418	.5847-01	.3694-01	3.099	20.77	611.8
126	27.400	.16480	215.00	.1139	.1881	.1643	.9222	.7275-02	.6354-02	.8240	5.707	551.5
125	27.600	.41600-01	102.00	.6000	1.512	.9286	.9413	.5849-01	.3591-01	2.842	19.01	616.2
126	27.600	.12440	205.00	.2039	.3528	.2983	.9250	.1364-01	.1154-01	1.380	9.492	563.7
126	27.600	.18700	230.00	.7177-01	.1117	.9953-01	.9220	.4321-02	.3849-02	.5733	4.013	532.1
126	27.700	.21010	243.00	.5690-01	.8601-01	.7731-01	.9220	.3326-02	.2990-02	.4803	3.385	520.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K019)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
126	27.900	.10110	188.00	.2675	.4751	.3901	.9281	.1838-01	.1508-01	1.748	11.99	569.7
125	28.000	.46800-01	110.00	.2779	.4634	.3661	.9398	.1792-01	.1416-01	1.983	13.71	554.2
126	28.200	.16810	221.00	.1195	.1975	.1726	.9221	.7639-02	.6675-02	.8644	5.986	551.6
126	28.300	.19040	236.00	.6956-01	.1081	.9636-01	.9220	.4181-02	.3727-02	.5571	3.901	531.6
126	28.300	.12200	201.00	.1664	.2799	.2388	.9252	.1082-01	.9236-02	1.172	8.097	556.5
125	28.400	.53500-01	114.00	.2996	.5076	.4017	.9379	.1963-01	.1554-01	2.088	14.41	558.4
126	28.400	.21310	248.00	.6030-01	.9062-01	.8160-01	.9220	.3505-02	.3156-02	.5148	3.633	517.9
125	28.700	.58600-01	117.00	.4800	.9510	.6997	.9366	.3678-01	.2706-01	2.769	18.79	583.5
126	28.800	.16580	217.00	.1368	.2305	.2001	.9222	.8915-02	.7739-02	.9605	6.632	557.1
125	28.800	.60400-01	121.00	.5067	1.123	.7800	.9361	.4343-01	.3017-01	2.638	17.76	604.0
126	29.000	.21110	244.00	.6707-01	.1015	.9122-01	.9220	.3927-02	.3528-02	.5643	3.975	521.1
125	29.000	.65700-01	129.00	.2398	.3935	.3217	.9349	.1522-01	.1244-01	1.755	12.17	549.5
125	29.200	.72400-01	133.00	.2713	.4639	.3752	.9333	.1794-01	.1451-01	1.867	12.87	560.7
125	29.300	.79500-01	136.00	.3872	.7781	.5890	.9318	.3009-01	.2278-01	2.202	14.92	591.6
125	29.600	.92500-01	143.00	.2056	.3439	.2872	.9293	.1330-01	.1111-01	1.461	10.10	554.9
125	29.700	.10000+00	146.00	.2742	.5283	.4192	.9281	.2043-01	.1621-01	1.629	11.08	585.1
126	29.900	.12100	198.00	.2076	.3772	.3128	.9252	.1459-01	.1210-01	1.319	9.019	574.4
126	30.200	.16480	214.00	.1396	.2382	.2060	.9222	.9213-02	.7966-02	.9632	6.639	560.3
126	30.300	.21010	242.00	.6994-01	.1068	.9574-01	.9220	.4132-02	.3702-02	.5784	4.066	524.8
125	31.500	.91000-02	82.000	.4402	.8037	.5813	.9463	.3109-01	.2248-01	2.780	19.01	575.4
125	31.500	.11100-01	83.000	.4605	.8586	.6131	.9463	.3321-01	.2371-01	2.837	19.35	579.4
125	31.500	.14200-01	84.000	.4884	2.178	.6241	.9720	.8425-01	.2414-01	1.799	11.86	643.5
125	31.500	.16000-01	85.000	.6542	2.265	.8170	.9720	.8762-01	.3160-01	2.628	17.40	634.8
125	31.500	.17600-01	86.000	.6304	1.920	.7766	.9720	.7425-01	.3004-01	2.682	17.82	628.7
125	31.500	.19400-01	87.000	.6010	1.432	.7178	.9720	.5540-01	.2776-01	2.959	19.84	611.4
126	32.100	.21010	241.00	.6137-01	.9275-01	.8337-01	.9220	.3587-02	.3224-02	.5181	3.651	520.4
126	32.200	.16480	213.00	.1166	.1955	.1700	.9221	.7561-02	.6576-02	.8252	5.702	555.7
126	32.200	.17860	224.00	.7340-01	.1146	.1020	.9220	.4432-02	.3945-02	.5834	4.082	533.2
126	32.200	.18700	228.00	.7694-01	.1186	.1060	.9220	.4586-02	.4098-02	.6250	4.390	528.3
126	32.300	.12100	197.00	.1851	.3220	.2716	.9251	.1245-01	.1050-01	1.243	8.549	564.9
126	32.300	.12300	194.00	.1520	.2693	.2260	.9248	.1042-01	.8741-02	.9973	6.841	569.1
126	32.300	.12730	208.00	.1051	.1705	.1480	.9244	.6592-02	.5724-02	.7832	5.441	546.0
126	32.300	.13420	209.00	.1066	.1791	.1542	.9238	.6925-02	.5963-02	.7533	5.204	556.0
125	32.400	.10000+00	147.00	.2044	.3624	.2883	.9278	.1402-01	.1154-01	1.339	9.187	569.2
126	32.400	.10110	184.00	.2324	.4123	.3396	.9277	.1594-01	.1313-01	1.522	10.44	569.3
126	32.400	.10630	193.00	.1279	.2021	.1748	.9269	.7815-02	.6761-02	.9960	6.963	537.4
126	32.500	.85800-01	183.00	.1566	.2476	.2106	.9302	.9574-02	.8145-02	1.219	8.535	577.6
125	32.600	.79500-01	137.00	.3381	.6364	.4993	.9314	.2461-01	.1927-01	2.061	14.05	581.1
126	32.600	.80800-01	176.00	.3007	.5357	.4308	.9312	.2072-01	.1666-01	1.958	13.42	570.3
125	32.700	.67400-01	132.00	.1825	.2962	.2444	.9340	.1146-01	.9454-02	1.358	9.435	546.2
125	32.700	.72400-01	134.00	.2433	.4110	.3351	.9329	.1590-01	.1296-01	1.703	11.75	557.7
125	32.800	.65700-01	130.00	.1930	.3074	.2554	.9344	.1189-01	.9877-02	1.482	10.33	540.1
126	32.800	.16680	210.00	.1013	.1670	.1461	.9221	.6459-02	.5650-02	.7354	5.095	550.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K019)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
126	32.800	.18880	225.00	.5500-01	.8386-01	.7518-01	.9220	.3243-02	.2907-02	.4564	3.210	524.1
125	32.900	.58600-01	118.00	.4113	.7765	.5883	.9360	.3003-01	.2275-01	2.499	17.03	581.6
125	32.900	.60400-01	122.00	.3298	.5964	.4631	.9356	.2307-01	.1791-01	2.108	14.42	573.4
126	32.900	.61300-01	171.00	.3992	.8038	.5916	.9354	.3109-01	.2288-01	2.265	15.35	591.9
125	33.000	.53500-01	115.00	.3305	.5706	.4489	.9373	.2207-01	.1736-01	2.244	15.44	563.1
125	33.200	.48300-01	113.00	.2374	.3836	.3099	.9386	.1484-01	.1199-01	1.780	12.37	544.9
126	33.400	.42800-01	166.00	.5170	1.104	.7583	.9401	.4268-01	.2932-01	2.779	18.75	599.7
125	33.500	.40100-01	99.000	.5208	1.061	.7449	.9409	.4103-01	.2881-01	2.922	19.78	593.6
125	33.600	.38300-01	97.000	.4416	.8329	.6094	.9414	.3222-01	.2357-01	2.686	18.30	581.4
125	33.700	.36700-01	96.000	.3739	.6749	.5048	.9419	.2610-01	.1952-01	2.395	16.39	573.1
125	33.900	.33800-01	95.000	.2729	.4618	.3565	.9427	.1786-01	.1379-01	1.907	13.16	558.0
126	34.700	.21010	240.00	.5629-01	.8454-01	.7613-01	.9220	.3270-02	.2944-02	.4811	3.395	517.7
126	34.700	.18700	227.00	.6522-01	.1015	.9045-01	.9220	.3926-02	.3498-02	.5211	3.648	532.1
126	34.900	.16480	212.00	.1089	.1811	.1580	.9221	.7002-02	.6109-02	.7813	5.406	553.2
125	35.100	.10000+00	148.00	.2178	.3786	.3145	.9276	.1464-01	.1216-01	1.465	10.07	564.8
126	35.200	.23900-01	161.00	.2686	.4375	.3399	.9457	.1692-01	.1315-01	1.988	13.80	547.3
125	35.300	.92500-01	145.00	.2161	.3695	.3068	.9288	.1429-01	.1187-01	1.488	10.25	560.7
125	35.300	.22100-01	160.00	.2495	.4068	.3157	.9457	.1573-01	.1221-01	1.843	12.79	547.7
126	35.400	.18800	231.00	.5956-01	.9227-01	.8233-01	.9220	.3569-02	.3184-02	.4800	3.364	530.3
126	35.500	.12100	196.00	.1888	.3228	.2744	.9249	.1248-01	.1061-01	1.299	8.950	560.7
126	35.600	.16580	216.00	.1059	.1742	.1625	.9221	.6736-02	.5898-02	.7726	5.355	550.1
125	35.800	.80600-01	138.00	.2539	.4387	.3582	.9309	.1697-01	.1385-01	1.722	11.65	563.3
126	35.900	.21310	247.00	.4518-01	.6704-01	.6059-01	.9220	.2593-02	.2343-02	.3957	2.801	512.2
126	36.000	.19040	235.00	.6030-01	.9251-01	.8278-01	.9220	.3578-02	.3201-02	.4946	3.474	526.5
126	36.200	.16810	220.00	.9336-01	.1511	.1330	.9220	.5843-02	.5142-02	.6981	4.851	545.3
125	36.200	.72400-01	135.00	.2725	.4639	.3777	.9325	.1794-01	.1461-01	1.888	13.01	559.6
126	36.300	.12200	200.00	.1697	.2882	.2458	.9247	.1115-01	.9506-02	1.179	8.131	559.0
125	36.600	.65700-01	131.00	.1942	.3144	.2598	.9339	.1216-01	.1005-01	1.451	10.08	545.5
126	36.700	.18700	226.00	.6762-01	.1042	.9309-01	.9220	.4028-02	.3600-02	.5505	3.863	528.1
126	36.900	.16480	211.00	.9753-01	.1613	.1410	.9221	.6238-02	.5452-02	.7047	4.880	551.8
126	36.900	.10110	187.00	.2259	.3876	.3243	.9273	.1499-01	.1254-01	1.547	10.66	561.6
125	37.000	.60400-01	123.00	.3649	.6650	.5159	.9351	.2572-01	.1996-01	2.310	15.79	575.0
126	37.000	.12440	204.00	.1551	.2578	.2219	.9244	.9970-02	.8583-02	1.113	7.702	553.2
125	37.100	.58600-01	119.00	.4205	.7601	.5906	.9355	.2940-01	.2284-01	2.689	18.41	573.3
126	37.200	.21310	246.00	.5076-01	.7541-01	.6813-01	.9220	.2916-02	.2635-02	.4436	3.139	512.7
126	37.600	.16810	219.00	.8260-01	.1338	.1177	.9220	.5173-02	.4552-02	.6169	4.287	545.5
125	37.800	.10270	150.00	.1858	.3166	.2660	.9270	.1225-01	.1029-01	1.284	8.853	559.9
126	37.900	.12100	195.00	.1760	.2997	.2554	.9247	.1159-01	.9875-02	1.217	8.392	559.8
126	38.000	.80300-01	179.00	.3260	.5664	.4618	.9307	.2191-01	.1786-01	2.194	15.09	564.6
125	38.500	.46800-01	112.00	.2431	.3920	.3174	.9384	.1516-01	.1227-01	1.829	12.72	544.2
126	38.600	.12440	203.00	.1557	.2602	.2237	.9243	.1006-01	.8651-02	1.107	7.656	554.8
126	38.700	.10000+00	185.00	.2286	.3905	.3271	.9273	.1510-01	.1265-01	1.575	10.86	560.5
125	38.900	.82200-01	141.00	.2395	.4084	.3365	.9303	.1580-01	.1302-01	1.654	11.40	560.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K019)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
125	39.300	.41600-01	104.00	.3976	.7414	.5518	.9397	.2868-01	.2134-01	2.450	16.71	579.4
126	39.500	.10270	190.00	.2353	.4026	.3380	.9269	.1557-01	.1307-01	1.618	11.15	560.9
126	39.600	.16810	218.00	.6507-01	.1052	.9264-01	.9220	.4070-02	.3583-02	.4871	3.385	545.1
126	39.900	.19040	233.00	.5262-01	.8047-01	.7207-01	.9220	.3112-02	.2787-02	.4343	3.052	525.2
126	40.100	.79500-01	177.00	.3138	.5514	.4473	.9307	.2132-01	.1730-01	2.080	14.28	567.3
126	40.200	.12440	202.00	.1399	.2346	.2015	.9243	.9074-02	.7794-02	.9902	6.842	555.7
126	40.300	.21310	245.00	.3438-01	.5094-01	.4606-01	.9220	.1970-02	.1781-02	.3020	2.139	511.5
125	41.100	.82200-01	142.00	.2547	.4413	.3615	.9301	.1707-01	.1398-01	1.720	11.83	564.0
126	41.100	.60700-01	173.00	.3693	.6540	.5162	.9346	.2529-01	.1996-01	2.424	16.63	569.0
126	42.600	.59600-01	172.00	.4251	.7721	.6014	.9348	.2986-01	.2326-01	2.701	18.48	574.3
126	43.200	.42000-01	168.00	.3675	.6479	.4987	.9392	.2506-01	.1928-01	2.426	16.65	568.0
126	43.400	.82200-01	181.00	.1979	.3221	.2711	.9300	.1246-01	.1048-01	1.466	10.18	547.1
125	43.600	.62900-01	128.00	.2686	.4737	.3762	.9339	.1832-01	.1455-01	1.772	12.16	568.1
125	45.000	.22900-01	8.0000	.5310	1.064	.7349	.9446	.4116-01	.2842-01	3.028	20.52	591.2
126	46.100	.62900-01	174.00	.3352	.5937	.4712	.9337	.2296-01	.1822-01	2.199	15.09	569.0
126	47.700	.40800-01	167.00	.3954	.7063	.5399	.9392	.2732-01	.2088-01	2.566	17.58	570.9
125	48.400	.44200-01	109.00	.3511	.6400	.4869	.9382	.2475-01	.1883-01	2.222	15.19	575.0
125	50.000	.19400-01	156.00	.4906	1.139	.5929	.9697	.4405-01	.2293-01	2.462	16.53	608.9
125	51.000	.12100-01	154.00	.4330	1.426	.5491	.9696	.5516-01	.2124-01	1.776	11.78	632.6
125	51.000	.17600-01	155.00	.4794	1.089	.5776	.9696	.4212-01	.2234-01	2.447	16.45	606.7
126	51.900	.44800-01	170.00	.2797	.4654	.3720	.9378	.1800-01	.1439-01	2.002	13.85	553.6
126	53.200	.24700-01	163.00	.3076	.5230	.4006	.9436	.2022-01	.1549-01	2.133	14.71	559.3
126	65.200	.24700-01	162.00	.3558	.6290	.4721	.9433	.2433-01	.1826-01	2.339	16.05	568.6
124	90.000	.91000-02	44.000	.4373	.7915	.5801	.9450	.3062-01	.2244-01	2.793	19.11	573.6
124	90.000	.11100-01	45.000	.4431	.7960	.5860	.9450	.3079-01	.2267-01	2.856	19.56	572.0
124	90.000	.13100-01	46.000	.4683	.8667	.6268	.9450	.3352-01	.2425-01	2.911	19.88	578.0
124	90.000	.17000-01	48.000	.4832	.8850	.6441	.9450	.3423-01	.2491-01	3.041	20.78	576.0
124	90.000	.20900-01	50.000	.4373	.8018	.5831	.9450	.3102-01	.2256-01	2.748	18.78	576.2
124	90.000	.26900-01	53.000	.4290	.7764	.5727	.9439	.3003-01	.2215-01	2.739	18.74	573.6
124	90.000	.28800-01	54.000	.4226	.7600	.5647	.9433	.2940-01	.2184-01	2.720	18.63	572.3
124	90.000	.32800-01	55.000	.3784	.6549	.5008	.9421	.2533-01	.1937-01	2.561	17.62	563.7
124	90.000	.36700-01	56.000	.3639	.6289	.4845	.9409	.2433-01	.1874-01	2.467	16.97	563.4
124	90.000	.40600-01	57.000	.3466	.6066	.4671	.9398	.2346-01	.1807-01	2.311	15.88	566.3
124	90.000	.48500-01	58.000	.2704	.4626	.3649	.9376	.1790-01	.1412-01	1.859	12.81	560.9
124	90.000	.56400-01	59.000	.2661	.4492	.3608	.9356	.1738-01	.1395-01	1.866	12.88	557.4
124	90.000	.76100-01	60.000	.2033	.3385	.2802	.9313	.1309-01	.1084-01	1.454	10.05	553.8
124	90.000	.95800-01	61.000	.1378	.2277	.1928	.9278	.8809-02	.7457-02	.9969	6.904	551.6
124	90.000	.11550	62.000	.9771-01	.1608	.1393	.9251	.6219-02	.5351-02	.7117	4.933	550.4
124	135.00	.19000-01	49.000	.5462	1.025	.6938	.9545	.3965-01	.2684-01	3.341	22.78	580.5
124	135.00	.22900-01	51.000	.5269	.9878	.6691	.9545	.3821-01	.2588-01	3.227	22.00	580.4
124	180.00	.91000-02	23.000	.4167	.8338	.4903	.9700	.3225-01	.1896-01	2.381	16.14	591.0
124	180.00	.11100-01	24.000	.6394	1.558	.7767	.9700	.6028-01	.3004-01	3.098	20.75	613.4
124	180.00	.13100-01	25.000	.6545	1.538	.7907	.9700	.5951-01	.3058-01	3.255	21.84	610.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K019)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
124	180.00	.15000-01	26.000	.6769	1.536	.8133	.9700	.5941-01	.3146-01	3.458	23.25	606.6
124	180.00	.17000-01	27.000	.6888	1.491	.8213	.9700	.5769-01	.3177-01	3.657	24.65	601.4
124	180.00	.19000-01	28.000	.6472	1.354	.7673	.9700	.5236-01	.2968-01	3.544	23.95	597.1
124	180.00	.20900-01	29.000	.6404	1.265	.7516	.9700	.4893-01	.2908-01	3.707	25.15	589.0
124	180.00	.28800-01	32.000	.5382	1.005	.6319	.9681	.3889-01	.2444-01	3.310	22.57	579.7
124	180.00	.32800-01	33.000	.5004	.8991	.5873	.9666	.3478-01	.2272-01	3.224	22.08	572.1
124	180.00	.36700-01	34.000	.4855	.8960	.5776	.9652	.3466-01	.2234-01	3.028	20.68	577.4
124	180.00	.48500-01	36.000	.4154	.7517	.5030	.9611	.2908-01	.1946-01	2.652	18.15	573.6
124	180.00	.56400-01	37.000	.4012	.7183	.4914	.9584	.2778-01	.1901-01	2.597	17.79	571.3
124	180.00	.76100-01	38.000	.3188	.5563	.4007	.9521	.2152-01	.1550-01	2.134	14.67	565.6
124	180.00	.95800-01	39.000	.2716	.4629	.3490	.9464	.1791-01	.1350-01	1.879	12.95	559.9
124	180.00	.11550	40.000	.2150	.3664	.2840	.9412	.1417-01	.1099-01	1.488	10.26	559.8
124	180.00	.18450	42.000	.1121	.1814	.1548	.9277	.7016-02	.5990-02	.8380	5.824	545.4
124	225.00	.22900-01	30.000	.6439	1.308	.7070	.9824	.5060-01	.2735-01	3.623	24.53	593.2
124	270.00	.91000-02	63.000	.5559	1.766	.6351	.9818	.6832-01	.2457-01	2.318	15.38	630.9
124	270.00	.11100-01	64.000	.7225	2.177	.8224	.9818	.8420-01	.3181-01	3.090	20.54	628.1
124	270.00	.13100-01	65.000	.7664	2.154	.8681	.9818	.8331-01	.3358-01	3.400	22.64	624.0
124	270.00	.17000-01	67.000	.7526	1.751	.8396	.9818	.6771-01	.3248-01	3.772	25.32	609.1
124	270.00	.20900-01	69.000	.6670	1.421	.7382	.9818	.5496-01	.2855-01	3.592	24.24	599.4
124	270.00	.24900-01	71.000	.6340	1.312	.7017	.9813	.5075-01	.2714-01	3.506	23.71	595.7
124	270.00	.28800-01	73.000	.5952	1.172	.6607	.9799	.4533-01	.2556-01	3.456	23.46	588.6
124	270.00	.36700-01	75.000	.5430	1.066	.6123	.9769	.4125-01	.2369-01	3.161	21.46	588.2
124	270.00	.48500-01	77.000	.4755	.9014	.5461	.9726	.3487-01	.2113-01	2.876	19.58	582.3
124	270.00	.56400-01	78.000	.4856	.9148	.5657	.9698	.3539-01	.2188-01	2.957	20.15	581.2
124	270.00	.95800-01	80.000	.3179	.5591	.3910	.9567	.2163-01	.1513-01	2.106	14.46	567.4
124	270.00	.11550	81.000	.2837	.4978	.3600	.9507	.1926-01	.1392-01	1.884	12.94	567.0
124	315.00	.19000-01	68.000	.5829	1.114	.6850	.9688	.4310-01	.2650-01	3.493	23.77	583.8
124	315.00	.22900-01	70.000	.6166	1.195	.7265	.9688	.4623-01	.2810-01	3.640	24.74	586.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K020)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
128	4.020	5.028	9.051	64.92	742.7	.4163	175.5	-61.18	2611.	.6403-02	.1412-06	3.679
129	4.020	4.995	8.992	64.92	738.7	.4163	174.5	-61.18	2604.	.6438-02	.1405-06	3.709
130	4.020	5.028	9.029	64.86	734.7	.4159	173.6	-61.12	2596.	.6467-02	.1397-06	3.736

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
128	.3873-01	.9610-02
129	.3869-01	.9577-02
130	.3864-01	.9548-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
129	.00000	.91000-02	1.0000	.4312	.7676	.5404	.9539	.2970-01	.2091-01	2.812	19.28	570.1
129	.00000	.15000-01	4.0000	.5246	1.057	.6834	.9539	.4090-01	.2644-01	2.977	20.17	592.0
129	.00000	.17000-01	5.0000	.5382	1.076	.6994	.9539	.4163-01	.2706-01	3.078	20.87	590.9
129	.00000	.19000-01	6.0000	.5416	1.068	.7009	.9539	.4131-01	.2712-01	3.142	21.32	588.9
129	.00000	.24900-01	9.0000	.4991	.9426	.6392	.9534	.3647-01	.2473-01	3.032	20.66	581.7
129	.00000	.26900-01	10.000	.4635	.8466	.5896	.9527	.3276-01	.2281-01	2.927	20.01	575.5
128	.00000	.32800-01	12.000	.3847	.6891	.4920	.9506	.2669-01	.1905-01	2.505	17.13	574.6
128	.00000	.36700-01	13.000	.3476	.6060	.4433	.9493	.2347-01	.1717-01	2.344	16.08	568.5
128	.00000	.40600-01	14.000	.3601	.6417	.4664	.9481	.2485-01	.1806-01	2.360	16.15	573.4
128	.00000	.48500-01	15.000	.3169	.5515	.4123	.9456	.2136-01	.1597-01	2.143	14.71	569.0
128	.00000	.56400-01	16.000	.2992	.5185	.3936	.9433	.2008-01	.1525-01	2.034	13.97	567.1
129	.00000	.76100-01	17.000	.2237	.3748	.2982	.9380	.1451-01	.1155-01	1.596	11.01	558.4
128	.00000	.11550	19.000	.1343	.2237	.1867	.9297	.8665-02	.7232-02	.9659	6.670	556.9
128	.00000	.16480	20.000	.6861-01	.1126	.9790-01	.9236	.4361-02	.3788-02	.5052	3.497	552.6
128	.00000	.21400	22.000	.3310-01	.5169-01	.4601-01	.9220	.2002-02	.1782-02	.2647	1.849	536.2
130	2.0000	.24700-01	165.00	.4176	.7414	.5258	.9530	.2864-01	.2031-01	2.718	18.67	566.3
129	9.0000	.15000-01	157.00	.4934	.9935	.6510	.9519	.3844-01	.2519-01	2.801	18.98	591.9
129	9.0000	.17600-01	158.00	.5157	.9772	.6673	.9519	.3781-01	.2582-01	3.121	21.26	582.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K020)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
130	9.8000	.24700-01	164.00	.4205	.7532	.5359	.9513	.2910-01	.2071-01	2.703	18.55	568.3
129	10.000	.22900-01	88.000	.4402	.8198	.5671	.9517	.3172-01	.2194-01	2.717	18.54	579.1
129	10.000	.26900-01	90.000	.3908	.6746	.4935	.9505	.2610-01	.1909-01	2.655	18.27	563.1
129	10.000	.34700-01	94.000	.3648	.6159	.4631	.9479	.2383-01	.1792-01	2.558	17.66	557.5
129	12.000	.17600-01	152.00	.7369	2.524	.8771	.9774	.9766-01	.3393-01	2.975	19.70	634.3
129	12.000	.12100-01	151.00	.4800	4.118	.5996	.9774	.1593	.2320-01	1.553	10.18	655.1
129	13.000	.19400-01	153.00	.7199	2.277	.8527	.9772	.8812-01	.3299-01	3.008	19.97	630.7
130	14.600	.44200-01	169.00	.4077	.7089	.5349	.9440	.2739-01	.2067-01	2.723	18.76	561.8
129	18.500	.44200-01	106.00	.4351	.7876	.5826	.9434	.3047-01	.2254-01	2.779	19.01	573.6
130	19.600	.62900-01	175.00	.3336	.5664	.4477	.9380	.2188-01	.1730-01	2.305	15.92	555.9
129	19.800	.40800-01	101.00	.5088	.9901	.6979	.9443	.3831-01	.2700-01	2.992	20.33	586.7
129	20.000	.24900-01	89.000	.3383	.5896	.4314	.9494	.2281-01	.1669-01	2.269	15.60	565.3
129	20.000	.28800-01	91.000	.3054	.5147	.3872	.9481	.1992-01	.1498-01	2.147	14.83	557.0
129	20.000	.32800-01	93.000	.3555	.6214	.4604	.9467	.2404-01	.1781-01	2.374	16.31	566.1
130	21.800	.82200-01	182.00	.1560-05	.1833-05	.1733-05	.9332	.7083-07	.6694-07	.2974-04	.2482-03	241.4
129	22.200	.62900-01	125.00	.3481	.6155	.4773	.9377	.2381-01	.1847-01	2.291	15.72	568.6
129	22.400	.44200-01	107.00	.4316	.8030	.5867	.9428	.3107-01	.2270-01	2.667	18.19	579.0
130	22.600	.10270	192.00	.1672	.2716	.2297	.9292	.1049-01	.8874-02	1.234	8.584	543.6
129	23.000	.42000-01	105.00	.5335	1.102	.7535	.9434	.4264-01	.2915-01	2.956	19.99	595.5
129	23.400	.59600-01	120.00	.4007	.7404	.5585	.9384	.2865-01	.2161-01	2.496	17.04	577.7
130	23.900	.21310	250.00	.3074-01	.4520-01	.4096-01	.9220	.1746-02	.1582-02	.2728	1.939	505.0
129	24.100	.82200-01	139.00	.2704	.4636	.3752	.9330	.1794-01	.1452-01	1.855	12.78	561.4
130	24.400	.19040	238.00	.4969-01	.7537-01	.6768-01	.9220	.2912-02	.2615-02	.4140	2.919	519.1
130	24.400	.12440	207.00	.1174	.1943	.1661	.9259	.7508-02	.6419-02	.8412	5.834	549.2
130	24.800	.16810	223.00	.6651-01	.1065	.9387-01	.9223	.4113-02	.3627-02	.5031	3.509	538.9
129	24.900	.62900-01	126.00	.3637	.6754	.5115	.9374	.2613-01	.1979-01	2.252	15.37	578.6
130	25.000	.79500-01	178.00	.2781	.4687	.3813	.9334	.1811-01	.1473-01	1.940	13.42	554.1
130	25.300	.10270	191.00	.2030	.3376	.2832	.9289	.1304-01	.1094-01	1.446	10.02	550.4
130	25.300	.10000+00	186.00	.2162	.3624	.3023	.9294	.1400-01	.1168-01	1.522	10.53	552.5
129	25.500	.60700-01	124.00	.4484	.9074	.6540	.9379	.3511-01	.2530-01	2.534	17.16	592.6
130	26.000	.12440	206.00	.1456	.2461	.2090	.9257	.9508-02	.8073-02	1.012	6.996	554.8
129	26.300	.82200-01	140.00	.2844	.4939	.3979	.9327	.1911-01	.1540-01	1.917	13.18	564.5
130	26.700	.12100	199.00	.1912	.3352	.2801	.9261	.1295-01	.1082-01	1.263	8.687	563.7
130	26.800	.16810	222.00	.9482-01	.1540	.1352	.9223	.5951-02	.5223-02	.7002	4.871	543.5
130	27.000	.19040	237.00	.6862-01	.1055	.9437-01	.9220	.4078-02	.3646-02	.5567	3.913	524.7
130	27.100	.21310	249.00	.5265-01	.7807-01	.7057-01	.9220	.3016-02	.2727-02	.4590	3.255	509.0
130	27.200	.80300-01	180.00	.3334	.5950	.4726	.9330	.2299-01	.1826-01	2.153	14.78	567.5
129	27.400	.40100-01	98.000	.5454	1.225	.7952	.9434	.4740-01	.3077-01	2.810	18.90	605.5
130	27.400	.16480	215.00	.1018	.1686	.1470	.9224	.6515-02	.5679-02	.7285	5.052	549.4
129	27.600	.41600-01	102.00	.5521	1.288	.8195	.9429	.4985-01	.3171-01	2.761	18.53	609.4
130	27.600	.12440	205.00	.1661	.2870	.2418	.9256	.1109-01	.9343-02	1.119	7.714	560.3
130	27.600	.18700	230.00	.6783-01	.1049	.9367-01	.9220	.4054-02	.3619-02	.5445	3.823	526.9
130	27.700	.21010	243.00	.6067-01	.9078-01	.8184-01	.9220	.3507-02	.3162-02	.5191	3.673	513.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K020)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
130	27.900	.10110	188.00	.2393	.4204	.3448	.9290	.1624-01	.1332-01	1.577	10.85	564.1
129	28.000	.46800-01	110.00	.2873	.4732	.3733	.9413	.1831-01	.1444-01	2.090	14.48	550.7
130	28.200	.16810	221.00	.1052	.1743	.1520	.9223	.6734-02	.5875-02	.7533	5.224	549.3
130	28.300	.19040	236.00	.7279-01	.1124	.1004	.9220	.4341-02	.3877-02	.5867	4.121	526.0
130	28.300	.12200	201.00	.1538	.2576	.2193	.9259	.9954-02	.8472-02	1.083	7.497	552.4
129	28.400	.53500-01	114.00	.3020	.5099	.4011	.9394	.1973-01	.1552-01	2.116	14.61	557.5
130	28.400	.21310	248.00	.6082-01	.9046-01	.8170-01	.9220	.3495-02	.3157-02	.5268	3.733	510.5
129	28.700	.58600-01	117.00	.4678	.9020	.6667	.9380	.3490-01	.2580-01	2.777	18.89	585.2
130	28.800	.16580	217.00	.1208	.2044	.1770	.9223	.7896-02	.6839-02	.8386	5.797	555.0
129	28.800	.60400-01	121.00	.4701	1.013	.7066	.9375	.3919-01	.2734-01	2.507	16.91	600.8
130	29.000	.21110	244.00	.6388-01	.9562-01	.8620-01	.9220	.3695-02	.3330-02	.5462	3.864	513.4
129	29.000	.65700-01	129.00	.2467	.3998	.3265	.9362	.1547-01	.1263-01	1.841	12.79	545.8
129	29.200	.72400-01	133.00	.2593	.4370	.3533	.9346	.1691-01	.1367-01	1.823	12.59	557.0
129	29.300	.79500-01	136.00	.3466	.6759	.5145	.9330	.2615-01	.1991-01	2.034	13.82	587.0
129	29.600	.92500-01	143.00	.1962	.3239	.2704	.9304	.1253-01	.1046-01	1.422	9.847	551.4
129	29.700	.10000+00	146.00	.2450	.4478	.3610	.9291	.1733-01	.1397-01	1.547	10.57	575.5
130	29.900	.12100	198.00	.1904	.3372	.2810	.9259	.1303-01	.1086-01	1.241	8.530	565.9
130	30.200	.16480	214.00	.1305	.2240	.1930	.9223	.8653-02	.7458-02	.8868	6.118	558.7
130	30.200	.18700	229.00	.9177-01	.1448	.1285	.9220	.5594-02	.4963-02	.7113	4.974	534.1
130	30.300	.21010	242.00	.7147-01	.1077	.9691-01	.9220	.4162-02	.3744-02	.6029	4.258	516.3
129	31.500	.91000-02	82.000	.4032	.6807	.5112	.9482	.2634-01	.1978-01	2.826	19.51	557.5
129	31.500	.11100-01	83.000	.4667	.8163	.5998	.9482	.3158-01	.2321-01	3.114	21.40	566.2
129	31.500	.14200-01	84.000	.5943	3.024	.7495	.9742	.1170	.2900-01	2.114	13.91	646.7
129	31.500	.16000-01	85.000	.7430	2.237	.8974	.9742	.8657-01	.3472-01	3.179	21.13	628.1
129	31.500	.17600-01	86.000	.7035	2.013	.8451	.9742	.7790-01	.3270-01	3.090	20.57	625.1
129	31.500	.19400-01	87.000	.6290	1.445	.7361	.9742	.5589-01	.2848-01	3.184	21.39	607.8
130	32.100	.21010	241.00	.6277-01	.9380-01	.8460-01	.9220	.3624-02	.3269-02	.5388	3.813	512.5
130	32.200	.16480	213.00	.1168	.1973	.1710	.9223	.7622-02	.6606-02	.8124	5.617	554.6
130	32.200	.17860	224.00	.7855-01	.1234	.1096	.9220	.4767-02	.4235-02	.6136	4.294	532.5
130	32.200	.18700	228.00	.6880-01	.1063	.9493-01	.9220	.4108-02	.3668-02	.5532	3.885	526.5
130	32.300	.12100	197.00	.1896	.3254	.2747	.9258	.1257-01	.1061-01	1.289	8.894	558.7
130	32.300	.12300	194.00	.1612	.2797	.2355	.9255	.1081-01	.9098-02	1.079	7.436	561.3
130	32.300	.12730	208.00	.9802-01	.1592	.1377	.9250	.6151-02	.5319-02	.7239	5.036	543.5
130	32.300	.13420	209.00	.1007	.1705	.1459	.9243	.6588-02	.5637-02	.6975	4.821	555.3
129	32.400	.10000+00	147.00	.2069	.3548	.2941	.9289	.1373-01	.1138-01	1.419	9.773	561.4
130	32.400	.10110	184.00	.2328	.4053	.3344	.9286	.1566-01	.1292-01	1.553	10.69	562.0
130	32.400	.10630	193.00	.1286	.2025	.1746	.9278	.7825-02	.6745-02	.9991	6.989	533.5
130	32.500	.85800-01	183.00	.1600	.2517	.2133	.9314	.9726-02	.8242-02	1.246	8.717	533.1
129	32.600	.79500-01	137.00	.3017	.5584	.4368	.9327	.2161-01	.1690-01	1.876	12.81	578.0
130	32.600	.80800-01	176.00	.3206	.5711	.4558	.9324	.2206-01	.1761-01	2.077	14.27	567.0
129	32.700	.67400-01	132.00	.1972	.3152	.2601	.9354	.1220-01	.1006-01	1.505	10.48	541.4
129	32.700	.72400-01	134.00	.2508	.4196	.3410	.9343	.1623-01	.1319-01	1.783	12.32	555.0
129	32.800	.65700-01	130.00	.2000	.3141	.2608	.9358	.1215-01	.1009-01	1.575	11.01	535.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K020)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
130	32.800	.16680	210.00	.1069	.1771	.1545	.9222	.6841-02	.5970-02	.7663	5.314	549.2
130	32.800	.18880	225.00	.6349-01	.9650-01	.8660-01	.9220	.3728-02	.3346-02	.5269	3.713	519.9
129	32.900	.58600-01	118.00	.4792	.8867	.6720	.9376	.3431-01	.2600-01	2.980	20.34	578.0
129	32.900	.60400-01	122.00	.3500	.6188	.4815	.9371	.2394-01	.1863-01	2.302	15.80	568.7
130	32.900	.61300-01	171.00	.4146	.8190	.6025	.9368	.3164-01	.2328-01	2.383	16.20	585.9
129	33.000	.53500-01	115.00	.3345	.5723	.4483	.9389	.2214-01	.1735-01	2.300	15.85	560.9
129	33.200	.48300-01	113.00	.2524	.4019	.3245	.9403	.1555-01	.1255-01	1.940	13.52	540.1
130	33.400	.42800-01	166.00	.5011	1.035	.7162	.9418	.4000-01	.2767-01	2.757	18.68	592.3
129	33.500	.40100-01	99.000	.4853	.9381	.6710	.9427	.3630-01	.2596-01	2.873	19.54	585.6
129	33.600	.38300-01	97.000	.4321	.7780	.5781	.9432	.3010-01	.2237-01	2.777	19.01	572.6
129	33.700	.36700-01	96.000	.3876	.6706	.5085	.9437	.2595-01	.1967-01	2.625	18.06	563.6
129	33.900	.33800-01	95.000	.2878	.4727	.3675	.9446	.1829-01	.1422-01	2.103	14.58	549.8
130	34.700	.21010	240.00	.5626-01	.8397-01	.7576-01	.9220	.3244-02	.2927-02	.4840	3.427	512.0
130	34.700	.18700	227.00	.7629-01	.1187	.1058	.9220	.4588-02	.4087-02	.6057	4.247	529.2
130	34.900	.16480	212.00	.1025	.1708	.1487	.9223	.6600-02	.5746-02	.7267	5.035	551.1
129	35.100	.10000+00	148.00	.2150	.3644	.3038	.9287	.1410-01	.1176-01	1.499	10.34	558.5
130	35.200	.23900-01	161.00	.2810	.4468	.3489	.9476	.1726-01	.1348-01	2.149	15.01	536.7
129	35.300	.92500-01	145.00	.2192	.3688	.3062	.9300	.1427-01	.1185-01	1.544	10.66	556.6
129	35.300	.22100-01	160.00	.2689	.4279	.3337	.9477	.1656-01	.1291-01	2.069	14.42	539.9
130	35.400	.18800	231.00	.7096-01	.1100	.9810-01	.9220	.4248-02	.3790-02	.5681	3.987	527.5
130	35.500	.12100	196.00	.1731	.2960	.2505	.9256	.1144-01	.9677-02	1.183	8.167	557.7
130	35.600	.16580	216.00	.9324-01	.1536	.1343	.9222	.5936-02	.5189-02	.6733	4.673	547.8
129	35.800	.80600-01	138.00	.2647	.4516	.3679	.9322	.1747-01	.1423-01	1.828	12.60	560.2
130	35.900	.21310	247.00	.4810-01	.7109-01	.6433-01	.9220	.2747-02	.2485-02	.4221	2.996	507.5
130	36.000	.19040	235.00	.5936-01	.9100-01	.8145-01	.9220	.3516-02	.3147-02	.4846	3.409	523.4
130	36.200	.16810	220.00	.8482-01	.1377	.1210	.9222	.5319-02	.4674-02	.6270	4.362	543.3
129	36.200	.72400-01	135.00	.2695	.4538	.3683	.9340	.1756-01	.1425-01	1.897	13.10	556.8
130	36.300	.12200	200.00	.1569	.2663	.2262	.9255	.1029-01	.8738-02	1.084	7.488	555.9
129	36.600	.65700-01	131.00	.1763	.2802	.2318	.9355	.1084-01	.8967-02	1.359	9.476	539.4
130	36.700	.18700	226.00	.6716-01	.1040	.9281-01	.9220	.4019-02	.3586-02	.5381	3.777	527.3
130	36.900	.16480	211.00	.8868-01	.1467	.1281	.9222	.5668-02	.4948-02	.6305	4.414	548.9
130	36.900	.10110	187.00	.2244	.3835	.3193	.9283	.1482-01	.1234-01	1.534	10.59	557.6
129	37.000	.60400-01	123.00	.3781	.6834	.5270	.9367	.2644-01	.2039-01	2.419	16.55	573.3
130	37.000	.12440	204.00	.1408	.2354	.2014	.9251	.9097-02	.7781-02	.9938	6.882	552.0
129	37.100	.58600-01	119.00	.4282	.7691	.5934	.9372	.2976-01	.2296-01	2.762	18.91	572.0
130	37.200	.21310	246.00	.5160-01	.7639-01	.6909-01	.9220	.2952-02	.2669-02	.4513	3.202	508.3
130	37.600	.16810	219.00	.7435-01	.1208	.1061	.9221	.4667-02	.4100-02	.5489	3.819	543.6
129	37.800	.10270	150.00	.1658	.2771	.2332	.9281	.1072-01	.9022-02	1.181	8.164	554.7
130	37.900	.12100	195.00	.1448	.2417	.2065	.9255	.9340-02	.7977-02	1.025	7.096	551.5
130	38.000	.80300-01	179.00	.3079	.5395	.4346	.9321	.2084-01	.1679-01	2.036	14.01	563.5
129	38.500	.46800-01	112.00	.2416	.3833	.3101	.9402	.1483-01	.1200-01	1.867	13.02	538.9
130	38.600	.12440	203.00	.1327	.2222	.1901	.9251	.8586-02	.7344-02	.9354	6.476	552.3
130	38.700	.10000+00	185.00	.2194	.3741	.3116	.9284	.1445-01	.1204-01	1.506	10.40	557.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K020)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWOT DEG. R /SEC	TW DEG. R
129	38.900	.82200-01	141.00	.2403	.4048	.3327	.9317	.1566-01	.1287-01	1.690	11.67	556.9
129	39.300	.41600-01	104.00	.4217	.7746	.5743	.9417	.2997-01	.2222-01	2.645	18.07	576.6
130	39.500	.10270	190.00	.2063	.3503	.2931	.9279	.1354-01	.1133-01	1.424	9.837	556.0
130	39.600	.16810	218.00	.6017-01	.9734-01	.8564-01	.9221	.3761-02	.3309-02	.4474	3.114	542.3
130	39.900	.19040	233.00	.5284-01	.8088-01	.7242-01	.9220	.3125-02	.2798-02	.4328	3.046	522.7
130	40.100	.79500-01	177.00	.2906	.5073	.4093	.9321	.1960-01	.1581-01	1.931	13.30	562.7
130	40.200	.12440	202.00	.1207	.2015	.1726	.9250	.7784-02	.6667-02	.8542	5.916	551.5
130	40.300	.21310	245.00	.3799-01	.5611-01	.5078-01	.9220	.2168-02	.1962-02	.3340	2.371	507.1
129	41.100	.82200-01	142.00	.2352	.4008	.3280	.9315	.1551-01	.1269-01	1.628	11.22	559.8
130	41.100	.60700-01	173.00	.3776	.6736	.5244	.9363	.2603-01	.2026-01	2.439	16.75	567.5
130	42.600	.59600-01	172.00	.4140	.7530	.5798	.9365	.2909-01	.2240-01	2.610	17.88	571.5
130	43.200	.42000-01	168.00	.3958	.6941	.5297	.9412	.2682-01	.2046-01	2.614	17.98	563.7
130	43.400	.82200-01	181.00	.2034	.3307	.2764	.9314	.1278-01	.1068-01	1.500	10.44	543.8
129	43.600	.62900-01	128.00	.2537	.4365	.3473	.9357	.1689-01	.1344-01	1.730	11.91	562.4
129	45.000	.22900-01	8.0000	.5027	.9844	.6792	.9469	.3809-01	.2628-01	2.936	19.94	587.7
130	46.100	.62900-01	174.00	.3249	.5676	.4488	.9355	.2193-01	.1734-01	2.157	14.85	562.8
130	47.700	.40800-01	167.00	.4231	.7473	.5678	.9413	.2887-01	.2194-01	2.769	19.03	565.3
129	48.400	.44200-01	109.00	.3545	.6297	.4796	.9403	.2436-01	.1856-01	2.319	15.90	569.6
129	50.000	.19400-01	156.00	.5215	1.111	.6102	.9726	.4299-01	.2361-01	2.809	18.95	599.5
129	51.000	.12100-01	154.00	.5311	1.905	.6622	.9726	.7369-01	.2562-01	2.105	13.93	636.2
129	51.000	.17600-01	155.00	.5027	1.071	.5883	.9726	.4144-01	.2276-01	2.707	18.27	599.5
130	51.900	.44800-01	170.00	.2902	.4780	.3799	.9399	.1847-01	.1468-01	2.098	14.56	547.6
130	53.200	.24700-01	163.00	.3262	.5463	.4168	.9460	.2111-01	.1610-01	2.299	15.91	552.3
130	65.200	.24700-01	162.00	.3773	.6591	.4907	.9460	.2547-01	.1896-01	2.505	17.24	562.8
128	90.000	.91000-02	44.000	.4088	.7357	.5317	.9480	.2849-01	.2059-01	2.646	18.09	575.5
128	90.000	.11100-01	45.000	.4482	.8306	.5894	.9480	.3217-01	.2283-01	2.800	19.08	581.4
128	90.000	.13100-01	46.000	.4849	.9617	.6535	.9480	.3725-01	.2531-01	2.813	19.05	592.9
128	90.000	.17000-01	48.000	.4248	.8482	.5738	.9480	.3285-01	.2222-01	2.447	16.56	593.9
128	90.000	.20900-01	50.000	.4544	.8876	.6091	.9480	.3437-01	.2359-01	2.678	18.16	590.5
128	90.000	.24900-01	52.000	.3954	.7518	.5263	.9475	.2912-01	.2038-01	2.399	16.31	586.0
128	90.000	.26900-01	53.000	.4370	.8348	.5852	.9469	.3233-01	.2266-01	2.638	17.92	586.8
128	90.000	.28800-01	54.000	.4319	.8139	.5776	.9462	.3152-01	.2237-01	2.646	18.00	584.5
128	90.000	.32800-01	55.000	.3808	.6869	.5046	.9449	.2660-01	.1954-01	2.459	16.80	576.0
128	90.000	.36700-01	56.000	.3670	.6564	.4881	.9437	.2542-01	.1890-01	2.394	16.38	574.2
128	90.000	.40600-01	57.000	.3516	.6357	.4731	.9425	.2462-01	.1832-01	2.263	15.46	576.5
128	90.000	.48500-01	58.000	.3334	.5859	.4490	.9403	.2269-01	.1739-01	2.226	15.26	570.3
128	90.000	.56400-01	59.000	.2753	.4746	.3720	.9381	.1838-01	.1441-01	1.885	12.96	565.8
128	90.000	.76100-01	60.000	.2035	.3409	.2792	.9334	.1320-01	.1077-01	1.452	10.02	558.4
128	90.000	.95800-01	61.000	.1514	.2513	.2103	.9295	.9733-02	.8146-02	1.095	7.568	555.9
128	90.000	.11550	62.000	.1044	.1721	.1468	.9265	.6664-02	.5687-02	.7626	5.275	554.0
128	135.00	.19000-01	49.000	.4910	.9778	.6245	.9571	.3787-01	.2419-01	2.837	19.21	593.5
128	135.00	.22900-01	51.000	.5138	1.037	.6559	.9571	.4018-01	.2540-01	2.927	19.80	595.5
128	180.00	.91000-02	23.000	.3907	.7568	.4555	.9706	.2931-01	.1764-01	2.323	15.76	589.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K020)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
128	180.00	.11100-01	24.000	.6075	1.532	.7388	.9706	.5935-01	.2861-01	2.895	19.33	619.6
128	180.00	.13100-01	25.000	.6636	1.628	.8037	.9706	.6307-01	.3113-01	3.221	21.53	617.3
128	180.00	.15000-01	26.000	.6178	1.471	.7449	.9706	.5698-01	.2885-01	3.063	20.50	614.7
128	180.00	.17000-01	27.000	.6480	1.505	.7785	.9706	.5830-01	.3015-01	3.272	21.93	612.3
128	180.00	.19000-01	28.000	.6515	1.478	.7798	.9706	.5723-01	.3020-01	3.351	22.49	609.8
128	180.00	.20900-01	29.000	.6466	1.380	.7665	.9706	.5345-01	.2968-01	3.499	23.57	602.9
128	180.00	.26800-01	32.000	.5413	1.057	.6393	.9686	.4095-01	.2476-01	3.190	21.63	590.5
128	180.00	.32800-01	33.000	.5068	.9445	.5979	.9671	.3658-01	.2315-01	3.146	21.42	582.4
128	180.00	.36700-01	34.000	.4759	.9132	.5694	.9657	.3536-01	.2205-01	2.858	19.41	587.6
128	180.00	.48500-01	36.000	.4273	.7882	.5197	.9615	.3053-01	.2009-01	2.684	18.30	580.5
128	180.00	.56400-01	37.000	.4071	.7410	.4999	.9588	.2870-01	.1936-01	2.599	17.74	577.8
128	180.00	.76100-01	38.000	.3285	.5808	.4140	.9524	.2249-01	.1603-01	2.174	14.89	571.7
128	180.00	.95800-01	39.000	.2710	.4676	.3494	.9466	.1811-01	.1353-01	1.853	12.73	566.1
128	180.00	.11550	40.000	.2234	.3862	.2967	.9414	.1496-01	.1149-01	1.524	10.47	566.5
128	180.00	.18450	42.000	.1075	.1758	.1494	.9278	.6810-02	.5788-02	.7951	5.506	551.6
128	225.00	.22900-01	30.000	.6373	1.353	.7120	.9802	.5241-01	.2758-01	3.465	23.34	602.3
128	270.00	.91000-02	63.000	.5358	1.592	.6254	.9784	.6165-01	.2422-01	2.323	15.42	630.7
128	270.00	.11100-01	64.000	.6747	1.924	.7847	.9784	.7450-01	.3039-01	2.989	19.86	628.3
128	270.00	.13100-01	65.000	.6925	1.914	.8032	.9784	.7414-01	.3110-01	3.120	20.76	626.3
128	270.00	.17000-01	67.000	.6868	1.698	.7881	.9784	.6577-01	.3052-01	3.317	22.16	618.0
128	270.00	.20900-01	69.000	.6823	1.545	.7758	.9784	.5984-01	.3005-01	3.515	23.59	609.7
128	270.00	.24900-01	71.000	.6228	1.351	.7070	.9779	.5231-01	.2738-01	3.324	22.37	604.9
128	270.00	.28800-01	73.000	.5448	1.116	.6195	.9764	.4320-01	.2399-01	3.063	20.69	597.5
128	270.00	.36700-01	75.000	.5370	1.083	.6199	.9735	.4194-01	.2401-01	3.064	20.73	595.3
128	270.00	.48500-01	77.000	.4818	.9309	.5660	.9692	.3605-01	.2192-01	2.873	19.50	588.7
128	270.00	.56400-01	78.000	.4260	.8155	.5076	.9664	.3158-01	.1966-01	2.565	17.43	587.2
128	270.00	.95900-01	80.000	.3077	.5461	.3863	.9534	.2115-01	.1496-01	2.027	13.88	572.5
128	270.00	.11550	81.000	.2463	.4375	.3194	.9476	.1694-01	.1237-01	1.621	11.10	572.7
128	315.00	.19000-01	68.000	.5400	1.083	.6480	.9667	.4194-01	.2510-01	3.098	20.96	594.5
128	315.00	.22900-01	70.000	.5095	1.054	.6152	.9667	.4083-01	.2382-01	2.835	19.14	599.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
42	3.010	5.045	6.051	36.08	723.7	.9677	257.3	-50.32	2367.	.1015-01	.2055-06	3.633
43	3.010	5.041	6.046	36.05	723.7	.9669	257.3	-50.32	2367.	.1014-01	.2055-06	3.630
44	3.010	5.040	6.045	36.08	723.7	.9677	257.3	-50.32	2367.	.1015-01	.2055-06	3.633

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
42	.4398-01	.7601-02
43	.4396-01	.7604-02
44	.4398-01	.7601-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
43	.00000	.91000-02	1.0000	.5259	1.222	.6653	.9632	.5371-01	.2925-01	2.938	19.85	596.6
43	.00000	.11100-01	2.0000	.6154	1.591	.7946	.9632	.6992-01	.3493-01	3.193	21.48	605.6
43	.00000	.15000-01	4.0000	.5772	1.512	.7471	.9632	.6647-01	.3284-01	2.970	19.96	606.6
43	.00000	.17000-01	5.0000	.5553	1.403	.7140	.9632	.6169-01	.3139-01	2.923	19.68	603.9
43	.00000	.19000-01	6.0000	.5532	1.408	.7122	.9632	.6188-01	.3131-01	2.900	19.52	604.4
43	.00000	.24900-01	9.0000	.5003	1.144	.6330	.9628	.5030-01	.2783-01	2.828	19.13	595.1
43	.00000	.26900-01	10.000	.4786	1.030	.6006	.9621	.4529-01	.2640-01	2.843	19.30	588.5
42	.00000	.32800-01	12.000	.4523	.9193	.5675	.9601	.4043-01	.2496-01	2.834	19.31	581.2
42	.00000	.36700-01	13.000	.4329	.8520	.5430	.9588	.3747-01	.2388-01	2.801	19.13	576.6
42	.00000	.40600-01	14.000	.4422	.8927	.5628	.9575	.3926-01	.2475-01	2.789	19.02	580.3
42	.00000	.48500-01	15.000	.4120	.8065	.5278	.9552	.3547-01	.2321-01	2.681	18.32	575.7
42	.00000	.56400-01	16.000	.3951	.7845	.5156	.9529	.3450-01	.2267-01	2.533	17.29	577.9
42	.00000	.76100-01	17.000	.3001	.5546	.3943	.9479	.2439-01	.1734-01	2.082	14.30	566.0
42	.00000	.11550	19.000	.1739	.3180	.2390	.9405	.1399-01	.1047-01	1.221	8.399	564.0
42	.00000	.16480	20.000	.9640-01	.1714	.1342	.9356	.7536-02	.5904-02	.7013	4.839	558.3
42	.00000	.21400	22.000	.6226-01	.1012	.8323-01	.9345	.4450-02	.3660-02	.5150	3.598	535.6
44	2.0000	.24700-01	165.00	.4209	.8443	.5183	.9625	.3713-01	.2279-01	2.671	18.22	579.4
43	9.0000	.15000-01	157.00	.4795	1.177	.6193	.9619	.5175-01	.2722-01	2.574	17.35	601.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
43	9.0000	.17600-01	158.00	.4886	1.127	.6231	.9619	.4956-01	.2739-01	2.744	18.55	595.9
44	9.8000	.24700-01	164.00	.4213	.8601	.5246	.9614	.3783-01	.2307-01	2.629	17.91	581.8
43	10.000	.22900-01	88.000	.4285	.9360	.5405	.9618	.4114-01	.2376-01	2.514	17.05	590.2
43	10.000	.26900-01	90.000	.4179	.8344	.5201	.9606	.3668-01	.2286-01	2.664	18.18	578.7
43	10.000	.34700-01	94.000	.4512	.9460	.5780	.9581	.4159-01	.2541-01	2.744	18.66	585.3
43	12.000	.17600-01	152.00	.6808	-8.889	.7916	.9870	-.3907	.3480-01	2.012	13.17	656.5
43	12.000	.12100-01	151.00	.4245	-6.847	.4924	.9870	-.3010	.2165-01	1.271	8.330	655.5
43	13.000	.19400-01	153.00	.7112	-32.63	.8202	.9870	-1.434	.3605-01	2.214	14.53	652.8
44	14.600	.44200-01	169.00	.4693	.9600	.6111	.9546	.4222-01	.2687-01	2.922	19.91	582.1
43	18.500	.44200-01	106.00	.4720	1.035	.6285	.9542	.4552-01	.2763-01	2.759	18.71	590.7
44	19.600	.62900-01	175.00	.3551	.6748	.4679	.9491	.2968-01	.2058-01	2.386	16.35	570.9
43	19.800	.40800-01	101.00	.5015	1.138	.6695	.9551	.5002-01	.2943-01	2.852	19.30	594.3
43	20.000	.24900-01	89.000	.3523	.7149	.4414	.9602	.3143-01	.1940-01	2.209	15.06	581.0
43	20.000	.28800-01	91.000	.3602	.7179	.4530	.9589	.3156-01	.1991-01	2.300	15.70	578.4
43	20.000	.32800-01	93.000	.4189	.8765	.5381	.9576	.3853-01	.2365-01	2.553	17.36	585.0
44	21.800	.82200-01	182.00	.2692	.4932	.3596	.9447	.2169-01	.1581-01	1.886	12.97	564.3
43	22.200	.62900-01	125.00	.3889	.8069	.5289	.9489	.3547-01	.2325-01	2.388	16.25	584.0
43	22.400	.44200-01	107.00	.4266	.9316	.5687	.9539	.4095-01	.2500-01	2.504	16.98	590.2
44	22.600	.10270	192.00	.2034	.3616	.2743	.9410	.1590-01	.1206-01	1.481	10.22	558.2
43	23.000	.42000-01	105.00	.4951	1.211	.6773	.9545	.5323-01	.2978-01	2.665	17.97	601.2
43	23.400	.59600-01	120.00	.4557	1.008	.6294	.9496	.4431-01	.2767-01	2.647	17.94	591.6
44	23.900	.21310	250.00	.7665-01	.1214	.1010	.9345	.5338-02	.4444-02	.6620	4.647	527.3
43	24.100	.82200-01	139.00	.2783	.5312	.3782	.9445	.2335-01	.1663-01	1.860	12.74	571.7
44	24.400	.19040	238.00	.9596-01	.1567	.1286	.9345	.6890-02	.5655-02	.7881	5.502	536.9
44	24.400	.12440	207.00	.1588	.2882	.2200	.9380	.1267-01	.9677-02	1.126	7.750	562.5
44	24.800	.16810	223.00	.1108	.1909	.1524	.9349	.8394-02	.6704-02	.8405	5.822	551.2
43	24.900	.62900-01	126.00	.3770	.8121	.5198	.9487	.3570-01	.2285-01	2.239	15.19	588.6
44	25.000	.79500-01	178.00	.3281	.6247	.4440	.9450	.2747-01	.1953-01	2.199	15.07	571.3
44	25.300	.10270	191.00	.2104	.3795	.2858	.9408	.1669-01	.1257-01	1.503	10.36	561.2
44	25.300	.10000+00	186.00	.2374	.4416	.3259	.9413	.1942-01	.1433-01	1.634	11.22	567.2
43	25.500	.60700-01	124.00	.4564	1.095	.6485	.9492	.4815-01	.2851-01	2.489	16.79	599.6
44	26.000	.12440	206.00	.1664	.3056	.2320	.9379	.1344-01	.1020-01	1.163	7.995	564.8
43	26.300	.82200-01	140.00	.3159	.6016	.4293	.9444	.2645-01	.1887-01	2.116	14.50	571.3
44	26.700	.12100	199.00	.2096	.4028	.2977	.9383	.1771-01	.1309-01	1.391	9.522	572.8
44	26.800	.16810	222.00	.1171	.2031	.1617	.9349	.8930-02	.7110-02	.8800	6.090	552.8
44	27.000	.19040	237.00	.1001	.1651	.1349	.9345	.7260-02	.5932-02	.8097	5.644	539.8
44	27.100	.21310	249.00	.8366-01	.1340	.1110	.9345	.5894-02	.4880-02	.7086	4.963	531.1
44	27.200	.80300-01	180.00	.3372	.6566	.4612	.9447	.2888-01	.2028-01	2.206	15.09	574.9
43	27.400	.40100-01	98.000	.5313	1.348	.7322	.9547	.5927-01	.3219-01	2.789	18.77	604.2
44	27.400	.16480	215.00	.1230	.2198	.1724	.9350	.9667-02	.7581-02	.8893	6.133	559.3
43	27.600	.41600-01	102.00	.4653	1.252	.6531	.9543	.5506-01	.2871-01	2.356	15.82	608.5
44	27.600	.12440	205.00	.1741	.3236	.2442	.9379	.1423-01	.1074-01	1.200	8.238	567.0
44	27.600	.18700	230.00	.1134	.1902	.1542	.9345	.8363-02	.6780-02	.8947	6.222	544.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
44	27.700	.21010	243.00	.9851-01	.1611	.1321	.9345	.7084-02	.5811-02	.8070	5.633	537.4
44	27.900	.10110	188.00	.2319	.4396	.3216	.9410	.1933-01	.1414-01	1.562	10.71	570.5
43	28.000	.46800-01	110.00	.3235	.5982	.4131	.9527	.2630-01	.1816-01	2.240	15.39	566.1
44	28.200	.16810	221.00	.1200	.2117	.1672	.9349	.9312-02	.7351-02	.8807	6.083	556.7
44	28.300	.19040	236.00	.9233-01	.1513	.1240	.9345	.6656-02	.5453-02	.7537	5.259	538.1
44	28.300	.12200	201.00	.1987	.3660	.2771	.9381	.1610-01	.1219-01	1.384	9.514	565.3
43	28.400	.53500-01	114.00	.4136	.8863	.5604	.9509	.3896-01	.2463-01	2.467	16.75	588.0
44	28.400	.21310	248.00	.8486-01	.1360	.1126	.9345	.5982-02	.4952-02	.7180	5.028	531.3
43	28.700	.58600-01	117.00	.4993	1.164	.7013	.9496	.5116-01	.3083-01	2.782	18.80	596.9
44	28.800	.16580	217.00	.1222	.2213	.1725	.9349	.9731-02	.7584-02	.8690	5.984	562.0
43	28.800	.60400-01	121.00	.4786	1.229	.6945	.9491	.5402-01	.3053-01	2.494	16.78	605.1
44	29.000	.21110	244.00	.9378-01	.1526	.1255	.9345	.6712-02	.5518-02	.7741	5.408	536.0
43	29.000	.65700-01	129.00	.2679	.4812	.3485	.9478	.2115-01	.1532-01	1.923	13.25	560.4
43	29.200	.72400-01	133.00	.3368	.6916	.4650	.9463	.3040-01	.2044-01	2.089	14.23	582.6
43	29.300	.79500-01	136.00	.3262	.7032	.4634	.9448	.3091-01	.2037-01	1.936	13.14	588.7
43	29.600	.92500-01	143.00	.2601	.5003	.3597	.9423	.2200-01	.1581-01	1.723	11.79	573.0
43	29.700	.10000+00	146.00	.2499	.5210	.3604	.9411	.2290-01	.1584-01	1.527	10.39	584.6
44	29.900	.12100	198.00	.2236	.4388	.3209	.9382	.1930-01	.1411-01	1.451	9.917	576.1
44	30.200	.16480	214.00	.1219	.2240	.1733	.9349	.9850-02	.7622-02	.8520	5.858	564.8
44	30.200	.18700	229.00	.1013	.1725	.1388	.9345	.7586-02	.6106-02	.7815	5.422	548.3
44	30.300	.21010	242.00	.1038	.1719	.1402	.9345	.7562-02	.6165-02	.8332	5.804	541.1
43	31.500	.91000-02	82.000	.5504	1.242	.7094	.9597	.5458-01	.3119-01	3.145	21.29	593.7
43	31.500	.11100-01	83.000	.6326	1.675	.8441	.9597	.7363-01	.3711-01	3.234	21.73	607.4
43	31.500	.14200-01	84.000	.6330	-6.159	.7449	.9864	-.2707	.3275-01	1.826	11.95	658.0
43	31.500	.16000-01	85.000	.7243	-15.08	.8449	.9864	-.6629	.3714-01	2.198	14.41	654.6
43	31.500	.17600-01	86.000	.7625	55.14	.8808	.9864	2.424	.3872-01	2.460	16.16	650.3
43	31.500	.19400-01	87.000	.7577	4.004	.8518	.9864	.1760	.3745-01	2.973	9.70	634.4
44	32.100	.21010	241.00	.1023	.1677	.1374	.9345	.7374-02	.6041-02	.8344	5.821	538.2
44	32.200	.16480	213.00	.1209	.2189	.1706	.9349	.9628-02	.7504-02	.8601	5.923	562.0
44	32.200	.17860	224.00	.1168	.1973	.1594	.9346	.8677-02	.7008-02	.9121	6.335	546.2
44	32.200	.18700	228.00	.1062	.1760	.1435	.9345	.7739-02	.6309-02	.8525	5.939	541.1
44	32.300	.12100	197.00	.2256	.4276	.3188	.9381	.1881-01	.1402-01	1.520	10.42	570.5
44	32.300	.12300	194.00	.1813	.3447	.2569	.9379	.1516-01	.1130-01	1.218	8.344	571.0
44	32.300	.12730	208.00	.1040	.1797	.1412	.9375	.7903-02	.6211-02	.7864	5.446	551.8
44	32.300	.13420	209.00	.1205	.2196	.1686	.9368	.9658-02	.7413-02	.8492	5.844	563.4
43	32.400	.10000+00	147.00	.2517	.4993	.3559	.9410	.2195-01	.1564-01	1.614	11.02	577.8
44	32.400	.10110	184.00	.2671	.5200	.3751	.9408	.2287-01	.1650-01	1.748	11.95	574.9
44	32.400	.10630	193.00	.1429	.2383	.1890	.9400	.1048-01	.8268-02	1.135	7.901	542.9
44	32.500	.85800-01	183.00	.1795	.3036	.2336	.9434	.1335-01	.1027-01	1.398	9.711	546.6
43	32.600	.79500-01	137.00	.3573	.7539	.5042	.9446	.3314-01	.2216-01	2.161	14.69	586.1
44	32.600	.80800-01	176.00	.3196	.6329	.4410	.9444	.2783-01	.1940-01	2.055	14.03	577.5
43	32.700	.67400-01	132.00	.2426	.4378	.3173	.9472	.1925-01	.1395-01	1.731	11.92	561.4
43	32.700	.72400-01	134.00	.3021	.5858	.4088	.9461	.2575-01	.1797-01	1.984	13.57	574.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
43	32.800	.65700-01	130.00	.2291	.3936	.2933	.9476	.1730-01	.1289-01	1.743	12.08	550.5
44	32.800	.16680	210.00	.1140	.2002	.1584	.9349	.8806-02	.6968-02	.8419	5.818	555.7
44	32.800	.18880	225.00	.8912-01	.1429	.1183	.9345	.6287-02	.5203-02	.7533	5.276	531.5
43	32.900	.58600-01	118.00	.4330	.9561	.5991	.9493	.4203-01	.2634-01	2.518	17.06	591.4
43	32.900	.60400-01	122.00	.3535	.7161	.4770	.9489	.3148-01	.2097-01	2.221	15.14	580.8
44	32.900	.61300-01	171.00	.3847	.8283	.5306	.9487	.3643-01	.2333-01	2.286	15.52	588.6
43	33.000	.53500-01	115.00	.3638	.7159	.4805	.9506	.3147-01	.2112-01	2.354	16.08	576.5
43	33.200	.48300-01	113.00	.2976	.5297	.3768	.9520	.2328-01	.1656-01	2.160	14.90	558.5
44	33.400	.42800-01	166.00	.4053	.9027	.5447	.9536	.3970-01	.2395-01	2.341	15.86	592.3
43	33.500	.40100-01	99.000	.4593	1.027	.6143	.9544	.4514-01	.2700-01	2.643	17.90	592.8
43	33.600	.38300-01	97.000	.4450	.9513	.5856	.9549	.4182-01	.2574-01	2.660	18.06	587.7
43	33.700	.36700-01	96.000	.4081	.8430	.5302	.9554	.3706-01	.2331-01	2.517	17.13	583.4
43	33.900	.33800-01	95.000	.3424	.6474	.4313	.9563	.2846-01	.1896-01	2.312	15.85	570.1
44	34.700	.21010	240.00	.9848-01	.1604	.1318	.9345	.7054-02	.5796-02	.8120	5.672	536.2
44	34.700	.18700	227.00	.1140	.1907	.1548	.9345	.8387-02	.6808-02	.9027	6.279	543.7
44	34.900	.16480	212.00	.1144	.2039	.1602	.9349	.8967-02	.7044-02	.8296	5.723	558.8
43	35.100	.10000+00	148.00	.2457	.4771	.3445	.9409	.2097-01	.1514-01	1.611	11.02	574.5
44	35.200	.23900-01	161.00	.3315	.5922	.4036	.9594	.2604-01	.1775-01	2.397	16.53	559.2
43	35.300	.92500-01	145.00	.2479	.4688	.3409	.9421	.2061-01	.1499-01	1.673	11.47	570.1
43	35.300	.22100-01	160.00	.3204	.5837	.3920	.9595	.2566-01	.1723-01	2.260	15.55	563.2
44	35.400	.18800	231.00	.1077	.1793	.1459	.9345	.7884-02	.6415-02	.8595	5.983	542.3
44	35.500	.12100	196.00	.1988	.3691	.2783	.9381	.1623-01	.1224-01	1.371	9.414	566.9
44	35.600	.16580	216.00	.1115	.1958	.1550	.9349	.8613-02	.6816-02	.8246	5.698	555.6
43	35.800	.80600-01	138.00	.2654	.5062	.3611	.9443	.2225-01	.1588-01	1.775	12.16	571.5
44	35.900	.21310	247.00	.7243-01	.1157	.9592-01	.9345	.5088-02	.4218-02	.6165	4.320	530.1
44	36.000	.19040	235.00	.9333-01	.1527	.1252	.9345	.6715-02	.5507-02	.7641	5.333	537.5
44	36.200	.16910	220.00	.9489-01	.1629	.1304	.9348	.7164-02	.5734-02	.7234	5.013	550.3
43	36.200	.72400-01	135.00	.2618	.4881	.3493	.9460	.2146-01	.1535-01	1.797	12.33	567.6
44	36.300	.12200	200.00	.1854	.3404	.2584	.9379	.1497-01	.1137-01	1.296	8.912	564.7
43	36.600	.65700-01	131.00	.2326	.4134	.3020	.9475	.1817-01	.1328-01	1.692	11.69	558.2
44	36.700	.18700	226.00	.9902-01	.1639	.1337	.9345	.7206-02	.5878-02	.7963	5.548	540.8
44	36.900	.16480	211.00	.1018	.1791	.1416	.9349	.7877-02	.6227-02	.7506	5.186	556.0
44	36.900	.10110	187.00	.2550	.4808	.3535	.9407	.2115-01	.1555-01	1.729	11.85	569.6
43	37.000	.60400-01	123.00	.3806	.8184	.5245	.9487	.3598-01	.2306-01	2.263	15.36	588.4
44	37.000	.12440	204.00	.1560	.2799	.2155	.9377	.1231-01	.9476-02	1.122	7.736	560.1
43	37.100	.58600-01	119.00	.4237	.8863	.5767	.9492	.3896-01	.2535-01	2.582	17.56	585.0
44	37.200	.21310	246.00	.7357-01	.1178	.9758-01	.9345	.5182-02	.4292-02	.6233	4.366	531.0
44	37.600	.16810	219.00	.9079-01	.1556	.1246	.9348	.6843-02	.5482-02	.6937	4.808	549.9
43	37.800	.10270	150.00	.1925	.3576	.2656	.9404	.1572-01	.1167-01	1.327	9.113	566.9
44	37.900	.12100	195.00	.1926	.3493	.2668	.9380	.1536-01	.1173-01	1.367	9.412	562.3
44	38.000	.80300-01	179.00	.2840	.5344	.3844	.9443	.2350-01	.1690-01	1.929	13.23	569.2
43	38.500	.46800-01	112.00	.2879	.5104	.3637	.9522	.2244-01	.1599-01	2.101	14.50	557.7
44	38.600	.12440	203.00	.1550	.2781	.2141	.9376	.1223-01	.9415-02	1.114	7.681	560.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
44	38.700	.10000+00	185.00	.2507	.4651	.3448	.9408	.2045-01	.1516-01	1.730	11.88	566.7
43	38.900	.82200-01	141.00	.2217	.4133	.2997	.9439	.1817-01	.1317-01	1.522	10.45	567.6
43	39.300	.41600-01	104.00	.4034	.8575	.5345	.9537	.3769-01	.2350-01	2.423	16.46	587.0
44	39.500	.10270	190.00	.2337	.4310	.3215	.9404	.1895-01	.1414-01	1.625	11.17	565.6
44	39.600	.16810	218.00	.9178-01	.1565	.1257	.9348	.6883-02	.5527-02	.7063	4.899	548.7
44	39.900	.19040	233.00	.7766-01	.1264	.1039	.9345	.5561-02	.4570-02	.6407	4.475	536.1
44	40.100	.79500-01	177.00	.2777	.5204	.3749	.9444	.2288-01	.1649-01	1.895	13.00	568.5
44	40.200	.12440	202.00	.1518	.2725	.2098	.9376	.1199-01	.9226-02	1.091	7.517	560.3
44	40.300	.21310	245.00	.6933-01	.1108	.9185-01	.9345	.4873-02	.4039-02	.5895	4.131	530.3
43	41.100	.82200-01	142.00	.2502	.4690	.3391	.9438	.2062-01	.1491-01	1.707	11.71	568.5
44	41.100	.60700-01	173.00	.3643	.7185	.4882	.9485	.3160-01	.2147-01	2.352	16.07	576.9
44	42.300	.10270	189.00	.2094	.3766	.2849	.9403	.1656-01	.1253-01	1.501	10.35	560.7
44	42.600	.59600-01	172.00	.4008	.8076	.5403	.9488	.3552-01	.2376-01	2.532	17.27	580.0
44	43.200	.42000-01	168.00	.4044	.7987	.5251	.9534	.3513-01	.2309-01	2.607	17.81	577.1
44	43.400	.82200-01	181.00	.2704	.4900	.3615	.9438	.2155-01	.1590-01	1.920	13.22	562.2
43	43.600	.62900-01	128.00	.3114	.6012	.4157	.9479	.2643-01	.1828-01	2.055	14.06	573.5
43	45.000	.22900-01	8.0000	.6083	1.559	.8098	.9592	.6853-01	.3560-01	3.173	21.35	605.0
44	46.100	.62900-01	174.00	.3405	.6524	.4534	.9479	.2869-01	.1994-01	2.206	15.52	572.3
44	47.700	.40800-01	167.00	.4411	.8960	.5765	.9537	.3940-01	.2535-01	2.765	18.04	581.1
43	48.400	.44200-01	109.00	.3972	.8141	.5240	.9527	.3579-01	.2303-01	2.467	16.80	582.4
43	50.000	.19400-01	156.00	.5925	2.643	.6662	.9857	.1162	.2929-01	2.430	16.13	630.4
43	51.000	.12100-01	154.00	.5943	13.70	.6882	.9857	.6023	.3025-01	1.976	13.00	648.0
43	51.000	.17600-01	155.00	.5364	2.146	.6006	.9857	.9432-01	.2640-01	2.275	15.13	627.2
44	51.900	.44800-01	170.00	.3461	.6393	.4422	.9526	.2811-01	.1945-01	2.401	16.50	565.9
44	53.200	.24700-01	163.00	.4246	.8521	.5353	.9588	.3747-01	.2354-01	2.694	18.39	579.4
44	65.200	.24700-01	162.00	.4605	.9886	.5891	.9591	.4348-01	.2591-01	2.744	18.63	588.2
42	90.000	.91000-02	44.000	.5793	1.451	.7525	.9617	.6383-01	.3309-01	3.068	20.66	603.2
42	90.000	.11100-01	45.000	.6293	1.707	.8301	.9617	.7509-01	.3650-01	3.172	21.29	609.1
42	90.000	.13100-01	46.000	.6284	1.639	.8227	.9617	.7209-01	.3618-01	3.243	21.80	606.3
42	90.000	.17000-01	48.000	.5145	1.267	.6660	.9617	.5571-01	.2929-01	2.757	18.58	601.8
42	90.000	.20900-01	50.000	.5851	1.438	.7571	.9617	.6323-01	.3329-01	3.140	21.16	601.6
42	90.000	.24900-01	52.000	.5368	1.282	.6929	.9612	.5639-01	.3047-01	2.938	19.83	599.2
42	90.000	.26900-01	53.000	.5171	1.178	.6640	.9606	.5181-01	.2920-01	2.933	19.84	594.7
42	90.000	.28800-01	54.000	.5094	1.127	.6528	.9599	.4957-01	.2871-01	2.958	20.04	591.6
42	90.000	.32800-01	55.000	.4691	.9571	.5946	.9566	.4209-01	.2615-01	2.928	19.94	581.8
42	90.000	.36700-01	56.000	.4687	.9413	.5964	.9573	.4140-01	.2623-01	2.971	20.26	579.5
42	90.000	.40600-01	57.000	.4397	.8949	.5660	.9561	.3935-01	.2489-01	2.752	18.75	581.4
42	90.000	.48500-01	58.000	.4392	.8626	.5690	.9538	.3794-01	.2498-01	2.848	19.46	576.2
42	90.000	.56400-01	59.000	.3775	.7217	.4908	.9516	.3174-01	.2158-01	2.519	17.25	571.9
42	90.000	.76100-01	60.000	.2914	.5341	.3843	.9468	.2349-01	.1690-01	2.041	14.04	564.4
42	90.000	.95800-01	61.000	.2325	.4190	.3118	.9429	.1843-01	.1371-01	1.663	11.46	561.1
42	90.000	.11550	62.000	.1689	.3038	.2306	.9398	.1336-01	.1014-01	1.211	8.345	560.7
42	135.00	.19000-01	49.000	.6494	1.613	.7912	.9700	.7093-01	.3480-01	3.460	23.31	602.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
42	135.00	.22900-01	51.000	.6120	1.496	.7439	.9700	.6581-01	.3272-01	3.296	22.22	601.2
42	180.00	.91000-02	23.000	.4555	1.100	.5149	.9803	.4839-01	.2264-01	2.474	16.69	600.2
42	180.00	.11100-01	24.000	.7318	2.683	.8540	.9803	.1180	.3756-01	3.203	21.33	624.2
42	180.00	.13100-01	25.000	.7269	2.275	.8393	.9803	.1000	.3691-01	3.400	22.73	617.3
42	180.00	.15000-01	26.000	.6956	2.134	.8020	.9803	.9387-01	.3527-01	3.284	21.96	616.3
42	180.00	.17000-01	27.000	.7054	2.170	.8134	.9803	.9543-01	.3577-01	3.326	22.24	616.4
42	180.00	.19000-01	28.000	.7169	2.111	.8239	.9803	.9282-01	.3624-01	3.455	23.13	614.1
42	180.00	.20900-01	29.000	.6893	1.816	.7851	.9803	.7988-01	.3453-01	3.535	23.76	607.0
42	180.00	.28800-01	32.000	.6209	1.431	.7079	.9783	.6294-01	.3113-01	3.490	23.60	595.9
42	180.00	.32800-01	33.000	.5580	1.182	.6361	.9768	.5198-01	.2797-01	3.364	22.86	586.6
42	180.00	.36700-01	34.000	.5649	1.272	.6548	.9753	.5595-01	.2880-01	3.233	21.89	593.5
42	180.00	.56400-01	37.000	.4661	.9718	.5582	.9683	.4274-01	.2455-01	2.850	19.39	584.6
42	180.00	.76100-01	38.000	.3841	.7698	.4747	.9619	.3385-01	.2088-01	2.440	16.65	579.2
42	180.00	.95800-01	39.000	.3280	.6346	.4161	.9562	.2791-01	.1830-01	2.161	14.79	573.9
42	180.00	.11550	40.000	.2682	.5193	.3511	.9512	.2284-01	.1544-01	1.766	12.08	574.0
42	180.00	.18450	42.000	.1525	.2659	.2063	.9389	.1169-01	.9070-02	1.138	7.874	553.9
42	225.00	.22900-01	30.000	.7197	1.885	.7885	.9859	.8290-01	.3468-01	3.705	24.91	606.6
42	270.00	.91000-02	63.000	.5465	2.166	.6298	.9823	.9528-01	.2770-01	2.326	15.47	626.9
42	270.00	.11100-01	64.000	.7343	2.845	.8451	.9823	.1251	.3716-01	3.150	20.96	626.1
42	270.00	.13100-01	65.000	.7234	2.438	.8261	.9823	.1072	.3633-01	3.274	21.84	620.8
42	270.00	.17000-01	67.000	.8291	2.657	.9439	.9823	.1169	.4151-01	3.836	25.62	618.5
42	270.00	.20900-01	69.000	.6805	1.876	.7669	.9823	.8248-01	.3373-01	3.399	22.81	610.1
42	270.00	.24900-01	71.000	.7086	1.848	.7982	.9818	.8127-01	.3510-01	3.658	24.59	606.3
42	270.00	.28800-01	73.000	.6008	1.402	.6771	.9803	.6164-01	.2978-01	3.347	22.62	597.0
42	270.00	.36700-01	75.000	.5646	1.317	.6490	.9773	.5792-01	.2854-01	3.146	21.26	597.0
42	270.00	.46500-01	77.000	.5266	1.151	.6173	.9729	.5062-01	.2715-01	3.089	20.95	590.3
42	270.00	.56400-01	78.000	.4892	1.058	.5828	.9701	.4653-01	.2563-01	2.896	19.65	589.1
42	270.00	.95800-01	80.000	.3216	.6325	.4058	.9578	.2782-01	.1785-01	2.082	14.23	576.4
42	270.00	.11550	81.000	.2533	.4988	.3304	.9526	.2193-01	.1453-01	1.638	11.19	576.6
42	315.00	.19000-01	68.000	.5252	1.206	.6218	.9725	.5303-01	.2734-01	2.962	20.03	595.4
42	315.00	.22900-01	70.000	.6889	1.722	.8251	.9725	.7573-01	.3628-01	3.654	24.81	603.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
142	4.020	5.042	6.048	63.83	729.7	.4093	172.4	-50.32	2588.	.6408-02	.1387-06	3.714
143	4.020	5.040	6.036	63.71	730.7	.4085	172.6	-50.28	2589.	.6387-02	.1389-06	3.700
144	4.020	5.038	6.038	63.71	731.7	.4085	172.9	-50.30	2591.	.6378-02	.1391-06	3.692

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
142	.3828-01	.9584-02
143	.3825-01	.9601-02
144	.3826-01	.9609-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
143	.00000	.91000-02	1.0000	.3767	.6365	.4632	.9542	.2435-01	.1772-01	2.579	17.86	551.7
143	.00000	.15000-01	4.0000	.6087	1.247	.7949	.9542	.4771-01	.3041-01	3.323	22.56	587.9
143	.00000	.17000-01	5.0000	.6127	1.194	.7883	.9542	.4567-01	.3015-01	3.517	23.98	580.6
143	.00000	.19000-01	6.0000	.6095	1.167	.7800	.9542	.4464-01	.2984-01	3.566	24.35	577.7
143	.00000	.24900-01	9.0000	.5345	.9949	.6800	.9538	.3806-01	.2601-01	3.228	22.10	572.8
143	.00000	.26900-01	10.000	.4927	.8892	.6231	.9531	.3401-01	.2384-01	3.089	21.21	566.8
142	.00000	.32800-01	12.000	.4087	.7114	.5164	.9510	.2723-01	.1977-01	2.684	18.52	558.2
142	.00000	.36700-01	13.000	.3678	.6287	.4649	.9497	.2407-01	.1780-01	2.476	17.13	553.8
142	.00000	.40600-01	14.000	.3975	.6948	.5102	.9484	.2660-01	.1953-01	2.595	17.90	559.1
142	.00000	.48500-01	15.000	.3436	.5911	.4442	.9459	.2263-01	.1701-01	2.292	15.84	555.4
142	.00000	.56400-01	16.000	.3324	.5728	.4356	.9435	.2193-01	.1668-01	2.212	15.28	555.8
142	.00000	.76100-01	17.000	.2345	.3918	.3119	.9382	.1500-01	.1194-01	1.632	11.32	547.9
142	.00000	.95800-01	18.000	.5324-01	.8579-01	.7116-01	.9336	.3284-02	.2724-02	.3919	2.735	537.4
142	.00000	.11550	19.000	.1376	.2286	.1909	.9298	.8750-02	.7307-02	.9649	6.702	546.4
142	.00000	.16480	20.000	.6589-01	.1073	.9344-01	.9236	.4108-02	.3577-02	.4768	3.322	540.6
142	.00000	.21400	22.000	.3573-01	.5414-01	.4863-01	.9220	.2073-02	.1862-02	.2936	2.075	515.0
144	2.0000	.24700-01	165.00	.4342	.7516	.5402	.9535	.2876-01	.2067-01	2.879	19.87	558.4
143	9.0000	.15000-01	157.00	.5669	1.118	.7381	.9529	.4275-01	.2824-01	3.215	21.90	582.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
143	9.0000	.17600-01	158.00	.5251	.9604	.6676	.9529	.3674-01	.2554-01	3.238	22.21	569.5
144	9.8000	.24700-01	164.00	.4186	.7258	.5242	.9524	.2777-01	.2006-01	2.769	19.10	558.8
143	10.000	.22900-01	88.000	.4694	.8559	.5966	.9528	.3274-01	.2282-01	2.905	19.93	568.9
143	10.000	.26900-01	90.000	.4105	.7045	.5144	.9516	.2695-01	.1968-01	2.749	19.00	555.6
143	10.000	.34700-01	94.000	.4210	.7241	.5354	.9489	.2770-01	.2048-01	2.811	19.42	556.1
143	12.000	.17600-01	152.00	.8586	2.797	1.005	.9790	.1070	.3843-01	3.463	23.05	625.2
143	12.000	.12100-01	151.00	.7016	4.729	.8541	.9790	.1809	.3267-01	2.303	15.17	644.9
143	13.000	.19400-01	153.00	.8185	2.397	.9505	.9789	.9169-01	.3636-01	3.474	23.19	619.7
144	14.600	.44200-01	169.00	.4401	.7750	.5761	.9454	.2965-01	.2205-01	2.851	19.63	562.4
143	18.500	.44200-01	106.00	.4606	.8408	.6133	.9449	.3216-01	.2346-01	2.847	19.53	569.1
144	19.600	.62900-01	175.00	.3327	.5588	.4406	.9395	.2138-01	.1686-01	2.303	15.95	550.8
143	19.800	.40800-01	101.00	.4842	.8776	.6393	.9459	.3357-01	.2445-01	3.019	20.72	567.7
143	20.000	.24900-01	89.000	.3513	.6020	.4410	.9512	.2303-01	.1687-01	2.358	16.30	555.2
143	20.000	.28800-01	91.000	.3268	.5500	.4104	.9498	.2104-01	.1570-01	2.250	15.59	550.7
143	20.000	.32800-01	93.000	.3991	.6954	.5114	.9484	.2660-01	.1956-01	2.618	18.05	559.2
143	22.200	.62900-01	125.00	.3527	.6210	.4782	.9393	.2376-01	.1829-01	2.281	15.71	561.6
143	22.400	.44200-01	107.00	.4483	.8171	.5978	.9446	.3126-01	.2287-01	2.776	19.05	568.8
144	22.600	.10270	192.00	.1688	.2729	.2299	.9303	.1044-01	.8796-02	1.238	8.632	539.9
143	23.000	.42000-01	105.00	.5047	.9706	.6848	.9452	.3713-01	.2619-01	2.939	20.06	578.5
143	23.400	.59600-01	120.00	.3967	.7141	.5409	.9400	.2732-01	.2069-01	2.495	17.14	566.3
144	23.900	.21310	250.00	.3588-01	.5312-01	.4804-01	.9220	.2032-02	.1838-02	.3094	2.198	506.3
143	24.100	.82200-01	139.00	.2602	.4418	.3563	.9344	.1690-01	.1363-01	1.769	12.25	552.9
144	24.400	.19040	238.00	.6681-01	.1009	.9070-01	.9220	.3860-02	.3470-02	.5537	3.913	515.0
144	24.400	.12440	207.00	.1282	.2106	.1797	.9268	.8057-02	.6875-02	.9181	6.383	544.5
144	24.800	.16810	223.00	.8623-01	.1365	.1206	.9227	.5221-02	.4613-02	.6559	4.590	532.9
143	24.900	.62900-01	126.00	.3439	.6140	.4699	.9390	.2349-01	.1798-01	2.186	15.03	564.6
144	25.000	.79500-01	178.00	.2860	.4783	.3873	.9349	.1830-01	.1482-01	1.991	13.81	549.7
144	25.300	.10270	191.00	.1897	.3103	.2604	.9302	.1187-01	.9962-02	1.368	9.514	543.3
144	25.300	.10000+00	186.00	.2156	.3577	.2975	.9307	.1369-01	.1138-01	1.519	10.54	547.5
143	25.500	.60700-01	124.00	.3960	.7435	.5518	.9396	.2844-01	.2111-01	2.368	16.20	574.3
144	26.000	.12440	206.00	.1429	.2373	.2017	.9267	.9078-02	.7717-02	1.006	6.980	547.7
143	26.300	.82200-01	140.00	.2789	.4728	.3818	.9343	.1809-01	.1461-01	1.900	13.15	552.5
144	26.700	.12100	199.00	.1850	.3139	.2640	.9271	.1201-01	.1010-01	1.261	8.723	553.5
144	26.800	.16810	222.00	.9389-01	.1498	.1320	.9226	.5732-02	.5051-02	.7042	4.920	535.7
144	27.000	.19040	237.00	.6644-01	.1017	.9105-01	.9220	.3890-02	.3484-02	.5368	3.782	520.5
144	27.200	.80300-01	180.00	.2989	.5078	.4089	.9346	.1943-01	.1564-01	2.034	14.07	553.8
143	27.400	.40100-01	98.000	.5278	1.025	.7176	.9455	.3920-01	.2745-01	3.042	20.74	580.0
144	27.400	.16480	215.00	.1001	.1624	.1422	.9228	.6212-02	.5441-02	.7305	5.089	540.9
143	27.600	.41600-01	102.00	.5104	1.033	.7072	.9450	.3950-01	.2705-01	2.821	19.17	586.2
144	27.600	.12440	205.00	.1544	.2590	.2194	.9266	.9909-02	.8395-02	1.071	7.422	550.4
144	27.600	.18700	230.00	.8412-01	.1292	.1156	.9220	.4945-02	.4423-02	.6746	4.749	522.1
144	27.700	.21010	243.00	.6304-01	.9510-01	.8553-01	.9220	.3639-02	.3273-02	.5235	3.701	514.6
144	27.900	.10110	188.00	.2239	.3788	.3131	.9303	.1449-01	.1198-01	1.534	10.62	552.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
143	28.000	.46800-01	110.00	.2743	.4461	.3508	.9434	.1706-01	.1342-01	1.991	13.87	540.9
144	28.200	.16810	221.00	.9941-01	.1601	.1407	.9226	.6125-02	.5383-02	.7343	5.122	538.6
144	28.300	.19040	236.00	.2321-01	.3599-01	.3210-01	.9220	.1377-02	.1228-02	.1829	1.285	525.7
144	28.300	.12200	201.00	.1626	.2697	.2290	.9269	.1032-01	.8763-02	1.146	7.957	547.4
143	28.400	.53500-01	114.00	.3462	.6011	.4607	.9414	.2299-01	.1763-01	2.283	15.75	558.3
143	28.700	.58600-01	117.00	.4305	.7820	.5897	.9399	.2991-01	.2256-01	2.677	18.38	568.1
144	28.800	.16580	217.00	.1034	.1690	.1477	.9227	.6466-02	.5653-02	.7466	5.195	543.0
143	28.800	.60400-01	121.00	.3964	.7634	.5591	.9394	.2920-01	.2139-01	2.304	15.73	578.7
144	29.000	.21110	244.00	.4902-02	.7520-02	.6729-02	.9220	.2877-03	.2575-03	.3942-01	.2776	521.5
143	29.000	.65700-01	129.00	.2283	.3700	.2993	.9380	.1415-01	.1145-01	1.667	11.62	539.8
143	29.200	.72400-01	133.00	.2880	.4983	.3937	.9364	.1906-01	.1506-01	1.908	13.17	557.5
143	29.300	.79500-01	136.00	.2975	.5401	.4210	.9347	.2066-01	.1610-01	1.851	12.70	568.0
143	29.600	.92500-01	143.00	.2089	.3537	.2897	.9319	.1353-01	.1108-01	1.425	9.868	552.3
143	29.700	.10000+00	146.00	.2417	.4323	.3486	.9305	.1654-01	.1334-01	1.532	10.53	565.0
144	29.900	.12100	198.00	.1878	.3208	.2693	.9270	.1228-01	.1030-01	1.268	8.762	555.2
144	30.200	.16480	214.00	.1046	.1722	.1501	.9227	.6590-02	.5744-02	.7450	5.177	545.4
144	30.200	.18700	229.00	.4350-01	.6768-01	.6030-01	.9220	.2590-02	.2307-02	.3409	2.394	526.8
144	30.300	.21010	242.00	.3917-01	.5958-01	.5345-01	.9220	.2280-02	.2045-02	.3202	2.259	518.1
143	31.500	.91000-02	82.000	.3487	.5753	.4328	.9507	.2201-01	.1656-01	2.475	17.20	545.1
143	31.500	.11100-01	83.000	.4579	.7856	.5766	.9507	.3005-01	.2206-01	3.069	21.21	555.5
143	31.500	.14200-01	84.000	.8498	3.802	1.033	.9772	.1454	.3952-01	3.059	20.24	636.6
143	31.500	.16000-01	85.000	.9250	2.565	1.083	.9772	.9811-01	.4144-01	4.044	27.05	616.4
143	31.500	.17600-01	86.000	.8363	2.546	.9879	.9772	.9741-01	.3779-01	3.481	23.21	621.9
143	31.500	.19400-01	87.000	.7200	1.629	.8252	.9772	.6231-01	.3157-01	3.607	24.34	599.7
144	32.100	.21010	241.00	.6427-01	.9680-01	.8710-01	.9220	.3704-02	.3333-02	.5355	3.787	513.9
144	32.200	.16480	213.00	.9573-01	.1560	.1365	.9227	.5967-02	.5221-02	.6941	4.832	542.2
144	32.200	.17960	224.00	.7394-01	.1145	.1021	.9222	.4382-02	.3907-02	.5842	4.105	525.2
144	32.200	.18700	228.00	.7315-01	.1124	.1005	.9220	.4302-02	.3847-02	.5862	4.126	522.3
144	32.300	.12100	197.00	.1803	.3005	.2548	.9269	.1150-01	.9748-02	1.263	8.759	548.7
144	32.300	.12300	194.00	.1587	.2668	.2258	.9267	.1021-01	.8640-02	1.097	7.602	551.0
144	32.300	.12730	208.00	.8647-01	.1382	.1196	.9261	.5289-02	.4574-02	.6465	4.515	536.3
144	32.300	.13420	209.00	.8377-01	.1388	.1190	.9253	.5309-02	.4554-02	.5918	4.109	547.0
143	32.400	.10000+00	147.00	.2073	.3572	.2929	.9303	.1366-01	.1120-01	1.380	9.531	556.6
144	32.400	.10110	184.00	.2224	.3773	.3118	.9301	.1443-01	.1193-01	1.517	10.49	553.4
144	32.400	.10630	193.00	.1167	.1819	.1564	.9292	.6959-02	.5983-02	.9115	6.397	527.5
144	32.500	.85800-01	183.00	.1457	.2273	.1917	.9331	.8696-02	.7335-02	1.137	7.977	527.8
143	32.600	.79500-01	137.00	.3240	.5796	.4555	.9345	.2217-01	.1743-01	2.054	14.12	564.9
144	32.600	.80800-01	176.00	.2804	.4809	.3864	.9342	.1840-01	.1478-01	1.883	13.01	556.2
143	32.700	.67400-01	132.00	.2078	.3372	.2735	.9374	.1290-01	.1046-01	1.513	10.54	540.3
143	32.700	.72400-01	134.00	.2593	.4378	.3505	.9362	.1675-01	.1341-01	1.778	12.32	551.4
143	32.800	.65700-01	130.00	.1868	.2941	.2416	.9378	.1125-01	.9241-02	1.431	10.03	530.4
144	32.800	.16680	210.00	.8518-01	.1367	.1203	.9226	.5232-02	.4602-02	.6324	4.413	537.6
144	32.800	.18880	225.00	.6447-01	.9715-01	.8740-01	.9220	.3717-02	.3344-02	.5365	3.794	514.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
143	32.900	.58600-01	118.00	.3405	.6068	.4630	.9397	.2321-01	.1771-01	2.169	14.92	564.2
143	32.900	.60400-01	122.00	.3155	.5471	.4248	.9392	.2093-01	.1625-01	2.083	14.37	558.1
144	32.900	.61300-01	171.00	.3377	.6072	.4631	.9390	.2323-01	.1772-01	2.130	14.63	566.8
143	33.000	.53500-01	115.00	.3271	.5538	.4310	.9411	.2118-01	.1649-01	2.234	15.46	552.2
143	33.200	.48300-01	113.00	.2362	.3756	.3001	.9426	.1437-01	.1148-01	1.778	12.44	533.8
144	33.400	.42800-01	166.00	.4441	.8175	.5959	.9442	.3128-01	.2280-01	2.723	18.65	571.5
143	33.500	.40100-01	99.000	.4712	.8617	.6274	.9451	.3296-01	.2400-01	2.907	19.94	569.4
143	33.600	.38300-01	97.000	.4339	.7639	.5671	.9456	.2922-01	.2169-01	2.806	19.33	561.6
143	33.700	.36700-01	96.000	.3809	.6566	.4923	.9461	.2512-01	.1883-01	2.536	17.51	556.6
143	33.900	.33800-01	95.000	.2794	.4555	.3513	.9471	.1742-01	.1344-01	2.019	14.06	541.7
144	34.700	.21010	240.00	.6922-01	.1042	.9374-01	.9220	.3985-02	.3587-02	.5777	4.087	513.5
144	34.700	.18700	227.00	.6651-01	.1023	.9144-01	.9220	.3913-02	.3499-02	.5326	3.748	522.4
144	34.900	.16480	212.00	.7563-01	.1226	.1074	.9227	.4690-02	.4111-02	.5527	3.851	540.7
143	35.100	.10000+00	148.00	.1940	.3296	.2720	.9302	.1261-01	.1041-01	1.318	9.117	553.1
144	35.200	.23900-01	161.00	.2694	.4215	.3282	.9503	.1613-01	.1256-01	2.090	14.66	528.9
143	35.300	.92500-01	145.00	.2004	.3348	.2761	.9317	.1281-01	.1056-01	1.395	9.679	548.7
143	35.300	.22100-01	160.00	.2812	.4459	.3442	.9505	.1706-01	.1317-01	2.127	14.88	532.9
144	35.400	.18800	231.00	.7358-01	.1131	.1012	.9220	.4328-02	.3871-02	.5894	4.149	522.3
144	35.500	.12100	196.00	.1478	.2443	.2079	.9269	.9347-02	.7953-02	1.048	7.281	546.3
144	35.600	.16580	216.00	.7422-01	.1193	.1049	.9226	.4565-02	.4013-02	.5499	3.837	538.0
143	35.800	.80600-01	138.00	.2234	.3786	.3060	.9341	.1448-01	.1171-01	1.522	10.54	552.5
144	35.900	.21310	247.00	.4739-01	.7080-01	.6386-01	.9220	.2709-02	.2444-02	.4012	2.843	510.4
144	36.000	.19040	235.00	.5903-01	.8999-01	.8068-01	.9220	.3443-02	.3087-02	.4803	3.387	519.0
144	36.200	.16810	220.00	.6499-01	.1032	.9115-01	.9225	.3949-02	.3488-02	.4913	3.435	534.1
143	36.200	.72400-01	135.00	.2363	.3920	.3168	.9360	.1500-01	.1212-01	1.662	11.54	546.8
144	36.300	.12200	200.00	.1358	.2235	.1906	.9267	.8552-02	.7295-02	.9694	6.738	545.1
143	36.600	.65700-01	131.00	.2067	.3321	.2703	.9377	.1270-01	.1034-01	1.531	10.69	537.0
144	36.700	.18700	226.00	.6518-01	.9984-01	.8938-01	.9220	.3820-02	.3420-02	.5256	3.703	520.9
144	36.900	.16480	211.00	.7353-01	.1182	.1039	.9227	.4522-02	.3975-02	.5448	3.802	538.0
144	36.900	.10110	187.00	.2016	.3343	.2792	.9300	.1279-01	.1068-01	1.422	9.872	547.3
143	37.000	.60400-01	123.00	.3422	.6044	.4652	.9390	.2312-01	.1780-01	2.205	15.18	562.2
144	37.000	.12440	204.00	.1196	.1945	.1669	.9264	.7440-02	.6387-02	.8704	6.062	541.5
143	37.100	.58600-01	119.00	.3682	.6442	.4970	.9395	.2464-01	.1901-01	2.402	16.56	560.1
144	37.200	.21310	246.00	.4886-01	.7320-01	.6597-01	.9220	.2801-02	.2524-02	.4114	2.913	511.6
144	37.600	.16810	219.00	.6304-01	.1001	.8840-01	.9225	.3830-02	.3383-02	.4767	3.334	534.0
143	37.800	.10270	150.00	.1574	.2629	.2192	.9297	.1006-01	.8387-02	1.096	7.603	548.6
144	37.900	.12100	195.00	.1333	.2164	.1854	.9268	.8280-02	.7094-02	.9716	6.768	541.2
144	38.000	.80300-01	179.00	.2458	.4061	.3321	.9341	.1554-01	.1271-01	1.743	12.10	546.4
143	38.500	.46800-01	112.00	.2312	.3680	.2937	.9428	.1408-01	.1123-01	1.739	12.16	534.1
144	38.600	.12440	203.00	.1161	.1889	.1622	.9263	.7228-02	.6205-02	.8443	5.879	541.7
144	38.700	.10000+00	185.00	.2021	.3330	.2786	.9301	.1274-01	.1066-01	1.440	10.00	545.5
143	38.900	.82200-01	141.00	.1977	.3280	.2684	.9337	.1255-01	.1027-01	1.391	9.662	546.7
143	39.300	.41600-01	104.00	.3911	.6920	.5159	.9443	.2647-01	.1974-01	2.513	17.30	562.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
144	39.500	.10270	190.00	.1940	.3183	.2675	.9296	.1218-01	.1024-01	1.391	9.670	544.3
144	39.600	.16810	218.00	.6088-01	.9653-01	.8530-01	.9225	.3693-02	.3264-02	.4616	3.229	533.5
144	39.900	.19040	233.00	.5143-01	.7806-01	.7008-01	.9220	.2987-02	.2681-02	.4221	2.980	517.2
144	40.100	.79500-01	177.00	.2455	.4059	.3317	.9343	.1553-01	.1269-01	1.739	12.08	546.5
144	40.200	.12440	202.00	.1140	.1854	.1592	.9263	.7096-02	.6092-02	.8283	5.768	541.8
144	40.300	.21310	245.00	.3948-01	.5892-01	.5316-01	.9220	.2254-02	.2034-02	.3351	2.375	509.8
143	41.100	.82200-01	142.00	.2014	.3355	.2741	.9336	.1284-01	.1049-01	1.408	9.770	547.9
144	41.100	.60700-01	173.00	.3294	.5590	.4399	.9388	.2139-01	.1683-01	2.245	15.53	553.5
144	42.600	.59600-01	172.00	.3471	.5949	.4651	.9391	.2276-01	.1780-01	2.333	16.12	556.0
144	43.200	.42000-01	168.00	.3634	.6137	.4706	.9441	.2348-01	.1801-01	2.494	17.27	552.3
144	43.400	.82200-01	181.00	.2301	.3763	.3101	.9336	.1440-01	.1187-01	1.657	11.53	543.4
143	43.600	.62900-01	128.00	.2829	.4760	.3775	.9382	.1821-01	.1444-01	1.949	13.50	550.6
143	45.000	.22900-01	8.0000	.5828	1.148	.7726	.9501	.4393-01	.2956-01	3.308	22.53	582.3
144	46.100	.62900-01	174.00	.2922	.4873	.3884	.9382	.1864-01	.1486-01	2.044	14.18	548.9
144	47.700	.40800-01	167.00	.3872	.6566	.5016	.9444	.2512-01	.1919-01	2.641	18.28	553.4
143	48.400	.44200-01	109.00	.3589	.6224	.4721	.9434	.2381-01	.1806-01	2.370	16.35	558.1
143	50.000	.19400-01	156.00	.5589	1.212	.6398	.9765	.4637-01	.2448-01	2.899	19.61	595.1
143	51.000	.12100-01	154.00	.6848	2.870	.8337	.9765	.1098	.3189-01	2.514	16.65	634.7
143	51.000	.17600-01	155.00	.5815	1.270	.6662	.9765	.4857-01	.2549-01	2.999	20.28	595.9
144	51.900	.44800-01	170.00	.2983	.4851	.3819	.9432	.1856-01	.1461-01	2.170	15.11	541.6
144	53.200	.24700-01	163.00	.3669	.6125	.4596	.9497	.2343-01	.1758-01	2.561	17.76	549.2
144	65.200	.24700-01	162.00	.4439	.7751	.5643	.9501	.2966-01	.2159-01	2.909	20.05	560.4
142	90.000	.91000-02	44.000	.4264	.7541	.5368	.9527	.2887-01	.2055-01	2.742	18.88	561.7
142	90.000	.11100-01	45.000	.5412	1.013	.6942	.9527	.3878-01	.2657-01	3.246	22.22	573.0
142	90.000	.13100-01	46.000	.5979	1.226	.7892	.9527	.4692-01	.3021-01	3.261	22.15	587.2
142	90.000	.17000-01	48.000	.5143	.9942	.6665	.9527	.3806-01	.2551-01	2.976	20.31	578.5
142	90.000	.20900-01	50.000	.5681	1.075	.7312	.9527	.4114-01	.2799-01	3.367	23.02	574.9
142	90.000	.24900-01	52.000	.5299	.9716	.6769	.9522	.3719-01	.2591-01	3.255	22.33	569.2
142	90.000	.26900-01	53.000	.5153	.9513	.6625	.9515	.3642-01	.2536-01	3.140	21.52	570.5
142	90.000	.28800-01	54.000	.5018	.9149	.6450	.9509	.3503-01	.2469-01	3.105	21.31	568.1
142	90.000	.32800-01	55.000	.4307	.7510	.5489	.9495	.2875-01	.2101-01	2.821	19.46	558.6
142	90.000	.36700-01	56.000	.4263	.7393	.5460	.9482	.2830-01	.2090-01	2.812	19.41	557.3
142	90.000	.40600-01	57.000	.4016	.7061	.5208	.9469	.2703-01	.1994-01	2.601	17.93	560.5
142	90.000	.48500-01	58.000	.3761	.6515	.4914	.9445	.2494-01	.1881-01	2.485	17.16	557.1
142	90.000	.56400-01	59.000	.3241	.5539	.4265	.9422	.2120-01	.1633-01	2.183	15.10	553.8
142	90.000	.76100-01	60.000	.2369	.3958	.3172	.9370	.1515-01	.1214-01	1.647	11.43	548.0
142	90.000	.95800-01	61.000	.1957	.3229	.2665	.9325	.1236-01	.1020-01	1.387	9.641	544.5
142	90.000	.11550	62.000	.1349	.2221	.1871	.9289	.8503-02	.7164-02	.9602	6.679	543.8
142	135.00	.19000-01	49.000	.6432	1.275	.7969	.9611	.4882-01	.3051-01	3.625	24.68	582.5
142	135.00	.22900-01	51.000	.6070	1.181	.7487	.9611	.4522-01	.2866-01	3.487	23.79	579.6
142	180.00	.91000-02	23.000	.3767	.6813	.4322	.9713	.2608-01	.1655-01	2.353	16.16	566.5
142	180.00	.11100-01	24.000	.6792	1.667	.8186	.9713	.6380-01	.3134-01	3.202	21.53	606.5
142	180.00	.13100-01	25.000	.7283	1.658	.8682	.9713	.6347-01	.3324-01	3.628	24.48	599.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
142	180.00	.15000-01	26.000	.6902	1.543	.8205	.9713	.5908-01	.3141-01	3.487	23.55	597.7
142	180.00	.17000-01	27.000	.6924	1.496	.8188	.9713	.5726-01	.3134-01	3.601	24.37	593.8
142	180.00	.19000-01	28.000	.7031	1.493	.8292	.9713	.5717-01	.3174-01	3.711	25.15	591.8
142	180.00	.20900-01	29.000	.6933	1.413	.8122	.9713	.5408-01	.3109-01	3.803	25.84	586.4
142	180.00	.28800-01	32.000	.5887	1.112	.6883	.9693	.4257-01	.2635-01	3.494	23.90	574.6
142	180.00	.32800-01	33.000	.5522	.9966	.6449	.9678	.3815-01	.2469-01	3.459	23.77	566.0
142	180.00	.36700-01	34.000	.5260	.9801	.6232	.9663	.3752-01	.2386-01	3.171	21.71	572.2
142	180.00	.48500-01	36.000	.4587	.8318	.5527	.9621	.3184-01	.2116-01	2.857	19.62	567.0
142	180.00	.56400-01	37.000	.4351	.7767	.5298	.9593	.2973-01	.2028-01	2.763	19.01	563.8
142	180.00	.76100-01	38.000	.3533	.6137	.4416	.9529	.2349-01	.1690-01	2.326	16.06	557.7
142	180.00	.95800-01	39.000	.2822	.4808	.3613	.9470	.1841-01	.1383-01	1.908	13.20	553.0
142	180.00	.11550	40.000	.2248	.3858	.2971	.9417	.1477-01	.1137-01	1.505	10.40	554.8
142	180.00	.18450	42.000	.1163	.1862	.1595	.9279	.7127-02	.6105-02	.8661	6.053	535.2
142	225.00	.22900-01	30.000	.6716	1.357	.7614	.9767	.5196-01	.2915-01	3.714	25.25	585.2
142	270.00	.91000-02	63.000	.5594	1.360	.6641	.9732	.5205-01	.2542-01	2.655	17.86	605.7
142	270.00	.11100-01	64.000	.6817	1.660	.8096	.9732	.6356-01	.3099-01	3.231	21.73	605.9
142	270.00	.13100-01	65.000	.7299	1.686	.8606	.9732	.6455-01	.3294-01	3.595	24.24	601.0
142	270.00	.17000-01	67.000	.7779	1.705	.9105	.9732	.6528-01	.3486-01	3.995	27.02	595.5
142	270.00	.20900-01	69.000	.7146	1.521	.8328	.9732	.5821-01	.3188-01	3.765	25.51	592.0
142	270.00	.24900-01	71.000	.6421	1.309	.7458	.9727	.5011-01	.2855-01	3.520	23.92	586.5
142	270.00	.28800-01	73.000	.5415	1.039	.6280	.9712	.3976-01	.2404-01	3.160	21.58	577.2
142	270.00	.36700-01	75.000	.5398	1.034	.6363	.9683	.3957-01	.2436-01	3.155	21.55	577.0
142	270.00	.48500-01	77.000	.4818	.8854	.5765	.9640	.3389-01	.2207-01	2.952	20.25	569.6
142	270.00	.56400-01	78.000	.4455	.8088	.5395	.9612	.3096-01	.2065-01	2.770	19.02	567.2
142	270.00	.95800-01	80.000	.2852	.4915	.3636	.9486	.1882-01	.1392-01	1.898	13.12	555.8
142	270.00	.11550	81.000	.2243	.3876	.2949	.9432	.1484-01	.1129-01	1.487	10.27	556.5
142	315.00	.19000-01	68.000	.5675	1.079	.6860	.9636	.4130-01	.2626-01	3.345	22.86	575.7
142	315.00	.22900-01	70.000	.6454	1.269	.7862	.9636	.4857-01	.3010-01	3.670	25.01	581.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
204	5.500	5.010	6.025	126.7	719.7	.1362	102.1	-50.40	2724.	.3600-02	.8214-07	3.711
205	5.500	5.002	6.016	126.8	720.7	.1363	102.2	-50.40	2726.	.3600-02	.8226-07	3.708
206	5.500	4.999	6.013	127.2	720.7	.1367	102.2	-50.40	2726.	.3609-02	.8226-07	3.717

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
204	.3015-01	.1277-01
205	.3017-01	.1277-01
206	.3021-01	.1275-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
205	.00000	.91000-02	1.0000	.2652	.4075	.3241	.9479	.1230-01	.9780-02	1.652	11.68	514.3
205	.00000	.15000-01	4.0000	.5570	.9782	.7179	.9479	.2952-01	.2166-01	2.813	19.46	553.3
205	.00000	.17000-01	5.0000	.5853	1.020	.7522	.9479	.3078-01	.2270-01	2.987	20.69	551.6
205	.00000	.19000-01	6.0000	.5641	.9606	.7184	.9479	.2898-01	.2168-01	2.971	20.64	546.1
205	.00000	.24900-01	9.0000	.5011	.8413	.6363	.9475	.2539-01	.1920-01	2.695	18.76	542.5
205	.00000	.26900-01	10.000	.4546	.7499	.5752	.9468	.2263-01	.1736-01	2.511	17.52	537.6
204	.00000	.32800-01	12.000	.3623	.5882	.4601	.9446	.1773-01	.1387-01	2.046	14.32	532.3
204	.00000	.36700-01	13.000	.3176	.5093	.4038	.9433	.1535-01	.1217-01	1.831	12.85	528.4
204	.00000	.40600-01	14.000	.3426	.5577	.4414	.9420	.1681-01	.1331-01	1.926	13.48	533.1
204	.00000	.48500-01	15.000	.2919	.4726	.3800	.9394	.1425-01	.1146-01	1.657	11.60	531.4
204	.00000	.56400-01	16.000	.2871	.4662	.3790	.9369	.1405-01	.1143-01	1.622	11.35	532.3
204	.00000	.76100-01	17.000	.1945	.3143	.2638	.9310	.9475-02	.7954-02	1.107	7.753	530.9
204	.00000	.11550	19.000	.1045	.1689	.1493	.9213	.5093-02	.4502-02	.5942	4.162	531.0
204	.00000	.16480	20.000	.5093-01	.8138-01	.7554-01	.9129	.2454-02	.2277-02	.2952	2.072	527.4
204	.00000	.21400	22.000	.2168-01	.3191-01	.3047-01	.9100	.9621-03	.9187-03	.1467	1.049	495.2
206	2.0000	.24700-01	165.00	.4082	.6580	.5104	.9472	.1988-01	.1542-01	2.340	16.40	530.9
205	9.0000	.15000-01	157.00	.5376	.9368	.6959	.9466	.2827-01	.2100-01	2.743	18.99	551.6
205	9.0000	.17600-01	158.00	.5193	.8634	.6597	.9466	.2605-01	.1990-01	2.833	19.75	539.9

FH15, E.T. NOSE (W/PROTUBERANCES) H!/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
206	9.8000	.24700-01	164.00	.3799	.6072	.4759	.9461	.1835-01	.1438-01	2.210	15.50	528.2
205	10.000	.22900-01	88.000	.4229	.6988	.5363	.9465	.2109-01	.1618-01	2.329	16.25	538.1
205	10.000	.26900-01	90.000	.3619	.5797	.4556	.9453	.1749-01	.1375-01	2.094	14.68	528.9
205	10.000	.34700-01	94.000	.2903	.4461	.3632	.9425	.1346-01	.1096-01	1.807	12.78	514.3
205	12.000	.17600-01	152.00	.8341	1.743	.9775	.9719	.5260-01	.2949-01	3.477	23.68	582.5
205	12.000	.12100-01	151.00	.6474	1.389	.7617	.9719	.4190-01	.2298-01	2.637	17.93	585.7
205	13.000	.19400-01	153.00	.7911	1.599	.9228	.9718	.4825-01	.2784-01	3.404	23.24	578.1
206	14.600	.44200-01	169.00	.3321	.5276	.4295	.9388	.1594-01	.1298-01	1.951	13.70	526.2
205	18.500	.44200-01	106.00	.3351	.5451	.4395	.9384	.1645-01	.1326-01	1.891	13.23	533.6
206	19.600	.62900-01	175.00	.2768	.4402	.3694	.9325	.1330-01	.1116-01	1.623	11.39	526.6
205	19.800	.40800-01	101.00	.3158	.5081	.4099	.9393	.1533-01	.1237-01	1.814	12.71	530.3
205	20.000	.24900-01	89.000	.2888	.4572	.3624	.9448	.1379-01	.1094-01	1.705	11.98	525.0
205	20.000	.28800-01	91.000	.2589	.4028	.3245	.9434	.1215-01	.9791-02	1.575	11.11	519 0
205	20.000	.32800-01	93.000	.2899	.4606	.3693	.9420	.1390-01	.1114-01	1.702	11.95	526.2
205	22.200	.62900-01	125.00	.2872	.4686	.3894	.9322	.1414-01	.1175-01	1.613	11.28	534.5
205	22.400	.44200-01	107.00	.3718	.6227	.4957	.9380	.1879-01	.1496-01	2.007	13.97	541.8
206	22.600	.10270	192.00	.1394	.2206	.1956	.9219	.6665-02	.5911-02	.8243	5.794	524.9
205	23.000	.42000-01	105.00	.3592	.6055	.4787	.9386	.1827-01	.1444-01	1.921	13.36	543.5
205	23.400	.59600-01	120.00	.3141	.5159	.4254	.9331	.1557-01	.1284-01	1.746	12.19	536.5
206	23.900	.21310	250.00	.2876-01	.4085-01	.3920-01	.9100	.1234-02	.1184-02	.2116	1.528	477.2
205	24.100	.82200-01	139.00	.2092	.3415	.2921	.9267	.1030-01	.8815-02	1.175	8.212	534.6
206	24.400	.19040	238.00	.3840-01	.5613-01	.5364-01	.9100	.1696-02	.1621-02	.2647	1.895	492.5
206	24.400	.12440	207.00	.9034-01	.1441	.1306	.9174	.4353-02	.3945-02	.5274	3.701	527.5
205	24.800	.16810	223.00	.5243-01	.8033-01	.7575-01	.9114	.2427-02	.2289-02	.3286	2.325	513.2
205	24.900	.62900-01	126.00	.3084	.5096	.4216	.9320	.1538-01	.1272-01	1.698	11.85	538.2
206	25.000	.79500-01	178.00	.2217	.3521	.3033	.9274	.1064-01	.9162-02	1.303	9.149	526.2
206	25.300	.10270	191.00	.1558	.2487	.2202	.9217	.7515-02	.6653-02	.9081	6.373	527.8
206	25.300	.10000+00	186.00	.1639	.2629	.2316	.9223	.7942-02	.6998-02	.9473	6.642	529.3
205	25.500	.60700-01	124.00	.3462	.5889	.4794	.9326	.1777-01	.1446-01	1.826	12.69	545.8
206	26.000	.12440	206.00	.1084	.1741	.1575	.9173	.5259-02	.4760-02	.6251	4.382	529.7
205	26.300	.82200-01	140.00	.2456	.4024	.3441	.9266	.1214-01	.1038-01	1.371	9.576	535.7
206	26.700	.12100	199.00	.1397	.2285	.2052	.9179	.6904-02	.6199-02	.7831	5.473	535.2
206	26.800	.16810	222.00	.6337-01	.9762-01	.9201-01	.9113	.2949-02	.2780-02	.3933	2.779	515.3
206	27.000	.19040	237.00	.4827-01	.7097-01	.6778-01	.9100	.2144-02	.2048-02	.3285	2.347	495.4
206	27.100	.21310	249.00	.3491-01	.4978-01	.4774-01	.9100	.1504-02	.1442-02	.2544	1.835	479.5
206	27.200	.80300-01	180.00	.2578	.4190	.3585	.9270	.1266-01	.1083-01	1.459	10.21	533.3
205	27.400	.40100-01	98.000	.3569	.6000	.4743	.9389	.1810-01	.1431-01	1.916	13.33	542.8
206	27.400	.16480	215.00	.6732-01	.1048	.9844-01	.9116	.3166-02	.2974-02	.4099	2.891	519.1
205	27.600	.41600-01	102.00	.3832	.6662	.5190	.9384	.2010-01	.1566-01	1.962	13.59	551.0
206	27.600	.12440	205.00	.1196	.1938	.1751	.9172	.5854-02	.5290-02	.6808	4.765	532.3
206	27.600	.18700	230.00	.4570-01	.6764-01	.6451-01	.9101	.2044-02	.1949-02	.3068	2.189	498.5
206	27.700	.21010	243.00	.3995-01	.5735-01	.5495-01	.9100	.1733-02	.1660-02	.2867	2.063	483.1
206	27.900	.10110	188.00	.1851	.3034	.2662	.9219	.9168-02	.8041-02	1.034	7.222	535.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
205	28.000	.46800-01	110.00	.2313	.3577	.2980	.9367	.1079-01	.8991-02	1.423	10.05	516.8
206	28.200	.16810	221.00	.7033-01	.1090	.1026	.9113	.3292-02	.3100-02	.4318	3.047	517.5
206	28.300	.19040	236.00	.4756-01	.6987-01	.6673-01	.9100	.2111-02	.2016-02	.3243	2.318	495.0
206	28.300	.12200	201.00	.1144	.1834	.1653	.9176	.5542-02	.5009-02	.6618	4.640	529.2
205	28.400	.53500-01	114.00	.2688	.4298	.3561	.9345	.1297-01	.1074-01	1.560	10.94	528.4
206	28.400	.21310	248.00	.3254-01	.4649-01	.4456-01	.9100	.1405-02	.1347-02	.2360	1.701	480.6
205	28.700	.58600-01	117.00	.3503	.5818	.4777	.9330	.1755-01	.1441-01	1.914	13.35	539.5
206	28.800	.16580	217.00	.6897-01	.1077	.1012	.9115	.3253-02	.3057-02	.4178	2.944	520.2
205	28.800	.60400-01	121.00	.3631	.6285	.5081	.9324	.1896-01	.1533-01	1.870	12.97	550.0
206	29.000	.21110	244.00	.3636-01	.5211-01	.4995-01	.9100	.1574-02	.1509-02	.2620	1.886	482.2
205	29.000	.65700-01	129.00	.2020	.3162	.2692	.9309	.9541-02	.8123-02	1.216	8.568	521.1
205	29.200	.72400-01	133.00	.2320	.3767	.3190	.9290	.1137-01	.9626-02	1.314	9.195	533.0
205	29.300	.79500-01	136.00	.2880	.4932	.4135	.9271	.1488-01	.1248-01	1.506	10.45	547.4
205	29.600	.92500-01	143.00	.1541	.2502	.2178	.9238	.7549-02	.6573-02	.8720	6.101	533.1
205	29.700	.10000+00	146.00	.2065	.3515	.3044	.9221	.1061-01	.9184-02	1.088	7.560	546.0
206	29.900	.12100	198.00	.1471	.2417	.2170	.9177	.7303-02	.6555-02	.8188	5.718	536.5
206	30.200	.16480	214.00	.6621-01	.1037	.9739-01	.9115	.3134-02	.2942-02	.3984	2.806	521.5
206	30.200	.18700	229.00	.2998-04	.3526-04	.3465-04	.9101	.1065-05	.1047-05	.4354-03	.3638-02	239.9
206	30.300	.21010	242.00	.4177-01	.6012-01	.5759-01	.9100	.1816-02	.1740-02	.2979	2.142	484.6
205	31.500	.11100-01	83.000	.2923	.4508	.3635	.9443	.1360-01	.1097-01	1.808	12.77	515.7
205	31.500	.14200-01	84.000	.8510	2.434	1.056	.9701	.7344-01	.3187-01	2.846	19.10	609.9
205	31.500	.16000-01	85.000	.8912	1.769	1.046	.9701	.5337-01	.3157-01	3.906	26.70	575.4
205	31.500	.19400-01	87.000	.5957	1.046	.6836	.9701	.3155-01	.2063-01	3.010	20.83	553.2
206	32.100	.21010	241.00	.4590-01	.6625-01	.6344-01	.9100	.2002-02	.1917-02	.3253	2.337	486.1
206	32.200	.16480	213.00	.6014-01	.9374-01	.8809-01	.9115	.2832-02	.2662-02	.3653	2.575	519.6
206	32.200	.17860	224.00	.4805-01	.7233-01	.6871-01	.9104	.2185-02	.2076-02	.3116	2.213	506.0
206	32.200	.18700	228.00	.5727-01	.8550-01	.8146-01	.9101	.2583-02	.2461-02	.3777	2.688	502.4
206	32.300	.12100	197.00	.1395	.2258	.2036	.9176	.6823-02	.6152-02	.7950	5.565	532.1
206	32.300	.12300	194.00	.1230	.1996	.1802	.9173	.6031-02	.5445-02	.6975	4.881	532.9
206	32.300	.12730	208.00	.5785-01	.9111-01	.8321-01	.9165	.2753-02	.2514-02	.3450	2.427	523.3
206	32.300	.13420	209.00	.6304-01	.1014	.9275-01	.9154	.3064-02	.2802-02	.3627	2.542	530.2
205	32.400	.10000+00	147.00	.1771	.2939	.2568	.9219	.8868-02	.7748-02	.9697	6.761	539.3
206	32.400	.10110	184.00	.1930	.3165	.2779	.9217	.9562-02	.8397-02	1.076	7.519	536.0
206	32.400	.10630	193.00	.9156-01	.1415	.1272	.9206	.4274-02	.3844-02	.5651	3.991	516.4
206	32.500	.85800-01	183.00	.1238	.1905	.1677	.9253	.5755-02	.5066-02	.7703	5.445	514.8
205	32.600	.79500-01	137.00	.2523	.4253	.3591	.9269	.1283-01	.1083-01	1.349	9.384	543.5
206	32.600	.80800-01	176.00	.2531	.4132	.3538	.9266	.1248-01	.1069-01	1.423	9.945	534.6
205	32.700	.67400-01	132.00	.1690	.2646	.2260	.9302	.7984-02	.6820-02	1.018	7.167	521.1
205	32.700	.72400-01	134.00	.2146	.3459	.2941	.9288	.1044-01	.8875-02	1.230	8.614	530.8
205	32.800	.65700-01	130.00	.1647	.2534	.2175	.9306	.7645-02	.6563-02	1.024	7.237	514.7
206	32.800	.16680	210.00	.5384-01	.8336-01	.7851-01	.9113	.2519-02	.2372-02	.3311	2.337	517.2
206	32.800	.18880	225.00	.4523-01	.6652-01	.6352-01	.9100	.2010-02	.1919-02	.3076	2.198	495.5
205	32.900	.58600-01	118.00	.3774	.6238	.5140	.9327	.1882-01	.1551-01	2.078	14.50	538.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
205	32.900	.60400-01	122.00	.2890	.4701	.3912	.9322	.1418-01	.1180-01	1.631	11.41	533.6
206	32.900	.61300-01	171.00	.3172	.5299	.4365	.9319	.1601-01	.1319-01	1.721	11.99	541.1
205	33.000	.53500-01	115.00	.2680	.4262	.3545	.9342	.1286-01	.1070-01	1.569	11.02	526.6
205	33.200	.48300-01	113.00	.1820	.2774	.2335	.9359	.8370-02	.7046-02	1.151	8.150	511.1
206	33.400	.42800-01	166.00	.3546	.5884	.4715	.9376	.1778-01	.1424-01	1.944	13.55	539.3
205	33.500	.40100-01	99.000	.3470	.5660	.4553	.9385	.1708-01	.1374-01	1.950	13.63	534.4
205	33.600	.38300-01	97.000	.3081	.4905	.3983	.9391	.1480-01	.1202-01	1.802	12.65	526.8
205	33.700	.36700-01	96.000	.2845	.4477	.3648	.9396	.1351-01	.1101-01	1.697	11.94	522.9
205	33.900	.33800-01	95.000	.2106	.3225	.2653	.9406	.9729-02	.8004-02	1.320	9.339	512.9
206	34.700	.21010	240.00	.4662-01	.6742-01	.6454-01	.9100	.2037-02	.1950-02	.3291	2.363	487.0
206	34.700	.18700	227.00	.5318-01	.7920-01	.7549-01	.9101	.2393-02	.2281-02	.3524	2.510	501.4
206	34.900	.16480	212.00	.5415-01	.8435-01	.7930-01	.9114	.2548-02	.2396-02	.3293	2.321	519.4
205	35.100	.10000+00	148.00	.1653	.2721	.2388	.9218	.8211-02	.7204-02	.9229	6.446	536.2
206	35.200	.23900-01	161.00	.2063	.3075	.2529	.9440	.9290-02	.7641-02	1.364	9.715	501.7
205	35.300	.92500-01	145.00	.1773	.2884	.2513	.9235	.8702-02	.7584-02	1.000	6.998	533.6
205	35.300	.22100-01	160.00	.1975	.2977	.2433	.9441	.8983-02	.7341-02	1.276	9.062	506.5
206	35.400	.18800	231.00	.5490-01	.8184-01	.7800-01	.9100	.2472-02	.2356-02	.3631	2.585	501.7
206	35.500	.12100	196.00	.1181	.1897	.1715	.9175	.5732-02	.5181-02	.6805	4.770	529.9
206	35.600	.16580	216.00	.5280-01	.8194-01	.7712-01	.9113	.2476-02	.2330-02	.3234	2.282	518.0
205	35.800	.80600-01	138.00	.2111	.3431	.2944	.9264	.1035-01	.8883-02	1.193	8.349	533.3
206	35.900	.21310	247.00	.3647-01	.5258-01	.5035-01	.9100	.1589-02	.1521-02	.2592	1.863	485.5
206	36.000	.19040	235.00	.4886-01	.7248-01	.6914-01	.9100	.2190-02	.2089-02	.3264	2.327	499.6
206	36.200	.16810	220.00	.4742-01	.7315-01	.6899-01	.9111	.2210-02	.2084-02	.2935	2.074	515.8
205	36.200	.72400-01	135.00	.2196	.3505	.2995	.9286	.1058-01	.9035-02	1.279	8.977	527.6
206	36.300	.12200	200.00	.1051	.1686	.1526	.9173	.5094-02	.4612-02	.6076	4.260	529.3
205	36.600	.65700-01	131.00	.1644	.2559	.2188	.9305	.7720-02	.6602-02	1.000	7.052	519.1
206	36.700	.18700	226.00	.4255-01	.6341-01	.6043-01	.9100	.1916-02	.1826-02	.2815	2.005	501.7
206	36.900	.16480	211.00	.4820-01	.7489-01	.7045-01	.9114	.2263-02	.2129-02	.2944	2.077	518.5
206	36.900	.10110	187.00	.1761	.2843	.2511	.9215	.8589-02	.7587-02	1.007	7.053	531.4
205	37.000	.60400-01	123.00	.3241	.5321	.4415	.9320	.1605-01	.1332-01	1.803	12.60	536.3
206	37.000	.12440	204.00	.9437-01	.1508	.1370	.9168	.4555-02	.4138-02	.5493	3.855	528.0
205	37.100	.58600-01	119.00	.3612	.5921	.4902	.9325	.1786-01	.1479-01	2.014	14.07	535.9
206	37.200	.21310	246.00	.3289-01	.4743-01	.4542-01	.9100	.1433-02	.1372-02	.2335	1.678	485.7
206	37.600	.16810	219.00	.4334-01	.6695-01	.6314-01	.9111	.2023-02	.1907-02	.2676	1.890	516.3
205	37.800	.10270	150.00	.1295	.2093	.1852	.9211	.6315-02	.5588-02	.7385	5.171	531.7
206	37.900	.12100	195.00	.1057	.1678	.1522	.9174	.5071-02	.4599-02	.6218	4.368	526.0
206	38.000	.80300-01	179.00	.2359	.3769	.3255	.9264	.1139-01	.9834-02	1.374	9.638	528.0
205	38.500	.46800-01	112.00	.1870	.2852	.2398	.9361	.8605-02	.7234-02	1.181	8.365	511.3
206	38.600	.12440	203.00	.9384-01	.1499	.1363	.9168	.4530-02	.4117-02	.5461	3.832	528.0
206	38.700	.10000+00	185.00	.1736	.2794	.2468	.9217	.8441-02	.7457-02	.9990	7.001	530.2
205	38.900	.82200-01	141.00	.1703	.2733	.2363	.9259	.8247-02	.7129-02	.9828	6.890	529.4
205	39.300	.41600-01	104.00	.3240	.5246	.4253	.9377	.1583-01	.1283-01	1.843	12.90	532.2
206	39.500	.10270	190.00	.1603	.2564	.2276	.9211	.7745-02	.6877-02	.9309	6.530	528.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
206	39.600	.16810	218.00	.3931-01	.6070-01	.5725-01	.9111	.1834-02	.1730-02	.2429	1.715	516.2
206	39.900	.19040	233.00	.2960-01	.4393-01	.4190-01	.9100	.1327-02	.1266-02	.1975	1.408	499.8
206	40.100	.79500-01	177.00	.2199	.3484	.3016	.9266	.1053-01	.9112-02	1.298	9.125	525.3
206	40.200	.12440	202.00	.9025-01	.1440	.1309	.9168	.4351-02	.3956-02	.5262	3.693	527.7
206	40.300	.21310	245.00	.2106-01	.3040-01	.2911-01	.9100	.9185-03	.8795-03	.1491	1.071	486.2
205	41.100	.82200-01	142.00	.1675	.2694	.2328	.9259	.8128-02	.7023-02	.9631	6.749	530.1
206	41.100	.60700-01	173.00	.3113	.5005	.4196	.9317	.1512-01	.1268-01	1.793	12.57	530.0
206	42.600	.59600-01	172.00	.3290	.5314	.4439	.9320	.1605-01	.1341-01	1.881	13.17	531.4
206	43.200	.42000-01	168.00	.3057	.4833	.3969	.9375	.1460-01	.1199-01	1.812	12.74	524.5
206	43.400	.82200-01	181.00	.2004	.3174	.2759	.9258	.9590-02	.8335-02	1.184	8.323	525.1
205	43.600	.62900-01	128.00	.1887	.2997	.2534	.9310	.9044-02	.7647-02	1.108	7.780	526.1
205	45.000	.22900-01	8.0000	.4745	.7816	.6091	.9438	.2358-01	.1838-01	2.627	18.33	537.2
206	46.100	.62900-01	174.00	.2635	.4159	.3527	.9310	.1256-01	.1065-01	1.566	11.01	524.0
206	47.700	.40800-01	167.00	.3170	.5013	.4110	.9378	.1515-01	.1242-01	1.877	13.20	524.7
205	48.400	.44200-01	109.00	.3123	.5054	.4120	.9367	.1525-01	.1243-01	1.778	12.45	532.0
205	50.000	.19400-01	156.00	.5822	1.043	.6727	.9695	.3147-01	.2030-01	2.866	19.78	557.5
205	51.000	.12100-01	154.00	.6476	1.390	.7734	.9695	.4195-01	.2334-01	2.636	17.92	585.8
205	51.000	.17600-01	155.00	.5307	.9509	.6133	.9695	.2869-01	.1850-01	2.612	18.03	557.6
206	51.900	.44800-01	170.00	.2659	.4116	.3430	.9365	.1244-01	.1036-01	1.636	11.55	517.1
206	53.200	.24700-01	163.00	.3307	.5159	.4151	.9433	.1559-01	.1254-01	2.005	14.13	519.9
206	65.200	.24700-01	162.00	.4380	.7077	.5577	.9437	.2138-01	.1685-01	2.503	17.52	531.6
204	90.000	.91000-02	44.000	.2961	.4655	.3679	.9464	.1403-01	.1109-01	1.766	12.43	521.9
204	90.000	.11100-01	45.000	.3721	.5924	.4649	.9464	.1786-01	.1401-01	2.171	15.25	526.1
204	90.000	.13100-01	46.000	.4921	.8135	.6245	.9464	.2453-01	.1883-01	2.703	18.86	537.5
204	90.000	.17000-01	48.000	.7152	1.271	.9345	.9464	.3833-01	.2817-01	3.547	24.52	555.2
204	90.000	.20900-01	50.000	.5365	.9112	.6884	.9464	.2747-01	.2075-01	2.830	19.68	544.7
204	90.000	.24900-01	52.000	.3694	.6122	.4703	.9459	.1846-01	.1418-01	2.020	14.09	538.2
204	90.000	.26900-01	53.000	.4986	.8335	.6395	.9452	.2513-01	.1928-01	2.693	18.76	540.5
204	90.000	.28800-01	54.000	.4773	.7919	.6123	.9445	.2387-01	.1846-01	2.606	18.18	538.5
204	90.000	.32800-01	55.000	.3020	.4733	.3804	.9431	.1427-01	.1147-01	1.811	12.76	520.8
204	90.000	.36700-01	56.000	.3899	.6283	.5006	.9417	.1894-01	.1509-01	2.230	15.63	530.0
204	90.000	.40600-01	57.000	.3715	.6048	.4823	.9404	.1823-01	.1454-01	2.089	14.62	533.1
204	90.000	.48500-01	58.000	.3092	.4943	.4030	.9378	.1490-01	.1215-01	1.792	12.58	527.5
204	90.000	.56400-01	59.000	.2904	.4584	.3805	.9354	.1382-01	.1147-01	1.720	12.10	523.3
204	90.000	.76100-01	60.000	.2006	.3120	.2679	.9296	.9406-02	.8077-02	1.219	8.603	518.1
204	90.000	.95800-01	61.000	.1506	.2330	.2054	.9245	.7024-02	.6192-02	.9234	6.522	516.2
204	90.000	.11550	62.000	.1023	.1611	.1444	.9201	.4857-02	.4354-02	.6087	4.284	522.4
204	135.00	.19000-01	49.000	.6142	1.061	.7590	.9547	.3197-01	.2288-01	3.166	21.96	548.7
204	135.00	.22900-01	51.000	.5852	1.004	.7217	.9547	.3028-01	.2176-01	3.042	21.12	547.2
204	180.00	.91000-02	23.000	.2895	.4608	.3335	.9645	.1389-01	.1006-01	1.689	11.86	526.2
204	180.00	.11100-01	24.000	.6158	1.180	.7419	.9645	.3557-01	.2237-01	2.795	19.18	569.1
204	180.00	.13100-01	25.000	.6681	1.195	.7923	.9645	.3604-01	.2389-01	3.286	22.69	556.5
204	180.00	.15000-01	26.000	.6850	1.215	.8107	.9645	.3663-01	.2444-01	3.407	23.55	554.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K021)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
204	180.00	.17000-01	27.000	.6654	1.185	.7883	.9645	.3573-01	.2376-01	3.292	22.75	555.6
204	180.00	.19000-01	28.000	.6556	1.171	.7771	.9645	.3529-01	.2343-01	3.233	22.34	556.1
204	180.00	.20900-01	29.000	.6738	1.178	.7948	.9645	.3552-01	.2396-01	3.415	23.65	551.5
204	180.00	.28800-01	32.000	.5526	.9229	.6503	.9626	.2782-01	.1961-01	2.989	20.83	540.3
204	180.00	.32800-01	33.000	.5017	.8180	.5904	.9611	.2466-01	.1780-01	2.815	19.69	533.6
204	180.00	.36700-01	34.000	.4820	.8014	.5742	.9597	.2416-01	.1731-01	2.624	18.30	539.1
204	180.00	.48500-01	36.000	.4150	.6842	.5028	.9556	.2063-01	.1516-01	2.289	15.98	536.7
204	180.00	.56400-01	37.000	.3855	.6321	.4723	.9529	.1906-01	.1424-01	2.144	14.99	535.2
204	180.00	.76100-01	38.000	.2969	.4843	.3745	.9465	.1460-01	.1129-01	1.666	11.65	533.6
204	180.00	.95800-01	39.000	.2355	.3834	.3058	.9404	.1156-01	.9219-02	1.325	9.269	533.1
204	180.00	.11550	40.000	.1834	.3007	.2460	.9347	.9064-02	.7417-02	1.020	7.131	535.1
204	180.00	.18450	42.000	.8881-01	.1366	.1241	.9187	.4118-02	.3741-02	.5508	3.895	514.0
204	225.00	.22900-01	30.000	.6313	1.083	.7232	.9695	.3264-01	.2180-01	3.286	22.81	547.0
204	270.00	.91000-02	63.000	.5012	.9007	.5893	.9663	.2715-01	.1777-01	2.452	16.93	557.4
204	270.00	.11100-01	64.000	.5842	1.096	.6932	.9663	.3304-01	.2090-01	2.714	18.66	565.6
204	270.00	.13100-01	65.000	.6407	1.139	.7515	.9663	.3435-01	.2266-01	3.177	21.96	555.2
204	270.00	.17000-01	67.000	.5871	1.046	.6889	.9663	.3154-01	.2077-01	2.902	20.05	555.7
204	270.00	.20900-01	69.000	.6948	1.236	.8150	.9663	.3726-01	.2457-01	3.444	23.80	555.3
204	270.00	.24900-01	71.000	.5438	.9393	.6352	.9658	.2832-01	.1915-01	2.802	19.44	548.8
204	270.00	.28800-01	73.000	.5522	.9217	.6440	.9644	.2779-01	.1942-01	2.989	20.83	540.1
204	270.00	.36700-01	75.000	.5066	.8403	.5977	.9616	.2533-01	.1802-01	2.767	19.30	538.5
204	270.00	.48500-01	77.000	.4126	.6661	.4923	.9575	.2008-01	.1484-01	2.353	16.48	530.6
204	270.00	.56400-01	78.000	.4002	.6456	.4833	.9548	.1946-01	.1457-01	2.285	16.01	530.3
204	270.00	.95800-01	80.000	.2398	.3781	.3042	.9421	.1140-01	.9171-02	1.423	10.01	522.9
204	270.00	.11550	81.000	.2033	.3188	.2642	.9364	.9610-02	.7965-02	1.219	8.584	520.9
204	315.00	.19000-01	68.000	.5287	.8801	.6379	.9571	.2653-01	.1923-01	2.873	20.03	539.4
204	315.00	.22900-01	70.000	.5444	.9398	.6642	.9571	.2833-01	.2003-01	2.807	19.47	548.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
45	3.010	5.018	3.004	36.04	723.7	.9666	257.3	-30.96	2367.	.1014-01	.2055-06	3.629
46	3.010	5.019	3.016	36.10	723.7	.9680	257.3	-31.06	2367.	.1015-01	.2055-06	3.634
47	3.010	5.019	3.014	36.17	723.7	.9701	257.3	-31.04	2367.	.1017-01	.2055-06	3.642

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
45	.4395-01	.7605-02
46	.4399-01	.7600-02
47	.4403-01	.7592-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
46	.00000	.91000-02	1.0000	.6053	1.285	.7501	.9635	.5652-01	.3299-01	3.643	24.75	586.9
46	.00000	.11100-01	2.0000	.7248	1.864	.9329	.9635	.8201-01	.4103-01	3.775	25.39	605.3
46	.00000	.15000-01	4.0000	.6041	1.436	.7660	.9635	.6318-01	.3369-01	3.319	22.40	598.8
46	.00000	.17000-01	5.0000	.5798	1.319	.7288	.9635	.5802-01	.3206-01	3.293	22.28	594.5
46	.00000	.19000-01	6.0000	.5737	1.295	.7199	.9635	.5694-01	.3167-01	3.279	22.20	593.7
46	.00000	.24900-01	9.0000	.5030	1.046	.6224	.9630	.4599-01	.2738-01	3.086	20.99	584.2
46	.00000	.26900-01	10.000	.4765	.9551	.5874	.9623	.4201-01	.2583-01	3.027	20.65	579.2
45	.00000	.32800-01	12.000	.4675	.9457	.5848	.9603	.4157-01	.2570-01	2.941	20.05	580.6
45	.00000	.36700-01	13.000	.4412	.8623	.5515	.9590	.3790-01	.2424-01	2.873	19.64	575.5
45	.00000	.40600-01	14.000	.4511	.9072	.5726	.9578	.3987-01	.2517-01	2.854	19.46	579.7
45	.00000	.48500-01	15.000	.4040	.7906	.5167	.9554	.3475-01	.2271-01	2.628	17.96	575.7
45	.00000	.56400-01	16.000	.3813	.7381	.4930	.9531	.3244-01	.2167-01	2.509	17.16	574.0
45	.00000	.76100-01	17.000	.2991	.5514	.3922	.9481	.2424-01	.1724-01	2.079	14.29	565.5
45	.00000	.11550	19.000	.1824	.3272	.2474	.9406	.1438-01	.1087-01	1.310	9.031	560.2
45	.00000	.16480	20.000	.1016	.1780	.1404	.9356	.7823-02	.6171-02	.7525	5.201	555.1
45	.00000	.21400	22.000	.6607-01	.1060	.8770-01	.9345	.4658-02	.3855-02	.5579	3.907	531.5
47	2.0000	.24700-01	165.00	.4110	.7857	.4991	.9630	.3460-01	.2198-01	2.746	18.80	571.9
46	9.0000	.15000-01	157.00	.5421	1.222	.6831	.9629	.5374-01	.3005-01	3.102	21.00	593.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
46	9.0000	.17600-01	158.00	.5088	1.086	.6337	.9629	.4776-01	.2787-01	3.048	20.70	587.5
47	9.8000	.24700-01	164.00	.4154	.8100	.5084	.9625	.3567-01	.2239-01	2.718	18.58	575.1
46	10.000	.22900-01	88.000	.4438	.8881	.5451	.9628	.3906-01	.2398-01	2.823	19.26	579.0
46	10.000	.26900-01	90.000	.4456	.8515	.5452	.9617	.3745-01	.2398-01	2.976	20.38	571.9
46	10.000	.34700-01	94.000	.4810	.9628	.6050	.9591	.4235-01	.2661-01	3.060	20.87	579.1
46	12.000	.17600-01	152.00	.7693	19.82	.8792	.9870	.8717	.3867-01	2.548	16.75	648.4
46	12.000	.12100-01	151.00	.5061	444.3	.5816	.9870	19.54	.2558-01	1.613	10.59	651.2
46	13.000	.19400-01	153.00	.7749	8.543	.8788	.9370	.3758	.3865-01	2.713	17.88	644.1
47	14.600	.44200-01	169.00	.4483	.8904	.5741	.9559	.3921-01	.2528-01	2.877	19.64	577.9
46	18.500	.44200-01	106.00	.4734	.9633	.6110	.9557	.4237-01	.2687-01	2.963	20.19	581.4
47	19.600	.62900-01	175.00	.3479	.6432	.4502	.9505	.2832-01	.1982-01	2.414	16.59	566.1
46	19.800	.40800-01	101.00	.5380	1.143	.6978	.9567	.5026-01	.3069-01	3.236	21.99	586.9
46	20.000	.24900-01	89.000	.3667	.7052	.4486	.9620	.3102-01	.1973-01	2.432	16.65	572.9
46	20.000	.28800-01	91.000	.4011	.7651	.4936	.9606	.3365-01	.2171-01	2.684	18.39	571.6
46	20.000	.32800-01	93.000	.4519	.9097	.5684	.9593	.4001-01	.2500-01	2.858	19.49	579.9
47	21.800	.82200-01	182.00	.2618	.4698	.3442	.9459	.2068-01	.1516-01	1.885	12.99	560.2
46	22.200	.62900-01	125.00	.3825	.7421	.5035	.9504	.3264-01	.2215-01	2.513	17.19	574.3
46	22.400	.44200-01	107.00	.4193	.8149	.5344	.9556	.3585-01	.2351-01	2.748	18.80	574.6
47	22.600	.10270	192.00	.2061	.3598	.2740	.9420	.1584-01	.1206-01	1.538	10.64	554.2
46	23.000	.42000-01	105.00	.5070	1.084	.6607	.9563	.4767-01	.2906-01	3.032	20.59	587.7
46	23.400	.59600-01	120.00	.4396	.8843	.5823	.9513	.3889-01	.2561-01	2.792	18.98	579.8
47	23.900	.21310	250.00	.8401-01	.1329	.1107	.9345	.5853-02	.4874-02	.7273	5.106	527.0
46	24.100	.82200-01	139.00	.2751	.4951	.3622	.9459	.2178-01	.1593-01	1.970	13.58	560.8
47	24.400	.19040	238.00	.1057	.1715	.1411	.9346	.7550-02	.6214-02	.8785	6.140	535.0
47	24.400	.12440	207.00	.1681	.2981	.2292	.9388	.1313-01	.1009-01	1.229	8.475	557.8
47	24.800	.16810	223.00	.1219	.2068	.1661	.9352	.9107-02	.7314-02	.9456	6.564	547.5
46	24.900	.62900-01	126.00	.3587	.6995	.4731	.9504	.3077-01	.2081-01	2.344	16.03	575.1
47	25.000	.79500-01	178.00	.3162	.5878	.4202	.9465	.2586-01	.1850-01	2.181	14.98	567.0
47	25.300	.10270	191.00	.2166	.3819	.2892	.9420	.1682-01	.1274-01	1.595	11.01	556.5
47	25.300	.10000+00	186.00	.2354	.4268	.3173	.9424	.1879-01	.1397-01	1.673	11.52	562.3
46	25.500	.60700-01	124.00	.4150	.8687	.5579	.9509	.3821-01	.2454-01	2.529	17.20	585.1
47	26.000	.12440	206.00	.1804	.3228	.2471	.9388	.1421-01	.1088-01	1.304	8.989	559.6
46	26.300	.82200-01	140.00	.2794	.4984	.3666	.9459	.2192-01	.1612-01	2.024	13.96	559.0
47	26.700	.12100	199.00	.2326	.4332	.3237	.9392	.1907-01	.1425-01	1.601	10.99	567.4
47	26.800	.16810	222.00	.1397	.2395	.1914	.9352	.1055-01	.8427-02	1.068	7.402	550.0
47	27.000	.19040	237.00	.1176	.1926	.1578	.9346	.8481-02	.6950-02	.9624	6.716	537.8
47	27.100	.21310	249.00	.9090-01	.1451	.1203	.9345	.6388-02	.5299-02	.7757	5.437	529.9
47	27.200	.80300-01	180.00	.3041	.5666	.4049	.9463	.2495-01	.1783-01	2.092	14.36	567.5
46	27.400	.40100-01	98.000	.5425	1.193	.7096	.9568	.5247-01	.3121-01	3.167	21.47	591.0
47	27.400	.16480	215.00	.1524	.2691	.2118	.9353	.1185-01	.9327-02	1.120	7.734	556.8
46	27.600	.41600-01	102.00	.4980	1.092	.6532	.9563	.4805-01	.2873-01	2.913	19.75	590.7
47	27.600	.12440	205.00	.1896	.3433	.2612	.9388	.1512-01	.1150-01	1.349	9.291	562.1
47	27.600	.18700	230.00	.1309	.2178	.1771	.9346	.9591-02	.7798-02	1.045	7.271	542.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
47	27.700	.21010	243.00	.1097	.1787	.1468	.9345	.7868-02	.6466-02	.9057	6.326	536.2
47	27.900	.10110	188.00	.2306	.4220	.3125	.9422	.1858-01	.1376-01	1.621	11.15	564.1
46	28.000	.46800-01	110.00	.2974	.5146	.3676	.9548	.2264-01	.1617-01	2.243	15.53	552.2
47	28.200	.16810	221.00	.1505	.2627	.2081	.9352	.1157-01	.9165-02	1.124	7.772	554.1
47	28.300	.19040	236.00	.1137	.1839	.1516	.9346	.8100-02	.6674-02	.9482	6.630	534.2
47	28.300	.12200	201.00	.2056	.3708	.2821	.9391	.1633-01	.1242-01	1.471	10.13	561.2
46	28.400	.53500-01	114.00	.3911	.7533	.5057	.9529	.3313-01	.2224-01	2.589	17.72	573.2
47	28.400	.21310	248.00	.8642-01	.1374	.1142	.9345	.6051-02	.5027-02	.7418	5.203	528.7
46	28.700	.58600-01	117.00	.4557	.9364	.6069	.9515	.4119-01	.2669-01	2.825	19.24	582.7
47	28.800	.16580	217.00	.1582	.2828	.2213	.9353	.1245-01	.9746-02	1.145	7.897	559.3
46	28.800	.60400-01	121.00	.4043	.8721	.5485	.9510	.3836-01	.2412-01	2.399	16.28	588.8
47	29.000	.21110	244.00	.9949-01	.1589	.1311	.9345	.6996-02	.5774-02	.8258	5.777	533.3
46	29.000	.65700-01	129.00	.2562	.4364	.3235	.9496	.1920-01	.1423-01	1.975	13.70	548.4
46	29.200	.72400-01	133.00	.3169	.5933	.4182	.9480	.2610-01	.1839-01	2.165	14.86	568.3
46	29.300	.79500-01	136.00	.2870	.5532	.3867	.9464	.2433-01	.1701-01	1.898	12.99	573.3
46	29.600	.92500-01	143.00	.2304	.4152	.3073	.9438	.1826-01	.1352-01	1.647	11.35	561.1
46	29.700	.10000+00	146.00	.2689	.5151	.3710	.9424	.2266-01	.1632-01	1.791	12.26	572.3
47	29.900	.12100	198.00	.2431	.4617	.3413	.9392	.2033-01	.1503-01	1.636	11.21	570.8
47	30.200	.16480	214.00	.1605	.2884	.2251	.9353	.1270-01	.9910-02	1.154	7.955	560.4
47	30.200	.18700	229.00	.1366	.2289	.1855	.9346	.1008-01	.8169-02	1.079	7.506	544.2
47	30.300	.21010	242.00	.1120	.1835	.1504	.9345	.8081-02	.6622-02	.9158	6.390	538.0
46	31.500	.91000-02	82.000	.6113	1.307	.7649	.9623	.5749-01	.3364-01	3.656	24.82	587.7
46	31.500	.11100-01	83.000	.7102	1.933	.9329	.9623	.8504-01	.4104-01	3.573	23.99	609.3
46	31.500	.14200-01	84.000	.6509	-11.37	.7547	.9870	-.5001	.3319-01	1.960	12.84	655.2
46	31.500	.16000-01	85.000	.7976	-55.99	.9188	.9870	-2.463	.4041-01	2.503	16.43	652.3
46	31.500	.17600-01	86.000	.8306	17.90	.9482	.9870	.7674	.4171-01	2.773	18.24	647.8
46	31.500	.19400-01	87.000	.8312	3.538	.9230	.9870	.1556	.4060-01	3.458	22.97	629.1
47	32.100	.21010	241.00	.1078	.1751	.1441	.9345	.7712-02	.6344-02	.8934	6.242	535.5
47	32.200	.16480	213.00	.1464	.2580	.2033	.9353	.1136-01	.8952-02	1.079	7.452	556.4
47	32.200	.17860	224.00	.1295	.2149	.1748	.9348	.9465-02	.7698-02	1.038	7.232	541.6
47	32.200	.18700	228.00	.1226	.2006	.1644	.9346	.8832-02	.7238-02	1.004	7.009	537.6
47	32.300	.12100	197.00	.2390	.4423	.3316	.9392	.1947-01	.1460-01	1.657	11.38	566.2
47	32.300	.12300	194.00	.1987	.3674	.2761	.9390	.1618-01	.1216-01	1.380	9.479	566.0
47	32.300	.12730	208.00	.1137	.1935	.1524	.9385	.8522-02	.6712-02	.8789	6.098	548.2
47	32.300	.13420	209.00	.1391	.2516	.1928	.9377	.1108-01	.8491-02	.9918	6.831	561.8
46	32.400	.10000+00	147.00	.2537	.4746	.3466	.9424	.2088-01	.1524-01	1.734	11.90	568.2
47	32.400	.10110	184.00	.2547	.4819	.3501	.9422	.2122-01	.1541-01	1.722	11.80	570.2
47	32.400	.10630	193.00	.1517	.2492	.1958	.9414	.1097-01	.8668-02	1.235	8.612	538.8
47	32.500	.85800-01	183.00	.1876	.3137	.2407	.9451	.1381-01	.1060-01	1.487	10.35	543.6
46	32.600	.79500-01	137.00	.3150	.6058	.4241	.9464	.2665-01	.1865-01	2.089	14.30	572.9
47	32.600	.80800-01	176.00	.2775	.5296	.3732	.9461	.2332-01	.1643-01	1.858	12.73	571.6
46	32.700	.67400-01	132.00	.2436	.4219	.3102	.9492	.1856-01	.1364-01	1.835	12.70	552.4
46	32.700	.72400-01	134.00	.2783	.5038	.3626	.9480	.2216-01	.1595-01	1.978	13.62	562.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
46	32.800	.65700-01	130.00	.2231	.3700	.2788	.9496	.1628-01	.1226-01	1.787	12.45	541.5
47	32.800	.16680	210.00	.1333	.2282	.1824	.9352	.1005-01	.8032-02	1.021	7.080	549.7
47	32.800	.18880	225.00	.1021	.1614	.1345	.9346	.7109-02	.5920-02	.8859	6.221	526.7
46	32.900	.58600-01	118.00	.3705	.7350	.4879	.9515	.3233-01	.2146-01	2.378	16.23	577.8
46	32.900	.60400-01	122.00	.3233	.6050	.4189	.9510	.2661-01	.1843-01	2.210	15.17	568.3
47	32.900	.61300-01	171.00	.3279	.6450	.4326	.9508	.2840-01	.1905-01	2.125	14.52	576.5
46	33.000	.53500-01	115.00	.3485	.6332	.4423	.9529	.2785-01	.1945-01	2.467	16.98	562.7
46	33.200	.48300-01	113.00	.2807	.4751	.3452	.9543	.2090-01	.1519-01	2.184	15.17	546.8
47	33.400	.42800-01	166.00	.4248	.8404	.5430	.9560	.3701-01	.2391-01	2.737	18.69	577.4
46	33.500	.40100-01	99.000	.4775	.9491	.6080	.9568	.4175-01	.2674-01	3.058	20.88	578.0
46	33.600	.38300-01	97.000	.4793	.9470	.6072	.9574	.4166-01	.2671-01	3.089	21.10	577.1
46	33.700	.36700-01	96.000	.4436	.8691	.5588	.9579	.3823-01	.2458-01	2.884	19.71	575.9
46	33.900	.33800-01	95.000	.3884	.7142	.4783	.9588	.3141-01	.2104-01	2.711	18.64	565.0
47	34.700	.21010	240.00	.1023	.1657	.1365	.9345	.7296-02	.6010-02	.8515	5.953	534.6
47	34.700	.18700	227.00	.1341	.2208	.1804	.9346	.9720-02	.7943-02	1.088	7.584	539.4
47	34.900	.16480	212.00	.1320	.2301	.1822	.9353	.1013-01	.8025-02	.9867	6.825	553.9
46	35.100	.10000+00	148.00	.2345	.4337	.3188	.9424	.1908-01	.1402-01	1.625	11.16	566.1
47	35.200	.23900-01	161.00	.3498	.6077	.4166	.9622	.2676-01	.1835-01	2.625	18.17	553.2
46	35.300	.92500-01	145.00	.2443	.4379	.3251	.9438	.1926-01	.1430-01	1.758	12.12	560.0
46	35.300	.22100-01	160.00	.3805	.6578	.4524	.9623	.2893-01	.1990-01	2.873	19.89	552.0
47	35.400	.18800	231.00	.1224	.2009	.1644	.9346	.8845-02	.7239-02	.9983	6.964	538.4
47	35.500	.12100	196.00	.1997	.3652	.2756	.9392	.1608-01	.1213-01	1.404	9.660	564.0
47	35.600	.16580	216.00	.1169	.2010	.1603	.9353	.8849-02	.7058-02	.8900	6.166	550.7
46	35.800	.80600-01	138.00	.2603	.4714	.3429	.9462	.2073-01	.1508-01	1.850	12.74	562.1
47	35.900	.21310	247.00	.8238-01	.1305	.1086	.9345	.5748-02	.4783-02	.7117	4.995	527.5
47	36.000	.19040	235.00	.1021	.1647	.1359	.9346	.7250-02	.5983-02	.8563	5.991	533.2
47	36.200	.16910	220.00	.1078	.1810	.1461	.9352	.7968-02	.6432-02	.8492	5.904	544.7
46	36.200	.72400-01	135.00	.2785	.5001	.3618	.9480	.2200-01	.1592-01	2.001	13.79	560.3
47	36.300	.12200	200.00	.1794	.3242	.2464	.9391	.1427-01	.1085-01	1.280	8.818	561.6
46	36.600	.65700-01	131.00	.2677	.4608	.3392	.9497	.2027-01	.1492-01	2.033	14.08	551.0
47	36.700	.18700	226.00	.1121	.1820	.1497	.9346	.8015-02	.6592-02	.9302	6.501	535.2
47	36.900	.16480	211.00	.1180	.2026	.1617	.9353	.8921-02	.7119-02	.9012	6.246	550.3
47	36.900	.10110	187.00	.2395	.4439	.3263	.9423	.1955-01	.1437-01	1.658	11.39	566.5
46	37.000	.60400-01	123.00	.3704	.7348	.4892	.9510	.3232-01	.2152-01	2.378	16.23	577.7
47	37.000	.12440	204.00	.1573	.2773	.2139	.9388	.1221-01	.9420-02	1.158	7.999	556.5
46	37.100	.58600-01	119.00	.4230	.8288	.5547	.9515	.3645-01	.2440-01	2.751	18.80	575.9
47	37.200	.21310	246.00	.7847-01	.1245	.1035	.9345	.5480-02	.4559-02	.6767	4.749	527.8
47	37.600	.16810	219.00	.1032	.1726	.1396	.9352	.7600-02	.6146-02	.8180	5.690	543.7
46	37.800	.10270	150.00	.2024	.3539	.2693	.9420	.1557-01	.1184-01	1.505	10.40	554.7
47	37.900	.12100	195.00	.1767	.3090	.2388	.9393	.1361-01	.1052-01	1.315	9.094	554.6
47	38.000	.80300-01	179.00	.2833	.5240	.3761	.9463	.2307-01	.1656-01	1.965	13.50	566.2
46	38.500	.46800-01	112.00	.2985	.5129	.3680	.9548	.2256-01	.1619-01	2.273	15.75	550.6
47	38.600	.12440	203.00	.1469	.2568	.1990	.9388	.1131-01	.8763-02	1.094	7.568	554.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
47	38.700	.10000+00	185.00	.2244	.4058	.3021	.9425	.1787-01	.1330-01	1.599	11.01	561.8
46	38.900	.82200-01	141.00	.2481	.4391	.3245	.9459	.1931-01	.1427-01	1.816	12.54	557.3
46	39.300	.41600-01	104.00	.4397	.8744	.5614	.9564	.3846-01	.2469-01	2.816	19.22	578.1
47	39.500	.10270	190.00	.2129	.3792	.2855	.9420	.1670-01	.1257-01	1.546	10.67	558.7
47	39.600	.16810	218.00	.9857-01	.1640	.1330	.9352	.7224-02	.5855-02	.7869	5.478	542.4
47	39.900	.19040	233.00	.8242-01	.1315	.1091	.9346	.5791-02	.4802-02	.7035	4.931	529.8
47	40.100	.79500-01	177.00	.2869	.5242	.3786	.9465	.2308-01	.1667-01	2.019	13.89	563.9
47	40.200	.12440	202.00	.1383	.2403	.1868	.9388	.1058-01	.8224-02	1.037	7.178	553.3
47	40.300	.21310	245.00	.6310-01	.9929-01	.8289-01	.9345	.4372-02	.3650-02	.5516	3.876	525.1
46	41.100	.82200-01	142.00	.2478	.4389	.3241	.9459	.1930-01	.1426-01	1.812	12.51	557.4
47	41.100	.60700-01	173.00	.3701	.7090	.4832	.9510	.3122-01	.2128-01	2.467	16.89	572.3
47	42.300	.10270	189.00	.1959	.3416	.2602	.9421	.1504-01	.1146-01	1.463	10.12	554.0
47	42.600	.59600-01	172.00	.4166	.8231	.5484	.9513	.3625-01	.2415-01	2.688	18.36	577.1
47	43.200	.42000-01	168.00	.4436	.8740	.5649	.9564	.3849-01	.2487-01	2.870	19.61	576.7
47	43.400	.82200-01	181.00	.2727	.4914	.3590	.9460	.2164-01	.1581-01	1.953	13.45	561.1
46	43.600	.62900-01	128.00	.3682	.6815	.4767	.9505	.2998-01	.2097-01	2.550	17.52	566.2
46	45.000	.22900-01	8.0000	.6746	1.643	.8658	.9625	.7225-01	.3808-01	3.644	24.57	600.9
47	46.100	.62900-01	174.00	.3656	.6889	.4760	.9506	.3033-01	.2096-01	2.483	17.03	569.5
47	47.700	.40800-01	167.00	.4853	.9915	.6222	.9569	.4366-01	.2740-01	3.029	20.64	581.9
46	48.400	.44200-01	109.00	.4477	.8828	.5721	.9559	.3883-01	.2516-01	2.892	19.76	576.8
46	50.000	.19400-01	156.00	.6136	3.378	.6866	.9870	.1486	.3020-01	2.387	15.80	635.2
46	51.000	.12100-01	154.00	.5888	15.14	.6729	.9870	.6660	.2960-01	1.950	12.82	648.4
46	51.000	.17600-01	155.00	.6505	3.445	.7271	.9870	.1515	.3198-01	2.552	16.91	634.5
47	51.900	.44800-01	170.00	.3742	.6874	.4683	.9559	.3027-01	.2062-01	2.617	17.99	564.8
47	53.200	.24700-01	163.00	.4407	.8745	.5414	.9625	.3851-01	.2384-01	2.831	19.33	577.8
47	65.200	.24700-01	162.00	.5277	1.157	.6590	.9634	.5095-0.	.2902-01	3.091	20.96	590.6
45	90.000	.91000-02	44.000	.6194	1.719	.7876	.9666	.7554-01	.3462-01	3.080	20.67	610.5
45	90.000	.11100-01	45.000	.7583	2.448	.9854	.9666	.1076	.4331-01	3.494	23.34	618.8
45	90.000	.13100-01	46.000	.7468	2.201	.9581	.9666	.9673-01	.4211-01	3.595	24.07	614.1
45	90.000	.17000-01	48.000	.6766	1.784	.8534	.9666	.7839-01	.3751-01	3.467	23.30	607.1
45	90.000	.20900-01	50.000	.6210	1.564	.7775	.9666	.6872-01	.3417-01	3.277	22.06	603.6
45	90.000	.24900-01	52.000	.5990	1.444	.7470	.9661	.6345-01	.3283-01	3.256	21.97	600.0
45	90.000	.26900-01	53.000	.5758	1.314	.7147	.9654	.5777-01	.3141-01	3.259	22.04	594.9
45	90.000	.28800-01	54.000	.5544	1.221	.6866	.9647	.5365-01	.3018-01	3.231	21.90	591.1
45	90.000	.32800-01	55.000	.4857	.9909	.5974	.9633	.4355-01	.2626-01	3.030	20.65	581.7
45	90.000	.36700-01	56.000	.4864	.9788	.6014	.9620	.4302-01	.2643-01	3.076	20.98	579.8
45	90.000	.40600-01	57.000	.4674	.9625	.5859	.9607	.4230-01	.2575-01	2.891	19.68	583.0
45	90.000	.48500-01	58.000	.4439	.8889	.5615	.9582	.3907-01	.2468-01	2.821	19.24	579.1
45	90.000	.56400-01	59.000	.4020	.7852	.5126	.9558	.3451-01	.2253-01	2.621	17.92	575.4
45	90.000	.76100-01	60.000	.3022	.5667	.3930	.9505	.2491-01	.1727-01	2.060	14.13	568.6
45	90.000	.95800-01	61.000	.2585	.4761	.3432	.9460	.2092-01	.1508-01	1.799	12.36	565.3
45	90.000	.11550	62.000	.1926	.3468	.2590	.9423	.1524-01	.1139-01	1.378	9.493	560.9
45	135.00	.19000-01	49.000	.6919	1.760	.8213	.9740	.7734-01	.3610-01	3.627	24.41	604.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
45	135.00	.22900-01	51.000	.6507	1.611	.7698	.9740	.7079-01	.3383-01	3.473	23.40	602.2
45	180.00	.91000-02	23.000	.4376	1.003	.4910	.9807	.4408-01	.2158-01	2.470	16.70	595.3
45	180.00	.11100-01	24.000	.7258	2.676	.8446	.9807	.1176	.3712-01	3.168	21.10	624.4
45	180.00	.13100-01	25.000	.7380	2.239	.8477	.9807	.9841-01	.3726-01	3.502	23.43	615.7
45	180.00	.15000-01	26.000	.7367	2.202	.8453	.9807	.9680-01	.3715-01	3.521	23.57	614.9
45	180.00	.17000-01	27.000	.7328	2.197	.8410	.9807	.9657-01	.3696-01	3.497	23.40	615.1
45	180.00	.19000-01	28.000	.7168	2.097	.8212	.9807	.9216-01	.3609-01	3.464	23.20	613.7
45	180.00	.20900-01	29.000	.7316	1.939	.8316	.9807	.8521-01	.3655-01	3.738	25.11	607.4
45	180.00	.28800-01	32.000	.6082	1.400	.6918	.9786	.6153-01	.3041-01	3.421	23.13	595.7
45	160.00	.32800-01	33.000	.5472	1.154	.6221	.9771	.5072-01	.2734-01	3.310	22.50	586.1
45	180.00	.36700-01	34.000	.5479	1.221	.6329	.9756	.5365-01	.2782-01	3.162	21.42	592.4
45	180.00	.56400-01	37.000	.4722	.9748	.5637	.9685	.4284-01	.2478-01	2.913	19.83	583.3
45	180.00	.76100-01	38.000	.3964	.7795	.4871	.9621	.3426-01	.2141-01	2.565	17.53	576.4
45	180.00	.95800-01	39.000	.3331	.6359	.4205	.9564	.2795-01	.1848-01	2.224	15.24	571.7
45	180.00	.11550	40.000	.2739	.5223	.3565	.9513	.2296-01	.1567-01	1.831	12.55	571.5
45	180.00	.18450	42.000	.1509	.2639	.2044	.9389	.1160-01	.8983-02	1.121	7.753	554.6
45	225.00	.22900-01	30.000	.7058	1.770	.7916	.9820	.7778-01	.3479-01	3.735	25.15	603.3
45	270.00	.91000-02	63.000	.5484	1.859	.6550	.9769	.8171-01	.2879-01	2.474	16.51	621.0
45	270.00	.11100-01	64.000	.7286	2.704	.8764	.9769	.1188	.3852-01	3.172	21.12	624.6
45	270.00	.13100-01	65.000	.7749	2.419	.9191	.9769	.1063	.4040-01	3.627	24.24	617.2
45	270.00	.17000-01	67.000	.6467	1.826	.7600	.9769	.8026-01	.3340-01	3.185	21.35	611.6
45	270.00	.20900-01	69.000	.6808	1.796	.7947	.9769	.7894-01	.3493-01	3.488	23.44	607.1
45	270.00	.24900-01	71.000	.6434	1.586	.7484	.9764	.6969-01	.3289-01	3.444	23.21	601.9
45	270.00	.28800-01	73.000	.5370	1.214	.6244	.9749	.5335-01	.2744-01	3.063	20.73	593.9
45	270.00	.36700-01	75.000	.5831	1.307	.6904	.9719	.5746-01	.3035-01	3.348	22.67	593.0
45	270.00	.48500-01	77.000	.4992	1.028	.5986	.9677	.4520-01	.2631-01	3.085	21.00	583.0
45	270.00	.56400-01	78.000	.4500	.9145	.5471	.9651	.4019-01	.2405-01	2.818	19.20	581.2
45	270.00	.95800-01	80.000	.3038	.5674	.3877	.9534	.2494-01	.1704-01	2.080	14.28	567.9
45	270.00	.11550	81.000	.2488	.4629	.3262	.9487	.2034-01	.1434-01	1.710	11.74	567.2
45	315.00	.19000-01	68.000	.6340	1.406	.7632	.9692	.6181-01	.3354-01	3.672	24.88	591.9
45	315.00	.22900-01	70.000	.5492	1.324	.6700	.9692	.5818-01	.2945-01	2.985	20.14	600.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
145	4.020	5.010	3.032	63.71	732.7	.4085	173.1	-31.24	2593.	.6369-02	.1393-06	3.685
146	4.020	5.014	3.037	63.80	726.7	.4091	171.7	-31.26	2582.	.6431-02	.1382-06	3.736
147	4.020	5.014	3.037	63.68	724.7	.4083	171.2	-31.26	2579.	.6437-02	.1378-06	3.744

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
145	.3827-01	.9618-02
146	.3824-01	.9561-02
147	.3819-01	.9553-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
146	.00000	.91000-02	1.0000	.3285	.5647	.4056	.9545	.2159-01	.1551-01	2.183	15.11	552.9
146	.00000	.15000-01	4.0000	.6076	1.275	.7972	.9545	.4874-01	.3049-01	3.227	21.91	587.8
146	.00000	.17000-01	5.0000	.6029	1.172	.7738	.9545	.4484-01	.2959-01	3.450	23.56	577.1
146	.00000	.19000-01	6.0000	.5538	1.059	.7072	.9545	.4051-01	.2705-01	3.225	22.06	574.4
146	.00000	.24900-01	9.0000	.4925	.9250	.6271	.9541	.3537-01	.2398-01	2.927	20.05	571.3
146	.00000	.26900-01	10.000	.4692	.8620	.5958	.9534	.3297-01	.2279-01	2.861	19.64	567.2
145	.00000	.32800-01	12.000	.4354	.7551	.5485	.9513	.2890-01	.2099-01	2.883	19.88	559.6
145	.00000	.36700-01	13.000	.3999	.6806	.5039	.9500	.2605-01	.1929-01	2.720	18.80	555.0
145	.00000	.40600-01	14.000	.4296	.7434	.5484	.9487	.2845-01	.2099-01	2.854	19.68	559.1
145	.00000	.48500-01	15.000	.3794	.6419	.4865	.9462	.2457-01	.1862-01	2.601	17.99	553.5
145	.00000	.56400-01	16.000	.3514	.5988	.4578	.9438	.2292-01	.1752-01	2.385	16.48	555.3
145	.00000	.76100-01	17.000	.2357	.3891	.3113	.9384	.1489-01	.1192-01	1.676	11.64	546.9
145	.00000	.95800-01	18.000	.4731-01	.7561-01	.6291-01	.9338	.2894-02	.2408-02	.3545	2.475	536.9
145	.00000	.11550	19.000	.1368	.2245	.1894	.9299	.8594-02	.7211-02	.9825	6.829	545.1
145	.00000	.16480	20.000	.6898-01	.1110	.9704-01	.9236	.4249-02	.3714-02	.5108	3.562	539.2
145	.00000	.21400	22.000	.3955-01	.5921-01	.5338-01	.9220	.2266-02	.2043-02	.3340	2.365	512.0
147	2.0000	.24700-01	165.00	.3770	.6573	.4690	.9540	.2510-01	.1791-01	2.446	16.91	554.8
146	9.0000	.15000-01	157.00	.6189	1.220	.8008	.9539	.4667-01	.3063-01	3.490	23.81	579.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
146	9.0000	.17600-01	158.00	.5072	.9298	.6416	.9539	.3556-01	.2454-01	3.102	21.30	566.8
147	9.8000	.24700-01	164.00	.4027	.7026	.5025	.9535	.2683-01	.1919-01	2.611	18.05	554.9
146	10.000	.22900-01	88.000	.4412	.8034	.5571	.9539	.3073-01	.2130-01	2.719	18.69	565.5
146	10.000	.26900-01	90.000	.4012	.6932	.5011	.9527	.2651-01	.1916-01	2.647	18.31	554.2
146	10.000	.34700-01	94.000	.4338	.7703	.5551	.9500	.2946-01	.2123-01	2.759	19.02	560.3
146	12.000	.17600-01	152.00	.7949	2.335	.9123	.9805	.8931-01	.3489-01	3.349	22.39	616.5
146	12.000	.12100-01	151.00	.6557	8.375	.7995	.9805	.3203	.3058-01	1.977	13.00	647.8
146	13.000	.19400-01	153.00	.7426	1.908	.8434	.9804	.7297-01	.3226-01	3.379	22.70	607.7
147	14.600	.44200-01	169.00	.4454	.7978	.5827	.9466	.3047-01	.2225-01	2.791	19.23	560.6
146	18.500	.44200-01	106.00	.4688	.8576	.6189	.9465	.3280-01	.2367-01	2.874	19.74	566.4
147	19.600	.62900-01	175.00	.3008	.5058	.3954	.9409	.1932-01	.1510-01	2.053	14.26	545.9
146	19.800	.40800-01	101.00	.4504	.8194	.5897	.9475	.3134-01	.2255-01	2.779	19.10	565.3
146	20.000	.24900-01	89.000	.3534	.6148	.4418	.9530	.2351-01	.1689-01	2.310	15.96	555.7
146	20.000	.28800-01	91.000	.3329	.5696	.4167	.9516	.2178-01	.1594-01	2.225	15.41	551.8
146	20.000	.32800-01	93.000	.3797	.6717	.4846	.9502	.2569-01	.1853-01	2.427	16.73	559.5
146	22.200	.62900-01	125.00	.3104	.5420	.4154	.9409	.2073-01	.1589-01	2.019	13.95	556.6
146	22.400	.44200-01	107.00	.4095	.7340	.5367	.9464	.2807-01	.2052-01	2.574	17.72	562.3
147	22.600	.10270	192.00	.1595	.2615	.2176	.9315	.9986-02	.8311-02	1.132	7.897	538.8
146	23.000	.42000-01	105.00	.4711	.8789	.6244	.9471	.3361-01	.2388-01	2.821	19.34	570.1
146	23.400	.59600-01	120.00	.3420	.6068	.4585	.9418	.2321-01	.1754-01	2.178	15.02	560.1
147	23.900	.21310	250.00	.3866-01	.5848-01	.5255-01	.9220	.2233-02	.2007-02	.3157	2.237	510.8
146	24.100	.82200-01	139.00	.2256	.3814	.3056	.9359	.1459-01	.1169-01	1.535	10.65	548.8
147	24.400	.19040	238.00	.6252-01	.9592-01	.8578-01	.9221	.3663-02	.3276-02	.4969	3.509	516.5
147	24.400	.12440	207.00	.1115	.1846	.1561	.9278	.7050-02	.5963-02	.7783	5.419	541.8
147	24.800	.16810	223.00	.7450-01	.1189	.1045	.9231	.4540-02	.3991-02	.5524	3.870	530.5
146	24.900	.62900-01	126.00	.3098	.5379	.4136	.9408	.2057-01	.1582-01	2.030	14.03	555.3
147	25.000	.79500-01	178.00	.2748	.4649	.3711	.9365	.1776-01	.1417-01	1.860	12.91	547.5
147	25.300	.10270	191.00	.1578	.2589	.2154	.9315	.9887-02	.8227-02	1.118	7.797	539.1
147	25.300	.10000+00	186.00	.1779	.2957	.2439	.9320	.1129-01	.9316-02	1.236	8.600	542.8
146	25.500	.60700-01	124.00	.3355	.6024	.4531	.9414	.2304-01	.1733-01	2.104	14.49	562.7
147	26.000	.12440	206.00	.1187	.1972	.1666	.9278	.7530-02	.6362-02	.8252	5.743	542.6
146	26.300	.82200-01	140.00	.1686	.2824	.2273	.9359	.1080-01	.8695-02	1.163	8.076	546.3
147	26.700	.12100	199.00	.1461	.2464	.2063	.9283	.9411-02	.7880-02	.9927	6.894	546.7
147	26.800	.16810	222.00	.8121-01	.1301	.1143	.9231	.4970-02	.4363-02	.5978	4.185	531.9
147	27.000	.19040	237.00	.6646-01	.1030	.9181-01	.9221	.3932-02	.3506-02	.5188	3.656	520.3
147	27.100	.21310	249.00	.3255-01	.4997-01	.4471-01	.9220	.1908-02	.1707-02	.2584	1.824	516.8
147	27.200	.80300-01	180.00	.2644	.4462	.3570	.9363	.1704-01	.1363-01	1.795	12.47	546.8
146	27.400	.40100-01	98.000	.4250	.7903	.5607	.9476	.3022-01	.2144-01	2.555	17.52	569.5
147	27.400	.16480	215.00	.9049-01	.1471	.1284	.9233	.5619-02	.4904-02	.6503	4.542	536.5
146	27.600	.41600-01	102.00	.4317	.8248	.5771	.9471	.3154-01	.2207-01	2.518	17.22	574.2
147	27.600	.12140	205.00	.1244	.2076	.1751	.9278	.7929-02	.6687-02	.8587	5.973	543.9
147	27.600	.16700	230.00	.8877-01	.1381	.1230	.9222	.5275-02	.4696-02	.6875	4.840	521.9
147	27.700	.21010	243.00	.6512-01	.1000	.8949-01	.9220	.3821-02	.3417-02	.5164	3.645	517.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
147	27.900	.10110	188.00	.1791	.2982	.2462	.9318	.1139-01	.9401-02	1.241	8.637	543.2
146	28.000	.46800-01	110.00	.2507	.4087	.3176	.9455	.1563-01	.1215-01	1.801	12.56	538.8
147	28.200	.16810	221.00	.9204-01	.1488	.1302	.9231	.5681-02	.4974-02	.6681	4.671	534.6
147	28.300	.19040	236.00	.3068-01	.4783-01	.4257-01	.9221	.1827-02	.1626-02	.2367	1.666	522.6
147	28.300	.12200	201.00	.1364	.2270	.1913	.9281	.8671-02	.7305-02	.9452	6.577	543.2
146	28.400	.53500-01	114.00	.3204	.5555	.4212	.9435	.2124-01	.1611-01	2.104	14.55	555.0
147	28.400	.21310	248.00	.1671-01	.2577-01	.2303-01	.9220	.9843-03	.8794-03	.1316	.9282	518.5
146	28.700	.58600-01	117.00	.3882	.6940	.5215	.9420	.2654-01	.1995-01	2.449	16.87	561.7
147	28.800	.16580	217.00	.9805-01	.1606	.1399	.9232	.6135-02	.5343-02	.6965	4.858	538.7
146	28.800	.60400-01	121.00	.3677	.6739	.5009	.9415	.2577-01	.1916-01	2.249	15.45	566.8
147	29.000	.21110	244.00	.2163-01	.3364-01	.2998-01	.9220	.1285-02	.1145-02	.1676	1.180	521.7
146	29.000	.65700-01	129.00	.2016	.3273	.2619	.9400	.1252-01	.1002-01	1.459	10.18	537.4
146	29.200	.72400-01	133.00	.2704	.4633	.3639	.9383	.1772-01	.1392-01	1.805	12.50	552.1
146	29.300	.79500-01	136.00	.2589	.4540	.3561	.9365	.1736-01	.1362-01	1.674	11.55	557.6
146	29.600	.92500-01	143.00	.1625	.2734	.2225	.9335	.1046-01	.8509-02	1.114	7.730	547.5
146	29.700	.10000+00	146.00	.2082	.3606	.2922	.9320	.1379-01	.1117-01	1.369	9.462	554.8
147	29.900	.12100	198.00	.1516	.2574	.2150	.9283	.9830-02	.8210-02	1.020	7.076	548.4
147	30.200	.16480	214.00	.1032	.1701	.1478	.9233	.6497-02	.5644-02	.7254	5.055	540.5
147	30.300	.21010	242.00	.4727-01	.7309-01	.6525-01	.9220	.2791-02	.2492-02	.3703	2.610	519.5
146	31.500	.91000-02	82.000	.3397	.5862	.4228	.9533	.2242-01	.1617-01	2.244	15.52	553.9
146	31.500	.11100-01	83.000	.5052	.9416	.6449	.9533	.3601-01	.2466-01	3.029	20.77	569.9
146	31.500	.14200-01	84.000	.7874	3.003	.9237	.9800	.1148	.3533-01	2.966	19.71	628.2
146	31.500	.16000-01	85.000	.8256	2.438	.9515	.9800	.9322-01	.3639-01	3.469	23.20	616.8
146	31.500	.17600-01	86.000	.7982	2.393	.9210	.9800	.9151-01	.3522-01	3.329	22.25	617.6
146	31.500	.19400-01	87.000	.6960	1.602	.7849	.9800	.6128-01	.3002-01	3.420	23.09	598.2
147	32.100	.21010	241.00	.6708-01	.1030	.9214-01	.9220	.3933-02	.3519-02	.5326	3.760	516.8
147	32.200	.16480	213.00	.1009	.1647	.1436	.9233	.6291-02	.5482-02	.7198	5.023	537.8
147	32.200	.17860	224.00	.8052-01	.1262	.1119	.9225	.4819-02	.4274-02	.6157	4.329	524.4
147	32.200	.18700	228.00	.7958-01	.1235	.1101	.9222	.4718-02	.4203-02	.6189	4.359	521.0
147	32.300	.12100	197.00	.1522	.2558	.2145	.9283	.9768-02	.8191-02	1.040	7.224	545.8
147	32.300	.12300	194.00	.1305	.2195	.1843	.9280	.8381-02	.7040-02	.8912	6.192	545.9
147	32.300	.12730	208.00	.7151-01	.1158	.9905-01	.9273	.4423-02	.3783-02	.5173	3.615	535.2
147	32.300	.13420	209.00	.8068-01	.1348	.1145	.9264	.5148-02	.4375-02	.5561	3.867	544.2
146	32.400	.10000+00	147.00	.1888	.3253	.2642	.9320	.1244-01	.1010-01	1.251	8.652	553.5
147	32.400	.10110	184.00	.1938	.3283	.2689	.9318	.1254-01	.1027-01	1.309	9.084	547.8
147	32.400	.10630	193.00	.1081	.1704	.1447	.9308	.6508-02	.5527-02	.8182	5.745	526.5
147	32.500	.85800-01	183.00	.1454	.2308	.1914	.9350	.8816-02	.7310-02	1.087	7.620	528.9
146	32.600	.79500-01	137.00	.2361	.4167	.3257	.9365	.1594-01	.1246-01	1.514	10.44	559.0
147	32.600	.80800-01	176.00	.2665	.4595	.3641	.9362	.1755-01	.1390-01	1.757	12.16	552.1
146	32.700	.67400-01	132.00	.2036	.3336	.2663	.9396	.1276-01	.1018-01	1.451	10.11	540.3
146	32.700	.72400-01	134.00	.2404	.4051	.3210	.9383	.1549-01	.1228-01	1.644	11.41	547.9
146	32.800	.65700-01	130.00	.1806	.2892	.2331	.9400	.1106-01	.8917-02	1.337	9.355	533.1
147	32.800	.16680	210.00	.9310-01	.1502	.1315	.9231	.5735-02	.5022-02	.6780	4.741	534.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
147	32.800	.18880	225.00	.6991-01	.1067	.9557-01	.9221	.4075-02	.3650-02	.5610	3.966	514.5
146	32.900	.58600-01	118.00	.3741	.6685	.5025	.9420	.2557-01	.1922-01	2.360	16.26	561.7
146	32.900	.60400-01	122.00	.3064	.5307	.4071	.9415	.2030-01	.1557-01	2.015	13.93	554.7
147	32.900	.61300-01	171.00	.3128	.5452	.4174	.9412	.2082-01	.1594-01	2.030	14.04	554.7
146	33.000	.53500-01	115.00	.3067	.5214	.3997	.9435	.1994-01	.1529-01	2.070	14.34	550.2
146	33.200	.48300-01	113.00	.2252	.3622	.2843	.9450	.1385-01	.1087-01	1.655	11.57	534.5
147	33.400	.42800-01	166.00	.3881	.6950	.5074	.9467	.2654-01	.1938-01	2.432	16.76	560.6
146	33.500	.40100-01	99.000	.4233	.7548	.5498	.9476	.2887-01	.2103-01	2.679	18.46	561.2
146	33.600	.38300-01	97.000	.4144	.7305	.5341	.9482	.2794-01	.2043-01	2.661	18.36	558.7
146	33.700	.36700-01	96.000	.3655	.6424	.4692	.9487	.2457-01	.1794-01	2.356	16.26	558.1
146	33.900	.33800-01	95.000	.3110	.5255	.3914	.9497	.2010-01	.1497-01	2.118	14.69	548.6
147	34.700	.21010	240.00	.7117-01	.1091	.9766-01	.9220	.4167-02	.3730-02	.5663	4.000	516.3
147	34.700	.18700	227.00	.9039-01	.1406	.1252	.9222	.5371-02	.4781-02	.7003	4.930	521.8
147	34.900	.16480	212.00	.8742-01	.1426	.1243	.9233	.5445-02	.4748-02	.6253	4.365	537.4
146	35.100	.10000+00	148.00	.1778	.3059	.2485	.9320	.1170-01	.9505-02	1.180	8.162	553.2
147	35.200	.23900-01	161.00	.2786	.4427	.3371	.9532	.1691-01	.1287-01	2.079	14.58	529.2
146	35.300	.92500-01	145.00	.1910	.3224	.2619	.9335	.1233-01	.1002-01	1.302	9.031	548.4
146	35.300	.22100-01	160.00	.2756	.4418	.3344	.9533	.1689-01	.1279-01	2.037	14.25	533.4
147	35.400	.18800	231.00	.7392-01	.1149	.1023	.9222	.4389-02	.3908-02	.5733	4.037	521.6
147	35.500	.12100	196.00	.1374	.2303	.1933	.9283	.8794-02	.7382-02	.9420	6.547	545.1
147	35.600	.16580	216.00	.8391-01	.1357	.1187	.9232	.5183-02	.4533-02	.6083	4.252	534.8
146	35.800	.80600-01	138.00	.2438	.4184	.3321	.9363	.1600-01	.1270-01	1.624	11.24	552.5
147	35.900	.21310	247.00	.4657-01	.7081-01	.6353-01	.9220	.2704-02	.2426-02	.3765	2.664	512.9
147	36.000	.19040	235.00	.6365-01	.9824-01	.8771-01	.9221	.3752-02	.3349-02	.5004	3.529	518.8
147	36.200	.16810	220.00	.7284-01	.1165	.1023	.9231	.4449-02	.3908-02	.5380	3.768	531.3
146	36.200	.72400-01	135.00	.2620	.4443	.3508	.9383	.1699-01	.1342-01	1.774	12.30	549.6
147	36.300	.12200	200.00	.1286	.2146	.1806	.9281	.8194-02	.6897-02	.8880	6.176	543.8
146	36.600	.65700-01	131.00	.2058	.3392	.2693	.9400	.1297-01	.1030-01	1.455	10.13	541.9
147	36.700	.18700	226.00	.7551-01	.1167	.1041	.9222	.4457-02	.3976-02	.5921	4.175	519.3
147	36.900	.16480	211.00	.8470-01	.1370	.1197	.9233	.5230-02	.4573-02	.6143	4.294	534.8
147	36.900	.10110	187.00	.1906	.3202	.2633	.9318	.1223-01	.1005-01	1.303	9.056	545.6
146	37.000	.60400-01	123.00	.3265	.5790	.4383	.9415	.2214-01	.1676-01	2.080	14.34	560.1
147	37.000	.12440	204.00	.1144	.1883	.1597	.9278	.7192-02	.6098-02	.8067	5.622	540.0
146	37.100	.58600-01	119.00	.3462	.6095	.4619	.9420	.2331-01	.1767-01	2.227	15.37	558.5
147	37.200	.21310	246.00	.5164-01	.7852-01	.7045-01	.9220	.2999-02	.2691-02	.4173	2.953	513.0
147	37.600	.16810	219.00	.7236-01	.1155	.1016	.9231	.4412-02	.3878-02	.5359	3.754	530.7
146	37.800	.10270	150.00	.1481	.2472	.2041	.9315	.9454-02	.7807-02	1.026	7.131	545.5
147	37.900	.12100	195.00	.1238	.2021	.1714	.9283	.7718-02	.6546-02	.8837	6.167	537.7
147	38.000	.80300-01	179.00	.2640	.4437	.3557	.9364	.1695-01	.1358-01	1.805	12.54	545.7
146	38.500	.46800-01	112.00	.2360	.3833	.2985	.9455	.1466-01	.1141-01	1.706	11.91	537.6
147	38.600	.12440	203.00	.1107	.1815	.1541	.9278	.6930-02	.5885-02	.7851	5.475	538.9
147	38.700	.10000+00	185.00	.1914	.3181	.2625	.9320	.1215-01	.1002-01	1.330	9.256	542.7
146	38.900	.82200-01	141.00	.2051	.3429	.2763	.9359	.1311-01	.1057-01	1.419	9.860	545.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
146	39.300	.41600-01	104.00	.3764	.6766	.4915	.9472	.2587-01	.1880-01	2.358	16.23	562.9
147	39.500	.10270	190.00	.1767	.2904	.2414	.9315	.1109-01	.9221-02	1.249	8.708	539.6
147	39.600	.16810	218.00	.7150-01	.1139	.1002	.9231	.4348-02	.3825-02	.5319	3.728	529.9
147	39.900	.19040	233.00	.5389-01	.8250-01	.7383-01	.9221	.3151-02	.2820-02	.4302	3.039	515.7
147	40.100	.79500-01	177.00	.2584	.4300	.3460	.9366	.1642-01	.1321-01	1.792	12.47	543.1
147	40.200	.12440	202.00	.1058	.1730	.1470	.9278	.6608-02	.5615-02	.7530	5.254	538.2
147	40.300	.21310	245.00	.3869-01	.5848-01	.5256-01	.9220	.2233-02	.2007-02	.3164	2.242	510.5
146	41.100	.82200-01	142.00	.1918	.3213	.2585	.9360	.1229-01	.9887-02	1.323	9.188	546.3
147	41.100	.60700-01	173.00	.3186	.5442	.4206	.9415	.2078-01	.1606-01	2.126	14.74	549.9
147	42.600	.59600-01	172.00	.3274	.5593	.4314	.9418	.2136-01	.1648-01	2.185	15.15	549.9
147	43.200	.42000-01	168.00	.3790	.6572	.4882	.9472	.2510-01	.1864-01	2.478	17.14	553.5
147	43.400	.82200-01	181.00	.2402	.4016	.3233	.9360	.1534-01	.1235-01	1.653	11.49	544.4
146	43.600	.62900-01	128.00	.3019	.5130	.3988	.9410	.1962-01	.1525-01	2.039	14.13	550.1
146	45.000	.22900-01	8.0000	.6187	1.264	.8113	.9535	.4834-01	.3103-01	3.368	22.91	584.3
147	46.100	.62900-01	174.00	.3084	.5204	.4059	.9410	.1987-01	.1550-01	2.096	14.55	546.8
147	47.700	.40800-01	167.00	.4170	.7300	.5374	.9477	.2788-01	.2052-01	2.691	18.59	555.7
146	48.400	.44200-01	109.00	.3876	.6890	.5055	.9467	.2635-01	.1933-01	2.462	16.97	560.6
146	50.000	.19400-01	156.00	.5949	1.443	.6721	.9805	.5518-01	.2570-01	2.813	18.95	603.0
146	51.000	.12100-01	154.00	.6405	2.975	.7561	.9805	.1138	.2892-01	2.268	15.03	634.1
146	51.000	.17600-01	155.00	.6513	1.605	.7366	.9805	.6140-01	.2817-01	3.046	20.50	604.4
147	51.900	.44800-01	170.00	.3260	.5443	.4147	.9466	.2079-01	.1584-01	2.249	15.64	544.0
147	53.200	.24700-01	163.00	.3975	.6895	.4950	.9535	.2633-01	.1890-01	2.598	17.97	553.5
147	65.200	.24700-01	162.00	.4985	.9229	.6309	.9544	.3524-01	.2409-01	3.000	20.60	567.1
145	90.000	.91000-02	44.000	.4284	.7603	.5256	.9576	.2910-01	.2012-01	2.751	18.91	564.9
145	90.000	.11100-01	45.000	.6107	1.218	.7742	.9576	.4660-01	.2963-01	3.436	23.36	585.7
145	90.000	.13100-01	46.000	.7148	1.543	.9252	.9576	.5905-01	.3541-01	3.734	25.24	596.2
145	90.000	.17000-01	48.000	.6909	1.338	.8689	.9576	.5119-01	.3325-01	4.007	27.31	581.1
145	90.000	.20900-01	50.000	.6063	1.147	.7576	.9576	.4391-01	.2900-01	3.606	24.62	577.3
145	90.000	.24900-01	52.000	.5415	.9832	.6706	.9571	.3763-01	.2567-01	3.380	23.18	569.6
145	90.000	.26900-01	53.000	.5521	1.008	.6877	.9564	.3859-01	.2632-01	3.421	23.45	570.7
145	90.000	.28800-01	54.000	.5393	.9751	.6723	.9557	.3732-01	.2573-01	3.383	23.21	568.8
145	90.000	.32800-01	55.000	.4824	.8321	.5971	.9543	.3185-01	.2285-01	3.218	22.21	558.4
145	90.000	.36700-01	56.000	.4573	.7845	.5690	.9529	.3002-01	.2178-01	3.075	21.23	557.0
145	90.000	.40600-01	57.000	.4367	.7591	.5497	.9516	.2905-01	.2104-01	2.883	19.87	560.2
145	90.000	.48500-01	58.000	.3436	.5861	.4354	.9490	.2243-01	.1667-01	2.329	16.10	555.6
145	90.000	.56400-01	59.000	.3564	.5994	.4550	.9465	.2294-01	.1741-01	2.465	17.07	552.0
145	90.000	.76100-01	60.000	.2641	.4345	.3438	.9409	.1663-01	.1316-01	1.889	13.12	545.8
145	90.000	.95800-01	61.000	.1975	.3207	.2619	.9360	.1227-01	.1002-01	1.441	10.03	542.0
145	90.000	.11550	62.000	.1666	.2694	.2252	.9318	.1031-01	.8618-02	1.224	8.531	540.7
145	135.00	.19000-01	49.000	.6656	1.311	.8039	.9651	.5016-01	.3077-01	3.792	25.80	583.8
145	135.00	.22900-01	51.000	.6281	1.213	.7554	.9651	.4642-01	.2891-01	3.653	24.90	580.7
145	180.00	.91000-02	23.000	.3111	.5426	.3540	.9716	.2077-01	.1355-01	2.045	14.09	560.9
145	180.00	.11100-01	24.000	.6721	1.620	.8060	.9716	.6200-01	.3085-01	3.221	21.65	607.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K022)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
145	180.00	.13100-01	25.000	.7038	1.505	.8291	.9716	.5761-01	.3173-01	3.707	25.07	595.1
145	180.00	.15000-01	26.000	.7125	1.497	.8370	.9716	.5728-01	.3203-01	3.8[illegible]4	25.83	592.8
145	180.00	.17000-01	27.000	.6965	1.441	.8162	.9716	.5513-01	.3124-01	3.781	25.64	590.8
145	180.00	.19000-01	28.000	.6749	1.383	.7896	.9716	.5294-01	.3022-01	3.695	25.07	589.6
145	180.00	.20900-01	29.000	.6869	1.366	.7997	.9716	.5227-01	.3061-01	3.875	26.35	585.3
145	180.00	.28800-01	32.000	.6122	1.144	.7128	.9696	.4377-01	.2728-01	3.693	25.25	575.0
145	180.00	.32800-01	33.000	.5455	.9676	.6337	.9681	.3703-01	.2425-01	3.507	24.11	564.7
145	180.00	.36700-01	34.000	.5380	.9816	.6335	.9666	.3757-01	.2425-01	3.338	22.88	570.5
145	180.00	.48500-01	36.000	.4640	.8208	.5548	.9624	.3141-01	.2123-01	2.993	20.59	564.1
145	180.00	.56400-01	37.000	.4386	.7672	.5304	.9596	.2936-01	.2030-01	2.871	19.77	561.6
145	180.00	.76100-01	38.000	.3603	.6175	.4478	.9531	.2363-01	.1714-01	2.425	16.75	556.8
145	180.00	.95800-01	39.000	.2834	.4772	.3608	.9471	.1826-01	.1381-01	1.957	13.55	552.3
145	180.00	.11550	40.000	.2290	.3871	.3004	.9418	.1482-01	.1150-01	1.572	10.87	553.3
145	180.00	.18450	42.000	.1169	.1852	.1592	.9279	.7087-02	.6094-02	.8881	6.211	534.1
145	225.00	.22900-01	30.000	.6865	1.346	.7916	.9729	.5153-01	.3030-01	3.928	26.74	583.2
145	270.00	.91000-02	63.000	.5118	1.035	.6106	.9680	.3960-01	.2337-01	2.840	19.29	587.7
145	270.00	.11100-01	64.000	.6952	1.668	.8549	.9680	.6384-01	.3272-01	3.343	22.47	607.0
145	270.00	.13100-01	65.000	.7520	1.681	.9137	.9680	.6435-01	.3497-01	3.815	25.73	600.1
145	270.00	.17000-01	67.000	.6543	1.365	.7852	.9680	.5222-01	.3005-01	3.525	23.88	591.9
145	270.00	.20900-01	69.000	.6425	1.283	.7648	.9680	.4909-01	.2927-01	3.610	24.54	585.9
145	270.00	.24900-01	71.000	.6555	1.283	.7795	.9675	.4912-01	.2983-01	3.757	25.58	582.9
145	270.00	.28800-01	73.000	.6033	1.122	.7158	.9660	.4292-01	.2739-01	3.661	25.04	574.1
145	270.00	.36700-01	75.000	.5162	.9387	.6191	.9631	.3593-01	.2370-01	3.216	22.05	569.9
145	270.00	.48500-01	77.000	.4306	.7491	.5219	.9588	.2867-01	.1998-01	2.840	19.58	560.3
145	270.00	.56400-01	78.000	.4190	.7222	.5135	.9561	.2764-01	.1965-01	2.798	19.31	558.2
145	270.00	.95800-01	80.000	.2539	.4180	.3253	.9441	.1600-01	.1245-01	1.814	12.61	546.0
145	270.00	.11550	81.000	.2288	.3796	.3019	.9390	.1453-01	.1155-01	1.614	11.20	548.3
145	315.00	.19000-01	68.000	.5961	1.097	.7281	.9603	.4199-01	.2787-01	3.660	25.06	572.2
145	315.00	.22900-01	70.000	.547[illegible]	1.045	.6752	.9603	.4001-01	.2584-01	3.224	22.00	578.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
38	3.010	5.048	-.1760-02	36.19	721.7	.9706	256.6	.2000-01	2364.	.1021-01	.2050-06	3.658
39	3.010	5.036	.0000	36.17	722.7	.9701	257.0	.0000	2365.	.1019-01	.2053-06	3.649
40	3.010	5.052	.0000	36.16	722.7	.9697	257.0	.0000	2365.	.1018-01	.2053-06	3.647

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
38	.4402-01	.7576-02
39	.4402-01	.7585-02
40	.4401-01	.7587-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
39	.00000	.91000-02	1.0000	.6329	1.397	.7903	.9636	.6148-01	.3479-01	3.682	24.97	590.5
39	.00000	.11100-01	2.0000	.7588	2.155	.9932	.9636	.9488-01	.4372-01	3.726	24.99	611.1
39	.00000	.15000-01	4.0000	.5860	1.407	.7442	.9636	.6193-01	.3276-01	3.195	21.57	598.8
39	.00000	.17000-01	5.0000	.5814	1.354	.7340	.9636	.5961-01	.3231-01	3.241	21.91	596.0
39	.00000	.19000-01	6.0000	.5613	1.304	.7082	.9636	.5741-01	.3118-01	3.135	21.20	595.8
39	.00000	.24900-01	9.0000	.4988	1.072	.6214	.9631	.4720-01	.2736-01	2.968	20.15	587.5
39	.00000	.26900-01	10.000	.4922	1.033	.6128	.9624	.4548-01	.2698-01	2.991	20.34	584.6
38	.00000	.32800-01	12.000	.5059	1.041	.6354	.9604	.4584-01	.2797-01	3.126	21.30	581.3
38	.00000	.36700-01	13.000	.4663	.9183	.5839	.9591	.4043-01	.2571-01	3.010	20.58	575.1
38	.00000	.40600-01	14.000	.4938	1.017	.6307	.9578	.4479-01	.2776-01	3.048	20.77	581.5
38	.00000	.46500-01	15.000	.4458	.8868	.5728	.9554	.3904-01	.2522-01	2.847	19.45	576.6
38	.00000	.56400-01	16.000	.3961	.7697	.5127	.9531	.3388-01	.2257-01	2.593	17.75	573.0
38	.00000	.76100-01	17.000	.3118	.5825	.4108	.9481	.2564-01	.1809-01	2.131	14.64	566.4
38	.00000	.11550	19.000	.1888	.3421	.2573	.9406	.1506-01	.1133-01	1.339	9.227	560.6
38	.00000	.16480	20.000	.1112	.1957	.1541	.9356	.8615-02	.6782-02	.8184	5.659	554.5
38	.00000	.21400	22.000	.6363-01	.1028	.8481-01	.9345	.4527-02	.3734-02	.5303	3.712	532.4
40	2.0000	.24700-01	165.00	.4080	.8098	.4993	.9632	.3564-01	.2197-01	2.615	17.86	577.0
39	9.0000	.15000-01	157.00	.5580	1.292	.7031	.9637	.5686-01	.3095-01	3.126	21.14	595.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
39	9.0000	.17600-01	158.00	.5219	1.150	.6511	.9637	.5061-01	.2866-01	3.041	20.62	590.3
40	9.8000	.24700-01	164.00	.4229	.8510	.5188	.9633	.3745-01	.2283-01	2.674	18.24	579.0
39	10.000	.22900-01	88.000	.4443	.9263	.5478	.9637	.4078-01	.2412-01	2.717	18.49	583.8
39	10.000	.26900-01	90.000	.4677	.9555	.5784	.9625	.4206-01	.2546-01	2.915	19.87	581.1
39	10.000	.34700-01	94.000	.4748	1.008	.6028	.9599	.4437-01	.2654-01	2.855	19.41	586.1
39	12.000	.17600-01	152.00	.8451	10.21	.9595	.9870	.4493	.4224-01	2.931	19.32	643.9
39	12.000	.12100-01	151.00	.4371	-6.881	.5073	.9870	-.3029	.2233-01	1.308	8.571	654.7
39	13.000	.19400-01	153.00	.8099	6.049	.9127	.9870	.2663	.4018-01	2.975	19.66	639.2
40	14.600	.44200-01	169.00	.4217	.8536	.5392	.9569	.3757-01	.2373-01	2.650	18.08	579.9
39	18.500	.44200-01	106.00	.4202	.8721	.5403	.9571	.3839-01	.2379-01	2.579	17.56	583.2
40	19.600	.62900-01	175.00	.3149	.6040	.4095	.9517	.2658-01	.1802-01	2.093	14.33	571.7
39	19.800	.40800-01	101.00	.4882	1.098	.6358	.9582	.4831-01	.2799-01	2.798	18.95	592.5
39	20.000	.24900-01	89.000	.3800	.7672	.4656	.9636	.3377-01	.2050-01	2.396	16.34	579.5
39	20.000	.28800-01	91.000	.4143	.8329	.5115	.9622	.3667-01	.2252-01	2.623	17.90	578.9
39	20.000	.32800-01	93.000	.4483	.9643	.5672	.9608	.4245-01	.2497-01	2.666	18.10	587.6
40	21.800	.82200-01	182.00	.2385	.4539	.3184	.9471	.1997-01	.1401-01	1.598	10.96	570.4
39	22.200	.62900-01	125.00	.3354	.6694	.4414	.9519	.2947-01	.1943-01	2.138	14.60	577.8
39	22.400	.44200-01	107.00	.3883	.7656	.4919	.9572	.3370-01	.2165-01	2.506	17.13	576.0
40	22.600	.10270	192.00	.1840	.3412	.2495	.9430	.1502-01	.1098-01	1.271	8.734	565.8
39	23.000	.42000-01	105.00	.4552	.9980	.5901	.9580	.4393-01	.2598-01	2.662	18.06	589.8
39	23.400	.59600-01	120.00	.3603	.7461	.4766	.9528	.3285-01	.2098-01	2.217	15.09	582.9
40	23.900	.21310	250.00	.8258-01	.1323	.1096	.9345	.5824-02	.4822-02	.6986	4.895	530.5
39	24.100	.82200-01	139.00	.2434	.4606	.3241	.9472	.2028-01	.1427-01	1.642	11.26	569.4
40	24.400	.19040	238.00	.1124	.1855	.1514	.9347	.8166-02	.6662-02	.9063	6.319	539.4
40	24.400	.12440	207.00	.1644	.3125	.2302	.9397	.1375-01	.1013-01	1.103	7.565	570.2
40	24.800	.16810	223.00	.1235	.2171	.1711	.9355	.9557-02	.7529-02	.9114	6.300	555.0
39	24.900	.62900-01	126.00	.3246	.6423	.4257	.9520	.2827-01	.1874-01	2.088	14.26	576.6
40	25.000	.79500-01	178.00	.2651	.5170	.3554	.9479	.2275-01	.1564-01	1.731	11.84	574.3
40	25.300	.10270	191.00	.1987	.3722	.2704	.9431	.1638-01	.1190-01	1.356	9.306	567.7
40	25.300	.10000+00	186.00	.2252	.4387	.3104	.9436	.1931-01	.1366-01	1.472	10.07	574.2
39	25.500	.60700-01	124.00	.3469	.7217	.4602	.9526	.3177-01	.2026-01	2.125	14.46	583.5
40	26.000	.12440	206.00	.1647	.3137	.2307	.9397	.1381-01	.1016-01	1.102	7.556	570.6
39	26.300	.82200-01	140.00	.2443	.4573	.3238	.9473	.2013-01	.1425-01	1.669	11.46	567.5
40	26.700	.12100	199.00	.1986	.3872	.2802	.9402	.1704-01	.1233-01	1.296	8.867	574.3
40	26.800	.16810	222.00	.1355	.2387	.1879	.9356	.1051-01	.8268-02	.9970	6.890	555.5
40	27.000	.19040	237.00	.1249	.2060	.1681	.9347	.9064-02	.7399-02	1.009	7.039	539.0
40	27.100	.21310	249.00	.1008	.1615	.1337	.9345	.7108-02	.5885-02	.8527	5.975	530.4
40	27.200	.80300-01	180.00	.2763	.5438	.3719	.9478	.2394-01	.1637-01	1.787	12.21	575.7
39	27.400	.40100-01	98.000	.4754	1.131	.6246	.9588	.4978-01	.2750-01	2.610	17.63	598.0
40	27.400	.16480	215.00	.1351	.2450	.1898	.9358	.1078-01	.8353-02	.9578	6.597	561.6
39	27.600	.41600-01	102.00	.4528	1.068	.5958	.9583	.4701-01	.2623-01	2.501	16.90	597.2
40	27.600	.12440	205.00	.1697	.3228	.2376	.9398	.1421-01	.1046-01	1.138	7.803	570.3
40	27.600	.18700	230.00	.1359	.2275	.1843	.9348	.1001-01	.8110-02	1.073	7.464	543.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
40	27.700	.21010	243.00	.1168	.1902	.1563	.9345	.8372-02	.6880-02	.9628	6.728	535.4
40	27.900	.10110	188.00	.2183	.4182	.2991	.9435	.1840-01	.1316-01	1.453	9.956	571.4
39	28.000	.46800-01	110.00	.2933	.5235	.3622	.9567	.2305-01	.1595-01	2.122	14.64	558.3
40	28.200	.16810	221.00	.1408	.2501	.1960	.9356	.1101-01	.8624-02	1.024	7.068	557.4
40	28.300	.19040	236.00	.1154	.1871	.1539	.9347	.8236-02	.6775-02	.9576	6.696	534.1
40	28.300	.12200	201.00	.1939	.3727	.2721	.9401	.1640-01	.1197-01	1.286	8.810	572.0
39	28.400	.53500-01	114.00	.3529	.7036	.4557	.9548	.3098-01	.2006-01	2.253	15.38	577.7
40	28.400	.21310	248.00	.1014	.1612	.1340	.9345	.7094-02	.5896-02	.8701	6.106	527.8
39	28.700	.58600-01	117.00	.3920	.8400	.5219	.9533	.3698-01	.2297-01	2.339	15.89	587.2
40	28.800	.16580	217.00	.1490	.2708	.2096	.9357	.1192-01	.9226-02	1.054	7.259	562.0
39	28.800	.60400-01	121.00	.3467	.7469	.4639	.9529	.3288-01	.2042-01	2.058	13.98	587.8
40	29.000	.21110	244.00	.1171	.1887	.1558	.9345	.8306-02	.6858-02	.9811	6.868	532.3
39	29.000	.65700-01	129.00	.2567	.4563	.3259	.9514	.2009-01	.1435-01	1.866	12.88	557.5
39	29.200	.72400-01	133.00	.3068	.6092	.4087	.9498	.2682-01	.1799-01	1.966	13.43	577.1
39	29.300	.79500-01	136.00	.2960	.6006	.4018	.9481	.2644-01	.1769-01	1.857	12.66	580.2
39	29.600	.92500-01	143.00	.2584	.4958	.3501	.9453	.2182-01	.1541-01	1.717	11.76	571.7
39	29.700	.10000+00	146.00	.2317	.4642	.3225	.9438	.2044-01	.1420-01	1.472	10.05	578.4
40	29.900	.12100	190.00	.2153	.4303	.3068	.9403	.1894-01	.1350-01	1.371	9.358	578.0
40	30.200	.16480	214.00	.1503	.2743	.2117	.9358	.1207-01	.9317-02	1.057	7.276	562.8
40	30.200	.18700	229.00	.1386	.2331	.1884	.9348	.1026-01	.8293-02	1.088	7.565	544.4
40	30.300	.21010	242.00	.1301	.2123	.1743	.9345	.9346-02	.7673-02	1.069	7.467	536.0
39	31.500	.91000-02	82.000	.6541	1.546	.8214	.9647	.6807-01	.3616-01	3.607	24.37	597.4
39	31.500	.11100-01	83.000	.7479	2.450	.9909	.9647	.1079	.4362-01	3.425	22.88	618.6
39	31.500	.14200-01	84.000	.8236	-6.677	.9645	.9870	-.2939	.4246-01	2.333	15.26	658.3
39	31.500	.16000-01	85.000	.8906	-12.48	1.035	.9870	-.5495	.4555-01	2.644	17.33	655.2
39	31.500	.17600-01	86.000	.8291	27.11	.9487	.9870	1.193	.4176-01	2.721	17.90	648.1
39	31.500	.19400-01	87.000	.8086	3.606	.8993	.9870	.1588	.3959-01	3.316	22.02	629.5
40	32.100	.21010	241.00	.1041	.1689	.1390	.9345	.7434-02	.6118-02	.8619	6.026	534.5
40	32.200	.16480	213.00	.1368	.2483	.1922	.9358	.1093-01	.8458-02	.9699	6.680	561.6
40	32.200	.17860	224.00	.1173	.1959	.1586	.9351	.8620-02	.6980-02	.9308	6.479	542.4
40	32.200	.18700	228.00	.1241	.2060	.1676	.9348	.9068-02	.7374-02	.9929	6.917	540.9
40	32.300	.12100	197.00	.2381	.4812	.3406	.9404	.2118-01	.1499-01	1.499	10.23	579.6
40	32.300	.12300	194.00	.1914	.3836	.2734	.9401	.1688-01	.1203-01	1.215	8.292	578.4
40	32.300	.12730	208.00	.1445	.2607	.1978	.9395	.1147-01	.8704-02	1.031	7.102	560.6
40	32.300	.13420	209.00	.1472	.2840	.2089	.9387	.1250-01	.9195-02	.9717	6.652	572.7
39	32.400	.10000+00	147.00	.2417	.5009	.3405	.9439	.2205-01	.1499-01	1.486	10.12	583.0
40	32.400	.10110	184.00	.2464	.5043	.3460	.9437	.2220-01	.1523-01	1.533	10.44	581.4
40	32.400	.10630	193.00	.1671	.2896	.2205	.9428	.1274-01	.9703-02	1.257	8.702	551.8
40	32.500	.85800-01	183.00	.2229	.3979	.2910	.9468	.1751-01	.1281-01	1.612	11.13	558.3
39	32.600	.79500-01	137.00	.2561	.5455	.3530	.9482	.2401-01	.1554-01	1.535	10.43	586.5
40	32.600	.80800-01	176.00	.3013	.6527	.4187	.9479	.2873-01	.1843-01	1.780	12.09	588.4
39	32.700	.67400-01	132.00	.2592	.4809	.3344	.9512	.2117-01	.1472-01	1.789	12.29	565.9
39	32.700	.72400-01	134.00	.3001	.5854	.3969	.9500	.2577-01	.1747-01	1.958	13.40	574.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
39	32.800	.65700-01	130.00	.2528	.4488	.3204	.9517	.1976-01	.1411-01	1.841	12.71	557.2
40	32.800	.16680	210.00	.1229	.2171	.1705	.9357	.9555-02	.7502-02	.9017	6.229	556.0
40	32.800	.18880	225.00	.9975-01	.1586	.1316	.9348	.6982-02	.5793-02	.8547	5.997	528.0
39	32.900	.58600-01	118.00	.4424	.9612	.5902	.9536	.4231-01	.2598-01	2.607	17.70	588.8
39	32.900	.60400-01	122.00	.3061	.6348	.4043	.9531	.2795-01	.1780-01	1.881	12.81	583.1
40	32.900	.61300-01	171.00	.3077	.6240	.4044	.9528	.2746-01	.1780-01	1.931	13.17	580.1
39	33.000	.53500-01	115.00	.3520	.6853	.4505	.9551	.3017-01	.1983-01	2.303	15.76	574.1
39	33.200	.48300-01	113.00	.2805	.4961	.3457	.9566	.2184-01	.1522-01	2.053	14.18	556.4
40	33.400	.42800-01	166.00	.4136	.9117	.5357	.9583	.4013-01	.2357-01	2.408	16.33	590.4
39	33.500	.40100-01	99.000	.4810	1.081	.6219	.9592	.4760-01	.2738-01	2.757	18.67	592.5
39	33.600	.38300-01	97.000	.5023	1.111	.6443	.9598	.4890-01	.2836-01	2.918	19.78	590.7
39	33.700	.36700-01	96.000	.5063	1.110	.6456	.9603	.4885-01	.2842-01	2.963	20.10	589.8
39	33.900	.33800-01	95.000	.4245	.8575	.5276	.9613	.3775-01	.2322-01	2.674	18.24	579.6
40	34.700	.21010	240.00	.8369-01	.1358	.1118	.9345	.5977-02	.4920-02	.6937	4.850	534.3
40	34.700	.18700	227.00	.1133	.1883	.1530	.9348	.8288-02	.6735-02	.9049	6.303	541.2
40	34.900	.16480	212.00	.1340	.2456	.1891	.9359	.1081-01	.8320-02	.9376	6.451	563.7
39	35.100	.10000+00	148.00	.2428	.5067	.3426	.9441	.2230-01	.1508-01	1.483	10.09	583.9
40	35.200	.23900-01	161.00	.3580	.6335	.4227	.9648	.2788-01	.1860-01	2.619	18.09	556.5
39	35.300	.92500-01	145.00	.2750	.5370	.3745	.9455	.2364-01	.1649-01	1.793	12.27	574.5
39	35.300	.22100-01	160.00	.3364	.6010	.3977	.9650	.2646-01	.1751-01	2.431	16.77	558.5
40	35.400	.18800	231.00	.1132	.1882	.1529	.9348	.8283-02	.6731-02	.9036	6.294	541.3
40	35.500	.12100	196.00	.2212	.4474	.3163	.9405	.1969-01	.1392-01	1.392	9.493	579.7
40	35.600	.16580	216.00	.1292	.2331	.1809	.9358	.1026-01	.7963-02	.9215	6.351	560.6
39	35.800	.80600-01	138.00	.2952	.6148	.4041	.9482	.2706-01	.1779-01	1.807	12.30	583.7
40	35.900	.21310	247.00	.7978-01	.1267	.1053	.9345	.5576-02	.4636-02	.6852	4.809	527.5
40	36.000	.19040	235.00	.1044	.1701	.1396	.9347	.7486-02	.6142-02	.8593	6.004	535.6
40	36.200	.16910	220.00	.1225	.2142	.1690	.9357	.9426-02	.7438-02	.9103	6.297	553.8
39	36.200	.72400-01	135.00	.3451	.6798	.4573	.9502	.2993-01	.2013-01	2.230	15.24	575.9
40	36.300	.12200	200.00	.1953	.3943	.2793	.9404	.1735-01	.1229-01	1.231	8.395	579.5
39	36.600	.65700-01	131.00	.2619	.4942	.3384	.9519	.2176-01	.1490-01	1.772	12.16	569.0
40	36.700	.18700	226.00	.1266	.2080	.1699	.9348	.9155-02	.7480-02	1.029	7.183	538.0
40	36.900	.16480	211.00	.1415	.2541	.1976	.9359	.1118-01	.8697-02	1.016	7.009	559.5
40	36.900	.10110	187.00	.2539	.5226	.3568	.9439	.2300-01	.1570-01	1.571	10.70	582.1
39	37.000	.60400-01	123.00	.3397	.7613	.4580	.9534	.3352-01	.2016-01	1.952	13.22	592.2
40	37.000	.12440	204.00	.1770	.3420	.2490	.9401	.1505-01	.1096-01	1.167	7.989	572.9
39	37.100	.58600-01	119.00	.4087	.8763	.5421	.9539	.3858-01	.2387-01	2.437	16.55	587.2
40	37.200	.21310	246.00	.8488-01	.1346	.1120	.9345	.5924-02	.4928-02	.7310	5.132	527.0
40	37.600	.16810	219.00	.1315	.2280	.1807	.9357	.1003-01	.7951-02	.9893	6.851	551.8
39	37.800	.10270	150.00	.2162	.4118	.2952	.9437	.1813-01	.1299-01	1.448	9.926	570.5
40	37.900	.12100	195.00	.2151	.3942	.2946	.9406	.1735-01	.1296-01	1.505	10.36	563.6
40	38.000	.80300-01	179.00	.3460	.7067	.4699	.9484	.3110-01	.2068-01	2.157	14.70	581.1
39	38.500	.46800-01	112.00	.3129	.5743	.3881	.9574	.2528-01	.1708-01	2.188	15.05	563.9
40	38.600	.12440	203.00	.1837	.3452	.2551	.9402	.1519-01	.1123-01	1.248	8.567	568.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
40	38.700	.10000+00	185.00	.2625	.5156	.3614	.9442	.2269-01	.1591-01	1.700	11.62	575.5
39	38.900	.82200-01	141.00	.2794	.5447	.3742	.9480	.2398-01	.1647-01	1.826	12.49	574.3
39	39.300	.41600-01	104.00	.4763	1.129	.6236	.9591	.4969-01	.2745-01	2.622	17.71	597.6
40	39.500	.10270	190.00	.2545	.4889	.3484	.9438	.2151-01	.1533-01	1.688	11.56	571.9
40	39.600	.16810	218.00	.1192	.2046	.1629	.9358	.9005-02	.7169-02	.9089	6.302	549.5
40	39.900	.19040	233.00	.1071	.1715	.1418	.9348	.7546-02	.6243-02	.9084	6.367	530.0
40	40.100	.79500-01	177.00	.3454	.6698	.4596	.9487	.2948-01	.2023-01	2.268	15.52	573.4
40	40.200	.12440	202.00	.1881	.3460	.2586	.9402	.1523-01	.1138-01	1.310	9.011	564.4
40	40.300	.21310	245.00	.8871-01	.1392	.1163	.9345	.6125-02	.5120-02	.7782	5.474	523.3
39	41.100	.82200-01	142.00	.3058	.5890	.4074	.9481	.2593-01	.1793-01	2.023	13.85	572.4
40	41.100	.60700-01	173.00	.3667	.7644	.4835	.9536	.3364-01	.2128-01	2.242	15.26	583.8
40	42.300	.10270	189.00	.2415	.4427	.3241	.9439	.1948-01	.1426-01	1.690	11.63	563.6
40	42.600	.59600-01	172.00	.4095	.8489	.5375	.9540	.3736-01	.2366-01	2.517	17.13	583.0
40	43.200	.42000-01	168.00	.4714	1.037	.6058	.9593	.4564-01	.2666-01	2.749	18.64	590.2
40	43.400	.82200-01	181.00	.2296	.4317	.3029	.9483	.1900-01	.1333-01	1.559	10.70	568.3
39	43.600	.62900-01	128.00	.3300	.6458	.4280	.9532	.2843-01	.1884-01	2.147	14.68	574.9
39	45.000	.22900-01	8.0000	.6533	1.688	.8264	.9658	.7431-01	.3638-01	3.391	22.82	604.8
40	46.100	.62900-01	174.00	.3771	.7501	.4910	.9534	.3301-01	.2161-01	2.412	16.47	577.3
40	47.700	.40800-01	167.00	.5182	1.183	.6670	.9601	.5205-01	.2939-01	2.933	19.85	594.0
39	48.400	.44200-01	109.00	.4596	.9812	.5872	.9591	.4319-01	.2585-01	2.751	18.69	586.7
39	50.000	.19400-01	156.00	.7374	7.355	.8350	.9870	.3238	.3676-01	2.607	17.20	642.3
39	51.000	.12100-01	154.00	.6868	-9.703	.7978	.9870	-.4272	.3512-01	2.040	13.37	655.2
39	51.000	.17600-01	155.00	.7621	7.905	.8635	.9870	.3480	.3801-01	2.683	17.70	642.7
40	51.900	.44800-01	170.00	.3876	.7608	.4844	.9593	.3348-01	.2132-01	2.514	17.18	575.3
40	53.200	.24700-01	163.00	.4795	1.011	.5828	.9663	.4449-01	.2565-01	2.901	19.73	585.2
40	65.200	.24700-01	162.00	.5669	1.330	.6957	.9677	.5855-01	.3062-01	3.141	21.23	596.8
38	90.000	.91000-02	44.000	.5795	2.207	.7325	.9717	.9714-01	.3225-01	2.497	16.63	623.8
38	90.000	.11100-01	45.000	.8410	3.336	1.067	.9717	.1468	.4697-01	3.572	23.78	625.2
38	90.000	.13100-01	46.000	.8234	2.770	1.028	.9717	.1219	.4525-01	3.723	24.86	619.0
38	90.000	.17000-01	48.000	.6499	1.779	.7923	.9717	.7834-01	.3488-01	3.252	21.85	608.0
38	90.000	.20900-01	50.000	.7074	1.852	.8575	.9717	.8154-01	.3775-01	3.636	24.47	604.9
38	90.000	.24900-01	52.000	.6379	1.575	.7699	.9712	.6933-01	.3389-01	3.406	22.97	600.4
38	90.000	.26900-01	53.000	.5989	1.381	.7193	.9704	.6077-01	.3167-01	3.360	22.74	594.2
38	90.000	.28800-01	54.000	.5819	1.291	.6980	.9697	.5682-01	.3073-01	3.366	22.83	590.3
38	90.000	.32800-01	55.000	.5027	1.033	.6007	.9683	.4549-01	.2644-01	3.110	21.20	581.1
39	90.000	.36700-01	56.000	.5000	1.015	.6012	.9669	.4469-01	.2646-01	3.130	21.35	579.5
38	90.000	.40600-01	57.000	.5100	1.065	.6219	.9655	.4690-01	.2738-01	3.109	21.16	583.2
38	90.000	.48500-01	58.000	.5005	1.009	.6159	.9628	.4443-01	.2711-01	3.154	21.53	578.5
38	90.000	.56400-01	59.000	.4230	.8301	.5253	.9603	.3654-01	.2313-01	2.741	18.75	574.5
38	90.000	.76100-01	60.000	.3364	.6349	.4279	.9545	.2795-01	.1884-01	2.273	15.60	568.2
38	90.000	.95800-01	61.000	.2932	.5437	.3821	.9495	.2393-01	.1682-01	2.022	13.90	565.0
38	90.000	.11550	62.000	.2163	.3922	.2867	.9453	.1726-01	.1262-01	1.533	10.56	560.7
38	135.00	.19000-01	49.000	.7471	2.039	.8676	.9781	.8978-01	.3820-01	3.746	25.17	607.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
38	135.00	.22900-01	51.000	.6929	1.777	.7998	.9781	.7821-01	.3521-01	3.608	24.30	603.4
38	180.00	.91000-02	23.000	.3745	.8838	.4209	.9809	.3891-01	.1853-01	2.065	13.96	596.4
38	180.00	.11100-01	24.000	.7732	2.932	.8999	.9809	.1291	.3961-01	3.336	22.23	623.7
38	180.00	.13100-01	25.000	.7638	2.389	.8780	.9809	.1052	.3865-01	3.567	23.86	615.6
38	180.00	.15000-01	26.000	.7229	2.218	.8298	.9809	.9765-01	.3653-01	3.407	22.81	614.6
38	180.00	.17000-01	27.000	.7564	2.299	.8677	.9809	.1012	.3820-01	3.581	23.98	614.1
38	180.00	.19000-01	28.000	.7801	2.328	.8937	.9809	.1025	.3934-01	3.728	24.97	613.1
38	180.00	.20900-01	29.000	.7526	2.018	.8551	.9809	.8885-01	.3764-01	3.813	25.63	606.6
38	180.00	.28800-01	32.000	.6200	1.424	.7042	.9788	.6267-01	.3100-01	3.490	23.62	593.8
38	180.00	.32800-01	33.000	.5772	1.214	.6553	.9773	.5343-01	.2885-01	3.497	23.80	584.0
38	180.00	.36700-01	34.000	.5869	1.311	.6775	.9758	.5772-01	.2982-01	3.375	22.88	591.0
38	180.00	.56400-01	37.000	.5000	1.033	.5964	.9687	.4546-01	.2625-01	3.080	20.98	581.7
38	180.00	.76100-01	38.000	.4177	.8181	.5124	.9622	.3601-01	.2256-01	2.712	18.55	574.2
38	180.00	.95800-01	39.000	.3375	.6416	.4252	.9565	.2825-01	.1872-01	2.262	15.51	569.4
38	180.00	.11550	40.000	.2741	.5203	.3560	.9514	.2290-01	.1567-01	1.840	12.62	569.2
38	180.00	.18450	42.000	.1556	.2734	.2112	.9389	.1203-01	.9296-02	1.148	7.941	554.1
38	225.00	.22900-01	30.000	.6880	1.688	.7907	.9781	.7431-01	.3481-01	3.689	24.89	599.9
38	270.00	.91000-02	63.000	.5694	1.608	.6968	.9717	.7078-01	.3068-01	2.801	18.79	609.9
38	270.00	.11100-01	64.000	.7878	2.747	.9873	.9717	.1209	.4346-01	3.510	23.42	620.5
38	270.00	.13100-01	65.000	.7975	2.458	.9862	.9717	.1082	.4342-01	3.751	25.11	614.8
38	270.00	.17000-01	67.000	.7869	2.079	.9551	.9717	.9154-01	.4205-01	4.022	27.05	605.6
38	270.00	.20900-01	69.000	.6665	1.682	.8040	.9717	.7406-01	.3539-01	3.507	23.63	602.2
38	270.00	.24900-01	71.000	.6450	1.553	.7757	.9712	.6838-01	.3415-01	3.504	23.66	598.3
38	270.00	.28800-01	73.000	.5278	1.169	.6330	.9697	.5147-01	.2786-01	3.056	20.73	590.1
38	270.00	.36700-01	75.000	.5571	1.229	.6804	.9669	.5410-01	.2995-01	3.238	21.97	589.6
38	270.00	.46500-01	77.000	.5007	1.012	.6165	.9628	.4457-01	.2714-01	3.147	21.47	578.9
38	270.00	.56400-01	78.000	.4416	.8751	.5498	.9603	.3852-01	.2420-01	2.833	19.36	576.0
38	270.00	.95800-01	80.000	.2799	.5116	.3629	.9495	.2252-01	.1598-01	1.963	13.52	562.3
38	270.00	.11550	81.000	.2122	.3854	.2814	.9453	.1696-01	.1239-01	1.500	10.33	561.1
38	315.00	.19000-01	68.000	.5655	1.231	.6937	.9658	.5419-01	.3054-01	3.324	22.56	588.2
38	315.00	.22900-01	70.000	.6138	1.437	.7633	.9658	.6327-01	.3360-01	3.404	23.02	595.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
138	4.020	5.044	.0000	63.99	726.7	.4104	171.7	.0000	2582.	.6451-02	.1382-06	3.747
139	4.020	5.052	.0000	63.93	726.7	.4100	171.7	.0000	2582.	.6445-02	.1382-06	3.744
140	4.020	5.040	.0000	63.87	726.7	.4096	171.7	.0000	2582.	.6438-02	.1382-06	3.740

