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AIRESEARCH MANUFACTURING COMPANY OF CALIFORNIA
A DIVISION OF THE GARRETT CORPORATION
2525 WEST 190TH STREET • TORRANCE, CALIFORNIA 90509

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Prepared by A. Gaede

Edited by W. Platte

Approved by E N Harris
Edward N. Harris
HRE Program Manager

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FOREWORD

This analytical report is submitted to the NASA Langley Research Center by the AiResearch Manufacturing Company of Los Angeles, California, in accordance with the guidelines of Paragraph 5.7.3.2.1, NASA Statement of Work L-4947-B (Revised).

The report describes Computer Program TSKTSK, which was utilized to analyze the performance of the Aerothermodynamic Integration Model (AIM) on the IBM 360-670 at the NASA-Lewis Research Center.

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LIST OF SYMBOLS

Symbol	Description	Unit Internal	Unit External
A	area	$in.^2$	$in.^2$
A_o/A_c	mass flow ratio		
a_{ij}	formula numbers (number of atoms of ith element in jth species)	gm-atoms/mole	--
b_i^o	specific formula numbers (total number of gm-atoms/gm of element i in the chemical system)	gm-atoms/gm	--
C_D	drag coefficient	--	--
C_{DA}	addition drag coefficient	--	--
C_F	friction coefficient	--	--
G	Gibbs free energy	cal/gm	--
g	functional - Equation 3.7	cal/gm	--
g	acceleration of gravity	$9.80665 \dfrac{gm_m\text{-}m}{gm_f\text{-}sec^2}$	$32.174 \dfrac{lbm}{lbf} \dfrac{ft}{sec^2}$
h	enthalpy	cal/gm/R	Btu/lbm
HP	assigned enthalpy-pressure problem		
I_{VAC}	vacuum specific impulse	$\dfrac{gm_f}{gm_m}$ sec	$\dfrac{lbf}{lbm}$ sec
j	energy conversion factor	426.65 gm_f-m/cal	778 lbf-ft/Btu
K_D	process efficiency	--	--
M	Mach number	--	--
MW	molecular weight		

LIST OF SYMBOLS (Continued)

Symbol	Description	Units: Internal	Units: External
n	1/molecular weight	$\frac{\text{gm-moles}}{\text{gm}}$	$\frac{\text{lbm-moles}}{\text{lbm}}$
n_j^{α}	composition variables (number of moles of species j in the phase α)	moles/gm	--
O/F	oxidant-to-fuel ratio	--	--
p	pressure	ATM	psia
Q	heat transferred into or out of engine	Btu/sec	Btu/sec
q	dynamic pressure	ATM	lbf/in.^{2}
R	R_o/MW (also see eq. 4.3.3.3)	cal/gm-^{o}K	Btu/lbm-^{o}K
R_o	universal gas constant (1.987165)	cal/mole-^{o}K	Btu/mole-^{o}R
S	entropy	cal/gm-^{o}K	Btu/lbm-^{o}R
SP	assigned entropy-pressure problem		
T	temperature	^{o}K	^{o}R
TP	assigned temperature-pressure problem		
V	velocity	m/sec	ft/sec
w	mass flow	$\frac{\text{ATM-in.}^2}{\text{sec.}}\left(\frac{\text{mass units}}{\text{force units}}\right)$	lbm/sec
WF	weight fraction	--	--
α	angle of attack	radians	degrees
β	fuel injection angle	radians	degrees
γ	isentropic exponent		
δ	denotes variation of	--	--

Symbol	Description	Units Internal	Units External
η	angle of ray in conical flow field	radian	degrees
η_c	combustor efficiency	--	--
η_{KE}	kinetic energy efficiency	--	--
η_i	ray angle in conical flow field	radians	degrees
η_s	conical shock angle	radians	degrees
η_o	angle of inlet spike conical surface	radians	degrees
λ_i	Lagrangian multiplier for element i	cal/gm-ATM	--
μ_j^α	chemical potential	cal/mole	--
ρ	density	$\frac{\text{mass}}{\text{force}}\ \frac{\text{ATM}}{\text{m}}$	--
ϵ	convergence criterion(1×10^{-4})	--	--
θ	flow angle	radians	degrees

Subscripts	Description
ST	SPIKE TIP
CL	COWL LIP
F	denotes conditions relating to fuels
FZ	frozen composition
n	nozzle
0	denotes conditions relating to oxidants
r	denotes conditions related to regeneratively-cooled engine simulation (also radial component)
T	denotes total conditions
t	denotes tangential component
0	denotes conditions in wind tunnel
1	denotes conditions at spike tip
2	denotes conditions at inlet throat
2',2"	denotes conditions at inlet normal shock
3	denotes conditions on surface of inlet spike conical section
4	denotes conditions at combustor exit (also conditions downstream of conical shock)
6	denotes conditions at nozzle exit
η	denotes conditions on ray in conical flow field

LIST OF SYMBOLS (Continued)

Superscripts	Description
(n)	nth iteration
(m)	mth iteration
(I)	initial estimate
(n')	nth iteration of a secondary calculation of a variable

1. INTRODUCTION

The data reduction program for the HRE-AIM engine tests was designed to execute interactively on the NASA-Lewis Research Center's IBM 360/67 under the TSS operating system. Personnel at the NASA-Lewis Research Center wrote the routines to acquire, calibrate and interpolate the test data, to calculate the axial components of the pressure-area integrals and the skin-function coefficients and to report the raw data in engineering units.

The routines used to calculate flow conditions in the wind tunnel, inlet, combustor and nozzle and the overall engine performance were written by AiResearch personnel. Certain of the subroutines in References 1 and 2 were modified and used to obtain species concentrations and transport properties in chemical equilibrium at each of the internal and external engine stations.

The execution of the data reduction program required a programmer constantly interacting with the computer terminal during all executions of the program. In addition, the calibration and test configuration data and channel assignments, some of which were changed from test to test, were contained in several block data subroutines. The transcription of data from the instrumentation sheets to these subroutines constituted a major source of error. Consequently, many man-hours were required to transcribe and check the data and to insure that the proper block data subroutines were loaded prior to each execution. It was also necessary to assign fuel injector, ignitor and fuel supply value configurations via procedures prior to each execution.

In view of the difficulties experienced during reduction of data from the AIM tests, it is recommended that future test plans include the configuration, calibration and channel assignment data on a magnetic tape generated at the test site immediately before or after a test, and that the data reduction computer program be designed to operate in a batch environment.

2. SUMMARY

Three methods were used to obtain the Mach number in the wind tunnel. The first method used wind tunnel calibration data, the second used measured wind tunnel total pressure and temperature and the pitot pressure on the inlet spike tip with the normal shock equations, and the third used the measured wind tunnel total temperature, the pitot pressure on the spike tip and a static pressure on the conical section of the inlet spike with the normal and conical shock and conical flow field equations. Close agreement was obtained with the three methods. However, at the nominal Mach 5 test conditions, the wind tunnel calibration data was incomplete. Therefore, the first method was used to obtain the wind tunnel Mach number for the nominal Mach 6 and 7 tests and the second method for the nominal Mach 5 tests. Use of the third method was eventually discontinued because it required excessive computer time.

The conditions at the inlet throat were determined by computing the momemtun and total enthalpy from the pressure forces and friction and heat losses incurred on the inlet spike and internal surfaces. The inlet mass flow ratio and additive drag were determined from theoretical calculations (Reference 3). When the inlet was started ($M_2 > 1$), the measured static pressures at the throat were not used, and the mass-momentum-averaged static pressure was calculated. When the inlet was unstarted, the average of the measured static pressures at the throat was used with the Mach number constrained to unity to calculate spillage and additive drag.

In both cases, the flow was expanded to the free-stream static pressure to obtain kinetic energy and process efficiencies. Total conditions were obtained by compressing the flow isentropically until the calculated enthalpy matched the known total enthalpy. When the inlet was started, a side calculation was made by isentropically expanding the flow to an area 10 percent larger than the throat area. At this point, the flow was passed through a normal shock. The limiting inlet pressure recovery, kinetic energy and process efficiencies were determined from conditions downstream of the normal shock.

Two methods were used to calculate conditions at the combustion stations. Up to the first station where fuel was injected, the mass-momentum-averaged static pressure that satisfied the state, continuity, momentum and energy equations was calculated. After fuel was injected, the average of the measured inner- and outerbody pressures was used, and the combustor efficiency was calculated to satisfy the conservation equations. The combustor efficiency was defined as the weight fraction of reacted hydrogen in chemical equilibrium to the total injected hydrogen. The unreacted hydrogen was assumed to be inert, i.e., it was not permitted to dissociate or to react with other species.

The combustor throat was defined as the point of minimum flow area between the struts in subsonic combustion, and at the strut exit plane in supersonic combustion. When the Mach number at the combustor throat was less than 0.95, a side calculation was made of the combustor efficiency required to produce sonic velocity at the throat.

The regeneratively-cooled combustor performance was simulated by recalculating the total enthalpy at the combustor exit as the sum of the free-stream enthalpy of the synthetic air, the enthalpy of the hydrogen fuel at 50 degrees Rankine, and the absolute value of the heat loss through the nozzle surfaces.

Engine performance was obtained by isentropically expanding the flow from the actual and regeneratively-cooled combustor exits both to the nozzle exit area and to ambient pressure. The flow was then isentropically expanded from the actual combustor throat to those nozzle locations having static pressure taps, and the local skin friction coefficients were calculated. The nozzle vacuum stream thrust coefficient was obtained from the surface-pressure integrals and the friction drag on the nozzle walls, and the stream thrust (momentum) at the combustor throat and nozzle exit.

Side calculations were made of a fictitious constant-pressure zero-velocity combustor at 100 percent combustor efficiency with isentropic expansion to ambient pressure to obtain the combustor effectiveness, and of a fictitious nozzle to determine the static and total conditions required to match the actual vacuum specific impulse at the nozzle exit.

3. CHEMICAL EQUILIBRIA (Reference 4)

The chemical equilibrium program minimizes the Gibbs free energy as the condition for chemical equilibrium with the independent variables

$$T = T_o, \tag{3.1}$$

$$p = p_o, \tag{3.2}$$

and the composition variables n_j^α which represent the number of moles of species j in the phase α. The Gibbs free energy can be written

$$G = G(p, T, n_j^\alpha) \quad . \tag{3.3}$$

Since the Gibbs free energy is an extensive property, equation 3.3 must be a first degree homogeneous function in n_j^α. This leads to

$$G = \sum_{j,\alpha} \mu_j^\alpha \, n_j^\alpha \tag{3.4}$$

where the chemical potential μ_j^α is defined

$$\frac{\partial G}{\partial n_j^\alpha} \equiv \mu_j^\alpha \quad . \tag{3.5}$$

The conservation of elements in the chemical system (which constitutes the constraints on the variations δn_j^α) may be written

$$\sum_i \left(\sum_{\alpha,j} a_{ij} \, n_j^\alpha - b_i^o \right) = 0 \tag{3.6}$$

where the formula number a_{ij} represent the number of atoms of the ith element in the jth species, and the specific formula numbers b_i^o represent the total number of gram-atoms of element i in the system.

The fundamental function for the variational problem may be written from equations 3.3 and 3.6 as

$$g = G + \sum_i \lambda_i \left(\sum_{j,\alpha} a_{ij} \, n_j^\alpha - b_i^o \right) \tag{3.7}$$

where the Lagrangian multipliers λ_i were introduced so that all of the δn_j^α could be considered independently variable. The condition for equilibrium is obtained by setting the first variation of the function 3.7 equal to zero.

$$\delta_g = \sum_{j,a} \left(\mu_j^\alpha + \sum_i \lambda_i \, a_{ij}\right) \delta n_j^\alpha$$

$$+ \sum_i \left(\sum_{j,\alpha} a_{ij} \, n_j^\alpha - b_i^o\right) \delta\lambda_i = 0 \tag{3.8}$$

Treating the $\delta\lambda_i$ and δn_j^α as independent variations gives

$$\frac{\partial G}{\partial n_j^\alpha} + \sum_i \lambda_i \, a_{ij} = 0 \tag{3.9}$$

and equation 3.6 which, along with equations 3.1 and 3.2 represents a set of nonlinear equations defining a thermodynamic state of the chemical system that can be solved by iterative techniques to obtain the equilibrium compositions of the species and the Lagrangian multipliers.

The use of equations 3.1 and 3.2 in forming the Function 3.7 implies that the thermodynamic state of the chemical system was specified by assigned temperatures and pressures. Hereafter, this specification will be referred to as the TP problem. In general, any two equations involving T, p, and n_j^α may be used to define the thermodynamic state. Equation 3.1 may be replaced by

$$h(T,\ p,\ n_j^\alpha) = h_o \tag{3.10}$$

where h is the enthalpy and h_o is a constant equal to the enthalpy of the reactants to define the HP problem, or by the entropy function

$$S(T,\ p,\ n_j^\alpha) = S_o \tag{3.11}$$

to define the SP problem. The problem designations TP, HP, and SP will be used in the following paragraphs to describe the thermodynamic-state calculations.

4. WINDTUNNEL

The three methods used in calculating the windtunnel flow conditions are discussed in detail in the following paragraphs.

4.1 CALIBRATION DATA

Prior to testing the AIM engine at the nominal Mach 5, 6 and 7 conditions, instrumentation rakes were installed just upstream of the inlet spike tip to measure pitot and static pressures (Reference 5). These pressures along with the measured total temperature were used to calculate the Mach number profile in the windtunnel test section, and an average Mach number was obtained as a function of windtunnel total pressure and temperature for the Mach 6 and 7 test conditions. Wind tunnel flow conditions are completely defined with these two state variables and the Mach number.

The TP problem was solved with the total pressure and temperature to obtain the total enthalpy (h_{To}) and entropy (S_o). An estimate of the static pressure (p_o) was obtained from the ideal-gas relationship

$$p_o^{(1)} = p_{To}/(1 + \frac{\gamma-1}{2} M_o^2)^{\frac{\gamma}{\gamma-1}} ,$$

and the SP problem was solved to obtain the static conditions in the windtunnel. The Mach number was obtained from

$$M_o^{(1)} = V_o^{(1)}/a_o^{(1)}$$

where

$$V_o^{(1)} = \left(\sqrt{2gj(h_T - h^{(1)})}\right)_o$$

and

$$a_o^{(1)} = \left(\sqrt{\gamma gj\ RT}\right)_o^{(1)}$$

Solution of the SP problem was repeated with new estimates of $p_o^{(n)}$ until

$$\left|1 - M_o^{(n)}/M_o\right| < \epsilon \quad .$$

Normally, the conditions downstream of the normal shock at the inlet spike tip would be based on the invarience of the momentum, energy and continuity across the shock. Since the pitot pressure at the spike tip was known, the problem was overprescribed. The flow conditions at the spike tip were obtained by relaxing the invariance of the momentum. The HP problem was solved with the spike tip pitot pressure (p_{T1}) and the enthalpy (h_{To}) to obtain the total temperature (T_{T1}) and entropy (S_1). An estimate of the static pressure ($p_1^{(1)}$) was obtained from the ideal-gas relationship across a normal shock

$$p_1^{(1)} = p_o \left[1 + 2\gamma(M_o^2 - 1)/(\gamma + 1)\right] \quad ,$$

and the SP problem was solved with $p_1^{(1)}$ and S_1 to obtain the static conditions downstream of the normal shock. The mass flow per unit area was obtained from

$$(w/A)_1^{(1)} = (pV/jRT)_1^{(1)}$$

Solution of the SP problem was repeated with new estimates of $p_1^{(n)}$ until

$$\left| 1 - (w/A)_1^{(n)}/(w/A)_o \right| < \epsilon \quad .$$

4.2 NORMAL SHOCK - INLET SPIKE TIP

The second method for determining the windtunnel Mach number used the conditions across the normal shock at the inlet spike tip. The total conditions on either side of the shock were the same as those in the preceeding paragraph. The independent variables were the static pressures, p_o and p_1, and the dependent variables were the mass flows per unit area, $(w/A)_o$ and $(w/A)_1$, and the vacuum specific impulse, $Ivac_1$ and $Ivac_2$, defined as

$$Ivac = V/g + p/(w/A) \quad .$$

The averaged values of static pressure from the method described in the preceding paragraph were used as the initial estimates for $p_o^{(1)}$ and $p_1^{(1)}$. The SP problem was solved on both sides of the normal shock with $p_o^{(1)}$, S_o and $p_1^{(1)}$, S_1 to obtain (w/A) and Ivac. The estimates of static pressure, p_o and p_1, were perturbed separately to obtain the elements of a 2 x 2 Jacobian matrix - the partial derivatives of the (w/A) and Ivac over the static pressures. The Jacobian was then inverted to obtain new estimates of the static pressures $p_o^{(2)}$ and $p_1^{(2)}$. Solution of the SP problem was repeated on both sides of the normal shock with static pressure perturbations and matrix inversions until

$$\left|1 - (w/A)_o^{(n)}/(w/A)_1^{(n)}\right| < \epsilon$$

and

$$\left|1 - Ivac_o^{(n)}/Ivac_1^{(n)}\right| < \epsilon \quad .$$

The windtunnel Mach number was determined from this method for the nominal Mach 5 tests since the calibration data was incomplete.

4.3 NORMAL AND CONICAL SHOCK SOLUTION - INLET SPIKE

The third method solved for the windtunnel conditions based on the static pressure on the conical portion of the inlet spike and the pitot pressure and enthalpy at the blunted tip of the inlet spike. It was assumed that a solution existed as shown in Figure 4-1. An entropy gradient existed near the surface of the cone due to the curved portion of the bow shock. Therefore, it was also assumed that the effect of the entropy layer on the solution of the conical flow equations was negligible. The solution of the problem was obtained by the methods discussed below.

4.3.1 Total Conditions - Spike Tip

The HP problem was solved with the state variables p_{T1} and h_{T1} to obtain S_1.

4.3.2 Total and Static Conditions - Surface of Conical Section

An initial estimate of the total pressure $(p_{T3}^{(1)})$ was obtained from

$$p_{T3}^{(1)} = 0.5(p_{To} + p_{T1}) \quad ,$$

and the HP problem was solved to obtain $S_3^{(1)}$. With $S_3^{(1)}$ and measured p_3, the SP problem was solved to obtain the static conditions on the surface of the cone.

4.3.3 Conical Flowfield

An initial estimate for the conical shock angle $(\eta_s^{(1)})$ was obtained from the empirical equation

$$\eta_s^{(1)} = (3\gamma + 1)\tan\eta_o/2(\gamma + 1) + 1/\left(2\, M_o^2 \tan\eta_o\right) \quad ,$$

where η_o was the angle of the cone. The flowfield between the surface of the cone and the conical shock was constructed from the equations in the hodograph plane

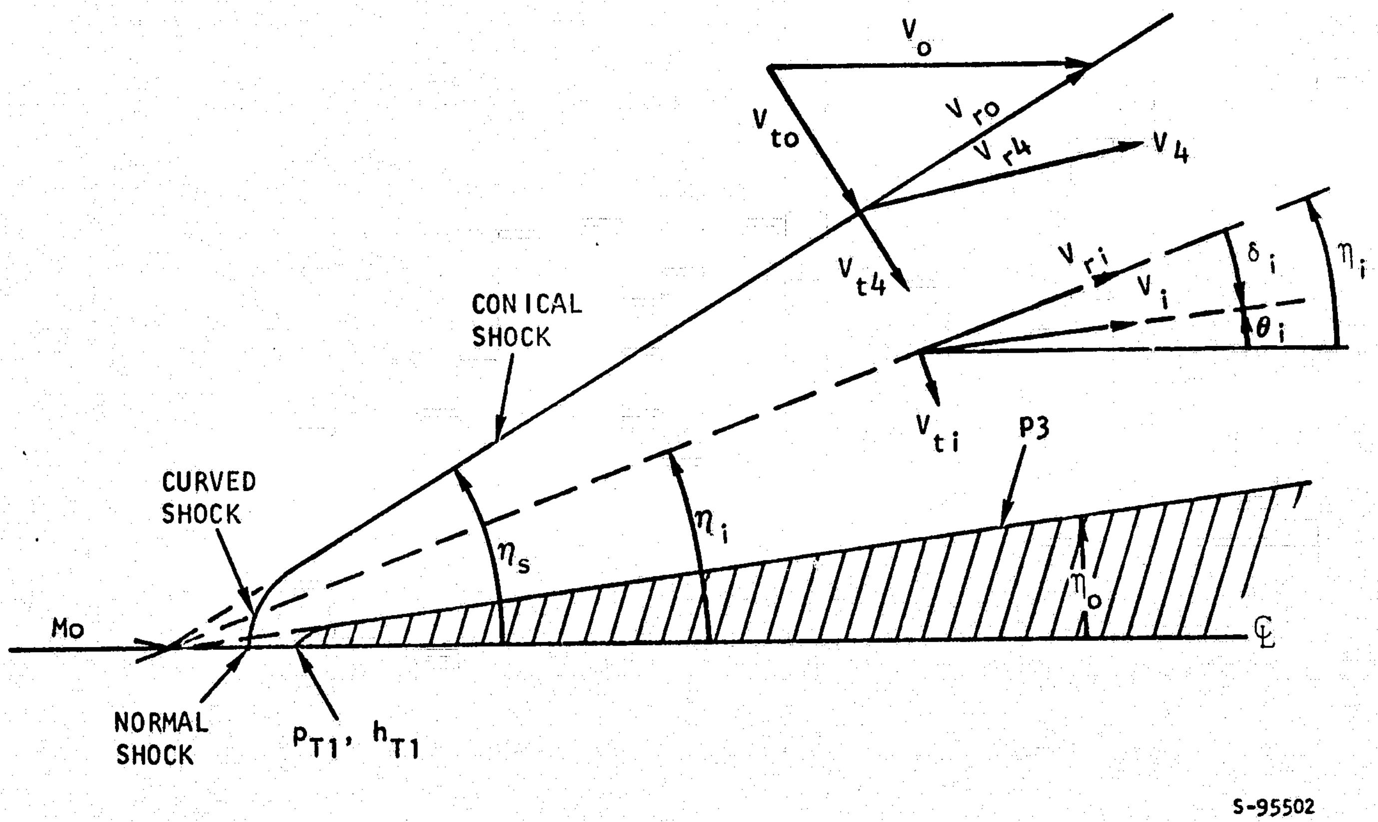

Figure 4-1. Normal and Conical Shock Solutions - Inlet Spike

$$(V_r)_{\eta+\Delta\eta} = (V_t)_\eta \sin\Delta\eta - (R - V_r)_\eta \cos\Delta\eta + R_\eta \qquad (4.3.3.1)$$

and

$$(V_t)_{\eta+\Delta\eta} = (V_t)_\eta \cos\Delta\eta + (R - V_r)_\eta \sin\Delta\eta \qquad (4.3.3.2)$$

where

$$R_\eta = \left[(V_t)_\eta/\tan\eta + (V_r)_\eta\right] / \left[(V_t/a)^2_\eta - 1\right] \qquad (4.3.3.3)$$

and

$$a^2_\eta = (\gamma g j R T)_\eta \qquad (4.3.3.4)$$

The construction was started from the surface of the cone where the tangential velocity $(V_t)_{\eta_o} = 0$. The velocity and flow angles at each successive ray were obtained from

$$V_i^2 = V_{ti}^2 + V_{ri}^2$$

and

$$\theta_i^{(n)} = \eta_i + \tan^{-1}(V_{ti}/V_{ri}) \quad ,$$

and the static enthalpy from

$$h_i^{(n)} = h_{T3}^{(n)} - V_i^2/2gj \quad .$$

An initial estimate of static pressure $(p_i^{(1)})$ on each successive ray was obtained from

$$p_i^{(1)} = p_{T3}^{(n)} / \left[1 + (\gamma - 1)\ V_i^2/2\ a_i^2\right]^{\frac{\gamma}{\gamma-1}} \quad ,$$

and the SP problem was solved with the state variables $p_i^{(1)}$, $S_3^{(n)}$ to obtain $h_i^{(1)}$. New estimates were obtained for $p_i^{(m)}$, and the SP problem repeatedly solved until

$$\left|1 - h_i^{(m)}/h_i^{(n)}\right| < \epsilon \ .$$

4.3.4 Conical Shock

Upon completion of the flowfield between the surface of the cone and the conical shock, the continuity, momentum and energy equations were used to obtain velocity, static pressure and static enthalpy upstream of the shock. The conditions across the shock were obtained from (see Figure 4-1)

$$\rho_o V_{to} = \rho_4 V_{t4}$$

$$V_{ro} = V_{r4}$$

$$p_o + \rho_o V_{to}^2 = p_4 + \rho_4 V_{t4}^2$$

and

$$h_{To} \equiv h_{T3} \equiv h_{T1}$$

These equations lead to

$$(w/A)_o^{(n)} = (w/A)_4^{(n)} \sin\left[\eta_s^{(n)} - \theta_4^{(n)}\right] / \sin \eta_s^{(n)}$$

$$V_o^{(n)} = V_4^{(n)} \cos\left[\eta_s^{(n)} - \theta_4^{(n)}\right] / \cos \eta_s^{(n)}$$

$$p_o^{(n)} = p_4^{(n)} + (w/A)_4^{(n)} (V_4/g)^{(n)} \sin^2\left[\eta_s^{(n)} - \theta_4^{(n)}\right] \times \left\{1 - \tan \eta_s^{(n)} / \tan\left[\eta_s^{(n)} - \theta_4^{(n)}\right]\right\}$$

and

$$h_o^{(n)} = h_{To} - V_o^{(n)^2}/2gj \quad .$$

The HP problem was solved with the state variables $p_o^{(n)}$, $h_o^{(n)}$ obtained from the above equations, and the equation of state was used to calculate

$$(w/A)_o^{(n')} = (pV/jRT)_o^{(n)}$$

and

$$M_o^{(n)} = V_o^{(n)} / (\sqrt{\gamma g j R T})_o^{(n)}$$

4.3.5 Static Conditions - Spike Tip

The initial estimate of the static pressure ($p_1^{(1)}$) downstream of the normal shock at the spike tip was obtained from

$$p_1^{(1)} = p_o^{(1)} \left[1 + 2\gamma(M^2 - 1)/(\gamma + 1)\right]_o^{(1)}$$

Then

$$V_1^{(n)} = V_o^{(n)} + g(p_o^{(n)} - p_1^{(n)})/(w/A)_o^{(n)}$$

and

$$h_1^{(n)} = h_{T1} - V_1^{(n)^2}/2gj$$

The SP problem was solved with the state variable $p_1^{(n)}$, S_1 (S_1 was calculated in para 4.3.1) to obtain $h_1^{(n')}$ and $(w/A)_1^{(n)}$.

4.3.6 Solution

The system of equations in the preceding paragraphs were reduced to three dependent and three independent variables. These were

Independent	Dependent
p_{T3}	$1 - h_1^{(n')}/h_1^{(n)}$
η_s	$1 - (w/A)_o^{(n')}/(w/A)_o^{(n)}$
p_1	$1 - (w/A)_1^{(n)}/(w/A)_o^{(n)}$

The independent variable were perturbed separately, each time repeating the calculations in paragraphs 4.3.2 through 4.3.4 to form a 3 x 3 matrix (Jacobian) of the partial derivatives of the dependent over the independent variables. The matrix was inverted to obtain new estimates of the independent variables. The procedure was repeated until

$$\left|1 - h_1^{(n')}/h_1^{(n)}\right| < \epsilon \ ,$$

$$\left|1 - (w/A)_o^{(n')}/(w/A)_o^{(n)}\right| < \epsilon$$

and

$$\left|1 - (w/A)_1^{(n)}/(w/A)_o^{(n)}\right| < \epsilon \ .$$

4.3.7 Total Conditions - Windtunnel

Following convergence of the above system of equations, an initial estimate of the windtunnel total pressure was obtained from

$$p_{To}^{(1)} = p_o \left(1 + \frac{\gamma-1}{2} M_o^2\right)^{\frac{\gamma}{\gamma-1}} \ .$$

The SP problem was solved with the state variables $p_{To}^{(1)}$, S_o to obtain $h_{To}^{(1)}$. New estimates of $P_{To}^{(n)}$ were obtained, and the SP problem was repeated until

$$\left|1 - h_{To}^{(n)}/h_{To}\right| < \varepsilon \; .$$

5. INLET

Following the calculation of the windtunnel conditions, the SP problem was solved with the entropy (S_1) downstream of the spike tip normal shock and the pressures on the spike and inner cowl surfaces up to the inlet throat and on the total outer cowl surface. The transport properties were obtained from subroutines described in Reference 2, and the skin friction coefficients were obtained by the method of Spalding and Chi described in References 6 and 7 (pp A112-A115a).

The friction drag on the spike and inner cowl surfaces up to the inlet throat and the friction drag on the outer cowl surface were calculated from the procedures outlined in Reference 7 (pp A54-A71).

The conditions at the inlet throat were determined by computing the stream thrust (momentum) and total enthalpy from the pressure integral, friction and heat losses incurred on the inlet spike and internal cowl surfaces. The stream thrust (F) was defined

$$F = wV/g + pA, \tag{5.1}$$

and was calculated from

$$F_2 = F_o + \int_o^2 pda - DRAG_{o,2}$$

$$+ C_{DA}\, q_o\, A_c + p_o\, A_c\, (1 - A_o/A_c)\ . \tag{5.2}$$

The first term on the right-hand side of equation 5.2 was the stream thrust (momentum) in the windtunnel. The second term was the pressure integral over the spike and internal surface of the cowl evaluated from the spike tip to the inlet throat. The third term was defined as

$$DRAG_{o,2} = -\int_0^2 C_f q dA_s \cos\delta_s - C_{DST}\, q_o\, A_{ST}$$

$$-C_{DCL} q_o A_{CL}$$

Where C_f is the local skin function coefficient, q is the local dynamic pressure, dA_s the local surface area, and δ_s the local surface angle on the spike and internal cowl surface. The skin friction coefficients on the cowl (C_f) were obtained as described in Reference 7 (pp A112-A115a). The drag forces on the spike tip (ST) and cowl lip (CL) were defined in Reference 7 (pp A54-A71) as

$$C_{DST}\, q_o A_{ST} = \frac{\pi}{64} \left[0.4843\ (p_1 - p_o) + 0.97\ p_o\right]$$

and

$$C_{DCL}\, q_o A_{CL} = 1.699\ (2.976\ q_o + p_o)\ .$$

The fourth and fifth terms in equation 5.2 represent the pressure integral over the spillage streamline. The additive drag coeffecienccts (C_{DA}) and mass flow rations (A_o/A_o) were obtained from theory (Reference 3). The total enthalpy of the synthetic air at the inlet throat was defined as

$$h_{T2} = h_{To} + Q_{o,2}/w_o, \tag{5.3}$$

where $Q_{o,2}$ was the heat transferred into (+) or out of (-) the mixture through the engine walls with units of Btu/sec. The calculation of the heat loss was described in Reference 8, pages 2-4 through 2-11.

A test was made to determine whether the inlet was started. The critical pressure was defined as

$$p_{cr} = p_o(1 + 0.425\ \gamma_o\ M_o^2),$$

and the arithmetic average of spike pressure ($\bar{p}$) was obtained between stations 35.0 and 38.0. The inlet was considered to be started unless $\bar{p}$ was greater than p_{cr}.

5.1 STATIC CONDITIONS - INLET STARTED ($M_2 > 1$)

When the inlet was started, the measured static pressures at the throat were ignored, and the mass-momentum averaged static pressure was calculated. In order to calculate static conditions at the inlet throat, an initial estimate of static pressure ($p_2^{(1)}$) was obtained from the arithmetic average of measured pressures at the inlet throat and an initial estimate of velocity ($V_2^{(1)}$) was obtained from equation 5.1 as

$$V_2^{(1)} = g\ (F_2 - p_2^{(1)} A_2)/w_2. \tag{5.4}$$

An initial estimate of static enthalpy ($h_2^{(1)}$) was obtained from

$$h_2^{(1)} = h_{T2} - {V_2^{(1)}}^2/2gj, \tag{5.5}$$

and the HP problem was solved with the state variables $p_2^{(1)}$, $h_2^{(1)}$ to obtain $(w/A)_2^{(1)}$ and $S_2^{(1)}$. New estimates were obtained for $p_2^{(n)}$, and the above sequence was repeated until

$$\left|1 - (w/A)_2^{(n)}/(w/A)_2\right| < \epsilon .$$

5.2 STATIC CONDITIONS - INLET UNSTARTED ($M_2 = 1$)

When the inlet was unstarted, the arithmetic average of the measured static pressures at the throat was used with the Mach number contrained to unity to calculate spillage and additive drag. Initial estimates of the velocity and static enthalpy were calculated from equation 5.4 and 5.5. The HP problem was solved with the state variables p_2, $h_2^{(1)}$ to obtain the sonic velocity (a_2) where

$$a_2^{(1)} = \sqrt{(\gamma g j R T)}_2^{(1)}$$

Successive substitutions of

$$V_2^{(n+1)} = a_2^{(n)}$$

in equation 5.5 were made, and the HP problem was repeatedly solved until

$$\left|1 - V_2^{(n)}/a_2^{(n)}\right| < \epsilon .$$

The actual flow through the inlet throat was calculated, the mass flow ratio and additive drag coefficient were corrected to reflect the spillage and the mass flow per unit area and the momentum were corrected at upstream stations.

