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MEMORANDUM REPORT ARBRL-MR-02880

TURBULENT BOUNDARY LAYER MEASUREMENTS ON THE BOATTAIL SECTION OF A YAWED, SPINNING PROJECTILE SHAPE AT MACH 3.0

Lyle D. Kayser
Walter B. Sturek

November 1978

US ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND
BALLISTIC RESEARCH LABORATORY
ABERDEEN PROVING GROUND, MARYLAND

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REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: MEMORANDUM REPORT ARBRL-MR-02880

2. GOVT ACCESSION NO.:

3. RECIPIENT'S CATALOG NUMBER:

4. TITLE *(and Subtitle)*: TURBULENT BOUNDARY LAYER MEASUREMENTS ON THE BOATTAIL SECTION OF A YAWED, SPINNING PROJECTILE SHAPE AT MACH 3.0

5. TYPE OF REPORT & PERIOD COVERED: Final

6. PERFORMING ORG. REPORT NUMBER:

7. AUTHOR(s):
Lyle D. Kayser
Walter B. Sturek

8. CONTRACT OR GRANT NUMBER(s):

9. PERFORMING ORGANIZATION NAME AND ADDRESS:
U.S. Army Ballistic Research Laboratory
(ATTN: DRDAR-BLL)
Aberdeen Proving Ground, Maryland 21005

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: RDT&E 1L161102AH43

11. CONTROLLING OFFICE NAME AND ADDRESS:
U.S. Army Armament Research and Development Cmd
U.S. Army Ballistic Research Laboratory
(ATTN: DRDAR-BL)
Aberdeen Proving Ground, Maryland 21005

12. REPORT DATE: NOVEMBER 1978

13. NUMBER OF PAGES: 88

14. MONITORING AGENCY NAME & ADDRESS *(if different from Controlling Office)*:

15. SECURITY CLASS. *(of this report)*: Unclassified

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT *(of this Report)*:
Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*:

18. SUPPLEMENTARY NOTES:

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*:
Turbulent Boundary Layers
Yawed Spinning Bodies
Experimental Measurements
Supersonic Flow

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)* (1cb)

Total pressure measurements were obtained in the turbulent boundary layer of a spinning body of revolution in support of the BRL Magnus Research Program. Data were obtained on the boattail section of a slender projectile shape at a Mach number of 3.0 and angles of attack up to 6.3 degrees. This report presents a tabulation of the boundary layer profile characteristics in a format that facilitates comparison with theoretical computations. A description of the experiment and a brief analysis of the data are given.

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I. INTRODUCTION

The BRL has been conducting and supporting theoretical and experimental Magnus research efforts in recent years. As a result of this research, numerical techniques have been developed for computing Magnus effects (forces and moments). Details of the computational procedure are described in references 1, 2, 3, and 4. The purpose of the experimental investigation reported here is to acquire detailed three-dimensional turbulent boundary layer profile data for the flow over a projectile boattail. These data are being used for comparison with the numerical computations in order to provide guidance and to help evaluate the theoretical effort.

A substantial number of experiments have been conducted in support of the BRL Magnus program. Types of experiments that have been conducted include: strain-gauge force and moment measurements, surface pressure measurements, and boundary layer studies. Results from some

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1. *H. A. Dwyer, "Three Dimensional Flow Studies Over a Spinning Cone at Angle of Attack," BRL Contract Report No. 137, February 1974, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland. AD 774795.*

2. *H. A. Dwyer and B. R. Sanders, "Magnus Forces on Spinning Supersonic Cones. Part I: The Boundary Layer," BRL Contract Report No. 248, July 1975, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland. AD A013518. Also, AIAA Journal, Vol. 14, No. 4, April 1976, p. 498.*

3. *B. R. Sanders, "Three-Dimensional, Steady, Inviscid Flow Field Calculations With Application to the Magnus Problem," PhD Dissertation, University of California, Davis, California, May 1974.*

4. *W. B. Sturek, et al, "Computations of Turbulent Boundary Layer Development Over a Yawed, Spinning Body of Revolution With Application to Magnus Effect," BRL Report No. 1985, May 1977, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland. AD A041338.*

of these experiments can be found in references 5 through 9. The primary purpose of this report is to provide a tabulation of the boundary layer profile data and integral parameters. A description of the experiment and a limited analysis of the data are also provided.

II. EXPERIMENT

All boundary layer results presented in this report were obtained on the boattail of the secant-ogive-cylinder-boattail model (SOCBT) shown in Figure 1. The model is 57.15 mm (2.25 inches) in diameter and 342.9 mm (13.5 inches) long. A boundary layer trip was placed on the ogive to insure the location of the start of turbulent flow. The tests were conducted in the BRL Supersonic Wind Tunnel No. 1, which is a continuous flow tunnel with a test section of 330 x 381 mm (13 x 15 inches). Measurements of the total head pressure through the boundary layer were made with a flattened impact pressure probe 1.5 mm wide by 0.15 mm high. The probe was electrically isolated from the probe holder so that contact with the model, for non-spinning runs, could be determined with an ohmmeter. The probe drive mechanism moved the probe perpendicular to the model centerline; also, the probe drive mechanism could be positioned circumferentially about the model. The SOC model without the boattail, the probe, and the probe drive mechanism are shown installed in the tunnel in Figure 2.

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5. *Charles J. Nietubicz, Klaus O. Opalka, and Walter B. Sturek, "Magnus Force Measurements on Bodies of Revolution at Supersonic Speeds," to be published as a BRL Memorandum Report.*

6. *R. P. Reklis and W. B. Sturek, "Surface Pressure Measurements on Slender Bodies at Angle of Attack in Supersonic Flow," to be published as a BRL Memorandum Report.*

7. *L. D. Kayser and W. B. Sturek, "Experimental Measurements in the Turbulent Boundary Layer of a Yawed, Spinning Ogive-Cylinder Body of Revolution at Mach 3.0. Part I. Description of the Experiment and Data Analysis," ARBRL-MR-02808, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland, January 1978. AD A052301.*

8. *L. D. Kayser and W. B. Sturek, "Experimental Measurements in the Turbulent Boundary Layer of a Yawed, Spinning Ogive-Cylinder Body of Revolution at Mach 3.0. Part II. Data Tabulation," ARBRL-MR-02813, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland, March 1978. AD A053458.*

9. *L. D. Kayser, W. B. Sturek, and W. J. Yanta, "Measurements in the Turbulent Boundary Layer of a Yawed, Spinning Body of Revolution at Mach 3.0 With a Laser Velocimeter and Impact Probe," AIAA 10th Aerodynamic Testing Conference, San Diego, California, 19-21 April 1978.*

The boundary layer survey procedure was to bring the impact probe from outside the boundary layer down to, and touching, the model for the no-spin case; immediately following a no-spin run, the model was brought up to the 333 rps (20,000 rpm) spin rate and the probe was brought down through the boundary layer to within approximately 0.1 mm of the surface. Data were obtained at 5.33 and 5.67 calibers from the nose (i.e., 0.67 and 0.33 caliber from the base) and the angle-of-attack range was 0 to 6.3 degrees. Data were acquired circumferentially around the model in 30 degree increments and also at 10 degrees on each side of the leeward ray (ϕ = 180 degrees). At most positions, surveys were made at both 0 and 333 rps: the spin rate of 333 rps corresponds to a dimensionless spin rate (pd/V) of 0.19 at Mach 3.0. Tunnel conditions for the tests were: Mach 3.0; a supply temperature of 310 K; a supply pressure of 298 kPa. These conditions provided a Reynolds number of 7.3×10^6 based on model length. Local Mach numbers within the boundary layer were determined from the Rayleigh pitot formula assuming a constant static pressure across the boundary layer. The data in this report were reduced using the experimental values of wall static pressure obtained by Reklis[6]. Figure 3 is a comparison of experimental pressures and theoretical surface pressures computed with the inviscid program described in reference 3. The model surface temperature was assumed to be equal to the adiabatic wall temperature for turbulent flow--the recovery factor was taken as the cube root of the Prandtl number. The temperature distribution in the boundary layer was found by assuming the Crocco linear total temperature profile:

$$\frac{T_t - T_w}{T_o - T_w} = \frac{u}{u_e} \quad .$$

With temperature, pressure, and Mach number determined, local densities and velocities can be calculated. The integral parameters of displacement thickness, momentum thickness, and velocity thickness were determined by integrating from y = 0 to y = δ where δ = y at u = 0.985 u_e. The value of 0.985 provided a more consistent circumferential distribution of boundary layer thicknesses than the conventional value of 0.99 because of slight velocity gradients outside of the boundary layer.

The probe axis was aligned longitudinally with the model axis. Some uncertainty is inherent in the profile data due to the probe not being aligned with the local flow direction within the boundary layer. The uncertainty due to cross flow would be of the order of angle of attack at the outer edge of the boundary layer when probing the sides of the model (ϕ = 90 and 270 degrees). The uncertainty due to spin is expected to be small because the large velocity gradients in a turbulent boundary layer would confine the greatest effect of flow angularity to a very small region near the surface which cannot be probed accurately using a total head probe.

Impact pressure measurements were made in the tunnel freestream at angles of incidence from -10 to +15 degrees in both pitch and yaw--these results are shown in Figure 4. In pitch, the probe pressure does not vary more than ± ½ percent from approximately -8 to +15 degrees. The pressure variation with yaw is nearly a cosine function and it is within the ½ percent deviation from approximately -6 to +6 degrees. This relative insensitivity to angle of incidence suggests that it would not have been worth any substantial effort to align the probe axis with the local flow direction.

Data Accuracy -- The pressure transducers used are linear to within 0.25% of full scale value. The data acquisition system measurement accuracy is approximately 0.1% of full scale. Full scale is rarely achieved on the transducer or the system measurement range; therefore, the accuracy of measured pressures is estimated to be ± 1.0%. The positioning of the probe in the y direction was repeatable to within approximately 0.03 mm and the uncertainty in determining the point of probe-model contact was also approximately 0.03 mm. The uncertainty of the probe position relative to the model surface is, therefore, estimated to be within 0.06 mm (0.0025 inch).

The possibility of interference between the model and the probe is also of concern. In recent tests at the Naval Surface Weapons Center[9], velocities were measured in the boundary layer with laser velocimeter for both spinning and non-spinning conditions. Comparisons of velocity profiles obtained from LDV measurements and from impact pressure measurements show good correlation. These comparisons provide evidence that probe-model interference was not significant for the sizes of boundary layers that were encountered.

III. DISCUSSION OF RESULTS

A test run summary for the boundary layer experiments is given in Table I and a tabulation of all data can be found in Appendix A.

To help clarify the data, the orientation of the probe with respect to the model must be known. The boundary layer and model coordinate system is shown in Figure 5. Circumferential points of ϕ = 0 degrees, at y = 0, lie on the most windward ray of the model when the model is at some angle of attack. Looking upstream at the model base, with the model at positive angle of attack, ϕ = 0 is on the bottom (6 o'clock); ϕ = 90 degrees is to the left (9 o'clock); ϕ = 180 degrees is on the top (12 o'clock); and ϕ = 270 degrees is to the right (3 o'clock). A clockwise spin is positive; therefore, a positive spin gives a surface velocity in the same direction as cross flow on the left side of the model. On the right side, cross flow and model surface velocities are in the opposite direction.

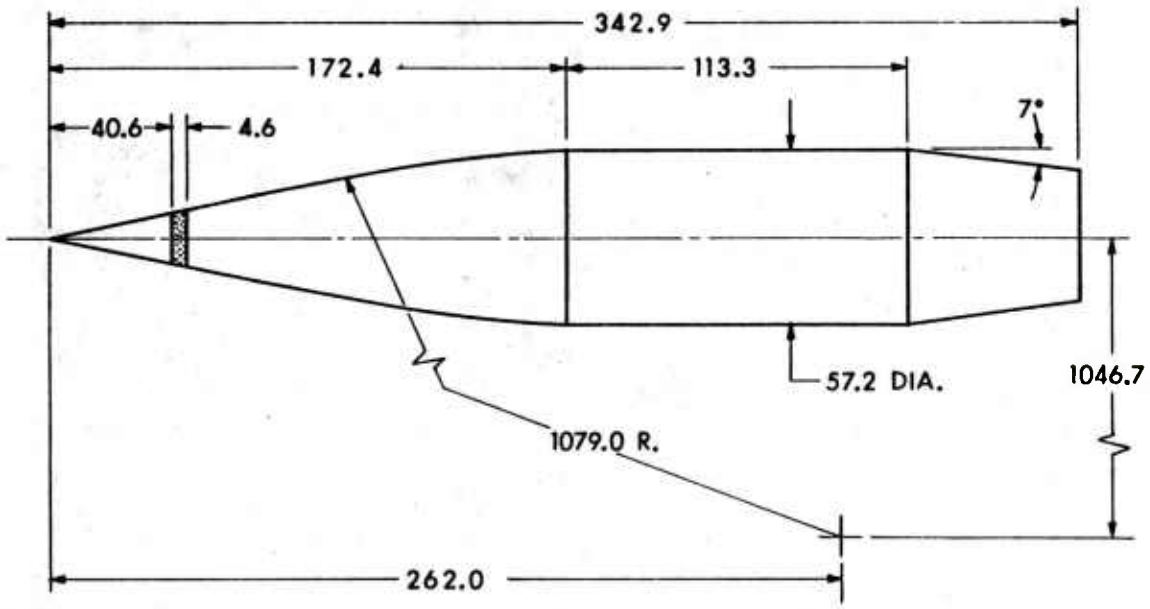
A comparison of experimental and theoretical velocity profiles at two degrees angle of attack is shown in Figure 6. The agreement on the windward side is very good but slight differences do exist in the profile shape on the leeward side near ϕ = 150, 180 degrees. Experimental velocities are slightly lower near the wall and slightly higher in the outer portion of the boundary layer. Figure 7 compares velocity profiles on opposite sides of the model and illustrates that the effects of spin on profile shape are measurable. On the windward side of the model, at ϕ = 30 vs 330 and 60 vs 300, there are no discernible effects of spin. On the leeward side, near ϕ = 120 vs 240 and 150 vs 210, effects of spin on the profile shape are substantial. However, near the leeward ray (ϕ = 170, 180, 190), the effects of spin were generally found to be small.

Figure 8 shows the longitudinal variation of displacement thickness at two degrees angle of attack. Boundary layer data on the cylindrical section were reported in references 7 and 8. The comparison of theory and experiment is encouraging; however, the disagreement is sufficient to suggest that conventional eddy viscosity models are not sufficiently responsive to changes in wall boundary conditions caused by abrupt changes in surface curvature such as occurs at the cylinder-boattail junction. The circumferential variation of displacement thickness for several angles of attack, with and without model spin, are shown in Figure 9. This figure illustrates clearly where the effects of spin are most pronounced. The dips at ϕ = 180 degrees for angles of attack of 4.2, 5.3, and 6.3 degrees are believed to be caused by longitudinal vortices that are forming within the boundary layer. At the higher angles of attack of 5.3 and 6.3 degrees, the dramatic thickening of the boundary layer suggests that leeward separation of the boundary layer may be near. The existence of such longitudinal separation type vortices suggests that boundary layer theory will not be adequate at angles of attack greater than five degrees. However, these data should be of value for comparison with boundary region or Navier-Stokes numerical computations. Additional displacement thickness data are shown in Figure 10. The increment of displacement thickness due to spin, at α = 4 degrees, is shown on an expanded scale as a function of circumferential position. Theoretical calculations for the increment of displacement thickness, on the cylindrical section, compared to experiment (reference 4) showed good agreement and the variation was qualitatively the same as shown in Figure 10.

IV. CONCLUDING REMARKS

A substantial quantity of three-dimensional turbulent boundary layer profile data, including effects of spin, have been acquired on a realistic projectile boattail configuration. The data will be of value for comparison with theoretical computations of three-dimensional turbulent boundary layer development. Preliminary comparisons of theoretical computations to these data using BRL's numerical finite-

difference codes indicate discrepancies which suggest that more sophisticated turbulence models may be required to adequately predict the boundary layer development over shapes with abrupt changes in wall geometry. The higher angle-of-attack data will be useful in defining the limits of boundary layer theory and for comparison with more general type calculations such as obtained from boundary-region or Navier-Stokes type codes.