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
138	.3830-01	.9546-02
139	.3828-01	.9551-02
140	.3827-01	.9555-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
139	.00000	.91000-02	1.0000	.3398	.5683	.4157	.9546	.2176-01	.1592-01	2.350	16.33	546.0
139	.00000	.15000-01	4.0000	.5956	1.214	.7749	.9546	.4646-01	.2967-01	3.254	22.14	584.0
139	.00000	.17000-01	5.0000	.5659	1.066	.7191	.9546	.4079-01	.2753-01	3.357	23.00	571.7
139	.00000	.19000-01	6.0000	.5160	.9614	.6535	.9546	.3680-01	.2502-01	3.098	21.25	569.8
139	.00000	.24900-01	9.0000	.4760	.8792	.6029	.9541	.3366-01	.2308-01	2.888	19.82	568.2
139	.00000	.26900-01	10.000	.4645	.8446	.5878	.9534	.3233-01	.2251-01	2.872	19.74	565.2
138	.00000	.32800-01	12.000	.4507	.8114	.5752	.9513	.3108-01	.2203-01	2.823	19.42	563.2
138	.00000	.36700-01	13.000	.4189	.7399	.5350	.9500	.2834-01	.2049-01	2.687	18.53	559.2
138	.00000	.40600-01	14.000	.4469	.8080	.5798	.9487	.3095-01	.2221-01	2.783	19.14	564.1
138	.00000	.48500-01	15.000	.4279	.7709	.5627	.9462	.2953-01	.2155-01	2.677	18.42	563.3
138	.00000	.56400-01	16.000	.3825	.6812	.5076	.9438	.2609-01	.1944-01	2.427	16.73	561.0
138	.00000	.76100-01	17.000	.2890	.4959	.3890	.9384	.1900-01	.1490-01	1.927	13.34	552.6
138	.00000	.95800-01	18.000	.5714-01	.9377-01	.7709-01	.9338	.3592-02	.2953-02	.4071	2.837	540.6
138	.00000	.11550	19.000	.1551	.2592	.2159	.9299	.9927-02	.8269-02	1.076	7.475	545.6
138	.00000	.16480	20.000	.8045-01	.1306	.1138	.9236	.5001-02	.4359-02	.5833	4.071	537.4
138	.00000	.21400	22.000	.3491-01	.5390-01	.4814-01	.9220	.2065-02	.1844-02	.2757	1.942	520.5
140	2.0000	.24700-01	165.00	.3785	.6584	.4700	.9542	.2520-01	.1799-01	2.475	17.10	555.8
139	9.0000	.15000-01	157.00	.6180	1.189	.7900	.9547	.4553-01	.3024-01	3.579	24.47	575.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
139	9.0000	.17600-01	158.00	.4982	.8993	.6245	.9547	.3443-01	.2391-01	3.108	21.38	563.7
140	9.8000	.24700-01	164.00	.3842	.6640	.4758	.9543	.2541-01	.1821-01	2.535	17.53	554.3
139	10.000	.22900-01	88.000	.4198	.7536	.5252	.9547	.2885-01	.2011-01	2.636	18.15	562.6
139	10.000	.26900-01	90.000	.4051	.7003	.5039	.9535	.2681-01	.1929-01	2.673	18.48	554.3
139	10.000	.34700-01	94.000	.4175	.7347	.5302	.9508	.2813-01	.2030-01	2.690	18.56	558.4
139	12.000	.17600-01	152.00	.7998	2.107	.9032	.9815	.8067-01	.3458-01	3.587	24.07	609.5
139	12.000	.12100-01	151.00	.6094	6.428	.7315	.9815	.2461	.2801-01	1.873	12.33	646.4
139	13.000	.19400-01	153.00	.7049	1.585	.7852	.9816	.6067-01	.3006-01	3.532	23.88	595.8
140	14.600	.44200-01	169.00	.3803	.6584	.4880	.9478	.2519-01	.1867-01	2.504	17.32	554.6
139	18.500	.44200-01	106.00	.3962	.7044	.5132	.9479	.2697-01	.1965-01	2.520	17.37	560.6
140	19.600	.62900-01	175.00	.2881	.4834	.3757	.9423	.1850-01	.1437-01	1.983	13.77	546.8
139	19.800	.40800-01	101.00	.4665	.8674	.6102	.9491	.3321-01	.2336-01	2.808	19.26	569.4
139	20.000	.24900-01	89.000	.3354	.5763	.4141	.9546	.2206-01	.1585-01	2.232	15.45	552.8
139	20.000	.28800-01	91.000	.3425	.5906	.4264	.9532	.2261-01	.1632-01	2.268	15.69	553.7
139	20.000	.32800-01	93.000	.3859	.6784	.4872	.9518	.2597-01	.1865-01	2.489	17.18	558.2
139	22.200	.62900-01	125.00	.3098	.5385	.4101	.9424	.2062-01	.1570-01	2.029	14.02	555.6
139	22.400	.44200-01	107.00	.3630	.6315	.4659	.9481	.2418-01	.1784-01	2.375	16.41	555.8
140	22.600	.10270	192.00	.1669	.2757	.2272	.9327	.1055-01	.8696-02	1.176	8.187	542.5
139	23.000	.42000-01	105.00	.4558	.8448	.5963	.9488	.3234-01	.2283-01	2.754	18.89	568.9
139	23.400	.59600-01	120.00	.3251	.5744	.4310	.9434	.2199-01	.1650-01	2.084	14.37	559.2
140	23.900	.21310	250.00	.5474-01	.8275-01	.7438-01	.9220	.3167-02	.2846-02	.4497	3.184	512.0
139	24.100	.82200-01	139.00	.2603	.4501	.3537	.9374	.1723-01	.1354-01	1.718	11.88	554.3
140	24.400	.19040	238.00	.6621-01	.1024	.9125-01	.9223	.3917-02	.3492-02	.5213	3.672	520.9
140	24.400	.12440	207.00	.1324	.2213	.1854	.9288	.8466-02	.7094-02	.9169	6.371	545.7
140	24.800	.16810	223.00	.8258-01	.1330	.1163	.9236	.5090-02	.4449-02	.6057	4.234	535.0
139	24.900	.62900-01	126.00	.2963	.5163	.3924	.9425	.1977-01	.1502-01	1.935	13.37	556.1
140	25.000	.79500-01	178.00	.2770	.4748	.3732	.9381	.1817-01	.1428-01	1.848	12.79	552.3
140	25.300	.10270	191.00	.1833	.3037	.2498	.9328	.1162-01	.9559-02	1.285	8.943	543.4
140	25.300	.10000+00	186.00	.2066	.3514	.2847	.9334	.1345-01	.1090-01	1.394	9.662	550.3
139	25.500	.60700-01	124.00	.3449	.6159	.4598	.9432	.2358-01	.1760-01	2.181	15.02	561.5
140	26.000	.12440	206.00	.1405	.2354	.1970	.9289	.9007-02	.7538-02	.9698	6.736	546.3
139	26.300	.82200-01	140.00	.1845	.3159	.2494	.9375	.1210-01	.9546-02	1.234	8.543	552.0
140	26.700	.12100	199.00	.1873	.3182	.2638	.9295	.1218-01	.1010-01	1.266	8.773	550.1
140	26.800	.16810	222.00	.8326-01	.1347	.1176	.9236	.5156-02	.4499-02	.6059	4.232	536.5
140	27.000	.19040	237.00	.8339-01	.1293	.1151	.9223	.4947-02	.4406-02	.6533	4.600	521.9
140	27.100	.21310	249.00	.6243-01	.9460-01	.8497-01	.9220	.3620-02	.3252-02	.5106	3.613	513.0
140	27.200	.80300-01	180.00	.2985	.5162	.4042	.9380	.1975-01	.1547-01	1.969	13.61	554.3
139	27.400	.40100-01	98.000	.4862	.9351	.6410	.9497	.3580-01	.2454-01	2.817	19.26	575.3
140	27.400	.16480	215.00	.9371-01	.1532	.1330	.9239	.5863-02	.5091-02	.6710	4.678	539.6
139	27.600	.41600-01	102.00	.5031	.9717	.6663	.9492	.3720-01	.2551-01	2.902	19.83	576.0
140	27.600	.12440	205.00	.1474	.2469	.2066	.9289	.9447-02	.7904-02	1.018	7.068	546.3
140	27.600	.18700	230.00	.9307-01	.1454	.1291	.9225	.5563-02	.4939-02	.7193	5.056	524.7
140	27.700	.21010	243.00	.7811-01	.1190	.1067	.9220	.4555-02	.4084-02	.6317	4.464	515.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
140	27.900	.10110	188.00	.2056	.3444	.2812	.9333	.1318-01	.1076-01	1.419	9.853	546.4
139	28.000	.46800-01	110.00	.2603	.4244	.3265	.9475	.1625-01	.1250-01	1.872	13.06	538.8
140	28.200	.16810	221.00	.1057	.1720	.1498	.9236	.6581-02	.5731-02	.7621	5.317	538.2
140	28.300	.19040	236.00	.6988-01	.1078	.9614-01	.9223	.4125-02	.3679-02	.5526	3.894	520.0
140	28.300	.12200	201.00	.1740	.2949	.2449	.9294	.1128-01	.9373-02	1.180	8.185	549.4
139	28.400	.53500-01	114.00	.3239	.5657	.4223	.9455	.2166-01	.1617-01	2.108	14.56	556.7
140	28.400	.21310	248.00	.5341-01	.8066-01	.7252-01	.9220	.3086-02	.2775-02	.4396	3.113	511.6
139	28.700	.58600-01	117.00	.4071	.7338	.5424	.9440	.2809-01	.2077-01	2.544	17.50	563.5
140	28.800	.16580	217.00	.1118	.1839	.1593	.9238	.7035-02	.6098-02	.7925	5.520	541.4
139	28.800	.60400-01	121.00	.3660	.6676	.4916	.9435	.2556-01	.1882-01	2.253	15.48	565.9
140	29.000	.21110	244.00	.6512-01	.9904-01	.8886-01	.9220	.3790-02	.3400-02	.5286	3.737	514.5
139	29.000	.65700-01	129.00	.2227	.3631	.2871	.9420	.1390-01	.1099-01	1.602	11.18	538.7
139	29.200	.72400-01	133.00	.2991	.5231	.4022	.9401	.2002-01	.1540-01	1.943	13.42	557.0
139	29.300	.79500-01	136.00	.2977	.5347	.4098	.9383	.2047-01	.1569-01	1.869	12.86	562.7
139	29.600	.92500-01	143.00	.2151	.3681	.2944	.9352	.1409-01	.1127-01	1.440	9.968	551.9
139	29.700	.10000+00	146.00	.2404	.4235	.3373	.9336	.1621-01	.1291-01	1.547	10.68	558.5
140	29.900	.12100	198.00	.2017	.3467	.2859	.9296	.1327-01	.1094-01	1.341	9.281	552.9
140	30.200	.16480	214.00	.1085	.1792	.1550	.9240	.6858-02	.5931-02	.7641	5.318	542.6
140	30.300	.21010	242.00	.7949-01	.1214	.1088	.9220	.4646-02	.4163-02	.6402	4.521	516.2
139	31.500	.91000-02	82.000	.3560	.6042	.4351	.9557	.2313-01	.1666-01	2.410	16.71	549.8
139	31.500	.11100-01	83.000	.5357	1.038	.6817	.9557	.3973-01	.2610-01	3.080	21.04	576.5
139	31.500	.14200-01	84.000	.8855	3.093	1.012	.9825	.1184	.3873-01	3.452	22.98	624.9
139	31.500	.16000-01	85.000	.9479	3.174	1.080	.9825	.1215	.4136-01	3.760	25.06	623.1
139	31.500	.17600-01	86.000	.8115	2.130	.9100	.9825	.8155-01	.3484-01	3.647	24.48	609.3
139	31.500	.19400-01	87.000	.7009	1.518	.7737	.9825	.5811-01	.2962-01	3.623	24.55	591.7
140	32.100	.21010	241.00	.7000-01	.1063	.9544-01	.9220	.4069-02	.3652-02	.5695	4.027	514.1
140	32.200	.16480	213.00	.1066	.1752	.1518	.9240	.6705-02	.5808-02	.7569	5.273	541.1
140	32.200	.17860	224.00	.9051-01	.1419	.1255	.9230	.5429-02	.4803-02	.6953	4.884	525.9
140	32.200	.18700	228.00	.9437-01	.1477	.1310	.9225	.5653-02	.5015-02	.7265	5.105	525.5
140	32.300	.12100	197.00	.2147	.3706	.3049	.9297	.1418-01	.1167-01	1.420	9.820	553.9
140	32.300	.12300	194.00	.1883	.3244	.2676	.9293	.1241-01	.1024-01	1.248	8.631	553.5
140	32.300	.12730	208.00	.1154	.1879	.1592	.9286	.7190-02	.6094-02	.8317	5.802	538.3
140	32.300	.13420	209.00	.1200	.2028	.1704	.9276	.7760-02	.6519-02	.8171	5.668	548.7
139	32.400	.10000+00	147.00	.2535	.4613	.3614	.9337	.1766-01	.1384-01	1.566	10.76	565.3
140	32.400	.10110	184.00	.2596	.4565	.3640	.9335	.1747-01	.1393-01	1.674	11.55	558.1
140	32.400	.10630	193.00	.1472	.2344	.1966	.9324	.8968-02	.7524-02	1.101	7.711	531.2
140	32.500	.85800-01	183.00	.1906	.3079	.2509	.9369	.1178-01	.9599-02	1.391	9.719	535.9
139	32.600	.79500-01	137.00	.2750	.5125	.3846	.9385	.1962-01	.1472-01	1.650	11.32	569.9
140	32.600	.80800-01	176.00	.3407	.6270	.4747	.9382	.2399-01	.1816-01	2.074	14.24	567.6
139	32.700	.67400-01	132.00	.2406	.4030	.3144	.9417	.1543-01	.1204-01	1.660	11.53	546.4
139	32.700	.72400-01	134.00	.2696	.4622	.3588	.9403	.1769-01	.1374-01	1.800	12.46	552.3
139	32.800	.65700-01	130.00	.2277	.3715	.2933	.9422	.1422-01	.1123-01	1.636	11.41	539.0
140	32.800	.16680	210.00	.9664-01	.1568	.1365	.9238	.6000-02	.5225-02	.7004	4.889	537.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
140	32.800	.18880	225.00	.7519-01	.1147	.1026	.9225	.4389-02	.3926-02	.6069	4.288	515.7
139	32.900	.58600-01	118.00	.4227	.7695	.5645	.9442	.2946-01	.2161-01	2.609	17.93	565.4
139	32.900	.60400-01	122.00	.3349	.6066	.4478	.9437	.2322-01	.1714-01	2.080	14.30	564.4
140	32.900	.61300-01	171.00	.3293	.5780	.4352	.9435	.2212-01	.1665-01	2.129	14.69	557.8
139	33.000	.53500-01	115.00	.3378	.5844	.4380	.9458	.2237-01	.1677-01	2.227	15.40	554.5
139	33.200	.48300-01	113.00	.2578	.4200	.3235	.9474	.1608-01	.1239-01	1.857	12.95	538.5
140	33.400	.42800-01	166.00	.4848	.9051	.6345	.9492	.3463-01	.2428-01	2.903	19.90	570.2
139	33.500	.40100-01	99.000	.5170	.9690	.6739	.9501	.3710-01	.2580-01	3.084	21.13	570.9
139	33.600	.38300-01	97.000	.4947	.9059	.6373	.9507	.3468-01	.2440-01	3.032	20.83	566.6
139	33.700	.36700-01	96.000	.4833	.8782	.6190	.9512	.3362-01	.2370-01	2.990	20.55	565.1
139	33.900	.33800-01	95.000	.3950	.6836	.4947	.9523	.2617-01	.1894-01	2.603	18.00	554.5
140	34.700	.21010	240.00	.6703-01	.1018	.9136-01	.9220	.3895-02	.3496-02	.5458	3.860	513.9
140	34.700	.18700	227.00	.1032	.1615	.1432	.9226	.6179-02	.5481-02	.7955	5.590	525.3
140	34.900	.16480	212.00	.9426-01	.1563	.1349	.9241	.5980-02	.5163-02	.6605	4.595	543.6
139	35.100	.10000+00	148.00	.2447	.4450	.3484	.9339	.1704-01	.1334-01	1.512	10.40	565.2
140	35.200	.23900-01	161.00	.2605	.4095	.3103	.9559	.1567-01	.1188-01	1.991	13.98	526.9
139	35.300	.92500-01	145.00	.2294	.3941	.3140	.9355	.1509-01	.1202-01	1.527	10.57	552.8
139	35.300	.22100-01	160.00	.2654	.4211	.3170	.9560	.1612-01	.1213-01	1.997	14.00	530.1
140	35.400	.18800	231.00	.9921-01	.1548	.1375	.9225	.5924-02	.5261-02	.7681	5.400	524.4
140	35.500	.12100	196.00	.2038	.3525	.2895	.9298	.1349-01	.1108-01	1.343	9.285	554.5
140	35.600	.16580	216.00	.9487-01	.1558	.1350	.9240	.5964-02	.5167-02	.6743	4.697	540.9
139	35.800	.80600-01	138.00	.3248	.6053	.4545	.9384	.2317-01	.1740-01	1.951	13.37	569.8
140	35.900	.21310	247.00	.5898-01	.8836-01	.7963-01	.9220	.3381-02	.3047-02	.4932	3.499	508.1
140	36.000	.19040	235.00	.8395-01	.1293	.1154	.9224	.4949-02	.4414-02	.6652	4.690	519.6
140	36.200	.16810	220.00	.9777-01	.1578	.1377	.9238	.6039-02	.5269-02	.7145	4.992	535.7
139	36.200	.72400-01	135.00	.2830	.4874	.3769	.9406	.1866-01	.1443-01	1.877	12.99	553.4
140	36.300	.12200	200.00	.2004	.3478	.2854	.9297	.1331-01	.1092-01	1.315	9.086	555.2
139	36.600	.65700-01	131.00	.2577	.4371	.3374	.9424	.1673-01	.1292-01	1.747	12.11	549.6
140	36.700	.18700	226.00	.9619-01	.1490	.1325	.9226	.5700-02	.5072-02	.7551	5.318	521.5
140	36.900	.16480	211.00	.1098	.1792	.1555	.9241	.6858-02	.5952-02	.7891	5.503	538.9
140	36.900	.10110	187.00	.2503	.4379	.3495	.9337	.1676-01	.1337-01	1.624	11.22	557.1
139	37.000	.60400-01	123.00	.3638	.6811	.4922	.9440	.2607-01	.1885-01	2.173	14.90	570.7
140	37.000	.12440	204.00	.1803	.3063	.2542	.9293	.1172-01	.9727-02	1.219	8.452	550.0
139	37.100	.58600-01	119.00	.3823	.6887	.5076	.9445	.2637-01	.1943-01	2.391	16.45	563.3
140	37.200	.21310	246.00	.6338-01	.9474-01	.8544-01	.9220	.3625-02	.3269-02	.5324	3.779	507.1
140	37.600	.16810	219.00	.9911-01	.1587	.1388	.9238	.6074-02	.5312-02	.7339	5.135	533.2
139	37.800	.10270	150.00	.2026	.3459	.2797	.9334	.1324-01	.1071-01	1.361	9.426	551.2
140	37.900	.12100	195.00	.1518	.2472	.2081	.9299	.9461-02	.7962-02	1.094	7.629	538.4
140	38.000	.80300-01	179.00	.3102	.5406	.4200	.9386	.2069-01	.1607-01	2.024	13.98	556.1
139	38.500	.46800-01	112.00	.2942	.4902	.3709	.9483	.1877-01	.1420-01	2.046	14.22	545.0
140	38.600	.12440	203.00	.1633	.2727	.2279	.9294	.1044-01	.8720-02	1.132	7.867	545.5
140	38.700	.10000+00	185.00	.2359	.3992	.3230	.9341	.1527-01	.1236-01	1.604	11.13	549.0
139	38.900	.82200-01	141.00	.2775	.4819	.3760	.9382	.1845-01	.1440-01	1.820	12.58	555.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
139	39.300	.41600-01	104.00	.5022	.9845	.6649	.9500	.3769-01	.2546-01	2.851	19.46	578.4
140	39.500	.10270	190.00	.2175	.3648	.2972	.9336	.1396-01	.1137-01	1.498	10.41	546.7
140	39.600	.16810	218.00	.8683-01	.1377	.1208	.9239	.5271-02	.4623-02	.6532	4.578	530.1
140	39.900	.19040	233.00	.7021-01	.1061	.9517-01	.9225	.4060-02	.3642-02	.5772	4.087	511.8
140	40.100	.79500-01	177.00	.2815	.4757	.3748	.9390	.1820-01	.1434-01	1.917	13.30	548.7
140	40.200	.12440	202.00	.1482	.2447	.2053	.9295	.9365-02	.7856-02	1.045	7.272	542.4
140	40.300	.21310	245.00	.5529-01	.8161-01	.7387-01	.9220	.3123-02	.2827-02	.4768	3.396	501.3
139	41.100	.82200-01	142.00	.2546	.4412	.3444	.9384	.1689-01	.1318-01	1.675	11.58	554.8
140	41.100	.60700-01	173.00	.3683	.6572	.4879	.9442	.2515-01	.1867-01	2.330	16.05	561.4
140	42.600	.59600-01	172.00	.3774	.6620	.4952	.9447	.2533-01	.1895-01	2.442	16.85	557.6
140	43.200	.42000-01	168.00	.4496	.8102	.5774	.9503	.3100-01	.2210-01	2.810	19.33	563.4
140	43.400	.82200-01	181.00	.2096	.3485	.2776	.9386	.1334-01	.1062-01	1.462	10.16	544.4
139	43.600	.62900-01	128.00	.3331	.5798	.4378	.9438	.2220-01	.1676-01	2.178	15.05	555.9
139	45.000	.22900-01	8.0000	.5959	1.223	.7650	.9569	.4681-01	.2929-01	3.233	21.99	584.9
140	46.100	.62900-01	174.00	.3556	.6147	.4654	.9440	.2352-01	.1781-01	2.345	16.22	554.3
140	47.700	.40800-01	167.00	.4706	.8517	.6024	.9511	.3259-01	.2305-01	2.924	20.11	564.3
139	48.400	.44200-01	109.00	.4690	.8623	.6075	.9500	.3301-01	.2326-01	2.861	19.65	567.3
139	50.000	.19400-01	156.00	.6711	1.710	.7425	.9842	.6548-01	.2843-01	3.072	20.65	607.1
139	51.000	.12100-01	154.00	.6523	2.833	.7422	.9843	.1085	.2841-01	2.358	15.63	632.3
139	51 000	.17600-01	155.00	.7527	1.977	.8339	.9843	.7568-01	.3193-01	3.381	22.70	609.3
140	51.900	.44800-01	170.00	.3914	.6772	.4956	.9502	.2592-01	.1896-01	2.579	17.83	554.5
140	53.200	.24700-01	163.00	.4123	.7208	.5043	.9573	.2758-01	.1930-01	2.678	18.50	556.9
140	65.200	.24700-01	162.00	.5393	1.016	.6685	.9588	.3887-01	.2558-01	3.197	21.90	571.8
138	90.000	.91000-02	44.000	.4804	.9238	.5850	.9628	.3538-01	.2241-01	2.786	19.05	575.3
138	90.000	.11100-01	45.000	.6654	1.572	.8475	.9628	.6021-01	.3246-01	3.212	21.66	600.7
138	90.000	.13100-01	46.000	.7379	1.707	.9358	.9628	.6538-01	.3584-01	3.617	24.42	598.7
138	90.000	.17000-01	48.000	.6315	1.314	.7830	.9628	.5033-01	.2999-01	3.384	22.99	586.8
138	90.000	.20900-01	50.000	.6489	1.295	.7969	.9628	.4958-01	.3052-01	3.621	24.68	581.0
138	90.000	.24900-01	52.000	.6079	1.152	.7398	.9623	.4412-01	.2833-01	3.583	24.53	572.8
138	90.000	.26900-01	53.000	.5774	1.100	.7067	.9615	.4214-01	.2707-01	3.382	23.14	573.7
138	90.000	.28800-01	54.000	.5610	1.054	.6870	.9608	.4037-01	.2631-01	3.339	22.88	571.3
138	90.000	.32800-01	55.000	.4984	.8868	.6064	.9593	.3397-01	.2323-01	3.167	21.83	560.8
138	90.000	.36700-01	56.000	.4885	.8633	.5977	.9579	.3306-01	.2289-01	3.133	21.60	559.3
138	90.000	.40600-01	57.000	.4549	.8152	.5631	.9565	.3122-01	.2157-01	2.865	19.73	562.2
138	90.000	.48500-01	58.000	.4475	.7849	.5583	.9538	.3006-01	.2138-01	2.897	20.00	557.6
139	90.000	.56400-01	59.000	.3767	.6503	.4740	.9512	.2491-01	.1815-01	2.492	17.24	553.9
138	90.000	.76100-01	60.000	.2942	.4951	.3783	.9452	.1897-01	.1449-01	2.018	14.01	547.6
138	90.000	.95800-01	61.000	.2584	.4280	.3392	.9399	.1639-01	.1299-01	1.815	12.62	543.3
138	90.000	.11550	62.000	.1869	.3065	.2501	.9352	.1174-01	.9581-02	1.334	9.294	540.4
138	135.00	.19000-01	49.000	.6806	1.407	.8100	.9691	.5391-01	.3103-01	3.668	24.93	586.0
138	135.00	.22900-01	51.000	.6591	1.343	.7823	.9691	.5142-01	.2996-01	3.603	24.52	583.9
138	180.00	.91000-02	23.000	.3144	.5542	.3581	.9718	.2123-01	.1372-01	2.023	13.96	558.7
138	180.00	.11100-01	24.000	.6734	1.732	.8136	.9718	.6634-01	.3116-01	3.067	20.61	607.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
138	180.00	.13100-01	25.000	.7243	1.649	.8603	.9718	.6316-01	.3295-01	3.595	24.29	597.1
138	180.00	.15000-01	26.000	.6918	1.550	.8197	.9718	.5936-01	.3140-01	3.478	23.52	595.4
138	180.00	.17000-01	27.000	.6908	1.509	.8154	.9718	.5782-01	.3123-01	3.545	24.01	592.7
138	180.00	.19000-01	28.000	.6867	1.468	.8079	.9718	.5624-01	.3095-01	3.590	24.35	590.2
138	180.00	.20900-01	29.000	.6878	1.409	.8038	.9718	.5396-01	.3079-01	3.741	25.44	584.7
138	180.00	.28800-01	32.000	.6144	1.187	.7192	.9698	.4547-01	.2755-01	3.545	24.23	576.0
138	180.00	.32800-01	33.000	.5578	1.018	.6512	.9683	.3900-01	.2494-01	3.433	23.59	566.0
138	180.00	.36700-01	34.000	.5298	.9963	.6272	.9668	.3816-01	.2402-01	3.149	21.57	571.5
138	180.00	.48500-01	36.000	.4627	.8421	.5567	.9625	.3225-01	.2132-01	2.859	19.65	565.4
138	180.00	.56400-01	37.000	.4321	.7747	.5257	.9598	.2967-01	.2013-01	2.720	18.73	562.3
138	180.00	.76100-01	38.000	.3527	.6147	.4405	.9532	.2355-01	.1687-01	2.304	15.91	556.2
138	180.00	.95800-01	39.000	.2874	.4899	.3675	.9473	.1876-01	.1407-01	1.934	13.40	550.9
138	180.00	.11550	40.000	.2322	.3931	.3046	.9419	.1506-01	.1167-01	1.578	10.94	549.2
138	180.00	.18450	42.000	.1170	.1844	.1589	.9279	.7064-02	.6085-02	.8908	6.251	527.9
138	225.00	.22900-01	30.000	.6457	1.277	.7622	.9691	.4891-01	.2919-01	3.635	24.80	579.7
138	270.00	.91000-02	63.000	.4835	.9035	.5847	.9628	.3461-01	.2240-01	2.895	19.84	570.4
138	270.00	.11100-01	64.000	.6604	1.510	.8354	.9628	.5783-01	.3200-01	3.267	22.07	597.5
138	270.00	.13100-01	65.000	.7674	1.847	.9810	.9628	.7076-01	.3757-01	3.654	24.62	602.4
138	270.00	.17000-01	67.000	.7124	1.483	.8834	.9628	.5680-01	.3383-01	3.816	25.93	586.8
138	270.00	.20900-01	69.000	.6581	1.346	.8128	.9628	.5155-01	.3113-01	3.585	24.39	584.5
138	270.00	.24900-01	71.000	.6054	1.200	.7448	.9623	.4598-01	.2853-01	3.399	23.18	580.1
138	270.00	.28800-01	73.000	.5082	.9537	.6221	.9608	.3653-01	.2383-01	3.028	20.75	571.1
138	270.00	.36700-01	75.000	.5111	.9466	.6338	.9579	.3626-01	.2428-01	3.092	21.22	568.7
138	270.00	.48500-01	77.000	.4302	.7540	.5366	.9538	.2888-01	.2055-01	2.788	19.25	557.5
138	270.00	.56400-01	78.000	.3793	.6555	.4774	.9512	.2511-01	.1829-01	2.506	17.33	554.2
138	270.00	.95800-01	80.000	.2380	.3905	.3110	.9399	.1496-01	.1191-01	1.695	11.81	540.6
138	270.00	.11550	81.000	.1904	.3118	.2546	.9352	.1194-01	.9750-02	1.361	9.483	540.1
138	315.00	.19000-01	68.000	.5771	1.081	.7222	.9569	.4139-01	.2766-01	3.448	23.63	570.7
138	315.00	.22900-01	70.000	.5260	1.027	.6662	.9569	.3935-01	.2552-01	3.000	20.48	577.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
207	5.500	5.028	.2454-01	127.3	721.7	.1368	102.4	-.2800	2728.	.3607-02	.8237-07	3.712
208	5.500	5.028	.7011-02	126.8	721.7	.1363	102.4	-.8000-01	2728.	.3594-02	.8237-07	3.699
209	5.500	5.028	.7011-02	126.5	721.7	.1359	102.4	-.8000-01	2728.	.3584-02	.8237-07	3.689

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
207	.3023-01	.1276-01
208	.3018-01	.1278-01
209	.3014-01	.1280-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
208	.00000	.91000-02	1.0000	.1858	.2753	.2234	.9483	.8308-02	.6741-02	1.244	8.871	499.7
208	.00000	.15000-01	4.0000	.6028	1.032	.7681	.9483	.3115-01	.2318-01	3.155	21.89	548.2
208	.00000	.17000-01	5.0000	.6045	.9870	.7561	.9483	.2978-01	.2282-01	3.397	23.74	535.4
208	.00000	.19000-01	6.0000	.5559	.9015	.6934	.9483	.2720-01	.2093-01	3.158	22.09	533.4
208	.00000	.24900-01	9.0000	.4827	.7821	.6033	.9478	.2360-01	.1821-01	2.746	19.21	533.1
208	.00000	.26900-01	10.000	.4584	.7369	.5730	.9471	.2224-01	.1729-01	2.641	18.50	530.8
207	.00000	.32800-01	12.000	.3922	.6844	.5127	.9449	.2069-01	.1550-01	2.005	13.87	552.6
207	.00000	.36700-01	13.000	.3743	.6481	.4914	.9436	.1959-01	.1486-01	1.932	13.39	550.9
207	.00000	.40600-01	14.000	.3963	.6997	.5287	.9422	.2115-01	.1598-01	1.994	13.78	555.3
207	.00000	.48500-01	15.000	.3611	.6320	.4872	.9396	.1911-01	.1473-01	1.837	12.71	553.3
207	.00000	.56400-01	16.000	.3489	.6084	.4769	.9371	.1839-01	.1442-01	1.785	12.35	552.5
207	.00000	.76100-01	17.000	.2294	.3894	.3198	.9312	.1177-01	.9669-02	1.218	8.465	546.0
207	.00000	.11550	19.000	.1249	.2100	.1833	.9214	.6348-02	.5542-02	.6731	4.682	543.5
207	.00000	.16480	20.000	.5548-01	.8936-01	.8281-01	.9129	.2701-02	.2503-02	.3193	2.236	531.3
207	.00000	.21400	22.000	.2167-01	.3206-01	.3059-01	.9100	.9692-03	.9248-03	.1460	1.041	498.9
209	2.0000	.24700-01	165.00	.3747	.6094	.4689	.9479	.1837-01	.1413-01	2.117	14.80	534.3
208	9.0000	.15000-01	157.00	.5991	.9753	.7482	.9484	.2943-01	.2258-01	3.383	23.65	534.6
208	9.0000	.17600-01	158.00	.4591	.7181	.5642	.9484	.2167-01	.1703-01	2.772	19.52	521.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
209	9.8000	.24700-01	164.00	.3450	.5547	.4295	.9480	.1672-01	.1294-01	1.984	13.90	530.8
208	10.000	.22900-01	88.000	.3974	.6275	.4902	.9484	.1894-01	.1479-01	2.359	16.58	524.9
208	10.000	.26900-01	90.000	.3633	.5626	.4469	.9472	.1698-01	.1349-01	2.234	15.76	517.9
208	10.000	.34700-01	94.000	.3604	.5477	.4450	.9444	.1653-01	.1343-01	2.295	16.26	510.7
208	12.000	.17600-01	152.00	.8535	1.628	.9730	.9742	.4913-01	.2936-01	3.907	26.79	570.0
208	12.000	.12100-01	151.00	.8499	2.396	1.020	.9742	.7231-01	.3078-01	2.868	19.25	609.8
208	13.000	.19400-01	153.00	.7562	1.328	.8507	.9742	.4008-01	.2567-01	3.825	26.45	554.1
209	14.600	.44200-01	169.00	.3675	.5978	.4749	.9413	.1802-01	.1431-01	2.074	14.50	534.4
208	18.500	.44200-01	106.00	.3834	.6068	.4888	.9414	.1831-01	.1475-01	2.267	15.93	525.7
209	19.600	.62900-01	175.00	.2453	.3816	.3187	.9355	.1150-01	.9605-02	1.493	10.53	519.7
208	19.800	.40800-01	101.00	.4294	.6881	.5475	.9426	.2076-01	.1652-01	2.488	17.44	529.7
208	20.000	.24900-01	89.000	.2771	.4231	.3373	.9482	.1277-01	.1018-01	1.748	12.37	512.6
208	20.000	.28800-01	91.000	.2786	.4259	.3414	.9468	.1285-01	.1030-01	1.755	12.42	513.0
208	20.000	.32800-01	93.000	.3431	.5352	.4267	.9454	.1615-01	.1288-01	2.081	14.66	520.7
208	22.200	.62900-01	125.00	.2634	.4044	.3397	.9356	.1220-01	.1025-01	1.646	11.64	514.6
208	22.400	.44200-01	107.00	.3370	.5227	.4252	.9416	.1577-01	.1283-01	2.066	14.57	518.6
209	22.600	.10270	192.00	.1344	.2114	.1851	.9248	.6371-02	.5580-02	.8029	5.648	523.5
208	23.000	.42000-01	105.00	.4050	.6473	.5164	.9424	.1953-01	.1558-01	2.356	16.52	528.9
208	23.400	.59600-01	120.00	.2919	.4514	.3760	.9367	.1362-01	.1135-01	1.799	12.70	517.4
209	23.900	.21310	250.00	.3101-01	.4485-01	.4293-01	.9100	.1352-02	.1294-02	.2185	1.568	487.8
208	24.100	.82200-01	139.00	.2075	.3174	.2737	.9301	.9578-02	.8260-02	1.305	9.232	513.3
209	24.400	.19040	238.00	.4003-01	.6018-01	.5710-01	.9107	.1814-02	.1721-02	.2600	1.846	506.2
209	24.400	.12440	207.00	.1035	.1646	.1472	.9200	.4962-02	.4437-02	.6061	4.254	527.4
209	24.800	.16810	223.00	.5334-01	.8317-01	.7760-01	.9129	.2507-02	.2339-02	.3235	2.279	520.5
208	24.900	.62900-01	126.00	.2601	.3973	.3343	.9357	.1199-01	.1009-01	1.640	11.60	512.7
209	25.000	.79500-01	178.00	.2254	.3540	.3009	.9309	.1067-01	.9070-02	1.348	9.488	523.1
209	25.300	.10270	191.00	.1429	.2249	.1968	.9249	.6778-02	.5932-02	.8530	5.999	523.7
209	25.300	.10000+00	186.00	.1763	.2809	.2439	.9255	.8466-02	.7352-02	1.030	7.226	527.9
208	25.500	.60700-01	124.00	.2834	.4375	.3652	.9365	.1320-01	.1102-01	1.752	12.37	516.8
209	26.000	.12440	206.00	.1125	.1792	.1601	.9201	.5401-02	.4826-02	.6569	4.609	527.9
208	26.300	.82200-01	140.00	.1810	.2763	.2383	.9302	.8337-02	.7192-02	1.142	8.084	512.5
209	26.700	.12100	199.00	.1498	.2408	.2138	.9208	.7259-02	.6443-02	.8614	6.035	530.8
209	26.800	.16810	222.00	.6455-01	.1008	.9402-01	.9129	.3039-02	.2834-02	.3902	2.748	521.1
209	27.000	.19040	237.00	.5027-01	.7565-01	.7175-01	.9108	.2280-02	.2162-02	.3259	2.314	506.6
209	27.100	.21310	249.00	.4248-01	.6128-01	.5868-01	.9100	.1847-02	.1768-02	.3013	2.164	486.4
209	27.200	.80300-01	180.00	.2422	.3820	.3243	.9308	.1151-01	.9775-02	1.439	10.12	524.5
208	27.400	.40100-01	98.000	.4218	.6785	.5371	.9433	.2048-01	.1621-01	2.428	17.01	530.9
209	27.400	.16480	215.00	.6698-01	.1053	.9790-01	.9133	.3172-02	.2948-02	.4005	2.818	523.2
208	27.600	.41600-01	102.00	.4052	.6521	.5173	.9428	.1968-01	.1561-01	2.330	16.32	531.1
209	27.600	.12440	205.00	.1189	.1894	.1692	.9201	.5707-02	.5098-02	.6949	4.876	527.7
209	27.600	.18700	230.00	.5612-01	.8485-01	.8032-01	.9110	.2557-02	.2421-02	.3605	2.557	508.5
209	27.700	.21010	243.00	.5327-01	.7732-01	.7398-01	.9100	.2330-02	.2230-02	.3725	2.671	489.7
209	27.900	.10110	188.00	.1575	.2490	.2170	.9254	.7504-02	.6539-02	.9316	6.546	525.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
208	28.000	.46800-01	110.00	.2086	.3091	.2581	.9411	.9329-02	.7788-02	1.397	9.958	499.8
209	28.200	.16810	221.00	.6884-01	.1081	.1007	.9129	.3257-02	.3034-02	.4123	2.901	522.9
209	28.300	.19040	236.00	.5188-01	.7777-01	.7380-01	.9108	.2344-02	.2224-02	.3389	2.409	504.9
209	28.300	.12200	201.00	.1374	.2201	.1958	.9207	.6634-02	.5900-02	.7955	5.577	529.6
208	28.400	.53500-01	114.00	.2512	.3835	.3183	.9389	.1157-01	.9606-02	1.587	11.23	512.4
209	28.400	.21310	248.00	.5703-01	.8208-01	.7863-01	.9100	.2474-02	.2370-02	.4063	2.920	485.3
208	28.700	.58600-01	117.00	.3131	.4842	.4022	.9373	.1461-01	.1214-01	1.930	13.62	517.4
209	28.800	.16580	217.00	.7638-01	.1205	.1119	.9133	.3632-02	.3374-02	.4536	3.189	524.6
208	28.800	.60400-01	121.00	.2876	.4471	.3714	.9367	.1349-01	.1121-01	1.755	12.37	519.4
209	29.000	.21110	244.00	.6212-01	.8979-01	.8596-01	.9100	.2706-02	.2591-02	.4383	3.146	487.5
208	29.000	.65700-01	129.00	.1851	.2734	.2341	.9351	.8250-02	.7066-02	1.248	8.905	498.2
208	29.200	.72400-01	133.00	.2508	.3832	.3261	.9332	.1157-01	.9841-02	1.580	11.18	512.9
208	29.300	.79500-01	136.00	.2473	.3851	.3281	.9311	.1162-01	.9902-02	1.505	10.61	520.0
208	29.600	.92500-01	143.00	.1673	.2557	.2231	.9276	.7717-02	.6733-02	1.054	7.459	512.9
208	29.700	.10000+00	146.00	.2248	.3505	.3064	.9258	.1058-01	.9245-02	1.364	9.614	520.5
209	29.900	.12100	198.00	.1630	.2638	.2336	.9210	.7950-02	.7039-02	.9284	6.497	532.7
209	30.200	.16480	214.00	.7795-01	.1232	.1143	.9134	.3712-02	.3444-02	.4617	3.244	525.1
209	30.300	.21010	242.00	.6592-01	.9567-01	.9154-01	.9100	.2883-02	.2759-02	.4610	3.305	489.6
208	31.500	.11100-01	83.000	.3505	.5403	.4263	.9494	.1631-01	.1286-01	2.172	15.34	516.3
208	31.500	.14200-01	84.000	1.061	2.248	1.222	.9751	.6782-01	.3688-01	4.378	29.77	585.0
208	31.500	.16000-01	85.000	.9779	1.883	1.111	.9751	.5682-01	.3353-01	4.430	30.35	571.5
208	31.500	.19400-01	87.000	.6579	1.101	.7313	.9751	.3323-01	.2207-01	3.560	24.78	542.4
209	32.100	.21010	241.00	.5411-01	.7811-01	.7479-01	.9100	.2354-02	.2254-02	.3831	2.751	486.8
209	32.200	.16480	213.00	.7655-01	.1204	.1118	.9135	.3629-02	.3369-02	.4570	3.214	523.6
209	32.200	.17860	224.00	.5934-01	.9052-01	.8520-01	.9119	.2728-02	.2568-02	.3748	2.653	512.1
209	32.200	.18700	228.00	.6354-01	.9576-01	.9065-01	.9111	.2886-02	.2732-02	.4108	2.916	507.2
209	32.300	.12100	197.00	.1852	.3003	.2655	.9211	.9052-02	.8003-02	1.050	7.345	533.5
209	32.300	.12300	194.00	.1658	.2699	.2390	.9207	.8135-02	.7201-02	.9350	6.536	534.6
209	32.300	.12730	208.00	.9995-01	.1567	.1409	.9198	.4722-02	.4246-02	.6003	4.225	522.4
209	32.300	.13420	209.00	.9336-01	.1504	.1352	.9184	.4533-02	.4074-02	.5353	3.749	531.4
208	32.400	.10000+00	147.00	.2460	.3914	.3394	.9259	.1181-01	.1024-01	1.442	10.12	527.4
209	32.400	.10110	184.00	.2213	.3593	.3098	.9256	.1083-01	.9336-02	1.253	8.762	533.8
209	32.400	.10630	193.00	.1110	.1700	.1505	.9244	.5124-02	.4535-02	.6948	4.913	513.9
209	32.500	.85800-01	183.00	.1609	.2456	.2125	.9296	.7402-02	.6404-02	1.015	7.181	512.4
208	32.600	.79500-01	137.00	.2779	.4397	.3718	.9313	.1327-01	.1122-01	1.644	11.55	525.6
209	32.600	.80800-01	176.00	.2875	.4687	.3921	.9310	.1413-01	.1182-01	1.617	11.30	535.0
208	32.700	.67400-01	132.00	.2032	.3032	.2588	.9349	.9148-02	.7809-02	1.342	9.548	502.8
208	32.700	.72400-01	134.00	.2270	.3436	.2933	.9334	.1037-01	.8852-02	1.457	10.33	509.0
208	32.800	.65700-01	130.00	.1874	.2763	.2366	.9354	.8337-02	.7139-02	1.268	9.053	497.4
209	32.800	.16680	210.00	.6957-01	.1088	.1012	.9133	.3279-02	.3051-02	.4195	2.954	521.6
209	32.800	.18880	225.00	.4786-01	.7115-01	.6754-01	.9110	.2144-02	.2036-02	.3180	2.265	501.2
208	32.900	.58600-01	118.00	.3091	.4782	.3967	.9376	.1443-01	.1197-01	1.905	13.44	517.5
208	32.900	.60400-01	122.00	.2754	.4266	.3545	.9370	.1287-01	.1070-01	1.692	11.94	518.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
209	32.900	.61300-01	171.00	.2471	.3900	.3217	.9367	.1175-01	.9694-02	1.467	10.31	524.7
208	33.000	.53500-01	115.00	.2432	.3677	.3062	.9392	.1110-01	.9242-02	1.565	11.10	508.5
208	33.200	.48300-01	113.00	.1873	.2768	.2316	.9409	.8354-02	.6988-02	1.261	8.997	498.5
209	33.400	.42800-01	166.00	.3392	.5595	.4379	.9428	.1686-01	.1320-01	1.873	13.07	538.4
208	33.500	.40100-01	99.000	.3967	.6285	.5007	.9437	.1897-01	.1511-01	2.342	16.45	526.0
208	33.600	.38300-01	97.000	.4220	.6649	.5298	.9443	.2006-01	.1599-01	2.515	17.69	524.1
208	33.700	.36700-01	96.000	.4132	.6529	.5181	.9449	.1970-01	.1563-01	2.451	17.23	525.1
208	33.900	.33800-01	95.000	.3394	.5244	.4195	.9459	.1583-01	.1266-01	2.096	14.79	517.1
209	34.700	.21010	240.00	.3854-01	.5536-01	.5304-01	.9100	.1668-02	.1599-02	.2758	1.984	484.2
209	34.700	.18700	227.00	.5811-01	.8782-01	.8307-01	.9112	.2647-02	.2504-02	.3736	2.650	508.4
209	34.900	.16480	212.00	.7848-01	.1238	.1148	.9136	.3732-02	.3461-02	.4659	3.275	524.7
208	35.100	.10000+00	148.00	.2222	.3535	.3063	.9261	.1067-01	.9242-02	1.303	9.145	527.3
209	35.200	.23900-01	161.00	.1865	.2816	.2248	.9496	.8486-02	.6774-02	1.201	8.521	508.0
208	35.300	.92500-01	145.00	.2049	.3141	.2733	.9280	.9478-02	.8248-02	1.284	9.082	514.0
208	35.300	.22100-01	160.00	.2174	.3188	.2588	.9497	.9620-02	.7809-02	1.488	10.64	494.8
209	35.400	.18800	231.00	.6178-01	.9270-01	.8782-01	.9111	.2794-02	.2647-02	.4029	2.863	505.3
209	35.500	.12100	196.00	.1804	.2936	.2591	.9213	.8848-02	.7807-02	1.018	7.117	534.5
209	35.600	.16580	216.00	.7437-01	.1168	.1084	.9135	.3519-02	.3268-02	.4455	3.135	522.9
208	35.800	.80600-01	138.00	.2933	.4658	.3935	.9313	.1406-01	.1187-01	1.725	12.11	526.8
209	35.900	.21310	247.00	.4264-01	.6073-01	.5826-01	.9100	.1830-02	.1756-02	.3112	2.244	479.5
209	36.000	.19040	235.00	.5493-01	.8170-01	.7757-01	.9109	.2462-02	.2338-02	.3646	2.597	501.4
209	36.200	.16810	220.00	.7238-01	.1126	.1049	.9132	.3392-02	.3160-02	.4410	3.109	519.5
208	36.200	.72400-01	135.00	.2474	.3755	.3198	.9336	.1133-01	.9652-02	1.580	11.20	510.1
209	36.300	.12200	200.00	.1800	.2943	.2596	.9211	.8871-02	.7823-02	1.008	7.041	535.9
208	36.600	.65700-01	131.00	.2472	.3722	.3154	.9357	.1123-01	.9517-02	1.604	11.39	506.7
209	36.700	.18700	226.00	.6339-01	.9474-01	.8976-01	.9112	.2855-02	.2705-02	.4167	2.964	503.6
209	36.900	.16480	211.00	.7172-01	.1122	.1041	.9137	.3380-02	.3138-02	.4326	3.046	521.5
209	36.900	.10110	187.00	.2235	.3614	.3115	.9259	.1089-01	.9389-02	1.274	8.917	532.5
208	37.000	.60400-01	123.00	.3099	.4871	.4014	.9373	.1470-01	.1211-01	1.855	13.05	523.3
209	37.000	.12440	204.00	.1675	.2710	.2404	.9206	.8168-02	.7245-02	.9534	6.672	532.8
208	37.100	.58600-01	119.00	.3052	.4717	.3909	.9379	.1423-01	.1180-01	1.883	13.29	517.2
209	37.200	.21310	246.00	.5009-01	.7119-01	.6831-01	.9100	.2146-02	.2059-02	.3675	2.652	478.2
209	37.600	.16810	219.00	.6449-01	.9981-01	.9306-01	.9133	.3008-02	.2805-02	.3964	2.797	517.7
208	37.800	.10270	150.00	.1941	.2991	.2627	.9256	.9026-02	.7929-02	1.205	8.512	516.0
209	37.900	.12100	195.00	.1155	.1805	.1611	.9214	.5441-02	.4855-02	.6970	4.908	521.4
209	38.000	.80300-01	179.00	.2613	.4147	.3500	.9315	.1250-01	.1055-01	1.537	10.80	526.5
208	38.500	.46800-01	112.00	.2431	.3645	.3015	.9418	.1100-01	.9099-02	1.589	11.30	505.0
209	38.600	.12440	203.00	.1436	.2292	.2040	.9207	.6908-02	.6148-02	.8359	5.863	528.5
209	38.700	.10000+00	185.00	.1934	.3077	.2662	.9263	.9272-02	.8024-02	1.132	7.946	527.4
208	38.900	.82200-01	141.00	.2406	.3702	.3172	.9310	.1117-01	.9572-02	1.497	10.58	515.5
208	39.300	.41600-01	104.00	.3434	.5474	.4347	.9436	.1652-01	.1312-01	2.007	14.08	528.0
209	39.500	.10270	190.00	.1816	.2876	.2501	.9257	.8668-02	.7536-02	1.071	7.522	526.0
209	39.600	.16810	218.00	.5170-01	.7962-01	.7427-01	.9133	.2400-02	.2238-02	.3206	2.265	515.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
209	39.900	.19040	233.00	.4638-01	.6796-01	.6464-01	.9110	.2048-02	.1948-02	.3176	2.271	494.4
209	40.100	.79500-01	177.00	.2260	.3505	.2982	.9319	.1056-01	.8986-02	1.384	9.765	518.5
209	40.200	.12440	202.00	.1222	.1934	.1724	.9208	.5827-02	.5197-02	.7219	5.072	525.6
209	40.300	.21310	245.00	.3717-01	.5235-01	.5030-01	.9100	.1578-02	.1516-02	.2789	2.019	472.7
208	41.100	.82200-01	142.00	.2020	.3095	.2654	.9312	.9339-02	.8009-02	1.267	8.961	513.8
209	41.100	.60700-01	173.00	.2737	.4354	.3563	.9376	.1312-01	.1074-01	1.602	11.25	527.4
209	42.600	.59600-01	172.00	.2684	.4218	.3465	.9380	.1271-01	.1044-01	1.605	11.29	523.2
209	43.200	.42000-01	168.00	.3212	.5233	.4102	.9438	.1577-01	.1236-01	1.809	12.65	534.8
209	43.400	.82200-01	181.00	.1773	.2782	.2360	.9314	.8383-02	.7113-02	1.064	7.486	522.6
208	43.600	.62900-01	128.00	.2647	.4006	.3366	.9371	.1209-01	.1016-01	1.700	12.05	508.9
208	45.000	.22900-01	8.0000	.4197	.6553	.5105	.9505	.1978-01	.1540-01	2.542	17.91	521.0
209	46.100	.62900-01	174.00	.2412	.3757	.3110	.9373	.1132-01	.9372-02	1.466	10.33	520.1
209	47.700	.40800-01	167.00	.3457	.5662	.4406	.9447	.1706-01	.1328-01	1.931	13.48	536.3
208	48.400	.44200-01	109.00	.3156	.4894	.3946	.9436	.1477-01	.1191-01	1.935	13.65	518.5
208	50.000	.19400-01	156.00	.5478	.9805	.6110	.9766	.2959-01	.1844-01	2.703	18.65	558.1
208	51.000	.12100-01	154.00	.7962	2.052	.9289	.9767	.6191-01	.2803-01	2.834	19.08	603.7
208	51.000	.17600-01	155.00	.7317	1.337	.8181	.9767	.4035-01	.2469-01	3.520	24.23	562.3
209	51.900	.44800-01	170.00	.2770	.4390	.3495	.9438	.1323-01	.1053-01	1.632	11.47	526.1
209	53.200	.24700-01	163.00	.3837	.6248	.4731	.9510	.1883-01	.1426-01	2.162	15.11	534.7
209	65.200	.24700-01	162.00	.5204	.8849	.6472	.9524	.2667-01	.1951-01	2.748	19.08	546.5
207	90.000	.91000-02	44.000	.3102	.5144	.3754	.9563	.1555-01	.1135-01	1.705	11.88	539.9
207	90.000	.11100-01	45.000	.5247	.9455	.6515	.9563	.2858-01	.1969-01	2.572	17.74	559.5
207	90.000	.13100-01	46.000	.6560	1.262	.8304	.9563	.3816-01	.2510-01	2.980	20.41	571.4
207	90.000	.17000-01	48.000	.6885	1.246	.8560	.9563	.3768-01	.2588-01	3.356	23.13	560.4
207	90.000	.20900-01	50.000	.5889	1.065	.7320	.9563	.3220-01	.2213-01	2.873	19.80	560.3
207	90.000	.24900-01	52.000	.6339	1.116	.7835	.9558	.3373-01	.2369-01	3.203	22.15	554.5
207	90.000	.26900-01	53.000	.5394	.9553	.6706	.9551	.2888-01	.2027-01	2.702	18.67	555.9
207	90.000	.28800-01	54.000	.5350	.9429	.6666	.9544	.2851-01	.2015-01	2.698	18.65	554.8
207	90.000	.32800-01	55.000	.3730	.6142	.4576	.9529	.1857-01	.1383-01	2.072	14.46	537.9
207	90.000	.36700-01	56.000	.4312	.7370	.5397	.9515	.2228-01	.1632-01	2.266	15.73	547.8
207	90.000	.40300-01	57.000	.4094	.7089	.5186	.9502	.2143-01	.1568-01	2.113	14.64	550.9
207	90.000	.48500-01	58.000	.3445	.5875	.4402	.9474	.1776-01	.1331-01	1.818	12.62	547.2
207	90.000	.56400-01	59.000	.3259	.5503	.4205	.9448	.1663-01	.1271-01	1.743	12.12	544.7
207	90.000	.76100-01	60.000	.2558	.4197	.3365	.9385	.1269-01	.1017-01	1.429	9.975	536.9
207	90.000	.95800-01	61.000	.1984	.3160	.2646	.9328	.9553-02	.7998-02	1.163	8.165	527.7
207	90.000	.11550	62.000	.1478	.2377	.2035	.9276	.7186-02	.6153-02	.8533	5.978	530.8
207	135.00	.19000-01	49.000	.5741	1.016	.6864	.9624	.3071-01	.2075-01	2.880	19.90	555.7
207	135.00	.22900-01	51.000	.6270	1.129	.7531	.9624	.3414-01	.2277-01	3.075	21.21	559.4
207	180.00	.91000-02	23.000	.2040	.3280	.2351	.9650	.9915-02	.7108-02	1.178	8.250	530.7
207	180.00	.11100-01	24.000	.5682	1.139	.6892	.9650	.3445-01	.2083-01	2.473	16.88	577.7
207	180.00	.13100-01	25.000	.5644	1.022	.6693	.9650	.3090-01	.2023-01	2.749	18.95	560.5
207	180.00	.15000-01	26.000	.5649	1.007	.6675	.9650	.3044-01	.2018-01	2.807	19.38	557.3
207	180.00	.17000-01	27.000	.5323	.9415	.6278	.9650	.2846-01	.1898-01	2.672	18.47	555.6

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K023)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
207	180.00	.19000-01	28.000	.5501	.9793	.6497	.9650	.2960-01	.1964-01	2.738	18.91	557.0
207	180.00	.20900-01	29.000	.6049	1.068	.7132	.9650	.3230-01	.2156-01	3.042	21.03	555.3
207	180.00	.28800-01	32.000	.5979	1.027	.7069	.9631	.3105-01	.2137-01	3.121	21.65	549.0
207	180.00	.32800-01	33.000	.5316	.8836	.6275	.9616	.2671-01	.1897-01	2.911	20.28	540.5
207	180.00	.36700-01	34.000	.4980	.8416	.5945	.9602	.2544-01	.1797-01	2.661	18.50	544.9
207	180.00	.48500-01	36.000	.4185	.7063	.5098	.9561	.2135-01	.1541-01	2.241	15.58	544.5
207	180.00	.56400-01	37.000	.3920	.6653	.4849	.9534	.2011-01	.1466-01	2.082	14.46	546.0
207	180.00	.76100-01	38.000	.2958	.5148	.3822	.9468	.1556-01	.1155-01	1.517	10.50	552.1
207	180.00	.95800-01	39.000	.2357	.4179	.3179	.9407	.1263-01	.9609-02	1.179	8.145	556.2
207	180.00	.11550	40.000	.1877	.3312	.2613	.9350	.1001-01	.7898-02	.9446	6.529	555.2
207	180.00	.18450	42.000	.9769-01	.1460	.1336	.9188	.4414-02	.4038-02	.6440	4.581	503.6
207	225.00	.22900-01	30.000	.6246	1.090	.7440	.9624	.3296-01	.2249-01	3.190	22.08	552.7
207	270.00	.91000-02	63.000	.3147	.5144	.3789	.9564	.1555-01	.1145-01	1.768	12.35	535.8
207	270.00	.11100-01	64.000	.5176	.9026	.6360	.9564	.2729-01	.1923-01	2.647	18.33	552.5
207	270.00	.13100-01	65.000	.6740	1.313	.8558	.9564	.3969-01	.2587-01	3.021	20.68	573.4
207	270.00	.17000-01	67.000	.5798	1.041	.7188	.9564	.3147-01	.2173-01	2.856	19.70	558.8
207	270.00	.20900-01	69.000	.6222	1.121	.7722	.9564	.3389-01	.2334-01	3.050	21.03	559.5
207	270.00	.24900-01	71.000	.5198	.9236	.6440	.9559	.2792-01	.1947-01	2.594	17.91	556.6
207	270.00	.28800-01	73.000	.5398	.9300	.6673	.9544	.2812-01	.2017-01	2.806	19.46	549.7
207	270.00	.36700-01	75.000	.4710	.8030	.5888	.9516	.2427-01	.1780-01	2.485	17.25	547.1
207	270.00	.48500-01	77.000	.3714	.6203	.4705	.9475	.1875-01	.1422-01	2.019	14.06	541.8
207	270.00	.56400-01	78.000	.3348	.5577	.4294	.9449	.1686-01	.1298-01	1.828	12.73	541.1
207	270.00	.95800-01	80.000	.1900	.3137	.2583	.9329	.9482-02	.7810-02	1.051	7.330	538.7
207	270.00	.11550	81.000	.1489	.2435	.2071	.9277	.7362-02	.6260-02	.8358	5.839	536.0
207	315.00	.19000-01	68.000	.5709	.9952	.7233	.9506	.3009-01	.2187-01	2.922	20.22	552.4
207	315.00	.22900-01	70.000	.5184	.9251	.6622	.9506	.2797-01	.2002-01	2.572	17.76	557.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
48	3.010	5.019	-3.009	36.19	723.7	.9705	257.3	31.00	2367.	.1018-01	.2055-06	3.643
49	3.010	5.020	-3.012	36.14	723.7	.9693	257.3	31.02	2367.	.1017-01	.2055-06	3.639
50	3.010	4.966	-2.980	36.16	723.7	.9698	257.3	31.02	2367.	.1017-01	.2055-06	3.641

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
48	.4404-01	.7590-02
49	.4401-01	.7595-02
50	.4403-01	.7593-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
49	.00000	.91000-02	1.0000	.6523	1.460	.8172	.9635	.6424-01	.3597-01	3.756	25.44	592.8
49	.00000	.11100-01	2.0000	.7468	2.113	.9774	.9635	.9300-01	.4302-01	3.680	24.67	611.7
49	.00000	.15000-01	4.0000	.5915	1.331	.7419	.9635	.5858-01	.3266-01	3.392	22.96	593.4
49	.00000	.17000-01	5.0000	.5787	1.280	.7232	.9635	.5632-01	.3183-01	3.365	22.81	591.6
49	.00000	.19000-01	6.0000	.5507	1.224	.6890	.9635	.5388-01	.3033-01	3.188	21.60	592.1
49	.00000	.24900-01	9.0000	.5070	1.053	.6271	.9630	.4634-01	.2760-01	3.114	21.19	584.1
49	.00000	.26900-01	10.000	.5016	1.033	.6221	.9623	.4546-01	.2738-01	3.106	21.15	583.0
48	.00000	.32800-01	12.000	.4952	1.015	.6214	.9603	.4470-01	.2737-01	3.082	20.99	582.4
48	.00000	.36700-01	13.000	.4686	.9262	.5874	.9590	.4079-01	.2587-01	3.022	20.64	577.2
48	.00000	.40600-01	14.000	.4954	1.025	.6336	.9578	.4516-01	.2790-01	3.054	20.79	583.7
48	.00000	.48500-01	15.000	.4067	.7775	.5166	.9554	.3424-01	.2275-01	2.718	18.62	571.9
48	.00000	.56400-01	16.000	.3739	.7046	.4794	.9531	.3103-01	.2111-01	2.538	17.41	569.5
48	.00000	.76100-01	17.000	.3020	.5418	.3920	.9481	.2386-01	.1727-01	2.174	14.99	560.2
48	.00000	.11550	19.000	.1893	.3316	.2541	.9406	.1460-01	.1119-01	1.406	9.722	555.0
48	.00000	.16480	20.000	.9604-01	.1603	.1295	.9356	.7059-02	.5702-02	.7638	5.314	543.1
48	.00000	.21400	22.000	.5960-01	.9221-01	.7756-01	.9345	.4061-02	.3416-02	.5371	3.787	519.0
50	2.0000	.24700-01	165.00	.4276	.8169	.5181	.9634	.3596-01	.2281-01	2.859	19.58	571.8
49	9.0000	.15000-01	157.00	.5444	1.191	.6753	.9643	.5243-01	.2972-01	3.194	21.66	590.4

FH15. E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
49	9.0000	.17600-01	158.00	.5389	1.131	.6627	.9643	.4978-01	.2917-01	3.280	22.30	585.4
50	9.8000	.24700-01	164.00	.4367	.8417	.5279	.9641	.3705-01	.2324-01	2.891	19.79	573.3
49	10.000	.22900-01	88.000	.4695	.9387	.5711	.9644	.4132-01	.2513-01	2.992	20.42	578.9
49	10.000	.26900-01	90.000	.4881	.9822	.5988	.9632	.4323-01	.2636-01	3.090	21.07	579.8
49	10.000	.34700-01	94.000	.4939	1.025	.6207	.9606	.4512-01	.2732-01	3.036	20.66	584.0
49	12.000	.17600-01	152.00	.8139	5.252	.9144	.9870	.2312	.4025-01	3.068	20.28	638.0
49	12.000	.12100-01	151.00	.7061	-4.825	.8297	.9870	-.2124	.3652-01	1.962	12.82	660.5
49	13.000	.19400-01	153.00	.7941	4.105	.8872	.9870	.1807	.3905-01	3.136	20.78	633.9
50	14.600	.44200-01	169.00	.4206	.7897	.5232	.9580	.3477-01	.2304-01	2.867	19.67	568.9
49	18.500	.44200-01	106.00	.4363	.8488	.5469	.9584	.3736-01	.2407-01	2.859	19.56	574.8
50	19.600	.62900-01	175.00	.3836	.7273	.4929	.9531	.3202-01	.2170-01	2.586	17.72	570.5
49	19.800	.40800-01	101.00	.5200	1.101	.6609	.9596	.4848-01	.2909-01	3.138	21.32	586.6
49	20.000	.24900-01	89.000	.4114	.7920	.4944	.9651	.3486-01	.2176-01	2.727	18.67	573.1
49	20.000	.28800-01	91.000	.4448	.8674	.5404	.9637	.3818-01	.2379-01	2.908	19.88	575.1
49	20.000	.32800-01	93.000	.4817	.9990	.5986	.9623	.4397-01	.2635-01	2.964	20.17	583.9
50	21.800	.82200-01	182.00	.3334	.6296	.4402	.9484	.2772-01	.1938-01	2.258	15.48	569.8
49	22.200	.62900-01	125.00	.4087	.8241	.5345	.9533	.3627-01	.2353-01	2.583	17.61	580.1
49	22.400	.44200-01	107.00	.4171	.7981	.5191	.9588	.3513-01	.2285-01	2.783	19.06	572.1
50	22.600	.10270	192.00	.2548	.4680	.3416	.9442	.2060-01	.1504-01	1.782	12.25	564.8
49	23.000	.42000-01	105.00	.4908	1.031	.6225	.9596	.4539-01	.2740-01	2.983	20.28	585.6
49	23.400	.59600-01	120.00	.4564	.9395	.5964	.9543	.4135-01	.2625-01	2.827	19.25	582.9
50	23.900	.21310	250.00	.9619-01	.1500	.1257	.9345	.6605-02	.5536-02	.8538	6.011	522.0
49	24.100	.82200-01	139.00	.3608	.6962	.4795	.9486	.3064-01	.2111-01	2.386	16.33	573.4
50	24.400	.19040	238.00	.1181	.1899	.1567	.9349	.8359-02	.6898-02	.9956	6.970	532.2
50	24.400	.12440	207.00	.1965	.3607	.2692	.9407	.1588-01	.1185-01	1.376	9.462	564.6
50	24.800	.16810	223.00	.1222	.2068	.1656	.9360	.9105-02	.7289-02	.9521	6.612	546.7
49	24.900	.62900-01	126.00	.4238	.8381	.5500	.9536	.3689-01	.2421-01	2.731	18.65	577.3
50	25.000	.79500-01	178.00	.3956	.7796	.5270	.9494	.3432-01	.2320-01	2.558	17.48	576.8
50	25.300	.10270	191.00	.2959	.5487	.3978	.9444	.2416-01	.1751-01	2.046	14.05	566.6
50	25.300	.10000+00	186.00	.3447	.6768	.4723	.9449	.2980-01	.2079-01	2.238	15.29	576.2
49	25.500	.60700-01	124.00	.4656	.9779	.6123	.9543	.4304-01	.2695-01	2.831	19.25	585.5
50	26.000	.12440	206.00	.2114	.3876	.2893	.9408	.1707-01	.1274-01	1.481	10.19	564.5
49	26.300	.82200-01	140.00	.3805	.7100	.4990	.9488	.3125-01	.2197-01	2.612	17.93	567.7
50	26.700	.12100	199.00	.2658	.5088	.3693	.9413	.2240-01	.1626-01	1.773	12.14	572.1
50	26.800	.16810	222.00	.1448	.2455	.1963	.9361	.1081-01	.8642-02	1.126	7.817	547.1
50	27.000	.19040	237.00	.1294	.2082	.1717	.9349	.9168-02	.7560-02	1.089	7.625	532.5
50	27.100	.21310	249.00	.1025	.1606	.1343	.9345	.7071-02	.5914-02	.9023	6.347	523.7
50	27.200	.80300-01	180.00	.4138	.8106	.5500	.9494	.3569-01	.2422-01	2.694	18.41	575.8
49	27.400	.40100-01	98.000	.5457	1.233	.6983	.9608	.5425-01	.3074-01	3.119	21.11	593.8
50	27.400	.16480	215.00	.1424	.2487	.1957	.9363	.1095-01	.8615-02	1.062	7.346	554.3
49	27.600	.41600-01	102.00	.4754	1.076	.6107	.9603	.4737-01	.2688-01	2.713	18.36	594.0
50	27.600	.12440	205.00	.2278	.4172	.3114	.9409	.1837-01	.1371-01	1.599	11.00	564.3
50	27.600	.18700	230.00	.1769	.2890	.2364	.9351	.1272-01	.1041-01	1.452	10.14	537.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
50	27.700	.21010	243.00	.1217	.1947	.1613	.9345	.8573-02	.7101-02	1.033	7.236	530.8
50	27.900	.10110	188.00	.3215	.6095	.4345	.9449	.2683-01	.1913-01	2.167	14.86	570.5
49	28.000	.46800-01	110.00	.3122	.5459	.3792	.9587	.2403-01	.1669-01	2.323	16.06	554.6
50	28.200	.16810	221.00	.1535	.2622	.2089	.9361	.1155-01	.9195-02	1.180	8.185	549.1
50	28.300	.19040	236.00	.1214	.1927	.1599	.9349	.8482-02	.7039-02	1.046	7.337	528.0
50	28.300	.12200	201.00	.2536	.4789	.3504	.9413	.2108-01	.1543-01	1.718	11.78	569.8
49	28.400	.53500-01	114.00	.4536	.9225	.5816	.9567	.4060-01	.2560-01	2.843	19.37	581.3
50	28.400	.21310	248.00	.1047	.1634	.1369	.9345	.7192-02	.6027-02	.9289	6.539	522.1
49	28.700	.58600-01	117.00	.5331	1.168	.7045	.9553	.5142-01	.3101-01	3.123	21.17	590.6
50	28.800	.16580	217.00	.1659	.2882	.2273	.9363	.1269-01	.1001-01	1.245	8.616	553.2
49	28.800	.60400-01	121.00	.4668	1.033	.6207	.9547	.4545-01	.2732-01	2.714	18.39	591.6
50	29.000	.21110	244.00	.1136	.1797	.1496	.9345	.7912-02	.6588-02	.9829	6.900	527.1
49	29.000	.65700-01	129.00	.3125	.5478	.3909	.9533	.2411-01	.1721-01	2.317	16.02	555.2
49	29.200	.72400-01	133.00	.4276	.8514	.5635	.9515	.3748-01	.2480-01	2.736	18.67	578.3
49	29.300	.79500-01	136.00	.3806	.7725	.5107	.9498	.3400-01	.2248-01	2.390	16.29	581.0
49	29.600	.92500-01	143.00	.3600	.7046	.4865	.9468	.3101-01	.2141-01	2.345	16.03	575.7
49	29.700	.10000+00	146.00	.3479	.7223	.4856	.9453	.3179-01	.2138-01	2.138	14.55	584.0
50	29.900	.12100	198.00	.2654	.5233	.3727	.9416	.2304-01	.1641-01	1.716	11.72	576.8
50	30.200	.16480	214.00	.1663	.2910	.2285	.9364	.1281-01	.1006-01	1.236	8.544	554.8
50	30.200	.18700	229.00	.1384	.2286	.1861	.9351	.1006-01	.8191-02	1.118	7.792	540.2
50	30.300	.21010	242.00	.1123	.1815	.1496	.9345	.7989-02	.6587-02	.9384	6.563	533.8
49	31.500	.91000-02	82.000	.6574	1.748	.8272	.9671	.7694-01	.3641-01	3.356	22.55	607.7
49	31.500	.11100-01	83.000	.7631	2.632	.9957	.9671	.1158	.4383-01	3.423	22.83	621.8
49	31.500	.14200-01	84.000	.9282	-5.764	1.093	.9870	-.2537	.4812-01	2.547	16.63	661.3
49	31.500	.16000-01	85.000	.9512	-15.20	1.104	.9870	-.6691	.4858-01	2.851	18.68	655.6
49	31.500	.17600-01	86.000	.8295	8.796	.9402	.9870	.3871	.4138-01	2.917	19.23	643.8
49	31.500	.19400-01	87.000	.7646	3.120	.8478	.9870	.1373	.3732-01	3.226	21.45	627.8
50	32.100	.21010	241.00	.9959-01	.1637	.1339	.9345	.7208-02	.5897-02	.8100	5.649	538.9
50	32.200	.16480	213.00	.1339	.2372	.1851	.9365	.1044-01	.8147-02	.9788	6.756	557.6
50	32.200	.17860	224.00	.1533	.2507	.2045	.9356	.1104-01	.9003-02	1.258	8.785	537.3
50	32.200	.18700	228.00	.1480	.2502	.2014	.9351	.1102-01	.8865-02	1.155	8.022	546.4
50	32.300	.12100	197.00	.2829	.5674	.3996	.9418	.2498-01	.1759-01	1.798	12.26	579.3
50	32.300	.12300	194.00	.2275	.4490	.3199	.9414	.1977-01	.1408-01	1.469	10.03	577.0
50	32.300	.12730	208.00	.2027	.3512	.2704	.9408	.1546-01	.1190-01	1.527	10.57	552.5
50	32.300	.13420	209.00	.1837	.3368	.2529	.9398	.1483-01	.1113-01	1.288	8.857	564.4
49	32.400	.10000+00	147.00	.3442	.7726	.4930	.9455	.3401-01	.2170-01	1.977	13.38	593.2
50	32.400	.10110	184.00	.3535	.7513	.4974	.9454	.3308-01	.2190-01	2.127	14.45	587.0
50	32.400	.10630	193.00	.2402	.4078	.3115	.9443	.1795-01	.1371-01	1.863	12.93	547.6
50	32.500	.85800-01	183.00	.2794	.4890	.3582	.9487	.2153-01	.1577-01	2.076	14.35	554.8
49	32.600	.79500-01	137.00	.4414	.9889	.6097	.9501	.4353-01	.2684-01	2.540	17.20	593.0
50	32.600	.80800-01	176.00	.4145	.9473	.5772	.9499	.4171-01	.2541-01	2.348	15.88	595.0
49	32.700	.67400-01	132.00	.3584	.6828	.4607	.9533	.3005-01	.2028-01	2.404	16.47	571.3
49	32.700	.72400-01	134.00	.4053	.8040	.5321	.9520	.3539-01	.2342-01	2.604	17.78	577.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
49	32.800	.65700-01	130.00	.3312	.5848	.4143	.9538	.2574-01	.1824-01	2.433	16.80	556.8
50	32.800	.16680	210.00	.1241	.2145	.1696	.9364	.9444-02	.7465-02	.9381	6.496	552.0
50	32.800	.18880	225.00	.1182	.1883	.1559	.9351	.8291-02	.6863-02	1.012	7.095	529.3
49	32.900	.58600-01	118.00	.4392	.9688	.5792	.9558	.4264-01	.2549-01	2.559	17.34	591.3
49	32.900	.60400-01	122.00	.4217	.9587	.5628	.9553	.4220-01	.2477-01	2.398	16.23	594.5
50	32.900	.61300-01	171.00	.4032	.8479	.5276	.9550	.3733-01	.2323-01	2.449	16.65	585.7
49	33.000	.53500-01	115.00	.4134	.8021	.5213	.9573	.3530-01	.2294-01	2.717	18.58	574.3
49	33.200	.48300-01	113.00	.3085	.5400	.3745	.9589	.2377-01	.1648-01	2.293	15.85	554.8
50	33.400	.42800-01	166.00	.4174	.9222	.5316	.9607	.4060-01	.2340-01	2.429	16.46	591.5
49	33.500	.40100-01	99.000	.4947	1.111	.6286	.9616	.4892-01	.2767-01	2.839	19.22	593.3
49	33.600	.38300-01	97.000	.5202	1.140	.6546	.9622	.5017-01	.2881-01	3.047	20.66	590.6
49	33.700	.36700-01	96.000	.5111	1.105	.6390	.9628	.4866-01	.2813-01	3.028	20.55	589.1
49	33.900	.33800-01	95.000	.4611	.9276	.5637	.9638	.4083-01	.2481-01	2.920	19.92	579.8
50	34.700	.21010	240.00	.1085	.1807	.1469	.9346	.7954-02	.6468-02	.8660	6.028	542.4
50	34.700	.18700	227.00	.1292	.2167	.1750	.9352	.9539-02	.7704-02	1.020	7.092	544.4
50	34.900	.16480	212.00	.1513	.2739	.2112	.9366	.1206-01	.9299-02	1.077	7.413	562.0
49	35.100	.10000+00	148.00	.3552	.8102	.5106	.9458	.3566-01	.2247-01	2.015	13.63	594.8
50	35.200	.23900-01	161.00	.3387	.5868	.3925	.9676	.2583-01	.1728-01	2.552	17.66	552.5
49	35.300	.92500-01	145.00	.3402	.6624	.4571	.9474	.2915-01	.2012-01	2.227	15.23	574.9
49	35.300	.22100-01	160.00	.3566	.6186	.4132	.9677	.2723-01	.1819-01	2.682	18.56	552.8
50	35.400	.18800	231.00	.1421	.2406	.1934	.9352	.1059-01	.8517-02	1.106	7.678	546.9
50	35.500	.12100	196.00	.2761	.5593	.3909	.9420	.2462-01	.1721-01	1.738	11.84	580.7
50	35.600	.16580	216.00	.1462	.2609	.2028	.9366	.1149-01	.8926-02	1.060	7.308	559.1
49	35.800	.80600-01	138.00	.4140	.9393	.5736	.9502	.4134-01	.2525-01	2.358	15.96	594.3
50	35.900	.21310	247.00	.1033	.1663	.1374	.9345	.7322-02	.6048-02	.8690	6.081	532.6
50	36.000	.19040	235.00	.1345	.2222	.1808	.9351	.9783-02	.7961-02	1.086	7.564	540.3
50	36.200	.16910	220.00	.1485	.2562	.2027	.9364	.1128-01	.8923-02	1.126	7.800	551.4
49	36.200	.72400-01	135.00	.3810	.7311	.4935	.9524	.3218-01	.2172-01	2.534	17.35	572.6
50	36.300	.12200	200.00	.2639	.5342	.3737	.9419	.2352-01	.1645-01	1.661	11.32	580.7
49	36.600	.65700-01	131.00	.3708	.7008	.4726	.9542	.3084-01	.2080-01	2.508	17.20	570.0
50	36.700	.18700	226.00	.1499	.2470	.2011	.9353	.1087-01	.8854-02	1.216	8.475	539.5
50	36.900	.16480	211.00	.1542	.2708	.2120	.9367	.1192-01	.9332-02	1.142	7.892	555.5
50	36.900	.10110	187.00	.3434	.7325	.4822	.9458	.3225-01	.2123-01	2.059	13.99	587.4
49	37.000	.60400-01	123.00	.4466	1.127	.6092	.9558	.4960-01	.2681-01	2.356	15.87	603.8
50	37.000	.12440	204.00	.2471	.4734	.3428	.9416	.2084-01	.1509-01	1.647	11.28	572.3
49	37.100	.58600-01	119.00	.4335	.9282	.5650	.9563	.4085-01	.2487-01	2.591	17.59	587.9
50	37.200	.21310	246.00	.1066	.1707	.1413	.9345	.7515-02	.6222-02	.9041	6.333	531.0
50	37.600	.16810	219.00	.1381	.2344	.1869	.9365	.1032-01	.8227-02	1.071	7.433	547.5
49	37.800	.10270	150.00	.2927	.5623	.3961	.9455	.2475-01	.1744-01	1.944	13.31	572.7
50	37.900	.12100	195.00	.2074	.3653	.2764	.9422	.1608-01	.1217-01	1.528	10.56	556.3
50	38.000	.80300-01	179.00	.3928	.8038	.5255	.9506	.3539-01	.2314-01	2.448	16.67	582.1
49	38.500	.46800-01	112.00	.3348	.6060	.4075	.9601	.2667-01	.1793-01	2.382	16.40	562.0
50	38.600	.12440	203.00	.2316	.4227	.3144	.9417	.1861-01	.1384-01	1.631	11.22	563.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
50	38.700	.10000+00	185.00	.3063	.5915	.4136	.9462	.2604-01	.1821-01	2.023	13.85	573.6
49	38.900	.82200-01	141.00	.3444	.6801	.4566	.9502	.2993-01	.2010-01	2.222	15.18	577.1
49	39.300	.41600-01	104.00	.4730	1.132	.6076	.9619	.4982-01	.2675-01	2.589	17.47	599.3
50	39.500	.10270	190.00	.3039	.5732	.4079	.9457	.2523-01	.1796-01	2.061	14.14	569.6
50	39.600	.16810	218.00	.1121	.1874	.1505	.9366	.8252-02	.6626-02	.8895	6.188	543.5
50	39.900	.19040	233.00	.1027	.1647	.1359	.9352	.7253-02	.5981-02	.8686	6.082	531.5
50	40.100	.79500-01	177.00	.3485	.6573	.4525	.9511	.2894-01	.1992-01	2.364	16.21	569.6
50	40.200	.12440	202.00	.2064	.3670	.2769	.9419	.1616-01	.1219-01	1.503	10.37	558.3
50	40.300	.21310	245.00	.8312-01	.1311	.1093	.9346	.5770-02	.4811-02	.7241	5.087	525.8
49	41.100	.82200-01	142.00	.3711	.7096	.4859	.9505	.3123-01	.2139-01	2.478	16.97	572.0
50	41.100	.60700-01	173.00	.4059	.8600	.5277	.9563	.3786-01	.2323-01	2.449	16.64	586.6
50	42.300	.10270	189.00	.2280	.3986	.2965	.9460	.1755-01	.1305-01	1.697	11.73	554.6
50	42.600	.59600-01	172.00	.4256	.8579	.5440	.9568	.3777-01	.2395-01	2.691	18.35	580.1
50	43.200	.42000-01	168.00	.4835	1.044	.6057	.9624	.4595-01	.2667-01	2.870	19.48	588.8
50	43.400	.82200-01	181.00	.2847	.5293	.3684	.9508	.2330-01	.1622-01	1.962	13.47	567.1
49	43.600	.62900-01	128.00	.4320	.8333	.5483	.9560	.3668-01	.2413-01	2.858	19.56	573.4
49	45.000	.22900-01	8.0000	.6468	1.594	.7918	.9692	.7015-01	.3485-01	3.468	23.37	601.9
50	46.100	.62900-01	174.00	.4095	.7930	.5191	.9563	.3491-01	.2285-01	2.697	18.45	574.0
50	47.700	.40800-01	167.00	.5448	1.228	.6836	.9635	.5408-01	.3009-01	3.119	21.11	593.6
49	48.400	.44200-01	109.00	.4763	.9946	.5921	.9625	.4377-01	.2606-01	2.912	19.81	584.8
49	50.000	.19400-01	156.00	.8541	8.873	.9678	.9870	.3906	.4260-01	3.010	19.84	643.6
49	51.000	.12100-01	154.00	.8165	-6.681	.9560	.9870	-.2941	.4208-01	2.317	15.15	659.2
49	51.000	.17600-01	155.00	.7786	8.175	.8824	.9870	.3598	.3884-01	2.741	18.07	643.7
50	51.900	.44800-01	170.00	.4013	.7605	.4868	.9628	.3348-01	.2143-01	2.707	18.56	570.5
50	53.200	.24700-01	163.00	.5001	1.035	.5912	.9702	.4556-01	.2603-01	3.083	20.98	583.6
50	65.200	.24700-01	162.00	.5981	1.366	.7087	.9722	.6014-01	.3120-01	3.390	22.93	594.9
48	90.000	.91000-02	44.000	.6781	3.211	.8290	.9769	.1414	.3651-01	2.740	18.17	631.9
48	90.000	.11100-01	45.000	.8304	3.411	1.006	.9769	.1502	.4430-01	3.498	23.25	628.0
48	90.000	.13100-01	46.000	.8271	2.793	.9875	.9769	.1230	.4349-01	3.745	24.99	620.9
48	90.000	.17000-01	48.000	.7610	2.184	.8956	.9769	.9617-01	.3944-01	3.723	24.95	612.6
48	90.000	.20900-01	50.000	.7261	1.915	.8475	.9769	.8435-01	.3733-01	3.727	25.05	607.1
48	90.000	.24900-01	52.000	.6615	1.592	.7673	.9764	.7010-01	.3379-01	3.607	24.34	599.8
48	90.000	.26900-01	53.000	.6229	1.399	.7202	.9756	.6161-01	.3172-01	3.578	24.23	593.2
48	90.000	.28800-01	54.000	.6005	1.303	.6945	.9749	.5740-01	.3058-01	3.549	24.08	589.5
48	90.000	.32800-01	55.000	.5005	1.004	.5776	.9734	.4423-01	.2544-01	3.179	21.69	579.4
48	90.000	.36700-01	56.000	.5002	.9969	.5815	.9719	.4390-01	.2561-01	3.200	21.84	578.4
48	90.000	.40600-01	57.000	.5198	1.076	.6132	.9705	.4738-01	.2701-01	3.205	21.81	583.7
48	90.000	.48500-01	58.000	.4882	.9807	.5826	.9677	.4319-01	.2566-01	3.099	21.13	579.6
48	90.000	.56400-01	59.000	.4483	.8843	.5416	.9651	.3894-01	.2385-01	2.898	19.80	576.9
48	90.000	.76100-01	60.000	.3752	.7038	.4643	.9589	.3100-01	.2045-01	2.561	17.57	568.7
48	90.000	.95800-01	61.000	.3260	.6000	.4140	.9534	.2642-01	.1823-01	2.275	15.64	565.2
48	90.000	.11550	62.000	.2487	.4465	.3219	.9487	.1966-01	.1417-01	1.790	12.34	560.3
48	135.00	.19000-01	49.000	.7803	2.151	.8815	.9820	.9474-01	.3882-01	3.903	26.19	610.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
48	135.00	.22900-01	51.000	.7346	1.848	.8240	.9820	.8139-01	.3629-01	3.885	26.16	603.6
48	180.00	.91000-02	23.000	.4408	1.040	.4960	.9807	.4581-01	.2184-01	2.438	16.47	598.1
48	180.00	.11100-01	24.000	.7955	2.896	.9251	.9807	.1275	.4074-01	3.496	23.29	623.9
48	180.00	.13100-01	25.000	.7761	2.326	.8906	.9807	.1024	.3922-01	3.712	24.84	615.1
48	180.00	.15000-01	26.000	.7700	2.282	.8830	.9807	.1005	.3889-01	3.704	24.80	614.4
48	180.00	.17000-01	27.000	.7601	2.208	.8702	.9807	.9722-01	.3832-01	3.694	24.75	613.3
48	180.00	.19000-01	28.000	.7589	2.148	.8671	.9807	.9459-01	.3819-01	3.740	25.07	611.8
48	180.00	.20900-01	29.000	.7621	1.931	.8629	.9807	.8505-01	.3800-01	4.012	27.01	604.1
48	180.00	.28800-01	32.000	.6152	1.371	.6973	.9786	.6037-01	.3071-01	3.557	24.10	592.4
48	180.00	.32800-01	33.000	.5824	1.197	.6600	.9771	.5271-01	.2907-01	3.616	24.62	582.7
48	180.00	.36700-01	34.000	.5765	1.260	.6643	.9756	.5550-01	.2926-01	3.386	22.96	590.3
48	180.00	.56400-01	37.000	.4989	1.005	.5928	.9685	.4425-01	.2611-01	3.158	21.54	579.9
48	180.00	.76100-01	38.000	.4109	.7827	.5010	.9621	.3447-01	.2207-01	2.756	18.88	571.3
48	180.00	.95800-01	39.000	.3327	.6114	.4153	.9564	.2692-01	.1829-01	2.326	15.99	564.9
48	180.00	.11550	40.000	.2681	.4895	.3438	.9513	.2156-01	.1514-01	1.888	12.99	563.7
48	180.00	.18450	42.000	.1531	.2601	.2045	.9389	.1145-01	.9007-02	1.187	8.237	547.7
48	225.00	.22900-01	30.000	.6583	1.520	.7720	.9740	.6696-01	.3400-01	3.700	25.02	596.0
48	270.00	.91000-02	63.000	.5818	1.376	.7207	.9666	.6059-01	.3174-01	3.213	21.70	598.3
48	270.00	.11100-01	64.000	.7526	2.261	.9684	.9666	.9956-01	.4265-01	3.596	24.06	615.2
48	270.00	.13100-01	65.000	.7696	2.177	.9815	.9666	.9589-01	.4323-01	3.793	25.43	611.7
48	270.00	.17000-01	67.000	.6015	1.460	.7484	.9666	.6429-01	.3296-01	3.260	21.99	600.6
48	270.00	.20900-01	69.000	.6351	1.496	.7862	.9666	.6590-01	.3463-01	3.516	23.75	597.9
48	270.00	.24900-01	71.000	.6085	1.378	.7505	.9661	.6071-01	.3305-01	3.472	23.50	594.1
48	270.00	.28800-01	73.000	.4840	1.019	.5941	.9647	.4489-01	.2616-01	2.937	19.97	585.9
48	270.00	.36700-01	75.000	.5296	1.096	.6591	.9620	.4827-01	.2903-01	3.267	22.23	583.6
48	270.00	.46500-01	77.000	.4569	.8787	.5717	.9582	.3870-01	.2518-01	3.033	20.77	572.9
48	270.00	.56400-01	78.000	.4016	.7581	.5070	.9558	.3339-01	.2233-01	2.722	18.67	569.8
48	270.00	.95800-01	80.000	.2662	.4638	.3457	.9460	.2043-01	.1523-01	1.990	13.77	553.9
48	270.00	.11550	81.000	.2144	.3720	.2838	.9423	.1638-01	.1250-01	1.613	11.16	552.8
48	315.00	.19000-01	68.000	.5663	1.163	.7011	.9625	.5122-01	.3088-01	3.517	23.95	582.6
48	315.00	.22900-01	70.000	.5164	1.123	.6475	.9625	.4947-01	.2851-01	3.046	20.66	589.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
148	4.020	5.016	-3.029	63.87	724.7	.4096	171.2	31.18	2579.	.6456-02	.1378-06	3.756
149	4.020	5.014	-3.037	63.86	725.7	.4095	171.5	31.26	2581.	.6446-02	.1380-06	3.747
150	4.020	5.014	-3.037	63.78	726.7	.4090	171.7	31.26	2582.	.6429-02	.1382-06	3.735

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
148	.3825-01	.9538-02
149	.3825-01	.9548-02
150	.3824-01	.9562-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
149	.00000	.91000-02	1.0000	.3554	.6147	.4397	.9545	.2351-01	.1682-01	2.339	16.18	553.6
149	.00000	.15000-01	4.0000	.5840	1.170	.7561	.9545	.4475-01	.2892-01	3.237	22.07	580.8
149	.00000	.17000-01	5.0000	.5516	1.063	.7060	.9545	.4067-01	.2701-01	3.182	21.76	574.9
149	.00000	.19000-01	6.0000	.5169	.9929	.6609	.9545	.3798-01	.2528-01	2.993	20.48	574.3
149	.00000	.24900-01	9.0000	.4684	.8827	.5971	.9541	.3376-01	.2284-01	2.770	18.98	571.1
149	.00000	.26900-01	10.000	.4504	.8349	.5736	.9534	.3193-01	.2194-01	2.715	18.63	568.1
148	.00000	.32800-01	12.000	.4371	.7991	.5609	.9513	.3056-01	.2145-01	2.674	18.39	564.7
148	.00000	.36700-01	13.000	.4144	.7461	.5330	.9500	.2854-01	.2039-01	2.584	17.80	561.7
148	.00000	.40600-01	14.000	.4517	.8369	.5915	.9487	.3201-01	.2262-01	2.721	18.68	567.2
148	.00000	.48500-01	15.000	.3880	.6983	.5101	.9461	.2671-01	.1951-01	2.420	16.67	561.6
148	.00000	.56400-01	16.000	.3260	.5753	.4310	.9438	.2200-01	.1649-01	2.084	14.39	557.5
148	.00000	.76100-01	17.000	.2485	.4252	.3341	.9384	.1626-01	.1278-01	1.658	11.49	550.3
148	.00000	.95800-01	18.000	.4699-01	.7676-01	.6323-01	.9338	.2936-02	.2418-02	.3358	2.343	537.8
148	.00000	.11550	19.000	.1370	.2310	.1917	.9299	.8836-02	.7331-02	.9333	6.482	546.6
148	.00000	.16480	20.000	.5692-01	.9301-01	.8089-01	.9236	.3557-02	.3094-02	.4067	2.838	537.9
148	.00000	.21400	22.000	.4166-01	.6390-01	.5719-01	.9220	.2444-02	.2188-02	.3323	2.347	516.3
150	2.0000	.24700-01	165.00	.3861	.6882	.4830	.9543	.2632-01	.1847-01	2.444	16.84	561.1
149	9.0000	.15000-01	157.00	.5283	1.028	.6746	.9554	.3931-01	.2581-01	3.018	20.62	576.3

FH15. EXTERNAL TANK OGIVE AERO HEATING

FH15. E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
149	9.0000	.17600-01	158.00	.4899	.8972	.6144	.9554	.3432-01	.2350-01	2.996	20.58	565.8
150	9.8000	.24700-01	164.00	.3776	.6684	.4694	.9550	.2556-01	.1795-01	2.412	16.63	559.6
149	10.000	.22900-01	88.000	.4129	.7509	.5164	.9555	.2873-01	.1975-01	2.546	17.51	564.5
149	10.000	.26900-01	90.000	.3913	.6885	.4875	.9543	.2634-01	.1865-01	2.517	17.37	557.5
149	10.000	.34700-01	94.000	.4388	.8064	.5632	.9515	.3085-01	.2154-01	2.672	18.35	566.5
149	12.000	.17600-01	152.00	.8210	2.254	.9243	.9824	.8622-01	.3536-01	3.585	24.03	611.5
149	12.000	.12100-01	151.00	.6207	3.504	.7257	.9824	.1341	.2776-01	2.094	13.85	637.5
149	13.000	.19400-01	153.00	.7269	1.702	.8078	.9825	.6511-01	.3090-01	3.522	23.77	599.0
150	14.600	.44200-01	169.00	.3805	.6681	.4879	.9489	.2555-01	.1866-01	2.456	16.95	557.9
149	18.500	.44200-01	106.00	.4095	.7379	.5289	.9493	.2823-01	.2023-01	2.554	17.58	562.6
150	19.600	.62900-01	175.00	.3443	.6023	.4538	.9437	.2303-01	.1735-01	2.234	15.43	557.0
149	19.800	.40800-01	101.00	.4990	.9489	.6517	.9506	.3630-01	.2493-01	2.921	20.00	572.6
149	20.000	.24900-01	89.000	.3194	.5511	.3916	.9561	.2108-01	.1498-01	2.109	14.59	553.1
149	20.000	.28800-01	91.000	.3460	.6052	.4293	.9547	.2315-01	.1642-01	2.243	15.50	556.2
149	20.000	.32800-01	93.000	.4132	.7543	.5237	.9533	.2885-01	.2003-01	2.536	17.43	565.2
150	21.800	.82200-01	182.00	.8633-05	.1015-04	.9506-05	.9387	.3883-06	.3635-06	.1601-03	.1336-02	241.7
149	22.200	.62900-01	125.00	.3669	.6659	.4903	.9440	.2547-01	.1875-01	2.268	15.60	564.1
149	22.400	.44200-01	107.00	.3632	.6434	.4649	.9498	.2461-01	.1779-01	2.315	15.97	559.0
150	22.600	.10270	192.00	.2156	.3663	.2960	.9340	.1401-01	.1132-01	1.457	10.10	550.0
149	23.000	.42000-01	105.00	.4527	.8504	.5889	.9506	.3253-01	.2253-01	2.687	18.42	570.5
149	23.400	.59600-01	120.00	.4025	.7419	.5376	.9451	.2838-01	.2056-01	2.442	16.77	567.0
150	23.900	.21310	250.00	.7192-01	.1088	.9779-01	.9220	.4162-02	.3739-02	.5893	4.171	512.4
149	24.100	.82200-01	139.00	.2970	.5267	.4048	.9389	.2015-01	.1548-01	1.890	13.03	559.3
150	24.400	.19040	238.00	.8539-01	.1317	.1173	.9226	.5038-02	.4487-02	.6745	4.754	520.1
150	24.400	.12440	207.00	.1708	.2946	.2421	.9300	.1127-01	.9256-02	1.130	7.813	553.7
150	24.800	.16810	223.00	.9782-01	.1593	.1383	.9242	.6093-02	.5288-02	.7040	4.911	538.5
149	24.900	.62900-01	126.00	.3794	.6860	.5052	.9443	.2624-01	.1933-01	2.357	16.22	563.3
150	25.000	.79500-01	178.00	.3609	.6449	.4913	.9397	.2466-01	.1879-01	2.276	15.68	561.7
150	25.300	.10270	191.00	.2452	.4175	.3365	.9342	.1596-01	.1287-01	1.651	11.44	550.6
150	25.300	.10000+00	186.00	.2778	.4903	.3871	.9348	.1875-01	.1480-01	1.782	12.29	559.0
149	25.500	.60700-01	124.00	.4212	.7908	.5669	.9450	.3025-01	.2168-01	2.501	17.15	570.4
150	26.000	.12440	206.00	.2036	.3502	.2879	.9301	.1339-01	.1101-01	1.352	9.354	553.1
149	26.300	.82200-01	140.00	.2952	.5106	.3971	.9392	.1953-01	.1519-01	1.943	13.44	553.6
150	26.700	.12100	199.00	.2508	.4423	.3592	.9307	.1691-01	.1370-01	1.610	11.11	558.8
150	26.800	.16810	222.00	.1175	.1915	.1661	.9243	.7325-02	.6353-02	.8449	5.893	538.7
150	27.000	.19040	237.00	.1115	.1727	.1536	.9227	.6603-02	.5873-02	.8754	6.165	521.4
150	27.100	.21310	249.00	.1029	.1565	.1404	.9220	.5984-02	.5368-02	.8340	5.896	514.6
150	27.200	.80300-01	180.00	.3623	.6485	.4935	.9398	.2480-01	.1887-01	2.280	15.70	562.0
149	27.400	.40100-01	98.000	.5030	.9859	.6586	.9518	.3771-01	.2519-01	2.851	19.47	577.5
150	27.400	.16480	215.00	.1081	.1795	.1544	.9246	.6864-02	.5903-02	.7547	5.248	544.1
149	27.600	.41600-01	102.00	.4724	.9304	.6214	.9513	.3559-01	.2377-01	2.664	18.18	578.3
150	27.600	.12440	205.00	.2066	.3540	.2912	.9302	.1354-01	.1114-01	1.378	9.539	552.2
150	27.600	.18700	230.00	.1220	.1906	.1688	.9229	.7288-02	.6457-02	.9415	6.618	524.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
150	27.700	.21010	243.00	.1022	.1565	.1401	.9220	.5983-02	.5356-02	.8191	5.783	517.1
150	27.900	.10110	188.00	.2587	.4448	.3557	.9349	.1701-01	.1360-01	1.719	11.89	553.0
149	28.000	.46800-01	110.00	.2655	.4423	.3324	.9496	.1692-01	.1272-01	1.844	12.82	544.1
150	28.200	.16810	221.00	.1348	.2208	.1911	.9244	.8442-02	.7308-02	.9624	6.708	540.0
150	28.300	.19040	236.00	.8367-01	.1302	.1156	.9227	.4977-02	.4420-02	.6510	4.580	523.2
150	28.300	.12200	201.00	.2486	.4343	.3533	.9307	.1661-01	.1351-01	1.616	11.16	556.7
149	28.400	.53500-01	114.00	.3986	.7340	.5242	.9476	.2808-01	.2005-01	2.421	16.63	566.9
150	28.400	.21310	248.00	.5510-01	.8436-01	.7553-01	.9220	.3226-02	.2888-02	.4416	3.117	517.1
149	28.700	.58600-01	117.00	.4892	.9222	.6553	.9460	.3528-01	.2507-01	2.892	19.82	571.1
150	28.800	.16580	217.00	.1323	.2198	.1890	.9246	.8404-02	.7228-02	.9237	6.424	544.1
149	28.800	.60400-01	121.00	.4420	.8579	.6007	.9455	.3282-01	.2298-01	2.531	17.30	576.0
150	29.000	.21110	244.00	.7174-01	.1105	.9872-01	.9220	.4224-02	.3775-02	.5686	4.009	519.4
149	29.000	.65700-01	129.00	.2610	.4349	.3364	.9440	.1664-01	.1287-01	1.812	12.60	544.2
149	29.200	.72400-01	133.00	.3654	.6585	.4922	.9421	.2519-01	.1883-01	2.278	15.68	562.6
149	29.300	.79500-01	136.00	.3457	.6421	.4775	.9402	.2456-01	.1826-01	2.079	14.27	568.5
149	29.600	.92500-01	143.00	.2919	.5127	.4006	.9370	.1961-01	.1533-01	1.882	12.99	557.2
149	29.700	.10000+00	146.00	.2751	.5017	.3887	.9353	.1919-01	.1487-01	1.691	11.62	565.0
150	29.900	.12100	198.00	.2550	.4577	.3671	.9310	.1750-01	.1404-01	1.600	11.01	562.6
150	30.200	.16480	214.00	.1265	.2120	.1816	.9248	.8105-02	.6943-02	.8715	6.052	546.5
150	30.200	.18700	229.00	.1072	.1690	.1493	.9230	.6463-02	.5708-02	.8151	5.720	527.9
150	30.300	.21010	242.00	.9181-01	.1420	.1267	.9221	.5431-02	.4846-02	.7215	5.082	521.2
149	31.500	.91000-02	82.000	.4161	.7605	.5133	.9582	.2909-01	.1963-01	2.550	17.53	565.4
149	31.500	.11100-01	83.000	.6082	1.375	.7930	.9582	.5258-01	.3033-01	3.028	20.48	595.5
149	31.500	.14200-01	84.000	.9113	4.051	1.032	.9849	.1550	.3949-01	3.264	21.65	632.0
149	31.500	.16000-01	85.000	.9840	3.481	1.104	.9849	.1332	.4222-01	3.808	25.35	624.5
149	31.500	.17600-01	86.000	.8502	2.421	.9427	.9849	.9263-01	.3606-01	3.637	24.36	613.8
149	31.500	.19400-01	87.000	.7238	1.694	.7924	.9849	.6478-01	.3031-01	3.509	23.68	598.9
150	32.100	.21010	241.00	.7609-01	.1193	.1060	.9221	.4564-02	.4055-02	.5834	4.097	526.2
150	32.200	.16480	213.00	.1018	.1719	.1468	.9249	.6575-02	.5612-02	.6931	4.808	548.6
150	32.200	.17860	224.00	.1162	.1833	.1613	.9236	.7008-02	.6167-02	.8813	6.183	528.3
150	32.200	.18700	228.00	.1282	.2065	.1811	.9230	.7898-02	.6924-02	.9398	6.569	535.0
150	32.300	.12100	197.00	.2707	.4924	.3921	.9312	.1883-01	.1499-01	1.670	11.48	565.3
150	32.300	.12300	194.00	.2182	.3980	.3173	.9309	.1522-01	.1213-01	1.343	9.229	565.8
150	32.300	.12730	208.00	.1443	.2403	.2002	.9301	.9189-02	.7655-02	1.004	6.976	544.8
150	32.300	.13420	209.00	.1544	.2706	.2222	.9289	.1035-01	.8497-02	.9989	6.896	557.5
149	32.400	.10000+00	147.00	.3029	.5873	.4402	.9356	.2247-01	.1684-01	1.736	11.86	575.8
150	32.400	.10110	184.00	.2956	.5492	.4215	.9353	.2100-01	.1612-01	1.779	12.20	569.3
150	32.400	.10630	193.00	.1889	.3057	.2524	.9342	.1169-01	.9650-02	1.375	9.600	536.4
150	32.500	.85800-01	183.00	.2304	.3817	.3039	.9390	.1460-01	.1162-01	1.614	11.23	543.4
149	32.600	.79500-01	137.00	.3797	.7551	.5388	.9406	.2889-01	.2061-01	2.120	14.46	579.7
150	32.600	.80800-01	176.00	.4354	.8736	.6217	.9403	.3340-01	.2377-01	2.412	16.43	581.8
149	32.700	.67400-01	132.00	.3087	.5374	.4054	.9440	.2056-01	.1551-01	2.014	13.92	555.1
149	32.700	.72400-01	134.00	.3369	.5986	.4499	.9425	.2290-01	.1721-01	2.140	14.75	559.7

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

(R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
149	32.800	.65700-01	130.00	.3003	.5033	.3870	.9445	.1925-01	.1480-01	2.066	14.36	545.8
150	32.800	.16680	210.00	.9497-01	.1583	.1359	.9247	.6052-02	.5197-02	.6599	4.587	545.0
150	32.800	.18880	225.00	.1012	.1567	.1392	.9229	.5994-02	.5324-02	.7942	5.592	521.5
149	32.900	.58600-01	118.00	.4572	.8627	.6105	.9466	.3300-01	.2335-01	2.700	18.50	571.3
149	32.900	.60400-01	122.00	.4397	.8719	.6003	.9460	.3335-01	.2296-01	2.463	16.80	579.3
150	32.900	.61300-01	171.00	.3905	.7393	.5248	.9458	.2827-01	.2007-01	2.300	15.74	572.7
149	33.000	.53500-01	115.00	.3637	.6465	.4704	.9482	.2473-01	.1799-01	2.308	15.91	559.8
149	33.200	.48300-01	113.00	.2624	.4360	.3279	.9499	.1668-01	.1254-01	1.829	12.72	543.5
150	33.400	.42800-01	166.00	.4236	.8241	.5536	.9517	.3151-01	.2117-01	2.422	16.54	577.1
149	33.500	.40100-01	99.000	.4853	.9412	.6298	.9526	.3600-01	.2409-01	2.781	19.00	575.9
149	33.600	.38300-01	97.000	.4869	.9248	.6253	.9532	.3538-01	.2392-01	2.854	19.54	572.4
149	33.700	.36700-01	96.000	.4869	.9205	.6223	.9538	.3521-01	.2380-01	2.869	19.65	571.6
149	33.900	.33800-01	95.000	.4383	.7941	.5494	.9549	.3038-01	.2102-01	2.716	18.68	563.7
150	34.700	.21010	240.00	.9066-01	.1435	.1271	.9221	.5486-02	.4860-02	.6846	4.800	529.2
150	34.700	.18700	227.00	.1045	.1669	.1466	.9231	.6381-02	.5607-02	.7764	5.434	532.3
150	34.900	.16480	212.00	.1137	.1951	.1655	.9250	.7462-02	.6329-02	.7576	5.244	552.5
149	35.100	.10000+00	148.00	.3294	.6528	.4828	.9359	.2497-01	.1847-01	1.846	12.60	579.2
150	35.200	.23900-01	161.00	.2582	.4178	.3067	.9586	.1598-01	.1173-01	1.879	13.12	536.4
149	35.300	.92500-01	145.00	.2587	.4575	.3548	.9376	.1750-01	.1357-01	1.652	11.40	558.7
149	35.300	.22100-01	160.00	.2448	.3973	.2908	.9588	.1520-01	.1113-01	1.771	12.37	536.6
150	35.400	.18800	231.00	.1290	.2075	.1819	.9231	.7933-02	.6957-02	.9476	6.624	534.6
150	35.500	.12100	196.00	.2680	.4943	.3904	.9315	.1890-01	.1493-01	1.627	11.17	567.9
150	35.600	.16580	216.00	.1142	.1939	.1651	.9250	.7415-02	.6314-02	.7716	5.349	549.9
149	35.800	.80600-01	138.00	.4212	.8605	.6040	.9407	.3291-01	.2311-01	2.290	15.59	583.5
150	35.900	.21310	247.00	.8666-01	.1343	.1198	.9221	.5135-02	.4579-02	.6790	4.781	521.8
150	36.000	.19040	235.00	.1149	.1821	.1606	.9229	.6962-02	.6140-02	.8664	6.074	529.6
150	36.200	.16910	220.00	.1159	.1926	.1655	.9248	.7364-02	.6328-02	.8090	5.626	544.1
149	36.200	.72400-01	135.00	.3155	.5565	.4189	.9430	.2129-01	.1603-01	2.023	13.96	558.1
150	36.300	.12200	200.00	.2774	.5151	.4058	.9314	.1970-01	.1552-01	1.670	11.46	569.2
149	36.600	.65700-01	131.00	.2914	.5066	.3803	.9450	.1938-01	.1455-01	1.904	13.16	554.8
150	36.700	.18700	226.00	.1127	.1785	.1572	.9232	.6826-02	.6012-02	.8501	5.960	529.5
150	36.900	.16480	211.00	.1135	.1906	.1628	.9251	.7289-02	.6226-02	.7801	5.416	547.0
150	36.900	.10110	187.00	.3097	.5832	.4431	.9358	.2230-01	.1694-01	1.836	12.57	571.7
149	37.000	.60400-01	123.00	.4456	.9173	.6143	.9466	.3509-01	.2350-01	2.405	16.36	584.6
150	37.000	.12440	204.00	.2529	.4528	.3636	.9310	.1732-01	.1390-01	1.591	10.96	562.1
149	37.100	.58600-01	119.00	.3874	.7236	.5135	.9472	.2768-01	.1964-01	2.315	15.88	569.5
150	37.200	.21310	246.00	.8994-01	.1386	.1238	.9221	.5300-02	.4734-02	.7120	5.019	519.6
150	37.600	.16810	219.00	.1055	.1734	.1495	.9248	.6632-02	.5718-02	.7486	5.215	541.1
149	37.800	.10270	150.00	.2492	.4447	.3477	.9356	.1701-01	.1330-01	1.574	10.84	560.6
150	37.900	.12100	195.00	.1608	.2692	.2217	.9318	.1029-01	.8479-02	1.110	7.708	546.2
150	38.000	.80300-01	179.00	.3745	.6933	.5137	.9411	.2651-01	.1964-01	2.263	15.53	568.6
149	38.500	.46800-01	112.00	.2800	.4729	.3498	.9511	.1809-01	.1338-01	1.906	13.23	547.8
150	38.600	.12440	203.00	.2142	.3700	.3015	.9312	.1415-01	.1153-01	1.413	9.770	554.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
150	38.700	.10000+00	185.00	.2561	.4518	.3538	.9363	.1728-01	.1353-01	1.643	11.34	558.9
149	38.900	.82200-01	141.00	.3508	.6394	.4791	.9407	.2446-01	.1833-01	2.158	14.83	564.9
149	39.300	.41600-01	104.00	.4641	.9403	.6092	.9530	.3597-01	.2331-01	2.544	17.33	582.4
150	39.500	.10270	190.00	.2529	.4422	.3489	.9357	.1691-01	.1334-01	1.642	11.34	556.9
150	39.600	.16810	218.00	.8463-01	.1376	.1190	.9249	.5261-02	.4551-02	.6109	4.263	537.9
150	39.900	.19040	233.00	.6859-01	.1062	.9429-01	.9231	.4062-02	.3605-02	.5379	3.788	521.6
150	40.100	.79500-01	177.00	.3023	.5290	.4033	.9416	.2023-01	.1542-01	1.960	13.53	557.1
150	40.200	.12440	202.00	.1751	.2981	.2443	.9314	.1140-01	.9341-02	1.179	8.167	550.6
150	40.300	.21310	245.00	.5764-01	.8779-01	.7869-01	.9221	.3357-02	.3009-02	.4664	3.296	515.1
149	41.100	.82200-01	142.00	.3250	.5812	.4393	.9410	.2223-01	.1680-01	2.046	14.10	561.1
150	41.100	.60700-01	173.00	.4079	.7701	.5430	.9471	.2945-01	.2076-01	2.409	16.50	572.2
150	42.300	.10270	189.00	.8633-05	.1015-04	.9547-05	.9361	.3883-06	.3651-06	.1601-03	.1336-02	241.7
150	42.600	.59600-01	172.00	.3673	.6657	.4799	.9476	.2545-01	.1835-01	2.277	15.66	564.5
150	43.200	.42000-01	168.00	.4460	.8428	.5713	.9534	.3223-01	.2185-01	2.633	18.03	572.3
150	43.400	.82200-01	181.00	.2473	.4291	.3292	.9413	.1641-01	.1259-01	1.622	11.21	555.2
149	43.600	.62900-01	128.00	.3229	.5812	.4229	.9468	.2223-01	.1618-01	2.017	13.89	562.4
149	45.000	.22900-01	8.0000	.5685	1.188	.7170	.9603	.4546-01	.2743-01	3.026	20.56	586.5
150	46.100	.62900-01	174.00	.3771	.6753	.4919	.9472	.2582-01	.1881-01	2.373	16.34	562.1
150	47.700	.40800-01	167.00	.4810	.9166	.6135	.9546	.3505-01	.2346-01	2.813	19.25	573.7
149	48.400	.44200-01	109.00	.4486	.8308	.5707	.9535	.3178-01	.2183-01	2.707	18.58	567.9
149	50.000	.19400-01	156.00	.9660	2.757	1.055	.9870	.1055	.4036-01	4.127	27.64	614.0
149	51.000	.12100-01	154.00	.7019	2.952	.7791	.9870	.1129	.2980-01	2.556	16.97	630.5
149	51.000	.17600-01	155.00	.7745	2.331	.8481	.9870	.8917-01	.3244-01	3.220	21.52	617.0
150	51.900	.44800-01	170.00	.3812	.6715	.4762	.9539	.2568-01	.1821-01	2.450	16.91	558.6
150	53.200	.24700-01	163.00	.4409	.7976	.5333	.9613	.3050-01	.2039-01	2.740	18.84	564.2
150	65.200	.24700-01	162.00	.5607	1.093	.6825	.9634	.4179-01	.2610-01	3.200	21.85	577.4
148	90.000	.91000-02	44.000	.5559	1.407	.6895	.9680	.5381-01	.2637-01	2.547	17.14	604.9
148	90.000	.11100-01	45.000	.7301	1.972	.9145	.9680	.7543-01	.3498-01	3.213	21.56	609.6
148	90.000	.13100-01	46.000	.7476	1.800	.9198	.9680	.6885-01	.3518-01	3.544	23.90	600.7
148	90.000	.17000-01	48.000	.7149	1.577	.8666	.9680	.6032-01	.3315-01	3.624	24.55	592.1
148	90.000	.20900-01	50.000	.6521	1.365	.7830	.9680	.5219-01	.2995-01	3.461	23.53	585.9
148	90.000	.24900-01	52.000	.6275	1.249	.7487	.9675	.4778-01	.2864-01	3.494	23.84	579.1
148	90.000	.26900-01	53.000	.6329	1.264	.7591	.9667	.4835-01	.2903-01	3.513	23.96	579.6
148	90.000	.28800-01	54.000	.6024	1.178	.7224	.9660	.4504-01	.2763-01	3.419	23.36	576.3
148	90.000	.32800-01	55.000	.5033	.9236	.6004	.9645	.3533-01	.2296-01	3.066	21.07	565.4
148	90.000	.36700-01	56.000	.5111	.9338	.6138	.9631	.3572-01	.2348-01	3.130	21.52	564.6
148	90.000	.40600-01	57.000	.4654	.8648	.5656	.9616	.3308-01	.2163-01	2.793	19.18	567.7
148	90.000	.48500-01	58.000	.4481	.8212	.5511	.9588	.3141-01	.2108-01	2.733	18.79	565.2
148	90.000	.56400-01	59.000	.4045	.7312	.5031	.9561	.2797-01	.1924-01	2.509	17.28	562.5
148	90.000	.76100-01	60.000	.3190	.5650	.4082	.9498	.2161-01	.1561-01	2.030	14.01	558.2
148	90.000	.95800-01	61.000	.2660	.4670	.3502	.9441	.1786-01	.1339-01	1.712	11.83	556.3
148	90.000	.11550	62.000	.2092	.3662	.2832	.9390	.1401-01	.1083-01	1.353	9.351	555.6
148	135.00	.19000-01	49.000	.6954	1.514	.8147	.9729	.5789-01	.3116-01	3.565	24.17	590.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K024)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
148	135.00	.22900-01	51.000	.7015	1.526	.8218	.9729	.5835-01	.3143-01	3.599	24.40	590.5
148	180.00	.91000-02	23.000	.3403	.6463	.3931	.9716	.2472-01	.1503-01	1.992	13.64	571.6
148	180.00	.11100-01	24.000	.6932	1.907	.8460	.9716	.7294-01	.3236-01	3.019	20.25	610.8
148	180.00	.13100-01	25.000	.7416	1.796	.8898	.9716	.6869-01	.3403-01	3.501	23.60	601.2
148	180.00	.15000-01	26.000	.7298	1.739	.8737	.9716	.6652-01	.3342-01	3.485	23.51	599.8
148	180.00	.17000-01	27.000	.6840	1.557	.8134	.9716	.5954-01	.3111-01	3.382	22.87	595.4
148	180.00	.19000-01	28.000	.6679	1.482	.7912	.9716	.5668-01	.3026-01	3.370	22.82	592.7
148	180.00	.20900-01	29.000	.6914	1.469	.8136	.9716	.5620-01	.3112-01	3.620	24.58	587.8
148	180.00	.28800-01	32.000	.6243	1.235	.7346	.9696	.4723-01	.2810-01	3.500	23.89	578.1
148	180.00	.32800-01	33.000	.5691	1.064	.6682	.9681	.4068-01	.2556-01	3.393	23.28	568.8
148	180.00	.36700-01	34.000	.5244	1.013	.6250	.9667	.3874-01	.2390-01	3.014	20.62	574.4
148	180.00	.48500-01	36.000	.4637	.8664	.5620	.9624	.3314-01	.2149-01	2.765	18.97	568.8
148	180.00	.56400-01	37.000	.4405	.8121	.5404	.9596	.3106-01	.2067-01	2.668	18.33	566.3
148	180.00	.76100-01	38.000	.3662	.6557	.4618	.9531	.2508-01	.1766-01	2.299	15.84	560.5
148	180.00	.95800-01	39.000	.2820	.4946	.3648	.9472	.1892-01	.1395-01	1.818	12.56	556.1
148	180.00	.11550	40.000	.2337	.4113	.3121	.9418	.1573-01	.1194-01	1.500	10.36	556.8
148	180.00	.18450	42.000	.1282	.2135	.1801	.9279	.8165-02	.6887-02	.8890	6.185	543.3
148	225.00	.22900-01	30.000	.6093	1.213	.7376	.9651	.4641-01	.2821-01	3.392	23.14	579.1
148	270.00	.91000-02	63.000	.4564	.8428	.5664	.9576	.3224-01	.2166-01	2.759	18.95	566.6
148	270.00	.11100-01	64.000	.5986	1.231	.7652	.9576	.4709-01	.2927-01	3.230	21.98	583.6
148	270.00	.13100-01	65.000	.7276	1.746	.9664	.9576	.6677-01	.3696-01	3.458	23.33	600.4
148	270.00	.17000-01	67.000	.5977	1.246	.7667	.9576	.4766-01	.2932-01	3.184	21.65	585.4
148	270.00	.20900-01	69.000	.6239	1.277	.7965	.9576	.4884-01	.3046-01	3.382	23.02	583.0
148	270.00	.24900-01	71.000	.5573	1.116	.7095	.9571	.4268-01	.2714-01	3.086	21.05	579.9
148	270.00	.28800-01	73.000	.5092	.9707	.6450	.9557	.3713-01	.2467-01	2.969	20.33	572.2
148	270.00	.36700-01	75.000	.4930	.9258	.6320	.9530	.3541-01	.2417-01	2.923	20.05	569.7
148	270.00	.48500-01	77.000	.4066	.7302	.5253	.9490	.2793-01	.2009-01	2.543	17.52	561.1
148	270.00	.56400-01	78.000	.3504	.6252	.4580	.9466	.2391-01	.1752-01	2.210	15.24	559.8
148	270.00	.95800-01	80.000	.2001	.3424	.2726	.9360	.1310-01	.1043-01	1.335	9.252	550.3
148	270.00	.11550	81.000	.1574	.2731	.2213	.9319	.1045-01	.8464-02	1.030	7.127	553.6
148	315.00	.19000-01	68.000	.5696	1.079	.7298	.9535	.4128-01	.2791-01	3.343	22.91	571.2
148	315.00	.22900-01	70.000	.4904	.9684	.6365	.9535	.3704-01	.2434-01	2.754	18.80	577.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
51	3.010	5.049	-6.029	36.20	723.7	.9709	257.3	50.20	2367.	.1018-01	.2055-06	3.645
52	3.010	5.059	-6.037	36.11	723.7	.9684	257.3	50.18	2367.	.1016-01	.2055-06	3.635
53	3.010	5.060	-6.038	35.99	723.7	.9653	257.3	50.18	2367.	.1012-01	.2055-06	3.624

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
51	.4405-01	.7588-02
52	.4399-01	.7598-02
53	.4392-01	.7610-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
52	.00000	.91000-02	1.0000	.5576	1.314	.7076	.9632	.5781-01	.3113-01	3.084	20.83	597.9
52	.00000	.11100-01	2.0000	.7110	1.975	.9302	.9632	.8690-01	.4092-01	3.537	23.73	610.6
52	.00000	.15000-01	4.0000	.5777	1.300	.7262	.9632	.5717-01	.3195-01	3.311	22.41	593.4
52	.00000	.17000-01	5.0000	.5777	1.283	.7242	.9632	.5645-01	.3186-01	3.345	22.66	592.0
52	.00000	.19000-01	6.0000	.5453	1.217	.6843	.9632	.5353-01	.3010-01	3.146	21.31	592.5
52	.00000	.24900-01	9.0000	.4795	.9994	.5948	.9627	.4397-01	.2617-01	2.935	19.96	584.6
52	.00000	.26900-01	10.000	.4857	1.016	.6058	.9620	.4471-01	.2665-01	2.961	20.14	585.1
51	.00000	.32800-01	12.000	.4751	1.004	.6018	.9601	.4423-01	.2651-01	2.875	19.54	586.3
51	.00000	.36700-01	13.000	.4830	.9887	.6120	.9588	.4355-01	.2696-01	3.010	20.50	582.2
51	.00000	.40600-01	14.000	.5102	1.083	.6590	.9575	.4772-01	.2899-01	3.074	20.89	586.9
51	.00000	.48500-01	15.000	.4118	.8029	.5269	.9552	.3537-01	.2321-01	2.695	18.43	575.1
51	.00000	.56400-01	16.000	.3982	.7817	.5178	.9529	.3444-01	.2281-01	2.587	17.68	576.2
51	.00000	.76100-01	17.000	.2710	.4992	.3556	.9479	.2199-01	.1567-01	1.890	12.99	565.4
51	.00000	.11550	19.000	.1362	.2413	.1838	.9405	.1063-01	.8095-02	.9961	6.876	557.6
51	.00000	.16480	20.000	.1028	.1746	.1399	.9356	.7692-02	.6161-02	.7967	5.530	547.7
51	.00000	.21400	22.000	.7076-01	.1109	.9276-01	.9345	.4886-02	.4086-02	.6230	4.381	523.8
53	2.0000	.24700-01	165.00	.4115	.7872	.4994	.9631	.3457-01	.2194-01	2.741	18.77	572.0
52	9.0000	.15000-01	157.00	.5542	1.219	.6862	.9647	.5362-01	.3019-01	3.236	21.93	591.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
52	9.0000	.17600-01	158.00	.5195	1.092	.6374	.9647	.4803-01	.2804-01	3.155	21.45	585.6
53	9.8000	.24700-01	164.00	.4121	.7920	.4968	.9645	.3479-01	.2182-01	2.730	18.69	572.8
52	10.000	.22900-01	88.000	.4353	.8731	.5283	.9649	.3841-01	.2324-01	2.764	18.85	579.3
52	10.000	.26900-01	90.000	.4690	.9419	.5735	.9637	.4144-01	.2523-01	2.974	20.29	579.5
52	10.000	.34700-01	94.000	.4922	1.045	.6200	.9610	.4598-01	.2728-01	2.962	20.12	586.9
52	12.000	.17600-01	152.00	.7003	3.844	.7837	.9870	.1691	.3448-01	2.726	18.05	635.2
52	12.000	.12100-01	151.00	.6770	-4.702	.7952	.9870	-.2069	.3498-01	1.884	12.31	660.4
52	13.000	.19400-01	153.00	.6809	3.810	.7623	.9870	.1676	.3353-01	2.639	17.47	635.6
53	14.600	.44200-01	169.00	.4003	.7564	.4967	.9588	.3322-01	.2181-01	2.703	18.53	570.0
52	18.500	.44200-01	106.00	.4301	.8530	.5381	.9595	.3752-01	.2367-01	2.762	18.86	577.7
53	19.600	.62900-01	175.00	.4435	.8462	.5673	.9542	.3717-01	.2492-01	2.963	20.30	571.6
52	19.800	.40800-01	101.00	.5299	1.130	.6690	.9609	.4971-01	.2943-01	3.177	21.58	587.4
52	20.000	.24900-01	89.000	.3876	.7441	.4620	.9664	.3273-01	.2033-01	2.575	17.63	572.6
52	20.000	.28800-01	91.000	.4359	.8545	.5262	.9650	.3759-01	.2315-01	2.832	19.36	576.0
52	20.000	.32800-01	93.000	.4609	.9866	.5719	.9636	.4340-01	.2516-01	2.754	18.70	587.8
53	21.800	.82200-01	182.00	.3546	.6770	.4668	.9495	.2974-01	.2050-01	2.367	16.22	571.7
52	22.200	.62900-01	125.00	.4813	.9903	.6278	.9546	.4357-01	.2762-01	2.982	20.30	582.9
52	22.400	.44200-01	107.00	.4129	.8039	.5118	.9603	.3537-01	.2252-01	2.702	18.48	574.9
53	22.600	.10270	192.00	.2848	.5302	.3816	.9452	.2329-01	.1676-01	1.955	13.42	567.4
52	23.000	.42000-01	105.00	.4952	1.044	.6225	.9611	.4592-01	.2738-01	2.999	20.39	586.0
52	23.400	.59600-01	120.00	.5308	1.139	.6949	.9558	.5009-01	.3057-01	3.166	21.50	588.1
53	23.900	.21310	250.00	.7332-01	.1180	.9747-01	.9345	.5182-02	.4281-02	.6158	4.310	532.5
52	24.100	.82200-01	139.00	.3762	.7434	.4999	.9499	.3270-01	.2199-01	2.425	16.56	577.2
53	24.400	.19040	238.00	.1243	.2061	.1674	.9351	.9054-02	.7354-02	.9954	6.933	541.4
53	24.400	.12440	207.00	.2342	.4406	.3224	.9416	.1935-01	.1416-01	1.589	10.90	569.2
53	24.800	.16810	223.00	.1571	.2737	.2154	.9365	.1202-01	.9461-02	1.172	8.106	553.8
52	24.900	.62900-01	126.00	.4361	.8660	.5612	.9551	.3810-01	.2409-01	2.796	19.09	577.9
53	25.000	.79500-01	178.00	.4670	.9438	.6218	.9507	.4146-01	.2731-01	2.938	20.03	580.4
53	25.300	.10270	191.00	.3101	.5764	.4143	.9456	.2532-01	.1820-01	2.134	14.65	567.0
53	25.300	.10000+00	186.00	.3936	.7960	.5409	.9461	.3496-01	.2376-01	2.475	16.87	580.5
52	25.500	.60700-01	124.00	.5245	1.121	.6856	.9558	.4930-01	.3016-01	3.139	21.32	587.6
53	26.000	.12440	206.00	.2655	.5007	.3655	.9418	.2199-01	.1605-01	1.797	12.32	569.6
52	26.300	.82200-01	140.00	.3704	.7006	.4838	.9503	.3082-01	.2128-01	2.502	17.16	570.1
53	26.700	.12100	199.00	.3248	.6436	.4544	.9424	.2827-01	.1996-01	2.084	14.23	577.6
53	26.800	.16810	222.00	.1902	.3282	.2593	.9366	.1442-01	.1139-01	1.437	9.951	551.6
53	27.000	.19040	237.00	.1411	.2331	.1896	.9352	.1024-01	.8328-02	1.137	7.922	540.3
53	27.100	.21310	249.00	.1162	.1880	.1549	.9346	.8256-02	.6803-02	.9670	6.762	534.2
53	27.200	.80300-01	180.00	.4535	.9016	.5939	.9509	.3960-01	.2635-01	2.900	19.80	578.1
52	27.400	.40100-01	98.000	.5580	1.295	.7089	.9626	.5696-01	.3119-01	3.122	21.10	596.5
53	27.400	.16480	215.00	.2133	.3849	.2967	.9369	.1691-01	.1303-01	1.520	10.47	561.4
52	27.600	.41600-01	102.00	.5091	1.198	.6507	.9621	.5268-01	.2863-01	2.819	19.04	597.8
53	27.600	.12440	205.00	.2797	.5216	.3827	.9420	.2291-01	.1681-01	1.917	13.16	567.6
53	27.600	.18700	230.00	.2157	.3617	.2918	.9354	.1589-01	.1282-01	1.699	11.82	544.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
53	27.700	.21010	243.00	.1441	.2393	.1948	.9346	.1051-01	.8555-02	1.153	8.026	541.6
53	27.900	.10110	188.00	.3319	.6268	.4442	.9463	.2753-01	.1951-01	2.243	15.38	569.8
52	28.000	.46800-01	110.00	.3148	.5680	.3820	.9605	.2499-01	.1680-01	2.248	15.49	561.3
53	28.200	.16810	221.00	.2016	.3497	.2755	.9367	.1536-01	.1210-01	1.513	10.47	552.8
53	28.300	.19040	236.00	.1299	.2121	.1734	.9353	.9315-02	.7618-02	1.067	7.448	536.8
53	28.300	.12200	201.00	.3261	.6373	.4537	.9424	.2799-01	.1993-01	2.123	14.52	575.4
52	28.400	.53500-01	114.00	.5244	1.122	.6731	.9585	.4937-01	.2961-01	3.134	21.28	587.8
53	28.400	.21310	248.00	.1077	.1732	.1431	.9346	.7608-02	.6285-02	.9046	6.332	532.4
52	28.700	.58600-01	117.00	.6056	1.358	.7947	.9571	.5976-01	.3496-01	3.479	23.56	593.1
53	28.800	.16580	217.00	.2114	.3768	.2924	.9369	.1655-01	.1284-01	1.531	10.56	558.8
52	28.800	.60400-01	121.00	.5428	1.244	.7189	.9566	.5473-01	.3163-01	3.066	20.73	595.3
53	29.000	.21110	244.00	.1196	.1957	.1604	.9346	.8597-02	.7044-02	.9769	6.818	537.7
52	29.000	.65700-01	129.00	.3402	.6114	.4248	.9551	.2690-01	.1869-01	2.441	16.82	560.6
52	29.200	.72400-01	133.00	.5458	1.157	.7246	.9533	.5088-01	.3188-01	3.290	22.36	586.6
52	29.300	.79500-01	136.00	.3927	.8170	.5251	.9515	.3594-01	.2310-01	2.408	16.38	584.3
52	29.600	.92500-01	143.00	.3758	.7528	.5068	.9484	.3312-01	.2229-01	2.389	16.30	579.2
52	29.700	.10000+00	146.00	.3724	.7869	.5175	.9468	.3462-01	.2277-01	2.251	15.30	586.3
53	29.900	.12100	198.00	.3270	.6685	.4620	.9428	.2936-01	.2029-01	2.035	13.86	582.0
53	30.200	.16480	214.00	.1969	.3563	.2740	.9371	.1565-01	.1203-01	1.398	9.629	562.0
53	30.200	.18700	229.00	.1510	.2594	.2067	.9355	.1139-01	.9081-02	1.149	7.960	550.5
53	30.300	.21010	242.00	.1114	.1877	.1517	.9347	.8244-02	.6661-02	.8705	6.048	545.7
52	31.500	.91000-02	82.000	.5843	1.838	.7389	.9693	.8084-01	.3251-01	2.727	18.23	617.6
52	31.500	.11100-01	83.000	.7405	2.561	.9471	.9693	.1127	.4166-01	3.317	22.12	621.9
52	31.500	.14200-01	84.000	.9089	-7.509	1.064	.9870	-.3304	.4681-01	2.581	16.88	659.1
52	31.500	.16000-01	85.000	.9122	-17.07	1.057	.9870	-.7508	.4650-01	2.757	18.07	655.0
52	31.500	.17600-01	86.000	.7291	8.035	.8268	.9870	.3535	.3637-01	2.553	16.82	644.1
52	31.500	.19400-01	87.000	.6762	3.267	.7539	.9870	.1437	.3317-01	2.715	18.00	632.4
53	32.100	.21010	241.00	.1067	.1861	.1479	.9347	.8176-02	.6498-02	.7949	5.498	554.!
53	32.200	.16480	213.00	.1869	.3502	.2642	.9373	.1538-01	.1160-01	1.274	8.745	568.4
53	32.200	.17860	224.00	.1592	.2690	.2154	.9361	.1181-01	.9459-02	1.240	8.614	546.3
53	32.200	.18700	228.00	.1690	.3033	.2364	.9356	.1332-01	.1038-01	1.213	8.362	560.2
53	32.300	.12100	197.00	.3376	.7142	.4823	.9431	.3137-01	.2118-01	2.035	13.83	586.4
53	32.300	.12300	194.00	.2703	.5616	.3845	.9428	.2467-01	.1689-01	1.657	11.27	584.1
53	32.300	.12730	208.00	.2012	.3550	.2686	.9420	.1559-01	.1180-01	1.476	10.19	556.7
53	32.300	.13420	209.00	.2323	.4441	.3233	.9410	.1951-01	.1420-01	1.549	10.61	571.9
52	32.400	.10000+00	147.00	.3820	.9089	.5506	.9472	.3998-01	.2422-01	2.098	14.16	598.8
53	32.400	.10110	184.00	.3570	.7678	.4985	.9470	.3373-01	.2189-01	2.121	14.39	588.4
53	32.400	.10630	193.00	.2478	.4225	.3193	.9459	.1856-01	.1402-01	1.905	13.22	548.6
53	32.500	.85800-01	183.00	.3016	.5379	.3855	.9505	.2363-01	.1693-01	2.182	15.05	559.0
52	32.600	.79500-01	137.00	.4545	1.091	.6310	.9520	.4798-01	.2776-01	2.480	16.74	599.6
53	32.600	.80800-01	176.00	.4754	1.160	.6649	.9517	.5093-01	.2920-01	2.561	17.27	601.0
52	32.700	.67400-01	132.00	.4482	.8935	.5767	.9553	.3931-01	.2537-01	2.864	19.54	578.4
52	32.700	.72400-01	134.00	.5156	1.088	.6805	.9539	.4785-01	.2994-01	3.121	21.21	586.1

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
52	32.800	.65700-01	130.00	.3799	.6878	.4736	.9558	.3026-01	.2083-01	2.701	18.60	562.0
53	32.800	.16680	210.00	.1834	.3345	.2561	.9371	.1469-01	.1125-01	1.290	8.876	563.5
53	32.800	.18880	225.00	.1372	.2278	.1845	.9355	.1000-01	.8103-02	1.096	7.633	541.7
52	32.900	.58600-01	118.00	.5030	1.185	.6639	.9579	.5213-01	.2921-01	2.782	18.79	597.9
52	32.900	.60400-01	122.00	.5554	1.359	.7427	.9574	.5979-01	.3267-01	2.991	20.16	601.3
53	32.900	.61300-01	171.00	.4817	1.048	.6272	.9571	.4605-01	.2755-01	2.832	19.21	589.8
52	33.000	.53500-01	115.00	.4523	.9126	.5686	.9595	.4015-01	.2501-01	2.855	19.47	580.2
52	33.200	.48300-01	113.00	.3158	.5706	.3821	.9611	.2510-01	.1681-01	2.252	15.51	561.6
53	33.400	.42800-01	166.00	.4615	1.060	.5835	.9630	.4656-01	.2563-01	2.598	17.57	595.5
52	33.500	.40100-01	99.000	.5562	1.319	.7029	.9639	.5802-01	.3092-01	3.062	20.67	598.5
52	33.600	.38300-01	97.000	.5740	1.317	.7175	.9645	.5793-01	.3157-01	3.239	21.91	595.4
52	33.700	.36700-01	96.000	.5390	1.226	.6700	.9651	.5392-01	.2948-01	3.064	20.73	594.5
52	33.900	.33800-01	95.000	.4844	1.017	.5888	.9662	.4475-01	.2590-01	2.945	20.02	585.5
53	34.700	.21010	240.00	.1158	.2080	.1630	.9347	.9137-02	.7159-02	.8310	5.728	560.3
53	34.700	.18700	227.00	.1372	.2418	.1901	.9357	.1062-01	.8349-02	1.009	6.969	556.3
53	34.900	.16480	212.00	.2157	.4205	.3102	.9375	.1847-01	.1362-01	1.407	9.621	575.1
52	35.100	.10000+00	148.00	.3851	.9648	.5620	.9476	.4244-01	.2472-01	2.041	13.74	603.2
53	35.200	.23900-01	161.00	.3292	.5824	.3785	.9700	.2558-01	.1662-01	2.407	16.62	557.2
52	35.300	.92500-01	145.00	.3681	.7449	.4950	.9493	.3277-01	.2178-01	2.317	15.80	580.6
52	35.300	.22100-01	160.00	.3444	.6210	.3971	.9702	.2732-01	.1747-01	2.462	16.96	561.2
53	35.400	.18800	231.00	.1625	.2921	.2274	.9357	.1283-01	.9988-02	1.164	8.022	560.6
53	35.500	.12100	196.00	.3188	.6916	.4584	.9435	.3038-01	.2013-01	1.880	12.76	589.4
53	35.600	.16580	216.00	.2063	.3951	.2943	.9374	.1735-01	.1293-01	1.372	9.398	572.2
52	35.800	.80600-01	138.00	.4605	1.123	.6406	.9523	.4939-01	.2818-01	2.485	16.76	601.0
53	35.900	.21310	247.00	.9942-01	.1693	.1361	.9347	.7436-02	.5978-02	.7657	5.313	548.3
53	36.000	.19040	235.00	.1397	.2434	.1925	.9356	.1069-01	.8457-02	1.042	7.206	553.8
53	36.200	.16910	220.00	.1860	.3368	.2587	.9372	.1479-01	.1136-01	1.320	9.091	562.0
52	36.200	.72400-01	135.00	.4398	.8819	.5695	.9546	.3880-01	.2505-01	2.793	19.06	579.3
53	36.300	.12200	200.00	.3053	.6596	.4385	.9434	.2897-01	.1926-01	1.807	12.26	588.9
52	36.600	.65700-01	131.00	.4228	.8148	.5345	.9565	.3584-01	.2352-01	2.797	19.15	573.3
53	36.700	.18700	226.00	.1407	.2437	.1931	.9358	.1070-01	.8481-02	1.058	7.324	552.5
53	36.900	.16480	211.00	.1685	.3101	.2356	.9376	.1362-01	.1035-01	1.173	8.064	565.2
53	36.900	.10110	187.00	.3825	.8680	.5409	.9477	.3813-01	.2376-01	2.174	14.71	594.3
52	37.000	.60400-01	123.00	.5949	1.783	.8249	.9582	.7845-01	.3629-01	2.842	19.02	615.1
53	37.000	.12440	204.00	.2762	.5560	.3869	.9431	.2442-01	.1700-01	1.744	11.90	579.9
52	37.100	.58600-01	119.00	.5385	1.269	.7063	.9587	.5582-01	.3107-01	2.979	20.12	597.9
53	37.200	.21310	246.00	.1031	.1735	.1403	.9347	.7620-02	.6161-02	.8081	5.616	545.2
53	37.600	.16810	219.00	.1528	.2708	.2102	.9373	.1189-01	.9231-02	1.115	7.695	557.6
52	37.800	.10270	150.00	.3324	.6757	.4534	.9475	.2973-01	.1995-01	2.082	14.19	581.3
53	37.900	.12100	195.00	.2143	.3861	.2856	.9438	.1696-01	.1255-01	1.530	10.54	561.1
53	38.000	.80300-01	179.00	.4291	.9280	.5750	.9528	.4076-01	.2525-01	2.537	17.22	589.1
52	38.500	.46800-01	112.00	.3325	.6192	.4018	.9628	.2724-01	.1768-01	2.286	15.69	567.4
53	38.600	.12440	203.00	.2528	.4778	.3448	.9433	.2099-01	.1514-01	1.706	11.69	570.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
53	38.700	.10000+00	185.00	.3370	.6718	.4543	.9482	.2951-01	.1995-01	2.150	14.67	578.5
52	38.900	.82200-01	141.00	.3974	.8309	.5284	.9525	.3656-01	.2324-01	2.425	16.49	585.0
52	39.300	.41600-01	104.00	.5169	1.351	.6612	.9647	.5945-01	.2909-01	2.665	17.91	606.5
53	39.500	.10270	190.00	.3340	.6496	.4477	.9477	.2853-01	.1967-01	2.186	14.95	574.7
53	39.600	.16810	218.00	.1184	.2052	.1609	.9375	.9012-02	.7069-02	.8895	6.157	552.6
53	39.900	.19040	233.00	.1107	.1853	.1493	.9357	.8139-02	.6559-02	.8738	6.077	543.9
53	40.100	.79500-01	177.00	.3795	.7379	.4905	.9534	.3241-01	.2154-01	2.483	16.98	574.7
53	40.200	.12440	202.00	.2188	.3989	.2937	.9435	.1752-01	.1290-01	1.541	10.60	563.4
53	40.300	.21310	245.00	.8340-01	.1372	.1121	.9348	.6027-02	.4922-02	.6760	4.714	539.1
52	41.100	.82200-01	142.00	.3666	.7297	.4789	.9529	.3210-01	.2107-01	2.346	16.01	578.2
53	41.100	.60700-01	173.00	.5188	1.200	.6765	.9589	.5270-01	.2971-01	2.905	19.64	596.2
53	42.300	.10270	189.00	.2264	.3998	.2920	.9482	.1756-01	.1283-01	1.659	11.46	556.8
53	42.600	.59600-01	172.00	.4868	1.037	.6197	.9596	.4554-01	.2722-01	2.917	19.81	587.2
53	43.200	.42000-01	168.00	.5203	1.160	.6430	.9654	.5097-01	.2824-01	2.998	20.31	592.5
53	43.400	.82200-01	181.00	.3238	.6151	.4157	.9533	.2702-01	.1826-01	2.173	14.89	570.9
52	43.600	.62900-01	128.00	.4912	.9860	.6193	.9588	.4338-01	.2724-01	3.116	21.25	579.5
52	45.000	.22900-01	8.0000	.6199	1.513	.7403	.9725	.6655-01	.3257-01	3.344	22.55	601.1
53	46.100	.62900-01	174.00	.4554	.9107	.5717	.9593	.4000-01	.2511-01	2.896	19.76	578.9
53	47.700	.40800-01	167.00	.5709	1.320	.7034	.9668	.5800-01	.3089-01	3.197	21.61	596.2
52	48.400	.44200-01	109.00	.5070	1.100	.6216	.9658	.4838-01	.2734-01	2.995	20.32	589.4
52	50.000	.19400-01	156.00	.6820	5.175	.7687	.9870	.2277	.3382-01	2.501	16.51	640.3
52	51.000	.12100-01	154.00	.7702	-6.469	.9014	.9870	-.2846	.3965-01	2.191	14.33	659.0
52	51.000	.17600-01	155.00	.8106	6.363	.9143	.9870	.2799	.4022-01	2.957	19.53	640.7
53	51.900	.44800-01	170.00	.4257	.8200	.5078	.9664	.3602-01	.2230-01	2.815	19.27	573.2
53	53.200	.24700-01	163.00	.5007	1.048	.5795	.9740	.4605-01	.2545-01	3.046	20.72	585.1
53	65.200	.24700-01	162.00	.6154	1.406	.7078	.9768	.6176-01	.3109-01	3.478	23.53	595.0
51	90.000	.91000-02	44.000	.6718	4.902	.7930	.9823	.2159	.3493-01	2.482	16.39	639.8
51	90.000	.11100-01	45.000	.8321	4.039	.9683	.9823	.1779	.4265-01	3.341	22.15	632.5
51	90.000	.13100-01	46.000	.8371	3.379	.9658	.9823	.1488	.4255-01	3.548	23.59	627.5
51	90.000	.17000-01	48.000	.8208	2.573	.9334	.9823	.1134	.4112-01	3.842	25.68	617.4
51	90.000	.20900-01	50.000	.7360	1.995	.8286	.9823	.8788-01	.3650-01	3.718	24.96	609.0
51	90.000	.24900-01	52.000	.6629	1.621	.7429	.9818	.7139-01	.3273-01	3.575	24.11	601.2
51	90.000	.26900-01	53.000	.6231	1.427	.6978	.9810	.6285-01	.3074-01	3.526	23.85	595.2
51	90.000	.28800-01	54.000	.6022	1.328	.6751	.9802	.5852-01	.2974-01	3.512	23.80	591.3
51	90.000	.32800-01	55.000	.5001	1.032	.5617	.9787	.4544-01	.2474-01	3.094	21.06	583.2
51	90.000	.36700-01	56.000	.4713	.9809	.5345	.9772	.4321-01	.2355-01	2.891	19.67	584.4
51	90.000	.40600-01	57.000	.5222	1.132	.6006	.9758	.4985-01	.2646-01	3.091	20.97	589.3
51	90.000	.48500-01	58.000	.4619	.9857	.5397	.9729	.4342-01	.2377-01	2.771	18.82	587.5
51	90.000	.56400-01	59.000	.4711	.9876	.5584	.9701	.4350-01	.2460-01	2.872	19.53	585.3
51	90.000	.76100-01	60.000	.3874	.7788	.4741	.9636	.3431-01	.2088-01	2.457	16.76	579.7
51	90.000	.95800-01	61.000	.3246	.6404	.4101	.9578	.2821-01	.1806-01	2.099	14.34	576.9
51	90.000	.11550	62.000	.2731	.5230	.3532	.9526	.2304-01	.1556-01	1.822	12.48	572.2
51	135.00	.19000-01	49.000	.7950	2.223	.8744	.9859	.9795-01	.3852-01	3.945	26.46	611.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	D(WDT DEG. R /SEC	TW DEG. R
51	135.00	.22900-01	51.000	.7202	1.828	.7877	.9859	.8054-01	.3470-01	3.788	25.50	604.3
51	180.00	.91000-02	23.000	.4575	1.156	.5192	.9803	.5095-01	.2287-01	2.413	16.25	603.9
51	180.00	.11100-01	24.000	.7370	2.648	.8589	.9803	.1167	.3784-01	3.255	21.69	623.4
51	180.00	.13100-01	25.000	.7226	2.208	.8327	.9803	.9727-01	.3668-01	3.424	22.90	616.1
51	180.00	.15000-01	26.000	.7263	2.229	.8373	.9803	.9817-01	.3688-01	3.435	22.97	616.3
51	180.00	.17000-01	27.000	.7459	2.218	.8579	.9803	.9771-01	.3779-01	3.583	23.98	614.6
51	180.00	.19000-01	28.000	.7543	2.169	.8653	.9803	.9555-01	.3812-01	3.687	24.70	612.7
51	180.00	.20900-01	29.000	.7373	1.884	.8376	.9803	.8299-01	.3690-01	3.862	25.99	604.8
51	180.00	.28800-01	32.000	.6586	1.467	.7481	.9783	.6464-01	.3295-01	3.809	25.80	592.4
51	180.00	.32800-01	33.000	.5960	1.229	.6770	.9768	.5412-01	.2982-01	3.690	25.12	583.1
51	180.00	.36700-01	34.000	.5520	1.200	.6369	.9753	.5285-01	.2806-01	3.259	22.11	589.6
51	180.00	.56400-01	37.000	.4885	.9942	.5825	.9683	.4380-01	.2566-01	3.062	20.87	581.4
51	180.00	.76100-01	38.000	.3852	.7451	.4721	.9619	.3282-01	.2079-01	2.542	17.39	573.8
51	180.00	.95800-01	39.000	.3259	.6076	.4090	.9562	.2676-01	.1802-01	2.242	15.39	567.6
51	180.00	.11550	40.000	.2677	.4962	.3453	.9512	.2186-01	.1521-01	1.853	12.73	566.5
51	180.00	.18450	42.000	.1536	.2616	.2055	.9389	.1152-01	.9051-02	1.187	8.234	548.3
51	225.00	.22900-01	30.000	.6235	1.436	.7509	.9700	.6327-01	.3308-01	3.512	23.75	595.8
51	270.00	.91000-02	63.000	.5463	1.228	.6936	.9617	.5408-01	.3055-01	3.137	21.24	593.3
51	270.00	.11100-01	64.000	.6523	1.726	.8561	.9617	.7603-01	.3771-01	3.343	22.46	607.3
51	270.00	.13100-01	65.000	.6642	1.742	.8702	.9617	.7672-01	.3833-01	3.423	23.01	606.7
51	270.00	.17000-01	67.000	.5452	1.281	.6988	.9617	.5641-01	.3078-01	3.027	20.44	597.7
51	270.00	.20900-01	69.000	.6088	1.409	.7779	.9617	.6206-01	.3427-01	3.418	23.11	596.2
51	270.00	.24900-01	71.000	.6071	1.383	.7756	.9613	.6092-01	.3417-01	3.450	23.34	594.7
51	270.00	.28800-01	73.000	.5148	1.103	.6547	.9599	.4859-01	.2884-01	3.077	20.90	588.0
51	270.00	.36700-01	75.000	.4813	1.007	.6190	.9574	.4434-01	.2727-01	2.941	20.00	585.0
51	270.00	.46500-01	77.000	.3918	.7635	.5054	.9538	.3363-01	.2226-01	2.565	17.54	575.0
51	270.00	.56400-01	78.000	.3781	.7265	.4922	.9516	.3200-01	.2168-01	2.513	17.20	572.8
51	270.00	.95800-01	80.000	.2238	.4031	.2999	.9429	.1775-01	.1321-01	1.603	11.05	561.0
51	270.00	.11550	81.000	.1844	.3311	.2515	.9398	.1459-01	.1108-01	1.326	9.139	560.4
51	315.00	.19000-01	68.000	.4917	1.013	.6224	.9592	.4462-01	.2742-01	3.046	20.74	583.0
51	315.00	.22900-01	70.000	.4465	.9767	.5735	.9592	.4302-01	.2526-01	2.622	17.78	590.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
151	4.020	4.995	-6.004	63.65	727.7	.4082	171.9	50.38	2584.	.6407-02	.1384-06	3.719
152	4.020	5.026	-6.045	63.81	727.7	.4092	171.9	50.40	2584.	.6424-02	.1384-06	3.729
153	4.020	5.029	-6.048	63.77	728.7	.4089	172.2	50.40	2586.	.6410-02	.1386-06	3.718

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
151	.3821-01	.9580-02
152	.3826-01	.9568-02
153	.3825-01	.9580-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
152	.00000	.91000-02	1.0000	.4239	.7544	.5302	.9543	.2886-01	.2028-01	2.694	18.56	561.5
152	.00000	.15000-01	4.0000	.5481	1.040	.6994	.9543	.3979-01	.2676-01	3.225	22.07	573.8
152	.00000	.17000-01	5.0000	.5181	.9612	.6566	.9543	.3677-01	.2512-01	3.129	21.46	569.8
152	.00000	.19000-01	6.0000	.5062	.9358	.6408	.9543	.3580-01	.2451-01	3.070	21.06	569.1
152	.00000	.24900-01	9.0000	.4580	.8287	.5773	.9538	.3171-01	.2209-01	2.850	19.59	565.0
152	.00000	.26900-01	10.000	.4370	.7831	.5513	.9531	.2996-01	.2109-01	2.752	18.94	563.0
151	.00000	.32800-01	12.000	.4221	.7499	.5369	.9511	.2865-01	.2052-01	2.685	18.50	561.2
151	.00000	.36700-01	13.000	.4061	.7093	.5172	.9498	.2710-01	.1976-01	2.642	18.24	557.4
151	.00000	.40600-01	14.000	.4548	.8154	.5890	.9485	.3116-01	.2250-01	2.859	19.68	563.1
151	.00000	.48500-01	15.000	.3584	.6156	.4629	.9460	.2352-01	.1769-01	2.385	16.50	553.5
151	.00000	.56400-01	16.000	.3212	.5479	.4189	.9436	.2093-01	.1601-01	2.158	14.94	551.8
151	.00000	.76100-01	17.000	.2131	.3514	.2815	.9383	.1343-01	.1076-01	1.506	10.48	542.8
151	.00000	.95800-01	18.000	.8383-01	.1336	.1113	.9337	.5103-02	.4253-02	.6259	4.381	532.3
151	.00000	.11550	19.000	.1077	.1744	.1471	.9299	.6663-02	.5622-02	.7825	5.462	537.5
151	.00000	.16480	20.000	.6627-01	.1069	.9339-01	.9236	.4086-02	.3568-02	.4846	3.385	536.3
151	.00000	.21400	22.000	.4573-01	.6823-01	.6157-01	.9220	.2607-02	.2352-02	.3855	2.737	507.0
153	2.0000	.24700-01	165.00	.3569	.6223	.4436	.9542	.2381-01	.1697-01	2.333	16.11	557.8
152	9.0000	.15000-01	157.00	.4674	.8740	.5883	.9558	.3344-01	.2251-01	2.797	19.16	571.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
152	9.0000	.17600-01	158.00	.4619	.8167	.5716	.9558	.3125-01	.2187-01	2.959	20.40	560.2
153	9.8000	.24700-01	164.00	.3554	.6188	.4383	.9556	.2367-01	.1677-01	2.327	16.06	557.5
152	10.000	.22900-01	88.000	.3965	.6981	.4895	.9560	.2671-01	.1873-01	2.554	17.62	559.3
152	10.000	.26900-01	90.000	.3760	.6445	.4632	.9548	.2466-01	.1772-01	2.512	17.39	553.0
152	10.000	.34700-01	94.000	.4101	.7309	.5193	.9521	.2796-01	.1987-01	2.601	17.91	561.9
152	12.000	.17600-01	152.00	.7336	1.887	.8194	.9829	.7220-01	.3135-01	3.341	22.43	608.6
152	12.000	.12100-01	151.00	.6755	3.689	.7855	.9829	.1411	.3005-01	2.302	15.22	638.6
152	13.000	.19400-01	153.00	.6502	1.497	.7191	.9831	.5728-01	.2751-01	3.199	21.59	599.1
153	14.600	.44200-01	169.00	.3543	.6140	.4500	.9497	.2349-01	.1721-01	2.335	16.13	556.4
152	18.500	.44200-01	106.00	.3090	.6963	.5059	.9505	.2664-01	.1936-01	2.602	17.96	557.2
153	19.600	.62900-01	175.00	.3705	.6466	.4845	.9449	.2474-01	.1853-01	2.418	16.69	558.0
152	19.800	.40800-01	101.00	.4907	.8969	.6275	.9519	.3431-01	.2401-01	3.017	20.72	567.0
152	20.000	.24900-01	89.000	.3173	.5333	.3833	.9575	.2040-01	.1466-01	2.180	15.13	548.0
152	20.000	.28800-01	91.000	.3501	.5997	.4284.	.9561	.2294-01	.1639-01	2.341	16.20	552.8
152	20.000	.32800-01	93.000	.4121	.7402	.5158	.9547	.2832-01	.1973-01	2.588	17.81	563.5
152	22.200	.62900-01	125.00	.4230	.7558	.5570	.9454	.2892-01	.2131-01	2.675	18.41	562.4
152	22.400	.44200-01	107.00	.3721	.6447	.4687	.9513	.2467-01	.1793-01	2.450	16.93	555.6
153	22.600	.10270	192.00	.2434	.4142	.3321	.9352	.1584-01	.1271-01	1.645	11.39	551.9
152	23.000	.42000-01	105.00	.4587	.8313	.5841	.9521	.3180-01	.2235-01	2.850	19.59	565.3
152	23.400	.59600-01	120.00	.5032	.9169	.6629	.9466	.3508-01	.2536-01	3.104	21.33	566.4
153	23.900	.21310	250.00	.6952-01	.1060	.9502-01	.9221	.4056-02	.3635-02	.5628	3.973	517.1
152	24.100	.82200-01	139.00	.3484	.6078	.4673	.9404	.2325-01	.1788-01	2.272	15.69	557.2
153	24.400	.19040	238.00	.1023	.1595	.1413	.9230	.6101-02	.5406-02	.7956	5.590	525.4
153	24.400	.12440	207.00	.2150	.3714	.3029	.9311	.1421-01	.1159-01	1.423	9.834	555.6
153	24.800	.16810	223.00	.1257	.2059	.1777	.9249	.7877-02	.6798-02	.8995	6.264	541.6
152	24.900	.62900-01	126.00	.4025	.7071	.5248	.9459	.2705-01	.2008-01	2.601	17.94	558.7
153	25.000	.79500-01	178.00	.4442	.7994	.6011	.9412	.3058-01	.2300-01	2.787	19.16	564.7
153	25.300	.10270	191.00	.2626	.4457	.3571	.9356	.1705-01	.1366-01	1.782	12.34	551.3
153	25.300	.10000+00	186.00	.3370	.5997	.4677	.9362	.2294-01	.1789-01	2.145	14.77	562.3
152	25.500	.60700-01	124.00	.4827	.8888	.6382	.9467	.3400-01	.2442-01	2.941	20.18	568.4
153	26.000	.12440	206.00	.2378	.4126	.3355	.9313	.1578-01	.1283-01	1.565	10.81	556.7
152	26.300	.82200-01	140.00	.3674	.6225	.4852	.9408	.2382-01	.1856-01	2.497	17.30	550.1
153	26.700	.12100	199.00	.2789	.4993	.3984	.9320	.1910-01	.1524-01	1.761	12.12	563.6
153	26.800	.16810	222.00	.1463	.2394	.2065	.9250	.9157-02	.7899-02	1.048	7.299	541.4
153	27.000	.19040	237.00	.1225	.1910	.1691	.9231	.7305-02	.6469-02	.9522	6.690	525.5
153	27.100	.21310	249.00	.8058-01	.1228	.1101	.9221	.4699-02	.4210-02	.6529	4.610	516.8
153	27.200	.80300-01	180.00	.4249	.7622	.5735	.9414	.2916-01	.2194-01	2.676	18.41	564.0
152	27.400	.40100-01	98.000	.5415	1.044	.6970	.9537	.3994-01	.2666-01	3.132	21.40	576.5
153	27.400	.16480	215.00	.1746	.2942	.2505	.9254	.1125-01	.9583-02	1.197	8.298	549.5
152	27.600	.41600-01	102.00	.4946	.9606	.6401	.9532	.3675-01	.2449-01	2.841	19.40	577.6
153	27.600	.12440	205.00	.2258	.3892	.3169	.9315	.1489-01	.1212-01	1.499	10.36	555.1
153	27.600	.18700	230.00	.1485	.2349	.2068	.9234	.8987-02	.7911-02	1.126	7.890	530.5
153	27.700	.21010	243.00	.1064	.1648	.1469	.9222	.6305-02	.5619-02	.8360	5.881	523.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA-. DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
153	27.900	.10110	188.00	.2664	.4569	.3625	.9364	.1748-01	.1387-01	1.780	12.32	553.9
152	28.000	.46800-01	110.00	.2697	.4450	.3334	.9516	.1703-01	.1275-01	1.907	13.27	542.9
153	28.200	.16810	221.00	.1557	.2563	.2205	.9251	.9803-02	.8435-02	1.107	7.702	542.9
153	28.300	.19040	236.00	.1105	.1714	.1520	.9232	.6557-02	.5814-02	.8668	6.097	523.6
153	28.300	.12200	201.00	.3139	.5536	.4447	.9321	.2118-01	.1701-01	2.021	13.93	560.4
152	28.400	.53500-01	114.00	.4714	.8560	.6098	.9495	.3275-01	.2333-01	2.921	20.07	565.7
153	28.400	.21310	248.00	.8924-01	.1362	.1220	.9222	.5209-02	.4665-02	.7219	5.096	517.2
152	28.700	.58600-01	117.00	.5324	.9885	.7007	.9479	.3782-01	.2681-01	3.212	22.02	570.0
153	28.800	.16580	217.00	.1645	.2762	.2356	.9254	.1057-01	.9011-02	1.134	-7.869	548.5
152	28.800	.60400-01	121.00	.5066	.9809	.6793	.9474	.3753-01	.2599-01	2.916	19.92	577.2
153	29.000	.21110	244.00	.9030-01	.1392	.1242	.9222	.5324-02	.4752-02	.7169	5.049	521.1
152	29.000	.65700-01	129.00	.3092	.5108	.3932	.9459	.1954-01	.1504-01	2.181	15.18	543.3
152	29.200	.72400-01	133.00	.4790	.8683	.6396	.9440	.3322-01	.2447-01	2.974	20.44	565.4
152	29.300	.79500-01	136.00	.3746	.6869	.5086	.9420	.2628-01	.1946-01	2.293	15.74	567.7
152	29.600	.92500-01	143.00	.3415	.5939	.4617	.9387	.2272-01	.1767-01	2.237	15.45	556.5
152	29.700	.10000+00	146.00	.2905	.5217	.4031	.9369	.1996-01	.1542-01	1.825	12.55	563.5
153	29.900	.12100	198.00	.2820	.5165	.4066	.9325	.1976-01	.1556-01	1.731	11.88	538.2
153	30.200	.16480	214.00	.1562	.2668	.2258	.9257	.1021-01	.8637-02	1.051	7.271	552.9
153	30.200	.18700	229.00	.1131	.1814	.1588	.9235	.6938-02	.6074-02	.8371	5.850	535.1
153	30.300	.21010	242.00	.8098-01	.1274	.1130	.9223	.4875-02	.4322-02	.6193	4.344	528.8
152	31.500	.91000-02	82.000	.5044	1.010	.6289	.9605	.3865-01	.2406-01	2.804	19.10	582.4
152	31.500	.11100-01	83.000	.6287	1.491	.8151	.9605	.5703-01	.3118-01	3.026	20.40	601.8
152	31.500	.14200-01	84.000	.9155	3.876	1.018	.9868	.1483	.3894-01	3.337	22.13	632.4
152	31.500	.16000-01	85.000	.9992	3.501	1.103	.9868	.1340	.4220-01	3.892	25.90	625.8
152	31.500	.17600-01	86.000	.8608	2.493	.9421	.9868	.9538-01	.3604-01	3.660	24.48	616.5
152	31.500	.19400-01	87.000	.7140	1.666	.7721	.9868	.6372-01	.2954-01	3.479	23.47	600.3
153	32.100	.21010	241.00	.7645-01	.1238	.1087	.9223	.4736-02	.4160-02	.5572	3.888	538.1
153	32.200	.16480	213.00	.1472	.2580	.2159	.9259	.9869-02	.8261-02	.9552	6.589	559.0
153	32.200	.17860	224.00	.1331	.2131	.1859	.9244	.8151-02	.7110-02	.9892	6.916	534.4
153	32.200	.18700	228.00	.1500	.2499	.2159	.9237	.9561-02	.8258-02	1.045	7.257	546.5
153	32.300	.12100	197.00	.3326	.6263	.4855	.9328	.2396-01	.1857-01	1.976	13.53	573.3
153	32.300	.12300	194.00	.2612	.4937	.3831	.9324	.1889-01	.1465-01	1.546	10.58	573.9
153	32.300	.12730	208.00	.1662	.2805	.2304	.9316	.1073-01	.8813-02	1.137	7.880	549.9
153	32.300	.13420	209.00	.1940	.3471	.2800	.9304	.1328-01	.1071-01	1.226	8.434	563.5
152	32.400	.10000+00	147.00	.3567	.6967	.5136	.9374	.2666-01	.1965-01	2.035	13.88	578.6
153	32.400	.10110	184.00	.3085	.5840	.4385	.9371	.2234-01	.1677-01	1.823	12.47	574.2
153	32.400	.10630	193.00	.2056	.3341	.2728	.9360	.1278-01	.1044-01	1.489	10.39	539.3
153	32.500	.85800-01	187.00	.2598	.4334	.3402	.9409	.1658-01	.1302-01	1.807	12.55	546.8
152	32.600	.79500-01	137.00	.5305	1.052	.7412	.9427	.4024-01	.2836-01	2.980	20.31	580.8
153	32.600	.80800-01	176.00	.5032	1.033	.7148	.9423	.3953-01	.2734-01	2.734	18.58	586.6
152	32.700	.67400-01	132.00	.3804	.6630	.4939	.9461	.2536-01	.1889-01	2.484	17.16	557.0
152	32.700	.72400-01	134.00	.4382	.7878	.5809	.9447	.3014-01	.2222-01	2.749	18.91	563.7
152	32.800	.65700-01	130.00	.3359	.5551	.4256	.9466	.2124-01	.1628-01	2.369	16.48	543.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
153	32.800	.16680	210.00	.1482	.2558	.2156	.9257	.9787-02	.8247-02	.9812	6.781	555.5
153	32.800	.18880	225.00	.1211	.1912	.1682	.9236	.7314-02	.6436-02	.9197	6.446	530.1
152	32.900	.58600-01	118.00	.4492	.8538	.5931	.9488	.3267-01	.2269-01	2.639	18.05	574.1
152	32.900	.60400-01	122.00	.5527	1.134	.7524	.9482	.4340-01	.2878-01	3.001	20.40	585.8
153	32.900	.61300-01	171.00	.4717	.9311	.6346	.9480	.3562-01	.2427-01	2.664	18.16	581.0
152	33.000	.53500-01	115.00	.3881	.6817	.4934	.9504	.2608-01	.1888-01	2.508	17.31	558.7
152	33.200	.48300-01	113.00	.2700	.4451	.3326	.9522	.1703-01	.1272-01	1.910	13.29	542.7
153	33.400	.42800-01	166.00	.4594	.8988	.5926	.9540	.3438-01	.2267-01	2.619	17.87	579.6
152	33.500	.40100-01	99.000	.5226	1.014	.6685	.9550	.3881-01	.2558-01	3.001	20.49	577.6
152	33.600	.38300-01	97.000	.5162	.9732	.6520	.9556	.3723-01	.2495-01	3.060	20.95	572.7
152	33.700	.36700-01	96.000	.4811	.8931	.6029	.9562	.3417-01	.2306-01	2.903	19.90	569.9
152	33.900	.33800-01	95.000	.4552	.8181	.5616	.9573	.3130-01	.2149-01	2.856	19.65	563.6
153	34.700	.21010	240.00	.9318-01	.1530	.1338	.9224	.5853-02	.5117-02	.6642	4.623	542.3
153	34.700	.18700	227.00	.1213	.1996	.1730	.9238	.7637-02	.6619-02	.8621	5.999	542.9
153	34.900	.16480	212.00	.1758	.3171	.2621	.9261	.1213-01	.1002-01	1.100	7.561	565.1
152	35.100	.10000+00	148.00	.4124	.8412	.6036	.9379	.3218-01	.2309-01	2.252	15.32	584.9
153	35.200	.23900-01	161.00	.2743	.4496	.3233	.9612	.1720-01	.1237-01	1.962	13.66	541.7
152	35.300	.92500-01	145.00	.3155	.5568	.4270	.9397	.2130-01	.1634-01	2.027	13.98	559.7
152	35.300	.23100-01	160.00	.2509	.4090	.2951	.9613	.1565-01	.1129-01	1.808	12.60	539.4
153	35.400	.18800	231.00	.1571	.2613	.2257	.9238	.9996-02	.8633-02	1.097	7.624	546.0
153	35.500	.12100	196.00	.3553	.6903	.5253	.9333	.2641-01	.2010-01	2.041	13.93	578.5
153	35.600	.16580	216.00	.1767	.3148	.2616	.9261	.1204-01	.1001-01	1.123	7.729	562.6
152	35.800	.80600-01	138.00	.5162	1.061	.7299	.9430	.4058-01	.2792-01	2.799	19.03	585.9
153	35.900	.21310	247.00	.8565-01	.1363	.1204	.9223	.5213-02	.4605-02	.6427	4.498	532.5
153	36.000	.19040	235.00	.1411	.2297	.2000	.9236	.8789-02	.7652-02	1.019	7.105	539.8
153	36.200	.16810	220.00	.1634	.2799	.2363	.9258	.1071-01	.9040-02	1.094	7.570	553.6
152	36.200	.72400-01	135.00	.3641	.6446	.4777	.9453	.2466-01	.1828-01	2.329	16.05	560.5
153	36.300	.12200	200.00	.3527	.6898	.5236	.9332	.2639-01	.2003-01	2.012	13.72	579.6
152	36.600	.65700-01	131.00	.3888	.6689	.4987	.9474	.2559-01	.1908-01	2.585	17.88	553.9
153	36.700	.18700	226.00	.1264	.2050	.1785	.9240	.7843-02	.6826-02	.9192	6.411	538.6
153	36.900	.16480	211.00	.1421	.2452	.2059	.9263	.9380-02	.7877-02	.9426	6.515	555.3
153	36.900	.10110	187.00	.3858	.7583	.5551	.9379	.2901-01	.2123-01	2.189	14.92	580.3
152	37.000	.60400-01	123.00	.6142	1.368	.8535	.9491	.5232-01	.3265-01	3.104	20.99	595.6
153	37.000	.12440	204.00	.3025	.5652	.4338	.9329	.2162-01	.1682-01	1.814	12.42	571.9
152	37.100	.58600-01	119.00	.5203	.9951	.6847	.9497	.3807-01	.2619-01	3.036	20.76	575.2
153	37.200	.21310	246.00	.9099-01	.1435	.1271	.9224	.5489-02	.4861-02	.6933	4.860	529.5
153	37.600	.16810	219.00	.1294	.2174	.1848	.9260	.8316-02	.7068-02	.8910	6.180	548.7
152	37.800	.10270	150.00	.3302	.5949	.4559	.9377	.2276-01	.1748-01	2.067	14.21	564.1
153	37.900	.12100	195.00	.1839	.3136	.2534	.9337	.1199-01	.9694-02	1.240	8.582	552.4
153	38.000	.80300-01	179.00	.4689	.9021	.6436	.9435	.3451-01	.2462-01	2.722	18.59	576.9
152	38.500	.46800-01	112.00	.2937	.4936	.3613	.9538	.1888-01	.1382-01	2.020	14.01	548.0
153	38.600	.12440	203.00	.2561	.4565	.3626	.9331	.1746-01	.1387-01	1.626	11.19	562.7
153	38.700	.10000+00	185.00	.3053	.5507	.4206	.9385	.2107-01	.1609-01	1.910	13.13	565.1

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
152	38.900	.82200-01	141.00	.3884	.7151	.5247	.9431	.2736-01	.2008-01	2.366	16.24	568.4
152	39.300	.41600-01	104.00	.5198	1.068	.6726	.9558	.4087-01	.2573-01	2.818	19.16	585.9
153	39.500	.10270	190.00	.3139	.5619	.4322	.9380	.2150-01	.1653-01	1.983	13.64	563.6
153	39.600	.16810	218.00	.9313-01	.1539	.1314	.9262	.5886-02	.5028-02	.6577	4.574	544.1
153	39.900	.19040	233.00	.7319-01	.1158	.1016	.9239	.4429-02	.3888-02	.5546	3.886	530.6
153	40.100	.79500-01	177.00	.3600	.6480	.4790	.9441	.2479-01	.1832-01	2.258	15.52	564.7
153	40.200	.12440	202.00	.2060	.3583	.2875	.9333	.1371-01	.1100-01	1.351	9.330	557.2
153	40.300	.21310	245.00	.5413-01	.8415-01	.7482-01	.9225	.3219-02	.2862-02	.4230	2.974	524.4
152	41.100	.82200-01	142.00	.3879	.6908	.5155	.9436	.2643-01	.1972-01	2.463	16.96	561.7
153	41.100	.60700-01	173.00	.5431	1.086	.7248	.9499	.4156-01	.2772-01	3.027	20.61	583.0
153	42.600	.59600-01	172.00	.4532	.8400	.5868	.9505	.3213-01	.2245-01	2.743	18.80	570.4
153	43.200	.42000-01	168.00	.4924	.9483	.6227	.9565	.3628-01	.2382-01	2.855	19.50	577.1
153	43.400	.82200-01	181.00	.2853	.4957	.3742	.9440	.1896-01	.1431-01	1.873	12.94	557.0
152	43.600	.62900-01	128.00	.4307	.7693	.5531	.9497	.2943-01	.2116-01	2.724	18.76	562.3
152	45.000	.22900-01	8.0000	.5534	1.119	.6782	.9636	.4279-01	.2595-01	3.049	20.75	583.6
153	46.100	.62900-01	174.00	.4207	.7632	.5415	.9503	.2919-01	.2072-01	2.613	17.95	566.3
153	47.700	.40800-01	167.00	.5363	1.042	.6738	.9579	.3986-01	.2578-01	3.080	21.02	578.6
152	48.400	.44200-01	109.00	.4916	.9226	.6155	.9569	.3530-01	.2355-01	2.930	20.07	571.9
152	50.000	.19400-01	156.00	.9097	2.474	.9912	.9870	.9466-01	.3792-01	4.005	26.84	612.6
152	51.000	.12100-01	154.00	.7148	3.069	.7940	.9870	.1174	.3038-01	2.594	17.20	632.8
152	51.000	.17600-01	155.00	.8115	2.444	.8887	.9870	.9350-01	.3400-01	3.382	22.59	618.7
153	51.900	.44800-01	170.00	.4124	.7358	.5071	.9575	.2815-01	.1940-01	2.615	18.00	562.9
153	53.200	.24700-01	163.00	.4617	.8431	.5483	.9651	.3225-01	.2097-01	2.844	19.53	567.6
153	65.200	.24700-01	162.00	.5827	1.133	.6906	.9678	.4336-01	.2642-01	3.343	22.81	578.7
151	90.000	.91000-02	44.000	.5739	1.578	.6921	.9731	.6029-01	.2645-01	2.507	16.80	613.3
151	90.000	.11100-01	45.000	.7208	1.740	.8554	.9731	.6650-01	.3268-01	3.421	23.04	603.5
151	90.000	.13100-01	46.000	.7458	1.715	.8792	.9731	.6551-01	.3359-01	3.669	24.77	598.9
151	90.000	.17000-01	48.000	.6644	1.432	.7762	.9731	.5473-01	.2966-01	3.446	23.35	591.9
151	90.000	.20900-01	50.000	.7298	1.490	.8457	.9731	.5693-01	.3231-01	3.977	27.05	585.0
151	90.000	.24900-01	52.000	.4783	.9039	.5490	.9726	.3454-01	.2098-01	2.824	19.33	573.1
151	90.000	.26900-01	53.000	.5906	1.130	.6822	.9719	.4319-01	.2607-01	3.438	23.51	575.3
151	90.000	.28800-01	54.000	.5702	1.074	.6595	.9711	.4105-01	.2520-01	3.379	23.13	572.6
151	90.000	.32800-01	55.000	.5080	.9149	.5873	.9696	.3496-01	.2244-01	3.176	21.85	564.1
151	90.000	.36700-01	56.000	.5171	.9353	.6029	.9682	.3574-01	.2303-01	3.215	22.11	564.9
151	90.000	.40600-01	57.000	.4974	.9229	.5874	.9668	.3526-01	.2244-01	2.999	20.56	569.8
151	90.000	.48500-01	58.000	.4890	.8987	.5854	.9639	.3434-01	.2237-01	2.983	20.47	568.0
151	90.000	.56400-01	59.000	.4356	.7921	.5279	.9611	.3027-01	.2017-01	2.691	18.49	566.0
151	90.000	.76100-01	60.000	.3509	.6264	.4395	.9546	.2393-01	.1675-01	2.219	15.28	562.2
151	90.000	.95800-01	61.000	.2831	.5006	.3646	.9486	.1913-01	.1393-01	1.812	12.49	560.1
151	90.000	.11550	62.000	.2197	.3851	.2907	.9431	.1471-01	.1111-01	1.422	9.816	558.2
151	135.00	.19000-01	49.000	.7553	1.613	.8630	.9765	.6163-01	.3297-01	3.949	26.77	590.8
151	135.00	.22900-01	51.000	.6690	1.377	.7608	.9765	.5260-01	.2907-01	3.619	24.59	586.1
151	180.00	.91000-02	23.000	.3825	.7251	.4428	.9712	.2771-01	.1692-01	2.250	15.40	573.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
151	180.00	.11100-01	24.000	.6618	1.573	.7943	.9712	.6011-01	.3035-01	3.176	21.40	602.1
151	180.00	.13100-01	25.000	.6855	1.515	.8139	.9712	.5789-01	.3110-01	3.481	23.55	594.8
151	180.00	.15000-01	26.000	.6646	1.454	.7878	.9712	.5556-01	.3010-01	3.403	23.04	593.6
151	180.00	.17000-01	27.000	.6870	1.467	.8113	.9712	.5607-01	.3100-01	3.591	24.35	590.8
151	180.00	.19000-01	28.000	.7177	1.526	.8470	.9712	.5830-01	.3236-01	3.768	25.55	590.3
151	180.00	.20900-01	29.000	.6916	1.401	.8097	.9712	.5353-01	.3094-01	3.797	25.84	584.0
151	180.00	.28800-01	32.000	.5728	1.080	.6696	.9692	.4125-01	.2558-01	3.392	23.22	572.7
151	180.00	.32800-01	33.000	.5330	.9606	.6225	.9677	.3670-01	.2378-01	3.328	22.89	564.2
151	180.00	.36700-01	34.000	.5304	.9845	.6282	.9663	.3761-01	.2400-01	3.197	21.92	569.9
151	180.00	.48500-01	36.000	.4533	.8140	.5451	.9620	.3110-01	.2083-01	2.845	19.57	563.4
151	180.00	.56400-01	37.000	.4278	.7582	.5201	.9593	.2897-01	.1987-01	2.729	18.81	560.7
151	180.00	.76100-01	38.000	.3493	.6029	.4357	.9528	.2304-01	.1665-01	2.308	15.96	554.7
151	180.00	.95800-01	39.000	.2817	.4738	.3589	.9469	.1810-01	.1371-01	1.932	13.41	548.1
151	180.00	.11550	40.000	.2327	.3927	.3053	.9416	.1500-01	.1167-01	1.588	11.01	549.0
151	180.00	.18450	42.000	.1129	.1818	.1554	.9278	.6945-02	.5938-02	.8288	5.791	535.6
151	225.00	.22900-01	30.000	.5856	1.109	.7172	.9611	.4235-01	.2740-01	3.451	23.62	573.4
151	270.00	.91000-02	63.000	.4202	.7297	.5255	.9528	.2788-01	.2008-01	2.754	19.03	556.1
151	270.00	.11100-01	64.000	.5364	.9765	.6815	.9528	.3731-01	.2604-01	3.309	22.73	566.2
151	270.00	.13100-01	65.000	.6433	1.364	.8572	.9528	.5210-01	.3275-01	3.387	22.97	589.9
151	270.00	.17000-01	67.000	.6865	1.357	.8955	.9528	.5184-01	.3421-01	3.864	26.34	580.4
151	270.00	.20900-01	69.000	.5746	1.105	.7431	.9528	.4223-01	.2839-01	3.327	22.73	576.1
151	270.00	.24900-01	71.000	.5209	.9905	.6731	.9523	.3784-01	.2572-01	3.055	20.90	574.2
151	270.00	.28800-01	73.000	.4927	.9025	.6339	.9509	.3448-01	.2422-01	3.017	20.71	567.4
151	270.00	.36700-01	75.000	.4441	.8002	.5769	.9483	.3057-01	.2204-01	2.775	19.09	564.1
151	270.00	.48500-01	77.000	.3655	.6361	.4783	.9445	.2431-01	.1828-01	2.388	16.49	556.7
151	270.00	.56400-01	78.000	.3364	.5795	.4440	.9422	.2214-01	.1697-01	2.230	15.43	554.2
151	270.00	.95900-01	80.000	.1686	.2841	.2322	.9326	.1086-01	.8873-02	1.152	7.992	548.8
151	270.00	.11550	81.000	.1312	.2222	.1851	.9290	.8491-02	.7071-02	.8910	6.176	550.0
151	315.00	.19000-01	68.000	.5083	.9336	.6574	.9502	.3567-01	.2512-01	3.102	21.29	567.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
210	5.500	5.024	-5.995	126.6	722.7	.1361	102.5	50.18	2730.	.3583-02	.8249-07	3.686
211	5.500	5.024	-5.995	126.3	722.7	.1358	102.5	50.18	2730.	.3575-02	.8249-07	3.677
212	5.500	5.004	-5.968	126.1	722.7	.1355	102.5	50.16	2730.	.3568-02	.8249-07	3.670

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
210	.3016-01	.1280-01
211	.3013-01	.1282-01
212	.3010-01	.1283-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
211	.00000	.91000-02	1.0000	.3219	.5054	.3970	.9479	.1523-01	.1196-01	1.930	13.57	523.7
211	.00000	.15000-01	4.0000	.5050	.8523	.6411	.9479	.2568-01	.1931-01	2.698	18.75	545.3
211	.00000	.17000-01	5.0000	.4829	.7965	.6075	.9479	.2399-01	.1830-01	2.671	18.62	539.1
211	.00000	.19000-01	6.0000	.4584	.7626	.5786	.9479	.2297-01	.1743-01	2.502	17.42	541.5
211	.00000	.24900-01	9.0000	.4236	.7066	.5365	.9474	.2129-01	.1616-01	2.303	16.03	542.2
211	.00000	.26900-01	10.000	.4055	.6716	.5140	.9467	.2023-01	.1549-01	2.228	15.53	540.3
210	.00000	.32800-01	12.000	.3623	.5999	.4641	.9446	.1809-01	.1400-01	1.994	13.90	540.2
210	.00000	.36700-01	13.000	.3683	.6094	.4749	.9433	.1838-01	.1432-01	2.029	14.14	540.0
210	.00000	.40600-01	14.000	.4360	.7356	.5709	.9420	.2219-01	.1722-01	2.333	16.21	545.2
210	.00000	.48500-01	15.000	.3323	.5401	.4335	.9393	.1629-01	.1307-01	1.893	13.16	534.8
210	.00000	.56400-01	16.000	.2566	.4070	.3348	.9368	.1228-01	.1010-01	1.514	10.63	527.1
210	.00000	.76100-01	17.000	.1876	.2932	.2497	.9310	.8844-02	.7530-02	1.136	7.997	522.0
210	.00000	.11550	19.000	.7743-01	.1204	.1077	.9213	.3632-02	.3248-02	.4728	3.332	520.2
210	.00000	.16480	20.000	.4377-01	.6805-01	.6350-01	.9129	.2053-02	.1915-02	.2674	1.885	520.1
210	.00000	.21400	22.000	.2995-01	.4264-01	.4091-01	.9100	.1286-02	.1234-02	.2192	1.581	479.9
212	2.0000	.24700-01	165.00	.3266	.5232	.4062	.9479	.1575-01	.1222-01	1.890	13.25	530.4
211	9.0000	.15000-01	157.00	.4640	.7620	.5783	.9495	.2296-01	.1742-01	2.583	18.02	537.9
211	9.0000	.17600-01	158.00	.3996	.6477	.4955	.9495	.1951-01	.1493-01	2.272	15.89	534.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
212	9.8000	.24700-01	164.00	.3153	.5009	.3884	.9492	.1508-01	.1169-01	1.851	12.99	527.6
211	10.000	.22900-01	88.000	.3572	.5830	.4438	.9496	.1756-01	.1337-01	2.008	14.03	536.1
211	10.000	.26900-01	90.000	.3220	.5171	.3998	.9484	.1558-01	.1204-01	1.858	13.01	531.2
211	10.000	.34700-01	94.000	.3297	.5156	.4099	.9457	.1553-01	.1235-01	1.990	14.01	522.3
211	12.000	.17600-01	152.00	.7925	1.541	.9002	.9753	.4641-01	.2712-01	3.553	24.31	573.8
211	12.000	.12100-01	151.00	.7831	2.006	.9216	.9753	.6043-01	.2776-01	2.797	18.83	604.1
211	13.000	.19400-01	153.00	.6674	1.213	.7500	.9755	.3654-01	.2259-01	3.231	22.25	562.0
212	14.600	.44200-01	169.00	.3302	.5223	.4172	.9433	.1572-01	.1256-01	1.953	13.72	526.2
211	18.500	.44200-01	106.00	.3538	.5736	.4504	.9441	.1728-01	.1357-01	2.010	14.06	534.1
212	19.600	.62900-01	175.00	.3279	.5174	.4237	.9382	.1557-01	.1275-01	1.947	13.68	525.4
211	19.800	.40800-01	101.00	.4643	.7746	.5941	.9455	.2334-01	.1790-01	2.524	17.57	542.2
211	20.000	.24900-01	89.000	.2519	.3962	.3065	.9511	.1194-01	.9232-02	1.506	10.59	524.2
211	20.000	.28800-01	91.000	.2726	.4327	.3349	.9497	.1303-01	.1009-01	1.603	11.25	527.4
211	20.000	.32800-01	93.000	.3415	.5579	.4272	.9483	.1681-01	.1287-01	1.917	13.39	536.3
211	22.200	.62900-01	125.00	.3496	.5680	.4573	.9387	.1711-01	.1378-01	1.980	13.84	534.7
211	22.400	.44200-01	107.00	.3228	.5179	.4075	.9448	.1560-01	.1228-01	1.866	13.07	530.8
212	22.600	.10270	192.00	.2076	.3229	.2800	.9276	.9719-02	.8426-02	1.264	8.904	520.4
211	23.000	.42000-01	105.00	.4160	.6919	.5310	.9457	.2084-01	.1600-01	2.271	15.82	541.4
211	23.400	.59600-01	120.00	.4011	.6604	.5247	.9400	.1989-01	.1581-01	2.224	15.51	538.6
212	23.900	.21310	250.00	.5146-01	.7447-01	.7122-01	.9102	.2241-02	.2143-02	.3622	2.598	488.8
211	24.100	.82200-01	139.00	.3083	.4941	.4114	.9334	.1488-01	.1239-01	1.785	12.51	530.5
212	24.400	.19040	238.00	.6551-01	.9727-01	.9195-01	.9119	.2927-02	.2767-02	.4363	3.108	501.3
212	24.400	.12440	207.00	.1754	.2782	.2454	.9228	.8372-02	.7387-02	1.033	7.248	527.1
212	24.800	.16810	223.00	.8859-01	.1377	.1273	.9147	.4145-02	.3832-02	.5400	3.806	520.1
211	24.900	.62900-01	126.00	.3502	.5658	.4556	.9393	.1704-01	.1373-01	2.002	14.01	533.0
212	25.000	.79500-01	178.00	.3779	.6071	.5025	.9343	.1827-01	.1512-01	2.176	15.24	531.3
212	25.300	.10270	191.00	.2294	.3576	.3091	.9281	.1076-01	.9304-02	1.392	9.806	521.1
212	25.300	.10000+00	186.00	.2734	.4354	.3720	.9288	.1310-01	.1119-01	1.598	11.21	528.4
211	25.500	.60700-01	124.00	.4149	.6903	.5453	.9401	.2080-01	.1643-01	2.264	15.77	541.5
212	26.000	.12440	206.00	.1898	.3021	.2659	.9230	.9092-02	.8002-02	1.110	7.788	528.3
211	26.300	.82200-01	140.00	.2495	.3946	.3298	.9338	.1189-01	.9936-02	1.477	10.38	526.1
212	26.700	.12100	199.00	.2310	.3725	.3249	.9239	.1121-01	.9779-02	1.322	9.254	532.5
212	26.800	.16810	222.00	.1076	.1671	.1543	.9150	.5030-02	.4645-02	.6563	4.626	519.9
212	27.000	.19040	237.00	.9147-01	.1362	.1286	.9121	.4100-02	.3870-02	.6054	4.308	502.8
212	27.100	.21310	249.00	.6312-01	.9161-01	.8753-01	.9103	.2757-02	.2634-02	.4414	3.163	490.3
212	27.200	.80300-01	180.00	.3557	.5740	.4737	.9345	.1727-01	.1426-01	2.035	14.24	532.6
211	27.400	.40100-01	98.000	.4518	.7739	.5788	.9473	.2332-01	.1744-01	2.363	16.39	549.1
212	27.400	.16480	215.00	.1120	.1771	.1624	.9155	.5329-02	.4888-02	.6634	4.660	525.9
211	27.600	.41600-01	102.00	.4480	.7723	.5769	.9468	.2326-01	.1738-01	2.323	16.10	550.5
212	27.600	.12440	205.00	.1842	.2920	.2570	.9233	.8788-02	.7734-02	1.085	7.618	526.9
212	27.600	.18700	230.00	.1138	.1714	.1611	.9126	.5157-02	.4850-02	.7376	5.236	507.4
212	27.700	.21010	243.00	.8068-01	.1185	.1129	.9105	.3567-02	.3399-02	.5497	3.926	496.3
212	27.900	.10110	188.00	.2419	.3791	.3256	.9290	.1141-01	.9800-02	1.454	10.23	523.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
211	28.000	.46800-01	110.00	.2200	.3418	.2735	.9451	.1030-01	.8239-02	1.344	9.476	519.8
212	28.200	.16610	221.00	.1154	.1800	.1660	.9151	.5417-02	.4995-02	.6999	4.929	521.2
212	28.300	.19040	236.00	.8240-01	.1225	.1156	.9122	.3687-02	.3480-02	.5475	3.898	501.9
212	28.300	.12200	201.00	.2492	.3985	.3485	.9239	.1199-01	.1049-01	1.446	10.14	529.8
211	28.400	.53500-01	114.00	.3750	.6193	.4838	.9430	.1866-01	.1458-01	2.070	14.43	539.5
212	28.400	.21310	248.00	.6102-01	.8873-01	.8473-01	.9104	.2670-02	.2550-02	.4250	3.044	491.2
211	28.700	.58600-01	117.00	.4418	.7368	.5772	.9414	.2220-01	.1739-01	2.402	16.72	542.2
212	28.800	.16580	217.00	.1158	.1826	.1676	.9155	.5495-02	.5043-02	.6879	4.834	525.2
211	28.800	.60400-01	121.00	.4354	.7430	.5765	.9409	.2238-01	.1737-01	2.289	15.88	548.1
212	29.000	.21110	244.00	.6581-01	.9625-01	.9178-01	.9105	.2897-02	.2762-02	.4524	3.235	494.2
211	29.000	.65700-01	129.00	.2561	.3973	.3266	.9392	.1197-01	.9839-02	1.568	11.06	519.4
211	29.200	.72400-01	133.00	.3933	.6424	.5198	.9372	.1935-01	.1566-01	2.208	15.42	536.3
211	29.300	.79500-01	136.00	.3417	.5674	.4605	.9352	.1709-01	.1387-01	1.871	13.03	541.0
211	29.600	.92500-01	143.00	.2894	.4625	.3891	.9315	.1393-01	.1172-01	1.683	11.80	529.6
211	29.700	.10000+00	146.00	.2628	.4314	.3626	.9296	.1299-01	.1092-01	1.465	10.22	537.7
212	29.900	.12100	198.00	.2449	.4007	.3468	.9244	.1206-01	.1044-01	1.370	9.567	536.8
212	30.200	.16480	214.00	.1114	.1777	.1624	.9159	.5349-02	.4887-02	.6492	4.552	529.0
212	30.300	.21010	242.00	.6803-01	.1008	.9591-01	.9107	.3035-02	.2886-02	.4549	3.242	500.5
211	31.500	.11100-01	83.000	.5961	1.106	.7563	.9540	.3331-01	.2279-01	2.816	19.35	565.8
211	31.500	.14200-01	84.000	1.028	2.462	1.172	.9790	.7417-01	.3531-01	3.845	25.96	598.6
211	31.500	.16000-01	85.000	1.019	2.230	1.151	.9790	.6719-01	.3467-01	4.087	27.72	589.6
211	31.500	.19400-01	87.000	.6902	1.243	.7615	.9790	.3744-01	.2294-01	3.380	23.30	560.1
212	32.100	.21010	241.00	.7242-01	.1091	.1035	.9107	.3284-02	.3114-02	.4682	3.322	507.9
212	32.200	.16480	213.00	.1089	.1763	.1603	.9161	.5307-02	.4825-02	.6188	4.328	533.8
212	32.200	.17860	224.00	.1010	.1543	.1437	.9141	.4645-02	.4325-02	.6364	4.502	513.4
212	32.200	.18700	228.00	.1349	.2118	.1972	.9130	.6373-02	.5935-02	.8081	5.684	523.6
212	32.300	.12100	197.00	.2810	.4662	.4007	.9248	.1403-01	.1206-01	1.539	10.72	540.7
212	32.300	.12300	194.00	.2353	.3942	.3385	.9244	.1186-01	.1019-01	1.269	8.831	543.4
212	32.300	.12730	208.00	.1346	.2108	.1862	.9234	.6345-02	.5603-02	.8097	5.698	522.8
212	32.300	.13420	209.00	.1434	.2334	.2052	.9219	.7025-02	.6176-02	.8084	5.649	535.3
211	32.400	.10000+00	147.00	.3235	.5631	.4605	.9301	.1696-01	.1387-01	1.655	11.45	552.8
212	32.400	.10110	184.00	.3010	.5051	.4202	.9298	.1520-01	.1265-01	1.620	11.27	543.8
212	32.400	.10630	193.00	.1749	.2658	.2316	.9284	.7998-02	.6969-02	1.113	7.685	511.2
212	32.500	.85800-01	183.00	.2220	.3416	.2897	.9340	.1028-01	.8690-02	1.379	9.740	516.3
211	32.600	.79500-01	137.00	.4128	.7328	.5735	.9358	.2207-01	.1728-01	2.058	14.21	557.2
212	32.600	.80800-01	176.00	.5091	.9120	.7122	.9354	.2745-01	.2143-01	2.507	17.29	559.1
211	32.700	.67400-01	132.00	.3041	.4882	.3940	.9395	.1471-01	.1187-01	1.756	12.30	531.0
211	32.700	.72400-01	134.00	.3454	.5637	.4546	.9380	.1698-01	.1370-01	1.941	13.56	536.1
211	32.800	.65700-01	130.00	.2967	.4628	.3781	.9400	.1394-01	.1139-01	1.800	12.68	521.3
212	32.800	.16680	210.00	.1087	.1749	.1595	.9159	.5263-02	.4800-02	.6250	4.376	531.7
212	32.800	.18880	225.00	.1018	.1539	.1444	.9128	.4632-02	.4347-02	.6535	4.633	509.3
211	32.900	.58600-01	118.00	.4586	.7726	.5991	.9423	.2328-01	.1805-01	2.457	17.08	544.9
211	32.900	.60400-01	122.00	.5025	.9006	.6769	.9417	.2713-01	.2039-01	2.475	17.07	559.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
212	32.900	.61300-01	171.00	.4335	.7407	.5725	.9414	.2229-01	.1723-01	2.273	15.77	548.4
211	33.000	.53500-01	115.00	.3246	.5268	.4135	.9440	.1587-01	.1246-01	1.841	12.87	534.4
211	33.200	.48300-01	113.00	.2231	.3480	.2771	.9457	.1048-01	.8347-02	1.354	9.533	521.3
212	33.400	.42800-01	166.00	.4148	.7069	.5293	.9477	.2127-01	.1593-01	2.183	15.15	547.8
211	33.500	.40100-01	99.000	.4620	.7919	.5879	.9486	.2386-01	.1771-01	2.415	16.75	549.2
211	33.600	.38300-01	97.000	.4604	.7758	.5801	.9492	.2337-01	.1747-01	2.465	17.13	544.9
211	33.700	.36700-01	96.000	.4815	.8128	.6053	.9498	.2449-01	.1824-01	2.571	17.87	545.4
211	33.900	.33800-01	95.000	.4280	.7069	.5309	.9509	.2130-01	.1599-01	2.362	16.47	539.5
212	34.700	.21010	240.00	.8450-01	.1285	.1216	.9109	.3866-02	.3659-02	.5369	3.802	511.5
212	34.700	.18700	227.00	.1047	.1626	.1516	.9132	.4894-02	.4561-02	.6402	4.513	519.6
212	34.900	.16480	212.00	.1322	.2174	.1965	.9165	.6542-02	.5914-02	.7331	5.114	538.3
211	35.100	.10000+00	148.00	.3562	.6357	.5127	.9306	.1915-01	.1544-01	1.763	12.17	558.3
212	35.200	.23900-01	161.00	.2040	.3081	.2408	.9547	.9271-02	.7247-02	1.314	9.316	508.7
211	35.300	.92500-01	145.00	.2450	.3953	.3293	.9327	.1191-01	.9922-02	1.404	9.823	532.5
211	35.300	.22100-01	160.00	.2111	.3229	.2502	.9549	.9728-02	.7537-02	1.328	9.388	513.9
212	35.400	.18800	231.00	.1373	.2144	.1997	.9131	.6452-02	.6009-02	.8309	5.851	521.6
212	35.500	.12100	196.00	.2961	.5003	.4258	.9254	.1506-01	.1281-01	1.578	10.96	545.6
212	35.600	.16580	216.00	.1359	.2223	.2013	.9164	.6690-02	.6059-02	.7605	5.310	536.7
211	35.800	.80600-01	138.00	.5217	.9632	.7375	.9361	.2902-01	.2222-01	2.477	17.03	565.0
212	35.900	.21310	247.00	.8806-01	.1318	.1251	.9107	.3967-02	.3766-02	.5768	4.100	505.0
212	36.000	.19040	235.00	.1289	.1987	.1857	.9129	.5979-02	.5588-02	.7980	5.634	516.9
212	36.200	.16810	220.00	.1322	.2117	.1930	.9161	.6370-02	.5808-02	.7654	5.364	530.2
211	36.200	.72400-01	135.00	.2964	.4773	.3861	.9387	.1438-01	.1163-01	1.702	11.92	532.0
212	36.300	.12200	200.00	.3138	.5370	.4551	.9253	.1616-01	.1370-01	1.642	11.39	548.8
211	36.600	.65700-01	131.00	.2971	.4769	.3824	.9408	.1437-01	.1152-01	1.716	12.02	530.9
212	36.700	.16700	226.00	.1014	.1561	.1455	.9134	.4697-02	.4380-02	.6301	4.450	516.2
212	36.900	.16480	211.00	.1088	.1745	.1585	.9167	.5251-02	.4770-02	.6291	4.407	530.6
212	36.900	.10110	187.00	.3302	.5637	.4633	.9306	.1696-01	.1394-01	1.73[illegible]	12.03	548.2
211	37.000	.60400-01	123.00	.5205	.9579	.7053	.9426	.2886-01	.2125-01	2.481	17.07	564.4
212	37.000	.12440	204.00	.2903	.4866	.4166	.9249	.1464-01	.1254-01	1.565	10.88	543.6
211	37.100	.58600-01	119.00	.3859	.6446	.4998	.9432	.1942-01	.1506-01	2.094	14.58	542.6
212	37.200	.21310	246.00	.6876-01	.1023	.9717-01	.9108	.3079-02	.2924-02	.4562	3.247	502.2
212	37.600	.16810	219.00	.1017	.1607	.1468	.9163	.4835-02	.4418-02	.6021	4.229	525.9
211	37.800	.10270	150.00	.2891	.4799	.3997	.9304	.1446-01	.1204-01	1.583	11.03	540.9
212	37.900	.12100	195.00	.1529	.2413	.2100	.9258	.7262-02	.6319-02	.9077	6.378	525.4
212	38.000	.80300-01	179.00	.4381	.7472	.5936	.9367	.2249-01	.1786-01	2.304	15.99	548.0
211	38.500	.46800-01	112.00	.2683	.4277	.3337	.9474	.1289-01	.1005-01	1.567	10.99	528.8
212	38.600	.12440	203.00	.2366	.3857	.3330	.9251	.1161-01	.1002-01	1.332	9.305	535.7
212	38.700	.10000+00	185.00	.2671	.4330	.3626	.9313	.1303-01	.1091-01	1.516	10.60	534.1
211	38.900	.82200-01	141.00	.3980	.6683	.5360	.9363	.2013-01	.1615-01	2.142	14.90	544.0
211	39.300	.41600-01	104.00	.4592	.8145	.5894	.9494	.2454-01	.1775-01	2.291	15.82	557.0
212	39.500	.10270	190.00	.2618	.4239	.3561	.9307	.1276-01	.1072-01	1.488	10.41	533.7
212	39.600	.16810	218.00	.7703-01	.1208	.1104	.9165	.3636-02	.3324-02	.4622	3.252	523.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K025)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
212	39.900	.19040	233.00	.4674-01	.7065-01	.6615-01	.9133	.2126-02	.1991-02	.3004	2.130	509.1
212	40.100	.79500-01	177.00	.3319	.5374	.4365	.9374	.1617-01	.1314-01	1.888	13.21	533.7
212	40.200	.12440	202.00	.1800	.2896	.2508	.9254	.8715-02	.7547-02	1.035	7.244	531.7
212	40.300	.21310	245.00	.3527-01	.5212-01	.4952-01	.9110	.1569-02	.1490-02	.2372	1.692	499.2
211	41.100	.82200-01	142.00	.3545	.5870	.4729	.9368	.1768-01	.1425-01	1.949	13.58	540.2
212	41.100	.60700-01	173.00	.4460	.7576	.5814	.9434	.2280-01	.1750-01	2.359	16.38	547.0
212	42.600	.59600-01	172.00	.3352	.5421	.4262	.9441	.1631-01	.1283-01	1.911	13.37	533.3
212	43.200	.42000-01	168.00	.4313	.7228	.5400	.9501	.2175-01	.1625-01	2.326	16.18	543.4
212	43.400	.82200-01	181.00	.2503	.3911	.3233	.9373	.1177-01	.9731-02	1.513	10.65	521.8
211	43.600	.62900-01	128.00	.3192	.5259	.4108	.9432	.1584-01	.1238-01	1.768	12.33	538.8
211	45.000	.22900-01	8.0000	.4627	.8018	.5653	.9571	.2415-01	.1703-01	2.381	16.49	551.8
212	46.100	.62900-01	174.00	.3536	.5746	.4511	.9438	.1729-01	.1358-01	1.999	13.97	534.8
212	47.700	.40800-01	167.00	.4610	.7762	.5739	.9515	.2336-01	.1727-01	2.469	17.16	544.7
211	48.400	.44200-01	109.00	.4501	.7643	.5650	.9505	.2302-01	.1702-01	2.383	16.55	546.9
211	50.000	.19400-01	156.00	1.440	2.791	1.572	.9826	.8409-01	.4736-01	6.474	44.31	573.4
211	51.000	.12100-01	154.00	.8714	2.120	.9694	.9828	.6387-01	.2920-01	3.221	21.73	600.0
211	51.000	.17600-01	155.00	.8473	1.686	.9264	.9828	.5079-01	.2791-01	3.708	25.32	577.4
212	51.900	.44800-01	170.00	.3842	.6272	.4740	.9511	.1888-01	.1427-01	2.157	15.06	536.2
212	53.200	.24700-01	163.00	.4236	.6862	.5035	.9585	.2065-01	.1515-01	2.407	16.83	533.9
212	65.200	.24700-01	162.00	.5482	.9227	.6509	.9611	.2777-01	.1959-01	2.937	20.42	544.6
210	90.000	.91000-02	44.000	.5528	1.098	.6640	.9663	.3311-01	.2003-01	2.427	16.57	577.1
210	90.000	.11100-01	45.000	.6837	1.309	.8151	.9663	.3949-01	.2459-01	3.119	21.37	571.4
210	90.000	.13100-01	46.000	.7212	1.339	.8542	.9663	.4039-01	.2576-01	3.407	23.41	566.1
210	90.000	.17000-01	48.000	.7693	1.413	.9090	.9663	.4262-01	.2742-01	3.680	25.31	564.1
210	90.000	.20900-01	50.000	.6532	1.155	.7654	.9663	.3485-01	.2309-01	3.275	22.62	556.4
210	90.000	.24900-01	52.000	.3560	.5982	.4132	.9658	.1804-01	.1246-01	1.916	13.33	544.2
210	90.000	.26900-01	53.000	.5432	.9214	.6341	.9651	.2779-01	.1913-01	2.884	20.03	546.6
210	90.000	.28800-01	54.000	.5301	.8918	.6196	.9644	.2690-01	.1869-01	2.849	19.81	544.5
210	90.000	.32800-01	55.000	.3779	.5999	.4380	.9629	.1810-01	.1321-01	2.225	15.62	527.4
210	90.000	.36700-01	56.000	.4387	.7219	.5166	.9616	.2177-01	.1558-01	2.437	17.00	538.5
210	90.000	.40600-01	57.000	.4356	.7317	.5193	.9602	.2207-01	.1566-01	2.347	16.32	544.1
210	90.000	.48500-01	58.000	.4199	.7068	.5077	.9574	.2132-01	.1531-01	2.255	15.68	544.6
210	90.000	.56400-01	59.000	.3779	.6369	.4631	.9547	.1921-01	.1397-01	2.025	14.08	545.0
210	90.000	.76100-01	60.000	.2850	.4817	.3614	.9482	.1453-01	.1090-01	1.521	10.57	545.7
210	90.000	.95800-01	61.000	.2409	.4002	.3131	.9421	.1207-01	.9443-02	1.319	9.190	541.1
210	90.000	.11550	62.000	.1893	.3180	.2550	.9363	.9592-02	.7692-02	1.020	7.092	544.1
210	135.00	.19000-01	49.000	.6846	1.223	.7908	.9695	.3689-01	.2385-01	3.389	23.38	558.5
210	135.00	.22900-01	51.000	.6247	1.090	.7192	.9695	.3288-01	.2166-01	3.190	22.07	553.4
210	180.00	.91000-02	23.000	.3439	.5626	.3990	.9645	.1697-01	.1203-01	1.928	13.46	536.8
210	180.00	.11100-01	24.000	.6333	1.212	.7626	.9645	.3657-01	.2300-01	2,890	19.80	571.4
210	180.00	.13100-01	25.000	.6851	1.244	.8151	.9645	.3752-01	.2459-01	3.324	22.89	561.8
210	180.00	.15000-01	26.000	.6810	1.229	.8092	.9645	.3708-01	.2441-01	3.328	22.93	560.6
210	180.00	.17000-01	27.000	.6714	1.205	.7968	.9645	.3635-01	.2403-01	3.304	22.79	559.5

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
210	180.00	.19000-01	28.000	.6581	1.179	.7805	.9645	.3555-01	.2354-01	3.248	22.40	559.0
210	180.00	.20900-01	29.000	.6456	1.125	.7607	.9645	.3392-01	.2294-01	3.304	22.87	553.0
210	180.00	.28800-01	32.000	.5313	.8880	.6252	.9626	.2678-01	.1886-01	2.882	20.06	542.8
210	180.00	.32800-01	33.000	.4922	.8037	.5794	.9612	.2424-01	.1748-01	2.768	19.33	536.2
210	180.00	.36700-01	34.000	.4726	.7829	.5622	.9598	.2361-01	.1696-01	2.599	18.11	540.3
210	180.00	.48500-01	36.000	.4144	.6791	.5010	.9556	.2048-01	.1511-01	2.317	16.17	537.3
210	180.00	.56400-01	37.000	.3844	.6264	.4698	.9529	.1889-01	.1417-01	2.169	15.15	535.6
210	180.00	.76100-01	38.000	.3045	.4899	.3818	.9465	.1478-01	.1152-01	1.755	12.29	531.7
210	180.00	.95800-01	39.000	.2423	.3836	.3104	.9404	.1157-01	.9363-02	1.434	10.07	526.5
210	180.00	.11550	40.000	.1925	.3048	.2534	.9348	.9194-02	.7643-02	1.139	7.995	526.6
210	180.00	.18450	42.000	.8936-01	.1351	.1233	.9188	.4076-02	.3719-02	.5749	4.076	509.4
210	225.00	.22900-01	30.000	.5704	.9687	.7009	.9547	.2922-01	.2114-01	3.024	21.00	546.9
210	270.00	.91000-02	63.000	.3060	.4809	.3801	.9464	.1450-01	.1146-01	1.835	12.90	523.9
210	270.00	.11100-01	64.000	.3740	.5983	.4681	.9464	.1805-01	.1412-01	2.175	15.25	529.9
210	270.00	.13100-01	65.000	.5277	.8912	.6753	.9464	.2688-01	.2037-01	2.820	19.59	545.5
210	270.00	.17000-01	67.000	.5463	.9820	.7168	.9464	.2962-01	.2162-01	2.684	18.51	559.8
210	270.00	.20900-01	69.000	.5619	.9653	.7241	.9464	.2911-01	.2184-01	2.930	20.32	549.8
210	270.00	.24900-01	71.000	.5063	.8714	.6546	.9459	.2628-01	.1975-01	2.634	18.26	550.2
210	270.00	.28800-01	73.000	.4266	.7199	.5512	.9445	.2171-01	.1662-01	2.282	15.86	545.3
210	270.00	.36700-01	75.000	.3987	.6664	.5204	.9418	.2010-01	.1570-01	2.164	15.06	542.8
210	270.00	.48500-01	77.000	.3224	.5299	.4260	.9379	.1598-01	.1285-01	1.795	12.52	538.1
210	270.00	.56400-01	78.000	.2640	.4341	.3535	.9354	.1309-01	.1066-01	1.469	10.25	538.2
210	270.00	.95800-01	80.000	.1283	.2117	.1825	.9246	.6386-02	.5506-02	.7094	4.946	539.3
210	270.00	.11550	81.000	.1013	.1657	.1469	.9202	.4997-02	.4430-02	.5683	3.968	536.7
210	315.00	.19000-01	68.000	.5194	.8847	.6765	.9438	.2668-01	.2041-01	2.742	19.03	547.6
210	315.00	.22900-01	70.000	.4165	.7155	.5444	.9438	.2158-01	.1642-01	2.172	15.06	549.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K026)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
118	4.020	4.986	-8.992	64.83	738.7	.4158	174.5	61.22	2604.	.6429-02	.1405-06	3.704
119	4.020	5.015	-9.043	64.83	738.7	.4158	174.5	61.22	2604.	.6429-02	.1405-06	3.704
120	4.020	5.018	-9.041	64.80	738.7	.4156	174.5	61.20	2604.	.6426-02	.1405-06	3.702

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
118	.3866-01	.9583-02
119	.3866-01	.9583-02
120	.3866-01	.9586-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
119	.00000	.91000-02	1.0000	.4828	.8996	.6141	.9538	.3478-01	.2374-01	2.976	20.30	579.2
119	.00000	.15000-01	4.0000	.5073	.9358	.6433	.9538	.3618-01	.2487-01	3.164	21.61	577.4
119	.00000	.17000-01	5.0000	.4644	.8396	.5850	.9538	.3246-01	.2262-01	2.967	20.31	573.4
119	.00000	.19000-01	6.0000	.4505	.8189	.5686	.9538	.3166-01	.2198-01	2.860	19.56	574.5
119	.00000	.24900-01	9.0000	.4098	.7321	.5156	.9534	.2831-01	.1994-01	2.659	18.22	570.9
119	.00000	.26900-01	10.000	.4024	.7142	.5072	.9527	.2761-01	.1961-01	2.632	18.05	569.5
118	.00000	.32800-01	12.000	.3954	.7396	.5131	.9507	.2860-01	.1984-01	2.427	16.55	580.0
118	.00000	.36700-01	13.000	.4197	.7607	.5428	.9494	.2941-01	.2099-01	2.674	18.30	573.9
118	.00000	.40600-01	14.000	.4407	.8126	.5779	.9481	.3142-01	.2234-01	2.750	18.78	577.3
118	.00000	.48500-01	15.000	.3111	.5432	.4051	.9457	.2100-01	.1566-01	2.079	14.29	565.8
118	.00000	.56400-01	16.000	.2898	.5026	.3813	.9433	.1943-01	.1474-01	1.955	13.45	564.2
118	.00000	.76100-01	17.000	.1976	.3324	.2639	.9381	.1285-01	.1020-01	1.392	9.613	556.5
118	.00000	.95800-01	18.000	.6826-01	.1081	.9041-01	.9335	.4180-02	.3496-02	.5289	3.690	538.3
118	.00000	.11550	19.000	.1212	.2020	.1695	.9298	.7809-02	.6517-02	.8661	5.990	553.9
118	.00000	.16480	20.000	.6694-01	.1087	.9474-01	.9236	.4203-02	.3663-02	.4976	3.456	546.4
118	.00000	.21400	22.000	.3966-01	.6003-01	.5394-01	.9220	.2321-02	.2085-02	.3338	2.351	521.0
120	2.0000	.24700-01	165.00	.3242	.5619	.4027	.9539	.2172-01	.1557-01	2.188	15.05	564.1
119	9.0000	.15000-01	157.00	.4488	.8084	.5576	.9561	.3126-01	.2156-01	2.881	19.72	572.6

FH15. EXTERNAL TANK OGIVE AERO HEATING

FH15. E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
119	9.0000	.17600-01	158.00	.4219	.7327	.5184	.9561	.2833-01	.2004-01	2.841	19.53	564.5
120	9.8000	.24700-01	164.00	.3392	.5868	.4167	.9559	.2268-01	.1611-01	2.295	15.79	563.6
119	10.000	.22900-01	88.000	.3700	.6426	.4540	.9564	.2485-01	.1755-01	2.490	17.13	564.6
119	10.000	.26900-01	90.000	.3547	.6016	.4346	.9552	.2326-01	.1681-01	2.469	17.03	558.7
119	10.000	.34700-01	94.000	.4233	.7573	.5355	.9525	.2928-01	.2071-01	2.741	18.78	571.2
119	12.000	.17600-01	152.00	.7569	1.993	.8459	.9830	.7706-01	.3271-01	3.485	23.27	619.6
119	12.000	.12100-01	151.00	.6477	3.923	.7546	.9830	.1517	.2918-01	2.216	14.56	650.2
119	13.000	.19400-01	153.00	.6957	1.753	.7736	.9833	.6780-01	.2991-01	3.294	22.03	616.2
120	14.600	.44200-01	169.00	.3494	.6041	.4415	.9505	.2335-01	.1707-01	2.366	16.28	563.5
119	18.500	.44200-01	106.00	.3757	.6494	.4721	.9516	.2511-01	.1825-01	2.546	17.52	563.4
120	19.600	.62900-01	175.00	.3686	.6354	.4765	.9461	.2456-01	.1842-01	2.506	17.25	562.8
119	19.800	.40800-01	101.00	.4796	.8586	.6049	.9531	.3320-01	.2339-01	3.102	21.25	571.4
119	20.000	.24900-01	89.000	.3124	.5172	.3735	.9587	.2000-01	.1444-01	2.254	15.60	552.1
119	20.000	.28800-01	91.000	.3492	.5972	.4245	.9573	.2309-01	.1641-01	2.402	16.55	560.8
119	20.000	.32800-01	93.000	.4368	.7908	.5444	.9559	.3057-01	.2105-01	2.787	19.07	573.6
119	22.200	.62900-01	125.00	.4002	.7124	.5220	.9467	.2754-01	.2018-01	2.608	17.88	570.1
119	22.400	.44200-01	107.00	.3563	.6062	.4427	.9527	.2344-01	.1712-01	2.468	17.02	559.5
120	22.600	.10270	192.00	.2735	.4592	.3682	.9364	.1775-01	.1423-01	1.931	13.34	556.0
119	23.000	.42000-01	105.00	.4468	.7977	.5615	.9536	.3084-01	.2171-01	2.900	19.88	570.8
119	23.400	.59600-01	120.00	.4811	.8754	.6281	.9481	.3385-01	.2428-01	3.051	20.87	574.7
120	23.900	.21310	250.00	.7441-01	.1131	.1013	.9223	.4370-02	.3917-02	.6215	4.374	522.6
119	24.100	.82200-01	139.00	.3486	.5981	.4604	.9418	.2313-01	.1780-01	2.386	16.44	561.6
120	24.400	.19040	238.00	.9973-01	.1549	.1371	.9235	.5989-02	.5300-02	.7992	5.597	531.3
120	24.400	.12440	207.00	.2533	.4361	.3538	.9322	.1686-01	.1368-01	1.726	11.89	562.4
120	24.800	.16810	223.00	.1366	.2230	.1919	.9256	.8620-02	.7418-02	1.007	6.985	548.0
119	24.900	.62900-01	126.00	.3808	.6618	.4902	.9475	.2559-01	.1895-01	2.562	17.62	564.7
120	25.000	.79500-01	178.00	.4536	.8166	.6085	.9427	.3157-01	.2352-01	2.914	19.95	572.5
120	25.300	.10270	191.00	.2684	.4481	.3591	.9370	.1732-01	.1388-01	1.911	13.21	554.5
120	25.300	.10000+00	186.00	.3738	.6622	.5132	.9376	.2560-01	.1984-01	2.451	16.81	569.1
119	25.500	.60700-01	124.00	.4674	.8609	.6121	.9483	.3329-01	.2367-01	2.921	19.95	577.1
120	26.000	.12440	206.00	.2565	.4410	.3573	.9325	.1705-01	.1381-01	1.750	12.05	562.1
119	26.300	.82200-01	140.00	.3523	.5851	.4572	.9424	.2262-01	.1768-01	2.529	17.50	553.0
120	26.700	.12100	199.00	.2754	.4892	.3886	.9334	.1891-01	.1502-01	1.799	12.34	569.6
120	26.800	.16810	222.00	.1590	.2595	.2230	.9259	.1003-01	.8621-02	1.173	8.139	547.9
120	27.000	.19040	237.00	.1089	.1691	.1495	.9237	.6537-02	.5780-02	.8727	6.112	531.3
120	27.100	.21310	249.00	.9081-01	.1386	.1240	.9224	.5359-02	.4794-02	.7516	5.283	524.6
120	27.200	.80300-01	180.00	.4051	.7165	.5382	.9431	.2770-01	.2081-01	2.661	18.26	568.7
119	27.400	.40100-01	98.000	.5373	1.033	.6833	.9555	.3995-01	.2642-01	3.196	21.74	584.8
120	27.400	.16480	215.00	.1858	.3115	.2644	.9263	.1204-01	.1022-01	1.314	9.083	555.6
119	27.600	.41600-01	102.00	.4983	.9736	.6385	.9550	.3764-01	.2469-01	2.915	19.80	587.4
120	27.600	.12440	205.00	.2321	.3943	.3207	.9329	.1524-01	.1240-01	1.612	11.12	559.1
120	27.600	.18700	230.00	.1258	.1978	.1739	.9240	.7647-02	.6722-02	.9855	6.885	535.9
120	27.700	.21010	243.00	.1112	.1728	.1537	.9225	.6681-02	.5940-02	.8903	6.235	531.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K026)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
120	27.900	.10110	188.00	.2573	.4346	.3445	.9380	.1680-01	.1332-01	1.802	12.44	557.5
119	28.000	.46800-01	110.00	.3356	.5531	.4109	.9534	.2139-01	.1589-01	2.437	16.88	550.9
120	28.200	.16810	221.00	.1478	.2421	.2076	.9260	.9357-02	.8024-02	1.083	7.514	549.0
120	28.300	.19040	236.00	.9252-01	.1428	.1264	.9238	.5520-02	.4888-02	.7502	5.261	528.9
120	28.300	.12200	201.00	.3379	.5988	.4758	.9335	.2315-01	.1839-01	2.214	15.19	569.2
119	28.400	.53500-01	114.00	.5064	.9245	.6493	.9513	.3574-01	.2510-01	3.198	21.87	575.3
120	28.400	.21310	248.00	.7442-01	.1133	.1014	.9224	.4380-02	.3920-02	.6191	4.355	523.5
119	28.700	.58600-01	117.00	.5060	.9266	.6552	.9498	.3583-01	.2533-01	3.184	21.76	575.9
120	28.800	.16580	217.00	.1670	.2792	.2372	.9264	.1079-01	.9168-02	1.186	8.202	554.9
119	28.800	.60400-01	121.00	.4702	.9085	.6225	.9493	.3513-01	.2407-01	2.783	18.92	585.6
120	29.000	.21110	244.00	.8295-01	.1278	.1139	.9225	.4940-02	.4404-02	.6748	4.735	528.2
119	29.000	.65700-01	129.00	.3273	.5349	.4106	.9477	.2068-01	.1588-01	2.409	16.71	548.3
119	29.200	.72400-01	133.00	.4827	.8702	.6362	.9458	.3364-01	.2460-01	3.097	21.20	572.8
119	29.300	.79500-01	136.00	.3754	.6810	.5019	.9438	.2633-01	.1940-01	2.390	16.35	574.1
119	29.600	.92500-01	143.00	.3774	.6432	.5005	.9405	.2487-01	.1935-01	2.608	17.98	559.9
119	29.700	.10000+00	146 00	.2788	.4918	.3797	.9386	.1902-01	.1468-01	1.838	12.62	568.1
120	29.900	.12100	198.00	.2817	.5167	.4025	.9340	.1997-01	.1556-01	1.769	12.09	576.2
120	30.200	.16480	214.00	.1487	.2519	.2125	.9267	.9738-02	.8215-02	1.036	7.150	558.4
120	30.200	.18700	229.00	.1035	.1654	.1444	.9243	.6393-02	.5582-02	.7888	5.494	541.4
120	30.300	.21010	242.00	.7987-01	.1259	.1114	.9227	.4866-02	.4304-02	.6239	4.357	536.6
119	31.500	.91000-02	82.000	.5309	1.165	.6667	.9626	.4506-01	.2578-01	2.785	18.76	603.0
119	31.500	.11100-01	83.000	.6641	1.540	.8435	.9626	.5952-01	.3261-01	3.336	22.40	608.8
119	31.500	.14200-01	84.000	.9181	4.515	1.024	.9870	.1746	.3960-01	3.291	21.67	645.9
119	31.500	.16000-01	85.000	.9995	3.864	1.106	.9870	.1494	.4277-01	3.851	25.45	639.0
119	31.500	.17600-01	86.000	.8319	2.415	.9095	.9870	.9339-01	.3516-01	3.624	24.12	626.0
119	31.500	.19400-01	87.000	.7036	1.686	.7612	.9870	.6519-01	.2943-01	3.448	23.12	611.9
120	32.100	.21010	241.00	.9115-01	.1486	.1300	.9227	.5745-02	.5024-02	.6730	4.671	547.6
120	32.200	.16480	213.00	.1397	.2431	.2026	.9270	.9396-02	.7832-02	.9372	6.443	565.1
120	32.200	.17860	224.00	.1371	.2188	.1901	.9253	.8457-02	.7349-02	1.048	7.302	540.9
120	32.200	.18700	228.00	.1123	.1865	.1605	.9245	.7209-02	.6205-02	.8053	5.573	553.1
120	32.300	.12100	197.00	.3425	.6670	.5027	.9345	.2578-01	.1943-01	2.010	13.66	586.8
120	32.300	.12300	194.00	.2857	.5511	.4186	.9341	.2130-01	.1618-01	1.694	11.52	585.3
120	32.300	.12730	208.00	.2110	.3510	.2876	.9332	.1357-01	.1112-01	1.510	10.45	553.5
120	32.300	.13420	209.00	.2139	.3803	.3047	.9319	.1470-01	.1178-01	1.396	9.573	569.8
119	32.400	.10000+00	147.00	.3734	.7452	.5356	.9393	.2881-01	.2071-01	2.137	14.49	590.6
120	32.400	.10110	184.00	.3289	.6359	.4662	.9390	.2458-01	.1802-01	1.945	13.22	585.7
120	32.400	.10630	193.00	.2210	.3561	.2893	.9378	.1376-01	.1118-01	1.663	11.57	544.0
120	32.500	.85800-01	183.00	.2826	.4706	.3661	.9429	.1819-01	.1415-01	2.020	13.97	553.8
119	32.600	.79500-01	137.00	.5566	1.125	.7723	.9447	.4349-01	.2986-01	3.146	21.31	592.5
120	32.600	.80800-01	176.00	.5406	1.148	.7664	.9443	.4439-01	.2962-01	2.917	19.69	599.1
119	32.700	.67400-01	132.00	.3880	.6730	.4969	.9482	.2602-01	.1921-01	2.617	18.00	564.2
119	32.700	.72400-01	134.00	.4642	.8367	.6084	.9468	.3235-01	.2352-01	2.977	20.38	572.8
119	32.800	.65700-01	130.00	.3675	.6025	.4593	.9488	.2330-01	.1776-01	2.691	18.66	549.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K026)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
120	32.800	.16680	210.00	.1365	.2343	.1966	.9268	.9057-02	.7598-02	.9335	6.430	561.7
120	32.800	.18880	225.00	.1040	.1637	.1436	.9243	.6326-02	.5550-02	.8136	5.683	536.2
119	32.900	.58600-01	118.00	.5419	1.091	.7192	.9510	.4216-01	.2781-01	3.076	20.84	591.8
119	32.900	.60400-01	122.00	.5614	1.198	.7621	.9504	.4631-01	.2946-01	3.018	20.37	599.6
120	32.900	.61300-01	171.00	.4811	.9789	.6445	.9501	.3784-01	.2491-01	2.702	18.29	593.4
119	33.000	.53500-01	115.00	.4660	.8280	.5876	.9527	.3202-01	.2272-01	3.044	20.87	569.7
119	33.200	.48300-01	113.00	.3537	.5855	.4316	.9544	.2264-01	.1669-01	2.552	17.67	552.1
120	33.400	.42800-01	166.00	.4810	.9699	.6169	.9563	.3749-01	.2384-01	2.725	18.46	592.1
119	33.500	.40100-01	99.000	.5540	1.090	.7013	.9573	.4215-01	.2712-01	3.217	21.84	588.5
119	33.600	.38300-01	97.000	.5371	1.020	.6707	.9579	.3945-01	.2593-01	3.240	22.06	582.7
119	33.700	.36700-01	96.000	.5065	.9552	.6290	.9585	.3693-01	.2432-01	3.079	20.98	581.4
119	33.900	.33800-01	95.000	.4851	.8712	.5908	.9596	.3368-01	.2284-01	3.126	21.41	572.0
120	34.700	.21010	240.00	.8340-01	.1385	.1203	.9229	.5355-02	.4651-02	.5983	4.141	553.1
120	34.700	.18700	227.00	.8506-01	.1394	.1204	.9247	.5390-02	.4655-02	.6228	4.319	549.3
120	34.900	.16480	212.00	.1486	.2674	.2194	.9274	.1034-01	.8481-02	.9550	6.539	572.4
119	35.100	.10000+00	148.00	.4147	.8653	.6034	.9399	.3346-01	.2333-01	2.274	15.37	596.8
120	35.200	.23900-01	161.00	.3072	.5056	.3584	.9636	.1954-01	.1385-01	2.236	15.49	550.4
119	35.300	.92500-01	145.00	.3233	.5668	.4309	.9419	.2191-01	.1666-01	2.150	14.77	566.7
119	35.300	.22100-01	160.00	.2950	.4783	.3426	.9638	.1849-01	.1325-01	2.198	15.27	545.9
120	35.400	.18800	231.00	.1131	.1878	.1615	.9247	.7260-02	.6243-02	.8123	5.622	552.9
120	35.500	.12100	196.00	.3241	.6472	.4792	.9352	.2502-01	.1852-01	1.854	12.57	590.7
120	35.600	.16580	216.00	.1414	.2512	.2072	.9273	.9708-02	.8011-02	.9242	6.338	569.6
119	35.800	.80600-01	138.00	.5139	1.067	.7177	.9452	.4126-01	.2775-01	2.831	19.14	596.2
120	35.900	.21310	247.00	.7668-01	.1228	.1080	.9228	.4746-02	.4174-02	.5832	4.061	541.9
120	36.000	.19040	235.00	.1033	.1680	.1456	.9245	.6495-02	.5630-02	.7654	5.315	546.9
120	36.200	.16810	220.00	.1403	.2396	.2011	.9271	.9264-02	.7773-02	.9664	6.660	560.5
119	36.200	.72400-01	135.00	.3842	.6757	.4961	.9477	.2613-01	.1918-01	2.544	17.47	567.4
120	36.300	.12200	200.00	.3005	.5964	.4431	.9351	.2305-01	.1713-01	1.729	11.73	589.9
119	36.600	.65700-01	131.00	.4145	.7196	.5265	.9498	.2782-01	.2036-01	2.793	19.21	564.4
120	36.700	.18700	226.00	.1068	.1731	.1500	.9249	.6692-02	.5796-02	.7967	5.535	545.8
120	36.900	.16480	211.00	.1335	.2300	.1917	.9276	.8890-02	.7410-02	.9093	6.260	562.5
120	36.900	.10110	187.00	.3872	.7964	.5594	.9401	.3079-01	.2162-01	2.151	14.55	594.9
119	37.000	.60400-01	123.00	.6398	1.495	.8847	.9516	.5779-01	.3421-01	3.194	21.44	609.5
120	37.000	.12440	204.00	.2702	.5081	.3891	.9348	.1964-01	.1504-01	1.648	11.23	580.9
119	37.100	.58600-01	119.00	.6025	1.252	.8012	.9522	.4841-01	.3098-01	3.316	22.42	596.3
120	37.200	.21310	246.00	.8006-01	.1268	.1118	.9229	.4900-02	.4323-02	.6206	4.330	538.1
120	37.600	.16810	219.00	.1316	.2208	.1864	.9273	.8535-02	.7204-02	.9309	6.432	555.7
119	37.800	.10270	150.00	.3269	.5930	.4476	.9399	.2293-01	.1731-01	2.080	14.23	574.1
120	37.900	.12100	195.00	.2152	.3727	.2956	.9357	.1441-01	.1143-01	1.455	10.01	563.8
120	38.000	.80300-01	179.00	.4935	.9694	.6719	.9459	.3747-01	.2597-01	2.870	19.48	588.2
119	38.500	.46800-01	112.00	.3601	.6130	.4389	.9565	.2370-01	.1697-01	2.493	17.19	559.6
120	38.600	.12440	203.00	.2492	.4463	.3493	.9351	.1725-01	.1350-01	1.612	11.04	571.4
120	38.700	.10000+00	185.00	.3235	.5972	.4440	.9408	.2308-01	.1716-01	2.016	13.77	577.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K026)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
119	38.900	.82200-01	141.00	.4005	.7382	.5332	.9456	.2854-01	.2061-01	2.501	17.08	577.2
119	39.300	.41600-01	104.00	.5590	1.183	.7157	.9585	.4575-01	.2767-01	3.026	20.43	598.7
120	39.500	.10270	190.00	.3264	.5958	.4470	.9403	.2303-01	.1728-01	2.061	14.09	575.3
120	39.600	.16810	218.00	.1086	.1789	.1518	.9276	.6916-02	.5868-02	.7881	5.460	550.8
120	39.900	.19040	233.00	.8470-01	.1336	.1168	.9249	.5163-02	.4514-02	.6610	4.615	536.8
120	40.100	.79500-01	177.00	.3964	.7170	.5204	.9467	.2772-01	.2012-01	2.531	17.32	573.5
120	40.200	.12440	202.00	.2207	.3837	.3041	.9354	.1483-01	.1176-01	1.483	10.20	564.8
120	40.300	.21310	245.00	.7360-01	.1144	.1014	.9231	.4421-02	.3920-02	.5897	4.130	531.4
119	41.100	.82200-01	142.00	.4130	.7322	.5395	.9462	.2831-01	.2086-01	2.705	18.55	569.3
120	41.100	.60700-01	173.00	.5060	1.261	.7943	.9527	.4876-01	.3070-01	3.226	21.78	598.6
120	42.600	.59600-01	172.00	.5382	1.056	.6973	.9535	.4082-01	.2696-01	3.133	21.27	588.1
120	43.200	.42000-01	168.00	.5019	.9802	.6254	.9595	.3789-01	.2418-01	2.937	19.95	587.3
120	43.400	.82200-01	181.00	.3231	.5594	.4167	.9468	.2162-01	.1611-01	2.183	15.02	563.8
119	43.600	.62900-01	128.00	.4364	.7840	.5522	.9527	.3031-01	.2135-01	2.811	19.25	572.1
119	45.000	.22900-01	8.0000	.5321	1.040	.6353	.9668	.4021-01	.2456-01	3.112	21.13	587.4
120	46.100	.62900-01	174.00	.4669	.8581	.5929	.9534	.3317-01	.2292-01	2.925	19.98	576.6
120	47.700	.40800-01	167.00	.5338	1.058	.6603	.9613	.4088-01	.2553-01	3.077	20.88	589.5
119	48.400	.44200-01	109.00	.5060	.9546	.6220	.9603	.3691-01	.2405-01	3.076	20.96	581.5
119	50.000	.19400-01	156.00	.7379	2.143	.8067	.9870	.8287-01	.3119-01	3.214	21.39	626.0
119	51.000	.12100-01	154.00	.7067	4.218	.7924	.9870	.1631	.3064-01	2.424	15.93	649.9
119	51.000	.17600-01	155.00	.7773	2.410	.8523	.9870	.9317-01	.3295-01	3.277	21.76	629.6
120	51.900	.44800-01	170.00	.4188	.7484	.5053	.9611	.2893-01	.1953-01	2.715	18.60	571.0
120	53.200	.24700-01	163.00	.4556	.8294	.5301	.9688	.3206-01	.2049-01	2.887	19.74	574.8
120	65.200	.24700-01	162.00	.5490	1.062	.6338	.9723	.4105-01	.2450-01	3.245	22.06	585.8
118	90.000	.91000-02	44.000	.5548	2.207	.6623	.9783	.8534-01	.2561-01	2.116	13.98	640.0
118	90.000	.11100-01	45.000	.7176	2.338	.8445	.9783	.9038-01	.3265-01	2.958	19.62	632.1
118	90.000	.13100-01	46.000	.7539	2.242	.8806	.9783	.8667-01	.3405-01	3.244	21.57	627.4
118	90.000	.17000-01	48.000	.6727	1.604	.7696	.9783	.6201-01	.2975-01	3.309	22.19	611.4
118	90.000	.20900-01	50.000	.7069	1.539	.8007	.9783	.5949-01	.3096-01	3.734	25.16	602.0
118	90.000	.26900-01	53.000	.5627	1.147	.6372	.9771	.4435-01	.2464-01	3.155	21.36	593.7
118	90.000	.28800-01	54.000	.5660	1.141	.6426	.9763	.4411-01	.2485-01	3.208	21.73	592.1
118	90.000	.32800-01	55.000	.4794	.9193	.5451	.9748	.3555-01	.2108-01	2.861	19.47	584.3
118	90.000	.36700-01	56.000	.4803	.9282	.5511	.9734	.3589-01	.2131-01	2.843	19.33	585.6
118	90.000	.40600-01	57.000	.4937	.9870	.5742	.9719	.3816-01	.2220-01	2.821	19.13	590.9
118	90.000	.48500-01	58.000	.4875	.9544	.5744	.9691	.3690-01	.2221-01	2.846	19.33	587.7
119	90.000	.56400-01	59.000	.4274	.8198	.5097	.9663	.3170-01	.1971-01	2.550	17.35	584.4
118	90.000	.76100-01	60.000	.3699	.6855	.4546	.9596	.2650-01	.1757-01	2.295	15.67	578.2
118	90.000	.95800-01	61.000	.3267	.5977	.4145	.9533	.2311-01	.1603-01	2.058	14.07	575.8
118	90.000	.11550	62.000	.2436	.4362	.3170	.9475	.1687-01	.1226-01	1.575	10.79	571.4
118	135.00	.19000-01	49.000	.7383	1.680	.8313	.9800	.6497-01	.3214-01	3.761	25.28	606.9
118	135.00	.22900-01	51.000	.6568	1.446	.7371	.9800	.5591-01	.2850-01	3.437	23.15	603.3
118	180.00	.91000-02	23.000	.4146	.8954	.4926	.9705	.3462-01	.1905-01	2.205	14.87	601.1
118	180.00	.11100-01	24.000	.6285	1.664	.7697	.9705	.6435-01	.2976-01	2.864	19.25	620.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
118	180.00	.13100-01	25.000	.6439	1.588	.7807	.9705	.6141-01	.3019-01	3.093	20.70	614.4
118	180.00	.15000-01	26.000	.6202	1.508	.7505	.9705	.5829-01	.2902-01	3.010	20.16	613.2
118	180.00	.17000-01	27.000	.6569	1.518	.7888	.9705	.5867-01	.3050-01	3.308	22.22	608.4
118	180.00	.19000-01	28.000	.6889	1.562	.8248	.9705	.6038-01	.3189-01	3.520	23.67	606.5
118	180.00	.20900-01	29.000	.6542	1.379	.7742	.9705	.5332-01	.2993-01	3.555	24.01	598.1
118	180.00	.28800-01	32.000	.5432	1.062	.6419	.9686	.4108-01	.2482-01	3.175	21.56	587.5
118	180.00	.32800-01	33.000	.5015	.9367	.5921	.9671	.3622-01	.2289-01	3.083	21.03	579.7
118	180.00	.36700-01	34.000	.4947	.9535	.5926	.9656	.3687-01	.2291-01	2.936	19.96	585.2
118	180.00	.48500-01	36.000	.4287	.8004	.5221	.9615	.3095-01	.2019-01	2.636	17.98	579.6
118	180.00	.56400-01	37.000	.4093	.7540	.5044	.9588	.2915-01	.1950-01	2.557	17.47	577.1
118	180.00	.76100-01	38.000	.3240	.5741	.4088	.9524	.2220-01	.1581-01	2.124	14.57	569.1
118	180.00	.95900-01	39.000	.2761	.4748	.3556	.9466	.1836-01	.1375-01	1.885	12.98	562.1
118	180.00	.11550	40.000	.2213	.3809	.2935	.9413	.1473-01	.1135-01	1.509	10.39	562.4
118	180.00	.16450	42.000	.1111	.1801	.1536	.9277	.6963-02	.5939-02	.8273	5.747	546.0
118	225.00	.22900-01	30.000	.5196	1.013	.6569	.9571	.3917-01	.2540-01	3.047	20.70	587.0
118	270.00	.91000-02	63.000	.4283	.7863	.5609	.9481	.3040-01	.2169-01	2.687	18.36	576.4
118	270.00	.11100-01	64.000	.4846	.9075	.6393	.9481	.3509-01	.2472-01	2.970	20.25	580.1
118	270.00	.13100-01	65.000	.5030	1.036	.6864	.9481	.4006-01	.2654-01	2.792	18.88	595.1
118	270.00	.17000-01	67.000	.5567	1.123	.7541	.9481	.4341-01	.2916-01	3.154	21.37	592.1
118	270.00	.20900-01	69.000	.4753	.9367	.6386	.9481	.3622-01	.2469-01	2.755	18.70	588.7
118	270.00	.24900-01	71.000	.4788	.9341	.6430	.9476	.3612-01	.2486-01	2.806	19.06	587.1
118	270.00	.28800-01	73.000	.4005	.7566	.5359	.9463	.2925-01	.2072-01	2.430	16.56	581.7
118	270.00	.36700-01	75.000	.3795	.7065	.5128	.9438	.2732-01	.1983-01	2.341	15.97	579.1
118	270.00	.48500-01	77.000	.3168	.5622	.4283	.9403	.2174-01	.1656-01	2.072	14.21	569.5
118	270.00	.56400-01	78.000	.2991	.5254	.4076	.9382	.2031-01	.1576-01	1.984	13.62	567.1
118	270.00	.95800-01	80.000	.1361	.2317	.1919	.9296	.8960-02	.7419-02	.9425	6.499	559.6
118	270.00	.11550	81.000	.1045	.1789	.1505	.9265	.6919-02	.5820-02	.7182	4.948	561.0
118	315.00	.19000-01	68.000	.4283	.8005	.5687	.9469	.3095-01	.2199-01	2.631	17.94	579.9
118	315.00	.22900-01	70.000	.4969	.9531	.6662	.9469	.3685-01	.2576-01	2.966	20.18	584.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K027)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = 11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
121	4.020	5.019	-11.06	64.89	738.7	.4161	174.5	65.88	2604.	.6435-02	.1405-06	3.707
122	4.020	5.024	-11.07	64.87	738.7	.4160	174.5	65.88	2604.	.6434-02	.1405-06	3.707
123	4.020	5.037	-11.05	64.86	738.7	.4159	174.5	65.80	2604.	.6432-02	.1405-06	3.706

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
121	.3868-01	.9579-02
122	.3868-01	.9580-02
123	.3867-01	.9581-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
122	.00000	.91000-02	1.0000	.4892	1.013	.6443	.9534	.3917-01	.2492-01	2.704	18.28	595.8
122	.00000	.15000-01	4.0000	.4820	.9219	.6197	.9534	.3566-01	.2397-01	2.886	19.64	583.9
122	.00000	.17000-01	5.0000	.4474	.8386	.5715	.9534	.3243-01	.2211-01	2.740	18.68	580.3
122	.00000	.19000-01	6.0000	.4370	.8215	.5588	.9534	.3177-01	.2161-01	2.668	18.18	580.9
122	.00000	.24900-01	9.0000	.3780	.7000	.4823	.9530	.2708-01	.1866-01	2.348	16.03	578.1
122	.00000	.26900-01	10.000	.3674	.6737	.4692	.9523	.2606-01	.1815-01	2.309	15.78	576.2
121	.00000	.32800-01	12.000	.3912	.6932	.4994	.9503	.2682-01	.1932-01	2.566	17.60	569.1
121	.00000	.36700-01	13.000	.4127	.7207	.5276	.9490	.2788-01	.2041-01	2.759	18.96	565.8
121	.00000	.40600-01	14.000	.4332	.7705	.5617	.9478	.2980-01	.2173-01	2.828	19.39	569.9
121	.00000	.48500-01	15.000	.2866	.4777	.3668	.9453	.1848-01	.1419-01	2.047	14.16	554.0
121	.00000	.56400-01	16.000	.2848	.4753	.3691	.9430	.1838-01	.1428-01	2.031	14.05	554.3
121	.00000	.76100-01	17.000	.2234	.3644	.2942	.9378	.1409-01	.1138-01	1.649	11.45	547.8
121	.00000	.95800-01	18.000	.7603-01	.1190	.1001	.9334	.4603-02	.3873-02	.6016	4.207	534.1
121	.00000	.11550	19.000	.1212	.1933	.1643	.9297	.7479-02	.6356-02	.9277	6.464	540.8
121	.00000	.16480	20.000	.7880-01	.1245	.1095	.9236	.4817-02	.4237-02	.6131	4.279	537.5
121	.00000	.21400	22.000	.4429-01	.6528-01	.5911-01	.9220	.2525-02	.2287-02	.3935	2.790	509.0
123	2.0000	.24700-01	165.00	.3266	.5617	.4053	.9536	.2172-01	.1567-01	2.229	15.35	562.2
122	9.0000	.15000-01	157.00	.4775	.8937	.5999	.9562	.3456-01	.2320-01	2.930	19.98	580.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
122	9.0000	.17600-01	158.00	.3997	.7225	.4970	.9562	.2794-01	.1922-01	2.555	17.49	573.4
123	9.8000	.24700-01	164.00	.3289	.5683	.4037	.9560	.2198-01	.1561-01	2.231	15.35	563.3
122	10.000	.22900-01	88.000	.3459	.6239	.4291	.9565	.2413-01	.1660-01	2.218	15.19	572.9
122	10.000	.26900-01	90.000	.3303	.5784	.4087	.9553	.2237-01	.1581-01	2.200	15.12	566.4
122	10.000	.34700-01	94.000	.4225	.7868	.5412	.9526	.3043-01	.2093-01	2.607	17.78	579.1
122	12.000	.17600-01	152.00	.7021	2.112	.7925	.9829	.8167-01	.3065-01	3.005	19.98	628.0
122	12.000	.12100-01	151.00	.6375	4.862	.7485	.9829	.1880	.2895-01	2.096	13.75	653.7
122	13.000	.19400-01	153.00	.6307	1.889	.7100	.9832	.7305-01	.2746-01	2.705	17.98	627.8
123	14.600	.44200-01	169.00	.3405	.5901	.4297	.9509	.2282-01	.1662-01	2.300	15.82	564.0
122	18.500	.44200-01	106.00	.3547	.6420	.4511	.9522	.2483-01	.1745-01	2.264	15.49	573.6
123	19.600	.62900-01	175.00	.3531	.6120	.4558	.9467	.2367-01	.1763-01	2.384	16.40	564.1
122	19.800	.40800-01	101.00	.4521	.8409	.5750	.9538	.3253-01	.2224-01	2.793	19.06	578.9
122	20.000	.24900-01	89.000	.3050	.5245	.3675	.9594	.2029-01	.1421-01	2.083	14.34	562.1
122	20.000	.28800-01	91.000	.3404	.6047	.4170	.9580	.2339-01	.1613-01	2.225	15.25	569.7
122	20 000	.32800-01	93.000	.4277	.8106	.5381	.9566	.3135-01	.2081-01	2.586	17.61	582.3
122	22.200	.62900-01	125.00	.3846	.7169	.5080	.9476	.2773-01	.1965-01	2.370	16.17	579.3
122	22.400	.44200-01	107.00	.3450	.6117	.4327	.9535	.2366-01	.1674-01	2.261	15.51	569.2
123	22.600	.10270	192.00	.2946	.5015	.3977	.9372	.1939-01	.1538-01	2.041	14.07	559.6
122	23.000	.42000-01	105.00	.4229	.7858	.5356	.9544	.3039-01	.2072-01	2.617	17.86	578.7
122	23.400	.59600-01	120.00	.4193	.7892	.5511	.9490	.3053-01	.2132-01	2.555	17.41	581.1
123	23.900	.21310	250.00	.7861-01	.1201	.1074	.9224	.4643-02	.4152-02	.6506	4.574	524.7
122	24.100	.82200-01	139.00	.3422	.6078	.4565	.9427	.2351-01	.1766-01	2.238	15.35	569.6
123	24.400	.19040	238.00	.1105	.1727	.1522	.9238	.6679-02	.5888-02	.8755	6.124	533.7
123	24.400	.12440	207.00	.2585	.4508	.3620	.9330	.1744-01	.1400-01	1.732	11.90	565.5
123	24.800	.16810	223.00	.1599	.2644	.2258	.9261	.1023-01	.8733-02	1.155	7.998	551.9
122	24.900	.62900-01	126.00	.3705	.6739	.4825	.9484	.2606-01	.1866-01	2.351	16.08	574.6
123	25.000	.79500-01	178.00	.4344	.7761	.5776	.9437	.3001-01	.2234-01	2.819	19.32	570.9
123	25.300	.10270	191.00	.2860	.4787	.3814	.9379	.1851-01	.1475-01	2.030	14.03	555.2
123	25.300	.10000+00	186.00	.3912	.7012	.5372	.9385	.2712-01	.2078-01	2.528	17.32	571.6
122	25.500	.60700-01	124.00	.4211	.8149	.5578	.9493	.3152-01	.2157-01	2.490	16.93	585.8
123	26.000	.12440	206.00	.2496	.4313	.3470	.9334	.1668-01	.1342-01	1.693	11.65	563.3
122	26.300	.82200-01	140.00	.2438	.4183	.3192	.9434	.1618-01	.1235-01	1.670	11.51	561.5
123	26.700	.12100	199.00	.2731	.4823	.3821	.9342	.1865-01	.1478-01	1.798	12.34	568.4
123	26.800	.16810	222.00	.1802	.2960	.2530	.9264	.1145-01	.9783-02	1.316	9.120	549.9
123	27.000	.19040	237.00	.1121	.1752	.1542	.9241	.6774-02	.5964-02	.8885	6.215	533.6
123	27.100	.21310	249.00	.8859-01	.1359	.1213	.9226	.5255-02	.4689-02	.7272	5.107	526.4
123	27.200	.80300-01	180.00	.3831	.6650	.5020	.9441	.2572-01	.1941-01	2.582	17.76	564.4
122	27.400	.40100-01	98.000	.4756	.9637	.6096	.9566	.3727-01	.2358-01	2.683	18.17	592.8
123	27.400	.16480	215.00	.2151	.3645	.3070	.9270	.1410-01	.1187-01	1.499	10.34	558.5
122	27.600	.41600-01	102.00	.4810	.9989	.6225	.9562	.3864-01	.2408-01	2.650	17.91	596.2
123	27.600	.12440	205.00	.2263	.3839	.3109	.9338	.1485-01	.1202-01	1.575	10.87	558.7
123	27.600	.18700	230.00	.1260	.1994	.1745	.9245	.7713-02	.6749-02	.9774	6.820	538.1
123	27.700	.21010	243.00	.1160	.1811	.1606	.9228	.7004-02	.6210-02	.9220	6.451	533.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K027)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
123	27.900	.10110	188.00	.2744	.4626	.3650	.9390	.1789-01	.1412-01	1.926	13.30	557.1
122	28.000	.46800-01	110.00	.3613	.6275	.4476	.9546	.2427-01	.1731-01	2.433	16.73	564.6
123	28.200	.16810	221.00	.1545	.2542	.2169	.9267	.9830-02	.8386-02	1.125	7.797	550.4
123	28.300	.19040	236.00	.9444-01	.1462	.1291	.9242	.5656-02	.4992-02	.7616	5.337	530.1
123	28.300	.12200	201.00	.3310	.5866	.4635	.9344	.2269-01	.1792-01	2.169	14.88	569.2
122	28.400	.53500-01	114.00	.5103	.9766	.6599	.9525	.3777-01	.2552-01	3.053	20.78	584.0
123	28.400	.21310	248.00	.7819-01	.1195	.1067	.9227	.4621-02	.4127-02	.6463	4.542	525.0
122	28.700	.58600-01	117.00	.4778	.9233	.6258	.9510	.3571-01	.2420-01	2.830	19.24	585.6
123	28.800	.16580	217.00	.1614	.2704	.2287	.9271	.1046-01	.8843-02	1.144	7.906	555.4
122	28.800	.60400-01	121.00	.4381	.9011	.5876	.9505	.3485-01	.2273-01	2.436	16.48	594.9
123	29.000	.21110	244.00	.9009-01	.1395	.1240	.9228	.5397-02	.4796-02	.7263	5.090	530.2
122	29.000	.65700-01	129.00	.3192	.5463	.4052	.9489	.2113-01	.1567-01	2.194	15.11	561.0
122	29.200	.72400-01	133.00	.4652	.8875	.6220	.9470	.3433-01	.2406-01	2.793	19.01	583.4
122	29.300	.79500-01	136.00	.3489	.6685	.4733	.9450	.2586-01	.1830-01	2.084	14.18	584.2
122	29.600	.92500-01	143.00	.3257	.5909	.4413	.9416	.2285-01	.1707-01	2.074	14.19	574.1
122	29.700	.10000+00	146.00	.3321	.6306	.4646	.9398	.2439-01	.1797-01	2.005	13.66	582.6
123	29.900	.12100	198.00	.2880	.5276	.4086	.9350	.2041-01	.1580-01	1.811	12.38	576.1
123	30.200	.16480	214.00	.1338	.2259	.1900	.9274	.8735-02	.7348-02	.9373	6.471	557.5
123	30.200	.18700	229.00	.1060	.1704	.1481	.9248	.6589-02	.5726-02	.8007	5.571	543.3
123	30.300	.21010	242.00	.1048	.1671	.1470	.9230	.6462-02	.5686-02	.8031	5.596	540.5
122	31.500	.91000-02	82.000	.5219	1.328	.6682	.9639	.5136-01	.2585-01	2.456	16.42	617.0
122	31.500	.11100-01	83.000	.6641	1.695	.8508	.9639	.6556-01	.3291-01	3.120	20.86	617.2
122	31.500	.14200-01	84.000	.9149	6.044	1.028	.9870	.2338	.3977-01	3.080	20.22	651.6
122	31.500	.16000-01	85.000	.9581	4.314	1.066	.9870	.1669	.4122-01	3.519	23.19	643.7
122	31.500	.17600-01	86.000	.8161	2.708	.8976	.9870	.1048	.3472-01	3.337	22.12	632.9
122	31.500	.19400-01	87.000	.6912	1.947	.7545	.9870	.7531-01	.2918-01	3.062	20.39	624.2
123	32.100	.21010	241.00	.1263	.2093	.1817	.9231	.8095-02	.7027-02	.9088	6.291	552.5
123	32.200	.16480	213.00	.1293	.2243	.1863	.9278	.8673-02	.7203-02	.8716	5.995	564.3
123	32.200	.17860	224.00	.1205	.1932	.1670	.9260	.7473-02	.6460-02	.9147	6.367	542.4
123	32.200	.18700	228.00	.1215	.2020	.1732	.9250	.7810-02	.6699-02	.8711	6.027	553.3
123	32.300	.12100	197.00	.3469	.6775	.5058	.9356	.2620-01	.1956-01	2.031	13.79	587.3
123	32.300	.12300	194.00	.2779	.5391	.4051	.9352	.2085-01	.1567-01	1.638	11.13	586.2
123	32.300	.12730	208.00	.2086	.3473	.2828	.9343	.1343-01	.1094-01	1.493	10.33	553.6
123	32.300	.13420	209.00	.1977	.3496	.2790	.9329	.1352-01	.1079-01	1.299	8.914	568.7
122	32.400	.10000+00	147.00	.4119	.9134	.6116	.9405	.3533-01	.2366-01	2.144	14.43	604.1
123	32.400	.10110	184.00	.3851	.7660	.5479	.9402	.2963-01	.2119-01	2.212	15.00	590.1
123	32.400	.10630	193.00	.2253	.3624	.2929	.9390	.1402-01	.1133-01	1.700	11.83	543.5
123	32.500	.85800-01	183.00	.2803	.4670	.3697	.9443	.1806-01	.1395-01	2.004	13.86	553.8
122	32.600	.79500-01	137.00	.4485	1.017	.6421	.9461	.3933-01	.2483-01	2.292	15.41	606.5
123	32.600	.80800-01	176.00	.5563	1.207	.7867	.9457	.4667-01	.3043-01	2.948	19.87	601.6
122	32.700	.67400-01	132.00	.3674	.6707	.4758	.9496	.2594-01	.1840-01	2.322	15.87	575.3
122	32.700	.72400-01	134.00	.4142	.7848	.5485	.9481	.3035-01	.2122-01	2.506	17.07	582.2
122	32.800	.65700-01	130.00	.3546	.6097	.4480	.9502	.2358-01	.1733-01	2.421	16.67	562.2

