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THE TURBULENT BOUNDARY LAYER: EXPERIMENTAL HEAT TRANSFER WITH BLOWING, SUCTION, AND FAVORABLE PRESSURE GRADIENT

W. H. Thielbahr, et al

Stanford University
Stanford, California

April 1969

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W. H. THIELBAHR, W. M. KAYS and R. J. MOFFAT

Report No. HMT-5

PREPARED UNDER GRANT NASA NGR-05-020-134
for
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Thermosciences Division
Department of Mechanical Engineering
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ABSTRACT

Surface heat-fluxes and mean temperature profiles in a turbulent boundary layer were measured along a porous flat plate in the presence of uniform transpiration (blowing or suction) and relatively strong favorable pressure gradients. The acceleration parameter, K, blowing fraction, F, and surface temperature were held constant. The range of boundary conditions achieved were: (1) $25 \leq U_\infty \leq 123$ ft/sec, (2) $-0.004 \leq F \leq +0.006$, (3) $-20 \leq (t_o - t_\infty) \leq 43^\circ F$, (4) $0 \leq K \leq 1.45 \times 10^{-6}$. These data apply to 2-dimensional, incompressible, turbulent boundary layers. The free stream and injected fluids were air. When supplemented with Julien's [2] hydrodynamic data taken under the same flow conditions, the resulting data afford a unique opportunity to study both boundary layer developments relative to the local surface heat flux.

Significant reductions in Stanton number are reported at $F = 0$, $K = 1.45 \times 10^{-6}$. Superposing both blowing and favorable pressure gradient may increase St above the "$K = 0$ equilibrium" level (i.e. at a particular Re_Δ, the experimental St may be larger than the zero pressure gradient St data of Moffat [3] at the same Re_Δ). There exists a critical combination of positive F and K (denoted as F_c, K_c) where St appears unaffected by the imposed favorable pressure gradient. If K_c is held constant and $F < F_c$, the resulting St drops below the "$K = 0$ equilibrium" level. When $F > F_c$, the Stanton number <u>increases</u> above "$K = 0$ equilibrium". The critical F_c increases with K.

Regardless of F, at any streamwise position the ratio of thermal layer thickness to hydrodynamic thickness, δ_T/δ, becomes greater as K increases. At any particular level of K, δ_T/δ continues to increase with streamwise distance.

Comparison of the $t^+ - y^+$ and $U^+ - y^+$ profiles in the constant K region reveals a significant difference in shape; the thermal boundary layer penetrates far outside the hydrodynamic layer. With constant, positive K flows, both U^+ and t^+ "overshoot" their accepted zero pressure gradient, fully turbulent, logrithmic levels. All temperature profile data taken in the pressure gradient region exhibit inner $(t^+ - y^+)$ and outer $(\overline{t} - y/\delta_T)$ region similarity.

Stanton numbers in the constant free stream velocity section following a favorable pressure gradient of $K = 1.45 \times 10^{-6}$ show a trend toward the "K = 0 equilibrium" behavior only when $F \leq 0$. The data for $F > 0$ show Stanton number receding from "K = 0 equilibrium" once the pressure gradient is removed.

In the recovery section, the inner region of the temperature profile recovers to the zero pressure gradient shape much faster than the outer region. For $F \geq 0$, the temperature profiles show outer region similarity over 90 percent of the thermal boundary layer but the shapes are much different than the zero pressure gradient data of Moffat [3] and Whitten [4].

The concepts of (1) reduced turbulent energy and momentum diffusivities near the wall, (2) energy transport by molecular mechanisms beyond the hydrodynamic thickness, were used with simple mixing length theory to predict the mean (time averaged) hydrodynamic and thermal boundary layer characteristics with uniform transpiration and favorable pressure gradients. Utilizing the hydrodynamic sublayer correlations of Julien [2] and particular Pr_T correlations, satisfactory predictions of St, C_f, mean velocity and mean temperature profiles were achieved for $-0.002 \leq F \leq +0.006$, $0 \leq K \leq 1.45 \times 10^{-6}$ using the Van Driest continuous eddy viscosity model. Satisfactory predictions for $0 \leq F \leq +0.006$, $0 \leq K \leq 1.45 \times 10^{-6}$, and $-0.002 \leq F \leq 0$, $K \leq 0.77 \times 10^{-6}$ were also obtained using a 2-layer model. Experimental

Stanton number behavior at and beyond the critical conditions (i.e. $F \geq F_c$, K_c) were successfully predicted.

The correlation

$$\ln \frac{St}{St_{K=0}} = \left[0.19 \times 10^6 K - 100F\right]\left[\frac{\theta}{\Delta} - \frac{\theta}{\Delta}_{K=0}\right]$$

predicts St within 10 percent for $-0.001 \leq F \leq +0.006$, $0 \leq K \leq 1.45 \times 10^{-6}$. This correlation can also be used to predict whether or not St will be greater than the zero pressure gradient value at the same Re_Δ .

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NOMENCLATURE

A^*	constant in Van Driest mixing length representation
B	blowing parameter; $B = \frac{\dot{m}''}{\rho_\infty U_\infty St}$
C_f	friction factor defined by $\tau_o = C_f \frac{\rho U_\infty^2}{2g_c}$
c	specific heat at constant pressure, Btu/lb_m-^oF
exp	exponential operator
F	mass flux ratio; $F = \frac{\dot{m}''}{\rho_\infty U_\infty}$
h	static enthalpy, Btu/lb_m
H	profile shape parameter; $H = \frac{\delta^*}{\theta}$
$\overline{H}$	distance from test surface to upper wall, ft
k	thermal conductivity, Btu/sec-ft-^oF
k_r	characteristic roughness height, ft
K	acceleration parameter; $K = \frac{\nu}{U_\infty^2} \frac{dU_\infty}{dx}$
ℓ	Prandtl's mixing length, ft
$\dot{m}''$	surface mass flux, lb_m/sec-ft^2
P	pressure, lb_f/ft^2
P^+	dimensionless pressure; $P^+ = \frac{K}{(C_f/2)^{3/2}}$

Pr molecular Prandtl number; $Pr = \frac{\nu}{\alpha}$

Pr_T turbulent Prandtl number; $Pr_T = \frac{\epsilon_M}{\epsilon_H}$

$\dot{q}''$ heat flux, Btu/sec-ft^2

ΔQ heat flux bias, Btu/sec-ft^2

r recovery factor; $t_{aw} = t + \frac{1}{2} r \frac{U^2}{g_c c J}$

Re_x Integrated Reynolds number based on distance from a virtual origin; $Re_x = \int_0^x \frac{U_\infty}{\nu_\infty} dx$

Re_Δ Reynolds number based on enthalpy thickness; $Re_\Delta = \frac{U_\infty \Delta}{\nu_\infty}$

Re_θ Reynolds number based on momentum thickness; $Re_\theta = \frac{U_\infty \theta}{\nu_\infty}$

St Stanton number; $\frac{\dot{q}_o''}{\rho_\infty U_\infty (h_{s,o} - h_{s,\infty})}$

t local mean (time averaged) static temperature, $^\circ$F or $^\circ$R

$\overline{t}$ dimensionless temperature; $\overline{t} = \frac{t_s - t_o}{t_{s,\infty} - t_o}$

t^+ dimensionless temperature; $t^+ = \frac{\overline{t} U_\tau}{St U_\infty}$

U	local mean (time averaged) velocity in streamwise direction, ft/sec
U^+	dimensionless velocity; $U^+ = \frac{U}{U_\tau}$
u'	fluctuating component of velocity in streamwise direction, ft/sec
U_τ	"shear velocity"; $U_\tau = (\tau_o g_c/\rho)^{1/2}$, ft/sec
V	local mean (time averaged) velocity normal to the wall, ft/sec
V_o^+	dimensionless blowing velocity; $V_o^+ = V_w/U_\tau$
v'	fluctuating component of velocity normal to the wall, ft/sec
x, X	distance along the plate in streamwise direction, ft
y	distance perpendicular to the wall, ft
y^+	dimensionless distance; $y^+ = yU_\tau/\nu_\infty$
z	transverse distance across the plate, ft; the x, y, and z directions are a right-handed set
α	molecular thermal diffusivity, ft^2/sec
β	pressure gradient parameter, see Eq. (6)
ϵ_H	eddy diffusivity for heat, ft^2/sec
ϵ_M	eddy diffusivity for momentum, ft^2/sec; $\epsilon_M \equiv \mu_{Turb}/\rho$
Δ	enthalpy thickness of the boundary layer, ft (see Eq. (4))

δ boundary layer thickness at which $U/U_\infty = 0.99$, ft

δ_T boundary layer thickness at which $\bar{t} = 0.99$, ft

δ^* displacement thickness of the boundary layer, ft;

$$\delta^* = \int_0^\infty \left(1 - \frac{\rho U}{\rho_\infty U_\infty}\right) dy$$

θ momentum thickness of the boundary layer, ft;

$$\theta = \int_0^\infty \frac{\rho U}{\rho_\infty U_\infty}\left(1 - \frac{U}{U_\infty}\right) dy$$

λ the y/δ at which mixing length first becomes constant (the "break-point" in representing mixing length)

ρ density

μ dynamic viscosity, lbm/ft-sec

ν kinematic viscosity, ft^2/sec

κ Von Kármán constant

τ shear stress, lb_f/ft^2

ψ stream function, lb_m/sec

$(\ )_H$ with temperature gradients (heat transfer)

$(\ )_I$ isothermal

Subscripts

a ambient conditions

aw adiabatic wall conditions

base	aluminum casting
c	critical conditions
c.p.	constant properties
cover	flexible top (upper wall)
dyn	dynamic conditions
eff	effective
K=0	without pressure gradient
ℓ	conditions at the edge of the laminar sublayer thickness
loc	based on local shear stress
o , w	at the wall ($y = 0$)
Re_Δ,F	at the same Re_Δ and F
s	stagnation condition
T	T-state
turb	turbulent
∞	free stream condition

CHAPTER I

INTRODUCTION

All methods of predicting the characteristics of turbulent boundary layers utilize some degree of empiricism. Only recently has there been general agreement that adequate hydrodynamic prediction methods exist for the incompressible, constant property, turbulent boundary layer with mild favorable and adverse pressure gradients [1]. Reliable experimental data pertaining to the more complex flows must be supplied. Following a brief review of experimental, turbulent boundary layer heat transfer studies with transpiration (blowing or suction) and/or favorable pressure gradients, and some discussion on the shortcomings of current prediction methods, it will be evident that heat transfer with transpiration and strong favorable pressure gradients cannot be successfully predicted and virtually no experimental heat transfer data for these flows are available. A summary of experimental, hydrodynamic, turbulent boundary layer work with favorable pressure gradients and/or transpiration can be found in reference 2.

A. Review of Previous Experimental Work

A.1. Zero Pressure Gradient, Permeable Wall ($F \neq 0$)

A fairly complete set of hydrodynamic and thermal data is provided by Moffat [3], Whitten [4], and Simpson [5]. The writer is inclined to favor these data because of a close association with the experimental apparatus and testing techniques. These authors provide an adequate review of the current status of prior analytical and experimental work in this area. Their work with constant and variable blowing fraction (F), constant and variable surface temperature (t_o), covered the range $-0.008 \leq F \leq +0.010$. Stanton numbers

(St), mean temperature and velocity profiles, and skin friction (C_f) form a part of these data and provide a base from which suitable theories may build for the zero pressure gradient case.

A.2. Favorable Pressure Gradients, F = 0

Moretti and Kays [6] provide surface heat-flux data for flows with $0 \leq K \leq 4x10^{-6}$ (K is a pressure gradient parameter where $K > 0$ denotes acceleration); however, no hydrodynamic or temperature profile data are furnished. Much of the data was obtained with constant K flows. Moretti concludes that for $K > 3x10^{-6}$, the heat transfer rate rapidly approaches the laminar boundary layer level, suggesting a severe reduction of the turbulent transport mechanisms. Similar hydrodynamic behavior at this level of K has been observed by Schraub and Kline [7] and Patel, et. al. [8]. Moretti includes a summary of the heat transfer work performed in this area prior to 1965.

In support of Hatton's analytical studies [9], Hatton and Eustace [10] experimentally determined Stanton number distributions at various levels of pressure gradient. Mean velocity profiles were taken and C_f values were calculated from Preston tube measurements. Temperature profiles were not presented. The pressure gradient range was $0 \leq K \leq 0.56x10^{-6}$. Constant K flows were sustained for a distance of 25 inches.

Back, et. al. [11] verified that up to 50 percent reduction in heat transfer below the typical turbulent boundary layer level was attainable in supersonic rocket nozzles. Back's hot gas convergent nozzle studies (variable K) covered the range $0 \leq K \leq 20x10^{-6}$ but no temperature or velocity profile data were reported in the pressure gradient region. This investigation spanned $20 \leq P_s \leq 250$ psia and $1000 \leq t_s \leq 2000^{\circ}R$.

Back and Seban [12] performed heat transfer and hydrodynamic experiments with variable K in the range $0 \leq K \leq 6 \times 10^{-6}$. Mean velocity and temperature profiles were taken. It was concluded that the mean velocity profiles were laminar-like near the wall but the mean temperature profiles indicated the presence of eddy transport.

Boldman, et al. [13] measured wall heat-flux in addition to obtaining velocity and temperature profiles in the convergent section of a supersonic nozzle. A large hydrodynamic boundary layer thickness was established in the uncooled inlet section (prior to acceleration) without noticeable effect on nozzle heat transfer.

In their reverse transition (relaminarization) studies, Badri Narayanan and Ramjee [15] established variable and constant K flows in the range $0 \leq K \leq 8 \times 10^{-6}$. Mean velocity profiles, distributions of longitudinal velocity fluctuations, C_f, and wall heat transfer rates were obtained. Most of these data were taken at large values of K where laminar-like behavior was evident. Heat transfer reductions on the order of 80 percent were reportedly measured.

A.3. Favorable Pressure Gradients, $F \neq 0$

Only one source of experimental data that includes a relatively wide range of blowing fractions was found in the open literature. Romanenko and Kharchenko [16] present experimental C_f and St data for $+0.0001 \leq F \leq +0.007$, $0 \leq K \leq 0.3 \times 10^{-6}$ (estimated). The free stream fluid was air. Air, Freon-12, CO_2, and He were used as injectants. Their constant property Stanton number data appear unaffected by the favorable pressure gradients. It is difficult to estimate reliability of these data; insufficient documentation of the test apparatus and free-stream conditions precludes adequate appraisal.

In summary, it is felt that a sufficient amount of accurate hydrodynamic and heat transfer data are available for the zero pressure gradient, permeable wall, low velocity, constant property flows to allow development of more sophisticated theories applicable to these conditions. These data cover the range of practical interest $-0.008 \leq F \leq +0.010$, and include variable wall temperature and variable surface injection boundary conditions. Simpson, et al. [19] have calculated turbulent Prandtl number (Pr_T) distributions for these flows from the available mean temperature and velocity profiles. There exist ample Stanton number data for $0 \leq K \leq 2\text{x}10^{-6}$, $F = 0$, but only a token amount of hydrodynamic and thermal profile data have been reported. Except for reference 16, there exists virtually no experimental data related to turbulent boundary layers with favorable pressure gradients and transpiration.

B. Shortcomings of Current Heat Transfer Prediction Methods

Most of the prediction methods employed today solve appropriate integral or differential equations of momentum and/or energy. The Ambrok solution as used in reference 6 is of the integral type and requires a unique relationship between local Stanton number and local Reynolds number based on enthalpy thickness (Re_Δ). This relationship, normally derived from zero pressure gradient flows, is substituted into the steady-flow energy integral equation to yield an ordinary differential equation which can be solved by a variety of methods. Moretti and Kays [6] used this method for prediction and achieved satisfactory results for mildly accelerating flows ($K \leq 0.5\text{x}10^{-6}$), but over-predicted Stanton number at larger values of K. They also demonstrated that this method can also be applied to problems with variable wall temperature. The Ambrok solution considers only the energy equation, thereby neglecting development of the hydrodynamic boundary layer. With mild favorable pressure gradients this deficiency is not serious, but modifications must be made when considering strong favorable pressure gradients.

Back and Seban [12] constructed a 2-layer model with $\epsilon_M = f(C_f, Re_\theta)$ in the outer region, and Von Karman sublayers in the inner region. The corresponding heat transfer results provided some improvement over the Ambrok method. Only the outer portion of the temperature profile wake was adequately predicted.

Elliot, et al. [14] solve the energy and momentum integral equations simultaneously for flows with $K > 0$, $F = 0$. In this way the thermal and hydrodynamic development can be incorporated into the solution. The weakest assumptions associated with this prediction method are: (1) C_f and St possess the same relationships as with zero pressure gradient, constant surface temperature flow on a flat plate at the same U_∞ , t_o , θ , Δ ; (2) boundary layer shape parameters θ/δ , δ_T/δ , H are evaluated from 1/7 power profiles (temperature and velocity). With strong favorable pressure gradients and blowing, these assumptions are no longer valid. Boldman, et al. [13] used this method and overpredicted heat transfer in the convergent and throat regions of a supersonic nozzle.

Those methods which solve the energy and momentum partial differential equations [9,17,18] utilize various empirical relations to describe distribution of the exchange coefficients and/or turbulence quantities. The experimental data upon which the empiricism is based is often times incomplete and inaccurate. Although valid for mild pressure gradients, there is no evidence corroborating use of the "law-of-the-wall" in strong favorable pressure gradient flows.

The ratio of thermal boundary layer thickness, δ_T , to hydrodynamic boundary layer thickness, δ , increases with favorable pressure gradient (shown and discussed in Chapter IV). Beyond the hydrodynamic thickness δ , the transport mechanisms are primarily molecular. In the region between δ and δ_T , a significant contribution to the overall thermal resistance can develop in strong and/or prolonged favorable pressure gradients. Many prediction methods restrict the thermal layer from developing outside the hydrodynamic layer.

To summarize the success of current prediction methods, it can be said that heat transfer in flows with mild favorable pressure gradients, without transpiration, can be adequately predicted from integral methods assuming C_f and St obey the accepted zero pressure gradient relations at the same local conditions. The differential methods of predicting heat transfer under the same conditions are also successful assuming the "law-of-the-wall" is valid. As K exceeds approximately 0.5×10^{-6} , these assumptions are no longer applicable. Growth of the thermal boundary layer relative to its hydrodynamic counterpart must be considered as well as deviations from the "law-of-the-wall" (shown and discussed in Chapters IV and V). Temperature profiles have not been satisfactorily predicted for these flows due, in part, to the scarcity of profile data and insufficient knowledge of the Pr_T distribution. No predictions of heat transfer or mean temperature profiles with surface injection and favorable pressure gradients were found in open literature.

C. Objectives of Present Research

1. Obtain meaningful and reliable heat transfer data applicable to 2-dimensional, low velocity, constant property, turbulent boundary layers with transpiration (blowing or suction) and favorable pressure gradients.

2. Obtain mean temperature profiles for such flows.
3. Develop a Stanton number correlation for use in the simpler integral methods which will reflect the effects of favorable pressure gradient and surface injection.
4. Develop a method which will adequately predict heat transfer and mean temperature profiles for the range of conditions established in this study.

D. Approach

The acceleration parameter $K = \frac{\nu}{U_\infty^2} \frac{dU_\infty}{dX}$ is a convenient measure of strength of the imposed pressure gradient. This parameter appears explicitly in a particular form of the 2-dimensional integral momentum equation

$$\frac{C_f}{2} - Re_\theta (1 + H) K + F = \frac{dRe_\theta}{dRe_X} \tag{1}$$

which can be derived by substituting

$$Re_X \equiv \int_0^X \frac{U_\infty}{\nu} dX$$

into the following common form of the 2-dimensional integral momentum equation [20]

$$\frac{C_f}{2} + F = \frac{d\theta}{dX} + \theta\left[(2 + H) \frac{1}{U_\infty} \frac{dU_\infty}{dX} + \frac{1}{\rho_\infty} \frac{d\rho_\infty}{dX}\right]$$

Examination of Eq. (1) without surface injection reveals that if K were positive and constant, the term $\frac{dRe_\theta}{dRe_x}$ might vanish if C_f, Re_θ and H reach appropriate values.

Schlicting [21] presents an exact solution to the laminar boundary layer momentum equation for flows in convergent channels (K = constant) without surface injection. This solution provides a unique relationship between K and Re_θ demonstrating that laminar flows with constant, positive K yield constant Re_θ.

Townsend [22] considers an exactly self-preserving turbulent boundary layer with constant, positive K and shows it possessing constant Re_θ. Launder [23] established a constant, positive K, turbulent flow over an impermeable wall and achieved near-constant Re_θ. Launder and Stinchcombe [24] present constant, positive K data also indicating near-constant Re_θ.

With uniform surface injection (F = constant) and constant, positive K, it is possible that a turbulent boundary layer could achieve constant momentum thickness Reynolds number. The hydrodynamic condition that exists when $\frac{dRe_\theta}{dRe_x} = 0$ is defined as <u>asymptotic</u>. This flow is characterized by constant Re_θ, K, F. If the hydrodynamic profiles are completely similar, then H and therefore C_f also become constant.

Two important variables appearing in the differential momentum equation, neglecting the X-derivatives (Couette-flow model), are $P^+ = K/\left(\frac{C_f}{2}\right)^{3/2}$ and $V_o^+ = F/\frac{C_f}{2}$. The onset of relaminarization has been associated with the magnitude of K and/or P^+ [8]. All these parameters are constant with asymptotic boundary layers having similar hydrodynamic profiles.

To satisfy the stated objectives, constant, positive K flows were established on all test runs. In addition, all runs were restricted to constant F, constant t_o, boundary conditions. Studies of relaminarization have established 3×10^{-6} as an approximate level of K beyond which laminar-like flow exists. To cover as large a range of favorable pressure gradients as possible without completely losing the turbulent characteristics of the boundary layer, experiments were restricted to $0 \leq K \leq 1.45 \times 10^{-6}$. Limitations imposed by the experimental apparatus restricted the injection parameter to $-0.004 \leq F \leq +0.006$. This range of F is suited to many problems of practical interest; the upper limit is near blow-off ($F \approx +0.010$), and asymptotic suction conditions are rapidly approached at $F = -0.004$.

Julien [2] studied the isothermal hydrodynamic development under the same test conditions; all hydrodynamic data documented in this study were obtained from his work.

CHAPTER II

EXPERIMENTAL APPARATUS

The test section is composed of a flow duct with 24 porous plates forming the lower surface. The rectangular duct is 8 feet long, 20 inches wide, and 6 inches high at the beginning of the test section. A flexible upper wall can be adjusted so as to produce any desired variation in free-stream velocity. All data were taken on the center 6-inch span of each porous segment.

A brief description of the apparatus is given below. A more detailed account can be found in reference 3.

A. General Description

The subsystems providing the desired boundary conditions are: (1) Main Air System, (2) Transpired Air System, (3) Heater Power-Porous Plate System. A schematic of these subsystems is shown in Fig. 1. The porous plate assembly is illustrated in Fig. 2.

A.1. Main Air System

The main blower can deliver 2000 scfm to yield 44 ft/sec at the test section entrance. Regulated flow of main stream air passes through a 0.7-micron-retention-air filter prior to entering the main blower. The primary air is delivered to a single-pass fin-tube heat exchanger which can maintain exit air temperature between 66°F (full open) and 100°F (full shut), depending on the ambient conditions. Once through the heat exchanger, the main air passes through fine screen(s), acting as flow straighteners, then into a 4:1 (area) converging nozzle. The converging nozzle is completely surrounded by insulation to minimize growth of a thermal boundary layer. A 6-inch, noninsulated, plexiglass "transition" (not to be confused with hydrodynamic transition) piece connects the nozzle to the porous plates. A 3/8-inch wide strip of coarse grit garnet paper (Carborundum type 50) provides a boundary layer trip just upstream of the porous plates.

The test section consists of the following: (1) lower porous plate test surface, (2) $\frac{1}{2}$-inch thick plexiglass side walls, (3) flexible, plexiglass upper surface. One of the side walls has 48 static pressure taps, 0.040 inch diameter, located on 2-inch centers, 1-inch above the porous surface. The upper flexible surface can provide a constant ($\pm \frac{1}{2}$ percent) freestream velocity region with uniform and variable (steps included) blowing conditions.

A.2. Transpired Air System

This system provides individual control of the air flow rate through each of the 24 porous plates. The transpired air first passes through a 0.7-micron-retention filter, then through a blower, then is cooled to within 1°F of ambient temperature by a heat exchanger. The flow rate to each plate can range from 0.5 to 18.0 scfm. This system can operate with no surface injection and has the capability to blow and suck through different plates simultaneously.

A.3. Porous Plate Test Assembly

Each porous plate is described as follows:

Size:	0.25 by 18.0 by 3.975 inches
Composition:	Special grade bronze filter material, 0.002 to 0.007 inch spherical sintered bronze particles
Surface Finish:	50-200 microinches (RMS) measured with a 0.0005 inch radius stylus

Thermal Conductivity:	6.5 Btu/(hr-ft-^{o}F) minimum (experimentally determined)
Total Emissivity:	0.37 average (experimentally determined)
Porosity:	Uniform within 6 percent over the center 6 inch section

The plates were designed (and to a large extent manufactured) by Moffat [3]. Each plate was individually inspected and tested using specially developed techniques to insure the 6 percent tolerance over the center 6-inches was not exceeded.

A cross-sectional view of the porous plate, aluminum casting, and associated underbody components is shown in Fig. 2. When blowing, the transpired air enters the first cavity through the delivery tube. This cavity is lined with balsa wood to minimize energy transfer from the fluid. The air then passes through a commercial grade porous bronze preplate which directs the flow into the second cavity below the test plate. A 3/8-inch layer of reinforced phenolic honeycomb (1/4-inch hexagon) is bonded to the back of each test plate to prevent creation of local energy sinks by circulating fluid.

All plates are heated by electrical energy dissipated from 0.012 inch diameter, teflon insulated, nichrome wires. The wires are glued into grooves on the back of each plate. The grooves are cast on 0.333 inch centers and yield negligible temperature variation along the plate surface.

Fluid temperature in the second cavity is measured by an iron-constantan thermocouple placed above the preplate. This temperature is used to describe the thermodynamic state of the fluid in the absence of temperature gradients. Because the T-state temperature is a measure of the fluid's thermal energy, it is important to minimize the energy loss from delivery (temperature designated as t_{in}) to the test plate. Temperature of the aluminum casting could be controlled, providing a near isothermal environment within the first cavity.

The plate's surface temperature is determined from the arithmetic average of five iron-constantan thermocouples imbedded 0.040 inches from the upper surface (main-stream side). The five thermocouples are positioned relative to the geometric center as follows: at the plate's geometric center, 3 inches to the right, 3 inches to the left, 1 inch upstream, 1 inch downstream.

Tests were conducted to determine if the free-stream static pressure gradients could cause significant preferential flow of transpired fluid through the porous plates. Under maximum dP/dX conditions ($K = 1.45 \times 10^{-6}$), the upstream plate temperatures (relative to center) were not consistently higher than their downstream counterparts. This test demonstrated, qualitatively, that the effects of preferential flow were small enough to yield no significant surface temperature gradient in the streamwise direction.

The maximum disturbance in transpiration flow necessarily occurs on the last plate in the accelerating region, where the local value of dP/dX is largest. The combination of strong acceleration (high K) and low blowing (low F) produce the largest percentwise variations. Pressure drop data from the highest K($K = 1.45 \times 10^{-6}$) and lowest flow ($F = +0.001$) indicate a 5% difference between the transpiration flows at the upstream and downstream edges.

B. Instrumentation

The basic instruments used in the data taking processes are listed in Table 1. The method of calibration and estimated accuracy are also included.

B.1. Probes*

All stagnation pressures were measured with pitot tubes. Small flattened-mouth boundary layer probes were constructed from INCO tubing. The elliptical mouth had a 0.011 inch minor O.D., 0.035 inch major O.D., and 0.0025 inch wall thickness. In the range $0.053 \leq P_{dyn} \leq 0.44$ inches of water, a yaw or pitch angle of at least ± 10 degrees produced no detectable change in indicated maximum pressure.

Pitot probe readings are affected by turbulent fluctuations, viscous and wall effects, yaw and pitch. Simpson (5) studied these probes and concluded that only the effects of laminar viscosity are important. An appropriate correction was used at low Reynolds numbers.

The boundary layer temperature probe consisted of an iron-constantan thermocouple whose junction was flattened to a height of 0.009 inches. The junction end consisted of 0.375 inches of bare wire pitched downward at an angle of approximately 2 degrees. Smaller sized probes having wire diameters 0.003 and 0.005 inches were also used but not successfully.

Electrical continuity was used to establish location of the contact point. Identical results were obtained by noting the location of a large relative change in temperature, as the probe moved off the wall.

B.2. Distances

All X-positions refer to the distance from upstream edge of the first plate to probe tip. A 1-inch displacement micrometer, having a least count of 0.001 inch, provided the means of measuring vertical displacement.

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*See references 3,4,5 for a more detailed discussion.

B.3. Static Pressures

Test section static pressures were obtained using sidewall static pressure taps. The taps were sharp edged holes perpendicular to the surface of the side wall, 0.040 inches in diameter. Reynolds number (wall shear effect) corrections were found to be negligibly small.

Static pressure sensed by a wall port is not necessarily the same as that existing in the center of the rectangular duct at the same X-position. Differences could be attributed to corner vortices, a flexible top which is not planar, and/or a vertical static pressure gradient in the potential core resulting from an imposed pressure gradient.

Two particular free-stream static pressure distributions (streamwise) were measured using the following instruments: (1) Pitot-Prandtl probes positioned in the center of the duct, (2) wall static ports 1-inch and 4-inches above the plate surface, (3) static ports located on the flexible top in the center of the duct. One static pressure distribution was made at $F = 0$, the other at $F = +0.004$. The free-stream velocity ranged from approximately 35 to 65 ft/sec in both cases. All differences that existed between the individually measured static pressure distributions were within the uncertainty of the measurements. Vertical (referenced to plane of test surface) static pressure probing in the potential core yielded negligible static pressure gradient under maximum dP/dX conditions. By virtue of the preceding experimental results, the following are concluded:

(1) There is no significant vertical static pressure gradient in the potential core for $0 \leq K \leq 1.45 \times 10^{-6}$.

(2) Wall static pressure taps located 1-inch above the porous plates adequately measure local static pressure in the center of the duct.

C. Determination of Wall Heat Flux

The surface heat-flux, $\dot{q}_o''$, was calculated from an energy balance performed on a specified control volume covering the center 6 inches of porous plate. This control volume, shown in Fig. 3, includes different portions of the plate assembly and free-stream depending upon the type of test (normal blowing, normal sucking, energy balance). Applying the 1st Law of Thermodynamics to the control volume yields

$$\dot{q}_o'' = \text{ENDEN-ECONV} - \sum \text{LOSSES} \tag{2}$$

The various energy terms appearing in Eq. (2) are described as follows:

ENDEN: Electrical power density in the center 6-inch test section.

ECONV: This term expresses the convective energy flux through the plate. It is calculated from the equation

$$\text{ECONV} = \dot{m}''c(t_o - t_T)[1+f(\dot{m}'', \text{KCONV})]$$

The experimentally derived function $f(\dot{m}'', \text{KCONV})$ is a correction which accounts for the difference between mixed-mean temperature of the transpired fluid leaving the plate surface and the indicated mean plate thermocouple reading.

LOSSES: Each loss was first computed analytically. Where significant differences existed between the analytical prediction and experiment, a correction coefficient was employed so as to minimize the difference. All losses are listed below.

a) Top Radiation = $F_1(t_o^4 - t_{cover}^4)$

SKFILE

SKFILE is a FORTRAN callable subroutine which calls a peripheral package that skips over a specified number of files on a tape unit. An example of its use is as follows:

```
N=2
FILE=5LTAPE1
CALL SKFILE(FILE,N)
```

where FILE=file name in display code, left justified in the word.

N = the number of files to be skipped over. (N is restricted to be less than 4096_{10})

The "L" hollerith code is used to generate the file name in display code, left justified in a word.

SKFIL

SKFIL is a control card callable program which calls a peripheral package that skips over a specified number of files on a tape unit. An example of its use is as follows:

```
JOB, 7, 100, 40000. JONES, 62411, AFWL
REQUEST TAPE5.
SKFIL(TAPE5, 2)
.
.
.
789
.
.
.
```

The first argument is the file name. The second argument is the number (in decimal) of files to be skipped over. (This number is restricted to be less than 4096_{10}.)

The coefficient F_1 was obtained analytically using the experimental plate emissivity.

b) Web Conduction = $(t_o - t_{base})/R_1$

The effective resistance R_1 was established experimentally.

c) Lateral Plate Conduction = $(t_o - t_{base})/R_2$

The effective resistance R_2 was established experimentally. The conduction path is out of the center 6-inch control volume.

d) Back Air Conduction = $(t_o - t_{base})/R_3$

R_3 was obtained analytically and is only applied when $\dot{m}'' = 0$. This loss accounts for energy conducted through the stagnant air in the underbody compartment.

e) Back Radiation: This particular energy loss was computed differently than Moffat [3]. The contribution of the honeycomb in radiation exchange was considered in detail as were differences between heater wire and plate temperatures. The new model considered radiant energy exchange between the plate and heater wires (considered independently), hex-cell honeycomb, and porous bronze preplate. The net back radiation became an explicit function of plate power input (because of wire temperature dependence) and T-state temperature (assumed to be the sink temperature). The only experimental inputs to the model are plate power, sink temperature, and physical properties of the materials.

C.1. Energy Balance Tests

To qualify the test rig, a series of energy balance tests were performed. These tests are normally conducted every 6 months to establish the adequacy of the thermal model described above. Energy balance tests do not utilize mainstream flow; the top cover is removed so as to provide 1-dimensional flow of the transpired (or sucked) fluid. Under these conditions $\dot{q}''_o = 0$ thus enabling the individual energy transfer mechanisms to be properly evaluated for each plate. Comparing Moffat's original energy balances with those taken for this study indicate no significant change in rig characteristics. The energy balance results are shown in Fig. 4.

C.2. Active Mode Tests

The active operating mode utilizes all energy terms in Eq. (2). This is the normal method of determining wall heat-flux. The free-stream air is precooled to approximately 68°F and the test plates are maintained at about 100°F.

When the blowing rate becomes large, the two dominant energy terms in Eq. (2) are ECONV and ENNET. Under these conditions, large uncertainty in the calculated surface heat-flux results and the normally small loss terms assume a much more important role. When the surface heat-flux uncertainty exceeded a prescribed amount (discussed later), another type of test procedure was used.

C.3. Passive Test Mode

To reduce uncertainty in surface heat-flux at large blowing rates, no electrical power is applied to the plates. Thus, one of the two dominant terms in Eq. (2) is eliminated. The plates are supplied energy from the free-stream fluid which is maintained at approximately 92°F as a result of not being cooled by the main stream heat exchanger. Since there is no plate temperature control, operating in the passive mode results in a slight surface temperature gradient in the streamwise direction (approximately 5°F overall drop).

There exists a relatively small range of blowing rates where both active and passive test modes can be used to calculate surface heat-fluxes. Comparing results from both passive and active modes provides a check on the accuracy of the calculated heat-flux. Whenever this comparison was made, good agreement was found. In general, the tests for

$F = +0.006$ were conducted in the passive mode, both active and passive modes were used at $F = +0.004$, and all runs for $F \leq 0.002$ utilized the active mode.

D. Uncertainty

Two causes of uncertainty were considered. One was associated with reading the instruments (i.e. interpolation between divisions on a scale, fluctuating values of measurand, etc.), the other reflected random errors resulting from uncontrolled test conditions (barometric pressure, humidity, ambient temperature, etc.). All uncertainties were calculated by the method of Kline and McKlintock [25].

The following basic uncertainty intervals were assumed:

Power	0.25 watts
Flowmeter	0.10 centimeters
Pressure	0.002 inches of water
Temperature	0.25°F with active mode
	0.15°F with passive mode
Vertical position, y	0.001 inches

Calculated uncertainties in pertinent quantities are listed in Table 2. A more detailed account of the hydrodynamic uncertainties can be found in reference 2.

Stanton number "uncertainty" was calculated from the equation

$$\Delta St = \Delta St_1 + \frac{\Delta Q}{\rho_\infty U_\infty (t_o - t_{s,\infty}) c} \qquad (3)$$

ΔSt_1 is the Kline and McClintock uncertainty in Stanton number resulting from uncertainties in plate power, temperatures, flow rates, free-stream velocity. The second term in Eq. (3) is a Stanton number based on an energy balance bias, ΔQ. This ΔQ was obtained by multiplying an average percent bias (based on heater power) from the energy balances

(Fig. 4) by the plate power. Although depicted as uncertainty, the bias contribution to ΔSt is really a fixed error. It was assumed that no bias was present when operating in the passive mode. The bias errors are small relative to ΔSt_1 except for the high suction runs ($F = -0.002, -0.004$).

In summary, the results of this study are believed to be reliable within 0.0001 Stanton number units for all but the higher suction runs ($F = -0.002, -0.004$).

E. Roughness

By definition, all porous surfaces are mechanically rough. In order to be classified as hydrodynamically smooth, the wall protuberances should not contribute additional resistance to fluid flow. A maximum roughness of 200 microinches (RMS) was established using the tracer method with a 0.0005 inch radius stylus. The plane of particle crests was chosen as the "effective no slip surface", i.e., the wall.

With $F = 0$, one usually considers a flat-plate boundary layer as having a laminar sublayer thickness terminating at $y^+ = 5$. Utilizing this criterion and an accepted flat-plate skin friction correlation yields a 0.0015 inch thick laminar sublayer at $Re_\theta = 500$, $U_\infty = 125$ ft/sec. Assuming an average protuberance height of 0.0002 inch (maximum RMS roughness), the porous bronze surface can be considered hydrodynamically smooth [21] under these conditions.

One of the conclusions derived from the experimental data presented in this study and in reference 2 is that favorable pressure gradients thicken the effective viscous sublayer. Therefore, roughness effects will be less pronounced when $K > 0$.

The effects of roughness are not established for the case of $F \neq 0$. Simpson [5], among others, established that the laminar sublayer thickness, in y^+ coordinates, decreases with blowing and increases with suction. Thus experimental conditions of this research most conducive to roughness effects are zero pressure gradient, large blowing fraction, and high free-stream velocity. Large F (+0.006) and U_∞ (75 ft/sec) were established in the recovery section following an acceleration of $K = 1.45 \times 10^{-6}$. At these conditions, Simpson's smooth wall correlation for C_f predicts a 0.001 inch thick viscous sublayer even if the laminar sublayer is assumed to terminate at $y^+ = 1$ (Simpson's data suggests a much larger sublayer thickness). If the flat-plate findings in reference 20 are applied with blowing, the recovery section can be considered hydrodynamically smooth.

In support of the roughness study, experiments were performed with no blowing at three different values of constant free-stream velocity: 42, 86, 126 ft/sec. Velocity profiles were taken at three axial stations and local Stanton numbers determined at each level of free-stream velocity. The velocity profile data can be found in reference 2. At each free-stream velocity, the calculated virtual origins (assuming $\theta \propto X^{0.2}$) at each axial station agreed within 3.8 percent.

Unblown values of skin friction were calculated from the 2-dimensional momentum integral equation using the same method as Simpson [5]. At the higher free-stream velocities the sublayer method of obtaining C_f was not applicable since the pitot probe height extended far outside the laminar sublayer. The log-cross plot method was also investigated for obtaining C_f, but the resulting uncertainty was too large for this method to be useful. Friction factor can be estimated from the heat transfer data using the constant property Reynolds analogy [20]

$$C_f/2 = St\ Pr^{0.4}$$

The values of $C_f/2$ derived from the momentum integral equation and Reynolds analogy are presented in Fig. 5 for all values of free-stream velocity.

Rotta [26] found the constant C in the fully turbulent law-of-the-wall

$$U^+ = \frac{1}{\kappa} \log y^+ + C$$

to decrease with increasing roughness parameter $(\frac{k_r U_\tau}{\nu})$. Rotta shows C decreasing from its smooth impermeable wall value of 5.0 ($\kappa = 0.41$) to zero at $\frac{k_r U_\tau}{\nu} = 50$.

All data except the Stanton numbers corresponding to the last three porous test plates at $K = 0.57 \times 10^{-6}$ were taken with $U_\infty \leq 86$ ft/sec. The unblown, flat-plate velocity profiles compared favorably with established 2-dimensional profiles at $U_\infty \leq 86$ ft/sec. Skin friction exhibited the same relationship to Re_θ as one would predict using an acceptable 2-dimensional correlation. For these reasons, in addition to those mentioned previously, it is concluded that all data for $U_\infty \leq 86$ ft/sec behave 2-dimensionally.

The calculated C_f values at $F = 0$, $U_\infty = 126$ ft/sec, are consistently higher than an acceptable 2-dimensional Re_θ correlation, the maximum difference being approximately 8 percent. The constant C (law-of-the-wall) decreased to approximately 4 at $U_\infty = 126$ ft/sec. These differences can be attributed, in part, to the uncertainty in C_f (5 percent). It is concluded that all data documented in this study are sufficiently unaffected by surface roughness.

F. <u>2-Dimensionality</u>

Some possible methods of checking 2-dimensionality are: (1) C_f agreement with the 2-dimensional momentum integral equation, (2) similarity of profiles taken across the flow (transverse direction), (3) hot wire information on the z-component of velocity, (4) pitch and yaw information from total pressure probes, (5) agreement between Δ calculated from profile measurements and Δ calculated from the 2-dimensional energy integral equation (hereafter designated as the enthalpy thickness check). All of the above methods except hot wire determination of the z-component of velocity were considered.

The enthalpy thickness check was found to be the most sensitive measure of 2-dimensionality. Shortcomings of the other methods are: (1) for the most part, the C_f values of Julien (2) were obtained from the 2-dimensional momentum integral equation, (2) small differences in transverse velocity profiles can yield relatively large differences in momentum thickness Reynolds number, (3) only large cross flow components of velocity can be detected from pitch and yaw pressure probe readings.

Two equations were used to evaluate enthalpy thickness. One equation was provided by the definition of enthalpy thickness and involves only temperature and velocity profile data.

$$\Delta = \frac{\int_0^\infty \rho U (h_s - h_{s,\infty}) dy}{\rho_\infty U_\infty (h_{s,o} - h_{s,\infty})} \tag{4}$$

The other equation was obtained from the 2-dimensional energy integral equation

$$St + F = \frac{d\Delta}{dX} + \Delta\left(\frac{1}{U_\infty}\frac{dU_\infty}{dX} + \frac{1}{\rho_\infty}\frac{d\rho_\infty}{dX}\right)$$

by solving for Δ , i.e.,

$$\Delta_x = \left(\frac{\nu_\infty}{U_\infty}\right)_x \left\{ \int_0^\infty \frac{U_\infty}{\nu_\infty}(St + F)dX + \frac{\Delta_i U_{\infty,i}}{\nu_\infty} \right\} \qquad (5)$$

Julien's velocity profiles [2] and the present temperature profiles were used to calculate Δ from Eq. (4). Experimental St, U_∞ , F were utilized in Eq. (5) to calculate Δ .

In Eq. (5), Δ_i is the enthalpy thickness at the beginning of the porous test section corresponding to a surface temperature t_o and free-stream temperature t_∞ . At an entrance velocity of 25 ft/sec (corresponding to the runs at $K = 1.45 \times 10^{-6}$), enthalpy thickness in the transition-piece (Δ_t) preceding the porous plates was calculated from measured temperature and velocity profiles. Knowing the transition-piece surface temperature (t_t), Δ_i can be calculated from the expression

$$\Delta_i = \frac{t_t - t_\infty}{t_o - t_\infty} \Delta_t$$

In general, Δ_i was approximately 0.006 inches for the active runs*.

At 41 ft/sec (entrance velocity for $K = 0.57 \times 10^{-6}$), the boundary layer thermal resistance over the transition piece is small relative to the other resistances yielding a very small temperature difference $(t_t - t_\infty)$. Neglecting Δ_i in these runs is, therefore, a valid approximation.

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*Moffat [3] did not consider Δ_i in his results. The ambient temperature corresponding to most of his data was approximately equal to the free-stream temperature, thus minimizing Δ_i .

Since Δ at the start of $K = 0.77\text{x}10^{-6}$ acceleration was approximately 0.10 inches, omission of Δ_i in Eq. (5) does not seriously affect the resulting Re_Δ distribution. In summary, Δ_i was applied only with the test runs corresponding to $K = 1.45\text{x}10^{-6}$.

The uncertainty in Δ from Eq. (4) ranged from 3 to 8 percent for $-0.001 \leq F \leq +0.006$. Uncertainty in Δ from Eq. (5) ranged from 2 to 6 percent for $-0.001 \leq F \leq +0.006$. It was concluded for $F \geq -0.001$ that when Δ from Eq. (4) was within 8 percent of Δ calculated from Eq. (5), the boundary layer development along the test surface was sufficiently 2-dimensional. Excluding the first temperature profile, that being in the constant U_∞ region preceding acceleration, all data for $-0.001 \leq F \leq +0.006$ met this 2-dimensionality criterion.

The uncertainty in Δ from Eqs. (4) and (5) became greater than 10 percent for $F \leq -0.002$. This large uncertainty made the enthalpy thickness check an ineffective method of establishing the presence of significant 3-dimensional effects. All flat-plate skin friction and heat transfer data corresponding to $F = -0.002$ agreed with the 2-dimensional, zero pressure gradient data of Moffat [3] and Simpson [5].

At $F = -0.004$, uncertainties in the calculated hydrodynamic and energy quantities became very large. The heat transfer data at $F = -0.004$ reflect these uncertainties.

At a particular X-position, the enthalpy thickness was not always uniform across the flow (transverse direction). In the constant U_∞ region preceding $K \leq 0.77\text{x}10^{-6}$, the transverse Δ distribution across the center 6 inches was saddle-shaped. The enthalpy thickness check, applied in this region, could not be closed within 8 percent but corresponding Stanton numbers agreed with Moffat's data within $\pm$ 5 percent.

In those cases where the enthalpy thickness difference exceeded 10 percent, a noticeable difference in the centerline

$t^+ - y^+$ profile resulted (relative to a profile having an acceptable enthalpy thickness check). The Stanton number normally used in defining t^+ represented an average over the center 6 inches of porous plate. When Re_Δ was calculated from profile measurements and used to calculate St from an acceptable 2-dimensional correlation, the resulting $t^+ - y^+$ profile appeared 2-dimensional.

When the entrance velocity was reduced to 25 ft/sec (to achieve $K = 1.45 \times 10^{-6}$), the following behavior was observed: (1) a 30 percent difference in the enthalpy thickness check existed in the pressure gradient region, (2) Stanton numbers and skin friction in the zero pressure gradient region did not agree with appropriate 2-dimensional correlations. To improve this situation, a new set of screens was substituted for the single 50-mesh screen and an additional boundary layer trip was positioned in the converging part of the primary nozzle. The new set consisted of one 100-mesh screen followed one-inch downstream by a 50-mesh screen. The additional trip was a 1/4-inch wide by 1/16-inch high bakelite strip extending across the bottom of the converging nozzle. As a result of these improvements, the enthalpy thickness check was reduced to within $\pm$ 8 percent in the pressure gradient region. The resulting transverse temperature and velocity profiles at X = 14 inches are displayed in Fig. 6 for $F = -0.002, +0.004$.

Conclusions regarding 2-dimensionality of the flow are as follows:

(1) The pressure gradient and recovery section data describe the characteristics of a sufficiently 2-dimensional turbulent boundary layer.

(2) Prior to acceleration, the experimental Stanton numbers obeyed an accepted smooth wall, 2-dimensional correlation within $\pm$ 5 percent (excluding St on the first porous plate).

(3) The initial enthalpy thickness, Δ_i, is significant only for the $K = 1.45 \times 10^{-6}$ data. The initial enthalpy thickness is negligible for test runs corresponding to $K \leq 0.77 \times 10^{-6}$.

G. Main Stream Conditions

A uniform hydrodynamic and energy potential flow core existed on all test runs. Velocity was uniform within $\pm$ 1/2 percent throughout the core. Maximum temperature difference within the core (transverse direction) was less than 0.25°F, the maximum difference in the vertical direction being 0.33°F. When operating in the passive mode (main stream air not cooled), the maximum temperature difference in the core was approximately 0.10°F.

A hot wire anemometer was used to obtain the free-stream turbulence level at various free-stream velocities. With the original screen, a maximum turbulence intensity of 1.2 percent was measured at U_∞ = 44 ft/sec. Simpson [5] shows this level of main stream turbulence has no noticeable affect on his hydrodynamic data. At 25 ft/sec, the free-stream turbulence intensity decreased to 0.8 percent with the new screen-set. It is concluded that free-stream turbulence has not significantly influenced the data taken in this study.

CHAPTER III

ESTABLISHING THE DESIRED FLOW AND DATA REDUCTION

A. Asymptotic Boundary Layer

An asymptotic hydrodynamic boundary layer was desired on all test runs primarily because (1) skin friction can be accurately determined, (2) it is much easier to correlate the hydrodynamic and heat transfer data for prediction purposes. All tests were conducted at constant surface temperature, constant K, and constant F. The data of Julien (2), part of which is listed in Appendix B, show that a near-asymptotic boundary layer was achieved for these conditions.

Some mention should be made of the relationship between asymptotic and equilibrium turbulent boundary layers. Clauser [27] defined equilibrium boundary layers as those exhibiting hydrodynamic similarity in the outer regions. Clauser also established that equilibrium flows could be obtained by restricting a particular pressure gradient parameter

$\beta = \dfrac{\delta^* \frac{dP}{dX}}{\tau_o}$ to a constant. Flat-plate ($\beta = 0$), turbulent boundary layers without surface injection exhibit similarity in the outer regions and are therefore classified as equilibrium flows.

Mellor [28] extended the work of Clauser and derived a specific family of defect profiles covering the range $-0.5 \leq \beta \leq \infty$. In effect, Mellor specifies that equilibrium turbulent boundary layers (nonseparating, $V_w = 0$) exist for all constant β flows in the range stated above. A result of Mellor's analysis is that the asymptotic Re_θ for $-0.5 \leq \beta \leq \infty$ is infinite. As Launder and Stinchcombe [22] point out, finite asymptotic Re_θ can exist only for $-2/3 < \beta < -1/2$.

The Clauser pressure gradient parameter can be rewritten as

$$\beta = \frac{-HRe_{\theta}K}{C_f/2} \tag{6}$$

If an unblown hydrodynamic boundary layer is asymptotic, Eq. (1) can be substituted into Eq. (6) to yield

$$\beta = \frac{-H}{1+H} \tag{7}$$

For laminar, asymptotic flows at $F = 0$, the shape factor, H, equals 2, and $\beta = -2/3$. If, with turbulent boundary layers, H does not vary with X(i.e. if the profiles are similar), β becomes constant. It can be concluded, therefore, that all asymptotic flows with constant H are equilibrium flows but the converse is not true.

In this study, the definition of "asymptotic" has been restricted to the hydrodynamic boundary layer. It is possible to achieve an "asymptotic" condition with the thermal boundary layer. The 2-dimensional energy integral equation with variable surface temperature may be written as

$$\frac{d[Re_{\Delta}(t_o - t_{\infty})]}{dRe_x} = (t_o - t_{s,\infty})(St + F) \tag{8}$$

Launder and Lockwood [29] show that a constant Re_{Δ} flow will exist if the surface temperature varies as $U_{\infty}{}^{\gamma}$ (where γ is a positive constant).

With constant surface temperature, Eq. (8) becomes

$$\frac{dRe_{\Delta}}{dRe_x} = St + F \tag{9}$$

Unlike the 2-dimensional integral momentum equation, this form of the 2-dimensional energy integral equation does <u>not</u> explicitly contain a pressure gradient term. Since $St \geq -F$ when $F < 0$, Re_Δ can never decrease regardless of pressure gradient.

B. Experimental Set-Up

A constant free-stream velocity region was provided upstream of the accelerating region to establish equilibrium between the energy and hydrodynamic boundary layer developments. When Re_θ at the start of acceleration was approximately equal to the asymptotic Re_θ, the flow adjusted to its asymptotic condition in a relatively small streamwise distance. It was not always possible to achieve this condition and in some cases the initial Re_θ either exceeded (hereafter designated as an "overshot" boundary layer), or was below (called "undershot" boundary layer) the asymptotic value.

Once the desired value of K was chosen, an acceptable zero pressure gradient C_f correlation was substituted into Eq. (1) with $\frac{dRe_\theta}{dRe_x} = 0$ to yield an estimate of the asymptotic Re_θ. This then became the desired value of Re_θ at the start of acceleration. The same flat plate skin friction correlation was then used in Eq. (1) to relate Re_θ to axial position; thus indicating the X-position at which acceleration should begin.

For example, if $F = 0$, the acceptable flat-plate correlation

$$\frac{C_f}{2} = 0.0128\ Re_\theta^{-0.25}$$

can be substituted into the asymptotic form of Eq. (1), setting $H = 1.29$, to yield

$$Re_\theta = 0.0157\ K^{-0.8}$$

This approximate method of establishing the initial Re_θ yielded suprisingly good results as will be shown. The success was partly due to the fact that C_f and H were relatively insensitive to the imposed favorable pressure gradient [2].

Shape of the flexible top is governed by the magnitude of K. Applying continuity to the definition of K without surface injection yields the following:

$$K = \frac{-\nu}{U_e \bar{H}_e} \frac{d\bar{H}}{dX} \tag{10}$$

where $\bar{H}$ is the vertical distance from test surface to flexible, plexiglass top. The subscript $(\ )_e$ is used to denote conditions at the beginning of acceleration.

To achieve constant K flow at $F = 0$, Eq. (10) shows that a constant slope $-\frac{d\bar{H}}{dX}$ is required by the upper wall. Displacement thickness effects were found to be negligible. When $F \neq 0$, Eq. (10) can still be used as a reasonable approximation to the desired slope.

For fixed inlet velocity, high values of K are achieved at the expense of testing length. Thirty-two inches of test surface were exposed to the maximum K achieved in this study (1.45×10^{-6}). At $K = 0.57 \times 10^{-6}$, the testing length increased to approximately 44 inches (11 plates). In general, K varied from its initial level ($K = 0$) to its maximum in about 1.4 feet, and after acceleration recovered to $K = 0$ in about 1.0 feet.

Static pressures from 48 static pressure taps were used to calculate the distribution of K. The derivative $\frac{dU_\infty}{dX}$ was calculated assuming a parabolic distribution between three equi-distant points.

C. Data Reduction

C.1. Temperature Profiles

The indicated mean temperature is affected by (1) thermal radiation from the probe, (2) conduction from the thermocouple junction along the wire, (3) temperature and velocity fluctuations. An error in vertical position corresponding to the indicated mean temperature can result from (1) improperly measuring vertical distance from porous plate to probe, (2) a flow disturbance caused by the probe near a wall ("wall effect"), (3) the presence of a boundary layer temperature gradient.

Neither a radiation nor a turbulent fluctuation correction was applied to the indicated temperature. Errors induced as a result of "wall effects" were assumed negligible. The length of bare thermocouple wire exposed to the flow was selected to minimize conduction loss from the junction. It was assumed that the indicated probe temperature corresponded to the y-position occupied by the probe's half-height (one-half the thickness of the welded junction). The uncertainty in y-position was assumed to be ± 0.001 inch.

In high-speed flow, the thermocouple probe senses an "adiabatic probe" temperature which differs from the local stagnation temperature. The "adiabatic probe" and stagnation temperatures are related by the expression

$$t_{aw} = t + \frac{1}{2} r \frac{U^2}{g_c c J}$$

This equation was used in calculating local stagnation temperature with $r = (Pr)^{1/3}$. Local velocities were low enough so as to yield no significant difference between "adiabatic probe" and stagnation temperatures.

Measured stagnation temperatures near the wall differed from those predicted by the constant property, laminar sublayer relation (applicable in the region between the wall and $y^+ \approx 10$)

$$t^+ = \frac{1}{V_o^+} [\exp(V_o^+ Pr y^+) - 1]$$

On most test runs, this difference could be eliminated by adjusting all the y-positions (at a particular axial location) by a fixed amount ranging from zero to 0.0025 inches. It is felt that the rather large probe size is partly responsible for the differences that exist between measured and predicted sublayer temperatures. Smaller sized thermocouple probes (0.003 and 0.005 inch diameter) were utilized without success. No attempt was made to match the measured temperatures to those predicted by the sublayer relation.

In the wall dominated region of the boundary layer, where the characteristic turbulent length scale is $\frac{\nu}{U_\tau}$, the differential energy equation can be written in terms of the dimensionless variables t^+, y^+. For constant properties

$$t^+ = \frac{t_s - t_o}{\frac{\dot{q}_o''}{\rho c}} \sqrt{g_c \tau_o / \rho} = \frac{\bar{t}\sqrt{C_f/2}}{St}$$

$$y^+ = \frac{yU_\tau}{\nu}$$

The variables t^+ and y^+ were calculated at each point, the properties being evaluated at free-stream conditions. The experimental Stanton number associated with each profile was corrected to a suitable constant property value using the relationship

$$St_{c.p.} = St\left(\frac{t_o}{t_\infty}\right)^{0.4}$$

The isothermal skin friction, obtained from reference 2, was evaluated at the same free-stream conditions.

A suitable length scale for the outer region should reflect the thickness of the thermal boundary layer. Some of the temperature profiles are plotted in $\bar{t}$, y/δ_T coordinates. The outer length scale, δ_T , is defined to be 99 percent of the thermal boundary layer thickness.

C.2. Velocity Profiles

No hydrodynamic profile data were obtained in the presence of heat transfer. The reduction of all isothermal hydrodynamic data can be found in reference 2. A study was undertaken to find a method of applying the local, isothermal, hydrodynamic profile data to the heat transfer case so as to calculate local Δ and Re_θ . The following were assumed as possible relationships existing between the temperature gradient, $(\ )_H$, and isothermal, $(\ )_I$, profile data:

$$\left(\frac{\Delta P_{dyn}}{\Delta P_{dyn,\infty}}\right)_H = \left(\frac{\Delta P_{dyn}}{\Delta P_{dyn,\infty}}\right)_I$$

$$\left(\frac{U}{U_\infty}\right)_H = \left(\frac{U}{U_\infty}\right)_I$$

$$\left(\frac{\rho U}{\rho_\infty U_\infty}\right)_H = \left(\frac{\rho U}{\rho_\infty U_\infty}\right)_I$$

Experimental temperature and velocity profiles were taken at constant free-stream velocity, $F = 0$, under $(\ )_I$ and $(\ )_H$ conditions. A similar experiment was performed at $F = +0.006$, $K = 0.77\text{x}10^{-6}$. Analytical $(\ )_I$ and $(\ )_H$ temperature and velocity profiles were also obtained from simultaneous solution of the momentum and energy equations (discussed in Chapter V). The three relationships listed above were applied to the $(\ )_I$ data (experimental and analytical). The following were concluded:

If the free stream conditions are similar for the isothermal and nonisothermal cases, the relationship which yields minimum difference between $(Re_\theta)_H$ and $(Re_\theta)_I$ is $(U/U_\infty)_H = (U/U_\infty)_I$. This same relationship also results in minimum Re_Δ difference. These results apply when $0.95 \le t_\infty/t_o \le 1.05$ and were verified by both experimental and analytical approaches. The error in Re_θ and Re_Δ resulting from this correction is less than 1 percent.

C.3. Stanton Number

The method of determining wall heat-flux was described in Chapter II. The Stanton number was calculated from its definition

$$St \equiv \frac{\dot{q}_o''}{\rho_\infty U_\infty (h_{s,o} - h_{s,\infty})}$$

where

$$h_{s,o} - h_{s,\infty} = c(t_o - t_\infty) - \frac{1}{2}\frac{U_\infty^2}{g_c J}$$

for constant specific heat, c.

All experimental St were corrected to constant property values using the relation

$$St_{c.p.} = St\left(\frac{t_o}{t_\infty}\right)^{0.4}$$

This correction was applied to correspond with the constant property Stanton number predictions. The maximum difference between Re_Δ and $(Re_\Delta)_{c.p.}$ is approximately 2 percent for all runs. Both St and $St_{c.p.}$ are tabulated in Appendix A .

Many investigators choose to exhibit experimental Stanton numbers in terms of local Re_x . Certainly, for $dP/dX = 0$ and $F = 0$ this is useful and convenient; distance from the virtual origin is easily obtained and one can physically relate surface heat transfer to the point in question. With variable free stream and wall boundary conditions, the utility of the virtual origin concept is questionable. It seems appropriate, therefore, to consider the possibility of relating Stanton number to local variables.

At constant F , Moffat [3] correlated Stanton number with both Re_x and Re_Δ . Whitten [4] successfully correlated his constant B and mildly varying F heat transfer data with local Re_Δ . On all graphs, $St_{c.p.}$ is displayed versus Re_Δ .

Moffat's data [3] at $F = 0$, $K = 0$, corrected for constant properties, can be correlated with the expression

$$St_{c.p.} = 0.0152\ Re_\Delta^{-0.25}$$

In the present study, the 2-dimensional, zero pressure gradient, unblown, constant property Stanton number is assumed to obey this correlation.

CHAPTER IV

EXPERIMENTAL RESULTS

A. Results

The range of test conditions are summarized below:

Free Stream Velocity	25 to 123 ft/sec
Blowing Fraction	-0.004 to +0.006
$(t_o - t_\infty)$	-20 to 43°F
Acceleration Parameter, K	0 to 1.45×10^{-6}

Four values of K were experimentally achieved: 0 , 0.57×10^{-6} , 0.77×10^{-6} , 1.45×10^{-6} . One temperature profile was taken upstream of the acceleration region, three or four profiles in the constant K region, and three more profiles in the recovery section (if provided). The results are grouped according to the level of K , then subdivided according to the value of F . The Stanton number data are tabulated in Appendix A, the temperature and velocity data in Appendix B. Hydrodynamic conditions for each run are discussed in detail in reference 2.

Figures 8 - 20 graphically display the Stanton number and profile data for the following conditions:

$$K = 0.57 \times 10^{-6}; \qquad -0.002 \leq F \leq +0.004$$

$$K = 1.45 \times 10^{-6}; \qquad -0.002 \leq F \leq +0.006$$

In some cases Stanton number and t^+ predictions are included, based on the method described in Chapter V.

As discussed previously, the 2-dimensional enthalpy thickness check (see Chapter II) prior to acceleration did not always convincingly indicate 2-dimensional flow. In those cases where the Δ difference exceeded 8 percent, the t^+ values differed by a constant percent from corresponding profiles having an acceptable enthalpy thickness check. Adjusting St , in the manner suggested in Chapter II, Section F, yielded acceptable, 2-dimensional t^+-y^+ behavior.

Temperature profiles taken in the constant velocity region (recovery section) following $K = 1.45 \times 10^{-6}$ are illustrated in Figs. 21.

Figure 22 displays the $F = 0$ Stanton number dependence on local Re_Δ at different values of K . Figures 23, 24, and 25 exhibit the relative effects of blowing and pressure gradient on Stanton number.

B. Discussion of Results

If a strong favorable pressure gradient is imposed on a turbulent boundary layer, a rather substantial change in the turbulent structure can occur. The resulting boundary layer may have many laminar-like characteristics, notably much lower Stanton numbers, higher shape factors, and "rounder" looking temperature and velocity profiles. This reversion from turbulent to laminar-like behavior has been called re-laminarization [6,7,8].

None of the data taken in this study for $F \geq -0.001$ show any significant evidence of laminar behavior. The experimental Stanton numbers are much greater than corresponding laminar values at the same Re_Δ . The mean velocity profile data of Julien [2] also indicate the presence of a turbulent boundary layer (i.e. the U/U_∞ - y/δ profiles are "steep" near the wall, $U^+ - y^+$ profiles depict a logarithmic region) for these flows.

At $F = -0.002$, $K = 0.57 \times 10^{-6}$, the heat transfer and hydrodynamic data have the same turbulent characteristics as described above. With flows for $K \geq 0.77 \times 10^{-6}$, $F = -0.002$, the last $U^+ - y^+$ profile in the constant K region exhibits a laminar-like shape but the U/U_∞ - y/δ

profiles and shape factor appear turbulent [2]. At the same Re_Δ, the corresponding Stanton numbers are much lower than at $K = 0$. It is felt that for $K \geq 0.77 \times 10^{-6}$, $F = -0.002$, the boundary layers are possibly undergoing re-laminarization since they are not fully laminar and cannot be classified as typically turbulent.

The hydrodynamic profiles corresponding to $F = -0.004$, $K \geq 0$, display a laminar-like appearance [2]. Stanton number achieves the magnitude of the sucking fraction with these flows.

In general, Julien's [2] last two velocity profiles in the constant K region demonstrated the presence of a near-asymptotic boundary layer. Table 3 provides best estimates of the asymptotic Re_θ for all experimental conditions of this study. Largest departures (percentage) from the estimated asymptotic condition were experienced with flows for large negative F, large positive K.

In Figs. 7, typical development of some important boundary layer quantities is shown for flows at $K = 1.45 \times 10^{-6}$, $F = -0.002$, $+0.004$. Several important observations can be made from Figs. 7:

(1) A near-asymptotic boundary layer can be achieved.

(2) Re_Δ continues to grow as Eq. (9) predicts.

(3) Both δ and δ_T are affected by the imposed favorable pressure gradient; the hydrodynamic boundary layer thickness being reduced much more (percentage) than its energy counterpart.

(4) The hydrodynamic variables θ, δ, respond faster to acceleration than their thermal counterparts (Δ, δ_T).

B.1. Stanton Numbers

Moffat's [3] heat transfer data for zero pressure gradient, uniform blowing, constant surface temperature, and Whitten's [4] data for variable blowing and arbitrary surface temperature variation, all show a strong <u>local</u> behavior in that

$$St = St(Re_\Delta, B)$$

for all slowly varying wall boundary conditions. In the above studies, the thermal and hydrodynamic boundary layers were well developed, hydrodynamic outer region similarity existed [5], and $\beta = 0$. Thus the flows could be classified as equilibrium in the Clauser sense [27]. In the following discussion, the phrase "$K = 0$ equilibrium" refers to the $St(Re_\Delta, F)$ behavior established by Moffat [3].

As illustrated in Fig. 22, the Stanton number data for $F = 0$, $K > 0$ lie below the "$K = 0$ equilibrium" relationship; i.e., for a given Re_Δ the value of St is less than the flat-plate value. As the favorable pressure gradient increases, departures from the "$K = 0$ equilibrium" become greater. At a fixed level of K, the Stanton number displays a greater percentage reduction (relative to "$K = 0$ equilibrium") as Re_Δ increases. The data at $K = 2.5 \times 10^{-6}$ [30] show a very large decrease in St which may indicate a significant reduction of turbulence. The St-Re_Δ trends shown in Fig. 22 substantiate the results of Moretti and Kays [6].

Selected results of reference [6] at $K = 0.41 \times 10^{-6}$ and $K = 1.4 \times 10^{-6}$ are shown in Figs. 26. There are quantitative differences (compared to Fig. 22) suggesting that local behavior cannot be relied upon in these flows, i.e.,

$$St \neq St(Re_\Delta, K)$$

Moretti's hydrodynamic boundary layer is highly "undershot" at the start of the test run for $K = 0.41 \times 10^{-6}$, whereas it is strongly "overshot" at the beginning of the run for $K = 1.4 \times 10^{-6}$. In the present study, the entrance Re_θ for all runs with $K \leq 1.45 \times 10^{-6}$, $F = 0$, was within $\pm$ 20 percent of the estimated asymptotic value. These hydrodynamic differences in the region preceding acceleration are believed to be partly responsible for Moretti's different St values at the same Re_Δ, K. It is felt that another important factor is how long (streamwise distance) the boundary layer has been exposed to the constant K condition. If the pressure gradient is maintained for a long streamwise distance, the thermal boundary layer will penetrate substantially beyond the hydrodynamic layer producing a significant resistance to surface heat transfer (discussed later).

The effects of highly "overshot" or "undershot" boundary layers on the surface heat flux were not experimentally investigated in this study. Results from computer experiments with "overshot" boundary layers, utilizing the prediction method discussed in Chapter V, indicated that the St - Re_Δ relationship in the constant K region could be substantially altered by varying the hydrodynamic and thermal boundary layer developments prior to acceleration.

A relatively long test section is required to develop significant thermal resistance between the hydrodynamic δ and thermal δ_T. With strong favorable pressure gradients, the testing length becomes quite small and one cannot accurately evaluate this effect. Again, results from computer experiments with prolonged favorable pressure gradients showed that this form of resistance could significantly reduce St, especially at large K. For flows with $F = 0$, $K > 0$, the greater percentage drop in St (relative to "$K = 0$ equilibrium") with increasing Re_Δ is believed to be caused, in part, by this outer region resistance.

One achieves a reduction in St at $F = 0$ when a favorable pressure gradient is imposed. Moffat [3], among others, proved that blowing without pressure gradient also reduces St . The results of this study, however, prove that superposing both blowing <u>and</u> favorable pressure gradient may, in fact, increase St above the "K = 0 equilibrium level." There exists a critical combination of positive F and K (hereafter denoted as F_c , K_c) where St appears unaffected by the imposed pressure gradient, i.e., St vs. Re_Δ is the same as with "K = 0 equilibrium." The critical combinations were found to be approximately $F_c = +0.002$ and $K_c = 0.57 \times 10^{-6}$, $F_c = +0.002$ and $K_c = 0.77 \times 10^{-6}$, $F_c = +0.004$ and $K_c = 1.45 \times 10^{-6}$. If K_c is fixed and $F < F_c$, the resulting St drops below the "K = 0 equilibrium" level. When $F > F_c$ the Stanton number <u>is larger</u> than "K = 0 equilibrium." The critical F_c increases with K .

With favorable pressure gradients and suction, Stanton number <u>always drops</u> below the "K = 0 equilibrium" level. The asymptotic suction condition is achieved quicker with a favorable pressure gradient. Dramatic proof of this can be seen in Fig. 14d where substantial reduction in St is achieved at $F = -0.002$, $K = 1.45 \times 10^{-6}$. Although no graphs are provided, Stanton number achieves the magnitude of the sucking fraction almost immediately at $F = -0.004$, $K = 1.45 \times 10^{-6}$.

Stanton numbers in the constant free-stream velocity section following $K = 1.45 \times 10^{-6}$ acceleration display a very interesting characteristic. Stanton numbers indicate a return toward "K = 0 equilibrium" only when $F \leq 0$. For $F > 0$, the Stanton number data <u>recede</u> from "K = 0 equilibrium" in the recovery section, as Fig. 25 illustrates. Even though Stanton number seems unaffected by the imposed pressure gradient at F_c, K_c, once the pressure gradient is removed, Stanton number deviates quite substantially from the zero pressure gradient equilibrium behavior (see Fig. 19d).

B.2. Profiles

In this section, the meaning of "K = 0 equilibrium" is expanded to include the shape of the $\overline{t}$ - y/δ_T profiles at zero pressure gradient, constant F. Departure from "K = 0 equilibrium" implies departure from the $\overline{t}$ - y/δ_T shape (at constant F) that Moffat [3] and Whitten [4] display in their zero pressure gradient, temperature profile data.

The data of this study show that regardless of F, the ratio of thermal layer thickness to hydrodynamic thickness, δ_T/δ, becomes greater as K increases. At any particular level of K, δ_T/δ continues to increase with X. Comparing the t^+ - y^+ and U^+ - y^+ profiles in the acceleration region reveals a significant difference in shape; the thermal boundary layer develops substantially outside the hydrodynamic layer.

The outer region of the thermal boundary layer has been mentioned as a possible source of significant thermal resistance. Near the edge of the hydrodynamic layer, the eddy conductivity is very small because of the very low momentum diffusivity. Beyond δ, heat is transferred primarily by molecular mechanisms (neglecting free stream turbulence). The relatively large t^+ - y^+ wakes in the pressure gradient region indicate a region of low thermal diffusivity. This reasoning, coupled with the data, support the notion that the outer region thermal resistance can become important with prolonged and/or strong favorable pressure gradients.

The data of Moffat [3] and Whitten [4] show t^+ - y^+ similarity in the inner region (wall dominated). All temperature profile data taken in this study for constant K, constant F show inner (t^+,y^+) and outer ($\overline{t}$,y/δ_T) region similarity. Selected outer region temperature profiles for flows with $F = -0.002$, $+0.004$, $K = 0.57 \times 10^{-6}$, 1.45×10^{-6}, are shown in Figs. 14c and 19c. In these figures it is rather surprising that all outer region profile shapes are approximately the same at a particular F even though the levels of pressure gradient are quite different. At $F = -0.002$, the outer region temperature profiles for $K \leq 1.45 \times 10^{-6}$ are the same as for "K = 0 equilibrium." As F and K increase, shape of the outer region departs further from "K = 0 equilibrium."

At $F = -0.002$, $K \leq 1.45 \times 10^{-6}$, outer region similarity exists over approximately 90 percent of the boundary layer, the shapes show no significant departure from "K = 0 equilibrium," yet the Stanton numbers are substantially lower than the "K = 0 equilibrium" level. This behavior suggests that at these conditions the inner region ($y/\delta_T < 0.1$) contains most of the thermal resistance.

At $F = +0.004$, $K \leq 1.45 \times 10^{-6}$, outer region similarity (at each level of K) spans about 90 percent of the boundary layer and the profile shape agrees with "K = 0 equilibrium" over the outer 50 percent of δ_T. For these conditions, the Stanton numbers are equal to or slightly larger than the "K = 0 equilibrium" values.

In the acceleration region, the $U^+ - y^+$ profiles of Julien [2] differ from those established at zero pressure gradient. With all velocity profiles for $K > 0$, U^+ "overshoots" its accepted zero pressure gradient, fully turbulent, logrithmic level. The temperature profiles also exhibit this t^+ "overshoot" as shown in Figs. 8-20.

One possible cause of this "overshoot" is a decrease in effective viscosity near the wall. Julien [2] suggests this based on his hydrodynamic data as does Patel, et. al [8]. Schraub and Kline [7] show a reduction in turbulent burst rate near the wall with increasing K. This idea of a reduced turbulent viscosity near the wall has been incorporated into the prediction scheme, i.e., greater laminar sublayer thickness in a 2-layer model and smaller ϵ_M near the wall in the Van Driest model.

In the recovery section the inner region of the temperature profile recovers much faster to "K = 0 equilibrium" than does the outer region. Temperature profiles, depicted in outer region variables, are shown in Figs. 21 for $F = -0.002, 0, +0.002, +0.004$.

For $F \geq 0$, the recovery section profiles show similarity over 90 percent of the thermal boundary layer but the shapes do not show evidence of a return toward the "K = 0 equilibrium" shape. As F increases, the $\overline{t} - y/\delta_T$ shape departs further from "K = 0 equilibrium." As indicated earlier, Stanton number also exhibits this trend away from "K = 0 equilibrium" as F increases.

At $F = -0.002$, Stanton numbers in the recovery section show quick recovery to "K = 0 equilibrium" but outer region similarity in the temperature profiles does not exist (Fig. 21a). The first profile, taken shortly after the acceleration had terminated is typical of those in the pressure gradient region; shapes of the two subsequent profiles depart from "K = 0 equilibrium."

In the recovery section, it is apparently the outer region of the temperature profile which contributes significant thermal resistance at the larger blowing fractions. At large suction fractions the inner region contains most of the thermal resistance and therefore Stanton number would be expected to recover quickly once the pressure gradient is removed. This behavior has been previously noted and is additional evidence supporting the reduced effective viscosity concept discussed earlier.

It is felt that "K = 0 equilibrium" would have been achieved in the recovery region given a long enough test section. This opinion is based on the following: (1) the data indicate that Δ/θ slowly approaches the appropriate equilibrium value; (2) the recovery section phenomena have been adequately predicted utilizing equilibrium physics (see Chapter V). It appears as though the slow St recovery to the "K = 0 equilibrium" behavior is primarily attributable to the slow response of the thermal boundary layer. This is apparently due to the fact that after prolonged acceleration, there is a substantial amount of thermal energy stored in the outer part of the boundary layer where the eddy conductivity is extremely small.

C. Stanton Number Correlation

When predicting impermeable wall heat transfer with favorable pressure gradients, some choose to apply a suitable correction to the zero pressure gradient Stanton number correlation before application of the 2-dimensional energy integral equation [14,31]. This correction usually takes the form $(\theta/\Delta)^n$, and is an attempt to bring the effects of hydrodynamic development into the energy integral equation. Arguments in favor of this particular correction follow what was stated earlier with regard to the decrease in St as a result of the difference between δ and δ_T. In principle, this type of correction does not account for any decrease in effective turbulent viscosity near the wall resulting from an imposed favorable pressure gradient.

The following results of Moffat [3] and Whitten [4],

$$\text{K=0, F=0:} \quad St_o = 0.0152\ Re_\Delta^{-0.25} \qquad (11)$$

$$\text{K=0, F}\neq\text{0:} \quad (St)_{K=0} = \left\{[\ell n(1+B)]/B\right\} St_o \qquad (12)$$

were used in establishing the correlation

$$\ln \frac{St}{(St)_{K=0}} = \left[0.19 \times 10^6 K - 100F\right]\left[\frac{\theta}{\Delta} - \left(\frac{\theta}{\Delta}\right)_{K=0}\right] \qquad (13)$$

The ratio $(\theta/\Delta)_{K=0}$ is approximately 0.95 for $F \geq 0$. Figure 27 displays Eq. (13) relative to the data.

This correlation predicts whether or not St wil be greater than the zero pressure gradient value at the same Re_Δ. Equation (13) predicts the Stanton number data within 10 percent for $-0.001 \leq F \leq +0.006$, $0 \leq K \leq 1.45 \times 10^{-6}$. Equation (12) does not accurately predict $(St)_{K=0}$ with sucking; at $F = -0.002$ the error is approximately 13 percent. Use of Moffat's data at $F = -0.001$ in place of Eq. (12) yields the dotted data points in Fig. 27.

CHAPTER V

PREDICTION

The equations governing steady-state heat, mass, and momentum transfer are elliptic in form. Introducing the usual boundary layer approximations [21] reduces the form of these equations to parabolic. Solutions of the resulting boundary layer equations, after suitable simplifications, are usually obtained using integral or differential techniques. The differential approach is deemed a more generally useful method of solution since the effects of variable properties, viscous dissipation, and chemical reactions can ultimately be considered. Another advantage of the differential approach is the ability to account for arbitrary growth of the thermal boundary layer. In this study, the Patankar-Spalding finite difference method of solving parabolic equations [18] was utilized.

The momentum and energy boundary layer equations can be expressed in $X - \psi$ co-ordinates (ψ is a stream function satisfying continuity) using the von Mises transformation:

Conservation of Momentum in X-direction:

$$\frac{\partial U}{\partial X} = \frac{\partial \tau}{\partial \psi} - \frac{1}{\rho U}\frac{dP}{dX} \tag{14}$$

Conservation of Stagnation Enthalpy

$$\frac{\partial \tilde{h}}{\partial X} = - \frac{\partial}{\partial \psi}\left[\dot{q}'' - U\tau\right] \tag{15}$$

Equations (14) and (15) apply to plane flows. The turbulent contributions to shear stress and heat flux are added to their viscous counterparts to yield an effective shear stress τ and effective heat flux $\dot{q}''$. The effective shear stress and heat flux are expressed in terms of effective exchange coefficients in the Boussinesq manner, i.e.,

$$\tau = \mu_{eff} \frac{\partial U}{\partial y}$$

$$\dot{q}'' = -\frac{\mu_{eff}}{Pr_{eff}} \frac{\partial h}{\partial y}$$

The effective viscosity, μ_{eff}, is the sum of the laminar and effective turbulent viscosities, i.e.,

$$\mu_{eff} = \mu + \mu_{turb}$$

The effective turbulent viscosity was calculated from Prandtl's mixing length hypothesis

$$\mu_{turb} = \rho \ell^2 \left|\frac{\partial U}{\partial y}\right| \tag{16}$$

The effective turbulent Prandtl number can be found from the equation

$$\frac{\mu_{eff}}{Pr_{eff}} = \frac{\mu}{Pr} + \frac{\mu_{turb}}{Pr_T}$$

where the term $\frac{\mu_{turb}}{Pr_T}$ represents the effective turbulent, energy diffusivity multiplied by local density.

It seems reasonable to consider the turbulent boundary layer as being composed of two distinct regions: the inner region which is significantly affected by the presence of the wall and the outer region which is relatively independent of the wall. The mixing length (ℓ) distribution through the boundary layer was chosen to reflect this inner and outer region idea. Near the wall, ℓ was proportional to distance from the wall and in the outer region, ℓ was constant and proportional to the hydrodynamic thickness (recommended by Escudier [32]). This inner and outer region mixing length representation is analagous to the inner and outer length scales $\frac{\nu}{U_\tau}$ and δ used to exhibit profile similarity.

Very little information exists on the turbulent Prandtl number even for flat-plate flows ($K = 0$, $F = 0$). Many turbulent boundary layer prediction schemes consider Pr_T constant throughout the boundary layer. Simpson, et. al [19] are the first to establish the Pr_T distribution through a transpired turbulent boundary layer ($-0.001 \leq F \leq +0.004$) in the absence of pressure gradient. No Pr_T data were found applicable to favorable pressure gradient flows with or without transpiration.

Attempts to accurately predict the impermeable wall, flat plate temperature profiles with a constant Pr_T were not successful, but satisfactory overall heat transfer predictions were obtained. It became apparent after these initial prediction attempts that an inner and outer Pr_T distribution, patterned after the mixing length, was needed.

The dependent variables vary significantly in the region bounded by the wall and first finite difference nodal point. In this region the velocity and X-derivatives are small making the X-wise convection of momentum and energy locally negligible. Neglect of these terms in the momentum and energy boundary layer equations constitutes a "Couette flow" model, and ordinary differential equations result. The solutions to these ordinary differential equations are used as boundary conditions for the main finite difference program.

With strong favorable pressure gradients, at $F = 0$, the "Couette flow" region becomes very small. A correction to the hydrodynamic "Couette flow" equation was applied in regions where validity of the "Couette flow" assumption was questionable [2]. In general, the "Couette flow" region extended to $y^+ = 50$ for all cases considered.

Two different models were chosen for study. One was a 2-layer model characterized by a fully laminar inner region and a fully turbulent outer region. Van Driest's continuous eddy viscosity model [33] comprised the second. Each of these models will be discussed individually. Both of these models were used by Julien [2] in predicting the isothermal, hydrodynamic characteristics of turbulent boundary layers under the same pressure gradient and constant F conditions achieved in this study. The same effective viscosity relations used by Julien, were employed in this study.

A. 2-Layer Model (2L)

The "Couette flow" region includes the laminar sublayer and part of the fully turbulent region. The effective turbulent viscosity is zero in the laminar region and, likewise, $\mu = 0$ in the fully turbulent domain. Outside the "Couette flow" region, however, no restrictions on μ or μ_{turb} are imposed.

For zero pressure gradient flows with blowing, Julien [2] matched Simpson's [5] fully turbulent law-of-the-wall to the laminar sublayer equation and obtained the laminar sublayer thickness as a function of V_o^+. With sucking, Julien applied Simpson's profile data in the same manner. The sublayer thickness, for flows with zero pressure gradient, was found to be adequately approximated by

$$(y_\ell^+)_{loc} = 11 - 18V_o^+$$

For all constant K flows of this study, Julien [2] used the experimental, hydrodynamic profile data in correlating $(y_\ell^+)_{loc}$ in terms of V_o^+ and P^+. The same matching technique as described above was utilized. This correlation is in tabular form and can be found in reference 2.

Julien [2] used the following mixing length distribution:

$$\ell = \kappa y \ ; \quad 0 \leq y \leq \lambda\delta/\kappa$$

$$\ell = \lambda\delta \ ; \quad y > \lambda\delta/\kappa$$

where $\kappa = 0.44$. The inner and outer mixing length idea alluded to earlier is quite evident in the above representation.

With most boundary layer flows at $F = 0$, the constant of proportionality, λ , is approximately 0.085 [32]. At low Re_θ , however, the data of Simpson [5] suggests a λ dependency upon Re_θ . Julien [2] found the following correlation to yield satisfactory results for all experimental conditions of this study:

$$\lambda = 0.25\ Re_\theta^{-0.125}(1 - 67.5\ F) \tag{17}$$

If Eq. (17) exceeded 0.085, λ was set equal to 0.085 .

One remaining quantity needed in the energy equation is the effective turbulent Prandtl number. The Pr_T results of reference 19 are illustrated in Fig. 28. Although no data points are shown, there is no obvious dependence on blowing fraction. One can conclude, however, that a larger Pr_T is needed very near the wall (inner 10 percent) whereas the outer 60 percent of the boundary layer requires a relatively constant Pr_T (except very near the outer edge).

In the inner region, Pr_T was correlated with y^+ and $(Pr_T)_\ell$. $(Pr_T)_\ell$ is the turbulent Prandtl number at the edge of the laminar sublayer which satisfies $\alpha_\ell = (\epsilon_H)_\ell$. The condition $\alpha_\ell = (\epsilon_H)_\ell$ occurs when

$$(Pr_T)_\ell = Pr\kappa(y_\ell^{+})_{loc}$$

The turbulent Prandtl number was considered constant for $y^+ > 1.5\ y_\ell^+$.

The resulting constant property Pr_T distribution (for air) used in the 2L model is expressed as follows:

$$Pr_T = \frac{(Pr_T)_\ell - 0.87}{y_\ell^+ - 1.5 y_\ell^+} (y^+ - y_\ell^+) + (Pr_T)_\ell \; ; \; y_\ell^+ \leq y^+ \leq 1.5\, y_\ell^+$$

$$Pr_T = 0.87; \quad y^+ > 1.5\, y_\ell^+ \tag{18}$$

The 2L model is artifical in the inner region, therefore the corresponding Pr_T distribution should likewise reflect this artificially. Equation (18) provides the same trend as exhibited in Fig. 28, i.e., large Pr_T near the wall and constant Pr_T in the outer region.

B. Van Driest Model (VD)

In the Van Driest model [33], the mixing length, ℓ , is represented by a damping function which becomes zero at the wall and approaches κy at reasonable distances from the wall. Julien [2] applied Van Driest's mixing length distribution in the form

$$\ell = \kappa y \left[1 - \exp\left\{- y \sqrt{\tau\rho}/(\mu A^*)\right\}\right] \quad ; \; 0 \leq y \leq \lambda\delta/\kappa$$

$$\ell = \lambda\delta \; ; \quad y > \lambda\delta/\kappa$$

where local shear was used instead of wall shear in an attempt to account for pressure gradient and transpiration effects [18]. For flat plate flows, $A^* = 26$. As with the 2-layer model, $\kappa = 0.44$.

As shown above, the mixing length possesses an inner and outer region distribution. The proportionality constant, λ , is identical to that proposed in the 2-layer model, i.e.,

$$\lambda = 0.25\ Re_\theta^{-0.125}(1 - 67.5\ F)$$

truncated at $\lambda = 0.085$.

With zero pressure gradient flows, Julien [2] used the above mixing length distribution in a "Couette flow" analysis to match Simpson's fully turbulent law-of-the-wall with blowing. With sucking, Julien matched Simpson's profile data in the same manner. Proper matching was achieved by adjustment of A^* . In this way, Julien correlated A^* with V_o^+ .

For all constant K flows, Julien used his hydrodynamic profile data to correlate A^* with V_o^+ and P^+ . The same matching technique as described above was applied. This correlation is in tabular form and can be found in reference 2.

With zero pressure gradient flows at $F = 0$, Pr_T was correlated with ϵ_M/ν in the inner region and was set equal to a constant in the outer region.

With favorable pressure gradients and $F \neq 0$, the inner region Pr_T correlation was modified by the variables P^+ and A^* . The outer Pr_T became a function of F . The resulting Pr_T distribution is represented by the following expression

$$Pr_T = \frac{1}{Pr}\left[1 - .1\left(\frac{26}{A^*}\right)^{0.4}\sqrt{\frac{\epsilon_M}{\nu}}\right]\left(1 + 20P^+\right)$$

truncated at

$$Pr_T = 0.86(1 + 52F)$$

At the wall, with flows for $F = 0$, $K = 0$, Pr_T achieves the same value as that predicted from the Jenkins model (as presented in reference 25). The range of Pr_T for all test conditions is illustrated in Fig. 28.

C. Discussion of Predicted Results

In general, the experimental values of C_f and mean velocity profiles were satisfactorily predicted with both models. The velocity profile and C_f predictions can be found in reference 2. The constant property mean temperature profile and Stanton number predictions are displayed in Figs. 8, 10, 12, 13, 14, 16, 18, 19, 20 for $K = 0.57 \times 10^{-6}$ and $K = 1.45 \times 10^{-6}$.

C.1. Zero Pressure Gradient

C.1.a. Stanton Number

Results of the Stanton number predictions for impermeable wall, zero pressure gradient flows can be found in Fig. 29. With both models, the predictions at $F = 0$ show excellent agreement with Moffat's data [3]. At $F = -0.0024$, which represents a relatively large sucking fraction, both models yield very good results. Good agreement with Moffat's data is also achieved with both models for $F \leq +0.004$. The 2-Layer model is not recommended for $F > +0.006$. Even at very large blowing fractions ($F \approx +0.0078$), the Van Driest model can be used to achieve a reasonable St prediction. It should be noticed, for later reference, that at larger Re_Δ, both models predict a greater St at $F = +0.004$ than Moffat's data suggests. Also, the 2L model predicts a larger Stanton number than does the VD model for $F \geq +0.006$.

C.1.b. Temperature Profiles

The predicted temperature profiles at $F = 0$ are in excellent agreement with the data (see Fig. 10a). This suggests that the correct Pr_T distribution was achieved since the predicted velocity profiles also matched the hydrodynamic data [2].

At $F = -0.002$, the experimental, hydrodynamic starting condition (at the start of sucking) was different than that used in the prediction method. As a consequence, the predicted Re_θ/Re_Δ ratio is different than what was provided experimentally. The 2-layer model displays very good agreement with the profile data (Fig. 8a). The Van Driest model does not predict the data as well due, in part, to the different Re_θ/Re_Δ ratio.

Reasonable agreement with the profile data is achieved with both models for $F \leq +0.004$ (Fig. 12a, 13a). It is evident that the prediction models need a larger Pr_T near the wall to achieve inner region ($y^+ < 60$) agreement with the data. This same deficiency can be seen in the profile predictions at $F = +0.006$ (Fig. 20a). It should be pointed out that at $F = +0.006$, the predicted and experimental profiles are compared at different conditions (Re_θ , Re_Δ) which account for some of the discrepancy.

C.2. Favorable Pressure Gradients and Recovery

C.2.a Stanton Number

Stanton number predictions with both models for $K \leq 1.45 \times 10^{-6}$, $F = 0$, are in very good agreement with the data (Fig. 10d, 16d). The Van Driest model more accurately predicts the magnitude of St at $K = 1.45 \times 10^{-6}$. The results from both models show excellent agreement with experimental St data in the recovery section, i.e., the region where K has returned to zero (Fig. 16d). In the region where K increases from zero to its constant value, both models predict a greater decrease in Stanton number than the data suggest. Although not shown in Fig. 16d, the same behavior is found when K returns to zero i.e., Stanton number rapidly achieves the flat plate equilibrium value once the pressure gradient is removed, but then quickly returns to the recovery section behavior displayed in Fig. 16d). Part of the reason for this behavior apparently lies in correlating the sublayer thickness (2L model) and A^* (VD model) with P^+. Possibly the rate of change of P^+ or K should be considered in these highly nonequilibrium regions.

At relatively large sucking fractions, $F \approx -0.002$, adequate St predictions were achieved with both models at $K = 0.57 \times 10^{-6}$; the 2L model showing closer quantitative agreement with the data (Fig. 8d). Solutions could not be obtained with the 2L model at $K = 1.45 \times 10^{-6}$, $F = -0.002$. As shown in Fig. 14d, the Van Driest model predicts St behavior relatively well at $K = 1.45 \times 10^{-6}$, $F = -0.002$ even though this flow has been shown to exhibit laminar-like behavior [2]. Predicted heat transfer in the recovery section shows excellent agreement with experiment at these conditions.

As pointed out in Chapter IV, the data suggest a critical blowing fraction at $K = 0.57 \times 10^{-6}$ of approximately +0.002. Figure 12d shows that both models predict this "critical" behavior, i.e., St appears unaffected by the imposed favorable pressure gradient.

