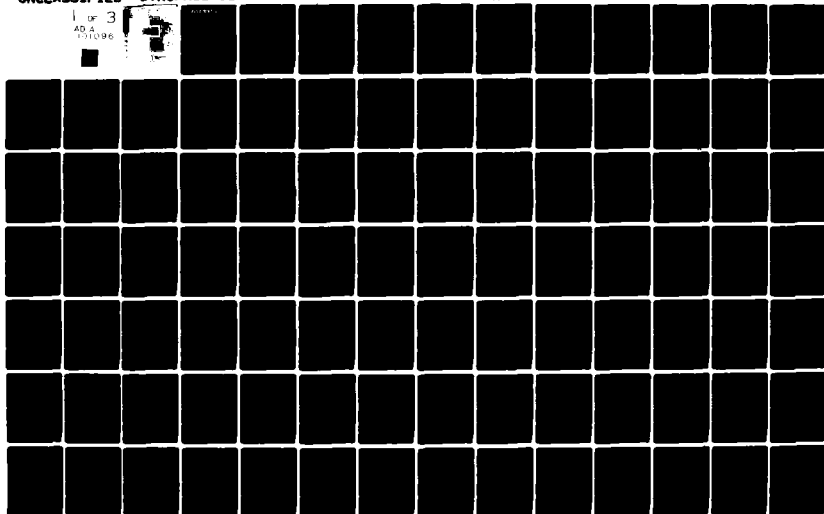


AD-A101 096

UNITED TECHNOLOGIES RESEARCH CENTER EAST HARTFORD CONN F/G 20/4
DATA REPORT. VOLUME II. VELOCITY AND TEMPERATURE PROFILE DATA F--ETC(U)
JAN 81 M F BLAIR F49620-78-C-0064
UNCLASSIFIED UTRC/R81-914388-16 AFOSR-TR-81-0515 NL

1 of 3
AD 4
10096



UNITED TECHNOLOGIES RESEARCH CENTER



UNITED
TECHNOLOGIES

East Hartford, Connecticut 06108

5

R81-914388-16

Data Report. - Vol. II - Velocity
and Temperature Profile Data for
Accelerating, Transitional Boundary
Layers.

Contract No. F49620-78-C-0064

Project - Task 2307/A4

61002 F

REPORTED BY

M. F. Blair

M. F. Blair

APPROVED BY

M. J. Werle

M. J. Werle

DATE January 1981

NO. OF PAGES 269

COPY NO. _____

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFSC)
NOTICE OF TRANSMITTAL TO DDC
This technical report has been reviewed and is
approved for public release IAW AFR 190-12 (7b).
Distribution is unlimited.
A. D. BLOSE
Technical Information Officer

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution is unlimited.

4/1/81 (1)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AFOSR-TR. 81-0515	2. GOVT ACCESSION NO. AD-A101096	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) VELOCITY AND TEMPERATURE PROFILE DATA FOR ZERO PRESSURE GRADIENT, FULLY TURBULENT BOUNDARY LAYERS. Vol II		5. TYPE OF REPORT & PERIOD COVERED (VOLUME II) INTERIM 1 Jun 78 - 31 Jan 81
7. AUTHOR(s) M F BLAIR		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS UNITED TECHNOLOGIES RESEARCH CENTER EAST HARTFORD, CT 06108.		8. CONTRACT OR GRANT NUMBER(s) F49620-78-C-0064
11. CONTROLLING OFFICE NAME AND ADDRESS AIR FORCE OFFICE OF SCIENTIFIC RESEARCH/NA BUILDING 410 BOLLING AFB, DC 20332		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2307/A4 61102F
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE January 1981
		13. NUMBER OF PAGES 326
		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 TEMPERATURE PROFILES FREE-STREAM TURBULENCE LONGITUDINAL PRESSURE GRADIENT HEAT TRANSFER VELOCITY PROFILES		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Experimental research has been conducted to examine the combined effects of free-stream turbulence and favorable pressure gradients on flat-wall transitional boundary layers. Convective heat transfer coefficients, boundary layer mean velocity and temperature profile data, and wall static pressure distribution data were obtained for four combinations of free-stream turbulence intensity and favorable pressure gradient. Free-stream multi-component turbulence intensity, longitudinal integral scale, and spectral distributions were obtained for the various test cases. Mean velocity and temperature profile data for the		

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

individual boundary layer traverses are presented in this report.

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

R81-914388-16

~~██████~~ Data Report - Vol. II
Velocity and Temperature Profile
Data for Accelerating, Transitional Boundary Layers

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
FOREWORD	1
INTRODUCTION	2
DESCRIPTION OF BOUNDARY LAYER DATA REDUCTION SYSTEM	3
LIST OF TABLES AND FIGURES	9
REFERENCES	10
TABLES	11-162
FIGURES	162-269

Accession		☒
NTIS GRA&I		
DTIC TAB		
Unannounced		
Justification		
By		
Distribution/		
Availability Codes		
Dist	Avail and/or	
	Special	
A		

FOREWORD

This report was prepared for the Air Force Office of Scientific Research, United States Air Force by the United Technologies Corporation Research Center, East Hartford, Connecticut, under Contract F49620-78-C-0064, Project Task No. 2307/A4 61102 F. The performance period covered by this report was from 1 June 1978 to 31 January 1981. The project monitors were Dr. D. G. Samaras and Dr. James Wilson.

INTRODUCTION

Experimental research has been conducted to examine the combined effects of free-stream turbulence and favorable pressure gradients on flat-wall transitional boundary layers. Convective heat transfer coefficients, boundary layer mean velocity and temperature profile data and wall static pressure distribution data were obtained for four combinations of freestream turbulence intensity and favorable pressure gradient. Data were obtained for freestream turbulence intensities of approximately 2% and 4% for an acceleration level of $K = \nu/U^2 \partial U/\partial x = 0.75 \times 10^{-6}$ and for turbulence intensities of approximately 1% and 2% for an acceleration level of $K = \nu/U^2 \partial U/\partial x = 0.20 \times 10^{-6}$. Freestream multi-component turbulence intensity, longitudinal integral scale, and spectral distributions were obtained for the various test cases. A comprehensive report containing a description of the experimental equipment, a presentation of the reduced data and an analysis of the results is available in Ref. 1.

Mean velocity and temperature profile data for the individual boundary layer traverses are presented in this report.

DESCRIPTION OF BOUNDARY LAYER DATA REDUCTION SYSTEM

A computer program has been written which reduces, plots, and tabulates the velocity and temperature boundary layer profile data obtained by the UTRC Boundary Layer Wind Tunnel Data Acquisition System. Following is a brief description of this reduction program.

(a) Mean velocities (U) are measured with miniature flattened pitot probes. These velocities are corrected for probe Reynolds number and wall blockage effects using the results of Refs. 2, 3, and 4. Except for those measurements extremely close to the wall ($y \sim < 0.010$ in.) the corrections were less than 1% of the measured velocity. The maximum velocity correction (5%) resulted for the case of the probe touching the wall.

(b) Friction velocities (U_τ) for each profile are determined by a least squares fit of the velocity profile data from $50 < y^+ < 500$ to the "law-of-the wall".

$$\frac{U}{U_\tau} = \frac{1}{\kappa} \ln \frac{y U_\tau}{\nu} + C \quad (1)$$

where $\kappa = 0.41$

$C = 5.0$

as recommended by Coles (Ref. 5).

Using this value of U_τ the velocity and temperature data are plotted in universal coordinates $U^+ = \frac{U}{U_\tau}$ and $t^+ = \frac{(t_w - t) \rho_w c_p \sqrt{\tau_w / \rho}}{q_w}$ vs. $y^+ = \frac{y U_\tau}{\nu}$. The velocity profile data are compared with Eq. (1) and the temperature data with Eq. (2).

$$t^+ = Pr_t \left(\frac{1}{\kappa} \ln y^+ + C + P_s \right) \quad (2)$$

where $Pr_t = 0.9$

$\kappa = 0.41$

$C = 5.0$

$P_s = -2.0$

(c) The following integral properties are determined

(i)	displacement thickness	$\delta^* = \int_0^\delta \left(1 - \frac{\rho U}{\rho_e U_e} \right) dy$
(ii)	momentum thickness	$\theta = \int_0^\delta \frac{\rho U}{\rho_e U_e} \left(1 - \frac{U}{U_e} \right) dy$
(iii)	energy-dissipation thickness	$\delta^{**} = \int_0^\delta \frac{\rho U}{\rho_e U_e} \left(1 - \frac{U^2}{U_e^2} \right) dy$
(iv)	enthalpy thickness	$\delta_h = \int_0^{\delta_1} \frac{\rho U}{\rho_e U_e} \left(\frac{T - T_e}{T_e} \right) dy$

(v)	kinematic displacement thickness	$\delta_k^* = \int_0^\delta \left(1 - \frac{U}{U_e}\right) dy$
(vi)	kinematic momentum thickness	$\theta_k = \int_0^\delta \frac{U}{U_e} \left(1 - \frac{U}{U_e}\right) dy$
(vii)	Clauser delta	$\Delta = \int_0^\delta \left(\frac{U_e - U}{U_\tau}\right) dy$
(viii)	Clauser shape parameter	$G = \frac{1}{\Delta} \int_0^\delta \left(\frac{U_e - U}{U_\tau}\right)^2 dy$

Measurement of velocity profile data very close ($y^+ < 30$) to a wall is difficult because of the extremely large local velocity gradients and the finite probe tip size. For the velocity profiles measured in this program a flattened impact probe with a probe tip height of approximately 0.007 in. is employed. This tip height corresponds to $\Delta y^+ \approx 10$ for most of the profiles (depending on the individual profile U_τ). Because the true distance from the wall to the effective center of the probe tip is uncertain (uncertainty of approximately ± 0.001 in.) the recommendation of Coles (Ref. 6) has been followed and the integral thicknesses are evaluated using standard sublayer functions very close to the wall. For values of $y^+ < 35$ (approximately three probe tip heights) the integral thicknesses are evaluated using the standard velocity sublayer and buffer zone function of Burton (Ref. 7).

$$y^+ = U^+ + \left(\frac{U^+}{8.74}\right)^7 \quad (3)$$

The thermocouple boundary layer probes are constructed with 0.001-in.-dia sensing elements. Because of this design, accurate temperature data can be obtained very close to the wall (for some profiles even within the viscous sublayer). For this reason it has been possible to use measured temperature data for evaluation of the integral thicknesses from $y^+ = 5$ to the edge of the boundary layer. For $y^+ < 5$ (viscous sublayer) the integral thicknesses are evaluated using Eq. (4).

$$y^+ = \text{Pr } U^+ \quad (4)$$

(d) The profile "wake strength" (Π) is determined from an iterative solution of two "local friction law" formulations from Coles (Ref. 6).

$$(i) \quad \frac{U_e}{U_\tau} = \frac{1}{\kappa} \ln \frac{\delta U_\tau}{\nu} + C + \frac{2\Pi}{\kappa}$$

$$(ii) \quad \left(\frac{\frac{\delta U_e}{\nu} - 65}{\frac{\delta U_\tau}{\nu}} \right) = 1 + \Pi$$

Since the term $\frac{y}{\delta}$ can be eliminated from Eqs. (i) and (ii) all that is required to solve for Π are values of U_e , U_T , and δ^* .

The wake component

$$W = \frac{\kappa}{\Pi} \left[\frac{U}{U_T} - \left(\frac{1}{\kappa} \ln y^+ + C \right) \right] \quad (5)$$

is plotted vs. $\frac{y}{\delta}$ and compared to Coles (Ref. 6) zero pressure gradient wake function

$$W = 2 \sin^2 \left(\frac{\pi}{2} \frac{y}{\delta} \right) \quad (6)$$

(e) Defect velocities are calculated using the value of U_T determined in (b).

$$\text{Velocity defect} = \frac{U - U_e}{U_T}$$

The velocity defect distribution is plotted vs. $\frac{y}{\delta}$ and compared with inner and outer region defect correlations.

(i) In the inner region ($\frac{y}{\delta} < 0.2$) with the correlation of Schubauer and Tchen (Ref. 8).

$$\frac{U - U_e}{U_T} = \frac{1}{\kappa} \ln \left(\frac{y}{\delta} \right) - 2.35 \quad (7)$$

(ii) in the outer region ($\frac{y}{\delta} > 0.2$) with the correlation of Hama (Ref. 9)

$$\frac{U - U_e}{U_T} = -9.6 \left(1 - \frac{y}{\delta} \right)^2 \quad (8)$$

(f) The following is a list of all plots constructed, including those discussed in parts (b), (d), and (e):

i) $\frac{U}{U_e}$ vs $\frac{y}{\delta}$

ii) $\frac{T_w - T}{T_w - T_e}$ vs $\frac{y}{\delta}$

iii) U^+ vs Y^+ (see b)

iv) T^+ vs Y^+ (see b)

$$v) \quad \frac{U-U_e}{U_\tau} \quad \text{vs} \quad \frac{Y}{\delta} \quad (\text{see d})$$

$$vi) \quad W \quad \text{vs} \quad \frac{y}{\delta} \quad (\text{see e})$$

(g) The following boundary layer values are tabulated

$$y, \frac{y}{\delta}, U, \tau, \frac{U}{U_e}, \frac{T_w - T}{T_w - T_e}, \frac{U - U_e}{U_\tau}, U^+, \tau^+, T^+$$

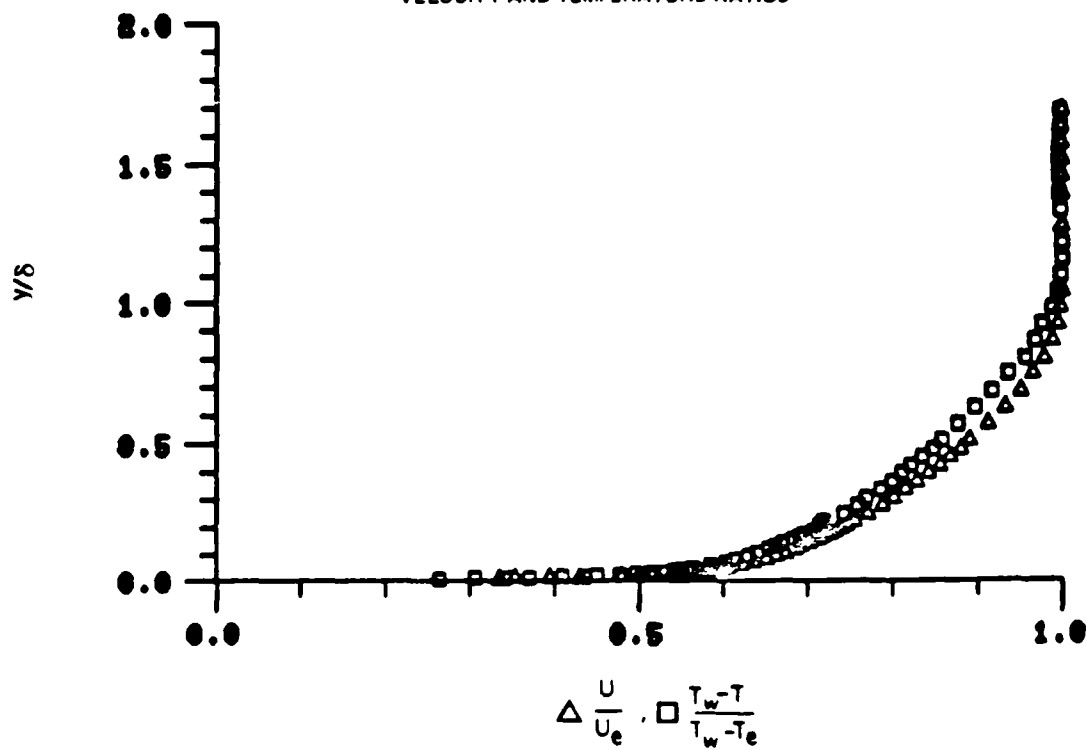
Sample reduced boundary layer profile data

Typical mean velocity and temperature boundary layer profile data obtained in the UTRC Boundary Layer Wind Tunnel with the test section adjusted for zero pressure gradient flow are presented in the following example figures. For these example figures the various analytical curves are labeled with their respective equation numbers.

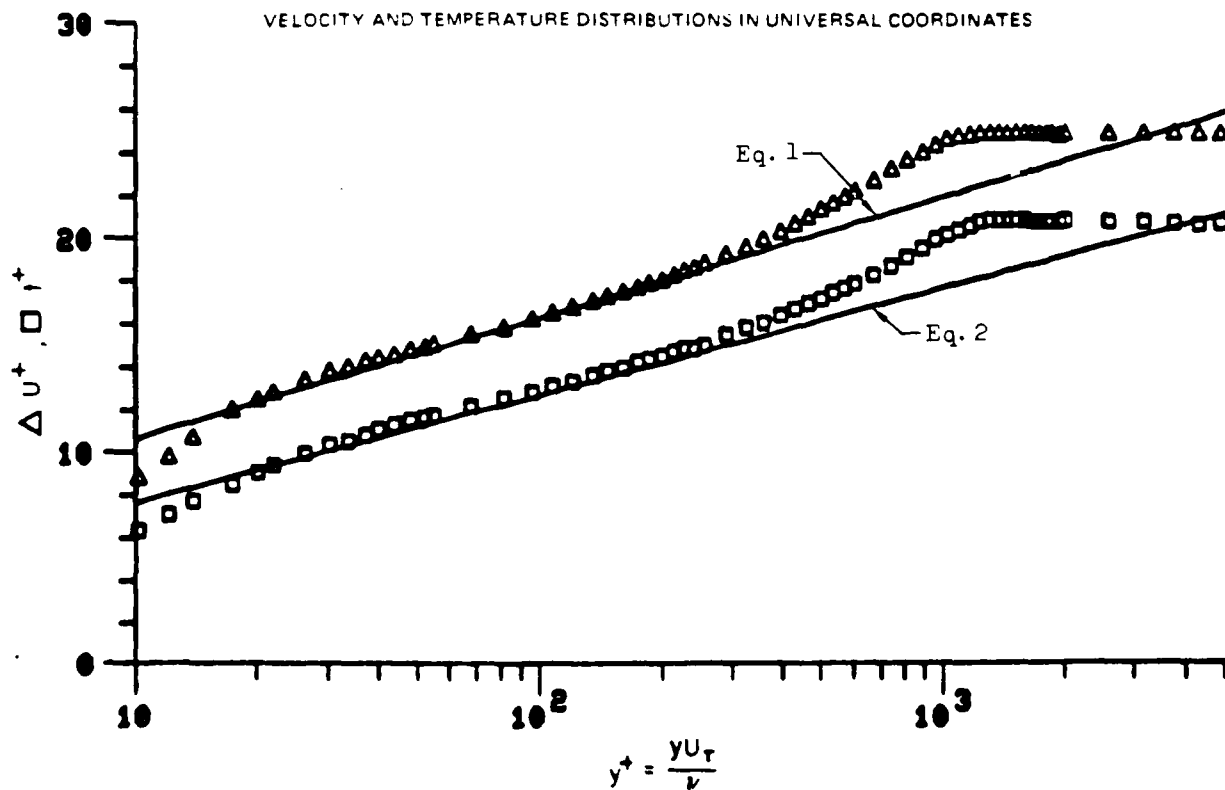
Laminar and Transitional Boundary Layer Profile Data

For those profile stations where the boundary layer was either laminar or transitional the previously described turbulent "law-of-the-wall" analysis is inapplicable. For those profiles the data are plotted as velocity and temperature ratios only. Tabulated values are given for the measured velocities, temperatures, velocity and temperature ratios, and for the calculated integral values of the boundary layer profiles.

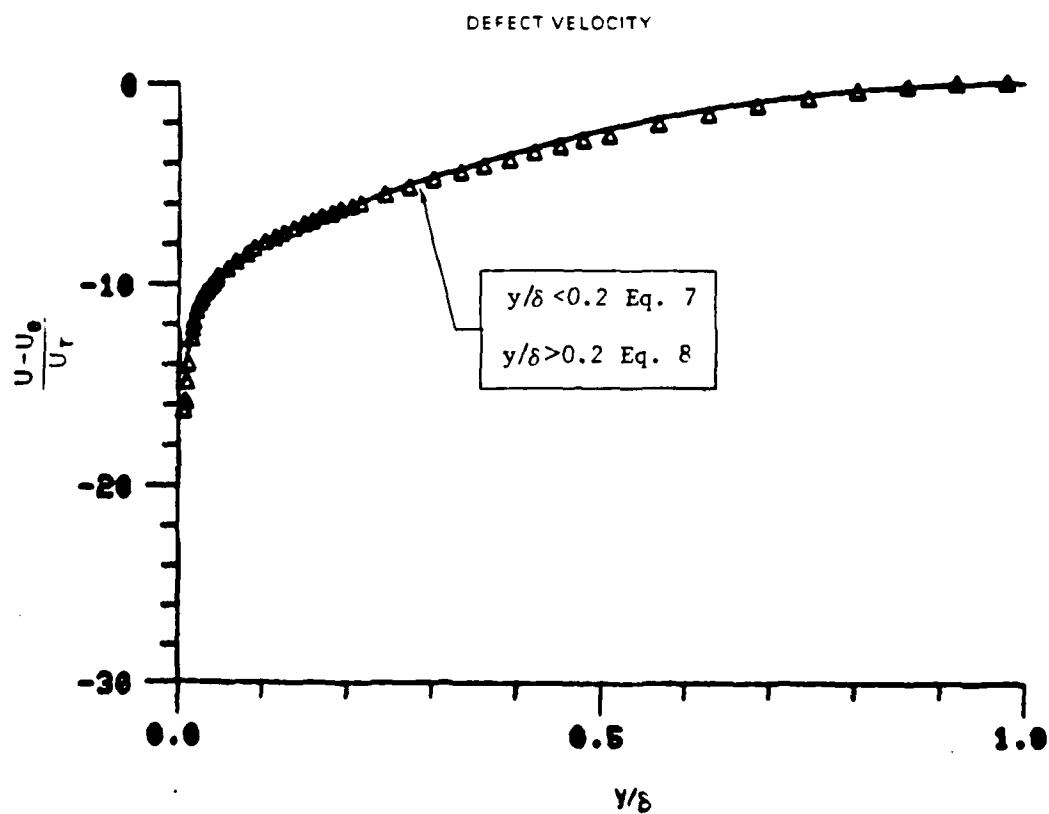
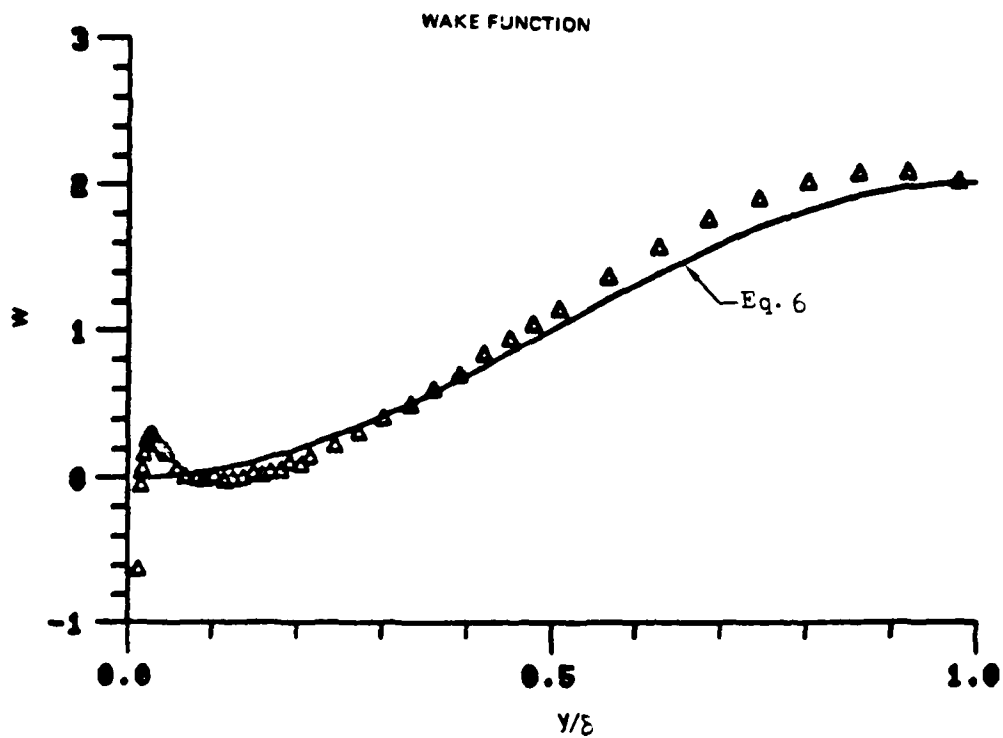
VELOCITY AND TEMPERATURE RATIOS



VELOCITY AND TEMPERATURE DISTRIBUTIONS IN UNIVERSAL COORDINATES



Example Profile Plot A - Typical Boundary Layer Velocity and Temperature Profiles



Example Profile Plot B - Typical Boundary Layer Velocity Profiles

LIST OF TABLES AND FIGURES

Table & Figure No.	Grid No.	Acceleration $K \times 10^6$	Run No.	Point No.	X (Inches)	Reg
1	1	0.2	2	23	12.4	340
2				21	16.4	361
3				22	16.4	390
4				20	24.4	471
5				17	28.4	486
6				18	28.4	522
7				19	28.4	514
8				16	32.4	552
9				13	36.4	622
10				15	36.4	632
11				12	40.4	726
12				9	44.4	819
13				10	44.4	874
14				11	44.4	816
15				8	48.4	995
16				5	52.4	1171
17				6	52.4	1150
18				7	52.4	1084
19				2	60.4	1485
20				3	60.4	1538
21	2	0.2	1	1	68.4	1800
22				26	4.4	226
23				25	8.4	299
24				7	8.4	310
25				5	8.4	307
26				24	12.4	403
27				9	16.4	519
28				10	16.4	516
29				11	20.4	737
30				12	20.4	702
31				13	20.4	715
32				14	24.4	951
33				15	36.4	1489
34				17	36.4	1518
35				18	48.4	1934
36				19	60.4	2313
37				20	60.4	2344
38				21	60.4	2343
39				22	68.4	2473
40	2	0.75	3	4	12.4	279
41				5	12.4	277
42				6	12.4	266
43				7	16.4	310
44				9	20.4	364
45				10	20.4	335
46				11	24.4	377
47				12	28.4	434
48				13	28.4	434
49				14	28.4	424
50				15	32.4	486
51				16	36.4	562
52				17	36.4	532
53				19	40.4	638
54				20	48.4	850
55				21	48.4	825
56				22	48.4	820
57				23	56.4	995
58	3	0.75	4	19	4.4	134
59				20	4.4	140
60				15	8.4	292
61				16	8.4	285
62				17	8.4	297
63				12	12.4	390
64				13	12.4	359
65				14	12.4	406
66				10	16.4	496
67				11	16.4	540
68				9	24.4	747
69				6	32.4	595
70				7	32.4	890
71				8	32.4	857
72				5	40.4	997
73				2	48.4	1093
74				3	48.4	1100
75				4	48.4	1073
76				1	56.4	1142

REFERENCES

1. Blair, M. F. and M. J. Werle: Boundary Layer Forward Transition in Accelerating Flow with High Levels of Freestream Turbulence. UTRC Report R81-914388-17, March 1981.
2. MacMillan, F. A.: Viscous Effects in Flattened Pitot Tubes at Low Speeds, Journal of Royal Aeronautical Society, Vol. 58, 1954.
3. Quarmby, A. and H. K. Das: Displacement Effects on Pitot Tubes with Rectangular Mouths, The Aeronautical Quarterly, May 1969.
4. MacMillan, F. A.: Experiments in Pitot Tubes in Shear Flow, A.R.C. R&M 3028, 1957.
5. Coles, D. E.: The Turbulent Boundary Layer in a Compressible Fluid, Rand Report, R-403-PR, 1962.
6. Coles, D. E.: Proceedings, Computations of Turbulent Boundary Layers - 1968, AFOSR-IFP, Stanford Conference, Vol. II, 1968.
7. Burton, R. A.: A Simple Universal Velocity Profile Equation, AIAA Journal 3, 1965.
8. Schubauer, G. B. and Tchen, C. M.: "Turbulent Flow" in Turbulent Flows and Heat Transfer, High Speed Aerodynamics and Jet Propulsion, Vol. 5, Princeton University Press, Princeton, N. J., 1959.
9. Hama, F. R.: Boundary-Layer Characteristics for Smooth and Rough Surfaces, Trans. Soc. Naval Architects Marine Engrs. 62, 1954.

JOB KLDM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 23. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	55.542	55.542
FREE STREAM TEMPERATURE =	74.734	
WALL TEMPERATURE =	112.150	
WALL HEAT FLUX =	.04250	
FREE STREAM DENSITY =	.07500	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.07009	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001849	
WALL/FREE STREAM DENSITY RATIO =	.93457	
LOCATION REYNOLDS NUMBER (REX) =	349666.94	
INPUT VALUE OF VELOCITY DELTA =	.11500	
INPUT VALUE OF TEMPERATURE DELTA =	.11500	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.11000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02904	.02250
MOMENTUM THICKNESS (THETA) =	.01205	.01243
ENERGY-DISSIPATION THICKNESS =	.01940	.02107
ENTHALPY THICKNESS =	.00083	.00115
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.40971	1.80940
SHAPE FACTOR 32 (ENERGY/THETA) =	1.60979	1.69468
MOMENTUM THICKNESS REYNOLDS NUMBER =	339.87	350.64
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	818.98	634.44
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.41874	-.36962
CLAUSERS 'G' INTEGRAL =	4.74538	2.56191
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02620	.02135
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01239	.01280
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.11523	1.66750

LOCATION -X- 12.40000

Z = CENTERLINE

K = 0.2 x 10⁻⁶

Table 1.

JOB KLOW22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2.

POINT 23.

GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/DE	THETA
1	.0040	.037	6.73	107.71	.121	.119
2	.0056	.051	9.73	106.76	.164	.144
3	.0072	.066	10.79	105.49	.194	.178
4	.0081	.074	11.73	104.79	.211	.197
5	.0099	.090	14.06	103.55	.253	.230
6	.0118	.108	15.96	101.97	.267	.272
7	.0138	.126	18.75	100.57	.338	.310
8	.0156	.142	20.81	99.25	.375	.345
9	.0170	.155	21.77	98.30	.392	.370
10	.0188	.171	23.65	96.93	.426	.407
11	.0211	.192	25.98	95.46	.468	.446
12	.0231	.210	28.76	94.16	.505	.481
13	.0247	.225	29.40	92.99	.529	.512
14	.0259	.241	34.30	89.23	.618	.613
15	.0376	.344	39.72	85.54	.706	.711
16	.0446	.408	43.53	82.52	.784	.792
17	.0506	.462	46.35	80.57	.834	.844
18	.0560	.528	49.16	78.53	.885	.898
19	.0649	.590	51.16	77.13	.921	.935
20	.0712	.648	52.74	76.40	.944	.956
21	.0762	.711	53.64	75.78	.966	.972
22	.0851	.774	54.52	75.37	.982	.983
23	.0910	.826	54.70	75.12	.985	.990
24	.0962	.893	55.08	74.96	.992	.994
25	.1030	.955	55.29	74.92	.995	.995
26	.1112	1.011	55.39	74.91	.997	.998
27	.1176	1.071	55.45	74.74	.998	1.000
28	.1249	1.136	55.64	74.74	1.002	1.000
29	.1422	1.293	55.54	74.72	1.000	1.000
30	.1596	1.451	55.48	74.74	.999	1.000
31	.1768	1.608	55.49	74.74	.999	1.000
32	.1949	1.772	55.49	74.75	1.001	1.000
33	.2124	1.931	55.54	74.74	1.000	1.000
34	.2302	2.093	55.51	74.73	.999	1.000
35	.2472	2.248	55.46	74.73	.998	1.000
36	.2650	2.409	55.44	74.74	.999	1.000
37	.2823	2.567	55.44	74.74	1.000	1.000
38	.3002	2.729	55.44	74.73	1.000	1.000
39	.3297	2.896	55.44	74.73	1.000	1.000
40	.3601	3.063	55.44	74.73	1.000	1.000
41	.3900	3.274	55.44	74.74	1.002	1.000
42	.4203	3.546	55.49	74.74	.999	1.000
43	.4500	3.821	55.49	74.73	.999	1.000
44	.4803	4.091	55.49	74.74	.999	1.000
45	.5101	4.367	55.46	74.73	.999	1.000
46	.5402	4.638	55.44	74.74	.998	1.000
47	.5699	4.911	55.49	74.74	1.001	1.000
48	.6000	5.181	55.50	74.73	.999	1.000
49	.6300	5.455	55.51	74.73	.999	1.000
50	1.0602	9.830	55.55	74.74	1.001	1.000
51	1.5596	14.180	55.30	74.73	.996	1.000
52	2.0400	18.546	55.28	74.72	.995	1.000
53	2.5196	22.906	55.15	74.74	.993	1.000
54	3.0001	27.274	55.16	74.72	.993	1.000

Table 1.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 21. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	56.997	56.997
FREE STREAM TEMPERATURE ==	74.722	
WALL TEMPERATURE ==	114.350	
WALL HEAT FLUX ==	.04070	
FREE STREAM DENSITY ==	.07500	
FREE STREAM KINEMATIC VISCOSITY ==	.0001641	
DENSITY OF FLUID AT WALL ==	.06982	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001862	
WALL/FREE STREAM DENSITY RATIO ==	.93097	
LOCATION REYNOLDS NUMBER (REX) ==	474620.14	
INPUT VALUE OF VELOCITY DELTA ==	.11500	
INPUT VALUE OF TEMPERATURE DELTA ==	.15000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.11000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03015	.02371
MOMENTUM THICKNESS (THETA) ==	.01247	.01295
ENERGY-DISSIPATION THICKNESS ==	.02020	.02198
ENTHALPY THICKNESS ==	.00115	.00152
SHAPE FACTOR 12 (DELSTAR/THETA) ==	2.41730	1.83078
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.61968	1.69735
MOMENTUM THICKNESS REYNOLDS NUMBER ==	360.96	374.73
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	872.54	686.05
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS 'DELTA' INTEGRAL ==	-.44025	-.38966
CLAUSERS 'G' INTEGRAL ==	4.96802	2.70892
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02754	.02219
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01289	.01341
SHAPE FACTOR 12 - CONSTANT DENSITY ==	2.09786	1.65550

LOCATION -X- 16.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 2.

JOB KLOM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 21. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/S/C	T DEG.F	U/UE	THETA
1	.0000	.0000	5.71	111.09	.100	.062
2	.0000	.0000	5.82	110.52	.137	.097
3	.0000	.0000	9.52	110.01	.167	.110
4	.0000	.0000	11.54	108.86	.203	.136
5	.0000	.0000	13.46	107.78	.236	.166
6	.0000	.0000	14.43	107.32	.253	.177
7	.0000	.0000	16.74	105.83	.295	.215
8	.0000	.0000	19.25	104.71	.338	.243
9	.0000	.0000	21.49	103.41	.377	.276
10	.0000	.0000	23.21	102.42	.407	.301
11	.0000	.0000	24.70	101.36	.434	.327
12	.0000	.0000	26.58	99.97	.466	.363
13	.0000	.0000	28.74	98.65	.504	.396
14	.0000	.0000	30.41	97.19	.534	.433
15	.0000	.0000	31.94	96.76	.560	.461
16	.0000	.0000	36.46	92.41	.634	.554
17	.0000	.0000	41.39	98.38	.724	.655
18	.0000	.0000	43.25	85.13	.794	.737
19	.0000	.0000	44.83	82.98	.839	.792
20	.0000	.0000	46.23	81.14	.882	.836
21	.0000	.0000	50.17	76.75	.915	.861
22	.0000	.0000	53.65	77.89	.942	.920
23	.0000	.0000	54.65	76.77	.959	.948
24	.0000	.0000	56.55	76.04	.975	.965
25	.0000	.0000	56.02	75.75	.983	.974
26	.0000	.0000	56.36	75.42	.989	.982
27	.0000	.0000	56.70	75.21	.995	.988
28	.0000	.0000	56.93	75.05	.999	.992
29	.0000	.0000	56.91	74.94	.998	.994
30	.0000	.0000	56.65	74.90	.999	.996
31	.0000	.0000	57.13	74.75	1.000	.999
32	.0000	.0000	57.12	74.73	1.000	1.000
33	.0000	.0000	57.20	74.71	1.000	1.000
34	.0000	.0000	57.10	74.72	1.000	1.000
35	.0000	.0000	57.25	74.72	1.000	1.000
36	.0000	.0000	57.13	74.72	1.000	1.000
37	.0000	.0000	57.23	74.72	1.000	1.000
38	.0000	.0000	57.25	74.71	1.000	1.000
39	.0000	.0000	57.17	74.72	1.000	1.000
40	.0000	.0000	57.10	74.73	1.000	1.000
41	.0000	.0000	57.08	74.73	1.000	1.000
42	.0000	.0000	57.07	74.73	1.000	1.000
43	.0000	.0000	57.22	74.73	1.000	1.000
44	.0000	.0000	57.10	74.72	1.000	1.000
45	.0000	.0000	57.11	74.72	1.000	1.000
46	.0000	.0000	57.12	74.74	1.000	.999
47	.0000	.0000	57.04	74.72	1.000	1.000
48	.0000	.0000	57.16	74.75	1.000	.999
49	.0000	.0000	57.07	74.74	1.000	1.000
50	.0000	.0000	57.13	74.74	1.000	.999
51	.0000	.0000	57.12	74.74	1.000	1.000
52	.0000	.0000	56.95	74.74	.999	1.000
53	.0000	.0000	56.93	74.73	.997	1.000
54	.0000	.0000	56.80	74.72	.997	1.000
55	.0000	.0000	56.87	74.72	.998	1.000

Table 2.

JOB KLDM22X TAPE 4752R- FILES 09-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 22. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	56.997	56.997
FREE STREAM TEMPERATURE	74.568	
WALL TEMPERATURE	114.200	
WALL HEAT FLUX	.04020	
FREE STREAM DENSITY	.07502	
FREE STREAM KINEMATIC VISCOSITY	.0001640	
DENSITY OF FLUID AT WALL	.06984	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001861	
WALL/FRFE STREAM DENSITY RATIO	.93094	
LOCATION PEYNOLDS NUMBER (REX)	474861.75	
INPUT VALUE OF VELOCITY DELTA	.15000	
INPUT VALUE OF TEMPERATURE DELTA	.17000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.12000	
DISPLACEMENT THICKNESS (DELSTAR)	.03234	.02564
MOMENTUM THICKNESS (THETA)	.01347	.01419
ENERGY-DISSIPATION THICKNESS	.02183	.02398
ENTHALPY THICKNESS	.00109	.00138
SHAPE FACTOR 12 (DELSTAR/THETA)	2.40037	1.80700
SHAPE FACTOR 32 (ENERGY/THETA)	1.61992	1.68995
MOMENTUM THICKNESS REYNOLDS NUMBER	390.12	410.84
DISPLACEMENT THICKNESS REYNOLDS NUMBER	936.43	742.38
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS 'DELTA' INTEGRAL	- .48312	- .43524
CLAUSERS 'G' INTEGRAL	5.60813	3.11775
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02909	.02426
MOMENTUM THICKNESS - CONSTANT DENSITY	.01364	.01457
SHAPE FACTOR 12 - CONSTANT DENSITY	2.10261	1.66457

LOCATION -X- 16.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 3.

JCB KLUM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 22. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.036	4.90	5.72	.086	2.755
2	.0053	.044	6.41	24.35	.112	2.267
3	.0063	.053	8.37	100.72	.147	.340
4	.0073	.061	10.13	150.37	.178	.122
5	.0087	.073	12.16	108.37	.214	.147
6	.0100	.084	13.90	107.47	.245	.170
7	.0113	.094	15.26	106.62	.268	.191
8	.0131	.109	17.15	105.49	.301	.220
9	.0134	.129	19.77	104.00	.347	.257
10	.0173	.144	21.77	102.54	.382	.294
11	.0187	.156	23.27	101.13	.406	.330
12	.0200	.169	24.53	100.48	.430	.340
13	.0219	.183	26.27	99.48	.461	.371
14	.0233	.199	28.06	98.10	.492	.406
15	.0258	.215	30.50	96.63	.519	.443
16	.0277	.231	32.66	95.57	.536	.470
17	.0343	.280	35.45	91.33	.622	.577
18	.0410	.342	40.19	88.29	.705	.654
19	.0481	.401	43.97	85.17	.771	.732
20	.0542	.452	46.31	82.91	.821	.789
21	.0612	.510	49.53	81.02	.869	.837
22	.0680	.567	51.43	78.92	.902	.888
23	.0743	.619	52.54	77.42	.928	.915
24	.0812	.677	54.26	77.13	.952	.935
25	.0881	.734	54.93	76.21	.964	.959
26	.0941	.784	55.64	75.92	.970	.966
27	.1012	.844	56.07	75.44	.984	.978
28	.1079	.899	56.30	75.76	.986	.988
29	.1140	.950	56.65	74.98	.994	.990
30	.1211	1.009	56.80	74.80	.997	.994
31	.1281	1.060	56.75	74.75	.996	.995
32	.1449	1.270	56.91	74.65	.990	.998
33	.1627	1.356	57.02	74.57	1.000	1.000
34	.1799	1.499	56.93	74.57	.999	1.000
35	.1979	1.649	57.03	74.58	1.001	1.000
36	.2149	1.791	56.89	74.56	.998	1.000
37	.2332	1.944	56.84	74.56	.999	1.000
38	.2502	2.085	56.92	74.57	.999	1.000
39	.2660	2.234	56.95	74.57	.999	1.000
40	.2851	2.376	57.02	74.57	1.000	1.000
41	.3031	2.520	56.99	74.56	.998	1.000
42	.3327	2.773	56.97	74.56	.999	1.000
43	.3631	3.026	56.94	74.57	.999	1.000
44	.3931	3.270	56.85	74.57	.999	1.000
45	.4230	3.525	56.93	74.56	.999	1.000
46	.4530	3.775	56.92	74.56	.999	1.000
47	.4831	4.026	57.00	74.56	1.001	1.000
48	.5132	4.277	56.94	74.56	1.000	1.000
49	.5433	4.526	57.04	74.54	1.001	1.001
50	.5729	4.774	56.92	74.57	.999	1.000
51	.6030	5.025	56.96	74.56	.999	1.000
52	1.0831	9.026	56.91	74.57	.998	1.000
53	1.5632	13.027	57.03	74.55	1.001	1.000
54	2.0430	17.025	57.05	74.55	1.001	1.001
55	2.5227	21.023	56.76	74.55	.996	1.001
56	3.0031	25.026	56.77	74.55	.996	1.000

Table 3.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 20. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	60.562	60.562
FREE STREAM TEMPERATURE =	75.423	
WALL TEMPERATURE =	119.890	
WALL HEAT FLUX =	.04110	
FREE STREAM DENSITY =	.07505	
FREE STREAM KINEMATIC VISCOSITY =	.0001642	
DENSITY OF FLUID AT WALL =	.06929	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001890	
WALL/FREE STREAM DENSITY RATIO =	.92328	
LOCATION REYNOLDS NUMBER (REX) =	750059.43	
INPUT VALUE OF VELOCITY DELTA =	.18000	
INPUT VALUE OF TEMPERATURE DELTA =	.25000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.14500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03884	.03135
MOMENTUM THICKNESS (THETA) =	.01532	.01673
ENERGY-DISSIPATION THICKNESS =	.02480	.02802
ENTHALPY THICKNESS =	.00139	.00188
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.53536	1.87432
SHAPE FACTOR 32 (ENERGY/THETA) =	1.61871	1.67519
MOMENTUM THICKNESS REYNOLDS NUMBER =	470.87	514.21
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1193.83	963.79
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.59324	-.55296
CLAUSERS 'G' INTEGRAL =	7.60750	4.26721
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03454	.02948
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01583	.01735
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.18144	1.69900

LOCATION -X- 24.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 4.

JOB KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 20. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.00588	.040	6.16	116.14	.102	.084
2	.0065	.045	7.15	115.70	.116	.094
3	.0077	.053	7.73	114.83	.128	.114
4	.0085	.059	8.38	114.21	.138	.128
5	.0102	.071	10.02	112.80	.165	.160
6	.0117	.081	11.41	112.49	.188	.167
7	.0125	.086	12.31	111.96	.203	.178
8	.0147	.102	14.54	110.32	.240	.215
9	.0166	.115	17.14	109.18	.283	.241
10	.0186	.128	18.99	107.76	.314	.273
11	.0202	.140	21.32	106.39	.347	.304
12	.0216	.149	22.16	105.35	.366	.327
13	.0236	.163	24.35	103.48	.402	.364
14	.0256	.177	25.94	102.47	.426	.392
15	.0273	.186	27.55	102.04	.462	.401
16	.0292	.202	29.53	101.13	.488	.422
17	.0335	.246	34.48	95.93	.569	.539
18	.0426	.294	39.17	91.63	.647	.635
19	.0494	.341	43.32	89.26	.715	.688
20	.0555	.382	46.47	86.61	.767	.742
21	.0624	.431	49.41	83.66	.816	.808
22	.0694	.479	51.99	82.27	.859	.846
23	.0755	.523	53.85	80.92	.889	.876
24	.0827	.571	55.26	79.67	.913	.900
25	.0895	.617	56.90	78.62	.939	.926
26	.0956	.660	57.71	77.70	.953	.947
27	.1024	.700	58.41	77.16	.964	.960
28	.1096	.750	58.06	76.65	.974	.972
29	.1155	.797	59.20	76.37	.979	.979
30	.1227	.846	59.71	76.07	.986	.988
31	.1295	.893	59.95	76.01	.990	.987
32	.1404	1.010	60.39	75.72	.997	.993
33	.1642	1.133	60.46	75.56	.998	.997
34	.1816	1.253	60.55	75.53	1.000	.998
35	.1996	1.377	60.52	75.51	.999	.998
36	.2164	1.493	60.56	75.44	1.000	1.000
37	.2343	1.616	60.56	75.46	1.000	.999
38	.2514	1.734	60.61	75.44	1.001	1.000
39	.2696	1.860	60.62	75.41	1.001	1.000
40	.2805	1.976	60.61	75.42	1.001	1.000
41	.3044	2.100	60.57	75.42	1.000	1.000
42	.3342	2.305	60.54	75.41	1.000	1.000
43	.3643	2.513	60.50	75.41	.999	1.000
44	.3946	2.722	60.72	75.41	1.003	1.000
45	.4244	2.927	60.56	75.41	1.000	1.000
46	.4544	3.134	60.66	75.41	1.001	1.000
47	.4845	3.342	60.61	75.41	1.002	1.000
48	.5147	3.550	60.61	75.41	1.001	1.000
49	.5444	3.755	60.60	75.41	1.002	1.000
50	.5745	3.962	60.70	75.42	1.002	1.000
51	.6047	4.171	60.70	75.41	1.001	1.000
52	1.00547	7.471	60.60	75.41	1.001	1.000
53	1.5645	10.790	60.54	75.42	1.000	1.000
54	2.0446	14.101	60.47	75.43	.999	1.000
55	2.5241	17.406	60.40	75.43	.997	1.000
56	3.0043	20.720	60.46	75.43	.998	1.000

Table 4.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 17. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	61.311	61.311
FREE STREAM TEMPERATURE ==	75.328	
WALL TEMPERATURE ==	120.670	
WALL HEAT FLUX ==	.04100	
FREE STREAM DENSITY ==	.07506	
FREE STREAM KINEMATIC VISCOSITY ==	.0001641	
DENSITY OF FLUID AT WALL ==	.06920	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001894	
WALL/FREE STREAM DENSITY RATIO ==	.92187	
LOCATION REYNOLDS NUMBER (REX) ==	884085.52	
INPUT VALUE OF VELOCITY DELTA ==	.17000	
INPUT VALUE OF TEMPERATURE DELTA ==	.25000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.15500	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03742	.02981
MOMENTUM THICKNESS (THETA) ==	.01561	.01641
ENERGY-DISSIPATION THICKNESS ==	.02545	.02790
ENTHALPY THICKNESS ==	.00166	.00216
SHAPE FACTOR 12 (DELSTAR/THETA) ==	2.39727	1.81662
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.63000	1.70030
MOMENTUM THICKNESS REYNOLDS NUMBER ==	485.95	510.87
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1164.95	928.06
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS 'DELTA' INTEGRAL ==	-.57517	-.50275
CLAUSERS 'G' INTEGRAL ==	6.47145	3.50450
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03371	.02766
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01619	.01705
SHAPE FACTOR 12 - CONSTANT DENSITY ==	2.08290	1.62216

LOCATION -X- 28.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 5.

JCB KLUM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 17. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.00041	.027	6.87	117.53	.112	.060
2	.00056	.036	7.62	116.10	.124	.101
3	.00084	.041	8.12	115.77	.132	.124
4	.00088	.054	9.12	114.54	.162	.135
5	.00100	.069	12.26	112.71	.209	.176
6	.00128	.080	15.19	111.83	.248	.195
7	.00149	.092	17.43	110.91	.291	.227
8	.00179	.101	19.33	109.37	.315	.249
9	.00199	.113	21.75	108.91	.355	.259
10	.00231	.126	23.37	107.62	.381	.288
11	.00251	.140	25.35	106.53	.414	.311
12	.00274	.150	26.69	105.60	.435	.332
13	.00294	.161	32.22	101.56	.526	.421
14	.00306	.236	36.90	97.12	.603	.519
15	.00333	.241	41.37	93.27	.675	.604
16	.00344	.338	44.73	90.56	.730	.664
17	.00366	.365	48.42	88.10	.790	.718
18	.00386	.409	51.50	85.43	.833	.777
19	.00409	.449	52.75	82.03	.861	.830
20	.00433	.493	54.66	82.77	.892	.851
21	.00458	.539	56.14	82.50	.915	.886
22	.00483	.582	57.76	79.32	.938	.912
23	.00508	.623	58.27	78.52	.950	.934
24	.00533	.665	59.47	77.66	.964	.949
25	.00558	.709	60.47	77.22	.970	.958
26	.00583	.751	60.77	76.73	.980	.969
27	.00608	.796	60.41	76.57	.985	.973
28	.00633	.847	60.91	75.85	.993	.988
29	.00658	.897	61.19	75.53	.996	.996
30	.00683	1.021	61.29	75.43	1.000	.998
31	.00708	1.133	61.32	75.40	1.000	.998
32	.00733	1.247	61.32	75.36	1.000	.999
33	.00758	1.358	61.44	75.39	1.000	.999
34	.00783	1.474	61.50	75.34	1.000	1.000
35	.00808	1.583	61.49	75.33	1.000	1.000
36	.00833	1.694	61.46	75.34	1.000	1.000
37	.00858	1.811	61.44	75.32	1.000	1.000
38	.00883	1.925	61.45	75.32	1.000	1.000
39	.00908	2.041	61.37	75.30	1.000	1.000
40	.00933	2.157	61.51	75.43	1.000	1.001
41	.00958	2.273	61.43	75.40	1.000	1.001
42	.00983	2.389	61.45	75.30	1.000	1.001
43	.01008	2.506	61.45	75.30	1.000	1.001
44	.01033	2.621	61.37	75.30	1.000	1.001
45	.01058	2.737	61.37	75.31	1.000	1.000
46	.01083	2.851	61.46	75.31	1.000	1.000
47	.01108	2.966	61.44	75.32	1.000	1.000
48	.01133	3.080	61.35	75.29	1.000	1.000
49	.01158	3.195	61.17	75.21	.996	1.003
50	.01183	3.312	61.06	75.21	.996	1.003
51	.01208	3.426	61.07	75.16	.996	1.004
52	.01233	3.466	60.69	75.15	.995	1.004

Table 5.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 18. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	61.380	61.380
FREE STREAM TEMPERATURE =	75.441	
WALL TEMPERATURE =	119.450	
WALL HEAT FLUX =	.04120	
FREE STREAM DENSITY =	.07505	
FREE STREAM KINEMATIC VISCOSITY =	.0001642	
DENSITY OF FLUID AT WALL =	.06935	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001887	
WALL/FREE STREAM DENSITY RATIO =	.92401	
LOCATION REYNOLDS NUMBER (REX) =	884753.12	
INPUT VALUE OF VELOCITY DELTA =	.20000	
INPUT VALUE OF TEMPERATURE DELTA =	.24000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.16500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03930	.03310
MOMENTUM THICKNESS (THETA) =	.01676	.01782
ENERGY-DISSIPATION THICKNESS =	.02743	.03004
ENTHALPY THICKNESS =	.00171	.00212
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.34493	1.85681
SHAPE FACTOR 32 (ENERGY/THETA) =	1.63663	1.68524
MOMENTUM THICKNESS REYNOLDS NUMBER =	522.08	555.27
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1224.25	1031.03
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.64612	-.60175
CLAUSERS 'G' INTEGRAL =	7.63645	4.70781
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03543	.03095
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01735	.01850
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.04129	1.67431

LOCATION -X- 28.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 6.

JOB KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 18. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	ES DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.026	6.44	116.73	.105	.062
2	.0057	.035	7.83	115.90	.126	.081
3	.0067	.041	8.35	115.49	.136	.090
4	.0077	.047	10.02	114.80	.163	.106
5	.0087	.053	10.92	113.72	.178	.126
6	.0102	.062	13.31	113.68	.217	.140
7	.0118	.072	14.94	112.62	.243	.155
8	.0126	.077	15.09	112.15	.261	.166
9	.0142	.087	18.11	110.74	.295	.198
10	.0164	.100	19.94	109.52	.325	.226
11	.0185	.112	21.91	107.90	.357	.262
12	.0200	.123	23.19	107.05	.378	.282
13	.0221	.132	24.27	106.65	.395	.291
14	.0234	.142	25.77	105.52	.421	.319
15	.0256	.155	28.00	103.60	.456	.356
16	.0277	.162	29.86	102.27	.477	.374
17	.0292	.177	30.75	102.26	.501	.391
18	.0335	.215	35.76	96.00	.584	.487
19	.0422	.260	39.80	93.40	.646	.592
20	.0444	.300	43.80	91.01	.714	.626
21	.0556	.337	46.66	89.48	.753	.681
22	.0622	.374	49.30	86.55	.813	.752
23	.0666	.421	51.74	84.48	.843	.764
24	.0755	.458	53.69	82.23	.873	.834
25	.0833	.499	54.60	81.23	.895	.868
26	.0883	.541	56.22	80.11	.916	.894
27	.0933	.580	57.40	78.85	.936	.923
28	.1022	.621	58.24	78.45	.949	.932
29	.1098	.666	59.14	77.50	.964	.953
30	.1156	.701	59.64	76.85	.972	.968
31	.1226	.743	59.96	77.05	.977	.963
32	.1293	.784	60.76	76.60	.983	.974
33	.1468	.690	60.81	76.00	.991	.987
34	.1642	.995	61.15	75.64	.996	.995
35	.1817	1.101	61.15	75.65	.996	.995
36	.1995	1.204	61.39	75.50	1.000	.999
37	.2166	1.313	61.76	75.52	1.000	.998
38	.2344	1.421	61.34	75.45	1.000	1.000
39	.2515	1.524	61.43	75.48	1.001	.999
40	.2645	1.634	61.37	75.42	1.000	1.000
41	.2867	1.738	61.37	75.42	1.000	1.000
42	.3044	1.846	61.34	75.42	1.000	1.000
43	.3344	2.035	61.73	75.42	1.000	1.000
44	.3644	2.239	61.73	75.42	1.000	1.000
45	.3944	2.390	61.71	75.42	1.000	1.000
46	.4244	2.572	61.36	75.43	1.000	1.000
47	.4544	2.755	61.35	75.44	1.000	1.000
48	.4844	2.938	61.26	75.43	1.000	1.000
49	.5144	3.118	61.24	75.42	1.000	1.001
50	.5444	3.302	61.35	75.43	1.000	1.000
51	.5747	3.483	61.31	75.43	1.000	1.000
52	.6045	3.664	61.37	75.43	1.000	1.000
53	1.0644	8.572	61.20	75.41	.997	1.001
54	1.5644	9.481	61.25	75.44	.998	1.000
55	2.0644	12.302	61.23	75.45	.998	1.000
56	2.5242	15.296	61.12	75.43	.996	1.000
57	3.0047	16.210	61.04	75.44	.994	1.000

Table 6.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 19. G-IL 1.0. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	61.330	61.330
FREE STREAM TEMPERATURE =	75.612	
WALL TEMPERATURE =	121.820	
WALL HEAT FLUX =	.04140	
FREE STREAM DENSITY =	.07552	
FREE STREAM KINEMATIC VISCOSITY =	.0001643	
DENSITY OF FLUID AT WALL =	.06906	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001901	
WALL/FREE STREAM DENSITY RATIO =	.92054	
LOCATION REYNOLDS NUMBER (REX) =	883544.97	
INPUT VALUE OF VELOCITY DELTA =	.18000	
INPUT VALUE OF TEMPERATURE DELTA =	.21000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.16500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03806	.03147
MOMENTUM THICKNESS (THETA) =	.01653	.01730
ENERGY-DISSIPATION THICKNESS =	.02714	.02940
ENTHALPY THICKNESS =	.00180	.00225
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.30259	1.81861
SHAPE FACTOR 32 (ENERGY/THETA) =	1.64240	1.69920
MOMENTUM THICKNESS REYNOLDS NUMBER =	514.17	538.27
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1183.92	978.91
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	- .56169	- .53402
CLAUSEPS 'G' INTEGRAL =	6.38567	3.75503
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03405	.02922
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01714	.01798
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.98653	1.62549

LOCATION -X- 28.40000

Z = -6 INCHES

K = 0.2 x 10⁻⁶

Table 7.

JOB ALDM22X TAPE 4752K- FILES 69-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 19. GRID NO. 1

REDUCED PROFILE DATA

	Y INCHES	DELTA Y/	U FT/SEC	T DEG.F	U/UE	THETA
12	.00000	.0027	6.84	117.82	.109	.586
11	.00000	.0041	6.81	116.48	.160	.116
10	.00000	.0051	12.44	115.44	.203	.138
9	.00000	.0062	14.93	114.77	.242	.168
8	.00000	.0076	16.31	112.72	.269	.206
7	.00000	.0082	18.35	112.18	.299	.209
6	.00000	.0094	19.47	110.33	.326	.248
5	.00000	.0105	21.82	109.53	.356	.266
4	.00000	.0117	24.07	108.91	.392	.279
3	.00000	.0156	29.68	104.77	.484	.369
2	.00000	.0196	34.65	100.71	.566	.457
1	.00000	.0236	39.06	96.90	.637	.539
10	.00000	.0276	42.21	93.50	.688	.613
9	.00000	.0316	46.05	90.98	.751	.667
8	.00000	.0361	48.81	87.46	.793	.744
7	.00000	.0397	50.97	85.33	.831	.790
6	.00000	.0438	52.98	83.43	.864	.820
5	.00000	.0461	54.82	82.00	.894	.862
4	.00000	.0499	56.72	80.99	.913	.884
3	.00000	.0540	57.25	80.00	.933	.899
2	.00000	.0588	58.14	79.55	.948	.930
1	.00000	.0641	59.98	77.83	.956	.939
10	.00000	.0693	60.83	77.33	.976	.953
9	.00000	.0747	60.49	76.49	.986	.981
8	.00000	.0805	60.99	75.99	.994	.992
7	.00000	.0840	61.21	75.87	.996	.994
6	.00000	.0877	61.30	75.75	.999	.997
5	.00000	.0913	61.37	75.65	1.001	.999
4	.00000	.0945	61.35	75.63	1.000	1.000
3	.00000	.0966	61.44	75.61	1.002	1.000
2	.00000	.0973	61.47	75.59	1.002	1.000
1	.00000	.0978	61.42	75.59	1.001	1.000
10	.00000	.0985	61.36	75.56	1.001	1.001
9	.00000	.0985	61.37	75.59	1.001	1.000
8	.00000	.0985	61.44	75.59	1.002	1.001
7	.00000	.0985	61.44	75.59	1.002	1.000
6	.00000	.0985	61.44	75.59	1.002	1.000
5	.00000	.0985	61.44	75.59	1.002	1.000
4	.00000	.0985	61.44	75.59	1.002	1.000
3	.00000	.0985	61.44	75.59	1.002	1.000
2	.00000	.0985	61.44	75.59	1.002	1.000
1	.00000	.0985	61.44	75.59	1.002	1.000
10	.00000	.0985	61.44	75.59	1.002	1.000
9	.00000	.0985	61.44	75.59	1.002	1.000
8	.00000	.0985	61.44	75.59	1.002	1.000
7	.00000	.0985	61.44	75.59	1.002	1.000
6	.00000	.0985	61.44	75.59	1.002	1.000
5	.00000	.0985	61.44	75.59	1.002	1.000
4	.00000	.0985	61.44	75.59	1.002	1.000
3	.00000	.0985	61.44	75.59	1.002	1.000
2	.00000	.0985	61.44	75.59	1.002	1.000
1	.00000	.0985	61.44	75.59	1.002	1.000
10	.00000	.0985	61.44	75.59	1.002	1.000
9	.00000	.0985	61.44	75.59	1.002	1.000
8	.00000	.0985	61.44	75.59	1.002	1.000
7	.00000	.0985	61.44	75.59	1.002	1.000
6	.00000	.0985	61.44	75.59	1.002	1.000
5	.00000	.0985	61.44	75.59	1.002	1.000
4	.00000	.0985	61.44	75.59	1.002	1.000
3	.00000	.0985	61.44	75.59	1.002	1.000
2	.00000	.0985	61.44	75.59	1.002	1.000
1	.00000	.0985	61.44	75.59	1.002	1.000

Table 7.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 16. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	62.786	62.786
FREE STREAM TEMPERATURE	75.167	
WALL TEMPERATURE	117.010	
WALL HEAT FLUX	.04190	
FREE STREAM DENSITY	.07509	
FREE STREAM KINEMATIC VISCOSITY	.0001640	
DENSITY OF FLUID AT WALL	.06964	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001873	
WALL/FREE STREAM DENSITY RATIO	.92744	
LOCATION PEYNOIDS NUMBER (REX)	1033427.74	
INPUT VALUE OF VELOCITY DELTA	.22000	
INPUT VALUE OF TEMPERATURE DELTA	.31000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.19800	
DISPLACEMENT THICKNESS (DELSTAR)	.04015	.03355
MOMENTUM THICKNESS (THETA)	.01730	.01850
ENERGY-DISSIPATION THICKNESS	.02855	.03134
ENTHALPY THICKNESS	.00170	.00212
SHAPE FACTOR 12 (DELSTAR/THETA)	2.32069	1.81344
SHAPE FACTOR 32 (ENERGY/THETA)	1.65002	1.69407
MOMENTUM THICKNESS REYNOLDS NUMBER	551.90	590.09
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1280.78	1070.10
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS 'DELTA' INTEGRAL	- .62445	- .59611
CLAUSERS 'G' INTEGRAL	7.40348	4.41754
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03571	.03145
MOMENTUM THICKNESS - CONSTANT DENSITY	.01787	.01915
SHAPE FACTOR 12 - CONSTANT DENSITY	1.99842	1.64191

LOCATION -X- 32.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 8.

JOB KLDW22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 16. GRID NO. 1

REDUCED PROFILE DATA

	Y	DELTA	U	T	U/UE	THETA
	INCHES	Y/	FT/SEC	DEG.F		
1	.0055	.026	5.77	113.71	.092	.088
2	.0067	.034	7.60	113.33	.122	.088
3	.0076	.034	9.15	112.34	.146	.112
4	.0091	.046	10.96	111.57	.175	.130
5	.0106	.054	13.15	111.03	.209	.143
6	.0114	.058	14.17	110.66	.226	.151
7	.0133	.067	17.86	109.47	.284	.180
8	.0153	.077	19.00	106.67	.303	.247
9	.0173	.088	21.07	106.10	.336	.259
10	.0191	.097	22.98	106.17	.366	.259
11	.0205	.105	24.74	105.46	.394	.276
12	.0225	.114	26.54	103.56	.423	.321
13	.0245	.124	28.32	101.65	.451	.367
14	.0266	.134	29.64	102.62	.472	.344
15	.0281	.142	31.40	102.42	.500	.349
16	.0346	.175	35.65	98.05	.573	.453
17	.0416	.210	40.23	93.58	.641	.560
18	.0484	.245	43.92	90.73	.700	.638
19	.0545	.275	47.04	88.00	.750	.683
20	.0614	.310	49.64	85.64	.791	.750
21	.0685	.346	52.44	84.74	.835	.788
22	.0745	.376	54.26	82.50	.861	.825
23	.0815	.412	55.55	80.89	.885	.863
24	.0884	.447	57.77	80.13	.914	.890
25	.0945	.477	58.45	79.34	.941	.914
26	.1016	.513	59.16	78.75	.962	.936
27	.1066	.544	59.16	77.84	.954	.949
28	.1148	.580	60.63	77.32	.966	.952
29	.1217	.615	60.91	77.16	.970	.972
30	.1264	.644	61.14	76.32	.975	.983
31	.1454	.734	61.94	75.53	.987	.987
32	.1632	.824	62.32	75.71	.993	.994
33	.1806	.912	62.40	75.42	.994	.996
34	.1965	1.003	62.54	75.35	.996	.998
35	.2155	1.089	62.66	75.38	.998	.999
36	.2334	1.174	62.71	75.26	.999	.999
37	.2504	1.265	62.68	75.31	1.001	.999
38	.2664	1.356	62.77	75.19	1.000	.999
39	.2855	1.442	62.74	75.21	1.000	.999
40	.3034	1.532	62.73	75.18	1.000	1.000
41	.3332	1.683	62.64	75.17	1.001	1.000
42	.3634	1.836	62.75	75.15	1.000	1.000
43	.3935	1.988	62.75	75.17	1.000	1.000
44	.4236	2.141	62.84	75.17	1.001	1.000
45	.4538	2.290	62.91	75.16	1.000	1.000
46	.4834	2.444	62.70	75.10	1.001	1.000
47	.5135	2.595	62.70	75.14	1.000	1.001
48	.5436	2.747	62.70	75.16	1.000	1.000
49	.5737	2.899	62.70	75.16	1.000	1.000
50	.6038	3.049	62.64	75.16	1.001	1.000
51	.6339	3.197	62.61	75.16	1.000	1.000
52	.6640	3.349	62.57	75.14	.996	1.001
53	.6941	3.500	62.56	75.12	.996	1.001
54	.7242	3.651	62.54	75.14	.996	1.001
55	.7543	3.802	62.53	75.10	.996	1.002

Table 8.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 13. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	64.370	64.370
FREE STREAM TEMPERATURE =	75.420	
WALL TEMPERATURE =	115.930	
WALL HEAT FLUX =	.04250	
FREE STREAM DENSITY =	.07508	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.06979	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001867	
WALL/FREE STREAM DENSITY RATIO =	.92962	
LOCATION REYNOLDS NUMBER (REX) =	1189710.05	
INPUT VALUE OF VELOCITY DELTA =	.24000	
INPUT VALUE OF TEMPERATURE DELTA =	.34000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.20000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04054	.03518
MOMENTUM THICKNESS (THETA) =	.01902	.01988
ENERGY-DISSIPATION THICKNESS =	.03179	.03395
ENTHALPY THICKNESS =	.00194	.00226
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.13172	1.76963
SHAPE FACTOR 32 (ENERGY/THETA) =	1.67131	1.70780
MOMENTUM THICKNESS REYNOLDS NUMBER =	621.64	649.81
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1325.16	1149.93
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.63628	-.64118
CLAUSERS 'G' INTEGRAL =	7.20622	4.70805
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03567	.03296
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01960	.02052
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.82021	1.60621
LOCATION -X-	36.40000	
Z = CENTERLINE		
K = 0.2×10^{-6}		

Table 9.

JOB KLOM22X TAPE 4752R- FILES 69-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 13. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0059	.0330	9.86	110.53	.153	.133
2	.0064	.0332	10.63	110.56	.165	.132
3	.0074	.0337	11.92	109.19	.185	.166
4	.0083	.042	12.81	107.67	.199	.204
5	.0102	.051	16.31	109.45	.253	.160
6	.0116	.059	18.92	108.17	.294	.192
7	.0123	.062	19.34	107.55	.300	.207
8	.0148	.074	22.16	105.28	.345	.263
9	.0168	.084	24.43	105.24	.360	.264
10	.0187	.094	25.73	104.14	.400	.291
11	.0202	.101	27.35	102.28	.425	.337
12	.0218	.109	28.47	101.56	.442	.354
13	.0236	.119	30.12	101.32	.468	.361
14	.0253	.127	31.90	101.16	.496	.365
15	.0278	.139	33.23	100.15	.516	.390
16	.0292	.146	34.22	99.12	.532	.415
17	.03157	.179	38.36	95.28	.596	.510
18	.03424	.212	42.17	93.23	.655	.560
19	.03555	.246	46.16	90.81	.717	.627
20	.03554	.277	49.62	89.84	.755	.649
21	.03624	.312	51.55	86.97	.797	.717
22	.03693	.347	53.64	84.39	.830	.779
23	.03734	.377	54.95	83.11	.854	.810
24	.03824	.412	56.50	82.07	.876	.836
25	.03894	.447	58.00	81.02	.902	.862
26	.03934	.477	58.77	80.43	.913	.876
27	.04029	.515	59.79	80.04	.929	.886
28	.04094	.547	60.48	79.40	.940	.902
29	.04157	.579	61.05	78.40	.949	.926
30	.04225	.613	61.63	77.71	.957	.943
31	.04295	.646	62.04	77.61	.964	.946
32	.04366	.734	62.90	77.04	.977	.960
33	.04411	.821	63.23	76.46	.982	.974
34	.04416	.909	63.78	76.22	.991	.980
35	.04444	.997	64.02	76.07	.995	.984
36	.04467	1.084	64.15	75.83	.997	.987
37	.04484	1.172	64.29	75.77	.999	.991
38	.04513	1.257	64.35	75.72	1.000	.993
39	.04547	1.347	64.33	75.56	1.000	.997
40	.04580	1.432	64.43	75.56	1.001	.997
41	.04613	1.522	64.41	75.52	1.001	.996
42	.04642	1.611	64.36	75.44	1.000	1.000
43	.04672	1.702	64.41	75.42	1.001	1.000
44	.04694	1.792	64.46	75.41	1.001	1.000
45	.04723	2.122	64.54	75.43	1.003	1.000
46	.04744	2.272	64.47	75.42	1.002	1.000
47	.04764	2.422	64.55	75.44	1.003	1.000
48	.04789	2.572	64.45	75.44	1.001	.999
49	.04814	2.725	64.45	75.45	1.001	.999
50	.04844	2.872	64.47	75.44	1.002	1.000
51	.04873	3.022	64.33	75.44	.999	.999
52	1.04844	5.422	64.40	75.45	1.001	.999
53	1.04843	7.822	64.16	75.42	.997	1.000
54	2.04845	10.223	64.13	75.43	.997	1.000
55	2.04842	12.621	64.23	75.42	.998	1.000
56	3.04844	15.022	64.19	75.41	.997	1.000

Table 9.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 15. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	64.136	64.136
FREE STREAM TEMPERATURE ==	75.436	
WALL TEMPERATURE ==	114.610	
WALL HEAT FLUX ==	.04210	
FREE STREAM DENSITY ==	.07505	
FREE STREAM KINEMATIC VISCOSITY ==	.0001642	
DENSITY OF FLUID AT WALL ==	.06993	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001860	
WALL/FREE STREAM DENSITY RATIO ==	.93179	
LOCATION REYNOLDS NUMBER (REX) ==	1184919.39	
INPUT VALUE OF VELOCITY DELTA ==	.25000	
INPUT VALUE OF TEMPERATURE DELTA ==	.34000	
CALCULATED DELTA ==	.21000	
DELTA 99.5% INPUT ==	.04275	.03692
DISPLACEMENT THICKNESS (DELSTAR) ==	.01941	.02062
MOMENTUM THICKNESS (THETA) ==	.03234	.03504
ENERGY-DISSIPATION THICKNESS ==	.00192	.00226
ENTHALPY THICKNESS ==	2.20323	1.79059
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.66677	1.69944
SHAPE FACTOR 32 (ENERGY/THETA) ==	631.69	671.22
MOMENTUM THICKNESS REYNOLDS NUMBER ==	1391.75	1201.88
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==		
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS 'DELTA' INTEGRAL ==	- .71137	- .69446
CLAUSERS 'G' INTEGRAL ==	8.36859	5.37500
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03819	.03469
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01998	.02128
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.91131	1.63015

LOCATION -X- 36.40000

Z = -6 INCHES

K = 0.2 X 10⁻⁶

Table 10.

JOB KLOM22X TAPE 4752F- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 15. GRIC NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/LE	THETA
1	.0053	.025	6.56	108.73	.103	.160
2	.0066	.033	7.78	110.41	.121	.107
3	.0075	.036	9.04	109.82	.141	.122
4	.0083	.040	9.81	108.94	.153	.145
5	.0097	.046	12.80	108.39	.200	.159
6	.0112	.053	14.78	107.42	.231	.184
7	.0125	.060	16.87	106.55	.263	.206
8	.0134	.064	17.75	106.33	.277	.211
9	.0135	.074	20.46	105.83	.319	.224
10	.0174	.083	22.72	104.16	.354	.267
11	.0194	.092	24.68	103.04	.385	.295
12	.0211	.101	26.55	102.44	.414	.312
13	.0226	.108	27.87	101.89	.435	.325
14	.0245	.119	29.16	101.26	.455	.341
15	.0266	.127	30.70	100.83	.480	.352
16	.0282	.136	32.59	100.20	.500	.366
17	.0300	.144	33.26	99.43	.519	.388
18	.0364	.173	37.09	95.31	.578	.493
19	.0436	.209	41.80	93.10	.652	.549
20	.0505	.241	45.43	91.90	.706	.580
21	.0564	.269	47.62	88.59	.747	.644
22	.0635	.303	50.25	86.59	.783	.715
23	.0706	.336	52.67	84.41	.821	.771
24	.0765	.364	54.26	83.93	.846	.783
25	.0834	.397	55.01	83.26	.872	.800
26	.0905	.431	57.15	81.51	.891	.845
27	.0964	.459	58.32	80.59	.909	.888
28	.1034	.493	59.00	79.81	.921	.886
29	.1106	.527	59.80	78.99	.934	.910
30	.1165	.559	60.50	78.29	.943	.927
31	.1236	.589	61.40	78.25	.957	.928
32	.1305	.622	61.57	77.92	.960	.937
33	.1473	.702	62.53	76.99	.975	.960
34	.1652	.787	63.23	76.48	.986	.973
35	.1825	.869	63.49	76.17	.990	.981
36	.2005	.955	63.78	76.00	.994	.986
37	.2174	1.035	63.87	75.82	.996	.990
38	.2354	1.121	64.01	75.80	.998	.991
39	.2525	1.203	64.12	75.77	1.000	.991
40	.2704	1.288	64.12	75.63	1.000	.995
41	.2875	1.369	64.17	75.54	1.001	.997
42	.3053	1.454	64.11	75.43	1.000	1.000
43	.3352	1.596	64.20	75.44	1.002	1.000
44	.3655	1.741	64.17	75.48	1.001	.999
45	.3954	1.863	64.31	75.41	1.003	1.001
46	.4254	2.026	64.22	75.42	1.001	1.000
47	.4556	2.170	64.25	75.41	1.002	1.001
48	.4855	2.312	64.33	75.41	1.003	1.001
49	.5154	2.454	64.25	75.42	1.002	1.000
50	.5454	2.597	64.25	75.41	1.002	1.001
51	.5753	2.740	64.27	75.40	1.002	1.001
52	.6055	2.883	64.22	75.42	1.001	1.000
53	1.0455	5.169	64.17	75.42	1.000	1.000
54	1.5655	7.455	64.11	75.41	1.000	1.001
55	2.0455	9.741	63.92	75.43	.997	1.000
56	2.5251	12.024	63.64	75.44	.995	1.000
57	3.0055	14.312	63.75	75.44	.994	1.000

Table 10.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 12. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	66.738	66.738
FREE STREAM TEMPERATURE =	75.443	
WALL TEMPERATURE =	109.770	
WALL HEAT FLUX =	.04350	
FREE STREAM DENSITY =	.07507	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.07055	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001832	
WALL/FREE STREAM DENSITY RATIO =	.93972	
LOCATION REYNOLDS NUMBER (REX) =	1368909.78	
INPUT VALUE OF VELOCITY DELTA =	.31000	
INPUT VALUE OF TEMPERATURE DELTA =	.46000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03961	.03625
MOMENTUM THICKNESS (THETA) =	.02145	.02179
ENERGY-DISSIPATION THICKNESS =	.03688	.03798
ENTHALPY THICKNESS =	.00217	.00233
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.64626	1.66342
SHAPE FACTOR 32 (ENERGY/THETA) =	1.71930	1.74280
MOMENTUM THICKNESS REYNOLDS NUMBER =	726.90	738.42
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1342.05	1228.31
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.63723	-.67312
CLAUSERS 'G' INTEGRAL =	6.08489	4.55936
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03461	.03396
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02199	.02235
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.58292	1.51902

LOCATION -X- 40.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 11.