FH15. EXTERNAL TANK OGIVE AERO HEATING

FH15. E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
123	32.800	.16680	210.00	.1228	.2102	.1757	.9276	.8130-02	.6795-02	.8428	5.806	561.1
123	32.800	.18880	225.00	.1234	.1953	.1705	.9249	.7552-02	.6594-02	.9570	6.677	538.1
122	32.900	.58600-01	118.00	.5943	1.313	.8037	.9524	.5080-01	.3108-01	3.101	20.88	603.8
122	32.900	.60400-01	122.00	.5110	1.211	.7082	.9518	.4685-01	.2739-01	2.525	16.94	610.9
123	32.900	.61300-01	171.00	.4724	.9628	.6272	.9515	.3724-01	.2426-01	2.649	17.93	593.7
122	33.000	.53500-01	115.00	.4597	.8681	.5864	.9541	.3358-01	.2268-01	2.791	19.02	581.7
122	33.200	.48300-01	113.00	.3733	.6550	.4608	.9559	.2533-01	.1782-01	2.480	17.03	566.9
123	33.400	.42800-01	166.00	.4912	1.008	.6270	.9577	.3897-01	.2425-01	2.738	18.52	594.5
122	33.500	.40100-01	99.000	.5437	1.152	.6952	.9587	.4457-01	.2689-01	2.941	19.85	598.8
122	33.600	.38300-01	97.000	.5152	1.036	.6473	.9594	.4007-01	.2504-01	2.928	19.84	591.7
122	33.700	.36700-01	96.000	.5024	.9896	.6257	.9600	.3828-01	.2420-01	2.916	19.79	588.6
122	33.900	.33800-01	95.000	.4895	.9376	.6013	.9611	.3626-01	.2326-01	2.926	19.91	584.1
123	34.700	.21010	240.00	.1023	.1708	.1478	.9233	.6606-02	.5714-02	.7291	5.042	554.4
123	34.700	.18700	227.00	.1101	.1826	.1565	.9254	.7063-02	.6051-02	.7917	5.480	552.7
123	34.900	.16480	212.00	.1345	.2395	.1962	.9282	.9263-02	.7590-02	.8762	6.007	570.2
122	35.100	.10000+00	148.00	.3954	.8962	.5883	.9413	.3466-01	.2276-01	2.022	13.59	606.5
123	35.200	.23900-01	161.00	.3162	.5315	.3682	.9651	.2055-01	.1424-01	2.230	15.41	556.3
122	35.300	.92500-01	145.00	.3361	.6214	.4543	.9433	.2403-01	.1757-01	2.092	14.28	577.8
122	35.300	.22100-01	160.00	.3611	.6205	.4224	.9653	.2400-01	.1634-01	2.467	16.99	562.0
123	35.400	.18800	231.00	.1145	.1905	.1630	.9254	.7366-02	.6305-02	.8197	5.671	553.5
123	35.500	.12100	196.00	.3203	.6304	.4660	.9364	.2438-01	.1802-01	1.860	12.63	588.5
123	35.600	.16580	216.00	.1254	.2203	.1816	.9282	.8522-02	.7022-02	.8320	5.713	567.2
122	35.800	.80600-01	138.00	.4778	1.109	.6856	.9468	.4289-01	.2652-01	2.398	16.10	608.9
123	35.900	.21310	247.00	.7341-01	.1181	.1035	.9232	.4567-02	.4001-02	.5542	3.856	543.4
123	36.000	.19040	235.00	.9328-01	.1521	.1312	.9252	.5881-02	.5076-02	.6892	4.783	547.6
123	36.200	.16810	220.00	.1155	.1962	.1641	.9280	.7587-02	.6347-02	.8025	5.535	559.0
122	36.200	.72400-01	135.00	.3754	.7030	.4916	.9493	.2719-01	.1901-01	2.302	15.69	580.2
123	36.300	.12200	200.00	.2905	.5648	.4203	.9364	.2184-01	.1625-01	1.709	11.61	586.5
122	36.600	.65700-01	131.00	.3880	.7221	.5004	.9514	.2793-01	.1936-01	2.395	16.34	579.0
123	36.700	.18700	226.00	.1146	.1866	.1607	.9256	.7217-02	.6216-02	.8486	5.891	547.2
123	36.900	.16480	211.00	.1254	.2154	.1787	.9286	.8330-02	.6911-02	.8572	5.903	561.9
123	36.900	.10110	187.00	.4150	.8571	.5942	.9415	.3315-01	.2298-01	2.298	15.54	595.5
122	37.000	.60400-01	123.00	.5852	1.525	.8222	.9532	.5899-01	.3180-01	2.712	18.12	618.8
123	37.000	.12440	204.00	.2537	.4698	.3594	.9361	.1817-01	.1390-01	1.576	10.76	578.1
122	37.100	.58600-01	119.00	.5982	1.369	.8084	.9538	.5296-01	.3127-01	3.035	20.39	607.5
123	37.200	.21310	246.00	.7669-01	.1217	.1071	.9233	.4707-02	.4140-02	.5921	4.129	539.0
123	37.600	.16810	219.00	.1216	.2035	.1710	.9282	.7870-02	.6612-02	.8628	5.963	555.2
122	37.800	.10270	150.00	.3126	.6006	.4348	.9414	.2323-01	.1682-01	1.863	12.67	584.5
123	37.900	.12100	195.00	.2242	.3894	.3059	.9370	.1506-01	.1183-01	1.510	10.38	564.5
123	38.000	.80300-01	179.00	.4984	.9860	.6731	.9475	.3813-01	.2603-01	2.879	19.53	589.3
122	38.500	.46800-01	112.00	.3762	.6883	.4642	.9582	.2662-01	.1795-01	2.371	16.21	575.7
123	38.600	.12440	203.00	.2354	.4174	.3256	.9365	.1614-01	.1259-01	1.543	10.58	569.2
123	38.700	.10000+00	185.00	.3590	.6717	.4907	.9423	.2598-01	.1898-01	2.203	15.02	580.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K027)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
122	38.900	.82200-01	141.00	.3556	.7105	.4827	.9473	.2748-01	.1867-01	2.033	13.79	590.8
122	39.300	.41600-01	104.00	.5472	1.295	.7101	.9603	.5009-01	.2747-01	2.707	18.16	610.8
123	39.500	.10270	190.00	.3448	.6302	.4680	.9419	.2437-01	.1810-01	2.175	14.87	575.6
123	39.600	.16810	218.00	.1185	.1954	.1648	.9286	.7556-02	.6374-02	.8600	5.958	551.0
123	39.900	.19040	233.00	.9866-01	.1560	.1357	.9257	.6033-02	.5249-02	.7667	5.351	537.7
123	40.100	.79500-01	177.00	.4028	.7308	.5242	.9484	.2826-01	.2027-01	2.564	17.54	574.1
123	40.200	.12440	202.00	.2154	.3723	.2935	.9369	.1440-01	.1135-01	1.460	10.05	563.4
123	40.300	.21310	245.00	.7768-01	.1208	.1068	.9236	.4673-02	.4132-02	.6212	4.350	531.9
122	41.100	.82200-01	142.00	.3329	.6354	.4425	.9480	.2457-01	.1712-01	1.998	13.60	583.5
123	41.100	.60700-01	173.00	.5978	1.278	.7889	.9545	.4944-01	.3051-01	3.208	21.64	599.9
123	42.600	.59600-01	172.00	.5479	1.086	.7035	.9554	.4198-01	.2721-01	3.161	21.44	589.5
123	43.200	.42000-01	168.00	.5097	1.008	.6296	.9615	.3899-01	.2435-01	2.945	19.98	589.3
123	43.400	.82200-01	181.00	.3281	.5699	.4195	.9487	.2204-01	.1622-01	2.210	15.20	564.5
122	43.600	.62900-01	128.00	.4319	.8332	.5525	.9547	.3223-01	.2137-01	2.562	17.42	585.3
122	45.000	.22900-01	8.0000	.5286	1.063	.6269	.9688	.4110-01	.2425-01	3.006	20.37	591.7
123	46.100	.62900-01	174.00	.4708	.8713	.5920	.9555	.3369-01	.2289-01	2.927	19.98	577.9
123	47.700	.40800-01	167.00	.5445	1.087	.6658	.9635	.4202-01	.2575-01	3.118	21.14	590.6
122	48.400	.44200-01	109.00	.5062	1.024	.6244	.9626	.3959-01	.2415-01	2.861	19.38	592.5
122	50.000	.19400-01	156.00	.5412	1.988	.5978	.9870	.7688-01	.2312-01	2.125	14.05	637.2
122	51.000	.12100-01	154.00	.7201	7.669	.8163	.9870	.2966	.3157-01	2.271	14.86	657.1
122	51.000	.17600-01	155.00	.7772	2.942	.8594	.9970	.1138	.3324-01	3.017	19.95	638.3
123	51.900	.44800-01	170.00	.4310	.7713	.5136	.9635	.2983-01	.1986-01	2.791	19.12	571.2
123	53.200	.24700-01	163.00	.4526	.8314	.5208	.9713	.3215-01	.2014-01	2.838	19.39	576.5
123	65.200	.24700-01	162.00	.5483	1.054	.6223	.9752	.4076-01	.2407-01	3.265	22.21	584.7
121	90.000	.91000-02	44.000	.5977	2.210	.6890	.9818	.8550-01	.2665-01	2.341	15.48	637.4
121	90.000	.11100-01	45.000	.7825	2.473	.8933	.9818	.9568-01	.3455-01	3.270	21.71	630.6
121	90.000	.13100-01	46.000	.8094	2.355	.9188	.9818	.9111-01	.3554-01	3.523	23.44	626.1
121	90.000	.17000-01	48.000	.6753	1.536	.7518	.9818	.5942-01	.2908-01	3.443	23.14	606.9
121	90.000	.20900-01	50.000	.6725	1.389	.7420	.9818	.5374-01	.2870-01	3.725	25.19	595.5
121	90.000	.24900-01	52.000	.3073	.5789	.3368	.9814	.2239-01	.1303-01	1.872	12.76	581.2
121	90.000	.26900-01	53.000	.5736	1.121	.6337	.9806	.4336-01	.2451-01	3.357	22.80	587.4
121	90.000	.28800-01	54.000	.5718	1.104	.6332	.9799	.4270-01	.2449-01	3.390	23.05	585.4
121	90.000	.32800-01	55.000	.4976	.9147	.5520	.9784	.3538-01	.2135-01	3.118	21.30	576.7
121	90.000	.36700-01	56.000	.5219	.9665	.5838	.9770	.3738-01	.2258-01	3.242	22.13	578.1
121	90.000	.40600-01	57.000	.5086	.9656	.5753	.9755	.3735-01	.2225-01	3.071	20.91	582.6
121	90.000	.48500-01	58.000	.5154	.9633	.5905	.9727	.3726-01	.2284-01	3.168	21.60	579.8
121	90.000	.56400-01	59.000	.4425	.8181	.5136	.9698	.3165-01	.1987-01	2.753	18.80	577.8
121	90.000	.76100-01	60.000	.3805	.6905	.4552	.9631	.2671-01	.1765-01	2.422	16.57	574.1
121	90.000	.95800-01	61.000	.3833	.6877	.4742	.9567	.2660-01	.1834-01	2.474	16.95	571.8
121	90.000	.11550	62.000	.2652	.4675	.3371	.9507	.1808-01	.1304-01	1.752	12.03	567.9
121	135.00	.19000-01	49.000	.7234	1.558	.7988	.9824	.6027-01	.3090-01	3.859	26.02	600.8
121	135.00	.22900-01	51.000	.6421	1.337	.7068	.9824	.5172-01	.2734-01	3.530	23.86	596.6
121	180.00	.91000-02	23.000	.4433	.9262	.5256	.9700	.3583-01	.2033-01	2.430	16.42	597.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWOT DEG. R /SEC	TW DEG. R
121	180.00	.11100-01	24.000	.6614	1.622	.8045	.9700	.6274-01	.3112-01	3.191	21.37	613.9
121	180.00	.13100-01	25.000	.6753	1.553	.8134	.9700	.6007-01	.3146-01	3.415	22.94	607.9
121	180.00	.15000-01	26.000	.6450	1.466	.7753	.9700	.5669-01	.2999-01	3.291	22.12	606.7
121	180.00	.17000-01	27.000	.6656	1.444	.7942	.9700	.5587-01	.3072-01	3.527	23.78	601.7
121	180.00	.19000-01	28.000	.6755	1.427	.8023	.9700	.5518-01	.3104-01	3.666	24.75	598.4
121	180.00	.20900-01	29.000	.6282	1.247	.7383	.9700	.4824-01	.2856-01	3.617	24.54	589.8
121	180.00	.28800-01	32.000	.5101	.9533	.5992	.9680	.3687-01	.2318-01	3.135	21.38	579.8
121	180.00	.32800-01	33.000	.4755	.8499	.5576	.9666	.3288-01	.2157-01	3.084	21.13	571.0
121	180.00	.36700-01	34.000	.4768	.8722	.5663	.9652	.3374-01	.2190-01	3.006	20.55	575.7
121	180.00	.48500-01	36.000	.4181	.7405	.5035	.9610	.2864-01	.1948-01	2.743	18.82	569.0
121	180.00	.56400-01	37.000	.3965	.6928	.4824	.9584	.2680-01	.1866-01	2.649	18.20	566.0
121	180.00	.76100-01	38.000	.3184	.5412	.3967	.9521	.2094-01	.1534-01	2.209	15.24	559.3
121	180.00	.95800-01	39.000	.2975	.4933	.3780	.9463	.1908-01	.1462-01	2.141	14.82	552.6
121	180.00	.11550	40.000	.2281	.3759	.2968	.9411	.1454-01	.1148-01	1.658	11.49	550.7
121	180.00	.18450	42.000	.1131	.1780	.1536	.9277	.6884-02	.5941-02	.8872	6.198	535.9
121	225.00	.22900-01	30.000	.5060	.9330	.6394	.9544	.3609-01	.2473-01	3.159	21.57	577.3
121	270.00	.91000-02	63.000	.4676	.8425	.6192	.9450	.3259-01	.2395-01	3.003	20.56	572.7
121	270.00	.11100-01	64.000	.4852	.8823	.6449	.9450	.3413-01	.2495-01	3.080	21.07	574.5
121	270.00	.13100-01	65.000	.4741	.9097	.6437	.9450	.3519-01	.2490-01	2.829	19.25	584.4
121	270.00	.17000-01	67.000	.5047	.9350	.6759	.9450	.3617-01	.2615-01	3.134	21.39	578.1
121	270.00	.20900-01	69.000	.3786	.6873	.5029	.9450	.2659-01	.1945-01	2.408	16.48	574.2
121	270.00	.24900-01	71.000	.4014	.7266	.5339	.9445	.2811-01	.2065-01	2.562	17.53	573.7
121	270.00	.28800-01	73.000	.3776	.6782	.5043	.9433	.2623-01	.1951-01	2.434	16.67	572.0
121	270.00	.36700-01	75.000	.3694	.6583	.4987	.9409	.2546-01	.1929-01	2.405	16.48	570.4
121	270.00	.48500-01	77.000	.2990	.5093	.4027	.9376	.1970-01	.1558-01	2.070	14.27	559.7
121	270.00	.56400-01	78.000	.2736	.4607	.3704	.9356	.1782-01	.1433-01	1.925	13.29	556.8
121	270.00	.95900-01	80.000	.1261	.2057	.1750	.9278	.7956-02	.6770-02	.9317	6.466	547.7
121	270.00	.11550	81.000	.9469-01	.1550	.1336	.9251	.5997-02	.5169-02	.6951	4.821	548.9
121	315.00	.19000-01	68.000	.4008	.7092	.5279	.9446	.2743-01	.2042-01	2.634	18.07	568.8
121	315.00	.22900-01	70.000	.4543	.8276	.6055	.9446	.3201-01	.2342-01	2.877	19.67	574.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K028)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -9.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
167	5.500	-.9542-02	9.036	173.8	731.7	.1868	103.8	-90.06	2747.	.4859-02	.8351-07	4.967
169	5.500	.3176-02	9.024	173.8	731.7	.1869	103.8	-89.98	2747.	.4859-02	.8351-07	4.967
170	5.500	.6353-02	9.024	173.9	732.7	.1869	103.9	-89.96	2749.	.4854-02	.8363-07	4.958

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
167	.3542-01	.1101-01
169	.3542-01	.1101-01
170	.3543-01	.1102-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
170	.00000	.91000-02	1.0000	.4535	.7808	.5571	.9556	.2766-01	.1974-01	2.809	19.39	557.9
170	.00000	.15000-01	4.0000	.6446	1.217	.8145	.9556	.4312-01	.2886-01	3.558	24.30	576.9
170	.00000	.17000-01	5.0000	.6588	1.227	.8291	.9556	.4348-01	.2938-01	3.693	25.26	574.5
170	.00000	.19000-01	6.0000	.6537	1.203	.8198	.9556	.4263-01	.2905-01	3.716	25.45	572.2
170	.00000	.24900-01	9.0000	.5670	1.006	.7049	.9552	.3564-01	.2497-01	3.374	23.20	564.7
170	.00000	.26900-01	10.000	.5116	.8804	.6322	.9544	.3119-01	.2240-01	3.170	21.88	557.8
167	.00000	.32800-01	12.000	.4260	.7007	.5239	.9524	.2481-01	.1855-01	2.817	19.58	545.0
167	.00000	.36700-01	13.000	.3948	.6383	.4856	.9510	.2261-01	.1720-01	2.681	18.69	539.9
167	.00000	.40600-01	14.000	.4205	.6941	.5247	.9496	.2458-01	.1858-01	2.765	19.21	546.0
167	.00000	.48500-01	15.000	.3686	.5986	.4630	.9469	.2120-01	.1640-01	2.487	17.32	541.2
167	.00000	.56400-01	16.000	.3648	.5917	.4638	.9443	.2096-01	.1643-01	2.465	17.17	540.9
167	.00000	.76100-01	17.000	.2685	.4218	.3463	.9382	.1494-01	.1226-01	1.914	13.41	530.4
167	.00000	.11550	19.000	.1585	.2486	.2151	.9274	.8805-02	.7617-02	1.133	7.941	529.8
167	.00000	.16480	20.000	.8658-01	.1352	.1233	.9171	.4787-02	.4368-02	.6242	4.379	528.1
167	.00000	.21400	22.000	.4105-01	.6113-01	.5803-01	.9109	.2165-02	.2055-02	.3240	2.298	508.9
169	2.0000	.24700-01	165.00	.4657	.7897	.5720	.9547	.2797-01	.2026-01	2.942	20.36	553.3
170	9.0000	.15000-01	157.00	.6399	1.193	.8166	.9533	.4228-01	.2893-01	3.582	24.50	574.7
170	9.0000	.17600-01	158.00	.5907	1.061	.7447	.9533	.3760-01	.2639-01	3.459	23.75	567.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
169	9.8000	.24700-01	164.00	.4750	.8062	.5895	.9527	.2856-01	.2088-01	2.997	20.73	553.5
170	10.000	.22900-01	88.000	.5180	.9117	.6496	.9531	.3230-01	.2302-01	3.114	21.43	563.0
170	10.000	.26900-01	90.000	.4286	.7051	.5283	.9519	.2498-01	.1872-01	2.838	19.72	545.8
170	10.000	.34700-01	94.000	.4004	.6444	.4960	.9491	.2283-01	.1757-01	2.745	19.14	539.2
170	12.000	.17600-01	152.00	1.048	3.286	1.238	.9775	.1164	.4386-01	3.996	26.60	625.1
170	12.000	.12100-01	151.00	.6147	2.497	.7402	.9775	.8847-01	.2622-01	2.117	14.01	635.5
170	13.000	.19400-01	153.00	.9997	2.807	1.171	.9773	.9946-01	.4149-01	4.030	26.92	618.9
169	14.600	.44200-01	169.00	.4703	.7889	.6054	.9447	.2794-01	.2144-01	3.019	20.92	550.5
170	18.500	.44200-01	106.00	.5123	.8869	.6717	.9438	.3142-01	.2380-01	3.148	21.71	559.2
169	19.600	.62900-01	175.00	.3966	.6515	.5248	.9376	.2308-01	.1859-01	2.628	18.27	544.6
170	19.800	.40800-01	101.00	.6082	1.105	.8095	.9447	.3914-01	.2868-01	3.513	24.09	569.6
170	20.000	.24900-01	89.000	.3905	.6526	.4882	.9502	.2312-01	.1730-01	2.524	17.49	550.3
170	20.000	.28800-01	91.000	.3318	.5343	.4117	.9488	.1893-01	.1459-01	2.274	15.85	539.3
170	20.000	.32800-01	93.000	.4067	.6768	.5148	.9474	.2398-01	.1824-01	2.646	18.35	549.1
170	22.200	.62900-01	125.00	.4579	.7805	.6191	.9370	.2765-01	.2193-01	2.876	19.87	555.4
170	22.400	.44200-01	107.00	.5427	.9703	.7250	.9429	.3438-01	.2569-01	3.196	21.96	566.4
169	22.600	.10270	192.00	.2167	.3461	.2996	.9260	.1226-01	.1061-01	1.501	10.49	536.0
170	23.000	.42000-01	105.00	.6788	1.320	.9355	.9435	.4678-01	.3314-01	3.626	24.70	581.9
170	23.400	.59600-01	120.00	.5400	.9652	.7440	.9378	.3420-01	.2636-01	3.182	21.86	566.4
169	23.900	.21310	250.00	.3058-01	.4522-01	.4316-01	.9100	.1602-02	.1529-02	.2448	1.739	505.7
170	24.100	.82200-01	139.00	.3652	.6136	.5067	.9310	.2174-01	.1795-01	2.341	16.21	551.7
169	24.400	.19040	238.00	.4598-01	.6883-01	.6524-01	.9110	.2438-02	.2311-02	.3589	2.542	511.3
169	24.400	.12440	207.00	.1525	.2438	.2169	.9208	.8637-02	.7682-02	1.056	7.374	536.3
169	24.800	.16810	223.00	.7586-01	.1172	.1093	.9133	.4151-02	.3870-02	.5574	3.919	524.2
170	24.900	.62900-01	126.00	.4675	.8317	.6478	.9364	.2947-01	.2295-01	2.771	19.04	565.4
169	25.000	.79500-01	178.00	.3847	.6466	.5321	.9316	.2290-01	.1885-01	2.461	17.05	551.0
169	25.300	.10270	191.00	.2714	.4429	.3815	.9255	.1569-01	.1351-01	1.816	12.64	542.7
169	25.300	.10000+00	186.00	.2875	.4760	.4064	.9261	.1686-01	.1439-01	1.882	13.07	546.9
170	25.500	.60700-01	124.00	.6124	1.184	.8803	.9370	.4196-01	.3119-01	3.291	22.43	581.0
169	26.000	.12440	206.00	.1968	.3194	.2832	.9205	.1131-01	.1003-01	1.329	9.259	541.0
170	26.300	.82200-01	140.00	.3290	.5597	.4609	.9306	.1983-01	.1633-01	2.072	14.32	554.9
169	26.700	.12100	199.00	.2758	.4743	.4118	.9211	.1680-01	.1458-01	1.707	11.79	556.9
169	26.800	.16810	222.00	.1189	.1860	.1731	.9131	.6586-02	.6132-02	.8537	5.987	528.9
169	27.000	.19040	237.00	.7943-01	.1199	.1136	.9109	.4248-02	.4024-02	.6096	4.309	515.0
169	27.100	.21310	249.00	.5551-01	.8240-01	.7860-01	.9100	.2919-02	.2784-02	.4408	3.129	507.5
169	27.200	.80300-01	180.00	.4664	.8214	.6649	.9309	.2909-01	.2355-01	2.796	19.25	562.4
170	27.400	.40100-01	98.000	.6601	1.367	.9346	.9432	.4844-01	.3311-01	3.314	22.46	591.0
169	27.400	.16480	215.00	.1357	.2157	.1998	.9135	.7638-02	.7076-02	.9493	6.638	534.2
170	27.600	.41600-01	102.00	.7199	1.545	1.038	.9427	.5475-01	.3676-01	3.499	23.66	595.5
169	27.600	.12440	205.00	.2411	.4017	.3539	.9203	.1423-01	.1254-01	1.564	10.85	548.6
169	27.600	.18700	230.00	.7454-01	.1129	.1068	.9111	.4000-02	.3784-02	.5683	4.013	516.4
169	27.700	.21010	243.00	.6909-01	.1037	.9872-01	.9100	.3672-02	.3497-02	.5368	3.800	512.3
169	27.900	.10110	188.00	.3220	.5602	.4715	.9254	.1984-01	.1670-01	1.963	13.53	553.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K028)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
170	28.000	.46800-01	110.00	.3176	.5050	.4069	.9409	.1789-01	.1442-01	2.222	15.53	535.2
169	28.200	.16810	221.00	.1519	.2423	.2249	.9130	.8581-02	.7965-02	1.055	7.373	535.5
169	28.300	.19040	236.00	.9960-01	.1513	.1432	.9108	.5357-02	.5073-02	.7558	5.334	517.4
169	28.300	.12200	201.00	.2104	.3425	.3032	.9206	.1213-01	.1074-01	1.413	9.840	542.0
170	28.400	.53500-01	114.00	.3411	.5549	.4468	.9386	.1966-01	.1583-01	2.299	16.00	542.5
169	28.400	.21310	248.00	.7441-01	.1111	.1059	.9100	.3937-02	.3751-02	.5835	4.135	510.3
170	28.700	.58600-01	117.00	.6200	1.166	.8798	.9370	.4133-01	.3117-01	3.436	23.48	576.3
169	28.800	.16580	217.00	.1612	.2618	.2418	.9132	.9271-02	.8564-02	1.087	7.573	541.2
170	28.800	.60400-01	121.00	.6487	1.318	.9581	.9364	.4669-01	.3394-01	3.317	22.52	588.4
169	29.000	.21110	244.00	.7883-01	.1186	.1129	.9100	.4202-02	.4000-02	.6090	4.307	513.6
170	29.000	.65700-01	129.00	.2888	.4560	.3796	.9348	.1616-01	.1345-01	2.045	14.31	532.8
170	29.200	.72400-01	133.00	.3324	.5472	.4516	.9328	.1939-01	.1600-01	2.197	15.26	546.1
170	29.300	.79500-01	136.00	.4860	.9320	.7269	.9307	.3302-01	.2575-01	2.636	17.98	579.6
170	29.600	.92500-01	143.00	.2140	.3441	.2952	.9272	.1219-01	.1046-01	1.468	10.24	539.0
170	29.700	.10000+00	146.00	.3524	.6434	.5320	.9254	.2280-01	.1885-01	2.023	13.86	570.7
169	29.900	.12100	198.00	.2840	.4959	.4298	.9206	.1757-01	.1522-01	1.722	11.87	560.5
169	30.200	.16480	214.00	.1650	.2709	.2497	.9132	.9594-02	.8843-02	1.094	7.605	544.5
169	30.300	.21010	242.00	.8142-01	.1238	.1177	.9100	.4385-02	.4168-02	.6161	4.347	518.0
170	31.500	.11100-01	83.000	.5011	.8787	.6448	.9481	.3113-01	.2285-01	3.027	20.85	562.2
170	31.500	.14200-01	84.000	.8989	2.642	1.089	.9735	.9361-01	.3860-01	3.536	23.58	621.6
170	31.500	.16000-01	85.000	.9997	2.633	1.197	.9735	.9329-01	.4239-01	4.184	28.01	614.6
170	31.500	.19400-01	87.000	.7894	1.561	.9085	.9735	.5531-01	.3219-01	4.146	28.21	584.4
169	32.100	.21010	241.00	.6598-01	.9901-01	.9429-01	.9100	.3507-02	.3340-02	.5124	3.627	512.4
169	32.200	.16480	213.00	.1398	.2246	.2081	.9130	.7954-02	.7372-02	.9597	6.697	537.9
169	32.200	.17860	224.00	.8071-01	.1224	.1155	.9115	.4334-02	.4091-02	.6143	4.337	516.8
169	32.200	.16700	228.00	.8921-01	.1344	.1274	.9108	.4760-02	.4512-02	.6878	4.864	514.0
169	32.300	.12100	197.00	.2488	.4154	.3658	.9203	.1471-01	.1296-01	1.608	11.15	549.2
169	32.300	.12300	194.00	.2127	.3595	.3162	.9198	.1273-01	.1120-01	1.349	9.341	552.5
169	32.300	.12730	208.00	.9249-01	.1448	.1308	.9190	.5130-02	.4632-02	.6633	4.651	529.2
169	32.300	.13420	209.00	.1149	.1848	.1668	.9177	.6547-02	.5909-02	.7863	5.485	538.4
170	32.400	.10000+00	147.00	.2534	.4258	.3641	.9249	.1509-01	.1290-01	1.624	11.25	551.7
169	32.400	.10110	184.00	.2910	.4995	.4245	.9247	.1769-01	.1504-01	1.806	12.47	556.4
169	32.400	.10630	193.00	.1329	.2053	.1821	.9234	.7273-02	.6449-02	.9755	6.859	524.4
169	32.500	.85800-01	183.00	.1548	.2392	.2070	.9285	.8471-02	.7333-02	1.137	7.995	524.3
170	32.600	.79500-01	137.00	.3517	.6383	.5124	.9301	.2261-01	.1816-01	2.033	13.94	569.5
169	32.600	.80800-01	176.00	.3815	.6656	.5447	.9298	.2357-01	.1929-01	2.316	15.96	560.3
170	32.700	.67400-01	132.00	.2289	.3598	.3018	.9335	.1275-01	.1069-01	1.633	11.44	531.3
170	32.700	.72400-01	134.00	.2752	.4461	.3719	.9321	.1581-01	.1318-01	1.864	12.98	541.5
170	32.800	.65700-01	130.00	.2236	.3443	.2908	.9340	.1220-01	.1030-01	1.655	11.64	523.8
169	32.800	.16680	210.00	.1187	.1877	.1748	.9127	.6650-02	.6191-02	.8361	5.851	532.8
169	32.800	.18880	225.00	.6826-01	.1017	.9663-01	.9107	.3602-02	.3423-02	.5381	3.815	509.1
170	32.900	.58600-01	118.00	.5828	1.035	.8084	.9361	.3669-01	.2864-01	3.460	23.79	565.1
170	32.900	.60400-01	122.00	.3914	.6717	.5352	.9356	.2380-01	.1896-01	2.434	16.81	557.1

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

(R4K028)

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
169	32.900	.61300-01	171.00	.5213	1.012	.7595	.9353	.3585-01	.2690-01	2.786	18.99	580.8
170	33.000	.53500-01	115.00	.3497	.5727	.4616	.9377	.2029-01	.1636-01	2.331	16.21	544.5
170	33.200	.48300-01	113.00	.2537	.3942	.3237	.9393	.1397-01	.1147-01	1.848	12.98	527.1
169	33.400	.42800-01	166.00	.5999	1.145	.8337	.9411	.4055-01	.2953-01	3.266	22.30	577.9
170	33.500	.40100-01	99.000	.5910	1.080	.8017	.9420	.3827-01	.2841-01	3.388	23.22	570.9
170	33.600	.38300-01	97.000	.4887	.8448	.6448	.9426	.2993-01	.2285-01	3.010	20.76	558.8
170	33.700	.36700-01	96.000	.4288	.7124	.5544	.9431	.2524-01	.1964-01	2.796	19.40	548.6
170	33.900	.33800-01	95.000	.3065	.4879	.3870	.9440	.1729-01	.1371-01	2.140	14.95	535.6
169	34.700	.21010	240.00	.5993-01	.8829-01	.8430-01	.9100	.3127-02	.2986-02	.4837	3.440	503.8
169	34.700	.18700	227.00	.9519-01	.1452	.1375	.9107	.5144-02	.4870-02	.7157	5.046	519.4
169	34.900	.16480	212.00	.1231	.1952	.1816	.9128	.6914-02	.6432-02	.8639	6.043	533.6
170	35.100	.10000+00	148.00	.2287	.3778	.3258	.9245	.1339-01	.1154-01	1.504	10.44	547.0
169	35.200	.23900-01	161.00	.2981	.4635	.3672	.9473	.1642-01	.1301-01	2.165	15.21	526.6
170	35.300	.92500-01	145.00	.2481	.4068	.3482	.9263	.1441-01	.1234-01	1.650	11.47	544.9
170	35.300	.22100-01	160.00	.2842	.4412	.3497	.9474	.1563-01	.1239-01	2.072	14.55	526.9
169	35.400	.18800	231.00	.8971-01	.1347	.1279	.9106	.4770-02	.4530-02	.6963	4.928	512.5
169	35.500	.12100	196.00	.2093	.3452	.3059	.9198	.1223-01	.1084-01	1.378	9.575	545.8
169	35.600	.16580	216.00	.1117	.1756	.1638	.9126	.6219-02	.5800-02	.7948	5.568	530.7
170	35.800	.80600-01	138.00	.2979	.4948	.4145	.9293	.1753-01	.1469-01	1.943	13.48	548.5
169	35.900	.21310	247.00	.5499-01	.8042-01	.7686-01	.9100	.2848-02	.2722-02	.4507	3.212	500.3
169	36.000	.19040	235.00	.7355-01	.1094	.1041	.9104	.3876-02	.3688-02	.5813	4.124	508.5
169	36.200	.16810	220.00	.1046	.1624	.1520	.9123	.5751-02	.5385-02	.7612	5.347	526.1
170	36.200	.72400-01	135.00	.3226	.5262	.4390	.9315	.1864-01	.1555-01	2.165	15.06	543.3
169	36.300	.12200	200.00	.1852	.3031	.2697	.9195	.1074-01	.9552-02	1.234	8.585	543.6
170	36.600	.65700-01	131.00	.2112	.3314	.2785	.9333	.1174-01	.9868-02	1.512	10.59	530.6
169	36.700	.18700	226.00	.8592-01	.1289	.1224	.9106	.4566-02	.4336-02	.6677	4.726	512.3
169	36.900	.16480	211.00	.1127	.1777	.1657	.9126	.6295-02	.5868-02	.7986	5.592	531.6
169	36.900	.10110	187.00	.2551	.4251	.3666	.9239	.1506-01	.1298-01	1.653	11.47	548.7
170	37.000	.60400-01	123.00	.4062	.6931	.5562	.9348	.2456-01	.1971-01	2.548	17.60	555.7
169	37.000	.12440	204.00	.1553	.2506	.2245	.9189	.8874-02	.7951-02	1.058	7.379	539.3
170	37.100	.58600-01	119.00	.4551	.7689	.6181	.9354	.2724-01	.2190-01	2.894	20.03	553.2
169	37.200	.21310	246.00	.5069-01	.7412-01	.7085-01	.9100	.2625-02	.2509-02	.4156	2.962	500.2
169	37.600	.16810	219.00	.9756-01	.1513	.1418	.9122	.5359-02	.5021-02	.7119	5.001	525.7
170	37.800	.10270	150.00	.1882	.3069	.2674	.9234	.1087-01	.9473-02	1.262	8.781	543.3
169	37.900	.12100	195.00	.1899	.3080	.2747	.9195	.1091-01	.9730-02	1.283	8.937	540.9
169	38.000	.80300-01	179.00	.3627	.6162	.5124	.9290	.2183-01	.1815-01	2.285	15.80	553.8
170	38.500	.46800-01	112.00	.2408	.3727	.3073	.9388	.1321-01	.1089-01	1.765	12.40	525.7
169	38.600	.12440	203.00	.1613	.2618	.2345	.9187	.9272-02	.8304-02	1.090	7.591	541.0
169	38.700	.10000+00	185.00	.2590	.4338	.3735	.9239	.1536-01	.1323-01	1.666	11.55	550.1
170	38.900	.82200-01	141.00	.2412	.3938	.3339	.9283	.1395-01	.1183-01	1.617	11.25	543.5
170	39.300	.41600-01	104.00	.4406	.7550	.5861	.9404	.2675-01	.2077-01	2.747	18.97	556.7
169	39.500	.10270	190.00	.2547	.4273	.3693	.9232	.1513-01	.1308-01	1.635	11.33	550.5
169	39.600	.16810	218.00	.8801-01	.1360	.1276	.9120	.4817-02	.4520-02	.6463	4.544	524.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K028)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
169	39.900	.19040	233.00	.5546-01	.8212-01	.7825-01	.9103	.2909-02	.2771-02	.4429	3.145	506.2
169	40.100	.79500-01	177.00	.3810	.6547	.5423	.9289	.2319-01	.1921-01	2.362	16.31	556.6
169	40.200	.12440	202.00	.1590	.2583	.2315	.9185	.9149-02	.8200-02	1.072	7.466	541.3
169	40.300	.21310	245.00	.4161-01	.6040-01	.5779-01	.9100	.2139-02	.2047-02	.3466	2.475	496.5
170	41.100	.82200-01	142.00	.2777	.4666	.3919	.9280	.1653-01	.1389-01	1.780	12.33	551.7
169	41.100	.60700-01	173.00	.3986	.6674	.5428	.9340	.2364-01	.1923-01	2.566	17.78	550.0
169	42.600	.59600-01	172.00	.4478	.7685	.6175	.9341	.2722-01	.2187-01	2.780	19.21	556.4
169	43.200	.42000-01	168.00	.3937	.6435	.5144	.9396	.2279-01	.1822-01	2.629	18.29	543.2
169	43.400	.82200-01	181.00	.2505	.3992	.3429	.9277	.1414-01	.1215-01	1.743	12.18	535.2
170	43.600	.62900-01	128.00	.3120	.5248	.4284	.9330	.1860-01	.1518-01	1.998	13.83	552.0
170	45.000	.22900-01	8.0000	.6460	1.203	.8635	.9456	.4264-01	.3059-01	3.620	24.76	574.5
169	46.100	.62900-01	174.00	.3783	.6495	.5265	.9326	.2301-01	.1865-01	2.348	16.22	556.4
169	47.700	.40800-01	167.00	.4198	.6911	.5513	.9392	.2448-01	.1953-01	2.771	19.26	545.3
170	48.400	.44200-01	109.00	.3838	.6500	.5144	.9380	.2303-01	.1822-01	2.433	16.83	553.8
170	50.000	.19400-01	156.00	1.060	2.111	1.243	.9704	.7478-01	.4404-01	5.530	37.60	585.5
170	51.000	.12100-01	154.00	.5973	1.703	.7400	.9703	.6033-01	.2622-01	2.388	15.94	619.8
170	51.000	.17600-01	155.00	.6840	1.320	.7982	.9703	.4676-01	.2828-01	3.686	25.13	580.6
169	51.900	.44800-01	170.00	.2915	.4645	.3803	.9373	.1645-01	.1347-01	2.028	14.17	535.2
169	53.200	.24700-01	163.00	.3425	.5501	.4344	.9440	.1949-01	.1538-01	2.352	16.41	537.8
169	65.200	.24700-01	162.00	.4273	.7159	.5561	.9426	.2536-01	.1970-01	2.747	19.04	550.2
167	90.000	.91000-02	44.000	.3434	.5496	.4394	.9418	.1947-01	.1556-01	2.371	16.55	536.7
167	90.000	.11100-01	45.000	.3762	.6084	.4837	.9418	.2155-01	.1713-01	2.554	17.80	540.0
167	90.000	.13100-01	46.000	.4573	.7795	.6023	.9418	.2761-01	.2133-01	2.866	19.82	554.7
167	90.000	.17000-01	48.000	.5041	.9124	.6819	.9418	.3232-01	.2415-01	2.919	20.04	568.2
167	90.000	.20900-01	50.000	.4995	.8672	.6634	.9418	.3071-01	.2349-01	3.053	21.06	559.1
167	90.000	.24900-01	52.000	.3963	.6676	.5205	.9413	.2364-01	.1843-01	2.527	17.50	551.6
167	90.000	.26900-01	53.000	.4527	.7688	.5991	.9406	.2723-01	.2122-01	2.853	19.74	553.7
167	90.000	.28800-01	54.000	.4514	.7641	.5986	.9399	.2706-01	.2120-01	2.858	19.78	552.9
167	90.000	.32800-01	55.000	.2975	.4694	.3838	.9386	.1662-01	.1359-01	2.104	14.73	531.9
167	90.000	.36700-01	56.000	.3829	.6256	.5061	.9373	.2216-01	.1792-01	2.557	17.79	543.1
167	90.000	.40600-01	57.000	.3597	.5979	.4829	.9360	.2118-01	.1710-01	2.340	16.23	548.0
167	90.000	.48500-01	58.000	.3337	.5462	.4502	.9335	.1934-01	.1594-01	2.222	15.46	543.6
167	90.000	.56400-01	59.000	.2741	.4456	.3730	.9311	.1578-01	.1321-01	1.845	12.85	541.6
167	90.000	.76100-01	60.000	.1881	.3038	.2623	.9257	.1076-01	.9290-02	1.279	8.919	539.6
167	90.000	.95800-01	61.000	.1263	.2009	.1788	.9210	.7116-02	.6331-02	.8818	6.165	534.6
167	90.000	.11550	62.000	.8962-01	.1442	.1307	.9171	.5108-02	.4627-02	.6134	4.279	538.4
167	135.00	.19000-01	49.000	.5889	1.044	.7718	.9456	.3696-01	.2733-01	3.502	24.09	563.7
167	135.00	.22900-01	51.000	.5510	.9822	.7239	.9456	.3478-01	.2564-01	3.252	22.36	565.0
167	180.00	.91000-02	23.000	.3438	.5632	.4156	.9556	.1995-01	.1472-01	2.286	15.90	543.9
167	180.00	.11100-01	24.000	.6220	1.296	.8085	.9556	.4589-01	.2863-01	3.100	21.01	590.9
167	180.00	.13100-01	25.000	.7171	1.413	.9176	.9556	.5005-01	.3250-01	3.773	25.68	583.1
167	180.00	.15000-01	26.000	.6887	1.340	.8780	.9556	.4745-01	.3110-01	3.672	25.02	581.1
167	180.00	.17000-01	27.000	.6854	1.305	.8684	.9556	.4623-01	.3075-01	3.739	25.53	577.6

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H. TF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
167	180.00	.19000-01	28.000	.6726	1.262	.8483	.9556	.4469-01	.3004-01	3.732	25.52	575.0
167	180.00	.20900-01	29.000	.6405	1.164	.8002	.9556	.4122-01	.2834-01	3.691	25.32	569.0
167	180.00	.28600-01	32.000	.5362	.9266	.6660	.9537	.3282-01	.2359-01	3.298	22.76	558.0
167	180.00	.32800-01	33.000	.4904	.8181	.6061	.9523	.2897-01	.2147-01	3.172	22.00	549.0
167	180.00	.36700-01	34.000	.4645	.7890	.5818	.9510	.2794-01	.2061-01	2.926	20.24	553.8
167	180.00	.48500-01	36.000	.3995	.6617	.5059	.9469	.2343-01	.1792-01	2.613	18.15	547.0
167	180.00	.56400-01	37.000	.3660	.5984	.4670	.9443	.2119-01	.1654-01	2.442	16.99	543.3
167	180.00	.76100-01	38.000	.2861	.4582	.3726	.9382	.1623-01	.1320-01	1.973	13.77	536.9
167	180.00	.95800-01	39.000	.2188	.3453	.2907	.9325	.1223-01	.1029-01	1.548	10.84	531.9
167	180.00	.11550	40.000	.1673	.2649	.2284	.9274	.9381-02	.8089-02	1.178	8.239	533.0
167	180.00	.18450	42.000	.6656-01	.1011	.9420-01	.9140	.3579-02	.3336-02	.5054	3.567	517.3
167	225.00	.22900-01	30.000	.6512	1.179	.7654	.9667	.4176-01	.2711-01	3.769	25.86	568.3
167	270.00	.91000-02	63.000	.6472	1.441	.7676	.9715	.5105-01	.2719-01	3.044	20.55	598.9
167	270.00	.11100-01	64.000	.8073	1.754	.9538	.9715	.6211-01	.3378-01	3.877	26.21	596.1
167	270.00	.13100-01	65.000	.8186	1.768	.9663	.9715	.6261-01	.3422-01	3.951	26.72	595.4
167	270.00	.17000-01	67.000	.8270	1.675	.9662	.9715	.5931-01	.3422-01	4.234	28.76	587.1
167	270.00	.20900-01	69.000	.7214	1.390	.8359	.9715	.4923-01	.2960-01	3.886	26.51	579.6
167	270.00	.24900-01	71.000	.6996	1.325	.8102	.9711	.4692-01	.2870-01	3.841	26.24	576.6
167	270.00	.28800-01	73.000	.5841	1.054	.6754	.9697	.3732-01	.2392-01	3.395	23.31	567.5
167	270.00	.36700-01	75.000	.5682	1.009	.6643	.9669	.3573-01	.2353-01	3.371	23.18	564.2
167	270.00	.48500-01	77.000	.5046	.8617	.5967	.9628	.3052-01	.2113-01	3.155	21.81	555.1
167	270.00	.56400-01	78.000	.4600	.7783	.5498	.9601	.2756-01	.1947-01	2.915	20.17	552.8
167	270.00	.95800-01	80.000	.3067	.5020	.3860	.9472	.1778-01	.1367-01	2.043	14.21	543.6
167	270.00	.11550	81.000	.2573	.4201	.3332	.9412	.1488-01	.1180-01	1.721	11.97	542.9
167	315.00	.19000-01	68.000	.6442	1.156	.7557	.9667	.4095-01	.2676-01	3.770	25.90	566.4
167	315.00	.22900-01	70.000	.6240	1.146	.7356	.9667	.4058-01	.2605-01	3.551	24.33	571.0

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
171	5.500	.4220-02	6.022	173.8	729.7	.1869	103.5	-89.96	2743.	.4873-02	.8329-07	4.988
172	5.500	.4221-02	6.024	173.8	728.7	.1869	103.4	-89.96	2741.	.4879-02	.8317-07	4.998
174	5.500	-.4217-02	6.018	173.8	727.7	.1869	103.2	-90.04	2739.	.4886-02	.8306-07	5.008

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
171	.3540-01	.1099-01
172	.3539-01	.1098-01
174	.3538-01	.1098-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
172	.00000	.91000-02	1.0000	.3670	.5973	.4416	.9562	.2114-01	.1563-01	2.455	17.12	539.7
172	.00000	.15000-01	4.0000	.6408	1.183	.8018	.9562	.4186-01	.2838-01	3.607	24.73	569.6
172	.00000	.17000-01	5.0000	.6495	1.180	.8089	.9562	.4178-01	.2863-01	3.725	25.59	566.6
172	.00000	.19000-01	6.0000	.6501	1.176	.8086	.9562	.4162-01	.2862-01	3.749	25.76	565.7
172	.00000	.24900-01	9.0000	.5794	1.020	.7166	.9557	.3611-01	.2536-01	3.458	23.84	560.1
172	.00000	.26900-01	10.000	.5313	.9082	.6535	.9550	.3215-01	.2313-01	3.302	22.85	553.1
171	.00000	.32800-01	12.000	.4647	.7752	.5729	.9528	.2744-01	.2028-01	2.996	20.80	547.5
171	.00000	.36700-01	13.000	.4350	.7134	.5367	.9514	.2526-01	.1900-01	2.879	20.04	542.7
171	.00000	.40600-01	14.000	.4450	.7402	.5556	.9501	.2620-01	.1967-01	2.883	20.02	546.7
171	.00000	.48500-01	15.000	.3952	.6448	.4963	.9474	.2283-01	.1757-01	2.637	18.37	541.2
171	.00000	.56400-01	16.000	.3738	.6085	.4751	.9447	.2154-01	.1682-01	2.503	17.44	540.5
171	.00000	.76100-01	17.000	.2741	.4315	.3534	.9385	.1527-01	.1251-01	1.942	13.61	529.6
171	.00000	.11550	19.000	.1611	.2546	.2195	.9276	.9014-02	.7770-02	1.134	7.941	530.9
171	.00000	.16480	20.000	.8094-01	.1276	.1151	.9171	.4517-02	.4111-02	.5719	4.008	530.1
171	.00000	.21400	22.000	.4146-01	.6204-01	.5885-01	.9109	.2196-02	.2083-02	.3229	2.289	509.7
174	2.0000	.24700-01	165.00	.4606	.7730	.5619	.9554	.2735-01	.1988-01	2.937	20.39	547.5
172	9.0000	.15000-01	157.00	.6212	1.131	.7809	.9546	.4002-01	.2764-01	3.556	24.42	567.0
172	9.0000	.17600-01	158.00	.5618	.98[illegible]	.6980	.9546	.3489-01	.2470-01	3.369	23.23	559.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
174	9.8000	.24700-01	164.00	.4530	.7620	.5566	.9541	.2696-01	.1970-01	2.876	19.96	548.2
172	10.000	.22900-01	88.000	.5102	.8842	.6319	.9545	.3130-01	.2237-01	3.110	21.48	556.4
172	10.000	.26900-01	90.000	.4533	.7445	.5548	.9532	.2635-01	.1963-01	2.988	20.80	542.4
172	10.000	.34700-01	94.000	.4614	.7498	.5701	.9504	.2654-01	.2018-01	3.093	21.57	539.2
172	12.000	.17600-01	152.00	1.066	2.929	1.228	.9792	.1037	.4348-01	4.322	28.94	614.1
172	12.000	.12100-01	151.00	.6572	3.454	.7902	.9792	.1222	.2797-01	2.093	13.84	638.7
172	13.000	.19400-01	153.00	1.000	2.429	1.141	.9791	.8598-01	.4038-01	4.387	29.52	604.8
174	14.600	.44200-01	169.00	.4832	.8158	.6183	.9464	.2887-01	.2188-01	3.051	21.16	549.2
172	18.500	.44200-01	106.00	.5232	.9002	.6770	.9457	.3186-01	.2396-01	3.222	22.28	554.7
174	19.600	.62900-01	175.00	.3061	.6470	.5176	.9395	.2290-01	.1832-01	2.630	18.33	540.1
172	19.800	.40800-01	101.00	.5437	.9420	.7018	.9467	.3334-01	.2484-01	3.316	22.90	556.4
172	20.000	.24900-01	89.000	.3873	.6426	.4778	.9523	.2274-01	.1691-01	2.513	17.47	545.3
172	20.000	.28800-01	91.000	.3684	.5980	.4539	.9509	.2116-01	.1607-01	2.474	17.25	538.9
172	20.000	.32800-01	93.000	.4394	.7333	.5510	.9495	.2595-01	.1950-01	2.828	19.63	546.8
172	22.200	.62900-01	125.00	.4404	.7432	.5859	.9391	.2630-01	.2074-01	2.789	19.33	549.8
172	22.400	.44200-01	107.00	.4893	.8416	.6352	.9451	.2979-01	.2248-01	3.015	20.84	554.6
174	22.600	.10270	192.00	.2120	.3364	.2894	.9277	.1191-01	.1024-01	1.476	10.34	531.0
172	23.000	.42000-01	105.00	.5690	1.028	.7506	.9458	.3637-01	.2657-01	3.289	22.61	565.4
172	23.400	.59600-01	120.00	.5119	.8859	.6859	.9399	.3136-01	.2427-01	3.127	21.61	556.1
174	23.900	.21310	250.00	.3160-01	.4643-01	.4431-01	.9102	.1643-02	.1568-02	.2547	1.815	499.9
172	24.100	.82200-01	139.00	.4028	.6799	.5540	.9330	.2406-01	.1961-01	2.549	17.67	549.9
174	24.400	.19040	238.00	.4873-01	.7291-01	.6890-01	.9117	.2580-02	.2438-02	.3784	2.685	508.2
174	24.400	.12440	207.00	.1509	.2421	.2133	.9224	.8566-02	.7546-02	1.031	7.210	534.5
174	24.800	.16810	223.00	.7409-01	.1149	.1065	.9144	.4066-02	.3767-02	.5372	3.780	522.8
172	24.900	.62900-01	126.00	.5031	.8841	.6839	.9387	.3129-01	.2420-01	3.011	20.76	559.6
174	25.000	.79500-01	178.00	.3975	.6616	.5406	.9337	.2341-01	.1913-01	2.563	17.81	545.4
174	25.300	.10270	191.00	.2635	.4268	.3649	.9274	.1510-01	.1291-01	1.773	12.38	537.5
174	25.300	.10000+00	186.00	.2721	.4453	.3779	.9281	.1576-01	.1337-01	1.802	12.55	540.6
172	25.500	.60700-01	124.00	.5626	1.049	.7830	.9393	.3711-01	.2771-01	3.131	21.45	571.4
174	26.000	.12440	206.00	.1883	.3063	.2689	.9222	.1084-01	.9516-02	1.259	8.778	538.8
172	26.300	.82200-01	140.00	.4212	.7205	.5845	.9327	.2550-01	.2069-01	2.615	18.09	553.3
174	26.700	.12100	199.00	.2715	.4643	.3995	.9228	.1643-01	.1414-01	1.683	11.65	552.5
174	26.800	.16810	222.00	.1050	.1641	.1520	.9142	.5808-02	.5378-02	.7500	5.269	525.8
174	27.000	.19040	237.00	.7728-01	.1165	.1101	.9116	.4124-02	.3895-02	.5908	4.183	511.6
174	27.100	.21310	249.00	.5298-01	.7821-01	.7462-01	.9101	.2768-02	.2640-02	.4229	3.010	502.1
174	27.200	.80300-01	180.00	.4761	.8248	.6637	.9332	.2919-01	.2348-01	2.900	20.04	555.5
172	27.400	.40100-01	98.000	.5649	1.037	.7500	.9458	.3670-01	.2655-01	3.200	21.96	568.6
174	27.400	.16480	215.00	.1149	.1820	.1676	.9146	.6438-02	.5931-02	.8028	5.626	530.2
172	27.600	.41600-01	102.00	.5434	1.013	.7282	.9452	.3585-01	.2577-01	3.024	20.71	571.5
174	27.600	.12440	205.00	.2256	.3744	.3269	.9220	.1325-01	.1157-01	1.461	10.16	544.6
174	27.600	.18700	230.00	.7671-01	.1162	.1095	.9119	.4112-02	.3875-02	.5810	4.109	513.6
174	27.700	.21010	243.00	.6094-01	.9088-01	.8654-01	.9102	.3216-02	.3062-02	.4764	3.382	506.8
174	27.900	.10110	188.00	.3152	.5395	.4513	.9275	.1909-01	.1597-01	1.952	13.51	552.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K029)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
172	28.000	.46800-01	110.00	.2854	.4486	.3593	.9434	.1588-01	.1272-01	2.023	14.19	528.4
174	28.200	.16810	221.00	.1277	.2024	.1870	.9141	.7163-02	.6617-02	.8911	6.243	530.5
174	28.300	.19040	236.00	.9133-01	.1379	.1302	.9115	.4879-02	.4609-02	.6965	4.930	512.2
174	28.300	.12200	201.00	.2061	.3353	.2939	.9224	.1186-01	.1040-01	1.377	9.602	538.8
172	28.400	.53500-01	114.00	.3075	.4931	.3950	.9412	.1745-01	.1398-01	2.107	14.72	535.1
174	28.400	.21310	248.00	.6537-01	.9690-01	.9241-01	.9101	.3429-02	.3270-02	.5173	3.679	504.0
172	28.700	.58600-01	117.00	.5232	.9225	.7089	.9395	.3265-01	.2509-01	3.118	21.49	560.3
174	28.800	.16580	217.00	.1349	.2168	.1994	.9144	.7673-02	.7055-02	.9186	6.420	535.2
172	28.800	.60400-01	121.00	.5834	1.121	.8254	.9389	.3969-01	.2921-01	3.136	21.42	576.8
174	29.000	.21110	244.00	.7239-01	.1080	.1029	.9101	.3822-02	.3641-02	.5650	4.011	507.1
172	29.000	.65700-01	129.00	.2996	.4766	.3907	.9372	.1687-01	.1383-01	2.081	14.57	532.4
172	29.200	.72400-01	133.00	.3561	.5901	.4793	.9352	.2088-01	.1696-01	2.317	16.10	544.9
172	29.300	.79500-01	136.00	.5270	.9975	.7700	.9331	.3531-01	.2725-01	2.881	19.71	574.2
172	29.600	.92500-01	143.00	.2335	.3797	.3205	.9295	.1344-01	.1135-01	1.564	10.90	539.4
172	29.700	.10000+00	146.00	.3685	.6669	.5454	.9275	.2360-01	.1930-01	2.123	14.59	565.8
174	29.900	.12100	198.00	.2831	.4907	.4212	.9225	.1736-01	.1490-01	1.723	11.91	555.7
174	30.200	.16480	214.00	.1363	.2211	.2029	.9144	.7823-02	.7179-02	.9156	6.389	537.9
174	30.200	.18700	229.00	.9856-01	.1511	.1422	.9117	.5348-02	.5033-02	.7295	5.146	518.5
174	30.300	.21010	242.00	.7217-01	.1086	.1033	.9101	.3844-02	.3656-02	.5536	3.921	510.9
172	31.500	.11100-01	83.000	.5094	.8899	.6441	.9511	.3150-01	.2280-01	3.072	21.20	558.3
172	31.500	.14200-01	84.000	1.095	3.179	1.295	.9765	.1125	.4583-01	4.310	28.80	617.5
172	31.500	.16000-01	85.000	1.064	2.703	1.240	.9765	.9566-01	.4390-01	4.522	30.37	608.5
172	31.500	.19400-01	87.000	.7654	1.474	.8630	.9765	.5218-01	.3054-01	4.105	28.04	577.1
174	32.100	.21010	241.00	.5486-01	.8178-01	.7791-01	.9101	.2894-02	.2757-02	.4291	3.047	506.6
174	32.200	.16480	213.00	.1169	.1871	.1724	.9143	.6622-02	.6099-02	.8028	5.615	533.7
174	32.200	.17860	224.00	.9090-01	.1384	.1299	.9125	.4898-02	.4597-02	.6817	4.816	515.7
174	32.200	.18700	228.00	.7538-01	.1135	.1072	.9116	.4015-02	.3792-02	.5782	4.096	510.9
174	32.300	.12100	197.00	.2506	.4186	.3643	.9222	.1481-01	.1289-01	1.608	11.17	546.3
174	32.300	.12300	194.00	.2125	.3596	.3124	.9218	.1272-01	.1105-01	1.338	9.273	549.8
174	32.300	.12730	208.00	.9154-01	.1441	.1287	.9209	.5099-02	.4553-02	.6462	4.533	528.2
174	32.300	.13420	209.00	.1200	.1945	.1735	.9195	.6884-02	.6141-02	.8065	5.628	537.7
172	32.400	.10000+00	147.00	.2780	.4706	.3960	.9272	.1665-01	.1402-01	1.753	12.15	550.6
174	32.400	.10110	184.00	.2992	.5079	.4276	.9269	.1797-01	.1513-01	1.875	12.99	550.6
174	32.400	.10630	193.00	.1394	.2149	.1887	.9256	.7605-02	.6678-02	1.022	7.198	520.6
174	32.500	.85800-01	183.00	.1681	.2588	.2218	.9309	.9157-02	.7848-02	1.235	8.707	520.0
172	32.600	.79500-01	137.00	.5068	.9271	.7295	.9327	.3281-01	.2582-01	2.883	19.79	567.9
174	32.600	.80800-01	176.00	.4335	.7559	.6094	.9323	.2675-01	.2156-01	2.617	18.07	557.1
172	32.700	.67400-01	132.00	.2432	.3846	.3177	.9362	.1361-01	.1125-01	1.707	11.96	530.4
172	32.700	.72400-01	134.00	.3080	.5049	.4132	.9347	.1787-01	.1462-01	2.037	14.19	541.8
172	32.800	.65700-01	130.00	.2236	.3465	.2885	.9367	.1226-01	.1021-01	1.630	11.47	522.9
174	32.800	.16680	210.00	.1018	.1607	.1487	.9140	.5685-02	.5261-02	.7161	5.022	528.9
174	32.800	.18880	225.00	.6097-01	.9079-01	.8598-01	.9114	.3213-02	.3042-02	.4780	3.395	506.1
172	32.900	.58600-01	118.00	.4153	.7122	.5573	.9389	.2521-01	.1972-01	2.570	17.78	553.9

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

(R4K029)

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
172	32.900	.60400-01	122.00	.4069	.6936	.5461	.9383	.2455-01	.1933-01	2.538	17.57	552.4
174	32.900	.61300-01	171.00	.4914	.9147	.6888	.9381	.3237-01	.2437-01	2.734	18.74	570.4
172	33.000	.53500-01	115.00	.3646	.5937	.4732	.9405	.2101-01	.1675-01	2.436	16.98	539.9
172	33.200	.48300-01	113.00	.2671	.4146	.3362	.9422	.1467-01	.1190-01	1.936	13.61	523.9
174	33.400	.42800-01	166.00	.4433	.7780	.5839	.9440	.2753-01	.2066-01	2.653	18.30	558.5
172	33.500	.40100-01	99.000	.4743	.8149	.6162	.9449	.2884-01	.2181-01	2.927	20.24	554.3
172	33.600	.38300-01	97.000	.4367	.7289	.5587	.9455	.2580-01	.1977-01	2.809	19.50	546.9
172	33.700	.36700-01	96.000	.3654	.5969	.4621	.9461	.2113-01	.1635-01	2.431	16.94	540.7
172	33.900	.33800-01	95.000	.2744	.4333	.3405	.9471	.1534-01	.1205-01	1.929	13.52	530.0
174	34.700	.21010	240.00	.5534-01	.8184-01	.7808-01	.9101	.2896-02	.2763-02	.4401	3.132	502.9
174	34.700	.18700	227.00	.8592-01	.1306	.1232	.9115	.4620-02	.4359-02	.6470	4.573	514.9
174	34.900	.16480	212.00	.1057	.1674	.1547	.9141	.5923-02	.5473-02	.7393	5.181	530.1
172	35.100	.10000+00	148.00	.2587	.4325	.3663	.9269	.1531-01	.1297-01	1.660	11.52	547.4
174	35.200	.23900-01	161.00	.2691	.4154	.3260	.9505	.1470-01	.1153-01	1.966	13.85	521.1
172	35.300	.92500-01	145.00	.3037	.5074	.4253	.9288	.1796-01	.1505-01	1.951	13.54	547.2
172	35.300	.22100-01	160.00	.2543	.3920	.3078	.9505	.1388-01	.1089-01	1.868	13.15	521.2
174	35.400	.18800	231.00	.7442-01	.1119	.1058	.9114	.3958-02	.3744-02	.5724	4.056	510.3
174	35.500	.12100	196.00	.2201	.3641	.3184	.9219	.1288-01	.1127-01	1.433	9.970	543.6
174	35.600	.16580	216.00	.9615-01	.1510	.1399	.9139	.5344-02	.4951-02	.6813	4.782	527.4
172	35.800	.80600-01	138.00	.3383	.5705	.4679	.9320	.2019-01	.1656-01	2.143	14.86	549.7
174	35.900	.21310	247.00	.5176-01	.7576-01	.7240-01	.9100	.2681-02	.2562-02	.4207	3.002	498.0
174	36.000	.19040	235.00	.6566-01	.9805-01	.9293-01	.9112	.3469-02	.3288-02	.5118	3.633	507.4
174	36.200	.16810	220.00	.8930-01	.1387	.1290	.9136	.4909-02	.4566-02	.6455	4.541	523.4
172	36.200	.72400-01	135.00	.3707	.6180	.5030	.9343	.2187-01	.1780-01	2.389	16.59	546.6
174	36.300	.12200	200.00	.1944	.3196	.2806	.9216	.1131-01	.9927-02	1.278	8.899	541.9
172	36.600	.65700-01	131.00	.2475	.3882	.3219	.9362	.1374-01	.1139-01	1.761	12.36	527.6
174	36.700	.18700	226.00	.7356-01	.1106	.1046	.9114	.3914-02	.3701-02	.5654	4.006	510.4
174	36.900	.16480	211.00	.9433-01	.1485	.1374	.9140	.5253-02	.4863-02	.6662	4.674	528.1
174	36.900	.10110	187.00	.2784	.4632	.3941	.9264	.1639-01	.1395-01	1.797	12.49	545.3
172	37.000	.60400-01	123.00	.4526	.7826	.6135	.9378	.2770-01	.2171-01	2.769	19.13	555.8
174	37.000	.12440	204.00	.1665	.2706	.2392	.9210	.9575-02	.8462-02	1.115	7.776	538.5
172	37.100	.58600-01	119.00	.4827	.8227	.6477	.9384	.2912-01	.2292-01	3.012	20.85	552.4
174	37.200	.21310	246.00	.4773-01	.6986-01	.6677-01	.9100	.2472-02	.2362-02	.3880	2.768	498.0
174	37.600	.16810	219.00	.8068-01	.1252	.1165	.9135	.4431-02	.4124-02	.5839	4.108	523.1
172	37.800	.10270	150.00	.2285	.3773	.3228	.9259	.1335-01	.1143-01	1.494	10.39	543.9
174	37.900	.12100	195.00	.1825	.2952	.2604	.9217	.1045-01	.9214-02	1.231	8.595	537.1
174	38.000	.80300-01	179.00	.4102	.6939	.5668	.9318	.2455-01	.2013-01	2.583	17.91	549.7
172	38.500	.46800-01	112.00	.2757	.4333	.3494	.9420	.1534-01	.1237-01	1.955	13.71	528.4
174	38.600	.12440	203.00	.1672	.2720	.2405	.9209	.9624-02	.8510-02	1.117	7.791	538.8
174	38.700	.10000+00	185.00	.2915	.4851	.4125	.9265	.1717-01	.1460-01	1.880	13.07	545.4
172	38.900	.82200-01	141.00	.2919	.4844	.4018	.9312	.1714-01	.1422-01	1.895	13.17	545.3
172	39.300	.41600-01	104.00	.4130	.6968	.5360	.9436	.2466-01	.1897-01	2.615	18.13	549.8
174	39.500	.10270	190.00	.2830	.4699	.4016	.9257	.1663-01	.1421-01	1.832	12.73	544.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K029)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
174	39.600	.16810	218.00	.6781-01	.1050	.9782-01	.9134	.3715-02	.3462-02	.4931	3.471	522.2
174	39.900	.19040	233.00	.5187-01	.7709-01	.7317-01	.9110	.2728-02	.2589-02	.4081	2.900	505.3
174	40.100	.79500-01	177.00	.3935	.6598	.5430	.9318	.2335-01	.1921-01	2.511	17.43	547.4
174	40.200	.12440	202.00	.1531	.2482	.2199	.9207	.8784-02	.7781-02	1.029	7.178	537.8
174	40.300	.21310	245.00	.4128-01	.6007-01	.5746-01	.9100	.2126-02	.2033-02	.3399	2.430	495.0
172	41.100	.82200-01	142.00	.2946	.4978	.4104	.9309	.1762-01	.1452-01	1.862	12.90	550.1
174	41.100	.60700-01	173.00	.4379	.7424	.5897	.9372	.2627-01	.2087-01	2.749	19.06	550.2
174	42.600	.59600-01	172.00	.4929	.8528	.6699	.9374	.3018-01	.2370-01	3.007	20.78	555.3
174	43.200	.42000-01	168.00	.3833	.6275	.4925	.9431	.2221-01	.1743-01	2.537	17.67	540.7
174	43.400	.82200-01	181.00	.2754	.4381	.3709	.9307	.1550-01	.1313-01	1.910	13.37	531.7
172	43.600	.62900-01	128.00	.3795	.6389	.5120	.9363	.2261-01	.1812-01	2.410	16.71	549.2
172	45.000	.22900-01	8.0000	.6283	1.187	.8250	.9493	.4200-01	.2920-01	3.444	23.56	573.8
174	46.100	.62900-01	174.00	.3850	.6450	.5189	.9360	.2282-01	.1836-01	2.460	17.08	547.1
174	47.700	.40800-01	167.00	.4081	.6724	.5261	.9430	.2379-01	.1862-01	2.674	18.61	542.5
172	48.400	.44200-01	109.00	.3716	.6225	.4857	.9417	.2203-01	.1719-01	2.378	16.50	547.9
172	50.000	.19400-01	156.00	.9367-01	.1807	.1068	.9744	.6396-02	.3782-02	.5015	3.425	577.4
172	51.000	.12100-01	154.00	.6807	2.163	.8261	.9743	.7656-01	.2924-01	2.561	17.08	622.3
172	51.000	.17600-01	155.00	.6699	1.289	.7642	.9743	.4562-01	.2705-01	3.597	24.57	577.0
174	51.900	.44800-01	170.00	.2903	.4603	.3708	.9412	.1629-01	.1312-01	2.023	14.18	530.7
174	53.200	.24700-01	163.00	.3744	.6062	.4672	.9481	.2145-01	.1653-01	2.521	17.59	537.4
174	65.200	.24700-01	162.00	.4750	.8097	.6080	.9471	.2865-01	.2151-01	2.958	20.49	551.6
171	90.000	.91000-02	44.000	.3112	.4985	.3893	.9466	.1765-01	.1378-01	2.140	14.95	535.5
171	90.000	.11100-01	45.000	.4204	.6962	.5331	.9466	.2465-01	.1887-01	2.741	19.04	545.5
171	90.000	.13100-01	46.000	.6027	1.113	.7979	.9466	.3940-01	.2825-01	3.395	23.27	570.5
171	90.000	.17000-01	48.000	.5549	1.040	.7387	.9466	.3681-01	.2615-01	3.074	21.04	573.2
171	90.000	.20900-01	50.000	.5681	1.001	.7384	.9466	.3542-01	.2614-01	3.395	23.39	560.9
171	90.000	.24900-01	52.000	.5802	1.005	.7511	.9461	.3556-01	.2659-01	3.548	24.50	556.9
171	90.000	.26900-01	53.000	.5093	.8850	.6628	.9454	.3133-01	.2347-01	3.098	21.38	557.9
171	90.000	.28800-01	54.000	.5064	.8738	.6596	.9447	.3093-01	.2335-01	3.111	21.49	556.1
171	90.000	.32800-01	55.000	.3527	.5646	.4480	.9433	.1999-01	.1586-01	2.428	16.97	535.2
171	90.000	.36700-01	56.000	.4130	.6865	.5371	.9420	.2430-01	.1901-01	2.677	18.59	546.5
171	90.000	.40600-01	57.000	.3878	.6517	.5104	.9407	.2307-01	.1807-01	2.473	17.15	549.5
171	90.000	.48500-01	58.000	.3324	.5524	.4413	.9381	.1956-01	.1562-01	2.157	14.98	546.4
171	90.000	.56400-01	59.000	.2924	.4829	.3921	.9356	.1710-01	.1388-01	1.914	13.30	544.8
171	90.000	.76100-01	60.000	.2200	.3600	.3026	.9298	.1275-01	.1071-01	1.461	10.17	542.1
171	90.000	.95800-01	61.000	.1393	.2240	.1948	.9247	.7928-02	.6895-02	.9523	6.650	536.6
171	90.000	.11550	62.000	.1058	.1727	.1532	.9202	.6115-02	.5422-02	.7060	4.918	541.3
171	135.00	.19000-01	49.000	.6189	1.121	.8005	.9493	.3967-01	.2834-01	3.571	24.53	566.7
171	135.00	.22900-01	51.000	.5753	1.035	.7424	.9493	.3665-01	.2628-01	3.344	22.99	565.5
171	180.00	.91000-02	23.000	.2710	.4336	.3243	.9562	.1535-01	.1148-01	1.868	13.05	535.0
171	180.00	.11100-01	24.000	.6426	1.293	.8242	.9562	.4578-01	.2918-01	3.299	22.44	584.6
171	180.00	.13100-01	25.000	.7181	1.460	.9238	.9562	.5170-01	.3271-01	3.650	24.81	586.1
171	180.00	.15000-01	26.000	.7072	1.391	.9012	.9562	.4923-01	.3191-01	3.717	25.33	581.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

(R4K029)

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
171	180.00	.17000-01	27.000	.7043	1.345	.8899	.9562	.4760-01	.3150-01	3.820	26.10	576.5
171	180.00	.19000-01	28.000	.6944	1.315	.8754	.9562	.4656-01	.3099-01	3.800	25.98	575.1
171	180.00	.20900-01	29.000	.6466	1.183	.8069	.9562	.4190-01	.2857-01	3.682	25.26	568.8
171	180.00	.28800-01	32.000	.5733	1.004	.7131	.9543	.3554-01	.2525-01	3.452	23.80	559.6
171	180.00	.32800-01	33.000	.5218	.8790	.6455	.9528	.3112-01	.2285-01	3.317	22.99	550.1
171	180.00	.36700-01	34.000	.4947	.8472	.6199	.9515	.2999-01	.2195-01	3.071	21.24	554.3
171	180.00	.48500-01	36.000	.4040	.6716	.5111	.9474	.2377-01	.1810-01	2.619	18.19	546.6
171	180.00	.56400-01	37.000	.3782	.6207	.4823	.9447	.2197-01	.1708-01	2.501	17.41	542.9
171	180.00	.76100-01	38.000	.2937	.4724	.3827	.9385	.1672-01	.1355-01	2.005	14.00	536.8
171	180.00	.95800-01	39.000	.2217	.3515	.2949	.9328	.1244-01	.1044-01	1.552	10.86	532.0
171	180.00	.11550	40.000	.1671	.2674	.2294	.9276	.9468-02	.8121-02	1.150	8.034	535.3
171	180.00	.18450	42.000	.6790-01	.1041	.9680-01	.9141	.3684-02	.3427-02	.5046	3.557	519.7
171	225.00	.22900-01	30.000	.6716	1.232	.8054	.9635	.4362-01	.2851-01	3.814	26.16	569.3
171	270.00	.91000-02	63.000	.5213	1.043	.6257	.9666	.3692-01	.2215-01	2.692	18.32	583.8
171	270.00	.11100-01	64.000	.6370	1.343	.7725	.9666	.4754-01	.2735-01	3.130	21.22	590.9
171	270.00	.13100-01	65.000	.7136	1.420	.8557	.9666	.5028-01	.3029-01	3.705	25.23	583.0
171	270.00	.17000-01	67.000	.8010	1.573	.9578	.9666	.5567-01	.3391-01	4.217	28.74	581.0
171	270.00	.20900-01	69.000	.7452	1.453	.8899	.9666	.5145-01	.3151-01	3.951	26.94	579.9
171	270.00	.24900-01	71.000	.6786	1.280	.8070	.9662	.4532-01	.2857-01	3.730	25.51	574.4
171	270.00	.28800-01	73.000	.6020	1.071	.7119	.9647	.3791-01	.2520-01	3.551	24.44	563.0
171	270.00	.36700-01	75.000	.5469	.9600	.6542	.9619	.3399-01	.2316-01	3.282	22.63	560.1
171	270.00	.48500-01	77.000	.4906	.8311	.5934	.9577	.2942-01	.2101-01	3.093	21.42	551.6
171	270.00	.56400-01	78.000	.4503	.7568	.5506	.9550	.2679-01	.1949-01	2.872	19.91	549.5
171	270.00	.95800-01	80.000	.2690	.4387	.3463	.9423	.1553-01	.1226-01	1.795	12.51	541.1
171	270.00	.11550	81.000	.2202	.3626	.2933	.9365	.1284-01	.1038-01	1.448	10.07	543.9
171	315.00	.19000-01	68.000	.6272	1.129	.7487	.9635	.3997-01	.2651-01	3.645	25.05	565.5
171	315.00	.22900-01	70.000	.7499	1.408	.9043	.9635	.4986-01	.3201-01	4.143	28.35	573.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K030)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
163	5.500	.3410-02	.2091-02	173.8	729.7	.1868	103.5	-31.52	2743.	.4872-02	.8329-07	4.987
164	5.500	.5116-02	.3135-02	173.8	729.7	.1868	103.5	-31.50	2743.	.4872-02	.8329-07	4.987
165	5.500	.6821-02	.4180-02	173.8	729.7	.1868	103.5	-31.50	2743.	.4872-02	.8329-07	4.987

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
163	.3540-01	.1100-01
164	.3540-01	.1100-01
165	.3540-01	.1100-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
163	.00000	.91000-02	1.0000	.3381	.5336	.4020	.9566	.1889-01	.1423-01	2.384	16.71	530.5
163	.00000	.15000-01	4.0000	.7389	1.328	.9149	.9566	.4700-01	.3239-01	4.304	29.59	565.1
163	.00000	.17000-01	5.0000	.6597	1.156	.8108	.9566	.4093-01	.2870-01	3.968	27.36	559.7
163	.00000	.19000-01	6.0000	.6577	1.144	.8064	.9566	.4050-01	.2855-01	3.995	27.57	558.1
163	.00000	.24900-01	9.0000	.5786	.9906	.7077	.9561	.3507-01	.2505-01	3.593	24.85	554.2
163	.00000	.26900-01	10.000	.5399	.9095	.6594	.9554	.3220-01	.2334-01	3.431	23.78	550.1
165	.00000	.32800-01	12.000	.4612	.7591	.5649	.9532	.2687-01	.2000-01	3.036	21.12	543.7
165	.00000	.36700-01	13.000	.3861	.6183	.4714	.9518	.2189-01	.1669-01	2.656	18.56	535.4
165	.00000	.40600-01	14.000	.3684	.5974	.4548	.9504	.2115-01	.1610-01	2.483	17.31	539.3
165	.00000	.48500-01	15.000	.3165	.5122	.3955	.9477	.1813-01	.1400-01	2.139	14.92	538.7
165	.00000	.56400-01	16.000	.3339	.5420	.4232	.9450	.1919-01	.1498-01	2.246	15.66	539.7
165	.00000	.76100-01	17.000	.3035	.4826	.3927	.9388	.1708-01	.1390-01	2.113	14.78	533.0
165	.00000	.11550	19.000	.1876	.3004	.2574	.9278	.1063-01	.9112-02	1.290	9.011	535.4
165	.00000	.16480	20.000	.9740-01	.1517	.1395	.9172	.5372-02	.4901-02	.7024	4.934	525.9
165	.00000	.21400	22.000	.4660-01	.6753-01	.6437-01	.9109	.2391-02	.2279-02	.3883	2.777	494.3
164	2.0000	.24700-01	165.00	.4615	.7288	.5498	.9562	.2580-01	.1946-01	3.249	22.76	530.8
163	9.0000	.15000-01	157.00	.6678	1.179	.8226	.9566	.4175-01	.2912-01	3.976	27.39	561.5
163	9.0000	.17600-01	158.00	.5615	.9415	.6807	.9566	.3333-01	.2410-01	3.594	24.93	548.9

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

(R4K030)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	(TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
164	9.8000	.24700-01	164.00	.4546	.7134	.5405	.9562	.2525-01	.1913-01	3.236	22.70	528.5
163	10.000	.22900-01	88.000	.5045	.8430	.6109	.9566	.2984-01	.2163-01	3.245	22.52	548.0
163	10.000	.26900-01	90.000	.4618	.7460	.5563	.9554	.2641-01	.1969-01	3.131	21.85	538.1
163	10.000	.34700-01	94.000	.4443	.7141	.5413	.9525	.2528-01	.1916-01	3.038	21.21	536.5
163	12.000	.17600-01	152.00	1.007	2.353	1.125	.9817	.8328-01	.3981-01	4.548	30.65	602.1
163	12.000	.12100-01	151.00	1.247	5.027	1.446	.9817	.1779	.5117-01	4.283	28.40	632.6
163	13.000	.19400-01	153.00	.8881	1.812	.9794	.9817	.6416-01	.3467-01	4.498	30.56	586.6
164	14.600	.44200-01	169.00	.4731	.7591	.5851	.9492	.2687-01	.2071-01	3.244	22.66	536.0
163	18.500	.44200-01	106.00	.4952	.8284	.6224	.9492	.2933-01	.2203-01	3.180	22.06	548.3
164	19.600	.62900-01	175.00	.3496	.5502	.4415	.9429	.1948-01	.1563-01	2.477	17.36	529.5
163	19.800	.40800-01	101.00	.5206	.8777	.6523	.9504	.3107-01	.2309-01	3.306	22.91	550.3
163	20.000	.24900-01	89.000	.3893	.6298	.4677	.9561	.2229-01	.1655-01	2.634	18.37	538.5
163	20.000	.28800-01	91.000	.3811	.6137	.4601	.9547	.2172-01	.1629-01	2.598	18.14	537.1
163	20.000	.32800-01	93.000	.4282	.6971	.5224	.9532	.2468-01	.1849-01	2.867	19.98	540.5
163	22.200	.62900-01	125.00	.3838	.6288	.4936	.9429	.2226-01	.1747-01	2.545	17.72	542.4
163	22.400	.44200-01	107.00	.4385	.7210	.5475	.9492	.2552-01	.1938-01	2.890	20.11	543.5
164	22.600	.10270	192.00	.1892	.2956	.2516	.9311	.1046-01	.8906-02	1.357	9.530	527.0
163	23.000	.42000-01	105.00	.5247	.8971	.6623	.9500	.3176-01	.2344-01	3.265	22.58	553.9
163	23.400	.59600-01	120.00	.3921	.6480	.5035	.9440	.2294-01	.1782-01	2.565	17.83	544.9
164	23.900	.21310	250.00	.5875-01	.8300-01	.7940-01	.9110	.2938-02	.2811-02	.5194	3.745	479.9
163	24.100	.82200-01	139.00	.2951	.4777	.3888	.9363	.1691-01	.1376-01	1.994	13.91	538.8
164	24.400	.19040	238.00	.7450-01	.1074	.1014	.9133	.3802-02	.3590-02	.6282	4.500	491.5
164	24.400	.12440	207.00	.1481	.2335	.2035	.9256	.8265-02	.7203-02	1.047	7.335	530.1
164	24.800	.16810	223.00	.9467-01	.1422	.1312	.9166	.5033-02	.4645-02	.7317	5.182	514.3
163	24.900	.62900-01	126.00	.3767	.6207	.4857	.9429	.2197-01	.1719-01	2.475	17.21	544.1
164	25.000	.79500-01	178.00	.3037	.4851	.3959	.9377	.1717-01	.1401-01	2.098	14.66	534.6
164	25.300	.10270	191.00	.2019	.3167	.2691	.9311	.1121-01	.9527-02	1.439	10.10	528.3
164	25.300	.10000+00	186.00	.2338	.3731	.3136	.9318	.1321-01	.1110-01	1.618	11.32	534.2
163	25.500	.60700-01	124.00	.4276	.7222	.5553	.9436	.2557-01	.1966-01	2.708	18.76	550.8
164	26.000	.12440	206.00	.1594	.2523	.2196	.9256	.8931-02	.7773-02	1.118	7.833	531.5
163	26.300	.82200-01	140.00	.2509	.4043	.3298	.9369	.1431-01	.1168-01	1.708	11.93	537.3
164	26.700	.12100	199.00	.2098	.3394	.2919	.9264	.1202-01	.1033-01	1.420	9.904	538.5
164	26.800	.16810	222.00	.1148	.1737	.1600	.9166	.6149-02	.5665-02	.8743	6.181	514.5
164	27.000	.19040	237.00	.9098-01	.1324	.1248	.9133	.4687-02	.4419-02	.7510	5.364	496.5
164	27.100	.21310	249.00	.7007-01	.9965-01	.9523-01	.9110	.3527-02	.3371-02	.6096	4.385	483.9
164	27.200	.80300-01	180.00	.3334	.5398	.4382	.9375	.1911-01	.1551-01	2.253	15.71	538.8
163	27.400	.40100-01	98.000	.5197	.8923	.6547	.9506	.3159-01	.2318-01	3.215	22.22	554.9
164	27.400	.16480	215.00	.1305	.2003	.1835	.9172	.7092-02	.6494-02	.9668	6.813	520.4
163	27.600	.41600-01	102.00	.5043	.8722	.6387	.9501	.3087-01	.2261-01	3.088	21.32	556.7
164	27.600	.12440	205.00	.1674	.2669	.2317	.9256	.9448-02	.8202-02	1.160	8.113	533.9
164	27.600	.18700	230.00	.9955-01	.1460	.1372	.9138	.5169-02	.4856-02	.8080	5.758	500.4
164	27.700	.21010	243.00	.8198-01	.1178	.1123	.9112	.4169-02	.3974-02	.6966	4.994	489.6
164	27.900	.10110	188.00	.2196	.3518	.2957	.9315	.1245-01	.1047-01	1.508	10.54	535.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K030)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
163	28.000	.46800-01	110.00	.2581	.3981	.3155	.9483	.1409-01	.1117-01	1.897	13.35	522.1
164	28.200	.16810	221.00	.1278	.1955	.1797	.9166	.6922-02	.6361-02	.9524	6.715	519.1
164	28.300	.19040	236.00	.8826-01	.1281	.1208	.9133	.4535-02	.4278-02	.7328	5.237	495.1
164	28.300	.12200	201.00	.1904	.3033	.2626	.9262	.1074-01	.9296-02	1.321	9.241	533.7
163	28.400	.53500-01	114.00	.3354	.5421	.4223	.9460	.1919-01	.1495-01	2.271	15.85	538.3
164	28.400	.21310	248.00	.6724-01	.9588-01	.9159-01	.9110	.3394-02	.3242-02	.5813	4.178	485.4
163	28.700	.58600-01	117.00	.4361	.7232	.5598	.9443	.2560-01	.1982-01	2.837	19.71	545.9
164	28.800	.16580	217.00	.1327	.2057	.1881	.9170	.7282-02	.6658-02	.9664	6.796	524.0
163	28.800	.60400-01	121.00	.4414	.7580	.5770	.9437	.2683-01	.2043-01	2.730	18.87	554.9
164	29.000	.21110	244.00	.7440-01	.1066	.1017	.9111	.3774-02	.3600-02	.6362	4.565	488.1
163	29.000	.65700-01	129.00	.2500	.3889	.3153	.9420	.1377-01	.1116-01	1.808	12.70	525.4
163	29.200	.72400-01	133.00	.3175	.5143	.4123	.9399	.1821-01	.1460-01	2.143	14.94	539.0
163	29.300	.79500-01	136.00	.3463	.5859	.4646	.9377	.2074-01	.1645-01	2.188	15.15	551.2
163	29.600	.92500-01	143.00	.2096	.3362	.2790	.9339	.1190-01	.9876-02	1.438	10.04	535.9
163	29.700	.10000+00	146.00	.2867	.4798	.3951	.9318	.1698-01	.1399-01	1.841	12.77	548.3
164	29.900	.12100	198.00	.2242	.3664	.3139	.9264	.1297-01	.1111-01	1.492	10.39	541.7
164	30.200	.16480	214.00	.1357	.2115	.1930	.9172	.7487-02	.6830-02	.9778	6.868	526.1
164	30.200	.18700	229.00	.1014	.1496	.1404	.9138	.5296-02	.4971-02	.8137	5.790	503.1
164	30.300	.21010	242.00	.8202-01	.1185	.1128	.9112	.4194-02	.3994-02	.6886	4.929	492.5
163	31.500	.11100-01	83.000	.5115	.9880	.6468	.9566	.3498-01	.2290-01	2.739	18.69	578.4
163	31.500	.14200-01	84.000	1.065	3.060	1.209	.9817	.1083	.4280-01	4.219	28.20	617.7
163	31.500	.16000-01	85.000	1.146	2.928	1.289	.9817	.1036	.4563-01	4.862	32.63	609.8
163	31.500	.19400-01	87.000	.7696	1.452	.8419	.9817	.5141-01	.2980-01	4.228	28.92	574.5
164	32.100	.21010	241.00	.7981-01	.1152	.1097	.9112	.4077-02	.3884-02	.6713	4.807	492.0
164	32.200	.16480	213.00	.1236	.1911	.1747	.9172	.6764-02	.6184-02	.9044	6.364	523.0
164	32.200	.17860	224.00	.1077	.1600	.1491	.9150	.5663-02	.5279-02	.8510	6.044	506.4
164	32.200	.18700	228.00	.9663-01	.1429	.1341	.9138	.5059-02	.4745-02	.7708	5.480	504.3
164	32.300	.12100	197.00	.2294	.3707	.3188	.9264	.1312-01	.1129-01	1.555	10.85	538.2
164	32.300	.12300	194.00	.1807	.2919	.2518	.9259	.1033-01	.8912-02	1.224	8.540	538.3
164	32.300	.12730	208.00	.8828-01	.1363	.1200	.9249	.4824-02	.4249-02	.6475	4.557	522.5
164	32.300	.13420	209.00	.1178	.1883	.1653	.9233	.6667-02	.5850-02	.8120	5.676	534.9
163	32.400	.10000+00	147.00	.2766	.4602	.3799	.9318	.1629-01	.1345-01	1.791	12.44	546.8
164	32.400	.10110	184.00	.2646	.4344	.3613	.9315	.1538-01	.1279-01	1.749	12.17	543.0
164	32.400	.10630	193.00	.1314	.1992	.1724	.9301	.7053-02	.6103-02	.9965	7.041	515.4
164	32.500	.85800-01	183.00	.1707	.2586	.2183	.9359	.9153-02	.7727-02	1.297	9.170	515.0
163	32.600	.79500-01	137.00	.3598	.6118	.4839	.9377	.2166-01	.1713-01	2.257	15.62	552.5
164	32.600	.80800-01	176.00	.3390	.5567	.4490	.9373	.1971-01	.1589-01	2.239	15.58	543.1
163	32.700	.67400-01	132.00	.2301	.3576	.2908	.9415	.1266-01	.1029-01	1.667	11.71	525.1
163	32.700	.72400-01	134.00	.2785	.4432	.3585	.9399	.1569-01	.1269-01	1.935	13.54	533.3
163	32.800	.65700-01	130.00	.2105	.3219	.2633	.9420	.1140-01	.9322-02	1.571	11.08	518.9
164	32.800	.16680	210.00	.1108	.1693	.1555	.9169	.5993-02	.5503-02	.8289	5.847	518.4
164	32.800	.18880	225.00	.7547-01	.1091	.1029	.9135	.3864-02	.3644-02	.6317	4.520	493.2
163	32.900	.58600-01	118.00	.4693	.7764	.6018	.9443	.2748-01	.2130-01	3.064	21.29	545.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

(R4K030)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
163	32.900	.60400-01	122.00	.3660	.5959	.4675	.9437	.2110-01	.1655-01	2.449	17.07	540.6
164	32.900	.61300-01	171.00	.3850	.6283	.4930	.9434	.2224-01	.1745-01	2.568	17.89	541.2
163	33.000	.53500-01	115.00	.3436	.5501	.4309	.9460	.1947-01	.1525-01	2.364	16.52	535.3
163	33.200	.48300-01	113.00	.2343	.3586	.2860	.9478	.1269-01	.1013-01	1.745	12.31	519.2
164	33.400	.42800-01	166.00	.4569	.7325	.5636	.9497	.2593-01	.1995-01	3.137	21.92	535.7
163	33.500	.40100-01	99.000	.5039	.8408	.6281	.9506	.2976-01	.2224-01	3.248	22.54	547.6
163	33.600	.38300-01	97.000	.5093	.8539	.6340	.9513	.3023-01	.2244-01	3.260	22.61	548.8
163	33.700	.36700-01	96.000	.4926	.8311	.6128	.9518	.2942-01	.2169-01	3.124	21.65	550.5
163	33.900	.33800-01	95.000	.3931	.6348	.4791	.9529	.2247-01	.1696-01	2.667	18.61	538.0
164	34.700	.21010	240.00	.7193-01	.1038	.9890-01	.9112	.3675-02	.3501-02	.6048	4.330	492.1
164	34.700	.18700	227.00	.1092	.1613	.1513	.9138	.5709-02	.5357-02	.8727	6.207	503.8
164	34.900	.16480	212.00	.1151	.1779	.1626	.9172	.6296-02	.5757-02	.8430	5.932	522.8
163	35.100	.10000+00	148.00	.2424	.4004	.3316	.9318	.1418-01	.1174-01	1.587	11.03	544.8
164	35.200	.23900-01	161.00	.2544	.3713	.2948	.9565	.1314-01	.1044-01	2.087	14.89	497.9
163	35.300	.92500-01	145.00	.2612	.4218	.3490	.9339	.1493-01	.1235-01	1.773	12.37	538.0
163	35.300	.22100-01	160.00	.2687	.4064	.3150	.9566	.1439-01	.1115-01	2.048	14.48	514.4
164	35.400	.18800	231.00	.8119-01	.1197	.1124	.9136	.4238-02	.3980-02	.6515	4.636	503.0
164	35.500	.12100	196.00	.2048	.3294	.2838	.9264	.1166-01	.1005-01	1.399	9.768	536.7
164	35.600	.16580	216.00	.1088	.1671	.1531	.9170	.5915-02	.5420-02	.8060	5.679	520.4
163	35.800	.80600-01	138.00	.3026	.4958	.4002	.9374	.1755-01	.1417-01	2.006	13.97	542.4
164	35.900	.21310	247.00	.6417-01	.9215-01	.8794-01	.9110	.3262-02	.3113-02	.5460	3.915	489.3
164	36.000	.19040	235.00	.8231-01	.1204	.1134	.9133	.4262-02	.4014-02	.6723	4.795	498.9
164	36.200	.16810	220.00	.9508-01	.1444	.1329	.9166	.5110-02	.4704-02	.7194	5.082	515.9
163	36.200	.72400-01	135.00	.2988	.4778	.3856	.9399	.1691-01	.1365-01	2.060	14.40	534.9
164	36.300	.12200	200.00	.1918	.3074	.2655	.9262	.1088-01	.9400-02	1.317	9.200	535.7
163	36.600	.65700-01	131.00	.2657	.4172	.3366	.9420	.1477-01	.1191-01	1.891	13.26	528.7
164	36.700	.18700	226.00	.8829-01	.1300	.1221	.9138	.4603-02	.4321-02	.7106	5.059	502.3
164	36.900	.16480	211.00	.1032	.1586	.1452	.9172	.5614-02	.5140-02	.7643	5.385	520.6
164	36.900	.10110	187.00	.2666	.4326	.3616	.9315	.1531-01	.1280-01	1.795	12.51	539.5
163	37.000	.60400-01	123.00	.4123	.6837	.5309	.9437	.2420-01	.1879-01	2.684	18.65	545.8
164	37.000	.12440	204.00	.1639	.2603	.2262	.9256	.9213-02	.8008-02	1.143	7.999	532.6
163	37.100	.58600-01	119.00	.4214	.6942	.5394	.9443	.2457-01	.1909-01	2.769	19.26	544.0
164	37.200	.21310	246.00	.5871-01	.8436-01	.8049-01	.9110	.2986-02	.2849-02	.4987	3.576	489.7
164	37.600	.16810	219.00	.9253-01	.1404	.1293	.9166	.4970-02	.4576-02	.7011	4.953	515.6
163	37.800	.10270	150.00	.2181	.3477	.2935	.9311	.1231-01	.1039-01	1.510	10.56	534.0
164	37.900	.12100	195.00	.1665	.2605	.2267	.9264	.9222-02	.8026-02	1.192	8.367	527.4
164	38.000	.80300-01	179.00	.3145	.5029	.4107	.9375	.1780-01	.1454-01	2.168	15.15	535.0
163	38.500	.46800-01	112.00	.2562	.3956	.3133	.9483	.1400-01	.1109-01	1.878	13.22	522.6
164	38.600	.12440	203.00	.1548	.2444	.2129	.9256	.8651-02	.7535-02	1.090	7.640	530.7
164	38.700	.10000+00	185.00	.2492	.4001	.3354	.9318	.1416-01	.1187-01	1.707	11.92	536.2
163	38.900	.82200-01	141.00	.2545	.4033	.3317	.9369	.1428-01	.1174-01	1.782	12.48	531.9
163	39.300	.41600-01	104.00	.4430	.7348	.5525	.9501	.2601-01	.1956-01	2.881	20.02	545.9
164	39.500	.10270	190.00	.2247	.3556	.3011	.9311	.1259-01	.1066-01	1.577	11.04	531.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K030)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
164	39.600	.16810	218.00	.8892-01	.1349	.1242	.9166	.4774-02	.4396-02	.6743	4.765	515.4
164	39.900	.19040	233.00	.6204-01	.9050-01	.8528-01	.9133	.3204-02	.3019-02	.5096	3.637	497.6
164	40.100	.79500-01	177.00	.2805	.4397	.3622	.9377	.1557-01	.1282-01	2.001	14.04	528.2
164	40.200	.12440	202.00	.1468	.2309	.2014	.9256	.8174-02	.7130-02	1.041	7.302	529.3
164	40.300	.21310	245.00	.4927-01	.7043-01	.6726-01	.9110	.2493-02	.2381-02	.4234	3.040	486.9
163	41.100	.82200-01	142.00	.2168	.3433	.2825	.9369	.1215-01	.9998-02	1.520	10.64	531.6
164	41.100	.60700-01	173.00	.3780	.6024	.4784	.9436	.2132-01	.1694-01	2.621	18.33	533.8
164	42.600	.59600-01	172.00	.3698	.5880	.4668	.9440	.2082-01	.1652-01	2.573	18.00	533.1
164	43.200	.42000-01	168.00	.4258	.6751	.5223	.9500	.2390-01	.1849-01	2.978	20.85	532.1
164	43.400	.82200-01	181.00	.2704	.4263	.3515	.9369	.1509-01	.1244-01	1.911	13.39	530.1
163	43.600	.62900-01	128.00	.3393	.5403	.4307	.9429	.1913-01	.1525-01	2.355	16.47	533.6
163	45.000	.22900-01	8.0000	.8259	1.610	1.047	.9566	.5699-01	.3707-01	4.380	29.87	579.8
164	46.100	.62900-01	174.00	.3314	.5213	.4184	.9429	.1845-01	.1481-01	2.350	16.48	529.3
164	47.700	.40800-01	167.00	.4731	.7561	.5810	.9504	.2677-01	.2057-01	3.264	22.81	534.8
163	48.400	.44200-01	109.00	.4272	.6989	.5323	.9492	.2474-01	.1884-01	2.838	19.76	542.0
163	50.000	.19400-01	156.00	.4753	.9823	.5248	.9817	.3477-01	.1858-01	2.379	16.15	588.3
163	51.000	.12100-01	154.00	1.036	2.866	1.173	.9817	.1014	.4153-01	4.193	28.05	615.4
163	51.000	.17600-01	155.00	.8152	1.703	.9011	.9817	.6028-01	.3190-01	4.039	27.40	589.7
164	51.900	.44800-01	170.00	.3405	.5229	.4142	.9490	.1851-01	.1466-01	2.522	17.77	520.5
164	53.200	.24700-01	163.00	.4495	.6965	.5322	.9562	.2465-01	.1884-01	3.274	23.03	523.9
164	65.200	.24700-01	162.00	.5848	.9562	.7047	.9562	.3385-01	.2495-01	3.889	27.08	541.8
165	90.000	.91000-02	44.000	.3597	.5846	.4318	.9566	.2069-01	.1529-01	2.416	16.84	540.0
165	90.000	.11100-01	45.000	.5721	1.072	.7172	.9566	.3794-01	.2539-01	3.170	21.70	573.1
165	90.000	.13100-01	46.000	.9719	2.038	1.257	.9566	.7214-01	.4450-01	4.799	32.55	590.2
165	90.000	.17000-01	48.000	.6571	1.169	.8112	.9566	.4137-01	.2871-01	3.877	26.68	563.0
165	90.000	.20900-01	50.000	.6813	1.198	.8382	.9566	.4242-01	.2967-01	4.079	28.11	560.6
165	90.000	.26900-01	53.000	.5762	.9787	.7057	.9554	.3465-01	.2498-01	3.619	25.05	552.2
165	90.000	.28800-01	54.000	.5690	.9576	.6972	.9547	.3390-01	.2468-01	3.621	25.10	549.9
165	90.000	.32800-01	55.000	.3956	.6141	.4745	.9532	.2174-01	.1680-01	2.872	20.19	524.6
165	90.000	.36700-01	56.000	.4896	.7917	.5999	.9518	.2803-01	.2124-01	3.315	23.12	538.4
165	90.000	.40600-01	57.000	.4651	.7634	.5768	.9505	.2702-01	.2042-01	3.074	21.39	542.9
165	90.000	.48500-01	58.000	.4324	.7003	.5405	.9477	.2479-01	.1913-01	2.920	20.36	538.9
165	90.000	.56400-01	59.000	.3739	.5977	.4708	.9451	.2116-01	.1667-01	2.579	18.03	534.8
165	90.000	.76100-01	60.000	.2785	.4381	.3584	.9388	.1551-01	.1269-01	1.974	13.84	529.4
165	90.000	.95800-01	61.000	.2133	.3327	.2808	.9330	.1178-01	.9941-02	1.536	10.79	526.2
165	90.000	.11550	62.000	.1588	.2490	.2151	.9278	.8814-02	.7614-02	1.133	7.945	528.2
165	135.00	.19000-01	49.000	.7097	1.258	.8751	.9566	.4453-01	.3098-01	4.206	28.96	562.2
165	135.00	.22900-01	51.000	.6668	1.173	.8204	.9566	.4153-01	.2904-01	3.991	27.51	560.6
165	180.00	.91000-02	23.000	.1680	.2590	.1982	.9566	.9169-02	.7015-02	1.234	8.688	522.1
165	180.00	.11100-01	24.000	.4130	.7249	.5078	.9566	.2566-01	.1797-01	2.480	17.10	560.1
165	180.00	.13100-01	25.000	.8414	1.724	1.082	.9566	.6102-01	.3828-01	4.246	28.85	587.1
165	180.00	.15000-01	26.000	.8751	1.742	1.116	.9566	.6165-01	.3950-01	4.543	30.93	583.0
165	180.00	.17000-01	27.000	.7639	1.389	.9491	.9566	.4915-01	.3360-01	4.386	30.12	567.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K030)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
165	180.00	.19000-01	28.000	.7202	1.295	.8917	.9566	.4582-01	.3157-01	4.192	28.82	565.2
165	180.00	.20900-01	29.000	.6898	1.208	.8474	.9566	.4276-01	.3000-01	4.154	28.64	559.5
165	180.00	.28800-01	32.000	.5954	.9971	.7283	.9547	.3530-01	.2578-01	3.818	26.49	548.5
165	180.00	.32800-01	33.000	.5372	.8706	.6544	.9532	.3082-01	.2316-01	3.624	25.27	539.1
165	180.00	.36700-01	34.000	.5277	.8738	.6520	.9518	.3093-01	.2308-01	3.441	23.91	545.5
165	180.00	.48500-01	36.000	.4448	.7188	.5554	.9477	.2544-01	.1966-01	3.013	21.02	538.3
165	180.00	.56400-01	37.000	.4060	.6488	.5111	.9451	.2297-01	.1809-01	2.803	19.59	534.7
165	180.00	.76100-01	38.000	.2955	.4660	.3808	.9388	.1650-01	.1348-01	2.086	14.62	530.2
165	180.00	.95800-01	39.000	.2294	.3580	.3021	.9330	.1267-01	.1069-01	1.650	11.58	526.6
165	180.00	.11550	40.000	.1722	.2708	.2336	.9278	.9586-02	.8271-02	1.222	8.570	529.2
165	180.00	.18450	42.000	.7001-01	.1044	.9765-01	.9141	.3697-02	.3457-02	.5487	3.893	508.3
165	225.00	.22900-01	30.000	.6671	1.143	.8141	.9566	.4046-01	.2882-01	4.138	28.62	554.4
165	270.00	.91000-02	63.000	.2632	.4209	.3143	.9566	.1490-01	.1113-01	1.815	12.69	534.9
165	270.00	.11100-01	64.000	.4136	.7146	.5061	.9566	.2530-01	.1791-01	2.537	17.52	556.4
165	270.00	.13100-01	65.000	.7925	1.605	1.016	.9566	.5683-01	.3595-01	4.043	27.49	585.6
165	270.00	.17000-01	67.000	.8488	1.536	1.053	.9566	.5438-01	.3728-01	4.900	33.66	566.6
165	270.00	.20900-01	69.000	.7061	1.259	.8722	.9566	.4455-01	.3087-01	4.155	28.59	563.4
165	270.00	.24900-01	71.000	.6581	1.149	.8098	.9561	.4066-01	.2867-01	3.980	27.45	558.8
165	270.00	.28800-01	73.000	.5832	.9749	.7129	.9547	.3451-01	.2524-01	3.748	26.01	548.1
165	270.00	.36700-01	75.000	.5197	.8598	.6420	.9518	.3044-01	.2273-01	3.394	23.59	545.2
165	270.00	.48500-01	77.000	.4507	.7218	.5608	.9477	.2555-01	.1985-01	3.099	21.65	535.4
165	270.00	.56400-01	78.000	.4118	.6535	.5168	.9451	.2313-01	.1830-01	2.876	20.13	532.4
165	270.00	.95800-01	80.000	.2210	.3399	.2886	.9330	.1203-01	.1022-01	1.632	11.50	521.1
165	270.00	.11550	81.000	.1712	.2645	.2297	.9278	.9362-02	.8132-02	1.255	8.828	522.7
165	315.00	.19000-01	68.000	.6347	1.082	.7733	.9566	.3829-01	.2738-01	3.968	27.45	553.1
165	315.00	.22900-01	70.000	.7319	1.282	.8992	.9566	.4537-01	.3183-01	4.407	30.39	559.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K031)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
175	5.500	.0000	-6.022	173.8	726.7	.1869	103.1	90.00	2737.	.4893-02	.8294-07	5.019
176	5.500	.0000	-6.018	173.8	726.7	.1869	103.1	90.00	2737.	.4893-02	.8294-07	5.019
177	5.500	.2109-02	-6.018	173.9	726.7	.1869	103.1	89.98	2737.	.4894-02	.8294-07	5.020

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
175	.3538-01	.1097-01
176	.3538-01	.1097-01
177	.3538-01	.1096-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
176	.00000	.91000-02	1.0000	.3924	.6582	.4767	.9562	.2328-01	.1687-01	2.498	17.35	546.7
176	.00000	.15000-01	4.0000	.5937	1.080	.7396	.9562	.3821-01	.2616-01	3.389	23.29	565.3
176	.00000	.17000-01	5.0000	.5597	.9840	.6900	.9562	.3481-01	.2441-01	3.336	23.02	558.2
176	.00000	.19000-01	6.0000	.5443	.9564	.6709	.9562	.3383-01	.2374-01	3.247	22.41	558.0
176	.00000	.24900-01	9.0000	.4977	.8580	.6115	.9557	.3035-01	.2163-01	3.048	21.08	553.6
176	.00000	.26900-01	10.000	.4868	.8334	.5990	.9550	.2948-01	.2119-01	3.009	20.84	551.9
175	.00000	.32800-01	12.000	.4860	.8234	.6024	.9528	.2913-01	.2131-01	3.049	21.14	549.3
175	.00000	.36700-01	13.000	.4589	.7609	.5684	.9515	.2692 01	.2011-01	2.971	20.67	543.6
175	.00000	.40600-01	14.000	.4940	.8372	.6211	.9501	.2962-01	.2197-01	3.098	21.48	549.4
175	.00000	.48500-01	15.000	.3858	.6298	.4846	.9474	.2228-01	.1714-01	2.560	17.85	539.1
175	.00000	.56400-01	16.000	.3520	.5708	.4466	.9447	.2019-01	.1580-01	2.361	16.48	537.1
175	.00000	.76100-01	17.000	.2577	.4054	.3321	.9385	.1434-01	.1175-01	1.817	12.76	527.3
175	.00000	.11550	19.000	.1160	.1826	.1576	.9276	.6458-02	.5576-02	.8185	5.745	527.3
175	.00000	.16480	20.000	.7710-01	.1216	.1106	.9171	.4300-02	.3913-02	.5418	3.802	528.0
175	.00000	.21400	22.000	.4271-01	.6359-01	.6037-01	.9109	.2250-02	.2136-02	.3343	2.375	505.4
177	2.0000	.24700-01	165.00	.3992	.6609	.4832	.9561	.2338-01	.1709-01	2.593	18.04	543.1
176	9.0000	.15000-01	157.00	.5192	.9085	.6339	.9578	.3214-01	.2243-01	3.115	21.51	557.1
176	9.0000	.17600-01	158.00	.4940	.8332	.5966	.9578	.2948-01	.2110-01	3.120	21.65	548.2

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K031)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
177	9.8000	.24700-01	164.00	.3909	.6445	.4694	.9575	.2280-01	.1661-01	2.554	17.78	542.0
176	10.000	.22900-01	88.000	.4330	.7287	.5221	.9579	.2578-01	.1847-01	2.742	19.03	547.6
176	10.000	.26900-01	90.000	.4090	.6751	.4932	.9567	.2388-01	.1745-01	2.668	18.57	542.3
176	10.000	.34700-01	94.000	.4395	.7250	.5370	.9539	.2565-01	.1900-01	2.870	19.98	542.1
176	12.000	.17600-01	152.00	.8817	2.006	.9751	.9829	.7098-01	.3450-01	4.043	27.32	597.0
176	12.000	.12100-01	151.00	.7972	2.529	.9028	.9829	.8945-01	.3194-01	2.993	19.97	620.5
176	13.000	.19400-01	153.00	.7715	1.577	.8446	.9831	.5579-01	.2988-01	3.883	26.42	584.4
177	14.600	.44200-01	169.00	.3847	.6302	.4746	.9514	.2229-01	.1679-01	2.539	17.69	540.1
176	18.500	.44200-01	106.00	.4266	.7099	.5276	.9520	.2512-01	.1866-01	2.747	19.10	544.6
177	19.600	.62900-01	175.00	.3617	.5938	.4587	.9459	.2101-01	.1623-01	2.380	16.48	540.7
176	19.800	.40800-01	101.00	.5491	.9546	.6845	.9534	.3377-01	.2422-01	3.323	22.46	545.6
176	20.000	.24900-01	89.000	.3385	.5527	.4021	.9592	.1955-01	.1423-01	2.246	15.66	539.1
176	20.000	.28800-01	91.000	.3627	.5922	.4337	.9578	.2095-01	.1534-01	2.406	16.70	539.2
176	20.000	.32800-01	93.000	.4514	.7673	.5505	.9563	.2714-01	.1947-01	2.819	19.54	540.1
176	22.200	.62900-01	125.00	.3860	.6417	.4910	.9463	.2270-01	.1737-01	2.490	17.32	544.3
176	22.400	.44200-01	107.00	.3876	.6368	.4757	.9527	.2253-01	.1683-01	2.546	17.74	541.0
177	22.600	.10270	192.00	.2336	.3774	.3116	.9343	.1335-01	.1102-01	1.577	11.01	535.9
176	23.000	.42000-01	105.00	.5062	.8727	.6289	.9535	.3087-01	.2225-01	3.099	21.44	553.6
176	23.400	.59600-01	120.00	.4452	.7495	.5655	.9476	.2652-01	.2000-01	2.819	19.56	547.7
177	23.900	.21310	250.00	.6833-01	.1029	.9689-01	.9123	.3641-02	.3428-02	.4227	3.204	510.5
176	24.100	.82200-01	139.00	.3351	.5531	.4376	.9405	.1957-01	.1548-01	2.186	15.21	542.3
177	24.400	.19040	238.00	.9471-01	.1464	.1351	.9153	.5179-02	.4779-02	.6890	4.859	520.8
177	24.400	.12440	207.00	.1917	.3159	.2662	.9289	.1118-01	.9420-02	1.254	8.733	541.8
177	24.800	.16810	223.00	.1055	.1688	.1514	.9192	.5973-02	.5386-02	.7227	5.057	533.0
176	24.900	.62900-01	126.00	.3616	.6012	.4589	.9468	.2127-01	.1604-01	2.332	16.21	[illegible]
177	25.000	.79500-01	178.00	.4005	.6696	.5236	.9415	.2369-01	.1862-01	2.563	17.83	[illegible]
177	25.300	.10270	191.00	.2580	.4196	.3447	.9347	.1484-01	.1219-01	1.723	12.02	[illegible]
177	25.300	.10000+00	186.00	.3100	.5160	.4176	.9355	.1826-01	.1477-01	1.937	13.44	[illegible]
176	25.500	.60700-01	124.00	.4402	.7514	.5623	.9476	.2058-01	.1949-01	2.742	18.93	[illegible]
177	26.000	.12440	206.00	.2084	.3444	.2896	.9290	.1219-01	.1045-01	1.357	9.442	[illegible]
176	26.300	.82200-01	140.00	.3314	.5401	.4295	.9403	.1911-01	.1519-01	2.135	15.94	[illegible]
177	26.700	.12100	199.00	.2606	.4430	.3662	.9300	.1567-01	.1246-01	1.627	11.20	[illegible]
177	26.800	.16810	222.00	.1266	.2030	.1818	.9194	.7181-02	.6439-02	.8857	6.246	[illegible]
177	27.000	.19040	237.00	.1086	.1680	.1548	.9155	.5943-02	.5470-02	.7490	5.447	[illegible]
177	27.100	.21310	249.00	.7473-01	.1125	.1058	.9125	.3940-02	.3743-02	.5123	4.256	[illegible]
177	27.200	.80300-01	180.00	.4014	.6725	.5250	.9416	.2379-01	.1987-01	2.562	17.78	[illegible]
176	27.400	.40100-01	98.000	.5603	1.031	.7226	.9549	.3646-01	.2956-01	3.413	23.42	[illegible]
177	27.400	.16480	215.00	.1218	.1976	.1756	.9201	.6990-02	.6214-02	.8161	5.637	[illegible]
176	27.600	.41600-01	102.00	.5293	.9434	.6616	.9544	.3338-01	.2341-01	3.183	21.46	561.1
177	27.600	.12440	205.00	.2110	.3483	.2927	.9292	.1232-01	.1035-01	1.376	9.401	542.3
177	27.600	.18700	230.00	.1116	.1742	.1598	.9161	.6165-02	.5654-02	.7448	5.016	[illegible]
177	27.700	.21010	243.00	.9127-01	.1392	.1304	.9129	.4926-02	.4613-02	.6813	4.813	515.7
177	27.900	.10110	188.00	.2653	.4369	.3552	.9355	.1546-01	.1257-01	1.736	12.09	541.7

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K031)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
176	28.000	.46800-01	110.00	.2845	.4460	.3433	.9527	.1578-01	.1214-01	2.020	14.19	525.9
177	28.200	.16810	221.00	.1411	.2276	.2033	.9195	.8054-02	.7192-02	.9534	6.661	535.6
177	28.300	.19040	236.00	.1010	.1547	.1429	.9156	.5475-02	.5054-02	.7475	5.276	517.5
177	28.300	.12200	201.00	.2734	.4601	.3820	.9293	.1628-01	.1351-01	1.731	12.02	547.7
176	28.400	.53500-01	114.00	.4310	.7221	.5385	.9505	.2554-01	.1905-01	2.748	19.09	546.4
177	28.400	.21310	248.00	.7986-01	.1199	.1128	.9126	.4241-02	.3989-02	.6153	4.364	508.9
176	28.700	.58600-01	117.00	.5059	.8704	.6440	.9488	.3079-01	.2278-01	3.105	21.49	553.2
177	28.800	.16580	217.00	.1334	.2176	.1932	.9200	.7697-02	.6834-02	.8869	6.186	538.8
176	28.800	.60400-01	121.00	.4575	.7975	.5871	.9482	.2821-01	.2077-01	2.759	19.06	556.2
177	29.000	.21110	244.00	.8000-01	.1211	.1136	.9128	.4283-02	.4018-02	.6064	4.292	512.4
176	29.000	.65700-01	129.00	.2728	.4263	.3379	.9465	.1508-01	.1195-01	1.947	13.68	524.9
176	29.200	.72400-01	133.00	.3901	.6488	.5013	.9444	.2295-01	.1773-01	2.514	17.48	544.5
176	29.300	.79500-01	136.00	.3841	.6643	.5081	.9422	.2350-01	.1797-01	2.342	16.19	554.4
176	29.600	.92500-01	143.00	.3484	.5780	.4615	.9383	.2045-01	.1633-01	2.254	15.68	543.8
176	29.700	.10000+00	146.00	.2847	.4881	.3880	.9361	.1727-01	.1373-01	1.757	12.16	552.3
177	29.900	.12100	198.00	.2687	.4656	.3808	.9304	.1647-01	.1347-01	1.634	11.30	554.8
177	30.200	.16480	214.00	.1184	.1940	.1717	.9204	.6863-02	.6073-02	.7809	5.443	540.2
177	30.200	.18700	229.00	.1090	.1706	.1562	.9163	.6036-02	.5525-02	.7752	5.447	525.6
177	30.300	.21010	242.00	.8303-01	.1275	.1192	.9130	.4511-02	.4217-02	.6120	4.317	518.4
176	31.500	.11100-01	83.000	.6513	1.411	.8213	.9615	.4990-01	.2906-01	3.110	21.08	591.7
176	31.500	.14200-01	84.000	.9798	3.015	1.084	.9857	.1066	.3835-01	3.731	24.92	619.0
176	31.500	.16000-01	85.000	1.064	2.957	1.170	.9857	.1046	.4141-01	4.270	28.60	613.2
176	31.500	.19400-01	87.000	.7502	1.518	.8085	.9857	.5369-01	.2860-01	3.814	25.97	583.0
177	32.100	.21010	241.00	.8159-01	.1262	.1178	.9132	.4466-02	.4166-02	.5932	4.178	521.2
177	32.200	.16480	213.00	.1143	.1879	.1659	.9206	.6647-02	.5869-02	.7495	5.220	541.2
177	32.200	.17860	224.00	.1151	.1801	.1636	.9180	.6373-02	.5786-02	.8203	5.764	525.3
177	32.200	.18700	228.00	.1484	.2358	.2149	.9165	.8342-02	.7602-02	1.029	7.211	530.6
177	32.300	.12100	197.00	.2996	.5226	.4253	.9307	.1849-01	.1505-01	1.804	12.46	556.4
177	32.300	.12300	194.00	.2378	.4168	.3396	.9302	.1474-01	.1201-01	1.424	9.833	557.4
177	32.300	.12730	208.00	.1546	.2487	.2113	.9291	.8798-02	.7475-02	1.051	7.349	534.5
177	32.300	.13420	209.00	.1910	.3208	.2705	.9274	.1135-01	.9570-02	1.214	8.429	547.0
176	32.400	.10000+00	147.00	.3211	.5746	.4460	.9365	.2033-01	.1578-01	1.870	12.88	562.0
177	32.400	.10110	184.00	.3151	.5530	.4344	.9362	.1957-01	.1537-01	1.883	13.00	557.8
177	32.400	.10630	193.00	.1959	.3062	.2562	.9347	.1083-01	.9062-02	1.398	9.825	525.0
177	32.500	.85800-01	183.00	.2371	.3730	.3025	.9407	.1320-01	.1070-01	1.674	11.75	527.2
176	32.600	.79500-01	137.00	.4295	.7814	.5790	.9427	.2764-01	.2048-01	2.452	16.85	565.3
177	32.600	.80800-01	176.00	.4734	.8611	.6397	.9423	.3047-01	.2263-01	2.703	18.58	565.3
176	32.700	.67400-01	132.00	.3068	.4936	.3846	.9465	.1746-01	.1361-01	2.083	14.56	534.7
176	32.700	.72400-01	134.00	.3486	.5737	.4448	.9449	.2030-01	.1573-01	2.285	15.91	541.4
176	32.800	.65700-01	130.00	.3052	.4782	.3774	.9471	.1692-01	.1335-01	2.168	15.23	525.9
177	32.800	.16680	210.00	.1098	.1786	.1585	.9202	.6320-02	.5609-02	.7334	5.117	538.0
177	32.800	.18880	225.00	.1063	.1631	.1500	.9163	.5769-02	.5308-02	.7848	5.537	518.0
176	32.900	.58600-01	118.00	.4335	.7424	.5490	.9494	.2626-01	.1942-01	2.678	18.55	552.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K031)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
176	32.900	.60400-01	122.00	.4420	.7713	.5655	.9488	.2728-01	.2001-01	2.661	18.38	556.5
177	32.900	.61300-01	171.00	.4084	.7038	.5209	.9485	.2490-01	.1843-01	2.501	17.30	553.5
176	33.000	.53500-01	115.00	.4022	.6623	.4976	.9512	.2343-01	.1760-01	2.633	18.34	541.6
176	33.200	.48300-01	113.00	.2898	.4541	.3492	.9530	.1607-01	.1235-01	2.059	14.47	525.8
177	33.400	.42800-01	166.00	.4966	.8734	.6165	.9549	.3090-01	.2181-01	2.960	20.43	558.2
176	33.500	.40100-01	99.000	.5606	.9778	.6906	.9559	.3459-01	.2443-01	3.378	23.33	556.3
176	33.600	.38300-01	97.000	.5744	.9953	.7038	.9565	.3521-01	.2490-01	3.493	24.15	554.8
176	33.700	.36700-01	96.000	.5970	1.051	.7327	.9571	.3717-01	.2592-01	3.554	24.52	558.4
176	33.900	.33800-01	95.000	.5333	.9243	.6479	.9582	.3270-01	.2292-01	3.241	22.40	554.9
177	34.700	.21010	240.00	.1007	.1561	.1454	.9133	.5523-02	.5146-02	.7293	5.135	522.0
177	34.700	.18700	227.00	.1110	.1761	.1604	.9167	.6231-02	.5674-02	.7712	5.405	530.2
177	34.900	.16480	212.00	.1272	.2120	.1861	.9209	.7499-02	.6584-02	.8182	5.687	544.9
176	35.100	.10000+00	148.00	.3573	.6487	.4987	.9369	.2295-01	.1764-01	2.045	14.06	564.9
177	35.200	.23900-01	161.00	.2498	.3848	.2803	.9620	.1361-01	.1020-01	1.831	12.90	519.5
176	35.300	.92500-01	145.00	.3070	.5101	.4053	.9391	.1805-01	.1434-01	1.982	13.78	544.2
176	35.300	.22100-01	160.00	.2363	.3633	.2724	.9621	.1285-01	.9636-02	1.738	12.26	518.7
177	35.400	.18800	231.00	.1480	.2341	.2134	.9166	.8282-02	.7552-02	1.034	7.250	529.2
177	35.500	.12100	196.00	.2929	.5177	.4178	.9311	.1832-01	.1478-01	1.733	11.95	559.4
177	35.600	.16580	216.00	.1297	.2145	.1889	.9207	.7588-02	.6683-02	.8441	5.874	542.8
176	35.800	.80600-01	138.00	.4568	.8391	.6179	.9428	.2969-01	.2186-01	2.577	17.70	567.2
177	35.900	.21310	247.00	.9683-01	.1468	.1376	.9130	.5195-02	.4867-02	.7310	5.171	513.3
177	36.000	.19040	235.00	.1320	.2056	.1885	.9163	.7274-02	.6669-02	.9479	6.667	523.7
177	36.200	.16810	220.00	.1269	.2056	.1826	.9203	.7275-02	.6460-02	.8517	5.947	536.9
176	36.200	.72400-01	135.00	.3431	.5646	.4366	.9454	.1997-01	.1545-01	2.249	15.66	541.4
177	36.300	.12200	200.00	.3002	.5350	.4307	.9310	.1893-01	.1524-01	1.759	12.12	561.1
176	36.600	.65700-01	131.00	.3145	.5071	.3926	.9476	.1794-01	.1389-01	2.128	14.87	535.4
177	36.700	.18700	226.00	.1278	.1997	.1824	.9169	.7065-02	.6452-02	.9129	6.417	524.8
177	36.900	.16480	211.00	.1213	.1980	.1747	.9210	.7007-02	.6182-02	.8040	5.606	539.2
177	36.900	.10110	187.00	.3371	.5944	.4641	.9368	.2103-01	.1642-01	2.002	13.81	558.8
176	37.000	.60400-01	123.00	.4502	.8024	.5786	.9494	.2838-01	.2047-01	2.637	18.17	561.1
177	37.000	.12440	204.00	.2755	.4769	.3901	.9304	.1687-01	.1380-01	1.677	11.60	554.6
176	37.100	.58600-01	119.00	.4200	.7103	.5277	.9501	.2513-01	.1867-01	2.642	18.32	548.9
177	37.200	.21310	246.00	.8918-01	.1347	.1262	.9131	.4765-02	.4466-02	.6787	4.806	511.6
177	37.600	.16810	219.00	.1200	.1925	.1713	.9205	.6810-02	.6061-02	.8192	5.730	533.7
176	37.800	.10270	150.00	.3043	.5164	.4118	.9365	.1827-01	.1457-01	1.905	13.20	549.7
177	37.900	.12100	195.00	.2075	.3395	.2829	.9314	.1201-01	.1001-01	1.371	9.557	539.9
177	38.000	.80300-01	179.00	.4148	.7064	.5419	.9432	.2499-01	.1917-01	2.584	17.91	550.6
176	38.500	.46800-01	112.00	.3187	.5077	.3840	.9543	.1796-01	.1359-01	2.200	15.41	531.5
177	38.600	.12440	203.00	.2563	.4322	.3571	.9306	.1529-01	.1263-01	1.619	11.23	548.1
177	38.700	.10000+00	185.00	.3002	.5044	.4023	.9373	.1784-01	.1423-01	1.907	13.24	547.1
176	38.900	.82200-01	141.00	.3573	.6112	.4689	.9427	.2162-01	.1659-01	2.211	15.31	551.7
176	39.300	.41600-01	104.00	.5417	.9672	.6709	.9562	.3422-01	.2373-01	3.165	21.80	561.5
177	39.500	.10270	190.00	.3107	.5222	.4178	.9367	.1847-01	.1478-01	1.972	13.69	547.3

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K031)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
177	39.600	.16810	218.00	.1077	.1712	.1526	.9206	.6056-02	.5400-02	.7475	5.237	530.6
177	39.900	.19040	233.00	.8157-01	.1242	.1143	.9166	.4395-02	.4044-02	.6107	4.316	515.0
177	40.100	.79500-01	177.00	.3496	.5754	.4487	.9437	.2036-01	.1588-01	2.291	15.95	541.5
177	40.200	.12440	202.00	.2235	.3723	.3089	.9308	.1317-01	.1093-01	1.437	9.990	544.9
177	40.300	.21310	245.00	.6130-01	.9133-01	.8575-01	.9133	.3231-02	.3034-02	.4793	3.405	505.7
176	41.100	.82200-01	142.00	.4040	.6869	.5279	.9430	.2430-01	.1868-01	2.521	17.47	550.3
177	41.100	.60700-01	173.00	.4386	.7477	.5531	.9499	.2645-01	.1957-01	2.728	18.90	550.9
177	42.600	.59600-01	172.00	.3934	.6571	.4910	.9505	.2325-01	.1737-01	2.521	17.51	545.6
177	43.200	.42000-01	168.00	.4654	.7936	.5672	.9566	.2808-01	.2007-01	2.894	20.05	550.9
177	43.400	.82200-01	181.00	.2773	.4482	.3538	.9433	.1586-01	.1252-01	1.869	13.05	536.1
176	43.600	.62900-01	128.00	.3863	.6491	.4855	.9495	.2296-01	.1717-01	2.452	17.02	547.2
176	45.000	.22900-01	8.0000	.6360	1.206	.7687	.9635	.4267-01	.2719-01	3.459	23.68	572.9
177	46.100	.62900-01	174.00	.4245	.7118	.5322	.9498	.2518-01	.1883-01	2.703	18.77	546.7
177	47.700	.40800-01	167.00	.5050	.8693	.6141	.9576	.3076-01	.2173-01	3.098	21.44	553.3
176	48.400	.44200-01	109.00	.5138	.8914	.6298	.9565	.3153-01	.2228-01	3.118	21.55	555.1
176	50.000	.19400-01	156.00	2.027	4.722	2.189	.9870	.1671	.7744-01	9.127	61.60	599.4
176	51.000	.12100-01	154.00	.7814	2.358	.8557	.9870	.8343-01	.3027-01	3.004	20.07	618.0
176	51.000	.17600-01	155.00	.8486	2.053	.9187	.9870	.7263-01	.3250-01	3.718	25.05	602.8
177	51.900	.44800-01	170.00	.4407	.7351	.5331	.9567	.2601-01	.1886-01	2.830	19.67	545.2
177	53.200	.24700-01	163.00	.4647	.7760	.5430	.9641	.2746-01	.1921-01	2.977	20.69	545.6
177	65.200	.24700-01	162.00	.5882	1.051	.6946	.9652	.3718-01	.2457-01	3.434	23.65	561.7
175	90.000	.91000-02	44.000	.6008	1.331	.7354	.9666	.4709-01	.2602-01	2.815	19.05	594.2
175	90.000	.11100-01	45.000	.7471	1.629	.9118	.9666	.5762-01	.3226-01	3.548	24.03	592.4
175	90.000	.13100-01	46.000	.7839	1.633	.9485	.9666	.5777-01	.3355-01	3.876	26.33	586.9
175	90.000	.17000-01	48.000	.6778	1.314	.8084	.9666	.4649-01	.2860-01	3.598	24.58	576.6
175	90.000	.20900-01	50.000	.7346	1.381	.8706	.9666	.4887-01	.3080-01	4.034	27.63	571.5
175	90.000	.24900-01	52.000	.6268	1.112	.7355	.9662	.3935-01	.2602-01	3.691	25.44	560.2
175	90.000	.26900-01	53.000	.5978	1.061	.7041	.9654	.3753-01	.2491-01	3.521	24.27	560.2
175	90.000	.28800-01	54.000	.5828	1.022	.6869	.9647	.3617-01	.2430-01	3.484	24.05	557.7
175	90.000	.32800-01	55.000	.4007	.6416	.4648	.9633	.2270-01	.1644-01	2.744	19.20	533.1
175	90.000	.36700-01	56.000	.5236	.8873	.6205	.9619	.3139-01	.2195-01	3.283	22.77	549.4
175	90.000	.40600-01	57.000	.5055	.8765	.6070	.9605	.3101-01	.2147-01	3.070	21.22	555.0
175	90.000	.48500-01	58.000	.4205	.7210	.5104	.9577	.2551-01	.1806-01	2.594	17.95	552.3
175	90.000	.56400-01	59.000	.4198	.7120	.5148	.9550	.2519-01	.1821-01	2.629	18.23	549.6
175	90.000	.76100-01	60.000	.3374	.5678	.4266	.9485	.2009-01	.1509-01	2.137	14.83	547.6
175	90.000	.95800-01	61.000	.2281	.3749	.2947	.9423	.1326-01	.1042-01	1.497	10.43	541.2
175	90.000	.11550	62.000	.2145	.3574	.2875	.9365	.1264-01	.1017-01	1.379	9.588	544.9
175	135.00	.19000-01	49.000	.7229	1.360	.8721	.9635	.4812-01	.3085-01	3.965	27.16	571.6
175	135.00	.22900-01	51.000	.6843	1.272	.8231	.9635	.4498-01	.2912-01	3.809	26.13	569.3
175	180.00	.91000-02	23.000	.2952	.4779	.3546	.9562	.1690-01	.1254-01	1.985	13.86	536.6
175	180.00	.11100-01	24.000	.6376	1.281	.8175	.9562	.4532-01	.2892-01	3.263	22.23	582.0
175	180.00	.13100-01	25.000	.6931	1.382	.8868	.9562	.4889-01	.3137-01	3.574	24.36	580.9
175	180.00	.15000-01	26.000	.7169	1.380	.9080	.9562	.4881-01	.3212-01	3.837	26.23	575.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K031)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
175	180.00	.17000-01	27.000	.6957	1.311	.8758	.9562	.4640-01	.3098-01	3.809	26.09	571.9
175	180.00	.19000-01	28.000	.6757	1.267	.8493	.9562	.4482-01	.3005-01	3.722	25.51	570.9
175	180.00	.20900-01	29.000	.6478	1.173	.8059	.9562	.4151-01	.2851-01	3.718	25.57	564.4
175	180.00	.28800-01	32.000	.5642	.9781	.6996	.9543	.3460-01	.2475-01	3.428	23.70	554.9
175	180.00	.32800-01	33.000	.5127	.8555	.6322	.9528	.3026-01	.2236-01	3.290	22.86	545.3
175	180.00	.36700-01	34.000	.5005	.8485	.6249	.9515	.3002-01	.2211-01	3.137	21.75	549.5
175	180.00	.48500-01	36.000	.4027	.6638	.5078	.9474	.2348-01	.1797-01	2.632	18.33	541.9
175	180.00	.56400-01	37.000	.3777	.6154	.4802	.9447	.2177-01	.1699-01	2.514	17.54	538.5
175	180.00	.76100-01	38.000	.2893	.4622	.3757	.9385	.1635-01	.1329-01	1.988	13.91	532.4
175	180.00	.95800-01	39.000	.2234	.3523	.2963	.9328	.1246-01	.1048-01	1.570	11.02	528.0
175	180.00	.11550	40.000	.1660	.2649	.2275	.9276	.9370-02	.8048-02	1.144	8.006	532.0
175	180.00	.18450	42.000	.6558-01	.1005	.9352-01	.9141	.3557-02	.3308-02	.4849	3.422	517.7
175	225.00	.22900-01	30.000	.5785	1.016	.7399	.9493	.3594-01	.2617-01	3.454	23.84	557.9
175	270.00	.91000-02	63.000	.2945	.4680	.3671	.9466	.1656-01	.1299-01	2.041	14.30	530.7
175	270.00	.11100-01	64.000	.3756	.6095	.4723	.9466	.2156-01	.1671-01	2.516	17.56	537.3
175	270.00	.13100-01	65.000	.6010	1.078	.7867	.9466	.3812-01	.2783-01	3.493	24.05	562.4
175	270.00	.17000-01	67.000	.7947	1.529	1.068	.9466	.5408-01	.3780-01	4.255	29.09	575.3
175	270.00	.20900-01	69.000	.6310	1.143	.8293	.9466	.4045-01	.2934-01	3.620	24.89	564.5
175	270.00	.24900-01	71.000	.5381	.9657	.7066	.9461	.3416-01	.2500-01	3.124	21.51	562.5
175	270.00	.28800-01	73.000	.5320	.9147	.6920	.9447	.3236-01	.2448-01	3.268	22.62	553.0
175	270.00	.36700-01	75.000	.4361	.7379	.5717	.9420	.2610-01	.2023-01	2.740	19.00	549.0
175	270.00	.48500-01	77.000	.3568	.5866	.4711	.9381	.2075-01	.1667-01	2.342	16.31	541.1
175	270.00	.56400-01	78.000	.3392	.5524	.4514	.9356	.1954-01	.1597-01	2.259	15.76	538.4
175	270.00	.95800-01	80.000	.1594	.2522	.2205	.9247	.8923-02	.7801-02	1.113	7.802	529.3
175	270.00	.11550	81.000	.1133	.1811	.1615	.9202	.6406-02	.5714-02	.7779	5.444	532.6
175	315.00	.19000-01	68.000	.5839	1.009	.7423	.9493	.3569-01	.2626-01	3.563	24.64	554.2
175	315.00	.22900-01	70.000	.5880	1.055	.7579	.9493	.3732-01	.2681-01	3.415	23.51	562.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K032)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 9.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
178	5.500	.3179-02	-9.030	173.8	728.7	.1868	103.4	89.98	2741.	.4879-02	.8317-07	4.997
179	5.500	.3176-02	-9.022	173.8	729.7	.1869	103.5	89.98	2743.	.4873-02	.8329-07	4.988
181	5.500	.3174-02	-9.018	173.9	733.7	.1869	104.1	89.98	2750.	.4847-02	.8374-07	4.948

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
178	.3539-01	.1099-01
179	.3540-01	.1099-01
181	.3544-01	.1103-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
179	.00000	.91000-02	1.0000	.4609	.8143	.5708	.9556	.2883-01	.2021-01	2.743	18.90	561.5
179	.00000	.15000-01	4.0000	.5576	.9884	.6912	.9556	.3499-01	.2447-01	3.304	22.75	562.3
179	.00000	.17000-01	5.0000	.5364	.9257	.6594	.9556	.3277-01	.2335-01	3.296	22.77	556.1
179	.00000	.19000-01	6.0000	.5185	.8895	.6362	.9556	.3149-01	.2252-01	3.212	22.21	554.7
179	.00000	.24900-01	9.0000	.4566	.7660	.5576	.9552	.2712-01	.1974-01	2.920	20.25	549.0
179	.00000	.26900-01	10.000	.4581	.7656	.5607	.9544	.2711-01	.1985-01	2.946	20.45	548.0
178	.00000	.32800-01	12.000	.4538	.7667	.5634	.9523	.2713-01	.1994-01	2.868	19.88	550.1
178	.00000	.36700-01	13.000	.4344	.7206	.5395	.9510	.2550-01	.1909-01	2.821	19.61	545.2
178	.00000	.40600-01	14.000	.4705	.7954	.5924	.9496	.2815-01	.2097-01	2.970	20.58	550.3
178	.00000	.48500-01	15.000	.3484	.5688	.4386	.9469	.2013-01	.1552-01	2.318	16.15	540.6
178	.00000	.56400-01	16.000	.3217	.5196	.4083	.9443	.1839-01	.1445-01	2.179	15.21	537.3
178	.00000	.76100-01	17.000	.1979	.3081	.2541	.9382	.1091-01	.8994-02	1.427	10.03	524.9
178	.00000	.11550	19.000	.1348	.2125	.1835	.9274	.7521-02	.6495-02	.9498	6.659	529.5
178	.00000	.16480	20.000	.7022-01	.1104	.1006	.9171	.3907-02	.3559-02	.4977	3.491	528.4
178	.00000	.21400	22.000	.4672-01	.6892-01	.6553-01	.9109	.2439-02	.2319-02	.3740	2.662	502.5
181	2.0000	.24700-01	165.00	.3213	.5200	.3867	.9558	.1843-01	.1370-01	2.187	15.23	541.6
179	9.0000	.15000-01	157.00	.5657	.9776	.6874	.9580	.3461-01	.2433-01	3.469	23.96	556.5
179	9.0000	.17600-01	158.00	.4766	.7930	.5725	.9580	.2807-01	.2027-01	3.085	21.42	546.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K032)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
181	9.8000	.24700-01	164.00	.3339	.5391	.3978	.9578	.1911-01	.1410-01	2.280	15.88	541.0
179	10.000	.22900-01	88.000	.4050	.6659	.4842	.9583	.2357-01	.1714-01	2.670	18.57	543.5
179	10.000	.26900-01	90.000	.3924	.6342	.4692	.9571	.2245-01	.1661-01	2.658	18.54	538.3
179	10.000	.34700-01	94.000	.4460	.7246	.5411	.9543	.2565-01	.1916-01	2.996	20.88	539.9
179	12.000	.17600-01	152.00	.8835	2.005	.9764	.9830	.7099-01	.3457-01	4.080	27.54	599.2
179	12.000	.12100-01	151.00	.7985	2.897	.9107	.9830	.1026	.3224-01	2.847	18.92	628.9
179	13.000	.19400-01	153.00	.7755	1.638	.8507	.9832	.5798-01	.3011-01	3.805	25.79	591.1
181	14.600	.44200-01	169.00	.3361	.5402	.4102	.9522	.1914-01	.1454-01	2.312	16.12	539.5
179	18.500	.44200-01	106.00	.3883	.6326	.4741	.9532	.2240-01	.1678-01	2.598	18.10	540.7
181	19.600	.62900-01	175.00	.3815	.6217	.4793	.9472	.2203-01	.1699-01	2.567	17.86	543.8
179	19.800	.40800-01	101.00	.4916	.8312	.6034	.9547	.2943-01	.2136-01	3.108	21.53	551.1
179	20.000	.24900-01	89.000	.3282	.5259	.3856	.9604	.1862-01	.1365-01	2.255	15.75	535.6
179	20.000	.28800-01	91.000	.3841	.6231	.4559	.9590	.2206-01	.1614-01	2.587	18.04	539.4
179	20.000	.32800-01	93.000	.4715	.7963	.5703	.9575	.2819-01	.2019-01	2.986	20.69	550.8
179	22.200	.62900-01	125.00	.4498	.7553	.5701	.9478	.2674-01	.2018-01	2.873	19.92	549.3
179	22.400	.44200-01	107.00	.3526	.5687	.4270	.9542	.2013-01	.1512-01	2.398	16.73	537.6
181	22.600	.10270	192.00	.2492	.4004	.3289	.9358	.1419-01	.1166-01	1.716	11.96	539.4
179	23.000	.42000-01	105.00	.4455	.7440	.5435	.9551	.2634-01	.1924-01	2.868	19.90	547.8
179	23.400	.59600-01	120.00	.4781	.8120	.6043	.9492	.2875-01	.2139-01	3.003	20.79	552.2
181	23.900	.21310	250.00	.6987-01	.1042	.9790-01	.9131	.3692-02	.3469-02	.5516	3.907	510.9
179	24.100	.82200-01	139.00	.4009	.6658	.5206	.9422	.2357-01	.1843-01	2.602	18.08	546.3
181	24.400	.19040	238.00	.9721-01	.1485	.1367	.9164	.5264-02	.4845-02	.7314	5.151	521.4
181	24.400	.12440	207.00	.2072	.3354	.2823	.9304	.1189-01	.1001-01	1.409	9.809	541.8
181	24.800	.16810	223.00	.1160	.1830	.1636	.9205	.6484-02	.5799-02	.8246	5.770	533.1
179	24.900	.62900-01	126.00	.4286	.7126	.5393	.9485	.2523-01	.1909-01	2.778	19.29	546.6
181	25.000	.79500-01	178.00	.4460	.7452	.5776	.9432	.2641-01	.2047-01	2.888	20.01	551.0
181	25.300	.10270	191.00	.2835	.4593	.3747	.9364	.1628-01	.1328-01	1.926	13.41	542.0
181	25.300	.10000+00	186.00	.3349	.5564	.4465	.9372	.1972-01	.1583-01	2.187	15.16	549.4
179	25.500	.60700-01	124.00	.4989	.8565	.6326	.9494	.3032-01	.2240-01	3.086	21.34	554.9
181	26.000	.12440	206.00	.2197	.3578	.2999	.9307	.1268-01	.1063-01	1.480	10.30	543.5
179	26.300	.82200-01	140.00	.3181	.5191	.4088	.9427	.1838-01	.1447-01	2.122	14.78	541.2
181	26.700	.12100	199.00	.2792	.4675	.3851	.9317	.1657-01	.1365-01	1.802	12.48	551.5
181	26.800	.16810	222.00	.1315	.2069	.1849	.9208	.7334-02	.6552-02	.9385	6.569	532.3
181	27.000	.19040	237.00	.1170	.1786	.1641	.9167	.6328-02	.5815-02	.8821	6.214	520.9
181	27.100	.21310	249.00	.8373-01	.1246	.1169	.9134	.4415-02	.4144-02	.6638	4.705	510.0
181	27.200	.80300-01	180.00	.4583	.7747	.5957	.9435	.2746-01	.2111-01	2.917	20.17	554.1
179	27.400	.40100-01	98.000	.4875	.8443	.5963	.9568	.2989-01	.2111-01	2.980	20.58	557.0
181	27.400	.16480	215.00	.1402	.2241	.1995	.9216	.7941-02	.7033-02	.9742	6.799	537.6
179	27.600	.41600-01	102.00	.4685	.8120	.5746	.9563	.2875-01	.2034-01	2.861	19.75	557.2
181	27.600	.12440	205.00	.2257	.3660	.3068	.9310	.1297-01	.1087-01	1.531	10.66	542.3
181	27.600	.18700	230.00	.1390	.2144	.1959	.9174	.7598-02	.6942-02	1.027	7.220	525.1
181	27.700	.21010	243.00	.1140	.1723	.1609	.9139	.6106-02	.5701-02	.8765	6.188	516.8
181	27.900	.10110	188.00	.2973	.4869	.3930	.9375	.1725-01	.1393-01	1.965	13.80	545.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K032)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
179	28.000	.46800-01	110.00	.2674	.4127	.3182	.9546	.1461-01	.1126-01	1.962	13.81	522.4
181	28.200	.16810	221.00	.1358	.2143	.1911	.9210	.7596-02	.6772-02	.9634	6.739	533.5
181	28.300	.19040	236.00	.1112	.1683	.1548	.9169	.5965-02	.5488-02	.8512	6.007	517.6
181	28.300	.12200	201.00	.2904	.4812	.3980	.9318	.1705-01	.1411-01	1.905	13.21	548.6
179	28.400	.53500-01	114.00	.4206	.7005	.5192	.9525	.2480-01	.1838-01	2.719	18.89	547.1
181	28.400	.21310	248.00	.8617-01	.1279	.1200	.9136	.4532-02	.4253-02	.6870	4.873	500.7
179	28.700	.58600-01	117.00	.5181	.8816	.6499	.9508	.3121-01	.2301-01	3.246	22.47	552.7
181	28.800	.16580	217.00	.1416	.2260	.2002	.9216	.8009-02	.7095-02	.9853	6.878	537.3
179	28.800	.60400-01	121.00	.5094	.8912	.6473	.9503	.3155-01	.2292-01	3.071	21.18	559.4
181	29.000	.21110	244.00	.9338-01	.1398	.1307	.9139	.4953-02	.4634-02	.7316	5.178	512.6
179	29.000	.65700-01	129.00	.3196	.4959	.3911	.9486	.1756-01	.1385-01	2.322	16.32	[illegible]
179	29.200	.72400-01	133.00	.5095	.8641	.6530	.9465	.3059-01	.2312-01	3.206	22.20	551.9
179	29.300	.79500-01	136.00	.4716	.8284	.6206	.9442	.2933-01	.2197-01	2.638	19.49	[illegible]
179	29.600	.92500-01	143.00	.3825	.6284	.4989	.9404	.2225-01	.1766-01	2.525	17.57	543.2
179	29.700	.10000+00	146.00	.3605	.6154	.4846	.9382	.2179-01	.1716-01	2.249	15.55	[illegible]
181	29.900	.12100	198.00	.2953	.5039	.4101	.9324	.1786-01	.1453-01	1.855	12.81	[illegible]
181	30.200	.16480	214.00	.1376	.2215	.1953	.9220	.7849-02	.6920-02	.9453	6.503	539.9
181	30.300	.21010	242.00	.1018	.1548	.1442	.9142	.5487-02	.5110-02	.7736	5.454	519.3
179	31.500	.11100-01	83.000	.7413	1.571	.9171	.9637	.5561-01	.3247-01	3.626	24.57	591.5
179	31.500	.14200-01	84.000	1.088	3.503	1.195	.9870	.1240	.4231-01	4.077	27.16	623.8
179	31.500	.16000-01	85.000	1.103	2.996	1.201	.9870	.1061	.4253-01	4.506	30.17	614.2
179	31.500	.19400-01	87.000	.7763	1.622	.8328	.9870	.5741-01	.2348-01	3.447	26.10	[illegible]
181	32.100	.21010	241.00	.1243	.1914	.1776	.9144	.6783-02	[illegible]	.9218	6.481	[illegible]
181	32.200	.16480	213.00	.1402	.2285	.2003	.9224	.8097-02	[illegible]	[illegible]	[illegible]	543.7
181	32.200	.17860	224.00	.1335	.2063	.1864	.9196	.7312-02	[illegible]	[illegible]	6.913	[illegible]
181	32.200	.18700	228.00	.1774	.2816	.2546	.9180	.9980-02	.9023-02	[illegible]	8.711	515.4
181	32.300	.12100	197.00	.3258	.5615	.4536	.9329	.1990-01	.1608-01	2.018	13.92	[illegible]
181	32.300	.12300	194.00	.2728	.4735	.3825	.9323	.1678-01	.1356-01	1.674	11.54	[illegible]
181	32.300	.12730	208.00	.1775	.2800	.2373	.9312	.9324-02	[illegible]	1.261	8.821	513.3
181	32.300	.13420	209.00	.1875	.3067	.2593	.9295	.1087-01	.9154-02	1.254	8.714	[illegible]
179	32.400	.10000+00	147.00	.3985	.7207	.5487	.9388	.2551-01	[illegible]	[illegible]	15.82	[illegible]
181	32.400	.10110	184.00	.3651	.6405	.4965	.9384	.2270-01	[illegible]	[illegible]	[illegible]	[illegible]
181	32.400	.10630	193.00	.2093	.3238	.2694	.9369	.1148-01	[illegible]	[illegible]	[illegible]	[illegible]
181	32.500	.85800-01	183.00	.2557	.3993	.3216	.9330	.1415-01	.1140-01	[illegible]	12.46	[illegible]
179	32.600	.79500-01	137.00	.5005	.9504	.6767	.9450	.3365-01	[illegible]	2.731	18.67	[illegible]
181	32.600	.80800-01	176.00	.6043	1.149	.8195	.9446	.4072-01	[illegible]	3.314	22.61	578.9
179	32.700	.67400-01	132.00	.3805	.6150	.4726	.9469	.2177-01	.1673-01	[illegible]	17.99	538.3
179	32.700	.72400-01	134.00	.4527	.7480	.5717	.9473	.2648-01	[illegible]	[illegible]	22.59	544.9
179	32.800	.65700-01	130.00	.3527	.5486	.4303	.9495	.1942-01	[illegible]	2.651	17.92	[illegible]
181	32.800	.16680	210.00	.1442	.2326	.2049	.9220	.8444-02	[illegible]	[illegible]	6.477	540.6
181	32.800	.18880	225.00	.1356	.2066	.1890	.9178	.7302-02	.6697-02	[illegible]	[illegible]	[illegible]
179	32.900	.58600-01	118.00	.5548	.9442	.6923	.9518	.3343-01	.2451-01	3.475	24.05	552.7
179	32.900	.60400-01	122.00	.5586	1.006	.7134	.9512	.3563-01	.2526-01	3.243	22.29	545.7

FH15. E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K032)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
181	32.900	.61300-01	171.00	.4608	.8069	.5836	.9509	.2859-01	.2068-01	2.793	19.23	562.6
179	33.000	.53500-01	115.00	.3808	.6205	.4641	.9536	.2197-01	.1643-01	2.546	17.74	540.8
179	33.200	.48300-01	113.00	.2798	.4327	.3322	.9554	.1532-01	.1176-01	2.045	14.39	523.2
181	33.400	.42800-01	166.00	.3996	.6765	.4842	.9573	.2398-01	.1716-01	2.539	17.55	554.4
179	33.500	.40100-01	99.000	.4960	.8536	.6011	.9583	.3022-01	.2128-01	3.059	21.14	555.5
179	33.600	.38300-01	97.000	.5336	.9121	.6433	.9589	.3229-01	.2277-01	3.322	22.98	553.8
179	33.700	.36700-01	96.000	.5645	.9769	.6809	.9595	.3458-01	.2410-01	3.454	23.86	556.8
179	33.900	.33800-01	95.000	.5412	.9307	.6481	.9606	.3295-01	.2294-01	3.340	23.08	555.3
181	34.700	.21010	240.00	.1493	.2321	.2147	.9146	.8226-02	.7608-02	1.087	7.630	528.1
181	34.700	.18700	227.00	.1528	.2413	.2181	.9184	.8551-02	.7728-02	1.084	7.583	533.5
181	34.900	.16480	212.00	.1627	.2692	.2343	.9228	.9542-02	.8302-02	1.069	7.420	548.2
179	35.100	.10000+00	148.00	.4185	.7760	.5808	.9393	.2747-01	.2056-01	2.346	16.08	571.3
181	35.200	.23900-01	161.00	.2497	.3828	.2849	.9644	.1357-01	.1010-01	1.867	13.14	522.7
179	35.300	.92500-01	145.00	.3640	.6016	.4731	.9416	.2130-01	.1675-01	2.381	16.55	544.9
179	35.300	.22100-01	160.00	.2871	.4407	.3275	.9646	.1560-01	.1160-01	2.127	14.99	520.3
181	35.400	.18800	231.00	.1671	.2639	.2386	.9183	.9354-02	.8457-02	1.185	8.285	533.7
181	35.500	.12100	196.00	.3339	.5889	.4689	.9335	.2087-01	.1662-01	2.004	13.79	564.3
181	35.600	.16580	216.00	.1640	.2696	.2352	.9227	.9556-02	.8337-02	1.089	7.562	546.4
179	35.800	.80600-01	138.00	.6158	1.214	.8461	.9454	.4298-01	.2995-01	3.271	22.30	580.6
181	35.900	.21310	247.00	.1232	.1861	.1734	.9144	.6596-02	.6145-02	.9466	6.684	516.8
181	36.000	.19040	235.00	.1588	.2467	.2244	.9180	.8742-02	.7952-02	1.160	8.141	527.6
181	36.200	.16810	220.00	.1554	.2491	.2196	.9223	.8828-02	.7782-02	1.074	7.494	538.6
179	36.200	.72400-01	135.00	.4290	.7086	.5396	.9480	.2509-01	.1910-01	2.808	19.52	544.8
181	36.300	.12200	200.00	.3477	.6204	.4916	.9334	.2199-01	.1742-01	2.056	14.12	566.8
179	36.600	.65700-01	131.00	.3572	.5713	.4389	.9503	.2022-01	.1554-01	2.462	17.21	534.9
181	36.700	.16700	226.00	.1415	.2188	.1985	.9187	.7753-02	.7035-02	1.041	7.309	526.1
181	36.900	.16480	211.00	.1433	.2299	.2017	.9231	.8147-02	.7148-02	.9888	6.896	538.9
181	36.900	.10110	187.00	.4012	.7115	.5453	.9394	.2521-01	.1933-01	2.392	16.44	565.4
179	37.000	.60400-01	123.00	.5882	1.116	.7603	.9521	.3951-01	.2691-01	3.213	21.97	575.4
181	37.000	.12440	204.00	.3132	.5405	.4363	.9329	.1915-01	.1546-01	1.936	13.35	559.2
179	37.100	.58600-01	119.00	.4728	.8024	.5866	.9528	.2841-01	.2077-01	2.973	20.59	552.0
181	37.200	.21310	246.00	.1040	.1557	.1452	.9145	.5519-02	.5147-02	.8130	5.752	513.0
181	37.600	.16810	219.00	.1312	.2070	.1832	.9225	.7336-02	.6492-02	.9318	6.519	533.3
179	37.800	.10270	150.00	.3588	.6070	.4777	.9391	.2149-01	.1691-01	2.266	15.70	551.2
181	37.900	.12100	195.00	.1912	.3081	.2551	.9340	.1092-01	.9042-02	1.311	9.135	540.3
181	38.000	.80300-01	179.00	.5451	.9630	.7122	.9459	.3413-01	.2524-01	3.265	22.45	564.6
179	38.500	.46800-01	112.00	.3206	.5075	.3808	.9571	.1797-01	.1348-01	2.249	15.75	531.5
181	38.600	.12440	203.00	.2812	.4689	.3839	.9332	.1662-01	.1360-01	1.826	12.66	550.4
181	38.700	.10000+00	185.00	.3418	.5699	.4496	.9401	.2020-01	.1593-01	2.220	15.38	550.4
179	38.900	.82200-01	141.00	.4595	.7931	.5961	.9455	.2808-01	.2110-01	2.823	19.50	556.2
179	39.300	.41600-01	104.00	.4614	.8153	.5611	.9591	.2886-01	.1986-01	2.745	18.91	561.6
181	39.500	.10270	190.00	.3411	.5681	.4500	.9394	.2013-01	.1595-01	2.219	15.38	550.1
181	39.600	.16810	218.00	.1113	.1734	.1538	.9228	.6146-02	.5451-02	.8074	5.662	528.9

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K032)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
181	39.900	.19040	233.00	.7846-01	.1180	.1079	.9185	.4181-02	.3825-02	.6093	4.307	514.6
181	40.100	.79500-01	177.00	.4436	.7331	.5621	.9466	.2598-01	.1992-01	2.920	20.27	547.9
181	40.200	.12440	202.00	.2281	.3735	.3078	.9335	.1324-01	.1091-01	1.524	10.59	545.2
181	40.300	.21310	245.00	.6132-01	.9039-01	.8447-01	.9148	.3204-02	.2993-02	.4958	3.523	505.5
179	41.100	.82200-01	142.00	.4691	.7958	.6028	.9460	.2817-01	.2134-01	2.952	20.44	551.9
181	41.100	.60700-01	173.00	.5222	.9226	.6563	.9529	.3270-01	.2326-01	3.129	21.52	564.6
181	42.600	.59600-01	172.00	.4101	.6798	.5026	.9536	.2409-01	.1781-01	2.688	18.65	548.7
181	43.200	.42000-01	168.00	.4325	.7294	.5173	.9597	.2585-01	.1833-01	2.763	19.12	553.4
181	43.400	.82200-01	181.00	.3164	.5118	.3978	.9464	.1814-01	.1410-01	2.155	15.01	541.5
179	43.600	.62900-01	128.00	.4268	.7206	.5287	.9527	.2551-01	.1872-01	2.705	18.74	550.7
179	45.000	.22900-01	8.0000	.6104	1.127	.7205	.9667	.3992-01	.2551-01	3.438	23.56	570.6
181	46.100	.62900-01	174.00	.4544	.7636	.5606	.9532	.2706-01	.1987-01	2.919	20.20	552.4
181	47.700	.40800-01	167.00	.4807	.8225	.5734	.9611	.2915-01	.2032-01	3.007	20.76	557.1
179	48.400	.44200-01	109.00	.4777	.8125	.5719	.9600	.2876-01	.2025-01	2.994	20.72	552.6
179	50.000	.19400-01	156.00	1.043	2.490	1.128	.9870	.8817-01	.3993-01	4.633	31.19	604.2
179	51.000	.12100-01	154.00	.8844	3.010	.9738	.9870	.1066	.3448-01	3.235	21.52	626.3
179	51.000	.17600-01	155.00	.9397	2.253	1.017	.9870	.7977-01	.3599-01	4.163	28.02	604.5
181	51.900	.44800-01	170.00	.3804	.6187	.4488	.9605	.2193-01	.1590-01	2.567	17.86	543.2
181	53.200	.24700-01	163.00	.4126	.6729	.4713	.9678	.2385-01	.1670-01	2.773	19.29	544.0
181	65.200	.24700-01	162.00	.5196	.8914	.5952	.9696	.3159-01	.2109-01	3.239	22.36	557.8
178	90.000	.91000-02	44.000	.6277	1.576	.7575	.9715	.5578-01	.2681-01	2.690	18.07	607.6
178	90.000	.11100-01	45.000	.8180	1.863	.9734	.9715	.6592-01	.3445-01	3.761	25.39	598.8
178	90.000	.13100-01	46.000	.8101	1.790	.9597	.9715	.6336-01	.3396-01	3.815	25.80	595.6
178	90.000	.17000-01	48.000	.6626	1.304	.7705	.9715	.4615-01	.2727-01	3.474	23.68	580.5
178	90.000	.20900-01	50.000	.6863	1.271	.7898	.9715	.4499-01	.2795-01	3.846	26.37	570.3
178	90.000	.24900-01	52.000	.6054	1.073	.6929	.9711	.3799-01	.2452-01	3.580	24.66	561.6
178	90.000	.26900-01	53.000	.5870	1.046	.6749	.9703	.3703-01	.2388-01	3.448	23.73	562.7
178	90.000	.28800-01	54.000	.5819	1.026	.6699	.9697	.3632-01	.2371-01	3.466	23.89	560.3
178	90.000	.32800-01	55.000	.4082	.6525	.4633	.9682	.2309-01	.1640-01	2.812	19.66	534.0
178	90.000	.36700-01	56.000	.5068	.8595	.5866	.9669	.3042-01	.2076-01	3.185	22.07	551.1
178	90.000	.40600-01	57.000	.5083	.8785	.5948	.9655	.3109-01	.2105-01	3.111	21.49	555.8
178	90.000	.48500-01	58.000	.5078	.8592	.5991	.9627	.3041-01	.2120-01	3.203	22.19	550.5
178	90.000	.56400-01	59.000	.4247	.7098	.5059	.9600	.2512-01	.1790-01	2.727	18.93	547.2
178	90.000	.76100-01	60.000	.3506	.5785	.4233	.9535	.2047-01	.1519-01	2.294	15.96	543.7
178	90.000	.95800-01	61.000	.2781	.4488	.3480	.9472	.1588-01	.1232-01	1.885	13.16	537.1
178	90.000	.11550	62.000	.2423	.3988	.3149	.9412	.1411-01	.1115-01	1.592	11.08	543.0
178	135.00	.19000-01	49.000	.6974	1.310	.8261	.9667	.4636-01	.2924-01	3.846	26.33	572.9
178	135.00	.22900-01	51.000	.6365	1.166	.7499	.9667	.4125-01	.2654-01	3.616	24.82	568.1
178	180.00	.91000-02	23.000	.3769	.6374	.4603	.9557	.2256-01	.1629-01	2.378	16.48	550.4
178	180.00	.11100-01	24.000	.6084	1.263	.7900	.9557	.4471-01	.2796-01	3.026	20.55	588.1
178	180.00	.13100-01	25.000	.6862	1.336	.8749	.9557	.4729-01	.3096-01	3.637	24.82	578.9
178	180.00	.15000-01	26.000	.6661	1.290	.8480	.9557	.4566-01	.3001-01	3.551	24.24	578.0
178	180.00	.17000-01	27.000	.6558	1.239	.8287	.9557	.4383-01	.2933-01	3.594	24.59	573.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K032)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
178	180.00	.19000-01	28.000	.6595	1.232	.8308	.9557	.4361-01	.2940-01	3.659	25.06	571.9
178	180.00	.20900-01	29.000	.6207	1.123	.7744	.9557	.3976-01	.2740-01	3.576	24.58	565.9
178	180.00	.28800-01	32.000	.5054	.8681	.6264	.9538	.3072-01	.2217-01	3.119	21.57	554.3
178	180.00	.32800-01	33.000	.4617	.7663	.5696	.9523	.2712-01	.2016-01	2.995	20.81	545.4
178	180.00	.36700-01	34.000	.4561	.7706	.5702	.9510	.2727-01	.2018-01	2.882	19.98	550.1
178	180.00	.48500-01	36.000	.3812	.6277	.4815	.9469	.2221-01	.1704-01	2.503	17.41	543.1
178	180.00	.56400-01	37.000	.3585	.5843	.4567	.9443	.2068-01	.1616-01	2.393	16.68	540.1
178	180.00	.76100-01	38.000	.2814	.4475	.3652	.9382	.1584-01	.1293-01	1.956	13.69	532.3
178	180.00	.95800-01	39.000	.2130	.3341	.2820	.9325	.1182-01	.9979-02	1.516	10.64	527.6
178	180.00	.11550	40.000	.1607	.2544	.2193	.9274	.9002-02	.7762-02	1.126	7.886	530.8
178	180.00	.18450	42.000	.6331-01	.9669-01	.9002-01	.9140	.3422-02	.3186-02	.4729	3.338	517.6
178	225.00	.22900-01	30.000	.5302	.9306	.6922	.9456	.3293-01	.2450-01	3.178	21.92	559.3
178	270.00	.91000-02	63.000	.3478	.5550	.4445	.9418	.1964-01	.1573-01	2.403	16.81	533.5
178	270.00	.11100-01	64.000	.3725	.5994	.4778	.9418	.2121-01	.1691-01	2.538	17.73	536.2
178	270.00	.13100-01	65.000	.4784	.8087	.6277	.9418	.2862-01	.2221-01	3.021	20.94	550.2
178	270.00	.17000-01	67.000	.7362	1.405	1.018	.9418	.4971-01	.3604-01	3.989	27.27	575.6
178	270.00	.20900-01	69.000	.5490	.9900	.7413	.9418	.3504-01	.2624-01	3.178	21.85	565.1
178	270.00	.24900-01	71.000	.5171	.9145	.6942	.9413	.3236-01	.2457-01	3.069	21.14	561.0
178	270.00	.28800-01	73.000	.4208	.7163	.5595	.9399	.2535-01	.1980-01	2.631	18.22	552.0
178	270.00	.36700-01	75.000	.3852	.6526	.5185	.9373	.2310-01	.1835-01	2.425	16.80	550.8
178	270.00	.48500-01	77.000	.3172	.5229	.4296	.9335	.1850-01	.1520-01	2.080	14.47	543.4
178	270.00	.56400-01	78.000	.2792	.4574	.3816	.9311	.1619-01	.1351-01	1.849	12.88	541.6
178	270.00	.95800-01	80.000	.1316	.2114	.1875	.9210	.7482-02	.6637-02	.8993	6.284	535.6
178	270.00	.11550	81.000	.9512-01	.1534	.1389	.9171	.5427-02	.4914-02	.6459	4.510	536.8
178	315.00	.19000-01	68.000	.5057	.8746	.6562	.9456	.3095-01	.2322-01	3.092	21.36	555.9
178	315.00	.22900-01	70.000	.5256	.9331	.6893	.9456	.3302-01	.2440-01	3.103	21.37	561.8

FH15, E.T. NOSE (W/PROT. AND GRIT) HI/HREF (R4K033)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
55	3.010	-.1875-01	-.1150-01	36.10	723.7	.9682	257.3	-31.52	2367.	.1015-01	.2055-06	3.635
56	3.010	-.1534-01	-.9410-02	36.22	723.7	.9713	257.3	-31.52	2367.	.1019-01	.2055-06	3.646
57	3.010	-.1364-01	-.8370-02	36.15	723.7	.9695	257.3	-31.54	2367.	.1017-01	.2055-06	3.640

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
55	.4399-01	.7599-02
56	.4406-01	.7587-02
57	.4402-01	.7594-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
55	.00000	.91000-02	1.0000	.6466	1.474	.7670	.9720	.6483-01	.3374-01	3.667	24.81	594.7
55	.00000	.11100-01	2.0000	.8826	2.629	1.084	.9720	.1157	.4769-01	4.229	28.31	614.7
55	.00000	.15000-01	4.0000	.7925	2.056	.9570	.9720	.9042-01	.4210-01	4.106	27.61	605.9
55	.00000	.17000-01	5.0000	.8546	2.417	1.043	.9720	.1063	.4589-01	4.209	28.22	611.7
55	.00000	.19000-01	6.0000	.8372	2.817	1.042	.9720	.1239	.4584-01	3.792	25.31	620.7
55	.00000	.24900-01	9.0000	.6181	1.385	.7338	.9715	.6094-01	.3228-01	3.552	24.06	593.0
55	.00000	.26900-01	10.000	.5924	1.284	.7031	.9708	.5647-01	.3093-01	3.501	23.76	589.3
56	.00000	.32800-01	12.000	.5443	1.092	.6463	.9686	.4813-01	.2847-01	3.459	23.60	579.4
56	.00000	.36700-01	13.000	.5002	.9603	.5937	.9672	.4231-01	.2616-01	3.329	22.79	572.6
56	.00000	.40600-01	14.000	.5285	1.051	.6368	.9658	.4630-01	.2806-01	3.389	23.14	578.1
56	.00000	.48500-01	15.000	.4388	.8379	.5325	.9631	.3692-01	.2346-01	2.938	20.12	571.7
56	.00000	.56400-01	16.000	.4155	.7844	.5102	.9605	.3456-01	.2248-01	2.816	19.31	569.8
56	.00000	.76100-01	17.000	.3409	.6236	.4290	.9547	.2747-01	.1890-01	2.398	16.50	564.0
56	.00000	.11550	19.000	.2242	.3990	.2948	.9454	.1758-01	.1299-01	1.633	11.26	558.4
56	.00000	.16480	20.000	.1428	.2476	.1937	.9379	.1091-01	.8533-02	1.076	7.445	552.7
56	.00000	.21400	22.000	.8739-01	.1384	.1151	.9347	.6098-02	.5070-02	.7560	5.307	527.3
57	2.0000	.24700-01	165.00	.4425	.9035	.5176	.9716	.3977-01	.2278-01	2.763	18.82	581.8
55	9.0000	.15000-01	157.00	.7100	1.850	.8578	.9720	.8137-01	.3773-01	3.668	24.66	606.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROT. AND GRIT) HI/HREF (R4K033)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
55	9.0000	.17600-01	158.00	.7471	2.053	.9089	.9720	.9032-01	.3998-01	3.739	25.09	609.9
57	9.8000	.24700-01	164.00	.5512	1.218	.6528	.9716	.5363-01	.2873-01	3.207	21.73	591.5
55	10.000	.22900-01	88.000	.6156	1.541	.7399	.9720	.6778-01	.3255-01	3.264	21.98	603.1
55	10.000	.26900-01	90.000	.5190	1.075	.6115	.9708	.4729-01	.2690-01	3.194	21.74	583.8
55	10.000	.34700-01	94.000	.5166	1.076	.6201	.9679	.4732-01	.2728-01	3.164	21.53	584.4
55	12.000	.17600-01	152.00	1.013	-9.390	1.184	.9870	-.4131	.5206-01	2.911	19.04	658.3
55	12.000	.12100-01	151.00	.8414	-6.438	.9864	.9870	-.2832	.4339-01	2.369	15.49	659.7
55	13.000	.19400-01	153.00	1.153	-4.653	1.376	.9870	-.2047	.6055-01	2.942	19.17	665.7
57	14.600	.44200-01	169.00	.4576	.8618	.5489	.9645	.3794-01	.2416-01	3.108	21.32	569.4
55	18.500	.44200-01	106.00	.4649	.9415	.5666	.9645	.4142-01	.2493-01	2.924	19.93	580.7
57	19.600	.62900-01	175.00	.3874	.7038	.4763	.9585	.3098-01	.2096-01	2.746	18.90	562.7
55	19.800	.40800-01	101.00	.5292	1.125	.6466	.9657	.4948-01	.2844-01	3.181	21.61	587.0
55	20.000	.24900-01	89.000	.4637	.9325	.5412	.9715	.4102-01	.2381-01	2.936	20.03	579.7
55	20.000	.28800-01	91.000	.4082	.7659	.4746	.9700	.3369-01	.2088-01	2.782	19.09	568.7
55	20.000	.32800-01	93.000	.4913	1.020	.5869	.9686	.4485-01	.2582-01	3.019	20.54	584.0
57	21.800	.82200-01	182.00	.3290	.5967	.4168	.9531	.2627-01	.1835-01	2.337	16.09	562.3
55	22.200	.62900-01	125.00	.4152	.8288	.5236	.9585	.3646-01	.2303-01	2.648	18.07	578.7
55	22.400	.44200-01	107.00	.4252	.8307	.5142	.9645	.3654-01	.2262-01	2.773	18.95	575.4
57	22.600	.10270	192.00	.2624	.4622	.3383	.9481	.2034-01	.1489-01	1.934	13.36	556.3
55	23.000	.42000-01	105.00	.4951	1.040	.6052	.9653	.4576-01	.2662-01	3.008	20.45	585.6
55	23.400	.59600-01	120.00	.4749	.9818	.6003	.9595	.4319-01	.2641-01	2.928	19.93	583.5
57	23.900	.21310	250.00	.1108	.1752	.1458	.9348	.7714-02	.6417-02	.9601	6.741	526.8
55	24.100	.82200-01	139.00	.3524	.6762	.4546	.9531	.2974-01	.2000-01	2.343	16.04	572.5
57	24.400	.19040	238.00	.1470	.2380	.1949	.9358	.1048-01	.8577-02	1.224	8.560	534.5
57	24.400	.12440	207.00	.2193	.3896	.2909	.9437	.1715-01	.1280-01	1.598	11.03	558.1
57	24.800	.16810	223.00	.1629	.2743	.2182	.9376	.1208-01	.9605-02	1.277	8.870	545.6
55	24.900	.62900-01	126.00	.4098	.8204	.5172	.9585	.3609-01	.2275-01	2.607	17.78	579.1
57	25.000	.79500-01	178.00	.3962	.7378	.5041	.9538	.3248-01	.2219-01	2.726	18.71	567.4
57	25.300	.10270	191.00	.2779	.4970	.3604	.9481	.2188-01	.1586-01	2.008	13.84	559.5
57	25.300	.10000+00	186.00	.3064	.5668	.4009	.9487	.2495-01	.1765-01	2.124	14.60	566.2
55	25.500	.60700-01	124.00	.4585	.9758	.5851	.9592	.4293-01	.2574-01	2.753	18.70	587.2
57	26.000	.12440	206.00	.2300	.4126	.3063	.9437	.1816-01	.1348-01	1.655	11.41	560.2
55	26.300	.82200-01	140.00	.3771	.7196	.4856	.9531	.3165-01	.2136-01	2.522	17.28	571.6
57	26.700	.12100	199.00	.2914	.5506	.3949	.9443	.2424-01	.1738-01	1.972	13.52	570.0
57	26.800	.16810	222.00	.1911	.3253	.2574	.9376	.1432-01	.1133-01	1.475	10.23	548.3
57	27.000	.19040	237.00	.1610	.2636	.2146	.9358	.1160-01	.9448-02	1.317	9.189	537.8
57	27.100	.21310	249.00	.1280	.2048	.1694	.9348	.9015-02	.7458-02	1.087	7.613	530.8
57	27.200	.80300-01	180.00	.4154	.7856	.5318	.9536	.3458-01	.2341-01	2.808	19.25	570.1
55	27.400	.40100-01	98.000	.5405	1.180	.6627	.9660	.5189-01	.2915-01	3.175	21.54	590.1
57	27.400	.16480	215.00	.2060	.3635	.2818	.9379	.1600-01	.1241-01	1.515	10.46	556.6
55	27.600	.41600-01	102.00	.4532	.9845	.5571	.9654	.4331-01	.2451-01	2.674	18.14	589.6
57	27.600	.12440	205.00	.2407	.4382	.3226	.9437	.1929-01	.1420-01	1.702	11.71	563.1
57	27.600	.18700	230.00	.2095	.3492	.2816	.9360	.1537-01	.1240-01	1.669	11.62	542.7

FH15, E.T. NOSE (W/PROT. AND GRIT) HI/HREF (R4K033)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
57	27.700	.21010	243.00	.1510	.2469	.2022	.9349	.1087-01	.8899-02	1.238	8.640	537.4
57	27.900	.10110	188.00	.3114	.5840	.4102	.9484	.2571-01	.1805-01	2.126	14.59	568.6
55	28.000	.46800-01	110.00	.2828	.5044	.3365	.9637	.2219-01	.1480-01	2.049	14.13	559.0
57	28.200	.16810	221.00	.2262	.3931	.3077	.9376	.1730-01	.1355-01	1.697	11.74	553.2
57	28.300	.19040	236.00	.1587	.2564	.2101	.9358	.1129-01	.9249-02	1.326	9.275	533.8
57	28.300	.12200	201.00	.2641	.4805	.3529	.9441	.2115-01	.1553-01	1.869	12.86	562.9
55	28.400	.53500-01	114.00	.4180	.8233	.5158	.9615	.3621-01	.2269-01	2.703	18.46	576.7
57	28.400	.21310	248.00	.1211	.1929	.1599	.9348	.8491-02	.7039-02	1.035	7.260	529.4
55	28.700	.58600-01	117.00	.4873	1.024	.6172	.9598	.4505-01	.2715-01	2.960	20.12	585.6
57	28.800	.16580	217.00	.2216	.3959	.3051	.9378	.1743-01	.1343-01	1.603	11.05	559.3
55	28.800	.60400-01	121.00	.4358	.9606	.5605	.9593	.4226-01	.2466-01	2.539	17.21	591.2
57	29.000	.21110	244.00	.1388	.2252	.1851	.9348	.9912-02	.8147-02	1.153	8.057	535.0
55	29.000	.65700-01	129.00	.2843	.5042	.3486	.9577	.2218-01	.1534-01	2.075	14.32	557.7
55	29.200	.72400-01	133.00	.3593	.7046	.4588	.9557	.3099-01	.2018-01	2.334	15.95	576.0
55	29.300	.79500-01	136.00	.3950	.8418	.5234	.9538	.3703-01	.2302-01	2.369	16.09	587.3
55	29.600	.92500-01	143.00	.3202	.6224	.4216	.9505	.2738-01	.1855-01	2.099	14.36	574.6
55	29.700	.10000+00	146.00	.3282	.6934	.4497	.9487	.3050-01	.1978-01	1.983	13.48	586.3
57	29.900	.12100	198.00	.3033	.5887	.4155	.9443	.2591-01	.1829-01	1.993	13.64	574.4
57	30.200	.16480	214.00	.2278	.4093	.3143	.9379	.1802-01	.1384-01	1.637	11.28	560.5
57	30.200	.18700	229.00	.1994	.3353	.2692	.9360	.1476-01	.1185-01	1.566	10.89	545.2
57	30.300	.21010	242.00	.1491	.2459	.2005	.9349	.1082-01	.8825-02	1.206	8.404	539.9
55	31.500	.91000-02	82.000	.7134	1.661	.8488	.9720	.7305-01	.3734-01	3.981	26.90	596.8
55	31.500	.11100-01	83.000	.9119	3.042	1.134	.9720	.1338	.4989-01	4.146	27.67	620.3
55	31.500	.14200-01	84.000	1.034	-12.23	1.203	.9870	-.5381	.5293-01	3.034	19.86	656.9
55	31.500	.16000-01	85.000	1.064	186.8	1.222	.9870	8.217	.5376-01	3.407	22.38	650.9
55	31.500	.17600-01	86.000	.9895	31.50	1.132	.9870	1.386	.4980-01	3.252	21.38	649.0
55	31.500	.19400-01	87.000	.9693	4.544	1.080	.9870	.1999	.4750-01	3.922	26.02	631.7
57	32.100	.21010	241.00	.1419	.2323	.1901	.9349	.1022-01	.8366-02	1.162	8.107	537.7
57	32.200	.16480	213.00	.2079	.3658	.2840	.9379	.1610-01	.1250-01	1.534	10.60	556.0
57	32.200	.17860	224.00	.1779	.2944	.2374	.9366	.1296-01	.1045-01	1.432	9.976	540.8
57	32.200	.18700	228.00	.1630	.2670	.2171	.9360	.1175-01	.9557-02	1.333	9.303	537.9
57	32.300	.12100	197.00	.3066	.5779	.4151	.9443	.2544-01	.1827-01	2.081	14.27	569.5
57	32.300	.12300	194.00	.2610	.4879	.3530	.9440	.2147-01	.1554-01	1.787	12.27	568.1
57	32.300	.12730	208.00	.1242	.2090	.1614	.9432	.9200-02	.7105-02	.9749	6.775	545.3
57	32.300	.13420	209.00	.1835	.3338	.2484	.9420	.1469-01	.1093-01	1.299	8.940	562.9
55	32.400	.10000+00	147.00	.3214	.6543	.4350	.9487	.2878-01	.1913-01	2.011	13.70	581.4
57	32.400	.10110	184.00	.3371	.6541	.4494	.9484	.2879-01	.1978-01	2.215	15.15	574.4
57	32.400	.10630	193.00	.1928	.3157	.2426	.9473	.1390-01	.1068-01	1.577	11.01	537.8
57	32.500	.85800-01	183.00	.2428	.4075	.3010	.9521	.1794-01	.1325-01	1.912	13.30	544.7
55	32.600	.79500-01	137.00	.4151	.8834	.5499	.9538	.3886-01	.2419-01	2.493	16.94	587.1
57	32.600	.80800-01	176.00	.3975	.7745	.5141	.9534	.3409-01	.2263-01	2.602	17.79	575.0
55	32.700	.67400-01	132.00	.2855	.5144	.3527	.9572	.2263-01	.1552-01	2.043	14.08	561.0
55	32.700	.72400-01	134.00	.3355	.6357	.4241	.9557	.2796-01	.1866-01	2.262	15.50	570.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROT. AND GRIT)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
55	32.800	.65700-01	130.00	.2617	.4517	.3184	.9577	.1987-01	.1401-01	1.981	13.72	551.6
57	32.800	.16680	210.00	.1844	.3131	.2478	.9377	.1378-01	.1091-01	1.429	9.917	547.6
57	32.800	.18880	225.00	.1279	.2016	.1670	.9359	.8872-02	.7353-02	1.115	7.832	525.7
55	32.900	.58600-01	118.00	.4074	.8313	.5123	.9598	.3657-01	.2254-01	2.543	17.33	581.7
55	32.900	.60400-01	122.00	.3558	.6833	.4421	.9593	.3006-01	.1945-01	2.363	16.18	572.7
57	32.900	.61300-01	171.00	.3655	.6892	.4527	.9590	.3034-01	.1993-01	2.479	17.00	569.6
55	33.000	.53500-01	115.00	.3717	.6950	.4529	.9615	.3057-01	.1992-01	2.543	17.46	568.1
55	33.200	.48300-01	113.00	.2762	.4794	.3273	.9632	.2109-01	.1440-01	2.074	14.35	553.0
57	33.400	.42800-01	166.00	.3938	.7527	.4727	.9650	.3313-01	.2081-01	2.632	18.02	571.9
55	33.500	.40100-01	99.000	.4758	.9782	.5766	.9660	.4303-01	.2537-01	2.949	20.08	582.8
55	33.600	.38300-01	97.000	.4917	1.027	.5953	.9666	.4516-01	.2619-01	3.004	20.43	584.8
55	33.700	.36700-01	96.000	.4723	.9986	.5712	.9672	.4393-01	.2512-01	2.853	19.39	586.4
55	33.900	.33800-01	95.000	.4558	.8994	.5406	.9682	.3957-01	.2378-01	2.942	20.09	576.9
57	34.700	.21010	240.00	.1329	.2166	.1776	.9349	.9533-02	.7818-02	1.097	7.660	536.3
57	34.700	.18700	227.00	.2061	.3406	.2758	.9360	.1499-01	.1214-01	1.662	11.58	540.4
57	34.900	.16480	212.00	.1826	.3181	.2483	.9379	.1400-01	.1093-01	1.366	9.448	553.8
55	35.100	.10000+00	148.00	.3243	.6517	.4370	.9487	.2867-01	.1922-01	2.055	14.02	579.6
57	35.200	.23900-01	161.00	.4669	.8104	.5300	.9719	.3567-01	.2333-01	3.508	24.28	553.0
55	35.300	.92500-01	145.00	.3157	.6101	.4149	.9505	.2684-01	.1825-01	2.082	14.25	573.7
55	35.300	.22100-01	160.00	.4661	.8471	.5331	.9720	.3726-01	.2345-01	3.299	22.71	562.8
57	35.400	.18800	231.00	.1838	.3017	.2452	.9359	.1328-01	.1079-01	1.498	10.45	538.5
57	35.500	.12100	196.00	.2683	.4979	.3610	.9443	.2192-01	.1589-01	1.854	12.74	566.7
57	35.600	.16580	216.00	.1756	.3012	.2371	.9378	.1326-01	.1044-01	1.341	9.297	550.1
55	35.800	.80600-01	138.00	.3357	.6534	.4338	.9535	.2874-01	.1908-01	2.198	15.03	574.8
57	35.900	.21310	247.00	.1071	.1700	.1412	.9348	.7483-02	.6213-02	.9216	6.466	528.1
57	36.000	.19040	235.00	.1315	.2125	.1741	.9358	.9354-02	.7665-02	1.099	7.689	533.8
57	36.200	.16910	220.00	.1530	.2553	.2040	.9376	.1124-01	.8932-02	1.216	8.464	543.1
55	36.200	.72400-01	135.00	.3323	.6296	.4201	.9557	.2770-01	.1848-01	2.240	15.36	570.4
57	36.300	.12200	200.00	.2450	.4476	.3280	.9441	.1970-01	.1444-01	1.725	11.87	563.8
55	36.600	.65700-01	131.00	.3051	.5565	.3772	.9577	.2448-01	.1659-01	2.150	14.79	563.5
57	36.700	.18700	226.00	.1567	.2546	.2078	.9360	.1121-01	.9149-02	1.297	9.063	535.6
57	36.900	.16480	211.00	.1718	.2942	.2316	.9379	.1295-01	.1019-01	1.314	9.111	549.8
57	36.900	.10110	187.00	.3240	.6177	.4292	.9484	.2719-01	.1889-01	2.171	14.87	571.5
55	37.000	.60400-01	123.00	.3970	.8067	.5005	.9593	.3548-01	.2202-01	2.488	16.96	581.2
57	37.000	.12440	204.00	.2194	.3865	.2899	.9437	.1701-01	.1276-01	1.616	11.16	556.3
55	37.100	.58600-01	119.00	.4423	.8855	.5536	.9598	.3895-01	.2435-01	2.813	19.19	579.1
57	37.200	.21310	246.00	.1113	.1769	.1468	.9348	.7785-02	.6461-02	.9559	6.705	528.5
57	37.600	.16810	219.00	.1456	.2428	.1941	.9376	.1069-01	.8542-02	1.158	8.058	542.9
55	37.800	.10270	150.00	.2476	.4631	.3265	.9481	.2037-01	.1436-01	1.694	11.62	568.2
57	37.900	.12100	195.00	.2466	.4379	.3260	.9443	.1927-01	.1435-01	1.802	12.44	557.8
57	38.000	.80300-01	179.00	.3714	.6945	.4738	.9536	.3057-01	.2085-01	2.543	17.45	568.1
55	38.500	.46800-01	112.00	.3021	.5358	.3590	.9637	.2357-01	.1579-01	2.205	15.22	557.7
57	38.600	.12440	203.00	.2077	.3621	.2733	.9437	.1594-01	.1203-01	1.552	10.74	553.9

FH15, E.T. NOSE (W/PROT. AND GRIT) HI/HREF (R4K033)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
57	38.700	.10000+00	185.00	.3118	.5781	.4083	.9487	.2545-01	.1797-01	2.156	14.81	566.6
55	38.900	.82200-01	141.00	.3043	.5729	.3902	.9531	.2520-01	.1716-01	2.067	14.18	569.3
55	39.300	.41600-01	104.00	.4511	.9268	.5483	.9654	.4077-01	.2412-01	2.797	19.05	582.7
57	39.500	.10270	190.00	.2922	.5289	.3807	.9481	.2328-01	.1676-01	2.079	14.32	562.0
57	39.600	.16810	218.00	.1299	.2151	.1726	.9376	.9470-02	.7596-02	1.044	7.273	541.0
57	39.900	.19040	233.00	.1200	.1919	.1580	.9358	.8446-02	.6956-02	1.021	7.153	530.4
57	40.100	.79500-01	177.00	.3529	.6415	.4456	.9538	.2824-01	.1961-01	2.498	17.20	562.8
57	40.200	.12440	202.00	.1996	.3454	.2618	.9437	.1520-01	.1152-01	1.505	10.42	552.3
57	40.300	.21310	245.00	.9629-01	.1519	.1265	.9348	.6687-02	.5569-02	.8375	5.883	526.1
55	41.100	.82200-01	142.00	.3053	.5685	.3901	.9531	.2501-01	.1716-01	2.099	14.41	567.4
57	41.100	.60700-01	173.00	.4129	.7722	.5097	.9592	.3399-01	.2244-01	2.826	19.40	568.2
57	42.300	.10270	189.00	.2396	.4184	.3075	.9481	.1842-01	.1355-01	1.785	12.34	554.4
57	42.600	.59600-01	172.00	.4433	.8475	.5494	.9595	.3731-01	.2418-01	2.961	20.28	571.9
57	43.200	.42000-01	168.00	.4570	.8730	.5476	.9653	.3843-01	.2411-01	3.056	20.93	571.8
57	43.400	.82200-01	181.00	.3179	.5722	.4017	.9531	.2519-01	.1768-01	2.279	15.70	560.8
55	43.600	.62900-01	128.00	.4281	.8222	.5343	.9585	.3617-01	.2350-01	2.843	19.46	572.7
55	45.000	.22900-01	8.0000	.7662	2.059	.9294	.9720	.9059-01	.4088-01	3.884	26.08	608.4
57	46.100	.62900-01	174.00	.4195	.7821	.5194	.9585	.3443-01	.2286-01	2.882	19.78	567.6
57	47.700	.40800-01	167.00	.5139	1.017	.6189	.9657	.4475-01	.2724-01	3.311	22.61	577.3
55	48.400	.44200-01	109.00	.4506	.8991	.5474	.9645	.3955-01	.2408-01	2.876	19.63	578.6
55	50.000	.19400-01	156.00	.8464	9.212	.9597	.9870	.4052	.4221-01	2.967	19.56	644.0
55	51.000	.12100-01	154.00	.8637	14.57	.9841	.9870	.6407	.4329-01	2.923	19.24	646.7
55	51.000	.17600-01	155.00	.8536	7.794	.9654	.9870	.3429	.4247-01	3.052	20.13	642.4
57	51.900	.44800-01	170.00	.4002	.7174	.4751	.9643	.3158-01	.2091-01	2.883	19.88	560.0
57	53.200	.24700-01	163.00	.5742	1.207	.6747	.9716	.5313-01	.2970-01	3.489	23.72	585.6
57	65.200	.24700-01	162.00	.6524	1.660	.7884	.9716	.7305-01	.3470-01	3.425	23.05	604.4
56	90.000	.91000-02	44.000	.7596	2.000	.9192	.9720	.8810-01	.4050-01	3.905	26.25	607.0
56	90.000	.11100-01	45.000	.9265	3.036	1.150	.9720	.1338	.5068-01	4.251	28.38	619.5
56	90.000	.13100-01	46.000	.8179	2.295	.9976	.9720	.1011	.4395-01	4.051	27.17	611.2
56	90.000	.17000-01	48.000	.6877	1.669	.8232	.9720	.7352-01	.3627-01	3.730	25.16	600.6
56	90.000	.20900-01	50.000	.8291	2.465	1.018	.9720	.1086	.4487-01	3.983	26.66	614.6
56	90.000	.24900-01	52.000	.6831	1.656	.8205	.9715	.7295-01	.3615-01	3.708	25.01	600.5
56	90.000	.26900-01	53.000	.5970	1.297	.7069	.9707	.5714-01	.3123-01	3.527	23.92	589.6
56	90.000	.28800-01	54.000	.5844	1.225	.6931	.9700	.5399-01	.3053-01	3.562	24.22	585.3
56	90.000	.32800-01	55.000	.5256	1.038	.6222	.9686	.4574-01	.2742-01	3.395	23.19	577.1
56	90.000	.36700-01	56.000	.5317	1.044	.6339	.9671	.4599-01	.2793-01	3.455	23.61	576.2
56	90.000	.40600-01	57.000	.5205	1.048	.6289	.9658	.4619-01	.2771-01	3.296	22.48	580.0
56	90.000	.48500-01	58.000	.5065	.9887	.6177	.9631	.4356-01	.2722-01	3.311	22.64	575.3
56	90.000	.56400-01	59.000	.4350	.8283	.5354	.9605	.3649-01	.2359-01	2.921	20.01	571.3
56	90.000	.76100-01	60.000	.3392	.6196	.4267	.9547	.2730-01	.1880-01	2.390	16.44	563.8
56	90.000	.95800-01	61.000	.2954	.5313	.3805	.9496	.2341-01	.1676-01	2.122	14.62	560.7
56	90.000	.11550	62.000	.2237	.3933	.2927	.9454	.1733-01	.1289-01	1.654	11.43	555.8
56	135.00	.19000-01	49.000	.8928	2.592	1.094	.9720	.1142	.4819-01	4.342	29.09	613.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROT. AND GRIT)

HI/HREF

(R4K033)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
56	135.00	.22900-01	51.000	.8136	2.400	.9985	.9720	.1057	.4399-01	3.924	26.27	614.2
56	180.00	.91000-02	23.000	.3793	.7280	.4382	.9720	.3207-01	.1930-01	2.525	17.29	572.6
56	180.00	.11100-01	24.000	.7722	2.710	.9658	.9720	.1194	.4255-01	3.444	22.96	622.5
56	180.00	.13100-01	25.000	.8070	2.375	.9902	.9720	.1046	.4363-01	3.897	26.10	614.1
56	180.00	.15000-01	26.000	.7658	2.157	.9348	.9720	.9503-01	.4119-01	3.786	25.38	611.5
56	180.00	.17000-01	27.000	.8545	2.473	1.046	.9720	.1090	.4611-01	4.162	27.88	613.1
56	180.00	.19000-01	28.000	.9804	4.110	1.247	.9720	.1811	.5492-01	4.105	27.28	628.6
56	180.00	.20900-01	29.000	.9922	4.305	1.265	.9720	.1897	.5574-01	4.111	27.30	629.6
56	180.00	.28800-01	32.000	.6005	1.260	.7124	.9700	.5551-01	.3139-01	3.659	24.89	585.4
56	180.00	.32800-01	33.000	.5374	1.059	.6360	.9685	.4664-01	.2802-01	3.480	23.77	576.7
56	180.00	.36700-01	34.000	.5532	1.129	.6647	.9671	.4975-01	.2929-01	3.458	23.56	581.8
56	180.00	.56400-01	37.000	.4399	.8342	.5410	.9605	.3675-01	.2364-01	2.968	20.34	570.6
56	180.00	.76100-01	38.000	.3534	.6432	.4442	.9547	.2834-01	.1957-01	2.501	17.21	563.0
56	180.00	.95800-01	39.000	.2875	.5100	.3685	.9496	.2247-01	.1624-01	2.102	14.50	557.8
56	180.00	.11550	40.000	.2368	.4182	.3104	.9453	.1843-01	.1367-01	1.740	12.02	556.9
56	180.00	.18450	42.000	.1180	.1962	.1583	.9362	.8645-02	.6973-02	.9433	6.567	542.2
56	225.00	.22900-01	30.000	.7326	1.785	.8777	.9720	.7863-01	.3867-01	3.963	26.72	600.9
56	270.00	.91000-02	63.000	.5558	1.441	.6715	.9720	.6351-01	.2958-01	2.885	19.40	605.9
56	270.00	.11100-01	64.000	.8456	2.977	1.058	.9720	.1311	.4661-01	3.766	25.10	622.6
56	270.00	.13100-01	65.000	.8787	2.784	1.087	.9720	.1227	.4790-01	4.093	27.35	617.9
56	270.00	.17000-01	67.000	1.130	5.480	1.454	.9720	.2414	.6405-01	4.541	30.11	632.5
56	270.00	.20900-01	69.000	.8264	2.558	1.020	.9720	.1127	.4493-01	3.892	26.02	616.8
56	270.00	.24900-01	71.000	.6976	1.600	.8314	.9715	.7050-01	.3663-01	3.944	26.67	595.4
56	270.00	.28800-01	73.000	.5376	1.139	.6388	.9700	.5017-01	.2814-01	3.247	22.06	586.6
56	270.00	.36700-01	75.000	.5829	1.220	.7038	.9671	.5374-01	.3101-01	3.560	24.21	585.1
56	270.00	.46500-01	77.000	.4904	.9478	.5968	.9630	.4176-01	.2629-01	3.239	22.17	573.7
56	270.00	.56400-01	78.000	.4446	.8431	.5467	.9605	.3715-01	.2409-01	2.999	20.55	570.6
56	270.00	.95800-01	80.000	.2770	.4869	.3538	.9496	.2145-01	.1559-01	2.048	14.15	555.8
56	270.00	.11550	81.000	.2312	.4042	.3018	.9454	.1781-01	.1330-01	1.722	11.91	554.6
56	315.00	.19000-01	68.000	.7816	2.163	.9517	.9720	.9529-01	.4193-01	3.902	26.18	610.4
56	315.00	.22900-01	70.000	.7706	1.747	.9135	.9720	.7696-01	.4025-01	4.396	29.75	594.2

FH15, E.T. NOSE (W/PROT. AND TRIP) HI/HREF (R4K034)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
9	3.010	.1705-02	.1046-02	36.12	717.7	.9687	255.2	-31.52	2357.	.1024-01	.2039-06	3.680
10	3.010	.5114-02	.3139-02	36.08	718.7	.9676	255.6	-31.54	2359.	.1022-01	.2042-06	3.669
11	3.010	.6818-02	.4185-02	36.11	720.7	.9684	256.3	-31.54	2362.	.1020-01	.2047-06	3.657

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
9	.4394-01	.7557-02
10	.4392-01	.7568-02
11	.4396-01	.7578-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
10	.00000	.91000-02	1.0000	.6210	1.378	.7339	.9720	.6050-01	.3223-01	3.569	24.24	587.8
10	.00000	.11100-01	2.0000	.8360	2.592	1.032	.9720	.1138	.4532-01	3.895	26.10	612.6
10	.00000	.15000-01	4.0000	.7341	1.775	.8784	.9720	.7796-01	.3858-01	3.951	26.71	596.1
10	.00000	.17000-01	5.0000	.7244	1.723	.8648	.9720	.7568-01	.3798-01	3.945	26.69	594.7
10	.00000	.19000-01	6.0000	.7148	1.706	.8537	.9720	.7494-01	.3750-01	3.882	26.26	595.0
10	.00000	.24900-01	9.0000	.6624	1.516	.7892	.9715	.6659-01	.3466-01	3.713	25.17	591.0
10	.00000	.26900-01	10.000	.6308	1.343	.7468	.9707	.5900-01	.3280-01	3.754	25.56	583.2
9	.00000	.32800-01	12.000	.5397	1.317	.6628	.9685	.5788-01	.2912-01	2.883	19.49	596.1
9	.00000	.36700-01	13.000	.4868	1.111	.5970	.9671	.4879-01	.2623-01	2.733	18.54	589.9
9	.00000	.40600-01	14.000	.5217	1.249	.6518	.9657	.5489-01	.2863-01	2.825	19.11	594.4
9	.00000	.48500-01	15.000	.4504	1.023	.5678	.9631	.4493-01	.2495-01	2.539	17.22	589.4
9	.00000	.56400-01	16.000	.4117	.9071	.5250	.9605	.3985-01	.2307-01	2.377	16.16	586.2
9	.00000	.76100-01	17.000	.3395	.6969	.4423	.9547	.3062-01	.1943-01	2.087	14.25	577.7
9	.00000	.11550	19.000	.2174	.4208	.2954	.9454	.1849-01	.1298-01	1.418	9.724	569.2
9	.00000	.16480	20.000	.1382	.2512	.1918	.9379	.1104-01	.8425-02	.9691	6.688	558.1
9	.00000	.21400	22.000	.7936-01	.1353	.1087	.9347	.5946-02	.4776-02	.6050	4.207	544.2
11	2.0000	.24700-01	165.00	.5660	1.215	.6674	.9716	.5340-01	.2934-01	3.358	22.83	585.7
10	9.0000	.15000-01	157.00	.6599	1.576	.7882	.9720	.6921-01	.3462-01	3.583	24.24	595.0

DATE 13 MAR 79

FH15. EXTERNAL TANK OGIVE AERO HEATING

FH15. E.T. NOSE (W/PROT. AND TRIP)

HI/HREF

(R4K034)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
10	9.0000	.17600-01	158.00	.6857	1.562	.8136	.9720	.6860-01	.3573-01	3.858	26.16	590.6
11	9.8000	.24700-01	164.00	.5839	1.344	.6959	.9716	.5909-01	.3059-01	3.271	22.15	593.2
10	10.000	.22900-01	88.000	.6387	1.565	.7657	.9720	.6875-01	.3363-01	3.405	23.01	597.3
10	10.000	.26900-01	90.000	.6205	1.337	.7359	.9707	.5871-01	.3232-01	3.655	24.86	584.5
10	10.000	.34700-01	94.000	.5484	1.084	.6520	.9678	.4759-01	.2863-01	3.505	23.99	573.2
10	12.000	.17600-01	152.00	1.041	21.23	1.187	.9870	.9325	.5215-01	3.454	22.78	643.1
10	12.000	.12100-01	151.00	.8207	-3.924	.9737	.9870	-.1724	.4277-01	2.142	14.01	659.2
10	13.000	.19400-01	153.00	1.113	22.46	1.270	.9870	.9867	.5578-01	3.697	24.38	643.1
11	14.600	.44200-01	169.00	.4836	.9314	.5831	.9645	.4095-01	.2563-01	3.186	21.84	570.8
10	18.500	.44200-01	106.00	.4997	1.002	.6079	.9645	.4399-01	.2670-01	3.148	21.52	575.2
11	19.600	.62900-01	175.00	.4125	.7643	.5100	.9585	.3360-01	.2242-01	2.839	19.53	564.1
10	19.800	.40800-01	101.00	.5888	1.259	.7205	.9657	.5532-01	.3165-01	3.490	23.75	583.7
10	20.000	.24900-01	89.000	.5345	1.168	.6323	.9715	.5128-01	.2777-01	3.112	21.15	586.1
10	20.000	.28800-01	91.000	.4834	.9334	.5651	.9700	.4100-01	.2482-01	3.165	21.71	569.6
10	20.000	.32800-01	93.000	.5185	1.054	.6172	.9685	.4628-01	.2711-01	3.222	22.01	577.2
11	21.800	.82200-01	182.00	.3269	.5966	.4151	.9530	.2623-01	.1825-01	2.291	15.79	561.2
10	22.200	.62900-01	125.00	.4579	.9079	.5765	.9585	.3988-01	.2532-01	2.916	19.95	573.7
10	22.400	.44200-01	107.00	.4607	.8840	.5550	.9645	.3883-01	.2438-01	3.037	20.84	568.6
11	22.600	.10270	192.00	.2610	.4626	.3374	.9480	.2034-01	.1483-01	1.897	13.11	555.3
10	23.000	.42000-01	105.00	.5587	1.182	.6840	.9653	.5191-01	.3004-01	3.344	22.78	582.4
10	23.400	.59600-01	120.00	.5241	1.084	.6628	.9595	.4759-01	.2911-01	3.204	21.86	579.5
11	23.900	.21310	250.00	.1101	.1752	.1453	.9348	.7702-02	.6388-02	.9382	6.588	526.8
10	24.100	.82200-01	139.00	.3579	.6823	.4608	.9530	.2997-01	.2024-01	2.376	16.31	567.5
11	24.400	.19040	238.00	.1490	.2434	.1984	.9358	.1070-01	.8722-02	1.217	8.505	534.9
11	24.400	.12440	207.00	.2213	.3967	.2947	.9437	.1744-01	.1295-01	1.585	10.94	557.7
11	24.800	.16810	223.00	.1651	.2818	.2226	.9376	.1239-01	.9788-02	1.263	8.771	546.6
10	24.900	.62900-01	126.00	.4232	.8411	.5332	.9585	.3694-01	.2342-01	2.689	18.40	574.0
11	25.000	.79500-01	178.00	.3971	.7488	.5073	.9537	.3292-01	.2230-01	2.678	18.39	567.3
11	25.300	.10270	191.00	.2772	.5007	.3609	.9480	.2201-01	.1587-01	1.968	13.57	559.2
11	25.300	.10000+00	186.00	.3117	.5830	.4095	.9487	.2563-01	.1800-01	2.121	14.58	565.8
10	25.500	.60700-01	124.00	.4889	1.041	.6241	.9592	.4573-01	.2741-01	2.908	19.80	583.2
11	26.000	.12440	206.00	.2321	.4213	.3107	.9437	.1852-01	.1366-01	1.638	11.29	560.2
10	26.300	.82200-01	140.00	.3856	.7320	.4959	.9530	.3215-01	.2178-01	2.573	17.67	566.8
11	26.700	.12100	199.00	.2901	.5596	.3965	.9443	.2460-01	.1743-01	1.909	13.08	571.0
11	26.800	.16810	222.00	.1864	.3218	.2528	.9376	.1414-01	.1111-01	1.403	9.730	549.4
11	27.000	.19040	237.00	.1608	.2655	.2154	.9358	.1167-01	.9467-02	1.292	9.012	538.0
11	27.100	.21310	249.00	.1274	.2046	.1690	.9348	.8995-02	.7429-02	1.069	7.494	529.8
11	27.200	.80300-01	180.00	.4093	.7874	.5259	.9535	.3462-01	.2316-01	2.700	18.51	570.6
10	27.400	.40100-01	98.000	.6219	1.403	.7675	.9659	.6163-01	.3371-01	3.525	23.92	589.6
11	27.400	.16480	215.00	.1977	.3537	.2723	.9379	.1555-01	.1197-01	1.420	9.802	557.3
10	27.600	.41600-01	102.00	.5734	1.276	.7084	.9654	.5605-01	.3111-01	3.286	22.31	588.2
11	27.600	.12440	205.00	.2419	.4460	.3259	.9437	.1961-01	.1433-01	1.675	11.53	553.2
11	27.600	.18700	230.00	.2205	.3709	.2978	.9360	.1630-01	.1309-01	1.723	11.99	542.9

FH15, E.T. NOSE (W/PROT. AND TRIP) HI/HREF (R4K034)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
11	27.700	.21010	243.00	.1557	.2559	.2090	.9349	.1125-01	.9190-02	1.260	8.802	536.6
11	27.900	.10110	188.00	.3082	.5860	.4080	.9484	.2576-01	.1794-01	2.060	14.13	568.7
10	28.000	.46800-01	110.00	.3474	.6079	.4115	.9636	.2670-01	.1807-01	2.558	17.72	551.0
11	28.200	.16810	221.00	.2095	.3699	.2872	.9376	.1626-01	.1263-01	1.530	10.58	554.5
11	28.300	.19040	236.00	.1521	.2477	.2023	.9358	.1089-01	.8892-02	1.249	8.737	533.9
11	28.300	.12200	201.00	.2689	.4988	.3622	.9441	.2193-01	.1592-01	1.849	12.72	564.3
10	28.400	.53500-01	114.00	.5052	1.028	.6285	.9614	.4513-01	.2760-01	3.137	21.42	577.3
11	28.400	.21310	248.00	.1223	.1954	.1618	.9348	.8590-02	.7112-02	1.035	7.263	528.1
10	28.700	.58600-01	117.00	.5457	1.156	.6927	.9598	.5079-01	.3043-01	3.262	22.21	582.6
11	28.800	.16580	217.00	.2109	.3829	.2927	.9378	.1683-01	.1287-01	1.487	10.25	560.3
10	28.800	.60400-01	121.00	.4863	1.065	.6247	.9592	.4677-01	.2744-01	2.825	19.20	586.4
11	29.000	.21110	244.00	.1434	.2341	.1918	.9348	.1029-01	.8433-02	1.173	8.198	534.7
10	29.000	.65700-01	129.00	.2983	.5174	.3635	.9576	.2273-01	.1596-01	2.223	15.42	549.0
10	29.200	.72400-01	133.00	.3961	.7633	.5034	.9557	.3353-01	.2211-01	2.599	17.83	569.3
10	29.300	.79500-01	136.00	.3900	.8287	.5165	.9537	.3640-01	.2268-01	2.325	15.83	582.9
10	29.600	.92500-01	143.00	.3429	.6614	.4505	.9504	.2905-01	.1979-01	2.248	15.42	569.4
10	29.700	.10000+00	146.00	.3278	.6902	.4488	.9487	.3031-01	.1971-01	1.971	13.43	581.8
11	29.900	.12100	198.00	.3018	.5982	.4168	.9443	.2630-01	.1832-01	1.930	13.19	575.2
11	30.200	.16480	214.00	.2137	.3901	.2971	.9379	.1715-01	.1306-01	1.498	10.32	561.3
11	30.200	.18700	229.00	.1988	.3388	.2703	.9360	.1489-01	.1188-01	1.524	10.59	546.3
11	30.300	.21010	242.00	.1487	.2465	.2006	.9349	.1084-01	.8817-02	1.188	8.284	539.0
10	31.500	.91000-02	82.000	.6863	1.593	.8165	.9720	.6996-01	.3586-01	3.806	25.78	592.4
10	31.500	.11100-01	83.000	.8487	3.024	1.063	.9720	.1328	.4668-01	3.724	24.87	618.8
10	31.500	.14200-01	84.000	.9651	-8.381	1.129	.9870	-.3681	.4957-01	2.732	17.91	654.2
10	31.500	.16000-01	85.000	1.061	-96.35	1.222	.9870	-4.232	.5366-01	3.313	21.79	647.6
10	31.500	.17600-01	86.000	1.016	12.68	1.154	.9870	.5571	.5069-01	3.487	23.02	640.5
10	31.500	.19400-01	87.000	1.268	6.077	1.413	.9870	.2669	.6206-01	5.056	33.61	627.9
11	32.100	.21010	241.00	.1401	.2301	.1880	.9349	.1011-01	.8264-02	1.134	7.921	536.5
11	32.200	.16480	213.00	.1973	.3520	.2713	.9379	.1547-01	.1193-01	1.422	9.818	556.7
11	32.200	.17860	224.00	.1704	.2848	.2286	.9366	.1252-01	.1005-01	1.345	9.368	541.2
11	32.200	.18700	228.00	.1620	.2685	.2172	.9360	.1180-01	.9546-02	1.294	9.027	539.0
11	32.300	.12100	197.00	.3032	.5823	.4136	.9443	.2560-01	.1818-01	2.004	13.73	570.3
11	32.300	.12300	194.00	.2492	.4725	.3391	.9439	.2077-01	.1491-01	1.671	11.47	568.2
11	32.300	.12730	208.00	.1407	.2380	.1833	.9432	.1046-01	.8057-02	1.091	7.585	544.3
11	32.300	.13420	209.00	.1922	.3515	.2607	.9420	.1545-01	.1146-01	1.344	9.254	561.7
10	32.400	.10000+00	147.00	.3193	.6469	.4315	.9487	.2841-01	.1895-01	1.990	13.60	576.7
11	32.400	.10110	184.00	.3294	.6547	.4430	.9484	.2878-01	.1947-01	2.100	14.36	575.6
11	32.400	.10630	193.00	.1974	.3249	.2499	.9473	.1428-01	.1094-01	1.593	11.12	537.1
11	32.500	.85800-01	183.00	.2460	.4149	.3056	.9521	.1824-01	.1344-01	1.915	13.32	543.6
10	32.600	.79500-01	137.00	.4197	.8921	.5559	.9537	.3918-01	.2442-01	2.502	17.04	582.9
11	32.600	.80800-01	176.00	.3905	.7854	.5101	.9534	.3453-01	.2242-01	2.461	16.81	577.3
10	32.700	.67400-01	132.00	.3013	.5329	.3703	.9571	.2341-01	.1626-01	2.188	15.14	553.3
10	32.700	.72400-01	134.00	.3527	.6597	.4443	.9557	.2898-01	.1952-01	2.393	16.46	564.2

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROT. AND TRIP) HI/HREF (R4K034)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
10	32.800	.65700-01	130.00	.2653	.4472	.3205	.9576	.1964-01	.1408-01	2.058	14.33	542.0
11	32.800	.16680	210.00	.1798	.3092	.2432	.9377	.1359-01	.1069-01	1.360	9.437	548.5
11	32.800	.18880	225.00	.1261	.2000	.1652	.9359	.8791-02	.7264-02	1.081	7.594	525.6
10	32.900	.58600-01	118.00	.4557	.9319	.5735	.9598	.4093-01	.2519-01	2.815	19.21	578.0
10	32.900	.60400-01	122.00	.3881	.7325	.4801	.9592	.3217-01	.2109-01	2.606	17.91	565.8
11	32.900	.61300-01	171.00	.4011	.7754	.5002	.9590	.3409-01	.2199-01	2.633	18.04	571.3
10	33.000	.53500-01	115.00	.4399	.8313	.5376	.9614	.3651-01	.2361-01	2.949	20.27	566.0
10	33.200	.48300-01	113.00	.3290	.5624	.3885	.9631	.2470-01	.1706-01	2.503	17.39	545.5
11	33.400	.42800-01	166.00	.4822	.9518	.5829	.9650	.4184-01	.2563-01	3.096	21.18	574.6
10	33.500	.40100-01	99.000	.5767	1.179	.6983	.9659	.5180-01	.3067-01	3.562	24.31	578.0
10	33.600	.38300-01	97.000	.5993	1.235	.7239	.9665	.5422-01	.3179-01	3.676	25.08	579.0
10	33.700	.36700-01	96.000	.5693	1.168	.6847	.9671	.5130-01	.3007-01	3.505	23.92	578.5
10	33.900	.33800-01	95.000	.4673	.8700	.5481	.9682	.3821-01	.2407-01	3.187	21.93	563.4
11	34.700	.21010	240.00	.1292	.2109	.1729	.9349	.9273-02	.7599-02	1.057	7.391	534.6
11	34.700	.18700	227.00	.2021	.3381	.2722	.9360	.1486-01	.1196-01	1.591	11.08	541.5
11	34.900	.16480	212.00	.1791	.3159	.2450	.9379	.1389-01	.1077-01	1.310	9.057	554.3
10	35.100	.10000+00	148.00	.3234	.6453	.4347	.9487	.2834-01	.1909-01	2.046	13.99	574.6
11	35.200	.23900-01	161.00	.4487	.7983	.5117	.9719	.3509-01	.2250-01	3.245	22.42	556.1
10	35.300	.92500-01	145.00	.3345	.6433	.4390	.9504	.2826-01	.1928-01	2.199	15.09	569.0
10	35.300	.22100-01	160.00	.3739	.6694	.4267	.9720	.2940-01	.1874-01	2.674	18.47	555.9
11	35.400	.18800	231.00	.1447	.2392	.1937	.9359	.1052-01	.8516-02	1.159	8.088	538.4
11	35.500	.12100	196.00	.2653	.5010	.3595	.9443	.2203-01	.1580-01	1.786	12.26	567.5
11	35.600	.16580	216.00	.1519	.2640	.2064	.9378	.1161-01	.9075-02	1.134	7.856	550.9
10	35.800	.80600-01	138.00	.3531	.6802	.4549	.9534	.2987-01	.1998-01	2.317	15.89	569.2
11	35.900	.21310	247.00	.1093	.1737	.1441	.9348	.7635-02	.6336-02	.9336	6.556	526.3
11	36.000	.19040	235.00	.1308	.2124	.1737	.9358	.9339-02	.7635-02	1.079	7.547	533.1
11	36.200	.16910	220.00	.1484	.2516	.1995	.9376	.1106-01	.8770-02	1.146	7.963	545.0
10	36.200	.72400-01	135.00	.3556	.6658	.4481	.9557	.2924-01	.1968-01	2.408	16.56	564.4
11	36.300	.12200	200.00	.2404	.4475	.3243	.9441	.1967-01	.1425-01	1.645	11.31	565.0
10	36.600	.65700-01	131.00	.3054	.5418	.3746	.9576	.2380-01	.1645-01	2.209	15.28	554.0
11	36.700	.18700	226.00	.1538	.2530	.2053	.9360	.1112-01	.9025-02	1.243	8.676	536.9
11	36.900	.16480	211.00	.1658	.2874	.2249	.9379	.1263-01	.9886-02	1.242	8.608	550.3
11	36.900	.10110	187.00	.3185	.6192	.4250	.9484	.2722-01	.1868-01	2.077	14.23	572.3
10	37.000	.60400-01	123.00	.4294	.8678	.5408	.9592	.3811-01	.2375-01	2.683	18.33	576.4
11	37.000	.12440	204.00	.2166	.3886	.2885	.9437	.1708-01	.1268-01	1.550	10.69	557.9
10	37.100	.58600-01	119.00	.4724	.9386	.5903	.9598	.4122-01	.2593-01	3.002	20.54	574.0
11	37.200	.21310	246.00	.1119	.1781	.1477	.9348	.7828-02	.6492-02	.9533	6.693	526.8
11	37.600	.16810	219.00	.1436	.2423	.1926	.9376	.1065-01	.8465-02	1.117	7.769	543.7
10	37.800	.10270	150.00	.2514	.4648	.3302	.9480	.2042-01	.1450-01	1.728	11.90	562.1
11	37.900	.12100	195.00	.2442	.4419	.3253	.9443	.1943-01	.1430-01	1.730	11.93	559.6
11	38.000	.80300-01	179.00	.3677	.7060	.4731	.9535	.3103-01	.2080-01	2.432	16.67	570.2
10	38.500	.46800-01	112.00	.3479	.6051	.4116	.9636	.2658-01	.1808-01	2.583	17.91	549.6
11	38.600	.12440	203.00	.2111	.3747	.2800	.9437	.1647-01	.1231-01	1.532	10.59	555.6

FH15, E.T. NOSE (W/PROT. AND TRIP) HI/HREF (R4K034)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
11	38.700	.10000+00	185.00	.3151	.5963	.4158	.9487	.2622-01	.1828-01	2.117	14.53	567.8
10	38.900	.82200-01	141.00	.2892	.5321	.3682	.9530	.2337-01	.1617-01	2.000	13.78	561.3
10	39.300	.41600-01	104.00	.4932	.9810	.5957	.9654	.4309-01	.2616-01	3.130	21.41	574.2
11	39.500	.10270	190.00	.2931	.5397	.3844	.9480	.2373-01	.1690-01	2.032	13.99	562.9
11	39.600	.16810	218.00	.1323	.2218	.1769	.9376	.9750-02	.7775-02	1.039	7.235	542.0
11	39.900	.19040	233.00	.1201	.1932	.1587	.9358	.8495-02	.6976-02	1.006	7.047	530.2
11	40.100	.79500-01	177.00	.3507	.6504	.4457	.9537	.2859-01	.1959-01	2.410	16.58	564.3
11	40.200	.12440	202.00	.2015	.3547	.2663	.9437	.1559-01	.1171-01	1.478	10.22	553.8
11	40.300	.21310	245.00	.1001	.1582	.1316	.9348	.6955-02	.5787-02	.8630	6.067	524.5
10	41.100	.82200-01	142.00	.3141	.5781	.3999	.9530	.2539-01	.1756-01	2.171	14.96	561.3
11	41.100	.60700-01	173.00	.4321	.8258	.5366	.9591	.3630-01	.2359-01	2.872	19.69	569.5
11	42.300	.10270	189.00	.2466	.4344	.3180	.9480	.1910-01	.1398-01	1.807	12.50	554.0
11	42.600	.59600-01	172.00	.4738	.9387	.5928	.9595	.4127-01	.2606-01	3.031	20.72	575.2
11	43.200	.42000-01	168.00	.4680	.9035	.5621	.9653	.3972-01	.2471-01	3.075	21.07	571.2
11	43.400	.82200-01	181.00	.3284	.5962	.4163	.9530	.2621-01	.1830-01	2.317	15.97	560.2
10	43.600	.62900-01	128.00	.4107	.7743	.5102	.9585	.3401-01	.2241-01	2.761	18.98	565.6
10	45.000	.22900-01	8.0000	.7532	1.993	.9122	.9720	.8753-01	.4006-01	3.822	25.74	603.1
11	46.100	.62900-01	174.00	.4175	.7920	.5195	.9585	.3482-01	.2284-01	2.797	19.19	568.3
11	47.700	.40800-01	167.00	.5198	1.030	.6263	.9657	.4530-01	.2753-01	3.323	22.72	575.2
10	48.400	.44200-01	109.00	.4766	.9369	.5773	.9645	.4115-01	.2535-01	3.062	20.96	572.4
10	50.000	.19400-01	156.00	.8324	4.859	.9329	.9870	.2134	.4097-01	3.171	21.03	631.9
10	51.000	.12100-01	154.00	.9028	-27.08	1.043	.9870	-1.189	.4580-01	2.758	18.13	649.1
10	51.000	.17600-01	155.00	.8387	4.604	.9385	.9870	.2022	.4122-01	3.237	21.48	630.8
11	51.900	.44800-01	170.00	.4050	.7381	.4828	.9643	.3245-01	.2123-01	2.844	19.60	560.9
11	53.200	.24700-01	163.00	.5536	1.157	.6500	.9716	.5087-01	.2857-01	3.362	22.90	582.5
11	65.200	.24700-01	162.00	.6548	1.642	.7899	.9716	.7219-01	.3473-01	3.451	23.27	600.8
9	90.000	.91000-02	44.000	.6515	2.434	.8197	.9720	.1069	.3601-01	2.805	18.73	619.7
9	90.000	.11100-01	45.000	.8068	4.753	1.051	.9720	.2088	.4619-01	3.064	20.33	631.2
9	90.000	.13100-01	46.000	.7612	3.147	.9663	.9720	.1382	.4246-01	3.166	21.10	623.0
9	90.000	.17000-01	48.000	.7430	2.458	.9235	.9720	.1080	.4057-01	3.358	22.47	614.8
9	90.000	.20900-01	50.000	.7202	2.501	.8997	.9720	.1099	.3953-01	3.189	21.32	616.9
9	90.000	.24900-01	52.000	.6375	1.990	.7908	.9715	.8743-01	.3474-01	2.958	19.82	612.1
9	90.000	.26900-01	53.000	.5919	1.607	.7262	.9707	.7062-01	.3190-01	2.954	19.88	604.1
9	90.000	.28800-01	54.000	.5846	1.519	.7168	.9700	.6675-01	.3149-01	2.996	20.20	601.0
9	90.000	.32800-01	55.000	.5319	1.238	.6482	.9685	.5437-01	.2848-01	2.942	19.93	591.8
9	90.000	.36700-01	56.000	.5195	1.207	.6392	.9671	.5304-01	.2808-01	2.875	19.49	591.7
9	90.000	.40600-01	57.000	.5144	1.246	.6439	.9657	.5474-01	.2829-01	2.763	18.68	595.4
9	90.000	.48500-01	58.000	.4699	1.077	.5935	.9631	.4732-01	.2608-01	2.629	17.83	590.4
9	90.000	.56400-01	59.000	.4163	.9262	.5320	.9605	.4069-01	.2337-01	2.384	16.19	587.3
9	90.000	.76100-01	60.000	.3246	.6720	.4241	.9547	.2953-01	.1864-01	1.982	13.53	578.8
9	90.000	.95800-01	61.000	.2751	.5528	.3683	.9496	.2429-01	.1618-01	1.727	11.81	574.8
9	90.000	.11550	62.000	.2207	.4251	.2994	.9454	.1868-01	.1315-01	1.448	9.937	568.4
9	135.00	.19000-01	49.000	.7326	2.286	.9047	.9720	.1004	.3975-01	3.399	22.79	612.1

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROT. AND TRIP)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
9	135.00	.22900-01	51.000	.6839	2.410	.8556	.9720	.1059	.3759-01	3.011	20.13	617.5
9	180.00	.91000-02	23.000	.4154	.8815	.4876	.9720	.3873-01	.2142-01	2.477	16.87	581.9
9	180.00	.11100-01	24.000	.6955	3.477	.8963	.9720	.1527	.3938-01	2.741	18.22	628.0
9	180.00	.13100-01	25.000	.7447	2.847	.9389	.9720	.1251	.4125-01	3.180	21.22	620.5
9	180.00	.15000-01	26.000	.7251	2.565	.9074	.9720	.1127	.3987-01	3.188	21.30	617.6
9	180.00	.17000-01	27.000	.7063	2.256	.8745	.9720	.9911-01	.3842-01	3.242	21.72	613.2
9	180.00	.19000-01	28.000	.7024	2.306	.8723	.9720	.1013	.3832-01	3.185	21.32	614.5
9	180.00	.20900-01	29.000	.7280	2.621	.9126	.9720	.1151	.4009-01	3.178	21.23	618.3
9	180.00	.28800-01	32.000	.5741	1.488	.7037	.9700	.6539-01	.3092-01	2.947	19.87	600.8
9	180.00	.32800-01	33.000	.5394	1.248	.6567	.9685	.5485-01	.2885-01	2.995	20.30	591.3
9	180.00	.36700-01	34.000	.5405	1.333	.6718	.9671	.5857-01	.2951-01	2.866	19.37	597.0
9	180.00	.56400-01	37.000	.4425	.9563	.5617	.9605	.4201-01	.2468-01	2.597	17.67	584.1
9	180.00	.76100-01	38.000	.3487	.7140	.4540	.9547	.3137-01	.1994-01	2.149	14.67	577.4
9	180.00	.95800-01	39.000	.2796	.5496	.3715	.9496	.2415-01	.1632-01	1.795	12.29	571.6
9	180.00	.11550	40.000	.2298	.4421	.3115	.9454	.1942-01	.1369 01	1.509	10.35	568.2
9	180.00	.18450	42.000	.1145	.2016	.1581	.9362	.8857-02	.6947-02	.8361	5.791	551.5
9	225.00	.22900-01	30.000	.7163	2.342	.8892	.9720	.1029	.3907-01	3.254	21.78	614.3
9	270.00	.91000-02	63.000	.5455	1.726	.6748	.9720	.7585-01	.2965-01	2.515	16.85	612.7
9	270.00	.11100-01	64.000	.7307	3.903	.9461	.9720	.1715	.4156-01	2.835	18.83	629.4
9	270.00	.13100-01	65.000	.7812	3.184	.9905	.9720	.1399	.4352-01	3.264	21.76	622.6
9	270.00	.17000-01	67.000	.6446	2.059	.7981	.9720	.9045-01	.3507-01	2.959	19.82	613.2
9	270.00	.20900-01	69.000	.7550	2.556	.9406	.9720	.1123	.4133-01	3.379	22.60	615.8
9	270.00	.24900-01	71.000	.6421	2.109	.8009	.9715	.9265-01	.3519-01	2.911	19.49	614.5
9	270.00	.28800-01	73.000	.5396	1.384	.6604	.9700	.6080-01	.2902-01	2.789	18.81	600.0
9	270.00	.36700-01	75.000	.5666	1.419	.7061	.9671	.6235-01	.3102-01	2.974	20.08	598.2
9	270.00	.46500-01	77.000	.4697	1.058	.5912	.9631	.4650-01	.2597-01	2.663	18.07	588.6
9	270.00	.56400-01	78.000	.4092	.8978	.5213	.9605	.3945-01	.2290-01	2.371	16.12	585.8
9	270.00	.95800-01	80.000	.2852	.5586	.3785	.9496	.2454-01	.1663-01	1.837	12.59	571.0
9	270.00	.11550	81.000	.2505	.4799	.3391	.9454	.2108-01	.1490-01	1.653	11.35	567.5
9	315.00	.19000-01	68.000	.5349	1.376	.6454	.9720	.6044-01	.2836-01	2.760	18.61	600.2
9	315.00	.22900-01	70.000	.6117	2.474	.7751	.9720	.1087	.3405-01	2.562	17.08	622.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K101)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
300	4.020	-5.003	11.01	62.99	715.7	.4040	169.1	65.86	2563.	.6448-02	.1361-06	3.774
301	4.020	-4.999	11.01	62.96	714.7	.4038	168.9	65.88	2561.	.6454-02	.1359-06	3.780
302	4.020	-4.999	11.01	63.05	714.7	.4044	168.9	65.88	2561.	.6463-02	.1359-06	3.786