At $K = 0.57 \times 10^{-6}$, $F = +0.004$, the data are adequately predicted using both models. When first observed, the increase in experimental St over the "K = 0 equilibrium" level was unexpected and was believed to be caused by some new and undefined phenomena. Successful prediction of the Stanton number data at this condition is gratifying and it is suggested that nothing "mysterious" is happening. This <u>increase</u> in Stanton number is merely a result of the complex coupling between the effects of favorable pressure gradient and blowing.

The critical blowing fraction at $K = 1.45 \times 10^{-6}$ is approximately +0.004. Adequate St predictions are achieved with both models at this condition (Fig. 19d). In the nonequilibrium region (rapidly changing K), the decrease in St predicted by both models is not substantiated by the data.

At the highest blowing fraction corresponding to the strongest favorable pressure gradient, both models yield acceptable St predictions (Fig. 20d). The VD model yields better St predictions; however, Julien [2] indicates better C_f agreement with the 2L model at this condition. When compared with Fig. 29, Fig. 20d shows that the increase in Stanton number was predicted by both models.

With large blowing fractions, the experimental Stanton numbers showed no sign of returning to the "K = 0 equilibrium" level once the pressure gradient was terminated. As shown in Figs. 18d, 19d, 20d, this same behavior has been successfully predicted. In viewing these results, one must make reference to Fig. 29 to determine each model's zero pressure gradient behavior. Adequate prediction of the recovery section Stanton numbers from equilibrium considerations suggests that return to the "K = 0 equilibrium" level would have been achieved given a long enough test section.

C.2.b. Temperature Profiles

As Figs. 10b and 16b illustrate, both models yield excellent predictions of the temperature profiles for $K \leq 1.45 \times 10^{-6}$, $F = 0$. The Van Driest Pr_T correlation apparently yields the correct turbulent Prandtl number distribution over most of the boundary layer.

Very good agreement between experimental and predicted temperature profiles were achieved at relatively large sucking fractions and mild favorable pressure gradients (see Fig. 8b). With strong favorable pressure gradients, the predicted temperature profiles at $F = -0.002$ seen to suffer from having too small a Pr_T near the wall (Fig. 14a). This same trend existed at $K = 0$, $F = -0.002$ but was not evident at $K = 0.57 \times 10^{-6}$. Part of the reason for this behavior at $F = -0.002$, $K = 1.45 \times 10^{-6}$ might be attributed to the laminar-like appearance of the hydrodynamic profiles [2]. In their present forms, the 2L and VD models cannot be used to satisfactorily predict the characteristics of a relaminarizing boundary layer.

With mild favorable pressure gradients and $F > 0$, the temperature profile predictions deviate from the data in the same consistent way as with the zero pressure gradient predictions (compare Fig. 12a with 12b, and 13a with 13b). Since St and C_f were adequately predicted at $K = 0.57 \times 10^{-6}$, $F > 0$, it appears that Pr_T should be greater near the wall with blowing. The 2L model yields somewhat better agreement with the data at these conditions.

At $K = 1.45 \times 10^{-6}$, the predicted temperature profiles show good agreement with the data for $0 \leq F \leq +0.006$ (see Fig. 18b, 19a, 20b). Deviation from the data at $F = +0.002$ is consistent with the zero pressure gradient behavior. As the blowing fraction increases, the profile predictions become better.

D. Summary of Predicted Results

Predicted Stanton numbers from both models for zero pressure gradient flows agree quite well with data for $-0.002 \leq F \leq +0.006$. Predicted $t^+ - y^+$ profiles from both models show excellent agreement with the data at $K = 0$, $F = 0$. As blowing fraction increases, predicted $t^+ - y^+$ profiles depart from the data in the inner region ($t^+ < 100$) signifying the need for a larger turbulent Prandtl number near the wall. Sufficiently accurate information on the variation of Pr_T very near the wall with blowing is lacking; the present correlation under-predicts the desired Pr_T in this region.

With mild favorable pressure gradients ($K \approx 0.6 \times 10^{-6}$) for $-0.002 \leq F \leq +0.004$, excellent agreement was achieved between predicted and experimental Stanton numbers using both models. Stanton number behavior at the critical F and K condition and the increase in St above the "K = 0 equilibrium" level were successfully predicted with both models. Adequate $t^+ - y^+$ profile predictions for these conditions were also obtained. The profile differences that exist are of the same type as found for zero pressure flows, i.e., with blowing, a greater Pr_T is required near the wall.

With strong favorable pressure gradients ($K \approx 1.5x10^{-6}$) for $0 \leq F \leq +0.006$, the predicted Stanton numbers from both models are in very good agreement with the data. Stanton number data at and beyond the critical condition ($F \geq F_c$) were satisfactorily predicted. At $K = 1.45x10^{-6}$, $0 \leq F \leq +0.006$, the temperature profile results from both models show closer agreement to the data than at $K = 0.57x10^{-6}$.

The particular 2-layer model used in this study should not be used when suction is applied with strong favorable pressure gradients. The Van Driest model adequately predicts the Stanton number and $t^+ - y^+$ profile data at $F = -0.002$, $K = 1.45x10^{-6}$.

The Stanton number behavior in the recovery section, for $-0.002 \leq F \leq +0.006$, has been satisfactorily predicted. As the data indicate, the St predictions do show a significant trend away from the "K = 0 equilibrium" level at large blowing fractions. This predicted behavior suggests that the slow Stanton number recovery to its "K = 0 equilibrium" behavior is primarily attributable to the slow response of the thermal boundary layer, since the hydrodynamic boundary layer responds quickly to removal of the pressure gradient (discussed in Chapter IV).

Julien's [2] sublayer thickness and inner region μ_{turb} correlations were derived from data applicable to near-asymptotic flows. It is not yet known how well the prediction method will work for flows with rapidly changing K in the streamwise direction. Referring to Fig. 16d, it is noted that as K increases from zero to $1.45x10^{-6}$, the predicted Stanton numbers are lower than the data suggest.

Successful prediction of the data was achieved using simple mixing length theory. In the 2-layer model, all blowing and favorable pressure gradient effects were taken into account merely by varying the laminar sublayer thickness. One need only to adjust A^* in the Van Driest model to satisfactorily represent the effects of favorable pressure gradient and surface injection for the range of experimental data covered in this study.

The importance of achieving the correct turbulent Prandtl number distribution in the inner region and the success of Julien's correlations [2] suggest that for the data of this study, the effects of favorable pressure gradient and blowing are primarily concentrated in the inner regions of the flow. However, with a very strong and/or prolonged favorable pressure gradient, significant thermal resistance can result from the near molecular transport of thermal energy outside the hydrodynamic layer.

CHAPTER VI

SUMMARY

A. Conclusions

Experimental surface heat flux distributions were obtained along a porous flat plate in the presence of uniform transpiration (blowing or suction) and relatively strong favorable pressure gradients. Mass flux ratio, F , acceleration parameter, K , and surface temperature, t_o , were held constant. The boundary conditions achieved in this study are as follows:

Free Stream Velocity	25 to 123 ft/sec
Blowing Fraction	-0.004 to +0.006
$(t_o - t_\infty)$	-20 to 43°F
Acceleration Parameter, K	0 to 1.45×10^{-6}

These data apply to 2-dimensional, incompressible turbulent boundary layers. The free stream and injected fluids are air.

Mean temperature profiles were taken in the pressure gradient and recovery regions. When supplemented with Julien's [2] mean velocity profiles obtained under the same flow conditions, the resulting data afford a unique opportunity to study and evaluate the effects of both boundary layer developments relative to the local surface heat flux.

The following conclusions can be drawn:

1. The Stanton number data for $F = 0$, $K > 0$ lie below the "K = 0 equilibrium" relationship, i.e., for a given Re_Δ the value of St is less than the flat-plate value. As the favorable pressure gradient increases, departures from "K = 0 equilibrium" become greater. At a fixed level of K , the Stanton number displays a greater percentage re-

duction (relative to "$K = 0$ equilibrium") as Re_Δ increases.

2. The results of this study show that superposing both blowing and favorable pressure gradient may increase St above the "$K = 0$ equilibrium" level. There exist critical combinations of positive F and K (denoted as F_c, K_c) where St appears unaffected by the imposed favorable pressure gradient (i.e., St vs. Re_Δ is the same as with "$K = 0$ equilibrium"). If K_c is fixed and $F < F_c$, the resulting St drops below the "$K = 0$ equilibrium" level. When $F > F_c$, the Stanton number <u>is greater</u> than "$K = 0$ equilibrium." The critical F_c increases with K.

3. With favorable pressure gradients and suction, Stanton number always decreases below the "$K = 0$ equilibrium" level. The asymptotic suction condition, $St = -F$, is achieved at lower values of F with a favorable pressure gradient than in a flat-plate flow.

4. Stanton numbers in the constant free stream velocity section following $K = 1.45\times10^{-6}$ acceleration indicate a return to "$K = 0$ equilibrium" only when $F \leq 0$. The data for $F > 0$ show Stanton number receding from "$K = 0$ equilibrium" once the pressure gradient is removed.

5. Regardless of F, at any streamwise position the ratio of thermal layer thickness to hydrodynamic thickness, δ_T/δ, becomes greater as K increases. At any particular level of K, δ_T/δ continues to increase with streamwise distance. Comparing the t^+-y^+ and U^+-y^+ profiles in the constant K region reveals a significant difference in shape;

the thermal boundary layer penetrates significantly beyond the hydrodynamic layer. With constant, positive K flows, both U^+ and t^+ "overshoot" their accepted zero pressure gradient, fully turbulent, logarithmic levels.

6. All mean temperature profile data taken in the pressure gradient region exhibit inner ($t^+ - y^+$) and outer ($\overline{t} - y/\delta_T$) region similarity. At $F = -0.002$, the outer region temperature profiles for $K \leq 1.45 \times 10^{-6}$ are the same as for "$K = 0$ equilibrium." As F and K increase, shape of the outer region departs from "$K = 0$ equilibrium."

7. In the recovery section, inner region of the temperature profile recovers to the zero pressure gradient shape much faster than the outer region. At $F = -0.002$, outer region similarity did not exist. For $F \geq 0$, the temperature profiles show outer region similarity over 90 percent of the thermal boundary layer but the shapes do not show evidence of a return toward the "$K = 0$ equilibrium shape. As F increases, the $\overline{t} - y/\delta_T$ shape departs further from "$K = 0$ equilibrium."

8. The concepts of (1) reduced turbulent energy and momentum diffusivities near the wall, (2) energy transport by molecular mechanisms beyond the hydrodynamic thickness, were used with simple mixing length theory to predict the mean (time averaged) hydrodynamic and thermal boundary layer characteristics with uniform transpiration and favorable pressure gradients. Utilizing the hydrodynamic sublayer correlations of Julien [2] and particular Pr_T correlations, satisfactory predictions of St, C_f, mean velocity and mean temperature profiles were

achieved for $-0.002 \le F \le +0.006$, $0 \le K \le 1.45 \times 10^{-6}$ using the Van Driest continuous eddy viscosity model. Satisfactory predictions for $0 \le F \le +0.006$, $0 \le K \le 1.45 \times 10^{-6}$, and $-0.002 \le F \le 0$, $K \le 0.77 \times 10^{-6}$ were also obtained using a 2-layer model. Experimental Stanton number behavior at and beyond the critical conditions (i.e., $F \ge F_c, K_c$) were successfully predicted.

9. Experimental Stanton number behavior in the recovery section, for $-0.002 \le F \le +0.006$, was satisfactorily predicted utilizing simple mixing length theory. As the data suggest, the Stanton number predictions do show a significant departure away from the "K = 0 equilibrium" level at large blowing fractions.

10. The correlation

$$\ln \frac{St}{St_{K=0}} = \left[0.19 \times 10^6 K - 100F\right]\left[\frac{\theta}{\Delta} - \left(\frac{\theta}{\Delta}\right)_{K=0}\right]$$

predicts St within 10 percent for $-0.001 \le F \le +0.006$, $0 \le K \le 1.45 \times 10^{-6}$. This correlation can also be used to predict whether or not St will be greater than the $K = 0$ value at the same Re_Δ .

B. Recommendations for Future Work

1. Heat transfer and hydrodynamic data with blowing and sucking should be obtained at larger values of K . Hot wire information should be provided to ascertain whether the boundary layer is truly turbulent. Intermittency data in the region between δ and δ_T should be relatively easy to obtain and would provide additional proof that the degree of turbulence in this region is negligible.

2. The effects of highly "overshot" and "undershot" boundary layers on heat transfer should be explored.

3. The recovery phenomena should be further analyzed. Additional data is needed to prove that the "$K = 0$ equilibrium" level will eventually be achieved.

4. The F and t_o boundary conditions should be varied to determine the corresponding effects on heat transfer and C_f .

5. One of the weakest links in all heat transfer prediction methods is the Pr_T distribution. The temperature profiles reported here and the velocity profiles of Julien [2] can provide valuable information on the Pr_T distribution with blowing, sucking, and favorable pressure gradients.

6. For flows with rapidly changing K , the A^* correlation should be modified so as to reflect the appropriate effective turbulent viscosity distribution. At present, the Van Driest model holds promise of being able to predict the relevant heat transfer and hydrodynamic quantities through relaminarization. This work should be continued.

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Measured Quantity	Instrument Used	Calibration or Check Instrument	Estimated Accuracy
Temperature	Iron-constantan thermo-couples	N.B.S. certified platinum resistance thermometer	0.25 ^{o}F (absolute)
	Leeds and Northrup Portable Semi-Precision Potentiometer and/or Hewlett-Packard Model 2401C Integrating Digital Voltmeter	Six-dial precision potentiometer	
Pressure	Dwyer Model 100.5 0-1 inch Inclined Manometer	Harrison Laboratory Standard Micromanometer	0.002 in. H_2O
Flowrate	Fisher-Porter Models B4 B5-27-10 Rotameters, Float types BSVT-45-A and BSVT-64-A respectively	ASME standard orifices, laminar flow elements	2 percent
Electrical Power	Sensitive Research Company, Reference Standard Wattmeter Model U-21020	DC load tests measured by reference standard instrumentation at Stanford Linear Accelerator Standards Facility	1/4 percent

TABLE 1

SUMMARY OF INSTRUMENTATION AND ESTIMATED ACCURACY

TABLE 2

UNCERTAINTY INTERVALS

(20:1) Odds

F/K	$\Delta St \times 10^3$ (avg.)	Re_Δ (Eq.9) (avg.%)	$\Delta K \times 10^{6*}$ (%)	ΔRe_θ^* (%)	Δu_∞ (max.%)	$\Delta F \times 10^3$ (max.)
$F = -0.004$						
$K = 0.57 \times 10^{-6}$	0.20	20.0	10.0	15.0	0.5	0.07
$K = 0.77 \times 10^{-6}$	0.20	35.0	16.0	15.0	0.5	0.09
$K = 1.45 \times 10^{-6}$	0.20	35.0	11.0	10.0	0.5	0.10
$F = -0.002$						
$K = 0.57 \times 10^{-6}$	0.20	13.0	9.0	4.7	0.5	0.02
$K = 0.77 \times 10^{-6}$	0.20	14.0	14.0	8.0	0.5	0.02
$K = 1.45 \times 10^{-6}$	0.20	13.0	10.0	8.5	0.5	0.02
$F = -0.001$						
$K = 0.57 \times 10^{-6}$	0.10	5.0	10.0	3.1	0.5	0.01
$K = 0.77 \times 10^{-6}$	0.10	5.0	17.0	6.0	0.5	0.02
$K = 1.45 \times 10^{-6}$	0.10	5.0	10.0	5.0	0.5	0.02
$F = 0$						
$K = 0.57 \times 10^{-6}$	0.05	2.0	8.0	2.3	0.5	0
$K = 0.77 \times 10^{-6}$	0.06	2.4	13.0	4.0	0.5	0
$K = 1.45 \times 10^{-6}$	0.07	2.4	10.0	5.0	0.5	0
$F = +0.001$						
$K = 0.57 \times 10^{-6}$	0.06	2.0	10.0	2.5	0.5	0.01
$K = 0.77 \times 10^{-6}$	0.07	2.1	14.0	4.1	0.5	0.02
$K = 1.45 \times 10^{-6}$	0.07	2.0	10.0	4.0	0.5	0.02
$F = +0.002$						
$K = 0.57 \times 10^{-6}$	0.08	2.3	10.0	2.1	0.5	0.02
$K = 0.77 \times 10^{-6}$	0.09	3.0	14.0	3.4	0.5	0.02
$K = 1.45 \times 10^{-6}$	0.08	2.4	10.0	4.1	0.5	0.02
$F = +0.004$						
$K = 0.57 \times 10^{-6}$ (P)	0.07	2.0	8.0	1.5	0.5	0.07
$K = 0.57 \times 10^{-6}$	0.10	2.4	8.0	1.5	0.5	0.09
$K = 0.77 \times 10^{-6}$ (P)	0.08	2.3	13.0	2.7	0.5	0.10
$K = 1.45 \times 10^{-6}$ (P)	0.07	2.1	10.0	3.5	0.5	0.10
$K = 1.45 \times 10^{-6}$	0.10	2.1	10.0	3.5	0.5	0.10
$F = +0.006$						
$K = 0.77 \times 10^{-6}$ (P)	0.09	2.0	13.0	2.5	0.5	0.09
$K = 1.45 \times 10^{-6}$ (P)	0.08	1.9	10.0	3.0	0.5	0.10
(recovery) K=0	0.07	1.6	100.0	0.6	0.5	0.10

(P) denotes passive mode

* Obtained from reference 2

TABLE 3

BEST ESTIMATE OF ASYMPTOTIC REYNOLDS NUMBER

$K \times 10^6$	F	Asymptotic Re_θ
0	greater than zero	∞
0.57	-0.002	700
	-0.001	1150
	0	1600
	+0.001	1970
	+0.002	2600
	+0.004	3700
0.77	-0.002	540
	-0.001	920
	0	1250
	+0.001	1580
	+0.002	2080
	+0.004	2950
	+0.006	3600
1.45	-0.002	300
	-0.001	520
	0	750
	+0.001	950
	+0.002	1130
	+0.004	1570
	+0.006	2000

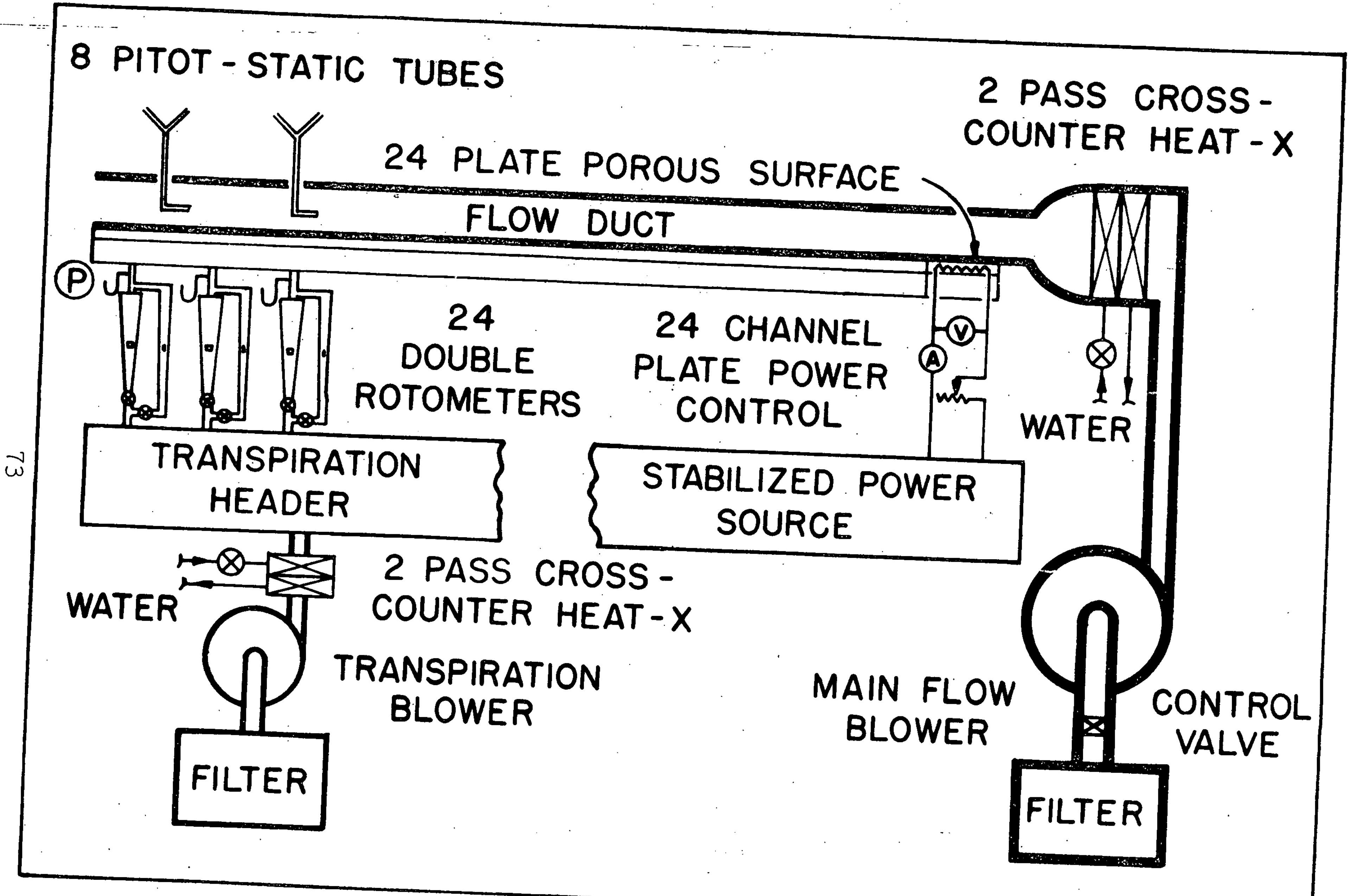
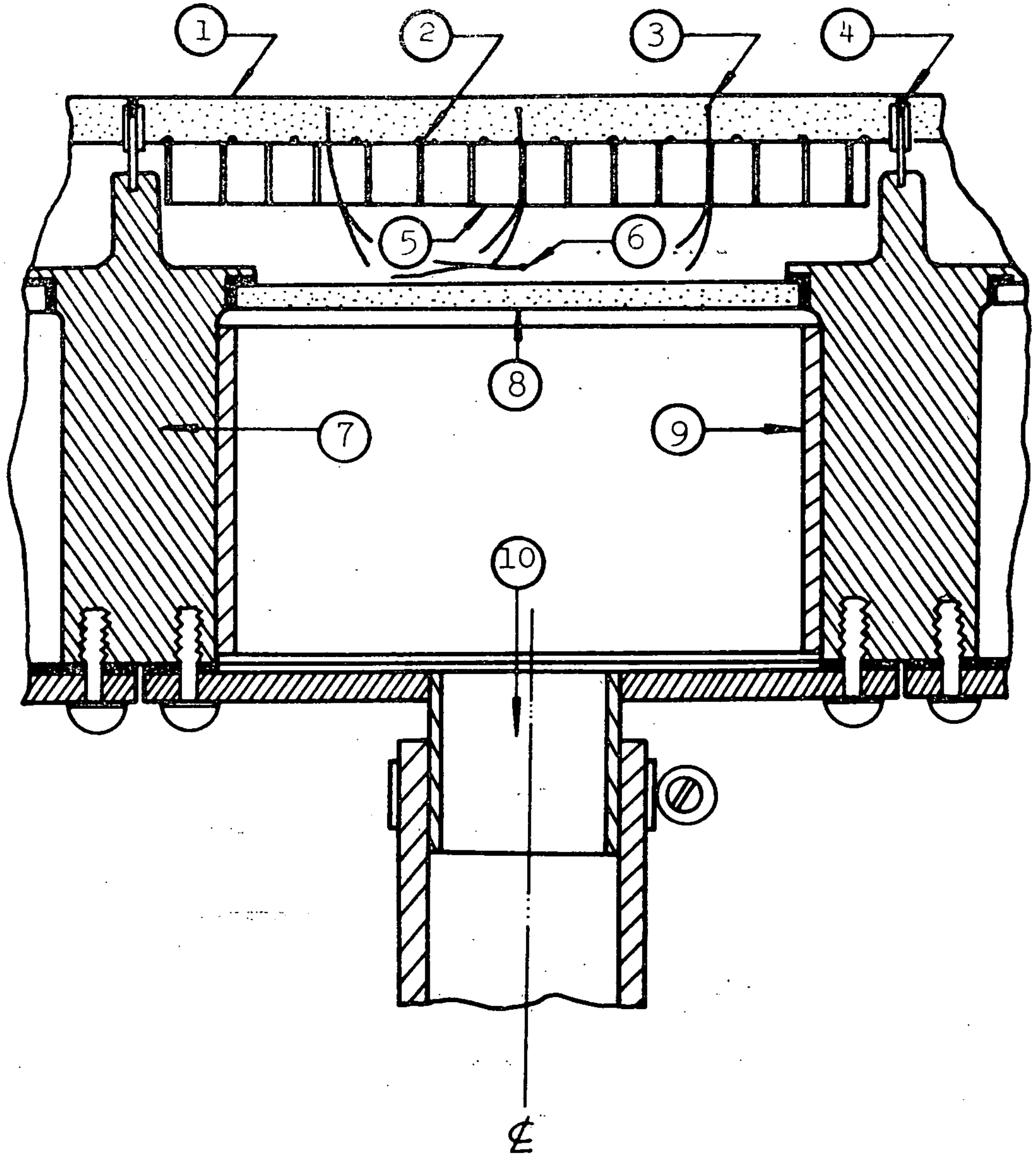
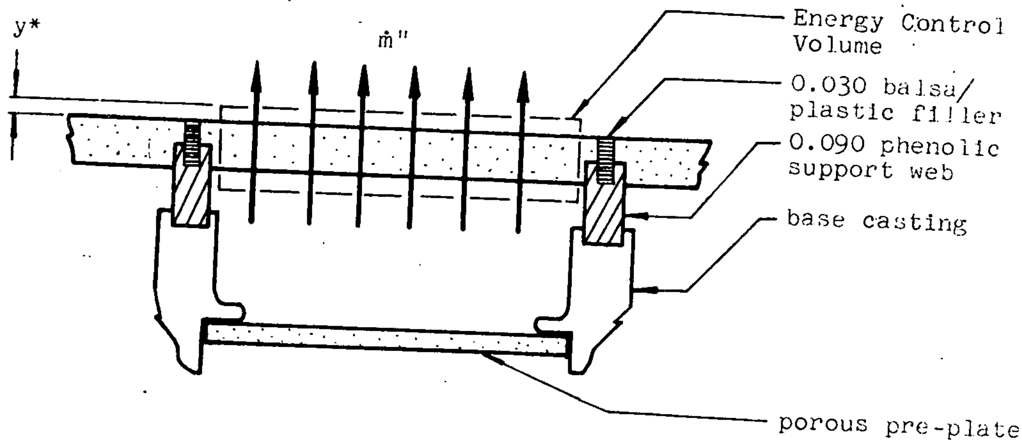


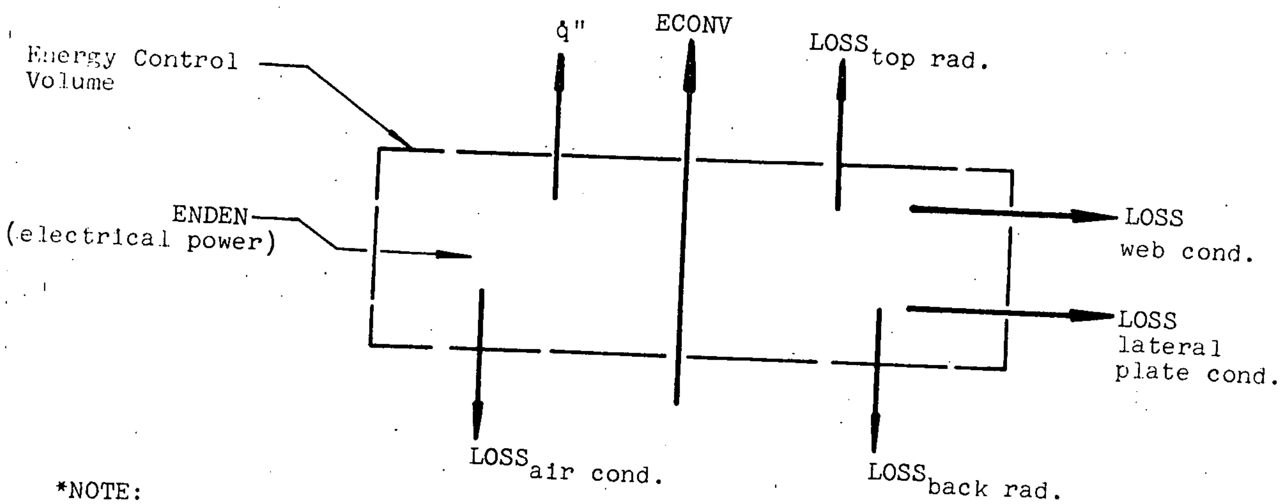
Figure 1. Test Apparatus Schematic



1. Porous plate
2. Heater wires
3. Thermocouples
4. Support webs
5. Honeycomb
6. Thermocouple
7. Base casting
8. Pre-plate
9. Balsa insulation
10. Delivery tube

Figure 2. Cross Section View of Typical Compartment





*NOTE:

$y \to \infty$ Sucking Energy Balance Mode

$y \to 0$ Normal Operating Modes

Figure 3. Energy Control Volume in Center Test Segment

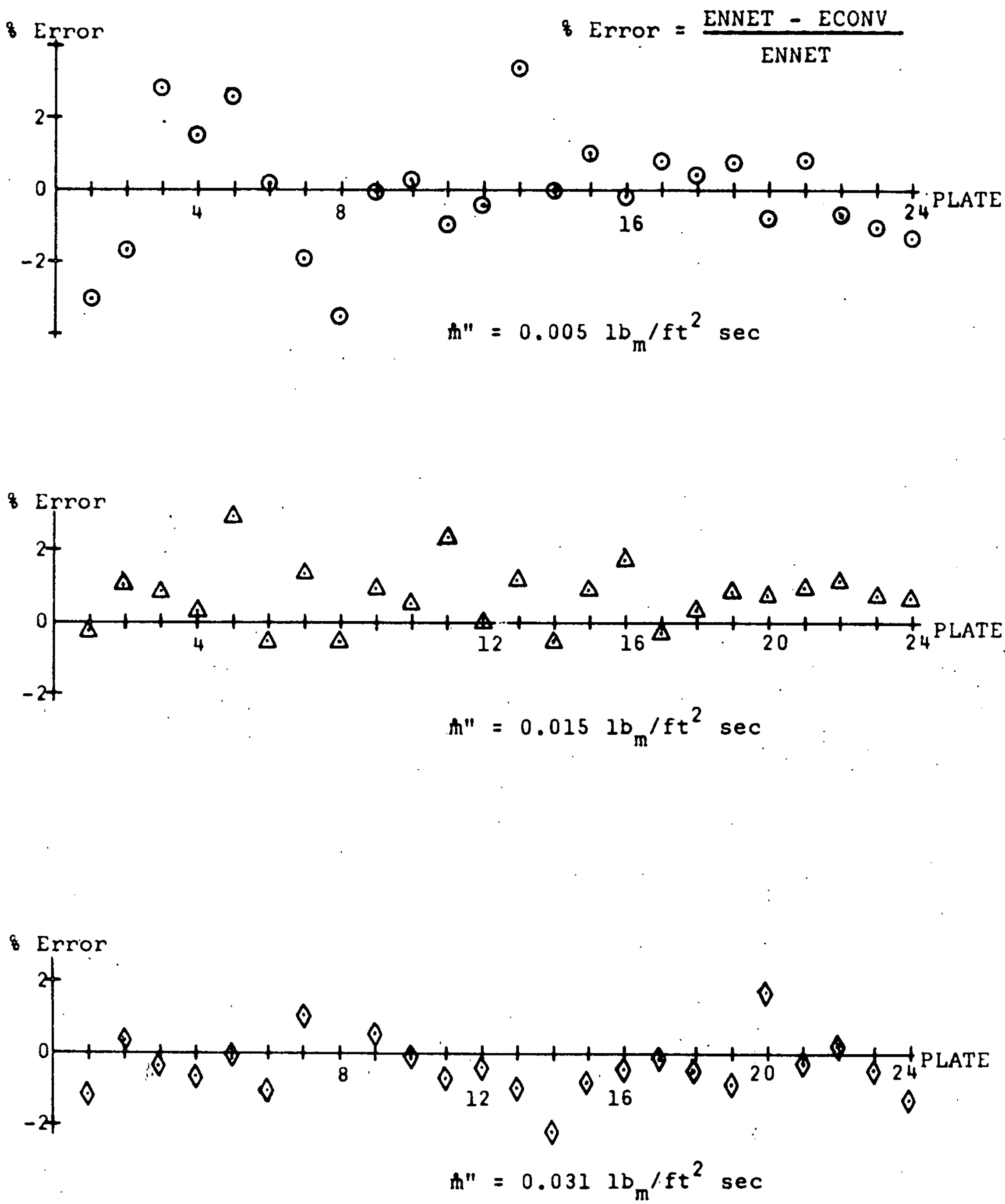


Figure 4a. Blowing Energy Balance Results

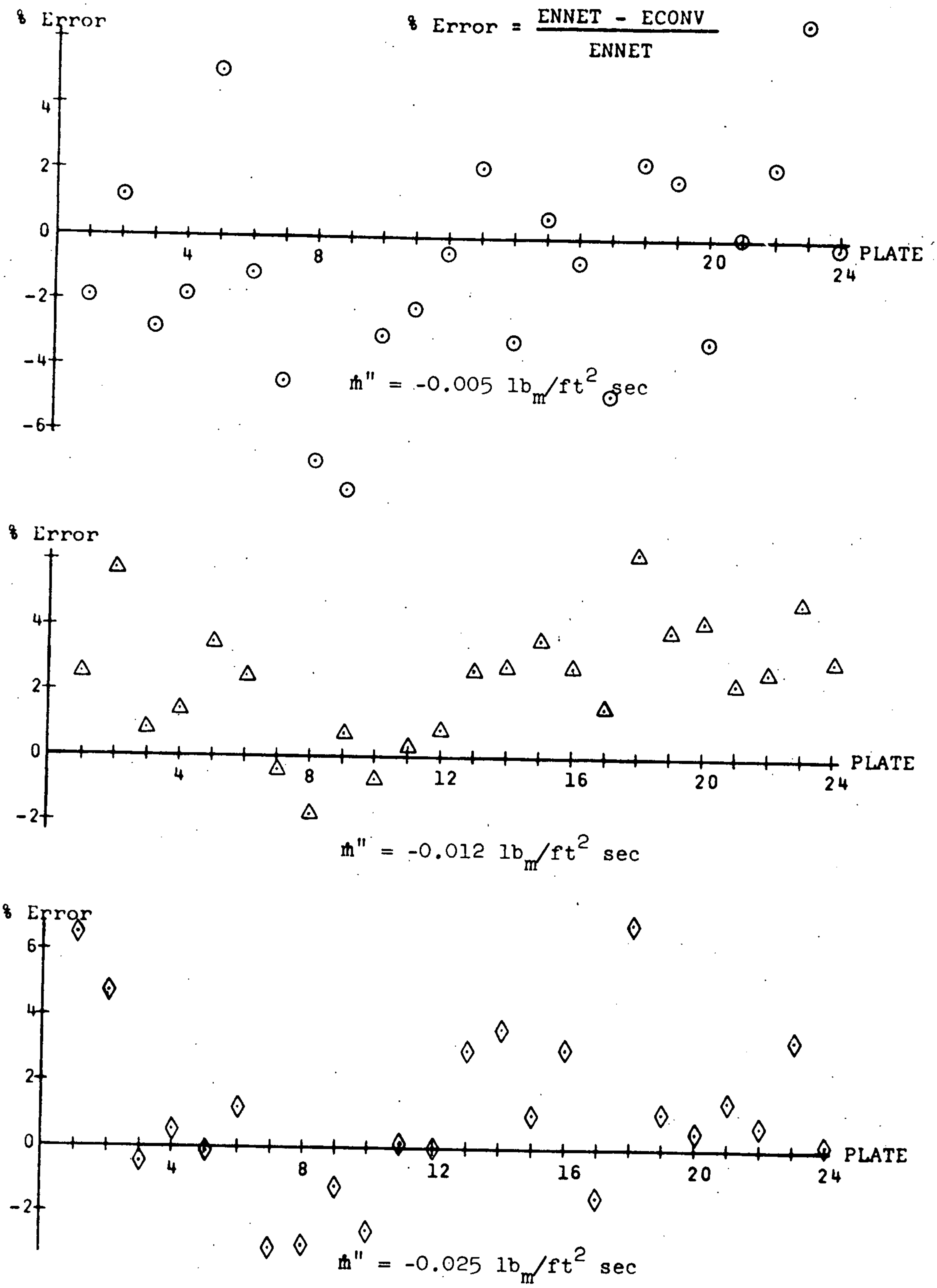


Figure 4b. Sucking Energy Balance Results

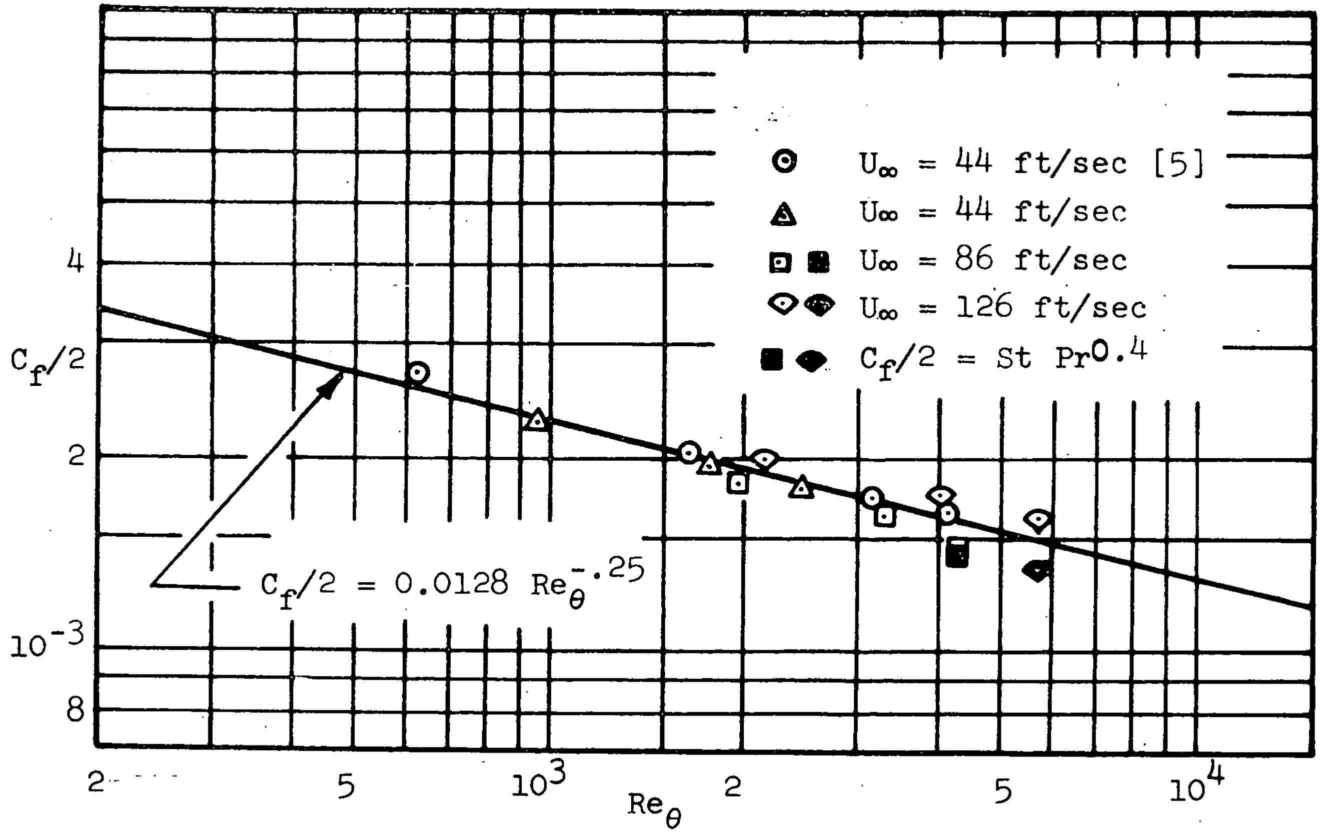


Figure 5. Unblown Friction Factors Compared to Smooth Wall Correlations

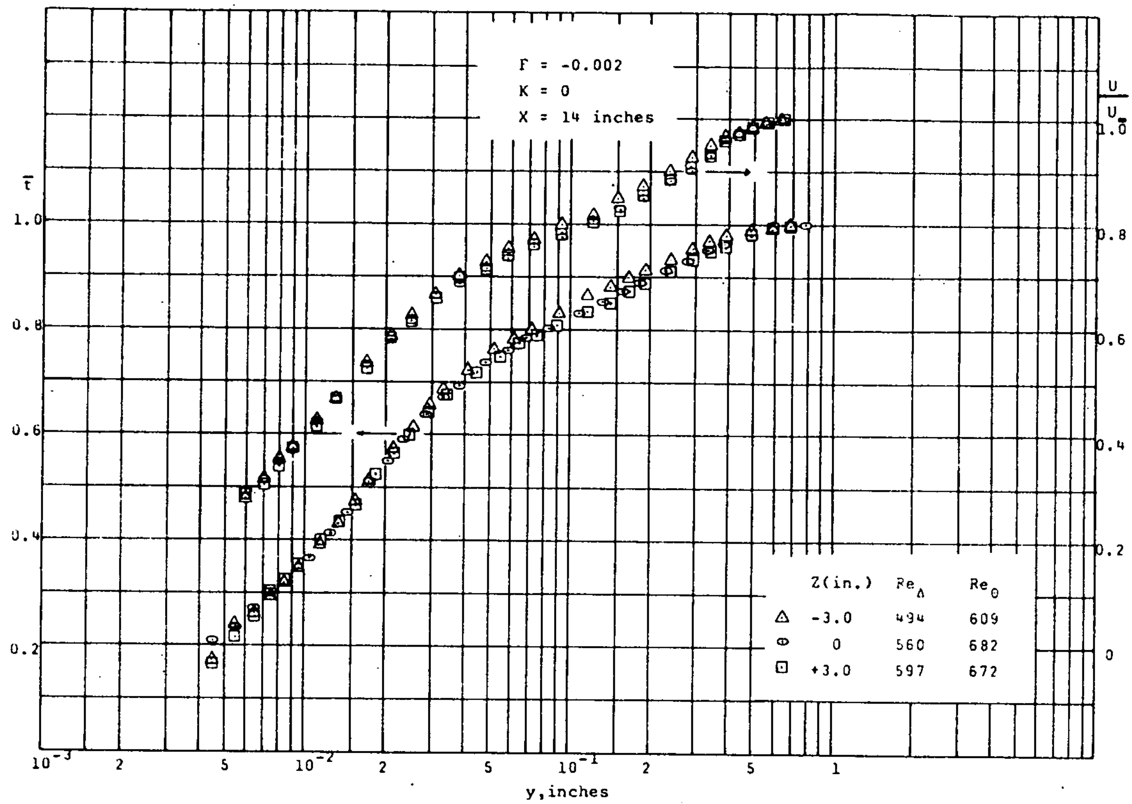


Figure 6a. Transverse Velocity and Temperature Profiles at F = -0.002 , K =

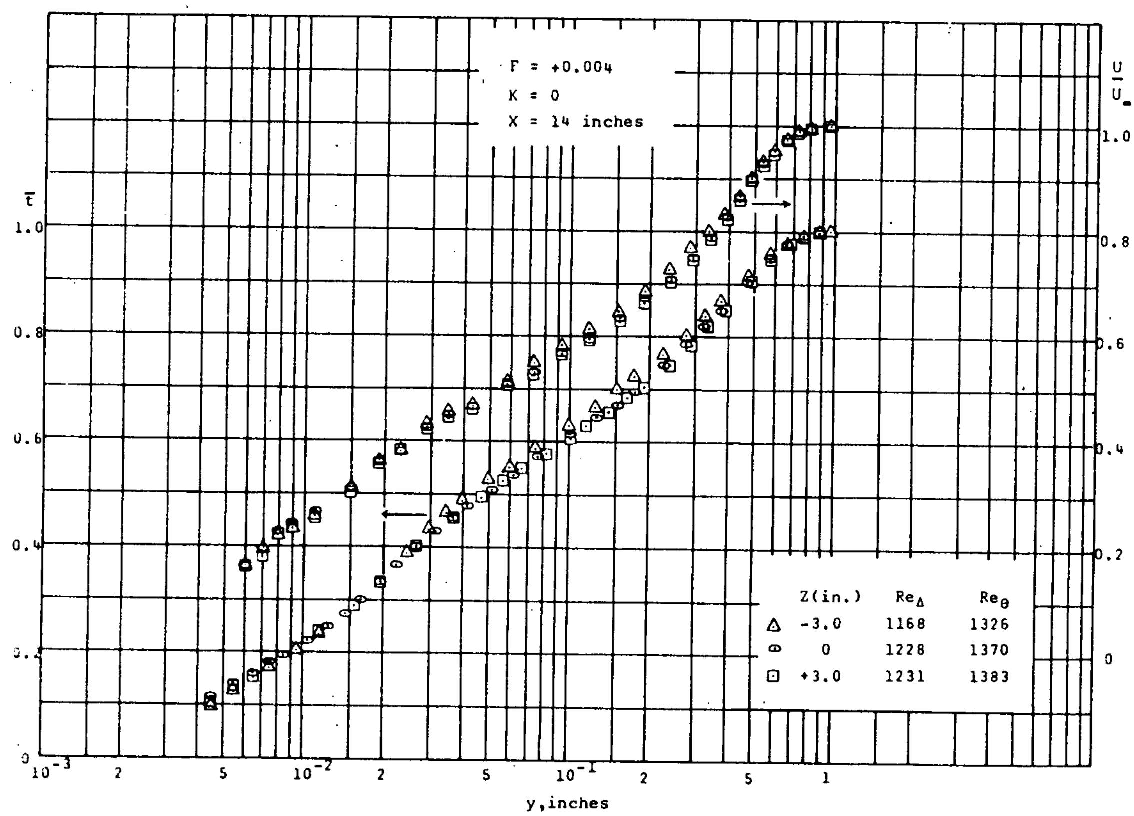


Figure 6b. Transverse Velocity and Temperature Profiles at F = +0.004 , K =

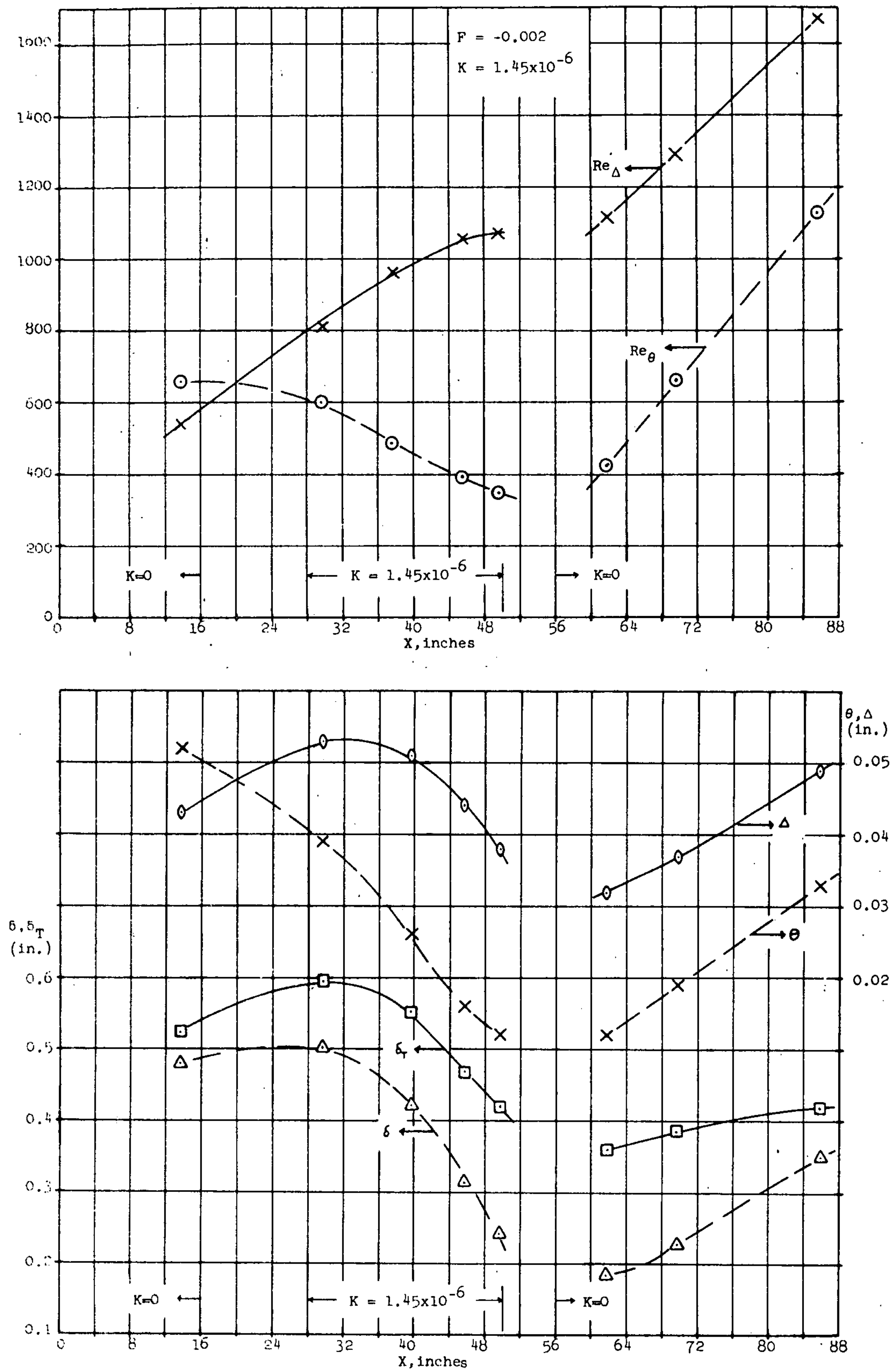


Figure 7a. Behavior of Selected Boundary Layer Parameters With Suction and Strong Favorable Pressure Gradient

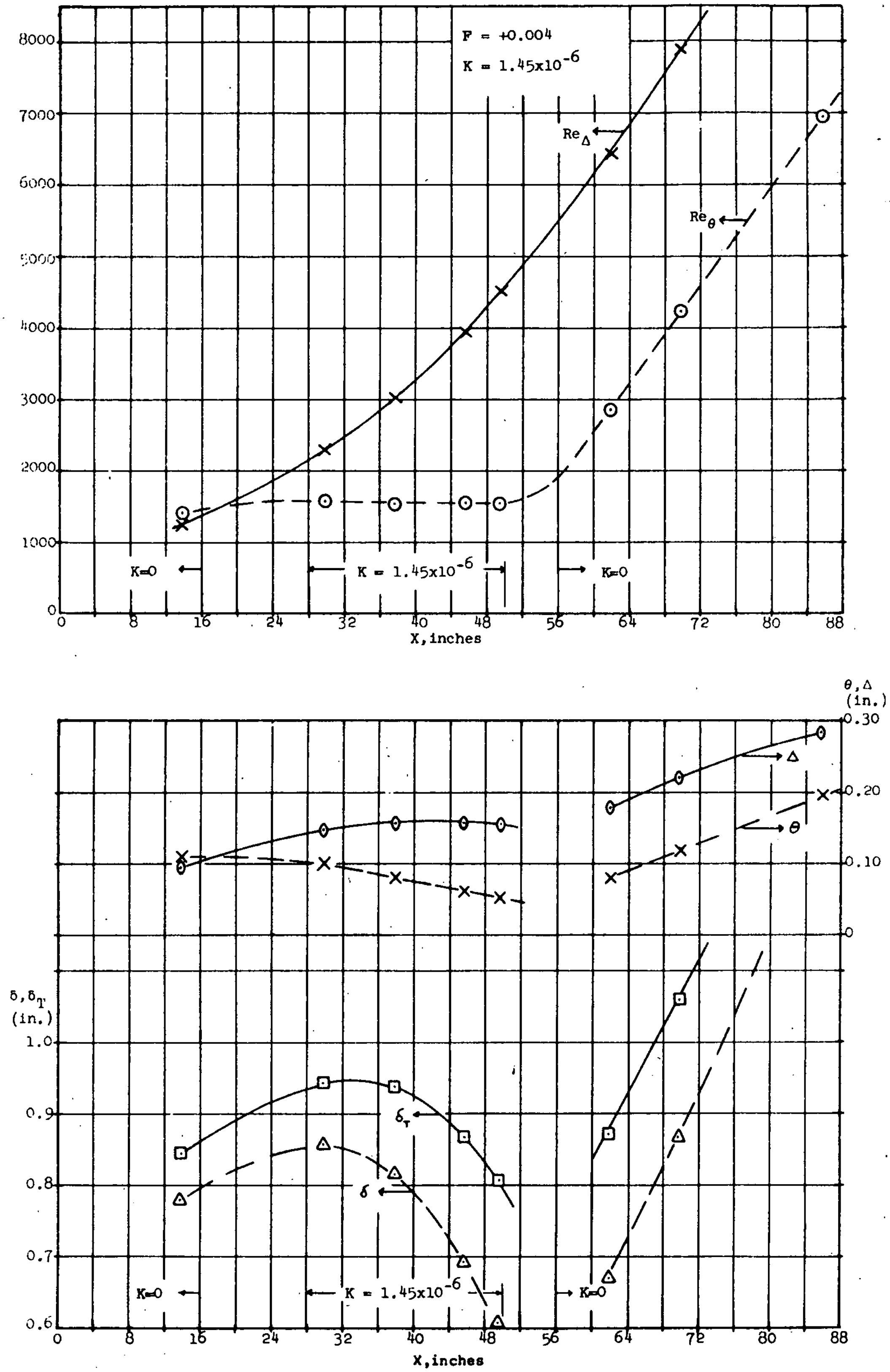


Figure 7b. Behavior of Selected Boundary Layer Parameters With Blowing and Strong Pressure Gradient

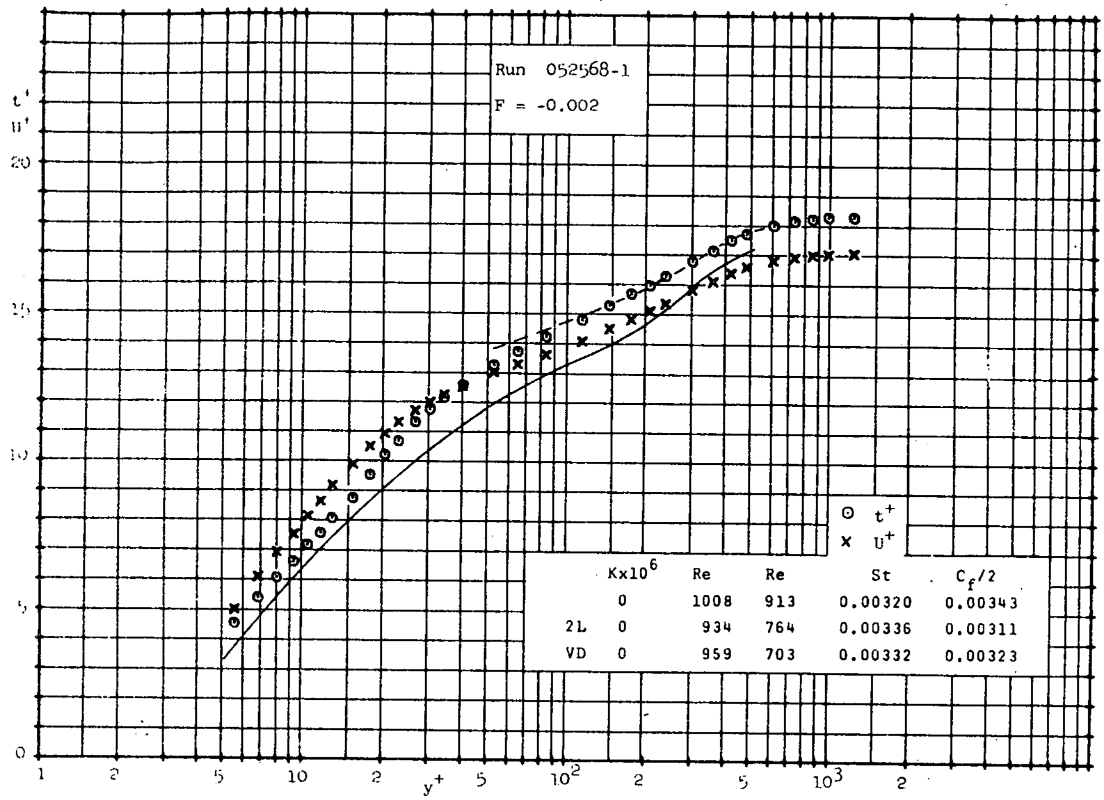


Figure 8a. Temperature and Velocity Profiles Preceding Acceleration

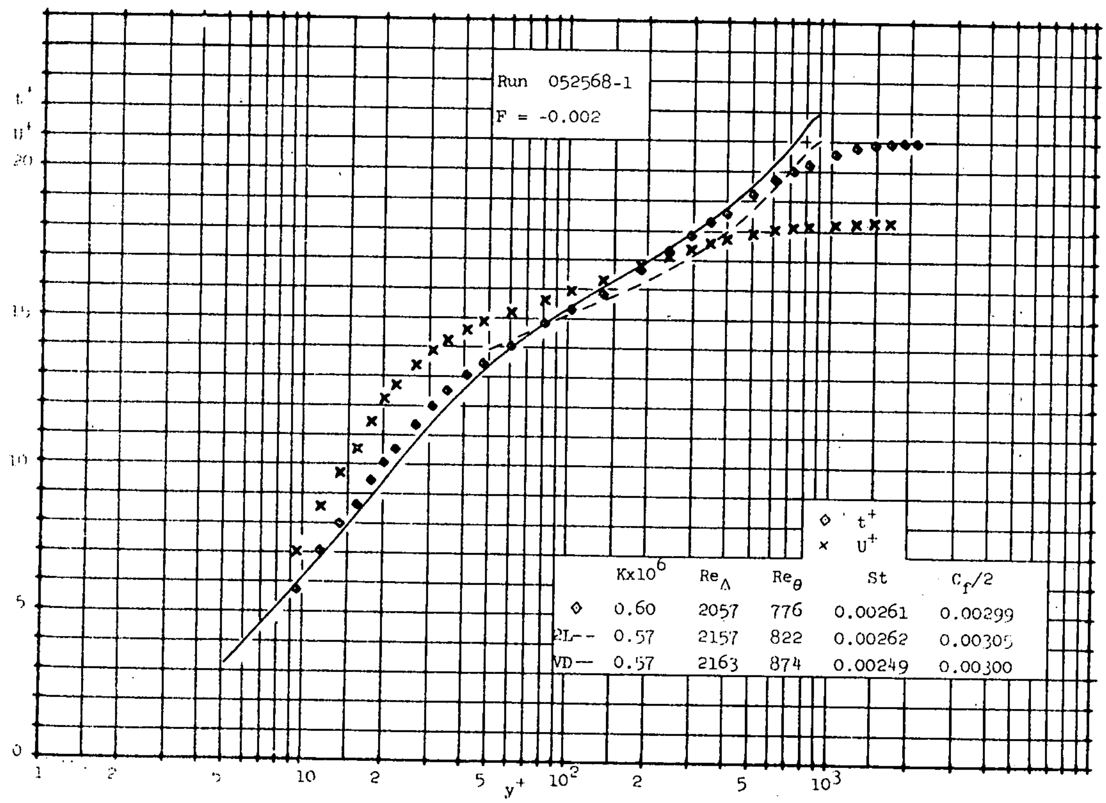


Figure 8b. Temperature and Velocity Profiles With Sucking and Favorable Pressure Gradient

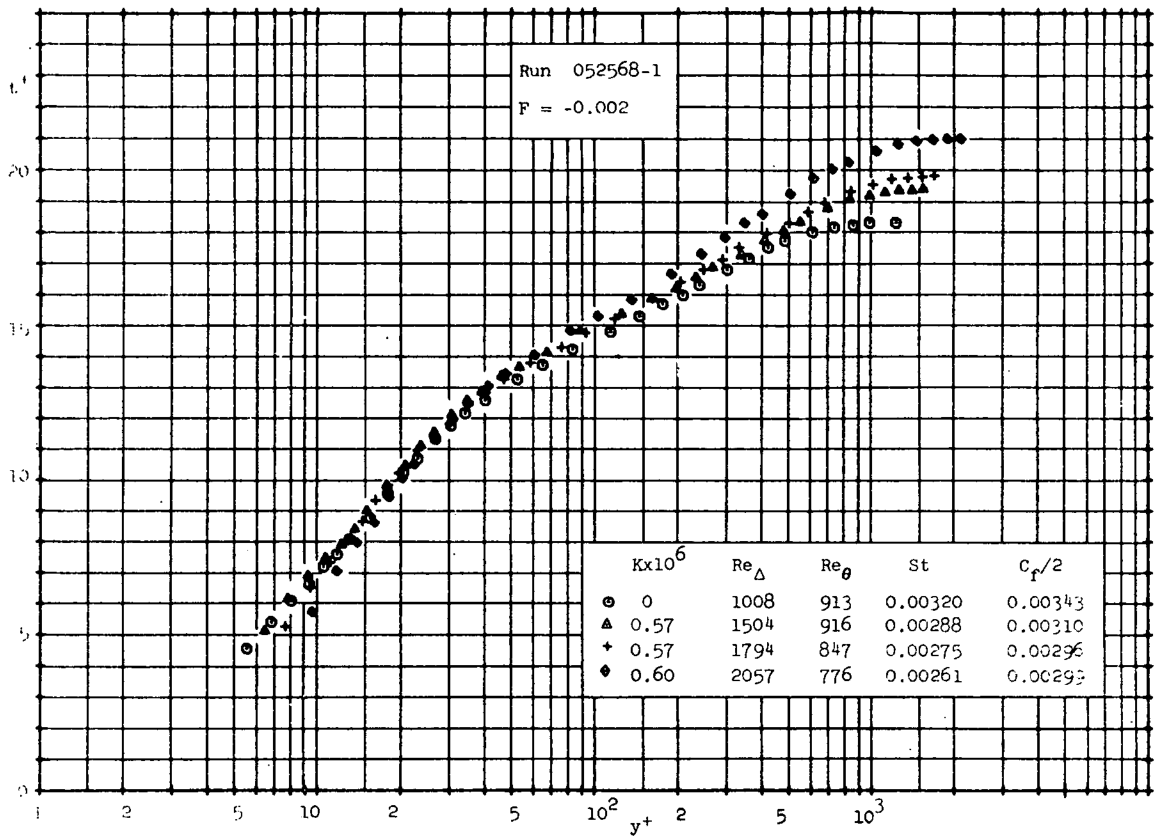


Figure 8c. Temperature Profile Development With Sucking and Favorable Pressure Gradient

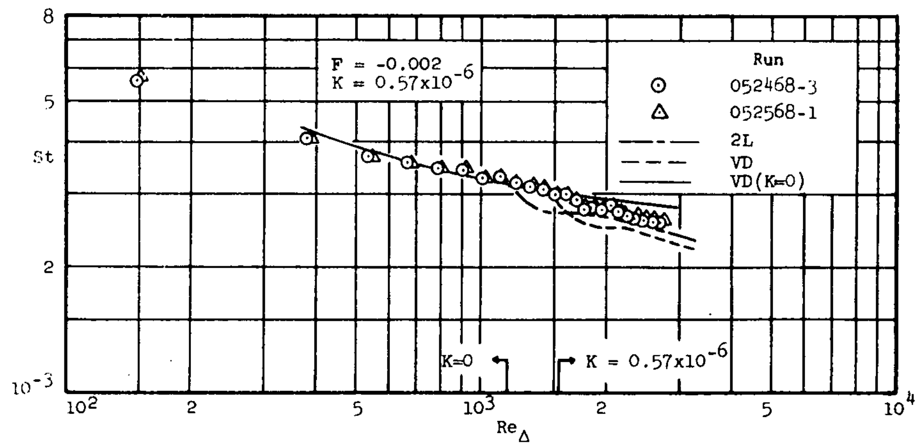


Figure 8d. Stanton Number Development With Sucking and Favorable Pressure Gradient

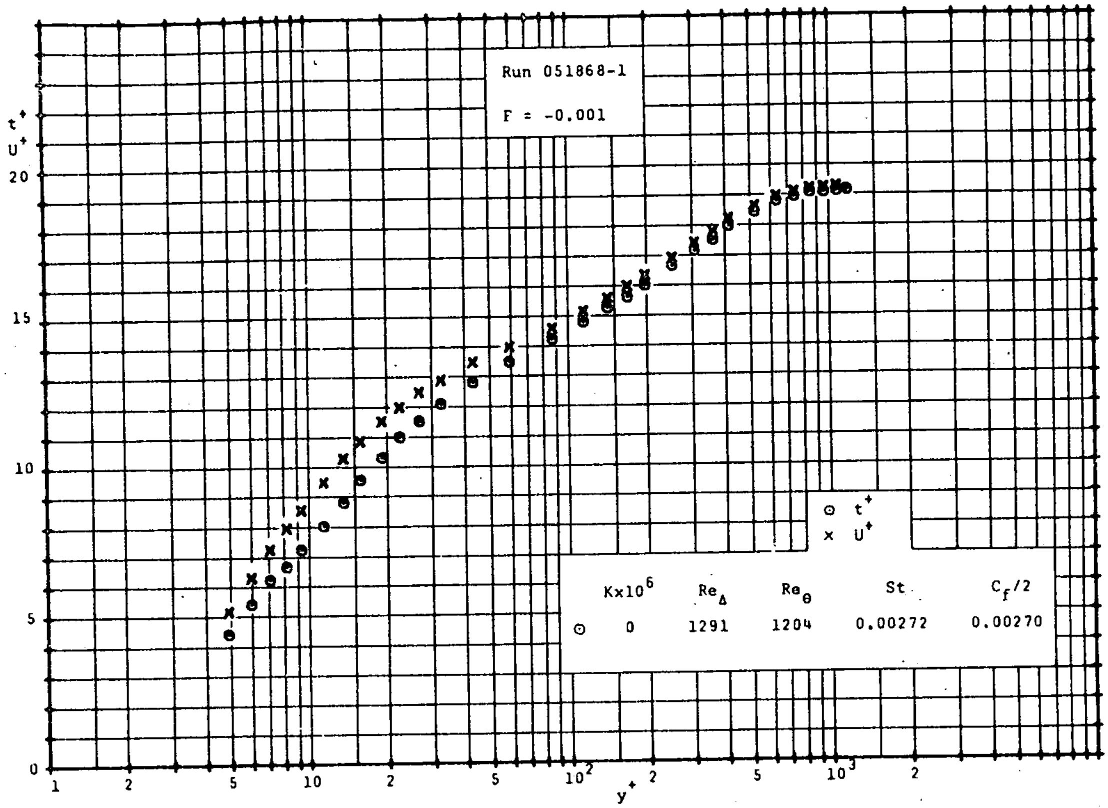


Figure 9a. Temperature and Velocity Profiles Preceding Acceleration

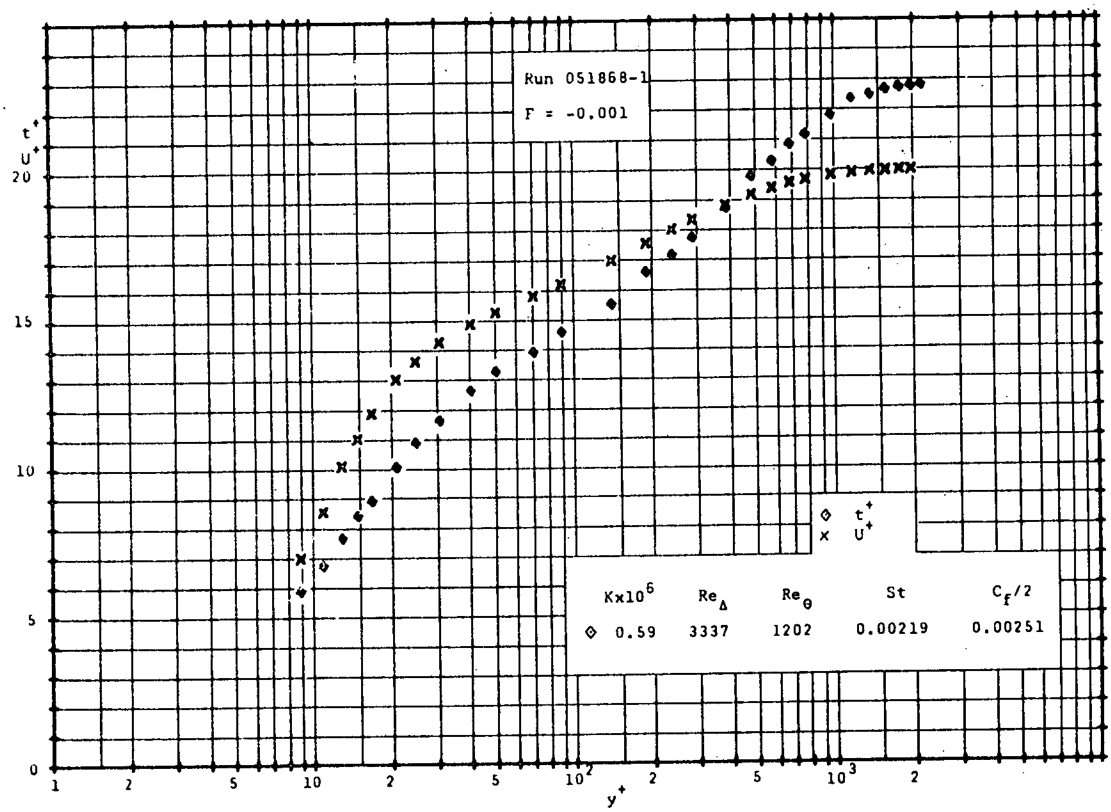


Figure 9b. Temperature and Velocity Profiles With Sucking and Favorable Pressure Gradient

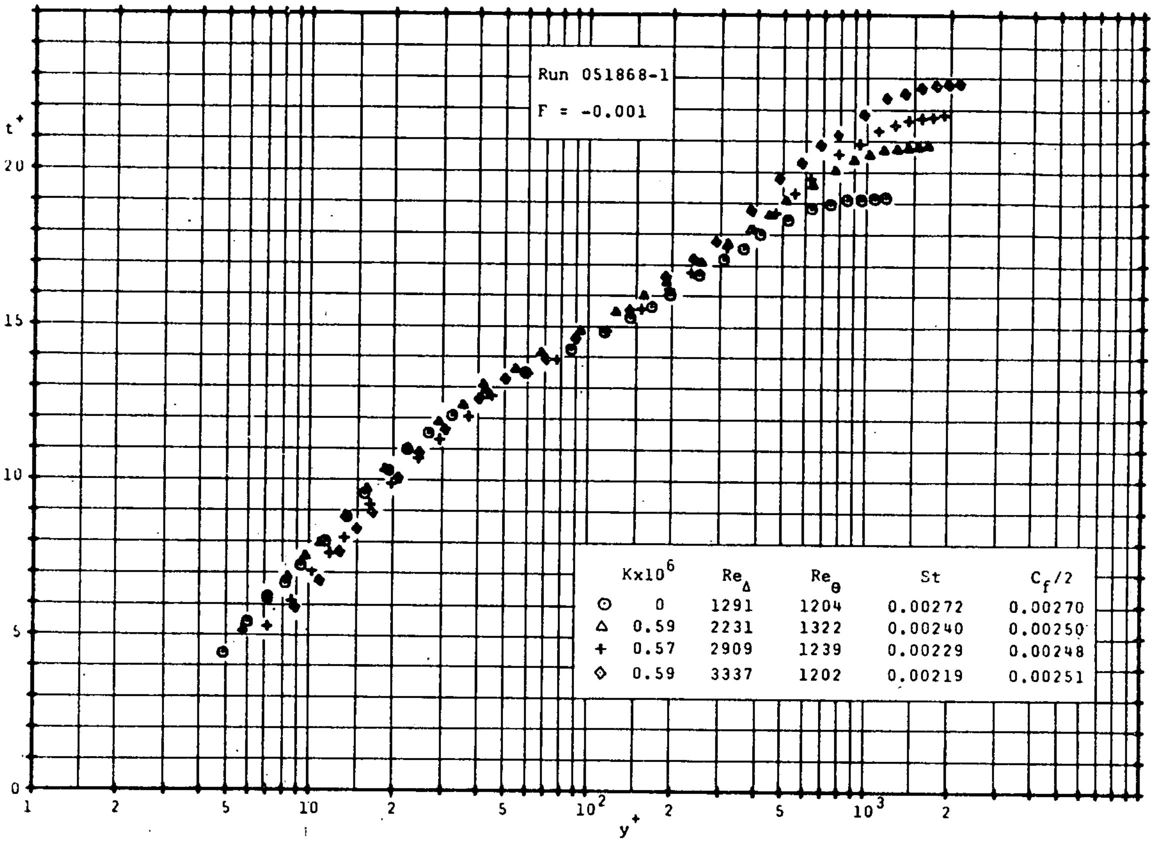


Figure 9c. Temperature Profile Development With Sucking and Favorable Pressure Gradient

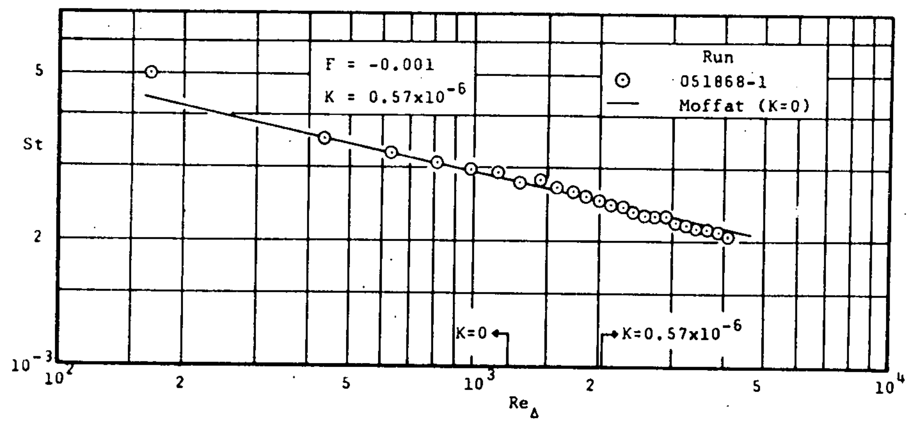


Figure 9d. Stanton Number Development With Sucking and Favorable Pressure Gradient

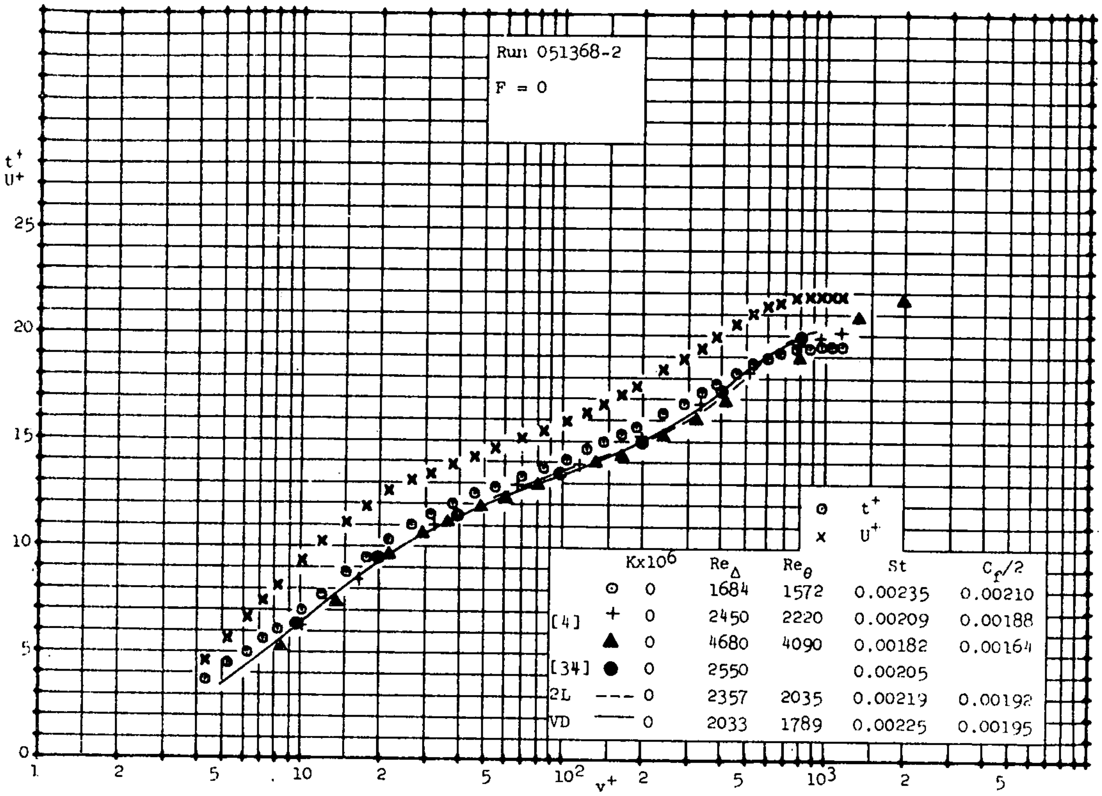


Figure 10a. Temperature and Velocity Profiles Preceding Acceleration

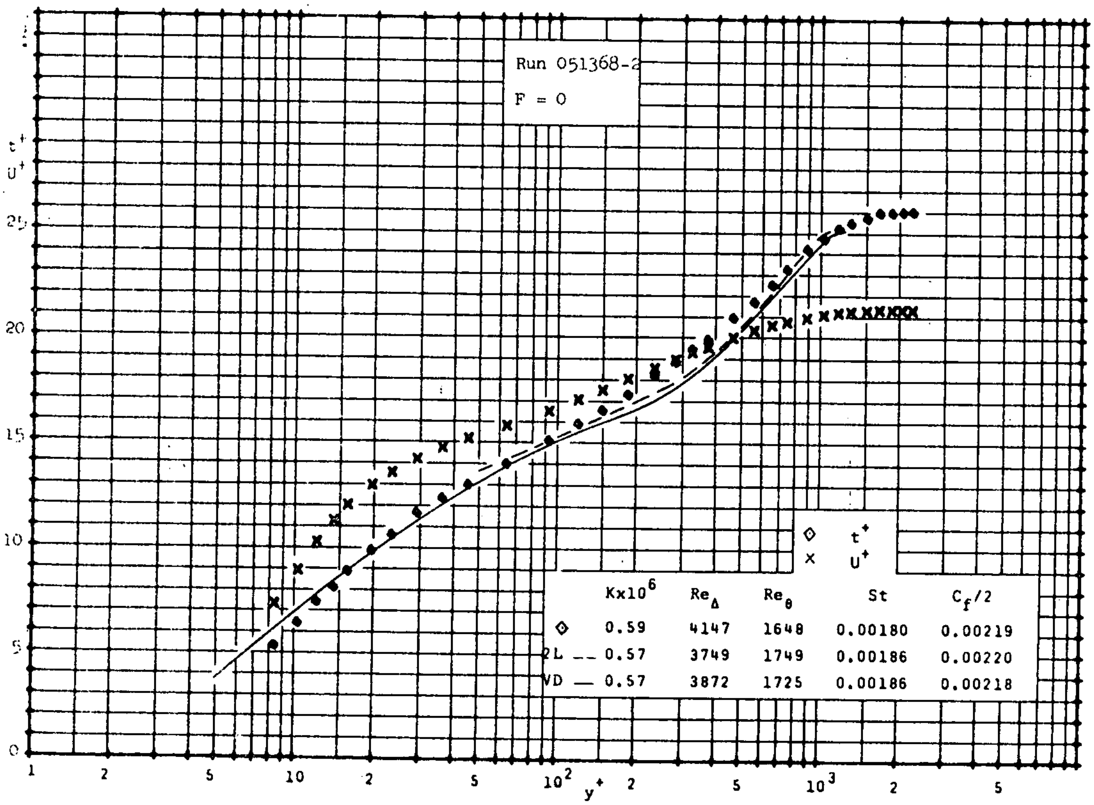


Figure 10b. Temperature and Velocity Profiles With Favorable Pressure Gradient

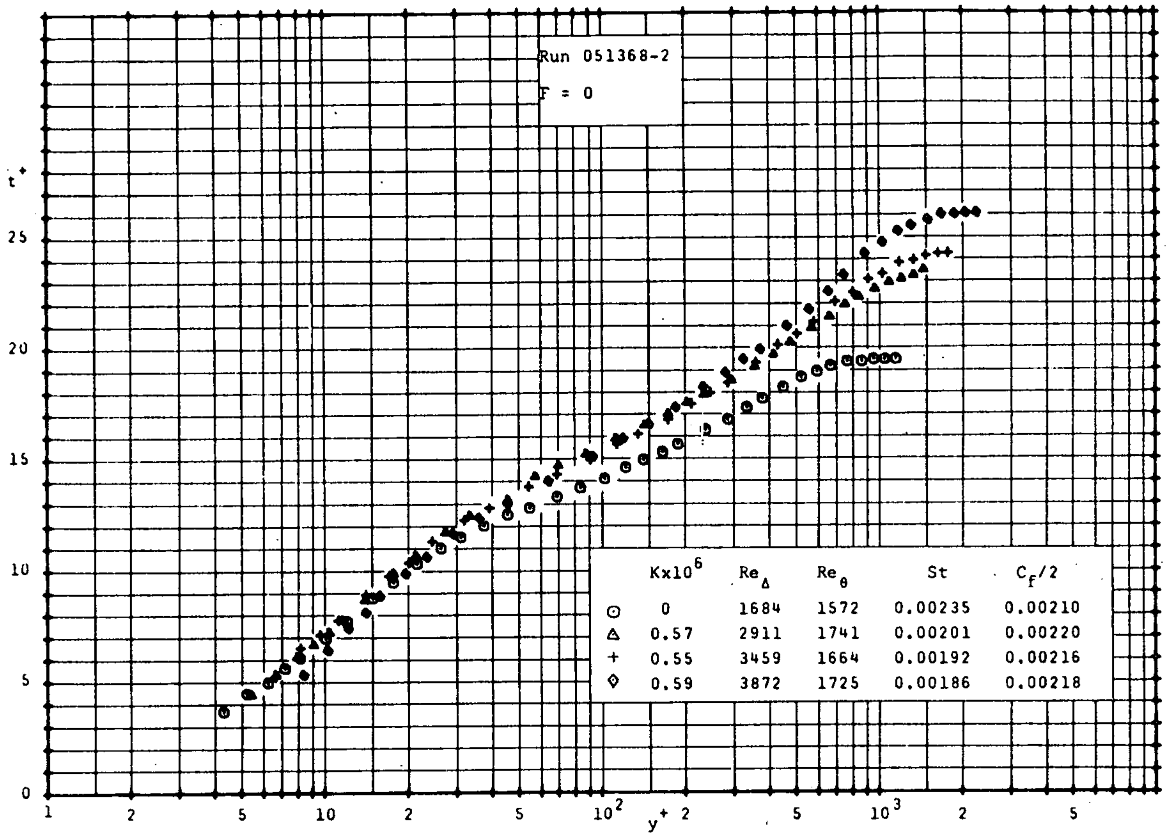


Figure 10c. Temperature Profile Development With Favorable Pressure Gradient

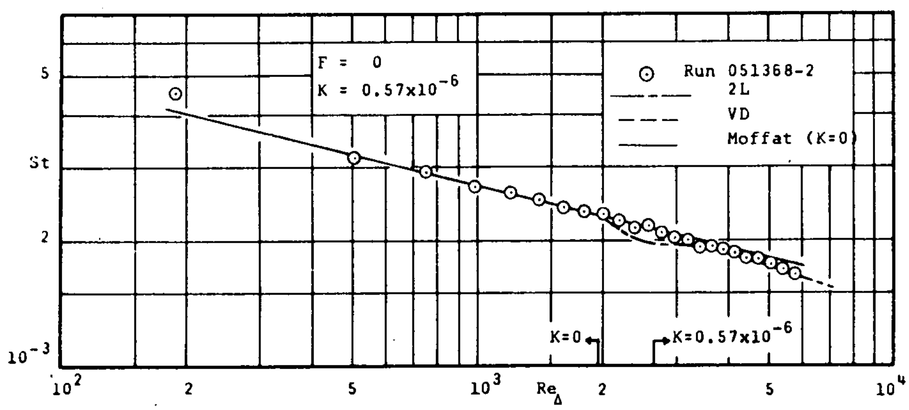


Figure 10d. Stanton Number Development With Favorable Pressure Gradient

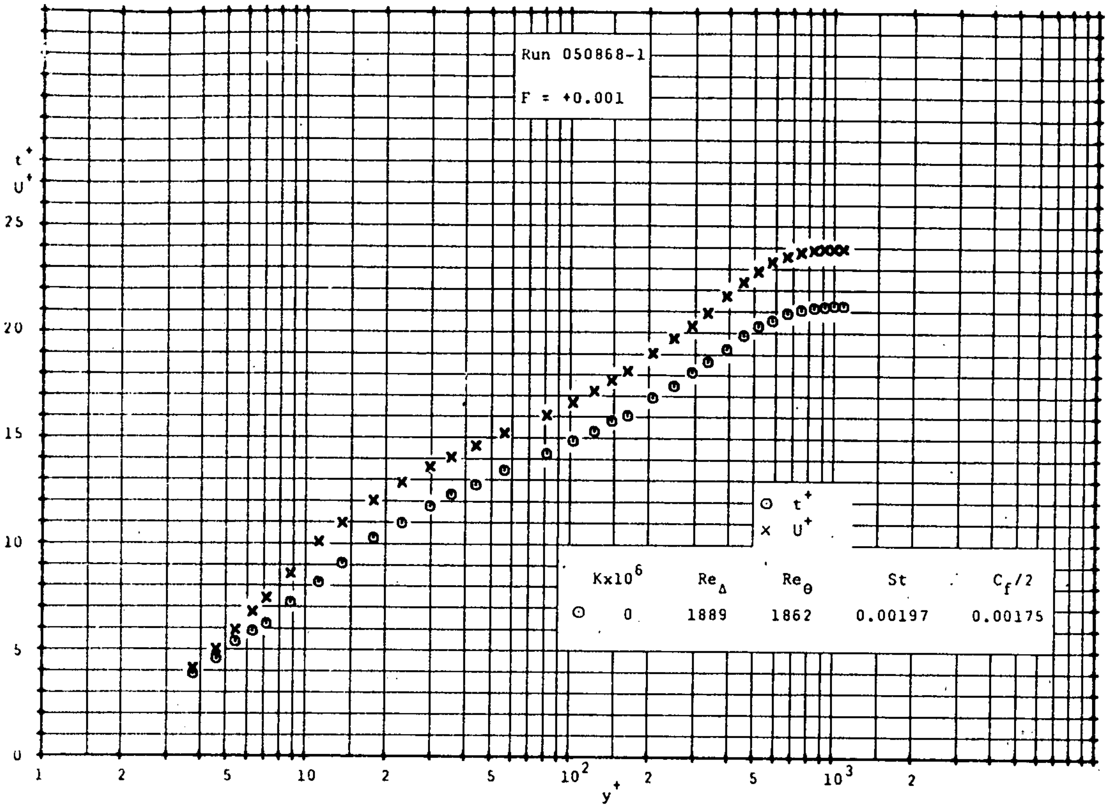


Figure 11a. Temperature and Velocity Profiles Preceding Acceleration

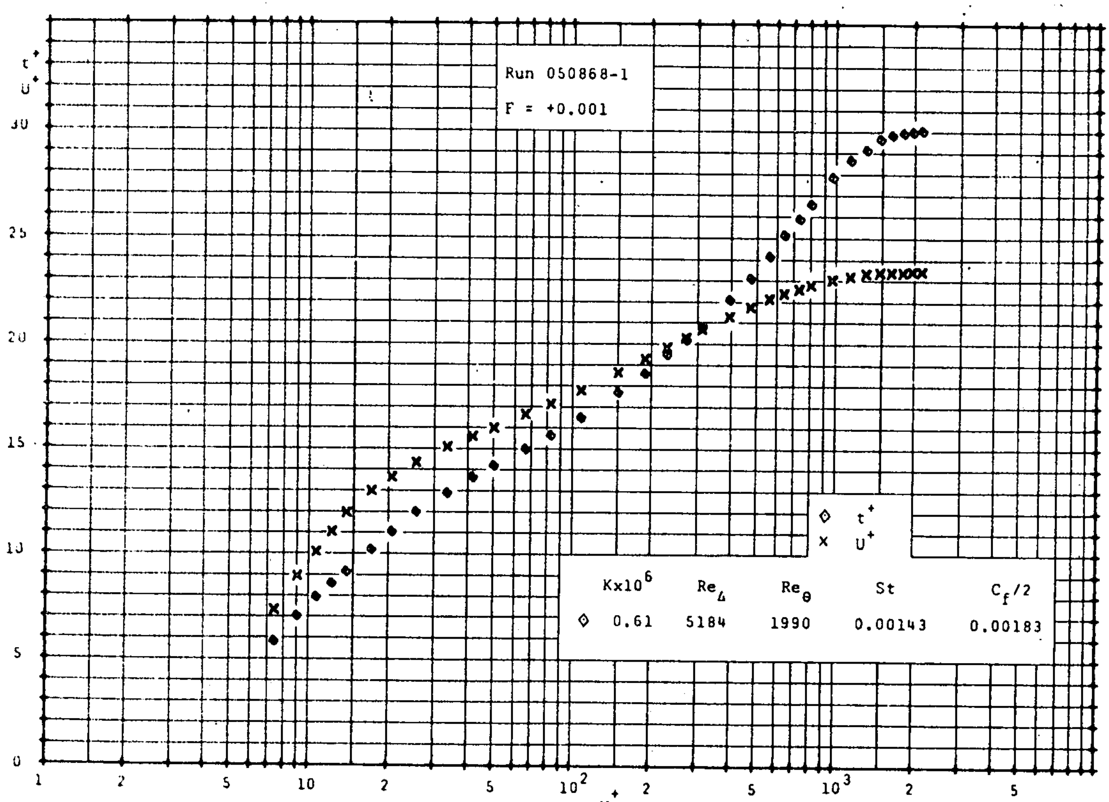


Figure 11b. Temperature and Velocity Profiles With Blowing and Favorable Pressure Gradient