JOB KLDW22x TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80
 RUN NO. 2. POINT 12. GRIC NO. 1

REDUCED PROFILE DATA

Y	INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/CE	THETA
1	.0000	.020	15.75	104.87	.236	.143
2	.0000	.024	16.70	103.56	.250	.181
3	.0000	.028	18.21	102.69	.273	.206
4	.0000	.031	20.30	103.63	.304	.179
5	.0000	.036	24.02	102.18	.345	.221
6	.0011	.041	24.86	100.94	.372	.257
7	.0011	.047	26.74	99.70	.401	.293
8	.0013	.049	27.75	98.70	.416	.322
9	.0015	.057	30.51	99.47	.457	.300
10	.0015	.065	31.84	98.39	.477	.332
11	.0017	.073	33.84	98.28	.507	.335
12	.0017	.079	34.64	97.88	.520	.346
13	.0022	.084	35.30	97.08	.539	.370
14	.0022	.092	37.32	96.26	.558	.393
15	.0025	.098	38.26	95.62	.574	.412
16	.0025	.106	39.54	94.88	.592	.434
17	.0030	.112	40.33	94.44	.600	.447
18	.0030	.135	43.67	93.54	.630	.473
19	.0036	.162	44.34	91.25	.705	.540
20	.0036	.167	45.01	88.33	.746	.618
21	.0055	.210	51.84	86.44	.777	.646
22	.0055	.221	53.75	85.16	.806	.660
23	.0055	.264	57.18	83.60	.835	.717
24	.0055	.306	58.28	82.91	.850	.762
25	.0055	.337	59.27	81.62	.873	.785
26	.0055	.358	60.77	80.71	.888	.820
27	.0055	.409	61.24	79.20	.903	.833
28	.0055	.431	62.31	78.68	.911	.846
29	.0055	.458	62.91	78.98	.927	.891
30	.0055	.474	63.37	78.81	.934	.906
31	.0055	.547	64.28	77.72	.941	.897
32	.0055	.601	64.86	77.11	.949	.902
33	.0055	.676	65.42	76.92	.963	.945
34	.0055	.743	65.55	76.65	.972	.951
35	.0055	.805	65.80	76.42	.980	.957
36	.0055	.873	66.23	75.85	.982	.971
37	.0055	.935	66.44	75.66	.992	.985
38	.0055	1.002	66.76	75.55	.994	.988
39	.0055	1.065	66.59	75.64	.995	.988
40	.0055	1.131	66.64	75.71	.999	.992
41	.0055	1.241	66.70	75.53	.999	.996
42	.0055	1.353	66.82	75.47	1.000	.997
43	.0055	1.464	66.77	75.42	1.000	.999
44	.0055	1.575	66.81	75.46	1.000	1.000
45	.0055	1.686	66.74	75.44	1.000	1.000
46	.0055	1.790	66.80	75.43	1.000	1.000
47	.0055	1.900	66.67	75.44	1.000	1.000
48	.0055	2.020	66.74	75.44	1.000	1.000
49	.0055	2.141	66.59	75.43	1.000	1.000
50	.0055	2.241	66.59	75.42	1.000	1.000
51	.0055	2.347	66.43	75.41	1.000	1.000
52	.0055	2.441	66.45	75.42	1.000	1.000
53	.0055	2.541	66.45	75.42	1.000	1.000
54	.0055	2.641	66.45	75.42	1.000	1.000
55	.0055	2.741	66.45	75.42	1.000	1.000
56	.0055	2.841	66.45	75.42	1.000	1.000
57	.0055	2.941	66.45	75.42	1.000	1.000

Table 11.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 9. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	68.556	68.556
FREE STREAM TEMPERATURE ==	76.036	
WALL TEMPERATURE ==	102.650	
WALL HEAT FLUX ==	.04520	
FREE STREAM DENSITY ==	.07499	
FREE STREAM KINEMATIC VISCOSITY ==	.0001645	
DENSITY OF FLUID AT WALL ==	.07144	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001792	
WALL/FREE STREAM DENSITY RATIO ==	.95267	
LOCATION PEYNOLDS NUMBER (REX) ==	1542400.72	
INPUT VALUE OF VELOCITY DELTA ==	.37000	
INPUT VALUE OF TEMPERATURE DELTA ==	.46000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03912	.03739
MOMENTUM THICKNESS (THETA) ==	.02349	.02359
ENERGY-DISSIPATION THICKNESS ==	.04137	.04176
ENTHALPY THICKNESS ==	.00243	.00250
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.66510	1.58512
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.76093	1.77057
MOMENTUM THICKNESS PEYNOLDS NUMBER ==	816.10	819.40
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1356.68	1298.64
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.01967
CLAUSERS 'DELTA' INTEGRAL ==	-.62492	-.69532
CLAUSERS 'G' INTEGRAL ==	5.04362	4.29098
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03404	.03491
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02399	.02409
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.41883	1.44891

LOCATION -X- 44.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 12.

JOB KLDW22X TAP 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 9. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.016	22.16	98.73	.323	.147
2	.0068	.023	24.86	97.54	.363	.192
3	.0075	.026	27.20	97.12	.396	.208
4	.0083	.028	29.00	97.58	.423	.191
5	.0096	.033	30.70	97.06	.449	.210
6	.0112	.038	32.63	96.29	.476	.239
7	.0127	.043	34.52	95.80	.504	.258
8	.0137	.047	35.15	95.29	.513	.277
9	.0157	.053	37.08	94.60	.541	.303
10	.0174	.059	37.84	95.56	.552	.266
11	.0195	.066	39.73	94.63	.579	.301
12	.0212	.072	40.77	94.12	.595	.320
13	.0226	.077	41.42	94.24	.604	.316
14	.0245	.083	42.16	94.21	.615	.317
15	.0263	.089	43.62	93.93	.636	.326
16	.0285	.097	44.64	93.62	.651	.339
17	.0301	.102	45.36	93.30	.662	.351
18	.0336	.125	47.70	91.40	.697	.423
19	.0434	.147	50.25	90.65	.733	.451
20	.0504	.171	52.51	88.62	.766	.527
21	.0566	.192	54.16	87.65	.790	.564
22	.0636	.216	55.76	86.86	.813	.593
23	.0706	.239	57.30	85.32	.837	.651
24	.0777	.261	57.91	84.53	.845	.681
25	.0834	.283	59.50	84.01	.868	.700
26	.0897	.306	60.10	83.56	.877	.717
27	.0966	.326	61.01	82.49	.890	.757
28	.1036	.352	61.33	81.41	.895	.798
29	.1103	.375	62.10	81.53	.906	.793
30	.1167	.396	62.70	81.12	.916	.809
31	.1234	.419	63.49	80.82	.926	.820
32	.1304	.443	64.38	80.53	.935	.831
33	.1473	.500	64.77	79.60	.945	.866
34	.1652	.561	65.82	78.72	.960	.899
35	.1823	.619	66.10	77.80	.965	.934
36	.2007	.682	66.75	77.78	.974	.935
37	.2174	.736	67.07	77.54	.978	.944
38	.2353	.799	67.53	77.27	.985	.954
39	.2523	.857	67.72	77.04	.988	.962
40	.2705	.919	68.03	76.77	.992	.972
41	.2877	.977	68.20	76.56	.995	.980
42	.3058	1.034	68.31	76.55	.996	.981
43	.3352	1.138	68.39	76.24	.998	.990
44	.3655	1.241	68.59	76.25	1.000	.992
45	.3953	1.342	68.53	76.21	1.000	.993
46	.4255	1.445	68.50	76.09	1.000	.996
47	.4556	1.547	68.59	76.04	1.000	1.000
48	.4853	1.646	68.56	76.03	1.000	1.000
49	.5156	1.751	68.63	76.03	1.000	1.000
50	.5456	1.853	68.66	76.04	1.000	1.000
51	.5754	1.954	68.61	76.04	1.000	1.000
52	.6056	2.057	68.58	76.02	1.000	1.000
53	1.0856	3.687	68.59	76.04	1.000	1.000
54	1.0656	5.317	68.55	76.03	1.000	1.000
55	1.0454	6.946	68.34	76.04	.997	1.000
56	1.0251	8.575	68.35	76.04	.997	1.000
57	1.0051	10.206	68.41	76.05	.998	.999

Table 12.

JOB KLDM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 10. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	68.661	68.661
FREE STREAM TEMPERATURE =	75.804	
WALL TEMPERATURE =	105.290	
WALL HEAT FLUX =	.04560	
FREE STREAM DENSITY =	.07502	
FREE STREAM KINEMATIC VISCOSITY =	.0001643	
DENSITY OF FLUID AT WALL =	.07111	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001806	
WALL/FREE STREAM DENSITY RATIO =	.94781	
LOCATION REYNOLDS NUMBER (REX) =	1545943.12	
INPUT VALUE OF VELOCITY DELTA =	.37000	
INPUT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		.30429
DELTA 99.5% INPUT =	.31000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04217	.04016
MOMENTUM THICKNESS (THETA) =	.02504	.02511
ENERGY-DISSIPATION THICKNESS =	.04387	.04433
ENTHALPY THICKNESS =	.00262	.00271
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.68395	1.59927
SHAPE FACTOR 32 (ENFRGY/THETA) =	1.75159	1.76557
MOMENTUM THICKNESS REYNOLDS NUMBER =	872.02	874.27
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1468.45	1396.20
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.03857
CLAUSERS 'DELTA' INTEGRAL =	- .71304	- .75803
CLAUSERS 'G' INTEGRAL =	5.71210	4.82149
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03741	.03747
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02562	.02569
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.46038	1.45866

LOCATION -X- 44.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 13.

JOB KLUW22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 10. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.014	18.79	102.25	.274	.103
2	.0057	.016	20.58	101.73	.300	.121
3	.0065	.021	22.86	100.65	.333	.151
4	.0073	.024	24.87	100.23	.362	.171
5	.0066	.026	26.76	99.05	.390	.212
6	.0102	.033	29.31	99.73	.427	.189
7	.0116	.038	30.54	99.26	.445	.205
8	.0125	.040	32.17	98.81	.469	.220
9	.0145	.047	34.25	98.52	.499	.230
10	.0167	.054	36.18	97.03	.527	.250
11	.0167	.060	37.36	96.29	.544	.305
12	.0202	.065	37.86	95.78	.551	.323
13	.0217	.070	38.76	95.86	.565	.319
14	.0236	.077	40.29	95.50	.587	.332
15	.0235	.082	40.79	94.58	.594	.363
16	.0276	.084	42.07	95.53	.613	.330
17	.0291	.094	42.73	95.57	.622	.330
18	.0354	.114	45.68	93.49	.665	.400
19	.0425	.137	48.50	91.88	.706	.455
20	.0444	.159	50.82	90.43	.740	.504
21	.0557	.160	52.65	88.54	.770	.568
22	.0623	.201	54.52	87.53	.794	.602
23	.0695	.224	55.80	85.85	.813	.659
24	.0755	.243	57.33	85.20	.834	.681
25	.0824	.266	58.32	84.62	.849	.701
26	.0893	.288	59.32	84.03	.864	.719
27	.0958	.309	60.44	83.08	.880	.753
28	.1023	.330	61.29	82.49	.893	.773
29	.1056	.354	61.70	82.09	.899	.787
30	.1157	.373	62.74	82.14	.914	.785
31	.1226	.396	63.00	81.20	.917	.817
32	.1294	.418	63.67	80.62	.927	.837
33	.1466	.473	64.59	78.79	.941	.899
34	.1642	.530	65.28	78.22	.951	.915
35	.1819	.587	66.13	78.79	.963	.899
36	.1994	.643	66.59	77.70	.970	.936
37	.2168	.699	66.90	76.98	.974	.960
38	.2345	.757	67.34	77.26	.981	.950
39	.2513	.811	67.52	77.01	.983	.959
40	.2633	.869	67.77	76.56	.987	.974
41	.2863	.924	68.16	76.37	.993	.981
42	.3043	.982	68.24	76.43	.994	.979
43	.3342	1.076	68.39	76.15	.996	.988
44	.3648	1.177	68.51	76.14	.998	.989
45	.3944	1.272	68.69	75.95	1.000	.995
46	.4244	1.369	68.61	75.87	1.000	.998
47	.4546	1.467	68.66	75.84	1.000	.999
48	.4844	1.563	68.65	75.81	1.000	1.000
49	.5145	1.660	68.74	75.81	1.001	1.000
50	.5449	1.758	68.63	75.80	1.000	1.000
51	.5745	1.853	68.61	75.80	.999	1.000
52	.6043	1.949	68.61	75.78	.999	1.001
53	1.0844	3.496	69.62	75.80	.999	1.000
54	1.0644	5.047	68.50	75.80	.996	1.000
55	2.0443	6.595	68.49	75.79	.997	1.001
56	2.0242	8.143	68.35	75.78	.996	1.001
57	3.0043	9.691	68.34	75.75	.995	1.002

Table 13.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 11. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	68.634	68.634
FREE STREAM TEMPERATURE	75.597	
WALL TEMPERATURE	107.740	
WALL HEAT FLUX	.04500	
FREE STREAM DENSITY	.07505	
FREE STREAM KINEMATIC VISCOSITY	.0001642	
DENSITY OF FLUID AT WALL	.07080	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001820	
WALL/FREE STREAM DENSITY RATIO	.94335	
LOCATION REYNOLDS NUMBER (REX)	1546400.16	
INPUT VALUE OF VELOCITY DELTA	.37000	
INPUT VALUE OF TEMPERATURE DELTA	.49000	
CALCULATED DELTA		.29399
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	.04048	.03843
MOMENTUM THICKNESS (THETA)	.02340	.02345
ENERGY-DISSIPATION THICKNESS	.04075	.04117
ENTHALPY THICKNESS	.00265	.00274
SHAPE FACTOR 12 (DELSTAR/THETA)	1.72976	1.63904
SHAPE FACTOR 32 (ENERGY/THETA)	1.74147	1.75572
MOMENTUM THICKNESS REYNOLDS NUMBER	815.05	816.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1409.83	1338.52
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		.01617
CLAUSERS 'DELTA' INTEGRAL	-.65165	-.71550
CLAUSERS 'G' INTEGRAL	5.55708	4.67564
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03518	.03571
MOMENTUM THICKNESS - CONSTANT DENSITY	.02401	.02406
SHAPE FACTOR 12 - CONSTANT DENSITY	1.46539	1.48393

LOCATION -X- 44.40000

Z = -6 INCHES

K = 0.2×10^{-6}

Table 14.

JOB KLDW22X TAPE 4752R- FILES 69-111, RUN 2, PTS.1-23 10/15/80
 RUN NO. 2. POINT 11. GRID NO. 1

REDUCED PROFILE DATA

N	Y	DELTA	U	T	U/UE	THETA
	INCHES	FT/SEC	DES. F			
1	.0053	.018	24.34	104.59	.355	.093
2	.0066	.023	25.03	103.15	.365	.143
3	.0077	.026	27.15	101.45	.396	.196
4	.0085	.029	27.93	101.21	.407	.203
5	.0096	.033	28.90	101.91	.421	.181
6	.0112	.038	30.20	101.71	.441	.188
7	.0126	.043	31.89	100.88	.465	.214
8	.0133	.045	32.32	100.76	.471	.217
9	.0156	.053	33.14	99.00	.483	.272
10	.0179	.060	35.64	99.22	.520	.265
11	.0196	.067	36.36	98.42	.530	.290
12	.0211	.072	37.64	98.38	.548	.291
13	.0225	.076	37.95	98.02	.553	.302
14	.0245	.083	39.42	97.67	.574	.313
15	.0263	.090	40.72	97.25	.594	.326
16	.0286	.097	41.75	96.60	.608	.346
17	.0301	.102	42.91	96.16	.625	.360
18	.0367	.125	45.31	94.90	.660	.389
19	.0363	.147	48.49	92.43	.707	.476
20	.0506	.173	51.31	91.68	.748	.500
21	.0565	.192	53.26	89.53	.776	.567
22	.0666	.216	55.00	88.00	.811	.614
23	.0707	.241	56.60	86.97	.843	.669
24	.0799	.261	57.86	85.32	.864	.696
25	.0855	.284	59.30	84.22	.880	.713
26	.0906	.300	60.13	82.96	.880	.771
27	.0980	.326	61.13	82.83	.890	.775
28	.1042	.352	62.01	82.49	.903	.785
29	.1100	.376	62.53	81.60	.911	.813
30	.1166	.397	62.93	81.23	.916	.825
31	.1233	.420	63.83	80.39	.930	.851
32	.1300	.444	64.46	79.59	.939	.876
33	.1477	.502	65.36	78.68	.952	.904
34	.1633	.562	65.67	78.14	.960	.921
35	.1833	.623	66.57	77.86	.970	.929
36	.2005	.682	67.34	77.13	.977	.952
37	.2178	.741	67.45	76.71	.983	.965
38	.2333	.801	67.64	76.46	.986	.973
39	.2506	.859	68.04	76.63	.991	.978
40	.2704	.920	68.33	76.33	.991	.977
41	.2873	.977	68.34	76.06	.996	.980
42	.3006	1.040	68.46	76.02	.997	.987
43	.3331	1.140	68.53	75.79	.997	.994
44	.3668	1.244	68.59	75.60	.999	.994
45	.3993	1.343	68.56	75.67	.999	.996
46	.4283	1.448	68.63	75.71	1.000	.996
47	.4533	1.550	68.71	75.64	1.001	.999
48	.4854	1.651	68.66	75.60	1.000	1.000
49	.5156	1.754	68.61	75.60	1.000	1.000
50	.5456	1.856	68.64	75.59	1.000	1.000
51	.5753	1.957	68.63	75.60	1.000	1.000
52	.6053	2.059	68.71	75.59	1.001	1.000
53	1.0856	3.693	68.59	75.60	.999	1.000
54	1.1656	5.326	68.59	75.60	.999	1.000
55	1.2453	6.957	68.46	75.60	.998	1.000
56	1.3252	8.589	68.42	75.62	.997	.999
57	1.4057	10.224	68.37	75.61	.996	1.000

Table 14.

JOB KLD22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 8. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	70.574	70.574
FREE STREAM TEMPERATURE	76.053	
WALL TEMPERATURE	100.250	
WALL HEAT FLUX	.04570	
FREE STREAM DENSITY	.07499	
FREE STREAM KINEMATIC VISCOSITY	.0001645	
DENSITY OF FLUID AT WALL	.07175	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001778	
WALL/FREE STREAM DENSITY RATIO	.95679	
LOCATION REYNOLDS NUMBER (REX)	1730743.22	
INPUT VALUE OF VELOCITY DELTA	.41000	
INPUT VALUE OF TEMPERATURE DELTA	.51000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.35400	
DISPLACEMENT THICKNESS (DELSTAR)	.04307	.04240
MOMENTUM THICKNESS (THETA)	.02778	.02782
ENERGY-DISSIPATION THICKNESS	.04956	.04968
ENTHALPY THICKNESS	.00263	.00266
SHAPE FACTOR 12 (DELSTAR/THETA)	1.55031	1.52418
SHAPE FACTOR 32 (ENERGY/THETA)	1.78383	1.78593
MOMENTUM THICKNESS REYNOLDS NUMBER	993.42	994.72
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1540.11	1516.13
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS 'DELTA' INTEGRAL	-.73583	-.80993
CLAUSERS 'G' INTEGRAL	5.05641	4.75216
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03828	.03976
MOMENTUM THICKNESS - CONSTANT DENSITY	.02827	.02831
SHAPE FACTOR 12 - CONSTANT DENSITY	1.35441	1.40450

LOCATION -X- 48.40000

Z = CENTERLINE

K = 0.2 x 10⁻⁶

Table 15.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 8. GRID NO. 1

REDUCED PPGFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.012	23.04	95.08	.326	.214
2	.0053	.015	25.21	94.23	.357	.245
3	.0066	.019	28.51	94.00	.408	.258
4	.0076	.022	31.60	93.61	.448	.274
5	.0086	.024	33.26	92.93	.472	.303
6	.0102	.029	35.47	92.99	.510	.300
7	.0114	.032	37.20	93.35	.527	.285
8	.0125	.035	37.93	93.14	.537	.294
9	.0146	.041	40.02	91.83	.567	.348
10	.0165	.047	41.77	91.67	.592	.354
11	.0186	.053	42.86	91.80	.608	.349
12	.0202	.057	43.71	91.17	.619	.375
13	.0217	.061	44.55	90.53	.631	.402
14	.0235	.066	45.20	90.97	.641	.384
15	.0255	.072	46.11	91.83	.653	.348
16	.0276	.078	47.20	91.47	.669	.363
17	.0299	.083	47.44	90.71	.672	.394
18	.0333	.100	49.73	88.88	.705	.470
19	.0349	.121	51.91	87.90	.736	.510
20	.0362	.140	53.32	87.33	.756	.534
21	.0394	.157	55.07	86.99	.780	.548
22	.0424	.176	56.22	86.01	.797	.569
23	.0466	.197	57.63	85.53	.817	.608
24	.0505	.213	58.10	84.96	.823	.632
25	.0547	.234	59.15	84.08	.838	.668
26	.0594	.253	59.44	83.51	.848	.692
27	.0656	.270	60.67	83.09	.860	.709
28	.0722	.290	61.43	82.81	.870	.721
29	.0796	.310	62.26	81.97	.882	.756
30	.0875	.326	62.52	81.62	.890	.770
31	.0958	.346	62.55	81.69	.891	.767
32	.1044	.366	62.76	81.68	.903	.767
33	.1134	.414	64.44	81.15	.920	.789
34	.1228	.464	66.03	80.46	.936	.818
35	.1311	.512	66.61	79.45	.944	.859
36	.1399	.564	67.33	78.82	.954	.886
37	.1484	.611	68.07	78.27	.965	.908
38	.1564	.662	68.52	78.03	.971	.918
39	.1644	.710	69.00	77.50	.976	.940
40	.1724	.761	69.36	77.68	.983	.933
41	.1804	.809	69.63	77.03	.987	.959
42	.1884	.866	69.91	76.72	.991	.972
43	.1964	1.000	70.19	76.41	.995	.985
44	.2044	1.143	70.43	76.20	.996	.994
45	.2124	1.284	70.54	76.13	1.000	.997
46	.2204	1.425	70.61	76.05	1.000	1.000
47	.2284	1.566	70.57	76.03	1.000	1.000
48	.2364	1.708	70.62	76.05	1.001	1.000
49	.2444	1.849	70.55	76.06	.999	1.000
50	.2524	1.990	70.54	76.06	1.000	1.000
51	.2604	2.131	70.53	76.07	.999	.999
52	.2684	2.273	70.60	76.06	1.000	1.000
53	.2764	2.414	70.50	76.07	.999	.999
54	.2844	2.554	70.46	76.05	.998	1.000
55	.2924	2.694	70.37	76.07	.997	.999
56	.3004	2.834	70.37	76.05	.997	1.000
57	.3084	2.974	70.44	76.05	.996	1.000
58	.3164	3.114	70.42	76.04	.998	1.000
59	.3244	3.254	70.35	76.04	.997	1.000
60	.3324	3.394	70.31	76.05	.996	1.000
61	.3404	3.534	70.37	76.05	.997	1.000
62	.3484	3.674	70.21	76.06	.995	1.000

Table 15.

JCB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 5. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	72.139	72.139
FREE STREAM TEMPERATURE =	76.492	
WALL TEMPERATURE =	98.040	
WALL HEAT FLUX =	.04640	
FREE STREAM DENSITY =	.07404	
FREE STREAM KINEMATIC VISCOSITY =	.0001667	
DENSITY OF FLUID AT WALL =	.07118	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001787	
WALL/FREE STREAM DENSITY RATIO =	.96136	
LOCATION REYNOLDS NUMBER (REX) =	1889833.86	
INPUT VALUE OF VELOCITY DELTA =	.51000	
INPUT VALUE OF TEMPERATURE DELTA =	.61000	
CALCULATED DELTA =		.39201
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04909	.04854
MOMENTUM THICKNESS (THETA) =	.03233	.03246
ENERGY-DISSIPATION THICKNESS =	.05787	.05808
ENTHALPY THICKNESS =	.00261	.00283
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.51833	1.49534
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78990	1.78916
MOMENTUM THICKNESS REYNOLDS NUMBER =	1166.04	1170.67
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1770.43	1750.55
SKIN FRICTION COEFFICIENT =	.004442	
FRICTION VELOCITY =	3.46736	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.01413
CLAUSERS 'DELTA' INTEGRAL =	-.86035	-.95107
CLAUSERS 'S' INTEGRAL =	5.82113	5.51612
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04382	.04571
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03263	.03297
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.33450	1.38653

LOCATION -X- 52.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 16.

JOB KLDW22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 5. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0049	.013	23.56	93.47	.327	.212	-14.010	6.795	5.832	7.972
2	.0058	.015	26.32	93.10	.365	.229	-13.215	7.590	6.308	9.427
3	.0066	.017	26.43	93.36	.408	.217	-12.317	8.486	5.969	10.720
4	.0075	.019	31.43	93.20	.436	.225	-11.741	9.064	6.184	12.176
5	.0092	.024	34.91	92.18	.484	.272	-10.738	10.067	7.479	14.924
6	.0108	.026	37.56	91.96	.521	.282	-9.972	10.833	7.758	17.512
7	.0113	.029	38.47	91.69	.533	.295	-9.709	11.096	8.102	18.320
8	.0135	.035	40.39	91.03	.560	.325	-9.156	11.649	8.948	21.677
9	.0154	.039	41.61	90.22	.577	.363	-8.804	12.001	9.980	24.949
10	.0176	.045	41.75	90.29	.606	.360	-8.167	12.616	9.896	28.630
11	.0192	.049	44.33	90.02	.614	.372	-8.021	12.785	10.233	31.094
12	.0217	.053	45.12	89.98	.626	.374	-7.791	13.014	10.286	33.353
13	.0227	.056	45.87	89.47	.636	.398	-7.577	13.226	10.946	36.753
14	.0246	.063	46.55	89.51	.645	.356	-7.380	13.423	10.942	39.825
15	.0262	.067	47.17	89.61	.654	.391	-7.202	13.603	10.764	42.574
16	.0282	.072	47.87	89.43	.664	.400	-6.999	13.806	10.996	45.646
17	.0346	.086	49.76	88.52	.690	.442	-6.453	14.352	12.150	55.995
18	.0418	.107	51.75	88.71	.718	.452	-5.866	14.937	12.421	67.637
19	.0563	.123	53.35	87.62	.740	.484	-5.418	15.387	13.302	78.147
20	.0646	.139	54.65	86.77	.758	.523	-5.043	15.762	14.388	88.334
21	.0684	.157	56.94	86.25	.775	.547	-4.672	16.133	15.047	99.329
22	.0707	.175	57.16	86.02	.792	.556	-4.320	16.485	15.341	111.133
23	.0748	.191	57.75	85.59	.801	.578	-4.149	16.656	15.887	120.634
24	.0787	.209	58.79	84.71	.815	.619	-3.851	16.954	17.014	132.315
25	.0868	.227	59.71	84.20	.822	.642	-3.699	17.106	17.663	143.633
26	.0948	.242	60.40	83.03	.837	.650	-3.386	17.419	17.888	153.335
27	.1017	.260	61.08	83.93	.847	.655	-3.190	17.615	18.015	164.492
28	.1087	.277	61.52	83.16	.856	.691	-2.948	17.857	18.998	175.810
29	.1146	.292	62.12	83.05	.861	.696	-2.850	17.915	19.138	185.350
30	.1216	.310	62.76	83.14	.870	.691	-2.705	18.100	19.016	196.669
31	.1287	.328	63.74	82.55	.876	.719	-2.537	18.269	19.717	206.149
32	.1458	.371	64.43	81.72	.893	.757	-2.223	18.582	20.634	235.152
33	.1632	.416	65.62	80.83	.910	.799	-1.880	18.925	21.974	263.934
34	.1804	.460	66.51	80.78	.922	.801	-1.622	19.183	22.033	291.745
35	.1983	.506	67.46	79.55	.935	.858	-1.350	19.455	23.601	320.689
36	.2157	.550	68.36	79.55	.948	.858	-1.090	19.715	23.601	348.823
37	.2337	.596	68.94	78.94	.956	.887	-.922	19.883	24.386	377.928
38	.2507	.640	69.38	78.77	.962	.894	-.796	20.004	24.600	405.416
39	.2685	.685	69.66	78.66	.970	.899	-.628	20.177	24.718	434.198
40	.2866	.729	70.51	78.02	.977	.929	-.471	20.334	25.556	461.848
41	.3037	.775	70.72	78.02	.980	.929	-.410	20.395	25.559	491.114
42	.3232	.901	71.47	77.07	.991	.973	-.194	20.611	26.763	571.153
43	.3433	1.029	71.92	76.90	.997	.981	-.063	20.742	26.987	652.162
44	.3633	1.156	72.00	76.76	.996	.987	-.040	20.765	27.161	733.009
45	.3834	1.284	72.07	76.55	.999	.996	-.020	20.786	27.390	814.018
46	.4035	1.412	72.10	76.52	1.000	.999	.006	20.812	27.476	895.027
47	.4236	1.540	72.16	76.51	1.000	.999	.007	20.812	27.489	975.874
48	.4437	1.667	72.04	76.49	.999	1.000	-.013	20.792	27.510	1056.883
49	.4638	1.795	72.13	76.49	1.000	1.000	-.002	20.803	27.515	1138.054
50	.4839	1.922	72.11	76.50	1.000	1.000	-.006	20.797	27.495	1218.416
51	.5040	2.051	72.11	76.48	1.000	1.000	-.006	20.797	27.517	1299.910
52	.5241	2.179	72.15	76.50	1.000	1.000	.004	20.809	27.502	1381.416
53	.5442	2.307	72.03	76.49	.998	1.000	-.033	20.772	27.509	2010.072
54	.5643	2.435	72.00	76.49	.998	1.000	-.040	20.765	27.509	2366.284
55	.5844	2.563	71.99	76.50	.998	1.000	-.042	20.764	27.495	2722.174
56	.6045	2.691	71.97	76.51	.996	1.000	-.049	20.756	27.488	3077.416
57	.6246	2.819	72.07	76.51	.999	.999	-.021	20.784	27.488	3433.791
58	.6447	2.947	71.94	76.52	.997	.999	-.057	20.748	27.474	3789.660
59	.6648	3.075	71.93	76.51	.996	.999	-.069	20.710	27.488	4144.599
60	.6849	3.203	71.80	76.51	.995	.999	-.097	20.708	27.488	4500.165
61	.7050	3.331	71.80	76.52	.997	.999	-.070	20.735	27.473	4856.216

Table 16.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 6. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	72.213	72.213
FREE STREAM TEMPERATURE =	76.490	
WALL TEMPERATURE =	98.920	
WALL HEAT FLUX =	.04720	
FREE STREAM DENSITY =	.07404	
FREE STREAM KINEMATIC VISCOSITY =	.0001667	
DENSITY OF FLUID AT WALL =	.07106	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001792	
WALL/FREE STREAM DENSITY RATIO =	.95985	
LOCATION REYNOLDS NUMBER (REX) =	1891764.95	
INPUT VALUE OF VELOCITY DELTA =	.51000	
INPUT VALUE OF TEMPERATURE DELTA =	.61000	
CALCULATED DELTA =		.38613
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04837	.04785
MOMENTUM THICKNESS (THETA) =	.03160	.03187
ENERGY-DISSIPATION THICKNESS =	.05691	.05706
ENTHALPY THICKNESS =	.00294	.00295
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.52105	1.50158
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78957	1.79042
MOMENTUM THICKNESS REYNOLDS NUMBER =	1148.17	1150.49
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1746.43	1727.55
SKIN FRICTION COEFFICIENT =	.004455	
FRICTION VELOCITY =	3.47856	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.01211
CLAUSERS 'DELTA' INTEGRAL =	-.65770	-.93220
CLAUSERS 'G' INTEGRAL =	5.65306	5.39033
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04338	.04491
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03233	.03240
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.34188	1.38608

LOCATION -X- 52.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 17.

JOB KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 6. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0041	.011	22.37	95.04	.310	.173	-14.326	6.431	4.875	6.661
2	.0051	.012	23.42	94.77	.324	.165	-14.027	6.732	5.220	8.299
3	.0036	.013	23.66	94.69	.356	.189	-13.376	7.383	5.328	9.431
4	.0073	.019	30.29	93.88	.419	.225	-12.052	8.708	6.335	11.857
5	.0066	.022	34.21	93.16	.474	.257	-10.924	9.835	7.245	13.960
6	.0101	.026	36.87	92.92	.511	.267	-10.160	10.600	7.577	16.387
7	.0109	.028	37.49	92.95	.519	.266	-9.963	10.777	7.573	17.661
8	.0132	.034	40.04	92.29	.554	.296	-9.249	11.511	8.338	21.402
9	.0148	.038	41.31	91.73	.572	.320	-8.663	11.877	9.033	23.990
10	.0173	.045	43.29	91.43	.599	.334	-8.315	12.444	9.412	28.034
11	.0187	.049	44.42	90.61	.615	.371	-7.969	12.770	10.449	30.299
12	.0203	.053	44.67	90.52	.619	.375	-7.919	12.841	10.560	32.687
13	.0223	.058	45.84	89.97	.635	.399	-7.581	13.176	11.255	36.122
14	.0239	.062	46.46	89.93	.644	.402	-7.397	13.363	11.339	38.711
15	.0260	.067	47.37	90.51	.656	.375	-7.143	13.617	10.576	42.108
16	.0277	.072	48.29	90.41	.669	.379	-6.876	13.683	10.693	44.858
17	.0241	.068	50.03	89.31	.693	.428	-6.377	14.382	12.075	55.211
18	.0241	.070	51.96	88.96	.720	.444	-5.821	14.936	12.519	66.535
19	.0261	.075	53.60	88.51	.742	.464	-5.352	15.408	13.091	77.858
20	.0242	.070	55.77	87.69	.758	.501	-5.015	15.745	14.120	87.726
21	.0209	.065	58.31	86.92	.773	.539	-4.715	16.046	15.210	98.564
22	.0232	.077	57.15	86.77	.791	.559	-4.330	16.429	15.774	110.373
23	.0241	.072	58.30	86.17	.807	.569	-4.000	16.759	16.029	119.918
24	.0212	.070	59.92	85.43	.816	.602	-3.822	16.937	16.962	131.403
25	.0279	.078	59.80	84.81	.826	.629	-3.570	17.190	17.732	142.241
26	.0940	.244	60.49	84.45	.838	.645	-3.369	17.390	18.183	152.109
27	.1011	.262	61.21	83.94	.848	.668	-3.162	17.598	18.832	163.595
28	.1079	.280	61.57	83.31	.853	.696	-3.059	17.700	19.622	174.595
29	.1140	.295	62.65	83.04	.866	.706	-2.751	18.009	19.959	184.462
30	.1208	.313	62.67	83.15	.871	.703	-2.686	18.074	19.821	195.463
31	.1262	.332	63.89	83.01	.885	.709	-2.392	18.367	20.000	207.433
32	.1432	.376	64.71	81.61	.896	.772	-2.158	18.600	21.758	234.934
33	.1627	.421	66.10	81.32	.915	.785	-1.757	19.003	22.122	263.243
34	.1803	.467	66.91	80.78	.927	.809	-1.523	19.236	22.807	291.714
35	.1961	.513	67.81	79.96	.939	.845	-1.265	19.494	23.830	320.508
36	.2152	.557	68.36	79.35	.947	.872	-1.109	19.651	24.593	348.170
37	.2328	.603	69.72	79.04	.956	.886	-.917	19.843	24.965	376.641
38	.2502	.648	69.74	79.15	.966	.881	-.697	20.063	24.852	404.789
39	.2681	.694	70.12	78.29	.971	.920	-.600	20.158	25.930	433.745
40	.2851	.738	70.55	78.01	.977	.932	-.478	20.282	26.287	461.245
41	.3032	.785	70.91	77.78	.982	.942	-.374	20.385	26.569	490.525
42	.3527	.914	71.63	77.46	.992	.957	-.168	20.592	26.974	570.599
43	.4030	1.044	71.86	76.82	.995	.985	-.101	20.658	27.774	651.968
44	.4532	1.174	71.97	76.61	.997	.995	-.071	20.689	28.041	733.175
45	.5029	1.302	72.23	76.64	1.000	.994	-.005	20.764	28.011	813.573
46	.5531	1.433	72.15	76.51	.999	.999	-.018	20.742	28.163	894.780
47	.6030	1.562	72.21	76.46	1.000	1.000	-.002	20.757	28.202	975.501
48	.6529	1.691	72.26	76.47	1.000	1.000	.020	20.779	28.213	1056.223
49	.7032	1.821	72.21	76.51	1.000	.999	-.001	20.758	28.173	1137.591
50	.7528	1.950	72.22	76.49	1.000	1.000	.001	20.761	28.194	1217.827
51	.8031	2.080	72.29	76.50	1.001	.999	.023	20.782	28.179	1299.196
52	1.0228	2.649	72.16	76.50	1.000	1.000	-.010	20.749	28.187	1654.597
53	1.2426	3.218	72.25	76.50	1.001	1.000	.011	20.771	28.187	2010.160
54	1.4630	3.789	72.16	76.49	1.000	1.000	-.008	20.751	28.193	2366.694
55	1.6829	4.358	72.10	76.51	.998	.999	-.033	20.726	28.172	2722.418
56	1.9026	4.927	72.05	76.51	.998	.999	-.046	20.714	28.166	3077.820
57	2.1229	5.496	71.95	76.51	.996	.999	-.076	20.683	28.166	3434.191
58	2.3431	6.068	71.97	76.50	.997	1.000	-.070	20.690	28.180	3790.401
59	2.5627	6.637	71.93	76.51	.996	.999	-.061	20.679	28.173	4145.641
60	2.7827	7.207	71.95	76.51	.996	.999	-.077	20.682	28.166	4501.527
61	3.0032	7.776	71.93	76.51	.996	.999	-.081	20.679	28.173	4858.223

Table 17.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 7. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	72.288	72.288
FREE STREAM TEMPERATURE	76.094	
WALL TEMPERATURE	100.280	
WALL HEAT FLUX	.04710	
FREE STREAM DENSITY	.07492	
FREE STREAM KINEMATIC VISCOSITY	.0001645	
DENSITY OF FLUID AT WALL	.07174	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001778	
WALL/FREE STREAM DENSITY RATIO	.95681	
LOCATION REYNOLDS NUMBER (REX)	1919040.80	
INPUT VALUE OF VELOCITY DELTA	.46000	
INPUT VALUE OF TEMPERATURE DELTA	.56000	
CALCULATED DELTA		.36318
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	.04579	.04496
MOMENTUM THICKNESS (THETA)	.02953	.02959
ENERGY-DISSIPATION THICKNESS	.05272	.05293
ENTHALPY THICKNESS	.00294	.00297
SHAPE FACTOR 12 (DELSTAR/THETA)	1.55057	1.51935
SHAPE FACTOR 32 (ENERGY/THETA)	1.78521	1.78884
MOMENTUM THICKNESS REYNOLDS NUMBER	1081.56	1083.68
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1677.03	1646.48
SKIN FRICTION COEFFICIENT	.004512	
FRICTION VELOCITY	3.51004	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		.00065
CLAUSERS 'DELTA' INTEGRAL	- .60391	- .86499
CLAUSERS 'G' INTEGRAL	5.42947	5.03676
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.04095	.04200
MOMENTUM THICKNESS - CONSTANT DENSITY	.03006	.03013
SHAPE FACTOR 12 - CONSTANT DENSITY	1.36210	1.39419

LOCATION -X- 52.40000

Z = -6 INCHES

K = 0.2×10^{-6}

Table 18.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 7. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0038	.011	20.46	95.94	.283	.180	-14.759	5.836	5.571	6.300
2	.0053	.015	23.58	95.63	.326	.192	-13.877	6.718	5.972	8.767
3	.0060	.017	26.24	95.50	.363	.198	-13.118	7.477	6.137	9.919
4	.0068	.019	28.24	94.31	.391	.247	-12.550	8.045	7.661	11.234
5	.0082	.023	31.81	95.24	.440	.209	-11.533	9.062	6.472	13.537
6	.0097	.027	34.19	94.75	.473	.229	-10.854	9.741	7.092	16.005
7	.0112	.031	36.45	93.78	.504	.269	-10.211	10.384	8.344	18.472
8	.0118	.033	37.69	93.57	.521	.277	-9.858	10.737	8.604	19.459
9	.0139	.038	40.01	93.99	.553	.260	-9.197	11.398	8.067	22.913
10	.0159	.044	41.82	93.12	.574	.248	-8.641	11.914	9.186	26.203
11	.0180	.050	42.95	92.10	.594	.338	-8.359	12.236	10.493	29.657
12	.0196	.054	44.66	91.86	.618	.348	-7.870	12.724	10.803	32.289
13	.0210	.058	44.95	91.99	.622	.343	-7.789	12.806	10.638	34.592
14	.0229	.063	46.11	91.88	.638	.347	-7.457	13.136	10.779	37.717
15	.0250	.069	46.37	90.95	.641	.386	-7.363	13.211	11.976	41.171
16	.0270	.074	47.80	90.59	.661	.400	-6.976	13.618	12.429	44.461
17	.0287	.079	48.61	90.60	.672	.400	-6.747	13.846	12.418	47.257
18	.0352	.097	50.64	90.45	.701	.407	-6.166	14.428	12.617	57.949
19	.0422	.116	52.53	89.19	.727	.459	-5.629	14.966	12.233	69.463
20	.0490	.135	54.13	88.59	.749	.463	-5.173	15.422	15.003	80.648
21	.0551	.152	55.72	87.76	.771	.518	-4.721	15.674	16.067	90.682
22	.0620	.171	57.09	86.75	.790	.561	-4.331	16.264	17.425	102.031
23	.0692	.191	57.96	86.15	.802	.584	-4.061	16.514	18.134	113.874
24	.0750	.207	59.30	85.98	.820	.561	-3.700	16.955	18.353	123.415
25	.0820	.226	59.79	85.40	.827	.615	-3.561	17.034	19.099	134.929
26	.0893	.246	60.94	83.85	.843	.679	-3.234	17.360	21.080	146.936
27	.0950	.262	61.74	83.60	.855	.690	-2.990	17.605	21.401	156.312
28	.1019	.281	62.20	83.39	.860	.698	-2.673	17.922	21.673	167.661
29	.1090	.300	63.00	83.11	.872	.710	-2.645	17.950	22.027	179.340
30	.1150	.317	63.41	83.43	.877	.697	-2.530	18.064	22.622	189.209
31	.1220	.336	64.21	82.95	.884	.717	-2.302	18.292	22.240	200.723
32	.1291	.356	64.77	81.85	.896	.762	-2.142	18.453	23.646	212.402
33	.1459	.402	65.80	80.96	.910	.799	-1.849	18.746	24.785	240.036
34	.1637	.451	66.92	80.46	.926	.819	-1.530	19.064	25.427	269.314
35	.1809	.498	67.57	79.42	.935	.863	-1.346	19.249	26.770	297.606
36	.1990	.546	68.67	79.31	.950	.867	-1.031	19.563	26.909	327.378
37	.2156	.594	69.25	79.14	.956	.874	-1.867	19.728	27.124	355.012
38	.2340	.644	69.83	78.65	.966	.894	-1.702	19.893	27.760	384.949
39	.2509	.691	70.23	78.05	.971	.919	-1.588	20.007	28.529	412.747
40	.2666	.740	70.63	77.49	.977	.942	-1.473	20.121	29.248	442.190
41	.2800	.786	70.99	77.17	.982	.956	-1.369	20.225	29.658	470.482
42	.3039	.837	71.16	77.72	.984	.933	-1.321	20.274	29.947	499.925
43	.3337	.874	71.81	76.81	.993	.970	-1.137	20.458	30.116	561.839
44	.4040	1.112	72.07	76.52	.997	.962	-1.063	20.531	30.486	664.576
45	.4540	1.250	72.22	76.26	.999	.963	-1.020	20.575	30.826	746.820
46	.5039	1.386	72.26	76.14	1.000	.968	-1.009	20.593	30.981	828.899
47	.5541	1.526	72.26	76.10	1.000	.946	-1.002	20.593	30.900	911.471
48	.6041	1.663	72.33	76.09	1.000	1.000	.011	20.606	31.045	993.715
49	.6543	1.802	72.30	76.10	1.000	1.000	.004	20.599	31.027	1076.287
50	.7035	1.936	72.29	76.10	1.000	1.000	.002	20.597	31.032	1157.708
51	.7536	2.076	72.25	76.06	.999	1.001	.012	20.583	31.078	1239.951
52	.8041	2.214	72.29	76.09	1.000	1.000	.001	20.594	31.041	1322.688
53	1.0238	2.619	72.23	76.07	.999	1.001	.016	20.579	31.071	1664.066
54	1.2437	3.425	72.12	76.07	.998	1.001	.048	20.547	31.072	2045.773
55	1.4639	4.031	72.13	76.04	.998	1.002	.045	20.555	31.107	2407.973
56	1.6839	4.637	72.11	76.04	.996	1.002	.061	20.514	31.106	2769.844
57	1.9037	5.242	72.10	76.03	.997	1.002	.052	20.542	31.093	3131.366
58	2.1240	5.848	72.15	76.03	.998	1.000	.050	20.555	31.121	3483.751
59	2.3439	6.454	72.09	76.03	.997	1.000	.056	20.539	31.114	3835.457
60	2.5637	7.059	71.92	76.04	.995	1.000	.104	20.491	31.100	4217.000
61	2.7836	7.665	71.95	76.04	.995	1.000	.097	20.447	31.107	4576.706
62	3.0040	8.271	71.98	76.04	.996	1.002	.088	20.506	31.099	4941.235

Table 18.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 2. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	76.348	76.348
FREE STREAM TEMPERATURE =	77.143	
WALL TEMPERATURE =	96.050	
WALL HEAT FLUX =	.04690	
FREE STREAM DENSITY =	.07395	
FREE STREAM KINEMATIC VISCOSITY =	.0001670	
DENSITY OF FLUID AT WALL =	.07143	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001776	
WALL/FREE STREAM DENSITY RATIO =	.96596	
LOCATION REYNOLDS NUMBER (REX) =	2300522.81	
INPUT VALUE OF VELOCITY DELTA =	.51000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.44939
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.05676	.05695
MOMENTUM THICKNESS (THETA) =	.03881	.03905
ENERGY-DISSIPATION THICKNESS =	.06981	.06996
ENTHALPY THICKNESS =	.00297	.00297
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.46246	1.45848
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79892	1.79218
MOMENTUM THICKNESS REYNOLDS NUMBER =	1478.14	1487.22
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2161.71	2169.08
SKIN FRICTION COEFFICIENT =	.004161	
FRICTION VELOCITY =	3.54340	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.08384
CLAUSERS 'DELTA' INTEGRAL =	-1.03576	-1.16341
CLAUSERS 'G' INTEGRAL =	6.72536	6.70067
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.05094	.05399
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03931	.03956
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29560	1.36484

LOCATION -X- 60.40000

Z = CENTERLINE

K = 0.2 x 10⁻⁶

Table 19.

JOE KLOM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/60

RUN NO. 2. POINT 2. GRID NO. 1

REDUCED PROFILE DATA

N	Y	Y/	U	T	L/UE	THETA	U-UE	U(+)	T(+)	Y(+)
INCHES	DELTA	FT/SEC	DELTA	DELTA		UTAU				
1	.00057	.0013	30.72	91.26	.397	.254	-12.990	8.557	6.210	9.528
2	.00067	.0015	33.72	93.78	.435	.279	-12.178	9.366	6.826	11.191
3	.00062	.0010	37.81	90.37	.495	.300	-10.875	10.872	7.356	13.685
4	.00069	.0020	39.11	90.10	.512	.315	-10.510	11.036	7.712	14.649
5	.00098	.0022	40.43	89.71	.530	.335	-10.136	11.411	8.210	16.346
6	.00116	.0023	43.13	89.42	.565	.350	-9.374	12.172	8.581	19.339
7	.00131	.0024	44.43	89.15	.585	.365	-8.944	12.602	8.934	21.833
8	.00138	.0024	44.43	88.94	.593	.376	-8.773	12.774	9.215	22.997
9	.00159	.0025	46.09	88.84	.615	.410	-8.294	13.253	10.033	26.489
10	.00178	.0025	46.09	88.84	.630	.415	-7.976	13.571	10.166	26.649
11	.00201	.0025	49.25	87.92	.644	.430	-7.663	13.884	10.536	33.473
12	.00216	.0025	49.25	87.77	.649	.438	-7.562	13.984	10.718	33.967
13	.00231	.0025	50.51	87.63	.650	.443	-7.413	14.134	10.846	38.462
14	.00241	.0025	50.51	87.54	.664	.450	-7.250	14.207	11.020	41.289
15	.00271	.0025	51.18	87.37	.673	.459	-7.035	14.511	11.244	45.113
16	.00306	.0025	51.18	87.23	.680	.467	-6.903	14.643	11.425	48.439
17	.00336	.0025	52.17	87.13	.683	.472	-6.823	14.723	11.551	50.933
18	.00370	.0025	53.17	86.83	.705	.488	-6.367	15.180	11.942	61.575
19	.00440	.0025	55.26	86.44	.721	.508	-6.003	15.344	12.449	73.215
20	.00511	.0025	56.26	86.05	.737	.529	-5.669	15.877	12.945	85.021
21	.00586	.0025	56.26	85.70	.745	.547	-5.466	16.059	13.403	94.500
22	.00639	.0025	57.26	85.46	.757	.560	-5.224	16.317	13.720	106.306
23	.00689	.0025	58.26	85.25	.772	.571	-4.922	16.825	13.989	117.946
24	.00770	.0025	59.26	85.10	.781	.579	-4.727	16.819	14.184	128.089
25	.00839	.0025	60.26	84.91	.790	.589	-4.526	17.021	14.423	139.397
26	.00909	.0025	60.26	84.66	.798	.602	-4.351	17.430	14.754	151.203
27	.00972	.0025	61.26	84.14	.809	.630	-4.116	17.431	15.432	161.679
28	.01042	.0025	62.26	84.23	.816	.625	-3.915	17.631	15.309	173.319
29	.01110	.0025	62.26	83.73	.825	.649	-3.773	17.774	15.886	184.626
30	.01169	.0025	63.26	83.93	.834	.641	-3.582	17.965	15.699	194.271
31	.01237	.0025	63.26	83.89	.838	.643	-3.465	18.062	15.745	205.744
32	.01307	.0025	64.26	83.65	.846	.656	-3.321	18.226	16.067	217.384
33	.01478	.0025	64.26	82.93	.865	.694	-2.907	18.639	16.989	245.819
34	.01636	.0025	67.26	82.46	.880	.719	-2.586	18.960	17.599	275.418
35	.01827	.0025	68.26	82.03	.894	.742	-2.277	19.270	18.161	303.852
36	.02008	.0025	69.26	81.36	.905	.777	-2.037	19.510	19.025	333.950
37	.02179	.0025	70.26	81.12	.919	.789	-1.754	19.793	19.333	362.365
38	.02308	.0025	71.26	80.46	.931	.824	-1.491	20.056	20.189	392.482
39	.02528	.0025	71.26	80.04	.941	.847	-1.279	20.268	20.743	420.418
40	.02711	.0025	72.26	79.95	.949	.852	-1.091	20.455	20.857	450.848
41	.02877	.0025	73.26	79.62	.959	.869	-.873	20.674	21.279	478.452
42	.03060	.0025	73.26	79.20	.966	.891	-.727	20.820	21.625	508.882
43	.03336	.0025	74.26	78.48	.980	.929	-.426	21.120	22.756	591.359
44	.04057	.0025	75.26	77.93	.991	.959	-.189	21.356	23.473	674.668
45	.04560	.0025	76.26	77.46	.996	.983	-.083	21.464	24.074	756.309
46	.05062	.0025	76.26	77.31	.999	.991	-.019	21.527	24.269	841.784
47	.05559	.0025	76.26	77.23	.999	.995	-.020	21.527	24.375	924.428
48	.06058	.0025	76.26	77.16	1.001	.996	-.020	21.567	24.447	1007.404
49	.06559	.0025	76.26	77.13	1.000	1.000	-.000	21.546	24.503	1090.547
50	.07061	.0025	76.26	77.15	1.000	1.000	-.000	21.551	24.481	1174.188
51	.07566	.0025	76.26	77.14	.999	1.000	-.022	21.525	24.490	1257.164
52	.08056	.0025	76.26	77.14	.999	1.000	-.019	21.528	24.497	1339.974
53	.08200	.0025	76.26	77.13	1.000	1.001	-.011	21.536	24.510	1706.133
54	.08245	.0025	76.26	77.15	.998	1.000	-.053	21.494	24.482	2071.295
55	.08287	.0025	76.26	77.14	.998	1.000	-.046	21.499	24.497	2437.288
56	.08287	.0025	76.26	77.13	.997	1.001	-.062	21.484	24.518	2803.614
57	.08287	.0025	76.26	77.12	.996	1.001	-.078	21.469	24.517	3168.609
58	.08287	.0025	76.26	77.11	.997	1.001	-.068	21.476	24.503	3535.268
59	.08287	.0025	76.26	77.12	.996	1.001	-.069	21.457	24.519	3800.928
60	.08287	.0025	75.26	77.09	.995	1.003	-.103	21.444	24.553	4266.090
61	.08287	.0025	76.26	77.10	.996	1.002	-.097	21.450	24.540	4631.917
62	.08287	.0025	75.26	77.03	.995	1.006	-.104	21.442	24.636	4998.243

Table 19.

JOB KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 3. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	76.627	76.627
FREE STREAM TEMPERATURE =	77.125	
WALL TEMPERATURE =	96.490	
WALL HEAT FLUX =	.04670	
FREE STREAM DENSITY =	.07395	
FREE STREAM KINEMATIC VISCOSITY =	.0001670	
DENSITY OF FLUID AT WALL =	.07137	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001778	
WALL/FREE STREAM DENSITY RATIO =	.96516	
LOCATION REYNOLDS NUMBER (REX) =	2309051.12	
INPUT VALUE OF VELOCITY DELTA =	.56000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.45207
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.05902	.05909
MOMENTUM THICKNESS (THETA) =	.04010	.04024
ENERGY-DISSIPATION THICKNESS =	.07190	.07200
ENTHALPY THICKNESS =	.00319	.00319
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.47175	1.46848
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79311	1.78917
MOMENTUM THICKNESS REYNOLDS NUMBER =	1532.95	1538.38
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2256.12	2259.09
SKIN FRICTION COEFFICIENT =	.004072	
FRICTION VELOCITY =	3.51956	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.13109
CLAUSERS 'DELTA' INTEGRAL =	-1.11060	-1.21744
CLAUSERS 'G' INTEGRAL =	7.20210	7.16863
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.05343	.05592
MOMENTUM THICKNESS - CONSTANT DENSITY =	.04005	.04079
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.31439	1.37072

LOCATION -X- 60.40000

Z = +6 INCHES

K = 0.2×10^{-6}

Table 20.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 3. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0046	.011	26.62	92.43	.347	.209	-14.208	7.564	5.237	7.966
2	.0080	.013	29.75	91.83	.388	.241	-13.319	8.452	6.016	9.966
3	.0117	.016	33.00	91.42	.431	.262	-12.397	9.375	6.541	11.595
4	.0157	.017	35.42	91.14	.462	.276	-11.709	10.063	6.910	12.914
5	.0192	.020	38.05	90.47	.497	.311	-10.960	10.812	7.778	13.224
6	.0227	.024	40.70	90.00	.531	.335	-10.209	11.563	8.375	13.698
7	.0267	.027	42.62	89.87	.556	.342	-9.667	12.111	8.541	14.007
8	.0302	.029	43.31	89.87	.565	.342	-9.467	12.304	8.544	14.326
9	.0334	.034	45.12	89.51	.590	.361	-8.935	12.836	9.013	14.620
10	.0370	.036	46.36	88.90	.605	.392	-8.598	13.173	9.801	15.069
11	.0407	.040	47.65	88.50	.622	.409	-8.232	13.540	10.227	15.717
12	.0449	.044	48.99	88.46	.639	.413	-8.029	13.742	10.320	16.191
13	.0485	.048	49.53	88.41	.654	.415	-7.852	13.920	10.366	16.665
14	.0526	.052	50.13	88.41	.663	.434	-7.698	14.074	10.453	17.134
15	.0561	.056	50.81	88.42	.669	.417	-7.524	14.242	10.479	17.608
16	.0596	.060	51.27	88.24	.669	.426	-7.206	14.566	10.653	18.070
17	.0633	.063	52.70	87.41	.688	.469	-6.799	14.972	11.717	18.529
18	.0674	.065	54.22	87.12	.706	.484	-6.367	15.404	12.004	19.072
19	.0719	.071	55.31	86.76	.722	.502	-6.058	15.714	12.557	19.552
20	.0761	.076	56.29	86.55	.735	.513	-5.777	15.995	12.832	20.079
21	.0802	.080	57.17	86.04	.746	.540	-5.529	16.243	13.492	20.629
22	.0849	.084	58.11	85.34	.761	.550	-5.204	16.566	13.750	21.190
23	.0892	.089	59.21	85.64	.773	.556	-4.947	16.825	13.947	21.731
24	.0931	.093	59.92	85.23	.782	.562	-4.747	17.024	14.140	22.254
25	.0969	.096	60.57	84.72	.791	.600	-4.561	17.171	14.340	22.769
26	.1002	.100	61.24	84.63	.799	.613	-4.371	17.211	14.540	23.274
27	.1031	.103	61.85	84.64	.809	.618	-4.169	17.400	14.741	23.779
28	.1100	.110	62.61	84.53	.817	.618	-3.963	17.603	14.942	24.284
29	.1164	.116	63.24	84.23	.826	.633	-3.788	17.789	15.144	24.789
30	.1233	.123	63.80	83.26	.833	.652	-3.627	17.984	15.346	25.294
31	.1301	.130	64.23	83.60	.833	.652	-3.467	18.145	15.548	25.799
32	.1371	.137	64.79	82.41	.833	.666	-3.522	18.250	15.750	26.304
33	.1441	.144	65.29	82.41	.833	.666	-3.300	18.763	15.951	26.809
34	.1511	.151	65.79	81.97	.833	.727	-2.652	19.119	16.152	27.314
35	.1581	.158	66.29	81.74	.833	.750	-2.427	19.345	16.353	27.819
36	.1651	.165	67.04	81.39	.833	.762	-2.031	19.741	16.554	28.324
37	.1721	.172	70.44	80.75	.833	.780	-1.758	19.914	16.755	28.829
38	.1791	.179	71.15	80.75	.833	.813	-1.568	20.014	16.956	29.334
39	.1861	.186	72.06	80.85	.833	.813	-1.297	20.217	17.157	29.839
40	.1931	.193	72.65	80.43	.833	.829	-1.131	20.474	17.358	30.344
41	.2001	.200	73.34	79.77	.833	.844	-0.935	20.640	17.559	30.849
42	.2071	.207	73.76	79.27	.833	.844	-0.815	20.837	17.760	31.354
43	.2141	.214	75.02	78.71	.833	.889	-0.456	20.957	17.961	31.859
44	.2211	.221	75.74	78.10	.833	.918	-0.252	21.316	18.162	32.364
45	.2281	.228	76.27	77.70	.833	.930	-0.159	21.520	18.363	32.869
46	.2351	.235	76.46	77.41	.833	.944	-0.047	21.613	18.564	33.374
47	.2421	.242	76.53	77.26	.833	.944	-0.027	21.725	18.765	33.879
48	.2491	.249	76.60	77.20	.833	.944	-0.015	21.744	18.966	34.384
49	.2561	.256	76.62	77.14	.833	.944	-0.014	21.766	19.167	34.889
50	.2631	.263	76.62	77.14	.833	.944	-0.014	21.766	19.368	35.394
51	.2701	.270	76.62	77.14	.833	.944	-0.014	21.766	19.569	35.899
52	.2771	.277	76.59	77.10	.833	.944	-0.012	21.760	19.770	36.404
53	.2841	.284	76.55	77.07	.833	.944	-0.021	21.750	19.971	36.909
54	.2911	.291	76.50	77.10	.833	.944	-0.018	21.753	20.172	37.414
55	.2981	.298	76.54	77.01	.833	.944	-0.011	21.761	20.373	37.919
56	.3051	.305	76.74	77.07	.833	.944	-0.003	21.690	20.574	38.424
57	.3121	.312	76.75	77.05	.833	.944	-0.007	21.693	20.775	38.929
58	.3191	.319	76.76	76.95	.833	.944	-0.004	21.667	20.976	39.434
59	.3261	.326	76.26	76.01	.833	.944	-0.098	21.674	21.177	39.939
60	.3331	.333	76.26	76.96	.833	.944	-0.105	21.666	21.378	40.444
61	.3401	.340	76.25	76.96	.833	.944	-0.108	21.663	21.579	40.949
62	.3471	.347	76.25	76.96	.833	.944	-0.108	21.664	21.780	41.454

Table 20.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 1. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	81.146	81.146
FREE STREAM TEMPERATURE ==	76.369	
WALL TEMPERATURE ==	94.350	
WALL HEAT FLUX ==	.04770	
FREE STREAM DENSITY ==	.07405	
FREE STREAM KINEMATIC VISCOSITY ==	.0001666	
DENSITY OF FLUID AT WALL ==	.07165	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001760	
WALL/FREE STREAM DENSITY RATIO ==	.96755	
LOCATION REYNOLDS NUMBER (REX) ==	2776012.91	
INPUT VALUE OF VELOCITY DELTA ==	.56000	
INPUT VALUE OF TEMPERATURE DELTA ==	.66000	
CALCULATED DELTA ==		.50854
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.06396	.06413
MOMENTUM THICKNESS (THETA) ==	.04413	.04438
ENERGY-DISSIPATION THICKNESS ==	.07937	.07954
ENTHALPY THICKNESS ==	.00330	.00330
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.44938	1.44509
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.79844	1.79231
MOMENTUM THICKNESS REYNOLDS NUMBER ==	1791.02	1801.15
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	2595.86	2602.81
SKIN FRICTION COEFFICIENT ==	.003967	
FRICTION VELOCITY ==	3.67412	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		.11173
CLAUSERS 'DELTA' INTEGRAL ==	-1.21163	-1.34417
CLAUSERS 'G' INTEGRAL ==	7.81323	7.77080
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.05778	.06086
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.04467	.04493
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.29331	1.35457

LOCATION -X- 68.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 21.

JOB KLDW22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 1. GFID NO. 1

REDUCED PROFILE DATA

N	Y	Y/	U	T	U/UE	THETA	U-UE	U(+)	T(+)	Y(+)
INCHES	DELTA	FT/SEC	DEG.F				UTAU			
1	.000556	.011	32.26	89.41	.398	.275	-13.301	8.785	6.542	10.107
2	.000733	.014	37.61	88.86	.464	.306	-11.849	10.237	7.277	12.707
3	.000933	.016	39.13	88.67	.482	.316	-11.436	10.644	7.521	13.747
4	.001093	.018	42.05	88.25	.518	.339	-10.642	11.444	8.080	16.174
5	.0011093	.020	43.74	88.04	.534	.351	-10.269	11.796	8.358	17.387
6	.001133	.023	45.62	87.55	.562	.380	-9.669	12.416	9.062	20.334
7	.001143	.026	47.29	87.27	.583	.394	-9.215	12.871	9.381	23.108
8	.001163	.028	48.65	87.21	.592	.397	-9.006	13.078	9.455	24.495
9	.001163	.030	49.66	86.90	.611	.414	-8.598	13.486	9.869	28.309
10	.001111	.033	50.60	86.60	.624	.431	-8.317	13.779	10.270	31.429
11	.001111	.036	51.46	86.44	.634	.440	-8.079	14.007	10.478	34.896
12	.001093	.039	52.27	86.19	.644	.454	-7.854	14.232	10.613	37.670
13	.001093	.042	53.04	86.04	.647	.462	-7.786	14.300	11.007	39.750
14	.001093	.045	53.79	85.99	.656	.461	-7.601	14.485	10.984	43.564
15	.001093	.048	54.51	85.99	.662	.465	-7.466	14.619	11.075	46.684
16	.001093	.051	55.21	85.80	.671	.476	-7.269	14.816	11.331	50.498
17	.001093	.054	55.89	85.61	.675	.486	-7.173	14.913	11.570	53.272
18	.001093	.057	56.56	85.42	.692	.508	-6.800	15.286	12.097	64.366
19	.001093	.060	57.21	85.23	.710	.523	-6.410	15.676	12.462	76.501
20	.001093	.063	57.84	85.04	.723	.530	-6.119	15.967	12.627	89.156
21	.001093	.066	58.46	84.85	.734	.535	-5.885	16.201	12.732	98.600
22	.001093	.069	59.07	84.66	.745	.550	-5.624	16.461	13.111	111.172
23	.001093	.072	59.67	84.47	.757	.564	-5.364	16.722	13.439	123.480
24	.001093	.075	60.26	84.28	.765	.581	-5.196	16.886	13.839	133.361
25	.001093	.078	60.85	84.09	.776	.577	-4.948	17.138	13.746	145.682
26	.001093	.081	61.44	83.90	.785	.595	-4.743	17.343	14.172	157.600
27	.001093	.084	62.03	83.71	.793	.603	-4.576	17.504	14.356	168.378
28	.001093	.087	62.62	83.52	.800	.622	-4.423	17.663	14.615	179.993
29	.001093	.090	63.21	83.33	.810	.624	-4.285	17.881	14.651	192.128
30	.001093	.093	63.80	83.14	.815	.631	-4.089	18.001	15.038	202.529
31	.001093	.096	64.39	82.95	.822	.633	-3.939	18.151	15.086	215.357
32	.001093	.099	64.98	82.76	.827	.645	-3.820	18.265	15.366	227.838
33	.001093	.102	65.57	82.57	.834	.681	-3.442	18.643	16.227	256.442
34	.001093	.105	66.16	82.38	.856	.694	-3.145	18.941	16.538	287.299
35	.001093	.108	66.75	82.19	.874	.708	-2.775	19.310	16.871	317.116
36	.001093	.111	67.34	82.00	.887	.726	-2.491	19.594	17.290	349.013
37	.001093	.114	67.93	81.81	.899	.755	-2.237	19.849	17.971	377.616
38	.001093	.117	68.52	81.62	.910	.768	-1.979	20.107	18.295	408.620
39	.001093	.120	69.11	81.43	.924	.777	-1.687	20.399	18.515	438.863
40	.001093	.123	69.70	81.24	.930	.803	-1.537	20.549	19.128	469.493
41	.001093	.126	70.29	81.05	.940	.826	-1.336	20.750	19.679	499.630
42	.001093	.129	70.88	80.86	.950	.819	-1.114	20.972	19.504	530.340
43	.001093	.132	71.47	80.67	.969	.884	-0.691	21.395	21.054	616.670
44	.001093	.135	72.06	80.48	.983	.926	-0.365	21.720	22.051	704.387
45	.001093	.138	72.65	80.29	.991	.957	-0.208	21.877	22.794	791.237
46	.001093	.141	73.24	80.10	.997	.972	-0.062	22.023	23.153	877.394
47	.001093	.144	73.83	79.91	.999	.985	-0.019	22.071	23.462	963.551
48	.001093	.147	74.42	79.72	.999	.993	-0.019	22.070	23.647	1050.227
49	.001093	.150	75.01	79.53	1.000	.996	.003	22.069	23.763	1136.904
50	.001093	.153	75.60	79.34	1.000	.998	.012	22.068	23.764	1223.928
51	.001093	.156	76.19	79.15	1.000	.998	.005	22.069	23.618	1310.431
52	.001093	.159	76.78	78.96	1.000	.998	-0.004	22.082	23.867	1397.628
53	.001093	.162	77.37	78.77	1.000	1.001	-0.006	22.079	23.834	1776.485
54	.001093	.165	77.96	78.58	.999	1.002	-0.028	22.068	23.863	2159.343
55	.001093	.168	78.55	78.39	.998	1.001	-0.047	22.039	23.842	2541.067
56	.001093	.171	79.14	78.20	.996	1.002	-0.093	22.033	23.871	2923.312
57	.001093	.174	79.73	78.01	.996	1.002	-0.046	22.042	23.655	3303.649
58	.001093	.177	80.32	77.82	.996	1.000	-0.066	21.998	23.619	3686.067
59	.001093	.180	80.91	77.63	.996	1.001	-0.110	21.981	23.634	4066.752
60	.001093	.183	81.50	77.44	.996	1.000	-0.066	21.999	23.611	4447.783
61	.001093	.186	82.09	77.25	.996	1.000	-0.086	21.997	23.789	4828.967
62	.001093	.189	82.68	77.06	.995	.999	-0.107	21.979	23.797	5210.885

Table 21.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 26. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	52.950	52.950
FREE STREAM TEMPERATURE	74.513	
WALL TEMPERATURE	96.020	
WALL HEAT FLUX	.04660	
FREE STREAM DENSITY	.07481	
FREE STREAM KINEMATIC VISCOSITY	.0001645	
DENSITY OF FLUID AT WALL	.07191	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001764	
WALL/FREE STREAM DENSITY RATIO	.96130	
LOCATION REYNOLDS NUMBER (REX)	118025.11	
INPUT VALUE OF VELOCITY DELTA	.07100	
INPUT VALUE OF TEMPERATURE DELTA	.07100	
CALCULATED DELTA		
DELTA 99.5% INPUT	.07100	
DISPLACEMENT THICKNESS (DELSTAR)	.02083	.01495
MOMENTUM THICKNESS (THETA)	.00843	.00840
ENERGY-DISSIPATION THICKNESS	.01344	.01431
ENTHALPY THICKNESS	.00024	.00038
SHAPE FACTOR 12 (DELSTAR/THETA)	2.47042	1.78076
SHAPE FACTOR 32 (ENERGY/THETA)	1.59358	1.70431
MOMENTUM THICKNESS REYNOLDS NUMBER	226.16	225.25
DISPLACEMENT THICKNESS REYNOLDS NUMBER	558.71	401.11
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS 'DELTA' INTEGRAL	- .25444	- .24295
CLAUSERS 'G' INTEGRAL	3.34750	1.68010
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.01793	.01457
MOMENTUM THICKNESS - CONSTANT DENSITY	.00855	.00853
SHAPE FACTOR 12 - CONSTANT DENSITY	2.09687	1.70871
LOCATION -X-	4.40000	
Z = CENTERLINE		
K = 0.2 x 10 ⁻⁶		

Table 22.

WLOM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80
 RUN NO. 1. POINT 26. GRID NO. 2

REDUCED PROFILE DATA

	Y	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
N	INC					
1	.0000	.075	10.90	93.24	.206	.129
2	.0000	.095	11.70	92.03	.222	.186
3	.0000	.105	12.05	91.47	.228	.216
4	.0000	.120	13.88	90.50	.262	.257
5	.0000	.137	14.95	89.57	.282	.300
6	.0000	.156	17.67	88.34	.334	.357
7	.0000	.174	19.53	87.23	.369	.409
8	.0000	.189	20.61	86.75	.389	.431
9	.0000	.216	22.47	86.10	.443	.508
10	.0000	.235	25.35	85.56	.498	.579
11	.0000	.255	28.00	85.03	.539	.627
12	.0000	.319	32.24	84.50	.576	.675
13	.0000	.348	34.59	84.01	.609	.711
14	.0000	.371	36.29	83.51	.653	.754
15	.0000	.403	38.37	83.01	.685	.792
16	.0000	.426	40.01	82.52	.725	.842
17	.0000	.448	42.44	82.03	.756	.865
18	.0000	.461	44.44	81.53	.639	.924
19	.0000	.474	46.72	81.03	.907	.971
20	.0000	.487	48.50	80.53	.952	.991
21	.0000	.500	51.70	80.03	.976	.996
22	.0000	.513	52.30	79.53	.989	.999
23	.0000	.526	52.70	79.03	.995	.999
24	.0000	.539	52.93	78.53	.999	1.000
25	.0000	.552	53.17	78.03	1.000	1.000
26	.0000	.565	53.41	77.53	1.000	1.000
27	.0000	.578	53.66	77.03	1.000	1.000
28	.0000	.591	53.91	76.53	1.000	1.000
29	.0000	.604	54.16	76.03	1.000	1.000
30	.0000	.617	54.41	75.53	1.000	1.000
31	.0000	.630	54.66	75.03	1.000	1.000
32	.0000	.643	54.91	74.53	1.000	1.000
33	.0000	.656	55.16	74.03	1.000	1.000
34	.0000	.669	55.41	73.53	1.000	1.000
35	.0000	.682	55.66	73.03	1.000	1.000
36	.0000	.695	55.91	72.53	1.000	1.000
37	.0000	.708	56.16	72.03	1.000	1.000
38	.0000	.721	56.41	71.53	1.000	1.000
39	.0000	.734	56.66	71.03	1.000	1.000
40	.0000	.747	56.91	70.53	1.000	1.000
41	.0000	.760	57.16	70.03	1.000	1.000
42	.0000	.773	57.41	69.53	1.000	1.000
43	.0000	.786	57.66	69.03	1.000	1.000
44	.0000	.799	57.91	68.53	1.000	1.000
45	.0000	.812	58.16	68.03	1.000	1.000
46	.0000	.825	58.41	67.53	1.000	1.000
47	.0000	.838	58.66	67.03	1.000	1.000
48	.0000	.851	58.91	66.53	1.000	1.000
49	.0000	.864	59.16	66.03	1.000	1.000
50	.0000	.877	59.41	65.53	1.000	1.000
51	.0000	.890	59.66	65.03	1.000	1.000
52	.0000	.903	59.91	64.53	1.000	1.000
53	.0000	.916	60.16	64.03	1.000	1.000
54	.0000	.929	60.41	63.53	1.000	1.000
55	.0000	.942	60.66	63.03	1.000	1.000
56	.0000	.955	60.91	62.53	1.000	1.000
57	.0000	.968	61.16	62.03	1.000	1.000
58	.0000	.981	61.41	61.53	1.000	1.000
59	.0000	.994	61.66	61.03	1.000	1.000
60	.0000	1.007	61.91	60.53	1.000	1.000
61	.0000	1.020	62.16	60.03	1.000	1.000
62	.0000	1.033	62.41	59.53	1.000	1.000
63	.0000	1.046	62.66	59.03	1.000	1.000
64	.0000	1.059	62.91	58.53	1.000	1.000
65	.0000	1.072	63.16	58.03	1.000	1.000
66	.0000	1.085	63.41	57.53	1.000	1.000
67	.0000	1.098	63.66	57.03	1.000	1.000
68	.0000	1.111	63.91	56.53	1.000	1.000
69	.0000	1.124	64.16	56.03	1.000	1.000
70	.0000	1.137	64.41	55.53	1.000	1.000
71	.0000	1.150	64.66	55.03	1.000	1.000
72	.0000	1.163	64.91	54.53	1.000	1.000
73	.0000	1.176	65.16	54.03	1.000	1.000
74	.0000	1.189	65.41	53.53	1.000	1.000
75	.0000	1.202	65.66	53.03	1.000	1.000
76	.0000	1.215	65.91	52.53	1.000	1.000
77	.0000	1.228	66.16	52.03	1.000	1.000
78	.0000	1.241	66.41	51.53	1.000	1.000
79	.0000	1.254	66.66	51.03	1.000	1.000
80	.0000	1.267	66.91	50.53	1.000	1.000
81	.0000	1.280	67.16	50.03	1.000	1.000
82	.0000	1.293	67.41	49.53	1.000	1.000
83	.0000	1.306	67.66	49.03	1.000	1.000
84	.0000	1.319	67.91	48.53	1.000	1.000
85	.0000	1.332	68.16	48.03	1.000	1.000
86	.0000	1.345	68.41	47.53	1.000	1.000
87	.0000	1.358	68.66	47.03	1.000	1.000
88	.0000	1.371	68.91	46.53	1.000	1.000
89	.0000	1.384	69.16	46.03	1.000	1.000
90	.0000	1.397	69.41	45.53	1.000	1.000
91	.0000	1.410	69.66	45.03	1.000	1.000
92	.0000	1.423	69.91	44.53	1.000	1.000
93	.0000	1.436	70.16	44.03	1.000	1.000
94	.0000	1.449	70.41	43.53	1.000	1.000
95	.0000	1.462	70.66	43.03	1.000	1.000
96	.0000	1.475	70.91	42.53	1.000	1.000
97	.0000	1.488	71.16	42.03	1.000	1.000
98	.0000	1.501	71.41	41.53	1.000	1.000
99	.0000	1.514	71.66	41.03	1.000	1.000
100	.0000	1.527	71.91	40.53	1.000	1.000

Table 22.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 25. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	54.221	54.221
FREE STREAM TEMPERATURE =	74.138	
WALL TEMPERATURE =	103.630	
WALL HEAT FLUX =	.04420	
FREE STREAM DENSITY =	.07486	
FREE STREAM KINEMATIC VISCOSITY =	.0001643	
DENSITY OF FLUID AT WALL =	.07094	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001807	
WALL/FREE STREAM DENSITY RATIO =	.94765	
LOCATION PEYNOLDS NUMBER (REX) =	231016.49	
INPUT VALUE OF VELOCITY DELTA =	.10500	
INPUT VALUE OF TEMPERATURE DELTA =	.11500	
CALCULATED DELTA =	.10500	
DELTA 99.5% INPUT =	.02470	.01922
DISPLACEMENT THICKNESS (DELSTAR) =	.01088	.01096
MOMENTUM THICKNESS (THETA) =	.01782	.01880
ENERGY-DISSIPATION THICKNESS =	.00060	.00081
ENTHALPY THICKNESS =	2.26956	1.75358
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.63699	1.71543
SHAPE FACTOR 32 (ENERGY/THETA) =	299.30	301.43
MOMENTUM THICKNESS PEYNOLDS NUMBER =	679.28	528.58
DISPLACEMENT THICKNESS PEYNOLDS NUMRER =		
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSEPS 'DELTA' INTEGRAL =	-.31715	-.31619
CLAUSEPS 'G' INTEGRAL =	3.82957	2.12458
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02128	.01841
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01111	.01121
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.91496	1.64266
LOCATION -X-	8.40000	
Z = CENTERLINE		
K = 0.2×10^{-6}		

Table 23.