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
300	.3790-01	.9529-02
301	.3788-01	.9522-02
302	.3791-01	.9516-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
301	.00000	.91000-02	1.0000	.7981	1.597	.9393	.9699	.6048-01	.3558-01	4.320	29.59	571.8
301	.00000	.15000-01	4.0000	.7689	1.464	.8968	.9699	.5544-01	.3397-01	4.385	30.16	564.1
301	.00000	.17000-01	5.0000	.7194	1.313	.8325	.9699	.4972-01	.3154-01	4.310	29.77	556.5
301	.00000	.19000-01	6.0000	.6616	1.201	.7648	.9699	.4549-01	.2897-01	3.988	27.56	555.5
301	.00000	.24900-01	9.0000	.5696	1.034	.6602	.9695	.3918-01	.2501-01	3.433	23.72	555.6
301	.00000	.26900-01	10.000	.5498	.9952	.6393	.9687	.3770-01	.2422-01	3.326	22.99	555.0
300	.00000	.32800-01	12.000	.4920	.8215	.5682	.9666	.3113-01	.2154-01	3.327	23.22	537.2
300	.00000	.36700-01	13.000	.4375	.7150	.5060	.9651	.2710-01	.1918-01	3.059	21.42	531.2
300	.00000	.40600-01	14.000	.4565	.7585	.5335	.9638	.2875-01	.2022-01	3.110	21.73	535.9
300	.00000	.48500-01	15.000	.4019	.6603	.4743	.9610	.2503-01	.1798-01	2.786	19.49	532.8
300	.00000	.56400-01	16.000	.4020	.6619	.4807	.9583	.2509-01	.1822-01	2.777	19.43	533.4
300	.00000	.76100-01	17.000	.3252	.5274	.3984	.9520	.1999-01	.1510-01	2.300	16.13	529.1
300	.00000	.95800-01	18.000	.7066-01	.1150	.8910-01	.9463	.4357-02	.3377-02	.4974	3.486	530.0
300	.00000	.11550	19.000	.2095	.3457	.2727	.9411	.1310-01	.1034-01	1.442	10.08	534.0
300	.00000	.16480	20.000	.1327	.2219	.1839	.9307	.8408-02	.6969-02	.8958	6.252	537.6
300	.00000	.21400	22.000	.8150-01	.1259	.1112	.9243	.4771-02	.4214-02	.6270	4.438	512.7
302	2.0000	.24700-01	165.00	.5165	.8899	.5942	.9688	.3373-01	.2253-01	3.335	23.19	544.3
301	9.0000	.15000-01	157.00	.6791	1.244	.8000	.9667	.4713-01	.3031-01	4.048	27.95	557.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
301	9.0000	.17600-01	158.00	.6499	1.193	.7660	.9667	.4521-01	.2902-01	3.863	26.66	557.8
302	9.8000	.24700-01	164.00	.5373	.9441	.6294	.9660	.3579-01	.2386-01	3.378	23.43	548.8
301	10.000	.22900-01	88.000	.5654	1.026	.6660	.9664	.3888-01	.2523-01	3.408	23.55	555.6
301	10.000	.26900-01	90.000	.5157	.9170	.6086	.9651	.3474-01	.2305-01	3.191	22.10	551.4
301	10.000	.34700-01	94.000	.4560	.8009	.5443	.9623	.3034-01	.2062-01	2.866	19.88	548.7
302	14.600	.44200-01	169.00	.3940	.6660	.4770	.9574	.2525-01	.1808-01	2.613	18.22	539.7
301	18.500	.44200-01	106.00	.3997	.6965	.4919	.9560	.2638-01	.1863-01	2.540	17.63	546.9
302	19.600	.62900-01	175.00	.3131	.5193	.3913	.9497	.1969-01	.1483-01	2.136	14.93	534.7
301	19.800	.40800-01	101.00	.4200	.7320	.5149	.9567	.2773-01	.1951-01	2.667	18.52	547.0
301	20.000	.24900-01	89.000	.5071	.8969	.6066	.9623	.3398-01	.2298-01	3.159	21.89	550.2
301	20.000	.28800-01	91.000	.4726	.8342	.5691	.9609	.3160-01	.2156-01	2.951	20.46	549.8
301	20.000	.32800-01	93.000	.4759	.8487	.5791	.9594	.3215-01	.2194-01	2.933	20.31	552.0
301	22.200	.62900-01	125.00	.3251	.5586	.4136	.9488	.2116-01	.1567-01	2.105	14.64	543.7
301	22.400	.44200-01	107.00	.3832	.6616	.4734	.9547	.2506-01	.1793-01	2.465	17.13	544.9
302	22.600	.10270	192.00	.1936	.3202	.2565	.9380	.1214-01	.9722-02	1.327	9.283	533.8
301	23.000	.42000-01	105.00	.4016	.6945	.4951	.9552	.2631-01	.1876-01	2.578	17.92	545.2
301	23.400	.59600-01	120.00	.3336	.5711	.4224	.9494	.2163-01	.1600-01	2.172	15.12	542.8
302	23.900	.21310	250.00	.5223-01	.8031-01	.7166-01	.9225	.3045-02	.2717-02	.4048	2.868	510.3
301	24.100	.82200-01	139.00	.2537	.4267	.3304	.9427	.1617-01	.1252-01	1.693	11.81	538.5
302	24.400	.19040	238.00	.7246-01	.1139	.1002	.9238	.4317-02	.3800-02	.5399	3.809	518.1
302	24.400	.12440	207.00	.1482	.2531	.2053	.9329	.9595-02	.7782-02	.9680	6.738	542.3
302	24.800	.16810	223.00	.9081-01	.1498	.1282	.9260	.5677-02	.4858-02	.6251	4.374	533.1
301	24.900	.62900-01	126.00	.3174	.5428	.4049	.9480	.2056-01	.1534-01	2.069	14.40	542.6
302	25.000	.79500-01	178.00	.2599	.4271	.3342	.9432	.1619-01	.1267-01	1.799	12.59	532.1
302	25.300	.10270	191.00	.1925	.3176	.2557	.9373	.1204-01	.9693-02	1.325	9.267	533.2
302	25.300	.10000+00	186.00	.1966	.3251	.2605	.9379	.1232-01	.9877-02	1.348	9.426	533.8
301	25.500	.60700-01	124.00	.3134	.5332	.3981	.9484	.2020-01	.1508-01	2.059	14.34	541.3
302	26.000	.12440	206.00	.1435	.2450	.1991	.9325	.9286-02	.7549-02	.9391	6.531	542.2
301	26.300	.82200-01	140.00	.2876	.4800	.3745	.9421	.1818-01	.1419-01	1.942	13.56	536.4
302	26.700	.12100	199.00	.1387	.2334	.1904	.9330	.8847-02	.7219-02	.9259	6.459	538.5
302	26.800	.16810	222.00	.8244-01	.1357	.1164	.9257	.5145-02	.4413-02	.5688	3.981	532.7
302	27.000	.19040	237.00	.6978-01	.1100	.9684-01	.9235	.4169-02	.3671-02	.5172	3.647	519.1
302	27.100	.21310	249.00	.5572-01	.8620-01	.7682-01	.9223	.3268-02	.2912-02	.4269	3.021	512.6
302	27.200	.80300-01	180.00	.2535	.4136	.3264	.9423	.1568-01	.1237-01	1.774	12.44	530.0
301	27.400	.40100-01	98.000	.4258	.7411	.5284	.9544	.2807-01	.2002-01	2.710	18.82	546.7
302	27.400	.16480	215.00	.8022-01	.1339	.1141	.9260	.5077-02	.4324-02	.5420	3.785	536.4
301	27.600	.41600-01	102.00	.3966	.6861	.4926	.9538	.2599-01	.1866-01	2.544	17.68	545.3
302	27.600	.12440	205.00	.1379	.2350	.1916	.9322	.8907-02	.7262-02	.9039	6.294	541.7
302	27.600	.18700	230.00	.7746-01	.1223	.1075	.9237	.4637-02	.4076-02	.5723	4.034	519.8
302	27.700	.21010	243.00	.5901-01	.9175-01	.8161-01	.9224	.3478-02	.3094-02	.4480	3.167	514.4
302	27.900	.10110	188.00	.1905	.3155	.2539	.9370	.1196-01	.9626-02	1.303	9.111	534.3
301	28.000	.46800-01	110.00	.3416	.5848	.4269	.9520	.2215-01	.1617-01	2.224	15.48	542.8
302	28.200	.16810	221.00	.8324-01	.1379	.1181	.9255	.5229-02	.4479-02	.5688	3.977	534.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K101)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
302	28.300	.19040	236.00	.6919-01	.1091	.9609-01	.9234	.4134-02	.3643-02	.5128	3.616	519.2
302	28.300	.12200	201.00	.1482	.2493	.2041	.9325	.9452-02	.7738-02	.9902	6.908	538.4
301	28.400	.53500-01	114.00	.3387	.5795	.4282	.9497	.2195-01	.1622-01	2.206	15.35	542.7
302	28.400	.21310	248.00	.5845-01	.9056-01	.8070-01	.9223	.3433-02	.3059-02	.4466	3.159	513.1
301	28.700	.58600-01	117.00	.3263	.5554	.4153	.9480	.2104-01	.1573-01	2.141	14.91	541.4
302	28.800	.16580	217.00	.7850-01	.1304	.1115	.9257	.4944-02	.4226-02	.5343	3.734	535.1
301	28.800	.60400-01	121.00	.3121	.5298	.3980	.9475	.2007-01	.1508-01	2.056	14.32	540.8
302	29.000	.21110	244.00	.5700-01	.8841-01	.7874-01	.9223	.3352-02	.2985-02	.4346	3.074	513.5
301	29.000	.65700-01	129.00	.2852	.4823	.3662	.9459	.1827-01	.1387-01	1.889	13.17	539.8
301	29.200	.72400-01	133.00	.2657	.4483	.3444	.9439	.1698-01	.1305-01	1.765	12.31	539.2
301	29.300	.79500-01	136.00	.2334	.3905	.3045	.9419	.1479-01	.1154-01	1.571	10.97	537.0
301	29.600	.92500-01	143.00	.2313	.3933	.3097	.9386	.1490-01	.1173-01	1.520	10.59	541.2
301	29.700	.10000+00	146.00	.1748	.2975	.2365	.9368	.1127-01	.8957-02	1.147	7.986	541.5
302	29.900	.12100	198.00	.1363	.2296	.1880	.9323	.8705-02	.7127-02	.9082	6.334	538.9
302	30.200	.16480	214.00	.7726-01	.1286	.1099	.9256	.4876-02	.4167-02	.5241	3.662	535.7
302	30.200	.18700	229.00	.6541-01	.1036	.9108-01	.9235	.3926-02	.3453-02	.4809	3.388	520.7
302	30.300	.21010	242.00	.5703-01	.8892-01	.7908-01	.9223	.3371-02	.2998-02	.4308	3.044	515.4
301	31.500	.11100-01	83.000	.6669	1.270	.8293	.9588	.4810-01	.3142-01	3.803	26.16	564.1
302	32.100	.21010	241.00	.5305-01	.8294-01	.7372-01	.9222	.3144-02	.2795-02	.3987	2.816	516.4
302	32.200	.16480	213.00	.7719-01	.1288	.1101	.9253	.4881-02	.4175-02	.5221	3.647	536.2
302	32.200	.17860	224.00	.7646-01	.1232	.1075	.9240	.4672-02	.4074-02	.5458	3.833	526.4
302	32.200	.18700	228.00	.6021-01	.9529-01	.8389-01	.9233	.3612-02	.3180-02	.4431	3.122	520.5
302	32.300	.12100	197.00	.1368	.2295	.1888	.9318	.8700-02	.7157-02	.9168	6.398	537.8
302	32.300	.12300	194.00	.1198	.2018	.1661	.9314	.7648-02	.6295-02	.7988	5.572	538.8
302	32.300	.12730	208.00	.1256	.2161	.1770	.9307	.8193-02	.6711-02	.8127	5.652	544.0
302	32.300	.13420	209.00	.1075	.1881	.1540	.9295	.7130-02	.5839-02	.6796	4.716	547.9
301	32.400	.10000+00	147.00	.1658	.2839	.2258	.9361	.1075-01	.8555-02	1.079	7.510	542.9
302	32.400	.10110	184.00	.1749	.2892	.2343	.9358	.1096-01	.8883-02	1.199	8.389	533.8
302	32.400	.10630	193.00	.1562	.2584	.2106	.9347	.9796-02	.7983-02	1.070	7.480	534.0
302	32.500	.85800-01	183.00	.2173	.3595	.2858	.9394	.1363-01	.1083-01	1.489	10.41	533.9
301	32.600	.79500-01	137.00	.2366	.3967	.3105	.9410	.1503-01	.1176-01	1.587	11.08	537.6
302	32.600	.80800-01	176.00	.2214	.3625	.2879	.9407	.1374-01	.1091-01	1.540	10.79	531.1
301	32.700	.67400-01	132.00	.2764	.4658	.3574	.9443	.1765-01	.1354-01	1.839	12.83	539.0
301	32.700	.72400-01	134.00	.2642	.4451	.3441	.9429	.1686-01	.1304-01	1.759	12.27	538.9
301	32.800	.65700-01	130.00	.2914	.4912	.3760	.9447	.1861-01	.1424-01	1.940	13.53	539.0
302	32.800	.16680	210.00	.8028-01	.1339	.1147	.9250	.5078-02	.4350-02	.5429	3.792	536.3
302	32.800	.18880	225.00	.6082-01	.9637-01	.8488-01	.9232	.3653-02	.3218-02	.4467	3.147	520.9
301	32.900	.58600-01	118.00	.3186	.5445	.4030	.9467	.2063-01	.1549-01	2.080	14.48	542.4
301	32.900	.60400-01	122.00	.2946	.4973	.3774	.9462	.1884-01	.1430-01	1.957	13.65	539.3
302	32.900	.61300-01	171.00	.2946	.4865	.3746	.9460	.1844-01	.1420-01	2.028	14.19	533.2
301	33.000	.53500-01	115.00	.3252	.5495	.4123	.9483	.2082-01	.1562-01	2.157	15.04	539.6
301	33.200	.48300-01	113.00	.3376	.5717	.4250	.9498	.2166-01	.1610-01	2.233	15.56	540.1
302	33.400	.42800-01	166.00	.3609	.5965	.4464	.9515	.2261-01	.1692-01	2.476	17.32	533.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K101)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
301	33.500	.40100-01	99.000	.3943	.6693	.4902	.9524	.2535-01	.1857-01	2.598	18.10	540.7
301	33.600	.38300-01	97.000	.4104	.7039	.5106	.9529	.2666-01	.1934-01	2.665	18.54	543.3
301	33.700	.36700-01	96.000	.4025	.6975	.5012	.9534	.2642-01	.1899-01	2.576	17.90	545.7
301	33.900	.33800-01	95.000	.4301	.7477	.5336	.9544	.2833-01	.2021-01	2.742	19.04	546.4
302	34.700	.21010	240.00	.4714-01	.7391-01	.6566-01	.9221	.2802-02	.2489-02	.3526	2.489	517.4
302	34.700	.18700	227.00	.7206-01	.1138	.1004	.9231	.4314-02	.3804-02	.5323	3.752	519.8
302	34.900	.16480	212.00	.7820-01	.1311	.1121	.9250	.4968-02	.4251-02	.5253	3.666	537.5
301	35.100	.10000+00	148.00	.1681	.2883	.2300	.9354	.1092-01	.8713-02	1.091	7.592	543.3
302	35.200	.23900-01	161.00	.5615	.9926	.6890	.9574	.3763-01	.2612-01	3.503	24.28	550.1
301	35.300	.92500-01	145.00	.1919	.3272	.2594	.9371	.1240-01	.9825-02	1.256	8.743	541.9
301	35.300	.22100-01	160.00	.5399	.9748	.6663	.9575	.3693-01	.2524-01	3.276	22.66	554.5
302	35.400	.18800	231.00	.5358-01	.8545-01	.7516-01	.9230	.3239-02	.2849-02	.3892	2.739	523.0
302	35.500	.12100	196.00	.1309	.2206	.1819	.9311	.8364-02	.6894-02	.8726	6.086	538.9
302	35.600	.16580	216.00	.7631-01	.1276	.1094	.9248	.4837-02	.4146-02	.5144	3.592	536.8
301	35.800	.80600-01	138.00	.2146	.3580	.2827	.9398	.1356-01	.1071-01	1.450	10.13	536.3
302	35.900	.21310	247.00	.3961-01	.6200-01	.5513-01	.9220	.2350-02	.2090-02	.2971	2.098	516.8
302	36.000	.19040	235.00	.5863-01	.9350-01	.8233-01	.9228	.3545-02	.3121-02	.4259	2.997	523.0
302	36.200	.16810	220.00	.7698-01	.1281	.1102	.9245	.4856-02	.4177-02	.5227	3.652	535.6
301	36.200	.72400-01	135.00	.2628	.4320	.3403	.9419	.1637-01	.1289-01	1.816	12.71	532.2
302	36.300	.12200	200.00	.1290	.2177	.1797	.9308	.8253-02	.6811-02	.8572	5.977	539.3
301	36.600	.65700-01	131.00	.2709	.4583	.3521	.9436	.1736-01	.1334-01	1.793	12.50	539.9
302	36.700	.18700	226.00	.5673-01	.9032-01	.7950-01	.9230	.3424-02	.3014-02	.4133	2.909	522.5
302	36.900	.16480	211.00	.7513-01	.1263	.1081	.9247	.4786-02	.4097-02	.5026	3.507	538.2
302	36.900	.10110	187.00	.1823	.3029	.2463	.9348	.1148-01	.9335-02	1.241	8.673	535.1
301	37.000	.60400-01	123.00	.2926	.4948	.3775	.9450	.1874-01	.1430-01	1.939	13.52	539.7
302	37.000	.12440	204.00	.1244	.2100	.1739	.9302	.7961-02	.6591-02	.8273	5.769	539.3
301	37.100	.58500-01	119.00	.3081	.5218	.3967	.9455	.1977-01	.1503-01	2.037	14.20	540.2
302	37.200	.21310	246.00	.4308-01	.6750-01	.6000-01	.9220	.2559-02	.2275-02	.3226	2.277	517.1
302	37.600	.16810	219.00	.7412-01	.1235	.1063	.9243	.4682-02	.4028-02	.5021	3.508	535.9
301	37.800	.10270	150.00	.1611	.2765	.2220	.9342	.1047-01	.8411-02	1.045	7.267	543.5
302	37.900	.12100	195.00	.1295	.2166	.1796	.9306	.8212-02	.6809-02	.8730	6.095	536.9
302	38.000	.80300-01	179.00	.2244	.3661	.2932	.9393	.1388-01	.1112-01	1.570	11.00	530.1
301	38.500	.46800-01	112.00	.3438	.5805	.4348	.9487	.2199-01	.1647-01	2.282	15.91	539.4
302	38.600	.12440	203.00	.1209	.2040	.1692	.9299	.7732-02	.6412-02	.8036	5.603	539.3
302	38.700	.10000+00	185.00	.1701	.2827	.2301	.9346	.1072-01	.8721-02	1.157	8.084	535.3
301	38.900	.82200-01	141.00	.2147	.3624	.2863	.9386	.1373-01	.1085-01	1.427	9.949	539.3
301	39.300	.41600-01	104.00	.3619	.6216	.4573	.9501	.2355-01	.1732-01	2.345	16.31	543.6
302	39.500	.10270	190.00	.1695	.2817	.2301	.9338	.1068-01	.8725-02	1.153	8.060	535.2
302	39.600	.16810	218.00	.7421-01	.1238	.1066	.9241	.4695-02	.4043-02	.5017	3.504	536.3
302	39.900	.19040	233.00	.5155-01	.8236-01	.7256-01	.9226	.3122-02	.2751-02	.3733	2.626	523.6
302	40.100	.79500-01	177.00	.2218	.3614	.2902	.9390	.1370-01	.1100-01	1.556	10.91	529.6
302	40.200	.12440	202.00	.1184	.2002	.1662	.9296	.7589-02	.6300-02	.7855	5.476	539.7
302	40.300	.21310	245.00	.3664-01	.5759-01	.5116-01	.9220	.2183-02	.1939-02	.2730	1.926	518.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K101)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
301	41.100	.82200-01	142.00	.2340	.3953	.3131	.9381	.1498-01	.1186-01	1.552	10.82	539.6
302	41.100	.60700-01	173.00	.2833	.4650	.3631	.9438	.1763-01	.1376-01	1.964	13.75	531.8
302	42.600	.59600-01	172.00	.2914	.4798	.3742	.9436	.1819-01	.1419-01	2.010	14.07	532.7
302	43.200	.42000-01	168.00	.3349	.5530	.4197	.9488	.2096-01	.1591-01	2.300	16.09	533.5
302	43.400	.82200-01	181.00	.2546	.4222	.3386	.9375	.1601-01	.1284-01	1.737	12.14	534.7
301	43.600	.62900-01	128.00	.2353	.3939	.3062	.9425	.1492-01	.1160-01	1.582	11.04	537.2
301	45.000	.22900-01	8.0000	.7342	1.372	.9315	.9544	.5199-01	.3529-01	4.274	29.45	561.0
302	46.100	.62900-01	174.00	.2619	.4292	.3387	.9418	.1627-01	.1284-01	1.820	12.74	531.4
302	47.700	.40800-01	167.00	.3643	.6047	.4594	.9479	.2292-01	.1742-01	2.482	17.35	534.9
301	48.400	.44200-01	109.00	.3414	.5740	.4356	.9466	.2174-01	.1650-01	2.281	15.91	538.3
302	53.200	.24700-01	163.00	.5324	.9113	.6661	.9517	.3454-01	.2525-01	3.469	24.14	542.8
302	65.200	.24700-01	162.00	.5051	.8568	.6396	.9488	.3248-01	.2425-01	3.334	23.23	540.6
300	90.000	.91000-02	44.000	.1575	.2801	.2074	.9450	.1062-01	.7862-02	.9764	6.760	552.1
300	90.000	.11100-01	45.000	.4000	.7095	.5262	.9450	.2689-01	.1994-01	2.487	17.23	551.6
300	90.000	.13100-01	46.000	.5625	.9859	.7363	.9450	.3736-01	.2791-01	3.553	24.64	549.0
300	90.000	.17000-01	48.000	.5535	.9384	.7146	.9450	.3557-01	.2708-01	3.660	25.49	541.2
300	90.000	.20900-01	50.000	.4752	.7991	.6114	.9450	.3029-01	.2317-01	3.180	22.18	539.1
300	90.000	.24900-01	52.000	.3467	.5757	.4446	.9446	.2182-01	.1685-01	2.363	16.51	535.8
300	90.000	.26900-01	53.000	.4624	.7694	.5956	.9440	.2916-01	.2257-01	3.144	21.96	536.3
300	90.000	.28800-01	54.000	.4475	.7394	.5763	.9434	.2802-01	.2184-01	3.074	21.49	534.4
300	90.000	.32800-01	55.000	.3480	.5411	.4385	.9421	.2051-01	.1662-01	2.644	18.68	515.2
300	90.000	.36700-01	56.000	.3962	.6399	.5111	.9410	.2425-01	.1937-01	2.822	19.80	527.7
300	90.000	.40600-01	57.000	.3491	.5716	.4558	.9399	.2166-01	.1728-01	2.432	17.03	531.8
300	90.000	.48500-01	58.000	.3166	.5182	.4179	.9377	.1964-01	.1584-01	2.208	15.46	531.7
300	90.000	.56400-01	59.000	.2610	.4272	.3481	.9357	.1619-01	.1319-01	1.820	12.74	531.7
300	90.000	.76100-01	60.000	.1878	.3081	.2566	.9313	.1168-01	.9725-02	1.304	9.129	532.4
300	90.000	.95900-01	61.000	.1317	.2186	.1848	.9278	.8287-02	.7002-02	.8991	6.282	535.6
300	90.000	.11550	62.000	.1047	.1752	.1498	.9251	.6640-02	.5679-02	.7057	4.924	537.8
300	135.00	.19000-01	49.000	.4449	.7483	.5735	.9447	.2836-01	.2174-01	2.977	20.76	539.2
300	135.00	.22900-01	51.000	.4234	.7117	.5456	.9447	.2697-01	.2068-01	2.835	19.77	539.0
300	180.00	.91000-02	23.000	.3488	.5866	.4299	.9535	.2223-01	.1629-01	2.334	16.28	539.1
300	180.00	.11100-01	24.000	.6271	1.163	.7981	.9535	.4406-01	.3025-01	3.693	25.46	560.3
300	180.00	.13100-01	25.000	.5238	.9189	.6548	.9535	.3483-01	.2482-01	3.304	22.91	549.2
300	180.00	.15000-01	26.000	.4803	.8316	.5978	.9535	.3152-01	.2266-01	3.084	21.42	546.3
300	180.00	.17000-01	27.000	.5383	.9279	.6689	.9535	.3517-01	.2535-01	3.477	24.16	545.2
300	180.00	.19000-01	28.000	.5519	.9521	.6860	.9535	.3609-01	.2600-01	3.561	24.74	545.4
300	180.00	.20900-01	29.000	.5730	.9740	.7087	.9535	.3692-01	.2686-01	3.774	26.28	541.9
300	180.00	.28800-01	32.000	.4304	.8103	.6050	.9517	.3071-01	.2297-01	3.370	23.56	534.4
300	180.00	.32800-01	33.000	.4376	.7033	.5387	.9503	.2665-01	.2042-01	3.143	22.07	526.2
300	180.00	.36700-01	34.000	.3833	.6259	.4776	.9491	.2372-01	.1810-01	2.682	18.79	531.0
300	180.00	.48500-01	36.000	.3324	.5384	.4203	.9454	.2041-01	.1593-01	2.357	16.53	528.6
300	180.00	.56400-01	37.000	.3020	.4860	.3850	.9431	.1842-01	.1459-01	2.164	15.20	526.6
300	180.00	.76100-01	38.000	.2323	.3715	.3028	.9378	.1408-01	.1148-01	1.682	11.82	524.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
300	180.00	.35800-01	39.000	.1822	.2917	.2429	.9334	.1105-01	.9207-02	1.316	9.253	525.0
300	180.00	.11550	40.000	.1335	.2180	.1835	.9297	.8262-02	.6955-02	.9336	6.540	531.1
300	180.00	.18450	42.000	.5461-01	.8635-01	.7639-01	.9224	.3273-02	.2895-02	.4029	2.838	521.0
300	225.00	.22900-01	30.000	.5764	.9874	.6625	.9688	.3742-01	.2511-01	3.756	26.12	543.7
300	270.00	.91000-02	63.000	1.009	2.119	1.115	.9818	.8030-01	.4226-01	5.221	35.62	579.1
300	270.00	.11100-01	64.000	.9774	1.947	1.075	.9818	.7378-01	.4074-01	5.325	36.47	571.9
300	270.00	.13100-01	65.000	.9647	1.863	1.058	.9818	.7062-01	.4008-01	5.425	37.25	567.3
300	270.00	.17000-01	67.000	.7620	1.394	.8306	.9818	.5282-01	.3148-01	4.560	31.48	557.8
300	270.00	.20900-01	69.000	.6963	1.257	.7579	.9818	.4764-01	.2873-01	4.234	29.27	555.2
300	270.00	.24900-01	71.000	.6595	1.182	.7190	.9813	.4479-01	.2725-01	4.048	28.00	553.7
300	270.00	.28800-01	73.000	.5660	.9877	.6194	.9798	.3743-01	.2348-01	3.597	24.96	548.0
300	270.00	.36700-01	75.000	.5550	.9700	.6160	.9769	.3676-01	.2334-01	3.519	24.42	548.4
300	270.00	.48500-01	77.000	.4981	.8530	.5623	.9726	.3233-01	.2131-01	3.247	22.59	543.7
300	270.00	.56400-01	78.000	.4569	.7819	.5226	.9698	.2963-01	.1981-01	2.982	20.74	543.5
300	270.00	.95800-01	80.000	.3300	.5501	.3993	.9566	.2085-01	.1513-01	2.237	15.62	536.8
300	270.00	.11550	81.000	.2746	.4586	.3424	.9507	.1738-01	.1298-01	1.857	12.96	537.3
300	315.00	.19000-01	68.000	.6207	1.058	.6697	.9823	.4009-01	.2538-01	4.075	28.36	542.5
300	315.00	.22900-01	70.000	.5907	1.051	.6403	.9823	.3984-01	.2427-01	3.659	25.33	552.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K102)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
303	4.020	-5.021	8.980	63.02	714.7	.4042	168.9	61.02	2561.	.6460-02	.1359-06	3.784
304	4.020	-5.021	8.980	63.05	716.7	.4044	169.3	61.02	2564.	.6445-02	.1363-06	3.770
305	4.020	-5.013	8.980	62.98	719.7	.4039	170.1	61.06	2570.	.6410-02	.1368-06	3.742

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
303	.3790-01	.9518-02
304	.3793-01	.9533-02
305	.3793-01	.9564-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
304	.00000	.91000-02	1.0000	.7837	1.619	.9239	.9706	.6139-01	.3504-01	4.130	28.20	577.7
304	.00000	.15000-01	4.0000	.7656	1.507	.8951	.9706	.5715-01	.3395-01	4.230	28.99	571.0
304	.00000	.17000-01	5.0000	.7243	1.360	.8398	.9706	.5158-01	.3185-01	4.212	28.99	563.3
304	.00000	.19000-01	6.0000	.6843	1.276	.7924	.9706	.4840-01	.3000-01	4.011	27.62	562.1
304	.00000	.24900-01	9.0000	.5801	1.079	.6732	.9701	.4093-01	.2553-01	3.409	23.48	561.7
304	.00000	.26900-01	10.000	.5590	1.035	.6508	.9693	.3925-01	.2468-01	3.304	22.77	560.8
303	.00000	.32800-01	12.000	.5007	.9316	.5905	.9671	.3531-01	.2238-01	2.932	20.21	560.2
303	.00000	.36700-01	13.000	.4466	.8132	.5283	.9657	.3082-01	.2002-01	2.683	18.54	556.1
303	.00000	.40600-01	14.000	.4558	.8493	.5461	.9643	.3219-01	.2070-01	2.664	18.36	560.4
303	.00000	.48500-01	15.000	.3998	.7420	.4860	.9615	.2812-01	.1842-01	2.348	16.19	559.7
303	.00000	.56400-01	16.000	.3931	.7324	.4858	.9588	.2776-01	.1841-01	2.298	15.84	560.4
303	.00000	.76100-01	17.000	.3213	.5768	.4070	.9524	.2186-01	.1543-01	1.965	13.59	553.3
303	.00000	.95800-01	18.000	.6412-01	.1072	.8163-01	.9466	.4064-02	.3094-02	.4319	3.016	536.9
303	.00000	.11550	19.000	.2197	.3877	.2945	.9414	.1469-01	.1116-01	1.373	9.522	549.7
303	.00000	.16480	20.000	.1411	.2407	.1976	.9309	.9121-02	.7489-02	.9237	6.432	541.9
303	.00000	.21400	22.000	.8822-01	.1352	.1197	.9243	.5124-02	.4536-02	.6876	4.876	509.0
305	2.0000	.24700-01	165.00	.5402	.9234	.6183	.9696	.3503-01	.2345-01	3.553	24.68	546.3
304	9.0000	.15000-01	157.00	.6908	1.301	.8133	.9679	.4935-01	.3085-01	4.003	27.54	563.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K102)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
304	9.0000	.17600-01	158.00	.6682	1.262	.7870	.9679	.4785-01	.2985-01	3.861	26.55	564.3
305	9.8000	.24700-01	164.00	.5648	.9859	.6568	.9672	.3740-01	.2491-01	3.610	25.01	551.2
304	10.000	.22900-01	88.000	.5855	1.091	.6889	.9676	.4138-01	.2613-01	3.434	23.65	562.0
304	10.000	.26900-01	90.000	.5281	.9596	.6222	.9663	.3640-01	.2360-01	3.192	22.03	557.3
304	10.000	.34700-01	94.000	.4754	.8530	.5670	.9635	.3235-01	.2151-01	2.919	20.18	554.8
305	14.600	.44200-01	169.00	.4153	.6946	.4979	.9587	.2635-01	.1889-01	2.820	19.65	540.7
304	18.500	.44200-01	106.00	.4128	.7340	.5069	.9576	.2784-01	.1923-01	2.565	17.75	552.9
305	19.600	.62900-01	175.00	.3284	.5382	.4057	.9511	.2042-01	.1539-01	2.300	16.07	535.1
304	19.800	.40800-01	101.00	.4396	.7821	.5376	.9584	.2967-01	.2039-01	2.728	18.88	553.0
304	20.000	.24900-01	89.000	.5334	.9675	.6360	.9640	.3669-01	.2412-01	3.231	22.31	556.9
304	20.000	.28800-01	91.000	.4851	.8742	.5820	.9626	.3316-01	.2207-01	2.962	20.47	555.7
304	20.000	.32800-01	93.000	.4830	.8796	.5856	.9611	.3336-01	.2221-01	2.911	20.10	557.7
305	21.800	.82200-01	182.00	.5931-06	.6982-06	.6468-06	.9448	.2648-07	.2454-07	.1076-04	.8977-04	241.6
304	22.200	.62900-01	125.00	.3375	.5904	.4286	.9504	.2239-01	.1625-01	2.142	14.85	549.3
304	22.400	.44200-01	107.00	.4038	.7110	.4974	.9564	.2697-01	.1887-01	2.540	17.60	550.8
305	22.600	.10270	192.00	.2121	.3444	.2767	.9393	.1307-01	.1050-01	1.508	10.55	532.3
304	23.000	.42000-01	105.00	.4244	.7489	.5216	.9570	.2840-01	.1978-01	2.662	18.44	551.3
304	23.400	.59600-01	120.00	.3402	.5925	.4297	.9511	.2247-01	.1630-01	2.172	15.07	548.3
305	23.900	.21310	250.00	.6501-01	.9812-01	.8796-01	.9227	.3722-02	.3336-02	.5260	3.736	506.4
304	24.100	.82200-01	139.00	.2628	.4477	.3415	.9442	.1698-01	.1295-01	1.730	12.04	543.1
305	24.400	.19040	238.00	.8313-01	.1278	.1131	.9242	.4849-02	.4290-02	.6489	4.589	513.9
305	24.400	.12440	207.00	.1573	.2642	.2146	.9340	.1002-01	.8140-02	1.061	7.391	541.8
305	24.800	.16810	223.00	.9655-01	.1562	.1341	.9266	.5925-02	.5087-02	.6904	4.836	531.2
304	24.900	.62900-01	126.00	.3252	.5661	.4139	.9497	.2147-01	.1570-01	2.078	14.42	548.2
305	25.000	.79500-01	178.00	.2745	.4447	.3481	.9447	.1687-01	.1320-01	1.957	13.71	531.7
305	25.300	.10270	191.00	.2075	.3363	.2713	.9386	.1276-01	.1029-01	1.480	10.36	531.7
305	25.300	.10000+00	186.00	.2012	.3270	.2625	.9393	.1240-01	.9959-02	1.428	9.996	532.6
304	25.500	.60700-01	124.00	.3309	.5728	.4191	.9502	.2172-01	.1590-01	2.131	14.79	546.9
305	26.000	.12440	206.00	.1539	.2583	.2102	.9337	.9799-02	.7975-02	1.039	7.232	541.7
304	26.300	.82200-01	140.00	.2523	.4432	.3406	.9437	.1681-01	.1292-01	1.746	12.16	541.1
305	26.700	.12100	199.00	.1489	.2462	.2012	.9342	.9339-02	.7633-02	1.029	7.184	537.5
305	26.800	.16810	222.00	.9187-01	.1484	.1277	.9264	.5630-02	.4843-02	.6584	4.613	530.7
305	27.000	.19040	237.00	.7755-01	.1196	.1058	.9240	.4537-02	.4014-02	.6022	4.256	515.0
305	27.100	.21310	249.00	.6266-01	.9517-01	.8521-01	.9225	.3610-02	.3232-02	.5006	3.550	509.0
305	27.200	.80300-01	180.00	.2686	.4320	.3409	.9439	.1639-01	.1293-01	1.939	13.59	529.4
304	27.400	.40100-01	98.000	.4215	.7489	.5209	.9564	.2840-01	.1976-01	2.621	18.14	552.7
305	27.400	.16480	215.00	.8323-01	.1363	.1165	.9267	.5170-02	.4417-02	.5836	4.079	534.8
304	27.600	.41600-01	102.00	.4322	.7627	.5346	.9558	.2893-01	.2028-01	2.710	18.77	551.3
305	27.600	.12440	205.00	.1477	.2475	.2020	.9334	.9390-02	.7663-02	1.000	6.967	541.2
305	27.600	.18700	230.00	.8655-01	.1337	.1181	.9243	.5071-02	.4479-02	.6703	4.736	515.5
305	27.700	.21010	243.00	.6573-01	.1003	.8963-01	.9226	.3805-02	.3400-02	.5206	3.688	510.9
305	27.900	.10110	188.00	.2022	.3289	.2651	.9384	.1248-01	.1006-01	1.433	10.03	532.9
304	28.000	.46800-01	110.00	.3674	.6408	.4573	.9539	.2430-01	.1734-01	2.340	16.23	548.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K102)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
305	28.200	.16810	221.00	.9055-01	.1470	.1264	.9262	.5576-02	.4793-02	.6438	4.507	532.2
305	28.300	.19040	236.00	.7424-01	.1145	.1013	.9239	.4342-02	.3844-02	.5767	4.077	514.9
305	28.300	.12200	201.00	.1601	.2643	.2168	.9337	.1003-01	.8223-02	1.108	7.734	537.2
304	28.400	.53500-01	114.00	.3621	.6305	.4560	.9516	.2391-01	.1730-01	2.312	16.04	548.3
305	28.400	.21310	248.00	.6399-01	.9737-01	.8715-01	.9225	.3693-02	.3306-02	.5095	3.612	509.7
304	28.700	.58600-01	117.00	.3437	.5949	.4368	.9499	.2256-01	.1653-01	2.212	15.36	547.0
305	28.800	.16580	217.00	.8801-01	.1433	.1229	.9264	.5437-02	.4663-02	.6225	4.355	533.2
304	28.800	.60400-01	121.00	.3242	.5599	.4121	.9493	.2124-01	.1563-01	2.093	14.54	546.4
305	29.000	.21110	244.00	.6358-01	.9685-01	.8664-01	.9225	.3674-02	.3286-02	.5053	3.581	510.2
304	29.000	.65700-01	129.00	.3007	.5170	.3849	.9477	.1961-01	.1460-01	1.953	13.57	545.4
304	29.200	.72400-01	133.00	.2815	.4826	.3639	.9457	.1830-01	.1380-01	1.836	12.77	544.7
304	29.300	.79500-01	136.00	.2444	.4145	.3179	.9436	.1572-01	.1206-01	1.619	11.27	542.0
304	29.600	.92500-01	143.00	.2374	.4086	.3169	.9401	.1550-01	.1202-01	1.540	10.70	545.6
304	29.700	.10000+00	146.00	.1751	.2999	.2356	.9383	.1137-01	.8935-02	1.143	7.947	544.5
305	29.900	.12100	198.00	.1480	.2450	.2008	.9336	.9293-02	.7617-02	1.021	7.123	537.9
305	30.200	.16480	214.00	.8712-01	.1422	.1219	.9264	.5393-02	.4623-02	.6141	4.295	533.8
305	30.300	.21010	242.00	.6314-01	.9663-01	.8633-01	.9225	.3666-02	.3275-02	.4974	3.521	512.0
304	31.500	.11100-01	83.000	.6856	1.357	.8494	.9610	.5147-01	.3222-01	3.767	25.80	571.8
305	32.100	.21010	241.00	.5739-01	.8810-01	.7866-01	.9224	.3342-02	.2984-02	.4495	3.180	513.2
305	32.200	.16480	213.00	.8805-01	.1441	.1236	.9261	.5465-02	.4687-02	.6182	4.322	534.6
305	32.200	.17860	224.00	.8719-01	.1375	.1204	.9246	.5215-02	.4567-02	.6507	4.578	522.9
305	32.200	.18700	228.00	.6888-01	.1066	.9431-01	.9238	.4045-02	.3577-02	.5310	3.750	516.4
305	32.300	.12100	197.00	.1476	.2434	.2003	.9331	.9232-02	.7599-02	1.024	7.148	536.8
305	32.300	.12300	194.00	.1324	.2192	.1805	.9327	.8316-02	.6848-02	.9132	6.372	537.9
305	32.300	.12730	208.00	.1202	.2040	.1669	.9319	.7739-02	.6332-02	.7995	5.559	544.4
305	32.300	.13420	209.00	.1211	.2100	.1714	.9306	.7966-02	.6502-02	.7803	5.410	549.7
304	32.400	.10000+00	147.00	.1824	.3159	.2476	.9377	.1198-01	.9392-02	1.173	8.145	547.1
305	32.400	.10110	184.00	.1898	.3083	.2500	.9374	.1170-01	.9482-02	1.348	9.436	532.4
305	32.400	.10630	193.00	.1687	.2732	.2232	.9362	.1036-01	.8465-02	1.204	8.433	531.5
305	32.500	.85800-01	183.00	.2308	.3761	.2987	.9411	.1427-01	.1133-01	1.630	11.40	533.5
304	32.600	.79500-01	137.00	.2167	.3681	.2833	.9428	.1396-01	.1075-01	1.431	9.961	542.5
305	32.600	.80800-01	176.00	.2399	.3876	.3073	.9424	.1470-01	.1166-01	1.719	12.04	530.8
304	32.700	.67400-01	132.00	.2953	.5058	.3805	.9462	.1918-01	.1443-01	1.929	13.41	544.5
304	32.700	.72400-01	134.00	.2700	.4617	.3504	.9447	.1751-01	.1329-01	1.767	12.29	544.1
304	32.800	.65700-01	130.00	.3113	.5334	.4002	.9467	.2023-01	.1518-01	2.033	14.13	544.5
305	32.800	.16680	210.00	.9199-01	.1504	.1292	.9258	.5703-02	.4901-02	.6469	4.523	534.3
305	32.800	.18880	225.00	.6766-01	.1049	.9282-01	.9236	.3979-02	.3521-02	.5202	3.673	517.0
304	32.900	.58600-01	118.00	.3699	.6438	.4730	.9488	.2442-01	.1794-01	2.363	16.40	548.2
304	32.900	.60400-01	122.00	.3102	.5327	.3958	.9482	.2020-01	.1501-01	2.019	14.04	545.0
305	32.900	.61300-01	171.00	.3156	.5155	.3955	.9479	.1955-01	.1500-01	2.223	15.54	534.0
304	33.000	.53500-01	115.00	.3533	.6070	.4459	.9503	.2302-01	.1691-01	2.298	15.97	545.2
304	33.200	.48300-01	113.00	.3668	.6319	.4594	.9519	.2397-01	.1742-01	2.376	16.51	545.9
305	33.400	.42800-01	166.00	.3903	.6393	.4762	.9537	.2425-01	.1806-01	2.736	19.12	534.9

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K102)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
304	33.500	.40100-01	99.000	.4210	.7283	.5208	.9546	.2762-01	.1975-01	2.713	18.84	546.8
304	33.600	.38300-01	97.000	.4344	.7597	.5376	.9552	.2881-01	.2039-01	2.757	19.12	549.3
304	33.700	.36700-01	96.000	.4475	.7914	.5542	.9557	.3002-01	.2102-01	2.799	19.38	551.8
304	33.900	.33800-01	95.000	.4578	.8128	.5648	.9566	.3083-01	.2142-01	2.849	19.72	552.6
305	34.700	.21010	240.00	.5479-01	.8436-01	.7529-01	.9223	.3200-02	.2856-02	.4267	3.016	514.4
305	34.700	.18700	227.00	.7217-01	.1113	.9867-01	.9236	.4223-02	.3743-02	.5602	3.959	515.0
305	34.900	.16480	212.00	.8842-01	.1453	.1246	.9258	.5512-02	.4728-02	.6166	4.308	535.8
304	35.100	.10000+00	148.00	.1823	.3165	.2487	.9371	.1200-01	.9431-02	1.169	8.113	547.6
305	35.200	.23900-01	161.00	.5739	1.010	.6943	.9598	.3829-01	.2634-01	3.631	25.13	552.9
304	35.300	.92500-01	145.00	.2012	.3473	.2710	.9388	.1317-01	.1028-01	1.300	9.032	546.3
304	35.300	.22100-01	160.00	.4671	.8716	.5739	.9599	.3306-01	.2177-01	2.736	18.84	562.2
305	35.400	.18800	231.00	.6695-01	.1044	.9229-01	.9235	.3962-02	.3501-02	.5092	3.590	519.2
305	35.500	.12100	196.00	.1434	.2377	.1959	.9325	.9017-02	.7430-02	.9875	6.889	538.2
305	35.600	.16580	216.00	.8298-01	.1360	.1169	.9256	.5158-02	.4434-02	.5813	4.063	535.0
304	35.800	.80600-01	138.00	.2250	.3803	.2953	.9417	.1442-01	.1120-01	1.498	10.44	541.1
305	35.900	.21310	247.00	.4758-01	.7322-01	.6540-01	.9222	.2778-02	.2481-02	.3709	2.622	514.2
305	36.000	.19040	235.00	.6900-01	.1077	.9526-01	.9233	.4086-02	.3614-02	.5241	3.695	519.4
305	36.200	.16810	220.00	.8819-01	.1438	.1240	.9253	.5454-02	.4705-02	.6229	4.357	533.5
304	36.200	.72400-01	135.00	.2713	.4524	.3500	.9439	.1716-01	.1327-01	1.843	12.86	537.6
305	36.300	.12200	200.00	.1390	.2309	.1904	.9322	.8758-02	.7224-02	.9538	6.653	538.8
304	36.600	.65700-01	131.00	.2691	.4635	.3485	.9457	.1758-01	.1322-01	1.745	12.12	545.7
305	36.700	.18700	226.00	.6672-01	.1039	.9188-01	.9235	.3941-02	.3485-02	.5089	3.590	518.6
305	36.900	.16480	211.00	.8681-01	.1431	.1228	.9255	.5428-02	.4657-02	.6025	4.207	536.7
305	36.900	.10110	187.00	.1959	.3203	.2602	.9364	.1215-01	.9869-02	1.378	9.635	534.3
304	37.000	.60400-01	123.00	.3150	.5426	.4048	.9471	.2058-01	.1535-01	2.042	14.18	545.8
305	37.000	.12440	204.00	.1383	.2297	.1901	.9316	.8714-02	.7209-02	.9485	6.615	538.9
304	37.100	.58500-01	119.00	.3332	.5747	.4272	.9476	.2180-01	.1620-01	2.156	14.98	546.1
305	37.200	.21310	246.00	.4702-01	.7245-01	.6470-01	.9222	.2748-02	.2454-02	.3657	2.585	514.5
305	37.600	.16810	219.00	.8610-01	.1406	.1213	.9251	.5332-02	.4602-02	.6066	4.243	533.9
304	37.800	.10270	150.00	.1717	.2982	.2359	.9359	.1131-01	.8946-02	1.100	7.634	547.7
305	37.900	.12100	195.00	.1412	.2319	.1923	.9320	.8796-02	.7294-02	.9855	6.886	535.7
305	38.000	.80300-01	179.00	.2463	.3968	.3169	.9413	.1505-01	.1202-01	1.773	12.42	529.9
304	38.500	.46800-01	112.00	.3722	.6404	.4684	.9510	.2429-01	.1777-01	2.416	16.79	545.5
305	38.600	.12440	203.00	.1336	.2219	.1839	.9313	.8419-02	.6975-02	.9159	6.388	538.9
305	38.700	.10000+00	185.00	.1906	.3105	.2528	.9363	.1178-01	.9591-02	1.348	9.430	533.3
304	38.900	.82200-01	141.00	.2308	.3947	.3064	.9406	.1497-01	.1162-01	1.510	10.50	544.1
304	39.300	.41600-01	104.00	.3982	.6946	.4996	.9525	.2634-01	.1895-01	2.537	17.60	548.7
305	39.500	.10270	190.00	.1891	.3082	.2519	.9355	.1169-01	.9555-02	1.336	9.345	533.4
305	39.600	.16810	218.00	.8026-01	.1312	.1133	.9249	.4976-02	.4298-02	.5644	3.946	534.3
305	39.900	.19040	233.00	.5966-01	.9335-01	.8261-01	.9230	.3541-02	.3134-02	.4512	3.179	520.3
305	40.100	.79500-01	177.00	.2430	.3910	.3129	.9410	.1483-01	.1187-01	1.752	12.28	529.6
305	40.200	.12440	202.00	.1312	.2185	.1812	.9310	.8289-02	.6872-02	.8965	6.250	539.5
305	40.300	.21310	245.00	.4542-01	.7014-01	.6261-01	.9221	.2660-02	.2375-02	.3519	2.486	515.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K102)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
304	41.100	.82200-01	142.00	.2427	.4158	.3234	.9400	.1577-01	.1227-01	1.584	11.01	544.5
305	41.100	.60700-01	173.00	.3075	.5007	.3885	.9460	.1899-01	.1474-01	2.175	15.22	533.2
305	42.300	.10270	189.00	.5931-06	.6982-06	.6575-06	.9349	.2648-07	.2494-07	.1076-04	.8977-04	241.6
305	42.600	.59600-01	172.00	.3178	.5195	.4023	.9459	.1971-01	.1526-01	2.234	15.62	534.3
305	43.200	.42000-01	168.00	.3604	.5882	.4443	.9513	.2231-01	.1685-01	2.540	17.77	533.8
305	43.400	.82200-01	181.00	.2677	.4372	.3497	.9395	.1658-01	.1327-01	1.885	13.19	534.0
304	43.600	.62900-01	128.00	.2435	.4150	.3156	.9447	.1574-01	.1197-01	1.602	11.15	543.2
304	45.000	.22900-01	8.0000	.7310	1.410	.9211	.9572	.5348-01	.3493-01	4.126	28.32	567.9
305	46.100	.62900-01	174.00	.2911	.4735	.3710	.9441	.1796-01	.1407-01	2.063	14.43	532.8
305	47.700	.40800-01	167.00	.4043	.6662	.5020	.9505	.2527-01	.1904-01	2.807	19.60	536.6
304	48.400	.44200-01	109.00	.3697	.6344	.4691	.9492	.2406-01	.1779-01	2.408	16.74	544.9
305	53.200	.24700-01	163.00	.5663	.9659	.6972	.9546	.3664-01	.2645-01	3.736	25.96	545.7
305	65.200	.24700-01	162.00	.5443	.9208	.6778	.9518	.3493-01	.2571-01	3.633	25.27	543.7
303	90.000	.91000-02	44.000	.1339	.2571	.1783	.9481	.9744-02	.6757-02	.7573	5.205	565.5
303	90.000	.11100-01	45.000	.3733	.7193	.4976	.9481	.2726-01	.1886-01	2.102	14.45	566.1
303	90.000	.13100-01	46.000	.6415	1.234	.8544	.9481	.4676-01	.3238-01	3.620	24.87	565.8
303	90.000	.17000-01	48.000	.4919	.9033	.6442	.9481	.3423-01	.2442-01	2.926	20.20	557.7
303	90.000	.20900-01	50.000	.5387	.9805	.7032	.9481	.3716-01	.2665-01	3.239	22.37	556.1
303	90.000	.24900-01	52.000	.4701	.8419	.6115	.9476	.3191-01	.2318-01	2.883	19.95	552.9
303	90.000	.26900-01	53.000	.4838	.8608	.6301	.9470	.3262-01	.2388-01	2.992	20.72	551.5
303	90.000	.28800-01	54.000	.4755	.8384	.6194	.9463	.3178-01	.2347-01	2.976	20.63	549.6
303	90.000	.32800-01	55.000	.3716	.6054	.4717	.9451	.2294-01	.1788-01	2.606	18.27	529.6
303	90.000	.36700-01	56.000	.4116	.7005	.5357	.9438	.2655-01	.2030-01	2.703	18.83	541.4
303	90.000	.40600-01	57.000	.3776	.6541	.4985	.9426	.2479-01	.1889-01	2.420	16.81	545.6
303	90.000	.48500-01	58.000	.3240	.5548	.4309	.9404	.2103-01	.1633-01	2.109	14.68	542.9
303	90.000	.56400-01	59.000	.2894	.4929	.3885	.9382	.1868-01	.1472-01	1.898	13.22	541.6
303	90.000	.76100-01	60.000	.2124	.3627	.2932	.9335	.1375-01	.1111-01	1.388	9.666	542.2
303	90.000	.95800-01	61.000	.1452	.2507	.2063	.9296	.9500-02	.7819-02	.9340	6.493	544.9
303	90.000	.11550	62.000	.1142	.1969	.1652	.9265	.7461-02	.6260-02	.7373	5.127	544.4
303	135.00	.19000-01	49.000	.5061	.9197	.6649	.9469	.3486-01	.2520-01	3.048	21.06	555.8
303	135.00	.22900-01	51.000	.4745	.8567	.6219	.9469	.3247-01	.2357-01	2.881	19.92	554.5
303	180.00	.91000-02	23.000	.2896	.5159	.3631	.9538	.1955-01	.1376-01	1.788	12.38	551.7
303	180.00	.11100-01	24.000	.5416	1.083	.7040	.9538	.4104-01	.2668-01	2.935	20.10	571.7
303	180.00	.13100-01	25.000	.5655	1.072	.7232	.9538	.4062-01	.2741-01	3.242	22.31	563.4
303	180.00	.15000-01	26.000	.5162	.9598	.6562	.9538	.3637-01	.2487-01	3.025	20.86	560.0
303	180.00	.17000-01	27.000	.5134	.9425	.6500	.9538	.3572-01	.2463-01	3.054	21.08	557.7
303	180.00	.19000-01	28.000	.5410	.9936	.6850	.9538	.3766-01	.2596-01	3.217	22.20	557.8
303	180.00	.20900-01	29.000	.5487	.9951	.6920	.9538	.3772-01	.2623-01	3.313	22.90	555.4
303	180.00	.28800-01	32.000	.5031	.8826	.6339	.9520	.3345-01	.2403-01	3.170	21.99	548.4
303	180.00	.32800-01	33.000	.4603	.7801	.5770	.9507	.2956-01	.2187-01	3.041	21.19	540.3
303	180.00	.36700-01	34.000	.4189	.7214	.5318	.9494	.2734-01	.2016-01	2.705	18.81	544.3
303	180.00	.48500-01	36.000	.3416	.5790	.4396	.9456	.2194-01	.1666-01	2.257	15.73	540.4
303	180.00	.56400-01	37.000	.3172	.5316	.4113	.9433	.2015-01	.1559-01	2.131	14.87	537.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
303	180.00	.76100-01	38.000	.2394	.3935	.3162	.9380	.1491-01	.1198-01	1.657	11.60	532.1
303	180.00	.95800-01	39.000	.1920	.3117	.2578	.9335	.1181-01	.9771-02	1.354	9.496	528.6
303	180.00	.11550	40.000	.1439	.2361	.1983	.9298	.8948-02	.7516-02	.9988	6.994	531.6
303	180.00	.18450	42.000	.5596-01	.8946-01	.7887-01	.9224	.3391-02	.2989-02	.4048	2.847	523.8
303	225.00	.22900-01	30.000	.5928	1.093	.6995	.9667	.4142-01	.2651-01	3.509	24.21	558.5
303	270.00	.91000-02	63.000	.9436	2.165	1.075	.9783	.8205-01	.4075-01	4.530	30.76	588.0
303	270.00	.11100-01	64.000	.9019	1.954	1.021	.9783	.7405-01	.3870-01	4.537	30.91	581.9
303	270.00	.13100-01	65.000	.8740	1.848	.9870	.9783	.7005-01	.3741-01	4.491	30.64	579.1
303	270.00	.17000-01	67.000	.8923	1.792	1.001	.9783	.6791-01	.3795-01	4.814	32.96	572.3
303	270.00	.20900-01	69.000	.6962	1.378	.7800	.9783	.5224-01	.2956-01	3.810	26.12	570.3
303	270.00	.24900-01	71.000	.6806	1.335	.7638	.9778	.5059-01	.2895-01	3.762	25.81	568.8
303	270.00	.28800-01	73.000	.6092	1.164	.6867	.9763	.4410-01	.2603-01	3.462	23.81	564.7
303	270.00	.36700-01	75.000	.5369	1.030	.6154	.9734	.3903-01	.2332-01	3.037	20.88	565.4
303	270.00	.48500-01	77.000	.4891	.9221	.5723	.9690	.3495-01	.2169-01	2.821	19.42	562.5
303	270.00	.56400-01	78.000	.4691	.8890	.5581	.9662	.3369-01	.2115-01	2.690	18.51	563.4
303	270.00	.95800-01	80.000	.2892	.5531	.3721	.9533	.2096-01	.1410-01	1.641	11.29	564.9
303	270.00	.11550	81.000	.2466	.4665	.3276	.9475	.1768-01	.1242-01	1.417	9.749	563.1
303	315.00	.19000-01	68.000	.6239	1.160	.6872	.9801	.4398-01	.2605-01	3.655	25.20	560.1
303	315.00	.22900-01	70.000	.7001	1.376	.7760	.9801	.5215-01	.2941-01	3.860	26.47	569.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
325	3.010	-5.027	6.008	36.05	715.7	.9668	254.5	50.22	2354.	.1025-01	.2034-06	3.688
326	3.010	-5.023	6.004	35.95	715.7	.9640	254.5	50.22	2354.	.1022-01	.2034-06	3.677
327	3.010	-5.023	6.004	35.95	715.7	.9640	254.5	50.22	2354.	.1022-01	.2034-06	3.677

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.7275
325	.4387-01	.7551-02
326	.4381-01	.7562-02
327	.4381-01	.7562-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
326	.00000	.91000-02	1.0000	.7908	2.230	.9060	.9803	.9770-01	.3969-01	3.841	25.85	604.8
326	.00000	.15000-01	4.0000	.7798	2.008	.8867	.9803	.8797-01	.3885-01	3.997	26.99	598.7
326	.00000	.17000-01	5.0000	.7516	1.778	.8481	.9603	.7787-01	.3715-01	4.083	27.67	591.7
326	.00000	.19000-01	6.0000	.7206	1.660	.8111	.9803	.7272-01	.3553-01	3.992	27.09	589.2
326	.00000	.24900-01	9.0000	.6458	1.457	.7277	.9798	.6385-01	.3188-01	3.635	24.69	587.2
326	.00000	.26900-01	10.000	.6160	1.367	.6964	.9790	.5988-01	.3051-01	3.516	23.91	585.4
325	.00000	.32800-01	12.000	.5468	1.126	.6212	.9767	.4941-01	.2725-01	3.337	22.80	576.6
325	.00000	.36700-01	13.000	.4983	.9824	.5674	.9753	.4310-01	.2489-01	3.175	21.76	570.4
325	.00000	.40600-01	14.000	.5235	1.071	.6044	.9738	.4700-01	.2651-01	3.214	21.97	575.7
325	.00000	.48500-01	15.000	.4685	.9326	.5476	.9710	.4091-01	.2402-01	2.956	20.25	571.8
325	.00000	.56400-01	16.000	.4608	.9191	.5475	.9682	.4032-01	.2402-01	2.902	19.87	572.1
325	.00000	.76100-01	17.000	.3832	.7232	.4669	.9619	.3173-01	.2048-01	2.559	17.61	563.5
325	.00000	.95800-01	18.000	.6445-01	.1099	.7871-01	.9562	.4820-02	.3453-02	.4895	3.407	542.5
325	.00000	.11550	19.000	.2657	.5021	.3450	.9511	.2203-01	.1514-01	1.771	12.18	563.7
325	.00000	.16480	20.000	.1813	.3274	.2453	.9415	.1436-01	.1076-01	1.276	8.818	555.3
325	.00000	.21400	22.000	.1212	.1992	.1617	.9361	.8739-02	.7092-02	.9724	6.805	532.8
327	2.0000	.24700-01	165.00	.6000	1.259	.6723	.9794	.5514-01	.2945-01	3.594	24.53	578.9
326	9.0000	.15000-01	157.00	.7215	1.709	.8244	.9784	.7485-01	.3612-01	3.916	26.53	591.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

(R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
326	9.0000	.17600-01	158.00	.7028	1.651	.8024	.9784	.7232-01	.3515-01	3.837	26.01	591.0
327	9.8000	.24700-01	164.00	.6283	1.390	.7154	.9778	.6091-01	.3134-01	3.593	24.44	585.1
326	10.000	.22900-01	88.000	.6347	1.437	.7228	.9782	.6297-01	.3167-01	3.563	24.20	587.5
326	10.000	.26900-01	90.000	.5988	1.294	.6837	.9769	.5668-01	.2995-01	3.495	23.80	582.4
326	10.000	.34700-01	94.000	.5410	1.171	.6292	.9739	.5129-01	.2756-01	3.153	21.47	582.6
327	14.600	.44200-01	169.00	.4817	.9619	.5682	.9695	.4214-01	.2489-01	3.025	20.72	572.3
326	18.500	.44200-01	106.00	.4807	.9837	.5725	.9686	.4309-01	.2508-01	2.947	20.15	575.7
327	19.600	.62900-01	175.00	.3893	.7403	.4743	.9622	.3243-01	.2078-01	2.575	17.70	564.7
326	19.800	.40800-01	101.00	.4997	1.030	.5926	.9696	.4512-01	.2596-01	3.043	20.79	576.6
326	20.000	.24900-01	89.000	.5816	1.256	.6702	.9754	.5502-01	.2936-01	3.396	23.13	582.4
326	20.000	.28800-01	91.000	.5684	1.220	.6605	.9739	.5343-01	.2893-01	3.338	22.74	581.6
326	20.000	.32800-01	93.000	.5576	1.209	.6550	.9724	.5297-01	.2869-01	3.244	22.09	582.9
326	22.200	.62900-01	125.00	.3966	.7923	.4905	.9617	.3471-01	.2149-01	2.489	17.04	572.4
326	22.400	.44200-01	107.00	.4616	.9311	.5512	.9678	.4079-01	.2415-01	2.871	19.64	573.7
327	22.600	.10270	192.00	.2595	.4845	.3367	.9506	.2123-01	.1475-01	1.752	12.07	561.6
326	23.000	.42000-01	105.00	.4761	.9665	.5670	.9684	.4234-01	.2484-01	2.942	20.12	574.6
326	23.400	.59600-01	120.00	.4119	.8100	.5052	.9624	.3549-01	.2213-01	2.628	18.02	570.0
327	23.900	.21310	250.00	.1000	.1655	.1345	.9352	.7249-02	.5892-02	.7931	5.544	534.7
326	24.100	.82200-01	139.00	.3201	.6077	.4052	.9556	.2662-01	.1775-01	2.120	14.59	564.5
327	24.400	.19040	238.00	.1196	.2021	.1614	.9366	.8854-02	.7071-02	.9194	6.407	540.3
327	24.400	.12440	207.00	.2069	.3938	.2789	.9456	.1725-01	.1222-01	1.367	9.401	564.8
327	24.800	.16810	223.00	.1453	.2583	.1985	.9388	.1132-01	.8694-02	1.041	7.207	552.1
326	24.900	.62900-01	126.00	.3953	.7846	.4899	.9611	.3437-01	.2146-01	2.498	17.11	571.4
327	25.000	.79500-01	178.00	.3403	.6373	.4276	.9562	.2792-01	.1873-01	2.290	15.77	562.1
327	25.300	.10270	191.00	.2569	.4767	.3335	.9502	.2088-01	.1461-01	1.747	12.04	560.4
327	25.300	.10000+00	186.00	.2771	.5180	.3593	.9508	.2269-01	.1574-01	1.869	12.87	561.8
326	25.500	.60700-01	124.00	.4009	.7828	.4932	.9616	.3429-01	.2161-01	2.577	17.68	569.0
327	26.000	.12440	206.00	.2034	.3859	.2742	.9454	.1691-01	.1201-01	1.348	9.270	564.4
326	26.300	.82200-01	140.00	.3043	.5695	.3845	.9552	.2495-01	.1684-01	2.048	14.10	562.0
327	26.700	.12100	199.00	.2014	.3734	.2681	.9460	.1636-01	.1175-01	1.371	9.450	560.3
327	26.800	.16810	222.00	.1421	.2518	.1940	.9386	.1103-01	.8497-02	1.022	7.079	551.4
327	27.000	.19040	237.00	.1168	.1981	.1580	.9364	.8680-02	.6924-02	.8921	6.213	541.3
327	27.100	.21310	249.00	.9838-01	.1635	.1327	.9351	.7162-02	.5812-02	.7746	5.411	536.0
327	27.200	.80300-01	180.00	.3305	.6097	.4150	.9555	.2671-01	.1818-01	2.262	15.60	559.4
326	27.400	.40100-01	98.000	.4776	.9928	.5724	.9681	.4349-01	.2507-01	2.885	19.70	577.8
327	27.400	.16480	215.00	.1390	.2509	.1911	.9389	.1099-01	.8370-02	.9772	6.754	555.2
326	27.600	.41600-01	102.00	.4692	.9630	.5630	.9675	.4219-01	.2466-01	2.869	19.61	576.1
327	27.600	.12440	205.00	.1957	.3697	.2637	.9452	.1619-01	.1155-01	1.303	8.966	563.6
327	27.600	.18700	230.00	.1103	.1865	.1488	.9367	.8171-02	.6519-02	.8461	5.896	540.6
327	27.700	.21010	243.00	.1003	.1684	.1359	.9352	.7379-02	.5954-02	.7765	5.415	538.9
327	27.900	.10110	188.00	.2528	.4712	.3288	.9501	.2064-01	.1440-01	1.710	11.78	561.3
326	28.000	.46800-01	110.00	.4222	.8360	.5087	.9656	.3662-01	.2229-01	2.674	18.33	571.1
327	28.200	.16810	221.00	.1363	.2442	.1872	.9385	.1070-01	.8202-02	.9678	6.695	553.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
327	28.300	.19040	236.00	.1112	.1884	.1504	.9364	.8252-02	.6588-02	.8504	5.924	541.0
327	28.300	.12200	201.00	.2070	.3846	.2765	.9455	.1685-01	.1211-01	1.405	9.683	560.7
326	28.400	.53500-01	114.00	.4197	.8280	.5124	.9633	.3627-01	.2245-01	2.668	18.29	570.5
327	28.400	.21310	248.00	.9236-01	.1541	.1248	.9351	.6751-02	.5469-02	.7228	5.046	537.0
326	28.700	.58600-01	117.00	.4185	.8198	.5153	.9616	.3591-01	.2257-01	2.680	18.38	569.5
327	28.800	.16580	217.00	.1354	.2430	.1859	.9387	.1064-01	.8143-02	.9594	6.636	554.0
326	28.800	.60400-01	121.00	.3978	.7754	.4909	.9610	.3397-01	.2151-01	2.561	17.57	568.7
327	29.000	.21110	244.00	.9509-01	.1589	.1286	.9351	.6963-02	.5634-02	.7421	5.180	537.5
326	29.000	.65700-01	129.00	.3743	.7267	.4661	.9594	.3183-01	.2042-01	2.420	16.61	568.1
326	29.200	.72400-01	133.00	.3522	.6783	.4430	.9574	.2972-01	.1940-01	2.296	15.77	566.8
326	29.300	.79500-01	136.00	.3085	.5799	.3900	.9554	.2540-01	.1708-01	2.066	14.22	562.8
326	29.600	.92500-01	143.00	.3004	.5757	.3901	.9519	.2522-01	.1709-01	1.969	13.53	566.0
326	29.700	.10000+00	146.00	.2396	.4513	.3129	.9501	.1977-01	.1371-01	1.602	11.02	563.1
327	29.900	.12100	198.00	.1945	.3616	.2599	.9455	.1584-01	.1139-01	1.319	9.088	560.8
327	30.200	.16480	214.00	.1318	.2369	.1811	.9387	.1038-01	.7934-02	.9316	6.442	554.4
327	30.200	.18700	229.00	.1126	.1901	.1519	.9365	.8330-02	.6655-02	.8649	6.028	540.3
327	30.300	.21010	242.00	.9385-01	.1579	.1274	.9351	.6918-02	.5580-02	.7253	5.057	539.3
326	31.500	.11100-01	83.000	.7590	1.943	.9072	.9732	.8512-01	.3974-01	3.905	26.37	598.2
327	32.100	.21010	241.00	.8769-01	.1479	.1192	.9351	.6478-02	.5222-02	.6755	4.709	539.8
327	32.200	.16480	213.00	.1343	.2425	.1851	.9385	.1062-01	.8110-02	.9439	6.524	555.3
327	32.200	.17860	224.00	.1244	.2149	.1693	.9371	.9416-02	.7416-02	.9267	6.439	545.7
327	32.200	.18700	228.00	.1019	.1719	.1376	.9364	.7533-02	.6026-02	.7844	5.468	540.0
327	32.300	.12100	197.00	.2008	.3708	.2682	.9452	.1624-01	.1175-01	1.373	9.471	559.5
327	32.300	.12300	194.00	.1844	.3411	.2471	.9448	.1494-01	.1083-01	1.259	8.679	559.9
327	32.300	.12730	208.00	.1811	.3474	.2475	.9440	.1522-01	.1084-01	1.187	8.154	566.1
327	32.300	.13420	209.00	.1646	.3228	.2287	.9428	.1414-01	.1002-01	1.053	7.222	569.6
326	32.400	.10000+00	147.00	.2409	.4562	.3161	.9496	.1999-01	.1385-01	1.600	11.01	564.0
327	32.400	.10110	184.00	.2443	.4514	.3182	.9493	.1977-01	.1394-01	1.670	11.51	559.7
327	32.400	.10630	193.00	.2291	.4192	.2995	.9482	.1836-01	.1312-01	1.583	10.93	557.9
327	32.500	.85800-01	183.00	.2951	.5541	.3780	.9531	.2427-01	.1656-01	1.980	13.63	562.5
326	32.600	.79500-01	137.00	.2621	.4936	.3327	.9547	.2162-01	.1458-01	1.752	12.05	563.1
327	32.600	.80800-01	176.00	.3063	.5660	.3874	.9544	.2479-01	.1697-01	2.093	14.43	559.7
326	32.700	.67400-01	132.00	.3688	.7111	.4619	.9581	.3115-01	.2024-01	2.402	16.50	567.0
326	32.700	.72400-01	134.00	.3564	.6855	.4500	.9567	.3003-01	.1971-01	2.327	15.98	566.6
326	32.800	.65700-01	130.00	.3730	.7210	.4662	.9586	.3159-01	.2042-01	2.423	16.64	567.4
327	32.800	.16680	210.00	.1359	.2455	.1877	.9382	.1075-01	.8222-02	.9550	6.600	555.3
327	32.800	.18880	225.00	.1104	.1877	.1497	.9362	.8221-02	.6557-02	.8399	5.848	541.9
326	32.900	.58600-01	118.00	.4542	.9007	.5640	.9607	.3946-01	.2471-01	2.873	19.68	571.3
326	32.900	.60400-01	122.00	.3815	.7434	.4732	.9602	.3257-01	.2073-01	2.457	16.86	568.7
327	32.900	.61300-01	171.00	.3893	.7376	.4802	.9599	.3231-01	.2104-01	2.585	17.78	564.1
326	33.000	.53500-01	115.00	.4199	.8142	.5136	.9623	.3567-01	.2250-01	2.719	18.66	567.9
326	33.200	.48300-01	113.00	.4213	.8197	.5107	.9640	.3591-01	.2237-01	2.718	18.65	568.4
327	33.400	.42800-01	166.00	.4547	.8811	.5450	.9658	.3860-01	.2387-01	2.946	20.23	567.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
326	33.500	.40100-01	99.000	.4786	.9557	.5740	.9667	.4187-01	.2515-01	3.006	20.58	572.3
326	33.600	.38300-01	97.000	.4995	1.021	.5997	.9673	.4474-01	.2627-01	3.065	20.95	575.6
326	33.700	.36700-01	96.000	.5205	1.089	.6255	.9678	.4770-01	.2740-01	3.127	21.34	578.6
326	33.900	.33800-01	95.000	.5466	1.159	.6544	.9688	.5078-01	.2867-01	3.243	22.11	580.2
327	34.700	.21010	240.00	.8180-01	.1385	.1115	.9350	.6066-02	.4883-02	.6267	4.366	540.8
327	34.700	.18700	227.00	.1029	.1730	.1387	.9362	.7579-02	.6078-02	.7960	5.551	539.1
327	34.900	.16480	212.00	.1333	.2426	.1847	.9383	.1063-01	.8091-02	.9284	6.412	556.7
326	35.100	.10000+00	148.00	.2500	.4749	.3293	.9491	.2080-01	.1443-01	1.655	11.38	564.5
327	35.200	.23900-01	161.00	.6389	1.456	.7570	.9722	.6376-01	.3316-01	3.570	24.24	588.1
326	35.300	.92500-01	145.00	.2725	.5201	.3556	.9509	.2279-01	.1558-01	1.794	12.33	565.4
326	35.300	.22100-01	160.00	.5211	1.209	.6186	.9723	.5297-01	.2710-01	2.871	19.47	589.9
327	35.400	.18800	231.00	.1103	.1891	.1503	.9361	.8283-02	.6585-02	.8306	5.777	543.8
327	35.500	.12100	196.00	.1896	.3521	.2546	.9447	.1542-01	.1115-01	1.288	8.876	560.6
327	35.600	.16580	216.00	.1373	.2492	.1902	.9381	.1091-01	.8330-02	.9590	6.625	556.2
326	35.800	.80600-01	138.00	.2944	.5478	.3744	.9538	.2400-01	.1640-01	1.995	13.75	561.0
327	35.900	.21310	247.00	.8119-01	.1373	.1106	.9348	.6014-02	.4847-02	.6230	4.341	540.5
327	36.000	.19040	235.00	.1081	.1859	.1477	.9359	.8142-02	.6470-02	.8100	5.631	544.6
327	36.200	.16810	220.00	.1317	.2371	.1821	.9378	.1039-01	.7977-02	.9294	6.426	554.6
326	36.200	.72400-01	135.00	.3377	.6200	.4223	.9560	.2716-01	.1850-01	2.325	16.04	558.5
327	36.300	.12200	200.00	.1852	.3439	.2491	.9444	.1507-01	.1091-01	1.259	8.675	560.6
326	36.600	.65700-01	131.00	.3439	.6711	.4329	.9578	.2940-01	.1897-01	2.212	15.17	568.9
327	36.700	.18700	226.00	.1028	.1748	.1395	.9361	.7657-02	.6111-02	.7826	5.449	541.9
327	36.900	.16480	211.00	.1318	.2406	.1830	.9381	.1054-01	.8019-02	.9130	6.303	557.5
327	36.900	.10110	187.00	.2514	.4683	.3300	.9486	.2051-01	.1446-01	1.702	11.73	561.1
326	37.000	.60400-01	123.00	.3874	.7601	.4839	.9593	.3330-01	.2120-01	2.477	16.99	569.7
327	37.000	.12440	204.00	.1827	.3383	.2463	.9439	.1482-01	.1079-01	1.246	8.587	560.0
326	37.100	.58500-01	119.00	.4007	.7625	.4983	.9599	.3428-01	.2183-01	2.575	17.66	569.0
327	37.200	.21310	246.00	.7937-01	.1344	.1083	.9348	.5888-02	.4743-02	.6076	4.233	540.9
327	37.600	.16810	219.00	.1301	.2346	.1801	.9377	.1028-01	.7891-02	.9161	6.333	555.0
326	37.800	.10270	150.00	.2326	.4395	.3078	.9481	.1925-01	.1348-01	1.549	10.66	563.7
327	37.900	.12100	195.00	.1869	.3404	.2495	.9444	.1491-01	.1093-01	1.300	8.977	556.9
327	38.000	.80300-01	179.00	.3097	.5677	.3927	.9535	.2487-01	.1720-01	2.136	14.74	558.2
326	38.500	.46800-01	112.00	.4286	.8367	.5220	.9633	.3665-01	.2287-01	2.755	18.90	568.9
327	38.600	.12440	203.00	.1823	.3370	.2459	.9437	.1476-01	.1077-01	1.245	8.584	559.8
327	38.700	.10000+00	185.00	.2425	.4477	.3173	.9486	.1961-01	.1390-01	1.659	11.44	559.5
326	38.900	.82200-01	141.00	.2932	.5552	.3771	.9528	.2432-01	.1652-01	1.947	13.40	564.0
326	39.300	.41600-01	104.00	.4726	.9653	.5758	.9649	.4229-01	.2522-01	2.903	19.85	575.4
327	39.500	.10270	190.00	.2470	.4555	.3245	.9478	.1995-01	.1422-01	1.692	11.67	559.3
327	39.600	.16810	218.00	.1191	.2153	.1653	.9375	.9432-02	.7239-02	.8362	5.779	555.4
327	39.900	.19040	233.00	.9804-01	.1685	.1341	.9357	.7382-02	.5873-02	.7351	5.111	544.5
327	40.100	.79500-01	177.00	.3099	.5656	.3928	.9533	.2478-01	.1721-01	2.148	14.83	557.4
327	40.200	.12440	202.00	.1798	.3336	.2432	.9434	.1461-01	.1065-01	1.223	8.431	560.4
327	40.300	.21310	245.00	.7937-01	.1347	.1084	.9347	.5902-02	.4750-02	.6057	4.218	541.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
326	41.100	.82200-01	142.00	.3037	.5761	.3918	.9524	.2524-01	.1717-01	2.013	13.85	564.3
327	41.100	.60700-01	173.00	.3814	.7183	.4738	.9584	.3147-01	.2076-01	2.549	17.54	563.1
327	42.600	.59600-01	172.00	.3911	.7429	.4870	.9584	.3254-01	.2133-01	2.589	17.80	564.5
327	43.200	.42000-01	168.00	.4402	.8544	.5336	.9639	.3743-01	.2338-01	2.847	19.54	568.0
327	43.400	.82200-01	181.00	.3309	.6307	.4287	.9520	.2763-01	.1878-01	2.182	15.00	565.1
326	43.600	.62900-01	128.00	.3253	.6237	.4090	.9572	.2732-01	.1792-01	2.132	14.65	566.1
326	45.000	.22900-01	8.0000	.7481	1.824	.9086	.9700	.7989-01	.3981-01	3.977	26.91	594.3
327	46.100	.62900-01	174.00	.3637	.6860	.4565	.9567	.3005-01	.2000-01	2.427	16.70	563.3
327	47.700	.40800-01	167.00	.4805	.9570	.5878	.9633	.4192-01	.2575-01	3.026	20.72	571.3
326	48.400	.44200-01	109.00	.4386	.8624	.5391	.9621	.3778-01	.2362-01	2.798	19.18	570.1
327	53.200	.24700-01	163.00	.6124	1.315	.7396	.9678	.5760-01	.3240-01	3.594	24.48	581.7
327	65.200	.24700-01	162.00	.5913	1.249	.7233	.9654	.5472-01	.3168-01	3.521	24.01	579.8
325	90.000	.91000-02	44.000	.4910	1.113	.6244	.9618	.4883-01	.2739-01	2.758	18.73	587.6
325	90.000	.11100-01	45.000	.5741	1.396	.7409	.9618	.6124-01	.3250-01	3.062	20.72	594.1
325	90.000	.13100-01	46.000	.6094	1.408	.7782	.9618	.6179-01	.3414-01	3.372	22.88	589.5
325	90.000	.17000-01	48.000	.6564	1.411	.8252	.9618	.6191-01	.3620-01	3.853	26.25	581.9
325	90.000	.20900-01	50.000	.5695	1.213	.7143	.9618	.5320-01	.3134-01	3.371	22.98	580.7
325	90.000	.24900-01	52.000	.6670	.9524	.7545	.9613	.4178-01	.3310-01	6.989	50.47	476.8
325	90.000	.26900-01	53.000	.5330	1.097	.6683	.9606	.4811-01	.2932-01	3.257	22.25	576.4
325	90.000	.28800-01	54.000	.5247	1.065	.6584	.9600	.4673-01	.2889-01	3.247	22.21	574.6
325	90.000	.32800-01	55.000	.3875	.6859	.4725	.9587	.3009-01	.2073-01	2.796	19.37	551.2
325	90.000	.36700-01	56.000	.4571	.8782	.5744	.9574	.3853-01	.2520-01	2.992	20.56	566.4
325	90.000	.40600-01	57.000	.4464	.8747	.5683	.9562	.3837-01	.2493-01	2.862	19.63	569.5
325	90.000	.48500-01	58.000	.3500	.6690	.4487	.9539	.2935-01	.1969-01	2.305	15.84	565.6
325	90.000	.56400-01	59.000	.3607	.6787	.4663	.9517	.2978-01	.2046-01	2.417	16.63	562.9
325	90.000	.76100-01	60.000	.2781	.5047	.3652	.9469	.2214-01	.1602-01	1.944	13.43	556.3
325	90.000	.95900-01	61.000	.2075	.3733	.2779	.9429	.1638-01	.1219-01	1.466	10.14	554.6
325	90.000	.11550	62.000	.1651	.2990	.2260	.9398	.1312-01	.9915-02	1.157	7.997	555.9
325	135.00	.19000-01	49.000	.5177	1.091	.6587	.9592	.4785-01	.2890-01	3.094	21.10	579.4
325	135.00	.22900-01	51.000	.5059	1.064	.6434	.9592	.4669-01	.2823-01	3.027	20.65	579.3
325	180.00	.91000-02	23.000	.4019	.7950	.4912	.9632	.3488-01	.2155-01	2.552	17.49	570.9
325	180.00	.11100-01	24.000	.5750	1.418	.7358	.9632	.6219-01	.3228-01	3.038	20.55	595.3
325	180.00	.13100-01	25.000	.6124	1.417	.7740	.9632	.6217-01	.3395-01	3.386	22.97	589.6
325	180.00	.15000-01	26.000	.6098	1.373	.7664	.9632	.6023-01	.3362-01	3.445	23.40	586.9
325	180.00	.17000-01	27.000	.5718	1.242	.7132	.9632	.5447-01	.3129-01	3.327	22.65	583.0
325	180.00	.19000-01	28.000	.5638	1.232	.7042	.9632	.5403-01	.3089-01	3.265	22.22	583.7
325	180.00	.20900-01	29.000	.5817	1.238	.7224	.9632	.5429-01	.3169-01	3.446	23.49	580.6
325	180.00	.28800-01	32.000	.5321	1.076	.6611	.9614	.4722-01	.2900-01	3.304	22.60	574.1
325	180.00	.32800-01	33.000	.5107	.9760	.6307	.9601	.4282-01	.2767-01	3.363	23.11	565.6
325	180.00	.36700-01	34.000	.4635	.9144	.5816	.9588	.4011-01	.2551-01	2.951	20.23	570.5
325	180.00	.48500-01	36.000	.4122	.7825	.5231	.9552	.3433-01	.2295-01	2.735	18.81	564.4
325	180.00	.56400-01	37.000	.3926	.7306	.5018	.9529	.3205-01	.2201-01	2.664	18.36	561.0
325	180.00	.76100-01	38.000	.2955	.5337	.3849	.9480	.2341-01	.1688-01	2.078	14.37	555.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
325	180.00	.95800-01	39.000	.2263	.3980	.2986	.9439	.1746-01	.1310-01	1.647	11.42	549.7
325	180.00	.11550	40.000	.1722	.3044	.2321	.9406	.1335-01	.1018-01	1.244	8.619	551.0
325	180.00	.18450	42.000	.8864-01	.1486	.1203	.9348	.6520-02	.5279-02	.6895	4.811	538.4
325	225.00	.22900-01	30.000	.6431	1.368	.7530	.9725	.6001-01	.3303-01	3.811	25.98	580.6
325	270.00	.91000-02	63.000	.8783	2.733	.9986	.9823	.1199	.4381-01	4.064	27.26	610.2
325	270.00	.11100-01	64.000	.9224	2.616	1.042	.9823	.1147	.4572-01	4.473	30.10	605.1
325	270.00	.13100-01	65.000	.8532	2.269	.9595	.9823	.9954-01	.4209-01	4.293	28.95	601.0
325	270.00	.17000-01	67.000	.7465	1.846	.8348	.9823	.8100-01	.3662-01	3.935	26.61	595.5
325	270.00	.20900-01	69.000	.7490	1.764	.8342	.9823	.7740-01	.3659-01	4.086	27.69	591.3
325	270.00	.24900-01	71.000	.6581	1.509	.7336	.9817	.6620-01	.3218-01	3.664	24.87	588.8
325	270.00	.28800-01	73.000	.6255	1.359	.7004	.9802	.5962-01	.3073-01	3.639	24.77	583.1
325	270.00	.36700-01	75.000	.5769	1.241	.6571	.9772	.5442-01	.2883-01	3.385	23.06	581.9
325	270.00	.48500-01	77.000	.4939	1.017	.5741	.9728	.4462-01	.2518-01	3.014	20.59	576.5
325	270.00	.56400-01	78.000	.4750	.9763	.5613	.9701	.4283-01	.2462-01	2.904	19.84	576.3
325	270.00	.95800-01	80.000	.3291	.6452	.4151	.9577	.2830-01	.1821-01	2.109	14.47	569.6
325	270.00	.11550	81.000	.2742	.5337	.3565	.9525	.2342-01	.1564-01	1.771	12.15	568.5
325	315.00	.19000-01	68.000	.6711	1.428	.7257	.9858	.6266-01	.3184-01	3.974	27.09	580.7
325	315.00	.22900-01	70.000	.6389	1.489	.6952	.9858	.6532-01	.3050-01	3.514	23.83	590.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
282	4.020	-4.998	6.004	63.08	718.7	.4045	169.8	50.36	2568.	.6430-02	.1366-06	3.756
283	4.020	-5.002	6.003	62.87	719.7	.4032	170.1	50.34	2570.	.6400-02	.1368-06	3.735
284	4.020	-4.989	5.975	62.92	719.7	.4035	170.1	50.28	2570.	.6404-02	.1368-06	3.738

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
282	.3796-01	.9547-02
283	.3790-01	.9572-02
284	.3792-01	.9568-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
283	.00000	.91000-02	1.0000	.6947	1.468	.8190	.9712	.5566-01	.3104-01	3.596	24.48	583.1
283	.00000	.15000-01	4.0000	.7238	1.489	.8496	.9712	.5644-01	.3220-01	3.842	26.21	579.6
283	.00000	.17000-01	5.0000	.7035	1.378	.8190	.9712	.5224-01	.3104-01	3.919	26.83	572.7
283	.00000	.19000-01	6.0000	.6935	1.360	.8075	.9712	.5156-01	.3060-01	3.858	26.41	572.9
283	.00000	.24900-01	9.0000	.6041	1.153	.7020	.9707	.4368-01	.2661-01	3.463	23.76	568.4
283	.00000	.26900-01	10.000	.5709	1.075	.6546	.9699	.4075-01	.2519-01	3.320	22.81	566.2
282	.00000	.32800-01	12.000	.5075	1.031	.6070	.9677	.3912-01	.2304-01	2.727	18.63	577.1
282	.00000	.36700-01	13.000	.4556	.8937	.5459	.9663	.3392-01	.2072-01	2.535	17.36	572.1
282	.00000	.40600-01	14.000	.4740	.9531	.5758	.9648	.3618-01	.2185-01	2.572	17.58	575.7
282	.00000	.48500-01	15.000	.4177	.8263	.5143	.9620	.3136-01	.1952-01	2.304	15.77	573.4
282	.00000	.56400-01	16.000	.4023	.7948	.5036	.9593	.3017-01	.1911-01	2.222	15.21	573.1
282	.00000	.76100-01	17.000	.3226	.6081	.4144	.9528	.2308-01	.1573-01	1.874	12.88	565.6
282	.00000	.95800-01	18.000	.5721-01	.9700-01	.7313-01	.9469	.3682-02	.2776-02	.3804	2.646	543.5
282	.00000	.11550	19.000	.2099	.3848	.2857	.9416	.1460-01	.1084-01	1.259	8.679	560.6
282	.00000	.16480	20.000	.1334	.2354	.1903	.9310	.8935-02	.7224-02	.8400	5.814	552.8
282	.00000	.21400	22.000	.7737-01	.1297	.1114	.9243	.4922-02	.4226-02	.5232	3.646	540.5
284	2.0000	.24700-01	165.00	.5739	1.023	.6598	.9704	.3879-01	.2502-01	3.568	24.65	555.7
283	9.0000	.15000-01	157.00	.6995	1.373	.8233	.9693	.5204-01	.3120-01	3.890	26.63	573.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
283	9.0000	.17600-01	158.00	.6737	1.327	.7934	.9693	.5028-01	.3007-01	3.734	25.55	573.4
284	9.8000	.24700-01	164.00	.6118	1.126	.7137	.9687	.4268-01	.2706-01	3.657	25.18	562.0
283	10.000	.22900-01	88.000	.6258	1.209	.7353	.9691	.4584-01	.2787-01	3.537	24.24	570.6
283	10.000	.26900-01	90.000	.5562	1.036	.6535	.9679	.3927-01	.2477-01	3.276	22.53	564.3
283	10.000	.34700-01	94.000	.4800	.8486	.5662	.9650	.3216-01	.2146-01	3.014	20.85	554.0
284	14.600	.44200-01	169.00	.4440	.7620	.5315	.9605	.2889-01	.2015-01	2.903	20.15	547.2
283	18.500	.44200-01	106.00	.4398	.7871	.5349	.9597	.2983-01	.2028-01	2.719	18.78	556.6
284	19.600	.62900-01	175.00	.3478	.5841	.4291	.9532	.2214-01	.1627-01	2.346	16.34	541.7
283	19.800	.40800-01	101.00	.4626	.8326	.5608	.9606	.3156-01	.2126-01	2.840	19.60	557.7
283	20.000	.24900-01	89.000	.5675	1.068	.6736	.9664	.4049-01	.2553-01	3.301	22.68	566.2
283	20.000	.28800-01	91.000	.5178	.9605	.6176	.9649	.3641-01	.2341-01	3.064	21.08	563.5
283	20.000	.32800-01	93.000	.5053	.9387	.6079	.9634	.3558-01	.2304-01	2.985	20.54	563.8
283	22.200	.62900-01	125.00	.3538	.6224	.4447	.9526	.2359-01	.1686-01	2.236	15.47	552.9
283	22.400	.44200-01	107.00	.4257	.7575	.5193	.9588	.2871-01	.1968-01	2.650	18.32	555.4
284	22.600	.10270	192.00	.2222	.3665	.2894	.9411	.1390-01	.1097-01	1.540	10.75	536.9
283	23.000	.42000-01	105.00	.4411	.7884	.5370	.9595	.2988-01	.2035-01	2.731	18.86	556.3
283	23.400	.59600-01	120.00	.3558	.6238	.4449	.9534	.2364-01	.1686-01	2.259	15.64	552.1
284	23.900	.21310	250.00	.7405-01	.1119	.1001	.9231	.4245-02	.3796-02	.5969	4.238	507.1
283	24.100	.82200-01	139.00	.2823	.4827	.3632	.9464	.1830-01	.1377-01	1.855	12.88	546.3
284	24.400	.19040	238.00	.9291-01	.1433	.1262	.9250	.5432-02	.4784-02	.7212	5.098	514.9
284	24.400	.12440	207.00	.1713	.2892	.2323	.9356	.1097-01	.8806-02	1.147	7.978	543.1
284	24.800	.16810	223.00	.1073	.1737	.1483	.9277	.6585-02	.5622-02	.7659	5.364	531.4
283	24.900	.62900-01	126.00	.3500	.6135	.4408	.9520	.2325-01	.1671-01	2.222	15.39	552.1
284	25.000	.79500-01	178.00	.2949	.4890	.3736	.9470	.1854-01	.1416-01	2.027	14.14	538.4
284	25.300	.10270	191.00	.2265	.3727	.2953	.9406	.1413-01	.1120-01	1.576	11.01	536.2
284	25.300	.10000+00	186.00	.2160	.3568	.2812	.9413	.1353-01	.1066-01	1.494	10.43	537.2
283	25.500	.60700-01	124.00	.3565	.6228	.4471	.9526	.2360-01	.1694-01	2.274	15.75	551.4
284	26.000	.12440	206.00	.1669	.2815	.2265	.9354	.1067-01	.8586-02	1.118	7.780	543.0
283	26.300	.82200-01	140.00	.2293	.3887	.2946	.9459	.1473-01	.1117-01	1.524	10.60	544.2
284	26.700	.12100	199.00	.1644	.2734	.2207	.9360	.1037-01	.8368-02	1.125	7.843	539.2
284	26.800	.16810	222.00	.1028	.1660	.1420	.9275	.6293-02	.5383-02	.7364	5.159	530.7
284	27.000	.19040	237.00	.8525-01	.1317	.1160	.9248	.4994-02	.4400-02	.6594	4.659	515.7
284	27.100	.21310	249.00	.6916-01	.1048	.9371-01	.9230	.3973-02	.3553-02	.5549	3.937	508.1
284	27.200	.80300-01	180.00	.2864	.4710	.3628	.9463	.1786-01	.1375-01	1.993	13.92	536.1
283	27.400	.40100-01	98.000	.4297	.7806	.5264	.9591	.2959-01	.1995-01	2.608	17.98	559.6
284	27.400	.16480	215.00	.1022	.1671	.1420	.9279	.6336-02	.5383-02	.7181	5.020	534.4
283	27.600	.41600-01	102.00	.4232	.7623	.5189	.9586	.2889-01	.1967-01	2.595	17.91	557.9
284	27.600	.12440	205.00	.1616	.2720	.2193	.9351	.1031-01	.8317-02	1.086	7.558	542.4
284	27.600	.18700	230.00	.9290-01	.1437	.1263	.9251	.5447-02	.4790-02	.7176	5.069	516.0
284	27.700	.21010	243.00	.7526-01	.1147	.1023	.9231	.4350-02	.3880-02	.5975	4.234	510.3
284	27.900	.10110	188.00	.2286	.3775	.2986	.9405	.1431-01	.1132-01	1.581	11.04	537.2
283	28.000	.46800-01	110.00	.3938	.6952	.4849	.9567	.2635-01	.1838-01	2.478	17.14	553.7
284	28.200	.16810	221.00	.1008	.1636	.1398	.9273	.6204-02	.5302-02	.7172	5.021	532.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
284	28.300	.19040	236.00	.8059-01	.1244	.1097	.9247	.4715-02	.4158-02	.6248	4.415	515.2
284	28.300	.12200	201.00	.1734	.2875	.2330	.9355	.1090-01	.8836-02	1.192	8.320	538.3
283	28.400	.53500-01	114.00	.3823	.6726	.4762	.9543	.2549-01	.1805-01	2.416	16.72	552.9
284	28.400	.21310	248.00	.6774-01	.1030	.9205-01	.9229	.3906-02	.3490-02	.5398	3.827	509.5
283	28.700	.58600-01	117.00	.3730	.6548	.4686	.9526	.2482-01	.1776-01	2.364	16.37	552.4
284	28.800	.16580	217.00	.9805-01	.1595	.1360	.9276	.6048-02	.5156-02	.6943	4.859	532.9
283	28.800	.60400-01	121.00	.3592	.6277	.4520	.9520	.2379-01	.1713-01	2.290	15.86	551.4
284	29.000	.21110	244.00	.6841-01	.1042	.9299-01	.9230	.3949-02	.3526-02	.5439	3.855	510.0
283	29.000	.65700-01	129.00	.3287	.5708	.4166	.9503	.2164-01	.1579-01	2.114	14.65	550.0
283	29.200	.72400-01	133.00	.3111	.5377	.3980	.9482	.2038-01	.1509-01	2.014	13.97	548.9
283	29.300	.79500-01	136.00	.2638	.4493	.3393	.9461	.1703-01	.1286-01	1.743	12.11	545.3
283	29.600	.92500-01	143.00	.2427	.4186	.3202	.9424	.1587-01	.1214-01	1.576	10.93	548.4
283	29.700	.10000+00	146.00	.2056	.3509	.2729	.9405	.1330-01	.1034-01	1.354	9.405	545.9
284	29.900	.12100	198.00	.1647	.2745	.2220	.9355	.1041-01	.8416-02	1.124	7.833	539.7
284	30.200	.16480	214.00	.9505-01	.1548	.1319	.9276	.5870-02	.5002-02	.6718	4.700	533.3
284	30.300	.21010	242.00	.6881-01	.1052	.9379-01	.9230	.3988-02	.3556-02	.5429	3.844	511.6
283	31.500	.11100-01	83.000	.6938	1.451	.8531	.9642	.5499-01	.3233-01	3.627	24.71	581.8
284	32.100	.21010	241.00	.6526-01	.9997-01	.8912-01	.9229	.3791-02	.3379-02	.5128	3.630	512.4
284	32.200	.16480	213.00	.9727-01	.1588	.1354	.9274	.6020-02	.5132-02	.6851	4.792	533.9
284	32.200	.17860	224.00	.1024	.1618	.1409	.9256	.6133-02	.5341-02	.7624	5.363	523.4
284	32.200	.18700	228.00	.7778-01	.1202	.1059	.9247	.4558-02	.4016-02	.6012	4.247	515.8
284	32.300	.12100	197.00	.1644	.2730	.2216	.9351	.1035-01	.8403-02	1.128	7.871	538.7
284	32.300	.12300	194.00	.1482	.2465	.2004	.9347	.9346-02	.7599-02	1.014	7.073	539.2
284	32.300	.12730	208.00	.1331	.2262	.1830	.9338	.8576-02	.6937-02	.8825	6.135	544.8
284	32.300	.13420	209.00	.1365	.2360	.1909	.9324	.8948-02	.7237-02	.8831	6.124	549.0
283	32.400	.10000+00	147.00	.1982	.3410	.2648	.9400	.1293-01	.1004-01	1.291	8.960	547.8
284	32.400	.10110	184.00	.2099	.3457	.2750	.9397	.1311-01	.1043-01	1.458	10.18	536.5
284	32.400	.10630	193.00	.1972	.3232	.2595	.9384	.1226-01	.9838-02	1.379	9.638	535.2
284	32.500	.85800-01	183.00	.2497	.4152	.3220	.9437	.1574-01	.1221-01	1.709	11.92	539.1
283	32.600	.79500-01	137.00	.2029	.3473	.2625	.9454	.1316-01	.9949-02	1.331	9.246	546.6
284	32.600	.80800-01	176.00	.2642	.4359	.3372	.9451	.1653-01	.1278-01	1.831	12.78	536.9
283	32.700	.67400-01	132.00	.3196	.5547	.4078	.9490	.2102-01	.1546-01	2.058	14.26	549.8
283	32.700	.72400-01	134.00	.3119	.5400	.4009	.9475	.2047-01	.1519-01	2.015	13.97	549.2
283	32.800	.65700-01	130.00	.3317	.5763	.4222	.9495	.2184-01	.1600-01	2.131	14.77	550.1
284	32.800	.16680	210.00	.9938-01	.1621	.1385	.9270	.6147-02	.5251-02	.7008	4.902	533.7
284	32.800	.18880	225.00	.7779-01	.1204	.1061	.9245	.4564-02	.4024-02	.6001	4.238	516.2
283	32.900	.58600-01	118.00	.4206	.7476	.5333	.9517	.2833-01	.2021-01	2.623	18.13	555.1
283	32.900	.60400-01	122.00	.3399	.5945	.4299	.9511	.2253-01	.1629-01	2.165	14.99	551.6
284	32.900	.61300-01	171.00	.3462	.5811	.4320	.9508	.2203-01	.1638-01	2.336	16.27	541.7
283	33.000	.53500-01	115.00	.3809	.6685	.4767	.9533	.2534-01	.1807-01	2.415	16.72	552.4
283	33.200	.48300-01	113.00	.3913	.6853	.4849	.9550	.2597-01	.1838-01	2.489	17.23	551.9
284	33.400	.42800-01	166.00	.4141	.7013	.5030	.9568	.2659-01	.1907-01	2.759	19.19	543.9
283	33.500	.40100-01	99.000	.4364	.7757	.5354	.9577	.2940-01	.2029-01	2.722	18.82	555.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
283	33.600	.38300-01	97.000	.4521	.8153	.5551	.9584	.3090-01	.2104-01	2.768	19.10	558.1
283	33.700	.36700-01	96.000	.4681	.8563	.5753	.9589	.3245-01	.2181-01	2.817	19.41	560.9
283	33.900	.33800-01	95.000	.4810	.8867	.5891	.9599	.3361-01	.2233-01	2.868	19.74	562.4
284	34.700	.21010	240.00	.6493-01	.9978-01	.8891-01	.9228	.3783-02	.3371-02	.5071	3.587	513.7
284	34.700	.18700	227.00	.8263-01	.1274	.1125	.9245	.4830-02	.4264-02	.6415	4.534	514.9
284	34.900	.16480	212.00	.1000	.1640	.1398	.9271	.6219-02	.5301-02	.6995	4.889	535.2
283	35.100	.10000+00	148.00	.1981	.3422	.2659	.9395	.1297-01	.1008-01	1.283	8.900	548.8
284	35.200	.23900-01	161.00	.6222	1.166	.7509	.9633	.4420-01	.2847-01	3.641	25.03	565.3
283	35.300	.92500-01	145.00	.2279	.3944	.3029	.9413	.1495-01	.1148-01	1.472	10.21	549.2
283	35.300	.22100-01	160.00	.5124	1.008	.6251	.9633	.3821-01	.2369-01	2.843	19.46	573.3
284	35.400	.18800	231.00	.7033-01	.1096	.9649-01	.9244	.4157-02	.3658-02	.5352	3.774	519.0
284	35.500	.12100	196.00	.1589	.2648	.2152	.9346	.1004-01	.8159-02	1.084	7.555	539.8
284	35.600	.16580	216.00	.9324-01	.1526	.1303	.9269	.5784-02	.4940-02	.6543	4.574	534.6
283	35.800	.80600-01	138.00	.2449	.4173	.3178	.9445	.1582-01	.1205-01	1.617	11.24	545.4
284	35.900	.21310	247.00	.5626-01	.8637-01	.7705-01	.9226	.3275-02	.2922-02	.4404	3.116	513.2
284	36.000	.19040	235.00	.7680-01	.1196	.1054	.9241	.4536-02	.3998-02	.5855	4.129	518.6
284	36.200	.16810	220.00	.1009	.1641	.1407	.9265	.6223-02	.5336-02	.7137	4.994	533.0
283	36.200	.72400-01	135.00	.2978	.5147	.3840	.9467	.1951-01	.1455-01	1.927	13.37	548.9
284	36.300	.12200	200.00	.1575	.2630	.2139	.9343	.9971-02	.8110-02	1.071	7.464	540.3
283	36.600	.65700-01	131.00	.3028	.5315	.3887	.9487	.2014-01	.1473-01	1.920	13.29	552.4
284	36.700	.18700	226.00	.7704-01	.1198	.1055	.9244	.4541-02	.4000-02	.5894	4.159	517.9
284	36.900	.16480	211.00	.9773-01	.1608	.1370	.9269	.6096-02	.5196-02	.6801	4.750	536.2
284	36.900	.10110	187.00	.2169	.3597	.2864	.9389	.1364-01	.1086-01	1.491	10.40	538.4
283	37.000	.60400-01	123.00	.3395	.5983	.4327	.9502	.2268-01	.1640-01	2.141	14.82	553.3
284	37.000	.12440	204.00	.1530	.2554	.2084	.9337	.9684-02	.7903-02	1.041	7.256	540.2
283	37.100	.56600-01	119.00	.3544	.6260	.4507	.9508	.2373-01	.1708-01	2.228	15.41	553.8
284	37.200	.21310	246.00	.5612-01	.8625-01	.7694-01	.9225	.3270-02	.2917-02	.4383	3.100	513.7
284	37.600	.16810	219.00	.9717-01	.1584	.1358	.9264	.6006-02	.5150-02	.6859	4.798	533.5
283	37.800	.10270	150.00	.1928	.3335	.2606	.9383	.1264-01	.9878-02	1.247	8.651	549.0
284	37.900	.12100	195.00	.1650	.2724	.2227	.9342	.1033-01	.8445-02	1.141	7.967	537.2
284	38.000	.80300-01	179.00	.2668	.4399	.3420	.9441	.1668-01	.1297-01	1.851	12.93	536.7
283	38.500	.46800-01	112.00	.3961	.6978	.4936	.9543	.2645-01	.1871-01	2.499	17.29	553.2
284	38.600	.12440	203.00	.1524	.2545	.2079	.9334	.9648-02	.7884-02	1.037	7.226	540.2
284	38.700	.10000+00	185.00	.2102	.3471	.2770	.9388	.1316-01	.1050-01	1.454	10.15	537.2
283	38.900	.82200-01	141.00	.2633	.4558	.3460	.9434	.1727-01	.1311-01	1.701	11.80	549.2
283	39.300	.41600-01	104.00	.4088	.7379	.5089	.9559	.2797-01	.1929-01	2.500	17.25	558.3
284	39.500	.10270	190.00	.2097	.3465	.2776	.9381	.1314-01	.1053-01	1.450	10.12	537.4
284	39.600	.16810	218.00	.8609-01	.1405	.1206	.9262	.5329-02	.4572-02	.6063	4.240	533.9
284	39.900	.19040	233.00	.7173-01	.1121	.9886-01	.9239	.4252-02	.3748-02	.5431	3.827	520.0
284	40.100	.79500-01	177.00	.2633	.4332	.3375	.9439	.1643-01	.1280-01	1.832	12.79	536.2
284	40.200	.12440	202.00	.1502	.2512	.2054	.9332	.9525-02	.7787-02	1.019	7.096	540.8
284	40.300	.21310	245.00	.5166-01	.7957-01	.7097-01	.9224	.3017-02	.2691-02	.4018	2.840	514.5
283	41.100	.82200-01	142.00	.2418	.4200	.3189	.9430	.1592-01	.1209-01	1.554	10.77	550.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
284	41.100	.60700-01	173.00	.3357	.5632	.4222	.9493	.2135-01	.1601-01	2.268	15.79	541.5
284	42.600	.59600-01	172.00	.3490	.5891	.4399	.9493	.2234-01	.1668-01	2.337	16.26	543.1
284	43.200	.42000-01	168.00	.3935	.6673	.4828	.9549	.2530-01	.1830-01	2.617	18.20	544.2
284	43.400	.82200-01	181.00	.2857	.4773	.3713	.9426	.1809-01	.1408-01	1.942	13.53	540.4
283	43.600	.62900-01	128.00	.2916	.5104	.3751	.9481	.1935-01	.1422-01	1.855	12.85	551.8
283	45.000	.22900-01	8.0000	.6925	1.382	.8593	.9611	.5240-01	.3257-01	3.785	25.87	575.5
284	46.100	.62900-01	174.00	.3224	.5408	.4090	.9476	.2050-01	.1551-01	2.179	15.17	541.5
284	47.700	.40800-01	167.00	.4332	.7447	.5354	.9544	.2824-01	.2030-01	2.826	19.62	547.6
283	48.400	.44200-01	109.00	.3921	.7024	.4947	.9530	.2662-01	.1875-01	2.421	16.72	556.8
284	53.200	.24700-01	163.00	.5858	1.057	.7173	.9589	.4008-01	.2720-01	3.585	24.74	558.3
284	65.200	.24700-01	162.00	.5585	1.007	.6929	.9564	.3817-01	.2627-01	3.422	23.62	558.1
282	90.000	.91000-02	44.000	.3016	.6167	.3975	.9528	.2341-01	.1509-01	1.610	10.99	578.0
282	90.000	.11100-01	45.000	.4622	1.028	.6247	.9528	.3902-01	.2371-01	2.291	15.55	588.1
282	90.000	.13100-01	46.000	.6654	1.587	.9169	.9528	.6024-01	.3480-01	3.125	21.14	594.9
282	90.000	.17000-01	48.000	.5684	1.218	.7598	.9528	.4624-01	.2884-01	2.906	19.78	583.9
282	90.000	.20900-01	50.000	.5423	1.158	.7242	.9528	.4397-01	.2749-01	2.781	18.93	583.5
282	90.000	.24900-01	52.000	.4470	.9230	.5928	.9523	.3503-01	.2250-01	2.364	16.13	579.3
282	90.000	.26900-01	53.000	.4859	.9967	.6462	.9516	.3783-01	.2453-01	2.586	17.65	578.4
282	90.000	.28800-01	54.000	.4739	.9680	.6323	.9509	.3674-01	.2400-01	2.533	17.29	577.9
282	90.000	.32800-01	55.000	.3393	.6180	.4392	.9496	.2346-01	.1667-01	2.052	14.15	559.3
282	90.000	.36700-01	56.000	.3937	.7648	.5256	.9483	.2903-01	.1995-01	2.213	15.17	570.6
282	90.000	.40600-01	57.000	.3830	.7553	.5184	.9470	.2867-01	.1968-01	2.119	14.51	572.9
282	90.000	.48500-01	58.000	.2917	.5616	.3977	.9445	.2132-01	.1509-01	1.655	11.36	569.1
282	90.000	.56400-01	59.000	.3083	.5820	.4233	.9422	.2209-01	.1607-01	1.788	12.29	565.8
282	90.000	.76100-01	60.000	.2288	.4188	.3203	.9370	.1589-01	.1216-01	1.375	9.479	560.3
282	90.000	.95800-01	61.000	.1614	.2926	.2313	.9326	.1111-01	.8779-02	.9819	6.775	558.4
282	90.000	.11550	62.000	.1271	.2263	.1846	.9290	.8589-02	.7006-02	.7912	5.470	554.7
282	135.00	.19000-01	49.000	.5299	1.134	.7211	.9502	.4303-01	.2737-01	2.714	18.47	583.7
282	135.00	.22900-01	51.000	.4771	1.017	.6486	.9502	.3861-01	.2462-01	2.451	16.69	583.3
282	180.00	.91000-02	23.000	.2722	.5170	.3474	.9543	.1962-01	.1318-01	1.568	10.77	566.9
282	180.00	.11100-01	24.000	.4805	1.096	.6462	.9543	.4158-01	.2453-01	2.334	15.83	590.7
282	180.00	.13100-01	25.000	.6565	1.591	.8974	.9543	.6040-01	.3406-01	3.049	20.61	596.3
282	180.00	.15000-01	26.000	.6653	1.560	.9016	.9543	.5922-01	.3422-01	3.164	21.42	593.4
282	180.00	.17000-01	27.000	.5851	1.276	.7775	.9543	.4844-01	.2951-01	2.948	20.04	585.9
282	180.00	.19000-01	28.000	.5499	1.198	.7304	.9543	.4547-01	.2772-01	2.773	18.85	585.8
282	180.00	.20900-01	29.000	.5576	1.185	.7356	.9543	.4499-01	.2792-01	2.872	19.56	583.0
282	180.00	.28800-01	32.000	.4798	.9653	.6305	.9525	.3664-01	.2393-01	2.602	17.78	575.8
282	180.00	.32800-01	33.000	.4304	.8327	.5636	.9511	.3161-01	.2139-01	2.430	16.66	569.9
282	180.00	.36700-01	34.000	.4156	.8228	.5532	.9498	.3123-01	.2100-01	2.291	15.68	573.4
282	180.00	.48500-01	36.000	.3406	.6500	.4586	.9460	.2467-01	.1741-01	1.954	13.42	567.6
282	180.00	.56400-01	37.000	.3093	.5785	.4194	.9436	.2196-01	.1592-01	1.814	12.48	564.2
282	180.00	.76100-01	38.000	.2290	.4153	.3167	.9383	.1576-01	.1202-01	1.392	9.607	558.5
282	180.00	.95800-01	39.000	.1767	.3157	.2496	.9337	.1198-01	.9473-02	1.094	7.563	555.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
282	180.00	.11550	40.000	.1404	.2494	.2025	.9299	.9468-02	.7686-02	.8766	6.062	554.2
282	180.00	.18450	42.000	.5477-01	.9168-01	.7964-01	.9224	.3480-02	.3023-02	.3711	2.586	540.2
282	225.00	.22900-01	30.000	.5943	1.256	.7355	.9636	.4768-01	.2792-01	3.077	20.96	582.3
282	270.00	.91000-02	63.000	.6633	1.797	.7986	.9731	.6820-01	.3031-01	2.868	19.30	604.7
282	270.00	.11100-01	64.000	.7859	1.989	.9384	.9731	.7549-01	.3562-01	3.545	23.91	599.8
282	270.00	.13100-01	65.000	.7316	1.787	.8695	.9731	.6783-01	.3300-01	3.379	22.83	597.0
282	270.00	.17000-01	67.000	.7418	1.732	.8764	.9731	.6575-01	.3326-01	3.538	23.96	593.0
282	270.00	.20900-01	69.000	.6663	1.539	.7860	.9731	.5842-01	.2983-01	3.205	21.71	591.9
282	270.00	.24900-01	71.000	.6413	1.426	.7550	.9726	.5411-01	.2866-01	3.180	21.59	588.0
282	270.00	.28800-01	73.000	.5960	1.269	.7037	.9711	.4817-01	.2671-01	3.065	20.86	583.2
282	270.00	.36700-01	75.000	.5259	1.112	.6319	.9682	.4221-01	.2398-01	2.722	18.54	582.3
282	270.00	.48500-01	77.000	.4391	.8923	.5377	.9639	.3387-01	.2041-01	2.358	16.11	577.2
282	270.00	.56400-01	78.000	.4450	.8975	.5534	.9611	.3406-01	.2101-01	2.407	16.45	576.1
282	270.00	.95800-01	80.000	.2670	.5019	.3516	.9486	.1905-01	.1334-01	1.555	10.69	565.2
282	270.00	.11550	81.000	.2257	.4163	.3052	.9431	.1580-01	.1158-01	1.345	9.264	561.7
282	315.00	.19000-01	68.000	.6239	1.324	.7122	.9765	.5024-01	.2703-01	3.219	21.92	582.7
282	315.00	.22900-01	70.000	.6934	1.547	.7964	.9765	.5870-01	.3023-01	3.428	23.27	588.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
229	5.500	-4.993	5.993	127.1	724.7	.1366	102.8	50.34	2734.	.3588-02	.8272-07	3.685
230	5.500	-4.990	5.985	127.2	724.7	.1367	102.8	50.32	2734.	.3590-02	.8272-07	3.688
231	5.500	-4.990	5.985	127.2	724.7	.1368	102.8	50.32	2734.	.3591-02	.8272-07	3.689

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
229	.3024-01	.1280-01
230	.3025-01	.1280-01
231	.3025-01	.1279-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
230	.00000	.91000-02	1.0000	.5681	.9841	.6687	.9644	.2977-01	.2023-01	2.946	20.39	553.2
230	.00000	.15000-01	4.0000	.6594	1.144	.7765	.9644	.3462-01	.2349-01	3.410	23.59	553.7
230	.00000	.17000-01	5.0000	.6851	1.176	.8045	.9644	.3556-01	.2433-01	3.600	24.94	551.0
230	.00000	.19000-01	6.0000	.6708	1.152	.7879	.9644	.3485-01	.2383-01	3.519	24.38	551.2
230	.00000	.24900-01	9.0000	.5564	.9439	.6531	.9639	.2855-01	.1975-01	2.971	20.62	548.1
230	.00000	.26900-01	10.000	.5344	.9032	.6288	.9632	.2732-01	.1902-01	2.868	19.91	547.2
229	.00000	.32800-01	12.000	.4877	.7867	.5723	.9611	.2379-01	.1731-01	2.812	19.67	534.0
229	.00000	.36700-01	13.000	.4329	.6860	.5085	.9597	.2074-01	.1537-01	2.571	18.03	528.3
229	.00000	.40600-01	14.000	.4555	.7287	.5398	.9583	.2203-01	.1632-01	2.661	18.64	531.4
229	.00000	.48500-01	15.000	.3881	.6148	.4641	.9556	.1859-01	.1403-01	2.307	16.18	528.1
229	.00000	.56400-01	16.000	.3870	.6102	.4676	.9529	.1845-01	.1414-01	2.319	16.28	526.5
229	.00000	.76100-01	17.000	.3013	.4666	.3718	.9464	.1411-01	.1124-01	1.863	13.13	520.1
229	.00000	.11550	19.000	.1868	.2934	.2449	.9347	.8871-02	.7404-02	1.127	7.917	525.2
229	.00000	.16480	20.000	.1101	.1734	.1534	.9226	.5243-02	.4639-02	.6608	4.642	526.2
229	.00000	.21400	22.000	.6467-01	.9297-01	.8761-01	.9140	.2811-02	.2649-02	.4655	3.343	486.6
231	2.0000	.24700-01	165.00	.5062	.8280	.5895	.9636	.2505-01	.1783-01	2.854	19.92	538.2
230	9.0000	.15000-01	157.00	.7015	1.211	.8322	.9627	.3664-01	.2517-01	3.653	25.29	552.5
230	9.0000	.17600-01	158.00	.6568	1.139	.7801	.9627	.3446-01	.2360-01	3.399	23.51	553.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
231	9.8000	.24700-01	164.00	.5414	.8986	.6374	.9621	.2718-01	.1928-01	2.986	20.78	542.4
230	10.000	.22900-01	88.000	.5746	.9802	.6803	.9625	.2965-01	.2058-01	3.044	21.11	549.5
230	10.000	.26900-01	90.000	.5196	.8740	.6165	.9613	.2644-01	.1865-01	2.809	19.52	545.9
230	10.000	.34700-01	94.000	.4368	.6941	.5164	.9584	.2100-01	.1562-01	2.583	18.11	529.2
231	14.600	.44200-01	169.00	.3990	.6408	.4825	.9541	.1939-01	.1460-01	2.318	16.22	532.6
230	18.500	.44200-01	106.00	.4049	.6662	.4957	.9533	.2015-01	.1499-01	2.263	15.78	539.9
231	19.600	.62900-01	175.00	.3227	.5070	.4001	.9468	.1534-01	.1210-01	1.945	13.67	525.4
230	19.800	.40800-01	101.00	.4252	.7016	.5188	.9542	.2122-01	.1569-01	2.366	16.48	540.7
230	20.000	.24900-01	89.000	.5342	.8997	.6384	.9598	.2721-01	.1931-01	2.883	20.02	546.3
230	20.000	.28800-01	91.000	.4908	.8243	.5900	.9584	.2493-01	.1785-01	2.659	18.47	545.6
230	20.000	.32800-01	93.000	.4707	.7880	.5693	.9570	.2384-01	.1722-01	2.562	17.81	544.7
230	22.200	.62900-01	125.00	.3177	.5125	.3994	.9462	.1550-01	.1208-01	1.833	12.82	534.0
230	22.400	.44200-01	107.00	.3957	.6499	.4861	.9525	.1966-01	.1470-01	2.218	15.47	539.4
231	22.600	.10270	192.00	.1866	.2911	.2444	.9341	.8807-02	.7393-02	1.139	8.016	522.9
230	23.000	.42000-01	105.00	.4115	.6773	.5044	.9531	.2049-01	.1526-01	2.298	16.02	540.0
230	23.400	.59600-01	120.00	.3190	.5141	.3992	.9470	.1555-01	.1208-01	1.843	12.89	533.7
231	23.900	.21310	250.00	.4970-01	.7240-01	.6861-01	.9121	.2190-02	.2076-02	.3475	2.486	493.5
230	24.100	.82200-01	139.00	.2450	.3901	.3157	.9398	.1180-01	.9550-02	1.444	10.12	529.9
231	24.400	.19040	238.00	.5990-01	.8976-01	.8355-01	.9149	.2715-02	.2527-02	.3948	2.803	506.8
231	24.400	.12440	207.00	.1408	.2233	.1917	.9281	.6755-02	.5800-02	.8351	5.857	528.6
231	24.800	.16810	223.00	.8122-01	.1274	.1152	.9186	.3853-02	.3485-02	.4915	3.455	524.6
230	24.900	.62900-01	126.00	.3249	.5234	.4093	.9456	.1583-01	.1238-01	1.878	13.14	533.6
231	25.000	.79500-01	178.00	.2579	.4025	.3281	.9404	.1218-01	.9926-02	1.573	11.07	523.0
231	25.300	.10270	191.00	.1871	.2915	.2455	.9336	.8819-02	.7427-02	1.146	8.066	522.3
231	25.300	.10000+00	186.00	.1815	.2824	.2372	.9344	.8544-02	.7174-02	1.114	7.845	521.8
230	25.500	.60700-01	124.00	.3201	.5149	.4018	.9462	.1557-01	.1215-01	1.854	12.97	533.1
231	26.000	.12440	206.00	.1374	.2180	.1874	.9278	.6593-02	.5669-02	.8150	5.717	528.6
230	26.300	.82200-01	140.00	.1759	.2793	.2269	.9393	.8448-02	.6862-02	1.042	7.307	528.9
231	26.700	.12100	199.00	.1369	.2157	.1853	.9285	.6525-02	.5605-02	.8217	5.771	526.3
231	26.800	.16810	222.00	.7477-01	.1171	.1061	.9183	.3542-02	.3210-02	.4536	3.190	524.1
231	27.000	.19040	237.00	.5949-01	.8931-01	.8322-01	.9146	.2702-02	.2517-02	.3906	2.772	507.6
231	27.100	.21310	249.00	.4442-01	.6486-01	.6151-01	.9118	.1962-02	.1861-02	.3089	2.208	494.8
231	27.200	.80300-01	180.00	.2544	.3959	.3243	.9397	.1198-01	.9810-02	1.561	10.99	521.9
230	27.400	.40100-01	98.000	.4033	.6683	.4963	.9528	.2022-01	.1501-01	2.229	15.52	541.9
231	27.400	.16480	215.00	.7329-01	.1156	.1043	.9188	.3496-02	.3154-02	.4393	3.085	526.5
230	27.600	.41600-01	102.00	.4061	.6703	.5004	.9522	.2028-01	.1514-01	2.259	15.74	540.8
231	27.600	.12440	205.00	.1328	.2105	.1814	.9275	.6369-02	.5486-02	.7892	5.537	528.3
231	27.600	.18700	230.00	.4999-01	.7530-01	.6997-01	.9150	.2278-02	.2117-02	.3261	2.312	509.1
231	27.700	.21010	243.00	.5005-01	.7353-01	.6959-01	.9121	.2225-02	.2105-02	.3436	2.452	497.7
231	27.900	.10110	188.00	.1826	.2851	.2399	.9335	.8624-02	.7258-02	1.113	7.829	523.2
230	28.000	.46800-01	110.00	.3660	.5982	.4535	.9503	.1809-01	.1372-01	2.067	14.43	537.9
231	28.200	.16810	221.00	.7343-01	.1152	.1044	.9181	.3484-02	.3159-02	.4442	3.122	524.7
231	28.300	.19040	236.00	.5870-01	.8810-01	.8214-01	.9145	.2665-02	.2485-02	.3856	2.737	507.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
231	28.300	.12200	201.00	.1421	.2238	.1928	.9280	.6771-02	.5832-02	.8525	5.987	526.3
230	28.400	.53500-01	114.00	.3517	.5744	.4406	.9480	.1738-01	.1333-01	1.988	13.88	537.8
231	28.400	.21310	248.00	.4482-01	.6566-01	.6226-01	.9117	.1986-02	.1884-02	.3096	2.211	496.4
230	28.700	.58600-01	117.00	.3352	.5413	.4215	.9462	.1637-01	.1275-01	1.930	13.49	534.3
231	28.800	.16580	217.00	.7060-01	.1109	.1003	.9184	.3354-02	.3035-02	.4259	2.993	525.2
230	28.800	.60400-01	121.00	.3135	.5042	.3947	.9456	.1525-01	.1194-01	1.817	12.72	533.0
231	29.000	.21110	244.00	.4620-01	.6774-01	.6418-01	.9119	.2049-02	.1941-02	.3184	2.274	496.8
230	29.000	.65700-01	129.00	.2925	.4694	.3710	.9439	.1420-01	.1122-01	1.701	11.91	532.4
230	29.200	.72400-01	133.00	.2819	.4510	.3608	.9417	.1364-01	.1091-01	1.648	11.54	531.4
230	29.300	.79500-01	136.00	.2341	.3719	.3017	.9395	.1125-01	.9126-02	1.384	9.707	529.1
230	29.600	.92500-01	143.00	.2033	.3236	.2673	.9356	.9787-02	.8084-02	1.199	8.403	529.7
230	29.700	.10000+00	146.00	.1789	.2841	.2374	.9335	.8595-02	.7180-02	1.059	7.424	529.0
231	29.900	.12100	198.00	.1369	.2158	.1858	.9279	.6528-02	.5622-02	.8201	5.759	526.6
231	30.200	.16480	214.00	.6676-01	.1050	.9498-01	.9184	.3176-02	.2873-02	.4020	2.824	525.6
231	30.200	.18700	229.00	.6331-04	.7444-04	.7256-04	.9148	.2252-05	.2195-05	.9284-03	.7758-02	239.9
231	30.300	.21010	242.00	.4794-01	.7060-01	.6685-01	.9119	.2136-02	.2022-02	.3274	2.335	498.9
230	31.500	.11100-01	83.000	.6499	1.154	.7970	.9577	.3490-01	.2411-01	3.262	22.50	558.7
231	32.100	.21010	241.00	.4570-01	.6753-01	.6394-01	.9118	.2043-02	.1934-02	.3099	2.208	500.5
231	32.200	.16480	213.00	.6773-01	.1065	.9649-01	.9181	.3222-02	.2919-02	.4079	2.866	525.6
231	32.200	.17860	224.00	.7761-01	.1198	.1103	.9158	.3624-02	.3338-02	.4831	3.407	518.9
231	32.200	.18700	228.00	.5642-01	.8560-01	.7962-01	.9145	.2589-02	.2409-02	.3628	2.568	512.1
231	32.300	.12100	197.00	.1373	.2160	.1866	.9275	.6534-02	.5644-02	.8254	5.798	525.9
231	32.300	.12300	194.00	.1234	.1944	.1683	.9270	.5882-02	.5090-02	.7401	5.197	526.4
231	32.300	.12730	208.00	.1113	.1778	.1539	.9260	.5379-02	.4657-02	.6520	4.567	531.0
231	32.300	.13420	209.00	.1096	.1776	.1543	.9244	.5374-02	.4667-02	.6266	4.378	535.6
230	32.400	.10000+00	147.00	.1737	.2770	.2316	.9329	.8380-02	.7006-02	1.020	7.150	530.4
231	32.400	.10110	184.00	.1750	.2733	.2310	.9326	.8267-02	.6987-02	1.067	7.509	523.1
231	32.400	.10630	193.00	.1608	.2506	.2134	.9312	.7581-02	.6456-02	.9842	6.928	522.4
231	32.500	.85800-01	183.00	.2213	.3461	.2864	.9369	.1047-01	.8664-02	1.344	9.455	523.8
230	32.600	.79500-01	137.00	.1770	.2822	.2293	.9388	.8537-02	.6936-02	1.040	7.286	530.4
231	32.600	.80800-01	176.00	.2347	.3669	.3017	.9384	.1110-01	.9126-02	1.428	10.05	523.5
230	32.700	.67400-01	132.00	.2899	.4656	.3702	.9425	.1408-01	.1120-01	1.684	11.79	532.6
230	32.700	.72400-01	134.00	.2790	.4476	.3588	.9409	.1354-01	.1085-01	1.623	11.36	532.3
230	32.800	.65700-01	130.00	.2890	.4642	.3691	.9430	.1404-01	.1114-01	1.678	11.74	532.7
231	32.800	.16680	210.00	.6718-01	.1057	.9598-01	.9177	.3198-02	.2903-02	.4041	2.839	525.8
231	32.800	.18880	225.00	.5496-01	.8304-01	.7742-01	.9142	.2512-02	.2342-02	.3564	2.525	510.3
230	32.900	.58600-01	118.00	.3789	.6161	.4800	.9453	.1864-01	.1452-01	2.157	15.06	536.5
230	32.900	.60400-01	122.00	.2987	.4813	.3790	.9447	.1456-01	.1143-01	1.726	12.07	533.7
231	32.900	.61300-01	171.00	.3052	.4817	.3833	.9444	.1457-01	.1160-01	1.826	12.82	526.9
230	33.000	.53500-01	115.00	.3481	.5668	.4377	.9469	.1714-01	.1324-01	1.978	13.81	536.8
230	33.200	.48300-01	113.00	.3590	.5856	.4480	.9486	.1771-01	.1355-01	2.033	14.19	537.4
231	33.400	.42800-01	166.00	.3742	.5991	.4597	.9505	.1812-01	.1391-01	2.185	15.30	531.6
230	33.500	.40100-01	99.000	.4027	.6581	.4963	.9514	.1991-01	.1501-01	2.274	15.87	537.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
230	33.600	.38300-01	97.000	.4188	.6895	.5160	.9520	.2086-01	.1561-01	2.338	16.30	540.1
230	33.700	.36700-01	96.000	.4333	.7190	.5340	.9525	.2175-01	.1615-01	2.390	16.64	542.3
230	33.900	.33800-01	95.000	.4499	.7461	.5517	.9535	.2257-01	.1669-01	2.485	17.30	542.1
231	34.700	.21010	240.00	.4517-01	.6692-01	.6339-01	.9116	.2025-02	.1918-02	.3046	2.169	501.7
231	34.700	.18700	227.00	.5100-01	.7714-01	.7189-01	.9143	.2334-02	.2175-02	.3299	2.337	510.8
231	34.900	.16480	212.00	.6998-01	.1106	.1002	.9178	.3344-02	.3032-02	.4180	2.934	527.2
230	35.100	.10000+00	148.00	.1737	.2778	.2326	.9324	.8402-02	.7036-02	1.016	7.118	531.2
231	35.200	.23900-01	161.00	.5909	.9871	.7149	.9568	.2986-01	.2163-01	3.227	22.44	544.1
230	35.300	.92500-01	145.00	.1939	.3096	.2568	.9344	.9365-02	.7768-02	1.137	7.968	530.8
230	35.300	.22100-01	160.00	.5565	.9537	.6783	.9569	.2885-01	.2052-01	2.928	20.29	550.7
231	35.400	.18800	231.00	.4865-01	.7385-01	.6885-01	.9140	.2234-02	.2083-02	.3124	2.211	512.4
231	35.500	.12100	196.00	.1313	.2074	.1794	.9269	.6275-02	.5428-02	.7841	5.504	527.2
231	35.600	.16580	216.00	.7208-01	.1137	.1033	.9175	.3440-02	.3124-02	.4315	3.030	526.7
230	35.800	.80600-01	138.00	.2207	.3515	.2872	.9378	.1063-01	.8686-02	1.299	9.107	530.0
231	35.900	.21310	247.00	.3936-01	.5831-01	.5532-01	.9112	.1764-02	.1674-02	.2654	1.890	501.7
231	36.000	.19040	235.00	.5634-01	.8545-01	.7982-01	.9137	.2585-02	.2415-02	.3624	2.566	512.0
231	36.200	.16810	220.00	.6657-01	.1048	.9548-01	.9170	.3170-02	.2888-02	.4001	2.811	526.0
230	36.200	.72400-01	135.00	.2615	.4188	.3373	.9402	.1267-01	.1020-01	1.525	10.68	531.8
231	36.300	.12200	200.00	.1284	.2035	.1762	.9265	.6155-02	.5329-02	.7631	5.354	528.2
230	36.600	.65700-01	131.00	.2765	.4468	.3546	.9422	.1351-01	.1073-01	1.591	11.12	534.5
231	36.700	.18700	226.00	.5448-01	.8297-01	.7730-01	.9140	.2510-02	.2338-02	.3478	2.460	513.6
231	36.900	.16480	211.00	.7044-01	.1116	.1012	.9175	.3375-02	.3062-02	.4190	2.940	528.0
231	36.900	.10110	187.00	.1798	.2827	.2392	.9317	.8551-02	.7237-02	1.084	7.614	525.5
230	37.000	.60400-01	123.00	.3005	.4854	.3824	.9438	.1468-01	.1157-01	1.730	12.09	534.4
231	37.000	.12440	204.00	.1256	.1996	.1733	.9258	.6039-02	.5242-02	.7432	5.211	529.1
230	37.100	.56600-01	119.00	.3226	.5231	.4101	.9444	.1582-01	.1240-01	1.845	12.89	535.6
231	37.200	.21310	246.00	.3834-01	.5689-01	.5399-01	.9111	.1721-02	.1633-02	.2578	1.835	502.4
231	37.600	.16810	219.00	.7135-01	.1124	.1025	.9168	.3401-02	.3101-02	.4280	3.006	526.4
230	37.800	.10270	150.00	.1681	.2692	.2267	.9311	.8142-02	.6858-02	.9814	6.872	531.7
231	37.900	.12100	195.00	.1227	.1926	.1673	.9265	.5826-02	.5062-02	.7406	5.205	525.1
231	38.000	.80300-01	179.00	.2378	.3732	.3077	.9374	.1129-01	.9307-02	1.437	10.10	524.9
230	38.500	.46800-01	112.00	.3628	.5929	.4546	.9480	.1793-01	.1375-01	2.049	14.30	538.0
231	38.600	.12440	203.00	.1246	.1980	.1721	.9255	.5990-02	.5206-02	.7364	5.163	529.3
231	38.700	.10000+00	185.00	.1777	.2791	.2363	.9317	.8442-02	.7149-02	1.072	7.530	525.3
230	38.900	.82200-01	141.00	.2243	.3592	.2943	.9367	.1086-01	.8901-02	1.310	9.171	531.6
230	39.300	.41600-01	104.00	.3800	.6265	.4740	.9496	.1895-01	.1434-01	2.116	14.75	540.5
231	39.500	.10270	190.00	.1765	.2776	.2359	.9308	.8397-02	.7138-02	1.063	7.468	525.6
231	39.600	.16810	218.00	.7292-01	.1151	.1050	.9166	.3481-02	.3177-02	.4364	3.064	526.8
231	39.900	.19040	233.00	.4747-01	.7228-01	.6759-01	.9133	.2186-02	.2045-02	.3032	2.144	513.5
231	40.100	.79500-01	177.00	.2315	.3630	.2996	.9372	.1098-01	.9064-02	1.400	9.845	524.7
231	40.200	.12440	202.00	.1225	.1950	.1696	.9253	.5899-02	.5131-02	.7220	5.061	529.8
231	40.300	.21310	245.00	.3562-01	.5297-01	.5029-01	.9109	.1602-02	.1521-02	.2385	1.697	503.4
230	41.100	.82200-01	142.00	.2002	.3224	.2640	.9362	.9753-02	.7986-02	1.157	8.094	533.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
231	41.100	.60700-01	173.00	.2972	.4715	.3769	.9428	.1426-01	.1140-01	1.761	12.35	528.7
231	42.600	.59600-01	172.00	.3068	.4891	.3899	.9428	.1480-01	.1179-01	1.805	12.65	530.2
231	43.200	.42000-01	168.00	.3527	.5648	.4371	.9486	.1708-01	.1322-01	2.059	14.42	531.7
231	43.400	.82200-01	181.00	.2532	.3954	.3293	.9357	.1196-01	.9961-02	1.544	10.86	523.1
230	43.600	.62900-01	128.00	.2661	.4295	.3421	.9416	.1299-01	.1035-01	1.533	10.72	534.2
230	45.000	.22900-01	8.0000	.6027	1.019	.7395	.9547	.3082-01	.2237-01	3.234	22.45	547.3
231	46.100	.62900-01	174.00	.2805	.4460	.3591	.9410	.1349-01	.1086-01	1.657	11.62	529.4
231	47.700	.40800-01	167.00	.3932	.6334	.4898	.9480	.1916-01	.1482-01	2.273	15.90	533.6
230	48.400	.44200-01	109.00	.3621	.5929	.4569	.9467	.1793-01	.1382-01	2.039	14.22	538.5
231	51.900	.44800-01	170.00	.3201	.5086	.4007	.9457	.1539-01	.1212-01	1.893	13.27	529.2
231	53.200	.24700-01	163.00	.5789	.9492	.7105	.9525	.2871-01	.2149-01	3.253	22.69	538.9
231	65.200	.24700-01	162.00	.5598	.9131	.6939	.9501	.2762-01	.2099-01	3.172	22.14	537.4
229	90.000	.91000-02	44.000	.1737	.2753	.2165	.9464	.8323-02	.6547-02	1.032	7.238	528.2
229	90.000	.11100-01	45.000	.3229	.5212	.4056	.9464	.1576-01	.1226-01	1.859	13.00	534.2
229	90.000	.13100-01	46.000	.6419	1.084	.8214	.9464	.3277-01	.2484-01	3.450	23.95	546.9
229	90.000	.17000-01	48.000	.7123	1.185	.9060	.9464	.3583-01	.2739-01	3.912	27.22	543.0
229	90.000	.20900-01	50.000	.5226	.8430	.6562	.9464	.2549-01	.1984-01	3.013	21.07	534.0
229	90.000	.24900-01	52.000	.4053	.6375	.5047	.9459	.1928-01	.1526-01	2.439	17.13	525.7
229	90.000	.26900-01	53.000	.4865	.7781	.6122	.9452	.2353-01	.1851-01	2.845	19.92	531.3
229	90.000	.28800-01	54.000	.4713	.7505	.5938	.9445	.2269-01	.1796-01	2.776	19.46	529.9
229	90.000	.32800-01	55.000	.3168	.4835	.3940	.9431	.1462-01	.1191-01	2.013	14.23	514.5
229	90.000	.36700-01	56.000	.3627	.5668	.4589	.9418	.1714-01	.1388-01	2.207	15.52	523.4
229	90.000	.40600-01	57.000	.3748	.5932	.4800	.9405	.1794-01	.1451-01	2.230	15.65	527.9
229	90.000	.48500-01	58.000	.3283	.5175	.4247	.9379	.1565-01	.1284-01	1.967	13.82	526.5
229	90.000	.56400-01	59.000	.2804	.4425	.3673	.9354	.1338-01	.1111-01	1.677	11.77	526.9
229	90.000	.76100-01	60.000	.1953	.3117	.2649	.9297	.9426-02	.8009-02	1.146	8.032	530.6
229	90.000	.95900-01	61.000	.1417	.2281	.1984	.9246	.6898-02	.5998-02	.8192	5.731	533.4
229	90.000	.11550	62.000	.9665-01	.1567	.1392	.9202	.4737-02	.4209-02	.5529	3.863	535.5
229	135.00	.19000-01	49.000	.6613	1.087	.8481	.9438	.3288-01	.2564-01	3.697	25.77	539.8
229	135.00	.22900-01	51.000	.5258	.8510	.6696	.9438	.2573-01	.2025-01	3.014	21.06	535.1
229	180.00	.91000-02	23.000	.2390	.3685	.2924	.9480	.1114-01	.8843-02	1.490	10.51	518.5
229	180.00	.11100-01	24.000	.4016	.6553	.5029	.9480	.1981-01	.1521-01	2.272	15.86	537.5
229	180.00	.13100-01	25.000	.6846	1.177	.8750	.9480	.3558-01	.2646-01	3.586	24.84	551.4
229	180.00	.15000-01	26.000	.7043	1.204	.8984	.9480	.3642-01	.2717-01	3.716	25.76	550.2
229	180.00	.17000-01	27.000	.6235	1.021	.7819	.9480	.3088-01	.2364-01	3.508	24.47	538.6
229	180.00	.19000-01	28.000	.5692	.9248	.7116	.9480	.2796-01	.2152-01	3.243	22.65	536.2
229	180.00	.20900-01	29.000	.5631	.9105	.7026	.9480	.2753-01	.2124-01	3.233	22.60	534.8
229	180.00	.28800-01	32.000	.4770	.7569	.5958	.9461	.2289-01	.1802-01	2.827	19.83	528.7
229	180.00	.32800-01	33.000	.4368	.6790	.5442	.9447	.2053-01	.1645-01	2.683	18.90	521.5
229	180.00	.36700-01	34.000	.4061	.6378	.5114	.9433	.1929-01	.1546-01	2.449	17.21	525.2
229	180.00	.48500-01	36.000	.3289	.5106	.4194	.9394	.1544-01	.1268-01	2.025	14.27	521.0
229	180.00	.56400-01	37.000	.2933	.4523	.3770	.9369	.1368-01	.1140-01	1.828	12.90	518.5
229	180.00	.76100-01	38.000	.2119	.3235	.2780	.9311	.9781-02	.8406-02	1.346	9.516	514.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K103)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
229	180.00	.95800-01	39.000	.1590	.2409	.2126	.9259	.7283-02	.6428-02	1.026	7.265	511.4
229	180.00	.11550	40.000	.1156	.1759	.1583	.9213	.5319-02	.4787-02	.7389	5.227	513.3
229	180.00	.18450	42.000	.3828-01	.5681-01	.5395-01	.9110	.1718-02	.1631-02	.2571	1.830	502.6
229	225.00	.22900-01	30.000	.5699	.9200	.6811	.9571	.2782-01	.2059-01	3.282	22.95	534.2
229	270.00	.91000-02	63.000	.7168	1.281	.8418	.9663	.3872-01	.2545-01	3.568	24.59	560.1
229	270.00	.11100-01	64.000	.7855	1.374	.9181	.9663	.4153-01	.2776-01	4.020	27.78	555.4
229	270.00	.13100-01	65.000	.7628	1.311	.8880	.9663	.3964-01	.2685-01	3.997	27.69	551.4
229	270.00	.17000-01	67.000	.6710	1.137	.7786	.9663	.3437-01	.2354-01	3.588	24.90	547.8
229	270.00	.20900-01	69.000	.6667	1.115	.7714	.9663	.3373-01	.2332-01	3.632	25.25	544.5
229	270.00	.24900-01	71.000	.6514	1.080	.7538	.9658	.3266-01	.2279-01	3.595	25.03	542.1
229	270.00	.28800-01	73.000	.5224	.8487	.6053	.9644	.2566-01	.1830-01	2.978	20.80	536.2
229	270.00	.36700-01	75.000	.5059	.8206	.5934	.9615	.2481-01	.1794-01	2.890	20.19	535.7
229	270.00	.48500-01	77.000	.4153	.6661	.4946	.9574	.2014-01	.1495-01	2.417	16.92	532.2
229	270.00	.56400-01	78.000	.3842	.6203	.4642	.9547	.1876-01	.1404-01	2.211	15.46	534.3
229	270.00	.95800-01	80.000	.2297	.3732	.2955	.9421	.1129-01	.8936-02	1.309	9.142	536.2
229	270.00	.11550	81.000	.1931	.3141	.2559	.9363	.9497-02	.7737-02	1.099	7.675	536.5
229	315.00	.19000-01	68.000	.5913	.9633	.6703	.9695	.2913-01	.2027-01	3.354	23.42	537.0
229	315.00	.22900-01	70.000	.5303	.8845	.6042	.9695	.2675-01	.1827-01	2.902	20.19	543.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
328	3.010	-4.959	2.957	35.92	715.7	.9634	254.5	30.86	2354.	.1022-01	.2034-06	3.675
329	3.010	-4.978	2.968	35.89	715.7	.9624	254.5	30.86	2354.	.1021-01	.2034-06	3.671
330	3.010	-4.993	2.979	35.99	715.7	.9653	254.5	30.88	2354.	.1024-01	.2034-06	3.682

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
328	.4379-01	.7564-02
329	.4377-01	.7568-02
330	.4384-01	.7557-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
329	.00000	.91000-02	1.0000	.7723	2.164	.8823	.9806	.9474-01	.3862-01	3.762	25.32	604.4
329	.00000	.15000-01	4.0000	.7874	2.019	.8929	.9806	.8838-01	.3908-01	4.044	27.30	598.3
329	.00000	.17000-01	5.0000	.7900	1.879	.8899	.9806	.8225-01	.3895-01	4.269	28.92	592.2
329	.00000	.19000-01	6.0000	.7552	1.743	.8484	.9806	.7631-01	.3713-01	4.174	28.32	589.4
329	.00000	.24900-01	9.0000	.6724	1.503	.7555	.9801	.6579-01	.3307-01	3.812	25.91	586.2
329	.00000	.26900-01	10.000	.6412	1.410	.7227	.9793	.6172-01	.3163-01	3.683	25.06	584.4
328	.00000	.32800-01	12.000	.5488	1.168	.6250	.9770	.5117-01	.2737-01	3.243	22.11	580.7
328	.00000	.36700-01	13.000	.4902	.9943	.5596	.9755	.4355-01	.2451-01	3.030	20.72	574.5
328	.00000	.40600-01	14.000	.5174	1.092	.5992	.9741	.4781-01	.2624-01	3.083	21.03	579.6
328	.00000	.48500-01	15.000	.4711	.9671	.5527	.9712	.4235-01	.2421-01	2.879	19.67	576.1
328	.00000	.56400-01	16.000	.4613	.9521	.5510	.9684	.4169-01	.2413-01	2.805	19.16	576.8
329	.00000	.76100-01	17.000	.3820	.7439	.4686	.9620	.3258-01	.2052-01	2.461	16.89	568.6
328	.00000	.95800-01	18.000	.6438-01	.1108	.7881-01	.9563	.4851-02	.3451-02	.4817	3.349	544.8
328	.00000	.11550	19.000	.2557	.4979	.3353	.9512	.2181-01	.1468-01	1.647	11.30	568.6
328	.00000	.16480	20.000	.1744	.3230	.2386	.9415	.1415-01	.1045-01	1.188	8.189	560.1
328	.00000	.21400	22.000	.1201	.1999	.1613	.9361	.8756-02	.7063-02	.9436	6.590	536.3
330	2.0000	.24700-01	165.00	.6185	1.286	.6901	.9800	.5637-01	.3025-01	3.739	25.53	577.8
329	9.0000	.15000-01	157.00	.7638	1.819	.8663	.9796	.7962-01	.3792-01	4.125	27.94	592.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
329	9.0000	.17600-01	158.00	.7231	1.708	.8194	.9796	.7477-01	.3587-01	3.928	26.62	591.6
330	9.8000	.24700-01	164.00	.6616	1.463	.7472	.9791	.6414-01	.3275-01	3.789	25.77	585.0
329	10.000	.22900-01	88.000	.6803	1.544	.7685	.9795	.6759-01	.3364-01	3.810	25.87	587.7
329	10.000	.26900-01	90.000	.6296	1.355	.7128	.9782	.5929-01	.3120-01	3.685	25.10	582.0
329	10.000	.34700-01	94.000	.5743	1.241	.6626	.9752	.5430-01	.2900-01	3.350	22.82	582.4
330	14.600	.44200-01	169.00	.4904	.9682	.5718	.9711	.4244-01	.2507-01	3.117	21.36	570.7
329	18.500	.44200-01	106.00	.4999	1.011	.5871	.9706	.4424-01	.2570-01	3.098	21.19	574.1
330	19.600	.62900-01	175.00	.4051	.7656	.4875	.9641	.3356-01	.2137-01	2.699	18.57	563.7
329	19.800	.40800-01	101.00	.5285	1.081	.6180	.9716	.4731-01	.2705-01	3.239	22.14	575.6
329	20.000	.24900-01	89.000	.6224	1.343	.7074	.9776	.5880-01	.3097-01	3.634	24.75	582.3
329	20.000	.28800-01	91.000	.5960	1.277	.6831	.9761	.5588-01	.2990-01	3.502	23.86	581.4
329	20.000	.32800-01	93.000	.5850	1.264	.6776	.9746	.5533-01	.2966-01	3.412	23.23	582.4
329	22.200	.62900-01	125.00	.4299	.8444	.5230	.9637	.3696-01	.2289-01	2.743	18.81	569.9
329	22.400	.44200-01	107.00	.4891	.9781	.5753	.9700	.4281-01	.2518-01	3.065	20.98	572.5
330	22.600	.10270	192.00	.2828	.5179	.3609	.9523	.2270-01	.1582-01	1.954	13.49	558.0
329	23.000	.42000-01	105.00	.5099	1.028	.5981	.9707	.4501-01	.2618-01	3.169	21.69	573.7
329	23.400	.59600-01	120.00	.4421	.8606	.5339	.9646	.3767-01	.2337-01	2.849	19.55	568.5
330	23.900	.21310	250.00	.1095	.1748	.1442	.9356	.7665-02	.6322-02	.9186	6.459	524.3
329	24.100	.82200-01	139.00	.3544	.6623	.4414	.9576	.2899-01	.1932-01	2.388	16.45	561.7
330	24.400	.19040	238.00	.1345	.2203	.1780	.9372	.9657-02	.7803-02	1.083	7.581	532.0
330	24.400	.12440	207.00	.2251	.4199	.2983	.9471	.1841-01	.1307-01	1.522	10.49	561.4
330	24.800	.16810	223.00	.1598	.2759	.2141	.9397	.1210-01	.9388-02	1.191	8.277	545.6
329	24.900	.62900-01	126.00	.4387	.8553	.5340	.9634	.3744-01	.2337-01	2.821	19.36	568.7
330	25.000	.79500-01	178.00	.3615	.6707	.4475	.9583	.2940-01	.1962-01	2.460	16.95	560.4
330	25.300	.10270	191.00	.2853	.5200	.3642	.9520	.2280-01	.1597-01	1.984	13.70	557.1
330	25.300	.10000+00	186.00	.3013	.5537	.3842	.9527	.2427-01	.1684-01	2.073	14.30	558.7
329	25.500	.60700-01	124.00	.4272	.8266	.5172	.9640	.3618-01	.2264-01	2.770	19.02	567.5
330	26.000	.12440	206.00	.2233	.4155	.2958	.9470	.1822-01	.1297-01	1.514	10.43	561.0
329	26.300	.82200-01	140.00	.3618	.6667	.4495	.9573	.2918-01	.1968-01	2.478	17.09	559.2
330	26.700	.12100	199.00	.2210	.4017	.2891	.9476	.1761-01	.1267-01	1.541	10.64	556.6
330	26.800	.16810	222.00	.1598	.2746	.2139	.9396	.1204-01	.9375-02	1.200	8.341	544.5
330	27.000	.19040	237.00	.1308	.2145	.1733	.9371	.9405-02	.7599-02	1.051	7.355	532.4
330	27.100	.21310	249.00	.1052	.1685	.1389	.9355	.7386-02	.6087-02	.8786	6.174	525.2
330	27.200	.80300-01	180.00	.3521	.6440	.4355	.9578	.2823-01	.1909-01	2.438	16.82	557.8
329	27.400	.40100-01	98.000	.5443	1.126	.6410	.9708	.4927-01	.2806-01	3.302	22.55	577.1
330	27.400	.16480	215.00	.1609	.2828	.2171	.9400	.1240-01	.9516-02	1.171	8.117	549.7
329	27.600	.41600-01	102.00	.5249	1.072	.6190	.9702	.4691-01	.2710-01	3.223	22.03	575.4
330	27.600	.12440	205.00	.2170	.4023	.2874	.9468	.1763-01	.1260-01	1.478	10.18	560.3
330	27.600	.18700	230.00	.1237	.2024	.1635	.9374	.8871-02	.7165-02	.9975	6.984	531.7
330	27.700	.21010	243.00	.1139	.1842	.1510	.9356	.8075-02	.6619-02	.9364	6.570	528.1
330	27.900	.10110	188.00	.2754	.5049	.3521	.9521	.2213-01	.1543-01	1.901	13.12	558.2
329	28.000	.46800-01	110.00	.4610	.9058	.5460	.9683	.3965-01	.2390-01	2.941	20.16	569.9
330	28.200	.16810	221.00	.1536	.2676	.2069	.9395	.1173-01	.9071-02	1.131	7.847	547.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWOT DEG. R /SEC	TW DEG. R
330	28.300	.19040	236.00	.1247	.2040	.1651	.9371	.8945-02	.7238-02	1.006	7.042	531.7
330	28.300	.12200	201.00	.2305	.4203	.3026	.9473	.1843-01	.1326-01	1.601	11.05	557.2
329	28.400	.53500-01	114.00	.4490	.8800	.5388	.9659	.3852-01	.2359-01	2.871	19.69	569.6
330	28.400	.21310	248.00	.1032	.1657	.1365	.9354	.7265-02	.5982-02	.8587	6.032	525.9
329	28.700	.58600-01	117.00	.4492	.8725	.5436	.9642	.3819-01	.2379-01	2.901	19.91	568.2
330	28.800	.16580	217.00	.1535	.2678	.2067	.9397	.1174-01	.9060-02	1.129	7.836	547.9
329	28.800	.60400-01	121.00	.4294	.8293	.5208	.9636	.3630-01	.2279-01	2.789	19.15	567.3
330	29.000	.21110	244.00	.1067	.1716	.1411	.9355	.7523-02	.6186-02	.8850	6.215	526.5
329	29.000	.65700-01	129.00	.4010	.7653	.4898	.9619	.3350-01	.2144-01	2.639	18.14	565.3
329	29.200	.72400-01	133.00	.3859	.7294	.4760	.9598	.3193-01	.2084-01	2.567	17.66	563.7
329	29.300	.79500-01	136.00	.3359	.6214	.4169	.9577	.2720-01	.1825-01	2.290	15.79	559.9
329	29.600	.92500-01	143.00	.3128	.5880	.3984	.9541	.2574-01	.1744-01	2.093	14.41	562.8
329	29.700	.10000+00	146.00	.2807	.5179	.3595	.9521	.2267-01	.1573-01	1.919	13.23	559.5
330	29.900	.12100	198.00	.2158	.3938	.2833	.9473	.1726-01	.1242-01	1.498	10.34	557.3
330	30.200	.16480	214.00	.1537	.2679	.2068	.9398	.1175-01	.9065-02	1.131	7.849	547.8
330	30.200	.18700	229.00	.1216	.1982	.1605	.9373	.8687-02	.7035-02	.9869	6.915	530.5
330	30.300	.21010	242.00	.1089	.1761	.1444	.9356	.7720-02	.6329-02	.8943	6.274	528.3
329	31.500	.11100-01	83.000	.8239	2.168	.9655	.9763	.9488-01	.4226-01	4.163	28.08	600.2
330	32.100	.21010	241.00	.1069	.1732	.1420	.9355	.7592-02	.6223-02	.8769	6.150	528.6
330	32.200	.16480	213.00	.1511	.2642	.2038	.9396	.1158-01	.8932-02	1.108	7.687	548.4
330	32.200	.17860	224.00	.1436	.2391	.1909	.9380	.1048-01	.8367-02	1.129	7.886	536.4
330	32.200	.18700	228.00	.1276	.2077	.1684	.9372	.9104-02	.7381-02	1.038	7.272	530.1
330	32.300	.12100	197.00	.2209	.4000	.2895	.9470	.1753-01	.1269-01	1.547	10.69	555.9
330	32.300	.12300	194.00	.1996	.3620	.2624	.9466	.1587-01	.1150-01	1.396	9.644	556.1
330	32.300	.12730	208.00	.2161	.4036	.2889	.9458	.1769-01	.1266-01	1.459	10.05	561.6
330	32.300	.13420	209.00	.1806	.3467	.2461	.9444	.1520-01	.1079-01	1.183	8.126	566.3
329	32.400	.10000+00	147.00	.2807	.5213	.3609	.9518	.2282-01	.1580-01	1.905	13.13	560.6
330	32.400	.10110	184.00	.2757	.5016	.3526	.9516	.2199-01	.1546-01	1.920	13.26	556.8
330	32.400	.10630	193.00	.2550	.4592	.3273	.9503	.2013-01	.1435-01	1.799	12.44	554.7
330	32.500	.85800-01	183.00	.3247	.6030	.4086	.9555	.2643-01	.1791-01	2.207	15.21	560.6
329	32.600	.79500-01	137.00	.3654	.6776	.4550	.9573	.2966-01	.1992-01	2.484	17.12	560.3
330	32.600	.80800-01	176.00	.3360	.6149	.4176	.9569	.2696-01	.1831-01	2.323	16.04	557.9
329	32.700	.67400-01	132.00	.3979	.7539	.4882	.9608	.3300-01	.2137-01	2.639	18.15	564.1
329	32.700	.72400-01	134.00	.3898	.7359	.4820	.9593	.3221-01	.2110-01	2.596	17.86	563.5
329	32.800	.65700-01	130.00	.3873	.7360	.4742	.9614	.3222-01	.2075-01	2.561	17.61	564.6
330	32.800	.16680	210.00	.1554	.2713	.2097	.9393	.1189-01	.9194-02	1.141	7.914	548.2
330	32.800	.18880	225.00	.1306	.2141	.1732	.9370	.9386-02	.7591-02	1.051	7.357	532.1
329	32.900	.58600-01	118.00	.3912	.7715	.4768	.9636	.3377-01	.2087-01	2.486	17.04	570.5
329	32.900	.60400-01	122.00	.4157	.7965	.5050	.9630	.3486-01	.2210-01	2.723	18.71	566.0
330	32.900	.61300-01	171.00	.4137	.7806	.5016	.9627	.3422-01	.2199-01	2.762	19.00	563.4
329	33.000	.53500-01	115.00	.4491	.8648	.5392	.9653	.3786-01	.2360-01	2.927	20.10	566.8
329	33.200	.48300-01	113.00	.4557	.8801	.5420	.9670	.3852-01	.2372-01	2.961	20.33	567.2
330	33.400	.42800-01	166.00	.4835	.9337	.5689	.9689	.4093-01	.2494-01	3.146	21.60	567.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
329	33.500	.40100-01	99.000	.5174	1.028	.6086	.9698	.4501-01	.2664-01	3.261	22.34	571.6
329	33.600	.38300-01	97.000	.5459	1.113	.6427	.9705	.4874-01	.2813-01	3.354	22.93	575.3
329	33.700	.36700-01	96.000	.5496	1.152	.6477	.9710	.5040-01	.2835-01	3.294	22.47	578.8
329	33.900	.33800-01	95.000	.5796	1.231	.6802	.9721	.5388-01	.2977-01	3.432	23.40	580.4
330	34.700	.21010	240.00	.1009	.1638	.1342	.9354	.7180-02	.5883-02	.8254	5.788	529.1
330	34.700	.18700	227.00	.1167	.1894	.1539	.9371	.8302-02	.6744-02	.9533	6.684	529.3
330	34.900	.16480	212.00	.1525	.2679	.2063	.9395	.1174-01	.9044-02	1.111	7.704	549.5
329	35.100	.10000+00	148.00	.2835	.5280	.3657	.9515	.2311-01	.1601-01	1.918	13.22	561.1
330	35.200	.23900-01	161.00	.6802	1.558	.7886	.9756	.6829-01	.3457-01	3.788	25.71	588.6
329	35.300	.92500-01	145.00	.3057	.5720	.3905	.9534	.2504-01	.1709-01	2.056	14.16	562.0
329	35.300	.22100-01	160.00	.6630	1.568	.7712	.9757	.6865-01	.3376-01	3.598	24.38	591.7
330	35.400	.18800	231.00	.1312	.2163	.1745	.9369	.9480-02	.7648-02	1.046	7.316	533.8
330	35.500	.12100	196.00	.2181	.3969	.2870	.9467	.1740-01	.1258-01	1.518	10.48	556.9
330	35.600	.16580	216.00	.1539	.2693	.2080	.9393	.1181-01	.9118-02	1.126	7.809	548.7
329	35.800	.80600-01	138.00	.3255	.5960	.4055	.9565	.2609-01	.1775-01	2.246	15.50	558.0
330	35.900	.21310	247.00	.1013	.1644	.1348	.9352	.7205-02	.5908-02	.8276	5.803	529.2
330	36.000	.19040	235.00	.1291	.2134	.1722	.9367	.9356-02	.7548-02	1.026	7.172	534.5
330	36.200	.16810	220.00	.1539	.2670	.2076	.9390	.1171-01	.9100-02	1.140	7.916	546.7
329	36.200	.72400-01	135.00	.3634	.6542	.4448	.9588	.2864-01	.1947-01	2.560	17.70	554.7
330	36.300	.12200	200.00	.2104	.3829	.2773	.9464	.1678-01	.1216-01	1.465	10.12	556.8
329	36.600	.65700-01	131.00	.4238	.8134	.5218	.9608	.3560-01	.2284-01	2.772	19.04	566.3
330	36.700	.18700	226.00	.1248	.2044	.1655	.9370	.8962-02	.7253-02	1.006	7.044	531.9
330	36.900	.16480	211.00	.1529	.2694	.2073	.9393	.1181-01	.9088-02	1.110	7.696	550.1
330	36.900	.10110	187.00	.2835	.5201	.3648	.9510	.2280-01	.1599-01	1.954	13.49	558.4
329	37.000	.60400-01	123.00	.4222	.8145	.5155	.9624	.3565-01	.2257-01	2.746	18.85	567.1
330	37.000	.12440	204.00	.2079	.3778	.2748	.9459	.1656-01	.1205-01	1.450	10.01	556.6
329	37.100	.58500-01	119.00	.4387	.8486	.5343	.9630	.3715-01	.2339-01	2.845	19.54	567.5
330	37.200	.21310	246.00	.9878-01	.1605	.1315	.9352	.7034-02	.5766-02	.8061	5.651	529.5
330	37.600	.16810	219.00	.1532	.2659	.2067	.9389	.1166-01	.9063-02	1.134	7.872	546.8
329	37.800	.10270	150.00	.2845	.5270	.3684	.9505	.2307-01	.1613-01	1.937	13.35	560.1
330	37.900	.12100	195.00	.2104	.3750	.2750	.9465	.1044-01	.1206-01	1.504	10.41	552.6
330	38.000	.80300-01	179.00	.3362	.6116	.4186	.9563	.2681-01	.1835-01	2.343	16.18	556.7
329	38.500	.46800-01	112.00	.4649	.9029	.5545	.9667	.3952-01	.2427-01	3.002	20.60	568.2
330	38.600	.12440	203.00	.2075	.3761	.2743	.9457	.1649-01	.1202-01	1.452	10.03	556.0
330	38.700	.10000+00	185.00	.2661	.4835	.3412	.9510	.2120-01	.1496-01	1.857	12.83	556.5
329	38.900	.82200-01	141.00	.3217	.5989	.4049	.9556	.2621-01	.1772-01	2.178	15.01	561.0
329	39.300	.41600-01	104.00	.5080	1.036	.6056	.9684	.4533-01	.2651-01	3.123	21.35	575.2
330	39.500	.10270	190.00	.2794	.5068	.3596	.9503	.2222-01	.1576-01	1.954	13.50	556.2
330	39.600	.16810	218.00	.1435	.2495	.1939	.9387	.1094-01	.8502-02	1.059	7.353	547.2
330	39.900	.19040	233.00	.1208	.1994	.1611	.9365	.8741-02	.7062-02	.9611	6.721	534.2
330	40.100	.79500-01	177.00	.3346	.6047	.4159	.9562	.2651-01	.1823-01	2.350	16.24	555.5
330	40.200	.12440	202.00	.2094	.3806	.2774	.9455	.1668-01	.1216-01	1.461	10.09	556.5
330	40.300	.21310	245.00	.1004	.1634	.1339	.9351	.7165-02	.5870-02	.8168	5.725	530.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
329	41.100	.82200-01	142.00	.3276	.6109	.4132	.9553	.2674-01	.1809-01	2.212	15.24	561.4
330	41.100	.60700-01	173.00	.4067	.7631	.4954	.9617	.3345-01	.2172-01	2.732	18.81	562.4
330	42.600	.59600-01	172.00	.4217	.7986	.5144	.9618	.3501-01	.2255-01	2.803	19.28	564.0
330	43.200	.42000-01	168.00	.4689	.9084	.5561	.9676	.3982-01	.2438-01	3.040	20.87	567.8
330	43.400	.82200-01	181.00	.3504	.6594	.4440	.9550	.2891-01	.1947-01	2.346	16.15	562.9
329	43.600	.62900-01	128.00	.4346	.8197	.5333	.9606	.3588-01	.2334-01	2.898	19.94	563.3
329	45.000	.22900-01	8.0000	.7835	1.892	.9240	.9740	.8284-01	.4044-01	4.188	28.35	593.5
330	46.100	.62900-01	174.00	.3949	.7371	.4843	.9602	.3231-01	.2123-01	2.668	18.38	561.5
330	47.700	.40800-01	167.00	.5190	1.036	.6203	.9672	.4540-01	.2719-01	3.263	22.35	572.2
329	48.400	.44200-01	109.00	.4865	.9522	.5837	.9659	.4168-01	.2555-01	3.116	21.37	569.3
330	53.200	.24700-01	163.00	.6605	1.426	.7764	.9722	.6250-01	.3403-01	3.860	26.29	582.3
330	65.200	.24700-01	162.00	.6420	1.365	.7628	.9701	.5985-01	.3344-01	3.802	25.92	580.6
328	90.000	.91000-02	44.000	.5771	1.456	.7222	.9667	.6375-01	.3163-01	2.996	20.25	597.1
328	90.000	.11100-01	45.000	.7302	2.039	.9287	.9667	.8928-01	.4067-01	3.566	24.00	604.2
328	90.000	.13100-01	46.000	.7571	1.930	.9492	.9667	.8453-01	.4157-01	3.904	26.37	597.9
328	90.000	.17000-01	48.000	.7149	1.644	.8807	.9667	.7201-01	.3857-01	3.964	26.90	589.1
328	90.000	.20900-01	50.000	.6089	1.376	.7477	.9667	.6027-01	.3275-01	3.423	23.25	587.3
328	90.000	.26900-01	53.000	.5583	1.215	.6863	.9655	.5320-01	.3006-01	3.238	22.04	583.2
328	90.000	.28800-01	54.000	.5625	1.205	.6924	.9648	.5277-01	.3032-01	3.307	22.53	581.4
328	90.000	.32800-01	55.000	.4087	.7473	.4899	.9634	.3272-01	.2146-01	2.827	19.51	557.7
328	90.000	.36700-01	56.000	.5013	1.005	.6189	.9621	.4401-01	.2711-01	3.134	21.46	572.9
328	90.000	.40600-01	57.000	.4812	.9860	.6021	.9608	.4318-01	.2637-01	2.946	20.13	575.9
328	90.000	.48500-01	58.000	.4308	.8551	.5433	.9583	.3745-01	.2379-01	2.721	18.64	571.5
328	90.000	.56400-01	59.000	.3936	.7625	.5004	.9559	.3339-01	.2191-01	2.550	17.50	567.8
328	90.000	.76100-01	60.000	.2973	.5620	.3875	.9505	.2461-01	.1697-01	1.978	13.61	563.7
328	90.000	.95800-01	61.000	.2427	.4582	.3253	.9460	.2007-01	.1424-01	1.618	11.13	563.5
328	90.000	.11550	62.000	.1847	.3487	.2534	.9423	.1527-01	.1110-01	1.231	8.472	563.5
328	135.00	.19000-01	49.000	.5687	1.284	.7181	.9627	.5625-01	.3145-01	3.199	21.73	587.2
328	135.00	.22900-01	51.000	.5564	1.258	.7028	.9627	.5509-01	.3078-01	3.127	21.24	587.3
328	180.00	.91000-02	23.000	.3550	.7085	.4337	.9636	.3103-01	.1899-01	2.230	15.27	572.2
328	180.00	.11100-01	24.000	.6407	1.776	.8349	.9636	.7779-01	.3656-01	3.141	21.15	603.7
328	180.00	.13100-01	25.000	.7009	1.800	.9011	.9636	.7882-01	.3946-01	3.598	24.29	598.5
328	180.00	.15000-01	26.000	.6891	1.703	.8797	.9636	.7460-01	.3852-01	3.627	24.53	595.5
328	180.00	.17000-01	27.000	.6222	1.461	.7865	.9636	.6397-01	.3444-01	3.397	23.03	591.0
328	180.00	.19000-01	28.000	.5906	1.371	.7449	.9636	.6004-01	.3262-01	3.252	22.06	589.9
328	180.00	.20900-01	29.000	.5898	1.323	.7387	.9636	.5792-01	.3235-01	3.337	22.67	586.5
328	180.00	.28800-01	32.000	.5431	1.147	.6800	.9618	.5025-01	.2978-01	3.232	22.04	579.8
328	180.00	.32800-01	33.000	.5058	1.003	.6293	.9604	.4393-01	.2756-01	3.198	21.91	571.3
328	180.00	.36700-01	34.000	.4746	.9743	.6004	.9591	.4267-01	.2629-01	2.900	19.82	576.1
328	180.00	.48500-01	36.000	.4061	.7985	.5198	.9555	.3497-01	.2277-01	2.590	17.75	570.1
328	180.00	.56400-01	37.000	.3826	.7442	.4952	.9532	.3259-01	.2169-01	2.467	16.93	568.4
328	180.00	.76100-01	38.000	.3087	.5800	.4075	.9482	.2540-01	.1785-01	2.069	14.24	562.7
328	180.00	.95800-01	39.000	.2324	.4250	.3114	.9440	.1861-01	.1364-01	1.607	11.09	557.8

(R4K104)

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
328	180.00	.11550	40.000	.1729	.3202	.2378	.9407	.1402-01	.1041-01	1.178	8.122	560.1
328	180.00	.18450	42.000	.8486-01	.1462	.1168	.9348	.6402-02	.5116-02	.6341	4.407	545.1
328	225.00	.22900-01	30.000	.6146	1.353	.7387	.9692	.5925-01	.3235-01	3.530	24.01	584.5
328	270.00	.91000-02	63.000	.7935	2.387	.9386	.9768	.1046	.4110-01	3.725	25.02	608.5
328	270.00	.11100-01	64.000	.8673	2.550	1.024	.9768	.1117	.4483-01	4.120	27.69	607.2
328	270.00	.13100-01	65.000	.7945	2.104	.9283	.9768	.9214-01	.4065-01	4.001	26.98	600.7
328	270.00	.17000-01	67.000	.6970	1.743	.8096	.9768	.7634-01	.3545-01	3.640	24.61	596.4
328	270.00	.20900-01	69.000	.7357	1.794	.8521	.9768	.7857-01	.3732-01	3.909	26.45	594.4
328	270.00	.24900-01	71.000	.6160	1.439	.7124	.9763	.6303-01	.3120-01	3.375	22.88	590.6
328	270.00	.28800-01	73.000	.6009	1.339	.6977	.9748	.5863-01	.3056-01	3.417	23.23	585.8
328	270.00	.36700-01	75.000	.5751	1.258	.6788	.9719	.5511-01	.2973-01	3.320	22.59	583.9
328	270.00	.48500-01	77.000	.4752	.9773	.5699	.9677	.4280-01	.2496-01	2.899	19.81	576.4
328	270.00	.56400-01	78.000	.4320	.8827	.5261	.9650	.3866-01	.2304-01	2.652	18.13	575.5
328	270.00	.95800-01	80.000	.2994	.5798	.3866	.9534	.2539-01	.1693-01	1.940	13.32	567.7
328	270.00	.11550	81.000	.2441	.4756	.3255	.9486	.2083-01	.1425-01	1.572	10.79	568.6
328	315.00	.19000-01	68.000	.6501	1.425	.7214	.9818	.6241-01	.3159-01	3.747	25.50	584.1
328	315.00	.22900-01	70.000	.6084	1.446	.6799	.9818	.6331-01	.2978-01	3.292	22.31	592.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
285	4.020	-4.957	2.972	63.08	719.7	.4045	170.1	31.00	2570.	.6421-02	.1368-06	3.748
286	4.020	-4.954	2.973	62.99	719.7	.4040	170.1	31.02	2570.	.6412-02	.1368-06	3.743
287	4.020	-4.954	2.973	63.10	719.7	.4046	170.1	31.02	2570.	.6422-02	.1368-06	3.749

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
285	.3796-01	.9556-02
286	.3794-01	.9562-02
287	.3797-01	.9554-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
286	.00000	.91000-02	1.0000	.6194	1.266	.7249	.9715	.4804-01	.2750-01	3.310	22.59	578.8
286	.00000	.15000-01	4.0000	.7297	1.475	.8523	.9715	.5595-01	.3233-01	3.943	26.93	577.2
286	.00000	.17000-01	5.0000	.7196	1.392	.8344	.9715	.5281-01	.3165-01	4.067	27.87	570.7
286	.00000	.19000-01	6.0000	.6945	1.335	.8044	.9715	.5063-01	.3052-01	3.954	27.11	569.6
286	.00000	.24900-01	9.0000	.6484	1.228	.7512	.9710	.4660-01	.2850-01	3.750	25.75	567.2
286	.00000	.26900-01	10.000	.6059	1.132	.7031	.9702	.4293-01	.2667-01	3.560	24.48	564.8
285	.00000	.32800-01	12.000	.5310	.9370	.6164	.9680	.3557-01	.2340-01	3.348	23.16	553.6
285	.00000	.36700-01	13.000	.4747	.8155	.5518	.9666	.3096-01	.2095-01	3.104	21.54	547.4
285	.00000	.40600-01	14.000	.5012	.8792	.5896	.9651	.3338-01	.2238-01	3.185	22.05	552.3
285	.00000	.48500-01	15.000	.4383	.7578	.5212	.9623	.2877-01	.1979-01	2.841	19.70	549.0
285	.00000	.56400-01	16.000	.4330	.7502	.5225	.9595	.2848-01	.1983-01	2.798	19.40	549.4
285	.00000	.76100-01	17.000	.3385	.5725	.4190	.9530	.2173-01	.1591-01	2.262	15.74	543.6
285	.00000	.95800-01	18.000	.5378-01	.8795-01	.6770-01	.9471	.3339-02	.2570-02	.3782	2.644	534.4
285	.00000	.11550	19.000	.2243	.3761	.2933	.9417	.1428-01	.1113-01	1.518	10.57	541.4
285	.00000	.16480	20.000	.1417	.2358	.1956	.9310	.8953-02	.7425-02	.9707	6.768	539.3
285	.00000	.21400	22.000	.8903-01	.1343	.1195	.9243	.5097-02	.4536-02	.7220	5.129	506.0
287	2.0000	.24700-01	165.00	.6044	1.127	.6987	.9709	.4280-01	.2653-01	3.561	24.49	564.5
286	9.0000	.15000-01	157.00	.6945	1.351	.8106	.9705	.5127-01	.3075-01	3.901	26.72	571.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
286	9.0000	.17600-01	158.00	.6710	1.300	.7826	.9705	.4934-01	.2969-01	3.784	25.93	571.0
287	9.8000	.24700-01	164.00	.6427	1.248	.7521	.9700	.4740-01	.2856-01	3.620	24.80	571.3
286	10.000	.22900-01	88.000	.6619	1.269	.7710	.9704	.4813-01	.2925-01	3.778	25.92	569.2
286	10.000	.26900-01	90.000	.5996	1.109	.6986	.9691	.4207-01	.2650-01	3.564	24.53	563.0
286	10.000	.34700-01	94.000	.5088	.9006	.5965	.9662	.3417-01	.2263-01	3.193	22.08	554.2
287	14.600	.44200-01	169.00	.4580	.8244	.5506	.9622	.3130-01	.2091-01	2.816	19.44	557.7
286	18.500	.44200-01	106.00	.4643	.8268	.5582	.9616	.3137-01	.2118-01	2.891	19.98	555.5
287	19.600	.62900-01	175.00	.3714	.6507	.4602	.9551	.2471-01	.1747-01	2.365	16.37	552.0
286	19.800	.40800-01	101.00	.4862	.8689	.5818	.9627	.3296-01	.2207-01	3.013	20.82	556.3
286	20.000	.24900-01	89.000	.6145	1.145	.7193	.9686	.4346-01	.2729-01	3.620	24.89	564.4
286	20.000	.28800-01	91.000	.5703	1.049	.6711	.9671	.3980-01	.2546-01	3.412	23.50	562.0
286	20.000	.32800-01	93.000	.5417	.9990	.6430	.9656	.3790-01	.2439-01	3.230	22.24	562.5
286	22.200	.62900-01	125.00	.3797	.6653	.4713	.9547	.2524-01	.1788-01	2.415	16.72	552.0
286	22.400	.44200-01	107.00	.4542	.8027	.5465	.9611	.3045-01	.2073-01	2.856	19.75	553.9
287	22.600	.10270	192.00	.2360	.4044	.3097	.9428	.1536-01	.1176-01	1.549	10.75	546.8
286	23.000	.42000-01	105.00	.4675	.8290	.5610	.9618	.3145-01	.2128-01	2.927	20.24	554.6
286	23.400	.59600-01	120.00	.3996	.6933	.4921	.9556	.2630-01	.1867-01	2.575	17.85	549.8
287	23.900	.21310	250.00	.8101-01	.1223	.1092	.9236	.4643-02	.4145-02	.6558	4.657	506.5
286	24.100	.82200-01	139.00	.3033	.5154	.3850	.9484	.1955-01	.1461-01	2.013	13.99	544.8
287	24.400	.19040	238.00	.1029	.1601	.1400	.9258	.6079-02	.5316-02	.7863	5.547	518.3
287	24.400	.12440	207.00	.1841	.3233	.2522	.9373	.1227-01	.9577-02	1.169	8.091	552.5
287	24.800	.16810	223.00	.1187	.1968	.1654	.9288	.7473-02	.6282-02	.8170	5.700	538.4
286	24.900	.62900-01	126.00	.3716	.6478	.4614	.9543	.2457-01	.1750-01	2.379	16.48	550.9
287	25.000	.79500-01	178.00	.3101	.5341	.3942	.9491	.2028-01	.1497-01	2.020	14.02	548.1
287	25.300	.10270	191.00	.2302	.3927	.3021	.9425	.1491-01	.1147-01	1.520	10.56	545.8
287	25.300	.10000+00	186.00	.2560	.4388	.3353	.9432	.1666-01	.1273-01	1.680	11.66	546.9
286	25.500	.60700-01	124.00	.3836	.6622	.4733	.9550	.2512-01	.1795-01	2.490	17.27	548.6
287	26.000	.12440	206.00	.1789	.3135	.2451	.9371	.1190-01	.9307-02	1.139	7.887	552.0
286	26.300	.82200-01	140.00	.3161	.5314	.4002	.9481	.2016-01	.1518-01	2.129	14.82	542.1
287	26.700	.12100	199.00	.1787	.3082	.2419	.9378	.1170-01	.9187-02	1.163	8.067	548.3
287	26.800	.16810	222.00	.1181	.1949	.1643	.9287	.7400-02	.6238-02	.8192	5.720	537.0
287	27.000	.19040	237.00	.9723-01	.1512	.1323	.9256	.5740-02	.5025-02	.7444	5.252	518.0
287	27.100	.21310	249.00	.7714-01	.1164	.1039	.9235	.4418-02	.3947-02	.6254	4.442	506.1
287	27.200	.80300-01	180.00	.3008	.5128	.3820	.9486	.1947-01	.1451-01	1.989	13.82	545.6
286	27.400	.40100-01	98.000	.5050	.9069	.6078	.9618	.3440-01	.2306-01	3.111	21.48	557.3
287	27.400	.16480	215.00	.1146	.1916	.1602	.9291	.7274-02	.6084-02	.7794	5.431	540.6
286	27.600	.41600-01	102.00	.4669	.8316	.5625	.9612	.3155-01	.2134-01	2.907	20.09	555.5
287	27.600	.12440	205.00	.1760	.3073	.2410	.9369	.1167-01	.9149-02	1.126	7.799	551.2
287	27.600	.18700	230.00	.8841-01	.1377	.1202	.9260	.5227-02	.4566-02	.6752	4.763	518.5
287	27.700	.21010	243.00	.8415-01	.1280	.1139	.9237	.4858-02	.4325-02	.6717	4.762	509.4
287	27.900	.10110	188.00	.2250	.3851	.2955	.9426	.1462-01	.1122-01	1.479	10.27	546.5
286	28.000	.46800-01	110.00	.4287	.7493	.5189	.9593	.2843-01	.1969-01	2.735	18.94	551.5
287	28.200	.16810	221.00	.1126	.1866	.1571	.9285	.7085-02	.5966-02	.7761	5.415	538.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
287	28.300	.19040	236.00	.9165-01	.1421	.1246	.9256	.5395-02	.4729-02	.7054	4.980	516.9
287	28.300	.12200	201.00	.1899	.3268	.2574	.9374	.1241-01	.9775-02	1.239	8.601	547.8
286	28.400	.53500-01	114.00	.4203	.7331	.5148	.9570	.2781-01	.1953-01	2.690	18.63	551.0
287	28.400	.21310	248.00	.7566-01	.1145	.1022	.9234	.4346-02	.3879-02	.6100	4.330	507.3
286	28.700	.58600-01	117.00	.4012	.6943	.4947	.9552	.2634-01	.1877-01	2.594	17.99	549.2
287	28.800	.16580	217.00	.1132	.1879	.1579	.9289	.7135-02	.5994-02	.7785	5.430	538.6
286	28.800	.60400-01	121.00	.3819	.6582	.4718	.9546	.2497-01	.1790-01	2.483	17.23	548.3
287	29.000	.21110	244.00	.7922-01	.1200	.1070	.9236	.4557-02	.4064-02	.6370	4.520	507.9
286	29.000	.65700-01	129.00	.3528	.6070	.4396	.9529	.2303-01	.1668-01	2.301	15.97	547.8
286	29.200	.72400-01	133.00	.3289	.5628	.4137	.9507	.2135-01	.1569-01	2.162	15.01	546.5
286	29.300	.79500-01	136.00	.2865	.4827	.3623	.9485	.1831-01	.1375-01	1.924	13.39	542.6
286	29.600	.92500-01	143.00	.2718	.4624	.3520	.9447	.1754-01	.1335-01	1.801	12.52	545.0
286	29.700	.10000+00	146.00	.2297	.3863	.2993	.9427	.1466-01	.1135-01	1.547	10.77	542.1
287	29.900	.12100	198.00	.1779	.3073	.2415	.9374	.1167-01	.9171-02	1.155	8.009	548.7
287	30.200	.16480	214.00	.1087	.1803	.1515	.9289	.6847-02	.5751-02	.7475	5.214	538.5
287	30.300	.21010	242.00	.7888-01	.1200	.1068	.9236	.4555-02	.4056-02	.6295	4.463	509.5
286	31.500	.11100-01	83.000	.7831	1.651	.9455	.9673	.6263-01	.3587-01	4.067	27.69	582.8
287	32.100	.21010	241.00	.7570-01	.1152	.1026	.9235	.4375-02	.3896-02	.6031	4.275	509.9
287	32.200	.16480	213.00	.1097	.1822	.1531	.9287	.6917-02	.5813-02	.7535	5.255	538.8
287	32.200	.17860	224.00	.1097	.1746	.1507	.9268	.6630-02	.5723-02	.8058	5.660	526.2
287	32.200	.18700	228.00	.8975-01	.1390	.1218	.9257	.5277-02	.4624-02	.6923	4.889	516.5
287	32.300	.12100	197.00	.1794	.3067	.2427	.9372	.1164-01	.9215-02	1.181	8.207	546.2
287	32.300	.12300	194.00	.1609	.2767	.2189	.9367	.1051-01	.8310-02	1.051	7.295	547.7
287	32.300	.12730	208.00	.1656	.2903	.2287	.9358	.1102-01	.8684-02	1.053	7.288	552.2
287	32.300	.13420	209.00	.1477	.2626	.2073	.9343	.9969-02	.7870-02	.9220	6.373	555.2
286	32.400	.10000+00	147.00	.2293	.3866	.2996	.9423	.1467-01	.1137-01	1.539	10.71	542.8
287	32.400	.10110	184.00	.2239	.3807	.2941	.9421	.1445-01	.1117-01	1.486	10.33	544.9
287	32.400	.10630	193.00	.2063	.3488	.2722	.9407	.1324-01	.1034-01	1.379	9.594	543.6
287	32.500	.85800-01	183.00	.2770	.4769	.3576	.9462	.1811-01	.1358-01	1.806	12.54	547.9
286	32.600	.79500-01	137.00	.3188	.5374	.4042	.9481	.2039-01	.1533-01	2.140	14.89	542.8
287	32.600	.80800-01	176.00	.2831	.4828	.3613	.9477	.1833-01	.1372-01	1.870	12.99	545.7
286	32.700	.67400-01	132.00	.3445	.5898	.4309	.9518	.2237-01	.1635-01	2.261	15.70	546.6
286	32.700	.72400-01	134.00	.3372	.5757	.4248	.9502	.2184-01	.1612-01	2.222	15.44	546.0
286	32.800	.65700-01	130.00	.3457	.5925	.4314	.9523	.2248-01	.1637-01	2.266	15.73	546.9
287	32.800	.16680	210.00	.1110	.1841	.1551	.9284	.6988-02	.5889-02	.7646	5.334	538.3
287	32.800	.18880	225.00	.9072-01	.1407	.1234	.9255	.5342-02	.4684-02	.6981	4.928	517.0
286	32.900	.58600-01	118.00	.3410	.5959	.4233	.9546	.2261-01	.1606-01	2.177	15.08	551.4
286	32.900	.60400-01	122.00	.3658	.6303	.4534	.9540	.2391-01	.1720-01	2.380	16.52	548.2
287	32.900	.61300-01	171.00	.3635	.6347	.4532	.9537	.2410-01	.1721-01	2.325	16.10	551.3
286	33.000	.53500-01	115.00	.4114	.7096	.5040	.9563	.2692-01	.1912-01	2.673	18.54	548.4
286	33.200	.48300-01	113.00	.4219	.7296	.5126	.9580	.2768-01	.1945-01	2.731	18.94	549.1
287	33.400	.42800-01	166.00	.4312	.7648	.5225	.9599	.2904-01	.1984-01	2.701	18.67	554.7
286	33.500	.40100-01	99.000	.4699	.8230	.5647	.9609	.3122-01	.2142-01	2.989	20.70	552.0

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
286	33.600	.38300-01	97.000	.4915	.8737	.5910	.9615	.3315-01	.2242-01	3.068	21.20	555.2
286	33.700	.36700-01	96.000	.4876	.8797	.5869	.9621	.3338-01	.2226-01	2.987	20.61	558.2
286	33.900	.33800-01	95.000	.5249	.9546	.6295	.9631	.3622-01	.2388-01	3.184	21.95	559.8
287	34.700	.21010	240.00	.7256-01	.1107	.9856-01	.9234	.4203-02	.3742-02	.5757	4.078	510.7
287	34.700	.18700	227.00	.8147-01	.1261	.1106	.9256	.4786-02	.4198-02	.6294	4.446	516.2
287	34.900	.16480	212.00	.1115	.1857	.1561	.9285	.7053-02	.5928-02	.7629	5.319	539.5
286	35.100	.10000+00	148.00	.2342	.3953	.3067	.9420	.1500-01	.1164-01	1.570	10.92	543.0
287	35.200	.23900-01	161.00	.6360	1.252	.7611	.9666	.4754-01	.2890-01	3.531	24.17	573.4
286	35.300	.92500-01	145.00	.2596	.4400	.3370	.9440	.1669-01	.1278-01	1.729	12.02	544.1
286	35.300	.22100-01	160.00	.5947	1.157	.7095	.9667	.4389-01	.2692-01	3.341	22.89	571.6
287	35.400	.18800	231.00	.7568-01	.1180	.1033	.9254	.4480-02	.3922-02	.5766	4.066	519.0
287	35.500	.12100	196.00	.1767	.3043	.2404	.9368	.1155-01	.9128-02	1.151	7.989	548.1
287	35.600	.16580	216.00	.1135	.1884	.1587	.9283	.7152-02	.6026-02	.7799	5.440	538.7
286	35.800	.80600-01	138.00	.2740	.4581	.3476	.9473	.1738-01	.1319-01	1.862	12.97	540.6
287	35.900	.21310	247.00	.7211-01	.1097	.9789-01	.9232	.4166-02	.3717-02	.5747	4.074	509.8
287	36.000	.19040	235.00	.9241-01	.1440	.1263	.9251	.5469-02	.4796-02	.7045	4.968	518.9
287	36.200	.16810	220.00	.1133	.1868	.1581	.9279	.7092-02	.6004-02	.7870	5.495	536.7
286	36.200	.72400-01	135.00	.3224	.5470	.4063	.9497	.2075-01	.1542-01	2.144	14.91	544.4
287	36.300	.12200	200.00	.1747	.3010	.2382	.9365	.1143-01	.9043-02	1.137	7.892	548.2
286	36.600	.65700-01	131.00	.3637	.6271	.4562	.9517	.2379-01	.1731-01	2.365	16.41	548.3
287	36.700	.18700	226.00	.9075-01	.1413	.1237	.9255	.5365-02	.4699-02	.6932	4.890	518.5
287	36.900	.16480	211.00	.1111	.1854	.1558	.9284	.7039-02	.5917-02	.7578	5.282	540.0
287	36.900	.10110	187.00	.2305	.3936	.3043	.9415	.1494-01	.1155-01	1.520	10.56	546.0
286	37.000	.60400-01	123.00	.3700	.6398	.4606	.9534	.2427-01	.1747-01	2.395	16.61	549.0
287	37.000	.12440	204.00	.1701	.2924	.2324	.9359	.1110-01	.8826-02	1.111	7.712	547.6
286	37.100	.56600-01	119.00	.3851	.6653	.4778	.9539	.2524-01	.1813-01	2.497	17.32	548.8
287	37.200	.21310	246.00	.6830-01	.1040	.9278-01	.9231	.3948-02	.3523-02	.5438	3.855	510.0
287	37.600	.16810	219.00	.1131	.1865	.1579	.9278	.7080-02	.5997-02	.7847	5.479	536.9
286	37.800	.10270	150.00	.2334	.3929	.3070	.9409	.1490-01	.1165-01	1.570	10.93	542.4
287	37.900	.12100	195.00	.1852	.3133	.2501	.9365	.1190-01	.9497-02	1.238	8.608	543.7
287	38.000	.80300-01	179.00	.2855	.4848	.3649	.9471	.1841-01	.1386-01	1.898	13.19	544.6
286	38.500	.46800-01	112.00	.4303	.7456	.5240	.9577	.2829-01	.1988-01	2.778	19.26	549.5
287	38.600	.12440	203.00	.1681	.2889	.2300	.9357	.1097-01	.8731-02	1.099	7.632	547.5
287	38.700	.10000+00	185.00	.2195	.3727	.2889	.9415	.1415-01	.1097-01	1.459	10.14	544.6
286	38.900	.82200-01	141.00	.2779	.4694	.3558	.9464	.1781-01	.1350-01	1.860	12.94	543.2
286	39.300	.41600-01	104.00	.4543	.8050	.5519	.9594	.3054-01	.2094-01	2.847	19.68	554.5
287	39.500	.10270	190.00	.2230	.3784	.2948	.9407	.1437-01	.1119-01	1.485	10.32	544.4
287	39.600	.16810	218.00	.1067	.1762	.1493	.9277	.6691-02	.5669-02	.7393	5.161	537.2
287	39.900	.19040	233.00	.8666-01	.1351	.1186	.9249	.5129-02	.4502-02	.6607	4.659	518.9
287	40.100	.79500-01	177.00	.2841	.4807	.3628	.9470	.1825-01	.1377-01	1.898	13.20	543.7
287	40.200	.12440	202.00	.1693	.2914	.2320	.9355	.1106-01	.8809-02	1.104	7.663	547.9
287	40.300	.21310	245.00	.6577-01	.1004	.8952-01	.9230	.3810-02	.3399-02	.5214	3.694	510.8
286	41.100	.82200-01	142.00	.2837	.4795	.3639	.9461	.1819-01	.1380-01	1.897	13.20	543.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
287	41.100	.60700-01	173.00	.3569	.6206	.4468	.9526	.2356-01	.1697-01	2.295	15.90	550.3
287	42.600	.59600-01	172.00	.3698	.6476	.4638	.9527	.2459-01	.1761-01	2.355	16.31	551.9
287	43.200	.42000-01	168.00	.4200	.7404	.5116	.9586	.2811-01	.1943-01	2.651	18.34	553.4
287	43.400	.82200-01	181.00	.3001	.5223	.3902	.9457	.1983-01	.1482-01	1.928	13.36	550.5
286	43.600	.62900-01	128.00	.3655	.6239	.4573	.9515	.2367-01	.1735-01	2.410	16.74	545.9
286	45.000	.22900-01	8.0000	.7099	1.377	.8546	.9651	.5225-01	.3242-01	4.000	27.41	571.2
287	46.100	.62900-01	174.00	.3445	.5969	.4342	.9511	.2266-01	.1649-01	2.226	15.44	549.5
287	47.700	.40800-01	167.00	.4634	.8310	.5683	.9583	.3155-01	.2158-01	2.863	19.77	557.0
286	48.400	.44200-01	109.00	.4375	.7595	.5351	.9570	.2882-01	.2030-01	2.817	19.53	549.9
287	53.200	.24700-01	163.00	.6158	1.158	.7439	.9632	.4397-01	.2824-01	3.593	24.69	566.0
287	65.200	.24700-01	162.00	.5952	1.117	.7270	.9612	.4240-01	.2760-01	3.484	23.94	565.5
285	90.000	.91000-02	44.000	.3101	.5728	.3847	.9577	.2174-01	.1460-01	1.848	12.72	562.7
285	90.000	.11100-01	45.000	.6513	1.335	.8312	.9577	.5068-01	.3156-01	3.475	23.71	579.1
285	90.000	.13100-01	46.000	.8408	1.733	1.075	.9577	.6578-01	.4080-01	4.463	30.44	579.8
285	90.000	.17000-01	48.000	.7159	1.363	.8956	.9577	.5176-01	.3400-01	4.119	28.27	568.1
285	90.000	.20900-01	50.000	.6078	1.146	.7583	.9577	.4350-01	.2879-01	3.536	24.29	566.4
285	90.000	.24900-01	52.000	.5589	1.023	.6934	.9573	.3884-01	.2633-01	3.366	23.19	561.0
285	90.000	.26900-01	53.000	.5341	.9774	.6653	.9565	.3711-01	.2526-01	3.218	22.17	561.0
285	90.000	.28800-01	54.000	.5287	.9560	.6588	.9558	.3629-01	.2501-01	3.232	22.30	558.6
285	90.000	.32800-01	55.000	.4021	.6557	.4882	.9544	.2489-01	.1853-01	2.841	19.87	533.6
285	90.000	.36700-01	56.000	.4569	.7929	.5704	.9530	.3010-01	.2165-01	2.946	20.42	549.8
285	90.000	.40600-01	57.000	.4466	.7865	.5643	.9517	.2986-01	.2142-01	2.823	19.54	553.2
285	90.000	.48500-01	58.000	.3730	.6456	.4751	.9491	.2451-01	.1804-01	2.413	16.74	549.2
285	90.000	.56400-01	59.000	.3487	.5992	.4488	.9466	.2275-01	.1704-01	2.279	15.82	547.5
285	90.000	.76100-01	60.000	.2577	.4345	.3391	.9410	.1649-01	.1287-01	1.730	12.04	542.8
285	90.000	.95800-01	61.000	.2047	.3433	.2759	.9361	.1303-01	.1047-01	1.385	9.649	541.4
285	90.000	.11550	62.000	.1604	.2680	.2208	.9319	.1018-01	.8381-02	1.091	7.604	540.5
285	135.00	.19000-01	49.000	.5837	1.125	.7513	.9537	.4273-01	.2852-01	3.313	22.72	570.2
285	135.00	.22900-01	51.000	.5513	1.053	.7076	.9537	.3999-01	.2686-01	3.161	21.69	568.7
285	180.00	.91000-02	23.000	.1777	.3009	.2182	.9546	.1142-01	.8285-02	1.186	8.248	543.9
285	180.00	.11100-01	24.000	.4432	.8449	.5650	.9546	.3208-01	.2145-01	2.547	17.48	568.3
285	180.00	.13100-01	25.000	.7858	1.676	1.035	.9546	.6363-01	.3930-01	4.042	27.50	584.2
285	180.00	.15000-01	26.000	.7716	1.613	1.011	.9546	.6124-01	.3837-01	4.041	27.53	581.7
285	180.00	.17000-01	27.000	.6735	1.342	.8701	.9546	.5095-01	.3303-01	3.694	25.25	575.2
285	180.00	.19000-01	28.000	.5947	1.165	.7645	.9546	.4424-01	.2902-01	3.318	22.72	572.7
285	180.00	.20900-01	29.000	.5727	1.086	.7289	.9546	.4121-01	.2767-01	3.312	22.74	567.3
285	180.00	.28800-01	32.000	.5173	.9399	.6567	.9528	.3568-01	.2493-01	3.143	21.67	559.6
285	180.00	.32800-01	33.000	.5004	.8715	.6311	.9514	.3309-01	.2396-01	3.211	22.25	550.6
285	180.00	.36700-01	34.000	.432	.7879	.5672	.9501	.2991-01	.2153-01	2.768	19.13	555.2
285	180.00	.48500-01	36.000	.3803	.6575	.4918	.9462	.2496-01	.1867-01	2.465	17.10	548.9
285	180.00	.56400-01	37.000	.3497	.5984	.4561	.9438	.2272-01	.1732-01	2.298	15.96	546.5
285	180.00	.76100-01	38.000	.2629	.4346	.3474	.9384	.1650-01	.1319-01	1.819	12.70	537.5
285	180.00	.95800-01	39.000	.1946	.3133	.2597	.9338	.1190-01	.9861-02	1.403	9.837	529.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K104)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
285	180.00	.11550	40.000	.1480	.2392	.2019	.9300	.9080-02	.7664-02	1.061	7.431	530.9
285	180.00	.18450	42.000	.6671-01	.1025	.9149-01	.9225	.3892-02	.3473-02	.5219	3.691	513.6
285	225.00	.22900-01	30.000	.5855	1.076	.7149	.9603	.4086-01	.2714-01	3.508	24.16	561.9
285	270.00	.91000-02	63.000	.6946	1.435	.8326	.9679	.5449-01	.3161-01	3.678	25.08	580.2
285	270.00	.11100-01	64.000	.8484	1.831	1.025	.9679	.6953-01	.3892-01	4.318	29.36	585.6
285	270.00	.13100-01	65.000	.7927	1.599	.9459	.9679	.6070-01	.3591-01	4.295	29.34	576.9
285	270.00	.17000-01	67.000	.6710	1.296	.7939	.9679	.4920-01	.3014-01	3.801	26.06	570.4
285	270.00	.20900-01	69.000	.6701	1.274	.7905	.9679	.4838-01	.3001-01	3.861	26.50	567.9
285	270.00	.24900-01	71.000	.6503	1.222	.7674	.9674	.4638-01	.2913-01	3.799	26.11	565.8
285	270.00	.28800-01	73.000	.5605	1.018	.6619	.9659	.3863-01	.2513-01	3.409	23.51	559.5
285	270.00	.36700-01	75.000	.5200	.9318	.6218	.9630	.3537-01	.2361-01	3.216	22.21	556.8
285	270.00	.48500-01	77.000	.4374	.7575	.5297	.9588	.2876-01	.2011-01	2.827	19.61	549.4
285	270.00	.56400-01	78.000	.4131	.7123	.5066	.9561	.2704-01	.1923-01	2.688	18.65	548.3
285	270.00	.95800-01	80.000	.2556	.4320	.3313	.9440	.1640-01	.1258-01	1.710	11.90	543.4
285	270.00	.11550	81.000	.2193	.3712	.2923	.9390	.1409-01	.1110-01	1.465	10.19	543.8
285	315.00	.19000-01	68.000	.6167	1.104	.7010	.9728	.4192-01	.2661-01	3.816	26.36	556.7
285	315.00	.22900-01	70.000	.6125	1.159	.7028	.9728	.4401-01	.2668-01	3.548	24.37	567.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
331	3.010	-4.988	-.1739-01	36.09	715.7	.9679	254.5	-.2000	2354.	.1026-01	.2034-06	3.692
332	3.010	-4.986	-.1912-01	35.98	715.7	.9648	254.5	-.2200	2354.	.1023-01	.2034-06	3.680
333	3.010	-4.984	-.1911-01	36.02	715.7	.9661	254.5	-.2200	2354.	.1025-01	.2034-06	3.685

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
331	.4390-01	.7547-02
332	.4383-01	.7559-02
333	.4386-01	.7554-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
332	.00000	.91000-02	1.0000	.7509	2.166	.8587	.9808	.9491-01	.3763-01	3.605	24.24	606.1
332	.00000	.15000-01	4.0000	.7891	2.081	.8960	.9808	.9122-01	.3927-01	3.986	26.89	600.4
332	.00000	.17000-01	5.0000	.7836	1.925	.8844	.9808	.8439-01	.3876-01	4.144	28.03	595.0
332	.00000	.19000-01	6.0000	.7561	1.797	.8508	.9808	.7876-01	.3729-01	4.094	27.74	592.1
332	.00000	.24900-01	9.0000	.6721	1.544	.7564	.9803	.6765-01	.3315-01	3.733	25.34	588.9
332	.00000	.26900-01	10.000	.6479	1.464	.7316	.9795	.6416-01	.3207-01	3.645	24.76	587.3
331	.00000	.32800-01	12.000	.5804	1.216	.6590	.9772	.5336-01	.2893-01	3.490	23.81	578.7
331	.00000	.36700-01	13.000	.5186	1.033	.5900	.9757	.4535-01	.2590-01	3.271	22.40	572.0
331	.00000	.40600-01	14.000	.5440	1.127	.6277	.9742	.4948-01	.2755-01	3.302	22.55	577.4
331	.00000	.48500-01	15.000	.4957	.9983	.5792	.9714	.4382-01	.2543-01	3.093	21.17	573.5
331	.00000	.56400-01	16.000	.4814	.9744	.5724	.9686	.4277-01	.2513-01	2.989	20.45	574.2
331	.00000	.76100-01	17.000	.3957	.7563	.4829	.9621	.3320-01	.2119-01	2.607	17.92	565.6
331	.00000	.95800-01	18.000	.6672-01	.1146	.8158-01	.9564	.5029-02	.3581-02	.5019	3.490	544.3
331	.00000	.11550	19.000	.2698	.5108	.3503	.9513	.2242-01	.1538-01	1.797	12.36	564.0
331	.00000	.16480	20.000	.1839	.3335	.2492	.9416	.1464-01	.1094-01	1.288	8.897	556.1
331	.00000	.21400	22.000	.1224	.2019	.1635	.9361	.8862-02	.7179-02	.9767	6.831	533.9
333	2.0000	.24700-01	165.00	.6373	1.335	.7104	.9803	.5857-01	.3116-01	3.826	26.11	578.8
332	9.0000	.15000-01	157.00	.7502	1.843	.8474	.9807	.8076-01	.3714-01	3.969	26.85	595.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
332	9.0000	.17600-01	158.00	.7452	1.831	.8418	.9807	.8025-01	.3689-01	3.942	26.66	595.0
333	9.8000	.24700-01	164.00	.6882	1.545	.7731	.9802	.6775-01	.3391-01	3.896	26.47	586.6
332	10.000	.22900-01	88.000	.6976	1.646	.7852	.9806	.7212-01	.3441-01	3.798	25.74	591.4
332	10.000	.26900-01	90.000	.6415	1.431	.7242	.9793	.6273-01	.3174-01	3.647	24.79	586.0
332	10.000	.34700-01	94.000	.5838	1.319	.6726	.9763	.5779-01	.2948-01	3.286	22.32	587.2
333	14.600	.44200-01	169.00	.5088	1.022	.5899	.9726	.4480-01	.2587-01	3.181	21.77	573.1
332	18.500	.44200-01	106.00	.5033	1.062	.5886	.9724	.4654-01	.2580-01	3.001	20.47	579.6
333	19.600	.62900-01	175.00	.4253	.8189	.5087	.9659	.3591-01	.2231-01	2.778	19.08	566.8
332	19.800	.40800-01	101.00	.5330	1.136	.6198	.9736	.4979-01	.2717-01	3.149	21.47	580.9
332	20.000	.24900-01	89.000	.6294	1.414	.7093	.9797	.6198-01	.3109-01	3.557	24.17	586.7
332	20.000	.28800-01	91.000	.6155	1.371	.6997	.9782	.6008-01	.3067-01	3.504	23.82	585.8
332	20.000	.32800-01	93.000	.5985	1.351	.6882	.9766	.5921-01	.3016-01	3.370	22.89	587.2
332	22.200	.62900-01	125.00	.4301	.8849	.5220	.9658	.3878-01	.2288-01	2.625	17.93	576.4
332	22.400	.44200-01	107.00	.4929	1.028	.5762	.9722	.4505-01	.2525-01	2.970	20.27	578.2
333	22.600	.10270	192.00	.2952	.5522	.3757	.9540	.2422-01	.1648-01	1.991	13.71	561.9
332	23.000	.42000-01	105.00	.5108	1.073	.5950	.9730	.4704-01	.2608-01	3.057	20.86	579.1
332	23.400	.59600-01	120.00	.4361	.8900	.5250	.9668	.3901-01	.2301-01	2.682	18.33	575.4
333	23.900	.21310	250.00	.1165	.1871	.1536	.9360	.8207-02	.6737-02	.9690	6.807	526.0
332	24.100	.82200-01	139.00	.3453	.6760	.4304	.9596	.2963-01	.1886-01	2.214	15.19	569.4
333	24.400	.19040	238.00	.1451	.2387	.1917	.9380	.1047-01	.8409-02	1.161	8.122	533.2
333	24.400	.12440	207.00	.2320	.4411	.3066	.9487	.1935-01	.1345-01	1.536	10.56	564.7
333	24.800	.16810	223.00	.1714	.3003	.2299	.9407	.1317-01	.1008-01	1.254	8.697	548.9
332	24.900	.62900-01	126.00	.4166	.8519	.5055	.9656	.3733-01	.2215-01	2.558	17.48	575.6
333	25.000	.79500-01	178.00	.3646	.6897	.4484	.9603	.3025-01	.1967-01	2.428	16.71	563.8
333	25.300	.10270	191.00	.2907	.5405	.3695	.9538	.2370-01	.1621-01	1.974	13.60	560.8
333	25.300	.10000+00	186.00	.3114	.5844	.3954	.9545	.2563-01	.1734-01	2.093	14.41	562.4
332	25.500	.60700-01	124.00	.4311	.8739	.5200	.9663	.3830-01	.2279-01	2.669	18.26	574.4
333	26.000	.12440	206.00	.2272	.4309	.3001	.9486	.1890-01	.1316-01	1.508	10.37	564.3
332	26.300	.82200-01	140.00	.3386	.6529	.4207	.9595	.2861-01	.1844-01	2.206	15.15	567.0
333	26.700	.12100	199.00	.2293	.4247	.2990	.9493	.1863-01	.1311-01	1.565	10.79	560.1
333	26.800	.16810	222.00	.1667	.2900	.2230	.9406	.1272-01	.9778-02	1.231	8.546	547.3
333	27.000	.19040	237.00	.1370	.2249	.1810	.9379	.9864-02	.7936-02	1.101	7.705	532.5
333	27.100	.21310	249.00	.1159	.1859	.1527	.9360	.8153-02	.6698-02	.9653	6.782	525.7
333	27.200	.80300-01	180.00	.3586	.6678	.4402	.9600	.2929-01	.1930-01	2.430	16.74	561.1
332	27.400	.40100-01	98.000	.5141	1.114	.6001	.9734	.4882-01	.2630-01	2.995	20.39	582.8
333	27.400	.16480	215.00	.1630	.2887	.2192	.9411	.1266-01	.9612-02	1.174	8.135	551.3
332	27.600	.41600-01	102.00	.5066	1.082	.5923	.9728	.4744-01	.2596-01	2.987	20.36	581.1
333	27.600	.12440	205.00	.2229	.4211	.2942	.9485	.1847-01	.1290-01	1.487	10.23	563.6
333	27.600	.18700	230.00	.1380	.2267	.1819	.9382	.9940-02	.7979-02	1.107	7.746	532.7
333	27.700	.21010	243.00	.1245	.2012	.1645	.9362	.8822-02	.7215-02	1.025	7.191	527.9
333	27.900	.10110	188.00	.2779	.5198	.3533	.9541	.2279-01	.1550-01	1.874	12.90	561.9
332	28.000	.46800-01	110.00	.4632	.9514	.5445	.9709	.4170-01	.2386-01	2.831	19.35	576.2
333	28.200	.16810	221.00	.1502	.2636	.2017	.9406	.1156-01	.8847-02	1.096	7.599	549.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
333	28.300	.19040	236.00	.1425	.2336	.1881	.9379	.1025-01	.8249-02	1.147	8.029	532.2
333	28.300	.12200	201.00	.2348	.4366	.3072	.9490	.1915-01	.1347-01	1.595	10.99	560.8
332	28.400	.53500-01	114.00	.4628	.9498	.5519	.9685	.4162-01	.2419-01	2.831	19.35	576.1
333	28.400	.21310	248.00	.1139	.1825	.1500	.9359	.8002-02	.6578-02	.9508	6.681	525.3
332	28.700	.58600-01	117.00	.4513	.9196	.5432	.9668	.4030-01	.2381-01	2.779	19.00	575.1
333	28.800	.16580	217.00	.1678	.2944	.2250	.9409	.1291-01	.9865-02	1.224	8.487	549.3
332	28.800	.60400-01	121.00	.4268	.8637	.5150	.9662	.3785-01	.2257-01	2.646	18.10	574.2
333	29.000	.21110	244.00	.1152	.1849	.1518	.9361	.8108-02	.6656-02	.9594	6.740	525.8
332	29.000	.65700-01	129.00	.4113	.8218	.5003	.9644	.3602-01	.2193-01	2.583	17.69	572.4
332	29.200	.72400-01	133.00	.3798	.7570	.4678	.9623	.3318-01	.2050-01	2.391	16.37	572.0
332	29.300	.79500-01	136.00	.3383	.6545	.4191	.9601	.2868-01	.1837-01	2.196	15.08	567.5
332	29.600	.92500-01	143.00	.3294	.6518	.4202	.9563	.2857-01	.1841-01	2.088	14.31	571.0
332	29.700	.10000+00	146.00	.2710	.5244	.3478	.9543	.2298-01	.1524-01	1.758	12.07	567.6
333	29.900	.12100	198.00	.2256	.4194	.2949	.9492	.1839-01	.1293-01	1.532	10.56	560.8
333	30.200	.16480	214.00	.1619	.2834	.2167	.9410	.1243-01	.9505-02	1.185	8.222	548.7
333	30.200	.18700	229.00	.1332	.2174	.1752	.9382	.9536-02	.7682-02	1.079	7.560	530.9
333	30.300	.21010	242.00	.1204	.1940	.1589	.9361	.8510-02	.6970-02	.9953	6.987	527.1
332	31.500	.11100-01	83.000	.8660	2.366	.9962	.9794	.1037	.4366-01	4.285	28.86	602.8
333	32.100	.21010	241.00	.1194	.1920	.1575	.9361	.8422-02	.6906-02	.9909	6.959	526.4
333	32.200	.16480	213.00	.1604	.2811	.2149	.9409	.1233-01	.9426-02	1.173	8.136	548.9
333	32.200	.17860	224.00	.1508	.2503	.1990	.9391	.1098-01	.8726-02	1.190	8.311	535.7
333	32.200	.18700	228.00	.1442	.2326	.1885	.9381	.1020-01	.8268-02	1.192	8.365	527.2
333	32.300	.12100	197.00	.2315	.4269	.3019	.9490	.1872-01	.1324-01	1.587	10.94	559.4
333	32.300	.12300	194.00	.2126	.3924	.2781	.9486	.1721-01	.1220-01	1.456	10.04	559.5
333	32.300	.12730	208.00	.2360	.4484	.3138	.9476	.1966-01	.1376-01	1.564	10.75	564.6
333	32.300	.13420	209.00	.1926	.3728	.2603	.9462	.1635-01	.1142-01	1.251	8.588	567.6
332	32.400	.10000+00	147.00	.2775	.5409	.3574	.9541	.2371-01	.1566-01	1.787	12.26	568.7
333	32.400	.10110	184.00	.2829	.5251	.3594	.9538	.2303-01	.1576-01	1.924	13.26	560.5
333	32.400	.10630	193.00	.2656	.4868	.3387	.9525	.2135-01	.1485-01	1.834	12.66	558.2
333	32.500	.85800-01	183.00	.3390	.6435	.4231	.9580	.2822-01	.1855-01	2.248	15.46	564.4
332	32.600	.79500-01	137.00	.3158	.6133	.3922	.9598	.2688-01	.1719-01	2.042	14.02	568.1
333	32.600	.80800-01	176.00	.3474	.6489	.4281	.9595	.2846-01	.1877-01	2.347	16.17	561.6
332	32.700	.67400-01	132.00	.4024	.7985	.4912	.9636	.3499-01	.2153-01	2.545	17.43	571.4
332	32.700	.72400-01	134.00	.3914	.7724	.4817	.9620	.3385-01	.2111-01	2.489	17.06	570.6
332	32.800	.65700-01	130.00	.4195	.8346	.5107	.9641	.3658-01	.2238-01	2.646	18.12	571.8
333	32.800	.16680	210.00	.1654	.2893	.2218	.9406	.1269-01	.9728-02	1.213	8.414	548.5
333	32.800	.18880	225.00	.1425	.2319	.1873	.9379	.1017-01	.8216-02	1.160	8.131	530.0
332	32.900	.58600-01	118.00	.4842	1.003	.5859	.9664	.4396-01	.2568-01	2.936	20.05	577.3
332	32.900	.60400-01	122.00	.4239	.8518	.5117	.9658	.3733-01	.2243-01	2.647	18.12	573.2
333	32.900	.61300-01	171.00	.4301	.8286	.5155	.9655	.3634-01	.2261-01	2.807	19.28	566.9
332	33.000	.53500-01	115.00	.4589	.9252	.5466	.9682	.4055-01	.2396-01	2.856	19.54	573.7
332	33.200	.48300-01	113.00	.4602	.9282	.5423	.9700	.4068-01	.2377-01	2.863	19.59	573.7
333	33.400	.42800-01	166.00	.4910	.9654	.5696	.9719	.4234-01	.2498-01	3.135	21.50	570.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
332	33.500	.40100-01	99.000	.5232	1.086	.6087	.9729	.4761-01	.2668-01	3.166	21.62	577.6
332	33.600	.38300-01	97.000	.5412	1.155	.6297	.9736	.5060-01	.2760-01	3.196	21.78	580.9
332	33.700	.36700-01	96.000	.5705	1.250	.6639	.9741	.5480-01	.2909-01	3.291	22.40	584.0
332	33.900	.33800-01	95.000	.5836	1.296	.6756	.9752	.5682-01	.2961-01	3.329	22.63	585.5
333	34.700	.21010	240.00	.1177	.1896	.1554	.9360	.8314-02	.6814-02	.9737	6.836	527.0
333	34.700	.18700	227.00	.1299	.2103	.1702	.9380	.9221-02	.7464-02	1.066	7.480	528.5
333	34.900	.16480	212.00	.1659	.2914	.2226	.9408	.1278-01	.9764-02	1.209	8.380	549.5
332	35.100	.10000+00	148.00	.2942	.5750	.3796	.9539	.2520-01	.1664-01	1.889	12.96	569.1
333	35.200	.23900-01	161.00	.7095	1.670	.8074	.9789	.7325-01	.3541-01	3.872	26.24	591.2
332	35.300	.92500-01	145.00	.3097	.6095	.3955	.9559	.2671-01	.1733-01	1.975	13.54	570.2
332	35.300	.22100-01	160.00	.5971	1.478	.6823	.9790	.6478-01	.2990-01	3.142	21.24	595.6
333	35.400	.18800	231.00	.1225	.1999	.1613	.9379	.8767-02	.7074-02	.9938	6.962	530.7
333	35.500	.12100	196.00	.2298	.4261	.3007	.9488	.1869-01	.1319-01	1.566	10.79	560.3
333	35.600	.16580	216.00	.1739	.3043	.2332	.9407	.1335-01	.1023-01	1.273	8.828	548.7
332	35.800	.80600-01	138.00	.3316	.6346	.4117	.9593	.2781-01	.1804-01	2.179	14.97	565.8
333	35.900	.21310	247.00	.1175	.1884	.1549	.9358	.8262-02	.6794-02	.9793	6.880	525.6
333	36.000	.19040	235.00	.1378	.2251	.1818	.9377	.9873-02	.7972-02	1.116	7.814	531.1
333	36.200	.16810	220.00	.1731	.2998	.2315	.9403	.1315-01	.1015-01	1.286	8.932	546.3
332	36.200	.72400-01	135.00	.3603	.6783	.4391	.9617	.2973-01	.1924-01	2.410	16.59	563.0
333	36.300	.12200	200.00	.2268	.4206	.2973	.9486	.1845-01	.1304-01	1.544	10.64	560.4
332	36.600	.65700-01	131.00	.3866	.7847	.4735	.9638	.3439-01	.2075-01	2.390	16.34	574.6
333	36.700	.18700	226.00	.1411	.2293	.1853	.9380	.1006-01	.8127-02	1.151	8.070	529.6
333	36.900	.16480	211.00	.1656	.2913	.2225	.9407	.1278-01	.9758-02	1.204	8.348	549.9
333	36.900	.10110	187.00	.2994	.5604	.3821	.9535	.2458-01	.1676-01	2.017	13.89	562.0
332	37.000	.60400-01	123.00	.4351	.8810	.5272	.9655	.3861-01	.2311-01	2.697	18.45	574.3
333	37.000	.12440	204.00	.2253	.4166	.2960	.9480	.1827-01	.1298-01	1.540	10.62	559.8
332	37.100	.58500-01	119.00	.4494	.9132	.5430	.9661	.4002-01	.2380-01	2.776	18.98	574.7
333	37.200	.21310	246.00	.1124	.1802	.1482	.9358	.7902-02	.6501-02	.9389	6.598	525.3
333	37.600	.16810	219.00	.1645	.2847	.2200	.9402	.1248-01	.9647-02	1.223	8.493	546.2
332	37.800	.10270	150.00	.2783	.5398	.3603	.9530	.2366-01	.1579-01	1.802	12.37	567.9
333	37.900	.12100	195.00	.2260	.4099	.2936	.9487	.1797-01	.1287-01	1.581	10.92	556.2
333	38.000	.80300-01	179.00	.3528	.6543	.4346	.9592	.2870-01	.1906-01	2.403	16.56	560.4
332	38.500	.46800-01	112.00	.4738	.9617	.5588	.9700	.4215-01	.2449-01	2.929	20.03	574.6
333	38.600	.12440	203.00	.2258	.4163	.2965	.9479	.1825-01	.1300-01	1.549	10.68	559.3
333	38.700	.10000+00	185.00	.2798	.5181	.3556	.9537	.2272-01	.1559-01	1.909	13.16	560.1
332	38.900	.82200-01	141.00	.3189	.6217	.3996	.9585	.2724-01	.1751-01	2.054	14.09	568.7
332	39.300	.41600-01	104.00	.5232	1.118	.6155	.9718	.4900-01	.2698-01	3.085	21.02	581.2
333	39.500	.10270	190.00	.2913	.5387	.3717	.9529	.2363-01	.1630-01	1.991	13.72	559.9
333	39.600	.16810	218.00	.1312	.2270	.1755	.9402	.9954-02	.7697-02	.9755	6.776	546.1
333	39.900	.19040	233.00	.1370	.2232	.1806	.9375	.9789-02	.7919-02	1.113	7.800	530.4
333	40.100	.79500-01	177.00	.3535	.6514	.4345	.9592	.2857-01	.1906-01	2.426	16.73	559.2
333	40.200	.12440	202.00	.2296	.4248	.3021	.9478	.1863-01	.1325-01	1.569	10.82	559.9
333	40.300	.21310	245.00	.1165	.1863	.1535	.9357	.8170-02	.6730-02	.9764	6.864	524.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
332	41.100	.82200-01	142.00	.3534	.6915	.4438	.9584	.3031-01	.1945-01	2.268	15.55	569.3
333	41.100	.60700-01	173.00	.4313	.8274	.5181	.9650	.3629-01	.2272-01	2.827	19.43	566.2
333	42.600	.59600-01	172.00	.4459	.8644	.5361	.9652	.3791-01	.2351-01	2.890	19.84	567.9
333	43.200	.42000-01	168.00	.4875	.9618	.5680	.9713	.4218-01	.2491-01	3.103	21.27	570.5
333	43.400	.82200-01	181.00	.3541	.6814	.4432	.9581	.2989-01	.1944-01	2.313	15.89	566.7
332	43.600	.62900-01	128.00	.3661	.7226	.4451	.9640	.3167-01	.1951-01	2.328	15.95	570.6
332	45.000	.22900-01	8.0000	.7705	1.909	.8867	.9780	.8366-01	.3886-01	4.053	27.40	595.7
333	46.100	.62900-01	174.00	.4195	.8005	.5068	.9638	.3511-01	.2223-01	2.766	19.01	565.3
333	47.700	.40800-01	167.00	.5363	1.092	.6284	.9712	.4788-01	.2756-01	3.308	22.62	575.0
332	48.400	.44200-01	109.00	.4928	.9823	.5798	.9699	.4305-01	.2541-01	3.102	21.24	572.1
333	53.200	.24700-01	163.00	.6920	1.528	.7937	.9766	.6701-01	.3481-01	3.970	27.00	584.9
333	65.200	.24700-01	162.00	.6799	1.479	.7863	.9750	.6485-01	.3448-01	3.951	26.89	583.2
331	90.000	.91000-02	44.000	.6736	1.890	.8236	.9717	.8298-01	.3615-01	3.288	22.13	604.5
331	90.000	.11100-01	45.000	.8468	2.381	1.036	.9717	.1045	.4545-01	4.128	27.78	604.6
331	90.000	.13100-01	46.000	.8077	2.025	.9731	.9717	.8888-01	.4272-01	4.221	28.53	596.6
331	90.000	.17000-01	48.000	.6227	1.422	.7404	.9717	.6242-01	.3250-01	3.480	23.62	588.4
331	90.000	.20900-01	50.000	.6900	1.546	.8182	.9717	.6787-01	.3591-01	3.914	26.60	586.4
331	90.000	.26900-01	53.000	.6101	1.310	.7244	.9705	.5751-01	.3180-01	3.586	24.43	581.7
331	90.000	.28800-01	54.000	.6015	1.269	.7154	.9698	.5572-01	.3140-01	3.592	24.50	579.6
331	90.000	.32800-01	55.000	.4136	.7413	.4811	.9683	.3254-01	.2112-01	2.940	20.34	553.7
331	90.000	.36700-01	56.000	.5400	1.074	.6464	.9669	.4714-01	.2837-01	3.412	23.37	571.7
331	90.000	.40600-01	57.000	.5161	1.049	.6256	.9655	.4603-01	.2746-01	3.192	21.83	574.7
331	90.000	.48500-01	58.000	.5078	.9985	.6212	.9629	.4383-01	.2727-01	3.246	22.25	570.0
331	90.000	.56400-01	59.000	.4230	.8096	.5219	.9603	.3554-01	.2291-01	2.782	19.12	565.8
331	90.000	.76100-01	60.000	.3382	.6279	.4279	.9545	.2756-01	.1878-01	2.303	15.87	560.6
331	90.000	.95800-01	61.000	.2872	.5287	.3733	.9495	.2321-01	.1638-01	1.975	13.63	559.0
331	90.000	.11550	62.000	.2148	.3912	.2851	.9453	.1717-01	.1251-01	1.496	10.33	557.0
331	135.00	.19000-01	49.000	.6252	1.400	.7706	.9659	.6147-01	.3383-01	3.548	24.11	586.4
331	135.00	.22900-01	51.000	.6103	1.361	.7516	.9659	.5974-01	.3299-01	3.476	23.63	585.9
331	180.00	.91000-02	23.000	.3812	.7409	.4629	.9637	.3252-01	.2032-01	2.467	16.93	568.3
331	180.00	.11100-01	24.000	.6753	1.883	.8806	.9637	.8265-01	.3865-01	3.308	22.27	604.1
331	180.00	.13100-01	25.000	.7109	1.808	.9121	.9637	.7936-01	.4004-01	3.681	24.86	597.7
331	180.00	.15000-01	26.000	.6697	1.637	.8529	.9637	.7187-01	.3744-01	3.559	24.08	594.6
331	180.00	.17000-01	27.000	.6193	1.429	.7800	.9637	.6272-01	.3424-01	3.434	23.30	589.4
331	180.00	.19000-01	28.000	.6201	1.416	.7793	.9637	.6214-01	.3421-01	3.467	23.53	588.3
331	180.00	.20900-01	29.000	.6026	1.319	.7509	.9637	.5791-01	.3296-01	3.485	23.71	583.9
331	180.00	.28800-01	32.000	.5416	1.116	.6741	.9618	.4899-01	.2959-01	3.305	22.58	576.6
331	180.00	.32800-01	33.000	.5166	1.005	.6395	.9605	.4412-01	.2807-01	3.338	22.91	568.4
331	180.00	.36700-01	34.000	.5006	1.012	.6308	.9592	.4444-01	.2769-01	3.111	21.28	574.1
331	180.00	.48500-01	36.000	.4266	.8221	.5429	.9555	.3609-01	.2383-01	2.786	19.13	566.9
331	180.00	.56400-01	37.000	.3839	.7270	.4927	.9532	.3191-01	.2163-01	2.556	17.58	564.0
331	180.00	.76100-01	38.000	.3016	.5550	.3950	.9482	.2436-01	.1734-01	2.075	14.31	558.9
331	180.00	.95800-01	39.000	.2483	.4451	.3300	.9440	.1954-01	.1449-01	1.765	12.21	553.8

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
331	180.00	.11550	40.000	.1894	.3407	.2572	.9407	.1495-01	.1129-01	1.340	9.267	554.5
331	180.00	.18450	42.000	.9561-01	.1589	.1292	.9348	.6974-02	.5670-02	.7541	5.268	536.0
331	225.00	.22900-01	30.000	.6110	1.309	.7469	.9659	.5745-01	.3278-01	3.600	24.53	581.4
331	270.00	.91000-02	63.000	.7083	1.931	.8633	.9717	.8478-01	.3789-01	3.514	23.67	602.7
331	270.00	.11100-01	64.000	.8295	2.380	1.017	.9717	.1045	.4466-01	3.999	26.90	605.8
331	270.00	.13100-01	65.000	.8025	2.108	.9733	.9717	.9254-01	.4272-01	4.070	27.46	600.1
331	270.00	.17000-01	67.000	.8040	1.894	.9607	.9717	.8312-01	.4217-01	4.389	29.75	591.3
331	270.00	.20900-01	69.000	.7006	1.619	.8348	.9717	.7105-01	.3664-01	3.880	26.32	589.5
331	270.00	.24900-01	71.000	.6854	1.533	.8154	.9712	.6728-01	.3579-01	3.895	26.47	586.2
331	270.00	.28800-01	73.000	.5964	1.265	.7102	.9697	.5555-01	.3118-01	3.544	24.17	580.3
331	270.00	.36700-01	75.000	.5582	1.164	.6747	.9668	.5111-01	.2962-01	3.368	22.99	578.2
331	270.00	.48500-01	77.000	.4759	.9269	.5811	.9628	.4069-01	.2551-01	3.073	21.09	568.6
331	270.00	.56400-01	78.000	.4289	.8221	.5296	.9603	.3609-01	.2325-01	2.817	19.36	566.0
331	270.00	.95800-01	80.000	.2875	.5196	.3713	.9495	.2281-01	.1630-01	2.022	13.98	555.5
331	270.00	.11550	81.000	.2291	.4133	.3030	.9453	.1814-01	.1330-01	1.615	11.17	555.1
331	315.00	.19000-01	68.000	.6373	1.343	.7207	.9780	.5895-01	.3164-01	3.810	25.99	579.5
331	315.00	.22900-01	70.000	.7274	1.661	.8301	.9780	.7289-01	.3644-01	4.066	27.60	588.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
306	4.020	-4.974	.0000	63.10	720.7	.4046	170.3	.0000	2572.	.6414-02	.1370-06	3.741
307	4.020	-4.988	.1739-02	63.05	720.7	.4044	170.3	.2000-01	2572.	.6409-02	.1370-06	3.738
308	4.020	-4.970	-.3465-02	63.13	720.7	.4048	170.3	-.4000-01	2572.	.6417-02	.1370-06	3.743

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
306	.3798-01	.9563-02
307	.3797-01	.9566-02
308	.3799-01	.9561-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
307	.00000	.91000-02	1.0000	.6135	1.172	.7091	.9717	.4449-01	.2692-01	3.523	24.16	569.4
307	.00000	.15000-01	4.0000	.7230	1.381	.8357	.9717	.5244-01	.3173-01	4.151	28.47	569.5
307	.00000	.17000-01	5.0000	.7238	1.338	.8318	.9717	.5078-01	.3158-01	4.316	29.69	563.6
307	.00000	.19000-01	6.0000	.6951	1.273	.7976	.9717	.4834-01	.3028-01	4.188	28.84	562.0
307	.00000	.24900-01	9.0000	.6604	1.201	.7588	.9712	.4561-01	.2881-01	4.013	27.65	560.6
307	.00000	.26900-01	10.000	.6205	1.117	.7144	.9704	.4241-01	.2712-01	3.818	26.34	558.6
306	.00000	.32800-01	12.000	.5326	.9391	.6177	.9682	.3567-01	.2346-01	3.367	23.29	554.2
306	.00000	.36700-01	13.000	.4759	.8196	.5532	.9667	.3113-01	.2101-01	3.106	21.55	548.8
306	.00000	.40600-01	14.000	.4949	.8725	.5824	.9653	.3314-01	.2212-01	3.129	21.64	554.2
306	.00000	.48500-01	15.000	.4381	.7652	.5220	.9624	.2906-01	.1983-01	2.806	19.43	552.0
306	.00000	.56400-01	16.000	.4273	.7504	.5172	.9596	.2850-01	.1964-01	2.716	18.80	553.3
306	.00000	.76100-01	17.000	.3315	.5736	.4132	.9531	.2178-01	.1569-01	2.149	14.90	549.9
306	.00000	.95800-01	18.000	.5360-01	.8837-01	.6767-01	.9472	.3356-02	.2570-02	.3729	2.603	537.5
306	.00000	.11550	19.000	.2207	.3835	.2931	.9418	.1456-01	.1113-01	1.423	9.662	550.9
306	.00000	.16480	20.000	.1411	.2365	.1955	.9310	.8981-02	.7423-02	.9574	6.665	542.0
306	.00000	.21400	22.000	.8373-01	.1270	.1128	.9244	.4823-02	.4284-02	.6728	4.771	509.1
308	2.0000	.24700-01	165.00	.6220	1.094	.7101	.9712	.4156-01	.2698-01	3.948	27.31	553.6
307	9.0000	.15000-01	157.00	.7063	1.315	.8132	.9716	.4992-01	.3087-01	4.175	28.71	565.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
307	9.0000	.17600-01	158.00	.6892	1.285	.7937	.9716	.4878-01	.3013-01	4.067	27.96	565.2
308	9.8000	.24700-01	164.00	.6608	1.205	.7599	.9711	.4577-01	.2887-01	4.006	27.60	561.1
307	10.000	.22900-01	88.000	.6819	1.259	.7841	.9716	.4780-01	.2977-01	4.070	28.00	563.5
307	10.000	.26900-01	90.000	.6258	1.122	.7204	.9703	.4258-01	.2735-01	3.873	26.74	557.6
307	10.000	.34700-01	94.000	.5268	.9214	.6125	.9673	.3498-01	.2325-01	3.365	23.29	552.4
308	14.600	.44200-01	169.00	.4759	.8243	.5623	.9637	.3131-01	.2136-01	3.083	21.37	550.1
307	18.500	.44200-01	106.00	.4746	.8383	.5639	.9635	.3183-01	.2141-01	2.993	20.69	554.6
308	19.600	.62900-01	175.00	.3873	.6625	.4717	.9569	.2517-01	.1792-01	2.553	17.73	547.1
307	19.800	.40800-01	101.00	.5028	.8883	.5939	.9647	.3372-01	.2255-01	3.171	21.92	554.6
307	20.000	.24900-01	89.000	.6387	1.155	.7352	.9706	.4384-01	.2791-01	3.910	26.96	559.4
307	20.000	.28800-01	91.000	.5898	1.056	.6829	.9691	.4009-01	.2592-01	3.656	25.24	557.4
307	20.000	.32800-01	93.000	.5554	1.001	.6489	.9676	.3799-01	.2463-01	3.415	23.56	558.7
307	22.200	.62900-01	125.00	.3766	.6689	.4642	.9568	.2540-01	.1762-01	2.357	16.29	555.8
307	22.400	.44200-01	107.00	.4677	.8220	.5556	.9633	.3121-01	.2109-01	2.969	20.54	553.5
308	22.600	.10270	192.00	.2392	.4075	.3101	.9446	.1548-01	.1178-01	1.586	11.02	546.2
307	23.000	.42000-01	105.00	.4866	.8558	.5759	.9640	.3249-01	.2187-01	3.086	21.35	553.6
307	23.400	.59600-01	120.00	.3925	.6893	.4796	.9578	.2617-01	.1821-01	2.495	17.26	553.3
308	23.900	.21310	250.00	.8254-01	.1221	.1094	.9242	.4638-02	.4156-02	.6973	4.975	498.3
307	24.100	.82200-01	139.00	.3052	.5321	.3868	.9505	.2020-01	.1469-01	1.958	13.56	551.7
308	24.400	.19040	238.00	.1117	.1691	.1487	.9267	.6424-02	.5650-02	.9021	6.400	508.2
308	24.400	.12440	207.00	.1973	.3398	.2652	.9390	.1291-01	.1008-01	1.289	8.938	548.8
308	24.800	.16810	223.00	.1301	.2090	.1768	.9300	.7938-02	.6715-02	.9431	6.611	529.8
307	24.900	.62900-01	126.00	.3723	.6587	.4588	.9566	.2501-01	.1742-01	2.343	16.20	554.9
308	25.000	.79500-01	178.00	.3208	.5469	.4018	.9513	.2078-01	.1526-01	2.124	14.76	546.4
308	25.300	.10270	191.00	.2461	.4166	.3184	.9445	.1582-01	.1210-01	1.646	11.44	544.6
308	25.300	.10000+00	186.00	.2627	.4472	.3394	.9452	.1699-01	.1289-01	1.743	12.11	546.0
307	25.500	.60700-01	124.00	.3891	.6805	.4761	.9573	.2584-01	.1807-01	2.486	17.21	552.4
308	26.000	.12440	206.00	.1926	.3303	.2585	.9389	.1255-01	.9819-02	1.265	8.780	547.9
307	26.300	.82200-01	140.00	.3143	.5416	.3970	.9504	.2056-01	.1507-01	2.049	14.21	548.9
308	26.700	.12100	199.00	.1928	.3240	.2551	.9397	.1231-01	.9690-02	1.303	9.067	542.7
308	26.800	.16810	222.00	.1304	.2081	.1766	.9299	.7907-02	.6709-02	.9552	6.703	527.8
308	27.000	.19040	237.00	.1092	.1644	.1449	.9266	.6246-02	.5505-02	.8904	6.325	506.0
308	27.100	.21310	249.00	.8705-01	.1282	.1150	.9241	.4869-02	.4370-02	.7428	5.306	496.0
308	27.200	.80300-01	180.00	.3152	.5314	.3939	.9509	.2019-01	.1496-01	2.121	14.75	543.5
307	27.400	.40100-01	98.000	.5201	.9257	.6161	.9644	.3514-01	.2339-01	3.247	22.43	556.2
308	27.400	.16480	215.00	.1225	.1984	.1669	.9305	.7537-02	.6339-02	.8757	6.129	532.4
307	27.600	.41600-01	102.00	.5058	.8953	.6001	.9639	.3399-01	.2278-01	3.182	21.99	555.0
308	27.600	.12440	205.00	.1894	.3231	.2537	.9388	.1227-01	.9637-02	1.254	8.707	546.5
308	27.600	.18700	230.00	.1056	.1589	.1398	.9271	.6038-02	.5312-02	.8615	6.120	505.9
308	27.700	.21010	243.00	.9032-01	.1333	.1194	.9244	.5063-02	.4536-02	.7671	5.477	497.1
308	27.900	.10110	188.00	.2497	.4230	.3227	.9448	.1607-01	.1226-01	1.668	11.60	544.8
307	28.000	.46800-01	110.00	.4381	.7664	.5233	.9620	.2910-01	.1987-01	2.798	19.37	552.4
308	28.200	.16810	221.00	.1323	.2118	.1796	.9299	.8047-02	.6821-02	.9639	6.760	528.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
308	28.300	.19040	236.00	.1021	.1529	.1350	.9266	.5807-02	.5129-02	.8414	5.985	503.7
308	28.300	.12200	201.00	.2036	.3439	.2705	.9393	.1306-01	.1028-01	1.366	9.500	544.0
307	28.400	.53500-01	114.00	.4281	.7517	.5182	.9596	.2854-01	.1968-01	2.721	18.83	553.3
308	28.400	.21310	248.00	.8448-01	.1239	.1114	.9241	.4707-02	.4231-02	.7269	5.198	494.2
307	28.700	.58600-01	117.00	.4070	.7126	.4969	.9578	.2706-01	.1886-01	2.596	17.97	552.6
308	28.800	.16580	217.00	.1272	.2042	.1726	.9302	.7756-02	.6555-02	.9232	6.472	529.6
307	28.800	.60400-01	121.00	.3903	.6818	.4777	.9572	.2588-01	.1814-01	2.497	17.29	552.1
308	29.000	.21110	244.00	.8760-01	.1286	.1155	.9243	.4885-02	.4387-02	.7523	5.379	494.6
307	29.000	.65700-01	129.00	.3624	.6344	.4481	.9554	.2408-01	.1701-01	2.313	16.01	552.6
307	29.200	.72400-01	133.00	.3332	.5823	.4165	.9532	.2211-01	.1581-01	2.131	14.76	552.2
307	29.300	.79500-01	136.00	.2988	.5145	.3760	.9510	.1953-01	.1428-01	1.950	13.52	548.8
307	29.600	.92500-01	143.00	.2780	.4854	.3591	.9471	.1843-01	.1363-01	1.780	12.32	552.0
307	29.700	.10000+00	146.00	.2496	.4302	.3246	.9450	.1633-01	.1232-01	1.626	11.28	549.1
308	29.900	.12100	198.00	.1906	.3203	.2525	.9395	.1217-01	.9592-02	1.289	8.968	542.7
308	30.200	.16480	214.00	.1248	.2001	.1691	.9304	.7601-02	.6424-02	.9072	6.361	529.3
308	30.300	.21010	242.00	.8994-01	.1321	.1186	.9243	.5019-02	.4505-02	.7713	5.513	494.9
307	31.500	.11100-01	83.000	.8164	1.616	.9569	.9703	.6137-01	.3633-01	4.514	30.86	575.0
308	32.100	.21010	241.00	.8939-01	.1308	.1175	.9243	.4967-02	.4465-02	.7736	5.536	492.9
308	32.200	.16480	213.00	.1264	.2027	.1714	.9303	.7702-02	.6512-02	.9196	6.448	529.2
308	32.200	.17860	224.00	.1273	.1942	.1692	.9281	.7377-02	.6428-02	1.011	7.157	511.6
308	32.200	.18700	228.00	.1054	.1561	.1382	.9269	.5931-02	.5252-02	.8888	6.339	498.7
308	32.300	.12100	197.00	.1991	.3314	.2628	.9393	.1259-01	.9982-02	1.365	9.517	540.1
308	32.300	.12300	194.00	.1852	.3090	.2453	.9389	.1174-01	.9319-02	1.266	8.817	540.8
308	32.300	.12730	208.00	.1814	.3107	.2447	.9378	.1180-01	.9294-02	1.193	8.280	547.5
308	32.300	.13420	209.00	.1582	.2773	.2179	.9363	.1054-01	.8276-02	1.008	6.979	552.9
307	32.400	.10000+00	147.00	.2506	.4308	.3258	.9448	.1636-01	.1237-01	1.639	11.37	548.4
308	32.400	.10110	184.00	.2449	.4103	.3156	.9445	.1559-01	.1199-01	1.664	11.58	541.9
308	32.400	.10630	193.00	.2265	.3764	.2929	.9431	.1430-01	.1113-01	1.557	10.86	539.7
308	32.500	.85800-01	183.00	.2947	.5001	.3731	.9488	.1900-01	.1417-01	1.963	13.65	545.3
307	32.600	.79500-01	137.00	.3378	.5806	.4254	.9508	.2204-01	.1615-01	2.209	15.33	548.4
308	32.600	.80800-01	176.00	.3076	.5164	.3848	.9503	.1962-01	.1462-01	2.082	14.49	542.5
307	32.700	.67400-01	132.00	.3579	.6240	.4439	.9546	.2369-01	.1685-01	2.297	15.91	551.7
307	32.700	.72400-01	134.00	.3480	.6054	.4350	.9530	.2298-01	.1651-01	2.240	15.52	551.1
307	32.800	.65700-01	130.00	.3599	.6275	.4450	.9551	.2382-01	.1690-01	2.309	15.99	551.7
308	32.800	.16680	210.00	.1300	.2076	.1762	.9299	.7886-02	.6692-02	.9527	6.686	527.8
308	32.800	.18880	225.00	.1051	.1563	.1384	.9266	.5938-02	.5256-02	.8790	6.264	500.6
307	32.900	.58600-01	118.00	.3574	.6324	.4385	.9575	.2401-01	.1665-01	2.249	15.55	554.9
307	32.900	.60400-01	122.00	.3804	.6643	.4663	.9569	.2522-01	.1770-01	2.434	16.86	552.1
308	32.900	.61300-01	171.00	.3788	.6459	.4617	.9566	.2453-01	.1754-01	2.507	17.41	546.4
307	33.000	.53500-01	115.00	.4237	.7360	.5123	.9592	.2794-01	.1945-01	2.732	18.93	550.8
307	33.200	.48300-01	113.00	.4390	.7609	.5256	.9610	.2889-01	.1996-01	2.839	19.60	550.3
308	33.400	.42800-01	166.00	.4565	.7795	.5393	.9630	.2961-01	.2049-01	3.017	20.95	546.7
307	33.500	.40100-01	99.000	.4883	.8490	.5766	.9639	.3223-01	.2189-01	3.144	21.78	551.1

FH15. E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NC	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
307	33.600	.38300-01	97.000	.5133	.9034	.6059	.9646	.3430-01	.2300-01	3.252	22.50	553.8
307	33.700	.36700-01	96.000	.5034	.8975	.5943	.9652	.3408-01	.2256-01	3.137	21.66	556.6
307	33.900	.33800-01	95.000	.5429	.9706	.6378	.9662	.3685-01	.2421-01	3.370	23.27	557.1
308	34.700	.21010	240.00	.8996-01	.1313	.1182	.9242	.4988-02	.4488-02	.7820	5.599	491.8
308	34.700	.18700	227.00	.9032-01	.1341	.1187	.9268	.5094-02	.4508-02	.7574	5.399	499.9
308	34.900	.16480	212.00	.1298	.2079	.1760	.9301	.7898-02	.6685-02	.9452	6.629	528.9
307	35.100	.10000+00	148.00	.2538	.4354	.3301	.9446	.1653-01	.1253-01	1.665	11.56	547.9
308	35.200	.23900-01	161.00	.6802	1.268	.7906	.9699	.4816-01	.3003-01	4.018	27.62	565.2
307	35.300	.92500-01	145.00	.2802	.4837	.3612	.9467	.1836-01	.1371-01	1.822	12.63	549.4
307	35.300	.22100-01	160.00	.6404	1.207	.7454	.9700	.4584-01	.2830-01	3.731	25.62	567.2
308	35.400	.18800	231.00	.1114	.1659	.1468	.9267	.6302-02	.5575-02	.9279	6.608	501.4
308	35.500	.12100	196.00	.1940	.3225	.2561	.9391	.1225-01	.9730-02	1.333	9.292	539.8
308	35.600	.16580	216.00	.1340	.2138	.1814	.9299	.8120-02	.6892-02	.9837	6.904	527.5
307	35.800	.80600-01	138.00	.2927	.4970	.3681	.9502	.1887-01	.1398-01	1.949	13.54	545.3
308	35.900	.21310	247.00	.8774-01	.1275	.1150	.9239	.4845-02	.4370-02	.7695	5.516	489.8
308	36.000	.19040	235.00	.1100	.1636	.1450	.9263	.6216-02	.5510-02	.9200	6.555	500.6
308	36.200	.16810	220.00	.1390	.2196	.1875	.9295	.8343-02	.7123-02	1.037	7.293	524.3
307	36.200	.72400-01	135.00	.3246	.5459	.4016	.9527	.2072-01	.1525-01	2.190	15.24	542.9
308	36.300	.12200	200.00	.1896	.3151	.2507	.9388	.1197-01	.9523-02	1.303	9.081	539.8
307	36.600	.65700-01	131.00	.3824	.6698	.4744	.9548	.2543-01	.1801-01	2.438	16.88	552.7
308	36.700	.18700	226.00	.1084	.1609	.1424	.9267	.6111-02	.5411-02	.9092	6.481	499.8
308	36.900	.16480	211.00	.1327	.2126	.1800	.9300	.8078-02	.6839-02	.9660	6.774	529.0
308	36.900	.10110	187.00	.2558	.4281	.3299	.9441	.1626-01	.1253-01	1.739	12.11	541.6
307	37.000	.60400-01	123.00	.3913	.6835	.4806	.9565	.2595-01	.1825-01	2.504	17.34	552.1
308	37.000	.12440	204.00	.1924	.3191	.2550	.9382	.1212-01	.9686-02	1.327	9.252	539.2
307	37.100	.56600-01	119.00	.4081	.7133	.4998	.9571	.2708-01	.1897-01	2.610	18.07	552.2
308	37.200	.21310	246.00	.8861-01	.1286	.1161	.9239	.4885-02	.4409-02	.7802	5.596	488.9
308	37.600	.16810	219.00	.1340	.2115	.1807	.9295	.8034-02	.6865-02	1.001	7.041	524.0
307	37.800	.10270	150.00	.2553	.4341	.3324	.9437	.1648-01	.1262-01	1.695	11.78	545.7
308	37.900	.12100	195.00	.1965	.3215	.2577	.9390	.1221-01	.9788-02	1.384	9.670	535.3
308	38.000	.80300-01	179.00	.3131	.5214	.3912	.9501	.1981-01	.1486-01	2.145	14.95	540.3
307	38.500	.46800-01	112.00	.4492	.7808	.5382	.9611	.2964-01	.2043-01	2.894	20.05	551.0
308	38.600	.12440	203.00	.1914	.3165	.2534	.9381	.1202-01	.9626-02	1.326	9.252	538.3
308	38.700	.10000+00	185.00	.2455	.4091	.3159	.9443	.1554-01	.1200-01	1.680	11.71	540.5
307	38.900	.82200-01	141.00	.3098	.5288	.3919	.9494	.2007-01	.1488-01	2.047	14.22	546.6
307	39.300	.41600-01	104.00	.4757	.8400	.5670	.9629	.3189-01	.2153-01	3.000	20.75	554.5
308	39.500	.10270	190.00	.2544	.4213	.3277	.9435	.1600-01	.1245-01	1.757	12.26	538.8
308	39.600	.16810	218.00	.1257	.1982	.1695	.9294	.7530-02	.6439-02	.9396	6.608	523.8
308	39.900	.19040	233.00	.1112	.1644	.1461	.9262	.6245-02	.5550-02	.9410	6.715	497.9
308	40.100	.79500-01	177.00	.3123	.5172	.3893	.9501	.1965-01	.1479-01	2.158	15.06	538.7
308	40.200	.12440	202.00	.1925	.3183	.2550	.9380	.1209-01	.9688-02	1.334	9.304	538.3
308	40.300	.21310	245.00	.8974-01	.1296	.1172	.9238	.4924-02	.4453-02	.7986	5.736	486.4
307	41.100	.82200-01	142.00	.2998	.5115	.3796	.9492	.1942-01	.1441-01	1.983	13.77	546.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
308	41.100	.60700-01	173.00	.3818	.6484	.4661	.9560	.2463-01	.1771-01	2.543	17.67	545.4
308	42.600	.59600-01	172.00	.3981	.6802	.4863	.9562	.2584-01	.1847-01	2.628	18.25	546.9
308	43.200	.42000-01	168.00	.4359	.7461	.5169	.9623	.2834-01	.1964-01	2.870	19.92	547.3
308	43.400	.82200-01	181.00	.3111	.5387	.3966	.9490	.2047-01	.1507-01	2.016	13.97	550.1
307	43.600	.62900-01	128.00	.3833	.6605	.4724	.9551	.2508-01	.1793-01	2.499	17.33	549.0
307	45.000	.22900-01	8.0000	.7056	1.298	.8218	.9690	.4926-01	.3120-01	4.232	29.13	562.7
308	46.100	.62900-01	174.00	.3694	.6252	.4533	.9548	.2375-01	.1722-01	2.472	17.19	544.5
308	47.700	.40800-01	167.00	.4844	.8418	.5769	.9622	.3198-01	.2192-01	3.124	21.65	550.9
307	48.400	.44200-01	109.00	.4532	.7857	.5429	.9609	.2983-01	.2061-01	2.929	20.30	550.4
308	53.200	.24700-01	163.00	.6505	1.173	.7604	.9676	.4458-01	.2889-01	3.997	27.57	558.9
308	65.200	.24700-01	162.00	.6397	1.148	.7532	.9660	.4361-01	.2861-01	3.956	27.30	557.9
306	90.000	.91000-02	44.000	.4669	.8509	.5613	.9628	.3232-01	.2132-01	2.832	19.51	561.0
306	90.000	.11100-01	45.000	.7645	1.589	.9476	.9628	.6034-01	.3599-01	4.033	27.47	581.8
306	90.000	.13100-01	46.000	.8185	1.589	.9989	.9628	.6037-01	.3794-01	4.618	31.63	572.1
306	90.000	.17000-01	48.000	.7484	1.377	.9018	.9628	.5231-01	.3425-01	4.486	30.88	562.8
306	90.000	.20900-01	50.000	.6691	1.213	.8032	.9628	.4605-01	.3050-01	4.086	28.17	559.9
306	90.000	.24900-01	52.000	.5956	1.048	.7115	.9623	.3981-01	.2702-01	3.774	26.11	553.8
306	90.000	.26900-01	53.000	.5874	1.037	.7051	.9615	.3939-01	.2678-01	3.707	25.63	554.5
306	90.000	.28800-01	54.000	.5782	1.011	.6948	.9608	.3839-01	.2639-01	3.698	25.60	552.3
306	90.000	.32800-01	55.000	.4202	.6698	.4952	.9593	.2544-01	.1881-01	3.086	21.66	527.3
306	90.000	.36700-01	56.000	.4939	.8313	.5956	.9579	.3157-01	.2262-01	3.331	23.17	543.1
306	90.000	.40600-01	57.000	.4678	.7993	.5706	.9566	.3035-01	.2167-01	3.087	21.44	546.9
306	90.000	.48500-01	58.000	.3672	.6185	.4519	.9538	.2349-01	.1716-01	2.473	17.21	543.3
306	90.000	.56400-01	59.000	.3788	.6313	.4706	.9512	.2397-01	.1787-01	2.592	18.06	540.5
306	90.000	.76100-01	60.000	.3035	.4994	.3866	.9452	.1897-01	.1468-01	2.118	14.79	536.9
306	90.000	.95800-01	61.000	.2101	.3446	.2745	.9399	.1309-01	.1042-01	1.473	10.29	536.1
306	90.000	.11550	62.000	.1766	.2902	.2366	.9352	.1102-01	.8986-02	1.236	8.629	536.5
306	135.00	.19000-01	49.000	.6401	1.150	.7910	.9570	.4367-01	.3004-01	3.952	27.27	558.1
306	135.00	.22900-01	51.000	.5979	1.069	.7379	.9570	.4061-01	.2803-01	3.712	25.63	557.2
306	180.00	.91000-02	23.000	.2215	.3591	.2681	.9547	.1364-01	.1018-01	1.582	11.07	532.6
306	180.00	.11100-01	24.000	.4588	.8201	.5732	.9547	.3115-01	.2177-01	2.850	19.68	557.1
306	180.00	.13100-01	25.000	.7867	1.635	1.028	.9547	.6208-01	.3905-01	4.150	28.28	581.7
306	180.00	.15000-01	26.000	.8107	1.634	1.051	.9547	.6207-01	.3990-01	4.404	30.07	577.7
306	180.00	.17000-01	27.000	.7090	1.330	.8933	.9547	.5052-01	.3415-01	4.156	28.55	566.3
306	180.00	.19000-01	28.000	.6338	1.159	.7976	.9547	.4403-01	.3029-01	3.827	26.36	561.7
306	180.00	.20900-01	29.000	.6137	1.093	.7659	.9547	.4152-01	.2909-01	3.828	26.44	556.4
306	180.00	.28800-01	32.000	.5390	.9228	.6705	.9528	.3505-01	.2547-01	3.547	24.62	547.4
306	180.00	.32800-01	33.000	.4959	.8204	.6138	.9514	.3116-01	.2331-01	3.431	23.93	538.5
306	180.00	.36700-01	34.000	.4725	.7970	.5930	.9501	.3027-01	.2252-01	3.177	22.10	543.6
306	180.00	.48500-01	36.000	.3862	.6390	.4904	.9463	.2427-01	.1863-01	2.673	18.64	538.5
306	180.00	.56400-01	37.000	.3544	.5808	.4537	.9439	.2206-01	.1723-01	2.489	17.39	535.8
306	180.00	.76100-01	38.000	.2579	.4192	.3379	.9385	.1592-01	.1283-01	1.835	12.84	533.3
306	180.00	.95800-01	39.000	.1902	.3103	.2557	.9338	.1178-01	.9710-02	1.346	9.409	534.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
306	180.00	.11550	40.000	.1481	.2464	.2055	.9300	.9358-02	.7805-02	1.016	7.085	540.0
306	180.00	.18450	42.000	.7207-01	.1086	.9753-01	.9225	.4126-02	.3704-02	.5859	4.161	506.6
306	225.00	.22900-01	30.000	.5940	1.044	.7293	.9570	.3965-01	.2770-01	3.772	26.10	553.5
306	270.00	.91000-02	63.000	.5008	.9208	.6033	.9628	.3497-01	.2291-01	3.005	20.69	562.7
306	270.00	.11100-01	64.000	.7673	1.617	.9540	.9628	.6139-01	.3623-01	3.998	27.21	583.5
306	270.00	.13100-01	65.000	.8333	1.687	1.027	.9628	.6407-01	.3900-01	4.507	30.76	578.3
306	270.00	.17000-01	67.000	.7021	1.319	.8502	.9628	.5010-01	.3229-01	4.108	28.22	566.6
306	270.00	.20900-01	69.000	.6647	1.229	.8017	.9628	.4667-01	.3045-01	3.962	27.26	563.7
306	270.00	.24900-01	71.000	.5913	1.071	.7115	.9623	.4066-01	.2702-01	3.615	24.92	559.7
306	270.00	.28800-01	73.000	.6045	1.062	.7273	.9608	.4034-01	.2762-01	3.840	26.56	553.4
306	270.00	.36700-01	75.000	.5161	.8921	.6273	.9579	.3388-01	.2382-01	3.351	23.23	549.7
306	270.00	.48500-01	77.000	.4125	.6855	.5054	.9538	.2603-01	.1919-01	2.834	19.76	539.7
306	270.00	.56400-01	78.000	.4054	.6681	.5015	.9512	.2537-01	.1905-01	2.821	19.69	537.4
306	270.00	.95800-01	80.000	.2367	.3839	.3076	.9399	.1458-01	.1168-01	1.690	11.82	532.7
306	270.00	.11550	81.000	.1893	.3081	.2523	.9352	.1170-01	.9582-02	1.343	9.391	533.9
306	315.00	.19000-01	68.000	.6054	1.064	.6988	.9690	.4039-01	.2654-01	3.847	26.61	553.4
306	315.00	.22900-01	70.000	.6897	1.274	.8041	.9690	.4839-01	.3054-01	4.115	28.31	563.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
232	5.500	-4.994	.5223-02	126.8	724.7	.1363	102.8	.6000-01	2734.	.3579-02	.8272-07	3.677
233	5.500	-4.994	.0000	126.8	724.7	.1363	102.8	.0000	2734.	.3580-02	.8272-07	3.677
234	5.500	-4.978	.0000	126.8	724.7	.1363	102.8	.0000	2734.	.3580-02	.8272-07	3.677