NOTE: DIMENSIONS ARE IN MILLIMETRES

Figure 1. Model Geometry

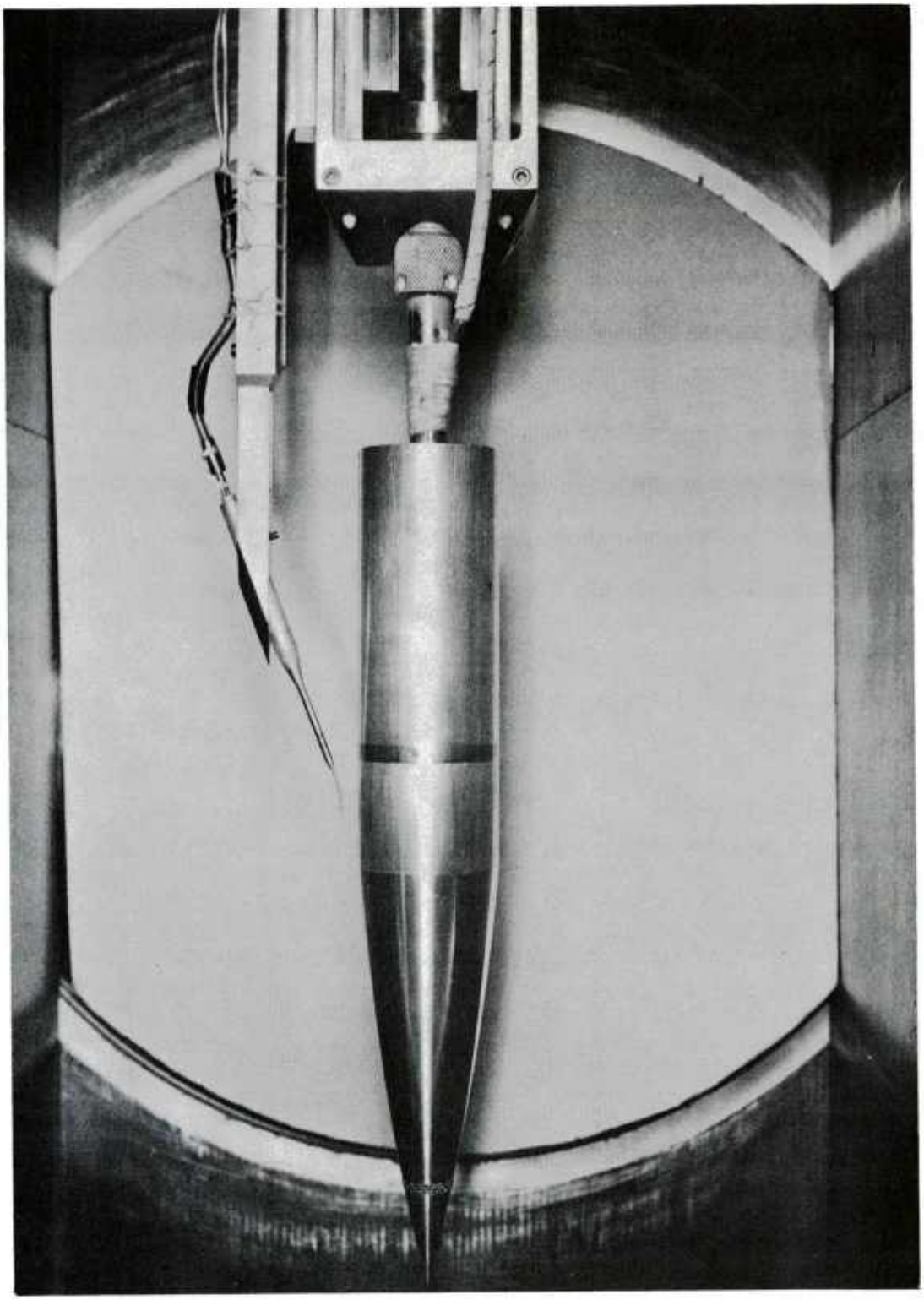


Figure 2. Model Installation Photograph

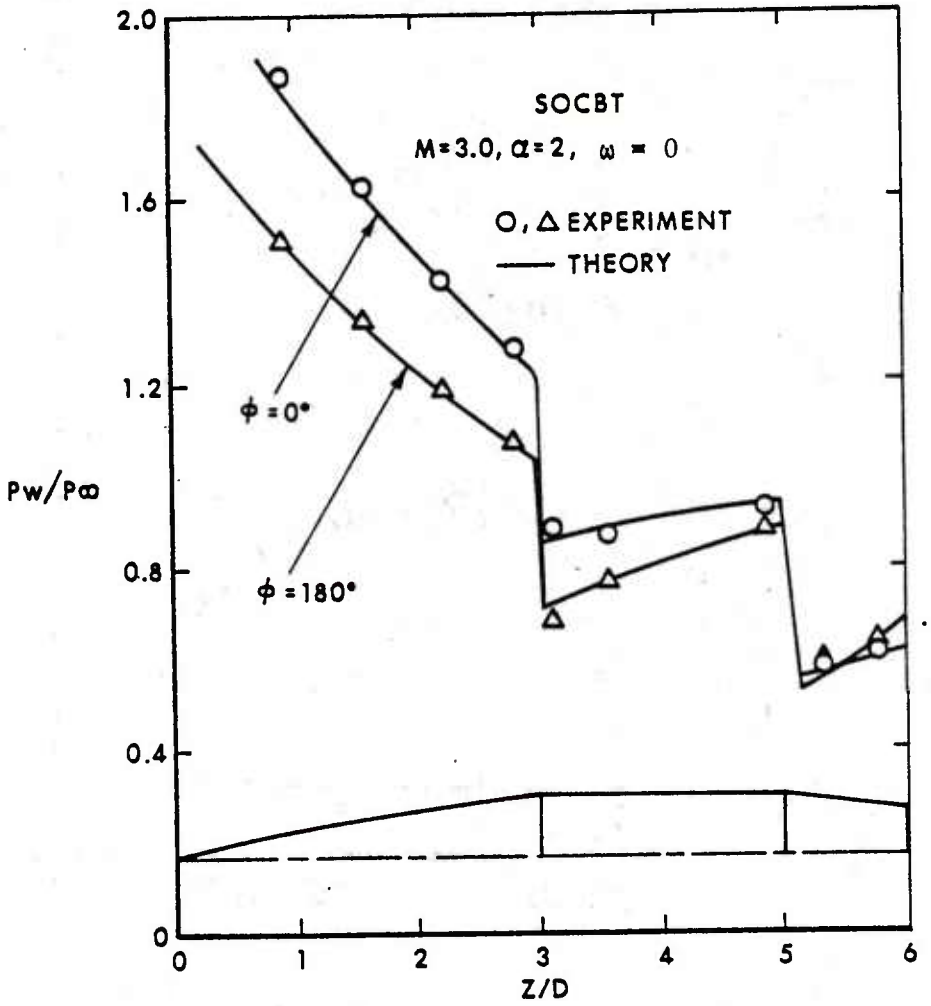


Figure 3. Surface Pressure Distribution

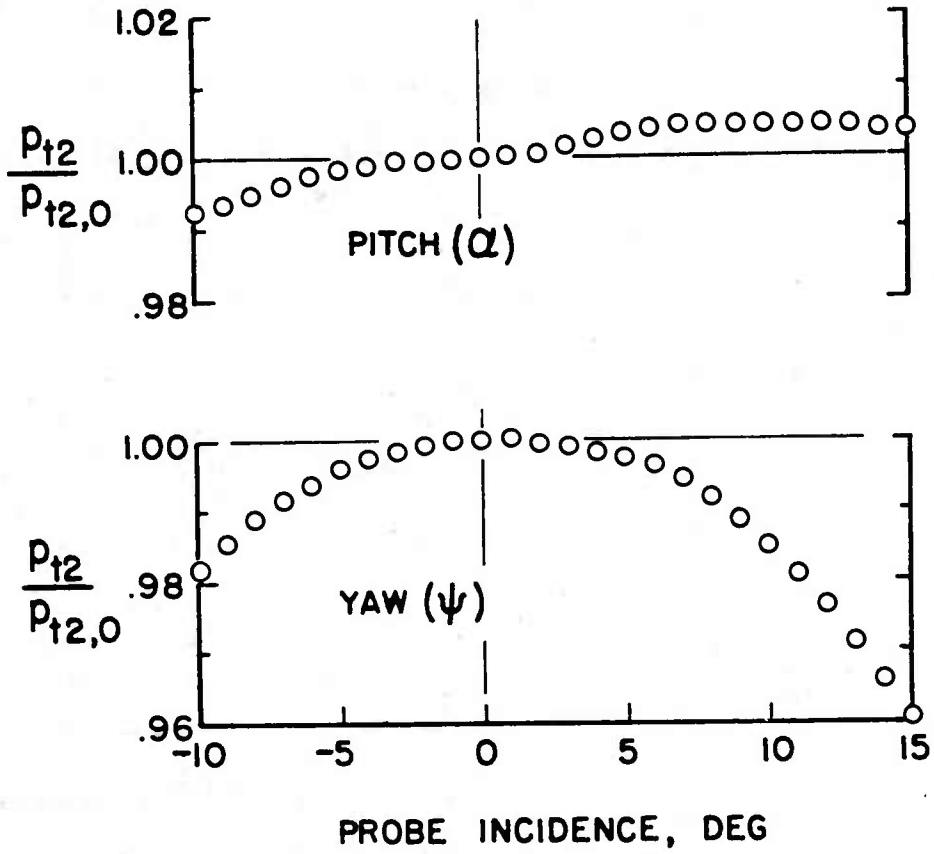


Figure 4. Impact Probe Calibration

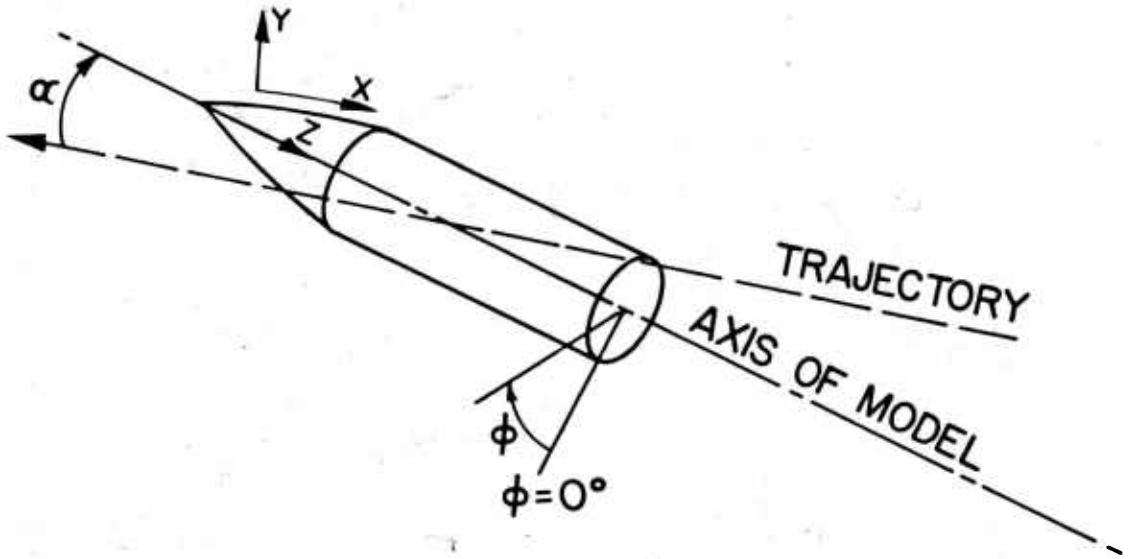


Figure 5. Coordinate System

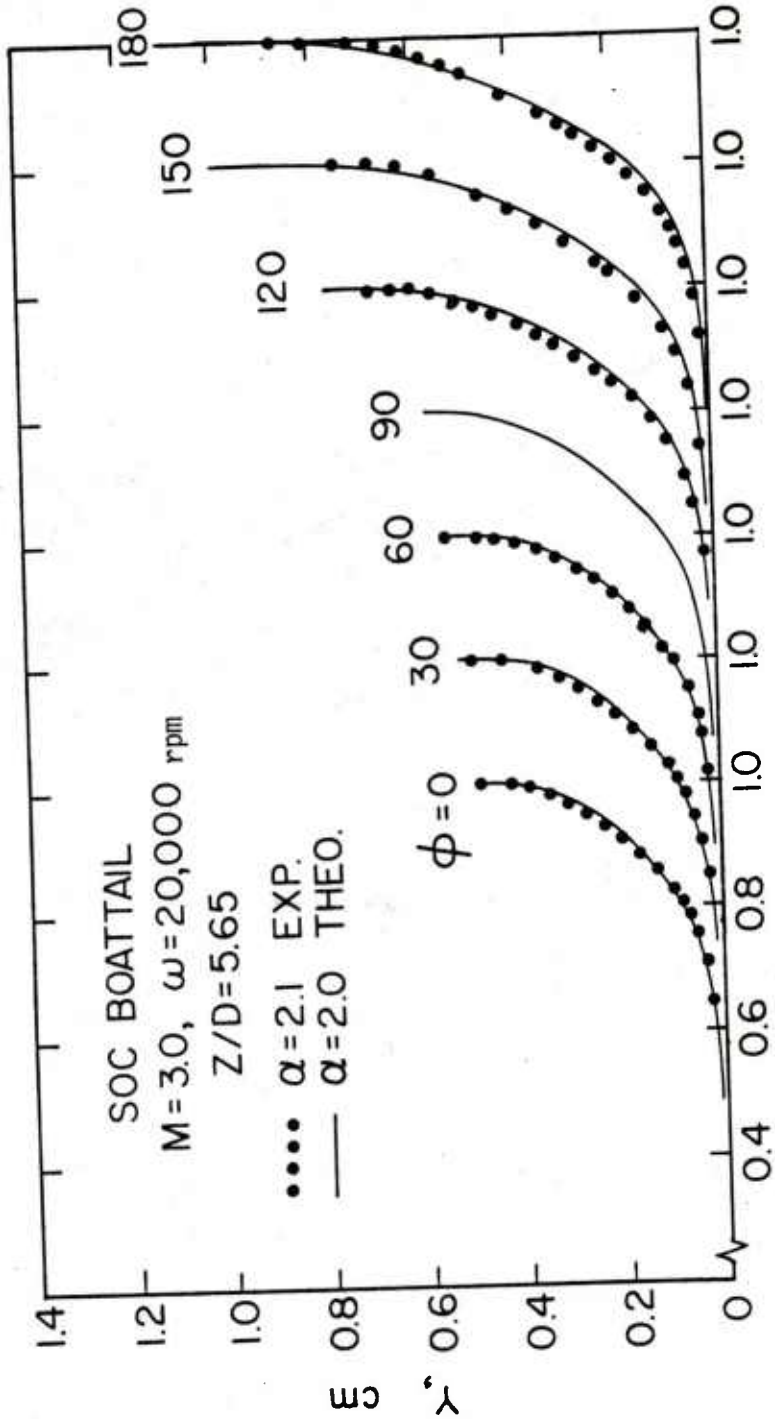


Figure 6. Velocity Profiles, Theory and Experiment

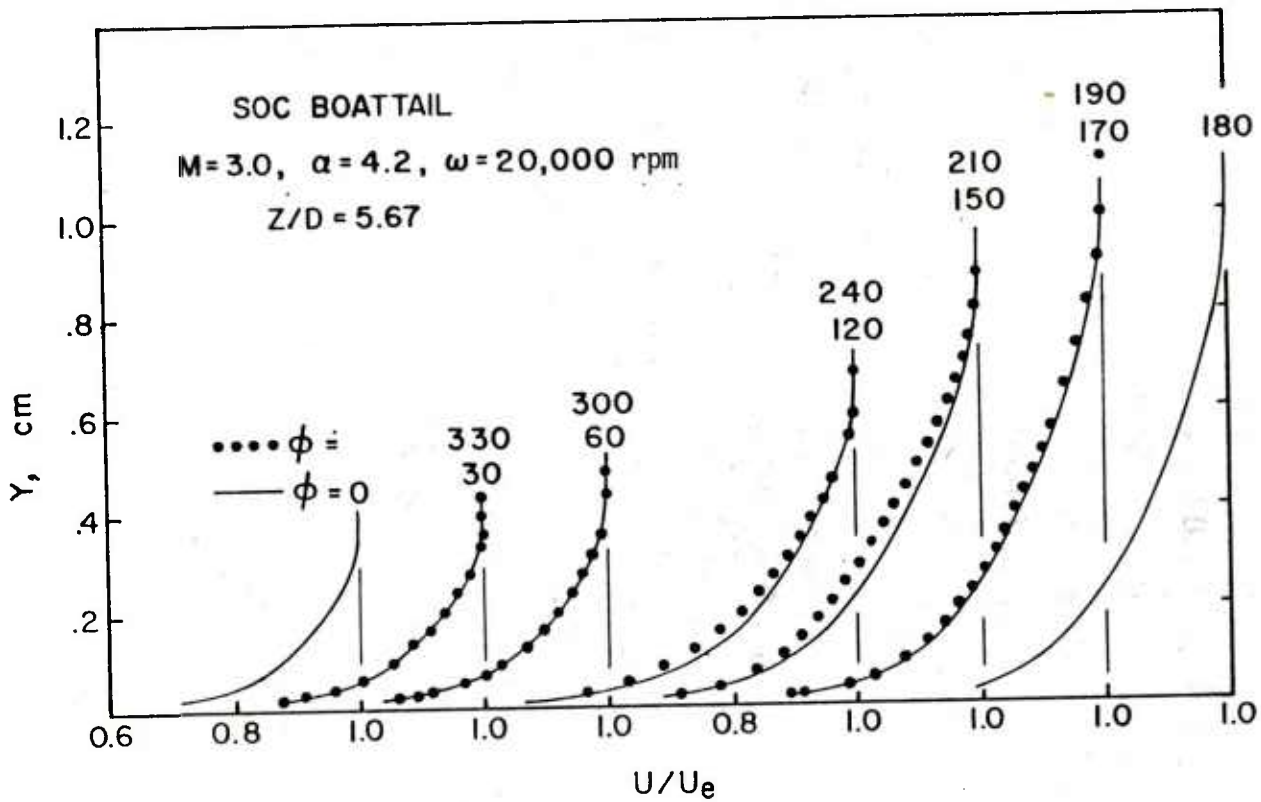


Figure 7. Velocity Profiles, Experiment

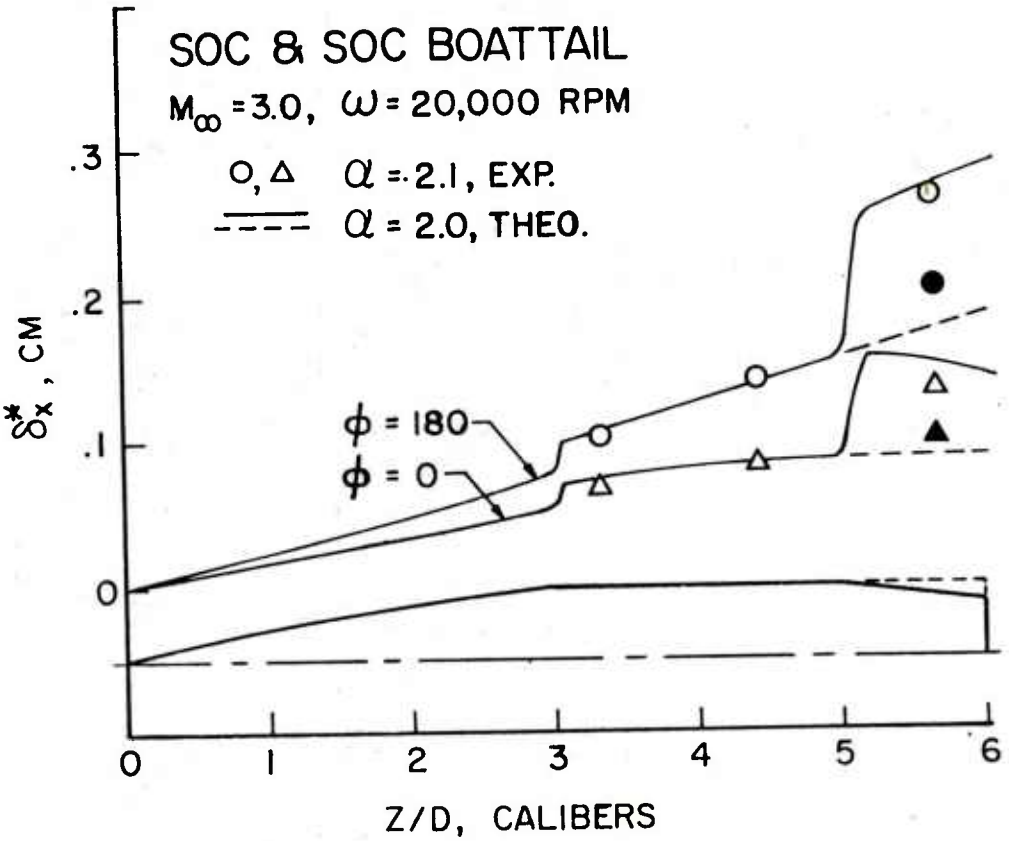


Figure 8. Longitudinal Variation of Displacement Thickness

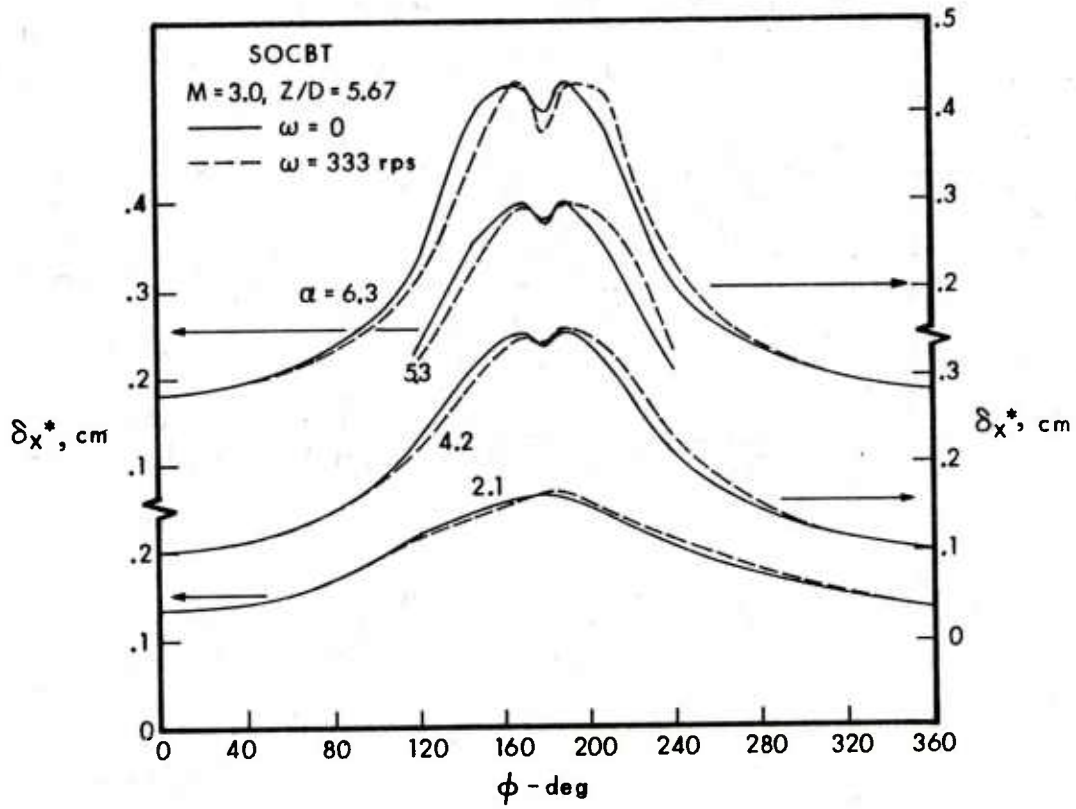


Figure 9. Angle-of-Attack Effect on Displacement Thickness, Experimental Data

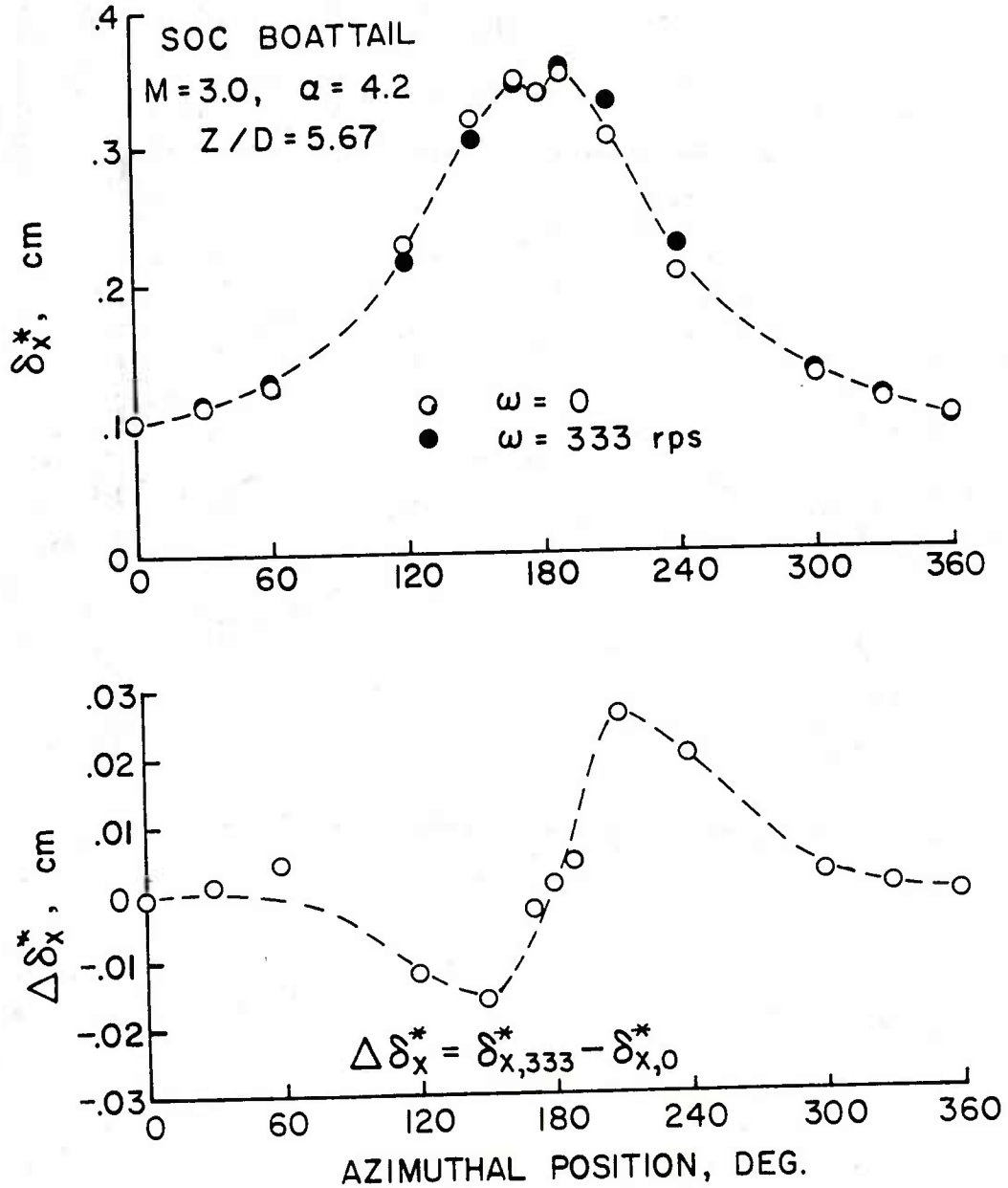


Figure 10. Effect of Spin on Displacement Thickness

Table I. Test Run Summary, SOCBT

ϕ	$\alpha = 0$	$\alpha = 2.1$	$\alpha = 0$	$\alpha = 2.1$	$\alpha = 4.2$	$\alpha = 5.3$	$\alpha = 6.3$
	Z/D = 5.33				Z/D = 5.67		
0	0	0,333*	0	0,333	0,333		0,333
30	0	0,333		0,333	0,333		0,333
60	0	0,333	0	0,333	0,333		0,333
90							
120		0,333		0,333	0,333	333	0,333
150		0,333		0,333	0,333	0,333	0,333
170	0,333	0,333		0,333	0,333	0,333	0,333
180		0,333		0,333	0,333	0,333	0,333
190		0,333		0,333	0,333	0,333	0,333
210		0,333		0,333	0,333	0,333	0,333
240		0,333		0,333	0,333	0,333	0,333
270		0,333					
300		0,333		0,333	0,333		0
330		0,333		0,333	0,333		0,333

* Model spin rate, rps

REFERENCES

1. H. A. Dwyer, "Three Dimensional Flow Studies Over a Spinning Cone at Angle of Attack," BRL Contract Report No. 137, February 1974, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland. AD 774795.

2. H. A. Dwyer and B. R. Sanders, "Magnus Forces on Spinning Supersonic Cones. Part I: The Boundary Layer," BRL Contract Report No. 248, July 1975, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland. AD A013518. Also, *AIAA Journal*, Vol. 14, No. 4, April 1976, p. 498.

3. B. R. Sanders, "Three-Dimensional, Steady, Inviscid Flow Field Calculations With Application to the Magnus Problem," PhD Dissertation, University of California, Davis, California, May 1974.

4. W. B. Sturek, et al, "Computations of Turbulent Boundary Layer Development Over a Yawed, Spinning Body of Revolution With Application to Magnus Effect," BRL Report No. 1985, May 1977, U.S. Army Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland. AD A041338.

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LIST OF SYMBOLS

D	diameter of model base
p	model spin rate, radians/second
p_{t_2}	impact probe pressure
$p_{t_{2,0}}$	impact probe pressure at zero yaw
p_w	model wall static pressure
p_∞	free-stream static pressure
SOCBT	secant-ogive-cylinder-boattail
T_o	tunnel total temperature
T_t	local total temperature
T_w	model wall temperature
u,w,v	velocities in boundary layer coordinates
u_e	velocity at edge of boundary layer
V	velocity along model trajectory
x,ϕ,y	boundary layer coordinates
z	longitudinal model axis coordinate
α	angle of attack, degrees
δ	boundary layer thickness, $\delta = y$ at $u = 0.985\ u_e$
δ_x^*	longitudinal component of displacement thickness, cm
$\Delta\delta_x^*$	increment of displacement thickness due to spin, cm
ϕ	circumferential boundary layer coordinate, degrees

APPENDIX A

The order of tabulated boundary layer profile data is as follows.

Within each angle-of-attack group, data are in order of increasing roll angle (ϕ) with spin and no-spin runs together.

At Z/D = 5.33, data for angles of attack greater than 2.1 degrees were not processed because the outer portion of the boundary layer was in the Prandtl-Meyer expansion fan and the edge of the boundary layer could not be accurately located.

Computer Tabulation Nomenclature

Mach	tunnel free-stream Mach number
PO	tunnel supply pressure, kPa
TO	tunnel supply temperature, deg. K
ALPHA	angle of attack, deg.
Z/D	distance in calibers from nose
PHI	circumferential position, degrees
RPM	model spin rate, rpm
PW	model wall pressure at point of survey, kPa
REL	Reynolds number based on model length
Y	distance normal to model surface, cm
TT	local total temperature, deg. K
T	local static temperature, deg. K
M	local Mach number
U	local velocity, m/s
RHO	local density, m/s
DEL	boundary layer thickness, DEL = Y at U = 0.985 UE
DELU	velocity thickness, cm
DEL*	displacement thickness, cm
THETA	momentum thickness, cm
H	boundary layer shape parameter, δ^*/θ
UE	velocity at edge of boundary layer, m/s
RHOE	density at edge of boundary layer, kg/m^3

MACH = 3.00 P0 = 297.6 KPA T0 = 313.2 K
ALPHA= .00 Z/D= 5.33 PHI= -60.
RPM= 0. PW = 4.60 KPA REL=7078049.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.327
.017	.953	.818	.908	.439	.366
.031	.961	.766	1.127	.527	.391
.044	.967	.714	1.331	.601	.420
.063	.973	.661	1.537	.668	.454
.077	.975	.636	1.634	.696	.472
.099	.978	.601	1.771	.734	.499
.127	.981	.572	1.892	.764	.525
.173	.983	.543	2.011	.792	.552
.218	.984	.527	2.084	.808	.569
.255	.985	.516	2.130	.818	.581
.305	.986	.502	2.194	.831	.597
.352	.987	.487	2.268	.846	.616
.398	.989	.468	2.358	.862	.641
.446	.990	.446	2.468	.881	.672
.483	.991	.433	2.541	.893	.693
.537	.992	.418	2.623	.906	.718
.584	.993	.405	2.694	.916	.740
.632	.994	.394	2.759	.926	.761
.681	.995	.384	2.822	.934	.782
.726	.995	.374	2.882	.942	.802
.798	.996	.360	2.975	.953	.834
.874	.997	.342	3.093	.967	.876
.944	.998	.328	3.194	.978	.913
1.020	.999	.316	3.284	.987	.948
1.090	.999	.308	3.352	.994	.974
1.170	1.000	.303	3.391	.998	.990
1.247	1.000	.301	3.410	.999	.997

DEL = .4371 DELU= .0607 DEL*= .1696 CM
THETA= .02723 H = 6.226 UE = 663.8 M/SEC
RHOE= .1709 KG/M**3 RUN = 265

MACH = 3.00 P0 = 298.2 KPA T0 = 312.4 K
ALPHA= .00 Z/D= 5.33 PHI= 0.
RPM= 0. PW = 4.61 KPA REL=7135698.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.330
.017	.955	.811	.940	.454	.373
.033	.963	.751	1.186	.551	.402
.051	.970	.696	1.403	.627	.435
.062	.973	.663	1.530	.668	.456
.079	.976	.632	1.648	.702	.478
.103	.979	.599	1.781	.739	.505
.126	.981	.575	1.878	.763	.526
.146	.982	.559	1.945	.779	.541
.185	.984	.540	2.029	.799	.561
.229	.985	.528	2.078	.809	.572
.277	.986	.516	2.136	.822	.587
.313	.987	.505	2.184	.832	.599
.362	.988	.486	2.273	.849	.623
.408	.990	.469	2.357	.865	.646
.452	.991	.453	2.437	.879	.668
.500	.992	.439	2.510	.891	.690
.545	.993	.426	2.579	.902	.711
.593	.994	.414	2.645	.912	.731
.629	.994	.404	2.702	.920	.749
.672	.995	.394	2.761	.929	.768
.726	.996	.382	2.834	.939	.792
.772	.997	.372	2.898	.947	.814
.823	.997	.361	2.971	.956	.839
.872	.998	.350	3.041	.964	.864
.916	.999	.340	3.112	.972	.890
.970	.999	.329	3.192	.981	.920
1.018	1.000	.320	3.256	.987	.945
1.062	1.000	.314	3.307	.992	.965
1.114	1.001	.309	3.342	.996	.979
1.157	1.001	.307	3.360	.998	.986
1.211	1.001	.305	3.378	.999	.993
1.261	1.001	.304	3.386	1.000	.996

DEL = .4409 DELU= .0620 DEL*= .1737 CM
THETA= .02803 H = 6.197 UE = 661.0 M/SEC
RHOE= .1715 KG/M**3 RUN = 204

MACH = 3.00 P0 = 298.3 KPA T0 = 310.9 K
ALPHA= .00 Z/D= 5.33 PHI= 30.
RPM= 0. PW = 4.61 KPA REL=7155445.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.331
.017	.953	.822	.894	.434	.370
.026	.958	.791	1.030	.491	.384
.038	.966	.733	1.258	.577	.414
.063	.973	.674	1.489	.654	.451
.080	.976	.634	1.643	.701	.479
.102	.979	.602	1.770	.735	.505
.150	.983	.560	1.943	.778	.543
.189	.984	.538	2.034	.799	.564
.233	.986	.522	2.106	.815	.582
.273	.986	.507	2.172	.829	.598
.317	.987	.493	2.240	.842	.616
.369	.988	.477	2.316	.857	.637
.409	.989	.463	2.383	.869	.655
.456	.991	.449	2.454	.881	.676
.502	.991	.436	2.521	.892	.696
.551	.992	.425	2.581	.902	.714
.591	.992	.418	2.622	.908	.727
.644	.993	.404	2.698	.919	.750
.691	.994	.394	2.757	.927	.770
.735	.995	.382	2.832	.938	.795
.784	.995	.369	2.913	.948	.822
.837	.996	.356	2.998	.958	.852
.882	.997	.345	3.070	.967	.878
.927	.997	.335	3.142	.975	.905
.980	.998	.325	3.215	.983	.933
1.030	.998	.318	3.273	.988	.955
1.080	.999	.312	3.320	.993	.973
1.130	.999	.308	3.348	.996	.985
1.180	.999	.306	3.368	.998	.993
1.225	.999	.304	3.380	.999	.997

DEL = .4390 DELU= .0619 DEL*= .1715 CM
THETA= .02804 H = 6.115 UE = 660.0 M/SEC
RHOE= .1711 KG/M**3 RUN = 221

MACH = 3.00 P0 = 298.4 KPA T0 = 310.2 K
ALPHA= .00 Z/D= 5.33 PHI= 60.
RPM= 0. PW = 4.61 KPA REL=7189564.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.329
.018	.953	.824	.884	.429	.366
.029	.958	.786	1.047	.497	.383
.043	.967	.718	1.316	.597	.420
.051	.969	.702	1.378	.618	.429
.070	.973	.660	1.542	.670	.457
.093	.977	.619	1.700	.716	.487
.119	.980	.592	1.808	.745	.509
.137	.981	.573	1.886	.764	.526
.178	.983	.547	1.999	.791	.552
.227	.985	.525	2.095	.812	.575
.273	.986	.507	2.173	.828	.594
.316	.988	.493	2.238	.841	.611
.358	.989	.478	2.309	.855	.630
.404	.990	.464	2.382	.868	.651
.454	.991	.451	2.444	.879	.668
.501	.991	.440	2.505	.889	.686
.548	.992	.428	2.567	.899	.705
.602	.993	.416	2.635	.909	.725
.645	.994	.402	2.713	.921	.750
.694	.995	.389	2.790	.931	.775
.743	.996	.377	2.867	.942	.801
.819	.997	.356	3.000	.958	.847
.886	.998	.340	3.109	.971	.886
.990	.999	.323	3.235	.984	.934
1.092	1.000	.312	3.318	.992	.966
1.184	1.000	.306	3.367	.997	.985
1.285	1.001	.303	3.390	.999	.994

DEL = .4311 DELU= .0611 DEL*= .1694 CM
THETA= .02719 H = 6.232 UE = 659.5 M/SEC
RHOE= .1727 KG/M**3 RUN = 250

MACH = 3.00 P0 = 297.4 KPA T0 = 318.2 K
ALPHA= 2.10 Z/D= 5.33 PHI= 0.
RPM= 0. PW = 4.63 KPA REL=6908582.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.332
.022	.959	.782	1.063	.504	.389
.038	.963	.751	1.189	.552	.405
.044	.967	.716	1.323	.600	.425
.064	.973	.657	1.549	.674	.463
.090	.978	.614	1.721	.723	.496
.123	.981	.571	1.894	.768	.533
.149	.983	.546	2.000	.793	.557
.198	.985	.517	2.129	.821	.589
.253	.987	.498	2.214	.838	.611
.307	.988	.480	2.302	.855	.634
.361	.989	.463	2.385	.870	.657
.414	.991	.447	2.467	.884	.681
.471	.991	.431	2.550	.898	.706
.521	.992	.420	2.612	.907	.725
.580	.993	.407	2.684	.918	.748
.644	.994	.392	2.772	.930	.776
.700	.995	.379	2.849	.941	.802
.758	.996	.367	2.926	.951	.829
.820	.997	.354	3.015	.961	.860
.878	.997	.343	3.086	.970	.886
.941	.998	.333	3.161	.978	.914
1.000	.998	.324	3.230	.985	.940
1.057	.999	.316	3.285	.991	.962
1.181	1.000	.308	3.349	.997	.987
1.311	1.000	.306	3.370	.999	.996

DEL = .3393 DELU= .0444 DEL*= .1250 CM
THETA= .02048 H = 6.104 UE = 666.9 M/SEC
RHOE= .1680 KG/M**3 RUN = 465

MACH = 3.00 P0 = 297.6 KPA T0 = 318.3 K
ALPHA= 2.10 Z/D= 5.33 PHI= 0.
RPM= 20000. PW = 4.63 KPA REL=6902548.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.332
.069	.976	.634	1.640	.700	.479
.097	.979	.597	1.787	.740	.509
.123	.982	.566	1.917	.773	.538
.142	.983	.547	1.998	.792	.556
.204	.986	.513	2.145	.824	.592
.254	.987	.498	2.213	.838	.610
.309	.988	.482	2.292	.853	.631
.360	.989	.469	2.356	.865	.649
.420	.990	.451	2.443	.880	.674
.471	.991	.436	2.523	.893	.697
.532	.992	.421	2.606	.906	.723
.586	.993	.406	2.692	.919	.750
.647	.994	.391	2.774	.931	.777
.707	.995	.379	2.849	.941	.802
.762	.996	.366	2.931	.951	.830
.823	.997	.354	3.011	.961	.858
.882	.998	.342	3.098	.971	.890
.947	.998	.330	3.179	.979	.921
1.000	.999	.323	3.232	.985	.941
1.063	.999	.316	3.288	.991	.962
1.129	.999	.312	3.322	.994	.976
1.188	1.000	.308	3.347	.996	.986
1.318	1.000	.305	3.372	.999	.996

DEL = .3375 DELU= .0462 DEL*= .1254 CM
THETA= .01996 H = 6.284 UE = 667.1 M/SEC
RHOE= .1680 KG/M**3 RUN = 466

MACH = 3.00 P0 = 297.9 KPA T0 = 309.9 K
ALPHA= 2.10 Z/D= 5.33 PHI= 30.
RPM= 0. PW = 4.60 KPA REL=7188396.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.331
.021	.955	.809	.950	.458	.375
.035	.960	.774	1.097	.517	.392
.042	.965	.736	1.249	.574	.412
.073	.974	.658	1.550	.673	.461
.100	.977	.615	1.715	.721	.493
.129	.981	.574	1.884	.765	.528
.146	.983	.551	1.981	.788	.551
.202	.986	.516	2.135	.822	.588
.248	.987	.499	2.211	.837	.608
.308	.988	.483	2.285	.851	.627
.357	.989	.468	2.361	.865	.648
.416	.990	.452	2.443	.880	.671
.469	.992	.436	2.522	.893	.695
.522	.993	.423	2.596	.904	.717
.587	.994	.407	2.683	.917	.745
.631	.994	.398	2.736	.925	.762
.690	.996	.382	2.831	.938	.793
.748	.996	.370	2.911	.948	.821
.807	.998	.352	3.028	.962	.862
.866	.998	.342	3.099	.971	.888
.926	.999	.336	3.141	.975	.903
.981	.999	.326	3.209	.982	.929
1.041	1.000	.316	3.288	.990	.960
1.097	1.000	.312	3.323	.994	.973
1.155	1.000	.308	3.353	.997	.985
1.274	1.000	.305	3.378	.999	.995
1.340	1.000	.304	3.384	1.000	.997