5.3 TOTAL CONDITIONS

The total conditions at the inlet throat were obtained by isentropically compressing the flow until the calculated total enthalpy matched the known total enthalpy. An initial estimate of the total pressure ($p_{T2}^{(1)}$) was calculated from

$$p_{T2}^{(1)} = p_2 \left(1 + \frac{\gamma-1}{2} M_2{}^2\right)^{\frac{\gamma}{\gamma-1}} ,$$

and the SP problem was solved with the state variables $p_{T2}^{(1)}$, S_2 to obtain $h_{T2}^{(1)}$. New estimates were obtained for $p_{T2}^{(n)}$, and the SP problem was repeatedly solved until

$$\left|1 - h_{T2}^{(n)}/h_{T2}\right| < \epsilon .$$

5.4 INLET PERFORMANCE

In both of the above cases -- inlet started and unstarted -- the flow was expanded isentropically to the windtunnel static pressure (p_o). The SP problem was solved with the state variables p_o, S_2 to obtain h_o', and the kinetic energy (η_{KE}) and process (K_D) efficiencies were calculated from

$$\eta_{KE} = (h_{T2} - h_o')/(h_{To} - h_o) \tag{5.6}$$

and

$$K_D = (h_2 - h_o')/(h_2 - h_o) \ . \tag{5.7}$$

When the inlet was started ($M_2 > 1$), the flow was expanded isentropically to a fictitious area 1.10 times the inlet throat area to determine the limiting inlet pressure recovery. The mass flow per unit area was calculated from

$$(w/A)_{2'} = (w/A)_2/1.10$$

and the initial pressure estimate from

$$p_{2'}^{(1)} = 0.9\ p_2 \ .$$

The SP problem was solved with the state variables $p_{2'}^{(1)}$, S2 to obtain $(w/A)_{2'}^{(1)}$. New estimates were obtained for $p_{2'}^{(n)}$, and the SP problem was repeatedly solved until

$$\left|1 - (w/A)_{2'}^{(n)}/(w/A)_{2'}\right| < \varepsilon \ .$$

Next, the flow was passed through a normal shock. The initial estimate of the static pressure downstream of the normal shock was calculated from

$$p_{2''}^{(1)} = p_{2'} \left[1 + 2\gamma\ (M_{2'}^2 - 1)/(\gamma + 1)\right] ,$$

and the velocity and static enthalpy from

$$V_{2''}^{(n)} = g\ (p_{2'} - p_{2''}^{(n)})/(w/A)_{2'} + V_{2'}$$

and

$$h_{2''}^{(n)} = h_{T2} - V_{2''}^{(n)^2}/2gj \ .$$

The HP problem was solved with the state variables $p_{2''}^{(1)}$, $h_{2''}^{(1)}$ to obtain $(w/A)_{2''}^{(1)}$. New estimates were obtained for $p_{2''}^{(n)}$ and the HP problem was solved repeatedly until

$$\left| 1 - (w/A)_{2''}^{(n)} / (w/A)_{2'} \right| < \epsilon .$$

The total conditions downstream of the normal shock were determined by isentropically compressing the flow until the calculated total enthalpy matched the known total enthalpy. An initial estimate of the total pressure $(p_{T2''}^{(1)})$ was calculated from

$$p_{T2''}^{(1)} = p_{2''} \left(1 + \frac{\gamma - 1}{2} M_{2''}^2\right)^{\frac{\gamma}{\gamma - 1}}$$

and the SP problem was solved with the state variables $p_{T2''}^{(1)}$, $S_{2''}$ to obtain $h_{T2''}^{(1)}$. The SP problem was solved repeatedly with new estimates of total pressure until

$$\left| 1 - h_{T2''}^{(n)} / h_{T2} \right| < \epsilon .$$

The flow downstream of the normal shock was expanded isentropically to the wind-tunnel static pressure (p_o). With the state variables p_o, $S_{2''}$, the SP problem was solved to obtain h_o'', and the kinetic energy and process efficiencies were calculated from

$$\eta_{KE}'' = (h_{T2} - h_o'')/(h_{To} - h_o) \tag{5.8}$$

and

$$K_D'' = (h_{2''} - h_o'')/(h_{2''} - h_o) . \tag{5.9}$$

Finally, the limiting inlet pressure recovery (η_{pT2}) was obtained from

$$\eta_{pT2} = (0.9 \; p_{T2''} + 0.1 \; p_{2''})/p_{To} . \tag{5.10}$$

6. COMBUSTOR

Two methods were used to calculate static conditions in the combustor. Up to the combustor station where fuel was first injected, the mass-momentum-averaged pressure was calculated to satisfy the state, continuity, momentum and energy equations. At that station where fuel was first injected and thereafter, the arithmetic average of measured inner- and outerbody pressures was used with a variable combustor efficiency to satisfy the conservation equations. The concept of real and inert hydrogen was used to define combustor efficiency equal to the weight fraction of real hydrogen (H_2) in the total injected hydrogen. The inert hydrogen (HZ_2) was not permitted to dissociate or to react with other species.

The combustor throat was defined as the point of minimum flow area between the struts in the subsonic combustion mode, and at the strut exit plane in the supersonic combustion mode. When the Mach number was less than 0.95 at the combustor throat, a side calculation was made to determine the combustor efficiency required to produce sonic velocity at the throat.

The regeneratively-cooled combustor performance was simulated by recalculating the total enthalpy at the combustor exit as the sum of the freestream enthalpy of the synthetic air, the enthalpy of the injected fuel at 50 degrees Rankine, and the absolute value of the heat loss through the nozzle surfaces.

A side calculation of a fictitious constant pressure, zero-velocity combustor was made at 100 percent combustion efficiency with isentropic expansion to ambient pressure (p_o) to obtain the combustor effectiveness.

The solution for static flow properties at the combustor stations involved the calculation of the velocity from the momentum equation, the mass flow per unit area from the continuity equation and the equation of state, the static enthalpy from the energy equation, and the arithmetic average of the measured inner- and outerbody static pressures. Before fuel injection, the static pressure was varied until the calculated mass flow per unit area matched its known value. After fuel injection, the arithmetic average of the static pressure was considered constant, and the combustor efficiency was varied until the calculated mass flow per unit area matched its known value. The details of the solution follow.

6.1 MOMENTUM EQUATION

The one-dimensional momentum equation was derived as

$$
\begin{aligned}
(wV/g)_x + (pA)_x &= (wV/g)_{x-1} + (pA)_{x-1} \\
&+ \int_{x-1}^{x} pdA + k\int_{x-1}^{x} \frac{\partial}{\partial x}\left[\int_{x_{\ell e}}^{x_{te}-1} pdA + (pA)_{BASE}\right]_{STRUTS} dx \\
&+ \sum_i \left(w_{Fi} \cdot I_{VACFi} \cdot \cos\beta_i\right)_{x-1,x} \\
&- 1/4\left[(wV/Ag)_x + (wV/Ag)_{x-1}\right]\left(\bar{C}_f \cdot A_w\right)_{x-1,x}
\end{aligned}
\qquad (6.1)
$$

where the subscript x denotes the current combustor station, and x-1, the previous station. The k in the fourth-term on the right of the equal sign was unity when calculating stations in the plane of the struts. Otherwise, k was equal to zero. The fifth-term was used to account for fuel momentum, and the sixth-term resulted from the integral

$$
-\int_{x-1}^{x} q\, C_f \cos\delta_s\, dA_s
$$

where q was the dynamic pressure, C_f the skin friction coefficient, δ_s the angles of the combustor walls with respect to the x-axis and A_s, the surface area.

In equation 6.1, the first two terms on the left and right of the equal sign were combined with the sixth-term, and the velocity at the current station was obtained from

$$
\begin{aligned}
V_x = (g/w_x)\Bigg\{&\left[1 - (\bar{C}_f A_w)_{x-1,x}/4A_{x-1}\right](wV/g)_{x-1} \\
&+ \int_{x-1}^{x} pdA + (pA)_{x-1} - (pA)_x \\
&+ k\int_{x-1}^{x} \frac{\partial}{\partial x}\left[\int_{x\ell e}^{x_{te}-1} pdA + (pA)_{BASE}\right]_{STRUTS} dx \\
&+ \sum_i \left(w_{Fi}\, I_{VACFi} \cdot \cos\beta_i\right)\Bigg\} \Bigg/ \left[1 + (\bar{C}_f A_w)_{x-1,x}/4A_x\right]
\end{aligned}
\qquad (6.2)
$$

In the solution of V_x from equation 6.2, $\overline{C}_{fx-1,x}$ was set equal to C_{fx-1} on the first iteration. Then C_{fx} was calculated, and

$$\overline{C}_{fx-1,x} = 0.5\ (C_{fx} + C_{fx-1})$$

was used in subsequent iterations. Two passes were made from the strut leading to trailing edges. On the first pass, the base pressure in the third term of equation 6.2 was taken to be one-half the arithmetic average of the measured pressures at the strut trailing edge. On the final pass, the base pressure was calculated as a function of gamma and Mach number at the strut exit determined from the first pass through the struts (Reference 9).

6.2 CONTINUITY EQUATION AND EQUATION OF STATE

The mass flow rate at combustor stations was obtained from

$$w_x = w_o + \sum_i (w_{Fi})_{o,x} + \sum_i (w_{0i})_{o,x} \tag{6.3}$$

The mass flow per unit area was calculated from

$$(w/A)_x = w_x/A_x \tag{6.4}$$

and

$$(w/A)_x = (\rho V)_x \tag{6.5}$$

and the equation of state

$$\rho_x = (p/jRT)_x \tag{6.6}$$

where R_x is the universal gas constant divided by the molecular weight at x. Substituting equation 6.6 for ρ_x in equation 6.5 yields

$$(w/A)_x = (pV/jRT)_x \tag{6.7}$$

6.3 ENERGY EQUATION

The total and static enthalpy of the gaseous mixture in the combustor were obtained from

$$h_{Tx} = \left\{ w_o h_{To} + \sum_i \left[(w_F h_{TF})_i + (w_0 h_{T0})_i \right]_{o,x} + Q_{o,x} \right\} / w_x \tag{6.8}$$

and

$$h_x = h_{Tx} - V_x^2/2gj \tag{6.9}$$

where w_F and w_O were the mass flow rates of injector and ignitor fuels and oxidants, and $Q_{o,x}$ was the cumulative heat loss through the engine surfaces up to the station x.

6.4 SOLUTION WITH NO FUEL INJECTED

The parameters $V_x^{(1)}$ w_x, $(W/A)_x$, and $H_x^{(1)}$ were calculated from equations 6.2, 6.3, 6.4, 6.8 and 6.9, respectively. The initial estimate of static pressure ($p_x^{(1)}$) was taken as the arithmetic average of measured inner- and outerbody pressures at station x. The HP problem was solved with the state variables $p_x^{(1)}$, $h_x^{(1)}$, and $(w/A)_x^{(1)}$ was calculated from equation 6.7. New estimates were obtained for $p_x^{(n)}$, $V_x^{(n)}$, $h_x^{(n)}$, and the HP problem was repeatedly solved until

$$\left| 1 - (w/A)_x^{(n)}/(w/A)_x \right| < \epsilon .$$

The initial estimate of total pressure was obtained from

$$p_{Tx}^{(1)} = p_x \left(1 + \frac{\gamma-1}{2} M_x^2\right)^{\frac{\gamma}{\gamma-1}}$$

and the SP problem was solved with the state variables $p_{Tx}^{(1)}$, S_x to obtain $h_{Tx}^{(1)}$. New estimates were obtained for $p_{Tx}^{(n)}$, and the SP problem was repeatedly solved until

$$\left| 1 - h_{Tx}^{(n)}/h_{Tx} \right| < \epsilon .$$

6.5 SOLUTION AFTER FUEL INJECTION

At this point, a new independent variable--the combustor efficiency--was introduced. The combustor efficiency was defined as

$$\eta_c = \frac{\text{weight of reacted hydrogen}}{\text{weight of injected hydrogen}} .$$

In order to implement this concept of combustor efficiency, an inert hydrogen (HZ_2) was introduced so that

$$\eta_c = \text{weight fraction of } H_2 \ (WFH_2)$$

and

$$1 - \eta_c = \text{weight fraction of } HZ_2 \ (WFHZ_2).$$

The inert hydrogen was assigned the physical and thermodynamic properties of real hydrogen, but was not permitted to dissociate or to react with other species.

After fuel was injected in the combustor, the static pressure (p_x) was fixed at the arithmetic average of the measured inner- and outerbody pressures. The parameters V_x, w_x, $(w/A)_x$, h_{Tx} and h_x were calculated from equations 6.2, 6.3, 6.4, 6.8 and 6.9, respectively. The initial estimate of combustor efficiency ($\eta_c^{(1)}$) was assumed equal to 0.50 at the combustor station where fuel was first injected or set equal to the converged value at the previous station for subsequent calculations. Each change in combustor efficiency required recalculation of the specific formula numbers of the elements in the fuel and mixture. The HP problem was solved for the chemical system defined by $\eta_c^{(1)}$ with the state variables p_x, h_x to obtain $(w/A)_x^{(1)}$ (Equation 6.7). New estimates were obtained for $\eta_c^{(n)}$, and the HP problem was solved repeatedly until

$$\left|1 - (w/A)_x^{(n)}/(w/A)_x\right| < \epsilon .$$

Total conditions were obtained in the same manner as in paragraph 6.4 with the combustor efficiency held equal to its converged value.

6.6 SONIC VELOCITY - COMBUSTOR THROAT

In the subsonic combustion mode, when the Mach number was less than 0.95 at the combustor throat, a side calculation was made to determine the value of combustor efficiency necessary to produce sonic velocity at the combustor throat. The calculation proceeded in the same manner as that in paragraph 6.5 with the exception that successive substitution of the calculated sonic velocity was made in equation 6.9 following each iteration.

6.7 REGENERATIVELY-COOLED ENGINE SIMULATION

The temperature of injected hydrogen was elevated during the tests to simulate the performance of a regeneratively-cooled engine. The accuracy of this simulation was determined by a recalculated total enthalpy at the combustor exit as

$$h_{Tr} = (w_o h_{To} + w_F h_{TF}^{50} + |Q_{NOZZLE}|)/(w_o + w_F)$$

where, h_{TF}^{50} was the enthalpy of hydrogen at 50 degrees Rankine, and $Q_{NOZZLE} < 0$ was the heat loss in Btu/sec through the nozzle surfaces. The simulated conditions at the combustion exit were obtained by assuming that the total pressure and combustion efficiency were constrained to the values calculated at the actual combustor exit.

The total conditions were obtained from the chemical system defined by η_{c4} by solving the HP problem with the state variables P_{T4}, h_{Tr} to obtain S_r. The initial estimate of static pressure, $P_{4r}^{(1)} = P_4$, was used with S_r and the chemical system defined by η_{c4} to solve the SP problem and obtain $(w/A)_r^{(1)}$. New estimates of $P_r^{(n)}$ were obtained, and the SP problem was solved repeatedly until

$$\left|1 - (w/A)_r^{(n)}/(w/A)_4\right| < \epsilon.$$

6.8 FICTIVE COMBUSTOR

The conditions at the exit of a fictitious constant-pressure, zero-velocity combustor were determined at 100 percent combustor efficiency (η_{cf}) with isentropic expansion to ambient pressure (p_o) to obtain the combustor effectiveness (η_{ce}). The state variables used to determine total conditions were p_{T2}, the total pressure at the inlet throat and h_{T4}, the total enthalpy at the actual combustor exit. The HP problem was solved with p_{T2}, h_{T4} and the chemical system defined by η_{cf} to obtain S_f. The static conditions were determined by solving the SP problem with the state variables p_o, S_f. The combustor effectiveness was calculated from

$$\eta_{ce} = \frac{(1 + f/a)\,Ivac(po) - Ivac2}{(1 + f/a)\,Ivac'(po) - Ivac2}$$

where f/a was the fuel-air ratio, Ivac(po) was the vacuum specific impulse obtained by isentropically expanding the flow from the normal combustor exit to the ambient pressure (po), Ivac'(po) was the vacuum specific impulse obtained by isentropically expanding the flow from the fictive combustor exit to the ambient pressure, and Ivac2 was the vacuum specific impulse at the inlet throat.

7. NOZZLE

The nozzle performance was obtained by expanding the flow isentropically from the actual and regeneratively-cooled combustor exits, both to the nozzle exit area and to ambient pressure. The flow was also isentropically expanded from the normal combustor exit to those nozzle locations having static pressure taps in order to calculate the local skin friction coefficients. The nozzle vacuum stream thrust coefficient was obtained from the surface pressure integrals and friction drag on the nozzle walls, and the stream thrust (momentum) at the combustor and nozzle exits.

7.1 EXPANSION TO EXIT AREA

The mass flow per unit area was calculated from

$$(w/A)_6 = w_4/Ae$$

and the initial estimate for static pressure from

$$p_6^{(1)} = p_o$$

or

$$p_{6r}^{(1)} = p_o \,.$$

The SP problem was solved with the state variables $p_6^{(1)}$, (or $p_{6r}^{(1)}$) S_4 (or S_{4r}) to obtain $(w/A)_6^{(1)}$ (or $(w/A)_{6r}^{(1)}$). New estimates were obtained for $p_6^{(n)}$ (or $p_{6r}^{(n)}$) and the SP problem was repeatedly solved until

$$1 - \left| (w/A)_{6r}^{(n)} / (w/A)_6 \right| < \epsilon.$$

or

$$1 - \left| (w/A)_6^{(n)} / (w/A)_6 \right| < \epsilon$$

72. EXPANSION TO AMBIENT PRESSURE

The SP problem was solved with the state variables p_o, S_4 (or S_{4r}).

7.3 PERFORMANCE

The flow at the actual combustor exit was expanded isentropically to the measured nozzle pressures to obtain the skin friction coefficient, and hence, the friction drag on the nozzle surfaces. The friction drag was calculated from

$$FF_{nozzle} = \sum_i \overline{C}_{fi} \overline{q}_i \; \Delta A_{wi}$$

The nozzle vacuum stream thrust coefficient was calculated from

$$C_s = \left\{ F_4 + \int_{NOZZLE} pdA - FF_{NOZZLE} + 2.84\, K \frac{\partial}{\partial x} \left[\int_{x_{1e}}^{x_{te}-1} pdA + (pA)_{BASE} \right]_{STRUTS} \right\} / F_6(Ae) \qquad (7.1)$$

where K = 0 for supersonic combustion, K = 1 for subsonic combustion, and $F_6(Ae)$ was the nozzle exit stream thrust from expansion to A_e.

The nozzle thrust coefficient was obtained from

$$C_T = (C_S \; w_4 \; Ivac6(Ae) - p_o A_e) / F_6(p_o) \qquad (7.2)$$

where Ivac6(Ae) denotes vacuum specific impulse obtained from isentropic expansion to A_e, and $F_6(p_o)$ denotes stream thrust from isentropic expansion to p_o.

7.4 FICTIVE NOZZLE

The static and total conditions required to match the actual vacuum specific impulse at the nozzle exit plane were determined. The energy equations were

$$h_{T6'} = \left[w_o h_{To} + \sum_i (w_{Fi} \; h_{TFi} + w_0 \; h_{T0i}) + Q_{0,6} \right] / w_4$$

and

$$h_{6'} = h_{T6'} - V_{6'}^2 / 2gj \qquad (7.3)$$

The actual vacuum specific impulse was

$$Ivac6' = C_s \cdot Ivac6(Ae)$$

and

$$Ivac6' = V_{6'}/g + p_{6'} \; A_e / w_4 \qquad (7.4)$$

The independent variable for the system of equations was the static pressure, ($p_{6'}$). The dependent variable was $(w/A)_6$. The mass flow per unit area was defined as

$$(w/A)_6 = w_4/A_e$$

and

$$(w/A)_6^{(n)} = (pV/jRT)_{6'}^{(n)} \tag{7.5}$$

The initial estimate for the static pressure was

$$p_{6'}^{(1)} = p_6(Ae)$$

The initial estimate of velocity was calculated from equation 7.4 as

$$V_{6'}^{(1)} = g\ (Ivac6' - p_{6'}^{(1)}\ A_e/w_4)$$

and the static enthalpy from equation 7.3. The HP problem was solved with the state variables $p_{6'}^{(1)}$, $h_{6'}^{(1)}$ to obtain $(w/A)_6^{(1)}$ from equation 7.5. New estimates were obtained for the static pressure, and the above procedure was repeated until

$$|1 - (w/A_6^{(n)}/(w/A)_6\ | < \epsilon.$$

The initial estimate for the total pressure was calculated from the ideal-gas relationship

$$p_{T6'}^{(1)} = p_{6'}\ (1 + \frac{\gamma-1}{2}\ M_{6'}^{2})^{\frac{\gamma}{\gamma-1}}$$

and the SP problem was solved to obtain $h_{T6'}^{(1)}$. The SP problem was repeatedly solved with new estimates of $p_{T6'}^{(n)}$ until

$$|1 - h_{T6'}^{(n)}/h_{T6'}\ | < \epsilon.$$

Finally the flow at the actual combustor exit was expanded isentropically to the static pressure of the fictitious nozzle, $p_{6'}$. The SP problem was solved with the state variables $p_{6'}$, S_4 to obtain $H_{4'}$, and the nozzle kinetic energy and process efficiencies were calculated from

$$\eta_{KEN} = (h_{T6'} - h_{6'})/(h_{T4} - h_{4'})$$

and

$$K_{DN} = (h_4 - h_{6'})/(h_4 - h_{4'})$$

8. ENGINE PERFORMANCE

The internal performance was computed from both thrust measurement and from calculated momentum change through the engine. Three parameters were used to define the internal performance. These were the thrust (T_i), the specific impulse (I_{si}), and the thrust coefficient (C_{Ti}).

8.1 CALCULATED INTERNAL PERFORMANCE

THRUST

$$T_i = F_{6'} - F_o - q_o A_C C_{DA} - P_o A_C (1 - A_o/A_c) \qquad \text{(lbf)}$$

SPECIFIC IMPULSE

$$I_{si} = T_i / w_F \qquad \text{(lbf sec/lbm)}$$

THRUST COEFFICIENT

$$C_{Ti} = T_i/(q_o A_c)$$

8.2 MEASURED INTERNAL PERFORMANCE

THRUST

$$T_i = F_c/\cos\alpha + D_{EXT} \qquad \text{(lbf)}$$

where F_c was the corrected load cell force (Reference 9, pp 27), α was the angle of attack, and

$$D_{EXT} = \left[\int p\,dA - \int C_f\, q \cos\delta_s\, d A_s\right]_{\substack{\text{OUTER}\\\text{COWL}}}$$

SPECIFIC IMPULSE

$$I_{si} = T_i/w_F \qquad \text{(lbf sec/lbm)}$$

THRUST COEFFICIENT

$$C_{Ti} = T_i/(q_o A_c)$$

9. DESCRIPTION OF PERFORMANCE OUTPUT

Performance output has not been published as yet, however, NASA-Langley Research Center is compiling this data and the release of their results is pending. This section defines parameters used in test summary reports previously issued to NASA.

Each page of the performance output (computer printout) has a standard heading with reading number (test number), block number (numbered sequentially and corresponding to recorded times of test data), time (of data recording from start of test in seconds), Mach number, PT (total pressure in wind tunnel in psia), TT (total temperature in wind tunnel in degrees Rankine) and page numbers. Pages 1, 2 and 3 of the computer printout contains the Summary Report of flow parameters at each calculation station in the AIM. Each station is headed by a station designator (i.e., wind tunnel, inlet throat, combustor, etc.) followed by 3 integers (the additional zero following the combustor designator is meaningless).

The first integer denotes the station number, the second denotes the combustor station number and the third denotes the number of iterations required to converge on a solution. The third integer may assume values between 0-21, 100-121 and 200-221. A value of the third integer equal to 21, denotes that the mass flow was too great (or the flow area too small) to obtain a solution, 121 denotes that the solution for total conditions did not converge in 21 iterations and 200-221 denotes that the mass flow was too small (or the flow area too large) to obtain a solution. When both solutions for static and total conditions have converged, the third integer may assume the values 1-20 or 101-120, depending on which solution (static or total) required the larger number of iterations.

Most of the station designators are self-explanatory. The first appearance of the designators 'Wind Tunnel' and 'Spike Tips NS' (NS = NORMAL SHOCK) reports conditions in wind tunnel and upstream of the spike tip based on a wind tunnel Mach number determined from calibration runs. The second appearance of these designators reports conditions based on a wind tunnel Mach number calculated from the wind tunnel total pressure and temperature and the spike tip pitot pressure applied to the normal shock equations. The designators 'INLET UPNRSK' and 'INLET DNNRSK' denote conditions upstream and downstream of a normal shock positioned at a fictitious flow area 1.10 times the flow area at the inlet throat. The designator 'COMBUSTOR REGEN' denotes conditions at the combustor throat simulating a regeneratively-cooled ramjet. 'NOZZLE AE' and 'NOZZLE PO' report conditions when the flow was expanded isentropically to the nozzle exit area and to the wind tunnel static pressure, respectively. "FICTIVE COMBUSTR' denotes conditions in a zero-velocity, constant-pressure combustor with combustor efficiency equal to unity. 'FICTIVE NOZZLE' reports conditions required to match the actual momentum and nozzle exit area.

Definition and units of parameters in the Summary Report (pp 1-3) are listed below:

P - pressure, psia

T - temperature, ^{o}R

H - enthalpy*, Btu/lbm

GAMMA - specific heat ratio

MOLWT - molecular weight

SONV - sonic velocity, ft/sec

MACH - Mach number

VEL - flow velocity, ft/sec

S - entropy, Btu/lbm-^{o}R

W/A - flow rate per unit area, lbm/sq in.

W - flow rate, lbm/sec

A/AC - local area ratio

MOMTM - flow momentum, lbf

Q - dynamic pressure, lbf/sq in.

IVAC - vacuum specific impulse, lbf-sec/lbm

PHI - equivalence ratio

ETAC - combustor efficiency

Definitions and units of parameters on pages 4 and 5 follow:

XABS - axial distance from virtual spike tip, in.

P-IB - surface pressure on innerbody, psia

P-OB - surface pressure on inner cowl, psia

PDA - pressure integral, $\int_{0}^{x} pdA$, lbf

*Two values were reported. The first value was the JANNAF-based enthalpy. The value in parenthesis was the enthalpy potential or the sensible enthalpy based on the equation

$$\sum_i \left[\int_0^T cp_i \; dT \; \sigma_i(T)\right] = \sum_i \left[\left(H_{fi}^{298} + \int_{298}^{T} cp_i \, dT\right) \sigma_i(T)\right]$$

$$- \sum_i \left[(H_{fi}^{298} + \int_{298}^{300} cp_i \, dT)\sigma_i(T)\right] + \sum_i \left(\int_0^{300} cp_i \, dT \cdot \sigma_i(T)\right)$$

QOX - cumulative internal heat loss from spike tip to station x, Btu/sec

Q-IB - cumulative internal heat loss from innerbody, Btu/sec

Q-OB - cumulative internal heat loss from outerbody, Btu/sec

CAWALL - cumulative surface area, sq in.

P-IB/PSO - innerbody static to wind tunnel static pressure ratio

P-IB/PTO - innerbody static to wind tunnel total pressure ratio

P-OB/PSO - outerbody static to wind tunnel static pressure ratio

P-OB/PTO - outerbody static to wind tunnel total pressure ratio

Definition and units of parameters on page 6 follows:

X - axial distance from spike virtual tip

DDRAG - incremental frictional drag force, lbf

CDRAG - cumulative frictional drag force, lbf

CF - skin friction coefficient

HC - heat transfer coefficient, Btu/(sec-sq ft-^{o}R)

10. COMPUTER PROGRAM OPERATION

The AIM data-reduction computer program was designed to operate interactively on the IBM 360-67 dual processor at the NASA - Lewis Research Center.

An IBM 2741 typewriter terminal was used to execute the data-reduction program, and COPE 1200 series remote batch terminals* were used to print the performance output.

Numerous procedures were written to facilitate loading the programs, modifying the calibration data and recording channel assignments, removing defective recording channels, assigning the injector and igniter configurations and valving, and specifying certain test parameters such as angle-of-attack, subsonic combustion and heat-transfer data.

The procedure used to assign program libraries and logical units to the system and to load the programs is reproduced in Table 10-1.

The names of the program libraries follow the procedure name 'JOBLIB' which assigned the libraries to the system (line 200 - 1400, Table 10-1). The contents of the program libraries which include module and entry point names, were reproduced in Appendix A.

The next three lines (1500-1700) in Table 10-1 loaded the block data subroutines PSBLK70, BDEN35 and BDCN49 which contain the pressure recording channel assignments, the test configuration data and the calibration data, respectively. These subroutines must correspond to the Reading number (test) being reduced prior to evoking 'HRERUN5' as shown in Table 10-2.

The remainder of the procedure 'HRERUN5' assigned the FORTRAN logical units to the system and loaded and initialized the data reduction program.

Other procedures used to facilitate execution of the data reduction program were:

(1) PSXX - used to modify the pressure recording channel assignments in the block data subroutines PSBLKYY

(2) SETXX- used to modify the calibration data in the block data subroutines BDCNYY with the exception of SET34, which was used in all executions

*The COPE terminals were programmed to emulate an IBM 2780 terminal.

TABLE 10-1

PROCEDURE 'HRERUN5'

```
HRERUN5 0000000 PROCDEF HRERUN5
HRERUN5 0000200 JOBLIB D36CLIB,10
HRERUN5 0000300 JOBLIB DATASYS.DATSYS,20
HRERUN5 0000400 JOBLIB LNKBB3,30
HRERUN5 0000500 JOBLIB GPMLIB9$,40
HRERUN5 0000600 JOBLIB DATASYS.VINCE,50
HRERUN5 0000800 JOBLIB NEWNEW,70
HRERUN5 0000900 JOBLIB TESTCD1,80
HRERUN5 0001000 JOBLIB VINCENEW,90
HRERUN5 0001100 JOBLIB VINNEW2,100
HRERUN5 0001200 JOBLIB DATASYS.DAN,110
HRERUN5 0001300 JOBLIB TESHRE,120
HRERUN5 0001400 JOBLIB NEWLIB,130
HRERUN5 0001500 LOAD PSBLK70;DISPLAY 'BLOCK DATA LOADED:  PSBLK70'
HRERUN5 0001600 LOAD BDEN35;DISPLAY 'BLOCK DATA LOADED:  BDEN35'
HRERUN5 0001700 LOAD BDCN49;DISPLAY 'BLOCK DATA LOADED:  BDCN49'
HRERUN5 0001800 LOAD ADATA;  DISPLAY 'BLOCK DATA LOADED:  ADATA'
HRERUN5 0001900 LOAD NGAS3;  DISPLAY 'BLOCK DATA LOADED:  NGAS3'
HRERUN5 0002000 DDEF FT50F001,VS,BIG
HRERUN5 0002100 DDEF FT60F001,VS,PRT5,RET=T
HRERUN5 0002200 DDEF FT66F001,VS,PRT1,RET=T
HRERUN5 0002300 DDEF FT06F001,VS,ERR,RET=T
HRERUN5 0002400 DDEF FT16F001,VS,JUNK1
HRERUN5 0002500 DDEF FT17F001,VS,PRT3
HRERUN5 0002600 DDEF FT04F001,VS,TSTFIL
HRERUN5 0002700 DDEF FT99F001,VS,GMESS,RET=T
HRERUN5 0002800 LOAD TSKTSK; DISPLAY 'TSKTSK LOADED'
HRERUN5 0002900 QUALIFY HMAIN
HRERUN5 0003000 HMAIN
HRERUN5 0003100 QUALIFY GETHRE
HRERUN5 0003200 SET DSNAME.(0,6)='HREFDG',NCHNDS=6
HRERUN5 0003300 QUALIFY RDHIGH
HRERUN5 0003400 SET NBLOCK=0
HRERUN5 0003500 DDEF FT25F001,VS,TAPE.BINEQ
HRERUN5 0003600 DDEF FT29F001,VS,FILE,RET=T
HRERUN5 0003700 DDEF FT35F001,VS,TAPE.BINTR
HRERUN5 0003800 DDEF FT15F001,VS,VINCERR,RET=T
```

TABLE 10-2

BLOCK DATA SUBROUTINES VS READING NUMBER

BDCN30 - READING NUMBERS THRU 33
BDCN34 - READING NUMBERS 34 & 35
BDCN36 - READING NUMBERS 36 THRU 48
BDCN49 - READING NUMBERS 49 THRU 62
BDCN63 - READING NUMBER 63
BDCN64 - READING NUMBER 64
BDCN65 - READING NUMBERS 65 THRU 69
BDCN70 - READING NUMBERS 70 THRU 75
BDCN76 - READING NUMBERS 76 THRU 92
BDCN93 - READING NUMBERS 93 THRU 96
BDCN97 - READING NUMBER 97 ONLY

BDEN30 - READING NUMBERS THRU 33
BDEN34 - READING NUMBER 34
BDEN35 - ALL OTHER MACH 6 READING NUMBERS
BDEN70 - MACH 6 AT ANGLE OF ATTACK &
MACH 7 UP TO READING NUMBER 76
BDEN76 - ALL OTHER MACH 7 READING NUMBERS
BDEN93 - ALL MACH 5 READING NUMBERS

PSBLK17 - READING NUMBERS THRU 35
PSBLK36 - READING NUMBERS 36 THRU 48
PSBLK65 - READING NUMBERS 65 THRU 69
PSBLK70 - READING NUMBERS 49 THRU 64 & 70 ON UP

(3) COXX - used to remove defective recording channels and to assign the mass flow rates of nitrogen and oxygen for each Reading number (XX)

(4) TCXX-ZZZ - used to assign injector, ignitor and valving configurations for each block number (ZZZ) of each Reading number (XX). This procedure was also used to assign heat transfer data in Reading numbers 33 through 69.