KLDM21X TAPL 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 25. GRID NO. 2

REDUCED PROFILE DATA

N	INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.00556	.054	9.99	99.17	.184	.151
2	.0065	.062	11.89	98.53	.219	.173
3	.0082	.078	14.50	97.04	.267	.223
4	.0097	.093	16.92	96.15	.312	.253
5	.0105	.100	17.54	95.66	.323	.270
6	.0127	.121	20.87	94.05	.385	.325
7	.0146	.141	23.96	92.60	.442	.374
8	.0167	.159	25.46	90.92	.470	.431
9	.0181	.173	26.69	90.19	.490	.456
10	.0197	.188	28.42	89.54	.524	.478
11	.0217	.207	30.69	88.13	.566	.524
12	.0236	.225	32.36	87.14	.597	.559
13	.0255	.243	33.60	86.07	.620	.595
14	.0271	.258	35.34	85.33	.652	.620
15	.0335	.319	39.47	82.04	.728	.732
16	.0403	.384	43.67	79.88	.805	.805
17	.0473	.451	46.59	77.99	.859	.869
18	.0533	.508	48.55	76.81	.895	.909
19	.0605	.576	50.36	75.71	.929	.947
20	.0674	.642	51.57	75.16	.951	.965
21	.0734	.699	52.64	74.79	.971	.979
22	.0805	.767	53.20	74.74	.982	.980
23	.0873	.832	53.43	74.73	.985	.983
24	.0935	.891	53.79	74.25	.992	.994
25	.1004	.950	54.11	74.21	.996	.998
26	.1077	1.026	54.10	74.15	.998	1.000
27	.1136	1.082	54.12	74.14	.998	1.000
28	.1204	1.147	54.44	74.15	1.004	1.000
29	.1278	1.217	54.56	74.13	1.007	1.000
30	.1447	1.378	54.30	74.14	1.003	1.000
31	.1622	1.545	54.44	74.16	1.004	.999
32	.1797	1.712	54.45	74.15	1.004	1.000
33	.1977	1.883	54.50	74.16	1.005	.999
34	.2146	2.044	54.35	74.14	1.002	1.000
35	.2327	2.216	54.52	74.15	1.007	1.000
36	.2493	2.375	54.36	74.15	1.003	1.000
37	.2677	2.550	54.23	74.15	1.000	1.000
38	.2843	2.708	54.34	74.13	1.002	1.000
39	.3024	2.880	54.60	74.13	1.008	1.000
40	.3321	3.163	54.49	74.13	1.005	1.000
41	.3628	3.456	54.30	74.14	1.001	1.000
42	.3927	3.740	54.44	74.13	1.004	1.000
43	.4226	4.025	54.46	74.13	1.004	1.000
44	.4527	4.312	54.42	74.13	1.004	1.000
45	.4829	4.599	54.35	74.12	1.002	1.000
46	.5127	4.883	54.16	74.13	.999	1.000
47	.5426	5.166	54.14	74.13	.999	1.000
48	.5723	5.451	54.24	74.13	1.000	1.000
49	.6024	5.737	53.91	74.12	.994	1.000
50	.6325	6.025	53.92	74.13	.994	1.000
51	.6627	6.313	53.96	74.14	.995	1.000
52	.6927	6.601	53.93	74.11	.995	1.001
53	.7221	6.890	54.00	74.09	.996	1.002
54	.7526	7.180	53.84	74.06	.993	1.003

Table 23.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 7. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	54.660	54.660
FREE STREAM TEMPERATURE	76.052	
WALL TEMPERATURE	107.310	
WALL HEAT FLUX	.04470	
FREE STREAM DENSITY	.07394	
FREE STREAM KINEMATIC VISCOSITY	.0001673	
DENSITY OF FLUID AT WALL	.07013	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001837	
WALL/FREE STREAM DENSITY RATIO	.94840	
LOCATION REYNOLDS NUMBER (REX)	228749.64	
INPUT VALUE OF VELOCITY DELTA	.17000	
INPUT VALUE OF TEMPERATURE DELTA	.17000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.12000	
DISPLACEMENT THICKNESS (DELSTAR)	.02610	.02022
MOMENTUM THICKNESS (THETA)	.01139	.01159
ENERGY-DISSIPATION THICKNESS	.01857	.01964
ENTHALPY THICKNESS	.00057	.00079
SHAPE FACTOR 12 (DELSTAR/THETA)	2.29172	1.74525
SHAPE FACTOR 32 (ENERGY/THETA)	1.63065	1.71289
MOMENTUM THICKNESS REYNOLDS NUMBER	310.18	315.50
DISPLACEMENT THICKNESS REYNOLDS NUMBER	710.85	550.63
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS 'DELTA' INTEGRAL	-.35951	-.33422
CLAUSERS 'G' INTEGRAL	4.11588	2.24762
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02322	.01943
MOMENTUM THICKNESS - CONSTANT DENSITY	.01162	.01183
SHAPE FACTOR 12 - CONSTANT DENSITY	1.99833	1.64207

LOCATION -X- 8.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 24.

KLUM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80
 RUN NO. 1. POINT 7. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0046	.039	8.75	103.56	.160	.128
2	.0074	.062	11.83	101.46	.216	.200
3	.0097	.081	15.35	99.78	.281	.257
4	.0122	.102	18.34	98.01	.336	.318
5	.0145	.121	21.31	96.85	.390	.358
6	.0173	.144	24.65	94.88	.451	.425
7	.0196	.164	26.87	93.13	.492	.485
8	.0226	.189	20.82	91.55	.545	.539
9	.0243	.203	31.31	90.69	.573	.568
10	.0272	.227	33.65	89.05	.619	.624
11	.0295	.246	35.87	88.05	.656	.658
12	.0326	.272	38.15	86.62	.698	.707
13	.0347	.289	39.45	85.95	.721	.735
14	.0373	.311	41.33	84.61	.759	.776
15	.0394	.329	42.44	84.06	.777	.795
16	.0426	.355	44.13	82.82	.807	.837
17	.0444	.370	45.07	82.45	.825	.850
18	.0477	.398	46.43	81.56	.844	.880
19	.0497	.414	47.38	81.14	.866	.894
20	.0526	.438	48.32	80.07	.884	.897
21	.0575	.479	40.00	80.06	.912	.931
22	.0625	.521	50.00	79.54	.932	.949
23	.0675	.563	51.00	78.97	.950	.969
24	.0726	.605	52.00	78.69	.963	.978
25	.0779	.646	53.00	78.57	.971	.982
26	.0829	.686	53.00	78.42	.980	.987
27	.0876	.725	53.00	78.26	.984	.992
28	.0925	.771	54.00	78.13	.989	.995
29	.0975	.813	54.00	78.15	.991	.997
30	.1025	.854	54.00	78.10	.993	.998
31	.1327	1.106	54.57	78.07	.996	.999
32	.1621	1.351	54.69	78.05	1.000	1.000
33	.1927	1.606	54.65	78.05	1.000	1.000
34	.2223	1.853	54.62	78.05	1.000	1.000
35	.2525	2.104	54.71	78.06	1.001	1.000
36	.8024	6.687	54.50	78.07	.997	.999
37	1.3527	11.273	54.28	78.04	.993	1.001
38	1.9022	15.652	54.36	78.07	.995	.999
39	2.4526	20.434	54.35	78.07	.994	.999
40	3.0028	25.024	54.28	78.08	.993	.999

Table 24.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 5. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	54.703	54.703
FREE STREAM TEMPERATURE ==	78.561	
WALL TEMPERATURE ==	107.740	
WALL HEAT FLUX ==	.04490	
FREE STREAM DENSITY ==	.07424	
FREE STREAM KINEMATIC VISCOSITY ==	.0001667	
DENSITY OF FLUID AT WALL ==	.07043	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001830	
WALL/FREE STREAM DENSITY RATIO ==	.94858	
LOCATION REYNOLDS NUMBER (REX) ==	229691.79	
INPUT VALUE OF VELOCITY DELTA ==	.17000	
INPUT VALUE OF TEMPERATURE DELTA ==	.17000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.10200	
DISPLACEMENT THICKNESS (DELSTAR) ==	.02616	.02017
MOMENTUM THICKNESS (THETA) ==	.01125	.01152
ENERGY-DISSIPATION THICKNESS ==	.01830	.01969
ENTHALPY THICKNESS ==	.00055	.00076
SHAPE FACTOR 12 (DELSTAR/THETA) ==	2.32439	1.74996
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.62650	1.70885
MOMENTUM THICKNESS REYNOLDS NUMBER ==	307.71	315.13
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	715.23	551.46
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS 'DELTA' INTEGRAL ==	- .36756	- .33522
CLAUSERS 'G' INTEGRAL ==	4.21955	2.28070
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02344	.01940
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01147	.01176
SHAPE FACTOR 12 - CONSTANT DENSITY ==	2.04415	1.64970
LOCATION -X-	8.40000	
Z = -6 INCHES		
K = 0.2 X 10 ⁻⁶		

Table 25.

KLDM21X TAPL 47522- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 5. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.00443	.042	7.64	103.67	.140	.139
2	.00663	.062	9.67	102.17	.185	.191
3	.00946	.094	14.37	99.46	.263	.284
4	.01113	.111	16.72	98.25	.306	.325
5	.01441	.134	20.90	96.36	.382	.390
6	.01677	.164	24.66	94.88	.433	.441
7	.01933	.193	28.44	93.18	.495	.502
8	.02148	.212	29.61	91.48	.523	.545
9	.02441	.244	31.67	90.44	.579	.594
10	.02663	.266	33.70	89.22	.610	.635
11	.02907	.290	35.71	88.18	.653	.670
12	.03113	.311	37.02	87.12	.677	.710
13	.03333	.333	39.49	85.73	.722	.752
14	.03557	.357	40.83	84.55	.746	.784
15	.03889	.388	42.55	84.07	.778	.811
16	.04111	.407	43.57	83.57	.796	.828
17	.04446	.446	44.62	82.59	.821	.862
18	.04664	.466	45.92	82.12	.839	.878
19	.04947	.494	47.12	81.65	.861	.894
20	.05144	.514	47.87	81.31	.875	.906
21	.05388	.538	48.60	80.79	.890	.924
22	.05544	.554	50.00	80.22	.919	.943
23	.05744	.574	51.35	79.79	.936	.958
24	.05933	.593	52.13	79.52	.953	.967
25	.06144	.614	52.28	79.28	.964	.975
26	.06333	.633	53.35	79.06	.970	.983
27	.06544	.654	53.70	78.90	.982	.988
28	.06766	.676	54.02	78.84	.988	.990
29	.06966	.696	54.16	78.78	.990	.992
30	.07155	.715	54.29	78.73	.992	.994
31	.07344	.734	54.57	78.73	.996	.994
32	.07518	.751	54.70	78.64	.997	.997
33	.07644	.764	54.85	78.60	.999	.999
34	.07805	.780	54.91	78.58	.998	.999
35	.07944	.794	54.70	78.55	.999	.999
36	.08044	.804	54.51	78.55	.999	.999
37	.08144	.814	54.65	78.54	.999	.999
38	.08244	.824	54.50	78.54	.997	.999
39	.08344	.834	54.45	78.54	.995	.999
40	.08444	.844	54.45	78.54	.995	.999
41	.08544	.854	54.44	78.54	.995	.999

Table 25.

KLDM21X TAPE 4752R- FILES 66-85, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 24. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	55.256	55.256
FREE STREAM TEMPERATURE =	74.158	
WALL TEMPERATURE =	102.740	
WALL HEAT FLUX =	.04540	
FREE STREAM DENSITY =	.07486	
FREE STREAM KINEMATIC VISCOSITY =	.0001643	
DENSITY OF FLUID AT WALL =	.07105	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001802	
WALL/FREE STREAM DENSITY RATIO =	.94918	
LOCATION PEYNOIDS NUMBER (REX) =	347510.93	
INPUT VALUE OF VELOCITY DELTA =	.17000	
INPUT VALUE OF TEMPERATURE DELTA =	.18500	
CALCULATED DELTA =	.14700	
DELTA 99.5% INPUT =	.03000	.02496
DISPLACEMENT THICKNESS (DELSTAR) =	.01437	.01470
MOMENTUM THICKNESS (THETA) =	.02400	.02535
ENERGY-DISSIPATION THICKNESS =	.00083	.00102
ENTHALPY THICKNESS =	2.08767	1.69757
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.66992	1.72411
SHAPE FACTOR 32 (ENERGY/THETA) =	402.78	411.99
MOMENTUM THICKNESS PEYNOIDS NUMBER =	840.88	699.38
DISPLACEMENT THICKNESS PEYNOIDS NUMBER =		
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =	.41000	
LAW OF THE WALL CONSTANT (K) =	5.00000	
LAW OF THE WALL CONSTANT (C) =		
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	- .45071	- .43419
CLAUSERS 'G' INTEGRAL =	4.77971	2.93936
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02701	.02393
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01465	.01500
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.64350	1.59533

LOCATION -X- 12.40000

Z = CENTERLINE

K = 0.2 x 10⁻⁶

Table 26.

KLDM21X TAPL 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 24. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.029	8.40	99.33	.152	.119
2	.0056	.036	8.67	98.62	.157	.144
3	.0064	.044	9.06	98.14	.181	.161
4	.0077	.053	12.60	97.44	.228	.185
5	.0083	.057	14.13	96.83	.258	.207
6	.0102	.070	16.68	95.45	.302	.254
7	.0115	.078	18.39	95.40	.353	.257
8	.0125	.085	20.04	94.75	.363	.280
9	.0145	.099	22.40	93.59	.406	.320
10	.0164	.112	24.66	92.62	.447	.354
11	.0184	.125	26.73	90.60	.484	.425
12	.0202	.138	28.40	90.12	.514	.441
13	.0214	.146	29.47	89.13	.533	.476
14	.0235	.160	30.93	88.51	.560	.498
15	.0253	.172	32.47	87.75	.588	.523
16	.0274	.187	33.85	86.56	.613	.565
17	.0292	.199	34.87	85.97	.631	.587
18	.0355	.242	38.70	83.67	.700	.660
19	.0425	.289	42.01	81.36	.760	.748
20	.0497	.378	44.75	79.95	.810	.798
21	.0554	.377	46.76	78.73	.846	.838
22	.0626	.426	48.42	77.55	.876	.881
23	.0676	.474	49.84	77.24	.902	.899
24	.0754	.513	50.35	76.55	.922	.916
25	.0825	.561	51.95	75.92	.940	.937
26	.0845	.608	52.64	75.51	.953	.953
27	.0935	.650	53.12	75.13	.961	.964
28	.1024	.697	53.46	74.91	.968	.974
29	.1093	.744	53.93	74.80	.976	.977
30	.1154	.785	54.23	74.78	.981	.978
31	.1227	.835	54.46	74.64	.986	.983
32	.1295	.881	54.60	74.41	.988	.992
33	.1403	.995	54.97	74.38	.995	.992
34	.1642	1.117	55.16	74.28	.998	.996
35	.1813	1.234	55.18	74.17	.999	.999
36	.1994	1.357	55.28	74.18	1.000	.999
37	.2163	1.472	55.30	74.18	1.001	1.000
38	.2344	1.595	55.21	74.13	.999	1.001
39	.2514	1.710	55.42	74.16	1.003	1.000
40	.2693	1.832	55.25	74.15	1.000	1.000
41	.2864	1.949	55.35	74.15	1.002	1.000
42	.3044	2.071	55.37	74.15	1.002	1.006
43	.3342	2.274	55.31	74.14	1.001	1.001
44	.3647	2.481	55.24	74.15	1.000	1.000
45	.3944	2.683	55.36	74.14	1.000	1.001
46	.4244	2.886	55.39	74.14	1.002	1.000
47	.4544	3.092	55.34	74.13	1.002	1.001
48	.4848	3.296	55.25	74.13	1.000	1.001
49	.5146	3.501	55.31	74.14	1.001	1.001
50	.5445	3.704	55.31	74.12	1.001	1.001
51	.5744	3.908	55.21	74.13	.999	1.001
52	.6046	4.113	55.35	74.14	1.002	1.001
53	.6345	4.376	55.20	74.15	.999	1.000
54	.6646	4.644	55.12	74.13	.998	1.001
55	.6945	4.908	55.10	74.14	.997	1.001
56	.7242	5.172	54.99	74.15	.994	1.000
57	.7546	5.440	54.91	74.15	.994	1.000

Table 26.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 9. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	56.366	56.366
FREE STREAM TEMPERATURE =	78.315	
WALL TEMPERATURE =	100.920	
WALL HEAT FLUX =	.04590	
FREE STREAM DENSITY =	.07391	
FREE STREAM KINEMATIC VISCOSITY =	.0001674	
DENSITY OF FLUID AT WALL =	.07093	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001800	
WALL/FREE STREAM DENSITY RATIO =	.95968	
LOCATION REYNOLDS NUMEP (REX) =	460146.57	
INPUT VALUE OF VELOCITY DELTA =	.21000	
INPUT VALUE OF TEMPERATURE DELTA =	.21000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.19500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03634	.03083
MOMENTUM THICKNESS (THETA) =	.01851	.01925
ENERGY-DISSIPATION THICKNESS =	.03163	.03358
ENTHALPY THICKNESS =	.00093	.00110
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.96262	1.60150
SHAPE FACTOR 32 (ENERGY/THETA) =	1.70873	1.74452
MOMENTUM THICKNESS REYNOLDS NUMBER =	519.40	540.11
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1019.50	864.98
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.55717	-.55081
CLAUSERS 'G' INTEGRAL =	5.70875	3.49754
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03274	.02973
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01877	.01954
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.74384	1.52137

LOCATION -X- 16.40000

Z = CENTERLINE

K = 0.2 x 10⁻⁶

Table 27.

KLDM21X TAPE 4752P- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 9. GRID NO. 2

REDUCED PROFILE DATA

N	Y	DELTA	U	T	U/UE	THETA
I	A	TA	SEC	DEG.F		
1	1	1	1	97.41	.160	.155
2	1	1	1	97.41	.201	.248
3	1	1	1	97.41	.416	.354
4	1	1	1	97.41	.516	.420
5	1	1	1	89.56	.577	.503
6	1	1	1	88.21	.631	.562
7	1	1	1	87.04	.681	.614
8	1	1	1	86.44	.717	.641
9	1	1	1	86.66	.745	.675
10	1	1	1	86.00	.776	.704
11	1	1	1	86.00	.797	.747
12	1	1	1	86.00	.810	.784
13	1	1	1	86.00	.834	.791
14	1	1	1	86.00	.854	.817
15	1	1	1	86.00	.866	.838
16	1	1	1	86.00	.876	.844
17	1	1	1	86.00	.890	.870
18	1	1	1	86.00	.901	.881
19	1	1	1	86.00	.914	.905
20	1	1	1	86.00	.922	.915
21	1	1	1	86.00	.930	.914
22	1	1	1	86.00	.937	.924
23	1	1	1	86.00	.946	.931
24	1	1	1	86.00	.953	.933
25	1	1	1	86.00	.964	.947
26	1	1	1	86.00	.971	.966
27	1	1	1	86.00	.977	.971
28	1	1	1	86.00	.983	.981
29	1	1	1	86.00	.985	.982
30	1	1	1	86.00	.989	.984
31	1	1	1	86.00	.992	.989
32	1	1	1	86.00	.996	.991
33	1	1	1	86.00	.999	.992
34	1	1	1	86.00	.999	.997
35	1	1	1	86.00	1.000	1.000
36	1	1	1	86.00	1.001	1.003
37	1	1	1	86.00	1.005	1.005
38	1	1	1	86.00	1.002	1.005
39	1	1	1	86.00	1.005	1.005
40	1	1	1	86.00	1.007	1.009
41	1	1	1	86.00	1.005	1.010
42	1	1	1	86.00	1.006	1.011
43	1	1	1	86.00	1.006	1.011
44	1	1	1	86.00	1.006	1.012
45	1	1	1	86.00	1.007	1.012
46	1	1	1	86.00	1.007	1.012
47	1	1	1	86.00	1.007	1.012
48	1	1	1	86.00	1.007	1.012
49	1	1	1	86.00	1.007	1.012
50	1	1	1	86.00	1.007	1.012
51	1	1	1	86.00	1.007	1.012
52	1	1	1	86.00	1.007	1.012
53	1	1	1	86.00	1.007	1.012
54	1	1	1	86.00	1.007	1.012
55	1	1	1	86.00	1.007	1.012
56	1	1	1	86.00	1.007	1.012
57	1	1	1	86.00	1.007	1.012
58	1	1	1	86.00	1.007	1.012
59	1	1	1	86.00	1.007	1.012
60	1	1	1	86.00	1.007	1.012
61	1	1	1	86.00	1.007	1.012
62	1	1	1	86.00	1.007	1.012
63	1	1	1	86.00	1.007	1.012
64	1	1	1	86.00	1.007	1.012
65	1	1	1	86.00	1.007	1.012
66	1	1	1	86.00	1.007	1.012
67	1	1	1	86.00	1.007	1.012
68	1	1	1	86.00	1.007	1.012
69	1	1	1	86.00	1.007	1.012
70	1	1	1	86.00	1.007	1.012
71	1	1	1	86.00	1.007	1.012
72	1	1	1	86.00	1.007	1.012
73	1	1	1	86.00	1.007	1.012
74	1	1	1	86.00	1.007	1.012
75	1	1	1	86.00	1.007	1.012
76	1	1	1	86.00	1.007	1.012
77	1	1	1	86.00	1.007	1.012
78	1	1	1	86.00	1.007	1.012
79	1	1	1	86.00	1.007	1.012
80	1	1	1	86.00	1.007	1.012
81	1	1	1	86.00	1.007	1.012
82	1	1	1	86.00	1.007	1.012
83	1	1	1	86.00	1.007	1.012
84	1	1	1	86.00	1.007	1.012
85	1	1	1	86.00	1.007	1.012
86	1	1	1	86.00	1.007	1.012
87	1	1	1	86.00	1.007	1.012
88	1	1	1	86.00	1.007	1.012
89	1	1	1	86.00	1.007	1.012
90	1	1	1	86.00	1.007	1.012
91	1	1	1	86.00	1.007	1.012
92	1	1	1	86.00	1.007	1.012
93	1	1	1	86.00	1.007	1.012
94	1	1	1	86.00	1.007	1.012
95	1	1	1	86.00	1.007	1.012
96	1	1	1	86.00	1.007	1.012
97	1	1	1	86.00	1.007	1.012
98	1	1	1	86.00	1.007	1.012
99	1	1	1	86.00	1.007	1.012
100	1	1	1	86.00	1.007	1.012

Table 27.

WLD M21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 10. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	56.477	56.477
FREE STREAM TEMPERATURE	78.495	
WALL TEMPERATURE	101.500	
WALL HEAT FLUX	.04690	
FREE STREAM DENSITY	.07388	
FREE STREAM KINEMATIC VISCOSITY	.0001675	
DENSITY OF FLUID AT WALL	.07085	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001804	
WALL/FREE STREAM DENSITY RATIO	.95901	
LOCATION REYNOLDS NUMBER (REX)	460782.89	
INPUT VALUE OF VELOCITY DELTA	.21000	
INPUT VALUE OF TEMPERATURE DELTA	.21000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.20000	
DISPLACEMENT THICKNESS (DELSTAR)	.03440	.02993
MOMENTUM THICKNESS (THETA)	.01839	.01876
ENERGY-DISSIPATION THICKNESS	.03155	.03263
ENTHALPY THICKNESS	.00098	.00111
SHAPE FACTOR 12 (DELSTAR/THETA)	1.87059	1.59533
SHAPE FACTOR 32 (ENFRGY/THETA)	1.71566	1.75006
MOMENTUM THICKNESS REYNOLDS NUMBER	516.74	527.04
DISPLACEMENT THICKNESS REYNOLDS NUMBER	966.62	840.80
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS 'DELTA' INTEGRAL	-.51939	-.53263
CLAUSERS 'G' INTEGRAL	5.04505	3.33698
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03076	.02881
MOMENTUM THICKNESS - CONSTANT DENSITY	.01866	.01905
SHAPE FACTOR 12 - CONSTANT DENSITY	1.64832	1.51270

LOCATION -X- 16.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 28.

KLDM21X TAPL 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 10. GPIC NO. 2

REDUCED PROFILE DATA

	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/VE	THETA
1	.00553	.027	10.43	98.68	.185	.123
2	.0104	.052	17.78	95.37	.315	.266
3	.0155	.079	26.30	92.90	.466	.374
4	.0207	.104	30.92	91.35	.547	.441
5	.02557	.129	34.22	89.83	.600	.507
6	.0304	.152	36.92	88.62	.654	.560
7	.0355	.178	39.45	88.05	.696	.585
8	.0407	.204	41.20	86.87	.731	.636
9	.0456	.228	43.09	85.99	.763	.674
10	.0505	.253	44.08	85.08	.781	.714
11	.0555	.276	45.43	84.50	.804	.739
12	.0607	.304	46.33	83.54	.820	.781
13	.0657	.329	47.84	83.06	.847	.802
14	.0704	.352	48.34	82.78	.855	.814
15	.0757	.377	49.43	82.21	.875	.838
16	.0807	.404	50.10	81.64	.887	.863
17	.0855	.428	50.65	81.01	.897	.881
18	.0900	.453	51.12	81.03	.905	.893
19	.0953	.479	51.72	81.00	.918	.908
20	.1006	.503	52.25	80.60	.925	.909
21	.1056	.520	52.77	80.43	.934	.916
22	.1126	.563	53.10	80.19	.941	.926
23	.1205	.603	53.50	79.87	.953	.940
24	.1277	.639	54.02	79.68	.958	.949
25	.1356	.676	54.42	79.40	.964	.961
26	.1425	.713	54.71	79.38	.969	.961
27	.1502	.751	54.90	79.10	.973	.971
28	.1574	.787	55.30	79.17	.979	.971
29	.1651	.826	55.65	79.04	.985	.976
30	.1726	.863	55.70	78.84	.986	.985
31	.1803	.902	55.95	78.77	.991	.988
32	.1876	.938	55.93	78.62	.990	.995
33	.1953	.977	56.05	78.51	.992	.999
34	.2023	1.012	56.16	78.52	.994	.999
35	.2101	1.051	56.40	78.54	1.000	.998
36	.2174	1.097	56.30	78.54	.996	.998
37	.2256	1.120	56.54	78.41	1.002	1.004
38	.2324	1.162	56.65	78.31	1.003	1.008
39	.2404	1.202	56.54	78.27	1.001	1.010
40	.2474	1.237	56.67	78.28	1.003	1.009
41	.2555	1.278	56.72	78.23	1.004	1.011
42	.3255	1.627	56.24	78.09	1.006	1.017
43	.3955	1.976	56.83	78.10	1.006	1.017
44	.4655	2.327	56.89	78.10	1.007	1.017
45	.5355	2.678	56.87	78.09	1.007	1.018
46	.6057	3.029	56.84	78.09	1.006	1.018
47	.6755	3.429	56.83	78.11	1.006	1.017
48	.7455	3.829	56.77	78.11	1.005	1.017
49	.8155	4.226	56.70	78.11	1.004	1.017
50	.8852	4.626	56.57	78.10	1.002	1.017
51	.9556	5.026	56.54	78.10	1.002	1.017

Table 28.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 11. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	58.458	58.458
FREE STREAM TEMPERATURE	78.287	
WALL TEMPERATURE	97.170	
WALL HEAT FLUX	.04730	
FREE STREAM DENSITY	.07391	
FREE STREAM KINEMATIC VISCOSITY	.0001674	
DENSITY OF FLUID AT WALL	.07141	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001779	
WALL/FREE STREAM DENSITY RATIO	.96609	
LOCATION REYNOLDS NUMBER (REX)	593676.37	
INPUT VALUE OF VELOCITY DELTA	.37000	
INPUT VALUE OF TEMPERATURE DELTA	.37000	
CALCULATED DELTA		.30790
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	.03958	.03824
MOMENTUM THICKNESS (THETA)	.02533	.02544
ENERGY-DISSIPATION THICKNESS	.04495	.04529
ENTHALPY THICKNESS	.00144	.00148
SHAPE FACTOR 12 (DELSTAR/THETA)	1.56241	1.50325
SHAPE FACTOR 32 (ENERGY/THETA)	1.77452	1.78073
MOMENTUM THICKNESS REYNOLDS NUMBER	737.24	740.23
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1151.87	1112.75
SKIN FRICTION COEFFICIENT	.005100	
FRICTION VELOCITY	3.00344	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		-.07052
CLAUSERS 'DELTA' INTEGRAL	-.65803	-.71550
CLAUSERS 'G' INTEGRAL	4.73858	4.17637
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03597	.03676
MOMENTUM THICKNESS - CONSTANT DENSITY	.02563	.02574
SHAPE FACTOR 12 - CONSTANT DENSITY	1.40357	1.42835

LOCATION -X- 20.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 29.

WLCM21X TAPL 4752R- FILES 66-66, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 11. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.014	15.26	94.41	.261	.146	-14.383	5.080	3.001	6.091
2	.0105	.034	28.12	91.13	.481	.320	-10.100	9.364	6.570	14.614
3	.0165	.054	34.39	89.39	.586	.412	-8.013	11.451	8.468	23.255
4	.0222	.072	37.57	88.30	.643	.470	-6.955	12.506	9.649	31.273
5	.0282	.092	39.84	87.26	.681	.525	-6.200	13.263	10.788	39.855
6	.0344	.112	41.62	86.69	.712	.555	-5.608	13.850	11.400	46.436
7	.0403	.131	42.96	86.09	.735	.587	-5.160	14.304	12.052	56.737
8	.0466	.152	44.54	85.35	.762	.626	-4.635	14.826	12.863	66.021
9	.0525	.171	45.50	84.92	.778	.649	-4.316	15.148	13.327	73.900
10	.0566	.190	46.40	84.68	.794	.661	-4.016	15.446	13.592	82.481
11	.0605	.210	47.22	84.32	.809	.681	-3.709	15.754	13.984	90.761
12	.0634	.236	48.06	83.66	.822	.721	-3.460	16.003	14.811	103.302
13	.0664	.266	49.36	83.12	.844	.744	-3.030	16.433	15.266	116.244
14	.0695	.297	50.19	82.58	.859	.773	-2.753	16.711	15.675	126.765
15	.0726	.327	51.17	82.06	.875	.800	-2.428	17.036	16.438	141.567
16	.0757	.356	51.80	81.67	.886	.821	-2.216	17.246	16.864	154.369
17	.0788	.384	52.69	81.39	.901	.825	-1.919	17.544	16.952	166.327
18	.0819	.413	53.07	81.39	.908	.835	-1.793	17.671	17.166	176.847
19	.0850	.442	53.69	80.99	.916	.857	-1.587	17.677	17.605	191.649
20	.0881	.472	54.26	80.57	.928	.879	-1.398	18.065	18.064	204.311
21	.0912	.501	54.71	80.00	.936	.898	-1.247	18.217	18.244	216.831
22	.0943	.533	55.16	80.00	.944	.901	-1.097	18.367	18.524	231.040
23	.0974	.566	55.63	80.00	.952	.909	-1.926	18.530	18.685	245.108
24	.1005	.596	56.03	79.9	.959	.927	-1.807	18.656	19.041	259.176
25	.1036	.631	56.21	79.9	.962	.933	-1.749	18.715	19.173	273.104
26	.1067	.665	56.54	79.9	.968	.944	-1.620	18.643	19.406	288.016
27	.1098	.695	56.65	79.9	.974	.951	-1.502	18.962	19.550	301.240
28	.1129	.726	57.15	79.13	.978	.955	-1.435	19.028	19.626	315.448
29	.1160	.763	57.45	79.09	.983	.958	-1.336	19.127	19.675	330.361
30	.1191	.794	57.65	78.96	.986	.964	-1.269	19.194	19.815	344.007
31	.1222	.827	57.66	79.00	.987	.962	-1.257	19.206	19.771	358.075
32	.1253	.857	57.94	78.63	.991	.982	-1.171	19.293	20.175	392.823
33	.1284	.888	58.24	78.48	.996	.990	-1.073	19.390	20.336	427.852
34	.1315	1.070	58.36	78.47	.998	.990	-1.033	19.430	20.353	463.445
35	.1346	1.152	58.36	78.34	.998	.997	-1.033	19.430	20.493	496.896
36	.1377	1.233	58.40	78.38	.999	1.000	-1.019	19.445	20.555	533.926
37	.1408	1.313	58.53	78.30	1.001	.999	-1.025	19.488	20.533	566.533
38	.1439	1.394	58.28	78.28	1.000	1.000	-1.006	19.457	20.557	603.985
39	.1470	1.476	58.39	78.27	.999	1.001	-1.022	19.442	20.562	639.436
40	.1501	1.558	58.28	78.27	.999	1.001	-1.025	19.439	20.562	674.747
41	.1532	1.638	58.40	78.27	.999	1.001	-1.018	19.445	20.568	709.636
42	.1563	1.963	58.44	78.28	1.000	1.000	-1.007	19.456	20.556	850.176
43	.1594	2.266	58.46	78.26	1.000	1.001	-1.002	19.466	20.574	990.997
44	.1625	2.613	58.43	78.27	1.000	1.001	-1.006	19.471	20.562	1131.819
45	.1656	2.926	58.50	78.27	1.001	1.001	-1.013	19.476	20.568	1272.500
46	.1687	3.262	58.46	78.26	1.000	1.001	-1.007	19.471	20.574	1413.040
47	.1718	5.426	58.26	78.27	.997	1.001	-1.066	19.398	20.568	2350.395
48	.1749	7.591	58.24	78.26	.996	1.000	-1.078	19.380	20.556	3286.173
49	.1780	9.759	58.16	76.26	.995	1.002	-1.101	19.363	20.580	4227.076

Table 29.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 12. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	58.768	58.768
FREE STREAM TEMPERATURE =	77.652	
WALL TEMPERATURE =	96.160	
WALL HEAT FLUX =	.04660	
FREE STREAM DENSITY =	.07388	
FREE STREAM KINEMATIC VISCOSITY =	.0001678	
DENSITY OF FLUID AT WALL =	.07123	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001781	
WALL/FREE STREAM DENSITY RATIO =	.96670	
LOCATION REYNOLDS NUMBER (REX) =	595681.68	
INPUT VALUE OF VELOCITY DELTA =	.38000	
INPUT VALUE OF TEMPERATURE DELTA =	.38000	
CALCULATED DELTA =		.29432
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03805	.03648
MOMENTUM THICKNESS (THETA) =	.02407	.02417
ENERGY-DISSIPATION THICKNESS =	.04266	.04303
ENTHALPY THICKNESS =	.00142	.00146
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.58103	1.50952
SHAPE FACTOR 32 (ENERGY/THETA) =	1.77260	1.78078
MOMENTUM THICKNESS REYNOLDS NUMBER =	702.71	705.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1111.01	1065.20
SKIN FRICTION COEFFICIENT =	.005175	
FRICTION VELOCITY =	3.04152	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.08141
CLAUSERS 'DELTA' INTEGRAL =	-.62431	-.67687
CLAUSERS 'S' INTEGRAL =	4.58830	3.94613
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03447	.03502
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02435	.02446
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.41550	1.43190

LOCATION -X- 20.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 30.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

PUN NO. 1. POINT 12. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.015	14.70	89.63	.250	.353	-14.495	4.833	7.260	6.162
2	.0103	.035	28.10	91.65	.478	.244	-10.090	9.238	5.011	14.700
3	.0169	.058	34.44	88.97	.526	.389	-8.004	11.324	7.289	24.092
4	.0222	.076	37.80	67.84	.643	.450	-6.900	12.427	9.243	31.634
5	.0285	.097	40.47	86.58	.688	.518	-6.022	13.306	10.646	40.599
6	.0347	.118	42.32	85.95	.720	.552	-5.413	13.915	11.342	49.421
7	.0403	.137	43.52	85.35	.740	.584	-5.021	14.307	12.006	57.390
8	.0465	.156	44.95	84.76	.765	.616	-4.548	14.780	12.666	66.213
9	.0525	.176	46.25	84.33	.787	.639	-4.122	15.207	13.145	74.751
10	.0567	.200	47.14	83.76	.802	.670	-3.830	15.498	13.774	83.574
11	.0647	.220	47.94	83.27	.815	.696	-3.567	15.761	14.316	92.112
12	.0734	.249	49.02	82.64	.834	.731	-3.210	16.116	15.222	104.492
13	.0824	.269	49.26	82.28	.855	.750	-2.797	16.531	15.417	117.299
14	.0915	.311	51.37	82.01	.869	.765	-2.537	16.792	15.725	130.249
15	.1005	.342	51.96	81.46	.884	.794	-2.246	17.062	16.334	143.056
16	.1094	.372	52.58	81.01	.894	.819	-2.041	17.287	16.835	155.721
17	.1161	.401	53.03	80.57	.902	.842	-1.894	17.434	17.322	168.101
18	.1272	.433	54.84	80.35	.916	.854	-1.626	17.702	17.567	181.050
19	.1352	.446	55.22	80.25	.927	.860	-1.403	17.925	17.673	193.857
20	.1452	.463	55.03	80.07	.933	.869	-1.236	18.063	17.689	206.665
21	.1542	.482	55.55	79.66	.944	.891	-1.112	18.216	18.329	219.472
22	.1641	.505	55.56	79.51	.950	.899	-1.970	18.356	18.492	233.560
23	.1741	.522	56.26	79.34	.957	.909	-1.826	18.503	18.691	247.790
24	.1842	.542	56.61	79.10	.963	.922	-1.716	18.613	18.956	262.162
25	.1942	.560	57.01	79.73	.970	.925	-1.584	18.744	19.027	276.392
26	.2044	.585	57.32	78.75	.975	.940	-1.484	18.844	19.336	290.907
27	.2142	.606	57.50	78.60	.978	.949	-1.423	18.905	19.504	304.853
28	.2242	.622	57.60	78.41	.981	.959	-1.369	18.959	19.718	319.063
29	.2346	.631	57.75	78.32	.982	.964	-1.341	18.987	19.816	333.882
30	.2446	.631	58.05	78.24	.987	.968	-1.243	19.085	19.913	348.112
31	.2547	.665	58.24	78.14	.991	.974	-1.180	19.149	20.017	362.485
32	.2752	.649	58.38	77.97	.993	.983	-1.134	19.194	20.205	377.349
33	.3042	1.034	58.56	77.87	.997	.988	-1.067	19.262	20.323	432.924
34	.3296	1.120	58.79	77.80	1.000	.992	-1.001	19.326	20.398	468.069
35	.3549	1.206	58.76	77.77	1.000	.994	-1.000	19.327	20.430	505.071
36	.3793	1.289	58.82	77.67	1.001	.999	-1.010	19.336	20.541	539.792
37	.4041	1.373	58.87	77.67	1.001	.999	-1.027	19.355	20.542	575.083
38	.4293	1.459	58.89	77.64	1.001	.998	-1.033	19.395	20.576	610.943
39	.4549	1.546	58.88	77.65	1.000	1.000	-1.066	19.335	20.366	647.372
40	.4795	1.629	58.84	77.66	1.001	.999	-1.018	19.346	20.351	682.379
41	.5045	1.714	58.78	77.64	1.000	1.000	-1.003	19.326	20.370	717.954
42	.5046	2.054	58.84	77.64	1.001	1.001	-1.017	19.346	20.575	860.398
43	.7043	2.393	58.69	77.64	.996	1.001	-1.031	19.297	20.575	1002.272
44	.8046	2.734	58.69	77.64	.999	1.001	-1.031	19.297	20.574	1145.001
45	.9043	3.073	58.75	77.66	.999	.999	-1.012	19.316	20.550	1286.876
46	1.0043	3.412	58.62	77.66	.997	.999	-1.036	19.273	20.550	1429.177
47	1.1043	3.676	58.66	77.65	.998	1.000	-1.041	19.287	20.569	2377.048
48	1.3374	7.942	58.45	77.60	.994	.999	-1.110	19.219	20.550	3326.199
49	3.0045	10.208	58.46	77.64	.995	1.001	-1.106	19.222	20.575	4275.493

Table 30.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 13. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	58.802	58.802
FREE STREAM TEMPERATURE ==	77.665	
WALL TEMPERATURE ==	95.710	
WALL HEAT FLUX ==	.04630	
FREE STREAM DENSITY ==	.07368	
FREE STREAM KINEMATIC VISCOSITY ==	.0001678	
DENSITY OF FLUID AT WALL ==	.07128	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001779	
WALL/FREE STREAM DENSITY RATIO ==	.96751	
LOCATION REYNOLDS NUMBER (REX) ==	595803.42	
INPUT VALUE OF VELOCITY DELTA ==	.37000	
INPUT VALUE OF TEMPERATURE DELTA ==	.37000	
CALCULATED DELTA ==		.29952
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03916	.03705
MOMENTUM THICKNESS (THETA) ==	.02449	.02458
ENERGY-DISSIPATION THICKNESS ==	.04322	.04372
ENTHALPY THICKNESS ==	.00134	.00139
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.59900	1.50723
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.76517	1.77844
MOMENTUM THICKNESS REYNOLDS NUMBER ==	715.18	718.02
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1143.57	1082.21
SKIN FRICTION COEFFICIENT ==	.005154	
FRICTION VELOCITY ==	3.03460	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.07974
CLAUSERS 'DELTA' INTEGRAL ==	-.64867	-.69113
CLAUSERS 'G' INTEGRAL ==	4.90015	4.05491
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03565	.03567
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02477	.02487
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.43954	1.43427

LOCATION -X- 20.40000

Z = -6 INCHES

K = 0.2 x 10⁻⁶

Table 31.

KLDM21x TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 13. GRID NO. 2

REDUCED PROFILE DATA

N	Y	INC-ES	Y/	U	T	U/UE	THETA	U-UE	U(+)	T(+)	Y(+)
			DELTA	FT/SEC	DEG.F			UTAU			
1	1	.0000	.0000	15.74	92.51	.256	.177	-14.421	4.956	3.585	6.156
2	2	.0000	.0000	15.70	92.11	.420	.310	-11.237	8.140	6.275	15.114
3	3	.0000	.0000	32.97	88.36	.559	.408	-6.545	10.832	8.246	23.502
4	4	.0000	.0000	37.15	87.18	.632	.472	-7.137	12.241	9.560	31.607
5	5	.0000	.0000	39.87	86.45	.676	.513	-6.238	13.140	10.381	40.706
6	6	.0000	.0000	41.81	86.51	.711	.565	-5.600	13.777	11.435	48.953
7	7	.0000	.0000	43.36	86.91	.738	.598	-5.053	14.294	12.105	57.168
8	8	.0000	.0000	44.61	86.63	.759	.614	-4.676	14.701	12.425	66.403
9	9	.0000	.0000	45.71	86.11	.779	.643	-4.280	15.097	13.000	74.607
10	10	.0000	.0000	46.90	85.59	.794	.671	-3.963	15.394	13.586	83.218
11	11	.0000	.0000	48.10	85.22	.806	.692	-3.730	15.647	14.000	91.607
12	12	.0000	.0000	49.30	84.68	.830	.722	-3.296	16.080	14.612	104.261
13	13	.0000	.0000	50.64	84.27	.848	.745	-2.953	16.425	15.072	117.910
14	14	.0000	.0000	51.77	83.74	.866	.774	-2.591	16.786	15.662	130.422
15	15	.0000	.0000	53.00	83.37	.884	.795	-2.257	17.121	16.078	143.076
16	16	.0000	.0000	54.55	81.04	.895	.813	-2.043	17.334	16.445	155.588
17	17	.0000	.0000	56.22	80.48	.900	.844	-1.939	17.438	17.076	167.958
18	18	.0000	.0000	58.00	80.34	.913	.852	-1.679	17.696	17.232	180.096
19	19	.0000	.0000	59.84	79.27	.921	.856	-1.524	17.853	17.311	193.551
20	20	.0000	.0000	61.75	78.51	.935	.881	-1.265	18.112	17.629	206.489
21	21	.0000	.0000	63.75	78.52	.943	.897	-1.095	18.282	18.156	219.543
22	22	.0000	.0000	65.80	79.42	.949	.903	-.996	18.361	18.265	233.503
23	23	.0000	.0000	67.92	79.23	.956	.913	-.853	18.524	18.479	247.171
24	24	.0000	.0000	69.64	79.26	.963	.923	-.713	18.664	18.670	261.197
25	25	.0000	.0000	71.01	78.79	.970	.937	-.591	18.787	18.968	276.158
26	26	.0000	.0000	72.70	78.57	.974	.950	-.496	18.882	19.211	290.802
27	27	.0000	.0000	74.40	78.50	.976	.953	-.462	18.915	19.292	304.594
28	28	.0000	.0000	76.72	78.41	.982	.959	-.358	19.019	19.396	318.670
29	29	.0000	.0000	78.84	78.32	.984	.964	-.317	19.060	19.497	333.172
30	30	.0000	.0000	81.14	78.26	.989	.966	-.220	19.156	19.544	347.674
31	31	.0000	.0000	83.24	78.18	.990	.972	-.166	19.191	19.658	361.893
32	32	.0000	.0000	85.45	78.01	.994	.981	-.116	19.261	19.850	377.111
33	33	.0000	.0000	87.16	77.85	.996	.990	-.071	19.306	20.027	392.556
34	34	.0000	.0000	88.67	77.73	.996	.996	-.042	19.335	20.158	408.812
35	35	.0000	.0000	90.73	77.67	.999	1.000	-.024	19.353	20.230	425.931
36	36	.0000	.0000	92.84	77.65	1.001	1.001	.012	19.369	20.249	443.476
37	37	.0000	.0000	94.91	77.66	1.000	1.000	.003	19.381	20.234	461.737
38	38	.0000	.0000	96.96	77.68	.999	.999	-.015	19.362	20.218	480.567
39	39	.0000	.0000	98.98	77.68	.998	.998	-.043	19.334	20.217	500.596
40	40	.0000	.0000	100.90	77.68	1.000	.999	.000	19.378	20.213	521.799
41	41	.0000	.0000	102.82	77.67	1.000	1.000	.006	19.383	20.226	543.702
42	42	.0000	.0000	104.76	77.66	1.000	1.000	-.002	19.375	20.237	566.583
43	43	.0000	.0000	106.73	77.67	.999	1.000	-.014	19.363	20.231	590.153
44	44	.0000	.0000	108.73	77.66	.999	1.000	-.023	19.354	20.237	614.744
45	45	.0000	.0000	110.71	77.65	1.000	1.001	-.003	19.380	20.249	640.925
46	46	.0000	.0000	112.66	77.67	.998	1.000	-.038	19.334	20.224	668.390
47	47	.0000	.0000	114.54	77.62	.995	1.002	-.090	19.287	20.231	697.029
48	48	.0000	.0000	116.44	77.63	.995	1.002	-.066	19.289	20.275	727.374
49	49	.0000	.0000	118.31	77.59	.995	1.004	-.092	19.285	20.312	759.004

Table 31.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 14. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	60.259	60.259
FREE STREAM TEMPERATURE =	77.395	
WALL TEMPERATURE =	95.410	
WALL HEAT FLUX =	.04760	
FREE STREAM DENSITY =	.07371	
FREE STREAM KINEMATIC VISCOSITY =	.0001676	
DENSITY OF FLUID AT WALL =	.07132	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001777	
WALL/FREE STREAM DENSITY RATIO =	.96755	
LOCATION REYNOLDS NUMBER (REX) =	730931.25	
INPUT VALUE OF VELOCITY DELTA =	.47000	
INPUT VALUE OF TEMPERATURE DELTA =	.47000	
CALCULATED DELTA =		.34628
DELTA 99.5% INPUT =	.36500	
DISPLACEMENT THICKNESS (DELSTAR) =	.04712	.04684
MOMENTUM THICKNESS (THETA) =	.03165	.03174
ENERGY-DISSIPATION THICKNESS =	.05646	.05662
ENTHALPY THICKNESS =	.00167	.00168
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.48879	1.47567
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78404	1.78346
MOMENTUM THICKNESS REYNOLDS NUMBER =	948.01	950.95
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1411.40	1403.29
SKIN FRICTION COEFFICIENT =	.004636	
FRICTION VELOCITY =	2.94936	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.07755
CLAUSERS 'DELTA' INTEGRAL =	-.85026	-.92285
CLAUSERS 'G' INTEGRAL =	5.62503	5.46666
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04353	.04517
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03197	.03207
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.36158	1.40832

LOCATION -X- 24.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 32.

KLUM21X TAPE 4752R- FILES 66-89, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 14. GRID NO. 2

REDUCED PPROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0038	.010	15.33	92.13	.254	.162	-1.5234	5.197	3.484	5.298
2	.0051	.014	17.44	91.08	.289	.240	-14.516	5.915	4.588	7.096
3	.0066	.016	19.76	90.64	.321	.265	-13.866	6.565	5.060	8.064
4	.0079	.019	22.94	90.09	.381	.295	-12.653	7.776	5.638	9.724
5	.0096	.022	25.64	89.63	.415	.321	-11.942	8.489	6.126	10.830
6	.0111	.026	29.07	88.94	.482	.359	-10.574	9.657	6.857	13.320
7	.0130	.030	30.76	88.47	.510	.385	-10.003	10.428	7.366	15.257
8	.0144	.033	31.66	88.22	.529	.400	-9.628	10.803	7.650	16.363
9	.0159	.035	32.55	88.00	.568	.437	-8.817	11.614	8.352	19.406
10	.0174	.038	33.44	87.77	.591	.459	-8.364	12.067	8.779	21.896
11	.0190	.040	34.33	87.53	.612	.466	-7.931	12.500	9.277	24.801
12	.0205	.042	35.22	87.29	.631	.499	-7.538	12.894	9.529	27.290
13	.0221	.044	36.11	87.04	.642	.514	-7.321	13.110	9.612	29.365
14	.0236	.046	36.99	86.79	.652	.527	-7.113	13.316	10.070	32.131
15	.0252	.048	37.88	86.54	.662	.532	-6.897	13.534	10.163	34.483
16	.0267	.050	38.77	86.29	.673	.542	-6.640	13.791	10.349	37.664
17	.0283	.052	39.66	86.04	.680	.549	-6.537	13.694	10.490	39.739
18	.0298	.054	40.55	85.79	.703	.586	-6.061	14.370	11.202	46.453
19	.0314	.056	42.38	84.30	.725	.617	-5.609	14.822	11.786	58.135
20	.0330	.058	45.06	84.04	.748	.631	-5.146	15.285	12.055	67.679
21	.0346	.060	45.95	83.79	.761	.651	-4.875	15.556	12.435	75.840
22	.0362	.062	46.84	83.54	.773	.671	-4.633	15.798	12.817	85.799
23	.0378	.064	47.73	83.29	.786	.687	-4.367	16.064	13.119	95.205
24	.0394	.066	48.62	83.04	.798	.696	-4.123	16.308	13.304	103.780
25	.0410	.068	49.51	82.79	.810	.709	-3.869	16.542	13.548	113.739
26	.0426	.070	50.40	82.54	.821	.734	-3.663	16.766	14.021	122.868
27	.0442	.072	51.29	82.29	.832	.735	-3.428	17.003	14.046	131.306
28	.0458	.074	52.18	82.04	.840	.733	-3.266	17.165	14.014	140.850
29	.0474	.076	53.07	81.79	.849	.758	-3.076	17.355	14.477	150.532
30	.0490	.078	53.96	81.54	.858	.767	-2.911	17.521	14.662	158.970
31	.0506	.080	54.85	81.29	.864	.776	-2.775	17.656	14.831	169.205
32	.0522	.082	55.74	81.04	.874	.785	-2.576	17.655	15.007	176.888
33	.0538	.084	56.63	80.79	.884	.825	-2.166	18.265	15.770	201.967
34	.0554	.086	57.52	80.54	.913	.847	-1.786	18.646	16.189	226.469
35	.0570	.088	58.41	80.29	.924	.864	-1.550	18.882	16.503	250.675
36	.0586	.090	59.30	80.04	.939	.883	-1.239	19.192	16.872	275.157
37	.0602	.092	60.19	79.79	.949	.912	-1.032	19.399	17.427	299.225
38	.0618	.094	61.08	79.54	.960	.924	-.808	19.623	17.661	323.984
39	.0634	.096	61.97	79.29	.970	.929	-.617	19.814	17.744	347.083
40	.0650	.098	62.86	79.04	.975	.946	-.502	19.929	18.082	372.257
41	.0666	.100	63.75	78.79	.982	.960	-.364	20.067	18.339	395.455
42	.0682	.102	64.64	78.54	.987	.974	-.263	20.168	18.602	420.530
43	.0698	.104	65.53	78.29	.991	.980	-.191	20.240	18.734	446.111
44	.0714	.106	66.42	78.04	.995	.987	-.102	20.324	18.850	503.936
45	.0730	.108	67.31	77.79	.997	.994	-.061	20.370	18.990	545.432
46	.0746	.110	68.20	77.54	.997	.999	-.057	20.374	19.083	586.769
47	.0762	.112	69.09	77.29	1.000	1.000	-.064	20.435	19.103	627.732
48	.0778	.114	69.98	77.04	1.000	1.000	-.007	20.424	19.113	669.365
49	.0794	.116	70.87	76.79	1.000	1.000	-.006	20.429	19.102	711.276
50	.0810	.118	71.76	76.54	1.001	1.000	-.014	20.445	19.106	752.218
51	.0826	.120	72.65	76.29	1.000	1.000	-.099	20.422	19.090	793.714
52	.0842	.122	73.54	76.04	.999	1.000	-.013	20.416	19.103	835.348
53	.0858	.124	74.43	75.79	1.001	1.000	.010	20.441	19.102	1167.866
54	.0874	.126	75.32	75.54	1.000	1.000	.003	20.434	19.108	1499.277
55	.0890	.128	76.21	75.29	.999	1.000	-.012	20.419	19.113	1831.795
56	.0906	.130	77.10	75.04	.998	1.000	-.036	20.395	19.102	2163.484
57	.0922	.132	77.99	74.79	.998	1.000	-.032	20.399	19.108	2495.863
58	.0938	.134	78.88	74.54	.996	1.000	-.048	20.383	19.108	2827.275
59	.0954	.136	79.77	74.29	.996	1.001	-.089	20.342	19.120	3158.686
60	.0970	.138	80.66	74.04	.995	1.001	-.101	20.331	19.125	3490.928
61	.0986	.140	81.55	73.79	.995	1.001	-.110	20.321	19.126	3823.564
62	.1002	.142	82.44	73.54	.995	1.002	-.095	20.336	19.149	4154.719

Table 32.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 15. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	64.816	64.816
FREE STREAM TEMPERATURE =	77.381	
WALL TEMPERATURE =	95.410	
WALL HEAT FLUX =	.04710	
FREE STREAM DENSITY =	.07372	
FREE STREAM KINEMATIC VISCOSITY =	.0001676	
DENSITY OF FLUID AT WALL =	.07132	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001777	
WALL/FREE STREAM DENSITY RATIO =	.96752	
LOCATION REYNOLDS NUMBER (REX) =	1172921.70	
INPUT VALUE OF VELOCITY DELTA =	.61000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.49433
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.06656	.06674
MOMENTUM THICKNESS (THETA) =	.04602	.04622
ENERGY-DISSIPATION THICKNESS =	.08234	.08248
ENTHALPY THICKNESS =	.00239	.00239
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.44617	1.44412
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78910	1.78471
MOMENTUM THICKNESS REYNOLDS NUMBER =	1483.04	1489.26
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2144.73	2150.67
SKIN FRICTION COEFFICIENT =	.004089	
FRICTION VELOCITY =	2.97952	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.16563
CLAUSERS 'DELTA' INTEGRAL =	-1.26001	-1.39997
CLAUSERS 'G' INTEGRAL =	8.37362	8.36688
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.06151	.06436
MOMENTUM THICKNESS - CONSTANT DENSITY =	.04648	.04667
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.32340	1.37880
LOCATION -X-	36.40000	
Z = CENTERLINE		
K = 0.2×10^{-6}		

Table 33.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 15. GRID NO. 2

REDUCED PROFILE DATA

N	Y	DELTA	U	T	U-UE	THETA	U-UE	U(+)	T(+)	Y(+)
INCHES	FT/SEC	DEG.F	U/UE	THETA	U-UE	U(+)	T(+)	Y(+)		
1	.0053	.011	20.00	90.06	.310	.247	-15.016	6.736	4.816	7.448
2	.0063	.013	22.74	90.34	.351	.281	-14.123	7.631	5.490	8.545
3	.0076	.016	27.03	89.55	.417	.325	-12.682	9.072	6.340	10.941
4	.0085	.017	28.72	89.22	.443	.343	-12.113	9.641	6.702	11.919
5	.0093	.019	30.43	88.85	.469	.364	-11.541	10.212	7.103	13.037
6	.0111	.023	33.45	88.43	.516	.387	-10.527	11.227	7.561	15.552
7	.0125	.025	35.11	88.05	.542	.406	-9.970	11.784	7.970	17.509
8	.0137	.028	36.17	87.75	.558	.425	-9.615	12.138	8.296	19.185
9	.0155	.031	37.49	87.30	.576	.450	-9.173	12.581	8.787	21.701
10	.0179	.033	38.97	86.91	.601	.477	-8.674	13.080	9.313	24.054
11	.0195	.036	39.40	86.67	.609	.495	-8.303	13.251	9.463	27.290
12	.0211	.040	40.10	86.60	.631	.501	-8.278	13.470	9.779	29.526
13	.0227	.044	41.15	86.55	.646	.518	-8.026	13.728	10.104	31.761
14	.0246	.047	41.58	86.55	.659	.525	-7.872	13.982	10.246	34.416
15	.0267	.051	42.25	86.55	.675	.537	-7.708	14.240	10.492	40.145
16	.0292	.054	42.94	86.55	.689	.546	-7.426	14.328	10.654	42.241
17	.0322	.058	43.81	86.55	.700	.575	-6.971	14.783	11.223	51.324
18	.0357	.062	44.55	86.55	.714	.592	-6.640	15.114	11.553	60.546
19	.0397	.066	45.50	86.55	.729	.607	-6.321	15.433	11.842	70.667
20	.0442	.071	46.73	86.55	.741	.627	-6.070	15.684	12.235	79.271
21	.0492	.075	47.75	86.55	.753	.648	-5.807	15.947	12.646	88.772
22	.0547	.080	48.95	86.55	.764	.653	-5.591	16.163	12.747	98.414
23	.0607	.085	49.55	86.55	.775	.661	-5.412	16.342	12.896	106.938
24	.0672	.090	50.00	86.55	.783	.671	-5.142	16.612	13.106	116.440
25	.0742	.095	50.00	86.55	.789	.687	-5.021	16.733	13.406	126.500
26	.0817	.100	50.00	86.55	.796	.696	-4.796	16.958	13.590	134.745
27	.0897	.104	50.00	86.55	.803	.701	-4.657	17.096	13.699	144.666
28	.0982	.109	50.00	86.55	.810	.712	-4.483	17.270	13.909	154.587
29	.1072	.114	50.00	86.55	.816	.717	-4.284	17.470	13.990	162.691
30	.1167	.119	50.00	86.55	.821	.721	-4.124	17.630	14.074	172.889
31	.1267	.124	50.00	86.55	.825	.731	-3.926	17.626	14.274	182.673
32	.1372	.129	50.00	86.55	.835	.756	-3.582	18.172	14.751	200.589
33	.1482	.134	50.00	86.55	.844	.768	-3.184	18.570	14.985	220.741
34	.1597	.139	50.00	86.55	.855	.789	-2.935	18.819	15.394	255.055
35	.1717	.144	50.00	86.55	.861	.810	-2.585	19.169	15.811	280.486
36	.1842	.149	50.00	86.55	.869	.829	-2.355	19.398	16.182	304.101
37	.1972	.154	50.00	86.55	.876	.846	-2.034	19.720	16.523	329.343
38	.2107	.159	50.00	86.55	.882	.862	-1.804	19.950	16.836	352.868
39	.2247	.164	50.00	86.55	.887	.872	-1.502	20.192	17.023	378.020
40	.2392	.169	50.00	86.55	.893	.871	-1.327	20.427	16.996	401.944
41	.2542	.174	50.00	86.55	.896	.900	-1.176	20.576	17.570	426.647
42	.2697	.179	50.00	86.55	.899	.929	-1.730	21.024	18.138	496.344
43	.2857	.184	50.00	86.55	.901	.957	-1.422	21.331	18.690	566.660
44	.3022	.189	50.00	86.55	.904	.975	-1.246	21.508	19.040	636.386
45	.3192	.194	50.00	86.55	.906	.981	-1.079	21.675	19.151	706.113
46	.3367	.199	50.00	86.55	.909	.988	-1.029	21.724	19.294	776.259
47	.3547	.204	50.00	86.55	.911	.994	-1.023	21.776	19.400	846.266
48	.3732	.209	50.00	86.55	.913	.999	-1.000	21.751	19.524	916.132
49	.3922	.214	50.00	86.55	.915	.999	-1.000	21.761	19.515	985.579
50	.4117	.219	50.00	86.55	.917	.999	-1.000	21.749	19.515	1055.566
51	.4317	.224	50.00	86.55	.919	.999	-1.016	21.737	19.533	1125.452
52	.4522	.229	50.00	86.55	.921	.999	-1.009	21.744	19.502	1433.144
53	.4732	.234	50.00	86.55	.923	.999	-1.013	21.767	19.514	1739.859
54	.4947	.239	50.00	86.55	.925	.999	-1.007	21.761	19.514	2047.691
55	.5167	.244	50.00	86.55	.927	.999	-1.006	21.746	19.520	2355.383
56	.5392	.249	50.00	86.55	.929	.999	-1.036	21.718	19.520	2662.237
57	.5622	.254	50.00	86.55	.931	.999	-1.019	21.735	19.520	2970.208
58	.5857	.259	50.00	86.55	.933	.999	-1.019	21.734	19.526	3277.202
59	.6097	.264	50.00	86.55	.935	.999	-1.034	21.720	19.520	3584.475
60	.6342	.269	50.00	86.55	.937	.999	-1.038	21.716	19.502	3891.748
61	.6592	.274	50.00	86.55	.939	.999	-1.018	21.736	19.539	4199.999

Table 33.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 17. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	65.395	65.395
FREE STREAM TEMPERATURE	77.658	
WALL TEMPERATURE	95.250	
WALL HEAT FLUX	.04640	
FREE STREAM DENSITY	.07457	
FREE STREAM KINEMATIC VISCOSITY	.0001658	
DENSITY OF FLUID AT WALL	.07220	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001755	
WALL/FREE STREAM DENSITY RATIO	.96830	
LOCATION REYNOLDS NUMBER (REX)	1196573.20	
INPUT VALUE OF VELOCITY DELTA	.61000	
INPUT VALUE OF TEMPERATURE DELTA	.66000	
CALCULATED DELTA		.50294
DELTA 99.5% INPUT	.52000	
DISPLACEMENT THICKNESS (DELSTAR)	.06571	.06624
MOMENTUM THICKNESS (THETA)	.04595	.04616
ENERGY-DISSIPATION THICKNESS	.08254	.08261
ENTHALPY THICKNESS	.00237	.00237
SHAPE FACTOR 12 (DELSTAR/THETA)	1.42991	1.43428
SHAPE FACTOR 32 (ENERGY/THETA)	1.79617	1.78871
MOMENTUM THICKNESS REYNOLDS NUMBER	1510.56	1518.23
DISPLACEMENT THICKNESS REYNOLDS NUMBER	2159.96	2177.57
SKIN FRICTION COEFFICIENT	.004111	
FRICTION VELOCITY	3.01300	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		.13500
CLAUSERS 'DELTA' INTEGRAL	-1.23727	-1.38642
CLAUSERS 'G' INTEGRAL	7.98431	8.12601
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.06017	.06388
MOMENTUM THICKNESS - CONSTANT DENSITY	.04639	.04663
SHAPE FACTOR 12 - CONSTANT DENSITY	1.29716	1.36995

LOCATION -X- 36.40000

Z = -6 INCHES

K = 0.2 X 10⁻⁶

Table 34.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 17. GPID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEC.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.00063	.012	26.86	89.85	.411	.307	-12.761	8.923	6.080	9.057
2	.00076	.014	29.34	89.12	.447	.346	-12.000	9.704	6.895	10.774
3	.00083	.016	30.94	88.86	.473	.363	-11.434	10.270	7.190	11.919
4	.00098	.019	33.53	88.55	.513	.381	-10.575	11.129	7.541	14.065
5	.00106	.020	34.41	88.34	.526	.393	-10.284	11.420	7.771	15.209
6	.00121	.023	36.23	87.87	.554	.420	-9.666	12.024	8.305	17.356
7	.00136	.026	37.47	87.37	.573	.448	-9.267	12.438	8.669	19.502
8	.00144	.028	38.10	87.29	.583	.455	-9.059	12.645	9.005	20.503
9	.00160	.031	39.22	86.66	.600	.474	-8.669	13.015	9.373	23.651
10	.00180	.034	40.97	86.60	.616	.491	-8.335	13.369	9.728	26.513
11	.00200	.037	40.97	86.60	.626	.505	-8.107	13.598	10.002	29.374
12	.00220	.040	41.72	86.60	.636	.511	-7.859	13.845	10.116	31.807
13	.00240	.043	41.99	86.60	.642	.524	-7.770	13.935	10.366	33.667
14	.00260	.045	43.33	85.74	.651	.538	-7.567	14.137	10.641	36.957
15	.00280	.048	43.33	85.74	.656	.539	-7.423	14.281	10.679	39.676
16	.00300	.050	43.33	85.74	.663	.550	-7.321	14.383	10.885	42.967
17	.00312	.051	43.33	85.74	.668	.557	-7.197	14.507	11.024	44.664
18	.00337	.053	45.06	85.01	.688	.582	-6.744	14.961	11.522	53.841
19	.00355	.055	46.01	84.65	.704	.601	-6.434	15.270	11.898	64.144
20	.00376	.057	46.01	84.65	.716	.607	-6.167	15.537	12.007	73.729
21	.00407	.060	47.61	84.33	.728	.623	-5.901	15.803	12.337	82.457
22	.00447	.063	48.88	83.79	.745	.634	-5.634	16.070	12.665	92.615
23	.00477	.065	49.88	83.33	.757	.651	-5.445	16.255	12.891	102.488
24	.00517	.068	50.00	83.33	.769	.660	-5.264	16.440	13.064	110.643
25	.00557	.070	50.00	83.33	.776	.676	-5.020	16.684	13.386	121.231
26	.00597	.072	50.00	83.33	.782	.682	-4.861	16.843	13.498	131.247
27	.00637	.074	50.00	83.33	.788	.696	-4.722	16.982	13.768	139.689
28	.00677	.076	50.00	83.33	.792	.702	-4.524	17.180	13.887	149.418
29	.00717	.078	50.00	83.33	.801	.715	-4.320	17.384	14.146	159.577
30	.00757	.080	50.00	83.33	.806	.720	-4.220	17.484	14.257	167.875
31	.00797	.082	50.00	83.33	.814	.727	-4.033	17.671	14.252	178.034
32	.00837	.084	50.00	83.33	.822	.727	-3.856	17.846	14.382	188.336
33	.00877	.086	50.00	83.33	.828	.736	-3.509	18.195	14.956	212.516
34	.00917	.088	50.00	83.33	.838	.772	-3.134	18.570	15.287	237.841
35	.00957	.090	50.00	83.33	.856	.708	-2.836	18.868	15.789	262.594
36	.01000	.092	50.00	83.33	.869	.608	-2.561	19.143	15.991	286.348
37	.01040	.094	50.00	83.33	.885	.622	-2.261	19.423	16.270	312.385
38	.01080	.096	50.00	83.33	.905	.640	-2.055	19.649	16.626	336.283
39	.01120	.098	50.00	83.33	.918	.651	-1.770	19.934	16.854	362.606
40	.01160	.100	50.00	83.33	.926	.663	-1.573	20.000	17.084	388.647
41	.01200	.102	50.00	83.33	.930	.685	-1.355	20.000	17.527	412.541
42	.01240	.104	50.00	83.33	.940	.697	-1.181	20.000	17.764	438.439
43	.01280	.106	50.00	83.33	.966	.697	-1.043	20.000	18.241	509.549
44	.01320	.108	50.00	83.33	.981	.697	-1.413	21.291	18.869	581.661
45	.01360	.110	50.00	83.33	.993	.697	-1.222	21.463	19.287	653.058
46	.01400	.112	50.00	83.33	.993	.697	-1.142	21.562	19.479	724.741
47	.01440	.114	50.00	83.33	.993	.697	-1.053	21.651	19.550	796.137
48	.01480	.116	50.00	83.33	.997	.697	-1.007	21.711	19.734	867.620
49	.01520	.118	50.00	83.33	.997	.697	-1.011	21.716	19.798	939.074
50	.01560	.120	50.00	83.33	.999	.697	-1.009	21.713	19.786	1011.166
51	.01600	.122	50.00	83.33	.999	.697	-1.021	21.684	19.803	1082.582
52	.01640	.124	50.00	83.33	.999	.697	-1.022	21.683	19.796	1153.979
53	.01680	.126	50.00	83.33	.999	.697	-1.013	21.691	19.784	1466.754
54	.01720	.128	50.00	83.33	.999	.697	-1.033	21.672	19.778	1783.100
55	.01760	.130	50.00	83.33	.999	.697	-1.006	21.698	19.790	2098.447
56	.01800	.132	50.00	83.33	.999	.697	-1.026	21.676	19.778	2412.936
57	.01840	.134	50.00	83.33	.998	.697	-1.051	21.653	19.785	2727.281
58	.01880	.136	50.00	83.33	.998	.697	-1.054	21.650	19.610	3042.629
59	.01920	.138	50.00	83.33	.998	.697	-1.044	21.660	19.816	3357.267
60	.01960	.140	50.00	83.33	.997	.697	-1.065	21.634	19.822	3671.606
61	.02000	.142	50.00	83.33	.997	.697	-1.070	21.634	19.628	3986.524
62	.02040	.144	50.00	83.33	.997	.697	-1.064	21.640	19.815	4301.728

Table 34.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 18. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	71.545	71.545
FREE STREAM TEMPERATURE	77.656	
WALL TEMPERATURE	95.680	
WALL HEAT FLUX	.04720	
FREE STREAM DENSITY	.07457	
FREE STREAM KINEMATIC VISCOSITY	.0001658	
DENSITY OF FLUID AT WALL	.07215	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001757	
WALL/FREE STREAM DENSITY RATIO	.96755	
LOCATION REYNOLDS NUMBER (REX)	1740696.19	
INPUT VALUE OF VELOCITY DELTA	.73000	
INPUT VALUE OF TEMPERATURE DELTA	.83000	
CALCULATED DELTA		.61315
DELTA 99.5% INPUT	.63200	
DISPLACEMENT THICKNESS (DELSTAR)	.07561	.07601
MOMENTUM THICKNESS (THETA)	.05354	.05379
ENERGY-DISSIPATION THICKNESS	.09652	.09664
ENTHALPY THICKNESS	.00302	.00302
SHAPE FACTOR 12 (DELSTAR/THETA)	1.41226	1.41320
SHAPE FACTOR 32 (ENERGY/THETA)	1.80294	1.79660
MOMENTUM THICKNESS REYNOLDS NUMBER	1925.44	1934.39
DISPLACEMENT THICKNESS REYNOLDS NUMBER	2719.21	2733.68
SKIN FRICTION COEFFICIENT	.003936	
FRICTION VELOCITY	3.22660	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		.09858
CLAUSEPS 'DELTA' INTEGRAL	-1.46930	-1.61866
CLAUSEPS 'G' INTEGRAL	9.11046	9.18365
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.06943	.07300
MOMENTUM THICKNESS - CONSTANT DENSITY	.05406	.05432
SHAPE FACTOR 12 - CONSTANT DENSITY	1.28420	1.34386

LOCATION -X- 48.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 35.