DEL = .3599 DELU= .0484 DEL*= .1347 CM
THETA= .02181 H = 6.179 UE = 658.5 M/SEC
RHOE= .1714 KG/M**3 RUN = 226

MACH = 3.00 P0 = 298.0 KPA T0 = 310.1 K
ALPHA= 2.10 Z/D= 5.33 PHI= 30.
RPM= 20000. PW = 4.60 KPA REL=7184534.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.331
.047	.966	.728	1.277	.584	.416
.074	.974	.655	1.558	.676	.463
.102	.978	.610	1.734	.726	.497
.126	.981	.576	1.873	.762	.526
.150	.983	.553	1.971	.785	.548
.203	.986	.517	2.130	.821	.587
.263	.987	.498	2.214	.838	.608
.313	.988	.485	2.275	.849	.625
.360	.989	.469	2.353	.864	.646
.419	.990	.452	2.439	.879	.670
.584	.993	.408	2.680	.917	.743
.644	.994	.393	2.764	.929	.771
.700	.995	.381	2.841	.939	.796
.759	.996	.367	2.927	.950	.826
.820	.997	.355	3.005	.960	.854
.875	.998	.343	3.089	.969	.884
.932	.998	.332	3.168	.978	.913
1.001	.999	.323	3.235	.985	.939
1.064	.999	.316	3.290	.991	.960
1.116	1.000	.311	3.325	.994	.974
1.169	1.000	.308	3.348	.996	.983
1.238	1.000	.306	3.368	.998	.991
1.298	1.000	.305	3.377	.999	.995
1.338	1.000	.304	3.382	1.000	.997

DEL = .3547 DELU= .0494 DEL*= .1342 CM
THETA= .02134 H = 6.288 UE = 658.6 M/SEC
RHOE= .1713 KG/M**3 RUN = 227

MACH = 3.00 P0 = 299.9 KPA T0 = 310.0 K
ALPHA= 2.10 Z/D= 5.33 PHI= 60.
RPM= 0. PW = 4.55 KPA REL=7219717.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.326
.020	.955	.807	.960	.460	.371
.028	.958	.787	1.043	.494	.380
.039	.963	.749	1.196	.553	.399
.050	.969	.703	1.374	.615	.425
.078	.975	.641	1.613	.690	.466
.101	.978	.600	1.775	.734	.498
.151	.982	.552	1.972	.783	.541
.203	.985	.524	2.097	.810	.570
.252	.986	.508	2.168	.825	.588
.295	.987	.496	2.224	.836	.603
.349	.988	.478	2.308	.852	.625
.407	.989	.460	2.399	.869	.650
.454	.991	.445	2.475	.882	.671
.507	.991	.431	2.551	.894	.694
.561	.992	.417	2.628	.906	.717
.616	.994	.399	2.727	.920	.748
.665	.995	.383	2.823	.933	.779
.725	.995	.372	2.895	.943	.804
.780	.996	.363	2.955	.950	.824
.853	.997	.345	3.073	.964	.866
.943	.998	.327	3.205	.978	.914
1.018	.999	.316	3.290	.987	.947
1.131	.999	.307	3.358	.993	.973
1.245	.999	.303	3.388	.996	.985
1.356	1.000	.302	3.400	.997	.990
1.470	1.000	.300	3.410	.998	.994

DEL = .3839 DELU= .0532 DEL*= .1488 CM
THETA= .02380 H = 6.252 UE = 660.9 M/SEC
RHOE= .1723 KG/M**3 RUN = 244

MACH = 3.00 P0 = 299.0 KPA T0 = 309.8 K
ALPHA= 2.10 Z/D= 5.33 PHI= 60.
RPM= 20000. PW = 4.54 KPA REL=7211420.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.327
.038	.964	.742	1.222	.562	.403
.053	.969	.696	1.403	.625	.430
.077	.975	.640	1.619	.692	.468
.111	.979	.591	1.812	.744	.506
.147	.983	.551	1.981	.785	.544
.197	.985	.522	2.106	.813	.574
.253	.986	.504	2.189	.830	.594
.296	.987	.492	2.241	.840	.608
.347	.988	.476	2.320	.855	.629
.402	.990	.456	2.421	.873	.657
.448	.991	.442	2.491	.885	.677
.499	.992	.427	2.571	.898	.701
.555	.993	.412	2.653	.910	.726
.614	.994	.398	2.736	.922	.752
.673	.995	.384	2.820	.933	.780
.728	.995	.371	2.903	.944	.808
.779	.996	.360	2.975	.953	.832
.847	.997	.344	3.079	.965	.869
.930	.998	.329	3.189	.977	.910
1.027	.999	.315	3.293	.988	.950
1.141	1.000	.307	3.360	.994	.976
1.254	1.000	.303	3.388	.997	.987
1.363	1.000	.302	3.400	.998	.991
1.470	1.000	.301	3.410	.999	.995

DEL = .3851 DELU= .0532 DEL*= .1471 CM
THETA= .02333 H = 6.307 UE = 660.4 M/SEC
RHOE= .1716 KG/M**3 RUN = 245

MACH = 3.00 P0 = 298.0 KPA T0 = 309.4 K
ALPHA= 2.10 Z/D= 5.33 PHI= 120.
RPM= 0. PW = 4.55 KPA REL=7223563.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.328
.016	.951	.833	.841	.411	.360
.032	.959	.783	1.059	.502	.383
.044	.965	.729	1.271	.581	.411
.060	.970	.689	1.428	.635	.435
.087	.976	.632	1.648	.702	.475
.118	.979	.598	1.786	.739	.502
.148	.981	.572	1.892	.766	.525
.191	.983	.551	1.979	.787	.544
.234	.984	.535	2.048	.802	.561
.276	.986	.519	2.120	.818	.578
.314	.987	.505	2.182	.830	.594
.360	.988	.491	2.251	.844	.612
.425	.990	.468	2.361	.864	.642
.488	.991	.448	2.462	.882	.670
.526	.992	.438	2.514	.891	.685
.595	.994	.419	2.619	.907	.717
.684	.996	.394	2.762	.928	.762
.774	.997	.369	2.920	.949	.815
.863	.999	.348	3.056	.965	.863
.947	1.000	.331	3.178	.978	.908
1.045	1.001	.316	3.293	.990	.952
1.138	1.002	.308	3.359	.996	.977
1.217	1.002	.304	3.390	.999	.990

DEL = .4765 DELU= .0699 DEL*= .1929 CM
THETA= .03047 H = 6.331 UE = 658.6 M/SEC
RHOE= .1716 KG/M**3 RUN = 251

MACH = 3.00 P0 = 297.9 KPA T0 = 309.9 K
ALPHA= 2.10 Z/D= 5.33 PHI= 120.
RPM= 20000. PW = 4.55 KPA REL=7192505.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.329
.049	.966	.721	1.306	.593	.418
.065	.971	.677	1.474	.649	.445
.084	.975	.640	1.618	.693	.470
.105	.978	.606	1.752	.730	.497
.137	.981	.575	1.879	.762	.524
.181	.983	.549	1.987	.788	.548
.229	.984	.534	2.053	.803	.564
.261	.985	.522	2.106	.814	.577
.306	.986	.507	2.176	.829	.594
.357	.988	.489	2.257	.845	.616
.415	.989	.470	2.353	.863	.641
.476	.991	.450	2.449	.880	.669
.521	.992	.436	2.524	.892	.691
.587	.993	.417	2.630	.908	.723
.694	.995	.387	2.804	.933	.779
.787	.997	.364	2.950	.952	.828
.873	.998	.344	3.082	.967	.875
.966	.999	.327	3.207	.981	.922
1.061	1.000	.313	3.311	.991	.962
1.151	1.000	.306	3.367	.997	.984
1.239	1.001	.303	3.392	.999	.994

DEL = .4694 DELU= .0698 DEL*= .1875 CM
THETA= .02943 H = 6.370 UE = 659.3 M/SEC
RHOE= .1706 KG/M**3 RUN = 252

MACH = 3.00 P0 = 298.4 KPA T0 = 317.8 K
ALPHA= 2.10 Z/D= 5.33 PHI= 150.
RPM= 0. PW = 4.67 KPA REL=6948045.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.329
.014	.954	.812	.937	.452	.371
.030	.964	.744	1.214	.560	.404
.049	.969	.696	1.403	.626	.433
.065	.973	.663	1.530	.666	.454
.093	.976	.625	1.677	.709	.482
.123	.979	.598	1.783	.738	.503
.157	.980	.581	1.855	.756	.518
.192	.981	.567	1.912	.770	.531
.227	.983	.554	1.967	.783	.543
.262	.983	.540	2.025	.796	.557
.295	.985	.527	2.082	.809	.571
.368	.987	.499	2.209	.835	.603
.441	.989	.471	2.345	.861	.639
.515	.991	.446	2.470	.883	.675
.585	.992	.424	2.590	.902	.710
.663	.994	.400	2.726	.922	.753
.743	.995	.376	2.871	.942	.801
.819	.997	.354	3.010	.959	.849
.890	.998	.338	3.121	.971	.889
.974	.999	.325	3.223	.982	.928
1.057	.999	.314	3.303	.990	.958
1.134	1.000	.307	3.355	.995	.979
1.216	1.000	.303	3.388	.998	.992

DEL = .5526 DELU= .0822 DEL*= .2252 CM
THETA= .03614 H = 6.233 UE = 667.8 M/SEC
RHOE= .1713 KG/M**3 RUN = 455

MACH = 3.00 P0 = 298.3 KPA T0 = 318.0 K
ALPHA= 2.10 Z/D= 5.33 PHI= 150.
RPM= 20000. PW = 4.67 KPA REL=6939168.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.329
.043	.964	.734	1.255	.575	.411
.068	.972	.671	1.499	.657	.449
.092	.975	.633	1.645	.700	.476
.125	.979	.598	1.784	.738	.504
.158	.980	.580	1.859	.757	.520
.190	.981	.565	1.922	.773	.534
.229	.983	.550	1.984	.787	.548
.297	.985	.524	2.095	.812	.575
.372	.987	.497	2.221	.838	.607
.444	.989	.471	2.346	.861	.640
.519	.991	.445	2.477	.884	.678
.589	.992	.421	2.603	.904	.715
.667	.994	.397	2.739	.924	.758
.749	.995	.376	2.869	.941	.801
.827	.997	.357	2.995	.957	.845
.902	.998	.339	3.119	.971	.890
.982	.998	.323	3.230	.983	.932
1.068	.999	.313	3.314	.991	.964
1.144	1.000	.307	3.360	.996	.982
1.226	1.000	.304	3.387	.998	.993

DEL = .5477 DELU= .0848 DEL*= .2250 CM
THETA= .03545 H = 6.348 UE = 667.9 M/SEC
RHOE= .1709 KG/M**3 RUN = 456

MACH = 3.00 P0 = 298.4 KPA T0 = 310.2 K
ALPHA= 2.10 Z/D= 5.33 PHI= 170.
RPM= 0. PW = 4.74 KPA REL=7192098.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.332
.013	.950	.840	.811	.399	.362
.026	.960	.774	1.097	.517	.393
.045	.969	.703	1.374	.618	.432
.063	.973	.663	1.531	.668	.459
.092	.976	.627	1.671	.709	.485
.123	.979	.599	1.781	.739	.508
.159	.980	.581	1.853	.757	.523
.189	.981	.568	1.906	.771	.535
.256	.984	.543	2.015	.796	.560
.329	.986	.515	2.138	.823	.590
.397	.988	.490	2.255	.846	.621
.471	.990	.464	2.380	.869	.655
.542	.991	.440	2.504	.890	.691
.615	.993	.417	2.629	.910	.730
.688	.994	.395	2.752	.928	.769
.768	.996	.374	2.881	.945	.813
.845	.997	.355	3.005	.960	.856
.916	.998	.339	3.116	.973	.896
.998	.999	.324	3.227	.985	.938
1.071	1.000	.314	3.306	.993	.969
1.149	1.000	.308	3.354	.997	.988

DEL = .5711 DELU= .0856 DEL*= .2327 CM
THETA= .03774 H = 6.166 UE = 658.3 M/SEC
RHOE= .1752 KG/M**3 RUN = 298

MACH = 3.00 P0 = 298.4 KPA T0 = 310.4 K
ALPHA= 2.10 Z/D= 5.33 PHI= 170.
RPM= 20000. PW = 4.73 KPA REL=7178233.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.331
.033	.965	.730	1.269	.581	.416
.044	.969	.704	1.370	.616	.431
.056	.971	.678	1.471	.649	.448
.073	.974	.649	1.582	.683	.468
.082	.975	.635	1.635	.699	.478
.119	.978	.600	1.776	.737	.506
.153	.980	.582	1.847	.755	.521
.187	.982	.570	1.902	.769	.534
.254	.983	.543	2.012	.795	.560
.323	.986	.517	2.131	.821	.589
.393	.988	.491	2.250	.845	.620
.466	.990	.465	2.375	.868	.654
.535	.991	.442	2.493	.889	.688
.609	.993	.419	2.619	.908	.726
.682	.994	.397	2.741	.926	.765
.756	.996	.377	2.866	.943	.807
.832	.997	.358	2.984	.958	.849
.909	.998	.341	3.103	.972	.892
.981	.999	.327	3.205	.983	.930
1.060	1.000	.315	3.298	.992	.966
1.133	1.000	.308	3.351	.997	.987

DEL = .5777 DELU= .0872 DEL*= .2353 CM
THETA= .03785 H = 6.216 UE = 658.6 M/SEC
RHOE= .1749 KG/M**3 RUN = 299

MACH = 3.00 P0 = 297.4 KPA T0 = 318.3 K
ALPHA= 2.10 Z/D= 5.33 PHI= 180.
RPM= 0. PW = 4.71 KPA REL=6912994.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.333
.014	.955	.806	.962	.463	.378
.030	.964	.743	1.218	.563	.410
.042	.969	.700	1.385	.622	.435
.063	.973	.665	1.523	.666	.459
.090	.976	.625	1.675	.711	.488
.125	.979	.599	1.779	.739	.509
.156	.980	.584	1.841	.755	.522
.189	.981	.570	1.899	.769	.535
.259	.983	.544	2.010	.795	.561
.325	.985	.519	2.118	.819	.587
.392	.987	.494	2.235	.843	.618
.464	.989	.468	2.362	.866	.652
.538	.991	.443	2.489	.888	.689
.611	.992	.417	2.629	.910	.732
.680	.994	.395	2.753	.928	.772
.760	.995	.373	2.886	.946	.817
.835	.997	.356	3.001	.960	.857
.912	.998	.340	3.109	.973	.897
.987	.999	.326	3.209	.983	.935
1.067	.999	.315	3.294	.992	.968
1.145	1.000	.309	3.346	.997	.988

DEL = .5588 DELU= .0829 DEL*= .2259 CM
THETA= .03694 H = 6.115 UE = 666.5 M/SEC
RHOE= .1703 KG/M**3 RUN = 463

MACH = 3.00 P0 = 297.4 KPA T0 = 318.2 K
ALPHA= 2.10 Z/D= 5.33 PHI= 180.
RPM= 20000. PW = 4.71 KPA REL=6912994.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.333
.043	.969	.703	1.375	.619	.433
.059	.973	.669	1.508	.661	.456
.094	.977	.623	1.686	.714	.489
.123	.979	.600	1.777	.738	.508
.156	.980	.583	1.846	.756	.523
.188	.981	.570	1.900	.770	.535
.259	.983	.542	2.018	.797	.562
.326	.986	.516	2.134	.822	.591
.396	.988	.489	2.257	.847	.623
.465	.989	.465	2.373	.868	.655
.538	.991	.441	2.498	.890	.691
.610	.993	.419	2.619	.909	.728
.686	.994	.396	2.747	.928	.769
.758	.996	.378	2.861	.943	.807
.838	.997	.358	2.986	.959	.851
.914	.998	.341	3.104	.972	.894
.990	.999	.326	3.211	.984	.935
1.071	1.000	.315	3.297	.993	.968
1.146	1.000	.309	3.346	.997	.988

DEL = .5581 DELU= .0850 DEL*= .2272 CM
THETA= .03640 H = 6.243 UE = 666.5 M/SEC
RHOE= .1704 KG/M**3 RUN = 464

MACH = 3.00 P0 = 298.2 KPA T0 = 310.2 K
ALPHA= 2.10 Z/D= 5.33 PHI= 190.
RPM= 0. PW = 4.74 KPA REL=7204549.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
0.000	.917	.917	0.000	0.000	.332
.013	.950	.842	.799	.393	.361
.023	.955	.811	.940	.454	.374
.027	.960	.780	1.073	.508	.390
.037	.964	.749	1.197	.556	.406
.057	.971	.685	1.444	.641	.444
.073	.973	.659	1.546	.673	.461
.099	.977	.622	1.688	.714	.488
.123	.979	.602	1.768	.736	.505
.152	.980	.588	1.828	.752	.517
.175	.981	.577	1.870	.762	.526
.205	.982	.565	1.921	.775	.538
.232	.983	.554	1.968	.786	.549
.258	.984	.544	2.010	.795	.559
.283	.985	.534	2.053	.805	.569
.311	.986	.523	2.103	.816	.581
.332	.986	.516	2.136	.823	.589
.360	.986	.505	2.183	.832	.601
.387	.988	.495	2.232	.842	.614
.413	.989	.486	2.273	.850	.625
.442	.989	.478	2.314	.858	.636
.497	.991	.460	2.402	.874	.661
.519	.991	.454	2.433	.879	.670
.545	.991	.444	2.484	.887	.685
.577	.992	.435	2.531	.895	.699
.640	.994	.416	2.638	.912	.732
.678	.995	.405	2.698	.921	.751
.713	.995	.395	2.757	.929	.770
.787	.997	.375	2.882	.946	.812
.827	.997	.365	2.944	.954	.834
.860	.998	.356	3.004	.961	.855
.933	.999	.339	3.123	.974	.898
.976	1.000	.330	3.186	.981	.922
1.010	1.000	.323	3.240	.987	.943
1.053	1.000	.316	3.288	.992	.962
1.088	1.001	.312	3.319	.995	.974
1.162	1.001	.307	3.359	.999	.990

DEL = .5763 DELU= .0885 DEL*= .2397 CM
THETA= .03856 H = 6.217 UE = 657.9 M/SEC
RHOE= .1760 KG/M**3 RUN = 286

MACH = 3.00 P0 = 298.2 KPA T0 = 310.5 K
ALPHA= 2.10 Z/D= 5.33 PHI= 190.
RPM= 20000. PW = 4.73 KPA REL=7182327.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
0.000	.916	.916	0.000	0.000	.328
.027	.958	.787	1.043	.495	.382
.036	.963	.745	1.210	.559	.403
.058	.971	.684	1.446	.640	.439
.073	.974	.657	1.553	.673	.457
.107	.977	.618	1.705	.717	.486
.132	.979	.600	1.778	.737	.501
.162	.980	.584	1.840	.753	.514
.209	.982	.565	1.920	.772	.532
.229	.982	.555	1.961	.782	.541
.259	.983	.544	2.009	.793	.552
.287	.984	.534	2.053	.803	.563
.339	.986	.513	2.145	.822	.585
.367	.987	.503	2.193	.832	.597
.384	.987	.497	2.220	.838	.605
.417	.988	.484	2.281	.849	.621
.447	.989	.473	2.336	.859	.635
.465	.990	.467	2.363	.864	.643
.487	.990	.460	2.400	.871	.653
.511	.991	.451	2.446	.879	.666
.562	.992	.434	2.537	.894	.693
.592	.993	.424	2.587	.902	.708
.625	.993	.413	2.651	.911	.728
.664	.994	.402	2.712	.920	.747
.699	.995	.392	2.776	.929	.768
.732	.995	.382	2.835	.937	.787
.772	.996	.372	2.897	.945	.808
.809	.997	.362	2.959	.953	.830
.844	.998	.353	3.022	.960	.852
.879	.998	.345	3.075	.966	.871
.919	.999	.337	3.135	.973	.893
.956	.999	.329	3.194	.979	.915
.993	.999	.322	3.241	.984	.933
1.068	1.000	.312	3.319	.992	.963
1.141	1.001	.307	3.362	.996	.980
1.217	1.001	.304	3.384	.998	.989
1.256	1.001	.303	3.393	.999	.992

DEL = .5876 DELU= .0911 DEL*= .2449 CM
THETA= .03861 H = 6.343 UE = 660.1 M/SEC
RHOE= .1775 KG/M**3 RUN = 287

MACH = 3.00 P0 = 298.4 KPA T0 = 313.1 K
ALPHA= 2.10 Z/D= 5.33 PHI= 210.
RPM= 0. PW = 4.67 KPA REL=7134186.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.326
.014	.951	.831	.849	.414	.359
.030	.961	.753	1.176	.546	.396
.044	.967	.706	1.359	.611	.422
.060	.971	.666	1.515	.661	.448
.087	.975	.628	1.662	.705	.475
.121	.978	.594	1.799	.742	.502
.156	.980	.574	1.879	.762	.519
.189	.980	.559	1.940	.777	.533
.239	.982	.540	2.022	.795	.552
.290	.984	.521	2.106	.814	.572
.349	.985	.502	2.196	.832	.594
.399	.987	.482	2.286	.850	.618
.453	.989	.463	2.382	.867	.644
.507	.990	.445	2.473	.883	.670
.568	.991	.425	2.580	.900	.701
.622	.993	.409	2.673	.914	.730
.677	.994	.394	2.761	.927	.758
.735	.995	.378	2.860	.940	.791
.798	.996	.363	2.956	.952	.823
.852	.998	.350	3.044	.962	.854
.914	.999	.336	3.140	.973	.889
.969	1.000	.326	3.216	.981	.917
1.025	1.000	.317	3.281	.988	.942
1.088	1.001	.310	3.341	.994	.965
1.120	1.001	.307	3.362	.996	.973
1.165	1.001	.305	3.380	.997	.980
1.204	1.002	.304	3.391	.998	.985
1.247	1.002	.303	3.398	.999	.988
1.285	1.002	.302	3.403	.999	.990
1.327	1.002	.301	3.412	1.000	.993

DEL = .5569 DELU= .0820 DEL*= .2282 CM
THETA= .03595 H = 6.348 UE = 662.9 M/SEC
RHOE= .1752 KG/M**3 RUN = 222

MACH = 3.00 P0 = 298.5 KPA T0 = 311.0 K
ALPHA= 2.10 Z/D= 5.33 PHI= 210.
RPM= 20000. PW = 4.67 KPA REL=7123418.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.328
.036	.964	.739	1.232	.564	.406
.049	.967	.702	1.374	.613	.427
.060	.971	.672	1.491	.651	.446
.085	.974	.637	1.626	.692	.471
.116	.977	.604	1.756	.727	.496
.150	.979	.583	1.841	.749	.514
.183	.980	.569	1.899	.763	.527
.231	.981	.550	1.978	.782	.545
.279	.983	.530	2.067	.802	.566
.336	.984	.509	2.158	.821	.588
.381	.985	.490	2.246	.838	.611
.438	.986	.470	2.344	.857	.637
.489	.987	.454	2.425	.871	.660
.543	.988	.434	2.529	.888	.690
.594	.989	.416	2.627	.903	.720
.653	.991	.397	2.732	.919	.753
.710	.991	.381	2.832	.932	.786
.768	.992	.365	2.933	.945	.820
.802	.993	.355	2.995	.952	.841
.861	.993	.341	3.094	.964	.877
.916	.994	.328	3.186	.974	.911
.972	.995	.317	3.266	.982	.941
1.030	.995	.310	3.327	.988	.965
1.085	.995	.305	3.363	.991	.979
1.146	.995	.302	3.388	.994	.989
1.201	.995	.300	3.402	.995	.995
1.256	.995	.299	3.413	.996	1.000

DEL = .5784 DELU= .0894 DEL*= .2360 CM
THETA= .03809 H = 6.197 UE = 663.6 M/SEC
RHOE= .1753 KG/M**3 RUN = 223

MACH = 3.00 P0 = 298.0 KPA T0 = 310.1 K
ALPHA= 2.10 Z/D= 5.33 PHI= 240.
RPM= 0. PW = 4.55 KPA REL=7167032.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.329
.016	.953	.821	.898	.435	.367
.033	.964	.742	1.221	.562	.406
.057	.971	.678	1.470	.647	.445
.082	.975	.635	1.636	.697	.474
.113	.979	.595	1.796	.740	.506
.176	.982	.556	1.958	.780	.542
.237	.984	.531	2.066	.805	.568
.301	.986	.508	2.169	.826	.593
.366	.987	.484	2.281	.848	.623
.432	.989	.463	2.380	.866	.650
.499	.990	.443	2.484	.884	.680
.557	.991	.426	2.576	.899	.707
.631	.992	.404	2.698	.917	.745
.699	.994	.384	2.816	.934	.784
.764	.995	.366	2.928	.948	.822
.838	.996	.349	3.048	.962	.864
.899	.997	.336	3.134	.972	.895
.971	.998	.324	3.227	.982	.931
1.040	.998	.314	3.300	.989	.959
1.092	.998	.309	3.339	.993	.974
1.129	.998	.307	3.357	.995	.981
1.183	.999	.304	3.379	.997	.990
1.229	.999	.303	3.391	.998	.995
1.269	.998	.302	3.399	.998	.998

DEL = .4661 DELU= .0669 DEL*= .1842 CM
THETA= .02989 H = 6.164 UE = 660.2 M/SEC
RHOE= .1705 KG/M**3 RUN = 234

MACH = 3.00 P0 = 297.9 KPA T0 = 309.6 K
ALPHA= 2.10 Z/D= 5.33 PHI= 240.
RPM= 20000. PW = 4.55 KPA REL=7185458.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.328
.045	.967	.710	1.346	.606	.424
.056	.971	.683	1.452	.641	.441
.077	.974	.647	1.592	.684	.465
.092	.976	.629	1.660	.704	.478
.117	.978	.598	1.783	.737	.503
.160	.981	.570	1.898	.766	.528
.220	.983	.546	2.001	.790	.551
.275	.984	.525	2.090	.810	.572
.344	.986	.501	2.199	.832	.600
.404	.988	.479	2.303	.852	.628
.495	.990	.450	2.451	.878	.669
.552	.991	.430	2.554	.895	.699
.624	.993	.409	2.672	.913	.735
.692	.994	.390	2.785	.929	.772
.756	.995	.372	2.897	.944	.809
.826	.996	.355	3.006	.957	.848
.890	.997	.340	3.107	.969	.884
.961	.998	.326	3.212	.980	.923
1.017	.998	.316	3.282	.987	.950
1.075	.999	.309	3.338	.993	.972
1.123	.999	.306	3.368	.995	.984
1.170	.999	.303	3.386	.997	.991
1.214	.999	.302	3.398	.998	.996
1.228	.999	.302	3.400	.998	.997

DEL = .4734 DELU= .0716 DEL*= .1921 CM
THETA= .03049 H = 6.301 UE = 659.8 M/SEC
RHOE= .1709 KG/M**3 RUN = 235

MACH = 3.00 P0 = 297.8 KPA T0 = 310.3 K
ALPHA= 2.10 Z/D= 5.33 PHI= 300.
RPM= 0. PW = 4.52 KPA REL=7175612.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.326
.020	.956	.801	.985	.471	.373
.034	.964	.744	1.216	.560	.402
.051	.969	.699	1.388	.620	.427
.075	.975	.639	1.620	.692	.468
.101	.979	.592	1.809	.744	.505
.150	.983	.538	2.033	.797	.555
.226	.987	.500	2.207	.834	.598
.309	.988	.479	2.305	.853	.624
.391	.990	.456	2.421	.873	.656
.471	.991	.436	2.524	.890	.686
.545	.993	.417	2.626	.906	.717
.633	.994	.394	2.759	.926	.759
.714	.996	.377	2.862	.939	.793
.805	.997	.355	3.005	.957	.842
.923	.999	.331	3.172	.976	.902
1.025	1.000	.316	3.290	.988	.947
1.154	1.001	.302	3.398	.998	.989

DEL = .3718 DELU= .0494 DEL*= .1410 CM
THETA= .02255 H = 6.252 UE = 660.7 M/SEC
RHOE= .1704 KG/M**3 RUN = 253

MACH = 3.00 P0 = 297.6 KPA T0 = 310.5 K
ALPHA= 2.10 Z/D= 5.33 PHI= 300.
RPM= 20000. PW = 4.53 KPA REL=7164669.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.326
.040	.969	.698	1.391	.621	.428
.071	.975	.632	1.648	.700	.473
.103	.979	.588	1.823	.747	.508
.164	.984	.535	2.048	.800	.559
.267	.986	.499	2.210	.834	.599
.304	.987	.487	2.268	.845	.614
.338	.988	.477	2.315	.854	.627
.397	.989	.458	2.407	.870	.652
.466	.991	.437	2.516	.889	.683
.548	.992	.416	2.634	.907	.719
.637	.994	.392	2.769	.926	.762
.713	.995	.375	2.876	.941	.797
.806	.997	.354	3.015	.958	.845
.923	.998	.330	3.184	.976	.906
1.043	.999	.313	3.310	.989	.955
1.162	1.000	.303	3.391	.997	.986