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
232	.3020-01	.1282-01
233	.3020-01	.1282-01
234	.3020-01	.1282-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
233	.00000	.91000-02	1.0000	.4982	.8252	.5786	.9649	.2492-01	.1747-01	2.751	19.16	541.8
233	.00000	.15000-01	4.0000	.5054	.8436	.5880	.9649	.2548-01	.1776-01	2.759	19.19	543.9
233	.00000	.17000-01	5.0000	.5498	.9224	.6405	.9649	.2786-01	.1935-01	2.979	20.70	545.3
233	.00000	.19000-01	6.0000	.5631	.9511	.6571	.9649	.2873-01	.1985-01	3.021	20.97	547.0
233	.00000	.24900-01	9.0000	.6150	1.057	.7224	.9645	.3193-01	.2182-01	3.218	22.29	551.4
233	.00000	.26900-01	10.000	.5661	.9663	.6661	.9637	.2918-01	.2012-01	2.991	20.74	549.7
232	.00000	.32800-01	12.000	.4934	.8260	.5837	.9616	.2495-01	.1763-01	2.682	18.64	544.7
232	.00000	.36700-01	13.000	.4448	.7324	.5272	.9602	.2212-01	.1592-01	2.479	17.28	540.1
232	.00000	.40600-01	14.000	.4612	.7697	.5524	.9588	.2325-01	.1668-01	2.518	17.51	543.9
232	.00000	.48500-01	15.000	.4077	.6754	.4938	.9560	.2040-01	.1491-01	2.251	15.67	541.9
232	.00000	.56400-01	16.000	.3900	.6455	.4785	.9533	.1950-01	.1445-01	2.157	15.02	541.6
232	.00000	.76100-01	17.000	.2979	.4883	.3759	.9468	.1475-01	.1135-01	1.672	11.66	538.9
232	.00000	.11550	19.000	.1876	.3127	.2536	.9350	.9443-02	.7659-02	1.027	7.143	543.5
232	.00000	.16480	20.000	.1048	.1725	.1504	.9228	.5210-02	.4542-02	.5841	4.071	540.1
232	.00000	.21400	22.000	.5797-01	.8723-01	.8147-01	.9140	.2635-02	.2460-02	.3783	2.683	508.6
234	2.0000	.24700-01	165.00	.5783	.9494	.6715	.9645	.2867-01	.2028-01	3.239	22.58	539.3
233	9.0000	.15000-01	157.00	.5559	.9370	.6487	.9648	.2830-01	.1959-01	2.991	20.77	546.5
233	9.0000	.17600-01	158.00	.5931	1.022	.6958	.9648	.3086-01	.2101-01	3.095	21.43	551.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
234	9.8000	.24700-01	164.00	.6234	1.045	.7280	.9644	.3156-01	.2199-01	3.382	23.50	545.1
233	10.000	.22900-01	88.000	.6370	1.108	.7491	.9648	.3346-01	.2263-01	3.280	22.68	554.2
233	10.000	.26900-01	90.000	.5811	.9917	.6843	.9636	.2995-01	.2067-01	3.072	21.30	549.6
233	10.000	.34700-01	94.000	.4526	.7234	.5305	.9608	.2185-01	.1602-01	2.647	18.54	531.1
234	14.600	.44200-01	169.00	.4329	.6903	.5151	.9572	.2085-01	.1556-01	2.541	17.81	530.3
233	18.500	.44200-01	106.00	.4492	.7335	.5389	.9571	.2215-01	.1628-01	2.537	17.70	537.7
234	19.600	.62900-01	175.00	.3526	.5493	.4284	.9506	.1659-01	.1294-01	2.155	15.17	522.3
233	19.800	.40800-01	101.00	.4707	.7737	.5628	.9582	.2337-01	.1700-01	2.630	18.34	539.6
233	20.000	.24900-01	89.000	.6129	1.055	.7220	.9639	.3186-01	.2181-01	3.202	22.17	551.7
233	20.000	.28800-01	91.000	.5447	.9283	.6446	.9625	.2804-01	.1947-01	2.885	20.00	549.3
233	20.000	.32800-01	93.000	.5034	.8508	.5987	.9610	.2570-01	.1808-01	2.699	18.73	547.2
233	22.200	.62900-01	125.00	.3574	.5660	.4372	.9505	.1710-01	.1321-01	2.122	14.89	528.1
233	22.400	.44200-01	107.00	.4434	.7210	.5318	.9568	.2178-01	.1606-01	2.521	17.61	536.4
234	22.600	.10270	192.00	.2117	.3332	.2736	.9380	.1006-01	.8264-02	1.271	8.931	525.9
233	23.000	.42000-01	105.00	.4579	.7497	.5482	.9576	.2261-01	.1656-01	2.580	18.00	538.1
233	23.400	.59600-01	120.00	.3701	.5845	.4502	.9515	.1765-01	.1360-01	2.209	15.51	527.1
234	23.900	.21310	250.00	.5485-01	.8008-01	.7530-01	.9138	.2419-02	.2274-02	.3810	2.724	494.7
233	24.100	.82200-01	139.00	.2842	.4518	.3585	.9441	.1365-01	.1083-01	1.676	11.75	529.4
234	24.400	.19040	238.00	.7908-01	.1196	.1099	.9173	.3612-02	.3319-02	.5109	3.620	510.8
234	24.400	.12440	207.00	.1595	.2568	.2150	.9318	.7756-02	.6494-02	.9208	6.441	533.5
234	24.800	.16810	223.00	.9025-01	.1432	.1272	.9215	.4324-02	.3840-02	.5344	3.749	528.6
233	24.900	.62900-01	126.00	.3584	.5655	.4381	.9503	.1708-01	.1323-01	2.141	15.03	526.9
234	25.000	.79500-01	178.00	.2906	.4524	.3619	.9449	.1366-01	.1093-01	1.778	12.52	522.1
234	25.300	.10270	191.00	.2116	.3318	.2731	.9378	.1002-01	.8249-02	1.279	8.988	524.6
234	25.300	.10000+00	186.00	.2387	.3745	.3071	.9386	.1131-01	.9275-02	1.441	10.13	524.9
233	25.500	.60700-01	124.00	.3640	.5727	.4432	.9510	.1730-01	.1339-01	2.187	15.37	525.8
234	26.000	.12440	206.00	.1584	.2547	.2135	.9317	.7693-02	.6448-02	.9167	6.414	533.0
233	26.300	.82200-01	140.00	.2833	.4483	.3569	.9440	.1354-01	.1078-01	1.684	11.81	527.9
234	26.700	.12100	199.00	.1583	.2521	.2113	.9326	.7615-02	.6382-02	.9315	6.529	529.9
234	26.800	.16810	222.00	.9092-01	.1438	.1279	.9214	.4344-02	.3863-02	.5411	3.798	527.6
234	27.000	.19040	237.00	.7457-01	.1122	.1033	.9172	.3389-02	.3119-02	.4867	3.452	508.6
234	27.100	.21310	249.00	.5692-01	.8260-01	.7779-01	.9137	.2495-02	.2350-02	.4007	2.869	491.6
234	27.200	.80300-01	180.00	.2836	.4397	.3532	.9445	.1328-01	.1067-01	1.749	12.33	520.5
233	27.400	.40100-01	98.000	.4713	.7785	.5650	.9580	.2351-01	.1707-01	2.614	18.21	541.0
234	27.400	.16480	215.00	.9365-01	.1491	.1319	.9220	.4505-02	.3984-02	.5508	3.861	529.9
233	27.600	.41600-01	102.00	.4505	.7398	.5405	.9574	.2234-01	.1632-01	2.521	17.58	539.4
234	27.600	.12440	205.00	.1547	.2481	.2083	.9317	.7494-02	.6291-02	.8986	6.290	532.3
234	27.600	.18700	230.00	.8163-01	.1232	.1130	.9177	.3720-02	.3412-02	.5298	3.756	509.8
234	27.700	.21010	243.00	.6496-01	.9464-01	.8891-01	.9141	.2858-02	.2685-02	.4533	3.243	493.6
234	27.900	.10110	188.00	.2017	.3164	.2600	.9381	.9558-02	.7854-02	1.217	8.557	524.8
233	28.000	.46800-01	110.00	.4196	.6752	.5045	.9556	.2039-01	.1524-01	2.426	16.98	533.2
234	28.200	.16810	221.00	.9070-01	.1435	.1277	.9213	.4335-02	.3856-02	.5393	3.785	527.8
234	28.300	.19040	236.00	.6834-01	.1023	.9427-01	.9171	.3089-02	.2847-02	.4506	3.201	506.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
234	28.300	.12200	201.00	.1648	.2630	.2206	.9322	.7944-02	.6663-02	.9657	6.766	530.6
233	28.400	.53500-01	114.00	.4063	.6508	.4930	.9532	.1966-01	.1489-01	2.368	16.58	531.7
234	28.400	.21310	248.00	.6059-01	.8769-01	.8264-01	.9137	.2649-02	.2496-02	.4291	3.075	490.2
233	28.700	.58600-01	117.00	.3846	.6068	.4677	.9515	.1833-01	.1413-01	2.298	16.14	526.8
234	28.800	.16580	217.00	.8927-01	.1413	.1254	.9218	.4268-02	.3787-02	.5305	3.723	527.9
233	28.800	.60400-01	121.00	.3570	.5606	.4346	.9509	.1693-01	.1313-01	2.152	15.12	525.1
234	29.000	.21110	244.00	.6101-01	.8839-01	.8320-01	.9139	.2670-02	.2513-02	.4310	3.088	490.8
233	29.000	.65700-01	129.00	.3411	.5349	.4183	.9491	.1616-01	.1263-01	2.061	14.49	524.7
233	29.200	.72400-01	133.00	.3178	.5003	.3942	.9469	.1511-01	.1190-01	1.907	13.39	526.0
233	29.300	.79500-01	136.00	.2700	.4250	.3383	.9446	.1283-01	.1022-01	1.621	11.39	525.9
233	29.600	.92500-01	143.00	.2339	.3744	.3011	.9406	.1131-01	.9093-02	1.365	9.556	531.5
233	29.700	.10000+00	146.00	.2210	.3544	.2878	.9383	.1070-01	.8692-02	1.286	9.001	532.1
234	29.900	.12100	198.00	.1583	.2521	.2115	.9324	.7613-02	.6387-02	.9316	6.530	529.8
234	30.200	.16480	214.00	.8496-01	.1343	.1192	.9219	.4058-02	.3599-02	.5058	3.550	527.6
234	30.300	.21010	242.00	.6464-01	.9378-01	.8821-01	.9140	.2832-02	.2664-02	.4554	3.262	491.4
233	31.500	.11100-01	83.000	.6764	1.206	.8050	.9636	.3644-01	.2431-01	3.369	23.23	559.7
234	32.100	.21010	241.00	.6541-01	.9455-01	.8902-01	.9139	.2856-02	.2689-02	.4646	3.331	489.5
234	32.200	.16480	213.00	.8676-01	.1368	.1215	.9218	.4133-02	.3671-02	.5190	3.644	526.6
234	32.200	.17860	224.00	.9346-01	.1434	.1301	.9191	.4330-02	.3930-02	.5876	4.150	516.5
234	32.200	.18700	228.00	.7573-01	.1130	.1040	.9175	.3412-02	.3141-02	.5027	3.573	504.9
234	32.300	.12100	197.00	.1606	.2545	.2141	.9323	.7686-02	.6468-02	.9535	6.690	528.1
234	32.300	.12300	194.00	.1453	.2306	.1944	.9317	.6964-02	.5871-02	.8593	6.027	528.8
234	32.300	.12730	208.00	.1473	.2374	.2000	.9306	.7170-02	.6040-02	.8499	5.945	533.7
234	32.300	.13420	209.00	.1302	.2133	.1802	.9288	.6443-02	.5441-02	.7314	5.102	538.7
233	32.400	.10000+00	147.00	.2194	.3521	.2861	.9381	.1063-01	.8640-02	1.274	8.915	532.4
234	32.400	.10110	184.00	.2052	.3200	.2641	.9378	.9666-02	.7977-02	1.251	8.803	522.8
234	32.400	.10530	193.00	.1898	.2969	.2464	.9363	.8968-02	.7443-02	1.152	8.104	523.7
234	32.500	.85800-01	183.00	.2568	.3998	.3235	.9424	.1208-01	.9769-02	1.571	11.06	522.1
233	32.600	.79500-01	137.00	.2987	.4709	.3750	.9444	.1422-01	.1133-01	1.788	12.56	526.5
234	32.600	.80800-01	176.00	.2729	.4222	.3404	.9439	.1275-01	.1028-01	1.689	11.90	519.8
233	32.700	.67400-01	132.00	.3333	.5232	.4104	.9482	.1580-01	.1239-01	2.010	14.13	525.0
233	32.700	.72400-01	134.00	.3166	.4979	.3930	.9466	.1504-01	.1187-01	1.902	13.36	525.7
233	32.800	.65700-01	130.00	.3314	.5192	.4067	.9488	.1568-01	.1228-01	2.005	14.09	524.4
234	32.800	.16680	210.00	.8927-01	.1408	.1253	.9213	.4251-02	.3785-02	.5342	3.751	526.5
234	32.800	.18880	225.00	.7514-01	.1120	.1033	.9172	.3382-02	.3119-02	.5000	3.555	504.4
233	32.900	.58600-01	118.00	.3444	.5475	.4206	.9511	.1653-01	.1270-01	2.032	14.25	529.3
233	32.900	.60400-01	122.00	.3498	.5493	.4264	.9505	.1659-01	.1288-01	2.108	14.81	525.1
234	32.900	.61300-01	171.00	.3522	.5468	.4290	.9502	.1652-01	.1293-01	2.166	15.26	521.0
233	33.000	.53500-01	115.00	.4032	.6435	.4893	.9529	.1944-01	.1478-01	2.364	16.56	530.6
233	33.200	.48300-01	113.00	.4196	.6730	.5060	.9546	.2033-01	.1528-01	2.438	17.07	532.2
234	33.400	.42800-01	166.00	.4195	.6650	.4997	.9565	.2008-01	.1509-01	2.487	17.45	528.4
233	33.500	.40100-01	99.000	.4571	.7437	.5466	.9575	.2246-01	.1651-01	2.595	18.12	536.7
233	33.600	.38300-01	97.000	.4687	.7710	.5607	.9581	.2329-01	.1694-01	2.616	18.23	539.9

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
233	33.700	.36700-01	96.000	.4631	.7702	.5544	.9587	.2326-01	.1674-01	2.542	17.69	542.9
233	33.900	.33800-01	95.000	.4917	.8236	.5870	.9597	.2488-01	.1773-01	2.671	18.56	544.8
234	34.700	.21010	240.00	.6815-01	.9811-01	.9248-01	.9138	.2963-02	.2793-02	.4885	3.507	487.4
234	34.700	.18700	227.00	.7651-01	.1145	.1054	.9174	.3458-02	.3183-02	.5047	3.585	506.3
234	34.900	.16480	212.00	.8959-01	.1416	.1258	.9216	.4276-02	.3799-02	.5340	3.748	527.3
233	35.100	.10000+00	148.00	.2024	.3251	.2644	.9379	.9820-02	.7984-02	1.174	8.219	532.6
234	35.200	.23900-01	161.00	.6525	1.102	.7678	.9632	.3328-01	.2319-01	3.502	24.31	547.0
233	35.300	.92500-01	145.00	.2417	.3871	.3118	.9401	.1169-01	.9417-02	1.409	9.863	531.7
233	35.300	.22100-01	160.00	.5625	.9867	.6679	.9633	.2980-01	.2017-01	2.864	19.79	556.1
234	35.400	.18800	231.00	.8355-01	.1244	.1148	.9172	.3758-02	.3466-02	.5567	3.959	504.0
234	35.500	.12100	196.00	.1595	.2530	.2130	.9320	.7641-02	.6434-02	.9445	6.625	528.6
234	35.600	.16580	216.00	.8988-01	.1416	.1261	.9214	.4278-02	.3809-02	.5383	3.780	526.4
233	35.800	.80600-01	138.00	.2635	.4141	.3313	.9437	.1251-01	.1001-01	1.585	11.14	525.5
234	35.900	.21310	247.00	.5831-01	.8363-01	.7903-01	.9134	.2526-02	.2387-02	.4216	3.030	485.3
234	36.000	.19040	235.00	.7622-01	.1131	.1046	.9168	.3417-02	.3161-02	.5112	3.638	502.6
234	36.200	.16810	220.00	.9458-01	.1484	.1326	.9209	.4481-02	.4005-02	.5710	4.014	524.8
233	36.200	.72400-01	135.00	.3063	.4805	.3803	.9463	.1451-01	.1149-01	1.849	12.99	524.8
234	36.300	.12200	200.00	.1546	.2459	.2071	.9317	.7426-02	.6255-02	.9116	6.391	529.4
233	36.600	.65700-01	131.00	.3561	.5611	.4387	.9485	.1695-01	.1325-01	2.133	14.98	526.3
234	36.700	.18700	226.00	.7709-01	.1150	.1060	.9173	.3473-02	.3201-02	.5121	3.640	504.8
234	36.900	.16480	211.00	.9453-01	.1494	.1328	.9215	.4513-02	.4012-02	.5632	3.953	527.4
234	36.900	.10110	187.00	.2123	.3319	.2741	.9374	.1002-01	.8278-02	1.290	9.073	523.5
233	37.000	.60400-01	123.00	.3599	.5671	.4399	.9502	.1713-01	.1329-01	2.155	15.14	526.4
234	37.000	.12440	204.00	.1528	.2435	.2056	.9310	.7355-02	.6211-02	.8974	6.289	530.2
233	37.100	.58600-01	119.00	.3748	.5934	.4578	.9508	.1792-01	.1383-01	2.227	15.62	527.9
234	37.200	.21310	246.00	.6353-01	.9101-01	.8604-01	.9134	.2749-02	.2599-02	.4604	3.310	484.7
234	37.600	.16910	219.00	.9426-01	.1475	.1320	.9208	.4456-02	.3987-02	.5714	4.018	524.0
233	37.800	.10270	150.00	.2177	.3495	.2857	.9369	.1056-01	.8628-02	1.264	8.847	532.5
234	37.900	.12100	195.00	.1591	.2497	.2114	.9318	.7543-02	.6385-02	.9595	6.744	525.0
234	38.000	.80300-01	179.00	.2818	.4358	.3519	.9436	.1316-01	.1063-01	1.746	12.31	519.6
233	38.500	.46800-01	112.00	.4212	.6778	.5084	.9547	.2047-01	.1536-01	2.435	17.04	533.2
234	38.600	.12440	203.00	.1525	.2427	.2052	.9309	.7331-02	.6198-02	.8979	6.294	529.7
234	38.700	.10000+00	185.00	.2023	.3154	.2606	.9376	.9527-02	.7872-02	1.235	8.690	522.6
233	38.900	.82200-01	141.00	.2752	.4349	.3481	.9430	.1314-01	.1051-01	1.641	11.52	527.3
233	39.300	.41600-01	104.00	.4320	.7085	.5205	.9564	.2140-01	.1572-01	2.422	16.89	539.0
234	39.500	.10270	190.00	.2025	.3155	.2618	.9368	.9528-02	.7906-02	1.237	8.706	522.4
234	39.600	.16810	218.00	.8904-01	.1395	.1249	.9207	.4214-02	.3772-02	.5386	3.787	524.4
234	39.900	.19040	233.00	.7754-01	.1145	.1051	.9166	.3458-02	.3205-02	.5259	3.748	500.1
234	40.100	.79500-01	177.00	.2808	.4329	.3501	.9437	.1308-01	.1057-01	1.750	12.34	518.4
234	40.200	.12440	202.00	.1525	.2427	.2054	.9308	.7331-02	.6202-02	.8975	6.291	529.8
234	40.300	.21310	245.00	.5606-01	.7998-01	.7570-01	.9132	.2416-02	.2287-02	.4103	2.954	482.4
233	41.100	.82200-01	142.00	.2569	.4083	.3261	.9428	.1233-01	.9848-02	1.516	10.63	529.2
234	41.100	.60700-01	173.00	.3467	.5393	.4227	.9497	.1629-01	.1277-01	2.125	14.97	521.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
234	42.600	.59600-01	172.00	.3586	.5605	.4376	.9499	.1693-01	.1322-01	2.179	15.32	523.5
234	43.200	.42000-01	168.00	.4007	.6354	.4787	.9559	.1919-01	.1446-01	2.375	16.66	528.4
234	43.400	.82200-01	181.00	.2773	.4351	.3503	.9425	.1314-01	.1058-01	1.674	11.77	524.8
233	43.600	.62900-01	128.00	.3585	.5646	.4410	.9487	.1705-01	.1332-01	2.149	15.09	526.2
233	45.000	.22900-01	8.0000	.5287	.8776	.6218	.9624	.2650-01	.1878-01	2.912	20.27	542.4
234	46.100	.62900-01	174.00	.3366	.5239	.4127	.9484	.1582-01	.1246-01	2.061	14.51	521.9
234	47.700	.40800-01	167.00	.4450	.7111	.5332	.9558	.2148-01	.1610-01	2.604	18.24	531.0
233	48.400	.44200-01	109.00	.4191	.6848	.5088	.9546	.2068-01	.1537-01	2.364	16.50	537.9
234	51.900	.44800-01	170.00	.3791	.5948	.4551	.9539	.1796-01	.1375-01	2.287	16.08	524.9
234	53.200	.24700-01	163.00	.6399	1.059	.7568	.9610	.3200-01	.2286-01	3.537	24.63	541.6
234	65.200	.24700-01	162.00	.6229	1.027	.7412	.9594	.3102-01	.2239-01	3.464	24.14	540.5
232	90.000	.91000-02	44.000	.3225	.5282	.3886	.9563	.1595-01	.1174-01	1.812	12.64	538.6
232	90.000	.11100-01	45.000	.6236	1.112	.7717	.9563	.3359-01	.2331-01	3.106	21.42	559.7
232	90.000	.13100-01	46.000	.7384	1.323	.9150	.9563	.3995-01	.2763-01	3.657	25.20	560.7
232	90.000	.17000-01	48.000	.6659	1.135	.8125	.9563	.3427-01	.2454-01	3.527	24.46	549.3
232	90.000	.20900-01	50.000	.6333	1.073	.7715	.9563	.3242-01	.2330-01	3.381	23.46	547.9
232	90.000	.24900-01	52.000	.3258	.5281	.3921	.9558	.1595-01	.1184-01	1.861	13.00	535.5
232	90.000	.26900-01	53.000	.5490	.9123	.6686	.9551	.2755-01	.2019-01	3.017	21.00	542.7
232	90.000	.28800-01	54.000	.5399	.8921	.6584	.9544	.2694-01	.1989-01	2.993	20.85	541.1
232	90.000	.32800-01	55.000	.3591	.5626	.4328	.9530	.1699-01	.1307-01	2.173	15.28	524.3
232	90.000	.36700-01	56.000	.4327	.6947	.5294	.9516	.2098-01	.1599-01	2.511	17.57	532.5
232	90.000	.40600-01	57.000	.4232	.6909	.5244	.9502	.2087-01	.1584-01	2.390	16.68	537.7
232	90.000	.48500-01	58.000	.3198	.5172	.4000	.9475	.1562-01	.1208-01	1.834	12.82	534.8
232	90.000	.56400-01	59.000	.3383	.5443	.4275	.9448	.1644-01	.1291-01	1.956	13.68	533.2
232	90.000	.76100-01	60.000	.2647	.4219	.3432	.9386	.1274-01	.1037-01	1.554	10.89	530.2
232	90.000	.95800-01	61.000	.1911	.3050	.2550	.9328	.9210-02	.7702-02	1.120	7.846	530.6
232	90.000	.11550	62.000	.1463	.2337	.2005	.9276	.7057-02	.6057-02	.8562	5.998	530.9
232	135.00	.19000-01	49.000	.6195	1.042	.7747	.9506	.3147-01	.2340-01	3.344	23.23	545.9
232	135.00	.22900-01	51.000	.5720	.9590	.7144	.9506	.2896-01	.2158-01	3.102	21.56	545.1
232	180.00	.91000-02	23.000	.1525	.2373	.1870	.9483	.7166-02	.5648-02	.9337	6.573	521.9
232	180.00	.11100-01	24.000	.2176	.3485	.2700	.9483	.1053-01	.8154-02	1.267	8.874	531.8
232	180.00	.13100-01	25.000	.6078	1.023	.7692	.9483	.3091-01	.2323-01	3 276	22.76	546.2
232	180.00	.15000-01	26.000	.7216	1.253	.9241	.9483	.3784-01	.2791-01	3.724	25.76	553.8
232	180.00	.17000-01	27.000	.7425	1.310	.9568	.9483	.3957-01	.2890-01	3.751	25.89	557.4
232	180.00	.19000-01	28.000	.6641	1.146	.8484	.9483	.3460-01	.2562-01	3.457	23.93	552.3
232	180.00	.20900-01	29.000	.5844	.9770	.7376	.9483	.2951-01	.2228-01	3.183	22.14	544.3
232	180.00	.28800-01	32.000	.5071	.8323	.6414	.9464	.2514-01	.1937-01	2.841	19.81	539.2
232	180.00	.32800-01	33.000	.4697	.7530	.5922	.9450	.2274-01	.1789-01	2.732	19.12	532.1
232	180.00	.36700-01	34.000	.4421	.7174	.5641	.9436	.2167-01	.1704-01	2.521	17.61	535.8
232	180.00	.48500-01	36.000	.3432	.5493	.4436	.9397	.1659-01	.1340-01	2.003	14.02	531.5
232	180.00	.56400-01	37.000	.3114	.4965	.4067	.9371	.1499-01	.1228-01	1.828	12.81	530.3
232	180.00	.76100-01	38.000	.2134	.3401	.2869	.9313	.1027-01	.8664-02	1.255	8.793	530.1
232	180.00	.95800-01	39.000	.1544	.2470	.2137	.9260	.7458-02	.6453-02	.9024	6.320	531.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K105)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
232	180.00	.11550	40.000	.1114	.1786	.1582	.9214	.5394-02	.4777-02	.6480	4.536	532.1
232	180.00	.18450	42.000	.4262-01	.6229-01	.5929-01	.9110	.1881-02	.1790-02	.2955	2.112	495.1
232	225.00	.22900-01	30.000	.5694	.9418	.7076	.9506	.2844-01	.2137-01	3.152	21.95	541.4
232	270.00	.91000-02	63.000	.3735	.6129	.4503	.9563	.1851-01	.1360-01	2.093	14.60	539.1
232	270.00	.11100-01	64.000	.6167	1.097	.7624	.9563	.3312-01	.2302-01	3.084	21.27	559.1
232	270.00	.13100-01	65.000	.7205	1.300	.8947	.9563	.3926-01	.2702-01	3.538	24.36	562.1
232	270.00	.17000-01	67.000	.6520	1.113	.7961	.9563	.3363-01	.2404-01	3.443	23.87	549.8
232	270.00	.20900-01	69.000	.6395	1.098	.7820	.9563	.3315-01	.2362-01	3.353	23.23	551.0
232	270.00	.24900-01	71.000	.6032	1.025	.7373	.9558	.3097-01	.2227-01	3.206	22.24	548.7
232	270.00	.28800-01	73.000	.5682	.9387	.6929	.9544	.2835-01	.2093-01	3.151	21.95	541.0
232	270.00	.36700-01	75.000	.4644	.7601	.5722	.9516	.2296-01	.1728-01	2.613	18.23	538.4
232	270.00	.48500-01	77.000	.3689	.5939	.4606	.9475	.1794-01	.1391-01	2.131	14.91	533.4
232	270.00	.56400-01	78.000	.3469	.5569	.4380	.9448	.1682-01	.1323-01	2.014	14.09	532.5
232	270.00	.95800-01	80.000	.1908	.3063	.2555	.9329	.9251-02	.7716-02	1.107	7.749	532.5
232	270.00	.11550	81.000	.1492	.2399	.2054	.9277	.7244-02	.6202-02	.8643	6.048	532.9
232	315.00	.19000-01	68.000	.5390	.8948	.6339	.9624	.2702-01	.1914-01	2.967	20.65	542.4
232	315.00	.22900-01	70.000	.7022	1.216	.8351	.9624	.3674-01	.2522-01	3.635	25.15	553.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
334	3.010	-4.973	-2.996	35.99	715.7	.9653	254.5	-31.12	2354.	.1024-01	.2034-06	3.682
335	3.010	-4.951	-2.983	36.02	715.7	.9660	254.5	-31.12	2354.	.1024-01	.2034-06	3.685
336	3.010	-4.972	-2.998	36.08	715.7	.9676	254.5	-31.14	2354.	.1026-01	.2034-06	3.691

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
334	.4384-01	.7557-02
335	.4385-01	.7554-02
336	.4389-01	.7548-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
335	.00000	.91000-02	1.0000	.7624	2.108	.8703	.9806	.9244-01	.3817-01	3.749	25.24	603.6
335	.00000	.15000-01	4.0000	.7979	2.051	.9053	.9806	.8993-01	.3970-01	4.099	27.67	598.5
335	.00000	.17000-01	5.0000	.8002	1.910	.9020	.9806	.8378-01	.3956-01	4.322	29.27	592.5
335	.00000	.19000-01	6.0000	.7542	1.739	.8474	.9806	.7627-01	.3716-01	4.179	28.36	589.3
335	.00000	.24900-01	9.0000	.6759	1.503	.7592	.9801	.6593-01	.3329-01	3.854	26.20	585.7
335	.00000	.26900-01	10.000	.6507	1.421	.7331	.9793	.6230-01	.3215-01	3.768	25.65	583.6
334	.00000	.32800-01	12.000	.5679	1.201	.6462	.9770	.5266-01	.2833-01	3.379	23.04	579.9
334	.00000	.36700-01	13.000	.5001	1.007	.5703	.9755	.4413-01	.2500-01	3.117	21.33	573.5
334	.00000	.40600-01	14.000	.5310	1.113	.6142	.9741	.4879-01	.2692-01	3.185	21.73	578.8
334	.00000	.48500-01	15.000	.4771	.9730	.5591	.9712	.4265-01	.2451-01	2.937	20.08	575.2
334	.00000	.56400-01	16.000	.4699	.9621	.5603	.9685	.4218-01	.2456-01	2.882	19.70	575.8
334	.00000	.76100-01	17.000	.3724	.7255	.4568	.9620	.3181-01	.2002-01	2.400	16.47	568.6
334	.00000	.95800-01	18.000	.7010-01	.1212	.8594-01	.9563	.5314-02	.3767-02	.5214	3.622	546.0
334	.00000	.11550	19.000	.2633	.5137	.3455	.9512	.2252-01	.1514-01	1.695	11.63	568.8
334	.00000	.16480	20.000	.1771	.3323	.2436	.9416	.1457-01	.1068-01	1.190	8.191	562.4
334	.00000	.21400	22.000	.1187	.1991	.1600	.9361	.8726-02	.7013-02	.9231	6.440	538.3
336	2.0000	.24700-01	165.00	.6366	1.315	.7083	.9804	.5771-01	.3109-01	3.875	26.47	577.0
335	9.0000	.15000-01	157.00	.7458	1.784	.8366	.9814	.7823-01	.3668-01	4.022	27.24	592.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
335	9.0000	.17600-01	158.00	.7432	1.776	.8335	.9814	.7788-01	.3655-01	4.011	27.17	592.6
336	9.8000	.24700-01	164.00	.6825	1.512	.7618	.9810	.6635-01	.3343-01	3.908	26.57	585.2
335	10.000	.22900-01	88.000	.7041	1.614	.7864	.9814	.7079-01	.3449-01	3.919	26.60	588.7
335	10.000	.26900-01	90.000	.6855	1.488	.7678	.9801	.6524-01	.3367-01	3.990	27.17	582.9
335	10.000	.34700-01	94.000	.5905	1.289	.6742	.9771	.5654-01	.2957-01	3.419	23.27	583.6
336	14.600	.44200-01	169.00	.5092	1.010	.5850	.9739	.4434-01	.2567-01	3.225	22.09	571.4
335	18.500	.44200-01	106.00	.5151	1.062	.5946	.9740	.4657-01	.2607-01	3.139	21.44	576.7
336	19.600	.62900-01	175.00	.4325	.8300	.5121	.9675	.3643-01	.2248-01	2.836	19.49	566.2
335	19.800	.40800-01	101.00	.5391	1.123	.6184	.9753	.4927-01	.2712-01	3.252	22.20	578.1
335	20.000	.24900-01	89.000	.6563	1.447	.7303	.9815	.6347-01	.3203-01	3.769	25.64	584.7
335	20.000	.28800-01	91.000	.6358	1.384	.7132	.9799	.6070-01	.3128-01	3.690	25.12	583.3
335	20.000	.32800-01	93.000	.6255	1.373	.7090	.9784	.6020-01	.3109-01	3.606	24.54	584.2
335	22.200	.62900-01	125.00	.4354	.8849	.5213	.9676	.3880-01	.2286-01	2.691	18.40	574.8
335	22.400	.44200-01	107.00	.5114	1.048	.5894	.9742	.4595-01	.2585-01	3.135	21.43	575.9
336	22.600	.10270	192.00	.3114	.5853	.3931	.9556	.2569-01	.1725-01	2.090	14.38	562.8
335	23.000	.42000-01	105.00	.5325	1.099	.6113	.9750	.4818-01	.2680-01	3.242	22.15	576.8
335	23.400	.59600-01	120.00	.4752	.9580	.5641	.9687	.4201-01	.2474-01	2.959	20.25	573.7
336	23.900	.21310	250.00	.1199	.1949	.1587	.9365	.8556-02	.6966-02	.9792	6.864	529.7
335	24.100	.82200-01	139.00	.3779	.7400	.4658	.9614	.3245-01	.2043-01	2.424	16.62	569.4
336	24.400	.19040	238.00	.1522	.2545	.2020	.9387	.1117-01	.8863-02	1.190	8.308	537.5
336	24.400	.12440	207.00	.2540	.4858	.3332	.9502	.2132-01	.1462-01	1.673	11.50	565.6
336	24.800	.16810	223.00	.1833	.3264	.2462	.9418	.1432-01	.1080-01	1.314	9.095	552.4
335	24.900	.62900-01	126.00	.4273	.8654	.5110	.9676	.3795-01	.2241-01	2.648	18.12	574.3
336	25.000	.79500-01	178.00	.3902	.7360	.4742	.9623	.3230-01	.2081-01	2.609	17.95	563.3
336	25.300	.10270	191.00	.3156	.5905	.3978	.9556	.2592-01	.1746-01	2.129	14.66	561.9
336	25.300	.10000+00	186.00	.3082	.5824	.3879	.9564	.2556-01	.1702-01	2.056	14.15	563.7
335	25.500	.60700-01	124.00	.4644	.9333	.5520	.9684	.4093-01	.2421-01	2.901	19.85	573.2
336	26.000	.12440	206.00	.2493	.4758	.3267	.9502	.2088-01	.1434-01	1.645	11.31	565.3
335	26.300	.82200-01	140.00	.4085	.7879	.5015	.9615	.3455-01	.2199-01	2.662	18.28	567.1
336	26.700	.12100	199.00	.2472	.4607	.3198	.9510	.2022-01	.1404-01	1.676	11.54	561.2
336	26.800	.16810	222.00	.1836	.3248	.2458	.9418	.1425-01	.1079-01	1.327	9.192	551.0
336	27.000	.19040	237.00	.1643	.2747	.2180	.9387	.1206-01	.9566-02	1.284	8.964	537.6
336	27.100	.21310	249.00	.1185	.1928	.1569	.9365	.8461-02	.6886-02	.9666	6.775	529.9
336	27.200	.80300-01	180.00	.3923	.7308	.4758	.9621	.3207-01	.2088-01	2.661	18.33	561.1
335	27.400	.40100-01	98.000	.5769	1.230	.6621	.9758	.5395-01	.2903-01	3.409	23.24	580.9
336	27.400	.16480	215.00	.1763	.3173	.2371	.9423	.1392-01	.1040-01	1.247	8.619	554.6
335	27.600	.41600-01	102.00	.5477	1.154	.6297	.9752	.5060-01	.2761-01	3.272	22.32	579.4
336	27.600	.12440	205.00	.2452	.4663	.3209	.9502	.2047-01	.1408-01	1.624	11.16	564.8
336	27.600	.18700	230.00	.1530	.2550	.2022	.9392	.1119-01	.8874-02	1.201	8.383	536.8
336	27.700	.21010	243.00	.1293	.2127	.1719	.9368	.9334-02	.7545-02	1.036	7.250	533.1
336	27.900	.10110	188.00	.3127	.5896	.3939	.9561	.2588-01	.1729-01	2.091	14.39	563.3
335	28.000	.46800-01	110.00	.4909	.9991	.5680	.9733	.4381-01	.2491-01	3.029	20.71	575.0
336	28.200	.16810	221.00	.1971	.3524	.2651	.9418	.1547-01	.1164-01	1.405	9.724	553.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
336	28.300	.19040	236.00	.1739	.2895	.2302	.9388	.1270-01	.1010-01	1.368	9.555	536.4
336	28.300	.12200	201.00	.2524	.4725	.3274	.9508	.2074-01	.1437-01	1.702	11.72	562.0
335	28.400	.53500-01	114.00	.4967	1.013	.5831	.9709	.4442-01	.2557-01	3.059	20.92	575.2
336	28.400	.21310	248.00	.1231	.2005	.1631	.9365	.8800-02	.7156-02	1.001	7.017	530.3
335	28.700	.58600-01	117.00	.4796	.9716	.5684	.9692	.4261-01	.2493-01	2.973	20.33	574.3
336	28.800	.16580	217.00	.1738	.3104	.2332	.9422	.1362-01	.1023-01	1.241	8.588	553.0
335	28.800	.60400-01	121.00	.4580	.9212	.5441	.9685	.4039-01	.2386-01	2.859	19.56	573.3
336	29.000	.21110	244.00	.1201	.1960	.1591	.9367	.8601-02	.6982-02	.9740	6.823	530.9
335	29.000	.65700-01	129.00	.4311	.8580	.5165	.9668	.3762-01	.2265-01	2.719	18.63	571.8
335	29.200	.72400-01	133.00	.4173	.8257	.5059	.9646	.3621-01	.2219-01	2.648	18.14	571.0
335	29.300	.79500-01	136.00	.3610	.7000	.4415	.9623	.3070-01	.1936-01	2.339	16.06	567.9
335	29.600	.92500-01	143.00	.3560	.7098	.4489	.9585	.3113-01	.1969-01	2.241	15.35	572.1
335	29.700	.10000+00	146.00	.2888	.5621	.3666	.9564	.2465-01	.1607-01	1.864	12.79	568.5
336	29.900	.12100	198.00	.2518	.4716	.3262	.9510	.2070-01	.1432-01	1.697	11.68	562.1
336	30.200	.16480	214.00	.1733	.3085	.2319	.9423	.1354-01	.1018-01	1.242	8.599	552.3
336	30.200	.18700	229.00	.1413	.2351	.1866	.9392	.1032-01	.8189-02	1.112	7.763	536.4
336	30.300	.21010	242.00	.1272	.2090	.1690	.9368	.9174-02	.7419-02	1.021	7.141	532.9
335	31.500	.11100-01	83.000	.8917	2.364	1.003	.9822	.1037	.4398-01	4.494	30.30	600.8
336	32.100	.21010	241.00	.1278	.2098	.1697	.9368	.9208-02	.7449-02	1.026	7.184	532.6
336	32.200	.16480	213.00	.1731	.3086	.2318	.9423	.1355-01	.1017-01	1.238	8.568	552.7
336	32.200	.17860	224.00	.1678	.2841	.2221	.9403	.1247-01	.9748-02	1.287	8.968	540.9
336	32.200	.18700	228.00	.1525	.2514	.2005	.9392	.1103-01	.8799-02	1.218	8.521	533.7
336	32.300	.12100	197.00	.2515	.4672	.3249	.9510	.2050-01	.1426-01	1.710	11.79	560.7
336	32.300	.12300	194.00	.2246	.4174	.2910	.9506	.1832-01	.1277-01	1.527	10.52	560.8
336	32.300	.12730	208.00	.1885	.3609	.2483	.9496	.1584-01	.1090-01	1.240	8.518	565.8
336	32.300	.13420	209.00	.2102	.4091	.2813	.9481	.1796-01	.1234-01	1.358	9.320	568.5
335	32.400	.10000+00	147.00	.3027	.5947	.3852	.9564	.2608-01	.1689-01	1.935	13.27	569.9
336	32.400	.10110	184.00	.3066	.5752	.3857	.9561	.2524-01	.1693-01	2.062	14.20	562.4
336	32.400	.10630	193.00	.2852	.5275	.3601	.9547	.2315-01	.1580-01	1.951	13.45	559.8
336	32.500	.85800-01	183.00	.3623	.6963	.4471	.9605	.3056-01	.1962-01	2.372	16.30	566.5
335	32.600	.79500-01	137.00	.3952	.7722	.4842	.9623	.3386-01	.2123-01	2.540	17.42	569.1
336	32.600	.80800-01	176.00	.3768	.7060	.4580	.9620	.3099-01	.2010-01	2.538	17.48	562.2
335	32.700	.67400-01	132.00	.4280	.8501	.5144	.9662	.3728-01	.2256-01	2.706	18.54	571.5
335	32.700	.72400-01	134.00	.4127	.8174	.5004	.9646	.3584-01	.2195-01	2.615	17.92	571.1
335	32.800	.65700-01	130.00	.4410	.8761	.5282	.9668	.3842-01	.2316-01	2.787	19.09	571.6
336	32.800	.16680	210.00	.1799	.3201	.2411	.9420	.1405-01	.1058-01	1.289	8.925	552.3
336	32.800	.18880	225.00	.1496	.2490	.1978	.9389	.1093-01	.8682-02	1.177	8.224	536.4
335	32.900	.58600-01	118.00	.4212	.8716	.5010	.9692	.3022-01	.2197-01	2.558	17.47	577.2
335	32.900	.60400-01	122.00	.4459	.8936	.5293	.9685	.3919-01	.2321-01	2.792	19.12	572.8
336	32.900	.61300-01	171.00	.4460	.8623	.5266	.9683	.3784-01	.2311-01	2.901	19.92	567.4
335	33.000	.53500-01	115.00	.4948	.9951	.5795	.9709	.4364-01	.2541-01	3.088	21.14	573.3
335	33.200	.48300-01	113.00	.4917	.9860	.5694	.9728	.4324-01	.2497-01	3.078	21.07	572.9
336	33.400	.42800-01	166.00	.5100	1.002	.5819	.9748	.4397-01	.2554-01	3.263	22.37	569.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
335	33.500	.40100-01	99.000	.5451	1.118	.6223	.9758	.4904-01	.2729-01	3.337	22.80	576.1
335	33.600	.38300-01	97.000	.5569	1.173	.6354	.9765	.5142-01	.2786-01	3.329	22.71	579.4
335	33.700	.36700-01	96.000	.5686	1.229	.6485	.9771	.5390-01	.2844-01	3.320	22.61	582.5
335	33.900	.33800-01	95.000	.6543	1.427	.7420	.9782	.6259-01	.3254-01	3.791	25.80	583.5
336	34.700	.21010	240.00	.1357	.2226	.1802	.9368	.9771-02	.7907-02	1.091	7.636	532.4
336	34.700	.18700	227.00	.1654	.2724	.2173	.9392	.1196-01	.9538-02	1.322	9.245	533.6
336	34.900	.16480	212.00	.1713	.3061	.2296	.9423	.1343-01	.1008-01	1.222	8.453	553.2
335	35.100	.10000+00	148.00	.3233	.6365	.4117	.9564	.2791-01	.1805-01	2.061	14.13	570.3
336	35.200	.23900-01	161.00	.7204	1.689	.8029	.9821	.7414-01	.3524-01	3.946	26.75	590.9
335	35.300	.92500-01	145.00	.3344	.6637	.4213	.9584	.2910-01	.1847-01	2.116	14.49	571.4
335	35.300	.22100-01	160.00	.6096	1.503	.6819	.9822	.6589-01	.2990-01	3.219	21.77	595.2
336	35.400	.18800	231.00	.1346	.2245	.1781	.9390	.9853-02	.7815-02	1.055	7.369	537.0
336	35.500	.12100	196.00	.2471	.4616	.3199	.9510	.2026-01	.1404-01	1.670	11.50	561.7
336	35.600	.16580	216.00	.1775	.3162	.2378	.9421	.1388-01	.1044-01	1.271	8.798	552.5
335	35.800	.80600-01	138.00	.3507	.6747	.4291	.9620	.2959-01	.1882-01	2.292	15.74	566.6
336	35.900	.21310	247.00	.1244	.2037	.1652	.9365	.8940-02	.7252-02	1.004	7.027	531.8
336	36.000	.19040	235.00	.1668	.2787	.2212	.9387	.1223-01	.9708-02	1.305	9.110	537.4
336	36.200	.16810	220.00	.1722	.3037	.2303	.9418	.1333-01	.1011-01	1.249	8.659	550.4
335	36.200	.72400-01	135.00	.3705	.6919	.4435	.9645	.3034-01	.1945-01	2.502	17.24	561.6
336	36.300	.12200	200.00	.2452	.4579	.3178	.9508	.2009-01	.1395-01	1.658	11.42	561.6
335	36.600	.65700-01	131.00	.4596	.9271	.5523	.9667	.4065-01	.2422-01	2.861	19.57	573.7
336	36.700	.18700	226.00	.1479	.2448	.1949	.9391	.1075-01	.8552-02	1.174	8.204	534.9
336	36.900	.16480	211.00	.1730	.3096	.2321	.9423	.1359-01	.1019-01	1.231	8.518	553.5
336	36.900	.10110	187.00	.3184	.6021	.4015	.9561	.2643-01	.1762-01	2.122	14.60	563.8
335	37.000	.60400-01	123.00	.4596	.9316	.5470	.9685	.4085-01	.2398-01	2.847	19.48	574.4
336	37.000	.12440	204.00	.2432	.4530	.3161	.9502	.1988-01	.1387-01	1.650	11.37	561.1
335	37.100	.58500-01	119.00	.4715	.9587	.5593	.9691	.4204-01	.2453-01	2.912	19.91	574.8
336	37.200	.21310	246.00	.1220	.1997	.1620	.9365	.8763-02	.7111-02	.9856	6.901	531.6
336	37.600	.16810	219.00	.1745	.3075	.2333	.9418	.1349-01	.1024-01	1.268	8.787	550.2
335	37.800	.10270	150.00	.2992	.5843	.3820	.9556	.2562-01	.1675-01	1.924	13.20	569.0
336	37.900	.12100	195.00	.2403	.4387	.3087	.9510	.1925-01	.1355-01	1.669	11.52	557.4
336	38.000	.80300-01	179.00	.3759	.7005	.4561	.9621	.3075-01	.2002-01	2.548	17.55	561.2
335	38.500	.46800-01	112.00	.5038	1.020	.5827	.9732	.4473-01	.2555-01	3.124	21.37	574.3
336	38.600	.12440	203.00	.2402	.4459	.3119	.9502	.1957-01	.1369-01	1.635	11.27	560.5
336	38.700	.10000+00	185.00	.3085	.5766	.3871	.9563	.2531-01	.1699-01	2.085	14.36	561.7
335	38.900	.82200-01	141.00	.3790	.7459	.4678	.9614	.3271-01	.2051-01	2.418	16.58	570.2
335	39.300	.41600-01	104.00	.5383	1.141	.6197	.9751	.5004-01	.2717-01	3.198	21.80	580.2
336	39.500	.10270	190.00	.3140	.5858	.3955	.9556	.2571-01	.1736-01	2.125	14.64	561.4
336	39.600	.16810	218.00	.1997	.3518	.2669	.9417	.1544-01	.1171-01	1.451	10.06	550.1
336	39.900	.19040	233.00	.1410	.2339	.1864	.9387	.1027-01	.8180-02	1.115	7.795	535.4
336	40.100	.79500-01	177.00	.3775	.6982	.4566	.9623	.3064-01	.2004-01	2.581	17.80	559.9
336	40.200	.12440	202.00	.2387	.4445	.3103	.9501	.1951-01	.1362-01	1.620	11.16	561.1
336	40.300	.21310	245.00	.1197	.1950	.1586	.9365	.8559-02	.6959-02	.9727	6.816	530.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
335	41.100	.82200-01	142.00	.3873	.7651	.4786	.9614	.3355-01	.2099-01	2.462	16.87	570.7
336	41.100	.60700-01	173.00	.4442	.8577	.5243	.9683	.3764-01	.2301-01	2.894	19.88	567.2
336	42.600	.59600-01	172.00	.4487	.8764	.5297	.9687	.3846-01	.2325-01	2.888	19.81	569.0
336	43.200	.42000-01	168.00	.4903	.9673	.5596	.9749	.4245-01	.2456-01	3.123	21.41	570.5
336	43.400	.82200-01	181.00	.3733	.7186	.4585	.9613	.3154-01	.2012-01	2.440	16.76	566.7
335	43.600	.62900-01	128.00	.4344	.8589	.5177	.9675	.3766-01	.2270-01	2.759	18.91	570.9
335	45.000	.22900-01	8.0000	.7744	1.861	.8661	.9819	.8162-01	.3798-01	4.162	28.18	593.1
336	46.100	.62900-01	174.00	.4321	.8301	.5121	.9674	.3643-01	.2248-01	2.830	19.44	566.4
336	47.700	.40800-01	167.00	.5406	1.102	.6190	.9751	.4837-01	.2717-01	3.333	22.78	575.2
335	48.400	.44200-01	109.00	.5037	1.025	.5812	.9738	.4494-01	.2549-01	3.109	21.26	574.9
336	53.200	.24700-01	163.00	.7061	1.559	.7882	.9810	.6842-01	.3459-01	4.054	27.58	584.8
336	65.200	.24700-01	162.00	.6877	1.495	.7716	.9799	.6563-01	.3386-01	3.999	27.23	583.2
334	90.000	.91000-02	44.000	.7619	2.340	.9025	.9769	.1026	.3956-01	3.544	23.79	609.6
334	90.000	.11100-01	45.000	.8761	2.450	1.029	.9769	.1074	.4509-01	4.279	28.80	604.3
334	90.000	.13100-01	46.000	.7993	1.993	.9276	.9769	.8736-01	.4066-01	4.187	28.30	596.2
334	90.000	.17000-01	48.000	.8068	1.908	.9308	.9769	.8362-01	.4080-01	4.386	29.72	591.7
334	90.000	.20900-01	50.000	.6963	1.612	.8014	.9769	.7067-01	.3513-01	3.845	26.09	589.7
334	90.000	.26900-01	53.000	.6199	1.366	.7151	.9756	.5986-01	.3135-01	3.562	24.23	584.6
334	90.000	.28800-01	54.000	.6221	1.352	.7197	.9749	.5928-01	.3155-01	3.614	24.61	583.1
334	90.000	.32800-01	55.000	.4412	.8024	.5013	.9734	.3518-01	.2198-01	3.075	21.24	556.7
334	90.000	.36700-01	56.000	.5651	1.147	.6590	.9719	.5028-01	.2889-01	3.495	23.90	574.6
334	90.000	.40600-01	57.000	.5330	1.112	.6297	.9705	.4873-01	.2760-01	3.213	21.93	578.2
334	90.000	.48500-01	58.000	.4242	.8594	.5071	.9677	.3767-01	.2223-01	2.627	17.97	574.4
334	90.000	.56400-01	59.000	.4490	.8898	.5431	.9650	.3900-01	.2381-01	2.844	19.49	571.2
334	90.000	.76100-01	60.000	.3679	.7086	.4586	.9589	.3106-01	.2010-01	2.400	16.49	566.8
334	90.000	.95800-01	61.000	.2892	.5532	.3718	.9534	.2425-01	.1630-01	1.901	13.06	565.7
334	90.000	.11550	62.000	.2408	.4579	.3183	.9487	.2007-01	.1395-01	1.594	10.96	564.7
334	135.00	.19000-01	49.000	.6631	1.501	.8006	.9692	.6582-01	.3510-01	3.725	25.30	587.5
334	135.00	.22900-01	51.000	.6308	1.418	.7608	.9692	.6215-01	.3335-01	3.566	24.23	586.7
334	180.00	.91000-02	23.000	.3876	.7685	.4729	.9636	.3369-01	.2073-01	2.453	16.81	571.3
334	180.00	.11100-01	24.000	.6606	1.816	.8598	.9636	.7961-01	.3769-01	3.258	21.94	603.2
334	180.00	.13100-01	25.000	.6996	1.779	.8980	.9636	.7801-01	.3937-01	3.617	24.43	597.7
334	180.00	.15000-01	26.000	.6909	1.698	.8812	.9636	.7441-01	.3863-01	3.656	24.73	595.0
334	180.00	.17000-01	27.000	.6291	1.464	.7940	.9636	.6417-01	.3481-01	3.461	23.48	590.2
334	180.00	.19000-01	28.000	.6100	1.401	.7678	.9636	.6141-01	.3366-01	3.390	23.00	588.9
334	180.00	.20900-01	29.000	.6060	1.337	.7566	.9636	.5860-01	.3317-01	3.478	23.66	584.8
334	180.00	.28800-01	32.000	.5556	1.151	.6926	.9618	.5045-01	.3036-01	3.369	23.01	577.3
334	180.00	.32800-01	33.000	.5043	.9840	.6250	.9604	.4314-01	.2740-01	3.246	22.27	568.9
334	180.00	.36700-01	34.000	.4831	.9760	.6088	.9591	.4278-01	.2669-01	3.002	20.54	573.9
334	180.00	.48500-01	36.000	.4080	.7897	.5200	.9554	.3462-01	.2279-01	2.649	18.18	567.6
334	180.00	.56400-01	37.000	.3817	.7244	.4902	.9532	.3175-01	.2149-01	2.531	17.40	564.4
334	180.00	.76100-01	38.000	.2920	.5397	.3831	.9482	.2366-01	.1680-01	1.996	13.76	559.7
334	180.00	.95800-01	39.000	.2332	.4208	.3108	.9440	.1845-01	.1362-01	1.641	11.34	555.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
334	180.00	.11550	40.000	.1784	.3262	.2440	.9407	.1430-01	.1070-01	1.236	8.530	557.7
334	180.00	.18450	42.000	.9168-01	.1547	.1249	.9348	.6781-02	.5473-02	.7061	4.922	540.0
334	225.00	.22900-01	30.000	.5551	1.183	.6926	.9626	.5186-01	.3036-01	3.281	22.36	580.8
334	270.00	.91000-02	63.000	.6062	1.502	.7568	.9666	.6585-01	.3318-01	3.188	21.56	595.7
334	270.00	.11100-01	64.000	.7314	2.073	.9328	.9666	.9089-01	.4089-01	3.545	23.85	605.1
334	270.00	.13100-01	65.000	.7593	2.020	.9590	.9666	.8856-01	.4204-01	3.817	25.73	601.0
334	270.00	.17000-01	67.000	.5993	1.410	.7416	.9666	.6180-01	.3251-01	3.271	22.17	591.2
334	270.00	.20900-01	69.000	.6482	1.491	.7988	.9666	.6536-01	.3502-01	3.597	24.41	589.1
334	270.00	.24900-01	71.000	.5891	1.315	.7245	.9661	.5765-01	.3176-01	3.348	22.75	586.0
334	270.00	.28800-01	73.000	.5752	1.226	.7076	.9647	.5373-01	.3102-01	3.400	23.17	580.8
334	270.00	.36700-01	75.000	.5054	1.053	.6299	.9620	.4618-01	.2761-01	3.048	20.81	578.1
334	270.00	.46500-01	77.000	.4145	.8126	.5212	.9582	.3562-01	.2285-01	2.654	18.20	569.6
334	270.00	.56400-01	78.000	.4039	.7799	.5132	.9558	.3419-01	.2250-01	2.629	18.05	567.2
334	270.00	.95800-01	80.000	.2345	.4298	.3107	.9460	.1884-01	.1362-01	1.619	11.17	558.2
334	270.00	.11550	81.000	.1857	.3436	.2527	.9423	.1506-01	.1108-01	1.267	8.736	560.0
334	315.00	.19000-01	68.000	.6123	1.292	.7093	.9740	.5663-01	.3110-01	3.652	24.91	579.6
334	315.00	.22900-01	70.000	.5940	1.359	.6958	.9740	.5956-01	.3050-01	3.311	22.48	588.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
288	4.020	-4.953	-2.975	63.13	719.7	.4048	170.1	-31.04	2570.	.6426-02	.1368-06	3.751
289	4.020	-4.944	-2.971	62.96	719.7	.4038	170.1	-31.06	2570.	.6409-02	.1368-06	3.741
290	4.020	-4.956	-2.978	62.92	719.7	.4035	170.1	-31.06	2570.	.6404-02	.1368-06	3.738

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
288	.3798-01	.9552-02
289	.3793-01	.9565-02
290	.3792-01	.9568-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
289	.00000	.91000-02	1.0000	.6069	1.234	.7097	.9715	.4681-01	.2692-01	3.259	22.25	578.1
289	.00000	.15000-01	4.0000	.7419	1.479	.8647	.9715	.5608-01	.3280-01	4.064	27.79	575.2
289	.00000	.17000-01	5.0000	.7280	1.392	.8426	.9715	.5281-01	.3196-01	4.165	28.57	568.8
289	.00000	.19000-01	6.0000	.7012	1.329	.8103	.9715	.5041-01	.3073-01	4.051	27.81	567.3
289	.00000	.24900-01	9.0000	.6482	1.201	.7481	.9710	.4556-01	.2837-01	3.843	26.45	563.4
289	.00000	.26900-01	10.000	.6168	1.127	.7129	.9702	.4276-01	.2704-01	3.717	25.61	560.8
288	.00000	.32800-01	12.000	.5325	.9453	.6190	.9680	.3590-01	.2351-01	3.333	23.04	554.9
288	.00000	.36700-01	13.000	.4768	.8243	.5551	.9665	.3131-01	.2108-01	3.092	21.44	548.9
288	.00000	.40600-01	14.000	.4982	.8817	.5873	.9651	.3348-01	.2231-01	3.131	21.65	554.2
288	.00000	.48500-01	15.000	.4498	.7847	.5361	.9623	.2980-01	.2036-01	2.881	19.96	551.0
288	.00000	.56400-01	16.000	.4277	.7474	.5173	.9595	.2839-01	.1965-01	2.733	18.93	551.4
289	.00000	.76100-01	17.000	.3365	.5761	.4183	.9530	.2188-01	.1588-01	2.211	15.35	546.7
288	.00000	.95800-01	18.000	.6792-01	.1118	.8571-01	.9471	.4244-02	.3255-02	.4732	3.305	536.2
288	.00000	.11550	19.000	.2207	.3810	.2924	.9417	.1447-01	.1111-01	1.434	9.946	548.6
288	.00000	.16480	20.000	.1431	.2420	.1993	.9310	.9191-02	.7569-02	.9564	6.653	543.6
288	.00000	.21400	22.000	.8596-01	.1305	.1159	.9243	.4958-02	.4402-02	.6883	4.881	508.9
290	2.0000	.24700-01	165.00	.6182	1.103	.7076	.9713	.4183-01	.2683-01	3.837	26.51	556.0
289	9.0000	.15000-01	157.00	.7346	1.412	.8473	.9723	.5356-01	.3214-01	4.179	28.66	569.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
289	9.0000	.17600-01	158.00	.6909	1.335	.7976	.9723	.5063-01	.3025-01	3.909	26.80	570.5
290	9.8000	.24700-01	164.00	.6656	1.238	.7650	.9719	.4695-01	.2900-01	3.927	27.01	564.1
289	10.000	.22900-01	88.000	.6885	1.305	.7920	.9723	.4951-01	.3004-01	3.977	27.31	567.4
289	10.000	.26900-01	90.000	.6195	1.131	.7128	.9711	.4289-01	.2703-01	3.740	25.77	560.5
289	10.000	.34700-01	94.000	.5277	.9278	.6119	.9681	.3519-01	.2321-01	3.340	23.12	552.8
290	14.600	.44200-01	169.00	.4806	.8342	.5646	.9649	.3163-01	.2141-01	3.093	21.44	549.9
289	18.500	.44200-01	106.00	.4900	.8686	.5780	.9651	.3294-01	.2192-01	3.069	21.22	554.5
290	19.600	.62900-01	175.00	.3944	.6707	.4756	.9586	.2543-01	.1803-01	2.613	18.16	545.0
289	19.800	.40800-01	101.00	.5151	.9174	.6043	.9663	.3479-01	.2292-01	3.207	22.16	555.5
289	20.000	.24900-01	89.000	.6404	1.187	.7338	.9724	.4501-01	.2783-01	3.797	26.13	563.3
289	20.000	.28800-01	91.000	.5864	1.069	.6753	.9709	.4056-01	.2561-01	3.544	24.43	560.3
289	20.000	.32800-01	93.000	.5511	1.008	.6400	.9693	.3822-01	.2427-01	3.319	22.87	560.9
289	22.200	.62900-01	125.00	.4106	.7200	.4994	.9586	.2731-01	.1894-01	2.608	18.05	552.2
289	22.400	.44200-01	107.00	.4805	.8486	.5659	.9652	.3219-01	.2146-01	3.023	20.91	553.8
290	22.600	.10270	192.00	.2522	.4253	.3228	.9463	.1613-01	.1224-01	1.691	11.77	542.8
289	23.000	.42000-01	105.00	.5014	.8885	.5885	.9660	.3370-01	.2232-01	3.141	21.72	554.5
289	23.400	.59600-01	120.00	.4009	.6996	.4840	.9598	.2653-01	.1836-01	2.563	17.75	551.1
290	23.900	.21310	250.00	.8629-01	.1308	.1159	.9249	.4960-02	.4396-02	.6917	4.907	508.2
289	24.100	.82200-01	139.00	.3197	.5502	.3993	.9524	.2087-01	.1514-01	2.082	14.45	547.9
290	24.400	.19040	238.00	.1108	.1727	.1496	.9277	.6547-02	.5671-02	.8430	5.945	518.9
290	24.400	.12440	207.00	.2061	.3538	.2741	.9406	.1342-01	.1039-01	1.347	9.350	547.3
290	24.800	.16810	223.00	.1364	.2244	.1867	.9312	.8507-02	.7080-02	.9489	6.628	536.2
289	24.900	.62900-01	126.00	.3917	.6852	.4759	.9587	.2599-01	.1805-01	2.496	17.28	551.7
290	25.000	.79500-01	178.00	.3314	.5605	.4096	.9533	.2125-01	.1553-01	2.212	15.39	543.6
290	25.300	.10270	191.00	.2604	.4376	.3326	.9464	.1659-01	.1261-01	1.754	12.21	542.0
290	25.300	.10000+00	186.00	.2766	.4674	.3528	.9471	.1772-01	.1337-01	1.849	12.87	543.4
289	25.500	.60700-01	124.00	.4046	.7043	.4890	.9595	.2671-01	.1855-01	2.596	17.99	550.5
290	26.000	.12440	206.00	.2018	.3461	.2682	.9406	.1312-01	.1017-01	1.321	9.173	547.0
289	26.300	.82200-01	140.00	.3023	.5150	.3762	.9524	.1953-01	.1427-01	1.998	13.88	545.4
290	26.700	.12100	199.00	.2024	.3417	.2658	.9415	.1296-01	.1008-01	1.355	9.428	543.1
290	26.800	.16810	222.00	.1345	.2206	.1838	.9313	.8364-02	.6969-02	.9403	6.571	535.3
290	27.000	.19040	237.00	.1088	.1698	.1470	.9277	.6438-02	.5573-02	.8265	5.828	519.3
290	27.100	.21310	249.00	.8439-01	.1281	.1135	.9249	.4856-02	.4302-02	.6751	4.789	508.7
290	27.200	.80300-01	180.00	.3247	.5448	.4006	.9531	.2066-01	.1519-01	2.193	15.27	541.5
289	27.400	.40100-01	98.000	.5117	.9220	.6004	.9668	.3497-01	.2277-01	3.139	21.66	557.9
290	27.400	.16480	215.00	.1292	.2146	.1773	.9319	.8136-02	.6722-02	.8866	6.184	538.7
289	27.600	.41600-01	102.00	.5070	.9074	.5957	.9662	.3442-01	.2259-01	3.136	21.66	556.6
290	27.600	.12440	205.00	.1975	.3379	.2632	.9406	.1281-01	.9940-02	1.297	9.011	546.4
290	27.600	.18700	230.00	.9696-01	.1514	.1307	.9282	.5740-02	.4956-02	.7361	5.189	519.5
290	27.700	.21010	243.00	.9095-01	.1392	.1228	.9252	.5278-02	.4655-02	.7160	5.069	512.0
290	27.900	.10110	188.00	.2584	.4363	.3299	.9469	.1654-01	.1251-01	1.730	12.04	543.1
289	28.000	.46800-01	110.00	.4552	.7998	.5377	.9644	.3034-01	.2040-01	2.883	19.95	552.7
290	28.200	.16810	221.00	.1335	.2204	.1831	.9313	.8356-02	.6944-02	.9247	6.455	537.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
290	28.300	.19040	236.00	.1039	.1618	.1402	.9277	.6134-02	.5315-02	.7925	5.590	518.5
290	28.300	.12200	201.00	.2095	.3544	.2757	.9412	.1344-01	.1045-01	1.398	9.726	543.6
289	28.400	.53700-01	114.00	.4379	.7690	.5236	.9620	.2917-01	.1986-01	2.776	19.22	552.5
290	28.400	.21310	248.00	.8203-01	.1248	.1105	.9249	.4732-02	.4189-02	.6529	4.628	509.7
289	28.700	.58600-01	117.00	.4308	.7528	.5192	.9602	.2855-01	.1969-01	2.750	19.05	551.4
290	28.800	.16580	217.00	.1302	.2149	.1782	.9317	.8150-02	.6756-02	.9005	6.286	537.2
289	28.800	.60400-01	121.00	.4071	.7086	.4916	.9596	.2688-01	.1865-01	2.612	18.10	550.5
290	29.000	.21110	244.00	.8640-01	.1317	.1164	.9251	.4992-02	.4412-02	.6857	4.859	510.3
289	29.000	.65700-01	129.00	.3812	.6646	.4649	.9578	.2521-01	.1763-01	2.440	16.90	550.9
289	29.200	.72400-01	133.00	.3614	.6279	.4453	.9556	.2382-01	.1689-01	2.324	16.11	550.1
289	29.300	.79500-01	136.00	.3171	.5426	.3934	.9533	.2058-01	.1492-01	2.083	14.47	546.5
289	29.600	.92500-01	143.00	.2862	.4969	.3645	.9493	.1885-01	.1383-01	1.842	12.77	550.0
289	29.700	.10000+00	146.00	.2842	.4875	.3646	.9472	.1849-01	.1383-01	1.861	12.92	547.1
290	29.900	.12100	198.00	.1999	.3382	.2627	.9415	.1282-01	.9960-02	1.333	9.274	543.7
290	30.200	.16480	214.00	.1246	.2057	.1703	.9319	.7798-02	.6458-02	.8622	6.019	537.1
290	30.200	.18700	229.00	.1025	.1598	.1381	.9282	.6060-02	.5236-02	.7806	5.505	518.9
290	30.300	.21010	242.00	.8803-01	.1348	.1189	.9252	.5113-02	.4508-02	.6918	4.896	512.4
289	31.500	.11100-01	83.000	.8261	1.680	.9571	.9731	.6373-01	.3630-01	4.436	30.28	578.1
290	32.100	.21010	241.00	.8852-01	.1358	.1197	.9252	.5147-02	.4537-02	.6942	4.912	512.8
290	32.200	.16480	213.00	.1261	.2086	.1726	.9319	.7909-02	.6543-02	.8693	6.066	537.8
290	32.200	.17860	224.00	.1283	.2045	.1740	.9295	.7755-02	.6599-02	.9388	6.592	526.7
290	32.200	.18700	228.00	.1070	.1666	.1440	.9282	.6319-02	.5462-02	.8165	5.760	518.5
290	32.300	.12100	197.00	.2075	.3491	.2721	.9415	.1324-01	.1032-01	1.397	9.722	542.2
290	32.300	.12300	194.00	.1951	.3288	.2567	.9410	.1247-01	.9732-02	1.310	9.114	542.7
290	32.300	.12730	208.00	.1979	.3405	.2644	.9399	.1291-01	.1003-01	1.289	8.947	547.8
290	32.300	.13420	209.00	.1695	.2977	.2308	.9383	.1129-01	.8752-02	1.073	7.430	552.6
289	32.400	.10000+00	147.00	.2767	.4765	.3554	.9472	.1807-01	.1348-01	1.801	12.50	548.0
290	32.400	.10110	184.00	.2594	.4357	.3304	.9469	.1652-01	.1253-01	1.748	12.17	541.9
290	32.400	.10630	193.00	.2405	.4014	.3078	.9454	.1522-01	.1167-01	1.637	11.41	540.1
290	32.500	.85800-01	183.00	.3080	.5239	.3851	.9514	.1986-01	.1460-01	2.039	14.17	545.1
289	32.600	.79500-01	137.00	.3363	.5774	.4177	.9533	.2190-01	.1584-01	2.199	15.27	547.3
290	32.600	.80800-01	176.00	.3195	.5375	.3948	.9529	.2038-01	.1497-01	2.149	14.96	542.3
289	32.700	.67400-01	132.00	.3786	.6589	.4628	.9572	.2499-01	.1755-01	2.430	16.84	550.5
289	32.700	.72400-01	134.00	.3640	.6323	.4485	.9556	.2398-01	.1701-01	2.341	16.23	550.1
289	32.800	.65700-01	130.00	.3809	.6599	.4636	.9578	.2503-01	.1758-01	2.460	17.05	549.4
290	32.800	.16680	210.00	.1279	.2113	.1753	.9315	.8012-02	.6646-02	.8839	6.169	537.4
290	32.800	.18880	225.00	.1069	.1667	.1442	.9279	.6321-02	.5467-02	.8129	5.732	519.1
289	32.900	.58600-01	118.00	.4521	.7997	.5456	.9602	.3033-01	.2073-01	2.839	19.63	554.1
289	32.900	.60400-01	122.00	.4017	.6977	.4848	.9596	.2646-01	.1839-01	2.584	17.91	550.1
290	32.900	.61300-01	171.00	.3924	.6685	.4716	.9593	.2535-01	.1788-01	2.592	18.01	545.4
289	33.000	.53500-01	115.00	.4404	.7668	.5254	.9620	.2908-01	.1993-01	2.824	19.57	550.6
289	33.200	.48300-01	113.00	.4587	.7989	.5422	.9638	.3030-01	.2056-01	2.940	20.37	550.7
290	33.400	.42800-01	166.00	.4716	.8119	.5504	.9658	.3078-01	.2087-01	3.070	21.30	548.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
289	33.500	.40100-01	99.000	.5138	.9046	.5998	.9668	.3431-01	.2275-01	3.246	22.46	553.1
289	33.600	.38300-01	97.000	.5214	.9311	.6085	.9675	.3532-01	.2308-01	3.234	22.34	556.1
289	33.700	.36700-01	96.000	.5193	.9417	.6061	.9681	.3572-01	.2299-01	3.160	21.79	559.2
289	33.900	.33800-01	95.000	.5431	.9894	.6309	.9691	.3753-01	.2393-01	3.286	22.65	560.1
290	34.700	.21010	240.00	.8633-01	.1328	.1169	.9252	.5034-02	.4433-02	.6735	4.763	513.9
290	34.700	.18700	227.00	.9610-01	.1493	.1292	.9282	.5661-02	.4898-02	.7358	5.193	517.7
290	34.900	.16480	212.00	.1292	.2145	.1773	.9319	.8134-02	.6721-02	.8869	6.186	538.7
289	35.100	.10000+00	148.00	.2567	.4426	.3300	.9471	.1679-01	.1251-01	1.669	11.58	548.3
290	35.200	.23900-01	161.00	.6942	1.326	.7970	.9729	.5028-01	.3022-01	3.975	27.28	568.6
289	35.300	.92500-01	145.00	.3017	.5224	.3839	.9493	.1981-01	.1456-01	1.950	13.52	549.3
289	35.300	.22100-01	160.00	.7265	1.420	.8367	.9730	.5386-01	.3173-01	4.061	27.81	572.3
290	35.400	.16800	231.00	.1071	.1681	.1450	.9280	.6372-02	.5496-02	.8058	5.675	521.2
290	35.500	.12100	196.00	.2074	.3498	.2723	.9415	.1326-01	.1032-01	1.390	9.671	542.9
290	35.600	.16580	216.00	.1290	.2137	.1769	.9317	.8101-02	.6708-02	.8892	6.205	537.9
289	35.800	.80600-01	138.00	.3110	.5289	.3858	.9529	.2006-01	.1463-01	2.060	14.32	545.0
290	35.900	.21310	247.00	.8844-01	.1355	.1197	.9249	.5138-02	.4537-02	.6948	4.917	512.5
290	36.000	.19040	235.00	.1097	.1721	.1487	.9277	.6526-02	.5638-02	.8250	5.811	521.3
290	36.200	.16810	220.00	.1317	.2168	.1804	.9312	.8220-02	.6840-02	.9161	6.398	536.3
289	36.200	.72400-01	135.00	.3587	.6194	.4412	.9556	.2349-01	.1674-01	2.326	16.13	548.7
290	36.300	.12200	200.00	.2025	.3420	.2664	.9412	.1297-01	.1010-01	1.355	9.428	543.2
289	36.600	.65700-01	131.00	.3939	.6872	.4805	.9578	.2607-01	.1822-01	2.519	17.45	551.1
290	36.700	.18700	226.00	.1088	.1704	.1470	.9282	.6460-02	.5573-02	.8222	5.793	520.4
290	36.900	.16480	211.00	.1310	.2181	.1800	.9318	.8268-02	.6825-02	.8961	6.248	539.3
290	36.900	.10110	187.00	.2697	.4548	.3442	.9468	.1724-01	.1305-01	1.808	12.58	542.9
289	37.000	.60400-01	123.00	.4018	.7022	.4859	.9595	.2663-01	.1843-01	2.563	17.75	551.5
290	37.000	.12440	204.00	.1982	.3343	.2614	.9406	.1267-01	.9912-02	1.329	9.250	542.8
289	37.100	.58500-01	119.00	.4251	.7436	.5125	.9602	.2820-01	.1944-01	2.708	18.76	551.7
290	37.200	.21310	246.00	.7937-01	.1216	.1074	.9249	.4612-02	.4072-02	.6233	4.411	512.6
290	37.600	.16810	219.00	.1321	.2175	.1810	.9312	.8247-02	.6861-02	.9179	6.410	536.4
289	37.800	.10270	150.00	.2715	.4668	.3501	.9463	.1770-01	.1328-01	1.771	12.29	547.7
290	37.900	.12100	195.00	.2161	.3595	.2820	.9414	.1363-01	.1069-01	1.478	10.31	539.3
290	38.000	.80300-01	179.00	.3265	.5475	.4029	.9530	.2076-01	.1527-01	2.207	15.37	541.4
289	38.500	.46800-01	112.00	.4711	.8242	.5562	.9643	.3126-01	.2110-01	3.002	20.79	551.7
290	38.600	.12440	203.00	.1981	.3335	.2611	.9406	.1265-01	.9898-02	1.330	9.261	542.5
290	38.700	.10000+00	185.00	.2602	.4362	.3308	.9471	.1654-01	.1254-01	1.760	12.26	541.2
289	38.900	.82200-01	141.00	.3205	.5517	.4004	.9524	.2092-01	.1519-01	2.088	14.49	547.9
289	39.300	.41600-01	104.00	.4938	.8839	.5805	.9662	.3353-01	.2202-01	3.054	21.09	556.6
290	39.500	.10270	190.00	.2688	.4499	.3429	.9463	.1706-01	.1300-01	1.822	12.69	540.9
290	39.600	.16810	218.00	.1217	.2006	.1668	.9312	.7604-02	.6324-02	.8438	5.692	536.7
290	39.900	.19040	233.00	.1102	.1726	.1493	.9276	.6545-02	.5660-02	.8321	5.863	520.6
290	40.100	.79500-01	177.00	.3296	.5500	.4057	.9532	.2085-01	.1538-01	2.245	15.64	540.1
290	40.200	.12440	202.00	.2012	.3393	.2654	.9405	.1287-01	.1006-01	1.348	9.384	542.9
290	40.300	.21310	245.00	.8942-01	.1368	.1209	.9249	.5187-02	.4583-02	.7044	4.987	511.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
289	41.100	.82200-01	142.00	.3125	.5390	.3908	.9523	.2045-01	.1482-01	2.029	14.08	548.5
290	41.100	.60700-01	173.00	.3926	.6672	.4714	.9594	.2530-01	.1787-01	2.602	18.09	544.8
290	42.600	.59600-01	172.00	.4162	.7120	.4999	.9597	.2700-01	.1895-01	2.733	18.98	546.5
290	43.200	.42000-01	168.00	.4542	.7837	.5302	.9659	.2972-01	.2010-01	2.947	20.45	548.5
290	43.400	.82200-01	181.00	.3212	.5482	.4003	.9523	.2079-01	.1518-01	2.116	14.70	545.9
289	43.600	.62900-01	128.00	.4205	.7228	.5087	.9585	.2741-01	.1930-01	2.744	19.04	547.6
289	45.000	.22900-01	8.0000	.7256	1.393	.8346	.9727	.5283-01	.3166-01	4.135	28.36	569.4
290	46.100	.62900-01	174.00	.3897	.6605	.4698	.9584	.2504-01	.1781-01	2.593	18.03	544.1
290	47.700	.40800-01	167.00	.5071	.8903	.5936	.9661	.3376-01	.2251-01	3.214	22.25	552.5
289	48.400	.44200-01	109.00	.4876	.8559	.5746	.9648	.3246-01	.2179-01	3.094	21.41	552.4
290	53.200	.24700-01	163.00	.6766	1.255	.7775	.9718	.4758-01	.2948-01	4.007	27.57	563.5
290	65.200	.24700-01	162.00	.6748	1.242	.7787	.9708	.4710-01	.2953-01	4.031	27.76	562.1
288	90.000	.91000-02	44.000	.6001	1.262	.7216	.9679	.4792-01	.2740-01	3.127	21.30	582.4
288	90.000	.11100-01	45.000	.8208	1.766	.9912	.9679	.6706-01	.3764-01	4.192	28.51	585.2
288	90.000	.13100-01	46.000	.8009	1.587	.9524	.9679	.6028-01	.3617-01	4.419	30.23	574.4
288	90.000	.17000-01	48.000	.6464	1.234	.7630	.9679	.4685-01	.2898-01	3.712	25.47	568.5
288	90.000	.20900-01	50.000	.6794	1.270	.7987	.9679	.4823-01	.3033-01	3.994	27.46	564.9
288	90.000	.24900-01	52.000	.6481	1.182	.7600	.9674	.4488-01	.2886-01	3.923	27.04	560.3
288	90.000	.26900-01	53.000	.6183	1.130	.7284	.9666	.4291-01	.2766-01	3.732	25.71	560.7
288	90.000	.28800-01	54.000	.6021	1.086	.7099	.9659	.4123-01	.2696-01	3.695	25.50	558.1
288	90.000	.32800-01	55.000	.4030	.6553	.4670	.9644	.2489-01	.1774-01	2.860	20.02	532.8
288	90.000	.36700-01	56.000	.5056	.8719	.5987	.9630	.3311-01	.2274-01	3.288	22.81	548.4
288	90.000	.40600-01	57.000	.4795	.8408	.5744	.9616	.3193-01	.2181-01	3.049	21.11	552.2
288	90.000	.48500-01	58.000	.4162	.7205	.5040	.9588	.2736-01	.1914-01	2.694	18.68	549.3
288	90.000	.56400-01	59.000	.4136	.7072	.5059	.9561	.2686-01	.1921-01	2.723	18.92	546.3
288	90.000	.76100-01	60.000	.3313	.5578	.4162	.9497	.2119-01	.1581-01	2.230	15.52	542.4
288	90.000	.95900-01	61.000	.2553	.4272	.3295	.9440	.1623-01	.1251-01	1.734	12.08	540.9
288	90.000	.11550	62.000	.2061	.3441	.2729	.9390	.1307-01	.1036-01	1.405	9.791	540.2
288	135.00	.19000-01	49.000	.6633	1.239	.8133	.9603	.4707-01	.3089-01	3.901	26.82	564.8
288	135.00	.22900-01	51.000	.6057	1.121	.7408	.9603	.4256-01	.2814-01	3.603	24.80	563.1
288	180.00	.91000-02	23.000	.2512	.4207	.3074	.9546	.1598-01	.1167-01	1.704	11.87	541.1
288	180.00	.11100-01	24.000	.4785	.8858	.6045	.9546	.3364-01	.2296-01	2.844	19.57	563.2
288	180.00	.13100-01	25.000	.7484	1.565	.9804	.9546	.5945-01	.3724-01	3.919	26.70	581.8
288	180.00	.15000-01	26.000	.7613	1.552	.9901	.9546	.5894-01	.3760-01	4.085	27.88	578.4
288	180.00	.17000-01	27.000	.6818	1.312	.8717	.9546	.4983-01	.3311-01	3.879	26.60	569.9
289	180.00	.19000-01	28.000	.6301	1.186	.8002	.9546	.4504-01	.3039-01	3.675	25.25	566.1
288	180.00	.20900-01	29.000	.5833	1.064	.7336	.9546	.4041-01	.2786-01	3.529	24.32	560.4
288	180.00	.28800-01	32.000	.5299	.9333	.6658	.9528	.3545-01	.2529-01	3.351	23.19	553.2
288	180.00	.32800-01	33.000	.4812	.8174	.6015	.9514	.3104-01	.2284-01	3.197	22.23	544.7
288	180.00	.36700-01	34.000	.4632	.8022	.5871	.9501	.3047-01	.2230-01	2.996	20.78	549.4
288	180.00	.48500-01	36.000	.3814	.6445	.4886	.9462	.2448-01	.1856-01	2.553	17.76	543.4
288	180.00	.56400-01	37.000	.3507	.5886	.4537	.9439	.2235-01	.1723-01	2.372	16.52	541.6
288	180.00	.76100-01	38.000	.2567	.4227	.3385	.9384	.1605-01	.1286-01	1.787	12.48	536.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K106)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
288	180.00	.95800-01	39.000	.1919	.3129	.2579	.9338	.1188-01	.9793-02	1.356	9.482	533.6
288	180.00	.11550	40.000	.1395	.2326	.1938	.9300	.8832-02	.7359-02	.9525	6.639	539.9
288	180.00	.18450	42.000	.6504-01	.1016	.9019-01	.9225	.3858-02	.3425-02	.4943	3.484	519.6
288	225.00	.22900-01	30.000	.5592	1.006	.7041	.9537	.3820-01	.2674-01	3.442	23.76	557.6
288	270.00	.91000-02	63.000	.4062	.7332	.5006	.9577	.2785-01	.1901-01	2.489	17.18	558.3
288	270.00	.11100-01	64.000	.6154	1.247	.7830	.9577	.4736-01	.2974-01	3.321	22.67	577.6
288	270.00	.13100-01	65.000	.7825	1.657	1.037	.9577	.6292-01	.3825-01	4.052	27.59	583.3
288	270.00	.17000-01	67.000	.7425	1.412	.9265	.9577	.5361-01	.3526-01	4.281	29.39	567.8
288	270.00	.20900-01	69.000	.6278	1.184	.7833	.9577	.4496-01	.2975-01	3.653	25.09	566.5
288	270.00	.24900-01	71.000	.5439	1.001	.6758	.9572	.3802-01	.2567-01	3.254	22.41	562.1
288	270.00	.28800-01	73.000	.5679	1.013	.7046	.9558	.3845-01	.2676-01	3.535	24.43	555.8
288	270.00	.36700-01	75.000	.4846	.8535	.6080	.9530	.3241-01	.2309-01	3.064	21.20	553.2
288	270.00	.48500-01	77.000	.3946	.6689	.4987	.9491	.2540-01	.1894-01	2.631	18.29	544.2
288	270.00	.56400-01	78.000	.3841	.6443	.4896	.9466	.2447-01	.1859-01	2.600	18.11	541.5
288	270.00	.95800-01	80.000	.1974	.3208	.2618	.9361	.1218-01	.9941-02	1.403	9.821	532.5
288	270.00	.11550	81.000	.1653	.2715	.2253	.9319	.1031-01	.8556-02	1.155	8.072	535.6
288	315.00	.19000-01	68.000	.5817	1.040	.6876	.9651	.3950-01	.2611-01	3.609	24.93	556.3
288	315.00	.22900-01	70.000	.6655	1.238	.7938	.9651	.4702-01	.3015-01	3.934	27.06	564.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
337	3.010	-4.978	-5.997	36.10	715.7	.9680	254.5	-50.44	2354.	.1027-01	.2034-06	3.693
338	3.010	-4.977	-5.995	36.08	715.7	.9676	254.5	-50.44	2354.	.1026-01	.2034-06	3.691
339	3.010	-4.978	-5.997	36.15	715.7	.9695	254.5	-50.44	2354.	.1028-01	.2034-06	3.698

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
337	.4390-01	.7546-02
338	.4389-01	.7548-02
339	.4393-01	.7541-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
338	.00000	.91000-02	1.0000	.7670	2.086	.8767	.9802	.9155-01	.3848-01	3.810	25.67	602.5
338	.00000	.15000-01	4.0000	.7949	1.971	.9013	.9802	.8651-01	.3956-01	4.184	28.29	595.7
338	.00000	.17000-01	5.0000	.7911	1.832	.8914	.9802	.8042-01	.3912-01	4.373	29.66	589.7
338	.00000	.19000-01	6.0000	.7370	1.668	.8285	.9802	.7319-01	.3636-01	4.149	28.18	587.4
338	.00000	.24900-01	9.0000	.6673	1.438	.7488	.9797	.6313-01	.3286-01	3.909	26.63	582.2
338	.00000	.26900-01	10.000	.6276	1.327	.7061	.9789	.5822-01	.3099-01	3.741	25.52	579.8
337	.00000	.32800-01	12.000	.5406	1.086	.6124	.9767	.4768-01	.2688-01	3.381	23.14	573.2
337	.00000	.36700-01	13.000	.4961	.9539	.5632	.9752	.4188-01	.2472-01	3.248	22.31	566.6
337	.00000	.40600-01	14.000	.5234	1.043	.6022	.9737	.4580-01	.2644-01	3.300	22.60	572.1
337	.00000	.48500-01	15.000	.4759	.9225	.5539	.9709	.4050-01	.2432-01	3.088	21.20	567.8
337	.00000	.56400-01	16.000	.4569	.8850	.5401	.9682	.3885-01	.2371-01	2.968	20.37	567.7
337	.00000	.76100-01	17.000	.3723	.6868	.4512	.9618	.3015-01	.1981-01	2.555	17.62	559.4
337	.00000	.95800-01	18.000	.6564-01	.1123	.8028-01	.9561	.4929-02	.3524-02	.4964	3.454	543.4
337	.00000	.11550	19.000	.2681	.5010	.3470	.9511	.2199-01	.1523-01	1.812	12.48	561.7
337	.00000	.16480	20.000	.1775	.3246	.2415	.9415	.1425-01	.1060-01	1.230	8.490	557.8
337	.00000	.21400	22.000	.1178	.1949	.1577	.9361	.8558-02	.6922-02	.9351	6.536	534.8
339	2.0000	.24700-01	165.00	.6359	1.298	.7074	.9802	.5702-01	.3108-01	3.919	26.79	575.4
338	9.0000	.15000-01	157.00	.8046	1.870	.8970	.9819	.8205-01	.3937-01	4.436	30.09	590.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
338	9.0000	.17600-01	158.00	.7342	1.692	.8179	.9819	.7424-01	.3590-01	4.074	27.65	589.2
339	9.8000	.24700-01	164.00	.6969	1.536	.7747	.9816	.6747-01	.3403-01	4.011	27.28	584.7
338	10.000	.22900-01	88.000	.6974	1.552	.7738	.9821	.6811-01	.3396-01	3.979	27.05	585.7
338	10.000	.26900-01	90.000	.6399	1.344	.7115	.9808	.5898-01	.3123-01	3.837	26.18	579.0
338	10.000	.34700-01	94.000	.5720	1.204	.6475	.9778	.5283-01	.2842-01	3.423	23.35	579.3
339	14.600	.44200-01	169.00	.5145	1.010	.5865	.9750	.4439-01	.2577-01	3.296	22.60	569.8
338	18.500	.44200-01	106.00	.5257	1.061	.5997	.9755	.4657-01	.2632-01	3.272	22.39	573.8
339	19.600	.62900-01	175.00	.4286	.8117	.5019	.9691	.3566-01	.2205-01	2.855	19.64	564.0
338	19.800	.40800-01	101.00	.5466	1.116	.6194	.9770	.4898-01	.2718-01	3.364	23.00	575.4
338	20.000	.24900-01	89.000	.6670	1.439	.7334	.9831	.6317-01	.3219-01	3.904	26.59	582.3
338	20.000	.28800-01	91.000	.6205	1.311	.6872	.9816	.5755-01	.3016-01	3.700	25.23	579.8
338	20.000	.32800-01	93.000	.5819	1.241	.6510	.9800	.5446-01	.2857-01	3.442	23.46	580.9
338	22.200	.62900-01	125.00	.4291	.8506	.5058	.9694	.3733-01	.2220-01	2.719	18.63	571.3
338	22.400	.44200-01	107.00	.5173	1.039	.5881	.9760	.4562-01	.2581-01	3.235	22.14	573.2
339	22.600	.10270	192.00	.3166	.5893	.3949	.9572	.2589-01	.1735-01	2.151	14.82	561.0
338	23.000	.42000-01	105.00	.5293	1.071	.5992	.9769	.4698-01	.2630-01	3.288	22.49	574.1
338	23.400	.59600-01	120.00	.4374	.8612	.5113	.9707	.3780-01	.2244-01	2.792	19.14	570.2
339	23.900	.21310	250.00	.1265	.2036	.1661	.9371	.8945-02	.7296-02	1.051	7.379	526.6
338	24.100	.82200-01	139.00	.3705	.7078	.4490	.9633	.3106-01	.1971-01	2.442	16.79	565.5
339	24.400	.19040	238.00	.1623	.2701	.2139	.9396	.1187-01	.9396-02	1.278	8.929	536.4
339	24.400	.12440	207.00	.2567	.4867	.3326	.9517	.2138-01	.1461-01	1.708	11.75	564.2
339	24.800	.16810	223.00	.1848	.3282	.2463	.9429	.1442-01	.1082-01	1.330	9.212	551.8
338	24.900	.62900-01	126.00	.4261	.8432	.5013	.9697	.3700-01	.2200-01	2.706	18.55	571.0
339	25.000	.79500-01	178.00	.3846	.7179	.4611	.9643	.3154-01	.2026-01	2.604	17.94	561.5
339	25.300	.10270	191.00	.3184	.5908	.3962	.9574	.2595-01	.1741-01	2.171	14.97	560.4
339	25.300	.10000+00	186.00	.3165	.5931	.3932	.9582	.2606-01	.1727-01	2.133	14.69	562.2
338	25.500	.60700-01	124.00	.4458	.8759	.5213	.9705	.3844-01	.2288-01	2.852	19.55	569.9
339	26.000	.12440	206.00	.2549	.4834	.3300	.9519	.2124-01	.1450-01	1.696	11.67	564.2
338	26.300	.82200-01	140.00	.3410	.6468	.4120	.9635	.2839-01	.1808-01	2.265	15.58	564.3
339	26.700	.12100	199.00	.2576	.4779	.3293	.9527	.2100-01	.1447-01	1.757	12.11	560.4
339	26.800	.16810	222.00	.1911	.3376	.2539	.9430	.1483-01	.1116-01	1.385	9.595	550.7
339	27.000	.19040	237.00	.1741	.2903	.2295	.9397	.1275-01	.1008-01	1.367	9.541	536.9
339	27.100	.21310	249.00	.1317	.2127	.1731	.9372	.9344-02	.7605-02	1.088	7.634	527.7
339	27.200	.80300-01	180.00	.3824	.7069	.4576	.9642	.3106-01	.2010-01	2.619	18.06	559.8
338	27.400	.40100-01	98.000	.5430	1.136	.6129	.9781	.4985-01	.2690-01	3.267	22.30	578.6
339	27.400	.16480	215.00	.1843	.3310	.2457	.9436	.1454-01	.1079-01	1.307	9.037	554.2
338	27.600	.41600-01	102.00	.5477	1.133	.6194	.9776	.4974-01	.2719-01	3.329	22.74	577.2
339	27.600	.12440	205.00	.2509	.4747	.3243	.9520	.2086-01	.1425-01	1.672	11.50	563.9
339	27.600	.18700	230.00	.1761	.2933	.2314	.9402	.1288-01	.1017-01	1.387	9.683	536.5
339	27.700	.21010	243.00	.1385	.2260	.1827	.9375	.9930-02	.8027-02	1.124	7.874	530.9
339	27.900	.10110	188.00	.3228	.6047	.4012	.9581	.2657-01	.1762-01	2.177	14.99	562.1
338	28.000	.46800-01	110.00	.4935	.9863	.5617	.9757	.4329-01	.2465-01	3.103	21.25	572.4
339	28.200	.16810	221.00	.2177	.3896	.2907	.9431	.1711-01	.1277-01	1.551	10.73	553.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
339	28.300	.19040	236.00	.1871	.3111	.2462	.9398	.1367-01	.1082-01	1.476	10.31	536.1
339	28.300	.12200	201.00	.2649	.4928	.3392	.9526	.2165-01	.1490-01	1.801	12.41	560.9
338	28.400	.53500-01	114.00	.4888	.9760	.5639	.9733	.4284-01	.2475-01	3.075	21.06	572.3
339	28.400	.21310	248.00	.1320	.2134	.1736	.9372	.9375-02	.7626-02	1.089	7.641	527.9
338	28.700	.58600-01	117.00	.4736	.9408	.5515	.9716	.4129-01	.2420-01	2.996	20.52	571.5
339	28.800	.16580	217.00	.1858	.3318	.2473	.9435	.1458-01	.1086-01	1.327	9.182	553.1
338	28.800	.60400-01	121.00	.4495	.8862	.5246	.9709	.3989-01	.2302-01	2.865	19.64	570.4
339	29.000	.21110	244.00	.1315	.2130	.1729	.9374	.9360-02	.7597-02	1.081	7.581	528.6
338	29.000	.65700-01	129.00	.4294	.8392	.5056	.9691	.3683-01	.2219-01	2.762	18.95	569.1
338	29.200	.72400-01	133.00	.4139	.8067	.4933	.9669	.3540-01	.2165-01	2.670	18.32	568.7
338	29.300	.79500-01	136.00	.3696	.7076	.4447	.9647	.3105-01	.1952-01	2.431	16.71	565.8
338	29.600	.92500-01	143.00	.3452	.6806	.4281	.9607	.2987-01	.1879-01	2.199	15.08	570.5
338	29.700	.10000+00	146.00	.3369	.6498	.4209	.9585	.2852-01	.1847-01	2.198	15.10	567.0
339	29.900	.12100	198.00	.2612	.4879	.3342	.9530	.2144-01	.1468-01	1.768	12.18	561.6
339	30.200	.16480	214.00	.1888	.3361	.2505	.9437	.1476-01	.1101-01	1.354	9.373	552.4
339	30.200	.18700	229.00	.1637	.2713	.2145	.9403	.1192-01	.9423-02	1.297	9.064	535.3
339	30.300	.21010	242.00	.1391	.2271	.1835	.9376	.9978-02	.8060-02	1.128	7.901	531.1
338	31.500	.11100-01	83.000	.8910	2.325	.9822	.9849	.1020	.4311-01	4.537	30.62	599.6
339	32.100	.21010	241.00	.1446	.2361	.1907	.9376	.1037-01	.8377-02	1.172	8.209	531.1
339	32.200	.16480	213.00	.1834	.3276	.2437	.9438	.1439-01	.1070-01	1.311	9.070	553.0
339	32.200	.17860	224.00	.1814	.3083	.2389	.9416	.1354-01	.1049-01	1.386	9.654	541.7
339	32.200	.18700	228.00	.1725	.2855	.2258	.9404	.1254-01	.9919-02	1.370	9.576	534.9
339	32.300	.12100	197.00	.2728	.5067	.3481	.9531	.2226-01	.1529-01	1.859	12.81	560.6
339	32.300	.12300	194.00	.2442	.4533	.3125	.9526	.1992-01	.1373-01	1.664	11.47	560.5
339	32.300	.12730	208.00	.1929	.3690	.2508	.9516	.1621-01	.1102-01	1.271	8.732	565.7
339	32.300	.13420	209.00	.2310	.4475	.3048	.9500	.1966-01	.1339-01	1.501	10.31	567.7
338	32.400	.10000+00	147.00	.3417	.6703	.4283	.9587	.2942-01	.1880-01	2.189	15.01	569.7
339	32.400	.10110	184.00	.3301	.6184	.4094	.9584	.2717-01	.1799-01	2.226	15.32	562.2
339	32.400	.10630	193.00	.3091	.5702	.3849	.9570	.2505-01	.1691-01	2.122	14.63	559.4
339	32.500	.85800-01	183.00	.3793	.7234	.4604	.9629	.3178-01	.2023-01	2.507	17.23	565.2
338	32.600	.79500-01	137.00	.3849	.7455	.4635	.9649	.3272-01	.2034-01	2.499	17.15	567.7
339	32.600	.80800-01	176.00	.4023	.7527	.4819	.9645	.3307-01	.2117-01	2.717	18.71	561.9
338	32.700	.67400-01	132.00	.4439	.8686	.5236	.9689	.3812-01	.2298-01	2.852	19.56	569.3
338	32.700	.72400-01	134.00	.4407	.8612	.5247	.9672	.3780-01	.2303-01	2.835	19.45	569.1
338	32.800	.65700-01	130.00	.4434	.8682	.5213	.9695	.3811-01	.2288-01	2.846	19.52	569.4
339	32.800	.16680	210.00	.1958	.3492	.2604	.9435	.1534-01	.1144-01	1.400	9.692	552.8
339	32.800	.18880	225.00	.1757	.2931	.2311	.9401	.1287-01	.1015-01	1.380	9.632	536.9
338	32.900	.58600-01	118.00	.5301	1.080	.6196	.9719	.4741-01	.2715-01	3.270	22.35	575.1
338	32.900	.60400-01	122.00	.4628	.9153	.5393	.9713	.4017-01	.2367-01	2.940	20.15	570.9
339	32.900	.61300-01	171.00	.4522	.8660	.5249	.9710	.3804-01	.2306-01	2.975	20.44	565.9
338	33.000	.53500-01	115.00	.4933	.9764	.5670	.9737	.4285-01	.2488-01	3.131	21.46	571.0
338	33.200	.48300-01	113.00	.4907	.9684	.5578	.9756	.4250-01	.2448-01	3.125	21.42	570.6
339	33.400	.42800-01	166.00	.5126	1.003	.5754	.9777	.4408-01	.2528-01	3.294	22.60	569.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
338	33.500	.40100-01	99.000	.5482	1.109	.6144	.9787	.4865-01	.2697-01	3.407	23.31	574.1
338	33.600	.38300-01	97.000	.5686	1.179	.6366	.9794	.5175-01	.2794-01	3.450	23.56	577.4
338	33.700	.36700-01	96.000	.5741	1.220	.6421	.9800	.5355-01	.2818-01	3.406	23.22	580.5
338	33.900	.33800-01	95.000	.5910	1.263	.6569	.9811	.5545-01	.2883-01	3.487	23.77	581.2
339	34.700	.21010	240.00	.1399	.2300	.1850	.9377	.1010-01	.8129-02	1.122	7.852	533.0
339	34.700	.18700	227.00	.1921	.3172	.2511	.9404	.1393-01	.1103-01	1.532	10.71	534.1
339	34.900	.16480	212.00	.1881	.3373	.2501	.9439	.1482-01	.1099-01	1.336	9.243	553.9
338	35.100	.10000+00	148.00	.3311	.6533	.4153	.9589	.2867-01	.1823-01	2.109	14.46	570.5
339	35.200	.23900-01	161.00	.7358	1.735	.8048	.9851	.7624-01	.3536-01	4.017	27.22	591.4
338	35.300	.92500-01	145.00	.3710	.7364	.4598	.9611	.3232-01	.2018-01	2.349	16.09	571.4
338	35.300	.22100-01	160.00	.6884	1.652	.7532	.9852	.7252-01	.3306-01	3.706	25.10	593.0
339	35.400	.18800	231.00	.1780	.2985	.2345	.9403	.1311-01	.1030-01	1.386	9.672	538.4
339	35.500	.12100	196.00	.2722	.5101	.3480	.9533	.2241-01	.1529-01	1.835	12.64	562.2
339	35.600	.16580	216.00	.1892	.3386	.2516	.9438	.1488-01	.1105-01	1.348	9.328	553.5
338	35.800	.80600-01	138.00	.3827	.7347	.4603	.9648	.3225-01	.2020-01	2.508	17.23	566.3
339	35.900	.21310	247.00	.1437	.2346	.1897	.9374	.1031-01	.8333-02	1.165	8.162	531.0
339	36.000	.19040	235.00	.1818	.3050	.2399	.9400	.1340-01	.1054-01	1.414	9.865	538.5
339	36.200	.16810	220.00	.1913	.3393	.2540	.9434	.1490-01	.1116-01	1.380	9.555	551.5
338	36.200	.72400-01	135.00	.4002	.7406	.4706	.9675	.3250-01	.2065-01	2.735	18.86	559.9
339	36.300	.12200	200.00	.2669	.5007	.3418	.9531	.2200-01	.1501-01	1.798	12.38	562.4
338	36.600	.65700-01	131.00	.4649	.9303	.5479	.9697	.4083-01	.2405-01	2.919	19.99	572.6
339	36.700	.18700	226.00	.1705	.2837	.2236	.9405	.1246-01	.9821-02	1.343	9.379	536.3
339	36.900	.16480	211.00	.1901	.3421	.2530	.9440	.1503-01	.1112-01	1.345	9.297	554.6
339	36.900	.10110	187.00	.3497	.6640	.4346	.9587	.2917-01	.1909-01	2.322	15.97	564.5
338	37.000	.60400-01	123.00	.4809	.9656	.5610	.9716	.4238-01	.2462-01	3.010	20.60	573.1
339	37.000	.12440	204.00	.2689	.5035	.3452	.9525	.2212-01	.1517-01	1.814	12.49	562.1
338	37.100	.58500-01	119.00	.4975	1.001	.5784	.9722	.4394-01	.2538-01	3.106	21.25	573.4
339	37.200	.21310	246.00	.1381	.2256	.1824	.9374	.9911-02	.8011-02	1.120	7.842	531.1
339	37.600	.16810	219.00	.1922	.3410	.2552	.9435	.1498-01	.1121-01	1.386	9.596	551.6
338	37.800	.10270	150.00	.3384	.6652	.4256	.9583	.2920-01	.1868-01	2.163	14.83	570.0
339	37.900	.12100	195.00	.2790	.5119	.3540	.9534	.2249-01	.1555-01	1.928	13.30	558.4
339	38.000	.80300-01	179.00	.4151	.7776	.4960	.9650	.3416-01	.2179-01	2.800	19.28	562.1
338	38.500	.46800-01	112.00	.5262	1.055	.5964	.9765	.4630-01	.2618-01	3.298	22.58	572.9
339	38.600	.12440	203.00	.2691	.5022	.3450	.9526	.2206-01	.1516-01	1.823	12.56	561.5
339	38.700	.10000+00	185.00	.3383	.6342	.4181	.9591	.2786-01	.1837-01	2.280	15.70	562.3
338	38.900	.82200-01	141.00	.3895	.7691	.4724	.9645	.3376-01	.2073-01	2.478	16.99	570.7
338	39.300	.41600-01	104.00	.5552	1.165	.6256	.9785	.5114-01	.2746-01	3.331	22.73	579.0
339	39.500	.10270	190.00	.3414	.6400	.4237	.9584	.2812-01	.1862-01	2.301	15.84	562.3
339	39.600	.16810	218.00	.2165	.3848	.2876	.9435	.1690-01	.1263-01	1.557	10.78	552.0
339	39.900	.19040	233.00	.1635	.2733	.2153	.9401	.1201-01	.9460-02	1.281	8.938	537.4
339	40.100	.79500-01	177.00	.4161	.7729	.4953	.9654	.3396-01	.2176-01	2.833	19.53	560.7
339	40.200	.12440	202.00	.2662	.4984	.3415	.9527	.2189-01	.1500-01	1.797	12.37	562.0
339	40.300	.21310	245.00	.1333	.2175	.1758	.9375	.9554-02	.7725-02	1.083	7.585	530.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG: R /SEC	TW DEG. R
338	41.100	.82200-01	142.00	.3744	.7441	.4545	.9645	.3266-01	.1995-01	2.367	16.22	571.6
339	41.100	.60700-01	173.00	.4784	.9240	.5540	.9717	.4059-01	.2434-01	3.119	21.41	567.3
339	42.600	.59600-01	172.00	.4849	.9472	.5613	.9721	.4161-01	.2466-01	3.124	21.43	569.0
339	43.200	.42000-01	168.00	.5165	1.021	.5778	.9785	.4485-01	.2538-01	3.286	22.52	570.8
339	43.400	.82200-01	181.00	.3783	.7154	.4540	.9646	.3143-01	.1994-01	2.524	17.37	563.8
338	43.600	.62900-01	128.00	.4760	.9363	.5552	.9710	.4109-01	.2437-01	3.042	20.85	570.1
338	45.000	.22900-01	8.0000	.7679	1.809	.8366	.9857	.7940-01	.3672-01	4.191	28.40	591.3
339	46.100	.62900-01	174.00	.4666	.8992	.5421	.9711	.3951-01	.2381-01	3.050	20.94	566.9
339	47.700	.40800-01	167.00	.5747	1.175	.6435	.9791	.5164-01	.2827-01	3.536	24.17	575.6
338	48.400	.44200-01	109.00	.5403	1.096	.6088	.9778	.4810-01	.2672-01	3.347	22.89	574.5
339	53.200	.24700-01	163.00	.7261	1.610	.7897	.9853	.7075-01	.3469-01	4.158	28.27	585.3
339	65.200	.24700-01	162.00	.7093	1.555	.7731	.9848	.6831-01	.3396-01	4.101	27.50	584.1
337	90.000	.91000-02	44.000	.8683	2.748	.9884	.9822	.1206	.4339-01	3.989	26.75	611.0
337	90.000	.11100-01	45.000	.9006	2.372	1.012	.9822	.1041	.4443-01	4.561	30.77	600.3
337	90.000	.13100-01	46.000	.8453	2.110	.9460	.9822	.9261-01	.4153-01	4.431	29.95	596.3
337	90.000	.17000-01	48.000	.7053	1.638	.7847	.9822	.7189-01	.3445-01	3.892	26.40	590.0
337	90.000	.20900-01	50.000	.7429	1.670	.8242	.9822	.7332-01	.3618-01	4.203	28.56	586.8
337	90.000	.26900-01	53.000	.6507	1.409	.7251	.9809	.6186-01	.3183-01	3.798	25.86	582.7
337	90.000	.28800-01	54.000	.6341	1.347	.7084	.9802	.5913-01	.3110-01	3.764	25.66	580.4
337	90.000	.32800-01	55.000	.4374	.7873	.4832	.9786	.3456-01	.2121-01	3.091	21.37	554.7
337	90.000	.36700-01	56.000	.5384	1.079	.6079	.9772	.4735-01	.2669-01	3.377	23.12	572.8
337	90.000	.40600-01	57.000	.5426	1.123	.6205	.9757	.4931-01	.2724-01	3.298	22.52	577.2
337	90.000	.48500-01	58.000	.5441	1.104	.6310	.9728	.4847-01	.2770-01	3.370	23.05	574.6
337	90.000	.56400-01	59.000	.4759	.9448	.5590	.9700	.4147-01	.2454-01	3.013	20.64	571.5
337	90.000	.76100-01	60.000	.3864	.7418	.4682	.9636	.3256-01	.2055-01	2.534	17.41	566.3
337	90.000	.95800-01	61.000	.3567	.6859	.4475	.9577	.3011-01	.1965-01	2.334	16.04	566.6
337	90.000	.11550	62.000	.2731	.5150	.3515	.9525	.2261-01	.1543-01	1.826	12.57	563.3
337	135.00	.19000-01	49.000	.6969	1.533	.8198	.9725	.6728-01	.3599-01	4.016	27.32	584.4
337	135.00	.22900-01	51.000	.6447	1.399	.7569	.9725	.6143-01	.3323-01	3.756	25.57	583.0
337	180.00	.91000-02	23.000	.4396	.8672	.5366	.9633	.3807-01	.2356-01	2.801	19.20	570.5
337	180.00	.11100-01	24.000	.6180	1.516	.7895	.9633	.6654-01	.3466-01	3.279	22.18	594.8
337	180.00	.13100-01	25.000	.6549	1.528	.8285	.9633	.6708-01	.3637-01	3.601	24.42	590.4
337	180.00	.15000-01	26.000	.6160	1.386	.7736	.9633	.6084-01	.3396-01	3.484	23.67	586.8
337	180.00	.17000-01	27.000	.5932	1.286	.7393	.9633	.5646-01	.3245-01	3.459	23.55	582.9
337	180.00	.19000-01	28.000	.6092	1.319	.7590	.9633	.5791-01	.3332-01	3.556	24.21	582.7
337	180.00	.20900-01	29.000	.5929	1.250	.7345	.9633	.5486-01	.3224-01	3.544	24.18	579.5
337	180.00	.28800-01	32.000	.5313	1.063	.6579	.9615	.4664-01	.2888-01	3.339	22.86	572.5
337	180.00	.32800-01	33.000	.4955	.9392	.6104	.9602	.4123-01	.2680-01	3.296	22.67	564.2
337	180.00	.36700-01	34.000	.4781	.9378	.5987	.9589	.4117-01	.2628-01	3.064	21.01	569.7
337	180.00	.48500-01	36.000	.4140	.7834	.5247	.9553	.3439-01	.2303-01	2.758	18.98	563.9
337	180.00	.56400-01	37.000	.3787	.7038	.4837	.9530	.3089-01	.2123-01	2.576	17.75	560.7
337	180.00	.76100-01	38.000	.2921	.5292	.3808	.9480	.2323-01	.1672-01	2.049	14.15	555.9
337	180.00	.95800-01	39.000	.2285	.4048	.3024	.9439	.1777-01	.1327-01	1.648	11.41	551.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
337	180.00	.11550	40.000	.1777	.3168	.2404	.9406	.1391-01	.1055-01	1.272	8.802	552.7
337	180.00	.18450	42.000	.8700-01	.1477	.1189	.9348	.6484-02	.5218-02	.6652	4.633	541.5
337	225.00	.22900-01	30.000	.5112	1.034	.6437	.9593	.4541-01	.2826-01	3.175	21.72	574.2
337	270.00	.91000-02	63.000	.5050	1.114	.6384	.9618	.4892-01	.2802-01	2.901	19.73	584.8
337	270.00	.11100-01	64.000	.5833	1.410	.7518	.9618	.6192-01	.3300-01	3.125	21.15	593.6
337	270.00	.13100-01	65.000	.6512	1.537	.8351	.9618	.6747-01	.3666-01	3.550	24.06	591.5
337	270.00	.17000-01	67.000	.6703	1.453	.8440	.9618	.6378-01	.3705-01	3.910	26.62	582.8
337	270.00	.20900-01	69.000	.6275	1.353	.7892	.9618	.5939-01	.3465-01	3.677	25.04	582.2
337	270.00	.24900-01	71.000	.5554	1.170	.6970	.9613	.5136-01	.3060-01	3.322	22.66	579.4
337	270.00	.28800-01	73.000	.5237	1.058	.6563	.9600	.4644-01	.2881-01	3.259	22.29	573.9
337	270.00	.36700-01	75.000	.4807	.9574	.6100	.9574	.4203-01	.2678-01	3.034	20.78	571.9
337	270.00	.48500-01	77.000	.4245	.8027	.5424	.9539	.3524-01	.2381-01	2.831	19.47	563.8
337	270.00	.56400-01	78.000	.3893	.7262	.5017	.9517	.3188-01	.2203-01	2.636	18.16	561.4
337	270.00	.95800-01	80.000	.2149	.3781	.2852	.9429	.1660-01	.1252-01	1.565	10.85	549.8
337	270.00	.11550	81.000	.1608	.2837	.2175	.9398	.1246-01	.9548-02	1.165	8.076	550.5
337	315.00	.19000-01	68.000	.5862	1.170	.6894	.9700	.5135-01	.3026-01	3.692	25.28	572.2
337	315.00	.22900-01	70.000	.6505	1.390	.7741	.9700	.6104-01	.3398-01	3.840	26.17	581.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
291	4.020	-4.983	-5.977	62.84	719.7	.4030	170.1	-50.32	2570.	.6397-02	.1368-06	3.734
292	4.020	-4.991	-6.007	62.99	719.7	.4040	170.1	-50.42	2570.	.6412-02	.1368-06	3.743
293	4.020	-4.973	-5.986	62.99	719.7	.4040	170.1	-50.42	2570.	.6412-02	.1368-06	3.743

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
291	.3789-01	.9574-02
292	.3794-01	.9562-02
293	.3794-01	.9562-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
292	.00000	.91000-02	1.0000	.6295	1.277	.7373	.9712	.4846-01	.2797-01	3.389	23.14	577.8
292	.00000	.15000-01	4.0000	.7222	1.425	.8419	.9712	.5406-01	.3194-01	3.998	27.36	573.7
292	.00000	.17000-01	5.0000	.7332	1.390	.8488	.9712	.5273-01	.3220-01	4.237	29.10	567.3
292	.00000	.19000-01	6.0000	.6969	1.307	.8052	.9712	.4959-01	.3055-01	4.075	28.01	565.5
292	.00000	.24900-01	9.0000	.6115	1.110	.7043	.9707	.4212-01	.2672-01	3.717	25.63	559.5
292	.00000	.26900-01	10.000	.5740	1.031	.6624	.9699	.3912-01	.2513-01	3.535	24.40	557.4
291	.00000	.32800-01	12.000	.5203	.9218	.6056	.9677	.3493-01	.2295-01	3.258	22.53	554.4
291	.00000	.36700-01	13.000	.4752	.8197	.5537	.9662	.3106-01	.2098-01	3.083	21.39	548.4
291	.00000	.40600-01	14.000	.4916	.8665	.5799	.9648	.3283-01	.2197-01	3.099	21.45	553.3
291	.00000	.48500-01	15.000	.4238	.7327	.5047	.9620	.2777-01	.1912-01	2.741	19.01	549.0
291	.00000	.56400-01	16.000	.4141	.7156	.4999	.9593	.2711-01	.1894-01	2.680	18.59	548.9
291	.00000	.76100-01	17.000	.3323	.5620	.4117	.9528	.2130-01	.1560-01	2.217	15.42	543.6
291	.00000	.95800-01	18.000	.6600-01	.1085	.8331-01	.9469	.4110-02	.3157-02	.4598	3.212	535.8
291	.00000	.11550	19.000	.2274	.3894	.3094	.9416	.1476-01	.1138-01	1.490	10.35	546.7
291	.00000	.16480	20.000	.1361	.2300	.1895	.9310	.8714-02	.7181-02	.9095	6.328	543.3
291	.00000	.21400	22.000	.8412-01	.1292	.1143	.9243	.4897-02	.4332-02	.6572	4.649	513.5
293	2.0000	.24700-01	165.00	.5869	1.040	.6714	.9711	.3945-01	.2547-01	3.679	25.44	554.5
292	9.0000	.15000-01	157.00	.7578	1.447	.8704	.9728	.5488-01	.3302-01	4.345	29.82	568.5

FH15, E.T. NØSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
292	9.0000	.17600-01	158.00	.7306	1.409	.8405	.9728	.5345-01	.3189-01	4.144	28.41	570.2
293	9.8000	.24700-01	164.00	.6400	1.185	.7327	.9725	.4497-01	.2780-01	3.798	26.14	563.3
292	10.000	.22900-01	88.000	.6549	1.218	.7483	.9730	.4622-01	.2839-01	3.867	26.60	564.0
292	10.000	.26900-01	90.000	.5884	1.057	.6727	.9717	.4009-01	.2552-01	3.625	25.03	557.3
292	10.000	.34700-01	94.000	.5215	.9107	.6017	.9688	.3455-01	.2283-01	3.331	23.07	551.3
293	14.600	.44200-01	169.00	.4786	.8287	.5589	.9560	.3144-01	.2120-01	3.093	21.45	549.3
292	18.500	.44200-01	106.00	.4804	.8416	.5608	.9666	.3193-01	.2128-01	3.056	21.16	552.0
293	19.600	.62900-01	175.00	.3879	.6605	.4643	.9601	.2506-01	.1762-01	2.567	17.84	545.3
292	19.800	.40800-01	101.00	.5100	.8996	.5921	.9680	.3413-01	.2246-01	3.216	22.25	553.5
292	20.000	.24900-01	89.000	.6198	1.134	.7026	.9740	.4302-01	.2665-01	3.732	25.71	561.0
292	20.000	.28800-01	91.000	.5742	1.037	.6545	.9725	.3935-01	.2483-01	3.512	24.23	558.5
292	20.000	.32800-01	93.000	.5496	.9976	.6319	.9710	.3785-01	.2397-01	3.342	23.05	559.4
292	22.200	.62900-01	125.00	.4002	.6958	.4809	.9605	.2640-01	.1825-01	2.572	17.83	550.3
292	22.400	.44200-01	107.00	.4754	.8310	.5533	.9671	.3153-01	.2099-01	3.034	21.01	551.5
293	22.600	.10270	192.00	.2659	.4510	.3381	.9480	.1711-01	.1293-01	1.770	12.30	544.3
292	23.000	.42000-01	105.00	.4947	.8685	.5738	.9680	.3295-01	.2177-01	3.138	21.73	552.5
292	23.400	.59600-01	120.00	.3945	.6825	.4704	.9618	.2589-01	.1785-01	2.553	17.70	549.1
293	23.900	.21310	250.00	.9400-01	.1408	.1249	.9256	.5343-02	.4738-02	.7718	5.491	503.3
292	24.100	.82200-01	139.00	.3413	.5857	.4216	.9544	.2222-01	.1599-01	2.233	15.50	547.2
293	24.400	.19040	238.00	.1267	.1964	.1696	.9287	.7449-02	.6435-02	.9759	6.891	516.7
293	24.400	.12440	207.00	.2165	.3733	.2858	.9423	.1416-01	.1084-01	1.407	9.760	548.4
293	24.800	.16810	223.00	.1477	.2426	.2007	.9325	.9205-02	.7614-02	1.031	7.207	535.7
292	24.900	.62900-01	126.00	.3936	.6839	.4722	.9608	.2595-01	.1791-01	2.532	17.55	550.1
293	25.000	.79500-01	178.00	.3455	.5870	.4234	.9553	.2227-01	.1606-01	2.292	15.94	544.8
293	25.300	.10270	191.00	.2694	.4560	.3417	.9483	.1730-01	.1296-01	1.797	12.50	543.8
293	25.300	.10000+00	186.00	.2650	.4510	.3355	.9490	.1711-01	.1273-01	1.755	12.20	545.2
292	25.500	.60700-01	124.00	.4063	.7023	.4847	.9616	.2664-01	.1839-01	2.632	18.26	548.9
293	26.000	.12440	206.00	.2134	.3682	.2816	.9424	.1397-01	.1068-01	1.386	9.618	548.5
292	26.300	.82200-01	140.00	.2606	.4434	.3206	.9546	.1682-01	.1216-01	1.726	12.00	545.1
293	26.700	.12100	199.00	.2136	.3635	.2787	.9433	.1379-01	.1057-01	1.415	9.831	545.1
293	26.800	.16810	222.00	.1528	.2500	.2070	.9327	.9486-02	.7853-02	1.073	7.498	534.6
293	27.000	.19040	237.00	.1235	.1914	.1652	.9288	.7262-02	.6269-02	.9511	6.715	516.7
293	27.100	.21310	249.00	.9384-01	.1404	.1245	.9258	.5325-02	.4722-02	.7728	5.500	502.6
293	27.200	.80300-01	180.00	.3393	.5732	.4151	.9552	.2175-01	.1575-01	2.270	15.79	543.3
292	27.400	.40100-01	98.000	.4867	.8711	.5634	.9692	.3305-01	.2137-01	3.011	20.79	556.6
293	27.400	.16480	215.00	.1503	.2491	.2043	.9333	.9449-02	.7750-02	1.034	7.217	538.2
292	27.600	.41600-01	102.00	.5050	.8986	.5855	.9686	.3409-01	.2221-01	3.148	21.76	555.4
293	27.600	.12440	205.00	.2112	.3639	.2793	.9425	.1381-01	.1056-01	1.374	9.536	548.1
293	27.600	.18700	230.00	.1251	.1940	.1670	.9294	.7362-02	.6336-02	.9616	6.788	517.1
293	27.700	.21010	243.00	.1030	.1556	.1372	.9261	.5901-02	.5206-02	.8315	5.904	506.8
293	27.900	.10110	188.00	.2752	.4688	.3487	.9490	.1778-01	.1323-01	1.820	12.65	545.4
292	28.000	.46800-01	110.00	.4493	.7833	.5235	.9668	.2972-01	.1986-01	2.877	19.93	550.9
293	28.200	.16810	221.00	.1540	.2538	.2094	.9327	.9627-02	.7942-02	1.070	7.470	536.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
293	28.300	.19040	236.00	.1185	.1832	.1583	.9289	.6950-02	.6004-02	.9171	6.479	515.7
293	28.300	.12200	201.00	.2189	.3728	.2859	.9432	.1414-01	.1085-01	1.447	10.05	545.4
292	28.400	.53500-01	114.00	.4360	.7600	.5140	.9644	.2883-01	.1950-01	2.792	19.34	550.9
293	28.400	.21310	248.00	.9575-01	.1438	.1273	.9268	.5454-02	.4829-02	.7828	5.566	504.2
292	28.700	.58600-01	117.00	.4229	.7345	.5025	.9627	.2787-01	.1906-01	2.721	18.86	550.1
293	28.800	.16580	217.00	.1459	.2404	.1978	.9332	.9120-02	.7504-02	1.013	7.073	536.6
292	28.800	.60400-01	121.00	.4092	.7084	.4873	.9620	.2687-01	.1849-01	2.645	18.34	549.3
293	29.000	.21110	244.00	.9563-01	.1438	.1271	.9261	.5456-02	.4823-02	.7792	5.538	504.9
292	29.000	.65700-01	129.00	.3845	.6645	.4618	.9603	.2521-01	.1752-01	2.491	17.28	548.9
292	29.200	.72400-01	133.00	.3749	.6504	.4560	.9580	.2467-01	.1730-01	2.417	16.76	549.7
292	29.300	.79500-01	136.00	.3242	.5545	.3973	.9557	.2104-01	.1507-01	2.131	14.80	546.4
292	29.600	.92500-01	143.00	.2921	.5082	.3676	.9517	.1928-01	.1395-01	1.875	12.99	550.5
292	29.700	.10000+00	146.00	.2753	.4729	.3490	.9495	.1794-01	.1324-01	1.799	12.49	547.4
293	29.900	.12100	198.00	.2147	.3666	.2802	.9436	.1391-01	.1063-01	1.414	9.823	546.0
293	30.200	.16480	214.00	.1416	.2329	.1915	.9335	.8837-02	.7266-02	.9852	6.881	536.2
293	30.300	.21010	242.00	.9999-01	.1512	.1333	.9262	.5735-02	.5056-02	.8063	5.724	507.1
292	31.500	.11100-01	83.000	.7981	1.610	.9091	.9758	.6110-01	.3449-01	4.320	29.51	577.0
293	32.100	.21010	241.00	.1039	.1574	.1386	.9263	.5971-02	.5260-02	.8360	5.933	507.7
293	32.200	.16480	213.00	.1405	.2317	.1902	.9336	.8790-02	.7215-02	.9739	6.800	536.9
293	32.200	.17860	224.00	.1425	.2260	.1912	.9310	.8574-02	.7255-02	1.053	7.398	524.9
293	32.200	.18700	228.00	.1205	.1865	.1605	.9296	.7076-02	.6098-02	.9285	6.557	516.5
293	32.300	.12100	197.00	.2200	.3742	.2864	.9438	.1420-01	.1086-01	1.458	10.13	545.0
293	32.300	.12300	194.00	.2022	.3441	.2640	.9432	.1305-01	.1001-01	1.338	9.298	545.2
293	32.300	.12730	208.00	.1356	.2356	.1798	.9421	.8938-02	.6820-02	.8725	6.047	550.1
293	32.300	.13420	209.00	.1850	.3266	.2495	.9404	.1239-01	.9465-02	1.165	8.060	553.7
292	32.400	.10000+00	147.00	.2665	.4613	.3384	.9497	.1750-01	.1284-01	1.722	11.94	549.3
293	32.400	.10110	184.00	.2681	.4559	.3389	.9493	.1730-01	.1286-01	1.777	12.35	545.0
293	32.400	.10630	193.00	.2489	.4202	.3162	.9478	.1594-01	.1199-01	1.666	11.59	543.2
293	32.500	.85800-01	183.00	.3215	.5534	.3984	.9539	.2100-01	.1511-01	2.095	14.54	547.9
292	32.600	.79500-01	137.00	.2945	.5064	.3609	.9560	.1921-01	.1369-01	1.922	13.34	547.7
293	32.600	.80800-01	176.00	.3317	.5641	.4061	.9555	.2140-01	.1541-01	2.198	15.28	545.0
292	32.700	.67400-01	132.00	.3838	.6634	.4616	.9600	.2517-01	.1751-01	2.486	17.24	548.9
292	32.700	.72400-01	134.00	.3625	.6259	.4396	.9583	.2375-01	.1668-01	2.352	16.31	548.7
292	32.800	.65700-01	130.00	.3842	.6639	.4607	.9606	.2519-01	.1748-01	2.490	17.27	548.8
293	32.800	.16680	210.00	.1445	.2380	.1959	.9332	.9028-02	.7431-02	1.005	7.015	536.4
293	32.800	.18880	225.00	.1220	.1890	.1628	.9293	.7171-02	.6176-02	.9393	6.632	516.7
292	32.900	.58600-01	118.00	.5040	.8875	.5999	.9630	.3367-01	.2276-01	3.185	22.04	553.1
292	32.900	.60400-01	122.00	.4000	.6935	.4757	.9624	.2631-01	.1805-01	2.581	17.89	549.6
293	32.900	.61300-01	171.00	.4033	.6911	.4790	.9620	.2622-01	.1817-01	2.644	18.36	546.9
292	33.000	.53500-01	115.00	.4416	.7653	.5188	.9648	.2903-01	.1968-01	2.850	19.76	549.5
292	33.200	.48300-01	113.00	.4496	.7783	.5232	.9667	.2953-01	.1985-01	2.906	20.15	549.3
293	33.400	.42800-01	166.00	.4779	.8307	.5512	.9687	.3151-01	.2091-01	3.072	21.29	550.2
292	33.500	.40100-01	99.000	.5109	.8958	.5874	.9697	.3399-01	.2228-01	3.247	22.48	552.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
292	33.600	.38300-01	97.000	.5282	.9401	.6070	.9704	.3567-01	.2303-01	3.291	22.74	555.4
292	33.700	.36700-01	96.000	.5442	.9842	.6254	.9710	.3734-01	.2372-01	3.324	22.93	558.7
292	33.900	.33800-01	95.000	.5539	1.007	.6336	.9721	.3822-01	.2404-01	3.360	23.17	559.8
293	34.700	.21010	240.00	.1074	.1633	.1436	.9264	.6194-02	.5447-02	.8572	6.078	509.3
293	34.700	.18700	227.00	.1218	.1880	.1618	.9297	.7131-02	.6139-02	.9440	6.671	515.3
293	34.900	.16480	212.00	.1425	.2359	.1932	.9337	.8948-02	.7328-02	.9829	6.859	537.9
292	35.100	.10000+00	148.00	.2640	.4584	.3353	.9498	.1739-01	.1272-01	1.700	11.78	550.0
293	35.200	.23900-01	161.00	.6752	1.290	.7628	.9759	.4896-01	.2894-01	3.866	26.53	568.7
292	35.300	.92500-01	145.00	.3036	.5291	.3814	.9521	.2007-01	.1447-01	1.945	13.47	550.8
292	35.300	.22100-01	160.00	.6760	1.300	.7636	.9761	.4930-01	.2897-01	3.846	26.38	569.7
293	35.400	.18800	231.00	.1437	.2241	.1923	.9296	.8502-02	.7294-02	1.093	7.704	519.2
293	35.500	.12100	196.00	.2201	.3764	.2869	.9439	.1428-01	.1088-01	1.447	10.05	546.3
293	35.600	.16580	216.00	.1422	.2349	.1927	.9336	.8911-02	.7311-02	.9833	6.864	537.4
292	35.800	.80600-01	138.00	.3340	.5706	.4088	.9559	.2165-01	.1551-01	2.199	15.28	546.1
293	35.900	.21310	247.00	.1026	.1555	.1371	.9260	.5901-02	.5203-02	.8235	5.843	508.2
293	36.000	.19040	235.00	.1284	.2003	.1722	.9292	.7598-02	.6531-02	.9775	6.893	519.1
293	36.200	.16810	220.00	.1473	.2419	.1995	.9331	.9176-02	.7567-02	1.029	7.191	535.6
292	36.200	.72400-01	135.00	.3707	.6419	.4494	.9586	.2435-01	.1705-01	2.395	16.61	549.4
293	36.300	.12200	200.00	.2187	.3744	.2855	.9437	.1420-01	.1083-01	1.435	9.968	546.6
292	36.600	.65700-01	131.00	.3587	.6265	.4308	.9608	.2377-01	.1634-01	2.291	15.87	551.3
293	36.700	.18700	226.00	.1261	.1964	.1684	.9298	.7449-02	.6390-02	.9629	6.793	518.4
293	36.900	.16480	211.00	.1469	.2441	.1995	.9338	.9260-02	.7569-02	1.008	7.030	538.9
293	36.900	.10110	187.00	.2821	.4834	.3571	.9496	.1834-01	.1355-01	1.850	12.84	546.8
292	37.000	.60400-01	123.00	.4070	.7108	.4843	.9627	.2697-01	.1837-01	2.600	18.01	551.3
293	37.000	.12440	204.00	.2171	.3714	.2842	.9431	.1409-01	.1078-01	1.426	9.905	546.5
292	37.100	.56600-01	119.00	.4210	.7355	.4993	.9633	.2790-01	.1894-01	2.688	18.62	551.4
293	37.200	.21310	246.00	.1075	.1631	.1437	.9261	.6188-02	.5453-02	.8609	6.106	508.6
293	37.600	.16810	219.00	.1470	.2416	.1991	.9332	.9167-02	.7554-02	1.025	7.163	535.9
292	37.800	.10270	150.00	.2748	.4768	.3502	.9492	.1809-01	.1329-01	1.771	12.28	549.8
293	37.900	.12100	195.00	.2223	.3753	.2880	.9441	.1424-01	.1092-01	1.489	10.36	543.1
293	38.000	.80300-01	179.00	.3458	.5885	.4223	.9560	.2233-01	.1602-01	2.289	15.91	545.2
292	38.500	.46800-01	112.00	.4628	.8066	.5370	.9676	.3060-01	.2037-01	2.965	20.54	550.8
293	38.600	.12440	203.00	.2175	.3717	.2845	.9432	.1410-01	.1079-01	1.432	9.944	546.2
293	38.700	.10000+00	185.00	.2798	.4764	.3525	.9500	.1807-01	.1337-01	1.851	12.87	545.3
292	38.900	.82200-01	141.00	.3051	.5291	.3759	.9555	.2007-01	.1426-01	1.968	13.64	549.7
292	39.300	.41600-01	104.00	.4897	.8745	.5655	.9695	.3318-01	.2146-01	3.038	20.99	556.1
293	39.500	.10270	190.00	.2788	.4746	.3526	.9492	.1800-01	.1338-01	1.845	12.82	545.2
293	39.600	.16810	218.00	.1360	.2240	.1843	.9332	.8497-02	.6994-02	.9459	6.606	536.4
293	39.900	.19040	233.00	.1245	.1940	.1667	.9293	.7361-02	.6325-02	.9477	6.683	519.0
293	40.100	.79500-01	177.00	.3472	.5881	.4227	.9564	.2231-01	.1604-01	2.314	16.09	544.0
293	40.200	.12440	202.00	.2197	.3762	.2876	.9433	.1427-01	.1091-01	1.442	10.01	546.7
293	40.300	.21310	245.00	.9546-01	.1450	.1277	.9261	.5502-02	.4845-02	.7626	5.408	509.1
292	41.100	.82200-01	142.00	.3058	.5325	.3770	.9556	.2020-01	.1430-01	1.961	13.59	550.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
293	41.100	.60700-01	173.00	.4090	.7028	.4845	.9627	.2666-01	.1838-01	2.671	18.54	547.5
293	42.600	.59600-01	172.00	.4205	.7275	.4979	.9632	.2760-01	.1889-01	2.721	18.87	549.1
293	43.200	.42000-01	168.00	.4620	.8046	.5310	.9695	.3052-01	.2014-01	2.963	20.53	550.6
293	43.400	.82200-01	181.00	.3348	.5727	.4104	.9557	.2173-01	.1557-01	2.201	15.28	546.4
292	43.600	.62900-01	128.00	.3558	.6136	.4231	.9621	.2328-01	.1605-01	2.311	16.04	548.4
292	45.000	.22900-01	8.0000	.6937	1.318	.7804	.9765	.5000-01	.2961-01	3.998	27.44	567.8
293	46.100	.62900-01	174.00	.4008	.6883	.4762	.9621	.2611-01	.1806-01	2.620	18.19	547.3
293	47.700	.40800-01	167.00	.5170	.9173	.5948	.9700	.3480-01	.2256-01	3.234	22.36	554.8
292	48.400	.44200-01	109.00	.4821	.8456	.5567	.9688	.3208-01	.2112-01	3.063	21.20	552.2
293	53.200	.24700-01	163.00	.6669	1.240	.7496	.9761	.4703-01	.2844-01	3.940	27.11	563.9
293	65.200	.24700-01	162.00	.6521	1.204	.7342	.9756	.4567-01	.2785-01	3.885	26.74	562.6
291	90.000	.91000-02	44.000	.6990	1.583	.8226	.9731	.6000-01	.3117-01	3.413	23.14	590.8
291	90.000	.11100-01	45.000	.8044	1.673	.9350	.9731	.6340-01	.3543-01	4.225	28.80	581.1
291	90.000	.13100-01	46.000	.7814	1.572	.9037	.9731	.5956-01	.3424-01	4.238	28.95	576.6
291	90.000	.17000-01	48.000	.6656	1.288	.7650	.9731	.4881-01	.2899-01	3.756	25.74	570.8
291	90.000	.20900-01	50.000	.7198	1.370	.8252	.9731	.5191-01	.3127-01	4.137	28.39	568.0
291	90.000	.24900-01	52.000	.6578	1.199	.7506	.9726	.4544-01	.2844-01	3.973	27.39	560.3
291	90.000	.26900-01	53.000	.6007	1.104	.6892	.9718	.4182-01	.2612-01	3.596	24.76	561.7
291	90.000	.28800-01	54.000	.5891	1.069	.6770	.9711	.4051-01	.2565-01	3.578	24.68	559.4
291	90.000	.32800-01	55.000	.4098	.6708	.4648	.9696	.2542-01	.1761-01	2.872	20.07	534.7
291	90.000	.36700-01	56.000	.5004	.8753	.5795	.9691	.3317-01	.2196-01	3.186	22.06	551.6
291	90.000	.40600-01	57.000	.5100	.9105	.5975	.9667	.3450-01	.2264-01	3.162	21.84	556.1
291	90.000	.48500-01	58.000	.4334	.7631	.5136	.9639	.2891-01	.1946-01	2.735	18.93	553.1
291	90.000	.56400-01	59.000	.4387	.7619	.5254	.9611	.2887-01	.1991-01	2.820	19.55	550.0
291	90.000	.76100-01	60.000	.3562	.6087	.4390	.9545	.2307-01	.1663-01	2.342	16.26	546.2
291	90.000	.95800-01	61.000	.2771	.4717	.3518	.9485	.1787-01	.1333-01	1.831	12.73	545.3
291	90.000	.11550	62.000	.2266	.3837	.2955	.9431	.1454-01	.1120-01	1.510	10.50	543.9
291	135.00	.19000-01	49.000	.6579	1.236	.7930	.9636	.4682-01	.3005-01	3.837	26.37	565.7
291	135.00	.22900-01	51.000	.6117	1.140	.7360	.9636	.4320-01	.2789-01	3.599	24.75	564.4
291	180.00	.91000-02	23.000	.3151	.5402	.3891	.9543	.2047-01	.1475-01	2.062	14.31	547.0
291	180.00	.11100-01	24.000	.5133	1.002	.6603	.9543	.3797-01	.2502-01	2.869	19.65	572.1
291	180.00	.13100-01	25.000	.7002	1.431	.9131	.9543	.5421-01	.3460-01	3.740	25.52	578.7
291	180.00	.15000-01	26.000	.7132	1.421	.9232	.9543	.5385-01	.3498-01	3.905	26.70	575.2
291	180.00	.17000-01	27.000	.6290	1.181	.7996	.9543	.4474-01	.3030-01	3.671	25.23	565.6
291	180.00	.19000-01	28.000	.6155	1.154	.7822	.9543	.4374-01	.2964-01	3.597	24.72	565.5
291	180.00	.20900-01	29.000	.5922	1.085	.7471	.9543	.4111-01	.2831-01	3.556	24.50	561.2
291	180.00	.29800-01	32.000	.5035	.8826	.6326	.9525	.3345-01	.2397-01	3.197	22.13	552.1
291	180.00	.32800-01	33.000	.4627	.7830	.5794	.9511	.2967-01	.2192-01	3.084	21.45	543.7
291	180.00	.36700-01	34.000	.4585	.7905	.5810	.9498	.2995-01	.2202-01	2.976	20.65	548.3
291	180.00	.48500-01	36.000	.3615	.6063	.4623	.9460	.2297-01	.1752-01	2.442	17.01	541.4
291	180.00	.56400-01	37.000	.3316	.5509	.4276	.9436	.2088-01	.1620-01	2.272	15.85	538.9
291	180.00	.76100-01	38.000	.2414	.3929	.3168	.9383	.1489-01	.1201-01	1.708	11.95	533.0
291	180.00	.95800-01	39.000	.1865	.2997	.2488	.9337	.1136-01	.9427-02	1.346	9.438	529.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
291	180.00	.11550	40.000	.1399	.2277	.1917	.9299	.8629-02	.7266-02	.9893	6.922	533.1
291	180.00	.18450	42.000	.6152-01	.9637-01	.8550-01	.9224	.3652-02	.3240-02	.4638	3.268	520.7
291	225.00	.22900-01	30.000	.5240	.9372	.6712	.9503	.3551-01	.2543-01	3.241	22.39	556.4
291	270.00	.91000-02	63.000	.3366	.6050	.4257	.9528	.2293-01	.1613-01	2.069	14.28	557.5
291	270.00	.11100-01	64.000	.4596	.8720	.5917	.9528	.3304-01	.2242-01	2.651	18.20	567.5
291	270.00	.13100-01	65.000	.6545	1.339	.8627	.9528	.5076-01	.3269-01	3.490	23.81	578.9
291	270.00	.17000-01	67.000	.6795	1.278	.8722	.9528	.4843-01	.3305-01	3.956	27.18	566.0
291	270.00	.20900-01	69.000	.5972	1.111	.7640	.9528	.4211-01	.2895-01	3.520	24.21	564.1
291	270.00	.24900-01	71.000	.5435	.9913	.6926	.9523	.3756-01	.2624-01	3.280	22.61	560.4
291	270.00	.28800-01	73.000	.5296	.9388	.6736	.9510	.3557-01	.2552-01	3.314	22.91	554.5
291	270.00	.36700-01	75.000	.4388	.7657	.5631	.9483	.2902-01	.2134-01	2.803	19.42	551.1
291	270.00	.48500-01	77.000	.3583	.6025	.4621	.9446	.2283-01	.1751-01	2.410	16.78	542.1
291	270.00	.56400-01	78.000	.3398	.5671	.4421	.9423	.2149-01	.1675-01	2.312	16.12	540.1
291	270.00	.95800-01	80.000	.1674	.2678	.2240	.9326	.1015-01	.8487-02	1.218	8.548	527.7
291	270.00	.11550	81.000	.1348	.2182	.1850	.9290	.8267-02	.7011-02	.9629	6.744	531.2
291	315.00	.19000-01	68.000	.5484	.9723	.6604	.9611	.3684-01	.2502-01	3.430	23.72	554.6
291	315.00	.22900-01	70.000	.6449	1.189	.7845	.9611	.4504-01	.2973-01	3.845	26.47	562.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
235	5.500	-4.988	-5.978	126.6	724.7	.1361	102.8	-50.30	2734.	.3574-02	.8272-07	3.671
236	5.500	-4.988	-5.978	126.6	724.7	.1361	102.8	-50.30	2734.	.3573-02	.8272-07	3.670
237	5.500	-4.982	-5.980	126.7	724.7	.1361	102.8	-50.34	2734.	.3575-02	.8272-07	3.672

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
235	.3018-01	.1283-01
236	.3018-01	.1283-01
237	.3018-01	.1282-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
236	.00000	.91000-02	1.0000	.6127	1.020	.7141	.9644	.3078-01	.2155-01	3.355	23.34	543.2
236	.00000	.15000-01	4.0000	.6827	1.125	.7937	.9644	.3395-01	.2395-01	3.797	26.46	540.3
236	.00000	.17000-01	5.0000	.7208	1.177	.8361	.9644	.3552-01	.2523-01	4.067	28.39	537.7
236	.00000	.19000-01	6.0000	.6839	1.111	.7923	.9644	.3354-01	.2391-01	3.888	27.15	536.3
236	.00000	.24900-01	9.0000	.5639	.9027	.6522	.9639	.2724-01	.1968-01	3.286	23.01	531.6
236	.00000	.26900-01	10.000	.5449	.8703	.6318	.9632	.2626-01	.1906-01	3.187	22.33	530.9
235	.00000	.32800-01	12.000	.4805	.7896	.5668	.9611	.2383-01	.1711-01	2.684	18.71	539.6
235	.00000	.36700-01	13.000	.4239	.6866	.5011	.9597	.2072-01	.1512-01	2.422	16.93	535.3
235	.00000	.40600-01	14.000	.4473	.7350	.5344	.9583	.2218-01	.1613-01	2.498	17.42	539.6
235	.00000	.48500-01	15.000	.3768	.6192	.4561	.9556	.1869-01	.1376-01	2.105	14.67	539.6
235	.00000	.56400-01	16.000	.3626	.5988	.4454	.9529	.1807-01	.1344-01	2.011	14.01	540.9
235	.00000	.76100-01	17.000	.2891	.4766	.3663	.9464	.1438-01	.1105-01	1.607	11.20	540.4
235	.00000	.11550	19.000	.1816	.3017	.2454	.9347	.9104-02	.7405-02	.9984	6.949	542.5
235	.00000	.16480	20.000	.1045	.1709	.1494	.9226	.5157-02	.4509-02	.5887	4.108	538.1
235	.00000	.21400	22.000	.5945-01	.8928-01	.8343-01	.9140	.2694-02	.2518-02	.3891	2.761	507.8
237	2.0000	.24700-01	165.00	.5456	.8583	.6272	.9644	.2590-01	.1893-01	3.279	23.04	525.6
236	9.0000	.15000-01	157.00	.6620	1.090	.7641	.9660	.3290-01	.2306-01	3.686	25.69	540.2
236	9.0000	.17600-01	158.00	.6984	1.155	.8069	.9660	.3485-01	.2435-01	3.864	26.91	541.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
237	9.8000	.24700-01	164.00	.5962	.9554	.6844	.9657	.2884-01	.2066-01	3.468	24.28	531.9
236	10.000	.22900-01	88.000	.6177	1.003	.7100	.9661	.3027-01	.2143-01	3.516	24.56	536.0
236	10.000	.26900-01	90.000	.5676	.9110	.6540	.9649	.2749-01	.1974-01	3.293	23.05	532.4
236	10.000	.34700-01	94.000	.4649	.7101	.5348	.9621	.2143-01	.1614-01	2.945	20.82	514.8
237	14.600	.44200-01	169.00	.4278	.6672	.5006	.9595	.2014-01	.1511-01	2.608	18.35	522.7
236	18.500	.44200-01	106.00	.4258	.6734	.4991	.9600	.2032-01	.1506-01	2.532	17.77	527.6
237	19.600	.62900-01	175.00	.3429	.5377	.4119	.9538	.1623-01	.1243-01	2.070	14.55	524.6
236	19.800	.40800-01	101.00	.4650	.7359	.5421	.9314	.2221-01	.1636-01	2.763	19.39	527.8
236	20.000	.24900-01	89.000	.6045	.9780	.6915	.9671	.2951-01	.2087-01	3.462	24.20	534.9
236	20.000	.28800-01	91.000	.5631	.9083	.6475	.9657	.2741-01	.1954-01	3.239	22.65	534.0
236	20.000	.32800-01	93.000	.5339	.8564	.6170	.9642	.2584-01	.1862-01	3.100	21.70	532.3
236	22.200	.62900-01	125.00	.3533	.5642	.4265	.9541	.1703-01	.1287-01	2.066	14.48	530.8
236	22.400	.44200-01	107.00	.4319	.6833	.5054	.9605	.2062-01	.1525-01	2.567	18.02	527.7
237	22.600	.10270	192.00	.2217	.3529	.2833	.9415	.1065-01	.8551-02	1.304	9.138	529.8
236	23.000	.42000-01	105.00	.4485	.7094	.5229	.9613	.2141-01	.1578-01	2.667	18.72	527.6
236	23.400	.59600-01	120.00	.3742	.5949	.4485	.9553	.1795-01	.1353-01	2.206	15.47	529.3
237	23.900	.21310	250.00	.7474-01	.1067	.9993-01	.9158	.3220-02	.3016-02	.5458	3.929	482.7
236	24.100	.82200-01	139.00	.3034	.4883	.3778	.9480	.1473-01	.1140-01	1.753	12.26	533.2
237	24.400	.19040	238.00	.9502-01	.1403	.1282	.9198	.4234-02	.3868-02	.6441	4.591	500.1
237	24.400	.12440	207.00	.1795	.2914	.2386	.9354	.8794-02	.7203-02	1.022	7.142	535.9
237	24.800	.16810	223.00	.1180	.1848	.1622	.9245	.5577-02	.4897-02	.7135	5.017	524.3
236	24.900	.62900-01	126.00	.3535	.5634	.4259	.9544	.1700-01	.1285-01	2.075	14.54	530.2
237	25.000	.79500-01	178.00	.3025	.4781	.3724	.9489	.1443-01	.1124-01	1.802	12.65	527.3
237	25.300	.10270	191.00	.2269	.3606	.2894	.9418	.1088-01	.8733-02	1.339	9.386	529.2
237	25.300	.10000+00	186.00	.2198	.3498	.2794	.9426	.1056-01	.8432-02	1.293	9.064	529.7
236	25.500	.60700-01	124.00	.3668	.5822	.4397	.9552	.1757-01	.1327-01	2.168	15.20	528.8
237	26.000	.12440	206.00	.1786	.2900	.2373	.9356	.8753-02	.7163-02	1.017	7.101	536.1
236	26.300	.82200-01	140.00	.3349	.5369	.4159	.9482	.1620-01	.1255-01	1.947	13.63	532.0
237	26.700	.12100	199.00	.1799	.2901	.2370	.9366	.8757-02	.7152-02	1.036	7.242	533.9
237	26.800	.16810	222.00	.1150	.1798	.1579	.9247	.5428-02	.4765-02	.6979	4.909	523.6
237	27.000	.19040	237.00	.9165-01	.1353	.1235	.9200	.4084-02	.3728-02	.6213	4.428	500.1
237	27.100	.21310	249.00	.7014-01	.1000	.9364-01	.9160	.3019-02	.2826-02	.5136	3.698	482.1
237	27.200	.80300-01	180.00	.3012	.4747	.3704	.9489	.1433-01	.1118-01	1.803	12.66	526.4
236	27.400	.40100-01	98.000	.4924	.7841	.5723	.9625	.2366-01	.1727-01	2.894	20.28	529.9
237	27.400	.16480	215.00	.1145	.1807	.1575	.9255	.5454-02	.4755-02	.6842	4.804	526.8
236	27.600	.41600-01	102.00	.4527	.7188	.5269	.9620	.2169-01	.1590-01	2.674	18.76	528.9
237	27.600	.12440	205.00	.1753	.2844	.2327	.9357	.8585-02	.7022-02	.9992	6.981	535.8
237	27.600	.18700	230.00	.9832-01	.1457	.1325	.9207	.4399-02	.3999-02	.6609	4.706	502.0
237	27.700	.21010	243.00	.8100-01	.1162	.1084	.9165	.3506-02	.3272-02	.5652	4.206	485.3
237	27.900	.10110	188.00	.2340	.3729	.2978	.9425	.1126-01	.8988-02	1.374	9.630	530.1
236	28.000	.46800-01	110.00	.4065	.6429	.4762	.9602	.1940-01	.1437-01	2.418	16.97	527.6
237	28.200	.16810	221.00	.1165	.1826	.1601	.9248	.5512-02	.4833-02	.7035	4.946	524.6
237	28.300	.19040	236.00	.8507-01	.1253	.1145	.9201	.3783-02	.3455-02	.5790	4.129	499.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
237	28.300	.12200	201.00	.1858	.3000	.2451	.9365	.9055-02	.7397-02	1.067	7.463	534.3
236	28.400	.53500-01	114.00	.3997	.6378	.4742	.9579	.1925-01	.1431-01	2.341	16.40	530.6
237	28.400	.21310	248.00	.7303-01	.1044	.9763-01	.9161	.3150-02	.2947-02	.5320	3.828	483.3
236	28.700	.58600-01	117.00	.3798	.6022	.4531	.9562	.1817-01	.1367-01	2.249	15.77	528.5
237	28.800	.16580	217.00	.1121	.1761	.1539	.9253	.5316-02	.4644-02	.6752	4.745	525.2
236	28.800	.60400-01	121.00	.3588	.5682	.4290	.9556	.1715-01	.1294-01	2.129	14.94	528.1
237	29.000	.21110	244.00	.7240-01	.1036	.9674-01	.9164	.3126-02	.2920-02	.5259	3.783	484.0
236	29.000	.65700-01	129.00	.3489	.5554	.4212	.9538	.1676-01	.1271-01	2.052	14.39	529.7
236	29.200	.72400-01	133.00	.3133	.5017	.3828	.9517	.1514-01	.1155-01	1.824	12.77	531.7
236	29.300	.79500-01	136.00	.2829	.4523	.3491	.9494	.1365-01	.1053-01	1.652	11.57	531.2
236	29.600	.92500-01	143.00	.2762	.4464	.3490	.9453	.1347-01	.1053-01	1.584	11.07	534.6
236	29.700	.10000+00	146.00	.2173	.3502	.2773	.9430	.1057-01	.8367-02	1.251	8.752	533.8
237	29.900	.12100	198.00	.1809	.2921	.2382	.9369	.8817-02	.7109-02	1.040	7.269	534.3
237	30.200	.16480	214.00	.1047	.1645	.1435	.9257	.4965-02	.4330-02	.6292	4.421	525.5
237	30.300	.21010	242.00	.7910-01	.1135	.1059	.9166	.3427-02	.3196-02	.5702	4.097	485.8
236	31.500	.11100-01	83.000	.7337	1.228	.8393	.9687	.3706-01	.2533-01	3.985	27.71	544.7
237	32.100	.21010	241.00	.8049-01	.1158	.1079	.9167	.3494-02	.3256-02	.5777	4.148	486.9
237	32.200	.16480	213.00	.1046	.1644	.1433	.9258	.4962-02	.4324-02	.6282	4.413	525.6
237	32.200	.17860	224.00	.1150	.1753	.1567	.9227	.5291-02	.4728-02	.7317	5.174	513.9
237	32.200	.18700	228.00	.9420-01	.1403	.1272	.9210	.4235-02	.3841-02	.6270	4.459	504.1
237	32.300	.12100	197.00	.1851	.2977	.2429	.9370	.8984-02	.7332-02	1.071	7.490	533.0
237	32.300	.12300	194.00	.1675	.2697	.2206	.9365	.8139-02	.6657-02	.9666	6.762	533.4
237	32.300	.12730	208.00	.1574	.2571	.2102	.9353	.7760-02	.6343-02	.8882	6.198	537.7
237	32.300	.13420	209.00	.1523	.2516	.2066	.9334	.7594-02	.6235-02	.8436	5.876	541.1
236	32.400	.10000+00	147.00	.2262	.3656	.2887	.9432	.1103-01	.8712-02	1.297	9.067	534.6
237	32.400	.10110	184.00	.2263	.3593	.2870	.9429	.1085-01	.8664-02	1.338	9.381	528.9
237	32.400	.10530	193.00	.2118	.3358	.2704	.9413	.1013-01	.8161-02	1.254	8.798	528.5
237	32.500	.85800-01	183.00	.2803	.4447	.3477	.9476	.1342-01	.1049-01	1.659	11.64	528.6
236	32.600	.79500-01	137.00	.3363	.5389	.4149	.9496	.1626-01	.1252-01	1.957	13.70	531.9
237	32.600	.80800-01	176.00	.2938	.4626	.3607	.9492	.1396-01	.1089-01	1.762	12.37	526.0
236	32.700	.67400-01	132.00	.3431	.5471	.4149	.9536	.1651-01	.1252-01	2.012	14.10	530.4
236	32.700	.72400-01	134.00	.3317	.5306	.4046	.9519	.1601-01	.1221-01	1.935	13.55	531.3
236	32.800	.65700-01	130.00	.3532	.5610	.4255	.9542	.1693-01	.1284-01	2.086	14.63	529.0
237	32.800	.16680	210.00	.1141	.1792	.1566	.9253	.5409-02	.4725-02	.6861	4.821	525.4
237	32.800	.18880	225.00	.9143-01	.1354	.1232	.9206	.4088-02	.3719-02	.6153	4.381	501.7
236	32.900	.58600-01	118.00	.3399	.5414	.4054	.9566	.1634-01	.1223-01	1.997	13.99	530.0
236	32.900	.60400-01	122.00	.3599	.5698	.4296	.9559	.1720-01	.1296-01	2.136	14.99	528.0
237	32.900	.61300-01	171.00	.3635	.5680	.4326	.9556	.1714-01	.1306-01	2.208	15.53	523.4
236	33.000	.53500-01	115.00	.4135	.6545	.4885	.9583	.1975-01	.1474-01	2.455	17.23	527.9
236	33.200	.48300-01	113.00	.4206	.6639	.4928	.9601	.2004-01	.1487-01	2.512	17.64	526.8
237	33.400	.42800-01	166.00	.4334	.6731	.5012	.9620	.2032-01	.1513-01	2.662	18.75	521.2
236	33.500	.40100-01	99.000	.4592	.7218	.5307	.9630	.2178-01	.1601-01	2.760	19.40	525.5
236	33.600	.38300-01	97.000	.4683	.7408	.5406	.9636	.2236-01	.1631-01	2.784	19.54	527.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
236	33.700	.36700-01	96.000	.4868	.7766	.5618	.9642	.2344-01	.1695-01	2.852	19.98	530.5
236	33.900	.33800-01	95.000	.5218	.8349	.5999	.9653	.2519-01	.1810-01	3.042	21.30	531.4
237	34.700	.21010	240.00	.7682-01	.1108	.1031	.9168	.3343-02	.3112-02	.5482	3.934	488.2
237	34.700	.18700	227.00	.9419-01	.1399	.1269	.9211	.4221-02	.3830-02	.6307	4.489	502.8
237	34.900	.16480	212.00	.1103	.1741	.1514	.9259	.5256-02	.4570-02	.6573	4.614	527.1
236	35.100	.10000+00	148.00	.2495	.4035	.3183	.9434	.1218-01	.9605-02	1.430	9.997	534.7
237	35.200	.23900-01	161.00	.6394	1.035	.7257	.9689	.3124-01	.2190-01	3.659	25.58	535.1
236	35.300	.92500-01	145.00	.2646	.4276	.3337	.9457	.1290-01	.1007-01	1.518	10.61	534.5
236	35.300	.22100-01	160.00	.5632	.9293	.6415	.9690	.2804-01	.1936-01	3.127	21.79	540.7
237	35.400	.18800	231.00	.9486-01	.1414	.1282	.9209	.4267-02	.3870-02	.6307	4.484	504.4
237	35.500	.12100	196.00	.1830	.2949	.2402	.9372	.8901-02	.7249-02	1.054	7.375	533.7
237	35.600	.16580	216.00	.1178	.1857	.1617	.9257	.5604-02	.4880-02	.7045	4.948	526.5
236	35.800	.80600-01	138.00	.2787	.4443	.3434	.9495	.1341-01	.1036-01	1.636	11.46	530.2
237	35.900	.21310	247.00	.7657-01	.1104	.1029	.9164	.3331-02	.3107-02	.5469	3.924	488.0
237	36.000	.19040	235.00	.9559-01	.1422	.1293	.9205	.4291-02	.3902-02	.6382	4.540	503.5
237	36.200	.16810	220.00	.1157	.1817	.1588	.9252	.5483-02	.4793-02	.6961	4.891	525.3
236	36.200	.72400-01	135.00	.3277	.5217	.3986	.9522	.1574-01	.1203-01	1.926	13.50	529.8
237	36.300	.12200	200.00	.1827	.2951	.2404	.9370	.8907-02	.7254-02	1.048	7.328	534.5
236	36.600	.65700-01	131.00	.3655	.5832	.4404	.9544	.1760-01	.1329-01	2.141	15.00	530.6
237	36.700	.18700	226.00	.9661-01	.1445	.1308	.9212	.4360-02	.3946-02	.6379	4.532	505.9
237	36.900	.16480	211.00	.1152	.1824	.1584	.9260	.5506-02	.4780-02	.6832	4.793	528.1
237	36.900	.10110	187.00	.2378	.3782	.3014	.9431	.1141-01	.9096-02	1.400	9.818	529.5
236	37.000	.60400-01	123.00	.3730	.5913	.4449	.9562	.1784-01	.1343-01	2.210	15.50	528.3
237	37.000	.12440	204.00	.1810	.2930	.2391	.9364	.8842-02	.7218-02	1.035	7.237	535.1
236	37.100	.58600-01	119.00	.3920	.6214	.4664	.9568	.1875-01	.1407-01	2.323	16.29	528.3
237	37.200	.21310	246.00	.8623-01	.1244	.1159	.9164	.3753-02	.3500-02	.6152	4.414	488.3
237	37.600	.16910	219.00	.1154	.1815	.1585	.9253	.5477-02	.4784-02	.6931	4.869	525.7
236	37.800	.10270	150.00	.2407	.3889	.3079	.9427	.1173-01	.9292-02	1.382	9.659	534.5
237	37.900	.12100	195.00	.1910	.3048	.2493	.9374	.9200-02	.7524-02	1.119	7.837	530.6
237	38.000	.80300-01	179.00	.3102	.4870	.3795	.9497	.1470-01	.1145-01	1.869	13.13	525.1
236	38.500	.46800-01	112.00	.4336	.6842	.5060	.9610	.2065-01	.1527-01	2.589	18.18	526.8
237	38.600	.12440	203.00	.1822	.2945	.2405	.9364	.8890-02	.7259-02	1.045	7.308	534.6
237	38.700	.10000+00	185.00	.2389	.3788	.3018	.9436	.1143-01	.9109-02	1.416	9.932	528.4
236	38.900	.82200-01	141.00	.2807	.4480	.3465	.9491	.1352-01	.1046-01	1.644	11.52	530.6
236	39.300	.41600-01	104.00	.4533	.7193	.5256	.9628	.2170-01	.1586-01	2.681	18.81	528.7
237	39.500	.10270	190.00	.2398	.3799	.3039	.9428	.1147-01	.9173-02	1.423	9.981	528.1
237	39.600	.16810	218.00	.1119	.1763	.1538	.9254	.5320-02	.4643-02	.6700	4.705	526.3
237	39.900	.19040	233.00	.9557-01	.1426	.1235	.9206	.4303-02	.3907-02	.6342	4.508	504.8
237	40.100	.79500-01	177.00	.3135	.4892	.3821	.9501	.1477-01	.1153-01	1.909	13.43	522.9
237	40.200	.12440	202.00	.1830	.2959	.2415	.9365	.8931-02	.7289-02	1.049	7.334	534.7
237	40.300	.21310	245.00	.7324-01	.1060	.9870-01	.9165	.3198-02	.2979-02	.5187	3.718	490.0
236	41.100	.82200-01	142.00	.3138	.5032	.3879	.9492	.1518-01	.1171-01	1.823	12.76	532.2
237	41.100	.60700-01	173.00	.3753	.5848	.4450	.9563	.1765-01	.1343-01	2.291	16.13	522.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
237	42.600	.59600-01	172.00	.3869	.6040	.4581	.9567	.1823-01	.1383-01	2.354	16.56	523.1
237	43.200	.42000-01	168.00	.4225	.6556	.4869	.9628	.1979-01	.1470-01	2.600	18.31	520.8
237	43.400	.82200-01	181.00	.2807	.4453	.3454	.9493	.1344-01	.1042-01	1.660	11.64	528.7
236	43.600	.62900-01	128.00	.3569	.5611	.4256	.9557	.1693-01	.1284-01	2.145	15.07	525.5
236	45.000	.22900-01	8.0000	.6067	.9800	.6867	.9694	.2957-01	.2072-01	3.483	24.36	534.4
237	46.100	.62900-01	174.00	.3712	.5775	.4410	.9557	.1743-01	.1331-01	2.273	16.01	521.8
237	47.700	.40800-01	167.00	.4718	.7372	.5435	.9633	.2225-01	.1640-01	2.866	20.16	523.4
236	48.400	.44200-01	109.00	.4452	.7004	.5164	.9622	.2113-01	.1558-01	2.672	18.77	525.8
237	51.900	.44800-01	170.00	.3995	.6132	.4606	.9619	.1851-01	.1390-01	2.507	17.70	516.7
237	53.200	.24700-01	163.00	.6213	.9898	.7021	.9691	.2987-01	.2119-01	3.650	25.58	530.0
237	65.200	.24700-01	162.00	.5959	.9468	.6744	.9686	.2857-01	.2035-01	3.518	24.67	529.1
235	90.000	.91000-02	44.000	.7136	1.336	.8468	.9662	.4032-01	.2556-01	3.349	22.98	569.1
235	90.000	.11100-01	45.000	.8005	1.439	.9416	.9662	.4343-01	.2841-01	3.945	27.18	561.4
235	90.000	.13100-01	46.000	.7902	1.388	.9246	.9662	.4188-01	.2790-01	4.014	27.72	556.4
235	90.000	.17000-01	48.000	.6352	1.092	.7398	.9662	.3297-01	.2232-01	3.319	22.99	551.5
235	90.000	.20900-01	50.000	.6484	1.088	.7509	.9662	.3285-01	.2266-01	3.507	24.37	545.4
235	90.000	.24900-01	52.000	.2747	.4417	.3155	.9658	.1333-01	.9523-02	1.589	11.12	533.0
235	90.000	.26900-01	53.000	.5465	.9020	.6338	.9650	.2722-01	.1913-01	3.032	21.12	540.8
235	90.000	.28800-01	54.000	.5408	.8895	.6286	.9644	.2684-01	.1897-01	3.016	21.03	539.8
235	90.000	.32800-01	55.000	.3626	.5663	.4184	.9629	.1709-01	.1263-01	2.205	15.51	523.2
235	90.000	.36700-01	56.000	.4557	.7297	.5326	.9615	.2202-01	.1607-01	2.653	18.58	531.7
235	90.000	.40600-01	57.000	.4618	.7507	.5455	.9602	.2265-01	.1646-01	2.624	18.33	536.4
235	90.000	.48500-01	58.000	.4567	.7333	.5442	.9574	.2213-01	.1642-01	2.648	18.54	532.5
235	90.000	.56400-01	59.000	.3891	.6202	.4681	.9547	.1872-01	.1413-01	2.283	16.00	530.2
235	90.000	.76100-01	60.000	.3033	.4796	.3747	.9482	.1447-01	.1131-01	1.804	12.66	527.6
235	90.000	.95800-01	61.000	.2549	.4061	.3250	.9421	.1226-01	.9808-02	1.496	10.49	530.1
235	90.000	.11550	62.000	.1896	.3047	.2496	.9363	.9194-02	.7534-02	1.098	7.684	532.8
235	135.00	.19000-01	49.000	.6399	1.071	.7735	.9571	.3232-01	.2334-01	3.478	24.18	544.6
235	135.00	.22900-01	51.000	.5836	.9707	.7041	.9571	.2929-01	.2125-01	3.201	22.28	542.9
235	180.00	.91000-02	23.000	.2803	.4385	.3450	.9480	.1323-01	.1041-01	1.698	11.94	523.9
235	180.00	.11100-01	24.000	.3961	.6546	.4985	.9480	.1975-01	.1504-01	2.194	15.28	541.1
235	180.00	.13100-01	25.000	.6533	1.131	.8373	.9480	.3413-01	.2527-01	3.383	23.41	553.1
235	180.00	.15000-01	26.000	.6687	1.165	.8591	.9480	.3516-01	.2593-01	3.433	23.74	554.6
235	180.00	.17000-01	27.000	.6294	1.055	.7966	.9480	.3183-01	.2404-01	3.413	23.72	545.0
235	180.00	.19000-01	28.000	.5931	.9830	.7473	.9480	.2966-01	.2255-01	3.270	22.77	542.0
235	180.00	.20900-01	29.000	.5598	.9213	.7034	.9480	.2780-01	.2123-01	3.120	21.75	540.0
235	180.00	.28800-01	32.000	.4852	.7828	.6103	.9461	.2362-01	.1842-01	2.791	19.52	534.0
235	180.00	.32800-01	33.000	.4324	.6823	.5423	.9447	.2059-01	.1636-01	2.583	18.13	526.8
235	180.00	.36700-01	34.000	.4110	.6554	.5211	.9433	.1978-01	.1573-01	2.410	16.89	530.3
235	180.00	.48500-01	36.000	.3265	.5140	.4191	.9394	.1551-01	.1265-01	1.957	13.75	526.0
235	180.00	.56400-01	37.000	.2939	.4596	.3804	.9369	.1387-01	.1148-01	1.782	12.53	523.7
235	180.00	.76100-01	38.000	.2080	.3245	.2764	.9311	.9793-02	.8341-02	1.266	8.911	522.9
235	180.00	.95800-01	39.000	.1528	.2401	.2091	.9259	.7245-02	.6311-02	.9185	6.454	525.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K107)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
235	180.00	.11550	40.000	.1072	.1702	.1513	.9213	.5137-02	.4565-02	.6334	4.442	528.9
235	180.00	.18450	42.000	.3604-01	.5494-01	.5195-01	.9110	.1658-02	.1568-02	.2291	1.620	514.0
235	225.00	.22900-01	30.000	.5132	.8350	.6550	.9438	.2520-01	.1977-01	2.912	20.33	536.7
235	270.00	.91000-02	63.000	.2250	.3598	.2815	.9464	.1086-01	.8495-02	1.314	9.200	531.2
235	270.00	.11100-01	64.000	.3159	.5167	.3989	.9464	.1559-01	.1204-01	1.778	12.41	538.2
235	270.00	.13100-01	65.000	.5558	.9400	.7116	.9464	.2837-01	.2148-01	2.974	20.65	547.3
235	270.00	.17000-01	67.000	.7167	1.215	.9186	.9464	.3667-01	.2772-01	3.820	26.51	548.0
235	270.00	.20900-01	69.000	.5730	.9523	.7284	.9464	.2874-01	.2198-01	3.147	21.90	542.7
235	270.00	.24900-01	71.000	.5247	.8695	.6679	.9460	.2624-01	.2015-01	2.894	20.15	541.9
235	270.00	.28800-01	73.000	.4717	.7613	.5977	.9446	.2297-01	.1804-01	2.711	18.96	534.2
235	270.00	.36700-01	75.000	.4047	.6501	.5186	.9418	.1962-01	.1565-01	2.344	16.40	532.7
235	270.00	.48500-01	77.000	.3244	.5101	.4191	.9379	.1539-01	.1265-01	1.948	13.69	525.6
235	270.00	.56400-01	78.000	.3000	.4701	.3914	.9354	.1419-01	.1181-01	1.813	12.75	524.4
235	270.00	.95800-01	80.000	.1407	.2194	.1928	.9246	.6620-02	.5819-02	.8580	6.039	522.6
235	270.00	.11550	81.000	.1057	.1651	.1483	.9202	.4982-02	.4474-02	.6420	4.516	523.3
235	315.00	.19000-01	68.000	.5168	.8389	.6256	.9547	.2532-01	.1888-01	2.944	20.57	535.9
235	315.00	.22900-01	70.000	.6393	1.067	.7810	.9547	.3220-01	.2357-01	3.488	24.26	543.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K108)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
294	4.020	-5.000	-9.023	62.99	718.7	.4040	169.8	-61.24	2568.	.6421-02	.1366-06	3.750
295	4.020	-4.980	-8.995	63.02	719.7	.4042	170.1	-61.26	2570.	.6415-02	.1368-06	3.744
296	4.020	-4.985	-9.004	62.93	719.7	.4036	170.1	-61.26	2570.	.6406-02	.1368-06	3.739

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
294	.3793-01	.9554-02
295	.3795-01	.9560-02
296	.3792-01	.9567-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
295	.00000	.91000-02	1.0000	.8235	1.617	.9629	.9705	.6137-01	.3654-01	4.582	31.36	573.0
295	.00000	.15000-01	4.0000	.8070	1.534	.9381	.9705	.5820-01	.3560-01	4.651	31.92	567.8
295	.00000	.17000-01	5.0000	.7719	1.399	.8895	.9705	.5308-01	.3375-01	4.704	32.45	559.1
295	.00000	.19000-01	6.0000	.6910	1.240	.7948	.9705	.4706-01	.3016-01	4.261	29.42	557.2
295	.00000	.24900-01	9.0000	.5856	1.029	.6725	.9700	.3904-01	.2552-01	3.712	25.69	552.6
295	.00000	.26900-01	10.000	.5711	.9962	.6573	.9693	.3780-01	.2494-01	3.654	25.32	551.0
294	.00000	.32800-01	12.000	.5083	.8939	.5924	.9671	.3390-01	.2247-01	3.211	22.23	552.1
294	.00000	.36700-01	13.000	.4574	.7836	.5336	.9657	.2972-01	.2024-01	2.995	20.80	546.0
294	.00000	.40600-01	14.000	.4657	.8139	.5498	.9643	.3087-01	.2085-01	2.968	20.56	550.7
294	.00000	.48500-01	15.000	.3966	.6809	.4726	.9615	.2583-01	.1792-01	2.588	17.98	546.6
294	.00000	.56400-01	16.000	.3905	.6702	.4716	.9588	.2542-01	.1789-01	2.550	17.71	546.5
294	.00000	.76100-01	17.000	.3343	.5628	.4143	.9524	.2135-01	.1572-01	2.244	15.63	541.7
294	.00000	.95800-01	18.000	.6370-01	.1048	.8059-01	.9466	.3976-02	.3057-02	.4425	3.092	535.5
294	.00000	.11550	19.000	.2200	.3732	.2898	.9414	.1416-01	.1099-01	1.461	10.16	543.6
294	.00000	.16480	20.000	.1308	.2205	.1820	.9308	.8363-02	.6902-02	.8764	6.101	542.0
294	.00000	.21400	22.000	.8102-01	.1265	.1113	.9243	.4797-02	.4221-02	.6145	4.334	518.7
296	2.0000	.24700-01	165.00	.5349	1.057	.6255	.9707	.4007-01	.2372-01	2.956	20.23	573.9
295	9.0000	.15000-01	157.00	.7507	1.37[illegible]	.8552	.9730	.5207-01	.3245-01	4.526	31.19	560.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K108)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
295	9.0000	.17600-01	158.00	.7485	1.378	.8536	.9730	.5229-01	.3239-01	4.475	30.81	562.1
296	9.8000	.24700-01	164.00	.6187	1.289	.7205	.9728	.4887-01	.2732-01	3.247	22.13	581.3
295	10.000	.22900-01	88.000	.6410	1.149	.7268	.9733	.4360-01	.2758-01	3.959	27.34	556.9
295	10.000	.26900-01	90.000	.5922	1.034	.6726	.9720	.3926-01	.2552-01	3.783	26.20	551.3
295	10.000	.34700-01	94.000	.5120	.8710	.5866	.9691	.3305-01	.2226-01	3.392	23.58	545.1
296	14.600	.44200-01	169.00	.4370	.8481	.5206	.9669	.3216-01	.1974-01	2.460	16.86	571.2
295	18.500	.44200-01	106.00	.4617	.7856	.5324	.9678	.2981-01	.2020-01	3.058	21.26	545.1
296	19.600	.62900-01	175.00	.3842	.7307	.4699	.9615	.2771-01	.1782-01	2.211	15.17	567.9
295	19.800	.40800-01	101.00	.4998	.8553	.5729	.9693	.3246-01	.2174-01	3.284	22.81	546.5
295	20.000	.24900-01	89.000	.6339	1.125	.7106	.9753	.4270-01	.2696-01	3.964	27.40	554.9
295	20.000	.28800-01	91.000	.5850	1.029	.6595	.9738	.3905-01	.2503-01	3.703	25.63	552.9
295	20.000	.32800-01	93.000	.5575	.9796	.6330	.9723	.3717-01	.2402-01	3.534	24.46	552.6
295	22.200	.62900-01	125.00	.3971	.6762	.4708	.9621	.2566-01	.1787-01	2.627	18.26	545.3
295	22.400	.44200-01	107.00	.4612	.7841	.5295	.9687	.2976-01	.2009-01	3.058	21.26	544.9
296	22.600	.10270	192.00	.2634	.4869	.3427	.9496	.1846-01	.1299-01	1.565	10.77	562.9
295	23.000	.42000-01	105.00	.4837	.8251	.5533	.9696	.3131-01	.2100-01	3.192	22.18	545.8
295	23.400	.59600-01	120.00	.4285	.7258	.5040	.9634	.2754-01	.1912-01	2.857	19.87	544.0
296	23.900	.21310	250.00	.9294-01	.1527	.1305	.9265	.5789-02	.4947-02	.6484	4.530	535.7
295	24.100	.82200-01	139.00	.3395	.5731	.4135	.9561	.2175-01	.1569-01	2.275	15.83	543.1
296	24.400	.19040	238.00	.1137	.1930	.1598	.9298	.7319-02	.6060-02	.7552	5.251	544.5
296	24.400	.12440	207.00	.2287	.4178	.3065	.9439	.1584-01	.1162-01	1.378	9.499	560.7
296	24.800	.16810	223.00	.1493	.2611	.2083	.9339	.9900-02	.7898-02	.9521	6.594	551.5
295	24.900	.62900-01	126.00	.4100	.6989	.4850	.9626	.2652-01	.1840-01	2.709	18.83	545.6
296	25.000	.79500-01	178.00	.3369	.6329	.4214	.9571	.2400-01	.1598-01	1.966	13.51	565.8
296	25.300	.10270	191.00	.2653	.4893	.3439	.9501	.1855-01	.1304-01	1.581	10.89	562.5
296	25.300	.10000+00	186.00	.2891	.5376	.3740	.9509	.2039-01	.1418-01	1.707	11.74	564.0
295	25.500	.60700-01	124.00	.4207	.7132	.4948	.9635	.2706-01	.1878-01	2.801	19.48	544.2
296	26.000	.12440	206.00	.2231	.4075	.2986	.9442	.1545-01	.1132-01	1.346	9.276	560.6
295	26.300	.82200-01	140.00	.3444	.5774	.4177	.9565	.2191-01	.1585-01	2.330	16.23	541.3
296	26.700	.12100	199.00	.2186	.3967	.2900	.9452	.1504-01	.1100-01	1.329	9.168	559.3
296	26.800	.16810	222.00	.1516	.2639	.2107	.9341	.1001-01	.7989-02	.9724	6.738	550.5
296	27.000	.19040	237.00	.1184	.2011	.1663	.9301	.7627-02	.6304-02	.7863	5.467	544.6
296	27.100	.21310	249.00	.8979-01	.1469	.1256	.9267	.5570-02	.4761-02	.6304	4.407	534.5
296	27.200	.80300-01	180.00	.3374	.6285	.4206	.9573	.2383-01	.1595-01	1.989	13.68	564.3
295	27.400	.40100-01	98.000	.5086	.8837	.5794	.9712	.3353-01	.2199-01	3.272	22.68	550.1
296	27.400	.16480	215.00	.1489	.2604	.2065	.9349	.9875-02	.7830-02	9486	6.569	551.6
295	27.600	.41600-01	102.00	.4948	.8554	.5646	.9707	.3246-01	.2142-01	3.205	22.23	549.0
296	27.600	.12440	205.00	.2166	.3955	.2894	.9444	.1500-01	.1097-01	1.307	9.011	560.5
296	27.600	.18700	230.00	.1054	.1786	.1472	.9307	.6772-02	.5582-02	.7017	4.880	544.1
296	27.700	.21010	243.00	.9746-01	.1615	.1370	.9272	.6123-02	.5197-02	.6713	4.684	538.1
296	27.900	.10110	188.00	.2550	.4742	.3297	.9510	.1798-01	.1250-01	1.505	10.35	564.0
295	28.000	.46800-01	110.00	.4395	.7477	.5042	.9689	.2837-01	.1913-01	2.912	20.24	545.1
296	28.200	.16810	221.00	.1524	.2674	.2124	.9343	.1014-01	.8055-02	.9671	6.695	552.3

) FH15, E.T. NOSE (CLEAN) HU/HREF (R4K108)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
296	28.300	.19040	236.00	.1208	.2045	.1691	.9302	.7753-02	.6413-02	.8061	5.607	543.7
296	28.300	.12200	201.00	.2265	.4122	.3009	.9452	.1563-01	.1141-01	1.372	9.461	559.9
295	28.400	.53500-01	114.00	.4359	.7431	.5058	.9666	.2820-01	.1919-01	2.879	20.01	545.6
296	28.400	.21310	248.00	.9121-01	.1497	.1277	.9268	.5676-02	.4843-02	.6371	4.452	535.5
295	28.700	.58600-01	117.00	.4361	.7418	.5100	.9648	.2815-01	.1935-01	2.889	20.08	545.1
296	28.800	.16580	217.00	.1476	.2576	.2045	.9348	.9769-02	.7756-02	.9433	6.534	551.1
295	28.800	.60400-01	121.00	.4213	.7157	.4940	.9642	.2716-01	.1874-01	2.797	19.44	544.7
296	29.000	.21110	244.00	.9444-01	.1552	.1321	.9271	.5885-02	.5011-02	.6583	4.599	535.9
295	29.000	.65700-01	129.00	.4071	.6919	.4816	.9624	.2626-01	.1827-01	2.702	18.78	544.8
295	29.200	.72400-01	133.00	.3708	.6301	.4434	.9602	.2391-01	.1682-01	2.461	17.11	544.8
295	29.300	.79500-01	136.00	.3338	.5628	.4028	.9579	.2136-01	.1528-01	2.241	15.59	542.8
295	29.600	.92500-01	143.00	.3331	.5714	.4125	.9539	.2168-01	.1565-01	2.182	15.15	547.1
295	29.700	.10000+00	146.00	.2610	.4428	.3257	.9516	.1680-01	.1236-01	1.736	12.07	544.4
296	29.900	.12100	198.00	.2155	.3935	.2857	.9457	.1492-01	.1084-01	1.300	8.960	560.6
296	30.200	.16480	214.00	.1422	.2473	.1963	.9352	.9377-02	.7443-02	.9137	6.333	550.3
296	30.200	.18700	229.00	.1079	.1825	.1503	.9309	.6919-02	.5701-02	.7213	5.018	543.4
296	30.300	.21010	242.00	.9858-01	.1632	.1384	.9274	.6188-02	.5247-02	.6795	4.742	537.9
295	31.500	.11100-01	83.000	.8465	1.676	.9492	.9781	.6361-01	.3602-01	4.670	31.94	574.3
296	32.100	.21010	241.00	.1035	.1715	.1453	.9275	.6502-02	.5509-02	.7131	4.976	538.0
296	32.200	.16480	213.00	.1412	.2457	.1946	.9354	.9315-02	.7380-02	.9055	6.275	550.5
296	32.200	.17860	224.00	.1379	.2372	.1920	.9327	.8993-02	.7282-02	.8997	6.244	547.7
296	32.200	.18700	228.00	.1234	.2083	.1716	.9311	.7900-02	.6507-02	.8266	5.751	543.1
296	32.300	.12100	197.00	.2219	.4039	.2932	.9460	.1532-01	.1112-01	1.343	9.259	560.0
296	32.300	.12300	194.00	.2039	.3699	.2700	.9455	.1403-01	.1024-01	1.241	8.556	559.2
296	32.300	.12730	208.00	.2456	.4482	.3282	.9443	.1699-01	.1244-01	1.482	10.22	560.5
296	32.300	.13420	209.00	.2058	.3723	.2770	.9425	.1412-01	.1050-01	1.255	8.659	558.8
295	32.400	.10000+00	147.00	.2731	.4684	.3414	.9520	.1778-01	.1296-01	1.789	12.42	547.1
296	32.400	.10110	184.00	.2674	.4971	.3442	.9517	.1885-01	.1305-01	1.580	10.87	563.9
296	32.400	.10630	193.00	.2530	.4648	.3273	.9502	.1763-01	.1241-01	1.515	10.43	561.8
296	32.500	.85800-01	183.00	.3224	.6112	.4060	.9564	.2318-01	.1539-01	1.862	12.78	567.4
295	32.600	.79500-01	137.00	.3319	.5644	.4004	.9585	.2142-01	.1519-01	2.201	15.30	544.9
296	32.600	.80800-01	176.00	.3333	.6262	.4147	.9581	.2375-01	.1572-01	1.945	13.36	565.8
295	32.700	.67400-01	132.00	.4044	.6890	.4785	.9625	.2615-01	.1816-01	2.673	18.58	545.5
295	32.700	.72400-01	134.00	.3860	.6574	.4605	.9608	.2495-01	.1747-01	2.554	17.75	545.3
295	32.800	.65700-01	130.00	.4253	.7245	.5018	.9631	.2749-01	.1904-01	2.812	19.54	545.4
296	32.800	.16680	210.00	.1416	.2472	.1960	.9351	.9374-02	.7431-02	.9049	6.268	551.2
296	32.800	.18880	225.00	.1213	.2055	.1692	.9309	.7793-02	.6417-02	.8071	5.613	544.1
295	32.900	.58600-01	118.00	.4173	.7202	.4879	.9656	.2733-01	.1852-01	2.709	18.79	548.6
295	32.900	.60400-01	122.00	.4283	.7316	.5012	.9649	.2776-01	.1902-01	2.821	19.60	546.1
296	32.900	.61300-01	171.00	.3984	.7638	.4795	.9646	.2896-01	.1818-01	2.272	15.59	569.2
295	33.000	.53500-01	115.00	.4414	.7505	.5099	.9674	.2848-01	.1935-01	2.926	20.34	545.0
295	33.200	.48300-01	113.00	.4436	.7509	.5074	.9693	.2849-01	.1925-01	2.960	20.59	543.8
296	33.400	.42800-01	166.00	.4467	.8654	.5187	.9713	.3282-01	.1967-01	2.519	17.26	570.9

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
295	33.500	.40100-01	99.000	.5039	.8603	.5692	.9723	.3265-01	.2160-01	3.321	23.07	546.0
295	33.600	.38300-01	97.000	.5236	.9057	.5910	.9730	.3437-01	.2243-01	3.390	23.51	549.1
295	33.700	.36700-01	96.000	.5410	.9485	.6103	.9736	.3599-01	.2316-01	3.439	23.81	552.2
295	33.900	.33800-01	95.000	.5548	.9774	.6230	.9747	.3709-01	.2364-01	3.505	24.25	553.2
296	34.700	.21010	240.00	.1102	.1833	.1549	.9277	.6951-02	.5874-02	.7548	5.264	539.1
296	34.700	.18700	227.00	.1075	.1812	.1491	.9313	.6871-02	.5656-02	.7213	5.020	542.7
296	34.900	.16480	212.00	.1438	.2517	.1985	.9357	.9545-02	.7529-02	.9157	6.341	551.8
295	35.100	.10000+00	148.00	.3023	.5205	.3776	.9524	.1975-01	.1433-01	1.969	13.66	548.0
296	35.200	.23900-01	161.00	.6484	1.403	.7324	.9787	.5321-01	.2777-01	3.289	22.36	585.9
295	35.300	.92500-01	145.00	.3108	.5363	.3838	.9547	.2035-01	.1457-01	2.018	14.00	548.6
295	35.300	.22100-01	160.00	.6182	1.143	.6850	.9788	.4338-01	.2599-01	3.677	25.31	562.9
296	35.400	.18800	231.00	.1140	.1941	.1592	.9312	.7359-02	.6035-02	.7543	5.242	545.2
296	35.500	.12100	196.00	.2265	.4147	.2993	.9464	.1572-01	.1135-01	1.362	9.387	561.1
296	35.600	.16580	216.00	.1460	.2557	.2018	.9355	.9695-02	.7651-02	.9287	6.431	551.9
295	35.800	.80600-01	138.00	.3363	.5693	.4049	.9586	.2160-01	.1537-01	2.244	15.61	543.8
296	35.900	.21310	247.00	.1077	.1779	.1510	.9273	.6746-02	.5725-02	.7439	5.193	537.4
296	36.000	.19040	235.00	.1301	.2216	.1821	.9309	.8404-02	.6905-02	.8593	5.971	545.5
296	36.200	.16810	220.00	.1511	.2640	.2091	.9351	.1001-01	.7930-02	.9648	6.683	551.3
295	36.200	.72400-01	135.00	.3923	.6686	.4669	.9614	.2537-01	.1772-01	2.592	18.01	545.5
296	36.300	.12200	200.00	.2226	.4068	.2942	.9463	.1543-01	.1116-01	1.342	9.248	560.7
295	36.600	.65700-01	131.00	.4061	.7016	.4795	.9637	.2662-01	.1819-01	2.633	18.26	548.8
296	36.700	.18700	226.00	.1281	.2174	.1782	.9315	.8245-02	.6759-02	.8502	5.911	544.6
296	36.900	.16480	211.00	.1501	.2637	.2074	.9359	.1000-01	.7865-02	.9510	6.583	552.6
296	36.900	.10110	187.00	.2855	.5340	.3671	.9523	.2028-01	.1392-01	1.671	11.49	565.3
295	37.000	.60400-01	123.00	.4374	.7538	.5113	.9656	.2861-01	.1940-01	2.845	19.74	548.2
296	37.000	.12440	204.00	.2202	.4009	.2916	.9457	.1520-01	.1106-01	1.333	9.188	560.0
295	37.100	.58600-01	119.00	.4453	.7658	.5186	.9662	.2906-01	.1968-01	2.906	20.17	547.7
296	37.200	.21310	246.00	.1135	.1876	.1591	.9274	.7112-02	.6033-02	.7840	5.472	537.5
296	37.600	.16810	219.00	.1522	.2661	.2106	.9353	.1009-01	.7984-02	.9702	6.720	551.6
295	37.800	.10270	150.00	.2833	.4888	.3550	.9520	.1855-01	.1347-01	1.840	12.76	548.5
296	37.900	.12100	195.00	.2216	.4014	.2911	.9467	.1522-01	.1104-01	1.350	9.312	559.0
296	38.000	.80300-01	179.00	.3478	.6531	.4303	.9590	.2477-01	.1632-01	2.031	13.96	565.7
295	38.500	.46800-01	112.00	.4657	.7951	.5303	.9706	.3017-01	.2012-01	3.069	21.32	546.0
296	38.600	.12440	203.00	.2260	.4107	.2937	.9459	.1557-01	.1133-01	1.371	9.456	559.6
296	38.700	.10000+00	185.00	.2749	.5112	.3514	.9529	.1938-01	.1333-01	1.623	11.16	564.0
295	38.900	.82200-01	141.00	.3389	.5834	.4103	.9585	.2214-01	.1557-01	2.208	15.33	548.0
295	39.300	.41600-01	104.00	.5041	.8779	.5707	.9726	.3331-01	.2165-01	3.233	22.40	550.7
296	39.500	.10270	190.00	.2782	.5167	.3570	.9522	.1959-01	.1354-01	1.645	11.32	563.7
296	39.600	.16810	218.00	.1515	.2655	.2096	.9354	.1007-01	.7948-02	.9622	6.662	552.1
296	39.900	.19040	233.00	.1260	.2142	.1758	.9311	.8122-02	.6667-02	.8345	5.801	545.0
296	40.100	.79500-01	177.00	.3539	.6603	.4357	.9595	.2504-01	.1652-01	2.081	14.31	564.6
296	40.200	.12440	202.00	.2248	.4091	.2970	.9460	.1551-01	.1126-01	1.361	9.386	559.9
296	40.300	.21310	245.00	.1106	.1825	.1548	.9276	.6920-02	.5868-02	.7666	5.352	536.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K108)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
295	41.100	.82200-01	142.00	.3744	.6483	.4534	.9588	.2460-01	.1721-01	2.421	16.79	549.3
296	41.100	.60700-01	173.00	.4111	.7909	.4913	.9660	.2999-01	.1863-01	2.337	16.02	569.8
296	42.600	.59600-01	172.00	.4215	.8178	.5030	.9666	.3101-01	.1907-01	2.374	16.27	571.1
296	43.200	.42000-01	168.00	.4470	.8692	.5146	.9730	.3296-01	.1951-01	2.512	17.21	571.5
296	43.400	.82200-01	181.00	.3254	.6139	.4030	.9590	.2328-01	.1528-01	1.890	12.98	566.5
295	43.600	.62900-01	128.00	.3815	.6535	.4454	.9655	.2480-01	.1690-01	2.503	17.38	546.8
295	45.000	.22900-01	8.0000	.7391	1.374	.8142	.9800	.5213-01	.3090-01	4.368	30.05	563.9
296	46.100	.62900-01	174.00	.4071	.7832	.4872	.9658	.2970-01	.1847-01	2.314	15.87	569.8
296	47.700	.40800-01	167.00	.4901	.9741	.5633	.9738	.3694-01	.2136-01	2.692	18.41	574.8
295	48.400	.44200-01	109.00	.4784	.8225	.5403	.9726	.3121-01	.2050-01	3.123	21.68	547.7
296	53.200	.24700-01	163.00	.6467	1.360	.7214	.9803	.5157-01	.2736-01	3.365	22.92	582.5
296	65.200	.24700-01	162.00	.6511	1.360	.7251	.9804	.5156-01	.2750-01	3.410	23.23	581.6
294	90.000	.91000-02	44.000	.8750	2.060	.9994	.9784	.7815-01	.3791-01	4.146	28.06	593.8
294	90.000	.11100-01	45.000	.9046	1.903	1.020	.9784	.7219-01	.3870-01	4.699	32.01	581.7
294	90.000	.13100-01	46.000	.9107	1.845	1.023	.9784	.6999-01	.3879-01	4.901	33.48	576.8
294	90.000	.17000-01	48.000	.7018	1.346	.7828	.9784	.5104-01	.2969-01	3.998	27.44	568.5
294	90.000	.20900-01	50.000	.6946	1.304	.7727	.9784	.4945-01	.2931-01	4.052	27.86	564.9
294	90.000	.24900-01	52.000	.6221	1.141	.6918	.9779	.4328-01	.2624-01	3.729	25.69	560.7
294	90.000	.26900-01	53.000	.6058	1.119	.6768	.9771	.4245-01	.2567-01	3.599	24.79	562.0
294	90.000	.28800-01	54.000	.6031	1.103	.6754	.9764	.4183-01	.2562-01	3.628	25.01	560.1
294	90.000	.32800-01	55.000	.4305	.7054	.4772	.9749	.2675-01	.1810-01	3.012	21.06	534.2
294	90.000	.36700-01	56.000	.5191	.9132	.5864	.9734	.3463-01	.2224-01	3.279	22.71	552.1
294	90.000	.40600-01	57.000	.5118	.9216	.5846	.9720	.3495-01	.2217-01	3.138	21.67	557.0
294	90.000	.48500-01	58.000	.5098	.9071	.5895	.9691	.3440-01	.2236-01	3.172	21.93	554.6
294	90.000	.56400-01	59.000	.4403	.7745	.5152	.9663	.2937-01	.1954-01	2.781	19.26	552.1
294	90.000	.76100-01	60.000	.3786	.6631	.4580	.9596	.2515-01	.1737-01	2.406	16.67	551.1
294	90.000	.95900-01	61.000	.3257	.5691	.4069	.9534	.2158-01	.1543-01	2.076	14.39	550.6
294	90.000	.11550	62.000	.2521	.4359	.3236	.9476	.1653-01	.1227-01	1.629	11.31	548.2
294	135.00	.19000-01	49.000	.6767	1.253	.7988	.9668	.4752-01	.3030-01	4.011	27.62	562.4
294	135.00	.22900-01	51.000	.5920	1.086	.6974	.9668	.4117-01	.2645-01	3.649	24.46	560.6
294	180.00	.91000-02	23.000	.3847	.6784	.4807	.9539	.2573-01	.1823-01	2.422	16.76	552.7
294	180.00	.11100-01	24.000	.5281	1.044	.6839	.9539	.3958-01	.2594-01	2.914	19.94	573.2
294	180.00	.13100-01	25.000	.5590	1.046	.7118	.9539	.3966-01	.2700-01	3.273	22.51	564.3
294	180.00	.15000-01	26.000	.5010	.9125	.6326	.9539	.3461-01	.2399-01	3.028	20.88	559.3
294	180.00	.17000-01	27.000	.4826	.8597	.6050	.9539	.3261-01	.2295-01	2.999	20.73	554.8
294	180.00	.19000-01	28.000	.5360	.9608	.6733	.9539	.3644-01	.2554-01	3.304	22.83	556.1
294	180.00	.20900-01	29.000	.5284	.9341	.6608	.9539	.3543-01	.2506-01	3.317	22.95	553.2
294	180.00	.28800-01	32.000	.4998	.8576	.6248	.9520	.3253-01	.2370-01	3.265	22.67	546.4
294	180.00	.32800-01	33.000	.4654	.7723	.5788	.9507	.2929-01	.2195-01	3.192	22.27	537.8
294	180.00	.36700-01	34.000	.4230	.7135	.5328	.9494	.2706-01	.2021-01	2.832	19.71	542.2
294	180.00	.48500-01	36.000	.3470	.5758	.4426	.9457	.2184-01	.1679-01	2.381	16.62	537.8
294	180.00	.56400-01	37.000	.3229	.5309	.4150	.9433	.2013-01	.1574-01	2.246	15.70	535.2
294	180.00	.76100-01	38.000	.2408	.3900	.3156	.9380	.1479-01	.1197-01	1.715	12.01	530.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K108)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
294	180.00	.95800-01	39.000	.1834	.2945	.2448	.9335	.1117-01	.9284-02	1.324	9.288	528.3
294	180.00	.11550	40.000	.1389	.2268	.1909	.9298	.8603-02	.7240-02	.9771	6.836	533.2
294	180.00	.18450	42.000	.5509-01	.8711-01	.7706-01	.9224	.3304-02	.2923-02	.4085	2.874	523.2
294	225.00	.22900-01	30.000	.4716	.8165	.6081	.9469	.3097-01	.2307-01	3.044	21.11	548.5
294	270.00	.91000-02	63.000	.1928	.3595	.2540	.9480	.1363-01	.9635-02	1.134	7.799	563.7
294	270.00	.11100-01	64.000	.3503	.6669	.4651	.9480	.2529-01	.1764-01	2.012	13.81	567.3
294	270.00	.13100-01	65.000	.5764	1.104	.7668	.9480	.4185-01	.2908-01	3.290	22.58	568.2
294	270.00	.17000-01	67.000	.6494	1.181	.8477	.9480	.4479-01	.3215-01	3.932	27.12	559.0
294	270.00	.20900-01	69.000	.5480	.9852	.7123	.9480	.3737-01	.2702-01	3.366	23.25	556.7
294	270.00	.24900-01	71.000	.4974	.8807	.6445	.9476	.3340-01	.2444-01	3.116	21.56	553.5
294	270.00	.28800-01	73.000	.4747	.8175	.6127	.9463	.3101-01	.2324-01	3.085	21.42	547.3
294	270.00	.36700-01	75.000	.4197	.7131	.5461	.9438	.2705-01	.2071-01	2.781	19.34	544.0
294	270.00	.48500-01	77.000	.3377	.5577	.4417	.9403	.2115-01	.1675-01	2.334	16.30	536.5
294	270.00	.56400-01	78.000	.3127	.5114	.4116	.9382	.1940-01	.1561-01	2.194	15.35	533.7
294	270.00	.95800-01	80.000	.1467	.2344	.1992	.9296	.8890-02	.7554-02	1.068	7.500	526.7
294	270.00	.11550	81.000	.1128	.1823	.1567	.9265	.6916-02	.5945-02	.8063	5.651	530.2
294	315.00	.19000-01	68.000	.5366	.9329	.6562	.9571	.3538-01	.2489-01	3.443	23.87	549.5
294	315.00	.22900-01	70.000	.5749	1.033	.7100	.9571	.3916-01	.2693-01	3.536	24.42	556.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K109)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = 11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
297	4.020	-4.995	-11.00	63.04	718.7	.4043	169.8	-65.86	2568.	.6425-02	.1366-06	3.753
298	4.020	-5.005	-11.03	63.08	716.7	.4045	169.3	-65.88	2564.	.6448-02	.1363-06	3.771
299	4.020	-5.010	-11.01	62.95	715.7	.4037	169.1	-65.82	2563.	.6443-02	.1361-06	3.771

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
297	.3794-01	.9551-02
298	.3794-01	.9530-02
299	.3789-01	.9532-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
298	.00000	.91000-02	1.0000	.7795	1.544	.9157	.9700	.5856-01	.3474-01	4.282	29.33	571.9
298	.00000	.15000-01	4.0000	.8083	1.520	.9406	.9700	.5767-01	.3568-01	4.692	32.28	563.6
298	.00000	.17000-01	5.0000	.7745	1.397	.8942	.9700	.5300-01	.3392-01	4.725	32.65	555.9
298	.00000	.19000-01	6.0000	.6885	1.228	.7932	.9700	.4659-01	.3009-01	4.261	29.48	553.5
298	.00000	.24900-01	9.0000	.5782	1.009	.6649	.9695	.3828-01	.2523-01	3.682	25.54	548.8
298	.00000	.26900-01	10.000	.5590	.9696	.6444	.9687	.3679-01	.2445-01	3.589	24.91	547.4
297	.00000	.32800-01	12.000	.4916	.8278	.5689	.9665	.3141-01	.2158-01	3.300	22.98	541.7
297	.00000	.36700-01	13.000	.4413	.7280	.5115	.9651	.2762-01	.1941-01	3.055	21.34	536.2
297	.00000	.40600-01	14.000	.4518	.7582	.5293	.9637	.2877-01	.2008-01	3.049	21.24	540.8
297	.00000	.48500-01	15.000	.3761	.6238	.4450	.9610	.2367-01	.1689-01	2.583	18.03	537.6
297	.00000	.56400-01	16.000	.3795	.6301	.4549	.9583	.2391-01	.1726-01	2.602	18.15	538.0
297	.00000	.76100-01	17.000	.3360	.5503	.4132	.9520	.2088-01	.1568-01	2.353	16.46	534.1
297	.00000	.95800-01	18.000	.5841-01	.9501-01	.7365-01	.9463	.3605-02	.2794-02	.4134	2.894	532.1
297	.00000	.11550	19.000	.2152	.3560	.2805	.9411	.1351-01	.1064-01	1.484	10.36	537.0
297	.00000	.16480	20.000	.1305	.2174	.1804	.9307	.8248-02	.6846-02	.8901	6.208	538.9
297	.00000	.21400	22.000	.7806-01	.1227	.1078	.9243	.4657-02	.4089-02	.5849	4.120	521.2
299	2.0000	.24700-01	165.00	.5563	.9685	.6370	.9703	.3669-01	.2413-01	3.545	24.60	547.5
298	9.0000	.15000-01	157.00	.7627	1.390	.8682	.9731	.5273-01	.3294-01	4.595	31.71	557.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K109)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
298	9.0000	.17600-01	158.00	.7459	1.368	.8501	.9731	.5190-01	.3225-01	4.460	30.76	559.1
299	9.8000	.24700-01	164.00	.6271	1.138	.7139	.9729	.4312-01	.2705-01	3.787	26.16	556.3
298	10.000	.22900-01	88.000	.6410	1.145	.7260	.9734	.4343-01	.2754-01	3.961	27.40	553.8
298	10.000	.26900-01	90.000	.5866	1.022	.6655	.9722	.3878-01	.2525-01	3.743	25.96	548.5
298	10.000	.34700-01	94.000	.5000	.8524	.5727	.9693	.3234-01	.2173-01	3.287	22.87	543.3
299	14.600	.44200-01	169.00	.4393	.7537	.5086	.9673	.2856-01	.1927-01	2.856	19.86	544.1
298	18.500	.44200-01	106.00	.4478	.7634	.5148	.9685	.2896-01	.1953-01	2.945	20.49	543.3
299	19.600	.62900-01	175.00	.4049	.6941	.4802	.9623	.2630-01	.1819-01	2.634	18.32	543.9
298	19.800	.40800-01	101.00	.4819	.8256	.5503	.9701	.3132-01	.2088-01	3.148	21.88	544.5
298	20.000	.24900-01	89.000	.6436	1.141	.7186	.9761	.4328-01	.2726-01	4.015	27.80	552.2
298	20.000	.28800-01	91.000	.5746	1.009	.6451	.9746	.3828-01	.2447-01	3.628	25.14	550.2
298	20.000	.32800-01	93.000	.5388	.9445	.6092	.9731	.3583-01	.2311-01	3.411	23.65	549.8
299	21.800	.82200-01	182.00	.5592-05	.6586-05	.5984-05	.9566	.2495-06	.2267-06	.1005-03	.8386-03	241.5
298	22.200	.62900-01	125.00	.4072	.6995	.4815	.9631	.2654-01	.1827-01	2.650	18.42	545.1
298	22.400	.44200-01	107.00	.4473	.7628	.5115	.9697	.2894-01	.1940-01	2.940	20.45	543.4
299	22.600	.10270	192.00	.2730	.4718	.3448	.9506	.1788-01	.1306-01	1.756	12.20	545.9
298	23.000	.42000-01	105.00	.4654	.7957	.5301	.9706	.3019-01	.2011-01	3.049	21.20	544.0
298	23.400	.59600-01	120.00	.4326	.7393	.5073	.9645	.2805-01	.1924-01	2.835	19.72	543.9
299	23.900	.21310	250.00	.1042	.1587	.1390	.9271	.6012-02	.5266-02	.8218	5.833	507.4
298	24.100	.82200-01	139.00	.3516	.6022	.4278	.9572	.2285-01	.1623-01	2.298	15.98	544.4
299	24.400	.19040	238.00	.1368	.2156	.1834	.9305	.8167-02	.6947-02	1.016	7.163	519.7
299	24.400	.12440	207.00	.2283	.4052	.3005	.9450	.1535-01	.1139-01	1.419	9.824	551.7
299	24.800	.16810	223.00	.1662	.2805	.2263	.9348	.1063-01	.8576-02	1.106	7.706	540.1
298	24.900	.62900-01	126.00	.4300	.7399	.5068	.9638	.2807-01	.1923-01	2.791	19.39	545.6
299	25.000	.79500-01	178.00	.3522	.6061	.4267	.9583	.2296-01	.1617-01	2.280	15.85	544.8
299	25.300	.10270	191.00	.2799	.4834	.3522	.9512	.1832-01	.1334-01	1.803	12.52	545.7
299	25.300	.10000+00	186.00	.2724	.4726	.3419	.9520	.1791-01	.1295-01	1.744	12.11	546.7
298	25.500	.60700-01	124.00	.4251	.7277	.4982	.9647	.2761-01	.1890-01	2.779	19.33	544.3
299	26.000	.12440	206.00	.2302	.4093	.3026	.9453	.1551-01	.1147-01	1.426	9.872	552.2
298	26.300	.82200-01	140.00	.3789	.6445	.4587	.9578	.2445-01	.1740-01	2.500	17.40	542.8
299	26.700	.12100	199.00	.2367	.4167	.3081	.9464	.1579-01	.1167-01	1.486	10.30	550.0
299	26.800	.16810	222.00	.1658	.2787	.2249	.9351	.1056-01	.8521-02	1.110	7.739	539.0
299	27.000	.19040	237.00	.1381	.2173	.1846	.9309	.8232-02	.6993-02	1.028	7.248	519.2
299	27.100	.21310	249.00	.1091	.1660	.1453	.9274	.6290-02	.5503-02	.8632	6.129	506.9
299	27.200	.80300-01	180.00	.3527	.6043	.4261	.9586	.2290-01	.1614-01	2.296	15.97	543.8
299	27.400	.40100-01	98.000	.5080	.8843	.5753	.9725	.3355-01	.2182-01	3.245	22.51	548.3
299	27.400	.16480	215.00	.1546	.2635	.2103	.9359	.9984-02	.7969-02	1.014	7.058	542.5
298	27.600	.41600-01	102.00	.4728	.8194	.5354	.9720	.3108-01	.2035-01	3.040	21.10	547.2
299	27.600	.12440	205.00	.2273	.4044	.2983	.9456	.1532-01	.1130-01	1.408	9.744	552.2
299	27.600	.18700	230.00	.1405	.2212	.1872	.9316	.8380-02	.7094-02	1.045	7.365	519.4
299	27.700	.21010	243.00	.1154	.1764	.1538	.9279	.6685-02	.5826-02	.9050	6.419	508.7
299	27.900	.10110	188.00	.2875	.5009	.3608	.9523	.1898-01	.1367-01	1.830	12.70	547.7
298	28.000	.46800-01	110.00	.4333	.7418	.4945	.9702	.2814-01	.1876-01	2.832	19.69	544.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K109)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
299	28.200	.16810	221.00	.1923	.3245	.2611	.9353	.1230-01	.9893-02	1.280	8.925	540.0
299	28.300	.19040	236.00	.1367	.2142	.1821	.9311	.8116-02	.6900-02	1.025	7.231	517.8
299	28.300	.12200	201.00	.2411	.4238	.3135	.9464	.1606-01	.1188-01	1.516	10.51	549.7
298	28.400	.53500-01	114.00	.4319	.7437	.4990	.9680	.2821-01	.1893-01	2.802	19.47	545.7
299	28.400	.21310	248.00	.1103	.1675	.1466	.9275	.6346-02	.5554-02	.8770	6.230	505.9
298	28.700	.58600-01	117.00	.4441	.7633	.5171	.9663	.2896-01	.1962-01	2.888	20.07	545.3
299	28.800	.16580	217.00	.1653	.2799	.2241	.9359	.1061-01	.8490-02	1.094	7.621	541.0
298	28.800	.60400-01	121.00	.4248	.7296	.4960	.9657	.2768-01	.1882-01	2.765	19.22	545.1
299	29.000	.21110	244.00	.1076	.1635	.1428	.9279	.6194-02	.5410-02	.8526	6.055	506.5
298	29.000	.65700-01	129.00	.4150	.7140	.4890	.9639	.2709-01	.1855-01	2.695	18.73	545.5
298	29.200	.72400-01	133.00	.3804	.6555	.4533	.9617	.2487-01	.1720-01	2.464	17.12	545.9
298	29.300	.79500-01	136.00	.3373	.5774	.4059	.9594	.2191-01	.1540-01	2.205	15.33	544.4
298	29.600	.92500-01	143.00	.3425	.5977	.4233	.9553	.2268-01	.1606-01	2.181	15.13	548.8
298	29.700	.10000+00	146.00	.2652	.4582	.3306	.9531	.1738-01	.1254-01	1.712	11.89	546.5
299	29.900	.12100	198.00	.2378	.4207	.3089	.9470	.1594-01	.1170-01	1.483	10.27	551.1
299	30.200	.16480	214.00	.1553	.2626	.2099	.9363	.9950-02	.7952-02	1.030	7.175	540.6
299	30.300	.21010	242.00	.1166	.1780	.1550	.9282	.6742-02	.5873-02	.9175	6.510	508.0
298	31.500	.11100-01	83.000	.9116	1.794	1.013	.9797	.6807-01	.3843-01	5.038	34.52	571.0
299	32.100	.21010	241.00	.1240	.1890	.1645	.9284	.7160-02	.6234-02	.9778	6.940	507.5
299	32.200	.16480	213.00	.1584	.2685	.2140	.9367	.1017-01	.8108-02	1.048	7.298	541.1
299	32.200	.17860	224.00	.1546	.2486	.2062	.9338	.9419-02	.7813-02	1.108	7.784	526.4
299	32.200	.18700	228.00	.1460	.2284	.1933	.9322	.8655-02	.7323-02	1.096	7.737	517.5
299	32.300	.12100	197.00	.2405	.4240	.3112	.9475	.1607-01	.1179-01	1.506	10.44	550.3
299	32.300	.12300	194.00	.2178	.3848	.2829	.9470	.1458-01	.1072-01	1.361	9.430	550.7
299	32.300	.12730	208.00	.1560	.2819	.2058	.9458	.1068-01	.7798-02	.9469	6.544	555.5
299	32.300	.13420	209.00	.2059	.3756	.2757	.9440	.1423-01	.1045-01	1.235	8.529	557.3
298	32.400	.10000+00	147.00	.2812	.4923	.3510	.9536	.1868-01	.1332-01	1.783	12.36	549.5
299	32.400	.10110	184.00	.2803	.4903	.3504	.9533	.1857-01	.1327-01	1.774	12.31	548.6
299	32.400	.10630	193.00	.2659	.4625	.3346	.9517	.1752-01	.1268-01	1.697	11.78	547.3
299	32.500	.85800-01	183.00	.3389	.5978	.4141	.9581	.2265-01	.1569-01	2.122	14.70	550.4
298	32.600	.79500-01	137.00	.3670	.6353	.4413	.9601	.2410-01	.1674-01	2.362	16.40	547.0
299	32.600	.80800-01	176.00	.3513	.6124	.4242	.9597	.2320-01	.1607-01	2.234	15.51	547.8
298	32.700	.67400-01	132.00	.4135	.7148	.4870	.9642	.2712-01	.1848-01	2.667	18.52	546.7
298	32.700	.72400-01	134.00	.3864	.6675	.4589	.9625	.2532-01	.1741-01	2.495	17.33	546.5
298	32.800	.65700-01	130.00	.4270	.7376	.5014	.9648	.2798-01	.1902-01	2.757	19.15	546.5
299	32.800	.16680	210.00	.1624	.2747	.2195	.9363	.1041-01	.8318-02	1.077	7.503	540.6
299	32.800	.18880	225.00	.1444	.2263	.1916	.9319	.8575-02	.7258-02	1.081	7.624	518.1
298	32.900	.58600-01	118.00	.3833	.6701	.4458	.9672	.2542-01	.1691-01	2.434	16.88	549.3
298	32.900	.60400-01	122.00	.4357	.7551	.5073	.9666	.2865-01	.1925-01	2.800	19.44	547.2
299	32.900	.61300-01	171.00	.4232	.7344	.4937	.9663	.2782-01	.1870-01	2.707	18.80	546.8
298	33.000	.53500-01	115.00	.4482	.7711	.5150	.9691	.2925-01	.1954-01	2.910	20.22	545.5
298	33.200	.48300-01	113.00	.4401	.7512	.5003	.9710	.2850-01	.1898-01	2.889	20.09	543.6
299	33.400	.42800-01	166.00	.4466	.7734	.5042	.9730	.2930-01	.1910-01	2.866	19.90	546.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K109)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
298	33.500	.40100-01	99.000	.4870	.8351	.5463	.9740	.3168-01	.2072-01	3.177	22.09	544.7
298	33.600	.38300-01	97.000	.5030	.8733	.5636	.9747	.3313-01	.2138-01	3.226	22.39	547.6
298	33.700	.36700-01	96.000	.5087	.8943	.5694	.9753	.3393-01	.2160-01	3.208	22.23	550.4
298	33.900	.33800-01	95.000	.5405	.9538	.6021	.9764	.3618-01	.2284-01	3.391	23.49	551.3
299	34.700	.21010	240.00	.1262	.1926	.1674	.9286	.7296-02	.6342-02	.9935	7.050	507.9
299	34.700	.18700	227.00	.1411	.2206	.1865	.9325	.8359-02	.7065-02	1.061	7.493	517.1
299	34.900	.16480	212.00	.1634	.2780	.2207	.9370	.1053-01	.8361-02	1.074	7.480	542.1
298	35.100	.10000+00	148.00	.3027	.5327	.3774	.9542	.2021-01	.1432-01	1.906	13.21	550.7
299	35.200	.23900-01	161.00	.6714	1.259	.7391	.9804	.4770-01	.2800-01	3.901	26.86	562.3
298	35.300	.92500-01	145.00	.3151	.5553	.3881	.9565	.2106-01	.1472-01	1.981	13.72	551.0
298	35.300	.22100-01	160.00	.6033	1.116	.6626	.9805	.4235-01	.2514-01	3.569	24.60	560.7
299	35.400	.18800	231.00	.1453	.2287	.1928	.9324	.8664-02	.7305-02	1.080	7.616	519.4
299	35.500	.12100	196.00	.2349	.4174	.3038	.9481	.1581-01	.1151-01	1.456	10.08	552.0
299	35.600	.16580	216.00	.1630	.2766	.2200	.9369	.1048-01	.8334-02	1.076	7.493	541.4
298	35.800	.80600-01	138.00	.3407	.5881	.4087	.9604	.2231-01	.1951-01	2.201	15.29	546.3
299	35.900	.21310	247.00	.1276	.1940	.1691	.9283	.7350-02	.6406-02	1.010	7.169	506.7
299	36.000	.19040	235.00	.1609	.2521	.2134	.9320	.9552-02	.8084-02	1.206	8.511	517.8
299	36.200	.16810	220.00	.1697	.2859	.2288	.9365	.1083-01	.8667-02	1.133	7.896	539.6
298	36.200	.72400-01	135.00	.3954	.6857	.4683	.9632	.2601-01	.1777-01	2.539	17.63	547.4
299	36.300	.12200	200.00	.2339	.4173	.3032	.9480	.1581-01	.1149-01	1.443	9.985	552.8
298	36.600	.65700-01	131.00	.4440	.7800	.5213	.9656	.2959-01	.1978-01	2.803	19.42	550.3
299	36.700	.18700	226.00	.1519	.2389	.2011	.9328	.9049-02	.7620-02	1.131	7.975	519.1
299	36.900	.16480	211.00	.1684	.2877	.2275	.9373	.1090-01	.8620-02	1.101	7.662	543.1
299	36.900	.10110	187.00	.2975	.5273	.3717	.9542	.1998-01	.1408-01	1.850	12.81	551.5
298	37.000	.60400-01	123.00	.4374	.7651	.5081	.9675	.2903-01	.1928-01	2.776	19.25	549.4
299	37.000	.12440	204.00	.2322	.4143	.3020	.9474	.1570-01	.1144-01	1.433	9.916	552.8
298	37.100	.58500-01	119.00	.4559	.7960	.5277	.9681	.3020-01	.2002-01	2.901	20.12	548.9
299	37.200	.21310	246.00	.1280	.1945	.1695	.9284	.7371-02	.6422-02	1.013	7.197	506.6
299	37.600	.16810	219.00	.1708	.2881	.2301	.9367	.1092-01	.8719-02	1.138	7.932	539.9
298	37.800	.10270	150.00	.2904	.5131	.3631	.9538	.1947-01	.1378-01	1.818	12.59	551.6
299	37.900	.12100	195.00	.2364	.4165	.3041	.9485	.1578-01	.1152-01	1.483	10.28	550.1
299	38.000	.80300-01	179.00	.3688	.6461	.4431	.9609	.2448-01	.1679-01	2.331	16.16	548.9
298	38.500	.46800-01	112.00	.4663	.8053	.5270	.9726	.3055-01	.1999-01	3.011	20.92	546.4
299	38.600	.12440	203.00	.2348	.4190	.3049	.9477	.1587-01	.1155-01	1.448	10.02	552.9
299	38.700	.10000+00	185.00	.2928	.5158	.3639	.9548	.1954-01	.1379-01	1.837	12.73	550.1
299	38.900	.82200-01	141.00	.3293	.5796	.3970	.9605	.2199-01	.1506-01	2.073	14.36	550.7
298	39.300	.41600-01	104.00	.4933	.8653	.5537	.9747	.3283-01	.2100-01	3.120	21.63	550.0
299	39.500	.10270	190.00	.2930	.5174	.3658	.9541	.1960-01	.1386-01	1.831	12.69	550.7
299	39.600	.16810	218.00	.1656	.2799	.2230	.9369	.1060-01	.8448-02	1.099	7.660	540.4
299	39.900	.19040	233.00	.1540	.2415	.2039	.9325	.9149-02	.7725-02	1.153	8.138	518.0
299	40.100	.79500-01	177.00	.3711	.6490	.4441	.9616	.2459-01	.1683-01	2.349	16.30	548.6
299	40.200	.12440	202.00	.2381	.4266	.3093	.9479	.1616-01	.1172-01	1.462	10.11	553.6
299	40.300	.21310	245.00	.1258	.1910	.1663	.9287	.7236-02	.6300-02	.9990	7.096	506.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K109)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
298	41.100	.82200-01	142.00	.3869	.6880	.4668	.9609	.2610-01	.1771-01	2.404	16.64	552.9
299	41.100	.60700-01	173.00	.4437	.7789	.5142	.9681	.2951-01	.1948-01	2.796	19.39	549.4
299	42.300	.10270	189.00	.5592-05	.6586-05	.6004-05	.9546	.2495-06	.2275-06	.1005-03	.8386-03	241.5
299	42.600	.59600-01	172.00	.4445	.7851	.5141	.9688	.2975-01	.1948-01	2.778	19.25	550.7
299	43.200	.42000-01	168.00	.4463	.7798	.4992	.9752	.2954-01	.1891-01	2.829	19.63	548.3
299	43.400	.82200-01	181.00	.3353	.5790	.4007	.9612	.2194-01	.1518-01	2.161	15.01	545.6
298	43.600	.62900-01	128.00	.4247	.7428	.4926	.9678	.2818-01	.1869-01	2.696	18.69	549.3
298	45.000	.22900-01	8.0000	.7503	1.378	.8160	.9823	.5227-01	.3096-01	4.479	30.89	559.3
299	46.100	.62900-01	174.00	.4356	.7698	.5054	.9682	.2916-01	.1915-01	2.721	18.85	550.8
299	47.700	.40800-01	167.00	.4924	.8748	.5493	.9763	.3314-01	.2081-01	3.055	21.15	551.9
298	48.400	.44200-01	109.00	.4753	.8270	.5314	.9752	.3138-01	.2016-01	3.038	21.08	548.2
299	53.200	.24700-01	163.00	.6665	1.228	.7230	.9829	.4651-01	.2739-01	3.955	27.28	559.1
299	65.200	.24700-01	162.00	.6551	1.202	.7081	.9835	.4553-01	.2683-01	3.904	26.94	558.4
297	90.000	.91000-02	44.000	1.005	2.159	1.114	.9817	.8191-01	.4226-01	5.128	34.89	584.2
297	90.000	.11100-01	45.000	1.010	1.934	1.106	.9817	.7339-01	.4197-01	5.759	39.52	568.3
297	90.000	.13100-01	46.000	.9987	1.847	1.090	.9817	.7007-01	.4136-01	5.931	40.84	562.2
297	90.000	.17000-01	48.000	.8309	1.488	.9037	.9817	.5644-01	.3429-01	5.132	35.46	555.9
297	90.000	.20900-01	50.000	.6782	1.201	.7367	.9817	.4558-01	.2795-01	4.247	29.38	553.6
297	90.000	.24900-01	52.000	.6371	1.110	.6925	.9813	.4213-01	.2627-01	4.077	28.26	550.0
297	90.000	.26900-01	53.000	.6155	1.082	.6720	.9805	.4106-01	.2550-01	3.891	26.94	552.0
297	90.000	.28900-01	54.000	.6034	1.053	.6604	.9798	.3994-01	.2506-01	3.856	26.72	550.3
297	90.000	.32800-01	55.000	.4207	.6731	.4580	.9783	.2554-01	.1738-01	3.060	21.48	527.0
297	90.000	.36700-01	56.000	.5212	.8895	.5764	.9769	.3375-01	.2187-01	3.432	23.86	545.1
297	90.000	.40600-01	57.000	.5186	.9103	.5799	.9754	.3454-01	.2200-01	3.286	22.76	551.7
297	90.000	.48500-01	58.000	.4853	.8498	.5500	.9725	.3224-01	.2087-01	3.085	21.37	551.1
297	90.000	.56400-01	59.000	.4507	.7874	.5177	.9697	.2988-01	.1964-01	2.874	19.91	550.6
297	90.000	.76100-01	60.000	.3903	.6816	.4637	.9630	.2586-01	.1759-01	2.491	17.26	550.5
297	90.000	.95800-01	61.000	.3293	.5787	.4051	.9566	.2196-01	.1537-01	2.084	14.43	551.9
297	90.000	.11550	62.000	.2641	.4596	.3343	.9506	.1744-01	.1268-01	1.693	11.74	549.7
297	135.00	.19000-01	49.000	.6679	1.157	.7695	.9688	.4391-01	.2920-01	4.307	29.88	548.7
297	135.00	.22900-01	51.000	.5888	1.017	.6779	.9688	.3859-01	.2572-01	3.812	26.45	548.0
297	180.00	.91000-02	23.000	.4495	.7613	.5553	.9535	.2888-01	.2107-01	2.993	20.83	543.2
297	180.00	.11100-01	24.000	.6364	1.166	.8068	.9535	.4424-01	.3061-01	3.820	26.33	560.4
297	180.00	.13100-01	25.000	.5346	.9291	.6661	.9535	.3525-01	.2527-01	3.432	23.80	549.4
297	180.00	.15000-01	26.000	.5008	.8588	.6212	.9535	.3258-01	.2357-01	3.275	22.75	546.3
297	180.00	.17000-01	27.000	.5296	.9019	.6554	.9535	.3422-01	.2487-01	3.499	24.33	544.6
297	180.00	.19000-01	28.000	.5672	.9709	.7032	.9535	.3684-01	.2668-01	3.720	25.85	545.8
297	180.00	.20900-01	29.000	.5787	.9735	.7132	.9535	.3694-01	.2706-01	3.892	27.10	541.4
297	180.00	.28800-01	32.000	.4703	.7677	.5785	.9517	.2913-01	.2195-01	3.310	23.16	533.2
297	180.00	.32800-01	33.000	.4466	.7104	.5475	.9503	.2695-01	.2077-01	3.279	23.05	525.1
297	180.00	.36700-01	34.000	.3864	.6246	.4796	.9491	.2370-01	.1820-01	2.763	19.36	530.2
297	180.00	.48500-01	36.000	.3301	.5272	.4149	.9454	.2000-01	.1574-01	2.408	16.91	526.4
297	180.00	.56400-01	37.000	.3079	.4907	.3908	.9431	.1862-01	.1483-01	2.253	15.83	525.8

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
297	180.00	.76100-01	38.000	.2346	.3716	.3043	.9378	.1410-01	.1155-01	1.735	12.20	523.8
297	180.00	.95800-01	39.000	.1745	.2767	.2314	.9334	.1050-01	.8782-02	1.288	9.058	524.1
297	180.00	.11550	40.000	.1317	.2130	.1800	.9297	.8081-02	.6830-02	.9412	6.595	530.3
297	180.00	.18450	42.000	.5488-01	.8670-01	.7672-01	.9224	.3289-02	.2911-02	.4078	2.870	522.8
297	225.00	.22900-01	30.000	.4646	.7622	.5925	.9447	.2892-01	.2248-01	3.244	22.68	534.6
297	270.00	.91000-02	63.000	.2498	.4412	.3280	.9451	.1674-01	.1244-01	1.570	10.87	553.0
297	270.00	.11100-01	64.000	.3871	.6872	.5093	.9451	.2607-01	.1932-01	2.417	16.72	554.1
297	270.00	.13100-01	65.000	.5543	.9790	.7278	.9451	.3714-01	.2761-01	3.485	24.11	553.0
297	270.00	.17000-01	67.000	.4789	.8150	.6192	.9451	.3092-01	.2349-01	3.166	22.02	544.4
297	270.00	.20900-01	69.000	.5114	.8644	.6593	.9451	.3280-01	.2502-01	3.414	23.76	542.7
297	270.00	.24900-01	71.000	.5036	.8433	.6482	.9446	.3200-01	.2459-01	3.409	23.76	540.2
297	270.00	.28800-01	73.000	.4398	.7209	.5643	.9434	.2735-01	.2141-01	3.075	21.50	534.4
297	270.00	.36700-01	75.000	.4015	.6520	.5192	.9410	.2474-01	.1970-01	2.850	19.96	531.6
297	270.00	.48500-01	77.000	.3189	.5079	.4151	.9377	.1927-01	.1575-01	2.337	16.42	525.5
297	270.00	.56400-01	78.000	.2588	.4111	.3397	.9357	.1560-01	.1289-01	1.904	13.38	524.7
297	270.00	.95800-01	80.000	.1334	.2101	.1811	.9278	.7972-02	.6872-02	.9958	7.011	521.9
297	270.00	.11550	81.000	.1071	.1706	.1484	.9252	.6472-02	.5632-02	.7845	5.512	525.6
297	315.00	.19000-01	68.000	.4992	.8247	.6086	.9545	.3129-01	.2309-01	3.449	24.08	536.6
297	315.00	.22900-01	70.000	.4782	.8133	.5887	.9545	.3086-01	.2234-01	3.165	22.01	544.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K110)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
258	4.020	-.3906-02	11.05	62.99	721.7	.4040	170.5	-90.02	2573.	.6394-02	.1372-06	3.727
259	4.020	-.3889-02	11.00	62.95	719.7	.4037	170.1	-90.02	2570.	.6407-02	.1368-06	3.740
260	4.020	-.3903-02	11.04	62.95	718.7	.4037	169.8	-90.02	2568.	.6416-02	.1366-06	3.748

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
258	.3796-01	.9579-02
259	.3792-01	.9566-02
260	.3791-01	.9557-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
259	.00000	.91000-02	1.0000	.5217	1.131	.6578	.9616	.4290-01	.2495-01	2.643	17.96	586.1
259	.00000	.15000-01	4.0000	.6007	1.271	.7532	.9616	.4819-01	.2857-01	3.110	21.17	583.2
259	.00000	.17000-01	5.0000	.5998	1.222	.7456	.9616	.4634-01	.2828-01	3.216	21.95	578.3
259	.00000	.19000-01	6.0000	.5945	1.205	.7381	.9616	.4568-01	.2799-01	3.204	21.88	577.6
259	.00000	.24900-01	9.0000	.5328	1.015	.6536	.9611	.3850-01	.2479-01	3.061	21.01	568.2
259	.00000	.26900-01	10.000	.4984	.9294	.6105	.9604	.3525-01	.2315-01	2.933	20.17	564.5
258	.00000	.32800-01	12.000	.4506	.8017	.5514	.9583	.3043-01	.2093-01	2.819	19.46	556.9
258	.00000	.36700-01	13.000	.4007	.6917	.4895	.9569	.2625-01	.1858-01	2.609	18.09	550.1
258	.00000	.40600-01	14.000	.4161	.7314	.5147	.9556	.2776-01	.1954-01	2.643	18.28	554.3
258	.00000	.48500-01	15.000	.3723	.6410	.4639	.9529	.2433-01	.1761-01	2.433	16.87	549.5
258	.00000	.56400-01	16.000	.3525	.6040	.4443	.9504	.2293-01	.1686-01	2.319	16.09	548.4
258	.00000	.76100-01	17.000	.2799	.4601	.3576	.9446	.1747-01	.1357-01	1.958	13.67	537.4
258	.00000	.95800-01	18.000	.7836-01	.1275	.1022	.9394	.4838-02	.3881-02	.5572	3.896	534.3
258	.00000	.11550	19.000	.1754	.2835	.2334	.9349	.1076-01	.8858-02	1.260	8.816	532.5
258	.00000	.16480	20.000	.1008	.1627	.1399	.9265	.6176-02	.5311-02	.7251	5.076	532.1
258	.00000	.21400	22.000	.5267-01	.8131-01	.7248-01	.9224	.3086-02	.2751-02	.4096	2.892	516.8
260	2.0000	.24700-01	165.00	.4869	.9046	.5954	.9605	.3430-01	.2258-01	2.874	19.78	563.0
259	9.0000	.15000-01	157.00	.5615	1.136	.7094	.9588	.4307-01	.2690-01	3.031	20.70	577.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K110)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
259	9.0000	.17600-01	158.00	.5873	1.187	.7419	.9588	.4503-01	.2814-01	3.172	21.66	577.3
260	9.8000	.24700-01	164.00	.5157	.9922	.6456	.9581	.3762-01	.2448-01	2.926	20.07	569.0
259	10.000	.22900-01	88.000	.5409	1.050	.6774	.9585	.3983-01	.2569-01	3.045	20.86	571.3
259	10.000	.26900-01	90.000	.4893	.9058	.6089	.9573	.3435-01	.2309-01	2.904	19.98	563.2
259	10.000	.34700-01	94.000	.4031	.6951	.4983	.9545	.2636-01	.1890-01	2.620	18.18	548.3
260	14.600	.44200-01	169.00	.3555	.6216	.4522	.9500	.2357-01	.1715-01	2.263	15.68	550.8
259	18.500	.44200-01	106.00	.3635	.6346	.4648	.9490	.2406-01	.1763-01	2.323	16.09	551.2
260	19.600	.62900-01	175.00	.2671	.4513	.3480	.9431	.1711-01	.1319-01	1.784	12.42	542.6
259	19.800	.40800-01	101.00	.3759	.6596	.4796	.9497	.2502-01	.1819-01	2.385	16.51	552.4
259	20.000	.24900-01	89.000	.4911	.9181	.6208	.9551	.3482-01	.2354-01	2.881	19.81	565.0
259	20.000	.28800-01	91.000	.4533	.8308	.5740	.9537	.3151-01	.2177-01	2.723	18.76	561.3
259	20.000	.32800-01	93.000	.4252	.7679	.5401	.9523	.2912-01	.2048-01	2.600	17.94	558.4
259	22.200	.62900-01	125.00	.2761	.4674	.3612	.9425	.1773-01	.1370-01	1.841	12.80	543.8
259	22.400	.44200-01	107.00	.3453	.5986	.4428	.9480	.2270-01	.1679-01	2.227	15.44	549.6
260	22.600	.10270	192.00	.1601	.2656	.2184	.9328	.1007-01	.8279-02	1.098	7.666	537.7
259	23.000	.42000-01	105.00	.3627	.6319	.4647	.9485	.2396-01	.1762-01	2.324	16.11	550.7
259	23.400	.59600-01	120.00	.2768	.4678	.3605	.9431	.1774-01	.1367-01	1.850	12.87	543.4
260	23.900	.21310	250.00	.3877-01	.5975-01	.5339-01	.9220	.2265-02	.2024-02	.3009	2.128	514.0
259	24.100	.82200-01	139.00	.2102	.3466	.2794	.9370	.1314-01	.1060-01	1.458	10.18	536.8
260	24.400	.19040	238.00	.4710-01	.7390-01	.6558-01	.9223	.2802-02	.2466-02	.3578	2.443	520.5
260	24.400	.12440	207.00	.1170	.1946	.1636	.9286	.7380-02	.6202-02	.7903	5.576	538.5
260	24.800	.16810	223.00	.6693-01	.1084	.9463-01	.9235	.4110-02	.3588-02	.4767	3.339	530.8
259	24.900	.62900-01	126.00	.2844	.4797	.3726	.9418	.1819-01	.1413-01	1.906	13.26	542.9
260	25.000	.79500-01	178.00	.2176	.3630	.2903	.9375	.1376-01	.1101-01	1.480	10.32	539.2
260	25.300	.10270	191.00	.1626	.2692	.2222	.9323	.1021-01	.8423-02	1.119	7.812	537.2
260	25.300	.10000+00	186.00	.1689	.2808	.2306	.9329	.1065-01	.8743-02	1.154	8.053	538.4
259	25.500	.60700-01	124.00	.2769	.4662	.3616	.9423	.1768-01	.1371-01	1.860	12.95	542.5
260	26.000	.12440	206.00	.1144	.1902	.1601	.9284	.7212-02	.6070-02	.7822	5.457	538.3
259	26.300	.82200-01	140.00	.1941	.3173	.2575	.9366	.1203-01	.9766-02	1.264	9.537	534.4
260	26.700	.12100	199.00	.1141	.1886	.1587	.9288	.7151-02	.6019-02	.7872	5.497	536.7
260	26.800	.16810	222.00	.6156-01	.9931-01	.8687-01	.9233	.3765-02	.3294-02	.4412	3.093	529.6
260	27.000	.19040	237.00	.4678-01	.7322-01	.6505-01	.9222	.2776-02	.2466-02	.3529	2.488	519.7
260	27.100	.21310	249.00	.3578-01	.5506-01	.4923-01	.9220	.2088-02	.1866-02	.2765	1.970	513.4
260	27.200	.80300-01	180.00	.2108	.3494	.2813	.9368	.1325-01	.1066-01	1.448	10.11	537.5
259	27.400	.40100-01	98.000	.3544	.6240	.4571	.9480	.2366-01	.1733-01	2.239	15.49	553.1
260	27.400	.16480	215.00	.5962-01	.9668-01	.8433-01	.9236	.3686-02	.3198-02	.4238	2.968	531.2
259	27.600	.41600-01	102.00	.3623	.6335	.4674	.9475	.2402-01	.1773-01	2.310	16.00	551.6
260	27.600	.12440	205.00	.1106	.1837	.1549	.9282	.6964-02	.5872-02	.7589	5.289	538.0
260	27.600	.18700	230.00	.3994-01	.6256-01	.5554-01	.9223	.2372-02	.2106-02	.3089	2.121	519.9
260	27.700	.21010	243.00	.4034-01	.6227-01	.5562-01	.9220	.2361-02	.2109-02	.3121	2.236	514.6
260	27.900	.10110	188.00	.1625	.2702	.2227	.9322	.1024-01	.8444-02	1.111	7.753	538.3
259	28.000	.46800-01	110.00	.3131	.5367	.4045	.9458	.2036-01	.1534-01	2.052	14.24	546.9
260	28.200	.16810	221.00	.5817-01	.9395-01	.8219-01	.9233	.3562-02	.3116-02	.4161	2.916	530.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K110)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
260	28.300	.19040	236.00	.4815-01	.7515-01	.6684-01	.9222	.2849-02	.2534-02	.3653	2.577	518.6
260	28.300	.12200	201.00	.1214	.2009	.1694	.9284	.7617-02	.6922-02	.8361	5.837	537.0
259	28.400	.53500-01	114.00	.3047	.5210	.3977	.9437	.1976-01	.1508-01	2.002	13.91	546.4
260	28.400	.21310	248.00	.3636-01	.5583-01	.4995-01	.9220	.2117-02	.1894-02	.2841	2.011	512.6
259	28.700	.58600-01	117.00	.2878	.4863	.3768	.9422	.1844-01	.1429-01	1.925	13.39	543.3
260	28.800	.16580	217.00	.5850-01	.9450-01	.8262-01	.9234	.3583-02	.3132-02	.4185	2.933	530.0
259	28.800	.60400-01	121.00	.2765	.4648	.3621	.9416	.1763-01	.1373-01	1.863	12.97	542.0
260	29.000	.21110	244.00	.4034-01	.6198-01	.5544-01	.9220	.2350-02	.2102-02	.3148	2.227	512.9
259	29.000	.65700-01	129.00	.2537	.4241	.3340	.9402	.1608-01	.1267-01	1.723	12.01	540.6
259	29.200	.72400-01	133.00	.2381	.3961	.3157	.9384	.1502-01	.1197-01	1.630	11.36	539.2
259	29.300	.79500-01	136.00	.2048	.3360	.2722	.9366	.1274-01	.1032-01	1.432	10.01	535.3
259	29.600	.92500-01	143.00	.1874	.3083	.2533	.9336	.1169-01	.9607-02	1.305	9.113	536.1
259	29.700	.10000+00	146.00	.1632	.2671	.2218	.9321	.1013-01	.8410-02	1.145	8.002	534.7
260	29.900	.12100	198.00	.1145	.1896	.1599	.9284	.7189-02	.6061-02	.7871	5.494	537.3
260	30.200	.16480	214.00	.5623-01	.9081-01	.7941-01	.9234	.3443-02	.3011-02	.4023	2.820	530.0
260	30.200	.18700	229.00	.4943-01	.7733-01	.6871-01	.9222	.2932-02	.2605-02	.3734	2.632	519.5
260	30.300	.21010	242.00	.4099-01	.6312-01	.5642-01	.9220	.2393-02	.2139-02	.3186	2.253	513.7
259	31.500	.11100-01	83.000	.5472	1.108	.7203	.9525	.4204-01	.2732-01	2.950	20.14	577.5
260	32.100	.21010	241.00	.3859-01	.5927-01	.5302-01	.9220	.2247-02	.2010-02	.3013	2.132	512.7
260	32.200	.16480	213.00	.5508-01	.8888-01	.7779-01	.9232	.3370-02	.2950-02	.3946	2.766	529.7
260	32.200	.17860	224.00	.6048-01	.9629-01	.8496-01	.9225	.3649-02	.3221-02	.4435	3.116	525.3
260	32.200	.18700	228.00	.4815-01	.7475-01	.6659-01	.9222	.2834-02	.2525-02	.3687	2.603	516.7
260	32.300	.12100	197.00	.1129	.1867	.1578	.9280	.7080-02	.5984-02	.7789	5.439	536.8
260	32.300	.12300	194.00	.1011	.1669	.1414	.9277	.6328-02	.5361-02	.6991	4.883	536.3
260	32.300	.12730	208.00	.8458-01	.1409	.1193	.9271	.5341-02	.4525-02	.5768	4.023	538.8
260	32.300	.13420	209.00	.8681-01	.1453	.1235	.9262	.5508-02	.4682-02	.5878	4.097	540.1
259	32.400	.10000+00	147.00	.1482	.2431	.2022	.9317	.9221-02	.7667-02	1.037	7.244	535.3
260	32.400	.10110	184.00	.1478	.2455	.2033	.9314	.9309-02	.7709-02	1.012	7.065	538.0
260	32.400	.10630	193.00	.1414	.2334	.1948	.9305	.8850-02	.7385-02	.9768	6.822	536.4
260	32.500	.85800-01	183.00	.1759	.2938	.2385	.9346	.1114-01	.9044-02	1.195	8.331	539.5
259	32.600	.79500-01	137.00	.1638	.2692	.2185	.9360	.1021-01	.8288-02	1.141	7.973	535.9
260	32.600	.80800-01	176.00	.1905	.3172	.2564	.9357	.1203-01	.9721-02	1.299	9.063	538.8
259	32.700	.67400-01	132.00	.2430	.4056	.3218	.9389	.1538-01	.1220-01	1.655	11.53	540.1
259	32.700	.72400-01	134.00	.2358	.3930	.3141	.9377	.1490-01	.1191-01	1.610	11.22	539.7
259	32.800	.65700-01	130.00	.2523	.4214	.3334	.9394	.1598-01	.1265-01	1.716	11.96	540.3
260	32.800	.16680	210.00	.5488-01	.8864-01	.7763-01	.9231	.3361-02	.2943-02	.3926	2.751	530.0
260	32.800	.18880	225.00	.4496-01	.7006-01	.6236-01	.9221	.2656-02	.2364-02	.3419	2.412	518.1
259	32.900	.58600-01	118.00	.3224	.5480	.4253	.9413	.2078-01	.1613-01	2.138	14.86	544.8
259	32.900	.60400-01	122.00	.2592	.4343	.3406	.9408	.1647-01	.1292-01	1.755	12.22	541.2
260	32.900	.61300-01	171.00	.2593	.4383	.3426	.9405	.1662-01	.1299-01	1.730	12.04	542.7
259	33.000	.53500-01	115.00	.2942	.4986	.3846	.9427	.1891-01	.1458-01	1.958	13.61	544.2
259	33.200	.48300-01	113.00	.3092	.5264	.4018	.9441	.1996-01	.1524-01	2.043	14.21	545.3
260	33.400	.42800-01	166.00	.3386	.5853	.4390	.9457	.2219-01	.1665-01	2.189	15.19	548.2