KLDM41X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 18. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+1)	T(+1)	Y(+1)
1	.00063	.010	29.26	90.54	.409	.285	-13.106	9.067	6.087	9.686
2	.00077	.012	32.04	89.92	.448	.320	-12.243	9.830	6.823	11.828
3	.00087	.014	34.20	89.55	.478	.340	-11.574	10.529	7.262	13.358
4	.00096	.015	36.23	89.38	.506	.360	-10.945	11.228	7.809	14.735
5	.00106	.017	37.45	88.71	.533	.387	-10.566	11.607	8.254	16.265
6	.00121	.019	39.56	88.32	.557	.409	-9.907	12.266	8.718	18.561
7	.00136	.022	40.87	87.80	.571	.428	-9.507	12.667	9.137	20.856
8	.00155	.023	41.56	87.71	.581	.442	-9.267	12.887	9.429	22.233
9	.00166	.026	42.77	87.38	.599	.460	-8.867	13.287	9.824	25.446
10	.00186	.032	43.94	87.13	.614	.474	-8.555	13.618	10.117	28.506
11	.00221	.035	44.77	86.97	.626	.483	-8.297	13.877	10.309	31.414
12	.00236	.037	45.19	86.67	.632	.500	-6.166	14.005	10.663	33.862
13	.00254	.037	45.62	86.52	.635	.508	-8.035	14.138	10.846	36.157
14	.00274	.040	46.12	86.77	.645	.516	-7.860	14.294	11.017	38.911
15	.00294	.043	46.63	86.21	.652	.525	-7.722	14.451	11.208	41.972
16	.00311	.044	47.70	86.36	.657	.533	-7.607	14.567	11.363	45.032
17	.00337	.045	48.57	85.58	.666	.538	-7.404	14.770	11.479	47.633
18	.00374	.049	49.63	85.30	.679	.560	-7.121	15.053	11.950	57.273
19	.00417	.051	50.77	84.98	.677	.576	-6.729	15.444	12.292	68.542
20	.00476	.051	51.45	84.73	.710	.593	-6.437	15.730	12.660	78.542
21	.00513	.052	52.20	84.49	.719	.607	-6.227	15.947	12.955	86.182
22	.00546	.053	53.77	84.33	.730	.620	-5.976	16.198	13.251	96.893
23	.00574	.053	53.60	84.16	.742	.639	-5.546	16.446	13.440	109.604
24	.00644	.055	54.57	84.10	.759	.642	-5.344	16.626	13.632	118.478
25	.00677	.055	54.57	83.51	.759	.642	-5.344	16.825	13.706	129.189
26	.00714	.055	55.55	83.51	.766	.658	-5.194	16.980	13.848	139.900
27	.00744	.055	55.55	83.51	.773	.667	-4.996	17.177	14.229	149.693
28	.00774	.055	55.55	83.51	.780	.677	-4.884	17.290	14.448	159.792
29	.00811	.056	56.45	83.51	.789	.683	-4.678	17.455	14.567	170.350
30	.00846	.056	56.45	83.51	.795	.693	-4.542	17.631	14.780	179.531
31	.00877	.057	57.38	83.51	.802	.701	-4.389	17.784	14.965	190.701
32	.00911	.057	57.38	82.65	.807	.706	-4.278	17.895	15.063	201.259
33	.00946	.057	58.97	82.71	.824	.720	-3.898	18.276	15.358	227.271
34	.00982	.058	59.62	82.71	.838	.740	-3.602	18.572	15.796	254.355
35	.01018	.059	60.66	82.71	.851	.758	-3.311	18.863	16.182	280.979
36	.01054	.061	61.74	81.75	.863	.773	-3.038	19.135	16.488	308.627
37	.01096	.063	62.43	81.69	.873	.776	-2.624	19.344	16.554	334.361
38	.01137	.063	63.30	81.69	.884	.791	-2.558	19.615	16.879	361.770
39	.01178	.063	63.30	81.69	.894	.811	-2.346	19.846	17.305	386.089
40	.01218	.063	63.30	81.69	.907	.823	-2.052	20.052	17.558	415.937
41	.01258	.063	63.30	81.69	.914	.843	-1.913	20.261	17.975	441.796
42	.01298	.063	63.30	81.69	.925	.857	-1.652	20.522	18.264	468.727
43	.01338	.063	63.30	81.69	.943	.876	-1.269	20.904	18.686	539.266
44	.01378	.063	63.30	81.69	.961	.906	-1.896	21.278	19.331	611.642
45	.01418	.063	63.30	81.69	.973	.929	-1.607	21.566	19.824	663.741
46	.01458	.063	63.30	81.69	.974	.945	-1.462	21.711	20.155	753.741
47	.01498	.063	63.30	81.69	.980	.971	-1.266	21.907	20.717	825.551
48	.01538	.063	63.30	81.69	.984	.976	-1.143	22.031	20.860	897.624
49	.01578	.063	63.30	81.69	.985	.988	-1.100	22.074	21.084	967.704
50	.01618	.063	63.30	81.69	.996	.992	-1.054	22.120	21.169	1039.621
51	.01658	.063	63.30	81.69	.995	.995	-1.010	22.163	21.219	1111.956
52	.01698	.063	63.30	81.69	.997	.997	-1.026	22.200	21.263	1181.923
53	.01738	.063	63.30	81.69	.999	.999	-1.017	22.256	21.329	1253.993
54	.01778	.063	63.30	81.69	.999	.999	-1.009	22.265	21.321	1325.603
55	.01818	.063	63.30	81.69	.999	.999	.005	22.279	21.336	1396.143
56	.01858	.063	63.30	81.69	.999	.999	.012	22.289	21.346	1468.365
57	.01898	.063	63.30	81.69	.999	.999	.009	22.265	21.326	1540.128
58	.01938	.063	63.30	81.69	.999	.999	.004	22.170	21.360	1846.003
59	.01978	.063	63.30	81.69	.999	.999	.001	22.174	21.360	2151.724
60	.02018	.063	63.30	81.69	.999	.999	.002	22.171	21.367	2457.751
61	.02058	.063	63.30	81.69	.999	.999	.022	22.154	21.360	2763.626
62	.02098	.063	63.30	81.69	.999	.999	.012	22.167	21.367	3069.959
63	.02138	.063	63.30	81.69	.996	.996	.035	22.139	21.361	3376.139
64	.02178	.063	63.30	81.69	.996	.996	.040	22.133	21.394	3681.708
65	.02218	.063	63.30	81.69	.999	.999	.012	22.161	21.399	3988.041
66	.02258	.063	63.30	81.69	.999	.999	.028	22.145	21.380	4294.374
67	.02298	.063	63.30	81.69	.998	.998	.035	22.138	21.407	4600.402

Table 35.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 19. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	77.041	77.041
FREE STREAM TEMPERATURE =	77.634	
WALL TEMPERATURE =	94.770	
WALL HEAT FLUX =	.04680	
FREE STREAM DENSITY =	.07457	
FREE STREAM KINEMATIC VISCOSITY =	.0001658	
DENSITY OF FLUID AT WALL =	.07226	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001752	
WALL/FREE STREAM DENSITY RATIO =	.96909	
LOCATION REYNOLDS NUMBER (REX) =	2339329.28	
INPUT VALUE OF VELOCITY DELTA =	.85000	
INPUT VALUE OF TEMPERATURE DELTA =	.91000	
CALCULATED DELTA =		.70793
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.08268	.06320
MOMENTUM THICKNESS (THETA) =	.05957	.05972
ENERGY-DISSIPATION THICKNESS =	.10763	.10769
ENTHALPY THICKNESS =	.00334	.00333
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.39138	1.39325
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80668	1.80328
MOMENTUM THICKNESS REYNOLDS NUMBER =	2307.09	2312.87
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	3210.03	3222.41
SKIN FRICTION COEFFICIENT =	.003831	
FRICTION VELOCITY =	3.42528	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.06066
CLAUSERS 'DELTA' INTEGRAL =	-1.68054	-1.79646
CLAUSERS 'G' INTEGRAL =	9.81706	9.90313
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.07713	.07987
MOMENTUM THICKNESS - CONSTANT DENSITY =	.06014	.06030
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.28251	1.32466

LOCATION -X- 60.40000

Z = CENTERLINE

K = 0.2 x 10⁻⁶

Table 36.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80
 RUN NO. 1. POINT 19. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0000	.0000	25.74	91.90	.334	.167	-14.978	7.514	3.641	7.868
2	.0000	.0000	30.77	90.76	.399	.234	-13.509	8.983	5.086	10.475
3	.0000	.0000	33.94	90.35	.426	.258	-12.876	9.616	5.600	11.452
4	.0000	.0000	35.16	89.81	.456	.290	-12.227	10.266	6.301	12.756
5	.0000	.0000	38.43	88.91	.499	.342	-11.577	11.211	7.440	15.199
6	.0000	.0000	42.81	88.45	.530	.369	-10.927	11.911	8.023	17.460
7	.0000	.0000	47.50	88.15	.552	.389	-10.277	12.511	8.501	20.066
8	.0000	.0000	43.20	87.74	.561	.399	-9.627	13.011	8.979	22.743
9	.0000	.0000	45.21	87.40	.567	.400	-8.977	13.511	9.457	27.490
10	.0000	.0000	46.42	86.89	.587	.445	-8.327	14.011	10.000	33.770
11	.0000	.0000	47.74	86.68	.603	.472	-7.677	14.511	10.500	35.868
12	.0000	.0000	48.95	86.63	.624	.475	-7.027	15.011	11.000	39.798
13	.0000	.0000	49.12	86.26	.636	.496	-6.377	15.511	11.500	42.242
14	.0000	.0000	49.79	86.39	.646	.489	-5.727	16.011	12.000	45.663
15	.0000	.0000	50.29	86.35	.653	.491	-5.077	16.511	12.500	48.269
16	.0000	.0000	50.64	86.20	.657	.500	-4.427	17.011	13.000	50.021
17	.0000	.0000	52.15	85.66	.677	.532	-3.777	17.511	13.500	51.773
18	.0000	.0000	53.10	85.28	.690	.554	-3.127	18.011	14.000	53.525
19	.0000	.0000	54.20	84.98	.703	.572	-2.477	18.511	14.500	55.277
20	.0000	.0000	55.10	84.94	.716	.573	-1.827	19.011	15.000	57.029
21	.0000	.0000	55.55	84.73	.725	.586	-1.177	19.511	15.500	58.781
22	.0000	.0000	56.60	84.51	.735	.599	-0.527	20.011	16.000	60.533
23	.0000	.0000	57.90	84.33	.744	.609	0.127	20.511	16.500	62.285
24	.0000	.0000	57.90	84.33	.753	.626	0.777	21.011	17.000	64.037
25	.0000	.0000	58.63	83.97	.761	.633	1.427	21.511	17.500	65.789
26	.0000	.0000	59.00	83.82	.767	.639	2.077	22.011	18.000	67.541
27	.0000	.0000	59.00	83.56	.772	.646	2.727	22.511	18.500	69.293
28	.0000	.0000	60.22	83.34	.789	.667	3.377	23.011	19.000	71.045
29	.0000	.0000	61.15	83.15	.794	.678	4.027	23.511	19.500	72.797
30	.0000	.0000	61.61	83.02	.800	.685	4.677	24.011	20.000	74.549
31	.0000	.0000	62.70	82.86	.815	.695	5.327	24.511	20.500	76.301
32	.0000	.0000	63.71	82.55	.827	.713	5.977	25.011	21.000	78.053
33	.0000	.0000	64.90	82.29	.843	.728	6.627	25.511	21.500	79.805
34	.0000	.0000	65.42	82.15	.849	.736	7.277	26.011	22.000	81.557
35	.0000	.0000	66.35	81.84	.861	.754	7.927	26.511	22.500	83.309
36	.0000	.0000	67.19	81.56	.872	.771	8.577	27.011	23.000	85.061
37	.0000	.0000	67.04	81.31	.882	.786	9.227	27.511	23.500	86.813
38	.0000	.0000	68.71	80.94	.890	.807	9.877	28.011	24.000	88.565
39	.0000	.0000	69.34	80.87	.900	.811	10.527	28.511	24.500	90.317
40	.0000	.0000	69.01	80.59	.907	.827	11.177	29.011	25.000	92.069
41	.0000	.0000	71.78	79.99	.932	.862	11.827	29.511	25.500	93.821
42	.0000	.0000	73.35	79.55	.957	.884	12.477	30.011	26.000	95.573
43	.0000	.0000	74.40	79.15	.974	.912	13.127	30.511	26.500	97.325
44	.0000	.0000	75.14	78.61	.987	.944	13.777	31.011	27.000	99.077
45	.0000	.0000	76.14	78.19	.993	.968	14.427	31.511	27.500	100.829
46	.0000	.0000	76.44	77.79	.996	.975	15.077	32.011	28.000	102.581
47	.0000	.0000	76.76	77.39	.999	.985	15.727	32.511	28.500	104.333
48	.0000	.0000	77.09	77.00	.999	.995	16.377	33.011	29.000	106.085
49	.0000	.0000	77.09	76.60	.999	.999	17.027	33.511	29.500	107.837
50	.0000	.0000	77.09	76.20	.999	.999	17.677	34.011	30.000	109.589
51	.0000	.0000	77.09	75.80	.999	.999	18.327	34.511	30.500	111.341
52	.0000	.0000	77.09	75.40	.999	.999	18.977	35.011	31.000	113.093
53	.0000	.0000	77.09	75.00	.999	.999	19.627	35.511	31.500	114.845
54	.0000	.0000	77.09	74.60	.999	.999	20.277	36.011	32.000	116.597
55	.0000	.0000	77.09	74.20	.999	.999	20.927	36.511	32.500	118.349
56	.0000	.0000	77.09	73.80	.999	.999	21.577	37.011	33.000	120.101
57	.0000	.0000	77.09	73.40	.999	.999	22.227	37.511	33.500	121.853
58	.0000	.0000	77.09	73.00	.999	.999	22.877	38.011	34.000	123.605
59	.0000	.0000	77.09	72.60	.999	.999	23.527	38.511	34.500	125.357
60	.0000	.0000	77.09	72.20	.999	.999	24.177	39.011	35.000	127.109
61	.0000	.0000	77.09	71.80	.999	.999	24.827	39.511	35.500	128.861
62	.0000	.0000	77.09	71.40	.999	.999	25.477	40.011	36.000	130.613
63	.0000	.0000	77.09	71.00	.999	.999	26.127	40.511	36.500	132.365
64	.0000	.0000	77.09	70.60	.999	.999	26.777	41.011	37.000	134.117
65	.0000	.0000	77.09	70.20	.999	.999	27.427	41.511	37.500	135.869
66	.0000	.0000	77.09	69.80	.999	.999	28.077	42.011	38.000	137.621
67	.0000	.0000	77.09	69.40	.999	.999	28.727	42.511	38.500	139.373

Table 36.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 20. GRID I.C. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	76.968	76.968
FREE STREAM TEMPERATURE ==	77.629	
WALL TEMPERATURE ==	95.200	
WALL HEAT FLUX ==	.04780	
FREE STREAM DENSITY ==	.07457	
FREE STREAM KINEMATIC VISCOSITY ==	.0001658	
DENSITY OF FLUID AT WALL ==	.07221	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001755	
WALL/FREE STREAM DENSITY RATIO ==	.96833	
LOCATION PEYNOIDS NUMBER (REX) ==	2337130.00	
INPUT VALUE OF VELOCITY DELTA ==	.91000	
INPUT VALUE OF TEMPERATURE DELTA ==	1.03000	
CALCULATED DELTA ==		.69942
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.08447	.08481
MOMENTUM THICKNESS (THETA) ==	.06049	.06059
ENERGY-DISSIPATION THICKNESS ==	.10914	.10913
ENTHALPY THICKNESS ==	.00350	.00350
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.39645	1.39983
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.80427	1.80112
MOMENTUM THICKNESS REYNOLDS NUMBER ==	2340.52	2344.45
DISPLACEMENT THICKNESS PEYNOIDS NUMBER ==	3266.41	3281.84
SKIN FRICTION COEFFICIENT ==	.003777	
FRICTION VELOCITY ==	3.39920	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		.10217
CLAUSERS 'DELTA' INTEGRAL ==	-1.72858	-1.84138
CLAUSEPS 'G' INTEGRAL ==	10.19570	10.32218
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.07866	.08132
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.06108	.06119
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.28766	1.32902

LOCATION -X- 60.40000

Z = +6 INCHES

K = 0.2 x 10⁻⁶

Table 37.

KLM21x TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 20. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE JTAU	U(+)	T(+)	Y(+)
1	.0046	.007	26.37	91.13	.343	.232	-1.4886	7.757	5.016	7.475
2	.0053	.008	27.33	90.12	.358	.255	-1.4345	8.098	5.521	8.605
3	.0069	.010	31.79	89.12	.413	.300	-1.3291	9.352	6.503	11.188
4	.0082	.012	35.66	89.37	.464	.332	-1.2146	10.497	7.185	13.267
5	.0093	.013	37.75	89.01	.490	.352	-1.1153	11.105	7.623	15.063
6	.0107	.015	39.83	88.57	.518	.377	-1.0225	11.718	8.167	17.323
7	.0124	.016	42.11	88.03	.547	.408	-1.0253	12.390	8.836	20.068
8	.0146	.021	44.22	87.65	.575	.430	-1.0633	13.009	9.310	23.619
9	.0167	.024	45.51	87.37	.591	.446	-1.0254	13.389	9.648	27.010
10	.0182	.026	46.43	87.27	.603	.451	-1.0963	13.660	9.776	29.431
11	.0197	.028	46.72	87.12	.607	.460	-1.0897	13.746	9.961	31.853
12	.0214	.031	47.54	86.77	.618	.473	-1.0656	13.985	10.236	34.598
13	.0237	.034	48.14	86.61	.629	.489	-1.0393	14.250	10.583	36.311
14	.0259	.037	49.04	86.42	.636	.500	-1.0245	14.397	10.626	41.663
15	.0272	.039	49.56	86.15	.642	.504	-1.1111	14.532	10.909	43.961
16	.0336	.048	50.92	86.15	.662	.521	-1.0663	14.980	11.274	54.294
17	.0406	.056	52.34	85.64	.680	.544	-1.0247	15.396	11.779	65.595
18	.0466	.066	53.16	85.40	.691	.558	-1.0004	15.639	12.082	76.896
19	.0534	.076	54.19	85.33	.704	.579	-1.0700	15.943	12.537	86.260
20	.0606	.086	55.14	84.44	.715	.591	-1.0452	16.191	12.796	97.561
21	.0677	.097	55.97	84.44	.727	.595	-1.0176	16.465	12.892	109.508
22	.0747	.105	56.53	84.27	.736	.607	-1.0977	16.665	13.146	119.033
23	.0816	.115	57.75	84.27	.743	.622	-1.0765	16.658	13.471	130.173
24	.0886	.125	59.49	84.27	.753	.632	-1.0584	17.058	13.687	141.636
25	.0937	.134	59.82	83.90	.759	.640	-1.0457	17.186	13.851	151.322
26	.1007	.144	59.22	83.84	.767	.646	-1.0222	17.421	14.000	162.623
27	.1074	.154	59.64	83.89	.775	.644	-1.0097	17.546	13.940	173.440
28	.1137	.163	60.27	83.80	.783	.649	-1.0912	17.731	14.044	183.611
29	.1205	.172	60.54	83.53	.787	.664	-1.0632	17.811	14.378	194.569
30	.1274	.182	61.20	83.24	.795	.681	-1.0638	18.005	14.743	205.729
31	.1447	.207	62.30	83.01	.809	.694	-1.0316	18.327	15.024	233.659
32	.1622	.232	63.36	82.73	.823	.706	-1.0004	18.639	15.282	261.912
33	.1794	.257	64.28	82.56	.835	.719	-1.0740	18.903	15.575	289.680
34	.1973	.282	65.43	82.15	.850	.743	-1.0365	19.248	16.063	318.579
35	.2145	.307	66.12	81.99	.859	.752	-1.0192	19.451	16.277	346.347
36	.2325	.332	67.75	81.70	.871	.768	-1.0918	19.725	16.631	375.408
37	.2494	.357	67.52	81.62	.877	.773	-1.0781	19.662	16.736	403.015
38	.2675	.383	68.31	81.35	.887	.788	-1.0348	20.095	17.068	431.913
39	.2847	.407	69.28	81.14	.895	.800	-1.0380	20.263	17.332	459.197
40	.3025	.433	69.64	80.63	.905	.816	-1.0155	20.488	17.708	486.419
41	.3205	.458	71.56	80.15	.930	.855	-1.0584	21.059	18.505	585.286
42	.4224	.604	73.09	79.60	.950	.888	-1.1140	21.503	19.220	682.476
43	.4826	.690	74.36	79.07	.966	.918	-1.0766	21.677	19.884	779.181
44	.5424	.776	75.37	78.68	.979	.940	-1.0470	22.173	20.365	875.725
45	.6025	.861	75.95	78.43	.987	.955	-1.0300	22.343	20.671	972.753
46	.6626	.947	76.33	78.07	.992	.975	-1.062	22.461	21.115	1069.782
47	.7225	1.033	76.80	77.85	.995	.982	-1.008	22.535	21.257	1166.467
48	.7825	1.119	76.80	77.78	.998	.991	-1.051	22.592	21.467	1263.354
49	.8424	1.204	76.87	77.73	.999	.994	-1.030	22.613	21.527	1360.059
50	.9024	1.290	76.85	77.68	1.000	.997	-1.006	22.637	21.588	1456.926
51	.9625	1.376	76.94	77.65	1.000	.999	-1.007	22.636	21.628	1553.954
52	1.0227	1.462	77.70	77.64	1.000	.999	-1.010	22.653	21.642	1651.144
53	1.0826	1.548	76.96	77.63	1.000	1.000	-1.003	22.639	21.655	1747.850
54	1.1426	1.634	77.00	77.63	1.000	1.000	-1.009	22.652	21.655	1845.039
55	1.2025	1.719	76.66	77.63	1.000	1.000	-1.005	22.647	21.655	1941.422
56	1.3522	1.976	76.83	77.59	.998	1.002	-1.040	22.603	21.696	2223.139
57	1.5522	2.234	76.90	77.60	.999	1.002	-1.020	22.623	21.696	2522.139
58	1.7421	2.491	76.86	77.60	.999	1.000	-1.026	22.617	21.662	2812.578
59	1.9221	2.746	76.86	77.60	.999	1.002	-1.025	22.616	21.689	3103.179
60	2.1021	3.006	76.75	77.62	.997	1.001	-1.064	22.579	21.669	3393.779
61	2.2822	3.263	76.73	77.63	.997	1.002	-1.070	22.572	21.696	3684.541
62	2.4622	3.521	76.74	77.61	.997	1.001	-1.067	22.576	21.676	3975.788
63	2.6422	3.778	76.72	77.61	.997	1.001	-1.072	22.571	21.682	4266.055
64	2.8222	4.035	76.73	77.63	.997	1.000	-1.070	22.573	21.655	4556.343
65	3.0024	4.293	76.70	77.61	.997	1.001	-1.074	22.564	21.676	4847.267

Table 37.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 21. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	77.042	77.042
FREE STREAM TEMPERATURE	77.578	
WALL TEMPERATURE	95.150	
WALL HEAT FLUX	.048JC	
FREE STREAM DENSITY	.07458	
FREE STREAM KINEMATIC VISCOSITY	.0001657	
DENSITY OF FLUID AT WALL	.07222	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001754	
WALL/FREE STREAM DENSITY RATIO	.96833	
LOCATION REYNOLDS NUMBER (REX)	2339761.59	
INPUT VALUE OF VELOCITY DELTA	.91000	
INPUT VALUE OF TEMPERATURE DELTA	.97000	
CALCULATED DELTA		.69962
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	.08452	.08479
MOMENTUM THICKNESS (THETA)	.06040	.06049
ENERGY-DISSIPATION THICKNESS	.10890	.10891
ENTHALPY THICKNESS	.00352	.00352
SHAPE FACTOR 12 (DELSTAR/THETA)	1.39939	1.40159
SHAPE FACTOR 32 (ENERGY/THETA)	1.80299	1.80039
MOMENTUM THICKNESS REYNOLDS NUMBER	2339.79	2343.44
DISPLACEMENT THICKNESS REYNOLDS NUMBER	3274.28	3284.54
SKIN FRICTION COEFFICIENT	.003777	
FRICTION VELOCITY	3.40240	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		.10156
CLAUSERS 'DELTA' INTEGRAL	-1.73613	-1.84027
CLAUSERS 'G' INTEGRAL	10.25166	10.33961
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.07884	.08127
MOMENTUM THICKNESS - CONSTANT DENSITY	.06101	.06111
SHAPE FACTOR 12 - CONSTANT DENSITY	1.29225	1.33002
LOCATION -X-	60.40000	
Z = -6 INCHES		
K = 0.2 x 10 ⁻⁶		

Table 38.

KLDM1X TAPL 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 21. GRID NO. 2

REDUCED PROFILE DATA

N	Y	Y/	U	T	U/UE	THETA	U-UE	U(+)	T(+)	Y(+)
INCH	DELTA	FT/SEC	DEG.F				UTAU			
1	.0000	24.45	91.70	.323	.196	-15.340	7.303	4.238	6.998	
2	.0000	27.44	90.75	.356	.250	-14.560	8.064	5.406	9.423	
3	.0000	30.59	90.36	.397	.273	-13.653	8.991	5.887	10.677	
4	.0000	32.76	89.92	.425	.298	-13.014	9.629	6.431	12.170	
5	.0000	36.00	88.36	.468	.329	-12.044	10.000	7.112	14.271	
6	.0000	38.91	88.94	.505	.354	-11.207	11.437	7.632	16.534	
7	.0000	41.20	88.45	.535	.381	-10.533	12.110	8.226	19.120	
8	.0000	41.69	86.31	.545	.389	-10.302	12.341	8.401	20.251	
9	.0000	44.08	87.95	.572	.410	-9.686	12.957	8.841	23.807	
10	.0000	45.49	87.55	.590	.433	-9.274	13.364	9.341	27.801	
11	.0000	46.24	87.27	.601	.448	-9.038	13.605	9.689	29.625	
12	.0000	47.14	87.11	.612	.458	-8.767	13.855	9.9	32.9	
13	.0000	47.31	86.97	.620	.465	-8.593	14.055	10.000	34.959	
14	.0000	48.32	86.72	.627	.460	-8.442	14.201	10.722	37.707	
15	.0000	49.17	86.42	.638	.497	-8.192	14.451	10.904	41.424	
16	.0000	49.66	86.27	.645	.505	-8.049	14.594	10.986	44.656	
17	.0000	50.00	86.21	.650	.509	-7.930	14.713	11.098	47.661	
18	.0000	50.51	86.09	.667	.526	-7.545	15.098	11.359	57.263	
19	.0000	50.61	85.95	.663	.546	-7.174	15.469	11.792	69.061	
20	.0000	50.73	85.27	.697	.562	-6.850	15.793	12.143	80.052	
21	.0000	50.79	85.09	.716	.573	-6.636	15.987	12.364	89.426	
22	.0000	50.84	84.97	.718	.580	-6.387	16.256	12.512	100.901	
23	.0000	50.84	84.97	.729	.589	-6.129	16.515	12.714	112.538	
24	.0000	50.84	84.97	.736	.599	-5.967	16.677	12.937	121.750	
25	.0000	50.84	84.97	.746	.615	-5.749	16.894	13.269	133.367	
26	.0000	50.84	84.97	.754	.629	-5.574	17.069	13.583	144.377	
27	.0000	50.84	84.97	.760	.636	-5.445	17.199	13.728	154.075	
28	.0000	50.84	84.97	.768	.643	-5.242	17.401	13.889	165.550	
29	.0000	50.84	84.97	.776	.647	-5.033	17.609	13.966	176.884	
30	.0000	50.84	84.97	.780	.658	-4.973	17.671	14.006	186.874	
31	.0000	50.84	84.97	.789	.663	-4.760	17.863	14.099	197.874	
32	.0000	50.84	84.97	.799	.667	-4.544	18.100	14.194	209.673	
33	.0000	50.84	84.97	.809	.682	-4.311	18.329	14.281	223.149	
34	.0000	50.84	84.97	.823	.690	-3.998	18.645	14.369	237.271	
35	.0000	50.84	84.97	.836	.712	-3.714	18.929	14.452	252.070	
36	.0000	50.84	84.97	.851	.736	-3.381	19.262	14.537	267.465	
37	.0000	50.84	84.97	.859	.752	-3.198	19.445	15.624	322.284	
38	.0000	50.84	84.97	.867	.763	-2.922	19.721	16.465	376.892	
39	.0000	50.84	84.97	.882	.785	-2.683	19.960	16.956	408.529	
40	.0000	50.84	84.97	.889	.800	-2.500	20.138	17.270	435.621	
41	.0000	50.84	84.97	.899	.800	-2.315	20.329	17.268	463.097	
42	.0000	50.84	84.97	.905	.818	-2.156	20.487	17.659	492.350	
43	.0000	50.84	84.97	.930	.858	-1.577	21.067	18.527	586.162	
44	.0000	50.84	84.97	.951	.883	-1.117	21.527	19.060	686.297	
45	.0000	50.84	84.97	.966	.915	-1.775	21.669	19.754	783.109	
46	.0000	50.84	84.97	.976	.942	-1.444	22.147	20.332	880.083	
47	.0000	50.84	84.97	.986	.960	-1.272	22.371	20.732	976.895	
48	.0000	50.84	84.97	.993	.976	-1.166	22.477	21.122	1074.191	
49	.0000	50.84	84.97	.997	.983	-1.084	22.581	21.422	1171.003	
50	.0000	50.84	84.97	.999	.992	-1.043	22.600	21.424	1267.815	
51	.0000	50.84	84.97	.999	.994	-1.024	22.619	21.482	1364.788	
52	.0000	50.84	84.97	.998	.998	-1.010	22.654	21.535	1462.247	
53	.0000	50.84	84.97	.998	.998	-1.004	22.646	21.554	1558.735	
54	.0000	50.84	84.97	.999	.999	-1.010	22.634	21.571	1656.032	
55	.0000	50.84	84.97	.999	.999	-1.005	22.649	21.613	1752.844	
56	.0000	50.84	84.97	.999	.999	-1.004	22.647	21.580	1849.817	
57	.0000	50.84	84.97	.999	.999	-1.021	22.623	21.589	1946.791	
58	.0000	50.84	84.97	.999	.999	-1.024	22.619	21.662	2043.726	
59	.0000	50.84	84.97	.999	.999	-1.005	22.638	21.614	2140.614	
60	.0000	50.84	84.97	.999	.999	-1.020	22.623	21.623	2237.506	
61	.0000	50.84	84.97	.999	.999	-1.047	22.597	21.683	2334.398	
62	.0000	50.84	84.97	.999	.999	-1.025	22.618	21.669	2431.290	
63	.0000	50.84	84.97	.999	.999	-1.025	22.618	21.669	2528.182	
64	.0000	50.84	84.97	.999	.999	-1.059	22.584	21.683	2625.074	
65	.0000	50.84	84.97	.999	.999	-1.036	22.585	21.629	2721.966	
66	.0000	50.84	84.97	.999	.999	-1.043	22.600	21.656	2818.858	
67	.0000	50.84	84.97	.999	.999	-1.054	22.589	21.649	2915.750	

Table 38.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 22. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	81.159	81.159
FREE STREAM TEMPERATURE =	77.860	
WALL TEMPERATURE =	95.430	
WALL HEAT FLUX =	.04840	
FREE STREAM DENSITY =	.07454	
FREE STREAM KINEMATIC VISCOSITY =	.0001659	
DENSITY OF FLUID AT WALL =	.07218	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001756	
WALL/FREE STREAM DENSITY RATIO =	.96835	
LOCATION REYNOLDS NUMBER (REX) =	2788689.44	
INPUT VALUE OF VELOCITY DELTA =	.91000	
INPUT VALUE OF TEMPERATURE DELTA =	.97000	
CALCULATED DELTA =		.73042
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.08443	.08472
MOMENTUM THICKNESS (THETA) =	.06060	.06065
ENERGY-DISSIPATION THICKNESS =	.10949	.10945
ENTHALPY THICKNESS =	.00383	.00383
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.39323	1.39695
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80673	1.80460
MOMENTUM THICKNESS REYNOLDS NUMBER =	2470.63	2472.67
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	3442.16	3454.20
SKIN FRICTION COEFFICIENT =	.003776	
FRICTION VELOCITY =	3.58340	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.05566
CLAUSERS 'DELTA' INTEGRAL =	-1.73866	-1.83220
CLAUSERS 'G' INTEGRAL =	9.93825	10.06549
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.07868	.08090
MOMENTUM THICKNESS - CONSTANT DENSITY =	.06122	.06127
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.28518	1.32024

LOCATION -X- 68.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 39.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 22. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.00338	.0005	26.92	91.63	.332	.216	-15.136	7.512	4.668	6.514
2	.00353	.0007	28.23	90.83	.346	.262	-14.770	7.679	5.895	9.065
3	.00359	.0008	30.26	90.51	.373	.280	-14.204	8.445	6.306	10.085
4	.0068	.009	33.37	90.03	.411	.307	-13.336	9.313	6.920	11.616
5	.0081	.011	37.17	89.43	.458	.341	-12.276	10.373	7.691	13.827
6	.0097	.013	40.93	88.93	.504	.370	-11.226	11.422	8.339	16.548
7	.0111	.015	42.87	88.60	.528	.389	-10.686	11.963	8.933	18.929
8	.0118	.016	43.66	88.46	.538	.396	-10.466	12.183	9.320	20.119
9	.0140	.019	46.14	88.16	.569	.414	-9.772	12.676	9.686	23.861
10	.0160	.022	47.83	87.89	.589	.430	-9.301	13.347	10.182	27.262
11	.0181	.025	49.09	87.42	.605	.452	-8.948	13.700	10.269	30.834
12	.0196	.027	49.85	87.42	.614	.456	-8.737	13.912	10.382	33.385
13	.0211	.029	50.55	87.34	.623	.461	-8.542	14.107	10.665	35.936
14	.0226	.031	51.12	87.11	.630	.473	-8.363	14.266	11.079	42.130
15	.0239	.034	51.72	86.79	.637	.492	-8.216	14.433	11.288	46.748
16	.0257	.037	52.30	86.63	.644	.501	-8.033	14.596	11.386	48.861
17	.0271	.039	52.85	86.55	.651	.505	-7.899	14.749	11.858	60.255
18	.0289	.042	53.49	86.13	.672	.526	-7.429	15.220	12.103	71.820
19	.0306	.045	55.66	85.99	.686	.537	-7.110	15.539	12.295	83.215
20	.0322	.047	56.96	85.84	.702	.546	-6.753	15.896	12.632	93.589
21	.0339	.049	57.74	85.58	.711	.561	-6.536	16.113	12.953	105.494
22	.0355	.051	58.85	85.53	.724	.575	-6.258	16.390	13.381	117.058
23	.0368	.053	59.53	85.53	.734	.594	-6.036	16.613	13.617	127.773
24	.0382	.055	60.14	84.61	.741	.604	-5.865	16.784	13.743	139.508
25	.0396	.057	60.86	84.71	.750	.610	-5.686	16.983	13.822	151.242
26	.0409	.059	61.60	84.65	.759	.613	-5.459	17.190	14.112	161.617
27	.0422	.061	62.07	84.43	.765	.626	-5.326	17.323	14.312	173.521
28	.0435	.063	62.72	84.27	.773	.635	-5.145	17.504	14.445	185.256
29	.0448	.065	63.42	83.93	.781	.641	-4.951	17.698	14.675	196.141
30	.0461	.067	64.17	83.84	.786	.651	-4.840	17.980	14.754	207.195
31	.0474	.069	64.93	83.60	.794	.655	-4.669	18.073	15.171	219.440
32	.0487	.071	65.76	83.32	.798	.659	-4.576	18.426	15.536	227.284
33	.0499	.073	66.53	83.22	.803	.673	-4.223	18.729	15.726	237.706
34	.0511	.075	67.12	83.17	.807	.689	-3.919	19.001	16.005	246.318
35	.0523	.077	67.99	82.76	.812	.698	-3.647	19.286	16.286	255.012
36	.0535	.079	69.12	82.46	.817	.720	-3.361	19.505	16.566	263.754
37	.0547	.081	70.91	82.25	.822	.738	-3.144	19.787	16.846	272.544
38	.0559	.083	71.41	82.08	.827	.750	-2.862	19.926	17.126	281.284
39	.0571	.085	72.16	81.80	.830	.760	-2.721	20.036	17.406	290.024
40	.0583	.087	72.90	81.53	.834	.776	-2.511	20.136	17.686	298.764
41	.0595	.089	73.48	81.49	.839	.788	-2.305	20.343	17.966	307.504
42	.0607	.091	74.38	81.65	.846	.794	-2.144	20.505	18.246	316.244
43	.0619	.093	75.31	80.65	.851	.805	-1.931	20.616	18.526	325.004
44	.0631	.095	76.96	80.14	.856	.841	-1.631	20.883	18.806	333.764
45	.0643	.097	78.26	79.53	.864	.870	-1.165	21.483	20.386	342.524
46	.0655	.099	79.24	79.20	.869	.905	-.808	21.641	20.815	351.284
47	.0667	.101	79.98	78.72	.876	.924	-.535	22.114	21.429	360.044
48	.0679	.103	80.41	78.39	.885	.951	-.330	22.319	21.849	368.804
49	.0691	.105	80.82	78.32	.891	.970	-.208	22.441	22.555	377.564
50	.0703	.107	81.04	78.14	.896	.974	-.093	22.555	22.939	386.324
51	.0715	.109	81.17	78.16	.899	.984	-.033	22.615	23.173	395.084
52	.0727	.111	81.19	77.90	.900	.983	.000	22.652	23.333	403.844
53	.0739	.113	81.19	77.87	.900	.998	.010	22.658	23.481	412.604
54	.0751	.115	81.15	77.87	.900	.999	.008	22.657	23.517	421.364
55	.0763	.117	81.14	77.86	.900	1.000	.002	22.647	23.524	430.124
56	.0775	.119	81.21	77.85	.900	1.000	.006	22.643	23.531	438.884
57	.0787	.121	81.25	77.83	.900	1.001	.014	22.662	23.546	447.644
58	.0799	.123	81.25	77.83	.900	1.001	.026	22.674	23.567	456.404
59	.0811	.125	81.25	77.83	.900	1.002	.035	22.683	23.573	465.164
60	.0823	.127	81.17	77.85	.900	1.001	.029	22.672	23.559	473.924
61	.0835	.129	81.06	77.83	.900	1.001	.002	22.651	23.552	482.684
62	.0847	.131	81.06	77.82	.900	1.001	.002	22.620	23.581	491.444
63	.0859	.133	81.06	77.82	.900	1.002	.025	22.624	23.580	500.204
64	.0871	.135	81.06	77.80	.900	1.002	.029	22.620	23.538	508.964
65	.0883	.137	80.96	77.85	.900	1.000	.045	22.604	22.593	517.724
66	.0895	.139	81.00	77.85	.900	1.001	.056	22.593	22.552	526.484
67	.0907	.141	80.86	77.85	.900	1.001	.045	22.604	22.545	535.244
68	.0919	.143	80.86	77.85	.900	1.000	.078	22.571	22.545	544.004

Table 39.

KLD-260 TAPE 47524 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 4. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	38.836	38.836
FREE STREAM TEMPERATURE ==	77.601	
WALL TEMPERATURE ==	117.660	
WALL HEAT FLUX ==	.04220	
FREE STREAM DENSITY ==	.07532	
FREE STREAM KINEMATIC VISCOSITY ==	.0001641	
DENSITY OF FLUID AT WALL ==	.07010	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001863	
WALL/FREE STREAM DENSITY RATIO ==	.93061	
LOCATION REYNOLDS NUMBER (REX) ==	244556.01	
INPUT VALUE OF VELOCITY DELTA ==	.15000	
INPUT VALUE OF TEMPERATURE DELTA ==	.15000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.13100	
DISPLACEMENT THICKNESS (DELTA*) ==	.03079	.02442
MOMENTUM THICKNESS (THETA) ==	.01413	.01360
ENERGY-DISSIPATION THICKNESS ==	.02331	.02355
ENTHALPY THICKNESS ==	.00116	.00147
SHAPE FACTOR 12 (DELTA*/THETA) ==	2.17898	1.79593
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.65003	1.73162
MOMENTUM THICKNESS REYNOLDS NUMBER ==	278.65	266.17
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	607.17	481.61
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS * DELTA* INTEGRAL ==	-.39069	-.38721
CLAUSERS * C* INTEGRAL ==	4.29078	2.54454
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02666	.02295
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01454	.01401
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.83264	1.63815

LOCATION -X- 12.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 40.

PLAN NO. 3. POINT 4. GRID NO. 2

[illegible]

Table 40.

ALFA260 TAPE 47516 FILES 115-143, RUN 3, PTS.1-19 10/15/80

PLA NO. 3. POINT 5. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	35.739	38.339
FREE STREAM TEMPERATURE	77.404	
WALL TEMPERATURE	117.700	
WALL HEAT FLUX	.04200	
FREE STREAM DENSITY	.07535	
FREE STREAM KINEMATIC VISCOSITY	.0001640	
DENSITY OF FLUID AT WALL	.07018	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001859	
WALL/FREE STREAM DENSITY RATIO	.93134	
LOCATION REYNOLDS NUMBER (REX)	241584.26	
INPUT VALUE OF VELOCITY DELTA	.15000	
INPUT VALUE OF TEMPERATURE DELTA	.17000	
CALCULATED DELTA		
DELTA 09.5% INPUT	.13100	
DISPLACEMENT THICKNESS (DELTA*)	.03286	.02593
MOMENTUM THICKNESS (THETA)	.01421	.01421
ENERGY-DISSIPATION THICKNESS	.02732	.02443
ENTHALPY THICKNESS	.00115	.00148
SHAPE FACTOR 12 (DELTA*/THETA)	2.31255	1.82504
SHAPE FACTOR 32 (ENERGY/THETA)	1.64132	1.71933
MOMENTUM THICKNESS REYNOLDS NUMBER	276.60	276.64
DISPLACEMENT THICKNESS REYNOLDS NUMBER	640.11	505.25
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS DELTA* INTEGRAL	-.49465	-.42660
CLAUSERS C* INTEGRAL	5.19152	2.97554
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03005	.02443
MOMENTUM THICKNESS - CONSTANT DENSITY	.01462	.01465
SHAPE FACTOR 12 - CONSTANT DENSITY	2.05498	1.66936

LOCATION -X- 12.40000

Z = +6 INCHES

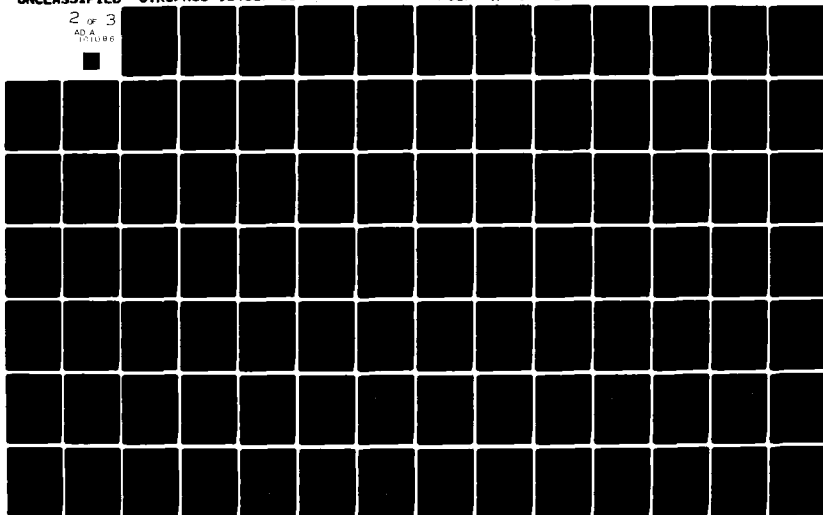
K = 0.75 x 10⁻⁶

Table 41.

AD-A101 096

UNITED TECHNOLOGIES RESEARCH CENTER EAST HARTFORD CONN F/G 20/4
DATA REPORT. VOLUME II. VELOCITY AND TEMPERATURE PROFILE DATA F--ETC(U)
JAN 81 M F BLAIR F49620-78-C-0064
UNCLASSIFIED UTRC/R81-914388-16 AFOSR-TR-81-0515 NL

2 of 3
AD-A101 096



REDUCED PROFILE DATA

[illegible]

Table 41.

KLDW260 TAPE 47526 FILES 115-143, RUN 3, PTS.1-19 10/15/EC

PUN NO. 1. POINT 6. CPID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=3E
FREE STREAM VELOCITY ==	38.517	38.517
FREE STREAM TEMPERATURE ==	76.773	
WALL TEMPERATURE ==	115.070	
WALL HEAT FLUX ==	.04130	
FREE STREAM DENSITY ==	.07574	
FREE STREAM KINEMATIC VISCOSITY ==	.0001630	
DENSITY OF FLUID AT WALL ==	.07769	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001841	
WALL/FREE STREAM DENSITY RATIO ==	.93337	
LOCATION REYNOLDS NUMBER (PEX) ==	244171.66	
INPUT VALUE OF VELOCITY DELTA ==	.15000	
INPUT VALUE OF TEMPERATURE DELTA ==	.17000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.13200	
DISPLACEMENT THICKNESS (DELTA STAR) ==	.03006	.02391
MOMENTUM THICKNESS (THETA) ==	.01351	.01316
ENERGY-DISSIPATION THICKNESS ==	.02219	.02269
ENTHALPY THICKNESS ==	.00113	.00142
SHAPE FACTOR 12 (DELTA STAR/THETA) ==	2.22516	1.81634
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.64292	1.72423
MOMENTUM THICKNESS REYNOLDS NUMBER ==	266.01	259.16
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	591.91	470.73
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSEN'S DELTA INTEGRAL ==	- .39099	- .37848
CLAUSEN'S P* INTEGRAL ==	4.26688	2.53434
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02606	.02249
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01391	.01326
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.87395	1.65770

LOCATION -Y- 12.40000

Z = -6 INCHES

K = 0.75×10^{-6}

Table 42.

KLEIN260 TAPE 47524 FILES 115-143, RUN 3, PTS.1-19 10/15/60

PLAN NO. 3. POINT 6. GRID NO. 2

REDUCED PROFILE DATA

Y	Y/TA	L	T	L/UF	T-ETA
1	1.0000	110.0000	110.0000	1.0000	1.0000
2	1.0000	109.0000	109.0000	1.0000	1.0000
3	1.0000	108.0000	108.0000	1.0000	1.0000
4	1.0000	107.0000	107.0000	1.0000	1.0000
5	1.0000	106.0000	106.0000	1.0000	1.0000
6	1.0000	105.0000	105.0000	1.0000	1.0000
7	1.0000	104.0000	104.0000	1.0000	1.0000
8	1.0000	103.0000	103.0000	1.0000	1.0000
9	1.0000	102.0000	102.0000	1.0000	1.0000
10	1.0000	101.0000	101.0000	1.0000	1.0000
11	1.0000	100.0000	100.0000	1.0000	1.0000
12	1.0000	99.0000	99.0000	1.0000	1.0000
13	1.0000	98.0000	98.0000	1.0000	1.0000
14	1.0000	97.0000	97.0000	1.0000	1.0000
15	1.0000	96.0000	96.0000	1.0000	1.0000
16	1.0000	95.0000	95.0000	1.0000	1.0000
17	1.0000	94.0000	94.0000	1.0000	1.0000
18	1.0000	93.0000	93.0000	1.0000	1.0000
19	1.0000	92.0000	92.0000	1.0000	1.0000
20	1.0000	91.0000	91.0000	1.0000	1.0000
21	1.0000	90.0000	90.0000	1.0000	1.0000
22	1.0000	89.0000	89.0000	1.0000	1.0000
23	1.0000	88.0000	88.0000	1.0000	1.0000
24	1.0000	87.0000	87.0000	1.0000	1.0000
25	1.0000	86.0000	86.0000	1.0000	1.0000
26	1.0000	85.0000	85.0000	1.0000	1.0000
27	1.0000	84.0000	84.0000	1.0000	1.0000
28	1.0000	83.0000	83.0000	1.0000	1.0000
29	1.0000	82.0000	82.0000	1.0000	1.0000
30	1.0000	81.0000	81.0000	1.0000	1.0000
31	1.0000	80.0000	80.0000	1.0000	1.0000
32	1.0000	79.0000	79.0000	1.0000	1.0000
33	1.0000	78.0000	78.0000	1.0000	1.0000
34	1.0000	77.0000	77.0000	1.0000	1.0000
35	1.0000	76.0000	76.0000	1.0000	1.0000
36	1.0000	75.0000	75.0000	1.0000	1.0000
37	1.0000	74.0000	74.0000	1.0000	1.0000
38	1.0000	73.0000	73.0000	1.0000	1.0000
39	1.0000	72.0000	72.0000	1.0000	1.0000
40	1.0000	71.0000	71.0000	1.0000	1.0000
41	1.0000	70.0000	70.0000	1.0000	1.0000
42	1.0000	69.0000	69.0000	1.0000	1.0000
43	1.0000	68.0000	68.0000	1.0000	1.0000
44	1.0000	67.0000	67.0000	1.0000	1.0000
45	1.0000	66.0000	66.0000	1.0000	1.0000
46	1.0000	65.0000	65.0000	1.0000	1.0000
47	1.0000	64.0000	64.0000	1.0000	1.0000
48	1.0000	63.0000	63.0000	1.0000	1.0000
49	1.0000	62.0000	62.0000	1.0000	1.0000
50	1.0000	61.0000	61.0000	1.0000	1.0000
51	1.0000	60.0000	60.0000	1.0000	1.0000
52	1.0000	59.0000	59.0000	1.0000	1.0000
53	1.0000	58.0000	58.0000	1.0000	1.0000
54	1.0000	57.0000	57.0000	1.0000	1.0000
55	1.0000	56.0000	56.0000	1.0000	1.0000
56	1.0000	55.0000	55.0000	1.0000	1.0000
57	1.0000	54.0000	54.0000	1.0000	1.0000
58	1.0000	53.0000	53.0000	1.0000	1.0000
59	1.0000	52.0000	52.0000	1.0000	1.0000
60	1.0000	51.0000	51.0000	1.0000	1.0000
61	1.0000	50.0000	50.0000	1.0000	1.0000
62	1.0000	49.0000	49.0000	1.0000	1.0000
63	1.0000	48.0000	48.0000	1.0000	1.0000
64	1.0000	47.0000	47.0000	1.0000	1.0000
65	1.0000	46.0000	46.0000	1.0000	1.0000
66	1.0000	45.0000	45.0000	1.0000	1.0000
67	1.0000	44.0000	44.0000	1.0000	1.0000
68	1.0000	43.0000	43.0000	1.0000	1.0000
69	1.0000	42.0000	42.0000	1.0000	1.0000
70	1.0000	41.0000	41.0000	1.0000	1.0000
71	1.0000	40.0000	40.0000	1.0000	1.0000
72	1.0000	39.0000	39.0000	1.0000	1.0000
73	1.0000	38.0000	38.0000	1.0000	1.0000
74	1.0000	37.0000	37.0000	1.0000	1.0000
75	1.0000	36.0000	36.0000	1.0000	1.0000
76	1.0000	35.0000	35.0000	1.0000	1.0000
77	1.0000	34.0000	34.0000	1.0000	1.0000
78	1.0000	33.0000	33.0000	1.0000	1.0000
79	1.0000	32.0000	32.0000	1.0000	1.0000
80	1.0000	31.0000	31.0000	1.0000	1.0000
81	1.0000	30.0000	30.0000	1.0000	1.0000
82	1.0000	29.0000	29.0000	1.0000	1.0000
83	1.0000	28.0000	28.0000	1.0000	1.0000
84	1.0000	27.0000	27.0000	1.0000	1.0000
85	1.0000	26.0000	26.0000	1.0000	1.0000
86	1.0000	25.0000	25.0000	1.0000	1.0000
87	1.0000	24.0000	24.0000	1.0000	1.0000
88	1.0000	23.0000	23.0000	1.0000	1.0000
89	1.0000	22.0000	22.0000	1.0000	1.0000
90	1.0000	21.0000	21.0000	1.0000	1.0000
91	1.0000	20.0000	20.0000	1.0000	1.0000
92	1.0000	19.0000	19.0000	1.0000	1.0000
93	1.0000	18.0000	18.0000	1.0000	1.0000
94	1.0000	17.0000	17.0000	1.0000	1.0000
95	1.0000	16.0000	16.0000	1.0000	1.0000
96	1.0000	15.0000	15.0000	1.0000	1.0000
97	1.0000	14.0000	14.0000	1.0000	1.0000
98	1.0000	13.0000	13.0000	1.0000	1.0000
99	1.0000	12.0000	12.0000	1.0000	1.0000
100	1.0000	11.0000	11.0000	1.0000	1.0000

Table 42.

KLEW260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

PLN NO. 3. POINT 7. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	41.243	41.243
FREE STREAM TEMPERATURE ==	77.398	
WALL TEMPERATURE ==	119.640	
WALL HEAT FLUX ==	.04200	
FREE STREAM DENSITY ==	.07565	
FREE STREAM KINEMATIC VISCOSITY ==	.0001633	
DENSITY OF FLUID AT WALL ==	.07013	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001967	
WALL/FREE STREAM DENSITY RATIO ==	.92708	
LOCATION REYNOLDS NUMBER (REX) ==	345076.46	
INFLT VALLE OF VELOCITY DELTA ==	.19000	
INFLT VALLE OF TEMPERATLRE DELTA ==	.21000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.14000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03245	.02628
MOMENTUM THICKNESS (THETA) ==	.01472	.01449
ENERGY-DISSIPATION THICKNESS ==	.02432	.02506
ENTHALPY THICKNESS ==	.00156	.00190
SHAPE FACTOR 12 (DELSTAR/THETA) ==	2.20529	1.81379
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.65241	1.72914
MOMENTUM THICKNESS REYNOLDS NUMBER ==	309.63	304.92
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	682.83	553.06
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS DELTA* INTEGRAL ==	- .44614	- .41924
CLAUSERS *P* INTEGRAL ==	4.63133	2.77190
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02848	.02438
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01523	.01501
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.87025	1.62463

LOCATION -X- 16.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 43.

GRIL NO. 2

[illegible]

Table 43.

KLDW260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 9. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	44.685	44.685
FREE STREAM TEMPERATURE =	77.722	
WALL TEMPERATURE =	121.250	
WALL HEAT FLUX =	.04160	
FREE STREAM DENSITY =	.07560	
FREE STREAM KINEMATIC VISCOSITY =	.0001635	
DENSITY OF FLUID AT WALL =	.06994	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001876	
WALL/FREE STREAM DENSITY RATIO =	.92507	
LOCATION REYNOLDS NUMBER (REX) =	464565.22	
INFLT VALUE OF VELOCITY DELTA =	.21000	
INFLT VALUE OF TEMPERATURE DELTA =	.26000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.18500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03364	.02757
MOMENTUM THICKNESS (THETA) =	.01600	.01579
ENERGY-DISSIPATION THICKNESS =	.02674	.02743
ENTHALPY THICKNESS =	.00174	.00205
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.10181	1.77146
SHAPE FACTOR 32 (ENERGY/THETA) =	1.67047	1.73727
MOMENTUM THICKNESS REYNOLDS NUMBER =	364.47	359.50
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	766.14	636.64
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-0.46604	-0.45446
CLAUSERS 'C' INTEGRAL =	4.72634	2.95110
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02925	.02592
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01654	.01632
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.76881	1.56831

LOCATION -X- 20.40000

Z = -6 INCHES

K = 0.75 X 10⁻⁶

Table 44.

KLW26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RLN. NO. 3. POINT 9. GRID NO. 2

NEOLCEL PROFILE DATA

Y	IN	Y/	U	1	L/LE	THETA
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9
10	10	10	10	10	10	10
11	11	11	11	11	11	11
12	12	12	12	12	12	12
13	13	13	13	13	13	13
14	14	14	14	14	14	14
15	15	15	15	15	15	15
16	16	16	16	16	16	16
17	17	17	17	17	17	17
18	18	18	18	18	18	18
19	19	19	19	19	19	19
20	20	20	20	20	20	20
21	21	21	21	21	21	21
22	22	22	22	22	22	22
23	23	23	23	23	23	23
24	24	24	24	24	24	24
25	25	25	25	25	25	25
26	26	26	26	26	26	26
27	27	27	27	27	27	27
28	28	28	28	28	28	28
29	29	29	29	29	29	29
30	30	30	30	30	30	30
31	31	31	31	31	31	31
32	32	32	32	32	32	32
33	33	33	33	33	33	33
34	34	34	34	34	34	34
35	35	35	35	35	35	35
36	36	36	36	36	36	36
37	37	37	37	37	37	37
38	38	38	38	38	38	38
39	39	39	39	39	39	39
40	40	40	40	40	40	40
41	41	41	41	41	41	41
42	42	42	42	42	42	42
43	43	43	43	43	43	43
44	44	44	44	44	44	44
45	45	45	45	45	45	45
46	46	46	46	46	46	46
47	47	47	47	47	47	47
48	48	48	48	48	48	48
49	49	49	49	49	49	49
50	50	50	50	50	50	50
51	51	51	51	51	51	51
52	52	52	52	52	52	52
53	53	53	53	53	53	53
54	54	54	54	54	54	54
55	55	55	55	55	55	55
56	56	56	56	56	56	56
57	57	57	57	57	57	57
58	58	58	58	58	58	58
59	59	59	59	59	59	59
60	60	60	60	60	60	60
61	61	61	61	61	61	61
62	62	62	62	62	62	62
63	63	63	63	63	63	63
64	64	64	64	64	64	64
65	65	65	65	65	65	65
66	66	66	66	66	66	66
67	67	67	67	67	67	67
68	68	68	68	68	68	68
69	69	69	69	69	69	69
70	70	70	70	70	70	70
71	71	71	71	71	71	71
72	72	72	72	72	72	72
73	73	73	73	73	73	73
74	74	74	74	74	74	74
75	75	75	75	75	75	75
76	76	76	76	76	76	76
77	77	77	77	77	77	77
78	78	78	78	78	78	78
79	79	79	79	79	79	79
80	80	80	80	80	80	80
81	81	81	81	81	81	81
82	82	82	82	82	82	82
83	83	83	83	83	83	83
84	84	84	84	84	84	84
85	85	85	85	85	85	85
86	86	86	86	86	86	86
87	87	87	87	87	87	87
88	88	88	88	88	88	88
89	89	89	89	89	89	89
90	90	90	90	90	90	90
91	91	91	91	91	91	91
92	92	92	92	92	92	92
93	93	93	93	93	93	93
94	94	94	94	94	94	94
95	95	95	95	95	95	95
96	96	96	96	96	96	96
97	97	97	97	97	97	97
98	98	98	98	98	98	98
99	99	99	99	99	99	99
100	100	100	100	100	100	100

Table 44.

ALLEN260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 10. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=3.5
FREE STREAM VELOCITY	44.312	44.312
FREE STREAM TEMPERATURE	77.645	
WALL TEMPERATURE	121.170	
WALL HEAT FLUX	.04100	
FREE STREAM DENSITY	.07561	
FREE STREAM KINEMATIC VISCOSITY	.0001635	
DENSITY OF FLUID AT WALL	.06995	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001875	
WALL/FREE STREAM DENSITY RATIO	.92807	
LOCATION REYNOLDS NUMBER (REX)	460800.94	
INPUT VALUE OF VELOCITY DELTA	.17000	
INPUT VALUE OF TEMPERATURE DELTA	.02000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.16500	
DISPLACEMENT THICKNESS (DELTA*)	.03128	.02617
MOMENTUM THICKNESS (THETA)	.01465	.01459
ENERGY-DISSIPATION THICKNESS	.02458	.02536
ENTHALPY THICKNESS	.00174	.00203
SHAPE FACTOR 12 (DELTA*/THETA)	2.10695	1.79376
SHAPE FACTOR 32 (ENERGY/THETA)	1.67564	1.73820
MOMENTUM THICKNESS REYNOLDS NUMBER	335.40	329.52
DISPLACEMENT THICKNESS REYNOLDS NUMBER	706.67	591.08
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSEPS * DELTA* INTEGRAL	- .42060	- .42101
CLAUSEPS * C* INTEGRAL	4.31757	2.74999
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02485	.02416
MOMENTUM THICKNESS - CONSTANT DENSITY	.01526	.01510
SHAPE FACTOR 12 - CONSTANT DENSITY	1.74797	1.59959

LOCATION -Y- 20.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 45.

RUN NO. 3. POINT 10. GRID NO. 2
 RECDCEL FFCFILE DATA

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ	JK	JL	JM	JN	JO	JP	JQ	JR	JS	JT	JU	JV	JW	JX	JY	JZ	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM
--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Table 45.

KLDW260 TAPE 47524 FILES 115-143, RUN 3, PTS.1-19 10/15/80

FLN NO. 3. POINT 11. OF 10 NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	48.002	48.002
FREE STREAM TEMPERATURE =	76.274	
WALL TEMPERATURE =	116.270	
WALL HEAT FLUX =	.04190	
FREE STREAM DENSITY =	.07460	
FREE STREAM KINEMATIC VISCOSITY =	.0001653	
DENSITY OF FLUID AT WALL =	.06931	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001862	
WALL/FREE STREAM DENSITY RATIO =	.02000	
LOCATION REYNOLDS NUMBER (REX) =	590360.08	
INFLT VALUE OF VELOCITY DELTA =	.21000	
INFLT VALUE OF TEMPERATURE DELTA =	.28000	
CALCULATED DELTA =		
DELTA 99.9% INPUT =	.18500	
DISPLACEMENT THICKNESS (DELTA*) =	.03117	.02683
MOMENTUM THICKNESS (THETA) =	.01559	.01526
ENERGY-DISSIPATION THICKNESS =	.02652	.02675
ENTHALPY THICKNESS =	.00305	.00229
SHAPE FACTOR 12 (DELTA*/THETA) =	1.99989	1.75871
SHAPE FACTOR 32 (ENERGY/THETA) =	1.70076	1.75353
MOMENTUM THICKNESS REYNOLDS NUMBER =	377.30	369.14
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	754.18	649.20
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS DELTA* INTEGRAL =	- .41066	- .43366
CLAUSERS C* INTEGRAL =	4.05580	2.73675
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02644	.02457
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01613	.01579
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.63985	1.55657

LOCATION -X- 24.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 46.

REFLECTED PROFILE DATA

[illegible]

Table 46.

KLCK26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 12. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	51.445	51.445
FREE STREAM TEMPERATURE	76.141	
WALL TEMPERATURE	113.460	
WALL HEAT FLUX	.04250	
FREE STREAM DENSITY	.07459	
FREE STREAM KINEMATIC VISCOSITY	.0001654	
DENSITY OF FLUID AT WALL	.06973	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001682	
WALL/FREE STREAM DENSITY RATIO	.93489	
LOCATION REYNOLDS NUMBER (REX)	736279.71	
INPUT VALUE OF VELOCITY DELTA	.22000	
INPUT VALUE OF TEMPERATURE DELTA	.09000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DPLSTAR)	.03244	.02860
MOMENTUM THICKNESS (THETA)	.01673	.01608
ENERGY-DISSIPATION THICKNESS	.02874	.02929
ENTHALPY THICKNESS	.00225	.00244
SHAPE FACTOR 12 (DPLSTAR/THETA)	1.93875	1.72628
SHAPE FACTOR 32 (ENERGY/THETA)	1.71767	1.75560
MOMENTUM THICKNESS REYNOLDS NUMBER	433.76	432.55
DISPLACEMENT THICKNESS REYNOLDS NUMBER	840.95	746.70
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS * DELTA * INTEGRAL	- .45206	- .47936
CLAUSERS * C * INTEGRAL	4.27919	3.05303
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02757	.02841
MOMENTUM THICKNESS - CONSTANT DENSITY	.01725	.01720
SHAPE FACTOR 12 - CONSTANT DENSITY	1.59970	1.53518

LOCATION -X- 28.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 47.

KLEW200 TAPL 47524 FILES 115-143, RUN 3, PTS.1-19 10/15/EC

PLN NO. 1. POINT 12. GRID NO. 2

REFLECT FILE DATA

Y	IN	Y/	FT/	SEC	REF	L/UE	THETA
1	1	1	13	10	10	10	10
1	1	1	14	10	10	10	10
1	1	1	15	10	10	10	10
1	1	1	16	10	10	10	10
1	1	1	17	10	10	10	10
1	1	1	18	10	10	10	10
1	1	1	19	10	10	10	10
1	1	1	20	10	10	10	10
1	1	1	21	10	10	10	10
1	1	1	22	10	10	10	10
1	1	1	23	10	10	10	10
1	1	1	24	10	10	10	10
1	1	1	25	10	10	10	10
1	1	1	26	10	10	10	10
1	1	1	27	10	10	10	10
1	1	1	28	10	10	10	10
1	1	1	29	10	10	10	10
1	1	1	30	10	10	10	10
1	1	1	31	10	10	10	10
1	1	1	32	10	10	10	10
1	1	1	33	10	10	10	10
1	1	1	34	10	10	10	10
1	1	1	35	10	10	10	10
1	1	1	36	10	10	10	10
1	1	1	37	10	10	10	10
1	1	1	38	10	10	10	10
1	1	1	39	10	10	10	10
1	1	1	40	10	10	10	10
1	1	1	41	10	10	10	10
1	1	1	42	10	10	10	10
1	1	1	43	10	10	10	10
1	1	1	44	10	10	10	10
1	1	1	45	10	10	10	10
1	1	1	46	10	10	10	10
1	1	1	47	10	10	10	10
1	1	1	48	10	10	10	10
1	1	1	49	10	10	10	10
1	1	1	50	10	10	10	10
1	1	1	51	10	10	10	10
1	1	1	52	10	10	10	10
1	1	1	53	10	10	10	10
1	1	1	54	10	10	10	10
1	1	1	55	10	10	10	10
1	1	1	56	10	10	10	10
1	1	1	57	10	10	10	10
1	1	1	58	10	10	10	10
1	1	1	59	10	10	10	10
1	1	1	60	10	10	10	10
1	1	1	61	10	10	10	10
1	1	1	62	10	10	10	10
1	1	1	63	10	10	10	10
1	1	1	64	10	10	10	10
1	1	1	65	10	10	10	10
1	1	1	66	10	10	10	10
1	1	1	67	10	10	10	10
1	1	1	68	10	10	10	10
1	1	1	69	10	10	10	10
1	1	1	70	10	10	10	10
1	1	1	71	10	10	10	10
1	1	1	72	10	10	10	10
1	1	1	73	10	10	10	10
1	1	1	74	10	10	10	10
1	1	1	75	10	10	10	10
1	1	1	76	10	10	10	10
1	1	1	77	10	10	10	10
1	1	1	78	10	10	10	10
1	1	1	79	10	10	10	10
1	1	1	80	10	10	10	10
1	1	1	81	10	10	10	10
1	1	1	82	10	10	10	10
1	1	1	83	10	10	10	10
1	1	1	84	10	10	10	10
1	1	1	85	10	10	10	10
1	1	1	86	10	10	10	10
1	1	1	87	10	10	10	10
1	1	1	88	10	10	10	10
1	1	1	89	10	10	10	10
1	1	1	90	10	10	10	10
1	1	1	91	10	10	10	10
1	1	1	92	10	10	10	10
1	1	1	93	10	10	10	10
1	1	1	94	10	10	10	10
1	1	1	95	10	10	10	10
1	1	1	96	10	10	10	10
1	1	1	97	10	10	10	10
1	1	1	98	10	10	10	10
1	1	1	99	10	10	10	10
1	1	1	100	10	10	10	10

Table 47.

KLDW26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

PLN NO. 3. POINT 13. GRID NO. 7

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=3E
FREE STREAM VELOCITY ==	51.230	51.230
FREE STREAM TEMPERATURE ==	76.276	
WALL TEMPERATURE ==	114.750	
WALL HEAT FLUX ==	.04220	
FREE STREAM DENSITY ==	.07457	
FREE STREAM KINEMATIC VISCOSITY ==	.0001654	
DENSITY OF FLUID AT WALL ==	.06960	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001866	
WALL/FREE STREAM DENSITY RATIO ==	.93335	
LOCATION REYNOLDS NUMBER (REX) ==	732661.46	
INPUT VALUE OF VELOCITY DELTA ==	.24000	
INPUT VALUE OF TEMPERATURE DELTA ==	.31000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03302	.02900
MOMENTUM THICKNESS (THETA) ==	.01681	.01679
ENERGY-DISSIPATION THICKNESS ==	.02980	.02946
ENTHALPY THICKNESS ==	.00219	.00241
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.96444	1.72761
SHAPE FACTOR 22 (ENERGY/THETA) ==	1.71321	1.75509
MOMENTUM THICKNESS REYNOLDS NUMBER ==	433.74	433.15
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	652.05	748.41
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS * DELTA * INTEGRAL ==	- .46252	- .46252
CLAUSERS * C * INTEGRAL ==	4.44074	3.05457
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02920	.02662
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01733	.01732
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.62702	1.53744

LOCATION -X- 28.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 48.

KLEB260 TAPL 47524 FILES 115-147, RUN 3, PTS.1-19 10/15/60

RUN NO. 1. POINT 13. GRID NO. 2

REFLECTED PROFILE DATA

Y	INCH	Y/1	FT	SEC	DEC	U/LE	THETA
1	1.000	1.000	12.000	10.000	10.000	1.000	1.000
2	1.000	1.000	12.000	10.000	10.000	1.000	1.000
3	1.000	1.000	12.000	10.000	10.000	1.000	1.000
4	1.000	1.000	12.000	10.000	10.000	1.000	1.000
5	1.000	1.000	12.000	10.000	10.000	1.000	1.000
6	1.000	1.000	12.000	10.000	10.000	1.000	1.000
7	1.000	1.000	12.000	10.000	10.000	1.000	1.000
8	1.000	1.000	12.000	10.000	10.000	1.000	1.000
9	1.000	1.000	12.000	10.000	10.000	1.000	1.000
10	1.000	1.000	12.000	10.000	10.000	1.000	1.000
11	1.000	1.000	12.000	10.000	10.000	1.000	1.000
12	1.000	1.000	12.000	10.000	10.000	1.000	1.000
13	1.000	1.000	12.000	10.000	10.000	1.000	1.000
14	1.000	1.000	12.000	10.000	10.000	1.000	1.000
15	1.000	1.000	12.000	10.000	10.000	1.000	1.000
16	1.000	1.000	12.000	10.000	10.000	1.000	1.000
17	1.000	1.000	12.000	10.000	10.000	1.000	1.000
18	1.000	1.000	12.000	10.000	10.000	1.000	1.000
19	1.000	1.000	12.000	10.000	10.000	1.000	1.000
20	1.000	1.000	12.000	10.000	10.000	1.000	1.000
21	1.000	1.000	12.000	10.000	10.000	1.000	1.000
22	1.000	1.000	12.000	10.000	10.000	1.000	1.000
23	1.000	1.000	12.000	10.000	10.000	1.000	1.000
24	1.000	1.000	12.000	10.000	10.000	1.000	1.000
25	1.000	1.000	12.000	10.000	10.000	1.000	1.000
26	1.000	1.000	12.000	10.000	10.000	1.000	1.000
27	1.000	1.000	12.000	10.000	10.000	1.000	1.000
28	1.000	1.000	12.000	10.000	10.000	1.000	1.000
29	1.000	1.000	12.000	10.000	10.000	1.000	1.000
30	1.000	1.000	12.000	10.000	10.000	1.000	1.000
31	1.000	1.000	12.000	10.000	10.000	1.000	1.000
32	1.000	1.000	12.000	10.000	10.000	1.000	1.000
33	1.000	1.000	12.000	10.000	10.000	1.000	1.000
34	1.000	1.000	12.000	10.000	10.000	1.000	1.000
35	1.000	1.000	12.000	10.000	10.000	1.000	1.000
36	1.000	1.000	12.000	10.000	10.000	1.000	1.000
37	1.000	1.000	12.000	10.000	10.000	1.000	1.000
38	1.000	1.000	12.000	10.000	10.000	1.000	1.000
39	1.000	1.000	12.000	10.000	10.000	1.000	1.000
40	1.000	1.000	12.000	10.000	10.000	1.000	1.000
41	1.000	1.000	12.000	10.000	10.000	1.000	1.000
42	1.000	1.000	12.000	10.000	10.000	1.000	1.000
43	1.000	1.000	12.000	10.000	10.000	1.000	1.000
44	1.000	1.000	12.000	10.000	10.000	1.000	1.000
45	1.000	1.000	12.000	10.000	10.000	1.000	1.000
46	1.000	1.000	12.000	10.000	10.000	1.000	1.000
47	1.000	1.000	12.000	10.000	10.000	1.000	1.000
48	1.000	1.000	12.000	10.000	10.000	1.000	1.000
49	1.000	1.000	12.000	10.000	10.000	1.000	1.000
50	1.000	1.000	12.000	10.000	10.000	1.000	1.000
51	1.000	1.000	12.000	10.000	10.000	1.000	1.000
52	1.000	1.000	12.000	10.000	10.000	1.000	1.000
53	1.000	1.000	12.000	10.000	10.000	1.000	1.000
54	1.000	1.000	12.000	10.000	10.000	1.000	1.000
55	1.000	1.000	12.000	10.000	10.000	1.000	1.000
56	1.000	1.000	12.000	10.000	10.000	1.000	1.000
57	1.000	1.000	12.000	10.000	10.000	1.000	1.000

Table 48.

KLDW260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

PLAN NO. 3. POINT 14. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	50.625	50.625
FREE STREAM TEMPERATURE ==	76.124	
WALL TEMPERATURE ==	114.790	
WALL HEAT FLUX ==	.04210	
FREE STREAM DENSITY ==	.07459	
FREE STREAM KINEMATIC VISCOSITY ==	.0001654	
DENSITY OF FLUID AT WALL ==	.06957	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001870	
WALL/FREE STREAM DENSITY RATIO ==	.93269	
LOCATION REYNOLDS NUMBER (REX) ==	724579.80	
INPUT VALUE OF VELOCITY DELTA ==	.24000	
INPUT VALUE OF TEMPERATURE DELTA ==	.31000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELTA STAR) ==	.03259	.02208
MOMENTUM THICKNESS (THETA) ==	.01662	.01661
ENERGY-DISSIPATION THICKNESS ==	.02556	.02920
ENTHALPY THICKNESS ==	.00220	.00241
SHAPE FACTOR 12 (DELTA STAR/THETA) ==	1.96054	1.72653
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.71777	1.75774
MOMENTUM THICKNESS REYNOLDS NUMBER ==	424.14	423.85
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	631.55	731.79
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS DELTA* INTEGRAL ==	- .45267	- .47450
CLAUSERS THETA* INTEGRAL ==	4.32362	2.98366
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02776	.02631
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01714	.01714
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.61969	1.53514

LOCATION -X- 28.40000

Z = -6 INCHES

K = 0.75×10^{-6}

Table 49.

RLN NO. 3. POINT 14. GRID NO. 2
REDUCED PROFILE DATA

[illegible]

Table 49.

KL0426C TAFE 47526 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 15. CFID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	55.942	55.942
FREE STREAM TEMPERATURE	75.889	
WALL TEMPERATURE	109.730	
WALL HEAT FLUX	.04370	
FREE STREAM DENSITY	.07462	
FREE STREAM KINEMATIC VISCOSITY	.0001652	
DENSITY OF FLUID AT WALL	.07024	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001839	
WALL/FREE STREAM DENSITY RATIO	.94123	
LOCATION REYNOLDS NUMBER (REX)	914154.44	
INLET VALUE OF VELOCITY DELTA	.24000	
INLET VALUE OF TEMPERATURE DELTA	.37000	
CALCULATED DELTA		
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DELTA*)	.03112	.02873
MOMENTUM THICKNESS (THETA)	.01727	.01713
ENERGY-DISSIPATION THICKNESS	.03014	.03036
ENTHALPY THICKNESS	.00246	.00258
SHAPE FACTOR 12 (DELTA*/THETA)	1.80679	1.67739
SHAPE FACTOR 32 (ENERGY/THETA)	1.74961	1.77286
MOMENTUM THICKNESS REYNOLDS NUMBER	486.04	483.20
DISPLACEMENT THICKNESS REYNOLDS NUMBER	878.16	810.52
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS * DELTA* INTEGRAL	- .42052	- .48011
CLAUSERS * C* INTEGRAL	3.69599	2.86794
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02608	.02623
MOMENTUM THICKNESS - CONSTANT DENSITY	.01771	.01701
SHAPE FACTOR 12 - CONSTANT DENSITY	1.47237	1.48945

LOCATION -Y- 32.40700

Z = CENTERLINE

K = 0.75 X 10⁻⁶

Table 50.

FLA NO. 3. POINT 15. GRID NO. 2

REDUCED PROFILE DATA

[illegible]

Table 50.

KLEK26C TAPE 4752H FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 16. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	59.576	59.576
FREE STREAM TEMPERATURE	75.860	
WALL TEMPERATURE	107.110	
WALL HEAT FLUX	.04520	
FREE STREAM DENSITY	.07463	
FREE STREAM KINEMATIC VISCOSITY	.0001652	
DENSITY OF FLUID AT WALL	.07751	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001826	
WALL/FREE STREAM DENSITY RATIO	.54487	
LOCATION REYNOLDS NUMBER (REX)	1093827.56	
INLET VALUE OF VELOCITY DELTA	.28000	
INLET VALUE OF TEMPERATURE DELTA	.49000	
CALCULATED DELTA		
DELTA 99.5% INLET	.23500	
DISPLACEMENT THICKNESS (DELTA*)	.03305	.03058
MOMENTUM THICKNESS (THETA)	.01869	.01876
ENERGY-DISSIPATION THICKNESS	.03285	.03337
ENTHALPY THICKNESS	.00252	.00263
SHAPE FACTOR 12 (DELTA*/THETA)	1.76823	1.62567
SHAPE FACTOR 32 (ENERGY/THETA)	1.75769	1.77864
MOMENTUM THICKNESS REYNOLDS NUMBER	561.62	563.73
DISPLACEMENT THICKNESS REYNOLDS NUMBER	993.07	918.61
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS DELTA* INTEGRAL	-0.48969	-0.52229
CLAUSERS %* INTEGRAL	3.08639	3.06733
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02849	.02808
MOMENTUM THICKNESS - CONSTANT DENSITY	.01913	.01921
SHAPE FACTOR 12 - CONSTANT DENSITY	1.48901	1.46143

LOCATION -X- 36.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 51.

WLDW26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80
 FLN NO. 3. POINT 16. GRID NO. 2

REDUCED PROFILE DATA

A	Y	DELTA	FI	SEC	DEC.F	U/UF	THETA
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55

Table 51.

KLEW260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 17. CPID NO. 7

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	59.299	59.299
FREE STREAM TEMPERATURE =	75.908	
WALL TEMPERATURE =	106.240	
WALL HEAT FLUX =	.04450	
FREE STREAM DENSITY =	.07462	
FREE STREAM KINEMATIC VISCOSITY =	.0001652	
DENSITY OF FLUID AT WALL =	.07062	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001821	
WALL/FREE STREAM DENSITY RATIO =	.94640	
LOCATION REYNOLDS NUMBER (REX) =	1088581.78	
INPUT VALUE OF VELOCITY DELTA =	.28000	
INPUT VALUE OF TEMPERATURE DELTA =	.46000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELTA*) =	.03123	.02945
MOMENTUM THICKNESS (THETA) =	.01778	.01779
ENERGY-DISSIPATION THICKNESS =	.03134	.03166
ENTHALPY THICKNESS =	.00244	.00253
SHAPE FACTOR 12 (DELTA*/THETA) =	1.75678	1.63882
SHAPE FACTOR 32 (ENERGY/THETA) =	1.76736	1.77976
MOMENTUM THICKNESS REYNOLDS NUMBER =	531.58	531.99
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	933.68	871.64
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSEN'S DELTA* INTEGRAL =	-0.43541	-0.49399
CLAUSEN'S C* INTEGRAL =	3.65116	2.90387
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02620	.02670
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01820	.01822
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.43988	1.46501

LOCATION -X- 36.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 52.

RECEIVED FBI FILE DATA

Table 52.

KLDW26C TAPE 47524 FILES 115-143, RUN 3, PTS.1-19 10/15/80

PLN NO. 3. POINT 19. GRID NO. 0

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	67.436	67.436
FREE STREAM TEMPERATURE =	75.415	
WALL TEMPERATURE =	100.470	
WALL HEAT FLUX =	.04550	
FREE STREAM DENSITY =	.07464	
FREE STREAM KINEMATIC VISCOSITY =	.0001651	
DENSITY OF FLUID AT WALL =	.07130	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001790	
WALL/FREE STREAM DENSITY RATIO =	.95527	
LOCATION REYNOLDS NUMBER (REX) =	1375323.31	
INPUT VALUE OF VELOCITY DELTA =	.28000	
INPUT VALUE OF TEMPERATURE DELTA =	.46000	
CALCULATED DELTA =		.25902
DELTA 99.5% INPUT =	.25000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03019	.02957
MOMENTUM THICKNESS (THETA) =	.01875	.01876
ENERGY-DISSIPATION THICKNESS =	.03360	.03366
ENTHALPY THICKNESS =	.00244	.00247
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.61058	1.57612
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79239	1.79433
MOMENTUM THICKNESS REYNOLDS NUMBER =	636.21	636.02
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1027.89	1006.55
SKIN FRICTION COEFFICIENT =	.005335	
FRICTION VELOCITY =	3.56364	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAVE STRENGTH =		-.17891
CLAUSERS DELTA* INTEGRAL =	-.44448	-.51412
CLAUSERS C* INTEGRAL =	3.11662	2.87830
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02565	.02717
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01912	.01913
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.34205	1.42015

LOCATION -X- 40.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 53.

REDUCED PROFILE DATA

Table 53.

KLEMMER 11/04/61 46462 13-16, RUN 3, PTS. 20-24

PLN NO. 3. POINT 20. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	63.420	83.420
FREE STREAM TEMPERATURE ==	74.994	
WALL TEMPERATURE ==	95.180	
WALL HEAT FLUX ==	.04760	
FREE STREAM DENSITY ==	.07515	
FREE STREAM KINEMATIC VISCOSITY ==	.0001639	
DENSITY OF FLUID AT WALL ==	.07241	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001750	
WALL/FREE STREAM DENSITY RATIO ==	.96362	
LOCATION REYNOLDS NUMBER (REX) ==	2053225.92	
INPUT VALUE OF VELOCITY DELTA ==	.34000	
INPUT VALUE OF TEMPERATURE DELTA ==	.43000	
CALCULATED DELTA ==		.27229
DELTA 59.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELTA*) ==	.03053	.03048
MOMENTUM THICKNESS (THETA) ==	.01976	.02005
ENERGY-DISSIPATION THICKNESS ==	.03591	.03618
ENTHALPY THICKNESS ==	.00243	.00244
SHAPE FACTOR 12 (DELTA*/THETA) ==	1.54490	1.52031
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.81697	1.80500
MOMENTUM THICKNESS REYNOLDS NUMBER ==	638.40	650.38
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1295.25	1292.84
SKIN FRICTION COEFFICIENT ==	.004976	
FRICTION VELOCITY ==	4.23888	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.14541
CLAUSERS * DELTA* INTEGRAL ==	-.44864	-.55225
CLAUSERS * C* INTEGRAL ==	3.11760	2.97595
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02546	.02806
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02009	.02038
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.26759	1.37704
LOCATION -X-	48.40000	
Z = CENTERLINE		
K = 0.75 x 10 ⁻⁶		

Table 54.

GPID NO. 2

Table 54.

WLCMWB06 11/04/80 4648P 13-16, RUN 3, PTS.20-24

REN NO. 2. POINT 21. DFID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	63.159	63.159
FREE STREAM TEMPERATURE =	74.990	
WALL TEMPERATURE =	95.610	
WALL HEAT FLUX =	.04820	
FREE STREAM DENSITY =	.07515	
FREE STREAM KINEMATIC VISCOSITY =	.0001639	
DENSITY OF FLUID AT WALL =	.07236	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001752	
WALL/FREE STREAM DENSITY RATIO =	.96267	
LOCATION REYNOLDS NUMBER (REX) =	2046840.61	
INFLT VALUE OF VELOCITY DELTA =	.29000	
INFLT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		.26858
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELTA*) =	.02993	.02976
MOMENTUM THICKNESS (THETA) =	.01934	.01951
ENERGY-DISSIPATION THICKNESS =	.03502	.03519
ENTHALPY THICKNESS =	.00246	.00246
SHAPE FACTOR 12 (DELTA*/THETA) =	1.54749	1.52542
SHAPE FACTOR 72 (ENERGY/THETA) =	1.81020	1.80394
MOMENTUM THICKNESS REYNOLDS NUMBER =	816.04	825.06
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1265.91	1256.56
SKIN FRICTION COEFFICIENT =	.005024	
FRICTION VELOCITY =	4.24752	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAVE STRENGTH =		-.15966
CLAUSERS * DELTA* INTEGRAL =	- .45530	- .53652
CLAUSERS * C* INTEGRAL =	3.03332	2.89756
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02542	.02740
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01967	.01964
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29222	1.38093

LOCATION -X- 48.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 55.