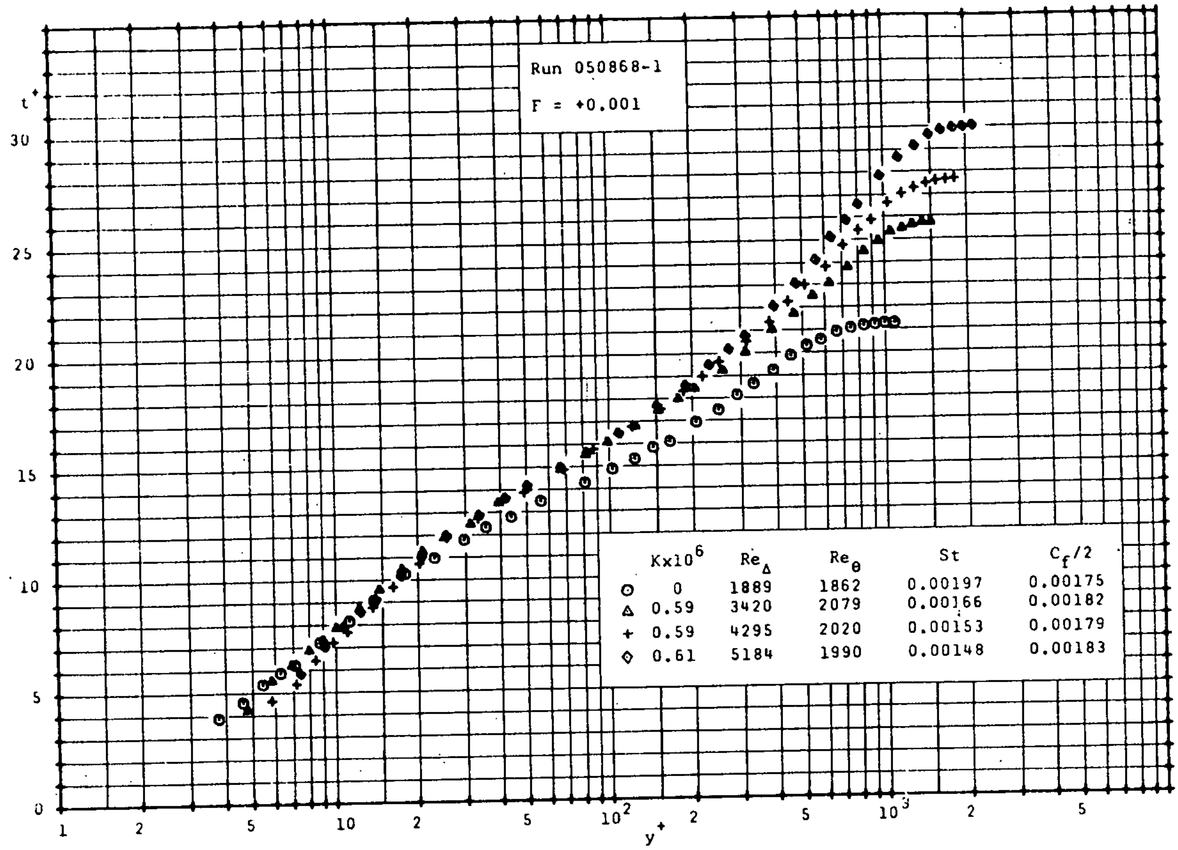


Figure 11c. Temperature Profile Development With Blowing and Favorable Pressure Gradient

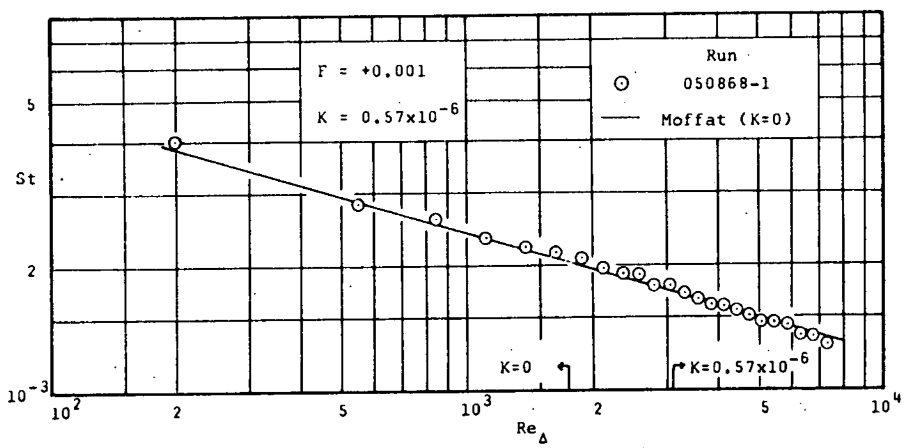


Figure 11d. Stanton Number Development With Blowing and Favorable Pressure Gradient

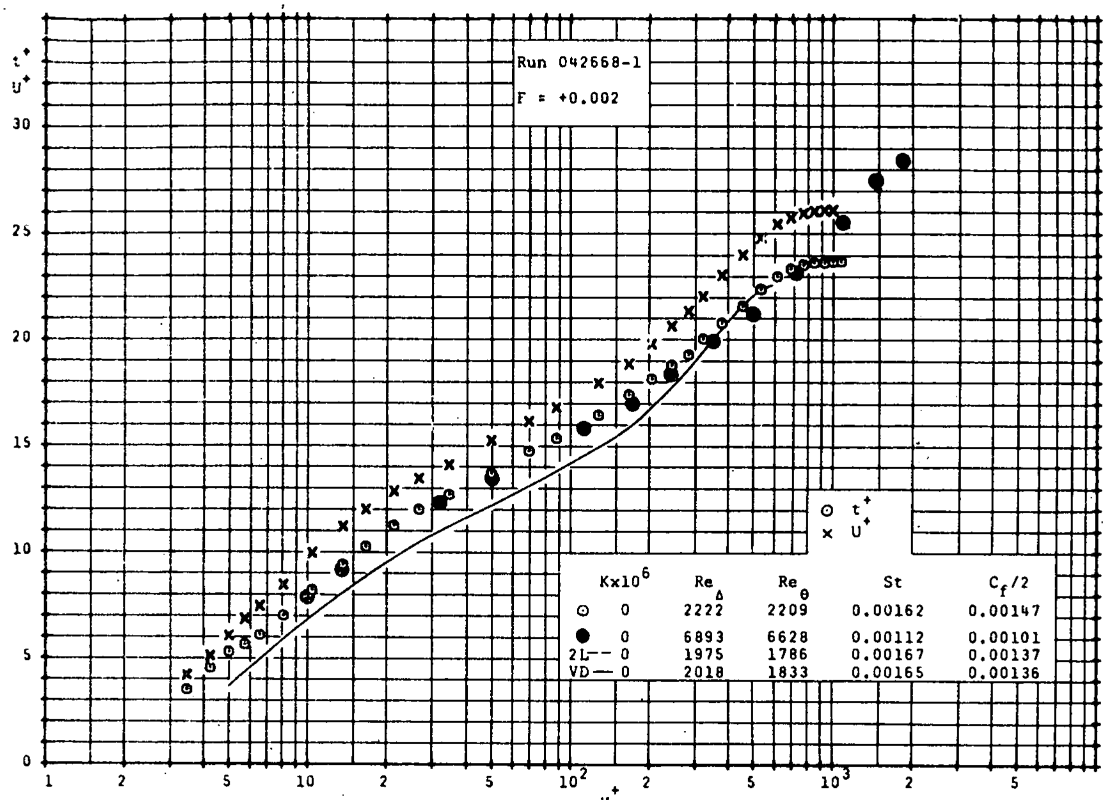


Figure 12a. Temperature and Velocity Profiles Preceding Acceleration

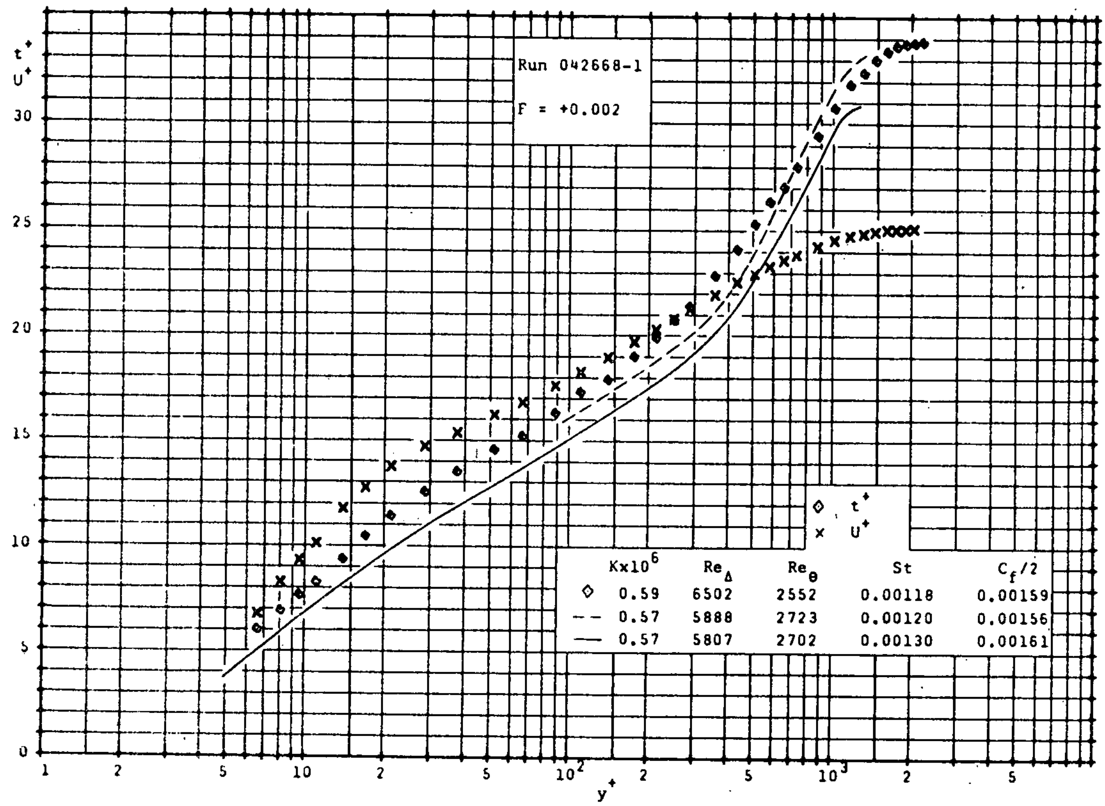


Figure 12b. Temperature and Velocity Profiles With Blowing and Favorable Pressure Gradient

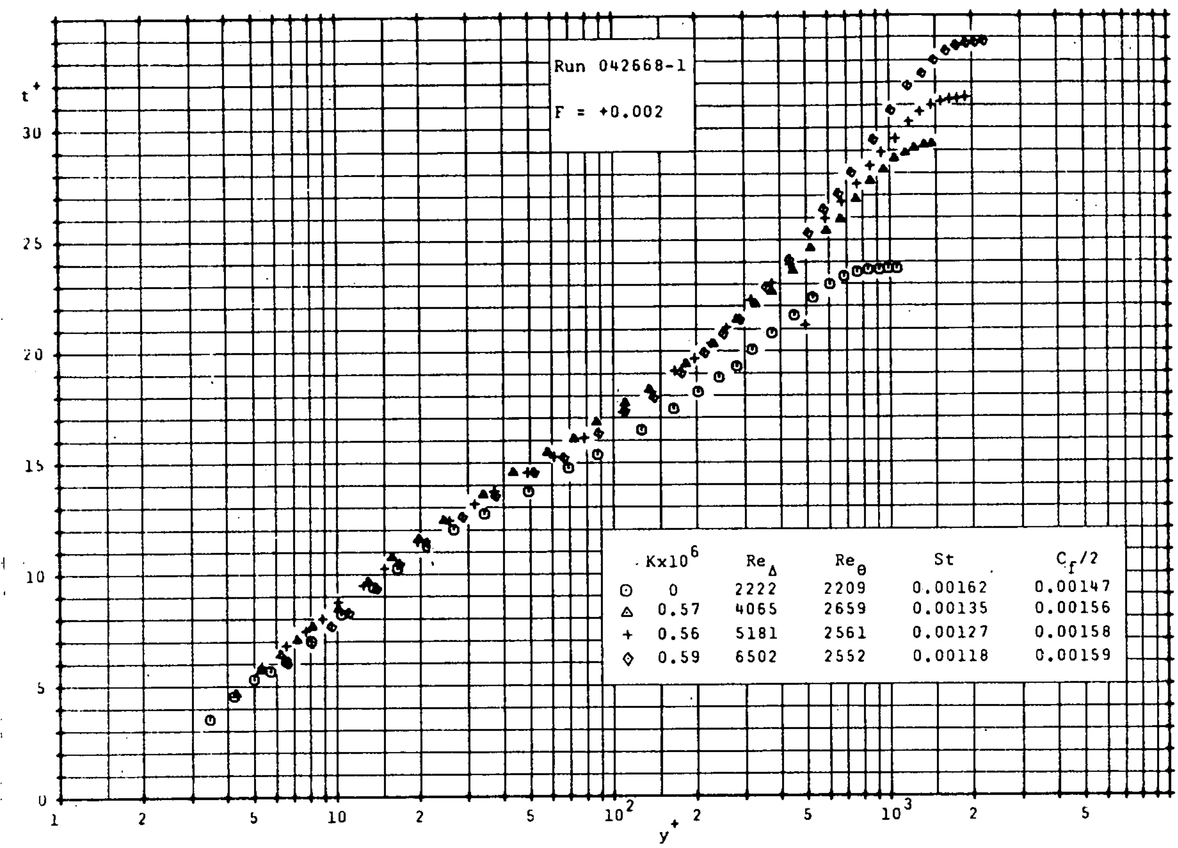


Figure 12c. Temperature Profile Development With Blowing and Favorable Pressure Gradient

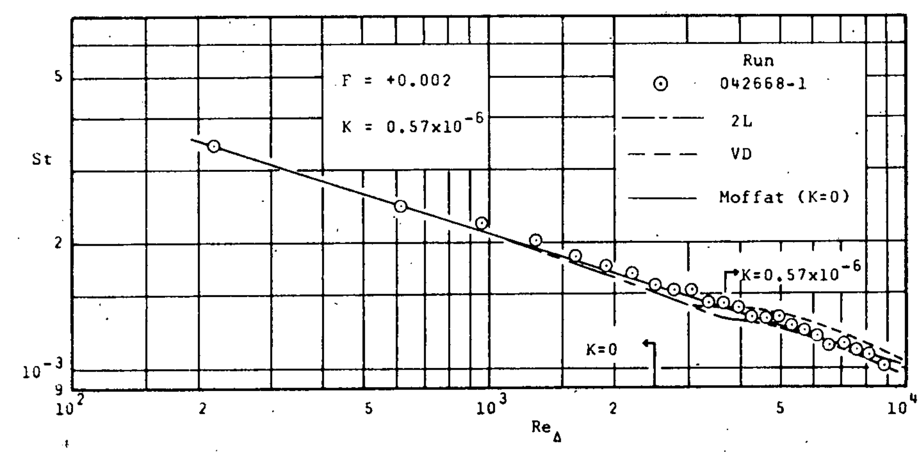


Figure 12d. Stanton Number Development With Blowing and Favorable Pressure Gradient

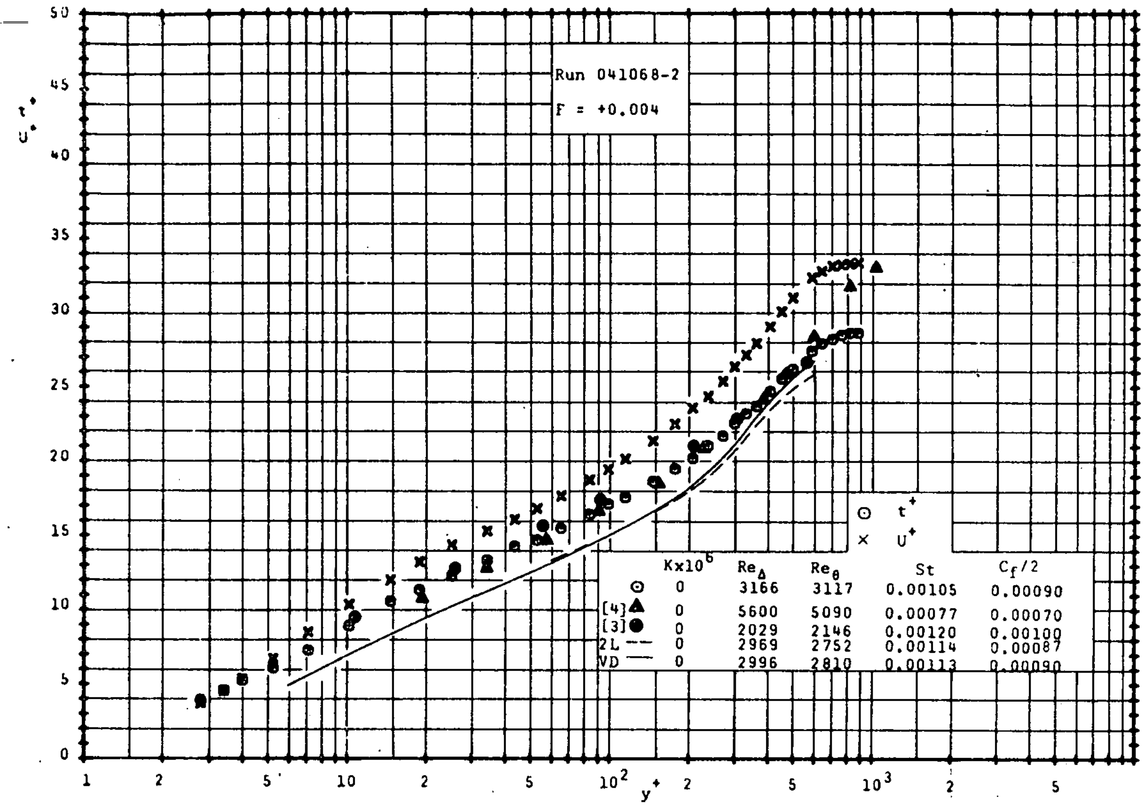


Figure 13a. Temperature and Velocity Profiles Preceding Acceleration

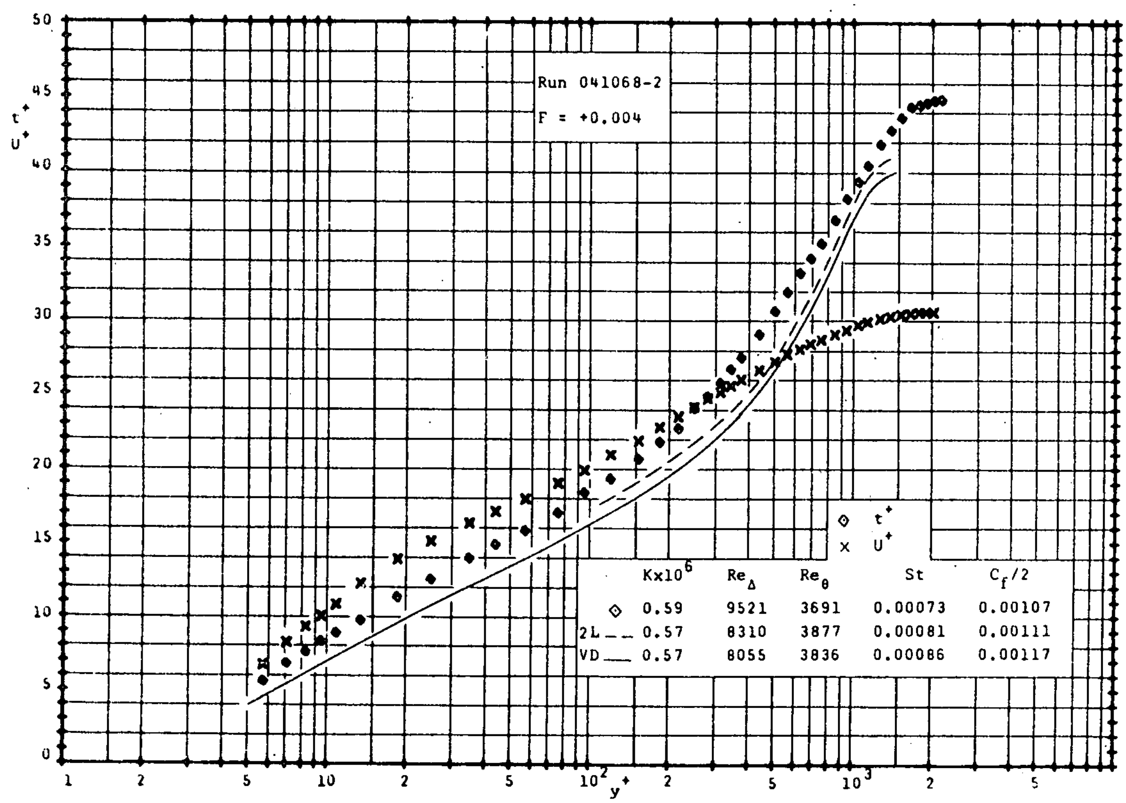


Figure 13b. Temperature and Velocity Profiles With Blowing and Favorable Pressure Gradient

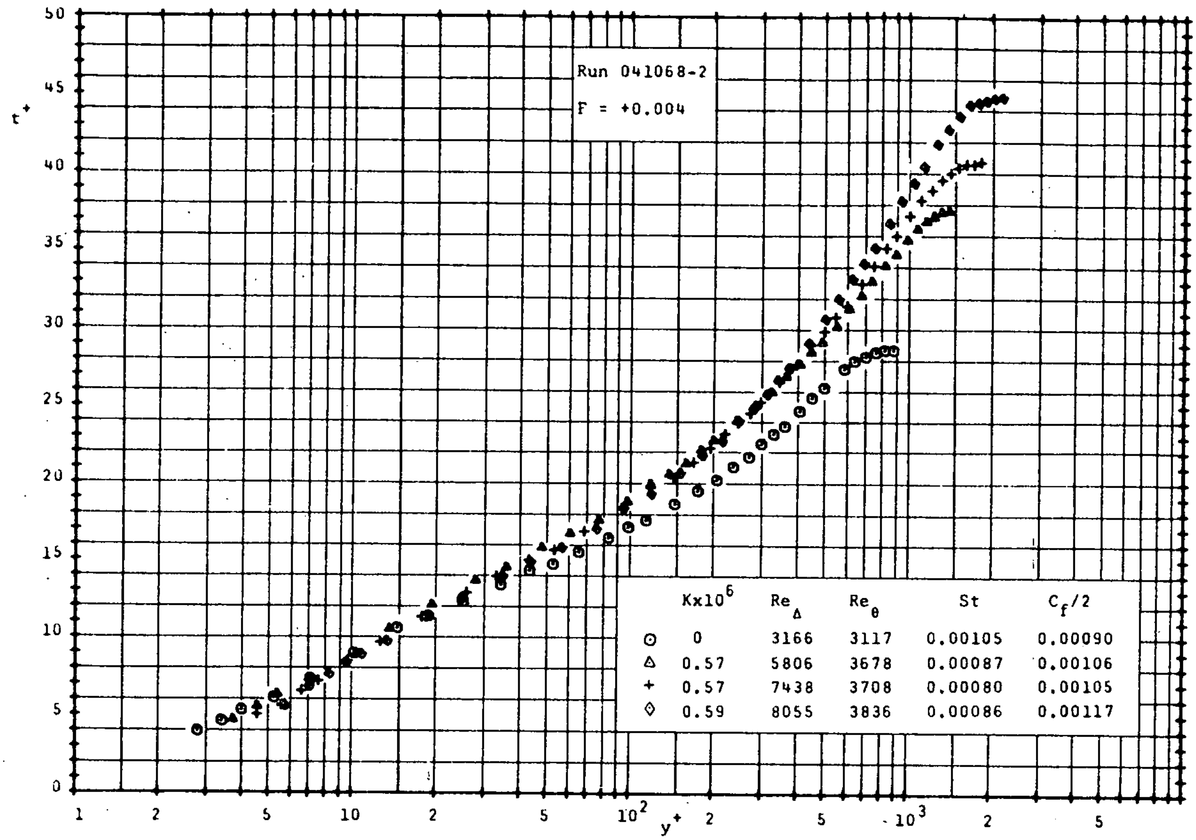


Figure 13c. Temperature Profile Development With Blowing and Favorable Pressure Gradient

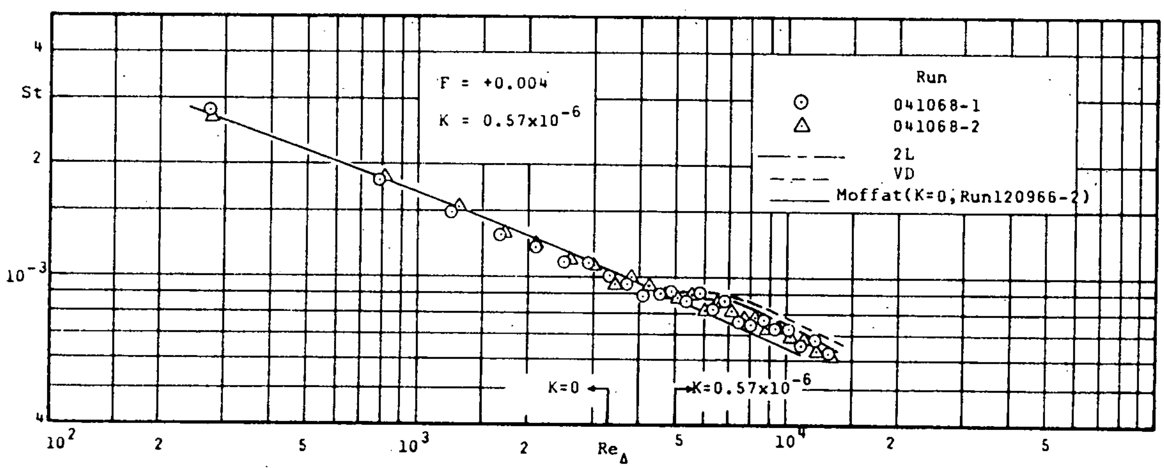


Figure 13d. Stanton Number Development With Blowing and Favorable Pressure Gradient

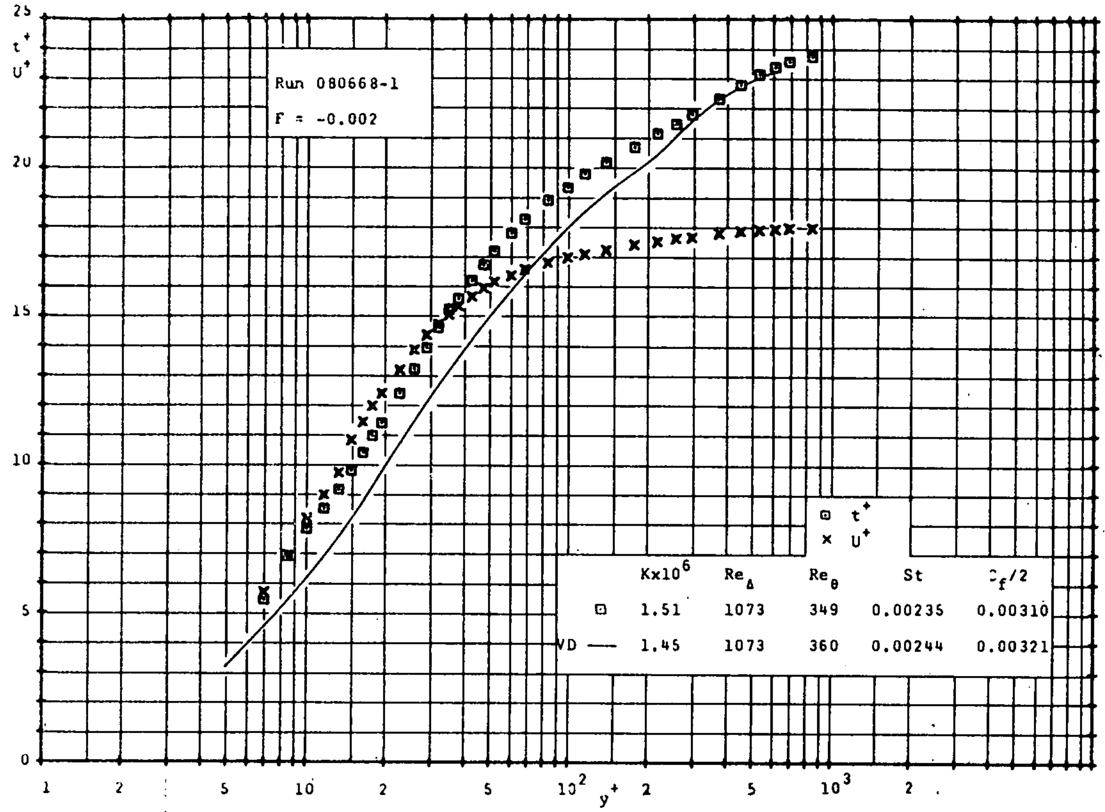


Figure 14a. Temperature and Velocity Profiles With Sucking and Favorable Pressure Gradient

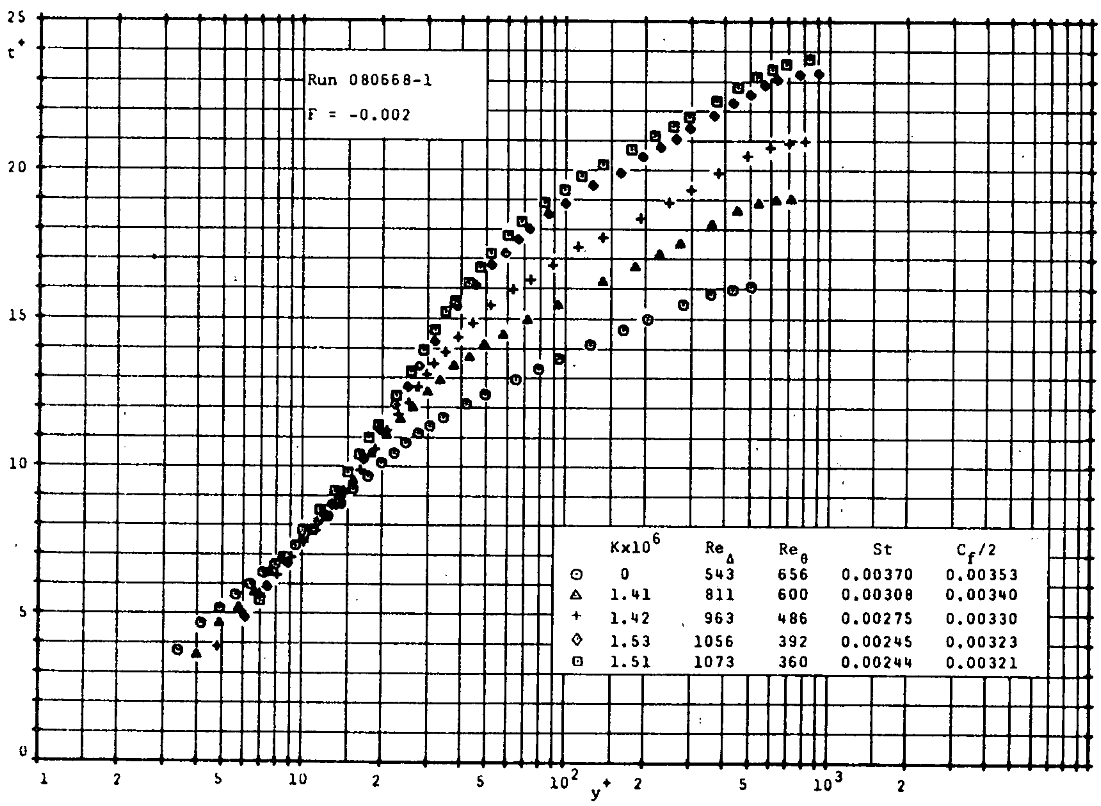


Figure 14b. Temperature Profile Development With Sucking and Favorable Pressure Gradient

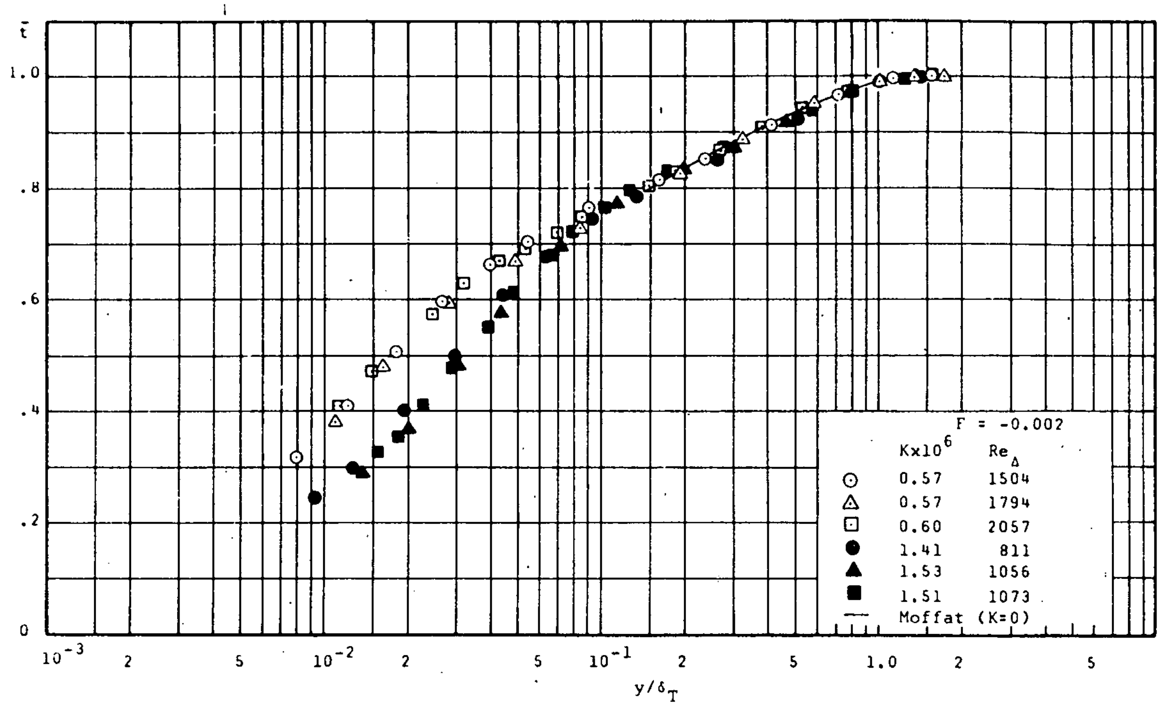


Figure 14c. Outer Region Representation of Temperature Profiles With Sucki
and Favorable Pressure Gradient

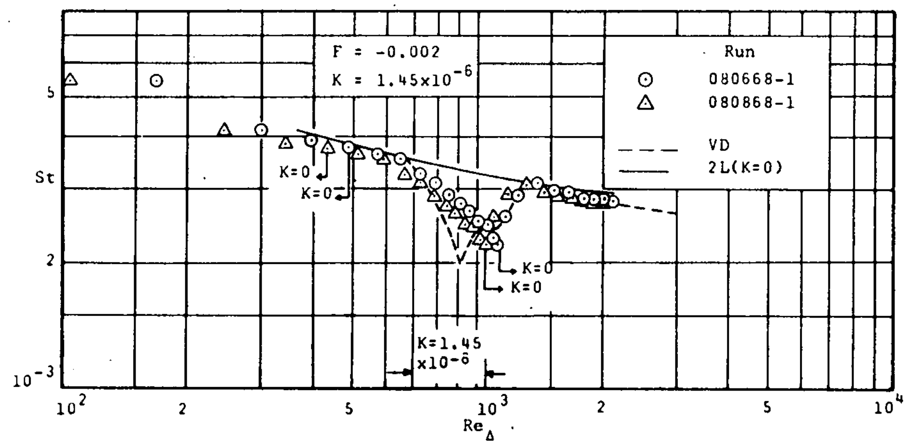


Figure 14d. Stanton Number Development With Sucking
and Favorable Pressure Gradient

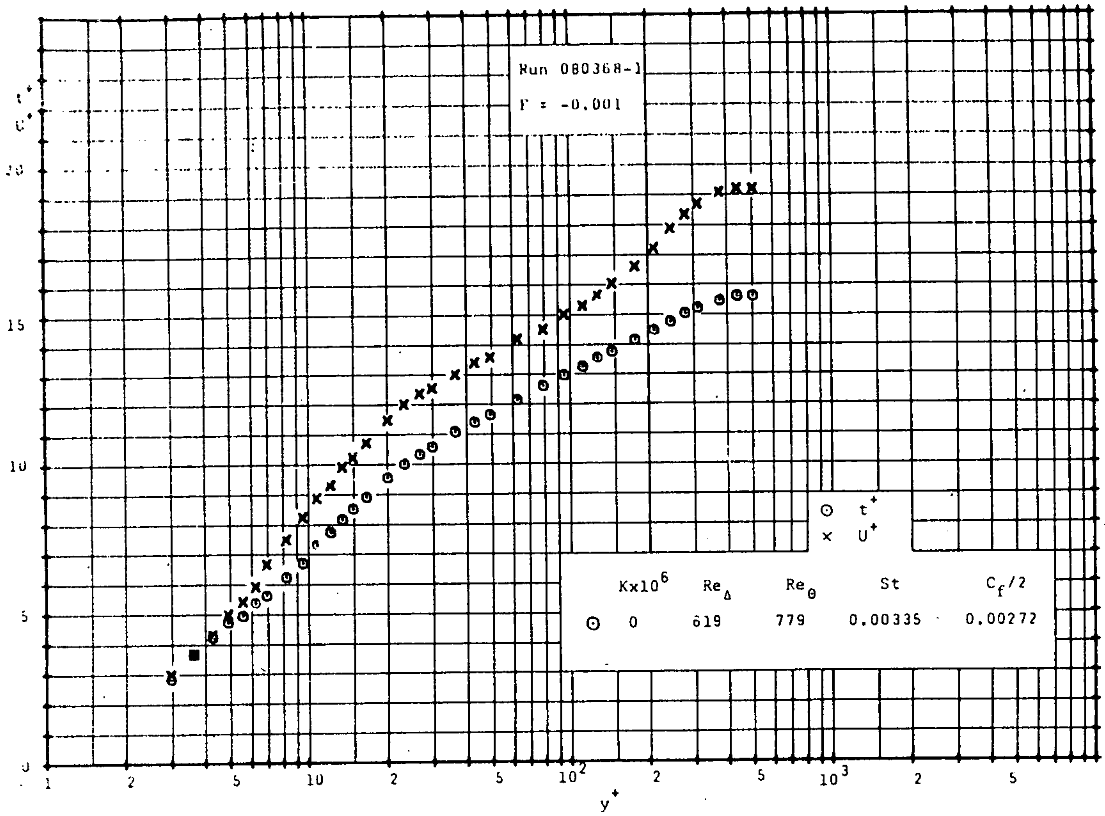


Figure 15a. Temperature and Velocity Profiles Preceding Acceleration

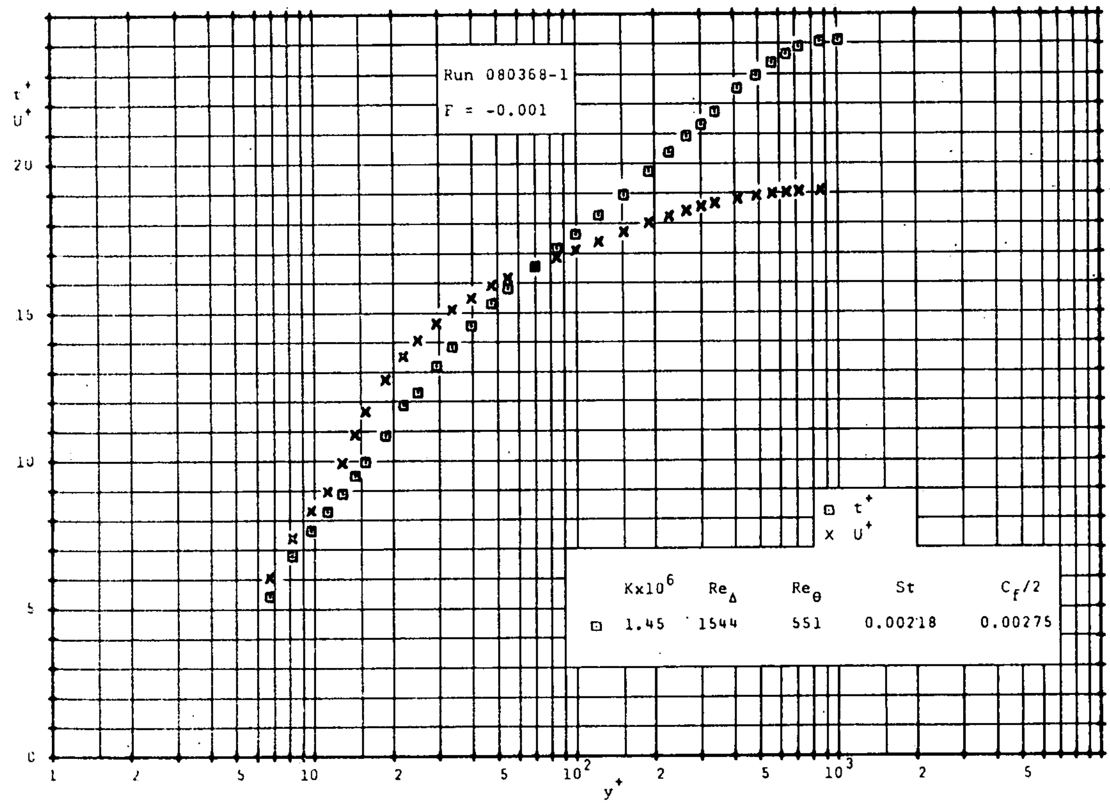


Figure 15b. Temperature and Velocity Profiles With Sucking and Favorable Pressure Gradient

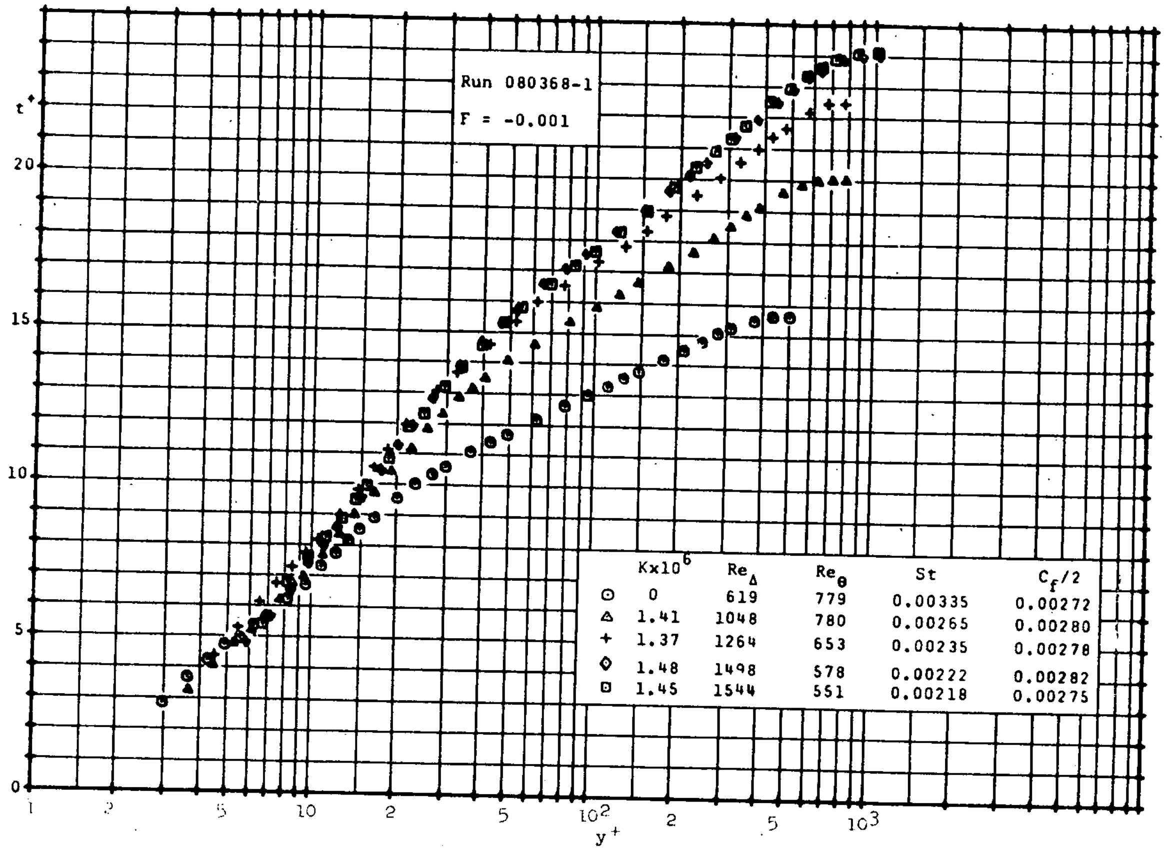


Figure 15c. Temperature Profile Development With Sucking and Favorable Pressure Gradient

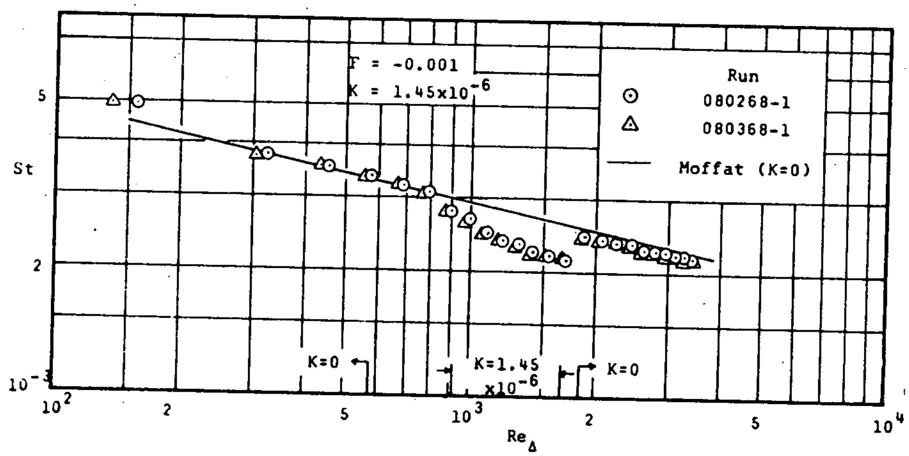


Figure 15d. Stanton Number Development With Sucking and Favorable Pressure Gradient

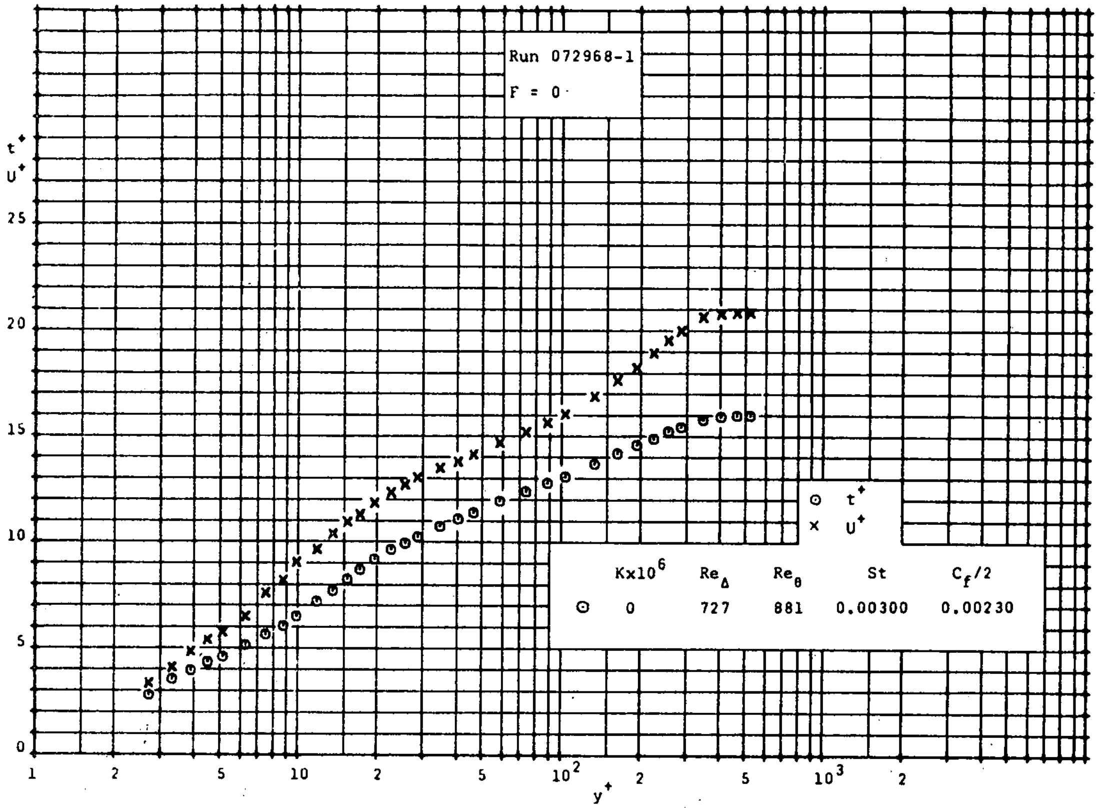


Figure 16a. Temperature and Velocity Profiles Preceding Acceleration

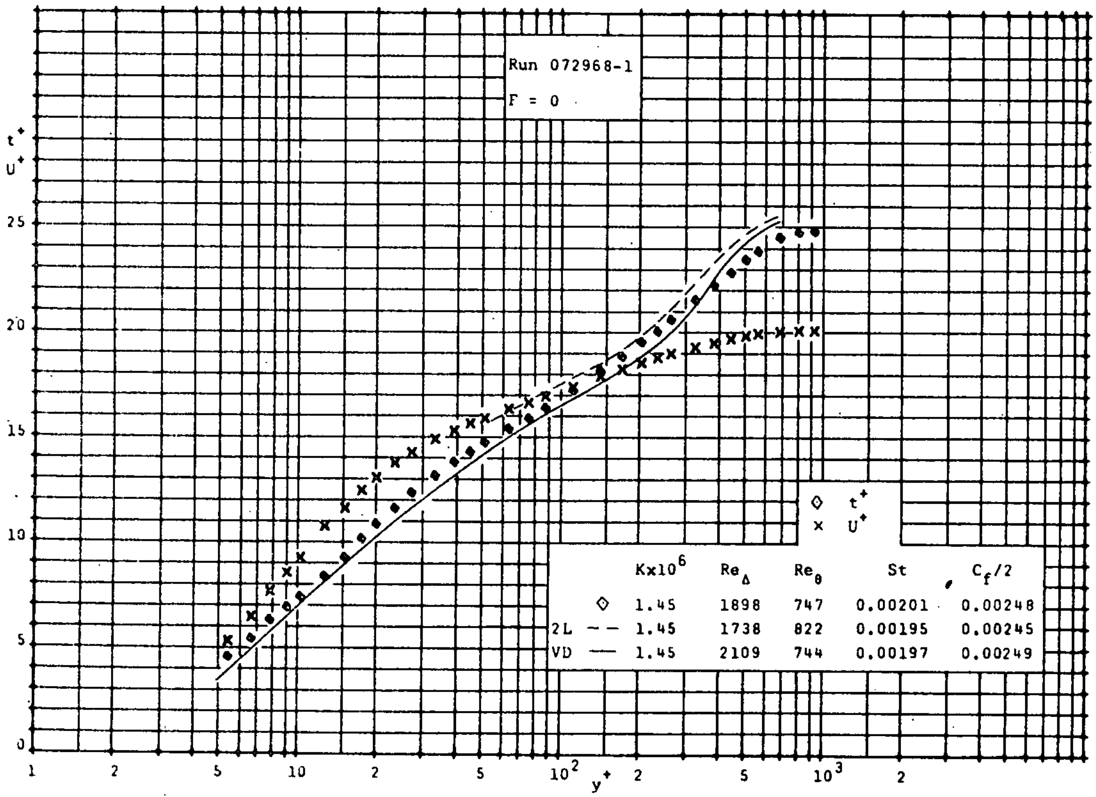


Figure 16b. Temperature and Velocity Profiles With Favorable Pressure Gradient

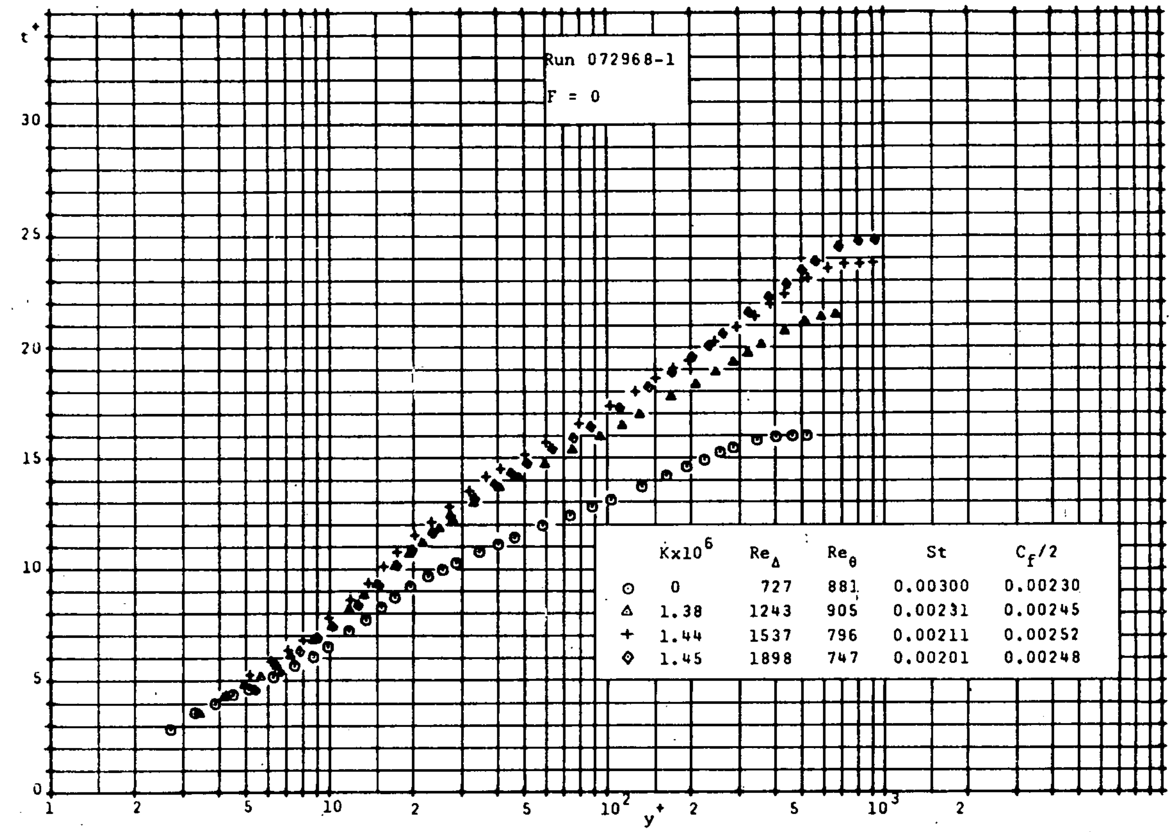


Figure 16c. Temperature Profile Development With Favorable Pressure Gradient

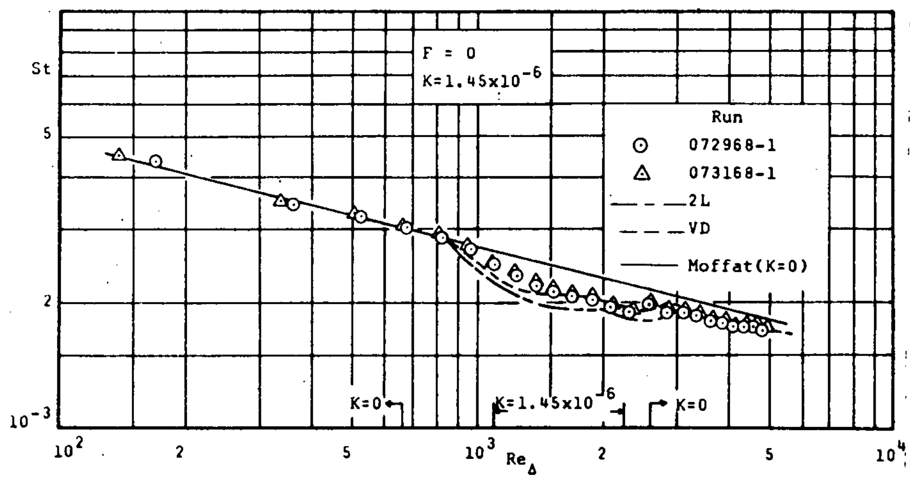


Figure 16d. Stanton Number Development With Favorable Pressure Gradient

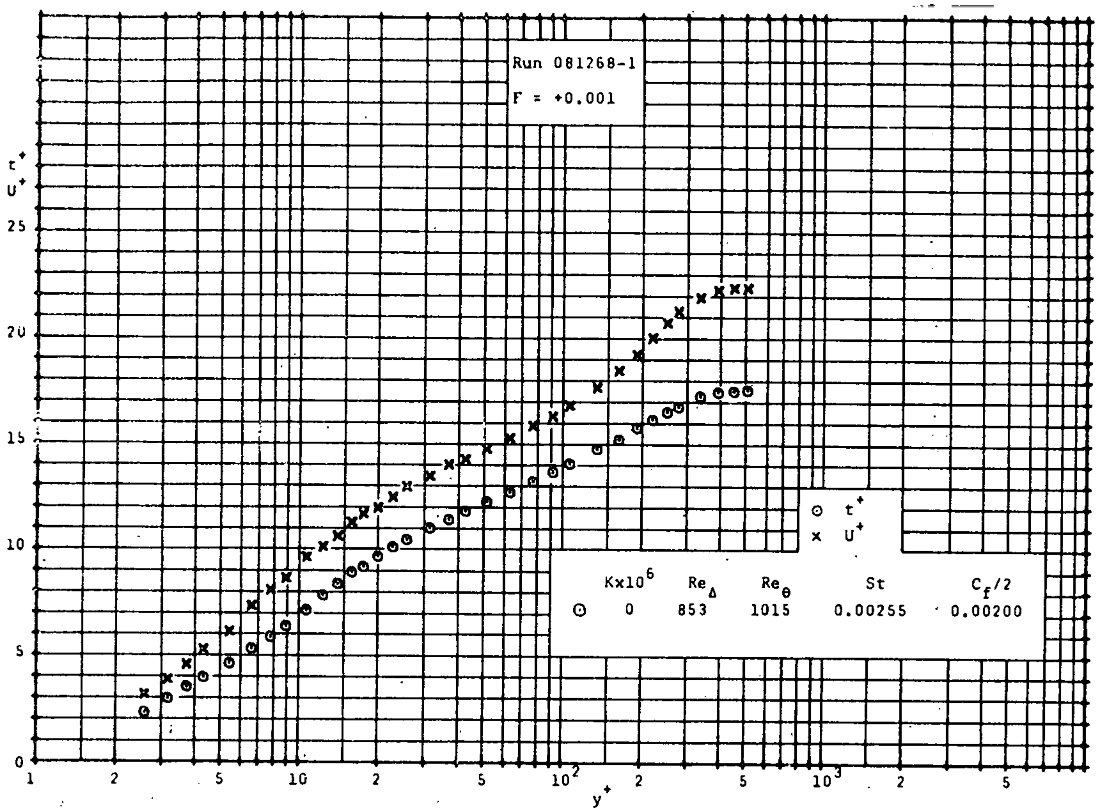


Figure 17a. Temperature and Velocity Profiles Preceding Acceleration

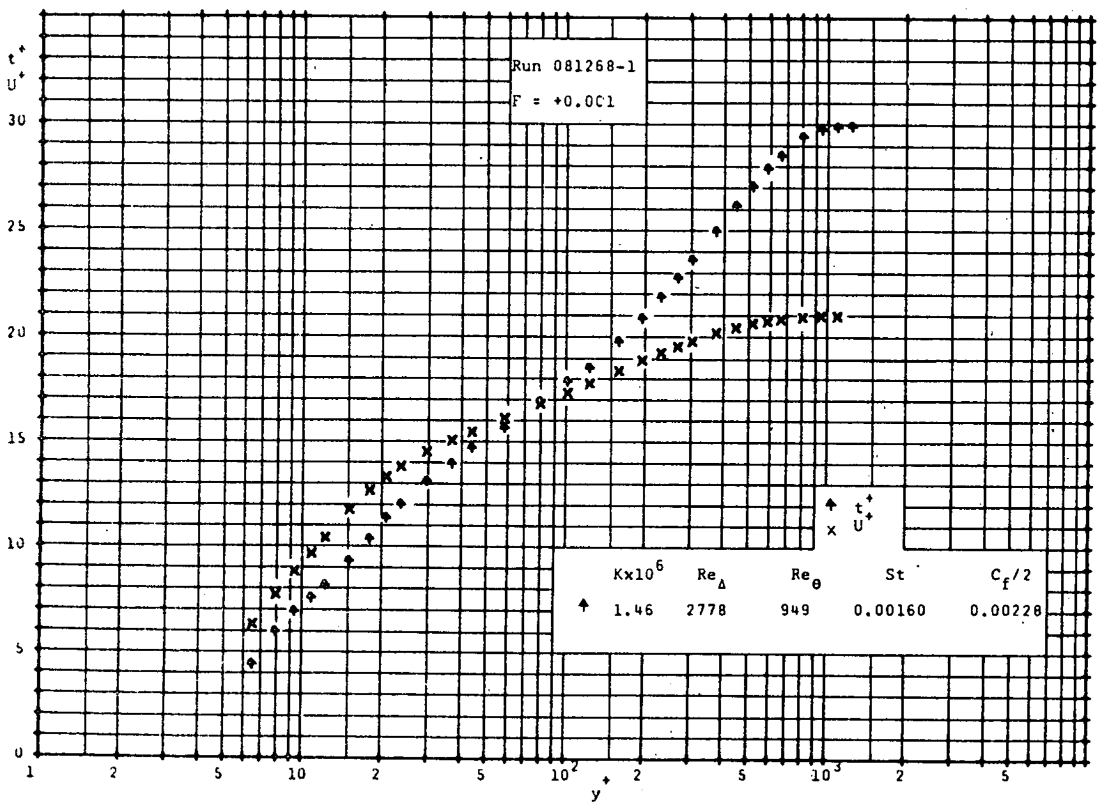


Figure 17b. Temperature and Velocity Profiles With Blowing and Favorable Pressure Gradient

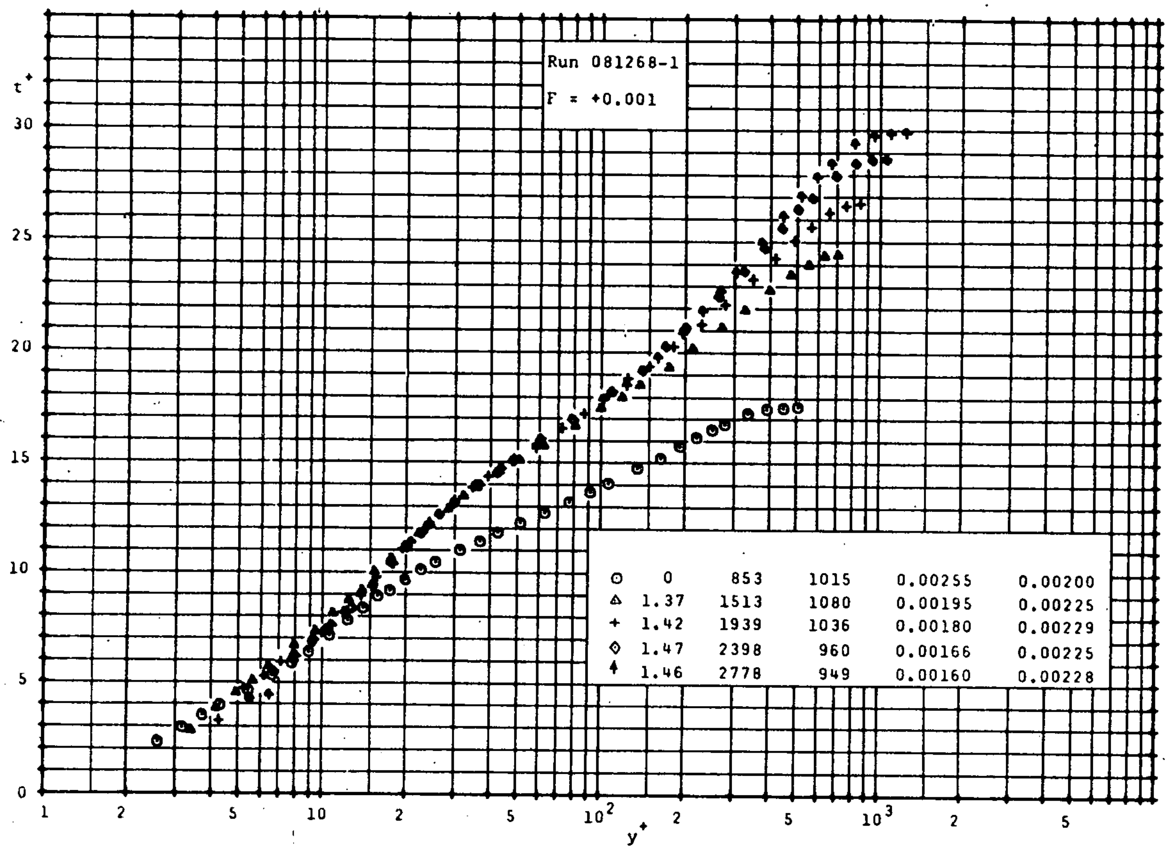


Figure 17c. Temperature Profile Development With Blowing and Favorable Pressure Gradient

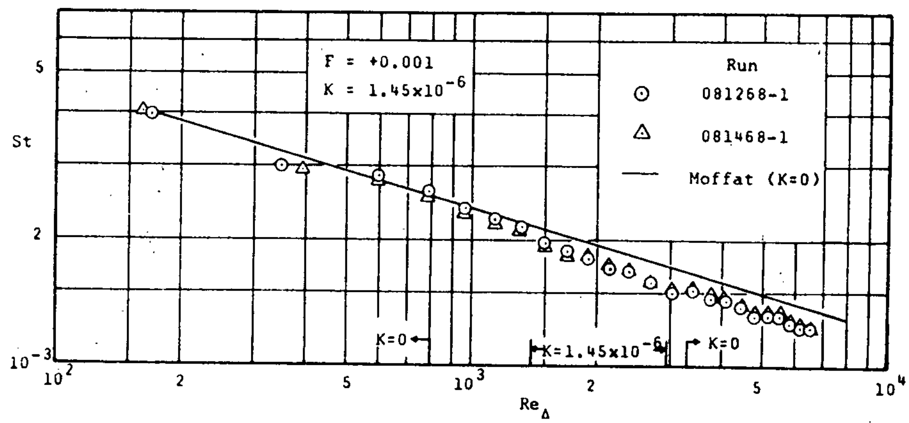


Figure 17d. Stanton Number Development With Blowing and Favorable Pressure Gradient

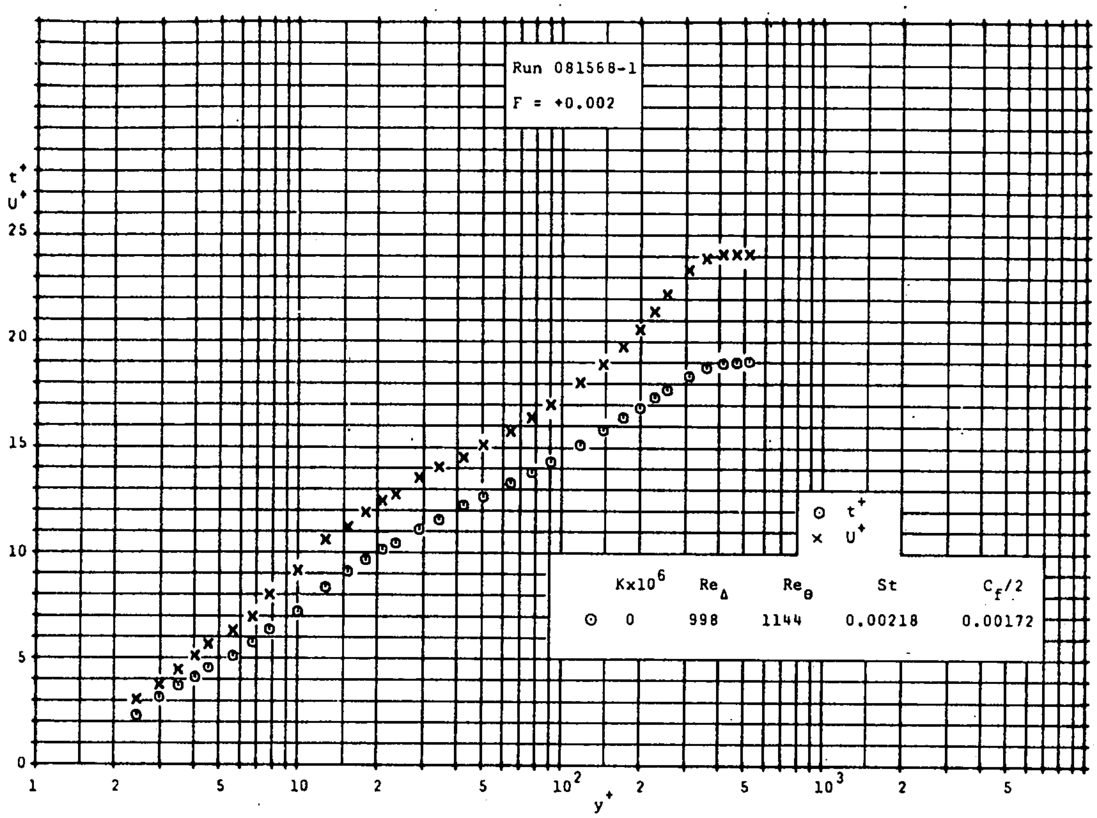


Figure 18a. Temperature and Velocity Profiles Preceding Acceleration

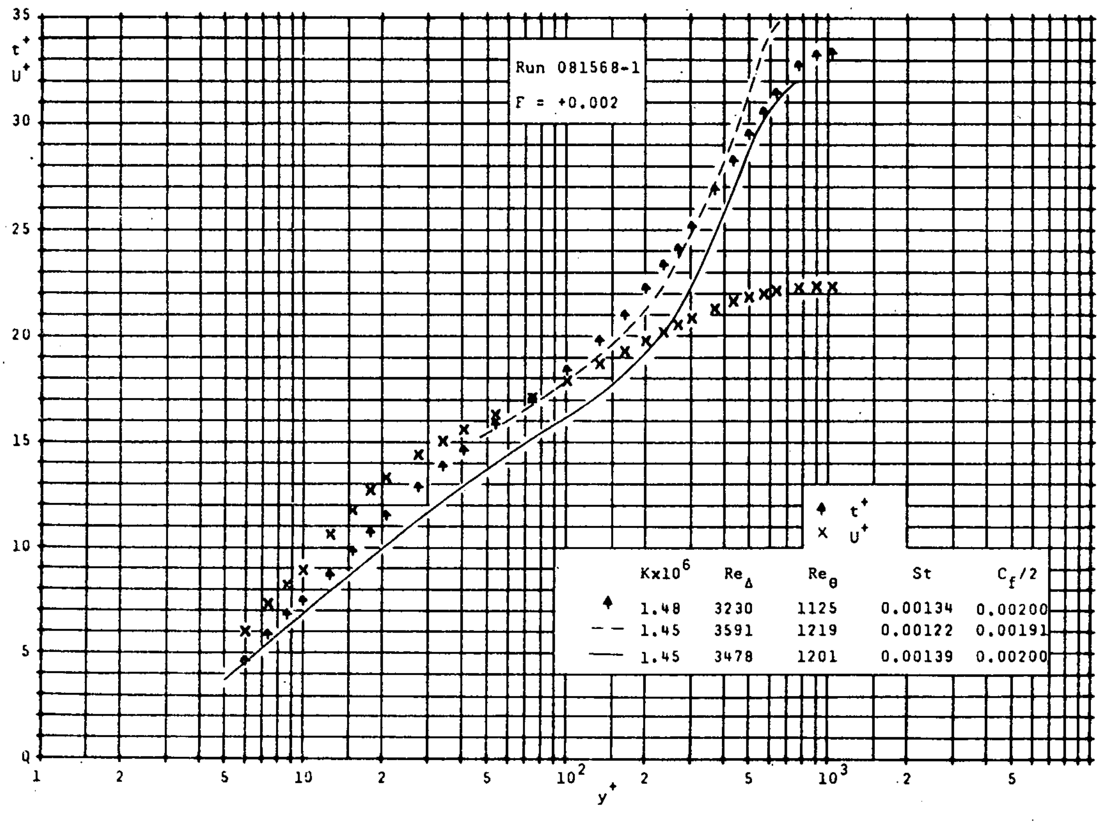


Figure 18b. Temperature and Velocity Profiles With Favorable Pressure Gradient and Blowing

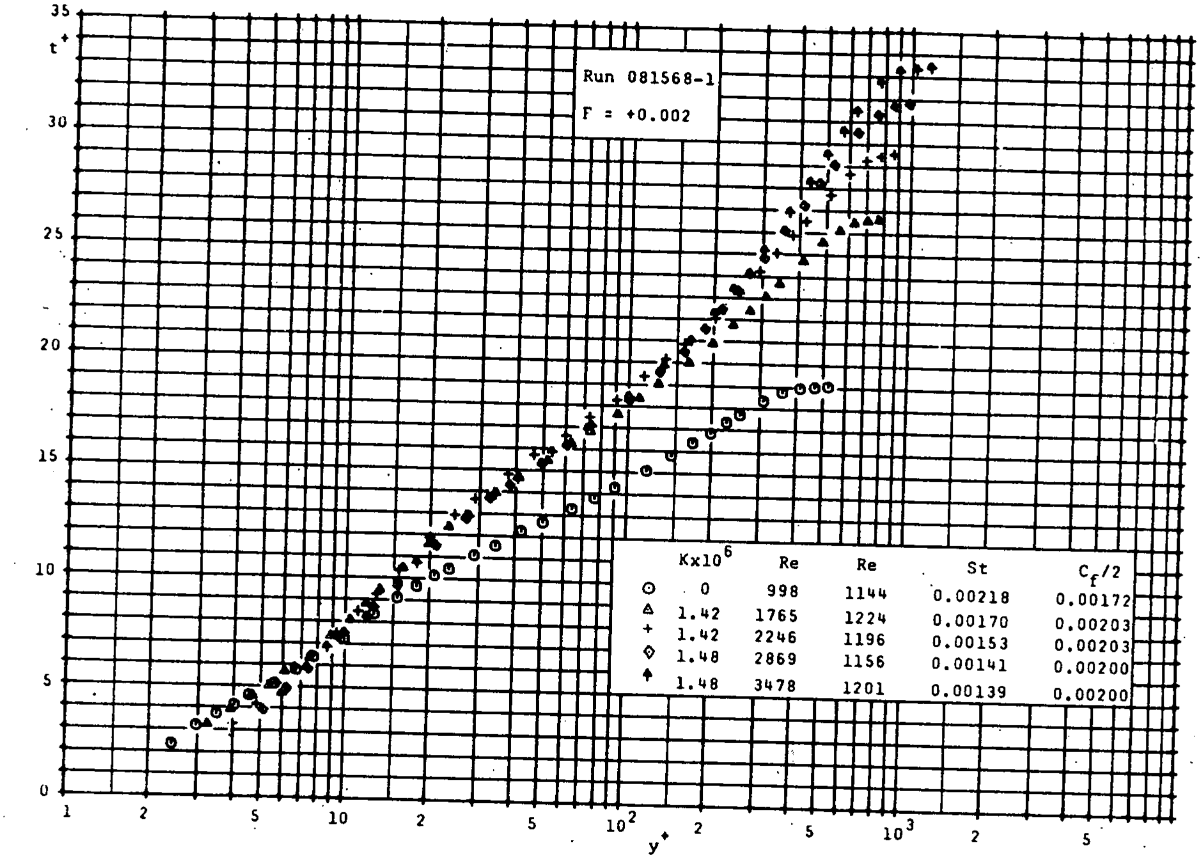


Figure 18c. Temperature Profile Development With Favorable Pressure Gradient and Blowing

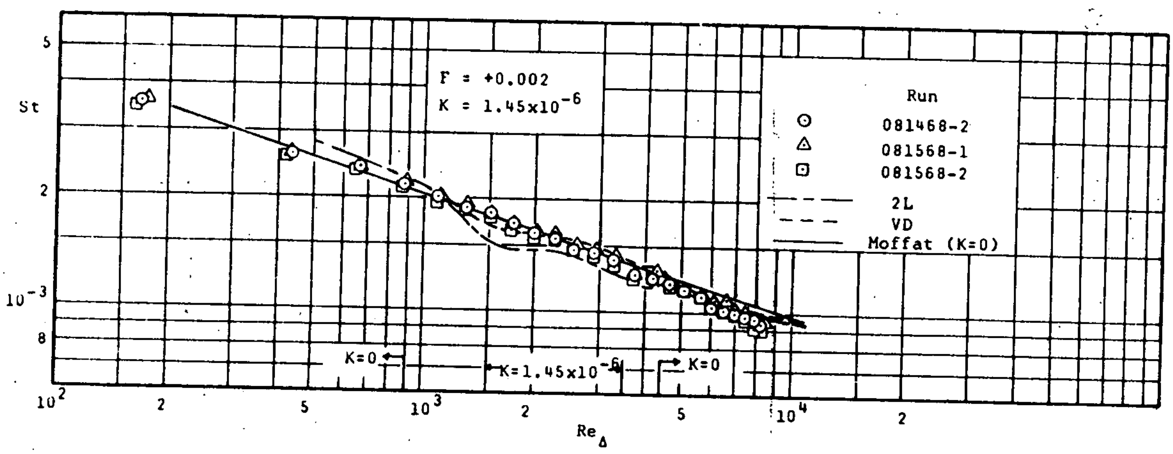


Figure 18d. Stanton Number Development With Favorable Pressure Gradient and Blowing

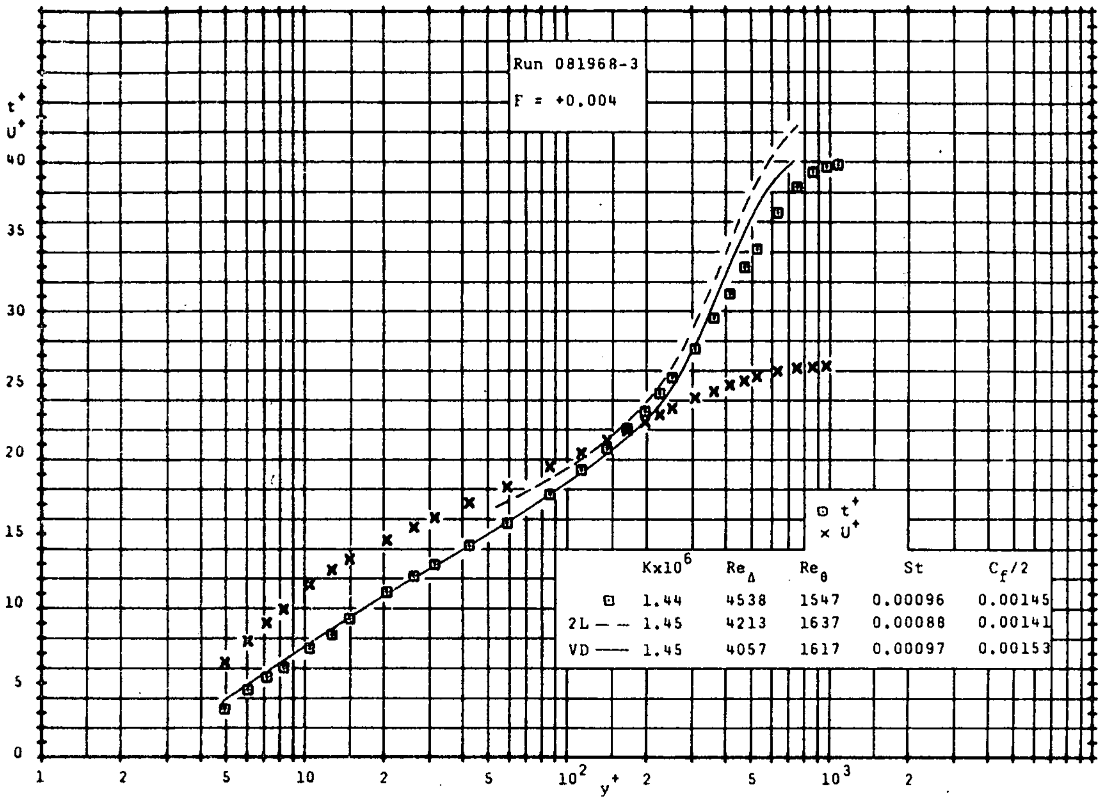


Figure 19a. Temperature and Velocity Profiles With Blowing and Favorable Pressure Gradient

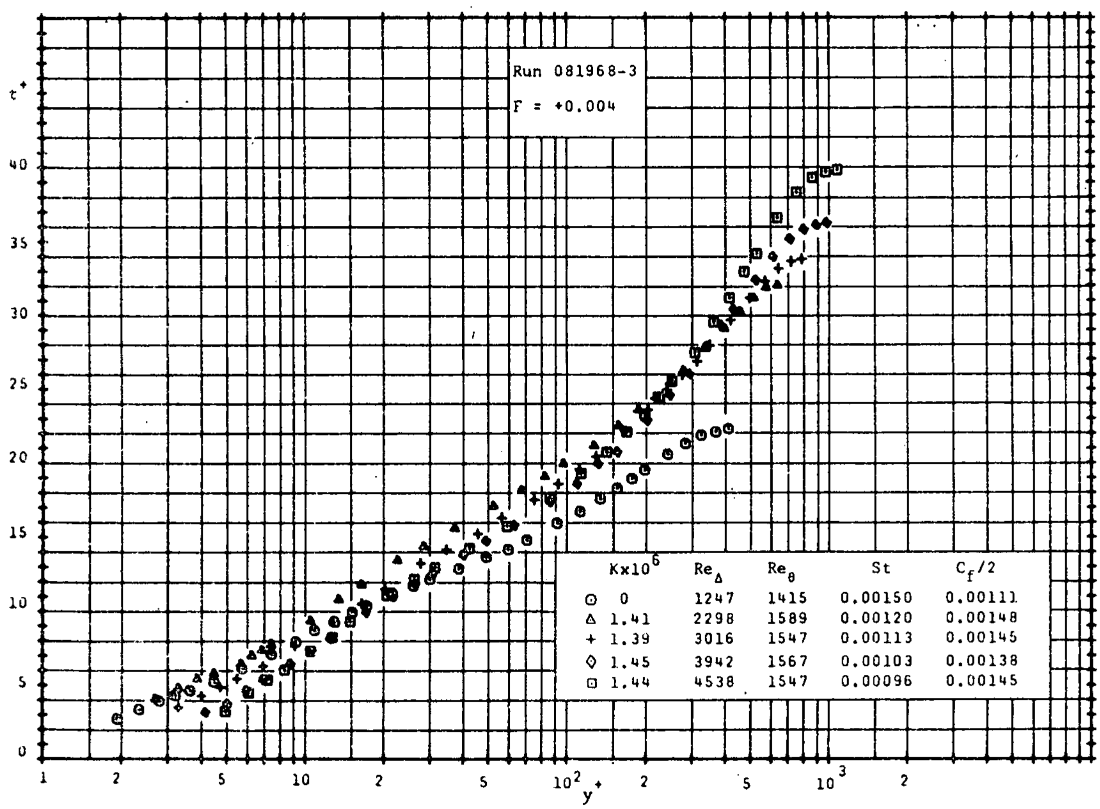


Figure 19b. Temperature Profile Development With Blowing and Favorable Pressure Gradient

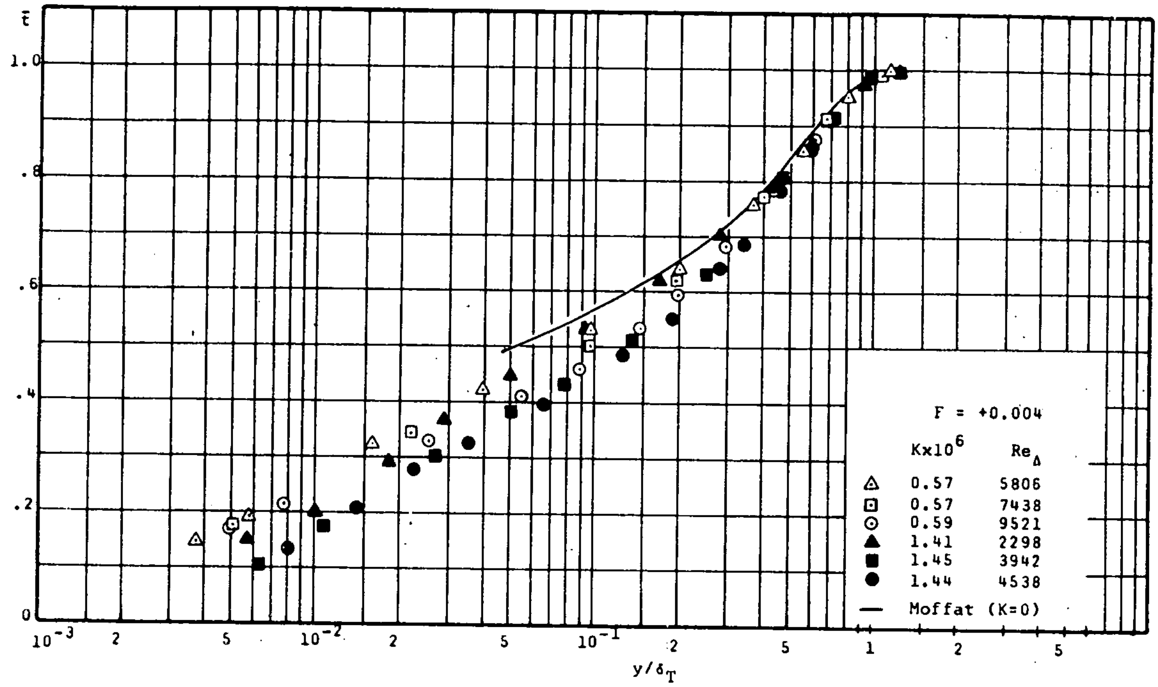


Figure 19c. Outer Region Representation of Temperature Profiles With Blowing and Favorable Pressure Gradient

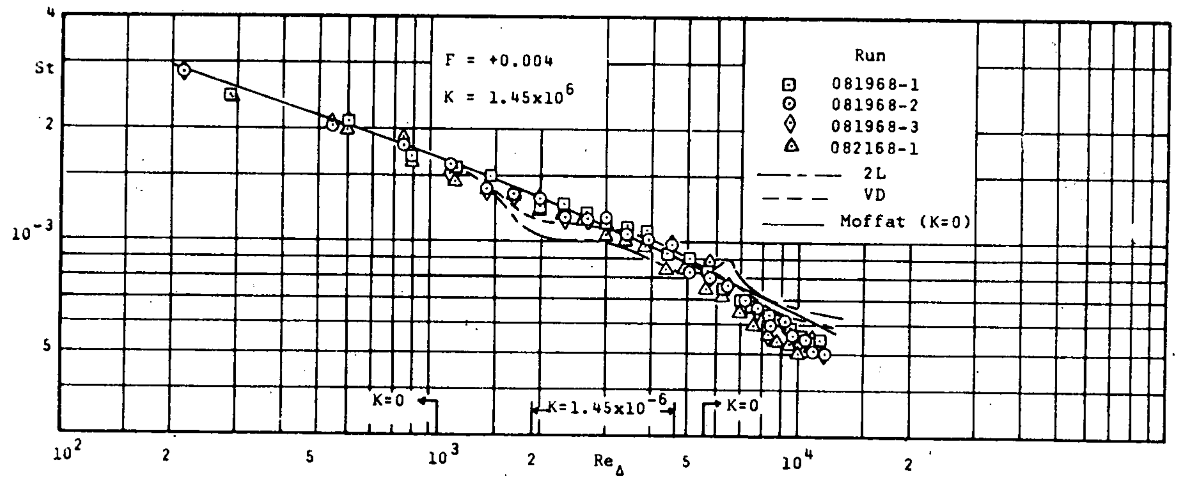


Figure 19d. Stanton Number Development With Blowing and Favorable Pressure Gradient

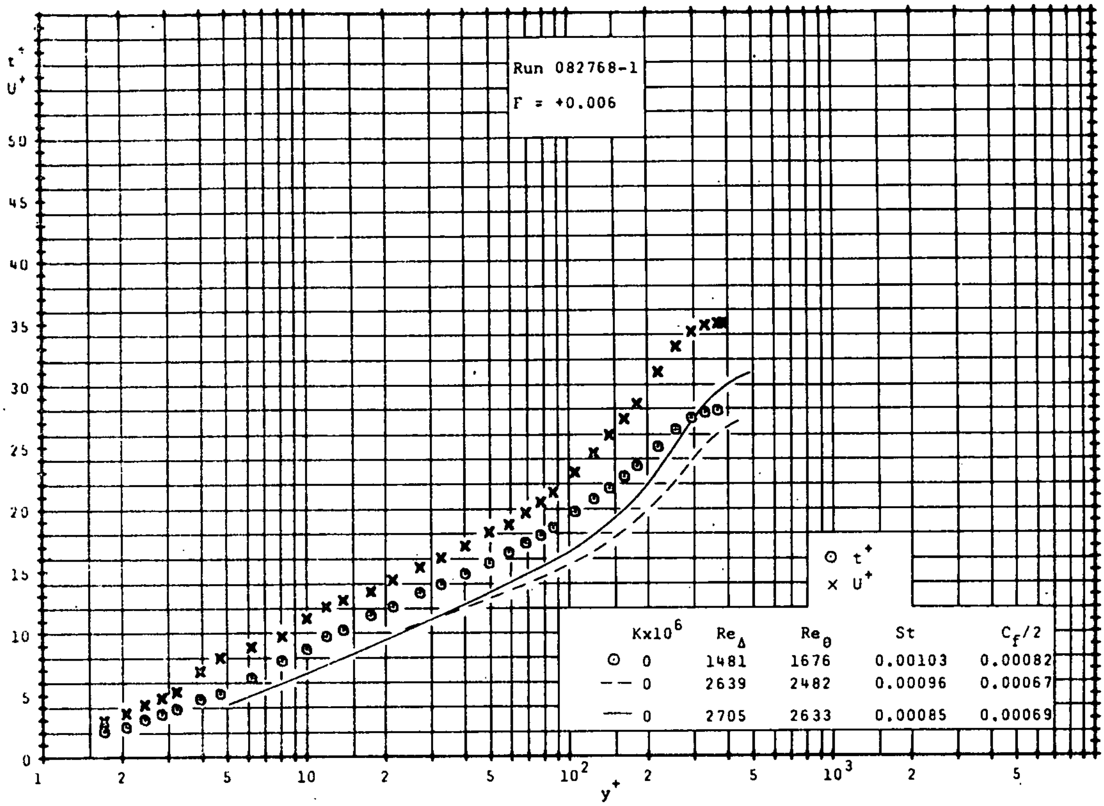


Figure 20a. Temperature and Velocity Profiles Preceding Acceleration

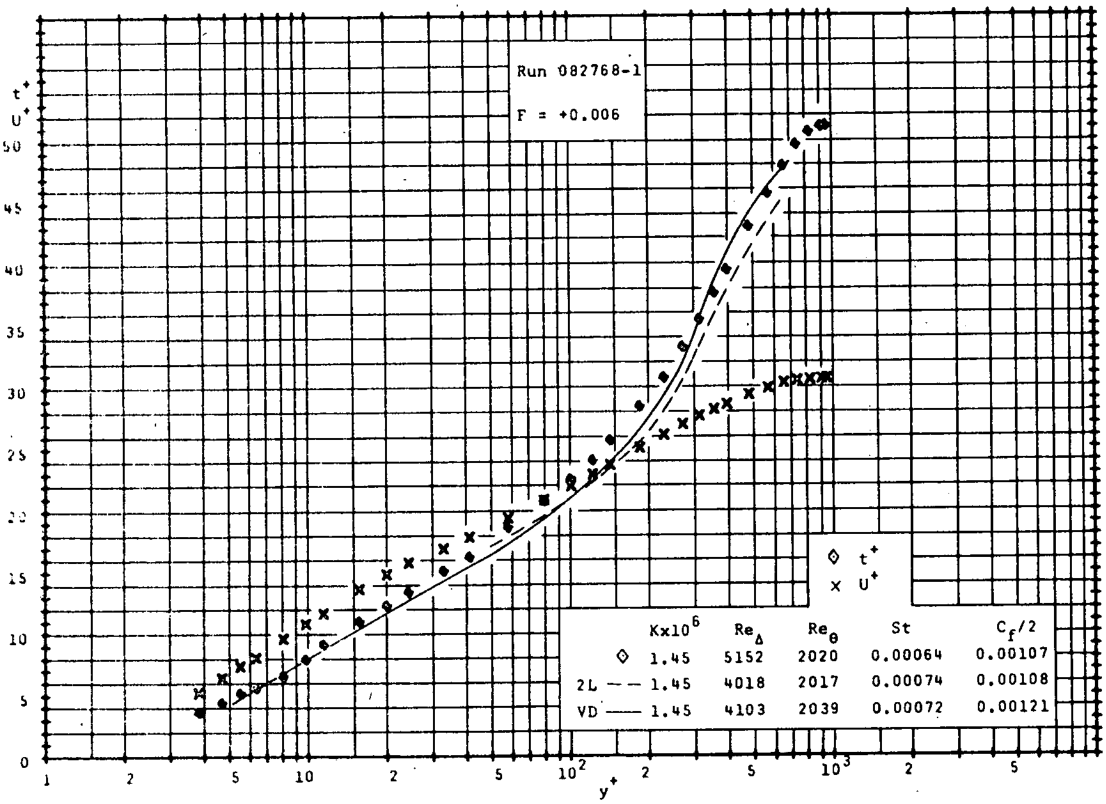


Figure 20b. Temperature and Velocity Profiles With Blowing and Favorable Pressure Gradient