FH15. E.T. NOSE (CLEAN) HU/HREF (R4K110)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
259	33.500	.40100-01	99.000	.3643	.6297	.4701	.9466	.2388-01	.1783-01	2.359	16.36	548.9
259	33.600	.38300-01	97.000	.3832	.6721	.4959	.9471	.2549-01	.1881-01	2.433	16.84	552.3
259	33.700	.36700-01	96.000	.4019	.7115	.5205	.9476	.2698-01	.1974-01	2.520	17.43	554.3
259	33.900	.33800-01	95.000	.4202	.7535	.5441	.9485	.2858-01	.2063-01	2.592	17.90	557.0
260	34.700	.21010	240.00	.3612-01	.5530-01	.4952-01	.9220	.2097-02	.1877-02	.2838	2.010	511.4
260	34.700	.18700	227.00	.4183-01	.6514-01	.5799-01	.9221	.2470-02	.2199-02	.3186	2.248	517.8
260	34.900	.16480	212.00	.5696-01	.9219-01	.8068-01	.9231	.3495-02	.3059-02	.4062	2.846	530.6
259	35.100	.10000+00	148.00	.1396	.2291	.1909	.9312	.8688-02	.7238-02	.9748	6.811	535.5
260	35.200	.23900-01	161.00	.5007	.9743	.6551	.9515	.3694-01	.2484-01	2.807	19.24	570.8
259	35.300	.92500-01	145.00	.1667	.2748	.2268	.9327	.1042-01	.8600-02	1.157	8.082	536.6
259	35.300	.22100-01	160.00	.3068	.7693	.5181	.9517	.2917-01	.1965-01	2.237	15.33	571.0
260	35.400	.18800	231.00	.4352-01	.6773-01	.6032-01	.9221	.2568-02	.2287-02	.3317	2.341	517.6
260	35.500	.12100	196.00	.1096	.1818	.1538	.9276	.6891-02	.5830-02	.7516	5.245	537.7
260	35.600	.16580	216.00	.5626-01	.9092-01	.7965-01	.9230	.3447-02	.3020-02	.4022	2.819	530.1
259	35.800	.80600-01	138.00	.1893	.3094	.2529	.9352	.1173-01	.9593-02	1.330	9.302	534.3
260	35.900	.21310	247.00	.3315-01	.5058-01	.4534-01	.9220	.1918-02	.1719-02	.2621	1.858	510.1
260	36.000	.19040	235.00	.4525-01	.7035-01	.6269-01	.9220	.2667-02	.2377-02	.3456	2.440	517.2
260	36.200	.16810	220.00	.5822-01	.9377-01	.8231-01	.9228	.3555-02	.3121-02	.4185	2.934	529.1
259	36.200	.72400-01	135.00	.2251	.3728	.2999	.9370	.1414-01	.1137-01	1.550	10.81	538.1
260	36.300	.12200	200.00	.1085	.1801	.1525	.9274	.6827-02	.5782-02	.7433	5.187	537.9
259	36.600	.65700-01	131.00	.2197	.3684	.2920	.9386	.1397-01	.1107-01	1.485	10.34	541.4
260	36.700	.18700	226.00	.4503-01	.7000-01	.6236-01	.9221	.2654-02	.2364-02	.3439	2.428	517.2
260	36.900	.16480	211.00	.5742-01	.9297-01	.8140-01	.9230	.3525-02	.3086-02	.4092	2.867	530.7
260	36.900	.10110	187.00	.1426	.2381	.1975	.9307	.9028-02	.7488-02	.9692	6.757	539.5
259	37.000	.60400-01	123.00	.2547	.4282	.3367	.9399	.1624-01	.1277-01	1.716	11.95	542.0
260	37.000	.12440	204.00	.1051	.1741	.1479	.9270	.6602-02	.5609-02	.7227	5.045	537.3
259	37.100	.58500-01	119.00	.2716	.4582	.3586	.9404	.1738-01	.1360-01	1.820	12.66	543.0
260	37.200	.21310	246.00	.3328-01	.5070-01	.4547-01	.9220	.1922-02	.1724-02	.2639	1.871	509.5
260	37.600	.16810	219.00	.5673-01	.9130-01	.8019-01	.9227	.3461-02	.3040-02	.4082	2.863	528.9
259	37.800	.10270	150.00	.1384	.2268	.1900	.9303	.8602-02	.7205-02	.9687	6.770	535.1
260	37.900	.12100	195.00	.1175	.1943	.1649	.9273	.7366-02	.6251-02	.8109	5.662	536.7
260	38.000	.80300-01	179.00	.1920	.3199	.2597	.9348	.1213-01	.9846-02	1.309	9.131	538.9
259	38.500	.46800-01	112.00	.3126	.5339	.4082	.9435	.2025-01	.1548-01	2.058	14.30	546.0
260	38.600	.12440	203.00	.1029	.1706	.1450	.9268	.6469-02	.5500-02	.7062	4.929	537.6
260	38.700	.10000+00	185.00	.1427	.2373	.1972	.9307	.8997-02	.7476-02	.9753	6.804	538.4
259	38.900	.82200-01	141.00	.1688	.2769	.2270	.9343	.1050-01	.8609-02	1.179	8.241	535.4
259	39.300	.41600-01	104.00	.3475	.6056	.4541	.9449	.2297-01	.1722-01	2.225	15.42	560.8
260	39.500	.10270	190.00	.1425	.2373	.1977	.9301	.8995-02	.7497-02	.9729	6.786	538.6
260	39.600	.16810	218.00	.5487-01	.8820-01	.7754-01	.9226	.3344-02	.2940-02	.3957	2.776	528.5
260	39.900	.19040	233.00	.4147-01	.6407-01	.5721-01	.9220	.2429-02	.2169-02	.3204	2.265	514.9
260	40.100	.79500-01	177.00	.1896	.3155	.2565	.9347	.1196-01	.9723-02	1.294	9.025	538.6
260	40.200	.12440	202.00	.1024	.1699	.1445	.9266	.6443-02	.5480-02	.7012	4.893	538.0
260	40.300	.21310	245.00	.2920-01	.4423-01	.3973-01	.9220	.1677-02	.1506-02	.2342	1.663	507.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K110)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
259	41.100	.62200-01	142.00	.1923	.3172	.2599	.9339	.1203-01	.9857-02	1.333	9.309	536.9
260	41.100	.60700-01	173.00	.2532	.4286	.3373	.9391	.1625-01	.1279-01	1.687	11.74	543.0
260	42.600	.59600-01	172.00	.2590	.4408	.3459	.9391	.1671-01	.1311-01	1.711	11.89	544.5
260	43.200	.42000-01	168.00	.3289	.5688	.4307	.9440	.2157-01	.1633-01	2.125	14.74	548.3
260	43.400	.82200-01	181.00	.2106	.3519	.2873	.9336	.1334-01	.1089-01	1.430	9.968	539.6
259	43.600	.62900-01	128.00	.2055	.3415	.2727	.9381	.1295-01	.1034-01	1.409	9.827	538.9
259	45.000	.22900-01	8.0000	.6056	1.245	.8170	.9496	.4721-01	.3098-01	3.218	21.95	579.5
260	46.100	.62900-01	174.00	.2392	.4047	.3210	.9377	.1534-01	.1217-01	1.593	11.09	543.0
260	47.700	.40800-01	167.00	.3621	.6371	.4788	.9435	.2416-01	.1815-01	2.285	15.82	552.2
259	48.400	.44200-01	109.00	.3311	.5696	.4362	.9424	.2160-01	.1654-01	2.158	14.97	547.8
260	53.200	.24700-01	163.00	.4865	.9242	.6464	.9478	.3504-01	.2451-01	2.799	19.22	566.9
260	65.200	.24700-01	162.00	.4535	.8461	.6044	.9462	.3208-01	.2292-01	2.663	18.32	563.8
258	90.000	.91000-02	44.000	.4846	.8592	.6367	.9452	.3261-01	.2417-01	3.045	21.04	556.1
258	90.000	.11100-01	45.000	.5192	.9376	.6872	.9452	.3559-01	.2609-01	3.187	21.97	559.9
258	90.000	.13100-01	46.000	.5657	1.119	.7760	.9452	.4249-01	.2945-01	3.132	21.41	575.8
258	90.000	.17000-01	48.000	.5063	.9591	.6830	.9452	.3640-01	.2592-01	2.937	20.15	568.8
258	90.000	.20900-01	50.000	.4675	.8579	.6228	.9452	.3256-01	.2364-01	2.813	19.36	563.1
258	90.000	.24900-01	52.000	.6530	1.142	.8554	.9448	.4336-01	.3247-01	4.176	28.89	553.2
258	90.000	.26900-01	53.000	.4186	.7496	.5557	.9441	.2845-01	.2109-01	2.596	17.92	558.2
258	90.000	.28800-01	54.000	.4156	.7374	.5515	.9435	.2799-01	.2093-01	2.609	18.02	556.3
258	90.000	.32800-01	55.000	.3182	.5204	.4102	.9423	.1975-01	.1557-01	2.243	15.67	536.0
258	90.000	.36700-01	56.000	.3613	.6215	.4795	.9411	.2359-01	.1820-01	2.364	16.39	549.3
258	90.000	.40600-01	57.000	.3387	.5892	.4547	.9400	.2236-01	.1726-01	2.182	15.11	551.9
258	90.000	.48500-01	58.000	.2569	.4391	.3463	.9378	.1667-01	.1314-01	1.696	11.77	547.7
258	90.000	.56400-01	59.000	.2709	.4579	.3672	.9358	.1738-01	.1394-01	1.816	12.62	545.0
258	90.000	.76100-01	60.000	.2034	.3377	.2797	.9314	.1282-01	.1062-01	1.400	9.760	540.2
258	90.000	.95900-01	61.000	.1397	.2305	.1952	.9278	.8749-02	.7409-02	.9721	6.782	538.4
258	90.000	.11550	62.000	.1038	.1700	.1465	.9252	.6452-02	.5559-02	.7294	5.094	536.5
258	135.00	.19000-01	49.000	.4834	.8946	.6293	.9496	.3396-01	.2389-01	2.881	19.81	564.7
258	135.00	.22900-01	51.000	.4892	.9169	.6398	.9496	.3480-01	.2428-01	2.873	19.73	566.9
258	180.00	.91000-02	23.000	.4491	.8382	.5466	.9616	.3181-01	.2075-01	2.650	18.21	566.2
258	180.00	.11100-01	24.000	.6200	1.393	.7881	.9616	.5288-01	.2991-01	3.060	20.74	591.6
258	180.00	.13100-01	25.000	.6373	1.352	.7998	.9616	.5131-01	.3036-01	3.303	22.46	585.1
258	180.00	.15000-01	26.000	.6346	1.316	.7922	.9616	.4996-01	.3007-01	3.356	22.86	582.3
258	180.00	.17000-01	27.000	.6209	1.281	.7742	.9616	.4861-01	.2939-01	3.302	22.50	581.6
258	180.00	.19000-01	28.000	.6031	1.227	.7496	.9616	.4659-01	.2845-01	3.248	22.15	579.8
258	180.00	.20900-01	29.000	.6056	1.187	.7460	.9616	.4506-01	.2832-01	3.386	23.16	574.4
258	180.00	.28800-01	32.000	.5120	.9359	.6264	.9597	.3552-01	.2378-01	3.096	21.32	562.3
258	180.00	.32800-01	33.000	.4819	.8473	.5877	.9582	.3216-01	.2231-01	3.061	21.17	554.3
258	180.00	.36700-01	34.000	.4624	.8300	.5716	.9569	.3150-01	.2169-01	2.861	19.73	558.7
258	180.00	.48500-01	36.000	.3759	.6555	.4703	.9529	.2488-01	.1785-01	2.414	16.71	552.5
258	180.00	.56400-01	37.000	.3613	.6251	.4570	.9504	.2373-01	.1735-01	2.345	16.25	550.7
258	180.00	.76100-01	38.000	.2833	.4764	.3654	.9445	.1808-01	.1387-01	1.914	13.31	543.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K110)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
258	180.00	.95800-01	39.000	.2353	.3885	.3092	.9394	.1475-01	.1174-01	1.634	11.40	538.7
258	180.00	.11550	40.000	.1716	.2825	.2306	.9349	.1072-01	.8753-02	1.198	8.360	537.8
258	180.00	.18450	42.000	.8592-01	.1335	.1177	.9243	.5069-02	.4466-02	.6600	4.653	519.3
258	225.00	.22900-01	30.000	.6373	1.261	.7242	.9757	.4785-01	.2749-01	3.530	24.13	575.7
258	270.00	.91000-02	63.000	.5989	1.990	.6839	.9822	.7554-01	.2596-01	2.346	15.68	618.4
258	270.00	.11100-01	64.000	.7906	2.488	.8998	.9822	.9443-01	.3415-01	3.174	21.23	615.9
258	270.00	.13100-01	65.000	.7989	2.303	.9040	.9822	.8742-01	.3431-01	3.351	22.47	611.2
258	270.00	.17000-01	67.000	.8368	2.018	.9341	.9822	.7659-01	.3545-01	3.916	26.44	598.4
258	270.00	.20900-01	69.000	.7029	1.543	.7783	.9822	.5857-01	.2954-01	3.536	24.00	589.1
258	270.00	.24900-01	71.000	.6210	1.315	.6874	.9817	.4992-01	.2609-01	3.223	21.92	584.9
258	270.00	.28800-01	73.000	.6343	1.258	.7032	.9802	.4774-01	.2669-01	3.506	23.96	576.1
258	270.00	.36700-01	75.000	.5565	1.094	.6264	.9773	.4153-01	.2378-01	3.102	21.21	574.8
258	270.00	.48500-01	77.000	.4872	.9306	.5593	.9729	.3532-01	.2123-01	2.801	19.20	570.2
258	270.00	.56400-01	78.000	.5050	.9637	.5888	.9701	.3658-01	.2235-01	2.906	19.93	570.1
258	270.00	.95800-01	80.000	.3244	.5713	.3988	.9569	.2168-01	.1514-01	2.057	14.22	554.6
258	270.00	.11550	81.000	.2829	.4919	.3575	.9509	.1867-01	.1357-01	1.823	12.63	551.8
258	315.00	.19000-01	68.000	.6243	1.224	.7085	.9757	.4644-01	.2689-01	3.491	23.88	574.3
258	315.00	.22900-01	70.000	.6933	1.411	.7909	.9757	.5354-01	.3002-01	3.734	25.47	579.8

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
273	4.020	.3181-02	9.036	63.14	718.7	.4049	169.8	-89.98	2568.	.6436-02	.1366-06	3.759
274	4.020	.3181-02	9.036	63.05	718.7	.4044	169.8	-89.98	2568.	.6427-02	.1366-06	3.754
275	4.020	.3183-02	9.042	62.93	718.7	.4036	169.8	-89.98	2568.	.6415-02	.1366-06	3.747

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
273	.3797-01	.9543-02
274	.3795-01	.9549-02
275	.3791-01	.9559-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
274	.00000	.91000-02	1.0000	.5079	1.007	.6255	.9621	.3821-01	.2374-01	2.795	19.13	573.7
274	.00000	.15000-01	4.0000	.6085	1.205	.7492	.9621	.4572-01	.2843-01	3.352	22.94	573.5
274	.00000	.17000-01	5.0000	.6114	1.190	.7496	.9621	.4514-01	.2844-01	3.431	23.51	570.8
274	.00000	.19000-01	6.0000	.6128	1.194	.7517	.9621	.4532-01	.2852-01	3.432	23.52	571.1
274	.00000	.24900-01	9.0000	.5713	1.075	.6968	.9616	.4081-01	.2644-01	3.323	22.84	565.4
274	.00000	.26900-01	10.000	.5356	.9878	.6526	.9608	.3748-01	.2476-01	3.190	21.97	561.7
273	.00000	.32800-01	12.000	.4634	.8210	.5650	.9587	.3118-01	.2146-01	2.903	20.08	553.7
273	.00000	.36700-01	13.000	.4165	.7161	.5070	.9573	.2719-01	.1925-01	2.716	18.86	546.9
273	.00000	.40600-01	14.000	.4348	.7615	.5361	.9560	.2892-01	.2036-01	2.766	19.16	551.1
273	.00000	.48500-01	15.000	.3850	.6589	.4778	.9533	.2502-01	.1814-01	2.527	17.56	545.8
273	.00000	.56400-01	16.000	.3675	.6291	.4622	.9507	.2389-01	.1755-01	2.412	16.75	545.9
273	.00000	.76100-01	17.000	.2837	.4674	.3623	.9448	.1775-01	.1376-01	1.970	13.76	535.8
273	.00000	.95800-01	18.000	.1182	.1914	.1538	.9396	.7269-02	.5839-02	.8441	5.914	530.7
273	.00000	.11550	19.000	.1782	.2910	.2392	.9350	.1105-01	.9047-02	1.255	8.779	533.3
273	.00000	.16480	20.000	.9869-01	.1631	.1390	.9266	.6192-02	.5278-02	.6822	4.764	536.6
273	.00000	.21400	22.000	.5310-01	.8247-01	.7337-01	.9224	.3132-02	.2786-02	.4070	2.873	516.8
275	2.0000	.24700-01	165.00	.5347	.9714	.6480	.9611	.3683-01	.2457-01	3.241	22.36	558.8
274	9.0000	.15000-01	157.00	.5542	1.080	.6895	.9597	.4099-01	.2616-01	3.104	21.27	571.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
274	9.0000	.17600-01	158.00	.5939	1.163	.7398	.9597	.4413-01	.2807-01	3.310	22.67	571.8
275	9.8000	.24700-01	164.00	.5481	1.027	.6772	.9591	.3892-01	.2567-01	3.204	22.03	564.5
274	10.000	.22900-01	88.000	.5714	1.088	.7076	.9595	.4127-01	.2685-01	3.284	22.55	567.2
274	10.000	.26900-01	90.000	.5344	.9770	.6591	.9582	.3708-01	.2501-01	3.217	22.17	560.0
274	10.000	.34700-01	94.000	.4431	.7665	.5456	.9555	.2909-01	.2070-01	2.864	19.87	548.3
275	14.600	.44200-01	169.00	.3743	.6378	.4690	.9511	.2418-01	.1778-01	2.469	17.16	544.7
274	18.500	.44200-01	106.00	.3901	.6702	.4925	.9502	.2543-01	.1869-01	2.545	17.68	546.7
275	19.600	.62900-01	175.00	.2875	.4774	.3694	.9443	.1810-01	.1401-01	1.970	13.75	537.9
274	19.800	.40800-01	101.00	.4099	.7089	.5165	.9511	.2690-01	.1960-01	2.651	18.39	548.3
274	20.000	.24900-01	89.000	.5242	.9637	.6538	.9565	.3657-01	.2481-01	3.135	21.60	561.1
274	20.000	.28800-01	91.000	.4949	.8958	.6192	.9551	.3399-01	.2350-01	3.015	20.81	558.1
274	20.000	.32800-01	93.000	.4704	.8436	.5914	.9537	.3201-01	.2244-01	2.900	20.03	556.2
274	22.200	.62900-01	125.00	.2979	.5015	.3861	.9437	.1903-01	.1465-01	2.001	13.93	541.7
274	22.400	.44200-01	107.00	.3724	.6363	.4714	.9494	.2415-01	.1789-01	2.449	17.02	545.4
275	22.600	.10270	192.00	.1722	.2815	.2318	.9338	.1067-01	.8788-02	1.208	8.451	533.6
274	23.000	.42000-01	105.00	.3881	.6665	.4906	.9500	.2529-01	.1862-01	2.534	17.60	546.6
274	23.400	.59600-01	120.00	.3159	.5307	.4076	.9444	.2014-01	.1547-01	2.129	14.83	541.1
275	23.900	.21310	250.00	.4189-01	.6411-01	.5741-01	.9220	.2431-02	.2176-02	.3292	2.331	511.4
274	24.100	.82200-01	139.00	.2294	.3772	.3027	.9382	.1432-01	.1148-01	1.596	11.15	535.3
275	24.400	.19040	238.00	.5540-01	.8646-01	.7678-01	.9225	.3278-02	.2911-02	.4201	2.963	518.7
275	24.400	.12440	207.00	.1259	.2093	.1752	.9294	.7936-02	.6641-02	.8609	6.006	538.3
275	24.800	.16810	223.00	.7158-01	.1159	.1010	.9239	.4395-02	.3828-02	.5096	3.570	530.9
274	24.900	.62900-01	126.00	.3019	.5070	.3920	.9432	.1924-01	.1487-01	2.036	14.18	541.0
275	25.000	.79500-01	178.00	.2331	.3823	.3063	.9387	.1449-01	.1161-01	1.627	11.37	534.5
275	25.300	.10270	191.00	.1750	.2858	.2360	.9334	.1084-01	.8946-02	1.230	8.605	533.3
275	25.300	.10000+00	186.00	.1765	.2895	.2379	.9339	.1098-01	.9017-02	1.232	8.613	534.6
274	25.500	.60700-01	124.00	.2995	.5019	.3875	.9437	.1904-01	.1470-01	2.026	14.12	540.4
275	26.000	.12440	206.00	.1231	.2046	.1714	.9292	.7756-02	.6498-02	.8412	5.869	538.3
274	26.300	.82200-01	140.00	.2470	.4029	.3253	.9378	.1529-01	.1234-01	1.741	12.18	533.0
275	26.700	.12100	199.00	.1210	.1991	.1671	.9297	.7548-02	.6333-02	.8403	5.871	535.5
275	26.800	.16810	222.00	.6863-01	.1108	.9666-01	.9238	.4199-02	.3665-02	.4914	3.445	529.8
275	27.000	.19040	237.00	.5618-01	.8750-01	.7779-01	.9224	.3317-02	.2949-02	.4276	3.017	517.9
275	27.100	.21310	249.00	.4029-01	.6152-01	.5513-01	.9220	.2332-02	.2090-02	.3182	2.255	510.4
275	27.200	.80300-01	180.00	.2262	.3690	.2974	.9381	.1399-01	.1128-01	1.593	11.15	532.9
274	27.400	.40100-01	98.000	.4236	.7377	.5392	.9497	.2799-01	.2046-01	2.713	18.81	549.9
275	27.400	.16480	215.00	.6625-01	.1079	.9375-01	.9240	.4090-02	.3554-02	.4678	3.274	532.4
274	27.600	.41600-01	102.00	.3911	.6766	.4980	.9491	.2567-01	.1890-01	2.528	17.54	548.3
275	27.600	.12440	205.00	.1188	.1972	.1655	.9290	.7476-02	.6273-02	.8135	5.676	538.0
275	27.600	.18700	230.00	.5749-01	.8959-01	.7958-01	.9225	.3396-02	.3017-02	.4370	3.083	518.1
275	27.700	.21010	243.00	.4612-01	.7076-01	.6332-01	.9220	.2683-02	.2401-02	.3609	2.555	512.3
275	27.900	.10110	188.00	.1847	.3031	.2498	.9333	.1149-01	.9470-02	1.288	9.004	534.7
274	28.000	.46800-01	110.00	.3392	.5772	.4332	.9474	.2190-01	.1644-01	2.244	15.61	544.3
275	28.200	.16810	221.00	.7221-01	.1168	.1019	.9237	.4427-02	.3863-02	.5155	3.612	530.4

FH15, E.T. NOSE (CLEAN) HU/HREF (RMKIII)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
275	28.300	.19040	236.00	.5705-01	.8858-01	.7883-01	.9224	.3358-02	.2989-02	.4367	3.083	516.8
275	28.300	.12200	201.00	.1300	.2138	.1798	.9293	.8105-02	.6816-02	.9032	6.312	535.4
274	28.400	.53500-01	114.00	.3269	.5540	.4215	.9453	.2102-01	.1599-01	2.175	15.13	543.3
275	28.400	.21310	248.00	.4109-01	.6266-01	.5618-01	.9220	.2376-02	.2130-02	.3253	2.306	509.9
274	28.700	.58600-01	117.00	.3097	.5209	.4013	.9437	.1976-01	.1523-01	2.084	14.51	541.4
275	28.800	.16580	217.00	.6607-01	.1071	.9327-01	.9238	.4058-02	.3536-02	.4703	3.2[illegible]	530.9
274	28.800	.60400-01	121.00	.2964	.4964	.3844	.9432	.1883-01	.1459-01	2.007	13.99	540.3
275	29.000	.21110	244.00	.4191-01	.6398-01	.5734-01	.9220	.2426-02	.2174-02	.3309	2.345	510.4
274	29.000	.65700-01	129.00	.2753	.4593	.3593	.9416	.1743-01	.1363-01	1.874	13.07	539.3
274	29.200	.72400-01	133.00	.2488	.4135	.3273	.9398	.1569-01	.1242-01	1.704	11.89	538.2
274	29.300	.79500-01	136.00	.2168	.3545	.2856	.9380	.1345-01	.1084-01	1.522	10.65	533.6
274	29.600	.92500-01	143.00	.1975	.3267	.2660	.9349	.1240-01	.1089-01	1.361	9.504	537.0
274	29.700	.10000+00	146.00	.1601	.2641	.2172	.9333	.1002-01	.6240-02	1.109	7.743	536.2
275	29.900	.12100	198.00	.1237	.2041	.1715	.9293	.7737-02	.6500-02	.8564	5.982	536.1
275	30.200	.16480	214.00	.6159-01	.9986-01	.8699-01	.9238	.3786-02	.3298-02	.4378	3.067	531.2
275	30.300	.21010	242.00	.4339-01	.6639-01	.5946-01	.9220	.2517-02	.2254-02	.3413	2.417	511.2
274	31.500	.11100-01	83.000	.5522	1.102	.7145	.9545	.4183-01	.2711-01	3.018	22.64	574.7
275	32.100	.21010	241.00	.4280-01	.6530-01	.5853-01	.9220	.2475-02	.2219-02	.3385	2.369	510.1
275	32.200	.16480	213.00	.6454-01	.1047	.9126-01	.9237	.3970-02	.3460-02	.4503	3.209	531.4
275	32.200	.17860	224.00	.6949-01	.1100	.9709-01	.9228	.4169-02	.3681-02	.5144	3.618	523.4
275	32.200	.18700	228.00	.5218-01	.8039-01	.7172-01	.9224	.3048-02	.2719-02	.4052	2.886	513.9
275	32.300	.12100	197.00	.1236	.2035	.1714	.9290	.7717-02	.6498-02	.8580	5.945	535.6
275	32.300	.12300	194.00	.1140	.1877	.1583	.9287	.7117-02	.6002-02	.7931	5.520	535.8
275	32.300	.12730	209.00	.1012	.1693	.1424	.9280	.6419-02	.5400-02	.6947	4.772	540.1
275	32.300	.13420	209.00	.9599-01	.1625	.1369	.9270	.6161-02	.5189-02	.6599	4.445	543.1
274	32.400	.10000+00	147.00	.1560	.2583	.2125	.9329	.9802-02	.8063-02	1.074	7.497	537.2
275	32.400	.10110	184.00	.1609	.2646	.2186	.9326	.1003-01	.8386-02	1.110	7.816	535.3
275	32.400	.10630	193.00	.1540	.2523	.2100	.9316	.9565-02	.7959-02	1.078	7.546	534.1
275	32.500	.85800-01	183.00	.1940	.3205	.2597	.9359	.1215-01	.9044-02	1.340	9.354	536.6
274	32.600	.79500-01	137.00	.2519	.4147	.3339	.9374	.1574-01	.1267-01	1.749	12.22	535.7
275	32.600	.80800-01	176.00	.2094	.3439	.2777	.9371	.1304-01	.1053-01	1.458	10.19	534.9
274	32.700	.67400-01	132.00	.2621	.4372	.3441	.9405	.1659-01	.1306-01	1.785	12.45	539.2
274	32.700	.72400-01	134.00	.2542	.4231	.3357	.9392	.1606-01	.1274-01	1.737	12.12	538.6
274	32.800	.65700-01	130.00	.2657	.4438	.3482	.9410	.1684-01	.1321-01	1.826	12.59	539.6
275	32.800	.16680	210.00	.6488-01	.1052	.9180-01	.9235	.3969-02	.3489-02	.4612	3.231	541.2
275	32.800	.18880	225.00	.4993-01	.7723-01	.6884-01	.9223	.2928-02	.2610-02	.3448	2.719	515.4
274	32.900	.58600-01	118.00	.2480	.4208	.3239	.9423	.1597-01	.1229-01	1.645	11.45	543.7
274	32.900	.60400-01	122.00	.2835	.4751	.3632	.9424	.1803-01	.1401-01	1.917	13.35	540.5
275	32.900	.61300-01	171.00	.2781	.4633	.3618	.9422	.1756-01	.1371-01	1.846	13.52	538.9
274	33.000	.53500-01	115.00	.3186	.5374	.4120	.9444	.2039-01	.1563-01	2.179	15.48	542.0
274	33.200	.48300-01	113.00	.3378	.5716	.4338	.9459	.2169-01	.1646-01	2.245	15.68	543.0
275	33.400	.42800-01	166.00	.3675	.6241	.4684	.9476	.2366-01	.1776-01	2.435	16.93	543.9
274	33.500	.40100-01	99.000	.3970	.6796	.5054	.9484	.2579-01	.1918-01	2.604	18.09	545.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
274	33.600	.38300-01	97.000	.4170	.7243	.5321	.9490	.2748-01	.2019-01	2.680	18.58	549.3
274	33.700	.36700-01	96.000	.4141	.7297	.5298	.9495	.2769-01	.2010-01	2.611	18.07	552.5
274	33.900	.33800-01	95.000	.4528	.8069	.5786	.9505	.3062-01	.2196-01	2.815	19.46	554.9
275	34.700	.21010	240.00	.4219-01	.6417-01	.5757-01	.9220	.2433-02	.2183-02	.3357	2.381	508.8
275	34.700	.18700	227.00	.5660-01	.8747-01	.7798-01	.9223	.3316-02	.2956-02	.4369	3.088	515.1
275	34.900	.16480	212.00	.6443-01	.1048	.9130-01	.9235	.3971-02	.3461-02	.4559	3.192	532.0
274	35.100	.10000+00	148.00	.1639	.2720	.2240	.9325	.1032-01	.8499-02	1.125	7.848	537.9
275	35.200	.23900-01	161.00	.5313	1.007	.6803	.9536	.3818-01	.2579-01	3.064	21.05	566.6
274	35.300	.92500-01	145.00	.1830	.3035	.2479	.9340	.1152-01	.9407-02	1.257	8.770	537.7
274	35.300	.22100-01	160.00	.4738	.9003	.6068	.9537	.3416-01	.2303-01	2.727	18.73	567.0
275	35.400	.18800	231.00	.5427-01	.8402-01	.7488-01	.9223	.3185-02	.2839-02	.4176	2.951	515.7
275	35.500	.12100	196.00	.1209	.1999	.1684	.9287	.7580-02	.6384-02	.8334	5.819	536.9
275	35.600	.16580	216.00	.6791-01	.1101	.9613-01	.9234	.4175-02	.3644-02	.4827	3.381	531.2
274	35.800	.80600-01	138.00	.2028	.3327	.2694	.9367	.1262-01	.1022-01	1.417	9.903	534.6
275	35.900	.21310	247.00	.3655-01	.5526-01	.4967-01	.9220	.2095-02	.1883-02	.2942	2.089	506.4
275	36.000	.19040	235.00	.5347-01	.8265-01	.7373-01	.9222	.3133-02	.2795-02	.4127	2.917	515.1
275	36.200	.16810	220.00	.6505-01	.1049	.9185-01	.9232	.3978-02	.3482-02	.4663	3.269	529.6
274	36.200	.72400-01	135.00	.2442	.4056	.3231	.9386	.1539-01	.1226-01	1.674	11.68	538.0
275	36.300	.12200	200.00	.1169	.1934	.1631	.9284	.7333-02	.6182-02	.8047	5.618	537.1
274	36.600	.65700-01	131.00	.2862	.4813	.3775	.9403	.1826-01	.1433-01	1.926	13.42	541.3
275	36.700	.18700	226.00	.5177-01	.7989-01	.7127-01	.9223	.3029-02	.2702-02	.4008	2.833	514.5
275	36.900	.16480	211.00	.6567-01	.1068	.9316-01	.9234	.4050-02	.3532-02	.4644	3.251	532.1
275	36.900	.10110	187.00	.1602	.2649	.2191	.9320	.1004-01	.8305-02	1.105	7.713	536.8
274	37.000	.60400-01	123.00	.2823	.4752	.3698	.9417	.1803-01	.1403-01	1.896	13.21	541.6
275	37.000	.12440	204.00	.1127	.1863	.1575	.9280	.7062-02	.5972-02	.7773	5.428	536.7
274	37.100	.56600-01	119.00	.3006	.5073	.3932	.9422	.1925-01	.1492-01	2.012	14.01	542.3
275	37.200	.21310	246.00	.3487-01	.5262-01	.4732-01	.9220	.1995-02	.1794-02	.2817	2.002	505.6
275	37.600	.16810	219.00	.6559-01	.1058	.9263-01	.9232	.4010-02	.3512-02	.4704	3.298	529.5
274	37.800	.10270	150.00	.1514	.2515	.2080	.9316	.9545-02	.7894-02	1.037	7.239	538.1
275	37.900	.12100	195.00	.1235	.2031	.1717	.9284	.7698-02	.6508-02	.8596	6.008	535.1
275	38.000	.80300-01	179.00	.2130	.3502	.2837	.9364	.1328-01	.1075-01	1.481	10.35	535.3
274	38.500	.46800-01	112.00	.3443	.5860	.4443	.9454	.2224-01	.1686-01	2.276	15.83	544.4
275	38.600	.12440	203.00	.1133	.1875	.1586	.9278	.7108-02	.6013-02	.7801	5.447	537.0
275	38.700	.10000+00	185.00	.1591	.2621	.2171	.9320	.9937-02	.8229-02	1.102	7.700	535.9
274	38.900	.82200-01	141.00	.2208	.3663	.2963	.9358	.1390-01	.1124-01	1.516	10.58	537.7
274	39.300	.41600-01	104.00	.3848	.6661	.4960	.9469	.2528-01	.1882-01	2.484	17.24	548.5
275	39.500	.10270	190.00	.1574	.2596	.2156	.9314	.9842-02	.8174-02	1.089	7.604	536.2
275	39.600	.16810	218.00	.6895-01	.1111	.9736-01	.9231	.4212-02	.3691-02	.4952	3.472	529.2
275	39.900	.19040	233.00	.4895-01	.7515-01	.6720-01	.9221	.2849-02	.2548-02	.3824	2.707	512.6
275	40.100	.79500-01	177.00	.2122	.3485	.2826	.9363	.1321-01	.1071-01	1.478	10.33	534.9
275	40.200	.12440	202.00	.1120	.1857	.1571	.9277	.7039-02	.5954-02	.7682	5.362	537.7
275	40.300	.21310	245.00	.3569-01	.5360-01	.4827-01	.9220	.2032-02	.1830-02	.2909	2.069	503.7
274	41.100	.82200-01	142.00	.2080	.3460	.2799	.9355	.1313-01	.1062-01	1.422	9.917	538.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
275	41.100	.60700-01	173.00	.2758	.4608	.3615	.9410	.1747-01	.1370-01	1.871	13.05	539.7
275	42.600	.59600-01	172.00	.2883	.4848	.3788	.9410	.1838-01	.1436-01	1.938	13.50	541.4
275	43.200	.42000-01	168.00	.3529	.6033	.4545	.9461	.2287-01	.1723-01	2.316	16.09	545.5
275	43.400	.82200-01	181.00	.2264	.3730	.3038	.9352	.1414-01	.1152-01	1.570	10.97	535.8
274	43.600	.62900-01	128.00	.2864	.4790	.3774	.9400	.1817-01	.1432-01	1.943	13.54	539.9
274	45.000	.22900-01	8.0000	.6171	1.205	.8058	.9520	.4571-01	.3058-01	3.450	23.64	571.3
275	46.100	.62900-01	174.00	.2651	.4433	.3501	.9396	.1681-01	.1327-01	1.798	12.53	539.8
275	47.700	.40800-01	167.00	.3924	.6785	.5086	.9458	.2572-01	.1928-01	2.536	17.59	548.2
274	48.400	.44200-01	109.00	.3612	.6211	.4700	.9447	.2357-01	.1783-01	2.354	16.34	546.9
275	53.200	.24700-01	163.00	.5215	.9651	.6756	.9504	.3659-01	.2561-01	3.091	21.28	562.3
275	65.200	.24700-01	162.00	.4974	.9081	.6465	.9490	.3443-01	.2451-01	2.996	20.68	559.8
273	90.000	.91000-02	44.000	.4176	.7147	.5321	.9482	.2714-01	.2021-01	2.741	19.05	545.8
273	90.000	.11100-01	45.000	.5146	.9050	.6625	.9482	.3436-01	.2516-01	3.256	22.55	552.0
273	90.000	.13100-01	46.000	.6621	1.317	.8915	.9482	.5000-01	.3385-01	3.634	24.86	574.1
273	90.000	.17000-01	48.000	.5157	.9837	.6842	.9482	.3735-01	.2598-01	2.958	20.31	567.6
273	90.000	.20900-01	50.000	.5343	.9868	.7006	.9482	.3747-01	.2660-01	3.180	21.90	562.0
273	90.000	.26900-01	53.000	.4636	.8314	.6051	.9471	.3157-01	.2298-01	2.860	19.76	556.2
273	90.000	.28800-01	54.000	.4532	.8057	.5917	.9465	.3059-01	.2247-01	2.827	19.55	554.4
273	90.000	.32800-01	55.000	.3438	.5609	.4364	.9452	.2130-01	.1657-01	2.424	16.96	533.0
273	90.000	.36700-01	56.000	.4042	.6952	.5281	.9440	.2640-01	.2005-01	2.635	18.29	547.0
273	90.000	.40600-01	57.000	.3710	.6512	.4923	.9428	.2473-01	.1869-01	2.354	16.30	551.6
273	90.000	.48500-01	58.000	.3144	.5440	.4199	.9405	.2066-01	.1595-01	2.033	14.10	548.4
273	90.000	.56400-01	59.000	.2969	.5089	.3996	.9383	.1933-01	.1518-01	1.945	13.51	546.1
273	90.000	.76100-01	60.000	.2300	.3892	.3159	.9335	.1478-01	.1199-01	1.534	10.67	543.0
273	90.000	.95800-01	61.000	.1567	.2657	.2203	.9296	.1009-01	.8365-02	1.042	7.252	543.5
273	90.000	.11550	62.000	.1144	.1934	.1634	.9265	.7344-02	.6206-02	.7645	5.321	542.7
273	135.00	.19000-01	49.000	.5770	1.092	.7458	.9520	.4145-01	.2832-01	3.340	22.95	566.2
273	135.00	.22900-01	51.000	.5487	1.035	.7084	.9520	.3928-01	.2690-01	3.188	21.91	565.6
273	180.00	.91000-02	23.000	.3996	.7083	.4787	.9621	.2690-01	.1818-01	2.502	17.31	553.8
273	180.00	.11100-01	24.000	.5781	1.260	.7274	.9621	.4785-01	.2762-01	2.915	19.82	585.9
273	180.00	.13100-01	25.000	.6341	1.278	.7840	.9621	.4854-01	.2977-01	3.434	23.47	576.1
273	180.00	.15000-01	26.000	.6033	1.194	.7427	.9621	.4534-01	.2820-01	3.328	22.78	573.4
273	180.00	.17000-01	27.000	.6220	1.235	.7662	.9621	.4689-01	.2910-01	3.420	23.40	573.9
273	180.00	.19000-01	28.000	.6392	1.269	.7875	.9621	.4820-01	.2990-01	3.514	24.05	573.9
273	180.00	.20900-01	29.000	.6277	1.212	.7682	.9621	.4603-01	.2917-01	3.553	24.37	569.6
273	180.00	.28800-01	32.000	.5383	.9793	.6560	.9602	.3719-01	.2491-01	3.262	22.50	559.1
273	180.00	.32800-01	33.000	.5004	.8739	.6076	.9587	.3319-01	.2307-01	3.195	22.14	550.5
273	180.00	.36700-01	34.000	.4794	.8545	.5839	.9573	.3245-01	.2240-01	2.981	20.61	554.9
273	180.00	.48500-01	36.000	.3972	.6895	.4952	.9533	.2618-01	.1881-01	2.557	17.73	549.1
273	180.00	.56400-01	37.000	.3762	.6447	.4733	.9507	.2448-01	.1797-01	2.465	17.12	546.1
273	180.00	.76100-01	38.000	.2902	.4869	.3734	.9448	.1849-01	.1418-01	1.960	13.66	540.8
273	180.00	.95800-01	39.000	.2381	.3928	.3124	.9396	.1492-01	.1186-01	1.650	11.52	536.2
273	180.00	.11550	40.000	.1809	.2994	.2435	.9350	.1137-01	.9247-02	1.247	8.704	537.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
273	180.00	.18450	42.000	.8608-01	.1349	.1185	.9244	.5122-02	.4500-02	.6493	4.576	520.0
273	225.00	.22900-01	30.000	.6577	1.276	.7543	.9736	.4847-01	.2864-01	3.703	25.38	570.4
273	270.00	.91000-02	63.000	.6100	1.776	.7089	.9787	.6744-01	.2692-01	2.535	17.02	609.2
273	270.00	.11100-01	64.000	.7919	2.134	.9141	.9787	.8102-01	.3471-01	3.436	23.13	604.4
273	270.00	.13100-01	65.000	.7838	2.013	.9007	.9787	.7643-01	.3420-01	3.503	23.62	601.0
273	270.00	.17000-01	67.000	.8823	2.031	1.003	.9787	.7711-01	.3808-01	4.258	28.86	591.6
273	270.00	.20900-01	69.000	.7191	1.522	.8099	.9787	.5779-01	.3075-01	3.720	25.34	582.4
273	270.00	.24900-01	71.000	.6813	1.386	.7660	.9782	.5261-01	.2909-01	3.658	24.98	577.3
273	270.00	.28800-01	73.000	.6427	1.249	.7245	.9767	.4744-01	.2751-01	3.612	24.76	570.7
273	270.00	.36700-01	75.000	.5668	1.091	.6485	.9738	.4144-01	.2463-01	3.218	22.07	569.2
273	270.00	.48500-01	77.000	.5092	.9421	.5924	.9694	.3577-01	.2249-01	3.024	20.82	562.3
273	270.00	.56400-01	78.000	.4920	.9064	.5807	.9666	.3442-01	.2205-01	2.937	20.23	561.5
273	270.00	.95800-01	80.000	.3082	.5405	.3851	.9536	.2052-01	.1462-01	1.957	13.56	551.4
273	270.00	.11550	81.000	.2613	.4557	.3363	.9477	.1731-01	.1277-01	1.672	11.59	550.2
273	315.00	.19000-01	68.000	.6104	1.174	.6991	.9736	.4457-01	.2655-01	3.471	23.81	568.9
273	315.00	.22900-01	70.000	.7056	1.401	.8122	.9736	.5320-01	.3084-01	3.880	26.54	573.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
217	5.500	.1355-06	9.016	129.8	723.7	.1395	102.6	-90.00	2732.	.3667-02	.8260-07	3.770
218	5.500	.1354-06	9.010	127.0	723.7	.1365	102.6	-90.00	2732.	.3588-02	.8260-07	3.688
219	5.500	-.3171-02	9.010	126.5	723.7	.1359	102.6	-90.02	2732.	.3575-02	.8260-07	3.674

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
217	.3054-01	.1266-01
218	.3021-01	.1280-01
219	.3015-01	.1282-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
218	.00000	.91000-02	1.0000	.4269	.7612	.5302	.9557	.2300-01	.1602-01	2.125	14.66	558.9
218	.00000	.15000-01	4.0000	.6356	1.189	.8008	.9557	.3591-01	.2419-01	2.987	20.50	568.1
218	.00000	.17000-01	5.0000	.6037	1.105	.7557	.9557	.3337-01	.2283-01	2.910	20.02	564.1
218	.00000	.19000-01	6.0000	.5776	1.054	.7223	.9557	.3183-01	.2182-01	2.795	19.23	563.5
218	.00000	.24900-01	9.0000	.5062	.8955	.6287	.9552	.2705-01	.1899-01	2.546	17.58	557.2
218	.00000	.26900-01	10.000	.4791	.8417	.5960	.9545	.2543-01	.1801-01	2.431	16.80	555.7
217	.00000	.32800-01	12.000	.4275	.6982	.5244	.9523	.2132-01	.1601-01	2.437	17.01	537.0
217	.00000	.36700-01	13.000	.3709	.5970	.4555	.9510	.1823-01	.1391-01	2.165	15.15	532.5
217	.00000	.40600-01	14.000	.3926	.6401	.4876	.9496	.1955-01	.1489-01	2.244	15.67	536.5
217	.00000	.48500-01	15.000	.3389	.5459	.4243	.9469	.1667-01	.1296-01	1.975	13.82	532.8
217	.00000	.56400-01	16.000	.3183	.5114	.4031	.9443	.1562-01	.1231-01	1.863	13.05	532.0
217	.00000	.76100-01	17.000	.2446	.3842	.3155	.9382	.1173-01	.9635-02	1.488	10.46	524.5
217	.00000	.11550	19.000	.1442	.2261	.1956	.9274	.6904-02	.5975-02	.8800	6.189	523.9
217	.00000	.16480	20.000	.7467-01	.1175	.1070	.9171	.3588-02	.3269-02	.4528	3.182	525.1
217	.00000	.21400	22.000	.3483-01	.5157-01	.4900-01	.9109	.1575-02	.1497-02	.2371	1.689	500.7
219	2.0000	.24700-01	165.00	.4809	.7915	.5848	.9547	.2387-01	.1763-01	2.674	18.65	539.3
218	9.0000	.15000-01	157.00	.6204	1.139	.7877	.9534	.3441-01	.2380-01	2.979	20.48	564.7
218	9.0000	.17600-01	158.00	.5628	1.033	.7145	.9534	.3122-01	.2159-01	2.702	18.58	564.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
219	9.8000	.24700-01	164.00	.5114	.8579	.6320	.9528	.2587-01	.1906-01	2.762	19.21	544.5
218	10.000	.22900-01	88.000	.5202	.9327	.6563	.9531	.2818-01	.1983-01	2.571	17.73	560.0
218	10.000	.26900-01	90.000	.4736	.8309	.5971	.9519	.2510-01	.1804-01	2.407	16.64	555.4
218	10.000	.34700-01	94.000	.3769	.6166	.4698	.9491	.1863-01	.1419-01	2.121	14.80	537.5
219	14.600	.44200-01	169.00	.3310	.5315	.4182	.9448	.1603-01	.1261-01	1.915	13.41	531.8
218	18.500	.44200-01	106.00	.3384	.5699	.4384	.9438	.1722-01	.1325-01	1.821	12.66	545.5
219	19.600	.62900-01	175.00	.2631	.4176	.3421	.9376	.1259-01	.1032-01	1.552	10.89	528.0
218	19.800	.40800-01	101.00	.3574	.6041	.4617	.9447	.1825-01	.1395-01	1.913	13.28	546.5
218	20.000	.24900-01	89.000	.4792	.8476	.6115	.9502	.2561-01	.1847-01	2.410	16.64	557.2
218	20.000	.28800-01	91.000	.4416	.7724	.5656	.9488	.2333-01	.1709-01	2.254	15.59	554.7
218	20.000	.32800-01	93.000	.4081	.7058	.5244	.9474	.2132-01	.1584-01	2.115	14.64	552.1
218	22.200	.62900-01	125.00	.2566	.4264	.3425	.9370	.1288-01	.1035-01	1.409	9.809	541.9
218	22.400	.44200-01	107.00	.3246	.5461	.4223	.9430	.1650-01	.1276-01	1.750	12.16	545.2
219	22.600	.10270	192.00	.1305	.2066	.1794	.9260	.6228-02	.5409-02	.7734	5.429	527.1
218	23.000	.42000-01	105.00	.3418	.5762	.4437	.9436	.1741-01	.1340-01	1.836	12.76	545.8
218	23.400	.59600-01	120.00	.2663	.4424	.3540	.9378	.1337-01	.1069-01	1.463	10.19	541.8
219	23.900	.21310	250.00	.2010-01	.3011-01	.2868-01	.9100	.9078-03	.8648-03	.1320	.9379	505.9
218	24.100	.82200-01	139.00	.1937	.3186	.2655	.9310	.9626-02	.8021-02	1.080	7.534	539.1
219	24.400	.19040	238.00	.3044-01	.4645-01	.4390-01	.9111	.1401-02	.1324-02	.1927	1.363	513.7
219	24.400	.12440	207.00	.9560-01	.1524	.1356	.9208	.4595-02	.4090-02	.5597	3.924	529.5
219	24.800	.16810	223.00	.4707-01	.7357-01	.6843-01	.9133	.2218-02	.2063-02	.2852	2.007	522.7
218	24.900	.62900-01	126.00	.2565	.4251	.3430	.9365	.1284-01	.1036-01	1.414	9.852	541.2
219	25.000	.79500-01	178.00	.1931	.3071	.2588	.9316	.9260-02	.7803-02	1.135	7.958	528.8
219	25.300	.10270	191.00	.1296	.2052	.1786	.9255	.6187-02	.5386-02	.7680	5.391	527.2
219	25.300	.10000+00	186.00	.1388	.2202	.1909	.9262	.6640-02	.5756-02	.8188	5.745	528.0
218	25.500	.60700-01	124.00	.2561	.4242	.3413	.9370	.1281-01	.1031-01	1.413	9.845	541.0
219	26.000	.12440	206.00	.9295-01	.1483	.1321	.9205	.4470-02	.3984-02	.5437	3.812	529.7
218	26.300	.82200-01	140.00	.1860	.3051	.2551	.9306	.9216-02	.7707-02	1.043	7.274	538.2
219	26.700	.12100	199.00	.9208-01	.1464	.1302	.9211	.4414-02	.3925-02	.5417	3.799	528.6
219	26.800	.16810	222.00	.4419-01	.6905-01	.6429-01	.9131	.2082-02	.1939-02	.2679	1.885	522.6
219	27.000	.19040	237.00	.2969-01	.4526-01	.4281-01	.9109	.1365-02	.1291-02	.1884	1.333	513.2
219	27.100	.21310	249.00	.2045-01	.3059-01	.2914-01	.9100	.9223-03	.8787-03	.1347	.9570	505.3
219	27.200	.80300-01	180.00	.1876	.2980	.2521	.9310	.8987-02	.7601-02	1.104	7.744	528.4
218	27.400	.40100-01	98.000	.3676	.6248	.4796	.9432	.1887-01	.1449-01	1.952	13.54	547.9
219	27.400	.16480	215.00	.4687-01	.7357-01	.6831-01	.9135	.2218-02	.2060-02	.2818	1.982	524.2
218	27.600	.41600-01	102.00	.3397	.5745	.4436	.9427	.1735-01	.1340-01	1.817	12.62	546.6
219	27.600	.12440	205.00	.8902-01	.1420	.1267	.9203	.4281-02	.3820-02	.5207	3.650	529.7
219	27.600	.18700	230.00	.3230-01	.4930-01	.4657-01	.9111	.1486-02	.1404-02	.2044	1.446	513.8
219	27.700	.21010	243.00	.2247-01	.3367-01	.3207-01	.9100	.1015-02	.9669-03	.1474	1.047	506.1
219	27.900	.10110	188.00	.1267	.2014	.1752	.9254	.6074-02	.5282-02	.7458	5.232	528.5
218	28.000	.46800-01	110.00	.2992	.5001	.3924	.9409	.1511-01	.1185-01	1.628	11.33	543.5
219	28.200	.16810	221.00	.4244-01	.6633-01	.6180-01	.9130	.2000-02	.1863-02	.2571	1.809	522.8
219	28.300	.19040	236.00	.2955-01	.4495-01	.4255-01	.9108	.1355-02	.1283-02	.1881	1.332	512.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
219	28.300	.12200	201.00	.9602-01	.1524	.1359	.9207	.4595-02	.4098-02	.5664	3.974	528.0
218	28.400	.53500-01	114.00	.2868	.4801	.3809	.9386	.1450-01	.1151-01	1.557	10.83	544.0
219	28.400	.21310	248.00	.2092-01	.3125-01	.2978-01	.9100	.9421-03	.8978-03	.1381	.9815	504.7
218	28.700	.58600-01	117.00	.2696	.4479	.3599	.9370	.1353-01	.1087-01	1.481	10.31	541.8
219	28.800	.16580	217.00	.4175-01	.6531-01	.6077-01	.9132	.1969-02	.1832-02	.2526	1.777	523.0
218	28.800	.60400-01	121.00	.2520	.4166	.3365	.9364	.1259-01	.1017-01	1.394	9.712	540.6
219	29.000	.21110	244.00	.2075-01	.3099-01	.2953-01	.9100	.9344-03	.8905-03	.1370	.9740	504.7
218	29.000	.65700-01	129.00	.2316	.3823	.3117	.9348	.1155-01	.9418-02	1.285	8.953	540.1
218	29.200	.72400-01	133.00	.2115	.3495	.2879	.9328	.1056-01	.8697-02	1.170	8.156	540.4
218	29.300	.79500-01	136.00	.1754	.2875	.2403	.9308	.8686-02	.7259-02	.9840	6.866	538.0
218	29.600	.92500-01	143.00	.1586	.2605	.2217	.9273	.7870-02	.6697-02	.8865	6.184	538.7
218	29.700	.10000+00	146.00	.1273	.2077	.1790	.9254	.6273-02	.5407-02	.7197	5.026	536.6
219	29.900	.12100	198.00	.9018-01	.1436	.1280	.9206	.4330-02	.3858-02	.5290	3.710	529.1
219	30.200	.16480	214.00	.4013-01	.6281-01	.5844-01	.9132	.1894-02	.1762-02	.2425	1.706	523.3
219	30.200	.18700	229.00	.2914-01	.4440-01	.4199-01	.9110	.1339-02	.1266-02	.1851	1.309	513.1
219	30.300	.21010	242.00	.2308-01	.3453-01	.3290-01	.9100	.1041-02	.9919-03	.1520	1.080	505.3
218	31.500	.11100-01	83.000	.4866	.8647	.6292	.9482	.2612-01	.1901-01	2.433	16.79	558.2
219	32.100	.21010	241.00	.2260-01	.3375-01	.3217-01	.9100	.1018-02	.9699-03	.1493	1.061	504.6
219	32.200	.16480	213.00	.3901-01	.6096-01	.5680-01	.9130	.1838-02	.1713-02	.2363	1.663	522.7
219	32.200	.17860	224.00	.4197-01	.6482-01	.6099-01	.9115	.1955-02	.1839-02	.2598	1.832	518.4
219	32.200	.18700	228.00	.3427-01	.5207-01	.4929-01	.9108	.1570-02	.1486-02	.2188	1.549	511.9
219	32.300	.12100	197.00	.9021-01	.1436	.1282	.9203	.4329-02	.3866-02	.5296	3.714	529.0
219	32.300	.12300	194.00	.8287-01	.1318	.1180	.9199	.3974-02	.3557-02	.4871	3.417	528.7
219	32.300	.12730	208.00	.6751-01	.1081	.9703-01	.9190	.3260-02	.2926-02	.3922	2.747	531.0
219	32.300	.13420	209.00	.7079-01	.1140	.1029	.9177	.3437-02	.3101-02	.4076	2.853	532.7
218	32.400	.10000+00	147.00	.1198	.1957	.1690	.9249	.5912-02	.5105-02	.6747	4.710	537.2
219	32.400	.10110	184.00	.1204	.1918	.1673	.9247	.5784-02	.5045-02	.7055	4.947	529.3
219	32.400	.10630	193.00	.1105	.1753	.1541	.9235	.5285-02	.4646-02	.6521	4.576	527.9
219	32.500	.85800-01	183.00	.1590	.2549	.2175	.9285	.7685-02	.6559-02	.9224	6.460	531.3
218	32.600	.79500-01	137.00	.1806	.2968	.2485	.9302	.8966-02	.7508-02	1.008	7.031	538.9
219	32.600	.80800-01	176.00	.1721	.2754	.2336	.9298	.8305-02	.7044-02	1.000	7.009	530.8
218	32.700	.67400-01	132.00	.2216	.3658	.3002	.9336	.1105-01	.9070-02	1.229	8.568	540.1
218	32.700	.72400-01	134.00	.2075	.3437	.2839	.9321	.1038-01	.8575-02	1.145	7.978	541.0
218	32.800	.65700-01	130.00	.2263	.3729	.3055	.9341	.1127-01	.9230-02	1.258	8.771	539.6
219	32.800	.16680	210.00	.3931-01	.6151-01	.5738-01	.9127	.1855-02	.1730-02	.2376	1.672	523.2
219	32.800	.18880	225.00	.3068-01	.4661-01	.4416-01	.9107	.1405-02	.1332-02	.1959	1.387	511.9
218	32.900	.58600-01	118.00	.2165	.3613	.2909	.9362	.1091-01	.8789-02	1.181	8.220	543.1
218	32.900	.60400-01	122.00	.2392	.3953	.3208	.9356	.1194-01	.9690-02	1.325	9.231	540.4
219	32.900	.61300-01	171.00	.2438	.3889	.3213	.9354	.1173-01	.9689-02	1.426	9.999	529.7
218	33.000	.53500-01	115.00	.2813	.4689	.3746	.9377	.1417-01	.1132-01	1.537	10.70	542.8
218	33.200	.48300-01	113.00	.2949	.4924	.3897	.9394	.1488-01	.1177-01	1.607	11.18	543.3
219	33.400	.42800-01	166.00	.3197	.5119	.4104	.9411	.1543-01	.1238-01	1.858	13.02	530.9
218	33.500	.40100-01	99.000	.3398	.5702	.4438	.9420	.1723-01	.1341-01	1.838	12.78	544.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
218	33.600	.38300-01	97.000	.3606	.6107	.4714	.9426	.1845-01	.1424-01	1.925	13.36	547.0
218	33.700	.36700-01	96.000	.3663	.6266	.4796	.9431	.1893-01	.1449-01	1.927	13.36	549.5
218	33.900	.33800-01	95.000	.3968	.6847	.5189	.9441	.2069-01	.1568-01	2.063	14.29	551.5
219	34.700	.21010	240.00	.2415-01	.3591-01	.3424-01	.9100	.1083-02	.1032-02	.1609	1.145	502.7
219	34.700	.18700	227.00	.3399-01	.5175-01	.4900-01	.9107	.1560-02	.1478-02	.2162	1.530	512.7
219	34.900	.16480	212.00	.4148-01	.6503-01	.6062-01	.9128	.1961-02	.1828-02	.2500	1.758	523.8
218	35.100	.10000+00	148.00	.1242	.2031	.1758	.9245	.6135-02	.5310-02	.6997	4.884	537.3
219	35.200	.23900-01	161.00	.5207	.8819	.6640	.9473	.2659-01	.2002-01	2.774	19.26	547.0
218	35.300	.92500-01	145.00	.1418	.2327	.1992	.9263	.7031-02	.6016-02	.7935	5.536	538.4
218	35.300	.22100-01	160.00	.5136	.9429	.6753	.9474	.2848-01	.2040-01	2.466	16.96	564.7
219	35.400	.18800	231.00	.3005-01	.4562-01	.4324-01	.9106	.1375-02	.1304-02	.1922	1.361	511.6
219	35.500	.12100	196.00	.8681-01	.1386	.1240	.9198	.4180-02	.3738-02	.5069	3.552	530.0
219	35.600	.16580	216.00	.4383-01	.6857-01	.6401-01	.9126	.2068-02	.1930-02	.2651	1.865	523.1
218	35.800	.80600-01	138.00	.1702	.2785	.2347	.9293	.8414-02	.7091-02	.9562	6.673	537.7
219	35.900	.21310	247.00	.2053-01	.3046-01	.2906-01	.9100	.9185-03	.8761-03	.1375	.9792	501.6
219	36.000	.19040	235.00	.2922-01	.4428-01	.4202-01	.9104	.1335-02	.1267-02	.1874	1.328	510.9
219	36.200	.16810	220.00	.4102-01	.6401-01	.5988-01	.9123	.1930-02	.1806-02	.2492	1.754	522.2
218	36.200	.72400-01	135.00	.1996	.3290	.2732	.9315	.9938-02	.8254-02	1.110	7.741	533.6
219	36.300	.12200	200.00	.8364-01	.1337	.1197	.9195	.4031-02	.3610-02	.4875	3.416	530.4
218	36.600	.65700-01	131.00	.2512	.4153	.3410	.9334	.1255-01	.1030-01	1.390	9.683	540.6
219	36.700	.18700	226.00	.3077-01	.4668-01	.4425-01	.9106	.1408-02	.1334-02	.1970	1.395	511.4
219	36.900	.16480	211.00	.4246-01	.6660-01	.6213-01	.9126	.2008-02	.1874-02	.2556	1.797	524.0
219	36.900	.10110	187.00	.1220	.1956	.1709	.9240	.5897-02	.5152-02	.7077	4.956	531.3
218	37.000	.60400-01	123.00	.2448	.4048	.3297	.9349	.1223-01	.9959-02	1.354	9.435	540.6
219	37.000	.12440	204.00	.8328-01	.1333	.1197	.9189	.4018-02	.3608-02	.4845	3.395	530.7
218	37.100	.56600-01	119.00	.2573	.4276	.3465	.9354	.1292-01	.1047-01	1.413	9.836	541.9
219	37.200	.21310	246.00	.1934-01	.2865-01	.2733-01	.9100	.8639-03	.8242-03	.1299	.9256	500.9
219	37.600	.16810	219.00	.4071-01	.6353-01	.5946-01	.9122	.1916-02	.1793-02	.2473	1.740	522.2
218	37.800	.10270	150.00	.1205	.1966	.1713	.9234	.5939-02	.5174-02	.6809	4.755	536.7
219	37.900	.12100	195.00	.8399-01	.1336	.1198	.9195	.4030-02	.3613-02	.4933	3.460	528.9
219	38.000	.80300-01	179.00	.1740	.2795	.2377	.9290	.8428-02	.7166-02	1.005	7.037	532.0
218	38.500	.46800-01	112.00	.2982	.4984	.3953	.9388	.1506-01	.1194-01	1.622	11.28	543.6
219	38.600	.12440	203.00	.8188-01	.1311	.1178	.9187	.3952-02	.3552-02	.4761	3.335	530.8
219	38.700	.10000+00	185.00	.1201	.1926	.1683	.9239	.5806-02	.5074-02	.6972	4.883	531.2
218	38.900	.82200-01	141.00	.1796	.2944	.2492	.9284	.8894-02	.7530-02	1.008	7.030	538.0
219	39.300	.41600-01	104.00	.3265	.5515	.4314	.9404	.1666-01	.1303-01	1.749	12.15	546.3
219	39.500	.10270	190.00	.1164	.1866	.1637	.9232	.5627-02	.4936-02	.6757	4.733	531.2
219	39.600	.16810	218.00	.3908-01	.6099-01	.5713-01	.9121	.1839-02	.1723-02	.2374	1.671	522.2
219	39.900	.19040	233.00	.2843-01	.4285-01	.4073-01	.9103	.1292-02	.1228-02	.1843	1.307	508.7
219	40.100	.79500-01	177.00	.1705	.2740	.2331	.9289	.8261-02	.7029-02	.9858	6.902	532.0
219	40.200	.12440	202.00	.8090-01	.1296	.1166	.9185	.3907-02	.3515-02	.4700	3.292	531.0
219	40.300	.21310	245.00	.1856-01	.2732-01	.2609-01	.9100	.8238-03	.7867-03	.1262	.9007	498.1
218	41.100	.82200-01	142.00	.1684	.2769	.2346	.9280	.8366-02	.7086-02	.9391	6.549	539.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
219	41.100	.60700-01	173.00	.2319	.3722	.3086	.9341	.1122-01	.9304-02	1.342	9.396	531.7
219	42.600	.59600-01	172.00	.2481	.3997	.3307	.9342	.1205-01	.9971-02	1.428	9.996	532.8
219	43.200	.42000-01	168.00	.3102	.4982	.4018	.9396	.1502-01	.1211-01	1.794	12.56	531.9
219	43.400	.82200-01	181.00	.1868	.2968	.2552	.9277	.8950-02	.7695-02	1.099	7.711	528.5
218	43.600	.62900-01	128.00	.2569	.4221	.3482	.9330	.1275-01	.1052-01	1.435	10.01	538.7
218	45.000	.22900-01	8.0000	.5842	1.076	.7772	.9456	.3249-01	.2348-01	2.796	19.22	565.3
219	46.100	.62900-01	174.00	.2239	.3607	.3007	.9326	.1087-01	.9068-02	1.288	9.015	532.8
219	47.700	.40800-01	167.00	.3413	.5524	.4444	.9393	.1666-01	.1340-01	1.949	13.62	534.3
218	48.400	.44200-01	109.00	.3122	.5240	.4165	.9380	.1583-01	.1258-01	1.689	11.74	544.6
219	51.900	.44800-01	170.00	.2738	.4377	.3577	.9374	.1320-01	.1079-01	1.595	11.17	530.5
219	53.200	.24700-01	163.00	.4947	.8214	.6365	.9440	.2477-01	.1919-01	2.714	18.90	541.7
219	65.200	.24700-01	162.00	.4787	.7887	.6182	.9426	.2378-01	.1864-01	2.657	18.53	539.6
217	90.000	.91000-02	44.000	.3033	.4723	.3831	.9418	.1443-01	.1170-01	1.873	13.19	521.5
217	90.000	.11100-01	45.000	.3278	.5121	.4147	.9418	.1564-01	.1266-01	2.013	14.17	522.6
217	90.000	.13100-01	46.000	.4377	.7027	.5609	.9418	.2146-01	.1713-01	2.566	17.97	531.7
217	90.000	.17000-01	48.000	.5595	.9886	.7487	.9418	.3019-01	.2287-01	2.849	19.67	557.0
217	90.000	.20900-01	50.000	.5824	.9892	.7657	.9418	.3021-01	.2339-01	3.131	21.73	547.7
217	90.000	.24900-01	52.000	.1794	.2932	.2323	.9413	.8954-02	.7095-02	1.022	7.134	537.2
217	90.000	.26900-01	53.000	.4368	.7209	.5703	.9406	.2202-01	.1742-01	2.450	17.08	540.0
217	90.000	.28800-01	54.000	.4262	.7008	.5573	.9400	.2140-01	.1702-01	2.405	16.77	538.9
217	90.000	.32800-01	55.000	.2932	.4548	.3751	.9386	.1389-01	.1146-01	1.824	12.86	520.0
217	90.000	.36700-01	56.000	.3439	.5471	.4483	.9373	.1671-01	.1369-01	2.046	14.35	528.8
217	90.000	.40600-01	57.000	.3283	.5300	.4340	.9360	.1619-01	.1326-01	1.907	13.34	533.5
217	90.000	.48500-01	58.000	.2912	.4664	.3882	.9335	.1425-01	.1186-01	1.714	12.00	531.0
217	90.000	.56400-01	59.000	.2505	.4000	.3373	.9311	.1222-01	.1030-01	1.481	10.38	530.1
217	90.000	.76100-01	60.000	.1775	.2847	.2464	.9257	.8694-02	.7526-02	1.042	7.298	531.4
217	90.000	.95900-01	61.000	.1149	.1850	.1640	.9210	.5650-02	.5008-02	.6699	4.688	532.7
217	90.000	.11550	62.000	.8432-01	.1360	.1231	.9171	.4153-02	.3760-02	.4905	3.432	533.2
217	135.00	.19000-01	49.000	.5744	.9657	.7367	.9456	.2949-01	.2250-01	3.133	21.77	545.1
217	135.00	.22900-01	51.000	.5170	.8729	.6642	.9456	.2666-01	.2029-01	2.803	19.47	546.2
217	180.00	.91000-02	23.000	.3418	.5459	.4097	.9557	.1667-01	.1251-01	2.020	14.16	530.1
217	180.00	.11100-01	24.000	.6199	1.166	.7823	.9557	.3560-01	.2389-01	2.927	20.08	569.1
217	180.00	.13100-01	25.000	.6869	1.232	.8546	.9557	.3763-01	.2610-01	3.431	23.65	560.1
217	180.00	.15000-01	26.000	.6509	1.152	.8065	.9557	.3519-01	.2463-01	3.307	22.83	557.3
217	180.00	.17000-01	27.000	.6394	1.125	.7907	.9557	.3435-01	.2415-01	3.275	22.63	555.9
217	180.00	.19000-01	28.000	.6286	1.100	.7760	.9557	.3359-01	.2370-01	3.242	22.41	554.8
217	180.00	.20900-01	29.000	.5936	1.016	.7279	.9557	.3104-01	.2223-01	3.154	21.87	549.7
217	180.00	.28800-01	32.000	.4896	.8067	.5993	.9538	.2464-01	.1827-01	2.753	19.19	539.6
217	180.00	.32800-01	33.000	.4395	.7074	.5363	.9523	.2160-01	.1638-01	2.566	17.96	532.6
217	180.00	.36700-01	34.000	.4309	.7039	.5321	.9510	.2150-01	.1625-01	2.455	17.14	537.1
217	180.00	.48500-01	36.000	.3542	.5725	.4441	.9469	.1749-01	.1356-01	2.053	14.36	533.9
217	180.00	.56400-01	37.000	.3285	.5266	.4155	.9443	.1608-01	.1269-01	1.930	13.52	531.3
217	180.00	.76100-01	38.000	.2548	.4026	.3296	.9382	.1229-01	.1007-01	1.535	10.78	526.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K111)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
217	180.00	.95800-01	39.000	.1958	.3065	.2589	.9325	.9360-02	.7907-02	1.199	8.434	523.2
217	180.00	.11550	40.000	.1480	.2335	.2016	.9274	.7131-02	.6157-02	.8942	6.281	525.9
217	180.00	.18450	42.000	.5849-01	.8930-01	.8315-01	.9140	.2727-02	.2540-02	.3748	2.651	513.9
217	225.00	.22900-01	30.000	.5854	.9969	.6788	.9667	.3045-01	.2073-01	3.134	21.75	548.4
217	270.00	.91000-02	63.000	.5922	1.204	.6925	.9715	.3678-01	.2115-01	2.576	17.55	581.3
217	270.00	.11100-01	64.000	.7514	1.465	.8725	.9715	.4474-01	.2665-01	3.409	23.31	575.1
217	270.00	.13100-01	65.000	.7608	1.462	.8812	.9715	.4465-01	.2691-01	3.506	24.00	572.8
217	270.00	.17000-01	67.000	.8266	1.515	.9496	.9715	.4628-01	.2900-01	4.020	27.64	564.4
217	270.00	.20900-01	69.000	.6419	1.138	.7330	.9715	.3477-01	.2239-01	3.253	22.45	557.7
217	270.00	.24900-01	71.000	.6451	1.132	.7369	.9710	.3457-01	.2251-01	3.315	22.91	555.4
217	270.00	.28800-01	73.000	.5775	.9847	.6604	.9696	.3007-01	.2017-01	3.086	21.41	548.7
217	270.00	.36700-01	75.000	.5104	.8658	.5908	.9668	.2644-01	.1804-01	2.748	19.08	547.4
217	270.00	.48500-01	77.000	.4678	.7771	.5493	.9627	.2374-01	.1678-01	2.598	18.09	541.9
217	270.00	.56400-01	78.000	.4328	.7236	.5157	.9600	.2210-01	.1575-01	2.380	16.56	543.6
217	270.00	.95800-01	80.000	.2700	.4494	.3422	.9472	.1373-01	.1045-01	1.494	10.40	542.4
217	270.00	.11550	81.000	.2258	.3741	.2944	.9412	.1142-01	.8993-02	1.259	8.773	541.1
217	315.00	.19000-01	68.000	.5760	.9727	.6667	.9667	.2971-01	.2036-01	3.122	21.69	546.2
217	315.00	.22900-01	70.000	.6454	1.112	.7504	.9667	.3397-01	.2292-01	3.398	23.54	551.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
313	3.010	-.8467-02	6.042	35.23	715.7	.9447	254.5	-90.08	2354.	.1002-01	.2034-06	3.604
314	3.010	-.8448-02	6.028	35.55	715.7	.9534	254.5	-90.08	2354.	.1011-01	.2034-06	3.637
315	3.010	-.8445-02	6.026	35.93	715.7	.9637	254.5	-90.08	2354.	.1022-01	.2034-06	3.676

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
313	.4337-01	.7639-02
314	.4357-01	.7604-02
315	.4380-01	.7563-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
314	.00000	.91000-02	1.0000	.5654	1.725	.6990	.9716	.7516-01	.3045-01	2.622	17.60	609.2
314	.00000	.15000-01	4.0000	.7164	2.148	.8840	.9716	.9359-01	.3851-01	3.351	22.51	608.3
314	.00000	.17000-01	5.0000	.6690	1.853	.8176	.9716	.8071-01	.3562-01	3.265	21.98	603.6
314	.00000	.19000-01	6.0000	.6470	1.752	.7884	.9716	.7634-01	.3435-01	3.198	21.55	602.2
314	.00000	.24900-01	9.0000	.6003	1.548	.7296	.9711	.6744-01	.3178-01	3.057	20.64	598.8
314	.00000	.26900-01	10.000	.5804	1.445	.7057	.9703	.6293-01	.3074-01	3.025	20.45	596.0
313	.00000	.32800-01	12.000	.5426	1.125	.6498	.9681	.4880-01	.2818-01	3.252	22.21	577.5
313	.00000	.36700-01	13.000	.4907	.9612	.5861	.9668	.4168-01	.2542-01	3.111	21.34	569.5
313	.00000	.40600-01	14.000	.5053	1.019	.6121	.9654	.4419-01	.2654-01	3.110	21.28	573.7
313	.00000	.48500-01	15.000	.4391	.8477	.5353	.9627	.3676-01	.2321-01	2.827	19.42	567.2
313	.00000	.56400-01	16.000	.4194	.8060	.5183	.9602	.3495-01	.2248-01	2.713	18.64	566.5
313	.00000	.76100-01	17.000	.3369	.6175	.4248	.9544	.2678-01	.1842-01	2.301	15.88	558.2
313	.00000	.95800-01	18.000	.7370-01	.1245	.9284-01	.9495	.5399-02	.4026-02	.5606	3.907	540.3
313	.00000	.11550	19.000	.2295	.4127	.3032	.9452	.1790-01	.1315-01	1.605	11.10	554.4
313	.00000	.16480	20.000	.1419	.2545	.1957	.9379	.1104-01	.8486-02	.9949	6.882	554.0
313	.00000	.21400	22.000	.9096-01	.1500	.1224	.9347	.6504-02	.5308-02	.7178	5.021	533.7
315	2.0000	.24700-01	165.00	.5600	1.226	.6657	.9708	.5370-01	.2916-01	3.231	21.99	583.9
314	9.0000	.15000-01	157.00	.6208	1.718	.7682	.9700	.7485-01	.3347-01	3.031	20.41	603.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
314	9.0000	.17600-01	158.00	.6347	1.746	.7847	.9700	.7607-01	.3419-01	3.109	20.94	603.2
315	9.8000	.24700-01	164.00	.5982	1.404	.7256	.9694	.6152-01	.3178-01	3.266	22.14	591.0
314	10.000	.22900-01	88.000	.6006	1.587	.7394	.9698	.6912-01	.3221-01	3.013	20.32	600.5
314	10.000	.26900-01	90.000	.5646	1.383	.6937	.9686	.6024-01	.3022-01	2.975	20.13	594.7
314	10.000	.34700-01	94.000	.5140	1.195	.6387	.9657	.5207-01	.2782-01	2.812	19.07	590.1
315	14.600	.44200-01	169.00	.4539	.9086	.5612	.9618	.3980-01	.2458-01	2.843	19.46	572.7
314	18.500	.44200-01	106.00	.4572	1.018	.5816	.9612	.4435-01	.2534-01	2.588	17.59	585.8
315	19.600	.62900-01	175.00	.3480	.6604	.4413	.9553	.2893-01	.1933-01	2.306	15.86	564.4
314	19.800	.40800-01	101.00	.4783	1.085	.6070	.9621	.4728-01	.2644-01	2.666	18.11	587.7
314	20.000	.24900-01	89.000	.5564	1.380	.6896	.9676	.6011-01	.3004-01	2.908	19.66	595.7
314	20.000	.28800-01	91.000	.5304	1.287	.6619	.9662	.5607-01	.2884-01	2.813	19.04	593.9
314	20.000	.32800-01	93.000	.5284	1.276	.6657	.9648	.5559-01	.2900-01	2.812	19.03	593.5
314	22.200	.62900-01	125.00	.3438	.7313	.4516	.9549	.3186-01	.1968-01	2.023	13.79	580.6
314	22.400	.44200-01	107.00	.4412	.9832	.5637	.9606	.4284-01	.2456-01	2.496	16.96	585.8
315	22.600	.10270	192.00	.2209	.4019	.2931	.9453	.1761-01	.1284-01	1.537	10.62	556.8
314	23.000	.42000-01	105.00	.4608	1.030	.5865	.9612	.4486-01	.2555-01	2.600	17.67	586.1
314	23.400	.59600-01	120.00	.3749	.7944	.4893	.9557	.3461-01	.2132-01	2.214	15.09	580.1
315	23.900	.21310	250.00	.7457-01	.1247	.1012	.9345	.5461-02	.4432-02	.5816	4.059	537.6
314	24.100	.82200-01	139.00	.2900	.5827	.3881	.9497	.2538-01	.1691-01	1.800	12.32	573.2
315	24.400	.19040	238.00	.8921-01	.1522	.1220	.9350	.6667-02	.5344-02	.6756	4.702	542.8
315	24.400	.12440	207.00	.1766	.3253	.2413	.9413	.1425-01	.1057-01	1.211	8.349	559.1
315	24.800	.16810	223.00	.1116	.1992	.1550	.9363	.8725-02	.6790-02	.7953	5.504	552.9
314	24.900	.62900-01	126.00	.3561	.7529	.4681	.9546	.3280-01	.2039-01	2.107	14.37	579.9
315	25.000	.79500-01	178.00	.2952	.5462	.3828	.9502	.2392-01	.1677-01	2.014	13.69	559.9
315	25.300	.10270	191.00	.2318	.4204	.3076	.9451	.1841-01	.1347-01	1.619	11.13	556.2
315	25.300	.10000+00	186.00	.2420	.4421	.3211	.9456	.1937-01	.1406-01	1.676	11.57	557.6
314	25.500	.60700-01	124.00	.3602	.7596	.4714	.9551	.3309-01	.2094-01	2.136	14.57	579.6
315	26.000	.12440	206.00	.1741	.3204	.2380	.9412	.1403-01	.1043-01	1.195	8.245	558.9
314	26.300	.82200-01	140.00	.3128	.6167	.4167	.9494	.2687-01	.1815-01	1.979	13.56	570.5
315	26.700	.12100	199.00	.1715	.3108	.2322	.9417	.1361-01	.1017-01	1.199	8.281	556.1
315	26.800	.16810	222.00	.1064	.1890	.1476	.9362	.8279-02	.6463-02	.7635	5.287	551.9
315	27.000	.19040	237.00	.8779-01	.1495	.1200	.9350	.6549-02	.5256-02	.6665	4.640	542.3
315	27.100	.21310	249.00	.6916-01	.1158	.9396-01	.9345	.5074-02	.4115-02	.5379	3.753	538.1
315	27.200	.80300-01	180.00	.2869	.5242	.3714	.9498	.2296-01	.1627-01	1.987	13.72	557.5
314	27.400	.40100-01	98.000	.4933	1.141	.6326	.9612	.4969-01	.2756-01	2.710	18.39	589.6
315	27.400	.16480	215.00	.1080	.1940	.1504	.9364	.8497-02	.6587-02	.7640	5.284	554.2
314	27.600	.41600-01	102.00	.4522	1.042	.5816	.9607	.4538-01	.2534-01	2.492	16.91	589.2
315	27.600	.12440	205.00	.1701	.3139	.2330	.9411	.1375-01	.1021-01	1.163	8.022	559.5
315	27.600	.18700	230.00	.7682-01	.1307	.1049	.9351	.5724-02	.4593-02	.5844	4.068	542.0
315	27.700	.21010	243.00	.7315-01	.1230	.9958-01	.9345	.5389-02	.4362-02	.5656	3.944	539.1
315	27.900	.10110	188.00	.2219	.4049	.2951	.9451	.1774-01	.1293-01	1.539	10.63	557.3
314	28.000	.46800-01	110.00	.4048	.8865	.5210	.9590	.3862-01	.2270-01	2.323	15.81	584.0
315	28.200	.16810	221.00	.1110	.1985	.1545	.9362	.8696-02	.6768-02	.7899	5.465	553.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
315	28.300	.19040	236.00	.8797-01	.1492	.1200	.9350	.6535-02	.5256-02	.6720	4.681	541.3
315	28.300	.12200	201.00	.1787	.3246	.2426	.9414	.1422-01	.1063-01	1.246	8.607	556.5
314	28.400	.53500-01	114.00	.3933	.8527	.5124	.9569	.3715-01	.2232-01	2.276	15.49	582.8
315	28.400	.21310	248.00	.6787-01	.1134	.9207-01	.9345	.4965-02	.4033-02	.5302	3.701	537.3
314	28.700	.58600-01	117.00	.3791	.8066	.4968	.9553	.3514-01	.2164-01	2.231	15.21	580.6
315	28.800	.16580	217.00	.1041	.1859	.1446	.9363	.8141-02	.6335-02	.7420	5.135	553.0
314	28.800	.60400-01	121.00	.3595	.7579	.4715	.9548	.3302-01	.2054-01	2.132	14.55	579.5
315	29.000	.21110	244.00	.7067-01	.1182	.9591-01	.9345	.5176-02	.4201-02	.5512	3.847	537.6
314	29.000	.65700-01	129.00	.3321	.6897	.4382	.9533	.3005-01	.1909-01	1.997	13.64	577.6
314	29.200	.72400-01	133.00	.2960	.6066	.3938	.9515	.2643-01	.1716-01	1.803	12.32	575.9
314	29.300	.79500-01	136.00	.2685	.5337	.3579	.9497	.2325-01	.1559-01	1.684	11.54	571.7
314	29.600	.92500-01	143.00	.2713	.5465	.3708	.9467	.2381-01	.1615-01	1.680	11.50	573.5
314	29.700	.10000+00	146.00	.2139	.4210	.2929	.9452	.1834-01	.1276-01	1.356	9.294	570.2
315	29.900	.12100	198.00	.1714	.3118	.2328	.9414	.1366-01	.1020-01	1.193	8.241	556.7
315	30.200	.16480	214.00	.9920-01	.1771	.1378	.9363	.7756-02	.6035-02	.7071	4.893	552.9
315	30.300	.21010	242.00	.7097-01	.1191	.9650-01	.9345	.5216-02	.4227-02	.5507	3.842	538.5
314	31.500	.11100-01	83.000	.6993	2.200	.9075	.9664	.9584-01	.3953-01	3.197	21.44	610.7
315	32.100	.21010	241.00	.6832-01	.1141	.9268-01	.9345	.4999-02	.4060-02	.5336	3.724	537.4
315	32.200	.16480	213.00	.1003	.1794	.1395	.9363	.7859-02	.6110-02	.7124	4.928	553.5
315	32.200	.17860	224.00	.9395-01	.1625	.1292	.9354	.7118-02	.5657-02	.6981	4.850	546.0
315	32.200	.18700	228.00	.7851-01	.1316	.1064	.9350	.5763-02	.4660-02	.6103	4.258	538.2
315	32.300	.12100	197.00	.1729	.3129	.2345	.9412	.1371-01	.1027-01	1.211	8.365	555.8
315	32.300	.12300	194.00	.1593	.2894	.2169	.9409	.1268-01	.9500-02	1.110	7.666	556.6
315	32.300	.12730	208.00	.1446	.2689	.1997	.9403	.1178-01	.8748-02	.9809	6.759	560.8
315	32.300	.13420	209.00	.1351	.2553	.1891	.9394	.1118-01	.8284-02	.8999	6.192	563.6
314	32.400	.10000+00	147.00	.2144	.4245	.2948	.9449	.1850-01	.1284-01	1.350	9.251	571.1
315	32.400	.10110	184.00	.2243	.4082	.2987	.9447	.1788-01	.1308-01	1.561	10.78	556.8
315	32.400	.10630	193.00	.2050	.3694	.2735	.9437	.1618-01	.1198-01	1.444	9.984	554.8
315	32.500	.85800-01	183.00	.2627	.4886	.3461	.9479	.2140-01	.1516-01	1.781	12.27	560.9
314	32.600	.79500-01	137.00	.2996	.5986	.4010	.9494	.2608-01	.1747-01	1.870	12.80	572.4
315	32.600	.80800-01	176.00	.2746	.5071	.3583	.9491	.2221-01	.1569-01	1.877	12.94	559.6
314	32.700	.67400-01	132.00	.3242	.6697	.4298	.9524	.2918-01	.1872-01	1.960	13.39	576.9
314	32.700	.72400-01	134.00	.3229	.6637	.4311	.9511	.2891-01	.1878-01	1.960	13.39	576.3
314	32.800	.65700-01	130.00	.3362	.6965	.4447	.9528	.3034-01	.1937-01	2.027	13.84	577.3
315	32.800	.16680	210.00	.1006	.1800	.1401	.9361	.7885-02	.6136-02	.7141	4.940	553.5
315	32.800	.18880	225.00	.8055-01	.1364	.1098	.9349	.5972-02	.4809-02	.6169	4.298	540.8
314	32.900	.58600-01	118.00	.3486	.7565	.4609	.9548	.3296-01	.2008-01	2.015	13.72	583.0
314	32.900	.60400-01	122.00	.3511	.7372	.4616	.9543	.3212-01	.2011-01	2.091	14.26	579.0
315	32.900	.61300-01	171.00	.3570	.6838	.4575	.9540	.2995-01	.2004-01	2.342	16.09	565.9
314	33.000	.53500-01	115.00	.3906	.8357	.5092	.9563	.3641-01	.2218-01	2.287	15.58	581.3
314	33.200	.48300-01	113.00	.4016	.8658	.5190	.9578	.3772-01	.2261-01	2.336	15.91	582.2
315	33.400	.42800-01	166.00	.4531	.9009	.5672	.9595	.3946-01	.2485-01	2.857	19.57	571.7
314	33.500	.40100-01	99.000	.4661	1.033	.5956	.9604	.4501-01	.2595-01	2.648	18.00	585.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
314	33.600	.38300-01	97.000	.4718	1.078	.6046	.9610	.4698-01	.2634-01	2.616	17.76	588.4
314	33.700	.36700-01	96.000	.4731	1.111	.6075	.9615	.4842-01	.2647-01	2.569	17.41	591.1
314	33.900	.33800-01	95.000	.4988	1.192	.6382	.9624	.5192-01	.2780-01	2.675	18.12	592.6
315	34.700	.21010	240.00	.6693-01	.1115	.9067-01	.9345	.4884-02	.3971-02	.5249	3.666	536.6
315	34.700	.18700	227.00	.8093-01	.1360	.1098	.9350	.5955-02	.4811-02	.6267	4.371	538.9
315	34.900	.16480	212.00	.1014	.1821	.1414	.9362	.7977-02	.6194-02	.7172	4.960	554.2
314	35.100	.10000+00	148.00	.2373	.4713	.3272	.9447	.2053-01	.1426-01	1.491	10.21	571.5
315	35.200	.23900-01	161.00	.5886	1.441	.7381	.9658	.6313-01	.3233-01	3.119	21.10	594.7
314	35.300	.92500-01	145.00	.2442	.4898	.3345	.9462	.2134-01	.1457-01	1.518	10.39	572.9
314	35.300	.22100-01	160.00	.5413	1.513	.6934	.9659	.6593-01	.3021-01	2.628	17.69	604.3
315	35.400	.18800	231.00	.8364-01	.1416	.1140	.9349	.6200-02	.4993-02	.6409	4.465	540.7
315	35.500	.12100	196.00	.1711	.3136	.2338	.9410	.1374-01	.1024-01	1.180	8.146	558.2
315	35.600	.16580	216.00	.1071	.1919	.1493	.9361	.8406-02	.6539-02	.7593	5.252	553.8
314	35.800	.80600-01	138.00	.2582	.5091	.3454	.9488	.2218-01	.1505-01	1.634	11.20	570.5
315	35.900	.21310	247.00	.6918-01	.1147	.9350-01	.9345	.5026-02	.4095-02	.5462	3.817	535.4
315	36.000	.19040	235.00	.8638-01	.1464	.1179	.9348	.6411-02	.5162-02	.6606	4.602	541.1
315	36.200	.16810	220.00	.9931-01	.1769	.1381	.9359	.7746-02	.6051-02	.7100	4.915	552.4
314	36.200	.72400-01	135.00	.2832	.5523	.3726	.9507	.2406-01	.1623-01	1.812	12.43	568.8
315	36.300	.12200	200.00	.1658	.3042	.2269	.9408	.1332-01	.9939-02	1.143	7.883	558.4
314	36.600	.65700-01	131.00	.3391	.7119	.4517	.9524	.3101-01	.1968-01	2.019	13.78	579.0
315	36.700	.18700	226.00	.8258-01	.1390	.1122	.9349	.6088-02	.4915-02	.6377	4.446	539.4
315	36.900	.16480	211.00	.1014	.1823	.1415	.9361	.7984-02	.6199-02	.7162	4.952	554.4
315	36.900	.10110	187.00	.2277	.4195	.3055	.9443	.1838-01	.1338-01	1.561	10.76	559.2
314	37.000	.60400-01	123.00	.3551	.7536	.4699	.9538	.3283-01	.2047-01	2.094	14.28	580.3
315	37.000	.12440	204.00	.1604	.2932	.2197	.9404	.1284-01	.9624-02	1.110	7.664	557.6
314	37.100	.56600-01	119.00	.3715	.7948	.4910	.9543	.3462-01	.2139-01	2.175	14.82	581.3
315	37.200	.21310	246.00	.6424-01	.1064	.8673-01	.9345	.4658-02	.3799-02	.5084	3.554	535.0
315	37.600	.16810	219.00	.1013	.1801	.1408	.9358	.7888-02	.6167-02	.7250	5.019	552.2
314	37.800	.10270	150.00	.2171	.4287	.3002	.9439	.1868-01	.1308-01	1.372	9.402	570.7
315	37.900	.12100	195.00	.1636	.2938	.2218	.9408	.1287-01	.9713-02	1.157	8.003	554.2
315	38.000	.80300-01	179.00	.2792	.5156	.3652	.9486	.2258-01	.1600-01	1.908	13.16	559.6
314	38.500	.46800-01	112.00	.4128	.9011	.5358	.9576	.3926-01	.2334-01	2.375	16.16	583.6
315	38.600	.12440	203.00	.1623	.2969	.2226	.9403	.1301-01	.9748-02	1.122	7.747	557.8
315	38.700	.10000+00	185.00	.2161	.3952	.2830	.9444	.1731-01	.1266-01	1.495	10.32	557.7
314	38.900	.82200-01	141.00	.2562	.5119	.3459	.9481	.2230-01	.1507-01	1.599	10.95	572.4
314	39.300	.41600-01	104.00	.4523	1.043	.5883	.9592	.4545-01	.2563-01	2.489	16.89	589.3
315	39.500	.10270	190.00	.2193	.4016	.2945	.9438	.1759-01	.1290-01	1.515	10.46	558.0
315	39.600	.16810	218.00	.1037	.1841	.1441	.9358	.8065-02	.6313-02	.7439	5.151	551.9
315	39.900	.19040	233.00	.8338-01	.1401	.1133	.9348	.6135-02	.4962-02	.6458	4.504	538.8
315	40.100	.79500-01	177.00	.2803	.5169	.3665	.9486	.2264-01	.1605-01	1.919	13.24	559.3
315	40.200	.12440	202.00	.1605	.2946	.2205	.9402	.1290-01	.9660-02	1.105	7.625	558.5
315	40.300	.21310	245.00	.7007-01	.1154	.9434-01	.9345	.5054-02	.4132-02	.5593	3.913	533.4
314	41.100	.82200-01	142.00	.2860	.5754	.3875	.9479	.2507-01	.1688-01	1.772	12.13	573.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
315	41.100	.60700-01	173.00	.3580	.6913	.4620	.9533	.3028-01	.2024-01	2.327	15.98	567.2
315	42.600	.59600-01	172.00	.3713	.7260	.4806	.9534	.3180-01	.2105-01	2.382	16.34	569.2
315	43.200	.42000-01	168.00	.4283	.8614	.5408	.9586	.3773-01	.2369-01	2.670	18.27	573.3
315	43.400	.82200-01	181.00	.2864	.5328	.3778	.9477	.2334-01	.1655-01	1.941	13.38	560.9
314	43.600	.62900-01	128.00	.3288	.6806	.4360	.9524	.2965-01	.1899-01	1.984	13.55	577.2
314	45.000	.22900-01	8.0000	.7301	2.122	.9505	.9646	.9243-01	.4141-01	3.470	23.33	606.6
315	46.100	.62900-01	174.00	.3449	.6657	.4481	.9522	.2916-01	.1963-01	2.243	15.41	567.2
315	47.700	.40800-01	167.00	.4640	.9657	.5915	.9585	.4230-01	.2591-01	2.800	19.12	577.9
314	48.400	.44200-01	109.00	.4205	.9312	.5488	.9574	.4057-01	.2391-01	2.391	16.26	585.2
315	53.200	.24700-01	163.00	.5542	1.287	.7001	.9634	.5635-01	.3067-01	3.052	20.70	589.9
315	65.200	.24700-01	162.00	.5506	1.249	.6970	.9624	.5470-01	.3053-01	3.087	20.97	587.7
313	90.000	.91000-02	44.000	.6249	1.412	.7929	.9620	.6122-01	.3439-01	3.480	23.64	587.3
313	90.000	.11100-01	45.000	.7159	1.967	.9443	.9620	.8529-01	.4095-01	3.493	23.53	603.1
313	90.000	.13100-01	46.000	.6982	1.789	.9090	.9620	.7759-01	.3942-01	3.554	24.00	598.3
313	90.000	.17000-01	48.000	.5478	1.247	.6963	.9620	.5410-01	.3020-01	3.031	20.58	588.1
313	90.000	.20900-01	50.000	.5815	1.292	.7353	.9620	.5604-01	.3189-01	3.281	22.31	585.6
313	90.000	.26900-01	53.000	.5401	1.171	.6846	.9608	.5076-01	.2969-01	3.112	21.19	582.8
313	90.000	.28800-01	54.000	.5279	1.126	.6696	.9602	.4885-01	.2904-01	3.083	21.01	581.0
313	90.000	.32800-01	55.000	.3924	.7113	.4812	.9588	.3085-01	.2087-01	2.716	18.77	556.1
313	90.000	.36700-01	56.000	.4396	.8868	.5592	.9576	.3846-01	.2425-01	2.706	18.51	573.7
313	90.000	.40600-01	57.000	.4517	.9339	.5831	.9564	.4050-01	.2529-01	2.715	18.54	577.1
313	90.000	.48500-01	58.000	.4484	.9009	.5831	.9540	.3907-01	.2529-01	2.771	18.97	573.2
313	90.000	.56400-01	59.000	.3777	.7452	.4954	.9518	.3232-01	.2149-01	2.377	16.29	570.6
313	90.000	.76100-01	60.000	.2946	.5548	.3921	.9470	.2406-01	.1701-01	1.949	13.41	563.1
313	90.000	.95800-01	61.000	.2542	.4693	.3442	.9430	.2035-01	.1492-01	1.721	11.87	559.5
313	90.000	.11550	62.000	.1825	.3289	.2493	.9398	.1427-01	.1081-01	1.272	8.796	554.9
313	135.00	.19900-01	49.000	.6226	1.435	.7787	.9646	.6223-01	.3377-01	3.414	23.16	589.3
313	135.00	.22900-01	51.000	.5949	1.379	.7448	.9646	.5982-01	.3230-01	3.246	22.02	589.8
313	180.00	.91000-02	23.000	.4518	.9305	.5294	.9715	.4035-01	.2296-01	2.726	18.62	576.5
313	180.00	.11100-01	24.000	.7905	2.411	.9775	.9715	.1045	.4239-01	3.650	24.51	609.2
313	180.00	.13100-01	25.000	.7767	2.030	.9423	.9715	.8802-01	.4086-01	3.905	26.34	599.7
313	180.00	.15000-01	26.000	.7282	1.822	.8783	.9715	.7900-01	.3809-01	3.765	25.45	596.4
313	180.00	.17000-01	27.000	.6968	1.707	.8380	.9715	.7403-01	.3634-01	3.654	24.72	594.7
313	180.00	.19000-01	28.000	.6955	1.708	.8367	.9715	.7405-01	.3629-01	3.642	24.64	594.9
313	180.00	.20900-01	29.000	.6685	1.581	.7999	.9715	.6855-01	.3469-01	3.595	24.36	591.7
313	180.00	.28800-01	32.000	.5807	1.267	.6952	.9696	.5494-01	.3015-01	3.327	22.65	583.5
313	180.00	.32800-01	33.000	.5625	1.150	.6719	.9681	.4987-01	.2914-01	3.417	23.35	575.6
313	180.00	.36700-01	34.000	.5438	1.159	.6605	.9667	.5028-01	.2864-01	3.179	21.67	580.9
313	180.00	.48500-01	36.000	.4637	.9310	.5705	.9627	.4037-01	.2474-01	2.867	19.63	573.1
313	180.00	.56400-01	37.000	.4303	.8447	.5348	.9602	.3663-01	.2319-01	2.723	18.67	569.8
313	180.00	.76100-01	38.000	.3492	.6611	.4449	.9544	.2867-01	.1929-01	2.298	15.81	564.0
313	180.00	.95800-01	39.000	.2863	.5245	.3716	.9494	.2274-01	.1612-01	1.957	13.50	558.1
313	180.00	.11550	40.000	.2276	.4133	.3019	.9452	.1792-01	.1309-01	1.573	10.86	556.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
313	180.00	.18450	42.000	.1211	.2046	.1638	.9361	.8873-02	.7102-02	.9206	6.415	540.4
313	225.00	.22900-01	30.000	.6602	1.553	.7497	.9792	.6734-01	.3251-01	3.564	24.16	591.2
313	270.00	.91000-02	63.000	.6426	2.731	.7408	.9827	.1184	.3213-01	2.608	17.39	622.1
313	270.00	.11100-01	64.000	.7873	3.127	.9046	.9827	.1356	.3923-01	3.266	21.80	620.0
313	270.00	.13100-01	65.000	.8005	2.660	.9109	.9827	.1154	.3950-01	3.554	23.81	613.3
313	270.00	.17000-01	67.000	.8428	2.530	.9530	.9827	.1097	.4133-01	3.923	26.35	608.3
313	270.00	.20900-01	69.000	.7402	1.986	.8305	.9827	.8611-01	.3601-01	3.663	24.69	601.6
313	270.00	.24900-01	71.000	.7223	1.799	.8087	.9821	.7802-01	.3507-01	3.746	25.32	596.1
313	270.00	.28800-01	73.000	.6184	1.415	.6942	.9806	.6138-01	.3011-01	3.409	23.14	588.6
313	270.00	.36700-01	75.000	.5887	1.316	.6721	.9776	.5707-01	.2915-01	3.306	22.47	586.2
313	270.00	.48500-01	77.000	.5338	1.125	.6214	.9732	.4877-01	.2695-01	3.154	21.51	579.4
313	270.00	.56400-01	78.000	.4985	1.040	.5893	.9704	.4508-01	.2556-0,	2.972	20.29	578.2
313	270.00	.95800-01	80.000	.3473	.6592	.4336	.9579	.2859-01	.1881-01	2.278	15.67	564.4
313	270.00	.11550	81.000	.2841	.5301	.3641	.9527	.2299-01	.1579-01	1.900	13.09	561.4
313	315.00	.19000-01	68.000	.6403	1.460	.7247	.9793	.6332-01	.3143-01	3.539	24.03	588.2
313	315.00	.22900-01	70.000	.6333	1.549	.7219	.9793	.6719-01	.3131-01	3.325	22.49	594.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
276	4.020	.4224-02	6.028	62.90	718.7	.4034	169.8	-89.96	2568.	.6412-02	.1366-06	3.745
277	4.020	.2112-02	6.028	63.07	718.7	.4045	169.8	-89.98	2568.	.6428-02	.1366-06	3.755
278	4.020	.2112-02	6.028	63.01	718.7	.4041	169.8	-89.98	2568.	.6422-02	.1366-06	3.751

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
276	.3790-01	.9561-02
277	.3795-01	.9548-02
278	.3793-01	.9553-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
277	.00000	.91000-02	1.0000	.4615	.8687	.5595	.9626	.3297-01	.2123-01	2.685	18.45	565.4
277	.00000	.15000-01	4.0000	.7090	1.502	.8834	.9626	.5701-01	.3353-01	3.662	24.94	582.6
277	.00000	.17000-01	5.0000	.6788	1.360	.8351	.9626	.5160-01	.3169-01	3.696	25.27	575.2
277	.00000	.19000-01	6.0000	.6424	1.271	.7882	.9626	.4825-01	.2991-01	3.541	24.24	573.4
277	.00000	.24900-01	9.0000	.5850	1.110	.7128	.9621	.4214-01	.2705-01	3.373	23.16	566.8
277	.00000	.26900-01	10.000	.5659	1.060	.6901	.9614	.4021-01	.2619-01	3.313	22.78	564.4
276	.00000	.32800-01	12.000	.5031	.8912	.6118	.9592	.3378-01	.2319-01	3.148	21.78	553.6
276	.00000	.36700-01	13.000	.4441	.7592	.5384	.9578	.2878-01	.2041-01	2.914	20.25	545.5
276	.00000	.40600-01	14.000	.4553	.7910	.5586	.9564	.2998-01	.2117-01	2.922	20.26	549.3
276	.00000	.48500-01	15.000	.4042	.6840	.4986	.9537	.2593-01	.1890-01	2.692	18.73	543.0
276	.00000	.56400-01	16.000	.3814	.6429	.4760	.9511	.2437-01	.1804-01	2.555	17.79	542.0
276	.00000	.76100-01	17.000	.2989	.4868	.3792	.9451	.1845-01	.1437-01	2.109	14.76	532.5
276	.00000	.95800-01	18.000	.4751-01	.7693-01	.6172-01	.9398	.2916-02	.2339-02	.3384	2.371	530.7
276	.00000	.11550	19.000	.1934	.3110	.2562	.9352	.1179-01	.9710-02	1.393	9.774	528.6
276	.00000	.16480	20.000	.1057	.1723	.1476	.9266	.6532-02	.5592-02	.7437	5.204	532.9
276	.00000	.21400	22.000	.5490-01	.8472-01	.7553-01	.9224	.3211-02	.2863-02	.4249	3.004	514.5
278	2.0000	.24700-01	165.00	.5387	.9822	.6508	.9618	.3726-01	.2469-01	3.252	22.42	559.5
277	9.0000	.15000-01	157.00	.7021	1.414	.8735	.9610	.5365-01	.3315-01	3.805	26.00	575.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
277	9.0000	.17600-01	158.00	.6319	1.258	.7839	.9610	.4774-01	.2975-01	3.462	23.68	574.3
278	9.8000	.24700-01	164.00	.5683	1.073	.6981	.9605	.4071-01	.2648-01	3.293	22.63	565.9
277	10.000	.22900-01	88.000	.5850	1.125	.7203	.9609	.4268-01	.2733-01	3.325	22.81	568.9
277	10.000	.26900-01	90.000	.5582	1.033	.6855	.9596	.3920-01	.2601-01	3.312	22.81	562.3
277	10.000	.34700-01	94.000	.4819	.8463	.5920	.9568	.3212-01	.2247-01	3.052	21.13	551.8
278	14.600	.44200-01	169.00	.4093	.7019	.5097	.9527	.2663-01	.1933-01	2.676	18.59	546.3
277	18.500	.44200-01	106.00	.4201	.7297	.5272	.9521	.2769-01	.2001-01	2.700	18.72	549.3
278	19.600	.62900-01	175.00	.3113	.5196	.3973	.9460	.1971-01	.1507-01	2.117	14.76	539.4
277	19.800	.40800-01	101.00	.4496	.7894	.5634	.9531	.2996-01	.2138-01	2.849	19.73	551.7
277	20.000	.24900-01	89.000	.5410	1.008	.6690	.9587	.3824-01	.2539-01	3.187	21.93	563.5
277	20.000	.28800-01	91.000	.5201	.9558	.6460	.9573	.3627-01	.2452-01	3.112	21.44	561.0
277	20.000	.32800-01	93.000	.5030	.9207	.6290	.9558	.3494-01	.2387-01	3.023	20.84	560.3
277	22.200	.62900-01	125.00	.3134	.5316	.4033	.9457	.2017-01	.1531-01	2.083	14.49	543.6
277	22.400	.44200-01	107.00	.4079	.7061	.5129	.9515	.2680-01	.1946-01	2.634	18.27	548.5
278	22.600	.10270	192.00	.1861	.3076	.2500	.9353	.1167-01	.9485-02	1.284	8.968	536.7
277	23.000	.42000-01	105.00	.4308	.7514	.5413	.9522	.2851-01	.2054-01	2.755	19.09	550.2
277	23.400	.59600-01	120.00	.3235	.5477	.4142	.9465	.2079-01	.1572-01	2.155	14.99	543.1
278	23.900	.21310	250.00	.4250-01	.6543-01	.5847-01	.9221	.2482-02	.2218-02	.3306	2.339	513.6
277	24.100	.82200-01	139.00	.2452	.4071	.3220	.9400	.1545-01	.1222-01	1.682	11.74	537.9
278	24.400	.19040	238.00	.6314-01	.9925-01	.8777-01	.9229	.3765-02	.3329-02	.4732	3.333	521.1
278	24.400	.12440	207.00	.1419	.2376	.1968	.9307	.9014-02	.7467-02	.9607	6.695	540.2
278	24.800	.16810	223.00	.8165-01	.1331	.1153	.9246	.5050-02	.4372-02	.5757	4.028	532.8
277	24.900	.62900-01	126.00	.3063	.5190	.3949	.9453	.1970-01	.1499-01	2.039	14.19	543.3
278	25.000	.79500-01	178.00	.2544	.4205	.3323	.9406	.1595-01	.1261-01	1.756	12.26	536.7
278	25.300	.10270	191.00	.1968	.3252	.2648	.9350	.1233-01	.1004-01	1.360	9.495	536.6
278	25.300	.10000+00	186.00	.1903	.3152	.2555	.9356	.1196-01	.9693-02	1.309	9.139	537.3
277	25.500	.60700-01	124.00	.3239	.5476	.4159	.9459	.2078-01	.1578-01	2.163	15.05	542.7
278	26.000	.12440	206.00	.1385	.2320	.1923	.9306	.8800-02	.7294-02	.9367	6.527	540.4
277	26.300	.82200-01	140.00	.1864	.3068	.2441	.9398	.1164-01	.9264-02	1.295	9.052	535.5
278	26.700	.12100	199.00	.1380	.2289	.1900	.9311	.8683-02	.7206-02	.9478	6.615	537.7
278	26.800	.16810	222.00	.7860-01	.1277	.1107	.9245	.4843-02	.4201-02	.5574	3.903	531.7
278	27.000	.19040	237.00	.6311-01	.9897-01	.8763-01	.9228	.3754-02	.3324-02	.4749	3.347	520.3
278	27.100	.21310	249.00	.4578-01	.7027-01	.6286-01	.9220	.2665-02	.2384-02	.3582	2.535	512.4
278	27.200	.80300-01	180.00	.2460	.4044	.3214	.9402	.1534-01	.1219-01	1.713	11.97	535.1
277	27.400	.40100-01	98.000	.4282	.7601	.5412	.9522	.2885-01	.2054-01	2.674	18.49	554.1
278	27.400	.16480	215.00	.7866-01	.1289	.1113	.9248	.4891-02	.4222-02	.5500	3.845	534.4
277	27.600	.41600-01	102.00	.4379	.7719	.5538	.9516	.2930-01	.2102-01	2.760	19.11	552.6
278	27.600	.12440	205.00	.1346	.2252	.1869	.9304	.8544-02	.7090-02	.9114	6.352	540.1
278	27.600	.18700	230.00	.6931-01	.1087	.9616-01	.9230	.4124-02	.3648-02	.5213	3.673	520.4
278	27.700	.21010	243.00	.4933-01	.7611-01	.6797-01	.9221	.2887-02	.2578-02	.3823	2.703	514.4
278	27.900	.10110	188.00	.1879	.3115	.2531	.9351	.1182-01	.9601-02	1.290	9.007	537.6
277	28.000	.46800-01	110.00	.3770	.6479	.4770	.9499	.2459-01	.1810-01	2.460	17.08	546.8
278	28.200	.16810	221.00	.8247-01	.1343	.1164	.9244	.5094-02	.4417-02	.5825	4.077	532.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
278	28.300	.19040	236.00	.6295-01	.9834-01	.8719-01	.9227	.3730-02	.3307-02	.4768	3.362	519.0
278	28.300	.12200	201.00	.1458	.2417	.2010	.9308	.9168-02	.7623-02	1.002	6.992	537.5
277	28.400	.53500-01	114.00	.3603	.6183	.4610	.9477	.2346-01	.1749-01	2.356	16.36	546.4
278	28.400	.21310	248.00	.4584-01	.7024-01	.6287-01	.9220	.2664-02	.2385-02	.3597	2.547	511.8
277	28.700	.58600-01	117.00	.3399	.5781	.4370	.9461	.2194-01	.1658-01	2.250	15.64	544.3
278	28.800	.16580	217.00	.7713-01	.1258	.1089	.9246	.4771-02	.4130-02	.5437	3.805	532.8
277	28.800	.60400-01	121.00	.3248	.5497	.4180	.9455	.2086-01	.1586-01	2.165	15.06	543.0
278	29.000	.21110	244.00	.4586-01	.7036-01	.6295-01	.9220	.2669-02	.2388-02	.3590	2.542	512.3
277	29.000	.65700-01	129.00	.3015	.5080	.3905	.9439	.1928-01	.1482-01	2.023	14.08	541.9
277	29.200	.72400-01	133.00	.2796	.4693	.3652	.9420	.1781-01	.1386-01	1.886	13.14	540.9
277	29.300	.79500-01	136.00	.2385	.3952	.3128	.9401	.1500-01	.1187-01	1.641	11.45	537.4
277	29.600	.92500-01	143.00	.1915	.3205	.2568	.9368	.1216-01	.9744-02	1.297	9.041	540.1
277	29.700	.10000+00	146.00	.1973	.3271	.2657	.9351	.1241-01	.1009-01	1.356	9.467	537.5
278	29.900	.12100	198.00	.1384	.2302	.1911	.9308	.8734-02	.7251-02	.9464	6.602	538.4
278	30.200	.16480	214.00	.7239-01	.1181	.1022	.9246	.4480-02	.3877-02	.5099	3.567	533.0
278	30.300	.21010	242.00	.4704-01	.7232-01	.6466-01	.9220	.2743-02	.2453-02	.3668	2.595	513.1
277	31.500	.11100-01	83.000	.6305	1.299	.8075	.9574	.4931-01	.3064-01	3.341	22.79	579.1
278	32.100	.21010	241.00	.4748-01	.7274-01	.6511-01	.9220	.2759-02	.2470-02	.3727	2.639	511.7
278	32.200	.16480	213.00	.7320-01	.1195	.1035	.9245	.4534-02	.3925-02	.5149	3.602	533.2
278	32.200	.17860	224.00	.7824-01	.1243	.1093	.9234	.4715-02	.4145-02	.5757	4.047	524.7
278	32.200	.18700	228.00	.5979-01	.9256-01	.8227-01	.9228	.3511-02	.3121-02	.4603	3.252	515.7
278	32.300	.12100	197.00	.1390	.2308	.1919	.9306	.8755-02	.7281-02	.9519	6.642	538.1
278	32.300	.12300	194.00	.1264	.2099	.1750	.9303	.7964-02	.6636-02	.8663	6.045	538.0
278	32.300	.12730	208.00	.1255	.2119	.1761	.9295	.8037-02	.6680-02	.8396	5.845	542.3
278	32.300	.13420	209.00	.1095	.1871	.1557	.9284	.7097-02	.5908-02	.7200	5.003	545.3
277	32.400	.10000+00	147.00	.1798	.2996	.2431	.9348	.1137-01	.9227-02	1.226	8.548	539.0
278	32.400	.10110	184.00	.1761	.2912	.2375	.9346	.1105-01	.9009-02	1.214	8.478	536.9
278	32.400	.10630	193.00	.1608	.2661	.2182	.9335	.1009-01	.8278-02	1.108	7.732	537.1
278	32.500	.85800-01	183.00	.2181	.3640	.2900	.9381	.1381-01	.1100-01	1.483	10.34	539.4
277	32.600	.79500-01	137.00	.2226	.3703	.2931	.9397	.1405-01	.1112-01	1.523	10.62	538.4
278	32.600	.80800-01	176.00	.2317	.3839	.3050	.9394	.1456-01	.1157-01	1.593	11.12	537.4
277	32.700	.67400-01	132.00	.2899	.4886	.3774	.9430	.1854-01	.1432-01	1.944	13.53	542.0
277	32.700	.72400-01	134.00	.2739	.4609	.3590	.9416	.1749-01	.1362-01	1.842	12.82	541.5
277	32.800	.65700-01	130.00	.2909	.4911	.3781	.9435	.1864-01	.1435-01	1.947	13.55	542.4
278	32.800	.16680	210.00	.7566-01	.1235	.1070	.9243	.4683-02	.4060-02	.5328	3.728	533.0
278	32.800	.18880	225.00	.5601-01	.8709-01	.7734-01	.9227	.3303-02	.2934-02	.4279	3.020	517.3
277	32.900	.58600-01	118.00	.3538	.6096	.4587	.9455	.2313-01	.1741-01	2.300	15.97	547.4
277	32.900	.60400-01	122.00	.3120	.5297	.4032	.9450	.2010-01	.1530-01	2.071	14.41	543.8
278	32.900	.61300-01	171.00	.3111	.5228	.4009	.9447	.1983-01	.1521-01	2.094	14.59	541.2
277	33.000	.53500-01	115.00	.3595	.6147	.4608	.9471	.2333-01	.1749-01	2.362	16.41	545.5
277	33.200	.48300-01	113.00	.3750	.6411	.4765	.9487	.2433-01	.1808-01	2.464	17.12	545.5
278	33.400	.42800+01	166.00	.4077	.7003	.5142	.9504	.2657-01	.1950-01	2.660	18.47	546.7
277	33.500	.40100-01	99.000	.4427	.7714	.5586	.9513	.2928-01	.2120-01	2.834	19.64	550.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
277	33.600	.38300-01	97.000	.4613	.8168	.5834	.9519	.3100-01	.2214-01	2.891	20.00	553.5
277	33.700	.36700-01	96.000	.4732	.8515	.6000	.9524	.3232-01	.2277-01	2.905	20.06	556.9
277	33.900	.33800-01	95.000	.4855	.8823	.6141	.9534	.3348-01	.2331-01	2.945	20.31	558.9
278	34.700	.21010	240.00	.5078-01	.7754-01	.6948-01	.9220	.2941-02	.2636-02	.4012	2.843	510.4
278	34.700	.18700	227.00	.6193-01	.9618-01	.8543-01	.9228	.3649-02	.3241-02	.4740	3.347	516.9
278	34.900	.16480	212.00	.7655-01	.1253	.1084	.9244	.4752-02	.4113-02	.5365	3.752	533.9
277	35.100	.10000+00	148.00	.1610	.2692	.2185	.9346	.1022-01	.8292-02	1.093	7.617	539.9
278	35.200	.23900-01	161.00	.5685	1.096	.7178	.9568	.4157-01	.2723-01	3.220	22.09	569.3
277	35.300	.92500-01	145.00	.2053	.3447	.2767	.9362	.1308-01	.1050-01	1.385	9.651	540.9
277	35.300	.22100-01	160.00	.5616	1.089	.7097	.9569	.4131-01	.2693-01	3.164	21.69	570.2
278	35.400	.18800	231.00	.6049-01	.9414-01	.8359-01	.9227	.3571-02	.3171-02	.4613	3.256	517.6
278	35.500	.12100	196.00	.1338	.2234	.1856	.9304	.8474-02	.7042-02	.9090	6.338	539.5
278	35.600	.16580	216.00	.7281-01	.1188	.1030	.9243	.4508-02	.3908-02	.5124	3.585	533.2
277	35.800	.80600-01	138.00	.2252	.3731	.2969	.9391	.1416-01	.1127-01	1.548	10.81	537.5
278	35.900	.21310	247.00	.4302-01	.6528-01	.5860-01	.9220	.2476-02	.2223-02	.3439	2.440	507.9
278	36.000	.19040	235.00	.6201-01	.9637-01	.8566-01	.9226	.3656-02	.3249-02	.4741	3.347	517.1
278	36.200	.16810	220.00	.7754-01	.1259	.1095	.9240	.4775-02	.4153-02	.5505	3.855	531.5
277	36.200	.72400-01	135.00	.2670	.4485	.3504	.9412	.1702-01	.1330-01	1.799	12.53	541.1
278	36.300	.12200	200.00	.1294	.2161	.1798	.9301	.8197-02	.6820-02	.8786	6.125	539.6
277	36.600	.65700-01	131.00	.2957	.5035	.3867	.9430	.1911-01	.1467-01	1.954	13.58	544.6
278	36.700	.18700	226.00	.6162-01	.9557-01	.8495-01	.9227	.3625-02	.3222-02	.4729	3.340	516.3
278	36.900	.16480	211.00	.7725-01	.1265	.1095	.9243	.4799-02	.4155-02	.5407	3.781	534.1
278	36.900	.10110	187.00	.1765	.2943	.2397	.9341	.1116-01	.9093-02	1.203	8.386	539.1
277	37.000	.60400-01	123.00	.3154	.5389	.4098	.9445	.2045-01	.1555-01	2.075	14.42	545.4
278	37.000	.12440	204.00	.1298	.2166	.1808	.9297	.8216-02	.6857-02	.8834	6.160	539.3
277	37.100	.58600-01	119.00	.3345	.5736	.4340	.9450	.2177-01	.1647-01	2.189	15.20	546.3
278	37.200	.21310	246.00	.4514-01	.6836-01	.6141-01	.9220	.2593-02	.2329-02	.3623	2.572	507.1
278	37.600	.16810	219.00	.7699-01	.1249	.1087	.9240	.4740-02	.4123-02	.5468	3.829	531.4
277	37.800	.10270	150.00	.1700	.2857	.2323	.9337	.1084-01	.8817-02	1.144	7.972	541.2
278	37.900	.12100	195.00	.1396	.2318	.1933	.9302	.8791-02	.7332-02	.9578	6.684	537.9
278	38.000	.80302-01	179.00	.2364	.3925	.3123	.9389	.1489-01	.1184-01	1.621	11.31	538.0
277	38.500	.46800-01	112.00	.3883	.6692	.4954	.9485	.2540-01	.1880-01	2.523	17.52	547.4
278	38.600	.12440	203.00	.1264	.2111	.1762	.9295	.8006-02	.6684-02	.8586	5.986	539.6
278	38.700	.10000+00	185.00	.1772	.2946	.2402	.9342	.1118-01	.9112-02	1.213	8.461	538.3
277	38.900	.82200-01	141.00	.2213	.3717	.2949	.9383	.1411-01	.1119-01	1.491	10.39	541.1
277	39.300	.41600-01	104.00	.4200	.7420	.5361	.9501	.2816-01	.2035-01	2.639	18.26	553.1
278	39.500	.10270	190.00	.1777	.2956	.2417	.9336	.1121-01	.9170-02	1.214	8.466	538.6
278	39.600	.16810	218.00	.7827-01	.1270	.1105	.9239	.4816-02	.4193-02	.5564	3.897	531.3
278	39.900	.19040	233.00	.6210-01	.9585-01	.8542-01	.9225	.3636-02	.3240-02	.4809	3.400	514.5
278	40.100	.79500-01	177.00	.2338	.3882	.3089	.9389	.1473-01	.1172-01	1.603	11.19	537.9
278	40.200	.12440	202.00	.1287	.2154	.1798	.9294	.8172-02	.6820-02	.8709	6.069	540.2
278	40.300	.21310	245.00	.4318-01	.6496-01	.5847-01	.9220	.2464-02	.2218-02	.3510	2.495	504.4
277	41.100	.82200-01	142.00	.1951	.3291	.2608	.9381	.1249-01	.9899-02	1.307	9.101	542.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
278	41.100	.60700-01	173.00	.3113	.5267	.4039	.9439	.1998-01	.1532-01	2.075	14.44	542.9
278	42.600	.59600-01	172.00	.3242	.5526	.4216	.9441	.2096-01	.1599-01	2.139	14.87	544.8
278	43.200	.42000-01	168.00	.3932	.6781	.4992	.9495	.2572-01	.1893-01	2.552	17.71	547.6
278	43.400	.82200-01	181.00	.2476	.4113	.3289	.9379	.1560-01	.1248-01	1.695	11.83	538.1
277	43.600	.62900-01	128.00	.3085	.5240	.4029	.9430	.1988-01	.1529-01	2.046	14.23	543.9
277	45.000	.22900-01	8.0000	.6968	1.471	.9088	.9557	.5581-01	.3449-01	3.612	24.60	582.1
278	46.100	.62900-01	174.00	.3007	.5095	.3928	.9428	.1933-01	.1490-01	2.000	13.92	543.3
278	47.700	.40800-01	167.00	.4347	.7626	.5556	.9494	.2893-01	.2107-01	2.755	19.08	551.6
277	48.400	.44200-01	109.00	.4024	.7013	.5164	.9482	.2662-01	.1960-01	2.575	17.85	550.1
278	53.200	.24700-01	163.00	.5610	1.040	.7102	.9544	.3946-01	.2694-01	3.319	22.85	562.7
278	65.200	.24700-01	162.00	.5442	1.006	.6922	.9534	.3814-01	.2626-01	3.234	22.27	562.0
276	90.000	.91000-02	44.000	.4212	.7093	.5206	.9530	.2688-01	.1973-01	2.825	19.67	541.7
276	90.000	.11100-01	45.000	.5748	1.037	.7273	.9530	.3932-01	.2756-01	3.511	24.24	557.5
276	90.000	.13100-01	46.000	.7437	1.605	.9945	.9530	.6082-01	.3769-01	3.775	25.68	584.7
276	90.000	.17000-01	48.000	.5963	1.154	.7717	.9530	.4375-01	.2925-01	3.360	23.04	570.0
276	90.000	.20900-01	50.000	.6050	1.127	.7735	.9530	.4273-01	.2932-01	3.556	24.46	563.6
276	90.000	.26900-01	53.000	.5351	.9721	.6831	.9518	.3684-01	.2589-01	3.243	22.37	558.8
276	90.000	.28800-01	54.000	.5188	.9305	.6619	.9511	.3527-01	.2509-01	3.194	22.06	556.3
276	90.000	.32800-01	55.000	.3874	.6297	.4802	.9498	.2387-01	.1820-01	2.741	19.19	531.9
276	90.000	.36700-01	56.000	.4490	.7742	.5731	.9485	.2934-01	.2172-01	2.911	20.21	547.6
276	90.000	.40600-01	57.000	.4219	.7384	.5454	.9472	.2798-01	.2067-01	2.682	18.58	551.0
276	90.000	.48500-01	58.000	.3452	.5972	.4502	.9447	.2263-01	.1706-01	2.228	15.46	548.4
276	90.000	.56400-01	59.000	.3372	.5765	.4432	.9424	.2185-01	.1680-01	2.212	15.37	545.6
276	90.000	.76100-01	60.000	.2551	.4286	.3422	.9371	.1624-01	.1297-01	1.716	11.95	541.2
276	90.000	.95800-01	61.000	.1861	.3110	.2551	.9327	.1179-01	.9668-02	1.263	8.805	539.6
276	90.000	.11550	62.000	.1396	.2324	.1948	.9290	.8807-02	.7384-02	.9528	6.646	538.6
276	135.00	.19000-01	49.000	.6264	1.183	.7913	.9557	.4482-01	.2999-01	3.627	24.93	565.9
276	135.00	.22900-01	51.000	.5873	1.107	.7416	.9557	.4196-01	.2811-01	3.407	23.42	565.6
276	180.00	.91000-02	23.000	.3400	.5764	.4015	.9626	.2185-01	.1522-01	2.258	15.70	543.5
276	180.00	.11100-01	24.000	.6784	1.563	.8604	.9626	.5925-01	.3261-01	3.264	22.12	591.7
276	180.00	.13100-01	25.000	.7233	1.544	.9026	.9626	.5851-01	.3421-01	3.707	25.23	583.4
276	180.00	.15000-01	26.000	.7171	1.481	.8883	.9626	.5612-01	.3367-01	3.787	25.84	579.3
276	180.00	.17000-01	27.000	.6960	1.408	.8582	.9626	.5338-01	.3253-01	3.748	25.61	576.6
276	180.00	.19000-01	28.000	.6835	1.365	.8403	.9626	.5175-01	.3185-01	3.728	25.49	574.8
276	180.00	.20900-01	29.000	.6467	1.238	.7873	.9626	.4694-01	.2984-01	3.687	25.31	568.2
276	180.00	.28800-01	32.000	.5831	1.059	.7083	.9607	.4015-01	.2685-01	3.532	24.37	558.8
276	180.00	.32800-01	33.000	.5349	.9301	.6470	.9592	.3525-01	.2452-01	3.429	23.78	549.5
276	180.00	.36700-01	34.000	.5144	.9109	.6302	.9578	.3452-01	.2388-01	3.220	22.27	553.6
276	180.00	.48500-01	36.000	.4124	.7070	.5109	.9537	.2680-01	.1936-01	2.695	18.72	546.2
276	180.00	.56400-01	37.000	.3900	.6620	.4880	.9511	.2509-01	.1849-01	2.586	17.99	543.7
276	180.00	.76100-01	38.000	.3031	.5043	.3880	.9452	.1911-01	.1471-01	2.069	14.43	538.6
276	180.00	.95800-01	39.000	.2440	.3977	.3179	.9398	.1507-01	.1205-01	1.721	12.04	532.6
276	180.00	.11550	40.000	.1914	.3124	.2555	.9352	.1184-01	.9685-02	1.347	9.425	533.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
276	180.00	.18450	42.000	.9014-01	.1397	.1232	.9244	.5297-02	.4669-02	.6918	4.886	516.2
276	225.00	.22900-01	30.000	.6691	1.291	.7812	.9702	.4892-01	.2961-01	3.785	25.96	569.4
276	270.00	.91000-02	63.000	.5591	1.389	.6642	.9735	.5264-01	.2517-01	2.549	17.21	598.4
276	270.00	.11100-01	64.000	.7304	1.790	.8662	.9735	.6785-01	.3283-01	3.360	22.70	597.3
276	270.00	.13100-01	65.000	.7578	1.736	.8907	.9735	.6580-01	.3376-01	3.664	24.83	591.1
276	270.00	.17000-01	67.000	.8019	1.720	.9339	.9735	.6519-01	.3539-01	4.092	27.85	584.0
276	270.00	.20900-01	69.000	.7151	1.497	.8298	.9735	.5673-01	.3145-01	3.730	25.42	581.1
276	270.00	.24900-01	71.000	.6600	1.328	.7636	.9730	.5031-01	.2894-01	3.575	24.43	575.8
276	270.00	.28800-01	73.000	.6325	1.200	.7311	.9715	.4549-01	.2771-01	3.642	25.02	566.7
276	270.00	.36700-01	75.000	.5576	1.045	.6536	.9685	.3962-01	.2477-01	3.255	22.38	564.6
276	270.00	.48500-01	77.000	.4878	.8799	.5803	.9642	.3335-01	.2199-01	2.981	20.58	557.4
276	270.00	.56400-01	78.000	.4810	.8612	.5797	.9614	.3264-01	.2197-01	2.968	20.50	555.9
276	270.00	.95800-01	80.000	.2869	.4904	.3644	.9488	.1859-01	.1381-01	1.883	13.09	545.5
276	270.00	.11550	81.000	.2325	.4003	.3050	.9433	.1517-01	.1156-01	1.510	10.48	547.3
276	315.00	.19000-01	68.000	.5951	1.114	.6910	.9702	.4221-01	.2619-01	3.481	23.94	564.3
276	315.00	.22900-01	70.000	.7330	1.454	.8601	.9702	.5510-01	.3260-01	4.027	27.55	573.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
220	5.500	-.4210-02	6.008	126.8	723.7	.1363	102.6	-90.04	2732.	.3583-02	.8260-07	3.682
221	5.500	-.6315-02	6.008	126.9	724.7	.1364	102.8	-90.06	2734.	.3582-02	.8272-07	3.679
222	5.500	-.8422-02	6.010	127.1	724.7	.1366	102.8	-90.08	2734.	.3587-02	.8272-07	3.685

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
220	.3019-01	.1281-01
221	.3021-01	.1281-01
222	.3023-01	.1280-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
221	.00000	.91000-02	1.0000	.3465	.5457	.4124	.9562	.1649-01	.1246-01	2.078	14.59	526.2
221	.00000	.15000-01	4.0000	.6206	1.063	.7590	.9562	.3212-01	.2293-01	3.264	22.62	550.6
221	.00000	.17000-01	5.0000	.6270	1.059	.7634	.9562	.3200-01	.2306-01	3.365	23.36	547.0
221	.00000	.19000-01	6.0000	.5976	1.010	.7278	.9562	.3052-01	.2199-01	3.205	22.25	547.2
221	.00000	.24900-01	9.0000	.5693	.9521	.6926	.9557	.2876-01	.2093-01	3.100	21.56	544.4
221	.00000	.26900-01	10.000	.5417	.8991	.6598	.9550	.2716-01	.1993-01	2.984	20.77	542.3
220	.00000	.32800-01	12.000	.4561	.7389	.5565	.9528	.2230-01	.1680-01	2.603	18.20	534.6
220	.00000	.36700-01	13.000	.3956	.6304	.4829	.9515	.1903-01	.1458-01	2.320	16.27	529.4
220	.00000	.40600-01	14.000	.4078	.6571	.5031	.9501	.1984-01	.1519-01	2.348	16.43	532.9
220	.00000	.48500-01	15.000	.3574	.5688	.4443	.9474	.1717-01	.1341-01	2.100	14.73	529.0
220	.00000	.56400-01	16.000	.3390	.5381	.4261	.9447	.1624-01	.1286-01	2.002	14.04	528.1
220	.00000	.76100-01	17.000	.2572	.3996	.3294	.9385	.1206-01	.9943-02	1.577	11.11	520.6
220	.00000	.11550	19.000	.1509	.2339	.2031	.9276	.7060-02	.6130-02	.9296	6.553	519.6
220	.00000	.16480	20.000	.7681-01	.1204	.1097	.9172	.3634-02	.3312-02	.4635	3.260	523.8
220	.00000	.21400	22.000	.3571-01	.5270-01	.5010-01	.9109	.1591-02	.1512-02	.2420	1.725	499.2
222	2.0000	.24700-01	165.00	.5276	.8596	.6374	.9554	.2599-01	.1927-01	2.996	20.91	536.9
221	9.0000	.15000-01	157.00	.5857	.9984	.7208	.9546	.3016-01	.2178-01	3.102	21.51	549.3
221	9.0000	.17600-01	158.00	.6047	1.036	.7454	.9546	.3130-01	.2252-01	3.181	22.04	550.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
222	9.9000	.24700-01	164.00	.5481	.9087	.6701	.9541	.2747-01	.2026-01	3.026	21.07	542.1
221	10.000	.22900-01	88.000	.5774	.9731	.7085	.9545	.2940-01	.2141-01	3.108	21.59	546.5
221	10.000	.26900-01	90.000	.5335	.8828	.6546	.9533	.2667-01	.1978-01	2.953	20.56	541.5
221	10.000	.34700-01	94.000	.4212	.6561	.5120	.9505	.1982-01	.1547-01	2.575	18.13	522.3
222	14.600	.44200-01	169.00	.3632	.5768	.4531	.9464	.1744-01	.1370-01	2.149	15.07	529.0
221	18.500	.44200-01	106.00	.3645	.5851	.4582	.9458	.1768-01	.1384-01	2.116	14.81	532.5
222	19.600	.62900-01	175.00	.2827	.4451	.3628	.9395	.1346-01	.1097-01	1.698	11.93	526.0
221	19.800	.40800-01	101.00	.3947	.6364	.4948	.9467	.1923-01	.1495-01	2.275	15.91	533.9
221	20.000	.24900-01	89.000	.5293	.8796	.6532	.9524	.2657-01	.1973-01	2.909	20.25	542.7
221	20.000	.28800-01	91.000	.4039	.8160	.6125	.9509	.2465-01	.1851-01	2.739	19.08	541.1
221	20.000	.32800-01	93.000	.4634	.7603	.5773	.9495	.2297-01	.1744-01	2.599	18.12	539.1
221	22.200	.62900-01	125.00	.2836	.4522	.3669	.9391	.1366-01	.1109-01	1.666	11.67	530.3
221	22.400	.44200-01	107.00	.3600	.5783	.4540	.9452	.1747-01	.1372-01	2.088	14.62	532.7
222	22.600	.10270	192.00	.1482	.2334	.2013	.9277	.7057-02	.6087-02	.8892	6.245	526.2
221	23.000	.42000-01	105.00	.3813	.6138	.4798	.9458	.1855-01	.1450-01	2.204	15.42	533.3
221	23.400	.59600-01	120.00	.2877	.4585	.3706	.9399	.1385-01	.1120-01	1.691	11.85	530.1
222	23.900	.21310	250.00	.2430-01	.3601-01	.3433-01	.9102	.1089-02	.1038-02	.1636	1.165	501.9
221	24.100	.82200-01	139.00	.1957	.3112	.2604	.9330	.9403-02	.7868-02	1.154	8.093	529.4
222	24.400	.19040	238.00	.3874-01	.5875-01	.5540-01	.9117	.1776-02	.1675-02	.2491	1.764	512.0
222	24.400	.12440	207.00	.1087	.1725	.1525	.9224	.5215-02	.4610-02	.6444	4.520	528.6
222	24.800	.16810	223.00	.5416-01	.8432-01	.7807-01	.9144	.2549-02	.2361-02	.3318	2.336	522.1
221	24.900	.62900-01	126.00	.2782	.4435	.3606	.9387	.1340-01	.1089-01	1.635	11.46	530.2
222	25.000	.79500-01	178.00	.2148	.3383	.2834	.9337	.1023-01	.8568-02	1.289	9.052	526.2
222	25.300	.10270	191.00	.1482	.2335	.2017	.9274	.7060-02	.6099-02	.8884	6.239	526.4
222	25.300	.10000+00	186.00	.1568	.2477	.2130	.9281	.7489-02	.6441-02	.9359	6.570	527.2
221	25.500	.60700-01	124.00	.2747	.4374	.3548	.9393	.1322-01	.1072-01	1.617	11.34	529.8
222	26.000	.12440	206.00	.1067	.1695	.1499	.9222	.5124-02	.4533-02	.6315	4.428	529.0
221	26.300	.82200-01	140.00	.2418	.3840	.3220	.9327	.1160-01	.9729-02	1.430	10.02	529.0
222	26.700	.12100	199.00	.1057	.1673	.1476	.9229	.5059-02	.4464-02	.6291	4.415	527.8
222	26.800	.16810	222.00	.5460-01	.8488-01	.7867-01	.9142	.2566-02	.2379-02	.3354	2.362	521.5
222	27.000	.19040	237.00	.3780-01	.5730-01	.5407-01	.9116	.1732-02	.1635-02	.2434	1.724	511.7
222	27.100	.21310	249.00	.2558-01	.3787-01	.3612-01	.9101	.1145-02	.1092-02	.1727	1.230	501.3
222	27.200	.80300-01	180.00	.2077	.3270	.2747	.9332	.9886-02	.8304-02	1.248	8.764	526.0
221	27.400	.40100-01	98.000	.4022	.6538	.5082	.9458	.1975-01	.1535-01	2.288	15.98	536.4
222	27.400	.16480	215.00	.5430-01	.8486-01	.7840-01	.9146	.2566-02	.2370-02	.3303	2.323	523.5
221	27.600	.41600-01	102.00	.3802	.6154	.4808	.9453	.1859-01	.1453-01	2.178	15.22	535.0
222	27.600	.12440	205.00	.1034	.1642	.1454	.9220	.4964-02	.4395-02	.6114	4.287	529.0
222	27.600	.18700	230.00	.4047-01	.6144-01	.5798-01	.9119	.1858-02	.1750-02	.2599	1.840	512.3
222	27.700	.21010	243.00	.2931-01	.4357-01	.4151-01	.9102	.1317-02	.1255-02	.1962	1.396	503.3
222	27.900	.10110	188.00	.1436	.2277	.1963	.9275	.6884-02	.5934-02	.8557	6.004	527.9
221	28.000	.46800-01	110.00	.3270	.5247	.4156	.9435	.1585-01	.1255-01	1.901	13.30	532.3
222	28.200	.16810	221.00	.5140-01	.7996-01	.7414-01	.9141	.2418-02	.2242-02	.3152	2.220	521.8
222	28.300	.19040	236.00	.3630-01	.5492-01	.5186-01	.9115	.1660-02	.1568-02	.2346	1.662	510.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
222	28.300	.12200	201.00	.1108	.1753	.1550	.9225	.5299-02	.4687-02	.6600	4.632	527.6
221	28.400	.53500-01	114.00	.3134	.5040	.4030	.9412	.1523-01	.1218-01	1.815	12.70	533.0
222	28.400	.21310	248.00	.2678-01	.3961-01	.3775-01	.9101	.1198-02	.1143-02	.1812	1.291	500.9
221	28.700	.58600-01	117.00	.2959	.4728	.3825	.9395	.1428-01	.1155-01	1.731	12.12	531.0
222	28.800	.16580	217.00	.5147-01	.8016-01	.7420-01	.9144	.2424-02	.2243-02	.3151	2.218	522.2
221	28.800	.60400-01	121.00	.2752	.4384	.3562	.9389	.1325-01	.1076-01	1.618	11.34	530.0
222	29.000	.21110	244.00	.2720-01	.4029-01	.3841-01	.9101	.1218-02	.1161-02	.1836	1.307	501.5
221	29.000	.65700-01	129.00	.2499	.3984	.3262	.9372	.1204-01	.9855-02	1.467	10.28	530.3
221	29.200	.72400-01	133.00	.2209	.3530	.2916	.9352	.1066-01	.8811-02	1.293	9.058	531.0
221	29.300	.79500-01	136.00	.1967	.3140	.2622	.9331	.9486-02	.7922-02	1.153	8.079	530.6
221	29.600	.92500-01	143.00	.1736	.2788	.2366	.9295	.8424-02	.7147-02	1.008	7.053	532.6
221	29.700	.10000+00	146.00	.1418	.2263	.1944	.9275	.6838-02	.5874-02	.8312	5.824	530.6
222	29.900	.12100	198.00	.1063	.1685	.1489	.9225	.5095-02	.4502-02	.6305	4.423	528.5
222	30.200	.16480	214.00	.5005-01	.7803-01	.7220-01	.9144	.2359-02	.2183-02	.3058	2.152	522.6
222	30.300	.21010	242.00	.2984-01	.4428-01	.4220-01	.9101	.1339-02	.1276-02	.2004	1.427	502.5
221	31.500	.11100-01	83.000	.4631	.7431	.5677	.9511	.2245-01	.1715-01	2.691	18.83	532.4
222	32.100	.21010	241.00	.2857-01	.4233-01	.4036-01	.9101	.1280-02	.1220-02	.1927	1.372	501.6
222	32.200	.16480	213.00	.4922-01	.7664-01	.7099-01	.9143	.2317-02	.2146-02	.3014	2.121	522.2
222	32.200	.17860	224.00	.5376-01	.8259-01	.7739-01	.9125	.2497-02	.2340-02	.3375	2.382	517.1
222	32.200	.18700	228.00	.3810-01	.5763-01	.5438-01	.9116	.1742-02	.1644-02	.2464	1.746	510.8
222	32.300	.12100	197.00	.1064	.1686	.1492	.9222	.5098-02	.4511-02	.6316	4.431	528.3
222	32.300	.12300	194.00	.9806-01	.1556	.1379	.9218	.4704-02	.4171-02	.5810	4.075	528.7
222	32.300	.12730	208.00	.8443-01	.1351	.1201	.9209	.4086-02	.3630-02	.4930	3.452	531.5
222	32.300	.13420	209.00	.8342-01	.1346	.1202	.9195	.4069-02	.3634-02	.4809	3.363	534.0
221	32.400	.10000+00	147.00	.1390	.2231	.1915	.9272	.6740-02	.5787-02	.8070	5.648	532.5
222	32.400	.10110	184.00	.1399	.2222	.1918	.9269	.6717-02	.5800-02	.8283	5.809	528.9
222	32.400	.10530	193.00	.1276	.2018	.1757	.9256	.6102-02	.5311-02	.7608	5.340	527.5
222	32.500	.85800-01	183.00	.1789	.2856	.2411	.9309	.8635-02	.7290-02	1.050	7.355	530.6
221	32.600	.79500-01	137.00	.1847	.2964	.2474	.9327	.8954-02	.7475-02	1.073	7.507	532.4
222	32.600	.80800-01	176.00	.1915	.3050	.2559	.9323	.9220-02	.7738-02	1.127	7.900	530.0
221	32.700	.67400-01	132.00	.2415	.3870	.3177	.9362	.1169-01	.9597-02	1.407	9.850	531.9
221	32.700	.72400-01	134.00	.2355	.3775	.3121	.9347	.1140-01	.9429-02	1.370	9.591	532.1
221	32.800	.65700-01	130.00	.2599	.4158	.3408	.9367	.1256-01	.1030-01	1.518	10.63	531.4
222	32.800	.16680	210.00	.5041-01	.7859-01	.7290-01	.9140	.2375-02	.2204-02	.3081	2.168	522.6
222	32.800	.18880	225.00	.3720-01	.5624-01	.5313-01	.9114	.1700-02	.1606-02	.2408	1.706	510.6
221	32.900	.58600-01	118.00	.2978	.4803	.3878	.9389	.1451-01	.1172-01	1.717	12.00	533.9
221	32.900	.60400-01	122.00	.2657	.4262	.3460	.9384	.1288-01	.1045-01	1.545	10.81	532.2
222	32.900	.61300-01	171.00	.2680	.4245	.3473	.9381	.1283-01	.1050-01	1.594	11.18	528.0
221	33.000	.53500-01	115.00	.3120	.5021	.4026	.9405	.1517-01	.1216-01	1.804	12.62	533.3
221	33.200	.48300-01	113.00	.3320	.5337	.4248	.9422	.1613-01	.1283-01	1.923	13.46	532.9
222	33.400	.42800-01	166.00	.3632	.5784	.4587	.9440	.1749-01	.1387-01	2.138	14.99	529.9
221	33.500	.40100-01	99.000	.3895	.6268	.4920	.9449	.1894-01	.1487-01	2.252	15.75	533.3
221	33.600	.38300-01	97.000	.4093	.6637	.5173	.9456	.2005-01	.1563-01	2.338	16.34	535.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
221	33.700	.36700-01	96.000	.4225	.6911	.5345	.9461	.2088-01	.1615-01	2.380	16.61	538.2
221	33.900	.33800-01	95.000	.4517	.7394	.5688	.9471	.2234-01	.1718-01	2.542	17.73	538.4
222	34.700	.21010	240.00	.3011-01	.4445-01	.4242-01	.9101	.1344-02	.1282-02	.2045	1.458	500.0
222	34.700	.18700	227.00	.3980-01	.6030-01	.5692-01	.9115	.1823-02	.1721-02	.2566	1.817	511.5
222	34.900	.16480	212.00	.5057-01	.7904-01	.7323-01	.9141	.2390-02	.2214-02	.3077	2.164	523.5
221	35.100	.10000+00	148.00	.1400	.2252	.1935	.9269	.6805-02	.5847-02	.8094	5.662	533.3
222	35.200	.23900-01	161.00	.5613	.9393	.7010	.9505	.2840-01	.2120-01	3.056	21.25	544.6
221	35.300	.92500-01	145.00	.1561	.2522	.2142	.9288	.7619-02	.6472-02	.8973	6.274	534.4
221	35.300	.22100-01	160.00	.5264	.9036	.6633	.9506	.2730-01	.2004-01	2.761	19.13	551.1
222	35.400	.18800	231.00	.3892-01	.5884-01	.5560-01	.9114	.1779-02	.1681-02	.2519	1.785	510.6
222	35.500	.12100	196.00	.1024	.1629	.1442	.9219	.4925-02	.4360-02	.6038	4.233	529.6
222	35.600	.16580	216.00	.4757-01	.7419-01	.6883-01	.9139	.2243-02	.2081-02	.2904	2.044	522.7
221	35.800	.80600-01	138.00	.1826	.2933	.2456	.9320	.8860-02	.7421-02	1.059	7.413	532.7
222	35.900	.21310	247.00	.2596-01	.3813-01	.3642-01	.9100	.1153-02	.1101-02	.1783	1.272	497.6
222	36.000	.19040	235.00	.3793-01	.5723-01	.5415-01	.9112	.1730-02	.1637-02	.2465	1.747	509.8
222	36.200	.16810	220.00	.5111-01	.7951-01	.7394-01	.9136	.2404-02	.2235-02	.3134	2.207	521.8
221	36.200	.72400-01	135.00	.2202	.3536	.2928	.9343	.1068-01	.8845-02	1.279	8.948	532.5
222	36.300	.12200	200.00	.9867-01	.1572	.1394	.9216	.4754-02	.4213-02	.5804	4.068	530.1
221	36.600	.65700-01	131.00	.2432	.3922	.3209	.9363	.1185-01	.9696-02	1.401	9.801	533.9
222	36.700	.18700	226.00	.3841-01	.5808-01	.5487-01	.9114	.1756-02	.1659-02	.2484	1.760	510.7
222	36.900	.16480	211.00	.5333-01	.8344-01	.7734-01	.9140	.2523-02	.2338-02	.3238	2.277	523.9
222	36.900	.10110	187.00	.1412	.2258	.1949	.9264	.6827-02	.5894-02	.8254	5.781	531.3
221	37.000	.60400-01	123.00	.2655	.4271	.3471	.9378	.1290-01	.1049-01	1.536	10.75	533.1
222	37.000	.12440	204.00	.9870-01	.1578	.1401	.9210	.4771-02	.4237-02	.5775	4.045	531.1
221	37.100	.58600-01	119.00	.2871	.4632	.3749	.9384	.1399-01	.1133-01	1.653	11.56	534.1
222	37.200	.21310	246.00	.2767-01	.4057-01	.3877-01	.9100	.1227-02	.1172-02	.1906	1.361	496.8
222	37.600	.16910	219.00	.5126-01	.7978-01	.7421-01	.9135	.2412-02	.2244-02	.3142	2.212	522.0
221	37.800	.10270	150.00	.1344	.2167	.1870	.9259	.6547-02	.5650-02	.7747	5.418	533.9
222	37.900	.12100	195.00	.9923-01	.1573	.1396	.9217	.4755-02	.4220-02	.5893	4.134	528.3
222	38.000	.80300-01	179.00	.1964	.3144	.2640	.9318	.9507-02	.7982-02	1.147	8.032	531.6
221	38.500	.46800-01	112.00	.3367	.5434	.4319	.9420	.1642-01	.1305-01	1.938	13.55	534.2
222	38.600	.12440	203.00	.9772-01	.1560	.1387	.9209	.4717-02	.4194-02	.5731	4.015	530.7
222	38.700	.10000+00	185.00	.1375	.2199	.1898	.9265	.6648-02	.5737-02	.8041	5.632	531.2
221	38.900	.82200-01	141.00	.1841	.2980	.2498	.9312	.9004-02	.7548-02	1.055	7.371	535.1
221	39.300	.41600-01	104.00	.3807	.6182	.4859	.9437	.1868-01	.1468-01	2.170	15.16	536.0
222	39.500	.10270	190.00	.1398	.2236	.1937	.9257	.6759-02	.5855-02	.8168	5.720	531.4
222	39.600	.16810	218.00	.4942-01	.7707-01	.7171-01	.9134	.2330-02	.2168-02	.3019	2.124	522.6
222	39.900	.19040	233.00	.3462-01	.5198-01	.4925-01	.9110	.1571-02	.1489-02	.2271	1.612	507.7
222	40.100	.79500-01	177.00	.1949	.3120	.2619	.9318	.9433-02	.7919-02	1.137	7.964	531.6
222	40.200	.12440	202.00	.9756-01	.1559	.1387	.9208	.4714-02	.4193-02	.5712	4.001	531.0
222	40.300	.21310	245.00	.2455-01	.3579-01	.3422-01	.9100	.1082-02	.1035-02	.1714	1.226	493.8
221	41.100	.82200-01	142.00	.1858	.3028	.2535	.9309	.9148-02	.7658-02	1.053	7.354	537.1
222	41.100	.60700-01	173.00	.2671	.4266	.3490	.9372	.1290-01	.1055-01	1.565	10.96	530.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
222	42.600	.59600-01	172.00	.2791	.4472	.3649	.9374	.1352-01	.1103-01	1.627	11.39	531.9
222	43.200	.42000-01	168.00	.3504	.5591	.4450	.9431	.1691-01	.1345-01	2.056	14.41	530.6
222	43.400	.82200-01	181.00	.2115	.3328	.2830	.9307	.1006-01	.8556-02	1.271	8.926	525.9
221	43.600	.62900-01	128.00	.2122	.3424	.2800	.9363	.1034-01	.8459-02	1.221	8.541	534.1
221	45.000	.22900-01	8.0000	.5774	.9944	.7331	.9494	.3004-01	.2215-01	3.015	20.87	551.9
222	46.100	.62900-01	174.00	.2541	.4074	.3347	.9360	.1232-01	.1012-01	1.480	10.36	532.1
222	47.700	.40800-01	167.00	.3830	.6157	.4882	.9430	.1862-01	.1476-01	2.220	15.54	532.9
221	48.400	.44200-01	109.00	.3466	.5616	.4461	.9418	.1697-01	.1348-01	1.983	13.85	535.3
222	51.900	.44800-01	170.00	.3129	.4971	.4001	.9412	.1503-01	.1210-01	1.851	12.98	529.1
222	53.200	.24700-01	163.00	.5433	.8939	.6822	.9481	.2703-01	.2063-01	3.035	21.16	539.9
222	65.200	.24700-01	162.00	.5329	.8759	.6722	.9471	.2648-01	.2032-01	2.982	20.79	539.6
220	90.000	.91000-02	44.000	.2353	.3561	.2873	.9467	.1075-01	.8673-02	1.516	10.74	510.3
220	90.000	.11100-01	45.000	.3074	.4714	.3775	.9467	.1423-01	.1140-01	1.930	13.64	515.7
220	90.000	.13100-01	46.000	.5195	.8408	.6525	.9467	.2538-01	.1970-01	2.969	20.76	534.3
220	90.000	.17000-01	48.000	.6120	1.072	.7936	.9467	.3235-01	.2396-01	3.117	21.54	555.0
220	90.000	.20900-01	50.000	.6050	1.008	.7689	.9467	.3042-01	.2321-01	3.307	23.02	542.6
220	90.000	.24900-01	52.000	.2351	.3801	.2959	.9462	.1147-01	.8932-02	1.346	9.416	534.0
220	90.000	.26900-01	53.000	.5006	.8194	.6355	.9454	.2474-01	.1918-01	2.810	19.61	537.7
220	90.000	.28800-01	54.000	.4912	.7992	.6240	.9448	.2413-01	.1884-01	2.784	19.45	535.9
220	90.000	.32800-01	55.000	.3338	.5146	.4168	.9434	.1554-01	.1258-01	2.076	14.65	517.7
220	90.000	.36700-01	56.000	.3937	.6235	.5007	.9420	.1882-01	.1511-01	2.333	16.38	527.3
220	90.000	.40600-01	57.000	.3740	.6004	.4817	.9407	.1812-01	.1454-01	2.167	15.17	531.7
220	90.000	.48500-01	58.000	.3240	.5155	.4208	.9381	.1556-01	.1270-01	1.904	13.35	528.9
220	90.000	.56400-01	59.000	.2895	.4589	.3798	.9356	.1385-01	.1146-01	1.713	12.02	527.7
220	90.000	.76100-01	60.000	.2109	.3342	.2846	.9298	.1009-01	.8591-02	1.248	8.759	527.6
220	90.000	.95800-01	61.000	.1434	.2286	.1993	.9247	.6900-02	.6018-02	.8404	5.892	529.5
220	90.000	.11550	62.000	.1022	.1627	.1453	.9202	.4912-02	.4386-02	.5997	4.205	529.2
220	135.00	.19000-01	49.000	.6077	1.015	.7627	.9493	.3063-01	.2302-01	3.311	23.03	543.2
220	135.00	.22900-01	51.000	.5637	.9363	.7060	.9493	.2826-01	.2131-01	3.094	21.54	541.8
220	180.00	.91000-02	23.000	.2405	.3659	.2830	.9562	.1105-01	.8544-02	1.533	10.85	512.5
220	180.00	.11100-01	24.000	.6227	1.095	.7678	.9562	.3306-01	.2318-01	3.152	21.78	556.0
220	180.00	.13100-01	25.000	.6687	1.187	.8268	.9562	.3582-01	.2496-01	3.348	23.11	557.8
220	180.00	.15000-01	26.000	.6511	1.128	.7992	.9562	.3406-01	.2413-01	3.362	23.27	552.6
220	180.00	.17000-01	27.000	.6577	1.116	.8021	.9562	.3370-01	.2421-01	3.496	24.27	547.5
220	180.00	.19000-01	28.000	.6488	1.105	.7921	.9562	.3336-01	.2391-01	3.433	23.82	548.4
220	180.00	.20900-01	29.000	.6166	1.036	.7496	.9562	.3127-01	.2263-01	3.328	23.13	544.9
220	180.00	.28800-01	32.000	.5377	.8768	.6532	.9543	.2647-01	.1972-01	3.038	21.21	536.5
220	180.00	.32800-01	33.000	.4777	.7584	.5798	.9528	.2289-01	.1747-01	2.820	19.79	528.1
220	180.00	.36700-01	34.000	.4510	.7244	.5522	.9514	.2187-01	.1667-01	2.610	18.27	531.9
220	180.00	.48500-01	36.000	.3720	.5903	.4619	.9474	.1782-01	.1394-01	2.198	15.42	527.9
220	180.00	.56400-01	37.000	.3444	.5430	.4317	.9447	.1639-01	.1303-01	2.058	14.45	525.8
220	180.00	.76100-01	38.000	.2649	.4121	.3395	.9385	.1244-01	.1025-01	1.620	11.41	521.1
220	180.00	.95800-01	39.000	.2070	.3187	.2708	.9328	.9620-02	.8175-02	1.291	9.115	517.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K112)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
220	180.00	.11550	40.000	.1539	.2386	.2072	.9276	.7204-02	.6253-02	.9464	6.670	519.9
220	180.00	.18450	42.000	.5923-01	.8961-01	.8357-01	.9141	.2705-02	.2323-02	.3816	2.704	510.2
220	225.00	.22900-01	30.000	.6345	1.066	.7446	.9635	.3219-01	.2248-01	3.423	23.79	545.0
220	270.00	.91000-02	63.000	.5405	.9666	.6337	.9666	.2918-01	.1913-01	2.678	18.47	559.5
220	270.00	.11100-01	64.000	.6082	1.130	.7190	.9666	.3412-01	.2171-01	2.876	19.75	567.0
220	270.00	.13100-01	65.000	.6581	1.154	.7683	.9666	.3482-01	.2319-01	3.348	23.14	555.2
220	270.00	.17000-01	67.000	.7555	1.313	.8804	.9666	.3964-01	.2658-01	3.887	26.89	553.3
220	270.00	.20900-01	69.000	.7087	1.235	.8263	.9666	.3728-01	.2494-01	3.634	25.14	553.8
220	270.00	.24900-01	71.000	.6615	1.126	.7690	.9661	.3400-01	.2321-01	3.502	24.30	548.3
220	270.00	.28800-01	73.000	.5604	.9218	.6504	.9647	.2783-01	.1963-01	3.122	21.77	539.1
220	270.00	.36700-01	75.000	.5040	.8281	.5924	.9619	.2500-01	.1788-01	2.813	19.62	538.8
220	270.00	.48500-01	77.000	.4502	.7285	.5370	.9577	.2199-01	.1621-01	2.575	18.01	534.2
220	270.00	.56400-01	78 000	.4124	.6684	.4983	.9550	.2018-01	.1504-01	2.352	16.44	534.7
220	270.00	.95800-01	80.000	.2403	.3928	.3097	.9423	.1186-01	.9350-02	1.352	9.437	537.3
220	270.00	.11550	81.000	.1971	.3227	.2618	.9365	.9742-02	.7903-02	1.106	7.715	537.8
220	315.00	.19000-01	68.000	.5471	.9022	.6389	.9635	.2724-01	.1929-01	3.036	21.16	539.8
220	315.00	.22900-01	70.000	.7088	1.212	.8354	.9635	.3657-01	.2522-01	3.731	25.87	549.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
316	3.010	-.4263-02	3.050	35.97	715.7	.9647	254.5	-90.08	2354.	.1023-01	.2034-06	3.680
317	3.010	-.4254-02	3.044	35.77	715.7	.9592	254.5	-90.08	2354.	.1017-01	.2034-06	3.659
318	3.010	-.5318-02	3.044	35.72	715.7	.9581	254.5	-90.10	2354.	.1016-01	.2034-06	3.655

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
316	.4382-01	.7559-02
317	.4370-01	.7581-02
318	.4367-01	.7585-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
317	.00000	.91000-02	1.0000	.5168	1.339	.6247	.9719	.5852-01	.2730-01	2.632	17.76	599.1
317	.00000	.15000-01	4.0000	.7430	2.028	.9041	.9719	.8863-01	.3951-01	3.667	24.70	602.7
317	.00000	.17000-01	5.0000	.7015	1.738	.8428	.9719	.7595-01	.3683-01	3.679	24.88	595.7
317	.00000	.19000-01	6.0000	.6817	1.636	.8155	.9719	.7148-01	.3563-01	3.656	24.76	593.0
317	.00000	.24900-01	9.0000	.6289	1.457	.7511	.9714	.6369-01	.3282-01	3.460	23.47	589.8
317	.00000	.26900-01	10.000	.6110	1.378	.7305	.9706	.6021-01	.3192-01	3.434	23.33	587.1
316	.00000	.32800-01	12.000	.5551	1.166	.6651	.9684	.5111-01	.2914-01	3.322	22.66	579.1
316	.00000	.36700-01	13.000	.5053	1.003	.6041	.9670	.4394-01	.2647-01	3.195	21.89	571.4
316	.00000	.40600-01	14.000	.5296	1.085	.6426	.9657	.4756-01	.2816-01	3.244	22.17	575.9
316	.00000	.48500-01	15.000	.4670	.9138	.5702	.9630	.4004-01	.2499-01	2.995	20.54	569.3
316	.00000	.56400-01	16.000	.4320	.8376	.5344	.9604	.3671-01	.2342-01	2.797	19.20	567.9
316	.00000	.76100-01	17.000	.3360	.6144	.4230	.9546	.2692-01	.1854-01	2.325	16.05	557.7
316	.00000	.95800-01	18.000	.6045-01	.1019	.7604-01	.9496	.4464-02	.3332-02	.4663	3.251	539.6
316	.00000	.11550	19.000	.2213	.3963	.2917	.9453	.1737-01	.1278-01	1.571	10.87	553.6
316	.00000	.16480	20.000	.1456	.2634	.2015	.9379	.1154-01	.8832-02	1.021	7.053	555.7
316	.00000	.21400	22.000	.8491-01	.1428	.1155	.9347	.6259-02	.5060-02	.6567	4.579	539.2
318	2.0000	.24700-01	165.00	.5963	1.278	.7042	.9713	.5583-01	.3075-01	3.493	23.80	581.5
317	9.0000	.15000-01	157.00	.6742	1.672	.8149	.9711	.7307-01	.3561-01	3.533	23.89	595.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
317	9.0000	.17600-01	158.00	.6582	1.614	.7942	.9711	.7052-01	.3471-01	3.476	23.51	594.8
318	9.8000	.24700-01	164.00	.6209	1.429	.7449	.9706	.6241-01	.3253-01	3.432	23.29	589.1
317	10.000	.22900-01	88.000	.6392	1.514	.7680	.9710	.6614-01	.3356-01	3.460	23.45	591.8
317	10.000	.26900-01	90.000	.6017	1.338	.7220	.9697	.5846-01	.3155-01	3.420	23.25	585.6
317	10.000	.34700-01	94.000	.5433	1.151	.6584	.9669	.5030-01	.2877-01	3.217	21.94	580.1
318	14.600	.44200-01	169.00	.4865	.9567	.5939	.9632	.4178-01	.2594-01	3.094	21.21	570.1
317	18.500	.44200-01	106.00	.4792	.9721	.5903	.9629	.4248-01	.2579-01	2.955	20.21	574.5
318	19.600	.62900-01	175.00	.3777	.6997	.4711	.9569	.3056-01	.2058-01	2.566	17.6[illegible]	560.1
317	19.800	.40800-01	101.00	.5129	1.060	.6302	.9639	.4631-01	.2754-01	3.108	21.23	577.0
317	20.000	.24900-01	89.000	.5938	1.334	.7142	.9696	.5828-01	.3121-01	3.347	22.74	586.7
317	20.000	.28800-01	91.000	.5676	1.254	.6874	.9682	.5479-01	.3004-01	3.243	22.06	584.9
317	20.000	.32800-01	93.000	.5494	1.208	.6712	.9667	.5280-01	.2933-01	3.151	21.43	584.4
317	22.200	.62900-01	125.00	.3986	.7710	.5039	.9567	.3369-01	.2202-01	2.581	17.72	567.5
317	22.400	.44200-01	107.00	.4776	.9610	.5884	.9626	.4199-01	.2571-01	2.970	20.32	573.4
318	22.600	.10270	192.00	.2340	.4178	.3058	.9467	.1824-01	.1335-01	1.663	11.51	552.9
317	23.000	.42000-01	105.00	.4959	1.010	.6100	.9633	.4414-01	.2665-01	3.047	20.84	575.1
317	23.400	.59600-01	120.00	.3992	.7688	.5013	.9576	.3360-01	.2191-01	2.596	17.63	566.8
318	23.900	.21310	250.00	.7444-01	.1226	.1002	.9346	.5355-02	.4375-02	.5922	4.142	533.5
317	24.100	.82200-01	139.00	.3040	.5637	.3919	.9513	.2463-01	.1712-01	2.065	14.23	560.3
318	24.400	.19040	238.00	.1009	.1703	.1370	.9354	.7439-02	.5985-02	.7745	5.398	540.0
318	24.400	.12440	207.00	.1948	.3537	.2627	.9425	.1545-01	.1147-01	1.355	9.362	556.4
318	24.800	.16810	223.00	.1163	.2060	.1604	.9369	.8998-02	.7004-02	.8344	5.779	551.4
317	24.900	.62900-01	126.00	.3827	.7378	.4839	.9565	.3224-01	.2115-01	2.487	17.08	567.0
318	25.000	.79500-01	178.00	.3218	.5842	.4103	.9520	.2551-01	.1792-01	2.239	15.47	556.3
318	25.300	.10270	191.00	.2423	.4314	.3165	.9465	.1884-01	.1382-01	1.727	11.96	552.4
318	25.300	.10000+00	186.00	.2432	.4361	.3175	.9471	.1904-01	.1387-01	1.719	11.89	553.8
317	25.500	.60700-01	124.00	.3944	.7578	.4964	.9571	.3312-01	.2169-01	2.572	17.67	566.4
318	26.000	.12440	206.00	.1905	.3456	.2569	.9424	.1509-01	.1122-01	1.326	9.163	556.2
317	26.300	.82200-01	140.00	.2911	.5330	.3739	9512	.2329-01	.1634-01	2.006	13.84	558.0
318	26.700	.12100	199.00	.1891	.3371	.2523	.3429	.1472-01	.1102-01	1.346	9.318	552.7
318	26.800	.16810	222.00	.1214	.2141	.1671	.9368	.9352-02	.7299-02	.8763	6.073	550.4
318	27.000	.19040	237.00	.9907-01	.1669	.1344	.9353	.7289-02	.5869-02	.7619	5.312	539.6
318	27.100	.21310	249.00	.7703-01	.1266	.1036	.9346	.5530-02	.4523-02	.6146	4.300	533.0
318	27.200	.80300-01	180.00	.3129	.5612	.3981	.9516	.2451-01	.1738-01	2.210	15.29	553.9
317	27.400	.40100-01	98.000	.4997	1.054	.6181	.9636	.4604-01	.2701-01	2.973	20.28	579.5
318	27.400	.16480	215.00	.1134	.2028	.1569	.9371	.8855-02	.6850-02	.8039	5.563	553.3
317	27.600	.41600-01	102.00	.4851	1.009	.6002	.9631	.4409-01	.2623-01	2.921	19.95	577.8
318	27.600	.12440	205.00	.1866	.3374	.2514	.9423	.1474-01	.1098-01	1.304	9.011	555.6
318	27.600	.18700	230.00	.1023	.1720	.1385	.9355	.7510-02	.6050-02	.7902	5.511	538.9
318	27.700	.21010	243.00	.7975-01	.1323	.1077	.9346	.5778-02	.4704-02	.6275	4.385	535.5
318	27.900	.10110	188.00	.2457	.4402	.3213	.9467	.1922-01	.1403-01	1.738	12.02	553.7
317	28.000	.46800-01	110.00	.4415	.8777	.5466	.9613	.3835-01	.2389-01	2.778	19.03	571.7
318	28.200	.16810	221.00	.1227	.2182	.1696	.9368	.9528-02	.7408-02	.8769	6.072	552.[illegible]

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
318	28.300	.19040	236.00	.9625-01	.1614	.1303	.9353	.7050-02	.5690-02	.7449	5.197	538.4
318	28.300	.12200	201.00	.1964	.3504	.2625	.9427	.1530-01	.1146-01	1.396	9.659	552.9
317	28.400	.53500-01	114.00	.4244	.8346	.5311	.9591	.3647-01	.2321-01	2.701	18.52	570.0
318	28.400	.21310	248.00	.7527-01	.1237	.1012	.9346	.5402-02	.4418-02	.6009	4.205	532.9
317	28.700	.58600-01	117.00	.4113	.7981	.5178	.9576	.3488-01	.2263-01	2.654	18.22	568.0
318	28.800	.16580	217.00	.1175	.2089	.1622	.9370	.9123-02	.7086-02	.8400	5.816	552.0
317	28.800	.60400-01	121.00	.3932	.7579	.4957	.9570	.3312-01	.2166-01	2.555	17.55	566.9
318	29.000	.21110	244.00	.7492-01	.1233	.1008	.9346	.5385-02	.4401-02	.5965	4.173	533.4
317	29.000	.65700-01	129.00	.3648	.6995	.4637	.9555	.3057-01	.2026-01	2.385	16.39	566.1
317	29.200	.72400-01	133.00	.3406	.6464	.4364	.9536	.2825-01	.1907-01	2.252	15.48	564.4
317	29.300	.79500-01	136.00	.2949	.5455	.3790	.9517	.2384-01	.1656-01	2.007	13.84	559.9
317	29.600	.92500-01	143.00	.2806	.5283	.3699	.9485	.2308-01	.1616-01	1.872	12.89	563.0
317	29.700	.10000+00	146.00	.2169	.4007	.2868	.9469	.1751-01	.1253-01	1.479	10.20	559.7
318	29.900	.12100	198.00	.1891	.3383	.2529	.9428	.1478-01	.1105-01	1.340	9.274	553.4
318	30.200	.16480	214.00	.1146	.2036	.1581	.9371	.8893-02	.6904-02	.8186	5.668	552.1
318	30.300	.21010	242.00	.7597-01	.1255	.1024	.9346	.5482-02	.4472-02	.6014	4.205	534.4
317	31.500	.11100-01	83.000	.7676	2.288	.9652	.9692	.9999-01	.4218-01	3.613	24.27	608.0
318	32.100	.21010	241.00	.7574-01	.1247	.1019	.9346	.5446-02	.4450-02	.6029	4.218	533.4
318	32.200	.16480	213.00	.1127	.2009	.1558	.9370	.8773-02	.6804-02	.8027	5.556	552.6
318	32.200	.17860	224.00	.1075	.1837	.1464	.9359	.8024-02	.6396-02	.8103	5.638	543.1
318	32.200	.18700	228.00	.9125-01	.1512	.1226	.9354	.6602-02	.5356-02	.7196	5.029	535.1
318	32.300	.12100	197.00	.1925	.3429	.2571	.9427	.1498-01	.1123-01	1.371	9.490	552.6
318	32.300	.12300	194.00	.1791	.3191	.2397	.9424	.1394-01	.1047-01	1.276	8.833	552.5
318	32.300	.12730	208.00	.1732	.3191	.2362	.9417	.1394-01	.1032-01	1.184	8.164	559.2
318	32.300	.13420	209.00	.1497	.2823	.2076	.9406	.1233-01	.9066-02	.9957	6.851	563.3
317	32.400	.10000+00	147.00	.2253	.4210	.2995	.9467	.1840-01	.1309-01	1.516	10.44	561.7
318	32.400	.10110	184.00	.2375	.4247	.3108	.9465	.1855-01	.1357-01	1.684	11.65	553.3
318	32.400	.10630	193.00	.2197	.3889	.2881	.9454	.1698-01	.1258-01	1.578	10.93	551.2
318	32.500	.85800-01	183.00	.2863	.5242	.3704	.9499	.2289-01	.1618-01	1.972	13.61	558.0
317	32.600	.79500-01	137.00	.2701	.5039	.3485	.9515	.2202-01	.1523-01	1.820	12.54	561.4
318	32.600	.80800-01	176.00	.3031	.5505	.3883	.9512	.2404-01	.1696-01	2.108	14.56	556.4
317	32.700	.67400-01	132.00	.3584	.6870	.4575	.9547	.3002-01	.1999-01	2.344	16.10	566.0
317	32.700	.72400-01	134.00	.3428	.6532	.4404	.9534	.2854-01	.1924-01	2.256	15.51	565.1
317	32.800	.65700-01	130.00	.3738	.7192	.4763	.9552	.3143-01	.2081-01	2.435	16.72	566.6
318	32.800	.16680	210.00	.1141	.2032	.1578	.9368	.8875-02	.6893-02	.8135	5.631	552.4
318	32.800	.18880	225.00	.9225-01	.1543	.1247	.9353	.6737-02	.5444-02	.7173	5.006	537.6
317	32.900	.58600-01	118.00	.4356	.8653	.5529	.9573	.3781-01	.2416-01	2.744	18.80	571.5
317	32.900	.60400-01	122.00	.3816	.7440	.4835	.9567	.3251-01	.2113-01	2.451	16.81	568.7
318	32.900	.61300-01	171.00	.3841	.7198	.4820	.9565	.3143-01	.2105-01	2.575	17.73	562.2
317	33.000	.53500-01	115.00	.4297	.8396	.5378	.9588	.3669-01	.2350-01	2.752	18.88	569.1
317	33.200	.48300-01	113.00	.4444	.8733	.5515	.9605	.3816-01	.2410-01	2.830	19.40	569.9
318	33.400	.42800-01	166.00	.4831	.9463	.5927	.9622	.4133-01	.2588-01	3.085	21.16	569.4
317	33.500	.40100-01	99.000	.5044	1.029	.6211	.9631	.4495-01	.2714-01	3.095	21.16	575.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
317	33.600	.38300-01	97.000	.5209	1.093	.6429	.9637	.4776-01	.2809-01	3.113	21.24	578.9
317	33.700	.36700-01	96.000	.5417	1.167	.6698	.9643	.5100-01	.2927-01	3.161	21.53	582.1
317	33.900	.33800-01	95.000	.5502	1.206	.6781	.9653	.5269-01	.2963-01	3.164	21.53	584.0
318	34.700	.21010	240.00	.7690-01	.1264	.1033	.9346	.5518-02	.4513-02	.6140	4.297	532.8
318	34.700	.18700	227.00	.8494-01	.1408	.1142	.9354	.6151-02	.4989-02	.6690	4.675	535.3
318	34.900	.16480	212.00	.1155	.2067	.1601	.9369	.9028-02	.6990-02	.8186	5.664	553.4
317	35.100	.10000+00	148.00	.2362	.4439	.3149	.9466	.1940-01	.1376-01	1.578	10.86	562.7
318	35.200	.23900-01	161.00	.6212	1.496	.7598	.9688	.6534-01	.3318-01	3.320	22.48	593.3
317	35.300	.92500-01	145.00	.2546	.4822	.3370	.9482	.2107-01	.1472-01	1.687	11.61	564.0
317	35.300	.22100-01	160.00	.5522	1.340	.6757	.9689	.5856-01	.2953-01	2.937	19.88	593.9
318	35.400	.18800	231.00	.9655-01	.1618	.1306	.9353	.7065-02	.5703-02	.7485	5.223	538.2
318	35.500	.12100	196.00	.1905	.3421	.2555	.9426	.1494-01	.1116-01	1.343	9.290	554.2
316	35.600	.16580	216.00	.1134	.2024	.1570	.9368	.8838-02	.6857-02	.8064	5.581	552.9
317	35.800	.80600-01	138.00	.2930	.5430	.3783	.9510	.2373-01	.1653-01	1.990	13.72	560.2
318	35.900	.21310	247.00	.7508-01	.1227	.1007	.9346	.5361-02	.4396-02	.6043	4.233	531.4
318	36.000	.19040	235.00	.9651-01	.1619	.1307	.9352	.7069-02	.5708-02	.7471	5.212	538.4
318	36.200	.16810	220.00	.1186	.2100	.1637	.9366	.9170-02	.7151-02	.8515	5.898	551.2
317	36.200	.72400-01	135.00	.3218	.5901	.4089	.9532	.2579-01	.1787-01	2.213	15.27	558.3
318	36.300	.12200	200.00	.1851	.3328	.2487	.9424	.1453-01	.1086-01	1.303	9.012	554.4
317	36.600	.65700-01	131.00	.3404	.6662	.4365	.9550	.2911-01	.1907-01	2.177	14.93	569.3
318	36.700	.18700	226.00	.9542-01	.1588	.1286	.9354	.6935-02	.5616-02	.7473	5.219	536.3
318	36.900	.16480	211.00	.1170	.2097	.1622	.9369	.9157-02	.7084-02	.8268	5.719	553.8
318	36.900	.10110	187.00	.2453	.4444	.3230	.9463	.1941-01	.1411-01	1.710	11.82	556.0
317	37.000	.60400-01	123.00	.3880	.7667	.4942	.9565	.3350-01	.2160-01	2.456	16.83	570.8
318	37.000	.12440	204.00	.1825	.3273	.2456	.9419	.1429-01	.1072-01	1.290	8.921	553.9
317	37.100	.56600-01	119.00	.4079	.8036	.5175	.9570	.3512-01	.2261-01	2.591	17.76	570.3
318	37.200	.21310	246.00	.7620-01	.1243	.1021	.9346	.5431-02	.4457-02	.6150	4.309	530.9
318	37.600	.16810	219.00	.1162	.2057	.1605	.9366	.8983-02	.7008-02	.8351	5.785	551.1
317	37.800	.10270	150.00	.2200	.4140	.2947	.9459	.1809-01	.1288-01	1.468	10.10	563.0
318	37.900	.12100	195.00	.1904	.3365	.2538	.9425	.1470-01	.1108-01	1.371	9.496	550.8
318	38.000	.80300-01	179.00	.3102	.5633	.3977	.9510	.2460-01	.1737-01	2.157	14.90	556.4
317	38.500	.46800-01	112.00	.4531	.9051	.5641	.9606	.3955-01	.2465-01	2.837	19.43	572.4
318	38.600	.12440	203.00	.1827	.3277	.2460	.9419	.1431-01	.1074-01	1.291	8.927	553.9
318	38.700	.10000+00	185.00	.2335	.4201	.3064	.9464	.1835-01	.1338-01	1.644	11.36	554.5
317	38.900	.82200-01	141.00	.2889	.5482	.3772	.9505	.2395-01	.1648-01	1.910	13.14	564.4
317	39.300	.41600-01	104.00	.4986	1.051	.6220	.9622	.4592-01	.2718-01	2.967	20.24	579.5
318	39.500	.10270	190.00	.2433	.4380	.3204	.9458	.1913-01	.1399-01	1.710	11.82	554.7
318	39.600	.16810	218.00	.1128	.1994	.1557	.9366	.8710-02	.6800-02	.8115	5.622	550.9
318	39.900	.19040	233.00	.9889-01	.1644	.1334	.9352	.7181-02	.5824-02	.7754	5.416	536.1
318	40.100	.79500-01	177.00	.3120	.5659	.3997	.9511	.2471-01	.1745-01	2.173	15.01	556.2
318	40.200	.12440	202.00	.1822	.3282	.2458	.9418	.1433-01	.1073-01	1.280	8.846	554.8
318	40.300	.21310	245.00	.7446-01	.1208	.9945-01	.9346	.5278-02	.4343-02	.6063	4.252	529.2
317	41.100	.82200-01	142.00	.3052	.5841	.4000	.9504	.2552-01	.1748-01	2.000	13.74	565.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
318	41.100	.60700-01	173.00	.3879	.7332	.4888	.9562	.3202-01	.2135-01	2.574	17.71	563.7
318	42.600	.59600-01	172.00	.4019	.7694	.5076	.9564	.3360-01	.2217-01	2.630	18.07	565.8
318	43.200	.42000-01	168.00	.4542	.9017	.5602	.9619	.3938-01	.2446-01	2.860	19.60	571.5
318	43.400	.82200-01	181.00	.3118	.5693	.4023	.9503	.2406-01	.1757-01	2.155	14.88	557.4
317	43.600	.62900-01	128.00	.3178	.6201	.4061	.9554	.2710-01	.1775-01	2.038	13.98	568.9
317	45.000	.22900-01	8.0000	.7736	2.103	.9677	.9683	.9189-01	.4229-01	3.827	25.79	602.5
318	46.100	.62900-01	174.00	.3744	.7119	.4752	.9553	.3109-01	.2075-01	2.468	16.97	564.7
318	47.700	.40800-01	167.00	.5063	1.041	.6291	.9620	.4548-01	.2747-01	3.080	21.04	576.4
317	48.400	.44200-01	109.00	.4635	.9476	.5793	.9609	.4141-01	.2532-01	2.837	19.39	575.6
318	53.200	.24700-01	163.00	.6245	1.431	.7650	.9674	.6247-01	.3341-01	3.464	23.51	588.7
318	65.200	.24700-01	162.00	.6194	1.396	.7593	.9669	.6096-01	.3316-01	3.480	23.64	587.0
316	90.000	.91000-02	44.000	.6922	1.709	.8624	.9668	.7488-01	.3779-01	3.649	24.68	595.4
316	90.000	.11100-01	45.000	.7752	2.381	.9987	.9668	.1043	.4376-01	3.606	24.20	609.5
316	90.000	.13100-01	46.000	.7759	2.125	.9830	.9668	.9313-01	.4308-01	3.833	25.82	602.9
316	90.000	.17000-01	48.000	.6858	1.622	.8482	.9668	.7108-01	.3717-01	3.726	25.25	591.7
316	90.000	.20900-01	50.000	.6505	1.508	.8018	.9668	.6607-01	.3513-01	3.588	24.34	589.8
316	90.000	.26900-01	53.000	.5962	1.347	.7377	.9656	.5904-01	.3233-01	3.354	22.78	587.3
316	90.000	.28800-01	54.000	.5921	1.313	.7334	.9649	.5756-01	.3214-01	3.382	22.99	585.4
316	90.000	.32800-01	55.000	.4289	.7888	.5145	.9635	.3457-01	.2255-01	2.948	20.33	558.8
316	90.000	.36700-01	56.000	.5069	1.050	.6302	.9622	.4601-01	.2762-01	3.073	20.99	577.3
316	90.000	.40600-01	57.000	.4956	1.053	.6251	.9609	.4616-01	.2739-01	2.936	20.01	580.5
316	90.000	.48500-01	58.000	.4098	.8450	.5218	.9583	.3703-01	.2287-01	2.496	17.05	576.7
316	90.000	.56400-01	59.000	.4128	.8281	.5299	.9559	.3629-01	.2322-01	2.582	17.67	573.0
316	90.000	.76100-01	60.000	.3245	.6275	.4262	.9506	.2750-01	.1868-01	2.108	14.47	567.4
316	90.000	.95800-01	61.000	.2308	.4380	.3099	.9461	.1919-01	.1358-01	1.530	10.52	564.4
316	90.000	.11550	62.000	.2006	.3712	.2729	.9423	.1627-01	.1196-01	1.368	9.433	560.0
316	135.00	.19000-01	49.000	.6763	1.616	.8295	.9683	.7083-01	.3635-01	3.647	24.70	592.6
316	135.00	.22900-01	51.000	.6438	1.549	.7904	.9683	.6790-01	.3464-01	3.454	23.39	593.2
316	180.00	.91000-02	23.000	.4208	.8545	.4909	.9719	.3744-01	.2151-01	2.601	17.79	574.6
316	180.00	.11100-01	24.000	.8132	2.881	1.019	.9719	.1263	.4465-01	3.553	23.77	616.0
316	180.00	.13100-01	25.000	.8093	2.402	.9949	.9719	.1053	.4360-01	3.828	25.72	607.7
316	180.00	.15000-01	26.000	.7905	2.207	.9646	.9719	.9672-01	.4227-01	3.863	26.00	604.2
316	180.00	.17000-01	27.000	.7197	1.873	.8704	.9719	.8208-01	.3814-01	3.665	24.73	599.4
316	180.00	.19000-01	28.000	.6876	1.765	.8302	.9719	.7733-01	.3638-01	3.533	23.86	598.4
316	180.00	.20900-01	29.000	.6897	1.673	.8263	.9719	.7331-01	.3621-01	3.680	24.91	593.9
316	180.00	.28800-01	32.000	.5970	1.324	.7152	.9699	.5801-01	.3134-01	3.410	23.19	585.3
316	180.00	.32800-01	33.000	.5635	1.160	.6727	.9684	.5083-01	.2948-01	3.437	23.48	576.5
316	180.00	.36700-01	34.000	.5679	1.228	.6903	.9670	.5381-01	.3025-01	3.314	22.57	582.5
316	180.00	.48500-01	36.000	.4815	.9823	.5936	.9630	.4305-01	.2601-01	2.962	20.25	575.3
316	180.00	.56400-01	37.000	.4452	.8840	.5541	.9604	.3874-01	.2428-01	2.813	19.27	571.5
316	180.00	.76100-01	38.000	.3435	.6546	.4380	.9546	.2869-01	.1919-01	2.267	15.58	565.1
316	180.00	.95800-01	39.000	.2897	.5337	.3765	.9496	.2339-01	.1650-01	1.987	13.70	559.1
316	180.00	.11550	40.000	.2279	.4176	.3032	.9453	.1830-01	.1329-01	1.574	10.86	558.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
316	180.00	.18450	42.000	.1208	.2072	.1647	.9362	.9080-02	.7215-02	.9092	6.323	544.0
316	225.00	.22900-01	30.000	.6733	1.604	.7838	.9757	.7028-01	.3435-01	3.639	24.65	592.3
316	270.00	.91000-02	63.000	.5880	2.268	.7066	.9773	.9938-01	.3097-01	2.490	16.63	619.1
316	270.00	.11100-01	64.000	.8223	3.304	.9911	.9773	.1448	.4343-01	3.433	22.91	620.4
316	270.00	.13100-01	65.000	.8141	2.699	.9672	.9773	.1183	.4238-01	3.656	24.49	613.2
316	270.00	.17000-01	67.000	.7706	2.185	.9032	.9773	.9575-01	.3958-01	3.734	25.12	605.1
316	270.00	.20900-01	69.000	.7653	2.051	.8921	.9773	.8990-01	.3909-01	3.828	25.81	601.5
316	270.00	.24900-01	71.000	.6905	1.717	.8016	.9768	.7522-01	.3513-01	3.623	24.50	595.9
316	270.00	.28800-01	73.000	.6529	1.503	.7590	.9753	.6586-01	.3326-01	3.621	24.57	589.1
316	270.00	.36700-01	75.000	.5960	1.343	.7045	.9723	.5885-01	.3087-01	3.361	22.83	587.0
316	270.00	.48500-01	77.000	.5054	1.053	.6061	.9681	.4616-01	.2656-01	3.047	20.80	578.1
316	270.00	.56400-01	78.000	.4959	1.021	.6034	.9654	.4474-01	.2644-01	3.024	20.66	576.5
316	270.00	.95800-01	80.000	.2921	.5606	.3754	.9536	.2457-01	.1645-01	1.912	13.14	566.3
316	270.00	.11550	81.000	.2457	.4702	.3251	.9489	.2060-01	.1425-01	1.615	11.10	565.7
316	315.00	.19000-01	68.000	.6239	1.407	.7215	.9757	.6165-01	.3162-01	3.516	23.89	587.1
316	315.00	.22900-01	70.000	.7309	1.812	.8548	.9757	.7940-01	.3746-01	3.842	25.98	595.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
279	4.020	.2108-02	3.016	62.92	718.7	.4035	169.8	-89.96	2568.	.6413-02	.1366-06	3.746
280	4.020	.1066-02	3.052	63.02	718.7	.4042	169.8	-89.98	2568.	.6424-02	.1366-06	3.752
281	4.020	.1061-02	3.036	62.92	718.7	.4035	169.8	-89.98	2568.	.6413-02	.1366-06	3.746

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
279	.3791-01	.9560-02
280	.3794-01	.9552-02
281	.3791-01	.9560-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
280	.00000	.91000-02	1.0000	.3930	.6857	.4668	.9629	.2601-01	.1771-01	2.510	17.39	550.3
280	.00000	.15000-01	4.0000	.7480	1.550	.9254	.9629	.5880-01	.3511-01	3.942	26.88	579.8
280	.00000	.17000-01	5.0000	.7174	1.400	.8756	.9629	.5312-01	.3322-01	4.011	27.48	571.3
280	.00000	.19000-01	6.0000	.6755	1.307	.8227	.9629	.4957-01	.3121-01	3.812	26.14	569.9
280	.00000	.24900-01	9.0000	.6007	1.116	.7267	.9624	.4234-01	.2757-01	3.546	24.41	563.1
280	.00000	.26900-01	10.000	.5755	1.051	.6962	.9617	.3987-01	.2641-01	3.468	23.91	559.8
279	.00000	.32800-01	12.000	.5228	.9304	.6356	.9595	.3527-01	.2409-01	3.252	22.48	554.6
279	.00000	.36700-01	13.000	.4731	.8140	.5738	.9581	.3085-01	.2175-01	3.078	21.37	547.0
279	.00000	.40600-01	14.000	.4857	.8493	.5962	.9567	.3219-01	.2260-01	3.091	21.42	550.8
279	.00000	.48500-01	15.000	.4171	.7083	.5144	.9540	.2685-01	.1950-01	2.763	19.22	543.9
279	.00000	.56400-01	16.000	.3915	.6606	.4882	.9514	.2504-01	.1851-01	2.618	18.22	542.3
279	.00000	.76100-01	17.000	.2987	.4876	.3789	.9453	.1848-01	.1436-01	2.100	14.69	533.2
279	.00000	.95800-01	18.000	.3814-01	.6182-01	.4953-01	.9400	.2343-02	.1877-02	.2713	1.901	531.0
279	.00000	.11550	19.000	.1925	.3118	.2558	.9353	.1182-01	.9698-02	1.370	9.601	530.9
279	.00000	.16480	20.000	.1057	.1742	.1486	.9267	.6604-02	.5632-02	.7326	5.118	535.9
279	.00000	.21400	22.000	.5654-01	.8798-01	.7822-01	.9224	.3335-02	.2965-02	.4310	3.042	517.6
281	2.0000	.24700-01	165.00	.5697	1.036	.6859	.9623	.3926-01	.2600-01	3.448	23.79	559.0
280	9.0000	.15000-01	157.00	.7083	1.393	.8704	.9621	.5286-01	.3302-01	3.928	26.90	572.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
280	9.0000	.17600-01	158.00	.6589	1.283	.8076	.9621	.4868-01	.3064-01	3.692	25.30	571.0
281	9.8000	.24700-01	164.00	.6012	1.137	.7338	.9616	.4310-01	.2782-01	3.475	23.88	566.2
280	10.000	.22900-01	88.000	.6250	1.185	.7616	.9620	.4495-01	.2889-01	3.607	24.77	566.6
280	10.000	.26900-01	90.000	.5734	1.043	.6964	.9608	.3958-01	.2642-01	3.471	23.94	559.1
280	10.000	.34700-01	94.000	.5073	.8785	.6170	.9579	.3333-01	.2341-01	3.274	22.71	548.6
281	14.600	.44200-01	169.00	.4427	.7601	.5473	.9542	.2881-01	.2075-01	2.888	20.05	546.6
280	18.500	.44200-01	106.00	.4560	.7841	.5651	.9539	.2975-01	.2144-01	2.972	20.64	546.9
281	19.600	.62900-01	175.00	.3323	.5536	.4200	.9477	.2098-01	.1592-01	2.264	15.79	538.9
280	19.800	.40800-01	101.00	.4821	.8370	.5959	.9549	.3175-01	.2261-01	3.099	21.49	549.2
280	20.000	.24900-01	89.000	.5792	1.067	.7062	.9607	.4049-01	.2679-01	3.452	23.78	561.5
280	20.000	.26800-01	91.000	.5339	.9669	.6532	.9592	.3668-01	.2478-01	3.251	22.43	558.2
280	20.000	.32800-01	93.000	.5223	.9420	.6434	.9578	.3574-01	.2441-01	3.196	22.07	557.4
280	22.200	.62900-01	125.00	.3427	.5748	.4348	.9475	.2181-01	.1649-01	2.314	16.12	540.7
280	22.400	.44200-01	107.00	.4447	.7618	.5513	.9536	.2890-01	.2091-01	2.913	20.24	546.0
281	22.600	.10270	192.00	.2024	.3327	.2690	.9368	.1261-01	.1020-01	1.407	9.836	535.2
280	23.000	.42000-01	105.00	.4691	.8092	.5807	.9543	.3070-01	.2203-01	3.043	21.12	547.7
280	23.400	.59600-01	120.00	.3614	.6027	.4553	.9485	.2286-01	.1727-01	2.461	17.16	539.2
281	23.900	.21310	250.00	.4906-01	.7539-01	.6736-01	.9222	.2858-02	.2553-02	.3826	2.707	512.9
280	24.100	.82200-01	139.00	.2470	.4040	.3191	.9418	.1533-01	.1211-01	1.732	12.11	533.8
281	24.400	.19040	238.00	.7062-01	.1108	.9783-01	.9233	.4201-02	.3708-02	.5304	3.737	520.6
281	24.400	.12440	207.00	.1544	.2579	.2123	.9321	.9777-02	.8047-02	1.048	7.305	539.6
281	24.800	.16810	223.00	.8536-01	.1388	.1198	.9254	.5262-02	.4540-02	.6038	4.227	532.1
280	24.900	.62900-01	126.00	.3437	.5762	.4364	.9473	.2186-01	.1656-01	2.323	16.18	540.5
281	25.000	.79500-01	178.00	.2681	.4413	.3462	.9425	.1673-01	.1312-01	1.861	13.00	535.5
281	25.300	.10270	191.00	.2065	.3390	.2745	.9366	.1285-01	.1040-01	1.439	10.06	534.8
281	25.300	.10000+00	186.00	.2084	.3428	.2764	.9373	.1299-01	.1048-01	1.447	10.11	535.4
280	25.500	.60700-01	124.00	.3522	.5893	.4455	.9480	.2236-01	.1690-01	2.387	16.63	540.1
281	26.000	.12440	206.00	.1523	.2546	.2096	.9320	.9650-02	.7944-02	1.033	7.200	539.8
280	26.300	.82200-01	140.00	.2639	.4286	.3401	.9417	.1626-01	.1290-01	1.872	13.11	531.7
281	26.700	.12100	199.00	.1494	.2471	.2037	.9326	.9368-02	.7721-02	1.029	7.184	537.0
281	26.800	.16810	222.00	.8696-01	.1409	.1218	.9253	.5342-02	.4617-02	.6185	4.333	531.0
281	27.000	.19040	237.00	.7190-01	.1126	.9948-01	.9233	.4268-02	.3771-02	.5420	3.820	519.8
281	27.100	.21310	249.00	.5015-01	.7689-01	.6876-01	.9222	.2914-02	.2606-02	.3930	2.782	512.0
281	27.200	.80300-01	180.00	.2575	.4213	.3322	.9422	.1597-01	.1259-01	1.804	12.62	533.8
280	27.400	.40100-01	98.000	.4981	.8753	.6193	.9546	.3321-01	.2350-01	3.152	21.82	551.9
281	27.400	.16480	215.00	.8367-01	.1369	.1177	.9257	.5188-02	.4460-02	.5864	4.102	533.8
280	27.600	.41600-01	102.00	.4729	.8245	.5881	.9541	.3128-01	.2231-01	3.023	20.95	550.2
281	27.600	.12440	205.00	.1492	.2492	.2053	.9319	.9445-02	.7782-02	1.013	7.064	539.5
281	27.600	.18700	230.00	.7601-01	.1189	.1049	.9235	.4505-02	.3978-02	.5744	4.050	519.3
281	27.700	.21010	243.00	.5495-01	.8467-01	.7557-01	.9223	.3210-02	.2865-02	.4265	3.016	513.9
281	27.900	.10110	188.00	.1991	.3279	.2648	.9368	.1243-01	.1004-01	1.380	9.639	535.8
280	28.000	.46800-01	110.00	.4142	.7054	.5159	.9523	.2676-01	.1957-01	2.736	19.02	544.6
281	28.200	.16810	221.00	.8386-01	.1363	.1177	.9253	.5167-02	.4462-02	.5936	4.156	531.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO -	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
281	28.300	.19040	236.00	.6862-01	.1070	.9471-01	.9233	.4058-02	.3590-02	.5209	3.674	518.4
281	28.300	.12200	201.00	.1589	.2628	.2169	.9323	.9960-02	.8223-02	1.096	7.650	536.8
280	28.400	.53500-01	114.00	.3942	.6673	.4955	.9500	.2532-01	.1880-01	2.626	18.27	543.1
281	28.400	.21310	248.00	.5018-01	.7680-01	.6872-01	.9222	.2911-02	.2605-02	.3945	2.794	511.3
280	28.700	.58600-01	117.00	.3740	.6277	.4726	.9484	.2381-01	.1793-01	2.523	17.58	540.9
281	28.800	.16580	217.00	.8334-01	.1356	.1169	.9255	.5140-02	.4431-02	.5889	4.123	532.2
280	28.800	.60400-01	121.00	.3526	.5911	.4466	.9478	.2242-01	.1694-01	2.382	16.60	540.6
281	29.000	.21110	244.00	.4750-01	.7278-01	.6508-01	.9222	.2759-02	.2467-02	.3726	2.638	511.8
280	29.000	.65700-01	129.00	.3263	.5440	.4158	.9462	.2064-01	.1577-01	2.223	15.50	539.1
280	29.200	.72400-01	133.00	.2960	.4907	.3801	.9442	.1861-01	.1442-01	2.034	14.19	537.6
280	29.300	.79500-01	136.00	.2513	.4108	.3240	.9422	.1559-01	.1229-01	1.764	12.34	533.6
280	29.600	.92500-01	143.00	.2266	.3741	.2987	.9388	.1419-01	.1133-01	1.568	10.95	536.4
280	29.700	.10000+00	146.00	.2001	.3271	.2649	.9370	.1241-01	.1005-01	1.405	9.826	533.6
281	29.900	.12100	198.00	.1515	.2515	.2071	.9324	.9532-02	.7852-02	1.039	7.249	537.8
281	30.200	.16480	214.00	.8013-01	.1304	.1124	.9256	.4944-02	.4260-02	.5660	3.962	532.3
281	30.300	.21010	242.00	.5405-01	.8299-01	.7415-01	.9222	.3146-02	.2811-02	.4222	2.988	512.6
280	31.500	.11100-01	03.000	.6767	1.395	.8508	.9603	.5293-01	.3228-01	3.582	24.44	579.1
281	32.100	.21010	241.00	.5452-01	.8341-01	.7462-01	.9222	.3162-02	.2829-02	.4287	3.037	511.2
281	32.200	.16480	213.00	.7976-01	.1300	.1120	.9255	.4927-02	.4244-02	.5624	3.936	532.6
281	32.200	.17860	224.00	.8953-01	.1420	.1244	.9241	.5383-02	.4716-02	.6600	4.641	524.2
281	32.200	.18700	228.00	.6895-01	.1066	.9452-01	.9234	.4041-02	.3583-02	.5318	3.758	515.2
281	32.300	.12100	197.00	.1545	.2562	.2112	.9323	.9710-02	.8007-02	1.061	7.405	537.5
281	32.300	.12300	194.00	.1384	.2294	.1895	.9319	.8694-02	.7185-02	.9503	6.632	537.5
281	32.300	.12730	208.00	.1391	.2346	.1933	.9311	.8893-02	.7326-02	.9304	6.477	542.2
281	32.300	.13420	209.00	.1189	.2033	.1677	.9299	.7705-02	.6356-02	.7804	5.423	545.5
280	32.400	.10000+00	147.00	.1987	.3271	.2642	.9368	.1241-01	.1002-01	1.380	9.646	535.6
281	32.400	.10110	184.00	.1876	.3092	.2499	.9366	.1172-01	.9474-02	1.300	9.080	535.9
281	32.400	.10630	193.00	.1768	.2900	.2364	.9354	.1099-01	.8962-02	1.234	8.626	534.6
281	32.500	.85800-01	183.00	.2345	.3906	.3079	.9404	.1481-01	.1167-01	1.599	11.15	538.8
280	32.600	.79500-01	137.00	.2796	.4595	.3617	.9420	.1743-01	.1372-01	1.947	13.61	535.1
281	32.600	.80800-01	176.00	.2541	.4201	.3302	.9417	.1593-01	.1252-01	1.751	12.22	536.9
280	32.700	.67400-01	132.00	.3156	.5263	.4038	.9455	.1997-01	.1532-01	2.149	14.99	539.2
280	32.700	.72400-01	134.00	.3030	.5037	.3901	.9440	.1911-01	.1480-01	2.074	14.47	538.3
280	32.800	.65700-01	130.00	.3137	.5242	.4007	.9460	.1989-01	.1520-01	2.130	14.85	539.7
281	32.800	.16680	210.00	.8023-01	.1306	.1127	.9253	.4951-02	.4273-02	.5665	3.965	532.4
281	32.800	.18880	225.00	.6432-01	.9989-01	.8849-01	.9233	.3786-02	.3354-02	.4922	3.475	516.8
280	32.900	.58600-01	118.00	.3204	.5477	.4083	.9481	.2078-01	.1549-01	2.105	14.63	545.5
280	32.900	.60400-01	122.00	.3419	.5747	.4341	.9475	.2180-01	.1647-01	2.300	16.02	541.3
281	32.900	.61300-01	171.00	.3388	.5698	.4309	.9473	.2160-01	.1633-01	2.277	15.86	541.4
280	33.000	.53500-01	115.00	.3923	6620	.4934	.9497	.2511-01	.1872-01	2.626	18.28	542.2
280	33.200	.40300-01	113.00	.4076	.6901	.5088	.9514	.2618-01	.1930-01	2.714	18.88	543.1
281	33.400	.42800-01	166.00	.4350	.7494	.5412	.9532	.2841-01	.2051-01	2.824	19.61	547.4
280	33.500	.40100-01	99.000	.4720	.8138	.5846	.9541	.3087-01	.2218-01	3.064	21.27	547.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
280	33.600	.38300-01	97.000	.4878	.8544	.6053	.9548	.3241-01	.2296-01	3.100	21.47	551.2
280	33.700	.36700-01	96.000	.4832	.8595	.6007	.9553	.3261-01	.2279-01	3.009	20.81	554.5
280	33.900	.33800-01	95.000	.5075	.9114	.6293	.9563	.3458-01	.2387-01	3.123	21.57	556.5
281	34.700	.21010	240.00	.5450-01	.8311-01	.7443-01	.9222	.3151-02	.2821-02	.4311	3.056	510.0
281	34.700	.18700	227.00	.6700-01	.1039	.9203-01	.9234	.3937-02	.3488-02	.5141	3.631	516.2
281	34.900	.16480	212.00	.8421-01	.1375	.1185	.9254	.5214-02	.4490-02	.5916	4.139	533.3
280	35.100	.10000+00	148.00	.1947	.3216	.2596	.9367	.1220-01	.9848-02	1.346	9.399	536.5
281	35.200	.23900-01	161.00	.6002	1.158	.7440	.9599	.4389-01	.2820-01	3.396	23.29	569.4
280	35.300	.92500-01	145.00	.2235	.3706	.2957	.9385	.1406-01	.1122-01	1.536	10.72	537.6
280	35.300	.22100-01	160.00	.5857	1.127	.7251	.9600	.4276-01	.2751-01	3.324	22.80	569.1
281	35.400	.18800	231.00	.7053-01	.1097	.9710-01	.9233	.4157-02	.3681-02	.5384	3.800	517.3
281	35.500	.12100	196.00	.1503	.2507	.2064	.9322	.9503-02	.7822-02	1.023	7.130	539.2
281	35.600	.16580	216.00	.8268-01	.1347	.1162	.9253	.5106-02	.4404-02	.5832	4.082	532.6
280	35.800	.80600-01	138.00	.2424	.3971	.3139	.9415	.1506-01	.1191-01	1.697	11.87	534.2
281	35.900	.21310	247.00	.5073-01	.7692-01	.6904-01	.9221	.2916-02	.2617-02	.4060	2.881	507.6
281	36.000	.19040	235.00	.7086-01	.1101	.9757-01	.9231	.4172-02	.3698-02	.5420	3.827	516.9
281	36.200	.16810	220.00	.8816-01	.1428	.1236	.9250	.5415-02	.4687-02	.6274	4.395	530.9
280	36.200	.72400-01	135.00	.2899	.4815	.3734	.9438	.1827-01	.1417-01	1.986	13.86	538.1
281	36.300	.12200	200.00	.1459	.2437	.2007	.9320	.9236-02	.7607-02	.9906	6.906	539.5
280	36.600	.65700-01	131.00	.3428	.5781	.4401	.9457	.2193-01	.1669-01	2.297	15.99	542.1
281	36.700	.18700	226.00	.7083-01	.1098	.9730-01	.9233	.4162-02	.3688-02	.5437	3.840	516.2
281	36.900	.16480	211.00	.8595-01	.1406	.1210	.9254	.5328-02	.4588-02	.6027	4.215	533.7
281	36.900	.10110	187.00	.1966	.3270	.2635	.9364	.1239-01	.9987-02	1.343	9.371	538.4
280	37.000	.60400-01	123.00	.3555	.6020	.4533	.9473	.2284-01	.1720-01	2.367	16.47	543.2
281	37.000	.12440	204.00	.1433	.2389	.1974	.9315	.9056-02	.7484-02	.9747	6.797	539.2
280	37.100	.56600-01	119.00	.3696	.6254	.4699	.9478	.2373-01	.1783-01	2.464	17.15	543.0
281	37.200	.21310	246.00	.5455-01	.8256-01	.7414-01	.9221	.3129-02	.2810-02	.4380	3.110	506.8
281	37.600	.16810	219.00	.8535-01	.1383	.1197	.9250	.5241-02	.4538-02	.6075	4.255	530.9
280	37.800	.10270	150.00	.1978	.3273	.2650	.9359	.1242-01	.1005-01	1.363	9.518	537.0
281	37.900	.12100	195.00	.1498	.2480	.2049	.9321	.9402-02	.7767-02	1.030	7.189	537.3
281	38.000	.80300-01	179.00	.2573	.4264	.3350	.9415	.1616-01	.1270-01	1.767	12.33	537.5
280	38.500	.46800-01	112.00	.4217	.7198	.5276	.9515	.2731-01	.2002-01	2.777	19.30	545.1
281	38.600	.12440	203.00	.1435	.2397	.1980	.9314	.9085-02	.7506-02	.9746	6.794	539.5
281	38.700	.10000+00	185.00	.1890	.3133	.2526	.9365	.1188-01	.9577-02	1.298	9.058	537.5
280	38.900	.82200-01	141.00	.2353	.3906	.3075	.9409	.1482-01	.1167-01	1.614	11.26	537.9
280	39.300	.41600-01	104.00	.4536	.7944	.5675	.9532	.3014-01	.2153-01	2.883	19.97	551.1
281	39.500	.10270	190.00	.1959	.3252	.2630	.9359	.1233-01	.9968-02	1.342	9.367	537.9
281	39.600	.16810	218.00	.8171-01	.1323	.1146	.9250	.5017-02	.4345-02	.5818	4.076	530.8
281	39.900	.19040	233.00	.7161-01	.1105	.9821-01	.9231	.4189-02	.3723-02	.5541	3.917	514.5
281	40.100	.79500-01	177.00	.2582	.4278	.3360	.9416	.1622-01	.1274-01	1.773	12.38	537.4
281	40.200	.12440	202.00	.1446	.2422	.1999	.9313	.9180-02	.7577-02	.9772	6.809	540.4
281	40.300	.21310	245.00	.5111-01	.7690-01	.6918-01	.9221	.2915-02	.2622-02	.4152	2.952	504.3
280	41.100	.82200-01	142.00	.2435	.4059	.3190	.9408	.1540-01	.1210-01	1.659	11.57	539.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
281	41.100	.60700-01	173.00	.3386	.5732	.4325	.9470	.2173-01	.1639-01	2.254	15.68	543.1
281	42.600	.59600-01	172.00	.3578	.6105	.4579	.9472	.2314-01	.1736-01	2.354	16.36	545.1
281	43.200	.42000-01	168.00	.4165	.7200	.5198	.9529	.2729-01	.1970-01	2.691	18.68	548.2
281	43.400	.82200-01	181.00	.2583	.4267	.3372	.9407	.1618-01	.1278-01	1.782	12.44	536.6
280	43.600	.62900-01	128.00	.3470	.5833	.4439	.9461	.2213-01	.1684-01	2.336	16.27	541.2
280	45.000	.22900-01	8.0000	.7513	1.562	.9524	.9593	.5926-01	.3613-01	3.947	26.91	580.2
281	46.100	.62900-01	174.00	.3264	.5529	.4191	.9460	.2096-01	.1589-01	2.170	15.10	543.3
281	47.700	.40800-01	167.00	.4653	.8187	.5836	.9530	.3103-01	.2212-01	2.936	20.33	552.2
280	48.400	.44200-01	109.00	.4347	.7502	.5452	.9518	.2846-01	.2068-01	2.819	19.56	547.8
281	53.200	.24700-01	163.00	.6047	1.123	.7481	.9585	.4256-01	.2836-01	3.571	24.58	562.9
281	65.200	.24700-01	162.00	.5897	1.098	.7322	.9579	.4161-01	.2775-01	3.471	23.89	563.4
279	90.000	.91000-02	44.000	.4039	.6893	.4891	.9579	.2613-01	.1854-01	2.658	18.47	545.1
279	90.000	.11100-01	45.000	.6474	1.269	.8154	.9579	.4811-01	.3091-01	3.599	24.65	572.0
279	90.000	.13100-01	46.000	.8191	1.831	1.067	.9579	.6939-01	.4045-01	4.038	27.41	588.6
279	90.000	.17000-01	48.000	.7261	1.405	.9114	.9579	.5327-01	.3455-01	4.093	28.06	570.0
279	90.000	.20900-01	50.000	.6341	1.197	.7905	.9579	.4539-01	.2996-01	3.671	25.23	565.9
279	90.000	.24900-01	52.000	.6890	1.258	.8533	.9575	.4770-01	.3235-01	4.148	28.60	559.8
279	90.000	.26900-01	53.000	.5722	1.054	.7134	.9567	.3997-01	.2704-01	3.408	23.47	561.5
279	90.000	.28800-01	54.000	.5631	1.026	.7025	.9560	.3890-01	.2663-01	3.399	23.44	559.4
279	90.000	.32800-01	55.000	.4073	.6675	.4949	.9546	.2530-01	.1876-01	2.846	19.90	534.3
279	90.000	.36700-01	56.000	.4860	.8486	.6074	.9532	.3217-01	.2302-01	3.098	21.47	550.5
279	90.000	.40600-01	57.000	.4660	.8282	.5902	.9519	.3139-01	.2237-01	2.903	20.07	554.3
279	90.000	.48500-01	58.000	.3746	.6565	.4789	.9493	.2489-01	.1815-01	2.376	16.46	551.3
279	90.000	.56400-01	59.000	.3712	.6468	.4801	.9468	.2452-01	.1820-01	2.373	16.45	550.0
279	90.000	.76100-01	60.000	.2758	.4733	.3657	.9411	.1794-01	.1386-01	1.801	12.51	546.4
279	90.000	.95800-01	61.000	.1802	.3080	.2451	.9361	.1168-01	.9292-02	1.183	8.217	545.5
279	90.000	.11550	62.000	.1548	.2633	.2151	.9320	.9980-02	.8155-02	1.024	7.121	544.2
279	135.00	.19000-01	49.000	.6689	1.276	.8292	.9594	.4837-01	.3143-01	3.830	26.29	567.6
279	135.00	.22900-01	51.000	.6282	1.195	.7781	.9594	.4529-01	.2949-01	3.609	24.78	567.1
279	180.00	.91000-02	23.000	.2570	.4251	.3011	.9630	.1611-01	.1141-01	1.771	12.36	536.9
279	180.00	.11100-01	24.000	.6708	1.492	.8425	.9630	.5654-01	.3194-01	3.320	22.54	588.1
279	180.00	.13100-01	25.000	.7875	1.734	.9871	.9630	.6572-01	.3742-01	3.931	26.71	587.0
279	180.00	.15000-01	26.000	.8027	1.700	.9978	.9630	.6445-01	.3782-01	4.142	28.21	582.5
279	180.00	.17000-01	27.000	.7334	1.476	.9015	.9630	.5597-01	.3417-01	3.970	27.13	575.9
279	180.00	.19000-01	28.000	.6980	1.389	.8557	.9630	.5264-01	.3244-01	3.823	26.15	574.2
279	180.00	.20900-01	29.000	.6815	1.309	.8287	.9630	.4963-01	.3141-01	3.872	26.56	568.8
279	180.00	.28800-01	32.000	.5852	1.061	.7092	.9610	.4020-01	.2688-01	3.556	24.54	558.4
279	180 00	.32800-01	33.000	.5451	.9494	.6597	.9595	.3599-01	.2497-01	3.487	24.17	549.9
279	180.00	.36700-01	34.000	.5397	.9624	.6614	.9581	.3648-01	.2507-01	3.348	23.14	555.0
279	180.00	.48500-01	36.000	.4314	.7431	.5346	.9540	.2817-01	.2026-01	2.802	19.45	547.3
279	180.00	.56400-01	37.000	.3950	.6713	.4939	.9514	.2545-01	.1872-01	2.615	18.18	544.1
279	180.00	.76100-01	38.000	.3024	.5042	.3871	.9453	.1911-01	.1467-01	2.059	14.36	539.1
279	180.00	.95800-01	39.000	.2412	.3952	.3148	.9400	.1498-01	.1193-01	1.687	11.80	534.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K113)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
279	180.00	.11550	40.000	.1930	.3176	.2586	.9353	.1204-01	.9804-02	1.339	9.359	535.5
279	180.00	.18450	42.000	.9060-01	.1416	.1245	.9244	.5369-02	.4719-02	.6850	4.830	519.2
279	225.00	.22900-01	30.000	.6385	1.202	.7566	.9667	.4556-01	.2868-01	3.710	25.50	565.4
279	270.00	.91000-02	63.000	.4941	1.010	.5896	.9683	.3828-01	.2235-01	2.635	17.99	578.0
279	270.00	.11100-01	64.000	.7201	1.772	.8871	.9683	.6716-01	.3363-01	3.305	22.32	597.6
279	270.00	.13100-01	65.000	.7782	1.761	.9456	.9683	.6673-01	.3584-01	3.800	25.77	589.9
279	270.00	.17000-01	67.000	.7638	1.603	.9159	.9683	.6076-01	.3472-01	3.975	27.09	581.4
279	270.00	.20900-01	69.000	.7079	1.422	.8420	.9683	.5390-01	.3192-01	3.840	26.25	575.6
279	270.00	.24900-01	71.000	.6314	1.229	.7487	.9678	.4658-01	.2838-01	3.537	24.24	570.9
279	270.00	.28800-01	73.000	.6449	1.209	.7653	.9663	.4582-01	.2901-01	3.767	25.90	564.6
279	270.00	.36700-01	75.000	.5525	1.015	.6635	.9633	.3849-01	.2515-01	3.301	22.75	561.0
279	270.00	.48500-01	77.000	.4437	.7792	.5386	.9591	.2954-01	.2042-01	2.807	19.44	551.8
279	270.00	.56400-01	78.000	.4398	.7685	.5407	.9564	.2913-01	.2050-01	2.801	19.41	550.7
279	270.00	.95800-01	80.000	.2416	.4160	.3153	.9443	.1577-01	.1195-01	1.570	10.90	547.2
279	270.00	.11550	81.000	.2065	.3542	.2767	.9391	.1343-01	.1049-01	1.349	9.370	546.3
279	315.00	.19000-01	68.000	.5908	1.100	.6985	.9667	.4168-01	.2648-01	3.478	23.93	563.4
279	315.00	.22900-01	70.000	.6744	1.304	.8037	.9667	.4942-01	.3046-01	3.806	26.10	569.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
310	3.010	-.1023-01	-.6281-02	36.26	715.7	.9725	254.5	-31.56	2354.	.1031-01	.2034-06	3.710
311	3.010	-.3408-02	-.2095-02	36.27	715.7	.9727	254.5	-31.58	2354.	.1032-01	.2034-06	3.710
312	3.010	-.1704-02	-.1047-02	35.93	715.7	.9637	254.5	-31.58	2354.	.1022-01	.2034-06	3.676

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
310	.4400-01	.7529-02
311	.4400-01	.7528-02
312	.4380-01	.7563-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
311	.00000	.91000-02	1.0000	.6419	1.581	.7700	.9720	.6958-01	.3388-01	3.403	23.02	595.2
311	.00000	.15000-01	4.0000	.7688	2.144	.9371	.9720	.9435-01	.4124-01	3.775	25.41	604.1
311	.00000	.17000-01	5.0000	.7331	1.856	.8827	.9720	.8168-01	.3884-01	3.816	25.78	597.4
311	.00000	.19000-01	6.0000	.7092	1.731	.8496	.9720	.7616-01	.3739-01	3.784	25.60	594.4
311	.00000	.24900-01	9.0000	.6451	1.547	.7737	.9715	.6807-01	.3405-01	3.485	23.60	592.9
311	.00000	.26900-01	10.000	.6247	1.470	.7511	.9707	.6469-01	.3305-01	3.421	23.19	591.2
310	.00000	.32800-01	12.000	.5602	1.208	.6738	.9686	.5313-01	.2965-01	3.291	22.41	582.2
310	.00000	.36700-01	13.000	.5035	1.031	.6052	.9671	.4536-01	.2663-01	3.099	21.18	575.8
310	.00000	.40600-01	14.000	.5309	1.132	.6488	.9658	.4982-01	.2855-01	3.147	21.45	580.9
310	.00000	.48500-01	15.000	.4666	.9556	.5753	.9631	.4205-01	.2531-01	2.871	19.62	575.8
310	.00000	.56400-01	16.000	.4383	.8939	.5488	.9605	.3933-01	.2415-01	2.709	18.52	575.2
310	.00000	.76100-01	17.000	.3371	.6504	.4313	.9547	.2862-01	.1898-01	2.204	15.13	567.1
310	.00000	.95800-01	18.000	.6276-01	.1085	.7968-01	.9496	.4774-02	.3506-02	.4688	3.257	545.9
310	.00000	.11550	19.000	.2207	.4130	.2959	.9454	.1817-01	.1302-01	1.492	10.27	562.0
310	.00000	.16480	20.000	.1406	.2540	.1945	.9379	.1118-01	.8559-02	.9914	6.852	555.4
310	.00000	.21400	22.000	.8636-01	.1430	.1165	.9347	.6293-02	.5125-02	.6868	4.801	535.0
312	2.0000	.24700-01	165.00	.6041	1.277	.7106	.9716	.5593-01	.3112-01	3.594	24.51	579.8
311	9.0000	.15000-01	157.00	.7601	1.931	.9155	.9720	.8497-01	.4029-01	3.947	26.66	597.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
311	9.0000	.17600-01	158.00	.6874	1.741	.8276	.9720	.7659-01	.3642-01	3.578	24.17	597.4
312	9.8000	.24700-01	164.00	.6558	1.485	.7796	.9716	.6505-01	.3415-01	3.682	25.01	587.5
311	10.000	.22900-01	88.000	.6675	1.657	.8016	.9720	.7293-01	.3527-01	3.520	23.80	595.8
311	10.000	.26900-01	90.000	.6274	1.475	.7542	.9707	.6489-01	.3319-01	3.439	23.31	591.1
311	10.000	.34700-01	94.000	.5174	1.073	.6208	.9679	.4721-01	.2732-01	3.148	21.49	577.4
312	14.600	.44200-01	169.00	.4850	.9730	.5900	.9645	.4262-01	.2584-01	3.032	20.75	573.0
311	18.500	.44200-01	106.00	.4962	1.076	.6135	.9645	.4733-01	.2700-01	2.901	19.76	582.8
312	19.600	.62900-01	175.00	.3792	.7251	.4729	.9585	.3176-01	.2071-01	2.493	17.13	565.6
311	19.800	.40800-01	101.00	.5257	1.156	.6467	.9657	.5087-01	.2846-01	3.037	20.66	584.4
311	20.000	.24900-01	89.000	.6225	1.470	.7450	.9715	.6470-01	.3278-01	3.400	23.04	591.5
311	20.000	.28800-01	91.000	.6001	1.406	.7247	.9700	.6187-01	.3189-01	3.298	22.36	590.8
311	20.000	.32800-01	93.000	.5608	1.318	.6845	.9685	.5799-01	.3012-01	3.074	20.84	591.1
311	22.200	.62900-01	125.00	.3928	.8189	.5010	.9585	.3603-01	.2705-01	2.378	16.23	578.1
311	22.400	.44200-01	107.00	.4865	1.045	.6004	.9645	.4599-01	.2642-01	2.867	19.53	581.8
312	22.600	.10270	192.00	.2446	.4466	.3197	.9481	.1956-01	.1400-01	1.695	11.70	557.4
311	23.000	.42000-01	105.00	.5067	1.099	.6234	.9653	.4837-01	.2743-01	2.960	20.15	582.9
311	23.400	.59600-01	120.00	.3928	.8084	.4961	.9595	.3557-01	.2183-01	2.406	16.44	576.5
312	23.900	.21310	250.00	.9227-01	.1475	.1221	.9348	.6459-02	.5347-02	.7727	5.432	524.5
311	24.100	.82200-01	139.00	.3178	.6238	.4130	.9530	.2745-01	.1817-01	2.041	14.00	569.7
312	24.400	.19040	238.00	.1114	.1821	.1484	.9358	.7975-02	.6499-02	.8993	6.298	531.3
312	24.400	.12440	207.00	.1967	.3581	.2636	.9437	.1569-01	.1155-01	1.368	9.445	556.9
312	24.800	.16810	223.00	.1450	.2482	.1959	.9376	.1087-01	.8579-02	1.094	7.610	543.5
311	24.900	.62900-01	126.00	.3785	.7854	.4822	.9585	.3456-01	.2122-01	2.301	15.71	577.5
312	25.000	.79500-01	178.00	.3242	.6076	.4134	.9538	.2661-01	.1811-01	2.179	15.00	562.2
312	25.300	.10270	191.00	.2459	.4469	.3209	.9481	.1957-01	.1405-01	1.714	11.84	556.5
312	25.300	.10000+00	186.00	.2607	.4782	.3402	.9487	.2095-01	.1490-01	1.797	12.40	558.3
311	25.500	.60700-01	124.00	.4006	.8209	.5065	.9592	.3613-01	.2229-01	2.464	16.84	575.9
312	26.000	.12440	206.00	.1946	.3535	.2606	.9437	.1548-01	.1141-01	1.358	9.380	556.4
311	26.300	.82200-01	140.00	.2480	.4784	.3205	.9530	.2105-01	.1410-01	1.622	11.14	567.1
312	26.700	.12100	199.00	.1960	.3509	.2599	.9443	.1537-01	.1138-01	1.392	9.627	553.6
312	26.800	.16810	222.00	.1433	.2439	.1930	.9376	.1068-01	.8452-02	1.089	7.581	542.2
312	27.000	.19040	237.00	.1144	.1869	.1524	.9358	.8187-02	.6674-02	.9241	6.472	531.2
312	27.100	.21310	249.00	.8869-01	.1422	.1175	.9348	.6228-02	.5148-02	.7390	5.192	525.4
312	27.200	.80300-01	180.00	.3180	.5878	.4042	.9535	.2574-01	.1770-01	2.172	14.98	559.7
311	27.400	.40100-01	98.000	.5005	1.126	.6173	.9659	.4954-01	.2717-01	2.838	19.28	586.8
312	27.400	.16480	215.00	.1388	.2388	.1876	.9379	.1046-01	.8216-02	1.039	7.221	544.8
311	27.600	.41600-01	102.00	.5235	1.158	.6459	.9654	.5095-01	.2842-01	3.009	20.46	585.0
312	27.600	.12440	205.00	.1916	.3467	.2552	.9437	.1518-01	.1122-01	1.343	9.283	555.6
312	27.600	.18700	230.00	.1040	.1695	.1381	.9360	.7422-02	.6051-02	.8437	5.912	530.4
312	27.700	.21010	243.00	.9503-01	.1532	.1263	.9349	.6709-02	.5530-02	.7848	5.510	527.1
312	27.900	.10110	188.00	.2342	.4278	.3055	.9484	.1874-01	.1338-01	1.622	11.20	557.5
311	28.000	.46800-01	110.00	.4656	.9876	.5764	.9636	.4346-01	.2536-01	2.774	18.91	580.3
312	28.200	.16810	221.00	.1482	.2542	.2003	.9376	.1113-01	.8775-02	1.114	7.746	544.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
312	28.300	.19040	236.00	.1143	.1861	.1520	.9358	.8152-02	.6656-02	.9283	6.506	530.2
312	28.300	.12200	201.00	.2022	.3643	.2691	.9441	.1596-01	.1179-01	1.424	9.848	554.8
311	28.400	.53500-01	114.00	.4494	.9476	.5637	.9614	.4170-01	.2480-01	2.692	18.36	579.5
312	28.400	.21310	248.00	.8825-01	.1415	.1169	.9348	.6196-02	.5122-02	.7355	5.168	525.4
311	28.700	.58600-01	117.00	.4228	.8743	.5335	.9598	.3847-01	.2348-01	2.579	17.61	577.1
312	28.800	.16580	217.00	.1400	.2394	.1887	.9378	.1049-01	.8265-02	1.056	7.347	543.4
311	28.800	.60400-01	121.00	.4053	.8375	.5132	.9593	.3685-01	.2258-01	2.473	16.89	577.0
312	29.000	.21110	244.00	.8795-01	.1410	.1165	.9348	.6177-02	.5104-02	.7326	5.147	525.5
311	29.000	.65700-01	129.00	.3789	.7707	.4029	.9577	.3391-01	.2125-01	2.348	16.05	574.9
311	29.200	.72400-01	133.00	.3524	.7064	.4529	.9557	.3108-01	.1993-01	2.214	15.16	572.9
311	29.300	.79500-01	136.00	.3104	.6034	.4003	.9538	.2655-01	.1761-01	2.013	13.82	568.3
311	29.600	.92500-01	143.00	.2708	.5292	.3573	.9504	.2329-01	.1572-01	1.747	11.98	569.1
311	29.700	.10000+00	146.00	.2578	.4900	.3407	.9487	.2156-01	.1499-01	1.714	11.78	564.6
312	29.900	.12100	198.00	.1967	.3533	.2612	.9443	.1548-01	.1144-01	1.391	9.623	554.2
312	30.200	.16480	214.00	.1360	.2320	.1830	.9379	.1016-01	.8017-02	1.031	7.176	542.6
312	30.300	.21010	242.00	.9426-01	.1518	.1252	.9349	.6651-02	.5483-02	.7791	5.470	527.0
311	31.500	.11100-01	83.000	.8487	2.745	1.052	.9720	.1208	.4630-01	3.869	25.93	612.1
312	32.100	.21010	241.00	.9378-01	.1510	.1245	.9349	.6615-02	.5454-02	.7756	5.445	526.8
312	32.200	.16480	213.00	.1346	.2299	.1812	.9379	.1007-01	.7938-02	1.018	7.083	543.0
312	32.200	.17860	224.00	.1315	.2179	.1757	.9366	.9645-02	.7695-02	1.040	7.271	535.1
312	32.200	.18700	228.00	.1123	.1814	.1485	.9360	.7947-02	.6505-02	.9233	6.479	527.9
312	32.300	.12100	197.00	.2030	.3620	.2688	.9443	.1586-01	.1177-01	1.449	10.03	552.7
312	32.300	.12300	194.00	.1806	.3210	.2393	.9439	.1406-01	.1048-01	1.295	8.965	552.0
312	32.300	.12730	208.00	.2210	.4008	.2966	.9432	.1755-01	.1299-01	1.545	10.67	556.1
312	32.300	.13420	209.00	.1666	.3084	.2272	.9420	.1351-01	.9953-02	1.136	7.834	560.0
311	32.400	.10000+00	147.00	.2537	.4865	.3363	.9487	.2141-01	.1480-01	1.670	11.47	566.1
312	32.400	.10110	184.00	.2461	.4469	.3204	.9484	.1957-01	.1403-01	1.717	11.86	556.4
312	32.400	.10630	193.00	.2278	.4084	.2971	.9473	.1789-01	.1301-01	1.615	11.17	553.9
312	32.500	.85800-01	183.00	.2944	.5484	.3783	.9521	.2402-01	.1657-01	1.992	13.72	561.2
311	32.600	.79500-01	137.00	.2858	.5592	.3693	.9538	.2461-01	.1625-01	1.841	12.63	569.3
312	32.600	.80800-01	176.00	.3143	.5822	.4001	.9534	.2550-01	.1752-01	2.141	14.76	560.2
311	32.700	.67400-01	132.00	.3767	.7632	.4811	.9572	.3359-01	.2117-01	2.342	16.02	574.4
311	32.700	.72400-01	134.00	.3633	.7345	.4680	.9557	.3232-01	.2059-01	2.263	15.48	574.1
311	32.800	.65700-01	130.00	.3757	.7629	.4786	.9577	.3357-01	.2106-01	2.331	15.94	574.7
312	32.800	.16680	210.00	.1390	.2369	.1871	.9377	.1037-01	.8197-02	1.054	7.335	542.5
312	32.800	.18880	225.00	.1132	.1845	.1505	.9359	.8080-02	.6591-02	.9179	6.432	530.5
311	32.900	.58600-01	118.00	.5024	1.066	.6379	.9598	.4690-01	.2807-01	2.993	20.41	580.3
311	32.900	.60400-01	122.00	.3983	.8199	.5038	.9593	.3608-01	.2217-01	2.439	16.66	576.5
312	32.900	.61300-01	171.00	.3997	.7666	.4974	.9590	.3358-01	.2179-01	2.618	17.99	566.1
311	33.000	.53500-01	115.00	.4496	.9366	.5623	.9614	.4121-01	.2475-01	2.723	18.59	578.0
311	33.200	.48300-01	113.00	.4562	.9539	.5649	.9631	.4197-01	.2486-01	2.754	18.80	578.5
312	33.400	.42800-01	166.00	.4895	.9693	.5921	.9650	.4245-01	.2594-01	3.100	21.24	571.1
311	33.500	.40100-01	99.000	.5202	1.121	.6364	.9659	.4933-01	.2801-01	3.057	20.82	582.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
311	33.600	.38300-01	97.000	.5372	1.195	.6583	.9666	.5259-01	.2897-01	3.073	20.89	585.7
311	33.700	.36700-01	96.000	.5611	1.288	.6889	.9671	.5669-01	.3031-01	3.131	21.25	588.9
311	33.900	.33800-01	95.000	.5663	1.319	.6919	.9682	.5803-01	.3045-01	3.126	21.20	590.2
312	34.700	.21010	240.00	.9197-01	.1484	.1223	.9349	.6501-02	.5356-02	.7580	5.320	527.5
312	34.700	.18700	227.00	.1034	.1671	.1368	.9360	.7321-02	.5991-02	.8499	5.963	528.0
312	34.900	.16480	212.00	.1381	.2361	.1861	.9379	.1034-01	.8149-02	1.043	7.260	543.2
311	35.100	.10000+00	148.00	.2401	.4617	.3186	.9487	.2032-01	.1402-01	1.575	10.82	566.6
312	35.200	.23900-01	161.00	.6736	1.595	.8043	.9719	.6985-01	.3523-01	3.656	24.77	591.8
311	35.300	.92500-01	145.00	.2816	.5479	.3710	.9504	.2411-01	.1632-01	1.824	12.52	568.4
311	35.300	.22100-01	160.00	.6802	1.814	.8245	.9720	.7984-01	.3628-01	3.427	23.10	601.2
312	35.400	.18800	231.00	.1182	.1927	.1572	.9359	.8442-02	.6884-02	.9591	6.720	530.5
312	35.500	.12100	196.00	.2009	.3590	.2662	.9443	.1572-01	.1166-01	1.430	9.893	553.2
312	35.600	.16580	216.00	.1375	.2345	.1851	.9378	1027-01	.8109-02	1.042	7.252	542.7
311	35.800	.80600-01	138.00	.3111	.6008	.4011	.9535	.2644-01	.1765-01	2.031	13.95	567.3
312	35.900	.21310	247.00	.9496-01	.1529	.1261	.9348	.6696-02	.5525-02	.7858	5.517	526.8
312	36.000	.19040	235.00	.1177	.1922	.1567	.9358	.8419-02	.6864-02	.9514	6.664	531.1
312	36.200	.16810	220.00	.1386	.2348	.1862	.9376	.1028-01	.8155-02	1.060	7.385	541.0
311	36.200	.72400-01	135.00	.3365	.6408	.4261	.9557	.2820-01	.1875-01	2.232	15.34	565.0
312	36.300	.12200	200.00	.1985	.3550	.2633	.9441	.1555-01	.1153-01	1.411	9.763	553.3
311	36.600	.65700-01	131.00	.3821	.7878	.4886	.9577	.3466-01	.2150-01	2.337	15.96	576.7
312	36.700	.18700	226.00	.1158	.1881	.1536	.9360	.8240-02	.6728-02	.9445	6.621	529.5
312	36.900	.16480	211.00	.1386	.2372	.1868	.9379	.1039-01	.8183-02	1.045	7.273	543.5
312	36.900	.10110	187.00	.2583	.4722	.3371	.9484	.2068-01	.1476-01	1.788	12.34	557.7
311	37.000	.60400-01	123.00	.4071	.8512	.5169	.9593	.3746-01	.2275-01	2.457	16.77	578.5
312	37.000	.12440	204.00	.1940	.3455	.2576	.9437	.1513-01	.1128-01	1.386	9.597	552.5
311	37.100	.56600-01	119.00	.4192	.8734	.5300	.9598	.3844-01	.2332-01	2.539	17.33	578.1
312	37.200	.21310	246.00	.8760-01	.1409	.1163	.9348	.6171-02	.5094-02	.7258	5.097	526.5
312	37.600	.16810	219.00	.1400	.2368	.1880	.9376	.1037-01	.8233-02	1.073	7.476	540.7
311	37.800	.10270	150.00	.2531	.4838	.3364	.9481	.2129-01	.1480-01	1.671	11.48	565.6
312	37.900	.12100	195.00	.2024	.3552	.2662	.9443	.1556-01	.1166-01	1.475	10.23	549.3
312	38.000	.80300-01	179.00	.3226	.5957	.4099	.9535	.2609-01	.1796-01	2.206	15.21	559.6
311	38.500	.46800-01	112.00	.4741	1.003	.5866	.9636	.4415-01	.2581-01	2.831	19.30	580.0
312	38.600	.12440	203.00	.1984	.3528	.2633	.9437	.1545-01	.1153-01	1.421	9.841	552.1
312	38.700	.10000+00	185.00	.2488	.4507	.3231	.9487	.1974-01	.1415-01	1.740	12.02	556.0
311	38.900	.82200-01	141.00	.3187	.6220	.4134	.9530	.2737-01	.1819-01	2.059	14.12	568.9
311	39.300	.41600-01	104.00	.5035	1.123	.6223	.9654	.4942-01	.2738-01	2.875	19.54	585.9
312	39.500	.10270	190.00	.2474	.4470	.3221	.9481	.1958-01	.1411-01	1.736	12.00	555.5
312	39.600	.16810	218.00	.1421	.2402	.1907	.9376	.1052-01	.8353-02	1.091	7.599	540.4
312	39.900	.19040	233.00	.1120	.1818	.1486	.9358	.7962-02	.6510-02	.9141	6.409	529.3
312	40.100	.79500-01	177.00	.3253	.5965	.4119	.9538	.2613-01	.1804-01	2.243	15.48	558.2
312	40.200	.12440	202.00	.1977	.3521	.2626	.9437	.1542-01	.1150-01	1.414	9.787	552.4
312	40.300	.21310	245.00	.9446-01	.1513	.1251	.9348	.6625-02	.5480-02	.7886	5.542	525.1
311	41.100	.82200-01	142.00	.2874	.5669	.3740	.9530	.2494-01	.1646-01	1.835	12.58	570.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
312	41.100	.60700-01	173.00	.4019	.7707	.4995	.9592	.3376-01	.2188-01	2.632	18.09	566.1
312	42.600	.59600-01	172.00	.4141	.8031	.5151	.9595	.3518-01	.2256-01	2.679	18.39	567.9
312	43.200	.42000-01	168.00	.4809	.9596	.5817	.9653	.4203-01	.2548-01	3.021	20.69	572.2
312	43.400	.82200-01	181.00	.3095	.5825	.3969	.9530	.2551-01	.1738-01	2.070	14.25	563.0
311	43.600	.62900-01	128.00	.3878	.7850	.4909	.9585	.3454-01	.2160-01	2.414	16.51	574.2
311	45.000	.22900-01	8.0000	.8135	2.254	.9908	.9720	.9917-01	.4360-01	4.009	27.00	603.7
312	46.100	.62900-01	174.00	.3881	.7399	.4835	.9585	.3241-01	.2118-01	2.559	17.59	565.1
312	47.700	.40800-01	167.00	.5228	1.082	.6355	.9657	.4739-01	.2783-01	3.171	21.66	577.2
311	48.400	.44200-01	109.00	.4907	1.053	.6055	.9645	.4634-01	.2664-01	2.894	19.72	581.7
312	53.200	.24700-01	163.00	.6738	1.528	.8011	.9716	.6692-01	.3509-01	3.778	25.66	587.6
312	65.200	.24700-01	162.00	.6720	1.513	.7982	.9716	.6629-01	.3496-01	3.789	25.74	586.9
310	90.000	.91000-02	44.000	.7167	2.091	.8783	.9720	.9201-01	.3865-01	3.434	23.08	606.8
310	90.000	.11100-01	45.000	.8617	3.065	1.079	.9720	.1349	.4747-01	3.774	25.25	616.1
310	90.000	.13100-01	46.000	.8652	2.561	1.062	.9720	.1127	.4673-01	4.115	27.65	607.6
310	90.000	.17000-01	48.000	.7042	1.760	.8463	.9720	.7745-01	.3724-01	3.696	24.98	596.4
310	90.000	.20900-01	50.000	.7005	1.701	.8386	.9720	.7485-01	.3690-01	3.750	25.38	594.0
310	90.000	.24900-01	52.000	.6385	1.468	.7611	.9715	.6458-01	.3349-01	3.559	24.15	589.0
310	90.000	.26900-01	53.000	.6382	1.491	.7665	.9707	.6561-01	.3373-01	3.514	23.83	590.5
310	90.000	.28800-01	54.000	.6223	1.417	.7481	.9700	.6236-01	.3292-01	3.494	23.72	588.1
310	90.000	.32800-01	55.000	.4378	.8117	.5120	.9685	.3571-01	.2253-01	2.993	20.63	560.3
310	90.000	.36700-01	56.000	.5257	1.111	.6358	.9671	.4888-01	.2797-01	3.143	21.43	579.8
310	90.000	.40600-01	57.000	.5372	1.173	.6596	.9658	.5161-01	.2902-01	3.121	21.24	583.6
310	90.000	.48500-01	58.000	.4437	.9351	.5505	.9631	.4114-01	.2422-01	2.659	18.14	579.5
310	90.000	.56400-01	59.000	.4437	.9018	.5551	.9605	.3968-01	.2442-01	2.751	18.81	574.8
310	90.000	.76100-01	60.000	.3597	.6938	.4601	.9547	.3053-01	.2025-01	2.352	16.15	567.0
310	90.000	.95800-01	61.000	.2758	.5185	.3609	.9496	.2281-01	.1588-01	1.856	12.78	562.8
310	90.000	.11550	62.000	.2293	.4184	.3045	.9454	.1841-01	.1340-01	1.598	11.03	557.3
310	135.00	.19000-01	49.000	.7083	1.738	.8492	.9720	.7647-01	.3737-01	3.764	25.47	594.9
310	135.00	.22900-01	51.000	.6725	1.642	.8058	.9720	.7227-01	.3545-01	3.586	24.26	594.5
310	180.00	.91000-02	23.000	.3937	.7895	.4580	.9720	.3474-01	.2015-01	2.473	16.93	572.9
310	180.00	.11100-01	24.000	.7741	2.929	.9751	.9720	.1289	.4291-01	3.313	22.13	618.4
310	180.00	.13100-01	25.000	.8097	2.470	.9976	.9720	.1087	.4389-01	3.793	25.46	609.2
310	180.00	.15000-01	26.000	.7930	2.261	.9694	.9720	.9949-01	.4266-01	3.846	25.87	605.4
310	180.00	.17000-01	27.000	.7276	1.901	.8798	.9720	.8366-01	.3871-01	3.712	25.04	599.7
310	180.00	.19000-01	28.000	.7059	1.815	.8517	.9720	.7987-01	.3748-01	3.637	24.56	598.6
310	180.00	.20900-01	29.000	.6994	1.698	.8374	.9720	.7471-01	.3685-01	3.745	25.35	594.0
310	180.00	.28800-01	32.000	.6257	1.386	.7489	.9700	.6097-01	.3295-01	3.593	24.43	585.2
310	180.00	.32800-01	33.000	.5842	1.194	.6951	.9685	.5253-01	.3063-01	3.603	24.63	575.5
310	180.00	.36700-01	34.000	.5702	1.222	.6915	.9671	.5375-01	.3043-01	3.367	22.94	581.5
310	180.00	.48500-01	36.000	.4894	.9925	.6022	.9630	.4367-01	.2650-01	3.040	20.79	574.5
310	180.00	.56400-01	37.000	.4528	.8939	.5625	.9605	.3933-01	.2475-01	2.889	19.80	570.7
310	180.00	.76100-01	38.000	.3504	.6692	.4470	.9547	.2944-01	.1967-01	2.317	15.92	565.4
310	180.00	.95800-01	39.000	.2796	.5217	.3649	.9496	.2295-01	.1606-01	1.898	13.08	561.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
310	180.00	.11550	40.000	.2216	.4108	.2961	.9454	.1808-01	.1303-01	1.515	10.44	560.3
310	180.00	.18450	42.000	.1172	.1995	.1591	.9362	.8778-02	.6999-02	.8941	6.224	542.2
310	225.00	.22900-01	30.000	.6702	1.573	.7986	.9720	.6920-01	.3514-01	3.677	24.93	591.0
310	270.00	.91000-02	63.000	.6081	1.734	.7433	.9720	.7630-01	.3271-01	2.949	19.84	605.5
310	270.00	.11100-01	64.000	.8217	3.170	1.037	.9720	.1395	.4563-01	3.493	23.33	619.1
310	270.00	.13100-01	65.000	.8250	2.661	1.023	.9720	.1171	.4500-01	3.765	25.24	611.9
310	270.00	.17000-01	67.000	.7843	2.084	.9504	.9720	.9171-01	.4182-01	3.960	26.70	600.9
310	270.00	.20900-01	69.000	.6878	1.759	.8292	.9720	.7738-01	.3649-01	3.557	24.02	598.1
310	270.00	.24900-01	71.000	.6852	1.688	.8250	.9715	.7426-01	.3630-01	3.633	24.57	595.2
310	270.00	.28800-01	73.000	.6688	1.514	.8033	.9700	.6661-01	.3535-01	3.773	25.62	587.5
310	270.00	.36700-01	75.000	.5793	1.285	.7070	.9671	.5655-01	.3111-01	3.321	22.58	585.4
310	270.00	.48500-01	77.000	.4805	.9831	.5924	.9631	.4326-01	.2607-01	2.960	20.23	575.7
310	270.00	.56400-01	78.000	.4754	.9490	.5921	.9605	.4175-01	.2605-01	3.000	20.54	572.3
310	270.00	.95800-01	80.000	.2741	.4972	.3542	.9496	.2188-01	.1558-01	1.924	13.29	556.1
310	270.00	.11550	81.000	.2468	.4389	.3244	.9454	.1931-01	.1427-01	1.776	12.30	552.1
310	315.00	.19000-01	68.000	.6208	1.372	.7332	.9720	.6037-01	.3226-01	3.570	24.28	585.0
310	315.00	.22900-01	70.000	.7291	1.783	.8737	.9720	.7847-01	.3844-01	3.883	26.27	594.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
255	4.020	.1533-01	.9426-02	62.90	716.7	.4034	169.3	-31.58	2564.	.6429-02	.1363-06	3.761
256	4.020	.2044-01	.1258-01	62.96	719.7	.4038	170.1	-31.60	2570.	.6409-02	.1368-06	3.741
257	4.020	.2385-01	.1467-01	62.90	723.7	.4034	171.0	-31.60	2577.	.6367-02	.1376-06	3.706