PLFM-500 11/24/80 46480 13-16, RUN 3, PTS.20-24

FLR NO. 1. POINT 21. GPIO NO. 2

REDUCED PROFILE DATA

Y	INC	DELTA	FT/SEC	T	U/C	THETA	U-LE	T(+)	Y(+)
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55	55	55
56	56	56	56	56	56	56	56	56	56
57	57	57	57	57	57	57	57	57	57
58	58	58	58	58	58	58	58	58	58
59	59	59	59	59	59	59	59	59	59
60	60	60	60	60	60	60	60	60	60
61	61	61	61	61	61	61	61	61	61
62	62	62	62	62	62	62	62	62	62
63	63	63	63	63	63	63	63	63	63
64	64	64	64	64	64	64	64	64	64
65	65	65	65	65	65	65	65	65	65
66	66	66	66	66	66	66	66	66	66
67	67	67	67	67	67	67	67	67	67
68	68	68	68	68	68	68	68	68	68
69	69	69	69	69	69	69	69	69	69
70	70	70	70	70	70	70	70	70	70
71	71	71	71	71	71	71	71	71	71
72	72	72	72	72	72	72	72	72	72
73	73	73	73	73	73	73	73	73	73
74	74	74	74	74	74	74	74	74	74
75	75	75	75	75	75	75	75	75	75
76	76	76	76	76	76	76	76	76	76
77	77	77	77	77	77	77	77	77	77
78	78	78	78	78	78	78	78	78	78
79	79	79	79	79	79	79	79	79	79
80	80	80	80	80	80	80	80	80	80
81	81	81	81	81	81	81	81	81	81
82	82	82	82	82	82	82	82	82	82
83	83	83	83	83	83	83	83	83	83
84	84	84	84	84	84	84	84	84	84
85	85	85	85	85	85	85	85	85	85
86	86	86	86	86	86	86	86	86	86
87	87	87	87	87	87	87	87	87	87
88	88	88	88	88	88	88	88	88	88
89	89	89	89	89	89	89	89	89	89
90	90	90	90	90	90	90	90	90	90
91	91	91	91	91	91	91	91	91	91
92	92	92	92	92	92	92	92	92	92
93	93	93	93	93	93	93	93	93	93
94	94	94	94	94	94	94	94	94	94
95	95	95	95	95	95	95	95	95	95
96	96	96	96	96	96	96	96	96	96
97	97	97	97	97	97	97	97	97	97
98	98	98	98	98	98	98	98	98	98
99	99	99	99	99	99	99	99	99	99
100	100	100	100	100	100	100	100	100	100

Table 55.

KLDMWEC6 11/04/66 46485 13-16, RUN 3, PTS.20-24

PLAN NO. 3. POINT 22. GRID NO. 7

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	62.860	62.860
FREE STREAM TEMPERATURE	75.318	
WALL TEMPERATURE	95.520	
WALL HEAT FLUX	.04680	
FREE STREAM DENSITY	.07510	
FREE STREAM KINEMATIC VISCOSITY	.0001640	
DENSITY OF FLUID AT WALL	.07237	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001751	
WALL/FREE STREAM DENSITY RATIO	.96361	
LOCATION REYNOLDS NUMBER (REX)	2037259.05	
INPUT VALUE OF VELOCITY DELTA	.31000	
INPUT VALUE OF TEMPERATURE DELTA	.49000	
CALCULATED DELTA		.26659
DELTA 99.5% INPUT	.00700	
DISPLACEMENT THICKNESS (DELTA STAR)	.02943	.02957
MOMENTUM THICKNESS (THETA)	.01937	.01948
ENERGY-DISSIPATION THICKNESS	.03511	.03517
ENTHALPY THICKNESS	.00234	.00234
SHAPE FACTOR 12 (DELTA STAR/THETA)	1.51967	1.51809
SHAPE FACTOR 32 (ENERGY/THETA)	1.81719	1.80542
MOMENTUM THICKNESS REYNOLDS NUMBER	615.15	819.98
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1238.76	1244.61
SKIN FRICTION COEFFICIENT	.005041	
FRICTION VELOCITY	4.23788	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		-.16031
CLAUSERS 'DELTA' INTEGRAL	-.45615	-.53367
CLAUSERS 'G' INTEGRAL	2.85981	2.86843
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02524	.02730
MOMENTUM THICKNESS - CONSTANT DENSITY	.01968	.01960
SHAPE FACTOR 12 - CONSTANT DENSITY	1.28266	1.37893

LOCATION -Y- 48.40000

Z = -6 INCHES

K = 0.75 X 10⁻⁶

Table 56.

PUR NO. 3. POINT 22. GRID NO. 2

REDUCED PROFILE DATA

[illegible]

Table 56.

KLEMM606 11/04/80 46485 13-16, RUN 3, PTS.2C-24

RUN NO. 3. POINT 23. GRID NO. -

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	117.408	110.408
FREE STREAM TEMPERATURE ==	75.434	
WALL TEMPERATURE ==	91.670	
WALL HEAT FLUX ==	.04870	
FREE STREAM DENSITY ==	.07508	
FREE STREAM KINEMATIC VISCOSITY ==	.0001641	
DENSITY OF FLUID AT WALL ==	.07287	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001730	
WALL/FREE STREAM DENSITY RATIO ==	.97055	
LOCATION REYNOLDS NUMBER (REX) ==	3164352.34	
INPUT VALUE OF VELOCITY DELTA ==	.28000	
INPUT VALUE OF TEMPERATURE DELTA ==	.49000	
CALCULATED DELTA ==		.24026
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELSTAR) ==	.02672	.02651
MOMENTUM THICKNESS (THETA) ==	.01735	.01773
ENERGY-DISSIPATION THICKNESS ==	.03168	.03212
ENTHALPY THICKNESS ==	.00221	.00222
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.54009	1.49476
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.82612	1.81113
MOMENTUM THICKNESS REYNOLDS NUMBER ==	973.44	994.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1499.18	1487.12
SKIN FRICTION COEFFICIENT ==	.004806	
FRICTION VELOCITY ==	5.49768	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.13204
CLAUSERS 'DELTA' INTEGRAL ==	-.38735	-.48957
CLAUSERS 'C' INTEGRAL ==	2.82602	2.57674
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02194	.02439
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.01761	.01800
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.24603	1.35442

LOCATION -X- 56.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 57.

KLFPM006 11/04/80 4648P 13-16, RUN 3, PTS.2C-24

PUN NO. 1.

POINT 23.

GR10 NO. 2

REDUCED PROFILE DATA

Y	INC	DELTA	U	DEC	U/UE	THETA	U-UE	U(+)	Y(+)	Y(+)
DELTA	FT/SEC	DEC.F	U/UE	THETA	U-UE	U(+)	Y(+)	Y(+)	Y(+)	
1.0000	53.51	88.35	.487	.202	-10.310	9.787	6.479	14.114		
1.0000	59.55	67.86	.552	.234	-9.211	10.886	7.516	16.762		
1.0000	66.52	67.46	.614	.259	-7.997	12.100	8.312	20.853		
1.0000	70.00	67.45	.634	.257	-7.361	12.736	8.452	22.853		
1.0000	72.44	87.14	.656	.279	-6.921	13.176	8.443	22.533		
1.0000	75.43	86.66	.683	.306	-6.377	13.721	8.685	22.733		
1.0000	78.95	86.66	.705	.315	-6.100	13.997	10.097	22.590		
1.0000	79.00	86.66	.724	.337	-5.671	14.226	10.646	22.820		
1.0000	81.44	86.66	.736	.353	-5.275	14.422	11.318	22.420		
1.0000	82.74	86.66	.747	.370	-4.947	14.580	12.052	22.466		
1.0000	84.00	86.66	.762	.389	-4.677	14.712	12.455	22.466		
1.0000	85.00	86.66	.772	.408	-4.451	14.826	12.755	22.466		
1.0000	86.00	86.66	.777	.427	-4.227	14.922	13.093	22.466		
1.0000	87.00	86.66	.794	.448	-4.000	15.000	13.727	22.466		
1.0000	88.00	86.66	.811	.466	-3.773	15.066	13.676	22.466		
1.0000	89.00	86.66	.829	.479	-3.545	15.122	14.372	22.466		
1.0000	90.00	86.66	.846	.492	-3.317	15.169	15.066	22.466		
1.0000	91.00	86.66	.863	.509	-3.089	15.206	15.760	22.466		
1.0000	92.00	86.66	.880	.524	-2.861	15.234	16.454	22.466		
1.0000	93.00	86.66	.897	.545	-2.634	15.253	17.148	22.466		
1.0000	94.00	86.66	.912	.561	-2.406	15.264	17.842	22.466		
1.0000	95.00	86.66	.926	.577	-2.178	15.266	18.536	22.466		
1.0000	96.00	86.66	.940	.591	-1.950	15.259	19.230	22.466		
1.0000	97.00	86.66	.954	.606	-1.722	15.243	19.924	22.466		
1.0000	98.00	86.66	.968	.620	-1.494	15.218	20.618	22.466		
1.0000	99.00	86.66	.982	.634	-1.266	15.183	21.312	22.466		
1.0000	100.00	86.66	.996	.647	-1.038	15.138	22.006	22.466		
1.0000	101.00	86.66	.999	.661	-0.810	15.083	22.700	22.466		
1.0000	102.00	86.66	.999	.675	-0.582	15.018	23.394	22.466		
1.0000	103.00	86.66	.999	.689	-0.354	14.943	24.088	22.466		
1.0000	104.00	86.66	.999	.703	-0.126	14.858	24.782	22.466		
1.0000	105.00	86.66	.999	.717	0.102	14.763	25.476	22.466		
1.0000	106.00	86.66	.999	.731	0.330	14.658	26.170	22.466		
1.0000	107.00	86.66	.999	.745	0.558	14.543	26.864	22.466		
1.0000	108.00	86.66	.999	.759	0.786	14.418	27.558	22.466		
1.0000	109.00	86.66	.999	.773	1.014	14.283	28.252	22.466		
1.0000	110.00	86.66	.999	.787	1.242	14.138	28.946	22.466		
1.0000	111.00	86.66	.999	.801	1.470	13.983	29.640	22.466		
1.0000	112.00	86.66	.999	.815	1.698	13.818	30.334	22.466		
1.0000	113.00	86.66	.999	.829	1.926	13.643	31.028	22.466		
1.0000	114.00	86.66	.999	.843	2.154	13.458	31.722	22.466		
1.0000	115.00	86.66	.999	.857	2.382	13.263	32.416	22.466		
1.0000	116.00	86.66	.999	.871	2.610	13.058	33.110	22.466		
1.0000	117.00	86.66	.999	.885	2.838	12.843	33.804	22.466		
1.0000	118.00	86.66	.999	.899	3.066	12.618	34.498	22.466		
1.0000	119.00	86.66	.999	.913	3.294	12.383	35.192	22.466		
1.0000	120.00	86.66	.999	.927	3.522	12.138	35.886	22.466		
1.0000	121.00	86.66	.999	.941	3.750	11.883	36.580	22.466		
1.0000	122.00	86.66	.999	.955	3.978	11.618	37.274	22.466		
1.0000	123.00	86.66	.999	.969	4.206	11.343	37.968	22.466		
1.0000	124.00	86.66	.999	.983	4.434	11.058	38.662	22.466		
1.0000	125.00	86.66	.999	.997	4.662	10.763	39.356	22.466		
1.0000	126.00	86.66	.999	.999	4.890	10.458	40.050	22.466		
1.0000	127.00	86.66	.999	.999	5.118	10.143	40.744	22.466		
1.0000	128.00	86.66	.999	.999	5.346	9.818	41.438	22.466		
1.0000	129.00	86.66	.999	.999	5.574	9.483	42.132	22.466		
1.0000	130.00	86.66	.999	.999	5.802	9.138	42.826	22.466		
1.0000	131.00	86.66	.999	.999	6.030	8.783	43.520	22.466		
1.0000	132.00	86.66	.999	.999	6.258	8.418	44.214	22.466		
1.0000	133.00	86.66	.999	.999	6.486	8.043	44.908	22.466		
1.0000	134.00	86.66	.999	.999	6.714	7.658	45.602	22.466		
1.0000	135.00	86.66	.999	.999	6.942	7.263	46.296	22.466		
1.0000	136.00	86.66	.999	.999	7.170	6.858	46.990	22.466		
1.0000	137.00	86.66	.999	.999	7.398	6.443	47.684	22.466		
1.0000	138.00	86.66	.999	.999	7.626	6.018	48.378	22.466		
1.0000	139.00	86.66	.999	.999	7.854	5.583	49.072	22.466		
1.0000	140.00	86.66	.999	.999	8.082	5.138	49.766	22.466		
1.0000	141.00	86.66	.999	.999	8.310	4.683	50.460	22.466		
1.0000	142.00	86.66	.999	.999	8.538	4.218	51.154	22.466		
1.0000	143.00	86.66	.999	.999	8.766	3.743	51.848	22.466		
1.0000	144.00	86.66	.999	.999	8.994	3.258	52.542	22.466		
1.0000	145.00	86.66	.999	.999	9.222	2.763	53.236	22.466		
1.0000	146.00	86.66	.999	.999	9.450	2.258	53.930	22.466		
1.0000	147.00	86.66	.999	.999	9.678	1.743	54.624	22.466		
1.0000	148.00	86.66	.999	.999	9.906	1.218	55.318	22.466		
1.0000	149.00	86.66	.999	.999	10.134	0.683	56.012	22.466		
1.0000	150.00	86.66	.999	.999	10.362	0.138	56.706	22.466		
1.0000	151.00	86.66	.999	.999	10.590	-0.407	57.400	22.466		
1.0000	152.00	86.66	.999	.999	10.818	-0.942	58.094	22.466		
1.0000	153.00	86.66	.999	.999	11.046	-1.467	58.788	22.466		
1.0000	154.00	86.66	.999	.999	11.274	-1.982	59.482	22.466		
1.0000	155.00	86.66	.999	.999	11.502	-2.487	60.176	22.466		
1.0000	156.00	86.66	.999	.999	11.730	-2.982	60.870	22.466		
1.0000	157.00	86.66	.999	.999	11.958	-3.467	61.564	22.466		
1.0000	158.00	86.66	.999	.999	12.186	-3.942	62.258	22.466		
1.0000	159.00	86.66	.999	.999	12.414	-4.407	62.952	22.466		
1.0000	160.00	86.66	.999	.999	12.642	-4.862	63.646	22.466		
1.0000	161.00	86.66	.999	.999	12.870	-5.307	64.340	22.466		
1.0000	162.00	86.66	.999	.999	13.098	-5.742	65.034	22.466		
1.0000	163.00	86.66	.999	.999	13.326	-6.167	65.728	22.466		
1.0000	164.00	86.66	.999	.999	13.554	-6.582	66.422	22.466		
1.0000	165.00	86.66	.999	.999	13.782	-6.987	67.116	22.466		
1.0000	166.00	86.66	.999	.999	14.010	-7.382	67.810	22.466		
1.0000	167.00	86.66	.999	.999	14.238	-7.767	68.504	22.466		
1.0000	168.00	86.66	.999	.999	14.466	-8.142	69.198	22.466		
1.0000	169.00	86.66	.999	.999	14.694	-8.507	69.892	22.466		
1.0000	170.00	86.66	.999	.999	14.922	-8.862	70.586	22.466		
1.0000	171.00	86.66	.999	.999	15.150	-9.207	71.280	22.466		
1.0000	172.00	86.66	.999	.999	15.378	-9.542	71.974	22.466		
1.0000	173.00	86.66	.999	.999	15.606	-9.867	72.668	22.466		
1.0000	174.00	86.66	.999	.999	15.834	-10.182	73.362	22.466		
1.0000	175.00	86.66	.999	.999	16.062	-10.487	74.056	22.466		
1.0000	176.00	86.66	.999	.999	16.290	-10.782	74.750	22.466		
1.0000	177.00	86.66	.999	.999	16.518	-11.067	75.444	22.466		
1.0000	178.00	86.66	.999	.999	16.746	-11.342	76.138	22.466		
1.0000	179.00	86.66	.999	.999	16.974	-11.607	76.832	22.466		
1.0000	180.00	86.66	.999	.999	17.202	-11.862	77.526	22.466		
1.0000	181.00	86.66	.999	.999	17.430	-12.107	78.220	22.466		
1.0000	182.00	86.66	.999	.999	17.658	-12.342	78.914	22.466		
1.0000	183.00	86.66	.999	.999	17.886	-12.567	79.608	22.466		
1.0000	184.00	86.66	.999	.999	18.114	-12.782	80.302	22.466		
1.0000	185.00	86.66	.999	.999	18.342	-12.987	80.996	22.466		
1.0000	186.00	86.66	.999	.999	18.570	-13.182	81.690	22.466		
1.0000	187.00	86.66	.999	.999	18.798	-13.367	82.384	22.466		
1.0000	188.00	86.66	.999	.999	19.026	-13.542	83.078	22.466		
1.0000	189.00	86.66	.999	.999	19.254	-13.707	83.772	22.466		
1.0000	190.00	86.66	.999	.999	19.482	-13.862	84.466	22.466		
1.0000	191.00	86.66	.999	.999	19.710	-14.007	85.160	22.466		
1.0000	192.00	86.66	.999	.999	19.938	-14.142	85.854	22.466		
1.0000	193.00	86.66	.999	.999	20.166	-14.267	86.548	22.466		
1.0000	194.00	86.66	.999	.999	20.394	-14.382	87.242	22.466		
1.0000	195.00	86.66	.999	.999	20.622	-14.487	87.936	22.466		
1.0000	196.00	86.66	.999	.999	20.850	-14.582	88.630	22.466		
1.0000	197.00	86.66	.999	.99						

KLLMWP07 TAPE 4646P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 19. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	36.602	36.602
FREE STREAM TEMPERATURE ==	73.300	
WALL TEMPERATURE ==	99.830	
WALL HEAT FLUX ==	.04620	
FREE STREAM DENSITY ==	.07459	
FREE STREAM KINEMATIC VISCOSITY ==	.0001647	
DENSITY OF FLUID AT WALL ==	.07105	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001794	
WALL/FREE STREAM DENSITY RATIO ==	.95258	
LOCATION REYNOLDS NUMBER (REX) ==	61492.42	
INPUT VALUE OF VELOCITY DELTA ==	.01000	
INPUT VALUE OF TEMPERATURE DELTA ==	.97000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.06600	
DISPLACEMENT THICKNESS (DELSTAR) ==	.01929	.01439
MOMENTUM THICKNESS (THETA) ==	.00721	.00632
ENERGY-DISSIPATION THICKNESS ==	.01065	.00964
ENTHALPY THICKNESS ==	.00046	.00054
SHAPE FACTOR 12 (DELSTAR/THETA) ==	2.53753	2.27812
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.47746	1.55761
MOMENTUM THICKNESS REYNOLDS NUMBER ==	133.50	117.00
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	338.77	266.55
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS 'DELTA' INTEGRAL ==	-.20253	-.22439
CLAUSERS 'C' INTEGRAL ==	2.74611	1.93637
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.01517	.01365
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.00737	.00647
SHAPE FACTOR 12 - CONSTANT DENSITY ==	2.05839	2.13942

LOCATION -Y- 4.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 58.

KLCWFC7 TAPE 464EF- FILES 17-36, RUN 4, PTS.1-20 11/11/80
 PLS NO. 4. POINT 19. GPID NO. 3

REDUCED PROFILE DATA

	Y INCHES	DELTA Y/INCH	U FT/SEC	THETA DEG.F	U/UF	THETA
1	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
2	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
3	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
4	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
5	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
6	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
7	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
8	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
9	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
10	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
11	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
12	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
13	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
14	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
15	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
16	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
17	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
18	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
19	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
20	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
21	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
22	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
23	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
24	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
25	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
26	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
27	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
28	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
29	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
30	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
31	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
32	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
33	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
34	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
35	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
36	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
37	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
38	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
39	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
40	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
41	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
42	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
43	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
44	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
45	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
46	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
47	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
48	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
49	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
50	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
51	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
52	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
53	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
54	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
55	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
56	1.0000	0.0000	12.7677	93.1444	0.3444	2.833
57	1.0000	0.0000	12.7677	93.1444	0.3444	2.833

Table 58.

KLDW807 TAPE 4648F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLAN NO. 4. POINT 20. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	36.023	36.023
FREE STREAM TEMPERATURE ==	72.232	
WALL TEMPERATURE ==	99.220	
WALL HEAT FLUX ==	.04580	
FREE STREAM DENSITY ==	.07460	
FREE STREAM KINEMATIC VISCOSITY ==	.0001647	
DENSITY OF FLUID AT WALL ==	.07113	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001791	
WALL/FREE STREAM DENSITY RATIO ==	.95750	
LOCATION REYNOLDS NUMBER (REX) ==	80220.19	
INFLT VALUE OF VELOCITY DELTA ==	.01000	
INFLT VALUE OF TEMPERATURE DELTA ==	.97000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.09300	
DISPLACEMENT THICKNESS (DELSTAR) ==	.01777	.01469
MOMENTUM THICKNESS (THETA) ==	.00767	.00693
ENERGY-DISSIPATION THICKNESS ==	.01198	.01124
ENTHALPY THICKNESS ==	.00042	.00049
SHAPE FACTOR 12 (DELSTAR/THETA) ==	2.71645	2.11938
SHAPE FACTOR 22 (ENERGY/THETA) ==	1.56166	1.62194
MOMENTUM THICKNESS REYNOLDS NUMBER ==	139.86	126.39
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	323.98	267.63
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSEPS * DELTA * INTEGRAL ==	- .19094	- .22803
CLAUSEPS * C * INTEGRAL ==	2.45602	1.83693
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.01469	.01469
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.00762	.00762
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.87765	2.00655

LOCATION -X- 4.40000

Z = -6 INCHES

K = 0.75 X 10⁻⁶

Table 59.

KLCNPF07 TAPE 464CF- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 20. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T SEC	U/LE	THETA
1	.0000	.0000	12.0000	92.0000	.3400	.273
2	.0000	.0000	12.0000	90.0000	.3400	.322
3	.0000	.0000	13.0000	90.0000	.3400	.346
4	.0000	.0000	14.0000	89.0000	.3400	.374
5	.0000	.0000	15.0000	88.0000	.3400	.403
6	.0000	.0000	16.0000	87.0000	.3400	.447
7	.0000	.0000	17.0000	86.0000	.3400	.497
8	.0000	.0000	18.0000	85.0000	.3400	.516
9	.0000	.0000	19.0000	84.0000	.3400	.559
10	.0000	.0000	20.0000	83.0000	.3400	.610
11	.0000	.0000	21.0000	82.0000	.3400	.657
12	.0000	.0000	22.0000	81.0000	.3400	.695
13	.0000	.0000	23.0000	80.0000	.3400	.721
14	.0000	.0000	24.0000	79.0000	.3400	.746
15	.0000	.0000	25.0000	78.0000	.3400	.772
16	.0000	.0000	26.0000	77.0000	.3400	.796
17	.0000	.0000	27.0000	76.0000	.3400	.820
18	.0000	.0000	28.0000	75.0000	.3400	.850
19	.0000	.0000	29.0000	74.0000	.3400	.875
20	.0000	.0000	30.0000	73.0000	.3400	.901
21	.0000	.0000	31.0000	72.0000	.3400	.929
22	.0000	.0000	32.0000	71.0000	.3400	.958
23	.0000	.0000	33.0000	70.0000	.3400	.981
24	.0000	.0000	34.0000	69.0000	.3400	.999
25	.0000	.0000	35.0000	68.0000	.3400	.999
26	.0000	.0000	36.0000	67.0000	.3400	.999
27	.0000	.0000	37.0000	66.0000	.3400	.999
28	.0000	.0000	38.0000	65.0000	.3400	.999
29	.0000	.0000	39.0000	64.0000	.3400	.999
30	.0000	.0000	40.0000	63.0000	.3400	.999
31	.0000	.0000	41.0000	62.0000	.3400	.999
32	.0000	.0000	42.0000	61.0000	.3400	.999
33	.0000	.0000	43.0000	60.0000	.3400	.999
34	.0000	.0000	44.0000	59.0000	.3400	.999
35	.0000	.0000	45.0000	58.0000	.3400	.999
36	.0000	.0000	46.0000	57.0000	.3400	.999
37	.0000	.0000	47.0000	56.0000	.3400	.999
38	.0000	.0000	48.0000	55.0000	.3400	.999
39	.0000	.0000	49.0000	54.0000	.3400	.999
40	.0000	.0000	50.0000	53.0000	.3400	.999
41	.0000	.0000	51.0000	52.0000	.3400	.999
42	.0000	.0000	52.0000	51.0000	.3400	.999
43	.0000	.0000	53.0000	50.0000	.3400	.999
44	.0000	.0000	54.0000	49.0000	.3400	.999
45	.0000	.0000	55.0000	48.0000	.3400	.999
46	.0000	.0000	56.0000	47.0000	.3400	.999
47	.0000	.0000	57.0000	46.0000	.3400	.999
48	.0000	.0000	58.0000	45.0000	.3400	.999
49	.0000	.0000	59.0000	44.0000	.3400	.999
50	.0000	.0000	60.0000	43.0000	.3400	.999
51	.0000	.0000	61.0000	42.0000	.3400	.999
52	.0000	.0000	62.0000	41.0000	.3400	.999
53	.0000	.0000	63.0000	40.0000	.3400	.999
54	.0000	.0000	64.0000	39.0000	.3400	.999
55	.0000	.0000	65.0000	38.0000	.3400	.999
56	.0000	.0000	66.0000	37.0000	.3400	.999
57	.0000	.0000	67.0000	36.0000	.3400	.999
58	.0000	.0000	68.0000	35.0000	.3400	.999
59	.0000	.0000	69.0000	34.0000	.3400	.999
60	.0000	.0000	70.0000	33.0000	.3400	.999
61	.0000	.0000	71.0000	32.0000	.3400	.999
62	.0000	.0000	72.0000	31.0000	.3400	.999
63	.0000	.0000	73.0000	30.0000	.3400	.999
64	.0000	.0000	74.0000	29.0000	.3400	.999
65	.0000	.0000	75.0000	28.0000	.3400	.999
66	.0000	.0000	76.0000	27.0000	.3400	.999
67	.0000	.0000	77.0000	26.0000	.3400	.999
68	.0000	.0000	78.0000	25.0000	.3400	.999
69	.0000	.0000	79.0000	24.0000	.3400	.999
70	.0000	.0000	80.0000	23.0000	.3400	.999
71	.0000	.0000	81.0000	22.0000	.3400	.999
72	.0000	.0000	82.0000	21.0000	.3400	.999
73	.0000	.0000	83.0000	20.0000	.3400	.999
74	.0000	.0000	84.0000	19.0000	.3400	.999
75	.0000	.0000	85.0000	18.0000	.3400	.999
76	.0000	.0000	86.0000	17.0000	.3400	.999
77	.0000	.0000	87.0000	16.0000	.3400	.999
78	.0000	.0000	88.0000	15.0000	.3400	.999
79	.0000	.0000	89.0000	14.0000	.3400	.999
80	.0000	.0000	90.0000	13.0000	.3400	.999
81	.0000	.0000	91.0000	12.0000	.3400	.999
82	.0000	.0000	92.0000	11.0000	.3400	.999
83	.0000	.0000	93.0000	10.0000	.3400	.999
84	.0000	.0000	94.0000	9.0000	.3400	.999
85	.0000	.0000	95.0000	8.0000	.3400	.999
86	.0000	.0000	96.0000	7.0000	.3400	.999
87	.0000	.0000	97.0000	6.0000	.3400	.999
88	.0000	.0000	98.0000	5.0000	.3400	.999
89	.0000	.0000	99.0000	4.0000	.3400	.999
90	.0000	.0000	100.0000	3.0000	.3400	.999
91	.0000	.0000	101.0000	2.0000	.3400	.999
92	.0000	.0000	102.0000	1.0000	.3400	.999
93	.0000	.0000	103.0000	0.0000	.3400	.999
94	.0000	.0000	104.0000	-1.0000	.3400	.999
95	.0000	.0000	105.0000	-2.0000	.3400	.999
96	.0000	.0000	106.0000	-3.0000	.3400	.999
97	.0000	.0000	107.0000	-4.0000	.3400	.999
98	.0000	.0000	108.0000	-5.0000	.3400	.999
99	.0000	.0000	109.0000	-6.0000	.3400	.999
100	.0000	.0000	110.0000	-7.0000	.3400	.999

Table 59.

KLMWBL7 TAPE 464EP- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 15. GRID NO. 7

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	37.517	37.517
FREE STREAM TEMPERATURE =	72.748	
WALL TEMPERATURE =	98.700	
WALL HEAT FLUX =	.04520	
FREE STREAM DENSITY =	.07067	
FREE STREAM KINEMATIC VISCOSITY =	.0001644	
DENSITY OF FLUID AT WALL =	.07120	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001708	
WALL/FREE STREAM DENSITY RATIO =	.95752	
LOCATION REYNOLDS NUMBER (REF) =	159756.94	
INPUT VALUE OF VELOCITY DELTA =	.21000	
INPUT VALUE OF TEMPERATURE DELTA =	.28000	
CALCULATED DELTA =		
DELTA 09.5% INPUT =	.19000	
DISPLACEMENT THICKNESS (DELTA STAR) =	.02674	.02469
MOMENTUM THICKNESS (THETA) =	.01533	.01498
ENERGY-DISSIPATION THICKNESS =	.02668	.02639
ENTHALPY THICKNESS =	.00086	.00091
SHAPE FACTOR 12 (DELTA STAR/THETA) =	1.74454	1.66198
SHAPE FACTOR 72 (ENERGY/THETA) =	1.74032	1.76212
MOMENTUM THICKNESS REYNOLDS NUMBER =	291.55	284.85
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	508.62	473.42
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS DELTA* INTEGRAL =	-.75192	-.41063
CLAUSERS Y* INTEGRAL =	3.02645	2.57390
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02723	.02399
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01556	.01521
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.49281	1.57795
LOCATION -X-	8.40000	
Z = CENTERLINE		
K = 0.75×10^{-6}		

Table 60.

KLLANB07 TYPE 404ER- FILLS 17-36, RUN 4, PTS.1-20 11/11/80
 RUN NO. 4. POINT 15. GRID NO. 3

REDUCED PROFILE DATA

Y	Y/	U	DEC	U/UE	THETA
1	1.000	12.300	91.300	.320	.207
2	1.000	13.100	91.300	.350	.249
3	1.000	14.000	91.300	.370	.286
4	1.000	14.800	91.300	.380	.319
5	1.000	15.600	89.300	.430	.355
6	1.000	16.400	89.300	.460	.389
7	1.000	17.200	86.300	.500	.414
8	1.000	18.000	87.300	.550	.433
9	1.000	18.800	86.300	.580	.481
10	1.000	19.600	85.300	.610	.516
11	1.000	20.400	84.300	.640	.565
12	1.000	21.200	84.300	.670	.611
13	1.000	22.000	83.300	.690	.642
14	1.000	22.800	81.300	.710	.653
15	1.000	23.600	81.300	.770	.655
16	1.000	24.400	79.300	.770	.632
17	1.000	25.200	78.300	.810	.626
18	1.000	26.000	76.300	.860	.646
19	1.000	26.800	76.300	.900	.674
20	1.000	27.600	75.300	.930	.712
21	1.000	28.400	74.300	.940	.748
22	1.000	29.200	74.300	.940	.783
23	1.000	30.000	72.300	.960	.818
24	1.000	30.800	72.300	.960	.848
25	1.000	31.600	72.300	.960	.861
26	1.000	32.400	72.300	.960	.862
27	1.000	33.200	72.300	.970	.865
28	1.000	34.000	72.300	.970	.876
29	1.000	34.800	72.300	.970	.885
30	1.000	35.600	72.300	.970	.889
31	1.000	36.400	72.300	.970	.894
32	1.000	37.200	72.300	.970	.896
33	1.000	38.000	72.300	.970	.897
34	1.000	38.800	72.300	.970	.896
35	1.000	39.600	72.300	.970	.890
36	1.000	40.400	72.300	.970	.880
37	1.000	41.200	72.300	.970	.868
38	1.000	42.000	72.300	.970	.854
39	1.000	42.800	72.300	.970	.839
40	1.000	43.600	72.300	.970	.822
41	1.000	44.400	72.300	.970	.803
42	1.000	45.200	72.300	.970	.781
43	1.000	46.000	72.300	.970	.757
44	1.000	46.800	72.300	.970	.731
45	1.000	47.600	72.300	.970	.704
46	1.000	48.400	72.300	.970	.676
47	1.000	49.200	72.300	.970	.647
48	1.000	50.000	72.300	.970	.617
49	1.000	50.800	72.300	.970	.586
50	1.000	51.600	72.300	.970	.554
51	1.000	52.400	72.300	.970	.521
52	1.000	53.200	72.300	.970	.487
53	1.000	54.000	72.300	.970	.452
54	1.000	54.800	72.300	.970	.416
55	1.000	55.600	72.300	.970	.379
56	1.000	56.400	72.300	.970	.341
57	1.000	57.200	72.300	.970	.302

Table 60.

ALLEN 7 TAPE 4648F- FILES 17-36, RUN 4, PTS. 1-20 11/11/80

PLN NO. 4. POINT 16. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	37.186	37.186
FREE STREAM TEMPERATURE =	72.916	
WALL TEMPERATURE =	99.680	
WALL HEAT FLUX =	.04530	
FREE STREAM DENSITY =	.07464	
FREE STREAM KINEMATIC VISCOSITY =	.0001645	
DENSITY OF FLUID AT WALL =	.07107	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001794	
WALL/FREE STREAM DENSITY RATIO =	.95215	
LOCATION REYNOLDS NUMBER (REX) =	158256.69	
INPUT VALUE OF VELOCITY DELTA =	.21000	
INPUT VALUE OF TEMPERATURE DELTA =	.24000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.18000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02819	.02502
MOMENTUM THICKNESS (THETA) =	.01516	.01460
ENERGY-DISSIPATION THICKNESS =	.02596	.02592
ENTHALPY THICKNESS =	.00085	.00095
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.85997	1.69027
SHAPE FACTOR 32 (ENERGY/THETA) =	1.71297	1.75136
MOMENTUM THICKNESS REYNOLDS NUMBER =	285.53	276.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	531.08	471.33
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS DELTA* INTEGRAL =	- .37848	- .41217
CLAUSERS C* INTEGRAL =	3.49592	2.64411
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02473	.02408
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01541	.01505
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.60456	1.59949
LOCATION -X-	8.40000	
Z = +6 INCHES		
K = 0.75 X 10 ⁻⁶		

Table 61.

REDUCED PROFILE DATA

Table 61.

WLLNWE07 TAPE 4048R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 17. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	37.604	37.604
FREE STREAM TEMPERATURE	73.264	
WALL TEMPERATURE	98.780	
WALL HEAT FLUX	.04510	
FREE STREAM DENSITY	.07459	
FREE STREAM KINEMATIC VISCOSITY	.0001647	
DENSITY OF FLUID AT WALL	.07119	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001789	
WALL/FREE STREAM DENSITY RATIO	.55431	
LOCATION REYNOLDS NUMBER (REX)	159650.92	
INPUT VALUE OF VELOCITY DELTA	.19000	
INPUT VALUE OF TEMPERATURE DELTA	.26000	
CALCULATED DELTA	.18000	
DELTA 99.5% INPUT	.02821	.02533
DISPLACEMENT THICKNESS (DELSTAR)	.01561	.01518
MOMENTUM THICKNESS (THETA)	.02666	.02666
ENERGY-DISSIPATION THICKNESS	.00082	.00090
ENTHALPY THICKNESS	1.80687	1.66848
SHAPE FACTOR 12 (DELSTAR/THETA)	1.72081	1.75641
SHAPE FACTOR 32 (ENFR0Y/THETA)	297.05	288.66
MOMENTUM THICKNESS REYNOLDS NUMBER	536.74	481.96
DISPLACEMENT THICKNESS REYNOLDS NUMBER		
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSEPS DELTA INTEGRAL	-.27971	-.42058
CLAUSEPS DELTA INTEGRAL	3.41899	2.67299
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02473	.02444
MOMENTUM THICKNESS - CONSTANT DENSITY	.01565	.01541
SHAPE FACTOR 12 - CONSTANT DENSITY	1.56036	1.58563

LOCATION -X- 8.40000

Z = -6 INCHES

K = 0.75 X 10⁻⁶

Table 62.

KLCPW607 TAPE 4648R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

REL NO. 4. POINT 17. GRID NO. 3

REDUCED PROFILE DATA

A	Y	DELTA	U	1	U/CE	THETA
1	1	11.1	11.1	94.9	.301	.150
2	2	11.2	11.2	94.9	.301	.180
3	3	11.3	11.3	93.9	.335	.224
4	4	11.4	11.4	92.9	.364	.253
5	5	11.5	11.5	91.7	.383	.277
6	6	11.6	11.6	90.6	.422	.320
7	7	11.7	11.7	89.6	.432	.351
8	8	11.8	11.8	89.4	.453	.367
9	9	11.9	11.9	87.7	.579	.433
10	10	12.0	12.0	86.6	.577	.460
11	11	12.1	12.1	86.6	.594	.490
12	12	12.2	12.2	85.9	.676	.520
13	13	12.3	12.3	84.4	.646	.545
14	14	12.4	12.4	83.7	.687	.565
15	15	12.5	12.5	82.2	.683	.585
16	16	12.6	12.6	80.9	.751	.610
17	17	12.7	12.7	79.6	.751	.646
18	18	12.8	12.8	77.6	.839	.713
19	19	12.9	12.9	76.6	.865	.788
20	20	13.0	13.0	75.4	.865	.859
21	21	13.1	13.1	75.4	.874	.881
22	22	13.2	13.2	75.4	.914	.913
23	23	13.3	13.3	75.4	.921	.921
24	24	13.4	13.4	75.4	.925	.925
25	25	13.5	13.5	74.9	.935	.935
26	26	13.6	13.6	74.9	.944	.951
27	27	13.7	13.7	74.9	.948	.961
28	28	13.8	13.8	74.9	.970	.961
29	29	13.9	13.9	74.9	.965	.964
30	30	14.0	14.0	73.9	.973	.975
31	31	14.1	14.1	73.9	.973	.982
32	32	14.2	14.2	73.9	.974	.985
33	33	14.3	14.3	73.9	.990	.990
34	34	14.4	14.4	73.9	.995	.995
35	35	14.5	14.5	73.9	.996	.996
36	36	14.6	14.6	73.9	.996	.996
37	37	14.7	14.7	73.9	.996	.996
38	38	14.8	14.8	73.9	.996	.996
39	39	14.9	14.9	73.9	.996	.996
40	40	15.0	15.0	73.9	.996	.996
41	41	15.1	15.1	73.9	.996	.996
42	42	15.2	15.2	73.9	.996	.996
43	43	15.3	15.3	73.9	.996	.996
44	44	15.4	15.4	73.9	.996	.996
45	45	15.5	15.5	73.9	.996	.996
46	46	15.6	15.6	73.9	.996	.996
47	47	15.7	15.7	73.9	.996	.996
48	48	15.8	15.8	73.9	.996	.996
49	49	15.9	15.9	73.9	.996	.996
50	50	16.0	16.0	73.9	.996	.996
51	51	16.1	16.1	73.9	.996	.996
52	52	16.2	16.2	73.9	.996	.996
53	53	16.3	16.3	73.9	.996	.996
54	54	16.4	16.4	73.9	.996	.996
55	55	16.5	16.5	73.9	.996	.996
56	56	16.6	16.6	73.9	.996	.996
57	57	16.7	16.7	73.9	.996	.996

Table 62.

KLCM207 TAPF 464EP- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLN NO. 4. POINT 12. GRID NO. 0

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	39.793	39.793
FREE STREAM TEMPERATURE =	77.629	
WALL TEMPERATURE =	98.270	
WALL HEAT FLUX =	.04660	
FREE STREAM DENSITY =	.07377	
FREE STREAM KINEMATIC VISCOSITY =	.0001666	
DENSITY OF FLUID AT WALL =	.07351	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001604	
WALL/FREE STREAM DENSITY RATIO =	.95584	
LOCATION REYNOLDS NUMBER (REX) =	246825.35	
INPUT VALUE OF VELOCITY DELTA =	.00000	
INPUT VALUE OF TEMPERATURE DELTA =	.40000	
CALCULATED DELTA =	.25000	
DELTA 99.5% INPUT =	.03168	.03122
DISPLACEMENT THICKNESS (DELTA STAR) =	.01961	.01965
MOMENTUM THICKNESS (THETA) =	.03483	.03496
ENERGY-DISSIPATION THICKNESS =	.00127	.00129
ENTHALPY THICKNESS =	1.62635	1.56846
SHAPE FACTOR 12 (DELTA STAR/THETA) =	1.77659	1.77875
SHAPE FACTOR 32 (ENERGY/THETA) =	390.25	391.22
MOMENTUM THICKNESS REYNOLDS NUMBER =	634.68	621.43
DISPLACEMENT THICKNESS REYNOLDS NUMBER =		
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSEN DELTA INTEGRAL =	-0.44663	-0.53517
CLAUSEN RHO INTEGRAL =	3.43807	3.20195
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02762	.02994
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01967	.01992
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.40010	1.50311

LOCATION -X- 12.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 63.

KLEMP#07 TAPE 464FF- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. PCINT 12. GRID NO. 3

REDUCED PROFILE DATA

A	Y	DELTA	U	T	U/UE	THETA
INCHES	Y/	FT/	C	CE		
1	.0000	12.00	92.71	.322	.225	
2	.0000	13.00	92.24	.351	.245	
3	.0000	15.00	90.51	.383	.299	
4	.0000	17.00	89.13	.422	.335	
5	.0000	19.00	87.00	.481	.371	
6	.0000	21.00	84.13	.515	.411	
7	.0000	23.00	81.00	.556	.456	
8	.0000	25.00	77.00	.598	.494	
9	.0000	27.00	73.00	.644	.521	
10	.0000	29.00	68.00	.686	.522	
11	.0000	31.00	64.00	.727	.545	
12	.0000	33.00	60.00	.767	.571	
13	.0000	35.00	56.00	.809	.593	
14	.0000	37.00	52.00	.853	.610	
15	.0000	39.00	48.00	.899	.629	
16	.0000	41.00	44.00	.947	.649	
17	.0000	43.00	40.00	.997	.671	
18	.0000	45.00	36.00	1.049	.695	
19	.0000	47.00	32.00	1.103	.721	
20	.0000	49.00	28.00	1.159	.749	
21	.0000	51.00	24.00	1.217	.779	
22	.0000	53.00	20.00	1.277	.811	
23	.0000	55.00	16.00	1.339	.845	
24	.0000	57.00	12.00	1.403	.881	
25	.0000	59.00	8.00	1.469	.919	
26	.0000	61.00	4.00	1.537	.959	
27	.0000	63.00	0.00	1.607	.999	
28	.0000	65.00		1.679	1.040	
29	.0000	67.00		1.753	1.082	
30	.0000	69.00		1.829	1.125	
31	.0000	71.00		1.907	1.169	
32	.0000	73.00		1.987	1.214	
33	.0000	75.00		2.069	1.260	
34	.0000	77.00		2.153	1.307	
35	.0000	79.00		2.239	1.355	
36	.0000	81.00		2.327	1.404	
37	.0000	83.00		2.417	1.454	
38	.0000	85.00		2.509	1.505	
39	.0000	87.00		2.603	1.557	
40	.0000	89.00		2.699	1.610	
41	.0000	91.00		2.797	1.664	
42	.0000	93.00		2.897	1.719	
43	.0000	95.00		2.999	1.775	
44	.0000	97.00		3.103	1.832	
45	.0000	99.00		3.209	1.890	
46	.0000	101.00		3.317	1.949	
47	.0000	103.00		3.427	2.009	
48	.0000	105.00		3.539	2.070	
49	.0000	107.00		3.653	2.132	
50	.0000	109.00		3.769	2.195	
51	.0000	111.00		3.887	2.259	
52	.0000	113.00		3.999	2.324	
53	.0000	115.00		4.103	2.390	
54	.0000	117.00		4.209	2.457	

Table 63.

KLLM807 TAPE 4648F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 13. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	39.745	39.745
FREE STREAM TEMPERATURE	73.663	
WALL TEMPERATURE	98.720	
WALL HEAT FLUX	.04580	
FREE STREAM DENSITY	.07377	
FREE STREAM KINEMATIC VISCOSITY	.0001666	
DENSITY OF FLUID AT WALL	.07046	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001807	
WALL/FREE STREAM DENSITY RATIO	.95513	
LOCATION REYNOLDS NUMBER (REX)	246505.67	
INPUT VALUE OF VELOCITY DELTA	.24000	
INPUT VALUE OF TEMPERATURE DELTA	.40000	
CALCULATED DELTA		
DELTA 59.5% INPUT	.24000	
DISPLACEMENT THICKNESS (DELTA*)	.02995	.02903
MOMENTUM THICKNESS (THETA)	.01808	.01800
ENERGY-DISSIPATION THICKNESS	.03194	.03192
ENTHALPY THICKNESS	.00120	.00123
SHAPE FACTOR 12 (DELTA*/THETA)	1.65699	1.61259
SHAPE FACTOR 32 (ENERGY/THETA)	1.76702	1.77264
MOMENTUM THICKNESS REYNOLDS NUMBER	359.38	357.92
DISPLACEMENT THICKNESS REYNOLDS NUMBER	595.49	577.17
SKIN FRICTION COEFFICIENT		
FRICTION VELOCITY		
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		
CLAUSERS *DELTA* INTEGRAL	-.41255	-.45174
CLAUSERS *C* INTEGRAL	3.26187	2.96831
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.02607	.02784
MOMENTUM THICKNESS - CONSTANT DENSITY	.01933	.01826
SHAPE FACTOR 12 - CONSTANT DENSITY	1.42210	1.52441

LOCATION -X- 12.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 64.

KLDPW007 TAPE 464ER- FILES 17-36, RUN 4, PTS.1-20 11/11/80
 RUN NO. 4. POINT 13. GRID NO. 3

REDUCED PROFILE DATA

N	IN	Y	DELTA	U	SEC	DEG.F	U/UE	THETA
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55	55
56	56	56	56	56	56	56	56	56
57	57	57	57	57	57	57	57	57

Table 64.

KLDMWEL7 TAPE 4648F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLAN NO. 4. POINT 14. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	40.003	40.003
FREE STREAM TEMPERATURE ==	72.759	
WALL TEMPERATURE ==	96.960	
WALL HEAT FLUX ==	.04552	
FREE STREAM DENSITY ==	.07467	
FREE STREAM KINEMATIC VISCOSITY ==	.0001644	
DENSITY OF FLUID AT WALL ==	.07142	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001778	
WALL/FREE STREAM DENSITY RATIO ==	.95652	
LOCATION REYNOLDS NUMBER (REX) ==	251449.38	
INPUT VALUE OF VELOCITY DELTA ==	.3100	
INPUT VALUE OF TEMPERATURE DELTA ==	.37000	
CALCULATED DELTA ==		
DELTA 99.5% INPUT ==	.28000	
DISPLACEMENT THICKNESS (DELTA*) ==	.03174	.03106
MOMENTUM THICKNESS (THETA) ==	.02002	.01992
ENERGY-DISSIPATION THICKNESS ==	.03571	.03559
ENTHALPY THICKNESS ==	.00116	.00117
SHAPE FACTOR 12 (DELTA*/THETA) ==	1.58494	1.55947
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.78315	1.78719
MOMENTUM THICKNESS REYNOLDS NUMBER ==	406.07	403.86
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	643.60	629.61
SKIN FRICTION COEFFICIENT ==		
FRICTION VELOCITY ==		
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		
CLAUSERS DELTA* INTEGRAL ==	-.44027	-.53164
CLAUSERS C* INTEGRAL ==	3.26529	3.07762
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.02793	.02986
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02027	.02016
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.27784	1.48261

LOCATION -Y- 12.40000

Z = -6 INCHES

K = 0.75 X 10⁻⁶

Table 65.

PLT NO. 4. POINT 14. GRID NO. 3

Y/ L T

[illegible]

Table 65.

KLEINWEC7 TAPE 4642P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 10. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	40.871	40.871
FREE STREAM TEMPERATURE ==	73.015	
WALL TEMPERATURE ==	96.760	
WALL HEAT FLUX ==	.04660	
FREE STREAM DENSITY ==	.07386	
FREE STREAM KINEMATIC VISCOSITY ==	.0001663	
DENSITY OF FLUID AT WALL ==	.07079	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001792	
WALL/FREE STREAM DENSITY RATIO ==	.95853	
LOCATION REYNOLDS NUMBER (REX) ==	335982.23	
INPUT VALUE OF VELOCITY DELTA ==	.43000	
INPUT VALUE OF TEMPERATURE DELTA ==	.58000	
CALCULATED DELTA ==		.27214
DELTA 99.5% INPUT ==	.00000	
DISPLACEMENT THICKNESS (DELTA*) ==	.03955	.03768
MOMENTUM THICKNESS (THETA) ==	.02378	.02419
ENERGY-DISSIPATION THICKNESS ==	.04225	.04308
ENTHALPY THICKNESS ==	.00164	.00170
SHAPE FACTOR 12 (DELTA*/THETA) ==	1.66301	1.55753
SHAPE FACTOR 22 (ENERGY/THETA) ==	1.77653	1.76078
MOMENTUM THICKNESS REYNOLDS NUMBER ==	487.26	495.66
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	810.32	771.91
SKIN FRICTION COEFFICIENT ==	.005588	
FRICTION VELOCITY ==	2.20656	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.04398
CLAUSERS *DELTA* INTEGRAL ==	-.59059	-.66713
CLAUSERS *C* INTEGRAL ==	4.76006	3.95173
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03513	.03602
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02407	.02450
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.45946	1.47015

LOCATION -Y- 16.40000

Z = CENTERLINE

K = 0.75 X 10⁻⁶

Table 66.

FLN AC. 4. POINT IC. GRID NO. 3

[illegible]

Table 66.

KLDMWFL7 TAPE 46485- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 11. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	42.388	42.388
FREE STREAM TEMPERATURE	77.445	
WALL TEMPERATURE	96.990	
WALL HEAT FLUX	.04760	
FREE STREAM DENSITY	.07360	
FREE STREAM KINEMATIC VISCOSITY	.0001665	
DENSITY OF FLUID AT WALL	.07068	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001797	
WALL/FREE STREAM DENSITY RATIO	.95771	
LOCATION REYNOLDS NUMBER (REX)	347952.69	
INPUT VALUE OF VELOCITY DELTA	.400000	
INPUT VALUE OF TEMPERATURE DELTA	1.090000	
CALCULATED DELTA		.30697
DELTA 99.5% INPUT	.380000	
DISPLACEMENT THICKNESS (DELTA*)	.03917	.03870
MOMENTUM THICKNESS (THETA)	.02532	.02543
ENERGY-DISSIPATION THICKNESS	.04545	.04563
ENTHALPY THICKNESS	.00162	.00163
SHAPE FACTOR 12 (DELTA*/THETA)	1.54697	1.52204
SHAPE FACTOR 32 (ENERGY/THETA)	1.79460	1.79435
MOMENTUM THICKNESS REYNOLDS NUMBER	537.25	539.50
DISPLACEMENT THICKNESS REYNOLDS NUMBER	631.11	621.14
SKIN FRICTION COEFFICIENT	.005594	
FRICTION VELOCITY	2.29072	
LAW OF THE WALL CONSTANT (K)	.410000	
LAW OF THE WALL CONSTANT (C)	5.000000	
WAKE STRENGTH		-.12519
CLAUSERS *DELTA* INTEGRAL	-.59564	-.66466
CLAUSERS *R* INTEGRAL	4.050000	3.85412
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03482	.03700
MOMENTUM THICKNESS - CONSTANT DENSITY	.02563	.02574
SHAPE FACTOR 12 - CONSTANT DENSITY	1.75950	1.43722

LOCATION -X- 16.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 67.

REFLECT PROFILE DATA

[illegible]

Table 67.

WLEW6C7 TAPE 4648R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLN NO. 4. POINT 9. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	46.907	46.907
FREE STREAM TEMPERATURE	73.294	
WALL TEMPERATURE	95.480	
WALL HEAT FLUX	.04710	
FREE STREAM DENSITY	.07382	
FREE STREAM KINEMATIC VISCOSITY	.0001664	
DENSITY OF FLUID AT WALL	.07087	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001788	
WALL/FREE STREAM DENSITY RATIO	.96004	
LOCATION REYNOLDS NUMBER (REX)	573156.16	
INPUT VALUE OF VELOCITY DELTA	.460000	
INPUT VALUE OF TEMPERATURE DELTA	1.09000	
CALCULATED DELTA		.39457
DELTA 99.5% INPUT	.43000	
DISPLACEMENT THICKNESS (DELTA STAR)	.04705	.04704
MOMENTUM THICKNESS (THETA)	.03166	.03161
ENERGY-DISSIPATION THICKNESS	.05713	.05732
ENTHALPY THICKNESS	.00235	.00235
SHAPE FACTOR 12 (DELTA STAR/THETA)	1.48623	1.47862
SHAPE FACTOR 32 (ENERGY/THETA)	1.80450	1.80172
MOMENTUM THICKNESS REYNOLDS NUMBER	743.69	747.30
DISPLACEMENT THICKNESS REYNOLDS NUMBER	105.29	1104.99
SKIN FRICTION COEFFICIENT	.005146	
FRICTION VELOCITY	2.42840	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		-.11643
CLAUSERS DELTA* INTEGRAL	-.78310	-.66641
CLAUSERS VC* INTEGRAL	4.79239	4.72664
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.04271	.04465
MOMENTUM THICKNESS - CONSTANT DENSITY	.03203	.03219
SHAPE FACTOR 12 - CONSTANT DENSITY	1.33346	1.39300
LOCATION -X-	24.40000	
Z = CENTERLINE		
K = 0.75 x 10 ⁻⁶		

Table 68.

KLEPHEC7 TAPE 4646R- FILES 17-36, RUN 4, PTS.1-20 11/11/80
 RUN NO. 4. POINT 9. GRID NO. 3

REDUCED PROFILE DATA

A	INC	Y	DELTA	U/UF	THETA	U-DE	U(+)	T(+))	Y(+))
1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1	1
35	1	1	1	1	1	1	1	1	1
36	1	1	1	1	1	1	1	1	1
37	1	1	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1	1	1
39	1	1	1	1	1	1	1	1	1
40	1	1	1	1	1	1	1	1	1
41	1	1	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1	1	1
44	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1
46	1	1	1	1	1	1	1	1	1
47	1	1	1	1	1	1	1	1	1
48	1	1	1	1	1	1	1	1	1
49	1	1	1	1	1	1	1	1	1
50	1	1	1	1	1	1	1	1	1
51	1	1	1	1	1	1	1	1	1
52	1	1	1	1	1	1	1	1	1
53	1	1	1	1	1	1	1	1	1
54	1	1	1	1	1	1	1	1	1
55	1	1	1	1	1	1	1	1	1
56	1	1	1	1	1	1	1	1	1
57	1	1	1	1	1	1	1	1	1

Table 68.

WLMWEL7 TAPF 464ER- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 6. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	55.214	55.214
FREE STREAM TEMPERATURE	74.953	
WALL TEMPERATURE	99.180	
WALL HEAT FLUX	.04730	
FREE STREAM DENSITY	.07438	
FREE STREAM KINEMATIC VISCOSITY	.0001655	
DENSITY OF FLUID AT WALL	.07167	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001768	
WALL/FREE STREAM DENSITY RATIO	.96398	
LOCATION REYNOLDS NUMBER (REX)	900555.99	
INLET VALUE OF VELOCITY DELTA	.41000	
INLET VALUE OF TEMPERATURE DELTA	.81000	
CALCULATED DELTA		.40071
DELTA 99.5% INPUT	.42000	
DISPLACEMENT THICKNESS (DELSTAR)	.04699	.04716
MOMENTUM THICKNESS (THETA)	.03706	.03219
ENERGY-DISSIPATION THICKNESS	.05792	.05804
ENTHALPY THICKNESS	.00256	.00256
SHAPE FACTOR 12 (DELSTAR/THETA)	1.46583	1.46517
SHAPE FACTOR 22 (ENERGY/THETA)	1.80692	1.80269
MOMENTUM THICKNESS REYNOLDS NUMBER	890.98	894.72
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1306.02	1310.92
SKIN FRICTION COEFFICIENT	.004904	
FRICTION VELOCITY	2.78528	
LAW OF THE WALL CONSTANT (K)	.41700	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		-.09403
CLAUSERS DELTA INTEGRAL	-.79038	-.86873
CLAUSERS R* INTEGRAL	4.80255	4.81762
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.04249	.04483
MOMENTUM THICKNESS - CONSTANT DENSITY	.03243	.03257
SHAPE FACTOR 12 - CONSTANT DENSITY	1.31005	1.37637

LOCATION -X- 32.40500

Z = CENTERLINE

K = 0.75×10^{-6}

Table 69.

KLCP#007 TAPE 404EF- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLAN NO. 4.

POINT 6.

GRID NO. 3

REFLECT PROFILE DATA

Y	IN	Y	U	U/DE	THETA	U-DE	U(+)	Y(+)	Y(+)
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55	55	55
56	56	56	56	56	56	56	56	56	56
57	57	57	57	57	57	57	57	57	57
58	58	58	58	58	58	58	58	58	58
59	59	59	59	59	59	59	59	59	59
60	60	60	60	60	60	60	60	60	60
61	61	61	61	61	61	61	61	61	61
62	62	62	62	62	62	62	62	62	62
63	63	63	63	63	63	63	63	63	63
64	64	64	64	64	64	64	64	64	64
65	65	65	65	65	65	65	65	65	65
66	66	66	66	66	66	66	66	66	66
67	67	67	67	67	67	67	67	67	67
68	68	68	68	68	68	68	68	68	68
69	69	69	69	69	69	69	69	69	69
70	70	70	70	70	70	70	70	70	70
71	71	71	71	71	71	71	71	71	71
72	72	72	72	72	72	72	72	72	72
73	73	73	73	73	73	73	73	73	73
74	74	74	74	74	74	74	74	74	74
75	75	75	75	75	75	75	75	75	75
76	76	76	76	76	76	76	76	76	76
77	77	77	77	77	77	77	77	77	77
78	78	78	78	78	78	78	78	78	78
79	79	79	79	79	79	79	79	79	79
80	80	80	80	80	80	80	80	80	80
81	81	81	81	81	81	81	81	81	81
82	82	82	82	82	82	82	82	82	82
83	83	83	83	83	83	83	83	83	83
84	84	84	84	84	84	84	84	84	84
85	85	85	85	85	85	85	85	85	85
86	86	86	86	86	86	86	86	86	86
87	87	87	87	87	87	87	87	87	87
88	88	88	88	88	88	88	88	88	88
89	89	89	89	89	89	89	89	89	89
90	90	90	90	90	90	90	90	90	90
91	91	91	91	91	91	91	91	91	91
92	92	92	92	92	92	92	92	92	92
93	93	93	93	93	93	93	93	93	93
94	94	94	94	94	94	94	94	94	94
95	95	95	95	95	95	95	95	95	95
96	96	96	96	96	96	96	96	96	96
97	97	97	97	97	97	97	97	97	97
98	98	98	98	98	98	98	98	98	98
99	99	99	99	99	99	99	99	99	99
100	100	100	100	100	100	100	100	100	100

Table 69.

WLOM#807 TAPF 4648R- FILLS 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 7. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	55.052	55.052
FREE STREAM TEMPERATURE	74.978	
WALL TEMPERATURE	94.750	
WALL HEAT FLUX	.04730	
FREE STREAM DENSITY	.07438	
FREE STREAM KINEMATIC VISCOSITY	.0001656	
DENSITY OF FLUID AT WALL	.07173	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001765	
WALL/FREE STREAM DENSITY RATIO	.96434	
LOCATION REYNOLDS NUMBER (REX)	897844.43	
INPUT VALUE OF VELOCITY DELTA	.41000	
INPUT VALUE OF TEMPERATURE DELTA	.76000	
CALCULATED DELTA		.39498
DELTA 99.5% INPUT	.45000	
DISPLACEMENT THICKNESS (DELSTAR)	.04706	.04720
MOMENTUM THICKNESS (THETA)	.03190	.03212
ENERGY-DISSIPATION THICKNESS	.05763	.05783
ENTHALPY THICKNESS	.00253	.00253
SHAPE FACTOR 12 (CELSTAR/THETA)	1.47508	1.46954
SHAPE FACTOR 32 (ENERGY/THETA)	1.80650	1.80046
MOMENTUM THICKNESS REYNOLDS NUMBER	864.10	890.11
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1304.11	1308.05
SKIN FRICTION COEFFICIENT	.004892	
FRICTION VELOCITY	2.77268	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		-.07869
CLAUSERS *DELTA* INTEGRAL	-.78252	-.89117
CLAUSERS *C* INTEGRAL	4.91274	4.88048
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.04208	.04468
MOMENTUM THICKNESS - CONSTANT DENSITY	.03228	.03250
SHAPE FACTOR 12 - CONSTANT DENSITY	1.30349	1.38067

LOCATION -X- 32.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 70.

Table 70.

KLEMMER7 TAPE 4648P- FILLS 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 8. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	54.635	54.635
FREE STREAM TEMPERATURE ==	75.000	
WALL TEMPERATURE ==	94.330	
WALL HEAT FLUX ==	.04740	
FREE STREAM DENSITY ==	.07438	
FREE STREAM KINEMATIC VISCOSITY ==	.0001656	
DENSITY OF FLUID AT WALL ==	.07178	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001763	
WALL/FREE STREAM DENSITY RATIO ==	.96511	
LOCATION REYNOLDS NUMBER (REX) ==	690976.28	
INPUT VALUE OF VELOCITY DELTA ==	.41000	
INPUT VALUE OF TEMPERATURE DELTA ==	.70000	
CALCULATED DELTA ==		.37762
DELTA 99.5% INPUT ==	.40500	
DISPLACEMENT THICKNESS (DELSTAR) ==	.04642	.04642
MOMENTUM THICKNESS (THETA) ==	.03090	.03116
ENERGY-DISSIPATION THICKNESS ==	.05564	.05601
ENTHALPY THICKNESS ==	.00240	.00241
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.50238	1.47709
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.80092	1.79777
MOMENTUM THICKNESS REYNOLDS NUMBER ==	849.65	656.75
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1276.50	1265.49
SKIN FRICTION COEFFICIENT ==	.004921	
FRICTION VELOCITY ==	2.75876	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.06500
CLAUSERS * DELTA * INTEGRAL ==	-.76938	-.86676
CLAUSERS * C * INTEGRAL ==	5.06961	4.80215
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.04151	.04377
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.03126	.03152
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.32820	1.36842
LOCATION -X-	32.40000	
Z = -6 INCHES		
K = 0.75 X 10 ⁻⁶		

Table 71.

MEDM 607 TAPE 4648P- FILES 17-36, RUN 4, PTS. 1-20 11/11/80
 RUN NO. 4. POINT 8. GRID NO. 3

REFLECTED PROFILE DATA

Y	INCH	Y/	DELTA	F	SEC	DE	F	U/UE	THETA	U-UE	UTAU	U(+)	T(+)	Y(+)
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 71.

KLDWFL7 TAPE 464EP- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 5. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=3E
FREE STREAM VELOCITY ==	66.696	66.696
FREE STREAM TEMPERATURE ==	75.156	
WALL TEMPERATURE ==	94.030	
WALL HEAT FLUX ==	.04800	
FREE STREAM DENSITY ==	.07436	
FREE STREAM KINEMATIC VISCOSITY ==	.0001657	
DENSITY OF FLUID AT WALL ==	.07182	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001761	
WALL/FREE STREAM DENSITY RATIO ==	.96591	
LOCATION REYNOLDS NUMBER (REX) ==	1355522.06	
INPUT VALUE OF VELOCITY DELTA ==	.46000	
INPUT VALUE OF TEMPERATURE DELTA ==	.81000	
CALCULATED DELTA ==		.40279
DELTA 9.5% INPUT ==	.41500	
DISPLACEMENT THICKNESS (DELSTAR) ==	.04284	.04319
MOMENTUM THICKNESS (THETA) ==	.02945	.02971
ENERGY-DISSIPATION THICKNESS ==	.05368	.05367
ENTHALPY THICKNESS ==	.00277	.00277
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.45435	1.45373
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.82258	1.81311
MOMENTUM THICKNESS REYNOLDS NUMBER ==	988.23	996.86
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1437.23	1449.16
SKIN FRICTION COEFFICIENT ==	.004856	
FRICTION VELOCITY ==	3.34404	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.16496
CLAUSERS DELTA* INTEGRAL ==	-.69681	-.61029
CLAUSERS C* INTEGRAL ==	4.16160	4.19889
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03760	.04007
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02961	.03007
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.26159	1.35102

LOCATION -X- 40.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 72.

Table 72.

KLDMW807 TAFF 404EP- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PUN AG. 4. POINT 2. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUB-LAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	82.716	82.718
FREE STREAM TEMPERATURE =	74.517	
WALL TEMPERATURE =	91.630	
WALL HEAT FLUX =	.04750	
FREE STREAM DENSITY =	.07444	
FREE STREAM KINEMATIC VISCOSITY =	.0001653	
DENSITY OF FLUID AT WALL =	.07213	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001748	
WALL/FREE STREAM DENSITY RATIO =	.96896	
LOCATION REYNOLDS NUMBER (REX) =	2018309.16	
INPUT VALUE OF VELOCITY DELTA =	.46000	
INPUT VALUE OF TEMPERATURE DELTA =	.81000	
CALCULATED DELTA =		.35700
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03774	.03703
MOMENTUM THICKNESS (THETA) =	.02590	.02620
ENERGY-DISSIPATION THICKNESS =	.04709	.04757
ENTHALPY THICKNESS =	.00255	.00231
SHAPE FACTOR 12 (CELSTAR/THETA) =	1.45679	1.44372
SHAPE FACTOR 32 (ENERGY/THETA) =	1.82543	1.81501
MOMENTUM THICKNESS REYNOLDS NUMBER =	1080.22	1092.04
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1573.64	1577.46
SKIN FRICTION COEFFICIENT =	.004757	
FRICTION VELOCITY =	4.09844	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.10139
CLAUSERS *DELTA* INTEGRAL =	-.61600	-.71625
CLAUSERS *C* INTEGRAL =	3.72502	3.67049
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03294	.03549
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02620	.02648
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.25689	1.34032

LOCATION -X- 48.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 73.

GAID NO. 3

[illegible]

Table 73.

KLDM 957 TAPF 4648F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 3. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY ==	62.719	62.719
FREE STREAM TEMPERATURE ==	74.729	
WALL TEMPERATURE ==	91.410	
WALL HEAT FLUX ==	.04760	
FREE STREAM DENSITY ==	.07441	
FREE STREAM KINEMATIC VISCOSITY ==	.0001654	
DENSITY OF FLUID AT WALL ==	.07216	
KINEMATIC VISCOSITY OF FLUID AT WALL ==	.0001747	
WALL/FREE STREAM DENSITY RATIO ==	.96973	
LOCATION REYNOLDS NUMBER (REX) ==	2016931.69	
INPUT VALUE OF VELOCITY DELTA ==	.41000	
INPUT VALUE OF TEMPERATURE DELTA ==	.81000	
CALCULATED DELTA ==		.35814
DELTA 99.5% INPUT ==	.40500	
DISPLACEMENT THICKNESS (DELSTAR) ==	.03798	.03621
MOMENTUM THICKNESS (THETA) ==	.02619	.02641
ENERGY-DISSIPATION THICKNESS ==	.04776	.04794
ENTHALPY THICKNESS ==	.00262	.00262
SHAPE FACTOR 12 (DELSTAR/THETA) ==	1.44982	1.44675
SHAPE FACTOR 32 (ENERGY/THETA) ==	1.82347	1.81513
MOMENTUM THICKNESS REYNOLDS NUMBER ==	1091.52	1100.72
DISPLACEMENT THICKNESS REYNOLDS NUMBER ==	1582.51	1592.47
SKIN FRICTION COEFFICIENT ==	.004741	
FRICTION VELOCITY ==	4.08964	
LAW OF THE WALL CONSTANT (K) ==	.41000	
LAW OF THE WALL CONSTANT (C) ==	5.00000	
WAKE STRENGTH ==		-.15328
CLAUSERS DELTA INTEGRAL ==	-.67267	-.72513
CLAUSERS REX INTEGRAL ==	3.72668	3.73254
DISPLACEMENT THICKNESS - CONSTANT DENSITY ==	.03744	.03565
MOMENTUM THICKNESS - CONSTANT DENSITY ==	.02650	.02673
SHAPE FACTOR 12 - CONSTANT DENSITY ==	1.26204	1.34136

LOCATION -X- 48.40000

Z = +6 INCHES

K = 0.75 X 10⁻⁶

Table 74.

KLLW5L7 TAPE 4648R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLN 'C. 4. POINT 3. GRID NO. 3

REFLECTED PROFILE DATA

Y	I.C.H	DELTA	FT/SEC	DEC.F	U/UF	THETA	U-UE	U(+)	T(+)	Y(+)
1.1	.0000	.0011	31.758	88.7	.385	.185	-12.431	7.796	4.564	8.449
1.1	.0000	.0014	36.751	88.7	.444	.239	-11.241	6.985	5.533	11.181
1.1	.0000	.0017	41.744	88.6	.502	.273	-10.677	10.150	6.774	12.937
1.1	.0000	.0020	46.737	88.6	.532	.296	-9.467	10.760	7.354	14.333
1.1	.0000	.0023	51.730	88.5	.577	.327	-8.551	11.675	8.115	16.844
1.1	.0000	.0026	56.723	88.5	.613	.358	-7.622	12.405	8.695	19.962
1.1	.0000	.0029	61.716	88.4	.636	.384	-7.367	12.859	9.531	22.409
1.1	.0000	.0032	66.709	88.4	.649	.394	-7.108	13.118	9.768	24.065
1.1	.0000	.0035	71.702	88.4	.670	.416	-6.680	13.547	10.377	27.982
1.1	.0000	.0038	76.695	88.4	.690	.439	-6.264	13.962	10.902	32.645
1.1	.0000	.0041	81.688	88.3	.711	.452	-5.966	14.261	11.215	37.133
1.1	.0000	.0044	86.681	88.3	.727	.463	-5.651	14.376	11.488	42.280
1.1	.0000	.0047	91.674	88.3	.735	.471	-5.326	14.370	11.709	48.007
1.1	.0000	.0050	96.667	88.3	.743	.483	-5.059	14.355	11.949	54.347
1.1	.0000	.0053	101.660	88.3	.747	.488	-4.798	14.322	12.111	61.324
1.1	.0000	.0056	106.653	88.3	.763	.499	-4.513	14.274	12.385	69.037
1.1	.0000	.0059	111.646	88.3	.763	.539	-4.201	14.216	13.374	78.720
1.1	.0000	.0062	116.639	88.3	.814	.594	-3.770	14.145	14.255	96.452
1.1	.0000	.0065	121.632	88.3	.827	.612	-3.503	14.118	15.116	108.356
1.1	.0000	.0068	126.625	88.3	.841	.612	-3.213	14.114	15.902	122.405
1.1	.0000	.0071	131.618	88.3	.864	.626	-3.069	14.117	16.533	136.065
1.1	.0000	.0074	136.611	88.3	.869	.642	-2.860	14.147	17.023	147.362
1.1	.0000	.0077	141.604	88.3	.869	.651	-2.657	14.177	17.347	159.846
1.1	.0000	.0080	146.597	88.3	.876	.666	-2.476	14.170	17.570	174.700
1.1	.0000	.0083	151.590	88.3	.885	.679	-2.336	14.189	17.753	186.458
1.1	.0000	.0086	156.583	88.3	.897	.678	-2.178	14.186	17.891	200.458
1.1	.0000	.0089	161.576	88.3	.907	.701	-2.078	14.182	17.946	214.117
1.1	.0000	.0092	166.569	88.3	.926	.726	-1.948	14.177	18.027	225.994
1.1	.0000	.0095	171.562	88.3	.911	.717	-1.800	14.177	18.027	235.994
1.1	.0000	.0098	176.555	88.3	.927	.752	-1.647	14.175	18.027	245.994
1.1	.0000	.0101	181.548	88.3	.936	.779	-1.497	14.175	18.027	255.994
1.1	.0000	.0104	186.541	88.3	.944	.806	-1.350	14.175	18.027	265.994
1.1	.0000	.0107	191.534	88.3	.957	.823	-1.207	14.175	18.027	275.994
1.1	.0000	.0110	196.527	88.3	.964	.823	-1.072	14.175	18.027	285.994
1.1	.0000	.0113	201.520	88.3	.971	.846	-0.946	14.175	18.027	295.994
1.1	.0000	.0116	206.513	88.3	.975	.857	-0.835	14.175	18.027	305.994
1.1	.0000	.0119	211.506	88.3	.980	.863	-0.735	14.175	18.027	315.994
1.1	.0000	.0122	216.499	88.3	.983	.870	-0.642	14.175	18.027	325.994
1.1	.0000	.0125	221.492	88.3	.986	.883	-0.557	14.175	18.027	335.994
1.1	.0000	.0128	226.485	88.3	.989	.890	-0.480	14.175	18.027	345.994
1.1	.0000	.0131	231.478	88.3	.993	.904	-0.406	14.175	18.027	355.994
1.1	.0000	.0134	236.471	88.3	.996	.920	-0.335	14.175	18.027	365.994
1.1	.0000	.0137	241.464	88.3	.999	.924	-0.267	14.175	18.027	375.994
1.1	.0000	.0140	246.457	88.3	.999	.935	-0.202	14.175	18.027	385.994
1.1	.0000	.0143	251.450	88.3	.999	.949	-0.140	14.175	18.027	395.994
1.1	.0000	.0146	256.443	88.3	.999	.962	-0.081	14.175	18.027	405.994
1.1	.0000	.0149	261.436	88.3	.999	.977	-0.026	14.175	18.027	415.994
1.1	.0000	.0152	266.429	88.3	.999	.990	0.019	14.175	18.027	425.994
1.1	.0000	.0155	271.422	88.3	.999	.986	0.066	14.175	18.027	435.994
1.1	.0000	.0158	276.415	88.3	.999	.984	0.113	14.175	18.027	445.994
1.1	.0000	.0161	281.408	88.3	.999	.980	0.157	14.175	18.027	455.994
1.1	.0000	.0164	286.401	88.3	.999	.980	0.202	14.175	18.027	465.994
1.1	.0000	.0167	291.394	88.3	.999	.980	0.247	14.175	18.027	475.994
1.1	.0000	.0170	296.387	88.3	.999	.980	0.292	14.175	18.027	485.994
1.1	.0000	.0173	301.380	88.3	.999	.980	0.337	14.175	18.027	495.994
1.1	.0000	.0176	306.373	88.3	.999	.980	0.382	14.175	18.027	505.994
1.1	.0000	.0179	311.366	88.3	.999	.980	0.427	14.175	18.027	515.994
1.1	.0000	.0182	316.359	88.3	.999	.980	0.472	14.175	18.027	525.994
1.1	.0000	.0185	321.352	88.3	.999	.980	0.517	14.175	18.027	535.994
1.1	.0000	.0188	326.345	88.3	.999	.980	0.562	14.175	18.027	545.994
1.1	.0000	.0191	331.338	88.3	.999	.980	0.607	14.175	18.027	555.994
1.1	.0000	.0194	336.331	88.3	.999	.980	0.652	14.175	18.027	565.994
1.1	.0000	.0197	341.324	88.3	.999	.980	0.697	14.175	18.027	575.994
1.1	.0000	.0200	346.317	88.3	.999	.980	0.742	14.175	18.027	585.994
1.1	.0000	.0203	351.310	88.3	.999	.980	0.787	14.175	18.027	595.994
1.1	.0000	.0206	356.303	88.3	.999	.980	0.832	14.175	18.027	605.994
1.1	.0000	.0209	361.296	88.3	.999	.980	0.877	14.175	18.027	615.994
1.1	.0000	.0212	366.289	88.3	.999	.980	0.922	14.175	18.027	625.994
1.1	.0000	.0215	371.282	88.3	.999	.980	0.967	14.175	18.027	635.994
1.1	.0000	.0218	376.275	88.3	.999	.980	1.012	14.175	18.027	645.994
1.1	.0000	.0221	381.268	88.3	.999	.980	1.057	14.175	18.027	655.994
1.1	.0000	.0224	386.261	88.3	.999	.980	1.102	14.175	18.027	665.994
1.1	.0000	.0227	391.254	88.3	.999	.980	1.147	14.175	18.027	675.994
1.1	.0000	.0230	396.247	88.3	.999	.980	1.192	14.175	18.027	685.994
1.1	.0000	.0233	401.240	88.3	.999	.980	1.237	14.175	18.027	695.994
1.1	.0000	.0236	406.233	88.3	.999	.980	1.282	14.175	18.027	705.994
1.1	.0000	.0239	411.226	88.3	.999	.980	1.327	14.175	18.027	715.994
1.1	.0000	.0242	416.219	88.3	.999	.980	1.372	14.175	18.027	725.994
1.1	.0000	.0245	421.212	88.3	.999	.980	1.417	14.175	18.027	735.994
1.1	.0000	.0248	426.205	88.3	.999	.980	1.462	14.175	18.027	745.994
1.1	.0000	.0251	431.198	88.3	.999	.980	1.507	14.175	18.027	755.994
1.1	.0000	.0254	436.191	88.3	.999	.980	1.552	14.175	18.027	765.994
1.1	.0000	.0257	441.184	88.3	.999	.980	1.597	14.175	18.027	775.994
1.1	.0000	.0260	446.177	88.3	.999	.980	1.642	14.175	18.027	785.994
1.1	.0000	.0263	451.170	88.3	.999	.980	1.687	14.175	18.027	795.994
1.1	.0000	.0266	456.163	88.3	.999	.980	1.732	14.175	18.027	805.994
1.1	.0000	.0269	461.156	88.3	.999	.980	1.777	14.175	18.027	815.994
1.1	.0000	.0272	466.149	88.3	.999	.980	1.822	14.175	18.027	825.994
1.1	.0000	.0275	471.142	88.3	.999	.980	1.867	14.175	18.027	835.994
1.1	.0000	.0278	476.135	88.3	.999	.980	1.912	14.175	18.027	845.994
1.1	.0000	.0281	481.128	88.3	.999	.980	1.957	14.175	18.027	855.994
1.1	.0000	.0284	486.121	88.3	.999	.980	2.002	14.175	18.027	865.994
1.1	.0000	.0287	491.114	88.3	.999	.980	2.047	14.175	18.027	875.994
1.1	.0000	.0290	496.107	88.3	.999	.980	2.092	14.175	18.027	885.994
1.1	.0000	.0293	501.100	88.3	.999	.980	2.137	14.175	18.027	895.994
1.1	.0000	.0296	506.093	88.3	.999	.980	2.182	14.175	18.027	905.994
1.1	.0000	.0299	511.086	88.3	.999	.980	2.227	14.175	18.027	915.994
1.1	.0000	.0302	516.079	88.3	.999	.980	2.272	14.175	18.027	925.994
1.1	.0000	.0305	521.072	88.3	.999	.980	2.317	14.175	18.027	935.994
1.1	.0000	.0308	526.065	88.3	.999	.980	2.362	14.175	18.027	945.994
1.1	.0000	.0311	531.058	88.3	.999	.980	2.407	14.175	18.027	955.994
1.1	.0000	.0314	536.051	88.3	.999	.980	2.452	14.175	18.027	965.994
1.1	.0000	.0317	541.044	88.3	.999	.980	2.497	14.175	18.027	975.994
1.1	.0000	.0320	546.037	88.3	.999	.980	2.542	14.175	18.027	985.994
1.1	.0000	.0323	551.030	88.3	.999	.980	2.587	14.175	18.027	995.994
1.1	.0000	.0326	556.023	88.3	.999	.980	2.632	14.175	18.027	1005.994
1.1	.0000	.0329	561.016	88.3	.999	.980	2.677	14.175	18.027	1015.994
1.1	.0000	.0332	566.009							

KLEMM807 TAPF 464EF- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 4. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	82.277	82.277
FREE STREAM TEMPERATURE	74.812	
WALL TEMPERATURE	91.510	
WALL HEAT FLUX	.04790	
FREE STREAM DENSITY	.07440	
FREE STREAM KINEMATIC VISCOSITY	.0001655	
DENSITY OF FLUID AT WALL	.07215	
KINEMATIC VISCOSITY OF FLUID AT WALL	.0001747	
WALL/FREE STREAM DENSITY RATIO	.96971	
LOCATION REYNOLDS NUMBER (REX)	2005605.17	
INPUT VALUE OF VELOCITY DELTA	.41000	
INPUT VALUE OF TEMPERATURE DELTA	.81000	
CALCULATED DELTA		.34858
DELTA 99.5% INPUT	.00000	
DISPLACEMENT THICKNESS (DELTA STAR)	.03743	.03762
MOMENTUM THICKNESS (THETA)	.02546	.02590
ENERGY-DISSIPATION THICKNESS	.04657	.04697
ENTHALPY THICKNESS	.00265	.00266
SHAPE FACTOR 12 (DELTA STAR/THETA)	1.46895	1.45277
SHAPE FACTOR 32 (ENERGY/THETA)	1.82897	1.81379
MOMENTUM THICKNESS REYNOLDS NUMBER	1055.21	1073.06
DISPLACEMENT THICKNESS REYNOLDS NUMBER	1551.11	1558.91
SKIN FRICTION COEFFICIENT	.004759	
FRICTION VELOCITY	4.07584	
LAW OF THE WALL CONSTANT (K)	.41000	
LAW OF THE WALL CONSTANT (C)	5.00000	
WAKE STRENGTH		-.14608
CLAUSERS 'DELTA' INTEGRAL	-.57991	-.71145
CLAUSERS 'C' INTEGRAL	3.78877	3.68401
DISPLACEMENT THICKNESS - CONSTANT DENSITY	.03189	.03524
MOMENTUM THICKNESS - CONSTANT DENSITY	.02576	.02620
SHAPE FACTOR 12 - CONSTANT DENSITY	1.23807	1.34502

LOCATION -X- 48.40000

Z = -6 INCHES

K = 0.75 X 10⁻⁶

Table 75.