DEL = .3697 DELU= .0499 DEL*= .1407 CM
THETA= .02236 H = 6.291 UE = 661.2 M/SEC
RHOE= .1704 KG/M**3 RUN = 254

MACH = 3.00 P0 = 298.3 KPA T0 = 309.9 K
ALPHA= 2.10 Z/D= 5.33 PHI= 330.
RPM= 0. PW = 4.60 KPA REL=7187593.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.330
.022	.956	.801	.985	.472	.377
.033	.961	.771	1.109	.521	.392
.047	.968	.711	1.345	.607	.425
.072	.974	.651	1.575	.681	.464
.092	.978	.610	1.738	.727	.496
.138	.983	.555	1.964	.783	.545
.177	.985	.526	2.088	.811	.575
.214	.987	.504	2.186	.832	.599
.274	.988	.485	2.278	.849	.623
.326	.989	.474	2.330	.859	.638
.383	.990	.458	2.409	.873	.660
.441	.991	.441	2.496	.888	.685
.495	.992	.428	2.569	.900	.707
.555	.993	.415	2.639	.910	.728
.605	.994	.399	2.730	.924	.757
.668	.995	.382	2.831	.937	.791
.725	.996	.367	2.927	.950	.823
.782	.997	.354	3.017	.961	.855
.845	.998	.343	3.093	.969	.882
.906	.999	.335	3.149	.975	.903
.961	.999	.327	3.203	.981	.924
1.023	.999	.320	3.261	.987	.946
1.082	1.000	.312	3.316	.993	.967
1.150	1.000	.307	3.357	.997	.984
1.210	1.000	.305	3.376	.998	.991
1.268	1.000	.304	3.387	.999	.996
1.329	1.000	.303	3.391	1.000	.997

DEL = .3494 DELU= .0457 DEL*= .1285 CM
THETA= .02075 H = 6.191 UE = 658.9 M/SEC
RHOE= .1716 KG/M**3 RUN = 277

MACH = 3.00 P0 = 298.0 KPA T0 = 310.1 K
ALPHA= 2.10 Z/D= 5.33 PHI= 330.
RPM= 20000. PW = 4.60 KPA REL=7186268.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.330
.057	.971	.682	1.456	.644	.443
.067	.974	.651	1.576	.681	.464
.092	.978	.611	1.733	.725	.495
.113	.980	.583	1.844	.754	.518
.139	.982	.555	1.964	.783	.544
.183	.985	.524	2.098	.813	.577
.225	.986	.505	2.182	.830	.598
.280	.987	.491	2.248	.843	.615
.332	.988	.475	2.323	.858	.635
.392	.989	.459	2.402	.872	.657
.452	.991	.442	2.491	.887	.683
.508	.992	.427	2.574	.900	.708
.565	.993	.410	2.664	.914	.736
.622	.994	.397	2.743	.925	.761
.682	.995	.383	2.828	.937	.789
.739	.996	.371	2.904	.946	.815
.802	.996	.357	2.990	.957	.845
.864	.997	.345	3.076	.967	.876
.924	.998	.333	3.161	.976	.907
.982	.999	.324	3.225	.983	.932
1.047	.999	.316	3.285	.989	.955
1.110	.999	.311	3.328	.993	.971
1.172	1.000	.307	3.358	.996	.984
1.236	1.000	.305	3.376	.998	.991
1.295	1.000	.303	3.388	.999	.995
1.357	1.000	.303	3.394	1.000	.998

DEL = .3421 DELU= .0471 DEL*= .1289 CM
THETA= .02044 H = 6.307 UE = 659.2 M/SEC
RHOE= .1719 KG/M**3 RUN = 278

MACH = 3.00 P0 = 298.9 KPA T0 = 310.4 K
ALPHA= .00 Z/D= 5.67 PHI= 0.
RPM= 0. PW = 4.88 KPA REL=7243553.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.017	.956	.812	.940	.459	.388
.030	.962	.774	1.101	.525	.407
.041	.966	.744	1.222	.571	.424
.052	.969	.716	1.330	.610	.440
.071	.973	.683	1.456	.652	.461
.089	.975	.663	1.533	.677	.475
.108	.977	.644	1.608	.700	.490
.138	.979	.619	1.706	.728	.509
.174	.981	.595	1.804	.754	.530
.215	.984	.570	1.907	.780	.554
.248	.985	.553	1.977	.797	.570
.278	.986	.540	2.032	.810	.584
.321	.988	.522	2.112	.827	.604
.360	.989	.508	2.177	.841	.621
.397	.990	.496	2.231	.852	.636
.427	.991	.485	2.284	.862	.651
.467	.992	.475	2.334	.871	.665
.506	.993	.462	2.397	.883	.683
.554	.994	.449	2.461	.894	.702
.591	.995	.438	2.518	.903	.720
.630	.996	.427	2.580	.913	.739
.674	.997	.414	2.652	.924	.763
.711	.997	.404	2.712	.933	.783
.757	.998	.391	2.784	.943	.807
.797	.999	.382	2.845	.952	.828
.840	1.000	.371	2.912	.960	.852
.889	1.001	.361	2.978	.969	.876
.928	1.001	.354	3.027	.974	.894
.970	1.002	.346	3.081	.981	.914
1.015	1.003	.338	3.137	.987	.936
1.056	1.004	.331	3.185	.992	.955
1.101	1.005	.326	3.227	.997	.971
1.182	1.005	.320	3.272	1.001	.989
1.334	1.005	.318	3.289	1.003	.996

DEL = .4576 DELU= .0695 DEL*= .1855 CM
THETA= .03047 H = 6.087 UE = 651.0 M/SEC
RHOE= .1759 KG/M**3 RUN = 335

MACH = 3.00 P0 = 297.8 KPA T0 = 312.3 K
ALPHA= .00 Z/D= 5.67 PHI= 60.
RPM= 0. PW = 4.87 KPA REL=7119947.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.017	.957	.809	.955	.464	.389
.024	.961	.778	1.082	.516	.404
.039	.967	.732	1.264	.585	.430
.059	.971	.695	1.407	.634	.452
.078	.973	.669	1.509	.667	.470
.096	.976	.648	1.590	.692	.486
.113	.977	.632	1.650	.709	.498
.150	.979	.604	1.764	.740	.521
.180	.981	.584	1.844	.761	.539
.222	.983	.563	1.933	.783	.560
.260	.985	.544	2.011	.801	.578
.300	.986	.528	2.084	.818	.597
.336	.987	.514	2.144	.831	.612
.370	.988	.501	2.205	.843	.628
.414	.989	.487	2.268	.855	.646
.452	.989	.475	2.329	.867	.663
.494	.991	.462	2.392	.878	.681
.536	.991	.449	2.458	.890	.701
.575	.992	.437	2.518	.900	.719
.616	.993	.426	2.582	.910	.739
.659	.994	.414	2.646	.920	.760
.703	.995	.402	2.718	.930	.784
.746	.996	.390	2.784	.940	.806
.786	.996	.381	2.843	.948	.827
.831	.997	.369	2.917	.957	.853
.876	.998	.358	2.992	.967	.881
.917	.999	.350	3.043	.973	.899
.964	.999	.341	3.104	.980	.923
1.010	.999	.332	3.168	.987	.947
1.050	1.000	.326	3.218	.992	.967
1.098	1.000	.320	3.258	.996	.983
1.144	1.000	.317	3.282	.998	.993
1.190	1.000	.316	3.294	1.000	.998

DEL = .4549 DELU= .0688 DEL*= .1822 CM
THETA= .03058 H = 5.959 UE = 655.6 M/SEC
RHOE= .1740 KG/M**3 RUN = 385

MACH = 3.00 P0 = 298.1 KPA T0 = 311.8 K
ALPHA= 2.10 Z/D= 5.67 PHI= 0.
RPM= 0. PW = 4.83 KPA REL=7163731.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.021	.960	.785	1.054	.505	.399
.047	.969	.717	1.324	.606	.437
.062	.973	.674	1.490	.661	.465
.092	.977	.635	1.639	.706	.493
.112	.979	.611	1.736	.733	.513
.132	.981	.592	1.813	.754	.530
.177	.984	.561	1.941	.786	.559
.223	.986	.538	2.038	.808	.583
.265	.987	.523	2.108	.823	.600
.313	.988	.504	2.190	.841	.622
.362	.990	.486	2.276	.858	.646
.408	.991	.472	2.344	.870	.665
.457	.992	.457	2.419	.884	.687
.506	.993	.443	2.489	.896	.708
.553	.994	.431	2.553	.906	.728
.608	.995	.418	2.629	.918	.752
.651	.996	.403	2.711	.930	.779
.704	.997	.389	2.794	.942	.806
.744	.997	.379	2.855	.950	.828
.808	.998	.368	2.929	.959	.854
.854	.999	.360	2.979	.966	.872
.908	1.000	.352	3.033	.972	.892
.967	1.000	.342	3.104	.980	.919
1.021	1.001	.332	3.177	.988	.947
1.074	1.002	.324	3.237	.995	.971
1.126	1.002	.319	3.270	.998	.984
1.183	1.002	.317	3.291	1.000	.993

DEL = .3575 DELU= .0496 DEL*= .1357 CM
THETA= .02260 H = 6.006 UE = 654.5 M/SEC
RHOE= .1736 KG/M**3 RUN = 338

MACH = 3.00 P0 = 297.3 KPA T0 = 312.2 K
ALPHA= 2.10 Z/D= 5.67 PHI= 0.
RPM= 20000. PW = 4.82 KPA REL=7115158.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.057	.972	.685	1.448	.647	.458
.091	.977	.632	1.650	.709	.496
.135	.980	.591	1.813	.753	.530
.183	.983	.561	1.937	.784	.559
.224	.984	.540	2.028	.805	.580
.273	.986	.519	2.120	.825	.604
.317	.988	.502	2.199	.841	.625
.370	.989	.483	2.290	.859	.650
.420	.990	.468	2.362	.873	.670
.464	.991	.455	2.427	.884	.690
.515	.992	.439	2.509	.898	.714
.565	.993	.426	2.578	.909	.736
.609	.994	.414	2.647	.920	.758
.661	.995	.402	2.716	.930	.781
.713	.996	.391	2.782	.939	.803
.766	.996	.379	2.854	.949	.828
.819	.997	.368	2.925	.958	.853
.874	.998	.357	2.997	.967	.879
.921	.998	.348	3.059	.974	.903
.979	.999	.337	3.134	.982	.931
1.034	1.000	.329	3.195	.989	.955
1.084	1.000	.323	3.239	.994	.972
1.091	1.000	.322	3.243	.994	.974
1.148	1.000	.318	3.277	.997	.987
1.199	1.001	.316	3.293	.999	.994

DEL = .3526 DELU= .0513 DEL*= .1350 CM
THETA= .02210 H = 6.107 UE = 655.8 M/SEC
RHOE= .1726 KG/M**3 RUN = 339

MACH = 3.00 P0 = 298.2 KPA T0 = 310.9 K
ALPHA= 2.10 Z/D= 5.67 PHI= 30.
RPM= 0. PW = 4.78 KPA REL=7162905.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.021	.958	.800	.991	.479	.392
.039	.965	.741	1.229	.572	.423
.048	.969	.714	1.337	.610	.440
.076	.974	.663	1.529	.673	.473
.094	.976	.638	1.628	.702	.492
.142	.980	.591	1.817	.754	.531
.184	.983	.561	1.938	.784	.559
.230	.985	.538	2.039	.807	.584
.273	.986	.519	2.122	.826	.605
.319	.988	.500	2.207	.843	.627
.372	.989	.483	2.290	.859	.650
.417	.990	.468	2.361	.872	.670
.460	.991	.454	2.430	.885	.691
.510	.992	.440	2.502	.897	.713
.560	.993	.426	2.578	.909	.736
.610	.994	.413	2.655	.921	.761
.662	.995	.398	2.738	.933	.789
.715	.996	.384	2.823	.945	.818
.766	.997	.374	2.885	.953	.839
.816	.997	.367	2.932	.959	.856
.862	.997	.360	2.977	.964	.873
.914	.998	.350	3.043	.972	.897
.975	.999	.338	3.126	.982	.929
1.028	.999	.329	3.192	.989	.954
1.082	1.000	.323	3.240	.994	.973
1.133	1.000	.319	3.269	.997	.985
1.190	1.000	.316	3.292	.999	.994
1.247	1.001	.315	3.301	1.000	.998

DEL = .3663 DELU= .0516 DEL*= .1390 CM
THETA= .02330 H = 5.968 UE = 654.4 M/SEC
RHOE= .1737 KG/M**3 RUN = 361

MACH = 3.00 P0 = 298.1 KPA T0 = 311.1 K
ALPHA= 2.10 Z/D= 5.67 PHI= 30.
RPM= 20000. PW = 4.78 KPA REL=7169720.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.063	.972	.681	1.461	.651	.461
.070	.974	.664	1.525	.671	.473
.094	.976	.635	1.641	.706	.495
.116	.979	.614	1.721	.729	.511
.137	.980	.597	1.790	.747	.526
.184	.983	.563	1.930	.782	.558
.232	.984	.540	2.029	.805	.582
.273	.986	.521	2.111	.823	.603
.321	.987	.502	2.200	.842	.626
.369	.989	.486	2.272	.856	.646
.418	.990	.469	2.355	.871	.670
.466	.991	.454	2.432	.885	.692
.517	.992	.438	2.513	.899	.717
.566	.993	.426	2.577	.909	.737
.618	.994	.413	2.651	.920	.761
.664	.995	.402	2.717	.930	.782
.716	.996	.387	2.805	.942	.812
.768	.996	.375	2.877	.952	.838
.820	.997	.364	2.949	.961	.864
.871	.998	.354	3.017	.969	.888
.931	.998	.342	3.095	.978	.918
.986	.999	.336	3.143	.983	.936
1.042	.999	.327	3.210	.991	.962
1.093	1.000	.321	3.253	.995	.979
1.143	1.000	.318	3.276	.997	.989
1.193	1.000	.316	3.289	.999	.994
1.262	1.000	.315	3.298	1.000	.998

DEL = .3653 DELU= .0536 DEL*= .1393 CM
THETA= .02282 H = 6.103 UE = 654.5 M/SEC
RHOE= .1734 KG/M**3 RUN = 362

MACH = 3.00 P0 = 298.1 KPA T0 = 312.1 K
ALPHA= 2.10 Z/D= 5.67 PHI= 60.
RPM= 0. PW = 4.66 KPA REL=7132613.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.337
.020	.957	.801	.987	.475	.386
.028	.960	.777	1.086	.515	.398
.040	.966	.735	1.254	.578	.421
.055	.970	.697	1.402	.630	.444
.079	.974	.660	1.544	.675	.469
.103	.976	.633	1.646	.705	.488
.147	.980	.595	1.799	.747	.520
.187	.982	.569	1.905	.773	.543
.232	.984	.543	2.014	.799	.569
.280	.986	.520	2.115	.821	.594
.324	.987	.502	2.197	.838	.615
.369	.988	.488	2.264	.851	.633
.414	.990	.473	2.337	.865	.654
.460	.991	.458	2.411	.878	.675
.506	.992	.441	2.497	.893	.700
.550	.993	.428	2.569	.904	.722
.605	.994	.413	2.651	.917	.748
.652	.994	.401	2.722	.927	.771
.699	.995	.388	2.799	.938	.797
.750	.996	.374	2.881	.949	.825
.796	.997	.364	2.948	.957	.849
.853	.998	.353	3.019	.966	.875
.906	.998	.344	3.084	.973	.899
.953	.999	.336	3.143	.980	.921
1.004	.999	.329	3.195	.985	.941
1.062	1.000	.322	3.245	.991	.961
1.117	1.000	.317	3.283	.994	.976
1.171	1.000	.313	3.312	.997	.987
1.220	1.000	.311	3.329	.999	.994
1.270	1.001	.310	3.338	1.000	.998
1.330	1.001	.309	3.343	1.000	1.000

DEL = .3797 DELU= .0550 DEL*= .1478 CM
THETA= .02426 H = 6.091 UE = 657.9 M/SEC
RHOE= .1697 KG/M**3 RUN = 379

MACH = 3.00 P0 = 297.9 KPA T0 = 312.1 K
ALPHA= 2.10 Z/D= 5.67 PHI= 60.
RPM= 20000. PW = 4.66 KPA REL=7128593.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.337
.052	.969	.707	1.360	.615	.438
.061	.971	.688	1.433	.640	.450
.078	.974	.657	1.554	.678	.471
.099	.976	.631	1.654	.707	.490
.146	.980	.592	1.811	.750	.523
.189	.982	.564	1.924	.778	.548
.224	.984	.545	2.007	.797	.568
.275	.985	.524	2.097	.817	.590
.320	.987	.506	2.181	.835	.612
.364	.988	.487	2.267	.852	.635
.407	.989	.472	2.342	.866	.656
.448	.990	.457	2.415	.879	.677
.501	.991	.442	2.495	.892	.701
.546	.992	.428	2.568	.904	.723
.597	.993	.414	2.645	.916	.748
.640	.994	.402	2.711	.926	.769
.689	.994	.391	2.779	.935	.792
.735	.996	.380	2.845	.944	.814
.787	.996	.368	2.921	.954	.841
.843	.997	.356	3.003	.964	.870
.894	.997	.347	3.061	.971	.892
.940	.998	.337	3.132	.979	.918
.995	.998	.330	3.186	.984	.939
1.048	.999	.322	3.243	.990	.961
1.095	1.000	.316	3.287	.995	.979
1.155	1.000	.313	3.315	.998	.990
1.203	1.000	.311	3.327	.999	.995
1.253	1.000	.310	3.335	1.000	.998
1.310	1.000	.310	3.339	1.000	1.000

DEL = .3849 DELU= .0569 DEL*= .1495 CM
THETA= .02423 H = 6.170 UE = 658.0 M/SEC
RHOE= .1694 KG/M**3 RUN = 380

MACH = 3.00 P0 = 298.5 KPA T0 = 316.1 K
ALPHA= 2.10 Z/D= 5.67 PHI= 120.
RPM= 0. PW = 4.80 KPA REL=7030269.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.015	.953	.826	.877	.430	.377
.020	.958	.800	.992	.479	.389
.035	.965	.740	1.233	.572	.421
.072	.972	.686	1.443	.645	.454
.109	.975	.655	1.562	.683	.476
.170	.980	.603	1.768	.741	.517
.232	.983	.562	1.936	.783	.555
.309	.986	.531	2.069	.814	.587
.385	.988	.507	2.179	.837	.615
.452	.990	.480	2.304	.862	.650
.530	.992	.454	2.434	.885	.687
.607	.994	.431	2.552	.905	.723
.678	.995	.412	2.662	.921	.758
.751	.997	.393	2.771	.937	.794
.834	.998	.373	2.896	.954	.837
.916	.999	.353	3.028	.970	.885
.994	1.000	.335	3.155	.984	.933
1.076	1.002	.323	3.244	.994	.968
1.155	1.002	.315	3.299	.999	.990
1.239	1.002	.313	3.318	1.001	.997

OEL = .5216 DELU= .0820 OEL*= .2168 CM
THETA= .03557 H = 6.094 UE = 660.0 M/SEC
RHOE= .1712 KG/M**3 RUN = 418

MACH = 3.00 P0 = 298.3 KPA T0 = 317.1 K
ALPHA= 2.10 Z/D= 5.67 PHI= 120.
RPM= 20000. PW = 4.80 KPA REL=6994072.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.341
.034	.965	.742	1.227	.571	.421
.066	.972	.683	1.453	.649	.457
.105	.976	.647	1.595	.693	.484
.165	.980	.596	1.798	.749	.525
.225	.983	.559	1.950	.787	.560
.299	.986	.525	2.097	.820	.596
.365	.989	.500	2.211	.844	.626
.438	.990	.475	2.332	.867	.659
.511	.992	.451	2.447	.888	.693
.588	.994	.429	2.563	.907	.729
.658	.995	.408	2.680	.925	.766
.725	.996	.389	2.793	.941	.804
.815	.998	.371	2.904	.955	.843
.888	.999	.353	3.026	.970	.887
.961	1.000	.341	3.110	.980	.919
1.052	1.001	.325	3.224	.992	.963
1.124	1.001	.316	3.291	.999	.990
1.202	1.002	.314	3.310	1.001	.998

DEL = .5382 DELU= .0814 OEL*= .2146 CM
THETA= .03513 H = 6.110 UE = 660.8 M/SEC
RHOE= .1702 KG/M**3 RUN = 419

MACH = 3.00 P0 = 298.3 KPA T0 = 318.6 K
ALPHA= 2.10 Z/D= 5.67 PHI= 150.
RPM= 0. PW = 4.96 KPA REL=6918164.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.013	.955	.820	.909	.445	.385
.019	.958	.801	.988	.478	.394
.032	.963	.761	1.154	.544	.415
.047	.967	.729	1.278	.590	.433
.075	.971	.693	1.417	.638	.456
.116	.975	.655	1.565	.685	.483
.162	.978	.621	1.696	.723	.509
.208	.980	.594	1.804	.752	.532
.253	.982	.570	1.901	.776	.554
.299	.984	.549	1.993	.798	.576
.345	.986	.530	2.075	.816	.597
.391	.987	.512	2.155	.833	.617
.443	.988	.494	2.237	.850	.639
.492	.990	.477	2.317	.865	.662
.544	.991	.461	2.398	.880	.686
.591	.992	.446	2.476	.893	.709
.644	.993	.428	2.567	.908	.737
.696	.994	.413	2.651	.921	.764
.750	.995	.399	2.735	.934	.793
.804	.996	.385	2.816	.945	.820
.855	.997	.371	2.907	.957	.852
.911	.998	.356	3.001	.968	.887
.969	.999	.342	3.098	.980	.924
1.020	.999	.331	3.176	.988	.954
1.076	1.000	.324	3.228	.994	.974
1.134	1.000	.320	3.258	.997	.987
1.188	1.000	.318	3.274	.998	.993
1.247	1.000	.317	3.282	.999	.996

DEL = .5819 DELU= .0953 DEL*= .2452 CM
THETA= .04104 H = 5.975 UE = 661.7 M/SEC
RHOE= .1722 KG/M**3 RUN = 398

MACH = 3.00 P0 = 298.7 KPA T0 = 318.1 K
ALPHA= 2.10 Z/D= 5.67 PHI= 150.
RPM= 20000. PW = 4.97 KPA REL=6963482.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.033	.963	.763	1.144	.541	.414
.047	.968	.726	1.290	.595	.435
.072	.971	.691	1.425	.641	.457
.117	.976	.647	1.595	.694	.488
.161	.979	.615	1.718	.730	.513
.207	.981	.589	1.824	.758	.536
.253	.983	.565	1.922	.782	.559
.319	.985	.537	2.044	.810	.588
.346	.986	.526	2.092	.821	.600
.393	.988	.509	2.170	.838	.621
.444	.989	.490	2.256	.855	.645
.493	.991	.473	2.338	.870	.668
.545	.992	.457	2.418	.885	.691
.595	.993	.440	2.506	.900	.718
.643	.994	.426	2.584	.912	.742
.698	.995	.409	2.678	.926	.773
.750	.996	.395	2.760	.938	.801
.801	.997	.381	2.842	.949	.829
.855	.998	.368	2.928	.961	.860
.912	.999	.356	3.008	.970	.889
.969	1.000	.343	3.093	.980	.921
1.022	1.001	.333	3.166	.988	.949
1.078	1.001	.325	3.225	.995	.973
1.131	1.001	.321	3.259	.998	.986
1.189	1.002	.319	3.273	1.000	.992
1.250	1.002	.318	3.282	1.000	.996

DEL = .5809 DELU= .0942 DEL*= .2416 CM
THETA= .03972 H = 6.081 UE = 660.3 M/SEC
RHOE= .1730 KG/M**3 RUN = 399

MACH = 3.00 P0 = 298.2 KPA T0 = 317.0 K
ALPHA= 2.10 Z/D= 5.67 PHI= 170.
RPM= 0. PW = 5.00 KPA REL=6982579.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.012	.950	.848	.777	.387	.371
.025	.957	.805	.972	.472	.391
.038	.963	.760	1.155	.545	.414
.064	.970	.708	1.360	.619	.445
.090	.973	.677	1.477	.658	.465
.119	.975	.651	1.578	.689	.484
.145	.977	.630	1.660	.713	.500
.174	.979	.612	1.732	.733	.515
.231	.982	.579	1.867	.768	.545
.287	.984	.552	1.977	.795	.571
.346	.986	.527	2.088	.820	.598
.405	.988	.503	2.198	.843	.627
.469	.990	.480	2.305	.864	.657
.527	.991	.461	2.398	.881	.684
.594	.993	.441	2.501	.898	.715
.654	.994	.422	2.604	.915	.747
.719	.995	.403	2.709	.930	.782
.791	.997	.385	2.821	.946	.820
.860	.998	.368	2.924	.959	.857
.931	.999	.352	3.033	.973	.897
.997	1.000	.337	3.138	.985	.937
1.067	1.001	.325	3.223	.994	.970
1.137	1.002	.320	3.264	.998	.987
1.210	1.001	.318	3.280	1.000	.993
1.277	1.002	.317	3.288	1.000	.996

DEL = .6187 DELU= .1005 DEL*= .2588 CM
THETA= .04284 H = 6.042 UE = 659.6 M/SEC
RHOE= .1751 KG/M**3 RUN = 410

MACH = 3.00 P0 = 298.0 KPA T0 = 317.6 K
ALPHA= 2.10 Z/D= 5.67 PHI= 170.
RPM= 20000. PW = 5.00 KPA REL=6954776.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.030	.961	.777	1.089	.519	.406
.039	.964	.749	1.198	.561	.421
.064	.970	.701	1.385	.627	.450
.088	.973	.673	1.495	.663	.469
.119	.976	.646	1.599	.695	.489
.143	.978	.625	1.679	.718	.505
.171	.979	.609	1.744	.736	.519
.228	.982	.576	1.878	.771	.548
.286	.984	.549	1.992	.798	.575
.345	.986	.524	2.098	.822	.602
.407	.988	.501	2.206	.844	.631
.466	.990	.479	2.309	.864	.659
.529	.991	.458	2.410	.883	.689
.590	.992	.437	2.519	.901	.722
.648	.994	.420	2.614	.916	.752
.722	.995	.399	2.734	.934	.792
.790	.996	.381	2.843	.949	.829
.859	.997	.366	2.940	.961	.864
.925	.998	.351	3.040	.973	.901
.991	.999	.337	3.132	.984	.936
1.064	1.000	.326	3.215	.993	.969
1.135	1.000	.320	3.257	.997	.985
1.207	1.001	.318	3.275	.999	.993
1.277	1.001	.317	3.283	1.000	.996

DEL = .6204 DELU= .0997 DEL*= .2555 CM
THETA= .04224 H = 6.048 UE = 660.2 M/SEC
RHOE= .1749 KG/M**3 RUN = 411

MACH = 3.00 P0 = 298.5 KPA T0 = 312.2 K
ALPHA= 2.10 Z/D= 5.67 PHI= 180.
RPM= 0. PW = 5.01 KPA REL=7165754.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
0.000	.918	.918	0.000	0.000	.345
.012	.953	.836	.837	.415	.379
.023	.959	.789	1.038	.500	.401
.035	.964	.755	1.177	.554	.419
.050	.969	.721	1.309	.602	.439
.067	.971	.701	1.388	.630	.452
.092	.974	.673	1.494	.664	.470
.111	.976	.655	1.567	.687	.484
.141	.978	.632	1.653	.712	.501
.168	.980	.613	1.730	.734	.517
.193	.981	.597	1.793	.751	.530
.221	.982	.582	1.854	.766	.544
.248	.983	.569	1.909	.780	.557
.274	.984	.556	1.962	.793	.569
.303	.986	.544	2.014	.805	.582
.333	.986	.533	2.063	.816	.594
.358	.987	.522	2.110	.826	.606
.386	.988	.513	2.150	.834	.617
.416	.989	.505	2.186	.842	.627
.446	.989	.495	2.236	.852	.640
.474	.990	.485	2.282	.861	.653
.503	.991	.475	2.329	.870	.666
.567	.992	.456	2.425	.887	.695
.597	.994	.446	2.476	.896	.710
.629	.994	.436	2.528	.904	.726
.687	.995	.418	2.629	.920	.758
.720	.996	.408	2.683	.928	.776
.757	.997	.399	2.739	.936	.795
.823	.998	.380	2.853	.952	.834
.851	.999	.373	2.899	.958	.851
.884	.999	.364	2.953	.965	.870
.956	1.001	.348	3.061	.978	.911
.990	1.001	.341	3.112	.984	.930
1.020	1.001	.335	3.152	.988	.945
1.091	1.002	.325	3.230	.996	.977
1.157	1.003	.321	3.262	1.000	.989
1.230	1.003	.319	3.276	1.001	.995

DEL = .6253 DELU= .1009 DEL*= .2626 CM
THETA= .04362 H = 6.019 UE = 653.5 M/SEC
RHOE= .1784 KG/M**3 RUN = 336

MACH = 3.00 P0 = 298.4 KPA T0 = 312.6 K
ALPHA= 2.10 Z/D= 5.67 PHI= 180.
RPM= 20000. PW = 5.00 KPA REL=7123251.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
0.000	.918	.918	0.000	0.000	.343
.039	.966	.736	1.251	.580	.428
.065	.970	.698	1.397	.631	.451
.088	.973	.671	1.502	.665	.470
.112	.975	.649	1.586	.690	.485
.138	.977	.630	1.662	.713	.500
.164	.979	.613	1.727	.731	.514
.191	.980	.597	1.793	.748	.528
.216	.981	.583	1.850	.763	.541
.246	.982	.569	1.907	.777	.554
.267	.983	.558	1.952	.788	.564
.294	.984	.547	2.001	.800	.576
.326	.985	.534	2.055	.812	.590
.349	.986	.525	2.098	.821	.601
.380	.987	.512	2.153	.833	.615
.408	.988	.501	2.203	.843	.629
.434	.988	.491	2.249	.852	.641
.464	.989	.483	2.287	.859	.652
.497	.990	.470	2.352	.871	.670
.524	.991	.465	2.376	.876	.677
.584	.992	.445	2.477	.893	.708
.614	.993	.436	2.528	.902	.723
.646	.993	.426	2.581	.910	.740
.709	.995	.406	2.690	.927	.775
.741	.995	.397	2.744	.935	.793
.772	.996	.388	2.797	.942	.811
.836	.997	.371	2.903	.956	.849
.868	.998	.364	2.951	.962	.866
.900	.998	.356	3.002	.968	.885
.971	.999	.340	3.111	.981	.926
1.002	.999	.335	3.153	.985	.942
1.039	1.000	.328	3.198	.990	.960
1.065	1.000	.325	3.225	.993	.970
1.135	1.000	.320	3.259	.996	.984
1.205	1.000	.318	3.274	.998	.990
1.274	1.000	.317	3.280	.999	.993