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
255	.3788-01	.9544-02
256	.3793-01	.9565-02
257	.3795-01	.9603-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
256	.00000	.91000-02	1.0000	.3408	.5734	.4009	.9630	.2175-01	.1521-01	2.293	15.97	542.2
256	.00000	.15000-01	4.0000	.8276	1.726	1.025	.9630	.6547-01	.3887-01	4.340	29.57	581.4
256	.00000	.17000-01	5.0000	.7397	1.440	.9019	.9630	.5463-01	.3421-01	4.151	28.44	571.7
256	.00000	.19000-01	6.0000	.6871	1.324	.8356	.9630	.5020-01	.3169-01	3.899	26.74	570.0
256	.00000	.24900-01	9.0000	.6292	1.182	.7629	.9625	.4483-01	.2894-01	3.673	25.24	565.8
256	.00000	.26900-01	10.000	.6069	1.124	.7364	.9618	.4264-01	.2793-01	3.600	24.77	563.3
255	.00000	.32800-01	12.000	.4807	.9737	.6043	.9596	.3689-01	.2289-01	2.577	17.62	575.1
255	.00000	.36700-01	13.000	.4404	.8676	.5547	.9582	.3287-01	.2101-01	2.429	16.64	571.1
255	.00000	.40600-01	14.000	.4650	.9325	.5936	.9568	.3532-01	.2249-01	2.518	17.23	573.7
255	.00000	.48500-01	15.000	.4128	.8070	.5322	.9541	.3057-01	.2016-01	2.294	15.73	570.0
255	.00000	.56400-01	16.000	.3877	.7504	.5067	.9514	.2843-01	.1919-01	2.178	14.94	568.4
255	.00000	.76100-01	17.000	.2885	.5243	.3825	.9454	.1986-01	.1449-01	1.741	12.02	557.3
255	.00000	.95800-01	18.000	.4465-01	.7650-01	.5952-01	.9400	.2898-02	.2255-02	.2912	2.024	544.5
255	.00000	.11550	19.000	.1808	.3113	.2491	.9353	.1179-01	.9398-02	1.172	8.140	545.7
255	.00000	.16480	20.000	.1044	.1735	.1475	.9267	.6573-02	.5588-02	.7124	4.975	536.6
255	.00000	.21400	22.000	.4997-01	.8263-01	.7207-01	.9224	.3130-02	.2730-02	.3432	2.398	535.4
257	2.0000	.24700-01	165.00	.5729	1.038	.6882	.9626	.3939-01	.2612-01	3.510	24.17	562.2
256	9.0000	.15000-01	157.00	.7417	1.458	.9064	.9630	.5531-01	.3438-01	4.120	28.20	573.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
256	9.0000	.17600-01	158.00	.6903	1.348	.8422	.9630	.5112-01	.3194-01	3.863	26.46	572.1
257	9.8000	.24700-01	164.00	.6149	1.159	.7459	.9626	.4398-01	.2831-01	3.598	24.67	569.5
256	10.000	.22900-01	88.000	.6544	1.257	.7953	.9630	.4766-01	.3017-01	3.727	25.56	569.5
256	10.000	.26900-01	90.000	.6062	1.127	.7364	.9618	.4275-01	.2793-01	3.581	24.63	563.9
256	10.000	.34700-01	94.000	.4955	.8551	.5991	.9589	.3243-01	.2272-01	3.216	22.31	548.5
257	14.600	.44200-01	169.00	.4483	.7849	.5540	.9555	.2979-01	.2102-01	2.871	19.85	554.9
256	18.500	.44200-01	106.00	.4665	.8221	.5776	.9555	.3118-01	.2191-01	2.943	20.37	553.3
257	19.600	.62900-01	175.00	.3369	.5758	.4266	.9493	.2185-01	.1619-01	2.231	15.47	549.2
256	19.800	.40800-01	101.00	.4938	.8759	.6088	.9567	.3322-01	.2309-01	3.090	21.37	554.7
256	20.000	.24900-01	89.000	.6117	1.147	.7413	.9625	.4349-01	.2812-01	3.579	24.60	565.4
256	20.000	.28800-01	91.000	.5727	1.060	.6976	.9611	.4021-01	.2646-01	3.399	23.39	563.2
256	20.000	.32800-01	93.000	.5353	.9807	.6557	.9596	.3720-01	.2487-01	3.217	22.16	561.2
256	22.200	.62900-01	125.00	.3694	.6367	.4692	.9493	.2415-01	.1780-01	2.402	16.66	548.3
256	22.400	.44200-01	107.00	.4601	.8075	.5690	.9555	.3063-01	.2158-01	2.918	20.20	552.4
257	22.600	.10270	192.00	.1994	.3326	.2649	.9383	.1262-01	.1005-01	1.367	9.513	543.0
256	23.000	.42000-01	105.00	.4788	.8442	.5906	.9563	.3202-01	.2240-01	3.020	20.89	553.4
256	23.400	.59600-01	120.00	.3613	.6208	.4558	.9504	.2355-01	.1729-01	2.359	16.37	547.5
257	23.900	.21310	250.00	.6174-01	.9341-01	.8377-01	.9225	.3545-02	.3179-02	.5000	3.543	510.2
256	24.100	.82200-01	139.00	.2839	.4791	.3685	.9436	.1817-01	.1398-01	1.902	13.23	543.0
257	24.400	.19040	238.00	.8090-01	.1248	.1105	.9239	.4737-02	.4193-02	.6314	4.455	518.0
257	24.400	.12440	207.00	.1602	.2673	.2185	.9334	.1014-01	.8291-02	1.098	7.640	543.1
257	24.800	.16810	223.00	.9946-01	.1588	.1373	.9262	.6028-02	.5212-02	.7306	5.121	530.1
256	24.900	.62900-01	126.00	.3466	.5955	.4397	.9493	.2259-01	.1668-01	2.263	15.71	547.5
257	25.000	.79500-01	178.00	.2828	.4777	.3658	.9444	.1813-01	.1388-01	1.903	13.22	546.3
257	25.300	.10270	191.00	.1977	.3289	.2623	.9383	.1248-01	.9953-02	1.362	9.478	542.2
257	25.300	.10000+00	186.00	.2085	.3483	.2762	.9389	.1322-01	.1048-01	1.426	9.917	543.5
256	25.500	.60700-01	124.00	.3686	.6317	.4655	.9500	.2396-01	.1765-01	2.416	16.78	546.8
257	26.000	.12440	206.00	.1580	.2634	.2154	.9334	.9994-02	.8172-02	1.085	7.548	542.8
256	26.300	.82200-01	140.00	.2435	.4075	.3150	.9436	.1545-01	.1195-01	1.652	11.51	540.8
257	26.700	.12100	199.00	.1570	.2605	.2126	.9341	.9887-02	.8069-02	1.084	7.550	541.6
257	26.800	.16810	222.00	.9578-01	.1525	.1320	.9262	.5787-02	.5009-02	.7072	4.959	529.1
257	27.000	.19040	237.00	.7832-01	.1208	.1069	.9239	.4584-02	.4058-02	.6115	4.315	517.9
257	27.100	.21310	249.00	.5615-01	.8496-01	.7618-01	.9225	.3224-02	.2891-02	.4549	3.224	510.2
257	27.200	.80300-01	180.00	.2738	.4593	.3536	.9442	.1743-01	.1342-01	1.862	12.94	544.5
256	27.400	.40100-01	98.000	.4739	.8495	.5854	.9569	.3222-01	.2220-01	2.926	20.21	556.9
257	27.400	.16480	215.00	.9364-01	.1497	.1291	.9266	.5682-02	.4900-02	.6865	4.810	530.5
256	27.600	.41600-01	102.00	.4634	.8243	.5726	.9564	.3126-01	.2172-01	2.889	19.96	555.3
257	27.600	.12440	205.00	.1545	.2572	.2105	.9334	.9762-02	.7987-02	1.062	7.395	542.5
257	27.600	.18700	230.00	.6822-01	.1055	.9316-01	.9242	.4002-02	.3535-02	.5305	3.741	518.7
257	27.700	.21010	243.00	.6232-01	.9486-01	.8485-01	.9226	.3600-02	.3220-02	.4990	3.531	512.7
257	27.900	.10110	188.00	.1987	.3316	.2634	.9387	.1258-01	.9996-02	1.361	9.469	543.1
256	28.000	.46800-01	110.00	.4282	.7465	.5310	.9546	.2832-01	.2014-01	2.741	18.99	550.9
257	28.200	.16810	221.00	.9914-01	.1584	.1369	.9262	.6012-02	.5197-02	.7276	5.099	530.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
257	28.300	.19040	236.00	.7453-01	.1147	.1016	.9239	.4351-02	.3855-02	.5849	4.129	516.9
257	28.300	.12200	201.00	.1644	.2740	.2235	.9339	.1040-01	.8480-02	1.130	7.862	542.6
256	28.400	.53500-01	114.00	.4100	.7130	.5140	.9524	.2704-01	.1950-01	2.633	18.25	550.3
257	28.400	.21310	248.00	.5493-01	.8323-01	.7460-01	.9225	.3158-02	.2831-02	.4437	3.144	510.8
256	28.700	.58600-01	117.00	.3860	.6607	.4855	.9507	.2506-01	.1841-01	2.534	17.60	546.6
257	28.800	.16580	217.00	.9269-01	.1478	.1277	.9265	.5608-02	.4845-02	.6827	4.786	529.6
256	28.800	.60400-01	121.00	.3669	.6248	.4619	.9501	.2370-01	.1752-01	2.426	16.86	545.3
257	29.000	.21110	244.00	.5874-01	.8905-01	.7977-01	.9225	.3379-02	.3027-02	.4740	3.357	511.0
256	29.000	.65700-01	129.00	.3395	.5780	.4312	.9485	.2192-01	.1635-01	2.246	15.61	545.2
256	29.200	.72400-01	133.00	.3122	.5296	.4002	.9464	.2009-01	.1518-01	2.076	14.43	544.4
256	29.300	.79500-01	136.00	.2695	.4491	.3466	.9444	.1703-01	.1315-01	1.839	12.82	539.7
256	29.600	.92500-01	143.00	.2510	.4223	.3302	.9408	.1602-01	.1252-01	1.689	11.76	542.3
256	29.700	.10000+00	146.00	.2001	.3325	.2644	.9389	.1261-01	.1003-01	1.372	9.568	538.9
257	29.900	.12100	198.00	.1576	.2624	.2139	.9341	.9957-02	.8116-02	1.084	7.547	542.4
257	30.200	.16480	214.00	.8985-01	.1431	.1236	.9266	.5428-02	.4689-02	.6635	4.653	529.1
257	30.200	.18700	229.00	.9494-01	.1462	.1293	.9242	.5549-02	.4908-02	.7433	5.246	517.4
257	30.300	.21010	242.00	.6143-01	.9350-01	.8364-01	.9226	.3548-02	.3174-02	.4918	3.480	512.7
256	31.500	.11100-01	83.000	.7142	1.535	.8902	.9630	.5822-01	.3376-01	3.646	24.79	585.1
257	32.100	.21010	241.00	.6063-01	.9235-01	.8259-01	.9226	.3504-02	.3134-02	.4847	3.430	513.0
257	32.200	.16480	213.00	.9069-01	.1444	.1247	.9266	.5478-02	.4732-02	.6700	4.698	529.0
257	32.200	.17860	224.00	.9250-01	.1457	.1274	.9250	.5529-02	.4834-02	.6956	4.887	525.5
257	32.200	.18700	228.00	.8142-01	.1256	.1110	.9242	.4767-02	.4214-02	.6357	4.485	517.9
257	32.300	.12100	197.00	.1605	.2659	.2172	.9341	.1009-01	.8242-02	1.111	7.738	541.2
257	32.300	.12300	194.00	.1450	.2396	.1965	.9337	.9094-02	.7455-02	1.009	7.032	540.3
257	32.300	.12730	208.00	.1280	.2128	.1748	.9328	.8077-02	.6634-02	.8823	6.142	542.1
257	32.300	.13420	209.00	.1355	.2249	.1862	.9315	.8536-02	.7066-02	.9354	6.513	541.7
256	32.400	.10000+00	147.00	.2029	.3378	.2683	.9389	.1281-01	.1018-01	1.386	9.666	539.5
257	32.400	.10110	184.00	.2023	.3365	.2678	.9387	.1277-01	.1016-01	1.393	9.699	542.2
257	32.400	.10630	193.00	.1887	.3119	.2506	.9374	.1183-01	.9511-02	1.312	9.139	540.5
257	32.500	.85800-01	183.00	.2542	.4285	.3316	.9426	.1626-01	.1258-01	1.717	11.93	545.7
256	32.600	.79500-01	137.00	.2337	.3922	.3014	.9444	.1488-01	.1143-01	1.578	10.99	541.6
257	32.600	.80800-01	176.00	.2686	.4513	.3473	.9440	.1712-01	.1318-01	1.823	12.67	544.9
256	32.700	.67400-01	132.00	.3332	.5662	.4241	.9480	.2148-01	.1608-01	2.211	15.37	544.8
256	32.700	.72400-01	134.00	.3198	.5440	.4104	.9464	.2063-01	.1556-01	2.118	14.72	545.0
256	32.800	.65700-01	130.00	.3383	.5745	.4292	.9485	.2179-01	.1628-01	2.245	15.61	544.7
257	32.800	.16680	210.00	.9236-01	.1472	.1273	.9264	.5586-02	.4829-02	.6807	4.773	529.4
257	32.800	.18880	225.00	.7515-01	.1160	.1026	.9240	.4400-02	.3893-02	.5863	4.137	518.1
256	32.900	.58600-01	118.00	.4456	.7700	.5624	.9507	.2920-01	.2133-01	2.887	20.03	548.8
256	32.900	.60400-01	122.00	.3577	.6095	.4505	.9501	.2312-01	.1709-01	2.364	16.43	545.4
257	32.900	.61300-01	171.00	.3500	.5985	.4421	.9498	.2271-01	.1677-01	2.314	16.05	549.4
256	33.000	.53500-01	115.00	.4123	.7111	.5155	.9524	.2697-01	.1955-01	2.679	18.58	548.4
256	33.200	.48300-01	113.00	.4270	.7384	.5295	.9541	.2801-01	.2008-01	2.764	19.17	549.0
257	33.400	.42800-01	166.00	.4500	.7848	.5540	.9560	.2978-01	.2102-01	2.897	20.04	554.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
256	33.500	.40100-01	99.000	.4925	.8615	.6039	.9569	.3268-01	.2290-01	3.139	21.74	551.6
256	33.600	.38300-01	97.000	.5120	.9096	.6285	.9576	.3450-01	.2384-01	3.197	22.10	555.0
256	33.700	.36700-01	96.000	.5272	.9518	.6482	.9582	.3610-01	.2459-01	3.226	22.26	558.3
256	33.900	.33800-01	95.000	.5370	.9767	.6578	.9592	.3704-01	.2495-01	3.256	22.45	559.8
257	34.700	.21010	240.00	.5860-01	.8932-01	.7986-01	.9226	.3390-02	.3031-02	.4678	3.309	513.3
257	34.700	.18700	227.00	.8004-01	.1233	.1091	.9242	.4681-02	.4139-02	.6262	4.419	517.5
257	34.900	.16480	212.00	.9210-01	.1471	.1269	.9266	.5584-02	.4817-02	.6761	4.738	530.2
256	35.100	.10000+00	148.00	.2137	.3562	.2828	.9389	.1351-01	.1073-01	1.459	10.17	539.7
257	35.200	.23900-01	161.00	.6388	1.230	.7775	.9629	.4668-01	.2950-01	3.650	24.98	573.1
256	35.300	.92500-01	145.00	.2357	.3950	.3096	.9408	.1498-01	.1174-01	1.596	11.11	541.2
256	35.300	.22100-01	160.00	.5144	.9784	.6238	.9630	.3711-01	.2366-01	2.961	20.33	567.9
257	35.400	.18800	231.00	.7256-01	.1122	.9918-01	.9241	.4260-02	.3764-02	.5636	3.975	519.0
257	35.500	.12100	196.00	.1588	.2637	.2152	.9341	.1001-01	.8166-02	1.097	7.638	541.7
257	35.600	.16580	216.00	.8775-01	.1401	.1210	.9265	.5317-02	.4590-02	.6448	4.519	530.0
256	35.800	.80600-01	138.00	.2715	.4521	.3496	.9441	.1715-01	.1326-01	1.856	12.94	539.5
257	35.900	.21310	247.00	.6095-01	.9274-01	.8301-01	.9225	.3519-02	.3150-02	.4883	3.456	512.5
257	36.000	.19040	235.00	.8037-01	.1243	.1100	.9239	.4717-02	.4172-02	.6245	4.404	518.9
257	36.200	.16810	220.00	.9254-01	.1475	.1276	.9262	.5597-02	.4843-02	.6821	4.782	529.4
256	36.200	.72400-01	135.00	.3152	.5319	.4032	.9464	.2017-01	.1529-01	2.113	14.70	543.0
257	36.300	.12200	200.00	.1570	.2608	.2131	.9339	.9898-02	.8085-02	1.083	7.543	541.8
256	36.600	.65700-01	131.00	.3200	.5470	.4071	.9485	.2075-01	.1544-01	2.105	14.62	546.3
257	36.700	.18700	226.00	.7889-01	.1222	.1079	.9242	.4636-02	.4093-02	.6115	4.311	519.4
257	36.900	.16480	211.00	.9592-01	.1536	.1324	.9266	.5828-02	.5023-02	.7018	4.916	530.9
257	36.900	.10110	187.00	.2154	.3595	.2856	.9387	.1364-01	.1084-01	1.475	10.26	543.2
256	37.000	.60400-01	123.00	.3625	.6173	.4564	.9501	.2341-01	.1731-01	2.398	16.66	545.3
257	37.000	.12440	204.00	.1544	.2558	.2097	.9334	.9707-02	.7959-02	1.069	7.447	541.2
256	37.100	.58500-01	119.00	.3876	.6635	.4875	.9507	.2516-01	.1849-01	2.545	17.68	546.6
257	37.200	.21310	246.00	.5759-01	.8762-01	.7843-01	.9225	.3325-02	.2976-02	.4614	3.265	512.5
257	37.600	.16810	219.00	.9438-01	.1504	.1302	.9262	.5709-02	.4940-02	.6956	4.877	529.5
256	37.800	.10270	150.00	.1944	.3227	.2576	.9383	.1224-01	.9772-02	1.335	9.308	538.7
257	37.900	.12100	195.00	.1647	.2712	.2222	.9341	.1029-01	.8432-02	1.152	8.032	539.4
257	38.000	.80300-01	179.00	.2783	.4673	.3595	.9442	.1773-01	.1364-01	1.890	13.14	544.7
256	38.500	.46800-01	112.00	.4411	.7648	.5460	.9546	.2901-01	.2071-01	2.845	19.72	549.6
257	38.600	.12440	203.00	.1571	.2603	.2134	.9334	.9877-02	.8100-02	1.089	7.586	541.0
257	38.700	.10000+00	185.00	.2038	.3384	.2692	.9389	.1284-01	.1021-01	1.407	9.794	541.8
256	38.900	.82200-01	141.00	.2685	.4481	.3469	.9436	.1700-01	.1316-01	1.829	12.75	540.1
256	39.300	.41600-01	104.00	.4876	.8662	.6023	.9564	.3285-01	.2285-01	3.045	21.05	555.0
257	39.500	.10270	190.00	.2089	.3466	.2758	.9383	.1315-01	.1050-01	1.444	10.06	541.5
257	39.600	.16810	218.00	.9945-01	.1586	.1372	.9262	.6018-02	.5206-02	.7323	5.133	529.6
257	39.900	.19040	233.00	.7342-01	.1135	.1004	.9239	.4308-02	.3811-02	.5707	4.025	518.9
257	40.100	.79500-01	177.00	.2800	.4677	.3604	.9444	.1775-01	.1368-01	1.916	13.33	543.4
257	40.200	.12440	202.00	.1583	.2623	.2151	.9334	.9952-02	.8161-02	1.097	7.640	541.1
257	40.300	.21310	245.00	.6083-01	.9237-01	.8274-01	.9225	.3505-02	.3140-02	.4891	3.463	511.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
256	41.100	.82200-01	142.00	.2842	.4781	.3685	.9436	.1813-01	.1397-01	1.913	13.32	542.2
257	41.100	.60700-01	173.00	.3577	.6115	.4513	.9500	.2321-01	.1713-01	2.367	16.41	549.3
257	42.600	.59600-01	172.00	.3681	.6305	.4639	.9504	.2393-01	.1760-01	2.428	16.83	549.8
257	43.200	.42000-01	168.00	.4431	.7706	.5442	.9563	.2924-01	.2065-01	2.863	19.81	553.4
257	43.400	.82200-01	181.00	.2653	.4484	.3446	.9436	.1701-01	.1308-01	1.784	12.39	546.4
256	43.600	.62900-01	128.00	.3161	.5329	.3982	.9493	.2021-01	.1510-01	2.121	14.76	542.8
256	45.000	.22900-01	8.0000	.8625	1.835	1.073	.9630	.6960-01	.4069-01	4.442	30.23	583.9
257	46.100	.62900-01	174.00	.3498	.5960	.4424	.9493	.2262-01	.1679-01	2.326	16.13	548.5
257	47.700	.40800-01	167.00	.4881	.8654	.6017	.9567	.3284-01	.2283-01	3.074	21.22	557.7
256	48.400	.44200-01	109.00	.4649	.8092	.5734	.9555	.3069-01	.2175-01	2.983	20.67	550.5
257	53.200	.24700-01	163.00	.6575	1.228	.7958	.9626	.4661-01	.3020-01	3.885	26.66	568.0
257	65.200	.24700-01	162.00	.6483	1.211	.7847	.9626	.4596-01	.2978-01	3.832	26.30	567.9
255	90.000	.91000-02	44.000	.3773	.7691	.4648	.9630	.2913-01	.1761-01	2.011	13.74	576.0
255	90.000	.11100-01	45.000	.7051	1.899	.9185	.9630	.7194-01	.3479-01	3.045	20.51	602.7
255	90.000	.13100-01	46.000	.8719	2.422	1.142	.9630	.9175-01	.4326-01	3.699	24.89	604.7
255	90.000	.17000-01	48.000	.6019	1.386	.7610	.9630	.5251-01	.2883-01	2.888	19.59	590.0
255	90.000	.20900-01	50.000	.6559	1.459	.8234	.9630	.5529-01	.3119-01	3.234	21.98	586.5
255	90.000	.24900-01	52.000	.5851	1.238	.7292	.9625	.4692-01	.2762-01	3.011	20.52	580.8
255	90.000	.26900-01	53.000	.5713	1.212	.7158	.9618	.4590-01	.2712-01	2.935	20.00	581.1
255	90.000	.28800-01	54.000	.5560	1.160	.6973	.9611	.4393-01	.2642-01	2.901	19.79	579.0
255	90.000	.32800-01	55.000	.3912	.7127	.4784	.9596	.2700-01	.1812-01	2.355	16.25	557.8
255	90.000	.36700-01	56.000	.4651	.9137	.5853	.9582	.3461-01	.2217-01	2.572	17.63	570.7
255	90.000	.40600-01	57.000	.4805	.9652	.6137	.9568	.3656-01	.2325-01	2.598	17.77	573.9
255	90.000	.48500-01	58.000	.4122	.8086	.5320	.9541	.3063-01	.2015-01	2.282	15.64	570.5
255	90.000	.56400-01	59.000	.3928	.7494	.5109	.9514	.2839-01	.1935-01	2.242	15.40	566.0
255	90.000	.76100-01	60.000	.3067	.5574	.4066	.9454	.2111-01	.1540-01	1.852	12.79	557.3
255	90.000	.95900-01	61.000	.2309	.4058	.3114	.9400	.1537-01	.1180-01	1.455	10.08	550.4
255	90.000	.11550	62.000	.1859	.3164	.2535	.9353	.1199-01	.9605-02	1.224	8.515	542.9
255	135.00	.19000-01	49.000	.6551	1.487	.8257	.9631	.5633-01	.3128-01	3.179	21.58	588.6
255	135.00	.22900-01	51.000	.6265	1.409	.7882	.9631	.5338-01	.2986-01	3.063	20.80	587.6
255	180.00	.91000-02	23.000	.1735	.3230	.2092	.9631	.1224-01	.7925-02	1.017	7.003	561.9
255	180.00	.11100-01	24.000	.6668	1.822	.8705	.9631	.6901-01	.3298-01	2.856	19.23	603.6
255	180.00	.13100-01	25.000	.8033	2.353	1.061	.9631	.8914-01	.4020-01	3.311	22.24	607.9
255	180.00	.15000-01	26.000	.7913	2.164	1.033	.9631	.8199-01	.3914-01	3.386	22.80	603.7
255	180.00	.17000-01	27.000	.6905	1.674	.8816	.9631	.6341-01	.3340-01	3.191	21.59	594.7
255	180.00	.19000-01	28.000	.6757	1.607	.8595	.9631	.6087-01	.3256-01	3.165	21.44	593.0
255	180.00	.20900-01	29.000	.6516	1.481	.8214	.9631	.5611-01	.3112-01	3.158	21.44	588.7
255	180.00	.28800-01	32.000	.5492	1.159	.6904	.9611	.4389-01	.2615-01	2.834	19.32	580.4
255	180.00	.32800-01	33.000	.5127	1.018	.6412	.9596	.3857-01	.2429-01	2.804	19.20	572.3
255	180.00	.36700-01	34.000	.5121	1.052	.6518	.9582	.3985-01	.2469-01	2.709	18.50	577.0
255	180.00	.48500-01	36.000	.4283	.8489	.5543	.9541	.3216-01	.2100-01	2.346	16.07	572.0
255	180.00	.56400-01	37.000	.3975	.7717	.5198	.9515	.2923-01	.1969-01	2.226	15.27	568.9
255	180.00	.76100-01	38.000	.2953	.5483	.3947	.9454	.2077-01	.1495-01	1.737	11.97	561.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
255	180.00	.95800-01	39.000	.2339	.4183	.3179	.9400	.1585-01	.1204-01	1.441	9.965	554.1
255	180.00	.11550	40.000	.1823	.3191	.2522	.9354	.1209-01	.9554-02	1.155	8.009	549.4
255	180.00	.18450	42.000	.8506-01	.1446	.1235	.9244	.5476-02	.4677-02	.5612	3.906	542.5
255	225.00	.22900-01	30.000	.6232	1.373	.7804	.9631	.5200-01	.2957-01	3.098	21.07	585.4
255	270.00	.91000-02	63.000	.3283	.6708	.4046	.9631	.2541-01	.1533-01	1.746	11.93	576.3
255	270.00	.11100-01	64.000	.6255	1.621	.8089	.9631	.6141-01	.3064-01	2.765	18.66	600.0
255	270.00	.13100-01	65.000	.7997	2.393	1.060	.9631	.9064-01	.4017-01	3.261	21.89	609.0
255	270.00	.17000-01	67.000	.7989	1.928	1.019	.9631	.7304-01	.3861-01	3.704	25.06	594.3
255	270.00	.20900-01	69.000	.6824	1.597	.8654	.9631	.6051-01	.3278-01	3.235	21.92	591.5
255	270.00	.24900-01	71.000	.6257	1.420	.7914	.9626	.5378-01	.2998-01	3.038	20.62	588.5
255	270.00	.28800-01	73.000	.5630	1.185	.7074	.9611	.4489-01	.2680-01	2.912	19.86	580.1
255	270.00	.36700-01	75.000	.4942	1.027	.6310	.9582	.3892-01	.2391-01	2.586	17.65	578.6
255	270.00	.48500-01	77.000	.4278	.8494	.5540	.9541	.3218-01	.2099-01	2.340	16.02	572.3
255	270.00	.56400-01	78.000	.4138	.8077	.5421	.9515	.3060-01	.2054-01	2.304	15.80	569.7
255	270.00	.95800-01	80.000	.2219	.3971	.3017	.9400	.1504-01	.1143-01	1.365	9.443	554.2
255	270.00	.11550	81.000	.2005	.3476	.2761	.9354	.1317-01	.1046-01	1.287	8.933	547.3
255	315.00	.19000-01	68.000	.5621	1.183	.6974	.9631	.4482-01	.2642-01	2.907	19.82	580.1
255	315.00	.22900-01	70.000	.6830	1.541	.8599	.9631	.5839-01	.3257-01	3.330	22.61	588.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
214	5.500	.1706-02	.1043-02	126.8	721.7	.1363	102.4	-31.44	2728.	.3594-02	.8237-07	3.699
215	5.500	-.1705-02	-.1045-02	128.7	723.7	.1383	102.6	-31.50	2732.	.3636-02	.8260-07	3.738
216	5.500	-.1706-02	-.1044-02	129.3	723.7	.1389	102.6	-31.46	2732.	.3653-02	.8260-07	3.755

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
214	.3018-01	.1278-01
215	.3041-01	.1271-01
216	.3048-01	.1268-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
215	.00000	.91000-02	1.0000	.2156	.3339	.2548	.9566	.1016-01	.7748-02	1.339	9.443	519.4
215	.00000	.15000-01	4.0000	.6662	1.155	.8161	.9566	.3514-01	.2482-01	3.462	23.96	552.8
215	.00000	.17000-01	5.0000	.6059	1.023	.7360	.9566	.3110-01	.2238-01	3.272	22.73	546.1
215	.00000	.19000-01	6.0000	.5598	.9437	.6797	.9566	.2870-01	.2067-01	3.028	21.04	545.8
215	.00000	.24900-01	9.0000	.5428	.9128	.6602	.9561	.2776-01	.2008-01	2.948	20.49	545.1
215	.00000	.26900-01	10.000	.5164	.8637	.6292	.9554	.2627-01	.1914-01	2.826	19.66	543.7
214	.00000	.32800-01	12.000	.4340	.7268	.5347	.9532	.2193-01	.1614-01	2.345	16.32	542.6
214	.00000	.36700-01	13.000	.3777	.6240	.4664	.9518	.1883-01	.1407-01	2.085	14.54	538.8
214	.00000	.40600-01	14.000	.4191	.7008	.5233	.9505	.2115-01	.1579-01	2.271	15.81	542.1
214	.00000	.48500-01	15.000	.3728	.6192	.4707	.9477	.1868-01	.1421-01	2.041	14.22	540.3
214	.00000	.56400-01	16.000	.3497	.5811	.4476	.9451	.1754-01	.1351-01	1.912	13.33	540.5
214	.00000	.76100-01	17.000	.2545	.4161	.3339	.9388	.1256-01	.1008-01	1.428	9.973	535.8
214	.00000	.11550	19.000	.1484	.2408	.2053	.9278	.7267-02	.6196-02	.8428	5.895	533.5
214	.00000	.16480	20.000	.7636-01	.1212	.1101	.9172	.3657-02	.3321-02	.4496	3.157	526.5
214	.00000	.21400	22.000	.4097-01	.6072-01	.5769-01	.9109	.1832-02	.1741-02	.2743	1.955	499.8
216	2.0000	.24700-01	165.00	.5356	.8630	.6423	.9562	.2631-01	.1958-01	3.115	21.80	532.9
215	9.0000	.15000-01	157.00	.6573	1.118	.8002	.9566	.3399-01	.2434-01	3.511	24.37	548.0
215	9.0000	.17600-01	158.00	.6055	1.039	.7394	.9566	.3161-01	.2249-01	3.192	22.12	550.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
216	9.8000	.24700-01	164.00	.5724	.9411	.6909	.9562	.2869-01	.2106-01	3.223	22.47	539.0
215	10.000	.22900-01	88.000	.5805	.9915	.7078	.9566	.3015-01	.2153-01	3.083	21.38	549.1
215	10.000	.26900-01	90.000	.5371	.9028	.6555	.9554	.2746-01	.1994-01	2.918	20.28	545.0
215	10.000	.34700-01	94.000	.4225	.6667	.5114	.9526	.2028-01	.1555-01	2.538	17.83	526.1
216	14.600	.44200-01	169.00	.3978	.6278	.4888	.9492	.1914-01	.1490-01	2.396	16.83	526.1
215	18.500	.44200-01	106.00	.3956	.6537	.4948	.9492	.1988-01	.1505-01	2.205	15.37	540.4
216	19.600	.62900-01	175.00	.3230	.5055	.4068	.9429	.1541-01	.1240-01	1.973	13.88	523.2
215	19.800	.40800-01	101.00	.4235	.7018	.5273	.9504	.2134-01	.1604-01	2.351	16.37	541.2
215	20.000	.24900-01	89.000	.5589	.9455	.6811	.9561	.2875-01	.2071-01	3.009	20.89	546.7
215	20.000	.28800-01	91.000	.5075	.8524	.6214	.9547	.2592-01	.1890-01	2.760	19.19	544.8
215	20.000	.32800-01	93.000	.4760	.8002	.5873	.9532	.2433-01	.1786-01	2.586	17.98	545.0
215	22.200	.62900-01	125.00	.3011	.4959	.3881	.9429	.1508-01	.1180-01	1.687	11.76	539.5
215	22.400	.44200-01	107.00	.3874	.6404	.4847	.9492	.1948-01	.1474-01	2.159	15.04	540.5
216	22.600	.10270	192.00	.1707	.2662	.2267	.9311	.8116-02	.6911-02	1.048	7.381	522.1
215	23.000	.42000-01	105.00	.4108	.6798	.5122	.9500	.2068-01	.1558-01	2.285	15.92	540.8
215	23.400	.59600-01	120.00	.2975	.4899	.3813	.9440	.1490-01	.1160-01	1.667	11.62	539.4
216	23.900	.21310	250.00	.3928-01	.5672-01	.5408-01	.9110	.1729-02	.1648-02	.2819	2.022	488.3
215	24.100	.82200-01	139.00	.2239	.3665	.2967	.9369	.1114-01	.9022-02	1.266	8.838	537.7
216	24.400	.19040	238.00	.5419-01	.7974-01	.7502-01	.9133	.2431-02	.2287-02	.3730	2.662	497.8
216	24.400	.12440	207.00	.1296	.2038	.1778	.9256	.6213-02	.5419-02	.7851	5.518	524.9
216	24.800	.16810	223.00	.7187-01	.1100	.1010	.9166	.3352-02	.3080-02	.4577	3.235	514.8
215	24.900	.62900-01	126.00	.2925	.4810	.3768	.9429	.1463-01	.1146-01	1.642	11.45	539.1
216	25.000	.79500-01	178.00	.2484	.3883	.3203	.9377	.1184-01	.9762-02	1.521	10.70	522.8
216	25.300	.10270	191.00	.1731	.2699	.2299	.9311	.8228-02	.7008-02	1.064	7.491	522.0
216	25.300	.10000+00	186.00	.1784	.2791	.2366	.9318	.8507-02	.7210-02	1.090	7.671	523.1
215	25.500	.60700-01	124.00	.3030	.4978	.3887	.9436	.1514-01	.1182-01	1.704	11.88	538.8
216	26.000	.12440	206.00	.1285	.2022	.1763	.9256	.6165-02	.5375-02	.7776	5.464	525.2
215	26.300	.82200-01	140.00	.1930	.3152	.2554	.9369	.9586-02	.7768-02	1.095	7.646	537.1
216	26.700	.12100	199.00	.1293	.2024	.1761	.9264	.6169-02	.5368-02	.7903	5.560	523.2
216	26.800	.16810	222.00	.6923-01	.1059	.9729-01	.9166	.3227-02	.2966-02	.4413	3.120	514.5
216	27.000	.19040	237.00	.5292-01	.7800-01	.7336-01	.9133	.2377-02	.2236-02	.3631	2.590	498.6
216	27.100	.21310	249.00	.3764-01	.5445-01	.5191-01	.9110	.1660-02	.1582-02	.2689	1.928	489.3
216	27.200	.80300-01	180.00	.2383	.3717	.3072	.9375	.1133-01	.9363-02	1.464	10.30	522.1
215	27.400	.40100-01	98.000	.4084	.6827	.5034	.9506	.2076-01	.1549-01	2.237	15.56	543.6
216	27.400	.16480	215.00	.6958-01	.1072	.9808-01	.9172	.3268-02	.2990-02	.4372	3.086	517.5
215	27.600	.41600-01	102.00	.4094	.6809	.5111	.9501	.2071-01	.1554-01	2.260	15.73	542.2
216	27.600	.12440	205.00	.1257	.1978	.1725	.9256	.6029-02	.5257-02	.7607	5.346	525.1
216	27.600	.18700	230.00	.4716-01	.6971-01	.6540-01	.9138	.2125-02	.1994-02	.3216	2.292	500.0
216	27.700	.21010	243.00	.4252-01	.6172-01	.5874-01	.9112	.1881-02	.1790-02	.3016	2.161	491.0
216	27.900	.10110	188.00	.1733	.2713	.2303	.9315	.8271-02	.7018-02	1.058	7.442	523.4
215	28.000	.46800-01	110.00	.3605	.5947	.4527	.9483	.1809-01	.1377-01	2.015	14.05	539.9
216	28.200	.16810	221.00	.7368-01	.1128	.1037	.9166	.3440-02	.3160-02	.4682	3.309	515.2
216	28.300	.19040	236.00	.5516-01	.8127-01	.7644-01	.9133	.2477-02	.2330-02	.3788	2.702	498.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
216	28.300	.12200	201.00	.1325	.2075	.1807	.9262	.6325-02	.5510-02	.8088	5.690	523.4
215	28.400	.53500-01	114.00	.3448	.5710	.4385	.9460	.1736-01	.1334-01	1.915	13.34	541.0
216	28.400	.21310	248.00	.3891-01	.5644-01	.5378-01	.9110	.1720-02	.1639-02	.2764	1.980	490.7
215	28.700	.58600-01	117.00	.3241	.5345	.4150	.9443	.1625-01	.1262-01	1.812	12.63	539.8
216	28.800	.16580	217.00	.6663-01	.1023	.9372-01	.9170	.3117-02	.2857-02	.4219	2.980	516.0
215	28.800	.60400-01	121.00	.3062	.5028	.3926	.9437	.1529-01	.1194-01	1.724	12.03	538.5
216	29.000	.21110	244.00	.3935-01	.5711-01	.5437-01	.9111	.1741-02	.1657-02	.2791	2.000	490.9
215	29.000	.65700-01	129.00	.2800	.4595	.3620	.9420	.1397-01	.1101-01	1.578	11.01	538.3
215	29.200	.72400-01	133.00	.2498	.4103	.3266	.9399	.1248-01	.9932-02	1.406	9.807	538.6
215	29.300	.79500-01	136.00	.2193	.3571	.2887	.9377	.1086-01	.8779-02	1.251	8.739	536.1
215	29.600	.92500-01	143.00	.1962	.3231	.2650	.9339	.9828-02	.8059-02	1.099	7.665	539.4
215	29.700	.10000+00	146.00	.1717	.2804	.2334	.9318	.8529-02	.7098-02	.9746	6.804	537.0
216	29.900	.12100	198.00	.1292	.2026	.1762	.9264	.6174-02	.5369-02	.7872	5.536	523.8
216	30.200	.16480	214.00	.6444-01	.9907-01	.9068-01	.9172	.3020-02	.2764-02	.4067	2.872	516.6
216	30.200	.18700	229.00	.5169-01	.7642-01	.7169-01	.9138	.2329-02	.2185-02	.3524	2.512	500.0
216	30.300	.21010	242.00	.4117-01	.5987-01	.5696-01	.9112	.1825-02	.1736-02	.2908	2.082	491.9
215	31.500	.11100-01	83.000	.4992	.8403	.6058	.9566	.2555-01	.1843-01	2.706	18.81	545.4
216	32.100	.21010	241.00	.4130-01	.6018-01	.5724-01	.9112	.1834-02	.1745-02	.2904	2.078	493.0
216	32.200	.16480	213.00	.6351-01	.9767-01	.8940-01	.9172	.2977-02	.2725-02	.4006	2.828	516.7
216	32.200	.17860	224.00	.7211-01	.1088	.1011	.9150	.3316-02	.3081-02	.4718	3.346	509.0
216	32.200	.18700	228.00	.5300-01	.7865-01	.7373-01	.9138	.2397-02	.2247-02	.3585	2.553	501.7
216	32.300	.12100	197.00	.1325	.2074	.1805	.9264	.6322-02	.5502-02	.8100	5.698	523.2
216	32.300	.12300	194.00	.1210	.1894	.1652	.9259	.5774-02	.5036-02	.7394	5.202	523.2
216	32.300	.12730	208.00	.1031	.1632	.1425	.9249	.4976-02	.4345-02	.6176	4.336	527.2
216	32.300	.13420	209.00	.1045	.1671	.1466	.9233	.5092-02	.4469-02	.6160	4.316	530.3
215	32.400	.10000+00	147.00	.1692	.2770	.2303	.9318	.8425-02	.7003-02	.9567	6.676	537.7
216	32.400	.10110	184.00	.1707	.2675	.2269	.9315	.8155-02	.6918-02	1.041	7.320	523.7
216	32.400	.10630	193.00	.1559	.2431	.2080	.9301	.7411-02	.6342-02	.9584	6.747	522.0
216	32.500	.85800-01	183.00	.2149	.3375	.2802	.9359	.1029-01	.8540-02	1.305	9.175	524.4
215	32.600	.79500-01	137.00	.1688	.2764	.2228	.9377	.8406-02	.6776-02	.9545	6.661	537.8
216	32.600	.80800-01	176.00	.2321	.3629	.2998	.9374	.1106-01	.9137-02	1.420	9.991	522.9
215	32.700	.67400-01	132.00	.2748	.4515	.3564	.9415	.1373-01	.1084-01	1.545	10.77	538.8
215	32.700	.72400-01	134.00	.2697	.4434	.3527	.9399	.1348-01	.1073-01	1.515	10.57	538.9
215	32.800	.65700-01	130.00	.2814	.4613	.3636	.9420	.1403-01	.1106-01	1.588	11.08	538.1
216	32.800	.16680	210.00	.6459-01	.9936-01	.9109-01	.9169	.3029-02	.2777-02	.4071	2.874	516.9
216	32.800	.18880	225.00	.5219-01	.7718-01	.7248-01	.9135	.2353-02	.2209-02	.3555	2.534	500.2
215	32.900	.58600-01	118.00	.3855	.6399	.4951	.9443	.1946-01	.1506-01	2.134	14.86	541.6
215	32.900	.60400-01	122.00	.2991	.4915	.3836	.9437	.1495-01	.1167-01	1.682	11.73	538.8
216	32.900	.61300-01	171.00	.3080	.4825	.3872	.9435	.1471-01	.1180-01	1.879	13.21	523.6
215	33.000	.53500-01	115.00	.3449	.5693	.4381	.9460	.1731-01	.1332-01	1.926	13.42	540.1
215	33.200	.48300-01	113.00	.3605	.5940	.4536	.9478	.1807-01	.1380-01	2.019	14.07	539.6
216	33.400	.42800-01	166.00	.3983	.6271	.4878	.9497	.1911-01	.1487-01	2.408	16.92	525.3
215	33.500	.40100-01	99.000	.4170	.6877	.5175	.9506	.2091-01	.1574-01	2.331	16.25	539.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
215	33.600	.38300-01	97.000	.4313	.7145	.5346	.9513	.2173-01	.1626-01	2.395	16.68	541.1
215	33.700	.36700-01	96.000	.4608	.7705	.5714	.9518	.2343-01	.1738-01	2.523	17.55	543.6
215	33.900	.33800-01	95.000	.4698	.7872	.5800	.9529	.2394-01	.1764-01	2.564	17.83	544.2
216	34.700	.21010	240.00	.4316-01	.6295-01	.5987-01	.9112	.1919-02	.1825-02	.3029	2.167	493.5
216	34.700	.18700	227.00	.5540-01	.8204-01	.7694-01	.9138	.2501-02	.2345-02	.3763	2.681	500.8
216	34.900	.16480	212.00	.6791-01	.1049	.9589-01	.9172	.3197-02	.2923-02	.4249	2.997	518.4
215	35.100	.10000+00	148.00	.1667	.2730	.2270	.9318	.8304-02	.6902-02	.9423	6.576	537.8
216	35.200	.23900-01	161.00	.6104	1.015	.7385	.9565	.3095-01	.2251-01	3.376	23.50	542.2
215	35.300	.92500-01	145.00	.1946	.3201	.2626	.9339	.9734-02	.7986-02	1.092	7.614	539.1
215	35.300	.22100-01	160.00	.5098	1.048	.7365	.9566	.3188-01	.2240-01	3.086	21.34	554.5
216	35.400	.18800	231.00	.5435-01	.8073-01	.7571-01	.9136	.2461-02	.2308-02	.3669	2.612	502.2
216	35.500	.12100	196.00	.1311	.2056	.1788	.9264	.6268-02	.5449-02	.7971	5.605	524.1
216	35.600	.16580	216.00	.6836-01	.1053	.9645-01	.9170	.3211-02	.2940-02	.4295	3.031	517.5
215	35.800	.80600-01	138.00	.2146	.3498	.2831	.9374	.1064-01	.8610-02	1.223	8.539	536.4
216	35.900	.21310	247.00	.3764-01	.5494-01	.5230-01	.9110	.1675-02	.1594-02	.2637	1.886	493.8
216	36.000	.19040	235.00	.5262-01	.7806-01	.7333-01	.9133	.2379-02	.2235-02	.3561	2.536	501.6
216	36.200	.16810	220.00	.6849-01	.1053	.9663-01	.9166	.3209-02	.2945-02	.4324	3.053	516.6
215	36.200	.72400-01	135.00	.2605	.4265	.3400	.9399	.1297-01	.1034-01	1.472	10.28	537.8
216	36.300	.12200	200.00	.1287	.2023	.1760	.9262	.6168-02	.5365-02	.7804	5.486	524.8
215	36.600	.65700-01	131.00	.2528	.4164	.3273	.9420	.1266-01	.9955-02	1.415	9.868	539.5
216	36.700	.18700	226.00	.5314-01	.7901-01	.7404-01	.9138	.2408-02	.2257-02	.3580	2.548	502.7
216	36.900	.16480	211.00	.7069-01	.1094	.9999-01	.9172	.3335-02	.3048-02	.4405	3.106	519.2
216	36.900	.10110	187.00	.1800	.2834	.2399	.9315	.8637-02	.7313-02	1.089	7.654	525.2
215	37.000	.60400-01	123.00	.3087	.5080	.3961	.9437	.1545-01	.1205-01	1.732	12.08	539.2
216	37.000	.12440	204.00	.1258	.1981	.1727	.9256	.6038-02	.5264-02	.7603	5.342	525.4
215	37.100	.56600-01	119.00	.3225	.5328	.4133	.9443	.1620-01	.1257-01	1.798	12.53	540.3
216	37.200	.21310	246.00	.3624-01	.5294-01	.5039-01	.9110	.1614-02	.1536-02	.2535	1.813	494.2
216	37.600	.16810	219.00	.6959-01	.1071	.9828-01	.9166	.3264-02	.2996-02	.4384	3.095	517.0
215	37.800	.10270	150.00	.1688	.2756	.2303	.9311	.8383-02	.7004-02	.9585	6.692	537.0
216	37.900	.12100	195.00	.1281	.1998	.1740	.9264	.6089-02	.5305-02	.7877	5.545	521.9
216	38.000	.80300-01	179.00	.2432	.3807	.3141	.9375	.1160-01	.9573-02	1.485	10.45	523.3
215	38.500	.46800-01	112.00	.3698	.6101	.4643	.9483	.1856-01	.1412-01	2.066	14.40	540.0
216	38.600	.12440	203.00	.1281	.2017	.1758	.9256	.6147-02	.5360-02	.7751	5.447	525.2
216	38.700	.10000+00	185.00	.1774	.2789	.2359	.9318	.8501-02	.7191-02	1.075	7.559	524.8
215	38.900	.82200-01	141.00	.2201	.3598	.2914	.9369	.1094-01	.8863-02	1.247	8.705	537.3
215	39.300	.41600-01	104.00	.4031	.6708	.5033	.9501	.2040-01	.1531-01	2.223	15.47	542.4
216	39.500	.10270	190.00	.1753	.2752	.2337	.9311	.8388-02	.7124-02	1.065	7.485	524.4
216	39.600	.16810	218.00	.7638-01	.1177	.1090	.9166	.3587-02	.3291-02	.4802	3.389	517.4
216	39.900	.19040	233.00	.4716-01	.7004-01	.6579-01	.9133	.2135-02	.2005-02	.3185	2.267	502.1
216	40.100	.79500-01	177.00	.2416	.3773	.3114	.9377	.1150-01	.9492-02	1.484	10.45	522.2
216	40.200	.12440	202.00	.1281	.2017	.1759	.9256	.6149-02	.5361-02	.7746	5.443	525.3
216	40.300	.21310	245.00	.3561-01	.5199-01	.4949-01	.9110	.1585-02	.1509-02	.2494	1.783	493.9
215	41.100	.82200-01	142.00	.2338	.3834	.3101	.9369	.1166-01	.9432-02	1.319	9.206	538.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
216	41.100	.60700-01	173.00	.3141	.4921	.3945	.9436	.1500-01	.1203-01	1.914	13.47	523.7
216	42.600	.59600-01	172.00	.3266	.5132	.4101	.9440	.1564-01	.1250-01	1.981	13.93	524.7
216	43.200	.42000-01	168.00	.3932	.6203	.4814	.9500	.1891-01	.1467-01	2.368	16.64	526.1
216	43.400	.82200-01	181.00	.2328	.3643	.3014	.9369	.1110-01	.9188-02	1.423	10.01	523.2
215	43.600	.62900-01	128.00	.2562	.4180	.3288	.9429	.1271-01	.1000-01	1.457	10.17	536.7
215	45.000	.22900-01	8.0000	.6171	1.079	.7579	.9566	.3282-01	.2305-01	3.172	21.93	554.7
216	46.100	.62900-01	174.00	.3073	.4812	.3872	.9429	.1467-01	.1180-01	1.876	13.20	523.4
216	47.700	.40800-01	167.00	.4341	.6883	.5315	.9504	.2098-01	.1620-01	2.592	18.19	527.7
215	48.400	.44200-01	109.00	.3891	.6427	.4867	.9492	.1955-01	.1480-01	2.171	15.13	540.2
216	51.900	.44800-01	170.00	.3594	.5601	.4397	.9490	.1707-01	.1340-01	2.212	15.57	521.8
216	53.200	.24700-01	163.00	.6263	1.027	.7553	.9562	.3129-01	.2302-01	3.543	24.72	538.1
216	65.200	.24700-01	162.00	.5981	.9770	.7205	.9562	.2978-01	.2196-01	3.403	23.76	537.0
214	90.000	.91000-02	44.000	.2398	.3808	.2857	.9566	.1149-01	.8622-02	1.411	9.909	526.7
214	90.000	.11100-01	45.000	.4829	.8198	.5876	.9566	.2474-01	.1773-01	2.558	17.77	546.1
214	90.000	.13100-01	46.000	.7078	1.301	.8824	.9566	.3927-01	.2663-01	3.380	23.26	563.4
214	90.000	.17000-01	48.000	.5621	.9730	.6881	.9566	.2936-01	.2077-01	2.898	20.08	550.8
214	90.000	.20900-01	50.000	.6308	1.090	.7719	.9566	.3289-01	.2329-01	3.262	22.61	550.3
214	90.000	.24900-01	52.000	.2639	.4416	.3205	.9561	.1333-01	.9671-02	1.428	9.944	542.3
214	90.000	.26900-01	53.000	.5541	.9371	.6776	.9554	.2828-01	.2045-01	2.952	20.52	545.1
214	90.000	.28800-01	54.000	.5287	.8866	.6471	.9547	.2676-01	.1953-01	2.852	19.85	542.9
214	90.000	.32800-01	55.000	.3464	.5482	.4185	.9532	.1654-01	.1263-01	2.050	14.40	525.6
214	90.000	.36700-01	56.000	.4258	.6950	.5234	.9518	.2097-01	.1580-01	2.394	16.73	535.3
214	90.000	.40600-01	57.000	.4331	.7190	.5394	.9505	.2170-01	.1628-01	2.372	16.53	540.2
214	90.000	.48500-01	58.000	.3880	.6361	.4874	.9477	.1920-01	.1471-01	2.167	15.13	536.6
214	90.000	.56400-01	59.000	.3441	.5587	.4361	.9451	.1686-01	.1316-01	1.951	13.64	533.8
214	90.000	.76100-01	60.000	.2577	.4120	.3344	.9388	.1243-01	.1009-01	1.499	10.52	528.9
214	90.000	.95900-01	61.000	.1817	.2823	.2387	.9330	.8520-02	.7204-02	1.110	7.827	519.2
214	90.000	.11550	62.000	.1539	.2412	.2084	.9278	.7279-02	.6289-02	.9261	6.519	522.3
214	135.00	.19000-01	49.000	.6124	1.056	.7488	.9566	.3186-01	.2260-01	3.176	22.02	549.8
214	135.00	.22900-01	51.000	.6051	1.042	.7396	.9566	.3145-01	.2232-01	3.142	21.79	549.6
214	180.00	.91000-02	23.000	.1191	.1845	.1408	.9566	.5567-02	.4248-02	.7324	5.168	517.9
214	180.00	.11100-01	24.000	.4242	.7122	.5144	.9566	.2149-01	.1552-01	2.284	15.89	543.2
214	180.00	.13100-01	25.000	.6880	1.291	.8629	.9566	.3897-01	.2604-01	3.207	22.02	567.2
214	180.00	.15000-01	26.000	.6696	1.237	.8360	.9566	.3734-01	.2523-01	3.178	21.86	564.4
214	180.00	.17000-01	27.000	.6288	1.100	.7723	.9566	.3320-01	.2331-01	3.196	22.12	553.2
214	180.00	.19000-01	28.000	.6206	1.080	.7611	.9566	.3260-01	.2297-01	3.176	21.99	552.1
214	180.00	.20900-01	29.000	.6126	1.056	.7489	.9566	.3185-01	.2260-01	3.179	22.04	549.7
214	180.00	.28800-01	32.000	.5319	.8896	.6504	.9547	.2685-01	.1963-01	2.880	20.05	542.2
214	180.00	.32800-01	33.000	.4805	.7835	.5865	.9532	.2364-01	.1770-01	2.706	18.91	535.1
214	180.00	.36700-01	34.000	.4741	.7849	.5858	.9518	.2369-01	.1768-01	2.607	18.18	539.4
214	180.00	.48500-01	36.000	.3935	.6481	.4952	.9477	.1956-01	.1494-01	2.181	15.22	538.0
214	180.00	.56400-01	37.000	.3596	.5901	.4579	.9451	.1781-01	.1382-01	2.005	14.00	536.9
214	180.00	.76100-01	38.000	.2668	.4345	.3493	.9388	.1311-01	.1054-01	1.505	10.52	534.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K114)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
214	180.00	.95800-01	39.000	.1999	.3233	.2686	.9330	.9757-02	.8105-02	1.141	7.982	532.6
214	180.00	.11550	40.000	.1533	.2479	.2116	.9278	.7481-02	.6386-02	.8748	6.122	532.6
214	180.00	.18450	42.000	.6132-01	.9335-01	.8693-01	.9141	.2817-02	.2623-02	.3893	2.757	511.3
214	225.00	.22900-01	30.000	.5659	.9660	.6899	.9566	.2915-01	.2082-01	2.976	20.66	547.4
214	270.00	.91000-02	63.000	.2107	.3338	.2508	.9566	.1007-01	.7568-02	1.244	8.739	526.0
214	270.00	.11100-01	64.000	.4377	.7341	.5306	.9566	.2215-01	.1601-01	2.361	16.43	543.0
214	270.00	.13100-01	65.000	.6519	1.203	.8136	.9566	.3631-01	.2455-01	3.098	21.31	564.2
214	270.00	.17000-01	67.000	.6902	1.199	.8458	.9566	.3617-01	.2552-01	3.544	24.55	551.5
214	270.00	.20900-01	69.000	.5856	1.022	.7188	.9566	.3085-01	.2169-01	2.986	20.66	552.7
214	270.00	.24900-01	71.000	.5858	1.020	.7203	.9561	.3078-01	.2174-01	2.997	20.75	552.1
214	270.00	.28800-01	73.000	.5225	.8887	.6424	.9547	.2682-01	.1939-01	2.761	19.18	546.5
214	270.00	.36700-01	75.000	.4603	.7744	.5721	.9518	.2337-01	.1726-01	2.472	17.19	543.7
214	270.00	.48500-01	77.000	.3958	.6487	.4971	.9477	.1958-01	.1500-01	2.211	15.44	536.5
214	270.00	.56400-01	78.000	.3676	.5953	.4654	.9451	.1796-01	.1405-01	2.094	14.65	533.0
214	270.00	.95800-01	80.000	.2031	.3160	.2670	.9330	.9535-02	.8057-02	1.238	8.730	519.6
214	270.00	.11550	81.000	.1658	.2569	.2229	.9278	.7752-02	.6726-02	1.018	7.183	518.2
214	315.00	.19000-01	68.000	.5140	.8639	.6235	.9566	.2607-01	.1882-01	2.763	19.22	543.5
214	315.00	.22900-01	70.000	.6534	1.137	.8011	.9566	.3430-01	.2418-01	3.347	23.18	551.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
319	3.010	.2126-02	-3.042	35.69	715.7	.9573	254.5	89.96	2354.	.1015-01	.2034-06	3.652
320	3.010	.2126-02	-3.042	36.23	715.7	.9717	254.5	89.96	2354.	.1031-01	.2034-06	3.707
321	3.010	.2126-02	-3.042	36.17	715.7	.9700	254.5	89.96	2354.	.1029-01	.2034-06	3.700

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
319	.4365-01	.7588-02
320	.4398-01	.7532-02
321	.4394-01	.7539-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
320	.00000	.91000-02	1.0000	.5451	1.429	.6599	.9719	.6284-01	.2902-01	2.774	18.71	600.0
320	.00000	.15000-01	4.0000	.7323	2.030	.8928	.9719	.8927-01	.3927-01	3.606	24.28	603.7
320	.00000	.17000-01	5.0000	.6933	1.764	.8360	.9719	.7759-01	.3677-01	3.595	24.28	597.8
320	.00000	.19000-01	6.0000	.6735	1.658	.8085	.9719	.7291-01	.3556-01	3.571	24.15	595.1
320	.00000	.24900-01	9.0000	.6322	1.472	.7556	.9714	.6473-01	.3323-01	3.488	23.66	590.2
320	.00000	.26900-01	10.000	.6062	1.375	.7253	.9706	.6047-01	.3190-01	3.412	23.17	587.7
319	.00000	.32800-01	12.000	.5372	1.150	.6459	.9684	.5022-01	.2820-01	3.149	21.46	581.4
319	.00000	.36700-01	13.000	.4929	1.002	.5921	.9670	.4372-01	.2585-01	3.032	20.74	574.7
319	.00000	.40600-01	14.000	.5120	1.076	.6244	.9657	.4699-01	.2726-01	3.050	20.81	579.2
319	.00000	.48500-01	15.000	.4474	.8985	.5496	.9630	.3922-01	.2399-01	2.785	19.06	573.1
319	.00000	.56400-01	16.000	.4263	.8487	.5309	.9604	.3705-01	.2318-01	2.676	18.33	571.9
319	.00000	.76100-01	17.000	.3307	.6213	.4198	.9546	.2712-01	.1833-01	2.209	15.20	562.7
319	.00000	.95800-01	18.000	.3534-01	.5997-01	.4457-01	.9496	.2618-02	.1946-02	.2689	1.873	541.4
319	.00000	.11550	19.000	.2152	.3955	.2866	.9453	.1726-01	.1251-01	1.474	10.17	558.7
319	.00000	.16480	20.000	.1388	.2530	.1928	.9379	.1104-01	.8418-02	.9608	6.634	557.1
319	.00000	.21400	22.000	.8365-01	.1418	.1142	.9347	.6189-02	.4985-02	.6373	4.439	541.1
321	2.0000	.24700-01	165.00	.5862	1.304	.6947	.9716	.5730-01	.3053-01	3.349	22.76	585.7
320	9.0000	.15000-01	157.00	.6372	1.634	.7645	.9727	.7187-01	.3363-01	3.288	22.20	598.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
320	9.0000	.17600-01	158.00	.6502	1.657	.7796	.9727	.7289-01	.3429-01	3.368	22.75	597.9
321	9.8000	.24700-01	164.00	.6234	1.505	.7439	.9723	.6611-01	.3269-01	3.348	22.67	593.5
320	10.000	.22900-01	88.000	.6500	1.580	.7740	.9728	.6950-01	.3404-01	3.476	23.52	594.1
320	10.000	.26900-01	90.000	.6077	1.364	.7217	.9715	.6000-01	.3174-01	3.450	23.44	586.6
320	10.000	.34700-01	94.000	.5577	1.214	.6716	.9686	.5338-01	.2954-01	3.249	22.12	583.2
321	14.600	.44200-01	169.00	.4807	.9833	.5830	.9657	.4321-01	.2562-01	2.958	20.22	575.7
320	18.500	.44200-01	106.00	.4849	1.005	.5884	.9660	.4418-01	.2588-01	2.951	20.15	577.3
321	19.600	.62900-01	175.00	.3822	.7384	.4737	.9600	.3245-01	.2081-01	2.491	17.11	567.3
320	19.800	.40800-01	101.00	.5315	1.119	.6417	.9673	.4923-01	.2823-01	3.186	21.74	579.4
320	20.000	.24900-01	89.000	.6068	1.396	.7152	.9732	.6139-01	.3146-01	3.379	22.93	589.1
320	20.000	.28800-01	91.000	.5695	1.270	.6748	.9717	.5584-01	.2968-01	3.251	22.10	585.9
320	20.000	.32800-01	93.000	.5779	1.295	.6921	.9702	.5697-01	.3044-01	3.284	22.32	586.5
320	22.200	.62900-01	125.00	.3957	.7823	.4926	.9602	.3441-01	.2167-01	2.520	17.27	570.9
320	22.400	.44200-01	107.00	.4884	1.003	.5904	.9663	.4410-01	.2597-01	2.998	20.49	576.1
321	22.600	.10270	192.00	.2636	.4885	.3436	.9494	.2147-01	.1510-01	1.800	12.41	560.2
320	23.000	.42000-01	105.00	.5160	1.072	.6219	.9671	.4713-01	.2735-01	3.133	21.39	577.6
320	23.400	.59600-01	120.00	.4312	.8473	.5324	.9613	.3727-01	.2342-01	2.764	18.95	569.9
321	23.900	.21310	250.00	.8477-01	.1460	.1166	.9350	.6417-02	.5122-02	.6354	4.417	545.1
320	24.100	.82200-01	139.00	.3209	.6023	.4070	.9547	.2649-01	.1790-01	2.162	14.88	562.5
321	24.400	.19040	238.00	.1148	.2029	.1587	.9363	.8915-02	.6975-02	.8317	5.763	550.8
321	24.400	.12440	207.00	.2022	.3833	.2733	.9449	.1684-01	.1201-01	1.345	9.253	564.2
321	24.800	.16810	223.00	.1364	.2538	.1908	.9383	.1115-01	.8386-02	.9275	6.391	560.9
320	24.900	.62900-01	126.00	.4147	.8167	.5151	.9604	.3592-01	.2266-01	2.651	18.18	570.3
321	25.000	.79500-01	178.00	.3357	.6328	.4244	.9555	.2781-01	.1865-01	2.249	15.48	563.2
321	25.300	.10270	191.00	.2672	.4937	.3476	.9496	.2169-01	.1527-01	1.832	12.63	559.7
321	25.300	.10000+00	186.00	.2594	.4828	.3370	.9502	.2121-01	.1481-01	1.763	12.15	561.0
320	25.500	.60700-01	124.00	.4160	.8153	.5139	.9611	.3586-01	.2260-01	2.674	18.34	569.5
321	26.000	.12440	206.00	.2011	.3811	.2716	.9450	.1675-01	.1194-01	1.339	9.209	564.2
320	26.300	.82200-01	140.00	.3575	.6621	.4512	.9548	.2912-01	.1985-01	2.446	16.86	560.1
321	26.700	.12100	199.00	.2013	.3734	.2684	.9457	.1641-01	.1180-01	1.373	9.466	560.4
321	26.800	.16810	222.00	.1354	.2510	.1890	.9384	.1103-01	.8305-02	.9245	6.372	560.3
321	27.000	.19040	237.00	.1109	.1960	.1533	.9363	.8612-02	.6736-02	.8033	5.566	550.8
321	27.100	.21310	249.00	.8734-01	.1508	.1202	.9350	.6625-02	.5281-02	.6530	4.538	545.5
321	27.200	.80300-01	180.00	.3323	.6176	.4184	.9554	.2714-01	.1839-01	2.262	15.59	560.7
320	27.400	.40100-01	98.000	.5577	1.199	.6721	.9682	.5274-01	.2956-01	3.281	22.35	581.9
321	27.400	.16480	215.00	.1336	.2515	.1874	.9388	.1105-01	.8233-02	.8962	6.168	563.0
320	27.600	.41600-01	102.00	.5169	1.095	.6234	.9677	.4817-01	.2742-01	3.081	21.01	580.1
321	27.600	.12440	205.00	.1970	.3723	.2657	.9451	.1636-01	.1168-01	1.316	9.057	563.6
321	27.600	.18700	230.00	.1151	.2024	.1585	.9366	.8895-02	.6964-02	.8399	5.823	549.7
321	27.700	.21010	243.00	.8745-01	.1521	.1207	.9352	.6683-02	.5305-02	.6471	4.492	547.3
321	27.900	.10110	188.00	.2673	.4971	.3474	.9501	.2184-01	.1527-01	1.819	12.53	560.8
320	28.000	.46800-01	110.00	.4589	.9281	.5545	.9659	.4082-01	.2439-01	2.857	19.54	574.1
321	28.200	.16810	221.00	.1396	.2616	.1958	.9384	.1150-01	.8604-02	.9407	6.477	562.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
321	28.300	.19040	236.00	.1044	.1836	.1439	.9363	.8067-02	.6323-02	.7607	5.274	549.8
321	28.300	.12200	201.00	.2092	.3883	.2793	.9456	.1706-01	.1227-01	1.426	9.830	560.5
320	28.400	.53500-01	114.00	.4416	.8850	.5399	.9637	.3892-01	.2375-01	2.775	18.99	572.8
321	28.400	.21310	248.00	.8305-01	.1432	.1142	.9350	.6294-02	.5019-02	.6215	4.319	545.4
320	28.700	.58600-01	117.00	.4330	.8566	.5331	.9620	.3768-01	.2345-01	2.756	18.89	571.0
321	28.800	.16580	217.00	.1297	.2426	.1814	.9387	.1066-01	.7972-02	.8761	6.034	561.9
320	28.800	.60400-01	121.00	.4069	.7991	.5019	.9615	.3515-01	.2207-01	2.610	17.90	569.8
321	29.000	.21110	244.00	.8018-01	.1384	.1103	.9351	.6083-02	.4846-02	.5991	4.163	545.6
320	29.000	.65700-01	129.00	.3866	.7552	.4809	.9598	.3322-01	.2115-01	2.493	17.10	569.1
320	29.200	.72400-01	133.00	.3636	.7013	.4563	.9578	.3085-01	.2007-01	2.376	16.32	567.1
320	29.300	.79500-01	136.00	.3170	.5931	.3991	.9558	.2609-01	.1755-01	2.143	14.76	562.0
320	29.600	.92500-01	143.00	.3168	.6019	.4092	.9523	.2648-01	.1800-01	2.106	14.48	564.6
320	29.700	.10000+00	146.00	.2476	.4611	.3213	.9505	.2028-01	.1413-01	1.684	11.60	561.1
321	29.900	.12100	198.00	.2080	.3871	.2774	.9459	.1701-01	.1219-01	1.413	9.736	561.0
321	30.200	.16480	214.00	.1310	.2442	.1828	.9389	.1073-01	.8032-02	.8891	6.125	561.2
321	30.200	.18700	229.00	.9347-01	.1632	.1282	.9366	.7171-02	.5632-02	.6882	4.775	548.1
321	30.300	.21010	242.00	.8757-01	.1520	.1207	.9352	.6680-02	.5306-02	.6496	4.510	546.9
320	31.500	.11100-01	83.000	.8252	2.765	1.004	.9747	.1216	.4414-01	3.703	24.80	613.7
321	32.100	.21010	241.00	.8813-01	.1526	.1214	.9352	.6706-02	.5332-02	.6559	4.555	546.3
321	32.200	.16480	213.00	.1316	.2446	.1833	.9390	.1075-01	.8056-02	.8962	6.176	560.7
321	32.200	.17860	224.00	.1252	.2232	.1726	.9374	.9808-02	.7586-02	.8975	6.212	552.6
321	32.200	.18700	228.00	.1134	.1953	.1544	.9367	.8583-02	.6786-02	.8511	5.916	544.9
321	32.300	.12100	197.00	.2106	.3901	.2803	.9460	.1714-01	.1232-01	1.440	9.923	560.1
321	32.300	.12300	194.00	.1889	.3497	.2519	.9456	.1537-01	.1107-01	1.291	8.902	560.1
321	32.300	.12730	208.00	.1769	.3413	.2410	.9448	.1500-01	.1059-01	1.155	7.935	567.1
321	32.300	.13420	209.00	.1656	.3284	.2300	.9435	.1443-01	.1011-01	1.050	7.195	571.3
320	32.400	.10000+00	147.00	.2616	.4932	.3405	.9507	.2169-01	.1498-01	1.754	12.07	563.3
321	32.400	.10110	184.00	.2596	.4815	.3366	.9504	.2116-01	.1479-01	1.772	12.21	560.4
321	32.400	.10630	193.00	.2477	.4539	.3221	.9492	.1995-01	.1415-01	1.715	11.84	558.1
321	32.500	.85900-01	183.00	.3131	.5952	.3998	.9543	.2616-01	.1757-01	2.078	14.29	564.7
320	32.600	.79500-01	137.00	.3517	.6628	.4432	.9560	.2915-01	.1949-01	2.358	16.23	563.2
321	32.600	.80800-01	176.00	.3268	.6149	.4125	.9557	.2702-01	.1813-01	2.193	15.09	562.9
320	32.700	.67400-01	132.00	.3868	.7521	.4813	.9596	.3308-01	.2117-01	2.506	17.20	568.3
320	32.700	.72400-01	134.00	.3742	.7233	.4691	.9581	.3181-01	.2063-01	2.440	16.75	567.4
320	32.800	.65700-01	130.00	.3891	.7534	.4822	.9601	.3314-01	.2121-01	2.533	17.39	567.7
321	32.800	.16680	210.00	.1397	.2595	.1948	.9387	.1140-01	.8560-02	.9520	6.561	560.6
321	32.800	.18880	225.00	.1127	.1966	.1545	.9366	.8638-02	.6789-02	.8298	5.758	548.0
320	32.900	.58600-01	118.00	.3776	.7620	.4652	.9623	.3352-01	.2050-01	2.356	16.12	573.8
320	32.900	.60400-01	122.00	.4051	.7947	.4986	.9618	.3495-01	.2193-01	2.601	17.83	569.7
321	32.900	.61300-01	171.00	.4064	.7922	.5002	.9615	.3481-01	.2198-01	2.624	18.00	568.7
320	33.000	.53500-01	115.00	.4537	.8983	.5520	.9640	.3951-01	.2428-01	2.885	19.77	571.1
320	33.200	.48300-01	113.00	.4597	.9146	.5540	.9658	.4023-01	.2437-01	2.909	19.92	571.8
321	33.400	.42800-01	166.00	.4986	1.018	.5971	.9677	.4472-01	.2624-01	3.075	21.02	575.4

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
320	33.500	.40100-01	99.000	.5248	1.085	.6262	.9687	.4774-01	.2754-01	3.199	21.85	577.1
320	33.600	.38300-01	97.000	.5483	1.169	.6550	.9693	.5140-01	.2881-01	3.251	22.16	580.9
320	33.700	.36700-01	96.000	.5554	1.217	.6642	.9699	.5355-01	.2921-01	3.215	21.88	584.1
320	33.900	.33800-01	95.000	.5825	1.295	.6932	.9710	.5695-01	.3049-01	3.333	22.66	585.6
321	34.700	.21010	240.00	.9258-01	.1598	.1272	.9352	.7022-02	.5591-02	.6921	4.810	545.5
321	34.700	.18700	227.00	.1098	.1896	.1496	.9367	.8333-02	.6576-02	.8197	5.696	545.7
321	34.900	.16480	212.00	.1391	.2593	.1939	.9390	.1139-01	.8521-02	.9438	6.502	561.3
320	35.100	.10000+00	148.00	.2840	.5385	.3700	.9508	.2368-01	.1627-01	1.892	13.01	564.2
321	35.200	.23900-01	161.00	.6524	1.673	.7707	.9748	.7352-01	.3387-01	3.363	22.71	598.4
320	35.300	.92500-01	145.00	.2945	.5620	.3801	.9527	.2472-01	.1672-01	1.948	13.39	565.3
320	35.300	.22100-01	160.00	.6035	1.582	.7140	.9750	.6957-01	.3141-01	3.071	20.72	600.0
321	35.400	.18800	231.00	.1144	.1995	.1568	.9367	.8768-02	.6888-02	.8433	5.852	547.9
321	35.500	.12100	196.00	.2134	.3990	.2847	.9462	.1753-01	.1251-01	1.443	9.939	561.8
321	35.600	.16580	216.00	.1344	.2496	.1871	.9389	.1097-01	.8223-02	.9150	6.306	560.7
320	35.800	.80600-01	138.00	.3196	.5969	.4019	.9559	.2625-01	.1768-01	2.166	14.92	561.6
321	35.900	.21310	247.00	.9072-01	.1563	.1246	.9351	.6868-02	.5477-02	.6799	4.726	545.1
321	36.000	.19040	235.00	.1229	.2148	.1688	.9365	.9439-02	.7416-02	.9034	6.268	548.4
321	36.200	.16810	220.00	.1419	.2613	.1971	.9387	.1148-01	.8662-02	.9766	6.736	559.0
320	36.200	.72400-01	135.00	.3178	.5880	.3931	.9583	.2586-01	.1729-01	2.176	15.00	559.9
321	36.300	.12200	200.00	.2118	.3965	.2830	.9460	.1742-01	.1244-01	1.430	9.847	562.0
320	36.600	.65700-01	131.00	.3995	.7933	.4974	.9603	.3489-01	.2188-01	2.533	17.35	571.5
321	36.700	.18700	226.00	.1182	.2044	.1612	.9368	.8982-02	.7083-02	.8819	6.127	545.9
321	36.900	.16480	211.00	.1393	.2603	.1943	.9391	.1144-01	.8540-02	.9430	6.495	561.7
321	36.900	.10110	187.00	.2756	.5186	.3585	.9506	.2279-01	.1575-01	1.850	12.73	562.9
320	37.000	.60400-01	123.00	.4240	.8423	.5225	.9620	.3704-01	.2298-01	2.688	18.42	571.5
321	37.000	.12440	204.00	.2085	.3894	.2791	.9456	.1711-01	.1226-01	1.412	9.724	561.6
320	37.100	.58500-01	119.00	.4366	.8705	.5366	.9626	.3829-01	.2360-01	2.757	18.88	572.1
321	37.200	.21310	246.00	.9650-01	.1659	.1324	.9351	.7291-02	.5820-02	.7253	5.043	544.6
321	37.600	.16810	219.00	.1387	.2554	.1926	.9387	.1122-01	.8465-02	.9551	6.588	559.0
320	37.800	.10270	150.00	.2642	.4998	.3450	.9503	.2198-01	.1518-01	1.765	12.14	563.8
321	37.900	.12100	195.00	.2219	.4065	.2935	.9463	.1786-01	.1290-01	1.537	10.61	558.0
321	38.000	.80300-01	179.00	.3407	.6405	.4287	.9561	.2815-01	.1884-01	2.289	15.76	562.8
320	38.500	.46800-01	112.00	.4772	.9626	.5737	.9667	.4234-01	.2523-01	2.979	20.38	573.7
321	38.600	.12440	203.00	.2050	.3826	.2742	.9456	.1681-01	.1205-01	1.388	9.563	561.5
321	38.700	.10000+00	185.00	.2625	.4892	.3396	.9510	.2150-01	.1492-01	1.782	12.27	561.2
320	38.900	.82200-01	141.00	.2937	.5602	.3722	.9557	.2464-01	.1637-01	1.943	13.36	565.2
320	39.300	.41600-01	104.00	.5376	1.148	.6456	.9685	.5049-01	.2839-01	3.183	21.69	581.1
321	39.500	.10270	190.00	.2723	.5079	.3537	.9504	.2232-01	.1554-01	1.846	12.72	561.4
321	39.600	.16810	218.00	.1325	.2437	.1838	.9388	.1071-01	.8079-02	.9130	6.298	558.8
321	39.900	.19040	233.00	.1152	.1993	.1573	.9366	.8758-02	.6912-02	.8583	5.962	546.1
321	40.100	.79500-01	177.00	.3387	.6343	.4248	.9565	.2787-01	.1867-01	2.285	15.74	562.1
321	40.200	.12440	202.00	.2082	.3906	.2789	.9457	.1716-01	.1226-01	1.402	9.653	562.4
321	40.300	.21310	245.00	.8920-01	.1524	.1220	.9352	.6696-02	.5361-02	.6765	4.707	543.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
320	41.100	.82200-01	142.00	.3522	.6761	.4469	.9558	.2974-01	.1965-01	2.314	15.90	566.3
321	41.100	.60700-01	173.00	.4143	.8117	.5083	.9622	.3567-01	.2234-01	2.661	18.25	569.5
321	42.600	.59600-01	172.00	.4212	.8351	.5169	.9627	.3670-01	.2271-01	2.673	18.31	571.3
321	43.200	.42000-01	168.00	.4891	1.002	.5824	.9687	.4402-01	.2559-01	3.005	20.54	575.8
321	43.400	.82200-01	181.00	.3194	.6065	.4036	.9559	.2665-01	.1774-01	2.122	14.59	564.5
320	43.600	.62900-01	128.00	.3839	.7556	.4731	.9617	.3323-01	.2081-01	2.456	16.84	570.2
320	45.000	.22900-01	8.0000	.7683	2.118	.9092	.9757	.9316-01	.3999-01	3.795	25.55	603.4
321	46.100	.62900-01	174.00	.4022	.7863	.4944	.9618	.3455-01	.2173-01	2.589	17.76	569.2
321	47.700	.40800-01	167.00	.5401	1.149	.6446	.9694	.5048-01	.2833-01	3.205	21.85	580.6
320	48.400	.44200-01	109.00	.5047	1.033	.6027	.9682	.4544-01	.2651-01	3.106	21.23	575.8
321	53.200	.24700-01	163.00	.6769	1.663	.7905	.9758	.7306-01	.3474-01	3.590	24.29	595.0
321	65.200	.24700-01	162.00	.6799	1.658	.7902	.9764	.7287-01	.3472-01	3.624	24.52	594.4
319	90.000	.91000-02	44.000	.5957	2.718	.7239	.9773	.1186	.3160-01	2.383	15.88	624.0
319	90.000	.11100-01	45.000	.8473	3.249	1.018	.9773	.1418	.4444-01	3.581	23.92	618.9
319	90.000	.13100-01	46.000	.8203	2.530	.9688	.9773	.1104	.4229-01	3.793	25.45	609.8
319	90.000	.17000-01	48.000	.7701	2.057	.8975	.9773	.8979-01	.3918-01	3.846	25.93	601.3
319	90.000	.20900-01	50.000	.6811	1.729	.7897	.9773	.7546-01	.3447-01	3.512	23.72	597.6
319	90.000	.26900-01	53.000	.6285	1.474	.7288	.9760	.6436-01	.3182-01	3.423	23.20	590.9
319	90.000	.28800-01	54.000	.6330	1.451	.7355	.9753	.6335-01	.3211-01	3.507	23.80	588.7
319	90.000	.32800-01	55.000	.5147	.9670	.5868	.9738	.4222-01	.2562-01	3.438	23.67	562.7
319	90.000	.36700-01	56.000	.5725	1.209	.6703	.9723	.5278-01	.2926-01	3.398	23.17	579.7
319	90.000	.40600-01	57.000	.5500	1.190	.6522	.9709	.5194-01	.2847-01	3.196	21.76	582.6
319	90.000	.48500-01	58.000	.4870	1.016	.5841	.9680	.4434-01	.2550-01	2.923	19.95	578.2
319	90.000	.56400-01	59.000	.4672	.9482	.5668	.9654	.4139-01	.2474-01	2.877	19.68	574.6
319	90.000	.76100-01	60.000	.3739	.7337	.4676	.9591	.3203-01	.2041-01	2.382	16.33	569.7
319	90.000	.95800-01	61.000	.3017	.5854	.3892	.9536	.2556-01	.1699-01	1.945	13.35	568.0
319	90.000	.11550	62.000	.2368	.4527	.3132	.9488	.1976-01	.1367-01	1.551	10.66	565.6
319	135.00	.19000-01	49.000	.7112	1.812	.8345	.9757	.7911-01	.3643-01	3.658	24.70	597.9
319	135.00	.22900-01	51.000	.6792	1.693	.7949	.9757	.7390-01	.3470-01	3.544	23.96	596.1
319	180.00	.91000-02	23.000	.3924	.8230	.4601	.9719	.3593-01	.2008-01	2.343	15.99	578.9
319	180.00	.11100-01	24.000	.7749	2.719	.9699	.9719	.1187	.4234-01	3.386	22.66	615.6
319	180.00	.13100-01	25.000	.7654	2.247	.9396	.9719	.9807-01	.4102-01	3.627	24.38	607.1
319	180.00	.15000-01	26.000	.7457	2.073	.9094	.9719	.9051-01	.3970-01	3.638	24.49	603.9
319	180.00	.17000-01	27.000	.7035	1.829	.8508	.9719	.7985-01	.3714-01	3.572	24.10	599.4
319	180.00	.19000-01	28.000	.6765	1.743	.8171	.9719	.7610-01	.3567-01	3.454	23.31	598.7
319	180.00	.20900-01	29.000	.6902	1.679	.8272	.9719	.7330-01	.3611-01	3.661	24.78	594.2
319	180.00	.28800-01	32.000	.6109	1.352	.7316	.9699	.5902-01	.3194-01	3.482	23.68	585.1
319	180.00	.32800-01	33.000	.5431	1.115	.6490	.9684	.4866-01	.2829-01	3.309	22.61	576.1
319	180.00	.36700-01	34.000	.5453	1.166	.6614	.9670	.5092-01	.2887-01	3.199	21.80	581.3
319	180.00	.48500-01	36.000	.4887	.9814	.6003	.9630	.4284-01	.2620-01	3.041	20.81	573.1
319	180.00	.56400-01	37.000	.4454	.8700	.5520	.9604	.3798-01	.2410-01	2.851	19.56	569.0
319	180.00	.76100-01	38.000	.3477	.6547	.4417	.9546	.2858-01	.1928-01	2.317	15.95	563.0
319	180.00	.95800-01	39.000	.2851	.5201	.3692	.9496	.2270-01	.1612-01	1.972	13.61	557.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
319	180.00	.11550	40.000	.2279	.4133	.3019	.9453	.1804-01	.1318-01	1.587	10.96	556.2
319	180.00	.18450	42.000	.1239	.2128	.1689	.9362	.9289-02	.7374-02	.9258	6.437	544.4
319	225.00	.22900-01	30.000	.6235	1.432	.7595	.9683	.6251-01	.3316-01	3.450	23.41	588.9
319	270.00	.91000-02	63.000	.6867	1.668	.8532	.9668	.7283-01	.3725-01	3.646	24.68	594.0
319	270.00	.11100-01	64.000	.7870	2.506	1.019	.9668	.1094	.4448-01	3.584	24.04	611.3
319	270.00	.13100-01	65.000	.7663	2.221	.9790	.9668	.9694-01	.4274-01	3.656	24.58	606.4
319	270.00	.17000-01	67.000	.6058	1.499	.7550	.9668	.6543-01	.3296-01	3.177	21.48	595.5
319	270.00	.20900-01	69.000	.6445	1.562	.8003	.9668	.6817-01	.3494-01	3.428	23.20	593.8
319	270.00	.24900-01	71.000	.6277	1.484	.7789	.9663	.6477-01	.3400-01	3.399	23.03	591.6
319	270.00	.28800-01	73.000	.5402	1.214	.6708	.9649	.5301-01	.2928-01	3.040	20.66	586.8
319	270.00	.36700-01	75.000	.5244	1.169	.6625	.9622	.5101-01	.2892-01	2.972	20.20	585.9
319	270.00	.48500-01	77.000	.4327	.9069	.5532	.9583	.3959-01	.2415-01	2.585	17.64	578.8
319	270.00	.56400-01	78.000	.3963	.8212	.5133	.9559	.3585-01	.2241-01	2.393	16.34	577.4
319	270.00	.95800-01	80.000	.2441	.4725	.3302	.9461	.2063-01	.1441-01	1.577	10.83	567.6
319	270.00	.11550	81.000	.1987	.3780	.2735	.9423	.1650-01	.1194-01	1.308	8.995	564.8
319	315.00	.19000-01	68.000	.5971	1.303	.7211	.9683	.5690-01	.3148-01	3.443	23.43	583.6
319	315.00	.22900-01	70.000	.5371	1.280	.6583	.9683	.5587-01	.2874-01	2.892	19.59	592.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 3.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
264	4.020	-.1061-02	-3.038	62.95	718.7	.4037	169.8	90.02	2568.	.6416-02	.1366-06	3.748
265	4.020	-.1062-02	-3.040	62.89	718.7	.4033	169.8	90.02	2568.	.6410-02	.1366-06	3.744
266	4.020	-.1045-02	-2.990	63.01	718.7	.4041	169.8	90.02	2568.	.6422-02	.1366-06	3.751

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
264	.3791-01	.9557-02
265	.3790-01	.9562-02
266	.3793-01	.9553-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
265	.00000	.91000-02	1.0000	.3925	.6956	.4681	.9630	.2636-01	.1774-01	2.454	16.97	553.7
265	.00000	.15000-01	4.0000	.7430	1.557	.9214	.9630	.5899-01	.3492-01	3.872	26.39	581.2
265	.00000	.17000-01	5.0000	.7081	1.405	.8675	.9630	.5326-01	.3288-01	3.886	26.59	573.8
265	.00000	.19000-01	6.0000	.6661	1.304	.8136	.9630	.4941-01	.3083-01	3.709	25.41	571.7
265	.00000	.24900-01	9.0000	.6028	1.132	.7311	.9625	.4290-01	.2771-01	3.511	24.14	565.0
265	.00000	.26900-01	10.000	.5760	1.064	.6987	.9617	.4031-01	.2648-01	3.422	23.57	561.9
264	.00000	.32800-01	12.000	.5224	.9383	.6366	.9595	.3557-01	.2414-01	3.211	22.18	556.5
264	.00000	.36700-01	13.000	.4833	.8416	.5883	.9581	.3191-01	.2230-01	3.094	21.45	549.8
264	.00000	.40600-01	14.000	.4877	.8651	.6012	.9567	.3280-01	.2280-01	3.046	21.07	553.9
264	.00000	.48500-01	15.000	.4036	.6976	.5007	.9540	.2645-01	.1898-01	2.610	18.11	548.1
264	.00000	.56400-01	16.000	.3879	.6674	.4871	.9514	.2530-01	.1847-01	2.524	17.52	547.0
264	.00000	.76100-01	17.000	.2962	.4919	.3785	.9453	.1865-01	.1435-01	2.029	14.15	538.0
264	.00000	.95800-01	18.000	.3758-01	.6131-01	.4895-01	.9400	.2324-02	.1856-02	.2646	1.852	533.0
264	.00000	.11550	19.000	.1876	.3089	.2515	.9353	.1171-01	.9535-02	1.301	9.090	535.7
264	.00000	.16480	20.000	.1094	.1795	.1533	.9267	.6806-02	.5813-02	.7627	5.332	534.7
264	.00000	.21400	22.000	.6216-01	.9555-01	.8528-01	.9224	.3623-02	.3233-02	.4847	3.429	513.0
266	2.0000	.24700-01	165.00	.5726	1.043	.6883	.9627	.3955-01	.2611-01	3.462	23.88	559.3
265	9.0000	.15000-01	157.00	.6611	1.326	.8078	.9638	.5025-01	.3061-01	3.590	24.54	575.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
265	9.0000	.17600-01	158.00	.6680	1.335	.8157	.9638	.5059-01	.3091-01	3.642	24.90	574.8
266	9.8000	.24700-01	164.00	.6165	1.169	.7454	.9634	.4435-01	.2828-01	3.555	24.42	566.7
265	10.000	.22900-01	88.000	.6284	1.214	.7612	.9639	.4602-01	.2885-01	3.548	24.33	569.7
265	10.000	.26900-01	90.000	.5820	1.077	.7028	.9626	.4081-01	.2663-01	3.449	23.75	562.3
265	10.000	.34700-01	94.000	.5134	.8993	.6207	.9597	.3408-01	.2352-01	3.258	22.57	551.2
266	14.600	.44200-01	169.00	.4523	.7823	.5533	.9567	.2968-01	.2099-01	2.923	20.28	548.3
265	18.500	.44200-01	106.00	.4561	.8014	.5596	.9571	.3037-01	.2121-01	2.883	19.96	551.9
266	19.600	.62900-01	175.00	.3409	.5741	.4258	.9509	.2178-01	.1615-01	2.288	15.93	541.7
265	19.800	.40800-01	101.00	.4894	.8672	.5978	.9584	.3286-01	.2266-01	3.060	21.17	553.7
265	20.000	.24900-01	89.000	.5810	1.091	.6975	.9642	.4133-01	.2643-01	3.387	23.29	564.9
265	20.000	.28800-01	91.000	.5646	1.045	.6812	.9628	.3962-01	.2582-01	3.342	23.01	562.4
265	20.000	.32800-01	93.000	.5509	1.013	.6691	.9613	.3840-01	.2536-01	3.288	22.66	561.2
265	22.200	.62900-01	125.00	.3552	.6106	.4465	.9511	.2314-01	.1692-01	2.313	16.06	546.8
265	22.400	.44200-01	107.00	.4488	.7860	.5492	.9574	.2979-01	.2081-01	2.849	19.74	551.2
266	22.600	.10270	192.00	.2223	.3692	.2924	.9398	.1400-01	.1109-01	1.523	10.63	538.0
265	23.000	.42000-01	105.00	.4739	.8346	.5784	.9592	.3163-01	.2192-01	2.987	20.68	552.4
265	23.400	.59600-01	120.00	.3819	.6515	.4759	.9523	.2469-01	.1803-01	2.513	17.47	545.0
266	23.900	.21310	250.00	.5774-01	.9033-01	.8003-01	.9228	.3426-02	.3036-02	.4363	3.076	519.5
265	24.100	.82200-01	139.00	.2865	.4787	.3669	.9454	.1814-01	.1390-01	1.943	13.54	539.7
266	24.400	.19040	238.00	.7932-01	.1263	.1103	.9245	.4790-02	.4182-02	.5815	4.086	525.4
266	24.400	.12440	207.00	.1702	.2883	.2322	.9348	.1094-01	.8807-02	1.133	7.882	543.2
266	24.800	.16810	223.00	.1067	.1766	.1499	.9272	.6699-02	.5687-02	.7345	5.128	537.2
265	24.900	.62900-01	126.00	.3689	.6330	.4629	.9513	.2399-01	.1754-01	2.408	16.72	546.4
266	25.000	.79500-01	178.00	.2895	.4810	.3683	.9462	.1825-01	.1397-01	1.982	13.83	538.2
266	25.300	.10270	191.00	.2184	.3620	.2867	.9400	.1373-01	.1087-01	1.500	10.47	537.6
266	25.300	.10000+00	186.00	.2389	.3975	.3130	.9406	.1508-01	.1187-01	1.633	11.39	538.5
265	25.500	.60700-01	124.00	.3686	.6282	.4596	.9521	.2380-01	.1742-01	2.430	16.89	544.7
266	26.000	.12440	206.00	.1665	.2820	.2270	.9349	.1070-01	.8611-02	1.108	7.707	543.3
265	26.300	.82200-01	140.00	.3124	.5180	.3985	.9456	.1963-01	.1510-01	2.144	14.96	537.6
266	26.700	.12100	199.00	.1704	.2856	.2300	.9357	.1083-01	.8726-02	1.151	8.020	540.6
266	26.800	.16810	222.00	.1056	.1745	.1482	.9272	.6619-02	.5621-02	.7296	5.095	536.6
266	27.000	.19040	237.00	.7628-01	.1218	.1062	.9246	.4619-02	.4028-02	.5567	3.910	526.3
266	27.100	.21310	249.00	.6552-01	.1025	.9079-01	.9228	.3888-02	.3444-02	.4952	3.491	519.4
266	27.200	.80300-01	180.00	.2860	.4721	.3631	.9462	.1791-01	.1377-01	1.978	13.81	536.4
265	27.400	.40100-01	98.000	.5156	.9259	.6293	.9593	.3509-01	.2385-01	3.169	21.89	556.5
266	27.400	.16480	215.00	.9695-01	.1617	.1364	.9277	.6133-02	.5175-02	.6602	4.604	539.2
265	27.600	.41600-01	102.00	.4809	.8576	.5874	.9587	.3250-01	.2226-01	2.982	20.61	555.1
266	27.600	.12440	205.00	.1635	.2765	.2226	.9350	.1049-01	.8444-02	1.090	7.585	542.9
266	27.600	.18700	230.00	.8174-01	.1302	.1134	.9250	.4939-02	.4302-02	.5986	4.206	525.6
266	27.700	.21010	243.00	.6451-01	.1016	.8970-01	.9230	.3853-02	.3402-02	.4819	3.393	521.7
265	27.900	.10110	188.00	.2047	.3410	.2686	.9405	.1293-01	.1019-01	1.397	9.740	538.8
265	28.000	.46800-01	110.00	.4237	.7386	.5190	.9569	.2799-01	.1967-01	2.706	18.76	550.1
266	28.200	.16810	221.00	.9568-01	.1591	.1347	.9273	.6034-02	.5110-02	.6545	4.566	538.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
266	28.300	.19040	236.00	.6847-01	.1090	.9511-01	.9246	.4134-02	.3608-02	.5021	3.528	525.3
266	28.300	.12200	201.00	.1792	.2994	.2417	.9356	.1136-01	.9168-02	1.216	8.480	539.7
265	28.400	.53500-01	114.00	.4110	.7132	.5087	.9547	.2703-01	.1928-01	2.642	18.32	549.0
266	28.400	.21310	248.00	.6182-01	.9689-01	.8576-01	.9229	.3675-02	.3253-02	.4655	3.281	520.2
265	28.700	.58600-01	117.00	.3895	.6674	.4842	.9530	.2529-01	.1835-01	2.547	17.69	546.1
266	28.800	.16580	217.00	.9723-01	.1614	.1365	.9276	.6123-02	.5178-02	.6664	4.650	538.0
265	28.800	.60400-01	121.00	.3671	.6263	.4571	.9524	.2373-01	.1732-01	2.416	16.79	545.0
266	29.000	.21110	244.00	.6404-01	.1004	.8880-01	.9230	.3808-02	.3368-02	.4821	3.397	520.2
265	29.000	.65700-01	129.00	.3476	.5919	.4363	.9508	.2243-01	.1653-01	2.294	15.95	544.5
265	29.200	.72400-01	133.00	.3127	.5293	.3958	.9487	.2006-01	.1500-01	2.081	14.48	543.1
265	29.300	.79500-01	136.00	.2733	.4559	.3476	.9466	.1728-01	.1317-01	1.858	12.96	539.3
265	29.600	.92500-01	143.00	.2748	.4629	.3577	.9429	.1754-01	.1356-01	1.841	12.82	541.8
265	29.700	.10000+00	146.00	.2034	.3399	.2666	.9410	.1288-01	.1010-01	1.379	9.616	539.7
266	29.900	.12100	198.00	.1710	.2874	.2309	.9359	.1090-01	.8760-02	1.151	8.017	541.2
266	30.200	.16480	214.00	.1000	.1656	.1400	.9278	.6281-02	.5312-02	.6884	4.806	537.2
266	30.300	.21010	242.00	.6502-01	.1023	.9037-01	.9231	.3882-02	.3428-02	.4861	3.423	521.6
265	31.500	.11100-01	83.000	.7197	1.688	.8959	.9657	.6398-01	.3395-01	3.417	23.13	593.4
266	32.100	.21010	241.00	.6619-01	.1041	.9193-01	.9231	.3949-02	.3487-02	.4954	3.489	521.3
266	32.200	.16480	213.00	.1044	.1725	.1459	.9279	.6542-02	.5535-02	.7213	5.037	536.6
266	32.200	.17860	224.00	.1015	.1640	.1413	.9261	.6219-02	.5359-02	.7259	5.087	530.1
266	32.200	.18700	228.00	.8483-01	.1335	.1167	.9251	.5065-02	.4427-02	.6343	4.466	521.6
266	32.300	.12100	197.00	.1779	.2966	.2392	.9360	.1125-01	.9072-02	1.212	8.454	539.1
266	32.300	.12300	194.00	.1533	.2565	.2070	.9356	.9730-02	.7850-02	1.039	7.243	540.0
266	32.300	.12730	208.00	.1563	.2664	.2141	.9347	.1011-01	.8122-02	1.031	7.165	544.8
266	32.300	.13420	209.00	.1382	.2395	.1926	.9332	.9084-02	.7305-02	.8907	6.179	548.7
265	32.400	.10000+00	147.00	.2059	.3470	.2707	.9411	.1315-01	.1026-01	1.380	9.606	541.9
266	32.400	.10110	184.00	.2103	.3501	.2754	.9408	.1328-01	.1045-01	1.436	10.01	538.7
266	32.400	.10630	193.00	.1973	.3267	.2595	.9395	.1239-01	.9843-02	1.358	9.481	537.2
266	32.500	.85800-01	183.00	.2655	.4455	.3415	.9449	.1690-01	.1295-01	1.791	12.48	540.8
265	32.600	.79500-01	137.00	.2846	.4770	.3623	.9468	.1808-01	.1373-01	1.921	13.38	540.5
266	32.600	.80800-01	176.00	.2831	.4718	.3604	.9464	.1790-01	.1367-01	1.930	13.46	539.0
265	32.700	.67400-01	132.00	.3412	.5800	.4286	.9505	.2198-01	.1624-01	2.257	15.69	544.1
265	32.700	.72400-01	134.00	.3253	.5527	.4118	.9489	.2094-01	.1561-01	2.153	14.98	544.0
265	32.800	.65700-01	130.00	.3557	.6052	.4456	.9510	.2293-01	.1689-01	2.349	16.34	544.4
266	32.800	.16680	210.00	.1044	.1724	.1461	.9276	.6538-02	.5540-02	.7216	5.040	536.4
266	32.800	.18880	225.00	.7726-01	.1226	.1070	.9249	.4651-02	.4057-02	.5694	4.004	524.4
265	32.900	.58600-01	118.00	.3346	.5803	.4170	.9533	.2199-01	.1580-01	2.152	14.93	548.9
265	32.900	.60400-01	122.00	.3708	.6323	.4609	.9527	.2396-01	.1747-01	2.441	16.97	544.9
266	32.900	.61300-01	171.00	.3652	.6165	.4531	.9524	.2339-01	.1719-01	2.443	17.00	542.4
265	33.000	.53500-01	115.00	.4168	.7192	.5139	.9550	.2726-01	.1948-01	2.699	18.73	547.8
265	33.200	.48300-01	113.00	.4270	.7391	.5222	.9568	.2801-01	.1979-01	2.754	19.11	548.5
266	33.400	.42800-01	166.00	.4610	.8000	.5588	.9587	.3035-01	.2120-01	2.966	20.57	549.1
265	33.500	.40100-01	99.000	.4926	.8678	.5964	.9597	.3289-01	.2260-01	3.102	21.47	552.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
265	33.600	.38300-01	97.000	.5118	.9169	.6204	.9604	.3475-01	.2351-01	3.155	21.80	556.0
265	33.700	.36700-01	96.000	.5258	.9575	.6380	.9610	.3628-01	.2418-01	3.176	21.90	559.3
265	33.900	.33800-01	95.000	.5554	1.022	.6718	.9621	.3874-01	.2546-01	3.312	22.81	561.3
266	34.700	.21010	240.00	.6330-01	.9954-01	.8789-01	.9232	.3776-02	.3334-02	.4741	3.339	521.3
266	34.700	.18700	227.00	.6936-01	.1097	.9568-01	.9252	.4161-02	.3630-02	.5144	3.619	523.2
266	34.900	.16480	212.00	.1085	.1795	.1517	.9280	.6807-02	.5753-02	.7475	5.219	537.0
265	35.100	.10000+00	148.00	.2301	.3894	.3028	.9413	.1476-01	.1148-01	1.532	10.66	543.0
266	35.200	.23900-01	161.00	.6391	1.249	.7671	.9658	.4739-01	.2910-01	3.567	24.43	571.5
265	35.300	.92500-01	145.00	.2461	.4167	.3205	.9433	.1579-01	.1214-01	1.637	11.39	543.1
265	35.300	.22100-01	160.00	.5588	1.115	.6728	.9660	.4226-01	.2550-01	3.050	20.86	574.6
266	35.400	.18800	231.00	.8024-01	.1270	.1108	.9251	.4818-02	.4204-02	.5940	4.178	523.5
266	35.500	.12100	196.00	.1721	.2892	.2320	.9362	.1097-01	.8802-02	1.158	8.066	541.3
266	35.600	.16580	216.00	.1044	.1725	.1460	.9279	.6543-02	.5537-02	.7217	5.040	536.5
265	35.800	.80600-01	138.00	.2674	.4461	.3400	.9467	.1691-01	.1288-01	1.817	12.67	539.3
266	35.900	.21310	247.00	.6720-01	.1053	.9313-01	.9230	.3993-02	.3533-02	.5067	3.571	519.9
266	36.000	.19040	235.00	.8798-01	.1393	.1217	.9248	.5284-02	.4615-02	.6511	4.580	523.6
266	36.200	.16810	220.00	.1095	.1799	.1528	.9276	.6825-02	.5796-02	.7623	5.328	535.1
265	36.200	.72400-01	135.00	.3175	.5372	.4008	.9492	.2036-01	.1519-01	2.114	14.71	543.0
266	36.300	.12200	200.00	.1716	.2890	.2319	.9360	.1096-01	.8796-02	1.152	8.020	541.8
265	36.600	.65700-01	131.00	.3467	.5956	.4353	.9513	.2257-01	.1650-01	2.259	15.69	546.7
266	36.700	.18700	226.00	.8786-01	.1387	.1210	.9252	.5262-02	.4592-02	.6534	4.598	522.6
266	36.900	.16480	211.00	.1065	.1766	.1490	.9281	.6698-02	.5653-02	.7316	5.106	537.6
266	36.900	.10110	187.00	.2281	.3833	.2996	.9411	.1454-01	.1136-01	1.537	10.70	541.1
265	37.000	.60400-01	123.00	.3704	.6356	.4607	.9530	.2409-01	.1746-01	2.417	16.79	546.5
266	37.000	.12440	204.00	.1657	.2787	.2244	.9355	.1057-01	.8511-02	1.115	7.764	541.3
265	37.100	.56600-01	119.00	.3903	.6721	.4845	.9536	.2547-01	.1836-01	2.535	17.60	547.3
266	37.200	.21310	246.00	.7027-01	.1099	.9729-01	.9230	.4170-02	.3691-02	.5311	3.744	519.4
266	37.600	.16810	219.00	.1078	.1771	.1504	.9276	.6719-02	.5705-02	.7503	5.244	535.1
265	37.800	.10270	150.00	.2175	.3684	.2872	.9408	.1396-01	.1088-01	1.446	10.06	543.3
266	37.900	.12100	195.00	.1838	.3045	.2459	.9363	.1155-01	.9327-02	1.265	8.829	537.3
266	38.000	.80300-01	179.00	.2939	.4902	.3733	.9469	.1859-01	.1416-01	2.001	13.95	539.2
265	38.500	.46800-01	112.00	.4408	.7682	.5377	.9577	.2911-01	.2038-01	2.817	19.53	550.0
266	38.600	.12440	203.00	.1714	.2882	.2319	.9356	.1093-01	.8798-02	1.152	8.027	541.4
266	38.700	.10000+00	185.00	.2154	.3600	.2816	.9415	.1365-01	.1068-01	1.462	10.19	539.7
265	38.900	.82200-01	141.00	.2827	.4765	.3614	.9464	.1806-01	.1370-01	1.892	13.17	542.0
265	39.300	.41600-01	104.00	.4905	.8782	.5969	.9596	.3328-01	.2262-01	3.026	20.91	555.9
266	39.500	.10270	190.00	.2224	.3722	.2919	.9408	.1412-01	.1107-01	1.507	10.50	540.1
266	39.600	.16810	218.00	.1085	.1784	.1514	.9277	.6769-02	.5744-02	.7550	5.277	535.3
266	39.900	.19040	233.00	.8182-01	.1288	.1127	.9249	.4886-02	.4274-02	.6115	4.306	521.7
266	40.100	.79500-01	177.00	.2916	.4854	.3693	.9473	.1841-01	.1401-01	1.991	13.88	538.7
266	40.200	.12440	202.00	.1728	.2912	.2340	.9357	.1105-01	.8876-02	1.158	8.061	542.0
266	40.300	.21310	245.00	.6829-01	.1063	.9420-01	.9230	.4031-02	.3573-02	.5208	3.675	517.6
265	41.100	.82200-01	142.00	.3049	.5176	.3907	.9466	.1962-01	.1481-01	2.021	14.05	543.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
266	41.100	.60700-01	173.00	.3707	.6277	.4586	.9532	.2381-01	.1740-01	2.468	17.17	543.2
266	42.600	.59600-01	172.00	.3845	.6560	.4759	.9536	.2488-01	.1805-01	2.533	17.61	545.0
266	43.200	.42000-01	168.00	.4474	.7769	.5396	.9597	.2947-01	.2047-01	2.875	19.94	549.2
266	43.400	.82200-01	181.00	.2753	.4586	.3499	.9467	.1739-01	.1327-01	1.878	13.10	538.8
265	43.600	.62900-01	128.00	.3276	.5593	.4076	.9527	.2120-01	.1544-01	2.154	14.97	545.2
265	45.000	.22900-01	8.0000	.7586	1.611	.9208	.9667	.6107-01	.3490-01	3.904	26.58	582.9
266	46.100	.62900-01	174.00	.3615	.6149	.4489	.9528	.2333-01	.1703-01	2.391	16.62	544.3
266	47.700	.40800-01	167.00	.4969	.8793	.6003	.9604	.3335-01	.2277-01	3.115	21.55	553.4
265	48.400	.44200-01	109.00	.4548	.7987	.5514	.9593	.3027-01	.2090-01	2.876	19.92	551.8
266	53.200	.24700-01	163.00	.6549	1.239	.7767	.9667	.4701-01	.2946-01	3.786	26.01	566.3
266	65.200	.24700-01	162.00	.6445	1.224	.7626	.9673	.4644-01	.2893-01	3.710	25.48	566.9
264	90.000	.91000-02	44.000	.5376	1.160	.6477	.9683	.4399-01	.2456-01	2.729	18.56	584.8
264	90.000	.11100-01	45.000	.7473	1.937	.9279	.9683	.7342-01	.3518-01	3.316	22.35	601.6
264	90.000	.13100-01	46.000	.8035	1.836	.9777	.9683	.6962-01	.3707-01	3.893	26.39	590.9
264	90.000	.17000-01	48.000	.6662	1.399	.7988	.9683	.5306-01	.3029-01	3.465	23.61	581.5
264	90.000	.20900-01	50.000	.6636	1.321	.7879	.9683	.5009-01	.2987-01	3.633	24.85	574.3
264	90.000	.26900-01	53.000	.6293	1.206	.7470	.9670	.4571-01	.2832-01	3.587	24.62	568.3
264	90.000	.28800-01	54.000	.6246	1.183	.7427	.9663	.4484-01	.2816-01	3.607	24.78	566.4
264	90.000	.32800-01	55.000	.4692	.7849	.5466	.9648	.2976-01	.2072-01	3.179	22.16	540.0
264	90.000	.36700-01	56.000	.5207	.9339	.6215	.9634	.3541-01	.2356-01	3.207	22.15	556.2
264	90.000	.40600-01	57.000	.4924	.8946	.5941	.9619	.3392-01	.2252-01	2.985	20.59	558.8
264	90.000	.48500-01	58.000	.4785	.8492	.5824	.9591	.3220-01	.2208-01	2.986	20.65	554.1
264	90.000	.56400-01	59.000	.4105	.7172	.5046	.9564	.2719-01	.1913-01	2.616	18.13	550.6
264	90.000	.76100-01	60.000	.3263	.5612	.4126	.9500	.2128-01	.1564-01	2.124	14.75	547.0
264	90.000	.95800-01	61.000	.2805	.4804	.3651	.9443	.1821-01	.1384-01	1.836	12.76	546.0
264	90.000	.11550	62.000	.2064	.3523	.2759	.9392	.1336-01	.1046-01	1.358	9.438	545.1
264	135.00	.19000-01	49.000	.7045	1.424	.8470	.9667	.5400-01	.3211-01	3.799	25.95	576.5
264	135.00	.22900-01	51.000	.6348	1.252	.7595	.9667	.4747-01	.2879-01	3.509	24.02	572.9
264	180.00	.91000-02	23.000	.2643	.4452	.3111	.9629	.1688-01	.1180-01	1.772	12.34	541.8
264	180.00	.11100-01	24.000	.6608	1.498	.8333	.9629	.5678-01	.3160-01	3.223	21.86	590.0
264	180.00	.13100-01	25.000	.7744	1.771	.9783	.9629	.6714-01	.3709-01	3.750	25.42	590.9
264	180.00	.15000-01	26.000	.7459	1.632	.9337	.9629	.6187-01	.3540-01	3.743	25.44	586.3
264	180.00	.17000-01	27.000	.7283	1.494	.8990	.9629	.5663-01	.3408-01	3.873	26.43	578.4
264	180.00	.19000-01	28.000	.7069	1.436	.8707	.9629	.5445-01	.3301-01	3.794	25.91	577.1
264	180.00	.20900-01	29.000	.6713	1.315	.8201	.9629	.4987-01	.3109-01	3.735	25.58	571.9
264	180.00	.28800-01	32.000	.5642	1.041	.6871	.9610	.3948-01	.2605-01	3.355	23.11	561.8
264	180.00	.32800-01	33.000	.5356	.9465	.6498	.9595	.3589-01	.2464-01	3.361	23.26	553.1
264	180.00	.36700-01	34.000	.5132	.9280	.6315	.9581	.3518-01	.2394-01	3.129	21.59	557.9
264	180.00	.48500-01	36.000	.4384	.7618	.5448	.9540	.2888-01	.2066-01	2.814	19.51	549.4
264	180.00	.56400-01	37.000	.3996	.6816	.5003	.9514	.2584-01	1897-01	2.632	18.30	545.0
264	180.00	.76100-01	38.000	.3119	.5189	.3989	.9453	.1967-01	.1512-01	2.131	14.87	538.5
264	180.00	.95800-01	39.000	.2448	.3993	.3189	.9400	.1514-01	.1209-01	1.725	12.07	532.9
264	180.00	.11550	40.000	.2007	.3278	.2679	.9353	.1243-01	.1016-01	1.410	9.866	533.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K115)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
264	180.00	.18450	42.000	.8770-01	.1388	.1215	.9244	.5263-02	.4607-02	.6491	4.566	523.5
264	225.00	.22900-01	30.000	.5976	1.128	.7387	.9594	.4276-01	.2801-01	3.464	23.80	565.8
264	270.00	.91000-02	63.000	.3987	.6816	.4831	.9579	.2584-01	.1832-01	2.618	18.19	545.5
264	270.00	.11100-01	64.000	.5798	1.094	.7229	.9579	.4148-01	.2741-01	3.361	23.10	565.8
264	270.00	.13100-01	65.000	.7824	1.822	1.030	.9579	.6907-01	.3904-01	3.737	25.31	592.7
264	270.00	.17000-01	67.000	.7611	1.532	.9657	.9579	.5809-01	.3661-01	4.121	28.16	575.9
264	270.00	.20900-01	69.000	.6237	1.225	.7861	.9579	.4643-01	.2980-01	3.464	23.72	572.2
264	270.00	.24900-01	71.000	.6373	1.226	.8011	.9574	.4649-01	.3037-01	3.616	24.81	569.0
264	270.00	.28800-01	73.000	.5234	.9664	.6557	.9560	.3664-01	.2486-01	3.112	21.43	561.9
264	270.00	.36700-01	75.000	.4863	.8857	.6164	.9532	.3358-01	.2337-01	2.938	20.26	559.3
264	270.00	.48500-01	77.000	.4258	.7493	.5453	.9492	.2841-01	.2068-01	2.687	18.60	552.2
264	270.00	.56400-01	78.000	.3847	.6759	.4993	.9467	.2563-01	.1893-01	2.433	16.85	551.9
264	270.00	.95800-01	80.000	.2142	.3633	.2903	.9361	.1377-01	.1101-01	1.423	9.898	543.5
264	270.00	.11550	81.000	.1598	.2702	.2214	.9319	.1025-01	.8395-02	1.066	7.418	542.8
264	315.00	.19000-01	68.000	.5846	1.072	.7172	.9594	.4066-01	.2719-01	3.502	24.13	560.7
264	315.00	.22900-01	70.000	.5576	1.075	.6931	.9594	.4074-01	.2628-01	3.158	21.66	569.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
322	3.010	.2111-02	-6.026	36.17	715.7	.9700	254.5	89.98	2354.	.1029-01	.2034-06	3.700
323	3.010	.4231-02	-6.038	36.08	715.7	.9676	254.5	89.96	2354.	.1026-01	.2034-06	3.691

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
322	.4394-01	.7539-02
323	.4389-01	.7548-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
323	.00000	.91000-02	1.0000	.5666	1.745	.7014	.9715	.7656-01	.3078-01	2.636	17.69	609.7
323	.00000	.15000-01	4.0000	.7047	2.023	.8652	.9715	.8880-01	.3797-01	3.396	22.84	605.9
323	.00000	.17000-01	5.0000	.6752	1.837	.8235	.9715	.8064-01	.3614-01	3.353	22.59	602.5
323	.00000	.19000-01	6.0000	.6479	1.676	.7850	.9715	.7358-01	.3445-01	3.317	22.39	599.0
323	.00000	.24900-01	9.0000	.6050	1.479	.7299	.9710	.6489-01	.3204-01	3.217	21.76	594.5
323	.00000	.26900-01	10.000	.5753	1.363	.6945	.9703	.5983-01	.3048-01	3.126	21.18	591.9
322	.00000	.32800-01	12.000	.5339	1.155	.6443	.9681	.5074-01	.2831-01	3.123	21.26	582.6
322	.00000	.36700-01	13.000	.4832	.9885	.5822	.9667	.4344-01	.2558-01	2.972	20.32	575.7
322	.00000	.40600-01	14.000	.5001	1.057	.6116	.9654	.4644-01	.2688-01	2.985	20.36	579.8
322	.00000	.48500-01	15.000	.4291	.8685	.5288	.9627	.3816-01	.2324-01	2.667	18.25	574.2
322	.00000	.56400-01	16.000	.4089	.8246	.5115	.9602	.3623-01	.2248-01	2.551	17.45	573.7
322	.00000	.76100-01	17.000	.3251	.6205	.4151	.9544	.2727-01	.1824-01	2.147	14.76	565.4
322	.00000	.95800-01	18.000	.6194-01	.1054	.7824-01	.9495	.4630-02	.3438-02	.4726	3.290	542.0
322	.00000	.11550	19.000	.2083	.3894	.2795	.9452	.1711-01	.1228-01	1.408	9.700	561.8
322	.00000	.16480	20.000	.1355	.2504	.1896	.9379	.1100-01	.8330-02	.9291	6.406	559.7
322	.00000	.21400	22.000	.8432-01	.1439	.1155	.9347	.6323-02	.5077-02	.6404	4.456	542.8
323	9.0000	.15000-01	157.00	.6680	1.831	.8052	.9732	.8034-01	.3534-01	3.304	22.25	603.0
323	9.0000	.17600-01	158.00	.6354	1.761	.7669	.9732	.7727-01	.3366-01	3.123	21.03	603.7
323	10.000	.22900-01	88.000	.6267	1.616	.7489	.9734	.7092-01	.3287-01	3.216	21.71	598.8
323	10.000	.26900-01	90.000	.5825	1.367	.6936	.9721	.6000-01	.3044-01	3.188	21.61	591.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
323	10.000	.34700-01	94.000	.5517	1.265	.6677	.9692	.5553-01	.2930-01	3.073	20.86	588.8
323	18.500	.44200-01	106.00	.4820	1.039	.5845	.9673	.4562-01	.2565-01	2.823	19.23	582.2
323	19.800	.40800-01	101.00	.5158	1.132	.6216	.9687	.4966-01	.2728-01	2.978	20.26	584.1
323	20.000	.24900-01	89.000	.5930	1.438	.6968	.9747	.6312-01	.3058-01	3.170	21.45	593.9
323	20.000	.28800-01	91.000	.5753	1.352	.6802	.9732	.5935-01	.2985-01	3.145	21.32	591.1
323	20.000	.32800-01	93.000	.5765	1.361	.6891	.9717	.5974-01	.3024-01	3.141	21.29	591.5
323	22.200	.62900-01	125.00	.4003	.8370	.5002	.9617	.3673-01	.2195-01	2.410	16.45	578.5
323	22.400	.44200-01	107.00	.4765	1.018	.5744	.9680	.4470-01	.2521-01	2.813	19.17	581.2
323	23.000	.42000-01	105.00	.4954	1.071	.5950	.9688	.4699-01	.2612-01	2.896	19.72	582.5
323	23.400	.59600-01	120.00	.4178	.8685	.5172	.9630	.3812-01	.2270-01	2.529	17.26	577.8
323	24.100	.82200-01	139.00	.3127	.6118	.3977	.9563	.2685-01	.1745-01	2.008	13.78	569.3
323	24.900	.62900-01	126.00	.4006	.8351	.4989	.9622	.3665-01	.2189-01	2.419	16.51	578.1
323	25.500	.60700-01	124.00	.4117	.8537	.5094	.9629	.3747-01	.2236-01	2.497	17.05	577.5
323	26.300	.82200-01	140.00	.3208	.6183	.4055	.9566	.2713-01	.1780-01	2.094	14.38	566.9
323	27.400	.40100-01	98.000	.5322	1.193	.6371	.9703	.5235-01	.2796-01	3.018	20.51	586.5
323	27.600	.41600-01	102.00	.4876	1.077	.5843	.9698	.4727-01	.2564-01	2.798	19.03	584.9
323	28.000	.46800-01	110.00	.4494	.9479	.5403	.9680	.4160-01	.2371-01	2.683	18.30	579.6
323	28.400	.53500-01	114.00	.4449	.9336	.5421	.9658	.4097-01	.2379-01	2.670	18.22	578.9
323	28.700	.58600-01	117.00	.4247	.8836	.5220	.9641	.3878-01	.2291-01	2.569	17.54	577.9
323	28.800	.60400-01	121.00	.4002	.8318	.4935	.9636	.3651-01	.2166-01	2.422	16.54	577.7
323	29.000	.65700-01	129.00	.3852	.7896	.4786	.9619	.3465-01	.2100-01	2.362	16.14	575.9
323	29.200	.72400-01	133.00	.3633	.7350	.4558	.9599	.3226-01	.2000-01	2.256	15.43	574.2
323	29.300	.79500-01	136.00	.3182	.6216	.4008	.9578	.2728-01	.1759-01	2.048	14.05	569.0
323	29.600	.92500-01	143.00	.2977	.5924	.3854	.9542	.2600-01	.1692-01	1.879	12.87	571.8
323	29.700	.10000+00	146.00	.2790	.5425	.3630	.9523	.2381-01	.1593-01	1.804	12.38	568.3
323	31.500	.11100-01	83.000	.7685	2.727	.9194	.9771	.1197	.4035-01	3.361	22.48	616.0
323	32.400	.10000+00	147.00	.2884	.5688	.3762	.9527	.2496-01	.1651-01	1.838	12.60	570.5
323	32.600	.79500-01	137.00	.3463	.6830	.4361	.9582	.2997-01	.1914-01	2.206	15.12	570.5
323	32.700	.67400-01	132.00	.3913	.8007	.4859	.9619	.3514-01	.2133-01	2.404	16.43	575.7
323	32.700	.72400-01	134.00	.3814	.7752	.4775	.9604	.3402-01	.2096-01	2.358	16.12	574.8
323	32.800	.65700-01	130.00	.3879	.7961	.4804	.9625	.3494-01	.2108-01	2.376	16.24	576.1
323	32.900	.58600-01	118.00	.3894	.8396	.4801	.9648	.3685-01	.2107-01	2.281	15.54	582.2
323	32.900	.60400-01	122.00	.4041	.8427	.4968	.9642	.3698-01	.2180-01	2.439	16.65	578.2
323	33.000	.53500-01	115.00	.4441	.9236	.5377	.9665	.4053-01	.2360-01	2.687	18.34	577.8
323	33.200	.48300-01	113.00	.4500	.9356	.5387	.9683	.4106-01	.2364-01	2.724	18.60	577.8
323	33.500	.40100-01	99.000	.5081	1.096	.6008	.9712	.4812-01	.2637-01	2.975	20.26	582.3
323	33.600	.38300-01	97.000	.5258	1.170	.6220	.9719	.5133-01	.2730-01	3.001	20.40	585.7
323	33.700	.36700-01	96.000	.5315	1.218	.6299	.9725	.5343-01	.2760-01	2.963	20.11	588.6
323	33.900	.33800-01	95.000	.5674	1.323	.6680	.9736	.5807-01	.2932-01	3.120	21.16	590.4
323	35.100	.10000+00	148.00	.2799	.5549	.3649	.9530	.2435-01	.1602-01	1.774	12.16	571.3
323	35.300	.92500-01	145.00	.3181	.6360	.4105	.9550	.2791-01	.1802-01	1.999	13.69	572.5
323	35.300	.22100-01	160.00	.6225	1.723	.7256	.9778	.7564-01	.3184-01	3.061	20.61	603.6
323	35.800	.80600-01	136.00	.3310	.6467	.4155	.9584	.2838-01	.1824-01	2.130	14.61	569.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
323	36.200	.72400-01	135.00	.3293	.6360	.4059	.9609	.2791-01	.1781-01	2.144	14.72	567.3
323	36.600	.65700-01	131.00	.4240	.8899	.5259	.9630	.3906-01	.2308-01	2.544	17.36	579.0
323	37.000	.60400-01	123.00	.4227	.8958	.5194	.9648	.3932-01	.2279-01	2.514	17.14	580.2
323	37.100	.58600-01	119.00	.4382	.9245	.5358	.9654	.4058-01	.2352-01	2.617	17.85	579.6
323	37.800	.10270	150.00	.2919	.5776	.3813	.9526	.2535-01	.1673-01	1.854	12.71	571.0
323	38.500	.46800-01	112.00	.4674	.9916	.5568	.9696	.4352-01	.2444-01	2.777	18.93	580.3
323	38.900	.82200-01	141.00	.3176	.6371	.4016	.9583	.2796-01	.1763-01	1.990	13.62	573.0
323	39.300	.41600-01	104.00	.4973	1.114	.5901	.9716	.4890-01	.2590-01	2.821	19.17	586.4
323	41.100	.82200-01	142.00	.3396	.6856	.4294	.9586	.3009-01	.1884-01	2.114	14.46	573.8
323	43.600	.62900-01	128.00	.4394	.9148	.5376	.9648	.4015-01	.2359-01	2.655	18.13	578.0
323	45.000	.22900-01	8.0000	.7348	2.051	.8478	.9792	.8999-01	.3721-01	3.597	24.21	604.1
323	48.400	.44200-01	109.00	.4902	1.056	.5771	.9719	.4635-01	.2533-01	2.874	19.57	582.1
322	90.000	.91000-02	44.000	.6325	3.575	.7380	.9826	.1571	.3243-01	2.417	16.06	628.7
322	90.000	.11100-01	45.000	.7872	3.158	.9052	.9826	.1388	.3978-01	3.298	22.01	620.3
322	90.000	.13100-01	46.000	.7842	2.599	.8924	.9826	.1142	.3921-01	3.532	23.66	613.2
322	90.000	.17000-01	48.000	.7225	2.123	.8159	.9826	.9329-01	.3585-01	3.444	23.15	607.2
322	90.000	.20900-01	50.000	.7398	1.985	.8302	.9826	.8722-01	.3648-01	3.709	25.00	601.6
322	90.000	.26900-01	53.000	.6414	1.556	.7205	.9813	.6836-01	.3166-01	3.433	23.23	593.9
322	90.000	.28800-01	54.000	.6487	1.535	.7307	.9806	.6744-01	.3211-01	3.534	23.95	591.7
322	90.000	.32800-01	55.000	.5133	.9843	.5706	.9790	.4325-01	.2508-01	3.374	23.18	566.1
322	90.000	.36700-01	56.000	.5375	1.167	.6117	.9775	.5129-01	.2688-01	3.134	21.34	583.0
322	90.000	.40600-01	57.000	.5408	1.211	.6235	.9761	.5324-01	.2740-01	3.072	20.88	586.4
322	90.000	.48500-01	58.000	.4632	1.010	.5420	.9731	.4439-01	.2382-01	2.690	18.31	583.5
322	90.000	.56400-01	59.000	.4972	1.056	.5898	.9703	.4641-01	.2592-01	2.955	20.15	580.4
322	90.000	.76100-01	60.000	.4150	.8364	.5076	.9638	.3675-01	.2230-01	2.591	17.73	573.6
322	90.000	.95800-01	61.000	.3120	.6273	.3957	.9579	.2757-01	.1739-01	1.952	13.36	573.3
322	90.000	.11550	62.000	.2614	.5171	.3413	.9527	.2272-01	.1500-01	1.662	11.39	571.0
322	135.00	.19000-01	49.000	.7283	1.978	.8383	.9792	.8690-01	.3684-01	3.626	24.43	602.4
322	135.00	.22900-01	51.000	.6731	1.716	.7703	.9792	.7539-01	.3385-01	3.484	23.53	597.9
322	180.00	.91000-02	23.000	.4350	.9746	.5163	.9715	.4283-01	.2269-01	2.471	16.79	586.4
322	180.00	.11100-01	24.000	.7466	2.447	.9306	.9715	.1075	.4089-01	3.379	22.64	612.7
322	180.00	.13100-01	25.000	.7392	2.081	.9053	.9715	.9146-01	.3978-01	3.605	24.26	604.7
322	180.00	.15000-01	26.000	.7452	1.997	.9069	.9715	.8776-01	.3985-01	3.738	25.20	601.5
322	180.00	.17000-01	27.000	.6808	1.771	.8253	.9715	.7783-01	.3627-01	3.478	23.47	599.4
322	180.00	.19000-01	28.000	.6690	1.746	.8114	.9715	.7674-01	.3566-01	3.410	23.01	599.7
322	180.00	.20900-01	29.000	.6588	1.624	.7928	.9715	.7135-01	.3484-01	3.486	23.58	595.2
322	180.00	.28800-01	32.000	.5844	1.304	.7022	.9696	.5732-01	.3086-01	3.329	22.63	586.0
322	180.00	.32800-01	33.000	.5529	1.150	.6626	.9681	.5054-01	.2912-01	3.349	22.86	577.9
322	180.00	.36700-01	34.000	.5446	1.177	.6631	.9667	.5170-01	.2914-01	3.189	21.72	582.4
322	180.00	.48500-01	36.000	.4595	.9297	.5665	.9627	.4085-01	.2490-01	2.861	19.57	574.1
322	180.00	.56400-01	37.000	.4332	.8555	.5391	.9602	.3759-01	.2369-01	2.760	18.92	570.7
322	180.00	.76100-01	38.000	.3401	.6488	.4342	.9544	.2851-01	.1908-01	2.248	15.45	565.3
322	180.00	.95800-01	39.000	.2811	.5176	.3655	.9495	.2274-01	.1606-01	1.936	13.35	559.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
322	180.00	.11550	40.000	.2275	.4183	.3032	.9452	.1838-01	.1332-01	1.568	10.82	558.8
322	180.00	.18450	42.000	.1217	.2102	.1665	.9361	.9239-02	.7315-02	.9090	6.316	545.7
322	225.00	.22900-01	30.000	.5829	1.326	.7270	.9646	.5829-01	.3195-01	3.270	22.20	588.0
322	270.00	.91000-02	63.000	.6073	1.417	.7758	.9620	.6228-01	.3409-01	3.341	22.66	590.5
322	270.00	.11100-01	64.000	.7145	2.037	.9485	.9620	.8950-01	.4168-01	3.461	23.28	605.4
322	270.00	.13100-01	65.000	.6722	1.822	.8842	.9620	.8005-01	.3886-01	3.350	22.57	602.3
322	270.00	.17000-01	67.000	.6321	1.519	.8123	.9620	.6674-01	.3570-01	3.405	23.06	593.1
322	270.00	.20900-01	69.000	.5898	1.387	.7547	.9620	.6097-01	.3316-01	3.227	21.87	591.2
322	270.00	.24900-01	71.000	.5769	1.324	.7368	.9615	.5817-01	.3238-01	3.216	21.83	588.8
322	270.00	.28800-01	73.000	.5247	1.154	.6702	.9602	.5071-01	.2945-01	3.026	20.59	584.4
322	270.00	.36700-01	75.000	.4783	1.045	.6211	.9576	.4590-01	.2729-01	2.775	18.89	583.6
322	270.00	.48500-01	77.000	.3930	.8168	.5161	.9540	.3589-01	.2268-01	2.382	16.26	577.7
322	270.00	.56400-01	78.000	.3805	.7801	.5051	.9518	.3428-01	.2220-01	2.336	15.96	576.0
322	270.00	.95800-01	80.000	.2119	.4021	.2901	.9430	.1767-01	.1275-01	1.409	9.691	564.3
322	270.00	.11550	81.000	.1821	.3430	.2537	.9398	.1507-01	.1115-01	1.221	8.402	563.1
322	315.00	.19000-01	68.000	.5802	1.256	.7165	.9646	.5518-01	.3149-01	3.391	23.09	582.6
322	315.00	.22900-01	70.000	.6321	1.486	.7933	.9646	.6529-01	.3486-01	3.460	23.45	591.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
267	4.020	-.2109-02	-6.020	63.02	717.7	.4042	169.6	90.02	2566.	.6433-02	.1365-06	3.760
268	4.020	-.2105-02	-6.010	62.95	718.7	.4037	169.8	90.02	2568.	.6416-02	.1366-06	3.748
269	4.020	-.2110-02	-6.022	62.99	718.7	.4040	169.8	90.02	2568.	.6421-02	.1366-06	3.750

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
267	.3793-01	.9543-02
268	.3791-01	.9557-02
269	.3793-01	.9554-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
268	.00000	.91000-02	1.0000	.4747	.9023	.5769	.9626	.3421-01	.2187-01	2.730	18.75	567.0
268	.00000	.15000-01	4.0000	.6840	1.442	.8512	.9626	.5466-01	.3227-01	3.547	24.16	581.9
268	.00000	.17000-01	5.0000	.6628	1.345	.8179	.9626	.5100-01	.3101-01	3.561	24.32	577.0
268	.00000	.19000-01	6.0000	.6303	1.256	.7745	.9626	.4763-01	.2937-01	3.446	23.57	574.5
268	.00000	.24900-01	9.0000	.5831	1.114	.7115	.9621	.4223-01	.2698-01	3.335	22.89	567.8
268	.00000	.26900-01	10.000	.5654	1.063	.6902	.9614	.4030-01	.2617-01	3.291	22.62	565.2
267	.00000	.32800-01	12.000	.5046	.9221	.6189	.9592	.3497-01	.2347-01	3.034	20.93	559.1
267	.00000	.36700-01	13.000	.4570	.8046	.5589	.9578	.3052-01	.2120-01	2.880	19.94	551.5
267	.00000	.40600-01	14.000	.4590	.8235	.5687	.9564	.3123-01	.2157-01	2.823	19.51	555.5
267	.00000	.48500-01	15.000	.3925	.6864	.4895	.9537	.2604-01	.1857-01	2.496	17.30	550.1
267	.00000	.56400-01	16.000	.3803	.6665	.4812	.9511	.2528-01	.1825-01	2.410	16.70	550.5
267	.00000	.76100-01	17.000	.2899	.4873	.3727	.9451	.1848-01	.1414-01	1.947	13.57	540.6
267	.00000	.95800-01	18.000	.4907-01	.8035-01	.6408-01	.9398	.3048-02	.2431-02	3431	2.401	533.3
267	.00000	.11550	19.000	.1830	.3045	.2468	.9352	.1155-01	.9362-02	1.249	8.718	537.7
267	.00000	.16480	20.000	.1066	.1764	.1502	.9266	.6691-02	.5698-02	.7336	5.124	536.3
267	.00000	.21400	22.000	.6247-01	.9622-01	.8583-01	.9224	.3650-02	.3255-02	.4848	3.430	513.1
269	2.0000	.24700-01	165.00	.5778	1.059	.6963	.9626	.4016-01	.2641-01	3.467	23.89	560.5
268	9.0000	.15000-01	157.00	.6820	1.398	.8349	.9642	.5299-01	.3165-01	3.630	24.77	578.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
268	9.0000	.17600-01	158.00	.6312	1.287	.7719	.9642	.4879-01	.2926-01	3.376	23.05	577.6
269	9.8000	.24700-01	164.00	.6012	1.154	.7266	.9640	.4377-01	.2756-01	3.421	23.47	568.6
268	10.000	.22900-01	88.000	.6086	1.202	.7383	.9644	.4559-01	.2799-01	3.358	22.98	573.2
268	10.000	.26900-01	90.000	.5829	1.104	.7055	.9632	.4184-01	.2675-01	3.366	23.13	566.4
268	10.000	.34700-01	94.000	.4827	.8548	.5836	.9603	.3241-01	.2213-01	3.022	20.91	553.6
269	14.600	.44200-01	169.00	.4409	.7644	.5370	.9577	.2899-01	.2037-01	2.840	19.70	548.9
268	18.500	.44200-01	106.00	.4353	.7727	.5320	.9584	.2930-01	.2017-01	2.717	18.79	554.1
269	19.600	.62900-01	175.00	.3517	.5962	.4372	.9523	.2261-01	.1658-01	2.338	16.27	543.4
268	19.800	.40800-01	101.00	.4694	.8388	.5704	.9598	.3180-01	.2163-01	2.905	20.08	555.5
268	20.000	.24900-01	89.000	.5894	1.139	.7062	.9657	.4318-01	.2678-01	3.329	22.83	569.7
268	20.000	.28800-01	91.000	.5572	1.049	.6695	.9642	.3976-01	.2538-01	3.240	22.27	565.3
268	20.000	.32800-01	93.000	.5194	.9633	.6271	.9627	.3652-01	.2378-01	3.072	21.15	562.7
268	22.200	.62900-01	125.00	.3526	.6162	.4421	.9527	.2336-01	.1676-01	2.246	15.56	550.7
268	22.400	.44200-01	107.00	.4406	.7807	.5363	.9590	.2960-01	.2033-01	2.756	19.07	553.7
269	22.600	.10270	192.00	.2358	.3902	.3072	.9412	.1480-01	.1165-01	1.625	11.35	537.0
268	23.000	.42000-01	105.00	.4604	.8193	.5585	.9599	.3106-01	.2117-01	2.864	19.80	554.6
268	23.400	.59600-01	120.00	.3639	.6340	.4527	.9540	.2404-01	.1716-01	2.328	16.14	550.0
269	23.900	.21310	250.00	.6374-01	.9931-01	.8791-01	.9232	.3767-02	.3334-02	.4851	3.423	518.0
268	24.100	.82200-01	139.00	.2873	.4906	.3680	.9471	.1860-01	.1395-01	1.889	13.13	545.3
269	24.400	.19040	238.00	.8955-01	.1405	.1224	.9253	.5329-02	.4641-02	.6527	4.589	524.3
269	24.400	.12440	207.00	.1771	.2989	.2392	.9363	.1134-01	.9073-02	1.184	8.243	542.3
269	24.800	.16810	223.00	.1142	.1892	.1596	.9282	.7174-02	.6055-02	.7858	5.485	537.3
268	24.900	.62900-01	126.00	.3485	.6086	.4358	.9531	.2307-01	.1652-01	2.222	15.40	550.5
269	25.000	.79500-01	178.00	.2977	.4972	.3762	.9480	.1886-01	.1427-01	2.022	14.10	539.6
269	25.300	.10270	191.00	.2304	.3806	.2994	.9416	.1444-01	.1136-01	1.592	11.12	536.5
269	25.300	.10000+00	186.00	.2306	.3824	.2991	.9423	.1450-01	.1134-01	1.583	11.05	537.6
268	25.500	.60700-01	124.00	.3719	.6477	.4626	.9540	.2456-01	.1754-01	2.379	16.49	549.9
269	26.000	.12440	206.00	.1752	.2972	.2370	.9364	.1127-01	.8991-02	1.163	8.091	543.6
268	26.300	.82200-01	140.00	.2304	.3902	.2936	.9474	.1479-01	.1113-01	1.534	10.67	543.1
269	26.700	.12100	199.00	.1778	.2968	.2375	.9373	.1126-01	.9008-02	1.208	8.423	539.5
269	26.800	.16810	222.00	.1115	.1844	.1556	.9283	.6993-02	.5900-02	.7690	5.369	536.8
269	27.000	.19040	237.00	.8103-01	.1288	.1120	.9254	.4885-02	.4248-02	.5955	4.186	524.9
269	27.100	.21310	249.00	.6915-01	.1078	.9537-01	.9234	.4090-02	.3617-02	.5255	3.707	518.3
269	27.200	.80300-01	180.00	.2906	.4821	.3661	.9481	.1828-01	.1388-01	1.995	13.92	537.7
268	27.400	.40100-01	98.000	.4528	.8212	.5478	.9613	.3114-01	.2077-01	2.750	18.97	558.5
269	27.400	.16480	215.00	.1043	.1742	.1459	.9289	.6608-02	.5535-02	.7084	4.938	539.6
268	27.600	.41600-01	102.00	.4580	.8249	.5546	.9608	.3127-01	.2103-01	2.805	19.37	557.1
269	27.600	.12440	205.00	.1700	.2880	.2296	.9366	.1092-01	.8708-02	1.130	7.865	543.3
269	27.600	.18700	230.00	.8938-01	.1418	.1231	.9259	.5377-02	.4669-02	.6592	4.635	524.2
269	27.700	.21010	243.00	.6834-01	.1074	.9462-01	.9236	.4072-02	.3589-02	.5124	3.610	521.0
269	27.900	.10110	188.00	.2354	.3906	.3053	.9424	.1482-01	.1158-01	1.614	11.26	537.9
268	28.000	.46800-01	110.00	.4174	.7374	.5076	.9591	.2796-01	.1924-01	2.620	18.13	553.1
269	28.200	.16810	221.00	.1064	.1771	.1489	.9285	.6717-02	.5648-02	.7261	5.065	538.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
269	28.300	.19040	236.00	.8041-01	.1278	.1111	.9255	.4846-02	.4213-02	.5912	4.156	524.8
269	28.300	.12200	201.00	.1860	.3105	.2485	.9373	.1178-01	.9425-02	1.264	8.816	539.4
268	28.400	.53500-01	114.00	.4081	.7187	.5017	.9568	.2725-01	.1902-01	2.572	17.81	552.4
269	28.400	.21310	248.00	.6255-01	.9783-01	.8642-01	.9234	.3710-02	.3278-02	.4729	3.334	519.4
268	28.700	.58600-01	117.00	.3952	.6890	.4887	.9551	.2612-01	.1853-01	2.525	17.50	550.1
269	28.800	.16580	217.00	.1050	.1747	.1467	.9289	.6628-02	.5562-02	.7176	5.005	538.5
268	28.800	.60400-01	121.00	.3669	.6402	.4552	.9546	.2427-01	.1726-01	2.342	16.23	550.3
269	29.000	.21110	244.00	.6207-01	.9712-01	.8570-01	.9236	.3684-02	.3251-02	.4688	3.305	519.5
268	29.000	.65700-01	129.00	.3485	.6052	.4355	.9529	.2295-01	.1651-01	2.238	15.52	549.3
268	29.200	.72400-01	133.00	.3189	.5522	.4026	.9508	.2093-01	.1526-01	2.057	14.27	548.6
268	29.300	.79500-01	136.00	.2794	.4739	.3541	.9486	.1797-01	.1342-01	1.855	12.91	543.6
268	29.600	.92500-01	143.00	.2637	.4550	.3432	.9449	.1725-01	.1301-01	1.709	11.86	547.7
268	29.700	.10000+00	146.00	.2256	.3855	.2956	.9429	.1462-01	.1121-01	1.482	10.30	545.4
269	29.900	.12100	198.00	.1811	.3033	.2418	.9377	.1151-01	.9172-02	1.225	8.538	540.3
269	30.200	.16480	214.00	.1074	.1783	.1496	.9291	.6762-02	.5672-02	.7366	5.140	537.9
269	30.200	.18700	229.00	.8728-01	.1384	.1201	.9260	.5248-02	.4554-02	.6444	4.531	524.0
269	30.300	.21010	242.00	.6800-01	.1069	.9415-01	.9237	.4056-02	.3571-02	.5091	3.586	521.3
268	31.500	.11100-01	83.000	.6864	1.610	.8399	.9681	.6106-01	.3185-01	3.260	22.07	593.4
269	32.100	.21010	241.00	.7328-01	.1152	.1014	.9238	.4371-02	.3847-02	.5485	3.863	521.3
269	32.200	.16480	213.00	.1088	.1802	.1511	.9293	.6833-02	.5732-02	.7484	5.224	537.3
269	32.200	.17860	224.00	.1076	.1737	.1488	.9272	.6588-02	.5644-02	.7711	5.405	529.8
269	32.200	.18700	228.00	.9252-01	.1455	.1265	.9261	.5517-02	.4799-02	.6929	4.880	521.2
269	32.300	.12100	197.00	.1890	.3156	.2516	.9380	.1197-01	.9542-02	1.284	8.951	539.5
269	32.300	.12300	194.00	.1649	.2766	.2206	.9375	.1049-01	.8366-02	1.114	7.762	540.6
269	32.300	.12730	208.00	.1543	.2646	.2098	.9365	.1004-01	.7959-02	1.010	7.013	546.2
269	32.300	.13420	209.00	.1465	.2557	.2028	.9350	.9699-02	.7692-02	.9353	6.482	550.4
268	32.400	.10000+00	147.00	.2222	.3834	.2918	.9433	.1454-01	.1106-01	1.440	9.992	547.8
269	32.400	.10110	184.00	.2303	.3823	.2978	.9430	.1450-01	.1130-01	1.579	11.02	537.9
269	32.400	.10630	193.00	.2162	.3567	.2808	.9416	.1353-01	.1065-01	1.495	10.44	536.3
269	32.500	.85800-01	183.00	.2857	.4806	.3635	.9472	.1823-01	.1379-01	1.921	13.38	541.4
268	32.600	.79500-01	137.00	.2361	.4049	.2996	.9491	.1535-01	.1136-01	1.543	10.72	546.3
269	32.600	.80800-01	176.00	.2935	.4912	.3698	.9487	.1863-01	.1403-01	1.988	13.86	540.1
268	32.700	.67400-01	132.00	.3488	.6068	.4362	.9529	.2301-01	.1654-01	2.235	15.50	549.6
268	32.700	.72400-01	134.00	.3409	.5928	.4299	.9513	.2247-01	.1630-01	2.187	15.16	549.5
268	32.800	.65700-01	130.00	.3564	.6203	.4445	.9534	.2352-01	.1685-01	2.283	15.83	549.7
269	32.800	.16680	210.00	.1142	.1891	.1589	.9290	.7171-02	.6026-02	.7859	5.494	537.1
269	32.800	.18880	225.00	.8576-01	.1357	.1179	.9260	.5146-02	.4470-02	.6354	4.470	523.3
268	32.900	.58600-01	118.00	.4735	.8385	.5863	.9558	.3179-01	.2223-01	2.964	20.50	553.6
268	32.900	.60400-01	122.00	.3730	.6537	.4619	.9552	.2478-01	.1751-01	2.367	16.40	551.3
269	32.900	.61300-01	171.00	.3686	.6275	.4529	.9549	.2380-01	.1718-01	2.435	16.93	544.5
268	33.000	.53500-01	115.00	.4162	.7305	.5093	.9575	.2770-01	.1931-01	2.635	18.25	551.7
268	33.200	.48300-01	113.00	.4290	.7531	.5199	.9593	.2855-01	.1971-01	2.716	18.81	551.7
269	33.400	.42800-01	166.00	.4511	.7860	.5401	.9613	.2981-01	.2048-01	2.885	20.00	550.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
268	33.500	.40100-01	99.000	.4758	.8464	.5699	.9623	.3209-01	.2161-01	2.961	20.47	554.5
268	33.600	.38300-01	97.000	.4947	.8941	.5928	.9630	.3390-01	.2247-01	3.018	20.83	557.8
268	33.700	.36700-01	96.000	.5142	.9431	.6163	.9636	.3576-01	.2337-01	3.081	21.23	560.6
268	33.900	.33800-01	95.000	.5269	.9761	.6292	.9647	.3701-01	.2386-01	3.120	21.48	562.5
269	34.700	.21010	240.00	.7764-01	.1222	.1075	.9239	.4635-02	.4076-02	.5804	4.087	521.6
269	34.700	.18700	227.00	.8635-01	.1360	.1181	.9263	.5158-02	.4480-02	.6446	4.539	521.8
269	34.900	.16480	212.00	.1156	.1920	.1607	.9295	.7281-02	.6093-02	.7923	5.528	538.0
268	35.100	.10000+00	148.00	.2210	.3834	.2904	.9436	.1454-01	.1101-01	1.423	9.866	548.9
269	35.200	.23900-01	161.00	.6445	1.284	.7639	.9686	.4870-01	.2897-01	3.527	24.13	574.4
268	35.300	.92500-01	145.00	.2610	.4535	.3392	.9457	.1719-01	.1286-01	1.676	11.62	549.3
268	35.300	.22100-01	160.00	.5321	1.084	.6327	.9688	.4111-01	.2399-01	2.847	19.44	577.5
269	35.400	.18800	231.00	.9949-01	.1574	.1366	.9262	.5971-02	.5180-02	.7369	5.184	523.4
269	35.500	.12100	196.00	.1907	.3202	.2541	.9383	.1214-01	.9636-02	1.285	8.955	541.0
269	35.600	.16580	216.00	.1230	.2039	.1708	.9294	.7733-02	.6479-02	.8448	5.896	537.6
268	35.800	.80600-01	138.00	.2944	.5028	.3728	.9492	.1906-01	.1414-01	1.935	13.45	545.3
269	35.900	.21310	247.00	.7363-01	.1154	.1017	.9237	.4378-02	.3859-02	.5542	3.906	520.2
269	36.000	.19040	235.00	.9663-01	.1530	.1329	.9260	.5803-02	.5040-02	.7149	5.028	523.6
269	36.200	.16810	220.00	.1183	.1950	.1640	.9291	.7395-02	.6221-02	.8195	5.725	536.0
268	36.200	.72400-01	135.00	.3280	.5692	.4121	.9518	.2158-01	.1563-01	2.108	14.62	549.1
269	36.300	.12200	200.00	.1873	.3153	.2500	.9382	.1196-01	.9482-02	1.257	8.753	541.7
268	36.600	.65700-01	131.00	.3439	.6064	.4294	.9540	.2299-01	.1628-01	2.165	14.98	552.7
269	36.700	.18700	226.00	.9532-01	.1502	.1303	.9264	.5695-02	.4943-02	.7115	5.009	521.9
269	36.900	.16480	211.00	.1168	.1945	.1625	.9297	.7379-02	.6162-02	.7971	5.560	538.8
269	36.900	.10110	187.00	.2426	.4064	.3141	.9435	.1541-01	.1191-01	1.641	11.44	540.3
268	37.000	.60400-01	123.00	.3787	.6689	.4686	.9558	.2536-01	.1777-01	2.379	16.46	553.0
269	37.000	.12440	204.00	.1669	.2809	.2234	.9377	.1065-01	.8472-02	1.121	7.808	541.6
268	37.100	.58500-01	119.00	.4024	.7097	.4960	.9564	.2691-01	.1881-01	2.532	17.53	552.7
269	37.200	.21310	246.00	.8055-01	.1259	.1111	.9238	.4777-02	.4213-02	.6093	4.296	519.3
269	37.600	.16810	219.00	.1170	.1931	.1623	.9292	.7322-02	.6154-02	.8096	5.654	536.2
268	37.800	.10270	150.00	.2172	.3776	.2863	.9432	.1432-01	.1085-01	1.393	9.660	549.5
269	37.900	.12100	195.00	.1982	.3293	.2623	.9386	.1249-01	.9949-02	1.357	9.470	538.1
269	38.000	.80300-01	179.00	.3082	.5163	.3867	.9496	.1958-01	.1467-01	2.084	14.52	540.4
268	38.500	.46800-01	112.00	.4474	.7945	.5402	.9607	.3012-01	.2048-01	2.791	19.30	554.2
269	38.600	.12440	203.00	.1872	.3153	.2504	.9379	.1196-01	.9496-02	1.256	8.746	541.8
269	38.700	.10000+00	185.00	.2437	.4058	.3138	.9441	.1539-01	.1190-01	1.662	11.60	538.8
269	38.900	.82200-01	141.00	.2706	.4687	.3447	.9492	.1777-01	.1307-01	1.744	12.10	548.6
268	39.300	.41600-01	104.00	.4694	.8532	.5642	.9626	.3235-01	.2139-01	2.843	19.61	558.9
269	39.500	.10270	190.00	.2438	.4067	.3152	.9434	.1542-01	.1196-01	1.659	11.57	539.2
269	39.600	.16810	218.00	.1059	.1748	.1467	.9293	.6629-02	.5566-02	.7319	5.111	536.4
269	39.900	.19040	233.00	.9453-01	.1491	.1295	.9262	.5656-02	.4913-02	.7039	4.954	522.4
269	40.100	.79500-01	177.00	.3108	.5195	.3886	.9501	.1970-01	.1474-01	2.108	14.70	539.8
269	40.200	.12440	202.00	.1852	.3129	.2479	.9381	.1187-01	.9401-02	1.237	8.611	542.6
269	40.300	.21310	245.00	.6948-01	.1083	.9558-01	.9239	.4109-02	.3625-02	.5280	3.725	518.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
268	41.100	.82200-01	142.00	.2871	.5011	.3661	.9494	.1900-01	.1388-01	1.831	12.69	550.4
269	41.100	.60700-01	173.00	.3871	.6633	.4732	.9563	.2516-01	.1795-01	2.534	17.60	546.1
269	42.600	.59600-01	172.00	.4094	.7076	.5004	.9569	.2684-01	.1898-01	2.648	18.39	548.1
269	43.200	.42000-01	168.00	.4487	.7851	.5331	.9631	.2978-01	.2022-01	2.854	19.78	550.9
269	43.400	.82200-01	181.00	.2861	.4786	.3585	.9497	.1815-01	.1360-01	1.938	13.51	540.0
268	43.600	.62900-01	128.00	.3611	.6348	.4459	.9559	.2407-01	.1691-01	2.282	15.80	552.0
268	45.000	.22900-01	8.0000	.6846	1.438	.8114	.9702	.5451-01	.3076-01	3.561	24.27	581.5
269	46.100	.62900-01	174.00	.3809	.6535	.4661	.9562	.2478-01	.1768-01	2.490	17.29	546.3
269	47.700	.40800-01	167.00	.5006	.8935	.5944	.9641	.3389-01	.2255-01	3.103	21.45	555.2
268	48.400	.44200-01	109.00	.4651	.8350	.5564	.9629	.3166-01	.2110-01	2.861	19.76	556.4
269	53.200	.24700-01	163.00	.6900	1.349	.8047	.9708	.5116-01	.3052-01	3.851	26.38	571.5
269	65.200	.24700-01	162.00	.6871	1.352	.7968	.9720	.5129-01	.3022-01	3.808	26.07	572.5
267	90.000	.91000-02	44.000	.5716	1.678	.6926	.9735	.6364-01	.2627-01	2.360	15.84	608.8
267	90.000	.11100-01	45.000	.7315	1.942	.8762	.9735	.7364-01	.3323-01	3.195	21.52	602.5
267	90.000	.13100-01	46.000	.7627	1.837	.9025	.9735	.6966-01	.3423-01	3.550	24.02	594.9
267	90.000	.17000-01	48.000	.6329	1.396	.7400	.9735	.5295-01	.2807-01	3.151	21.42	586.4
267	90.000	.20900-01	50.000	.7215	1.526	.8386	.9735	.5787-01	.3180-01	3.725	25.38	581.5
267	90.000	.24900-01	52.000	.6242	1.242	.7210	.9730	.4710-01	.2735-01	3.416	23.38	573.4
267	90.000	.26900-01	53.000	.6353	1.264	.7372	.9722	.4796-01	.2796-01	3.476	23.79	573.4
267	90.000	.28800-01	54.000	.6200	1.215	.7205	.9715	.4608-01	.2733-01	3.446	23.61	571.1
267	90.000	.32800-01	55.000	.4431	.7547	.5058	.9700	.2862-01	.1918-01	2.922	20.32	543.8
267	90.000	.36700-01	56.000	.5489	1.020	.6423	.9685	.3869-01	.2430-01	3.235	22.27	562.3
267	90.000	.40600-01	57.000	.5182	.9841	.6139	.9671	.3733-01	.2328-01	2.979	20.47	566.1
267	90.000	.48500-01	58.000	.5180	.9635	.6207	.9642	.3654-01	.2354-01	3.049	20.99	562.5
267	90.000	.56400-01	59.000	.4447	.8136	.5390	.9614	.3086-01	.2044-01	2.670	18.41	559.4
267	90.000	.76100-01	60.000	.3518	.6291	.4393	.9548	.2386-01	.1666-01	2.173	15.02	554.8
267	90.000	.95900-01	61.000	.3124	.5520	.4017	.9488	.2094-01	.1524-01	1.959	13.56	552.3
267	90.000	.11550	62.000	.2291	.4021	.3030	.9433	.1525-01	.1149-01	1.449	10.04	550.9
267	135.00	.19000-01	49.000	.6781	1.425	.8036	.9702	.5404-01	.3048-01	3.522	24.01	580.7
267	135.00	.22900-01	51.000	.6752	1.403	.7987	.9702	.5320-01	.3029-01	3.544	24.18	579.3
267	180.00	.91000-02	23.000	.3449	.6178	.4131	.9626	.2343-01	.1567-01	2.126	14.69	555.2
267	180.00	.11100-01	24.000	.6543	1.605	.8403	.9626	.6086-01	.3187-01	3.007	20.33	596.5
267	180.00	.13100-01	25.000	.7279	1.663	.9216	.9626	.6306-01	.3495-01	3.524	23.90	590.0
267	180.00	.15000-01	26.000	.6868	1.504	.8619	.9626	.5705-01	.3269-01	3.440	23.39	585.6
267	180.00	.17000-01	27.000	.6838	1.458	.8532	.9626	.5530-01	.3236-01	3.506	23.87	582.5
267	180.00	.19000-01	28.000	.6785	1.435	.8450	.9626	.5441-01	.3205-01	3.504	23.88	581.5
267	180.00	.20900-01	29.000	.6427	1.296	.7920	.9626	.4917-01	.3004-01	3.470	23.72	575.3
267	180.00	.28800-01	32.000	.5741	1.089	.7053	.9607	.4130-01	.2675-01	3.306	22.72	565.9
267	180.00	.32800-01	33.000	.5288	.9531	.6462	.9592	.3615-01	.2451-01	3.233	22.33	556.5
267	180.00	.36700-01	34.000	.4944	.9081	.6120	.9578	.3444-01	.2321-01	2.954	20.36	560.1
267	180.00	.48500-01	36.000	.4196	.7388	.5245	.9537	.2802-01	.1989-01	2.643	18.31	551.6
267	180.00	.56400-01	37.000	.3869	.6708	.4878	.9511	.2544-01	.1850-01	2.489	17.27	548.1
267	180.00	.76100-01	38.000	.3079	.5205	.3968	.9451	.1974-01	.1505-01	2.052	14.29	541.9

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
267	180.00	.95800-01	39.000	.2480	.4107	.3256	.9398	.1558-01	.1235-01	1.704	11.90	536.5
267	180.00	.11550	40.000	.1974	.3264	.2654	.9352	.1238-01	.1006-01	1.359	9.496	536.1
267	180.00	.18450	42.000	.8746-01	.1394	.1218	.9244	.5288-02	.4619-02	.6388	4.489	525.1
267	225.00	.22900-01	30.000	.5580	1.069	.7080	.9557	.4056-01	.2685-01	3.176	21.80	567.6
267	270.00	.91000-02	63.000	.4028	.6941	.5018	.9530	.2633-01	.1903-01	2.613	18.15	546.6
267	270.00	.11100-01	64.000	.5173	.9379	.6555	.9530	.3557-01	.2486-01	3.141	21.68	557.6
267	270.00	.13100-01	65.000	.6891	1.521	.9276	.9530	.5769-01	.3518-01	3.430	23.31	586.5
267	270.00	.17000-01	67.000	.7212	1.490	.9522	.9530	.5652-01	.3611-01	3.804	25.96	578.6
267	270.00	.20900-01	69.000	.6224	1.231	.8107	.9530	.4667-01	.3075-01	3.428	23.47	572.5
267	270.00	.24900-01	71.000	.5733	1.113	.7448	.9525	.4223-01	.2825-01	3.217	22.06	569.7
267	270.00	.28800-01	73.000	.4759	.8853	.6148	.9512	.3358-01	.2332-01	2.802	19.29	562.5
267	270.00	.36700-01	75.000	.4525	.8304	.5911	.9485	.3150-01	.2242-01	2.707	18.66	560.0
267	270.00	.48500-01	77.000	.3854	.6847	.5082	.9447	.2597-01	.1927-01	2.400	16.60	553.5
267	270.00	.56400-01	78.000	.3353	.5913	.4467	.9424	.2243-01	.1694-01	2.108	14.60	551.9
267	270.00	.95800-01	80.000	.1929	.3294	.2675	.9327	.1249-01	.1015-01	1.268	8.817	544.4
267	270.00	.11550	81.000	.1409	.2409	.1998	.9290	.9135-02	.7577-02	.9247	6.429	544.7
267	315.00	.19000-01	68.000	.5605	1.041	.7046	.9557	.3947-01	.2672-01	3.306	22.77	562.1
267	315.00	.22900-01	70.000	.5355	1.047	.6834	.9557	.3970-01	.2592-01	2.984	20.45	570.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
223	5.500	-.2105-02	-6.008	127.2	724.7	.1367	102.8	90.02	2734.	.3589-02	.8272-07	3.687
224	5.500	-.2105-02	-6.008	127.1	724.7	.1366	102.8	90.02	2734.	.3586-02	.8272-07	3.684
225	5.500	-.2105-02	-6.010	126.8	724.7	.1363	102.8	90.02	2734.	.3579-02	.8272-07	3.676

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
223	.3024-01	.1280-01
224	.3023-01	.1280-01
225	.3020-01	.1282-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
224	.00000	.91000-02	1.0000	.3447	.5570	.4138	.9562	.1684-01	.1251-01	1.981	13.85	534.5
224	.00000	.15000-01	4.0000	.6086	1.062	.7486	.9562	.3210-01	.2263-01	3.123	21.59	554.9
224	.00000	.17000-01	5.0000	.5963	1.035	.7323	.9562	.3130-01	.2214-01	3.080	21.31	553.8
224	.00000	.19000-01	6.0000	.5924	1.028	.7275	.9562	.3108-01	.2199-01	3.062	21.18	553.7
224	.00000	.24900-01	9.0000	.5562	.9494	.6812	.9557	.2870-01	.2059-01	2.942	20.40	549.7
224	.00000	.26900-01	10.000	.5388	.9122	.6606	.9550	.2758-01	.1997-01	2.884	20.02	547.6
223	.00000	.32800-01	12.000	.4581	.7726	.5670	.9528	.2337-01	.1715-01	2.467	17.13	546.6
223	.00000	.36700-01	13.000	.3907	.6495	.4844	.9515	.1964-01	.1465-01	2.150	14.96	542.8
223	.00000	.40600-01	14.000	.4055	.6830	.5086	.9501	.2066-01	.1538-01	2.188	15.19	546.3
223	.00000	.48500-01	15.000	.3483	.5817	.4415	.9474	.1759-01	.1335-01	1.903	13.23	544.0
223	.00000	.56400-01	16.000	.3238	.5418	.4163	.9447	.1639-01	.1259-01	1.763	12.26	544.6
223	.00000	.76100-01	17.000	.2375	.3920	.3135	.9385	.1185-01	.9480-02	1.321	9.203	540.8
223	.00000	.11550	19.000	.1427	.2345	.1992	.9276	.7093-02	.6024-02	.7993	5.572	539.5
223	.00000	.16480	20.000	.7464-01	.1199	.1096	.9171	.3626-02	.3285-02	.4334	3.033	532.7
223	.00000	.21400	22.000	.3859-01	.5726-01	.5439-01	.9109	.1732-02	.1645-02	.2593	1.846	502.5
225	2.0000	.24700-01	165.00	.5313	.8884	.6451	.9561	.2683-01	.1948-01	2.893	20.12	544.4
224	9.0000	.15000-01	157.00	.6116	1.068	.7463	.9578	.3229-01	.2256-01	3.135	21.67	555.1
224	9.0000	.17600-01	158.00	.6080	1.075	.7447	.9578	.3250-01	.2251-01	3.066	21.16	557.8

FH15. E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
225	9.8000	.24700-01	164.00	.5826	.9984	.7079	.9575	.3015-01	.2138-01	3.062	21.22	550.6
224	10.000	.22900-01	88.000	.5903	1.028	.7191	.9579	.3107-01	.2174-01	3.038	21.01	554.4
224	10.000	.26900-01	90.000	.5581	.9504	.6794	.9567	.2873-01	.2054-01	2.962	20.54	549.1
224	10.000	.34700-01	94.000	.4236	.6726	.5108	.9539	.2033-01	.1544-01	2.507	17.58	528.9
225	14.600	.44200-01	169.00	.3827	.6231	.4711	.9514	.1882-01	.1423-01	2.171	15.16	536.8
224	18.500	.44200-01	106.00	.3928	.6492	.4846	.9520	.1963-01	.1465-01	2.179	15.18	541.2
225	19.600	.62900-01	175.00	.3109	.4991	.3905	.9459	.1507-01	.1179-01	1.804	12.63	532.5
224	19.800	.40800-01	101.00	.4176	.6917	.5121	.9534	.2091-01	.1548-01	2.308	16.07	541.8
224	20.000	.24900-01	89.000	.5687	.9813	.6866	.9592	.2967-01	.2075-01	2.963	20.51	552.3
224	20.000	.28800-01	91.000	.5279	.8984	.6393	.9577	.2716-01	.1933-01	2.804	19.45	549.0
224	20.000	.32800-01	93.000	.4756	.7991	.5778	.9563	.2416-01	.1747-01	2.573	17.88	545.7
224	22.200	.62900-01	125.00	.3062	.5008	.3868	.9463	.1514-01	.1169-01	1.726	12.04	538.2
224	22.400	.44200-01	107.00	.3884	.6413	.4775	.9527	.1939-01	.1443-01	2.157	15.03	540.9
225	22.600	.10270	192.00	.1835	.2955	.2442	.9343	.8924-02	.7375-02	1.057	7.391	533.8
224	23.000	.42000-01	105.00	.4080	.6750	.4999	.9535	.2040-01	.1511-01	2.260	15.74	541.4
224	23.400	.59600-01	120.00	.3148	.5139	.3950	.9476	.1554-01	.1194-01	1.780	12.42	537.7
225	23.900	.21310	250.00	.4161-01	.6301-01	.5926-01	.9123	.1903-02	.1790-02	.2682	1.900	511.3
224	24.100	.82200-01	139.00	.2487	.4056	.3230	.9405	.1226-01	.9764-02	1.408	9.827	537.4
225	24.400	.19040	238.00	.6211-01	.9630-01	.8881-01	.9153	.2908-02	.2682-02	.3829	2.698	520.6
225	24.400	.12440	207.00	.1401	.2283	.1933	.9288	.6896-02	.5836-02	.7931	5.537	537.2
225	24.800	.16810	223.00	.8266-01	.1323	.1187	.9192	.3997-02	.3584-02	.4819	3.375	531.6
224	24.900	.62900-01	126.00	.3167	.5173	.3991	.9468	.1564-01	.1206-01	1.790	12.49	537.8
225	25.000	.79500-01	178.00	.2543	.4085	.3263	.9415	.1234-01	.9855-02	1.474	10.32	532.7
225	25.300	.10270	191.00	.1839	.2966	.2445	.9347	.8956-02	.7385-02	1.059	7.406	534.0
225	25.300	.10000+00	186.00	.1933	.3123	.2563	.9355	.9432-02	.7740-02	1.109	7.755	534.6
224	25.500	.60700-01	124.00	.3221	.5249	.4038	.9476	.1587-01	.1221-01	1.826	12.74	537.1
225	26.000	.12440	206.00	.1388	.2266	.1915	.9290	.6844-02	.5782-02	.7841	5.472	537.6
224	26.300	.82200-01	140.00	.1934	.3149	.2506	.9409	.9520-02	.7575-02	1.099	7.671	536.9
225	26.700	.12100	199.00	.1392	.2264	.1906	.9300	.6837-02	.5756-02	.7911	5.525	536.5
225	26.800	.16810	222.00	.7971-01	.1274	.1142	.9194	.3848-02	.3448-02	.4658	3.262	531.2
225	27.000	.19040	237.00	.5831-01	.9040-01	.8328-01	.9155	.2730-02	.2515-02	.3594	2.533	520.5
225	27.100	.21310	249.00	.4630-01	.7000-01	.6579-01	.9125	.2114-02	.1987-02	.2993	2.121	510.6
225	27.200	.80300-01	180.00	.2512	.4032	.3221	.9416	.1218-01	.9727-02	1.458	10.20	532.5
224	27.400	.40100-01	98.000	.4094	.6838	.4998	.9549	.2067-01	.1511-01	2.236	15.55	544.1
225	27.400	.16480	215.00	.7779-01	.1250	.1114	.9201	.3774-02	.3364-02	.4509	3.156	532.7
224	27.600	.41600-01	102.00	.4181	.6955	.5110	.9544	.2102-01	.1545-01	2.297	15.98	543.0
225	27.600	.12440	205.00	.1360	.2222	.1875	.9292	.6710-02	.5662-02	.7680	5.359	537.7
225	27.600	.18700	230.00	.7113-01	.1103	.1013	.9161	.3332-02	.3060-02	.4381	3.087	520.7
225	27.700	.21010	243.00	.5026-01	.7635-01	.7156-01	.9129	.2306-02	.2161-02	.3219	2.278	512.6
225	27.900	.10110	188.00	.1821	.2951	.2418	.9355	.8911-02	.7301-02	1.041	7.273	535.4
224	28.000	.46800-01	110.00	.3784	.6231	.4648	.9527	.1883-01	.1405-01	2.111	14.72	540.1
225	28.200	.16810	221.00	.8028-01	.1287	.1151	.9195	.3886-02	.3477-02	.4672	3.271	532.0
225	28.300	.19040	236.00	.5655-01	.8746-01	.8057-01	.9156	.2641-02	.2433-02	.3502	2.468	519.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
225	28.300	.12200	201.00	.1465	.2381	.2005	.9299	.7191-02	.6056-02	.8329	5.817	536.4
224	28.400	.53500-01	114.00	.3651	.6021	.4535	.9505	.1820-01	.1371-01	2.031	14.15	540.6
225	28.400	.21310	248.00	.4725-01	.7140-01	.6709-01	.9126	.2156-02	.2026-02	.3058	2.167	510.4
224	28.700	.58600-01	117.00	.3464	.5660	.4323	.9488	.1711-01	.1307-01	1.955	13.64	537.9
225	28.800	.16580	217.00	.7751-01	.1241	.1108	.9200	.3749-02	.3346-02	.4516	3.162	531.7
224	28.800	.60400-01	121.00	.3268	.5325	.4085	.9482	.1610-01	.1235-01	1.854	12.94	537.0
225	29.000	.21110	244.00	.4545-01	.6874-01	.6449-01	.9128	.2076-02	.1948-02	.2935	2.079	510.8
224	29.000	.65700-01	129.00	.3066	.5001	.3867	.9465	.1512-01	.1169-01	1.737	12.12	537.3
224	29.200	.72400-01	133.00	.2841	.4646	.3624	.9444	.1405-01	.1096-01	1.601	11.17	538.2
224	29.300	.79500-01	136.00	.2435	.3967	.3135	.9422	.1199-01	.9478-02	1.382	9.650	536.9
224	29.600	.92500-01	143.00	.2217	.3637	.2921	.9383	.1099-01	.8829-02	1.244	8.673	539.1
224	29.700	.10000+00	146.00	.1897	.3102	.2523	.9361	.9378-02	.7628-02	1.070	7.467	538.1
225	29.900	.12100	198.00	.1417	.2309	.1938	.9304	.6974-02	.5853-02	.8021	5.599	537.2
225	30.200	.16480	214.00	.7766-01	.1242	.1107	.9204	.3752-02	.3343-02	.4533	3.175	531.4
225	30.300	.21010	242.00	.5157-01	.7826-01	.7331-01	.9130	.2363-02	.2214-02	.3310	2.343	512.2
224	31.500	.11100-01	83.000	.6115	1.157	.7470	.9615	.3497-01	.2258-01	2.842	19.48	570.9
225	32.100	.21010	241.00	.5368-01	.8137-01	.7620-01	.9132	.2457-02	.2301-02	.3452	2.444	511.7
225	32.200	.16480	213.00	.7797-01	.1245	.1109	.9206	.3759-02	.3348-02	.4567	3.200	530.7
225	32.200	.17860	224.00	.8433-01	.1329	.1204	.9180	.4012-02	.3636-02	.5052	3.548	526.3
225	32.200	.18700	228.00	.6722-01	.1038	.9521-01	.9165	.3134-02	.2875-02	.4177	2.945	518.9
225	32.300	.12100	197.00	.1469	.2392	.2005	.9307	.7225-02	.6055-02	.8325	5.812	537.0
225	32.300	.12300	194.00	.1306	.2125	.1786	.9302	.6417-02	.5395-02	.7412	5.176	536.7
225	32.300	.12730	208.00	.1358	.2236	.1882	.9291	.6753-02	.5684-02	.7574	5.279	540.0
225	32.300	.13420	209.00	.1213	.2013	.1705	.9274	.6080-02	.5150-02	.6681	4.651	542.3
224	32.400	.10000+00	147.00	.1910	.3141	.2543	.9365	.9495-02	.7687-02	1.068	7.444	539.7
225	32.400	.10110	184.00	.1831	.2974	.2426	.9362	.8981-02	.7326-02	1.042	7.279	536.2
225	32.400	.10530	193.00	.1697	.2747	.2261	.9347	.8294-02	.6828-02	.9717	6.791	535.0
225	32.500	.85800-01	183.00	.2384	.3875	.3089	.9407	.1170-01	.9328-02	1.355	9.464	536.4
224	32.600	.79500-01	137.00	.1836	.3005	.2363	.9427	.9085-02	.7144-02	1.034	7.211	538.4
225	32.600	.80800-01	176.00	.2464	.3988	.3162	.9423	.1204-01	.9548-02	1.410	9.856	535.1
224	32.700	.67400-01	132.00	.3043	.4977	.3842	.9465	.1505-01	.1161-01	1.715	11.97	538.2
224	32.700	.72400-01	134.00	.2833	.4645	.3608	.9449	.1404-01	.1091-01	1.590	11.09	538.9
224	32.800	.65700-01	130.00	.3089	.5038	.3884	.9471	.1523-01	.1174-01	1.749	12.21	537.3
225	32.800	.16680	210.00	.8327-01	.1331	.1187	.9202	.4019-02	.3585-02	.4869	3.411	531.0
225	32.800	.18880	225.00	.6384-01	.9860-01	.9057-01	.9163	.2978-02	.2735-02	.3963	2.795	519.1
224	32.900	.58600-01	118.00	.4121	.6783	.5141	.9494	.2051-01	.1554-01	2.300	16.03	540.0
224	32.900	.60400-01	122.00	.3259	.5319	.4064	.9488	.1608-01	.1229-01	1.843	12.86	537.6
225	32.900	.61300-01	171.00	.3199	.5162	.3978	.9485	.1559-01	.1201-01	1.841	12.88	534.1
224	33.000	.53500-01	115.00	.3717	.6114	.4597	.9512	.1848-01	.1390-01	2.078	14.48	539.8
224	33.200	.48300-01	113.00	.3835	.6305	.4701	.9530	.1906-01	.1421-01	2.144	14.95	539.7
225	33.400	.42800-01	166.00	.3966	.6447	.4799	.9549	.1947-01	.1449-01	2.256	15.75	536.3
224	33.500	.40100-01	99.000	.4243	.6969	.5128	.9559	.2107-01	.1550-01	2.376	16.56	539.4
224	33.600	.38300-01	97.000	.4392	.7276	.5306	.9565	.2199-01	.1604-01	2.427	16.90	541.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
224	33.700	.36700-01	96.000	.4706	.7863	.5685	.9571	.2377-01	.1718-01	2.567	17.85	544.2
224	33.900	.33800-01	95.000	.4842	.8126	.5826	.9582	.2457-01	.1761-01	2.624	18.24	545.4
225	34.700	.21010	240.00	.5323-01	.8055-01	.7539-01	.9133	.2433-02	.2277-02	.3435	2.433	511.0
225	34.700	.18700	227.00	.7047-01	.1090	.9986-01	.9167	.3292-02	.3016-02	.4363	3.076	519.6
225	34.900	.16480	212.00	.8402-01	.1346	.1196	.9209	.4066-02	.3612-02	.4890	3.424	531.9
224	35.100	.10000+00	148.00	.1890	.3116	.2515	.9369	.9420-02	.7602-02	1.053	7.335	540.5
225	35.200	.23900-01	161.00	.6204	1.078	.7398	.9620	.3255-01	.2234-01	3.200	22.13	553.9
224	35.300	.92500-01	145.00	.2181	.3592	.2867	.9391	.1086-01	.8666-02	1.216	8.476	540.2
224	35.300	.22100-01	160.00	.6141	1.106	.7386	.9621	.3344-01	.2233-01	3.025	20.83	561.7
225	35.400	.18800	231.00	.6740-01	.1041	.9543-01	.9166	.3142-02	.2882-02	.4187	2.953	519.0
225	35.500	.12100	196.00	.1470	.2406	.2008	.9311	.7267-02	.6065-02	.8270	5.770	538.4
225	35.600	.16580	216.00	.8675-01	.1388	.1234	.9207	.4191-02	.3728-02	.5063	3.546	531.4
224	35.800	.80600-01	138.00	.2435	.3977	.3129	.9428	.1202-01	.9460-02	1.375	9.598	537.8
225	35.900	.21310	247.00	.5188-01	.7814-01	.7331-01	.9130	.2360-02	.2214-02	.3379	2.396	509.0
225	36.000	.19040	235.00	.6771-01	.1044	.9592-01	.9163	.3152-02	.2897-02	.4218	2.975	518.4
225	36.200	.16810	220.00	.9114-01	.1454	.1297	.9203	.4392-02	.3918-02	.5343	3.744	530.5
224	36.200	.72400-01	135.00	.2890	.4731	.3670	.9454	.1430-01	.1109-01	1.627	11.35	538.5
225	36.300	.12200	200.00	.1468	.2408	.2009	.9310	.7271-02	.6068-02	.8227	5.737	539.1
224	36.600	.65700-01	131.00	.2916	.4791	.3668	.9476	.1448-01	.1109-01	1.632	11.38	539.5
225	36.700	.18700	226.00	.6929-01	.1070	.9799-01	.9169	.3232-02	.2959-02	.4301	3.033	519.1
225	36.900	.16480	211.00	.8770-01	.1408	.1249	.9210	.4253-02	.3772-02	.5089	3.562	532.5
225	36.900	.10110	187.00	.1968	.3223	.2610	.9368	.9733-02	.7883-02	1.106	7.712	538.6
224	37.000	.60400-01	123.00	.3290	.5382	.4094	.9494	.1627-01	.1238-01	1.854	12.94	538.2
225	37.000	.12440	204.00	.1455	.2391	.2000	.9304	.7222-02	.6039-02	.8132	5.669	539.6
224	37.100	.58600-01	119.00	.3524	.5780	.4377	.9501	.1747-01	.1323-01	1.977	13.79	539.0
225	37.200	.21310	246.00	.5033-01	.7571-01	.7102-01	.9131	.2286-02	.2145-02	.3286	2.331	508.5
225	37.600	.16910	219.00	.8812-01	.1407	.1254	.9205	.4248-02	.3786-02	.5162	3.616	530.7
224	37.800	.10270	150.00	.1970	.3250	.2628	.9364	.9825-02	.7944-02	1.096	7.639	540.6
225	37.900	.12100	195.00	.1485	.2412	.2017	.9314	.7285-02	.6090-02	.8459	5.908	536.1
225	38.000	.80300-01	179.00	.2618	.4258	.3351	.9432	.1286-01	.1012-01	1.488	10.39	536.5
224	38.500	.46800-01	112.00	.3978	.6560	.4851	.9543	.1983-01	.1466-01	2.214	15.43	540.6
225	38.600	.12440	203.00	.1484	.2439	.2037	.9306	.7365-02	.6152-02	.8289	5.779	539.6
225	38.700	.10000+00	185.00	.1923	.3143	.2541	.9373	.9492-02	.7675-02	1.085	7.570	537.9
224	38.900	.82200-01	141.00	.2214	.3638	.2854	.9427	.1100-01	.8628-02	1.240	8.643	539.5
224	39.300	.41600-01	104.00	.4167	.6945	.5052	.9562	.2100-01	.1527-01	2.282	15.87	543.5
225	39.500	.10270	190.00	.1994	.3263	.2646	.9367	.9854-02	.7989-02	1.122	7.825	538.4
225	39.600	.16810	218.00	.8279-01	.1323	.1178	.9206	.3995-02	.3556-02	.4843	3.392	531.0
225	39.900	.19040	233.00	.7037-01	.1080	.9920-01	.9166	.3261-02	.2996-02	.4420	3.121	516.7
225	40.100	.79500-01	177.00	.2647	.4298	.3377	.9437	.1298-01	.1020-01	1.507	10.53	536.1
225	40.200	.12440	202.00	.1506	.2479	.2067	.9308	.7485-02	.6243-02	.8395	5.851	540.0
225	40.300	.21310	245.00	.4819-01	.7211-01	.6765-01	.9133	.2178-02	.2043-02	.3179	2.258	506.2
224	41.100	.82200-01	142.00	.2580	.4268	.3331	.9430	.1290-01	.1007-01	1.428	9.948	541.5
225	41.100	.60700-01	173.00	.3317	.5388	.4107	.9499	.1627-01	.1240-01	1.888	13.19	536.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K116)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
225	42.600	.59600-01	172.00	.3460	.5641	.4279	.9505	.1703-01	.1292-01	1.958	13.67	537.3
225	43.200	.42000-01	168.00	.3974	.6467	.4772	.9566	.1953-01	.1441-01	2.256	15.76	536.7
225	43.400	.82200-01	181.00	.2406	.3856	.3058	.9433	.1164-01	.9234-02	1.400	9.799	532.0
224	43.600	.62900-01	128.00	.2951	.4819	.3669	.9495	.1457-01	.1109-01	1.668	11.64	537.7
224	45.000	.22900-01	8.0000	.5879	1.043	.6993	.9635	.3152-01	.2114-01	2.953	20.38	558.5
225	46.100	.62900-01	174.00	.3253	.5303	.4035	.9498	.1602 01	.1219-01	1.841	12.85	537.3
225	47.700	.40800-01	167.00	.4365	.7145	.5227	.9576	.2158-01	.1579-01	2.455	17.12	538.4
224	48.400	.44200-01	109.00	.4213	.6967	.5088	.9565	.2106-01	.1538-01	2.335	16.26	541.3
225	51.900	.44800-01	170.00	.3789	.6115	.4536	.9567	.1847-01	.1370-01	2.180	15.25	534.2
225	53.200	.24700-01	163.00	.6440	1.104	.7575	.9641	.3335-01	.2288-01	3.381	23.42	550.8
225	65.200	.24700-01	162.00	.6361	1.089	.7437	.9652	.3289-01	.2246-01	3.347	23.19	550.4
223	90.000	.91000-02	44.000	.5650	1.099	.6744	.9666	.3324-01	.2040-01	2.548	17.42	575.5
223	90.000	.11100-01	45.000	.6427	1.268	.7694	.9666	.3834-01	.2327-01	2.857	19.51	577.7
223	90.000	.13100-01	46.000	.6685	1.238	.7898	.9666	.3745-01	.2389-01	3.184	21.86	567.2
223	90.000	.17000-01	48.000	.7309	1.331	.8605	.9666	.4027-01	.2602-01	3.552	24.43	564.0
223	90.000	.20900-01	50.000	.6482	1.170	.7616	.9666	.3539-01	.2303-01	3.184	21.92	562.2
223	90.000	.24900-01	52.000	.1312	.2173	.1515	.9661	.6573-02	.4582-02	.7249	5.047	541.9
223	90.000	.26900-01	53.000	.5530	.9598	.6481	.9654	.2903-01	.1960-01	2.860	19.79	553.7
223	90.000	.28800-01	54.000	.5448	.9377	.6393	.9647	.2836-01	.1934-01	2.850	19.73	551.7
223	90.000	.32800-01	55.000	.3814	.6137	.4430	.9633	.1856-01	.1340-01	2.208	15.45	533.3
223	90.000	.36700-01	56.000	.4467	.7450	.5272	.9619	.2253-01	.1594-01	2.445	17.01	543.7
223	90.000	.40600-01	57.000	.4673	.7902	.5573	.9605	.2390-01	.1685-01	2.506	17.40	547.4
223	90.000	.48500-01	58.000	.4394	.7368	.5299	.9577	.2228-01	.1603-01	2.386	16.58	545.1
223	90.000	.56400-01	59.000	.3895	.6494	.4750	.9550	.1964-01	.1437-01	2.133	14.84	543.6
223	90.000	.76100-01	60.000	.2972	.4897	.3727	.9484	.1481-01	.1127-01	1.657	11.55	540.3
223	90.000	.95800-01	61.000	.2537	.4179	.3282	.9423	.1264-01	.9925-02	1.416	9.866	540.2
223	90.000	.11550	62.000	.1970	.3245	.2625	.9365	.9814-02	.7940-02	1.099	7.663	540.2
223	135.00	.19000-01	49.000	.6465	1.160	.7712	.9635	.3508-01	.2332-01	3.201	22.06	560.9
223	135.00	.22900-01	51.000	.6227	1.113	.7421	.9635	.3365-01	.2245-01	3.099	21.36	560.1
223	180.00	.91000-02	23.000	.2435	.3885	.2911	.9562	.1175-01	.8805-02	1.431	10.03	530.4
223	180.00	.11100-01	24.000	.5734	1.041	.7140	.9562	.3150-01	.2159-01	2.796	19.24	563.4
223	180.00	.13100-01	25.000	.6052	1.117	.7572	.9562	.3378-01	.2290-01	2.896	19.89	566.5
223	180.00	.15000-01	26.000	.5997	1.076	.7441	.9562	.3255-01	.2250-01	2.968	20.45	561.0
223	180.00	.17000-01	27.000	.6124	1.074	.7546	.9562	.3250-01	.2282-01	3.121	21.56	556.1
223	180.00	.19000-01	28.000	.5909	1.046	.7301	.9562	.3163-01	.2208-01	2.977	20.54	558.1
223	180.00	.20900-01	29.000	.5970	1.046	.7352	.9562	.3162-01	.2223-01	3.050	21.07	555.8
223	180.00	.28800-01	32.000	.5126	.8728	.6318	.9543	.2640-01	.1911-01	2.722	18.88	549.1
223	180.00	.32800-01	33.000	.4670	.7727	.5741	.9528	.2337-01	.1736-01	2.587	18.02	541.5
223	180.00	.36700-01	34.000	.4384	.7376	.5459	.9514	.2231-01	.1651-01	2.369	16.45	546.0
223	180.00	.48500-01	36.000	.3657	.6047	.4618	.9474	.1829-01	.1397-01	2.028	14.13	541.3
223	180.00	.56400-01	37.000	.3391	.5575	.4328	.9447	.1686-01	.1309-01	1.897	13.23	539.7
223	180.00	.76100-01	38.000	.2603	.4234	.3411	.9385	.1281-01	.1032-01	1.480	10.34	536.6
223	180.00	.95800-01	39.000	.1955	.3172	.2635	.9328	.9595-02	.7968-02	1.117	7.803	535.8

(R4K116)

FH15, E.T. NOSE (CLEAN) HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
223	180.00	.11550	40.000	.1474	.2403	.2047	.9276	.7268-02	.6191-02	.8352	5.830	537.3
223	180.00	.18450	42.000	.5845-01	.8960-01	.8334-01	.9141	.2710-02	.2521-02	.3685	2.603	516.2
223	225.00	.22900-01	30.000	.5265	.8952	.6653	.9493	.2708-01	.2012-01	2.801	19.43	548.7
223	270.00	.91000-02	63.000	.2177	.3400	.2694	.9467	.1028-01	.8148-02	1.326	9.328	523.3
223	270.00	.11100-01	64.000	.2587	.4088	.3217	.9467	.1236-01	.9730-02	1.544	10.84	527.3
223	270.00	.13100-01	65.000	.4525	.7435	.5719	.9467	.2248-01	.1730-01	2.534	17.67	539.5
223	270.00	.17000-01	67.000	.6081	1.117	.8034	.9467	.3378-01	.2430-01	2.926	20.11	565.6
223	270.00	.20900-01	69.000	.5815	1.016	.7532	.9467	.3071-01	.2278-01	2.982	20.61	555.1
223	270.00	.24900-01	71.000	.4841	.8338	.6253	.9462	.2522-01	.1891-01	2.530	17.52	551.9
223	270.00	.28800-01	73.000	.4534	.7619	.5840	.9448	.2304-01	.1766-01	2.454	17.05	545.7
223	270.00	.36700-01	75.000	.4166	.6931	.5419	.9420	.2096-01	.1639-01	2.288	15.92	543.0
223	270.00	.48500-01	77.000	.3376	.5484	.4431	.9381	.1659-01	.1340-01	1.924	13.44	536.2
223	270.00	.56400-01	78.000	.2855	.4627	.3790	.9356	.1399-01	.1146-01	1.634	11.42	535.5
223	270.00	.95800-01	80.000	.1439	.2343	.2029	.9247	.7087-02	.6135-02	.8177	5.710	536.8
223	270.00	.11550	81.000	.1027	.1672	.1483	.9202	.5057-02	.4486-02	.5832	4.072	536.9
223	315.00	.19000-01	68.000	.5155	.8670	.6487	.9494	.2622-01	.1962-01	2.787	19.37	545.9
223	315.00	.22900-01	70.000	.4654	.8049	.5918	.9494	.2434-01	.1790-01	2.418	16.74	552.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
270	4.020	-.3180-02	-9.036	62.90	718.7	.4034	169.8	90.02	2568.	.6412-02	.1366-06	3.745
271	4.020	-.3180-02	-9.036	62.86	718.7	.4031	169.8	90.02	2568.	.6407-02	.1366-06	3.742
272	4.020	-.3180-02	-9.036	63.01	718.7	.4041	169.8	90.02	2568.	.6422-02	.1366-06	3.751

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
270	.3790-01	.9561-02
271	.3789-01	.9564-02
272	.3793-01	.9553-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
271	.00000	.91000-02	1.0000	.5162	1.039	.6379	.9621	.3935-01	.2417-01	2.795	19.10	575.8
271	.00000	.15000-01	4.0000	.6474	1.335	.8046	.9621	.5057-01	.3048-01	3.423	23.36	579.1
271	.00000	.17000-01	5.0000	.6408	1.285	.7913	.9621	.4870-01	.2998-01	3.480	23.79	575.4
271	.00000	.19000-01	6.0000	.6184	1.201	.7578	.9621	.4550-01	.2871-01	3.471	23.79	570.5
271	.00000	.24900-01	9.0000	.5828	1.092	.7100	.9616	.4138-01	.2690-01	3.403	23.40	564.6
271	.00000	.26900-01	10.000	.5438	1.000	.6621	.9608	.3790-01	.2508-01	3.244	22.35	561.2
270	.00000	.32800-01	12.000	.4688	.8239	.5703	.9587	.3123-01	.2161-01	2.962	20.51	551.9
270	.00000	.36700-01	13.000	.4280	.7315	.5201	.9573	.2772-01	.1971-01	2.811	19.53	545.4
270	.00000	.40600-01	14.000	.4362	.7600	.5369	.9560	.2881-01	.2035-01	2.788	19.33	550.0
270	.00000	.48500-01	15.000	.3691	.6302	.4576	.9533	.2389-01	.1734-01	2.426	16.86	545.2
270	.00000	.56400-01	16.000	.3676	.6288	.4621	.9507	.2383-01	.1752-01	2.410	16.75	545.7
270	.00000	.76100-01	17.000	.2793	.4598	.3565	.9448	.1743-01	.1351-01	1.937	13.53	535.7
270	.00000	.95800-01	18.000	.1390	.2251	.1808	.9396	.8531-02	.6851-02	.9897	6.934	530.8
270	.00000	.11550	19.000	.1780	.2913	.2392	.9350	.1104-01	.9028-02	1.247	8.718	533.9
270	.00000	.16480	20.000	.1033	.1689	.1445	.9266	.6402-02	.5477-02	.7236	5.061	533.8
270	.00000	.21400	22.000	.5896-01	.9001-01	.8052-01	.9224	.3412-02	.3052-02	.4659	3.302	510.2
272	2.0000	.24700-01	165.00	.5756	1.051	.6944	.9622	.3988-01	.2634-01	3.468	23.91	559.8
271	9.0000	.15000-01	157.00	.6071	1.231	.7403	.9645	.4664-01	.2805-01	3.261	22.27	576.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
271	9.0000	.17600-01	158.00	.6310	1.281	.7697	.9645	.4855-01	.2916-01	3.385	23.12	577.1
272	9.8000	.24700-01	164.00	.6105	1.174	.7368	.9643	.4455-01	.2795-01	3.466	23.78	569.0
271	10.000	.22900-01	88.000	.6186	1.207	.7469	.9648	.4571-01	.2829-01	3.456	23.68	571.2
271	10.000	.26900-01	90.000	.5911	1.092	.7098	.9635	.4136-01	.2689-01	3.511	24.18	561.9
271	10.000	.34700-01	94.000	.4762	.8341	.5729	.9607	.3160-01	.2170-01	3.022	20.93	551.2
272	14.600	.44200-01	169.00	.4336	.7585	.5272	.9585	.2877-01	.2000-01	2.759	19.12	550.9
271	18.500	.44200-01	106.00	.4439	.7887	.5392	.9596	.2988-01	.2043-01	2.765	19.12	554.3
272	19.600	.62900-01	175.00	.3488	.5942	.4316	.9536	.2254-01	.1637-01	2.303	16.01	544.7
271	19.800	.40800-01	101.00	.4746	.8488	.5728	.9611	.3216-01	.2170-01	2.931	20.25	555.7
271	20.000	.24900-01	89.000	.5860	1.115	.6949	.9670	.4225-01	.2633-01	3.363	23.09	567.2
271	20.000	.28800-01	91.000	.5390	.9970	.6405	.9655	.3777-01	.2427-01	3.195	22.00	562.2
271	20.000	.32800-01	93.000	.5156	.9480	.6169	.9640	.3592-01	.2337-01	3.078	21.21	561.1
271	22.200	.62900-01	125.00	.3482	.6063	.4325	.9542	.2297-01	.1639-01	2.227	15.44	549.9
271	22.400	.44200-01	107.00	.4403	.7807	.5317	.9606	.2958-01	.2014-01	2.749	19.02	553.9
272	22.600	.10270	192.00	.2378	.3971	.3089	.9426	.1506-01	.1172-01	1.616	11.27	539.5
271	23.000	.42000-01	105.00	.4612	.8218	.5550	.9615	.3114-01	.2103-01	2.862	19.79	554.9
271	23.400	.59600-01	120.00	.3739	.6493	.4607	.9556	.2460-01	.1745-01	2.400	16.64	549.2
272	23.900	.21310	250.00	.7216-01	.1129	.9953-01	.9237	.4281-02	.3775-02	.5456	3.847	519.3
271	24.100	.82200-01	139.00	.2920	.4941	.3695	.9487	.1872-01	.1400-01	1.943	13.52	543.0
272	24.400	.19040	238.00	.9191-01	.1465	.1269	.9261	.5558-02	.4813-02	.6724	4.723	525.8
272	24.400	.12440	207.00	.1851	.3139	.2488	.9377	.1191-01	.9436-02	1.231	8.560	543.5
272	24.800	.16810	223.00	.1120	.1863	.1561	.9292	.7067-02	.5920-02	.7664	5.346	538.4
271	24.900	.62900-01	126.00	.3566	.6209	.4414	.9549	.2352-01	.1672-01	2.281	15.81	549.8
272	25.000	.79500-01	178.00	.3052	.5126	.3832	.9497	.1944-01	.1454-01	2.057	14.33	541.0
272	25.300	.10270	191.00	.2431	.4055	.3146	.9432	.1538-01	.1194-01	1.655	11.54	539.2
272	25.300	.10000+00	186.00	.2345	.3928	.3030	.9439	.1490-01	.1149-01	1.586	11.06	540.3
271	25.500	.60700-01	124.00	.3708	.6444	.4566	.9557	.2441-01	.1730-01	2.379	16.49	549.4
272	26.000	.12440	206.00	.1848	.3136	.2480	.9380	.1189-01	.9406-02	1.226	8.530	543.7
271	26.300	.82200-01	140.00	.3340	.5605	.4203	.9492	.2124-01	.1592-01	2.250	15.67	540.9
272	26.700	.12100	199.00	.1870	.3137	.2483	.9389	.1190-01	.9418-02	1.262	8.791	540.8
272	26.800	.16810	222.00	.1202	.1996	.1671	.9295	.7573-02	.6338-02	.8239	5.749	538.0
272	27.000	.19040	237.00	.8676-01	.1387	.1198	.9263	.5262-02	.4545-02	.6316	4.435	526.8
272	27.100	.21310	249.00	.7312-01	.1144	.1008	.9240	.4340-02	.3822-02	.5523	3.894	519.5
272	27.200	.80300-01	180.00	.3029	.5054	.3786	.9500	.1917-01	.1437-01	2.060	14.36	539.4
271	27.400	.40100-01	98.000	.4999	.9085	.5987	.9633	.3442-01	.2268-01	3.026	20.87	558.9
272	27.400	.16480	215.00	.1194	.2003	.1664	.9301	.7597-02	.6311-02	.8068	5.621	540.6
271	27.600	.41600-01	102.00	.4751	.8572	.5695	.9628	.3248-01	.2158-01	2.902	20.03	557.5
272	27.600	.12440	205.00	.1790	.3034	.2397	.9383	.1151-01	.9091-02	1.189	8.273	543.5
272	27.600	.18700	230.00	.9702-01	.1548	.1335	.9268	.5871-02	.5063-02	.7088	4.979	526.1
272	27.700	.21010	243.00	.7397-01	.1168	.1024	.9243	.4429-02	.3884-02	.5502	3.872	522.6
272	27.900	.10110	188.00	.2470	.4143	.3189	.9442	.1571-01	.1210-01	1.668	11.62	540.6
271	28.000	.46800-01	110.00	.4166	.7367	.5014	.9611	.2791-01	.1900-01	2.611	18.06	553.3
272	28.200	.16810	221.00	.1129	.1889	.1575	.9297	.7167-02	.5974-02	.7652	5.334	540.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
272	28.300	.19040	236.00	.8305-01	.1325	.1145	.9265	.5026-02	.4342-02	.6066	4.261	526.1
272	28.300	.12200	201.00	.1931	.3238	.2562	.9389	.1228-01	.9720-02	1.303	9.078	540.7
271	28.400	.53500-01	114.00	.4100	.7220	.4987	.9588	.2736-01	.1889-01	2.583	17.88	552.4
272	28.400	.21310	248.00	.7129-01	.1120	.9850-01	.9241	.4250-02	.3736-02	.5343	3.764	521.1
271	28.700	.58600-01	117.00	.3975	.6922	.4860	.9572	.2623-01	.1842-01	2.542	17.62	549.9
272	28.800	.16580	217.00	.1094	.1829	.1521	.9301	.6937-02	.5770-02	.7429	5.179	539.7
271	28.800	.60400-01	121.00	.3679	.6405	.4512	.9566	.2427-01	.1710-01	2.355	16.32	549.8
272	29.000	.21110	244.00	.7107-01	.1117	.9810-01	.9243	.4238-02	.3721-02	.5323	3.749	521.2
271	29.000	.65700-01	129.00	.3511	.6080	.4336	.9549	.2304-01	.1643-01	2.262	15.69	548.6
271	29.200	.72400-01	133.00	.3183	.5479	.3967	.9529	.2076-01	.1503-01	2.069	14.36	547.1
271	29.300	.79500-01	136.00	.2948	.4960	.3685	.9507	.1879-01	.1396-01	1.979	13.78	541.5
271	29.600	.92500-01	143.00	.2950	.5030	.3779	.9469	.1906-01	.1432-01	1.942	13.50	544.9
271	29.700	.10000+00	146.00	.2366	.3983	.3049	.9449	.1509-01	.1155-01	1.587	11.05	541.7
272	29.900	.12100	198.00	.1917	.3228	.2542	.9395	.1225-01	.9643-02	1.287	8.964	541.7
272	30.200	.16480	214.00	.1115	.1857	.1544	.9305	.7045-02	.5856-02	.7597	5.298	539.0
272	30.200	.18700	229.00	.9563-01	.1522	.1312	.9271	.5774-02	.4976-02	.7012	4.928	525.4
272	30.300	.21010	242.00	.7502-01	.1186	.1038	.9245	.4499-02	.3939-02	.5566	3.916	523.1
271	31.500	.11100-01	83.000	.7214	1.655	.8658	.9704	.6272-01	.3280-01	3.482	23.60	591.3
272	32.100	.21010	241.00	.8113-01	.1281	.1121	.9246	.4860-02	.4253-02	.6030	4.244	522.7
272	32.200	.16480	213.00	.1144	.1902	.1580	.9308	.7215-02	.5993-02	.7819	5.455	538.4
272	32.200	.17860	224.00	.1171	.1899	.1613	.9285	.7204-02	.6119-02	.8326	5.832	531.2
272	32.200	.18700	228.00	.1004	.1586	.1369	.9273	.6018-02	.5195-02	.7460	5.249	522.8
272	32.300	.12100	197.00	.1987	.3336	.2624	.9399	.1266-01	.9955-02	1.339	9.325	541.0
272	32.300	.12300	194.00	.1786	.2999	.2365	.9394	.1138-01	.8972-02	1.204	8.384	541.0
272	32.300	.12730	208.00	.1613	.2779	.2175	.9384	.1054-01	.8252-02	1.048	7.278	547.4
272	32.300	.13420	209.00	.1581	.2767	.2163	.9368	.1050-01	.8224-02	1.006	6.967	551.0
271	32.400	.10000+00	147.00	.2351	.3993	.3032	.9454	.1513-01	.1149-01	1.557	10.83	543.9
272	32.400	.10110	184.00	.2402	.4030	.3087	.9451	.1529-01	.1171-01	1.622	11.30	540.7
272	32.400	.10630	193.00	.2289	.3811	.2953	.9437	.1446-01	.1120-01	1.562	10.89	538.8
272	32.500	.85800-01	183.00	.2899	.4934	.3662	.9495	.1872-01	.1389-01	1.917	13.33	544.4
271	32.600	.79500-01	137.00	.3119	.5311	.3901	.9514	.2012-01	.1478-01	2.057	14.30	544.6
272	32.600	.80800-01	176.00	.3018	.5100	.3772	.9510	.1934-01	.1431-01	2.015	14.02	542.7
271	32.700	.67400-01	132.00	.3572	.6192	.4407	.9552	.2346-01	.1670-01	2.299	15.95	548.8
271	32.700	.72400-01	134.00	.3488	.6030	.4335	.9536	.2284-01	.1643-01	2.254	15.64	548.2
271	32.800	.65700-01	130.00	.3621	.6282	.4454	.9558	.2380-01	.1688-01	2.327	16.14	549.0
272	32.800	.16680	210.00	.1214	.2018	.1679	.9305	.7654-02	.6369-02	.8311	5.799	538.2
272	32.800	.18880	225.00	.9609-01	.1528	.1317	.9271	.5798-02	.4997-02	.7055	4.958	525.1
271	32.900	.58600-01	118.00	.3440	.6089	.4204	.9582	.2307-01	.1593-01	2.153	14.90	553.5
271	32.900	.60400-01	122.00	.3781	.6611	.4619	.9576	.2505-01	.1750-01	2.404	16.66	550 8
272	32.900	.61300-01	171.00	.3724	.6411	.4536	.9573	.2432-01	.1720-01	2.422	16.82	547.2
271	33.000	.53500-01	115.00	.4218	.7417	.5098	.9600	.2810-01	.1932-01	2.663	18.44	552.1
271	33.200	.48300-01	113.00	.4269	.7511	.5112	.9618	.2846-01	.1937-01	2.693	18.64	552.2
272	33.400	.42800-01	166.00	.4559	.7985	.5397	.9638	.3029-01	.2047-01	2.896	20.06	551.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
271	33.500	.40100-01	99.000	.4868	.8694	.5760	.9648	.3294-01	.2182-01	3.011	20.81	555.4
271	33.600	.38300-01	97.000	.5021	.9113	.5943	.9655	.3453-01	.2252-01	3.045	21.01	558.6
271	33.700	.36700-01	96.000	.5040	.9282	.5965	.9661	.3517-01	.2260-01	3.003	20.68	561.4
271	33.900	.33800-01	95.000	.5303	.9838	.6248	.9672	.3727-01	.2367-01	3.133	21.56	562.8
272	34.700	.21010	240.00	.8118-01	.1283	.1122	.9248	.4867-02	.4255-02	.6025	4.239	523.0
272	34.700	.18700	227.00	.9782-01	.1549	.1334	.9276	.5877-02	.5062-02	.7234	5.088	523.7
272	34.900	.16480	212.00	.1229	.2049	.1697	.9311	.7774-02	.6436-02	.8365	5.833	539.2
271	35.100	.10000+00	148.00	.2578	.4399	.3321	.9460	.1667-01	.1258-01	1.696	11.79	545.0
272	35.200	.23900-01	161.00	.6354	1.259	.7410	.9712	.4774-01	.2811-01	3.499	23.94	573.5
271	35.300	.92500-01	145.00	.2759	.4726	.3519	.9481	.1791-01	.1333-01	1.805	12.54	546.0
271	35.300	.22100-01	160.00	.5406	1.092	.6320	.9714	.4139-01	.2395-01	2.914	19.91	576.4
272	35.400	.18800	231.00	.1002	.1593	.1370	.9275	.6041-02	.5198-02	.7368	5.179	524.8
272	35.500	.12100	196.00	.1981	.3349	.2616	.9405	.1270-01	.9925-02	1.322	9.198	542.8
272	35.600	.16580	216.00	.1240	.2064	.1711	.9310	.7830-02	.6490-02	.8461	5.901	538.7
271	35.800	.80600-01	138.00	.2909	.4929	.3626	.9518	.1867-01	.1374-01	1.933	13.45	543.3
272	35.900	.21310	247.00	.8182-01	.1289	.1129	.9246	.4888-02	.4282-02	.6111	4.303	521.8
272	36.000	.19040	235.00	.1047	.1666	.1435	.9272	.6321-02	.5444-02	.7686	5.401	525.2
272	36.200	.16810	220.00	.1224	.2028	.1688	.9307	.7693-02	.6401-02	.8415	5.874	537.4
271	36.200	.72400-01	135.00	.3439	.5933	.4254	.9544	.2248-01	.1612-01	2.228	15.46	547.7
272	36.300	.12200	200.00	.1997	.3384	.2642	.9404	.1284-01	.1002-01	1.328	9.239	543.4
271	36.600	.65700-01	131.00	.3697	.6498	.4546	.9567	.2462-01	.1722-01	2.335	16.17	552.0
272	36.700	.18700	226.00	.1035	.1638	.1410	.9278	.6214-02	.5348-02	.7666	5.393	523.4
272	36.900	.16480	211.00	.1234	.2066	.1706	.9314	.7839-02	.6470-02	.8359	5.825	540.2
272	36.900	.10110	187.00	.2546	.4314	.3269	.9460	.1636-01	.1240-01	1.693	11.78	543.3
271	37.000	.60400-01	123.00	.3980	.6988	.4845	.9585	.2648-01	.1836-01	2.517	17.43	551.7
272	37.000	.12440	204.00	.1975	.3346	.2619	.9399	.1269-01	.9936-02	1.314	9.142	543.3
271	37.100	.58500-01	119.00	.4082	.7198	.4959	.9592	.2727-01	.1879-01	2.567	17.77	552.7
272	37.200	.21310	246.00	.8468-01	.1332	.1167	.9247	.5052-02	.4426-02	.6339	4.464	521.3
272	37.600	.16810	219.00	.1262	.2094	.1740	.9309	.7944-02	.6600-02	.8661	6.044	537.8
271	37.800	.10270	150.00	.2485	.4248	.3208	.9457	.1609-01	.1215-01	1.631	11.33	545.5
272	37.900	.12100	195.00	.2291	.3844	.3009	.9409	.1458-01	.1141-01	1.547	10.78	540.7
272	38.000	.80300-01	179.00	.3185	.5400	.3959	.9523	.2048-01	.1502-01	2.117	14.73	543.5
271	38.500	.46800-01	112.00	.4531	.8081	.5395	.9636	.3062-01	.2044-01	2.808	19.41	555.1
272	38.600	.12440	203.00	.2030	.3442	.2630	.9402	.1306-01	.1020-01	1.350	9.389	543.4
272	38.900	.10000+00	185.00	.2524	.4253	.3223	.9467	.1613-01	.1223-01	1.693	11.79	541.8
271	38.900	.82200-01	141.00	.3044	.5225	.3808	.9519	.1979-01	.1443-01	1.986	13.79	546.5
271	39.300	.41600-01	104.00	.4905	.8968	.5811	.9656	.3398-01	.2202-01	2.948	20.32	560.0
272	39.500	.10270	190.00	.2539	.4282	.3253	.9461	.1624-01	.1234-01	1.701	11.84	542.1
272	39.600	.16810	218.00	.1177	.1955	.1621	.9311	.7417-02	.6149-02	.8057	5.622	538.2
272	39.900	.19040	233.00	.1042	.1652	.1422	.9276	.6265-02	.5393-02	.7695	5.411	524.0
272	40.100	.79500-01	177.00	.3205	.5424	.3967	.9530	.2057-01	.1505-01	2.136	14.86	543.0
272	40.200	.12440	202.00	.2032	.3458	.2693	.9405	.1312-01	.1022-01	1.344	9.345	544.4
272	40.300	.21310	245.00	.7700-01	.1206	.1057	.9249	.4575-02	.4009-02	.5807	4.093	519.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
271	41.100	.82200-01	142.00	.3416	.5906	.4274	.9524	.2238-01	.1619-01	2.206	15.30	548.2
272	41.100	.60700-01	173.00	.3971	.6858	.4792	.9593	.2601-01	.1818-01	2.572	17.85	547.9
272	42.600	.59600-01	172.00	.4059	.7073	.4892	.9600	.2683-01	.1856-01	2.596	17.99	550.1
272	43.200	.42000-01	168.00	.4441	.7861	.5204	.9663	.2982-01	.1974-01	2.783	19.26	553.5
272	43.400	.82200-01	181.00	.2841	.4779	.3513	.9528	.1813-01	.1333-01	1.911	13.31	541.4
271	43.600	.62900-01	128.00	.3615	.6331	.4384	.9591	.2399-01	.1661-01	2.294	15.89	551.2
271	45.000	.22900-01	8.0000	.6408	1.276	.7379	.9736	.4836-01	.2796-01	3.503	23.96	574.4
272	46.100	.62900-01	174.00	.3921	.6782	.4726	.9596	.2573-01	.1793-01	2.534	17.58	548.3
272	47.700	.40800-01	167.00	.4998	.9043	.5843	.9677	.3430-01	.2216-01	3.047	21.03	558.0
271	48.400	.44200-01	109.00	.4784	.8633	.5621	.9666	.3271-01	.2130-01	2.922	20.17	557.5
272	53.200	.24700-01	163.00	.6641	1.290	.7568	.9748	.4893-01	.2871-01	3.732	25.58	570.5
272	65.200	.24700-01	162.00	.6563	1.283	.7407	.9767	.4868-01	.2810-01	3.662	25.08	571.6
270	90.000	.91000-02	44.000	.6314	1.950	.7374	.9787	.7390-01	.2795-01	2.543	17.05	612.4
270	90.000	.11100-01	45.000	.7947	2.102	.9158	.9787	.7965-01	.3471-01	3.481	23.45	603.1
270	90.000	.13100-01	46.000	.7958	1.966	.9111	.9787	.7451-01	.3453-01	3.642	24.60	597.9
270	90.000	.17000-01	48.000	.7469	1.655	.8455	.9787	.6273-01	.3204-01	3.708	25.18	587.7
270	90.000	.20900-01	50.000	.6984	1.424	.7832	.9787	.5397-01	.2968-01	3.733	25.49	577.6
270	90.000	.24900-01	52.000	.6226	1.201	.6955	.9782	.4553-01	.2636-01	3.520	24.14	569.5
270	90.000	.26900-01	53.000	.6360	1.236	.7142	.9775	.4686-01	.2707-01	3.568	24.45	570.7
270	90.000	.28800-01	54.000	.6292	1.209	.7081	.9767	.4581-01	.2684-01	3.574	24.52	568.8
270	90.000	.32800-01	55.000	.4632	.7791	.5149	.9752	.2953-01	.1952-01	3.112	21.67	541.4
270	90.000	.36700-01	56.000	.5555	1.018	.6306	.9738	.3858-01	.2390-01	3.331	22.96	560.5
270	90.000	.40600-01	57.000	.5321	.9955	.6108	.9723	.3773-01	.2315-01	3.113	21.41	564.3
270	90.000	.48500-01	58.000	.5259	.9664	.6111	.9694	.3663-01	.2316-01	3.143	21.66	561.0
270	90.000	.56400-01	59.000	.4643	.8412	.5460	.9666	.3188-01	.2069-01	2.823	19.48	558.3
270	90.000	.76100-01	60.000	.3721	.6615	.4514	.9598	.2507-01	.1711-01	2.317	16.02	554.4
270	90.000	.95900-01	61.000	.3343	.5870	.4179	.9536	.2225-01	.1584-01	2.115	14.65	551.7
270	90.000	.11550	62.000	.2645	.4580	.3395	.9477	.1736-01	.1287-01	1.706	11.83	548.5
270	135.00	.19000-01	49.000	.7126	1.463	.8244	.9736	.5547-01	.3125-01	3.783	25.82	578.6
270	135.00	.22900-01	51.000	.6497	1.287	.7475	.9736	.4876-01	.2833-01	3.575	24.47	573.5
270	180.00	.91000-02	23.000	.4071	.7479	.4922	.9621	.2835-01	.1865-01	2.433	16.77	561.0
270	180.00	.11100-01	24.000	.5983	1.308	.7534	.9621	.4957-01	.2855-01	3.004	20.42	586.2
270	180.00	.13100-01	25.000	.6341	1.276	.7836	.9621	.4836-01	.2970-01	3.433	23.47	575.8
270	180.00	.15000-01	26.000	.6179	1.225	.7609	.9621	.4641-01	.2884-01	3.397	23.25	573.6
270	180.00	.17000-01	27.000	.6347	1.256	.7814	.9621	.4761-01	.2962-01	3.495	23.92	573.4
270	180.00	.19000-01	28.000	.6383	1.265	.7861	.9621	.4795-01	.2979-01	3.510	24.02	573.6
270	180.00	.20900-01	29.000	.6221	1.195	.7604	.9621	.4530-01	.2882-01	3.533	24.24	568.8
270	180.00	.28800-01	32.000	.5454	.9885	.6641	.9601	.3747-01	.2517-01	3.315	22.87	558.3
270	180.00	.32800-01	33.000	.4883	.8478	.5920	.9587	.3213-01	.2244-01	3.137	21.75	549.2
270	180.00	.36700-01	34.000	.4612	.8168	.5664	.9573	.3096-01	.2147-01	2.885	19.96	553.6
270	180.00	.48500-01	36.000	.4011	.6894	.4985	.9533	.2613-01	.1889-01	2.613	18.14	546.8
270	180.00	.56400-01	37.000	.3765	.6377	.4717	.9507	.2417-01	.1788-01	2.504	17.42	543.2
270	180.00	.76100-01	38.000	.3037	.5023	.3884	.9448	.1904-01	.1472-01	2.092	14.61	536.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
270	180.00	.95800-01	39.000	.2544	.4139	.3316	.9396	.1569-01	.1257-01	1.798	12.58	532.2
270	180.00	.11550	40.000	.1877	.3050	.2503	.9350	.1156-01	.9486-02	1.330	9.310	531.8
270	180.00	.18450	42.000	.8457-01	.1329	.1167	.9244	.5039-02	.4422-02	.6330	4.459	521.2
270	225.00	.22900-01	30.000	.5366	.9824	.6861	.9520	.3723-01	.2600-01	3.221	22.20	560.3
270	270.00	.91000-02	63.000	.4234	.7177	.5375	.9482	.2720-01	.2037-01	2.812	19.56	543.4
270	270.00	.11100-01	64.000	.4786	.8284	.6124	.9482	.3140-01	.2321-01	3.087	21.42	548.5
270	270.00	.13100-01	65.000	.6434	1.233	.8549	.9482	.4672-01	.3240-01	3.666	25.16	568.3
270	270.00	.17000-01	67.000	.5857	1.124	.7786	.9482	.4259-01	.2951-01	3.332	22.86	568.6
270	270.00	.20900-01	69.000	.5090	.9484	.6696	.9482	.3595-01	.2538-01	2.993	20.59	563.5
270	270.00	.24900-01	71.000	.4610	.8428	.6038	.9478	.3194-01	.2289-01	2.772	19.11	560.0
270	270.00	.28800-01	73.000	.4235	.7488	.5518	.9465	.2838-01	.2091-01	2.656	18.38	553.2
270	270.00	.36700-01	75.000	.3993	.6999	.5259	.9440	.2653-01	.1993-01	2.532	17.54	551.4
270	270.00	.48500-01	77.000	.3524	.6022	.4680	.9405	.2283-01	.1774-01	2.313	16.08	545.4
270	270.00	.56400-01	78.000	.3008	.5108	.4030	.9383	.1936-01	.1528-01	1.992	13.86	543.9
270	270.00	.95800-01	80.000	.1608	.2664	.2230	.9296	.1010-01	.8452-02	1.105	7.711	537.4
270	270.00	.11550	81.000	.1192	.1979	.1684	.9265	.7499-02	.6381-02	.8163	5.696	537.9
270	315.00	.19000-01	68.000	.5122	.9132	.6490	.9520	.3461-01	.2460-01	3.177	21.96	555.0
270	315.00	.22900-01	70.000	.4852	.9016	.6234	.9520	.3417-01	.2363-01	2.862	19.69	563.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 9.000 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
226	5.500	-.3170-02	-9.008	126.8	724.7	.1363	102.8	90.02	2734.	.3580-02	.8272-07	3.677
227	5.500	-.3170-02	-9.006	126.8	724.7	.1363	102.8	90.02	2734.	.3579-02	.8272-07	3.677
228	5.500	-.3170-02	-9.008	127.0	724.7	.1365	102.8	90.02	2734.	.3585-02	.8272-07	3.683

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
226	.3020-01	.1282-01
227	.3020-01	.1282-01
228	.3023-01	.1281-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
227	.00000	.91000-02	1.0000	.4465	.7488	.5439	.9557	.2261-01	.1643-01	2.421	16.83	545.1
227	.00000	.15000-01	4.0000	.6391	1.131	.7918	.9557	.3416-01	.2391-01	3.215	22.19	558.1
227	.00000	.17900-01	5.0000	.6157	1.074	.7594	.9557	.3244-01	.2293-01	3.157	21.82	554.9
227	.00000	.19000-01	6.0000	.5881	1.016	.7231	.9557	.3068-01	.2184-01	3.057	21.16	552.6
227	.00000	.24900-01	9.0000	.5128	.8624	.6267	.9552	.2605-01	.1893-01	2.769	19.23	545.9
227	.00000	.26900-01	10.000	.4795	.7995	.5864	.9545	.2415-01	.1771-01	2.622	18.24	543.6
226	.00000	.32800-01	12.000	.4167	.6924	.5143	.9523	.2091-01	.1553-01	2.291	15.95	542.6
226	.00000	.36700-01	13.000	.3719	.6087	.4595	.9510	.1838-01	.1388-01	2.093	14.60	538.4
226	.00000	.40600-01	14.000	.3376	.6415	.4842	.9496	.1938-01	.1462-01	2.144	14.93	541.6
226	.00000	.48500-01	15.000	.3450	.5640	.4345	.9469	.1704-01	.1312-01	1.944	13.56	538.1
226	.00000	.56400-01	16.000	.3131	.5100	.3988	.9443	.1540-01	.1205-01	1.775	12.39	537.0
226	.00000	.76100-01	17.000	.2357	.3743	.3057	.9382	.1131-01	.9233-02	1.393	9.770	529.0
226	.00000	.11550	19.000	.1443	.2281	.1968	.9274	.6890-02	.5943-02	.8593	6.031	527.5
226	.00000	.16480	20.000	.7434-01	.1187	.1077	.9171	.3586-02	.3254-02	.4353	3.049	530.8
226	.00000	.21400	22.000	.3641-01	.5426-01	.5151-01	.9109	.1639-02	.1556-02	.2423	1.723	504.3
228	2.0000	.24700-01	165.00	.4999	.8190	.6040	.9558	.2476-01	.1826-01	2.811	19.61	538.7
227	9 0000	.15000-01	157.00	.6384	1.127	.7805	.9580	.3403-01	.2357-01	3.223	22.25	557.5
227	9.0000	.17600-01	158.00	.6082	1.075	.7438	.9580	.3246-01	.2246-01	3.066	21.16	557.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
228	9.8000	.24700-01	164.00	.5433	.9122	.6550	.9578	.2757-01	.1980-01	2.942	20.45	545.5
227	10.000	.22900-01	88.000	.5566	.9547	.6739	.9583	.2883-01	.2035-01	2.922	20.24	550.9
227	10.000	.26900-01	90.000	.5107	.8563	.6177	.9571	.2586-01	.1866-01	2.769	19.25	545.1
227	10.000	.34700-01	94.000	.4045	.6384	.4859	.9543	.1928-01	.1467-01	2.416	16.96	526.9
228	14.600	.44200-01	169.00	.3844	.6177	.4692	.9522	.1867-01	.1418-01	2.230	15.60	532.8
227	18.500	.44200-01	106.00	.3853	.6343	.4721	.9532	.1916-01	.1426-01	2.148	14.97	540.1
228	19.600	.62900-01	175.00	.3105	.4932	.3860	.9472	.1491-01	.1167-01	1.836	12.87	529.0
227	19.800	.40800-01	101.00	.4131	.6819	.5030	.9547	.2059-01	.1519-01	2.294	15.98	540.8
227	20.000	.24900-01	89.000	.5150	.8730	.6149	.9604	.2636-01	.1857-01	2.749	19.07	547.9
227	20.000	.28800-01	91.000	.4911	.8266	.5892	.9590	.2496-01	.1779-01	2.648	18.39	546.1
227	20.000	.32800-01	93.000	.4615	.7708	.5563	.9575	.2328-01	.1680-01	2.517	17.51	544.1
227	22.200	.62900-01	125.00	.3100	.5033	.3876	.9478	.1520-01	.1171-01	1.766	12.34	536.0
227	22.400	.44200-01	107.00	.3879	.6382	.4729	.9542	.1927-01	.1428-01	2.164	15.08	539.9
228	22.600	.10270	192.00	.1854	.2956	.2437	.9358	.8934-02	.7366-02	1.090	7.637	530.2
227	23.000	.42000-01	105.00	.4023	.6633	.4887	.9551	.2003-01	.1476-01	2.237	15.59	540.5
227	23.400	.59600-01	120.00	.3105	.5035	.3856	.9492	.1521-01	.1164-01	1.773	12.39	535.6
228	23.900	.21310	250.00	.4395-01	.6596-01	.6190-01	.9131	.1994-02	.1871-02	.2885	2.048	507.5
227	24.100	.82200-01	139.00	.2471	.4004	.3173	.9422	.1209-01	.9583-02	1.412	9.870	535.4
228	24.400	.19040	238.00	.6638-01	.1023	.9399-01	.9164	.3093-02	.2841-02	.4138	2.919	518.4
228	24.400	.12440	207.00	.1459	.2369	.1992	.9304	.7159-02	.6020-02	.8321	5.813	536.0
228	24.800	.16810	223.00	.8594-01	.1376	.1225	.9205	.4158-02	.3702-02	.5017	3.514	531.5
227	24.900	.62900-01	126.00	.3037	.4928	.3785	.9485	.1488-01	.1143-01	1.732	12.10	535.8
228	25.000	.79500-01	178.00	.2616	.4153	.3312	.9432	.1255-01	.1001-01	1.549	10.86	528.8
228	25.300	.10270	191.00	.1921	.3065	.2519	.9364	.9266-02	.7613-02	1.127	7.897	530.6
228	25.300	.10000+00	186.00	.2015	.3210	.2630	.9372	.9703-02	.7949-02	1.186	8.309	530.0
227	25.500	.60700-01	124.00	.3210	.5203	.3982	.9494	.1571-01	.1203-01	1.834	12.81	535.5
228	26.000	.12440	206.00	.1449	.2357	.1977	.9307	.7126-02	.5975-02	.8229	5.746	536.7
227	26.300	.82200-01	140.00	.1943	.3143	.2487	.9427	.9493-02	.7511-02	1.114	7.783	534.9
228	26.700	.12100	199.00	.1471	.2383	.1991	.9317	.7204-02	.6019-02	.8413	5.879	535.4
228	26.800	.16910	222.00	.8762-01	.1400	.1245	.9208	.4232-02	.3764-02	.5128	3.592	531.0
228	27.000	.19040	237.00	.6727-01	.1037	.9510-01	.9167	.3136-02	.2875-02	.4191	2.956	518.6
228	27.100	.21310	249.00	.4989-01	.7481-01	.7011-01	.9134	.2261-02	.2119-02	.3281	2.329	507.1
228	27.200	.80300-01	180.00	.2609	.4139	.3298	.9435	.1251-01	.9968-02	1.547	10.85	528.6
227	27.400	.40100-01	98.000	.4077	.6785	.4926	.9568	.2049-01	.1488-01	2.236	15.56	543.1
228	27.400	.16480	215.00	.8850-01	.1423	.1258	.9216	.4300-02	.3802-02	.5129	3.589	532.9
227	27.600	.41600-01	102.00	.4155	.6887	.5025	.9563	.2080-01	.1518-01	2.292	15.96	542.0
228	27.600	.12440	205.00	.1428	.2326	.1947	.9310	.7032-02	.5884-02	.8104	5.658	537.0
228	27.600	.18700	230.00	.7857-01	.1213	.1108	.9174	.3665-02	.3348-02	.4888	3.448	518.8
228	27.700	.21010	243.00	.5552-01	.8376-01	.7824-01	.9139	.2532-02	.2365-02	.3607	2.557	509.7
228	27.900	.10110	188.00	.1913	.3068	.2502	.9375	.9275-02	.7563-02	1.113	7.791	532.2
227	28.000	.46800-01	110.00	.3764	.6178	.4575	.9546	.1866-01	.1382-01	2.108	14.70	539.2
228	28.200	.16810	221.00	.9266-01	.1485	.1318	.9210	.4488-02	.3983-02	.5397	3.779	532.0
228	28.300	.19040	236.00	.6539-01	.1006	.9221-01	.9169	.3041-02	.2787-02	.4092	2.888	517.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
228	28.300	.12200	201.00	.1550	.2509	.2097	.9318	.7583-02	.6337-02	.8889	6.213	535.0
227	28.400	.53500-01	114.00	.3608	.5928	.4433	.9525	.1790-01	.1339-01	2.017	14.06	539.5
228	28.400	.21310	248.00	.5367-01	.8050-01	.7539-01	.9136	.2433-02	.2279-02	.3527	2.503	507.3
227	28.700	.58600-01	117.00	.3416	.5559	.4215	.9508	.1679-01	.1273-01	1.939	13.54	536.7
228	28.800	.16580	217.00	.8398-01	.1345	.1190	.9216	.4066-02	.3598-02	.4897	3.429	531.8
227	28.800	.60400-01	121.00	.3239	.5254	.4003	.9503	.1587-01	.1209-01	1.849	12.92	535.7
228	29.000	.21110	244.00	.5264-01	.7906-01	.7391-01	.9139	.2390-02	.2234-02	.3451	2.449	507.8
227	29.000	.65700-01	129.00	.3043	.4942	.3793	.9486	.1493-01	.1145-01	1.733	12.11	536.1
227	29.200	.72400-01	133.00	.2873	.4683	.3623	.9465	.1414-01	.1094-01	1.628	11.36	537.1
227	29.300	.79500-01	136.00	.2461	.3994	.3131	.9442	.1206-01	.9457-02	1.404	9.806	535.8
227	29.600	.92500-01	143.00	.2264	.3718	.2953	.9404	.1123-01	.8917-02	1.267	8.834	539.4
227	29.700	.10000+00	146.00	.1962	.3221	.2587	.9382	.9729-02	.7813-02	1.098	7.654	539.4
228	29.900	.12100	198.00	.1496	.2431	.2022	.9324	.7348-02	.6111-02	.8524	5.954	536.2
228	30.200	.16480	214.00	.8392-01	.1343	.1186	.9220	.4059-02	.3585-02	.4899	3.431	531.5
228	30.300	.21010	242.00	.5744-01	.8658-01	.8078-01	.9142	.2617-02	.2442-02	.3738	2.650	509.4
227	31.500	.11100-01	83.000	.6646	1.218	.7959	.9637	.3679-01	.2404-01	3.201	22.00	565.2
228	32.100	.21010	241.00	.6207-01	.9349-01	.8716-01	.9144	.2826-02	.2634-02	.4046	2.869	509.0
228	32.200	.16480	213.00	.8631-01	.1378	.1216	.9224	.4165-02	.3675-02	.5058	3.544	530.8
228	32.200	.17860	224.00	.9780-01	.1535	.1381	.9196	.4639-02	.4173-02	.5907	4.152	524.9
228	32.200	.18700	228.00	.7600-01	.1168	.1065	.9180	.3532-02	.3219-02	.4763	3.362	517.3
228	32.300	.12100	197.00	.1551	.2519	.2090	.9329	.7612-02	.6316-02	.8839	6.174	536.1
228	32.300	.12300	194.00	.1385	.2249	.1871	.9323	.6797-02	.5656-02	.7897	5.516	536.0
228	32.300	.12730	208.00	.1481	.2438	.2028	.9312	.7369-02	.6131-02	.8259	5.756	540.1
228	32.300	.13420	209.00	.1241	.2064	.1726	.9295	.6239-02	.5218-02	.6812	4.740	543.0
227	32.400	.10000+00	147.00	.1981	.3286	.2618	.9388	.9923-02	.7906-02	1.092	7.604	542.1
228	32.400	.10110	184.00	.1943	.3127	.2533	.9384	.9453-02	.7658-02	1.123	7.858	533.4
228	32.400	.10530	193.00	.1821	.2924	.2389	.9370	.8839-02	.7222-02	1.057	7.398	532.6
228	32.500	.85800-01	163.00	.2447	.3938	.3120	.9430	.1190-01	.9431-02	1.416	9.909	533.2
227	32.600	.79500-01	137.00	.1980	.3238	.2518	.9450	.9779-02	.7604-02	1.115	7.778	538.2
228	32.600	.80800-01	176.00	.2576	.4128	.3254	.9446	.1248-01	.9835-02	1.501	10.51	531.9
227	32.700	.67400-01	132.00	.3068	.5010	.3826	.9489	.1513-01	.1155-01	1.732	12.08	537.8
227	32.700	.72400-01	134.00	.3002	.4912	.3776	.9473	.1483-01	.1141-01	1.690	11.79	538.3
227	32.800	.65700-01	130.00	.3080	.5017	.3827	.9495	.1515-01	.1156-01	1.747	12.19	536.9
228	32.800	.16680	210.00	.8901-01	.1422	.1257	.9220	.4299-02	.3798-02	.5210	3.650	531.0
228	32.800	.18880	225.00	.7282-01	.1120	.1022	.9178	.3385-02	.3089-02	.4562	3.220	517.4
227	32.900	.58600-01	118.00	.4042	.6643	.4982	.9518	.2006-01	.1505-01	2.259	15.75	539.6
227	32.900	.60400-01	122.00	.3266	.5331	.4027	.9512	.1610-01	.1216-01	1.846	12.88	537.6
228	32.900	.61300-01	171.00	.3220	.5145	.3944	.9509	.1555-01	.1192-01	1.884	13.20	531.0
227	33.000	.53500-01	115.00	.3694	.6064	.4513	.9536	.1832-01	.1363-01	2.068	14.42	539.3
227	33.200	.48300-01	113.00	.3829	.6280	.4636	.9554	.1897-01	.1400-01	2.147	14.97	539.0
228	33.400	.42800-01	166.00	.3995	.6428	.4765	.9573	.1943-01	.1440-01	2.311	16.17	533.3
227	33.500	.40100-01	99.000	.4201	.6907	.5022	.9583	.2086-01	.1517-01	2.347	16.36	539.7
227	33.600	.38300-01	97.000	.4396	.7261	.5246	.9589	.2193-01	.1584-01	2.438	16.99	541.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
227	33.700	.36700-01	96.000	.4673	.7784	.5575	.9595	.2351-01	.1684-01	2.560	17.81	543.3
227	33.900	.33800-01	95.000	.4789	.8012	.5692	.9606	.2420-01	.1719-01	2.606	18.12	544.5
228	34.700	.21010	240.00	.6545-01	.9843-01	.9167-01	.9146	.2975-02	.2771-02	.4280	3.036	508.4
228	34.700	.18700	227.00	.8022-01	.1235	.1124	.9184	.3734-02	.3397-02	.5011	3.536	518.0
228	34.900	.16480	212.00	.9199-01	.1475	.1296	.9228	.4457-02	.3918-02	.5356	3.750	532.0
227	35.100	.10000+00	148.00	.1973	.3286	.2604	.9393	.9925-02	.7865-02	1.080	7.512	543.4
228	35.200	.23900-01	161.00	.5792	.9810	.6780	.9644	.2965-01	.2049-01	3.098	21.50	547.7
227	35.300	.92500-01	145.00	.2191	.3637	.2853	.9416	.1098-01	.8618-02	1.206	8.397	542.4
227	35.300	.22100-01	160.00	.5385	.9284	.6326	.9646	.2804-01	.1911-01	2.806	19.43	552.1
228	35.400	.18800	231.00	.8162-01	.1254	.1142	.9183	.3791-02	.3452-02	.5119	3.613	517.2
228	35.500	.12100	196.00	.1568	.2562	.2113	.9335	.7744-02	.6387-02	.8856	6.180	537.8
228	35.600	.16580	216.00	.9021-01	.1444	.1270	.9227	.4363-02	.3840-02	.5268	3.689	531.5
227	35.800	.80600-01	138.00	.2548	.4172	.3237	.9454	.1260-01	.9775-02	1.433	10.000	538.4
228	35.900	.21310	247.00	.5989-01	.8964-01	.8368-01	.9143	.2710-02	.2529-02	.3953	2.807	506.3
228	36.000	.19040	235.00	.7809-01	.1198	.1093	.9180	.3622-02	.3305-02	.4909	3.466	516.7
228	36.200	.16810	220.00	.9712-01	.1550	.1368	.9223	.4684-02	.4134-02	.5699	3.993	530.5
227	36.200	.72400-01	135.00	.2955	.4845	.3706	.9480	.1463-01	.1119-01	1.658	11.56	538.9
228	36.300	.12200	200.00	.1528	.2505	.2064	.9334	.7570-02	.6239-02	.8585	5.988	538.8
227	36.600	.65700-01	131.00	.3018	.4966	.3749	.9503	.1500-01	.1132-01	1.684	11.73	540.0
228	36.700	.18700	226.00	.7748-01	.1192	.1083	.9187	.3602-02	.3273-02	.4850	3.423	517.6
228	36.900	.16480	211.00	.9753-01	.1567	.1374	.9231	.4737-02	.4154-02	.5657	3.959	532.8
228	36.900	.10110	187.00	.2109	.3414	.2745	.9394	.1032-01	.8297-02	1.208	8.443	535.2
227	37.000	.60400-01	123.00	.3307	.5418	.4065	.9521	.1636-01	.1228-01	1.857	12.95	538.7
228	37.000	.12440	204.00	.1531	.2516	.2076	.9329	.7605-02	.6276-02	.8566	5.972	539.6
227	37.100	.58600-01	119.00	.3516	.5773	.4312	.9528	.1744-01	.1302-01	1.968	13.72	539.3
228	37.200	.21310	246.00	.6607-01	.9878-01	.9217-01	.9145	.2986-02	.2786-02	.4371	3.105	505.8
228	37.600	.16910	219.00	.9754-01	.1557	.1373	.9225	.4707-02	.4150-02	.5718	4.006	530.7
227	37.800	.10270	150.00	.2044	.3421	.2708	.9391	.1033-01	.8179-02	1.111	7.727	544.6
228	37.900	.12100	195.00	.1582	.2563	.2117	.9340	.7748-02	.6399-02	.9052	6.325	535.4
228	38.000	.80300-01	179.00	.2755	.4437	.3465	.9459	.1341-01	.1047-01	1.592	11.14	533.5
227	38.500	.46800-01	112.00	.3969	.6545	.4776	.9571	.1977-01	.1442-01	2.207	15.38	540.6
228	38.600	.12440	203.00	.1588	.2611	.2151	.9332	.7891-02	.6501-02	.8876	6.187	539.7
228	38.700	.10000+00	185.00	.2079	.3358	.2694	.9401	.1015-01	.8143-02	1.196	8.364	534.3
227	38.900	.82200-01	141.00	.2463	.4071	.3138	.9455	.1229-01	.9478-02	1.365	9.507	541.2
227	39.300	.41600-01	104.00	.4167	.6934	.4981	.9591	.2094-01	.1504-01	2.286	15.91	543.0
228	39.500	.10270	190.00	.2162	.3501	.2814	.9394	.1058-01	.8505-02	1.239	8.658	535.1
228	39.600	.16810	218.00	.9831-01	.1571	.1383	.9228	.4750-02	.4179-02	.5752	4.029	531.1
228	39.900	.19040	233.00	.8030-01	.1227	.1118	.9185	.3709-02	.3379-02	.5090	3.597	515.0
228	40.100	.79500-01	177.00	.2777	.4468	.3480	.9466	.1351-01	.1052-01	1.607	11.25	533.2
228	40.200	.12440	202.00	.1613	.2657	.2183	.9335	.8032-02	.6600-02	.8984	6.261	540.3
228	40.300	.21310	245.00	.5816-01	.8654-01	.8071-01	.9148	.2616-02	.2439-02	.3886	2.764	503.6
227	41.100	.82200-01	142.00	.2536	.4236	.3238	.9460	.1279-01	.9779-02	1.383	9.616	544.1
228	41.100	.60700-01	173.00	.3373	.5429	.4104	.9529	.1641-01	.1241-01	1.950	13.64	533.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K117)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
228	42.600	.59600-01	172.00	.3544	.5729	.4306	.9536	.1732-01	.1301-01	2.035	14.23	534.7
228	43.200	.42000-01	168.00	.4034	.6506	.4762	.9597	.1967-01	.1439-01	2.325	16.26	534.0
228	43.400	.82200-01	181.00	.2476	.3920	.3085	.9464	.1185-01	.9323-02	1.472	10.33	528.0
227	43.600	.62900-01	128.00	.3084	.5065	.3784	.9527	.1530-01	.1143-01	1.725	12.03	539.4
227	45.000	.22900-01	8.0000	.6082	1.056	.7083	.9667	.3189-01	.2139-01	3.139	21.72	553.8
228	46.100	.62900-01	174.00	.3344	.5403	.4070	.9532	.1633-01	.1230-01	1.923	13.44	534.5
228	47.700	.40800-01	167.00	.4501	.7307	.5292	.9611	.2209-01	.1600-01	2.567	17.93	536.0
227	48.400	.44200-01	109.00	.4229	.6997	.5024	.9600	.2113-01	.1517-01	2.339	16.29	541.5
228	51.900	.44800-01	170.00	.3821	.6119	.4488	.9604	.1849-01	.1357-01	2.229	15.61	531.7
228	53.200	.24700-01	163.00	.6065	1.019	.6974	.9678	.3079-01	.2108-01	3.283	22.81	545.6
228	65.200	.24700-01	162.00	.5988	1.006	.6829	.9695	.3040-01	.2064-01	3.241	22.52	545.6
226	90.000	.91000-02	44.000	.6390	1.338	.7508	.9715	.4041-01	.2268-01	2.677	18.19	586.0
226	90.000	.11100-01	45.000	.7788	1.517	.9042	.9715	.4580-01	.2731-01	3.504	23.95	575.7
226	90.000	.13100-01	46.000	.7809	1.482	.9026	.9715	.4475-01	.2726-01	3.614	24.76	571.4
226	90.000	.17000-01	48.000	.7792	1.415	.8937	.9715	.4275-01	.2699-01	3.794	26.11	563.4
226	90.000	.20900-01	50.000	.6151	1.067	.6996	.9715	.3224-01	.2113-01	3.177	21.98	553.6
226	90.000	.24900-01	52.000	.1551	.2601	.1756	.9710	.7856-02	.5304-02	.8404	5.841	545.2
226	90.000	.26900-01	53.000	.5782	.9839	.6589	.9703	.2972-01	.1990-01	3.069	21.29	548.9
226	90.000	.28800-01	54.000	.5664	.9575	.6466	.9696	.2892-01	.1953-01	3.035	21.07	547.3
226	90.000	.32800-01	55.000	.4015	.6330	.4543	.9682	.1912-01	.1372-01	2.402	16.87	526.6
226	90.000	.36700-01	56.000	.4626	.7616	.5319	.9668	.2300-01	.1606-01	2.579	17.98	540.1
226	90.000	.40600-01	57.000	.4703	.7892	.5466	.9655	.2384-01	.1651-01	2.547	17.70	545.4
226	90.000	.48500-01	58.000	.4584	.7703	.5399	.9627	.2326-01	.1631-01	2.478	17.21	545.7
226	90.000	.56400-01	59.000	.4001	.6733	.4776	.9600	.2034-01	.1443-01	2.158	14.99	546.1
226	90.000	.76100-01	60.000	.3180	.5402	.3934	.9534	.1631-01	.1188-01	1.693	11.74	548.4
226	90.000	.95800-01	61.000	.2701	.4623	.3462	.9471	.1396-01	.1046-01	1.422	9.856	550.4
226	90.000	.11550	62.000	.2197	.3733	.2899	.9412	.1128-01	.8755-02	1.169	8.107	548.6
226	135.00	.19000-01	49.000	.6456	1.123	.7522	.9667	.3391-01	.2272-01	3.324	22.99	554.2
226	135.00	.22900-01	51.000	.5862	.9992	.6799	.9667	.3018-01	.2054-01	3.104	21.52	549.4
226	180.00	.91000-02	23.000	.3594	.5820	.4328	.9557	.1758-01	.1307-01	2.056	14.37	535.2
226	180.00	.11100-01	24.000	.6044	1.129	.7612	.9557	.3409-01	.2299-01	2.848	19.54	568.7
226	180.00	.13100-01	25.000	.6433	1.139	.7972	.9557	.3440-01	.2408-01	3.235	22.32	558.2
226	180.00	.15000-01	26.000	.6434	1.129	.7951	.9557	.3410-01	.2401-01	3.274	22.62	556.2
226	180.00	.17000-01	27.000	.6266	1.093	.7728	.9557	.3300-01	.2334-01	3.215	22.23	554.8
226	180.00	.19000-01	28.000	.6033	1.050	.7437	.9557	.3172-01	.2246-01	3.103	21.45	554.4
226	180.00	.20900-01	29.000	.5894	1.004	.7216	.9557	.3033-01	.2179-01	3.122	21.65	549.3
226	180.00	.28800-01	32.000	.4795	.7881	.5855	.9538	.2380-01	.1768-01	2.680	18.69	539.6
226	180.00	.32800-01	33.000	.4295	.6898	.5237	.9523	.2083-01	.1582-01	2.491	17.44	532.6
226	180.00	.36700-01	34.000	.4141	.6758	.5111	.9510	.2041-01	.1544-01	2.341	16.34	537.5
226	180.00	.48500-01	36.000	.3565	.5740	.4462	.9469	.1734-01	.1348-01	2.059	14.40	533.4
226	180.00	.56400-01	37.000	.3225	.5155	.4074	.9443	.1557-01	.1230-01	1.885	13.20	531.2
226	180.00	.76100-01	38.000	.2563	.4042	.3312	.9382	.1221-01	.1000-01	1.534	10.77	526.6
226	180.00	.95800-01	39.000	.1943	.3037	.2567	.9325	.9173-02	.7754-02	1.181	8.309	523.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	HU/HREF H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
226	180.00	.11550	40.000	.1458	.2295	.1983	.9274	.6930-02	.5989-02	.8751	6.147	525.9
226	180.00	.18450	42.000	.5740-01	.8778-01	.8171-01	.9140	.2651-02	.2468-02	.3631	2.566	515.3
226	225.00	.22900-01	30.000	.4906	.8190	.6273	.9456	.2474-01	.1895-01	2.677	18.62	544.0
226	270.00	.91000-02	63.000	.2997	.4646	.3778	.9418	.1403-01	.1141-01	1.848	13.02	520.5
226	270.00	.11100-01	64.000	.3095	.4822	.3910	.9418	.1456-01	.1181-01	1.891	13.31	522.4
226	270.00	.13100-01	65.000	.3975	.6320	.5070	.9418	.1909-01	.1531-01	2.345	16.44	529.3
226	270.00	.17000-01	67.000	.5678	1.014	.7632	.9418	.3062-01	.2305-01	2.825	19.47	559.9
226	270.00	.20900-01	69.000	.5488	.9482	.7271	.9418	.2864-01	.2196-01	2.852	19.74	552.6
226	270.00	.24900-01	71.000	.4599	.7781	.6051	.9413	.2350-01	.1828-01	2.462	17.09	547.5
226	270.00	.28800-01	73.000	.3905	.6474	.5126	.9400	.1955-01	.1548-01	2.153	14.99	542.1
226	270.00	.36700-01	75.000	.3652	.5958	.4822	.9373	.1800-01	.1457-01	2.065	14.41	537.4
226	270.00	.48500-01	77.000	.3055	.4865	.4059	.9335	.1469-01	.1226-01	1.797	12.60	529.9
226	270.00	.56400-01	78.000	.2468	.3907	.3307	.9311	.1180-01	.9988-02	1.467	10.29	527.9
226	270.00	.95800-01	80.000	.1180	.1884	.1674	.9210	.5689-02	.5055-02	.6907	4.839	530.8
226	270.00	.11550	81.000	.8631-01	.1385	.1255	.9171	.4182-02	.3791-02	.5014	3.509	532.3
226	315.00	.19000-01	68.000	.4704	.7748	.5982	.9456	.2340-01	.1807-01	2.621	18.26	540.2
226	315.00	.22900-01	70.000	.4384	.7486	.5658	.9456	.2261-01	.1709-01	2.316	16.05	549.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K118)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 11.00 PHI = .0000 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
261	4.020	-.3903-02	-11.04	62.84	718.7	.4030	169.8	90.02	2568.	.6405-02	.1366-06	3.741
262	4.020	-.3901-02	-11.04	62.90	718.7	.4034	169.8	90.02	2568.	.6412-02	.1366-06	3.745
263	4.020	-.3900-02	-11.04	62.90	718.7	.4034	169.8	90.02	2568.	.6412-02	.1366-06	3.745