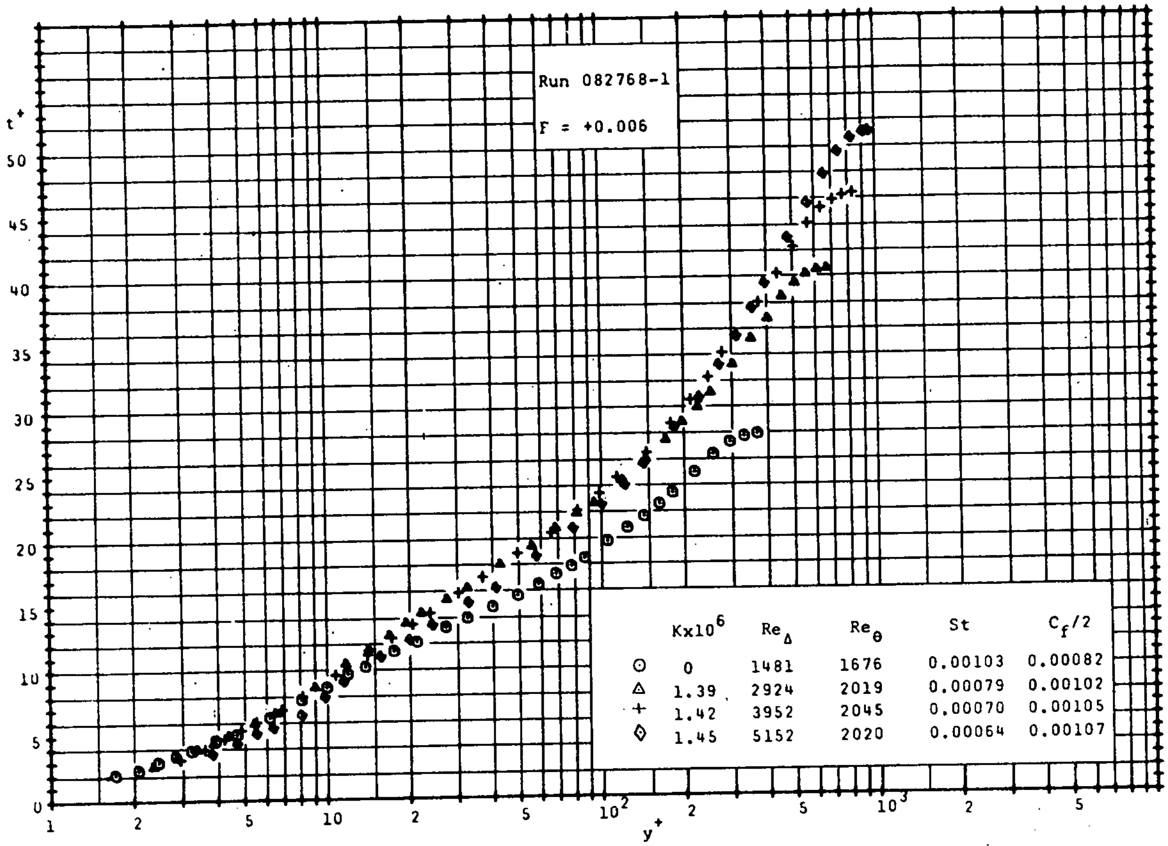


Figure 20c. Temperature Profile Development With Blowing and Favorable Pressure Gradient

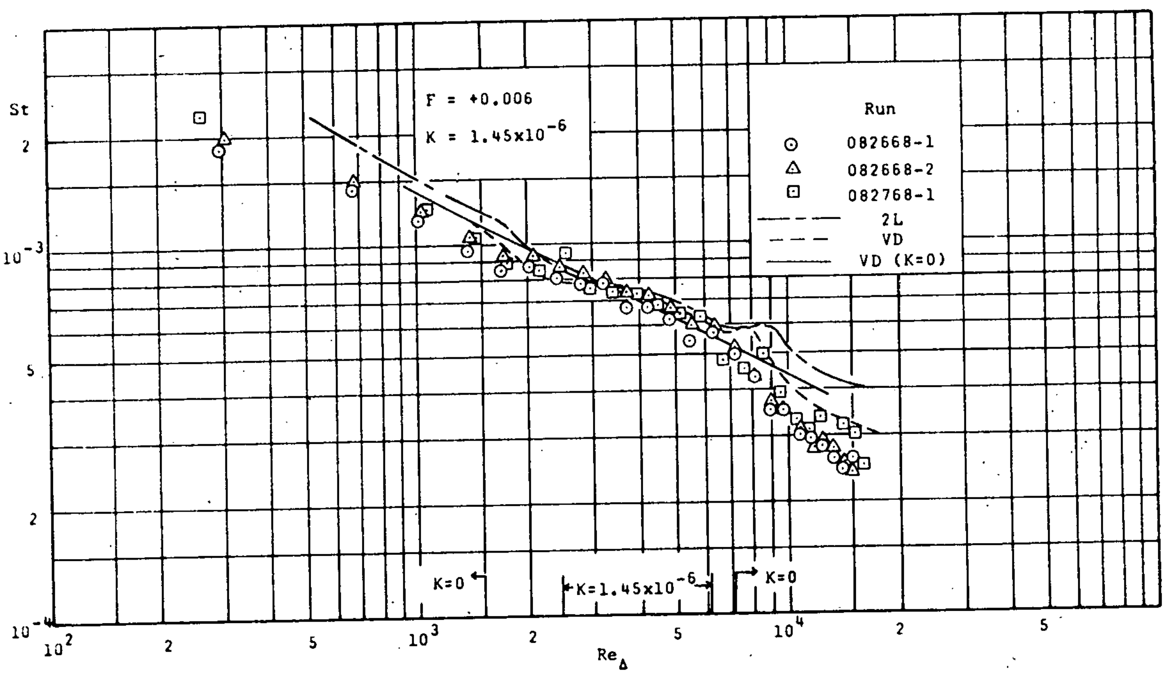


Figure 20d. Stanton Number Development With Blowing and Favorable Pressure Gradient

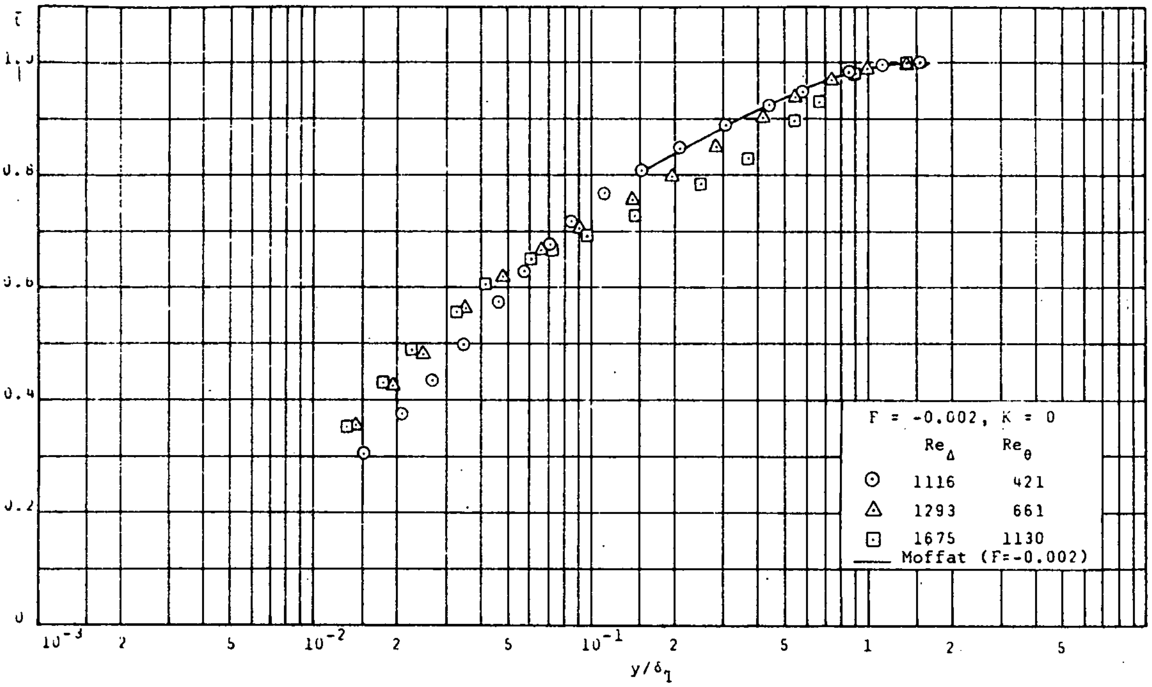


Figure 21a. Temperature Profile Development in the Recovery Section; F = -0.002

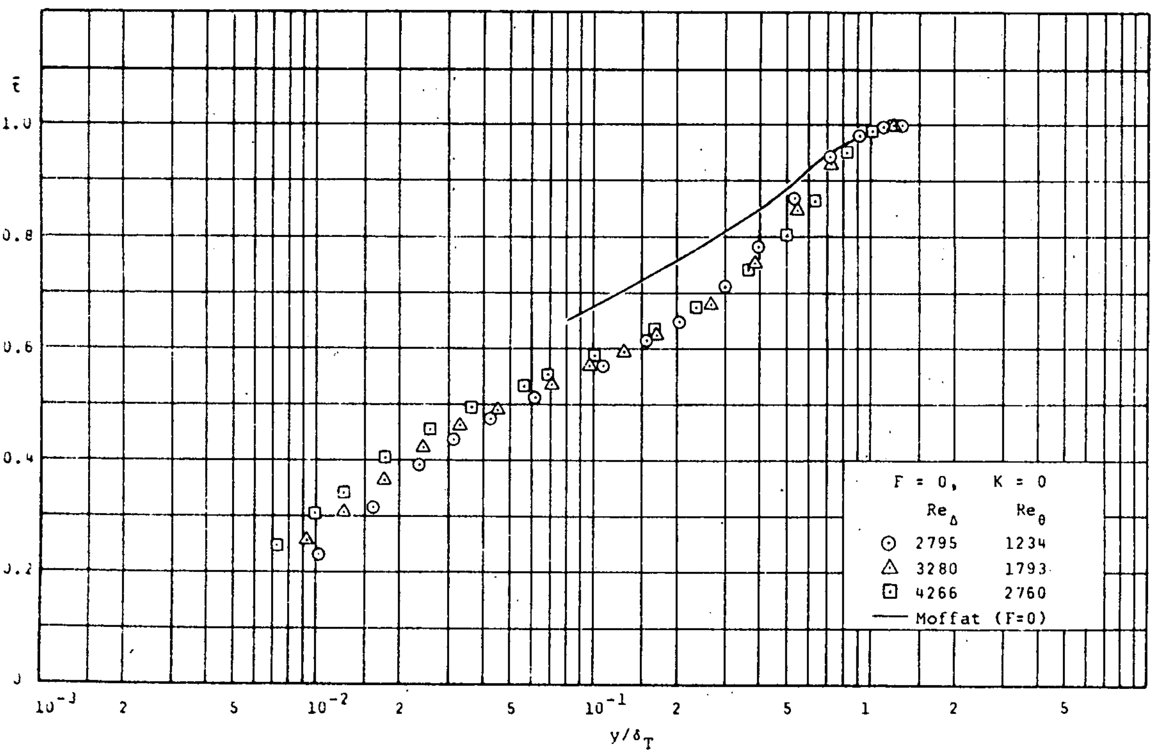


Figure 21b. Temperature Profile Development in the Recovery Section; F = 0

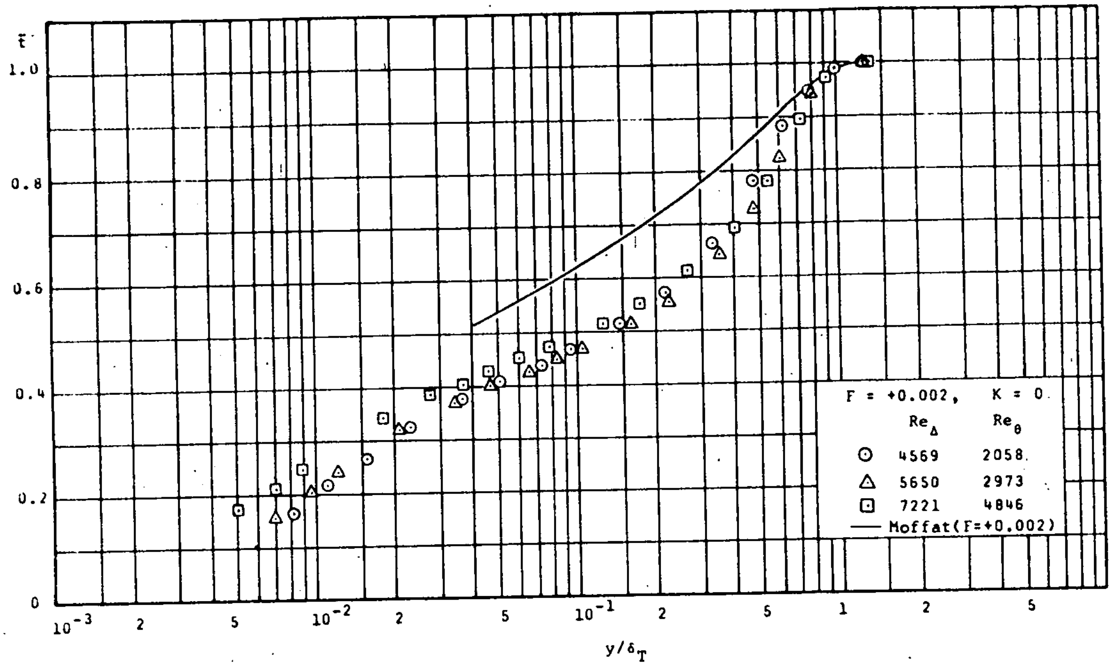


Figure 21c. Temperature Profile Development in the Recovery Section; F = +0.002

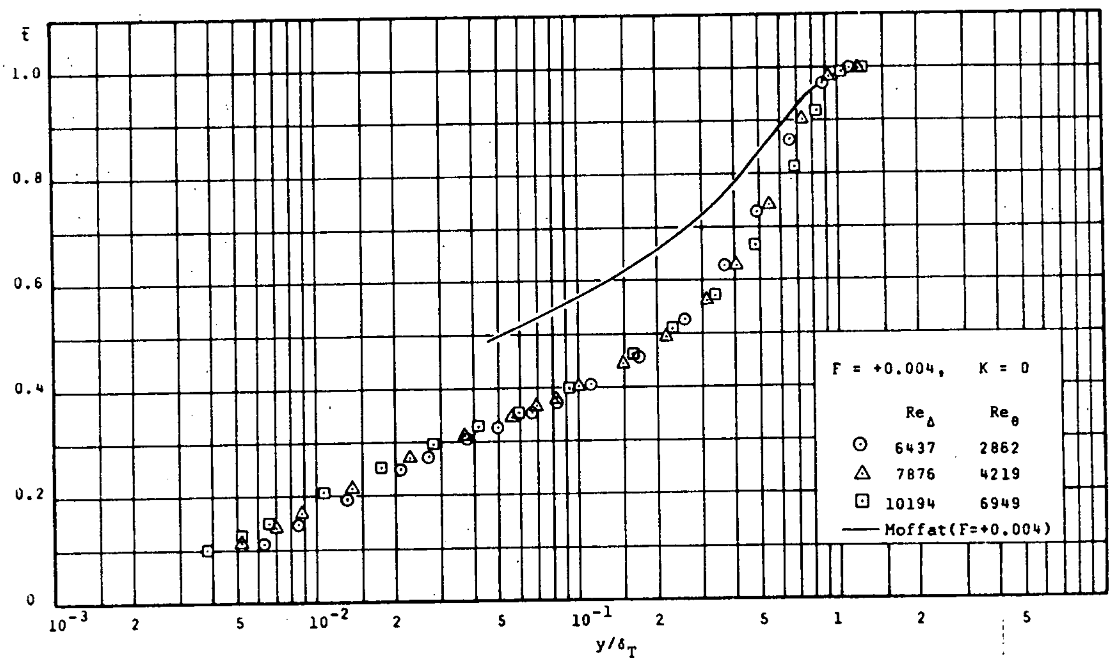


Figure 21d. Temperature Profile Development in the Recovery Section; F = +0.004

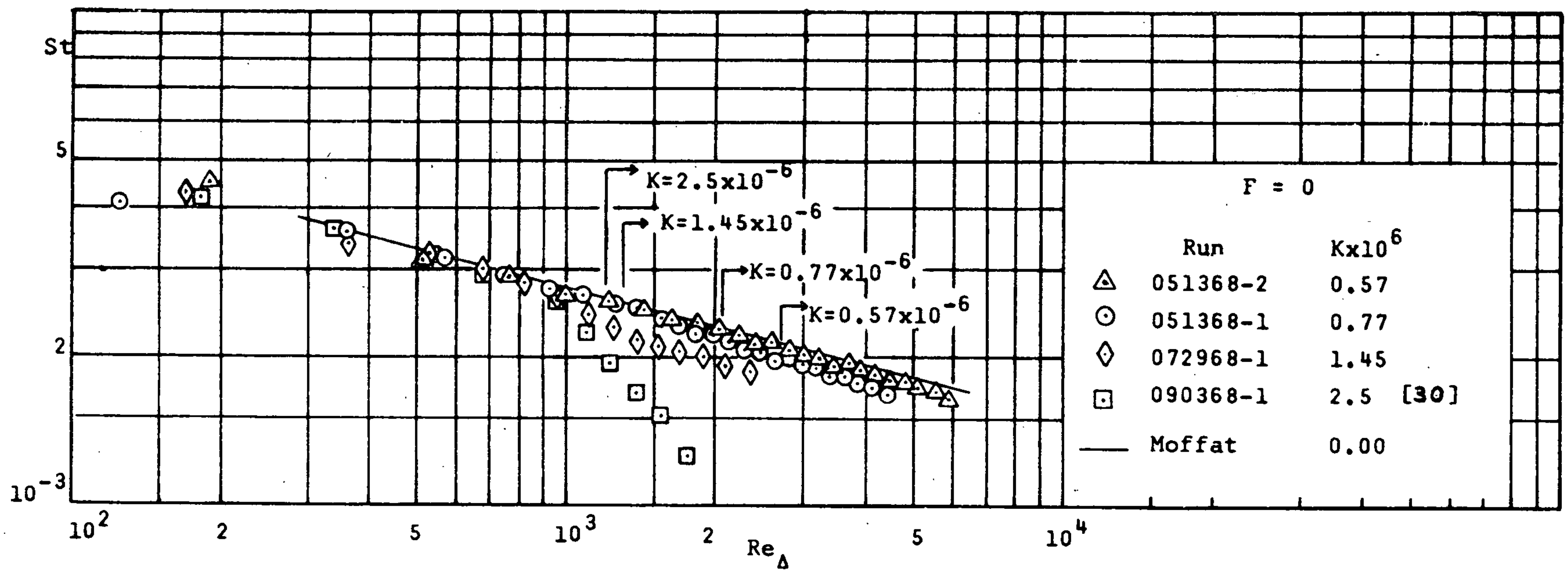


Figure 22. Influence of Favorable Pressure Gradient on Stanton Number

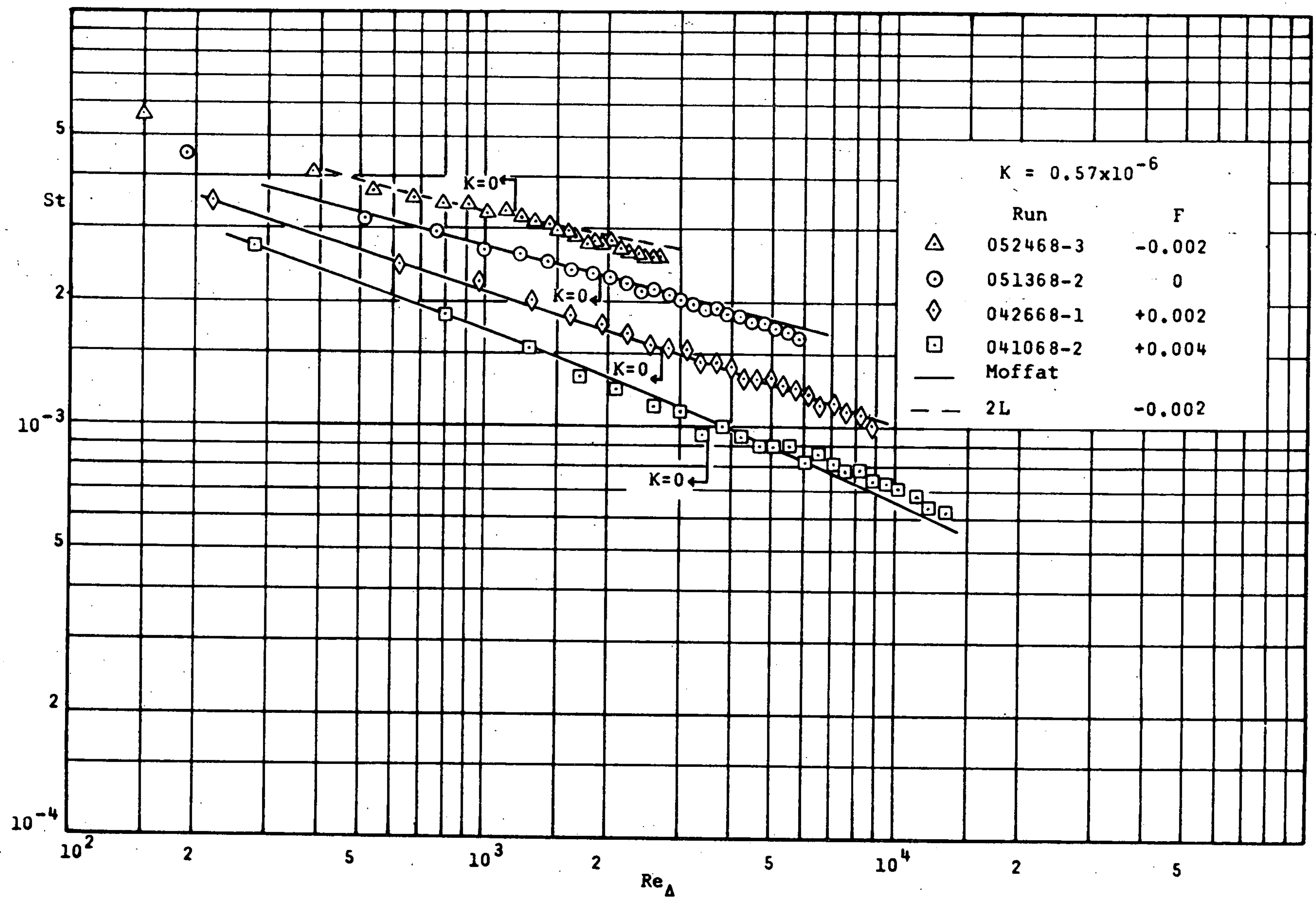


Figure 23. Influence of Favorable Pressure Gradient on Stanton Number With Blowing or Sucking; $K = 0.57 \times 10^{-6}$

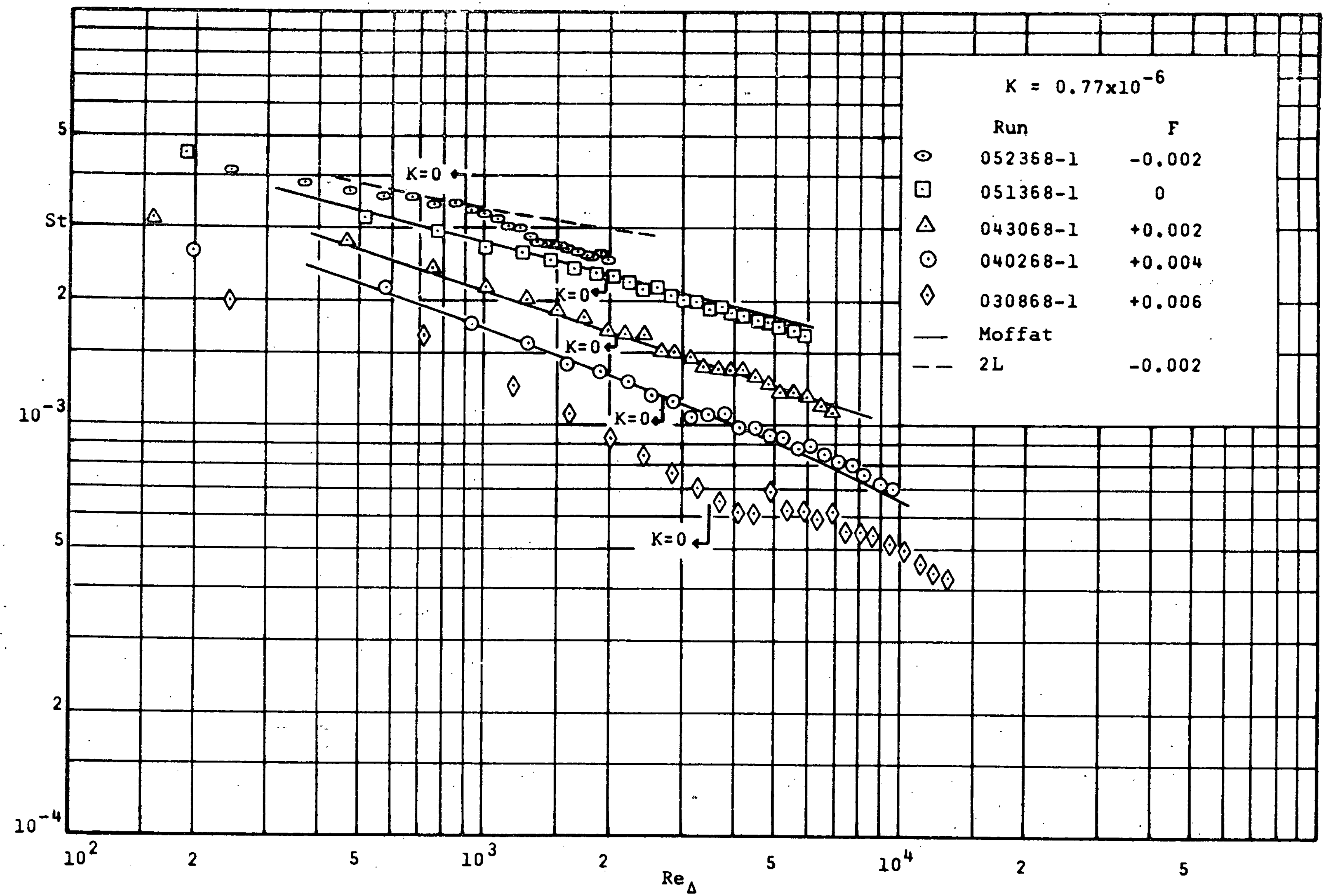


Figure 24. Influence of Favorable Pressure Gradient on Stanton Number With Blowing or Sucking; $K = 0.77 \times 10^{-6}$

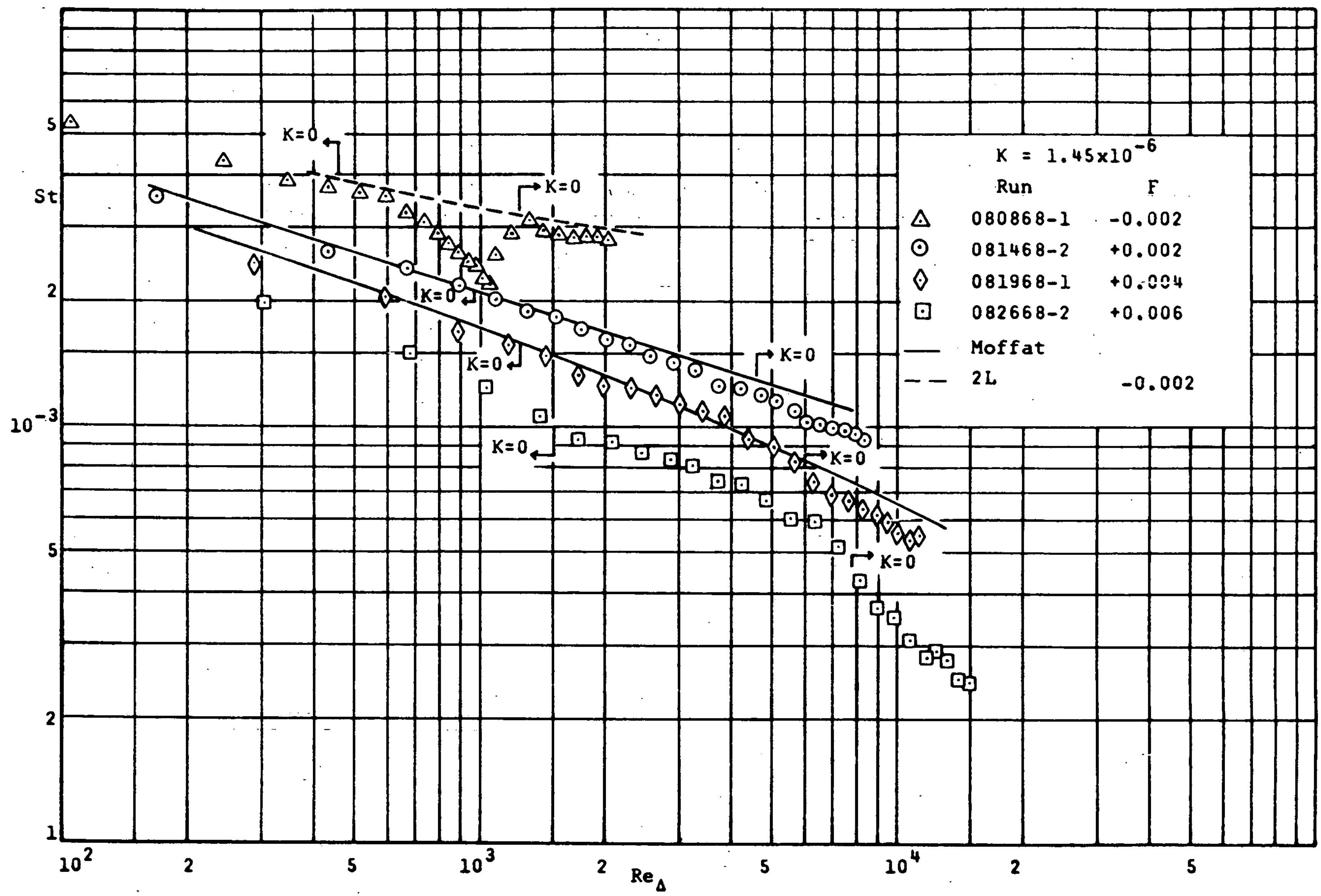


Figure 25. Influence of Favorable Pressure Gradient on Stanton Number With Blowing or Sucking; $K = 1.45\times10^{-6}$

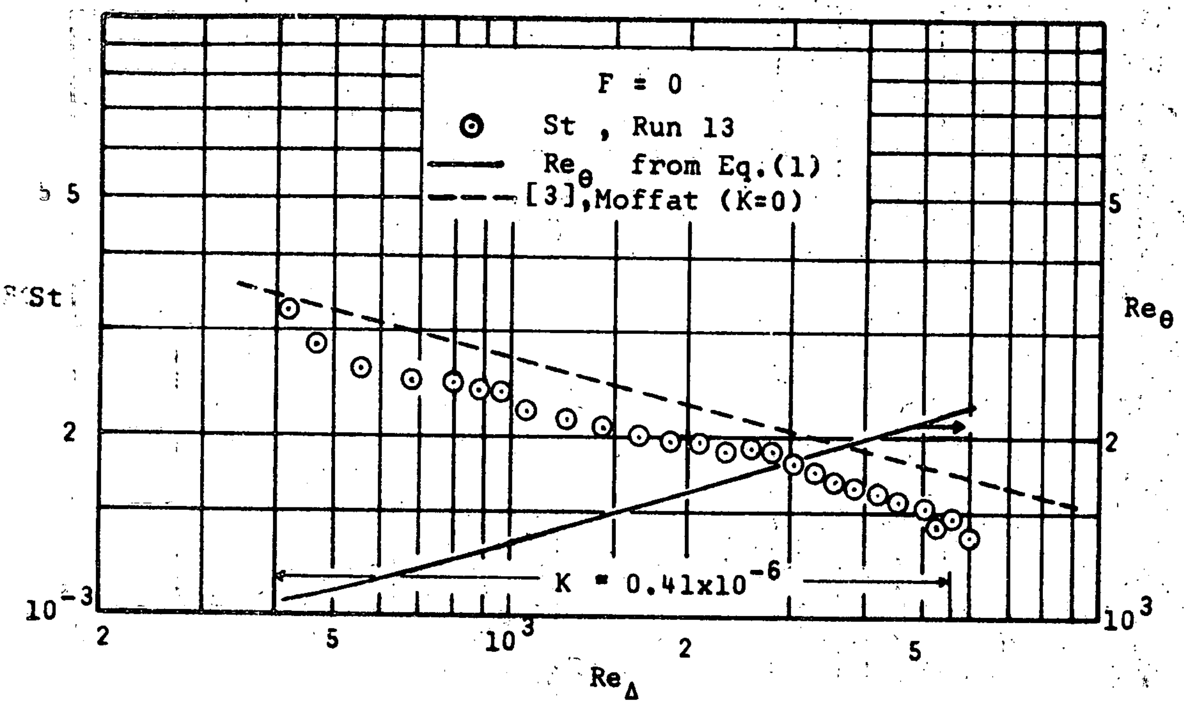


Figure 26a. Results of Moretti and Kays [6]; Favorable Pressure Gradient, Zero Blowing

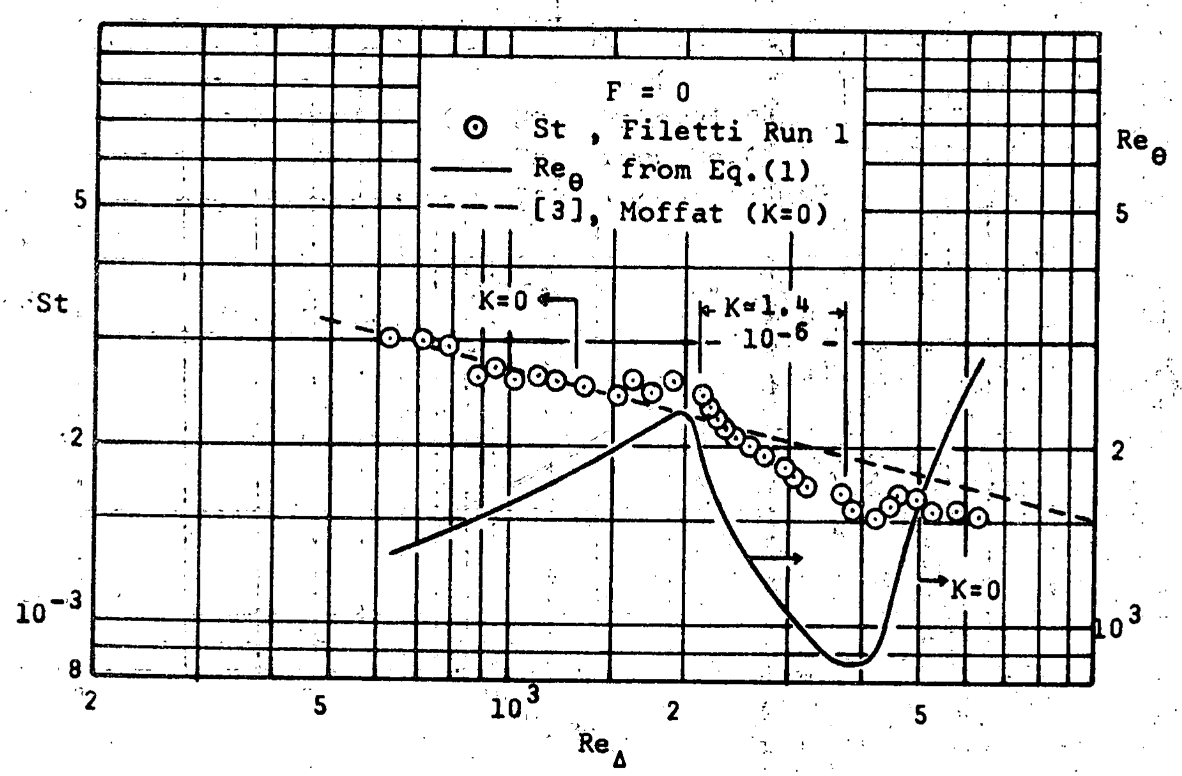


Figure 26b. Results of Moretti and Kays [6]; Favorable Pressure Gradient, Zero Blowing

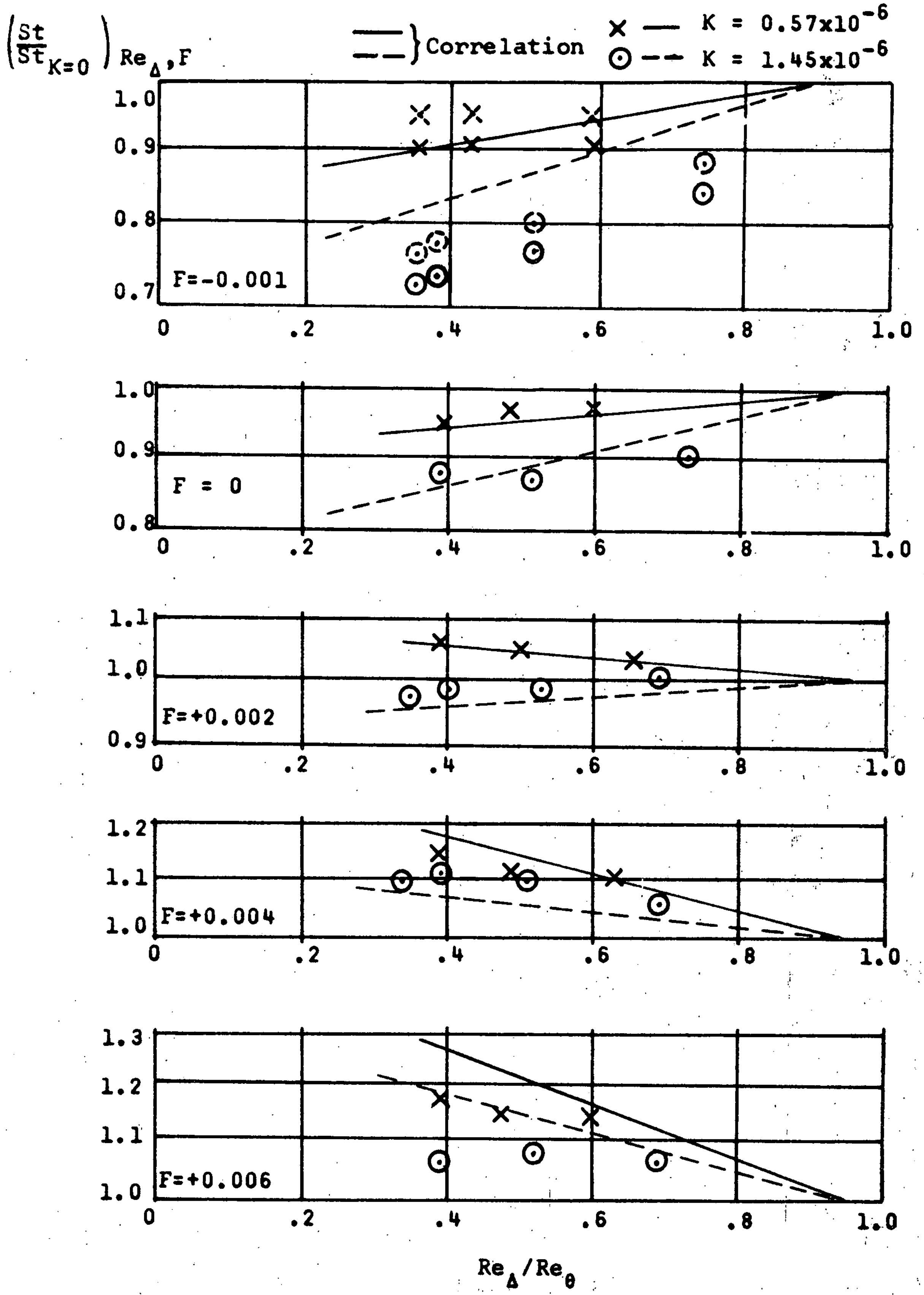


Figure 27. Stanton Number Correlation Relative to the Experimental Data

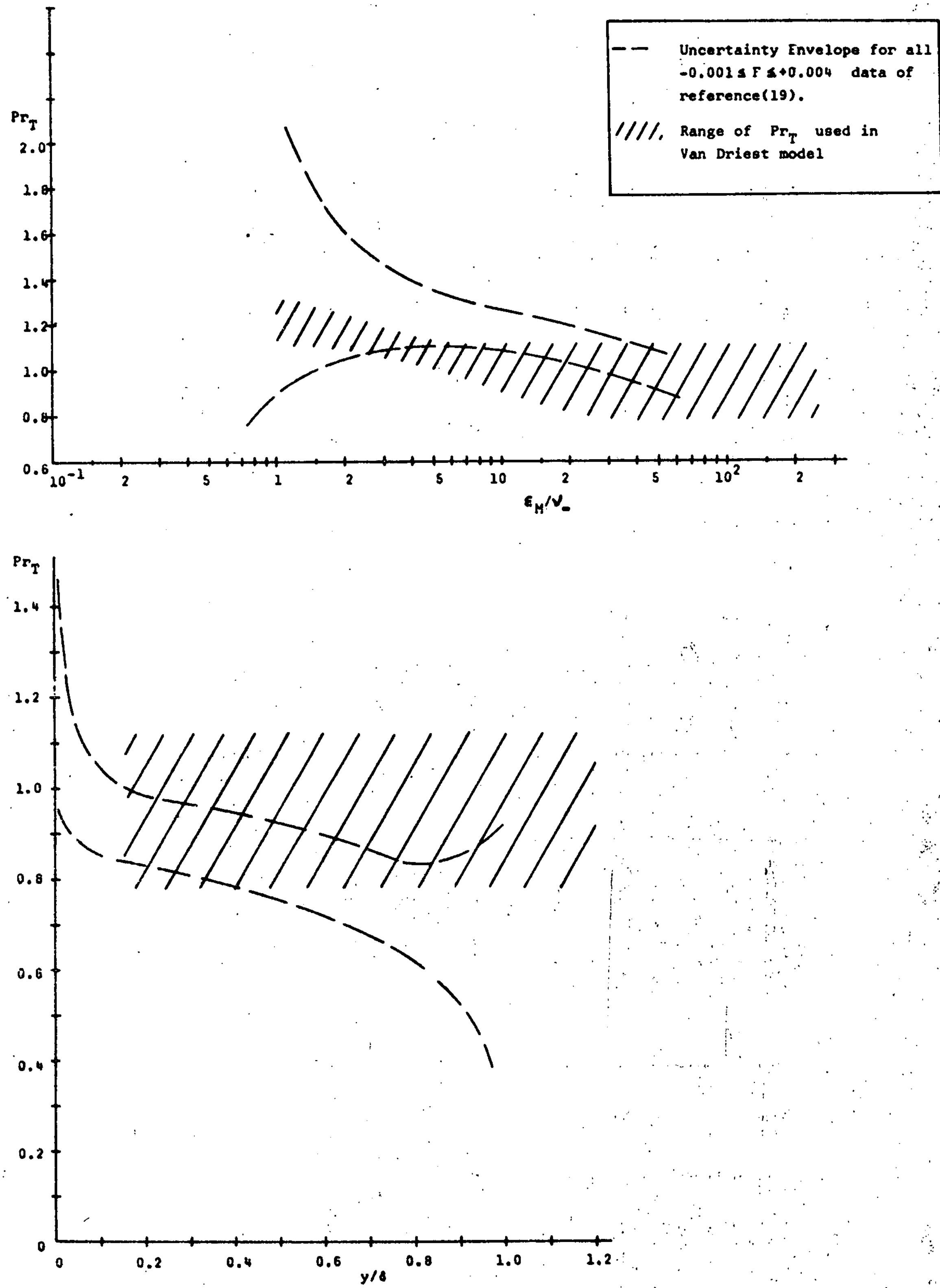


Figure 28. Turbulent Prandtl Number versus ε_M/ν and y/δ at Zero Pressure Gradient

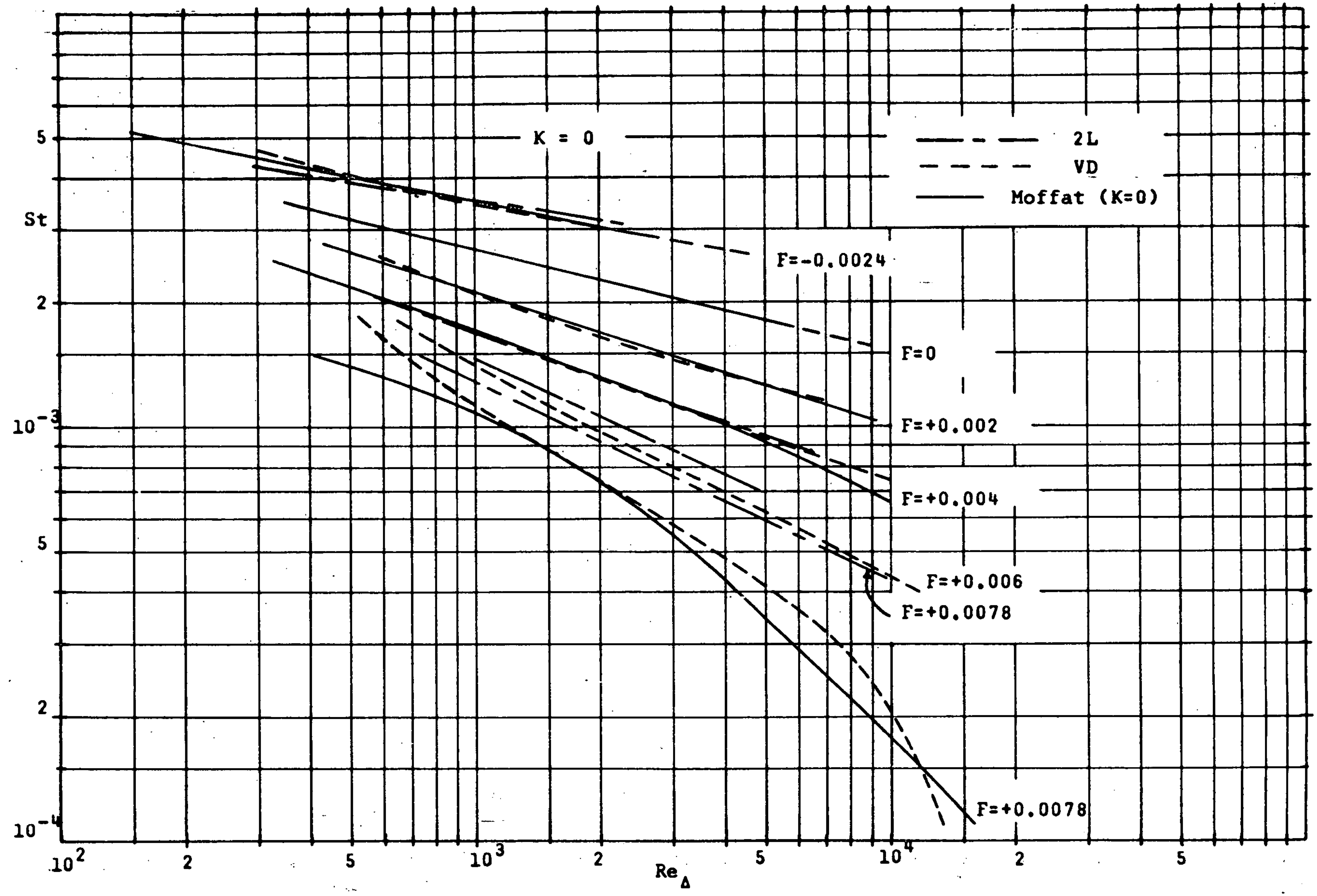


Figure 29. Stanton Number Prediction With Both 2-Layer and Van Driest Models; Constant F

APPENDIX A

STANTON NUMBER DATA

The tests are identified according to RUN and RUN NO. in the following manner:

Test 080468-1

where 080468 refers to RUN and the 1 refers to RUN NO. Additional nomenclature is listed below.

AMB TMP	=	ambient temperature, ^{o}F
BARO	=	barometric pressure, in. Hg.
BASE TEMP	=	base casting temperature, ^{o}F
DATE	=	date of test
DELTA2	=	Δ calculated from Eq. (5), in.
F	=	$\dot{m}''/\rho_{\infty}U_{\infty}$
G TEMP	=	t_{∞} , ^{o}F
K	=	K
PL NO.	=	plate number
REENTH	=	Re_{Δ}
RELHUM	=	relative humidity
ST	=	St
STCP	=	$St_{c.p.}$
TCOVER	=	temperature of inside surface of flexible top, ^{o}F
TO,EFF	=	effective surface temperature of porous plate, ^{o}F
TT	=	T-state temperature, ^{o}F
VEL-X	=	local U_{∞} , fps

RUN 053168-1, F=-0.004, K=0.55E-06
DATE 53168 RUN NO. 1
AMB TMP= 77.00F BASE TEMP= 86.38F G TEMP= 65.54F
BARO= 28.95IN.HG RELHUM= 0.4 TCOVER=68.36

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	92.03	94.06	0.00685	0.00658	0.0058	0.121E 03	-0.00395	41.62	0.000E 00
2	92.11	93.66	0.00524	0.00535	0.0142	0.296E 03	-0.00393	41.62	0.157E-08
3	92.10	93.50	0.00473	0.00483	0.0184	0.384E 03	-0.00393	41.64	0.143E-07
4	92.31	93.69	0.00460	0.00469	0.0214	0.446E 03	-0.00392	41.62	0.000E 00
5	92.08	93.39	0.00443	0.00452	0.0238	0.495E 03	-0.00393	41.65	-0.239E-07
6	92.22	93.54	0.00446	0.00455	0.0259	0.537E 03	-0.00395	41.51	-0.397E-07
7	92.16	93.42	0.00423	0.00431	0.0275	0.571E 03	-0.00393	41.51	0.800E-08
8	92.30	93.55	0.00421	0.00429	0.0287	0.595E 03	-0.00392	41.48	0.484E-08
9	92.34	93.58	0.00416	0.00424	0.0296	0.617E 03	-0.00393	41.59	0.539E-07
10	92.30	93.55	0.00413	0.00421	0.0302	0.635E 03	-0.00392	42.00	0.201E-06
11	92.26	93.54	0.00414	0.00422	0.0304	0.653E 03	-0.00392	43.02	0.357E-06
12	92.39	93.70	0.00407	0.00415	0.0300	0.668E 03	-0.00396	44.51	0.449E-06
13	92.41	93.82	0.00419	0.00427	0.0293	0.683E 03	-0.00396	46.65	0.547E-06
14	92.23	93.68	0.00410	0.00419	0.0285	0.702E 03	-0.00394	49.21	0.570E-06
15	92.23	93.72	0.00397	0.00405	0.0273	0.711E 03	-0.00397	52.12	0.575E-06
16	92.24	93.84	0.00399	0.00407	0.0258	0.714E 03	-0.00394	55.41	0.552E-06
17	92.30	93.59	0.00395	0.00403	0.0243	0.716E 03	-0.00396	59.00	0.562E-06
18	92.22	94.15	0.00420	0.00428	0.0231	0.730E 03	-0.00396	63.30	0.575E-06
19	92.24	94.25	0.00399	0.00407	0.0219	0.746E 03	-0.00397	68.31	0.578E-06
20	92.28	94.45	0.00397	0.00405	0.0202	0.749E 03	-0.00394	74.17	0.601E-06
21	92.21	94.63	0.00403	0.00411	0.0186	0.756E 03	-0.00396	81.43	0.597E-06
22	92.21	94.85	0.00395	0.00403	0.0170	0.762E 03	-0.00395	89.95	0.579E-06
23	91.93	95.00	0.00412	0.00420	0.0156	0.776E 03	-0.00397	100.16	0.569E-06
24	92.01	95.21	0.00380	0.00387	0.0143	0.803E 03	-0.00369	112.80	0.590E-06

RUN 060268-1, F=-0.004, K=0.55E-06
DATE 60268 RUN NO. 1
AMB TMP= 76.70F BASE TEMP= 87.07F G TEMP= 68.12F
BARO= 29.67IN.HG RELHUM= 0.4 TCOVER=71.15

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	95.15	97.24	0.00682	0.00696	0.0058	0.120E 03	-0.00394	40.81	0.000E 00
2	95.13	96.69	0.00513	0.00524	0.0140	0.291E 03	-0.00391	40.81	-0.160E-08
3	95.19	96.61	0.00465	0.00474	0.0178	0.373E 03	-0.00393	40.82	0.145E-07
4	95.27	96.65	0.00451	0.00460	0.0205	0.427E 03	-0.00393	40.80	0.000E 00
5	95.21	96.54	0.00438	0.00446	0.0225	0.470E 03	-0.00392	40.83	-0.242E-07
6	95.17	96.50	0.00439	0.00447	0.0245	0.505E 03	-0.00391	40.69	-0.401E-07
7	95.11	96.38	0.00416	0.00425	0.0259	0.540E 03	-0.00391	40.69	0.810E-08
8	95.15	96.41	0.00415	0.00423	0.0269	0.559E 03	-0.00393	40.67	0.488E-08
9	95.19	96.44	0.00410	0.00419	0.0276	0.575E 03	-0.00393	40.78	0.577E-07
10	95.19	96.44	0.00407	0.00415	0.0280	0.590E 03	-0.00390	41.18	0.218E-06
11	95.28	96.58	0.00410	0.00419	0.0280	0.604E 03	-0.00393	42.19	0.343E-06
12	95.14	96.44	0.00396	0.00404	0.0275	0.615E 03	-0.00390	43.66	0.456E-06
13	95.13	96.53	0.00408	0.00417	0.0268	0.627E 03	-0.00389	45.81	0.539E-06
14	95.09	96.53	0.00400	0.00408	0.0255	0.641E 03	-0.00390	48.30	0.582E-06
15	95.11	96.60	0.00387	0.00394	0.0246	0.644E 03	-0.00390	51.25	0.574E-06
16	95.03	96.62	0.00390	0.00398	0.0230	0.642E 03	-0.00391	54.50	0.548E-06
17	95.12	96.78	0.00382	0.00390	0.0215	0.638E 03	-0.00388	58.01	0.563E-06
18	95.14	97.06	0.00405	0.00414	0.0203	0.646E 03	-0.00388	62.26	0.575E-06
19	95.14	97.10	0.00383	0.00391	0.0191	0.655E 03	-0.00387	67.22	0.576E-06
20	95.14	97.28	0.00383	0.00391	0.0174	0.648E 03	-0.00389	73.01	0.601E-06
21	95.07	97.41	0.00380	0.00387	0.0156	0.639E 03	-0.00385	80.25	0.597E-06
22	94.93	97.49	0.00376	0.00384	0.0135	0.629E 03	-0.00383	88.62	0.574E-06
23	95.20	98.24	0.00394	0.00402	0.0126	0.634E 03	-0.00383	98.71	0.565E-06
24	94.99	98.22	0.00371	0.00379	0.0114	0.646E 03	-0.00371	111.18	0.584E-06

RUN 052468-3, F=-0.002, K=0.55E-06
DATE 52468 RUN NO. 3
AMB TMP= 75.90F BASE TEMP= 82.93F G TEMP= 63.90F
BARO= 29.98IN.HG RELHUM= 0.4 TCOVER=66.62

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	96.46	98.49	0.00546	0.00560	0.0069	0.148E 03	-0.00199	40.88	0.000E 00
2	96.73	98.20	0.00395	0.00405	0.0178	0.380E 03	-0.00198	40.88	0.000E 00
3	96.72	98.05	0.00360	0.00368	0.0250	0.533E 03	-0.00197	40.88	0.000E 00
4	96.66	97.94	0.00346	0.00354	0.0312	0.665E 03	-0.00198	40.88	0.000E 00
5	96.59	97.84	0.00336	0.00345	0.0370	0.787E 03	-0.00198	40.84	-0.250E-07
6	96.67	97.89	0.00334	0.00342	0.0426	0.904E 03	-0.00198	40.71	-0.388E-07
7	96.67	97.87	0.00321	0.00329	0.0478	0.101E 04	-0.00197	40.69	0.940E-08
8	96.64	97.82	0.00322	0.00330	0.0528	0.112E 04	-0.00198	40.68	0.000E 00
9	96.61	97.77	0.00313	0.00320	0.0574	0.122E 04	-0.00198	40.79	0.589E-07
10	96.64	97.79	0.00306	0.00313	0.0612	0.132E 04	-0.00198	41.23	0.252E-06
11	96.61	97.77	0.00301	0.00308	0.0635	0.141E 04	-0.00201	42.46	0.429E-06
12	96.71	97.88	0.00290	0.00298	0.0646	0.149E 04	-0.00198	44.35	0.496E-06
13	96.80	98.04	0.00290	0.00298	0.0649	0.158E 04	-0.00200	46.71	0.575E-06
14	96.73	97.99	0.00280	0.00287	0.0647	0.167E 04	-0.00192	49.48	0.556E-06
15	96.76	98.04	0.00268	0.00275	0.0642	0.176E 04	-0.00191	52.50	0.576E-06
16	96.81	98.19	0.00271	0.00278	0.0634	0.184E 04	-0.00192	55.89	0.542E-06
17	96.56	97.99	0.00266	0.00272	0.0623	0.194E 04	-0.00194	59.67	0.548E-06
18	96.54	98.13	0.00275	0.00281	0.0610	0.203E 04	-0.00194	64.05	0.568E-06
19	96.66	98.34	0.00264	0.00270	0.0592	0.214E 04	-0.00195	69.34	0.558E-06
20	96.54	98.32	0.00259	0.00266	0.0570	0.224E 04	-0.00195	75.51	0.583E-06
21	96.68	98.63	0.00256	0.00262	0.0541	0.234E 04	-0.00195	83.19	0.582E-06
22	96.62	98.75	0.00253	0.00259	0.0511	0.245E 04	-0.00195	92.16	0.559E-06
23	96.58	98.96	0.00251	0.00257	0.0480	0.256E 04	-0.00197	102.94	0.544E-06
24	96.49	99.17	0.00250	0.00256	0.0446	0.268E 04	-0.00197	116.26	0.562E-06

RUN 052568-1, F=-0.002, K=0.55E-06
DATE 52568 RUN NO. 1
AMB TMP= 72.30F BASE TEMP= 85.00F G TEMP= 66.41F
BARO= 29.98IN.HG RELHUM= 0.4 TCOVER=69.06

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	99.06	101.13	0.00553	0.00567	0.0071	0.151E 03	-0.00199	41.21	0.000E 00
2	99.26	100.75	0.00397	0.00407	0.0182	0.388E 03	-0.00197	41.21	0.000E 00
3	99.15	100.49	0.00362	0.00370	0.0255	0.544E 03	-0.00197	41.21	0.000E 00
4	99.16	100.45	0.00347	0.00355	0.0317	0.676E 03	-0.00199	41.21	0.000E 00
5	99.13	100.38	0.00338	0.00346	0.0375	0.799E 03	-0.00198	41.24	-0.921E-08
6	99.13	100.37	0.00335	0.00343	0.0431	0.917E 03	-0.00197	41.10	-0.382E-07
7	99.31	100.52	0.00321	0.00329	0.0483	0.103E 04	-0.00198	41.18	0.383E-07
8	99.28	100.47	0.00322	0.00330	0.0534	0.113E 04	-0.00199	41.07	-0.295E-07
9	99.11	100.27	0.00312	0.00320	0.0580	0.123E 04	-0.00198	41.18	0.595E-07
10	99.14	100.31	0.00307	0.00315	0.0618	0.133E 04	-0.00198	41.64	0.257E-06
11	99.07	100.25	0.00302	0.00310	0.0641	0.142E 04	-0.00201	42.89	0.415E-06
12	99.14	100.32	0.00291	0.00298	0.0652	0.151E 04	-0.00199	44.76	0.501E-06
13	99.23	100.48	0.00292	0.00299	0.0655	0.160E 04	-0.00199	47.13	0.565E-06
14	99.13	100.39	0.00281	0.00288	0.0654	0.169E 04	-0.00195	49.89	0.561E-06
15	99.09	100.39	0.00274	0.00281	0.0649	0.178E 04	-0.00192	52.95	0.575E-06
16	98.97	100.35	0.00271	0.00278	0.0641	0.187E 04	-0.00193	56.36	0.532E-06
17	99.03	100.49	0.00270	0.00277	0.0630	0.196E 04	-0.00195	60.12	0.548E-06
18	98.93	100.53	0.00275	0.00282	0.0617	0.206E 04	-0.00194	64.64	0.566E-06
19	98.92	100.60	0.00265	0.00271	0.0599	0.216E 04	-0.00196	69.91	0.559E-06
20	98.83	100.63	0.00262	0.00268	0.0576	0.226E 04	-0.00196	76.11	0.581E-06
21	98.81	100.77	0.00260	0.00266	0.0548	0.237E 04	-0.00196	83.78	0.578E-06
22	98.81	100.95	0.00255	0.00261	0.0519	0.248E 04	-0.00196	92.81	0.559E-06
23	98.67	101.05	0.00255	0.00261	0.0487	0.260E 04	-0.00199	103.63	0.543E-06
24	98.75	101.44	0.00253	0.00259	0.0453	0.272E 04	-0.00199	116.98	0.558E-06

RUN 051868-1, F=-0.001, K=0.55E-06
DATE 51868 RUN NO. 1
AMB TMP= 76.00F BASE TEMP= 80.85F G TEMP= 65.85F
BARO= 29.95IN.HG RELHUM= 0.4 TCOVER=68.71

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	94.31	95.88	0.00491	0.00501	0.0075	0.166E 03	-0.00097	40.80	0.000E 00
2	94.25	95.35	0.00343	0.00350	0.0207	0.436E 03	-0.00097	40.80	-0.126E-07
3	94.26	95.28	0.00319	0.00325	0.0301	0.634E 03	-0.00096	40.73	-0.793E-08
4	94.27	95.24	0.00300	0.00307	0.0385	0.813E 03	-0.00097	40.79	0.000E 00
5	94.11	95.03	0.00290	0.00296	0.0465	0.980E 03	-0.00097	40.73	-0.111E-07
6	94.18	95.09	0.00286	0.00292	0.0542	0.114E 04	-0.00098	40.66	-0.237E-07
7	94.15	95.02	0.00270	0.00276	0.0613	0.129E 04	-0.00097	40.75	0.427E-07
8	94.32	95.20	0.00272	0.00278	0.0682	0.144E 04	-0.00097	40.77	0.206E-07
9	94.33	95.18	0.00263	0.00268	0.0748	0.158E 04	-0.00097	40.94	0.698E-07
10	94.33	95.17	0.00257	0.00263	0.0803	0.172E 04	-0.00097	41.47	0.260E-06
11	94.22	95.07	0.00251	0.00256	0.0841	0.186E 04	-0.00096	42.77	0.446E-06
12	94.36	95.22	0.00245	0.00250	0.0864	0.200E 04	-0.00097	44.71	0.539E-06
13	94.08	94.96	0.00239	0.00244	0.0876	0.214E 04	-0.00097	47.14	0.563E-06
14	94.07	95.00	0.00237	0.00242	0.0880	0.228E 04	-0.00097	50.04	0.583E-06
15	94.03	94.58	0.00230	0.00235	0.0882	0.242E 04	-0.00097	53.13	0.573E-06
16	93.93	94.91	0.00225	0.00230	0.0878	0.257E 04	-0.00098	56.64	0.540E-06
17	94.02	95.06	0.00224	0.00229	0.0871	0.272E 04	-0.00098	60.49	0.561E-06
18	94.04	95.17	0.00226	0.00231	0.0859	0.289E 04	-0.00099	65.06	0.563E-06
19	93.93	95.11	0.00217	0.00222	0.0841	0.306E 04	-0.00099	70.40	0.560E-06
20	93.88	95.14	0.00215	0.00219	0.0817	0.324E 04	-0.00099	76.76	0.588E-06
21	93.86	95.22	0.00211	0.00215	0.0785	0.343E 04	-0.00100	84.63	0.582E-06
22	93.94	95.44	0.00208	0.00213	0.0750	0.363E 04	-0.00100	93.87	0.556E-06
23	93.98	95.66	0.00207	0.00211	0.0711	0.385E 04	-0.00100	105.04	0.549E-06
24	93.96	95.79	0.00201	0.00205	0.0669	0.409E 04	-0.00096	118.91	0.563E-06

RUN 051368-2, F= 0.0 , K=0.55E-06
DATE 51368 RUN NO. 2
AMB TMP= 72.30F BASE TEMP= 71.15F G TEMP= 66.45F
BARO= 29.93IN.HG RELHUM= 0.4 TCOVER=68.71

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	97.59	77.70	0.00443	0.00453	0.0089	0.188E 03	0.00000	41.11	0.000E 00
2	97.39	75.59	0.00309	0.00316	0.0239	0.507E 03	0.00000	41.11	-0.616E-08
3	97.42	78.71	0.00286	0.00293	0.0358	0.759E 03	0.00000	41.06	-0.124E-07
4	97.14	79.69	0.00262	0.00268	0.0466	0.991E 03	0.00000	41.06	-0.467E-08
5	97.35	75.49	0.00255	0.00260	0.0572	0.121E 04	0.00000	41.01	-0.219E-07
6	97.39	79.68	0.00245	0.00250	0.0673	0.142E 04	0.00000	40.92	-0.404E-07
7	97.39	74.31	0.00234	0.00239	0.0770	0.162E 04	0.00000	40.87	0.157E-07
8	97.49	79.12	0.00230	0.00235	0.0862	0.182E 04	0.00000	40.87	0.158E-07
9	97.49	100.47	0.00225	0.00230	0.0949	0.201E 04	0.00000	41.06	0.116E-06
10	97.59	75.66	0.00218	0.00223	0.1021	0.220E 04	0.00000	41.75	0.321E-06
11	97.49	81.06	0.00209	0.00214	0.1069	0.239E 04	0.00000	43.29	0.465E-06
12	97.56	75.83	0.00212	0.00216	0.1103	0.258E 04	0.00000	45.32	0.537E-06
13	97.45	75.14	0.00204	0.00208	0.1124	0.278E 04	0.00000	47.92	0.588E-06
14	97.35	76.18	0.00197	0.00202	0.1138	0.298E 04	0.00000	50.81	0.566E-06
15	97.32	76.18	0.00194	0.00199	0.1146	0.320E 04	0.00000	54.05	0.569E-06
16	97.32	76.01	0.00188	0.00192	0.1149	0.342E 04	0.00000	57.63	0.548E-06
17	97.35	74.03	0.00189	0.00193	0.1148	0.365E 04	0.00000	61.64	0.557E-06
18	97.42	77.81	0.00184	0.00189	0.1138	0.389E 04	0.00000	66.36	0.562E-06
19	97.32	75.00	0.00181	0.00186	0.1122	0.415E 04	0.00000	71.87	0.558E-06
20	97.32	76.53	0.00176	0.00180	0.1096	0.443E 04	0.00000	78.47	0.586E-06
21	97.25	84.50	0.00175	0.00179	0.1060	0.473E 04	0.00000	86.72	0.577E-06
22	97.21	74.38	0.00170	0.00174	0.1021	0.505E 04	0.00000	96.26	0.553E-06
23	97.21	75.07	0.00167	0.00171	0.0976	0.541E 04	0.00000	107.94	0.545E-06
24	97.18	75.14	0.00161	0.00165	0.0924	0.579E 04	0.00000	122.40	0.550E-06

RUN 050868-1, F=+0.001, K=0.55E-06
DATE 50868 RUN NO. 1
AMB TMP= 72.00F BASE TEMP= 72.88F G TEMP= 66.24F
BARO= 30.08IN.HG RELHUM= 0.4 TCOVER=68.71

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	94.16	73.65	0.00393	0.00401	0.0098	0.199E 03	0.00099	38.98	0.000E 00
2	94.23	73.26	0.00276	0.00282	0.0272	0.550E 03	0.00099	38.98	-0.893E-08
3	94.27	74.10	0.00253	0.00258	0.0418	0.845E 03	0.00099	38.93	0.899E-08
4	94.30	74.06	0.00229	0.00233	0.0553	0.112E 04	0.00100	38.98	-0.897E-08
5	94.12	73.47	0.00216	0.00221	0.0683	0.138E 04	0.00100	38.95	-0.903E-08
6	94.36	73.79	0.00209	0.00214	0.0809	0.163E 04	0.00100	38.87	-0.538E-07
7	94.37	73.58	0.00204	0.00208	0.0932	0.188E 04	0.00100	38.84	0.362E-07
8	94.41	73.69	0.00192	0.00196	0.1049	0.212E 04	0.00100	38.93	0.272E-07
9	94.37	73.47	0.00186	0.00189	0.1158	0.236E 04	0.00099	39.15	0.132E-06
10	94.39	73.86	0.00184	0.00188	0.1251	0.259E 04	0.00100	39.82	0.349E-06
11	94.36	73.96	0.00174	0.00177	0.1315	0.282E 04	0.00099	41.34	0.513E-06
12	94.48	73.47	0.00173	0.00177	0.1359	0.306E 04	0.00100	43.40	0.556E-06
13	94.44	73.13	0.00167	0.00171	0.1392	0.331E 04	0.00100	45.82	0.612E-06
14	94.42	73.13	0.00163	0.00166	0.1413	0.357E 04	0.00099	48.67	0.596E-06
15	94.40	73.13	0.00157	0.00161	0.1430	0.384E 04	0.00099	51.74	0.604E-06
16	94.44	73.16	0.00155	0.00159	0.1438	0.413E 04	0.00099	55.27	0.571E-06
17	94.38	72.74	0.00151	0.00155	0.1443	0.443E 04	0.00101	59.13	0.577E-06
18	94.32	72.88	0.00149	0.00152	0.1436	0.475E 04	0.00100	63.68	0.591E-06
19	94.39	72.81	0.00143	0.00146	0.1421	0.508E 04	0.00101	69.02	0.582E-06
20	94.49	73.13	0.00143	0.00146	0.1394	0.545E 04	0.00100	75.42	0.613E-06
21	94.64	72.85	0.00140	0.00143	0.1353	0.585E 04	0.00100	83.43	0.603E-06
22	94.46	72.43	0.00134	0.00136	0.1308	0.628E 04	0.00100	92.80	0.578E-06
23	94.45	72.29	0.00132	0.00135	0.1254	0.675E 04	0.00100	104.17	0.567E-06
24	94.45	72.19	0.00125	0.00128	0.1193	0.728E 04	0.00101	119.26	0.570E-06

RUN 042668-1, F=+0.002, K=0.55E-06
DATE 42668 RUN NO. 1
AMB TMP= 78.00F BASE TEMP= 78.43F G TEMP= 66.94F
BARO= 29.87IN.HG RELHUM= 0.4 TCOVER=70.10

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	95.87	79.12	0.00338	0.00346	0.0107	0.219E 03	0.00198	39.71	0.000E 00
2	96.04	79.09	0.00242	0.00247	0.0303	0.617E 03	0.00197	39.71	-0.780E-07
3	96.09	79.37	0.00218	0.00223	0.0476	0.965E 03	0.00198	39.46	0.000E 00
4	96.25	79.47	0.00199	0.00203	0.0635	0.129E 04	0.00196	39.68	0.349E-07
5	96.37	79.30	0.00182	0.00186	0.0793	0.161E 04	0.00198	39.51	-0.265E-07
6	96.38	79.40	0.00173	0.00177	0.0944	0.191E 04	0.00199	39.46	-0.350E-07
7	96.54	79.40	0.00165	0.00169	0.1091	0.221E 04	0.00196	39.46	0.264E-07
8	96.47	79.54	0.00155	0.00158	0.1233	0.250E 04	0.00198	39.48	0.177E-07
9	96.60	79.40	0.00152	0.00155	0.1368	0.278E 04	0.00197	39.62	0.867E-07
10	96.60	79.47	0.00151	0.00155	0.1490	0.307E 04	0.00196	40.13	0.266E-06
11	96.59	79.50	0.00141	0.00144	0.1584	0.336E 04	0.00199	41.28	0.422E-06
12	96.66	79.33	0.00140	0.00143	0.1652	0.365E 04	0.00198	43.02	0.510E-06
13	96.41	79.33	0.00138	0.00141	0.1701	0.395E 04	0.00196	45.29	0.593E-06
14	96.49	79.19	0.00131	0.00133	0.1737	0.427E 04	0.00198	47.89	0.575E-06
15	96.37	79.33	0.00129	0.00132	0.1765	0.460E 04	0.00198	50.81	0.581E-06
16	96.58	79.47	0.00131	0.00134	0.1789	0.495E 04	0.00198	54.00	0.576E-06
17	96.48	79.09	0.00124	0.00127	0.1791	0.533E 04	0.00196	58.02	0.564E-06
18	96.41	79.12	0.00121	0.00124	0.1802	0.572E 04	0.00196	61.92	0.581E-06
19	96.28	78.99	0.00118	0.00120	0.1791	0.614E 04	0.00197	66.85	0.579E-06
20	96.37	79.12	0.00110	0.00113	0.1769	0.658E 04	0.00198	72.64	0.598E-06
21	96.25	78.78	0.00113	0.00115	0.1730	0.707E 04	0.00199	79.77	0.590E-06
22	96.17	78.60	0.00109	0.00111	0.1686	0.760E 04	0.00198	88.07	0.573E-06
23	96.41	78.54	0.00106	0.00108	0.1633	0.818E 04	0.00197	97.98	0.555E-06
24	96.18	78.43	0.00100	0.00102	0.1569	0.882E 04	0.00199	110.10	0.586E-06

RUN C41068-2, F=+0.004, K=0.55E-06
DATE 41068 RUN NO. 2
AMB TMP= 79.30F BASE TEMP= 80.85F G TEMP= 67.70F
BARO= 29.97IN.HG RELHUM= 0.4 TCOVER=71.15

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	96.81	80.55	0.00265	0.00271	0.0132	0.275E 03	0.00396	40.46	0.000E 00
2	96.95	81.03	0.00182	0.00186	0.0380	0.790E 03	0.00396	40.46	0.000E 00
3	96.98	81.17	0.00151	0.00154	0.0604	0.126E 04	0.00393	40.46	0.000E 00
4	96.95	81.23	0.00130	0.00133	0.0818	0.170E 04	0.00394	40.46	0.000E 00
5	96.94	81.13	0.00120	0.00123	0.1026	0.213E 04	0.00393	40.46	-0.328E-07
6	97.00	81.23	0.00110	0.00113	0.1235	0.256E 04	0.00394	40.24	-0.493E-07
7	97.02	81.23	0.00106	0.00108	0.1436	0.297E 04	0.00393	40.24	0.248E-07
8	96.98	81.23	0.00094	0.00096	0.1630	0.338E 04	0.00395	40.35	0.578E-07
9	96.94	81.13	0.00098	0.00100	0.1814	0.379E 04	0.00393	40.62	0.147E-06
10	97.14	81.20	0.00093	0.00095	0.1977	0.420E 04	0.00392	41.32	0.311E-06
11	97.06	81.17	0.00088	0.00090	0.2101	0.462E 04	0.00394	42.75	0.446E-06
12	97.25	81.06	0.00087	0.00089	0.2198	0.505E 04	0.00392	44.70	0.499E-06
13	97.15	81.34	0.00088	0.00090	0.2274	0.550E 04	0.00395	47.10	0.594E-06
14	97.04	81.34	0.00081	0.00082	0.2333	0.598E 04	0.00395	49.89	0.558E-06
15	96.95	81.30	0.00084	0.00086	0.2383	0.648E 04	0.00390	52.96	0.577E-06
16	96.91	81.17	0.00081	0.00082	0.2419	0.702E 04	0.00393	56.46	0.554E-06
17	96.99	80.96	0.00077	0.00078	0.2447	0.758E 04	0.00392	60.34	0.562E-06
18	97.05	80.92	0.00077	0.00079	0.2458	0.819E 04	0.00393	64.86	0.573E-06
19	97.06	80.75	0.00073	0.00074	0.2452	0.883E 04	0.00392	70.18	0.562E-06
20	97.00	80.68	0.00071	0.00073	0.2432	0.953E 04	0.00393	76.40	0.585E-06
21	97.21	80.54	0.00070	0.00071	0.2390	0.103E 05	0.00391	84.02	0.570E-06
22	96.98	80.34	0.00067	0.00068	0.2334	0.111E 05	0.00390	93.05	0.554E-06
23	97.29	80.23	0.00063	0.00064	0.2268	0.120E 05	0.00389	103.79	0.537E-06
24	97.09	80.13	0.00061	0.00062	0.2185	0.131E 05	0.00387	116.94	0.566E-06

RUN C41068-1, F=+0.004, K=0.55E-06 PASSIVE
DATE 41068 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 77.39F G TEMP= 96.18F
BARO= 29.97IN.HG RELHUM= 0.4 TCOVER=94.30

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	95.40	78.19	0.00282	0.00280	0.0136	0.273E 03	0.00399	42.77	0.000E 00
2	83.69	77.98	0.00184	0.00182	0.0388	0.779E 03	0.00397	42.77	-0.159E-07
3	83.01	78.02	0.00150	0.00148	0.0615	0.123E 04	0.00396	42.69	-0.803E-08
4	82.61	78.12	0.00130	0.00129	0.0828	0.166E 04	0.00395	42.72	0.802E-08
5	82.44	78.09	0.00122	0.00121	0.1038	0.208E 04	0.00396	42.66	-0.242E-07
6	82.29	78.22	0.00113	0.00111	0.1246	0.249E 04	0.00396	42.57	-0.641E-07
7	81.91	77.91	0.00110	0.00109	0.1451	0.289E 04	0.00396	42.50	0.405E-07
8	81.75	77.91	0.00102	0.00101	0.1651	0.330E 04	0.00398	42.55	0.325E-07
9	81.58	77.81	0.00099	0.00098	0.1841	0.369E 04	0.00398	42.77	0.127E-06
10	81.31	77.81	0.00090	0.00089	0.2003	0.409E 04	0.00396	43.56	0.331E-06
11	81.31	77.77	0.00091	0.00090	0.2129	0.450E 04	0.00397	45.03	0.467E-06
12	81.29	77.67	0.00093	0.00092	0.2228	0.492E 04	0.00397	47.09	0.538E-06
13	81.38	78.02	0.00088	0.00087	0.2304	0.536E 04	0.00400	49.66	0.610E-06
14	81.31	77.77	0.00092	0.00091	0.2366	0.583E 04	0.00399	52.59	0.593E-06
15	81.22	77.95	0.00083	0.00082	0.2415	0.633E 04	0.00394	55.87	0.593E-06
16	81.05	77.60	0.00088	0.00087	0.2455	0.685E 04	0.00398	59.50	0.584E-06
17	80.85	77.70	0.00078	0.00077	0.2480	0.740E 04	0.00397	63.67	0.582E-06
18	80.65	77.57	0.00076	0.00075	0.2491	0.799E 04	0.00398	68.46	0.590E-06
19	80.51	77.36	0.00078	0.00077	0.2485	0.862E 04	0.00398	74.09	0.594E-06
20	80.30	77.22	0.00075	0.00074	0.2462	0.931E 04	0.00397	80.79	0.613E-06
21	80.17	77.08	0.00074	0.00073	0.2417	0.101E 05	0.00397	88.97	0.590E-06
22	79.85	76.98	0.00067	0.00066	0.2361	0.109E 05	0.00396	98.59	0.585E-06
23	79.83	76.91	0.00069	0.00068	0.2296	0.118E 05	0.00397	109.97	0.549E-06
24	79.48	76.70	0.00064	0.00063	0.2223	0.128E 05	0.00397	123.46	0.547E-06

RUN 060368-1, F=-0.004, K=0.75E-06
DATE 60368 RUN NO. 1
AMB TMP= 79.20F BASE TEMP= 87.07F G TEMP= 63.51F
BARO= 29.86IN.HG RELHUM= 0.4 TCOVER=69.06

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	98.16	99.68	0.00624	0.00640	0.0045	0.707E 02	-0.00397	30.24	0.000E 00
2	98.32	99.72	0.00510	0.00523	0.0114	0.178E 03	-0.00394	30.26	0.117E-07
3	98.30	99.60	0.00473	0.00484	0.0153	0.238E 03	-0.00395	30.29	0.195E-07
4	98.37	99.64	0.00457	0.00468	0.0180	0.281E 03	-0.00397	30.29	0.791E-08
5	98.14	99.37	0.00450	0.00461	0.0203	0.317E 03	-0.00394	30.33	-0.235E-07
6	98.21	99.42	0.00443	0.00454	0.0224	0.349E 03	-0.00395	30.26	-0.465E-07
7	98.29	99.46	0.00424	0.00434	0.0240	0.373E 03	-0.00397	30.22	0.000E 00
8	98.19	99.33	0.00419	0.00430	0.0250	0.389E 03	-0.00395	30.20	0.119E-07
9	98.19	99.33	0.00414	0.00424	0.0258	0.402E 03	-0.00397	30.33	0.967E-07
10	98.29	99.43	0.00408	0.00418	0.0261	0.411E 03	-0.00395	30.55	0.281E-06
11	98.18	99.36	0.00414	0.00424	0.0261	0.421E 03	-0.00394	31.33	0.470E-06
12	98.32	99.51	0.00406	0.00416	0.0255	0.432E 03	-0.00393	32.46	0.579E-06
13	98.27	99.55	0.00417	0.00427	0.0254	0.443E 03	-0.00397	33.97	0.766E-06
14	98.13	99.44	0.00405	0.00415	0.0246	0.454E 03	-0.00395	35.91	0.749E-06
15	98.22	99.57	0.00391	0.00400	0.0233	0.456E 03	-0.00395	38.07	0.778E-06
16	98.31	99.77	0.00398	0.00408	0.0219	0.455E 03	-0.00396	40.46	0.725E-06
17	98.13	99.65	0.00390	0.00400	0.0205	0.454E 03	-0.00394	43.08	0.753E-06
18	98.09	99.81	0.00409	0.00419	0.0194	0.460E 03	-0.00393	46.19	0.769E-06
19	98.18	99.98	0.00394	0.00403	0.0183	0.469E 03	-0.00393	49.87	0.777E-06
20	97.99	99.92	0.00390	0.00400	0.0168	0.467E 03	-0.00394	54.18	0.799E-06
21	98.03	100.14	0.00387	0.00397	0.0152	0.464E 03	-0.00390	59.53	0.793E-06
22	97.92	100.25	0.00387	0.00396	0.0136	0.459E 03	-0.00391	65.71	0.765E-06
23	98.10	100.81	0.00400	0.00409	0.0123	0.463E 03	-0.00390	73.19	0.752E-06
24	97.85	100.82	0.00388	0.00398	0.0111	0.470E 03	-0.00388	82.42	0.778E-06

RUN 060368-2, F=-0.004, K=0.75E-06
DATE 60369 RUN NO. 2
AMB TMP= 81.00F BASE TEMP= 85.65F G TEMP= 63.83F
BARO= 29.94IN.HG RELHUM= 0.4 TCOVER=68.02

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	96.56	98.23	0.00606	0.00621	0.0042	0.661E 02	-0.00395	30.17	0.000E 00
2	96.54	97.92	0.00503	0.00516	0.0106	0.166E 03	-0.00395	30.17	0.117E-07
3	96.69	97.97	0.00464	0.00475	0.0142	0.222E 03	-0.00395	30.21	0.194E-07
4	96.53	97.76	0.00449	0.00460	0.0166	0.259E 03	-0.00397	30.21	0.777E-08
5	96.63	97.86	0.00445	0.00455	0.0186	0.291E 03	-0.00394	30.24	-0.233E-07
6	96.74	97.94	0.00436	0.00446	0.0205	0.320E 03	-0.00394	30.17	-0.463E-07
7	96.74	97.91	0.00418	0.00429	0.0217	0.335E 03	-0.00398	30.13	0.000E 00
8	96.68	97.82	0.00414	0.00424	0.0225	0.351E 03	-0.00395	30.11	0.118E-07
9	96.72	97.65	0.00409	0.00418	0.0230	0.361E 03	-0.00397	30.24	0.962E-07
10	96.68	97.82	0.00408	0.00418	0.0233	0.368E 03	-0.00397	30.46	0.280E-06
11	96.68	97.84	0.00407	0.00417	0.0232	0.376E 03	-0.00394	31.24	0.468E-06
12	96.78	97.96	0.00399	0.00409	0.0228	0.382E 03	-0.00394	32.37	0.576E-06
13	96.69	97.97	0.00411	0.00421	0.0222	0.389E 03	-0.00395	33.88	0.762E-06
14	96.58	97.89	0.00400	0.00410	0.0214	0.397E 03	-0.00395	35.81	0.745E-06
15	96.68	98.03	0.00391	0.00400	0.0202	0.397E 03	-0.00396	37.96	0.774E-06
16	96.73	98.19	0.00394	0.00403	0.0188	0.394E 03	-0.00396	40.35	0.721E-06
17	96.51	98.04	0.00389	0.00398	0.0175	0.390E 03	-0.00394	42.95	0.750E-06
18	96.48	98.19	0.00405	0.00415	0.0165	0.393E 03	-0.00393	46.06	0.766E-06
19	96.54	98.33	0.00390	0.00400	0.0154	0.397E 03	-0.00393	49.72	0.773E-06
20	96.21	98.23	0.00387	0.00397	0.0140	0.392E 03	-0.00395	54.02	0.795E-06
21	96.35	98.44	0.00382	0.00391	0.0125	0.383E 03	-0.00390	59.36	0.789E-06
22	96.31	98.62	0.00382	0.00391	0.0110	0.372E 03	-0.00390	65.52	0.761E-06
23	96.49	99.19	0.00396	0.00405	0.0098	0.370E 03	-0.00390	72.98	0.748E-06
24	96.38	99.32	0.00381	0.00390	0.0087	0.369E 03	-0.00388	82.18	0.774E-06

RUN 052368-1, F=-0.002, K=0.75E-06
DATE 52368 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 83.27F G TEMP= 64.32F
BARO= 30.05IN.HG RELHUM= 0.4 TCOVER=67.67

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	96.65	97.98	0.00486	0.00498	0.0058	0.903E 02	-0.00197	30.02	0.000E 00
2	96.55	97.63	0.00400	0.00410	0.0157	0.244E 03	-0.00196	30.02	-0.117E-07
3	96.67	97.69	0.00377	0.00386	0.0234	0.364E 03	-0.00197	29.96	0.158E-07
4	96.57	97.54	0.00360	0.00368	0.0302	0.472E 03	-0.00196	30.03	0.118E-07
5	96.68	97.62	0.00350	0.00358	0.0365	0.571E 03	-0.00195	30.05	-0.158E-07
6	96.58	97.51	0.00346	0.00355	0.0428	0.666E 03	-0.00196	29.94	-0.509E-07
7	96.62	97.52	0.00332	0.00340	0.0484	0.755E 03	-0.00198	29.96	0.118E-07
8	96.69	97.59	0.00333	0.00341	0.0539	0.839E 03	-0.00197	29.93	0.792E-08
9	96.76	97.64	0.00323	0.00331	0.0585	0.921E 03	-0.00197	30.07	0.117E-06
10	96.76	97.64	0.00317	0.00324	0.0632	0.998E 03	-0.00196	30.40	0.321E-06
11	96.72	97.60	0.00308	0.00316	0.0658	0.107E 04	-0.00196	31.36	0.598E-06
12	96.62	97.50	0.00297	0.00304	0.0673	0.114E 04	-0.00197	32.71	0.681E-06
13	96.62	97.53	0.00291	0.00298	0.0677	0.121E 04	-0.00198	34.42	0.779E-06
14	96.65	97.57	0.00279	0.00286	0.0673	0.128E 04	-0.00192	36.53	0.785E-06
15	96.61	97.55	0.00270	0.00277	0.0665	0.134E 04	-0.00195	38.79	0.758E-06
16	96.53	97.53	0.00270	0.00276	0.0654	0.140E 04	-0.00198	41.23	0.739E-06
17	96.52	97.57	0.00266	0.00272	0.0640	0.147E 04	-0.00195	44.06	0.750E-06
18	96.51	97.65	0.00269	0.00275	0.0624	0.153E 04	-0.00195	47.30	0.756E-06
19	96.50	97.70	0.00259	0.00266	0.0604	0.161E 04	-0.00194	51.17	0.762E-06
20	96.52	97.80	0.00256	0.00262	0.0575	0.167E 04	-0.00196	55.74	0.789E-06
21	96.74	98.14	0.00253	0.00259	0.0548	0.175E 04	-0.00195	61.35	0.788E-06
22	96.48	98.00	0.00250	0.00256	0.0516	0.182E 04	-0.00196	67.96	0.755E-06
23	96.41	98.15	0.00256	0.00262	0.0484	0.190E 04	-0.00200	75.88	0.735E-06
24	96.38	98.28	0.00246	0.00252	0.0448	0.199E 04	-0.00197	85.74	0.755E-06

RUN 052468-1, F=-0.002, K=0.75E-06
DATE 52468 RUN NO. 1
AMB TMP= 71.50F BASE TEMP= 81.20F G TEMP= 64.22F
BARO= 30.01IN.HG RELHUM= 0.4 TCOVER=66.97

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	96.30	97.65	0.00494	0.00506	0.0060	0.935E 02	-0.00196	30.24	0.000E 00
2	96.24	97.33	0.00403	0.00412	0.0161	0.252E 03	-0.00195	30.24	0.000E 00
3	96.29	97.31	0.00376	0.00385	0.0238	0.374E 03	-0.00197	30.24	0.000E 00
4	96.36	97.35	0.00361	0.00370	0.0307	0.483E 03	-0.00195	30.24	0.000E 00
5	96.30	97.25	0.00350	0.00358	0.0372	0.584E 03	-0.00195	30.24	0.000E 00
6	96.23	97.17	0.00346	0.00354	0.0432	0.679E 03	-0.00196	30.24	0.000E 00
7	96.34	97.25	0.00331	0.00339	0.0489	0.768E 03	-0.00198	30.24	0.000E 00
8	96.24	97.14	0.00334	0.00342	0.0544	0.853E 03	-0.00196	30.20	0.000E 00
9	96.24	97.12	0.00322	0.00330	0.0594	0.936E 03	-0.00197	30.31	0.950E-07
10	96.35	97.23	0.00318	0.00325	0.0638	0.101E 04	-0.00196	30.60	0.330E-06
11	96.42	97.29	0.00307	0.00315	0.0664	0.109E 04	-0.00195	31.61	0.588E-06
12	96.24	97.12	0.00296	0.00303	0.0678	0.116E 04	-0.00197	32.96	0.658E-06
13	96.24	97.15	0.00291	0.00298	0.0682	0.123E 04	-0.00196	34.66	0.780E-06
14	96.27	97.19	0.00280	0.00287	0.0679	0.130E 04	-0.00190	36.77	0.769E-06
15	96.30	97.25	0.00272	0.00278	0.0672	0.136E 04	-0.00194	39.06	0.758E-06
16	96.22	97.23	0.00272	0.00278	0.0661	0.143E 04	-0.00197	41.54	0.729E-06
17	96.32	97.38	0.00269	0.00275	0.0648	0.149E 04	-0.00195	44.35	0.747E-06
18	96.23	97.38	0.00269	0.00275	0.0632	0.156E 04	-0.00194	47.62	0.769E-06
19	96.26	97.46	0.00259	0.00265	0.0612	0.164E 04	-0.00193	51.50	0.736E-06
20	96.14	97.42	0.00256	0.00262	0.0586	0.171E 04	-0.00196	56.05	0.789E-06
21	96.09	97.47	0.00257	0.00263	0.0566	0.178E 04	-0.00199	60.54	0.815E-06
22	96.07	97.58	0.00251	0.00257	0.0523	0.185E 04	-0.00196	68.36	0.750E-06
23	96.10	97.84	0.00256	0.00262	0.0490	0.194E 04	-0.00198	76.37	0.729E-06
24	96.04	97.94	0.00247	0.00253	0.0454	0.203E 04	-0.00197	96.21	0.745E-06