DEL = .6379 DELU= .1042 DEL*= .2660 CM
THETA= .04376 H = 6.079 UE = 655.7 M/SEC
RHOE= .1788 KG/M**3 RUN = 337

MACH = 3.00 P0 = 298.3 KPA T0 = 317.9 K
ALPHA= 2.10 Z/D= 5.67 PHI= 190.
RPM= 0. PW = 5.00 KPA REL=6952031.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.012	.951	.844	.796	.396	.373
.025	.959	.792	1.028	.495	.398
.038	.965	.746	1.210	.565	.422
.064	.970	.702	1.381	.626	.449
.092	.973	.672	1.497	.664	.469
.118	.976	.646	1.598	.695	.488
.147	.978	.627	1.674	.717	.503
.201	.981	.593	1.809	.753	.532
.257	.983	.565	1.922	.781	.557
.315	.985	.541	2.029	.806	.583
.373	.987	.517	2.132	.829	.610
.437	.989	.493	2.242	.851	.639
.496	.990	.472	2.343	.870	.668
.562	.992	.450	2.452	.890	.700
.623	.993	.431	2.555	.907	.732
.686	.995	.411	2.663	.923	.766
.753	.996	.391	2.780	.940	.806
.825	.998	.373	2.896	.956	.846
.892	.999	.357	2.998	.968	.884
.962	1.000	.343	3.095	.980	.920
1.031	1.000	.331	3.180	.989	.953
1.098	1.001	.323	3.240	.995	.977
1.167	1.001	.319	3.267	.998	.987
1.238	1.001	.318	3.281	.999	.993

DEL = .6227 DELU= .1000 DEL*= .2587 CM
THETA= .04288 H = 6.032 UE = 660.7 M/SEC
RHOE= .1748 KG/M**3 RUN = 400

MACH = 3.00 P0 = 298.5 KPA T0 = 318.3 K
ALPHA= 2.10 Z/D= 5.67 PHI= 190.
RPM= 20000. PW = 5.00 KPA REL=6931590.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.030	.960	.785	1.057	.506	.402
.038	.963	.756	1.171	.550	.417
.064	.969	.708	1.359	.618	.446
.090	.972	.678	1.474	.656	.465
.117	.975	.653	1.571	.686	.483
.142	.977	.633	1.646	.708	.498
.190	.979	.601	1.775	.744	.525
.252	.982	.569	1.905	.777	.554
.309	.984	.544	2.012	.802	.580
.367	.986	.520	2.115	.825	.606
.429	.988	.498	2.217	.846	.633
.488	.990	.476	2.322	.866	.662
.547	.991	.457	2.419	.883	.691
.612	.993	.436	2.525	.901	.723
.674	.994	.416	2.636	.919	.759
.739	.995	.397	2.746	.935	.795
.807	.996	.378	2.859	.950	.834
.875	.997	.362	2.964	.964	.872
.941	.998	.346	3.066	.976	.910
1.010	.999	.333	3.163	.986	.947
1.075	1.000	.324	3.231	.994	.974
1.145	1.000	.320	3.263	.997	.987
1.216	1.000	.318	3.277	.998	.993

DEL = .6347 DELU= .1050 DEL*= .2659 CM
THETA= .04388 H = 6.060 UE = 661.5 M/SEC
RHOE= .1749 KG/M**3 RUN = 401

MACH = 3.00 P0 = 298.4 KPA T0 = 315.6 K
ALPHA= 2.10 Z/D= 5.67 PHI= 210.
RPM= 0. PW = 4.96 KPA REL=7030480.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.346
.013	.954	.825	.885	.435	.385
.028	.961	.781	1.074	.514	.407
.041	.966	.740	1.237	.577	.429
.070	.971	.694	1.412	.638	.457
.095	.974	.669	1.512	.670	.475
.128	.977	.641	1.619	.702	.495
.157	.978	.620	1.699	.725	.512
.213	.982	.585	1.844	.764	.543
.276	.984	.553	1.976	.796	.574
.336	.987	.526	2.091	.822	.603
.400	.989	.502	2.204	.845	.633
.464	.990	.480	2.305	.865	.661
.529	.992	.460	2.403	.883	.690
.598	.993	.440	2.507	.901	.722
.668	.995	.420	2.618	.918	.757
.736	.996	.401	2.721	.934	.791
.808	.997	.382	2.838	.950	.832
.878	.998	.365	2.945	.964	.870
.954	1.000	.348	3.058	.977	.913
1.025	1.000	.333	3.164	.989	.953
1.100	1.001	.323	3.238	.997	.983
1.178	1.001	.320	3.263	.999	.993
1.251	1.002	.319	3.272	1.000	.997

DEL = .5762 DELU= .0914 DEL*= .2375 CM
THETA= .03983 H = 5.963 UE = 657.2 M/SEC
RHOE= .1749 KG/M**3 RUN = 353

MACH = 3.00 P0 = 298.3 KPA T0 = 316.3 K
ALPHA= 2.10 Z/D= 5.67 PHI= 210.
RPM= 20000. PW = 4.96 KPA REL=7000971.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.345
.042	.967	.729	1.277	.591	.434
.070	.972	.690	1.429	.642	.459
.099	.974	.664	1.528	.674	.477
.126	.976	.640	1.620	.702	.495
.156	.978	.622	1.693	.723	.510
.212	.981	.589	1.825	.758	.538
.274	.983	.561	1.939	.786	.565
.335	.985	.536	2.047	.811	.591
.399	.987	.511	2.158	.835	.620
.460	.989	.488	2.267	.857	.650
.525	.991	.466	2.374	.877	.681
.592	.992	.444	2.485	.896	.714
.665	.994	.421	2.605	.916	.752
.732	.995	.403	2.713	.932	.787
.805	.996	.382	2.835	.949	.830
.872	.998	.364	2.948	.963	.870
.948	.999	.348	3.061	.977	.912
1.024	1.000	.332	3.168	.989	.954
1.098	1.001	.323	3.238	.996	.982
1.169	1.001	.320	3.265	.999	.992
1.246	1.001	.318	3.276	1.000	.997

DEL = .5785 DELU= .0954 DEL*= .2418 CM
THETA= .03988 H = 6.063 UE = 658.4 M/SEC
RHOE= .1748 KG/M**3 RUN = 354

MACH = 3.00 P0 = 298.8 KPA T0 = 310.0 K
ALPHA= 2.10 Z/D= 5.67 PHI= 240.
RPM= 0. PW = 4.80 KPA REL=7216040.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.016	.954	.823	.893	.437	.379
.032	.962	.769	1.120	.531	.406
.046	.967	.734	1.258	.582	.425
.079	.972	.683	1.456	.650	.457
.113	.976	.648	1.592	.692	.482
.147	.978	.622	1.690	.720	.502
.179	.980	.601	1.776	.743	.520
.216	.982	.581	1.858	.765	.538
.247	.983	.566	1.920	.780	.552
.289	.985	.546	2.003	.799	.572
.322	.986	.532	2.065	.813	.587
.361	.987	.516	2.136	.829	.605
.391	.988	.505	2.189	.839	.619
.432	.989	.487	2.270	.855	.641
.471	.991	.474	2.336	.868	.660
.505	.991	.461	2.399	.879	.678
.545	.992	.449	2.458	.889	.695
.580	.993	.440	2.509	.898	.711
.625	.994	.427	2.578	.909	.732
.665	.995	.415	2.643	.919	.753
.701	.996	.405	2.699	.927	.772
.740	.996	.397	2.749	.934	.788
.786	.997	.384	2.824	.945	.813
.828	.998	.374	2.887	.953	.835
.872	.999	.364	2.954	.962	.860
.913	.999	.354	3.021	.970	.884
.951	1.000	.345	3.082	.977	.907
.996	1.001	.335	3.152	.984	.933
1.038	1.001	.328	3.206	.990	.955
1.081	1.002	.322	3.253	.995	.973
1.123	1.002	.317	3.284	.998	.985
1.208	1.002	.314	3.311	1.001	.996
1.297	1.002	.314	3.313	1.001	.997

DEL = .4854 DELU= .0774 DEL*= .2025 CM
THETA= .03315 H = 6.107 UE = 653.4 M/SEC
RHOE= .1741 KG/M**3 RUN = 371

MACH = 3.00 P0 = 298.4 KPA T0 = 310.6 K
ALPHA= 2.10 Z/D= 5.67 PHI= 240.
RPM= 20000. PW = 4.80 KPA REL=7181453.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.047	.967	.727	1.285	.591	.429
.063	.970	.702	1.381	.624	.444
.079	.972	.683	1.454	.648	.457
.108	.975	.655	1.562	.682	.476
.145	.977	.629	1.665	.712	.496
.174	.979	.608	1.748	.735	.513
.209	.981	.587	1.833	.757	.532
.243	.982	.569	1.904	.775	.548
.278	.984	.553	1.973	.792	.564
.309	.985	.538	2.037	.806	.580
.346	.986	.524	2.101	.820	.596
.381	.987	.509	2.167	.834	.613
.418	.988	.495	2.231	.847	.630
.453	.989	.482	2.294	.859	.648
.490	.990	.469	2.354	.870	.665
.526	.991	.458	2.412	.880	.681
.562	.992	.446	2.472	.891	.699
.597	.993	.435	2.531	.900	.717
.635	.993	.424	2.591	.910	.736
.679	.994	.411	2.661	.921	.759
.719	.995	.399	2.731	.931	.782
.755	.996	.389	2.791	.939	.802
.795	.997	.379	2.857	.948	.825
.832	.997	.369	2.917	.956	.846
.877	.998	.359	2.985	.964	.870
.914	.998	.349	3.048	.972	.894
.951	.999	.342	3.102	.978	.914
.997	.999	.333	3.165	.985	.938
1.035	1.000	.326	3.218	.990	.959
1.069	1.000	.321	3.251	.994	.972
1.119	1.001	.316	3.289	.998	.987
1.164	1.001	.314	3.308	.999	.995
1.245	1.001	.312	3.319	1.001	.999

DEL = .5077 DELU= .0835 DEL*= .2125 CM
THETA= .03433 H = 6.191 UE = 654.7 M/SEC
RHOE= .1739 KG/M**3 RUN = 372

MACH = 3.00 P0 = 298.0 KPA T0 = 319.5 K
ALPHA= 2.10 Z/D= 5.67 PH1= 300.
RPM= 0. PW = 4.66 KPA REL=6889393.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHDE
.000	.917	.917	.000	.000	.333
.018	.956	.803	.975	.469	.380
.026	.959	.785	1.053	.500	.389
.047	.967	.719	1.313	.598	.424
.069	.973	.667	1.513	.663	.458
.118	.978	.612	1.727	.725	.499
.148	.980	.581	1.852	.758	.525
.198	.983	.552	1.977	.788	.554
.239	.985	.531	2.065	.808	.575
.283	.986	.510	2.160	.828	.599
.327	.988	.489	2.257	.847	.624
.372	.989	.473	2.336	.862	.646
.417	.990	.458	2.409	.875	.667
.457	.991	.445	2.474	.886	.685
.503	.992	.434	2.538	.897	.704
.553	.993	.420	2.612	.908	.728
.597	.993	.408	2.679	.918	.749
.640	.994	.399	2.733	.926	.766
.689	.995	.389	2.792	.934	.786
.738	.996	.377	2.862	.943	.809
.788	.996	.367	2.930	.952	.833
.837	.997	.356	3.000	.961	.858
.896	.998	.346	3.071	.969	.884
.931	.998	.337	3.135	.976	.907
.988	.999	.327	3.206	.984	.934
1.045	.999	.319	3.269	.990	.959
1.088	1.000	.312	3.318	.995	.978
1.140	1.000	.309	3.347	.998	.990
1.187	1.000	.307	3.358	.999	.994
1.243	1.000	.306	3.367	1.000	.998
1.289	1.000	.306	3.370	1.000	.999

DEL = .4121 DELU= .0584 DEL*= .1597 CM
THETA= .02602 H = 6.136 UE = 667.6 M/SEC
RHDE= .1673 KG/M**3 RUN = 426

MACH = 3.00 P0 = 297.9 KPA T0 = 319.6 K
ALPHA= 2.10 Z/D= 5.67 PH1= 300.
RPM= 20000. PW = 4.66 KPA REL=6886466.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHDE
.000	.917	.917	.000	.000	.333
.060	.971	.680	1.464	.648	.449
.074	.974	.655	1.559	.677	.466
.110	.978	.615	1.718	.723	.496
.149	.980	.583	1.846	.756	.523
.196	.983	.557	1.956	.783	.548
.239	.984	.535	2.050	.804	.570
.283	.986	.516	2.135	.822	.592
.327	.987	.498	2.217	.839	.613
.371	.988	.480	2.302	.855	.636
.417	.989	.466	2.371	.868	.655
.457	.991	.451	2.443	.881	.676
.506	.991	.437	2.516	.893	.697
.550	.992	.425	2.584	.904	.718
.606	.993	.412	2.656	.915	.741
.651	.994	.400	2.722	.924	.762
.690	.994	.390	2.782	.932	.781
.749	.996	.379	2.853	.942	.805
.782	.996	.368	2.922	.951	.829
.839	.997	.356	2.998	.960	.856
.886	.997	.345	3.072	.969	.883
.931	.998	.336	3.137	.976	.907
.988	.999	.327	3.207	.983	.934
1.033	.999	.319	3.265	.989	.956
1.087	.999	.313	3.315	.994	.976
1.134	1.000	.309	3.345	.997	.988
1.186	1.000	.307	3.363	.999	.995
1.241	1.000	.305	3.372	1.000	.999

DEL = .4123 DELU= .0614 DEL*= .1627 CM
THETA= .02588 H = 6.288 UE = 667.9 M/SEC
RHDE= .1674 KG/M**3 RUN = 427

MACH = 3.00 P0 = 298.2 KPA T0 = 315.6 K
ALPHA= 2.10 Z/D= 5.67 PHI= 330.
RPM= 0. PW = 4.78 KPA REL=7041803.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.337
.020	.956	.805	.971	.469	.385
.039	.963	.753	1.181	.553	.411
.058	.970	.696	1.402	.631	.444
.081	.974	.653	1.567	.683	.474
.105	.978	.624	1.682	.716	.496
.127	.979	.602	1.771	.741	.514
.148	.981	.582	1.853	.762	.532
.196	.983	.552	1.975	.791	.560
.242	.985	.533	2.059	.810	.581
.286	.987	.515	2.139	.827	.601
.334	.988	.497	2.225	.845	.624
.379	.990	.479	2.308	.861	.646
.431	.991	.462	2.390	.876	.670
.480	.992	.448	2.465	.889	.692
.520	.993	.433	2.540	.901	.715
.576	.994	.416	2.635	.916	.744
.626	.995	.402	2.719	.928	.771
.676	.996	.390	2.789	.938	.795
.727	.997	.379	2.856	.947	.818
.782	.998	.370	2.913	.954	.838
.835	.998	.361	2.967	.961	.857
.886	.998	.352	3.028	.968	.879
.939	1.000	.342	3.102	.977	.907
.993	1.000	.333	3.167	.984	.932
1.046	1.001	.324	3.232	.991	.957
1.104	1.002	.318	3.278	.996	.975
1.157	1.001	.314	3.306	.998	.986
1.213	1.002	.312	3.323	1.000	.993
1.263	1.002	.311	3.330	1.001	.996

DEL = .3726 DELU= .0527 DEL*= .1431 CM
THETA= .02337 H = 6.123 UE = 660.4 M/SEC
RHOE= .1715 KG/M**3 RUN = 386

MACH = 3.00 P0 = 298.3 KPA T0 = 316.2 K
ALPHA= 2.10 Z/D= 5.67 PHI= 330.
RPM= 20000. PW = 4.78 KPA REL=7005663.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.338
.059	.968	.717	1.324	.604	.432
.079	.973	.670	1.504	.663	.463
.099	.976	.643	1.609	.695	.482
.149	.980	.595	1.798	.747	.521
.189	.982	.564	1.926	.779	.550
.236	.985	.540	2.030	.803	.574
.281	.986	.520	2.116	.822	.596
.328	.987	.502	2.197	.839	.617
.371	.989	.484	2.284	.856	.641
.424	.990	.467	2.365	.871	.663
.465	.991	.453	2.435	.883	.684
.517	.992	.438	2.518	.897	.709
.568	.993	.423	2.599	.910	.734
.615	.994	.409	2.674	.921	.758
.666	.995	.398	2.740	.931	.779
.714	.996	.388	2.802	.939	.800
.767	.997	.375	2.876	.949	.826
.821	.997	.365	2.945	.958	.850
.871	.998	.355	3.009	.966	.874
.923	.999	.344	3.089	.975	.903
.972	.999	.335	3.148	.981	.926
1.027	1.000	.326	3.214	.988	.951
1.083	1.001	.319	3.269	.994	.973
1.138	1.001	.314	3.304	.998	.987
1.189	1.001	.312	3.320	.999	.993
1.248	1.001	.311	3.330	1.000	.997

DEL = .3791 DELU= .0575 DEL*= .1489 CM
THETA= .02379 H = 6.258 UE = 661.6 M/SEC
RHOE= .1711 KG/M**3 RUN = 387

MACH = 3.00 P0 = 298.6 KPA T0 = 313.9 K
ALPHA= 4.20 Z/O= 5.67 PHI= 0.
RPM= 0. PW = 4.97 KPA REL=7108355.

Y/OEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.345
.028	.964	.760	1.158	.547	.417
.056	.971	.697	1.404	.635	.454
.082	.976	.648	1.590	.694	.488
.101	.979	.619	1.705	.727	.511
.165	.984	.567	1.916	.782	.558
.226	.986	.530	2.075	.819	.597
.287	.989	.506	2.185	.842	.626
.351	.990	.483	2.291	.863	.656
.412	.992	.464	2.386	.880	.683
.479	.993	.444	2.485	.898	.713
.536	.994	.430	2.563	.910	.737
.601	.996	.413	2.658	.925	.768
.662	.997	.396	2.755	.939	.801
.727	.998	.382	2.839	.951	.830
.794	.999	.372	2.902	.959	.852
.862	.999	.364	2.955	.965	.871
.931	1.000	.352	3.033	.975	.900
.994	1.001	.340	3.115	.984	.932
1.068	1.002	.331	3.187	.992	.960
1.125	1.002	.325	3.226	.996	.975
1.207	1.003	.321	3.258	1.000	.988
1.281	1.003	.319	3.272	1.001	.994
1.346	1.003	.319	3.278	1.002	.996
1.504	1.003	.318	3.280	1.002	.997

DEL = .2708 DELU= .0364 OEL*= .0996 CM
THETA= .01664 H = 5.989 UE = 655.1 M/SEC
RHOE= .1769 KG/M**3 RUN = 349

MACH = 3.00 P0 = 298.4 KPA T0 = 315.5 K
ALPHA= 4.20 Z/O= 5.67 PHI= 0.
RPM= 20000. PW = 4.97 KPA REL=7040174.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.345
.084	.978	.630	1.662	.715	.503
.112	.980	.602	1.771	.745	.526
.143	.982	.576	1.878	.772	.550
.170	.984	.556	1.963	.793	.570
.200	.985	.539	2.035	.809	.588
.229	.987	.524	2.100	.824	.605
.290	.988	.501	2.205	.845	.632
.348	.990	.482	2.295	.863	.658
.408	.991	.463	2.388	.880	.685
.479	.993	.443	2.490	.898	.715
.538	.994	.428	2.569	.911	.740
.603	.995	.412	2.662	.925	.770
.663	.996	.399	2.736	.936	.795
.736	.997	.384	2.825	.948	.826
.797	.998	.372	2.900	.958	.852
.867	.999	.360	2.976	.967	.880
.934	1.000	.349	3.055	.977	.910
.996	1.000	.339	3.124	.985	.936
1.073	1.001	.330	3.189	.992	.962
1.123	1.001	.326	3.221	.995	.974
1.214	1.001	.321	3.258	.999	.989
1.283	1.002	.319	3.273	1.000	.995
1.358	1.002	.318	3.278	1.001	.998

OEL = .2698 OELU= .0382 DEL*= .0991 CM
THETA= .01605 H = 6.178 UE = 657.2 M/SEC
RHOE= .1758 KG/M**3 RUN = 350

MACH = 3.00 P0 = 298.9 KPA T0 = 307.9 K
ALPHA= 4.20 Z/D= 5.67 PHI= 30.
RPM= 0. PW = 4.77 KPA REL=7309357.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.026	.962	.767	1.128	.534	.406
.052	.970	.704	1.376	.623	.443
.068	.974	.668	1.512	.668	.466
.104	.978	.623	1.689	.720	.501
.123	.980	.598	1.787	.746	.521
.153	.983	.571	1.898	.774	.546
.210	.986	.537	2.044	.809	.581
.267	.988	.509	2.168	.835	.613
.325	.989	.488	2.268	.855	.639
.386	.991	.469	2.359	.872	.665
.436	.992	.451	2.448	.888	.691
.496	.994	.436	2.531	.902	.716
.559	.995	.421	2.613	.915	.742
.617	.996	.406	2.697	.927	.769
.681	.997	.391	2.782	.939	.798
.736	.998	.379	2.859	.949	.824
.794	.999	.366	2.942	.960	.854
.862	1.000	.353	3.023	.970	.883
.929	1.000	.345	3.084	.977	.906
.997	1.001	.335	3.153	.985	.932
1.057	1.002	.327	3.213	.991	.955
1.123	1.002	.320	3.265	.996	.976
1.192	1.003	.316	3.295	.999	.988
1.261	1.003	.314	3.309	1.001	.994
1.330	1.003	.314	3.314	1.001	.996

DEL = .2928 DELU= .0394 DEL*= .1086 CM
THETA= .01785 H = 6.085 UE = 651.1 M/SEC
RHOE= .1752 KG/M**3 RUN = 365

MACH = 3.00 P0 = 299.0 KPA T0 = 308.8 K
ALPHA= 4.20 Z/D= 5.67 PHI= 30.
RPM= 20000. PW = 4.78 KPA REL=7260397.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.073	.974	.664	1.528	.672	.470
.096	.976	.636	1.636	.704	.490
.124	.980	.602	1.769	.741	.518
.153	.981	.579	1.866	.766	.539
.213	.985	.538	2.038	.806	.580
.269	.987	.514	2.146	.830	.607
.326	.988	.491	2.253	.851	.636
.382	.990	.472	2.342	.868	.661
.440	.991	.452	2.443	.886	.690
.502	.993	.436	2.527	.900	.716
.563	.994	.420	2.613	.914	.743
.618	.995	.405	2.698	.926	.770
.686	.996	.389	2.791	.939	.801
.742	.997	.378	2.859	.948	.825
.802	.998	.367	2.931	.958	.850
.869	.998	.355	3.012	.967	.880
.938	.999	.343	3.095	.977	.911
.997	1.000	.333	3.164	.985	.937
1.064	1.000	.325	3.221	.991	.960
1.126	1.000	.319	3.264	.995	.977
1.201	1.001	.316	3.295	.998	.989
1.265	1.001	.314	3.309	1.000	.995
1.341	1.001	.313	3.315	1.000	.997

DEL = .2904 DELU= .0422 DEL*= .1097 CM
THETA= .01757 H = 6.244 UE = 652.8 M/SEC
RHOE= .1744 KG/M**3 RUN = 366

MACH = 3.00 P0 = 297.8 KPA T0 = 310.8 K
ALPHA= 4.20 Z/D= 5.67 PHI= 60.
RPM= 0. PW = 4.30 KPA REL=7165446.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.328
.024	.956	.798	.996	.476	.376
.038	.961	.764	1.136	.531	.393
.050	.965	.732	1.263	.578	.410
.074	.972	.672	1.496	.656	.447
.095	.975	.639	1.624	.695	.470
.127	.978	.605	1.755	.731	.496
.152	.981	.579	1.863	.759	.519
.200	.984	.545	2.007	.793	.551
.259	.986	.518	2.124	.818	.579
.307	.987	.498	2.218	.837	.603
.362	.989	.478	2.314	.856	.629
.415	.990	.459	2.405	.872	.654
.475	.992	.440	2.505	.889	.683
.525	.993	.423	2.594	.903	.709
.575	.994	.410	2.671	.915	.733
.640	.995	.394	2.760	.927	.762
.692	.996	.379	2.851	.939	.792
.751	.997	.366	2.935	.950	.820
.818	.998	.354	3.013	.960	.848
.875	.999	.343	3.090	.968	.875
.932	1.000	.332	3.172	.977	.906
.996	1.000	.322	3.241	.985	.932
1.058	1.001	.314	3.306	.991	.957
1.108	1.001	.310	3.341	.994	.970
1.178	1.002	.306	3.372	.997	.983
1.239	1.002	.304	3.387	.999	.989
1.302	1.002	.303	3.398	1.000	.993
1.366	1.002	.302	3.405	1.001	.996
1.502	1.002	.301	3.409	1.001	.997

DEL = .3144 DELU= .0451 DEL*= .1233 CM
THETA= .01936 H = 6.366 UE = 660.1 M/SEC
RHOE= .1623 KG/M**3 RUN = 381

MACH = 3.00 P0 = 297.9 KPA T0 = 311.3 K
ALPHA= 4.20 Z/D= 5.67 PHI= 60.
RPM= 20000. PW = 4.31 KPA REL=7160171.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.328
.067	.970	.688	1.433	.636	.437
.071	.972	.675	1.483	.652	.445
.096	.976	.631	1.654	.703	.477
.121	.978	.607	1.747	.728	.495
.146	.980	.581	1.853	.756	.517
.197	.984	.542	2.018	.795	.555
.246	.985	.520	2.115	.816	.578
.291	.987	.501	2.203	.834	.600
.349	.988	.480	2.301	.853	.626
.397	.990	.460	2.397	.870	.653
.456	.991	.442	2.492	.887	.680
.508	.992	.426	2.579	.900	.706
.561	.993	.412	2.656	.912	.730
.615	.994	.398	2.736	.924	.755
.672	.995	.383	2.826	.936	.785
.727	.996	.372	2.895	.945	.808
.787	.997	.361	2.964	.953	.832
.840	.997	.350	3.042	.963	.859
.899	.998	.340	3.111	.970	.885
.951	.999	.330	3.184	.978	.911
1.012	1.000	.319	3.265	.987	.943
1.068	1.000	.313	3.313	.991	.961
1.130	1.000	.307	3.357	.996	.978
1.200	1.001	.304	3.384	.998	.989
1.257	1.001	.303	3.394	.999	.993
1.326	1.001	.302	3.401	1.000	.996
1.446	1.001	.301	3.407	1.000	.998

DEL = .3261 DELU= .0482 DEL*= .1276 CM
THETA= .01974 H = 6.464 UE = 660.9 M/SEC
RHOE= .1619 KG/M**3 RUN = 382

MACH = 3.00 P0 = 298.2 KPA T0 = 317.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 120.
RPM= 0. PW = 4.62 KPA REL=6960772.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHDE
.000	.917	.917	.000	.000	.340
.014	.951	.841	.808	.400	.371
.025	.955	.813	.935	.455	.383
.054	.966	.738	1.241	.575	.422
.090	.971	.695	1.407	.633	.448
.118	.974	.665	1.524	.670	.469
.150	.976	.638	1.629	.702	.489
.218	.981	.590	1.821	.754	.529
.284	.984	.551	1.983	.794	.566
.353	.986	.521	2.112	.822	.598
.425	.988	.493	2.242	.849	.633
.492	.990	.468	2.360	.871	.666
.575	.992	.444	2.484	.893	.702
.643	.994	.421	2.607	.912	.741
.711	.995	.399	2.731	.931	.781
.791	.996	.377	2.864	.949	.827
.871	.998	.358	2.986	.964	.870
.949	.999	.342	3.102	.978	.913
1.035	1.000	.326	3.215	.990	.957
1.099	1.000	.317	3.285	.997	.985
1.182	1.001	.313	3.314	1.000	.996
1.264	1.001	.313	3.317	1.000	.998

DEL = .5425 DELU= .0899 DEL*= .2283 CM
THETA= .03713 H = 6.147 UE = 662.3 M/SEC
RHDE= .1639 KG/M**3 RUN = 420

MACH = 3.00 P0 = 298.0 KPA T0 = 317.9 K
ALPHA= 4.20 Z/D= 5.67 PHI= 120.
RPM= 20000. PW = 4.62 KPA REL=6935651.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHDE
.000	.918	.918	.000	.000	.342
.025	.956	.811	.947	.461	.387
.097	.972	.678	1.471	.655	.463
.153	.978	.619	1.702	.723	.507
.222	.982	.571	1.896	.774	.550
.293	.985	.533	2.058	.812	.589
.359	.987	.506	2.182	.838	.621
.433	.989	.479	2.306	.862	.655
.498	.991	.457	2.418	.883	.688
.584	.992	.434	2.539	.903	.724
.654	.994	.412	2.655	.921	.761
.723	.995	.393	2.768	.937	.799
.801	.996	.374	2.887	.953	.840
.886	.998	.356	3.004	.968	.883
.963	.999	.340	3.110	.980	.923
1.044	1.000	.327	3.210	.991	.962
1.116	1.000	.319	3.271	.997	.986
1.202	1.000	.316	3.295	.999	.996
1.280	1.000	.315	3.298	1.000	.997