A cross reference of the required block data subroutines and procedures versus Reading numbers was prepared in Tables 10-3, 10-4 and 10-5 for the Mach 5, 6 and 7 tests, respectively. Three additional procedures were written to change line numbers 1500 through 1700 of the procedure 'HRERUN5' in Table 10-1. These were 'CHGPSBLK', 'CHGBDEN' and 'CHGBDCN' which, when appended by a space plus a double digit, changed the name of the appropriate block data subroutine to be loaded. For example, the entry

chgbdcn 63

changed line 1700 in Table 10-1, and caused the line

HRERUN5 0001700 LOAD BDCN63;DISPLAY 'BLOCK DATA LOADED: BDCN63'

TABLE 10-3

MACH 5 TESTS

READING	PSBLKXX	BDENXX	BDCNXX	PSXX	SETXX	COXX	TCXX-ZZZ
93	70	93	93	89	34	93	TC93-BLKNO
94	70	93	93	89	34	94	TC94-BLKNO
95	70	93	93	89	34	95	TC95-BLKNO
96	70	93	93	89	34,96	96	TC96-BLKNO
97	70	93	97	92	34	97	TC97-BLKNO

TABLE 10-4

MACH 6 TESTS

READING	PSBLKXX	BDENXX	BDCNXX	PSXX	SETXX	COXX	TCXX-ZZZ
71	70	70	70	71	34	71	TC71-BLKNO
69	65	35	65	92	34	69	TC69-BLKNO
65	65	35	65	92	34	65	TC65-BLKNO
64	70	35	64	71	34	64	TC64-BLKNO
63	70	35	63	71	34	63	TC63-BLKNO
61	70	35	49	71	34,61	61	TC61-BLKNO
60	70	35	49	71	34,61	60	TC60-BLKNO
57	70	35	49	71	34,61	57	TC57-BLKNO
54	70	35	49	71	34,61	54	TC54-BLKNO
52	70	35	49	71	34,61	52	TC52-BLKNO
38	36	35	36	--	34,38	38	TC38-BLKNO
36	36	35	36	--	34	36	TC36-BLKNO
34	17	34	34	--	34	34	TC34-BLKNO
33	17	33	33	--	34	33	TC33-BLKNO

TABLE 10-5

MACH 7 TESTS

READING	PSBLKXX	BDENXX	BDCNXX	PSXX	SETXX	COXX	TCXX-ZZZ
88	70	76	76	92	34,88	88	TC88-BLKNO
89	70	76	76	89	34,89	89	TC89-BLKNO
90	70	76	76	89	34,89	90	TC90-BLKNO
91	70	76	76	89	34,91	91	TC91-BLKNO
92	70	76	76	92	34,92	92	TC92-BLKNO

to be printed on the typewriter terminal. A list of all procedure names was reproduced in Table 10-6, and the contents of the applicable procedures were included in Appendix B.

In order to illustrate the usage of Tables 10-3, 10-4 and 10-5 in reducing the data, the procedure 'HRERUN5' was changed and loaded to process the data for Readi No. 93 by evoking the following procedures: (see line 1 of Table 10-3):

chgpsblk 70

chgbden 93

chgbdcn 93

hrerun5

The first three procedures changed lines 1500 through 1700 in Table 10-1 to correspond to the block data subroutines on the first line in Table 10-3, and the last procedure loaded the data-reduction program. After loading the program, the computer prompted the user for the 'INPUT LINE DSNAME' which was 'rdg50' for all readings. Next the user entered

release ft66fool (only if the user wanted to print performance output on the typewriter)

ps89

set34

grabber 93

co93

tc93-039

corresponding to the first line of Table 10-3 to process Block 039 of Reading 93. The procedure 'grabber 93' retrieved the raw data for Reading 93 from migrated storage into a temporary library called 'YHTFX2·T001', and the computer was ready to start processing the data. Some of the above procedures contained program control system (PCS) commands, each of which was assigned a unique number printed at the terminal. After processing Block 039 and before processing Block 048 of Reading 93, the PCS number (0013) printed following the procedure 'tc93-039' was removed, and the program was prepared to process Block 048 by the following entries:

remove 13

tc93-048

After processing all of the desired blocks in Reading 93, the data reduction program was unloaded and reloaded by the following commands:

abend

hrerun5

TABLE 10-6

PROCEDURE NAMES

AIMFINAL	BL57	BL69	BORED	CDINJ	CHGBDCN	CHGBDEN	CHGPSBLK
CHGTC	CKAREA	COMACH5	COPYMEMB	C033	C034	C036	C038
C052	C054	C057	C060	C061	C063	C064	C065
C069	C071	C088	C089	C090	C091	C092	C093
C094	C095	C096	C097	CPLOC	CP02	DELET	DRG
DSS	FINALAIM	FIXDRG	FIX61	FIX64	FIX65	GASCAL	GOHOME
GRABBER	GRABBERP	HRERUN5	HRERUN6	INLTSYM5	INLTSYM6	INLTSYM7	JOBLIB
KDOSEL	LAZY	LNGPRT	LOADCELL	LSTC	LSTCO	LSTP	MACH5
MACH6	MACH7	MIGDS	MOVIES	PC	PDAOB	PRIN	PRLS
PRNT	PRNTMV	PS71	PS89	PS92	PUKE1	PUKE2	PUKE2P
PUSH	PUTIN	RUBOUT	SETCMB	SETDRG	SETENG	SETFLOAD	SETFTEMP
SETNOZ1	SETPS	SETSONIC	SETSTD	SETTM4	SETTOPT	SET34	SET38
SET61	SET88	SET89	SET91	SET92	SET96	SHOWVAL	STOW
STRUT	TC33-083	TC33-121	TC33-129	TC33-136	TC34-075	TC34-079	TC34-082
TC34-131	TC34-168	TC34-184	TC36-085	TC36-091	TC36-100	TC36-113	TC36-129
TC36-145	TC38-067	TC38-079	TC38-086	TC38-089	TC38-090	TC52-069	TC52-076
TC52-085	TC52-095	TC54-066	TC54-098	TC54-105	TC54-115	TC54-139	TC54-154
TC54-174	TC54-204	TC57-078	TC57-092	TC57-122	TC57-156	TC57-181	TC60-055
TC60-080	TC60-089	TC60-107	TC60-130	TC60-138	TC60-150	TC60-159	TC60-169
TC60-176	TC61-088	TC61-110	TC61-118	TC61-125	TC61-136	TC61-146	TC61-160
TC61-163	TC61-169	TC61-181	TC61-193	TC63-064	TC63-071	TC63-098	TC63-134
TC63-163	TC64-058	TC64-071	TC64-109	TC64-151	TC64-175	TC64-211	TC65-060
TC65-072	TC65-078	TC65-096	TC65-102	TC65-120	TC65-139	TC69-069	TC69-071
TC69-087	TC69-095	TC69-099	TC69-110	TC69-126	TC69-159	TC69-169	TC71-059
TC71-071	TC71-075	TC71-096	TC71-111	TC71-153	TC71-157	TC71-177	TC71-181
TC71-197	TC71-198	TC88-131	TC88-141	TC88-159	TC88-168	TC88-169	TC88-170
TC88-178	TC88-186	TC88-201	TC88-208	TC89-070	TC89-094	TC89-106	TC89-114
TC89-119	TC89-130	TC89-136	TC89-143	TC89-155	TC89-183	TC90-082	TC90-092
TC90-099	TC90-104	TC90-119	TC90-124	TC90-137	TC90-138	TC91-074	TC91-079
TC91-086	TC91-090	TC91-105	TC91-119	TC91-128	TC91-131	TC91-134	TC91-141
TC92-076	TC92-097	TC92-121	TC92-144	TC92-191	TC92-216	TC93-039	TC93-048
TC93-057	TC93-066	TC93-071	TC93-084	TC93-093	TC94-033	TC94-040	TC94-051
TC94-059	TC94-066	TC94-084	TC94-122	TC94-123	TC94-127	TC94-141	TC94-143
TC94-144	TC95-032	TC95-044	TC95-066	TC95-076	TC95-099	TC95-106	TC95-115
TC95-123	TC95-130	TC95-142	TC95-156	TC95-169	TC95-210	TC95-233	TC95-241
TC96-034	TC96-042	TC96-052	TC96-069	TC96-076	TC96-085	TC96-156	TC96-178
TC96-190	TC96-191	TC96-212	TC96-233	TC97-029	TC97-052	TC97-057	TC97-081
TC97-102	TC97-128	TC97-159	TC97-180	TC97-207	TC97-231	TC97-236	TC97-240
TH20	TIME	TUNNOPT	TURKEY	UPDLIB	WIPEOUT	XREF	ZLOGON

and the entries:

ps89

set34

grabber 96

set96

co96

tc96-034

prepared the program to process Block 034 of Reading 96. A typewriter print-out of an execution of Blocks 107 and 130 of Reading 60 was reproduced in Appendix C.

The dates of the final performance output versus reading and block numbers is presented in Table 10-7.

TABLE 10-7

FINAL PERFORMANCE OUTPUT VS DATE

READING-BLK1,BLK2,ETC	DATE
33-ALL(SPIKE PRESSURE < 0, NO OUTPUT)	DECEMBER 23, 1974
34-075,079,082,131,168,184	"
36-085,091(NOZZLE PRESSURE < 0, NO OUTPUT)	"
36-100,113,129,145(FUEL PRESSURE = 0)	"
38-067,086(SPIKE PRESSURE < 0, NO OUTPUT)	"
38-079,089,090(FUEL PRESSURE = 0)	"
52-069,076,085,095	MARCH 05, 1975
54-066,098,115,139,154,174,204	"
54-105	JANUARY 29, 1975
57-078,092,122	MARCH 04, 1975
57-156,181	JANUARY 29, 1975
60-055,080,089,107,130,138,150	MARCH 04, 1975
60-159	MARCH 21, 1975
60-169,176	JANUARY 29, 1975
61-088,110,118,125,136,146,160,163,169,181,193	MARCH 04, 1975
63-064	APRIL 14, 1975
63-071,098,134,163	MARCH 03, 1975
64-058,109,175	"
64-071	JANUARY 16, 1975
64-151,211	JANUARY 29, 1975
65-060,072,078,096,102,120,139	MARCH 03, 1975
69-069,071,095,110,159,169	"
69-087,099,126	JANUARY 29, 1975
71-059,071,075,096,111,153,177,197,198	MARCH 03, 1975
71-066,157,181	JANUARY 29, 1975
88-131,141,159,168,169,170,178,186,195,201,208	FEBRUARY 12, 1975
89-070,094,106,114,119,130,136,143,155,183	FEBRUARY 13, 1975
89-143,155(PRESSURE INPUT, CHANNELS 123, 206, 270, 273)	MARCH 06, 1975
90-082,104,124,137,138	DECEMBER 20, 1974
90-092,099,119	JANUARY 27, 1975
91-074,079,086,090,105,119,128,131,134,141	FEBRUARY 13, 1975
92-076,097,121,144,191,216	JANUARY 07, 1975
93-039,048,057	MARCH 02, 1975
93-066,071,084,093	MARCH 03, 1975
94-033,040,122,123,127	FEBRUARY 28, 1975
94-051,066,084	JANUARY 27, 1975
94-059	JANUARY 17, 1975
94-141,143,144	MARCH 02, 1975
95-032,044,066,076,099,106,115,123,130,142,156,169,210,241	FEBRUARY 28, 1975
95-233	JANUARY 27, 1975
96-034,212	MARCH 28, 1975
96-042,052,069,076,085,156,178,190,191,233	FEBRUARY 27, 1975
97-029,052,057,081,102,128,159,180,207,231,236,240	"

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APPENDIX A

PROGRAM LIBRARIES

The following tables list the module and entry point names in the AIM data-reduction program libraries.

APPENDIX A

TABLE A-1 D360LIB (LIBRARY)

```
D360LIB
SMSEARCH
    SMSEAR#P,SMSEAR#C,SEARCH
GATES
    TRMWAR  ,TRMWR   ,GATES#P ,TRMRD   ,GATES#C
TAGXXX
    TAGG    ,TAG     ,TAGXXX#P,NTAGG   ,TAGXXX#C
SMCENT
    SMCENT#P,CENT    ,SMCENT#C
GETDATA
    GETDAT  ,GETDAT#P,GETDAT#C
LINEXX
    WRITEL  ,READL   ,ERRLINE ,UPDATE  ,OPEN    ,CLOSE   ,LINEXX#P,DELETE
    LINEXX#C
LDNL$
    LODLB$  ,LODNM$  ,LDNL$#P ,LDNL$#C
SMARITH
    SMARIT#P,ARITH   ,SMARIT#C
INTCNVXX
    INTCNV  ,INTCNV#P,INTCNV#C
SMEQUNAM
    SMEQUN#C,SMEQUN#P,EQUNAM
ERMSGS
    ERMSG4  ,ERMSG1  ,ERMSG3  ,ERMSG2  ,ERMSGS#P,ERMSGS#C
NEWDYN
    DYNRES  ,DYNPRT  ,NEWDYN#P,DYNPRE  ,NEWDYN#C
OUTJM$
    OUTJB$  ,OUTJM$#P,OUTJM$#C
SMCONVC
    CONVC   ,SMCONV#C,SMCONV#P
SMDATA
PCSXXX
    CC      ,BEGIN   ,SHUTF5  ,OPENF5  ,PCS
REGIST
    REGIST#C,REGIST#P
STRMD$
    CST$    ,CST$#C  ,CST$#P
CNVXXX
    CNVRT   ,CNVPTR  ,UNFLAG  ,CNVCH$  ,CNVXXX#C,SAVRES  ,CNVXXX#P
NEWTRM
    NEWTRM#C,NEWTRM#P
SMERMES
    SMERME#C,SMERME#P,ERMES
CONVRX
    CONVRT  ,CONVRX#C,CONVRX#P
LINKAG
    LINKAG#C,LINKAG#P
SMCTRL
    SMCTRL#C,SMCTRL#P
STNL$
    STRNM$  ,CLRLB$  ,BLDNM$  ,STRLB$  ,CLRNM$  ,BLDLB$  ,STNL$#C ,STNL$#P
SMDIMENS
    SMDIME#P,SMDIME#C,DIMENS
MOLOC$
    COLOC$  ,OLOC$   ,QOLOC$
SMLINEIN
    SMLINE#C,SMLINE#P,INI     ,LINEIN
GETNAMXX
    GETNAM#P,STORED  ,GETFUN  ,GETNAM#C,GETNAM  ,GEDATA  ,UPSETA  ,SETUP
    UPSET
MOVEXX
    MOVEXX#P,MOVEXX#C,MOVE
GETSAVE
    GETSAV#P,GETSAV#C,GETSAV
HASH
```

TABLE A-1 (Con't)

```
    HASH#P   ,HASH#C   ,GNHSEN
HSHD
    HSH#P    ,HSH#C    ,HSH
SMICHANG
    SMICHA#C,ICHANG    ,SMICHA#P
PT13RH
    PT13RH#P,PT13RH#C,PR13TK   ,PR13MV
SMGETINT
    GETINT   ,SMGETI#C,SMGETI#P
RESOXX
    RESOLV   ,RESOLV#C,RESOLV#P
TMAIN
    TMAIN#P  ,TMAIN#C
LDTAB$
    LDTAB$#P,LDTAB$#C,LDTB$
PACKIT
    PACKLN   ,PACKIT#P,PACKIT#C
LINKUP
    LINKUP#P,LINKUP#C
RDAUP
    RDAUP#P  ,INIRD    ,SETBCK   ,RDAUP#C ,RDUNPK
INVOXX
    INVOKE#C,INVOKE#P,INVOKE
COUPLE
    CUCNTK   ,CUCNMV   ,COUPLE#C,COUPLE#P,FECNTK   ,FECNMV   ,CHALTK   ,CHALMV
    CHCNTK   ,CHCNMV
RELTIMXX
    RELTIM#C,RELTIM#P,RELTIM   ,JULIAN
LNKWXX
    LNKWXX#C,LNKWXX#P,LINKWR
UNPK
    SEPSGN   ,CNCTSP   ,UNPK#C   ,UNPK#P   ,UNPKIT   ,CMBSGN   ,INUNPK   ,CNCTPK
CLMFMT
    CLMF     ,CLMFMT#C,CLMFMT#P,FPTOAF   ,INTOAF   ,AFTOAF
SMFLINE
    SMFLIN#C,FLINE    ,SMFLIN#P
ENTIXX
    ENTIXX#C,ENTIXX#P,ENTITY   ,THREAD
SMSENTER
    SMSENT#P,SENTER   ,SMSENT#C
SMVENTER
    VENTER   ,SMVENT#P,SMVENT#C
ITO
    ITO#C    ,ITO#P    ,ITOEBC
RDLNDS
    RDLNDS#C,SETLB    ,ACCP     ,CLOSOU   ,RDLINE   ,OUDSPR   ,LNDSPR   ,SETSP
    WRLINE   ,CLOSIN
HSHD$
    HSH$#C   ,HSH$#P   ,HSH$
```

APPENDIX A (Con't)

TABLE A-2 DATASYS.DATSYS (LIBRARY)

```
DATASYS.DATSYS
TSKTSK
    TSKTSK#P,TSKTSK#C
GATES
    TRMWAR  ,TRMWR ) ,GATES#P ,TRMRD   ,GATES#C
NUBASK
    NUBASK#P,NUBASK#C
DISPLY
    DEMCAD  ,DISPLY#P,DISPLY#C
SCNVAL
    SCANV   ,SCNVAL#P,SCNVAL#C
FNCL
    FCALL   ,FLOAD   ,FLODED  ,FNCL#P  ,FNCL#C
BLDOUT
    OUTCNV  ,BLDOUT#P,BLDOUT#C
PLATS
    PLAT    ,PLATS#P ,PLATS#C
CONBCD
    CNCVRT  ,CONBCD#P,CONBCD#C
READER
    DDEFLN  ,XMAS    ,RDLIN   ,DONER   ,RD      ,DDEFRD  ,RDRES   ,PUNKIN
    RW
DUMPIT
    DUMPIT#P,DUMPIT#C
FERROR
    SETAD   ,CALERC  ,CALERR  ,GETERR  ,CALERW
NOBLER
    NOBLE   ,NOBLER#P,NOBLER#C
TESBLD
    TESBLD#C,TESBLD#P
QUTFDG
    QUTEKE  ,QUTFDG#C,QUTFDG#P
TSTDYN
    TSTDYN#C,TSTDYN#P
CADRED
    RDCA$   ,RDCADP  ,DELRD$  ,SRTMB$  ,RDCADC  ,RDCADE
NMHASH
    ENTHSH  ,HASHC   ,HASH    ,REMHSH  ,HASHP
CFRDWR
    RDCFP   ,RDCFC   ,WRCFDS  ,RDCFDS
OPTION
    OPTION#P,OPTION#C
BATCH
    BATCH#P ,BATCH#C
SCNCHK
    SCNCHK#P,SCNCHK#C,SCANCK
COLOUR
    COLOUR#P,COLOR   ,COLOUR#C
SQCP
    SQCP#P  ,SQCP#C
ENTRCF
    ENTRCF#P,BLDCOF  ,ENTRCF#C
COUPLE
    CUCNTK  ,CUCNMV  ,COUPLE#C,COUPLE#P,FECNTK  ,FECNMV  ,CHALTK  ,CHALMV
    CHCNTK  ,CHCNMV
DUMPAL
    DUMPAL#C,DUMPAL#P
CPCONV
    INCVRT  ,CPCONV#C,CPCONV#P
EXPLAN
    EXPLAN#C,EXPLAN#P,EXPL
PDPSEND
    PEESECT ,PDPW    ,DLWPDP
THERMO
    THERMO#C,THERMO#P,THERM
GNTANK
    GNTANK#C,DAMPER  ,GNTANK#P
CADINT
    CADINT#C,CADINT#P,RDRAWD
TISKET
    TISKET#C,TISKET#P
CPCNVR
    CPCNVR#C,FSTENG  ,CPCNVR#P
ERTST
    ERTST#C ,ERTST#P
```

APPENDIX A (Con't)

TABLE A-3 LNKBB3
(LIBRARY)

```
LNKBB3
CALFAK
    OFFSET  ,SYMBOL  ,CALFAK#P,QUWAA3  ,PLOT    ,QUFILL  ,DEVOUT  ,CALFAK#C
MLINER
    MLINER#P,MLINER#C
MRLOWW
    LRLOWW  ,MRLOWW#P,MRLOWW#C
MRTTXX
    LRTY37  ,LRTY35  ,LRASIZ  ,LR2741  ,LRBSIZ  ,LRTTXX  ,LRPAUX  ,MRTTXX#P
    LRPURG  ,MRTTXX#C
MRCC88
    LRCC88  ,PRCC88  ,OPEN88  ,CRCC88  ,RDCC88  ,CLOS88
PDPFAK
    PDPW    ,PDPFAK#C,PDPFAK#P
PLOTS
    LSP     ,PLOTS#C ,PLOTS#P
FLINER
    FLINER#C,FLINER#P
MRLIST
    LRLIST  ,MRLIST#C,MRLIST#P
GROUPT
    GROUPT#C,GROUPT#P
MLOGXY
    LOGXY   ,MLOGXY#C,MLOGXY#P
MRCT94
    MRCT94#P,MRCT94#C,ACCT94
FLOSH
    FLOSH#P ,FLOSH#C
LINK3
    LRTPF8  ,LRION   ,MRZIPP#P,MSCRAM#C,LRLGER  ,LRTMF8  ,MRTMF8  ,MRCPLT#P
    KANBALL ,CWTC    ,MRFILM  ,RASTER  ,LRCLER  ,MRFLET#C,MRINTR#P,LRGG94
    LRAXIS  ,LRID    ,LRAON   ,LRMOFF  ,FILM    ,MRWTCC  ,LRLABL  ,LRNOFF
    LRCHSZ  ,LRCON   ,MRSCLR#P,MRTSF8#C,MRTSGA  ,MRTSG8#C,LRBON   ,PER
    PASTER  ,KBERG   ,LREON   ,LRWTC   ,LRDON   ,LRSIZE  ,MRTVF8#C,LRTSGA
    MESSER  ,LRCUT   ,LRLEGN  ,MRLABL  ,MRSPIL#P,LRGON   ,LRKOFF  ,CID
    LRLOFF  ,MRRGON  ,MRCPLT#C,LRCURV  ,PWTC    ,MRFLET#P,MRINTR#C,MRSHPT
    LRRAST  ,LRSHPT  ,DIAGSYN ,HASTER  ,MRRAST  ,MSCRAM#P,MRZIPP#C,LRSHOT
    LRIOFF  ,LRMRGN  ,LRWTCR  ,MRCURV  ,LRTAF8  ,LRDOFF  ,LRLEAD  ,MRTVF8#P
    LREOFF  ,LRGRID  ,MRJBCD  ,MRSPIL#C,LRCNVT  ,LRLON   ,PID     ,LRKON
    MRANGE  ,LRANGE  ,LRNON   ,LRAOFF  ,MRCNVT  ,LRMON   ,MRLEAD  ,MRTSF8#P
    LRBOFF  ,MRSCLR#C,LRCOFF  ,LRGTUN  ,MRTSG8#P,CER     ,SENSOR  ,LRSHGG
    LRSCLR  ,MRLABL#P,MRSPIL  ,LRZAPP  ,MRANGE#C,TEST2701,ERASER  ,LRSPIL
    MRCNVT#C,MRLEAD#C,MRSCLR  ,MRRGON#C,MRTMF8#P,LRSTUG  ,MRTAFA  ,MRCPLT
    LRCONT  ,LRTAPN  ,LRZIPP  ,LRZIQQ  ,LRTON   ,SCRAMF  ,MRSHPT#C,MRINTR
    LRSON   ,LINK1   ,LRINTR  ,MRZIPP  ,PAXER   ,LRCPLT  ,MRCURV#C,DIGNOSE
    LRTAFA  ,MRCNVT#P,PEAS    ,MRLEAD#P,MRTSF8  ,LRTVF8  ,LRYLEG  ,MRTSG8
    LRTVF9  ,LRTSG8  ,LRTSF8  ,MRTVF8  ,MRLABL#C,MRANGE#P,MESSET  ,LRTLEG
    MSCRAM  ,LRENT   ,LRFLET  ,CAXER   ,MRCURV#P,LRPLOT  ,LRXLEG  ,MRRGON#P
    MRTMF8#C,MRFLET  ,LRSOFF  ,LRMULP  ,MRSHPT#P,TASTER  ,LRSCAN  ,LRTOFF
TECHER
    TECHER#C,TECHER#P
MR8DEF
    CR8DEF  ,PR8DEF  ,LR8DEF
FLESH
    FLESH#C ,FLESH#P
MRFLAT
    MRFLAT#C,MRFLAT#P,LRFLAT
FLASH
    FLASH#C ,FLASH#P
```

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APPENDIX A (Con't)

TABLE A-4 GPMLIB9

(LIBRARY)

```
GPMLIB9$
NGAS1
     NGAS1#P ,GASP    ,NGAS1#C
NGAS3
NGAS2
     NGAS2#P ,SETUP   ,NGAS2#C
NGAS5
     NGAS5#P ,ROOT    ,NGAS5#C
NGAS4
     SOLVE   ,NGAS4#P ,NGAS4#C
NGAS7
     NGAS7#P ,DPOLY  ),NGAS7#C
NGAS6
     ROOTX   ,NGAS6#P ,NGAS6#C
NGAS9
     PCHECK  ,DCHECK  ,NGAS9#P ,CHECS   ,NGAS9#C ,TCHECK
NGAS8
     NGAS8#P ,NGAS8#C ,SPLINA
NGAS10
     NGAS10#C,NGAS10#P,DENS
NGAS23
     NGAS23#C,SDINT   ,NGAS23#P,HDINT
NGAS21
     HSS     ,NGAS21#C,NGAS21#P,SSS
NGAS12
     NGAS12#C,NGAS12#P,DSF     ,DDSF
NGAS13
     PRESS   ,NGAS13#C,NGAS13#P
NGAS31
     NGAS31#C,CPPRLF  ,NGAS31#P
NGAS14
     NGAS14#C,NGAS14#P,TEMP
NGAS27
     NGAS27#C,TSHF    ,TPSF    ,NGAS27#P
NGAS36
     NGAS36#C,VISC    ,NGAS36#P
NGAS26
     NGAS26#C,NGAS26#P,TEMPPH
NGAS25
     NGAS25#C,TEMPPS  ,NGAS25#P
NGAS34
     SETCPO  ,NGAS34#C,NGAS34#P
NGAS35
     NGAS35#C,NGAS35#P,THERM
NGAS17
     NGAS17#C,NGAS17#P,TSS
NGAS24
     NGAS24#C,NGAS24#P,SDINTF  ,HDINTF
NGAS19
     NGAS19#C,NGAS19#P,ENT    ),ENTH
NGAS29
     NGAS29#C,CPPRL   ,NGAS29#P,SONIC
```

TABLE A-5 DATASYS.VINCE

```
DATASYS.VINCE
TSKTSK
    TSKTSK#P,TSKTSK#C
CONHI
    CONVTA  ,CONHI#P ,CONHI#C
GATES
    TRMWAR  ,TRMWR   ,GATES#P ,TRMRD   ,GATES#C
BATS
    BATS#P  ,BATSUM  ,BATS#C
DISPLY
    DEMCAD  ,DISPLY#P,DISPLY#C
FNCL
    FCALL   ,FLOAD   ,FLODED  ,FNCL#P  ,FNCL#C
KO
    KDOUT   ,KO#P    ,KO#C
PLATS
    PLAT    ,PLATS#P ,PLATS#C
RCBER
    RCBER#P ,RCBER#C
FSETLN
    SETLN   ,FSETLN#P,FSETLN#C
BLDOUT
    OUTCNV  ,BLDOUT#P,BLDOUT#C
READER
    DDEFLN  ,XMAS    ,RDLIN   ,DONER   ,RD )    ,DDEFRD  ,RDRES   ,PUNKIN
    RW
CONBCD
    CNCVRT  ,CONBCD#P,CONBCD#C
CADRED$
    RDCA$   ,RDCADP  ,DELRD$  ,SRTMB$  ,RDCADC  ,RDCADE
GETDATA
    GETDAT  ,GETDAT#P,GETDAT#C
MAINHI
    MAINTS  ,MAINHI#P,MAINHI#C
LINEC
    LINEC#P ,LINEC#C
BATCHS
    BATCHS#P,BATCHS#C
LINE
    LINE#P  ,LINE#C
DUMRES
    SCANTO  ,DUMRES#P,DUMRES#C
FERROR
    SETAD   ,CALERC  ,CALERR  ,GETERR  ,CALERW
FDGCHC
    CHCERR  ,FDGCHC#P,FDGCHC#C
RSCANT
    SCANT   ,RSCANT#P,RSCANT#C
FDGACN
    ACONVT  ,FDGACN#C,FDGACN#P
RDHIGH
    CHECK   ,ECTEST  ,RDHIGH#C,RDHDAT  ,RDHIGH#P
PLOTS
    LSP     ,PLOTS#C ,PLOTS#P
M
MEMBRMGR
    MEMBRM#P,MEMBRM#C
BASKET
    BASKET#C,BASKET#P
TSTSCN
    TSTSCN#C,TSTSCN#P
ANALOG
    MAINRA  ,ANLOG   ,MAINTA  ,ANALOG#C,ANALOG#P
RESET
    RESET#C ,RESET#P ,XCHAN
PARAM
    PARAM#C ,GETLST  ,PARAM#P
QUTFDG
    QUTEKE  ,QUTFDG#C,QUTFDG#P
RSDT
    RESDT   ,RSDT#C  ,RSDT#P
```

TABLE A-5 (Con't)

```
CHANGE
    CHANGE#C,CHANGE#P
MAINEND
    MAINRR  ,MAINEN#C,MAINEN#P
ANAPRESS
    ANAPRE#C,ANAPRE#P
RDMIS
    RDM     ,RDMC    ,RDMP
NEWANA
    NEWANA#P,NEWANA#C
TSTEC
    TSTEC#P ,TSTEC#C ,TESTEC
CFRDWR
    RDCFP   ,RDCFC   ,WRCFDS  ,RDCFDS
PURGE
    PURGE#P ,PURGE#C
PTERMM
    PTERMM#P,PTERMM#C,TERMMP
TMAIN
    TMAIN#P ,TMAIN#C
BATCH
    BATCH#P ,BATCH#C
RCBASMB
    RCBPUT  ,RCBP    ,RCBC
TESTH
    TESTH#P ,TESTH#C
COUPLE
    CUCNTK  ,CUCNMV  ,COUPLE#C,COUPLE#P,FECNTK  ,FECNMV  ,CHALTK  ,CHALMV
    CHCNTK  ,CHCNMV
WHIP
    WHIP#C  ,WHIP#P
CPCONV
    INCVRT  ,CPCONV#C,CPCONV#P
PFUD
    PFUD#C  ,MINCAL  ,CALPRF  ,PFUD#P
PDPSEND
    PEESECT ,PDPW    ,DLWPDP
SPEC
    SPEC#C  ,SPEC#P  ,SPECIL
UNPK
    SEPSGN  ,CNCTSP  ,UNPK#C  ,UNPK#P  ,UNPKIT  ,CMBSGN  ,INUNPK  ,CNCTPK
PHONY
    PHONY#C ,ANA$    ,PHONY#P
SCAN
    SCAN#C  ,SCANV   ,SCAN#P
THERMO
    THERMO#C,THERMO#P,THERM
CLMFMT
    CLMF    ,CLMFMT#C,CLMFMT#P,FPTOAF  ,INTOAF  ,AFTOAF
HASH$
    HASH$#C ,HASH$#P ,GNHSE$
PROMPT
    PROMPT#C,PROMPT#P
DYN
    DYN#C   ,DYNRES  ,DYNPRT  ,DYN#P   ,TIMDAT  ,DYNPRE
CADINT
    CADINT#C,CADINT#P,RDRAWD
FUDGLIST
    FUDGLI#C,FUDGLI#P
NEWLINE
    NEWLIN#C,NEWLIN#P
RES
    RES#C   ,RES#P   ,MAINRS
GFINDX
    ZZDD_   ,ZZFIND  ,QYPSECT ,QYCSECT
CPCNVR
    CPCNVR#C,FSTENG  ,CPCNVR#P
PATCH
    PATCH#C ,PATCH#P
TERMM
    TERMM#C ,TERMM#P
MIS
    MIS#C   ,MIS#P
```