RUN 051768-1, F=-0.001, K=0.75E-06
DATE 51768 RUN NO. 1
AMB TMP= 74.20F BASE TEMP= 81.89F G TEMP= 64.92F
BARO= 29.90IN.HG RELHUM= 0.4 TCOVER=68.36

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	100.59	101.93	0.00443	0.00454	0.0069	0.107E 03	-0.00098	29.96	0.000E 00
2	100.52	101.64	0.00373	0.00383	0.0193	0.299E 03	-0.00099	29.96	-0.796E-08
3	100.54	101.56	0.00341	0.00350	0.0296	0.459E 03	-0.00098	29.93	-0.801E-08
4	100.55	101.51	0.00320	0.00328	0.0389	0.603E 03	-0.00099	29.95	-0.396E-08
5	100.66	101.58	0.00307	0.00315	0.0475	0.736E 03	-0.00098	29.93	0.000E 00
6	100.73	101.63	0.00301	0.00309	0.0558	0.863E 03	-0.00098	29.91	-0.159E-07
7	100.60	101.47	0.00284	0.00292	0.0634	0.984E 03	-0.00098	29.96	0.398E-07
8	100.63	101.49	0.00283	0.00290	0.0708	0.110E 04	-0.00098	29.97	0.280E-07
9	100.50	101.33	0.00273	0.00280	0.0776	0.121E 04	-0.00097	30.13	0.117E-06
10	100.64	101.48	0.00270	0.00278	0.0836	0.132E 04	-0.00099	30.49	0.355E-06
11	100.63	101.44	0.00260	0.00267	0.0875	0.143E 04	-0.00099	31.49	0.619E-06
12	100.67	101.51	0.00252	0.00259	0.0899	0.153E 04	-0.00098	32.90	0.693E-06
13	100.60	101.47	0.00248	0.00255	0.0910	0.164E 04	-0.00099	34.76	0.786E-06
14	100.59	101.49	0.00240	0.00247	0.0916	0.174E 04	-0.00099	36.81	0.795E-06
15	100.49	101.40	0.00233	0.00239	0.0915	0.185E 04	-0.00098	39.15	0.762E-06
16	100.58	101.54	0.00229	0.00235	0.0910	0.196E 04	-0.00100	41.72	0.743E-06
17	100.61	101.63	0.00231	0.00237	0.0903	0.208E 04	-0.00100	44.50	0.760E-06
18	100.46	101.54	0.00228	0.00234	0.0890	0.220E 04	-0.00100	47.86	0.773E-06
19	100.59	101.73	0.00220	0.00226	0.0870	0.233E 04	-0.00099	51.85	0.758E-06
20	100.47	101.68	0.00217	0.00223	0.0844	0.246E 04	-0.00100	56.50	0.803E-06
21	100.60	101.89	0.00211	0.00216	0.0811	0.261E 04	-0.00093	62.30	0.782E-06
22	100.44	101.85	0.00210	0.00216	0.0775	0.276E 04	-0.00100	69.08	0.756E-06
23	100.31	101.87	0.00207	0.00213	0.0734	0.293E 04	-0.00100	77.31	0.734E-06
24	100.45	102.19	0.00203	0.00208	0.0689	0.311E 04	-0.00099	87.46	0.755E-06

RUN 051368-1, F= 0.0 , K=0.75E-06
DATE 51368 RUN NO. 1
AMB TMP= 68.00F BASE TEMP= 69.41F G TEMP= 64.60F
BARO= 29.90IN.HG RELHUM= 0.4 TCOVER=66.97

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	100.81	76.98	0.00401	0.00412	0.0080	0.125E 03	0.00000	30.01	0.000E 00
2	100.74	74.69	0.00350	0.00359	0.0230	0.358E 03	0.00000	30.01	0.000E 00
3	100.74	78.36	0.00308	0.00317	0.0362	0.562E 03	0.00000	30.00	-0.796E-08
4	100.78	79.82	0.00283	0.00291	0.0480	0.746E 03	0.00000	30.02	0.000E 00
5	100.85	74.58	0.00270	0.00277	0.0591	0.918E 03	0.00000	30.00	-0.200E-07
6	100.54	76.18	0.00262	0.00269	0.0699	0.108E 04	0.00000	29.92	-0.595E-07
7	100.85	73.23	0.00249	0.00256	0.0801	0.124E 04	0.00000	29.92	0.320E-07
8	100.85	79.02	0.00245	0.00252	0.0901	0.139E 04	0.00000	29.91	0.802E-08
9	100.98	73.09	0.00234	0.00240	0.0991	0.154E 04	0.00000	30.07	0.165E-06
10	100.95	74.97	0.00226	0.00232	0.1063	0.169E 04	0.00000	30.65	0.471E-06
11	100.95	81.20	0.00218	0.00224	0.1115	0.183E 04	0.00000	31.72	0.639E-06
12	100.95	75.07	0.00218	0.00224	0.1147	0.198E 04	0.00000	33.32	0.749E-06
13	101.02	74.31	0.00212	0.00217	0.1171	0.213E 04	0.00000	35.16	0.781E-06
14	100.91	75.62	0.00203	0.00208	0.1184	0.229E 04	0.00000	37.31	0.787E-06
15	100.81	75.45	0.00199	0.00205	0.1192	0.245E 04	0.00000	39.65	0.775E-06
16	100.78	75.24	0.00193	0.00199	0.1193	0.261E 04	0.00000	42.33	0.748E-06
17	100.78	72.85	0.00196	0.00201	0.1190	0.279E 04	0.00000	45.29	0.749E-06
18	100.78	77.12	0.00190	0.00195	0.1181	0.298E 04	0.00000	48.74	0.758E-06
19	100.78	74.13	0.00187	0.00192	0.1162	0.317E 04	0.00000	52.81	0.770E-06
20	100.64	75.73	0.00179	0.00184	0.1134	0.338E 04	0.00000	57.72	0.792E-06
21	100.74	85.45	0.00178	0.00183	0.1096	0.361E 04	0.00000	63.71	0.779E-06
22	100.78	73.09	0.00173	0.00178	0.1054	0.385E 04	0.00000	70.76	0.750E-06
23	100.78	73.79	0.00169	0.00174	0.1005	0.412E 04	0.00000	79.33	0.731E-06
24	100.85	73.54	0.00165	0.00169	0.0951	0.441E 04	0.00000	89.87	0.730E-06

RUN 112267-1, F= 0.0 , K=0.75E-06
DATE 112267 RUN NO. 1
AMB TMP= 72.60F BASE TEMP= 69.06F G TEMP= 64.99F
BARO= 29.85IN.HG RELHUM= 0.4 TCOVER=67.32

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	102.15	79.26	0.00299	0.00307	0.0060	0.926E 02	0.00000	30.03	0.000E 00
2	102.08	77.46	0.00279	0.00287	0.0175	0.272E 03	0.00000	30.03	0.000E 00
3	101.91	81.61	0.00312	0.00320	0.0294	0.455E 03	0.00000	30.03	0.000E 00
4	101.63	83.79	0.00298	0.00306	0.0416	0.644E 03	0.00000	30.03	0.000E 00
5	101.63	76.53	0.00279	0.00286	0.0531	0.823E 03	0.00000	30.03	0.000E 00
6	101.43	82.86	0.00268	0.00275	0.0640	0.992E 03	0.00000	30.03	0.000E 00
7	101.60	75.14	0.00253	0.00260	0.0745	0.115E 04	0.00000	30.03	0.000E 00
8	101.63	83.45	0.00246	0.00253	0.0845	0.131E 04	0.00000	30.03	0.000E 00
9	101.63	74.13	0.00237	0.00244	0.0941	0.146E 04	0.00000	30.03	0.396E-07
10	101.60	76.08	0.00231	0.00237	0.1016	0.160E 04	0.00000	30.62	0.485E-06
11	101.53	87.35	0.00222	0.00228	0.1073	0.175E 04	0.00000	31.62	0.650E-06
12	101.84	76.35	0.00226	0.00232	0.1112	0.190E 04	0.00000	33.13	0.736E-06
13	101.74	76.63	0.00216	0.00222	0.1142	0.205E 04	0.00000	34.89	0.759E-06
14	101.87	77.22	0.00209	0.00215	0.1165	0.221E 04	0.00000	36.82	0.712E-06
15	101.74	77.95	0.00204	0.00209	0.1177	0.237E 04	0.00000	39.10	0.777E-06
16	101.63	74.86	0.00201	0.00206	0.1184	0.254E 04	0.00000	41.64	0.700E-06
17	101.63	74.13	0.00197	0.00202	0.1188	0.272E 04	0.00000	44.38	0.754E-06
18	101.67	79.19	0.00196	0.00202	0.1182	0.290E 04	0.00000	47.67	0.744E-06
19	101.56	73.30	0.00191	0.00196	0.1173	0.310E 04	0.00000	51.31	0.718E-06
20	101.53	76.77	0.00186	0.00191	0.1156	0.331E 04	0.00000	55.56	0.766E-06
21	101.74	85.38	0.00181	0.00186	0.1122	0.353E 04	0.00000	61.07	0.760E-06
22	101.43	72.15	0.00178	0.00183	0.1086	0.377E 04	0.00000	67.35	0.769E-06
23	101.43	72.92	0.00174	0.00179	0.1035	0.403E 04	0.00000	75.60	0.818E-06
24	101.39	72.71	0.00169	0.00174	0.0969	0.431E 04	0.00000	86.55	0.106E-05

RUN 050568-1, F=+0.001, K=0.75E-06
DATE 50568 RUN NO. 1
AMB TMP= 69.00F BASE TEMP= 73.23F G TEMP= 64.85F
BARO= 29.88IN.HG RELHUM= 0.4 TCOVER=67.67

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	98.62	74.62	0.00353	0.00362	0.0090	0.140E 03	0.00098	30.14	0.000E 00
2	98.31	73.96	0.00306	0.00313	0.0261	0.407E 03	0.00099	30.14	-0.780E-08
3	98.35	75.21	0.00273	0.00280	0.0416	0.648E 03	0.00098	30.11	0.000E 00
4	98.26	75.10	0.00246	0.00252	0.0559	0.871E 03	0.00098	30.14	0.783E-08
5	98.11	74.17	0.00227	0.00232	0.0693	0.108E 04	0.00098	30.14	-0.197E-07
6	98.33	74.62	0.00225	0.00231	0.0824	0.128E 04	0.00099	30.11	-0.195E-07
7	98.47	74.24	0.00216	0.00221	0.0951	0.148E 04	0.00098	30.11	0.392E-07
8	98.28	74.86	0.00201	0.00206	0.1073	0.167E 04	0.00098	30.14	0.394E-07
9	98.28	74.20	0.00196	0.00201	0.1183	0.186E 04	0.00098	30.36	0.172E-06
10	98.19	74.72	0.00192	0.00197	0.1275	0.204E 04	0.00098	30.98	0.465E-06
11	98.23	75.07	0.00181	0.00186	0.1344	0.223E 04	0.00098	32.08	0.637E-06
12	98.28	74.31	0.00181	0.00186	0.1390	0.242E 04	0.00098	33.66	0.743E-06
13	98.26	73.86	0.00175	0.00179	0.1421	0.261E 04	0.00097	35.60	0.786E-06
14	98.39	73.96	0.00170	0.00174	0.1445	0.282E 04	0.00097	37.76	0.789E-06
15	98.36	73.96	0.00165	0.00169	0.1460	0.303E 04	0.00097	40.18	0.772E-06
16	98.38	74.10	0.00163	0.00167	0.1469	0.326E 04	0.00098	42.90	0.739E-06
17	98.50	73.54	0.00159	0.00163	0.1472	0.349E 04	0.00098	45.95	0.749E-06
18	98.38	73.72	0.00155	0.00159	0.1466	0.375E 04	0.00098	49.45	0.778E-06
19	98.40	73.47	0.00149	0.00153	0.1446	0.401E 04	0.00098	53.74	0.760E-06
20	98.39	73.82	0.00147	0.00151	0.1418	0.430E 04	0.00097	58.71	0.784E-06
21	98.30	73.58	0.00143	0.00147	0.1377	0.461E 04	0.00098	64.85	0.772E-06
22	98.43	72.99	0.00140	0.00143	0.1330	0.494E 04	0.00097	72.08	0.744E-06
23	98.45	72.88	0.00137	0.00140	0.1276	0.532E 04	0.00098	80.86	0.722E-06
24	98.46	72.78	0.00129	0.00132	0.1212	0.573E 04	0.00099	91.78	0.733E-06

RUN 050568-2, F=+0.001, K=0.75E-06
DATE 50568 RUN NO. 2
AMB TMP= 75.00F BASE TEMP= 78.78F G TEMP= 65.54F
BARO= 29.80IN.HG RELHUM= 0.4 TCOVER=69.06

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	100.46	79.68	0.00341	0.00350	0.0088	0.137E 03	0.00099	30.16	0.000E 00
2	100.40	79.19	0.00305	0.00313	0.0257	0.399E 03	0.00100	30.16	-0.781E-08
3	100.50	80.44	0.00268	0.00275	0.0412	0.639E 03	0.00100	30.13	0.000E 00
4	100.37	80.20	0.00244	0.00250	0.0554	0.861E 03	0.00100	30.16	0.784E-08
5	100.35	79.44	0.00228	0.00234	0.0688	0.107E 04	0.00100	30.16	-0.198E-07
6	100.57	79.82	0.00224	0.00230	0.0820	0.127E 04	0.00101	30.13	-0.196E-07
7	100.81	79.68	0.00214	0.00219	0.0947	0.147E 04	0.00100	30.13	0.393E-07
8	100.68	80.20	0.00201	0.00206	0.1069	0.166E 04	0.00100	30.16	0.395E-07
9	100.67	79.64	0.00193	0.00198	0.1180	0.185E 04	0.00099	30.38	0.172E-06
10	100.62	80.06	0.00189	0.00194	0.1271	0.203E 04	0.00099	31.00	0.466E-06
11	100.55	80.34	0.00179	0.00184	0.1339	0.221E 04	0.00099	32.10	0.638E-06
12	100.70	79.68	0.00178	0.00182	0.1385	0.240E 04	0.00099	33.68	0.744E-06
13	100.65	79.19	0.00172	0.00177	0.1416	0.260E 04	0.00099	35.63	0.788E-06
14	100.77	79.30	0.00168	0.00172	0.1439	0.280E 04	0.00099	37.79	0.791E-06
15	100.73	79.19	0.00163	0.00168	0.1455	0.301E 04	0.00099	40.21	0.774E-06
16	100.76	79.47	0.00161	0.00166	0.1464	0.324E 04	0.00099	42.93	0.741E-06
17	100.71	78.74	0.00154	0.00158	0.1467	0.347E 04	0.00099	45.98	0.751E-06
18	100.71	78.78	0.00153	0.00157	0.1460	0.372E 04	0.00099	49.49	0.780E-06
19	100.66	78.57	0.00147	0.00150	0.1440	0.399E 04	0.00098	53.78	0.762E-06
20	100.75	78.88	0.00145	0.00149	0.1412	0.427E 04	0.00099	58.75	0.786E-06
21	100.69	78.60	0.00142	0.00146	0.1371	0.458E 04	0.00099	64.90	0.774E-06
22	100.59	77.55	0.00135	0.00139	0.1325	0.491E 04	0.00100	72.13	0.746E-06
23	100.87	77.74	0.00131	0.00134	0.1269	0.528E 04	0.00099	80.92	0.724E-06
24	100.57	77.63	0.00126	0.00129	0.1205	0.568E 04	0.00099	91.85	0.734E-06

RUN 042268-1, F=+0.002, K=0.75E-06
DATE 42268 RUN NO. 1
AMB TMP= 72.20F BASE TEMP= 73.92F G TEMP= 64.95F
BARO= 30.17IN.HG RELHUM= 0.4 TCOVER=67.67

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	99.27	74.31	0.00318	0.00327	0.0103	0.161E 03	0.00198	29.96	0.000E 00
2	99.37	74.03	0.00274	0.00281	0.0301	0.470E 03	0.00197	29.96	-0.785E-08
3	99.39	74.48	0.00232	0.00238	0.0481	0.751E 03	0.00198	29.93	-0.118E-07
4	99.37	74.90	0.00212	0.00217	0.0649	0.101E 04	0.00199	29.96	-0.197E-07
5	99.36	74.38	0.00194	0.00199	0.0812	0.126E 04	0.00198	29.95	-0.399E-07
6	99.56	74.62	0.00185	0.00190	0.0969	0.150E 04	0.00199	29.81	-0.198E-07
7	99.50	74.58	0.00177	0.00182	0.1121	0.174E 04	0.00196	29.81	0.199E-07
8	99.56	74.90	0.00166	0.00170	0.1268	0.197E 04	0.00198	29.81	0.200E-07
9	99.52	74.41	0.00161	0.00165	0.1406	0.219E 04	0.00198	29.96	0.666E-07
10	99.49	74.72	0.00164	0.00168	0.1548	0.242E 04	0.00199	30.00	0.414E-06
11	99.52	74.72	0.00147	0.00151	0.1623	0.265E 04	0.00198	31.29	0.578E-06
12	99.62	74.27	0.00147	0.00150	0.1692	0.288E 04	0.00198	32.63	0.660E-06
13	99.60	74.20	0.00145	0.00149	0.1746	0.312E 04	0.00199	34.26	0.773E-06
14	99.51	74.20	0.00133	0.00137	0.1779	0.336E 04	0.00197	36.30	0.752E-06
15	99.31	74.20	0.00135	0.00139	0.1806	0.362E 04	0.00198	38.50	0.758E-06
16	99.47	74.20	0.00135	0.00139	0.1826	0.390E 04	0.00198	40.99	0.745E-06
17	99.50	73.72	0.00133	0.00136	0.1841	0.419E 04	0.00196	43.71	0.742E-06
18	99.58	73.82	0.00130	0.00134	0.1840	0.450E 04	0.00195	46.96	0.767E-06
19	99.52	73.58	0.00124	0.00127	0.1829	0.483E 04	0.00198	50.71	0.753E-06
20	99.47	73.72	0.00115	0.00118	0.1804	0.518E 04	0.00197	55.13	0.774E-06
21	99.49	73.40	0.00120	0.00123	0.1764	0.555E 04	0.00196	60.54	0.769E-06
22	99.51	73.06	0.00116	0.00119	0.1718	0.597E 04	0.00197	66.84	0.742E-06
23	99.67	72.88	0.00110	0.00113	0.1663	0.643E 04	0.00195	74.36	0.714E-06
24	99.45	72.81	0.00105	0.00107	0.1598	0.692E 04	0.00199	83.46	0.745E-06

RUN 043068-1, F=+0.002, K=0.75E-06
DATE 43068 RUN NO. 1
AMB TMP= 71.00F BASE TEMP= 77.74F G TEMP= 65.23F
BARO= 29.91IN.HG RELHUM= 0.4 TCOVER=68.36

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	99.74	77.57	0.00309	0.00317	0.0101	0.159E 03	0.00196	30.46	0.000E 00
2	99.50	77.32	0.00273	0.00280	0.0296	0.465E 03	0.00194	30.46	-0.190E-07
3	99.65	78.26	0.00234	0.00240	0.0476	0.746E 03	0.00196	30.35	-0.385E-07
4	99.62	78.22	0.00210	0.00216	0.0642	0.101E 04	0.00195	30.42	-0.307E-07
5	99.51	77.74	0.00196	0.00201	0.0805	0.126E 04	0.00197	30.28	-0.780E-08
6	99.66	77.88	0.00185	0.00190	0.0961	0.150E 04	0.00197	30.24	-0.386E-07
7	99.61	77.88	0.00177	0.00182	0.1111	0.174E 04	0.00194	30.28	0.387E-07
8	99.58	78.15	0.00166	0.00170	0.1257	0.197E 04	0.00197	30.29	0.389E-07
9	99.44	77.84	0.00164	0.00168	0.1396	0.219E 04	0.00197	30.42	0.114E-06
10	99.54	78.19	0.00162	0.00166	0.1519	0.242E 04	0.00197	30.86	0.326E-06
11	99.61	77.84	0.00147	0.00150	0.1614	0.265E 04	0.00198	31.77	0.573E-06
12	99.53	77.67	0.00147	0.00151	0.1684	0.288E 04	0.00192	33.08	0.650E-06
13	99.40	77.15	0.00144	0.00147	0.1731	0.311E 04	0.00196	34.85	0.763E-06
14	99.49	77.32	0.00136	0.00139	0.1768	0.336E 04	0.00195	36.83	0.755E-06
15	99.32	77.01	0.00133	0.00136	0.1795	0.362E 04	0.00193	39.06	0.761E-06
16	99.35	76.87	0.00133	0.00136	0.1815	0.389E 04	0.00194	41.54	0.725E-06
17	99.56	76.77	0.00134	0.00137	0.1929	0.418E 04	0.00194	44.28	0.744E-06
18	99.45	76.63	0.00127	0.00131	0.1826	0.449E 04	0.00192	47.62	0.764E-06
19	99.54	76.39	0.00123	0.00126	0.1813	0.481E 04	0.00196	51.46	0.739E-06
20	99.42	76.56	0.00118	0.00121	0.1792	0.516E 04	0.00195	55.88	0.772E-06
21	99.48	76.28	0.00118	0.00121	0.1753	0.554E 04	0.00194	61.33	0.758E-06
22	99.57	75.83	0.00114	0.00117	0.1706	0.595E 04	0.00194	67.70	0.743E-06
23	99.33	75.69	0.00110	0.00113	0.1651	0.640E 04	0.00191	75.29	0.712E-06
24	99.51	75.59	0.00106	0.00108	0.1585	0.689E 04	0.00195	84.58	0.748E-06

RUN 040268-1, F=+0.004, K=0.75E-06 PASSIVE
DATE 40268 RUN NO. 1
AMB TMP= 72.00F BASE TEMP= 74.58F G TEMP= 93.44F
BARO= 29.96IN.HG RELHUM= 0.4 TCOVER=91.06

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	82.14	75.17	0.00266	0.00264	0.0133	0.198E 03	0.00397	31.60	0.000E 00
2	81.41	75.00	0.00216	0.00214	0.0387	0.578E 03	0.00394	31.60	0.000E 00
3	80.65	75.10	0.00176	0.00174	0.0624	0.931E 03	0.00399	31.60	0.000E 00
4	80.33	75.17	0.00158	0.00157	0.0851	0.127E 04	0.00398	31.60	0.000E 00
5	80.01	75.17	0.00141	0.00140	0.1070	0.159E 04	0.00399	31.60	-0.395E-07
6	79.93	75.26	0.00135	0.00134	0.1287	0.191E 04	0.00399	31.53	-0.392E-07
7	79.45	75.00	0.00129	0.00127	0.1503	0.223E 04	0.00401	31.46	0.000E 00
8	79.33	75.00	0.00120	0.00118	0.1709	0.254E 04	0.00400	31.53	0.795E-07
9	79.08	74.86	0.00115	0.00114	0.1912	0.285E 04	0.00401	31.60	0.973E-07
10	78.82	74.83	0.00105	0.00104	0.2078	0.316E 04	0.00396	32.21	0.495E-06
11	78.78	74.72	0.00107	0.00106	0.2210	0.347E 04	0.00396	33.26	0.607E-06
12	78.76	74.65	0.00108	0.00107	0.2305	0.379E 04	0.00397	34.87	0.744E-06
13	78.75	75.00	0.00099	0.00098	0.2385	0.413E 04	0.00397	36.70	0.786E-06
14	78.63	74.83	0.00100	0.00098	0.2444	0.448E 04	0.00398	38.89	0.822E-06
15	78.52	74.86	0.00095	0.00094	0.2494	0.486E 04	0.00401	41.31	0.824E-06
16	78.35	74.65	0.00094	0.00093	0.2529	0.526E 04	0.00396	44.08	0.773E-06
17	78.15	74.58	0.00089	0.00088	0.2552	0.568E 04	0.00398	47.18	0.801E-06
18	77.98	74.41	0.00090	0.00089	0.2560	0.613E 04	0.00399	50.78	0.789E-06
19	77.66	74.24	0.00085	0.00084	0.2552	0.661E 04	0.00397	54.96	0.807E-06
20	77.45	74.03	0.00082	0.00081	0.2520	0.713E 04	0.00396	60.05	0.820E-06
21	77.29	73.89	0.00081	0.00080	0.2475	0.770E 04	0.00398	66.05	0.797E-06
22	77.14	73.86	0.00077	0.00076	0.2417	0.832E 04	0.00395	73.16	0.782E-06
23	77.01	73.66	0.00073	0.00072	0.2342	0.900E 04	0.00393	81.72	0.724E-06
24	76.80	73.79	0.00070	0.00069	0.2266	0.976E 04	0.00398	91.62	0.728E-06

RUN 040568-1, F=+0.004, K=0.75E-06 PASSIVE
DATE 40568 RUN NO. 1
AMB TMP= 68.70F BASE TEMP= 72.54F G TEMP= 91.72F
BARO= 30.00IN.HG RELHUM= 0.4 TCOVER=89.14

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	79.56	73.13	0.00255	0.00253	0.0132	0.195E 03	0.00405	31.05	0.000E 00
2	79.23	72.92	0.00209	0.00207	[illegible]	0.570E 03	0.00402	31.05	0.000E 00
3	78.47	72.99	0.00171	0.00169	0.0624	0.920E 03	0.00407	31.05	0.000E 00
4	78.08	73.09	0.00149	0.00148	0.0850	0.125E 04	0.00405	31.05	0.000E 00
5	77.80	73.06	0.00136	0.00134	0.1069	0.158E 04	0.00405	31.05	0.000E 00
6	77.75	73.16	0.00130	0.00129	0.1284	0.189E 04	0.00405	31.05	0.000E 00
7	77.34	72.95	0.00124	0.00123	0.1457	0.221E 04	0.00405	31.05	0.000E 00
8	77.21	72.95	0.00116	0.00115	0.1707	0.252E 04	0.00405	31.05	0.205E-07
9	76.97	72.85	0.00111	0.00110	0.1909	0.283E 04	0.00407	31.17	0.141E-06
10	76.74	72.85	0.00102	0.00101	0.2075	0.313E 04	0.00403	31.76	0.450E-06
11	76.73	72.81	0.00103	0.00102	0.2208	0.344E 04	0.00402	32.81	0.613E-06
12	76.68	72.71	0.00104	0.00102	0.2311	0.376E 04	0.00404	34.29	0.785E-06
13	76.67	72.55	0.00098	0.00097	0.2392	0.410E 04	0.00406	36.11	0.803E-06
14	76.63	72.76	0.00100	0.00099	0.2448	0.446E 04	0.00404	38.36	0.826E-06
15	76.55	73.02	0.00091	0.00090	0.2501	0.484E 04	0.00406	40.71	0.786E-06
16	76.41	72.85	0.00090	0.00089	0.2538	0.523E 04	0.00400	43.40	0.788E-06
17	76.27	72.85	0.00086	0.00085	0.2563	0.565E 04	0.00401	46.40	0.810E-06
18	76.10	72.74	0.00085	0.00084	0.2565	0.609E 04	0.00406	49.98	0.787E-06
19	75.90	72.68	0.00081	0.00080	0.2563	0.658E 04	0.00404	54.05	0.804E-06
20	75.79	72.54	0.00080	0.00079	0.2536	0.709E 04	0.00403	58.96	0.826E-06
21	75.59	72.43	0.00077	0.00076	0.2491	0.766E 04	0.00406	64.85	0.801E-06
22	75.44	72.40	0.00073	0.00072	0.2434	0.828E 04	0.00403	71.79	0.797E-06
23	75.34	72.43	0.00069	0.00068	0.2358	0.896E 04	0.00401	80.24	0.732E-06
24	75.17	72.33	0.00068	0.00067	0.2285	0.973E 04	0.00406	89.93	0.731E-06

RUN 012768-1, F=+0.005, K=0.75E-06 PASSIVE
DATE 12768 RUN NO. 1
AMB TMP= 65.20F BASE TEMP= 69.15F G TEMP= 85.30F
BARO= 29.72IN.HG RELHUM= 0.4 TCOVER=82.17

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	70.70	66.24	0.00194	0.00192	0.0163	0.243E 03	0.00621	30.98	0.000E 00
2	70.24	66.14	0.00169	0.00168	0.0484	0.722E 03	0.00623	30.98	0.000E 00
3	69.69	66.34	0.00130	0.00128	0.0792	0.118E 04	0.00618	30.98	0.000E 00
4	69.33	66.41	0.00109	0.00108	0.1088	0.162E 04	0.00620	30.98	0.000E 00
5	69.08	66.31	0.00101	0.00099	0.1377	0.205E 04	0.00616	30.98	0.000E 00
6	68.99	66.62	0.00085	0.00084	0.1661	0.247E 04	0.00618	30.98	0.000E 00
7	68.78	66.55	0.00078	0.00077	0.1940	0.285E 04	0.00616	30.98	0.000E 00
8	68.66	66.55	0.00073	0.00072	0.2212	0.330E 04	0.00616	31.06	0.406E-07
9	68.56	66.55	0.00068	0.00067	0.2481	0.371E 04	0.00618	31.13	0.119E-06
10	68.43	66.45	0.00067	0.00066	0.2713	0.413E 04	0.00620	31.65	0.407E-06
11	68.29	66.20	0.00070	0.00069	0.2898	0.455E 04	0.00618	32.68	0.632E-06
12	68.37	66.20	0.00074	0.00073	0.3048	0.506E 04	0.00619	34.10	0.725E-06
13	68.43	66.27	0.00074	0.00073	0.3160	0.546E 04	0.00618	35.97	0.783E-06
14	68.46	66.59	0.00064	0.00063	0.3259	0.595E 04	0.00621	38.01	0.799E-06
15	68.17	66.24	0.00066	0.00065	0.3333	0.647E 04	0.00625	40.41	0.853E-06
16	68.14	66.20	0.00065	0.00065	0.3385	0.703E 04	0.00620	43.18	0.776E-06
17	68.07	66.27	0.00061	0.00060	0.3431	0.761E 04	0.00622	46.17	0.798E-06
18	67.90	66.10	0.00060	0.00060	0.3456	0.824E 04	0.00621	49.63	0.777E-06
19	67.90	66.07	0.00062	0.00061	0.3457	0.892E 04	0.00622	53.71	0.811E-06
20	67.72	66.20	0.00051	0.00050	0.3432	0.965E 04	0.00627	58.58	0.812E-06
21	67.45	65.89	0.00051	0.00051	0.3383	0.105E 05	0.00627	64.37	0.772E-06
22	67.30	65.66	0.00048	0.00047	0.3336	0.113E 05	0.00629	70.81	0.702E-06
23	67.33	65.86	0.00046	0.00045	0.3289	0.123E 05	0.00592	77.78	0.643E-06
24	67.27	65.75	0.00045	0.00045	0.3221	0.132E 05	0.00567	85.82	0.611E-06

RUN 012868-1, F=+0.006, K=0.75E-06 PASSIVE
DATE 12868 RUN NO. 1
AMB TMP= 65.50F BASE TEMP= 68.54F G TEMP= 86.72F
BARO= 29.88IN.HG RELHUM= 0.4 TCOVER=83.65

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	71.98	67.46	0.00194	0.00192	0.0163	0.243E 03	0.00622	30.95	0.000E 00
2	71.49	67.35	0.00167	0.00165	0.0485	0.721E 03	0.00624	30.95	0.000E 00
3	70.87	67.49	0.00128	0.00126	0.0792	0.118E 04	0.00620	30.95	0.000E 00
4	70.44	67.49	0.00108	0.00106	0.1087	0.162E 04	0.00621	30.95	0.000E 00
5	70.23	67.42	0.00099	0.00098	0.1376	0.205E 04	0.00617	30.95	0.000E 00
6	70.07	67.67	0.00083	0.00082	0.1660	0.247E 04	0.00619	30.95	0.000E 00
7	69.86	67.60	0.00077	0.00076	0.1939	0.288E 04	0.00617	30.95	0.000E 00
8	69.74	67.63	0.00070	0.00070	0.2216	0.330E 04	0.00619	30.95	0.000E 00
9	69.60	67.56	0.00067	0.00067	0.2485	0.371E 04	0.00620	31.02	0.120E-06
10	69.47	67.49	0.00065	0.00064	0.2718	0.412E 04	0.00623	31.54	0.411E-06
11	69.37	67.32	0.00067	0.00066	0.2903	0.455E 04	0.00623	32.57	0.637E-06
12	69.41	67.22	0.00073	0.00072	0.3052	0.499E 04	0.00621	34.00	0.731E-06
13	69.61	67.60	0.00068	0.00067	0.3163	0.545E 04	0.00621	35.87	0.788E-06
14	69.54	67.60	0.00065	0.00064	0.3261	0.594E 04	0.00623	37.91	0.804E-06
15	69.22	67.32	0.00062	0.00062	0.3334	0.646E 04	0.00627	40.31	0.857E-06
16	69.00	67.25	0.00056	0.00056	0.3384	0.701E 04	0.00621	43.08	0.780E-06
17	68.98	67.15	0.00059	0.00059	0.3428	0.759E 04	0.00624	46.07	0.802E-06
18	68.74	66.90	0.00059	0.00058	0.3453	0.822E 04	0.00623	49.53	0.780E-06
19	68.63	66.80	0.00059	0.00058	0.3454	0.889E 04	0.00624	53.61	0.814E-06
20	68.42	66.66	0.00056	0.00056	0.3429	0.963E 04	0.00628	58.47	0.820E-06
21	68.11	66.45	0.00052	0.00051	0.3381	0.104E 05	0.00678	64.30	0.773E-06
22	67.93	66.45	0.00046	0.00046	0.3335	0.113E 05	0.00631	70.70	0.710E-06
23	67.95	66.45	0.00044	0.00043	0.3280	0.122E 05	0.00591	77.87	0.647E-06
24	67.94	66.34	0.00045	0.00044	0.3211	0.132E 05	0.00567	85.94	0.614E-06

RUN 030868-1, F=+0.006, K=0.75E-06 PASSIVE
DATE 30868 RUN NO. 1
AMB TMP= 68.80F BASE TEMP= 72.85F G TEMP= 92.68F
BARO= 29.76IN.HG RELHUM= 0.4 TCOVER=90.00

PL NO.	TO,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	77.88	73.20	0.00204	0.00202	0.0166	0.243E 03	0.00624	31.25	0.000E 00
2	77.18	73.09	0.00164	0.00162	0.0489	0.717E 03	0.00624	31.25	0.000E 00
3	76.49	73.16	0.00125	0.00123	0.0796	0.117E 04	0.00622	31.25	0.000E 00
4	76.13	73.23	0.00106	0.00105	0.1091	0.160E 04	0.00624	31.25	0.000E 00
5	75.89	73.23	0.00093	0.00092	0.1380	0.203E 04	0.00623	31.25	0.000E 00
6	75.80	73.33	0.00085	0.00084	0.1664	0.244E 04	0.00620	31.25	0.000E 00
7	75.38	73.13	0.00077	0.00076	0.1945	0.285E 04	0.00623	31.25	0.000E 00
8	75.34	73.20	0.00071	0.00070	0.2224	0.326E 04	0.00624	31.25	0.000E 00
9	75.12	73.09	0.00066	0.00065	0.2495	0.367E 04	0.00622	31.33	0.105E-06
10	74.96	73.02	0.00062	0.00061	0.2727	0.408E 04	0.00624	31.85	0.430E-06
11	74.85	72.92	0.00062	0.00061	0.2913	0.450E 04	0.00626	32.86	0.644E-06
12	74.90	72.74	0.00069	0.00068	0.3055	0.493E 04	0.00619	34.37	0.781E-06
13	74.89	72.55	0.00062	0.00062	0.3168	0.538E 04	0.00619	36.20	0.815E-06
14	74.64	72.68	0.00062	0.00062	0.3259	0.586E 04	0.00621	38.31	0.790E-06
15	74.46	72.54	0.00060	0.00059	0.3326	0.637E 04	0.00617	40.78	0.865E-06
16	74.18	72.22	0.00061	0.00060	0.3374	0.691E 04	0.00626	43.62	0.801E-06
17	74.01	72.19	0.00056	0.00055	0.3419	0.748E 04	0.00620	46.64	0.827E-06
18	73.74	71.91	0.00056	0.00055	0.3437	0.810E 04	0.00624	50.23	0.787E-06
19	73.43	71.60	0.00055	0.00054	0.3439	0.876E 04	0.00620	54.33	0.805E-06
20	73.15	71.39	0.00052	0.00051	0.3413	0.948E 04	0.00625	59.26	0.837E-06
21	72.91	71.18	0.00051	0.00050	0.3366	0.103E 05	0.00626	65.12	0.777E-06
22	72.69	71.11	0.00046	0.00046	0.3318	0.111E 05	0.00630	71.67	0.716E-06
23	72.83	71.18	0.00044	0.00044	0.3265	0.121E 05	0.00574	78.81	0.652E-06
24	72.91	71.25	0.00043	0.00043	0.3153	0.130E 05	0.00551	86.92	0.621E-06

RUN 080868-2, F=-0.004, K=1.47E-06
DATE 80868 RUN NO. 1
AMB TMP= 78.00F BASE TEMP= 82.93F G TEMP= 67.70F
BARO= 30.21IN.HG RELHUM= 0.4 TCOVER=71.84

PL NO.	TO.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	101.54	103.58	0.00666	0.00683	0.0098	0.128E 03	-0.00396	25.15	0.000E 00
2	102.04	103.31	0.00520	0.00533	0.0177	0.230E 03	-0.00394	25.15	0.000E 00
3	102.22	103.42	0.00487	0.00500	0.0221	0.287E 03	-0.00395	25.15	-0.338E-07
4	102.19	103.34	0.00470	0.00482	0.0254	0.329E 03	-0.00399	25.10	0.407E-07
5	101.59	103.11	0.00457	0.00465	0.0278	0.363E 03	-0.00395	25.37	0.454E-06
6	102.02	103.18	0.00454	0.00466	0.0289	0.395E 03	-0.00397	26.48	0.109E-05
7	102.09	103.26	0.00418	0.00429	0.0283	0.418E 03	-0.00394	28.60	0.141E-05
8	102.08	103.30	0.00405	0.00415	0.0268	0.425E 03	-0.00398	31.04	0.143E-05
9	102.03	103.34	0.00391	0.00401	0.0243	0.432E 03	-0.00392	34.43	0.153E-05
10	102.04	103.48	0.00384	0.00394	0.0216	0.427E 03	-0.00396	38.38	0.145E-05
11	101.84	103.45	0.00384	0.00394	0.0187	0.415E 03	-0.00392	43.37	0.148E-05
12	101.84	103.68	0.00378	0.00388	0.0158	0.407E 03	-0.00394	50.10	0.152E-05
13	101.60	104.07	0.00392	0.00402	0.0130	0.398E 03	-0.00394	59.44	0.152E-05
14	101.82	104.59	0.00392	0.00402	0.0106	0.394E 03	-0.00397	72.15	0.835E-06
15	101.50	104.16	0.00370	0.00379	0.0097	0.372E 03	-0.00394	74.20	-0.212E-07
16	101.41	104.17	0.00384	0.00393	0.0090	0.345E 03	-0.00395	74.08	-0.661E-08
17	101.41	104.17	0.00385	0.00395	0.0086	0.329E 03	-0.00395	74.06	0.533E-08
18	101.51	104.45	0.00413	0.00424	0.0088	0.335E 03	-0.00395	74.11	-0.132E-08
19	101.68	104.48	0.00383	0.00393	0.0085	0.341E 03	-0.00393	74.26	0.000E 00
20	101.44	104.25	0.00390	0.00400	0.0087	0.330E 03	-0.00394	74.14	0.000E 00
21	101.44	104.24	0.00389	0.00399	0.0085	0.323E 03	-0.00395	74.11	0.000E 00
22	101.44	104.23	0.00389	0.00399	0.0082	0.312E 03	-0.00397	74.08	-0.135E-08
23	101.65	104.60	0.00406	0.00416	0.0082	0.313E 03	-0.00396	74.09	0.145E-07
24	101.39	104.26	0.00395	0.00405	0.0083	0.320E 03	-0.00397	74.50	-0.774E-08

RUN 081068-1, F=-0.004, K=1.47E-06
DATE 81068 RUN NO. 1
AMB TMP= 76.00F BASE TEMP= 83.62F G TEMP= 67.39F
BARO= 29.92IN.HG RELHUM= 0.4 TCOVER=70.80

PL NO.	TO.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	101.35	103.07	0.00693	0.00710	0.0095	0.123E 03	-0.00398	25.44	0.000E 00
2	101.76	103.06	0.00532	0.00545	0.0182	0.236E 03	-0.00391	25.44	0.000E 00
3	101.67	102.87	0.00492	0.00504	0.0230	0.299E 03	-0.00390	25.44	-0.332E-07
4	101.81	102.58	0.00476	0.00488	0.0267	0.348E 03	-0.00392	25.44	0.664E-07
5	101.62	102.72	0.00451	0.00462	0.0293	0.385E 03	-0.00392	25.72	0.482E-06
6	101.64	102.81	0.00458	0.00469	0.0304	0.419E 03	-0.00393	26.89	0.111E-05
7	101.67	102.86	0.00423	0.00434	0.0301	0.446E 03	-0.00393	28.97	0.926E-06
8	101.63	102.86	0.00410	0.00420	0.0285	0.460E 03	-0.00394	31.48	0.183E-05
9	101.65	102.57	0.00393	0.00403	0.0261	0.467E 03	-0.00388	34.91	0.152E-05
10	101.70	103.14	0.00386	0.00396	0.0234	0.467E 03	-0.00390	38.96	0.142E-05
11	101.64	103.26	0.00385	0.00395	0.0207	0.465E 03	-0.00386	43.92	0.147E-05
12	101.84	103.69	0.00378	0.00388	0.0177	0.460E 03	-0.00388	50.72	0.152E-05
13	101.53	103.80	0.00390	0.00400	0.0148	0.456E 03	-0.00389	60.21	0.153E-05
14	101.42	104.14	0.00385	0.00395	0.0122	0.456E 03	-0.00386	73.19	0.836E-06
15	101.06	103.68	0.00362	0.00371	0.0114	0.439E 03	-0.00383	75.35	-0.181E-07
16	101.38	104.12	0.00378	0.00387	0.0109	0.419E 03	-0.00383	75.14	-0.129E-07
17	101.58	104.34	0.00377	0.00387	0.0107	0.411E 03	-0.00382	75.14	0.908E-08
18	101.42	104.35	0.00403	0.00413	0.0111	0.426E 03	-0.00379	75.26	0.129E-08
19	101.52	104.27	0.00373	0.00382	0.0114	0.437E 03	-0.00382	75.47	0.389E-08
20	101.41	104.20	0.00382	0.00392	0.0112	0.431E 03	-0.00382	75.32	-0.129E-08
21	101.31	104.07	0.00379	0.00388	0.0112	0.425E 03	-0.00382	75.31	0.000E 00
22	101.38	104.13	0.00379	0.00389	0.0110	0.424E 03	-0.00383	75.26	0.000E 00
23	101.42	104.32	0.00396	0.00406	0.0112	0.429E 03	-0.00385	75.29	0.179E-07
24	101.46	104.33	0.00389	0.00399	0.0115	0.444E 03	-0.00382	75.74	-0.150E-07

RUN 080668-1, F=-0.002, K=1.47E-06
DATE 80668 RUN NO. 1
AMB TMP= 80.40F BASE TEMP= 93.95F G TEMP= 66.17F
BARO= 29.85IN.HG RELHUM= 0.4 TCOVER=70.80

PL NO.	TO.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	101.89	103.20	0.00532	0.00546	0.0130	0.166E 03	-0.00198	24.96	0.000E 00
2	101.71	102.70	0.00408	0.00419	0.0235	0.300E 03	-0.00216	24.96	0.000E 00
3	101.82	102.76	0.00384	0.00394	0.0310	0.396E 03	-0.00199	24.96	-0.281E-07
4	101.72	102.62	0.00369	0.00379	0.0382	0.487E 03	-0.00200	24.90	-0.212E-07
5	101.69	102.56	0.00355	0.00364	0.0445	0.570E 03	-0.00199	25.00	0.370E-06
6	101.66	102.53	0.00345	0.00354	0.0490	0.648E 03	-0.00199	25.86	0.915E-06
7	101.66	102.53	0.00319	0.00328	0.0508	0.721E 03	-0.00199	27.72	0.138E-05
8	101.93	102.83	0.00303	0.00311	0.0510	0.787E 03	-0.00199	30.17	0.144E-05
9	101.79	102.71	0.00284	0.00292	0.0499	0.848E 03	-0.00201	33.20	0.156E-05
10	101.81	102.79	0.00270	0.00277	0.0478	0.902E 03	-0.00200	36.90	0.141E-05
11	101.80	102.85	0.00260	0.00267	0.0450	0.955E 03	-0.00199	41.45	0.151E-05
12	101.89	103.03	0.00245	0.00251	0.0413	0.100E 04	-0.00201	47.45	0.152E-05
13	101.76	103.07	0.00242	0.00248	0.0368	0.105E 04	-0.00201	55.65	0.148E-05
14	101.74	103.17	0.00222	0.00228	0.0322	0.108E 04	-0.00201	65.97	0.803E-06
15	101.74	103.17	0.00216	0.00222	0.0321	0.111E 04	-0.00199	67.75	0.354E-08
16	101.80	103.46	0.00251	0.00258	0.0336	0.116E 04	-0.00199	67.71	-0.704E-08
17	101.60	103.45	0.00282	0.00290	0.0362	0.125E 04	-0.00200	67.75	0.884E-08
18	101.41	103.38	0.00302	0.00310	0.0399	0.138E 04	-0.00198	67.81	-0.948E-08
19	101.59	103.51	0.00292	0.00299	0.0439	0.152E 04	-0.00197	67.83	-0.819E-08
20	101.62	103.53	0.00290	0.00297	0.0477	0.165E 04	-0.00201	67.66	-0.177E-08
21	101.56	103.41	0.00282	0.00289	0.0511	0.177E 04	-0.00199	67.66	0.176E-08
22	101.53	103.37	0.00282	0.00289	0.0544	0.188E 04	-0.00198	67.65	-0.179E-08
23	101.40	103.23	0.00281	0.00289	0.0578	0.200E 04	-0.00197	67.65	0.176E-07
24	101.57	103.40	0.00278	0.00285	0.0608	0.211E 04	-0.00199	67.99	-0.242E-07

RUN 080868-1, F=-0.002, K=1.47E-06
DATE 80868 RUN NO. 1
AMB TMP= 70.50F BASE TEMP= 76.70F G TEMP= 66.10F
BARO= 30.21IN.HG RELHUM= 0.4 TCOVER=69.76

PL NO.	TO.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	100.69	102.24	0.00534	0.00548	0.0080	0.103E 03	-0.00200	24.98	0.000E 00
2	100.58	102.00	0.00405	0.00416	0.0187	0.243E 03	-0.00201	24.98	-0.204E-07
3	101.13	102.08	0.00378	0.00387	0.0264	0.342E 03	-0.00201	24.94	-0.550E-07
4	101.21	102.12	0.00365	0.00375	0.0332	0.430E 03	-0.00201	24.85	0.692E-08
5	101.25	102.13	0.00354	0.00363	0.0395	0.512E 03	-0.00200	24.94	0.308E-06
6	101.18	102.06	0.00345	0.00354	0.0441	0.590E 03	-0.00202	25.78	0.918E-06
7	101.11	102.00	0.00316	0.00324	0.0462	0.661E 03	-0.00201	27.54	0.137E-05
8	101.04	101.94	0.00303	0.00311	0.0466	0.725E 03	-0.00202	30.00	0.146E-05
9	101.07	102.00	0.00281	0.00288	0.0456	0.784E 03	-0.00202	33.14	0.978E-06
10	100.99	101.97	0.00266	0.00273	0.0437	0.836E 03	-0.00201	36.86	0.190E-05
11	101.05	102.10	0.00256	0.00263	0.0412	0.885E 03	-0.00200	41.43	0.146E-05
12	100.93	102.06	0.00241	0.00247	0.0376	0.928E 03	-0.00201	47.63	0.151E-05
13	101.07	102.39	0.00239	0.00245	0.0336	0.970E 03	-0.00201	55.78	0.148E-05
14	100.88	102.31	0.00220	0.00226	0.0293	0.101E 04	-0.00201	66.37	0.788E-06
15	100.91	102.35	0.00215	0.00221	0.0292	0.103E 04	-0.00200	68.05	0.000E 00
16	100.94	102.61	0.00251	0.00258	0.0305	0.108E 04	-0.00200	68.03	-0.338E-08
17	100.94	102.82	0.00283	0.00291	0.0332	0.117E 04	-0.00201	68.05	0.340E-08
18	100.92	102.93	0.00303	0.00311	0.0369	0.130E 04	-0.00200	68.08	-0.405E-08
19	101.04	102.56	0.00286	0.00294	0.0407	0.143E 04	-0.00199	69.10	-0.110E-07
20	101.01	102.91	0.00285	0.00292	0.0442	0.155E 04	-0.00201	67.95	-0.205E-08
21	101.02	102.87	0.00279	0.00286	0.0474	0.167E 04	-0.00200	67.95	0.339E-08
22	100.95	102.78	0.00277	0.00285	0.0506	0.178E 04	-0.00199	67.92	0.345E-08
23	101.02	102.86	0.00276	0.00283	0.0537	0.189E 04	-0.00198	67.98	-0.136E-07
24	100.88	102.71	0.00273	0.00280	0.0565	0.200E 04	-0.00200	68.27	-0.332E-08

RUN 080268-1, F=-0.001, K=1.47E-06
DATE 80268 RUN NO. 1
AMB TMP= 78.00F BASE TEMP= 77.05F G TEMP= 66.45F
BARO= 29.87IN.HG RELHUM= 0.4 TCOVER=70.45

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	104.42	105.75	0.00479	0.00493	0.0122	0.157E 03	-0.00098	25.09	0.000E 00
2	104.44	105.44	0.00366	0.00376	0.0252	0.324E 03	-0.00098	25.09	-0.345E-07
3	104.52	105.46	0.00343	0.00353	0.0356	0.456E 03	-0.00098	25.05	-0.697E-07
4	104.49	105.39	0.00327	0.00336	0.0452	0.577E 03	-0.00098	24.87	-0.354E-07
5	104.64	105.49	0.00311	0.00320	0.0538	0.690E 03	-0.00097	25.07	0.382E-06
6	104.67	105.53	0.00300	0.00309	0.0600	0.799E 03	-0.00098	26.03	0.107E-05
7	104.64	105.48	0.00268	0.00276	0.0630	0.902E 03	-0.00097	27.95	0.142E-05
8	104.57	105.42	0.00257	0.00265	0.0644	0.100E 04	-0.00097	30.37	0.144E-05
9	104.60	105.48	0.00241	0.00247	0.0639	0.110E 04	-0.00097	33.65	0.157E-05
10	104.59	105.53	0.00230	0.00237	0.0627	0.120E 04	-0.00096	37.42	0.142E-05
11	104.68	105.70	0.00226	0.00232	0.0605	0.131E 04	-0.00096	42.01	0.149E-05
12	104.73	105.85	0.00217	0.00223	0.0576	0.142E 04	-0.00096	48.32	0.150E-05
13	104.67	105.95	0.00213	0.00219	0.0535	0.155E 04	-0.00096	56.72	0.147E-05
14	104.60	106.08	0.00209	0.00214	0.0492	0.170E 04	-0.00096	67.41	0.797E-06
15	104.39	106.08	0.00236	0.00243	0.0531	0.187E 04	-0.00097	68.95	-0.235E-07
16	104.43	106.05	0.00232	0.00239	0.0588	0.207E 04	-0.00096	68.72	-0.236E-07
17	104.47	106.10	0.00230	0.00236	0.0643	0.225E 04	-0.00097	68.59	-0.682E-08
18	104.44	106.07	0.00229	0.00235	0.0697	0.244E 04	-0.00096	68.53	-0.204E-07
19	104.41	106.22	0.00220	0.00227	0.0749	0.262E 04	-0.00097	68.45	-0.104E-07
20	104.48	106.05	0.00218	0.00225	0.0799	0.279E 04	-0.00097	68.33	0.000E 00
21	104.79	106.35	0.00217	0.00223	0.0848	0.296E 04	-0.00097	68.30	0.000E 00
22	104.59	106.12	0.00215	0.00221	0.0895	0.312E 04	-0.00100	68.25	-0.122E-07
23	104.46	105.98	0.00214	0.00220	0.0944	0.328E 04	-0.00096	68.07	-0.121E-07
24	104.56	106.08	0.00211	0.00217	0.0990	0.344E 04	-0.00099	68.05	-0.792E-07

RUN 080368-1, F=-0.001, K=1.47E-06
DATE 80368 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 77.39F G TEMP= 66.69F
BARO= 29.88IN.HG RELHUM= 0.4 TCOVER=70.45

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	105.37	106.73	0.00481	0.00495	0.0106	0.136E 03	-0.00099	25.09	0.000E 00
2	105.19	106.20	0.00362	0.00373	0.0236	0.303E 03	-0.00097	25.09	-0.104E-06
3	105.20	106.15	0.00345	0.00355	0.0341	0.434E 03	-0.00099	24.87	-0.142E-06
4	105.07	105.97	0.00325	0.00335	0.0437	0.554E 03	-0.00100	24.78	0.000E 00
5	105.08	105.94	0.00312	0.00321	0.0521	0.666E 03	-0.00098	24.96	0.422E-06
6	105.25	106.11	0.00298	0.00306	0.0581	0.773E 03	-0.00098	26.03	0.113E-05
7	105.22	106.07	0.00269	0.00277	0.0612	0.875E 03	-0.00099	27.91	0.138E-05
8	105.15	106.00	0.00256	0.00263	0.0626	0.972E 03	-0.00098	30.37	0.145E-05
9	105.11	106.00	0.00239	0.00246	0.0620	0.107E 04	-0.00097	33.71	0.165E-05
10	105.06	106.01	0.00230	0.00236	0.0609	0.117E 04	-0.00096	37.55	0.143E-05
11	105.19	106.21	0.00222	0.00229	0.0592	0.128E 04	-0.00096	42.19	0.148E-05
12	105.14	106.26	0.00215	0.00221	0.0561	0.139E 04	-0.00096	48.48	0.150E-05
13	105.04	106.34	0.00213	0.00219	0.0521	0.152E 04	-0.00096	56.99	0.147E-05
14	105.14	106.64	0.00209	0.00215	0.0481	0.166E 04	-0.00096	67.74	0.795E-06
15	104.77	106.47	0.00235	0.00242	0.0519	0.184E 04	-0.00096	69.41	-0.264E-07
16	104.71	106.37	0.00231	0.00238	0.0576	0.203E 04	-0.00096	69.15	-0.265E-07
17	104.88	106.53	0.00231	0.00237	0.0632	0.222E 04	-0.00097	68.97	-0.838E-08
18	104.78	106.42	0.00228	0.00234	0.0685	0.241E 04	-0.00096	68.92	-0.150E-07
19	105.06	106.67	0.00220	0.00226	0.0737	0.259E 04	-0.00096	68.87	-0.136E-07
20	104.72	106.29	0.00218	0.00224	0.0788	0.276E 04	-0.00096	68.69	-0.169E-08
21	104.79	106.34	0.00214	0.00220	0.0836	0.293E 04	-0.00097	68.69	0.000E 00
22	104.66	106.40	0.00215	0.00221	0.0884	0.310E 04	-0.00097	68.63	-0.138E-07
23	104.77	106.27	0.00209	0.00215	0.0932	0.326E 04	-0.00096	68.46	-0.119E-07
24	104.76	106.28	0.00210	0.00216	0.0978	0.342E 04	-0.00096	68.40	-0.848E-07

RUN 072968-1, F= 0.0 , K=1.47E-06
DATE 72968 RUN NO. 1
AMB TMP= 80.00F BASE TEMP= 86.03F G TEMP= 66.76F
BARO= 29.82IN.HG RELHUM= 0.4 TCOVER=71.84

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	109.18	91.13	0.00423	0.00436	0.0133	0.169E 03	0.00000	24.94	0.000E 00
2	109.28	89.45	0.00333	0.00343	0.0284	0.362E 03	0.00000	24.94	-0.707E-07
3	109.28	92.30	0.00313	0.00322	0.0416	0.525E 03	0.00000	24.76	-0.108E-06
4	109.35	93.71	0.00292	0.00301	0.0538	0.678E 03	0.00000	24.71	0.364E-07
5	109.45	89.34	0.00276	0.00284	0.0646	0.822E 03	0.00000	24.94	0.425E-06
6	109.59	93.13	0.00260	0.00268	0.0723	0.961E 03	0.00000	26.04	0.114E-05
7	109.62	88.69	0.00238	0.00246	0.0769	0.110E 04	0.00000	27.98	0.147E-05
8	109.56	93.37	0.00224	0.00231	0.0794	0.124E 04	0.00000	30.48	0.147E-05
9	109.49	88.72	0.00213	0.00219	0.0801	0.138E 04	0.00000	33.72	0.151E-05
10	109.49	90.03	0.00206	0.00212	0.0800	0.153E 04	0.00000	37.49	0.147E-05
11	109.52	95.02	0.00200	0.00207	0.0788	0.169E 04	0.00000	42.16	0.147E-05
12	109.49	95.56	0.00197	0.00203	0.0760	0.188E 04	0.00000	49.44	0.151E-05
13	109.62	85.76	0.00188	0.00194	0.0718	0.208E 04	0.00000	56.96	0.149E-05
14	109.56	90.75	0.00182	0.00188	0.0671	0.232E 04	0.00000	67.94	0.800E-06
15	109.35	90.65	0.00191	0.00197	0.0728	0.258E 04	0.00000	69.64	-0.656E-08
16	109.28	91.82	0.00183	0.00189	0.0803	0.285E 04	0.00000	69.56	-0.653E-08
17	109.35	88.79	0.00183	0.00189	0.0876	0.311E 04	0.00000	69.61	0.151E-07
18	109.32	92.23	0.00179	0.00185	0.0947	0.336E 04	0.00000	69.73	0.325E-09
19	109.25	89.45	0.00175	0.00180	0.1017	0.361E 04	0.00000	69.80	0.164E-08
20	109.25	90.79	0.00173	0.00178	0.1086	0.386E 04	0.00000	69.90	0.107E-07
21	109.25	98.07	0.00169	0.00175	0.1152	0.410E 04	0.00000	69.99	0.208E-07
22	109.28	88.41	0.00169	0.00174	0.1218	0.435E 04	0.00000	70.07	0.162E-08
23	109.18	88.83	0.00169	0.00175	0.1286	0.459E 04	0.00000	70.05	0.160E-08
24	109.32	88.48	0.00167	0.00172	0.1351	0.483E 04	0.00000	70.18	-0.600E-07

RUN 073168-1, F= 0.0 , K=1.47E-06
DATE 73168 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 74.27F G TEMP= 68.61F
BARO= 29.84IN.HG RELHUM= 0.4 TCOVER=71.84

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	108.50	82.34	0.00440	0.00453	0.0108	0.138E 03	0.00000	25.15	0.000E 00
2	108.64	79.89	0.00340	0.00350	0.0264	0.338E 03	0.00000	25.15	-0.486E-07
3	108.36	83.72	0.00319	0.00328	0.0398	0.505E 03	0.00000	25.02	-0.706E-07
4	108.40	85.69	0.00295	0.00304	0.0521	0.661E 03	0.00000	24.96	-0.142E-07
5	108.16	79.85	0.00282	0.00291	0.0632	0.808E 03	0.00000	25.18	0.451E-06
6	108.46	85.03	0.00265	0.00273	0.0713	0.951E 03	0.00000	26.27	0.113E-05
7	108.46	78.33	0.00242	0.00249	0.0762	0.109E 04	0.00000	28.20	0.142E-05
8	108.46	84.48	0.00228	0.00235	0.0791	0.123E 04	0.00000	30.65	0.142E-05
9	108.50	78.05	0.00217	0.00224	0.0798	0.138E 04	0.00000	33.98	0.157E-05
10	108.53	79.92	0.00209	0.00216	0.0795	0.153E 04	0.00000	37.80	0.144E-05
11	108.50	86.86	0.00204	0.00210	0.0786	0.170E 04	0.00000	42.63	0.150E-05
12	108.57	80.06	0.00201	0.00207	0.0759	0.189E 04	0.00000	49.07	0.152E-05
13	108.50	79.40	0.00192	0.00197	0.0719	0.210E 04	0.00000	57.67	0.149E-05
14	108.60	80.78	0.00184	0.00190	0.0671	0.234E 04	0.00000	68.88	0.792E-06
15	108.43	80.54	0.00195	0.00200	0.0730	0.261E 04	0.00000	70.59	-0.952E-08
16	108.46	81.99	0.00187	0.00192	0.0807	0.288E 04	0.00000	70.45	-0.790E-08
17	108.50	77.68	0.00187	0.00193	0.0882	0.315E 04	0.00000	70.51	0.699E-08
18	108.57	82.55	0.00181	0.00187	0.0954	0.341E 04	0.00000	70.60	-0.220E-08
19	108.23	78.81	0.00178	0.00183	0.1025	0.367E 04	0.00000	70.69	0.478E-08
20	108.43	80.75	0.00176	0.00181	0.1096	0.392E 04	0.00000	70.69	0.142E-07
21	108.50	91.17	0.00171	0.00176	0.1162	0.417E 04	0.00000	70.85	0.156E-07
22	108.46	77.81	0.00172	0.00177	0.1230	0.442E 04	0.00000	70.91	0.000E 00
23	108.40	78.57	0.00172	0.00177	0.1299	0.467E 04	0.00000	70.88	0.311E-08
24	108.46	78.33	0.00169	0.00174	0.1365	0.491E 04	0.00000	71.00	-0.645E-07

RUN CE1268-1, F=+0.001, K=1.47E-06
DATE 81268 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 79.47F G TEMP= 66.62F
BARO= 29.92IN.HG RELHUM= 0.5 TCOVER=70.45

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	102.99	80.23	0.00389	0.00359	0.0130	0.168E 03	0.00101	25.25	0.000E 00
2	103.06	79.78	0.00291	0.00299	0.0307	0.397E 03	0.00101	25.25	-0.675E-07
3	102.89	81.34	0.00274	0.00282	0.0461	0.595E 03	0.00101	25.16	0.000E 00
4	102.79	81.06	0.00253	0.00260	0.0608	0.784E 03	0.00102	25.16	0.342E-07
5	103.02	80.02	0.00230	0.00237	0.0738	0.962E 03	0.00101	25.43	0.497E-06
6	103.01	79.85	0.00218	0.00223	0.0833	0.113E 04	0.00100	26.58	0.112E-05
7	102.96	79.92	0.00204	0.00210	0.0892	0.131E 04	0.00101	28.68	0.145E-05
8	103.11	80.47	0.00191	0.00196	0.0930	0.149E 04	0.00099	31.36	0.149E-05
9	103.15	79.75	0.00183	0.00187	0.0946	0.165E 04	0.00099	34.83	0.159E-05
10	102.93	80.02	0.00176	0.00181	0.0946	0.190E 04	0.00098	39.17	0.153E-05
11	102.87	79.95	0.00167	0.00171	0.0933	0.213E 04	0.00097	44.51	0.143E-05
12	103.04	79.30	0.00163	0.00168	0.0911	0.238E 04	0.00098	51.10	0.144E-05
13	102.79	78.81	0.00154	0.00158	0.0870	0.268E 04	0.00098	60.13	0.142E-05
14	102.82	78.85	0.00146	0.00150	0.0821	0.301E 04	0.00099	71.76	0.737E-06
15	102.82	78.60	0.00148	0.00152	0.0898	0.338E 04	0.00099	73.55	0.138E-08
16	102.85	79.19	0.00142	0.00145	0.0996	0.374E 04	0.00099	73.52	0.000E 00
17	102.80	78.40	0.00139	0.00143	0.1090	0.410E 04	0.00098	73.61	0.964E-08
18	102.74	78.36	0.00135	0.00138	0.1182	0.446E 04	0.00098	73.73	0.000E 00
19	102.77	78.26	0.00128	0.00131	0.1272	0.480E 04	0.00098	73.84	0.276E-08
20	102.68	78.64	0.00129	0.00132	0.1364	0.514E 04	0.00099	73.76	0.000E 00
21	102.66	78.50	0.00127	0.00131	0.1455	0.549E 04	0.00098	73.73	0.000E 00
22	102.58	77.95	0.00123	0.00126	0.1546	0.582E 04	0.00098	73.67	-0.555E-08
23	102.74	77.84	0.00121	0.00124	0.1636	0.615E 04	0.00098	73.58	-0.274E-08
24	102.75	77.88	0.00120	0.00123	0.1721	0.648E 04	0.00097	73.67	-0.569E-07

RUN CE1468-1, F=+0.001, K=1.47E-06
DATE 81468 RUN NO. 1
AMB TMP= 73.50F BASE TEMP= 76.01F G TEMP= 66.59F
BARO= 30.30IN.HG RELHUM= 0.6 TCOVER=69.76

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	101.35	77.70	0.00391	0.00401	0.0124	0.162E 03	0.00101	25.14	0.000E 00
2	101.22	77.15	0.00286	0.00293	0.0300	0.392E 03	0.00102	25.14	-0.333E-07
3	101.53	76.57	0.00272	0.00279	0.0453	0.591E 03	0.00102	25.10	-0.337E-07
4	101.45	78.43	0.00244	0.00251	0.0595	0.778E 03	0.00102	25.05	0.101E-06
5	101.52	77.35	0.00227	0.00233	0.0723	0.955E 03	0.00101	25.45	0.485E-06
6	101.51	76.46	0.00212	0.00218	0.0818	0.113E 04	0.00100	26.56	0.110E-05
7	101.59	77.05	0.00204	0.00209	0.0978	0.130E 04	0.00101	28.64	0.134E-05
8	101.61	77.63	0.00188	0.00193	0.0922	0.149E 04	0.00100	31.10	0.144E-05
9	101.71	76.91	0.00178	0.00183	0.0940	0.168E 04	0.00099	34.46	0.152E-05
10	101.57	77.25	0.00179	0.00183	0.0949	0.189E 04	0.00100	38.39	0.141E-05
11	101.61	77.32	0.00170	0.00175	0.0945	0.212E 04	0.00099	43.31	0.146E-05
12	101.74	76.70	0.00165	0.00169	0.0912	0.238E 04	0.00099	50.35	0.144E-05
13	101.64	76.53	0.00155	0.00159	0.0876	0.268E 04	0.00101	58.91	0.145E-05
14	101.63	76.32	0.00145	0.00153	0.0828	0.301E 04	0.00100	70.31	0.749E-06
15	101.66	76.46	0.00151	0.00155	0.0906	0.338E 04	0.00100	72.09	0.143E-08
16	101.66	76.60	0.00144	0.00147	0.1006	0.375E 04	0.00101	72.06	-0.427E-08
17	101.57	75.94	0.00141	0.00145	0.1102	0.411E 04	0.00100	72.11	0.114E-07
18	101.58	76.08	0.00137	0.00141	0.1196	0.447E 04	0.00100	72.23	0.141E-08
19	101.51	76.01	0.00131	0.00134	0.1287	0.482E 04	0.00099	72.34	0.000E 00
20	101.59	76.35	0.00132	0.00135	0.1381	0.517E 04	0.00100	72.28	-0.142E-08
21	101.84	76.21	0.00130	0.00134	0.1474	0.551E 04	0.00100	72.23	0.000E 00
22	101.55	75.59	0.00124	0.00128	0.1567	0.585E 04	0.00100	72.16	-0.720E-08
23	101.62	75.45	0.00124	0.00127	0.1658	0.619E 04	0.00100	72.08	-0.142E-08
24	101.63	75.38	0.00119	0.00122	0.1745	0.652E 04	0.00099	72.14	-0.563E-07

RUN CE1468-2, F=+0.002, K=1.47E-06
DATE 81468 RUN NO. 2
AMB TMP= 72.00F BASE TEMP= 78.09F G TEMP= 66.31F
BARO= 30.00IN.HG RELHUM= 0.6 TCOVER=70.10

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	100.11	78.60	0.00346	0.00355	0.0129	0.165E 03	0.00197	25.48	0.000E 00
2	100.35	78.43	0.00254	0.00261	0.0328	0.430E 03	0.00199	25.48	0.000E 00
3	100.39	79.40	0.00233	0.00239	0.0505	0.662E 03	0.00198	25.48	0.000E 00
4	100.45	79.40	0.00211	0.00216	0.0673	0.882E 03	0.00199	25.48	0.980E-07
5	100.44	78.85	0.00195	0.00200	0.0825	0.109E 04	0.00197	25.74	0.474E-06
6	100.39	79.02	0.00184	0.00188	0.0937	0.130E 04	0.00197	27.02	0.114E-05
7	100.51	78.60	0.00177	0.00182	0.1018	0.152E 04	0.00198	29.03	0.132E-05
8	100.58	78.78	0.00165	0.00170	0.1076	0.175E 04	0.00198	31.63	0.141E-05
9	100.59	78.40	0.00157	0.00161	0.1106	0.200E 04	0.00198	35.03	0.152E-05
10	100.50	78.47	0.00153	0.00157	0.1127	0.227E 04	0.00201	39.09	0.140E-05
11	100.37	78.22	0.00142	0.00146	0.1132	0.256E 04	0.00201	44.07	0.146E-05
12	100.60	77.88	0.00139	0.00142	0.1110	0.290E 04	0.00202	50.76	0.146E-05
13	100.63	77.46	0.00132	0.00136	0.1065	0.328E 04	0.00201	59.93	0.145E-05
14	100.54	77.36	0.00121	0.00124	0.1012	0.372E 04	0.00201	71.62	0.748E-06
15	100.52	77.18	0.00121	0.00124	0.1111	0.420E 04	0.00201	73.68	0.178E-07
16	100.47	77.46	0.00116	0.00119	0.1238	0.468E 04	0.00201	73.73	0.406E-08
17	100.54	76.54	0.00111	0.00114	0.1361	0.516E 04	0.00200	73.85	0.162E-07
18	100.63	76.91	0.00107	0.00109	0.1481	0.563E 04	0.00201	74.03	0.535E-08
19	100.75	76.51	0.00101	0.00103	0.1608	0.609E 04	0.00200	73.81	0.136E-08
20	100.65	77.01	0.00099	0.00101	0.1721	0.654E 04	0.00200	74.11	0.134E-08
21	100.67	77.01	0.00097	0.00100	0.1840	0.700E 04	0.00199	74.11	0.266E-08
22	100.74	76.63	0.00096	0.00098	0.1959	0.745E 04	0.00197	74.08	-0.271E-08
23	100.81	76.49	0.00093	0.00096	0.2076	0.789E 04	0.00199	74.08	0.107E-07
24	100.66	76.53	0.00091	0.00093	0.2184	0.833E 04	0.00200	74.38	-0.366E-07

RUN CE1568-1, F=+0.002, K=1.47E-06
DATE 81568 RUN NO. 1
AMB TMP= 73.00F BASE TEMP= 72.19F G TEMP= 66.87F
BARO= 29.71IN.HG RELHUM= 0.6 TCOVER=72.54

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	99.19	74.72	0.00352	0.00360	0.0133	0.174E 03	0.00198	25.58	0.000E 00
2	99.15	74.72	0.00259	0.00265	0.0335	0.436E 03	0.00200	25.58	0.000E 00
3	99.13	75.14	0.00237	0.00242	0.0514	0.669E 03	0.00199	25.58	0.000E 00
4	99.26	75.42	0.00215	0.00220	0.0682	0.890E 03	0.00199	25.67	0.111E-06
5	99.25	75.00	0.00198	0.00203	0.0836	0.110E 04	0.00197	25.93	0.463E-06
6	99.30	75.17	0.00189	0.00194	0.0953	0.131E 04	0.00198	27.12	0.107E-05
7	99.36	74.76	0.00180	0.00184	0.1035	0.153E 04	0.00198	29.12	0.136E-05
8	99.32	75.04	0.00169	0.00173	0.1095	0.176E 04	0.00200	31.67	0.145E-05
9	99.36	74.65	0.00160	0.00164	0.1125	0.201E 04	0.00200	35.14	0.151E-05
10	99.49	74.93	0.00160	0.00164	0.1145	0.228E 04	0.00202	39.22	0.144E-05
11	99.60	75.17	0.00147	0.00150	0.1149	0.258E 04	0.00202	44.26	0.145E-05
12	99.42	74.72	0.00143	0.00147	0.1128	0.292E 04	0.00203	50.98	0.148E-05
13	99.34	74.83	0.00138	0.00141	0.1081	0.331E 04	0.00201	60.23	0.146E-05
14	99.26	74.38	0.00124	0.00127	0.1026	0.375E 04	0.00202	72.09	0.765E-06
15	99.26	75.04	0.00127	0.00130	0.1128	0.424E 04	0.00201	74.06	0.110E-07
16	99.18	74.38	0.00118	0.00121	0.1257	0.472E 04	0.00202	74.12	0.136E-08
17	99.18	74.51	0.00118	0.00120	0.1382	0.520E 04	0.00201	74.26	0.164E-07
18	99.26	74.72	0.00111	0.00114	0.1505	0.568E 04	0.00201	74.41	0.539E-08
19	99.05	74.55	0.00107	0.00109	0.1626	0.615E 04	0.00200	74.56	0.272E-08
20	99.01	74.51	0.00106	0.00109	0.1750	0.661E 04	0.00201	74.47	0.000E 00
21	99.06	74.45	0.00102	0.00104	0.1872	0.707E 04	0.00200	74.45	0.000E 00
22	99.03	74.03	0.00099	0.00102	0.1593	0.752E 04	0.00199	74.44	0.000E 00
23	99.24	73.96	0.00093	0.00095	0.2110	0.797E 04	0.00199	74.47	0.175E-07
24	99.12	73.69	0.00093	0.00096	0.2220	0.841E 04	0.00201	74.73	-0.488E-07

RUN CE196E-2, F=+0.002, K=1.47E-06
DATE 91968 RUN NO. 2
AMB TMP= 72.30F BASE TEMP= 76.35F G TEMP= 67.18F
BARO= 29.93IN.HG RELHUM= 0.4 TCOVER=70.45

PL NO.	TC.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	101.41	77.38	0.00339	0.00346	0.0125	0.163E 03	0.00196	25.39	0.000E 00
2	101.34	77.77	0.00250	0.00257	0.0323	0.420E 03	0.00201	25.39	0.000E 00
3	101.46	76.54	0.00232	0.00238	0.0500	0.650E 03	0.00200	25.39	0.000E 00
4	101.51	78.60	0.00209	0.00214	0.0669	0.869E 03	0.00201	25.39	0.998E-07
5	101.51	76.05	0.00190	0.00195	0.0814	0.108E 04	0.00197	25.87	0.506E-06
6	101.42	76.02	0.00182	0.00187	0.0933	0.129E 04	0.00198	26.93	0.107E-05
7	101.62	77.74	0.00175	0.00180	0.1013	0.150E 04	0.00199	29.96	0.135E-05
8	101.51	77.55	0.00162	0.00167	0.1073	0.173E 04	0.00201	31.51	0.143E-05
9	101.43	77.53	0.00155	0.00159	0.1105	0.197E 04	0.00200	34.90	0.152E-05
10	101.54	77.70	0.00153	0.00157	0.1127	0.224E 04	0.00203	38.39	0.143E-05
11	101.41	77.60	0.00141	0.00144	0.1130	0.254E 04	0.00203	43.32	0.146E-05
12	101.58	77.32	0.00138	0.00141	0.1138	0.287E 04	0.00204	50.63	0.149E-05
13	101.49	76.58	0.00132	0.00135	0.1063	0.325E 04	0.00202	59.85	0.147E-05
14	101.48	76.73	0.00120	0.00123	0.1010	0.369E 04	0.00202	71.57	0.762E-06
15	101.28	76.77	0.00121	0.00124	0.1105	0.417E 04	0.00201	73.52	0.133E-07
16	101.27	76.60	0.00117	0.00119	0.1236	0.465E 04	0.00202	73.68	0.549E-09
17	101.37	76.46	0.00112	0.00114	0.1360	0.513E 04	0.00201	73.79	0.183E-07
18	101.32	76.42	0.00106	0.00109	0.1490	0.559E 04	0.00201	73.97	0.487E-08
19	101.34	76.35	0.00100	0.00103	0.1599	0.605E 04	0.00200	74.39	0.273E-08
20	101.41	76.42	0.00099	0.00101	0.1720	0.651E 04	0.00201	74.06	0.135E-08
21	101.22	76.39	0.00098	0.00100	0.1840	0.696E 04	0.00199	74.03	-0.649E-07
22	101.30	76.04	0.00094	0.00097	0.1958	0.740E 04	0.00199	74.03	0.660E-07
23	101.47	76.01	0.00090	0.00092	0.2074	0.785E 04	0.00200	74.05	0.175E-07
24	101.28	76.04	0.00090	0.00092	0.2182	0.829E 04	0.00201	74.34	-0.489E-07

RUN CE196E-1, F=+0.004, K=1.47E-06 PASSIVE
DATE 91968 RUN NO. 1
AMB TMP= 75.72F BASE TEMP= 78.43F G TEMP= 97.73F
BARO= 29.93IN.HG RELHUM= 0.6 TCOVER=94.30

PL NO.	TC.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	85.20	78.15	0.00247	0.00245	0.0233	0.286E 03	0.00402	26.47	0.000E 00
2	84.55	77.98	0.00207	0.00205	0.0485	0.594E 03	0.00404	26.47	-0.344E-07
3	84.00	78.29	0.00171	0.00169	0.0725	0.835E 03	0.00405	26.38	-0.697E-07
4	83.69	78.26	0.00158	0.00156	0.0954	0.116E 04	0.00404	26.34	0.350E-07
5	83.54	78.19	0.00150	0.00149	0.1171	0.144E 04	0.00404	25.49	0.344E-06
6	83.24	78.33	0.00134	0.00132	0.1335	0.171E 04	0.00402	27.57	0.115E-05
7	82.77	79.15	0.00126	0.00125	0.1450	0.199E 04	0.00409	29.67	0.147E-05
8	82.86	79.15	0.00127	0.00126	0.1540	0.230E 04	0.00410	32.37	0.156E-05
9	82.53	78.02	0.00121	0.00120	0.1593	0.264E 04	0.00410	35.75	0.164E-05
10	82.32	77.51	0.00115	0.00113	0.1631	0.300E 04	0.00408	39.81	0.152E-05
11	82.09	77.70	0.00112	0.00110	0.1642	0.341E 04	0.00407	44.93	0.157E-05
12	81.80	77.57	0.00108	0.00107	0.1624	0.387E 04	0.00408	51.58	0.156E-05
13	81.79	78.02	0.00094	0.00093	0.1568	0.440E 04	0.00407	60.74	0.155E-05
14	81.70	78.02	0.00091	0.00090	0.1503	0.501E 04	0.00404	72.21	0.797E-06
15	81.37	77.88	0.00084	0.00083	0.1662	0.567E 04	0.00403	73.94	-0.240E-07
16	81.02	77.84	0.00075	0.00074	0.1865	0.633E 04	0.00405	73.53	-0.354E-07
17	80.82	77.77	0.00070	0.00070	0.2061	0.698E 04	0.00405	73.35	-0.653E-09
18	80.63	77.74	0.00068	0.00067	0.2254	0.763E 04	0.00408	73.26	-0.196E-07
19	80.51	77.70	0.00064	0.00064	0.2447	0.827E 04	0.00408	73.16	-0.116E-07
20	80.40	77.63	0.00062	0.00062	0.2639	0.890E 04	0.00407	73.05	-0.495E-08
21	80.16	77.46	0.00060	0.00059	0.2830	0.953E 04	0.00410	72.97	-0.132E-07
22	80.01	77.43	0.00057	0.00056	0.3023	0.102E 05	0.00409	72.94	-0.101E-07
23	79.83	77.32	0.00054	0.00054	0.3214	0.108E 05	0.00409	72.70	-0.100E-07
24	79.74	77.19	0.00055	0.00055	0.3405	0.114E 05	0.00410	72.51	-0.123E-06

RUN CE196E-2, F=+0.004, K=1.47E-06
DATE 91968 RUN NO. 2
AMB TMP= 77.00F BASE TEMP= 78.78F G TEMP= 69.48F
BARO= 29.93IN.HG RELHUM= 0.6 TCOVER=73.23

PL NO.	TC.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	102.32	79.16	0.00276	0.00283	0.0164	0.214E 03	0.00392	25.64	0.000E 00
2	102.28	79.16	0.00199	0.00203	0.0417	0.542E 03	0.00395	25.64	-0.328E-07
3	102.33	79.54	0.00179	0.00183	0.0651	0.845E 03	0.00394	25.59	-0.331E-07
4	102.32	79.54	0.00156	0.00160	0.0877	0.114E 04	0.00394	25.55	0.332E-07
5	102.31	79.33	0.00134	0.00138	0.1084	0.142E 04	0.00396	25.77	0.453E-06
6	102.44	79.40	0.00131	0.00125	0.1246	0.170E 04	0.00391	26.88	0.960E-06
7	102.38	79.23	0.00127	0.00130	0.1354	0.199E 04	0.00397	28.31	0.936E-06
8	102.52	79.33	0.00111	0.00114	0.1454	0.231E 04	0.00397	31.31	0.183E-05
9	102.45	79.09	0.00111	0.00114	0.1512	0.265E 04	0.00401	34.55	0.153E-05
10	102.66	79.19	0.00111	0.00114	0.1543	0.303E 04	0.00396	38.69	0.149E-05
11	102.74	79.09	0.00100	0.00103	0.1557	0.345E 04	0.00395	43.65	0.145E-05
12	102.72	78.92	0.00098	0.00100	0.1545	0.392E 04	0.00396	50.01	0.141E-05
13	102.87	79.30	0.00096	0.00098	0.1508	0.446E 04	0.00398	58.38	0.142E-05
14	102.93	79.12	0.00080	0.00082	0.1455	0.508E 04	0.00397	69.00	0.731E-06
15	103.00	79.23	0.00078	0.00080	0.1605	0.575E 04	0.00396	70.57	0.317E-08
16	103.00	79.06	0.00074	0.00076	0.1800	0.643E 04	0.00397	70.59	-0.142E-07
17	102.82	78.91	0.00068	0.00070	0.1990	0.710E 04	0.00397	70.47	-0.956E-08
18	102.95	78.92	0.00064	0.00066	0.2178	0.776E 04	0.00398	70.39	-0.111E-07
19	102.94	78.88	0.00058	0.00059	0.2362	0.841E 04	0.00398	70.36	-0.808E-08
20	102.95	78.85	0.00061	0.00062	0.2547	0.906E 04	0.00398	70.30	0.000E 00
21	102.88	78.71	0.00054	0.00056	0.2730	0.971E 04	0.00400	70.28	0.000E 00
22	102.85	78.47	0.00054	0.00055	0.2913	0.104E 05	0.00398	70.25	-0.497E-08
23	103.32	78.36	0.00049	0.00051	0.3098	0.110E 05	0.00398	70.14	-0.642E-08
24	102.92	78.19	0.00049	0.00050	0.3277	0.116E 05	0.00398	70.12	-0.798E-07

RUN C31968-3, F=+0.004, K=1.47E-06
DATE 21968 RUN NO. 3
AMB TMP= 78.00F BASE TEMP= 80.16F G TEMP= 70.17F
BARO= 29.93IN.HG RELHUM= 0.5 TCOVER=73.92

PL NO.	TC.EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	103.75	80.51	0.00278	0.00284	0.0167	0.214E 03	0.00399	25.24	0.000E 00
2	103.79	80.54	0.00202	0.00207	0.0423	0.541E 03	0.00401	25.24	0.000E 00
3	103.93	80.96	0.00183	0.00187	0.0661	0.643E 03	0.00398	25.20	-0.694E-07
4	103.68	80.92	0.00151	0.00155	0.0939	0.113E 04	0.00401	25.16	0.239E-07
5	103.81	80.65	0.00136	0.00139	0.1099	0.141E 04	0.00401	25.33	0.457E-06
6	103.70	80.78	0.00130	0.00133	0.1259	0.169E 04	0.00397	26.50	0.106E-05
7	103.78	80.61	0.00127	0.00131	0.1382	0.198E 04	0.00404	28.34	0.134E-05
8	103.65	80.75	0.00111	0.00114	0.1471	0.230E 04	0.00403	30.33	0.149E-05
9	103.75	80.51	0.00111	0.00113	0.1524	0.264E 04	0.00407	34.16	0.158E-05
10	103.99	80.65	0.00111	0.00113	0.1565	0.301E 04	0.00403	39.32	0.143E-05
11	103.62	80.47	0.00099	0.00101	0.1582	0.343E 04	0.00403	42.81	0.147E-05
12	103.81	80.37	0.00098	0.00100	0.1567	0.389E 04	0.00403	49.12	0.149E-05
13	103.90	80.47	0.00096	0.00099	0.1521	0.443E 04	0.00403	57.62	0.146E-05
14	103.85	80.27	0.00078	0.00080	0.1467	0.506E 04	0.00402	69.21	0.751E-06
15	103.81	80.27	0.00076	0.00078	0.1621	0.572E 04	0.00401	69.37	0.000E 00
16	103.89	80.13	0.00075	0.00076	0.1814	0.639E 04	0.00401	69.78	-0.164E-07
17	103.78	79.92	0.00066	0.00068	0.2006	0.706E 04	0.00402	69.55	-0.662E-08
18	103.88	79.99	0.00063	0.00065	0.2194	0.772E 04	0.00403	69.60	-0.989E-08
19	103.83	79.89	0.00056	0.00057	0.2391	0.837E 04	0.00402	69.55	-0.670E-08
20	103.80	79.85	0.00058	0.00060	0.2567	0.901E 04	0.00402	69.48	-0.166E-08
21	103.80	79.78	0.00054	0.00056	0.2751	0.966E 04	0.00404	69.48	0.165E-08
22	103.71	79.54	0.00051	0.00052	0.2936	0.103E 05	0.00405	69.42	-0.135E-07
23	104.07	79.47	0.00055	0.00056	0.3124	0.109E 05	0.00403	69.31	-0.501E-08
24	103.89	79.30	0.00049	0.00050	0.3306	0.116E 05	0.00403	69.29	-0.712E-07

RUN CE2668-1, F=+0.006, K=1.47E-06 PASSIVE
DATE 82668 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 76.42F C TEMP=101.55F
BARO= 29.34IN.HG RELHUM= 0.5 TCOVER=55.07

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	85.14	80.22	0.00187	0.00185	0.0240	0.255E 03	0.00585	26.86	0.000E 00
2	84.47	80.30	0.00144	0.00143	0.0541	0.665E 03	0.00585	26.46	-0.334E-07
3	83.75	80.29	0.00119	0.00117	0.0828	0.102E 04	0.00585	25.21	0.000E 00
4	83.40	80.34	0.00097	0.00096	0.1106	0.136E 04	0.00589	26.81	0.673E-07
5	83.24	80.44	0.00088	0.00085	0.1264	0.165E 04	0.00583	27.09	0.470E-06
6	83.14	80.20	0.00098	0.00097	0.1569	0.203E 04	0.00583	28.32	0.114E-05
7	82.85	80.20	0.00082	0.00081	0.1722	0.239E 04	0.00586	30.35	0.142E-05
8	82.89	80.23	0.00079	0.00078	0.1836	0.278E 04	0.00588	33.08	0.153E-05
9	82.71	80.06	0.00079	0.00078	0.1910	0.320E 04	0.00585	35.66	0.159E-05
10	82.45	80.13	0.00068	0.00067	0.1966	0.367E 04	0.00587	40.91	0.155E-05
11	82.42	80.09	0.00068	0.00067	0.1985	0.419E 04	0.00586	46.17	0.157E-05
12	82.00	79.89	0.00063	0.00062	0.1970	0.479E 04	0.00586	53.10	0.154E-05
13	82.14	80.27	0.00054	0.00054	0.1912	0.546E 04	0.00586	62.54	0.154E-05
14	81.93	79.92	0.00057	0.00057	0.1940	0.627E 04	0.00583	74.57	0.794E-06
15	81.65	80.06	0.00050	0.00050	0.2046	0.714E 04	0.00580	76.46	-0.753E-08
16	81.39	79.82	0.00043	0.00043	0.2304	0.802E 04	0.00584	75.23	-0.206E-07
17	81.19	79.85	0.00035	0.00035	0.2556	0.888E 04	0.00583	76.12	-0.594E-08
18	81.12	79.78	0.00036	0.00035	0.2905	0.975E 04	0.00583	76.10	-0.109E-07
19	80.84	79.66	0.00031	0.00030	0.3254	0.106E 05	0.00593	75.33	-0.391E-08
20	80.73	79.61	0.00029	0.00029	0.3302	0.115E 05	0.00587	75.39	-0.299E-08
21	80.63	79.50	0.00025	0.00026	0.3551	0.123E 05	0.00586	75.92	-0.684E-08
22	80.52	79.47	0.00026	0.00026	0.3901	0.132E 05	0.00584	75.81	-0.820E-08
23	80.50	79.50	0.00024	0.00024	0.4049	0.140E 05	0.00574	75.69	-0.120E-07
24	80.45	79.40	0.00027	0.00026	0.4302	0.148E 05	0.00586	75.49	-0.111E-06

RUN CE2668-2, F=+0.006, K=1.47E-06 PASSIVE
DATE 82668 RUN NO. 1
AMB TMP= 77.00F BASE TEMP= 78.43F C TEMP=100.43F
BARO= 29.54IN.HG RELHUM= 0.5 TCOVER=57.35

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	85.00	79.99	0.00200	0.00200	0.0244	0.306E 03	0.00585	25.93	0.000E 00
2	84.23	79.95	0.00154	0.00153	0.0551	0.622E 03	0.00585	25.43	-0.333E-07
3	83.61	79.92	0.00127	0.00125	0.0845	0.104E 04	0.00584	25.79	0.000E 00
4	83.29	80.05	0.00107	0.00106	0.1126	0.139E 04	0.00587	25.79	0.671E-07
5	83.42	80.16	0.00094	0.00093	0.1383	0.172E 04	0.00582	27.07	0.489E-06
6	83.00	80.12	0.00095	0.00093	0.1592	0.207E 04	0.00585	28.29	0.114E-05
7	82.62	79.89	0.00088	0.00087	0.1747	0.243E 04	0.00596	30.32	0.142E-05
8	82.51	79.89	0.00085	0.00084	0.1861	0.283E 04	0.00587	33.05	0.152E-05
9	82.37	79.75	0.00081	0.00080	0.1934	0.325E 04	0.00584	36.63	0.157E-05
10	82.14	79.58	0.00075	0.00074	0.1985	0.372E 04	0.00585	40.77	0.155E-05
11	82.00	79.61	0.00073	0.00072	0.2007	0.425E 04	0.00585	45.12	0.156E-05
12	81.71	79.44	0.00068	0.00067	0.1991	0.485E 04	0.00586	53.05	0.153E-05
13	81.63	79.61	0.00060	0.00060	0.1941	0.553E 04	0.00586	63.48	0.154E-05
14	81.33	79.42	0.00060	0.00059	0.1858	0.634E 04	0.00582	74.49	0.792E-06
15	81.23	79.40	0.00052	0.00052	0.2064	0.722E 04	0.00580	76.39	-0.762E-08
16	80.84	79.30	0.00043	0.00043	0.2222	0.810E 04	0.00584	76.15	-0.205E-07
17	80.67	79.30	0.00038	0.00037	0.2576	0.898E 04	0.00585	76.34	-0.593E-08
18	80.53	79.23	0.00036	0.00035	0.2874	0.984E 04	0.00584	76.33	-0.109E-07
19	80.22	79.16	0.00031	0.00031	0.3074	0.107E 05	0.00584	75.95	-0.390E-08
20	80.14	79.06	0.00029	0.00028	0.3323	0.116E 05	0.00587	75.90	-0.297E-08
21	80.11	78.95	0.00025	0.00025	0.3571	0.124E 05	0.00565	75.84	-0.683E-08
22	80.04	78.95	0.00028	0.00028	0.3822	0.133E 05	0.00584	75.74	-0.818E-08
23	79.94	78.99	0.00025	0.00025	0.4070	0.141E 05	0.00574	75.62	-0.120E-07
24	79.97	79.02	0.00024	0.00024	0.4323	0.149E 05	0.00587	75.41	-0.111E-06

RUN CE2769-1, F=+0.006, K=1.47E-06
DATE 82769 RUN NO. 1
AMB TMP= 75.00F BASE TEMP= 76.35F C TEMP= 66.30F
BARO= 30.67IN.HG RELHUM= 0.6 TCOVER=70.45

PL NO.	TC,EFF	TT	ST	STCP	DELTA2	REENTH	F	VEL-X	K
1	97.49	77.15	0.00223	0.00228	0.0198	0.261E 03	0.00585	24.36	0.000E 00
2	97.42	77.13	0.00147	0.00151	0.0506	0.667E 03	0.00585	24.36	0.000E 00
3	97.38	77.32	0.00122	0.00125	0.0794	0.105E 04	0.00586	24.96	0.000E 00
4	97.45	77.39	0.00103	0.00105	0.1073	0.142E 04	0.00586	24.99	0.112E-06
5	97.44	77.29	0.00088	0.00090	0.1326	0.178E 04	0.00579	25.37	0.472E-06
6	97.60	77.29	0.00083	0.00085	0.1535	0.214E 04	0.00583	25.41	0.192E-05
7	97.66	77.18	0.00093	0.00095	0.1636	0.253E 04	0.00582	28.40	0.134E-05
8	97.60	77.18	0.00074	0.00076	0.1807	0.295E 04	0.00586	33.98	0.143E-05
9	97.51	76.98	0.00073	0.00074	0.1879	0.340E 04	0.00594	34.26	0.152E-05
10	97.72	77.01	0.00071	0.00073	0.1932	0.390E 04	0.00581	38.23	0.139E-05
11	97.76	77.08	0.00067	0.00069	0.1962	0.446E 04	0.00584	43.36	0.142E-05
12	97.59	76.96	0.00063	0.00064	0.1952	0.509E 04	0.00584	49.43	0.144E-05
13	98.07	77.01	0.00062	0.00063	0.1895	0.582E 04	0.00580	59.28	0.142E-05
14	97.70	76.87	0.00047	0.00048	0.1931	0.667E 04	0.00578	69.19	0.732E-06
15	97.76	76.77	0.00044	0.00045	0.2129	0.759E 04	0.00575	71.72	0.434E-08
16	97.62	76.84	0.00049	0.00050	0.2276	0.852E 04	0.00577	71.05	-0.143E-09
17	97.81	76.73	0.00038	0.00039	0.2526	0.945E 04	0.00576	71.05	0.144E-08
18	97.68	76.77	0.00033	0.00033	0.2765	0.104E 05	0.00576	71.38	-0.573E-08
19	97.69	76.73	0.00031	0.00031	0.3013	0.113E 05	0.00576	71.36	-0.582E-09
20	97.57	76.70	0.00032	0.00033	0.3257	0.122E 05	0.00579	71.05	0.346E-08
21	97.82	76.60	0.00028	0.00029	0.3499	0.131E 05	0.00577	71.38	0.286E-08
22	97.61	76.42	0.00031	0.00032	0.3742	0.140E 05	0.00575	71.05	-0.592E-08
23	97.79	76.32	0.00029	0.00030	0.3987	0.145E 05	0.00564	70.47	-0.431E-08
24	97.51	76.29	0.00025	0.00025	0.4330	0.158E 05	0.00576	70.89	-0.729E-07

APPENDIX B

PROFILE DATA

The nomenclature applicable to the profile data is listed below.