DEL = .5335 DELU= .0832 DEL*= .2160 CM
THETA= .03599 H = 6.002 UE = 661.7 M/SEC
RHDE= .1622 KG/M**3 RUN = 421

MACH = 3.00 P0 = 298.7 KPA T0 = 315.0 K
ALPHA= 4.20 Z/D= 5.67 PHI= 150.
RPM= 0. PW = 5.02 KPA REL=7083480.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.341
.010	.955	.815	.930	.454	.384
.029	.963	.765	1.138	.538	.409
.053	.968	.728	1.282	.592	.430
.076	.971	.702	1.382	.626	.446
.099	.973	.680	1.466	.654	.460
.143	.977	.646	1.598	.695	.485
.191	.979	.616	1.715	.728	.508
.241	.981	.591	1.816	.755	.530
.289	.983	.570	1.905	.778	.550
.341	.986	.547	2.001	.800	.573
.394	.987	.525	2.098	.822	.597
.446	.989	.504	2.193	.842	.622
.500	.990	.483	2.290	.861	.648
.555	.992	.463	2.391	.879	.677
.608	.994	.443	2.494	.897	.708
.666	.995	.423	2.599	.914	.741
.726	.997	.404	2.708	.930	.776
.780	.998	.387	2.807	.944	.810
.839	.999	.370	2.913	.958	.847
.898	1.000	.356	3.006	.969	.881
.962	1.001	.344	3.089	.979	.912
1.018	1.002	.333	3.168	.988	.942
1.077	1.002	.324	3.237	.995	.969
1.138	1.003	.319	3.273	.999	.984
1.201	1.003	.317	3.290	1.000	.991
1.260	1.004	.316	3.299	1.001	.994

DEL = .7401 DELU= .1242 DEL*= .3198 CM
THETA= .05214 H = 6.133 UE = 657.5 M/SEC
RHOE= .1777 KG/M**3 RUN = 388

MACH = 3.00 P0 = 298.2 KPA T0 = 315.9 K
ALPHA= 4.20 Z/D= 5.67 PHI= 150.
RPM= 20000. PW = 5.01 KPA REL=7023908.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.028	.959	.793	1.022	.492	.397
.051	.966	.738	1.243	.577	.427
.077	.970	.705	1.370	.622	.446
.101	.972	.680	1.468	.654	.463
.146	.976	.641	1.616	.700	.491
.196	.979	.607	1.753	.738	.519
.249	.981	.578	1.867	.768	.544
.299	.984	.555	1.964	.791	.567
.352	.985	.533	2.059	.813	.590
.378	.987	.522	2.110	.824	.603
.459	.989	.490	2.254	.853	.642
.514	.990	.470	2.354	.872	.670
.572	.992	.450	2.456	.890	.701
.631	.993	.430	2.561	.908	.733
.687	.995	.411	2.663	.923	.766
.749	.996	.394	2.765	.938	.800
.807	.997	.378	2.862	.951	.834
.866	.998	.363	2.958	.963	.868
.927	.999	.349	3.048	.974	.902
.992	1.000	.337	3.136	.984	.935
1.051	1.000	.328	3.202	.991	.961
1.110	1.001	.322	3.249	.996	.979
1.172	1.001	.319	3.272	.998	.989
1.237	1.001	.317	3.283	.999	.993
1.301	1.001	.316	3.293	1.000	.997

DEL = .7175 DELU= .1211 DEL*= .3041 CM
THETA= .04958 H = 6.133 UE = 658.7 M/SEC
RHOE= .1763 KG/M**3 RUN = 389

MACH = 3.00 P0 = 297.9 KPA T0 = 317.8 K
ALPHA= 4.20 Z/D= 5.67 PHI= 170.
RPM= 0. PW = 5.14 KPA REL=6938631.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.009	.950	.849	.774	.386	.372
.024	.961	.778	1.084	.517	.406
.043	.967	.727	1.285	.592	.434
.063	.970	.700	1.389	.629	.451
.082	.973	.678	1.475	.657	.466
.123	.976	.641	1.617	.700	.493
.162	.979	.612	1.729	.732	.515
.203	.981	.589	1.823	.757	.536
.247	.983	.568	1.910	.779	.556
.290	.984	.549	1.992	.798	.576
.334	.986	.529	2.079	.817	.597
.381	.987	.510	2.163	.835	.619
.426	.989	.493	2.243	.851	.641
.471	.990	.476	2.324	.867	.664
.521	.991	.459	2.408	.882	.688
.570	.992	.443	2.491	.896	.713
.619	.993	.427	2.573	.910	.739
.668	.994	.413	2.655	.922	.765
.719	.995	.398	2.741	.935	.794
.770	.996	.384	2.820	.946	.821
.821	.997	.372	2.896	.955	.848
.872	.998	.361	2.971	.965	.876
.921	.998	.351	3.038	.973	.900
.973	.999	.341	3.109	.981	.927
1.026	.999	.331	3.179	.989	.955
1.081	1.000	.322	3.242	.995	.980
1.131	1.000	.318	3.273	.998	.992
1.183	1.000	.317	3.287	1.000	.998

DEL = .8552 DELU= .1340 DEL*= .3494 CM
THETA= .05869 H = 5.954 UE = 660.7 M/SEC
RHOE= .1799 KG/M**3 RUN = 412

MACH = 3.00 P0 = 297.9 KPA T0 = 318.1 K
ALPHA= 4.20 Z/D= 5.67 PHI= 170.
RPM= 20000. PW = 5.14 KPA REL=6929590.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.025	.959	.789	1.038	.499	.401
.045	.967	.733	1.264	.585	.432
.062	.970	.705	1.369	.622	.448
.085	.972	.681	1.464	.653	.464
.125	.976	.643	1.610	.698	.492
.166	.979	.613	1.727	.732	.516
.208	.981	.589	1.823	.757	.537
.252	.983	.567	1.913	.779	.557
.297	.984	.546	2.002	.800	.579
.340	.986	.528	2.082	.818	.599
.389	.987	.509	2.169	.837	.622
.434	.988	.491	2.252	.853	.644
.482	.990	.473	2.335	.869	.668
.531	.991	.456	2.420	.884	.693
.581	.992	.441	2.502	.898	.718
.631	.993	.425	2.586	.912	.744
.682	.995	.410	2.669	.925	.771
.730	.995	.397	2.747	.936	.797
.784	.996	.383	2.832	.947	.827
.836	.997	.370	2.910	.958	.854
.887	.998	.359	2.984	.967	.881
.941	.998	.348	3.057	.975	.909
.993	.999	.337	3.132	.984	.938
1.046	1.000	.328	3.197	.991	.963
1.100	1.000	.321	3.250	.996	.984
1.152	1.000	.318	3.275	.999	.994
1.205	1.000	.317	3.284	1.000	.998

DEL = .8395 DELU= .1350 DEL*= .3456 CM
THETA= .05744 H = 6.016 UE = 660.8 M/SEC
RHOE= .1795 KG/M**3 RUN = 413

MACH = 3.00 P0 = 297.3 KPA T0 = 312.6 K
ALPHA= 4.20 Z/D= 5.67 PHI= 180.
RPM= 0. PW = 5.15 KPA REL=7109828.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.009	.959	.794	1.017	.490	.397
.027	.965	.742	1.228	.572	.425
.038	.968	.724	1.299	.597	.436
.057	.970	.698	1.397	.631	.452
.078	.973	.676	1.480	.658	.467
.095	.974	.660	1.545	.678	.478
.135	.977	.627	1.670	.715	.503
.176	.980	.603	1.766	.742	.523
.216	.981	.581	1.857	.765	.543
.261	.983	.560	1.942	.786	.563
.301	.984	.542	2.022	.805	.583
.344	.986	.522	2.106	.823	.604
.389	.988	.504	2.190	.841	.626
.436	.989	.487	2.271	.857	.648
.485	.990	.470	2.355	.872	.672
.533	.991	.452	2.440	.887	.698
.582	.992	.436	2.524	.901	.723
.630	.993	.421	2.607	.915	.750
.679	.994	.407	2.685	.926	.775
.731	.995	.393	2.767	.938	.803
.784	.996	.380	2.850	.949	.831
.832	.997	.368	2.924	.959	.858
.883	.997	.357	2.996	.968	.884
.932	.999	.347	3.062	.975	.909
.989	.999	.337	3.134	.983	.936
1.040	1.000	.329	3.195	.990	.961
1.095	1.000	.322	3.247	.996	.981
1.152	1.000	.318	3.275	.998	.993
1.200	1.000	.317	3.284	.999	.996
1.281	1.000	.316	3.290	1.000	.999
1.358	1.000	.315	3.295	1.000	1.000

DEL = .8356 DELU= .1273 DEL*= .3375 CM
THETA= .05716 H = 5.905 UE = 655.4 M/SEC
RHOE= .1826 KG/M**3 RUN = 340

MACH = 3.00 P0 = 297.5 KPA T0 = 313.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 180.
RPM= 20000. PW = 5.14 KPA REL=7066374.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.037	.968	.727	1.287	.593	.434
.058	.971	.697	1.402	.633	.453
.076	.973	.676	1.482	.659	.467
.096	.975	.657	1.554	.681	.480
.135	.978	.626	1.674	.716	.504
.176	.980	.602	1.770	.743	.524
.216	.982	.581	1.858	.766	.544
.261	.983	.559	1.947	.787	.564
.302	.985	.541	2.025	.805	.583
.346	.986	.522	2.110	.824	.605
.390	.988	.504	2.191	.841	.626
.435	.989	.487	2.271	.857	.648
.485	.990	.469	2.357	.873	.673
.531	.991	.453	2.438	.887	.697
.582	.992	.436	2.526	.902	.724
.630	.993	.421	2.608	.915	.750
.679	.994	.407	2.684	.926	.775
.730	.995	.393	2.766	.938	.802
.783	.996	.381	2.842	.948	.828
.832	.997	.369	2.918	.958	.855
.884	.998	.358	2.990	.967	.882
.937	.998	.348	3.060	.975	.908
.990	.999	.337	3.134	.984	.936
1.042	1.000	.329	3.196	.990	.961
1.095	1.000	.322	3.246	.996	.981
1.154	1.000	.318	3.274	.998	.992
1.203	1.000	.317	3.282	.999	.995
1.282	1.000	.316	3.288	1.000	.997
1.363	1.001	.316	3.292	1.000	.999

DEL = .8343 DELU= .1314 DEL*= .3390 CM
THETA= .05613 H = 6.039 UE = 656.6 M/SEC
RHOE= .1819 KG/M**3 RUN = 341

MACH = 3.00 P0 = 298.1 KPA T0 = 318.6 K
ALPHA= 4.20 Z/D= 5.67 PHI= 190.
RPM= 0. PW = 5.15 KPA REL=6928448.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.009	.950	.853	.753	.376	.371
.015	.954	.826	.879	.432	.383
.027	.961	.778	1.085	.517	.406
.045	.967	.735	1.255	.582	.430
.064	.970	.706	1.368	.622	.448
.086	.972	.683	1.454	.650	.463
.105	.974	.665	1.525	.673	.475
.146	.977	.633	1.650	.710	.500
.188	.979	.606	1.755	.739	.522
.232	.981	.584	1.846	.763	.542
.273	.983	.564	1.927	.783	.560
.319	.984	.544	2.013	.803	.581
.365	.986	.524	2.100	.822	.603
.412	.988	.505	2.184	.840	.626
.459	.989	.488	2.266	.856	.648
.508	.990	.469	2.358	.873	.674
.555	.991	.454	2.434	.887	.697
.606	.993	.437	2.519	.901	.723
.657	.994	.420	2.612	.916	.752
.705	.995	.405	2.697	.929	.780
.758	.996	.390	2.785	.941	.810
.810	.997	.377	2.869	.952	.840
.857	.997	.365	2.941	.961	.865
.912	.998	.354	3.019	.971	.894
.962	.999	.343	3.090	.979	.921
1.016	.999	.333	3.165	.987	.950
1.069	1.000	.325	3.226	.994	.974
1.122	1.000	.320	3.264	.998	.990
1.172	1.000	.318	3.279	.999	.996

DEL = .8435 DELU= .1371 DEL*= .3516 CM
THETA= .05874 H = 5.986 UE = 661.4 M/SEC
RHOE= .1797 KG/M**3 RUN = 402

MACH = 3.00 P0 = 298.0 KPA T0 = 318.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 190.
RPM= 20000. PW = 5.14 KPA REL=6906607.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.022	.959	.794	1.020	.491	.398
.026	.961	.779	1.080	.515	.406
.044	.966	.733	1.262	.584	.431
.063	.970	.703	1.378	.625	.450
.104	.974	.661	1.538	.676	.478
.144	.977	.629	1.662	.713	.502
.185	.979	.603	1.765	.742	.524
.226	.981	.581	1.856	.765	.544
.269	.983	.561	1.940	.786	.564
.312	.985	.541	2.023	.805	.584
.358	.986	.521	2.111	.824	.606
.402	.987	.505	2.186	.840	.626
.450	.989	.488	2.265	.856	.648
.497	.990	.471	2.348	.871	.672
.544	.991	.454	2.430	.886	.696
.594	.992	.438	2.513	.900	.721
.644	.993	.423	2.595	.913	.747
.692	.994	.408	2.678	.926	.774
.744	.995	.393	2.765	.938	.804
.794	.996	.380	2.844	.949	.831
.844	.997	.369	2.918	.958	.858
.893	.998	.357	2.992	.968	.885
.944	.998	.347	3.063	.976	.911
.996	.999	.336	3.139	.984	.940
1.047	.999	.328	3.200	.991	.965
1.100	1.000	.321	3.249	.996	.984
1.154	1.000	.318	3.274	.999	.994
1.199	1.000	.317	3.283	1.000	.998

DEL = .8602 DELU= .1387 DEL*= .3555 CM
THETA= .05933 H = 5.992 UE = 661.6 M/SEC
RHDE= .1792 KG/M**3 RUN = 403

MACH = 3.00 P0 = 298.0 KPA T0 = 316.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 210.
RPM= 0. PW = 5.01 KPA REL=6984656.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.011	.951	.845	.791	.393	.373
.019	.957	.808	.957	.465	.390
.031	.961	.774	1.101	.524	.408
.054	.966	.735	1.253	.581	.429
.075	.969	.712	1.343	.613	.443
.100	.972	.687	1.440	.645	.459
.123	.974	.669	1.509	.667	.472
.147	.975	.650	1.583	.690	.485
.197	.978	.619	1.704	.725	.510
.247	.981	.592	1.810	.753	.533
.296	.983	.568	1.911	.779	.555
.349	.985	.545	2.007	.801	.579
.404	.986	.522	2.108	.824	.604
.458	.988	.502	2.202	.843	.629
.515	.990	.482	2.295	.861	.655
.569	.991	.461	2.398	.880	.685
.628	.993	.438	2.516	.900	.720
.688	.994	.418	2.625	.917	.755
.741	.995	.400	2.728	.933	.789
.806	.996	.382	2.837	.948	.827
.867	.997	.365	2.945	.962	.865
.929	.998	.350	3.042	.973	.901
.991	.999	.337	3.134	.984	.936
1.050	1.000	.327	3.205	.991	.964
1.146	1.000	.320	3.264	.997	.988
1.237	1.001	.318	3.280	.999	.994
1.334	1.001	.316	3.290	1.000	.998

DEL = .7052 DELU= .1223 DEL*= .3060 CM
THETA= .05044 H = 6.066 UE = 659.6 M/SEC
RHOE= .1771 KG/M**3 RUN = 355

MACH = 3.00 P0 = 298.0 KPA T0 = 316.9 K
ALPHA= 4.20 Z/D= 5.67 PHI= 210.
RPM= 20000. PW = 5.01 KPA REL=6968769.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.032	.960	.780	1.075	.513	.404
.052	.965	.739	1.236	.575	.426
.075	.969	.716	1.330	.608	.440
.096	.971	.696	1.405	.634	.453
.140	.974	.661	1.538	.676	.476
.187	.977	.633	1.649	.709	.498
.234	.979	.609	1.743	.735	.517
.282	.981	.587	1.833	.759	.537
.331	.982	.566	1.918	.780	.556
.382	.985	.544	2.011	.802	.579
.437	.986	.523	2.103	.822	.602
.490	.988	.502	2.198	.842	.627
.543	.989	.482	2.296	.861	.654
.595	.991	.461	2.398	.880	.684
.655	.992	.438	2.516	.900	.720
.710	.994	.418	2.626	.917	.754
.767	.995	.399	2.734	.933	.790
.826	.996	.380	2.847	.948	.829
.881	.997	.363	2.953	.962	.867
.944	.999	.347	3.063	.975	.908
1.000	.999	.335	3.152	.985	.942
1.087	1.000	.322	3.244	.995	.978
1.176	1.000	.318	3.277	.998	.992
1.267	1.000	.316	3.291	1.000	.997

DEL = .7402 DELU= .1364 DEL*= .3323 CM
THETA= .05387 H = 6.168 UE = 660.2 M/SEC
RHOE= .1772 KG/M**3 RUN = 356

MACH = 3.00 P0 = 298.5 KPA T0 = 310.8 K
ALPHA= 4.20 Z/D= 5.67 PHI= 240.
RPM= 0. PW = 4.62 KPA REL=7163534.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.339
.015	.951	.839	.818	.404	.371
.034	.962	.770	1.115	.527	.404
.067	.969	.713	1.340	.610	.437
.099	.972	.679	1.469	.653	.459
.130	.975	.650	1.583	.688	.479
.164	.978	.622	1.689	.718	.500
.195	.980	.599	1.784	.744	.520
.235	.982	.574	1.886	.770	.543
.302	.985	.537	2.041	.806	.580
.374	.987	.505	2.184	.837	.616
.447	.989	.475	2.327	.864	.656
.512	.991	.452	2.442	.885	.689
.594	.993	.427	2.576	.907	.730
.677	.994	.404	2.704	.926	.771
.750	.996	.383	2.827	.943	.813
.833	.997	.365	2.944	.958	.854
.919	.998	.346	3.068	.973	.900
.999	.999	.331	3.175	.985	.940
1.087	1.000	.320	3.261	.994	.974
1.168	1.000	.314	3.309	.999	.993
1.251	1.000	.312	3.325	1.000	1.000

DEL = .4997 DELU= .0801 DEL*= .2055 CM
THETA= .03358 H = 6.120 UE = 655.6 M/SEC
RHOE= .1676 KG/M**3 RUN = 373

MACH = 3.00 P0 = 298.4 KPA T0 = 311.2 K
ALPHA= 4.20 Z/D= 5.67 PHI= 240.
RPM= 20000. PW = 4.62 KPA REL=7171191.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.336
.040	.962	.758	1.163	.545	.407
.042	.963	.752	1.184	.553	.410
.049	.964	.745	1.215	.564	.414
.065	.967	.724	1.294	.593	.426
.093	.970	.698	1.396	.628	.442
.125	.973	.672	1.497	.660	.459
.155	.975	.648	1.588	.688	.476
.188	.977	.624	1.682	.715	.494
.218	.979	.604	1.762	.737	.511
.288	.982	.562	1.932	.780	.549
.359	.985	.528	2.080	.813	.584
.430	.987	.498	2.217	.842	.620
.501	.990	.471	2.348	.866	.656
.575	.991	.446	2.471	.888	.692
.652	.993	.420	2.609	.910	.734
.723	.995	.398	2.741	.929	.776
.804	.996	.375	2.878	.948	.823
.884	.998	.354	3.016	.965	.872
.954	.999	.337	3.131	.978	.915
1.046	1.000	.321	3.253	.991	.962
1.121	1.000	.312	3.319	.998	.988
1.204	1.001	.309	3.345	1.000	.999

DEL = .5194 DELU= .0910 DEL*= .2262 CM
THETA= .03584 H = 6.311 UE = 657.1 M/SEC
RHOE= .1690 KG/M**3 RUN = 374

MACH = 3.00 P0 = 297.8 KPA T0 = 319.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 300.
RPM= 0. PW = 4.31 KPA REL=6877237.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.915	.915	.000	.000	.321
.023	.958	.781	1.064	.501	.376
.033	.963	.741	1.223	.560	.397
.055	.970	.686	1.440	.635	.429
.074	.974	.645	1.597	.683	.456
.104	.977	.603	1.761	.728	.487
.149	.982	.556	1.958	.777	.529
.206	.984	.524	2.095	.807	.561
.261	.986	.499	2.210	.831	.589
.313	.987	.480	2.300	.848	.613
.363	.989	.458	2.407	.867	.642
.418	.991	.439	2.507	.884	.670
.466	.992	.422	2.596	.898	.696
.525	.992	.406	2.687	.911	.724
.576	.994	.392	2.771	.923	.750
.634	.994	.379	2.847	.933	.775
.691	.995	.369	2.914	.942	.797
.746	.996	.359	2.978	.950	.819
.804	.997	.349	3.044	.957	.842
.854	.997	.339	3.114	.965	.867
.922	.998	.327	3.201	.975	.898
.986	.998	.316	3.288	.983	.931
1.043	.999	.308	3.353	.990	.956
1.101	1.000	.302	3.402	.994	.975
1.163	1.000	.298	3.435	.997	.988
1.224	1.000	.295	3.452	.999	.995
1.281	1.000	.295	3.460	.999	.998
1.351	1.000	.294	3.464	1.000	.999

DEL = .3357 DELU= .0450 DEL*= .1275 CM
THETA= .02001 H = 6.370 UE = 673.3 M/SEC
RHDE= .1605 KG/M**3 RUN = 428

MACH = 3.00 P0 = 297.9 KPA T0 = 319.8 K
ALPHA= 4.20 Z/D= 5.67 PHI= 300.
RPM= 20000. PW = 4.31 KPA REL=6875620.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.915	.915	.000	.000	.321
.068	.972	.663	1.526	.661	.443
.083	.975	.636	1.631	.692	.461
.100	.977	.614	1.717	.716	.478
.151	.981	.564	1.923	.768	.520
.205	.984	.530	2.069	.802	.554
.256	.986	.506	2.176	.824	.580
.309	.988	.483	2.284	.845	.608
.363	.989	.462	2.389	.864	.636
.415	.990	.444	2.480	.879	.661
.467	.992	.426	2.574	.895	.688
.520	.993	.412	2.654	.907	.712
.575	.994	.398	2.736	.918	.738
.633	.994	.384	2.822	.930	.765
.690	.995	.371	2.897	.940	.790
.739	.996	.360	2.971	.949	.815
.802	.997	.349	3.046	.958	.841
.855	.997	.339	3.116	.965	.866
.920	.998	.327	3.204	.975	.898
.982	.999	.316	3.285	.983	.928
1.043	.999	.308	3.347	.989	.952
1.097	1.000	.302	3.398	.994	.972
1.166	1.000	.298	3.434	.997	.986
1.221	1.000	.295	3.453	.999	.994
1.278	1.000	.295	3.461	1.000	.997
1.347	1.000	.294	3.466	1.000	.999

DEL = .3363 DELU= .0482 DEL*= .1304 CM
THETA= .01975 H = 6.604 UE = 673.5 M/SEC
RHDE= .1607 KG/M**3 RUN = 429

MACH = 3.00 P0 = 297.8 KPA T0 = 317.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 330.
RPM= 0. PW = 4.76 KPA REL=6941686.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.336
.026	.958	.788	1.041	.497	.391
.043	.964	.749	1.198	.557	.412
.061	.968	.707	1.359	.615	.436
.081	.974	.658	1.550	.676	.469
.116	.978	.609	1.742	.731	.506
.138	.980	.587	1.829	.754	.525
.206	.984	.537	2.041	.804	.574
.258	.986	.507	2.174	.833	.608
.314	.988	.485	2.276	.852	.635
.370	.989	.468	2.362	.868	.659
.436	.991	.449	2.455	.885	.686
.492	.992	.434	2.532	.898	.709
.556	.993	.419	2.618	.911	.736
.615	.994	.405	2.696	.923	.761
.679	.995	.390	2.787	.935	.791
.745	.996	.374	2.880	.948	.823
.806	.997	.362	2.958	.957	.850
.873	.998	.351	3.034	.967	.878
.934	.998	.339	3.120	.976	.910
1.006	.999	.327	3.207	.986	.943
1.070	.999	.318	3.272	.992	.969
1.139	1.000	.313	3.310	.996	.984
1.207	1.000	.311	3.330	.998	.992
1.252	1.000	.309	3.340	.999	.996
1.310	1.000	.309	3.346	1.000	.999
1.412	1.000	.308	3.349	1.000	1.000

DEL = .2929 DELU= .0409 DEL*= .1107 CM
THETA= .01815 H = 6.100 UE = 664.3 M/SEC
RHOE= .1701 KG/M**3 RUN = 394

MACH = 3.00 P0 = 297.7 KPA T0 = 317.7 K
ALPHA= 4.20 Z/D= 5.67 PHI= 330.
RPM= 20000. PW = 4.76 KPA REL=6930539.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.336
.068	.974	.659	1.545	.674	.468
.092	.977	.626	1.674	.712	.492
.114	.979	.600	1.775	.740	.513
.135	.981	.582	1.851	.759	.530
.197	.985	.536	2.046	.805	.575
.250	.986	.511	2.156	.829	.603
.313	.988	.487	2.267	.851	.633
.368	.989	.469	2.357	.868	.658
.430	.991	.449	2.458	.885	.687
.483	.992	.433	2.538	.898	.711
.544	.993	.417	2.627	.912	.739
.602	.994	.404	2.705	.924	.764
.659	.995	.391	2.779	.934	.788
.727	.996	.376	2.868	.946	.819
.785	.997	.364	2.947	.956	.846
.859	.997	.352	3.026	.966	.875
.911	.998	.342	3.098	.974	.901
.983	.999	.330	3.184	.983	.934
1.040	.999	.322	3.239	.989	.956
1.116	1.000	.315	3.296	.995	.978
1.184	1.000	.311	3.326	.998	.990
1.250	1.000	.309	3.342	.999	.997
1.318	1.000	.308	3.349	1.000	.999
1.385	1.000	.308	3.350	1.000	1.000

DEL = .2985 DELU= .0420 DEL*= .1114 CM
THETA= .01785 H = 6.240 UE = 664.5 M/SEC
RHOE= .1700 KG/M**3 RUN = 395

NOTE: Data not available for RPM = 0.