KLEW 907 TAPF 464EP- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 4. GRID NO. 3

RELCEC PROFILE DATA

Y	INCH	DELTA	FT/SEC	DEC.F	U/UE	THETA	U-UE	U(+)	T(+)	Y(+)
11	0.0000	0.0000	41.0000	0.0000	0.5000	0.2940	-10.0000	10.1470	7.2280	12.3000
10	0.0000	0.0000	41.0000	0.0000	0.5000	0.3320	-9.0000	11.1000	6.1600	14.8000
9	0.0000	0.0000	41.0000	0.0000	0.5000	0.3400	-8.0000	11.8800	5.0700	16.9000
8	0.0000	0.0000	41.0000	0.0000	0.5000	0.3570	-7.0000	12.2300	4.0000	18.5000
7	0.0000	0.0000	41.0000	0.0000	0.5000	0.3700	-6.0000	12.6500	3.0000	20.0000
6	0.0000	0.0000	41.0000	0.0000	0.5000	0.3980	-5.0000	13.1000	2.0000	21.5000
5	0.0000	0.0000	41.0000	0.0000	0.5000	0.4160	-4.0000	13.4690	1.0000	23.0000
4	0.0000	0.0000	41.0000	0.0000	0.5000	0.4280	-3.0000	13.6540	0.0000	24.5000
3	0.0000	0.0000	41.0000	0.0000	0.5000	0.4440	-2.0000	13.9000	0.0000	26.0000
2	0.0000	0.0000	41.0000	0.0000	0.5000	0.4590	-1.0000	14.2620	0.0000	27.5000
1	0.0000	0.0000	41.0000	0.0000	0.5000	0.4800	0.0000	14.4670	0.0000	29.0000
0	0.0000	0.0000	41.0000	0.0000	0.5000	0.4700	0.0000	14.5790	0.0000	30.5000
-1	0.0000	0.0000	41.0000	0.0000	0.5000	0.4790	0.0000	14.6930	0.0000	32.0000
-2	0.0000	0.0000	41.0000	0.0000	0.5000	0.4960	0.0000	14.8390	0.0000	33.5000
-3	0.0000	0.0000	41.0000	0.0000	0.5000	0.5100	0.0000	14.9960	0.0000	35.0000
-4	0.0000	0.0000	41.0000	0.0000	0.5000	0.5130	0.0000	15.1310	0.0000	36.5000
-5	0.0000	0.0000	41.0000	0.0000	0.5000	0.5110	0.0000	15.2250	0.0000	38.0000
-6	0.0000	0.0000	41.0000	0.0000	0.5000	0.7740	0.0000	15.6170	0.0000	39.5000
-7	0.0000	0.0000	41.0000	0.0000	0.5000	0.7020	0.0000	15.9950	0.0000	41.0000
-8	0.0000	0.0000	41.0000	0.0000	0.5000	0.8070	0.0000	16.2950	0.0000	42.5000
-9	0.0000	0.0000	41.0000	0.0000	0.5000	0.8300	0.0000	16.5490	0.0000	44.0000
-10	0.0000	0.0000	41.0000	0.0000	0.5000	0.8450	0.0000	16.7660	0.0000	45.5000
-11	0.0000	0.0000	41.0000	0.0000	0.5000	0.8520	0.0000	16.9560	0.0000	47.0000
-12	0.0000	0.0000	41.0000	0.0000	0.5000	0.8640	0.0000	17.1940	0.0000	48.5000
-13	0.0000	0.0000	41.0000	0.0000	0.5000	0.8790	0.0000	17.4410	0.0000	50.0000
-14	0.0000	0.0000	41.0000	0.0000	0.5000	0.8860	0.0000	17.5810	0.0000	51.5000
-15	0.0000	0.0000	41.0000	0.0000	0.5000	0.8960	0.0000	17.7460	0.0000	53.0000
-16	0.0000	0.0000	41.0000	0.0000	0.5000	0.9000	0.0000	17.9170	0.0000	54.5000
-17	0.0000	0.0000	41.0000	0.0000	0.5000	0.9070	0.0000	18.0750	0.0000	56.0000
-18	0.0000	0.0000	41.0000	0.0000	0.5000	0.9120	0.0000	18.2120	0.0000	57.5000
-19	0.0000	0.0000	41.0000	0.0000	0.5000	0.9140	0.0000	18.3360	0.0000	59.0000
-20	0.0000	0.0000	41.0000	0.0000	0.5000	0.9160	0.0000	18.4400	0.0000	60.5000
-21	0.0000	0.0000	41.0000	0.0000	0.5000	0.9240	0.0000	18.7220	0.0000	62.0000
-22	0.0000	0.0000	41.0000	0.0000	0.5000	0.9370	0.0000	19.0750	0.0000	63.5000
-23	0.0000	0.0000	41.0000	0.0000	0.5000	0.9510	0.0000	19.3670	0.0000	65.0000
-24	0.0000	0.0000	41.0000	0.0000	0.5000	0.9590	0.0000	19.6070	0.0000	66.5000
-25	0.0000	0.0000	41.0000	0.0000	0.5000	0.9660	0.0000	19.7950	0.0000	68.0000
-26	0.0000	0.0000	41.0000	0.0000	0.5000	0.9730	0.0000	19.9710	0.0000	69.5000
-27	0.0000	0.0000	41.0000	0.0000	0.5000	0.9770	0.0000	20.1360	0.0000	71.0000
-28	0.0000	0.0000	41.0000	0.0000	0.5000	0.9840	0.0000	20.2900	0.0000	72.5000
-29	0.0000	0.0000	41.0000	0.0000	0.5000	0.9890	0.0000	20.4330	0.0000	74.0000
-30	0.0000	0.0000	41.0000	0.0000	0.5000	0.9930	0.0000	20.5690	0.0000	75.5000
-31	0.0000	0.0000	41.0000	0.0000	0.5000	0.9990	0.0000	20.6940	0.0000	77.0000
-32	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	20.8180	0.0000	78.5000
-33	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	20.9420	0.0000	80.0000
-34	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.0660	0.0000	81.5000
-35	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.1900	0.0000	83.0000
-36	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.3140	0.0000	84.5000
-37	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.4380	0.0000	86.0000
-38	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.5620	0.0000	87.5000
-39	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.6860	0.0000	89.0000
-40	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.8100	0.0000	90.5000
-41	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	21.9340	0.0000	92.0000
-42	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.0580	0.0000	93.5000
-43	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.1820	0.0000	95.0000
-44	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.3060	0.0000	96.5000
-45	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.4300	0.0000	98.0000
-46	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.5540	0.0000	99.5000
-47	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.6780	0.0000	101.0000
-48	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.8020	0.0000	102.5000
-49	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	22.9260	0.0000	104.0000
-50	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.0500	0.0000	105.5000
-51	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.1740	0.0000	107.0000
-52	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.2980	0.0000	108.5000
-53	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.4220	0.0000	110.0000
-54	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.5460	0.0000	111.5000
-55	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.6700	0.0000	113.0000
-56	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.7940	0.0000	114.5000
-57	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	23.9180	0.0000	116.0000
-58	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.0420	0.0000	117.5000
-59	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.1660	0.0000	119.0000
-60	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.2900	0.0000	120.5000
-61	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.4140	0.0000	122.0000
-62	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.5380	0.0000	123.5000
-63	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.6620	0.0000	125.0000
-64	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.7860	0.0000	126.5000
-65	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	24.9100	0.0000	128.0000
-66	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.0340	0.0000	129.5000
-67	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.1580	0.0000	131.0000
-68	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.2820	0.0000	132.5000
-69	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.4060	0.0000	134.0000
-70	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.5300	0.0000	135.5000
-71	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.6540	0.0000	137.0000
-72	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.7780	0.0000	138.5000
-73	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	25.9020	0.0000	140.0000
-74	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.0260	0.0000	141.5000
-75	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.1500	0.0000	143.0000
-76	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.2740	0.0000	144.5000
-77	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.3980	0.0000	146.0000
-78	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.5220	0.0000	147.5000
-79	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.6460	0.0000	149.0000
-80	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.7700	0.0000	150.5000
-81	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	26.8940	0.0000	152.0000
-82	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	27.0180	0.0000	153.5000
-83	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	27.1420	0.0000	155.0000
-84	0.0000	0.0000	41.0000	0.0000	0.5000	1.0000	0.0000	27.2660	0.	

KLENNR07 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 1. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	110.334	110.334
FREE STREAM TEMPERATURE =	75.431	
WALL TEMPERATURE =	89.970	
WALL HEAT FLUX =	.04950	
FREE STREAM DENSITY =	.07509	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.07310	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001721	
WALL/FREE STREAM DENSITY RATIO =	.97355	
LOCATION REYNOLDS NUMBER (REX) =	3159984.16	
INPUT VALUE OF VELOCITY DELTA =	.41000	
INPUT VALUE OF TEMPERATURE DELTA =	.81000	
CALCULATED DELTA =		.29211
DELTA 99.5% INPUT =	.00700	
DISPLACEMENT THICKNESS (DELSTAR) =	.02957	.02964
MOMENTUM THICKNESS (THETA) =	.02003	.02039
ENERGY-DISSIPATION THICKNESS =	.03681	.03717
ENTHALPY THICKNESS =	.00247	.00247
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.47578	1.45349
SHAPE FACTOR 32 (ENERGY/THETA) =	1.83731	1.82299
MOMENTUM THICKNESS REYNOLDS NUMBER =	1122.49	1142.43
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1656.55	1660.50
SKIN FRICTION COEFFICIENT =	.004735	
FRICTION VELOCITY =	5.44116	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.19110
CLAUSERS 'DELTA' INTEGRAL =	-.45573	-.55506
CLAUSERS 'C' INTEGRAL =	2.89758	2.76807
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02489	.02737
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02027	.02064
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.22762	1.32624

LOCATION -X- 56.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 76.

REDUCED PROFILE DATA

Table 76.

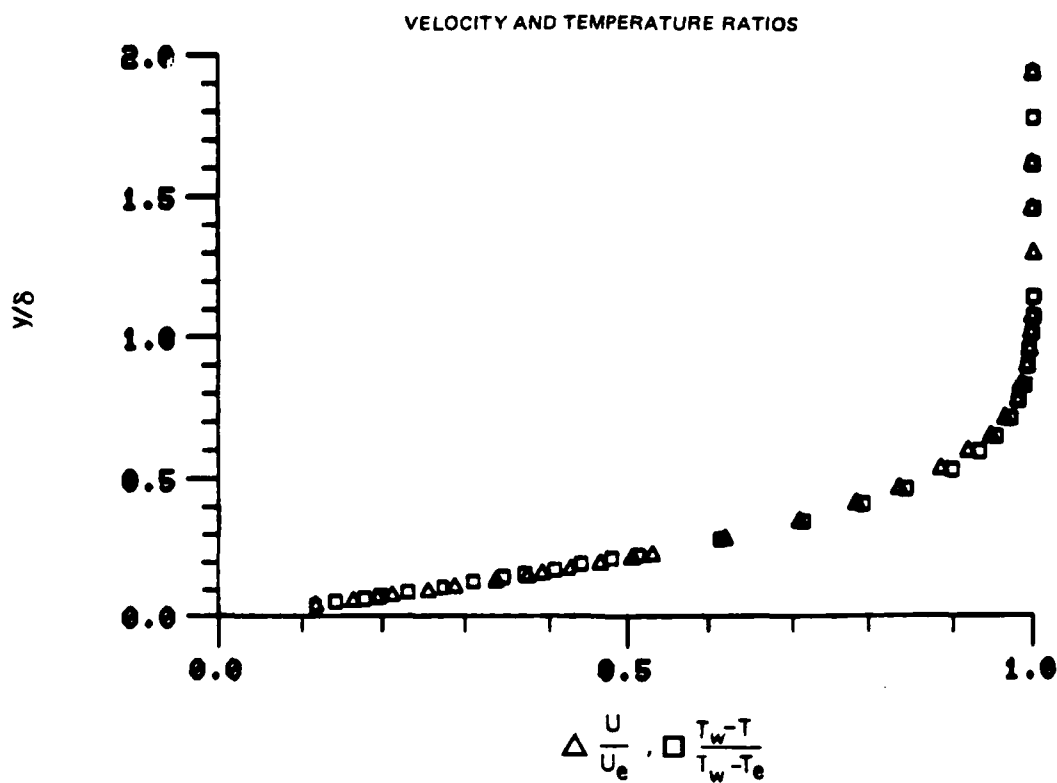


Figure 1 . Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 23

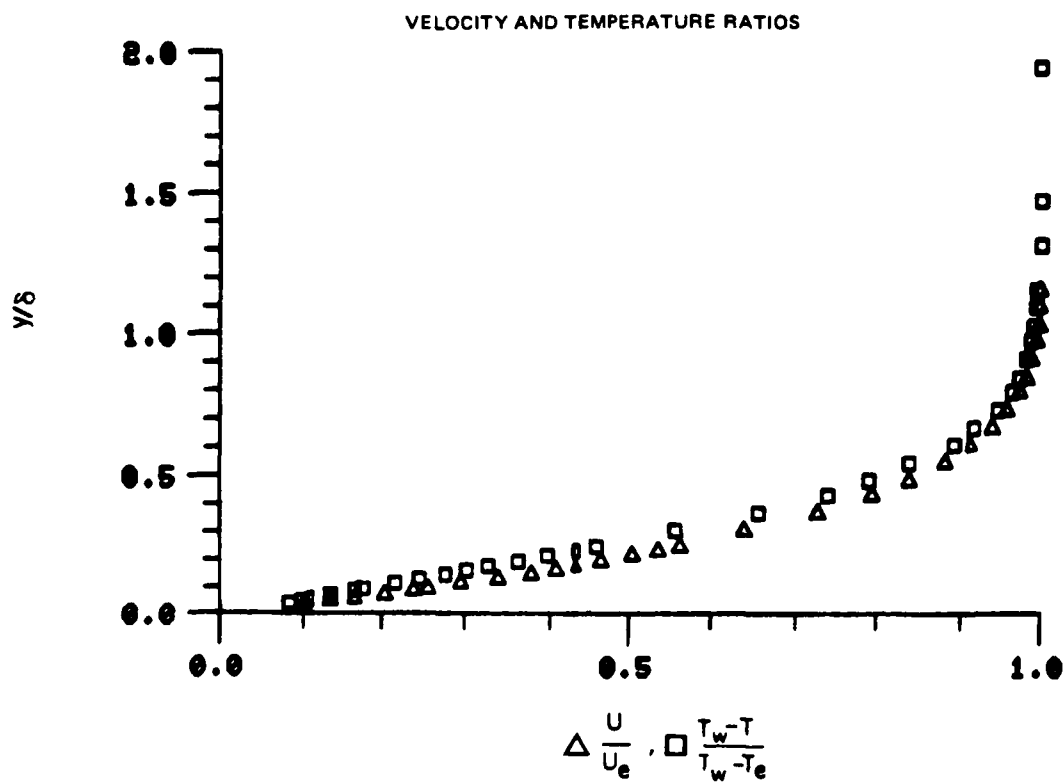


Figure 2 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.21

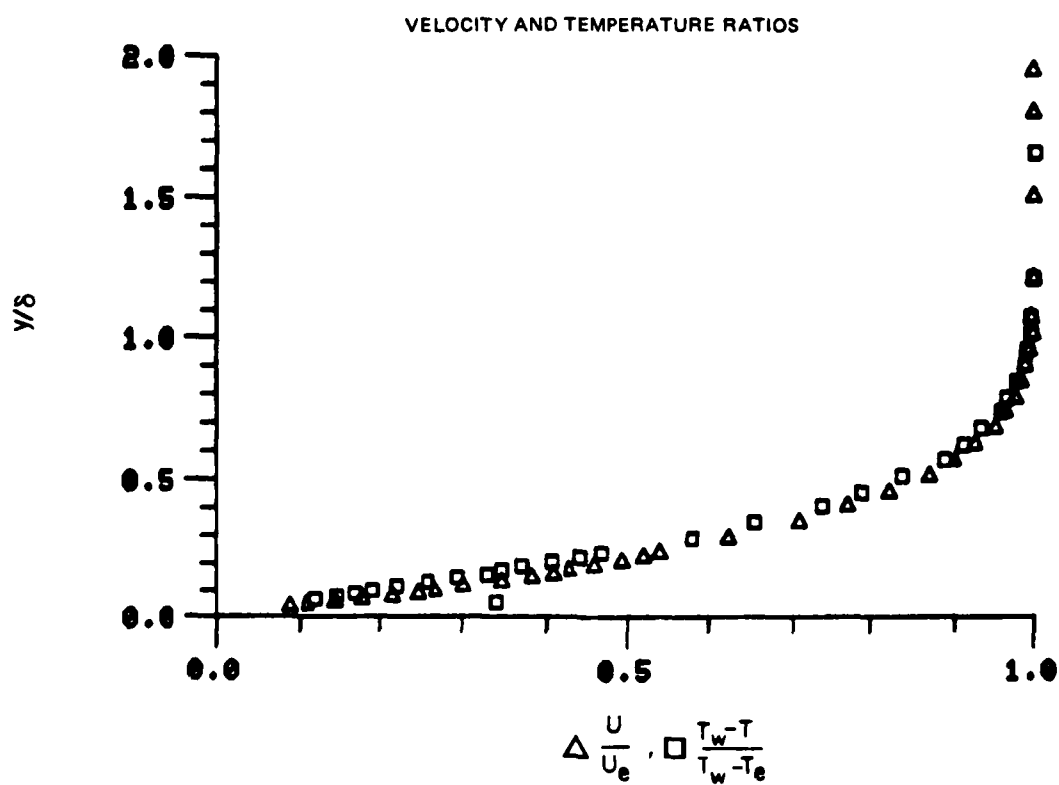


Figure 3 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.22

VELOCITY AND TEMPERATURE RATIOS

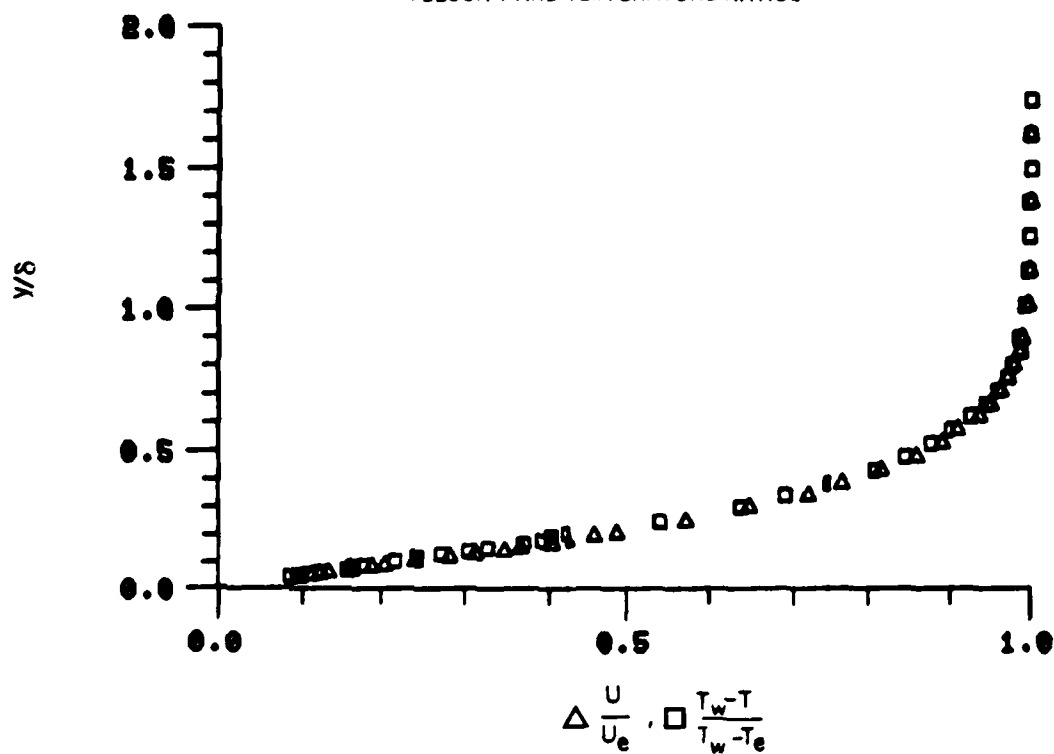


Figure 4 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.20

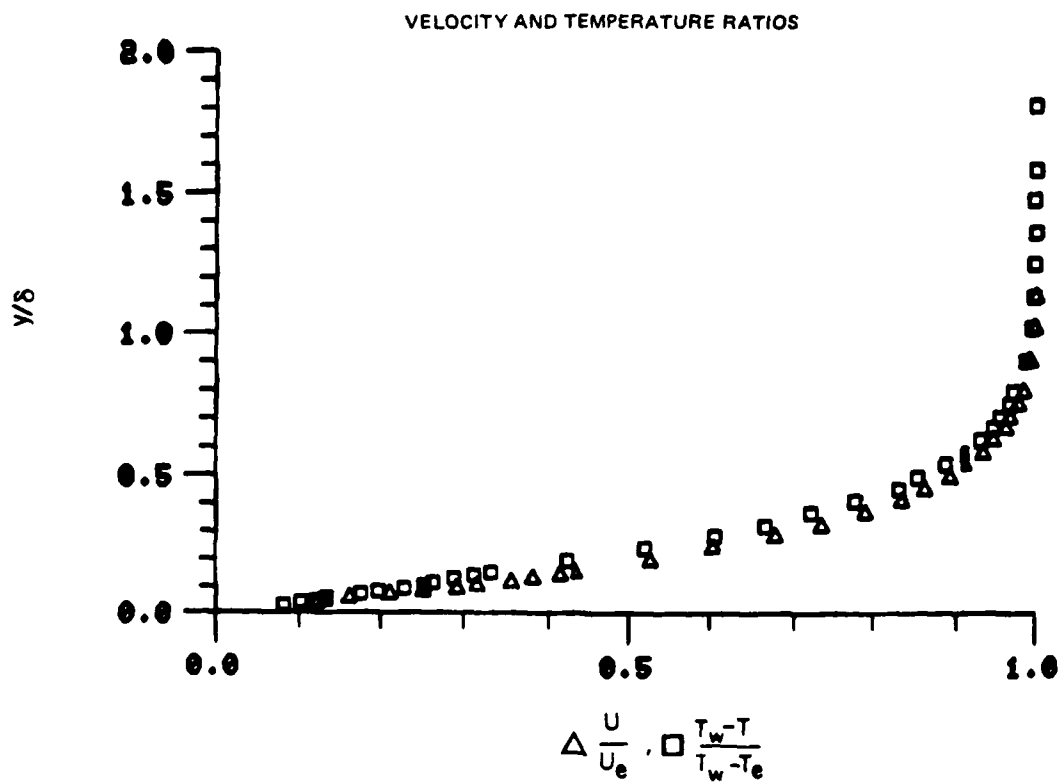


Figure 5 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.17

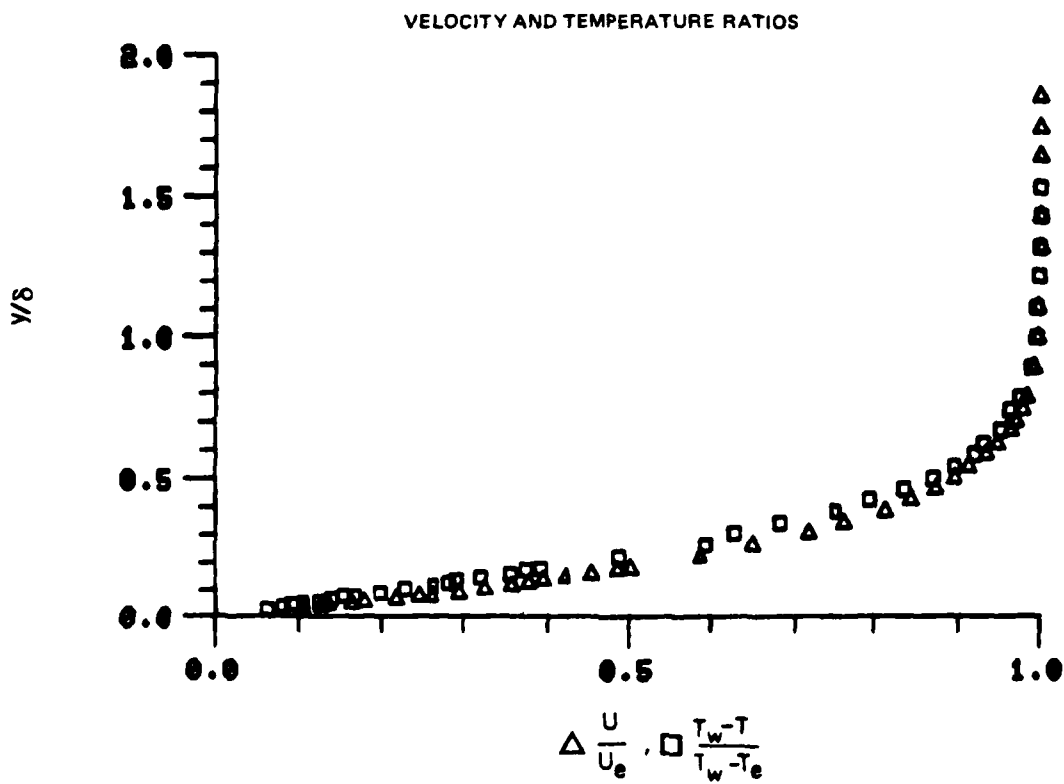


Figure 6 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.18

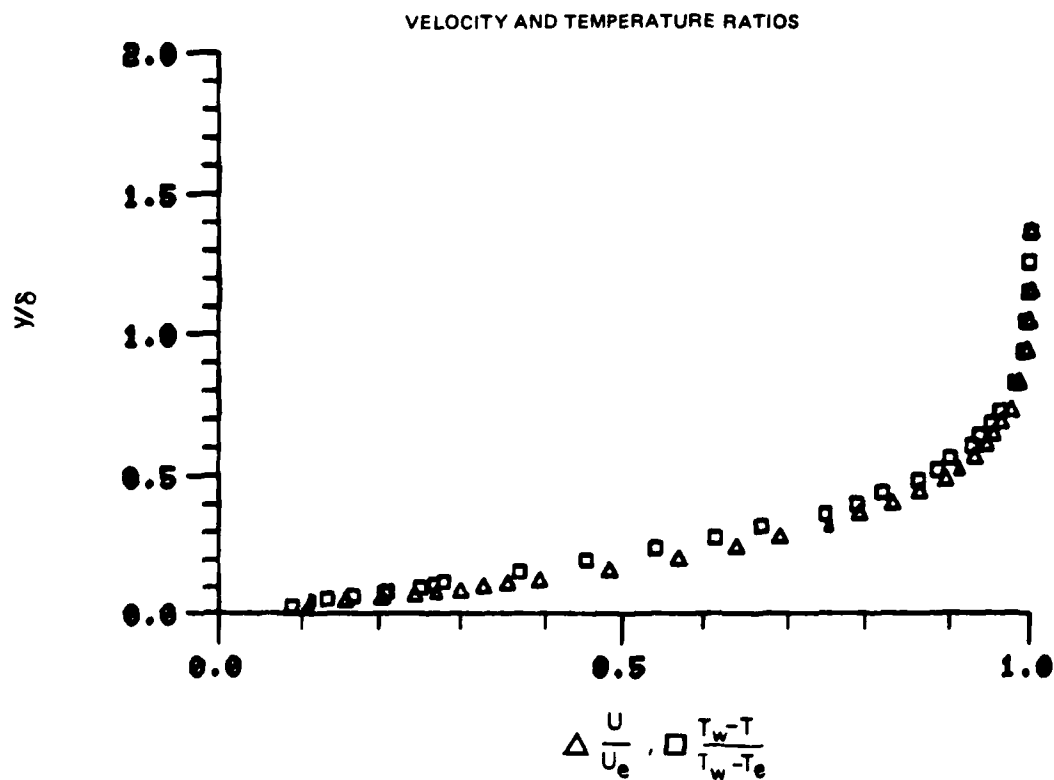


Figure 7 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.19

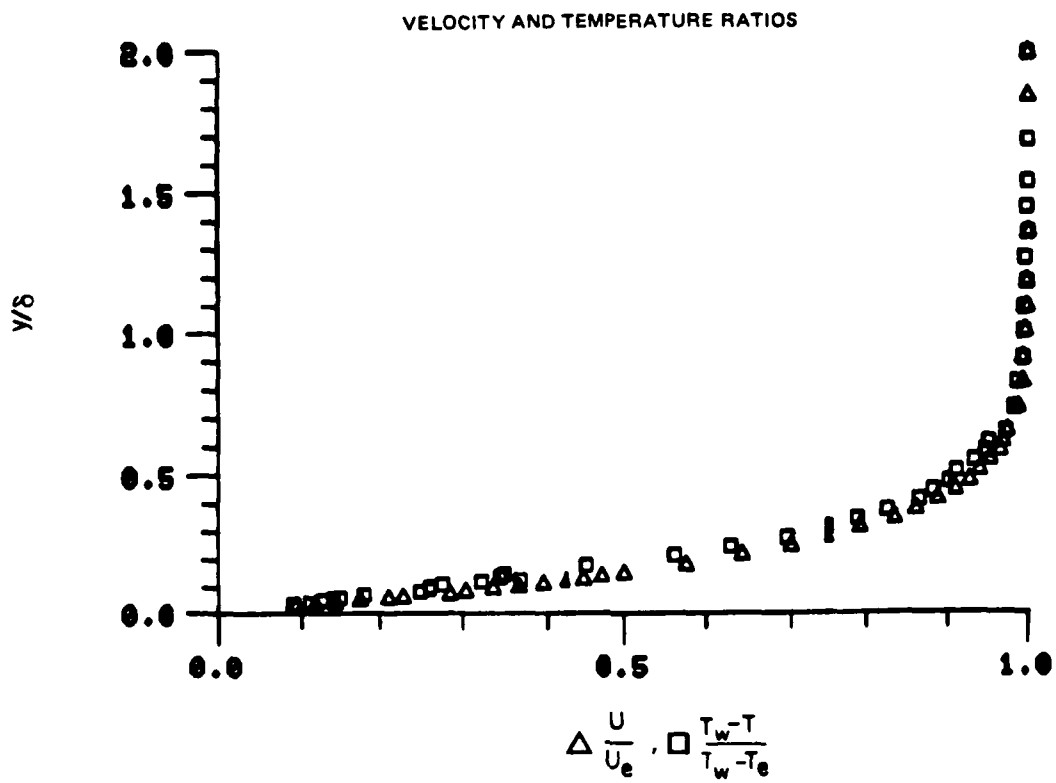


Figure 8 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.16

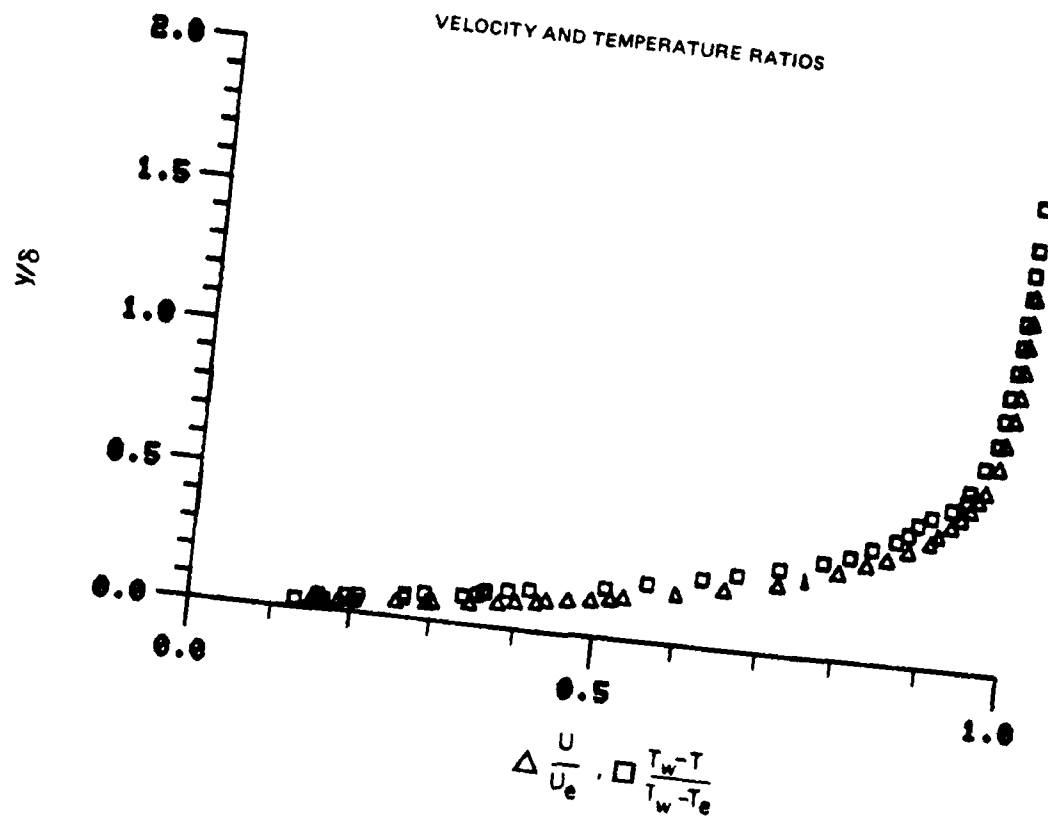


Figure 9 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.13

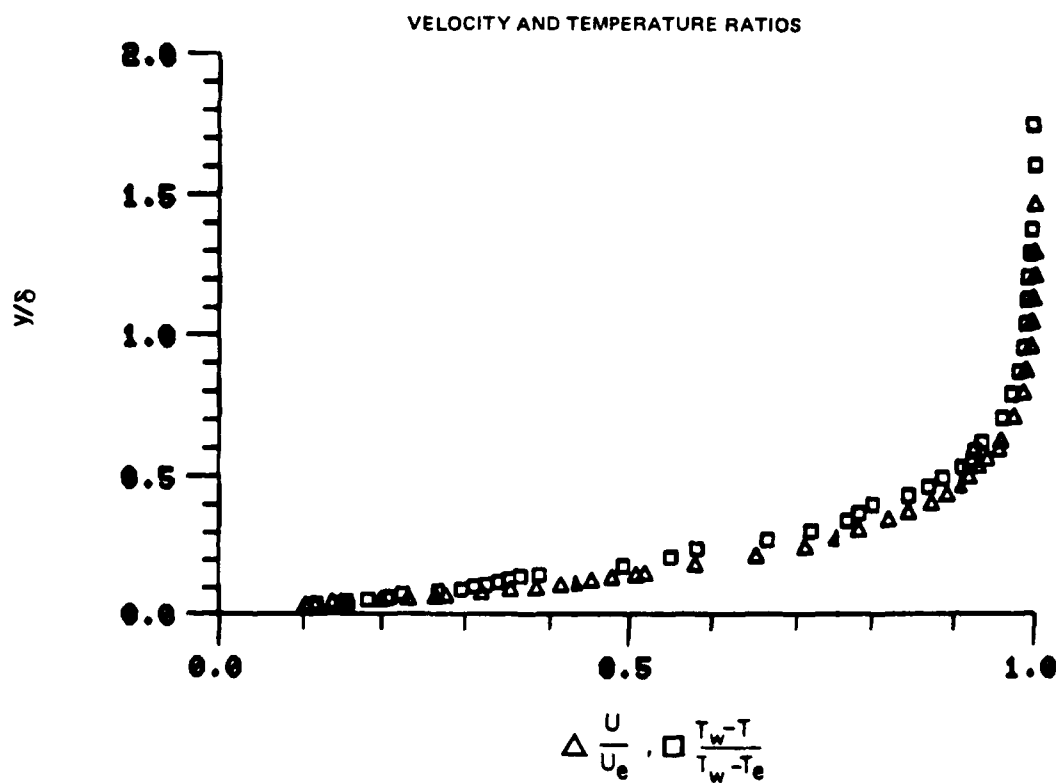


Figure 10. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.15

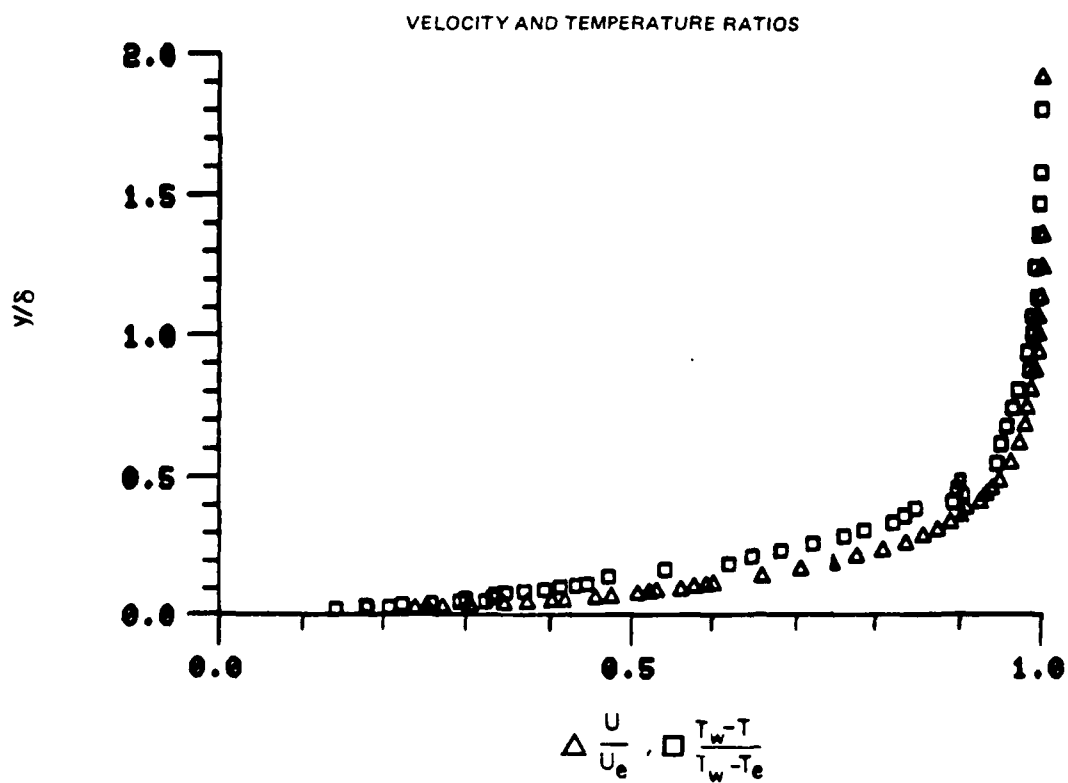


Figure 11. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 12

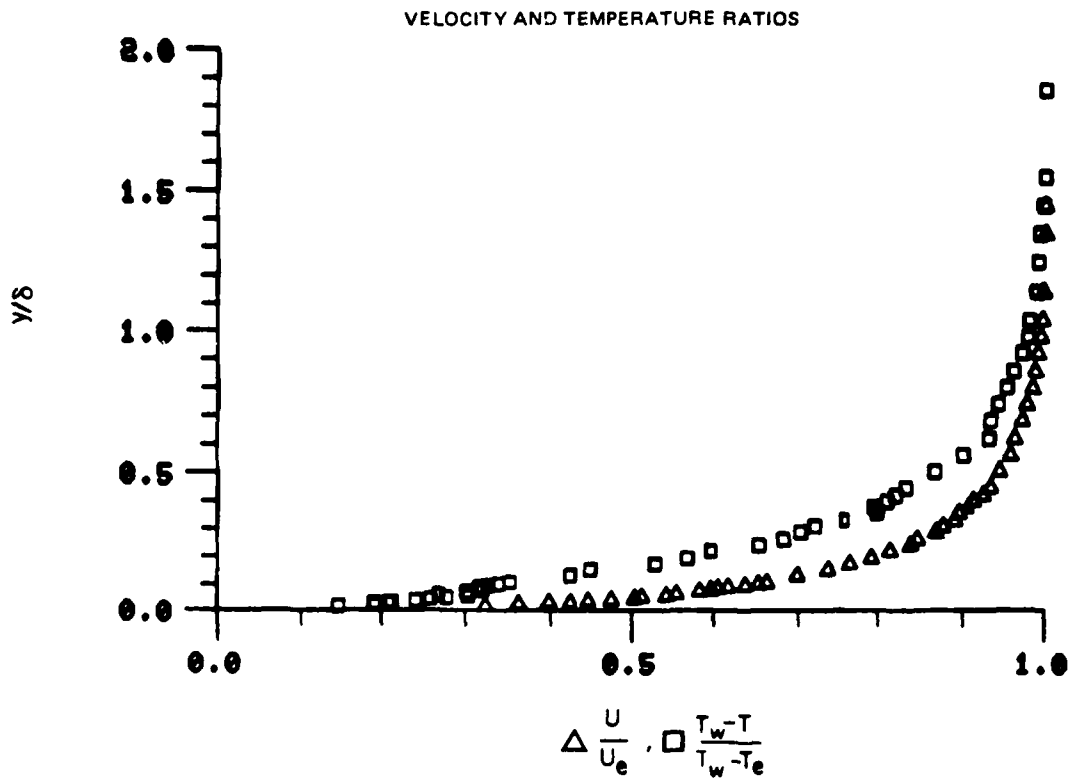


Figure 12. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.9

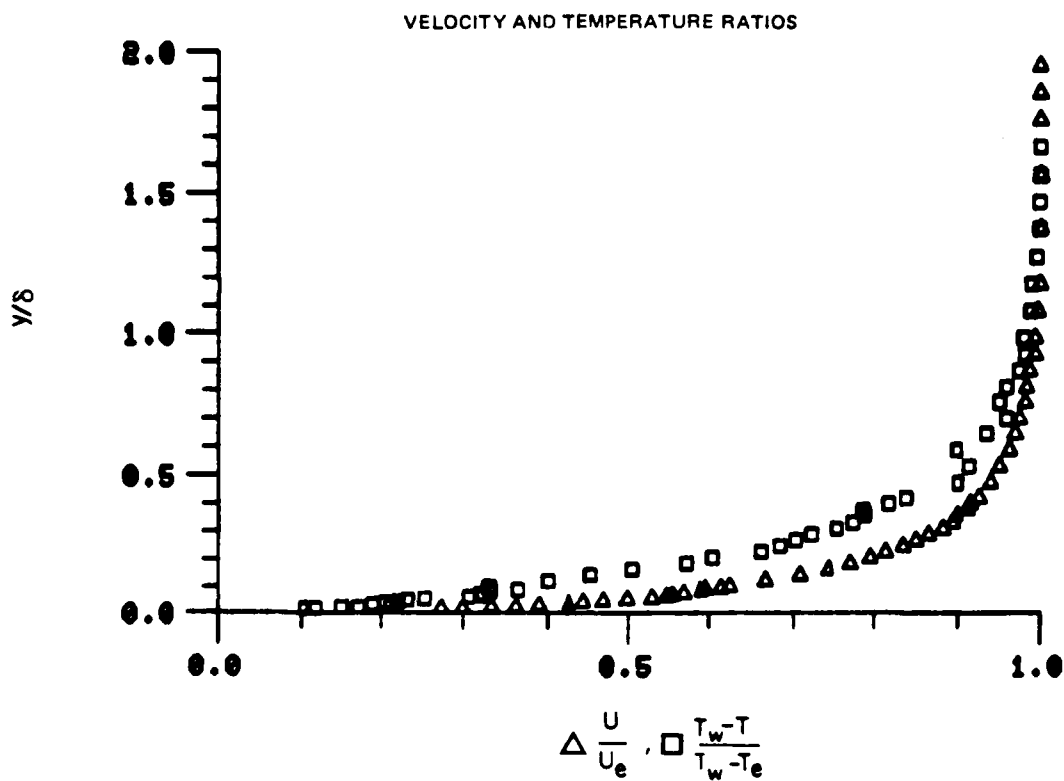


Figure 13. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.10

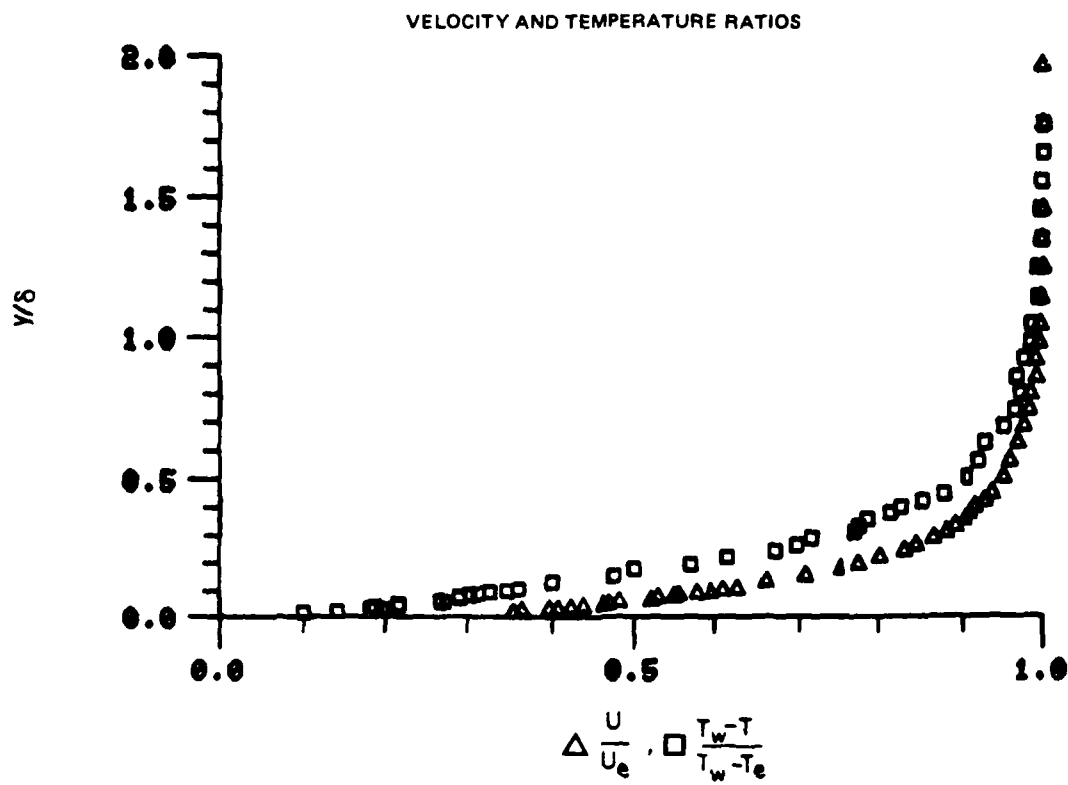


Figure 14. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.11

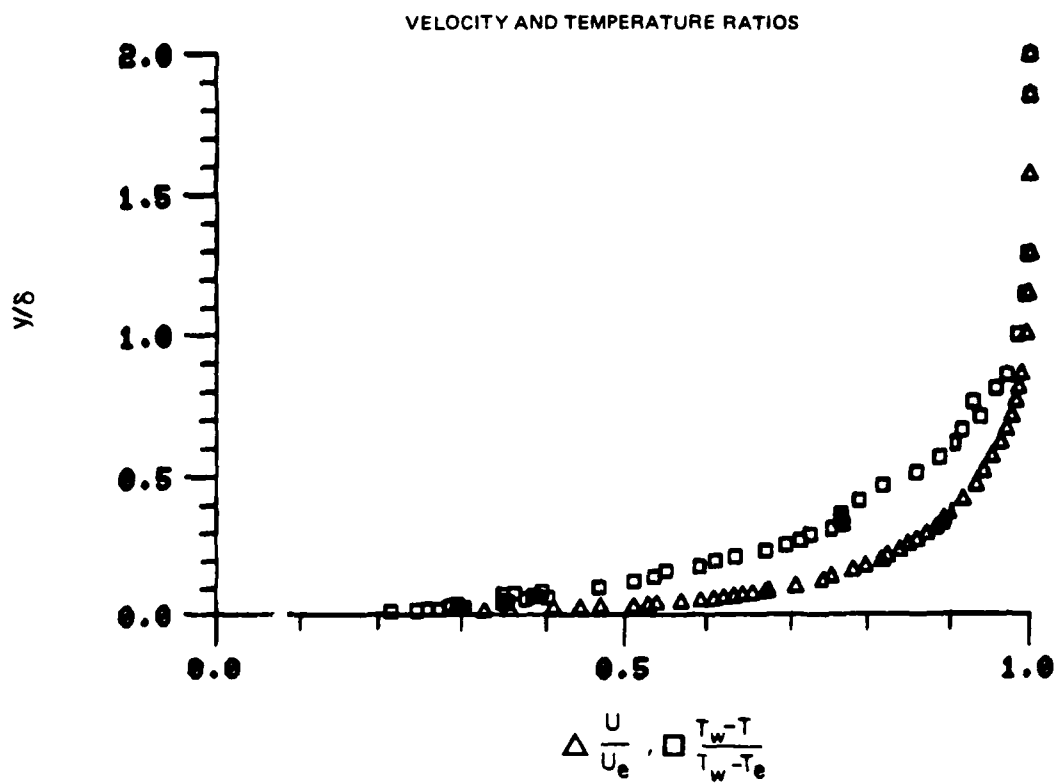


Figure 15. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 8

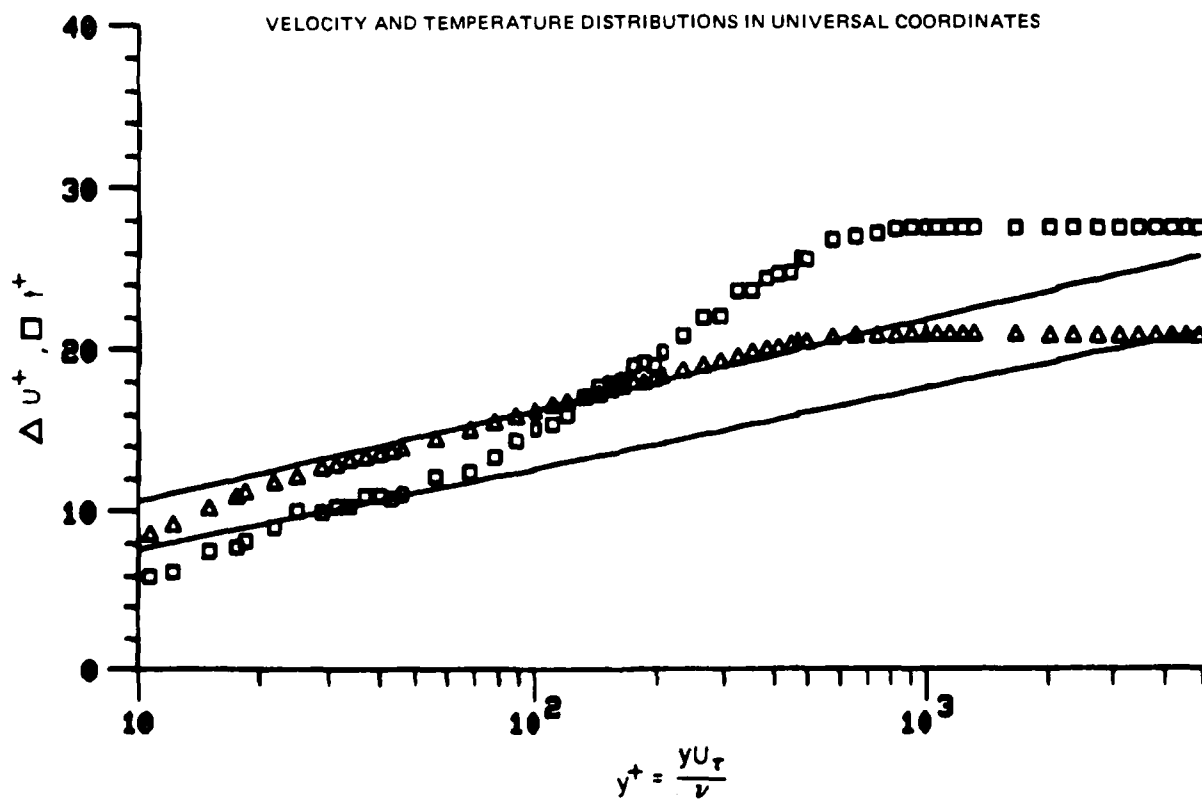
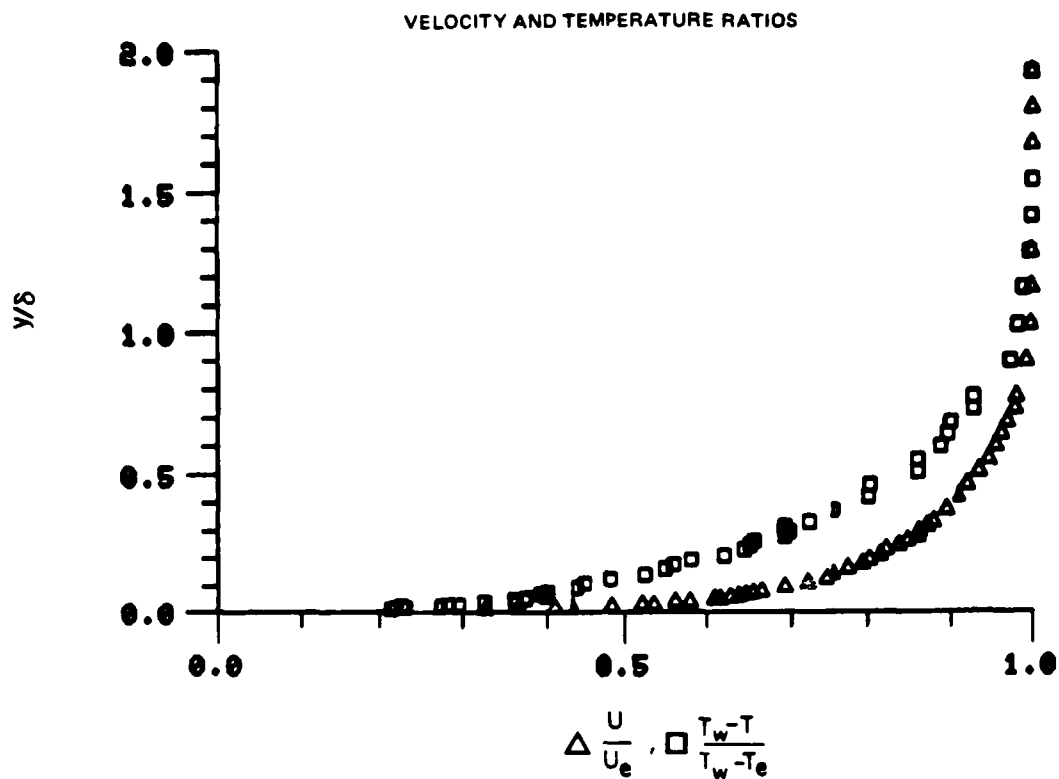


Figure 16. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 5

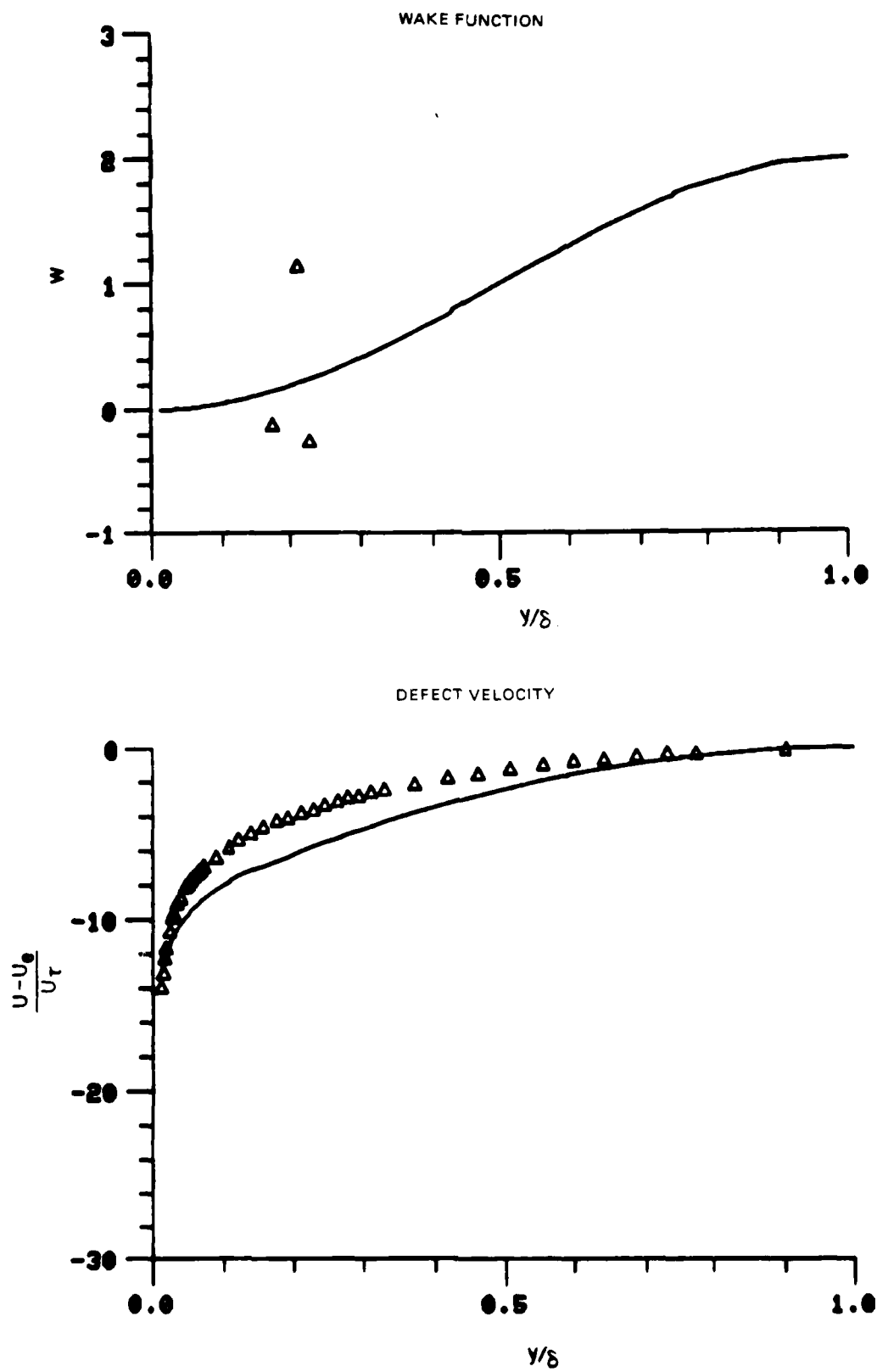


Figure 16. Boundary Layer Velocity Profiles
Run No.2 Point No.5

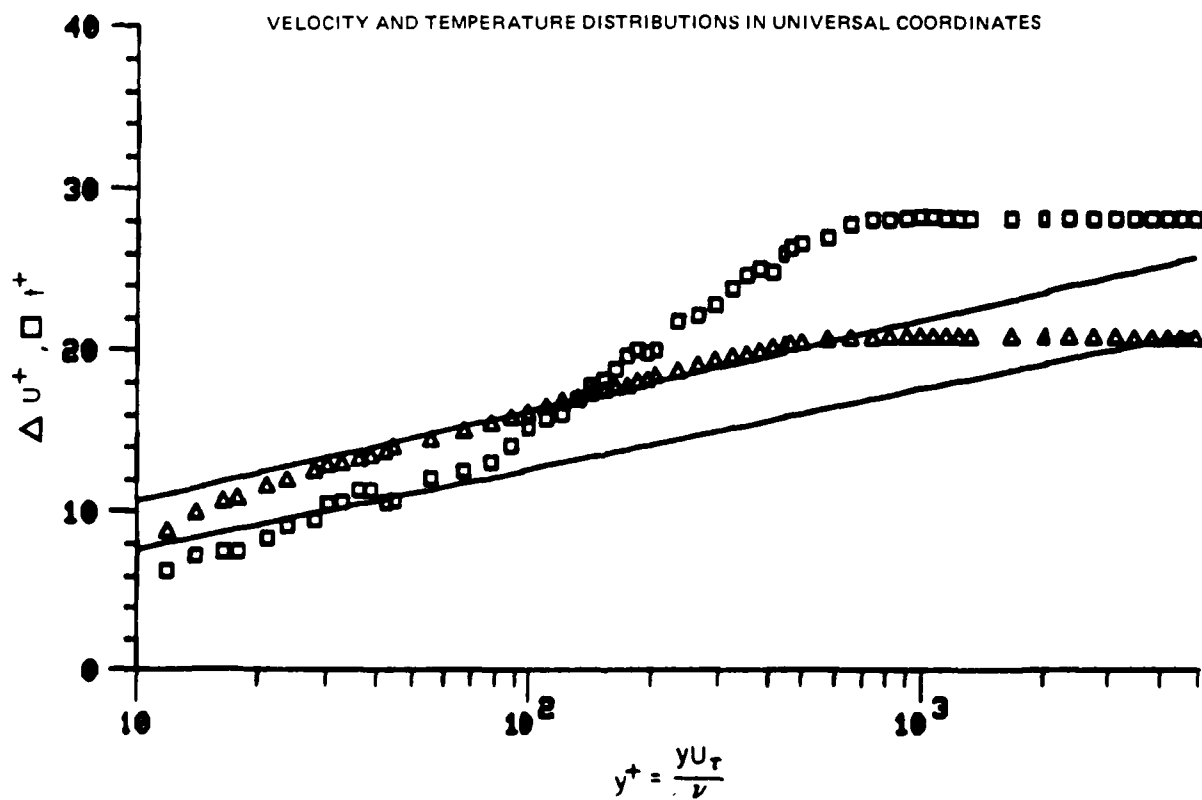
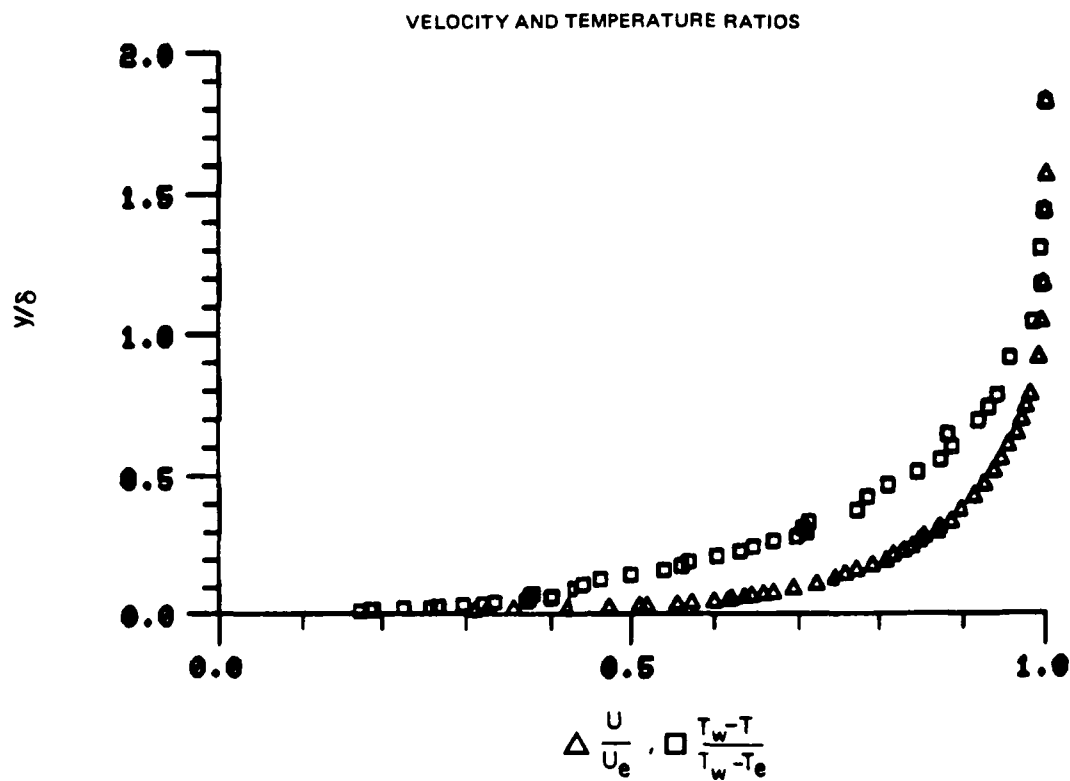


Figure 17. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.6

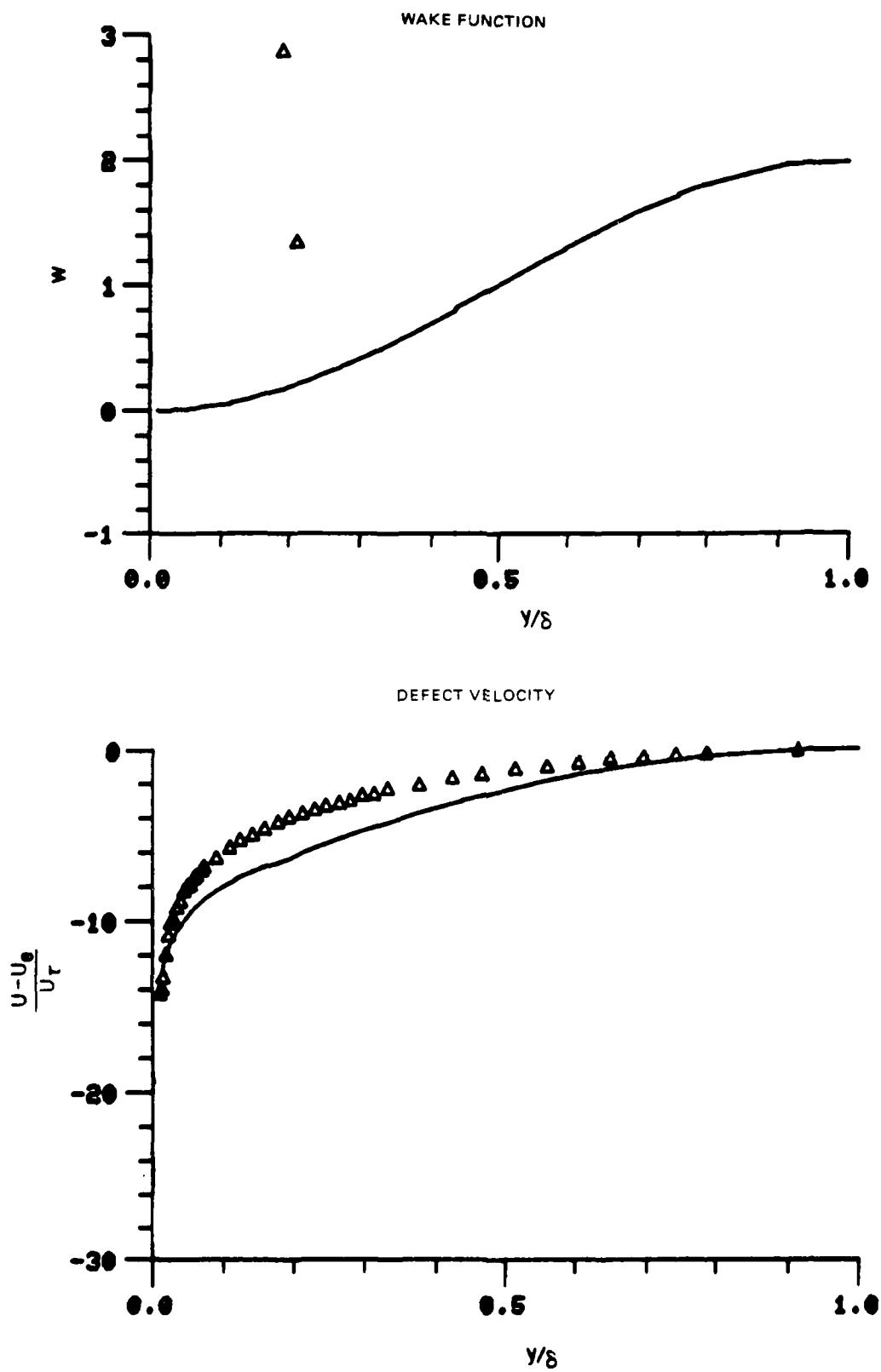


Figure 17. Boundary Layer Velocity Profiles
Run No. 2 Point No. 6

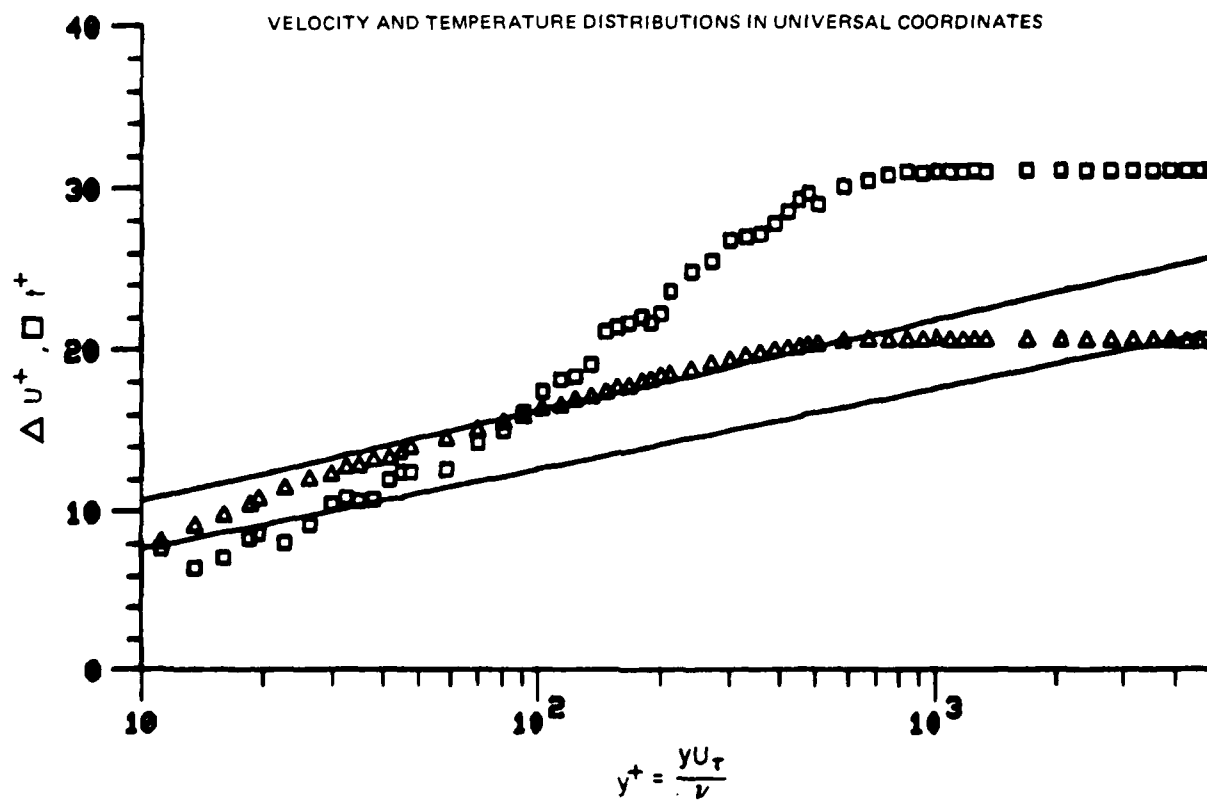
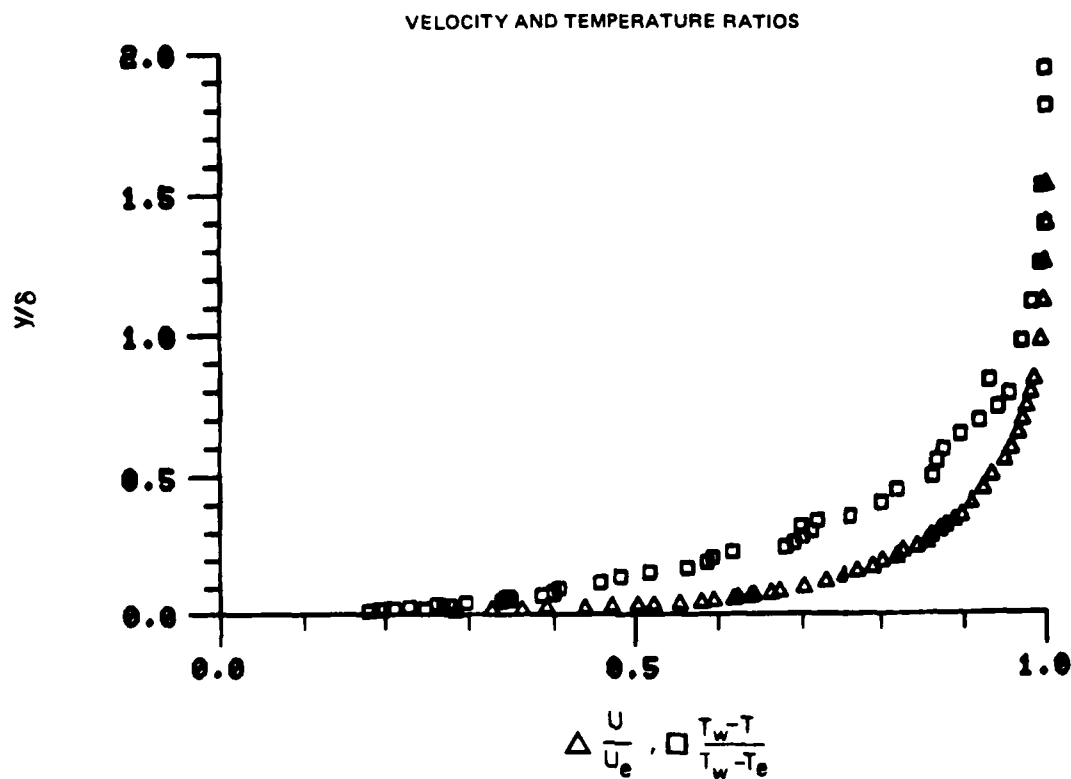