CF2	=	local $C_f/2$ from [2]
DELMOM	=	θ , in.
DELTA2	=	Δ calculated from Eq. (4), in.
DELTAT	=	δ_T , in.
DELTAV	=	δ from [2], in.
F	=	$\dot{m}''/\rho_\infty U_\infty$
H	=	δ^*/θ
K	=	local K
REENTH	=	Re_Δ calculated from Eq. (4)
REMOM	=	Re_θ
RUNT	=	identification number of heat transfer test
RUNV	=	identification number of Julien's [2] test
ST	=	local St
TBAR	=	$\bar{t}$
TGAST	=	t_∞ , ^oF
TPLATE	=	t_o , ^oF
TPLUS	=	t^+
UGAST	=	local U_∞ corresponding to the heat transfer test, fps
UPLUS	=	U^+ from [2]
UUG	=	U/U_∞ from [2]
X	=	X , in.
Y	=	Y , in.
YPLUS	=	Y^+

RUN 052568-1 , F = -0.002 , K = 0.57×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52568 1	52868 1	29.91	99.48	66.59	41.07

ST	CF2	F	K	REENTH	REMOM
0.00320	0.00343	-0.00199	0.739E-06	1008.0	913.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.043	0.048	0.580	0.570	1.387

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.55	0.293	5.00	0.248	4.53
0.0055	6.78	0.358	6.11	0.295	5.39
0.0065	8.02	0.406	6.93	0.331	6.06
0.0075	9.25	0.442	7.54	0.362	6.62
0.0085	10.49	0.476	8.13	0.392	7.17
0.0095	11.72	0.507	8.66	0.414	7.58
0.0105	12.95	0.538	9.18	0.441	9.09
0.0125	15.42	0.580	9.90	0.478	8.75
0.0145	17.89	0.615	10.51	0.522	9.55
0.0165	20.35	0.640	10.93	0.558	10.21
0.0185	22.82	0.664	11.33	0.583	10.67
0.0215	26.52	0.695	11.70	0.619	11.33
0.0245	30.22	0.703	12.01	0.642	11.75
0.0275	33.92	0.717	12.24	0.664	12.15
0.0325	40.09	0.734	12.54	0.687	12.58
0.0425	52.43	0.761	13.00	0.724	13.25
0.0525	64.77	0.777	13.27	0.748	13.70
0.0675	83.27	0.797	13.60	0.777	14.27
0.0925	114.11	0.823	14.06	0.809	14.80
0.1175	144.95	0.848	14.49	0.835	15.28
0.1425	175.79	0.869	14.83	0.857	15.69
0.1675	206.63	0.886	15.12	0.872	15.96
0.1925	237.47	0.901	15.37	0.890	16.29
0.2425	299.15	0.926	15.81	0.918	16.79
0.2925	360.83	0.944	16.12	0.937	17.14
0.3425	422.52	0.960	16.39	0.957	17.51
0.3925	484.20	0.971	16.59	0.967	17.70
0.4925	607.56	0.984	16.81	0.984	18.01
0.5925	730.92	0.991	16.92	0.992	18.15
0.6925	854.28	0.995	16.99	0.996	18.22
0.7925	977.65	0.998	17.03	1.000	18.30
0.9925	1224.37	1.000	17.07	1.000	18.30

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52568 1	52868 1	53.86	99.37	66.62	49.79

ST	CF2	F	K	REENTH	REMOM
0.00288	0.00310	-0.00195	0.570E-06	1534.0	916.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.036	0.059	0.690	0.561	1.388

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.40	0.315	5.65	0.263	5.09
0.0055	7.82	0.385	6.91	0.318	5.14
0.0065	9.24	0.440	7.90	0.357	6.90
0.0075	10.66	0.483	8.68	0.386	7.47
0.0085	12.08	0.525	9.43	0.409	7.91
0.0095	13.51	0.561	10.07	0.434	8.40
0.0105	14.93	0.591	10.61	0.465	8.99
0.0125	17.77	0.641	11.51	0.507	9.81
0.0145	20.61	0.674	12.10	0.542	10.49
0.0165	23.46	0.701	12.59	0.573	11.09
0.0185	26.30	0.722	12.97	0.597	11.54
0.0215	30.56	0.748	13.43	0.625	12.10
0.0245	34.83	0.765	13.73	0.649	12.57
0.0275	39.09	0.779	14.00	0.665	12.87
0.0325	46.20	0.797	14.31	0.691	13.36
0.0375	53.31	0.810	14.55	0.705	13.65
0.0475	67.53	0.829	14.89	0.729	14.10
0.0625	88.85	0.849	15.25	0.766	14.82
0.0875	124.39	0.872	15.66	0.793	15.35
0.1125	159.93	0.888	15.95	0.819	15.84
0.1375	195.47	0.903	16.22	0.837	16.19
0.1625	231.01	0.914	16.41	0.854	16.52
0.1875	266.55	0.923	16.58	0.872	16.87
0.2375	337.63	0.939	16.87	0.892	17.26
0.2875	408.72	0.951	17.08	0.914	17.73
0.3375	479.80	0.962	17.28	0.932	18.04
0.3875	550.88	0.972	17.45	0.947	18.33
0.4875	693.04	0.984	17.67	0.968	18.74
0.5875	835.20	0.992	17.81	0.983	19.02
0.6875	977.36	0.996	17.89	0.989	19.15
0.7875	1119.53	0.998	17.92	0.995	19.25
0.8875	1261.69	0.999	17.95	0.998	19.31
0.9875	1403.85	1.000	17.96	0.999	19.33
1.0875	1546.01	1.000	17.96	1.000	19.35

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52568 1	52868 1	66.83	99.34	66.66	61.05

ST	CF2	F	K	REENTH	REMOM
0.00275	0.00296	-0.00195	0.567E-06	1794.0	847.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.027	0.057	0.644	0.478	1.434

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.66	0.339	6.23	0.265	5.24
0.0055	9.37	0.414	7.61	0.328	6.49
0.0065	11.07	0.479	8.81	0.370	7.32
0.0075	12.77	0.530	9.75	0.407	9.05
0.0085	14.48	0.572	10.52	0.437	8.64
0.0095	16.18	0.608	11.18	0.472	9.33
0.0105	17.88	0.645	11.85	0.496	9.81
0.0115	19.59	0.674	12.40	0.516	10.21
0.0135	22.99	0.707	13.00	0.554	10.96
0.0155	26.40	0.732	13.46	0.575	11.38
0.0175	29.80	0.753	13.85	0.597	11.82
0.0205	34.91	0.776	14.26	0.628	12.43
0.0235	40.02	0.790	14.52	0.649	12.82
0.0275	46.84	0.807	14.82	0.670	13.26
0.0345	58.76	0.825	15.17	0.697	13.79
0.0445	75.79	0.845	15.54	0.722	14.29
0.0545	92.82	0.858	15.78	0.746	14.75
0.0695	118.37	0.877	16.12	0.769	15.22
0.0945	160.94	0.901	16.55	0.801	15.85
0.1195	203.52	0.919	16.89	0.829	16.39
0.1445	246.10	0.934	17.16	0.848	16.77
0.1695	288.68	0.942	17.32	0.865	17.11
0.1945	331.25	0.951	17.47	0.884	17.49
0.2445	416.41	0.964	17.73	0.907	17.95
0.2945	501.56	0.973	17.88	0.924	18.29
0.3445	586.72	0.979	17.99	0.942	18.65
0.3945	671.88	0.984	18.09	0.956	18.92
0.4945	842.19	0.991	18.21	0.975	19.30
0.5945	1012.50	0.995	18.29	0.986	19.51
0.6945	1182.81	0.998	18.34	0.995	19.68
0.7945	1353.12	1.000	18.38	0.996	19.70
0.8945	1523.43	1.000	18.38	0.999	19.76
0.9945	1693.74	1.000	18.38	1.000	19.78

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52568 1	52868 1	77.79	99.20	66.62	75.95

ST	CF2	F	K	REENTH	REMOM
0.00261	0.00299	-0.00196	0.599E-06	2057.0	776.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.020	0.053	0.580	0.339	1.505

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	9.57	0.383	7.00	0.272	5.70
0.0055	11.70	0.468	8.55	0.336	7.05
0.0065	13.83	0.530	9.69	0.380	7.96
0.0075	15.95	0.574	10.50	0.411	9.62
0.0085	18.08	0.625	11.43	0.450	9.44
0.0095	20.21	0.667	12.20	0.479	10.04
0.0105	22.33	0.694	12.69	0.501	10.51
0.0125	26.59	0.731	13.37	0.540	11.33
0.0145	30.84	0.757	13.84	0.571	11.98
0.0165	35.09	0.777	14.21	0.595	12.49
0.0195	41.47	0.797	14.57	0.621	13.02
0.0225	47.86	0.812	14.84	0.640	13.42
0.0285	60.62	0.830	15.19	0.669	14.02
0.0385	81.89	0.854	15.61	0.707	14.83
0.0485	103.16	0.871	15.93	0.728	15.27
0.0635	135.06	0.891	16.29	0.755	15.83
0.0885	188.23	0.918	16.78	0.793	16.63
0.1135	241.41	0.936	17.12	0.824	17.28
0.1385	294.58	0.950	17.37	0.850	17.82
0.1635	347.75	0.960	17.56	0.871	18.27
0.1885	400.93	0.968	17.71	0.886	18.58
0.2385	507.27	0.978	17.89	0.917	19.23
0.2885	613.62	0.985	18.02	0.939	19.70
0.3385	719.96	0.990	18.10	0.954	20.01
0.3885	826.31	0.993	18.15	0.965	20.23
0.4885	1039.00	0.997	18.22	0.981	20.57
0.5885	1251.69	0.999	18.26	0.992	20.79
0.6885	1464.39	1.000	18.28	0.996	20.89
0.7885	1677.08	1.000	18.29	0.998	20.93
0.8885	1889.77	1.000	18.29	0.999	20.95
0.9885	2102.46	1.000	18.29	1.000	20.97

RUN 051868-1 , F = -0.001 , K = 0.57 x 10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51868 1	52068 1	29.91	94.54	65.79	40.77

ST	CF2	F	K	REENTH	REMOM
0.00272	0.00270	-0.00097	0.158E-07	1291.0	1204.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.058	0.062	0.679	0.657	1.398

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.89	0.267	5.14	0.231	4.41
0.0055	5.98	0.326	6.28	0.282	5.40
0.0065	7.07	0.375	7.21	0.324	6.20
0.0075	8.16	0.412	7.92	0.348	6.66
0.0085	9.25	0.443	8.52	0.377	7.21
0.0105	11.42	0.492	9.47	0.419	8.01
0.0125	13.60	0.533	10.26	0.460	8.79
0.0145	15.77	0.562	10.81	0.499	9.55
0.0175	19.03	0.597	11.49	0.538	10.29
0.0205	22.30	0.622	11.97	0.573	10.95
0.0245	26.65	0.647	12.46	0.602	11.51
0.0295	32.09	0.669	12.87	0.631	12.06
0.0395	42.96	0.699	13.46	0.668	12.77
0.0545	59.28	0.725	13.96	0.704	13.47
0.0795	86.47	0.757	14.57	0.744	14.23
0.1045	113.66	0.798	15.16	0.774	14.80
0.1295	140.85	0.808	15.56	0.798	15.26
0.1545	168.04	0.830	15.97	0.815	15.59
0.1795	195.23	0.848	16.33	0.837	16.00
0.2295	249.62	0.878	16.90	0.869	16.63
0.2795	304.00	0.903	17.38	0.897	17.16
0.3295	358.38	0.924	17.78	0.915	17.51
0.3795	412.77	0.945	18.20	0.939	17.97
0.4795	521.53	0.968	18.62	0.964	18.43
0.5795	630.30	0.984	18.94	0.982	18.78
0.6795	739.06	0.991	19.07	0.990	18.94
0.7795	847.83	0.996	19.18	0.996	19.06
0.8795	956.59	0.999	19.23	0.998	19.08
0.9795	1065.36	1.000	19.24	0.999	19.10
1.0795	1174.13	1.000	19.24	1.000	19.13

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51868 1	52068 1	53.86	94.16	65.79	49.90

ST	CF2	F	K	REENTH	REMOM
0.00240	0.00250	-0.00097	0.586E-06	2231.0	1322.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.052	0.087	0.863	0.703	1.373

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.76	0.280	5.60	0.248	5.15
0.0055	7.05	0.342	6.84	0.294	6.12
0.0065	8.33	0.393	7.86	0.330	6.85
0.0075	9.61	0.428	8.56	0.360	7.49
0.0085	10.89	0.466	9.32	0.382	7.94
0.0105	13.45	0.543	10.85	0.425	8.83
0.0125	16.01	0.590	11.79	0.466	9.69
0.0145	18.57	0.622	12.44	0.497	10.33
0.0175	22.42	0.656	13.12	0.529	10.99
0.0225	28.82	0.692	13.85	0.570	11.85
0.0275	35.23	0.720	14.39	0.597	12.41
0.0325	41.63	0.738	14.76	0.629	13.07
0.0425	54.44	0.761	15.23	0.654	13.58
0.0525	67.25	0.779	15.59	0.678	14.09
0.0725	92.87	0.807	16.13	0.714	14.83
0.0975	124.89	0.832	16.64	0.743	15.44
0.1225	156.92	0.851	17.03	0.768	15.95
0.1475	188.94	0.867	17.33	0.790	16.41
0.1975	252.99	0.891	17.81	0.819	17.03
0.2475	317.04	0.908	18.16	0.850	17.66
0.2975	381.09	0.927	18.53	0.871	18.10
0.3475	445.14	0.939	18.77	0.893	18.56
0.3975	509.19	0.949	18.98	0.916	19.04
0.4975	637.28	0.969	19.38	0.941	19.55
0.5975	765.38	0.982	19.64	0.963	20.01
0.6975	893.48	0.990	19.79	0.978	20.32
0.7975	1021.58	0.994	19.88	0.986	20.50
0.8975	1149.67	0.997	19.94	0.993	20.63
0.9975	1277.77	0.999	19.99	0.995	20.68
1.0975	1405.87	1.000	20.00	0.996	20.71
1.1975	1533.96	1.000	20.00	0.999	20.76
1.2975	1662.06	1.000	20.00	1.000	20.78

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51868 1	52068 1	66.83	94.12	65.65	61.45

ST	CF2	F	K	REENTH	REMOM
0.00229	0.00248	-0.00098	0.570E-06	2909.0	1239.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.039	0.092	0.864	0.583	1.424

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.07	0.322	6.46	0.242	5.26
0.0055	8.65	0.393	7.90	0.279	6.07
0.0065	10.22	0.447	8.97	0.323	7.02
0.0075	11.79	0.495	9.94	0.349	7.60
0.0085	13.36	0.544	10.92	0.372	8.10
0.0105	16.50	0.598	12.01	0.422	9.18
0.0125	19.65	0.640	12.84	0.453	9.87
0.0155	24.36	0.676	13.58	0.491	10.69
0.0185	29.08	0.703	14.12	0.518	11.27
0.0235	36.94	0.729	14.64	0.553	12.04
0.0285	44.80	0.748	15.01	0.584	12.72
0.0385	60.52	0.774	15.53	0.617	13.44
0.0485	76.24	0.795	15.95	0.638	13.89
0.0735	115.53	0.830	16.66	0.680	14.82
0.0985	154.83	0.856	17.19	0.713	15.53
0.1235	194.13	0.878	17.63	0.744	16.19
0.1485	233.42	0.896	17.99	0.767	16.70
0.1985	312.02	0.922	18.52	0.806	17.55
0.2485	390.61	0.938	18.85	0.833	18.13
0.2985	469.21	0.952	19.12	0.857	18.65
0.3485	547.80	0.962	19.32	0.886	19.30
0.3985	626.39	0.971	19.49	0.907	19.75
0.4985	783.59	0.982	19.72	0.944	20.55
0.5985	940.77	0.991	19.91	0.958	20.87
0.6985	1097.96	0.996	20.00	0.978	21.29
0.7985	1255.14	0.999	20.06	0.987	21.48
0.8985	1412.33	1.000	20.08	0.993	21.61
0.9985	1569.52	1.000	20.08	0.996	21.69
1.0985	1726.71	1.000	20.08	0.998	21.72
1.1985	1883.89	1.000	20.08	1.000	21.77

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51868 1	52068 1	77.79	93.95	65.75	76.50

ST	CF2	F	K	REENTH	REMOM
0.00219	0.00251	-0.00099	0.594E-06	3337.0	1202.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.031	0.085	0.745	0.465	1.448

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	8.86	0.349	6.97	0.256	5.84
0.0055	10.82	0.427	8.52	0.294	6.70
0.0065	12.79	0.505	10.07	0.335	7.63
0.0075	14.76	0.552	11.01	0.368	8.38
0.0085	16.73	0.595	11.87	0.391	8.91
0.0105	20.66	0.651	12.99	0.440	10.04
0.0125	24.60	0.682	13.61	0.476	10.85
0.0155	30.50	0.715	14.26	0.509	11.61
0.0205	40.34	0.745	14.86	0.552	12.59
0.0255	50.18	0.764	15.24	0.581	13.24
0.0355	69.86	0.790	15.77	0.610	13.91
0.0455	89.54	0.811	16.19	0.639	14.56
0.0705	138.74	0.850	16.96	0.681	15.51
0.0955	187.94	0.878	17.53	0.728	16.58
0.1205	237.14	0.901	17.99	0.752	17.15
0.1455	286.34	0.918	18.33	0.777	17.71
0.1955	384.74	0.941	18.79	0.820	18.70
0.2455	483.14	0.959	19.14	0.866	19.74
0.2955	581.53	0.970	19.37	0.888	20.25
0.3455	679.93	0.978	19.52	0.913	20.81
0.3955	778.33	0.984	19.64	0.928	21.15
0.4955	975.13	0.992	19.80	0.956	21.80
0.5955	1171.93	0.996	19.87	0.979	22.31
0.6955	1368.72	0.998	19.92	0.986	22.48
0.7955	1565.52	0.999	19.94	0.994	22.65
0.8955	1762.32	1.000	19.95	0.996	22.71
0.9955	1959.11	1.000	19.96	0.999	22.76
1.0955	2155.91	1.000	19.96	1.000	22.79

RUN 051368-2 , F = 0 , K = 0.57×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 2	51468 1	29.91	97.69	65.55	40.87

ST	CF2	F	K	REENTH	REMOM
0.00235	0.00216	0.00000	0.156E-07	1694.0	1572.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.075	0.081	0.744	0.739	1.448

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.41	0.209	4.57	0.157	3.53
0.0055	5.27	0.256	5.59	0.228	4.43
0.0065	6.23	0.302	6.40	0.254	4.95
0.0075	7.19	0.340	7.42	0.289	5.62
0.0085	8.14	0.370	8.08	0.312	6.17
0.0105	10.06	0.427	9.32	0.358	6.96
0.0125	11.98	0.466	10.18	0.395	7.59
0.0155	14.85	0.509	11.10	0.450	8.75
0.0185	17.72	0.544	11.67	0.486	9.46
0.0225	21.56	0.576	12.58	0.529	10.29
0.0275	26.35	0.600	13.10	0.567	11.02
0.0325	31.15	0.614	13.41	0.591	11.50
0.0395	37.84	0.636	13.87	0.617	12.00
0.0475	45.51	0.651	14.21	0.642	12.50
0.0575	55.09	0.669	14.60	0.659	12.92
0.0725	69.45	0.691	15.09	0.683	13.29
0.0875	83.83	0.709	15.47	0.704	13.69
0.1075	103.00	0.730	15.92	0.726	14.12
0.1275	122.16	0.748	16.32	0.751	14.60
0.1475	141.32	0.765	16.68	0.767	14.93
0.1725	165.27	0.787	17.17	0.787	15.32
0.1975	189.22	0.804	17.55	0.804	15.65
0.2475	237.13	0.840	18.33	0.838	16.40
0.2775	265.03	0.865	18.87	0.860	16.73
0.3475	332.94	0.887	19.36	0.888	17.28
0.3975	380.84	0.912	19.90	0.910	17.71
0.4725	452.70	0.940	20.50	0.936	18.21
0.5475	524.56	0.962	21.00	0.957	18.63
0.6225	596.41	0.977	21.33	0.972	18.91
0.6975	668.27	0.985	21.50	0.984	19.15
0.7975	764.09	0.996	21.73	0.993	19.33
0.8975	859.89	0.998	21.79	0.996	19.37
0.9975	955.70	1.000	21.82	0.999	19.44
1.0975	1051.51	1.000	21.82	1.000	19.45

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 2	51468 1	53.86	97.62	66.62	50.70

ST	CF2	F	K	REENTH	REMOM
0.00201	0.00220	0.00000	0.568E-06	2911.0	1741.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.067	0.112	1.110	0.826	1.405

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.47	0.259	5.52	0.188	4.42
0.0055	6.69	0.317	6.75	0.226	5.30
0.0065	7.91	0.353	7.84	0.260	6.10
0.0075	9.12	0.408	8.71	0.285	6.67
0.0085	10.34	0.445	9.50	0.307	7.19
0.0095	11.55	0.480	10.23	0.330	7.74
0.0115	13.99	0.531	11.31	0.368	8.65
0.0145	17.64	0.576	12.27	0.420	9.87
0.0175	21.28	0.607	12.94	0.455	10.67
0.0225	27.37	0.642	13.69	0.499	11.71
0.0275	33.45	0.667	14.22	0.530	12.44
0.0375	45.61	0.699	14.90	0.561	13.17
0.0475	57.77	0.722	15.39	0.605	14.19
0.0575	69.93	0.739	15.75	0.627	14.71
0.0725	88.18	0.762	16.24	0.647	15.18
0.0925	112.50	0.783	16.69	0.678	15.91
0.1175	142.91	0.808	17.23	0.703	16.51
0.1425	173.31	0.827	17.63	0.724	16.99
0.1675	203.72	0.842	17.96	0.746	17.50
0.1925	234.12	0.856	18.25	0.760	17.84
0.2425	294.93	0.877	18.71	0.789	18.49
0.2925	355.75	0.895	19.08	0.814	19.09
0.3425	416.56	0.911	19.42	0.838	19.67
0.3925	477.37	0.923	19.68	0.860	20.19
0.4675	568.59	0.941	20.07	0.888	20.85
0.5425	659.80	0.957	20.40	0.911	21.37
0.6175	751.02	0.969	20.65	0.933	21.89
0.6925	842.24	0.978	20.85	0.947	22.23
0.7925	963.86	0.988	21.05	0.963	22.60
0.8925	1085.48	0.994	21.19	0.975	22.89
0.9925	1207.10	0.997	21.25	0.983	23.07
1.0925	1328.73	0.999	21.30	0.989	23.20
1.1925	1450.35	1.000	21.32	1.000	23.47

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 2	51468 1	66.93	97.80	66.30	63.56

ST	CF2	F	K	REENTH	REMOM
0.00192	0.00216	0.00000	0.552E-06	3459.0	1664.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.052	0.108	0.906	0.691	1.429

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.59	0.292	6.29	0.215	5.20
0.0055	8.17	0.357	7.68	0.269	6.49
0.0065	9.66	0.406	8.74	0.294	7.11
0.0075	11.15	0.442	9.52	0.321	7.76
0.0095	14.12	0.509	10.95	0.368	8.89
0.0115	17.09	0.569	12.22	0.403	9.75
0.0135	20.06	0.597	12.85	0.429	10.37
0.0165	24.52	0.631	13.58	0.469	11.31
0.0215	31.95	0.667	14.36	0.506	12.23
0.0265	39.38	0.686	14.81	0.530	12.82
0.0365	54.24	0.719	15.46	0.570	13.77
0.0465	69.11	0.740	15.92	0.592	14.31
0.0615	91.40	0.767	16.50	0.613	14.86
0.0765	113.69	0.789	16.99	0.649	15.66
0.0915	135.98	0.807	17.35	0.667	16.12
0.1165	173.14	0.832	17.90	0.692	16.74
0.1415	210.29	0.855	18.39	0.722	17.45
0.1665	247.45	0.871	18.75	0.743	17.96
0.1915	284.60	0.886	19.07	0.762	18.42
0.2415	358.91	0.909	19.57	0.799	19.32
0.2915	433.22	0.927	19.94	0.831	20.10
0.3415	507.52	0.941	20.25	0.852	20.59
0.3915	581.83	0.953	20.50	0.875	21.16
0.4665	693.29	0.965	20.77	0.911	22.03
0.5415	804.76	0.975	20.99	0.928	22.44
0.6165	916.22	0.983	21.15	0.953	23.04
0.6915	1027.69	0.990	21.30	0.964	23.31
0.7915	1176.30	0.995	21.40	0.984	23.80
0.8915	1324.91	0.998	21.46	0.989	23.91
0.9915	1473.53	0.999	21.51	0.997	24.10
1.0915	1622.14	1.000	21.52	1.000	24.18

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 2	51468 1	77.79	97.69	65.62	78.11

ST	CF2	F	K	REENTH	REMOM
0.00180	0.00219	0.00000	0.586E-06	4147.0	1648.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.041	0.104	0.807	0.588	1.453

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	8.41	0.341	7.30	0.203	5.29
0.0055	10.28	0.417	8.92	0.247	6.41
0.0065	12.15	0.480	10.26	0.284	7.39
0.0075	14.02	0.526	11.24	0.312	8.11
0.0085	15.89	0.561	11.99	0.340	8.83
0.0105	19.63	0.606	12.95	0.379	9.84
0.0125	23.37	0.635	13.57	0.409	10.62
0.0155	28.98	0.664	14.18	0.447	11.63
0.0195	36.46	0.689	14.73	0.475	12.36
0.0245	45.80	0.711	15.20	0.501	13.02
0.0345	64.50	0.739	15.79	0.539	14.00
0.0495	92.54	0.772	16.50	0.581	15.10
0.0645	120.58	0.799	17.07	0.611	15.89
0.0795	148.62	0.820	17.52	0.637	16.55
0.0995	186.01	0.844	18.04	0.666	17.31
0.1245	232.75	0.868	18.56	0.699	18.18
0.1495	279.49	0.887	18.96	0.725	18.84
0.1745	326.23	0.903	19.30	0.749	19.45
0.1995	372.96	0.916	19.57	0.765	19.89
0.2495	466.44	0.936	20.00	0.805	20.93
0.2995	559.91	0.952	20.35	0.835	21.72
0.3495	653.39	0.964	20.59	0.865	22.50
0.3995	746.86	0.972	20.76	0.895	23.26
0.4745	887.07	0.981	20.97	0.932	24.22
0.5495	1027.29	0.987	21.10	0.950	24.69
0.6245	1167.50	0.992	21.20	0.970	25.21
0.6995	1307.71	0.995	21.27	0.980	25.47
0.7995	1494.66	0.997	21.31	0.989	25.71
0.8995	1681.61	0.999	21.34	0.998	25.94
0.9995	1868.56	1.000	21.36	0.999	25.97
1.0995	2055.51	1.000	21.37	1.000	26.00

RUN 050868-1 , F = +0.001 , K = 0.57×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50868 1	51068 1	29.91	95.77	66.45	38.91

ST	CF2	F	K	REENTH	REMOM
0.00197	0.00175	0.00100	0.264E-07	1889.0	1862.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.093	0.094	0.872	0.836	1.484

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.77	0.171	4.09	0.181	3.83
0.0055	4.61	0.209	5.00	0.215	4.56
0.0065	5.45	0.247	5.90	0.251	5.33
0.0075	6.29	0.281	6.73	0.276	5.85
0.0085	7.12	0.310	7.41	0.292	6.20
0.0105	8.80	0.359	8.57	0.338	7.18
0.0135	11.31	0.420	10.04	0.384	8.15
0.0165	13.83	0.457	10.93	0.426	9.05
0.0215	18.02	0.502	12.01	0.482	10.23
0.0275	23.05	0.538	12.86	0.516	10.95
0.0355	29.75	0.569	13.60	0.553	11.73
0.0425	35.62	0.587	14.03	0.580	12.31
0.0525	44.00	0.610	14.58	0.601	12.76
0.0675	56.57	0.635	15.18	0.633	13.44
0.0975	81.71	0.671	16.04	0.671	14.24
0.1225	102.66	0.697	16.65	0.699	14.84
0.1475	123.61	0.720	17.21	0.721	15.32
0.1725	144.55	0.740	17.70	0.745	15.82
0.1975	165.51	0.759	18.14	0.757	16.07
0.2475	207.42	0.794	18.99	0.795	16.88
0.2975	249.32	0.824	19.70	0.822	17.46
0.3475	291.22	0.849	20.29	0.852	18.08
0.3975	333.12	0.874	20.89	0.875	18.59
0.4725	395.59	0.907	21.69	0.905	19.22
0.5475	458.43	0.936	22.37	0.935	19.85
0.6225	521.68	0.956	22.86	0.956	20.30
0.6975	584.54	0.975	23.30	0.968	20.55
0.7975	668.34	0.985	23.54	0.985	20.91
0.8975	752.15	0.994	23.75	0.992	21.06
0.9975	835.95	0.997	23.84	0.996	21.16
1.0975	919.76	0.999	23.89	0.999	21.21
1.1975	1003.56	1.000	23.90	1.000	21.24

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50868 1	51068 1	53.86	96.09	66.48	48.56

ST	CF2	F	K	REENTH	REMOM
0.00166	0.00182	0.00099	0.589E-06	3420.0	2079.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.083	0.137	1.092	0.918	1.425

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.80	0.209	4.89	0.164	4.21
0.0055	5.87	0.255	5.97	0.215	5.52
0.0065	6.93	0.301	7.06	0.242	6.21
0.0075	8.00	0.341	8.00	0.267	6.87
0.0085	9.07	0.380	8.90	0.284	7.29
0.0095	10.13	0.412	9.66	0.305	7.83
0.0115	12.26	0.459	10.75	0.340	8.72
0.0135	14.40	0.497	11.65	0.372	9.56
0.0165	17.60	0.537	12.60	0.406	10.43
0.0195	20.80	0.569	13.35	0.439	11.27
0.0235	25.06	0.594	13.92	0.461	11.84
0.0295	31.46	0.621	14.57	0.485	12.47
0.0375	39.99	0.648	15.18	0.522	13.40
0.0475	50.66	0.672	15.76	0.547	14.06
0.0625	66.65	0.701	16.42	0.578	14.84
0.0775	82.65	0.723	16.94	0.602	15.48
0.0925	98.65	0.740	17.34	0.624	16.05
0.1175	125.31	0.766	17.96	0.651	16.74
0.1425	151.97	0.787	18.45	0.678	17.43
0.1675	178.63	0.805	18.87	0.698	17.94
0.1925	205.30	0.820	19.22	0.716	18.39
0.2425	258.62	0.846	19.84	0.747	19.21
0.2925	311.94	0.867	20.31	0.778	19.99
0.3675	391.93	0.891	20.88	0.817	20.99
0.4425	471.92	0.910	21.32	0.845	21.71
0.5175	551.90	0.929	21.75	0.875	22.50
0.5925	631.89	0.946	22.18	0.898	23.07
0.6925	738.54	0.963	22.57	0.925	23.76
0.7925	845.19	0.979	22.95	0.951	24.43
0.8925	951.83	0.988	23.17	0.969	24.91
0.9925	1058.48	0.994	23.31	0.984	25.28
1.0925	1165.13	0.998	23.38	0.991	25.46
1.1925	1271.77	0.999	23.42	0.995	25.58
1.2925	1378.42	1.000	23.44	1.000	25.70

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50868 1	51068 1	65.83	96.19	66.52	69.02

ST	CF2	F	K	REENTH	REMOM
0.00153	0.00179	0.00101	0.587E-06	4295.0	2020.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.105	0.135	1.057	0.916	1.450

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.88	0.236	5.58	0.167	4.61
0.0055	7.19	0.289	6.82	0.194	5.35
0.0065	8.50	0.341	8.07	0.232	6.41
0.0075	9.80	0.383	9.06	0.260	7.18
0.0085	11.11	0.419	9.91	0.277	7.66
0.0105	13.72	0.487	11.51	0.317	8.75
0.0125	16.34	0.527	12.46	0.349	9.65
0.0155	20.26	0.567	13.41	0.386	10.68
0.0195	25.49	0.602	14.24	0.429	11.84
0.0255	33.33	0.633	14.97	0.459	12.68
0.0345	45.09	0.674	15.92	0.502	13.87
0.0525	68.62	0.708	16.73	0.538	14.87
0.0675	88.22	0.734	17.34	0.571	15.77
0.0925	120.91	0.769	18.17	0.605	16.74
0.1175	153.59	0.795	18.80	0.632	17.48
0.1425	186.26	0.819	19.35	0.663	18.32
0.1675	218.94	0.839	19.82	0.685	18.94
0.1925	251.62	0.855	20.21	0.709	19.62
0.2425	316.97	0.882	20.85	0.741	20.49
0.2925	382.33	0.902	21.32	0.771	21.33
0.3425	447.68	0.919	21.73	0.805	22.27
0.3925	513.04	0.934	22.05	0.832	23.01
0.4675	611.07	0.949	22.43	0.862	23.82
0.5425	709.12	0.961	22.73	0.894	24.73
0.6175	807.13	0.971	22.95	0.918	25.38
0.6925	905.17	0.980	23.16	0.935	25.87
0.7925	1035.83	0.988	23.36	0.961	26.58
0.8925	1166.55	0.995	23.51	0.976	27.00
0.9925	1297.30	0.998	23.58	0.985	27.23
1.0925	1428.01	0.999	23.61	0.993	27.46
1.1925	1558.72	1.000	23.64	0.997	27.56
1.2925	1689.43	1.000	23.64	0.999	27.62
1.3925	1820.14	1.000	23.64	1.000	27.65

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50868 1	51068 1	77.79	96.39	66.59	75.05

ST	CF2	F	K	REENTH	REMOM
0.00143	0.00183	0.00100	0.613E-06	5184.0	1990.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.052	0.134	0.930	0.671	1.475

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.43	0.312	7.30	0.193	5.79
0.0055	9.09	0.382	8.92	0.234	7.00
0.0065	10.74	0.431	10.07	0.264	7.90
0.0075	12.39	0.470	11.00	0.284	8.53
0.0085	14.04	0.509	11.90	0.303	9.08
0.0105	17.35	0.553	12.93	0.339	10.15
0.0125	20.65	0.582	13.61	0.368	11.02
0.0155	25.61	0.612	14.31	0.399	11.95
0.0205	33.87	0.644	15.05	0.429	12.85
0.0255	42.13	0.665	15.54	0.454	13.62
0.0305	50.39	0.682	15.94	0.471	14.14
0.0405	66.91	0.709	16.58	0.499	14.97
0.0505	83.44	0.730	17.08	0.520	15.60
0.0655	108.22	0.759	17.75	0.549	16.46
0.0905	149.52	0.796	18.61	0.598	17.64
0.1155	190.83	0.825	19.27	0.618	18.55
0.1405	232.13	0.848	19.81	0.649	19.45
0.1655	273.44	0.867	20.27	0.672	20.15
0.1905	314.74	0.883	20.64	0.693	20.77
0.2405	397.35	0.909	21.25	0.734	22.03
0.2905	479.96	0.929	21.71	0.769	23.07
0.3405	562.57	0.945	22.09	0.804	24.12
0.3905	645.18	0.955	22.33	0.837	25.10
0.4405	727.79	0.965	22.56	0.862	25.86
0.4905	810.40	0.972	22.73	0.886	26.56
0.5905	975.62	0.983	22.98	0.927	27.78
0.6905	1140.84	0.991	23.17	0.953	28.59
0.7905	1306.06	0.996	23.28	0.971	29.11
0.8905	1471.28	0.998	23.34	0.987	29.60
0.9905	1636.50	0.999	23.36	0.994	29.81
1.0905	1801.72	1.000	23.37	0.998	29.92
1.1905	1966.94	1.000	23.38	0.999	29.95
1.2905	2132.16	1.000	23.38	1.000	29.99

RUN 042668-1 , F = +0.002 , K = 0.57×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42668 1	42468 1	29.91	97.49	67.18	39.47

ST	CF2	F	K	REENTH	REMOM
0.00162	0.00147	0.00198	0.834E-08	2222.0	2209.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.110	0.110	0.964	0.932	1.531

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.47	0.160	4.18	0.148	3.51
0.0055	4.24	0.196	5.11	0.192	4.56
0.0065	5.01	0.232	6.04	0.224	5.31
0.0075	5.78	0.263	6.87	0.238	5.63
0.0085	6.55	0.285	7.42	0.258	6.12
0.0105	8.10	0.325	8.47	0.295	7.01
0.0135	10.41	0.381	9.93	0.346	8.22
0.0175	13.49	0.430	11.21	0.396	9.40
0.0215	16.58	0.460	12.00	0.433	10.26
0.0275	21.20	0.492	12.84	0.475	11.26
0.0345	26.60	0.515	13.44	0.506	11.99
0.0445	34.31	0.541	14.12	0.536	12.72
0.0645	49.73	0.584	15.23	0.577	13.69
0.0845	65.01	0.619	16.14	0.622	14.75
0.1145	88.28	0.644	16.79	0.647	15.34
0.1645	126.83	0.688	17.94	0.694	16.45
0.2145	165.38	0.724	18.87	0.734	17.40
0.2645	203.93	0.760	19.81	0.764	18.13
0.3145	242.49	0.791	20.63	0.793	18.81
0.3645	281.03	0.819	21.36	0.815	19.32
0.4145	319.58	0.845	22.03	0.844	20.03
0.4895	377.41	0.884	23.05	0.877	20.81
0.5895	454.51	0.919	23.98	0.911	21.60
0.6895	531.61	0.951	24.81	0.944	22.39
0.7895	608.71	0.975	25.44	0.970	23.01
0.8895	685.81	0.987	25.73	0.984	23.34
0.9895	762.91	0.995	25.94	0.992	23.53
1.0895	840.07	0.998	26.03	0.997	23.64
1.1895	917.12	1.000	26.08	0.998	23.67
1.2895	994.22	1.000	26.08	0.999	23.69
1.3895	1071.32	1.000	26.08	1.000	23.72

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42668 1	42468 1	53.86	97.66	67.18	47.80

ST	CF2	F	K	REENTH	REMOM
0.00135	0.00156	0.00198	0.565E-06	4065.0	2659.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.109	0.167	1.247	1.095	1.448

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.33	0.202	5.13	0.159	4.65
0.0055	5.29	0.247	6.26	0.195	5.70
0.0065	6.25	0.288	7.28	0.219	6.40
0.0075	7.21	0.318	8.07	0.241	7.06
0.0085	8.18	0.343	8.69	0.262	7.65
0.0105	10.10	0.397	10.06	0.289	8.45
0.0135	12.99	0.451	11.42	0.331	9.67
0.0165	15.87	0.487	12.33	0.367	10.73
0.0205	19.72	0.519	13.15	0.397	11.62
0.0255	24.53	0.550	13.94	0.424	12.42
0.0355	34.15	0.587	14.86	0.463	13.54
0.0455	43.77	0.613	15.52	0.497	14.54
0.0605	58.19	0.639	16.19	0.529	15.47
0.0755	72.62	0.664	16.82	0.549	16.06
0.0905	87.05	0.684	17.32	0.574	16.80
0.1155	111.10	0.712	18.02	0.603	17.63
0.1405	135.15	0.734	18.58	0.624	18.26
0.1905	183.24	0.771	19.53	0.664	19.42
0.2405	231.33	0.799	20.22	0.693	20.29
0.2905	279.43	0.821	20.78	0.731	21.38
0.3405	327.52	0.838	21.22	0.755	22.08
0.3905	375.62	0.856	21.67	0.774	22.65
0.4655	447.76	0.879	22.27	0.807	23.62
0.5405	519.90	0.900	22.79	0.840	24.58
0.6155	592.04	0.918	23.25	0.868	25.38
0.6905	664.18	0.934	23.66	0.886	25.92
0.7905	760.37	0.954	24.16	0.917	26.82
0.8905	856.56	0.969	24.53	0.943	27.59
0.9905	952.75	0.981	24.83	0.961	28.12
1.0905	1048.94	0.990	25.06	0.978	28.62
1.1905	1145.13	0.995	25.15	0.986	28.86
1.2905	1241.32	0.998	25.26	0.993	29.06
1.3905	1337.50	0.999	25.30	0.998	29.19
1.4905	1433.69	1.000	25.32	1.000	29.26

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42668 1	42468 1	66.83	97.86	67.18	58.69

ST	CF2	F	K	REENTH	REMOM
0.00127	0.00158	0.00196	0.557E-06	5181.0	2561.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.086	0.173	1.192	0.989	1.463

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.35	0.232	5.85	0.187	5.85
0.0055	6.54	0.284	7.15	0.217	6.80
0.0065	7.73	0.328	8.24	0.238	7.46
0.0075	8.91	0.364	9.16	0.256	8.02
0.0085	10.10	0.399	10.03	0.279	8.73
0.0105	12.48	0.450	11.32	0.303	9.50
0.0125	14.86	0.484	12.19	0.327	10.24
0.0165	19.61	0.529	13.31	0.366	11.47
0.0215	25.55	0.563	14.15	0.396	12.42
0.0265	31.50	0.586	14.74	0.420	13.16
0.0315	37.44	0.603	15.17	0.437	13.69
0.0415	49.33	0.635	15.97	0.464	14.53
0.0515	61.21	0.656	16.51	0.486	15.24
0.0665	79.04	0.692	17.15	0.514	16.12
0.0915	108.75	0.721	18.15	0.550	17.25
0.1165	138.47	0.750	18.88	0.580	18.16
0.1415	168.18	0.774	19.47	0.610	19.12
0.1665	197.90	0.795	20.01	0.627	19.65
0.1915	227.61	0.815	20.50	0.650	20.35
0.2165	257.33	0.829	20.86	0.672	21.06
0.2665	316.76	0.854	21.49	0.711	22.30
0.3165	376.18	0.875	22.01	0.735	23.04
0.3665	435.61	0.891	22.42	0.762	23.89
0.4165	495.04	0.907	22.82	0.788	24.70
0.4915	584.19	0.926	23.29	0.828	25.94
0.5665	673.33	0.942	23.69	0.853	26.72
0.6415	762.47	0.954	24.00	0.878	27.50
0.7165	851.62	0.965	24.27	0.904	28.32
0.7915	940.76	0.974	24.50	0.922	28.88
0.8915	1059.62	0.983	24.74	0.942	29.52
0.9915	1178.47	0.990	24.91	0.965	30.23
1.0915	1297.33	0.995	25.03	0.980	30.69
1.1915	1416.19	0.998	25.12	0.990	31.01
1.2915	1535.05	1.000	25.15	0.994	31.16
1.3915	1653.90	1.000	25.16	0.998	31.26
1.4915	1772.76	1.000	25.16	0.999	31.30
1.5915	1891.62	1.000	25.16	1.000	31.33

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42668 1	42468 1	77.79	97.76	67.11	72.40

ST	CF2	F	K	REENTH	REMOM
0.00118	0.00159	0.00198	0.553E-06	6502.0	2552.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.069	0.176	1.138	0.859	1.489

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.62	0.268	6.73	0.178	6.02
0.0055	8.09	0.328	8.23	0.204	6.89
0.0065	9.56	0.372	9.32	0.226	7.65
0.0075	11.03	0.403	10.10	0.244	8.26
0.0095	13.98	0.469	11.76	0.277	9.36
0.0115	16.92	0.509	12.77	0.309	10.46
0.0145	21.33	0.548	13.74	0.337	11.41
0.0195	28.69	0.586	14.68	0.371	12.55
0.0255	37.52	0.612	15.35	0.399	13.50
0.0355	52.23	0.646	16.21	0.429	14.53
0.0455	66.94	0.669	16.79	0.450	15.21
0.0605	89.01	0.701	17.58	0.481	16.28
0.0755	111.08	0.728	18.26	0.512	17.31
0.0955	140.50	0.756	18.96	0.528	17.88
0.1205	177.28	0.785	19.69	0.562	19.02
0.1455	214.06	0.809	20.28	0.588	19.90
0.1705	250.84	0.830	20.82	0.613	20.74
0.1955	287.62	0.848	21.26	0.632	21.39
0.2455	361.18	0.875	21.95	0.675	22.84
0.2955	434.74	0.898	22.53	0.712	24.10
0.3455	508.30	0.915	22.94	0.748	25.32
0.3955	581.86	0.929	23.31	0.779	26.36
0.4455	655.42	0.942	23.62	0.799	27.04
0.4955	728.98	0.951	23.84	0.828	28.00
0.5955	876.10	0.967	24.24	0.871	29.46
0.6955	1023.22	0.978	24.53	0.909	30.76
0.7955	1170.34	0.986	24.73	0.941	31.83
0.8955	1317.46	0.992	24.87	0.958	32.41
0.9955	1464.58	0.996	24.97	0.976	33.02
1.0955	1611.70	0.998	25.04	0.988	33.41
1.1955	1758.82	0.999	25.06	0.994	33.64
1.2955	1905.94	1.000	25.07	0.998	33.75
1.3955	2053.06	1.000	25.08	0.999	33.79
1.4955	2200.18	1.000	25.08	1.000	33.83

RUN 041068-1 , F = +0.004 , K = 0.57×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
41068 2	41268 1	29.91	96.57	67.32	40.34

ST	CF2	F	K	REENTH	REMOM
0.00105	0.00090	0.00395	0.453E-07	3166.0	3117.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.151	0.154	1.196	1.099	1.655

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.78	0.112	3.73	0.136	3.90
0.0055	3.40	0.137	4.56	0.159	4.57
0.0065	4.02	0.162	5.35	0.184	5.26
0.0085	5.25	0.201	6.69	0.211	6.06
0.0115	7.11	0.255	8.49	0.254	7.28
0.0165	10.20	0.310	10.34	0.311	8.91
0.0235	14.53	0.360	12.02	0.368	10.54
0.0305	18.86	0.397	13.22	0.396	11.34
0.0405	25.04	0.430	14.34	0.428	12.27
0.0555	34.31	0.458	15.28	0.466	13.37
0.0705	43.59	0.483	16.09	0.498	14.27
0.0855	52.86	0.504	16.79	0.513	14.70
0.1055	65.22	0.529	17.62	0.542	15.53
0.1355	83.77	0.560	18.68	0.572	16.40
0.1605	99.23	0.584	19.45	0.598	17.13
0.1855	114.68	0.604	20.15	0.614	17.60
0.2355	145.59	0.640	21.34	0.650	18.63
0.2855	176.51	0.674	22.47	0.679	19.47
0.3355	207.42	0.707	23.56	0.706	20.24
0.3855	238.33	0.731	24.36	0.735	21.07
0.4355	269.24	0.760	25.34	0.758	21.74
0.4855	300.15	0.790	26.33	0.786	22.54
0.5355	331.06	0.813	27.11	0.810	23.21
0.5855	361.98	0.838	27.93	0.826	23.68
0.6605	408.34	0.872	29.06	0.862	24.72
0.7355	454.71	0.902	30.07	0.891	25.55
0.8105	501.08	0.929	30.96	0.915	26.22
0.9605	593.81	0.971	32.36	0.956	27.40
1.0355	640.18	0.983	32.76	0.973	27.90
1.1355	702.01	0.993	33.11	0.985	28.24
1.2355	763.83	0.998	33.25	0.994	28.50
1.3355	825.65	0.999	33.32	0.999	28.64
1.4355	887.48	1.000	33.33	1.000	28.67

RUNT	RUNV	X	TPLATE	TGAST	UGAST
41068 2	41268 1	53.86	96.73	66.94	49.79

ST	CF2	F	K	REENTH	REMOM
0.00087	0.00106	0.00395	0.572E-06	5806.0	3678.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.144	0.228	1.471	1.316	1.511

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.73	0.158	4.85	0.124	4.66
0.0055	4.56	0.193	5.93	0.146	5.48
0.0065	5.39	0.228	7.01	0.168	6.30
0.0085	7.05	0.281	8.63	0.194	7.29
0.0125	10.36	0.357	10.97	0.237	8.89
0.0165	13.68	0.400	12.28	0.280	10.49
0.0235	19.49	0.453	13.93	0.322	12.09
0.0335	27.78	0.493	15.16	0.364	13.65
0.0435	36.07	0.523	16.06	0.387	14.52
0.0585	48.51	0.555	17.05	0.421	15.82
0.0735	60.94	0.584	17.93	0.446	16.73
0.0935	77.53	0.612	18.79	0.469	17.60
0.1185	98.26	0.645	19.81	0.500	18.77
0.1435	118.99	0.670	20.59	0.531	19.94
0.1685	139.72	0.691	21.21	0.549	20.59
0.1935	160.45	0.712	21.88	0.567	21.29
0.2185	181.18	0.726	22.29	0.590	22.16
0.2435	201.90	0.740	22.72	0.608	22.81
0.2935	243.36	0.767	23.56	0.641	24.07
0.3435	284.82	0.788	24.21	0.668	25.07
0.3935	326.28	0.807	24.77	0.691	25.94
0.4435	367.74	0.822	25.26	0.716	26.90
0.4935	409.20	0.841	25.82	0.737	27.69
0.5435	450.66	0.853	26.21	0.759	28.51
0.5935	492.12	0.866	26.61	0.776	29.12
0.6685	554.30	0.886	27.21	0.803	30.17
0.7435	616.49	0.904	27.76	0.832	31.26
0.8185	678.68	0.921	28.28	0.856	32.13
0.8935	740.87	0.936	28.76	0.881	33.10
0.9935	823.79	0.952	29.23	0.908	34.10
1.0935	906.70	0.969	29.75	0.925	34.76
1.1935	989.62	0.980	30.11	0.951	35.72
1.2935	1072.54	0.988	30.36	0.970	36.42
1.3935	1155.46	0.996	30.58	0.984	36.94
1.4935	1238.37	0.999	30.68	0.992	37.25
1.5935	1321.29	1.000	30.71	0.998	37.47
1.6935	1404.21	1.000	30.71	1.000	37.55

RUNT	RUNV	X	TPLATE	TGAST	UGAST
41068 2	41268 1	66.83	96.29	66.66	61.27

ST	CF2	F	K	REENTH	REMOM
0.00080	0.00105	0.00392	0.566E-06	7438.0	3708.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.118	0.237	1.480	1.229	1.514

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.57	0.192	5.94	0.124	5.02
0.0055	5.59	0.235	7.26	0.136	5.54
0.0065	6.61	0.267	8.24	0.160	6.53
0.0075	7.62	0.288	8.90	0.175	7.14
0.0095	9.66	0.337	10.41	0.207	8.41
0.0125	12.71	0.392	12.11	0.237	9.63
0.0175	17.79	0.440	13.57	0.277	11.28
0.0255	25.92	0.491	15.15	0.317	12.88
0.0325	33.04	0.519	16.02	0.342	13.92
0.0425	43.20	0.548	16.91	0.369	15.01
0.0525	53.37	0.572	17.66	0.385	15.67
0.0675	68.61	0.602	18.59	0.414	16.85
0.0925	94.02	0.644	19.86	0.451	18.36
0.1175	119.44	0.678	20.92	0.494	19.68
0.1425	144.85	0.707	21.83	0.501	20.39
0.1675	170.26	0.731	22.55	0.525	21.38
0.1925	195.67	0.752	23.21	0.548	22.28
0.2175	221.08	0.769	23.72	0.571	23.23
0.2425	246.50	0.784	24.21	0.588	23.94
0.2675	271.91	0.799	24.66	0.603	24.55
0.2925	297.32	0.813	25.08	0.622	25.31
0.3425	348.14	0.833	25.70	0.652	26.54
0.3925	398.97	0.854	26.36	0.681	27.72
0.4425	449.79	0.869	26.83	0.713	29.00
0.4925	500.62	0.884	27.29	0.734	29.86
0.5425	551.44	0.896	27.66	0.757	30.81
0.5925	602.26	0.908	28.02	0.775	31.52
0.6675	678.50	0.923	28.49	0.809	32.94
0.7425	754.74	0.936	28.88	0.837	34.08
0.8175	830.97	0.948	29.25	0.865	35.22
0.8925	907.21	0.958	29.57	0.885	36.03
0.9925	1008.85	0.970	29.95	0.916	37.27
1.0925	1110.50	0.981	30.26	0.942	38.31
1.1925	1212.15	0.988	30.48	0.957	38.93
1.2925	1313.80	0.994	30.67	0.973	39.60
1.3925	1415.45	0.997	30.78	0.984	40.03
1.4925	1517.09	0.999	30.83	0.992	40.36
1.5925	1618.74	1.000	30.86	0.997	40.55
1.6925	1720.39	1.000	30.86	0.998	40.60
1.7925	1822.04	1.000	30.86	1.000	40.69

RUNT	RUNV	X	TPLATE	TGAST	UGAST
41068 2	41268 1	77.79	96.08	66.45	76.16

ST	CF2	F	K	REENTH	REMOM
0.00073	0.00107	0.00393	0.586E-06	9521.0	3691.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.095	0.244	1.344	1.060	1.537

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.74	0.220	6.72	0.124	5.96
0.0055	7.02	0.269	8.22	0.152	6.81
0.0065	8.30	0.304	9.31	0.169	7.59
0.0075	9.57	0.327	10.01	0.184	8.26
0.0085	10.85	0.354	10.81	0.197	8.83
0.0105	13.40	0.399	12.21	0.217	9.72
0.0145	18.51	0.454	13.87	0.252	11.28
0.0195	24.89	0.494	15.09	0.279	12.53
0.0275	35.10	0.533	16.28	0.311	13.94
0.0345	44.03	0.558	17.05	0.331	14.83
0.0445	56.80	0.586	17.92	0.353	15.82
0.0595	75.94	0.621	18.98	0.379	17.02
0.0745	95.09	0.650	19.86	0.410	18.38
0.0945	120.62	0.694	20.90	0.429	19.26
0.1195	152.53	0.716	21.88	0.460	20.62
0.1445	184.44	0.744	22.76	0.485	21.77
0.1695	216.35	0.768	23.47	0.506	22.71
0.1945	248.25	0.790	24.15	0.536	24.07
0.2195	280.16	0.808	24.69	0.554	24.86
0.2445	312.07	0.821	25.11	0.575	25.80
0.2695	343.98	0.837	25.59	0.595	26.69
0.2945	375.89	0.851	26.02	0.612	27.47
0.3445	439.71	0.872	26.65	0.647	29.05
0.3945	503.53	0.890	27.21	0.682	30.62
0.4445	567.35	0.906	27.69	0.711	31.93
0.4945	631.17	0.919	28.09	0.741	33.24
0.5445	694.98	0.929	28.41	0.763	34.24
0.5945	758.80	0.939	28.69	0.785	35.24
0.6695	854.53	0.951	29.09	0.819	36.76
0.7445	950.26	0.961	29.39	0.852	38.23
0.8195	1045.99	0.972	29.71	0.878	39.39
0.8945	1141.72	0.978	29.90	0.901	40.44
0.9945	1269.35	0.986	30.15	0.933	41.86
1.0945	1396.99	0.992	30.31	0.953	42.76
1.1945	1524.63	0.996	30.44	0.973	43.65
1.2945	1652.26	0.998	30.52	0.988	44.33
1.3945	1779.90	0.999	30.55	0.992	44.49
1.4945	1907.54	1.000	30.57	0.995	44.65
1.5945	2035.18	1.000	30.57	0.998	44.76
1.6945	2162.81	1.000	30.57	1.000	44.86

RUN 052368-1 , F = -0.002 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52368 1	52768 1	29.91	96.70	64.29	29.93

ST	CF2	F	K	REENTH	REMOM
0.00332	0.00355	-0.00197	0.769E-08	712.0	615.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.040	0.046	0.520	0.480	1.441

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.16	0.234	3.92	0.195	3.50
0.0055	5.08	0.286	4.80	0.249	4.47
0.0065	6.00	0.336	5.63	0.283	5.08
0.0075	6.93	0.374	6.28	0.299	5.37
0.0085	7.85	0.410	6.88	0.329	5.90
0.0095	8.77	0.439	7.37	0.356	6.40
0.0115	10.62	0.494	8.29	0.400	7.19
0.0135	12.47	0.539	9.05	0.444	7.97
0.0155	14.31	0.579	9.72	0.480	8.62
0.0185	17.08	0.624	10.48	0.533	9.58
0.0215	19.85	0.649	10.90	0.574	10.31
0.0245	22.62	0.677	11.36	0.603	10.82
0.0285	26.32	0.703	11.79	0.632	11.36
0.0325	30.01	0.723	12.14	0.659	11.84
0.0375	34.63	0.739	12.41	0.688	12.36
0.0425	39.25	0.758	12.72	0.707	12.71
0.0495	45.71	0.770	12.93	0.729	13.09
0.0595	54.94	0.790	13.26	0.753	13.53
0.0745	68.79	0.815	13.68	0.782	14.05
0.0895	82.65	0.829	13.91	0.805	14.46
0.1045	96.50	0.843	14.14	0.822	14.76
0.1295	119.58	0.861	14.45	0.842	15.13
0.1545	142.67	0.883	14.81	0.869	15.61
0.1795	165.75	0.904	15.18	0.884	15.88
0.2295	211.92	0.928	15.58	0.913	16.40
0.2795	258.09	0.951	15.97	0.940	16.88
0.3295	304.26	0.963	16.17	0.954	17.14
0.3795	350.44	0.978	16.42	0.970	17.43
0.4545	419.69	0.988	16.57	0.982	17.64
0.5295	488.95	0.992	16.65	0.991	17.81
0.6045	558.20	0.994	16.69	0.994	17.85
0.6795	627.46	0.996	16.71	0.997	17.91
0.7795	719.80	0.998	16.74	0.999	17.95
0.8795	812.14	0.999	16.77	1.000	17.97
0.9795	904.48	1.000	16.78	1.000	17.97

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52368 1	52768 1	53.86	96.46	64.22	36.46

ST	CF2	F	K	REENTH	REMOM
0.00288	0.00330	-0.00192	0.739E-06	1251.0	684.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.036	0.066	0.749	0.557	1.432

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.88	0.262	4.57	0.217	4.32
0.0055	5.97	0.321	5.58	0.263	5.23
0.0065	7.05	0.372	6.48	0.289	5.77
0.0075	8.14	0.416	7.24	0.316	6.30
0.0085	9.22	0.455	7.92	0.341	6.79
0.0105	11.39	0.515	8.96	0.388	7.73
0.0125	13.56	0.566	9.84	0.425	8.48
0.0145	15.73	0.612	10.65	0.465	9.27
0.0175	18.98	0.663	11.54	0.517	10.30
0.0205	22.24	0.697	12.14	0.552	11.00
0.0235	25.49	0.728	12.67	0.588	11.71
0.0275	29.83	0.751	13.08	0.620	12.35
0.0315	34.17	0.773	13.46	0.647	12.89
0.0355	38.51	0.791	13.78	0.665	13.25
0.0425	46.10	0.810	14.10	0.697	13.88
0.0525	56.95	0.829	14.43	0.725	14.43
0.0625	67.80	0.844	14.68	0.746	14.86
0.0725	78.65	0.855	14.88	0.762	15.19
0.0825	89.50	0.864	15.04	0.776	15.47
0.1075	116.62	0.882	15.36	0.803	16.00
0.1325	143.74	0.896	15.60	0.826	16.46
0.1575	170.86	0.909	15.82	0.845	16.84
0.1825	197.98	0.919	16.00	0.858	17.10
0.2325	252.22	0.936	16.29	0.883	17.60
0.2825	306.46	0.950	16.53	0.905	18.03
0.3325	360.70	0.962	16.74	0.926	18.46
0.3825	414.54	0.970	16.89	0.939	18.72
0.4325	469.18	0.978	17.03	0.950	18.93
0.4825	523.42	0.983	17.11	0.961	19.15
0.5825	631.90	0.992	17.27	0.976	19.45
0.6825	740.38	0.998	17.37	0.986	19.64
0.7825	848.86	1.000	17.40	0.992	19.77
0.8825	957.34	1.000	17.41	0.997	19.86
0.9825	1065.82	1.000	17.41	0.998	19.88
1.0825	1174.30	1.000	17.41	1.000	19.92

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52368 1	52768 1	66.83	96.32	64.08	44.75

ST	CF2	F	K	REENTH	REMOM
0.00275	0.00322	-0.00195	0.761E-06	1404.0	641.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.028	0.061	0.688	0.480	1.477

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.92	0.278	4.91	0.248	5.13
0.0055	7.24	0.340	6.00	0.298	6.16
0.0065	8.55	0.402	7.09	0.334	6.91
0.0075	9.87	0.456	8.03	0.363	7.51
0.0085	11.18	0.507	8.94	0.383	7.93
0.0095	12.50	0.553	9.74	0.406	8.39
0.0105	13.82	0.579	10.20	0.430	8.90
0.0115	15.13	0.602	10.61	0.448	9.28
0.0125	16.45	0.629	11.09	0.470	9.72
0.0135	17.76	0.652	11.50	0.489	10.12
0.0155	20.40	0.688	12.12	0.521	10.78
0.0175	23.03	0.717	12.63	0.544	11.27
0.0205	26.97	0.749	13.20	0.585	12.11
0.0235	30.92	0.770	13.56	0.607	12.56
0.0285	37.50	0.798	14.06	0.644	13.33
0.0335	44.08	0.814	14.35	0.672	13.91
0.0385	50.66	0.830	14.62	0.689	14.27
0.0485	63.82	0.851	15.00	0.715	14.80
0.0585	76.98	0.865	15.24	0.738	15.29
0.0735	96.71	0.880	15.51	0.763	15.80
0.0885	116.45	0.895	15.77	0.785	16.24
0.1135	149.35	0.913	16.09	0.805	16.67
0.1385	182.24	0.926	16.33	0.828	17.13
0.1635	215.14	0.937	16.51	0.846	17.51
0.1885	248.03	0.946	16.67	0.865	17.91
0.2385	313.83	0.962	16.95	0.892	18.47
0.2885	379.62	0.972	17.12	0.913	18.89
0.3385	445.41	0.977	17.22	0.931	19.27
0.3885	511.20	0.984	17.35	0.945	19.56
0.4885	642.79	0.991	17.46	0.968	20.03
0.5885	774.37	0.996	17.55	0.983	20.34
0.6885	905.95	0.998	17.59	0.990	20.50
0.7885	1037.54	0.999	17.61	0.996	20.61
0.8885	1169.12	1.000	17.62	0.999	20.68
0.9885	1300.70	1.000	17.62	1.000	20.70

RUNT	RUNV	X	TPLATE	TGAST	UGAST
52368 1	52768 1	77.79	96.12	64.01	55.55

ST	CF2	F	K	REENTH	REMOM
0.00262	0.00325	-0.00194	0.808E-06	1857.0	589.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.020	0.064	0.689	0.353	1.550

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.39	0.341	5.99	0.249	5.41
0.0055	9.03	0.417	7.32	0.309	6.71
0.0065	10.67	0.485	8.51	0.344	7.49
0.0075	12.31	0.539	9.45	0.377	8.21
0.0085	13.95	0.583	10.23	0.399	8.68
0.0095	15.59	0.622	10.92	0.424	9.22
0.0115	18.88	0.675	11.84	0.473	10.30
0.0135	22.16	0.712	12.49	0.510	11.09
0.0155	25.44	0.742	13.02	0.542	11.80
0.0175	28.72	0.763	13.39	0.567	12.34
0.0195	32.01	0.779	13.66	0.585	12.74
0.0225	36.93	0.799	14.02	0.611	13.30
0.0265	43.50	0.820	14.38	0.634	13.79
0.0305	50.06	0.834	14.63	0.654	14.24
0.0345	56.63	0.846	14.84	0.669	14.57
0.0395	64.83	0.858	15.05	0.689	14.97
0.0495	81.25	0.875	15.35	0.717	15.60
0.0595	97.66	0.887	15.56	0.738	16.05
0.0745	122.28	0.904	15.85	0.758	16.50
0.0895	146.90	0.917	16.08	0.780	16.97
0.1145	187.94	0.934	16.38	0.804	17.49
0.1395	228.97	0.948	16.63	0.828	18.03
0.1645	270.01	0.957	16.80	0.849	18.48
0.1895	311.04	0.965	16.93	0.867	18.85
0.2395	393.11	0.977	17.14	0.894	19.44
0.2895	475.18	0.985	17.27	0.916	19.94
0.3395	557.25	0.989	17.35	0.937	20.39
0.3895	639.31	0.992	17.41	0.949	20.65
0.4395	721.38	0.994	17.44	0.960	20.88
0.5145	844.49	0.998	17.51	0.974	21.19
0.5895	967.59	0.999	17.53	0.983	21.38
0.6895	1131.73	1.000	17.54	0.990	21.55
0.7895	1295.87	1.000	17.54	0.996	21.66
0.8895	1460.00	1.000	17.54	0.997	21.69
0.9895	1624.14	1.000	17.54	1.000	21.76

RUN 051768-1 , F = -0.001 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51768 1	52168 1	29.91	100.91	65.12	29.97

ST	CF2	F	K	REENTH	REMOM
0.00285	0.00286	-0.00098	0.198E-07	967.0	845.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.055	0.063	0.662	0.651	1.460

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.71	0.204	3.22	0.191	3.58
0.0055	4.54	0.250	4.67	0.247	4.64
0.0065	5.36	0.295	5.52	0.281	5.27
0.0075	6.19	0.334	6.25	0.308	5.78
0.0085	7.01	0.359	6.72	0.331	6.21
0.0095	7.84	0.393	7.17	0.354	6.64
0.0115	9.49	0.436	8.15	0.390	7.31
0.0135	11.14	0.482	9.02	0.428	8.04
0.0165	13.62	0.535	10.01	0.476	8.92
0.0195	16.09	0.572	10.69	0.516	9.69
0.0225	18.57	0.603	11.27	0.548	10.28
0.0255	21.04	0.627	11.72	0.573	10.75
0.0285	23.52	0.645	12.04	0.601	11.28
0.0335	27.65	0.665	12.43	0.624	11.71
0.0385	31.77	0.685	12.82	0.646	12.11
0.0465	38.37	0.709	13.26	0.674	12.64
0.0565	46.63	0.730	13.65	0.700	13.13
0.0715	59.00	0.751	14.05	0.727	13.64
0.0865	71.38	0.769	14.37	0.749	14.06
0.1015	83.76	0.785	14.68	0.767	14.39
0.1215	100.27	0.803	15.01	0.789	14.81
0.1465	120.90	0.827	15.47	0.811	15.22
0.1965	162.15	0.863	16.13	0.850	15.95
0.2465	203.42	0.891	16.67	0.880	16.52
0.2965	244.65	0.916	17.13	0.907	17.01
0.3465	285.94	0.933	17.54	0.929	17.43
0.3965	327.21	0.955	17.85	0.946	17.74
0.4465	368.47	0.971	18.15	0.957	17.96
0.5215	430.36	0.983	18.34	0.975	18.29
0.5965	492.25	0.987	18.45	0.984	18.47
0.6965	574.74	0.993	18.56	0.989	18.55
0.7965	657.27	1.000	18.70	0.994	18.65
0.8965	739.82	1.000	18.70	0.997	18.71
0.9965	822.35	1.000	18.70	0.999	18.75
1.0965	904.87	1.000	18.70	1.000	18.75

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51768 1	52168 1	53.36	100.85	65.16	36.73

ST	CF2	F	K	REENTH	REMOM
0.00245	0.00270	-0.00099	0.784E-06	1683.0	1046.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.055	0.069	0.872	0.753	1.415

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.42	0.224	4.31	0.198	4.20
0.0055	5.40	0.273	5.26	0.251	5.32
0.0065	6.39	0.323	6.22	0.279	5.92
0.0075	7.37	0.368	7.08	0.311	6.59
0.0085	8.35	0.403	7.75	0.327	6.94
0.0095	9.33	0.429	8.26	0.353	7.47
0.0115	11.30	0.492	9.46	0.389	8.25
0.0135	13.26	0.541	10.42	0.419	8.68
0.0155	15.23	0.577	11.10	0.455	9.64
0.0185	18.18	0.619	11.92	0.493	10.44
0.0215	21.13	0.650	12.52	0.527	11.16
0.0245	24.07	0.678	13.05	0.552	11.70
0.0275	27.02	0.696	13.39	0.572	12.13
0.0315	30.95	0.715	13.76	0.598	12.66
0.0375	36.85	0.739	14.22	0.621	13.16
0.0475	46.67	0.764	14.70	0.653	13.84
0.0575	56.50	0.782	15.05	0.680	14.41
0.0675	66.32	0.796	15.32	0.694	14.70
0.0925	90.89	0.822	15.81	0.732	15.50
0.1175	115.45	0.843	16.23	0.755	16.00
0.1425	140.01	0.857	16.49	0.776	16.43
0.1675	164.58	0.869	16.72	0.794	16.82
0.1925	189.14	0.881	16.95	0.812	17.20
0.2425	238.27	0.900	17.32	0.840	17.90
0.2925	287.40	0.916	17.62	0.862	18.27
0.3425	336.53	0.929	17.89	0.884	18.72
0.3925	385.66	0.942	18.13	0.902	19.12
0.4675	459.35	0.958	18.43	0.927	19.64
0.5425	533.04	0.969	18.64	0.944	20.01
0.6175	606.73	0.979	18.83	0.960	20.34
0.6925	680.42	0.986	18.98	0.972	20.59
0.7925	778.68	0.993	19.10	0.985	20.88
0.8925	876.94	0.997	19.19	0.991	21.00
0.9925	975.19	0.999	19.22	0.996	21.10
1.0925	1073.45	0.999	19.24	0.999	21.15
1.1925	1171.70	1.000	19.24	1.000	21.19

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51768 1	52168 1	65.43	100.74	64.88	45.20

ST	CF2	F	K	REENTH	REMOM
0.00234	0.00267	-0.00100	0.767E-06	2207.0	975.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.042	0.095	0.886	0.635	1.465

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.42	0.280	5.42	0.202	4.46
0.0055	6.62	0.342	6.62	0.234	5.15
0.0065	7.82	0.399	7.72	0.274	6.04
0.0075	9.03	0.442	8.55	0.307	6.52
0.0085	10.23	0.478	9.25	0.324	7.15
0.0095	11.43	0.513	9.93	0.343	7.57
0.0115	13.84	0.559	10.82	0.382	8.44
0.0135	16.25	0.607	11.75	0.420	9.27
0.0155	18.65	0.633	12.24	0.451	9.97
0.0175	21.06	0.657	12.71	0.479	10.59
0.0195	23.47	0.679	13.13	0.503	11.10
0.0225	27.09	0.704	13.63	0.529	11.67
0.0265	31.89	0.727	14.07	0.560	12.37
0.0305	36.71	0.745	14.43	0.579	12.79
0.0365	43.93	0.765	14.81	0.605	13.35
0.0435	52.35	0.781	15.12	0.626	13.82
0.0535	64.39	0.799	15.45	0.651	14.38
0.0635	76.42	0.815	15.78	0.671	14.83
0.0885	106.51	0.841	16.29	0.709	15.66
0.1135	136.60	0.865	16.74	0.736	16.26
0.1385	166.69	0.882	17.07	0.758	16.75
0.1635	196.78	0.898	17.37	0.784	17.30
0.1885	226.87	0.911	17.63	0.799	17.65
0.2385	287.04	0.931	18.01	0.831	18.35
0.2885	347.22	0.946	18.31	0.859	18.97
0.3385	407.39	0.956	18.51	0.880	19.42
0.3885	467.57	0.965	18.67	0.902	19.92
0.4635	557.84	0.975	18.87	0.926	20.45
0.5385	648.10	0.985	19.05	0.944	20.84
0.6135	738.36	0.989	19.14	0.960	21.23
0.6885	828.63	0.992	19.20	0.971	21.44
0.7885	948.99	0.996	19.27	0.983	21.70
0.8885	1069.33	0.999	19.34	0.990	21.87
0.9885	1189.60	1.000	19.35	0.994	21.95
1.0885	1310.04	1.000	19.35	0.995	21.97
1.1885	1430.39	1.000	19.35	0.996	22.00
1.2885	1550.75	1.000	19.35	1.000	22.08

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51768 1	52168 1	77.79	100.57	64.81	56.30

ST	CF2	F	K	REENTH	REMOM
0.00222	0.00257	-0.00100	0.787E-06	2627.0	943.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.032	0.091	0.820	0.495	1.517

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.62	0.312	6.15	0.216	4.93
0.0055	8.09	0.381	7.51	0.265	6.05
0.0065	9.56	0.434	8.56	0.297	6.77
0.0075	11.03	0.473	9.32	0.323	7.37
0.0085	12.50	0.514	10.13	0.357	8.16
0.0095	13.98	0.553	10.92	0.375	8.55
0.0105	15.45	0.588	11.60	0.398	9.08
0.0125	18.39	0.636	12.54	0.436	9.94
0.0145	21.33	0.667	13.15	0.464	10.60
0.0165	24.27	0.690	13.62	0.488	11.13
0.0185	27.22	0.710	14.00	0.506	11.55
0.0215	31.63	0.730	14.39	0.530	12.10
0.0245	36.04	0.746	14.72	0.549	12.52
0.0295	43.40	0.767	15.14	0.576	13.14
0.0355	52.22	0.784	15.47	0.596	13.61
0.0455	66.93	0.806	15.90	0.622	14.20
0.0555	81.65	0.823	16.25	0.646	14.76
0.0655	96.36	0.838	16.53	0.660	15.07
0.0905	133.13	0.866	17.09	0.698	15.95
0.1155	169.91	0.888	17.52	0.728	16.62
0.1405	206.69	0.907	17.90	0.758	17.30
0.1655	243.47	0.922	18.18	0.781	17.84
0.1905	280.24	0.934	18.42	0.800	18.28
0.2405	353.80	0.952	18.78	0.839	19.17
0.2905	427.35	0.965	19.04	0.865	19.77
0.3405	500.91	0.974	19.22	0.891	20.34
0.3905	574.46	0.980	19.34	0.916	20.92
0.4655	684.79	0.988	19.48	0.938	21.41
0.5405	795.12	0.993	19.58	0.956	21.83
0.6155	905.46	0.995	19.63	0.972	22.19
0.6905	1015.79	0.998	19.70	0.983	22.46
0.7905	1162.90	0.999	19.72	0.988	22.57
0.8905	1310.01	1.000	19.73	0.995	22.72
0.9905	1457.11	1.000	19.73	0.996	22.75
1.0905	1604.22	1.000	19.73	0.997	22.77
1.1905	1751.33	1.000	19.73	1.000	22.84

RUN 051368-1 , F = +0.001 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 1	51568 1	29.91	100.74	64.64	29.92

ST	CF2	F	K	REENTH	REMOM
0.00250	0.00231	0.00000	0.114E-07	1159.0	1099.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.071	0.075	0.743	0.730	1.476

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.33	0.179	3.72	0.169	3.25
0.0055	4.07	0.218	4.54	0.196	3.76
0.0065	4.82	0.258	5.37	0.245	4.71
0.0075	5.56	0.293	6.09	0.273	5.24
0.0085	6.30	0.315	6.55	0.290	5.57
0.0105	7.78	0.367	7.63	0.334	6.42
0.0135	10.00	0.432	8.98	0.390	7.50
0.0175	12.96	0.494	10.29	0.449	8.64
0.0215	15.93	0.540	11.24	0.501	9.63
0.0255	18.89	0.565	11.76	0.538	10.33
0.0295	21.85	0.594	12.36	0.565	10.87
0.0345	25.56	0.619	12.88	0.593	11.40
0.0395	29.26	0.633	13.17	0.608	11.70
0.0495	36.67	0.662	13.78	0.642	12.34
0.0645	47.78	0.689	14.33	0.673	12.93
0.0795	58.90	0.709	14.76	0.700	13.45
0.0945	70.01	0.729	15.16	0.719	13.82
0.1145	84.83	0.746	15.52	0.744	14.30
0.1395	103.35	0.770	16.01	0.772	14.83
0.1645	121.87	0.792	16.47	0.788	15.15
0.1995	140.39	0.814	16.94	0.810	15.57
0.2395	177.43	0.848	17.63	0.839	16.13
0.2895	214.47	0.873	18.16	0.868	16.68
0.3395	251.51	0.896	18.64	0.889	17.09
0.3995	288.55	0.915	19.03	0.912	17.54
0.4645	344.12	0.944	19.65	0.941	18.09
0.5395	399.68	0.966	20.11	0.956	18.37
0.6145	455.24	0.979	20.38	0.974	18.72
0.6895	510.80	0.987	20.54	0.985	18.93
0.7645	566.37	0.992	20.63	0.991	19.06
0.8395	621.93	0.995	20.70	0.996	19.15
0.9395	696.01	0.998	20.77	0.998	19.19
1.0395	770.10	1.000	20.81	1.000	19.22

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 1	51568 1	53.86	100.67	64.60	37.23

ST	CF2	F	K	REENTH	REMOM
0.00210	0.00238	0.00000	0.794E-06	2273.0	1393.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.073	0.118	0.982	0.883	1.416

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.21	0.224	4.60	0.147	3.40
0.0055	5.15	0.274	5.62	0.204	4.73
0.0065	6.08	0.320	6.57	0.235	5.44
0.0075	7.02	0.355	7.27	0.259	5.99
0.0085	7.95	0.385	7.88	0.276	6.39
0.0105	9.83	0.449	9.21	0.316	7.32
0.0125	11.70	0.493	10.11	0.350	8.10
0.0155	14.50	0.543	11.12	0.395	9.14
0.0185	17.31	0.584	11.97	0.441	10.21
0.0225	21.06	0.620	12.70	0.477	11.03
0.0275	25.73	0.653	13.39	0.514	11.90
0.0325	30.41	0.674	13.82	0.536	12.41
0.0375	35.09	0.690	14.14	0.563	13.03
0.0475	44.45	0.716	14.68	0.597	13.81
0.0575	53.81	0.735	15.07	0.622	14.39
0.0725	67.85	0.758	15.53	0.647	14.97
0.0875	81.88	0.776	15.90	0.667	15.44
0.1075	100.60	0.794	16.28	0.691	16.00
0.1325	123.99	0.814	16.69	0.715	16.56
0.1575	147.39	0.832	17.06	0.735	17.00
0.1932	171.44	0.844	17.30	0.757	17.52
0.2325	217.57	0.864	17.71	0.787	18.21
0.2925	264.36	0.883	18.10	0.814	18.84
0.3325	311.16	0.899	18.43	0.841	19.46
0.3825	357.95	0.913	18.71	0.859	19.87
0.4575	428.13	0.931	19.08	0.885	20.47
0.5325	498.32	0.947	19.40	0.909	21.03
0.6075	568.50	0.958	19.64	0.930	21.53
0.6825	638.69	0.968	19.84	0.948	21.93
0.7825	732.27	0.982	20.14	0.965	22.33
0.8825	825.85	0.990	20.29	0.980	22.67
0.9825	919.43	0.993	20.36	0.990	22.92
1.0825	1013.01	0.997	20.43	0.994	23.01
1.1825	1106.59	1.000	20.50	0.998	23.10
1.2925	1200.17	1.000	20.50	0.999	23.12
1.3925	1293.75	1.000	20.50	1.000	23.14

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 1	51568 1	66.83	100.50	64.60	45.98

ST	CF2	F	K	REENTH	REMOM
0.00201	0.00228	0.00000	0.758E-06	2763.0	1341.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.057	0.117	0.983	0.765	1.467

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.09	0.226	4.73	0.181	4.31
0.0055	6.22	0.276	5.78	0.222	5.27
0.0065	7.35	0.326	6.83	0.254	6.04
0.0075	8.48	0.372	7.78	0.278	6.51
0.0095	10.75	0.455	9.53	0.318	7.57
0.0115	13.01	0.502	10.52	0.353	8.39
0.0145	16.40	0.568	11.89	0.405	9.64
0.0175	19.80	0.603	12.72	0.434	10.33
0.0205	23.19	0.636	13.32	0.462	10.99
0.0245	27.71	0.661	13.85	0.489	11.63
0.0285	32.24	0.684	14.32	0.515	12.25
0.0335	37.90	0.701	14.67	0.539	12.82
0.0385	43.55	0.715	14.97	0.550	13.07
0.0445	54.86	0.738	15.45	0.581	13.80
0.0635	71.83	0.764	15.99	0.607	14.44
0.0785	88.80	0.784	16.41	0.633	15.06
0.0985	111.42	0.807	16.90	0.660	15.68
0.1235	139.70	0.829	17.37	0.691	16.44
0.1485	167.98	0.850	17.80	0.709	16.85
0.1735	196.26	0.866	18.13	0.733	17.43
0.1985	224.54	0.880	18.43	0.751	17.96
0.2485	281.10	0.903	18.90	0.791	18.90
0.2985	337.66	0.921	19.29	0.817	19.42
0.3485	394.22	0.935	19.58	0.846	20.12
0.3985	450.78	0.945	19.79	0.865	20.58
0.4485	507.34	0.954	19.98	0.889	21.13
0.5235	592.18	0.965	20.22	0.912	21.68
0.5985	677.02	0.975	20.42	0.931	22.14
0.6735	761.86	0.984	20.60	0.950	22.58
0.7485	846.70	0.989	20.71	0.965	22.95
0.8235	931.54	0.994	20.82	0.975	23.18
0.8985	1016.38	0.998	20.89	0.983	23.36
0.9985	1129.50	0.999	20.93	0.991	23.57
1.0985	1242.62	1.000	20.94	0.996	23.69
1.1985	1355.74	1.000	20.94	0.998	23.73
1.2985	1468.86	1.000	20.94	0.999	23.76
1.3985	1581.98	1.000	20.94	1.000	23.78

RUNT	RUNV	X	TPLATE	TGAST	UGAST
51368 1	51568 1	77.79	100.30	64.57	57.45

ST	CF2	F	K	REENTH	REMOM
0.00188	0.00233	0.00000	0.788E-06	3478.0	1277.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.043	0.117	0.924	0.602	1.516

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.43	0.286	5.93	0.200	5.13
0.0055	7.86	0.350	7.24	0.250	6.41
0.0065	9.29	0.405	8.40	0.279	7.15
0.0075	10.72	0.451	9.34	0.300	7.70
0.0085	12.15	0.493	10.22	0.322	8.27
0.0095	13.58	0.527	10.92	0.340	8.74
0.0115	16.43	0.577	11.96	0.376	9.65
0.0135	19.29	0.610	12.64	0.401	10.30
0.0165	23.58	0.646	13.39	0.437	11.24
0.0195	27.86	0.670	13.87	0.459	11.79
0.0245	35.01	0.699	14.49	0.492	12.65
0.0295	42.15	0.716	14.87	0.509	13.08
0.0395	56.44	0.744	15.42	0.541	13.90
0.0495	70.73	0.765	15.85	0.567	14.57
0.0595	85.02	0.783	16.22	0.587	15.09
0.0745	106.46	0.806	16.69	0.610	15.69
0.0945	135.04	0.831	17.22	0.637	16.36
0.1195	170.76	0.855	17.72	0.665	17.08
0.1445	206.49	0.875	18.13	0.695	17.85
0.1695	242.21	0.892	18.49	0.718	18.45
0.1945	277.93	0.907	18.78	0.741	19.05
0.2445	349.38	0.929	19.24	0.781	20.07
0.2945	420.83	0.945	19.58	0.812	20.87
0.3445	492.28	0.957	19.84	0.839	21.57
0.3945	563.73	0.967	20.04	0.871	22.40
0.4445	635.18	0.975	20.19	0.891	22.90
0.4945	706.62	0.980	20.31	0.911	23.42
0.5445	778.07	0.985	20.41	0.930	23.90
0.5945	849.52	0.989	20.50	0.942	24.22
0.6445	920.97	0.993	20.56	0.956	24.57
0.7195	1028.14	0.997	20.65	0.969	24.90
0.7945	1135.32	0.998	20.69	0.979	25.15
0.8945	1278.21	0.999	20.70	0.988	25.40
0.9945	1421.11	1.000	20.72	0.995	25.58
1.0945	1564.01	1.000	20.72	0.998	25.65
1.1945	1706.90	1.000	20.72	0.999	25.68
1.2945	1849.80	1.000	20.72	1.000	25.70

RUN 050568-1 , F = 0 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50568 1	50768 1	29.91	98.93	65.12	30.14

ST	CF2	F	K	REENTH	REMOM
0.00209	0.00190	0.00098	0.347E-07	1489.0	1401.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.090	0.096	0.893	0.851	1.494

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.04	0.164	3.76	0.154	3.20
0.0055	3.71	0.200	4.59	0.191	3.98
0.0065	4.39	0.237	5.43	0.221	4.60
0.0075	5.06	0.271	6.21	0.249	5.19
0.0085	5.74	0.297	6.81	0.265	5.59
0.0105	7.09	0.338	7.75	0.300	6.25
0.0125	8.44	0.376	8.62	0.334	6.95
0.0155	10.47	0.424	9.74	0.380	7.91
0.0185	12.49	0.462	10.59	0.423	8.81
0.0215	14.52	0.495	11.35	0.454	9.44
0.0255	17.22	0.523	11.99	0.490	10.19
0.0295	19.92	0.540	12.39	0.521	10.85
0.0345	23.29	0.565	12.96	0.546	11.36
0.0415	28.02	0.593	13.60	0.571	11.88
0.0535	36.12	0.619	14.19	0.604	12.58
0.0685	46.25	0.644	14.77	0.628	13.07
0.0935	63.13	0.676	15.51	0.672	13.99
0.1185	80.01	0.704	16.15	0.702	14.61
0.1435	96.89	0.725	16.63	0.725	15.08
0.1685	113.77	0.747	17.14	0.742	15.45
0.1935	130.65	0.767	17.60	0.763	15.88
0.2185	147.53	0.783	17.96	0.780	16.24
0.2435	164.41	0.799	18.33	0.794	16.52
0.2935	198.16	0.828	19.00	0.824	17.14
0.3435	231.92	0.855	19.63	0.854	17.78
0.3935	265.68	0.879	20.16	0.872	18.15
0.4435	299.44	0.905	20.76	0.897	18.66
0.4935	333.20	0.924	21.20	0.918	19.11
0.5435	366.96	0.935	21.46	0.932	19.39
0.5935	400.72	0.949	21.78	0.946	19.69
0.6935	468.24	0.973	22.32	0.968	20.15
0.7935	535.75	0.986	22.62	0.984	20.49
0.8935	603.27	0.992	22.75	0.991	20.62
0.9935	670.79	0.995	22.82	0.997	20.75
1.0935	738.31	1.000	22.94	0.999	20.79
1.1935	805.82	1.000	22.94	1.000	20.81

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50568 1	50768 1	53.86	99.13	65.12	37.67

ST	CF2	F	K	REENTH	REMOM
0.00175	0.00197	0.00097	0.800E-06	2831.0	1713.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.038	0.146	1.193	0.997	1.446

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.87	0.201	4.52	0.160	4.04
0.0055	4.73	0.245	5.52	0.205	5.20
0.0065	5.59	0.281	6.34	0.231	5.86
0.0075	6.45	0.308	6.94	0.248	6.30
0.0085	7.31	0.335	7.55	0.268	6.79
0.0095	8.17	0.361	8.14	0.291	7.12
0.0115	9.89	0.413	9.31	0.314	7.97
0.0135	11.61	0.450	10.13	0.342	8.66
0.0165	14.19	0.499	11.25	0.380	9.64
0.0205	17.62	0.547	12.33	0.420	10.64
0.0255	21.92	0.587	13.22	0.459	11.65
0.0305	26.22	0.615	13.85	0.485	12.29
0.0365	31.38	0.639	14.39	0.510	12.94
0.0455	39.12	0.663	14.94	0.532	13.50
0.0575	49.43	0.686	15.46	0.564	14.30
0.0725	62.33	0.710	15.99	0.591	15.00
0.0925	79.52	0.736	16.59	0.619	15.70
0.1175	101.02	0.760	17.11	0.650	16.50
0.1425	122.51	0.782	17.61	0.674	17.09
0.1675	144.00	0.798	17.99	0.692	17.56
0.1925	165.50	0.814	18.33	0.711	18.02
0.2175	186.99	0.829	18.67	0.731	18.54
0.2425	208.49	0.843	18.99	0.744	18.88
0.2925	251.47	0.858	19.33	0.772	19.58
0.3425	294.45	0.874	19.70	0.794	20.15
0.3925	337.44	0.890	20.06	0.819	20.74
0.4425	380.43	0.904	20.37	0.837	21.23
0.4925	423.41	0.917	20.67	0.853	21.62
0.5425	466.40	0.928	20.91	0.873	22.14
0.5925	509.38	0.938	21.14	0.889	22.56
0.6925	595.36	0.956	21.53	0.917	23.26
0.7925	681.33	0.970	21.87	0.939	23.83
0.8925	767.30	0.983	22.14	0.956	24.24
0.9925	853.27	0.990	22.30	0.971	24.63
1.0925	939.24	0.996	22.44	0.984	24.95
1.1925	1025.22	0.999	22.50	0.990	25.10
1.2925	1111.19	1.000	22.53	0.995	25.23
1.7925	1541.05	1.000	22.53	1.000	25.36

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50568 1	50768 1	66.83	99.41	65.16	46.64

ST	CF2	F	K	REENTH	REMOM
0.00161	0.00194	0.00098	0.753E-06	3505.0	1685.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.070	0.146	1.076	0.876	1.466