MACH = 3.00 P0 = 297.9 KPA T0 = 318.4 K
ALPHA= 5.28 Z/D= 5.67 PHI= 120.
RPM= 20000. PW = 4.46 KPA REL=6922665.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.060	.965	.741	1.229	.571	.421
.091	.970	.699	1.392	.628	.446
.123	.974	.660	1.541	.675	.473
.190	.979	.604	1.763	.739	.517
.264	.983	.556	1.960	.788	.561
.335	.986	.521	2.111	.822	.599
.405	.988	.491	2.248	.850	.635
.477	.990	.465	2.379	.874	.672
.550	.992	.442	2.493	.894	.706
.630	.993	.418	2.622	.915	.746
.704	.995	.398	2.740	.932	.785
.781	.996	.378	2.859	.948	.826
.865	.997	.358	2.988	.964	.872
.953	.999	.341	3.103	.977	.915
1.019	.999	.328	3.201	.988	.952
1.110	1.000	.319	3.264	.995	.977
1.190	1.000	.316	3.291	.997	.988
1.277	1.000	.315	3.298	.998	.991
1.354	1.000	.314	3.303	.999	.993
1.440	1.000	.313	3.310	.999	.996

DEL = .5218 DELU= .0880 DEL*= .2165 CM
THETA= .03437 H = 6.299 UE = 663.2 M/SEC
RHDE= .1571 KG/M**3 RUN = 423

MACH = 3.00 P0 = 298.1 KPA T0 = 316.4 K
ALPHA= 5.28 Z/D= 5.67 PHI= 150.
RPM= 0. PW = 4.97 KPA REL=6994007.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHDE
.000	.917	.917	.000	.000	.340
.010	.950	.852	.758	.378	.366
.020	.956	.813	.934	.455	.383
.039	.963	.760	1.154	.543	.410
.060	.966	.732	1.266	.584	.426
.082	.969	.711	1.348	.613	.439
.125	.973	.674	1.488	.659	.462
.169	.976	.646	1.599	.693	.483
.216	.978	.621	1.696	.721	.502
.261	.980	.599	1.784	.745	.521
.308	.982	.579	1.864	.765	.538
.357	.984	.558	1.951	.786	.558
.407	.985	.536	2.045	.808	.581
.456	.987	.515	2.138	.828	.605
.507	.989	.494	2.237	.848	.631
.555	.990	.473	2.336	.867	.659
.610	.992	.451	2.450	.887	.692
.665	.993	.431	2.556	.904	.724
.718	.995	.411	2.664	.921	.759
.771	.996	.392	2.772	.937	.794
.829	.997	.375	2.878	.951	.831
.881	.998	.360	2.979	.963	.867
.936	.999	.345	3.076	.975	.903
.990	1.000	.334	3.157	.984	.934
1.047	1.000	.325	3.219	.990	.958
1.105	1.000	.320	3.261	.995	.975
1.163	1.001	.316	3.291	.998	.987
1.216	1.001	.314	3.307	.999	.993

DEL = .7979 DELU= .1455 DEL*= .3599 CM
THETA= .05801 H = 6.203 UE = 661.0 M/SEC
RHDE= .1760 KG/M**3 RUN = 390

MACH = 3.00 P0 = 298.0 KPA T0 = 316.9 K
ALPHA= 5.28 Z/D= 5.67 PHI= 150.
RPM= 20000. PW = 4.97 KPA REL=6975701.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHDE
.000	.918	.918	.000	.000	.341
.032	.956	.810	.949	.461	.386
.042	.961	.777	1.090	.518	.403
.066	.965	.737	1.246	.577	.425
.087	.969	.711	1.347	.613	.440
.130	.973	.668	1.511	.667	.468
.176	.977	.632	1.651	.708	.495
.225	.979	.603	1.767	.741	.519
.271	.982	.579	1.866	.766	.541
.322	.984	.556	1.963	.789	.563
.372	.985	.533	2.061	.812	.588
.423	.987	.511	2.157	.832	.612
.475	.989	.490	2.254	.852	.638
.526	.990	.470	2.352	.870	.666
.582	.992	.449	2.458	.889	.697
.636	.993	.429	2.565	.906	.730
.694	.994	.410	2.671	.923	.764
.749	.995	.392	2.774	.937	.798
.803	.997	.376	2.874	.951	.833
.862	.997	.362	2.963	.962	.865
.920	.998	.348	3.054	.973	.898
.976	.999	.337	3.134	.982	.929
1.033	1.000	.327	3.204	.989	.956
1.089	1.000	.321	3.252	.994	.975
1.151	1.000	.317	3.282	.997	.987
1.212	1.000	.315	3.296	.999	.993
1.268	1.000	.314	3.305	1.000	.997

DEL = .7656 DELU= .1363 DEL*= .3328 CM
THETA= .05338 H = 6.235 UE = 661.1 M/SEC
RHDE= .1751 KG/M**3 RUN = 391

MACH = 3.00 P0 = 297.9 KPA T0 = 318.3 K
ALPHA= 5.28 Z/D= 5.67 PHI= 170.
RPM= 0. PW = 5.15 KPA REL=6921558.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.008	.949	.858	.729	.364	.366
.016	.956	.810	.949	.461	.387
.024	.963	.764	1.140	.538	.410
.033	.967	.736	1.253	.580	.426
.051	.970	.706	1.367	.620	.444
.068	.972	.683	1.455	.649	.459
.084	.974	.665	1.526	.672	.472
.102	.976	.648	1.591	.691	.484
.120	.977	.632	1.651	.709	.496
.136	.978	.620	1.700	.723	.506
.175	.980	.597	1.793	.748	.526
.212	.982	.577	1.874	.769	.544
.251	.983	.557	1.956	.788	.563
.290	.985	.540	2.029	.805	.581
.330	.986	.524	2.100	.821	.599
.371	.987	.508	2.174	.836	.618
.411	.989	.492	2.246	.851	.638
.453	.990	.477	2.317	.864	.657
.496	.991	.463	2.388	.877	.678
.540	.992	.449	2.457	.889	.698
.584	.993	.436	2.527	.901	.720
.627	.993	.423	2.597	.912	.742
.672	.994	.410	2.668	.923	.765
.716	.995	.398	2.736	.933	.787
.761	.996	.388	2.801	.942	.809
.807	.997	.377	2.867	.950	.832
.851	.997	.367	2.932	.959	.855
.897	.998	.357	2.999	.967	.880
.945	.999	.346	3.072	.975	.907
.989	.999	.336	3.142	.983	.934
1.035	1.000	.326	3.211	.991	.961
1.080	1.000	.320	3.258	.995	.980
1.124	1.001	.317	3.283	.998	.989

DEL = .9722 DELU= .1493 DEL*= .3964 CM
THETA= .06635 H = 5.974 UE = 662.3 M/SEC
RHOE= .1811 KG/M**3 RUN = 414

MACH = 3.00 P0 = 297.6 KPA T0 = 318.6 K
ALPHA= 5.28 Z/D= 5.67 PHI= 170.
RPM= 20000. PW = 5.15 KPA REL=6915168.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.016	.965	.744	1.218	.567	.422
.034	.964	.750	1.196	.559	.418
.051	.968	.717	1.324	.605	.437
.067	.971	.696	1.407	.634	.451
.085	.973	.675	1.487	.660	.465
.101	.975	.657	1.554	.680	.477
.121	.976	.640	1.619	.700	.490
.140	.978	.626	1.675	.716	.501
.177	.980	.603	1.768	.741	.520
.215	.981	.582	1.853	.763	.539
.252	.983	.563	1.931	.782	.557
.293	.984	.544	2.011	.801	.577
.334	.986	.526	2.089	.818	.596
.375	.987	.510	2.163	.834	.615
.414	.988	.494	2.238	.849	.636
.459	.990	.478	2.315	.864	.657
.501	.991	.462	2.390	.878	.679
.546	.992	.448	2.464	.890	.701
.592	.993	.434	2.539	.903	.723
.637	.994	.420	2.612	.914	.747
.680	.995	.408	2.683	.925	.770
.724	.995	.396	2.752	.935	.793
.771	.996	.384	2.824	.945	.818
.817	.997	.373	2.893	.954	.842
.862	.997	.363	2.958	.962	.865
.910	.998	.352	3.027	.970	.890
.957	.999	.343	3.095	.978	.916
1.002	.999	.333	3.162	.985	.942
1.049	1.000	.325	3.225	.992	.967
1.094	1.000	.319	3.267	.996	.984
1.138	1.000	.316	3.289	.999	.992

DEL = .9601 DELU= .1492 DEL*= .3931 CM
THETA= .06562 H = 5.990 UE = 662.5 M/SEC
RHOE= .1811 KG/M**3 RUN = 415

MACH = 3.00 P0 = 298.1 KPA T0 = 313.9 K
ALPHA= 5.28 Z/D= 5.67 PHI= 180.
RPM= 0. PW = 5.17 KPA REL=7071965.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.008	.952	.838	.824	.408	.376
.014	.956	.811	.947	.461	.389
.019	.961	.774	1.100	.523	.407
.030	.965	.743	1.221	.569	.424
.048	.969	.711	1.346	.614	.443
.061	.971	.690	1.426	.640	.456
.098	.975	.652	1.573	.686	.483
.131	.978	.624	1.682	.718	.505
.168	.979	.600	1.776	.744	.525
.203	.981	.580	1.858	.765	.543
.241	.983	.559	1.945	.786	.563
.274	.984	.543	2.015	.803	.580
.316	.986	.524	2.099	.821	.601
.355	.987	.507	2.177	.838	.622
.397	.988	.490	2.256	.853	.644
.438	.989	.474	2.331	.867	.665
.481	.991	.459	2.405	.881	.686
.525	.991	.445	2.480	.894	.709
.566	.992	.432	2.547	.905	.730
.611	.993	.419	2.620	.916	.753
.658	.994	.406	2.694	.927	.777
.702	.995	.395	2.758	.936	.799
.745	.996	.385	2.816	.944	.819
.791	.996	.375	2.879	.953	.841
.836	.997	.366	2.937	.960	.861
.882	.997	.356	3.000	.968	.885
.927	.998	.347	3.062	.975	.908
.975	.999	.339	3.120	.982	.930
1.020	.999	.331	3.179	.988	.953
1.067	.999	.324	3.227	.993	.972
1.113	1.000	.319	3.263	.997	.987
1.184	1.000	.316	3.293	1.000	.999
1.257	1.000	.315	3.299	1.000	1.001

DEL = .9556 DELU= .1418 DEL*= .3766 CM
THETA= .06371 H = 5.911 UE = 657.1 M/SEC
RHOE= .1829 KG/M**3 RUN = 342

MACH = 3.00 P0 = 298.0 KPA T0 = 313.9 K
ALPHA= 5.28 Z/D= 5.67 PHI= 180.
RPM= 20000. PW = 5.17 KPA REL=7065737.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.080	.974	.663	1.531	.673	.475
.094	.975	.647	1.593	.692	.487
.129	.978	.619	1.702	.724	.509
.165	.980	.595	1.799	.750	.529
.202	.982	.574	1.886	.772	.549
.238	.983	.555	1.966	.791	.568
.278	.985	.535	2.050	.810	.589
.317	.986	.517	2.131	.828	.609
.354	.987	.501	2.201	.842	.628
.400	.988	.483	2.288	.859	.652
.436	.990	.470	2.351	.871	.670
.483	.991	.453	2.435	.886	.695
.524	.992	.440	2.502	.897	.715
.565	.992	.429	2.565	.907	.735
.612	.993	.415	2.640	.919	.759
.655	.994	.404	2.703	.928	.780
.703	.995	.392	2.772	.938	.803
.746	.996	.383	2.831	.946	.823
.791	.996	.373	2.888	.954	.844
.838	.997	.364	2.947	.961	.865
.880	.997	.356	3.002	.968	.885
.927	.998	.347	3.062	.975	.907
.975	.999	.338	3.124	.982	.931
1.024	.999	.330	3.183	.988	.954
1.074	.999	.323	3.233	.993	.974
1.121	1.000	.319	3.264	.997	.987
1.184	1.000	.316	3.288	.999	.996
1.254	1.000	.315	3.296	1.000	1.000

DEL = .9557 DELU= .1492 DEL*= .3748 CM
THETA= .06059 H = 6.186 UE = 657.3 M/SEC
RHOE= .1829 KG/M**3 RUN = 343

MACH = 3.00 P0 = 299.1 KPA T0 = 313.6 K
ALPHA= 5.28 Z/D= 5.67 PHI= 190.
RPM= 0. PW = 5.16 KPA REL=7152989.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.008	.950	.852	.758	.379	.366
.016	.957	.803	.980	.475	.388
.034	.966	.743	1.225	.571	.420
.049	.969	.713	1.342	.613	.438
.068	.973	.688	1.438	.645	.454
.087	.974	.669	1.510	.669	.467
.121	.977	.637	1.633	.705	.490
.157	.980	.613	1.731	.733	.510
.197	.982	.591	1.819	.757	.529
.235	.984	.572	1.899	.777	.547
.275	.985	.553	1.978	.795	.565
.315	.987	.535	2.055	.813	.584
.354	.988	.519	2.127	.829	.602
.395	.990	.504	2.197	.843	.621
.438	.991	.488	2.272	.858	.641
.482	.992	.472	2.345	.872	.662
.527	.993	.458	2.419	.885	.683
.571	.995	.444	2.493	.897	.705
.616	.996	.430	2.565	.909	.727
.661	.997	.417	2.634	.920	.750
.705	.998	.406	2.703	.930	.772
.750	.999	.394	2.773	.940	.795
.794	1.000	.383	2.840	.949	.818
.841	1.001	.372	2.908	.958	.842
.888	1.002	.362	2.975	.966	.866
.936	1.002	.352	3.042	.974	.891
.981	1.003	.342	3.108	.982	.916
1.027	1.004	.333	3.174	.989	.941
1.074	1.005	.325	3.234	.995	.965
1.117	1.005	.320	3.268	.999	.978
1.165	1.006	.318	3.290	1.001	.987
1.209	1.006	.316	3.300	1.002	.991

DEL = .9589 DELU= .1484 DEL*= .3984 CM
THETA= .06482 H = 6.147 UE = 655.7 M/SEC
RHOE= .1850 KG/M**3 RUN = 406

MACH = 3.00 P0 = 298.4 KPA T0 = 315.1 K
ALPHA= 5.28 Z/D= 5.67 PHI= 190.
RPM= 20000. PW = 5.16 KPA REL=7067059.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.341
.024	.963	.760	1.154	.544	.412
.033	.966	.736	1.252	.580	.426
.050	.970	.705	1.372	.623	.445
.067	.972	.681	1.463	.652	.460
.085	.974	.661	1.541	.677	.474
.119	.977	.630	1.659	.712	.497
.154	.980	.603	1.766	.741	.519
.192	.981	.581	1.856	.765	.539
.230	.983	.561	1.938	.785	.558
.269	.985	.543	2.017	.803	.577
.308	.986	.525	2.094	.820	.596
.348	.987	.510	2.164	.835	.615
.389	.989	.495	2.233	.849	.633
.430	.990	.480	2.304	.863	.653
.471	.991	.467	2.371	.875	.672
.516	.992	.453	2.441	.887	.693
.559	.993	.440	2.504	.898	.712
.603	.994	.428	2.572	.909	.733
.645	.995	.416	2.634	.918	.753
.689	.995	.405	2.698	.928	.774
.732	.996	.395	2.762	.937	.795
.780	.997	.383	2.829	.946	.818
.823	.998	.374	2.889	.954	.839
.866	.999	.364	2.955	.962	.863
.916	1.000	.353	3.025	.971	.889
.960	1.000	.344	3.089	.978	.913
1.004	1.001	.334	3.156	.986	.938
1.052	1.002	.326	3.220	.992	.963
1.096	1.002	.320	3.267	.997	.982
1.140	1.002	.317	3.290	1.000	.991
1.183	1.002	.315	3.301	1.001	.996

DEL = .9797 DELU= .1481 DEL*= .3955 CM
THETA= .06539 H = 6.049 UE = 658.0 M/SEC
RHOE= .1835 KG/M**3 RUN = 407

MACH = 3.00 P0 = 299.5 KPA T0 = 310.8 K
ALPHA= 5.28 Z/D= 5.67 PHI= 210.
RPM= 0. PW = 4.99 KPA REL=7216580.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.010	.950	.851	.763	.381	.369
.017	.955	.822	.899	.441	.382
.039	.963	.765	1.136	.538	.410
.061	.967	.738	1.245	.579	.426
.106	.971	.697	1.402	.633	.451
.148	.975	.664	1.529	.674	.473
.194	.977	.637	1.635	.706	.493
.241	.980	.612	1.733	.733	.513
.291	.982	.590	1.823	.757	.533
.342	.984	.565	1.923	.782	.556
.392	.986	.543	2.017	.804	.579
.443	.988	.521	2.115	.826	.603
.497	.989	.500	2.213	.846	.629
.549	.991	.479	2.313	.865	.657
.604	.992	.457	2.418	.884	.687
.660	.994	.437	2.523	.902	.719
.716	.995	.418	2.629	.919	.753
.773	.997	.398	2.743	.936	.790
.828	.998	.380	2.851	.950	.827
.882	.999	.364	2.955	.964	.865
.943	1.000	.349	3.057	.976	.903
1.003	1.001	.336	3.143	.985	.935
1.061	1.002	.328	3.208	.992	.961
1.118	1.002	.322	3.250	.997	.978
1.181	1.003	.320	3.269	.999	.985
1.240	1.003	.318	3.279	1.000	.989
1.327	1.003	.317	3.289	1.001	.993

DEL = .7533 DELU= .1380 DEL*= .3405 CM
THETA= .05491 H = 6.201 UE = 653.0 M/SEC
RHOE= .1817 KG/M**3 RUN = 359

MACH = 3.00 P0 = 298.7 KPA T0 = 310.9 K
ALPHA= 5.28 Z/D= 5.67 PHI= 210.
RPM= 20000. PW = 4.98 KPA REL=7178315.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.036	.963	.762	1.148	.541	.413
.057	.966	.734	1.256	.582	.428
.077	.969	.715	1.334	.609	.440
.098	.971	.697	1.401	.632	.451
.138	.973	.670	1.505	.666	.470
.181	.976	.647	1.592	.692	.486
.227	.977	.627	1.671	.715	.502
.270	.979	.610	1.739	.734	.516
.317	.980	.591	1.814	.754	.532
.366	.982	.572	1.893	.774	.550
.412	.983	.554	1.969	.792	.568
.462	.985	.534	2.054	.811	.589
.511	.987	.515	2.141	.830	.611
.562	.989	.492	2.246	.851	.639
.614	.990	.471	2.347	.870	.668
.667	.992	.448	2.463	.891	.702
.716	.993	.427	2.574	.909	.737
.770	.995	.406	2.690	.927	.774
.822	.996	.386	2.809	.943	.815
.878	.997	.366	2.934	.960	.859
.933	.998	.350	3.043	.973	.899
.987	.999	.337	3.133	.983	.933
1.041	1.000	.327	3.208	.991	.963
1.098	1.000	.321	3.254	.996	.981
1.154	1.000	.318	3.274	.998	.989
1.235	1.001	.316	3.290	.999	.996

DEL = .8097 DELU= .1582 DEL*= .3789 CM
THETA= .06080 H = 6.231 UE = 654.0 M/SEC
RHOE= .1814 KG/M**3 RUN = 360

MACH = 3.00 P0 = 298.0 KPA T0 = 311.8 K
ALPHA= 5.28 Z/D= 5.67 PHI= 240.
RPM= 0. PW = 4.45 KPA REL=7139383.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.337
.016	.950	.844	.792	.392	.366
.036	.959	.789	1.039	.497	.392
.053	.963	.754	1.178	.551	.410
.087	.968	.714	1.334	.607	.433
.118	.972	.684	1.449	.645	.452
.154	.975	.651	1.576	.684	.475
.188	.978	.621	1.695	.719	.498
.223	.980	.594	1.801	.747	.520
.278	.983	.558	1.952	.785	.554
.332	.985	.527	2.086	.815	.587
.387	.987	.501	2.203	.839	.617
.443	.989	.478	2.310	.860	.646
.503	.991	.457	2.416	.879	.677
.555	.992	.440	2.505	.894	.703
.618	.993	.421	2.607	.910	.735
.679	.994	.404	2.701	.924	.765
.738	.995	.387	2.803	.938	.799
.800	.996	.372	2.899	.951	.832
.863	.997	.357	2.998	.963	.867
.928	.998	.343	3.092	.974	.902
.967	.999	.335	3.148	.980	.923
1.029	.999	.324	3.228	.989	.955
1.091	1.000	.317	3.284	.995	.977
1.162	1.000	.312	3.322	.998	.992
1.229	1.000	.310	3.338	1.000	.998

DEL = .4870 DELU= .0821 DEL*= .2056 CM
THETA= .03294 H = 6.241 UE = 657.7 M/SEC
RHOE= .1623 KG/M**3 RUN = 377

MACH = 3.00 P0 = 298.0 KPA T0 = 312.0 K
ALPHA= 5.28 Z/D= 5.67 PHI= 240.
RPM= 20000. PW = 4.46 KPA REL=7137873.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.332
.045	.962	.759	1.156	.540	.400
.050	.963	.750	1.193	.554	.406
.083	.967	.720	1.309	.595	.422
.113	.970	.697	1.397	.626	.436
.142	.972	.674	1.487	.655	.451
.175	.974	.652	1.571	.680	.466
.205	.976	.629	1.663	.707	.484
.261	.980	.593	1.806	.746	.513
.310	.982	.561	1.937	.778	.542
.366	.985	.532	2.062	.806	.571
.417	.986	.507	2.174	.830	.600
.473	.988	.483	2.289	.853	.630
.529	.990	.461	2.395	.872	.660
.584	.991	.440	2.502	.890	.691
.644	.993	.421	2.608	.907	.723
.695	.994	.402	2.714	.922	.757
.756	.995	.384	2.821	.937	.792
.815	.996	.367	2.927	.951	.828
.880	.998	.351	3.036	.964	.867
.914	.998	.343	3.092	.970	.888
.975	.999	.329	3.192	.981	.925
1.042	1.000	.317	3.284	.991	.960
1.101	1.000	.310	3.338	.996	.982
1.165	1.000	.306	3.369	.999	.994

DEL = .5133 DELU= .0940 DEL*= .2294 CM
THETA= .03537 H = 6.486 UE = 660.3 M/SEC
RHOE= .1650 KG/M**3 RUN = 378

MACH = 3.00 P0 = 298.1 KPA T0 = 316.2 K
ALPHA= 6.34 Z/D= 5.67 PHI= 0.
RPM= 0. PW = 5.30 KPA REL=7003632.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.919	.919	.000	.000	.353
.033	.965	.755	1.178	.557	.430
.051	.969	.722	1.308	.605	.450
.071	.973	.680	1.466	.659	.477
.081	.976	.657	1.556	.687	.494
.119	.980	.608	1.751	.743	.535
.147	.982	.581	1.859	.771	.559
.178	.984	.555	1.965	.797	.585
.219	.986	.530	2.075	.822	.613
.252	.988	.512	2.156	.840	.634
.320	.990	.489	2.264	.862	.665
.388	.991	.468	2.365	.881	.694
.460	.993	.446	2.475	.900	.728
.538	.994	.426	2.582	.918	.763
.616	.995	.411	2.666	.930	.791
.683	.996	.397	2.748	.942	.819
.752	.997	.383	2.830	.954	.848
.836	.998	.366	2.936	.967	.887
.916	.999	.354	3.018	.977	.918
.990	.999	.346	3.075	.984	.940
1.063	1.000	.339	3.123	.990	.959
1.145	1.000	.331	3.177	.996	.981
1.215	1.001	.328	3.203	.998	.991
1.302	1.001	.326	3.218	1.000	.997
1.392	1.001	.325	3.224	1.001	.999
1.552	1.001	.325	3.225	1.001	1.000

DEL = .2313 DELU= .0306 DEL*= .0811 CM
THETA= .01402 H = 5.783 UE = 654.6 M/SEC
RHOE= .1825 KG/M**3 RUN = 351

MACH = 3.00 P0 = 297.8 KPA T0 = 316.5 K
ALPHA= 6.34 Z/D= 5.67 PHI= 0.
RPM= 20000. PW = 5.30 KPA REL=6980548.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.919	.919	.000	.000	.354
.076	.977	.638	1.631	.709	.509
.114	.981	.600	1.783	.751	.542
.149	.983	.570	1.906	.783	.571
.178	.985	.546	2.005	.807	.595
.217	.987	.525	2.096	.827	.619
.252	.988	.508	2.174	.843	.640
.324	.990	.485	2.279	.864	.670
.398	.991	.464	2.383	.884	.700
.465	.993	.444	2.484	.901	.732
.544	.994	.424	2.590	.919	.766
.615	.995	.410	2.670	.931	.793
.684	.996	.396	2.754	.943	.822
.767	.997	.379	2.854	.957	.857
.829	.998	.368	2.924	.966	.883
.917	.998	.355	3.007	.976	.914
.994	.999	.345	3.080	.985	.942
1.077	1.000	.337	3.136	.991	.964
1.156	1.000	.331	3.179	.996	.982
1.238	1.000	.328	3.203	.998	.992
1.324	1.000	.326	3.217	1.000	.997
1.398	1.000	.325	3.222	1.000	.999
1.573	1.000	.325	3.224	1.000	1.000

DEL = .2287 DELU= .0309 DEL*= .0796 CM
THETA= .01343 H = 5.926 UE = 655.1 M/SEC
RHOE= .1821 KG/M**3 RUN = 352

MACH = 3.00 P0 = 298.2 KPA T0 = 309.2 K
ALPHA= 6.34 Z/D= 5.67 PHI= 30.
RPM= 0. PW = 4.92 KPA REL=7227258.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.031	.967	.731	1.269	.587	.432
.061	.972	.679	1.470	.656	.466
.083	.976	.644	1.606	.697	.491
.109	.979	.607	1.751	.738	.521
.146	.982	.575	1.882	.772	.550
.177	.984	.552	1.978	.795	.573
.213	.986	.529	2.079	.818	.598
.282	.988	.497	2.224	.848	.637
.346	.990	.474	2.332	.869	.667
.417	.991	.454	2.434	.887	.697
.485	.993	.432	2.547	.906	.732
.548	.994	.416	2.637	.920	.761
.619	.995	.398	2.741	.935	.796
.691	.996	.384	2.824	.947	.824
.756	.997	.373	2.889	.955	.847
.839	.998	.361	2.969	.965	.876
.905	.999	.350	3.047	.974	.905
.985	.999	.338	3.126	.983	.935
1.061	1.000	.329	3.194	.991	.962
1.136	1.000	.323	3.235	.995	.978
1.205	1.000	.320	3.259	.998	.988
1.284	1.001	.318	3.275	.999	.994
1.365	1.001	.317	3.283	1.000	.998
1.446	1.001	.317	3.286	1.000	.999

DEL = .2461 DELU= .0319 DEL*= .0873 CM
THETA= .01477 H = 5.910 UE = 651.4 M/SEC
RHOE= .1767 KG/M**3 RUN = 367

MACH = 3.00 P0 = 298.3 KPA T0 = 309.4 K
ALPHA= 6.34 Z/D= 5.67 PHI= 30.
RPM= 20000. PW = 4.92 KPA REL=7213892.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.344
.089	.975	.656	1.557	.683	.482
.102	.976	.638	1.629	.704	.496
.115	.978	.621	1.695	.723	.509
.142	.981	.590	1.821	.757	.536
.175	.983	.562	1.934	.785	.562
.207	.985	.538	2.039	.809	.588
.268	.987	.507	2.176	.838	.623
.339	.989	.484	2.284	.860	.653
.407	.991	.460	2.401	.881	.687
.471	.992	.441	2.500	.898	.717
.539	.993	.422	2.602	.914	.749
.609	.994	.405	2.695	.928	.780
.680	.996	.390	2.784	.941	.810
.752	.997	.376	2.870	.952	.840
.818	.997	.364	2.951	.963	.869
.892	.998	.351	3.033	.973	.900
.958	.999	.341	3.103	.981	.927
1.046	.999	.331	3.179	.989	.956
1.111	1.000	.325	3.223	.994	.973
1.192	1.000	.320	3.257	.997	.987
1.261	1.000	.318	3.274	.999	.994
1.343	1.000	.317	3.282	1.000	.997
1.413	1.001	.317	3.287	1.000	.999

DEL = .2501 DELU= .0364 DEL*= .0919 CM
THETA= .01481 H = 6.208 UE = 651.8 M/SEC
RHOE= .1764 KG/M**3 RUN = 368

MACH = 3.00 P0 = 297.9 KPA T0 = 311.8 K
ALPHA= 6.34 Z/D= 5.67 PHI= 60.
RPM= 0. PW = 4.02 KPA REL=7141462.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.324
.027	.958	.791	1.027	.487	.375
.043	.964	.744	1.215	.559	.398
.060	.970	.694	1.410	.626	.427
.090	.975	.642	1.609	.688	.462
.120	.978	.606	1.754	.728	.490
.146	.981	.576	1.875	.759	.515
.204	.984	.531	2.064	.802	.558
.265	.987	.500	2.206	.832	.593
.317	.988	.480	2.302	.850	.618
.379	.990	.457	2.412	.870	.648
.439	.991	.437	2.518	.888	.678
.501	.993	.419	2.614	.903	.707
.563	.994	.403	2.709	.917	.736
.621	.995	.388	2.797	.929	.764
.683	.996	.373	2.889	.941	.795
.740	.997	.361	2.965	.950	.821
.815	.997	.350	3.042	.959	.848
.877	.998	.338	3.123	.968	.877
.940	.999	.327	3.206	.977	.907
1.007	.999	.316	3.290	.986	.939
1.067	1.000	.308	3.349	.992	.961
1.145	1.000	.302	3.397	.996	.980
1.216	1.001	.300	3.421	.998	.990
1.274	1.001	.298	3.436	1.000	.996

DEL = .2849 DELU= .0397 DEL*= .1095 CM
THETA= .01709 H = 6.411 UE = 663.7 M/SEC
RHOE= .1528 KG/M**3 RUN = 383

MACH = 3.00 P0 = 297.9 KPA T0 = 312.1 K
ALPHA= 6.34 Z/D= 5.67 PHI= 60.
RPM= 20000. PW = 4.02 KPA REL=7129434.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.324
.071	.973	.655	1.558	.673	.453
.083	.975	.634	1.641	.697	.468
.118	.979	.587	1.827	.747	.505
.141	.981	.566	1.915	.768	.524
.196	.985	.523	2.100	.810	.567
.258	.986	.498	2.216	.834	.596
.310	.988	.477	2.312	.852	.622
.370	.990	.456	2.421	.872	.651
.436	.991	.434	2.534	.890	.684
.490	.992	.416	2.631	.905	.713
.554	.993	.401	2.720	.918	.741
.613	.995	.386	2.809	.930	.770
.654	.995	.377	2.862	.937	.787
.731	.996	.362	2.962	.950	.821
.803	.997	.348	3.053	.961	.853
.861	.998	.337	3.128	.969	.880
.929	.998	.327	3.204	.977	.908
1.000	.999	.317	3.282	.985	.937
1.062	.999	.309	3.339	.991	.959
1.125	1.000	.304	3.383	.995	.977
1.178	1.000	.301	3.407	.997	.986
1.251	1.000	.298	3.428	.999	.994

DEL = .2870 DELU= .0398 DEL*= .1076 CM
THETA= .01651 H = 6.518 UE = 663.9 M/SEC
RHOE= .1524 KG/M**3 RUN = 384

MACH = 3.00 P0 = 298.2 KPA T0 = 318.5 K
ALPHA= 6.34 Z/D= 5.67 PHI= 120.
RPM= 0. PW = 4.28 KPA REL=6914011.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.337
.015	.949	.849	.769	.381	.364
.044	.959	.787	1.043	.498	.392
.107	.967	.720	1.310	.598	.428
.175	.973	.669	1.508	.663	.462
.248	.978	.611	1.735	.729	.505
.319	.982	.561	1.940	.781	.551
.393	.986	.519	2.120	.822	.595
.466	.988	.483	2.287	.855	.639
.541	.990	.456	2.419	.879	.676
.619	.992	.427	2.573	.904	.723
.694	.994	.403	2.709	.925	.766
.778	.996	.379	2.852	.944	.814
.857	.997	.358	2.987	.961	.862
.931	.998	.341	3.103	.975	.905
1.016	,999	.325	3.218	.987	.949
1.106	1.000	.314	3.306	.996	.984
1.181	1.000	.309	3.340	.999	.997
1.269	1.000	.308	3.349	1.000	1.001