Figure 18. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.7

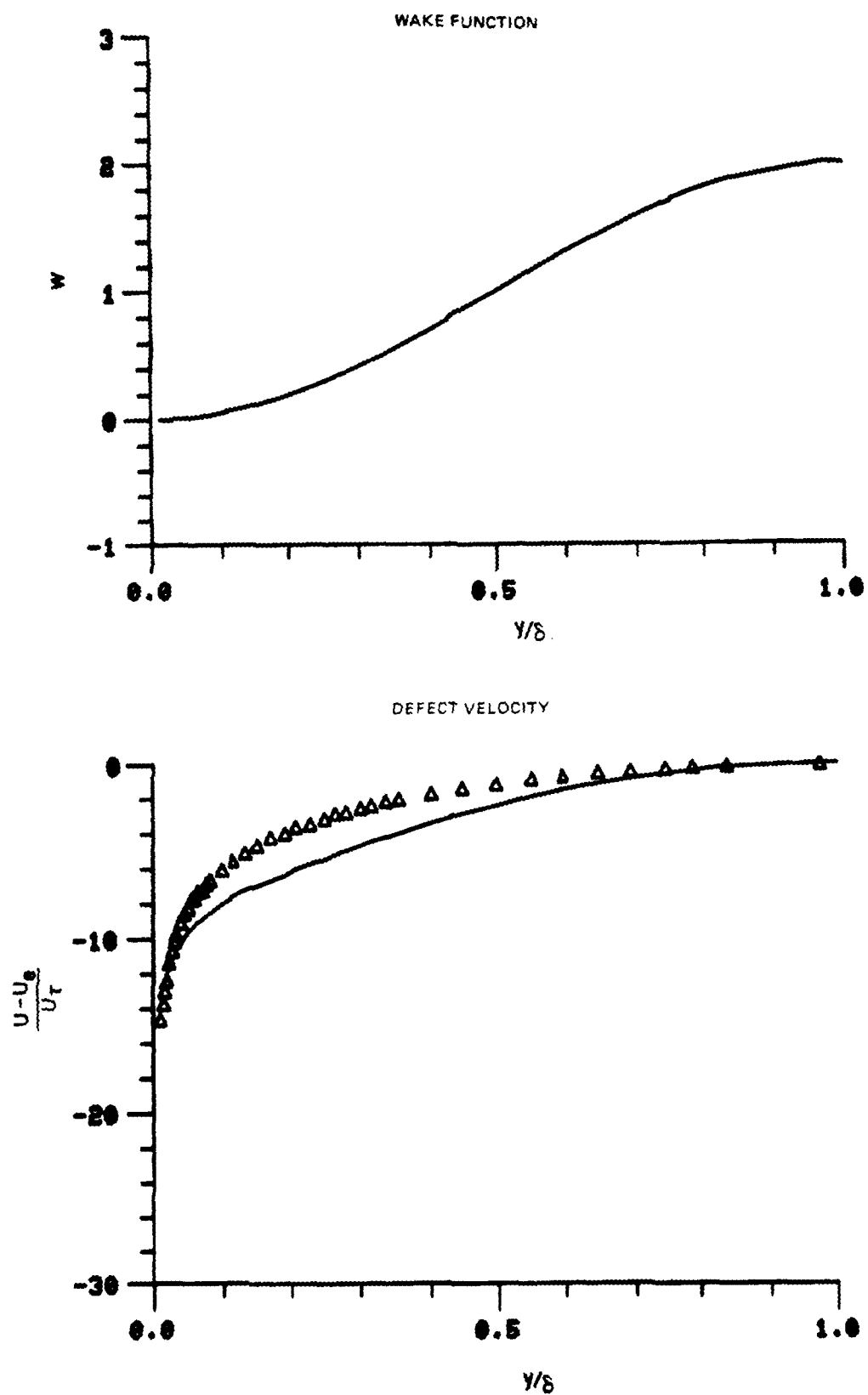


Figure 18. Boundary Layer Velocity Profiles
Run No. 2 Point No. 7

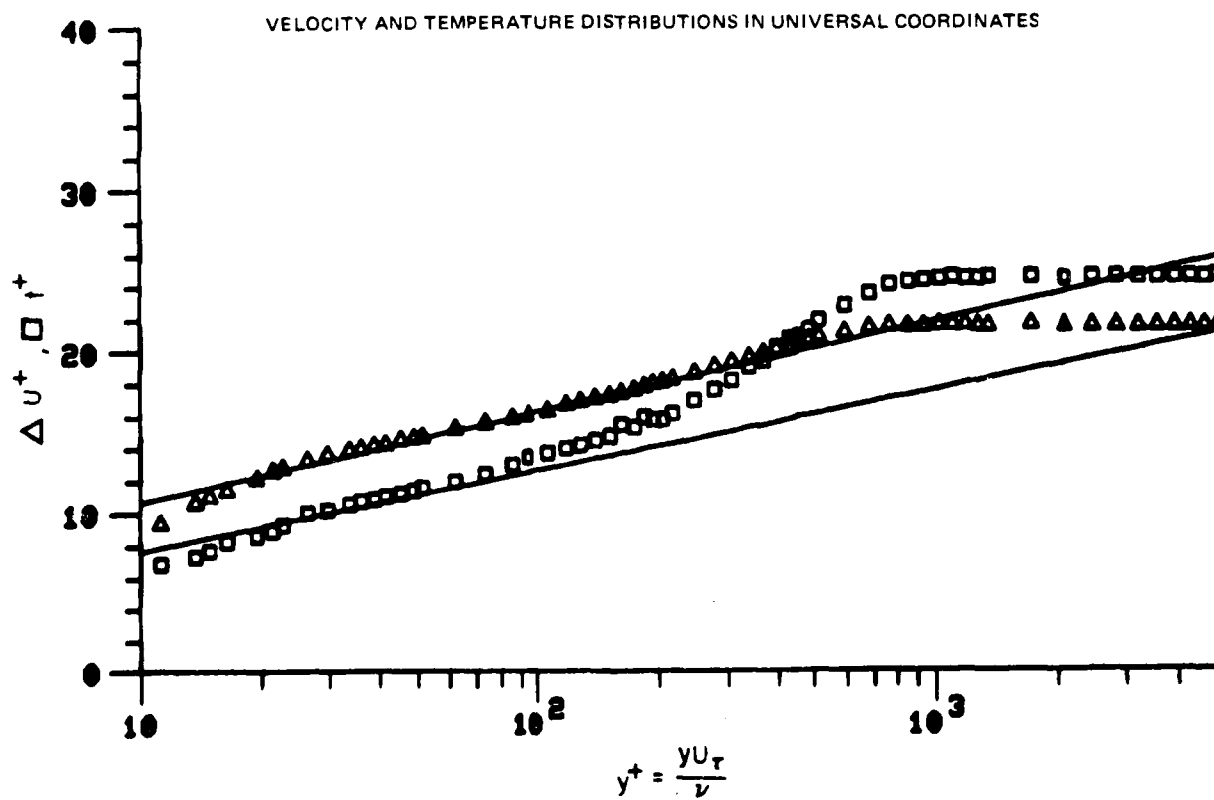
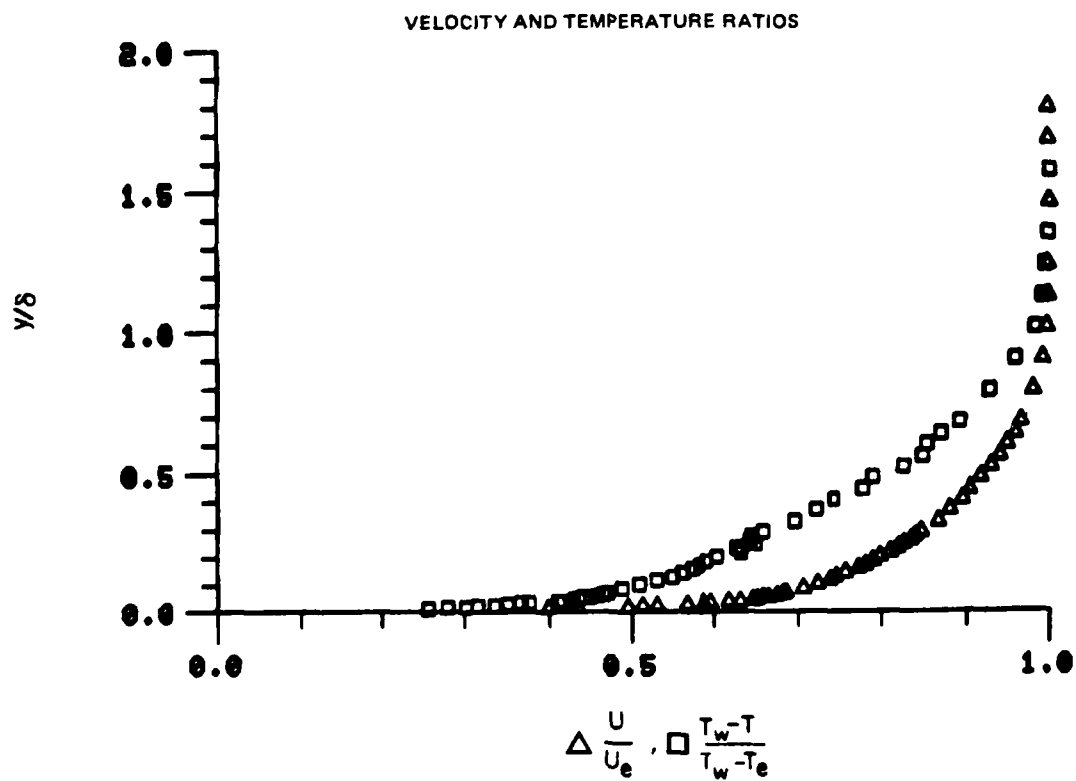


Figure 19. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.2

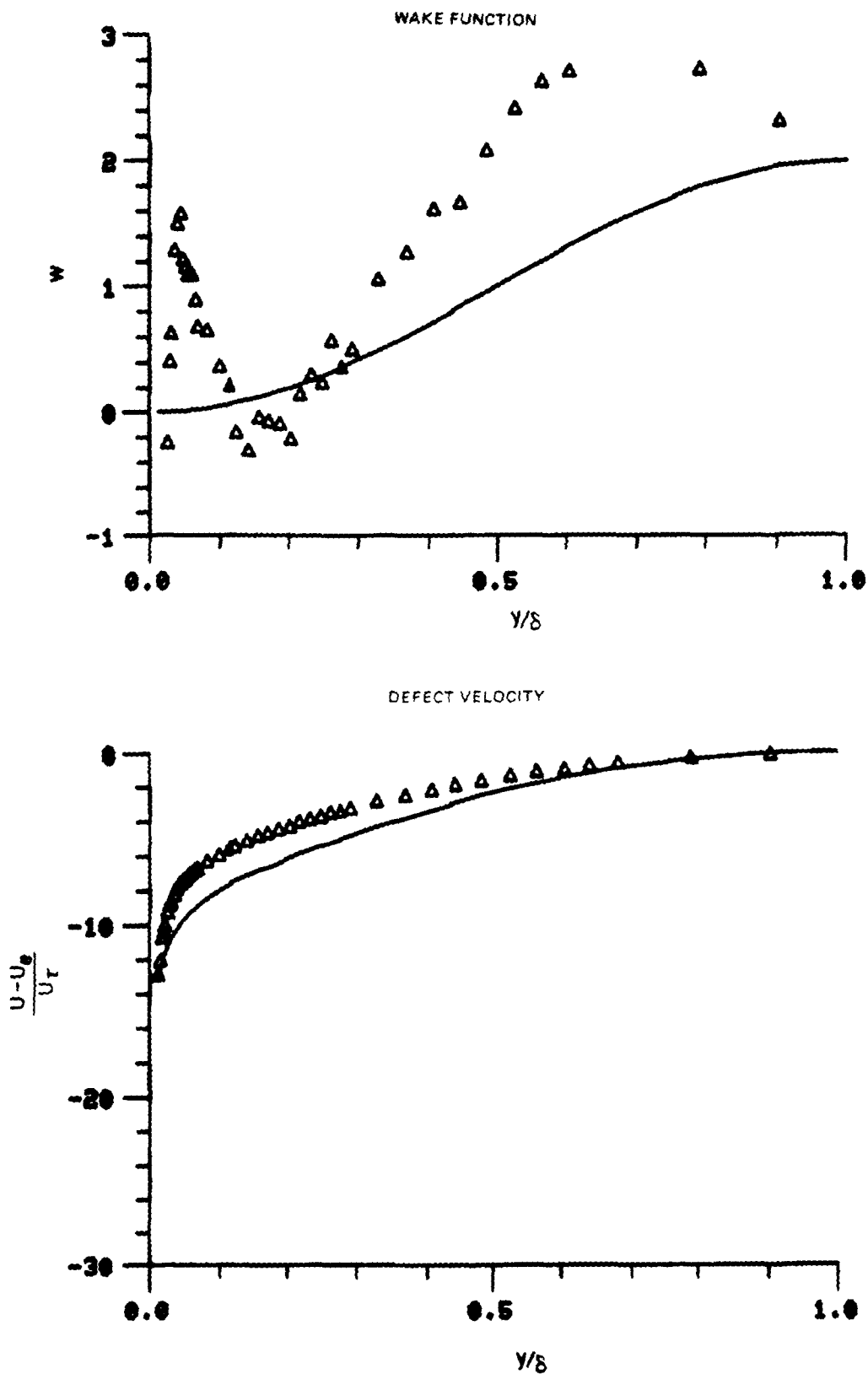
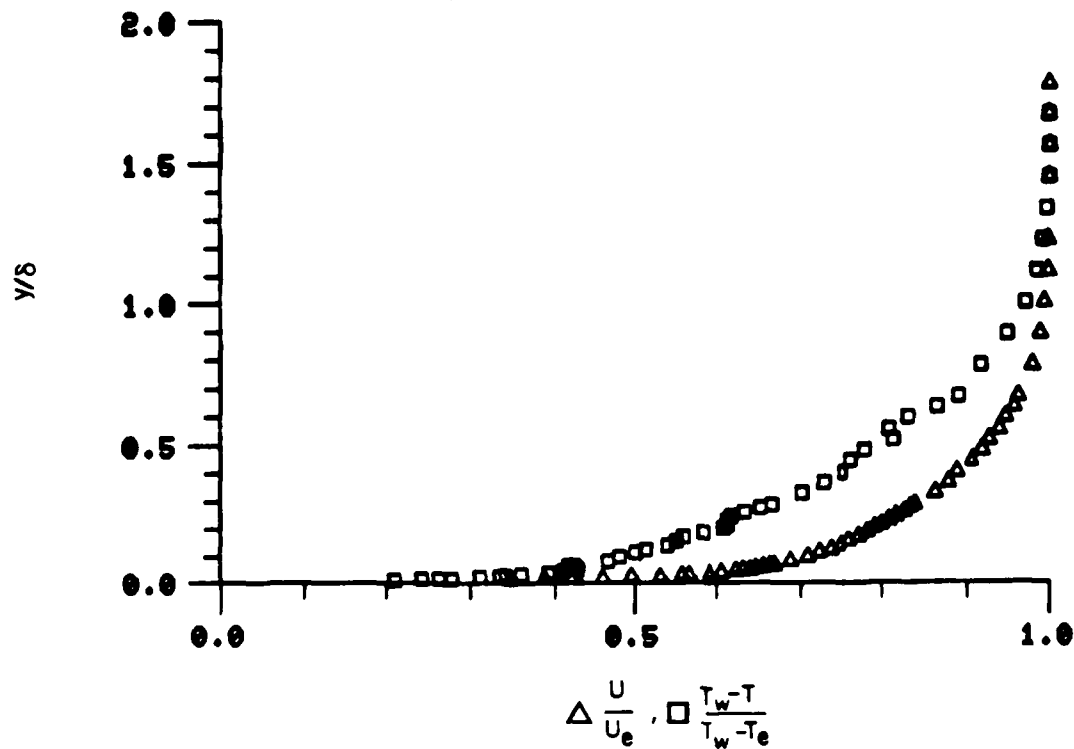


Figure 19. Boundary Layer Velocity Profiles
Run No.2 Point No.2

VELOCITY AND TEMPERATURE RATIOS



VELOCITY AND TEMPERATURE DISTRIBUTIONS IN UNIVERSAL COORDINATES

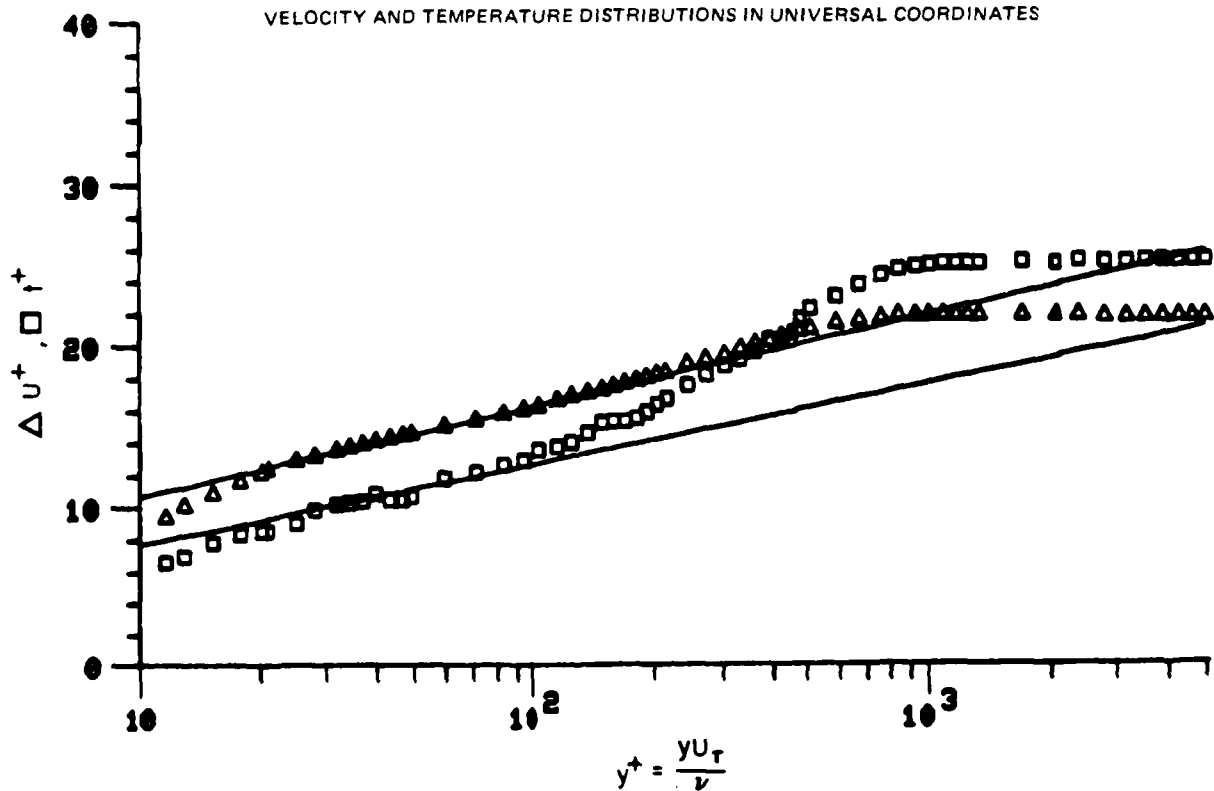


Figure 20. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.3

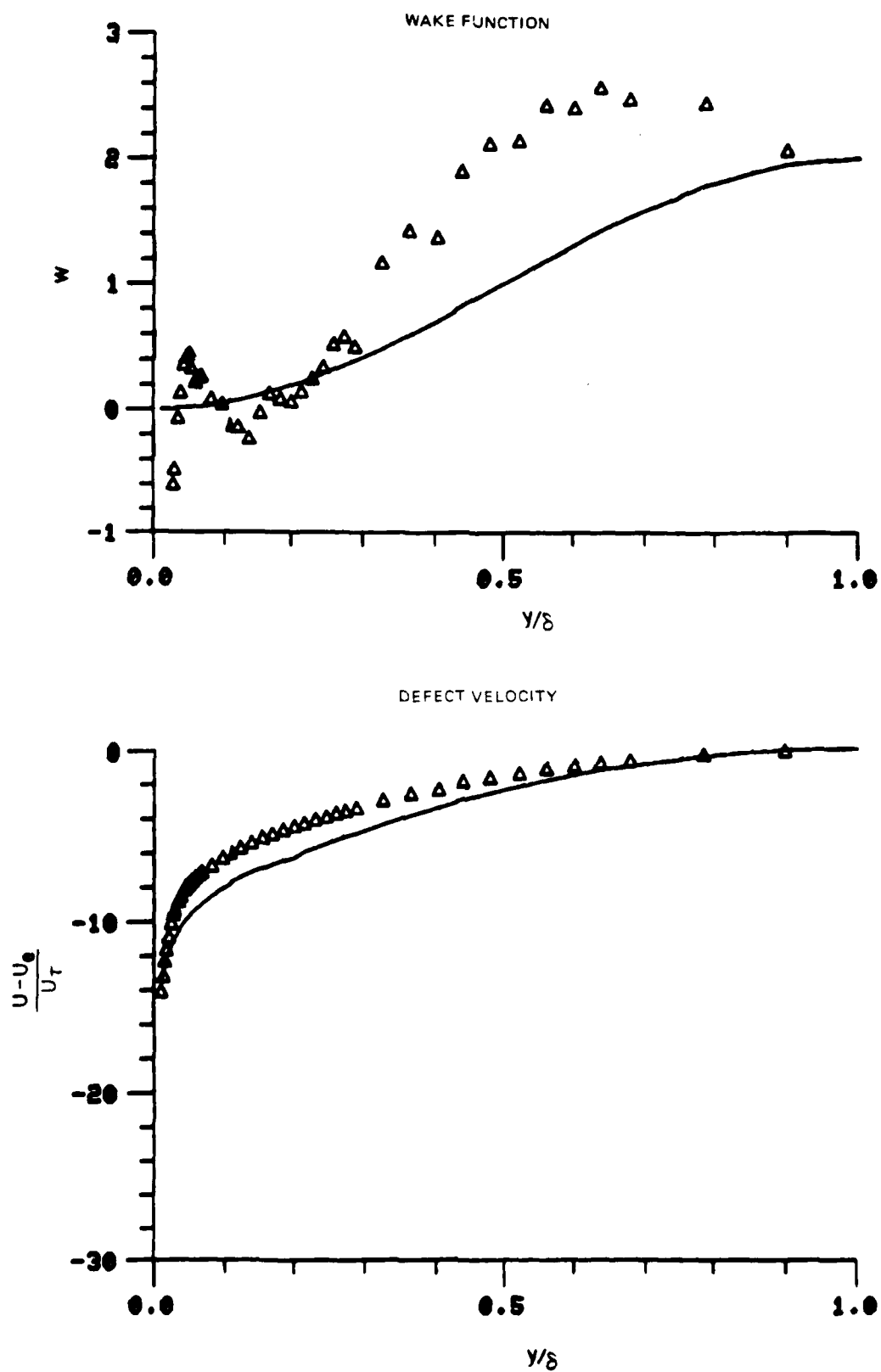


Figure 20. Boundary Layer Velocity Profiles
Run No.2 Point No.3

AD-A101 096

UNITED TECHNOLOGIES RESEARCH CENTER EAST HARTFORD CONN F/8 20/4
DATA REPORT. VOLUME II. VELOCITY AND TEMPERATURE PROFILE DATA F--ETC(U)
JAN 81 M F BLAIR F49620-78-C-0064
UTRC/R81-914388-16 AFOSR-TR-81-0515 NL

UNCLASSIFIED

3 of 3
AD A
100000



END

DATE

FILED

8-81

DTIC

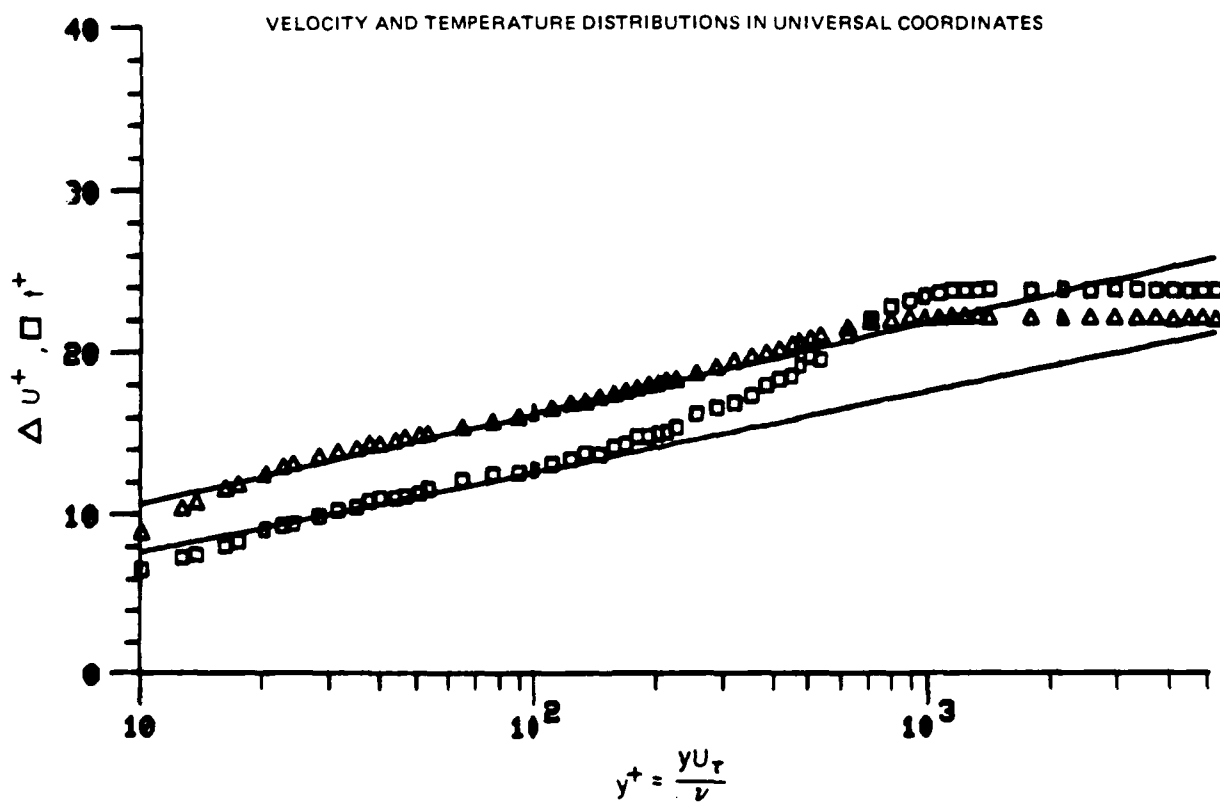
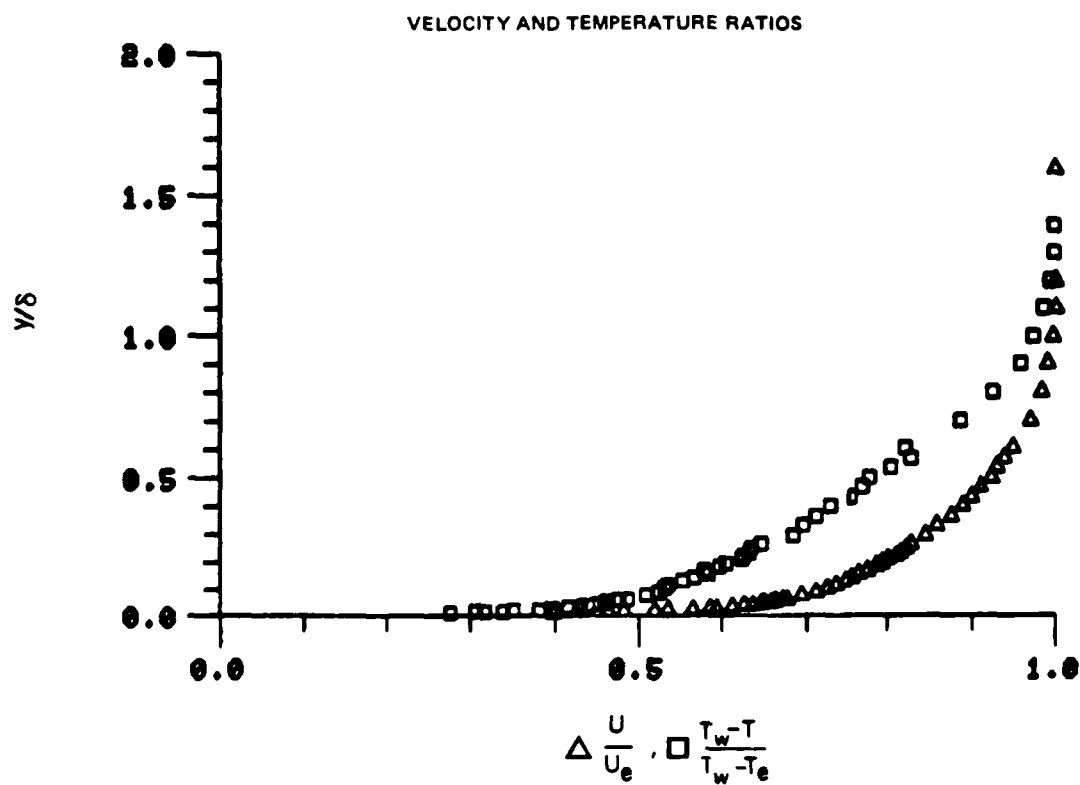


Figure 21. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 1

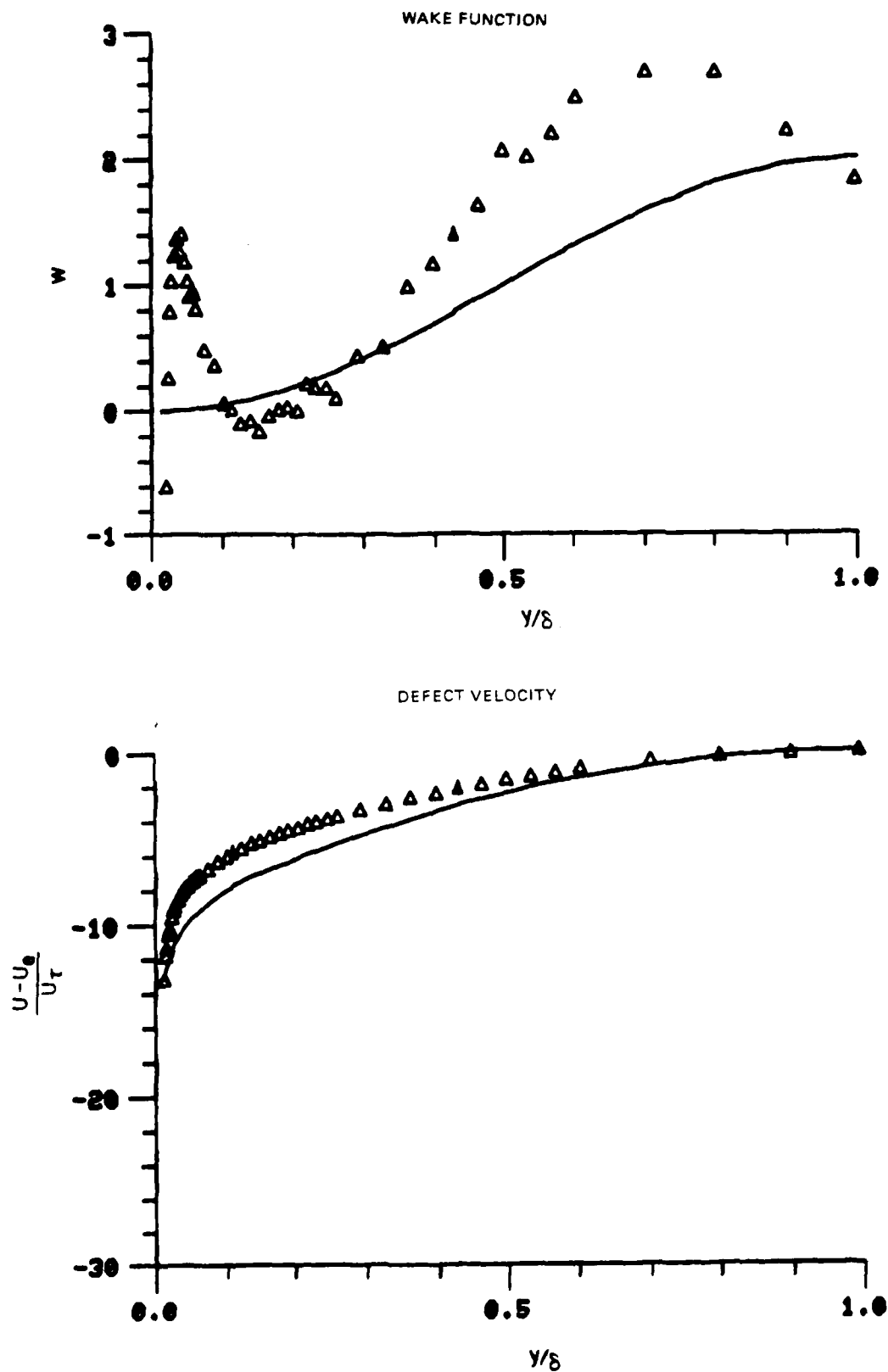


Figure 21. Boundary Layer Velocity Profiles
Run No.2 Point No.1

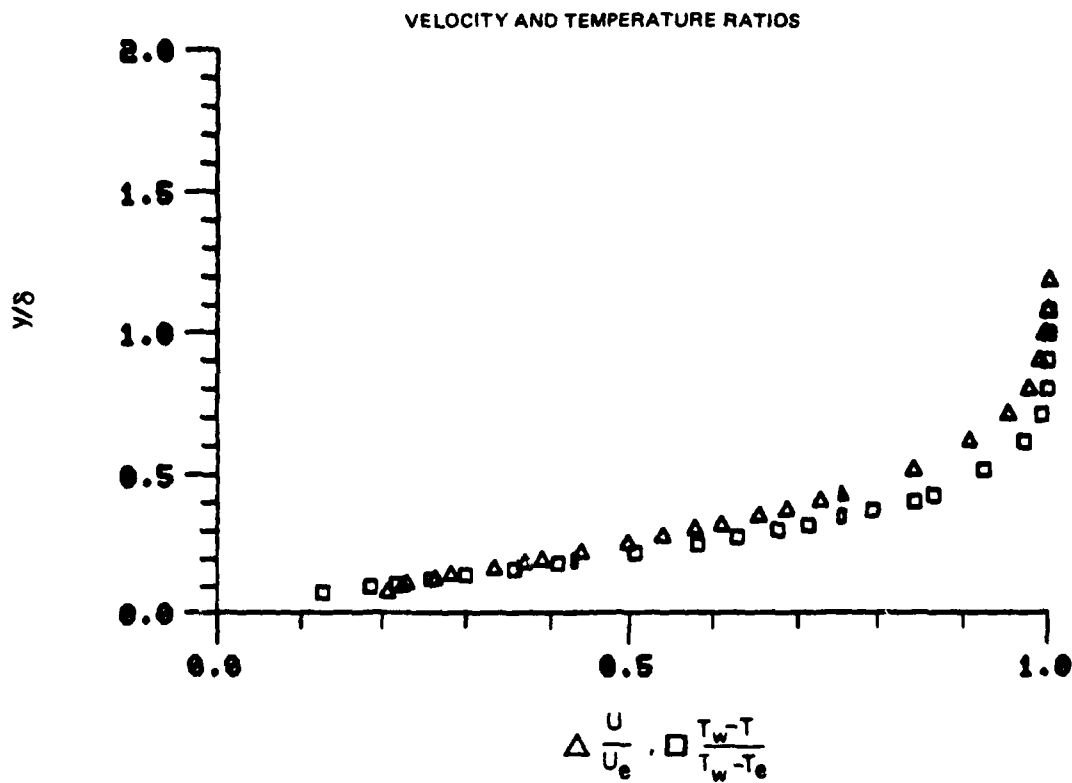


Figure 22. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.26

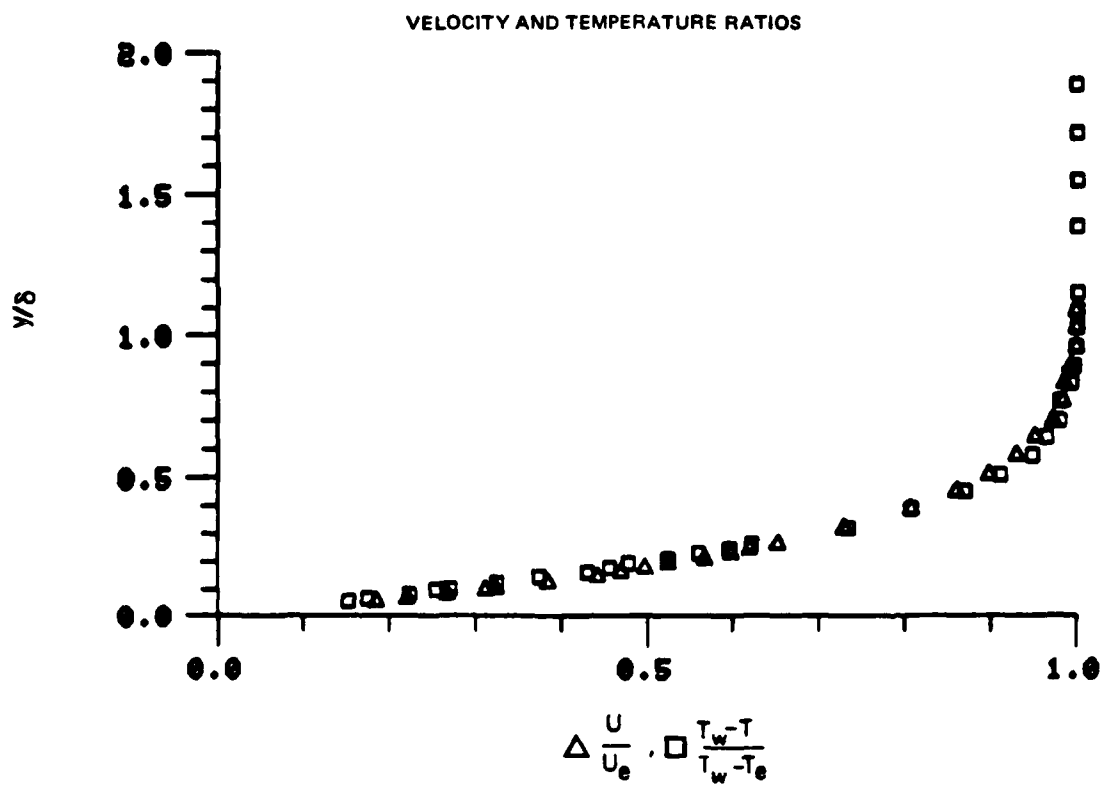


Figure 23. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.25

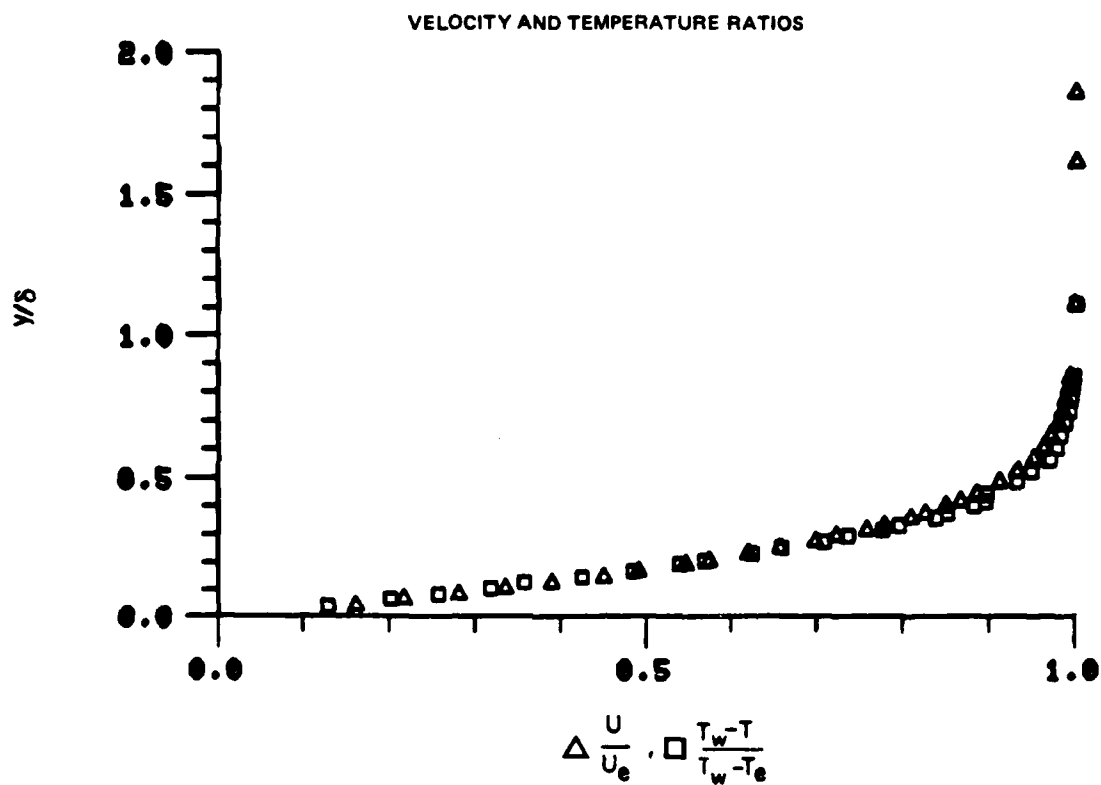


Figure 24. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 7

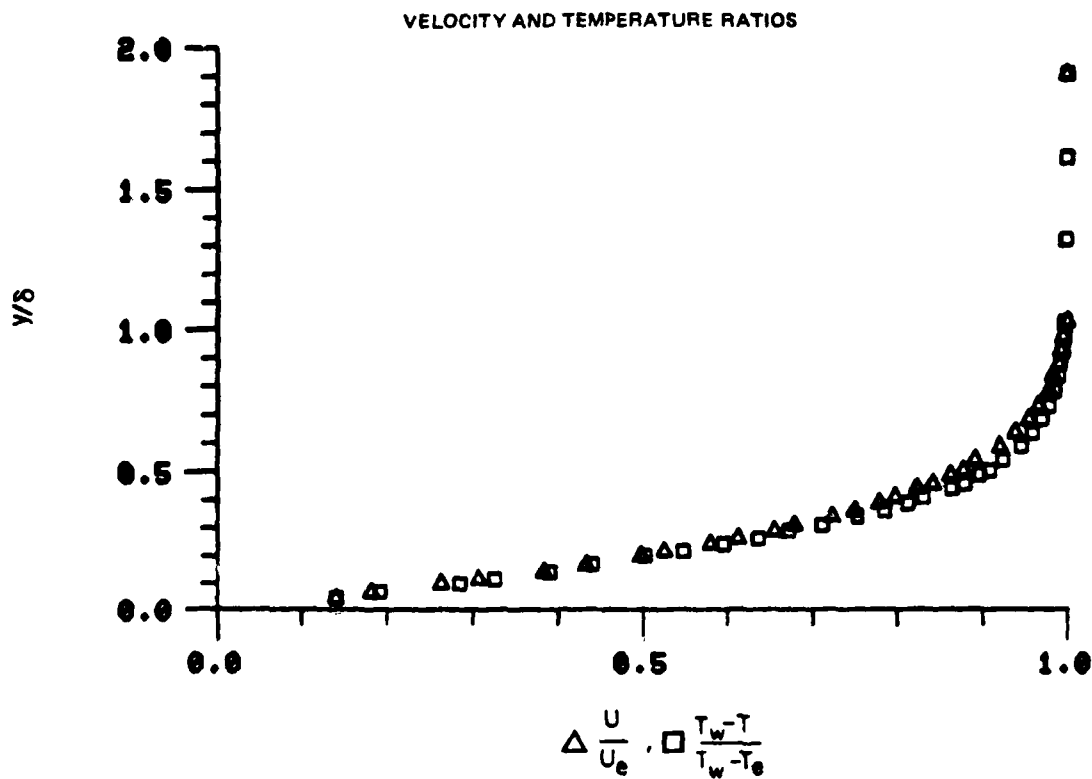


Figure 25. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 5

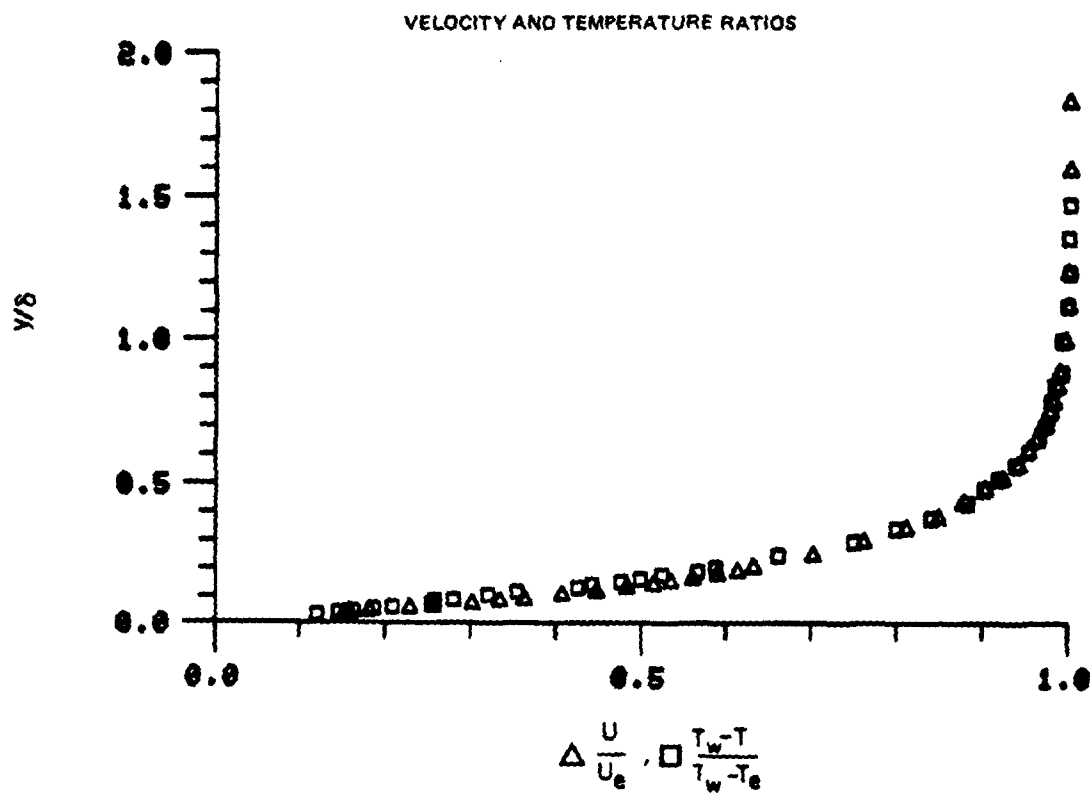


Figure 26. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 24

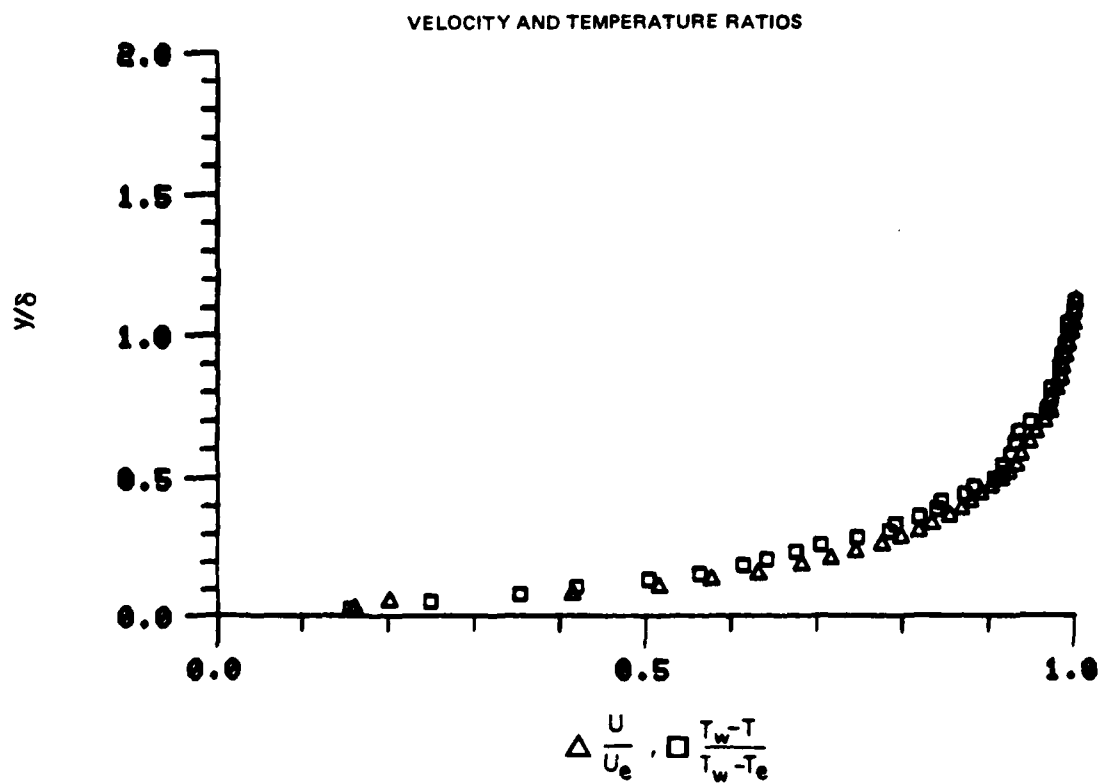


Figure 27. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 9

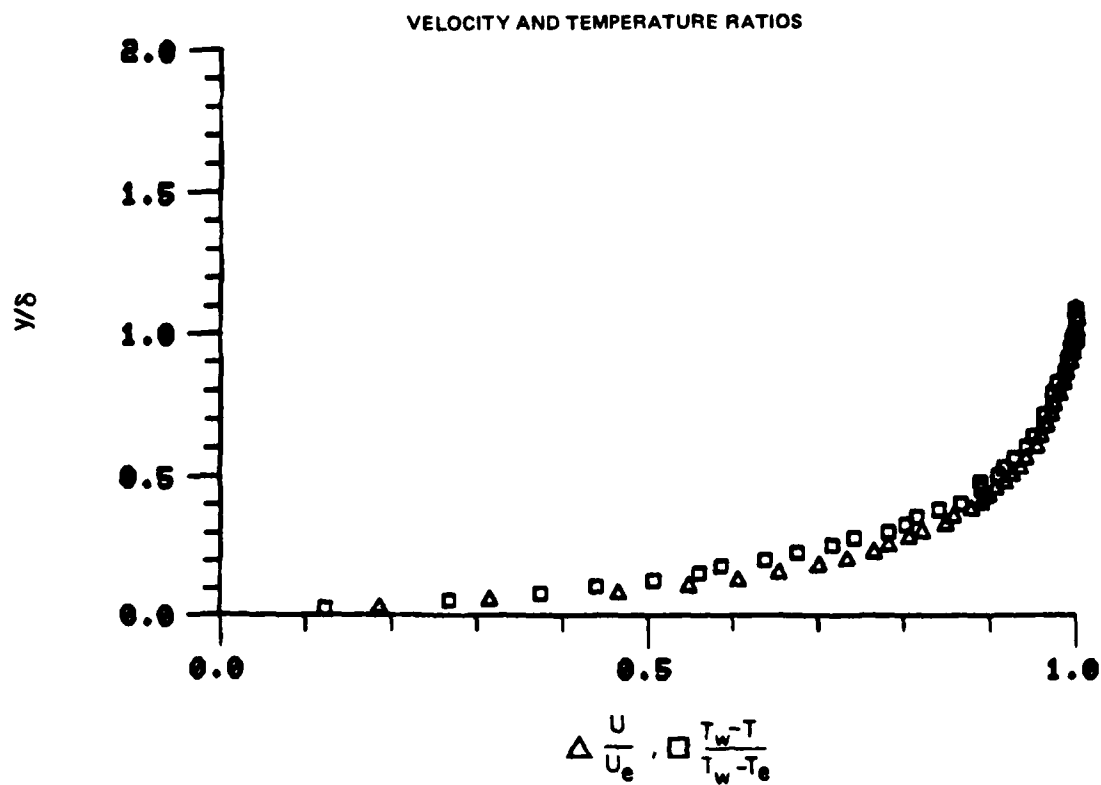


Figure 28. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 10

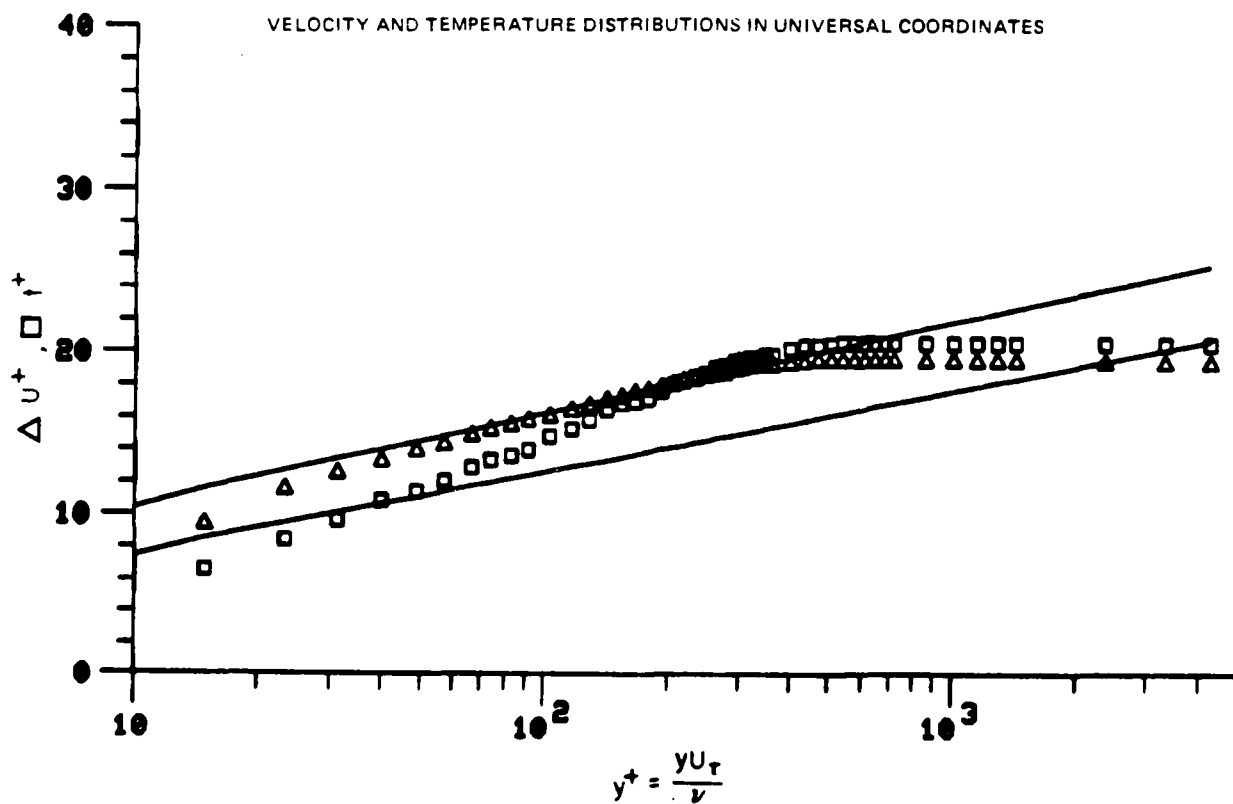
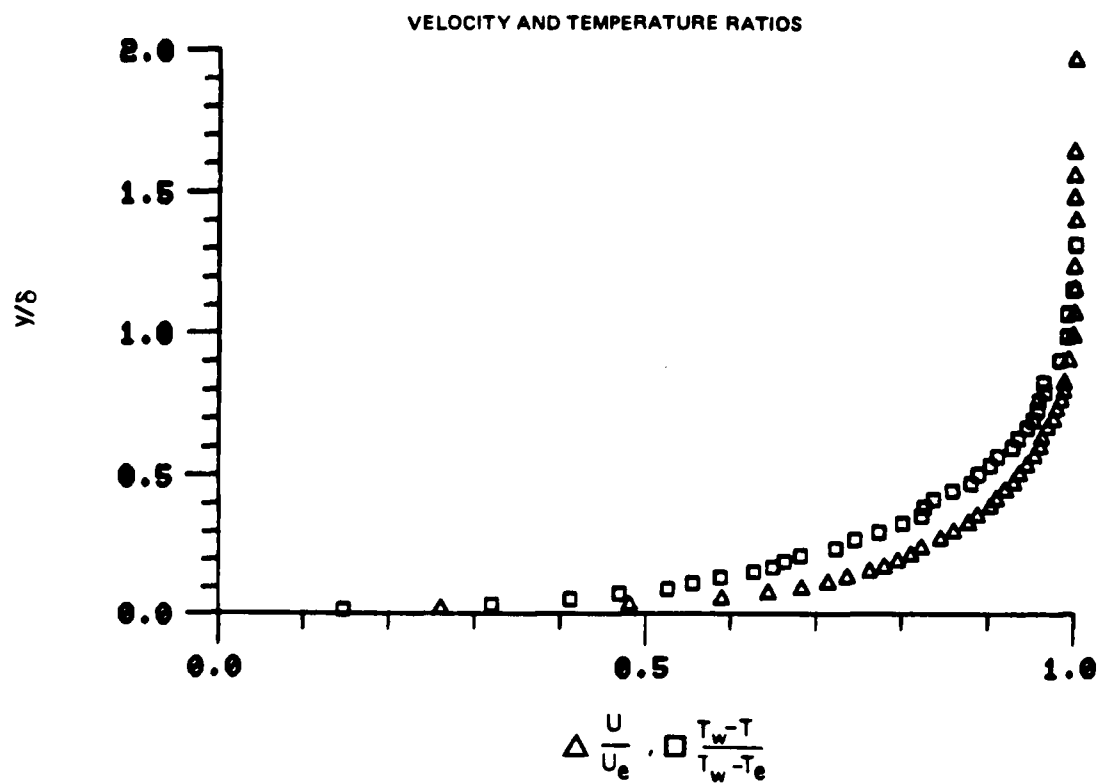


Figure 29. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.11

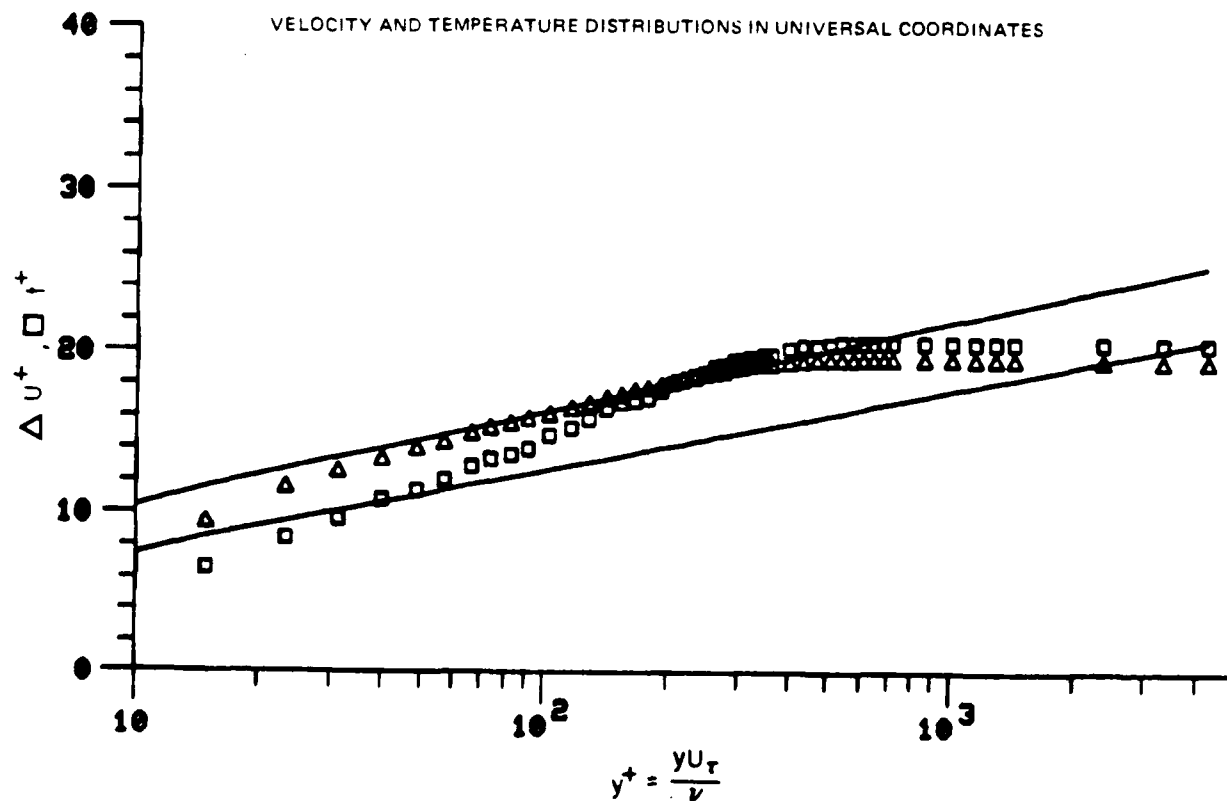
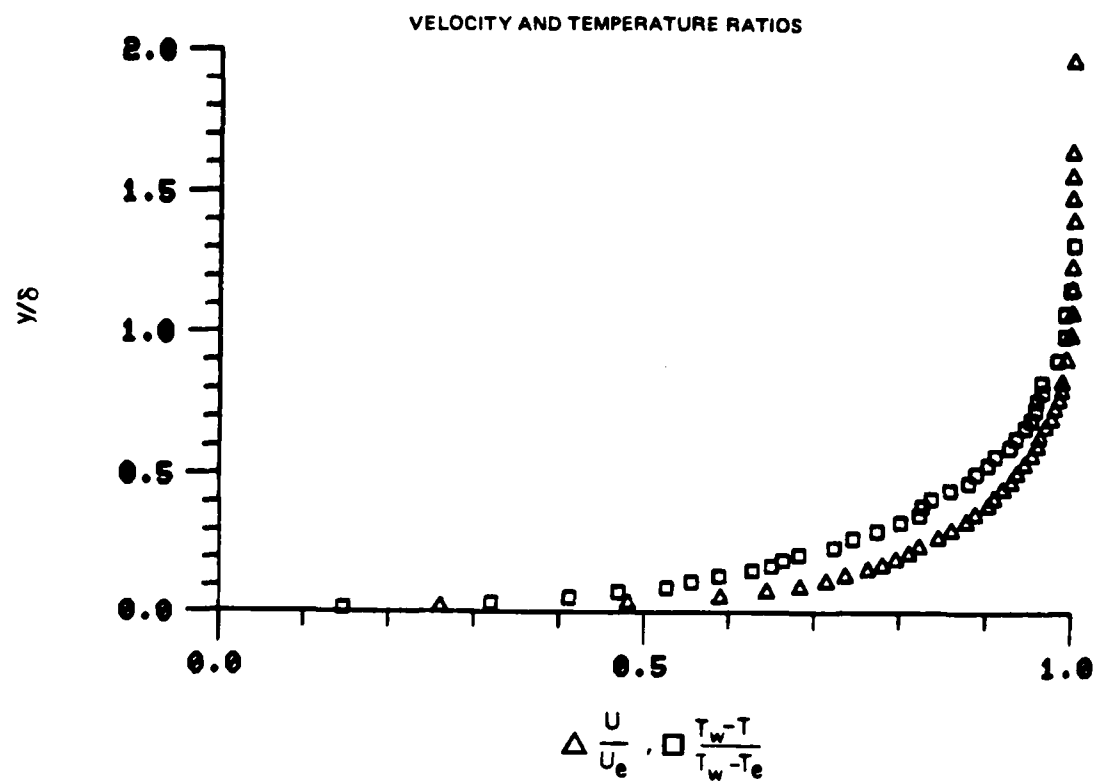


Figure 29. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.11

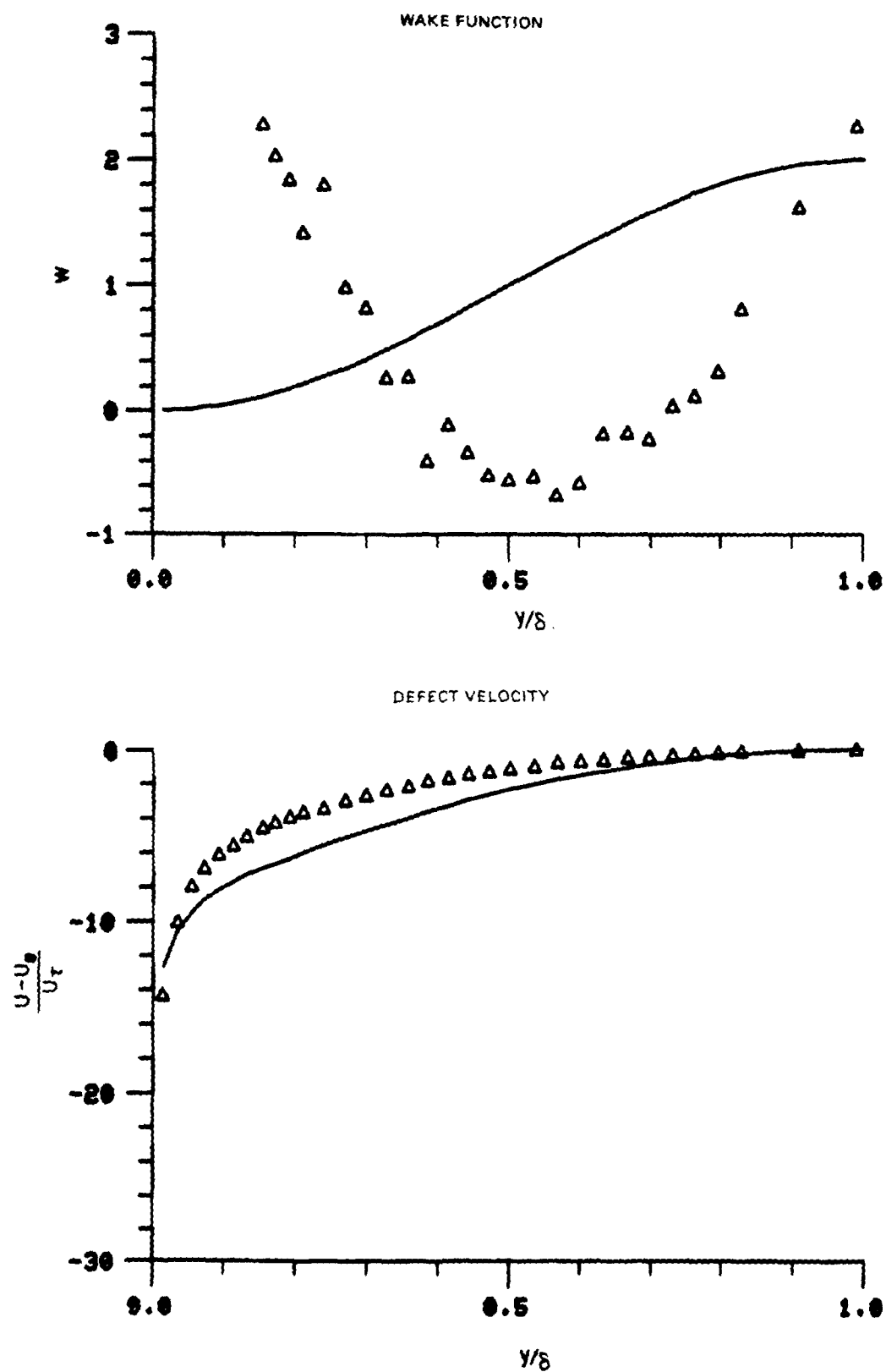


Figure 29. Boundary Layer Velocity Profiles
Run No. 1 Point No. 11

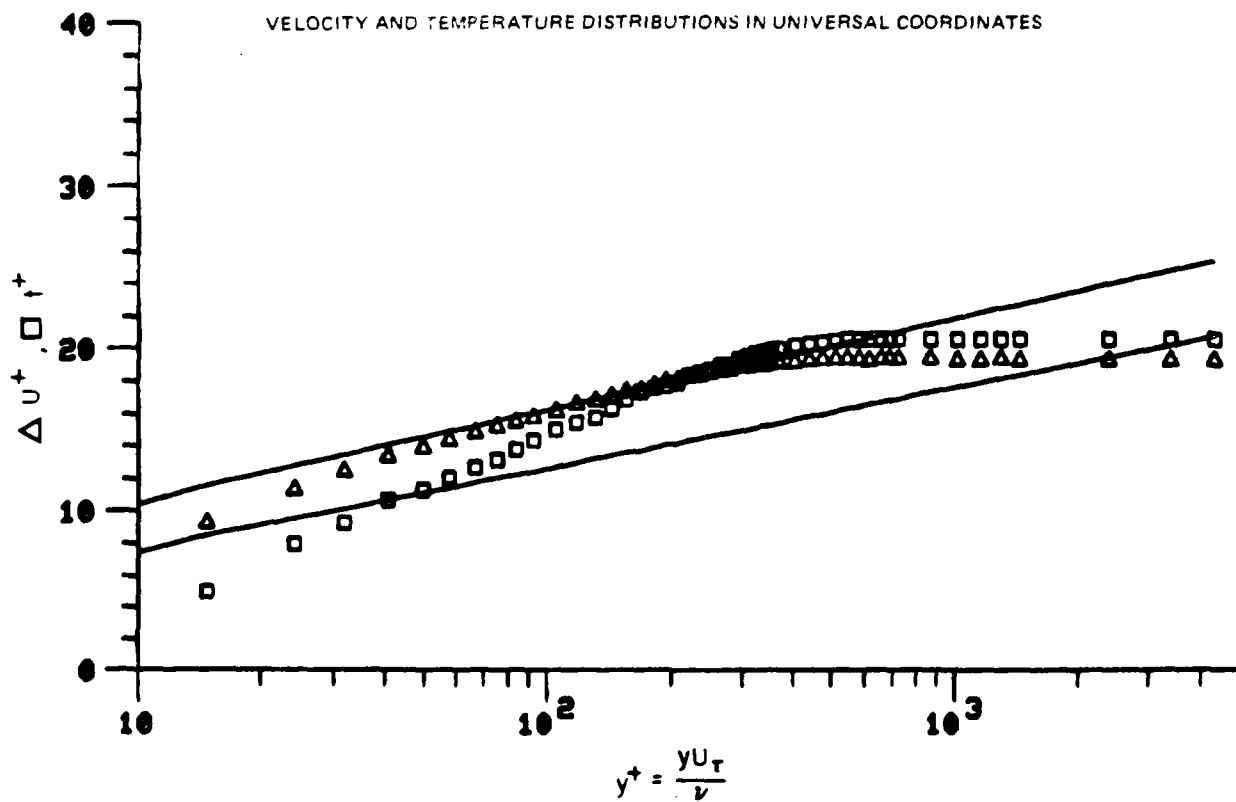
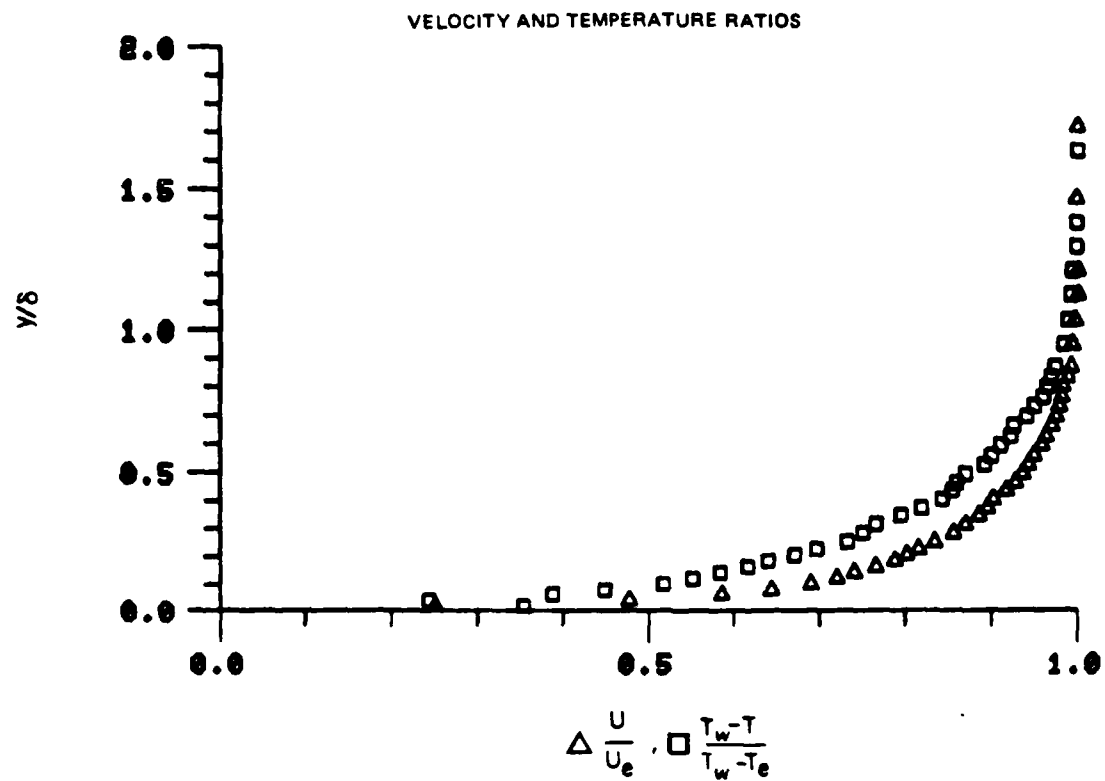