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.75	0.212	4.82	0.150	4.08
0.0055	5.81	0.259	5.89	0.191	5.21
0.0065	6.86	0.306	6.96	0.220	6.00
0.0075	7.92	0.348	7.90	0.241	6.58
0.0085	8.97	0.383	8.69	0.261	7.10
0.0105	11.08	0.445	10.10	0.295	8.04
0.0125	13.20	0.484	10.99	0.330	9.00
0.0155	16.36	0.536	12.18	0.372	10.13
0.0195	20.59	0.582	13.21	0.414	11.29
0.0235	24.81	0.612	13.89	0.441	12.03
0.0285	30.09	0.638	14.49	0.466	12.72
0.0345	36.42	0.660	14.99	0.492	13.41
0.0465	49.09	0.692	15.72	0.525	14.32
0.0565	59.64	0.712	16.16	0.549	14.96
0.0715	75.47	0.733	16.64	0.574	15.65
0.0865	91.31	0.753	17.10	0.594	16.20
0.1015	107.15	0.772	17.53	0.616	16.81
0.1215	128.26	0.793	17.99	0.637	17.36
0.1465	154.65	0.814	18.45	0.660	18.00
0.1715	181.04	0.833	18.90	0.687	18.75
0.1965	207.43	0.850	19.29	0.705	19.22
0.2215	233.82	0.864	19.62	0.725	19.77
0.2465	260.21	0.878	19.94	0.740	20.19
0.2715	286.60	0.887	20.15	0.756	20.60
0.2965	312.99	0.896	20.34	0.773	21.08
0.3465	365.77	0.912	20.70	0.802	21.88
0.3965	418.55	0.926	21.03	0.826	22.52
0.4465	471.33	0.938	21.30	0.852	23.24
0.4965	524.11	0.947	21.51	0.865	23.60
0.5465	576.89	0.955	21.68	0.886	24.16
0.5965	629.68	0.962	21.84	0.903	24.63
0.6715	708.85	0.971	22.04	0.924	25.19
0.7465	788.02	0.979	22.23	0.945	25.77
0.8215	867.19	0.986	22.39	0.960	26.19
0.8965	946.36	0.991	22.50	0.970	26.47
0.9965	1051.92	0.995	22.59	0.983	26.80
1.0965	1157.49	0.998	22.66	0.992	27.05
1.1965	1263.05	1.000	22.69	0.996	27.16
1.2965	1368.61	1.000	22.70	0.999	27.25
1.3965	1474.17	1.000	22.70	1.000	27.27

RUNT	RUNV	X	TPLATE	TGAST	UGAST
50568 1	50768 1	77.79	99.41	65.33	59.45

ST	CF2	F	K	REENTH	REMOM
0.00151	0.00191	0.00097	0.806E-06	4364.0	1642.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.055	0.145	0.992	0.714	1.508

Y	YPLUS	UDG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.90	0.266	6.09	0.157	4.55
0.0055	7.22	0.325	7.44	0.191	5.51
0.0065	8.53	0.370	8.48	0.219	6.33
0.0075	9.84	0.405	9.27	0.241	6.97
0.0085	11.15	0.442	10.10	0.262	7.58
0.0105	13.77	0.502	11.49	0.302	8.72
0.0125	16.40	0.543	12.43	0.332	9.60
0.0155	20.33	0.587	13.44	0.371	10.71
0.0185	24.27	0.615	14.08	0.397	11.48
0.0225	29.52	0.641	14.67	0.423	12.24
0.0275	36.08	0.664	15.21	0.450	13.00
0.0375	49.20	0.696	15.92	0.484	14.00
0.0475	62.31	0.720	16.47	0.508	14.70
0.0575	75.43	0.739	16.91	0.530	15.32
0.0725	95.11	0.764	17.45	0.555	16.05
0.0925	121.35	0.792	18.13	0.593	16.85
0.1175	154.15	0.819	18.75	0.614	17.76
0.1425	186.94	0.842	19.27	0.642	18.55
0.1675	219.74	0.861	19.69	0.667	19.29
0.1925	252.54	0.876	20.05	0.692	20.02
0.2175	285.33	0.891	20.38	0.710	20.53
0.2675	350.93	0.913	20.89	0.754	21.79
0.3175	416.52	0.931	21.29	0.782	22.62
0.3675	482.12	0.945	21.62	0.814	23.53
0.4175	547.71	0.955	21.85	0.841	24.33
0.4925	646.10	0.968	22.15	0.876	25.33
0.5675	744.49	0.978	22.38	0.899	25.98
0.6425	842.88	0.985	22.54	0.924	26.72
0.7175	941.27	0.990	22.66	0.945	27.32
0.7925	1039.67	0.994	22.74	0.963	27.85
0.8925	1170.85	0.997	22.82	0.979	28.29
0.9925	1302.04	0.999	22.86	0.991	28.65
1.0925	1433.23	1.000	22.88	0.996	28.80
1.1925	1564.42	1.000	22.88	0.999	28.88
1.2925	1695.61	1.000	22.88	1.000	28.91

RUN 042268-1 , F = +0.002 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42268 1	42368 1	29.91	101.05	64.95	29.81

ST	CF2	F	K	REENTH	REMOM
0.00172	0.00164	0.00198	0.000E 00	1721.0	1642.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.196	0.111	1.042	0.917	1.547

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0030	0.00	0.000	0.00	0.000	0.00
0.0045	2.82	0.133	3.28	0.130	3.06
0.0055	3.45	0.162	4.01	0.161	3.80
0.0065	4.07	0.192	4.74	0.196	4.63
0.0075	4.70	0.221	5.47	0.217	5.12
0.0095	5.95	0.272	6.71	0.256	6.04
0.0125	7.83	0.330	8.15	0.294	6.94
0.0175	10.96	0.401	9.90	0.369	8.71
0.0225	14.10	0.445	10.98	0.425	10.02
0.0275	17.23	0.487	12.02	0.461	10.87
0.0325	20.36	0.504	12.55	0.492	11.59
0.0375	23.49	0.528	13.04	0.516	12.18
0.0425	26.63	0.543	13.41	0.533	12.56
0.0475	29.76	0.557	13.76	0.545	12.86
0.0575	36.02	0.578	14.27	0.570	13.44
0.0675	42.29	0.595	14.69	0.592	13.96
0.0825	51.69	0.617	15.23	0.616	14.53
0.1075	67.35	0.649	16.02	0.645	15.20
0.1325	83.01	0.675	16.67	0.675	15.93
0.1575	98.68	0.695	17.15	0.693	16.36
0.1925	120.61	0.723	17.85	0.726	17.13
0.2175	136.27	0.741	18.31	0.740	17.47
0.2675	167.59	0.776	19.17	0.770	18.17
0.3175	198.92	0.807	19.92	0.798	18.82
0.3675	230.25	0.831	20.52	0.825	19.46
0.4175	261.57	0.853	21.06	0.851	20.07
0.4675	292.90	0.877	21.64	0.868	20.48
0.5425	339.89	0.909	22.45	0.896	21.14
0.6175	386.88	0.934	23.06	0.921	21.73
0.6925	433.87	0.953	23.54	0.947	22.34
0.7925	496.52	0.975	24.08	0.966	22.79
0.8925	559.17	0.988	24.40	0.981	23.14
0.9925	621.82	0.995	24.57	0.988	23.32
1.0925	684.47	0.998	24.65	0.992	23.41
1.1925	747.13	1.000	24.65	0.997	23.52
1.2925	809.78	1.000	24.69	0.998	23.54
1.3925	872.43	1.000	24.69	1.000	23.59

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42268 1	42368 1	53.86	101.36	64.89	36.22

ST	CF2	F	K	REENTH	REMOM
0.00143	0.00166	0.00197	0.754E-06	3204.0	2151.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.114	0.170	1.267	1.147	1.473

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0009	0.00	0.000	0.00	0.000	0.00
0.0045	3.45	0.159	3.91	0.102	2.92
0.0055	4.21	0.195	4.78	0.139	3.96
0.0065	4.98	0.230	5.65	0.165	4.71
0.0075	5.75	0.259	6.36	0.185	5.27
0.0085	6.51	0.285	7.00	0.208	5.92
0.0105	8.04	0.328	8.06	0.232	6.62
0.0145	11.11	0.416	10.21	0.291	8.28
0.0175	13.41	0.456	11.20	0.328	9.36
0.0225	17.24	0.503	12.35	0.376	10.70
0.0275	21.07	0.541	13.28	0.411	11.70
0.0325	24.90	0.567	13.91	0.434	12.37
0.0375	28.73	0.586	14.39	0.461	13.13
0.0425	32.56	0.600	14.72	0.479	13.64
0.0525	40.22	0.622	15.26	0.505	14.40
0.0625	47.88	0.644	15.81	0.524	14.93
0.0775	59.37	0.669	16.43	0.553	15.75
0.0925	70.86	0.687	16.85	0.573	16.34
0.1075	82.35	0.701	17.21	0.591	16.83
0.1275	97.67	0.721	17.69	0.614	17.50
0.1525	116.82	0.743	18.22	0.636	18.12
0.1775	135.97	0.760	18.65	0.659	18.77
0.2025	155.12	0.775	19.02	0.671	19.12
0.2275	174.28	0.788	19.34	0.691	19.69
0.2525	193.43	0.800	19.63	0.706	20.13
0.3025	231.73	0.821	20.15	0.739	21.02
0.3525	270.03	0.838	20.57	0.760	21.64
0.4025	308.33	0.854	20.97	0.784	22.32
0.4525	346.64	0.869	21.32	0.800	22.78
0.5275	404.09	0.889	21.83	0.833	23.73
0.6025	461.54	0.907	22.26	0.855	24.36
0.7025	538.15	0.927	22.74	0.883	25.15
0.8025	614.75	0.946	23.23	0.910	25.93
0.9025	691.36	0.963	23.64	0.936	26.67
1.0025	767.96	0.977	23.97	0.954	27.18
1.1025	844.57	0.987	24.22	0.971	27.67
1.2025	921.17	0.993	24.37	0.986	28.08
1.3025	997.78	0.997	24.47	0.992	28.27
1.4025	1074.38	0.999	24.53	0.997	28.41
1.5025	1150.99	1.000	24.54	0.999	28.46
1.6025	1227.59	1.000	24.54	1.000	28.49

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42268 1	42368 1	65.83	101.60	64.74	44.36

ST	CF2	F	K	REENTH	REMOM
0.00134	0.00171	0.00196	0.753E-06	4105.0	2062.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.085	0.178	1.267	1.008	1.497

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0030	0.00	0.000	0.00	0.000	0.00
0.0045	4.29	0.203	4.91	0.136	4.22
0.0055	5.24	0.248	6.00	0.161	4.95
0.0065	6.19	0.289	6.99	0.190	5.88
0.0075	7.15	0.322	7.79	0.210	6.49
0.0095	9.05	0.374	9.06	0.243	7.50
0.0115	10.96	0.420	10.16	0.276	8.53
0.0145	13.81	0.476	11.50	0.314	9.71
0.0175	16.67	0.515	12.45	0.347	10.72
0.0215	20.48	0.548	13.25	0.370	11.44
0.0265	25.25	0.578	13.97	0.405	12.51
0.0325	30.96	0.602	14.55	0.431	13.32
0.0425	40.49	0.632	15.28	0.462	14.27
0.0525	50.02	0.655	15.84	0.496	15.03
0.0675	64.31	0.683	16.51	0.519	15.78
0.0825	78.60	0.704	17.02	0.536	16.56
0.0975	92.89	0.724	17.51	0.557	17.22
0.1175	111.94	0.747	18.07	0.590	17.92
0.1425	135.76	0.771	18.65	0.603	18.64
0.1675	159.57	0.791	19.13	0.629	19.46
0.1925	183.39	0.810	19.60	0.646	19.98
0.2425	231.02	0.837	20.24	0.687	21.25
0.2925	278.66	0.860	20.75	0.712	22.01
0.3425	326.29	0.879	21.25	0.747	23.08
0.3925	373.93	0.894	21.63	0.771	23.84
0.4425	421.56	0.908	21.97	0.794	24.54
0.4925	469.19	0.919	22.23	0.815	25.21
0.5675	540.64	0.934	22.58	0.846	26.17
0.6425	612.09	0.948	22.94	0.870	26.89
0.7175	683.54	0.959	23.19	0.892	27.59
0.7925	755.00	0.968	23.42	0.912	28.21
0.8925	850.26	0.979	23.69	0.942	29.14
0.9925	945.53	0.989	23.91	0.959	29.63
1.0925	1040.80	0.994	24.04	0.974	30.10
1.1925	1136.07	0.997	24.11	0.984	30.42
1.2925	1231.33	0.999	24.17	0.993	30.69
1.3925	1326.60	1.000	24.18	0.996	30.80
1.4925	1421.87	1.000	24.18	0.997	30.83
1.5925	1517.14	1.000	24.18	0.990	30.86
1.6925	1612.40	1.000	24.18	0.999	30.89
1.7925	1707.67	1.000	24.18	1.000	30.92

RUNT	RUNV	X	TPLATE	TGAST	UGAST
42268 1	42368 1	77.78	101.63	64.60	54.92

ST	CF2	F	K	REENTH	REMOM
0.00124	0.00165	0.00197	0.801E-06	5171.0	2109.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.074	0.181	1.177	0.914	1.524

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0030	0.00	0.000	0.00	0.000	0.00
0.0045	5.22	0.234	5.75	0.144	4.73
0.0055	6.38	0.286	7.03	0.190	5.88
0.0065	7.53	0.329	8.11	0.201	6.58
0.0075	8.69	0.361	8.90	0.220	7.19
0.0095	11.01	0.424	10.43	0.249	8.16
0.0115	13.33	0.469	11.55	0.282	9.23
0.0145	16.81	0.520	12.79	0.313	10.26
0.0185	21.44	0.560	13.79	0.349	11.42
0.0225	26.08	0.596	14.42	0.370	12.12
0.0295	34.19	0.617	15.19	0.406	13.31
0.0375	43.47	0.642	15.81	0.430	14.10
0.0475	55.06	0.669	16.47	0.454	14.87
0.0625	72.45	0.698	17.17	0.482	15.78
0.0775	89.83	0.721	17.76	0.505	16.55
0.0925	107.22	0.743	18.29	0.531	17.40
0.1125	130.40	0.767	18.89	0.552	18.07
0.1375	159.38	0.792	19.51	0.575	18.84
0.1625	188.36	0.814	20.03	0.605	19.82
0.1875	217.34	0.833	20.50	0.627	20.55
0.2375	275.29	0.862	21.23	0.665	21.78
0.2875	333.25	0.885	21.78	0.701	22.98
0.3375	391.21	0.904	22.25	0.735	24.08
0.3875	449.16	0.920	22.65	0.765	25.06
0.4375	507.12	0.933	22.96	0.792	25.95
0.4875	565.07	0.942	23.20	0.820	26.85
0.5625	652.01	0.956	23.52	0.854	27.98
0.6375	738.94	0.967	23.80	0.880	28.81
0.7125	825.88	0.975	24.00	0.908	29.74
0.7875	912.81	0.981	24.15	0.927	30.35
0.8875	1028.73	0.988	24.33	0.950	31.12
0.9875	1144.64	0.994	24.47	0.972	31.83
1.0875	1260.55	0.997	24.54	0.982	32.17
1.1875	1376.46	0.998	24.58	0.992	32.48
1.2875	1492.38	0.999	24.60	0.995	32.60
1.3875	1608.29	1.000	24.62	0.998	32.70
1.4875	1724.20	1.000	24.62	0.999	32.73
1.5875	1840.11	1.000	24.62	1.000	32.76

RUN 040568-1 , F = +0.004 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
40568 1	40268 1	29.91	90.34	94.85	31.05

ST	CF2	F	K	REENTH	REMOM
0.00118	0.00104	0.00405	0.300E-07	2298.0	2252.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.155	0.158	1.248	1.150	1.509

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.11	0.086	2.68	0.138	3.78
0.0055	2.58	0.106	3.26	0.188	5.14
0.0065	3.05	0.140	4.35	0.205	5.60
0.0075	3.52	0.175	5.44	0.222	6.05
0.0095	4.45	0.203	6.30	0.241	6.57
0.0115	5.39	0.232	7.19	0.265	7.23
0.0135	6.33	0.262	8.11	0.286	7.81
0.0175	8.21	0.313	9.70	0.327	8.92
0.0185	8.68	0.321	9.96	0.334	9.11
0.0235	11.02	0.358	11.09	0.372	10.15
0.0285	13.36	0.388	12.03	0.403	11.00
0.0335	15.71	0.412	12.78	0.432	11.77
0.0435	20.40	0.442	13.70	0.460	12.55
0.0535	25.09	0.467	14.49	0.489	13.33
0.0685	32.12	0.491	15.24	0.517	14.11
0.0835	39.16	0.519	16.09	0.544	14.82
0.0985	46.19	0.535	16.58	0.570	15.54
0.1185	55.57	0.562	17.41	0.594	16.19
0.1435	67.29	0.581	18.01	0.617	16.84
0.1685	79.02	0.603	18.71	0.634	17.29
0.1935	90.74	0.626	19.40	0.658	17.94
0.2185	102.46	0.646	20.03	0.670	18.26
0.2685	125.91	0.673	20.86	0.705	19.24
0.3185	149.35	0.704	21.83	0.732	19.95
0.3935	184.52	0.749	23.22	0.765	20.86
0.4685	219.69	0.791	24.53	0.793	21.63
0.5685	266.59	0.831	25.77	0.831	22.67
0.6685	313.48	0.873	27.08	0.862	23.51
0.7685	360.37	0.912	28.27	0.893	24.35
0.8685	407.27	0.946	29.34	0.929	25.32
0.9685	454.16	0.969	30.05	0.957	26.10
1.0685	501.05	0.984	30.51	0.974	26.55
1.1685	547.95	0.991	30.72	0.981	26.75
1.2685	594.84	0.995	30.85	0.993	27.07
1.3685	641.73	0.998	30.95	0.998	27.20
1.4685	688.63	1.000	31.01	1.000	27.26

RUNT	RUNV	X	TPLATE	TGAST	UGAST
40568 1	40268 1	53.86	79.85	94.57	38.28

ST	CF2	F	K	REENTH	REMOM
0.00097	0.00119	0.00404	0.780E-06	4095.0	2803.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.156	0.226	1.495	1.353	1.351

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.79	0.142	4.12	0.128	4.51
0.0055	3.40	0.174	5.04	0.159	5.60
0.0065	4.02	0.205	5.94	0.175	6.18
0.0075	4.64	0.228	6.60	0.197	6.93
0.0095	5.88	0.266	7.71	0.220	7.77
0.0115	7.12	0.298	8.64	0.244	8.60
0.0135	8.36	0.332	9.64	0.265	9.35
0.0175	10.83	0.377	10.93	0.301	10.61
0.0225	13.93	0.422	12.23	0.332	11.69
0.0305	18.98	0.474	13.74	0.374	13.19
0.0405	25.07	0.509	14.75	0.412	14.52
0.0505	31.26	0.533	15.44	0.433	15.28
0.0655	40.54	0.566	16.40	0.444	16.36
0.0805	49.83	0.592	17.15	0.493	17.36
0.1005	62.20	0.618	17.93	0.521	18.36
0.1205	74.58	0.642	18.61	0.535	18.86
0.1455	90.06	0.667	19.34	0.566	19.94
0.1955	121.01	0.702	20.36	0.609	21.44
0.2455	151.95	0.733	21.25	0.651	22.94
0.2955	182.90	0.759	22.00	0.667	23.52
0.3705	229.32	0.790	22.90	0.712	25.10
0.4455	275.74	0.816	23.67	0.745	26.26
0.5205	322.17	0.838	24.29	0.778	27.43
0.5955	368.59	0.857	24.85	0.800	28.17
0.6955	430.48	0.883	25.60	0.835	29.42
0.7955	492.38	0.905	26.25	0.866	30.50
0.8955	554.27	0.927	26.86	0.894	31.50
0.9955	616.17	0.946	27.41	0.918	32.33
1.0955	678.06	0.961	27.87	0.939	33.07
1.1955	739.96	0.976	28.29	0.955	33.66
1.3455	832.80	0.989	28.68	0.974	34.32
1.4955	925.65	0.996	28.89	0.991	34.90
1.6455	1018.49	0.999	28.97	0.995	35.07
1.7955	1111.33	1.000	28.99	1.000	35.23

RUNT	RUNV	X	TPLATE	TGAST	UGAST
40568 1	40268 1	66.33	79.12	94.54	47.14

ST	CF2	F	K	REENTH	REMOM
0.00089	0.00118	0.00401	0.771E-06	5216.0	2797.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.127	0.236	1.545	1.263	1.301

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.42	0.177	5.15	0.139	5.37
0.0055	4.17	0.216	6.30	0.170	6.58
0.0065	4.93	0.247	7.20	0.191	7.36
0.0075	5.69	0.274	7.96	0.209	8.06
0.0095	7.21	0.316	9.20	0.231	8.92
0.0115	8.73	0.351	10.22	0.249	9.61
0.0145	11.01	0.395	11.51	0.278	10.74
0.0185	14.04	0.447	13.03	0.307	11.86
0.0245	18.60	0.484	14.08	0.336	12.99
0.0305	23.15	0.511	14.89	0.359	13.85
0.0405	30.74	0.544	15.84	0.390	15.06
0.0555	42.13	0.583	16.96	0.424	16.36
0.0705	53.52	0.607	17.66	0.451	17.39
0.0955	72.49	0.647	18.84	0.484	18.69
0.1205	91.47	0.678	19.74	0.515	19.90
0.1455	110.45	0.707	20.59	0.542	20.93
0.1705	129.42	0.730	21.26	0.565	21.80
0.2205	167.38	0.767	22.34	0.612	23.61
0.2705	205.33	0.795	23.14	0.647	24.99
0.3205	243.29	0.819	23.83	0.670	25.85
0.3955	300.22	0.851	24.78	0.715	27.58
0.4955	376.13	0.880	25.61	0.764	29.47
0.5455	414.09	0.891	25.93	0.784	30.25
0.5955	452.04	0.902	26.26	0.806	31.11
0.6705	508.97	0.919	26.74	0.826	31.88
0.7455	565.90	0.931	27.10	0.851	32.83
0.8205	622.83	0.943	27.46	0.871	33.61
0.8955	679.76	0.954	27.78	0.889	34.29
0.9955	755.67	0.967	28.15	0.911	35.16
1.0955	831.58	0.977	28.45	0.929	35.84
1.1955	907.49	0.986	28.71	0.951	36.70
1.2955	983.39	0.992	28.87	0.967	37.31
1.3955	1059.30	0.995	28.98	0.978	37.74
1.4955	1135.21	0.997	29.04	0.987	38.08
1.5955	1211.12	0.998	29.07	0.993	38.34
1.6955	1287.03	0.999	29.09	0.998	38.51
1.7955	1362.94	1.000	29.11	1.000	38.60

RUNT	RUNV	X	TPLATE	TGAST	UGAST
40568 1	40268 1	77.79	78.22	94.30	58.76

ST	CF2	F	K	REENTH	REMOM
0.00081	0.00116	0.00403	0.771E-06	6575.0	2801.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.102	0.253	1.414	1.098	1.275

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.22	0.200	5.86	0.143	5.98
0.0055	5.16	0.244	7.16	0.171	7.15
0.0065	6.10	0.276	8.09	0.189	7.88
0.0075	7.04	0.299	8.78	0.200	8.33
0.0085	7.98	0.326	9.58	0.215	8.96
0.0105	9.86	0.374	10.99	0.241	10.05
0.0125	11.74	0.411	12.08	0.260	10.86
0.0155	14.55	0.449	13.18	0.289	12.04
0.0205	19.25	0.493	14.49	0.312	13.03
0.0285	26.76	0.536	15.73	0.341	14.20
0.0365	34.27	0.563	16.52	0.369	15.38
0.0465	43.66	0.591	17.34	0.388	16.19
0.0615	57.74	0.624	18.32	0.416	17.37
0.0815	76.52	0.662	19.45	0.442	18.45
0.1065	99.99	0.700	20.54	0.479	19.98
0.1315	123.46	0.730	21.44	0.507	21.16
0.1565	146.93	0.753	22.12	0.538	22.42
0.1815	170.40	0.772	22.66	0.555	23.14
0.2065	193.88	0.789	23.17	0.577	24.04
0.2565	240.82	0.823	24.17	0.614	25.58
0.3065	287.76	0.848	24.91	0.646	26.93
0.3565	334.71	0.869	25.51	0.676	28.19
0.4065	381.65	0.888	26.07	0.707	29.45
0.4815	452.06	0.910	26.73	0.746	31.07
0.5565	522.48	0.927	27.21	0.778	32.42
0.6315	592.89	0.940	27.61	0.810	33.77
0.7065	663.31	0.953	27.98	0.840	35.03
0.7815	733.72	0.964	28.30	0.862	35.93
0.8815	827.61	0.975	28.62	0.897	37.37
0.9815	921.50	0.984	28.88	0.925	38.54
1.0815	1015.38	0.989	29.04	0.946	39.44
1.1815	1109.27	0.994	29.18	0.963	40.16
1.2815	1203.16	0.998	29.29	0.976	40.70
1.3815	1297.04	0.999	29.34	0.987	41.15
1.4815	1390.93	1.000	29.36	0.996	41.51
1.5815	1484.82	1.000	29.36	1.000	41.69

RUN 012468-1 , F = +0.006 , K = 0.77×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
12468 1	120867 1	29.96	73.65	92.04	30.74

ST	CF2	F	K	REENTH	REMOM
0.00072	0.00060	0.00616	0.000E 00	3051.0	2793.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.193	0.211	1.427	1.293	1.617

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	1.60	0.052	2.12	0.072	2.44
0.0055	1.95	0.063	2.59	0.089	3.02
0.0065	2.31	0.087	3.54	0.104	3.53
0.0075	2.66	0.113	4.60	0.115	3.92
0.0085	3.01	0.137	5.55	0.129	4.37
0.0105	3.72	0.181	7.40	0.149	5.07
0.0145	5.14	0.213	8.71	0.195	6.29
0.0195	6.92	0.241	9.83	0.238	8.09
0.0295	10.46	0.300	12.24	0.308	10.46
0.0395	14.01	0.334	13.64	0.346	11.74
0.0495	17.56	0.361	14.75	0.391	12.96
0.0695	24.65	0.398	16.26	0.406	13.79
0.0845	29.97	0.424	17.30	0.444	15.07
0.0995	35.29	0.445	18.16	0.451	15.64
0.1195	42.38	0.467	19.06	0.474	16.09
0.1445	51.25	0.488	19.92	0.513	17.43
0.1695	60.12	0.511	20.87	0.536	18.20
0.2195	77.85	0.556	22.70	0.570	19.35
0.2695	95.59	0.595	24.29	0.605	20.57
0.3445	122.19	0.636	25.96	0.639	21.72
0.4445	157.66	0.700	28.56	0.696	23.63
0.5445	193.13	0.750	30.61	0.741	25.16
0.6445	228.59	0.795	32.47	0.779	26.44
0.7445	264.06	0.836	34.12	0.819	27.78
0.8445	299.53	0.880	35.93	0.852	28.93
0.9445	335.00	0.915	37.36	0.889	30.20
1.0445	370.47	0.945	38.57	0.918	31.16
1.1445	423.67	0.979	39.97	0.957	32.49
1.3945	494.61	0.997	40.71	0.995	33.45
1.5945	565.54	1.000	40.82	1.000	33.96

RUNT	RUNV	X	TPLATE	TGAST	UGAST
12468 1	120867 1	53.97	73.40	92.34	37.66

ST	CF2	F	K	REENTH	REMOM
0.00063	0.00090	0.00621	0.788E-06	5698.0	3386.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.191	0.321	1.813	1.573	1.365

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.39	0.137	4.58	0.073	3.49
0.0055	2.93	0.158	5.60	0.090	4.28
0.0065	3.46	0.191	6.37	0.104	4.97
0.0075	3.99	0.207	6.90	0.115	5.50
0.0095	5.05	0.235	7.84	0.136	6.46
0.0135	7.18	0.287	9.57	0.170	8.12
0.0175	9.31	0.326	10.86	0.203	9.68
0.0215	11.44	0.355	11.83	0.231	10.99
0.0275	14.63	0.389	12.95	0.256	12.21
0.0375	19.95	0.433	14.45	0.291	13.86
0.0515	27.40	0.473	15.75	0.330	15.69
0.0765	40.70	0.519	17.31	0.370	17.61
0.1015	54.00	0.557	18.57	0.412	19.61
0.1265	67.30	0.591	19.72	0.439	20.91
0.1765	93.90	0.641	21.37	0.481	22.91
0.2265	120.50	0.676	22.52	0.519	24.74
0.3015	160.40	0.719	23.98	0.572	27.26
0.4015	213.60	0.760	25.35	0.625	29.77
0.5015	266.81	0.798	26.59	0.662	31.51
0.6015	320.01	0.823	27.42	0.698	33.24
0.7015	373.21	0.851	28.36	0.740	35.24
0.8015	426.41	0.872	29.06	0.769	36.62
0.9015	479.61	0.892	29.72	0.800	38.10
1.0015	532.81	0.914	30.45	0.829	39.48
1.1015	586.02	0.933	31.09	0.855	40.70
1.2015	639.22	0.950	31.66	0.882	41.99
1.3015	692.42	0.963	32.11	0.909	43.29
1.4015	745.62	0.975	32.51	0.931	44.33
1.5015	798.82	0.985	32.85	0.951	45.28
1.6015	852.02	0.992	33.06	0.965	45.98
1.7015	905.23	0.996	33.21	0.982	46.75
1.8015	958.43	0.998	33.26	0.989	47.10
1.9015	1011.63	1.000	33.33	0.996	47.45
2.0015	1064.83	1.000	33.33	1.000	47.62

RUNT	RUNV	X	TPLATE	TGAST	UGAST
12468 1	120867 1	66.77	73.02	92.58	46.60

ST	CF2	F	K	REENTH	REMOM
0.00058	0.00082	0.00622	0.769E-06	7107.0	3381.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.154	0.324	1.752	1.452	1.323

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.93	0.127	4.43	0.075	3.68
0.0055	3.45	0.155	5.42	0.085	4.38
0.0065	4.08	0.183	6.39	0.103	5.08
0.0075	4.71	0.204	7.13	0.117	5.78
0.0085	5.34	0.222	7.77	0.129	6.40
0.0095	5.96	0.242	8.45	0.138	6.83
0.0115	7.22	0.278	9.71	0.158	7.80
0.0155	9.73	0.336	11.74	0.190	9.37
0.0255	16.01	0.410	14.32	0.243	12.00
0.0355	22.29	0.452	15.80	0.280	13.83
0.0455	28.57	0.486	16.98	0.301	14.88
0.0605	37.99	0.521	18.19	0.330	16.28
0.0755	47.41	0.550	19.22	0.351	17.33
0.0955	59.96	0.582	20.34	0.377	18.64
0.1205	75.66	0.619	21.61	0.408	20.12
0.1455	91.36	0.649	22.66	0.436	21.52
0.1705	107.05	0.674	23.53	0.461	22.74
0.2205	138.45	0.719	25.12	0.503	24.83
0.2705	169.84	0.755	26.37	0.542	26.75
0.3205	201.24	0.782	27.30	0.567	27.97
0.3955	248.33	0.817	28.52	0.616	30.42
0.4955	311.12	0.849	29.66	0.671	33.11
0.5955	373.91	0.876	30.58	0.715	35.29
0.6955	436.70	0.897	31.34	0.745	36.77
0.7955	499.48	0.916	31.98	0.785	38.77
0.8955	562.27	0.932	32.54	0.817	40.34
0.9955	625.06	0.945	33.01	0.847	41.81
1.0955	687.85	0.957	33.44	0.872	43.03
1.1955	750.64	0.969	33.83	0.901	44.51
1.2955	813.43	0.979	34.18	0.923	45.55
1.3955	876.22	0.986	34.43	0.946	46.68
1.4955	939.00	0.992	34.64	0.965	47.63
1.5955	1001.79	0.996	34.77	0.977	48.24
1.6955	1064.58	0.998	34.86	0.986	48.68
1.7955	1127.37	0.999	34.90	0.993	49.02
1.8955	1190.16	1.000	34.92	0.995	49.11
1.9955	1252.95	1.000	34.92	1.000	49.37

RUNT	RUNV	X	TPLATE	TGAST	UGAST
12468 1	120867 1	77.79	72.40	92.92	57.86

ST	CF2	F	K	REENTH	REMOM
0.00053	0.00086	0.00627	0.793E-06	8859.0	3368.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.124	0.326	1.648	1.259	1.286

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.59	0.161	5.45	0.078	4.31
0.0055	4.39	0.197	6.71	0.100	5.52
0.0065	5.19	0.230	7.94	0.112	6.18
0.0075	5.98	0.256	8.73	0.122	6.74
0.0085	6.78	0.277	9.46	0.129	7.11
0.0095	7.58	0.298	10.17	0.142	7.86
0.0105	8.37	0.315	10.73	0.154	8.51
0.0115	9.17	0.327	11.16	0.166	9.17
0.0135	10.77	0.352	12.01	0.181	10.01
0.0175	13.96	0.396	13.52	0.206	11.41
0.0235	18.74	0.436	14.86	0.233	12.91
0.0325	25.92	0.476	16.24	0.262	14.49
0.0375	29.91	0.495	16.87	0.277	15.34
0.0525	41.87	0.535	18.25	0.314	17.39
0.0725	57.82	0.580	19.77	0.338	18.70
0.0975	77.76	0.624	21.28	0.373	20.65
0.1225	97.70	0.660	22.52	0.402	22.24
0.1475	117.63	0.691	23.55	0.427	23.64
0.1725	137.57	0.715	24.35	0.454	25.13
0.2225	177.45	0.760	25.90	0.490	27.09
0.2725	217.32	0.794	27.06	0.528	29.23
0.3225	257.20	0.823	28.05	0.565	31.28
0.3975	317.01	0.857	29.23	0.603	33.32
0.4975	394.76	0.891	30.37	0.665	36.77
0.5975	476.52	0.914	31.16	0.712	39.37
0.6975	556.27	0.934	31.84	0.755	41.79
0.7975	636.02	0.948	32.33	0.801	44.29
0.8975	715.77	0.960	32.73	0.836	46.24
0.9975	795.52	0.970	33.08	0.864	47.82
1.0975	875.27	0.979	33.40	0.895	49.49
1.1975	955.03	0.986	33.63	0.923	51.07
1.2975	1034.78	0.992	33.82	0.945	52.27
1.3975	1114.53	0.995	33.92	0.963	53.29
1.4975	1194.28	0.998	34.02	0.977	54.03
1.5975	1274.03	0.999	34.07	0.987	54.59
1.6975	1353.78	1.000	34.09	0.993	54.96
1.7975	1433.54	1.000	34.10	0.997	55.15
1.8975	1513.29	1.000	34.10	1.000	55.33

RUN 080668-1 , F = -0.002 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	13.78	102.01	66.17	24.90

ST	CF2	F	K	REENTH	REMOM
0.00370	0.00353	-0.00200	0.201E-08	543.0	656.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.052	0.043	0.525	0.481	1.468

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.40	0.186	3.13	0.231	3.70
0.0055	4.15	0.227	3.83	0.289	4.64
0.0065	4.91	0.269	4.52	0.321	5.15
0.0075	5.67	0.309	5.21	0.350	5.61
0.0085	6.42	0.346	5.83	0.372	5.97
0.0095	7.18	0.371	6.25	0.396	6.35
0.0105	7.93	0.386	6.50	0.415	6.66
0.0125	9.44	0.437	7.36	0.452	7.27
0.0145	10.95	0.473	7.96	0.486	7.81
0.0165	12.46	0.513	8.64	0.515	8.27
0.0185	13.98	0.539	9.08	0.544	8.73
0.0205	15.49	0.571	9.61	0.573	9.20
0.0235	17.75	0.600	10.10	0.602	9.66
0.0265	20.02	0.621	10.45	0.629	10.10
0.0295	22.29	0.646	10.87	0.650	10.44
0.0325	24.55	0.658	11.08	0.671	10.78
0.0365	27.57	0.672	11.31	0.693	11.12
0.0405	30.60	0.689	11.59	0.707	11.36
0.0455	34.37	0.708	11.92	0.726	11.65
0.0555	41.93	0.735	12.37	0.754	12.10
0.0655	49.48	0.749	12.60	0.774	12.43
0.0855	64.59	0.775	13.04	0.806	12.94
0.1055	79.70	0.792	13.33	0.828	13.30
0.1255	94.81	0.808	13.60	0.849	13.63
0.1655	125.03	0.837	14.09	0.878	14.09
0.2205	166.58	0.872	14.68	0.909	14.59
0.2705	204.35	0.903	15.20	0.931	14.95
0.3705	279.90	0.949	15.98	0.963	15.46
0.4705	355.44	0.987	16.60	0.984	15.81
0.5705	430.99	0.998	16.79	0.995	15.98
0.6705	506.53	1.000	16.83	1.000	16.06

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	29.67	102.18	66.24	29.91

ST	CF2	F	K	REENTH	REMOM
0.00308	0.00340	-0.00199	0.141E-05	811.0	600.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.039	0.053	0.595	0.503	1.450

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.01	0.228	3.91	0.187	3.56
0.0055	4.90	0.279	4.78	0.244	4.64
0.0065	5.79	0.319	5.47	0.273	5.19
0.0075	6.68	0.351	6.03	0.299	5.67
0.0085	7.57	0.387	6.64	0.335	6.36
0.0095	8.46	0.418	7.18	0.359	6.82
0.0115	10.24	0.473	8.11	0.406	7.72
0.0135	12.02	0.535	9.18	0.443	8.41
0.0155	13.80	0.574	9.84	0.472	8.98
0.0175	15.58	0.608	10.43	0.499	9.49
0.0205	18.25	0.653	11.21	0.547	10.40
0.0235	20.92	0.686	11.76	0.581	11.05
0.0265	23.60	0.711	12.19	0.609	11.58
0.0295	26.27	0.732	12.56	0.629	11.96
0.0335	29.83	0.758	13.00	0.658	12.51
0.0375	33.39	0.777	13.33	0.678	12.89
0.0425	37.84	0.791	13.57	0.704	13.39
0.0485	43.18	0.808	13.85	0.720	13.68
0.0555	49.42	0.820	14.06	0.742	14.10
0.0655	58.32	0.833	14.28	0.760	14.44
0.0805	71.68	0.850	14.57	0.786	14.94
0.1055	93.93	0.868	14.89	0.812	15.43
0.1555	138.45	0.894	15.33	0.852	16.20
0.2055	182.97	0.914	15.67	0.880	16.73
0.2555	227.49	0.927	15.89	0.902	17.15
0.3055	272.01	0.946	16.22	0.921	17.50
0.4055	361.05	0.971	16.65	0.955	18.14
0.5055	450.09	0.990	16.99	0.979	18.60
0.6055	539.12	0.997	17.09	0.992	18.86
0.7055	628.16	0.999	17.13	0.998	18.97
0.8055	717.20	1.000	17.15	1.000	19.01

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	37.69	102.21	66.17	36.65

ST	CF2	F	K	REENTH	REMOM
0.00275	0.00330	-0.00200	0.142E-05	963.0	486.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.026	0.051	0.553	0.422	1.520

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.84	0.260	4.53	0.184	3.85
0.0055	5.91	0.318	5.53	0.240	5.03
0.0065	6.99	0.367	6.39	0.270	5.66
0.0075	8.06	0.404	7.04	0.301	6.30
0.0085	9.14	0.442	7.69	0.329	6.90
0.0095	10.21	0.479	8.34	0.352	7.38
0.0105	11.29	0.511	8.90	0.371	7.78
0.0115	12.36	0.544	9.47	0.394	8.26
0.0125	13.44	0.573	9.98	0.412	8.64
0.0135	14.51	0.597	10.40	0.432	9.06
0.0155	16.66	0.643	11.19	0.470	9.84
0.0175	18.81	0.674	11.73	0.505	10.58
0.0195	20.96	0.707	12.30	0.535	11.20
0.0215	23.11	0.734	12.77	0.561	11.76
0.0235	25.26	0.757	13.17	0.580	12.16
0.0255	27.42	0.773	13.45	0.605	12.68
0.0275	29.57	0.786	13.69	0.625	13.10
0.0295	31.72	0.799	13.90	0.643	13.46
0.0325	34.94	0.812	14.13	0.661	13.84
0.0365	39.24	0.826	14.39	0.686	14.37
0.0415	44.62	0.842	14.67	0.708	14.83
0.0485	52.14	0.860	14.98	0.737	15.43
0.0585	62.89	0.876	15.25	0.762	15.95
0.0685	73.64	0.888	15.45	0.778	16.29
0.0835	89.77	0.902	15.70	0.801	16.78
0.1035	111.27	0.915	15.92	0.830	17.38
0.1285	138.15	0.928	16.15	0.845	17.70
0.1785	191.91	0.945	16.44	0.876	18.35
0.2285	245.66	0.955	16.62	0.902	18.89
0.2785	299.42	0.967	16.84	0.922	19.32
0.3535	380.05	0.981	17.08	0.949	19.88
0.4535	487.56	0.993	17.29	0.976	20.45
0.5535	595.07	0.998	17.37	0.990	20.75
0.6535	702.58	1.000	17.40	0.997	20.89
0.7535	810.09	1.000	17.41	1.000	20.95

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	45.64	102.56	66.48	46.93

ST	CF2	F	K	REENTH	REMOM
0.00245	0.00323	-0.00201	0.153E-05	1056.0	392.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.016	0.044	0.468	0.315	1.642

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.12	0.293	5.16	0.209	4.87
0.0055	7.48	0.358	6.30	0.253	5.89
0.0065	8.84	0.423	7.45	0.287	6.68
0.0075	10.20	0.464	8.16	0.323	7.52
0.0085	11.56	0.507	8.93	0.349	8.12
0.0095	12.93	0.545	9.59	0.373	8.67
0.0105	14.29	0.594	10.44	0.394	9.16
0.0125	17.01	0.651	11.45	0.439	10.20
0.0145	19.73	0.698	12.28	0.482	11.22
0.0165	22.45	0.732	12.89	0.519	12.07
0.0185	25.17	0.764	13.44	0.545	12.69
0.0205	27.89	0.785	13.81	0.575	13.38
0.0235	31.97	0.816	14.36	0.611	14.22
0.0285	38.78	0.846	14.89	0.662	15.40
0.0335	45.58	0.873	15.36	0.693	16.12
0.0385	52.38	0.891	15.69	0.721	16.78
0.0435	59.18	0.902	15.87	0.739	17.19
0.0485	65.99	0.909	16.00	0.758	17.63
0.0535	72.79	0.915	16.10	0.773	17.99
0.0635	86.40	0.925	16.28	0.795	18.50
0.0735	100.00	0.934	16.43	0.811	18.86
0.0935	127.21	0.946	16.64	0.836	19.46
0.1185	161.23	0.956	16.82	0.856	19.91
0.1435	195.24	0.964	16.96	0.878	20.42
0.1685	229.25	0.969	17.06	0.891	20.74
0.1935	263.27	0.975	17.15	0.905	21.05
0.2185	297.28	0.979	17.22	0.919	21.38
0.2685	365.31	0.985	17.33	0.938	21.83
0.3185	433.34	0.990	17.43	0.957	22.26
0.3685	501.37	0.994	17.49	0.969	22.55
0.4185	569.39	0.996	17.52	0.982	22.84
0.4685	637.42	0.998	17.56	0.990	23.04
0.5685	773.48	1.000	17.60	0.997	23.20
0.6685	909.53	1.000	17.60	1.000	23.26

RUN 080668-1 , F = -0.002 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	49.63	102.59	66.48	54.88

ST	CF2	F	K	REENTH	REMOM
0.00235	0.00310	-0.00201	0.151E-05	1073.0	349.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.012	0.038	0.420	0.243	1.731

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.01	0.316	5.67	0.229	5.44
0.0055	8.57	0.386	6.93	0.291	6.91
0.0065	10.13	0.456	8.19	0.330	7.83
0.0075	11.69	0.499	8.96	0.359	8.51
0.0085	13.25	0.540	9.70	0.385	9.14
0.0095	14.81	0.603	10.82	0.413	9.80
0.0105	16.37	0.637	11.44	0.439	10.41
0.0115	17.93	0.667	11.98	0.462	10.98
0.0125	19.48	0.691	12.40	0.480	11.41
0.0145	22.60	0.734	13.18	0.522	12.40
0.0165	25.72	0.772	13.87	0.556	13.20
0.0185	28.84	0.800	14.37	0.586	13.92
0.0205	31.95	0.820	14.73	0.615	14.60
0.0225	35.07	0.838	15.05	0.641	15.22
0.0245	38.19	0.854	15.33	0.656	15.58
0.0275	42.86	0.872	15.66	0.682	16.19
0.0305	47.54	0.887	15.94	0.704	16.72
0.0335	52.22	0.898	16.13	0.723	17.17
0.0385	60.01	0.912	16.37	0.749	17.79
0.0435	67.80	0.922	16.56	0.768	18.24
0.0535	83.39	0.935	16.79	0.795	18.88
0.0635	98.98	0.944	16.96	0.814	19.33
0.0735	114.56	0.950	17.07	0.833	19.77
0.0885	137.94	0.958	17.21	0.850	20.18
0.1135	176.91	0.967	17.38	0.871	20.68
0.1385	215.88	0.974	17.49	0.890	21.13
0.1635	254.85	0.979	17.59	0.904	21.45
0.1885	293.81	0.983	17.66	0.917	21.77
0.2385	371.75	0.989	17.77	0.940	22.32
0.2885	449.68	0.994	17.85	0.961	22.80
0.3385	527.62	0.997	17.90	0.975	23.14
0.3885	605.55	0.998	17.93	0.985	23.40
0.4385	683.49	0.999	17.95	0.993	23.58
0.5385	839.36	1.000	17.96	1.000	23.74

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	61.77	102.76	66.48	67.73

ST	CF2	F	K	REENTH	REMOM
0.00230	0.00315	-0.00199	0.510E-08	1116.0	421.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.012	0.032	0.360	0.185	1.713

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	8.73	0.347	6.19	0.246	6.02
0.0055	10.67	0.424	7.56	0.301	7.36
0.0065	12.60	0.482	8.60	0.339	8.28
0.0075	14.54	0.530	9.44	0.377	9.21
0.0085	16.48	0.579	10.32	0.405	9.91
0.0095	18.42	0.617	11.00	0.434	10.60
0.0105	20.36	0.649	11.57	0.456	11.16
0.0125	24.24	0.699	12.46	0.499	12.20
0.0145	28.12	0.732	13.04	0.539	13.18
0.0165	32.00	0.758	13.50	0.572	13.99
0.0185	35.87	0.781	13.91	0.602	14.71
0.0205	39.75	0.798	14.22	0.627	15.32
0.0255	49.45	0.833	14.84	0.677	16.55
0.0305	59.14	0.857	15.28	0.715	17.48
0.0355	68.84	0.875	15.59	0.741	18.11
0.0405	78.53	0.889	15.84	0.765	18.70
0.0455	88.23	0.900	16.03	0.780	19.07
0.0555	107.62	0.919	16.37	0.808	19.75
0.0655	127.01	0.933	16.62	0.830	20.28
0.0755	146.40	0.944	16.82	0.846	20.68
0.0855	165.79	0.953	16.99	0.861	21.06
0.1105	214.27	0.970	17.28	0.889	21.73
0.1355	262.75	0.980	17.45	0.908	22.20
0.1605	311.23	0.986	17.57	0.924	22.60
0.1855	359.70	0.990	17.64	0.936	22.88
0.2105	408.18	0.993	17.69	0.947	23.16
0.2605	505.14	0.996	17.74	0.965	23.61
0.3105	602.09	0.998	17.78	0.981	23.98
0.3605	699.05	0.999	17.80	0.990	24.21
0.4105	796.00	1.000	17.81	0.995	24.33
0.4605	892.96	1.000	17.82	0.999	24.43
0.5605	1086.87	1.000	17.82	1.000	24.45

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	69.70	102.39	66.41	67.82

ST	CF2	F	K	REENTH	REMOM
0.00309	0.00330	-0.00198	0.111E-07	1293.0	661.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.019	0.037	0.385	0.229	1.542

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	8.95	0.368	6.40	0.294	5.48
0.0055	10.93	0.449	7.82	0.345	6.42
0.0065	12.92	0.516	8.98	0.391	7.28
0.0075	14.91	0.567	9.87	0.426	7.94
0.0085	16.90	0.609	10.60	0.456	8.50
0.0095	18.88	0.641	11.15	0.480	8.96
0.0105	20.87	0.666	11.60	0.503	9.39
0.0115	22.86	0.683	11.89	0.524	9.77
0.0135	26.84	0.706	12.29	0.561	10.46
0.0155	30.81	0.725	12.61	0.587	10.95
0.0185	36.78	0.746	12.98	0.619	11.54
0.0215	42.74	0.761	13.24	0.642	11.97
0.0255	50.69	0.777	13.52	0.666	12.42
0.0305	60.63	0.792	13.78	0.687	12.81
0.0355	70.57	0.804	14.00	0.706	13.17
0.0455	90.45	0.827	14.39	0.737	13.75
0.0555	110.33	0.846	14.72	0.759	14.16
0.0655	130.20	0.863	15.02	0.781	14.56
0.0755	150.08	0.879	15.31	0.798	14.88
0.0855	169.96	0.894	15.56	0.813	15.17
0.1105	219.66	0.924	16.09	0.849	15.84
0.1355	269.35	0.948	16.50	0.879	16.40
0.1605	319.05	0.966	16.81	0.902	16.83
0.1855	368.74	0.978	17.02	0.925	17.26
0.2105	418.44	0.985	17.16	0.940	17.53
0.2355	468.14	0.991	17.26	0.955	17.80
0.2855	567.53	0.996	17.33	0.973	18.15
0.3355	666.92	0.998	17.37	0.983	18.33
0.3855	766.31	0.998	17.38	0.990	18.47
0.4355	865.70	0.999	17.39	0.996	18.58
0.4855	965.10	1.000	17.40	0.999	18.63
0.5355	1064.49	1.000	17.41	1.000	18.65

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80668 1	80768 1	85.78	103.07	67.18	67.65

ST	CF2	F	K	REENTH	REMOM
0.00288	0.00290	-0.00198	0.995E-09	1675.0	1130.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.033	0.049	0.420	0.349	1.462

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	8.34	0.341	6.33	0.263	4.93
0.0055	10.20	0.417	7.74	0.354	6.63
0.0065	12.05	0.475	8.81	0.400	7.49
0.0075	13.91	0.519	9.64	0.431	8.07
0.0085	15.76	0.563	10.45	0.461	8.64
0.0095	17.61	0.593	11.01	0.490	9.18
0.0115	21.32	0.631	11.71	0.527	9.86
0.0135	25.03	0.656	12.18	0.559	10.48
0.0155	28.74	0.675	12.54	0.585	10.96
0.0175	32.45	0.692	12.84	0.603	11.29
0.0205	38.01	0.708	13.14	0.624	11.68
0.0255	47.28	0.727	13.50	0.650	12.17
0.0305	56.55	0.741	13.76	0.666	12.48
0.0405	75.09	0.762	14.14	0.693	12.98
0.0505	93.63	0.779	14.46	0.712	13.34
0.0605	112.17	0.794	14.74	0.727	13.61
0.0805	149.25	0.820	15.23	0.757	14.17
0.1055	195.60	0.846	15.72	0.785	14.70
0.1305	241.95	0.870	16.15	0.807	15.11
0.1555	288.31	0.891	16.54	0.832	15.58
0.1805	334.66	0.910	16.89	0.854	16.00
0.2305	427.36	0.942	17.50	0.896	16.78
0.2805	520.06	0.968	17.98	0.932	17.47
0.3305	612.77	0.986	18.31	0.960	17.99
0.3805	705.47	0.995	18.47	0.982	18.39
0.4305	798.17	0.998	18.54	0.993	18.61
0.4805	890.87	0.999	18.56	0.997	18.68
0.5805	1076.28	1.000	18.57	1.000	18.73

RUN 080368-1 , F = -0.001 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	13.78	105.53	67.15	24.77

ST	CF2	F	K	REENTH	REMOM
0.00335	0.00272	-0.00100	0.260E-07	619.0	779.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.062	0.049	0.565	0.526	1.515

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.96	0.155	2.98	0.180	2.82
0.0055	3.62	0.190	3.64	0.234	3.55
0.0065	4.28	0.224	4.30	0.270	4.22
0.0075	4.94	0.259	4.96	0.301	4.70
0.0085	5.60	0.292	5.41	0.316	4.93
0.0095	6.26	0.308	5.91	0.342	5.35
0.0105	6.92	0.346	6.63	0.359	5.60
0.0125	8.24	0.390	7.48	0.399	6.23
0.0145	9.55	0.428	8.20	0.427	6.68
0.0165	10.87	0.463	8.87	0.466	7.28
0.0185	12.19	0.485	9.29	0.494	7.72
0.0205	13.51	0.516	9.90	0.521	8.14
0.0225	14.92	0.533	10.23	0.544	8.49
0.0255	16.80	0.558	10.71	0.571	8.91
0.0305	20.09	0.598	11.47	0.610	9.53
0.0355	23.39	0.626	11.99	0.641	10.01
0.0405	26.68	0.644	12.36	0.661	10.33
0.0455	29.98	0.654	12.54	0.677	10.57
0.0555	36.55	0.678	13.01	0.709	11.06
0.0655	43.15	0.698	13.39	0.729	11.40
0.0755	49.74	0.708	13.58	0.745	11.65
0.0955	62.92	0.740	14.19	0.778	12.16
0.1205	79.39	0.756	14.50	0.806	12.59
0.1455	95.86	0.783	15.01	0.829	12.96
0.1705	112.33	0.797	15.27	0.848	13.25
0.1955	128.80	0.816	15.64	0.866	13.54
0.2205	145.27	0.836	16.02	0.883	13.75
0.2705	178.21	0.866	16.61	0.906	14.16
0.3205	211.15	0.898	17.22	0.927	14.48
0.3705	244.09	0.930	17.84	0.945	14.76
0.4205	277.03	0.955	18.31	0.961	15.02
0.4705	309.97	0.975	18.69	0.974	15.22
0.5705	375.85	0.995	19.08	0.991	15.48
0.6705	441.73	1.000	19.17	0.998	15.60
0.7705	507.61	1.000	19.17	1.000	15.62

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	29.67	105.60	67.15	30.17

ST	CF2	F	K	REENTH	REMOM
0.00265	0.00280	-0.00098	0.141E-05	1048.0	780.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.051	0.068	0.670	0.643	1.439

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.66	0.220	4.15	0.162	3.23
0.0055	4.48	0.269	5.08	0.203	4.05
0.0065	5.29	0.307	5.81	0.238	4.76
0.0075	6.11	0.342	6.46	0.260	5.19
0.0085	6.92	0.375	7.09	0.284	5.67
0.0095	7.73	0.402	7.60	0.310	6.19
0.0105	8.55	0.431	8.14	0.336	6.71
0.0115	9.36	0.458	8.66	0.347	6.94
0.0135	10.99	0.509	9.62	0.382	7.64
0.0155	12.62	0.549	10.37	0.416	8.32
0.0175	14.25	0.584	11.04	0.448	8.96
0.0205	16.69	0.616	11.64	0.485	9.69
0.0235	19.13	0.645	12.18	0.520	10.39
0.0275	22.39	0.682	12.88	0.558	11.14
0.0315	25.65	0.708	13.37	0.589	11.77
0.0355	28.90	0.724	13.67	0.614	12.27
0.0405	32.97	0.742	14.02	0.641	12.81
0.0455	37.04	0.757	14.30	0.656	13.12
0.0505	41.11	0.771	14.58	0.674	13.48
0.0605	49.26	0.794	15.01	0.703	14.05
0.0755	61.47	0.807	15.24	0.728	14.56
0.1005	81.82	0.831	15.71	0.767	15.33
0.1255	102.18	0.848	16.02	0.790	15.78
0.1505	122.53	0.860	16.25	0.811	16.21
0.1755	142.88	0.875	16.54	0.830	16.59
0.2255	183.59	0.893	16.89	0.857	17.13
0.2755	224.30	0.912	17.24	0.882	17.62
0.3255	265.01	0.932	17.62	0.904	18.07
0.3755	305.71	0.941	17.78	0.924	18.47
0.4255	346.42	0.958	18.10	0.941	18.81
0.4755	387.13	0.969	18.31	0.955	19.08
0.5755	468.54	0.986	18.63	0.979	19.57
0.6755	549.96	0.992	18.74	0.993	19.82
0.7755	631.37	0.998	18.86	0.998	19.95
0.8755	712.79	1.000	18.89	1.000	19.99
0.9755	794.20	1.000	18.90	1.000	19.99

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80569 1	37.59	105.43	67.04	37.29

ST	CF2	F	K	REENTH	REMOM
0.00235	0.00278	-0.00096	0.137E-05	1264.0	653.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.034	0.066	0.608	0.506	1.504

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.51	0.226	4.28	0.193	4.34
0.0055	5.52	0.276	5.23	0.235	5.28
0.0065	6.52	0.326	6.19	0.272	6.10
0.0075	7.52	0.371	7.04	0.299	6.71
0.0085	8.53	0.411	7.79	0.323	7.25
0.0095	9.53	0.454	8.62	0.343	7.71
0.0105	10.53	0.496	9.41	0.363	8.15
0.0125	12.54	0.546	10.35	0.399	8.96
0.0145	14.54	0.594	11.27	0.435	9.78
0.0165	16.55	0.635	12.06	0.468	10.53
0.0185	19.56	0.663	12.58	0.493	11.09
0.0215	21.57	0.698	13.25	0.530	11.92
0.0275	27.58	0.746	14.15	0.580	13.03
0.0325	32.60	0.771	14.62	0.609	13.66
0.0425	42.63	0.805	15.28	0.648	14.56
0.0525	52.66	0.826	15.66	0.692	15.33
0.0625	62.69	0.839	15.90	0.711	15.98
0.0775	77.74	0.855	16.22	0.734	16.51
0.1025	102.81	0.878	16.65	0.770	17.30
0.1275	127.89	0.895	16.98	0.792	17.80
0.1525	152.96	0.909	17.24	0.814	18.29
0.1775	178.04	0.920	17.45	0.835	18.78
0.2275	228.19	0.936	17.78	0.866	19.47
0.2775	278.34	0.952	18.05	0.891	20.02
0.3275	328.49	0.963	18.27	0.914	20.55
0.3775	378.65	0.973	18.45	0.932	20.95
0.4275	428.80	0.981	18.61	0.949	21.34
0.4775	478.95	0.987	18.71	0.964	21.66
0.5775	579.25	0.997	18.90	0.986	22.17
0.6775	679.56	0.999	18.95	0.999	22.46
0.7775	779.86	1.000	18.97	1.000	22.48

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	45.54	105.50	66.97	47.97

ST	CF2	F	K	REENTH	REMOM
0.00222	0.00282	-0.00096	0.148E-05	1498.0	578.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.024	0.061	0.570	0.378	1.578

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.85	0.289	5.45	0.199	4.78
0.0055	7.15	0.354	6.56	0.235	5.63
0.0065	8.45	0.419	7.87	0.270	6.49
0.0075	9.75	0.463	8.73	0.306	7.34
0.0085	11.05	0.502	9.45	0.331	7.96
0.0095	12.35	0.548	10.31	0.355	8.53
0.0115	14.95	0.611	11.51	0.396	9.52
0.0135	17.55	0.659	12.41	0.435	10.44
0.0155	20.15	0.699	12.97	0.469	11.25
0.0175	22.75	0.716	13.48	0.496	11.91
0.0205	26.65	0.747	14.06	0.532	12.77
0.0255	33.15	0.783	14.74	0.576	13.84
0.0305	39.65	0.805	15.16	0.610	14.63
0.0355	46.15	0.823	15.50	0.636	15.26
0.0405	52.64	0.837	15.77	0.653	15.69
0.0505	65.64	0.856	16.12	0.684	16.52
0.0605	78.64	0.871	16.40	0.710	17.04
0.0705	91.64	0.883	16.64	0.729	17.51
0.0905	117.64	0.904	17.01	0.760	18.25
0.1155	150.13	0.922	17.37	0.790	18.96
0.1405	182.63	0.937	17.64	0.816	19.58
0.1655	215.13	0.948	17.85	0.835	20.06
0.1905	247.62	0.956	18.00	0.854	20.51
0.2405	312.62	0.970	18.26	0.887	21.31
0.2905	377.61	0.979	18.43	0.913	21.91
0.3405	442.60	0.986	18.56	0.936	22.47
0.3905	507.60	0.991	18.66	0.954	22.99
0.4405	572.59	0.995	18.74	0.970	23.29
0.4905	637.58	0.997	18.77	0.979	23.51
0.5905	767.57	0.999	18.81	0.994	23.86
0.6905	897.55	1.000	18.83	0.998	23.96
0.7905	1027.54	1.000	18.83	1.000	24.01

RUN 080368-1 , F = -0.001 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	47.62	105.46	67.09	55.16

ST	CF2	F	K	REENTH	REMOM
0.00218	0.00275	-0.00096	0.145E-05	1544.0	551.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.019	0.044	0.471	0.319	1.618

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.76	0.316	6.03	0.224	5.41
0.0055	8.26	0.397	7.37	0.291	6.74
0.0065	9.76	0.434	8.28	0.316	7.60
0.0075	11.27	0.469	8.93	0.342	8.25
0.0085	12.77	0.519	9.90	0.368	8.97
0.0095	14.27	0.570	10.86	0.393	9.48
0.0105	15.77	0.610	11.63	0.412	9.93
0.0125	18.78	0.668	12.73	0.449	10.91
0.0145	21.78	0.708	13.50	0.492	11.85
0.0165	24.79	0.735	14.04	0.511	12.30
0.0195	29.29	0.767	14.62	0.546	13.17
0.0225	33.80	0.790	15.06	0.573	13.92
0.0265	39.81	0.811	15.47	0.604	14.55
0.0315	47.32	0.833	15.98	0.634	15.27
0.0365	54.83	0.847	16.15	0.655	15.79
0.0465	69.85	0.868	16.55	0.686	16.53
0.0565	84.88	0.883	16.83	0.711	17.13
0.0665	99.90	0.895	17.07	0.730	17.59
0.0815	122.43	0.911	17.37	0.757	18.24
0.1015	152.48	0.928	17.69	0.786	18.94
0.1265	190.04	0.944	18.00	0.818	19.72
0.1515	227.59	0.956	18.23	0.845	20.37
0.1765	265.15	0.965	18.41	0.867	20.89
0.2015	302.70	0.972	18.54	0.883	21.27
0.2265	340.26	0.978	18.65	0.900	21.70
0.2765	415.37	0.985	18.79	0.933	22.49
0.3265	490.49	0.991	18.89	0.951	22.97
0.3765	565.60	0.994	18.96	0.968	23.34
0.4265	640.71	0.997	19.01	0.982	23.66
0.4765	715.83	0.999	19.04	0.991	23.88
0.5765	866.05	1.000	19.07	0.998	24.06
0.6765	1016.28	1.000	19.07	1.000	24.10

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	61.77	105.36	67.08	60.16

ST	CF2	F	K	REENTH	REMOM
0.00239	0.00270	-0.00096	0.290E-07	1983.0	947.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.027	0.056	0.440	0.296	1.577

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	8.25	0.331	6.37	0.244	5.31
0.0055	10.09	0.405	7.79	0.275	5.97
0.0065	11.92	0.465	8.95	0.318	6.93
0.0075	13.75	0.507	9.76	0.350	7.61
0.0085	15.58	0.541	10.41	0.380	8.27
0.0095	17.41	0.569	10.95	0.408	8.88
0.0105	19.25	0.594	11.43	0.430	9.35
0.0115	21.08	0.612	11.78	0.449	9.76
0.0135	24.75	0.637	12.25	0.476	10.37
0.0155	28.41	0.656	12.63	0.503	10.94
0.0175	32.09	0.672	12.93	0.521	11.33
0.0205	37.58	0.686	13.21	0.543	11.82
0.0235	43.08	0.699	13.46	0.559	12.17
0.0305	55.91	0.724	13.93	0.588	12.80
0.0405	74.24	0.751	14.45	0.618	13.45
0.0505	92.57	0.773	14.87	0.641	13.96
0.0655	120.07	0.803	15.45	0.670	14.58
0.0905	165.90	0.846	16.28	0.712	15.49
0.1155	211.72	0.883	16.99	0.749	16.30
0.1405	257.55	0.913	17.57	0.785	17.08
0.1655	303.38	0.938	18.06	0.821	17.87
0.1905	349.21	0.957	18.42	0.856	18.62
0.2155	395.03	0.970	18.67	0.883	19.21
0.2405	440.86	0.979	18.84	0.905	19.69
0.2155	395.03	0.972	18.70	0.923	20.09
0.2905	532.52	0.989	19.04	0.939	20.44
0.3405	624.17	0.994	19.13	0.963	20.95
0.3905	715.83	0.997	19.19	0.981	21.35
0.4405	807.48	0.998	19.21	0.991	21.55
0.4905	899.14	0.999	19.23	0.998	21.72
0.5405	990.79	1.000	19.24	1.000	21.75
0.5905	1082.45	1.000	19.24	1.000	21.76

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	69.70	105.33	67.19	59.93

ST	CF2	F	K	REENTH	REMOM
0.00230	0.00250	-0.00096	0.152E-07	2423.0	1345.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.038	0.069	0.522	0.368	1.534

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.91	0.315	6.29	0.263	5.64
0.0055	9.67	0.385	7.69	0.300	6.52
0.0065	11.42	0.442	8.83	0.332	7.23
0.0075	13.18	0.493	9.66	0.361	7.65
0.0085	14.94	0.518	10.37	0.386	8.38
0.0095	16.70	0.547	10.93	0.406	8.93
0.0105	18.45	0.567	11.35	0.427	9.28
0.0115	20.21	0.584	11.67	0.447	9.72
0.0135	23.73	0.608	12.17	0.475	10.33
0.0155	27.24	0.626	12.53	0.499	10.86
0.0175	30.76	0.639	12.77	0.515	11.19
0.0225	39.54	0.664	13.28	0.546	11.96
0.0275	48.33	0.679	13.58	0.567	12.31
0.0325	57.12	0.692	13.84	0.580	12.61
0.0425	74.69	0.714	14.28	0.611	13.28
0.0525	92.27	0.733	14.66	0.630	13.69
0.0625	109.84	0.749	14.99	0.648	14.09
0.0825	144.99	0.779	15.58	0.674	14.66
0.1075	188.92	0.812	16.23	0.708	15.39
0.1325	232.86	0.840	16.80	0.735	15.98
0.1575	276.80	0.867	17.34	0.761	16.55
0.1825	320.73	0.890	17.79	0.791	17.20
0.2075	364.67	0.911	18.21	0.816	17.74
0.2325	408.60	0.930	18.60	0.839	18.23
0.2825	496.47	0.963	19.25	0.887	19.28
0.3325	584.35	0.982	19.63	0.927	20.15
0.3825	672.22	0.993	19.85	0.962	20.93
0.4325	760.09	0.996	19.92	0.977	21.24
0.4825	847.96	0.998	19.96	0.986	21.44
0.5825	1023.70	1.000	19.99	0.996	21.66
0.6825	1199.45	1.000	20.00	0.999	21.72
0.7825	1375.19	1.000	20.00	1.000	21.74

RUNT	RUNV	X	TPLATE	TGAST	UGAST
80368 1	80568 1	85.78	105.50	67.11	68.64

ST	CF2	F	K	REENTH	REMOM
0.00220	0.00230	-0.00097	0.131E-07	3062.0	2068.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.059	0.087	0.625	0.541	1.483

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.46	0.291	6.07	0.244	5.31
0.0055	9.23	0.356	7.42	0.303	6.59
0.0065	10.91	0.406	8.46	0.335	7.30
0.0075	12.59	0.447	9.32	0.359	7.81
0.0085	14.27	0.483	10.07	0.384	8.35
0.0095	15.95	0.507	10.56	0.400	8.70
0.0115	19.31	0.544	11.35	0.437	9.51
0.0135	22.67	0.571	11.90	0.469	10.21
0.0155	26.02	0.590	12.30	0.490	10.68
0.0205	34.42	0.622	12.97	0.531	11.56
0.0255	42.81	0.640	13.34	0.554	12.07
0.0305	51.21	0.654	13.64	0.572	12.46
0.0405	68.00	0.677	14.11	0.601	13.09
0.0505	84.79	0.693	14.46	0.620	13.50
0.0655	109.97	0.715	14.92	0.643	13.99
0.0805	135.16	0.734	15.31	0.662	14.41
0.1005	168.74	0.756	15.77	0.682	14.86
0.1255	210.71	0.780	16.26	0.708	15.41
0.1505	252.68	0.801	16.70	0.731	15.92
0.1755	294.66	0.819	17.08	0.748	16.29
0.2005	336.63	0.838	17.47	0.766	16.69
0.2505	420.58	0.869	18.13	0.803	17.48
0.3005	504.53	0.897	18.71	0.834	18.17
0.3505	588.48	0.924	19.26	0.865	18.84
0.4005	672.43	0.947	19.74	0.895	19.49
0.5005	840.32	0.980	20.44	0.952	20.73
0.6005	1008.27	0.996	20.77	0.987	21.50
0.7005	1176.12	1.000	20.85	0.999	21.76
0.8905	1495.12	1.000	20.85	1.000	21.78

RUN 072968-1 , F = 0 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72968 1	73068 1	13.78	109.52	66.80	24.71

ST	CF2	F	K	REENTH	REMOM
0.00300	0.00230	0.00000	0.162E-07	727.0	881.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.070	0.058	0.612	0.566	1.548

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.71	0.160	3.35	0.174	2.79
0.0055	3.32	0.196	4.09	0.222	3.55
0.0065	3.92	0.232	4.83	0.246	3.94
0.0075	4.52	0.260	5.42	0.271	4.34
0.0085	5.13	0.276	5.76	0.288	4.61
0.0105	6.33	0.311	6.49	0.321	5.14
0.0125	7.54	0.365	7.62	0.352	5.63
0.0145	8.75	0.393	8.20	0.378	6.06
0.0165	9.95	0.433	9.03	0.406	6.49
0.0195	11.76	0.464	9.67	0.451	7.22
0.0225	13.57	0.498	10.39	0.482	7.72
0.0255	15.38	0.525	10.94	0.517	8.27
0.0285	17.19	0.541	11.29	0.543	8.70
0.0325	19.61	0.568	11.84	0.573	9.18
0.0375	22.62	0.593	12.36	0.601	9.63
0.0425	25.64	0.610	12.72	0.622	9.95
0.0475	28.66	0.625	13.04	0.640	10.25
0.0575	34.69	0.648	13.52	0.670	10.73
0.0675	40.72	0.662	13.80	0.694	11.11
0.0775	46.76	0.679	14.17	0.712	11.40
0.0975	58.82	0.704	14.69	0.745	11.93
0.1225	73.91	0.729	15.20	0.774	12.38
0.1475	88.99	0.752	15.67	0.799	12.80
0.1725	104.07	0.771	16.07	0.820	13.12
0.2225	134.24	0.811	16.91	0.856	13.71
0.2725	164.40	0.845	17.63	0.887	14.20
0.3225	194.57	0.876	18.27	0.912	14.61
0.3725	224.74	0.909	18.95	0.932	14.92
0.4225	254.90	0.938	19.56	0.951	15.23
0.4725	285.07	0.959	19.99	0.965	15.45
0.5725	345.40	0.990	20.65	0.986	15.79
0.6725	405.73	0.997	20.78	0.996	15.95
0.7725	466.06	1.000	20.85	0.998	15.99
0.8725	526.40	1.000	20.85	1.000	16.01

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72968 1	73068 1	29.67	110.34	66.76	30.27

ST	CF2	F	K	REENTH	REMOM
0.00231	0.00245	0.00000	0.138E-05	1243.0	905.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.059	0.081	0.713	0.665	1.481

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.43	0.191	3.85	0.164	3.51
0.0055	4.20	0.233	4.71	0.198	4.25
0.0065	4.96	0.275	5.56	0.225	4.82
0.0075	5.72	0.315	6.36	0.241	5.17
0.0085	6.48	0.345	6.97	0.263	5.65
0.0095	7.25	0.366	7.40	0.285	6.12
0.0115	8.77	0.415	8.38	0.317	6.79
0.0135	10.30	0.468	9.45	0.345	7.40
0.0155	11.82	0.509	10.28	0.380	8.14
0.0175	13.35	0.543	10.96	0.411	8.82
0.0195	14.88	0.565	11.41	0.434	9.31
0.0225	17.16	0.598	12.09	0.472	10.12
0.0255	19.45	0.628	12.69	0.497	10.66
0.0285	21.74	0.650	13.13	0.521	11.17
0.0325	24.79	0.672	13.57	0.550	11.80
0.0365	27.85	0.689	13.92	0.568	12.17
0.0435	33.19	0.712	14.38	0.603	12.94
0.0535	40.81	0.742	14.99	0.637	13.65
0.0635	48.44	0.763	15.41	0.659	14.12
0.0785	59.89	0.780	15.75	0.686	14.70
0.0985	75.14	0.799	16.14	0.716	15.35
0.1235	94.22	0.816	16.49	0.744	15.96
0.1485	113.29	0.833	16.83	0.768	16.47
0.1735	132.36	0.847	17.11	0.790	16.93
0.2235	170.50	0.869	17.56	0.827	17.74
0.2735	208.65	0.891	18.00	0.854	18.32
0.3235	246.79	0.910	18.39	0.879	18.84
0.3735	284.94	0.925	18.69	0.900	19.29
0.4235	323.08	0.941	19.02	0.919	19.72
0.4735	361.22	0.957	19.34	0.938	20.11
0.5735	437.51	0.980	19.79	0.966	20.71
0.6735	513.80	0.991	20.03	0.986	21.15
0.7735	590.09	0.999	20.19	0.996	21.36
0.8735	666.38	1.000	20.20	1.000	21.44

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72969 1	73069 1	37.69	110.17	67.22	37.20

ST	CF2	F	K	REENTH	REMOM
0.00211	0.00252	0.00000	0.144E-05	1537.0	796.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.042	0.081	0.658	0.535	1.529

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.27	0.215	4.28	0.180	4.29
0.0055	5.22	0.262	5.23	0.220	5.24
0.0065	6.17	0.310	6.18	0.246	5.85
0.0075	7.12	0.348	6.92	0.266	6.34
0.0085	8.07	0.378	7.52	0.286	6.82
0.0105	9.97	0.454	9.05	0.327	7.78
0.0125	11.87	0.499	9.95	0.361	8.58
0.0145	13.77	0.551	10.97	0.394	9.36
0.0165	15.67	0.585	11.65	0.426	10.12
0.0185	17.56	0.610	12.15	0.451	10.73
0.0215	20.41	0.642	12.78	0.483	11.48
0.0245	23.26	0.672	13.38	0.508	12.09
0.0285	27.06	0.701	13.96	0.538	12.79
0.0335	31.80	0.728	14.51	0.568	13.52
0.0385	36.55	0.749	14.92	0.594	14.13
0.0435	41.30	0.763	15.20	0.610	14.51
0.0535	50.79	0.782	15.58	0.637	15.16
0.0635	60.29	0.799	15.92	0.660	15.70
0.0835	79.27	0.827	16.47	0.695	16.54
0.1085	103.01	0.849	16.91	0.729	17.33
0.1335	126.74	0.867	17.28	0.757	18.00
0.1585	150.48	0.886	17.64	0.781	18.58
0.1835	174.21	0.899	17.90	0.801	19.06
0.2085	197.95	0.911	18.14	0.816	19.42
0.2585	245.42	0.931	18.54	0.852	20.27
0.3085	292.89	0.946	18.85	0.878	20.88
0.3585	340.36	0.957	19.07	0.900	21.42
0.4085	387.83	0.969	19.29	0.922	21.94
0.4585	435.30	0.978	19.49	0.942	22.40
0.5585	530.24	0.993	19.78	0.971	23.10
0.6585	625.18	0.997	19.86	0.990	23.56
0.7585	720.12	0.999	19.90	0.998	23.73
0.8585	815.06	1.000	19.92	0.999	23.77
0.9585	910.00	1.000	19.92	1.000	23.79

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72968 1	73068 1	45.64	110.00	66.90	47.92

ST	CF2	F	K	REENTH	REMOM
0.00201	0.00248	0.00000	0.145E-05	1898.0	747.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.031	0.078	0.607	0.430	1.595

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.45	0.263	5.28	0.184	4.57
0.0055	6.67	0.321	6.45	0.218	5.42
0.0065	7.88	0.390	7.63	0.253	6.29
0.0075	9.09	0.425	8.53	0.277	6.88
0.0085	10.30	0.460	9.23	0.298	7.39
0.0105	12.73	0.535	10.75	0.337	8.36
0.0125	15.15	0.577	11.60	0.373	9.26
0.0145	17.57	0.620	12.44	0.409	10.15
0.0165	20.00	0.649	13.03	0.437	10.85
0.0195	23.63	0.686	13.77	0.468	11.62
0.0225	27.27	0.710	14.25	0.498	12.35
0.0275	33.33	0.741	14.89	0.530	13.16
0.0325	39.39	0.763	15.31	0.557	13.82
0.0375	45.45	0.779	15.64	0.577	14.31
0.0425	51.51	0.792	15.91	0.594	14.73
0.0525	63.63	0.813	16.33	0.621	15.40
0.0625	75.75	0.830	16.67	0.641	15.90
0.0725	87.87	0.843	16.93	0.661	16.42
0.0925	112.11	0.866	17.39	0.696	17.27
0.1175	142.41	0.891	17.90	0.733	18.19
0.1425	172.71	0.910	18.27	0.759	18.84
0.1675	203.01	0.925	18.57	0.787	19.54
0.1925	233.31	0.937	18.82	0.808	20.06
0.2175	263.60	0.946	19.00	0.830	20.60
0.2675	324.20	0.961	19.30	0.869	21.56
0.3175	384.80	0.972	19.52	0.896	22.24
0.3675	445.40	0.980	19.68	0.921	22.86
0.4175	506.00	0.988	19.85	0.946	23.47
0.4675	566.60	0.994	19.95	0.961	23.84
0.5675	687.80	0.999	20.06	0.986	24.48
0.6675	808.99	1.000	20.08	0.997	24.74
0.7675	930.19	1.000	20.08	1.000	24.82

RUN 072968-1 , F = 0 , K = 1.45 x10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72968 1	73068 1	69.70	109.15	66.34	69.73

ST	CF2	F	K	REENTH	REMOM
0.00186	0.00191	0.00000	0.251E-08	3280.0	1793.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.050	0.092	0.589	0.450	1.595

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.99	0.270	6.19	0.209	4.89
0.0055	8.55	0.331	7.56	0.256	6.01
0.0065	10.10	0.371	8.50	0.285	6.68
0.0075	11.65	0.400	9.15	0.305	7.17
0.0085	13.21	0.435	9.95	0.321	7.55
0.0105	16.32	0.487	11.18	0.364	8.55
0.0125	19.42	0.523	11.98	0.398	9.34
0.0145	22.53	0.548	12.54	0.422	9.91
0.0165	25.64	0.568	13.00	0.439	10.29
0.0195	30.30	0.587	13.42	0.462	10.85
0.0225	34.96	0.602	13.78	0.476	11.17
0.0265	41.18	0.617	14.12	0.493	11.59
0.0315	48.95	0.632	14.47	0.511	12.01
0.0415	64.49	0.658	15.05	0.538	12.63
0.0565	87.79	0.686	15.70	0.567	13.31
0.0765	118.87	0.716	16.39	0.595	13.98
0.1015	157.71	0.751	17.18	0.625	14.68
0.1265	196.56	0.782	17.89	0.650	15.28
0.1515	235.41	0.809	18.52	0.680	15.99
0.1765	274.25	0.835	19.10	0.706	16.60
0.2265	351.94	0.876	20.05	0.753	17.70
0.2765	429.63	0.913	20.89	0.799	18.76
0.3265	507.32	0.946	21.64	0.849	19.94
0.3765	585.02	0.970	22.18	0.896	21.05
0.4265	662.71	0.986	22.57	0.936	21.99
0.4765	740.40	0.993	22.73	0.964	22.66
0.5265	818.09	0.997	22.81	0.979	23.00
0.5765	895.78	0.999	22.85	0.989	23.23
0.6265	973.47	1.000	22.88	0.994	23.36
0.6765	1051.17	1.000	22.88	0.999	23.44
0.7265	1128.86	1.000	22.88	1.000	23.50

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72968 1	73068 1	85.78	108.77	66.27	70.07

ST	CF2	F	K	REENTH	REMOM
0.00179	0.00175	0.00000	0.968E-09	4266.0	2760.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.077	0.119	0.755	0.657	1.549

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.73	0.254	6.07	0.203	4.75
0.0055	8.22	0.310	7.42	0.246	5.75
0.0065	9.72	0.351	8.39	0.276	6.47
0.0075	11.21	0.381	9.10	0.304	7.11
0.0085	12.71	0.409	9.78	0.321	7.53
0.0095	14.20	0.441	10.55	0.340	7.96
0.0115	17.19	0.488	11.67	0.376	8.81
0.0135	20.18	0.512	12.24	0.405	9.47
0.0165	24.67	0.536	12.82	0.433	10.14
0.0195	29.15	0.556	13.30	0.456	10.68
0.0225	33.64	0.572	13.66	0.471	11.02
0.0275	41.11	0.589	14.09	0.493	11.54
0.0325	48.58	0.602	14.39	0.507	11.88
0.0425	63.53	0.623	14.90	0.533	12.48
0.0525	78.49	0.642	15.34	0.551	12.90
0.0775	115.86	0.677	16.17	0.586	13.72
0.1025	153.23	0.705	16.84	0.611	14.31
0.1275	190.60	0.728	17.41	0.633	14.92
0.1525	227.98	0.751	17.94	0.653	15.30
0.1775	265.35	0.771	18.42	0.673	15.75
0.2275	340.09	0.805	19.25	0.707	16.55
0.2775	414.84	0.835	19.96	0.740	17.33
0.3275	489.59	0.862	20.61	0.769	18.02
0.3775	564.33	0.889	21.23	0.802	18.79
0.4275	639.08	0.912	21.80	0.842	19.45
0.4775	713.83	0.935	22.35	0.863	20.21
0.5275	788.57	0.956	22.85	0.893	20.92
0.5775	863.32	0.977	23.24	0.924	21.65
0.6275	938.06	0.984	23.53	0.950	22.25
0.6775	1012.81	0.993	23.72	0.972	22.78
0.7275	1087.56	0.997	23.82	0.985	23.08
0.7775	1162.30	0.999	23.88	0.993	23.27
0.8275	1237.05	1.000	23.90	0.999	23.37
0.8775	1311.79	1.000	23.90	0.998	23.39
0.9275	1386.54	1.000	23.90	0.999	23.41
0.9775	1461.29	1.000	23.90	1.000	23.43

RUNT	RUNV	X	TPLATE	TGAST	UGAST
72968 1	73068 1	61.77	109.11	66.62	69.58

ST	CF2	F	K	REENTH	REMOM
0.00190	0.00222	0.00000	0.668E-08	2795.0	1234.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.035	0.079	0.527	0.358	1.433

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.52	0.303	6.43	0.184	4.59
0.0055	9.19	0.370	7.86	0.232	5.78
0.0065	10.86	0.429	9.11	0.267	6.66
0.0085	14.20	0.506	10.75	0.319	7.95
0.0105	17.54	0.553	11.74	0.361	9.01
0.0125	20.88	0.582	12.36	0.394	9.83
0.0145	24.22	0.603	12.79	0.422	10.51
0.0165	27.56	0.618	13.11	0.439	10.96
0.0195	32.57	0.636	13.51	0.460	11.46
0.0225	37.59	0.648	13.76	0.476	11.88
0.0275	45.94	0.656	14.14	0.499	12.42
0.0325	54.28	0.682	14.47	0.513	12.91
0.0425	70.98	0.707	15.01	0.542	13.51
0.0575	96.03	0.739	15.67	0.569	14.19
0.0825	137.78	0.783	16.63	0.613	15.28
0.1075	179.53	0.823	17.47	0.647	16.15
0.1325	221.28	0.858	18.20	0.683	17.04
0.1575	263.03	0.887	18.81	0.716	17.87
0.1825	304.78	0.912	19.35	0.747	18.63
0.2075	346.53	0.932	19.79	0.781	19.48
0.2325	388.28	0.950	20.17	0.815	20.33
0.2575	430.03	0.964	20.47	0.846	21.10
0.2825	471.78	0.974	20.67	0.869	21.67
0.3075	513.53	0.981	20.82	0.893	22.28
0.3325	555.28	0.987	20.95	0.914	22.81
0.3825	638.78	0.993	21.07	0.945	23.56
0.4325	722.29	0.997	21.15	0.967	24.13
0.4825	805.79	0.998	21.18	0.980	24.45
0.5325	889.29	0.999	21.20	0.991	24.72
0.5925	972.79	1.000	21.22	0.996	24.84
0.6325	1056.29	1.000	21.22	0.998	24.90
0.6825	1139.79	1.000	21.22	1.000	24.94

RUN 081268-1 , F = +0.001 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81368 1	13.78	102.57	66.48	25.16

ST	CF2	F	K	REENTH	REMOM
0.00255	0.00200	0.00102	0.589E-07	853.0	1015.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.075	0.066	0.654	0.630	1.567

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.59	0.141	3.16	0.130	2.29
0.0055	3.17	0.173	3.86	0.167	2.93
0.0065	3.74	0.204	4.57	0.201	3.52
0.0075	4.32	0.236	5.27	0.224	3.94
0.0095	5.47	0.272	6.08	0.263	4.61
0.0115	6.62	0.326	7.29	0.303	5.32
0.0135	7.77	0.360	8.06	0.334	5.85
0.0155	8.93	0.385	8.60	0.362	6.35
0.0185	10.65	0.430	9.62	0.405	7.11
0.0215	12.38	0.452	10.12	0.446	7.82
0.0245	14.11	0.475	10.62	0.476	8.35
0.0275	15.84	0.502	11.23	0.506	8.89
0.0305	17.56	0.521	11.65	0.521	9.15
0.0345	19.87	0.534	11.93	0.549	9.63
0.0395	22.75	0.556	12.44	0.576	10.11
0.0445	25.63	0.578	12.94	0.596	10.46
0.0545	31.39	0.601	13.45	0.626	10.98
0.0645	37.14	0.627	14.01	0.648	11.38
0.0745	42.90	0.638	14.26	0.673	11.81
0.0895	51.54	0.659	14.74	0.697	12.24
0.1095	63.06	0.682	15.25	0.724	12.71
0.1345	77.45	0.708	15.84	0.752	13.19
0.1595	91.85	0.730	16.32	0.778	13.66
0.1845	106.25	0.751	16.79	0.800	14.04
0.2345	135.04	0.790	17.66	0.839	14.73
0.2845	163.83	0.824	18.43	0.867	15.21
0.3345	192.63	0.858	19.19	0.896	15.73
0.3845	221.42	0.894	19.99	0.919	16.13
0.4345	250.21	0.926	20.71	0.941	16.52
0.4845	279.01	0.951	21.26	0.955	16.77
0.5845	336.59	0.980	21.91	0.982	17.24
0.6845	394.18	0.996	22.27	0.993	17.44
0.7845	451.76	1.000	22.36	0.998	17.52
0.8845	505.35	1.000	22.36	1.000	17.55

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81368 1	29.67	103.21	66.62	31.12

ST	CF2	F	K	REENTH	REMOM
0.00195	0.00225	0.00099	0.137E-05	1513.0	1080.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.068	0.095	0.794	0.690	1.481

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.40	0.175	3.68	0.115	2.80
0.0055	4.15	0.214	4.50	0.156	3.80
0.0065	4.91	0.252	5.32	0.185	4.51
0.0075	5.66	0.280	5.91	0.206	5.03
0.0085	6.42	0.309	6.51	0.233	5.70
0.0105	7.93	0.364	7.68	0.273	6.66
0.0125	9.44	0.415	8.75	0.300	7.32
0.0145	10.95	0.459	9.68	0.332	8.10
0.0165	12.46	0.497	10.49	0.357	8.71
0.0185	13.97	0.517	10.90	0.376	9.17
0.0205	15.48	0.542	11.42	0.409	10.00
0.0235	17.75	0.575	12.13	0.435	10.62
0.0265	20.01	0.599	12.63	0.456	11.14
0.0295	22.28	0.616	12.98	0.481	11.74
0.0325	24.54	0.632	13.33	0.499	12.17
0.0375	28.32	0.661	13.94	0.526	12.84
0.0425	32.09	0.684	14.42	0.550	13.44
0.0475	35.87	0.692	14.59	0.567	13.85
0.0575	43.42	0.717	15.12	0.597	14.59
0.0675	50.97	0.734	15.48	0.618	15.09
0.0825	62.30	0.751	15.84	0.645	15.76
0.1075	81.18	0.779	16.42	0.692	16.66
0.1325	100.05	0.797	16.80	0.714	17.44
0.1575	118.93	0.813	17.13	0.736	17.97
0.1825	137.81	0.827	17.43	0.757	18.48
0.2325	175.57	0.853	17.98	0.791	19.31
0.2825	213.32	0.876	18.46	0.826	20.16
0.3575	269.96	0.906	19.11	0.864	21.09
0.4325	326.59	0.927	19.55	0.898	21.92
0.5325	402.11	0.955	20.14	0.934	22.80
0.6325	477.62	0.981	20.67	0.963	23.51
0.7325	553.13	0.994	20.96	0.990	23.93
0.8325	628.65	1.000	21.07	0.996	24.33
0.9325	704.16	1.000	21.08	1.000	24.42

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81368 1	37.69	102.83	66.41	38.81

ST	CF2	F	K	REENTH	REMOM
0.00190	0.00229	0.00098	0.142E-05	1939.0	1036.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.052	0.098	0.737	0.630	1.494

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.28	0.217	4.54	0.123	3.27
0.0055	5.23	0.265	5.54	0.176	4.70
0.0065	6.18	0.314	6.55	0.196	5.23
0.0075	7.13	0.354	7.40	0.220	5.88
0.0085	8.08	0.387	8.09	0.231	6.16
0.0105	9.98	0.450	9.40	0.269	7.18
0.0125	11.88	0.503	10.51	0.305	8.14
0.0145	13.79	0.535	11.18	0.333	8.89
0.0165	15.69	0.567	11.85	0.365	9.75
0.0205	19.49	0.615	12.86	0.413	11.03
0.0255	24.24	0.647	13.52	0.459	12.24
0.0315	29.95	0.684	14.30	0.497	13.27
0.0365	34.70	0.703	14.69	0.520	13.87
0.0415	39.46	0.715	14.93	0.537	14.33
0.0515	48.96	0.738	15.43	0.568	15.16
0.0615	58.47	0.756	15.80	0.592	15.79
0.0765	72.73	0.780	16.29	0.621	16.57
0.0915	86.99	0.800	16.72	0.645	17.21
0.1115	106.01	0.821	17.15	0.676	18.04
0.1315	125.02	0.838	17.50	0.704	18.80
0.1565	148.79	0.854	17.86	0.724	19.33
0.1915	182.06	0.876	18.30	0.759	20.27
0.2415	229.60	0.901	18.82	0.795	21.23
0.2915	277.14	0.920	19.23	0.831	22.17
0.3665	348.44	0.945	19.74	0.872	23.28
0.4415	419.75	0.960	20.07	0.909	24.25
0.5165	491.05	0.975	20.36	0.938	25.03
0.5915	562.35	0.987	20.62	0.961	25.64
0.6915	657.43	0.994	20.77	0.985	26.28
0.7915	752.50	0.999	20.88	0.996	26.59
0.8915	847.57	1.000	20.90	1.000	26.69

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81368 1	45.64	102.80	66.38	50.45

ST	CF2	F	K	REENTH	REMOM
0.00166	0.00225	0.00098	0.147E-05	2398.0	960.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.037	0.093	0.654	0.492	1.566