TABLE A-6 NEWNEW AEQLBRM (LIBRARY)

```
NEWNEW
AEQLBRM
    EQLBRM  ,AEQLBR#C,AEQLBR#P
AMATRIX
    MATRIX  ,AMATRI#P,AMATRI#C
ASNVL
    SNVL    ,ASNVL#P ,ASNVL#C
AINSERT
    INSERT  ,AINSER#P,AINSER#C
HMAIN
    HMAIN#P ,HMAIN#C
ALNMOD
    LNMOD   ,ALNMOD#P,ALNMOD#C
HISIDEZ
    HISIDE#P,HISIDE#C,HISIDE
ASAVE
    SAVE    ,MOLEST  ,NEWOF   ,ASAVE#P ,ASAVE#C ,SPCFRM
AVNPT
    VNPT    ,AVNPT#P ,AVNPT#C
AFCCFXT
    FCCFC   ,AFCCFX#P,AFCCFX#C,FCCFT   ,FCCFX
JTSCAN
    HRESCN  ,JTSCAN#P,JTSCAN#C
AFLAREA
    FLAREA  ,AFLARE#P,AFLARE#C
AVIETA
    VIETA   ,AVIETA#P,AVIETA#C
APBAR
    PBAR    ,APBAR#P ,APBAR#C ,PBARSP
DMAIN
    DMAIN#P ,DMAIN#C
AVARFMT
    AVARFM#P,VARFMT  ,AVARFM#C
COMFILL
    COMFIL  ,THMFIL  ,COMFIL#C,COMFIL#P,TRNFIL
EQTRANS
    EQTRAN#C,EQTRAN#P
DTWATRZ
    DTWATR#C,DTWATR#P,DTWATR
ALINEAR
    LINE    ,ALINEA#P,LININT  ,ALINEA#C,LINEVL
AMATMUL
    MATMUL  ,AMATMU#P,AMATMU#C
BDENGPGM
AANEWTON
    NEWTON  ,AANEWT#C,AANEWT#P
AQASFIT
    QASINT  ,AQASFI#C,QASFIT  ,AQASFI#P,QASONT  ,QASIN   ,QASOUT
CPHSZ
    CPHSZ#C ,CPHSZ#P ,CPHSXX
GARTABX
    TABX    ,GARTAB#C,GARTAB#P
CUSPLINE
    CUSPLI#P,CUSPLI#C,CUBIN   ,INTEG   ,SPLINE
AFMACH
    FMACH   ,AFMACH#C,AFMACH#P
SAVERXX
    SAVERX#C,SAVERX#P,SAVER
PRESTABL
    PTABLE  ,PRESTA#P,PRESTA#C
HRERES1
    HRERES#P,MAINTS  ,HRERES#C,MAINRS
SAVRD
    DSAV    ,SAV     ,ASAV    ,SAVRD#C ,SAVRD#P
AHCALC
    HCALC   ,AHCALC#C,AHCALC#P
ALMAIN
    ALMAIN#C,THERMO  ,ALMAIN#P
```

TABLE A-6 (Con't)

```
HREPRF
    HREPRF#C,HREPRF#P
LAGRANG
    LGRNGE  ,LAGRAN#C,LAGRAN#P
SPALDCHI
    SPALDC#P,SPALDC#C,XVIRTL  ,SPACHI
VENTURI
    VENTUR#P,VENTUR#C,VENTUR
FCPRZ
    FCPR    ,FCPRZ#P ,FCPRZ#C
AGAUSS
    AGAUSS#P,AGAUSS#C,GAUSS
AFLWFLD
    AFLWFL#P,AFLWFL#C,FLWFLD
ATOMBLK
FMFRZ
    FMFRZ#P ,FMFR    ,FMFRZ#C ,FMFRO
AFGAM1
    AFGAM1#P,AFGAM1#C,FGAM1
ACQAINT
    CQACXS  ,CQAINT  ,ACQAIN#P,CQAIS   ,CQACIS  ,ACQAIN#C
AWAC
    AWAC#P  ,AWAC#C  ,WAC
PERIODSP
    PERIN   ,PERIOD#C,PINTEG  ,PERSPL  ,PERIOD#P
ADATA
TABL3Z
    TABLE3  ,TABL3Z#P,TABL3Z#C
TABLOZ
    TABLEO  ,TABLOZ#P,TABLOZ#C
ANSHKTT
    ANSHKT#P,NSHKTT  ,ANSHKT#C
AAMINV
    AAMINV#P,AAMINV#C,MINV
AFROZEN
    AFROZE#P,AFROZE#C,FROZEN
HREPLT
    HREPLT#C,HREPLT#P,HPLOT
GETHRE
    GETDAT  ,GETHRE#C,GETHRE#P
GARBISC
    GARBIS#C,GARBIS#P,BISC
AEFMT
    AEFMT#C ,AEFMT#P ,EFMT
TRNSPORT
    ENT3    ,ENT2    ,ENT1    ,ENT7    ,ENT6    ,ENT5    ,ENT4    ,ENT9
    ENT8    ,TRNSPO#P,TRNSET  ,TRNSPO#C
ARKTOUT
    ARKTOU#C,ARKTOU#P,RKTOUT
ASKNFRC
    ASKNFR#C,ASKNFR#P,SKNFRC
ACONSHK
    ACONSH#P,ACONSH#C,CONSHK
EULIST
    EULIST#C,EULIST#P
WNDTNLZ
    WNDTNL  ,WNDTNL#C,WNDTNL#P
GARDTAVX
    GARDTA#C,DTABX   ,GARDTA#P
APAFIT
    APAFIT#C,APAFIT#P,PAINTG  ,PAFIT   ,PAINTP
SYMGAUSS
    SYMGAU#C,SYMGAU#P,GAUSYM
FGAMZ
    FGAMZ#C ,FGAMZ#P ,FGAM
ACPHS
    ACPHS#C ,ACPHS#P ,CPHS
```

TABLE A-7 TESTCD1
(LIBRARY)

```
TESTCD1
BDCNVCD1
OUTHRE
    OUTJT3  ,OUTJT2  ,OUTJT1  ,OUTJT5  ,OUTJT   ,OUTHRE#P,OUTHRE#C
IR40RH
    ZIR40T  ,ZIR40M  ,IR40RH#P,IR40RH#C
DUMMY
    DUMMY#P ,DUMMY#C
ORIFICE
    ORIFIC  ,ORIFIC#P,ORIFIC#C
BDEN35
BDEN34
BDEN70
BDCN30
FREDSFIX
    FREDSF#C,FREDSF#P,WEDINT  ,FUD     ,WEDEXT
BDEN30
BDCN36
BDCN34
BDCN70
BDEN76
RESDAT
    RESDT   ,RESDAT#C,RESDAT#P
BDCN93
HPLOTS
    HPLOTS#C,LSP     ,HPLOTS#P
BDCN92XX
BDEN93
BDCN49
ADDRAG
    FADRAG  ,ADDRAG#C,ADDRAG#P
BDCN97
D3INTY
    D3INTY#P,INTY    ,D3INTY#C
BDCNVT5
BDENGCD1
LATE
    LATE#C  ,LATE#P
DUM
    DUM#C   ,DUM#P
DYN
    DYN#C   ,DYNRES  ,DYNPRT  ,DYN#P   ,TIMDAT  ,DYNPRE
D3SINTP
    D3SINT#P,SINTP   ,D3SINT#C
```

TABLE A-8 VINCENEW ALIMITS
(LIBRARY)


```
VINCENEW
ALIMITS
    LIMITS  ,ALIMIT#P,ALIMIT#C
DUMDTW
    DUMDTW#C,DUMDTW#P,DTWATR
SUMWTZ
    SUMWTZ#C,SUMWTZ#P,SUMWT
```

TABLE A-9 VINNEW2
(LIBRARY)

```
VINNEW2
PSBLK17
PSBLK70
PSBLK36
PSBLK65
```

TABLE A-10 DATASYS.DAN (LIBRARY)

```
DATASYS.DAN
SQCP
     SQCP#P  ,SQCP#C
NEWEST
     NEWEST#C,NEWEST#P,SCANTO
SANTY
     SANTY#C ,SANTY#P ,SCANT
```

TABLE A-11 TESHRE (LIBRARY)

```
TESHRE
ANEWTOD
     NEWTOD  ,ANEWTO#P,ANEWTO#C
AINLETT
     AINLET#P,INLETT  ,AINLET#C
BDCN76
AMODEL
     COWLEX  ,MODEL   ,CWLXDA  ,SPIKE1  ,CWLIN1  ,CWLEX1  ,CWLNDA  ,AMODEL#C
     SPIKE   ,SPIKDA  ,COWLIN  ,AMODEL#P
BDCN64
ACHMIST
     ACHMIS#C,CHMIST  ,ACHMIS#P
BDCN71
AHTXFER
     HTXFER  ,AHTXFE#P,AHTXFE#C
GSTRUTD
     STRUTD  ,GSTRUT#C,GSTRUT#P
ANOZZL1
     NOZZL1  ,ANOZZL#C,ANOZZL#P
ALINTRP
     ALINTR#C,ALINTR#P,LINTRP
EUFLOAD
     FLOADC  ,EUFLOA#P,EUFLOA#C
ANOZ
     ANOZ#P  ,ANOZ#C  ,NOZZLE
CONVTAZ
     CONVTA  ,CONVTA#P,CONVTA#C
GTWTBL
     GTWTBL#C,GTWTBL#P,TWTBL
HREPRR1
     PERFOR  ,HREPRR#P,HREPRR#C
ATWTABL
     ATWTAB#P,ATWTAB#C,TWTABL
```

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TABLE A-12 NEWLIB (LIBRARY)

```
NEWLIB
AOUTPUT
     OUTPUT  ,AOUTPU#P,AOUTPU#C
AENTHB0
     AENTHB#C,ENTHB0  ,AENTHB#P
ACMBSTR
     CMBSTR  ,ACMBST#C,ACMBST#P
BDCN65
ENG65
     ENGPGM  ,ENG65#C ,ENG65#P
BDCN63
AOUT1
     AOUT1#P ,AOUT1#C ,OUT1    ,OUT3    ,OUT2    ,OUT5    ,OUT4
ASURFPS
     PSCWLE  ,PSCWLI  ,ASURFP#P,PSINNR  ,SURFPS  ,ASURFP#C
ASEARCH
     ASEARC#C,ASEARC#P,SEARCH
AREACT
     AREACT#C,AREACT#P,REACT
LSTAPRS
     LSTAPR#C,STAPRS  ,LSTAPR#P
```