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
261	.3788-01	.9565-02
262	.3790-01	.9561-02
263	.3790-01	.9561-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
262	.00000	.91000-02	1.0000	.5301	1.135	.6665	.9616	.4302-01	.2526-01	2.709	18.44	583.8
262	.00000	.15000-01	4.0000	.6327	1.358	.7960	.9616	.5147-01	.3017-01	3.227	21.96	584.1
262	.00000	.17000-01	5.0000	.6433	1.340	.8038	.9616	.5078-01	.3046-01	3.371	22.98	580.4
262	.00000	.19000-01	6.0000	.6096	1.230	.7561	.9616	.4662-01	.2866-01	3.292	22.49	576.2
262	.00000	.24900-01	9.0000	.5528	1.044	.6766	.9611	.3956-01	.2564-01	3.201	22.00	565.9
262	.00000	.26900-01	10.000	.5214	.9642	.6374	.9604	.3655-01	.2416-01	3.092	21.29	562.2
261	.00000	.32800-01	12.000	.4422	.8015	.5440	.9583	.3036-01	.2061-01	2.686	18.53	558.4
261	.00000	.36700-01	13.000	.4022	.7074	.4941	.9569	.2680-01	.1872-01	2.538	17.57	552.1
261	.00000	.40600-01	14.000	.4126	.7409	.5138	.9556	.2807-01	.1946-01	2.535	17.51	556.5
261	.00000	.48500-01	15.000	.3727	.6568	.4680	.9529	.2488-01	.1773-01	2.346	16.24	552.5
261	.00000	.56400-01	16.000	.3449	.6058	.4386	.9504	.2295-01	.1661-01	2.180	15.09	551.8
261	.00000	.76100-01	17.000	.2636	.4450	.3406	.9446	.1686-01	.1290-01	1.761	12.26	542.4
261	.00000	.95800-01	18.000	.9562-01	.1575	.1255	.9394	.5966-02	.4755-02	.6627	4.630	535.7
261	.00000	.11550	19.000	.1696	.2832	.2295	.9349	.1073-01	.8696-02	1.150	8.021	539.6
261	.00000	.16480	20.000	.1002	.1647	.1407	.9265	.6238-02	.5329-02	.6962	4.865	535.2
261	.00000	.21400	22.000	.5676-01	.8708-01	.7778-01	.9224	.3299-02	.2947-02	.4443	3.146	512.1
263	2.0000	.24700-01	165.00	.5179	.9748	.6308	.9618	.3694-01	.2391-01	3.010	20.69	565.3
262	9.0000	.15000-01	157.00	.5843	1.237	.7189	.9645	.4690-01	.2725-01	3.015	20.53	582.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

(R4K118)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
262	9.0000	.17600-01	158.00	.6379	1.345	.7842	.9645	.5099-01	.2972-01	3.305	22.51	582.0
263	9.8000	.24700-01	164.00	.5672	1.133	.6899	.9644	.4293-01	.2615-01	3.095	21.17	574.7
262	10.000	.22900-01	88.000	.5995	1.187	.7258	.9649	.4501-01	.2751-01	3.298	22.57	573.5
262	10.000	.26900-01	90.000	.5459	1.022	.6573	.9636	.3875-01	.2491-01	3.191	21.95	564.4
262	10.000	.34700-01	94.000	.4569	.8020	.5496	.9608	.3040-01	.2083-01	2.893	20.03	551.6
263	14.600	.44200-01	169.00	.4142	.7433	.5062	.9590	.2817-01	.1918-01	2.549	17.61	556.3
262	18.500	.44200-01	106.00	.4264	.7624	.5171	.9602	.2890-01	.1960-01	2.636	18.21	555.6
263	19.600	.62900-01	175.00	.3468	.6105	.4320	.9543	.2314-01	.1637-01	2.187	15.14	552.3
262	19.800	.40800-01	101.00	.4579	.8247	.5516	.9618	.3126-01	.2090-01	2.805	19.37	557.1
262	20.000	.24900-01	89.000	.5706	1.105	.6764	.9677	.4189-01	.2564-01	3.213	22.03	570.1
262	20.000	.28800-01	91.000	.5329	1.004	.6332	.9662	.3804-01	.2400-01	3.094	21.26	565.5
262	20.000	.32800-01	93.000	.5190	.9661	.6202	.9648	.3662-01	.2350-01	3.055	21.02	563.4
263	21.800	.82200-01	182.00	.1126-04	.1325-04	.1219-04	.9490	.5020-06	.4620-06	.2040-03	.1704-02	240.4
262	22.200	.62900-01	125.00	.3616	.6356	.4484	.9551	.2409-01	.1699-01	2.285	15.82	551.9
262	22.400	.44200-01	107.00	.4310	.7701	.5191	.9615	.2919-01	.1967-01	2.665	18.42	555.5
263	22.600	.10270	192.00	.2446	.4198	.3200	.9435	.1591-01	.1213-01	1.596	11.08	546.5
262	23.000	.42000-01	105.00	.4467	.8017	.5359	.9624	.3039-01	.2031-01	2.748	18.98	556.4
262	23.400	.59600-01	120.00	.3797	.6559	.4669	.9566	.2524-01	.1770-01	2.407	16.67	551.4
263	23.900	.21310	250 00	.7391-01	.1167	.1024	.9241	.4421-02	.3880-02	.5493	3.866	522.6
262	24.100	.82200-01	139.00	.2988	.5115	.3779	.9497	.1939-01	.1432-01	1.957	13.60	545.8
263	24.400	.19040	238.00	.9671-01	.1561	.1342	.9266	.5916-02	.5085-02	.6924	4.853	529.8
263	24.400	.12440	207.00	.1877	.3253	.2535	.9386	.1233-01	.9610-02	1.208	8.380	548.8
263	24.800	.16810	223.00	.1260	.2128	.1764	.9299	.8066-02	.6687-02	.8409	5.853	542.6
262	24.900	.62900-01	126.00	.3695	.6497	.4562	.9559	.2462-01	.1729-01	2.333	16.15	552.1
263	25.000	.79500-01	178.00	.3003	.5208	.3794	.9508	.1974-01	.1438-01	1.933	13.40	548.9
263	25.300	.10270	191.00	.2444	.4194	.3185	.9442	.1589-01	.1207-01	1.596	11.09	546.4
263	25.300	.10000+00	186.00	.2361	.4071	.3071	.9450	.1543-01	.1164-01	1.531	10.63	547.6
262	25.500	.60700-01	124.00	.3713	.6516	.4560	.9568	.2470-01	.1728-01	2.351	16.28	551.6
263	26.000	.12440	206.00	.1872	.3250	.2526	.9389	.1232-01	.9573-02	1.203	8.340	549.2
262	26.300	.82200-01	140.00	.3343	.5676	.4200	.9503	.2151-01	.1592-01	2.215	15.40	543.9
263	26.700	.12100	199.00	.1884	.3246	.2519	.9399	.1230-01	.9547-02	1.223	8.488	547.4
263	26.800	.16810	222.00	.1241	.2093	.1733	.9303	.7934-02	.6567-02	.8297	5.776	542.2
263	27.000	.19040	237.00	.9495-01	.1538	.1318	.9270	.5828-02	.4994-02	.6761	4.737	530.8
263	27.100	.21310	249.00	.7367-01	.1162	.1019	.9244	.4406-02	.3861-02	.5479	3.856	522.5
263	27.200	.80300-01	180.00	.3025	.5215	.3806	.9511	.1976-01	.1442-01	1.962	13.62	547.5
262	27.400	.40100-01	98.000	.4912	.9002	.5858	.9645	.3412-01	.2220-01	2.945	20.30	560.5
263	27.400	.16480	215.00	.1250	.2126	.1747	.9309	.8057-02	.6622-02	.8267	5.748	544.2
262	27.600	.41600-01	102.00	.4621	.8415	.5516	.9640	.3190-01	.2091-01	2.791	19.25	559.3
263	27.600	.12440	205.00	.1814	.3164	.2448	.9393	.1199-01	.9278-02	1.159	8.032	550.2
263	27.600	.18700	230.00	.1026	.1657	.1417	.9275	.6282-02	.5372-02	.7327	5.135	530.2
263	27.700	21010	243.00	.7732-01	.1231	.1074	.9248	.4667-02	.4070-02	.5661	3.978	525.5
263	27.900	.10110	188.00	.2520	.4351	.3272	.9453	.1649-01	.1240-01	1.631	11.32	547.9
262	28.000	.46800-01	110.00	.4210	.7540	.5051	.9623	.2858-01	.1914-01	2.596	17.94	556.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K118)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
263	28.200	.16810	221.00	.1267	.2155	.1776	.9305	.8169-02	.6730-02	.8376	5.824	544.3
263	28.300	.19040	236.00	.8970-01	.1450	.1242	.9271	.5494-02	.4707-02	.6410	4.492	530.1
263	28.300	.12200	201.00	.1959	.3375	.2617	.9401	.1279-01	.9918-02	1.271	8.826	547.4
262	28.400	.53500-01	114.00	.4120	.7362	.4998	.9601	.2790-01	.1894-01	2.548	17.61	555.5
263	28.400	.21310	248.00	.7332-01	.1163	.1017	.9245	.4409-02	.3854-02	.5402	3.798	524.3
262	28.700	.58600-01	117.00	.3958	.6972	.4824	.9585	.2643-01	.1828-01	2.494	17.27	552.4
263	28.800	.16580	217.00	.1163	.1973	.1622	.9310	.7476-02	.6149-02	.7723	5.373	543.5
262	28.800	.60400-01	121.00	.3725	.6552	.4551	.9579	.2483-01	.1725-01	2.351	16.28	552.1
263	29.000	.21110	244.00	.7503-01	.1191	.1039	.9248	.4513-02	.3940-02	.5525	3.884	524.4
262	29.000	.65700-01	129.00	.3565	.6241	.4388	.9562	.2365-01	.1663-01	2.264	15.69	551.1
262	29.200	.72400-01	133.00	.3197	.5575	.3974	.9542	.2113-01	.1506-01	2.042	14.15	550.2
262	29.300	.79500-01	136.00	.2891	.4950	.3612	.9520	.1876-01	.1369-01	1.893	13.15	545.9
262	29.600	.92500-01	143.00	.2998	.5176	.3833	.9482	.1962-01	.1453-01	1.941	13.47	547.9
262	29.700	.10000+00	146.00	.2405	.4088	.3091	.9461	.1549-01	.1171-01	1.592	11.07	544.1
263	29.900	.12100	198.00	.1977	.3422	.2638	.9407	.1297-01	.9998-02	1.275	8.847	548.5
263	30.200	.16480	214.00	.1169	.1975	.1623	.9314	.7485-02	.6152-02	.7806	5.434	542.5
263	30.200	.18700	229.00	.9317-01	.1501	.1282	.9279	.5688-02	.4860-02	.6694	4.694	529.1
263	30.300	.21010	242.00	.7820-01	.1247	.1086	.9250	.4727-02	.4115-02	.5711	4.011	526.0
262	31.500	.11100-01	83.000	.7315	1.799	.8783	.9718	.6819-01	.3329-01	3.358	22.68	597.6
263	32.100	.21010	241.00	.8689-01	.1387	.1206	.9252	.5257-02	.4570-02	.6335	4.449	526.3
263	32.200	.16480	213.00	.1187	.2002	.1643	.9318	.7586-02	.6228-02	.7949	5.534	542.0
263	32.200	.17860	224.00	.1234	.2038	.1710	.9294	.7723-02	.6481-02	.8522	5.951	536.5
263	32.200	.18700	228.00	.1097	.1761	.1505	.9281	.6674-02	.5703-02	.7929	5.563	528.0
263	32.300	.12100	197.00	.1997	.3451	.2654	.9412	.1308-01	.1006-01	1.291	8.956	548.1
263	32.300	.12300	194.00	.1793	.3090	.2387	.9407	.1171-01	.9046-02	1.164	8.078	547.4
263	32.300	.12730	208.00	.1664	.2934	.2252	.9397	.1112-01	.8534-02	1.047	7.245	552.7
263	32.300	.13420	209.00	.1646	.2931	.2259	.9381	.1111-01	.8562-02	1.023	7.070	554.7
262	32.400	.10000+00	147.00	.2518	.4325	.3237	.9468	.1639-01	.1227-01	1.642	11.40	546.6
263	32.400	.10110	184.00	.2463	.4260	.3180	.9465	.1614-01	.1205-01	1.590	11.03	548.3
263	32.400	.10630	193.00	.2396	.4116	.3110	.9451	.1560-01	.1179-01	1.563	10.85	546.6
263	32.500	.85800-01	183.00	.2887	.5077	.3662	.9510	.1924-01	.1388-01	1.824	12.63	552.0
262	32.600	.79500-01	137.00	.3386	.5852	.4224	.9529	.2218-01	.1601-01	2.188	15.18	548.2
263	32.600	.80800-01	176.00	.3053	.5341	.3833	.9525	.2024-01	.1453-01	1.942	13.46	550.9
262	32.700	.67400-01	132.00	.3605	.6333	.4431	.9568	.2400-01	.1679-01	2.280	15.79	551.8
262	32.700	.72400-01	134.00	.3596	.6312	.4456	.9552	.2392-01	.1689-01	2.277	15.77	551.6
262	32.800	.65700-01	130.00	.3733	.6558	.4573	.9573	.2486-01	.1733-01	2.360	16.34	551.9
263	32.800	.16680	210.00	.1256	.2117	.1741	.9315	.8025-02	.6599-02	.8415	5.859	541.9
263	32.800	.18880	225.00	.1040	.1680	.1433	.9280	.6367-02	.5432-02	.7435	5.211	530.0
262	32.900	.58600-01	118.00	.3478	.6241	.4233	.9597	.2365-01	.1604-01	2.140	14.78	556.3
262	32.900	.60400-01	122.00	.3803	.6729	.4626	.9591	.2551-01	.1753-01	2.383	16.49	553.4
263	32.900	.61300-01	171.00	.3690	.6585	.4505	.9588	.2496-01	.1708-01	2.286	15.80	555.2
262	33.000	.53500-01	115.00	.4239	.7575	.5105	.9615	.2871-01	.1935-01	2.622	18.12	555.5
262	33.200	.48300-01	113.00	.4305	.7693	.5134	.9633	.2916-01	.1946-01	2.663	18.41	555.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
263	33.400	.42800-01	166.00	.4365	.7919	.5169	.9653	.3002-01	.1959-01	2.649	18.28	558.5
262	33.500	.40100-01	99.000	.4707	.8501	.5539	.9663	.3222-01	.2100-01	2.874	19.84	557.6
262	33.600	.38300-01	97.000	.4849	.8890	.5705	.9670	.3370-01	.2162-01	2.906	20.03	560.6
262	33.700	.36700-01	96.000	.4960	.9228	.5833	.9676	.3498-01	.2211-01	2.921	20.10	563.3
262	33.900	.33800-01	95.000	.5281	.9912	.6184	.9687	.3757-01	.2344-01	3.078	21.16	564.9
263	34.700	.21010	240.00	.9262-01	.1482	.1285	.9255	.5617-02	.4872-02	.6727	4.723	527.0
263	34.700	.18700	227.00	.1066	.1715	.1462	.9285	.6501-02	.5540-02	.7678	5.385	528.7
263	34.900	.16480	212.00	.1283	.2170	.1775	.9322	.8226-02	.6727-02	.8552	5.951	542.8
262	35.100	.10000+00	148.00	.2733	.4717	.3507	.9475	.1788-01	.1329-01	1.770	12.28	547.8
263	35.200	.23900-01	161.00	.6150	1.274	.7156	.9728	.4829-01	.2712-01	3.238	22.08	579.8
262	35.300	.92500-01	145.00	.2890	.5018	.3674	.9497	.1902-01	.1392-01	1.857	12.88	549.2
262	35.300	.22100-01	160.00	.5397	1.099	.6257	.9730	.4166-01	.2372-01	2.888	19.72	577.5
263	35.400	.18800	231.00	.1098	.1771	.1508	.9284	.6714-02	.5716-02	.7866	5.514	529.7
263	35.500	.12100	196.00	.2091	.3643	.2777	.9420	.1381-01	.1053-01	1.336	9.264	550.0
263	35.600	.16580	216.00	.1300	.2195	.1797	.9322	.8320-02	.6810-02	.8675	6.038	542.5
262	35.800	.80600-01	138.00	.2926	.5036	.3635	.9534	.1909-01	.1378-01	1.903	13.21	547.1
263	35.900	.21310	247.00	.8992-01	.1432	.1246	.9253	.5429-02	.4721-02	.6581	4.623	525.6
263	36.000	.19040	235.00	.1141	.1842	.1570	.9282	.6983-02	.5951-02	.8160	5.720	529.9
263	36.200	.16810	220.00	.1299	.2186	.1796	.9319	.8287-02	.6806-02	.8722	6.074	541.6
262	36.200	.72400-01	135.00	.3427	.6010	.4224	.9561	.2278-01	.1601-01	2.173	15.05	551.4
263	36.300	.12200	200.00	.2013	.3517	.2678	.9419	.1333-01	.1015-01	1.282	8.884	550.6
262	36.600	.65700-01	131.00	.3802	.6779	.4651	.9584	.2569-01	.1763-01	2.358	16.30	555.0
263	36.700	.18700	226.00	.1105	.1780	.1513	.9288	.6745-02	.5736-02	.7931	5.561	529.2
263	36.900	.16480	211.00	.1325	.2250	.1833	.9326	.8527-02	.6946-02	.8774	6.102	543.9
263	36.900	.10110	187.00	.2665	.4669	.3437	.9476	.1770-01	.1303-01	1.691	11.71	551.2
262	37.000	.60400-01	123.00	.3936	.6991	.4763	.9603	.2650-01	.1805-01	2.454	16.97	554.2
263	37.000	.12440	204.00	.2027	.3536	.2702	.9415	.1340-01	.1024-01	1.293	8.963	550.3
262	37.100	.58600-01	119.00	.4166	.7437	.5031	.9609	.2819-01	.1907-01	2.580	17.83	555.3
263	37.200	.21310	246.00	.8950-01	.1424	.1238	.9254	.5399-02	.4693-02	.6560	4.609	525.3
263	37.600	.16810	219.00	.1325	.2233	.1831	.9321	.8464-02	.6939-02	.8879	6.182	541.9
262	37.800	.10270	150.00	.2647	.4573	.3400	.9474	.1733-01	.1289-01	1.712	11.88	548.0
263	37.900	.12100	195.00	.2315	.4001	.3055	.9425	.1516-01	.1158-01	1.496	10.38	548.1
263	38.000	.80300-01	179.00	.3214	.5652	.4007	.9541	.2142-01	.1519-01	2.029	14.05	552.1
262	38.500	.46800-01	112.00	.4515	.8194	.5346	.9654	.3106-01	.2026-01	2.740	18.90	558.6
263	38.600	.12440	203.00	.2068	.3614	.2753	.9418	.1370-01	.1043-01	1.317	9.123	550.7
263	38.700	.10000+00	185.00	.2599	.4519	.3329	.9484	.1713-01	.1262-01	1.666	11.55	549.5
262	38.900	.82200-01	141.00	.2962	.5165	.3690	.9537	.1958-01	.1399-01	1.892	13.11	550.2
262	39.300	.41600-01	104.00	.4781	.8867	.5624	.9675	.3361-01	.2132-01	2.827	19.46	562.7
263	39.500	.10270	190.00	.2636	.4598	.3391	.9478	.1743-01	.1285-01	1.682	11.66	550.3
263	39.600	.16810	218.00	.1305	.2203	.1802	.9324	.8351-02	.6828-02	.8725	6.074	542.3
263	39.900	.19040	233.00	.1112	.1789	.1523	.9287	.6782-02	.5773-02	.8003	5.613	528.8
263	40.100	.79500-01	177.00	.3269	.5739	.4056	.9549	.2175-01	.1537-01	2.068	14.32	551.7
263	40.200	.12440	202.00	.2087	.3662	.2778	.9422	.1388-01	.1053-01	1.322	9.155	551.6

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K118)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
263	40.300	.21310	245.00	.8806-01	.1396	.1213	.9257	.5290-02	.4598-02	.6499	4.570	523.9
262	41.100	.82200-01	142.00	.3478	.6134	.4336	.9543	.2325-01	.1643-01	2.188	15.15	552.7
263	41.100	.60700-01	173.00	.3882	.7003	.4691	.9613	.2654-01	.1778-01	2.372	16.38	557.4
263	42.300	.10270	189.00	.1126-04	.1325-04	.1220-04	.9485	.5020-06	.4624-06	.2040-03	.1704-02	240.4
263	42.600	.59600-01	172.00	.4018	.7327	.4848	.9621	.2777-01	.1837-01	2.423	16.71	559.5
263	43.200	.42000-01	168.00	.4371	.7979	.5099	.9684	.3024-01	.1933-01	2.633	18.15	559.8
263	43.400	.82200-01	181.00	.2795	.4839	.3453	.9549	.1834-01	.1309-01	1.803	12.51	548.5
262	43.600	.62900-01	128.00	.3721	.6609	.4480	.9612	.2505-01	.1698-01	2.319	16.04	554.2
262	45.000	.22900-01	8.0000	.6036	1.231	.6889	.9757	.4667-01	.2611-01	3.225	22.02	577.7
263	46.100	.62900-01	174.00	.3839	.6945	.4629	.9619	.2632-01	.1754-01	2.338	16.13	558.0
263	47.700	.40800-01	167.00	.4853	.9083	.5641	.9700	.3442-01	.2138-01	2.838	19.52	564.3
262	48.400	.44200-01	109.00	.4764	.8738	.5547	.9690	.3312-01	.2102-01	2.853	19.66	560.7
263	53.200	.24700-01	163.00	.6615	1.353	.7482	.9773	.5127-01	.2836-01	3.526	24.07	578.0
263	65.200	.24700-01	162.00	.6561	1.350	.7326	.9797	.5116-01	.2777-01	3.478	23.73	578.8
261	90.000	.91000-02	44.000	.6142	2.476	.7092	.9822	.9380-01	.2687-01	2.224	14.82	623.1
261	90.000	.11100-01	45.000	.7659	2.550	.8749	.9822	.9660-01	.3314-01	2.980	19.94	615.9
261	90.000	.13100-01	46.000	.8099	2.381	.9177	.9822	.9019-01	.3477-01	3.342	22.43	609.8
261	90.000	.17000-01	48.000	.6868	1.663	.7669	.9822	.6300-01	.2905-01	3.185	21.53	596.2
261	90.000	.20900-01	50.000	.7040	1.529	.7789	.9822	.5794-01	.2951-01	3.551	24.15	585.5
261	90.000	.24900-01	52.000	.5970	1.227	.6589	.9817	.4648-01	.2496-01	3.165	21.60	578.7
261	90.000	.26900-01	53.000	.6287	1.306	.6977	.9809	.4946-01	.2643-01	3.302	22.51	580.1
261	90.000	.28800-01	54.000	.6148	1.254	.6837	.9802	.4750-01	.2590-01	3.284	22.42	577.7
261	90.000	.32800-01	55.000	.4326	.7515	.4755	.9787	.2847-01	.1802-01	2.775	19.25	549.3
261	90.000	.36700-01	56.000	.5084	.9781	.5707	.9773	.3705-01	.2162-01	2.882	19.77	569.0
261	90.000	.40600-01	57.000	.5207	1.032	.5916	.9758	.3910-01	.2241-01	2.861	19.58	573.6
261	90.000	.46500-01	58.000	.4745	.9238	.5464	.9729	.3500-01	.2070-01	2.656	18.20	570.9
261	90.000	.56400-01	59.000	.4620	.8809	.5386	.9701	.3337-01	.2040-01	2.645	18.16	567.6
261	90.000	.76100-01	60.000	.3980	.7405	.4794	.9633	.2805-01	.1816-01	2.342	16.12	563.3
261	90.000	.95800-01	61.000	.3322	.6025	.4119	.9568	.2283-01	.1561-01	2.016	13.91	558.5
261	90.000	.11550	62.000	.2715	.4795	.3450	.9509	.1817-01	.1307-01	1.704	11.79	553.0
261	135.00	.19000-01	49.000	.7047	1.544	.8119	.9757	.5847-01	.3076-01	3.531	23.99	586.4
261	135.00	.22900-01	51.000	.6382	1.338	.7310	.9757	.5068-01	.2769-01	3.323	22.64	581.2
261	180.00	.91000-02	23.000	.4436	.8924	.5499	.9616	.3381-01	.2083-01	2.402	16.42	575.7
261	180.00	.11100-01	24.000	.6070	1.428	.7791	.9616	.5408-01	.2951-01	2.875	19.46	593.6
261	180.00	.13100-01	25.000	.6127	1.315	.7709	.9616	.4980-01	.2920-01	3.124	21.26	584.1
261	180.00	.15000-01	26.000	.6004	1.282	.7545	.9616	.4857-01	.2858-01	3.074	20.92	583.5
261	180.00	.17000-01	27.000	.6075	1.291	.7626	.9616	.4890-01	.2889-01	3.124	21.27	582.9
261	180.00	.19000-01	28.000	.6101	1.292	.7654	.9616	.4896-01	.2899-01	3.146	21.43	582.5
261	180.00	.20900-01	29.000	.5992	1.213	.7439	.9616	.4597-01	.2818-01	3.223	22.02	576.7
261	180.00	.28800-01	32.000	.5020	.9409	.6183	.9597	.3565-01	.2342-01	2.929	20.14	564.6
261	180.00	.32800-01	33.000	.4434	.7948	.5438	.9583	.3011-01	.2060-01	2.731	18.87	556.1
261	180.00	.36700-01	34.000	.4481	.8210	.5572	.9569	.3110-01	.2111-01	2.687	18.52	560.4
261	180.00	.48500-01	36.000	.3752	.6678	.4727	.9529	.2530-01	.1791-01	2.331	16.12	554.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
261	180.00	.56400-01	37.000	.3559	.6239	.4523	.9504	.2363-01	.1713-01	2.256	15.62	551.4
261	180.00	.76100-01	38.000	.2767	.4700	.3585	.9445	.1780-01	.1358-01	1.833	12.75	543.9
261	180.00	.95800-01	39.000	.2406	.4008	.3176	.9394	.1518-01	.1203-01	1.639	11.43	538.8
261	180.00	.11550	40.000	.1786	.2966	.2411	.9349	.1123-01	.9133-02	1.223	8.531	538.0
261	180.00	.18450	42.000	.8334-01	.1322	.1157	.9243	.5009-02	.4383-02	.6136	4.314	524.3
261	225.00	.22900-01	30.000	.4763	.8931	.6229	.9496	.3383-01	.2360-01	2.779	19.11	564.7
261	270.00	.91000-02	63.000	.4411	.7888	.5815	.9452	.2988-01	.2203-01	2.724	18.82	555.7
261	270.00	.11100-01	64.000	.4740	.8608	.6287	.9452	.3261-01	.2382-01	2.872	19.81	558.7
261	270.00	.13100-01	65.000	.5189	1.026	.7117	.9452	.3888-01	.2696-01	2.858	19.56	573.3
261	270.00	.17000-01	67.000	.5581	1.100	.7644	.9452	.4167-01	.2896-01	3.084	21.11	572.8
261	270.00	.20900-01	69.000	.4442	.8491	.6012	.9452	.3217-01	.2278-01	2.536	17.40	568.0
261	270.00	.24900-01	71.000	.4269	.8003	.5751	.9448	.3032-01	.2179-01	2.492	17.13	564.6
261	270.00	.28800-01	73.000	.4084	.7441	.5480	.9435	.2819-01	.2076-01	2.465	17.00	559.4
261	270.00	.36700-01	75.000	.3567	.6413	.4828	.9411	.2429-01	.1829-01	2.188	15.11	556.7
261	270.00	.48500-01	77.000	.2938	.5102	.3990	.9378	.1933-01	.1512-01	1.885	13.07	549.3
261	270.00	.56400-01	78.000	.2841	.4895	.3889	.9358	.1854-01	.1473-01	1.844	12.80	547.4
261	270.00	.95800-01	80.000	.1408	.2350	.1981	.9279	.8903-02	.7504-02	.9565	6.669	539.4
261	270.00	.11550	81.000	.1017	.1700	.1454	.9252	.6442-02	.5509-02	.6884	4.799	539.9
261	315.00	.19000-01	68.000	.4198	.7578	.5416	.9496	.2871-01	.2052-01	2.563	17.69	557.5
261	315.00	.22900-01	70.000	.5454	1.048	.7194	.9496	.3970-01	.2725-01	3.096	21.24	568.8

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K128)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -9.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
241	5.500	-.6362-02	9.038	173.6	731.7	.1866	103.8	-90.04	2747.	.4854-02	.8351-07	4.961
242	5.500	-.9436-02	8.938	173.6	732.7	.1866	103.9	-90.06	2749.	.4846-02	.8363-07	4.950
243	5.500	-.1272-01	9.032	173.6	733.7	.1866	104.1	-90.08	2750.	.4839-02	.8374-07	4.940

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
241	.3540-01	.1102-01
242	.3540-01	.1103-01
243	.3541-01	.1104-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
242	.00000	.91000-02	1.0000	.4668	.8178	.5764	.9557	.2895-01	.2041-01	2.821	19.42	562.0
242	.00000	.15000-01	4.0000	.6830	1.302	.8653	.9557	.4609-01	.3063-01	3.727	25.43	578.6
242	.00000	.17000-01	5.0000	.6577	1.190	.8202	.9557	.4212-01	.2904-01	3.815	26.17	568.8
242	.00000	.19000-01	6.0000	.6182	1.108	.7689	.9557	.3923-01	.2722-01	3.627	24.91	566.9
242	.00000	.24900-01	9.0000	.5509	.9600	.6808	.9552	.3399-01	.2410-01	3.353	23.11	560.7
242	.00000	.26900-01	10.000	.5188	.8930	.6411	.9545	.3162-01	.2270-01	3.212	22.17	557.8
241	.00000	.32800-01	12.000	.4522	.7635	.5612	.9523	.2703-01	.1987-01	2.871	19.88	552.3
241	.00000	.36700-01	13.000	.3995	.6585	.4950	.9510	.2331-01	.1752-01	2.632	18.29	545.6
241	.00000	.40600-01	14.000	.4141	.6934	.5195	.9496	.2454-01	.1839-01	2.663	18.46	550.0
241	.00000	.48500-01	15.000	.3632	.6003	.4595	.9469	.2125-01	.1627-01	2.381	16.54	546.4
241	.00000	.56400-01	16.000	.3464	.5710	.4435	.9443	.2021-01	.1570-01	2.281	15.85	545.6
241	.00000	.76100-01	17.000	.2607	.4179	.3397	.9382	.1479-01	.1202-01	1.795	12.53	537.2
241	.00000	.11550	19.000	.1567	.2494	.2146	.9274	.8826-02	.7596-02	1.093	7.637	534.7
241	.00000	.16480	20.000	.8105-01	.1286	.1159	.9171	.4551-02	.4137-02	.5681	3.974	533.7
241	.00000	.21400	22.000	.3887-01	.5795-01	.5501-01	.9109	.2051-02	.1947-02	.3057	2.168	509.5
243	2.0000	.24700-01	165.00	.4987	.8324	.6092	.9547	.2947-01	.2157-01	3.232	22.39	550.7
242	9.0000	.15000-01	157.00	.6024	1.101	.7635	.9534	.3897-01	.2703-01	3.451	23.65	570.8
242	9.0000	.17600-01	158.00	.5943	1.073	.7503	.9534	.3798-01	.2656-01	3.457	23.72	568.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
243	9.8000	.24700-01	164.00	.5391	.9181	.6697	.9528	.3251-01	.2371-01	3.393	23.44	555.9
242	10.000	.22900-01	88.000	.5624	.9932	.7058	.9532	.3516-01	.2499-01	3.364	23.14	563.7
242	10.000	.26900-01	90.000	.5133	.8800	.6418	.9520	.3115-01	.2272-01	3.194	22.06	556.9
242	10.000	.34700-01	94.000	.4147	.6670	.5134	.9492	.2361-01	.1818-01	2.844	19.84	539.0
243	14.600	.44200-01	169.00	.3639	.5796	.4580	.9448	.2052-01	.1622-01	2.539	17.73	536.6
242	18.500	.44200-01	106.00	.3664	.5984	.4682	.9439	.2118-01	.1658-01	2.451	17.05	543.7
243	19.600	.62900-01	175.00	.2683	.4196	.3462	.9376	.1486-01	.1226-01	1.932	13.54	530.3
242	19.800	.40800-01	101.00	.3869	.6343	.4931	.9447	.2245-01	.1746-01	2.573	17.88	544.8
242	20.000	.24900-01	89.000	.5131	.8854	.6487	.9503	.3135-01	.2297-01	3.165	21.84	558.4
242	20.000	.28800-01	91.000	.4808	.8208	.6100	.9489	.2906-01	.2160-01	3.011	20.80	555.8
242	20.000	.32800-01	93.000	.4480	.7534	.5692	.9475	.2667-01	.2015-01	2.866	19.84	552.0
242	22.200	.62900-01	125.00	.2759	.4440	.3621	.9371	.1572-01	.1282-01	1.889	13.18	539.2
242	22.400	.44200-01	107.00	.3534	.5778	.4538	.9430	.2046-01	.1607-01	2.360	16.41	544.0
243	22.600	.10270	192.00	.1486	.2296	.2011	.9260	.8131-02	.7121-02	1.093	7.680	525.8
242	23.000	.42000-01	105.00	.3744	.6115	.4791	.9436	.2165-01	.1696-01	2.504	17.42	543.7
242	23.400	.59600-01	120.00	.2961	.4759	.3869	.9379	.1685-01	.1370-01	2.033	14.18	538.8
243	23.900	.21310	250.00	.2382-01	.3501-01	.3344-01	.9100	.1240-02	.1184-02	.1935	1.376	504.2
242	24.100	.82200-01	139.00	.2085	.3319	.2803	.9311	.1175-01	.9924-02	1.456	10.17	535.5
243	24.400	.19040	238.00	.3577-01	.5343-01	.5067-01	.9111	.1892-02	.1794-02	.2810	1.990	511.8
243	24.400	.12440	207.00	.1051	.1640	.1469	.9208	.5806-02	.5201-02	.7600	5.328	529.4
243	24.800	.16810	223.00	.5525-01	.8494-01	.7926-01	.9133	.3008-02	.2806-02	.4106	2.888	523.8
242	24.900	.62900-01	126.00	.2732	.4392	.3595	.9365	.1555-01	.1273-01	1.875	13.08	538.8
243	25.000	.79500-01	178.00	.2158	.3355	.2854	.9316	.1188-01	.1011-01	1.572	11.03	528.0
243	25.300	.10270	191.00	.1456	.2251	.1976	.9255	.7972-02	.6998-02	1.072	7.529	525.9
243	25.300	.10000+00	186.00	.1507	.2334	.2041	.9262	.8264-02	.7226-02	1.104	7.753	526.7
242	25.500	.60700-01	124.00	.2814	.4517	.3690	.9371	.1599 01	.1306-01	1.937	13.51	538.3
243	26.000	.12440	206.00	.1016	.1586	.1422	.9205	.5617-02	.5036-02	.7342	5.147	529.6
242	26.300	.82200-01	140.00	.2429	.3851	.3265	.9307	.1363-01	.1156-01	1.706	11.93	534.3
243	26.700	.12100	199.00	.1025	.1594	.1427	.9211	.5644-02	.5052-02	.7463	5.236	528.1
243	26.800	.16810	222.00	.4865-01	.7463-01	.6973-01	.9131	.2642-02	.2469-02	.3630	2.554	522.9
243	27.000	.19040	237.00	.3568-01	.5321-01	.5051-01	.9109	.1884-02	.1788-02	.2812	1.992	511.1
243	27.100	.21310	249.00	.2469-01	.3621-01	.3460-01	.9100	.1282-02	.1225-02	.2015	1.433	503.2
243	27.200	.80300-01	180.00	.2067	.3204	.2738	.9309	.1134-01	.9694-02	1.513	10.63	526.9
242	27.400	.40100-01	98.000	.4036	.6653	.5194	.9433	.2355-01	.1839-01	2.662	18.49	546.4
243	27.400	.16480	215.00	.5090-01	.7849-01	.7314-01	.9135	.2779-02	.2590-02	.3762	2.644	524.9
242	27.600	.41600-01	102.00	.3668	.6015	.4723	.9428	.2130-01	.1672-01	2.438	16.95	544.9
243	27.600	.12440	205.00	.9864-01	.1539	.1382	.9203	.5451-02	.4895-02	.7134	5.001	529.4
243	27.600	.18700	230.00	.2864-01	.4275-01	.4053-01	.9111	.1514-02	.1435-02	.2253	1.596	511.4
243	27.700	.21010	243.00	.2712-01	.3992-01	.3812-01	.9100	.1413-02	.1350-02	.2198	1.562	504.8
243	27.900	.10110	188.00	.1426	.2215	.1943	.9254	.7843-02	.6879-02	1.044	7.330	527.2
242	28.000	.46800-01	110.00	.3227	.5244	.4175	.9410	.1857-01	.1478-01	2.176	15.15	542.2
243	28.200	.16810	221.00	.4771-01	.7323-01	.6846-01	.9130	.2593-02	.2424-02	.3556	2.502	523.2
243	28.300	.19040	236.00	.3669-01	.5459-01	.5186-01	.9108	.1933-02	.1836-02	.2905	2.059	510.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K128)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
243	28.300	.12200	201.00	.1079	.1677	.1504	.9207	.5937-02	.5326-02	.7854	5.511	528.0
242	28.400	.53500-01	114.00	.3123	.5081	.4088	.9387	.1799-01	.1447-01	2.103	14.64	542.5
243	28.400	.21310	248.00	.2601-01	.3813-01	.3643-01	.9100	.1350-02	.1290-02	.2127	1.514	502.7
242	28.700	.58600-01	117.00	.2910	.4682	.3820	.9371	.1658-01	.1352-01	1.994	13.90	539.1
243	28.800	.16580	217.00	.4832-01	.7425-01	.6932-01	.9132	.2629-02	.2455-02	.3594	2.528	523.6
242	28.800	.60400-01	121.00	.2749	.4407	.3613	.9365	.1560-01	.1279-01	1.896	13.23	537.9
243	29.000	.21110	244.00	.2644-01	.3877-01	.3704-01	.9100	.1373-02	.1312-02	.2159	1.536	503.1
242	29.000	.65700-01	129.00	.2524	.4045	.3343	.9349	.1432-01	.1183-01	1.741	12.15	537.8
242	29.200	.72400-01	133.00	.2289	.3666	.3061	.9329	.1298-01	.1084-01	1.581	11.04	537.6
242	29.300	.79500-01	136.00	.1928	.3064	.2593	.9308	.1085-01	.9180-02	1.348	9.420	535.2
242	29.600	.92500-01	143.00	.1785	.2844	.2447	.9273	.1007-01	.8665-02	1.243	8.683	536.0
242	29.700	.10000+00	146.00	.1387	.2200	.1915	.9254	.7789-02	.6778-02	.9734	6.806	534.4
243	29.900	.12100	198.00	.1024	.1594	.1430	.9206	.5643-02	.5062-02	.7436	5.216	528.5
243	30.200	.16480	214.00	.4561-01	.7013-01	.6547-01	.9132	.2483-02	.2318-02	.3389	2.383	523.8
243	30.200	.18700	229.00	.3649-01	.5436-01	.5159-01	.9110	.1925-02	.1827-02	.2884	2.044	510.5
243	30.300	.21010	242.00	.2817-01	.4137-01	.3952-01	.9100	.1465-02	.1399-02	.2293	1.631	503.8
242	31.500	.11100-01	83.000	.5264	.9316	.6793	.9482	.3298-01	.2405-01	3.139	21.59	564.2
243	32.100	.21010	241.00	.2771-01	.4061-01	.3880-01	.9100	.1438-02	.1374-02	.2266	1.613	502.7
243	32.200	.16480	213.00	.4431-01	.6807-01	.6362-01	.9130	.2410-02	.2253-02	.3298	2.320	523.5
243	32.200	.17860	224.00	.4607-01	.6970-01	.6581-01	.9115	.2468-02	.2330-02	.3531	2.492	517.2
243	32.200	.18700	228.00	.3701-01	.5496-01	.5222-01	.9108	.1946-02	.1849-02	.2943	2.087	509.1
243	32.300	.12100	197.00	.9998-01	.1555	.1397	.9203	.5505-02	.4948-02	.7276	5.105	528.1
243	32.300	.12300	194.00	.9165-01	.1425	.1284	.9199	.5047-02	.4546-02	.6669	4.679	528.2
243	32.300	.12730	208.00	.7851-01	.1233	.1112	.9190	.4365-02	.3938-02	.5615	3.932	531.7
243	32.300	.13420	209.00	.7651-01	.1215	.1100	.9177	.4301-02	.3895-02	.5370	3.753	535.4
242	32.400	.10000+00	147.00	.1339	.2134	.1858	.9250	.7555-02	.6578-02	.9319	6.509	536.1
243	32.400	.10110	184.00	.1373	.2131	.1876	.9247	.7546-02	.6641-02	1.002	7.030	527.6
243	32.400	.10630	193.00	.1241	.1921	.1702	.9234	.6801-02	.6027-02	.9113	6.400	526.3
243	32.500	.85800-01	183.00	.1782	.2781	.2398	.9285	.9847-02	.8491-02	1.289	9.041	529.3
242	32.600	.79500-01	137.00	.2235	.3571	.3025	.9302	.1264-01	.1071-01	1.551	10.83	536.8
243	32.600	.80800-01	176.00	.1888	.2944	.2523	.9298	.1042-01	.8934-02	1.367	9.583	529.2
242	32.700	.67400-01	132.00	.2416	.3883	.3224	.9336	.1375-01	.1142-01	1.659	11.57	538.7
242	32.700	.72400-01	134.00	.2287	.3672	.3073	.9322	.1300-01	.1088-01	1.574	10.98	538.4
242	32.800	.65700-01	130.00	.2509	.4028	.3338	.9341	.1426-01	.1182-01	1.726	12.04	538.4
243	32.800	.16680	210.00	.4309-01	.6620-01	.6197-01	.9127	.2344-02	.2194-02	.3207	2.256	523.5
243	32.800	.18880	225.00	.3507-01	.5218-01	.4960-01	.9107	.1848-02	.1756-02	.2777	1.968	510.0
242	32.900	.58600-01	118.00	.2530	.4099	.3346	.9362	.1451-01	.1185-01	1.714	11.94	541.3
242	32.900	.60400-01	122.00	.2609	.4194	.3446	.9357	.1485-01	.1220-01	1.790	12.49	538.8
243	32.900	.61300-01	171.00	.2627	.4123	.3432	.9353	.1460-01	.1215-01	1.882	13.18	531.4
242	33.000	.53500-01	115.00	.3034	.4918	.3983	.9378	.1741-01	.1410-01	2.055	14.31	541.4
242	33.200	.48300-01	113.00	.3173	.5148	.4134	.9394	.1823-01	.1463-01	2.146	14.94	541.7
243	33.400	.42800-01	166.00	.3464	.5488	.4425	.9411	.1943-01	.1567-01	2.441	17.06	534.7
242	33.500	.40100-01	99.000	.3727	.6060	.4797	.9421	.2145-01	.1698-01	2.512	17.49	542.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K128)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
242	33.600	.38300-01	97.000	.3960	.6501	.5104	.9427	.2302-01	.1807-01	2.628	18.27	545.2
242	33.700	.36700-01	96.000	.3937	.6536	.5086	.9432	.2314-01	.1801-01	2.569	17.82	548.4
242	33.900	.33800-01	95.000	.4338	.7265	.5598	.9441	.2572-01	.1982-01	2.793	19.35	550.8
243	34.700	.21010	240.00	.2727-01	.3983-01	.3807-01	.9100	.1410-02	.1348-02	.2248	1.601	500.9
243	34.700	.18700	227.00	.2988-01	.4448-01	.4227-01	.9107	.1575-02	.1497-02	.2364	1.676	510.2
243	34.900	.16480	212.00	.4642-01	.7150-01	.6687-01	.9128	.2532-02	.2368-02	.3439	2.418	524.4
242	35.100	.10000+00	148.00	.1352	.2160	.1884	.9246	.7648-02	.6669-02	.9376	6.546	536.8
243	35.200	.23900-01	161.00	.5266	.9033	.6750	.9473	.3199-01	.2390-01	3.280	22.64	557.7
242	35.300	.92500-01	145.00	.1542	.2474	.2134	.9264	.8757-02	.7554-02	1.062	7.409	538.1
242	35.300	.22100-01	160.00	.4065	.7162	.5259	.9475	.2535-01	.1862-01	2.438	16.78	563.2
243	35.400	.18800	231.00	.4332-01	.6429-01	.6115-01	.9106	.2277-02	.2165-02	.3450	2.447	508.7
243	35.500	.12100	196.00	.9724-01	.1517	.1366	.9198	.5373-02	.4836-02	.7033	4.931	529.4
243	35.600	.16580	216.00	.4832-01	.7427-01	.6955-01	.9126	.2630-02	.2463-02	.3593	2.527	523.7
242	35.800	.80600-01	138.00	.1856	.2960	.2520	.9294	.1048-01	.8920-02	1.291	9.016	536.2
243	35.900	.21310	247.00	.2433-01	.3538-01	.3385-01	.9100	.1253-02	.1198-02	.2024	1.443	498.8
243	36.000	.19040	235.00	.3553-01	.5266-01	.5014-01	.9104	.1865-02	.1775-02	.2839	2.014	508.1
243	36.200	.16810	220.00	.4667-01	.7154-01	.6714-01	.9123	.2533-02	.2377-02	.3488	2.455	522.6
242	36.200	.72400-01	135.00	.2172	.3485	.2927	.9316	.1234-01	.1036-01	1.496	10.44	538.1
243	36.300	.12200	200.00	.9276-01	.1450	.1307	.9195	.5135-02	.4627-02	.6688	4.687	530.1
242	36.600	.65700-01	131.00	.2499	.4037	.3348	.9334	.1429-01	.1185-01	1.701	11.85	540.4
243	36.700	.18700	226.00	.3676-01	.5459-01	.5192-01	.9106	.1933-02	.1838-02	.2923	2.073	509.1
243	36.900	.16480	211.00	.4761-01	.7337-01	.6868-01	.9126	.2598-02	.2432-02	.3522	2.476	524.7
243	36.900	.10110	187.00	.1355	.2116	.1865	.9240	.7493-02	.6604-02	.9780	6.855	529.8
242	37.000	.60400-01	123.00	.2608	.4204	.3464	.9349	.1488-01	.1226-01	1.782	12.42	539.7
243	37.000	.12440	204.00	.8988-01	.1406	.1270	.9189	.4978-02	.4498-02	.6472	4.535	530.3
242	37.100	.56600-01	119.00	.2800	.4526	.3714	.9355	.1602-01	.1315-01	1.905	13.27	540.5
243	37.200	.21310	246.00	.2179-01	.3164-01	.3027-01	.9100	.1120-02	.1072-02	.1818	1.298	498.0
243	37.600	.16810	219.00	.4555-01	.6980-01	.6554-01	.9122	.2472-02	.2321-02	.3406	2.397	522.5
242	37.800	.10270	150.00	.1261	.2016	.1767	.9235	.7136-02	.6255-02	.8729	6.094	537.1
243	37.900	.12100	195.00	.9720-01	.1510	.1363	.9195	.5348-02	.4827-02	.7084	4.971	527.8
243	38.000	.80300-01	179.00	.1915	.2995	.2574	.9290	.1060-01	.9113-02	1.379	9.665	530.2
242	38.500	.46800-01	112.00	.3190	.5193	.4173	.9389	.1838-01	.1477-01	2.146	14.94	542.7
243	38.600	.12440	203.00	.9126-01	.1429	.1292	.9187	.5059-02	.4574-02	.6562	4.597	530.6
243	38.700	.10000+00	185.00	.1363	.2127	.1875	.9239	.7530-02	.6639-02	.9854	6.908	529.4
242	38.900	.82200-01	141.00	.1736	.2780	.2374	.9284	.9842-02	.8404-02	1.199	8.365	537.6
242	39.300	.41600-01	104.00	.3608	.5947	.4711	.9405	.2106-01	.1668-01	2.379	16.53	546.4
243	39.500	.10270	190.00	.1341	.2095	.1853	.9232	.7418-02	.6562-02	.9682	6.786	529.8
243	39.600	.16810	218.00	.4871-01	.7461-01	.7012-01	.9121	.2642-02	.2483-02	.3646	2.566	522.3
243	39.900	.19040	233.00	.3327-01	.4909-01	.4680-01	.9103	.1738-02	.1657-02	.2683	1.906	505.9
243	40.100	.79500-01	177.00	.1869	.2920	.2512	.9289	.1034-01	.8896-02	1.349	9.455	529.9
243	40.200	.12440	202.00	.8885-01	.1393	.1260	.9185	.4932-02	.4462-02	.6374	4.465	531.1
243	40.300	.21310	245.00	.2212-01	.3193-01	.3057-01	.9100	.1130-02	.1082-02	.1872	1.338	494.7
242	41.100	.82200-01	142.00	.1946	.3139	.2678	.9281	.1111-01	.9481-02	1.328	9.257	539.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K128)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
243	41.100	.60700-01	173.00	.2563	.4038	.3376	.9341	.1430-01	.1195-01	1.823	12.75	532.8
243	42.600	.59600-01	172.00	.2638	.4174	.3482	.9341	.1478-01	.1233-01	1.862	13.02	534.3
243	43.200	.42000-01	168.00	.3379	.5388	.4361	.9396	.1908-01	.1544-01	2.354	16.43	536.9
243	43.400	.82200-01	181.00	.2037	.3159	.2741	.9277	.1119-01	.9707-02	1.489	10.45	527.2
242	43.600	.62900-01	128.00	.2393	.3852	.3205	.9331	.1364-01	.1135-01	1.638	11.42	539.3
242	45.000	.22900-01	8.0000	.6644	1.234	.8864	.9457	.4369-01	.3138-01	3.733	25.54	573.9
243	46.100	.62900-01	174.00	.2447	.3864	.3250	.9326	.1368-01	.1151-01	1.734	12.13	533.6
243	47.700	.40800-01	167.00	.3720	.5976	.4827	.9393	.2116-01	.1709-01	2.561	17.86	539.3
242	48.400	.44200-01	109.00	.3371	.5526	.4443	.9381	.1956-01	.1573-01	2.243	15.59	544.7
243	51.900	.44800-01	170.00	.3009	.4747	.3905	.9373	.1681-01	.1383-01	2.135	14.94	533.3
243	53.200	.24700-01	163.00	.5238	.8822	.6781	.9440	.3124-01	.2401-01	3.349	23.18	553.1
243	65.200	.24700-01	162.00	.4978	.8294	.6462	.9426	.2937-01	.2288-01	3.234	22.42	550.2
241	90.000	.91000-02	44.000	.3357	.5353	.4289	.9417	.1895-01	.1518-01	2.331	16.29	535.5
241	90.000	.11100-01	45.000	.3812	.6131	.4889	.9417	.2170-01	.1731-01	2.610	18.21	538.2
241	90.000	.13100-01	46.000	.5214	.8909	.6875	.9417	.3154-01	.2434-01	3.256	22.51	555.2
241	90.000	.17000-01	48.000	.7251	1.348	.9923	.9417	.4773-01	.3512-01	4.063	27.81	573.4
241	90.000	.20900-01	50.000	.5394	.9455	.7194	.9417	.3347-01	.2547-01	3.253	22.41	561.3
241	90.000	.24900-01	52.000	.2899	.4934	.3826	.9413	.1747-01	.1354-01	1.821	12.59	554.2
241	90.000	.26900-01	53.000	.4557	.7782	.6046	.9406	.2754-01	.2140-01	2.848	19.69	555.1
241	90.000	.28800-01	54.000	.4421	.7463	.5855	.9399	.2642-01	.2072-01	2.809	19.45	552.2
241	90.000	.32800-01	55.000	.3198	.5052	.4129	.9386	.1788-01	.1462-01	2.257	15.80	532.3
241	90.000	.36700-01	56.000	.3773	.6165	.4987	.9372	.2182-01	.1765-01	2.518	17.52	543.1
241	90.000	.40600-01	57.000	.3529	.5884	.4745	.9360	.2083-01	.1680-01	2.283	15.84	548.9
241	90.000	.48500-01	58.000	.3056	.5040	.4140	.9335	.1784-01	.1466-01	2.011	13.97	545.8
241	90.000	.56400-01	59.000	.2655	.4355	.3632	.9311	.1542-01	.1286-01	1.762	12.25	544.2
241	90.000	.76100-01	60.000	.1803	.2945	.2533	.9257	.1042-01	.8965-02	1.204	8.374	543.1
241	90.000	.95900-01	61.000	.1315	.2156	.1901	.9210	.7633-02	.6730-02	.8735	6.074	544.1
241	90.000	.11550	62.000	.9257-01	.1506	.1361	.9170	.5331-02	.4816-02	.6222	4.332	541.9
241	135.00	.19000-01	49.000	.5777	1.016	.7547	.9456	.3595-01	.2672-01	3.469	23.89	562.0
241	135.00	.22900-01	51.000	.5404	.9553	.7076	.9456	.3382-01	.2505-01	3.222	22.17	563.2
241	180.00	.91000-02	23.000	.3584	.5882	.4335	.9556	.2082-01	.1534-01	2.375	16.52	544.4
241	180.00	.11100-01	24.000	.6342	1.309	.8223	.9556	.4635-01	.2911-01	3.186	21.61	589.8
241	180.00	.13100-01	25.000	.7214	1.403	.9196	.9556	.4967-01	.3255-01	3.845	26.20	581.1
241	180.00	.15000-01	26.000	.7134	1.369	.9059	.9556	.4847-01	.3207-01	3.857	26.32	578.9
241	180.00	.17000-01	27.000	.6705	1.256	.8452	.9556	.4444-01	.2992-01	3.727	25.49	574.7
241	180.00	.19000-01	28.000	.6296	1.162	.7902	.9556	.4114-01	.2797-01	3.559	24.37	572.0
241	180.00	.20900-01	29.000	.6226	1.116	.7744	.9556	.3949-01	.2741-01	3.649	25.07	566.1
241	180.00	.28800-01	32.000	.5215	.8887	.6447	.9538	.3146-01	.2282-01	3.269	22.60	554.6
241	180.00	.32800-01	33.000	.4836	.7972	.5953	.9523	.2822-01	.2107-01	3.185	22.13	545.6
241	180.00	.36700-01	34.000	.4555	.7631	.5677	.9510	.2701-01	.2010-01	2.926	20.28	550.2
241	180.00	.48500-01	36.000	.3875	.6344	.4884	.9469	.2246-01	.1729-01	2.578	17.93	543.7
241	180.00	.56400-01	37.000	.3574	.5796	.4544	.9443	.2052-01	.1609-01	2.415	16.83	540.8
241	180.00	.76100-01	38.000	.2768	.4432	.3605	.9382	.1569-01	.1276-01	1.910	13.34	536.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

(R4K128)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	HU/HREF H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
241	180.00	.95800-01	39.000	.2098	.3324	.2793	.9325	.1177-01	.9887-02	1.473	10.31	533.3
241	180.00	.11550	40.000	.1634	.2605	.2240	.9274	.9222-02	.7930-02	1.134	7.925	535.5
241	180.00	.18450	42.000	.6316-01	.9735-01	.9048-01	.9140	.3446-02	.3203-02	.4657	3.276	523.4
241	225.00	.22900-01	30.000	.6377	1.138	.7472	.9667	.4029-01	.2645-01	3.757	25.82	565.3
241	270.00	.91000-02	63.000	.6579	1.527	.7851	.9715	.5406-01	.2779-01	2.994	20.16	603.1
241	270.00	.11100	64.000	.7995	1.782	.9483	.9715	.6306-01	.3357-01	3.756	25.36	598.9
241	270.00	.13100-01	65.000	.8130	1.760	.9600	.9715	.6230-01	.3398-01	3.913	26.46	595.7
241	270.00	.17000-01	67.000	.7153	1.419	.8329	.9715	.5024-01	.2948-01	3.736	25.42	584.1
241	270.00	.20900-01	69.000	.7193	1.368	.8315	.9715	.4842-01	.2943-01	3.928	26.83	577.4
241	270.00	.24900-01	71.000	.6572	1.234	.7599	.9711	.4367-01	.2690-01	3.642	24.90	575.1
241	270.00	.28800-01	73.000	.5987	1.072	.6913	.9697	.3796-01	.2447-01	3.511	24.12	566.0
241	270.00	.36700-01	75.000	.5619	.9960	.6567	.9669	.3526-01	.2325-01	3.339	22.97	563.8
241	270.00	.48500-01	77.000	.4771	.8191	.5649	.9628	.2899-01	.2000-01	2.959	20.44	556.5
241	270.00	.56400-01	78.000	.4414	.7557	.5294	.9601	.2675-01	.1874-01	2.748	18.99	555.8
241	270.00	.95800-01	80.000	.2871	.4851	.3660	.9472	.1717-01	.1295-01	1.822	12.61	552.4
241	270.00	.11550	81.000	.2467	.4129	.3232	.9412	.1461-01	.1144-01	1.588	11.01	549.8
241	315.00	.19000-01	68.000	.5997	1.060	.7012	.9667	.3753-01	.2482-01	3.576	24.61	563.2
241	315.00	.22900-01	70.000	.5616	1.029	.6617	.9667	.3642-01	.2342-01	3.204	21.96	570.5

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K129)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = -6.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
244	5.500	-.8419-02	6.008	173.6	733.7	.1866	104.1	-90.08	2750.	.4840-02	.8374-07	4.941
245	5.500	-.8453-02	6.032	174.1	734.7	.1871	104.2	-90.08	2752.	.4845-02	.8386-07	4.943
246	5.500	-.4220-02	6.022	174.2	735.7	.1873	104.4	-90.04	2754.	.4844-02	.8397-07	4.938

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
244	.3541-01	.1104-01
245	.3547-01	.1104-01
246	.3549-01	.1104-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
245	.00000	.91000-02	1.0000	.3833	.6386	.4647	.9562	.2265-01	.1648-01	2.499	17.31	550.9
245	.00000	.15000-01	4.0000	.7165	1.360	.9038	.9562	.4823-01	.3205-01	3.946	26.92	579.4
245	.00000	.17000-01	5.0000	.6768	1.231	.8431	.9562	.4366-01	.2990-01	3.917	26.83	571.5
245	.00000	.19000-01	6.0000	.6353	1.147	.7895	.9562	.4066-01	.2800-01	3.712	25.45	569.9
245	.00000	.24900-01	9.0000	.5868	1.033	.7255	.9557	.3663-01	.2573-01	3.540	24.34	564.6
245	.00000	.26900-01	10.000	.5635	.9807	.6969	.9550	.3478-01	.2472-01	3.451	23.76	562.0
244	.00000	.32800-01	12.000	.4912	.8162	.6047	.9529	.2890-01	.2142-01	3.206	22.23	549.4
244	.00000	.36700-01	13.000	.4247	.6863	.5211	.9515	.2430-01	.1846-01	2.896	20.17	541.1
244	.00000	.40600-01	14.000	.4414	.7232	.5480	.9501	.2561-01	.1941-01	2.943	20.45	545.4
244	.00000	.48500-01	15.000	.3762	.6055	.4698	.9474	.2145-01	.1664-01	2.580	17.98	540.0
244	.00000	.56400-01	16.000	.3633	.5823	.4586	.9447	.2062-01	.1624-01	2.510	17.51	538.6
244	.00000	.76100-01	17.000	.2750	.4284	.3526	.9385	.1517-01	.1249-01	1.995	13.99	528.9
244	.00000	.11550	19.000	.1631	.2516	.2188	.9276	.8910-02	.7748-02	1.204	8.460	525.2
244	.00000	.16480	20.000	.8235-01	.1283	.1171	.9172	.4543-02	.4146-02	.5975	4.190	528.8
244	.00000	.21400	22.000	.3993-01	.5871-01	.5585-01	.9109	.2079-02	.1978-02	.3243	2.306	504.3
246	2.0000	.24700-01	165.00	.5379	.9043	.6564	.9554	.3210-01	.2330-01	3.466	23.97	554.1
245	9.0000	.15000-01	157.00	.6514	1.198	.8213	.9546	.4248-01	.2913-01	3.721	25.47	573.6
245	9.0000	.17600-01	158.00	.6260	1.142	.7873	.9546	.4049-01	.2792-01	3.612	24.73	572.0

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
246	9.8000	.24700-01	164.00	.5768	.9912	.7138	.9541	.3518-01	.2533-01	3.602	24.83	559.7
245	10.000	.22900-01	88.000	.5917	1.053	.7392	.9545	.3736-01	.2622-01	3.517	24.15	567.1
245	10.000	.26900-01	90.000	.5530	.9597	.6896	.9533	.3404-01	.2446-01	3.401	23.43	561.3
245	10.000	.34700-01	94.000	.4457	.7242	.5506	.9505	.2569-01	.1953-01	3.019	21.00	543.7
246	14.600	.44200-01	169.00	.3860	.6201	.4839	.9464	.2201-01	.1718-01	2.669	18.60	540.8
245	18.500	.44200-01	106.00	.3978	.6536	.5050	.9458	.2318-01	.1791-01	2.648	18.38	547.0
246	19.600	.62900-01	175.00	.2773	.4379	.3564	.9395	.1554-01	.1265-01	1.974	13.80	535.1
245	19.800	.40800-01	101.00	.4242	.7017	.5374	.9467	.2489-01	.1906-01	2.794	19.38	548.9
245	20.000	.24900-01	89.000	.5414	.9416	.6789	.9523	.3339-01	.2408-01	3.319	22.86	561.8
245	20.000	.28800-01	91.000	.5215	.9009	.6574	.9509	.3195-01	.2331-01	3.226	22.24	560.2
245	20.000	.32800-01	93.000	.4882	.8323	.6171	.9495	.2952-01	.2188-01	3.076	21.24	557.0
245	22.200	.62900-01	125.00	.3014	.4868	.3925	.9391	.1727-01	.1392-01	2.062	14.36	541.8
245	22.400	.44200-01	107.00	.3843	.6309	.4892	.9451	.2238-01	.1735-01	2.562	17.79	546.7
246	22.600	.10270	192.00	.1652	.2566	.2225	.9277	.9108-02	.7896-02	1.210	8.485	529.2
245	23.000	.42000-01	105.00	.4103	.6764	.5215	.9458	.2399-01	.1850-01	2.719	18.87	547.9
245	23.400	.59600-01	120.00	.3074	.4956	.3982	.9399	.1758-01	.1412-01	2.109	14.69	541.2
246	23.900	.21310	250.00	.2997-01	.4407-01	.4206-01	.9102	.1564-02	.1493-02	.2446	1.738	505.7
245	24.100	.82200-01	139.00	.2221	.3529	.2954	.9330	.1251-01	.1048-01	1.561	10.90	536.5
246	24.400	.19040	238.00	.4671-01	.6984-01	.6602-01	.9117	.2479-02	.2343-02	.3683	2.605	513.5
246	24.400	.12440	207.00	.1188	.1870	.1658	.9224	.6638-02	.5883-02	.8511	5.953	533.9
246	24.800	.16810	223.00	.6176-01	.9531-01	.8841-01	.9144	.3383-02	.3138-02	.4581	3.217	526.7
245	24.900	.62900-01	126.00	.2915	.4702	.3801	.9387	.1668-01	.1348-01	1.999	13.92	541.3
246	25.000	.79500-01	178.00	.2371	.3718	.3121	.9337	.1320-01	.1108-01	1.709	11.96	532.6
246	25.300	.10270	191.00	.1609	.2500	.2171	.9274	.8875-02	.7707-02	1.179	8.268	529.2
246	25.300	.10000+00	186.00	.1787	.2783	.2407	.9281	.9877-02	.8542-02	1.304	9.142	530.0
245	25.500	.60700-01	124.00	.3019	.4861	.3921	.9393	.1724-01	.1391-01	2.076	14.47	540.8
246	26.000	.12440	206.00	.1172	.1845	.1636	.9222	.6548-02	.5808-02	.8382	5.861	534.1
245	26.300	.82200-01	140.00	.2345	.3712	.3117	.9327	.1316-01	.1105-01	1.659	11.60	535.1
246	26.700	.12100	199.00	.1162	.1822	.1613	.9228	.6468-02	.5725-02	.8375	5.862	532.6
246	26.800	.16910	222.00	.5933-01	.9135-01	.8484-01	.9142	.3242-02	.3011-02	.4420	3.105	525.8
246	27.000	.19040	237.00	.4267-01	.6375-01	.6030-01	.9116	.2263-02	.2140-02	.3370	2.384	513.2
246	27.100	.21310	249.00	.3084-01	.4528-01	.4323-01	.9101	.1607-02	.1534-02	.2527	1.796	504.9
246	27.200	.80300-01	180.00	.2273	.3553	.2994	.9332	.1261-01	.1063-01	1.648	11.54	531.4
245	27.400	.40100-01	98.000	.4262	.7110	.5444	.9458	.2522-01	.1931-01	2.772	19.20	551.3
246	27.400	.16480	215.00	.6113-01	.9461-01	.8759-01	.9146	.3358-02	.3109-02	.4510	3.165	527.8
245	27.600	.41600-01	102.00	.4137	.6862	.5286	.9453	.2434-01	.1875-01	2.714	18.82	549.7
246	27.600	.12440	205.00	.1127	.1774	.1575	.9220	.6297-02	.5591-02	.8067	5.642	534.0
246	27.600	.18700	230.00	.4659-01	.6967-01	.6590-01	.9119	.2473-02	.2336-02	.3671	2.597	513.7
246	27.700	.21010	243.00	.3534-01	.5201-01	.4963-01	.9102	.1846-02	.1761-02	.2877	2.044	506.2
246	27.900	.10110	188.00	.1557	.2435	.2108	.9275	.8641-02	.7483-02	1.127	7.892	531.7
245	28.000	.46800-01	110.00	.3524	.5775	.4521	.9434	.2048-01	.1603-01	2.356	16.37	546.1
246	28.200	.16810	221.00	.5739-01	.8847-01	.8219-01	.9141	.3140-02	.2917-02	.4267	2.997	526.2
246	28.300	.19040	236.00	.4011-01	.5977-01	.5658-01	.9115	.2122-02	.2008-02	.3183	2.254	512.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K129)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
246	28.300	.12200	201.00	.1222	.1917	.1700	.9224	.6803-02	.6034-02	.8812	6.167	532.6
245	28.400	.53500-01	114.00	.3396	.5555	.4402	.9412	.1970-01	.1561-01	2.276	15.82	545.7
246	28.400	.21310	248.00	.3140-01	.4606-01	.4399-01	.9101	.1635-02	.1561-02	.2575	1.831	504.6
245	28.700	.58600-01	117.00	.3182	.5140	.4135	.9395	.1823-01	.1467-01	2.177	15.16	541.8
246	28.800	.16580	217.00	.5754-01	.8874-01	.8232-01	.9144	.3150-02	.2922-02	.4272	3.000	526.5
245	28.800	.60400-01	121.00	.2997	.4818	.3897	.9389	.1709-01	.1382-01	2.066	14.40	540.3
246	29.000	.21110	244.00	.3200-01	.4697-01	.4485-01	.9101	.1667-02	.1592-02	.2620	1.862	504.9
245	29.000	.65700-01	129.00	.2752	.4419	.3606	.9372	.1567-01	.1279-01	1.901	13.25	539.9
245	29.200	.72400-01	133.00	.2547	.4078	.3366	.9352	.1446-01	.1194-01	1.767	12.32	539.0
245	29.300	.79500-01	136.00	.2164	.3434	.2875	.9331	.1218-01	.1020-01	1.525	10.65	536.0
245	29.600	.92500-01	143.00	.2045	.3248	.2768	.9295	.1152-01	.9817-02	1.438	10.04	536.4
245	29.700	.10000+00	146.00	.1589	.2514	.2167	.9275	.8918-02	.7687-02	1.126	7.867	535.0
246	29.900	.12100	198.00	.1149	.1807	.1601	.9225	.6413-02	.5681-02	.8234	5.759	533.7
246	30.200	.16480	214.00	.5518-01	.8515-01	.7896-01	.9144	.3022-02	.2802-02	.4093	2.874	526.7
246	30.200	.18700	229.00	.4405-01	.6572-01	.6213-01	.9117	.2333-02	.2205-02	.3490	2.470	512.5
246	30.300	.21010	242.00	.3371-01	.4952-01	.4727-01	.9101	.1758-02	.1678-02	.2756	1.958	505.3
245	31.500	.11100-01	83.000	.5450	.9532	.6895	.9511	.3381-01	.2445-01	3.317	22.83	563.1
246	32.100	.21010	241.00	.3371-01	.4948-01	.4725-01	.9101	.1756-02	.1677-02	.2761	1.962	504.9
246	32.200	.16480	213.00	.5334-01	.8224-01	.7633-01	.9143	.2919-02	.2709-02	.3963	2.783	526.3
246	32.200	.17860	224.00	.6119-01	.9279-01	.8716-01	.9125	.3293-02	.3093-02	.4692	3.307	519.6
246	32.200	.18700	228.00	.4491-01	.6681-01	.6322-01	.9116	.2371-02	.2244-02	.3578	2.534	511.2
246	32.300	.12100	197.00	.1155	.1811	.1608	.9222	.6429-02	.5707-02	.8318	5.821	532.7
246	32.300	.12300	194.00	.1030	.1616	.1438	.9218	.5734-02	.5102-02	.7424	5.196	532.6
246	32.300	.12730	208.00	.1043	.1651	.1472	.9209	.5861-02	.5224-02	.7388	5.161	536.0
246	32.300	.13420	209.00	.9140-01	.1459	.1307	.9195	.5178-02	.4639-02	.6389	4.456	538.7
245	32.400	.10000+00	147.00	.1548	.2458	.2119	.9272	.8719-02	.7516-02	1.088	7.602	536.4
246	32.400	.10110	184.00	.1539	.2410	.2092	.9269	.8554-02	.7424-02	1.113	7.790	532.0
246	32.400	.10630	193.00	.1395	.2177	.1903	.9256	.7725-02	.6756-02	1.015	7.109	530.7
246	32.500	.85800-01	183.00	.1949	.3068	.2606	.9309	.1089-01	.9248-02	1.395	9.757	534.0
245	32.600	.79500-01	137.00	.2102	.3349	.2805	.9327	.1188-01	.9948-02	1.471	10.26	537.4
246	32.600	.80800-01	176.00	.2110	.3319	.2801	.9323	.1178-01	.9941-02	1.512	10.58	533.7
245	32.700	.67400-01	132.00	.2648	.4255	.3488	.9362	.1509-01	.1237-01	1.826	12.73	540.2
245	32.700	.72400-01	134.00	.2512	.4028	.3331	.9347	.1429-01	.1181-01	1.740	12.13	539.4
245	32.800	.65700-01	130.00	.2787	.4478	.3662	.9367	.1588-01	.1299-01	1.922	13.40	540.2
246	32.800	.16680	210.00	.5367-01	.8277-01	.7694-01	.9140	.2938-02	.2731-02	.3987	2.800	526.4
246	32.800	.18880	225.00	.4156-01	.6186-01	.5859-01	.9114	.2196-02	.2079-02	.3306	2.341	511.5
245	32.900	.58600-01	118.00	.3349	.5454	.4362	.9389	.1934-01	.1554-01	2.261	15.72	544.3
245	32.900	.60400-01	122.00	.2876	.4633	.3754	.9383	.1643-01	.1331-01	1.976	13.77	540.9
246	32.900	.61300-01	171.00	.2893	.4586	.3750	.9381	.1628-01	.1331-01	2.046	14.29	536.4
245	33.000	.53500-01	115.00	.3366	.5493	.4374	.9405	.1948-01	.1551-01	2.268	15.77	544.8
245	33.200	.48300-01	113.00	.3544	.5798	.4571	.9422	.2056-01	.1621-01	2.375	16.50	545.7
246	33.400	.42800-01	166.00	.3894	.6266	.4941	.9440	.2224-01	.1754-01	2.687	18.72	541.3
245	33.500	.40100-01	99.000	.4184	.6878	.5335	.9449	.2439-01	.1892-01	2.784	19.33	547.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K129)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
245	33.600	.38300-01	97.000	.4393	.7299	.5609	.9455	.2589-01	.1989-01	2.874	19.92	550.2
245	33.700	.36700-01	96.000	.4649	.7821	.5951	.9461	.2774-01	.2110-01	2.987	20.66	553.5
245	33.900	.33800-01	95.000	.3655	.6168	.4660	.9471	.2188-01	.1653-01	2.337	16.16	554.4
246	34.700	.21010	240.00	.3354-01	.4911-01	.4692-01	.9101	.1743-02	.1665-02	.2762	1.965	503.6
246	34.700	.18700	227.00	.4141-01	.6175-01	.5844-01	.9115	.2192-02	.2074-02	.3283	2.324	512.3
246	34.900	.16480	212.00	.5606-01	.8667-01	.8048-01	.9141	.3076-02	.2856-02	.4145	2.909	527.4
245	35.100	.10000+00	148.00	.1554	.2472	.2133	.9269	.8768-02	.7566-02	1.089	7.605	537.0
246	35.200	.23900-01	161.00	.5656	.9833	.7164	.9505	.3490-01	.2543-01	3.477	23.93	562.5
245	35.300	.92500-01	145.00	.1741	.2771	.2368	.9288	.9827-02	.8398-02	1.221	8.521	537.0
245	35.300	.22100-01	160.00	.4186	.7533	.5365	.9506	.2672-01	.1903-01	2.455	16.84	569.3
246	35.400	.18800	231.00	.3575-01	.5318-01	.5038-01	.9114	.1887-02	.1788-02	.2849	2.018	511.2
246	35.500	.12100	196.00	.1121	.1765	.1568	.9219	.6266-02	.5566-02	.8025	5.612	534.0
246	35.600	.16580	216.00	.5732-01	.8846-01	.8225-01	.9139	.3140-02	.2919-02	.4251	2.985	526.7
245	35.800	.80600-01	138.00	.2019	.3206	.2699	.9320	.1137-01	.9571-02	1.421	9.923	536.2
246	35.900	.21310	247.00	.2916-01	.4250-01	.4064-01	.9100	.1509-02	.1443-02	.2426	1.728	501.3
246	36.000	.19040	235.00	.4186-01	.6217-01	.5898-01	.9112	.2207-02	.2093-02	.3346	2.371	510.5
246	36.200	.16810	220.00	.5875-01	.9040-01	.8424-01	.9136	.3209-02	.2990-02	.4380	3.078	525.6
245	36.200	.72400-01	135.00	.2406	.3853	.3194	.9343	.1366-01	.1133-01	1.670	11.65	539.0
246	36.300	.12200	200.00	.1098	.1731	.1539	.9216	.6144-02	.5463-02	.7834	5.477	534.6
245	36.600	.65700-01	131.00	.2515	.4066	.3323	.9362	.1442-01	.1179-01	1.717	11.96	542.1
246	36.700	.18700	226.00	.4423-01	.6582-01	.6234-01	.9114	.2336-02	.2213-02	.3520	2.493	511.4
246	36.900	.16480	211.00	.5795-01	.8968-01	.8331-01	.9140	.3183-02	.2957-02	.4277	3.001	527.7
246	36.900	.10110	187.00	.1581	.2491	.2162	.9264	.8840-02	.7674-02	1.130	7.900	534.3
245	37.000	.60400-01	123.00	.2920	.4722	.3829	.9378	.1675-01	.1358-01	1.993	13.88	542.2
246	37.000	.12440	204.00	.1075	.1696	.1512	.9210	.6019-02	.5366-02	.7662	5.356	534.8
245	37.100	.58600-01	119.00	.3134	.5085	.4105	.9384	.1803-01	.1456-01	2.129	14.81	543.2
246	37.200	.21310	246.00	.2827-01	.4114-01	.3935-01	.9100	.1460-02	.1397-02	.2359	1.680	500.6
246	37.600	.16810	219.00	.5796-01	.8917-01	.8313-01	.9135	.3165-02	.2951-02	.4323	3.037	525.5
245	37.800	.10270	150.00	.1452	.2313	.2005	.9259	.8204-02	.7110-02	1.016	7.089	537.4
246	37.900	.12100	195.00	.1110	.1738	.1548	.9217	.6170-02	.5496-02	.8019	5.614	532.1
246	38.000	.80300-01	179.00	.2153	.3397	.2870	.9318	.1206-01	.1019-01	1.535	10.73	534.8
245	38.500	.46800-01	112.00	.3639	.5951	.4697	.9420	.2111-01	.1666-01	2.440	16.96	545.6
246	38.600	.12440	203.00	.1069	.1687	.1505	.9209	.5989-02	.5342-02	.7608	5.317	535.1
246	38.700	.10000+00	185.00	.1532	.2410	.2092	.9265	.8553-02	.7426-02	1.098	7.676	533.8
245	38.900	.82200-01	141.00	.2039	.3250	.2743	.9312	.1153-01	.9727-02	1.426	9.957	537.4
245	39.300	.41600-01	104.00	.4104	.6823	.5292	.9437	.2420-01	.1877-01	2.684	18.60	550.3
246	39.500	.10270	190.00	.1510	.2379	.2072	.9257	.8442-02	.7354-02	1.081	7.557	534.1
246	39.600	.16810	218.00	.5186-01	.7976-01	.7442-01	.9134	.2831-02	.2641-02	.3872	2.721	525.3
246	39.900	.19040	233.00	.4244-01	.6274-01	.5960-01	.9110	.2227-02	.2115-02	.3426	2.430	508.3
246	40.100	.79500-01	177.00	.2130	.3358	.2838	.9318	.1192-01	.1007-01	1.521	10.63	534.5
246	40.200	.12440	202.00	.1052	.1664	.1485	.9207	.5907-02	.5271-02	.7475	5.223	535.6
246	40.300	.21310	245.00	.2631-01	.3811-01	.3647-01	.9100	.1353-02	.1295-02	.2220	1.584	498.0
245	41.100	.82200-01	142.00	.2158	.3459	.2915	.9309	.1227-01	.1034-01	1.495	10.42	539.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K129)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
246	41.100	.60700-01	173.00	.2881	.4594	.3761	.9372	.1631-01	.1335-01	2.016	14.07	538.4
246	42.600	.59600-01	172.00	.2991	.4793	.3912	.9374	.1701-01	.1388-01	2.077	14.48	540.0
246	43.200	.42000-01	168.00	.3810	.6143	.4861	.9431	.2180-01	.1725-01	2.620	18.24	541.9
246	43.400	.82200-01	181.00	.2246	.3515	.2996	.9307	.1247-01	.1063-01	1.625	11.38	531.8
245	43.600	.62900-01	128.00	.2268	.3646	.2988	.9363	.1293-01	.1060-01	1.565	10.90	540.2
245	45.000	.22900-01	8.0000	.6623	1.256	.8709	.9493	.4455-01	.3089-01	3.650	24.90	579.3
246	46.100	.62900-01	174.00	.2761	.4407	.3629	.9360	.1564-01	.1288-01	1.930	13.46	558.7
246	47.700	.40800-01	167.00	.4194	.6842	.5382	.9430	.2428-01	.1910-01	2.830	19.66	545.6
245	48.400	.44200-01	109.00	.3764	.6183	.4876	.9417	.2193-01	.1729-01	2.506	17.40	546.9
246	51.900	.44800-01	170.00	.3354	.5354	.4299	.9412	.1900-01	.1526-01	2.345	16.36	538.7
246	53.200	.24700-01	163.00	.5687	.9619	.7220	.9481	.3414-01	.2563-01	3.633	25.11	555.7
246	65.200	.24700-01	162.00	.5603	.9506	.7159	.9471	.3374-01	.2541-01	3.563	24.61	556.5
244	90.000	.91000-02	44.000	.2916	.4515	.3595	.9467	.1599-01	.1273-01	2.140	15.03	526.4
244	90.000	.11100-01	45.000	.4080	.6492	.5089	.9467	.2299-01	.1802-01	2.854	19.94	536.1
244	90.000	.13100-01	46.000	.6933	1.242	.9071	.9467	.4399-01	.3213-01	4.078	27.99	567.6
244	90.000	.17000-01	48.000	.6287	1.154	.8304	.9467	.4088-01	.2941-01	3.587	24.56	572.6
244	90.000	.20900-01	50.000	.6117	1.055	.7885	.9467	.3737-01	.2792-01	3.781	26.08	559.1
244	90.000	.24900-01	52.000	.9730-01	.1608	.1236	.9462	.5696-02	.4376-02	.6400	4.441	547.9
244	90.000	.26900-01	53.000	.5277	.8939	.6795	.9454	.3166-01	.2407-01	3.346	23.14	554.6
244	90.000	.28800-01	54.000	.5112	.8575	.6580	.9448	.3037-01	.2330-01	3.289	22.77	552.0
244	90.000	.32800-01	55.000	.3561	.5525	.4459	.9434	.1957-01	.1579-01	2.603	18.27	527.3
244	90.000	.36700-01	56.000	.4146	.6686	.5318	.9420	.2368-01	.1883-01	2.836	19.76	540.5
244	90.000	.40600-01	57.000	.3987	.6524	.5182	.9407	.2310-01	.1835-01	2.663	18.51	545.0
244	90.000	.48500-01	58.000	.3644	.5908	.4778	.9381	.2092-01	.1692-01	2.472	17.21	542.2
244	90.000	.56400-01	59.000	.3129	.5032	.4137	.9356	.1782-01	.1465-01	2.151	14.99	539.6
244	90.000	.76100-01	60.000	.2207	.3518	.2989	.9298	.1246-01	.1058-01	1.539	10.75	536.7
244	90.000	.95900-01	61.000	.1568	.2503	.2182	.9247	.8865-02	.7727-02	1.091	7.612	537.3
244	90.000	.11550	62.000	.1120	.1780	.1590	.9202	.6305-02	.5632-02	.7849	5.484	535.9
244	135.00	.19000-01	49.000	.6365	1.108	.8115	.9493	.3925-01	.2874-01	3.884	26.76	561.4
244	135.00	.22900-01	51.000	.5869	1.022	.7484	.9493	.3621-01	.2651-01	3.580	24.66	561.4
244	180.00	.91000-02	23.000	.2663	.4150	.3159	.9562	.1470-01	.1119-01	1.931	13.54	528.9
244	180.00	.11100-01	24.000	.6424	1.256	.8174	.9562	.4449-01	.2895-01	3.416	23.25	583.5
244	180.00	.13100-01	25.000	.7307	1.398	.9239	.9562	.4951-01	.3272-01	3.978	27.12	580.0
244	180.00	.15000-01	26.000	.7237	1.349	.9081	.9562	.4776-01	.3216-01	4.059	27.75	575.3
244	180.00	.17000-01	27.000	.7031	1.286	.8773	.9562	.4553-01	.3107-01	4.032	27.62	571.7
244	180.00	.19000-01	28.000	.6896	1.250	.8582	.9562	.4428-01	.3039-01	3.996	27.39	570.1
244	180.00	.20900-01	29.000	.6507	1.145	.8024	.9562	.4053-01	.2842-01	3.919	26.96	563.6
244	180.00	.28800-01	32.000	.5746	.9682	.7058	.9543	.3429-01	.2500-01	3.672	25.41	553.2
244	180.00	.32800-01	33.000	.5237	.8505	.6397	.9528	.3012-01	.2265-01	3.541	24.65	542.7
244	180.00	.36700-01	34.000	.4856	.7998	.6003	.9514	.2832-01	.2126-01	3.216	22.33	546.8
244	180.00	.48500-01	36.000	.4018	.6453	.5014	.9474	.2285-01	.1776-01	2.768	19.30	539.2
244	180.00	.56400-01	37.000	.3751	.5971	.4722	.9447	.2115-01	.1672-01	2.622	18.31	536.3
244	180.00	.76100-01	38.000	.2941	.4612	.3785	.9385	.1633-01	.1340-01	2.109	14.77	531.2

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

(R4K129)

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
244	180.00	.95800-01	39.000	.2221	.3436	.2914	.9328	.1217-01	.1032-01	1.632	11.46	526.2
244	180.00	.11550	40.000	.1671	.2596	.2252	.9276	.9193-02	.7974-02	1.218	8.547	527.8
244	180.00	.18450	42.000	.6601-01	.1000	.9327-01	.9141	.3543-02	.3303-02	.5042	3.557	518.0
244	225.00	.22900-01	30.000	.6676	1.174	.7925	.9635	.4158-01	.2807-01	4.022	27.67	563.6
244	270.00	.91000-02	63.000	.5819	1.164	.6985	.9666	.4121-01	.2474-01	3.024	20.54	586.9
244	270.00	.11100-01	64.000	.6845	1.414	.8271	.9666	.5009-01	.2929-01	3.447	23.36	591.5
244	270.00	.13100-01	65.000	.7557	1.489	.9044	.9666	.5272-01	.3203-01	3.988	27.13	584.6
244	270.00	.17000-01	67.000	.8335	1.585	.9903	.9666	.5614-01	.3507-01	4.566	31.15	579.0
244	270.00	.20900-01	69.000	.7345	1.374	.8696	.9666	.4865-01	.3080-01	4.102	28.03	576.0
244	270.00	.24900-01	71.000	.6964	1.262	.8210	.9661	.4468-01	.2908-01	4.039	27.69	569.9
244	270.00	.28800-01	73.000	.5874	1.011	.6893	.9647	.3581-01	.2441-01	3.642	25.13	558.6
244	270.00	.36700-01	75.000	.5481	.9353	.6508	.9619	.3312-01	.2305-01	3.440	23.76	556.5
244	270.00	.48500-01	77.000	.4883	.8094	.5867	.9577	.2866-01	.2078-01	3.198	22.18	548.7
244	270.00	.56400-01	78.000	.4400	.7262	.5349	.9550	.2572-01	.1894-01	2.900	20.13	547.5
244	270.00	.95800-01	80.000	.2754	.4500	.3549	.9423	.1594-01	.1257-01	1.844	12.82	544.6
244	270.00	.11550	81.000	.2190	.3574	.2904	.9365	.1266-01	.1029-01	1.469	10.22	544.2
244	270.00	.19000-01	68.000	.6050	1.048	.7155	.9635	.3712-01	.2534-01	3.717	25.62	560.2
244	315.00	.22900-01	70.000	.6840	1.235	.8171	.9635	.4374-01	.2894-01	3.983	27.32	569.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K130)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = -31.50 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
238	5.500	.1194-01	.7311-02	173.7	729.7	.1867	103.5	-31.48	2743.	.4868-02	.8329-07	4.983
239	5.500	.1194-01	.7315-02	173.8	730.7	.1868	103.6	-31.50	2745.	.4864-02	.8340-07	4.975
240	5.500	.1365-01	.8355-02	173.9	730.7	.1869	103.6	-31.48	2745.	.4868-02	.8340-07	4.979

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
238	.3538-01	.1100-01
239	.3540-01	.1101-01
240	.3542-01	.1100-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
239	.00000	.91000-02	1.0000	.2638	.4048	.3108	.9566	.1433-01	.1100-01	1.959	13.80	520.9
239	.00000	.15000-01	4.0000	.7894	1.425	.9789	.9566	.5045-01	.3465-01	4.577	31.44	566.9
239	.00000	.17000-01	5.0000	.7172	1.242	.8782	.9566	.4397-01	.3109-01	4.390	30.30	557.8
239	.00000	.19000-01	6.0000	.6745	1.165	.8253	.9566	.4124-01	.2922-01	4.144	28.61	557.1
239	.00000	.24900-01	9.0000	.5992	1.016	.7309	.9561	.3598-01	.2587-01	3.777	26.14	552.6
239	.00000	.26900-01	10.000	.5650	.9480	.6893	.9554	.3356-01	.2440-01	3.618	25.08	549.8
238	.00000	.32800-01	12.000	.4860	.8426	.6059	.9532	.2981-01	.2144-01	2.964	20.47	557.3
238	.00000	.36700-01	13.000	.4480	.7591	.5582	.9518	.2686-01	.1975-01	2.823	19.55	551.6
238	.00000	.40600-01	14.000	.4680	.8072	.5911	.9504	.2856-01	.2091-01	2.875	19.86	556.0
238	.00000	.48500-01	15.000	.3969	.6735	.5055	.9477	.2383-01	.1789-01	2.495	17.28	552.0
238	.00000	.56400-01	16.000	.3654	.6213	.4723	.9450	.2199-01	.1671-01	2.290	15.85	552.6
239	.00000	.76100-01	17.000	.2696	.4462	.3559	.9388	.1579-01	.1259-01	1.758	12.22	545.4
238	.00000	.11550	19.000	.1606	.2617	.2228	.9278	.9259-02	.7883-02	1.074	7.481	540.7
238	.00000	.16480	20.000	.8126-01	.1287	.1159	.9172	.4552-02	.4137-02	.5696	3.988	531.6
238	.00000	.21400	22.000	.4315-01	.6425-01	.6100-01	.9109	.2273-02	.2158-02	.3391	2.407	507.5
240	2.0000	.24700-01	165.00	.5735	.9421	.6922	.9562	.3336-01	.2451-01	3.794	26.39	543.9
239	9.0000	.15000-01	157.00	.7271	1.274	.8935	.9566	.4509-01	.3163-01	4.382	30.20	560.4
239	9.0000	.17600-01	158.00	.6788	1.190	.8343	.9566	.4212-01	.2954-01	4.089	28.18	560.5

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

(R4K130)

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
240	9.8000	.24700-01	164.00	.6165	1.037	.7497	.9562	.3673-01	.2655-01	3.933	27.25	550.5
239	10.000	.22900-01	88.000	.6304	1.088	.7713	.9566	.3853-01	.2730-01	3.876	26.76	557.0
239	10.000	.26900-01	90.000	.5666	.9537	.6919	.9554	.3376-01	.2449-01	3.610	25.01	550.7
239	10.000	.34700-01	94.000	.4766	.7617	.5796	.9525	.2697-01	.2052-01	3.294	23.02	535.4
240	14.600	.44200-01	169.00	.4282	.6845	.5289	.9492	.2424-01	.1873-01	2.960	20.68	535.5
239	18.500	.44200-01	106.00	.4307	.7016	.5358	.9492	.2484-01	.1897-01	2.885	20.09	541.4
240	19.600	.62900-01	175.00	.3246	.5137	.4110	.9429	.1819-01	.1456-01	2.282	15.97	532.2
239	19.800	.40800-01	101.00	.4628	.7569	.5734	.9504	.2680-01	.2030-01	3.081	21.44	542.6
239	20.000	.24900-01	89.000	.5855	.9921	.7139	.9561	.3512-01	.2527-01	3.696	25.59	552.4
239	20.000	.28800-01	91.000	.5406	.9097	.6624	.9547	.3221-01	.2345-01	3.446	23.88	550.6
239	20.000	.32800-01	93.000	.5186	.8680	.6389	.9532	.3073-01	.2262-01	3.333	23.11	549.1
239	22.200	.62900-01	125.00	.3298	.5346	.4222	.9429	.1893-01	.1494-01	2.227	15.52	539.9
239	22.400	.44200-01	107.00	.4223	.6868	.5251	.9492	.2432-01	.1859-01	2.836	19.76	541.0
240	22.600	.10270	192.00	.1803	.2863	.2420	.9311	.1014-01	.8572-02	1.260	8.814	533.3
239	23.000	.42000-01	105.00	.4474	.7293	.5547	.9499	.2582-01	.1964-01	2.994	20.85	541.6
239	23.400	.59600-01	120.00	.3260	.5262	.4143	.9440	.1863-01	.1467-01	2.217	15.46	538.6
240	23.900	.21310	250.00	.4057-01	.5812-01	.5549-01	.9110	.2059-02	.1965-02	.3476	2.493	488.8
239	24.100	.82200-01	139.00	.2522	.4081	.3323	.9369	.1445-01	.1176-01	1.707	11.90	539.4
240	24.400	.19040	238.00	.6281-01	.9212-01	.8673-01	.9133	.3263-02	.3072-02	.5109	3.640	501.0
240	24.400	.12440	207.00	.1367	.2181	.1893	.9256	.7725-02	.6704-02	.9473	6.621	535.0
240	24.800	.16810	223.00	.7639-01	.1171	.1076	.9166	.4148-02	.3810-02	.5683	4.004	520.6
239	24.900	.62900-01	126.00	.3135	.5066	.4007	.9429	.1793-01	.1418-01	2.127	14.84	539.0
240	25.000	.79500-01	178.00	.2596	.4109	.3369	.9377	.1455-01	.1193-01	1.824	12.77	532.3
240	25.300	.10270	191.00	.1804	.2855	.2417	.9311	.1011-01	.8561-02	1.268	8.877	532.2
240	25.300	.10000+00	186.00	.1922	.3048	.2569	.9318	.1080-01	.9099-02	1.347	9.423	532.9
239	25.500	.60700-01	124.00	.3299	.5310	.4195	.9436	.1880-01	.1485-01	2.254	15.73	537.7
240	26.000	.12440	206.00	.1356	.2160	.1875	.9256	.7650-02	.6642-02	.9418	6.585	534.5
239	26.300	.82200-01	140.00	.2134	.3437	.2805	.9369	.1217-01	.9929-02	1.455	10.15	538.0
240	26.700	.12100	199.00	.1360	.2155	.1867	.9264	.7632-02	.6612-02	.9541	6.677	532.6
240	26.800	.16810	222.00	.7719-01	.1182	.1086	.9166	.4188-02	.3847-02	.5754	4.055	520.2
240	27.000	.19040	237.00	.5905-01	.8679-01	.8168-01	.9133	.3074-02	.2893-02	.4781	3.403	502.1
240	27.100	.21310	249.00	.4098-01	.5888-01	.5619-01	.9110	.2085-02	.1990-02	.3488	2.500	490.3
240	27.200	.80300-01	180.00	.2541	.4002	.3292	.9375	.1417-01	.1166-01	1.801	12.62	530.5
239	27.400	.40100-01	98.000	.4489	.7391	.5569	.9506	.2616-01	.1972-01	2.958	20.57	544.5
240	27.400	.16480	215.00	.7619-01	.1177	.1076	.9172	.4169-02	.3812-02	.5590	3.932	523.5
239	27.600	.41600-01	102.00	.4437	.7261	.5506	.9501	.2571-01	.1949-01	2.950	20.53	542.8
240	27.600	.12440	205.00	.1330	.2116	.1838	.9256	.7494-02	.6511-02	.9272	6.485	533.9
240	27.600	.18700	230.00	.6715-01	.9898-01	.9291-01	.9138	.3506-02	.3291-02	.5403	3.843	503.5
240	27.700	.21010	243.00	.4731-01	.6833-01	.6508-01	.9112	.2420-02	.2305-02	.3980	2.848	493.1
240	27.900	.10110	188.00	.1835	.2905	.2454	.9315	.1029-01	.8691-02	1.288	9.017	532.4
239	28.000	.46800-01	110.00	.3952	.6385	.4922	.9483	.2260-01	.1742-01	2.683	18.71	538.9
240	28.200	.16810	221.00	.7708-01	.1183	.1087	.9166	.4191-02	.3848-02	.5722	4.030	521.1
240	28.300	.19040	236.00	.5644-01	.8293-01	.7805-01	.9133	.2937-02	.2764-02	.4573	3.256	501.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K130)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
240	28.300	.12200	201.00	.1421	.2259	.1957	.9261	.8002-02	.6933-02	.9910	6.931	533.8
239	28.400	.53500-01	114.00	.3720	.6028	.4689	.9460	.2134-01	.1660-01	2.513	17.51	539.9
240	28.400	.21310	248.00	.4323-01	.6231-01	.5943-01	.9110	.2207-02	.2105-02	.3652	2.615	492.1
239	28.700	.58600-01	117.00	.3530	.5657	.4465	.9443	.2003-01	.1581-01	2.429	16.96	536.3
240	28.800	.16580	217.00	.7390-01	.1137	.1042	.9170	.4028-02	.3690-02	.5460	3.843	522.1
239	28.800	.60400-01	121.00	.3341	.5359	.4240	.9437	.1897-01	.1501-01	2.294	16.02	536.7
240	29.000	.21110	244.00	.4244-01	.6120-01	.5833-01	.9111	.2167-02	.2066-02	.3582	2.564	492.3
239	29.000	.65700-01	129.00	.3088	.4962	.3954	.9420	.1757-01	.1400-01	2.114	14.76	537.3
239	29.200	.72400-01	133.00	.2801	.4516	.3629	.9399	.1599-01	.1285-01	1.908	13.31	538.2
239	29.300	.79500-01	136.00	.2408	.3865	.3147	.9377	.1368-01	.1114-01	1.653	11.54	536.8
239	29.600	.92500-01	143.00	.2200	.3561	.2943	.9339	.1260-01	.1042-01	1.489	10.38	539.4
239	29.700	.10000+00	146.00	.1709	.2753	.2305	.9318	.9746-02	.8160-02	1.166	8.137	537.9
240	29.900	.12100	198.00	.1367	.2168	.1877	.9264	.7677-02	.6649-02	.9581	6.704	532.8
240	30.200	.16480	214.00	.7113-01	.1096	.1002	.9172	.3880-02	.3550-02	.5248	3.694	522.3
240	30.300	.21010	242.00	.4707-01	.6815-01	.6489-01	.9112	.2414-02	.2298-02	.3939	2.817	494.4
239	31.500	.11100-01	83.000	.6120	1.079	.7535	.9566	.3820-01	.2667-01	3.657	25.19	561.9
240	32.100	.21010	241.00	.4595-01	.6669-01	.6348-01	.9112	.2362-02	.2248-02	.3822	2.731	495.8
240	32.200	.16480	213.00	.7218-01	.1112	.1018	.9172	.3940-02	.3604-02	.5319	3.744	522.6
240	32.200	.17860	224.00	.7523-01	.1134	.1054	.9150	.4018-02	.3734-02	.5781	4.089	513.7
240	32.200	.18700	228.00	.5621-01	.8340-01	.7819-01	.9138	.2954-02	.2769-02	.4463	3.169	506.5
240	32.300	.12100	197.00	.1396	.2202	.1911	.9264	.7797-02	.6767-02	.9871	6.914	531.0
240	32.300	.12300	194.00	.1272	.2005	.1745	.9259	.7101-02	.6179-02	.9003	6.307	530.8
240	32.300	.12730	208.00	.1300	.2067	.1802	.9249	.7320-02	.6382-02	.9062	6.338	533.8
240	32.300	.13420	209.00	.1122	.1801	.1578	.9233	.6377-02	.5590-02	.7712	5.385	536.7
239	32.400	.10000+00	147.00	.1758	.2833	.2371	.9318	.1003-01	.8395-02	1.198	8.360	538.1
240	32.400	.10110	184.00	.1812	.2849	.2413	.9315	.1009-01	.8548-02	1.287	9.023	530.0
240	32.400	.10530	193.00	.1667	.2615	.2233	.9301	.9263-02	.7908-02	1.190	8.344	529.1
240	32.500	.85800-01	183.00	.2319	.3651	.3028	.9358	.1293-01	.1072-01	1.646	11.53	530.4
239	32.600	.79500-01	137.00	.2026	.3252	.2647	.9377	.1151-01	.9372-02	1.389	9.698	537.0
240	32.600	.80800-01	176.00	.2502	.3916	.3234	.9373	.1387-01	.1146-01	1.794	12.58	528.3
239	32.700	.67400-01	132.00	.3043	.4888	.3906	.9415	.1730-01	.1383-01	2.085	14.56	537.1
239	32.700	.72400-01	134.00	.2874	.4621	.3719	.9399	.1636-01	.1317-01	1.967	13.73	537.4
239	32.800	.65700-01	130.00	.3113	.4985	.3980	.9420	.1765-01	.1409-01	2.143	14.97	536.2
240	32.800	.16680	210.00	.7337-01	.1130	.1036	.9169	.4004-02	.3669-02	.5409	3.807	522.5
240	32.800	.18880	225.00	.5670-01	.8381-01	.7871-01	.9135	.2968-02	.2788-02	.4537	3.225	504.8
239	32.900	.58600-01	118.00	.4162	.6696	.5273	.9443	.2370-01	.1867-01	2.845	19.86	537.6
239	32.900	.60400-01	122.00	.3275	.5234	.4149	.9437	.1853-01	.1469-01	2.263	15.81	535.5
240	32.900	.61300-01	171.00	.3308	.5196	.4164	.9434	.1840-01	.1475-01	2.356	16.52	529.6
239	33.000	.53500-01	115.00	.3772	.6064	.4739	.9460	.2147-01	.1678-01	2.582	18.02	537.4
239	33.200	.48300-01	113.00	.3935	.6326	.4903	.9478	.2240-01	.1736-01	2.693	18.80	537.3
240	33.400	.42800-01	166.00	.4319	.6852	.5306	.9497	.2427-01	.1879-01	3.023	21.15	533.0
239	33.500	.40100-01	99.000	.4637	.7489	.5711	.9506	.2651-01	.2022-01	3.149	21.97	538.8
239	33.600	.38300-01	97.000	.4825	.7875	.5948	.9512	.2788-01	.2106-01	3.223	22.44	542.0

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K130)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
239	33.700	.36700-01	96.000	.5084	.8399	.6278	.9518	.2974-01	.2222-01	3.331	23.15	545.6
239	33.900	.33800-01	95.000	.5212	.8658	.6416	.9529	.3065-01	.2271-01	3.387	23.52	547.1
240	34.700	.21010	240.00	.4732-01	.6874-01	.6541-01	.9112	.2434-02	.2317-02	.3929	2.807	496.2
240	34.700	.18700	227.00	.6486-01	.9600-01	.9004-01	.9138	.3400-02	.3189-02	.5174	3.677	505.4
240	34.900	.16480	212.00	.7444-01	.1151	.1052	.9172	.4078-02	.3727-02	.5450	3.833	523.9
239	35.100	.10000+00	148.00	.1831	.2949	.2469	.9318	.1044-01	.8741-02	1.249	8.716	538.0
240	35.200	.23900-01	161.00	.6423	1.095	.7831	.9565	.3877-01	.2774-01	4.021	27.82	553.9
239	35.300	.92500-01	145.00	.2050	.3306	.2738	.9339	.1170-01	.9691-02	1.396	9.743	538.3
239	35.300	.22100-01	160.00	.5745	.9972	.7040	.9566	.3530-01	.2492-01	3.506	24.19	558.3
240	35.400	.18800	231.00	.6379-01	.9471-01	.8884-01	.9136	.3354-02	.3146-02	.5057	3.591	506.8
240	35.500	.12100	196.00	.1382	.2178	.1890	.9264	.7713-02	.6695-02	.9786	6.856	530.7
240	35.600	.16580	216.00	.7294-01	.1127	.1031	.9170	.3990-02	.3651-02	.5354	3.766	523.4
239	35.800	.80600-01	138.00	.2351	.3750	.3068	.9374	.1328-01	.1086-01	1.630	11.40	534.8
240	35.900	.21310	247.00	.4069-01	.5911-01	.5631-01	.9110	.2093-02	.1994-02	.3379	2.414	496.2
240	36.000	.19040	235.00	.5773-01	.8562-01	.8044-01	.9133	.3032-02	.2849-02	.4585	3.257	506.4
240	36.200	.16810	220.00	.7722-01	.1188	.1090	.9166	.4207-02	.3861-02	.5710	4.020	521.9
239	36.200	.72400-01	135.00	.2837	.4536	.3661	.9399	.1606-01	.1296-01	1.960	13.70	535.5
240	36.300	.12200	200.00	.1356	.2140	.1859	.9261	.7578-02	.6584-02	.9588	6.716	531.1
239	36.600	.65700-01	131.00	.2925	.4699	.3745	.9420	.1664-01	.1326-01	2.003	13.99	537.2
240	36.700	.18700	226.00	.5852-01	.8711-01	.8162-01	.9138	.3085-02	.2891-02	.4614	3.273	508.1
240	36.900	.16480	211.00	.7749-01	.1201	.1097	.9172	.4254-02	.3886-02	.5652	3.973	524.7
240	36.900	.10110	187.00	.1889	.2969	.2516	.9315	.1052-01	.8911-02	1.344	9.420	529.8
239	37.000	.60400-01	123.00	.3367	.5391	.4269	.9437	.1909-01	.1511-01	2.320	16.20	536.1
240	37.000	.12440	204.00	.1354	.2135	.1860	.9256	.7560-02	.6588-02	.9573	6.706	531.0
239	37.100	.58600-01	119.00	.3549	.5668	.4482	.9443	.2006-01	.1587-01	2.455	17.16	535.2
240	37.200	.21310	246.00	.4537-01	.6595-01	.6282-01	.9110	.2336-02	.2225-02	.3763	2.688	496.5
240	37.600	.16910	219.00	.7701-01	.1187	.1089	.9166	.4204-02	.3857-02	.5673	3.993	522.7
239	37.800	.10270	150.00	.1744	.2800	.2357	.9311	.9913-02	.8343-02	1.196	8.354	536.9
240	37.900	.12100	195.00	.1505	.2351	.2047	.9264	.8326-02	.7250-02	1.082	7.592	527.7
240	38.000	.80300-01	179.00	.2642	.4117	.3404	.9375	.1458-01	.1206-01	1.908	13.39	526.8
239	38.500	.46800-01	112.00	.4031	.6472	.5008	.9483	.2291-01	.1773-01	2.765	19.31	536.9
240	38.600	.12440	203.00	.1366	.2150	.1875	.9256	.7616-02	.6642-02	.9695	6.794	530.3
240	38.700	.10000+00	185.00	.1916	.3002	.2543	.9318	.1063-01	.9007-02	1.370	9.611	528.7
239	38.900	.82200-01	141.00	.2490	.3968	.3255	.9369	.1405-01	.1152-01	1.728	12.08	534.6
239	39.300	.41600-01	104.00	.4527	.7383	.5611	.9501	.2614-01	.1986-01	3.028	21.08	541.8
240	39.500	.10270	190.00	.1949	.3047	.2593	.9311	.1079-01	.9183-02	1.399	9.817	528.0
240	39.600	.16810	218.00	.7377-01	.1138	.1044	.9166	.4031-02	.3697-02	.5426	3.817	523.0
240	39.900	.19040	233.00	.5879-01	.8727-01	.8198-01	.9133	.3091-02	.2903-02	.4662	3.310	506.8
240	40.100	.79500-01	177.00	.2659	.4117	.3412	.9377	.1458-01	.1208-01	1.943	13.66	524.4
240	40.200	.12440	202.00	.1383	.2174	.1897	.9256	.7700-02	.6717-02	.9831	6.891	529.9
240	40.300	.21310	245.00	.3743-01	.5436-01	.5179-01	.9110	.1925-02	.1834-02	.3111	2.223	496.0
239	41.100	.82200-01	142.00	.2503	.4013	.3282	.9369	.1421-01	.1162-01	1.721	12.02	536.5
240	41.100	.60700-01	173.00	.3426	.5330	.4290	.9436	.1888-01	.1519-01	2.481	17.43	526.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K130)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
240	42.600	.59600-01	172.00	.3527	.5505	.4416	.9440	.1950-01	.1564-01	2.541	17.83	527.3
240	43.200	.42000-01	168.00	.4265	.6753	.5229	.9499	.2392-01	.1852-01	2.996	20.97	532.3
240	43.400	.82200-01	181.00	.2431	.3869	.3175	.9369	.1370-01	.1125-01	1.692	11.83	534.2
239	43.600	.62900-01	128.00	.2962	.4683	.3749	.9429	.1658-01	.1327-01	2.085	14.60	531.9
239	45.000	.22900-01	8.0000	.7732	1.414	.9626	.9566	.5007-01	.3408-01	4.412	30.26	569.5
240	46.100	.62900-01	174.00	.3313	.5134	.4155	.9429	.1818-01	.1471-01	2.417	16.99	524.7
240	47.700	.40800-01	167.00	.4718	.7557	.5800	.9504	.2677-01	.2054-01	3.250	22.70	536.2
239	48.400	.44200-01	109.00	.4321	.6935	.5345	.9492	.2455-01	.1892-01	2.965	20.71	536.8
240	51.900	.44800-01	170.00	.3922	.6085	.4791	.9490	.2155-01	.1697-01	2.855	20.07	525.1
240	53.200	.24700-01	163.00	.6575	1.097	.7975	.9562	.3886-01	.2825-01	4.246	29.46	548.3
240	65.200	.24700-01	162.00	.6557	1.092	.7950	.9562	.3869-01	.2815-01	4.245	29.46	547.9
238	90.000	.91000-02	44.000	.3134	.5181	.3783	.9566	.1833-01	.1338-01	2.049	14.24	545.0
238	90.000	.11100-01	45.000	.6119	1.150	.7678	.9566	.4069-01	.2717-01	3.376	23.10	573.7
238	90.000	.13100-01	46.000	.8794	1.838	1.137	.9566	.6504-01	.4022-01	4.353	29.53	589.8
238	90.000	.17000-01	48.000	.7845	1.464	.9823	.9566	.5181-01	.3476-01	4.363	29.87	572.5
238	90.000	.20900-01	50.000	.6595	1.201	.8198	.9566	.4248-01	.2901-01	3.778	25.94	567.8
238	90.000	.26900-01	53.000	.5635	.9897	.6975	.9554	.3502-01	.2468-01	3.378	23.28	560.3
238	90.000	.28800-01	54.000	.5497	.9555	.6807	.9547	.3381-01	.2409-01	3.342	23.07	557.8
238	90.000	.32800-01	55.000	.4014	.6424	.4868	.9532	.2273-01	.1723-01	2.762	19.30	535.2
238	90.000	.36700-01	56.000	.4882	.8174	.6057	.9518	.2892-01	.2143-01	3.130	21.71	548.5
238	90.000	.40600-01	57.000	.4780	.8115	.6003	.9504	.2871-01	.2124-01	3.003	20.79	552.1
238	90.000	.48500-01	58.000	.4440	.7361	.5602	.9477	.2604-01	.1982-01	2.889	20.07	545.8
238	90.000	.56400-01	59.000	.3734	.6108	.4748	.9450	.2161-01	.1680-01	2.481	17.27	541.9
238	90.000	.76100-01	60.000	.2719	.4393	.3547	.9388	.1555-01	.1255-01	1.842	12.85	538.2
238	90.000	.95800-01	61.000	.2196	.3522	.2937	.9330	.1246-01	.1039-01	1.506	10.52	535.9
238	90.000	.11550	62.000	.1635	.2597	.2232	.9278	.9188-02	.7898-02	1.139	7.973	532.7
238	135.00	.19000-01	49.000	.6953	1.275	.8661	.9566	.4511-01	.3065-01	3.949	27.09	569.2
238	135.00	.22900-01	51.000	.6442	1.174	.8009	.9566	.4154-01	.2834-01	3.685	25.30	568.0
238	180.00	.91000-02	23.000	.1370	.2166	.1630	.9566	.7665-02	.5767-02	.9628	6.744	531.1
238	180.00	.11100-01	24.000	.5206	.9481	.6471	.9566	.3355-01	.2290-01	2.981	20.46	567.8
238	180.00	.13100-01	25.000	.7929	1.671	1.027	.9566	.5911-01	.3633-01	3.896	26.42	590.8
238	180.00	.15000-01	26.000	.7837	1.601	1.007	.9566	.5666-01	.3561-01	3.963	26.93	586.8
238	180.00	.17000-01	27.000	.7288	1.377	.9157	.9566	.4872-01	.3240-01	3.998	27.34	574.6
238	180.00	.19000-01	28.000	.6871	1.288	.8613	.9566	.4556-01	.3047-01	3.803	26.03	573.2
238	180.00	.20900-01	29.000	.6820	1.244	.8481	.9566	.4402-01	.3001-01	3.897	26.74	568.2
239	180.00	.28800-01	32.000	.5547	.9616	.6862	.9547	.3402-01	.2428-01	3.385	23.37	557.2
238	180.00	.32800-01	33.000	.5306	.8909	.6543	.9533	.3152-01	.2315-01	3.388	23.49	549.2
238	180.00	.36700-01	34.000	.4995	.8565	.6249	.9519	.3031-01	.2211-01	3.093	21.39	554.6
238	180.00	.48500-01	36.000	.4373	.7311	.5536	.9477	.2587-01	.1959-01	2.810	19.50	548.1
238	180.00	.56400-01	37.000	.3921	.6494	.5012	.9451	.2298-01	.1773-01	2.555	17.75	545.5
238	180.00	.76100-01	38.000	.2929	.4795	.3845	.9388	.1697-01	.1360-01	1.943	13.53	542.2
238	180.00	.95800-01	39.000	.2202	.3570	.2962	.9330	.1263-01	.1048-01	1.484	10.34	539.3
238	180.00	.11550	40.000	.1693	.2737	.2336	.9278	.9684-02	.8267-02	1.145	7.989	538.4

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
238	180.00	.18450	42.000	.6466-01	.9970-01	.9261-01	.9141	.3528-02	.3277-02	.4750	3.344	522.1
238	225.00	.22900-01	30.000	.6303	1.132	.7802	.9566	.4005-01	.2761-01	3.672	25.24	565.0
238	270.00	.91000-02	63.000	.2846	.4692	.3431	.9566	.1660-01	.1214-01	1.867	12.98	544.2
238	270.00	.11100-01	64.000	.5257	.9501	.6520	.9566	.3362-01	.2307-01	3.038	20.87	566.3
238	270.00	.13100-01	65.000	.7824	1.657	1.015	.9566	.5862-01	.3590-01	3.827	25.94	591.4
238	270.00	.17000-01	67.000	.6818	1.292	.8574	.9566	.4570-01	.3034-01	3.729	25.49	575.1
238	270.00	.20900-01	69.000	.6685	1.256	.8386	.9566	.4443-01	.2967-01	3.692	25.26	573.6
238	270.00	.24900-01	71.000	.6290	1.155	.7861	.9561	.4088-01	.2781-01	3.565	24.45	569.5
238	270.00	.28800-01	73.000	.5139	.8994	.6377	.9547	.3182-01	.2257-01	3.096	21.35	559.4
238	270.00	.36700-01	75.000	.5168	.8999	.6500	.9519	.3184-01	.2300-01	3.134	21.63	558.3
238	270.00	.48500-01	77.000	.4318	.7246	.5474	.9477	.2564-01	.1937-01	2.758	19.13	549.1
238	270.00	.56400-01	78.000	.3743	.6209	.4788	.9451	.2197-01	.1694-01	2.434	16.91	545.9
238	270.00	.95800-01	80.000	.2247	.3570	.2989	.9330	.1263-01	.1058-01	1.565	10.95	532.8
238	270.00	.11550	81.000	.1719	.2694	.2327	.9278	.9533-02	.8234-02	1.225	8.596	528.2
238	315.00	.19000-01	68.000	.5842	1.028	.7189	.9566	.3639-01	.2544-01	3.492	24.06	560.7
238	315.00	.22900-01	70.000	.5616	1.034	.7005	.9566	.3660-01	.2479-01	3.171	21.74	570.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K131)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
247	5.500	.2113-02	-6.030	174.1	735.7	.1871	104.4	89.98	2754.	.4840-02	.8397-07	4.935
248	5.500	.2110-02	-6.022	173.7	735.7	.1867	104.4	89.98	2754.	.4828-02	.8397-07	4.922
249	5.500	.2114-02	-6.032	174.2	735.7	.1873	104.4	89.98	2754.	.4844-02	.8397-07	4.938

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
247	.3548-01	.1104-01
248	.3543-01	.1106-01
249	.3549-01	.1104-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
248	.00000	.91000-02	1.0000	.4021	.6595	.4850	.9562	.2337-01	.1719-01	2.685	18.64	547.2
248	.00000	.15000-01	4.0000	.7138	1.313	.8921	.9562	.4652-01	.3161-01	4.077	27.89	574.5
248	.00000	.17000-01	5.0000	.6633	1.185	.8218	.9562	.4198-01	.2912-01	3.929	26.96	568.5
248	.00000	.19000-01	6.0000	.6316	1.116	.7799	.9562	.3954-01	.2764-01	3.793	26.06	566.2
248	.00000	.24900-01	9.0000	.5864	1.011	.7205	.9557	.3584-01	.2553-01	3.637	25.07	560.6
248	.00000	.26900-01	10.000	.5656	.9657	.6954	.9550	.3422-01	.2464-01	3.559	24.56	558.1
247	.00000	.32800-01	12.000	.4895	.8163	.6034	.9528	.2896-01	.2141-01	3.192	22.10	551.9
247	.00000	.36700-01	13.000	.4209	.6838	.5175	.9514	.2426-01	.1836-01	2.858	19.88	544.3
247	.00000	.40600-01	14.000	.4372	.7195	.5437	.9501	.2553-01	.1929-01	2.908	20.18	548.2
247	.00000	.48500-01	15.000	.3733	.6037	.4671	.9474	.2142-01	.1657-01	2.552	17.76	543.0
247	.00000	.56400-01	16.000	.3555	.5725	.4497	.9447	.2031-01	.1596-01	2.448	17.05	541.6
247	.00000	.76100-01	17.000	.2708	.4236	.3480	.9385	.1503-01	.1235-01	1.959	13.72	531.7
247	.00000	.11550	19.000	.1579	.2461	.2132	.9276	.8732-02	.7565-02	1.149	8.051	530.5
247	.00000	.16480	20.000	.8085-01	.1264	.1152	.9171	.4484-02	.4089-02	.5859	4.103	531.4
247	.00000	.21400	22.000	.4189-01	.6173-01	.5870-01	.9109	.2190-02	.2083-02	.3402	2.415	506.8
249	2.0000	.24700-01	165.00	.5842	.9752	.7089	.9561	.3461-01	.2516-01	3.805	26.34	552.2
248	9.0000	.15000-01	157.00	.6266	1.130	.7718	.9578	.4004-01	.2735-01	3.667	25.14	570.5
248	9.0000	.17600-01	158.00	.6427	1.159	.7917	.9578	.4107-01	.2805-01	3.761	25.78	570.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
249	9.8000	.24700-01	164.00	.6069	1.045	.7386	.9575	.3710-01	.2621-01	3.780	26.05	560.2
248	10.000	.22900-01	88.000	.6255	1.107	.7656	.9579	.3923-01	.2713-01	3.749	25.75	566.5
248	10.000	.26900-01	90.000	.5816	.9993	.7100	.9567	.3541-01	.2516-01	3.627	25.01	559.7
248	10.000	.34700-01	94.000	.4636	.7458	.5616	.9539	.2643-01	.1990-01	3.194	22.24	541.3
249	14.600	.44200-01	169.00	.4140	.6613	.5061	.9514	.2347-01	.1796-01	2.891	20.16	539.0
248	18.500	.44200-01	106.00	.4223	.6883	.5184	.9520	.2439-01	.1837-01	2.849	19.80	545.3
249	19.600	.62900-01	175.00	.3286	.5188	.4099	.9459	.1841-01	.1455-01	2.341	16.36	535.0
248	19.800	.40800-01	101.00	.4483	.7343	.5477	.9534	.2602-01	.1941-01	3.001	20.84	546.8
248	20.000	.24900-01	89.000	.5941	1.035	.7192	.9592	.3669-01	.2549-01	3.633	25.00	563.1
248	20.000	.28800-01	91.000	.5485	.9394	.6655	.9577	.3329-01	.2358-01	3.436	23.70	558.9
248	20.000	.32800-01	93.000	.5112	.8609	.6215	.9563	.3050-01	.2202-01	3.280	22.68	554.6
248	22.200	.62900-01	125.00	.3428	.5507	.4299	.9463	.1951-01	.1523-01	2.367	16.49	540.8
248	22.400	.44200-01	107.00	.4222	.6868	.5163	.9527	.2434-01	.1830-01	2.856	19.86	544.7
249	22.600	.10270	192.00	.1965	.3088	.2581	.9343	.1096-01	.9162-02	1.410	9.864	533.5
248	23.000	.42000-01	105.00	.4357	.7114	.5313	.9535	.2521-01	.1883-01	2.930	20.35	545.9
248	23.400	.59600-01	120.00	.3587	.5728	.4460	.9476	.2030-01	.1580-01	2.501	17.44	538.9
249	23.900	.21310	250.00	.5295-01	.7892-01	.7443-01	.9123	.2801-02	.2642-02	.4201	2.974	512.1
248	24.100	.82200-01	139.00	.2638	.4210	.3391	.9405	.1492-01	.1202-01	1.842	12.85	538.6
249	24.400	.19040	238.00	.6673-01	.1017	.9413-01	.9153	.3609-02	.3341-02	.5069	3.569	521.7
249	24.400	.12440	207.00	.1534	.2450	.2090	.9288	.8696-02	.7419-02	1.071	7.466	539.0
249	24.800	.16810	223.00	.9169-01	.1441	.1299	.9192	.5115-02	.4610-02	.6581	4.604	533.4
248	24.900	.62900-01	126.00	.3256	.5227	.4074	.9468	.1852-01	.1443-01	2.250	15.68	540.6
249	25.000	.79500-01	178.00	.2756	.4343	.3505	.9415	.1541-01	.1244-01	1.970	13.77	534.3
249	25.300	.10270	191.00	.2020	.3176	.2650	.9347	.1127-01	.9404-02	1.449	10.14	533.6
249	25.300	.10000+00	186.00	.2032	.3201	.2659	.9355	.1136-01	.9436-02	1.453	10.16	534.3
248	25.500	.60700-01	124.00	.3531	.5636	.4390	.9476	.1997-01	.1556-01	2.464	17.18	538.7
249	26.000	.12440	206.00	.1523	.2436	.2075	.9290	.8646-02	.7365-02	1.061	7.399	539.4
248	26.300	.82200-01	140.00	.2787	.4432	.3570	.9409	.1570-01	.1265-01	1.957	13.66	537.5
249	26.700	.12100	199.00	.1549	.2465	.2094	.9300	.8747-02	.7431-02	1.090	7.605	537.5
249	26.800	.16810	222.00	.9116-01	.1430	.1288	.9194	.5077-02	.4572-02	.6563	4.593	532.8
249	27.000	.19040	237.00	.6809-01	.1038	.9596-01	.9155	.3683-02	.3406-02	.5170	3.640	521.7
249	27.100	.21310	249.00	.5029-01	.7493-01	.7061-01	.9125	.2660-02	.2506-02	.3994	2.828	511.9
249	27.200	.80300-01	180.00	.2751	.4324	.3493	.9416	.1535-01	.1240-01	1.976	13.82	533.3
248	27.400	.40100-01	98.000	.4672	.7727	.5685	.9549	.2738-01	.2014-01	3.080	21.36	549.6
249	27.400	.16480	215.00	.8771-01	.1384	.1240	.9201	.4912-02	.4401-02	.6254	4.371	534.8
249	27.600	.41600-01	102.00	.4593	.7553	.5591	.9544	.2676-01	.1981-01	3.055	21.20	548.0
249	27.600	.12440	205.00	.1486	.2376	.2022	.9292	.8433-02	.7176-02	1.036	7.223	539.3
249	27.600	.18700	230.00	.6069-01	.9246-01	.8526-01	.9161	.3282-02	.3026-02	.4611	3.247	521.6
249	27.700	.21010	243.00	.5529-01	.8286-01	.7786-01	.9129	.2941-02	.2764-02	.4339	3.068	514.6
249	27.900	.10110	188.00	.2001	.3159	.2620	.9356	.1121-01	.9299-02	1.425	9.960	535.0
248	28.000	.46800-01	110.00	.4070	.6598	.4971	.9527	.2338-01	.1761-01	2.769	19.26	543.7
249	28.200	.16810	221.00	.9298-01	.1464	.1316	.9195	.5196-02	.4672-02	.6655	4.654	534.0
249	28.300	.19040	236.00	.6790-01	.1032	.9546-01	.9156	.3664-02	.3388-02	.5180	3.650	520.7

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K131)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
249	28.300	.12200	201.00	.1623	.2583	.2194	.9299	.9166-02	.7788-02	1.141	7.966	537.6
248	28.400	.53500-01	114.00	.3919	.6351	.4836	.9505	.2251-01	.1714-01	2.667	18.55	543.6
249	28.400	.21310	248.00	.5251-01	.7829-01	.7374-01	.9126	.2779-02	.2617-02	.4164	2.947	512.3
248	28.700	.58600-01	117.00	.3734	.5982	.4624	.9488	.2120-01	.1638-01	2.591	18.06	539.9
249	28.800	.16580	217.00	.8822-01	.1388	.1245	.9200	.4925-02	.4418-02	.6326	4.424	533.7
248	28.800	.60400-01	121.00	.3532	.5639	.4379	.9482	.1998-01	.1552-01	2.464	17.19	538.8
249	29.000	.21110	244.00	.5478-01	.8175-01	.7688-01	.9128	.2901-02	.2729-02	.4335	3.068	512.7
248	29.000	.65700-01	129.00	.3319	.5319	.4155	.9465	.1885-01	.1472-01	2.300	16.03	540.1
248	29.200	.72400-01	133.00	.3081	.4948	.3899	.9444	.1753-01	.1382-01	2.130	14.84	540.6
248	29.300	.79500-01	136.00	.2634	.4198	.3357	.9422	.1487-01	.1190-01	1.843	12.86	538.2
248	29.600	.92500-01	143.00	.2593	.4165	.3381	.9383	.1476-01	.1198-01	1.791	12.48	540.7
248	29.700	.10000+00	146.00	.1894	.3021	.2486	.9361	.1070-01	.8810-02	1.324	9.233	538.4
249	29.900	.12100	198.00	.1578	.2515	.2130	.9304	.8926-02	.7561-02	1.106	7.716	538.2
249	30.200	.16480	214.00	.8954-01	.1406	.1260	.9204	.4991-02	.4471-02	.6437	4.504	533.1
249	30.200	.18700	229.00	.6799-01	.1033	.9520-01	.9164	.3666-02	.3379-02	.5197	3.662	520.3
249	30.300	.21010	242.00	.5686-01	.8516-01	.7997-01	.9131	.3023-02	.2838-02	.4468	3.159	514.3
248	31.500	.11100-01	83.000	.7027	1.412	.8711	.9615	.5005-01	.3087-01	3.645	24.74	589.3
249	32.100	.21010	241.00	.5858-01	.8768-01	.8230-01	.9132	.3112-02	.2921-02	.4608	3.259	514.0
249	32.200	.16480	213.00	.9054-01	.1419	.1271	.9206	.5037-02	.4510-02	.6529	4.570	532.5
249	32.200	.17860	224.00	.9314-01	.1438	.1310	.9180	.5103-02	.4649-02	.6906	4.849	526.8
249	32.200	.18700	228.00	.7579-01	.1149	.1058	.9165	.4077-02	.3757-02	.5818	4.102	519.4
249	32.300	.12100	197.00	.1626	.2586	.2189	.9307	.9179-02	.7768-02	1.143	7.979	537.6
249	32.300	.12300	194.00	.1451	.2306	.1958	.9302	.8186-02	.6948-02	1.021	7.129	537.3
249	32.300	.12730	208.00	.1354	.2181	.1852	.9291	.7742-02	.6572-02	.9315	6.486	541.8
249	32.300	.13420	209.00	.1319	.2152	.1835	.9274	.7638-02	.6512-02	.8906	6.188	545.5
248	32.400	.10000+00	147.00	.1949	.3131	.2563	.9365	.1109-01	.9083-02	1.345	9.373	540.8
249	32.400	.10110	184.00	.2011	.3179	.2627	.9362	.1128-01	.9324-02	1.430	9.993	535.4
249	32.400	.10630	193.00	.1882	.2964	.2471	.9347	.1052-01	.8769-02	1.347	9.419	534.0
249	32.500	.85800-01	183.00	.2554	.4058	.3273	.9407	.1440-01	.1162-01	1.799	12.56	537.2
248	32.600	.79500-01	137.00	.2643	.4237	.3370	.9427	.1502-01	.1194-01	1.830	12.76	540.2
249	32.600	.80800-01	176.00	.2700	.4271	.3428	.9423	.1516-01	.1217-01	1.916	13.38	535.7
248	32.700	.67400-01	132.00	.3281	.5276	.4112	.9465	.1869-01	.1457-01	2.262	15.75	541.1
248	32.700	.72400-01	134.00	.3174	.5103	.4009	.9449	.1808-01	.1420-01	2.188	15.24	541.1
248	32.800	.65700-01	130.00	.3431	.5508	.4296	.9471	.1952-01	.1519-01	2.371	16.52	540.6
249	32.800	.16680	210.00	.9229-01	.1447	.1298	.9202	.5135-02	.4606-02	.6655	4.657	532.5
249	32.800	.18880	225.00	.7148-01	.1087	.1002	.9163	.3856-02	.3555-02	.5455	3.843	520.7
248	32.900	.58600-01	118.00	.3516	.5686	.4356	.9494	.2015-01	.1544-01	2.402	16.71	542.9
248	32.900	.60400-01	122.00	.3530	.5657	.4370	.9488	.2004-01	.1549-01	2.447	17.05	540.0
249	32.900	.61300-01	171.00	.3464	.5475	.4271	.9486	.1943-01	.1516-01	2.463	17.21	535.3
248	33.000	.53500-01	115.00	.4011	.6487	.4930	.9512	.2299-01	.1747-01	2.739	19.06	542.9
248	33.200	.48300-01	113.00	.4159	.6731	.5070	.9530	.2385-01	.1796-01	2.837	19.74	543.2
249	33.400	.42800-01	166.00	.4372	.6990	.5260	.9549	.2481-01	.1867-01	3.048	21.26	539.2
248	33.500	.40100-01	99.000	.4653	.7585	.5610	.9559	.2688-01	.1988-01	3.139	21.81	545.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
248	33.600	.38300-01	97.000	.4809	.7924	.5800	.9565	.2808-01	.2055-01	3.189	22.12	548.5
248	33.700	.36700-01	96.000	.5106	.8511	.6163	.9571	.3016-01	.2184-01	3.327	23.04	551.8
248	33.900	.33800-01	95.000	.6275	1.048	.7540	.9582	.3713-01	.2672-01	4.077	28.23	552.3
249	34.700	.21010	240.00	.6065-01	.9071-01	.8509-01	.9133	.3220-02	.3020-02	.4778	3.380	513.7
249	34.700	.18700	227.00	.6555-01	.9960-01	.9163-01	.9167	.3535-02	.3252-02	.5005	3.527	520.5
249	34.900	.16480	212.00	.9419-01	.1481	.1323	.9209	.5255-02	.4695-02	.6759	4.728	533.5
248	35.100	.10000+00	148.00	.2167	.3493	.2850	.9369	.1238-01	.1010-01	1.489	10.37	541.8
249	35.200	.23900-01	161.00	.6413	1.125	.7665	.9620	.3992-01	.2721-01	3.895	26.79	564.5
248	35.300	.92500-01	145.00	.2344	.3784	.3051	.9391	.1341-01	.1081-01	1.605	11.18	542.4
248	35.300	.22100-01	160.00	.6188	1.112	.7437	.9621	.3939-01	.2635-01	3.638	24.95	569.7
249	35.400	.18800	231.00	.7930-01	.1203	.1108	.9166	.4271-02	.3933-02	.6072	4.280	519.9
249	35.500	.12100	196.00	.1614	.2579	.2174	.9311	.9154-02	.7718-02	1.127	7.859	539.0
249	35.600	.16580	216.00	.9600-01	.1507	.1348	.9207	.5349-02	.4784-02	.6905	4.832	533.0
248	35.800	.80600-01	138.00	.2637	.4219	.3357	.9428	.1495-01	.1190-01	1.834	12.79	539.4
249	35.900	.21310	247.00	.6124-01	.9118-01	.8572-01	.9130	.3236-02	.3042-02	.4869	3.448	511.6
249	36.000	.19040	235.00	.8109-01	.1230	.1134	.9163	.4365-02	.4026-02	.6214	4.381	519.7
249	36.200	.16810	220.00	.9664-01	.1513	.1357	.9203	.5370-02	.4816-02	.6986	4.891	532.0
248	36.200	.72400-01	135.00	.3112	.5005	.3922	.9454	.1774-01	.1390-01	2.145	14.94	541.2
249	36.300	.12200	200.00	.1611	.2581	.2175	.9310	.9160-02	.7721-02	1.120	7.809	539.8
248	36.600	.65700-01	131.00	.3221	.5222	.4030	.9476	.1851-01	.1428-01	2.192	15.25	543.7
249	36.700	.18700	226.00	.7875-01	.1195	.1099	.9169	.4243-02	.3901-02	.6025	4.246	520.1
249	36.900	.16480	211.00	.9738-01	.1534	.1368	.9211	.5446-02	.4857-02	.6961	4.867	534.3
249	36.900	.10110	187.00	.2164	.3444	.2828	.9368	.1222-01	.1004-01	1.520	10.61	537.8
248	37.000	.60400-01	123.00	.3576	.5762	.4425	.9494	.2042-01	.1568-01	2.457	17.11	541.8
249	37.000	.12440	204.00	.1609	.2580	.2179	.9304	.9156-02	.7735-02	1.117	7.782	540.1
248	37.100	.58600-01	119.00	.3837	.6191	.4737	.9501	.2194-01	.1678-01	2.631	18.32	542.2
249	37.200	.21310	246.00	.6063-01	.9018-01	.8476-01	.9131	.3201-02	.3008-02	.4831	3.422	511.2
249	37.600	.16810	219.00	.9792-01	.1533	.1374	.9205	.5443-02	.4878-02	.7073	4.952	532.1
248	37.800	.10270	150.00	.2022	.3263	.2666	.9365	.1156-01	.9448-02	1.387	9.652	542.2
249	37.900	.12100	195.00	.1738	.2744	.2321	.9314	.9739-02	.8240-02	1.238	8.652	535.0
249	38.000	.80300-01	179.00	.2882	.4570	.3647	.9432	.1622-01	.1294-01	2.037	14.23	536.5
248	38.500	.46800-01	112.00	.4282	.6971	.5199	.9543	.2470-01	.1842-01	2.893	20.11	545.0
249	38.600	.12440	203.00	.1634	.2620	.2211	.9306	.9299-02	.7848-02	1.134	7.902	540.2
249	38.700	.10000+00	185.00	.2137	.3389	.2780	.9374	.1203-01	.9868-02	1.510	10.55	536.6
248	38.900	.82200-01	141.00	.2637	.4243	.3367	.9427	.1504-01	.1193-01	1.816	12.65	541.3
248	39.300	.41600-01	104.00	.4700	.7784	.5687	.9562	.2758-01	.2015-01	3.093	21.44	550.0
249	39.500	.10270	190.00	.2184	.3466	.2852	.9367	.1230-01	.1012-01	1.541	10.76	536.9
249	39.600	.16810	218.00	.1048	.1642	.1470	.9207	.5830-02	.5218-02	.7562	5.293	532.4
249	39.900	.19040	233.00	.7535-01	.1139	.1050	.9166	.4041-02	.3725-02	.5816	4.103	518.2
249	40.100	.79500-01	177.00	.2906	.4595	.3664	.9437	.1631-01	.1300-01	2.063	14.42	535.6
249	40.200	.12440	202.00	.1664	.2672	.2251	.9308	.9483-02	.7990-02	1.151	8.019	540.7
249	40.300	.21310	245.00	.6298-01	.9323-01	.8763-01	.9133	.3309-02	.3110-02	.5068	3.594	508.9
248	41.100	.82200-01	142.00	.2964	.4811	.3794	.9430	.1705-01	.1344-01	2.012	13.99	544.1

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K131)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
249	41.100	.60700-01	173.00	.3595	.5713	.4414	.9499	.2028-01	.1567-01	2.532	17.67	537.2
249	42.600	.59600-01	172.00	.3703	.5912	.4543	.9505	.2098-01	.1613-01	2.588	18.05	538.7
249	43.200	.42000-01	168.00	.4355	.6991	.5207	.9566	.2481-01	.1848-01	3.017	21.02	540.5
249	43.400	.82200-01	181.00	.2577	.4054	.3248	.9433	.1439-01	.1153-01	1.846	12.91	533.8
248	43.600	.62900-01	128.00	.3003	.4842	.3715	.9495	.1716-01	.1316-01	2.061	14.35	542.0
248	45.000	.22900-01	8.0000	.6732	1.245	.8089	.9635	.4413-01	.2866-01	3.820	26.11	575.5
249	46.100	.62900-01	174.00	.3517	.5604	.4325	.9499	.1989-01	.1535-01	2.466	17.20	538.1
249	47.700	.40800-01	167.00	.4758	.7738	.5686	.9576	.2746-01	.2018-01	3.227	22.43	544.6
248	48.400	.44200-01	109.00	.4524	.7412	.5447	.9565	.2626-01	.1930-01	3.026	21.01	546.9
249	51.900	.44800-01	170.00	.4122	.6531	.4905	.9567	.2318-01	.1741-01	2.918	20.38	536.2
249	53.200	.24700-01	163.00	.6723	1.159	.7917	.9641	.4114-01	.2810-01	4.179	28.80	560.5
249	65.200	.24700-01	162.00	.6478	1.118	.7587	.9652	.3967-01	.2693-01	4.024	27.73	560.7
247	90.000	.91000-02	44.000	.6163	1.384	.7562	.9666	.4910-01	.2683-01	2.901	19.54	603.0
247	90.000	.11100-01	45.000	.7680	1.695	.9394	.9666	.6014-01	.3333-01	3.665	24.71	601.2
247	90.000	.13100-01	46.000	.7965	1.640	.9615	.9666	.5819-01	.3411-01	4.043	27.38	592.6
247	90.000	.17000-01	48.000	.6629	1.262	.7877	.9666	.4479-01	.2795-01	3.644	24.84	580.8
247	90.000	.20900-01	50.000	.7166	1.317	.8450	.9666	.4672-01	.2998-01	4.103	28.07	574.3
247	90.000	.24900-01	52.000	1.283	2.215	1.496	.9662	.7858-01	.5307-01	7.957	54.83	560.8
247	90.000	.26900-01	53.000	.5989	1.049	.7031	.9654	.3721-01	.2495-01	3.644	25.06	564.2
247	90.000	.28800-01	54.000	.5905	1.023	.6939	.9647	.3630-01	.2462-01	3.646	25.11	561.7
247	90.000	.32800-01	55.000	.4054	.6390	.4682	.9633	.2267-01	.1661-01	2.896	20.24	534.4
247	90.000	.36700-01	56.000	.5101	.8508	.6019	.9619	.3019-01	.2136-01	3.325	23.02	552.0
247	90.000	.40600-01	57.000	.4999	.8490	.5968	.9605	.3012-01	.2117-01	3.173	21.91	556.8
247	90.000	.48500-01	58.000	.4965	.8318	.5984	.9577	.2951-01	.2123-01	3.215	22.25	553.2
247	90.000	.56400-01	59.000	.4266	.7096	.5198	.9550	.2518-01	.1844-01	2.792	19.34	551.2
247	90.000	.76100-01	60.000	.3324	.5502	.4176	.9485	.1952-01	.1482-01	2.192	15.20	549.8
247	90.000	.95900-01	61.000	.2880	.4789	.3740	.9423	.1699-01	.1327-01	1.887	13.07	551.1
247	90.000	.11550	62.000	.2150	.3548	.2867	.9365	.1259-01	.1017-01	1.424	9.874	549.0
247	135.00	.19000-01	49.000	.7044	1.290	.8443	.9635	.4578-01	.2996-01	4.049	27.70	573.7
247	135.00	.22900-01	51.000	.6656	1.209	.7962	.9635	.4290-01	.2825-01	3.865	26.47	572.0
247	180.00	.91000-02	23.000	.3019	.4835	.3614	.9562	.1715-01	.1282-01	2.099	14.63	539.7
247	180.00	.11100-01	24.000	.6449	1.264	.8211	.9562	.4486-01	.2913-01	3.436	23.36	585.6
247	180.00	.13100-01	25.000	.7092	1.377	.9005	.9562	.4885-01	.3195-01	3.817	25.97	584.0
247	180.00	.15000-01	26.000	.6994	1.313	.8795	.9562	.4660-01	.3121-01	3.904	26.65	578.3
247	180.00	.17000-01	27.000	.6878	1.265	.8597	.9562	.4490-01	.3050-01	3.933	26.90	574.5
247	180.00	.19000-01	28.000	.6760	1.238	.8438	.9562	.4391-01	.2994-01	3.889	26.61	573.5
247	180.00	.20900-01	29.000	.6414	1.137	.7927	.9562	.4034-01	.2813-01	3.841	26.38	566.9
247	180.00	.28800-01	32.000	.5539	.9381	.6815	.9543	.3329-01	.2418-01	3.531	24.39	556.0
247	180.00	.32800-01	33.000	.5136	.8380	.6283	.9528	.2973-01	.2229-01	3.463	24.06	545.6
247	180.00	.36700-01	34.000	.4813	.7955	.5955	.9515	.2823-01	.2113-01	3.180	22.05	549.4
247	180.00	.48500-01	36.000	.3971	.6382	.4956	.9474	.2264-01	.1758-01	2.743	19.11	541.0
247	180.00	.56400-01	37.000	.3700	.5890	.4656	.9447	.2090-01	.1652-01	2.597	18.12	537.8
247	180.00	.76100-01	38.000	.2860	.4481	.3678	.9385	.1590-01	.1305-01	2.063	14.44	532.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

(R4K131)

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
247	180.00	.95800-01	39.000	.2155	.3340	.2830	.9328	.1185-01	.1004-01	1.586	11.12	528.3
247	180.00	.11550	40.000	.1632	.2551	.2208	.9276	.9051-02	.7833-02	1.182	8.281	531.5
247	180.00	.18450	42.000	.6502-01	.9834-01	.9172-01	.9141	.3489-02	.3254-02	.5009	3.533	518.5
247	225.00	.22900-01	30.000	.5672	.9716	.7188	.9493	.3447-01	.2550-01	3.557	24.53	558.9
247	270.00	.91000-02	63.000	.2863	.4467	.3542	.9466	.1585-01	.1257-01	2.081	14.58	530.8
247	270.00	.11100-01	64.000	.3568	.5647	.4440	.9466	.2004-01	.1576-01	2.529	17.67	535.9
247	270.00	.13100-01	65.000	.6127	1.059	.7907	.9466	.3758-01	.2805-01	3.794	26.14	561.2
247	270.00	.17000-01	67.000	.7493	1.404	.9978	.9466	.4983-01	.3540-01	4.193	28.63	578.0
247	270.00	.20900-01	69.000	.6245	1.105	.8133	.9466	.3921-01	.2886-01	3.747	25.74	566.5
247	270.00	.24900-01	71.000	.6216	1.090	.8087	.9461	.3866-01	.2869-01	3.778	25.98	564.4
247	270.00	.28800-01	73.000	.4840	.8162	.6244	.9447	.2896-01	.2216-01	3.103	21.45	554.9
247	270.00	.36700-01	75.000	.4410	.7307	.5728	.9420	.2592-01	.2032-01	2.904	20.13	550.1
247	270.00	.48500-01	77.000	.3642	.5844	.4751	.9380	.2073-01	.1686-01	2.523	17.58	540.4
247	270.00	.56400-01	78.000	.3211	.5123	.4228	.9355	.1818-01	.1500-01	2.246	15.67	538.5
247	270.00	.95800-01	80.000	.1566	.2440	.2145	.9247	.8657-02	.7610-02	1.141	7.996	530.3
247	270.00	.11550	81.000	.1130	.1775	.1591	.9202	.6297-02	.5645-02	.8121	5.682	533.1
247	315.00	.19000-01	68.000	.5392	.9135	.6805	.9493	.3241-01	.2414-01	3.435	23.73	556.1
247	315.00	.22900-01	70.000	.5554	.9770	.7109	.9493	.3467-01	.2522-01	3.360	23.10	565.2

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K132)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 9.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
250	5.500	.3179-02	-9.030	173.8	736.7	.1868	104.5	89.98	2756.	.4826-02	.8408-07	4.916
251	5.500	.3181-02	-9.036	173.8	736.7	.1869	104.5	89.98	2756.	.4826-02	.8408-07	4.917
252	5.500	.3181-02	-9.036	174.1	736.7	.1871	104.5	89.98	2756.	.4832-02	.8408-07	4.923

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
250	.3546-01	.1106-01
251	.3546-01	.1106-01
252	.3548-01	.1105-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
251	.00000	.91000-02	1.0000	.4589	.8613	.5788	.9556	.3054-01	.2053-01	2.565	17.50	579.0
251	.00000	.15000-01	4.0000	.6574	1.326	.8468	.9556	.4702-01	.3003-01	3.407	23.10	590.5
251	.00000	.17000-01	5.0000	.6458	1.243	.8207	.9556	.4408-01	.2910-01	3.512	23.90	583.3
251	.00000	.19000-01	6.0000	.6035	1.141	.7629	.9556	.4047-01	.2705-01	3.346	22.81	580.3
251	.00000	.24900-01	9.0000	.5419	.9878	.6794	.9552	.3503-01	.2409-01	3.136	21.46	573.5
251	.00000	.26900-01	10.000	.5078	.9130	.6365	.9544	.3238-01	.2257-01	2.988	20.48	570.7
250	.00000	.32800-01	12.000	.4452	.7501	.5522	.9523	.2680-01	.1958-01	2.860	19.77	555.5
250	.00000	.36700-01	13.000	.4007	.6608	.4965	.9510	.2343-01	.1761-01	2.660	18.44	549.5
250	.00000	.40600-01	14.000	.4143	.6929	.5196	.9496	.2457-01	.1842-01	2.691	18.62	553.5
250	.00000	.48500-01	15.000	.3647	.6021	.4612	.9469	.2135-01	.1635-01	2.416	16.74	549.9
250	.00000	.56400-01	16.000	.3401	.5596	.4351	.9443	.1984-01	.1543-01	2.265	15.71	548.9
250	.00000	.76100-01	17.000	.2541	.4063	.3307	.9382	.1441-01	.1172-01	1.771	12.35	540.0
250	.00000	.11550	19.000	.1544	.2463	.2118	.9274	.8733-02	.7510-02	1.082	7.544	539.1
250	.00000	.16480	20.000	.8100-01	.1285	.1158	.9171	.4557-02	.4142-02	.5724	3.995	537.4
250	.00000	.21400	22.000	.4202-01	.6216-01	.5907-01	.9109	.2204-02	.2095-02	.3389	2.403	509.2
252	2.0000	.24700-01	165.00	.5401	.9111	.6587	.9558	.3233-01	.2337-01	3.466	23.95	555.8
251	9.0000	.15000-01	157.00	.6659	1.307	.8387	.9580	.4635-01	.2974-01	3.547	24.10	586.5
251	9.0000	.17600-01	158.00	.6189	1.210	.7787	.9580	.4292-01	.2761-01	3.309	22.49	585.9

FH15. EXTERNAL TANK OGIVE AERO HEATING

FH15. E.T. NOSE (CLEAN)

HU/HREF

(R4K132)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
252	9.8000	.24700-01	164.00	.5742	1.003	.7006	.9578	.3558-01	.2486-01	3.513	24.16	564.3
251	10.000	.22900-01	88.000	.5890	1.109	.7324	.9583	.3934-01	.2597-01	3.280	22.37	579.6
251	10.000	.26900-01	90.000	.5411	.9840	.6708	.9571	.3490-01	.2379-01	3.141	21.50	573.0
251	10.000	.34700-01	94.000	.4423	.7531	.5452	.9543	.2671-01	.1933-01	2.800	19.32	558.2
252	14.600	.44200-01	169.00	.4158	.6796	.5106	.9522	.2411-01	.1812-01	2.800	19.44	546.9
251	18.500	.44200-01	106.00	.4171	.7288	.5216	.9532	.2584-01	.1850-01	2.548	17.52	564.4
252	19.600	.62900-01	175.00	.3336	.5362	.4167	.9472	.1903-01	.1479-01	2.307	16.06	541.8
251	19.800	.40800-01	101.00	.4455	.7827	.5536	.9547	.2776-01	.1963-01	2.702	18.57	565.7
251	20.000	.24900-01	89.000	.5601	1.040	.6854	.9604	.3687-01	.2431-01	3.172	21.67	577.0
251	20.000	.28800-01	91.000	.5325	.9747	.6543	.9590	.3456-01	.2320-01	3.066	20.97	574.3
251	20.000	.32800-01	93.000	.5066	.9131	.6246	.9575	.3238-01	.2215-01	2.972	20.37	571.2
251	22.200	.62900-01	125.00	.3266	.5610	.4176	.9478	.1989-01	.1481-01	2.042	14.07	560.4
251	22.400	.44200-01	107.00	.4174	.7298	.5193	.9542	.2588-01	.1842-01	2.548	17.52	564.6
252	22.600	.10270	192.00	.2076	.3304	.2726	.9358	.1172-01	.9674-02	1.460	10.18	538.5
251	23.000	.42000-01	105.00	.4342	.7618	.5382	.9551	.2701-01	.1908-01	2.637	18.13	565.4
251	23.400	.59600-01	120.00	.3432	.5883	.4353	.9492	.2086-01	.1544-01	2.152	14.84	559.8
252	23.900	.21310	250.00	.5428-01	.8174-01	.7666-01	.9131	.2900-02	.2720-02	.4224	2.981	517.4
251	24.100	.82200-01	139.00	.2659	.4471	.3472	.9422	.1585-01	.1231-01	1.714	11.85	554.9
252	24.400	.19040	238.00	.7295-01	.1124	.1032	.9164	.3988-02	.3663-02	.5434	3.815	526.8
252	24.400	.12440	207.00	.1593	.2578	.2171	.9304	.9149-02	.7703-02	1.090	7.583	543.8
252	24.800	.16810	223.00	.9945-01	.1585	.1413	.9205	.5623-02	.5013-02	.6981	4.869	538.8
251	24.900	.62900-01	126.00	.3398	.5832	.4328	.9485	.2068-01	.1535-01	2.127	14.66	560.1
252	25.000	.79500-01	178.00	.2855	.4567	.3626	.9432	.1620-01	.1287-01	1.990	13.87	540.2
252	25.300	.10270	191.00	.2130	.3392	.2790	.9364	.1204-01	.9899-02	1.497	10.44	538.7
252	25.300	.10000+00	186.00	.2191	.3498	.2863	.9372	.1241-01	.1016-01	1.533	10.69	539.5
251	25.500	.60700-01	124.00	.3440	.5896	.4360	.9494	.2091-01	.1546-01	2.158	14.88	559.8
252	26.000	.12440	206.00	.1606	.2603	.2186	.9307	.9238-02	.7758-02	1.096	7.618	544.4
251	26.300	.82200-01	140.00	.2650	.4430	.3442	.9427	.1571-01	.1221-01	1.723	11.92	553.3
252	26.700	.12100	199.00	.1629	.2629	.2201	.9317	.9329-02	.7808-02	1.120	7.794	542.9
252	26.800	.16810	222.00	.9957-01	.1584	.1410	.9208	.5620-02	.5005-02	.7007	4.889	538.3
252	27.000	.19040	237.00	.7041-01	.1085	.9950-01	.9168	.3851-02	.3530-02	.5240	3.679	526.9
252	27.100	.21310	249.00	.5462-01	.8219-01	.7697-01	.9134	.2916-02	.2731-02	.4255	3.004	517.1
252	27.200	.80300-01	180.00	.2813	.4487	.3564	.9435	.1592-01	.1265-01	1.971	13.75	539.2
251	27.400	.40100-01	98.000	.4617	.8225	.5636	.9568	.2917-01	.2020-01	2.750	18.87	568.7
252	27.400	.16480	215.00	.9757-01	.1561	.1382	.9216	.5540-02	.4905-02	.6801	4.740	540.2
251	27.600	.41600-01	102.00	.4474	.7926	.5524	.9564	.2811-01	.1959-01	2.684	18.43	567.5
252	27.600	.12440	205.00	.1567	.2541	.2130	.9310	.9017-02	.7559-02	1.069	7.432	544.5
252	27.600	.18700	230.00	.6505-01	.1002	.9150-01	.9174	.3556-02	.3250-02	.4845	3.402	526.7
252	27.700	.21010	243.00	.6228-01	.9431-01	.8802-01	.9139	.3346-02	.3123-02	.4794	3.379	519.7
252	27.900	.10110	188.00	.2062	.3300	.2694	.9375	.1171-01	.9560-02	1.437	10.01	540.3
251	28.000	.46800-01	110.00	.3954	.6927	.4910	.9547	.2457-01	.1741-01	2.407	16.55	565.0
252	28.200	.16810	221.00	.1005	.1605	.1426	.9210	.5697-02	.5051-02	.7027	4.899	539.7
252	28.300	.19040	236.00	.6977-01	.1072	.9830-01	.9169	.3805-02	.3488-02	.5219	3.666	525.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K132)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
252	28.300	.12200	201.00	.1700	.2732	.2290	.9318	.9695-02	.8125-02	1.176	8.187	541.7
251	28.400	.53500-01	114.00	.3882	.6793	.4875	.9525	.2409-01	.1729-01	2.366	16.27	564.8
252	28.400	.21310	248.00	.5653-01	.8515-01	.7968-01	.9136	.3021-02	.2827-02	.4397	3.104	517.5
251	28.700	.58600-01	117.00	.3621	.6237	.4561	.9508	.2212-01	.1618-01	2.255	15.54	561.0
252	28.800	.16580	217.00	.9502-01	.1516	.1343	.9216	.5378-02	.4765-02	.6658	4.643	539.2
251	28.800	.60400-01	121.00	.3428	.5872	.4323	.9503	.2082-01	.1533-01	2.152	14.84	559.7
252	29.000	.21110	244.00	.6140-01	.9256-01	.8646-01	.9139	.3284-02	.3068-02	.4767	3.364	517.8
251	29.000	.65700-01	129.00	.3247	.5553	.4129	.9486	.1969-01	.1464-01	2.043	14.09	559.3
251	29.200	.72400-01	133.00	.3114	.5300	.3996	.9465	.1879-01	.1417-01	1.972	13.61	558.1
251	29.300	.79500-01	136.00	.2701	.4534	.3487	.9443	.1608-01	.1236-01	1.745	12.06	554.5
251	29.600	.92500-01	143.00	.2414	.4054	.3181	.9404	.1438-01	.1128-01	1.558	10.77	554.6
251	29.700	.10000+00	146.00	.2309	.3840	.3064	.9382	.1362-01	.1087-01	1.514	10.48	551.8
252	29.900	.12100	198.00	.1669	.2701	.2251	.9324	.9585-02	.7986-02	1.143	7.947	543.8
252	30.200	.16480	214.00	.9542-01	.1519	.1344	.9220	.5390-02	.4768-02	.6707	4.678	538.6
252	30.200	.18700	229.00	.5779	.7103	.6825	.9178	.2521-01	.2422-01	8.099	63.40	341.7
252	30.300	.21010	242.00	.6368-01	.9638-01	.8984-01	.9142	.3420-02	.3188-02	.4905	3.458	519.6
251	31.500	.11100-01	83.000	.7336	1.584	.9111	.9637	.5616-01	.3231-01	3.570	24.09	599.4
252	32.100	.21010	241.00	.6747-01	.1021	.9508-01	.9144	.3623-02	.3374-02	.5200	3.666	519.4
252	32.200	.16480	213.00	.1005	.1598	.1411	.9224	.5669-02	.5008-02	.7083	4.942	538.1
252	32.200	.17860	224.00	.1014	.1585	.1427	.9196	.5623-02	.5064-02	.7361	5.153	532.1
252	32.200	.18700	228.00	.8431-01	.1292	.1179	.9181	.4584-02	.4182-02	.6343	4.459	524.6
252	32.300	.12100	197.00	.1694	.2727	.2271	.9329	.9677-02	.8059-02	1.168	8.130	542.3
252	32.300	.12300	194.00	.1535	.2478	.2067	.9324	.8792-02	.7334-02	1.054	7.336	543.1
252	32.300	.12730	208.00	.1429	.2339	.1951	.9312	.8300-02	.6924-02	.9608	6.670	547.2
252	32.300	.13420	209.00	.1400	.2318	.1943	.9295	.8225-02	.6893-02	.9246	6.407	550.6
251	32.400	.10000+00	147.00	.2272	.3806	.3017	.9388	.1350-01	.1070-01	1.473	10.19	553.9
252	32.400	.10110	184.00	.2152	.3453	.2802	.9385	.1225-01	.9941-02	1.493	10.40	541.1
252	32.400	.10630	193.00	.2011	.3212	.2631	.9370	.1140-01	.9336-02	1.405	9.795	539.7
252	32.500	.85800-01	183.00	.2673	.4321	.3415	.9430	.1533-01	.1212-01	1.832	12.75	543.5
251	32.600	.79500-01	137.00	.2901	.4901	.3741	.9450	.1738-01	.1327-01	1.857	12.83	556.1
252	32.600	.80800-01	176.00	.2835	.4566	.3588	.9446	.1620-01	.1273-01	1.954	13.60	542.4
251	32.700	.67400-01	132.00	.3283	.5620	.4169	.9489	.1993-01	.1478-01	2.062	14.22	559.5
251	32.700	.72400-01	134.00	.3134	.5345	.4008	.9473	.1895-01	.1421-01	1.979	13.65	558.6
251	32.800	.65700-01	130.00	.3262	.5583	.4129	.9495	.1980-01	.1464-01	2.049	14.13	559.5
252	32.800	.16680	210.00	.9935-01	.1579	.1397	.9221	.5603-02	.4959-02	.7003	4.887	538.0
252	32.800	.18880	225.00	.7872-01	.1209	.1103	.9178	.4289-02	.3915-02	.5901	4.146	525.4
251	32.900	.58600-01	118.00	.3543	.6181	.4460	.9518	.2192-01	.1582-01	2.169	14.92	564.1
251	32.900	.60400-01	122.00	.3480	.5982	.4372	.9512	.2121-01	.1550-01	2.174	14.98	560.5
252	32.900	.61300-01	171.00	.3497	.5642	.4299	.9509	.2002-01	.1525-01	2.405	16.73	542.9
251	33.000	.53500-01	115.00	.3949	.6895	.4926	.9536	.2445-01	.1747-01	2.414	16.60	564.3
251	33.200	.48300-01	113.00	.4052	.7056	.5002	.9554	.2502-01	.1774-01	2.486	17.11	563.6
252	33.400	.42800-01	166.00	.4339	.7129	.5209	.9573	.2530-01	.1848-01	2.898	20.11	548.4
251	33.500	.40100-01	99.000	.4531	.7961	.5524	.9583	.2823-01	.1959-01	2.748	18.88	565.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

(R4K132)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
251	33.600	.38300-01	97.000	.4761	.8470	.5804	.9589	.3003-01	.2058-01	2.840	19.49	568.4
251	33.700	.36700-01	96.000	.4796	.8643	.5850	.9595	.3065-01	.2074-01	2.815	19.29	571.2
251	33.900	.33800-01	95.000	.4134	.7484	.5020	.9606	.2654-01	.1780-01	2.413	16.53	572.1
252	34.700	.21010	240.00	.7390-01	.1119	.1041	.9147	.3970-02	.3692-02	.5688	4.010	519.7
252	34.700	.18700	227.00	.7372-01	.1133	.1031	.9184	.4020-02	.3658-02	.5516	3.875	525.8
252	34.900	.16480	212.00	.1031	.1644	.1448	.9228	.5833-02	.5136-02	.7227	5.040	539.1
251	35.100	.10000+00	148.00	.2143	.3600	.2840	.9394	.1276-01	.1007-01	1.383	9.564	554.6
252	35.200	.23900-01	161.00	.6140	1.097	.7279	.9645	.3892-01	.2583-01	3.646	25.01	569.3
251	35.300	.92500-01	145.00	.2632	.4436	.3451	.9416	.1573-01	.1224-01	1.690	11.68	555.6
251	35.300	.22100-01	160.00	.4864	.9327	.5856	.9646	.3307-01	.2077-01	2.655	18.08	582.7
252	35.400	.18800	231.00	.8189-01	.1256	.1144	.9183	.4458-02	.4061-02	.6147	4.320	525.1
252	35.500	.12100	196.00	.1739	.2817	.2332	.9335	.9997-02	.8276-02	1.188	8.261	544.2
252	35.600	.16580	216.00	.1006	.1602	.1412	.9227	.5684-02	.5010-02	.7066	4.928	538.7
251	35.800	.80600-01	138.00	.2783	.4677	.3574	.9454	.1659-01	.1267-01	1.795	12.41	554.8
252	35.900	.21310	247.00	.7139-01	.1075	.1003	.9144	.3816-02	.3557-02	.5553	3.919	517.5
252	36.000	.19040	235.00	.8980-01	.1378	.1257	.9180	.4889-02	.4461-02	.6742	4.738	525.1
252	36.200	.16810	220.00	.1049	.1666	.1472	.9223	.5910-02	.5224-02	.7402	5.165	537.8
251	36.200	.72400-01	135.00	.3196	.5442	.4068	.9481	.1930-01	.1443-01	2.023	13.96	558.2
252	36.300	.12200	200.00	.1750	.2841	.2351	.9334	.1008-01	.8342-02	1.191	8.278	544.9
251	36.600	.65700-01	131.00	.3597	.6217	.4549	.9503	.2205-01	.1613-01	2.229	15.35	561.9
252	36.700	.18700	226.00	.8764-01	.1346	.1224	.9187	.4776-02	.4341-02	.6568	4.615	525.5
252	36.900	.16480	211.00	.1066	.1705	.1497	.9231	.6050-02	.5313-02	.7439	5.185	540.0
252	36.900	.10110	187.00	.2316	.3750	.3015	.9394	.1330-01	.1070-01	1.584	11.02	543.9
251	37.000	.60400-01	123.00	.3659	.6331	.4585	.9522	.2245-01	.1626-01	2.265	15.59	562.1
252	37.000	.12440	204.00	.1707	.2786	.2306	.9329	.9884-02	.8184-02	1.153	8.009	546.3
251	37.100	.56600-01	119.00	.3774	.6558	.4720	.9528	.2326-01	.1674-01	2.323	15.99	563.1
252	37.200	.21310	246.00	.7155-01	.1077	.1003	.9145	.3821-02	.3561-02	.5573	3.934	517.2
252	37.600	.16810	219.00	.1080	.1716	.1515	.9225	.6090-02	.5376-02	.7611	5.311	538.0
251	37.800	.10270	150.00	.2353	.3953	.3122	.9391	.1402-01	.1107-01	1.518	10.49	554.7
252	37.900	.12100	195.00	.1868	.2995	.2485	.9340	.1063-01	.8819-02	1.297	9.038	540.9
252	38.000	.80300-01	179.00	.3000	.4851	.3779	.9459	.1721-01	.1341-01	2.054	14.29	543.7
251	38.500	.46800-01	112.00	.4277	.7515	.5247	.9571	.2665-01	.1861-01	2.593	17.82	565.7
252	38.600	.12440	203.00	.1729	.2812	.2328	.9332	.9979-02	.8260-02	1.173	8.153	545.4
252	38.700	.10000+00	185.00	.2224	.3587	.2890	.9401	.1273-01	.1022-01	1.531	10.66	542.7
251	38.900	.82200-01	141.00	.3117	.5262	.4006	.9455	.1866-01	.1421-01	1.997	13.80	556.0
251	39.300	.41600-01	104.00	.4413	.7919	.5390	.9591	.2808-01	.1911-01	2.604	17.85	570.3
252	39.500	.10270	190.00	.2344	.3786	.3046	.9395	.1343-01	.1081-01	1.608	11.19	543.3
252	39.600	.16810	218.00	.1110	.1766	.1556	.9228	.6268-02	.5522-02	.7805	5.445	538.5
252	39.900	.19040	233.00	.8378-01	.1281	.1167	.9185	.4546-02	.4141-02	.6329	4.451	523.8
252	40.100	.79500-01	177.00	.3042	.4911	.3817	.9466	.1743-01	.1354-01	2.089	14.54	543.1
252	40.200	.12440	202.00	.1780	.2903	.2396	.9335	.1030-01	.8503-02	1.203	8.359	546.2
252	40.300	.21310	245.00	.7056-01	.1057	.9846-01	.9148	.3751-02	.3493-02	.5545	3.919	515.2
251	41.100	.82200-01	142.00	.2742	.4672	.3529	.9460	.1657-01	.1252-01	1.734	11.97	558.3

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K132)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
252	41.100	.60700-01	173.00	.3689	.6002	.4506	.9529	.2130-01	.1599-01	2.502	17.39	545.5
252	42.600	.59600-01	172.00	.3837	.6281	.4682	.9536	.2229-01	.1661-01	2.578	17.90	547.3
252	43.200	.42000-01	168.00	.4358	.7195	.5179	.9598	.2553-01	.1838-01	2.888	20.02	549.9
252	43.400	.82200-01	181.00	.2660	.4243	.3324	.9465	.1506-01	.1180-01	1.864	13.00	539.2
251	43.600	.62900-01	128.00	.3785	.6498	.4716	.9527	.2304-01	.1672-01	2.368	16.32	560.2
251	45.000	.22900-01	8.0000	.6384	1.256	.7635	.9667	.4455-01	.2708-01	3.390	23.03	586.9
252	46.100	.62900-01	174.00	.3669	.5987	.4480	.9532	.2125-01	.1590-01	2.476	17.20	546.5
252	47.700	.40800-01	167.00	.4821	.8086	.5720	.9611	.2869-01	.2029-01	3.120	21.58	554.2
251	48.400	.44200-01	109.00	.4534	.8039	.5491	.9600	.2851-01	.1947-01	2.716	18.65	567.7
252	51.900	.44800-01	170.00	.4117	.6695	.4856	.9605	.2376-01	.1723-01	2.794	19.42	545.4
252	53.200	.24700-01	163.00	.6465	1.144	.7517	.9678	.4057-01	.2667-01	3.888	26.70	567.2
252	65.200	.24700-01	162.00	.6466	1.149	.7457	.9696	.4077-01	.2646-01	3.865	26.53	568.2
250	90.000	.91000-02	44.000	.6226	1.563	.7514	.9715	.5543-01	.2664-01	2.703	18.10	614.2
250	90.000	.11100-01	45.000	.8093	1.840	.9629	.9715	.6523-01	.3414-01	3.775	25.39	605.1
250	90.000	.13100-01	46.000	.8175	1.762	.9647	.9715	.6247-01	.3421-01	3.984	26.89	599.2
250	90.000	.17000-01	48.000	.7929	1.556	.9216	.9715	.5516-01	.3268-01	4.225	28.71	586.4
250	90.000	.20900-01	50.000	.6680	1.238	.7687	.9715	.4390-01	.2726-01	3.789	25.89	576.7
250	90.000	.24900-01	52.000	.9392	1.667	1.075	.9711	.5911-01	.3812-01	5.619	38.57	567.9
250	90.000	.26900-01	53.000	.6177	1.117	.7122	.9703	.3961-01	.2525-01	3.610	24.72	571.9
250	90.000	.28800-01	54.000	.6069	1.086	.7006	.9697	.3849-01	.2484-01	3.595	24.66	569.6
250	90.000	.32800-01	55.000	.4432	.7119	.5036	.9682	.2524-01	.1786-01	3.068	21.36	541.5
250	90.000	.36700-01	56.000	.4988	.8501	.5779	.9669	.3014-01	.2049-01	3.153	21.75	558.4
250	90.000	.40600-01	57.000	.5079	.8924	.5951	.9655	.3129-01	.2110-01	3.126	21.52	563.1
250	90.000	.48500-01	58.000	.4858	.8320	.5750	.9627	.2950-01	.2039-01	3.050	21.03	559.6
250	90.000	.56400-01	59.000	.4374	.7440	.5237	.9600	.2638-01	.1857-01	2.773	19.14	557.9
250	90.000	.76100-01	60.000	.3444	.5870	.4264	.9535	.2081-01	.1512-01	2.177	15.02	558.4
250	90.000	.95900-01	61.000	.2956	.5044	.3783	.9472	.1789-01	.1341-01	1.865	12.87	558.7
250	90.000	.11550	62.000	.2392	.4034	.3145	.9412	.1430-01	.1115-01	1.536	10.61	555.6
250	135.00	.19000-01	49.000	.6884	1.275	.8130	.9667	.4520-01	.2883-01	3.909	26.70	576.5
250	135.00	.22900-01	51.000	.6310	1.150	.7427	.9667	.4078-01	.2634-01	3.652	24.99	573.5
250	180.00	.91000-02	23.000	.3794	.6372	.4623	.9557	.2259-01	.1639-01	2.449	16.93	554.6
250	180.00	.11100-01	24.000	.6096	1.248	.7884	.9557	.4424-01	.2795-01	3.114	21.09	592.6
250	180.00	.13100-01	25.000	.6802	1.304	.8634	.9557	.4625-01	.3061-01	3.713	25.29	582.7
250	180.00	.15000-01	26.000	.6735	1.285	.8536	.9557	.4555-01	.3027-01	3.699	25.20	581.8
250	180.00	.17000-01	27.000	.6533	1.217	.8221	.9557	.4315-01	.2915-01	3.684	25.15	577.6
250	180.00	.19000-01	28.000	.6304	1.162	.7908	.9557	.4120-01	.2804-01	3.600	24.61	575.6
250	180.00	.20900-01	29.000	.6149	1.099	.7642	.9557	.3897-01	.2710-01	3.646	25.01	569.4
250	180.00	.28800-01	32.000	.5200	.8861	.6428	.9538	.3142-01	.2279-01	3.288	22.68	558.4
250	180.00	.32800-01	33.000	.4727	.7801	.5820	.9523	.2766-01	.2064-01	3.134	21.73	549.7
250	180.00	.36700-01	34.000	.4422	.7416	.5514	.9510	.2630-01	.1955-01	2.862	19.79	554.2
250	180.00	.48500-01	36.000	.3794	.6220	.4784	.9469	.2206-01	.1696-01	2.540	17.63	547.8
250	180.00	.56400-01	37.000	.3530	.5751	.4497	.9443	.2039-01	.1595-01	2.388	16.59	545.9
250	180.00	.76100-01	38.000	.2740	.4371	.3561	.9382	.1550-01	.1263-01	1.917	13.37	539.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
250	180.00	.95800-01	39.000	.2087	.3283	.2767	.9325	.1164-01	.9812-02	1.496	10.46	534.5
250	180.00	.11550	40.000	.1601	.2535	.2185	.9274	.8988-02	.7749-02	1.135	7.923	536.8
250	180.00	.18450	42.000	.6353-01	.9740-01	.9062-01	.9140	.3454-02	.3213-02	.4773	3.355	524.8
250	225.00	.22900-01	30.000	.5193	.9002	.6745	.9456	.3192-01	.2392-01	3.206	22.07	562.6
250	270.00	.91000-02	63.000	.3419	.5408	.4350	.9418	.1917-01	.1543-01	2.428	16.95	536.4
250	270.00	.11100-01	64.000	.3579	.5698	.4568	.9418	.2020-01	.1620-01	2.515	17.54	538.5
250	270.00	.13100-01	65.000	.4838	.8073	.6311	.9418	.2863-01	.2238-01	3.154	21.83	552.8
250	270.00	.17000-01	67.000	.5943	1.121	.8181	.9418	.3973-01	.2901-01	3.306	22.55	579.8
250	270.00	.20900-01	69.000	.5402	.9658	.7267	.9418	.3424-01	.2577-01	3.202	21.96	569.5
250	270.00	.24900-01	71.000	.4483	.7871	.5999	.9413	.2791-01	.2127-01	2.721	18.70	565.5
250	270.00	.28800-01	73.000	.4138	.6998	.5485	.9399	.2481-01	.1945-01	2.645	18.27	556.4
250	270.00	.36700-01	75.000	.3919	.6546	.5238	.9373	.2321-01	.1857-01	2.550	17.65	553.1
250	270.00	.48500-01	77.000	.3194	.5210	.4301	.9335	.1847-01	.1525-01	2.157	14.98	546.3
250	270.00	.56400-01	78.000	.2729	.4421	.3706	.9311	.1568-01	.1314-01	1.863	12.96	544.2
250	270.00	.95800-01	80.000	.1326	.2132	.1891	.9210	.7560-02	.6704-02	.9163	6.380	541.8
250	270.00	.11550	81.000	.9322-01	.1501	.1360	.9171	.5323-02	.4821-02	.6425	4.473	542.3
250	315.00	.19000-01	68.000	.5057	.8622	.6524	.9456	.3057-01	.2313-01	3.195	22.04	558.5
250	315.00	.22900-01	70.000	.4702	.8347	.6167	.9456	.2960-01	.2187-01	2.813	19.31	568.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K205)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = 180.0 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
24	3.010	-5.042	-.3516-02	36.08	721.7	.9676	256.6	180.0	2364.	.1018-01	.2050-06	3.647

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
24	.4395-01	.7588-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
24	.00000	.32800-01	12.000	.5919	1.279	.6742	.9773	.5620-01	.2963-01	3.496	23.75	587.3
24	.00000	.36700-01	13.000	.5467	1.120	.6241	.9758	.4923-01	.2743-01	3.388	23.09	580.7
24	.00000	.40600-01	14.000	.5718	1.217	.6619	.9743	.5350-01	.2909-01	3.420	23.25	585.6
24	.00000	.48500-01	15.000	.4958	1.007	.5799	.9714	.4427-01	.2549-01	3.098	21.13	579.5
24	.00000	.56400-01	16.000	.4744	.9581	.5635	.9687	.4211-01	.2477-01	2.981	20.34	578.7
24	.00000	.76100-01	17.000	.4048	.7782	.4944	.9622	.3420-01	.2173-01	2.676	18.34	571.3
24	.00000	.11550	19.000	.2607	.5001	.3398	.9514	.2198-01	.1494-01	1.728	11.84	570.9
24	.00000	.16480	20.000	.1759	.3295	.2416	.9416	.1448-01	.1062-01	1.197	8.221	566.8
24	.00000	.21400	22.000	.1165	.1973	.1578	.9361	.8674-02	.6934-02	.9015	6.264	545.6
24	90.000	.91000-02	44.000	.6231	2.076	.7771	.9717	.9125-01	.3415-01	2.824	18.86	618.6
24	90.000	.11100-01	45.000	.8308	3.342	1.055	.9717	.1469	.4638-01	3.507	23.34	625.6
24	90.000	.13100-01	46.000	.8078	2.411	.9951	.9717	.1060	.4374-01	3.853	25.81	613.2
24	90.000	.17000-01	48.000	.6269	1.615	.7583	.9717	.7098-01	.3333-01	3.250	21.88	603.7
24	90.000	.20900-01	50.000	.6769	1.664	.8135	.9717	.7315-01	.3576-01	3.619	24.41	600.0
24	90.000	.24900-01	52.000	.6006	1.384	.7176	.9712	.6084-01	.3154-01	3.365	22.77	594.2
24	90.000	.26900-01	53.000	.5872	1.297	.7006	.9704	.5701-01	.3079-01	3.403	23.08	589.8
24	90.000	.28800-01	54.000	.5865	1.269	.7006	.9697	.5577-01	.3079-01	3.460	23.50	587.5
24	90.000	.32800-01	55.000	.5165	1.044	.6152	.9683	.4588-01	.2704-01	3.243	22.13	578.8
24	90.000	.36700-01	56.000	.5278	1.054	.6324	.9669	.4632-01	.2780-01	3.354	22.91	577.1
24	90.000	.40600-01	57.000	.5197	1.063	.6310	.9655	.4671-01	.2773-01	3.226	22.00	580.4
24	90.000	.48500-01	58.000	.5018	.9834	.6134	.9628	.4322-01	.2696-01	3.249	22.23	574.3
24	90.000	.56400-01	59.000	.4215	.8031	.5196	.9603	.3530-01	.2284-01	2.814	19.30	569.8

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
24	90.000	.76100-01	60.000	.3322	.6133	.4198	.9545	.2696-01	.1845-01	2.299	15.82	564.2
24	90.000	.95800-01	61.000	.2859	.5202	.3700	.9495	.2286-01	.1626-01	2.013	13.87	561.4
24	90.000	.11550	62.000	.2134	.3841	.2820	.9453	.1688-01	.1240-01	1.524	10.51	559.2
24	135.00	.19000-01	49.000	.6419	1.502	.7980	.9658	.6603-01	.3507-01	3.555	24.04	595.7
24	135.00	.22900-01	51.000	.6128	1.418	.7603	.9658	.6232-01	.3342-01	3.423	23.16	594.6
24	180.00	.91000-02	23.000	.4830	.9680	.5909	.9636	.4255-01	.2597-01	3.058	20.88	577.6
24	180.00	.11100-01	24.000	.7392	2.129	.9698	.9636	.9357-01	.4263-01	3.592	24.09	611.1
24	180.00	.13100-01	25.000	.7185	1.913	.9301	.9636	.8408-01	.4088-01	3.650	24.55	606.1
24	180.00	.15000-01	26.000	.6859	1.773	.8831	.9636	.7791-01	.3882-01	3.549	23.89	604.0
24	180.00	.17000-01	27.000	.6651	1.603	.8453	.9636	.7044-01	.3715-01	3.606	24.35	598.3
24	180.00	.19000-01	28.000	.6512	1.551	.8257	.9636	.6818-01	.3629-01	3.560	24.05	597.3
24	180.00	.20900-01	29.000	.6281	1.425	.7888	.9636	.6265-01	.3467-01	3.562	24.12	592.6
24	180.00	.28800-01	32.000	.5557	1.182	.6570	.9617	.5196-01	.3064-01	3.326	22.62	585.5
24	180.00	.32800-01	33.000	.5148	1.031	.6423	.9604	.4532-01	.2823-01	3.261	22.27	577.6
24	180.00	.36700-01	34.000	.5132	1.077	.6531	.9591	.4733-01	.2871-01	3.110	21.17	583.8
24	180.00	.56400-01	37.000	.4064	.7909	.5263	.9531	.3476-01	.2313-01	2.651	18.15	573.2
24	180.00	.76100-01	38.000	.3139	.5881	.4141	.9481	.2585-01	.1820-01	2.136	14.67	566.9
24	180.00	.95800-01	39.000	.2485	.4498	.3317	.9440	.1977-01	.1458-01	1.761	12.14	560.4
24	180.00	.11550	40.000	.1977	.3566	.2689	.9406	.1567-01	.1182-01	1.408	9.705	559.7
24	180.00	.18450	42.000	.9921-01	.1641	.1337	.9348	.7213-02	.5877-02	.7957	5.549	539.2
24	225.00	.22900-01	30.000	.6188	1.403	.7649	.9658	.6166-01	.3362-01	3.512	23.79	592.5
24	270.00	.91000-02	63.000	.5967	1.817	.7369	.9717	.7988-01	.3239-01	2.818	18.87	614.2
24	270.00	.11100-01	64.000	.8330	2.675	1.035	.9717	.1176	.4548-01	3.837	25.65	616.9
24	270.00	.13100-01	65.000	.8105	2.334	.9943	.9717	.1026	.4370-01	3.938	26.41	611.1
24	270.00	.17000-01	67.000	.8035	2.070	.9719	.9717	.9097-01	.4272-01	4.166	28.05	603.7
24	270.00	.20900-01	69.000	.6711	1.682	.8088	.9717	.7395-01	.3555-01	3.541	23.87	601.6
24	270.00	.24900-01	71.000	.6667	1.595	.8011	.9712	.7012-01	.3521-01	3.633	24.54	597.7
24	270.00	.28800-01	73.000	.5110	1.130	.6127	.9697	.4966-01	.2693-01	2.960	20.08	589.9
24	270.00	.36700-01	75.000	.5457	1.199	.6659	.9668	.5268-01	.2927-01	3.178	21.56	589.2
24	270.00	.48500-01	77.000	.4799	.9766	.5918	.9628	.4293-01	.2601-01	2.993	20.41	579.8
24	270.00	.56400-01	78.000	.4391	.8786	.5480	.9603	.3862-01	.2409-01	2.785	19.02	577.4
24	270.00	.95800-01	80.000	.2818	.5205	.3667	.9495	.2288-01	.1612-01	1.950	13.41	564.3
24	270.00	.11550	81.000	.2131	.3920	.2841	.9453	.1723-01	.1249-01	1.482	10.20	563.5
24	315.00	.19000-01	68.000	.6068	1.404	.6931	.9781	.6169-01	.3046-01	3.390	22.94	594.5
24	315.00	.22900-01	70.000	.6986	1.706	.8025	.9781	.7498-01	.3527-01	3.753	25.32	599.5

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K205)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = -5.000 BETA = .0000 PHI = 180.0 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
91	4.020	-5.042	-.7031-02	65.04	735.7	.4171	173.8	179.9	2598.	.6476-02	.1399-06	3.739

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
91	.3870-01	.9543-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
91	.00000	.32800-01	12.000	.5508	.9865	.6405	.9683	.3817-01	.2479-01	3.551	24.36	569.1
91	.00000	.36700-01	13.000	.4865	.8403	.5655	.9668	.3252-01	.2188-01	3.289	22.66	561.0
91	.00000	.40600-01	14.000	.5012	.8861	.5899	.9654	.3429-01	.2283-01	3.284	22.56	566.3
91	.00000	.48500-01	15.000	.4343	.7479	.5152	.9625	.2894-01	.1994-01	2.948	20.32	560.3
91	.00000	.56400-01	16.000	.4081	.6991	.4903	.9598	.2706-01	.1897-01	2.792	19.26	558.9
91	.00000	.76100-01	17.000	.3321	.5576	.4096	.9532	.2158-01	.1585-01	2.339	16.18	553.7
91	.00000	.11550	19.000	.2274	.3802	.2967	.9419	.1471-01	.1148-01	1.611	11.15	552.6
91	.00000	.16480	20.000	.1430	.2335	.1951	.9311	.9036-02	.7551-02	1.051	7.304	545.9
91	.00000	.21400	22.000	.8311-01	.1254	.1115	.9244	.4853-02	.4317-02	.7016	4.952	517.5
91	90.000	.91000-02	44.000	.4907	.9063	.5918	.9628	.3507-01	.2290-01	3.047	20.83	575.2
91	90.000	.11100-01	45.000	.6996	1.563	.8808	.9628	.6048-01	.3409-01	3.606	24.30	602.5
91	90.000	.13100-01	46.000	.7341	1.542	.9120	.9628	.5968-01	.3529-01	3.989	26.98	595.3
91	90.000	.17000-01	48.000	.6466	1.236	.7862	.9628	.4783-01	.3042-01	3.860	26.31	581.4
91	90.000	.20900-01	50.000	.6205	1.154	.7495	.9628	.4466-01	.2901-01	3.822	26.11	576.5
91	90.000	.24900-01	52.000	.5660	1.034	.6826	.9623	.4002-01	.2642-01	3.560	24.36	573.2
91	90.000	.26900-01	53.000	.5462	.9765	.6578	.9615	.3779-01	.2545-01	3.529	24.21	568.7
91	90.000	.28800-01	54.000	.5502	.9761	.6637	.9608	.3777-01	.2569-01	3.591	24.66	567.0
91	90.000	.32800-01	55.000	.4889	.8352	.5891	.9593	.3232-01	.2276-01	3.357	23.17	558.2
91	90.000	.36700-01	56.000	.4633	.7846	.5598	.9579	.3036-01	.2166-01	3.222	22.26	556.0
91	90.000	.40600-01	57.000	.4431	.7607	.5413	.9566	.2944-01	.2095-01	3.022	20.84	559.5
91	90.000	.48500-01	58.000	.3707	.6229	.4559	.9538	.2411-01	.1764-01	2.607	18.03	554.0
91	90.000	.56400-01	59.000	.3814	.6323	.4729	.9512	.2447-01	.1830-01	2.736	18.96	550.3

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
91	90.000	.76100-01	60.000	.3093	.5036	.3922	.9452	.1949-01	.1518-01	2.282	15.86	545.0
91	90.000	.95800-01	61.000	.2355	.3833	.3065	.9399	.1483-01	.1186-01	1.739	12.09	544.8
91	90.000	.11550	62.000	.1977	.3181	.2619	.9352	.1231-01	.1013-01	1.486	10.35	541.4
91	135.00	.19000-01	49.000	.6292	1.160	.7837	.9569	.4488-01	.3033-01	3.915	26.77	574.9
91	135.00	.22900-01	51.000	.5882	1.088	.7333	.9569	.4209-01	.2838-01	3.647	24.93	575.4
91	180.00	.91000-02	23.000	.2920	.4708	.3529	.9546	.1822-01	.1366-01	2.189	15.24	542.0
91	180.00	.11100-01	24.000	.5387	.9519	.6709	.9546	.3684-01	.2596-01	3.533	24.27	566.2
91	180.00	.13100-01	25.000	.7172	1.525	.9444	.9546	.5902-01	.3655-01	3.854	26.05	596.8
91	180.00	.15000-01	26.000	.7299	1.522	.9558	.9546	.5889-01	.3699-01	3.994	27.03	594.3
91	180.00	.17000-01	27.000	.6946	1.346	.8903	.9546	.5211-01	.3446-01	4.085	27.80	583.7
91	180.00	.19000-01	28.000	.6502	1.224	.8261	.9546	.4738-01	.3197-01	3.947	26.93	578.8
91	180.00	.20900-01	29.000	.6184	1.133	.7791	.9546	.4385-01	.3015-01	3.876	26.52	573.7
91	180.00	.28800-01	32.000	.5179	.9156	.6518	.9527	.3543-01	.2522-01	3.395	23.33	566.3
91	180.00	.32800-01	33.000	.4683	.7991	.5864	.9513	.3092-01	.2269-01	3.220	22.22	558.0
91	180.00	.36700-01	34.000	.4736	.8250	.6018	.9500	.3193-01	.2329-01	3.165	21.78	563.0
91	180.00	.56400-01	37.000	.3565	.6017	.4624	.9438	.2328-01	.1790-01	2.491	17.22	555.1
91	180.00	.76100-01	38.000	.2610	.4341	.3460	.9384	.1680-01	.1339-01	1.863	12.91	551.2
91	180.00	.95800-01	39.000	.1993	.3267	.2687	.9338	.1264-01	.1040-01	1.454	10.10	547.1
91	180.00	.11550	40.000	.1487	.2449	.2052	.9299	.9477-02	.7941-02	1.079	7.484	548.3
91	180.00	.18450	42.000	.6317-01	.9665-01	.8638-01	.9224	.3740-02	.3343-02	.5192	3.653	523.3
91	225.00	.22900-01	30.000	.5893	1.073	.7315	.9569	.4152-01	.2831-01	3.722	25.48	572.5
91	270.00	.91000-02	63.000	.5043	.9553	.6119	.9627	.3697-01	.2368-01	3.041	20.74	579.9
91	270.00	.11100-01	64.000	.6766	1.512	.8520	.9627	.5852-01	.3297-01	3.487	23.49	602.5
91	270.00	.13100-01	65.000	.7373	1.590	.9214	.9627	.6153-01	.3566-01	3.914	26.42	598.5
91	270.00	.17000-01	67.000	.7382	1.464	.9055	.9627	.5667-01	.3504-01	4.238	28.79	587.3
91	270.00	.20900-01	69.000	.6561	1.273	.8007	.9627	.4926-01	.3099-01	3.855	26.24	583.8
91	270.00	.24900-01	71.000	.5832	1.101	.7090	.9622	.4260-01	.2744-01	3.531	24.09	579.2
91	270.00	.28800-01	73.000	.5734	1.045	.6967	.9608	.4044-01	.2696-01	3.618	24.77	572.6
91	270.00	.36700-01	75.000	.5096	.9114	.6257	.9579	.3527-01	.2421-01	3.291	22.58	568.8
91	270.00	.48500-01	77.000	.4058	.6966	.5027	.9538	.2696-01	.1946-01	2.768	19.09	559.4
91	270.00	.56400-01	78.000	.4055	.6891	.5073	.9512	.2667-01	.1963-01	2.805	19.37	556.9
91	270.00	.95800-01	80.000	.2264	.3685	.2947	.9399	.1426-01	.1140-01	1.671	11.62	544.9
91	270.00	.11550	81.000	.1881	.3050	.2502	.9352	.1180-01	.9683-02	1.398	9.721	543.7
91	315.00	.19000-01	68.000	.5949	1.113	.6949	.9691	.4306-01	.2689-01	3.639	24.85	577.6
91	315.00	.22900-01	70.000	.7182	1.386	.8441	.9691	.5365-01	.3267-01	4.243	28.88	583.0

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K214)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = 148.5 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
5	3.010	-.2217-01	-.1358-01	36.08	721.7	.9676	256.6	148.5	2364.	.1018-01	.2050-06	3.647

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
5	.4395-01	.7588-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
5	.00000	.32800-01	12.000	.5446	1.075	.6445	.9686	.4725-01	.2833-01	3.500	23.93	575.4
5	.00000	.36700-01	13.000	.5080	.9618	.6011	.9672	.4227-01	.2642-01	3.415	23.43	568.7
5	.00000	.40600-01	14.000	.5496	1.075	.6600	.9658	.4726-01	.2901-01	3.567	24.40	574.0
5	.00000	.48500-01	15.000	.4844	.9070	.5849	.9631	.3986-01	.2571-01	3.297	22.65	566.8
5	.00000	.56400-01	16.000	.4389	.8059	.5350	.9605	.3542-01	.2352-01	3.056	21.03	563.2
5	.00000	.76100-01	17.000	.3590	.6329	.4465	.9547	.2782-01	.1963-01	2.631	18.19	554.9
5	.00000	.11550	19.000	.2254	.3954	.2946	.9454	.1738-01	.1295-01	1.664	11.51	553.8
5	.00000	.16480	20.000	.1426	.2424	.1916	.9379	.1066-01	.8420-02	1.099	7.631	546.4
5	.00000	.21400	22.000	.9004-01	.1395	.1171	.9347	.6129-02	.5148-02	.8061	5.688	518.0
5	90.000	.91000-02	44.000	.5741	1.556	.6972	.9720	.6839-01	.3064-01	2.886	19.39	607.3
5	90.000	.11100-01	45.000	.8326	3.242	1.051	.9720	.1425	.4620-01	3.554	23.66	624.6
5	90.000	.13100-01	46.000	.8464	2.538	1.040	.9720	.1116	.4573-01	4.028	26.98	613.4
5	90.000	.17000-01	48.000	.6770	1.634	.8096	.9720	.7180-01	.3559-01	3.667	24.76	598.4
5	90.000	.20900-01	50.000	.7161	1.654	.8512	.9720	.7271-01	.3741-01	4.006	27.10	594.4
5	90.000	.24900-01	52.000	.6535	1.450	.7747	.9715	.6372-01	.3405-01	3.773	25.59	590.3
5	90.000	.26900-01	53.000	.6153	1.297	.7270	.9708	.5701-01	.3196-01	3.712	25.26	584.4
5	90.000	.28800-01	54.000	.6041	1.238	.7136	.9700	.5440-01	.3136-01	3.743	25.52	580.7
5	90.000	.32800-01	55.000	.5325	1.029	.6277	.9686	.4522-01	.2759-01	3.501	23.98	572.1
5	90.000	.36700-01	56.000	.5234	1.004	.6211	.9672	.4412-01	.2730-01	3.469	23.78	570.9
5	90.000	.40600-01	57.000	.5370	1.058	.6459	.9658	.4652-01	.2839-01	3.458	23.64	575.2
5	90.000	.48500-01	58.000	.5212	.9887	.6314	.9631	.4346-01	.2775-01	3.496	23.98	569.1
5	90.000	.56400-01	59.000	.4471	.8217	.5453	.9605	.3612-01	.2397-01	3.111	21.41	563.4

DATE 13 MAR 79

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

(R4K214)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
5	90.000	.76100-01	60.000	.3405	.5967	.4227	.9547	.2623-01	.1858-01	2.516	17.40	553.6
5	90.000	.95800-01	61.000	.3096	.5384	.3939	.9497	.2367-01	.1731-01	2.310	16.00	551.9
5	90.000	.11550	62.000	.2319	.3977	.3003	.9454	.1748-01	.1320-01	1.765	12.25	548.5
5	135.00	.19000-01	49.000	.7094	1.651	.8443	.9720	.7256-01	.3711-01	3.945	26.69	595.1
5	135.00	.22900-01	51.000	.6964	1.618	.8286	.9720	.7110-01	.3642-01	3.879	26.24	594.9
5	180.00	.91000-02	23.000	.4153	.7686	.4768	.9720	.3378-01	.2096-01	2.866	19.71	564.7
5	180.00	.11100-01	24.000	.7696	2.624	.9598	.9720	.1153	.4219-01	3.455	23.06	619.5
5	180.00	.13100-01	25.000	.7937	2.237	.9691	.9720	.9832-01	.4259-01	3.902	26.19	609.8
5	180.00	.15000-01	26.000	.7406	1.979	.8983	.9720	.8697-01	.3948-01	3.755	25.24	606.3
5	180.00	.17000-01	27.000	.7221	1.782	.8667	.9720	.7830-01	.3809-01	3.852	25.98	600.3
5	180.00	.19000-01	28.000	.7327	1.801	.8789	.9720	.7917-01	.3863-01	3.918	26.43	600.0
5	180.00	.20900-01	29.000	.7204	1.698	.8591	.9720	.7462-01	.3776-01	3.970	26.83	596.3
5	180.00	.28800-01	32.000	.6337	1.382	.7567	.9700	.6074-01	.3326-01	3.713	25.21	588.4
5	180.00	.32800-01	33.000	.5909	1.188	.7020	.9685	.5221-01	.3086-01	3.729	25.46	578.1
5	180.00	.36700-01	34.000	.5715	1.209	.6915	.9671	.5313-01	.3039-01	3.438	23.38	584.8
5	180.00	.56400-01	37.000	.4645	.9014	.5746	.9605	.3962-01	.2525-01	3.039	20.81	572.8
5	180.00	.76100-01	38.000	.3724	.6884	.4704	.9546	.3026-01	.2067-01	2.574	17.70	564.4
5	180.00	.95800-01	39.000	.2985	.5364	.3844	.9496	.2357-01	.1690-01	2.135	14.73	558.9
5	180.00	.11550	40.000	.2398	.4276	.3155	.9453	.1879-01	.1387-01	1.732	11.95	557.4
5	180.00	.18450	42.000	.1303	.2127	.1731	.9362	.9349-02	.7608-02	1.066	7.449	535.5
5	225.00	.22900-01	30.000	.6896	1.574	.8187	.9719	.6919-01	.3598-01	3.893	26.36	593.2
5	270.00	.91000-02	63.000	.6719	1.722	.8105	.9720	.7568-01	.3562-01	3.496	23.54	603.3
5	270.00	.11100-01	64.000	.8355	2.931	1.045	.9720	.1288	.4593-01	3.706	24.73	620.7
5	270.00	.13100-01	65.000	.8444	2.579	1.041	.9720	.1134	.4573-01	3.982	26.66	614.4
5	270.00	.17000-01	67.000	.7626	1.919	.9176	.9720	.8433-01	.4033-01	4.015	27.06	601.9
5	270.00	.20900-01	69.000	.7441	1.799	.8905	.9720	.7909-01	.3914-01	4.025	27.17	598.6
5	270.00	.24900-01	71.000	.6823	1.593	.8154	.9715	.7003-01	.3584-01	3.785	25.60	595.4
5	270.00	.28800-01	73.000	.5728	1.217	.6810	.9700	.5349-01	.2993-01	3.433	23.34	585.3
5	270.00	.36700-01	75.000	.5764	1.204	.6957	.9671	.5292-01	.3058-01	3.508	23.88	583.2
5	270.00	.48500-01	77.000	.5151	1.009	.6289	.9630	.4436-01	.2764-01	3.337	22.83	574.3
5	270.00	.56400-01	78.000	.4537	.8712	.5597	.9605	.3829-01	.2460-01	3.003	20.58	571.1
5	270.00	.95800-01	80.000	.3074	.5411	.3929	.9496	.2378-01	.1727-01	2.257	15.61	554.6
5	270.00	.11550	81.000	.2387	.4174	.3116	.9453	.1835-01	.1370-01	1.769	12.24	553.1
5	315.00	.19000-01	68.000	.6449	1.376	.7577	.9720	.6050-01	.3330-01	3.849	26.17	585.9
5	315.00	.22900-01	70.000	.6206	1.422	.7369	.9720	.6250-01	.3239-01	3.493	23.65	593.6

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K214)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = 148.5 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
62	4.020	-.8523-02	-.5231-02	64.93	735.7	.4164	173.8	148.5	2598.	.6466-02	.1399-06	3.733

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
62	.3867-01	.9551-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
62	.00000	.32800-01	12.000	.5381	.9587	.6539	.9596	.3707-01	.2529-01	3.489	23.95	568.0
62	.00000	.36700-01	13.000	.4848	.8354	.5879	.9582	.3230-01	.2273-01	3.286	22.65	560.4
62	.00000	.40600-01	14.000	.4819	.8494	.5926	.9568	.3284-01	.2292-01	3.169	21.78	565.6
62	.00000	.48500-01	15.000	.4244	.7302	.5254	.9541	.2824-01	.2032-01	2.883	19.87	560.0
62	.00000	.56400-01	16.000	.4048	.6954	.5078	.9515	.2689-01	.1963-01	2.756	19.00	559.6
62	.00000	.76100-01	17.000	.3250	.5412	.4157	.9454	.2093-01	.1607-01	2.314	16.03	551.5
62	.00000	.11550	19.000	.2032	.3316	.2710	.9354	.1282-01	.1048-01	1.494	10.38	545.6
62	.00000	.16480	20.000	.1381	.2216	.1908	.9267	.8570-02	.7378-02	1.042	7.258	540.6
62	90.000	.91000-02	44.000	.2791	.5029	.3340	.9631	.1945-01	.1292-01	1.785	12.23	570.3
62	90.000	.11100-01	45.000	.7288	1.588	.9108	.9631	.6141-01	.3522-01	3.831	25.85	599.7
62	90.000	.13100-01	46.000	.9039	1.990	1.132	.9631	.7694-01	.4377-01	4.712	31.77	600.9
62	90.000	.17000-01	48.000	.6667	1.245	.8048	.9631	.4816-01	.3112-01	4.081	27.87	577.4
62	90.000	.20900-01	50.000	.6656	1.229	.8012	.9631	.4751-01	.3098-01	4.131	28.25	575.2
62	90.000	.24900-01	52.000	.6153	1.121	.7403	.9626	.4335-01	.2863-01	3.880	26.57	572.6
62	90.000	.26900-01	53.000	.5692	1.014	.6836	.9618	.3920-01	.2644-01	3.692	25.34	567.9
62	90.000	.28800-01	54.000	.5550	.9768	.6671	.9611	.3777-01	.2579-01	3.657	25.14	565.3
62	90.000	.32800-01	55.000	.4863	.8284	.5836	.9596	.3203-01	.2257-01	3.351	23.13	557.5
62	90.000	.36700-01	56.000	.4950	.8417	.5979	.9582	.3255-01	.2312-01	3.418	23.60	557.1
62	90.000	.40600-01	57.000	.4699	.8157	.5752	.9568	.3154-01	.2224-01	3.154	21.71	562.1
62	90.000	.48500-01	58.000	.4530	.7692	.5584	.9541	.2974-01	.2159-01	3.135	21.65	556.7
62	90.000	.56400-01	59.000	.3908	.6533	.4854	.9515	.2526-01	.1877-01	2.766	19.15	552.6
62	90.000	.76100-01	60.000	.2914	.4737	.3689	.9454	.1832-01	.1426-01	2.155	14.98	544.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
62	90.000	.95800-01	61.000	.2415	.3871	.3119	.9400	.1497-01	.1206-01	1.827	12.73	540.1
62	90.000	.11550	62.000	.2012	.3188	.2642	.9353	.1233-01	.1022-01	1.552	10.84	536.2
62	135.00	.19000-01	49.000	.7034	1.292	.8457	.9631	.4996-01	.3270-01	4.392	30.05	574.2
62	135.00	.22900-01	51.000	.6510	1.185	.7811	.9631	.4584-01	.3020-01	4.108	28.13	572.5
62	180.00	.91000-02	23.000	.2024	.3283	.2358	.9630	.1269-01	.9120-02	1.502	10.45	543.7
62	180.00	.11100-01	24.000	.7068	1.373	.8612	.9630	.5309-01	.3330-01	4.144	28.19	584.1
62	180.00	.13100-01	25.000	.9046	1.844	1.114	.9630	.7129-01	.4309-01	5.052	34.24	591.2
62	180.00	.15000-01	26.000	.8470	1.678	1.037	.9630	.6489-01	.4009-01	4.865	33.05	587.1
62	180.00	.17000-01	27.000	.7366	1.367	.8878	.9630	.5284-01	.3433-01	4.545	31.06	576.1
62	180.00	.19000-01	28.000	.6994	1.287	.8414	.9630	.4978-01	.3254-01	4.356	29.79	574.6
62	180.00	.20900-01	29.000	.6794	1.219	.8123	.9630	.4715-01	.3141-01	4.365	29.93	569.5
62	180.00	.28800-01	32.000	.5581	.9682	.6682	.9611	.3744-01	.2584-01	3.747	25.81	562.0
62	180.00	.32800-01	33.000	.5068	.8496	.6055	.9596	.3285-01	.2341-01	3.573	24.72	553.3
62	180.00	.36700-01	34.000	.5182	.8883	.6275	.9582	.3435-01	.2426-01	3.537	24.40	559.1
62	180.00	.56400-01	37.000	.4065	.6699	.5024	.9514	.2590-01	.1943-01	2.941	20.40	548.6
62	180.00	.76100-01	38.000	.3088	.5010	.3907	.9454	.1937-01	.1511-01	2.291	15.93	543.8
62	180.00	.95800-01	39.000	.2431	.3882	.3134	.9400	.1501-01	.1212-01	1.850	12.91	538.8
62	180.00	.11550	40.000	.1929	.3079	.2543	.9353	.1191-01	.9833-02	1.469	10.24	538.7
62	180.00	.18450	42.000	.8991-01	.1371	.1215	.9244	.5303-02	.4700-02	.7426	5.228	522.1
62	225.00	.22900-01	30.000	.6423	1.135	.7651	.9630	.4390-01	.2958-01	4.207	28.91	566.3
62	270.00	.91000-02	63.000	.3533	.6073	.4179	.9631	.2348-01	.1616-01	2.404	16.57	559.7
62	270.00	.11100-01	64.000	.6912	1.360	.8447	.9631	.5259-01	.3266-01	3.998	27.18	586.1
62	270.00	.13100-01	65.000	.9070	1.895	1.123	.9631	.7328-01	.4344-01	4.948	33.48	594.6
62	270.00	.17000-01	67.000	.6756	1.259	.8152	.9631	.4870-01	.3152-01	4.146	28.32	577.0
62	270.00	.20900-01	69.000	.6982	1.286	.8401	.9631	.4973-01	.3249-01	4.345	29.72	574.7
62	270.00	.24900-01	71.000	.6366	1.155	.7652	.9626	.4467-01	.2959-01	4.034	27.63	571.8
62	270.00	.28900-01	73.000	.5215	.9127	.6259	.9611	.3529-01	.2420-01	3.461	23.81	564.0
62	270.00	.36700-01	75.000	.5266	.9133	.6399	.9582	.3532-01	.2474-01	3.539	24.37	561.9
62	270.00	.48500-01	77.000	.4621	.7742	.5671	.9541	.2994-01	.2193-01	3.261	22.56	553.2
62	270.00	.56400-01	78.000	.3916	.6485	.4848	.9514	.2508-01	.1875-01	2.811	19.49	550.0
62	270.00	.95800-01	80.000	.2472	.3922	.3176	.9400	.1516-01	.1228-01	1.902	13.28	536.7
62	270.00	.11550	81.000	.1932	.3058	.2536	.9353	.1182-01	.9805-02	1.492	10.42	535.9
62	315.00	.19000-01	68.000	.5954	1.064	.7110	.9631	.4114-01	.2749-01	3.845	26.38	568.7
62	315.00	.22900-01	70.000	.6724	1.232	.8080	.9631	.4765-01	.3124-01	4.209	28.80	573.8

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K223)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = .0000 PHI = 180.0 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
41	3.010	5.008	.5238-02	36.14	722.7	.9692	257.0	179.9	2365.	.1018-01	.2053-06	3.646

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
41	.4400-01	.7589-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
41	.00000	.32800-01	12.000	.4941	.9768	.6143	.9604	.4298-01	.2703-01	3.180	21.73	576.4
41	.00000	.36700-01	13.000	.4610	.8712	.5708	.9591	.3833-01	.2512-01	3.114	21.36	569.2
41	.00000	.40600-01	14.000	.4842	.9459	.6095	.9579	.4162-01	.2682-01	3.154	21.57	574.6
41	.00000	.48500-01	15.000	.4439	.8348	.5608	.9555	.3673-01	.2468-01	3.014	20.68	568.4
41	.00000	.56400-01	16.000	.3903	.7231	.4975	.9532	.3181-01	.2189-01	2.697	18.53	565.6
41	.00000	.76100-01	17.000	.3135	.5627	.4069	.9482	.2476-01	.1790-01	2.250	15.52	559.5
41	.00000	.11550	19.000	.1903	.3400	.2576	.9406	.1496-01	.1134-01	1.374	9.477	558.6
41	.00000	.16480	20.000	.1115	.1975	.1550	.9356	.8691-02	.6820-02	.8146	5.626	556.7
41	.00000	.21400	22.000	.6270-01	.1018	.8377-01	.9345	.4479-02	.3686-02	.5191	3.629	534.5
41	90.000	.91000-02	44.000	.7319	2.142	.8997	.9717	.9427-01	.3959-01	3.535	23.69	612.9
41	90.000	.11100-01	45.000	.8652	2.715	1.072	.9717	.1194	.4717-01	4.038	27.00	616.6
41	90.000	.13100-01	46.000	.8743	2.442	1.069	.9717	.1074	.4702-01	4.331	29.06	610.1
41	90.000	.17000-01	48.000	.7167	1.733	.8595	.9717	.7626-01	.3782-01	3.886	26.22	599.5
41	90.000	.20900-01	50.000	.7085	1.652	.8453	.9717	.7271-01	.3719-01	3.944	26.66	596.2
41	90.000	.24900-01	52.000	.6583	1.484	.7841	.9712	.6530-01	.3450-01	3.762	25.48	592.8
41	90.000	.26900-01	53.000	.6173	1.322	.7329	.9704	.5816-01	.3225-01	3.683	25.02	587.1
41	90.000	.28800-01	54.000	.5993	1.246	.7111	.9697	.5482-01	.3129-01	3.672	24.99	583.4
41	90.000	.32800-01	55.000	.5139	1.007	.6095	.9682	.4430-01	.2677-01	3.338	22.82	575.1
41	90.000	.36700-01	56.000	.5120	.9957	.6102	.9668	.4381-01	.2685-01	3.351	22.93	573.9
41	90.000	.40600-01	57.000	.4976	.9922	.6012	.9655	.4366-01	.2645-01	3.177	21.69	577.6
41	90.000	.48500-01	58.000	.4789	.9232	.5833	.9628	.4062-01	.2566-01	3.164	21.66	572.5
41	90.000	.56400-01	59.000	.4130	.7778	.5076	.9603	.3422-01	.2233-01	2.800	19.21	568.6

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
41	90.000	.76100-01	60.000	.3307	.6042	.4165	.9545	.2659-01	.1833-01	2.323	15.99	563.0
41	90.000	.95800-01	61.000	.3011	.5462	.3893	.9495	.2403-01	.1713-01	2.134	14.70	561.6
41	90.000	.11550	62.000	.2217	.4003	.2934	.9453	.1762-01	.1291-01	1.581	10.89	560.7
41	135.00	.19000-01	49.000	.7641	1.793	.8744	.9780	.7891-01	.3847-01	4.233	28.61	596.8
41	135.00	.22900-01	51.000	.6990	1.601	.7977	.9780	.7042-01	.3510-01	3.946	26.70	594.4
41	180.00	.91000-02	23.000	.5193	1.076	.5766	.9808	.4736-01	.2537-01	3.191	21.72	583.0
41	180.00	.11100-01	24.000	.8887	2.505	1.014	.9808	.1102	.4463-01	4.380	29.38	610.7
41	180.00	.13100-01	25.000	.8130	2.044	.9192	.9808	.8993-01	.4045-01	4.293	28.92	602.7
41	180.00	.15000-01	26.000	.7827	1.954	.8844	.9808	.8596-01	.3891-01	4.152	27.98	602.1
41	180.00	.17000-01	27.000	.7983	1.986	.9017	.9808	.8738-01	.3968-01	4.245	28.61	601.8
41	180.00	.19000-01	28.000	.7943	1.966	.8969	.9808	.8652-01	.3946-01	4.237	28.56	601.4
41	180.00	.20900-01	29.000	.7741	1.800	.8691	.9808	.7918-01	.3824-01	4.319	29.20	595.9
41	180.00	.28800-01	32.000	.6514	1.399	.7348	.9788	.6156-01	.3233-01	3.876	26.32	587.4
41	180.00	.32800-01	33.000	.5946	1.189	.6710	.9772	.5231-01	.2952-01	3.782	25.81	578.1
41	180.00	.36700-01	34.000	.5957	1.255	.6828	.9757	.5524-01	.3004-01	3.604	24.51	585.2
41	180.00	.56400-01	37.000	.5124	1.009	.6061	.9686	.4441-01	.2667-01	3.310	22.62	575.9
41	180.00	.76100-01	38.000	.4347	.8250	.5294	.9622	.3630-01	.2330-01	2.922	20.03	569.9
41	180.00	.95800-01	39.000	.3551	.6563	.4439	.9564	.2888-01	.1953-01	2.460	16.91	565.2
41	180.00	.11550	40.000	.2868	.5330	.3700	.9513	.2345-01	.1628-01	1.975	13.57	566.2
41	180.00	.18450	42.000	.1634	.2787	.2187	.9389	.1226-01	.9621-02	1.256	8.717	548.0
41	225.00	.22900-01	30.000	.7020	1.559	.7984	.9780	.6858-01	.3513-01	4.062	27.53	591.2
41	270.00	.91000-02	63.000	.6034	1.545	.7293	.9717	.6800-01	.3209-01	3.148	21.19	604.1
41	270.00	.11100-01	64.000	.8085	2.417	.9962	.9717	.1064	.4383-01	3.863	25.87	614.1
41	270.00	.13100-01	65.000	.8353	2.251	1.016	.9717	.9905-01	.4472-01	4.223	28.37	607.8
41	270.00	.17000-01	67.000	.6952	1.646	.8311	.9717	.7241-01	.3657-01	3.828	25.86	597.5
41	270.00	.20900-01	69.000	.6990	1.599	.8314	.9717	.7035-01	.3658-01	3.949	26.72	594.3
41	270.00	.24900-01	71.000	.6387	1.416	.7587	.9712	.6231-01	.3338-01	3.700	25.08	591.0
41	270.00	.28800-01	73.000	.5356	1.117	.6358	.9697	.4914-01	.2798-01	3.273	22.27	583.9
41	270.00	.36700-01	75.000	.5650	1.176	.6825	.9669	.5175-01	.3003-01	3.458	23.53	583.6
41	270.00	.48500-01	77.000	.4889	.9518	.5968	.9628	.4188-01	.2626-01	3.196	21.87	574.1
41	270.00	.56400-01	78.000	.4270	.8199	.5273	.9603	.3608-01	.2320-01	2.833	19.40	571.9
41	270.00	.95800-01	80.000	.2916	.5297	.3772	.9495	.2331-01	.1660-01	2.063	14.21	561.9
41	270.00	.11550	81.000	.2249	.4106	.2989	.9453	.1807-01	.1315-01	1.581	10.88	562.9
41	315.00	.19000-01	68.000	.5553	1.155	.6748	.9659	.5081-01	.2969-01	3.401	23.15	583.5
41	315.00	.22900-01	70.000	.5596	1.225	.6869	.9659	.5389-01	.3022-01	3.276	22.22	589.6

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF

E.T. OGIVE

PARAMETRIC DATA

ALPHA = 5.000 BETA = .0000 PHI = 180.0 RN/FT = 3.700

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
141	4.020	5.018	.6998-02	63.90	727.7	.4098	171.9	179.9	2584.	.6433-02	.1384-06	3.734

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
141	.3828-01	.9561-02

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
141	.00000	.32800-01	12.000	.4715	.8166	.5935	.9514	.3126-01	.2272-01	3.109	21.48	555.5
141	.00000	.36700-01	13.000	.4566	.7732	.5740	.9500	.2960-01	.2198-01	3.106	21.53	550.0
141	.00000	.40600-01	14.000	.4619	.7955	.5884	.9487	.3045-01	.2253-01	3.068	21.22	554.2
141	.00000	.48500-01	15.000	.4560	.7810	.5875	.9462	.2990-01	.2249-01	3.052	21.13	552.8
141	.00000	.56400-01	16.000	.4045	.6842	.5252	.9438	.2620-01	.2011-01	2.757	19.11	549.7
141	.00000	.76100-01	17.000	.2939	.4839	.3877	.9384	.1853-01	.1484-01	2.085	14.52	542.3
141	.00000	.95900-01	18.000	.4913-01	.7917-01	.6561-01	.9338	.3031-02	.2512-02	.3607	2.520	535.9
141	.00000	.11550	19.000	.1568	.2599	.2172	.9299	.9951-02	.8315-02	1.101	7.659	544.2
141	.00000	.16480	20.000	.8953-01	.1450	.1265	.9236	.5550-02	.4841-02	.6522	4.553	537.4
141	.00000	.21400	22.000	.4144-01	.6280-01	.5640-01	.9220	.2404-02	.2159-02	.3395	2.401	513.7
141	90.000	.91000-02	44.000	.4787	.8776	.5763	.9627	.3360-01	.2206-01	2.934	20.14	567.6
141	90.000	.11100-01	45.000	.7339	1.566	.9151	.9627	.5996-01	.3503-01	3.848	26.09	590.7
141	90.000	.13100-01	46.000	.8251	1.705	1.021	.9627	.6528-01	.3911-01	4.454	30.26	586.7
141	90.000	.17000-01	48.000	.6681	1.275	.8121	.9627	.4881-01	.3109-01	3.910	26.74	574.8
141	90.000	.20900-01	50.000	.6829	1.263	.8240	.9627	.4836-01	.3155-01	4.142	28.41	569.3
141	90.000	.24900-01	52.000	.5738	1.024	.6830	.9622	.3920-01	.2634-01	3.636	25.04	562.1
141	90.000	.26900-01	53.000	.5868	1.052	.7071	.9615	.4026-01	.2707-01	3.699	25.46	563.0
141	90.000	.28800-01	54.000	.5862	1.038	.7058	.9608	.3973-01	.2706-01	3.753	25.86	560.4
141	90.000	.32800-01	55.000	.5240	.8910	.6294	.9593	.3411-01	.2410-01	3.543	24.55	551.0
141	90.000	.36700-01	56.000	.4856	.8224	.5869	.9579	.3149-01	.2247-01	3.307	22.92	549.9
141	90.000	.40600-01	57.000	.4621	.7921	.5643	.9565	.3033-01	.2160-01	3.090	21.39	553.0
141	90.000	.48500-01	58.000	.3952	.6661	.4866	.9538	.2550-01	.1863-01	2.708	18.78	548.7

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

(R4K223)

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
141	90.000	.56400-01	59.000	.3792	.6302	.4706	.9512	.2413-01	.1802-01	2.652	18.43	545.0
141	90.000	.76100-01	60.000	.3047	.4991	.3874	.9452	.1911-01	.1483-01	2.179	15.18	540.9
141	90.000	.95800-01	61.000	.2314	.3778	.3017	.9399	.1446-01	.1155-01	1.663	11.59	540.0
141	90.000	.11550	62.000	.1878	.3070	.2509	.9352	.1175-01	.9605-02	1.347	9.387	540.3
141	135.00	.19000-01	49.000	.7113	1.347	.8331	.9690	.5156-01	.3189-01	4.200	28.74	573.4
141	135.00	.22900-01	51.000	.6778	1.281	.7936	.9690	.4905-01	.3038-01	4.009	27.44	573.2
141	180.00	.91000-02	23.000	.3677	.6205	.4155	.9718	.2375-01	.1591-01	2.515	17.44	549.0
141	180.00	.11100-01	24.000	.7998	1.726	.9426	.9718	.6610-01	.3609-01	4.151	28.12	592.1
141	180.00	.13100-01	25.000	.7601	1.514	.8844	.9718	.5795-01	.3386-01	4.253	28.98	581.5
141	180.00	.15000-01	26.000	.7430	1.472	.8639	.9718	.5637-01	.3307-01	4.179	28.49	580.8
141	180.00	.17000-01	27.000	.7427	1.462	.8624	.9718	.5596-01	.3302-01	4.206	28.69	579.7
141	180.00	.19000-01	28.000	.7363	1.435	.8537	.9718	.5495-01	.3268-01	4.211	28.75	578.3
141	180.00	.20900-01	29.000	.7044	1.333	.8126	.9718	.5104-01	.3111-01	4.160	28.47	573.4
141	180.00	.28800-01	32.000	.6196	1.131	.7178	.9698	.4329-01	.2748-01	3.819	26.23	566.7
141	180.00	.32800-01	33.000	.5451	.9524	.6307	.9682	.3646-01	.2415-01	3.550	24.51	557.5
141	180.00	.36700-01	34.000	.5502	.9889	.6453	.9668	.3786-01	.2471-01	3.455	23.77	563.7
141	180.00	.48500-01	36.000	.4601	.8100	.5491	.9625	.3101-01	.2102-01	2.967	20.46	559.2
141	180.00	.56400-01	37.000	.4426	.7738	.5348	.9597	.2963-01	.2047-01	2.880	19.88	557.7
141	180.00	.76100-01	38.000	.3496	.6046	.4356	.9532	.2315-01	.1668-01	2.309	15.96	555.1
141	180.00	.95800-01	39.000	.2889	.4934	.3698	.9472	.1889-01	.1416-01	1.943	13.45	552.1
141	180.00	.11550	40.000	.2296	.3943	.3033	.9419	.1509-01	.1161-01	1.532	10.60	553.4
141	180.00	.18450	42.000	.1162	.1844	.1585	.9279	.7061-02	.6066-02	.8745	6.125	531.1
141	225.00	.22900-01	30.000	.6575	1.217	.7666	.9690	.4659-01	.2935-01	3.984	27.33	569.4
141	270.00	.91000-02	63.000	.4779	.8650	.5735	.9628	.3311-01	.2196-01	2.976	20.46	565.0
141	270.00	.11100-01	64.000	.7526	1.593	.9365	.9628	.6098-01	.3585-01	3.974	26.96	589.7
141	270.00	.13100-01	65.000	.8322	1.780	1.038	.9628	.6815-01	.3974-01	4.354	29.52	591.0
141	270.00	.17000-01	67.000	.7866	1.519	.9588	.9628	.5816-01	.3671-01	4.545	31.05	576.7
141	270.00	.20900-01	69.000	.6467	1.236	.7862	.9628	.4729-01	.3010-01	3.782	25.86	574.9
141	270.00	.24900-01	71.000	.6295	1.177	.7635	.9623	.4506-01	.2923-01	3.771	25.84	571.2
141	270.00	.28800-01	73.000	.5804	1.046	.7031	.9608	.4006-01	.2692-01	3.630	24.97	564.3
141	270.00	.36700-01	75.000	.5148	.9189	.6316	.9579	.3518-01	.2418-01	3.261	22.46	562.2
141	270.00	.48500-01	77.000	.4219	.7239	.5225	.9538	.2771-01	.2000-01	2.817	19.50	553.2
141	270.00	.56400-01	78.000	.3988	.6792	.4993	.9512	.2600-01	.1911-01	2.690	18.63	551.4
141	270.00	.95800-01	80.000	.2270	.3754	.2977	.9399	.1437-01	.1140-01	1.599	11.12	543.6
141	270.00	.11550	81.000	.1853	.3085	.2499	.9352	.1181-01	.9567-02	1.292	8.979	545.5
141	315.00	.19000-01	68.000	.5684	1.020	.7022	.9569	.3903-01	.2688-01	3.578	24.62	563.2
141	315.00	.22900-01	70.000	.5656	1.047	.7053	.9569	.4008-01	.2700-01	3.427	23.51	569.4

FH15, E.T. NOSE (W/PROTUBERANCES) HI/HREF (R4K230)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = .0000 PHI = 148.5 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
166	5.500	-.5111-02	-.3142-02	173.8	729.7	.1868	103.5	148.4	2743.	.4872-02	.8329-07	4.987

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
166	.3540-01	.1100-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
166	.00000	.32800-01	12.000	.4744	.7920	.5839	.9532	.2804-01	.2067-01	3.056	21.21	547.7
166	.00000	.36700-01	13.000	.3856	.6244	.4726	.9518	.2210-01	.1673-01	2.604	18.16	538.9
166	.00000	.40600-01	14.000	.3728	.6082	.4613	.9505	.2153-01	.1633-01	2.489	17.34	541.1
166	.00000	.48500-01	15.000	.3265	.5254	.4070	.9477	.1860-01	.1441-01	2.228	15.55	536.9
166	.00000	.56400-01	16.000	.3437	.5539	.4342	.9451	.1961-01	.1537-01	2.339	16.33	537.4
166	.00000	.76100-01	17.000	.3001	.4797	.3893	.9388	.1698-01	.1378-01	2.070	14.47	534.8
166	.00000	.11550	19.000	.1977	.3156	.2708	.9278	.1117-01	.9585-02	1.367	9.555	534.4
166	.00000	.16480	20.000	.1018	.1589	.1449	.9172	.5626-02	.5131-02	.7324	5.143	526.5
166	.00000	.21400	22.000	.4829-01	.6980-01	.6656-01	.9109	.2471-02	.2356-02	.4049	2.897	492.8
166	90.000	.91000-02	44.000	.3163	.5104	.3787	.9566	.1807-01	.1341-01	2.148	14.99	537.8
166	90.000	.11100-01	45.000	.6212	1.125	.7709	.9566	.3981-01	.2729-01	3.585	24.62	566.7
166	90.000	.13100-01	46.000	.9610	2.026	1.245	.9566	.7173-01	.4407-01	4.721	32.01	590.9
166	90.000	.17000-01	48.000	.8177	1.466	1.012	.9566	.5191-01	.3582-01	4.775	32.83	564.7
166	90.000	.20900-01	50.000	.6773	1.185	.8319	.9566	.4195-01	.2945-01	4.084	28.16	559.4
166	90.000	.24900-01	52.000	.6250	1.055	.7612	.9561	.3736-01	.2694-01	3.959	27.43	550.7
166	90.000	.26900-01	53.000	.6043	1.023	.7393	.9554	.3621-01	.2617-01	3.814	26.41	551.4
166	90.000	.28800-01	54.000	.5875	.9860	.7191	.9547	.3490-01	.2546-01	3.754	26.03	549.2
166	90.000	.32800-01	55.000	.3912	.6080	.4695	.9532	.2152-01	.1662-01	2.834	19.92	525.0
166	90.000	.36700-01	56.000	.4887	.7925	.5993	.9518	.2805-01	.2121-01	3.292	22.96	539.3
166	90.000	.40600-01	57.000	.4732	.7795	.5875	.9505	.2759-01	.2080-01	3.110	21.63	544.0
166	90.000	.48500-01	58.000	.3669	.5968	.4594	.9477	.2113-01	.1626-01	2.461	17.15	540.2
166	90.000	.56400-01	59.000	.3825	.6148	.4827	.9451	.2176-01	.1709-01	2.615	18.26	536.5

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (W/PROTUBERANCES)

HI/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
166	90.000	.76100-01	60.000	.2873	.4548	.3709	.9388	.1610-01	.1313-01	2.014	14.10	531.6
166	90.000	.95800-01	61.000	.2003	.3141	.2645	.9330	.1112-01	.9363-02	1.428	10.02	528.2
166	90.000	.11550	62.000	.1607	.2529	.2182	.9278	.8953-02	.7723-02	1.139	7.988	529.4
166	135.00	.19000-01	49.000	.7233	1.280	.8915	.9566	.4532-01	.3156-01	4.294	29.57	562.0
166	135.00	.22900-01	51.000	.6769	1.192	.8331	.9566	.4220-01	.2949-01	4.046	27.88	560.8
166	180.00	.91000-02	23.000	.1634	.2502	.1923	.9566	.8856-02	.6808-02	1.216	8.574	519.4
166	180.00	.11100-01	24.000	.4883	.8346	.5955	.9566	.2955-01	.2108-01	3.039	21.02	553.8
166	180.00	.13100-01	25.000	.8501	1.724	1.090	.9566	.6104-01	.3858-01	4.330	29.44	585.8
166	180.00	.15000-01	26.000	.8932	1.772	1.138	.9566	.6271-01	.4028-01	4.653	31.69	582.5
166	180.00	.17000-01	27.000	.7769	1.412	.9651	.9566	.4997-01	.3417-01	4.463	30.64	567.4
166	180.00	.19000-01	28.000	.7054	1.271	.8741	.9566	.4498-01	.3094-01	4.095	28.15	565.7
166	180.00	.20900-01	29.000	.6990	1.230	.8602	.9566	.4356-01	.3045-01	4.180	28.80	560.7
166	180.00	.28800-01	32.000	.5770	.9755	.7080	.9547	.3453-01	.2506-01	3.648	25.27	551.1
166	180.00	.32800-01	33.000	.5275	.8635	.6449	.9532	.3057-01	.2283-01	3.502	24.38	542.2
166	180.00	.36700-01	34.000	.5229	.8742	.6484	.9518	.3095-01	.2295-01	3.361	23.32	548.1
166	180.00	.48500-01	36.000	.4364	.7096	.5464	.9477	.2512-01	.1934-01	2.928	20.41	540.1
166	180.00	.56400-01	37.000	.3980	.6375	.5016	.9451	.2257-01	.1776-01	2.737	19.12	535.4
166	180.00	.76100-01	38.000	.2928	.4606	.3769	.9388	.1631-01	.1334-01	2.076	14.55	529.4
166	180.00	.95800-01	39.000	.2302	.3578	.3025	.9330	.1267-01	.1071-01	1.667	11.72	525.1
166	180.00	.11550	40.000	.1725	.2688	.2327	.9278	.9516-02	.8239-02	1.244	8.738	526.0
166	180.00	.18450	42.000	.6901-01	.1026	.9599-01	.9141	.3631-02	.3398-02	.5446	3.867	506.7
166	225.00	.22900-01	30.000	.6595	1.146	.8083	.9566	.4055-01	.2861-01	4.015	27.72	557.7
166	270.00	.91000-02	63.000	.2862	.4516	.3402	.9566	.1599-01	.1204-01	2.017	14.14	530.5
166	270.00	.11100-01	64.000	.4742	.8020	.5764	.9566	.2839-01	.2040-01	2.997	20.76	551.1
166	270.00	.13100-01	65.000	.8082	1.625	1.034	.9566	.5751-01	.3659-01	4.155	28.26	584.5
166	270.00	.17000-01	67.000	.7084	1.291	.8808	.9566	.4569-01	.3118-01	4.056	27.84	567.9
166	270.00	.20900-01	69.000	.7010	1.263	.8687	.9566	.4471-01	.3075-01	4.070	27.97	565.7
166	270.00	.24900-01	71.000	.6591	1.169	.8151	.9561	.4138-01	.2885-01	3.903	26.87	562.4
166	270.00	.28800-01	73.000	.5774	.9811	.7097	.9547	.3473-01	.2512-01	3.625	25.10	552.3
166	270.00	.36700-01	75.000	.5303	.8936	.6594	.9518	.3163-01	.2334-01	3.369	23.35	550.2
166	270.00	.48500-01	77.000	.4267	.6964	.5351	.9477	.2465-01	.1894-01	2.846	19.82	541.3
166	270.00	.56400-01	78.000	.3985	.6457	.5047	.9451	.2286-01	.1786-01	2.689	18.76	539.0
166	270.00	.95800-01	80.000	.2141	.3375	.2836	.9330	.1195-01	.1004-01	1.513	10.60	530.1
166	270.00	.11550	81.000	.1711	.2687	.2319	.9278	.9511-02	.8211-02	1.217	8.534	528.8
166	315.00	.19000-01	68.000	.6339	1.091	.7747	.9566	.3863-01	.2742-01	3.906	26.99	555.6
166	315.00	.22900-01	70.000	.6418	1.141	.7921	.9566	.4039-01	.2804-01	3.789	26.08	562.9

FH15, E.T. NOSE (CLEAN) HU/HREF (R4K231)

E.T. OGIVE

PARAMETRIC DATA

ALPHA = .0000 BETA = 6.000 PHI = .0000 RN/FT = 5.000

TEST CONDITIONS

RUN NUMBER	MACH NUMBER	ALPHA DEG.	PSI DEG.	PO PSIA	TO DEG. R	P PSIA	T DEG. R	PHI DEG.	V FT/SEC	RHO SLUGS /FT3	MU LB-SEC /FT2	RN/FT /FT X10 6
253	5.500	.4220-02	-6.022	173.9	736.7	.1869	104.5	89.96	2756.	.4828-02	.8408-07	4.919

RUN NUMBER	HREF BTU/ R FT2SEC	STN NO REF(R) =.0275
253	.3547-01	.1106-01

TEST DATA

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
253	.00000	.32800-01	12.000	.4808	.8036	.5932	.9528	.2850-01	.2104-01	3.127	21.63	553.3
253	.00000	.36700-01	13.000	.4209	.6867	.5183	.9514	.2435-01	.1838-01	2.841	19.73	546.4
253	.00000	.40600-01	14.000	.4333	.7159	.5397	.9501	.2539-01	.1914-01	2.868	19.88	550.0
253	.00000	.48500-01	15.000	.3708	.6025	.4649	.9474	.2137-01	.1649-01	2.519	17.51	545.1
253	.00000	.56400-01	16.000	.3585	.5800	.4544	.9447	.2057-01	.1612-01	2.452	17.05	543.8
253	.00000	.76100-01	17.000	.2708	.4261	.3490	.9385	.1511-01	.1238-01	1.941	13.57	534.5
253	.00000	.11550	19.000	.1596	.2488	.2155	.9276	.8823-02	.7644-02	1.163	8.147	531.2
253	.00000	.16480	20.000	.8414-01	.1326	.1207	.9171	.4702-02	.4280-02	.6017	4.205	535.0
253	.00000	.21400	22.000	.3428-01	.5058-01	.4809-01	.9109	.1794-02	.1706-02	.2780	1.972	508.1
253	90.000	.91000-02	44.000	.6423	1.394	.7832	.9666	.4944-01	.2778-01	3.112	21.00	600.0
253	90.000	.11100-01	45.000	.7773	1.670	.9461	.9666	.5923-01	.3356-01	3.800	25.65	598.9
253	90.000	.13100-01	46.000	.8052	1.621	.9677	.9666	.5749-01	.3432-01	4.180	28.35	590.3
253	90.000	.17000-01	48.000	.7572	1.420	.8969	.9666	.5036-01	.3181-01	4.240	28.93	578.8
253	90.000	.20900-01	50.000	.7008	1.270	.8240	.9666	.4504-01	.2923-01	4.087	27.98	572.3
253	90.000	.24900-01	52.000	.4623	.7847	.5370	.9662	.2783-01	.1905-01	2.940	20.30	557.4
253	90.000	.26900-01	53.000	.5982	1.037	.7007	.9654	.3677-01	.2485-01	3.694	25.43	562.6
253	90.000	.28800-01	54.000	.5876	1.008	.6890	.9647	.3577-01	.2444-01	3.680	25.37	560.1
253	90.000	.32800-01	55.000	.4262	.6691	.4917	.9633	.2373-01	.1744-01	3.067	21.45	533.8
253	90.000	.36700-01	56.000	.5223	.8639	.6149	.9619	.3064-01	.2181-01	3.450	23.91	550.4
253	90.000	.40600-01	57.000	.5007	.8426	.5962	.9605	.2988-01	.2115-01	3.223	22.28	555.1
253	90.000	.48500-01	58.000	.4811	.7998	.5786	.9577	.2837-01	.2052-01	3.155	21.85	551.8
253	90.000	.56400-01	59.000	.4226	.6984	.5139	.9550	.2477-01	.1823-01	2.796	19.38	550.1

FH15, EXTERNAL TANK OGIVE AERO HEATING

FH15, E.T. NOSE (CLEAN)

HU/HREF

RUN NUMBER	THETA DEG.	X/L	T/C NO	H/HREF R=1.0	H/HREF R=0.9	H/HREF R= TAW/TO	TAW/TO	H(9TO) BTU/R FT2SEC	H(TAW) BTU/R FT2SEC	QDOT BTU/ FT2SEC	DTWDT DEG. R /SEC	TW DEG. R
253	90.000	.76100-01	60.000	.3270	.5405	.4106	.9485	.1917-01	.1456-01	2.163	15.00	550.1
253	90.000	.95800-01	61.000	.2831	.4691	.3671	.9423	.1664-01	.1302-01	1.866	12.93	550.8
253	90.000	.11550	62.000	.2168	.3572	.2889	.9365	.1267-01	.1025-01	1.442	10.00	549.2
253	135.00	.19000-01	49.000	.7023	1.272	.8396	.9635	.4512-01	.2978-01	4.097	28.06	572.2
253	135.00	.22900-01	51.000	.6684	1.203	.7979	.9635	.4268-01	.2830-01	3.928	26.92	571.0
253	180.00	.91000-02	23.000	.3032	.4801	.3616	.9562	.1703-01	.1282-01	2.151	15.02	536.7
253	180.00	.11100-01	24.000	.6488	1.254	.8227	.9562	.4448-01	.2918-01	3.512	23.90	584.1
253	180.00	.13100-01	25.000	.7095	1.359	.8974	.9562	.4821-01	.3183-01	3.878	26.41	582.6
253	180.00	.15000-01	26.000	.7185	1.333	.9004	.9562	.4729-01	.3193-01	4.072	27.81	576.9
253	180.00	.17000-01	27.000	.6954	1.266	.8665	.9562	.4492-01	.3073-01	4.029	27.57	573.3
253	180.00	.19000-01	28.000	.6649	1.206	.8276	.9562	.4279-01	.2935-01	3.870	26.50	572.6
253	180.00	.20900-01	29.000	.6415	1.129	.7912	.9562	.4006-01	.2806-01	3.881	26.66	566.1
253	180.00	.28800-01	32.000	.5643	.9555	.6943	.9543	.3389-01	.2462-01	3.602	24.88	556.7
253	180.00	.32800-01	33.000	.5122	.8374	.6271	.9528	.2970-01	.2224-01	3.447	23.93	547.0
253	180.00	.36700-01	34.000	.4727	.7837	.5855	.9515	.2780-01	.2077-01	3.112	21.56	551.0
253	180.00	.48500-01	36.000	.3980	.6436	.4980	.9474	.2283-01	.1766-01	2.725	18.96	543.6
253	180.00	.56400-01	37.000	.3729	.5972	.4705	.9447	.2118-01	.1669-01	2.593	18.07	540.6
253	180.00	.76100-01	38.000	.2895	.4556	.3732	.9385	.1616-01	.1324-01	2.075	14.50	534.6
253	180.00	.95800-01	39.000	.2192	.3397	.2878	.9328	.1205-01	.1021-01	1.614	11.32	529.1
253	180.00	.11550	40.000	.1669	.2592	.2249	.9276	.9194-02	.7976-02	1.224	8.582	529.8
253	180.00	.18450	42.000	.6427-01	.9760-01	.9096-01	.9141	.3462-02	.3226-02	.4917	3.464	521.0
253	225.00	.22900-01	30.000	.5570	.9524	.7054	.9493	.3378-01	.2502-01	3.506	24.18	559.2
253	270.00	.91000-02	63.000	.2865	.4422	.3528	.9466	.1568-01	.1251-01	2.127	14.93	527.4
253	270.00	.11100-01	64.000	.3637	.5724	.4516	.9466	.2030-01	.1602-01	2.605	18.21	534.7
253	270.00	.13100-01	65.000	.6204	1.069	.7995	.9466	.3792-01	.2836-01	3.861	26.60	561.2
253	270.00	.17000-01	67.000	.6764	1.252	.8964	.9466	.4441-01	.3179-01	3.844	26.26	576.4
253	270.00	.20900-01	69.000	.6037	1.062	.7844	.9466	.3767-01	.2782-01	3.655	25.12	566.0
253	270.00	.24900-01	71.000	.5510	.9632	.7160	.9461	.3416-01	.2540-01	3.364	23.13	564.5
253	270.00	.28800-01	73.000	.4850	.8194	.6262	.9447	.2906-01	.2221-01	3.105	21.45	556.2
253	270.00	.36700-01	75.000	.4366	.7270	.5683	.9420	.2578-01	.2016-01	2.857	19.78	552.2
253	270.00	.48500-01	77.000	.3638	.5887	.4766	.9381	.2088-01	.1690-01	2.489	17.31	543.8
253	270.00	.56400-01	78.000	.3124	.5043	.4139	.9356	.1789-01	.1468-01	2.146	14.93	543.1
253	270.00	.95800-01	80.000	.1555	.2501	.2175	.9247	.8672-02	.7713-02	1.073	7.474	542.0
253	270.00	.11550	81.000	.1131	.1812	.1615	.9202	.6427-02	.5729-02	.7857	5.474	540.8
253	315.00	.19000-01	68.000	.5487	.9255	.6913	.9493	.3283-01	.2452-01	3.521	24.33	555.7
253	315.00	.22900-01	70.000	.5077	.8893	.6487	.9493	.3154-01	.2301-01	3.091	21.25	565.0