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.51	0.238	5.01	0.148	4.25
0.0055	6.74	0.291	6.13	0.190	5.46
0.0065	7.96	0.343	7.24	0.216	6.21
0.0075	9.19	0.392	8.26	0.236	6.78
0.0085	10.41	0.434	9.14	0.257	7.37
0.0105	12.86	0.507	10.68	0.291	8.37
0.0125	15.31	0.554	11.68	0.328	9.42
0.0145	17.77	0.595	12.55	0.362	10.39
0.0165	20.22	0.621	13.09	0.387	11.12
0.0185	22.67	0.640	13.50	0.409	11.74
0.0215	26.34	0.668	14.07	0.439	12.61
0.0245	30.02	0.687	14.45	0.458	13.15
0.0295	36.14	0.709	14.95	0.485	13.94
0.0345	42.27	0.728	15.35	0.505	14.51
0.0395	48.39	0.743	15.66	0.524	15.05
0.0495	60.65	0.766	16.16	0.559	16.05
0.0645	75.02	0.794	16.75	0.590	16.95
0.0895	109.65	0.833	17.56	0.634	18.19
0.1145	140.28	0.862	18.16	0.668	19.17
0.1395	170.91	0.883	18.61	0.706	20.26
0.1645	201.54	0.901	18.99	0.734	21.08
0.2145	262.80	0.929	19.58	0.783	22.49
0.2645	324.05	0.948	19.98	0.824	23.66
0.3145	385.32	0.963	20.29	0.860	24.70
0.3645	446.58	0.974	20.54	0.891	25.60
0.4145	507.83	0.982	20.70	0.921	26.44
0.4645	565.09	0.987	20.82	0.938	26.94
0.5645	691.61	0.997	21.01	0.973	27.95
0.6645	814.13	0.999	21.06	0.992	28.49
0.7645	933.65	1.000	21.08	0.998	28.66
0.8645	1055.16	1.000	21.08	1.000	28.71

RUN 081268-1 , F = +0.001 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81268 1	49.63	102.49	66.52	59.20

ST	CF2	F	K	REENTH	REMOM
0.00160	0.00228	0.00098	0.146E-05	2778.0	949.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.031	0.092	0.618	0.423	1.581

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.51	0.301	6.30	0.146	4.38
0.0055	7.96	0.367	7.69	0.199	5.94
0.0065	9.40	0.420	8.80	0.230	6.88
0.0075	10.85	0.460	9.64	0.253	7.57
0.0085	12.30	0.499	10.42	0.272	8.14
0.0105	15.19	0.560	11.73	0.311	9.31
0.0125	18.08	0.603	12.63	0.346	10.33
0.0145	20.97	0.636	13.32	0.390	11.36
0.0165	23.87	0.658	13.79	0.401	11.99
0.0205	29.65	0.692	14.48	0.437	13.08
0.0255	36.89	0.719	15.05	0.466	13.94
0.0305	44.12	0.738	15.46	0.491	14.68
0.0405	58.59	0.768	16.08	0.523	15.63
0.0555	80.29	0.802	16.80	0.565	16.89
0.0705	101.98	0.827	17.31	0.596	17.83
0.0855	123.68	0.848	17.76	0.619	18.52
0.1105	159.84	0.877	18.37	0.661	19.76
0.1355	196.01	0.899	18.83	0.697	20.85
0.1605	232.17	0.916	19.19	0.730	21.83
0.1855	268.33	0.931	19.49	0.761	22.75
0.2105	304.50	0.943	19.75	0.789	23.58
0.2605	376.82	0.962	20.14	0.834	24.94
0.3105	449.15	0.975	20.41	0.874	26.15
0.3605	521.49	0.983	20.58	0.905	27.07
0.4105	593.81	0.989	20.71	0.933	27.91
0.4605	666.13	0.994	20.81	0.953	28.49
0.5605	810.79	0.999	20.91	0.983	29.38
0.6605	955.44	1.000	20.94	0.995	29.76
0.7605	1100.10	1.000	20.94	0.998	29.84
0.8605	1244.75	1.000	20.94	1.000	29.90

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81268 1	61.77	102.86	67.08	73.53

ST	CF2	F	K	REENTH	REMOM
0.00145	0.00175	0.00099	0.000E 00	3759.0	1699.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.045	0.100	0.591	0.428	1.625

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	7.07	0.265	6.34	0.165	4.78
0.0055	8.64	0.324	7.75	0.215	6.22
0.0065	10.21	0.366	8.76	0.244	7.05
0.0075	11.78	0.397	9.48	0.266	7.68
0.0085	13.35	0.429	10.26	0.287	8.29
0.0105	16.50	0.475	11.35	0.323	9.32
0.0125	19.64	0.510	12.18	0.353	10.18
0.0145	22.78	0.534	12.76	0.377	10.87
0.0165	25.92	0.551	13.17	0.393	11.34
0.0215	33.78	0.582	13.90	0.422	12.18
0.0265	41.64	0.603	14.42	0.442	12.76
0.0365	57.35	0.635	15.18	0.473	13.65
0.0465	73.06	0.659	15.76	0.497	14.35
0.0665	104.48	0.701	16.75	0.530	15.29
0.0915	143.76	0.743	17.77	0.564	16.29
0.1165	183.04	0.782	18.70	0.598	17.27
0.1415	222.32	0.816	19.51	0.626	18.08
0.1665	261.60	0.848	20.27	0.659	19.00
0.1915	300.88	0.875	20.91	0.696	20.09
0.2415	379.43	0.920	21.99	0.757	21.88
0.2915	457.99	0.952	22.76	0.816	23.55
0.3415	536.55	0.972	23.24	0.866	25.01
0.3915	615.11	0.984	23.54	0.914	26.38
0.4415	693.66	0.991	23.69	0.943	27.22
0.4915	772.22	0.995	23.79	0.966	27.90
0.5915	929.34	0.999	23.88	0.990	28.60
0.6915	1086.45	1.000	23.90	0.999	28.85
0.7915	1243.57	1.000	23.90	1.000	28.88

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81268 1	69.70	102.45	66.73	73.70

ST	CF2	F	K	REENTH	REMOM
0.00137	0.00154	0.00098	0.104E-07	4460.0	2428.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.064	0.118	0.663	0.533	1.607

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.66	0.240	6.12	0.161	4.61
0.0055	8.13	0.294	7.48	0.190	5.44
0.0065	9.61	0.333	8.48	0.220	6.29
0.0075	11.09	0.361	9.19	0.244	6.98
0.0085	12.57	0.392	9.99	0.262	7.51
0.0095	14.05	0.418	10.65	0.279	8.00
0.0115	17.01	0.455	11.58	0.314	8.99
0.0135	19.97	0.482	12.28	0.342	9.79
0.0165	24.40	0.509	12.96	0.375	10.76
0.0205	30.32	0.535	13.62	0.406	11.64
0.0285	42.15	0.567	14.44	0.440	12.61
0.0385	56.94	0.594	15.12	0.468	13.41
0.0535	79.13	0.626	15.94	0.498	14.27
0.0685	101.31	0.651	16.60	0.522	14.96
0.0885	130.89	0.680	17.34	0.544	15.60
0.1135	167.87	0.713	18.16	0.575	16.49
0.1385	204.84	0.741	18.89	0.602	17.26
0.1635	241.82	0.767	19.56	0.618	17.73
0.2135	315.77	0.816	20.78	0.667	19.12
0.2635	389.72	0.857	21.84	0.712	20.43
0.3135	463.67	0.894	22.79	0.756	21.68
0.3635	537.62	0.927	23.62	0.803	23.01
0.4135	611.57	0.954	24.31	0.850	24.38
0.4635	685.52	0.974	24.82	0.902	25.85
0.5635	833.42	0.993	25.31	0.960	27.53
0.6635	981.32	0.999	25.45	0.990	28.39
0.7635	1129.22	1.000	25.48	0.999	28.64
0.8635	1277.12	1.000	25.48	1.000	28.67

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81268 1	81268 1	85.78	102.28	66.59	73.68

ST	CF2	F	K	REENTH	REMOM
0.00125	0.00136	0.00098	0.560E-08	5877.0	3857.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.102	0.156	0.908	0.797	1.579

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.26	0.220	5.98	0.162	4.79
0.0055	7.65	0.270	7.31	0.202	5.98
0.0065	9.04	0.304	8.24	0.224	6.60
0.0075	10.43	0.328	8.90	0.243	7.17
0.0085	11.82	0.348	9.70	0.262	7.74
0.0105	14.60	0.401	10.89	0.299	8.82
0.0125	17.38	0.430	11.67	0.329	9.73
0.0145	20.16	0.453	12.30	0.351	10.38
0.0165	22.94	0.471	12.78	0.374	11.04
0.0195	27.11	0.490	13.28	0.394	11.63
0.0235	32.67	0.506	13.73	0.413	12.20
0.0285	39.62	0.524	14.22	0.435	12.86
0.0385	53.52	0.550	14.92	0.461	13.63
0.0535	74.37	0.578	15.66	0.499	14.46
0.0785	109.13	0.613	16.61	0.523	15.45
0.1035	143.88	0.640	17.35	0.549	16.23
0.1285	178.63	0.665	18.03	0.571	16.88
0.1535	213.39	0.687	18.62	0.592	17.48
0.1785	248.14	0.706	19.13	0.609	18.00
0.2285	317.65	0.740	20.07	0.641	18.94
0.2785	387.16	0.774	20.99	0.672	19.86
0.3285	456.66	0.805	21.82	0.701	20.72
0.3785	526.17	0.831	22.55	0.731	21.60
0.4285	595.68	0.858	23.26	0.759	22.43
0.4785	665.18	0.882	23.93	0.783	23.15
0.5785	804.20	0.928	25.15	0.844	24.96
0.6785	943.21	0.964	26.13	0.904	26.71
0.7785	1082.23	0.988	26.78	0.955	28.24
0.8785	1221.24	0.997	27.02	0.987	29.19
0.9785	1360.26	0.999	27.10	0.997	29.47
1.0785	1495.27	1.000	27.12	1.000	29.56

RUN 081568-1 , F = +0.002 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	13.78	99.34	66.45	25.65

ST	CF2	F	K	REENTH	REMOM
0.00218	0.00172	0.00199	0.303E-07	998.0	1144.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.088	0.077	0.723	0.662	1.607

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.43	0.127	3.07	0.122	2.32
0.0055	2.97	0.155	3.75	0.166	3.16
0.0065	3.51	0.184	4.43	0.195	3.71
0.0075	4.05	0.212	5.11	0.215	4.09
0.0085	4.59	0.234	5.64	0.239	4.55
0.0105	5.67	0.262	6.32	0.268	5.10
0.0125	6.75	0.289	6.96	0.302	5.74
0.0145	7.83	0.332	8.02	0.333	6.34
0.0185	9.99	0.380	9.17	0.379	7.22
0.0235	12.70	0.441	10.62	0.439	8.35
0.0285	15.40	0.465	11.22	0.479	9.11
0.0335	18.10	0.494	11.91	0.507	9.65
0.0385	20.80	0.516	12.43	0.532	10.13
0.0435	23.50	0.528	12.74	0.550	10.47
0.0535	28.90	0.562	13.54	0.582	11.09
0.0635	34.31	0.582	14.03	0.606	11.53
0.0785	42.41	0.602	14.52	0.642	12.23
0.0935	50.51	0.627	15.11	0.663	12.63
0.1185	64.02	0.653	15.75	0.697	13.28
0.1435	77.53	0.679	16.38	0.725	13.80
0.1685	91.04	0.705	17.00	0.751	14.30
0.2185	118.05	0.749	18.06	0.792	15.08
0.2685	145.06	0.783	18.88	0.829	15.78
0.3195	172.08	0.818	19.73	0.862	16.41
0.3685	199.09	0.853	20.57	0.885	16.85
0.4185	226.10	0.887	21.39	0.910	17.33
0.4685	253.12	0.921	22.20	0.930	17.72
0.5685	307.14	0.967	23.33	0.963	18.34
0.6685	361.17	0.991	23.90	0.984	18.74
0.7685	415.20	1.000	24.10	0.995	18.94
0.8685	469.22	1.000	24.11	0.999	19.02
0.9685	523.25	1.000	24.11	1.000	19.04

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	29.67	99.85	66.41	31.44

ST	CF2	F	K	REENTH	REMOM
0.00170	0.00203	0.00200	0.142E-05	1765.0	1224.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.077	0.110	0.837	0.741	1.496

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.24	0.158	3.50	0.121	3.21
0.0055	3.96	0.193	4.28	0.147	3.91
0.0065	4.68	0.228	5.06	0.172	4.57
0.0075	5.40	0.263	5.83	0.188	5.00
0.0085	6.12	0.294	6.53	0.212	5.63
0.0105	7.55	0.349	7.75	0.237	6.31
0.0125	8.99	0.398	8.84	0.275	7.32
0.0145	10.43	0.436	9.67	0.302	8.03
0.0165	11.87	0.470	10.44	0.332	8.82
0.0185	13.31	0.495	10.99	0.355	9.45
0.0225	16.19	0.536	11.90	0.392	10.43
0.0275	19.79	0.574	12.75	0.434	11.53
0.0325	23.38	0.601	13.33	0.465	12.37
0.0375	26.98	0.622	13.80	0.486	12.92
0.0475	34.18	0.652	14.47	0.525	13.96
0.0575	41.37	0.678	15.04	0.551	14.65
0.0725	52.16	0.701	15.55	0.581	15.44
0.0875	62.96	0.719	15.96	0.611	16.24
0.1025	73.75	0.737	16.36	0.632	16.81
0.1275	91.74	0.762	16.91	0.662	17.61
0.1525	109.73	0.781	17.33	0.690	18.35
0.1775	127.71	0.803	17.82	0.714	18.98
0.2275	163.69	0.830	18.43	0.752	20.00
0.2775	199.66	0.855	18.97	0.785	20.88
0.3275	235.64	0.876	19.44	0.817	21.73
0.3775	271.62	0.896	19.88	0.842	22.39
0.4275	307.59	0.911	20.23	0.866	23.03
0.4775	343.57	0.928	20.59	0.889	23.63
0.5775	415.52	0.958	21.26	0.928	24.68
0.6775	487.47	0.980	21.75	0.961	25.54
0.7775	559.42	0.995	22.08	0.982	26.12
0.8775	631.37	0.999	22.17	0.995	26.45
0.9775	703.32	1.000	22.19	0.999	26.56
1.0775	775.27	1.000	22.19	1.000	26.59

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	37.69	100.19	66.48	38.87

ST	CF2	F	K	REENTH	REMOM
0.00153	0.00203	0.00202	0.142E-05	2246.0	1196.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.061	0.114	0.778	0.687	1.500

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.00	0.208	4.62	0.110	3.26
0.0055	4.89	0.255	5.65	0.141	4.16
0.0065	5.78	0.291	6.47	0.174	5.12
0.0075	6.67	0.317	7.04	0.198	5.84
0.0085	7.56	0.349	7.76	0.217	6.41
0.0105	9.34	0.409	9.08	0.252	7.43
0.0125	11.12	0.451	10.01	0.286	8.46
0.0145	12.90	0.492	10.93	0.313	9.24
0.0175	15.56	0.540	11.99	0.350	10.35
0.0225	20.01	0.587	13.04	0.400	11.83
0.0275	24.46	0.624	13.85	0.436	12.88
0.0325	28.90	0.646	14.34	0.463	13.67
0.0425	37.80	0.681	15.12	0.501	14.81
0.0525	46.69	0.705	15.64	0.531	15.69
0.0675	60.03	0.732	16.25	0.563	16.62
0.0825	73.37	0.755	16.76	0.590	17.44
0.1025	91.16	0.781	17.33	0.618	18.26
0.1275	113.39	0.806	17.89	0.656	19.37
0.1525	135.62	0.827	18.35	0.683	20.16
0.1775	157.86	0.846	18.77	0.705	20.83
0.2275	202.33	0.873	19.39	0.746	22.04
0.2775	246.79	0.897	19.92	0.785	23.19
0.3275	291.26	0.916	20.32	0.820	24.22
0.3775	335.73	0.932	20.68	0.849	25.07
0.4275	380.19	0.946	21.00	0.874	25.83
0.4775	424.66	0.958	21.25	0.897	26.50
0.5775	513.59	0.977	21.69	0.938	27.71
0.6775	602.53	0.989	21.95	0.969	28.63
0.7775	691.46	0.996	22.11	0.990	29.24
0.8775	780.40	0.999	22.17	0.997	29.45
0.9775	869.33	1.000	22.19	1.000	29.54

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	45.64	100.30	66.48	50.28

ST	CF2	F	K	REENTH	REMOM
0.00141	0.00200	0.00203	0.148E-05	2869.0	1156.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.045	0.112	0.714	0.564	1.552

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.14	0.238	5.31	0.123	3.92
0.0055	6.28	0.290	6.49	0.155	4.92
0.0065	7.42	0.331	7.39	0.182	5.79
0.0075	8.56	0.367	8.20	0.204	6.50
0.0085	9.71	0.410	9.17	0.225	7.14
0.0105	11.99	0.475	10.62	0.258	8.21
0.0135	15.42	0.537	12.01	0.304	9.66
0.0185	21.12	0.599	13.40	0.362	11.50
0.0235	26.83	0.637	14.25	0.400	12.73
0.0285	32.54	0.661	14.79	0.431	13.70
0.0335	38.25	0.682	15.25	0.449	14.28
0.0435	49.67	0.714	15.95	0.482	15.32
0.0535	61.09	0.735	16.44	0.508	16.16
0.0635	72.51	0.756	16.90	0.532	16.94
0.0885	101.06	0.795	17.78	0.573	18.24
0.1135	129.60	0.829	18.53	0.614	19.54
0.1385	158.15	0.855	19.11	0.645	20.51
0.1635	186.70	0.875	19.56	0.677	21.55
0.1885	215.24	0.892	19.95	0.706	22.46
0.2135	243.79	0.906	20.27	0.733	23.31
0.2635	300.88	0.930	20.79	0.780	24.80
0.3135	357.98	0.948	21.19	0.819	26.07
0.3635	415.07	0.960	21.47	0.854	27.18
0.4135	472.16	0.972	21.73	0.887	28.22
0.4635	529.26	0.979	21.90	0.914	29.07
0.5635	643.44	0.990	22.13	0.958	30.48
0.6635	757.63	0.997	22.29	0.984	31.29
0.7635	871.82	0.999	22.35	0.996	31.68
0.8635	986.00	1.000	22.36	1.000	31.82

RUN 081568-1 , F = +0.002 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	49.52	100.71	66.62	58.92

ST	CF2	F	K	REENTH	REMOM
0.00134	0.00200	0.00201	0.148E-05	3230.0	1125.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.038	0.108	0.646	0.464	1.586

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.02	0.267	5.98	0.137	4.60
0.0055	7.36	0.327	7.31	0.176	5.87
0.0065	8.69	0.367	8.21	0.234	6.82
0.0075	10.03	0.397	8.89	0.223	7.46
0.0095	12.71	0.475	10.61	0.259	8.67
0.0115	15.38	0.525	11.75	0.294	9.81
0.0135	18.06	0.568	12.70	0.321	10.72
0.0155	20.73	0.596	13.32	0.344	11.50
0.0205	27.42	0.644	14.35	0.394	12.85
0.0255	34.11	0.674	15.07	0.414	13.86
0.0305	40.79	0.697	15.58	0.437	14.60
0.0405	54.17	0.728	16.28	0.474	15.85
0.0555	74.23	0.765	17.10	0.509	17.04
0.0755	100.98	0.802	17.92	0.550	18.39
0.1005	134.42	0.836	18.69	0.591	19.78
0.1255	167.85	0.863	19.31	0.628	21.00
0.1505	201.29	0.886	19.81	0.665	22.25
0.1755	234.73	0.904	20.21	0.698	23.34
0.2005	268.16	0.920	20.57	0.720	24.08
0.2255	301.60	0.933	20.87	0.752	25.14
0.2755	368.47	0.953	21.31	0.804	26.90
0.3255	435.34	0.967	21.63	0.844	28.23
0.3755	502.22	0.977	21.84	0.893	29.52
0.4255	569.09	0.985	22.02	0.913	30.54
0.4755	635.96	0.991	22.17	0.940	31.43
0.5755	769.71	0.998	22.31	0.980	32.76
0.6755	903.46	0.999	22.35	0.994	33.24
0.7755	1037.20	1.000	22.36	0.998	33.37
0.8755	1170.95	1.000	22.36	1.000	33.44

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	61.77	100.64	66.52	74.12

ST	CF2	F	K	REENTH	REMOM
0.00118	0.00145	0.00202	0.852E-09	4569.0	2058.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.055	0.121	0.675	0.497	1.648

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.45	0.247	6.48	0.135	4.38
0.0055	7.88	0.302	7.92	0.162	5.25
0.0065	9.32	0.345	9.07	0.195	6.33
0.0075	10.75	0.377	9.91	0.217	7.04
0.0085	12.18	0.404	10.61	0.235	7.62
0.0105	15.05	0.444	11.67	0.267	8.67
0.0125	17.91	0.472	12.41	0.294	9.51
0.0155	22.21	0.499	13.10	0.324	10.49
0.0195	27.95	0.526	13.82	0.351	11.37
0.0245	35.11	0.550	14.45	0.377	12.22
0.0345	49.44	0.585	15.35	0.408	13.23
0.0495	70.94	0.620	16.29	0.439	14.24
0.0645	92.43	0.652	17.14	0.468	15.15
0.0795	113.93	0.679	17.84	0.489	15.84
0.0995	142.59	0.713	18.73	0.516	16.72
0.1245	178.42	0.750	19.70	0.547	17.73
0.1495	214.25	0.782	20.55	0.573	18.58
0.1745	250.08	0.815	21.40	0.605	19.60
0.2245	321.73	0.871	22.86	0.663	21.49
0.2745	393.38	0.910	23.89	0.723	23.43
0.3245	465.04	0.942	24.75	0.780	25.27
0.3745	536.69	0.964	25.32	0.835	27.07
0.4245	608.35	0.978	25.69	0.883	28.62
0.4745	680.00	0.987	25.92	0.919	29.77
0.5245	751.66	0.993	26.07	0.949	30.76
0.5745	823.31	0.996	26.15	0.968	31.38
0.6745	966.62	0.999	26.22	0.990	32.07
0.7745	1109.93	1.000	26.25	0.999	32.37
0.8745	1253.24	1.000	26.26	1.000	32.40

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	69.70	100.64	66.55	74.38

ST	CF2	F	K	REENTH	REMOM
0.00100	0.00128	0.00201	0.107E-07	5650.0	2973.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.079	0.150	0.778	0.624	1.657

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	6.08	0.210	5.67	0.136	4.50
0.0055	7.43	0.257	7.17	0.158	5.23
0.0065	8.78	0.290	8.10	0.185	6.13
0.0075	10.13	0.317	8.88	0.204	6.77
0.0085	11.48	0.345	9.65	0.223	7.40
0.0095	12.83	0.366	10.24	0.241	8.00
0.0115	15.54	0.407	11.38	0.271	9.01
0.0135	18.24	0.433	12.10	0.291	9.67
0.0165	22.29	0.455	12.71	0.323	10.74
0.0215	29.05	0.483	13.51	0.351	11.65
0.0265	35.80	0.504	14.09	0.372	12.35
0.0365	49.31	0.534	14.91	0.400	13.29
0.0515	69.58	0.567	15.85	0.429	14.22
0.0665	89.84	0.594	16.59	0.452	15.03
0.0815	110.11	0.619	17.28	0.470	15.60
0.1015	137.11	0.645	18.04	0.493	16.37
0.1265	170.91	0.676	18.89	0.515	17.11
0.1515	204.64	0.704	19.67	0.539	17.98
0.1765	238.45	0.729	20.38	0.558	18.56
0.2265	304.01	0.776	21.69	0.603	20.04
0.2765	371.56	0.821	22.94	0.665	21.45
0.3265	441.11	0.870	24.34	0.695	22.76
0.3765	508.86	0.893	24.95	0.729	24.24
0.4265	576.22	0.922	25.77	0.776	25.79
0.4765	643.77	0.948	26.49	0.825	27.41
0.5265	711.32	0.969	27.08	0.865	28.76
0.5765	778.87	0.982	27.44	0.908	30.18
0.6265	846.42	0.990	27.68	0.943	31.33
0.6765	913.97	0.996	27.83	0.967	32.15
0.7765	1049.08	0.999	27.92	0.985	32.86
0.8765	1184.18	1.000	27.95	0.998	33.16
0.9765	1319.28	1.000	27.95	1.000	33.23

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81568 1	81668 1	85.78	100.51	66.72	74.44

ST	CF2	F	K	REENTH	REMOM
0.00097	0.00100	0.00199	0.318E-08	7221.0	4846.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.128	0.191	1.065	0.941	1.636

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	5.37	0.183	5.79	0.141	4.58
0.0055	6.57	0.224	7.08	0.172	5.55
0.0065	7.76	0.253	8.01	0.196	6.38
0.0075	8.96	0.273	8.64	0.210	6.84
0.0085	10.15	0.297	9.38	0.229	7.42
0.0095	11.35	0.318	10.05	0.244	7.95
0.0115	13.74	0.351	11.09	0.271	8.83
0.0145	17.32	0.386	12.22	0.304	9.92
0.0195	23.29	0.421	13.32	0.341	11.10
0.0245	29.26	0.444	14.03	0.365	11.89
0.0295	35.24	0.460	14.56	0.385	12.54
0.0395	47.19	0.487	15.38	0.408	13.30
0.0495	59.12	0.508	16.07	0.431	14.06
0.0645	77.04	0.531	16.80	0.453	14.75
0.0845	100.93	0.560	17.71	0.474	15.44
0.1095	130.79	0.587	18.57	0.496	16.16
0.1345	160.65	0.611	19.32	0.518	16.89
0.1595	190.51	0.631	19.97	0.537	17.51
0.1845	220.37	0.650	20.56	0.554	18.04
0.2345	280.09	0.685	21.67	0.582	18.96
0.2845	339.81	0.719	22.73	0.614	20.02
0.3345	399.54	0.748	23.64	0.641	20.91
0.3845	459.26	0.777	24.58	0.671	21.87
0.4345	518.98	0.805	25.44	0.695	22.66
0.4845	578.70	0.831	26.30	0.729	23.75
0.5845	698.14	0.879	27.80	0.779	25.41
0.6845	817.58	0.920	29.11	0.837	27.29
0.7845	937.03	0.956	30.24	0.898	29.28
0.8845	1056.47	0.981	31.02	0.946	30.84
0.9845	1175.91	0.994	31.42	0.976	31.84
1.0845	1295.35	0.998	31.56	0.993	32.37
1.1845	1414.80	0.999	31.61	0.999	32.57
1.2845	1534.24	1.000	31.62	1.000	32.60
1.4345	1713.40	1.000	31.62	1.000	32.60

RUN 081968-3 , F = +0.004 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82068 1	13.79	102.86	68.26	25.16

ST	CF2	F	K	REENTH	REMOM
0.00150	0.00111	0.00401	0.171E-05	1247.0	1415.0

DELMOM	DELT2	DELTAT	DELTAV	H
0.111	0.097	0.845	0.789	1.724

Y	YPLUS	UMG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	1.92	0.089	2.68	0.121	2.68
0.0055	2.34	0.109	3.27	0.151	3.36
0.0065	2.77	0.124	3.74	0.177	3.94
0.0075	3.20	0.138	4.16	0.193	4.29
0.0085	3.62	0.160	4.80	0.210	4.66
0.0105	4.48	0.203	6.10	0.235	5.23
0.0135	5.76	0.254	7.64	0.277	6.16
0.0175	7.46	0.291	8.75	0.318	7.09
0.0215	9.17	0.340	10.21	0.356	7.93
0.0255	10.87	0.366	10.98	0.390	8.68
0.0305	13.00	0.386	11.58	0.416	9.25
0.0355	15.13	0.411	12.33	0.446	9.92
0.0405	17.27	0.432	12.98	0.465	10.36
0.0505	21.53	0.457	13.73	0.502	11.18
0.0605	25.79	0.483	14.48	0.525	11.69
0.0705	30.05	0.503	15.09	0.545	12.13
0.0905	38.58	0.529	15.87	0.578	12.86
0.1155	49.24	0.563	16.85	0.613	13.64
0.1405	59.90	0.592	17.76	0.637	14.17
0.1655	70.55	0.618	18.54	0.665	14.79
0.2155	91.87	0.669	19.91	0.715	15.90
0.2655	113.18	0.706	21.20	0.750	16.68
0.3155	134.50	0.741	22.25	0.789	17.55
0.3655	155.81	0.790	23.40	0.823	18.31
0.4155	177.13	0.820	24.61	0.850	18.91
0.4655	198.44	0.857	25.72	0.877	19.51
0.5655	241.07	0.921	27.65	0.923	20.54
0.6655	283.70	0.968	29.05	0.958	21.32
0.7655	326.33	0.988	29.66	0.983	21.88
0.8655	368.96	0.996	29.88	0.992	22.08
0.9655	411.59	0.999	29.99	1.000	22.26
1.0655	454.22	1.000	30.01	1.000	22.26

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82068 1	29.67	102.80	68.50	30.61

ST	CF2	F	K	REENTH	REMOM
0.00129	0.00148	0.00403	0.141E-05	2298.0	1589.0

DELMOM	DELT2	DELTAT	DELTAV	H
0.102	0.148	0.943	0.857	1.544

Y	YPLUS	UMG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.69	0.146	3.80	0.128	4.10
0.0055	3.29	0.179	4.65	0.150	4.80
0.0065	3.89	0.215	5.60	0.169	5.41
0.0075	4.49	0.253	6.58	0.180	5.76
0.0095	5.68	0.293	7.61	0.201	6.44
0.0105	6.28	0.310	8.06	0.218	6.98
0.0115	6.88	0.327	8.50	0.230	7.37
0.0125	7.48	0.344	8.95	0.242	7.75
0.0175	10.47	0.412	10.71	0.293	9.39
0.0225	13.46	0.463	12.05	0.337	10.81
0.0275	16.46	0.501	13.01	0.369	11.80
0.0375	22.44	0.547	14.23	0.419	13.41
0.0475	28.42	0.581	15.09	0.449	14.38
0.0625	37.40	0.610	15.86	0.486	15.57
0.0875	52.36	0.648	16.83	0.533	17.06
0.1125	67.32	0.677	17.60	0.567	18.15
0.1375	82.28	0.703	18.29	0.595	19.06
0.1625	97.24	0.729	18.94	0.622	19.93
0.2125	127.16	0.760	19.76	0.660	21.13
0.2625	157.08	0.788	20.45	0.702	22.49
0.3125	187.00	0.814	21.17	0.737	23.59
0.3625	216.92	0.838	21.78	0.763	24.43
0.4125	246.84	0.856	22.25	0.793	25.40
0.4625	276.76	0.876	22.77	0.817	26.18
0.5625	336.59	0.912	23.70	0.866	27.74
0.6625	396.43	0.944	24.54	0.908	29.07
0.7625	456.27	0.969	25.19	0.943	30.21
0.8625	516.11	0.991	25.77	0.972	31.12
0.9625	575.95	0.998	25.94	0.994	31.83
1.0625	635.79	0.999	25.98	1.000	32.03
1.1625	695.63	1.000	25.99	1.000	32.03

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82068 1	37.69	102.66	68.16	37.74

ST	CF2	F	K	REENTH	REMOM
0.00113	0.00145	0.00403	0.139E-05	3016.0	1547.0

DELMOM	DELT2	DELTAT	DELTAV	H
0.081	0.157	0.938	0.817	1.553

Y	YPLUS	UMG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.29	0.178	4.68	0.103	3.48
0.0055	4.02	0.218	5.72	0.128	4.31
0.0065	4.75	0.252	6.62	0.145	4.88
0.0075	5.48	0.276	7.24	0.161	5.45
0.0095	6.95	0.328	8.63	0.187	6.32
0.0125	9.14	0.390	10.25	0.227	7.66
0.0175	12.79	0.465	12.21	0.276	9.34
0.0225	16.45	0.508	13.35	0.311	10.52
0.0275	20.11	0.541	14.22	0.341	11.53
0.0375	27.42	0.589	15.46	0.391	13.21
0.0475	34.73	0.617	16.21	0.418	14.12
0.0625	45.69	0.652	17.11	0.451	15.23
0.0775	56.66	0.675	17.73	0.482	16.30
0.1025	74.94	0.715	18.79	0.518	17.52
0.1275	93.22	0.744	19.53	0.550	18.60
0.1525	111.49	0.769	20.18	0.578	19.54
0.1775	129.77	0.791	20.77	0.604	20.42
0.2275	166.33	0.826	21.70	0.655	22.14
0.2775	202.88	0.852	22.37	0.697	23.56
0.3275	239.44	0.874	22.96	0.738	24.95
0.3775	275.99	0.894	23.48	0.766	25.90
0.4275	312.55	0.911	23.92	0.794	26.84
0.4775	349.10	0.927	24.34	0.827	27.96
0.5775	422.21	0.951	24.98	0.877	29.66
0.6775	495.32	0.972	25.52	0.921	31.12
0.7775	568.43	0.986	25.89	0.955	32.27
0.8775	641.54	0.997	26.19	0.981	33.15
0.9775	714.65	1.000	26.25	0.996	33.66
1.0775	787.76	1.000	26.26	1.000	33.80

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82068 1	45.64	101.32	66.73	48.55

ST	CF2	F	K	REENTH	REMOM
0.00103	0.00138	0.00403	0.145E-05	3942.0	1567.0

DELMOM	DELT2	DELTAT	DELTAV	H
0.063	0.159	0.869	0.693	1.591

Y	YPLUS	UMG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.15	0.195	5.25	0.096	3.11
0.0055	5.07	0.238	6.41	0.104	3.75
0.0065	5.99	0.281	7.58	0.127	4.61
0.0075	6.91	0.316	8.52	0.149	5.39
0.0095	8.76	0.375	10.09	0.177	6.40
0.0115	10.60	0.421	11.33	0.202	7.29
0.0135	12.45	0.460	12.39	0.224	8.12
0.0185	17.06	0.520	13.95	0.274	9.91
0.0235	21.66	0.555	14.97	0.305	11.02
0.0285	26.27	0.586	15.77	0.326	11.81
0.0335	30.88	0.605	16.28	0.348	12.60
0.0435	40.10	0.636	17.11	0.381	13.78
0.0535	49.32	0.662	17.83	0.407	14.72
0.0685	63.15	0.697	18.75	0.436	15.76
0.0935	86.20	0.740	19.93	0.480	17.38
0.1185	109.25	0.772	20.77	0.513	18.57
0.1435	132.29	0.798	21.49	0.550	19.90
0.1685	155.34	0.822	22.13	0.573	20.73
0.2185	201.44	0.858	23.10	0.633	22.89
0.2685	247.53	0.887	23.87	0.680	24.59
0.3185	293.63	0.911	24.53	0.720	26.03
0.3685	339.72	0.929	25.02	0.770	27.84
0.4185	385.82	0.945	25.44	0.809	29.29
0.4685	431.91	0.957	25.76	0.840	30.37
0.5685	524.11	0.975	26.24	0.895	32.37
0.6685	616.30	0.988	26.58	0.938	33.92
0.7685	708.49	0.996	26.80	0.971	35.12
0.8685	800.69	0.999	26.88	0.990	35.81
0.9685	892.87	1.000	26.91	0.997	36.07
1.0685	985.06	1.000	26.92	1.000	36.18

RUN 081968-3 , F = +0.004 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82068 1	49.52	100.61	65.96	56.58

ST	CF2	F	K	REENTH	REMOM
0.00096	0.00145	0.00403	0.144E-05	4538.0	1547.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.053	0.156	0.809	0.606	1.610

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	4.97	0.242	6.36	0.081	3.22
0.0055	6.07	0.296	7.78	0.113	4.51
0.0065	7.18	0.343	9.00	0.135	5.38
0.0075	8.28	0.379	9.96	0.151	6.01
0.0095	10.49	0.441	11.57	0.183	7.26
0.0115	12.70	0.477	12.54	0.207	8.25
0.0135	14.91	0.505	13.26	0.233	9.27
0.0185	20.43	0.555	14.57	0.279	11.08
0.0235	25.95	0.587	15.42	0.304	12.11
0.0285	31.47	0.612	16.06	0.325	12.93
0.0385	42.51	0.651	17.10	0.358	14.24
0.0535	59.07	0.691	18.15	0.395	15.73
0.0785	86.67	0.741	19.47	0.443	17.63
0.1035	114.28	0.779	20.46	0.485	19.29
0.1285	141.88	C.810	21.26	0.521	20.71
0.1535	169.48	0.834	21.91	0.555	22.10
0.1785	197.09	0.856	22.48	0.583	23.21
0.2035	224.69	0.876	22.99	0.613	24.40
0.2285	252.29	0.891	23.41	C.641	25.51
0.2785	3C7.50	C.918	24.11	0.689	27.41
0.3285	362.70	0.937	24.59	0.742	29.51
0.3785	417.91	0.951	24.98	0.783	31.14
0.4285	473.12	0.963	25.30	0.828	32.93
0.4785	528.32	0.973	25.56	0.859	34.17
0.5785	638.74	C.987	25.92	0.919	36.56
0.6785	749.15	0.995	26.14	C.962	38.27
0.7785	859.56	0.999	26.23	0.987	39.27
0.8785	969.97	1.000	26.26	C.997	39.67
0.9785	1080.39	1.000	26.26	1.00C	39.79

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82C68 1	61.77	100.47	65.82	69.80

ST	CF2	F	K	REENTH	REMOM
0.00075'	0.0008C	0.00401	0.2C7E-07	6437.0	2862.0

DELMOM	DELTA2	DELTAT	DELTAV	H
C.08C	0.180	0.873	0.670	1.765

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	C.0C	0.000	0.0C	0.000	0.00
0.0045	4.55	0.172	6.06	0.075	2.83
0.0055	5.57	0.210	7.41	0.109	4.10
0.0065	6.58	0.234	8.26	0.130	4.89
0.0075	7.59	0.249	8.81	0.144	5.45
0.0C95	9.62	0.297	10.51	0.173	6.53
0.0115	11.64	0.333	11.79	0.195	7.35
C.0135	13.66	0.359	12.71	0.216	8.14
0.0185	18.73	0.401	14.17	0.250	9.45
0.0235	23.79	0.428	15.12	0.273	10.31
0.0335	33.91	0.467	16.53	0.308	11.62
0.0435	44.03	0.497	17.56	0.327	12.33
0.0585	59.21	0.530	18.73	0.354	13.35
0.0735	74.40	0.559	19.77	0.374	14.13
0.0985	99.70	0.602	21.28	0.406	15.34
0.1235	125.01	0.640	22.61	C.434	16.39
0.1485	150.31	0.674	23.81	0.458	17.29
0.1735	175.62	0.706	24.96	0.482	18.19
0.2235	226.23	0.765	27.03	C.528	19.92
0.2735	276.84	0.815	28.81	0.575	21.73
0.3235	327.45	0.862	30.48	C.627	23.68
0.3735	378.06	0.899	31.80	0.675	25.49
0.4235	428.67	C.928	32.80	0.725	27.38
0.4735	479.29	0.949	33.54	0.782	29.53
0.5735	580.51	0.977	34.53	0.865	32.67
0.6735	681.73	C.990	35.02	0.932	35.17
0.7735	782.95	0.998	35.27	0.970	36.61
0.8735	884.17	0.999	35.33	0.991	37.41
0.9735	985.39	1.000	35.36	1.000	37.75

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82068 1	69.70	100.40	65.93	69.60

ST	CF2	F	K	REENTH	REMOM
0.00066	0.00068	0.00403	0.163E-07	7876.0	4219.0

DELMOM	DELTA2	DELTAT	DELTAV	H
0.118	0.221	1.063	0.868	1.783

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
C.0000	0.00	0.000	0.00	0.000	0.00
0.0C45	4.19	0.146	5.61	0.082	3.22
0.0055	5.12	0.179	6.85	0.112	4.40
0.0065	6.05	C.206	7.89	0.128	5.03
0.0075	6.98	0.226	8.68	0.140	5.50
0.0C95	8.84	0.261	9.99	0.168	6.60
0.0145	13.49	0.320	12.27	C.216	8.49
0.0195	18.14	0.353	13.53	0.252	9.91
0.0245	22.79	0.378	14.49	0.273	10.74
0.0295	27.44	0.395	15.15	C.288	11.33
0.0395	36.74	0.423	16.20	0.313	12.32
0.0495	46.05	0.445	17.06	0.331	13.03
0.0595	55.35	0.464	17.80	0.346	13.62
0.0745	69.30	0.491	18.84	0.367	14.45
0.0895	83.25	C.514	19.71	0.380	14.96
0.1095	1C1.86	0.540	20.70	0.404	15.87
0.1345	125.11	0.568	21.80	0.424	16.70
0.1595	148.37	0.594	22.79	0.444	17.45
0.1845	171.63	0.617	23.65	0.461	18.12
0.2345	218.14	0.663	25.44	0.497	19.55
0.2845	264.65	0.706	27.07	0.529	20.82
0.3345	311.16	0.745	28.57	0.561	22.08
0.3845	357.67	0.781	29.96	0.595	23.43
0.4345	404.18	0.817	31.33	0.629	24.74
0.4845	450.69	0.852	32.67	C.664	26.13
0.5845	543.71	C.910	34.90	C.744	29.27
C.6845	636.73	0.952	36.51	0.824	32.41
0.7845	729.76	0.979	37.56	0.903	35.52
C.8845	822.78	0.992	38.05	C.950	37.39
0.9845	915.80	0.997	38.24	0.981	38.59
1.0845	10C8.82	0.999	38.32	0.994	39.11
1.1845	1101.84	1.000	38.35	0.999	39.31
1.2845	1194.87	1.000	38.35	1.000	39.35

RUNT	RUNV	X	TPLATE	TGAST	UGAST
81968 3	82C68 1	85.78	100.50	65.96	69.43

ST	CF2	F	K	REENTH	REMOM
0.00C55	0.00053	0.00405	C.981E-08	10194.0	6949.0

DELMOM	DELT#2	CELTAT	DELTAV	H
0.195	0.286	1.436	1.315	1.797

Y	YPLUS	UUG	UPLUS	TBAR	TPLUS
0.0000	C.00	0.000	0.0C	0.000	0.00
0.0045	3.69	0.118	5.1C	0.080	3.36
0.0055	4.51	0.144	6.24	0.100	4.19
C.0065	5.32	0.164	7.11	0.113	4.73
0.0075	6.14	0.179	7.77	0.128	5.36
0.0095	7.78	0.209	9.07	0.150	6.31
0.0125	10.24	0.245	10.64	0.181	7.60
0.0155	12.70	0.271	11.75	0.207	8.69
0.0205	16.79	0.302	13.12	0.237	9.94
0.0255	20.89	0.323	14.02	0.253	10.65
0.0305	24.98	C.340	14.75	0.273	11.48
0.0405	33.18	0.365	15.85	0.295	12.40
0.0505	41.37	0.385	16.72	0.316	13.27
0.0605	49.56	0.401	17.41	0.330	13.86
0.0855	70.04	0.437	18.97	0.356	14.94
0.1105	9C.51	0.464	20.15	0.382	16.03
0.1355	110.99	0.487	21.14	0.399	16.74
0.1605	131.47	0.509	22.12	0.419	17.62
0.1855	151.95	0.527	22.88	0.435	18.28
0.2355	192.91	0.560	24.31	0.462	19.41
0.2855	233.86	0.589	25.6C	0.485	20.38
0.3355	274.82	0.618	26.82	0.510	21.42
0.3855	315.78	0.645	28.02	0.532	22.34
0.4355	356.73	0.673	29.22	C.550	23.10
0.4855	397.69	0.697	30.27	0.574	24.10
0.5855	479.60	0.747	32.43	0.617	25.91
0.6855	561.52	0.792	34.40	0.664	27.92
0.7855	643.43	0.837	36.34	0.711	29.90
0.8855	725.34	0.880	38.21	0.761	32.00
0.9855	807.26	0.916	39.78	0.811	34.10
1.0855	889.17	0.948	41.17	0.863	36.29
1.1855	971.09	0.972	42.21	0.920	38.65
1.2855	1C53.00	0.987	42.89	0.958	40.25
1.3855	1134.91	0.995	43.23	0.984	41.35
1.4855	1216.83	0.998	43.35	0.996	41.86
1.5855	1298.74	0.999	43.40	1.000	42.03
1.6855	1380.65	1.000	43.43	1.000	42.03
1.7855	1462.57	1.000	43.44	1.000	42.03

RUN 082768-1 , F = +0.006 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
82768 1	82668 1	13.78	97.49	66.80	24.99

ST	CF2	F	K	REENTH	REMUM
0.00103	0.00082	0.00586	0.557E-07	1481.0	1676.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.127	0.112	0.856	0.841	1.612

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	1.70	0.093	2.90	0.072	2.02
0.0055	2.07	0.102	3.55	0.087	2.42
0.0065	2.45	0.119	4.16	0.107	2.98
0.0075	2.83	0.135	4.71	0.122	3.39
0.0085	3.21	0.151	5.27	0.137	3.83
0.0105	3.96	0.196	6.85	0.165	4.60
0.0125	4.71	0.229	7.98	0.193	5.10
0.0165	6.22	0.254	8.87	0.229	6.38
0.0215	8.11	0.278	9.72	0.277	7.72
0.0265	9.99	0.320	11.17	0.311	8.66
0.0315	11.88	0.346	12.10	0.347	9.66
0.0365	13.76	0.360	12.58	0.367	10.22
0.0465	17.53	0.381	13.31	0.408	11.37
0.0565	21.31	0.407	14.20	0.434	12.09
0.0715	26.96	0.437	15.25	0.473	13.19
0.0865	32.62	0.460	16.06	0.498	13.88
0.1065	40.16	0.487	16.95	0.530	14.75
0.1315	49.59	0.517	18.05	0.559	15.57
0.1565	59.01	0.536	18.71	0.599	16.42
0.1815	68.44	0.561	19.59	0.620	17.26
0.2065	77.87	0.586	20.48	0.639	17.80
0.2315	87.29	0.610	21.30	0.660	18.39
0.2815	106.15	0.655	22.89	0.707	19.71
0.3315	125.00	0.699	24.41	0.745	20.75
0.3815	143.86	0.741	25.86	0.776	21.63
0.4315	162.71	0.777	27.14	0.810	22.57
0.4815	181.56	0.813	28.40	0.839	23.39
0.5815	219.27	0.886	30.92	0.896	24.96
0.6815	256.98	0.945	32.99	0.943	26.29
0.7815	294.69	0.979	34.17	0.977	27.23
0.8815	332.40	0.994	34.71	0.994	27.71
0.9815	370.10	0.999	34.85	1.000	27.86
1.1615	438.96	1.000	34.92	1.000	27.86

RUNT	RUNV	X	TPLATE	TGAST	UGAST
82768 1	82668 1	29.67	97.73	66.80	30.80

ST	CF2	F	K	REENTH	REMUM
0.00079	0.00102	0.00586	0.139E-05	2924.0	2019.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.124	0.180	1.083	1.002	1.599

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.33	0.105	3.30	0.069	2.65
0.0055	2.85	0.129	4.03	0.082	3.32
0.0065	3.37	0.152	4.76	0.097	3.95
0.0075	3.89	0.175	5.49	0.109	4.40
0.0085	4.41	0.193	6.04	0.122	4.94
0.0105	5.44	0.236	7.38	0.145	5.88
0.0125	6.48	0.268	8.40	0.165	6.69
0.0175	9.07	0.334	10.46	0.213	8.62
0.0225	11.66	0.383	12.00	0.257	10.42
0.0275	14.25	0.423	13.23	0.285	11.54
0.0325	16.85	0.450	14.08	0.311	12.58
0.0375	19.44	0.469	14.69	0.334	13.53
0.0425	22.03	0.489	15.30	0.353	14.29
0.0525	27.21	0.520	16.28	0.379	15.37
0.0625	32.40	0.541	16.95	0.401	16.23
0.0825	42.76	0.581	18.20	0.444	17.99
0.1075	55.72	0.612	19.16	0.477	19.34
0.1325	68.68	0.643	20.15	0.512	20.74
0.1575	81.64	0.669	20.96	0.539	21.83
0.1825	94.60	0.692	21.65	0.559	22.64
0.2325	120.51	0.723	22.62	0.600	24.32
0.2825	146.43	0.751	23.51	0.640	25.94
0.3325	172.35	0.777	24.32	0.676	27.39
0.3825	198.26	0.801	25.08	0.712	28.84
0.4325	224.18	0.826	25.85	0.739	29.93
0.4825	250.10	0.848	26.55	0.767	31.07
0.5825	301.93	0.881	27.59	0.819	33.20
0.6825	353.76	0.916	28.68	0.866	35.11
0.7825	405.60	0.947	29.64	0.905	36.65
0.8825	457.43	0.973	30.47	0.947	38.38
0.9825	509.27	0.987	30.91	0.974	39.47
1.0825	561.10	0.997	31.21	0.990	40.11
1.1825	612.93	0.999	31.25	0.999	40.47
1.2825	664.77	1.000	31.31	1.000	40.52

RUNT	RUNV	X	TPLATE	TGAST	UGAST
82768 1	82668 1	37.69	97.76	66.90	38.20

ST	CF2	F	K	REENTH	REMUM
0.00070	0.00105	0.00581	0.142E-05	3952.0	2045.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.102	0.196	1.077	0.940	1.581

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.93	0.139	4.28	0.069	3.19
0.0055	3.59	0.170	5.23	0.086	3.96
0.0065	4.24	0.200	6.18	0.101	4.68
0.0075	4.89	0.222	6.86	0.117	5.41
0.0085	5.54	0.247	7.62	0.129	5.97
0.0105	6.85	0.289	8.87	0.150	6.95
0.0125	8.15	0.329	10.15	0.171	7.93
0.0165	10.76	0.382	11.76	0.208	9.63
0.0215	14.02	0.428	13.21	0.241	11.18
0.0265	17.28	0.463	14.25	0.268	12.42
0.0315	20.54	0.487	15.04	0.290	13.45
0.0365	23.81	0.508	15.68	0.308	14.28
0.0465	30.33	0.544	16.78	0.342	15.83
0.0565	36.85	0.573	17.70	0.368	17.07
0.0765	49.89	0.614	18.94	0.408	18.88
0.1015	66.19	0.653	20.16	0.441	20.44
0.1265	82.49	0.684	21.12	0.477	22.10
0.1515	98.79	0.715	22.06	0.505	23.39
0.1765	115.09	0.741	22.85	0.530	24.58
0.2265	147.69	0.777	23.98	0.572	26.50
0.2765	180.29	0.807	24.90	0.620	28.74
0.3265	212.89	0.834	25.74	0.659	30.55
0.3765	245.49	0.855	26.39	0.695	32.22
0.4265	278.09	0.874	26.98	0.737	34.14
0.4765	310.69	0.894	27.59	0.764	35.39
0.5765	375.90	0.922	28.47	0.819	37.94
0.6765	441.10	0.947	29.22	0.867	40.18
0.7765	506.30	0.967	29.86	0.911	42.22
0.8765	571.51	0.983	30.33	0.951	44.10
0.9765	636.71	0.992	30.61	0.976	45.25
1.0765	701.91	0.997	30.77	0.990	45.87
1.1765	767.11	0.999	30.83	0.997	46.19
1.2765	832.32	1.000	30.86	1.000	46.34

RUNT	RUNV	X	TPLATE	TGAST	UGAST
82768 1	82668 1	45.64	97.83	67.04	49.39

ST	CF2	F	K	REENTH	REMOM
0.00064	0.00107	0.00584	0.145E-05	5152.0	2020.0

DELMOM	DELT#2	DELTAT	DELTAV	H
0.078	0.198	0.969	0.780	1.618

Y	YPLUS	U/UG	UPLUS	TBAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.83	0.171	5.23	0.070	3.59
0.0055	4.69	0.209	6.39	0.085	4.39
0.0065	5.53	0.240	7.33	0.100	5.13
0.0075	6.38	0.263	8.05	0.109	5.58
0.0095	8.09	0.313	9.56	0.128	6.55
0.0115	9.78	0.353	10.78	0.154	7.86
0.0135	11.48	0.382	11.69	0.178	9.06
0.0185	15.74	0.447	13.67	0.215	11.00
0.0235	19.99	0.495	14.92	0.240	12.26
0.0285	24.24	0.515	15.74	0.261	13.35
0.0385	32.75	0.553	16.90	0.295	15.06
0.0485	41.26	0.583	17.83	0.317	16.20
0.0685	58.27	0.633	19.36	0.364	18.61
0.0935	79.53	0.681	20.83	0.407	20.78
0.1185	100.80	0.718	21.94	0.441	22.50
0.1435	122.06	0.749	22.89	0.470	23.99
0.1685	143.33	0.775	23.70	0.502	25.66
0.2185	185.86	0.819	25.05	0.555	28.35
0.2685	228.39	0.853	26.07	0.600	30.65
0.3185	270.92	0.879	26.88	0.650	33.18
0.3685	313.46	0.902	27.57	0.693	35.36
0.4185	355.99	0.920	28.12	0.735	37.55
0.4685	398.52	0.935	28.58	0.772	39.40
0.5685	483.58	0.958	29.29	0.842	42.97
0.6685	568.64	0.976	29.84	0.894	45.62
0.7685	653.71	0.989	30.24	0.938	47.87
0.8685	738.77	0.996	30.43	0.970	49.55
0.9685	823.83	0.999	30.54	0.990	50.53
1.0685	908.89	1.000	30.57	0.999	51.00
1.1185	951.43	1.000	30.57	1.000	51.05

RUN 082768-1 , F = +0.006 , K = 1.45×10^{-6}

RUNT	RUNV	X	TPLATE	TGAST	UGAST
82768 1	82268 1	69.70	99.96	68.26	71.07

ST	CF2	F	K	REENTH	REMOM
0.00032	0.00035	0.00576	0.417E-08	10062.0	5538.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.145	0.270	1.221	1.019	1.894

Y	YPLUS	UPIG	UPLUS	THAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	3.14	0.099	5.28	0.081	4.74
0.0055	3.83	0.121	6.45	0.096	5.63
0.0065	4.53	0.141	7.56	0.107	6.26
0.0075	5.23	0.156	8.37	0.117	6.83
0.0085	5.93	0.169	9.06	0.126	7.34
0.0105	7.32	0.198	10.59	0.143	8.35
0.0125	8.72	0.221	11.81	0.159	9.30
0.0145	10.11	0.239	12.77	0.170	9.93
0.0175	12.20	0.259	13.84	0.183	10.69
0.0215	14.99	0.273	14.61	0.200	11.64
0.0245	17.09	0.291	15.55	0.208	12.15
0.0285	19.87	0.308	16.44	0.222	12.97
0.0335	23.36	0.321	17.18	0.232	13.54
0.0385	26.84	0.335	17.91	0.243	14.18
0.0455	31.72	0.351	18.75	0.254	14.81
0.0535	37.30	0.369	19.72	0.266	15.51
0.0635	44.27	0.387	20.66	0.278	16.21
0.0735	51.25	0.404	21.62	0.289	16.84
0.0885	61.70	0.426	22.76	0.304	17.73
0.1085	75.65	0.453	24.20	0.323	18.88
0.1335	93.09	0.482	25.78	0.344	20.08
0.1585	110.51	0.505	27.20	0.359	20.97
0.1835	127.94	0.523	28.47	0.374	21.86
0.2085	145.37	0.555	29.65	0.395	23.07
0.2585	180.23	0.598	31.96	0.423	24.72
0.3085	215.09	0.639	34.16	0.451	26.31
0.4085	284.81	0.715	38.15	0.512	29.88
0.5085	354.53	0.783	41.87	0.578	33.77
0.6085	424.25	0.856	45.25	0.647	37.79
0.7085	493.98	0.898	47.99	0.715	41.74
0.8085	563.70	0.941	50.31	0.798	46.60
0.9085	633.42	0.972	51.93	0.877	51.22
1.0085	703.14	0.989	52.95	0.937	54.74
1.1085	772.86	0.996	53.23	0.974	56.86
1.2085	842.59	0.999	53.40	0.989	57.76
1.3085	912.30	1.000	53.44	0.997	58.21
1.4085	982.02	1.000	53.45	1.000	58.40

RUNT	RUNV	X	TPLATE	TGAST	UGAST
82768 1	82268 1	85.78	99.96	69.22	71.06

ST	CF2	F	K	REENTH	REMOM
0.00028	0.00028	0.00579	0.362E-08	13711.0	9187.0

DELMOM	DELT/2	DELTAT	DELTAV	H
0.247	0.368	1.758	1.580	1.916

Y	YPLUS	UPIG	UPLUS	THAR	TPLUS
0.0000	0.00	0.000	0.00	0.000	0.00
0.0045	2.81	0.078	4.67	0.067	4.00
0.0055	3.43	0.095	5.71	0.078	4.65
0.0065	4.05	0.110	6.57	0.090	5.36
0.0075	4.68	0.121	7.23	0.099	5.94
0.0095	5.92	0.138	8.27	0.117	6.97
0.0125	7.79	0.168	10.01	0.134	8.01
0.0175	10.91	0.202	12.08	0.168	10.01
0.0225	14.03	0.225	13.41	0.189	11.24
0.0325	20.27	0.259	15.48	0.214	12.79
0.0425	26.50	0.282	16.84	0.236	14.09
0.0625	38.97	0.317	18.97	0.260	15.51
0.0875	54.56	0.354	21.16	0.287	17.13
0.1125	70.15	0.384	22.97	0.309	18.49
0.1375	95.74	0.407	24.30	0.327	19.53
0.1625	101.33	0.428	25.57	0.342	20.44
0.1875	116.92	0.447	26.74	0.354	21.15
0.2375	148.10	0.480	28.67	0.380	22.71
0.2875	179.28	0.507	30.32	0.399	23.88
0.3375	210.46	0.535	32.00	0.427	25.50
0.3875	241.64	0.559	33.35	0.444	26.54
0.4875	304.00	0.609	36.40	0.482	28.82
0.5875	366.36	0.657	39.26	0.522	31.22
0.6875	428.72	0.700	41.85	0.563	33.70
0.7875	491.08	0.745	44.50	0.601	35.98
0.8875	553.44	0.790	47.21	0.643	38.45
0.9875	615.80	0.829	49.54	0.688	41.19
1.0875	678.16	0.866	51.75	0.733	43.87
1.1875	740.51	0.901	53.84	0.781	46.74
1.2875	802.87	0.933	55.78	0.836	50.01
1.3875	865.23	0.959	57.33	0.892	53.34
1.4875	927.59	0.978	58.47	0.932	55.76
1.5875	989.95	0.990	59.19	0.966	57.79
1.6875	1052.31	0.997	59.56	0.984	58.84
1.7875	1114.67	0.998	59.66	0.992	59.37
1.8875	1177.03	0.999	59.72	0.998	59.70
1.9875	1239.39	1.000	59.75	1.000	59.83
2.0875	1301.75	1.000	59.76	1.000	59.83

APPENDIX C

HEAT TRANSFER DATA REDUCTION PROGRAM LISTING

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$WATFOR
C   STANTON NUMBER AND RELATED PARAMETERS FOR PRESSURE GRADIENT RUNS ON
C   MASS TRANSFER RIG
      REAL TAMB,TCCV,TRCT,TBASE,PBAR,RHUM,EMISS,E1,E2,TGAS,PTOTAL,CMFLAG
     1,WFLAG,PROT,ENBLFG,EC(24),EU(24),ED(24),ET(24),CM(24),WIND(24),
     2PSTAT(48),A,B,C,D,CH20,P,TEMP(10),T,EPS,VAPH,PSAT(10),VAPL,VEPS,
     3RHCH,RHOSAT(10),RHCL,REPS,RHCV,RA,PVAF,RHOA,MV,MA,RM,TROTA,PROTA,
     4PROTAB,TO(24),TU(24),TD(24),TT(24),KW,WNET(24),RC,BETA,WSCALE,NPWR
     5,WCORR,ENDEN(24),TAVG(24),ER1,ER2,ER3,RH1,RH2,RH3,T1,T2,T3,DEN,Q1,
     6Q2,Q3,COEF1,COEF23,B1T1,B3T3,QHEATA,QHEAT,CHTA,QRAD(24),MDOT(24),
     7WSTDI,WSTD(24),WACT(24),KFLOW(24),KFUDGE(24),RHOZRO,VZERO(24),
     8QCCND(24),KCCND(24), CONLAT(24),QLOSS,ENNET(24),CP,TOEFF(24),
     9HTRANS(24),HTFRAC(24),RHOG(48),VISCG(48),V(48),DUDX(48),KV(48)
      REAL REX(48),VS(24),GS(24),REXS(24),XS(24),X(48),KS(24),DELTAT(24)
     1,H(24),ST(24),BB(24),F(24),CFO(24),KPRCP,STSTO(24),XSTCP(24),
     2CFFT(24),DUDXS(24),VISCGS(24),AREA(24),REENTH(24),ENTH(24),F13,F12
     3,F22,AR,KCCNV(24),ECCNV(24), TITLE*8,REENW(25),DELH(25),STCP(25)
      INTEGER DATE,RUN,NPLATE,NPRINT,I,KLM,NSTAT,J,MASSK(25)
      DIMENSION TITLE(9)
C   THE FOLLOWING ARE FIXED DATA FILLS:
      DATA CONLAT(1),CCNLAT(2),CCNLAT(3),CONLAT(4),CONLAT(5),CONLAT(6),
     1CCNLAT(7),CONLAT(8),CONLAT(9),CONLAT(10),CONLAT(11),CONLAT(12),
     2CCNLAT(13),CCNLAT(14),CCNLAT(15),CONLAT(16),CONLAT(17),CONLAT(18),
     3CONLAT(19),CONLAT(20),CONLAT(21),CCNLAT(22),CCNLAT(23),CONLAT(24)/
     40.0007,0.0003,0.0,0.001,0.0018,0.0018,0.0004,0.0021,0.0015,0.0014,
     50.0016,0.0006,0.0006,0.0016,0.001,0.0008,0.001,0.001,0.0,0.0007,
     60.0011,0.0010,0.0,0.0/
      DATA KCCNV(1),KCCNV(2),KCCNV(3),KCONV(4),KCONV(5),KCONV(6),KCONV(7
     1),KCCNV(8),KCCNV(9),KCCNV(10),KCCNV(11),KCCNV(12),KCONV(13),
     2KCONV(14),KCONV(15),KCONV(16),KCONV(17),KCCNV(18),KCONV(19),
     3KCCNV(20),KCCNV(21),KCCNV(22),KCONV(23),KCONV(24)/0.020,0.020,
     40.025,0.020,0.018,0.035,0.040,0.026,0.024,0.035,0.032,0.039,0.032,
     50.024,0.016,0.014,0.018,0.020,0.019,0.015,0.017,0.013,0.030,0.015/
      DATA KCCND(1),KCCND(2),KCCND(3),KCCND(4),KCOND(5),KCOND(6),KCOND(7
     1),KCOND(8),KCOND(9),KCCND(10),KCOND(11),KCCND(12),KCOND(13),
     2KCCND(14),KCOND(15),KCOND(16),KCOND(17),KCOND(18),KCOND(19),
     3KCCND(20),KCCND(21),KCCND(22),KCCND(23),KCCND(24)/0.00688,0.00375,
     40.00337,0.00328,0.00194,0.00194,0.00386,0.00202,0.00235,0.00264,
     50.00267,0.00243,0.00298,0.00233,0.00206,0.00231,0.00168,0.00282,
     60.00405,0.00298,0.00265,0.00168,0.00309,0.00338/
      DATA KFUDGE(1),KFUDGE(2),KFUDGE(3),KFUDGE(4),KFUDGE(5),KFUDGE(6),
     1KFUDGE(7),KFUDGE(8),KFUDGE(9),KFUDGE(10),KFUDGE(11),KFUDGE(12),
     2KFUDGE(13),KFUDGE(14),KFUDGE(15),KFUDGE(16),KFUDGE(17),KFUDGE(18),
     3KFUDGE(19),KFUDGE(20),KFUDGE(21),KFUDGE(22),KFUDGE(23),KFUDGE(24)/
     4-0.010,0.024,0.0,-0.0025,0.0080,0.004,0.004,-0.008,0.008,0.0,0.008
     5,0.008,0.0,0.012,0.006,0.016,0.010,0.016,0.016,0.005,0.016,0.010,
     60.010,0.008/
      DATA KFLOW(1),KFLCW(2),KFLCW(3),KFLOW(4),KFLCW(5),KFLOW(6),KFLOW(7
     1),KFLOW(8),KFLOW(9),KFLOW(10),KFLOW(11),KFLOW(12),KFLOW(13),
     2KFLOW(14),KFLCW(15),KFLOW(16),KFLOW(17),KFLOW(18),KFLOW(19),
     3KFLOW(20),KFLOW(21),KFLOW(22),KFLCW(23),KFLCW(24)/1.0204,1.0101,
     41.0309,1.0417,1.0309,1.0309,1.0183,1.0493,1.0225,1.0449,1.0331,
     51.0428,1.0504,1.0373,1.0526,1.0152,1.0341,1.0331,1.0081,1.0471,
     61.0363,1.0428,1.0018,1.0331/
      DATA X(1),X(2),X(3),X(4),X(5),X(6),X(7),X(8),X(9),X(10),X(11),X(12
     1),X(13),X(14),X(15),X(16),X(17),X(18),X(19),X(20),X(21),X(22),X(23
     2),X(24),X(25),X(26),X(27),X(28),X(29),X(30),X(31),X(32),X(33),X(34
     3),X(35),X(36),X(37),X(38),X(39),X(40),X(41),X(42),X(43),X(44),X(45
     4),X(46),X(47),X(48)/1.969,3.953,5.953,7.961,9.969,11.953,13.937,
     515.945,17.953,19.922,21.938,23.954,25.962,27.962,29.978,31.939,
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     633.955,35.955,37.971,39.987,41.963,43.963,45.963,47.979,49.979,
     751.979,53.995,55.971,57.971,59.955,61.979,63.971,65.979,67.963,
     869.971,71.979,73.963,75.939,77.947,79.939,81.931,83.962,85.931,
     987.915,89.939,91.931,93.947,96.0/
      DATA TEMP(1),TEMP(2),TEMP(3),TEMP(4),TEMP(5),TEMP(6),TEMP(7),
     1TEMP(8),TEMP(9)/40.0,50.0,60.0,70.0,80.0,90.0,100.0,110.0,120.0/
      DATA PSAT(1),PSAT(2),PSAT(3),PSAT(4),PSAT(5),PSAT(6),PSAT(7),
     1PSAT(8),PSAT(9)/17.53,25.65,36.90,52.20,73.00,100.40,136.50,183.60
     2,243.70/
      DATA RHOSAT(1),RHOSAT(2),RHOSAT(3),RHOSAT(4),RHOSAT(5),RHOSAT(6),
     1RHOSAT(7),RHOSAT(8),RHOSAT(9)/0.000409,0.000587,0.000830,0.001153,
     20.001580,0.002139,0.002853,0.003770,0.004920/
      DATA A,B,C,D/-2220.703,781.25,7.950782,0.256/
      DATA ER2,ER3,F13,AR/0.20,0.35,0.175,0.25/
      WRITE(6,3)
  777 FORMAT(1X,9A8)
      RH2=1.0-ER2
      RH3=1.0-ER3
      F12=1.0-F13
      F22=1.0-2.0*AR*F12
      PSTAT(48)=0.0
C  THIS IS A TEMPORARY SET OF CARDS TO READ MULTIPLE SETS OF DATA
      READ(5,6)NRUNS
      DO 500 IRUN=1,NRUNS
C   ALL DATA READ AND PRINTED DURING THE NEXT OPERATION
    1 FORMAT('1',9A8)
    2 READ(5,1) (TITLE(I),I=1,9)
      PUNCH 777, (TITLE(I),I=1,9)
    3 FORMAT(1H1)
  306 FORMAT(1H )
  308 FORMAT(1H0)
      WRITE(6,777) (TITLE(I),I=1,9)
    4 FORMAT(I6,4X,I1,9X,5F10.2/2F10.2,I2,8X,I1,9X,2F10.1)
  304 FORMAT(1X,I6,1X,I1,1X,7F6.2,5X,I2,5X,I1,2X,2F6.1)
  300  FORMAT(78H DATE RUN TAMB   TCOV   TROT   TBASE PBAR   RHUM   EMISS   NPL
     1ATE  NPRINT    E1    E2 )
      WRITE(6,300)
      READ(5,4) DATE,RUN,TAMB,TCOV,TROT,TBASE,PBAR,RHUM,EMISS,NPLATE,
     1     NPRINT,E1,E2
      PUNCH 4, DATE,RUN,TAMB,TCOV,TROT,TBASE,PBAR,RHUM,EMISS,NPLATE,
     1   NPRINT,E1,E2
      WRITE(6,304) DATE,RUN,TAMB,TCOV,TROT,TBASE,PBAR,RHUM,EMISS,NPLATE
     1,NPRINT,E1,E2
      WRITE(6,306)
    5 FORMAT(7F10.5)
  301 FORMAT(60H    TGAS         PTOTAL      CMFLAG   WFLAG       PROT         EN
     1BLFG)
      WRITE(6,301)
      READ(5,5) TGAS,PTOTAL,CMFLAG,WFLAG,PROT,ENBLFG
      PUNCH 5, TGAS,PTOTAL,CMFLAG,WFLAG,PROT,ENBLFG
      WRITE(6,5) TGAS,PTOTAL,CMFLAG,WFLAG,PROT,ENBLFG
      WRITE(6,306)
   75 FORMAT(72H   I     EC        EU        ED        ET       CM        WIND
     1MASSK                  )
  302 FORMAT(54H   I    EO        EU       ED          ET       CM         WIND    )
    6 FORMAT(I2,8X,6F10.3)
  307 FORMAT(1X,I2,7F8.3)
 71    FORMAT(I2,8X,6F10.3,1X,I1)
 73    FORMAT(1X,I2,7F8.3,5X,I1)
 52    FORMAT(1X,I2,6F8.3,5X,I1)
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      IF(CMFLAG.NE.3.)GO TC 74
      WRITE(6,75)
      GC TO 76
   74 WRITE(6,302)
   76 DO 7 I=1,NPLATE
      IF(CMFLAG.NE.3.)GC TC 70
      READ(5,71)II,EO(I),EU(I),ED(I),ET(I),CM(I),WIND(I),MASSK(I)
      PUNCH 71, II,EO(I),EU(I),ED(I),ET(I),CM(I),WIND(I),MASSK(I)
      WRITE(6,52)II,EC(I),EU(I),ED(I),ET(I),CM(I),WIND(I),MASSK(I)
      GO TO 7
   70 READ(5,6) II,EO(I),EU(I),ED(I),ET(I),CM(I),WIND(I)
      PUNCH 6, II,EO(I),EU(I),ED(I),ET(I),CM(I),WIND(I)
      WRITE(6,307) II,EC(I),EU(I),ED(I),ET(I),CM(I),WIND(I)
    7 CCNTINUE
      WRITE(6,308)
  303 FORMAT(55H   STATIC  PRESSURES  FROM  WALL  PORTS,INCHES H2O GAGE)
      WRITE (6,303)
      READ(5,5) (PSTAT(I),I=1,47)
      PUNCH 5, (PSTAT(I),I=1,47)
      WRITE(6,5)(PSTAT(I),I=1,47)
      WRITE(6,3)
C   TGAS IS CONVERTED FROM MV TC DEG. F
      IF(TGAS - 10.) 251, 250, 250
  251 TGAS = A+B*SQRT(C+D*TGAS)
      TGAS = TGAS + 49.97 -12.6E-04*TGAS - 32.0E-06*TGAS*TGAS
  250 CCNTINUE
C   CH2O CORRECTS DENSITY CF H2C FRCM 62.4266 FOR AMBIENT TEMP.
      CH2O=0.99732-0.0001395*(TAMB-75.0)
C   MIXTURE CCMPOSITION IS DETERMINED FRCM RELATIVE HUMICITY AND USEC
C   TO GET MIXTURE GAS CONSTANT RM VIA PERFECT GAS ASSUMPTION
      P=PBAR*2116.C/29.96
      DC 8 N=1,9
      IF(TEMP(N).GT.TAMB) GO TO 9
    8 CCNTINUE
    9 T=TEMP(N)
      EPS=T-TAMB
      VAPH=PSAT(N)
      VAPL=PSAT(N-1)
      VEPS=VAPH-VAPL
      RHOH=RHOSAT(N)
      RHOL=RHOSAT(N-1)
      REPS=RHOH-RHCL
      RHOV=RHOL+(10.0-EPS)*REPS/10.0
      RA=53.3
      PVAP=RHUM*(VAPL+(10.0-EPS)*VEPS/10.0)
      RHOA=((P-PVAP)/(RA*(TAMB+460.0))+(RHUM*RHOV))
      MV=RHUM*RHOV/RHOA
      MA=1.C-MV
      RM=1545.0*(MA/28.9+MV/18.0)
      IF(TROT - 10.) 255, 256, 256
  255 TROT = A+B*SQRT(C+D*TROT)
      TROT = TROT +49.97 -12.6E-C4*TROT -32.0E-06*TROT*TROT
  256 TROTA=TROT+460.0
      PROTA=PBAR+PROT/25.4
      PROTAE=2116.C*PROTA/29.96
C  FREE STREAM DATA NOW PROCESSED
      DC 101 I=1,48
      RHOG(I)=(P+(    5.20    )*PSTAT(I))/(RM*(TGAS+460.0))
      VISCG(I)=(11.0+0.0175*TGAS)/(1000000.0*RHOG(I))
  101 V(I)=SQRT((64.34*(PTOTAL-PSTAT(I))*(62.4*CH2O/RHOG(I))/12.0))
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      DUDX(1)=(V(2)-V(1))/(X(1)/12.0)
      KV(1)=VISCG(1)*DUDX(1)/(V(1)*V(1))
      REX(1)=V(1)*X(1)/(12.0*VISCG(1))
      DO 102 I=2,47
      DUDX(I)=12.0*(V(I+1)-V(I-1))/(X(I+1)-X(I-1))
      KV(I)=VISCG(I)*DUDX(I)/(V(I)*V(I))
  102 REX(I)=V(I)*X(I)/(12.0*VISCG(I))
C  DATA IS REDUCED FOR EACH PLATE DURING THE NEXT OPERATION
      DO 22 I=1,NPLATE
      TC(I)=A+B*SQRT(C+D*EC(I))
      TU(I)=A+B*SQRT(C+D*EU(I))
      TD(I)=A+B*SQRT(C+D*ED(I))
      IF(TU(I).LT.35.0) TU(I)=TC(I)
      IF(TD(I).LT.35.0) TD(I)=TO(I)
      IF(ET(I).LT.0.8) ET(I)=EC(I)-ET(I)
      TT(I)=A+B*SQRT(C+D*ET(I))
      TC(I)=TO(I)+49.97-12.6E-04*TC(I)-32.0E-06*TO(I)*TO(I)
      TU(I)=TU(I)+49.97-12.6E-04*TU(I)-32.0E-06*TU(I)*TU(I)
      TD(I)=TD(I)+49.97-12.6E-04*TD(I)-32.0E-06*TD(I)*TD(I)
      TT(I)=TT(I)+49.97-12.6E-04*TT(I)-32.0E-06*TT(I)*TT(I)
C  FOLLOWING BLOCK CORRECTS INDICATED POWER FOR VOLTAGE COIL LOSS AND
C  FOR DEVIATION FROM ACTUAL PWR, PER SLAC TEST NO. 1149
C     WIND=0 USED AS FLAG FOR NO-POWER RUNS
      IF(WIND(I).LE.0.0) GO TO 12
      IF(WFLAG.LT.0.5) GO TO 10
C        WFLAG=0.0 FOR NEW WATTMETER
C        WFLAG=1.0 FOR OLD WATTMETER
      IF(WIND(I).GE.75.0) KW=0.99162
      IF(WIND(I).LT.75.0) KW=0.98326
      IF(WIND(I).GE.75.0) WNET(I)=KW*WIND(I)+0.6*(SIN(WIND(I)*3.1416*
     157./200.0)**2.0)
      IF(WIND(I).LT.75.0) WNET(I)=WIND(I)*KW+0.08
C  FOLLOWING CORRECTS POWER FOR THE EFFECT OF VOLTAGE COIL ON POWER
C  CIRCUIT DUE TO CHANGED SYSTEM RESISTANCE
      IF(I.LE.12) RC=E1/SQRT(75.0*WNET(I))
      IF(I.GT.12) RC=E2/SQRT(75.0*WNET(I))
      IF(WIND(I).LT.75.0) BETA=1.0+0.034*(1.0-1.0/RC)
      IF(WIND(I).GE.75.0) BETA=1.0+0.017*(1.0-1.0/RC)
      GO TO 11
   10 IF(WIND(I).GE.75.0) KW=0.995
      IF(WIND(I).LT.75.0) KW=0.99
      IF(WIND(I).GE.75.0) WSCALE=150.0
      IF(WIND(I).LT.75.0) WSCALE=75.0
      NPWR=WIND(I)/WSCALE
      WCORR=NPWR*(0.0728*NPWR-0.0427*(NPWR*NPWR)-0.0292)
      WNET(I)=KW*WIND(I)+WCORR*WSCALE
      IF(I.LE.12) RC=E1/SQRT(75.0*WNET(I))
      IF(I.GT.12) RC=E2/SQRT(75.0*WNET(I))
      IF(WIND(I).LT.75.0) BETA=1.0+0.020*(1.0-1.0/RC)
      IF(WIND(I).GE.75.0) BETA=1.0+0.010*(1.0-1.0/RC)
   11 WNET(I)=BETA*WNET(I)
C  NEXT CALCULATES ENERGY INPUT DENSITY BTU/SECFT2 CORRECTING FOR
C  HEATER WIRE WRAPPED ACROSS ENDS, 2.3 PERCENT
      ENDEN(I)=WNET(I)/(1055.0*0.50*1.023)
      GO TO 13
   12 ENDEN(I)=0.0
C  NEXT CALCULATES HEAT LOSS BY RADIATION
   13 TAVG(I)=(TC(I)*3.0+TU(I)+TD(I))/5.0
      KLM=1
      ER1=0.35
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      RH1=1.0-ER1
      T1=TAVG(I)+0.022*WIND(I)+460.0
      T3=TT(I)+460.0
      IF(PROT.LE.-0.1) T2=T1
      IF(PROT.GT.-0.1) T2=TT(I)+460.0
   14 IF(KLM.EQ.1) GO TO 15
      T1=T1+0.551*WIND(I)-0.0911*(T1-T3)
      ER1=0.90
      RH1=0.10
   15 DEN=1.0-RH2*F22-2.0*RH1*RH2*RH3*AR*F12*F12*F13-RH1*RH3*F13*F13*
     1(1.0-RH2*F22)-RH2*(RH3+RH1)*AR*F12*F12
      Q1=ER1*0.174E-08*T1*T1*T1*T1
      Q2=ER2*0.174E-08*T2*T2*T2*T2
      Q3=ER3*0.174E-08*T3*T3*T3*T3
      COEF1=1.0-RH2*F22-RH2*RH3*AR*F12*F12
      COEF23=(RH1*RH3*F12*F13+RH1*F12)*Q2+(RH1*RH2*AR*F12*F12+RH1*(1.0-
     1RH2*F22)*F13)*Q3
      B1T1=(COEF1*Q1+COEF23)/DEN
      B3T3=((RH3*(1.0+RH1*F13)*B1T1)+(RH1*Q3-RH3*Q1))/(RH1*(1.0+RH3*F13)
     1)
      IF(PROT.LE.-0.1) QHEATA=(ER1/RH1)*((Q1/ER1)-B1T1)
      IF(PROT.GT.-0.1) QHEATA=(ER3/RH3)*(B3T3-(Q3/ER3))
      IF(KLM.GE.2) GO TO 16
      KLM=2
      QHTA=QHEATA
      GO TO 14
   16 QHEAT=(0.895*QHTA+0.105*QHEATA)/3600.0
      IF(TCOV - 10.) 252, 253, 253
  252 TCOV = A+B*SQRT(C+D*TCOV)
      TCOV = TCOV +49.97 -12.6E-04*TCOV -32.0E-06*TCOV*TCOV
  253 QRAD(I)=0.1714*EMISS*(((TAVG(I)+460.0)/100.0)**4.0-((TCOV+460.0)/
     1100.0)**4.0)/3600.0+QHEAT
C  NEXT CALCULATES WEIGHT FLOW FROM ROTAMETER DATA AND GETS M..
      MDOT(I)=0.0
      VZERO(I) = 0.0
      RHOZRO = 0.0
      NSTAT = 2*I - 1
      IF(CMFLAG.NE.3.)GO TO 77
      IF(MASSK(I).EQ.1)GO TO 17
      IF(MASSK(I).EQ.2)GO TO 77
   77 IF(CMFLAG.LE.0.0) GO TO 17
      IF(CM(I).LE.0.0) GO TO 19
C  NEW FIT FOR FACTORY CALIBRATION, PLUS/MINUS 0.3 PERCENT
      WSTDI=(0.60+0.752*CM(I)-0.50*SIN(CM(I)*3.1417/25.0))*0.075/60.0
      GO TO 18
   17 IF(CM(I).LE.0.0) GO TO 19
      WSTDI=(0.175+0.13091*CM(I)-0.067*SIN((CM(I)-2.0)*3.1417/21.0))*
     10.075/60.0
   18 WSTD(I)=WSTDI
C  ROTAMETER FLOW IS NEXT CORRECTED FOR DENSITY TO YIELD ACTUAL FLOW,
C  THEN CORRECTED FOR PLATE POROSITY VARIATION
      WACT(I)=WSTD(I)*SQRT(PROTAB/(RM*TROTA*0.075))
      IF(PROT.LE.-0.1) MDOT(I)=WACT(I)*KFLOW(I)*2.01258
      IF(PROT.GT.-0.1) MDOT(I)=WACT(I)*(KFLOW(I)+KFUDGE(I))*2.01258
C  DENSITY OF FLOW AT PLATE SURFACE IS CALCULATED AND USED TO GET VZERO
      RHOZRO=(P+(    5.20    )*PSTAT(NSTAT))/(RM*(TAVG(I)+460.0))
      VZERO(I)=MDOT(I)/RHOZRO
C  NEXT CALCULATES HEAT LOSS BY CONDUCTION
   19 IF(TBASE-10.) 257, 258, 258
  257 TBASE = A+B*SQRT(C+D*TBASE)
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      TBASE = TBASE +49.97 -12.6E-C4*TBASE -32.CE-C6*TBASE*TBASE
  258 QCCNC(I)=KCCND(I)*(TAVG(I)-TEASE)/30.0
      IF(MDOT(I).LE.0.CC44) QCOND(I)=QCCND(I)+CONLAT(I)*((1.0-(MDOT(I)/
     10.0044)))*(TAVG(I)-TBASE)/30.0
      IF(MCOT(I).LE.0.0002) CCCNC(I)=QCCND(I)+(0.015/3600.0)*12.0*
     1(TAVG(I)-TBASE)
      CLCSS=GRAC(I)+QCCNC(I)
      ENNET(I)=ENCEN(I)-GLCSS
C   ENNET IS THE ENERGY DENSITY ON PLATE,AFTER SUBTRACTION OF HEAT LOSSES
C    FRCM ENERGY CELIVERED TO THE PLATE, ENNET=Q''(IO-IT)
C   SPECIFIC HEAT IS CORRECTED FCR HUMICITY EFFECTS IN THE FCLLOWING
C    CALCULATION
      CP=0.240+0.2C5*MV
C   CISTRIBUTION OF ENERGY IS MADE NOW
      IF(PRUT.GT.-0.1) GO TO 20
      MCOT(I)=0.0-MDOT(I)
      TT(I)=TAVG(I)+0.C22*WIND(I)
      TOEFF(I)=TAVG(I)-0.0044*WINC(I)
      ECONV(I)=MCCT(I)*(TCEFF(I)-TT(I))*CP
      IF(ENBLFG.LE.-1.C) ECONV(I)=MDOT(I)*(TGAS-TT(I))*CP
      GC TC 21
   2C ECONV(I)=MCCT(I)*(TAVG(I)-TT(I))*CP
C   EFFECTIVE SURFACE TEMPERATURE IS NOW DEFINED BASED ON MEASURED BULK
C   FLUIC TEMPERATURES LEAVING THE C-STATE, THIS INCLUDES THE EFFECT ON
C   CONDUCTION ERRCR, ON THE PLATE TEMPERATURE MEASUREMENT, AND ALSC THE
C   TEMPERATURE ANC AREA WEIGHT FACTORS
      ECCNV(I)=(1.0+30.0*MCCT(I)*KCCNV(I))*ECCNV(I)
      IF(MDOT(I).LE.0.0) TOEFF(I)=TAVG(I)
      IF(MCCT(I).GT.0.0) TOEFF(I)=TT(I)+ECONV(I)/(CP*MDOT(I))
   21 CCNTINUE
      HTRANS(I)=ENNET(I)-ECONV(I)
      HTFRAC(I)=HTRANS(I)/ENNET(I)
C   FREE STREAM DATA FOR INCIVICUAL PLATE IS RECORDEC NOW
      VS(I)=V(NSTAT)
      GS(I)=V(NSTAT)*RHCG(NSTAT)
      REXS(I)=REX(NSTAT)
      XS(I)=(2.0+(I-1)*4.0)/12.0
      KS(I)=KV(NSTAT)
C   CUTPUT PARAMETERS CALCULATED NCW
      DELTAT(I)=TOEFF(I)-TGAS
      DELH(I) =CP*DELTAT(I)     -VS(1)*VS(1)/(64.4*778.)
      H(I)=HTRANS(I)/DELH(I)
      ST(I)=H(I)/GS(I)
      F(I)=MDOT(I)/GS(I)
      STCP(I)=ST(I)*(((TOEFF(I)+46C.)/(TGAS+46C.))**0.4)
      BB(I)=MCCT(I)/(GS(I)*ST(I))
      CFO(I)=0.059/(REXS(I)**0.2)
      KPROP=((TOEFF(I)+46C.0)/(TGAS+46C.0))**0.16
      KPRCP=1.0/KPROP
C   STO IS TAKEN TC BE C.C1295*PR**-0.5*REENTH**-C.25
      STSTO(I)=ST(I)/(0.565*CFC(I))
      XSTCP(I)=ST(I)/KPRCP
      CFHT(I)=XSTCP(I)/0.565
C   ENTHALPY THICKNESS AND ENTHALPY THICKNESS REYNOLDS NUMBER CALCULATED
      DLDXS(I)=DLDX(NSTAT)
      VISCGS(I)=VISCG(NSTAT)
      IF(I-1) 201, 201,200
  2C1  CONTINUE
C   THE FCLLCWING IS A CALCULATION CF INITIAL ENTHALPY THICKNESS THAT
C   EXISTS UNDER CONSTANT SURFACE TEMPERATURE AT X=C .THE CONSTANTS WERE
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C   CETERMINED EXPERIMENTALLY FROM PROFILES TAKEN C82968-1 .ENTHALPY
C   THICKNESS AT X=-3.5 ECUALS 0.039 INCHES. AT X=-3.5 THE TEMPERATURE
C   CIFFERENCE IS
       TRATIO= 0.47*(TGAS-TAMB +2.)/(TGAS-TOEFF(1))
       ENTHZR = 0.039*TRATIO/12.
       IF(TGAS.GT.TOEFF(1))TRATIC=0.3*(TGAS-TAMB+2.)/(TGAS-TOEFF(1)+2.5)
       IF(TGAS.GT.TOEFF(1))ENTHZR= 0.022*TRATIO/12.
       AREA(I) = ((0.5*(XS(I)-0.0)*(ST(I)*VS(I) + ST(I)*VS(I) +
      1F(I)*VS(I) + F(I)*VS(I) ))/VISCGS(I)) +ENTHZR*VS(I)/VISCGS(I)
       GC TC 202
  2CC AREA(I)= ((C.5*(XS(I)-XS(I-1))*(ST(I-1)*VS(I-1) + ST(I)*VS(I)))/
     1VISCGS(I)) + AREA(I-1) + ((0.5*(XS(I)-XS(I-1))*(F(I-1)*VS(I-1) +
     2F(I)*VS(I)))/VISCGS(I))
  2C2 REENTH(I) = AREA(I)
      ENTH(I) =(REENTH(I)*VISCGS(I)/VS(I))*12.0
   22 CCNTINLE
      DO 33 J=1,NPRINT
      WRITE(6,777) (TITLE(I),I=1,9)
   24 FCRMAT(5H CATE,I8,5X,7HRUN NC.,I4)
      WRITE(6,24) DATE, RLN
   25 FCRMAT(9H AMB TMF=,F6.2,1HF,1X,10HBASE TEMP=,F6.2,1HF,4X,7HG TEMP=
     1,F6.2,1HF,/1X,5HBARC=,F6.2,5HIN.HG,5X,7HRELHUM=,F4.1,4X,7HTCOVER=,
     2F5.2)
      WRITE(6,25) TAMB,TBASE,TGAS,PBAR,RHUM,TCOV
   26 FCRMAT(115H UNITS:P-RCT= MM HG;  WIND= WATTS;  VEL= FT/SEC;  MCOT=
     1LB/(SEC-FT2);  HT-X, ECONV, ENNET, QCOND, CRAD= BTL/(SECFT2) )
  310 FORMAT(19H UNITS: DELTA2= IN.)
      WRITE(6,26)
      WRITE(6,310)
   27 FORMAT(/5H  PL  ,1X,7HTCL-AVG,5X,2HTU,6X,2HTD,7X,2HTT,5X,5HTOEFF,5X
     1,5HDEL-T,5X,2HCM,7X,4HWIND,6X,5HVEL-X,5X,5HXSTCP,7X,4HCFHT,/1X,3HN
     2O.,/8X,4HRE-X,6X1HB,7X,4HMDOT,4X,6HV-ZERO,4X,4HHT-X,4X,5HECONV,
     35X,5HENNET,4X,5HCCCND,5X,4HQRAC,6X,3HCFC,8X,6HHTFRAC,//)
      WRITE(6,27)
      CC 29 I=1,NFLATE
   28 FCRMAT(6X,F6.2,4X,F6.2,2X,F6.2,3X,F6.2,3X,F6.2,3X,F6.2,2X,F6.2,4X,
     1F6.2,5X,F6.2,4X,E10.3,2X,E10.3,/,I3,3X,/,4X,E10.3,2X,F6.3,2X,F8.5,
     22X,F8.5,   E10.3,   E10.3,   E10.3,   E10.3,   E10.3,   E10.3,2X,
     3E1C.3,//)
      WRITE(6,28) TO(I),TU(I),TD(I),TT(I),TOEFF(I),DELTAT(I),CM(I),WIND(
     1I),VS(I),XSTCP(I),CFHT(I),I,REXS(I),BB(I),MDOT(I),VZERO(I),
     2HTRANS(I),ECONV(I),ENNET(I),CCCNC(I),QRAD(I),CFC(I),HTFRAC(I)
   29 CCNTINUE
      WRITE (6,3)
  1C3 FORMAT(64H     RUN         PTOTAL          TG           TAMB          PBAR
    1 RHUM   ,//)
      WRITE(6,103)
  1C4 FORMAT(2X,I6,1H-,I1,4X,5F1C.5,///)
      WRITE(6,104) DATE,RLN,PTCTAL,TGAS,TAMB,PBAR,RHUM
  1C5 FCRMAT(77H   I          X(I)      PSTAT(I)      V(I)          DUDX(I)
    1  K(I)          NREX(I) ,//)
      WRITE(6,105)
      DO 107 I=1,47
  1C6 FCRMAT(1X,I2,4X,F8.3,3F11.5,5X,E11.3,3X,E11.3)
      WRITE(6,106) I,X(I),PSTAT(I),V(I),DUCX(I),KV(I),REX(I)
  1C7 CONTINUE
      WRITE(6,3)
      WRITE(6,777) (TITLE(I),I=1,9)
      WRITE(6,24) DATE,RUN
      WRITE(6,25) TAMB,TBASE,TGAS,PBAR,RHUM,TCOV
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 30 FORMAT(/5H  PL  ,1X,6HTC,EFF,4X,2HTT,7X,2HST,4X,4HSTCP,4X,
   26HDELTA2,4X,6HREENTH,8X,1HF,6X,5HVEL-X,7X,1HK,/,1X,3HNO.,/)
    WRITE(6,30)
    DO 32 I=1,24
 31 FORMAT(I3,3X,F6.2,2X,F6.2,2X,                              F7.5,1X,
   1F7.5,2X,F6.4,2X,E10.3,2X,          F8.5,2X,F6.2,2X,E10.3)
    WRITE(6,31) I,TOEFF(I),TT(I),ST(I),STCP(I),
   1         ENTH(I),REENTH(I),          F(I),VS(I),KS(I)
 81 FORMAT(I3,3X,F6.2,2X,F6.2,2X,F7.5,2X,F7.5,1X,
   1F6.0,2X,F8.5,2X,F5.1,2X,E10.3)
    PUNCH 81, I,TOEFF(I),TT(I),ST(I),STCP(I)   ,REENTH(I),F(I),VS(I),
   1  KS(I)
 32 CONTINUE
    WRITE(6,3)
 33 CONTINUE
500  CONTINUE
    RETURN
    END

$DATA
```