APPENDIX B

PROCEDURES

The following procedures were used to facilitate operation of the AIM data-reduction computer program.

```
BL57     0000000 PROCDEF BL57
BL57     0000100 PARAM $R,$B,$F1,$F2,$F3,$F4,$F5,$F6,$F7,$F8,$I1,$I2,$I3,$T1,$T2,$T3,$T4
BL57     0000200 DEFAULT SYSINX=E
BL57     0000300 PROCDEF TC$R-$B
BL57     0000350 QUALIFY AHTXFER
BL57     0000400 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=$T1,TIOUT=$T2,TOIN=$T3,TOOUT=$T4
BL57     0000450 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
BL57     0000600 QUALIFY ENGPGM
BL57     0000700 SET IFUEL(1)=$F1,IFUEL(2)=$F2,IFUEL(3)=$F3,IFUEL(4)=$F4
BL57     0000800 SET IFUEL(5)=$F5,IFUEL(6)=$F6,IFUEL(7)=$F7,IFUEL(8)=$F8
BL57     0000900 SET IGNON(1)=$I1,IGNON(2)=$I2,IGNON(3)=$I3
BL57     0001000 SET DORE=2.0
BL57     0001100 DISPLAY IFUEL,IGNON,DORE
BL57     0001200 _END
BL57     0001300 DEFAULT SYSINX=G
BL69     0000000 PROCDEF BL69
BL69     0000100 PARAM $R,$B,$1,$2,$3,$4
BL69     0000200 DEFAULT SYSINX=E
BL69     0000300 PROCDEF TC$R-$B
BL69     0000400 EXCISE 200
BL69     0000500 INSERT 100,50
BL69     0000600 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=$1,TIOUT=$2,TOIN=$3,TOOUT=$4
BL69     0000700 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
BL69     0000800 _END
BL69     0000900 DEFAULT SYSINX=G
BORED    0000000 PROCDEF BORED
BORED    0000100 DISPLAY ACMBSTR.ISTA
BORED    0000200 GO
CDINJ    0000000 PROCDEF CDINJ
CDINJ    0000100 QUALIFY ACMBSTR
CDINJ    0000200 AT 60;DISPLAY WINJ,TERM1,PT,AINJ,FM,GAMF,TTT(3),GAMMAS(3),WM(3),CDINJ(ICM),VMOC(3)
CHGBDCN  0000000 PROCDEF CHGBDCN
CHGBDCN  0000100 PARAM $1
CHGBDCN  0000200 DEFAULT SYSINX=E
CHGBDCN  0000300 PROCDEF HRERUN5
CHGBDCN  0000400 REVISE 1700
CHGBDCN  0000500 LOAD BDCN$1;DISPLAY 'BLOCK DATA LOADED:  BDCN$1'
CHGBDCN  0000600 LIST 1700
CHGBDCN  0000700 _END
CHGBDCN  0000800 DEFAULT SYSINX=G
CHGBDEN  0000000 PROCDEF CHGBDEN
CHGBDEN  0000100 PARAM $1
CHGBDEN  0000200 DEFAULT SYSINX=E
CHGBDEN  0000300 PROCDEF HRERUN5
CHGBDEN  0000400 REVISE 1600
CHGBDEN  0000500 LOAD BDEN$1;DISPLAY 'BLOCK DATA LOADED:  BDEN$1'
CHGBDEN  0000600 LIST 1600
CHGBDEN  0000700 _END
CHGBDEN  0000800 DEFAULT SYSINX=G
CHGPSBLK0000000 PROCDEF CHGPSBLK
CHGPSBLK0000100 PARAM $1
CHGPSBLK0000200 DEFAULT SYSINX=E
CHGPSBLK0000300 PROCDEF HRERUN5
CHGPSBLK0000400 REVISE 1500
CHGPSBLK0000500 LOAD PSBLK$1;DISPLAY 'BLOCK DATA LOADED:  PSBLK$1'
CHGPSBLK0000600 LIST 1500
CHGPSBLK0000700 _END
CHGPSBLK0000800 DEFAULT SYSINX=G
CHGTC    0000000 PROCDEF CHGTC
CHGTC    0000100 PARAM $R,$1,$2,$3,$4,$5,$6,$7,$8,$9,$10
CHGTC    0000200 PROCDEF TC$R-$1
CHGTC    0000220 EXCISE LAST
CHGTC    0000240 EXCISE LAST
CHGTC    0000400 END
CHGTC    0000500 IF '$2'¬='';CHGTC $R,$2,$3,$4,$5,$6,$7,$8,$9,$10
CKAREA   0000000 PROCDEF CKAREA
CKAREA   0000100 QUALIFY MODEL
CKAREA   0000200 AT 4(5);IF XII>55.75;IF XI<55.9;DISPLAY XII,XI,N,R,AREA,DRDX,SIGMA
CO33     0000000 PROCDEF CO33
CO33     0000100 KDOSEL  60, 65, 67, 83, 84, 85, 86, 87, 88, 91, 92,123,124,148,154,156,158,160,162,164
CO33     0000200 KDOSEL 165,166,168,171,172,174,175,176,180,181,182,183,186,191,206
CO33     0000300 KDOSEL 208,212,226,228,230,231,236,239,240,241,244,248,249,290,292
CO33     0000400 KDOSEL 305,306,307,308,309,310,311,312,313,314,315,316,317,318,319
CO33     0000500 KDOSEL 320,321,322,323,324,325,326,327,328,329,330,331,332,333,334
CO33     0000600 KDOSEL 335,336,337,338
CO33     0000700 KDOSEL 399
CO33     0000800 QUALIFY AINLETT
CO33     0000900 AT 3(2);SET VAL(11,INITRO)=.73448,VAL(11,IOXY)=.26552;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
CO33     0001000 QUALIFY STAPRS
CO33     0001100 AT 320(2);DISPLAY 'INPUT PSI(1,1), THEN TYPE GO'
CO34     0000000 PROCDEF CO34
CO34     0000100 KDOSEL  60, 65, 67, 84, 85, 86, 87, 88, 92,123,124,148,154,156,158,160,162,164
CO34     0000200 KDOSEL 166,168,171,172,174,176,180,181,182,183,186,191,195,199,201
CO34     0000300 KDOSEL 206,208,212,226,228,230,231,236,240,241,244,248,249,252,290,292
CO34     0000400 KDOSEL 305,306,307,308,309,310,311,312,313,314,315,316,317,318,319
CO34     0000500 KDOSEL 320,321,322,323,324,325,326,327,328,329,330,331,332,334,335
CO34     0000600 KDOSEL 336,337,338
CO34     0000700 KDOSEL 399
CO34     0000800 QUALIFY AINLETT
CO34     0000900 AT 3(2);SET VAL(11,INITRO)=.73448,VAL(11,IOXY)=.26552;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
CO36     0000000 PROCDEF CO36
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C036     0000100 KDOSEL  60, 65, 66, 67,123,124,144,154,156,158,160,162,164,166,168,171,172,174,181
C036     0000200 KDOSEL 182,186,191,195,199,206,208,218,228,230,231,236,240,241,244
C036     0000300 KDOSEL 248,249,252,289,290,292,294,305,310,312,313,314,315,320
C036     0000400 KDOSEL 399
C036     0000500 QUALIFY AINLETT
C036     0000600 AT 3(2);SET VAL(11,INITRO)=.73448,VAL(11,IOXY)=.26552;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C038     0000000 PROCDEF C038
C038     0000100 KDOSEL  60, 65, 66, 67,123,124,144,154,168,174,181,182,186,191,195,199,201,206,228
C038     0000200 KDOSEL 230,231,236,240,241,244,248,249,252,290,292,294,305,310,312,313
C038     0000300 KDOSEL 314,315,319,320
C038     0000400 KDOSEL 399
C038     0000500 QUALIFY AINLETT
C038     0000600 AT 3(2);SET VAL(11,INITRO)=.73448,VAL(11,IOXY)=.26552;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C038     0000700 QUALIFY STAPRS
C038     0000800 AT 320(2);DISPLAY 'INPUT PSI(1,1), THEN TYPE GO'
C052     0000000 PROCDEF C052
C052     0000100 KDOSEL  65, 66, 67,124,137,139,141,158,165,168,178,181,182,195,199,200,201,206,208
C052     0000200 KDOSEL 226,230,249,252,289,290,292,294,305,313,314,315,320,329,399
C052     0000400 QUALIFY AINLETT
C052     0000500 AT 3(2);SET VAL(11,INITRO)=.73448,VAL(11,IOXY)=.26552;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C054     0000000 PROCDEF C054
C054     0000100 KDOSEL  65, 66, 67,124,137,139,141,156,165,168,178,181,182,195,199,200,201,206,226,230
C054     0000200 KDOSEL 249,252,268,289,290,292,294,305,313,314,315,319,320,329,399
C054     0000400 QUALIFY AINLETT
C054     0000500 AT 3(2);SET VAL(11,INITRO)=.73448,VAL(11,IOXY)=.26552;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C057     0000000 PROCDEF C057
C057     0000100 KDOSEL  62, 65, 66, 74,124,137,139,158,160,168,172,179,181,182,183,187,190,195,199
C057     0000200 KDOSEL 201,206,226,230,248,249,252,289,290,292,294,305,313,314,315,320,321
C057     0000300 KDOSEL 329
C057     0000400 KDOSEL 399
C057     0000500 QUALIFY AINLETT
C057     0000600 AT 3(2);SET VAL(11,INITRO)=.73613,VAL(11,IOXY)=.26387;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C060     0000000 PROCDEF C060
C060     0000100 KDOSEL  62, 65, 66, 74,124,137,139,158,160,168,172,179,181,182,183,187,190,195,199
C060     0000200 KDOSEL 201,206,226,230,248,249,252,289,290,292,294,305,313,314,315,319,320
C060     0000300 KDOSEL 321,329
C060     0000400 KDOSEL 399
C060     0000500 QUALIFY AINLETT
C060     0000600 AT 3(2);SET VAL(11,INITRO)=.73613,VAL(11,IOXY)=.26387;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C061     0000000 PROCDEF C061
C061     0000100 KDOSEL  62, 65, 66, 74,124,137,139,158,160,168,172,179,181,182,183,187,190,195,199
C061     0000200 KDOSEL 201,206,226,230,248,249,252,289,290,292,294,305,313,314,315,319,320
C061     0000300 KDOSEL 321,329
C061     0000400 KDOSEL 399
C061     0000500 QUALIFY AINLETT
C061     0000600 AT 3(2);SET VAL(11,INITRO)=.73928,VAL(11,IOXY)=.26072;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C063     0000000 PROCDEF C063
C063     0000100 KDOSEL  62, 65, 66, 74,124,137,139,158,160,168,172,179,181,182,183,187,190,195,197
C063     0000200 KDOSEL 199,201,206,226,230,248,249,252,289,290,292,294,305,313,314,315,319
C063     0000300 KDOSEL 320,321,329
C063     0000400 KDOSEL 399
C063     0000500 QUALIFY AINLETT
C063     0000600 AT 3(2);SET VAL(11,INITRO)=.7724,VAL(11,IOXY)=.2276;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C064     0000000 PROCDEF C064
C064     0000050 KDOSEL  62, 65, 66, 74
C064     0000100 KDOSEL 124,137,139,148,158,160,168,172,179,181,182,183,187,190,195
C064     0000200 KDOSEL 197,199,201,206,226,230,248,249,252,289,290,292,294,305,313,314,315
C064     0000300 KDOSEL 319,320,321,329,399
C064     0000400 QUALIFY AINLETT
C064     0000500 AT 3(2);SET VAL(11,INITRO)=.76751,VAL(11,IOXY)=.23249;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C065     0000000 PROCDEF C065
C065     0000100 KDOSEL  62, 65, 66, 74,137,139,181,182,183,187,188,190,195,197,199,201,206,226,230
C065     0000200 KDOSEL 248,252,289,290,292,294,305,313,314,315,320,321,329,399
C065     0000400 QUALIFY AINLETT
C065     0000500 AT 3(2);SET VAL(11,INITRO)=.76751,VAL(11,IOXY)=.23249;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C069     0000000 PROCDEF C069
C069     0000100 KDOSEL  62, 65, 66, 74,137,139,181,182,183,187,190,195,197,199,201,206,226,230,248,252
C069     0000200 KDOSEL 289,290,292,294,305,313,314,315,320,321,322,329,399
C069     0000400 QUALIFY AINLETT
C069     0000500 AT 3(2);SET VAL(11,INITRO)=.76479,VAL(11,IOXY)=.23521;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C071     0000000 PROCDEF C071
C071     0000100 KDOSEL  53, 62, 65, 66, 74,124,137,139,158,160,172,179,181,182,183,187,190,195,197,199
C071     0000200 KDOSEL 201,206,226,230,248,249,252,289,290,292,294,305,313,314,315,320,321,322,329,399
C071     0000500 QUALIFY AINLETT
C071     0000600 AT 3(2);SET VAL(11,INITRO)=.75452,VAL(11,IOXY)=.24548;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C088     0000000 PROCDEF C088
C088     0000100 KDOSEL  19, 22, 23, 54, 55, 60, 62, 64, 67, 74, 95,124,137,139,157,158,160
C088     0000200 KDOSEL 162,165,166,169,170,171,172,173,174,175,176,177,178,179,181
C088     0000300 KDOSEL 182,183,187,190,195,197,199,206,226,227,230,235,241,248,249
C088     0000400 KDOSEL 250,252,278,289,290,292,294,305,313,314,315,320,321,329,349
C088     0000500 KDOSEL 353,366,367,368,369,370,374,375,378,379,382,388,394,395,399
C088     0000800 QUALIFY AINLETT
C088     0000900 AT 3(2);SET VAL(11,INITRO)=.75328,VAL(11,IOXY)=.24672;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C088     0001000 QUALIFY ANOZ
C088     0001100 AT 360(3);SET DRAGEX=-0.5*Q0AC;DISPLAY DRAGEX,DRAGEX*PSIATM,'DRAGEX = -0.5*Q0*AC'
C088     0001200 QUALIFY CONVTA
C088     0001300 AT 0;SET MV(65)=MV(53),MV(66)=MV(53);DISPLAY MV(53),MV(65),MV(66)
C088     0001400 SETPS 123,0.690
C089     0000000 PROCDEF C089
C089     0000100 KDOSEL  54, 55, 60, 62, 64, 67, 74, 95,124,137,139,157,158,160,165,166,169
C089     0000200 KDOSEL 172,175,176,179,181,182,183,187,190,195,197,199
C089     0000300 KDOSEL 210,223,224,226,227,230,235,248,249,250,252,289,290,292,294
C089     0000400 KDOSEL 305,313,320,321,329,399
C089     0000600 QUALIFY AINLETT
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C089    0000700 AT 3(2);SET VAL(11,INITRO)=.75148,VAL(11,IOXY)=.24852;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C089    0000800 QUALIFY CONVTA
C089    0000900 AT 0;SET MV(65)=MV(53),MV(66)=MV(53);DISPLAY MV(53),MV(65),MV(66)
C089    0001000 SETPS 123,0.690
C090    0000000 PROCDEF C090
C090    0000100 KDOSEL  54, 55, 60, 62, 64, 67, 74,124,137,139,157,158,160,165,172,175,176
C090    0000200 KDOSEL 179,181,182,183,187,190,195,197,199,202,203,206,207
C090    0000300 KDOSEL 208,210,215,224,226,227,230,235,248,249,250,252,273,289,290
C090    0000400 KDOSEL 292,294,305,313,314,315,320,321,329
C090    0000500 KDOSEL 399
C090    0000600 QUALIFY AINLETT
C090    0000700 AT 3(2);SET VAL(11,INITRO)=.7389,VAL(11,IOXY)=.2611;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C090    0000800 QUALIFY CONVTA
C090    0000900 AT 0;SET MV(65)=MV(53),MV(66)=MV(53);DISPLAY MV(53),MV(65),MV(66)
C091    0000000 PROCDEF C091
C091    0000100 KDOSEL  54, 55, 60, 62, 64, 67, 74, 96,124,137,139,148,157,158,160,165,172
C091    0000200 KDOSEL 175,176,179,181,182,183,187,190,195,197,199,206,208
C091    0000300 KDOSEL 226,227,230,235,248,249,250,252,289,290,292,294,305,313
C091    0000400 KDOSEL 314,315,320,321,329,399
C091    0000600 QUALIFY AINLETT
C091    0000700 AT 3(2);SET VAL(11,INITRO)=.7389,VAL(11,IOXY)=.2611;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C091    0000800 QUALIFY ENGPGM
C091    0000900 SET ALPHA=3.0;DISPLAY ALPHA
C091    0001000 QUALIFY CONVTA
C091    0001100 AT 0;SET MV(65)=MV(61),MV(66)=MV(61);DISPLAY MV(61),MV(65),MV(66)
C091    0001200 SETPS 123,0.690
C092    0000000 PROCDEF C092
C092    0000100 KDOSEL  54, 55, 60, 62, 64, 67, 74,137,139,148,175,176,181,182,183,187,190,195
C092    0000200 KDOSEL 197,199,206,208,226,227,230,232,248,252,265,266
C092    0000300 KDOSEL 267,268,270,271,272,289,290,292,294,305
C092    0000400 KDOSEL 313,314,315,320,321,329,399
C092    0000500 QUALIFY ANOZ
C092    0000600 AT 360(3);SET DRAGEX=-0.5*Q0AC;DISPLAY DRAGEX,DRAGEX*PSIATM,'DRAGEX = -0.5*Q0*AC'
C092    0000700 QUALIFY CONVTA
C092    0000800 AT 0;SET MV(65)=MV(53),MV(66)=MV(53);DISPLAY MV(53),MV(65),MV(66)
C093    0000000 PROCDEF C093
C093    0000100 COMACH5
C093    0000200 KDOSEL 96
C093    0000500 QUALIFY AINLETT
C093    0000600 AT 3(2);SET VAL(11,INITRO)=.655704,VAL(11,IOXY)=.344296;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C093    0000700 TUNNOPT 3
C094    0000000 PROCDEF C094
C094    0000100 COMACH5
C094    0000600 QUALIFY AINLETT
C094    0000700 AT 3(2);SET VAL(11,INITRO)=.76284,VAL(11,IOXY)=.23716;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C094    0000800 TUNNOPT 3
C095    0000000 PROCDEF C095
C095    0000100 COMACH5
C095    0000600 QUALIFY AINLETT
C095    0000700 AT 3(2);SET VAL(11,INITRO)=.7486,VAL(11,IOXY)=.25138;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C095    0000800 TUNNOPT 3
C096    0000000 PROCDEF C096
C096    0000100 COMACH5
C096    0000600 QUALIFY AINLETT
C096    0000700 AT 3(2);SET VAL(11,INITRO)=.76488,VAL(11,IOXY)=.23512;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C096    0000800 TUNNOPT 3
C097    0000000 PROCDEF C097
C097    0000100 KDOSEL  54, 55, 60, 62, 64, 65, 66, 67, 74,124,137,139,181,182,183,187,190,195,197
C097    0000200 KDOSEL 199,226,230,248,252,280,289,290,292,294,305,313,314,315,320,321,329,399
C097    0000500 QUALIFY AINLETT
C097    0000600 AT 3(2);SET VAL(11,INITRO)=.77086,VAL(11,IOXY)=.22914;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
C097    0000700 QUALIFY ANOZ
C097    0000800 AT 360(3);SET DRAGEX=-0.5*Q0AC;DISPLAY DRAGEX,DRAGEX*PSIATM,'DRAGEX = -0.5*Q0*AC'
C097    0000900 TUNNOPT 3
C097    0001000 QUALIFY ACMBSTR
C097    0001100 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
COMACH5 0000000 PROCDEF COMACH5
COMACH5 0000100 KDOSEL  54, 55, 60, 62, 64, 65, 66, 67, 74,124,137,139,157,158,160,162,165,172,176,179
COMACH5 0000200 KDOSEL 181,182,183,187,190,195,197,199,206,226,230,248,249,252,280,289,290,292,294,305
COMACH5 0000300 KDOSEL 313,314,315,320,321,329,399
COPYMEMB0000000 PROCDEF COPYMEMB
COPYMEMB0000100 PARAM $1,$2,$3,$4
COPYMEMB0000200 UNLOAD MEMBRMGR
COPYMEMB0000300 RELEASE XX
COPYMEMB0000400 DDEF XX,VP,DATASYS.VINCE,OPTION=JOBLIB;LOAD MEMBRMGR;QUALIFY MEMBRMGR;SET NOCHAR=47
COPYMEMB0000500 SET COMSTR.(,4)='_CDS',COMSTR.(4,20)=X'4040404040404040404040404040404040404040'
COPYMEMB0000600 SET COMSTR.(24,8)='(R0000),',COMSTR.(32,16)=X'40404040404040404040404040404040'
COPYMEMB0000700 SET DSNAM1.(,16)='$1',IFRMEM=$2,LASMEM=$3,DSNAM2.(,16)='$4'
COPYMEMB0000800 MEMBRMGR;D ' ->->-> MEMBERS SUCCESSFULLY COPIED <-<-<-'
CPLOC   0000000 PROCDEF CPLOC
CPLOC   0000100 PARAM N1
CPLOC   0000200 DEFAULT LISTDS=N
CPLOC   0000300 FTN N1,Y
CPLOC   0000400 ERASE USERLIB(N1)
CPLOC   0000500 DEFAULT LISTDS=Y
CP02    0000000 PROCDEF CP02
CP02    0000100 PARAM $1
CP02    0000200 FTN $1,Y
CP02    0000300 PRINT LIST.$1,PRTSP=EDIT,STATION=RJE02
CP02    0000400 ERASE USERLIB($1)
DELET   0000000 PROCDEF DELET
DELET   0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
DELET   0000200 DELETE PRT$1
DELET   0000300 IF '$2'¬='';DELET $2,$3,$4,$5,$6,$7,$8,$9,$10
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APPENDIX B (Con't)

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DRG     0000000 PROCDEF DRG
DRG     0000100 PARAM $READ,$BLK,$DRGX
DRG     0000200 DEFAULT SYSINX=E
DRG     0000300 PROCDEF TC$READ-$BLK
DRG     0000400 INSERT LAST
DRG     0000500 QUALIFY ANOZ
DRG     0000600 AT 360(3);SET DRAGEX=$DRGX;DISPLAY DRAGEX
DRG     0000700 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - SO DO 6 REMOVES INSTEAD OF 5 AT THE END'
DRG     0000800 _END
DRG     0000900 DEFAULT SYSINX=G
DSS     0000000 PROCDEF DSS
DSS     0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
DSS     0000200 DSS? PRNT$1
DSS     0000300 IF '$2'¬=' ';DSS $2,$3,$4,$5,$6,$7,$8,$9,$10
FIXDRG  0000000 PROCDEF FIXDRG
FIXDRG  0000100 PARAM $R,$B,$1
FIXDRG  0000200 DEFAULT SYSINX=E
FIXDRG  0000300 PROCDEF TC$R-$B
FIXDRG  0000400 INSERT LAST
FIXDRG  0000500 QUALIFY ANOZ
FIXDRG  0000600 AT 360(3);SET DRAGEX=-$1/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
FIXDRG  0000700 _END
FIXDRG  0000800 DEFAULT SYSINX=G
FIX61   0000000 PROCDEF FIX61
FIX61   0000100 PARAM $R,$1,$2,$3,$4,$5,$6,$7,$8,$9,$10,$11
FIX61   0000150 PROCDEF TC$R-$1
FIX61   0000200 EXCISE 200
FIX61   0000300 EXCISE 900
FIX61   0000400 LIST 100,300
FIX61   0000500 LIST LAST
FIX61   0000600 IF '$2'¬=' ';FIX61 $R,$2,$3,$4,$5,$6,$7,$8,$9,$10,$11
FIX64   0000000 PROCDEF FIX64
FIX64   0000100 QUALIFY ASURFPS
FIX64   0000200 AT 22;SET NCHCI(2,12)=200,NCHCI(4,12)=228,NCHCE(2,8)=177,NCHCE(4,8)=179,NCHCE(2,12)=247
FIX65   0000000 PROCDEF FIX65
FIX65   0000100 PARAM $R,$1,$2,$3,$4,$5,$6,$7,$8,$9,$10
FIX65   0000150 DEFAULT SYSINX=E
FIX65   0000200 PROCDEF TC$R-$1
FIX65   0000300 LIST 900
FIX65   0000400 EXCISE 900
FIX65   0000450 END
FIX65   0000500 IF '$2'¬=' ';FIX65 $R,$2,$3,$4,$5,$6,$7,$8,$9,$10
FIX65   0000700 DEFAULT SYSINX=G
GASCAL  0000000 PROCDEF GASCAL
GASCAL  0000100 PARAM $RDNO,$N,$O
GASCAL  0000200 DEFAULT SYSINX=E
GASCAL  0000300 PROCDEF CO$RDNO
GASCAL  0000400 INSERT LAST
GASCAL  0000500 QUALIFY AINLETT
GASCAL  0000600 AT 3(2);SET VAL(11,INITRO)=$N,VAL(11,IOXY)=$O;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
GASCAL  0000700 _END
GASCAL  0000800 DEFAULT SYSINX=G
GRABBER 0000000 PROCDEF GRABBER
GRABBER 0000100 PARAM $1
GRABBER 0000200 ERASE YHTFX2.T001
GRABBER 0000300 RMDS READNG$1,YHTFX2.T001
KDOSEL  0000000 PROCDEF KDOSEL
KDOSEL  0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10,$11,$12,$13,$14,$15,$16,$17,$18,$19,$20
KDOSEL  0000200 QUALIFY KDOUT
KDOSEL  0000300 SET NKOSEL=NKOSEL+1
KDOSEL  0000400 SET INDX=NKOSEL
KDOSEL  0000500 SET KOSEL(INDX)=$1
KDOSEL  0000600 IF '$2' = ' ';DISPLAY NKOSEL
KDOSEL  0000700 IF '$2' ¬= ' ';KDOSEL $2,$3,$4,$5,$6,$7,$8,$9,$10,$11,$12,$13,$14,$15,$16,$17,$18,$19,$20
LSTC    0000000 PROCDEF LSTC
LSTC    0000100 PARAM $R,$B1,$B2,$B3,$B4,$B5,$B6,$B7,$B8,$B9,$B10
LSTC    0000300 PROCDEF TC$R-$B1
LSTC    0000350 LIST 0,LAST
LSTC    0000400 END
LSTC    0000450 IF '$B2'¬=' ';LSTC $R,$B2,$B3,$B4,$B5,$B6,$B7,$B8,$B9,$B10
LSTCO   0000000 PROCDEF LSTCO
LSTCO   0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
LSTCO   0000200 DEFAULT SYSINX=E
LSTCO   0000300 PROCDEF CO$1
LSTCO   0000400 LIST LAST
LSTCO   0000500 END
LSTCO   0000600 IF '$2'¬=' ';LSTCO $2,$3,$4,$5,$6,$7,$8,$9,$10
LSTCO   0000700 DEFAULT SYSINX=G
LSTP    0000000 PROCDEF LSTP
LSTP    0000100 PARAM N1
LSTP    0000200 PROCDEF N1
LSTP    0000300 LIST 0,LAST
LSTP    0000400 END
MIGDS   0000000 PROCDEF MIGDS
MIGDS   0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
MIGDS   0000200 MDS READNG$1
MIGDS   0000300 PMC? READNG$1
MIGDS   0000400 IF '$2'¬=' ';MIGDS $2,$3,$4,$5,$6,$7,$8,$9,$10
MOVIES  0000000 PROCDEF MOVIES
MOVIES  0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
MOVIES  0000200 RMDS READNG$1
MOVIES  0000500 DSS? READNG$1
MOVIES  0000700 IF '$2'¬=' ';MOVIES $2,$3,$4,$5,$6,$7,$8,$9,$10
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APPENDIX B (Con't)

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PC       0000000 PROCDEF PC
PC       0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10,$11,$12,$13,$14
PC       0000200 PC? READNG$1
PC       0000300 IF '$2'¬=''';PC $2,$3,$4,$5,$6,$7,$8,$9,$10,$11,$12,$13,$14
PDAOB    0000000 PROCDEF PDAOB
PDAOB    0000100 QUALIFY STAPRS
PDAOB    0000150 AT 36(4);DISPLAY PDAOB
PDAOB    0000175 AT 38;DISPLAY PDAOB,XCE(1),PAVCE(1),ANOW
PDAOB    0000200 AT 40;DISPLAY PDAOB,PNOW,PLAST,ANOW,ALAST
PDAOB    0000300 AT 400;DISPLAY LCH(K1),CH(K1),PBAR1,M
PDAOB    0000400 AT 420;DISPLAY LCH(K1),CH(K1),PBAR2,M
PDAOB    0000500 AT 420(4);DISPLAY PBAR1,PBAR2,PDAOB
PDAOB    0000600 AT 430;DISPLAY LCH(NX3),CH(NX3),WT3,PBAR
PDAOB    0000700 AT 440;DISPLAY LCH(K1),CH(K1),PBAR1,M
PDAOB    0000800 AT 450;DISPLAY PBAR,WT4,WTSUM
PDAOB    0000900 AT 460;DISPLAY LCH(NX5),CH(NX5),PBAR,WT5,WTSUM
PDAOB    0001000 AT 470;DISPLAY LCH(NX6),CH(NX6),PBAR,WT6,WTSUM
PDAOB    0001100 AT 480;DISPLAY LCH(NX7),CH(NX7),PBAR,WT7,WTSUM
PDAOB    0001200 AT 490;DISPLAY LCH(K1),CH(K1),PBAR1,M
PDAOB    0001300 AT 500;DISPLAY PBAR,WT10,WTSUM
PDAOB    0001400 AT 510;DISPLAY LCH(K1),CH(K1),PBAR1,M
PDAOB    0001500 AT 520;DISPLAY PBAR,WT11,WTSUM
PDAOB    0001600 AT 530;DISPLAY LCH(NX12),CH(NX12),PBAR,WT12,WTSUM
PDAOB    0001700 AT 540(2);DISPLAY LCH(NX13),CH(NX13),PBAR,WT13,WTSUM,PDAOB
PRNT     0000000 PROCDEF PRNT
PRNT     0000100 PARAM $NUM
PRNT     0000200 ERASE PRIN$NUM
PRNT     0000300 DDEF LIBR$NUM,VS,PRIN$NUM,RET=T
PRNT     0000400 DISPLAY 'LIBR$NUM IS PRIN$NUM'
PRNT     0000500 CDS PRNT$NUM,PRIN$NUM
PRNT     0000600 PRINT PRIN$NUM,PRTSP=EDIT,STATION=RJE02
PRNT     0000700 RELEASE LIBR$NUM
PRNTMV   0000000 PROCDEF PRNTMV
PRNTMV   0000100 PARAM $1,$2,$3,$4,$5
PRNTMV   0000200 QUALIFY CONVTA
PRNTMV   0000300 AT 101(2);DISPLAY MV($1),CH($1)
PRNTMV   0000400 IF '$2'¬=''';PRNTMV $2,$3,$4,$5
PS71     0000000 PROCDEF PS71
PS71     0000050 DISPLAY 'PS71 VALID FOR READINGS 71, 64, 63, 61, 60, 57, 54, 52'
PS71     0000100 QUALIFY ASURFPS
PS71     0000200 AT 22;SET NCHCI(1,12)=200,NCHCI(2,12)=228
PS71     0000300 AT 42;SET                              NCHCE(3, 8)=177,-
PS71     0000400                             NCHCE(2,12)=247
PS89     0000000 PROCDEF PS89
PS89     0000100 DISPLAY 'PS89 VALID FOR RDGS 89 THRU 91 AND 93 THRU 96.'
PS89     0000200 QUALIFY ASURFPS
PS89     0000300 AT 22;SET             NCHCI(2,12)=200,             NCHCI(4,12)=228
PS89     0000400 AT 42;SET             NCHCE(2, 4)=167,             NCHCE(4, 4)=169,-
PS89     0000500                       NCHCE(2, 8)=177,             NCHCE(4, 8)=179,-
PS89     0000600             NCHCE(1,11)=154,-
PS89     0000700                       NCHCE(2,12)=247
PS92     0000000 PROCDEF PS92
PS92     0000050 DISPLAY 'PS92 VALID FOR READINGS 65, 69, 88, 92 AND 97.  THESE READINGS NEED INPUT FOR EXTERNAL DRAG.'
PS92     0000100 QUALIFY SURFPS
PS92     0000400 AT 22;SET NCHCI(2,12)=200,NCHCI(4,12)=228
PS92     0000500 AT 42;BRANCH 49(2)
PS92     0000600 QUALIFY STAPRS
PS92     0000700 AT 36(2);BRANCH 540(2)
PS92     0000800 AT 112(6);BRANCH 115(5)
PUKE2    0000000 PROCDEF PUKE2
PUKE2    0000100 PARAM $NUM
PUKE2    0000200 ERASE PRNT$NUM
PUKE2    0000300 DDEF LIBR$NUM,VS,PRNT$NUM,RET=T
PUKE2    0000400 DISPLAY 'LIBR$NUM IS PRNT$NUM'
PUKE2    0000500 CDS PRT1,PRNT$NUM
PUKE2    0000600 CDS PRT1,PRNT$NUM
PUKE2    0000700 PRINT PRNT$NUM,PRTSP=EDIT,STATION=RJE02
PUKE2    0000800 RELEASE LIBR$NUM
PUKE2P   0000000 PROCDEF PUKE2P
PUKE2P   0000100 PARAM $NUM
PUKE2P   0000200 ERASE PRNT$NUM
PUKE2P   0000300 CDS PRT1,PRNT$NUM
PUKE2P   0000400 CDS PRT1,PRNT$NUM
PUKE2P   0000500 PRINT PRNT$NUM,PRTSP=EDIT,STATION=RJE02
PUKE1    0000000 PROCDEF PUKE1
PUKE1    0000100 PARAM $NUM
PUKE1    0000200 ERASE PRNT$NUM
PUKE1    0000300 DDEF LIBR$NUM,VS,PRNT$NUM,RET=T
PUKE1    0000400 DISPLAY 'LIBR$NUM IS PRNT$NUM'
PUKE1    0000500 CDS PRT1,PRNT$NUM
PUKE1    0000600 PRINT PRNT$NUM,PRTSP=EDIT,STATION=RJE02
PUKE1    0000700 RELEASE LIBR$NUM
PUSH     0000000 PROCDEF PUSH
PUSH     0000050 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
PUSH     0000100 PRINT PRNT$1,PRTSP=EDIT,STATION=RJE02
PUSH     0000200 IF '$2'¬=''';PUSH $2,$3,$4,$5,$6,$7,$8,$9,$10
PUTIN    0000000 PROCDEF PUTIN
PUTIN    0000100 PARAM TCNUM,THEFIX
PUTIN    0000200 DEFAULT SYSINX=E
PUTIN    0000300 PROCDEF TCNUM
PUTIN    0000400 INSERT LAST
PUTIN    0000500 THEFIX
PUTIN    0000600 _END
PUTIN    0000700 DEFAULT SYSINX=G
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RUBOUT   0000000 PROCDEF RUBOUT
RUBOUT   0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
RUBOUT   0000200 ERASE PRIN$1
RUBOUT   0000300 IF '$2'¬=' ';RUBOUT $2,$3,$4,$5,$6,$7,$8,$9,$10
SET34    0000000 PROCDEF SET34
SET34    0000400 QUALIFY INLETT;AT 45(2);BRANCH 58
SET34    0000500 AT 6;DISPLAY XCL,CDADD,AOAC(1),DELTAX;IF CDADD<.0;STOP
SET34    0000700 QUALIFY ASURFPS
SET34    0000800 AT 4(2);BRANCH 4(3)
SET34    0001000 AT 26(6);BRANCH 26(7)
SET34    0001100 QUALIFY SPALDCHI
SET34    0001200 AT 5(2);IF TW<.0;DISPLAY TW;STOP
SET34    0001300 DISPLAY '---------> DO ------------>> GRABBER XX <<--------------'
SET38    0000000 PROCDEF SET38
SET38    0000100 QUALIFY CONVTA
SET38    0000200 SET ENGUHI(123)=10.,ENGUHI(231)=500.
SET61    0000000 PROCDEF SET61
SET61    0000100 QUALIFY CONVTA
SET61    0000200 SET ENGUHI( 91)=10.,ENGUHI( 92)=-10.,ENGUHI(279)=15.,ENGUHI(280)=25.
SET88    0000000 PROCDEF SET88
SET88    0000100 QUALIFY CONVTA
SET88    0000200 SET ENGUHI(169)= 25.,ENGUHI(170)= 25.,ENGUHI(171)= 25.,ENGUHI(176)=150.,ENGUHI(235)= 10.,ENGUHI(244)=  0.
SET88    0000300 SET ENGUHI(343)=283.;DISPLAY ENGUHI(169),ENGUHI(170),ENGUHI(171),ENGUHI(176),ENGUHI(235),ENGUHI(244),ENGUHI(343)
SET89    0000000 PROCDEF SET89
SET89    0000100 QUALIFY CONVTA
SET89    0000200 SET ENGUHI(154)= 15.,ENGUHI(157)= 25.,ENGUHI(158)= 10.,ENGUHI(160)= 10.,ENGUHI(162)= 10.,ENGUHI(168)= 15.
SET89    0000300 SET ENGUHI(169)= 15.,ENGUHI(170)= 15.,ENGUHI(171)= 10.,ENGUHI(174)= 10.,ENGUHI(176)= 10.,ENGUHI(177)= 15.
SET89    0000400 SET ENGUHI(178)= 20.,ENGUHI(179)= 25.,ENGUHI(235)= 10.,ENGUHI(244)=  0.,ENGUHI(343)=283.
SET89    0000450 SET ENGUHI(172)=10.
SET91    0000000 PROCDEF SET91
SET91    0000400 SET89
SET91    0000500 QUALIFY CONVTA
SET91    0000600 SET ENGUHI(134)= 50.,ENGUHI(136)= 75.,ENGUHI(194)= 50.
SET92    0000000 PROCDEF SET92
SET92    0000100 SET89
SET92    0000200 SET91
SET92    0000300 QUALIFY CONVTA
SET92    0000400 SET ENGUHI( 84)=25.
SET92    0000500 SET ENGUHI(155)= 50.,ENGUHI(157)= 15.,ENGUHI(158)= 15.,ENGUHI(160)= 50.,ENGUHI(161)= 15.,ENGUHI(162)= 15.
SET92    0000600 SET ENGUHI(164)= 15.,ENGUHI(165)= 50.,ENGUHI(167)= 15.,ENGUHI(171)= 50.,ENGUHI(172)= 15.,ENGUHI(174)= 15.
SET92    0000700 SET ENGUHI(178)= 50.,ENGUHI(179)= 15.,ENGUHI(233)= 15.,ENGUHI(234)= 50.,ENGUHI(235)= 15.
SET92    0000800 SET ENGUHI(237)= 50.,ENGUHI(238)= 30.,ENGUHI(239)= 50.,ENGUHI(242)= 30.,ENGUHI(243)= 50.
SET92    0000900 SET ENGUHI(245)= 30.,ENGUHI(246)= 50.,ENGUHI(247)= 30.,ENGUHI(249)= 50.,ENGUHI(250)= 50.
SET96    0000000 PROCDEF SET96
SET96    0000100 QUALIFY ENGPGM;SET ALPHA=3.
SET96    0000200 QUALIFY CONVTA;SET ENGUHI(155)=20.,ENGUHI(156)=20.
SET96    0000300 SET ENGUHI(169)=20.,ENGUHI(176)=15.
SETCMB   0000000 PROCDEF SETCMB
SETCMB   0000100 QUALIFY ACMBSTR;AT 70(6); DISPLAY VAL(11,1),VAL(11,2),VAL(11,3),VAL(11,4),WO,WF,OF,EQRAT,NVAL,XABS(IX)
SETCMB   0000200 AT 280;DISPLAY ISTA,ITER,ETAC,XABS(IX)
SETDRG   0000000 PROCDEF SETDRG
SETDRG   0000100 PARAM $R
SETDRG   0000200 DEFAULT SYSINX=E
SETDRG   0000300 PROCDEF CO$R
SETDRG   0000400 INSERT LAST
SETDRG   0000500 QUALIFY ANOZ
SETDRG   0000600 AT 360(3);SET DRAGEX=-0.5*Q0AC;DISPLAY DRAGEX,DRAGEX*PSIATM,'DRAGEX = -0.5*Q0*AC'
SETDRG   0000700 _END
SETDRG   0000800 DEFAULT SYSINX=G
SETENG   0000000 PROCDEF SETENG
SETENG   0000100 PARAM $S1,$V1,$S2,$V2,$S3,$V3,$S4,$V4,$S5,$V5,$S6,$V6,$S7,$V7,$S8,$V8,$S9,$V9,$S10,$V10
SETENG   0000200 SET CONVTA.ENGUHI($S1)=$V1
SETENG   0000300 IF '$S2'¬=' ';SETENG $S2,$V2,$S3,$V3,$S4,$V4,$S5,$V5,$S6,$V6,$S7,$V7,$S8,$V8,$S9,$V9,$S10,$V10
SETFLOAD0000000 PROCDEF SETFLOAD
SETFLOAD0000100 QUALIFY EUFLOAD
SETFLOAD0000200 SET MVLIM(1,1)=-29.0
SETFLOAD0000300 SET MVLIM(2,1)=24.0
SETFLOAD0000400 SET MVLIM(1,2)=25.0
SETFLOAD0000500 SET MVLIM(2,2)=25.0
SETFLOAD0000600 SET MVLIM(1,3)=25.0
SETFLOAD0000700 SET MVLIM(2,3)=25.0
SETFLOAD0000800 SET B(1,1,1)=1.1347
SETFLOAD0000900 SET B(2,1,1)=-17.03
SETFLOAD0001000 SET B(1,2,1)=2.0
SETFLOAD0001100 SET B(2,2,1)=8.0
SETFLOAD0001200 SET B(1,3,1)=1.106
SETFLOAD0001300 SET B(2,3,1)=29.45
SETFLOAD0001400 SET B(1,1,2)=0.00888
SETFLOAD0001500 SET B(2,1,2)=-0.2222
SETFLOAD0001600 SET B(1,2,2)=0.007143
SETFLOAD0001700 SET B(2,2,2)=-0.178575
SETFLOAD0001800 SET B(1,3,2)=0.007143
SETFLOAD0001900 SET B(2,3,2)=-0.178575
SETFLOAD0002000 SET B(1,1,3)=0.008888
SETFLOAD0002100 SET B(2,1,3)=-0.2222
SETFLOAD0002200  SET B(1,2,3)=0.007143
SETFLOAD0002300 SET B(2,2,3)=-0.178575
SETFLOAD0002400 SET B(1,3,3)=0.007143
SETFLOAD0002500 SET B(2,2,3)=-0.178575
SETFTEMP0000000 PROCDEF SETFTEMP
SETFTEMP0000050 PARAM $1
SETFTEMP0000100 QUALIFY CHMIST
SETFTEMP0000200 AT 14(2);DISPLAY XINJ,TTINJ,DELTAX,CONVTA.CH($1);STOP
SETNOZ1 0000000 PROCDEF SETNOZ1
SETNOZ1 0000100 QUALIFY NOZZL1
SETNOZ1 0000200 AT 0(1);DISPLAY XEQ(1),XEQ(2);IF XEQ(2)<SMALNO;SET XEQ(2)=2.0;DISPLAY XEQ(2)
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SETPS    0000000 PROCDEF SETPS
SETPS    0000100 PARAM $CH1,$VAL1,$CH2,$VAL2,$CH3,$VAL3,$CH4,$VAL4,$CH5,$VAL5
SETPS    0000200 QUALIFY CONVTA
SETPS    0000300 AT 101(2);SET CH($CH1)=$VAL1;DISPLAY CH($CH1)
SETPS    0000400 IF '$CH2'¬='';SETPS $CH2,$VAL2,$CH3,$VAL3,$CH4,$VAL4,$CH5,$VAL5
SETSONIC0000000 PROCDEF SETSONIC
SETSONIC0000010 PARAM $R,$1,$2,$3,$4,$5,$6,$7,$8,$9,$10
SETSONIC0000020 DEFAULT SYSINX=E
SETSONIC0000030 PROCDEF TC$R-$1
SETSONIC0000040 INSERT LAST
SETSONIC0000100 QUALIFY ACMBSTR
SETSONIC0000200 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
SETSONIC0000300 _END
SETSONIC0000400 DEFAULT SYSINX=G
SETSONIC0000500 IF '$2'¬='';SETSONIC $R,$2,$3,$4,$5,$6,$7,$8,$9,$10
SETSTD   0000000 PROCDEF SETSTD
SETSTD   0000100 QUALIFY GSTRUTD
SETSTD   0000200 AT 0(5);SET DRAG=10.0/PSIATM,DDX=DRAG/DX;BRANCH 80(3)
SETTM4   0000000 PROCDEF SETTM4
SETTM4   0000100 PARAM $R,$1
SETTM4   0000200 DEFAULT SYSINX=E
SETTM4   0000300 PROCDEF CO$R
SETTM4   0000400 INSERT LAST
SETTM4   0000500 QUALIFY CONVTA
SETTM4   0000600 AT 0;SET MV(65)=MV($1),MV(66)=MV($1);DISPLAY MV($1),MV(65),MV(66)
SETTM4   0000700 _END
SETTM4   0000800 DEFAULT SYSINX=G
SETTOPT  0000000 PROCDEF SETTOPT
SETTOPT  0000100 PARAM $0,$1,$2,$3,$4,$5
SETTOPT  0000200 DEFAULT SYSINX=E
SETTOPT  0000300 PROCDEF CO$1
SETTOPT  0000400 INSERT LAST
SETTOPT  0000500 TUNNOPT $0
SETTOPT  0000600 _LIST LAST
SETTOPT  0000700 END
SETTOPT  0000800 IF '$2'¬='';SETTOPT $0,$2,$3,$4,$5
SETTOPT  0000900 DEFAULT SYSINX=G
SHOWVAL  0000000 PROCDEF SHOWVAL
SHOWVAL  0000100 QUALIFY AINLETT
SHOWVAL  0000200 AT 2000(4);DISPLAY VAL(1,1):VAL(20,3)
STRUT    0000000 PROCDEF STRUT
STRUT    0000100 PARAM $S
STRUT    0000200 AT ACMBSTR.345.(2);DISPLAY ACMBSTR.DDXCOM;SET ACMBSTR.DDXCOM=$S.0/STRUTD.DX/STRUTD.PSIATM;DISPLAY ACMBSTR.DDXCOM
TC33-0830000000 PROCDEF TC33-083
TC33-0830000100 QUALIFY AHTXFER
TC33-0830000300 AT 40(4);SET DTI=31.2,DTO=12.37,QTI=854.88,QTO=1109.71,QT=1964.59,TIIN=550.0,TIOUT=581.2,TOIN=550.0,TOOUT=562.37
TC33-0830000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC33-0830000500 QUALIFY ENGPGM
TC33-0830000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC33-0830000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC33-0830000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC33-0830000900 SET DORE=1.0
TC33-0830001000 DISPLAY IFUEL,IGNON,DORE
TC33-1210000000 PROCDEF TC33-121
TC33-1210000100 QUALIFY AHTXFER
TC33-1210000300 AT 40(4);SET DTI=47.34,DTO=15.0,QTI=1297.12,QTO=1345.65,QT=2642.77,TIIN=550.0,TIOUT=597.34,TOIN=550.0,TOOUT=565.0
TC33-1210000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC33-1210000500 QUALIFY ENGPGM
TC33-1210000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC33-1210000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC33-1210000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC33-1210000900 SET DORE=1.0
TC33-1210001000 DISPLAY IFUEL,IGNON,DORE
TC33-1290000000 PROCDEF TC33-129
TC33-1290000100 QUALIFY AHTXFER
TC33-1290000300 AT 40(4);SET DTI=57.94,DTO=17.08,QTI=1587.56,QTO=1532.25,QT=3118.8,TIIN=550.0,TIOUT=607.94,TOIN=550.0,TOOUT=567.08
TC33-1290000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC33-1290000500 QUALIFY ENGPGM
TC33-1290000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC33-1290000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC33-1290000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC33-1290000900 SET DORE=1.0
TC33-1290001000 DISPLAY IFUEL,IGNON,DORE
TC33-1360000000 PROCDEF TC33-136
TC33-1360000100 QUALIFY AHTXFER
TC33-1360000300 AT 40(4);SET DTI=77.7,DTO=25.0,QTI=2130.9,QTO=2242.75,QT=4373.65,TIIN=550.0,TIOUT=627.7,TOIN=550.0,TOOUT=575.0
TC33-1360000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC33-1360000500 QUALIFY ENGPGM
TC33-1360000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC33-1360000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC33-1360000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC33-1360000900 SET DORE=1.0
TC33-1360001000 DISPLAY IFUEL,IGNON,DORE
TC34-0750000000 PROCDEF TC34-075
TC34-0750000100 QUALIFY AHTXFER
TC34-0750000300 AT 40(4);SET DTI=29.0,DTO=11.72,QTI=79[illegible].6,QTO=1051.4,QT=1846.0,TIIN=550.0,TIOUT=579.0,TOIN=550.0,TOOUT=561.72
TC34-0750000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC34-0750000500 QUALIFY ENGPGM
TC34-0750000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC34-0750000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC34-0750000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC34-0750000900 SET DORE=1.0
TC34-0750001000 DISPLAY IFUEL,IGNON,DORE
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TC34-0790000000 PROCDEF TC34-079
TC34-0790000100 QUALIFY AHTXFER
TC34-0790000300 AT 40(4);SET DTI=34.05,DTO=16.21,QTI=932.97,QTO=1454.2,QT=2387.17,TIIN=550.0,TIOUT=584.05,TOIN=550.0,TOOUT=566.21
TC34-0790000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC34-0790000500 QUALIFY ENGPGM
TC34-0790000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC34-0790000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC34-0790000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC34-0790000900 SET DORE=1.0
TC34-0790001000 DISPLAY IFUEL,IGNON,DORE
TC34-0820000000 PROCDEF TC34-082
TC34-0820000100 QUALIFY AHTXFER
TC34-0820000300 AT 40(4);SET DTI=52.3,DTO=21.9,QTI=1433.02,QTO=1964.65,QT=3397.67,TIIN=550.0,TIOUT=602.3,TOIN=550.0,TOOUT=571.9
TC34-0820000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC34-0820000500 QUALIFY ENGPGM
TC34-0820000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC34-0820000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC34-0820000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC34-0820000900 SET DORE=1.0
TC34-0820001000 DISPLAY IFUEL,IGNON,DORE
TC34-1310000000 PROCDEF TC34-131
TC34-1310000100 QUALIFY AHTXFER
TC34-1310000300 AT 40(4);SET DTI=98.9,DTO=32.96,QTI=2709.86,QTO=2956.84,QT=5666.7,TIIN=550.0,TIOUT=648.9,TOIN=550.0,TOOUT=582.96
TC34-1310000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC34-1310000500 QUALIFY ENGPGM
TC34-1310000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC34-1310000700 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=0,IFUEL(8)=0
TC34-1310000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC34-1310000900 SET DORE=1.0
TC34-1310001000 DISPLAY IFUEL,IGNON,DORE
TC34-1680000000 PROCDEF TC34-168
TC34-1680000100 QUALIFY AHTXFER
TC34-1680000300 AT 40(4);SET DTI=224.1,DTO=42.36,QTI=3126.34,QTO=3801.91,QT=6928.25,TIIN=550.0,TIOUT=664.1,TOIN=550.0,TOOUT=592.36
TC34-1680000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC34-1680000500 QUALIFY ENGPGM
TC34-1680000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC34-1680000700 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=0,IFUEL(8)=0
TC34-1680000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC34-1680000900 SET DORE=1.0
TC34-1680001000 DISPLAY IFUEL,IGNON,DORE
TC34-1840000000 PROCDEF TC34-184
TC34-1840000100 QUALIFY AHTXFER
TC34-1840000300 AT 40(4);SET DTI=108.0,DTO=44.63,QTI=2959.2,QTO=4003.76,QT=6962.96,TIIN=550.0,TIOUT=658.0,TOIN=550.0,TOOUT=594.63
TC34-1840000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC34-1840000500 QUALIFY ENGPGM
TC34-1840000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC34-1840000700 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=0,IFUEL(8)=0
TC34-1840000800 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0
TC34-1840000900 SET DORE=1.0
TC34-1840001000 DISPLAY IFUEL,IGNON,DORE
TC36-0850000000 PROCDEF TC36-085
TC36-0850000100 QUALIFY AHTXFER
TC36-0850000300 AT 40(4);SET DTI=32.9,DTO=11.5,QTI=901.46,QTO=1031.67,QT=1933.13,TIIN=550.0,TIOUT=582.9,TOIN=550.0,TOOUT=561.5
TC36-0850000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC36-0850000500 QUALIFY ENGPGM
TC36-0850000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC36-0850000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC36-0850000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC36-0850000900 SET DORE=1.0
TC36-0850001000 DISPLAY IFUEL,IGNON,DORE
TC36-0910000000 PROCDEF TC36-091
TC36-0910000100 QUALIFY AHTXFER
TC36-0910000300 AT 40(4);SET DTI=36.2,DTO=12.26,QTI=991.88,QTO=1099.84,QT=2091.72,TIIN=550.0,TIOUT=586.2,TOIN=550.0,TOOUT=562.26
TC36-0910000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC36-0910000500 QUALIFY ENGPGM
TC36-0910000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC36-0910000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC36-0910000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC36-0910000900 SET DORE=1.0
TC36-0910001000 DISPLAY IFUEL,IGNON,DORE
TC36-1000000000 PROCDEF TC36-100
TC36-1000000100 QUALIFY AHTXFER
TC36-1000000300 AT 40(4);SET
DTI=61.48,DTO=24.53,QTI=1684.55,QTO=2200.59,QT=3885.14,TIIN=550.0,TIOUT=611.48,TOIN=550.0,TOOUT=574.53
TC36-1000000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC36-1000000500 QUALIFY ENGPGM
TC36-1000000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC36-1000000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC36-1000000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC36-1000000900 SET DORE=1.0
TC36-1000001000 DISPLAY IFUEL,IGNON,DORE
TC36-1130000000 PROCDEF TC36-113
TC36-1130000100 QUALIFY AHTXFER
TC36-1130000300 AT 40(4);SET DTI=92.5,DTO=29.89,QTI=2534.5,QTO=2681.43,QT=5215.93,TIIN=550.0,TIOUT=642.5,TOIN=550.0,TOOUT=579.89
TC36-1130000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC36-1130000500 QUALIFY ENGPGM
TC36-1130000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC36-1130000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC36-1130000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC36-1130000900 SET DORE=1.0
TC36-1130001000 DISPLAY IFUEL,IGNON,DORE
TC36-1290000000 PROCDEF TC36-129
TC36-1290000100 QUALIFY AHTXFER
TC36-1290000300 AT 40(4);SET DTI=103.6,DTO=33.18,QTI=2838.64,QTO=2976.58,QT=5815.22,TIIN=550.0,TIOUT=653.6,TOIN=550.0,TOOUT=583.18
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TC36-1290000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC36-1290000500 QUALIFY ENGPGM
TC36-1290000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC36-1290000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC36-1290000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC36-1290000900 SET DORE=1.0
TC36-1290001000 DISPLAY IFUEL,IGNON,DORE
TC36-1450000000 PROCDEF TC36-145
TC36-1450000100 QUALIFY AHTXFER
TC36-1450000300 AT 40(4);SET DTI=114.8,DTO=36.57,QTI=3145.52,QTO=3280.64,QT=6426.21,TIIN=550.0,TIOUT=664.8,TOIN=550.0,TOOUT=586.57
TC36-1450000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC36-1450000500 QUALIFY ENGPGM
TC36-1450000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC36-1450000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC36-1450000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC36-1450000900 SET DORE=1.0
TC36-1450001000 DISPLAY IFUEL,IGNON,DORE
TC38-0670000000 PROCDEF TC38-067
TC38-0670000100 QUALIFY AHTXFER
TC38-0670000300 AT 40(4);SET DTI=31.5,DTO=11.94,QTI=863.1,QTO=1071.14,QT=1934.24,TIIN=550.0,TIOUT=581.5,TOIN=550.0,TOOUT=561.94
TC38-0670000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC38-0670000500 QUALIFY ENGPGM
TC38-0670000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC38-0670000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC38-0670000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC38-0670000900 SET DORE=1.0
TC38-0670001000 DISPLAY IFUEL,IGNON,DORE
TC38-0790000000 PROCDEF TC38-079
TC38-0790000100 QUALIFY AHTXFER
TC38-0790000300 AT 40(4);SET DTI=38.4,DTO=14.13,QTI=1052.16,QTO=1267.6,QT=2319.76,TIIN=550.0,TIOUT=588.4,TOIN=550.0,TOOUT=564.13
TC38-0790000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC38-0790000500 QUALIFY ENGPGM
TC38-0790000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC38-0790000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC38-0790000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC38-0790000900 SET DORE=1.0
TC38-0790001000 DISPLAY IFUEL,IGNON,DORE
TC38-0860000000 PROCDEF TC38-086
TC38-0860000100 QUALIFY AHTXFER
TC38-0860000300 AT 40(4);SET DTI=39.9,DTO=13.03,QTI=1093.26,QTO=1168.92,QT=2262.18,TIIN=550.0,TIOUT=589.9,TOIN=550.0,TOOUT=563.03
TC38-0860000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC38-0860000500 QUALIFY ENGPGM
TC38-0860000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC38-0860000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC38-0860000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC38-0860000900 SET DORE=1.0
TC38-0860001000 DISPLAY IFUEL,IGNON,DORE
TC38-0890000000 PROCDEF TC38-089
TC38-0890000100 QUALIFY AHTXFER
TC38-0890000300 AT 40(4);SET DTI=43.9,DTO=21.02,QTI=1202.86,QTO=1885.7,QT=3088.56,TIIN=550.0,TIOUT=593.9,TOIN=550.0,TOOUT=571.02
TC38-0890000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC38-0890000500 QUALIFY ENGPGM
TC38-0890000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC38-0890000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC38-0890000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC38-0890000900 SET DORE=1.0
TC38-0890001000 DISPLAY IFUEL,IGNON,DORE
TC38-0900000000 PROCDEF TC38-090
TC38-0900000100 QUALIFY AHTXFER
TC38-0900000300 AT 40(4);SET
DTI=53.68,DTO=30.22,QTI=1470.83,QTO=2711.04,QT=4181.87,TIIN=550.0,TIOUT=603.68,TOIN=550.0,TOOUT=580.22
TC38-0900000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC38-0900000500 QUALIFY ENGPGM
TC38-0900000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC38-0900000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC38-0900000800 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC38-0900000900 SET DORE=1.0
TC38-0900001000 DISPLAY IFUEL,IGNON,DORE
TC52-0690000000 PROCDEF TC52-069
TC52-0690000100 QUALIFY AHTXFER
TC52-0690000200 AT 40(4);SET DTI=24.5,DTO=11.3,QTI=671.3,QTO=1013.72,QT=1685.02,TIIN=552.5,TIOUT=577.0,TOIN=552.5,TOOUT=563.8