DEL = .5159 DELU= .0946 DEL*= .2279 CM
THETA= .03598 H = 6.335 UE = 665.1 M/SEC
RHOE= .1526 KG/M**3 RUN = 424

MACH = 3.00 P0 = 297.8 KPA T0 = 318.6 K
ALPHA= 6.34 Z/D= 5.67 PHI= 120.
RPM= 20000. PW = 4.28 KPA REL=6909603.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.343
.047	.960	.780	1.075	.513	.404
.086	.966	.732	1.265	.585	.430
.110	.971	.696	1.406	.634	.453
.181	.978	.623	1.686	.719	.506
.264	.983	.565	1.921	.781	.557
.329	.986	.525	2.096	.821	.601
.405	.988	.493	2.241	.850	.639
.480	.990	.464	2.380	.876	.679
.558	.992	.440	2.507	.898	.717
.636	.993	.416	2.635	.918	.758
.716	.995	.395	2.756	.936	.798
.798	.996	.374	2.882	.953	.842
.884	.997	.355	3.008	.969	.888
.966	.998	.340	3.114	.981	.928
1.055	.999	.327	3.208	.991	.965
1.130	1.000	.320	3.256	.996	.984
1.220	1.000	.317	3.283	.999	.995
1.308	1.000	.316	3.289	.999	.997

DEL = .5003 DELU= .0854 DEL*= .2067 CM
THETA= .03318 H = 6.228 UE = 662.1 M/SEC
RHOE= .1493 KG/M**3 RUN = 425

MACH = 3.00 P0 = 297.8 KPA T0 = 317.2 K
ALPHA= 6.34 Z/D= 5.67 PHI= 150.
RPM= 0. PW = 4.89 KPA REL=6962482.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.336
.009	.949	.853	.747	.371	.361
.024	.958	.795	1.011	.485	.387
.043	.963	.754	1.176	.549	.408
.062	.966	.732	1.264	.581	.420
.082	.968	.713	1.338	.607	.432
.122	.972	.680	1.463	.649	.452
.163	.974	.657	1.553	.677	.468
.202	.976	.638	1.626	.698	.482
.248	.977	.618	1.704	.720	.497
.290	.979	.601	1.772	.739	.512
.336	.981	.582	1.849	.759	.528
.384	.982	.562	1.936	.780	.548
.430	.984	.542	2.021	.800	.568
.476	.986	.520	2.114	.820	.591
.524	.987	.498	2.217	.841	.618
.574	.989	.475	2.328	.862	.648
.620	.991	.454	2.432	.881	.678
.664	.992	.434	2.534	.898	.708
.721	.994	.410	2.670	.919	.751
.774	.995	.389	2.789	.936	.790
.824	.996	.373	2.889	.949	.825
.872	.997	.359	2.980	.960	.857
.926	.998	.345	3.077	.971	.892
.977	.999	.332	3.166	.981	.926
1.028	1.000	.322	3.242	.989	.955
1.079	1.000	.316	3.288	.994	.973
1.134	1.000	.313	3.313	.996	.983
1.181	1.000	.312	3.323	.997	.987
1.230	1.000	.311	3.329	.998	.990
1.359	1.000	.309	3.342	.999	.995

DEL = .8664 DELU= .1656 DEL*= .4045 CM
THETA= .06407 H = 6.313 UE = 663.9 M/SEC
RHOE= .1752 KG/M**3 RUN = 392

MACH = 3.00 P0 = 297.9 KPA T0 = 317.4 K
ALPHA= 6.34 Z/D= 5.67 PHI= 150.
RPM= 20000. PW = 4.89 KPA REL=6946484.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.337
.027	.956	.808	.957	.463	.383
.046	.963	.760	1.153	.541	.407
.069	.966	.730	1.274	.585	.424
.090	.969	.709	1.354	.614	.436
.133	.973	.669	1.506	.663	.462
.175	.976	.640	1.620	.697	.483
.220	.978	.614	1.723	.727	.504
.267	.980	.590	1.817	.751	.524
.317	.982	.568	1.911	.775	.545
.366	.984	.544	2.010	.798	.568
.416	.986	.522	2.108	.820	.593
.465	.987	.501	2.204	.839	.618
.517	.989	.479	2.310	.860	.646
.570	.991	.456	2.421	.880	.678
.621	.992	.435	2.531	.898	.711
.675	.994	.415	2.642	.916	.746
.726	.995	.396	2.749	.931	.781
.782	.996	.378	2.856	.946	.817
.834	.997	.364	2.949	.957	.850
.890	.998	.351	3.037	.968	.882
.948	.998	.338	3.126	.978	.915
1.005	.999	.328	3.196	.986	.942
1.061	1.000	.321	3.250	.991	.963
1.115	1.000	.316	3.288	.995	.978
1.165	1.000	.314	3.305	.997	.985
1.228	1.000	.312	3.319	.998	.991
1.282	1.000	.311	3.325	.999	.993
1.334	1.000	.311	3.329	.999	.995
1.470	1.000	.310	3.338	1.000	.998

DEL = .8002 DELU= .1453 DEL*= .3548 CM
THETA= .05621 H = 6.312 UE = 663.6 M/SEC
RHOE= .1741 KG/M**3 RUN = 393

MACH = 3.00 P0 = 297.7 KPA T0 = 318.8 K
ALPHA= 6.34 Z/O= 5.67 PHI= 170.
RPM= 0. PW = 5.14 KPA REL=6903101.

Y/OEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.341
.007	.952	.837	.827	.408	.373
.015	.960	.780	1.073	.512	.400
.022	.965	.743	1.222	.568	.421
.036	.969	.706	1.365	.619	.442
.052	.972	.682	1.456	.649	.458
.067	.974	.662	1.533	.673	.472
.082	.975	.644	1.602	.694	.485
.115	.978	.615	1.717	.727	.508
.148	.980	.592	1.809	.751	.528
.182	.982	.573	1.887	.771	.545
.216	.983	.555	1.965	.790	.563
.252	.984	.539	2.033	.805	.580
.289	.986	.525	2.097	.819	.596
.324	.987	.512	2.154	.831	.611
.362	.988	.498	2.219	.845	.628
.399	.989	.485	2.277	.856	.644
.439	.990	.473	2.335	.867	.660
.478	.991	.462	2.390	.877	.676
.518	.991	.451	2.447	.887	.693
.554	.992	.440	2.502	.896	.710
.596	.993	.428	2.566	.906	.729
.637	.993	.417	2.627	.916	.749
.677	.994	.407	2.686	.924	.768
.713	.995	.398	2.736	.932	.785
.757	.996	.388	2.800	.941	.806
.801	.996	.377	2.866	.949	.829
.843	.997	.367	2.928	.957	.851
.880	.997	.359	2.985	.964	.872
.923	.998	.349	3.049	.972	.896
.964	.999	.340	3.115	.979	.920
1.004	.999	.332	3.173	.986	.943
1.041	1.000	.325	3.225	.991	.963
1.085	1.000	.319	3.268	.996	.980
1.127	1.000	.315	3.299	.999	.993
1.168	1.000	.314	3.309	1.000	.997

DEL = 1.0807 OELU= .1559 DEL*= .4290 CM
THETA= .07253 H = 5.915 UE = 663.3 M/SEC
RHOE= .1812 KG/M**3 RUN = 416

MACH = 3.00 P0 = 297.6 KPA T0 = 318.9 K
ALPHA= 6.34 Z/O= 5.67 PHI= 170.
RPM= 20000. PW = 5.14 KPA REL=6896908.

Y/OEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.340
.022	.960	.778	1.082	.515	.401
.036	.966	.731	1.267	.584	.426
.052	.969	.705	1.371	.621	.443
.068	.972	.683	1.453	.648	.456
.086	.974	.664	1.527	.671	.470
.118	.976	.633	1.648	.707	.493
.150	.978	.610	1.736	.731	.511
.185	.980	.590	1.819	.753	.528
.221	.982	.570	1.899	.774	.547
.254	.983	.554	1.970	.790	.563
.291	.985	.537	2.042	.807	.581
.329	.986	.521	2.110	.822	.598
.367	.987	.506	2.180	.836	.616
.404	.988	.492	2.246	.849	.634
.442	.989	.478	2.312	.862	.652
.483	.990	.464	2.383	.875	.672
.524	.991	.451	2.449	.886	.692
.563	.992	.438	2.516	.898	.712
.605	.993	.425	2.584	.908	.733
.645	.994	.414	2.646	.918	.753
.686	.994	.403	2.711	.927	.775
.727	.995	.392	2.773	.936	.795
.768	.996	.383	2.830	.944	.815
.810	.996	.373	2.890	.952	.836
.852	.997	.363	2.952	.960	.858
.893	.998	.355	3.009	.967	.879
.935	.998	.345	3.074	.974	.903
.975	.999	.337	3.136	.981	.927
1.016	.999	.328	3.195	.987	.949
1.053	1.000	.322	3.244	.992	.969
1.099	1.000	.317	3.282	.996	.984
1.140	1.000	.314	3.307	.999	.994
1.181	1.000	.313	3.317	1.000	.998

DEL = 1.0681 OELU= .1650 OEL*= .4348 CM
THETA= .07187 H = 6.050 UE = 663.8 M/SEC
RHOE= .1816 KG/M**3 RUN = 417

MACH = 3.00 P0 = 297.8 KPA T0 = 314.1 K
ALPHA= 6.34 Z/D= 5.67 PHI= 180.
RPM= 0. PW = 5.15 KPA REL=7057443.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.341
.007	.952	.836	.832	.410	.374
.013	.958	.798	1.000	.482	.392
.022	.965	.747	1.206	.562	.419
.038	.969	.708	1.358	.617	.442
.053	.972	.682	1.458	.650	.459
.068	.974	.663	1.533	.673	.472
.098	.977	.629	1.665	.712	.498
.130	.979	.604	1.764	.740	.519
.162	.981	.581	1.854	.763	.538
.194	.983	.562	1.937	.783	.557
.229	.984	.542	2.018	.802	.577
.264	.986	.525	2.096	.819	.597
.298	.987	.510	2.161	.833	.613
.335	.988	.494	2.234	.848	.633
.373	.989	.480	2.303	.861	.652
.411	.990	.467	2.368	.873	.671
.448	.991	.455	2.429	.884	.689
.487	.992	.443	2.491	.894	.707
.526	.993	.432	2.549	.904	.725
.567	.993	.421	2.609	.913	.744
.605	.994	.411	2.665	.922	.762
.647	.995	.402	2.717	.929	.779
.686	.995	.393	2.767	.936	.796
.726	.995	.385	2.816	.943	.813
.767	.996	.376	2.870	.950	.832
.812	.997	.368	2.925	.957	.851
.852	.997	.360	2.974	.963	.869
.897	.998	.352	3.028	.970	.889
.937	.998	.343	3.088	.977	.912
.980	.999	.336	3.142	.982	.932
1.021	.999	.329	3.188	.987	.950
1.062	1.000	.323	3.234	.992	.968
1.103	1.000	.318	3.274	.996	.984
1.145	1.000	.315	3.297	.999	.993
1.184	1.000	.314	3.307	1.000	.997
1.250	1.000	.313	3.312	1.000	1.000

DEL = 1.0621 DELU= .1454 DEL*= .4018 CM
THETA= .06815 H = 5.895 UE = 658.2 M/SEC
RHOE= .1833 KG/M**3 RUN = 344

MACH = 3.00 P0 = 297.8 KPA T0 = 313.9 K
ALPHA= 6.34 Z/D= 5.67 PHI= 180.
RPM= 0. PW = 5.15 KPA REL=7057443.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.918	.918	.000	.000	.342
.007	.965	.738	1.241	.575	.425
.023	.970	.706	1.367	.620	.445
.039	.972	.683	1.455	.649	.460
.054	.974	.661	1.537	.675	.475
.083	.977	.631	1.656	.710	.498
.115	.979	.607	1.752	.736	.517
.149	.981	.582	1.850	.762	.539
.184	.982	.561	1.937	.784	.559
.219	.984	.541	2.023	.803	.580
.253	.986	.522	2.105	.821	.601
.288	.987	.506	2.181	.837	.621
.326	.988	.488	2.263	.853	.643
.363	.989	.473	2.335	.867	.663
.403	.990	.459	2.406	.880	.684
.442	.991	.446	2.473	.891	.704
.480	.992	.434	2.533	.901	.722
.521	.993	.424	2.590	.910	.740
.562	.993	.414	2.647	.919	.759
.604	.994	.404	2.700	.927	.776
.643	.994	.396	2.748	.934	.792
.686	.995	.388	2.796	.940	.809
.726	.995	.381	2.839	.946	.823
.769	.996	.373	2.887	.952	.840
.810	.996	.366	2.937	.959	.858
.852	.997	.358	2.985	.965	.876
.897	.997	.350	3.037	.971	.895
.941	.998	.343	3.089	.977	.915
.983	.998	.335	3.143	.983	.935
1.025	.999	.329	3.191	.988	.954
1.067	.999	.323	3.236	.993	.972
1.108	.999	.318	3.274	.997	.987
1.148	.999	.315	3.295	.999	.995
1.192	1.000	.314	3.304	1.000	.999
1.258	1.000	.313	3.308	1.000	1.001

DEL = 1.0422 DELU= .1324 DEL*= .3781 CM
THETA= .06556 H = 5.768 UE = 657.9 M/SEC
RHOE= .1829 KG/M**3 RUN = 345

MACH = 3.00 P0 = 298.5 KPA T0 = 316.1 K
ALPHA= 6.34 Z/D= 5.67 PHI= 190.
RPM= 0. PW = 5.15 KPA REL=7023515.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.339
.007	.949	.852	.753	.375	.365
.011	.954	.824	.887	.434	.378
.022	.963	.757	1.167	.548	.411
.036	.969	.715	1.331	.607	.435
.053	.971	.688	1.436	.642	.453
.082	.975	.650	1.579	.687	.479
.116	.977	.620	1.698	.721	.502
.148	.980	.598	1.786	.745	.521
.181	.981	.579	1.863	.765	.537
.217	.983	.560	1.944	.785	.556
.252	.984	.544	2.013	.801	.573
.288	.986	.529	2.077	.815	.589
.326	.987	.514	2.145	.829	.606
.362	.988	.501	2.205	.842	.622
.402	.989	.487	2.268	.854	.639
.439	.990	.476	2.326	.865	.655
.476	.991	.463	2.385	.876	.672
.517	.992	.452	2.445	.886	.690
.556	.993	.440	2.507	.897	.708
.597	.993	.428	2.569	.907	.728
.636	.994	.417	2.629	.916	.747
.676	.995	.406	2.692	.925	.767
.715	.996	.396	2.752	.934	.787
.757	.996	.386	2.810	.942	.807
.798	.997	.377	2.870	.950	.828
.840	.998	.367	2.933	.958	.850
.881	.998	.358	2.992	.965	.871
.922	.999	.349	3.052	.972	.893
.959	.999	.340	3.111	.979	.916
1.002	1.000	.332	3.171	.985	.938
1.040	1.001	.326	3.220	.990	.958
1.082	1.001	.319	3.270	.996	.978
1.121	1.001	.315	3.302	.999	.990
1.163	1.002	.313	3.317	1.000	.996

OEL = 1.0845 OELU= .1591 DEL*= .4348 CM
THETA= .07253 H = 5.995 UE = 660.4 M/SEC
RHOE= .1835 KG/M**3 RUN = 408

MACH = 3.00 P0 = 298.1 KPA T0 = 316.6 K
ALPHA= 6.34 Z/D= 5.67 PHI= 190.
RPM= 20000. PW = 5.15 KPA REL=6995273.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.341
.016	.962	.770	1.115	.528	.406
.022	.965	.744	1.218	.567	.420
.036	.970	.706	1.365	.619	.442
.053	.973	.680	1.467	.653	.460
.083	.976	.642	1.615	.698	.487
.116	.979	.611	1.737	.732	.512
.148	.981	.587	1.832	.758	.532
.181	.983	.566	1.918	.779	.552
.215	.984	.546	2.003	.799	.572
.250	.986	.529	2.079	.816	.591
.286	.987	.514	2.146	.830	.609
.323	.988	.500	2.212	.844	.626
.361	.989	.486	2.273	.856	.643
.397	.990	.476	2.326	.866	.657
.434	.991	.465	2.376	.875	.672
.474	.992	.455	2.429	.884	.687
.514	.992	.445	2.481	.893	.703
.554	.993	.435	2.532	.901	.719
.594	.994	.426	2.582	.909	.734
.633	.994	.417	2.633	.917	.751
.671	.995	.407	2.686	.925	.768
.713	.996	.398	2.740	.933	.786
.753	.996	.388	2.798	.941	.805
.793	.997	.379	2.854	.948	.825
.836	.997	.370	2.914	.956	.846
.874	.998	.361	2.970	.963	.866
.916	.999	.352	3.034	.971	.890
.957	1.000	.343	3.096	.978	.913
.996	1.000	.334	3.156	.984	.936
1.036	1.000	.327	3.212	.990	.958
1.075	1.001	.320	3.259	.995	.976
1.118	1.001	.316	3.295	.999	.991
1.158	1.001	.314	3.308	1.000	.996

OEL = 1.0895 DELU= .1528 DEL*= .4243 CM
THETA= .07138 H = 5.944 UE = 660.7 M/SEC
RHOE= .1824 KG/M**3 RUN = 409

MACH = 3.00 P0 = 298.0 KPA T0 = 309.8 K
ALPHA= 6.34 Z/D= 5.67 PHI= 210.
RPM= 0. PW = 4.89 KPA REL=7194640.

Y/DEL	TT/T0	T/T0	M	U/UE	RHD/RHOE
.000	.917	.917	.000	.000	.339
.010	.947	.861	.707	.353	.361
.015	.952	.835	.835	.411	.372
.025	.958	.799	.997	.480	.389
.046	.962	.763	1.141	.537	.407
.088	.968	.723	1.301	.596	.430
.129	.971	.691	1.424	.638	.450
.173	.974	.664	1.529	.671	.468
.217	.976	.641	1.614	.697	.484
.260	.978	.621	1.696	.720	.501
.311	.980	.599	1.784	.744	.519
.356	.982	.578	1.870	.766	.538
.408	.983	.555	1.963	.788	.560
.459	.985	.534	2.054	.809	.582
.508	.986	.513	2.147	.829	.606
.560	.988	.491	2.250	.850	.633
.611	.990	.467	2.367	.871	.666
.666	.992	.442	2.495	.893	.704
.717	.993	.420	2.614	.912	.741
.771	.995	.397	2.743	.931	.782
.827	.996	.375	2.877	.949	.828
.881	.997	.358	2.986	.963	.867
.937	.999	.344	3.085	.975	.904
1.018	.999	.327	3.204	.988	.950
1.074	1.000	.320	3.259	.993	.971
1.159	1.000	.314	3.305	.998	.990
1.244	1.000	.312	3.322	1.000	.996

DEL = .7961 DELU= .1570 DEL*= .3752 CM
THETA= .05958 H = 6.296 UE = 654.7 M/SEC
RHDE= .1782 KG/M**3 RUN = 369

MACH = 3.00 P0 = 297.6 KPA T0 = 310.0 K
ALPHA= 6.34 Z/D= 5.67 PHI= 210.
RPM= 20000. PW = 4.89 KPA REL=7188599.

Y/DEL	TT/T0	T/T0	M	U/UE	RHD/RHDE
.000	.917	.917	.000	.000	.339
.025	.960	.780	1.074	.511	.399
.029	.961	.770	1.115	.527	.404
.044	.964	.747	1.208	.562	.416
.062	.967	.726	1.291	.593	.429
.082	.969	.708	1.358	.616	.439
.120	.972	.682	1.457	.649	.456
.160	.974	.663	1.530	.672	.469
.204	.975	.647	1.592	.690	.480
.243	.977	.635	1.641	.705	.490
.290	.978	.620	1.699	.721	.502
.332	.979	.605	1.760	.737	.514
.380	.981	.589	1.824	.754	.528
.427	.982	.571	1.897	.772	.544
.473	.984	.552	1.975	.791	.563
.522	.985	.531	2.068	.812	.586
.566	.987	.510	2.164	.832	.610
.619	.989	.486	2.275	.854	.640
.667	.990	.462	2.390	.876	.673
.718	.992	.437	2.522	.898	.712
.771	.994	.410	2.667	.921	.758
.821	.995	.389	2.791	.938	.799
.870	.997	.369	2.914	.954	.842
.896	.997	.360	2.973	.962	.863
.949	.998	.345	3.081	.974	.903
1.002	.999	.330	3.181	.985	.941
1.081	1.000	.318	3.275	.995	.978
1.160	1.000	.313	3.313	.999	.993

DEL = .8538 DELU= .1756 DEL*= .4181 CM
THETA= .06627 H = 6.308 UE = 654.9 M/SEC
RHDE= .1780 KG/M**3 RUN = 370

MACH = 3.00 P0 = 297.9 KPA T0 = 311.4 K
ALPHA= 6.34 Z/D= 5.67 PHI= 240.
RPM= 0. PW = 4.28 KPA REL=7151050.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.335
.016	.949	.852	.754	.374	.360
.040	.957	.799	.996	.478	.384
.072	.963	.752	1.185	.552	.408
.112	.968	.719	1.316	.600	.427
.140	.970	.695	1.407	.630	.442
.177	.973	.664	1.526	.668	.462
.218	.976	.629	1.662	.708	.488
.255	.980	.595	1.799	.746	.516
.313	.983	.553	1.972	.788	.555
.368	.986	.518	2.125	.822	.593
.426	.988	.488	2.263	.850	.629
.484	.990	.463	2.384	.872	.663
.545	.992	.442	2.494	.891	.695
.602	.993	.422	2.601	.908	.728
.671	.994	.402	2.714	.925	.764
.733	.995	.384	2.820	.939	.799
.796	.997	.368	2.923	.953	.835
.863	.998	.352	3.026	.965	.872
.929	.998	.339	3.116	.975	.905
.989	.999	.329	3.193	.984	.934
1.060	1.000	.319	3.267	.991	.963
1.130	1.000	.313	3.315	.996	.982
1.218	1.000	.309	3.348	.999	.995
1.313	1.001	.307	3.360	1.000	1.000

DEL = .4671 DELU= .0836 DEL*= .2018 CM
THETA= .03149 H = 6.410 UE = 658.3 M/SEC
RHOE= .1572 KG/M**3 RUN = 375

MACH = 3.00 P0 = 297.9 KPA T0 = 311.6 K
ALPHA= 6.34 Z/D= 5.67 PHI= 240.
RPM= 20000. PW = 4.29 KPA REL=7146557.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.916	.916	.000	.000	.327
.044	.960	.770	1.111	.521	.388
.070	.964	.743	1.218	.561	.402
.100	.966	.723	1.296	.589	.414
.134	.969	.700	1.387	.620	.427
.164	.971	.679	1.468	.646	.441
.201	.973	.653	1.565	.676	.458
.235	.976	.628	1.665	.705	.476
.284	.979	.593	1.805	.742	.505
.339	.982	.558	1.949	.778	.536
.390	.985	.525	2.091	.810	.570
.442	.987	.498	2.215	.835	.601
.502	.989	.470	2.348	.860	.636
.556	.990	.447	2.465	.880	.669
.619	.992	.425	2.582	.899	.703
.676	.993	.405	2.693	.916	.738
.734	.994	.386	2.806	.932	.774
.795	.996	.368	2.920	.946	.813
.852	.997	.352	3.026	.959	.850
.915	.998	.336	3.135	.971	.889
.978	.999	.323	3.235	.982	.926
1.041	1.000	.311	3.323	.991	.960
1.122	1.000	.303	3.395	.997	.989
1.210	1.000	.299	3.421	1.000	.999

DEL = .5068 DELU= .0973 DEL*= .2325 CM
THETA= .03479 H = 6.684 UE = 662.4 M/SEC
RHOE= .1614 KG/M**3 RUN = 376

MACH = 3.00 P0 = 297.7 KPA T0 = 319.8 K
ALPHA= 6.34 Z/D= 5.67 PHI= 300.
RPM= 0. PW = 4.01 KPA REL=6868018.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.914	.914	.000	.000	.312
.026	.958	.779	1.072	.500	.366
.036	.962	.744	1.210	.552	.383
.066	.971	.661	1.530	.658	.431
.095	.976	.615	1.714	.711	.464
.124	.980	.572	1.889	.755	.499
.192	.984	.518	2.120	.807	.550
.246	.986	.486	2.269	.837	.587
.309	.988	.461	2.389	.859	.618
.365	.990	.442	2.490	.875	.645
.425	.991	.421	2.604	.893	.678
.487	.993	.402	2.711	.909	.710
.552	.994	.385	2.809	.922	.740
.613	.995	.371	2.901	.934	.769
.670	.995	.359	2.979	.944	.795
.737	.996	.347	3.058	.953	.822
.803	.997	.335	3.140	.962	.850
.867	.998	.325	3.215	.970	.877
.929	.998	.315	3.289	.977	.904
.995	.999	.306	3.366	.985	.933
1.066	.999	.298	3.431	.991	.957
1.138	.999	.292	3.481	.995	.976
1.208	1.000	.288	3.513	.998	.989
1.270	1.000	.286	3.530	.999	.996

DEL = .2929 DELU= .0382 DEL*= .1099 CM
THETA= .01661 H = 6.619 UE = 677.6 M/SEC
RHOE= .1542 KG/M**3 RUN = 430

MACH = 3.00 P0 = 297.8 KPA T0 = 319.8 K
ALPHA= 6.34 Z/D= 5.67 PHI= 300.
RPM= 20000. PW = 4.01 KPA REL=6867857.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.907	.907	.000	.000	.251
.488	.997	.279	3.589	.965	.818
.564	.997	.279	3.590	.965	.819
.637	.997	.276	3.610	.966	.825
.710	.997	.274	3.636	.968	.834
.783	.998	.270	3.668	.971	.844
.854	.998	.266	3.713	.974	.859
.924	.998	.259	3.773	.978	.879
.989	.999	.251	3.855	.984	.908
1.053	.999	.243	3.946	.990	.939
1.113	1.000	.235	4.035	.995	.971

DEL = DELU= DEL*=
THETA= H = UE = M/SEC
RHOE= KG/M**3 RUN = 431

NOTE: Partial boundary layer profile.
Integral parameters not computed.

MACH = 3.00 P0 = 298.3 KPA T0 = 317.8 K
ALPHA= 6.34 Z/D= 5.67 PHI= 330.
RPM= 0. PW = 4.91 KPA REL=6932989.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.339
.031	.960	.777	1.088	.516	.400
.048	.966	.735	1.252	.578	.423
.064	.970	.696	1.401	.630	.446
.082	.974	.659	1.547	.676	.472
.109	.978	.620	1.700	.721	.501
.135	.980	.587	1.829	.755	.529
.173	.983	.551	1.978	.791	.563
.199	.985	.532	2.064	.811	.584
.278	.988	.494	2.235	.846	.629
.343	.989	.472	2.339	.866	.658
.409	.991	.454	2.429	.882	.684
.478	.992	.434	2.533	.899	.715
.548	.993	.415	2.638	.916	.748
.621	.994	.399	2.734	.930	.780
.695	.996	.384	2.822	.942	.809
.769	.996	.369	2.913	.954	.841
.838	.997	.357	2.995	.964	.871
.914	.998	.344	3.085	.974	.904
.989	.999	.331	3.175	.984	.938
1.069	.999	.324	3.227	.990	.959
1.141	1.000	.319	3.269	.994	.975
1.224	1.000	.315	3.300	.997	.988
1.305	1.000	.312	3.318	.999	.995
1.382	1.000	.311	3.326	1.000	.998
1.457	1.000	.311	3.330	1.000	1.000
1.626	1.000	.311	3.331	1.000	1.000

DEL = .2470 DELU= .0337 DEL*= .0908 CM
THETA= .01498 H = 6.061 UE = 663.3 M/SEC
RHOE= .1741 KG/M**3 RUN = 396

MACH = 3.00 P0 = 297.8 KPA T0 = 318.4 K
ALPHA= 6.34 Z/D= 5.67 PHI= 330.
RPM= 20000. PW = 4.91 KPA REL=6917394.

Y/DEL	TT/T0	T/T0	M	U/UE	RHO/RHOE
.000	.917	.917	.000	.000	.338
.083	.976	.636	1.633	.702	.488
.106	.978	.611	1.735	.730	.508
.139	.981	.576	1.876	.767	.539
.171	.984	.548	1.993	.795	.566
.205	.985	.526	2.088	.816	.590
.236	.987	.507	2.177	.835	.613
.266	.988	.493	2.240	.847	.630
.341	.990	.469	2.357	.869	.662
.405	.991	.450	2.453	.886	.690
.475	.992	.431	2.552	.902	.721
.544	.993	.413	2.652	.918	.752
.610	.995	.397	2.741	.931	.781
.687	.996	.382	2.831	.943	.812
.754	.996	.369	2.913	.954	.840
.829	.997	.355	3.008	.965	.875
.906	.998	.343	3.094	.975	.907
.980	.999	.332	3.166	.983	.934
1.057	.999	.324	3.231	.990	.959
1.131	1.000	.318	3.274	.994	.976
1.208	1.000	.314	3.305	.997	.989
1.290	1.000	.312	3.322	.999	.996
1.369	1.000	.311	3.329	1.000	.999
1.448	1.000	.311	3.332	1.000	1.000

DEL = .2497 DELU= .0346 DEL*= .0902 CM
THETA= .01439 H = 6.266 UE = 664.0 M/SEC
RHOE= .1738 KG/M**3 RUN = 397

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