TC52-0690000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC52-0690000400 QUALIFY ENGPGM
TC52-0690000500 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC52-0690000600 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC52-0690000750 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC52-0690000800 DISPLAY IFUEL,IGNON,DORE
TC52-0760000000 PROCDEF TC52-076
TC52-0760000100 QUALIFY AHTXFER
TC52-0760000300 AT 40(4);SET DTI=41.5,DTO=22.4,QTI=1137.1,QTO=2009.5,QT=3146.6,TIIN=552.5,TIOUT=594.0,TOIN=552.5,TOOUT=574.9
TC52-0760000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC52-0760000500 QUALIFY ENGPGM
TC52-0760000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC52-0760000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC52-0760000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC52-0760000800 DISPLAY IFUEL,IGNON,DORE
TC52-0850000000 PROCDEF TC52-085
TC52-0850000100 QUALIFY AHTXFER
TC52-0850000300 AT 40(4);SET DTI=79.28,DTO=29.0,QTI=2172.27,QTO=2601.59,QT=4773.86,TIIN=552.5,TIOUT=631.78,TOIN=552.5,TOOUT=581.5
TC52-0850000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC52-0850000500 QUALIFY ENGPGM
TC52-0850000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC52-0850000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC52-0850000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
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TC52-0850000800 DISPLAY IFUEL,IGNON,DORE
TC52-0950000000 PROCDEF TC52-095
TC52-0950000100 QUALIFY AHTXFER
TC52-0950000300 AT 40(4);SET DTI=85.67,DTO=30.5,QTI=2347.36,QTO=2736.16,QT=5083.5,TIIN=552.5,TIOUT=638.17,TOIN=552.5,TOOUT=583.0
TC52-0950000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC52-0950000500 QUALIFY ENGPGM
TC52-0950000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC52-0950000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC52-0950000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=5
TC52-0950000800 DISPLAY IFUEL,IGNON,DORE
TC54-0660000000 PROCDEF TC54-066
TC54-0660000100 QUALIFY AHTXFER
TC54-0660000300 AT 40(4);SET DTI=27.37,DTO=11.81,QTI=749.9,QTO=1059.48,QT=1809.41,TIIN=555.0,TIOUT=582.37,TOIN=555.0,TOOUT=566.81
TC54-0660000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-0660000500 QUALIFY ENGPGM
TC54-0660000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC54-0660000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-0660000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-0660000800 DISPLAY IFUEL,IGNON,DORE
TC54-0980000000 PROCDEF TC54-098
TC54-0980000100 QUALIFY AHTXFER
TC54-0980000300 AT 40(4);SET DTI=75.0,DTO=34.0,QTI=2055.0,QTO=3050.1,QT=5105.1,TIIN=555.0,TIOUT=630.0,TOIN=555.0,TOOUT=589.0
TC54-0980000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-0980000500 QUALIFY ENGPGM
TC54-0980000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-0980000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-0980000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-0980000800 DISPLAY IFUEL,IGNON,DORE
TC54-1050000000 PROCDEF TC54-105
TC54-1050000100 QUALIFY AHTXFER
TC54-1050000300 AT 40(4);SET DTI=45.44,DTO=24.6,QTI=1245.06,QTO=2206.87,QT=3451.9,TIIN=555.0,TIOUT=600.44,TOIN=555.0,TOOUT=579.6
TC54-1050000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-1050000500 QUALIFY ENGPGM
TC54-1050000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-1050000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-1050000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-1050000800 DISPLAY IFUEL,IGNON,DORE
TC54-1150000000 PROCDEF TC54-115
TC54-1150000100 QUALIFY AHTXFER
TC54-1150000300 AT 40(4);SET DTI=69.0,DTO=30.6,QTI=1890.6,QTO=2745.13,QT=4635.7,TIIN=555.0,TIOUT=624.0,TOIN=555.0,TOOUT=585.6
TC54-1150000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-1150000500 QUALIFY ENGPGM
TC54-1150000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-1150000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-1150000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-1150000800 DISPLAY IFUEL,IGNON,DORE
TC54-1390000000 PROCDEF TC54-139
TC54-1390000100 QUALIFY AHTXFER
TC54-1390000300 AT 40(4);SET DTI=72.0,DTO=29.4,QTI=1972.8,QTO=2637.4,QT=4610.2,TIIN=557.0,TIOUT=629.0,TOIN=557.0,TOOUT=586.4
TC54-1390000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-1390000500 QUALIFY ENGPGM
TC54-1390000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-1390000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-1390000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-1390000800 DISPLAY IFUEL,IGNON,DORE
TC54-1540000000 PROCDEF TC54-154
TC54-1540000100 QUALIFY AHTXFER
TC54-1540000300 AT 40(4);SET DTI=78.8,DTO=33.0,QTI=2159.12,QTO=2960.4,QT=5119.5,TIIN=559.2,TIOUT=638.0,TOIN=559.2,TOOUT=592.2
TC54-1540000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-1540000500 QUALIFY ENGPGM
TC54-1540000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-1540000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-1540000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-1540000800 DISPLAY IFUEL,IGNON,DORE
TC54-1740000000 PROCDEF TC54-174
TC54-1740000100 QUALIFY AHTXFER
TC54-1740000300 AT 40(4);SET DTI=77.8,DTO=35.3,QTI=2131.7,QTO=3166.7,QT=5298.5,TIIN=559.2,TIOUT=637.0,TOIN=559.2,TOOUT=594.5
TC54-1740000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-1740000500 QUALIFY ENGPGM
TC54-1740000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-1740000650 SET IGNON(1)=1,IGNON(2)=1,IGNON(3)=0,DORE=1.0
TC54-1740000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-1740000750 SET IGNON(1)=1,IGNON(2)=1
TC54-1740000800 DISPLAY IFUEL,IGNON,DORE
TC54-2040000000 PROCDEF TC54-204
TC54-2040000100 QUALIFY AHTXFER
TC54-2040000300 AT 40(4);SET DTI=75.1,DTO=35.22,QTI=2057.74,QTO=3166.7,QT=5224.5,TIIN=563.6,TIOUT=638.7,TOIN=563.6,TOOUT=598.82
TC54-2040000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC54-2040000500 QUALIFY ENGPGM
TC54-2040000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC54-2040000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC54-2040000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC54-2040000800 DISPLAY IFUEL,IGNON,DORE
TC57-0780000000 PROCDEF TC57-078
TC57-0780000100 QUALIFY AHTXFER
TC57-0780000300 AT 40(4);SET DTI=29.69,DTO=12.92,QTI=813.5,QTO=1159.05,QT=1972.56,TIIN=553.0,TIOUT=582.69,TOIN=553.0,TOOUT=565.92
TC57-0780000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC57-0780000500 QUALIFY ENGPGM
TC57-0780000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC57-0780000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC57-0780000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC57-0780000800 DISPLAY IFUEL,IGNON,DORE
TC57-0920000000 PROCDEF TC57-092
TC57-0920000100 QUALIFY AHTXFER
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C57-0920000300 AT 40(4);SET DTI=81.32,DTO=36.1,QTI=2228.17,QTO=3238.53,QT=5466.70,TIIN=553.6,TIOUT=634.92,TOIN=553.6,TOOUT=589.7
C57-0920000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C57-0920000500 QUALIFY ENGPGM
C57-0920000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
C57-0920000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C57-0920000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C57-0920000800 DISPLAY IFUEL,IGNON,DORE
C57-1220000000 PROCDEF TC57-122
C57-1220000100 QUALIFY AHTXFER
C57-1220000300 AT 40(4);SET DTI=86.96,DTO=37.5,QTI=2382.7,QTO=3364.13,QT=5746.83,TIIN=555.0,TIOUT=641.96,TOIN=555.0,TOOUT=592.5
C57-1220000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C57-1220000500 QUALIFY ENGPGM
C57-1220000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
C57-1220000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
ROM SYSOPERD AT 21:14
RY IT AGAIN, PLEASE....
C57-1220000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C57-1220000800 DISPLAY IFUEL,IGNON,DORE
C57-1560000000 PROCDEF TC57-156
C57-1560000100 QUALIFY AHTXFER
C57-1560000300 AT 40(4);SET
TI=72.48,DTO=29.028,QTI=1985.95,QTO=2604.1,QT=4590.05,TIIN=558.0,TIOUT=630.48,TOIN=558.0,TOOUT=587.03
C57-1560000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C57-1560000500 QUALIFY ENGPGM
C57-1560000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
C57-1560000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C57-1560000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C57-1560000800 DISPLAY IFUEL,IGNON,DORE
C57-1810000000 PROCDEF TC57-181
C57-1810000100 QUALIFY AHTXFER
C57-1810000300 AT 40(4);SET DTI=81.83,DTO=35.0,QTI=2242.14,QTO=3139.85,QT=5381.99,TIIN=561.0,TIOUT=642.83,TOIN=561.0,TOOUT=596.0
C57-1810000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C57-1810000500 QUALIFY ENGPGM
C57-1810000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
C57-1810000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C57-1810000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C57-1810000800 DISPLAY IFUEL,IGNON,DORE
C60-0550000000 PROCDEF TC60-055
C60-0550000100 QUALIFY AHTXFER
C60-0550000300 AT 40(4);SET DTI=28.0,DTO=12.7,QTI=767.2,QTO=1139.32,QT=1906.52,TIIN=557.5,TIOUT=585.5,TOIN=547.5,TOOUT=560.2
C60-0550000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C60-0550000500 QUALIFY ENGPGM
C60-0550000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
C60-0550000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C60-0550000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C60-0550000800 DISPLAY IFUEL,IGNON,DORE
C60-0800000000 PROCDEF TC60-080
C60-0800000100 QUALIFY AHTXFER
C60-0800000300 AT 40(4);SET DTI=74.3,DTO=34.2,QTI=2035.82,QTO=3068.08,QT=5103.9,TIIN=558.2,TIOUT=632.5,TOIN=558.2,TOOUT=592.4
C60-0800000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C60-0800000500 QUALIFY ENGPGM
C60-0800000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
C60-0800000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C60-0800000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C60-0800000800 DISPLAY IFUEL,IGNON,DORE
C60-0890000000 PROCDEF TC60-089
C60-0890000100 QUALIFY AHTXFER
C60-0890000300 AT 40(4);SET DTI=78.8,DTO=34.3,QTI=2159.12,QTO=3077.05,QT=5236.17,TIIN=558.2,TIOUT=637.0,TOIN=558.2,TOOUT=592.5
C60-0890000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C60-0890000500 QUALIFY ENGPGM
C60-0890000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
C60-0890000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C60-0890000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C60-0890000800 DISPLAY IFUEL,IGNON,DORE
C60-1070000000 PROCDEF TC60-107
C60-1070000100 QUALIFY AHTXFER
C60-1070000300 AT 40(4);SET DTI=72.3,DTO=33.0,QTI=1981.02,QTO=2960.43,QT=4941.45,TIIN=558.7,TIOUT=631.0,TOIN=558.7,TOOUT=591.7
C60-1070000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C60-1070000500 QUALIFY ENGPGM
C60-1070000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
C60-1070000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C60-1070000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C60-1070000800 DISPLAY IFUEL,IGNON,DORE
C60-1300000000 PROCDEF TC60-130
C60-1300000100 QUALIFY AHTXFER
C60-1300000300 AT 40(4);SET DTI=85.0,DTO=32.4,QTI=2329.0,QTO=2906.6,QT=5235.6,TIIN=560.0,TIOUT=645.0,TOIN=560.0,TOOUT=592.4
C60-1300000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
C60-1300000500 QUALIFY ENGPGM
C60-1300000600 SET IFUEL(1)=1,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
C60-1300000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
C60-1300000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
C60-1300000800 DISPLAY IFUEL,IGNON,DORE
TC60-1380000000 PROCDEF TC60-138
TC60-1380000100 QUALIFY AHTXFER
TC60-1380000300 AT 40(4);SET DTI=80.1,DTO=34.7,QTI=2194.74,QTO=3112.94,QT=5307.68,TIIN=561.5,TIOUT=641.6,TOIN=561.5,TOOUT=596.2
TC60-1380000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC60-1380000500 QUALIFY ENGPGM
TC60-1380000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC60-1380000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC60-1380000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC60-1380000800 DISPLAY IFUEL,IGNON,DORE
TC60-1500000000 PROCDEF TC60-150
TC60-1500000100 QUALIFY AHTXFER
TC60-1500000300 AT 40(4);SET DTI=70.49,DTO=36.19,QTI=1931.43,QTO=3241.6,QT=5178.03,TIIN=562.7,TIOUT=633.19,TOIN=562.7,TOOUT=598.89
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TC60-1500000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC60-1500000500 QUALIFY ENGPGM
TC60-1500000600 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC60-1500000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC60-1500000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC60-1500000800 DISPLAY IFUEL,IGNON,DORE
TC60-1590000000 PROCDEF TC60-159
TC60-1590000100 QUALIFY AHTXFER
TC60-1590000300 AT 40(4);SET DTI=71.68,DTO=37.5,QTI=1964.03,QTO=3364.13,QT=5328.16,TIIN=564.0,TIOUT=635.68,TOIN=564.0,TOOUT=601.5
TC60-1590000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC60-1590000500 QUALIFY ENGPGM
TC60-1590000600 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC60-1590000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC60-1590000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC60-1590000800 DISPLAY IFUEL,IGNON,DORE
TC60-1690000000 PROCDEF TC60-169
TC60-1690000100 QUALIFY AHTXFER
TC60-1690000300 AT 40(4);SET DTI=72.5,DTO=27.1,QTI=1986.5,QTO=2431.14,QT=4417.64,TIIN=563.5,TIOUT=636.0,TOIN=563.5,TOOUT=590.6
TC60-1690000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC60-1690000500 QUALIFY ENGPGM
TC60-1690000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC60-1690000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC60-1690000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC60-1690000800 DISPLAY IFUEL,IGNON,DORE
TC60-1760000000 PROCDEF TC60-176
TC60-1760000100 QUALIFY AHTXFER
TC60-1760000300 AT 40(4);SET DTI=73.4,DTO=27.2,QTI=2011.16,QTO=2440.11,QT=4451.27,TIIN=564.6,TIOUT=638.0,TOIN=564.6,TOOUT=591.8
TC60-1760000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC60-1760000500 QUALIFY ENGPGM
TC60-1760000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC60-1760000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC60-1760000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC60-1760000800 DISPLAY IFUEL,IGNON,DORE
TC61-0880000000 PROCDEF TC61-088
TC61-0880000100 QUALIFY AHTXFER
TC61-0880000300 AT 40(4);SET DTI=30.0,DTO=12.8,QTI=822.0,QTO=1148.3,QT=1970.2,TIIN=561.0,TIOUT=591.0,TOIN=561.0,TOOUT=573.8
TC61-0880000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-0880000500 QUALIFY ENGPGM
TC61-0880000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC61-0880000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-0880000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-0880000800 DISPLAY IFUEL,IGNON,DORE
TC61-1100000000 PROCDEF TC61-110
TC61-1100000100 QUALIFY AHTXFER
TC61-1100000300 AT 40(4);SET DTI=63.0,DTO=25.75,QTI=1726.2,QTO=2130.6,QT=3856.8,TIIN=562.0,TIOUT=625.0,TOIN=562.0,TOOUT=585.75
TC61-1100000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1100000500 QUALIFY ENGPGM
TC61-1100000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1100000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1100000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1100000800 DISPLAY IFUEL,IGNON,DORE
TC61-1180000000 PROCDEF TC61-118
TC61-1180000100 QUALIFY AHTXFER
TC61-1180000300 AT 40(4);SET DTI=69.0,DTO=28.2,QTI=1890.6,QTO=2529.8,QT=4420.4,TIIN=561.0,TIOUT=630.0,TOIN=561.0,TOOUT=589.2
TC61-1180000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1180000500 QUALIFY ENGPGM
TC61-1180000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1180000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1180000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1180000800 DISPLAY IFUEL,IGNON,DORE
TC61-1250000000 PROCDEF TC61-125
TC61-1250000100 QUALIFY AHTXFER
TC61-1250000300 AT 40(4);SET DTI=72.0,DTO=32.8,QTI=1972.8,QTO=2942.49,QT=4915.29,TIIN=562.0,TIOUT=634.0,TOIN=562.0,TOOUT=594.8
TC61-1250000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1250000500 QUALIFY ENGPGM
TC61-1250000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1250000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1250000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1250000800 DISPLAY IFUEL,IGNON,DORE
TC61-1360000000 PROCDEF TC61-136
TC61-1360000100 QUALIFY AHTXFER
TC61-1360000300 AT 40(4);SET DTI=72.5,DTO=35.1,QTI=1986.5,QTO=3148.82,QT=5135.32,TIIN=562.0,TIOUT=634.5,TOIN=560.0,TOOUT=595.1
TC61-1360000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1360000500 QUALIFY ENGPGM
TC61-1360000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1360000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1360000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1360000800 DISPLAY IFUEL,IGNON,DORE
TC61-1460000000 PROCDEF TC61-146
TC61-1460000100 QUALIFY AHTXFER
TC61-1460000300 AT 40(4);SET DTI=29.5,DTO=11.33,QTI=808.3,QTO=1016.4,QT=1824.71,TIIN=562.2,TIOUT=591.7,TOIN=562.2,TOOUT=573.53
TC61-1460000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1460000500 QUALIFY ENGPGM
TC61-1460000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC61-1460000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1460000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1460000800 DISPLAY IFUEL,IGNON,DORE
TC61-1600000000 PROCDEF TC61-160
TC61-1600000100 QUALIFY AHTXFER
TC61-1600000300 AT 40(4);SET DTI=46.8,DTO=18.5,QTI=1282.3,QTO=1659.64,QT=2941.96,TIIN=563.8,TIOUT=610.6,TOIN=563.8,TOOUT=582.3
TC61-1600000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1600000500 QUALIFY ENGPGM
TC61-1600000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC61-1600000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
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TC61-1600000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1600000800 DISPLAY IFUEL,IGNON,DORE
TC61-1630000000 PROCDEF TC61-163
TC61-1630000100 QUALIFY AHTXFER
TC61-1630000300 AT 40(4);SET DTI=49.5,DTO=19.5,QTI=1315.2,QTO=1749.3,QT=3064.55,TIIN=562.5,TIOUT=612.0,TOIN=562.5,TOOUT=582.0
TC61-1630000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1630000500 QUALIFY ENGPGM
TC61-1630000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1630000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1630000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1630000800 DISPLAY IFUEL,IGNON,DORE
TC61-1690000000 PROCDEF TC61-169
TC61-1690000100 QUALIFY AHTXFER
TC61-1690000300 AT 40(4);SET DTI=62.5,DTO=25.25,QTI=1712.5,QTO=2265.18,QT=3977.68,TIIN=564.0,TIOUT=626.5,TOIN=564.0,TOOUT=589.25
TC61-1690000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1690000500 QUALIFY ENGPGM
TC61-1690000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1690000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1690000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1690000800 DISPLAY IFUEL,IGNON,DORE
TC61-1810000000 PROCDEF TC61-181
TC61-1810000100 QUALIFY AHTXFER
TC61-1810000300 AT 40(4);SET DTI=67.0,DTO=31.25,QTI=1835.8,QTO=2803.4,QT=4639.2,TIIN=565.0,TIOUT=632.0,TOIN=565.0,TOOUT=596.25
TC61-1810000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1810000500 QUALIFY ENGPGM
TC61-1810000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1810000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1810000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1810000800 DISPLAY IFUEL,IGNON,DORE
TC61-1930000000 PROCDEF TC61-193
TC61-1930000100 QUALIFY AHTXFER
TC61-1930000300 AT 40(4);SET DTI=68.0,DTO=33.65,QTI=1863.2,QTO=3018.74,QT=4881.94,TIIN=566.0,TIOUT=634.0,TOIN=566.0,TOOUT=599.65
TC61-1930000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC61-1930000500 QUALIFY ENGPGM
TC61-1930000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC61-1930000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC61-1930000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC61-1930000800 DISPLAY IFUEL,IGNON,DORE
TC63-0640000000 PROCDEF TC63-064
TC63-0640000100 QUALIFY AHTXFER
TC63-0640000300 AT 40(4);SET DTI=32.8,DTO=14.88,QTI=898.7,QTO=1334.88,QT=2233.58,TIIN=560.2,TIOUT=593.0,TOIN=560.2,TOOUT=575.0
TC63-0640000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC63-0640000500 QUALIFY ENGPGM
TC63-0640000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC63-0640000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC63-0640000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC63-0640000800 DISPLAY IFUEL,IGNON,DORE
TC63-0710000000 PROCDEF TC63-071
TC63-0710000100 QUALIFY AHTXFER
TC63-0710000300 AT 40(4);SET DTI=73.3,DTO=33.0,QTI=2008.42,QTO=2960.43,QT=4968.85,TIIN=559.7,TIOUT=633.0,TOIN=559.7,TOOUT=592.7
TC63-0710000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC63-0710000500 QUALIFY ENGPGM
TC63-0710000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC63-0710000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC63-0710000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC63-0710000800 DISPLAY IFUEL,IGNON,DORE
TC63-0980000000 PROCDEF TC63-098
TC63-0980000100 QUALIFY AHTXFER
TC63-0980000300 AT 40(4);SET DTI=86.8,DTO=40.65,QTI=2378.32,QTO=3646.71,QT=6025.03,TIIN=560.2,TIOUT=647.0,TOIN=560.2,TOOUT=600.85
TC63-0980000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC63-0980000500 QUALIFY ENGPGM
TC63-0980000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC63-0980000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC63-0980000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC63-0980000800 DISPLAY IFUEL,IGNON,DORE
TC63-1340000000 PROCDEF TC63-134
TC63-1340000100 QUALIFY AHTXFER
TC63-1340000300 AT 40(4);SET DTI=25.8,DTO=9.85,QTI=706.0,QTO=883.6,QT=1590.56,TIIN=561.2,TIOUT=587.0,TOIN=561.2,TOOUT=571.05
TC63-1340000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC63-1340000500 QUALIFY ENGPGM
TC63-1340000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC63-1340000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC63-1340000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC63-1340000800 DISPLAY IFUEL,IGNON,DORE
TC63-1630000000 PROCDEF TC63-163
TC63-1630000100 QUALIFY AHTXFER
TC63-1630000300 AT 40(4);SET DTI=53.0,DTO=23.75,QTI=1452.2,QTO=2130.6,QT=3582.8,TIIN=565.0,TIOUT=618.0,TOIN=565.0,TOOUT=588.75
TC63-1630000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC63-1630000500 QUALIFY ENGPGM
TC63-1630000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC63-1630000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=1.0
TC63-1630000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC63-1630000800 DISPLAY IFUEL,IGNON,DORE
TC64-0580000000 PROCDEF TC64-058
TC64-0580000100 QUALIFY AHTXFER
TC64-0580000200 AT 40(4);SET DTI=29.5,DTO=11.9,QTI=808.3,QTO=1067.5,QT=1875.8,TIIN=555.5,TIOUT=585.0,TOIN=555.5,TOOUT=567.4
TC64-0580000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC64-0580000400 QUALIFY ENGPGM
TC64-0580000500 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0,IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC64-0580000550 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC64-0580000600 DISPLAY IFUEL,IGNON,DORE
TC64-0710000000 PROCDEF TC64-071
TC64-0710000100 QUALIFY AHTXFER
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TC64-0710000200 AT 40(4);SET DTI=64.0,DTO=33.0,QTI=1753.6,QTO=2960.4,QT=4714.03,TIIN=556.0,TIOUT=620.0,TOIN=556.0,TOOUT=589.2
TC64-0710000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC64-0710000400 QUALIFY ENGPGM
TC64-0710000500 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4,IFUEL(5)=1,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC64-0710000550 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC64-0710000600 DISPLAY IFUEL,IGNON,DORE
TC64-1090000000 PROCDEF TC64-109
TC64-1090000100 QUALIFY AHTXFER
TC64-1090000200 AT 40(4);SET DTI=38.5,DTO=28.65,QTI=1054.9,QTO=2570.19,QT=3625.10,TIIN=556.5,TIOUT=595.0,TOIN=556.5,TOOUT=585.15
TC64-1090000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC64-1090000400 QUALIFY ENGPGM
TC64-1090000500 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC64-1090000600 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC64-1090000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC64-1090000700 DISPLAY IFUEL,IGNON,DORE
TC64-1090000800 QUALIFY ACMBSTR
TC64-1090000900 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC64-1510000000 PROCDEF TC64-151
TC64-1510000100 QUALIFY AHTXFER
TC64-1510000200 AT 40(4);SET DTI=71.7,DTO=39.1,QTI=1964.58,QTO=3507.66,QT=5472.24,TIIN=539.3,TIOUT=631.0,TOIN=539.3,TOOUT=578.4
TC64-1510000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC64-1510000400 QUALIFY ENGPGM
TC64-1510000500 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4,IFUEL(5)=1,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC64-1510000550 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC64-1510000600 DISPLAY IFUEL,IGNON,DORE
TC64-1750000000 PROCDEF TC64-175
TC64-1750000100 QUALIFY AHTXFER
TC64-1750000200 AT 40(4);SET DTI=48.0,DTO=36.1,QTI=1315.2,QTO=3238.53,QT=4553.73,TIIN=563.0,TIOUT=611.0,TOIN=563.0,TOOUT=599.1
TC64-1750000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC64-1750000400 QUALIFY ENGPGM
TC64-1750000500 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC64-1750000600 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC64-1750000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC64-1750000700 DISPLAY IFUEL,IGNON,DORE
TC64-1750000800 QUALIFY ACMBSTR
TC64-1750000900 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC64-2110000000 PROCDEF TC64-211
TC64-2110000100 QUALIFY AHTXFER
TC64-2110000200 AT 40(4);SET DTI=70.8,DTO=38.25,QTI=1939.92,QTO=3431.4,QT=5371.32,TIIN=565.2,TIOUT=636.0,TOIN=565.2,TOOUT=603.45
TC64-2110000300 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC64-2110000600 QUALIFY ENGPGM
TC64-2110000700 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4,IFUEL(5)=1,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC64-2110000750 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC64-2110000800 DISPLAY IFUEL,IGNON,DORE
TC65-0600000000 PROCDEF TC65-060
TC65-0600000100 QUALIFY AHTXFER
TC65-0600000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0600000300 AT 40(4);SET
DTI=35.88,DTO=12.51,QTI=983.11,QTO=1122.27,QT=2105.38,TIIN=548.56,TIOUT=584.44,TOIN=548.56,TOOUT=561.07
TC65-0600000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0600000500 QUALIFY ENGPGM
TC65-0600000600 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC65-0600000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-0600000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-0600000800 DISPLAY IFUEL,IGNON,DORE
TC65-0600001000 QUALIFY ANOZ
TC65-0600001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1080.0);DISPLAY DRAGEX
TC65-0600001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC65-0720000000 PROCDEF TC65-072
TC65-0720000100 QUALIFY AHTXFER
TC65-0720000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0720000300 AT 40(4);SET
DTI=40.91,DTO=13.61,QTI=1120.99,QTO=1220.95,QT=2341.89,TIIN=547.89,TIOUT=588.8,TOIN=547.89,TOOUT=561.5
TC65-0720000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0720000500 QUALIFY ENGPGM
TC65-0720000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC65-0720000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-0720000700 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-0720000800 DISPLAY IFUEL,IGNON,DORE
TC65-0720001000 QUALIFY ANOZ
TC65-0720001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1078.0);DISPLAY DRAGEX
TC65-0720001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC65-0780000000 PROCDEF TC65-078
TC65-0780000100 QUALIFY AHTXFER
TC65-0780000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0780000300 AT 40(4);SET
DTI=64.69,DTO=22.73,QTI=1772.51,QTO=2039.11,QT=3811.61,TIIN=548.67,TIOUT=613.36,TOIN=548.67,TOOUT=571.4
TC65-0780000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0780000500 QUALIFY ENGPGM
TC65-0780000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC65-0780000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-0780000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-0780000800 DISPLAY IFUEL,IGNON,DORE
TC65-0780001000 QUALIFY ANOZ
TC65-0780001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1085.0);DISPLAY DRAGEX
TC65-0780001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC65-0960000000 PROCDEF TC65-096
TC65-0960000100 QUALIFY AHTXFER
TC65-0960000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0960000300 AT 40(4);SET
DTI=99.8,DTO=32.31,QTI=2734.52,QTO=2898.53,QT=5633.05,TIIN=548.45,TIOUT=646.25,TOIN=548.45,TOOUT=580.76
TC65-0960000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-0960000500 QUALIFY ENGPGM
TC65-0960000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
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TC65-0960000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-0960000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-0960000800 DISPLAY IFUEL,IGNON,DORE
TC65-0960001000 QUALIFY ANOZ
TC65-0960001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1200.0);DISPLAY DRAGEX
TC65-0960001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC65-1020000000 PROCDEF TC65-102
TC65-1020000100 QUALIFY AHTXFER
TC65-1020000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-1020000300 AT 40(4);SET
DTI=104.23,DTO=35.96,QTI=2855.9,QTO=3225.97,QT=6081.87,TIIN=549.11,TIOUT=653.34,TOIN=549.11,TOOUT=585.07
TC65-1020000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-1020000500 QUALIFY ENGPGM
TC65-1020000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC65-1020000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-1020000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-1020000800 DISPLAY IFUEL,IGNON,DORE
TC65-1020001000 QUALIFY ANOZ
TC65-1020001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1575.0);DISPLAY DRAGEX
TC65-1020001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC65-1200000000 PROCDEF TC65-120
TC65-1200000100 QUALIFY AHTXFER
TC65-1200000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-1200000300 AT 40(4);SET
DTI=92.5,DTO=34.75,QTI=2534.5,QTO=3117.42,QT=5651.92,TIIN=550.44,TIOUT=642.94,TOIN=550.44,TOOUT=585.19
TC65-1200000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-1200000500 QUALIFY ENGPGM
TC65-1200000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC65-1200000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-1200000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-1200000800 DISPLAY IFUEL,IGNON,DORE
TC65-1200001000 QUALIFY ANOZ
TC65-1200001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1500.0);DISPLAY DRAGEX
TC65-1200001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC65-1390000000 PROCDEF TC65-139
TC65-1390000100 QUALIFY AHTXFER
TC65-1390000200 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-1390000300 AT 40(4);SET DTI=92.85,DTO=32.05,QTI=2544.09,QTO=2875.21,QT=5419.3,TIIN=551.65,TIOUT=644.5,TOIN=551.65,TOOUT=583.7
TC65-1390000400 AT 40(4);DISPLAY DTI,DTO,QTI,QTO,QT,TIIN,TIOUT,TOIN,TOOUT
TC65-1390000500 QUALIFY ENGPGM
TC65-1390000600 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC65-1390000650 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0,DORE=2.0
TC65-1390000700 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC65-1390000800 DISPLAY IFUEL,IGNON,DORE
TC65-1390001000 QUALIFY ANOZ
TC65-1390001100 AT 360(3);SET DRAGEX= (1.0/PSIATM)*(-1560.0);DISPLAY DRAGEX
TC65-1390001200 DISPLAY 'NOTE: DRAGEX SET IN THIS RUN - REMEMBER THE EXTRA REMOVE'
TC69-0690000000 PROCDEF TC69-069
TC69-0690000100 QUALIFY AHTXFER
TC69-0690000200 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=549.88,TIOUT=584.77,TOIN=549.88,TOOUT=562.27
TC69-0690000300 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-0690000400 QUALIFY ENGPGM
TC69-0690000500 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC69-0690000600 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-0690000700 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-0690000800 SET DORE=2.0
TC69-0690000900 DISPLAY IFUEL,IGNON,DORE
TC69-0690001000 QUALIFY ANOZ
TC69-0690001100 AT 360(3);SET DRAGEX=-1075.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-0710000000 PROCDEF TC69-071
TC69-0710000100 QUALIFY AHTXFER
TC69-0710000150 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=550.37,TIOUT=584.88,TOIN=550.37,TOOUT=564.8
TC69-0710000200 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-0710000300 QUALIFY ENGPGM
TC69-0710000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC69-0710000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-0710000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-0710000700 SET DORE=2.0
TC69-0710000800 DISPLAY IFUEL,IGNON,DORE
TC69-0710000900 QUALIFY ANOZ
TC69-0710001000 AT 360(3);SET DRAGEX=-1075.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-0870000000 PROCDEF TC69-087
TC69 0870000100 QUALIFY AHTXFER
TC69-0870000200 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=550.2,TIOUT=609.66,TOIN=550.2,TOOUT=563.46
TC69-0870000300 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-0870000400 QUALIFY ENGPGM
TC69-0870000500 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC69-0870000600 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-0870000700 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-0870000800 SET DORE=2.0
TC69-0870000900 DISPLAY IFUEL,IGNON,DORE
TC69-0870001000 QUALIFY ANOZ
TC69-0870001100 AT 360(3);SET DRAGEX=-1080.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-0950000000 PROCDEF TC69-095
TC69-0950000100 QUALIFY AHTXFER
TC69-0950000150 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=550.4,TIOUT=604.5,TOIN=550.4,TOOUT=566.3
TC69-0950000200 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-0950000300 QUALIFY ENGPGM
TC69-0950000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC69-0950000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-0950000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-0950000700 SET DORE=2.0
TC69-0950000800 DISPLAY IFUEL,IGNON,DORE
TC69-0950000900 QUALIFY ANOZ
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TC69-0950001000 AT 360(3);SET DRAGEX=-1078.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-0990000000 PROCDEF TC69-099
TC69-0990000100 QUALIFY AHTXFER
TC69-0990000200 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=550.0,TIOUT=615.2,TOIN=550.0,TOOUT=573.76
TC69-0990000300 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-0990000400 QUALIFY ENGPGM
TC69-0990000500 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC69-0990000600 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-0990000700 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-0990000800 SET DORE=2.0
TC69-0990000900 DISPLAY IFUEL,IGNON,DORE
TC69-0990001000 QUALIFY ANOZ
TC69-0990001100 AT 360(3);SET DRAGEX=-1085.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-1100000000 PROCDEF TC69-110
TC69-1100000100 QUALIFY AHTXFER
TC69-1100000150 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=551.0,TIOUT=646.0,TOIN=551.0,TOOUT=581.0
TC69-1100000200 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-1100000300 QUALIFY ENGPGM
TC69-1100000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC69-1100000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-1100000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-1100000700 SET DORE=2.0
TC69-1100000800 DISPLAY IFUEL,IGNON,DORE
TC69-1100000900 QUALIFY ANOZ
TC69-1100001000 AT 360(3);SET DRAGEX=-1100.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-1260000000 PROCDEF TC69-126
TC69-1260000100 QUALIFY AHTXFER
TC69-1260000150 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=552.2,TIOUT=655.98,TOIN=552.2,TOOUT=581.0
TC69-1260000200 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-1260000300 QUALIFY ENGPGM
TC69-1260000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC69-1260000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-1260000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-1260000700 SET DORE=2.0
TC69-1260000800 DISPLAY IFUEL,IGNON,DORE
TC69-1260000900 QUALIFY ANOZ
TC69-1260001000 AT 360(3);SET DRAGEX=-1430.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-1590000000 PROCDEF TC69-159
TC69-1590000100 QUALIFY AHTXFER
TC69-1590000150 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=553.5,TIOUT=649.01,TOIN=553.5,TOOUT=581.76
TC69-1590000200 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-1590000300 QUALIFY ENGPGM
TC69-1590000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC69-1590000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-1590000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-1590000700 SET DORE=2.0
TC69-1590000800 DISPLAY IFUEL,IGNON,DORE
TC69-1590000900 QUALIFY ANOZ
TC69-1590001000 AT 360(3);SET DRAGEX=-1510.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC69-1690000000 PROCDEF TC69-169
TC69-1690000100 QUALIFY AHTXFER
TC69-1690000150 AT 20;DISPLAY TIIN,TIOUT,TOIN,TOOUT;SET TIIN=555.0,TIOUT=641.64,TOIN=555.0,TOOUT=580.3
TC69-1690000200 AT 40(4);DISPLAY TIIN,TIOUT,DTI,QTI,TOIN,TOOUT,DTO,QTO,QT
TC69-1690000300 QUALIFY ENGPGM
TC69-1690000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC69-1690000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC69-1690000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC69-1690000700 SET DORE=2.0
TC69-1690000800 DISPLAY IFUEL,IGNON,DORE
TC69-1690000900 QUALIFY ANOZ
TC69-1690001000 AT 360(3);SET DRAGEX=-1562.0/PSIATM;DISPLAY DRAGEX*PSIATM,DRAGEX,'DRAGEX INPUT THIS RUN'
TC71-0590000000 PROCDEF TC71-059
TC71-0590000100 QUALIFY AHTXFER
TC71-0590000200 AT 40(4);DISPLAY QT
TC71-0590000300 QUALIFY ENGPGM
TC71-0590000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC71-0590000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-0590000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-0590000700 SET DORE=2.0
TC71-0590000800 DISPLAY IFUEL,IGNON,DORE
TC71-0710000000 PROCDEF TC71-071
TC71-0710000100 QUALIFY AHTXFER
TC71-0710000200 AT 40(4);DISPLAY QT
TC71-0710000300 QUALIFY ENGPGM
TC71-0710000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC71-0710000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-0710000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-0710000700 SET DORE=2.0
TC71-0710000800 DISPLAY IFUEL,IGNON,DORE
TC71-0750000000 PROCDEF TC71-075
TC71-0750000100 QUALIFY AHTXFER
TC71-0750000200 AT 40(4);DISPLAY QT
TC71-0750000300 QUALIFY ENGPGM
TC71-0750000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC71-0750000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-0750000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-0750000700 SET DORE=2.0
TC71-0750000800 DISPLAY IFUEL,IGNON,DORE
TC71-0960000000 PROCDEF TC71-096
TC71-0960000100 QUALIFY AHTXFER
TC71-0960000200 AT 40(4);DISPLAY QT
TC71-0960000300 QUALIFY ENGPGM
TC71-0960000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC71-0960000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
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TC71-0960000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-0960000700 SET DORE=2.0
TC71-0960000800 DISPLAY IFUEL,IGNON,DORE
TC71-1110000000 PROCDEF TC71-111
TC71-1110000100 QUALIFY AHTXFER
TC71-1110000200 AT 40(4);DISPLAY QT
TC71-1110000300 QUALIFY ENGPGM
TC71-1110000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC71-1110000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1110000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1110000700 SET DORE=2.0
TC71-1110000800 DISPLAY IFUEL,IGNON,DORE
TC71-1530000000 PROCDEF TC71-153
TC71-1530000100 QUALIFY AHTXFER
TC71-1530000200 AT 40(4);DISPLAY QT
TC71-1530000300 QUALIFY ENGPGM
TC71-1530000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC71-1530000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1530000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1530000700 SET DORE=2.0
TC71-1530000800 DISPLAY IFUEL,IGNON,DORE
TC71-1570000000 PROCDEF TC71-157
TC71-1570000100 QUALIFY AHTXFER
TC71-1570000200 AT 40(4);DISPLAY QT
TC71-1570000300 QUALIFY ENGPGM
TC71-1570000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC71-1570000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1570000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1570000700 SET DORE=2.0
TC71-1570000800 DISPLAY IFUEL,IGNON,DORE
TC71-1770000000 PROCDEF TC71-177
TC71-1770000100 QUALIFY AHTXFER
TC71-1770000200 AT 40(4);DISPLAY QT
TC71-1770000300 QUALIFY ENGPGM
TC71-1770000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC71-1770000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1770000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1770000700 SET DORE=2.0
TC71-1770000800 DISPLAY IFUEL,IGNON,DORE
TC71-1810000000 PROCDEF TC71-181
TC71-1810000100 QUALIFY AHTXFER
TC71-1810000200 AT 40(4);DISPLAY QT
TC71-1810000300 QUALIFY ENGPGM
TC71-1810000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC71-1810000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1810000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1810000700 SET DORE=2.0
TC71-1810000800 DISPLAY IFUEL,IGNON,DORE
TC71-1970000000 PROCDEF TC71-197
TC71-1970000100 QUALIFY AHTXFER
TC71-1970000200 AT 40(4);DISPLAY QT
TC71-1970000300 QUALIFY ENGPGM
TC71-1970000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC71-1970000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1970000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1970000700 SET DORE=2.0
TC71-1970000800 DISPLAY IFUEL,IGNON,DORE
TC71-1980000000 PROCDEF TC71-198
TC71-1980000100 QUALIFY AHTXFER
TC71-1980000200 AT 40(4);DISPLAY QT
TC71-1980000300 QUALIFY ENGPGM
TC71-1980000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC71-1980000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC71-1980000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC71-1980000700 SET DORE=2.0
TC71-1980000800 DISPLAY IFUEL,IGNON,DORE
TC88-1310000000 PROCDEF TC88-131
TC88-1310000100 QUALIFY AHTXFER
TC88-1310000200 AT 40(4);DISPLAY QT
TC88-1310000300 QUALIFY ENGPGM
TC88-1310000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC88-1310000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC88-1310000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1310000700 SET DORE=2.0
TC88-1310000800 DISPLAY IFUEL,IGNON,DORE
TC88-1410000000 PROCDEF TC88-141
TC88-1410000100 QUALIFY AHTXFER
TC88-1410000200 AT 40(4);DISPLAY QT
TC88-1410000300 QUALIFY ENGPGM
TC88-1410000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC88-1410000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC88-1410000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1410000700 SET DORE=2.0
TC88-1410000800 DISPLAY IFUEL,IGNON,DORE
TC88-1590000000 PROCDEF TC88-159
TC88-1590000100 QUALIFY AHTXFER
TC88-1590000200 AT 40(4);DISPLAY QT
TC88-1590000300 QUALIFY ENGPGM
TC88-1590000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC88-1590000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC88-1590000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1590000700 SET DORE=2.0
TC88-1590000800 DISPLAY IFUEL,IGNON,DORE
TC88-1680000000 PROCDEF TC88-168
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TC88-1680000100 QUALIFY AHTXFER
TC88-1680000200 AT 40(4);DISPLAY QT
TC88-1680000300 QUALIFY ENGPGM
TC88-1680000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC88-1680000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC88-1680000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1680000700 SET DORE=2.0
TC88-1680000800 DISPLAY IFUEL,IGNON,DORE
TC88-1690000000 PROCDEF TC88-169
TC88-1690000100 QUALIFY AHTXFER
TC88-1690000200 AT 40(4);DISPLAY QT
TC88-1690000300 QUALIFY ENGPGM
TC88-1690000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC88-1690000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC88-1690000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1690000700 SET DORE=2.0
TC88-1690000800 DISPLAY IFUEL,IGNON,DORE
TC88-1700000000 PROCDEF TC88-170
TC88-1700000100 QUALIFY AHTXFER
TC88-1700000200 AT 40(4);DISPLAY QT
TC88-1700000300 QUALIFY ENGPGM
TC88-1700000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC88-1700000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC88-1700000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1700000700 SET DORE=2.0
TC88-1700000800 DISPLAY IFUEL,IGNON,DORE
TC88-1780000000 PROCDEF TC88-178
TC88-1780000100 QUALIFY AHTXFER
TC88-1780000200 AT 40(4);DISPLAY QT
TC88-1780000300 QUALIFY ENGPGM
TC88-1780000400 SET IFUEL(1)=1,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC88-1780000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC88-1780000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1780000700 SET DORE=2.0
TC88-1780000800 DISPLAY IFUEL,IGNON,DORE
TC88-1860000000 PROCDEF TC88-186
TC88-1860000100 QUALIFY AHTXFER
TC88-1860000200 AT 40(4);DISPLAY QT
TC88-1860000300 QUALIFY ENGPGM
TC88-1860000400 SET IFUEL(1)=1,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC88-1860000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC88-1860000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-1860000700 SET DORE=2.0
TC88-1860000800 DISPLAY IFUEL,IGNON,DORE
TC88-2010000000 PROCDEF TC88-201
TC88-2010000100 QUALIFY AHTXFER
TC88-2010000200 AT 40(4);DISPLAY QT
TC88-2010000300 QUALIFY ENGPGM
TC88-2010000400 SET IFUEL(1)=1,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC88-2010000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC88-2010000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-2010000700 SET DORE=2.0
TC88-2010000800 DISPLAY IFUEL,IGNON,DORE
TC88-2080000000 PROCDEF TC88-208
TC88-2080000100 QUALIFY AHTXFER
TC88-2080000200 AT 40(4);DISPLAY QT
TC88-2080000300 QUALIFY ENGPGM
TC88-2080000400 SET IFUEL(1)=1,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC88-2080000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC88-2080000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC88-2080000700 SET DORE=2.0
TC88-2080000800 DISPLAY IFUEL,IGNON,DORE
TC89-0700000000 PROCDEF TC89-070
TC89-0700000100 QUALIFY AHTXFER
TC89-0700000200 AT 40(4);DISPLAY QT
TC89-0700000300 QUALIFY ENGPGM
TC89-0700000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC89-0700000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-0700000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC89-0700000700 SET DORE=2.0
TC89-0700000800 DISPLAY IFUEL,IGNON,DORE
TC89-0940000000 PROCDEF TC89-094
TC89-0940000100 QUALIFY AHTXFER
TC89-0940000200 AT 40(4);DISPLAY QT
TC89-0940000300 QUALIFY ENGPGM
TC89-0940000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC89-0940000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-0940000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-0940000700 SET DORE=2.0
TC89-0940000800 DISPLAY IFUEL,IGNON,DORE
TC89-1060000000 PROCDEF TC89-106
TC89-1060000100 QUALIFY AHTXFER
TC89-1060000200 AT 40(4);DISPLAY QT
TC89-1060000300 QUALIFY ENGPGM
TC89-1060000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC89-1060000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1060000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1060000700 SET DORE=2.0
TC89-1060000800 DISPLAY IFUEL,IGNON,DORE
TC89-1140000000 PROCDEF TC89-114
TC89-1140000100 QUALIFY AHTXFER
TC89-1140000200 AT 40(4);DISPLAY QT
TC89-1140000300 QUALIFY ENGPGM
TC89-1140000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
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TC89-1140000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1140000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1140000700 SET DORE=2.0
TC89-1140000800 DISPLAY IFUEL,IGNON,DORE
TC89-1190000000 PROCDEF TC89-119
TC89-1190000100 QUALIFY AHTXFER
TC89-1190000200 AT 40(4);DISPLAY QT
TC89-1190000300 QUALIFY ENGPGM
TC89-1190000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC89-1190000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1190000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1190000700 SET DORE=2.0
TC89-1190000800 DISPLAY IFUEL,IGNON,DORE
TC89-1300000000 PROCDEF TC89-130
TC89-1300000100 QUALIFY AHTXFER
TC89-1300000200 AT 40(4);DISPLAY QT
TC89-1300000300 QUALIFY ENGPGM
TC89-1300000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC89-1300000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1300000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1300000700 SET DORE=2.0
TC89-1300000800 DISPLAY IFUEL,IGNON,DORE
TC89-1360000000 PROCDEF TC89-136
TC89-1360000100 QUALIFY AHTXFER
TC89-1360000200 AT 40(4);DISPLAY QT
TC89-1360000300 QUALIFY ENGPGM
TC89-1360000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC89-1360000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1360000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1360000700 SET DORE=2.0
TC89-1360000800 DISPLAY IFUEL,IGNON,DORE
TC89-1430000000 PROCDEF TC89-143
TC89-1430000100 QUALIFY AHTXFER
TC89-1430000200 AT 40(4);DISPLAY QT
TC89-1430000300 QUALIFY ENGPGM
TC89-1430000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC89-1430000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1430000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1430000700 SET DORE=2.0
TC89-1430000800 DISPLAY IFUEL,IGNON,DORE
TC89-1550000000 PROCDEF TC89-155
TC89-1550000100 QUALIFY AHTXFER
TC89-1550000200 AT 40(4);DISPLAY QT
TC89-1550000300 QUALIFY ENGPGM
TC89-1550000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC89-1550000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC89-1550000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC89-1550000700 SET DORE=2.0
TC89-1550000800 DISPLAY IFUEL,IGNON,DORE
TC90-0820000000 PROCDEF TC90-082
TC90-0820000100 QUALIFY AHTXFER
TC90-0820000200 AT 40(4);DISPLAY QT
TC90-0820000300 QUALIFY ENGPGM
TC90-0820000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC90-0820000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC90-0820000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC90-0820000700 SET DORE=2.0
TC90-0820000800 DISPLAY IFUEL,IGNON,DORE
TC90-0920000000 PROCDEF TC90-092
TC90-0920000100 QUALIFY AHTXFER
TC90-0920000200 AT 40(4);DISPLAY QT
TC90-0920000300 QUALIFY ENGPGM
TC90-0920000400 SET IFUEL(1)=5,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC90-0920000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC90-0920000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-0920000700 SET DORE=2.0
TC90-0920000800 DISPLAY IFUEL,IGNON,DORE
TC90-0990000000 PROCDEF TC90-099
TC90-0990000100 QUALIFY AHTXFER
TC90-0990000200 AT 40(4);DISPLAY QT
TC90-0990000300 QUALIFY ENGPGM
TC90-0990000400 SET IFUEL(1)=5,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC90-0990000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC90-0990000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-0990000700 SET DORE=2.0
TC90-0990000800 DISPLAY IFUEL,IGNON,DORE
TC90-1040000000 PROCDEF TC90-104
TC90-1040000100 QUALIFY AHTXFER
TC90-1040000200 AT 40(4);DISPLAY QT
TC90-1040000300 QUALIFY ENGPGM
TC90-1040000400 SET IFUEL(1)=5,IFUEL(2)=2,IFUEL(3)=1,IFUEL(4)=0
TC90-1040000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC90-1040000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-1040000700 SET DORE=2.0
TC90-1040000800 DISPLAY IFUEL,IGNON,DORE
TC90-1190000000 PROCDEF TC90-119
TC90-1190000100 QUALIFY AHTXFER
TC90-1190000200 AT 40(4);DISPLAY QT
TC90-1190000300 QUALIFY ENGPGM
TC90-1190000400 SET IFUEL(1)=5,IFUEL(2)=2,IFUEL(3)=1,IFUEL(4)=0
TC90-1190000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC90-1190000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-1190000700 SET DORE=2.0
TC90-1190000800 DISPLAY IFUEL,IGNON,DORE
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TC90-1240000000 PROCDEF TC90-124
TC90-1240000100 QUALIFY AHTXFER
TC90-1240000200 AT 40(4);DISPLAY QT
TC90-1240000300 QUALIFY ENGPGM
TC90-1240000400 SET IFUEL(1)=5,IFUEL(2)=2,IFUEL(3)=1,IFUEL(4)=0
TC90-1240000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC90-1240000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-1240000700 SET DORE=2.0
TC90-1240000800 DISPLAY IFUEL,IGNON,DORE
TC90-1370000000 PROCDEF TC90-137
TC90-1370000100 QUALIFY AHTXFER
TC90-1370000200 AT 40(4);DISPLAY QT
TC90-1370000300 QUALIFY ENGPGM
TC90-1370000400 SET IFUEL(1)=5,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC90-1370000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC90-1370000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-1370000700 SET DORE=2.0
TC90-1370000800 DISPLAY IFUEL,IGNON,DORE
TC90-1380000000 PROCDEF TC90-138
TC90-1380000100 QUALIFY AHTXFER
TC90-1380000200 AT 40(4);DISPLAY QT
TC90-1380000300 QUALIFY ENGPGM
TC90-1380000400 SET IFUEL(1)=5,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC90-1380000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC90-1380000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC90-1380000700 SET DORE=2.0
TC90-1380000800 DISPLAY IFUEL,IGNON,DORE
TC91-0740000000 PROCDEF TC91-074
TC91-0740000100 QUALIFY AHTXFER
TC91-0740000200 AT 40(4);DISPLAY QT
TC91-0740000300 QUALIFY ENGPGM
TC91-0740000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-0740000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC91-0740000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-0740000700 SET DORE=2.0
TC91-0740000800 DISPLAY IFUEL,IGNON,DORE
TC91-0790000000 PROCDEF TC91-079
TC91-0790000100 QUALIFY AHTXFER
TC91-0790000200 AT 40(4);DISPLAY QT
TC91-0790000300 QUALIFY ENGPGM
TC91-0790000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-0790000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC91-0790000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-0790000700 SET DORE=2.0
TC91-0790000800 DISPLAY IFUEL,IGNON,DORE
TC91-0860000000 PROCDEF TC91-086
TC91-0860000100 QUALIFY AHTXFER
TC91-0860000200 AT 40(4);DISPLAY QT
TC91-0860000300 QUALIFY ENGPGM
TC91-0860000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC91-0860000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC91-0860000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC91-0860000700 SET DORE=2.0
TC91-0860000800 DISPLAY IFUEL,IGNON,DORE
TC91-0900000000 PROCDEF TC91-090
TC91-0900000100 QUALIFY AHTXFER
TC91-0900000200 AT 40(4);DISPLAY QT
TC91-0900000300 QUALIFY ENGPGM
TC91-0900000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-0900000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC91-0900000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-0900000700 SET DORE=2.0
TC91-0900000800 DISPLAY IFUEL,IGNON,DORE
TC91-1050000000 PROCDEF TC91-105
TC91-1050000100 QUALIFY AHTXFER
TC91-1050000200 AT 40(4);DISPLAY QT
TC91-1050000300 QUALIFY ENGPGM
TC91-1050000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-1050000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC91-1050000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-1050000700 SET DORE=2.0
TC91-1050000800 DISPLAY IFUEL,IGNON,DORE
TC91-1190000000 PROCDEF TC91-119
TC91-1190000100 QUALIFY AHTXFER
TC91-1190000200 AT 40(4);DISPLAY QT
TC91-1190000300 QUALIFY ENGPGM
TC91-1190000400 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-1190000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC91-1190000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-1190000700 SET DORE=2.0
TC91-1190000800 DISPLAY IFUEL,IGNON,DORE
TC91-1280000000 PROCDEF TC91-128
TC91-1280000100 QUALIFY AHTXFER
TC91-1280000200 AT 40(4);DISPLAY QT
TC91-1280000300 QUALIFY ENGPGM
TC91-1280000400 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-1280000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC91-1280000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-1280000700 SET DORE=2.0
TC91-1280000800 DISPLAY IFUEL,IGNON,DORE
TC91-1310000000 PROCDEF TC91-131
TC91-1310000100 QUALIFY AHTXFER
TC91-1310000200 AT 40(4);DISPLAY QT
TC91-1310000300 QUALIFY ENGPGM
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TC91-1310000400 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-1310000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC91-1310000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-1310000700 SET DORE=2.0
TC91-1310000800 DISPLAY IFUEL,IGNON,DORE
TC91-1340000000 PROCDEF TC91-134
TC91-1340000100 QUALIFY AHTXFER
TC91-1340000200 AT 40(4);DISPLAY QT
TC91-1340000300 QUALIFY ENGPGM
TC91-1340000400 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-1340000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC91-1340000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-1340000700 SET DORE=4.0
TC91-1340000800 DISPLAY IFUEL,IGNON,DORE
TC91-1410000000 PROCDEF TC91-141
TC91-1410000100 QUALIFY AHTXFER
TC91-1410000200 AT,40(4);DISPLAY QT
TC91-1410000300 QUALIFY ENGPGM
TC91-1410000400 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC91-1410000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC91-1410000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC91-1410000700 SET DORE=2.0
TC91-1410000800 DISPLAY IFUEL,IGNON,DORE
TC92-0760000000 PROCDEF TC92-076
TC92-0760000100 QUALIFY AHTXFER
TC92-0760000200 AT 40(4);DISPLAY QT
TC92-0760000300 QUALIFY ENGPGM
TC92-0760000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC92-0760000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC92-0760000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC92-0760000700 SET DORE=2.0
TC92-0760000800 DISPLAY IFUEL,IGNON,DORE
TC92-0760000900 QUALIFY AINLETT
TC92-0760001000 AT 3(2);SET VAL(11,INITRO)=0.768,VAL(11,IOXY)=0.232;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
TC92-0970000000 PROCDEF TC92-097
TC92-0970000100 QUALIFY AHTXFER
TC92-0970000200 AT 40(4);DISPLAY QT
TC92-0970000300 QUALIFY ENGPGM
TC92-0970000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC92-0970000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC92-0970000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC92-0970000700 SET DORE=2.0
TC92-0970000800 DISPLAY IFUEL,IGNON,DORE
TC92-0970000900 QUALIFY AINLETT
TC92-0970001000 AT 3(2);SET VAL(11,INITRO)=0.769,VAL(11,IOXY)=0.231;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
TC92-1210000000 PROCDEF TC92-121
TC92-1210000100 QUALIFY AHTXFER
TC92-1210000200 AT 40(4);DISPLAY QT
TC92-1210000300 QUALIFY ENGPGM
TC92-1210000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC92-1210000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC92-1210000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC92-1210000700 SET DORE=2.0
TC92-1210000800 DISPLAY IFUEL,IGNON,DORE
TC92-1210000900 QUALIFY AINLETT
TC92-1210001000 AT 3(2);SET VAL(11,INITRO)=0.765,VAL(11,IOXY)=0.235;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
TC92-1440000000 PROCDEF TC92-144
TC92-1440000100 QUALIFY AHTXFER
TC92-1440000200 AT 40(4);DISPLAY QT
TC92-1440000300 QUALIFY ENGPGM
TC92-1440000400 SET IFUEL(1)=0,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC92-1440000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC92-1440000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC92-1440000700 SET DORE=2.0
TC92-1440000800 DISPLAY IFUEL,IGNON,DORE
TC92-1440000900 QUALIFY AINLETT
TC92-1440001000 AT 3(2);SET VAL(11,INITRO)=0.759,VAL(11,IOXY)=0.241;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
TC92-1910000000 PROCDEF TC92-191
TC92-1910000100 QUALIFY AHTXFER
TC92-1910000200 AT 40(4);DISPLAY QT
TC92-1910000300 QUALIFY ENGPGM
TC92-1910000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC92-1910000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC92-1910000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC92-1910000700 SET DORE=2.0
TC92-1910000800 DISPLAY IFUEL,IGNON,DORE
TC92-1910000900 QUALIFY AINLETT
TC92-1910001000 AT 3(2);SET VAL(11,INITRO)=0.805,VAL(11,IOXY)=0.195;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
TC92-2160000000 PROCDEF TC92-216
TC92-2160000100 QUALIFY AHTXFER
TC92-2160000200 AT 40(4);DISPLAY QT
TC92-2160000300 QUALIFY ENGPGM
TC92-2160000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC92-2160000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=3
TC92-2160000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC92-2160000700 SET DORE=2.0
TC92-2160000800 DISPLAY IFUEL,IGNON,DORE
TC92-2160000900 QUALIFY AINLETT
TC92-2160001000 AT 3(2);SET VAL(11,INITRO)=0.800,VAL(11,IOXY)=0.200;DISPLAY VAL(11,INITRO),VAL(11,IOXY)
TC93-0390000000 PROCDEF TC93-039
TC93-0390000100 QUALIFY AHTXFER
TC93-0390000200 AT 40(4);DISPLAY QT
TC93-0390000300 QUALIFY ENGPGM
TC93-0390000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
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APPENDIX B (Con't)

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TC93-0390000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC93-0390000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC93-0390000700 SET DORE=2.0
TC93-0390000800 DISPLAY IFUEL,IGNON,DORE
TC93-0390000900 QUALIFY ACMBSTR
TC93-0390001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC93-0480000000 PROCDEF TC93-048
TC93-0480000100 QUALIFY AHTXFER
TC93-0480000200 AT 40(4);DISPLAY QT
TC93-0480000300 QUALIFY ENGPGM
TC93-0480000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC93-0480000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC93-0480000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC93-0480000700 SET DORE=2.0
TC93-0480000800 DISPLAY IFUEL,IGNON,DORE
TC93-0570000000 PROCDEF TC93-057
TC93-0570000100 QUALIFY AHTXFER
TC93-0570000200 AT 40(4);DISPLAY QT
TC93-0570000300 QUALIFY ENGPGM
TC93-0570000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC93-0570000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC93-0570000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC93-0570000700 SET DORE=2.0
TC93-0570000800 DISPLAY IFUEL,IGNON,DORE
TC93-0570000900 QUALIFY ACMBSTR
TC93-0570001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC93-0660000000 PROCDEF TC93-066
TC93-0660000100 QUALIFY AHTXFER
TC93-0660000200 AT 40(4);DISPLAY QT
TC93-0660000300 QUALIFY ENGPGM
TC93-0660000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC93-0660000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC93-0660000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC93-0660000700 SET DORE=2.0
TC93-0660000800 DISPLAY IFUEL,IGNON,DORE
TC93-0660000900 QUALIFY ACMBSTR
TC93-0660001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC93-0710000000 PROCDEF TC93-071
TC93-0710000100 QUALIFY AHTXFER
TC93-0710000200 AT 40(4);DISPLAY QT
TC93-0710000300 QUALIFY ENGPGM
TC93-0710000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC93-0710000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC93-0710000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC93-0710000700 SET DORE=2.0
TC93-0710000800 DISPLAY IFUEL,IGNON,DORE
TC93-0710000900 QUALIFY ACMBSTR
TC93-0710001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC93-0840000000 PROCDEF TC93-084
TC93-0840000100 QUALIFY AHTXFER
TC93-0840000200 AT 40(4);DISPLAY QT
TC93-0840000300 QUALIFY ENGPGM
TC93-0840000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC93-0840000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC93-0840000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC93-0840000700 SET DORE=2.0
TC93-0840000800 DISPLAY IFUEL,IGNON,DORE
TC93-0840000900 QUALIFY ACMBSTR
TC93-0840001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC93-0930000000 PROCDEF TC93-093
TC93-0930000100 QUALIFY AHTXFER
TC93-0930000200 AT 40(4);DISPLAY QT
TC93-0930000300 QUALIFY ENGPGM
TC93-0930000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC93-0930000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC93-0930000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC93-0930000700 SET DORE=2.0
TC93-0930000800 DISPLAY IFUEL,IGNON,DORE
TC93-0930000900 QUALIFY ACMBSTR
TC93-0930001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-0330000000 PROCDEF TC94-033
TC94-0330000100 QUALIFY AHTXFER
TC94-0330000200 AT 40(4);DISPLAY QT
TC94-0330000300 QUALIFY ENGPGM
TC94-0330000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC94-0330000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-0330000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC94-0330000700 SET DORE=2.0
TC94-0330000800 DISPLAY IFUEL,IGNON,DORE
TC94-0330000900 QUALIFY ACMBSTR
TC94-0330001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-0400000000 PROCDEF TC94-040
TC94-0400000100 QUALIFY AHTXFER
TC94-0400000200 AT 40(4);DISPLAY QT
TC94-0400000300 QUALIFY ENGPGM
TC94-0400000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC94-0400000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-0400000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-0400000700 SET DORE=2.0
TC94-0400000800 DISPLAY IFUEL,IGNON,DORE
TC94-0510000000 PROCDEF TC94-051
TC94-0510000100 QUALIFY AHTXFER
TC94-0510000200 AT 40(4);DISPLAY QT
TC94-0510000300 QUALIFY ENGPGM
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TC94-0510000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC94-0510000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC94-0510000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-0510000700 SET DORE=2.0
TC94-0510000800 DISPLAY IFUEL,IGNON,DORE
TC94-0510000900 QUALIFY ACMBSTR
TC94-0510001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-0590000000 PROCDEF TC94-059
TC94-0590000100 QUALIFY AHTXFER
TC94-0590000200 AT 40(4);DISPLAY QT
TC94-0590000300 QUALIFY ENGPGM
TC94-0590000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC94-0590000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC94-0590000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-0590000700 SET DORE=2.0
TC94-0590000800 DISPLAY IFUEL,IGNON,DORE
TC94-0590000900 QUALIFY ACMBSTR
TC94-0590001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-0660000000 PROCDEF TC94-066
TC94-0660000100 QUALIFY AHTXFER
TC94-0660000200 AT 40(4);DISPLAY QT
TC94-0660000300 QUALIFY ENGPGM
TC94-0660000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC94-0660000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC94-0660000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-0660000700 SET DORE=2.0
TC94-0660000800 DISPLAY IFUEL,IGNON,DORE
TC94-0660000900 QUALIFY ACMBSTR
TC94-0660001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-0840000000 PROCDEF TC94-084
TC94-0840000100 QUALIFY AHTXFER
TC94-0840000200 AT 40(4);DISPLAY QT
TC94-0840000300 QUALIFY ENGPGM
TC94-0840000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC94-0840000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC94-0840000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-0840000700 SET DORE=2.0
TC94-0840000800 DISPLAY IFUEL,IGNON,DORE
TC94-0840000900 QUALIFY ACMBSTR
TC94-0840001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-1220000000 PROCDEF TC94-122
TC94-1220000100 QUALIFY AHTXFER
TC94-1220000200 AT 40(4);DISPLAY QT
TC94-1220000300 QUALIFY ENGPGM
TC94-1220000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC94-1220000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-1220000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-1220000700 SET DORE=2.0
TC94-1220000800 DISPLAY IFUEL,IGNON,DORE
TC94-1230000000 PROCDEF TC94-123
TC94-1230000100 QUALIFY AHTXFER
TC94-1230000200 AT 40(4);DISPLAY QT
TC94-1230000300 QUALIFY ENGPGM
TC94-1230000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC94-1230000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-1230000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-1230000700 SET DORE=2.0
TC94-1230000800 DISPLAY IFUEL,IGNON,DORE
TC94-1230000900 QUALIFY ACMBSTR
TC94-1230001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-1270000000 PROCDEF TC94-127
TC94-1270000100 QUALIFY AHTXFER
TC94-1270000200 AT 40(4);DISPLAY QT
TC94-1270000300 QUALIFY ENGPGM
TC94-1270000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC94-1270000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC94-1270000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-1270000700 SET DORE=2.0
TC94-1270000800 DISPLAY IFUEL,IGNON,DORE
TC94-1270000900 QUALIFY ACMBSTR
TC94-1270001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-1410000000 PROCDEF TC94-141
TC94-1410000100 QUALIFY AHTXFER
TC94-1410000200 AT 40(4);DISPLAY QT
TC94-1410000300 QUALIFY ENGPGM
TC94-1410000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC94-1410000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-1410000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-1410000700 SET DORE=2.0
TC94-1410000800 DISPLAY IFUEL,IGNON,DORE
TC94-1430000000 PROCDEF TC94-143
TC94-1430000100 QUALIFY AHTXFER
TC94-1430000200 AT 40(4);DISPLAY QT
TC94-1430000300 QUALIFY ENGPGM
TC94-1430000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC94-1430000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-1430000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-1430000700 SET DORE=2.0
TC94-1430000800 DISPLAY IFUEL,IGNON,DORE
TC94-1430000900 QUALIFY ACMBSTR
TC94-1430001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC94-1440000000 PROCDEF TC94-144
TC94-1440000100 QUALIFY AHTXFER
TC94-1440000200 AT 40(4);DISPLAY QT
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TC94-1440000300 QUALIFY ENGPGM
TC94-1440000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC94-1440000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC94-1440000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC94-1440000700 SET DORE=2.0
TC94-1440000800 DISPLAY IFUEL,IGNON,DORE
TC95-0320000000 PROCDEF TC95-032
TC95-0320000100 QUALIFY AHTXFER
TC95-0320000200 AT 40(4);DISPLAY QT
TC95-0320000300 QUALIFY ENGPGM
TC95-0320000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC95-0320000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-0320000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC95-0320000700 SET DORE=2.0
TC95-0320000800 DISPLAY IFUEL,IGNON,DORE
TC95-0320000900 QUALIFY ACMBSTR
TC95-0320001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC95-0440000000 PROCDEF TC95-044
TC95-0440000100 QUALIFY AHTXFER
TC95-0440000200 AT 40(4);DISPLAY QT
TC95-0440000300 QUALIFY ENGPGM
TC95-0440000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC95-0440000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-0440000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-0440000700 SET DORE=2.0
TC95-0440000800 DISPLAY IFUEL,IGNON,DORE
TC95-0660000000 PROCDEF TC95-066
TC95-0660000100 QUALIFY AHTXFER
TC95-0660000200 AT 40(4);DISPLAY QT
TC95-0660000300 QUALIFY ENGPGM
TC95-0660000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC95-0660000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-0660000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-0660000700 SET DORE=2.0
TC95-0660000800 DISPLAY IFUEL,IGNON,DORE
TC95-0760000000 PROCDEF TC95-076
TC95-0760000100 QUALIFY AHTXFER
TC95-0760000200 AT 40(4);DISPLAY QT
TC95-0760000300 QUALIFY ENGPGM
TC95-0760000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC95-0760000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-0760000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-0760000700 SET DORE=2.0
TC95-0760000800 DISPLAY IFUEL,IGNON,DORE
TC95-0990000000 PROCDEF TC95-099
TC95-0990000100 QUALIFY AHTXFER
TC95-0990000200 AT 40(4);DISPLAY QT
TC95-0990000300 QUALIFY ENGPGM
TC95-0990000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-0990000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-0990000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-0990000700 SET DORE=2.0
TC95-0990000800 DISPLAY IFUEL,IGNON,DORE
TC95-1060000000 PROCDEF TC95-106
TC95-1060000100 QUALIFY AHTXFER
TC95-1060000200 AT 40(4);DISPLAY QT
TC95-1060000300 QUALIFY ENGPGM
TC95-1060000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-1060000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1060000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-1060000700 SET DORE=2.0
TC95-1060000800 DISPLAY IFUEL,IGNON,DORE
TC95-1150000000 PROCDEF TC95-115
TC95-1150000100 QUALIFY AHTXFER
TC95-1150000200 AT 40(4);DISPLAY QT
TC95-1150000300 QUALIFY ENGPGM
TC95-1150000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-1150000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1150000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-1150000700 SET DORE=2.0
TC95-1150000800 DISPLAY IFUEL,IGNON,DORE
TC95-1230000000 PROCDEF TC95-123
TC95-1230000100 QUALIFY AHTXFER
TC95-1230000200 AT 40(4);DISPLAY QT
TC95-1230000300 QUALIFY ENGPGM
TC95-1230000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-1230000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1230000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-1230000700 SET DORE=2.0
TC95-1230000800 DISPLAY IFUEL,IGNON,DORE
TC95-1300000000 PROCDEF TC95-130
TC95-1300000100 QUALIFY AHTXFER
TC95-1300000200 AT 40(4);DISPLAY QT
TC95-1300000300 QUALIFY ENGPGM
TC95-1300000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-1300000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1300000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-1300000700 SET DORE=2.0
TC95-1300000800 DISPLAY IFUEL,IGNON,DORE
TC95-1420000000 PROCDEF TC95-142
TC95-1420000100 QUALIFY AHTXFER
TC95-1420000200 AT 40(4);DISPLAY QT
TC95-1420000300 QUALIFY ENGPGM
TC95-1420000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
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TC95-1420000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1420000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-1420000700 SET DORE=2.0
TC95-1420000800 DISPLAY IFUEL,IGNON,DORE
TC95-1560000000 PROCDEF TC95-156
TC95-1560000100 QUALIFY AHTXFER
TC95-1560000200 AT 40(4);DISPLAY QT
TC95-1560000300 QUALIFY ENGPGM
TC95-1560000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC95-1560000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1560000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC95-1560000700 SET DORE=2.0
TC95-1560000800 DISPLAY IFUEL,IGNON,DORE
TC95-1560000900 QUALIFY ACMBSTR
TC95-1560001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC95-1690000000 PROCDEF TC95-169
TC95-1690000100 QUALIFY AHTXFER
TC95-1690000200 AT 40(4);DISPLAY QT
TC95-1690000300 QUALIFY ENGPGM
TC95-1690000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=4
TC95-1690000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-1690000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-1690000700 SET DORE=2.0
TC95-1690000800 DISPLAY IFUEL,IGNON,DORE
TC95-2100000000 PROCDEF TC95-210
TC95-2100000100 QUALIFY AHTXFER
TC95-2100000200 AT 40(4);DISPLAY QT
TC95-2100000300 QUALIFY ENGPGM
TC95-2100000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-2100000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-2100000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-2100000700 SET DORE=2.0
TC95-2100000800 DISPLAY IFUEL,IGNON,DORE
TC95-2330000000 PROCDEF TC95-233
TC95-2330000100 QUALIFY AHTXFER
TC95-2330000200 AT 40(4);DISPLAY QT
TC95-2330000300 QUALIFY ENGPGM
TC95-2330000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-2330000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-2330000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-2330000700 SET DORE=2.0
TC95-2330000800 DISPLAY IFUEL,IGNON,DORE
TC95-2410000000 PROCDEF TC95-241
TC95-2410000100 QUALIFY AHTXFER
TC95-2410000200 AT 40(4);DISPLAY QT
TC95-2410000300 QUALIFY ENGPGM
TC95-2410000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC95-2410000500 SET IFUEL(5)=5,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC95-2410000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC95-2410000700 SET DORE=2.0
TC95-2410000800 DISPLAY IFUEL,IGNON,DORE
TC96-0340000000 PROCDEF TC96-034
TC96-0340000100 QUALIFY AHTXFER
TC96-0340000200 AT)40(4);DISPLAY QT
TC96-0340000300 QUALIFY ENGPGM
TC96-0340000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-0340000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-0340000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC96-0340000700 SET DORE=2.0
TC96-0340000800 DISPLAY IFUEL,IGNON,DORE
TC96-0340000900 QUALIFY ACMBSTR
TC96-0340001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-0420000000 PROCDEF TC96-042
TC96-0420000100 QUALIFY AHTXFER
TC96-0420000200 AT 40(4);DISPLAY QT
TC96-0420000300 QUALIFY ENGPGM
TC96-0420000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC96-0420000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-0420000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-0420000700 SET DORE=2.0
TC96-0420000800 DISPLAY IFUEL,IGNON,DORE
TC96-0520000000 PROCDEF TC96-052
TC96-0520000100 QUALIFY AHTXFER
TC96-0520000200 AT 40(4);DISPLAY QT
TC96-0520000300 QUALIFY ENGPGM
TC96-0520000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC96-0520000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC96-0520000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-0520000700 SET DORE=2.0
TC96-0520000800 DISPLAY IFUEL,IGNON,DORE
TC96-0520000900 QUALIFY ACMBSTR
TC96-0520001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-0690000000 PROCDEF TC96-069
TC96-0690000100 QUALIFY AHTXFER
TC96-0690000200 AT 40(4);DISPLAY QT
TC96-0690000300 QUALIFY ENGPGM
TC96-0690000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-0690000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC96-0690000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-0690000700 SET DORE=2.0
TC96-0690000800 DISPLAY IFUEL,IGNON,DORE
TC96-0690000900 QUALIFY ACMBSTR
TC96-0690001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-0760000000 PROCDEF TC96-076
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TC96-0760000100 QUALIFY AHTXFER
TC96-0760000200 AT 40(4);DISPLAY QT
TC96-0760000300 QUALIFY ENGPGM
TC96-0760000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-0760000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC96-0760000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-0760000700 SET DORE=2.0
TC96-0760000800 DISPLAY IFUEL,IGNON,DORE
TC96-0760000900 QUALIFY ACMBSTR
TC96-0760001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-0850000000 PROCDEF TC96-085
TC96-0850000100 QUALIFY AHTXFER
TC96-0850000200 AT 40(4);DISPLAY QT
TC96-0850000300 QUALIFY ENGPGM
TC96-0850000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-0850000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC96-0850000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-0850000700 SET DORE=2.0
TC96-0850000800 DISPLAY IFUEL,IGNON,DORE
TC96-0850000900 QUALIFY ACMBSTR
TC96-0850001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-1560000000 PROCDEF TC96-156
TC96-1560000100 QUALIFY AHTXFER
TC96-1560000200 AT 40(4);DISPLAY QT
TC96-1560000300 QUALIFY ENGPGM
TC96-1560000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-1560000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-1560000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-1560000700 SET DORE=2.0
TC96-1560000800 DISPLAY IFUEL,IGNON,DORE
TC96-1560000900 QUALIFY ACMBSTR
TC96-1560001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-1780000000 PROCDEF TC96-178
TC96-1780000100 QUALIFY AHTXFER
TC96-1780000200 AT 40(4);DISPLAY QT
TC96-1780000300 QUALIFY ENGPGM
TC96-1780000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC96-1780000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-1780000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-1780000700 SET DORE=2.0
TC96-1780000800 DISPLAY IFUEL,IGNON,DORE
TC96-1900000000 PROCDEF TC96-190
TC96-1900000100 QUALIFY AHTXFER
TC96-1900000200 AT 40(4);DISPLAY QT
TC96-1900000300 QUALIFY ENGPGM
TC96-1900000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC96-1900000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-1900000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-1900000700 SET DORE=2.0
TC96-1900000800 DISPLAY IFUEL,IGNON,DORE
TC96-1910000000 PROCDEF TC96-191
TC96-1910000100 QUALIFY AHTXFER
TC96-1910000200 AT 40(4);DISPLAY QT
TC96-1910000300 QUALIFY ENGPGM
TC96-1910000400 SET IFUEL(1)=1,IFUEL(2)=2,IFUEL(3)=0,IFUEL(4)=0
TC96-1910000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-1910000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-1910000700 SET DORE=2.0
TC96-1910000800 DISPLAY IFUEL,IGNON,DORE
TC96-2120000000 PROCDEF TC96-212
TC96-2120000100 QUALIFY AHTXFER
TC96-2120000200 AT 40(4);DISPLAY QT
TC96-2120000300 QUALIFY ENGPGM
TC96-2120000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-2120000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC96-2120000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC96-2120000700 SET DORE=2.0
TC96-2120000800 DISPLAY IFUEL,IGNON,DORE
TC96-2120000900 QUALIFY ACMBSTR
TC96-2120001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC96-2330000000 PROCDEF TC96-233
TC96-2330000100 QUALIFY AHTXFER
TC96-2330000200 AT 40(4);DISPLAY QT
TC96-2330000300 QUALIFY ENGPGM
TC96-2330000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC96-2330000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC96-2330000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC96-2330000700 SET DORE=2.0
TC96-2330000800 DISPLAY IFUEL,IGNON,DORE
TC96-2330000900 QUALIFY ACMBSTR
TC96-2330001000 AT 350(3);SET XCTP=XCT;DISPLAY XSLE,XCT,XCTP,XSTE,'SUBSONIC COMBUSTION'
TC97-0290000000 PROCDEF TC97-029
TC97-0290000100 QUALIFY AHTXFER
TC97-0290000200 AT 40(4);DISPLAY QT
TC97-0290000300 QUALIFY ENGPGM
TC97-0290000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-0290000500 SET IFUEL(5)=0,IFUEL(6)=0,IFUEL(7)=0,IFUEL(8)=0
TC97-0290000600 SET IGNON(1)=0,IGNON(2)=0,IGNON(3)=0
TC97-0290000700 SET DORE=2.0
TC97-0290000800 DISPLAY IFUEL,IGNON,DORE
TC97-0520000000 PROCDEF TC97-052
TC97-0520000100 QUALIFY AHTXFER
TC97-0520000200 AT 40(4);DISPLAY QT
TC97-0520000300 QUALIFY ENGPGM
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TC97-0520000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC97-0520000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-0520000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-0520000700 SET DORE=2.0
TC97-0520000800 DISPLAY IFUEL,IGNON,DORE
TC97-0570000000 PROCDEF TC97-057
TC97-0570000100 QUALIFY AHTXFER
TC97-0570000200 AT 40(4);DISPLAY QT
TC97-0570000300 QUALIFY ENGPGM
TC97-0570000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC97-0570000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-0570000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-0570000700 SET DORE=2.0
TC97-0570000800 DISPLAY IFUEL,IGNON,DORE
TC97-0810000000 PROCDEF TC97-081
TC97-0810000100 QUALIFY AHTXFER
TC97-0810000200 AT 40(4);DISPLAY QT
TC97-0810000300 QUALIFY ENGPGM
TC97-0810000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-0810000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-0810000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-0810000700 SET DORE=2.0
TC97-0810000800 DISPLAY IFUEL,IGNON,DORE
TC97-1020000000 PROCDEF TC97-102
TC97-1020000100 QUALIFY AHTXFER
TC97-1020000200 AT 40(4);DISPLAY QT
TC97-1020000300 QUALIFY ENGPGM
TC97-1020000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-1020000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-1020000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-1020000700 SET DORE=2.0
TC97-1020000800 DISPLAY IFUEL,IGNON,DORE
TC97-1280000000 PROCDEF TC97-128
TC97-1280000100 QUALIFY AHTXFER
TC97-1280000200 AT 40(4);DISPLAY QT
TC97-1280000300 QUALIFY ENGPGM
TC97-1280000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-1280000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-1280000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-1280000700 SET DORE=2.0
TC97-1280000800 DISPLAY IFUEL,IGNON,DORE
TC97-1590000000 PROCDEF TC97-159
TC97-1590000100 QUALIFY AHTXFER
TC97-1590000200 AT 40(4);DISPLAY QT
TC97-1590000300 QUALIFY ENGPGM
TC97-1590000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC97-1590000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-1590000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-1590000700 SET DORE=2.0
TC97-1590000800 DISPLAY IFUEL,IGNON,DORE
TC97-1800000000 PROCDEF TC97-180
TC97-1800000100 QUALIFY AHTXFER
TC97-1800000200 AT 40(4);DISPLAY QT
TC97-1800000300 QUALIFY ENGPGM
TC97-1800000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=4
TC97-1800000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-1800000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-1800000700 SET DORE=2.0
TC97-1800000800 DISPLAY IFUEL,IGNON,DORE
TC97-2070000000 PROCDEF TC97-207
TC97-2070000100 QUALIFY AHTXFER
TC97-2070000200 AT 40(4);DISPLAY QT
TC97-2070000300 QUALIFY ENGPGM
TC97-2070000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-2070000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-2070000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-2070000700 SET DORE=2.0
TC97-2070000800 DISPLAY IFUEL,IGNON,DORE
TC97-2310000000 PROCDEF TC97-231
TC97-2310000100 QUALIFY AHTXFER
TC97-2310000200 AT 40(4);DISPLAY QT
TC97-2310000300 QUALIFY ENGPGM
TC97-2310000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-2310000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-2310000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-2310000700 SET DORE=2.0
TC97-2310000800 DISPLAY IFUEL,IGNON,DORE
TC97-2360000000 PROCDEF TC97-236
TC97-2360000100 QUALIFY AHTXFER
TC97-2360000200 AT 40(4);DISPLAY QT
TC97-2360000300 QUALIFY ENGPGM
TC97-2360000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-2360000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-2360000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-2360000700 SET DORE=2.0
TC97-2360000800 DISPLAY IFUEL,IGNON,DORE
TC97-2400000000 PROCDEF TC97-240
TC97-2400000100 QUALIFY AHTXFER
TC97-2400000200 AT 40(4);DISPLAY QT
TC97-2400000300 QUALIFY ENGPGM
TC97-2400000400 SET IFUEL(1)=0,IFUEL(2)=0,IFUEL(3)=0,IFUEL(4)=0
TC97-2400000500 SET IFUEL(5)=0,IFUEL(6)=5,IFUEL(7)=5,IFUEL(8)=0
TC97-2400000600 SET IGNON(1)=0,IGNON(2)=1,IGNON(3)=0
TC97-2400000700 SET DORE=2.0
TC97-2400000800 DISPLAY IFUEL,IGNON,DORE
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TH20     0000000 PROCDEF TH20
TH20     0000100 QUALIFY CONVTA
TH20     0000150 DISPLAY HV(288),HV(362),MV(370),HV(371),HV(372),HV(373),MV(374),MV(380),MV(381)
TH20     C000200 DISPLAY CH(288),CH(362),CH(370),CH(371),CH(372),CH(373),CH(374),CH(380),CH(381)
TIME     C000000 PROCDEF TIME
TIME     0000100 QUALIFY AOUT1
TIME     0000200 DISPLAY ILAPSE
TUNNOPT  0000000 PROCDEF TUNNOPT
TUNNOPT  0000100 PARAM $1
TUNNOPT  0000200 QUALIFY AINLETT
TUNNOPT  0000300 AT 2000(3);SET IWTOPT=$1;DISPLAY IWTOPT
TURKEY   0000000 PROCDEF TURKEY
TURKEY   0000100 PARAM NUM
TURKEY   0000200 DEFAULT SYSINX=E
TURKEY   0000300 PROCDEF CONUM
TURKEY   0000400 INSERT LAST
TURKEY   0000500 KDOSEL 399
TURKEY   0000600 _END
TURKEY   0000700 DEFAULT SYSINX=G
UPDLIB   0000000 PROCDEF UPDLIB
UPDLIB   0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10,$11,$12,$13,$14,$15
UPDLIB   0000200 DSS? $1
UPDLIB   000030C POD? $1,,Y
UPDLIB   0000400 IF '$2'¬=' ';UPDLIB $2,$3,$4,$5,$6,$7,$8,$9,$10,$11,$12,$13,$14,$15
WIPEOUT  0000000 PROCDEF WIPEOUT
WIPEOUT  0000100 PARAM $1,$2,$3,$4,$5,$6,$7,$8,$9,$10
WIPEOUT  0000200 ERASE PRNT$1
WIPEOUT  0000300 IF '$2'¬=' ';WIPEOUT $2,$3,$4,$5,$6,$7,$8,$9,$10
```

APPENDIX C

TYPICAL PROGRAM EXECUTION

A typical session on the IBM 2741 typewriter terminal was reproduced in Table C-1. The user entries were made in lower-case characters while the computer and program outputs and prompts were received in upper-case characters. The user entries in Table C-1 were tagged with numbered arrows to aid in the description of the user control of program execution.

After the user dialed the IBM 360-67, the computer responded with the first line containing port identification and then prompted the user for his terminal identification which user entered at (1)*. The computer was satisfied with the response and invited the user to LOGON which he did at (2) with user identification and password. User requested available computer resources at (3) and the identification of total users at (4) to determine if sufficient resources were available to execute the data-reduction program and to obtain an estimate of the turn-around times. Both appeared to be satisfactory, and the program was loaded at (5).

After printing library assignments and loading information, the computer prompted for the 'INPUT LINE DSNAME' which was input at (6). The applicable procedures for Reading 60 were obtained from Table 10-4 and entered at (7), (8), (10), (11) and (12). The procedure 'SET34' prompted the user to obtain the raw data at (9). The entry at (12) set the fuel injector configuration in the array IFUEL and caused the array to be printed on the typewriter. Each sequential location in the array corresponded to the injectors 1A, 1B, 1C, 2A, 2C, 3A, 3B and 4, respectively.

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*Circled numbers refer to numbered arrows in Table C-1.

APPENDIX C

TYPICAL PROGRAM EXECUTION

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After printing library assignments and loading information, the computer prompted for the 'INPUT LINE DSNAME' which was input at 6. The applicable procedures for Reading 60 were obtained from Table 10-4 and entered at 7, 8, 10, 11 and 12. The procedure 'SET34' prompted the user to obtain the raw data at 9. The entry at 12 set the fuel injector configuration in the array IFUEL and caused the array to be printed on the typewriter. Each sequential location in the array corresponded to the injectors 1A, 1B, 1C, 2A, 2C, 3A, 3B and 4, respectively.

---

*Circled numbers refer to numbered arrows in Table C-1.

When an injector was not used, a zero was stored in the appropriate location in the array. When an injector was used during a test, the appropriate location in the array contained a number, 1 through 5, which corresponsed to the fuel manifold valves A through E, respectively, to which the injector was connected. Injectors 1A, 1C and 2C could be connected to valves A or E (1 or 5), 3A and 3B to valve E (5) only, 1B to valve B (2) only, 2A to valve D (4) only, and 4 to valve C (3) only. The entry at 12 also set the three igniters false (off) in the logical array IGNØN.

Next, the main program, TSKTSK, was executed at 13. The program prompted the user with WHERE TO? >_, and he responded with 'h' at 14 to indicate that data from a new reading (test) would be used. At 15, the user requested the CPU time, pages and paging rate used in loading the program, at 16, he reinitialized these parameters and, at 17, he caused the program to resume execution.

The entries of facility and program and reading numbers at 18, 19, and 20 gave the location and identification of the data to the program, and d (for data) was entered at 21 to define the reading type. The entry y (for yes) at 23 caused the program to omit printing the engineering units report, and the block number 107 of Reading 60 was entered at 25 to resume execution of the program.

At the completion of execution of block 107, the program prompted the user with WHERE TO? >_, and he responded with s (for stop) at 26. The performance output was stored in a temporary data set (PRNT64) and directed to the remote batch terminal at 27 by use of the procedure PUKE.

In order to execute another block of Reading 60, it was necessary to remove the PCS commands initiated at (12) which were assigned the numbers 9 and 10. This was accomplished by the entry at (28), and the heat transfer data and injector and igniter configurations for Block 130 were entered at (29). The main program was executed again at (32), and the program responded with WHERE TO? >_. The user entered b (for block) at (33) and the block number at (34). Execution of Block No. 130 was completed at (35), temporary storage of completed print files cleaned up at (36) and the performance output printed at (37).

APPENDIX C

TABLE C-I

```
ENTER TERM ID-ba009 ← (1)
PLEASE LOGON
?
logon aeeal,$aeg ← (2)
 TSS/360 RELEASE 9.0
  TASKID=0471 --> DO READBOX GETNEWS,FACILITY <- LOGON AT 00:57 ON 03/05/75.
usage ← (3)
USAGE FOR AEEAL*** /TEMP STOR=1000;583;4.98E 04/PERM STOR=900;582;1.51E 05
/DA DEV=1;/MAG TAP=2;0;3.37E-01/PRINTERS=0;/RD-PUN=0;/DATA CELL=1749;
/TSS TASKS=1;/BULKOUT=1343624/CPU TIME=70.0.0;0.01.053;65.3.33/
 CONN TIME=1000.0.0;0.0.52;684.53.15;
/PAGING RATE=89
exhibit uid ← (4)
ACTIVE USER STATUS AT 00:58:42     03/05/75
USERID    TID TYPE SYSI
SYSOPERO    1 CONV   48 UUJUNE**  470 BACK 2774 AEEAL***  471 CONV
BF SYSOPERC    2 BACK 3024 XXMON***  446 CONV   95
ICCICA**  291 BACK   18 YYDUDA**  288 CONV   F6
hrerun5 ← (5)
    BDCNXX, BDENXX, & PSBLKXX VS. READING NUMBER - DO -------------> XREF
LIB10 IS D360LIB
LIB20 IS DATASYS.DATSYS
LIB30 IS LNKBB3
LIB40 IS GPMLIB9$
LIB50 IS DATASYS.VINCE
LIB70 IS NEWNEW
LIB80 IS TESTCD1
LIB90 IS VINCENEW
LIB100 IS VINNEW2
LIB110 IS DATASYS.DAN
LIB120 IS TESHRE
LIB130 IS NEWLIB
BLOCK DATA LOADED:  PSBLK70
BLOCK DATA LOADED:  BDEN35
BLOCK DATA LOADED:  BDCN49
 PROCEEDING: MODULE ADATA    PRODUCED WITH LEVEL 1 ERRORS
BLOCK DATA LOADED:  ADATA
BLOCK DATA LOADED:  NGAS3
 UNDEFINED REF ANALYS   IN MODULE TSKTSK  . ADDRESS FFFFF000 ASSIGNED
TSKTSK LOADED
TYPE YOUR LINE DSNAME.  UP TO 20 CHARS.
INPUT LINE DSNAME = rdg50 ← (6)
 TERMINATED: STOP
ps71 ← (7)
PS71 VALID FOR READINGS 71, 64, 63, 61, 60, 57, 54, 52
00001
00002
set34 ← (8)
00003
00004
00005
00006
00007
--------->> DO ------------>> GRABBER XX <<-------------
grabber 60 ← (9)
 CANCELLED: YHTFX2.T001 UNKNOWN.
 TEMP RESTORE set61 ← (10)
co60 ← (11)
NKOSEL=19
NKOSEL=36
NKOSEL=38
NKOSEL=39
00008
tc60-107 ← (12)
00009
00010
IFUEL =
(1)          1         2         0         4
             5         0         0         0
IGNON =
(1) .F. .F. .F.
DORE=+.10000000E+01
```

TABLE C-1 (Con't)

```
tsktsk ← (13)
  WHEN THE MESSAGE 'WHERE TO?' TYPES UP, --ENTER APPROPRIATE CODE
WHERE TO? >h ← (14)
 PROCEEDING: PAUSE SET ANY NECESSARY CONSTANTS, THEN TYPE GO
taskuse ? ← (15)
CPUTIME(SEC)=31.134, TIME SLICES=113
PAGING (PGS-PGS/SEC)
4573-146
taskuse on ← (16)
go ← (17)
 PROCEEDING(PCS): EXECUTION CONTINUES AT CHCRWC.(X'4C14')
ENTER THE FOLLOWING CODES FOR SEL WHEN READING IS REQUESTED --
E IF EC'S ONLY, B IF DATA AND EC'S, C  IF CALIBRATION,
L FOR LOWS, H FOR HIGHS,D FOR DATA
ENTER FACILITY  UP TO 8 CHARACTERS
htfx2 ← (18)
ENTER 4 DIGIT PROGRAM NUMBER
1001 ← (19)
ENTER READING NUMBER TO BE PROCESSED
60 ← (20)
ENTER READING TYPE
d ← (21)
LEVEL IS 20 AT BLOCK    1
LEVEL IS 26 AT BLOCK    3
LEVEL IS 06 AT BLOCK    6
LEVEL IS 95 AT BLOCK  179
LEVEL IS 26 AT BLOCK  194
LEVEL IS 20 AT BLOCK  197
LEVEL IS 20 END BLOCK AT  198
DO YOU WANT TO PROCESS THE SPECIAL GAS SAMPLE ANALYZER RESUME DATA? Y OR N
n ← (22)
SKIP RESUME?
y ← (23)
TYPE Y TO USE THIS READING,H TO REQUEST ANOTHER READING,
 S TO  STOP,N TO USE THIS READING BUT SKIP BLOCK REQ
y ← (24)
ENTER BLOCKS FOR PROCESSING
107 ← (25)
00008
VAL(11,1)=+.73613000E+00
VAL(11,2)=+.26386994E+00
00005
 PROCEEDING(PCS): EXECUTION CONTINUES AT ASURFPS.4(3)
00001
00006
 PROCEEDING(PCS): EXECUTION CONTINUES AT ASURFPS.26(7)
00002
00004
XCL=+.35220764E+02
CDADD=+.56724530E-03
AOAC(1)=+.98380917E+00
DELTAX=+.33677673E+00
00003
 PROCEEDING(PCS): EXECUTION CONTINUES AT AINLETT.58
00009
00010
DTI=+.72299988E+02
DTO=+.33000000E+02
QTI=+.19810198E+04
QTO=+.29604299E+04
QT=+.49414492E+04
TIIN=+.55869995E+03
TIOUT=+.63100000E+03
TOIN=+.55869995E+03
TOOUT=+.59169995E+03
WHERE TO? >s ← (26)
 TERMINATED: STOP
```

TABLE C-1 (Con't)

```
puke 64  (27)
 CANCELLED: PRNT64 UNKNOWN.
LIBR64 IS PRNT64
 PRINT BSN=2990,    1700 LINES
remove 9,10  (28)
tc60-130  (29)
00011
00012
IFUEL =
(1)            1            0            0            4
               5            0            0            0
IGNON =
(1) .F. .F. .F.
DORE=+.10000000E+01
taskuse ?  (30)
CPUTIME(SEC)=252.854, TIME SLICES=235
PAGING (PGS-PGS/SEC)
12094-47
taskuse on  (31)
tsktsk  (32)
WHERE TO? >b  (33)
ENTER BLOCKS FOR PROCESSING
130  (34)
00008
VAL(11,1)=+.73613000E+00
VAL(11,2)=+.26386994E+00
00005
 PROCEEDING(PCS): EXECUTION CONTINUES AT ASURFPS.4(3)
00001
00006
 PROCEEDING(PCS): EXECUTION CONTINUES AT ASURFPS.26(7)
00002
00004
XCL=+.35202820E+02
CDADD=+.48097968E-03
AOAC(1)=+.98522842E+00
DELTAX=+.31883240E+00
00003
 PROCEEDING(PCS): EXECUTION CONTINUES AT AINLETT.58
00011
00012
DTI=+.85000000E+02
DTO=+.32399994E+02
QTI=+.23290000E+04
QTO=+.29065999E+04
QT=+.52355977E+04
TIIN=+.56000000E+03
TIOUT=+.64500000E+03
TOIN=+.56000000E+03
TOOUT=+.59239990E+03
WHERE TO? >s  (35)
 TERMINATED: STOP
wipeout 45,46,47,48,49,50,51,52,  (36)
 CANCELLED: PRNT45 UNKNOWN.
 CANCELLED: PRNT46 UNKNOWN.
 CANCELLED: PRNT47 UNKNOWN.
 CANCELLED: PRNT48 UNKNOWN.
 CANCELLED: PRNT49 UNKNOWN.
 CANCELLED: PRNT50 UNKNOWN.
puke 65  (37)
 CANCELLED: PRNT65 UNKNOWN.
LIBR65 IS PRNT65
 PRINT BSN=2992,    1600 LINES
```

END