Figure 30. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.12

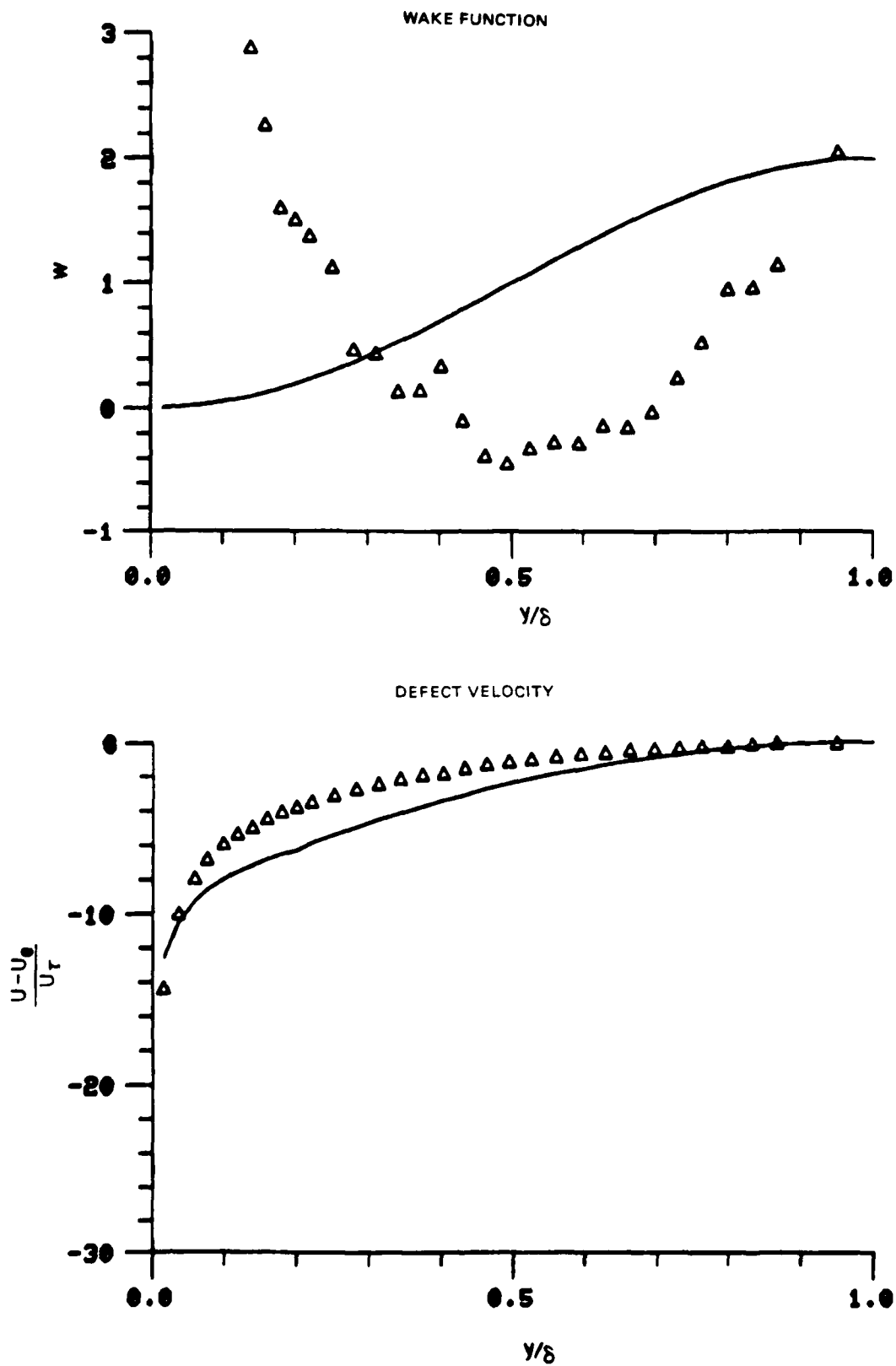


Figure 30. Boundary Layer Velocity Profiles
Run No.1 Point No. 12

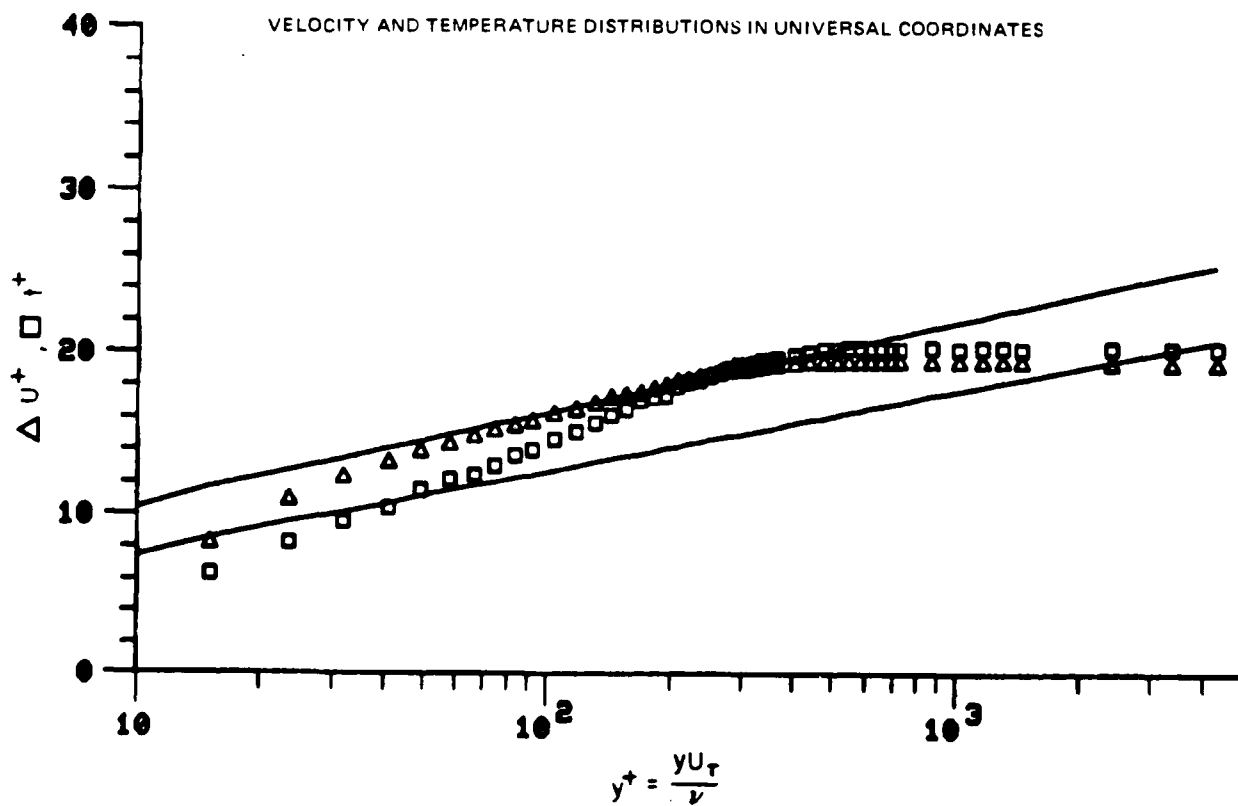
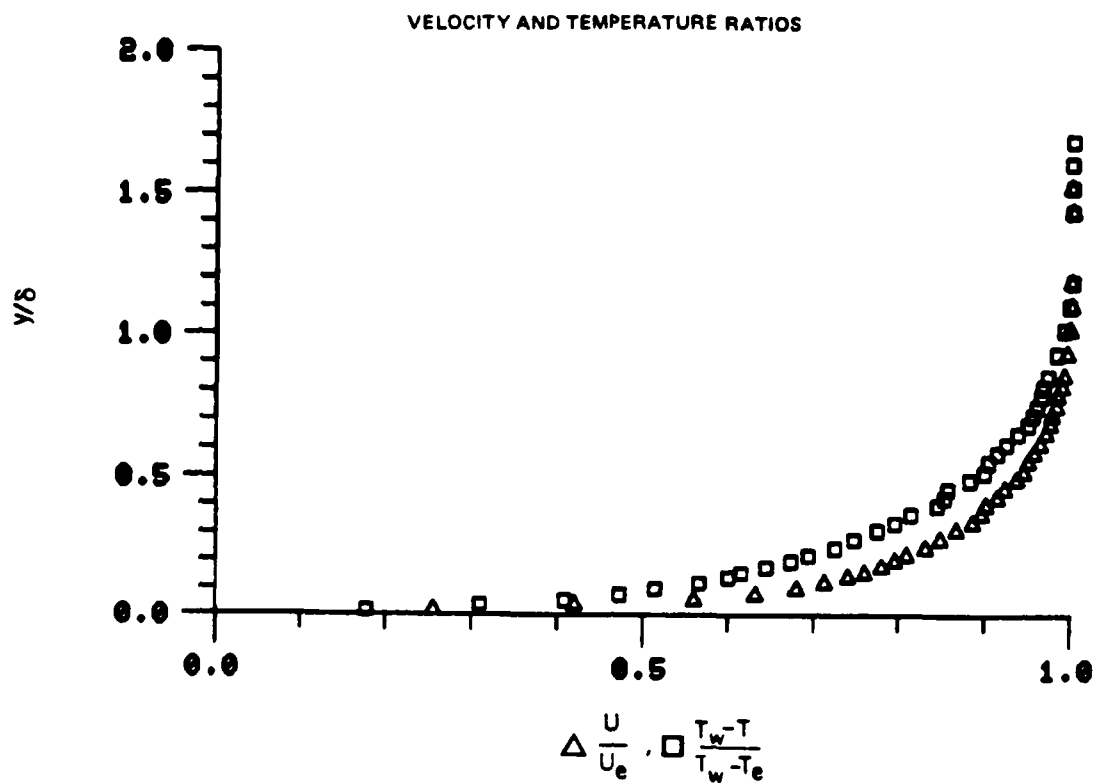


Figure 31. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.13

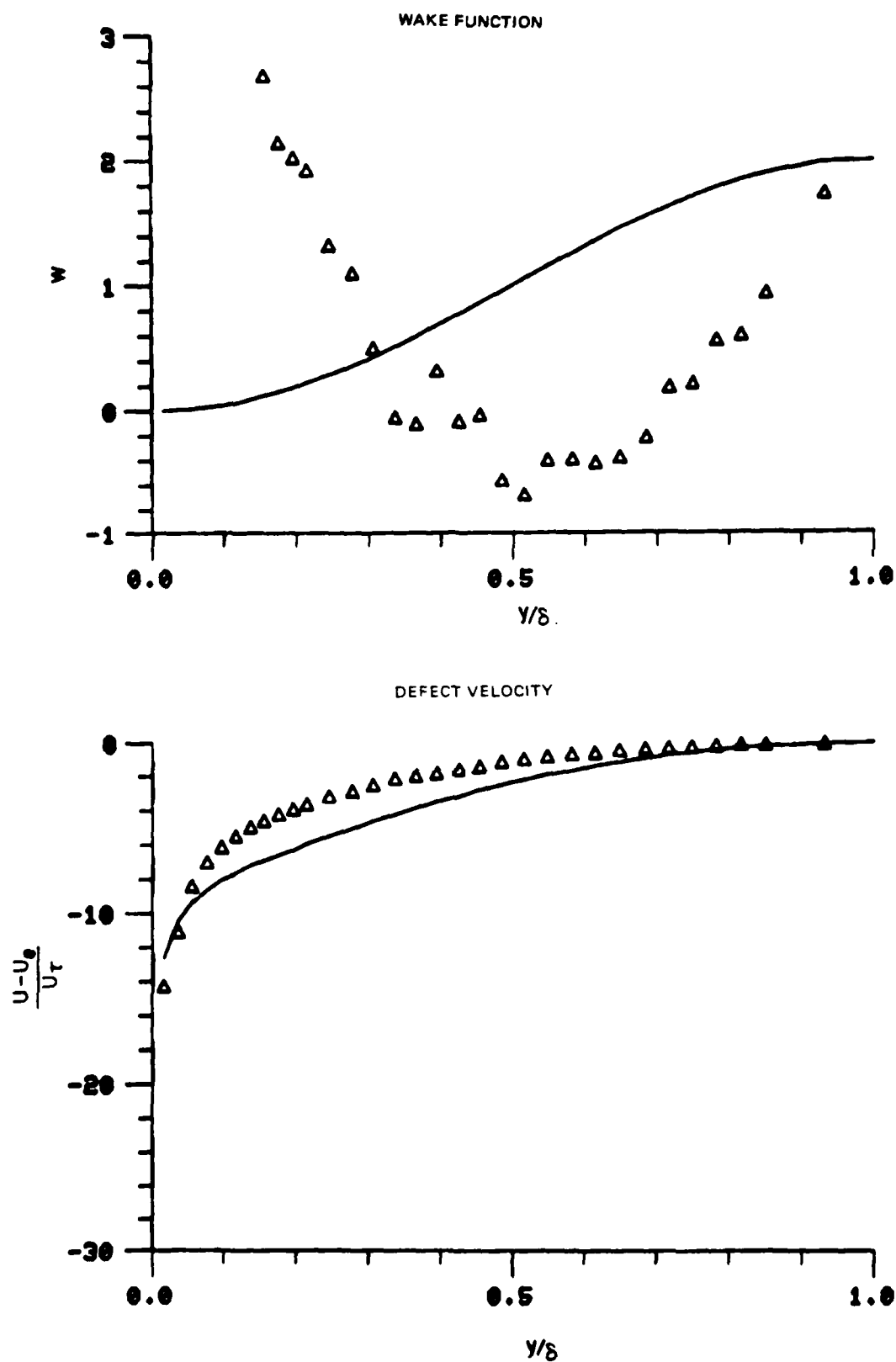


Figure 31. Boundary Layer Velocity Profiles
Run No.1 Point No.13

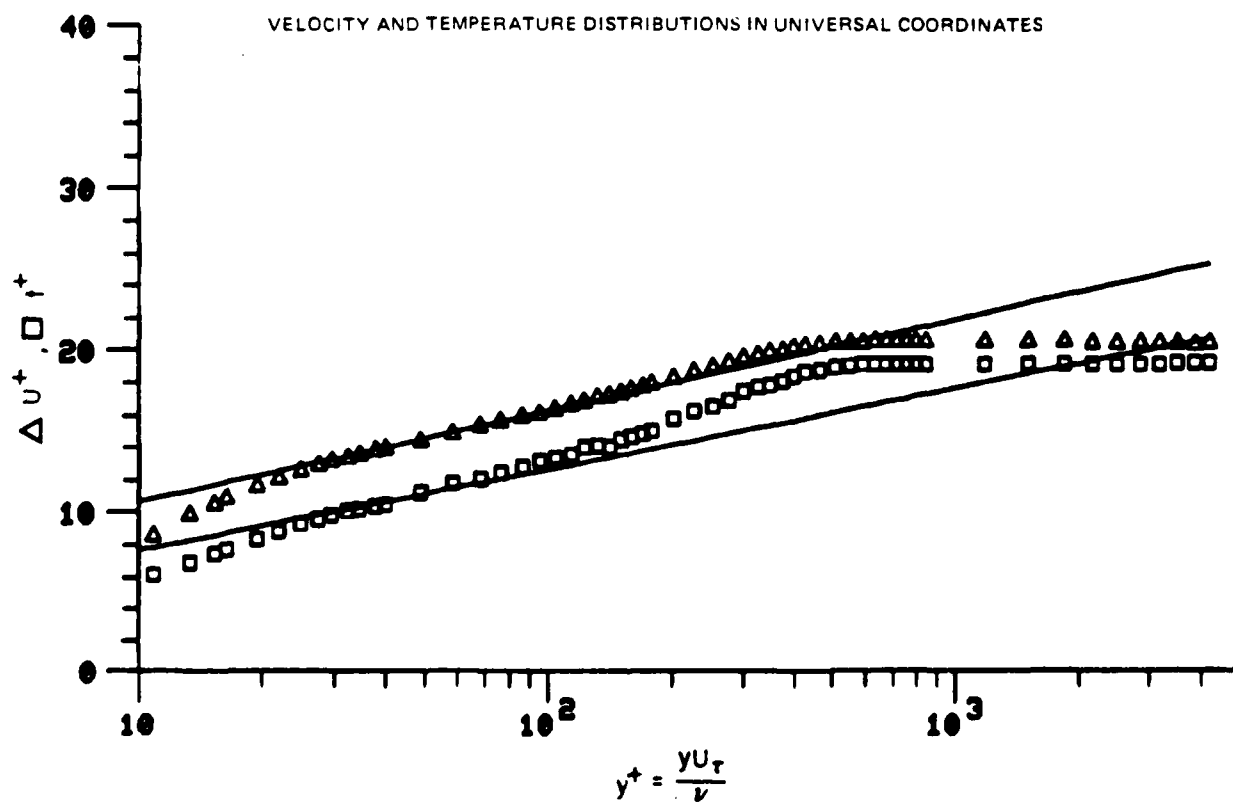
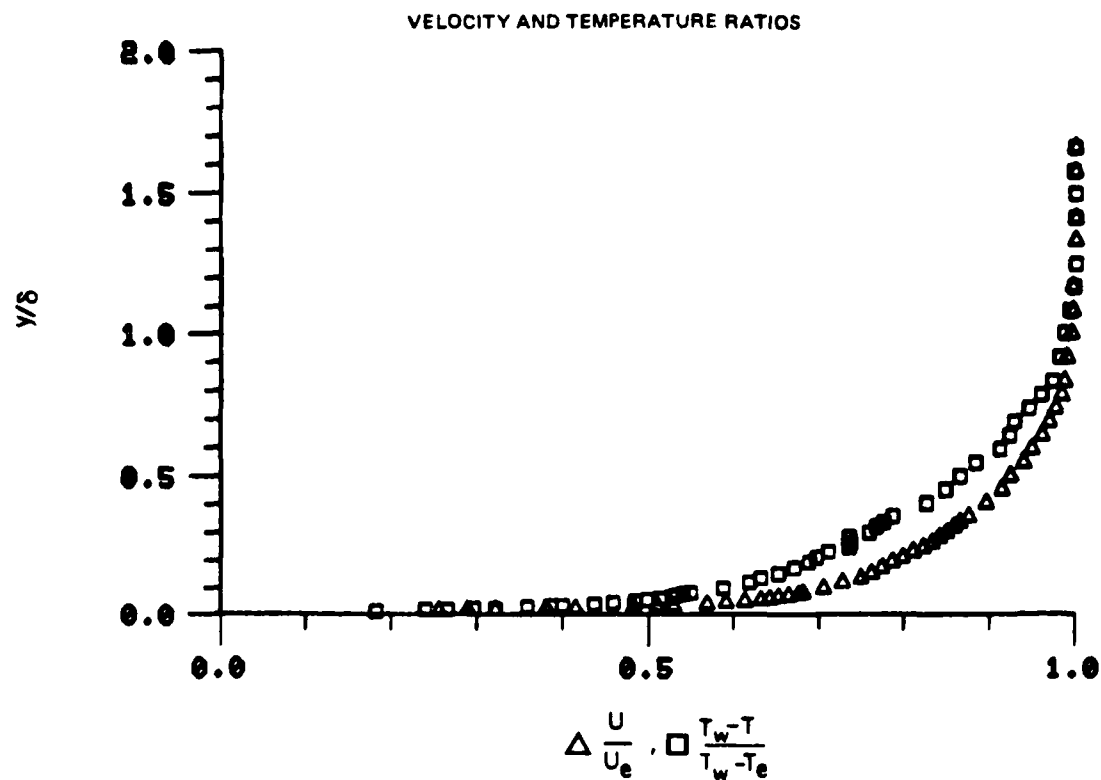


Figure 32. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 14

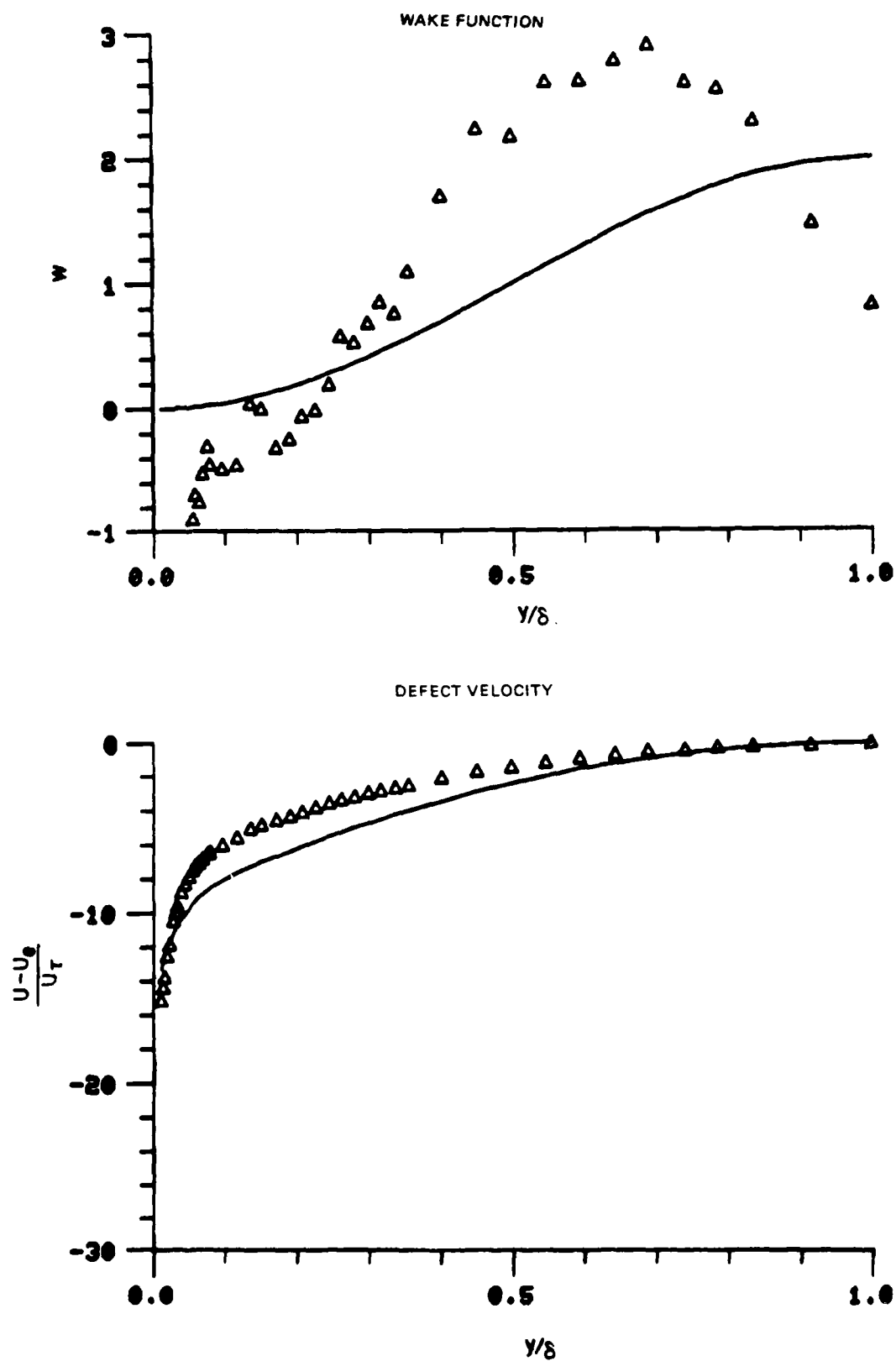


Figure 32. Boundary Layer Velocity Profiles
Run No.1 Point No.14

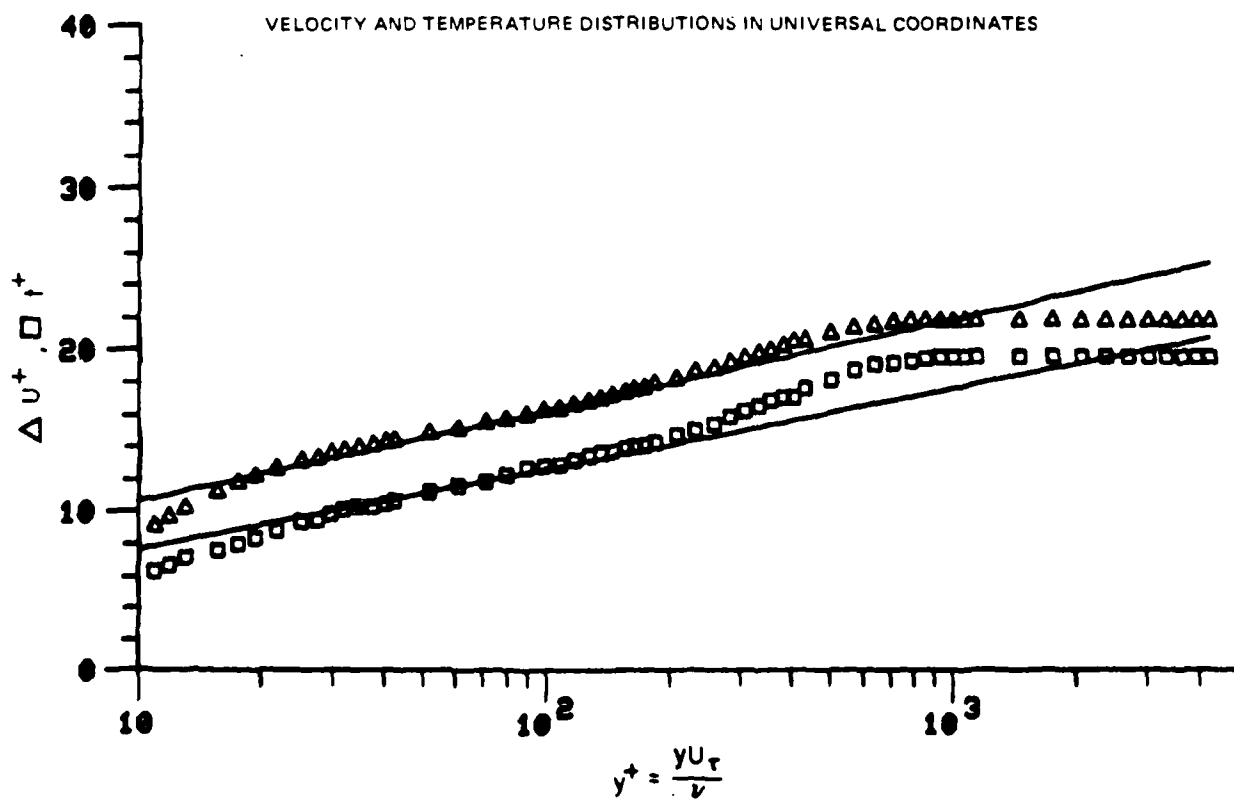
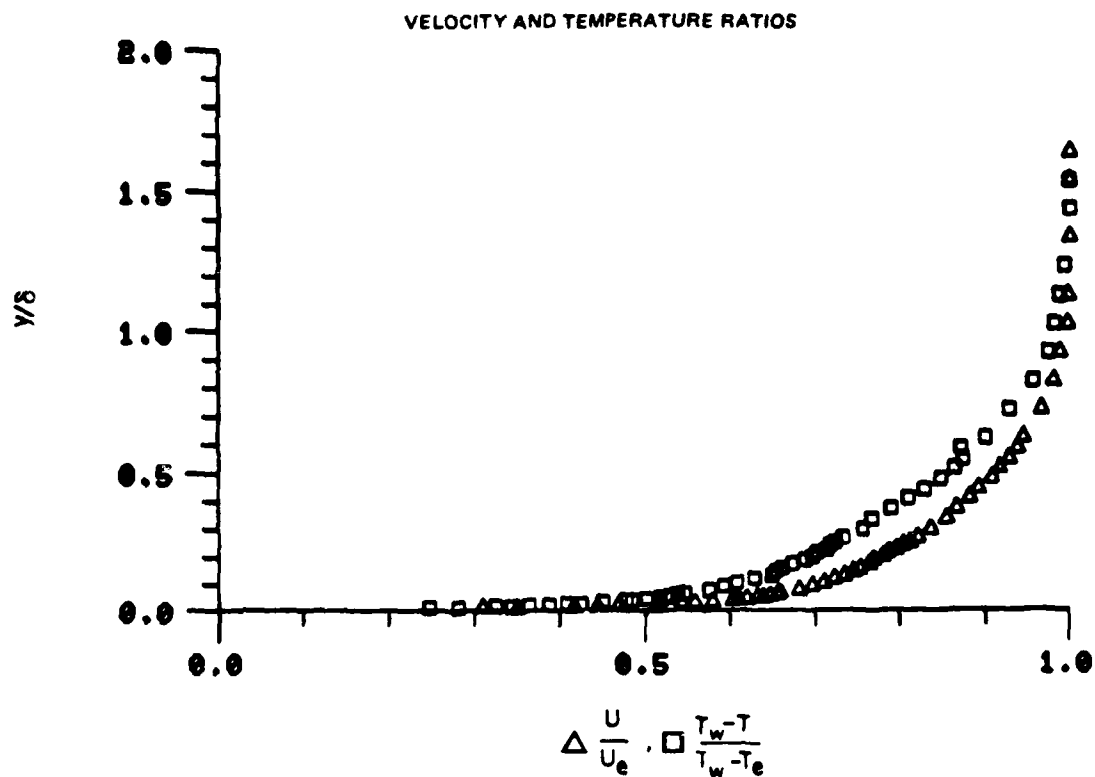


Figure 33. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.15

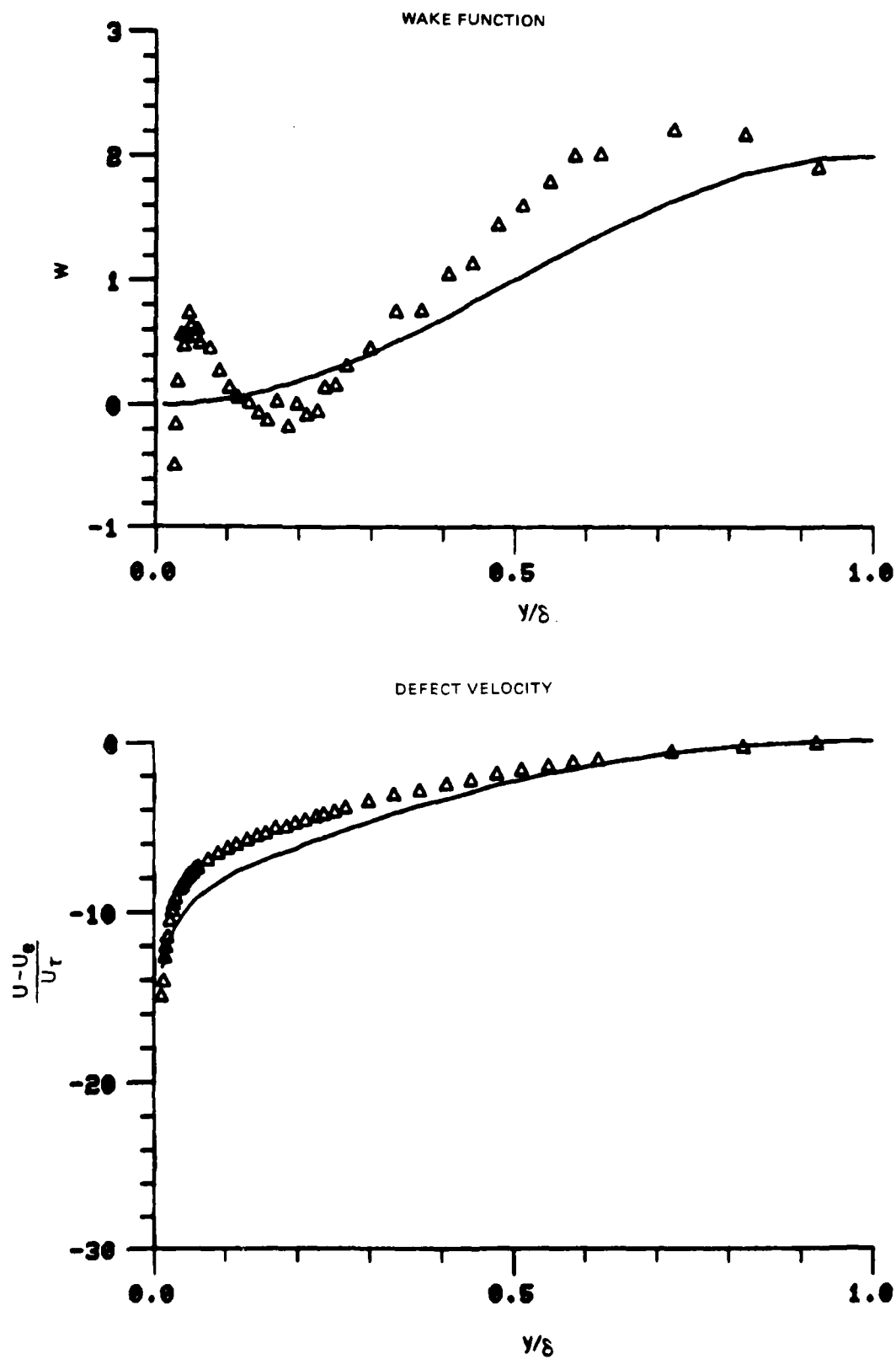


Figure 33. Boundary Layer Velocity Profiles
Run No.1 Point No.15

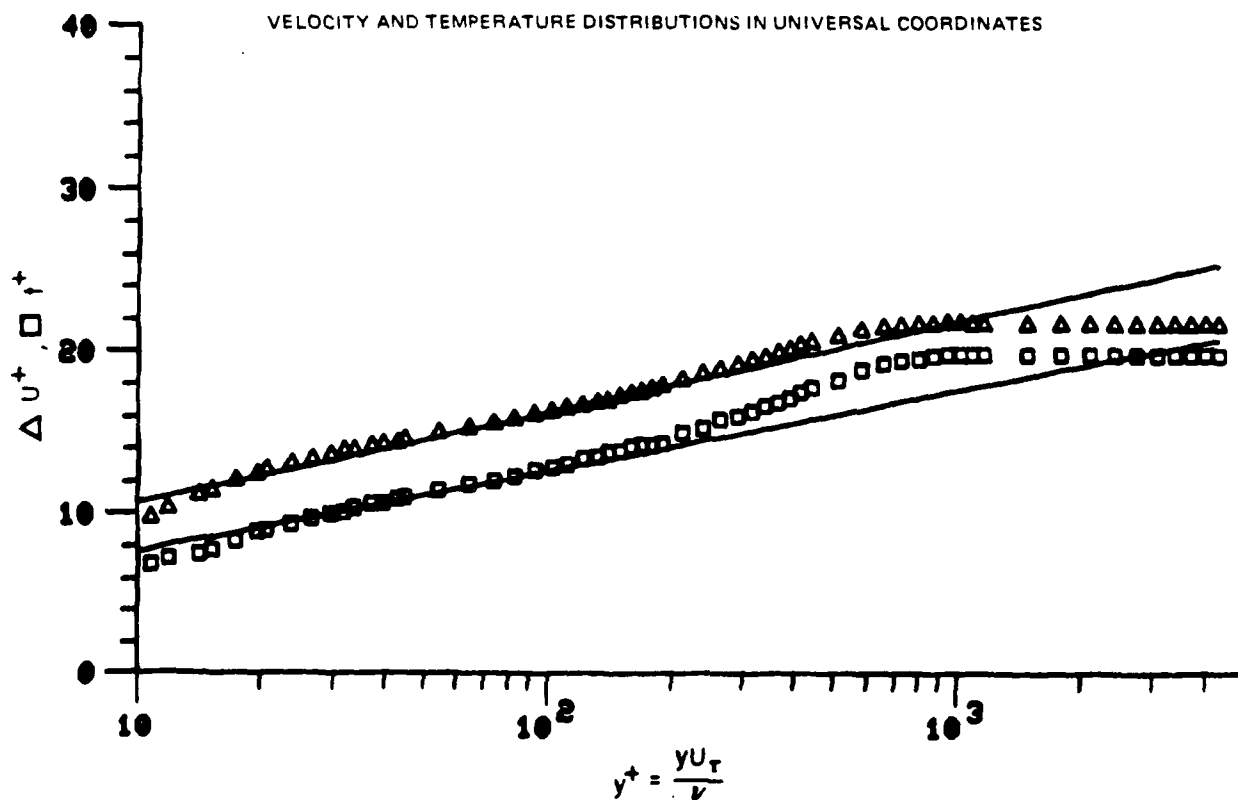
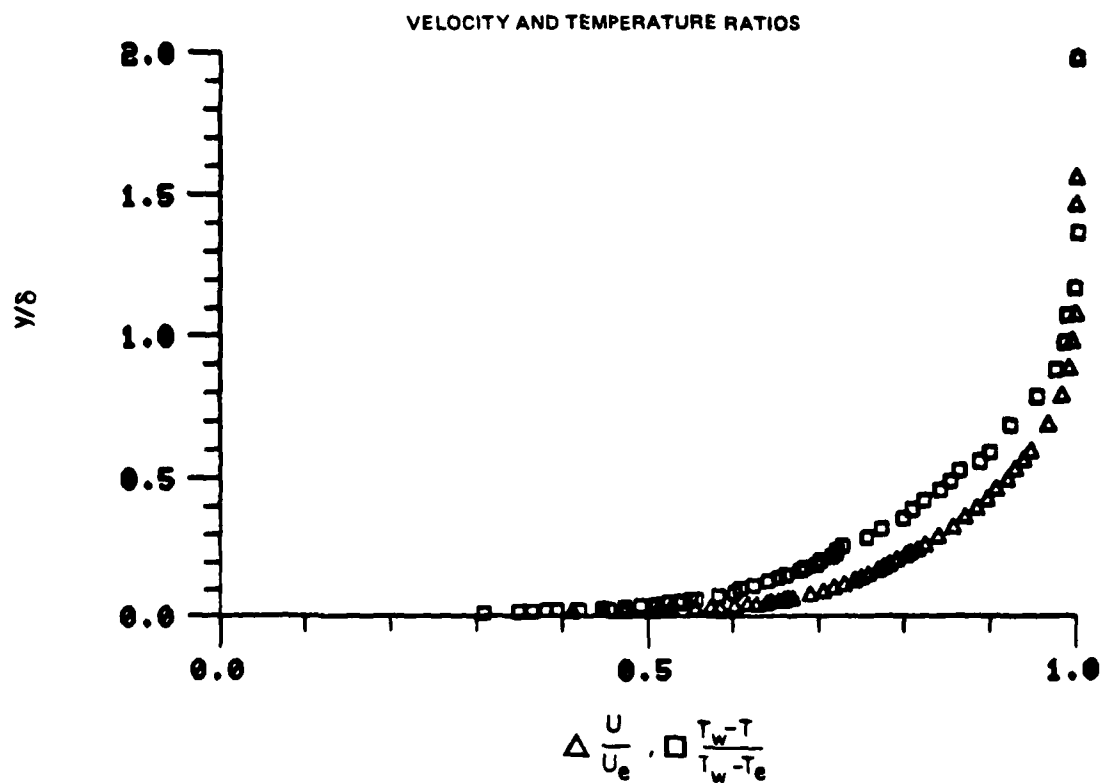


Figure 34. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.17

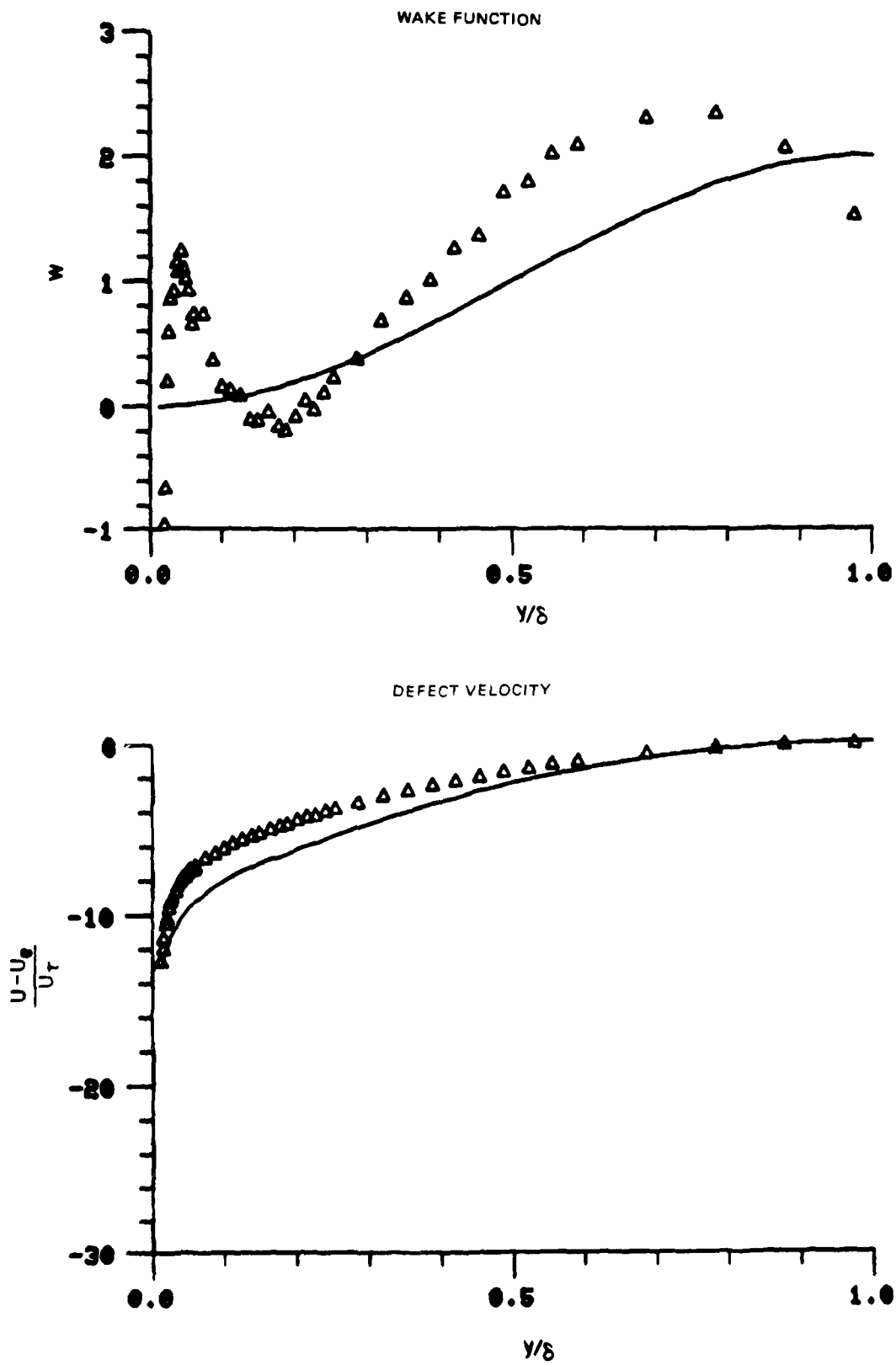


Figure 34. Boundary Layer Velocity Profiles
Run No. 1 Point No. 17

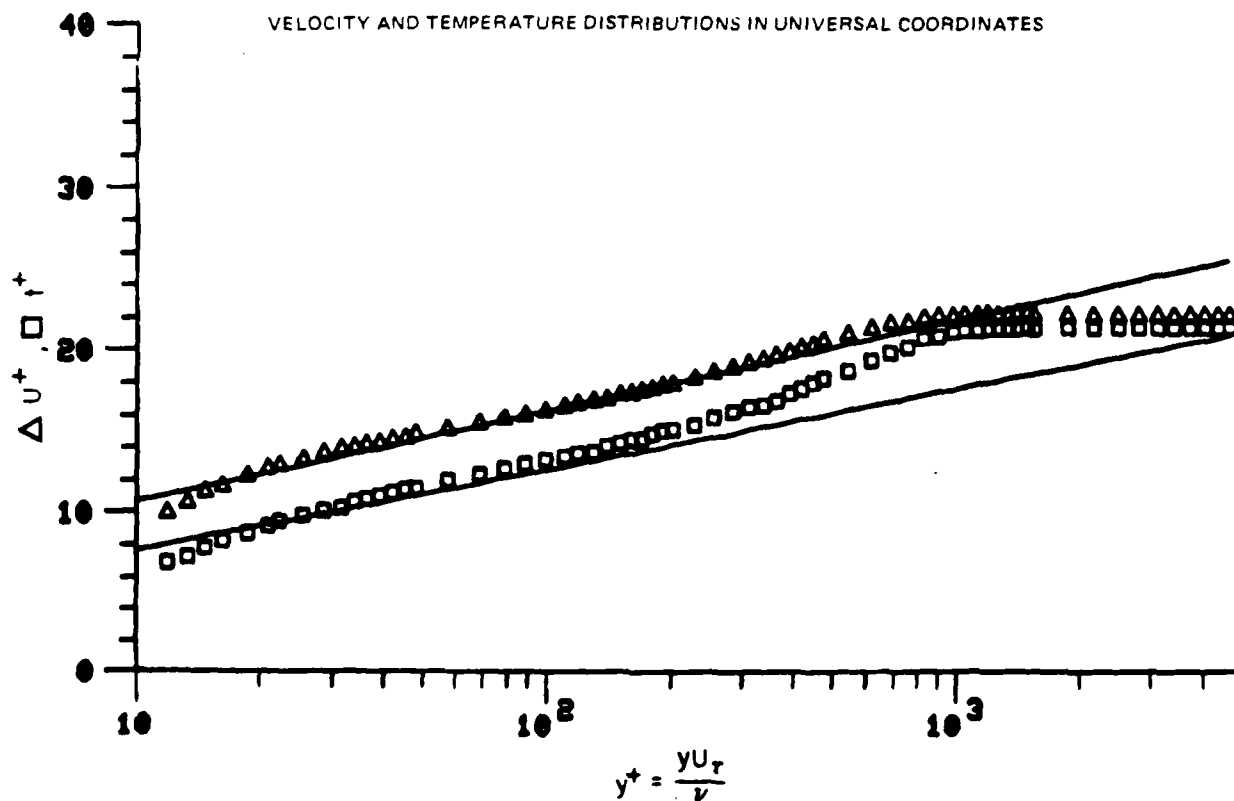
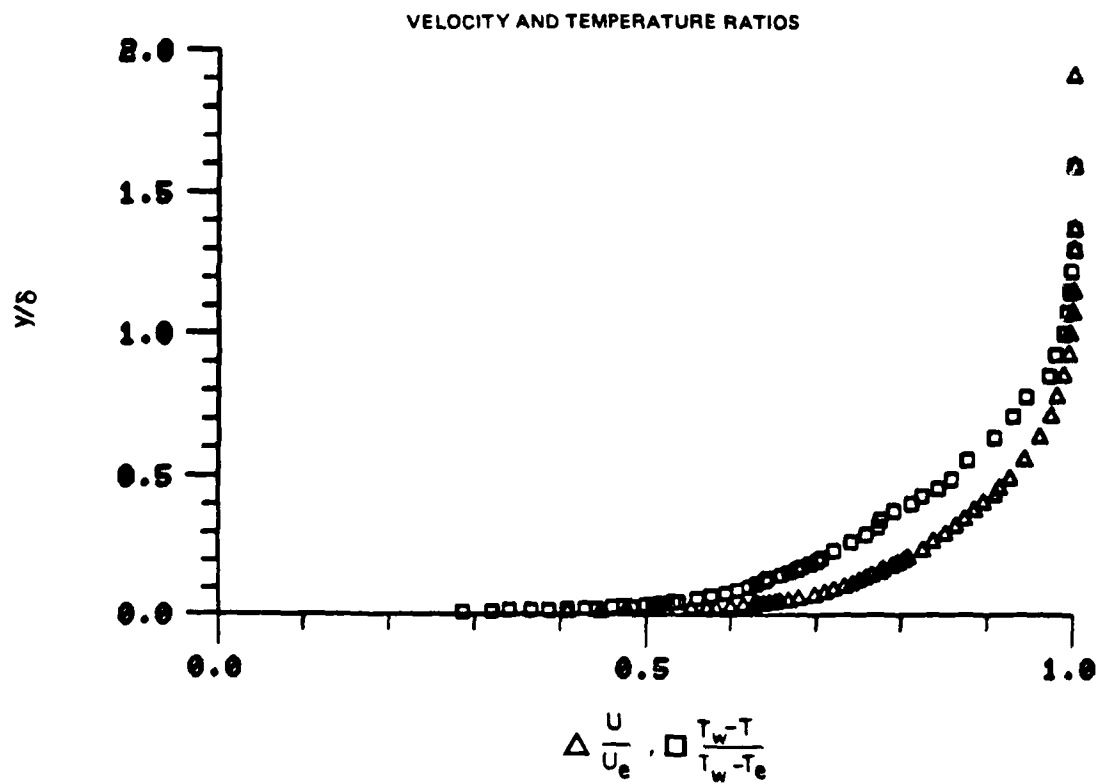


Figure 35. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 18

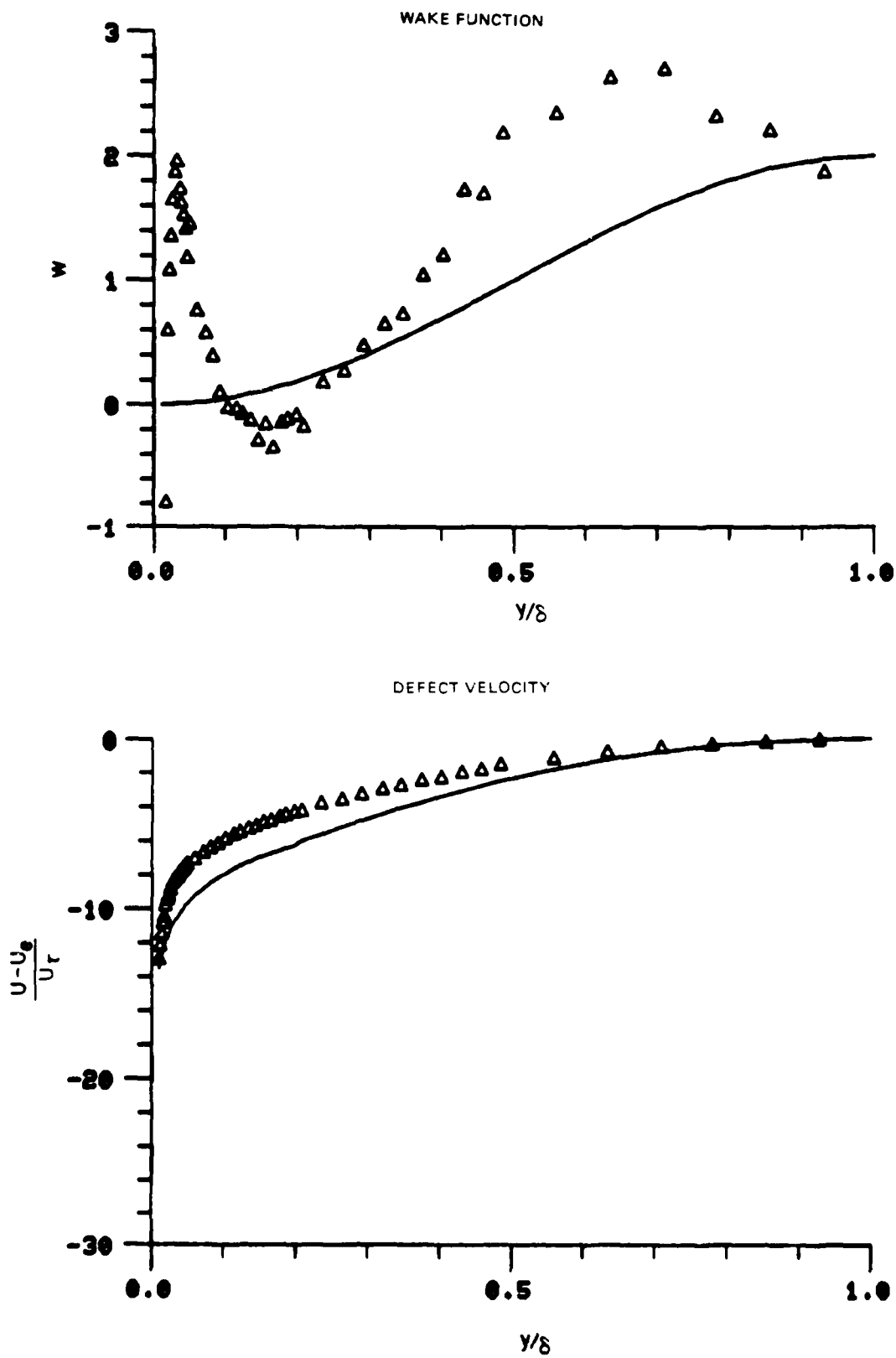


Figure 35. Boundary Layer Velocity Profiles
Run No.1 Point No.18

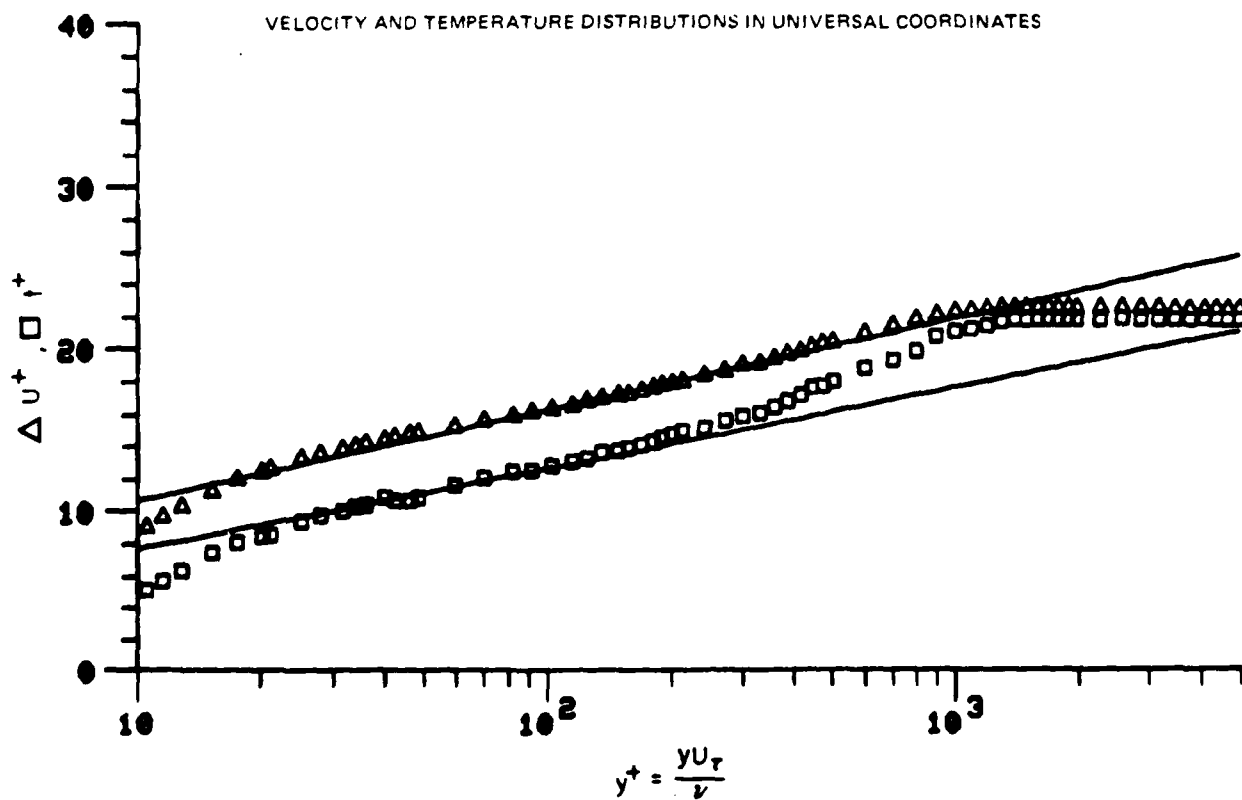
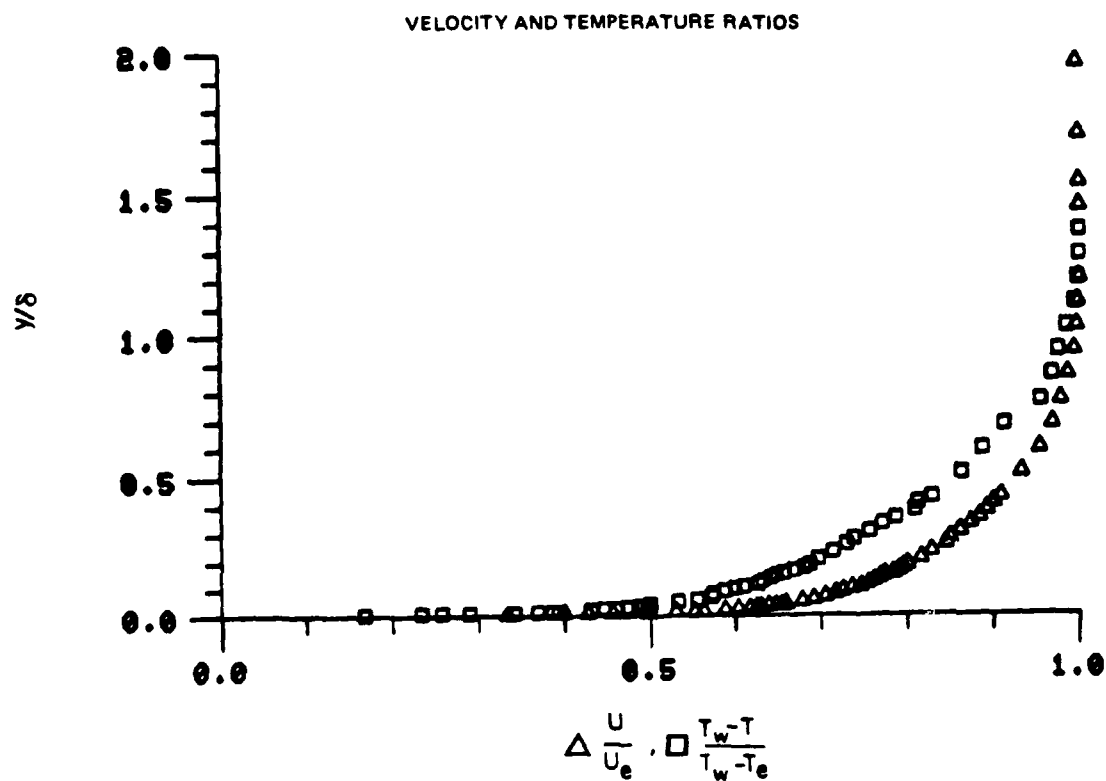


Figure 36. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.19

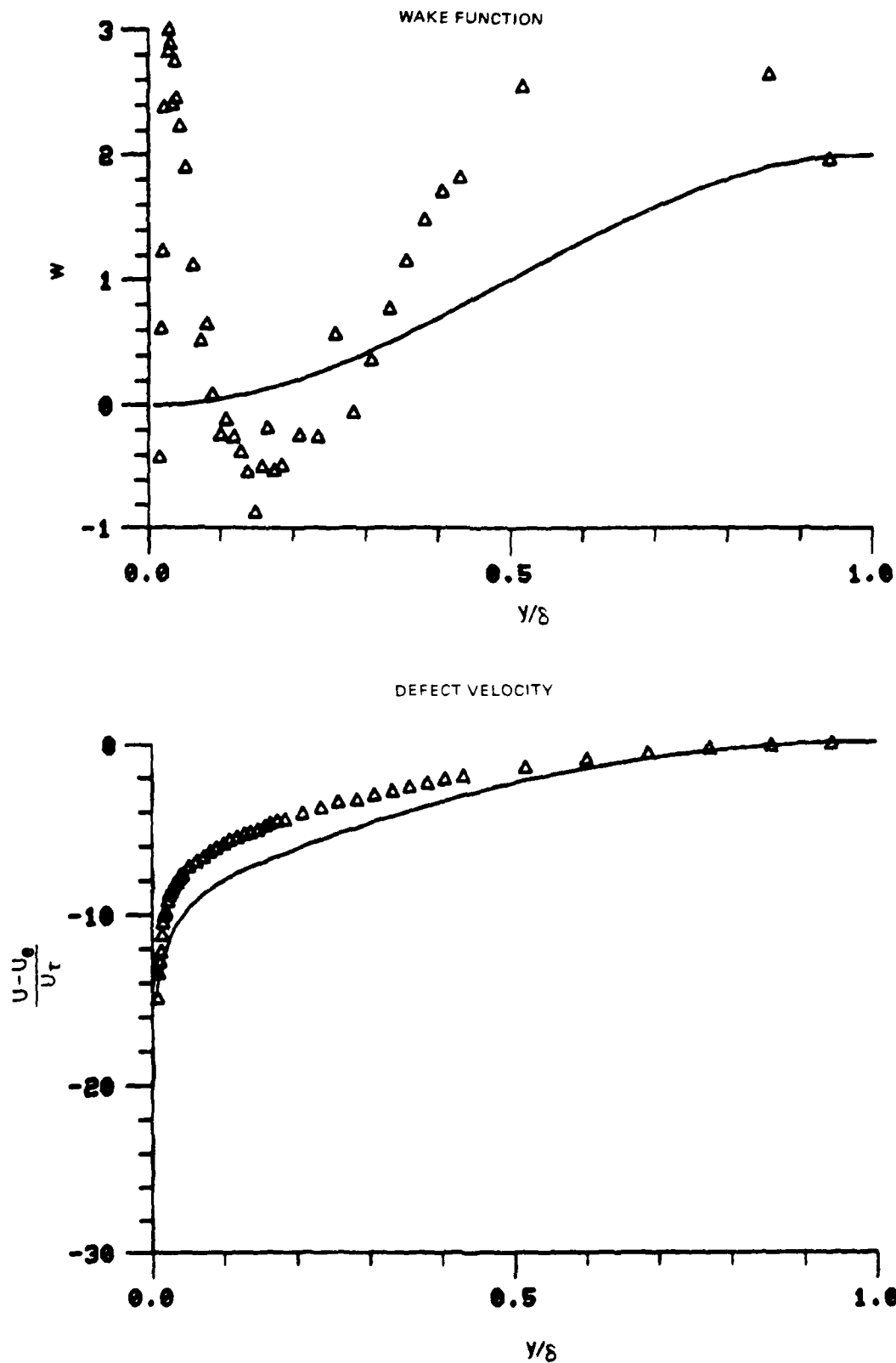


Figure 36. Boundary Layer Velocity Profiles
Run No.1 Point No.19

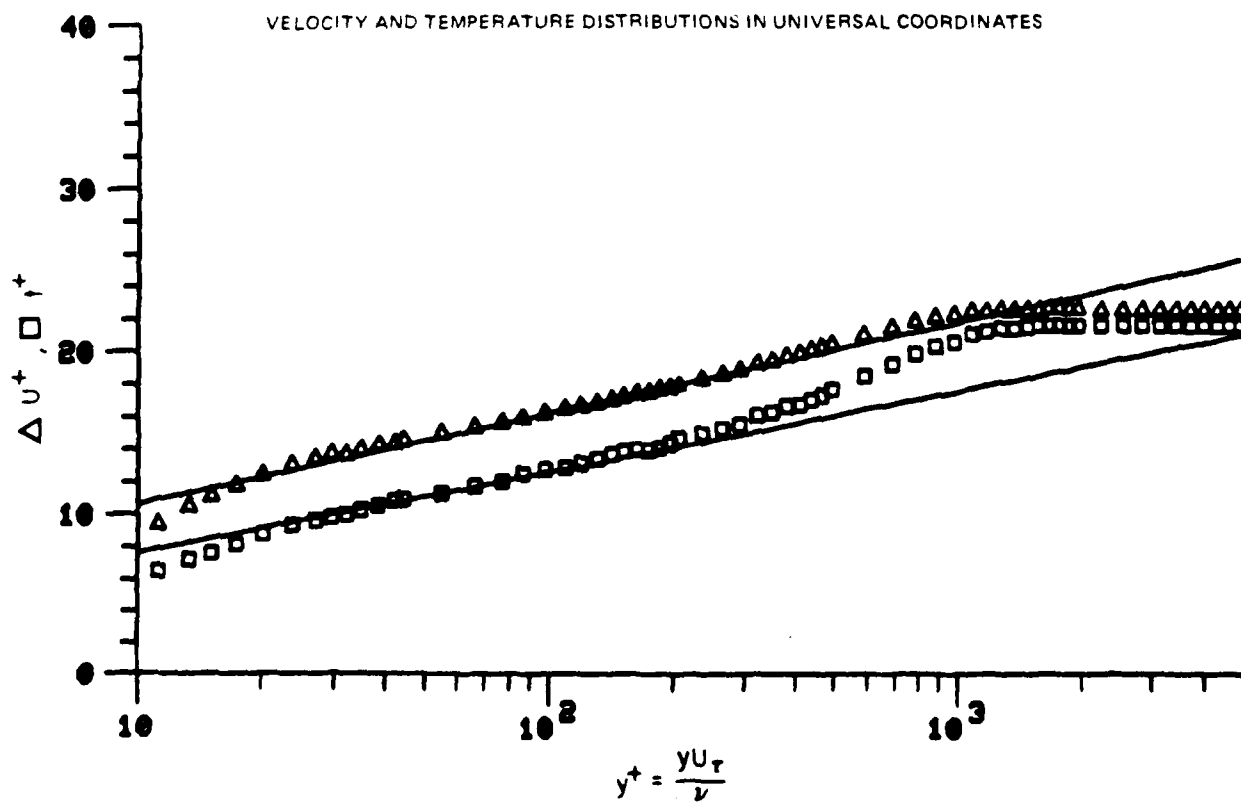
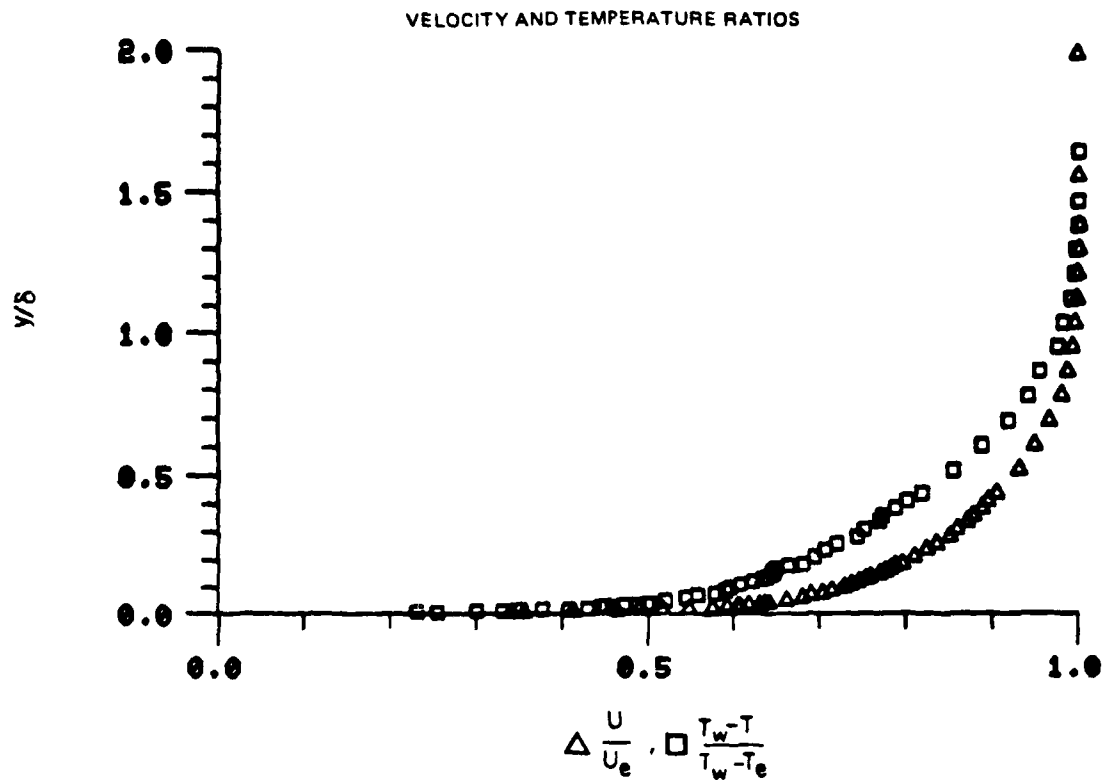


Figure 37. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.20

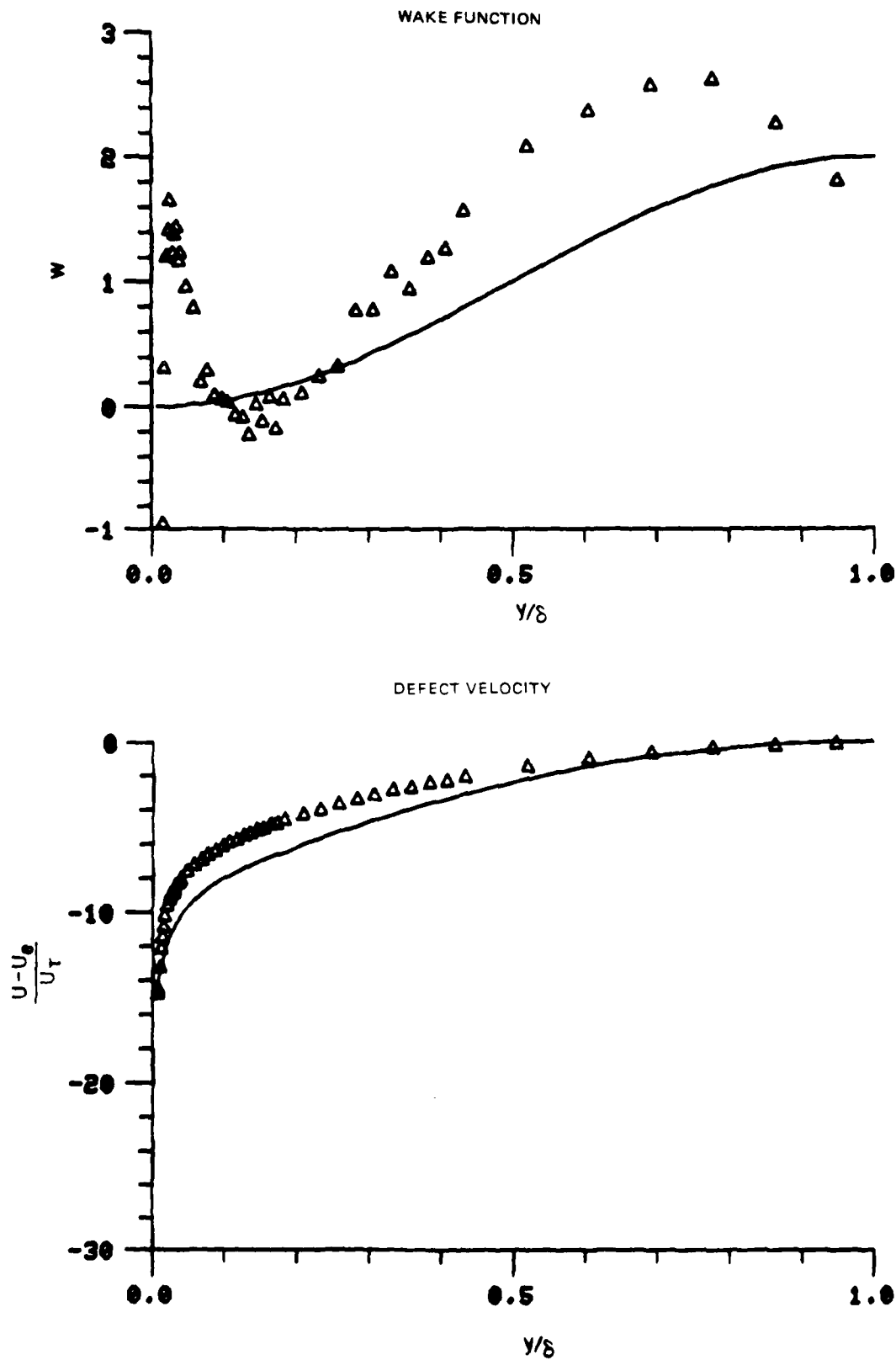


Figure 37. Boundary Layer Velocity Profiles
Run No.1 Point No.20

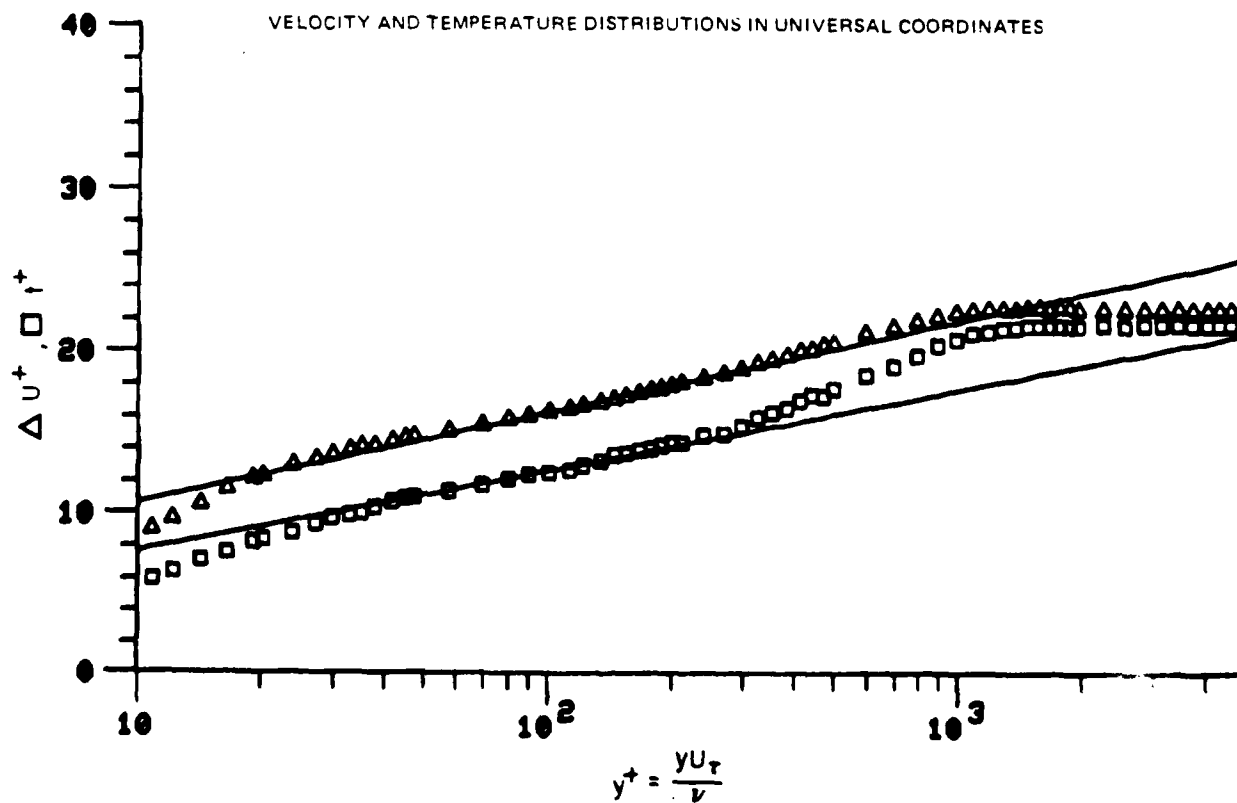
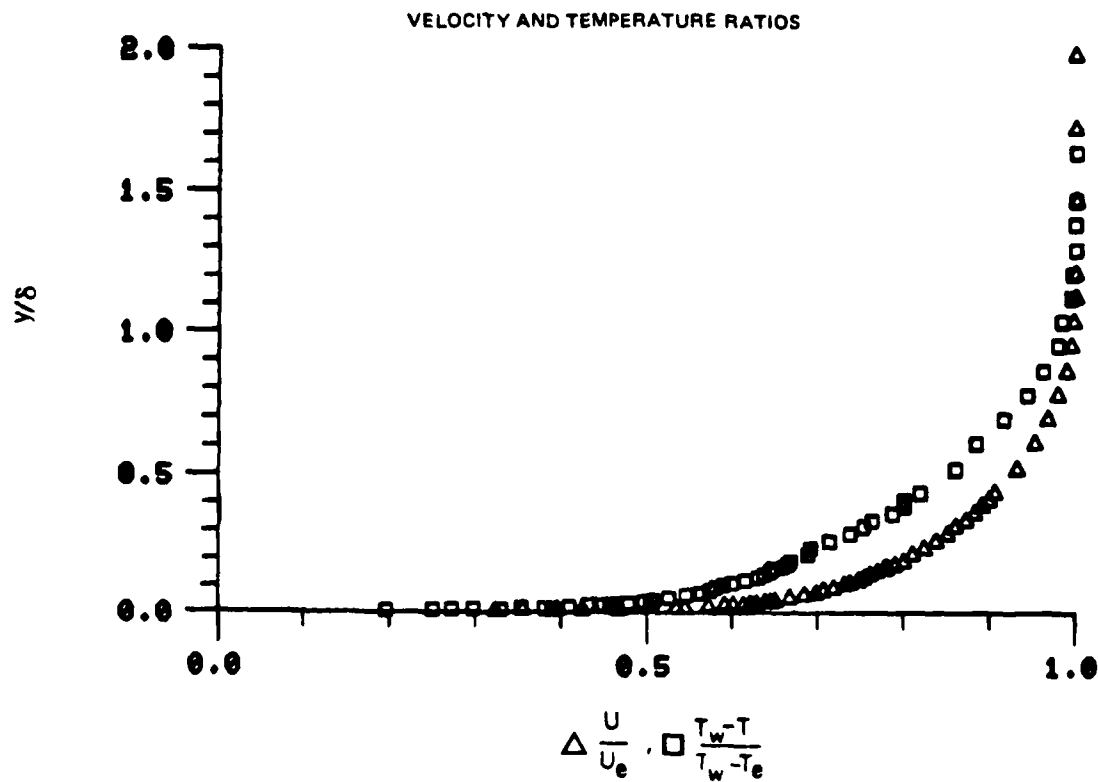


Figure 38. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.21

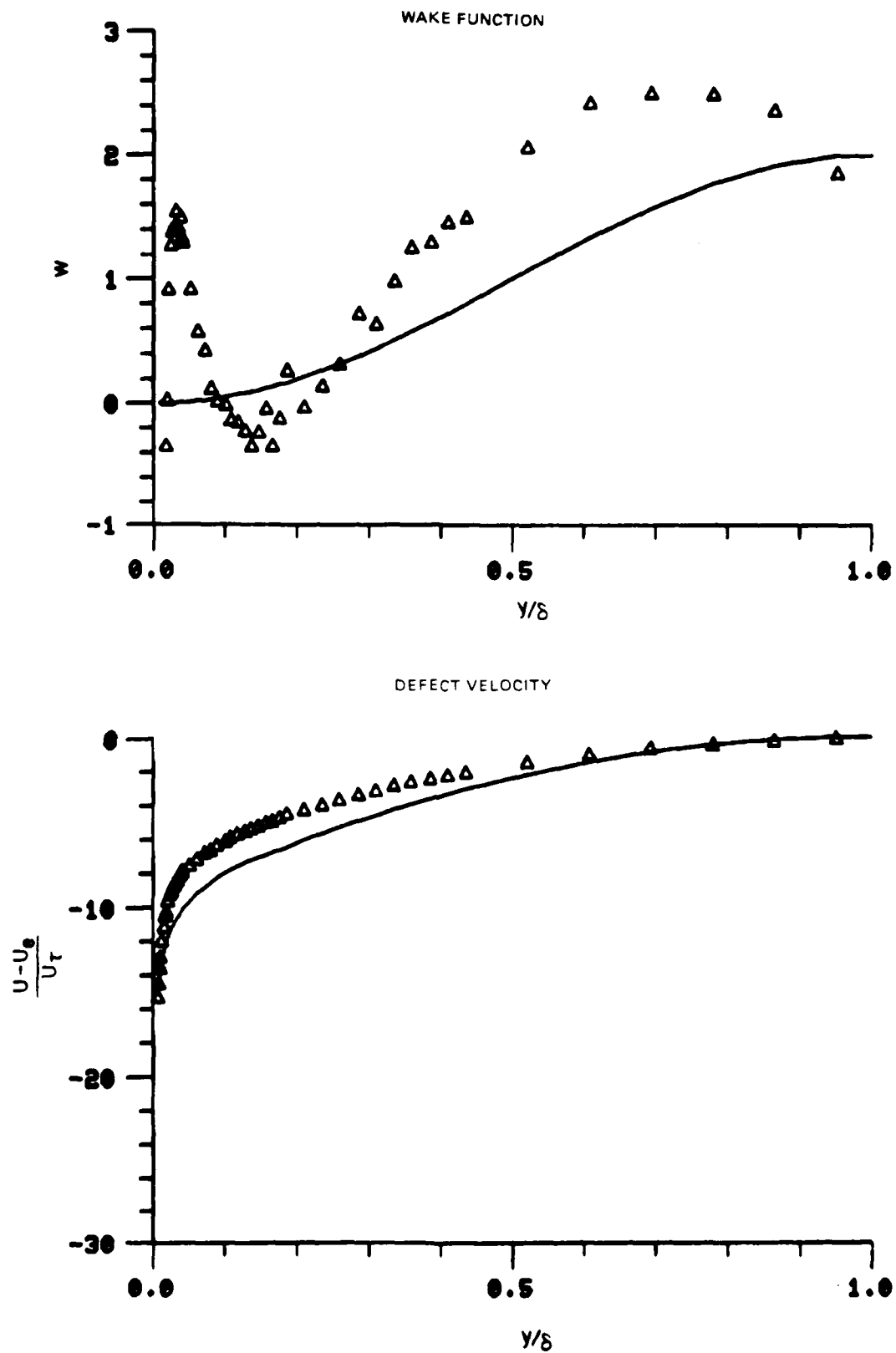


Figure 38. Boundary Layer Velocity Profiles
Run No.1 Point No.21

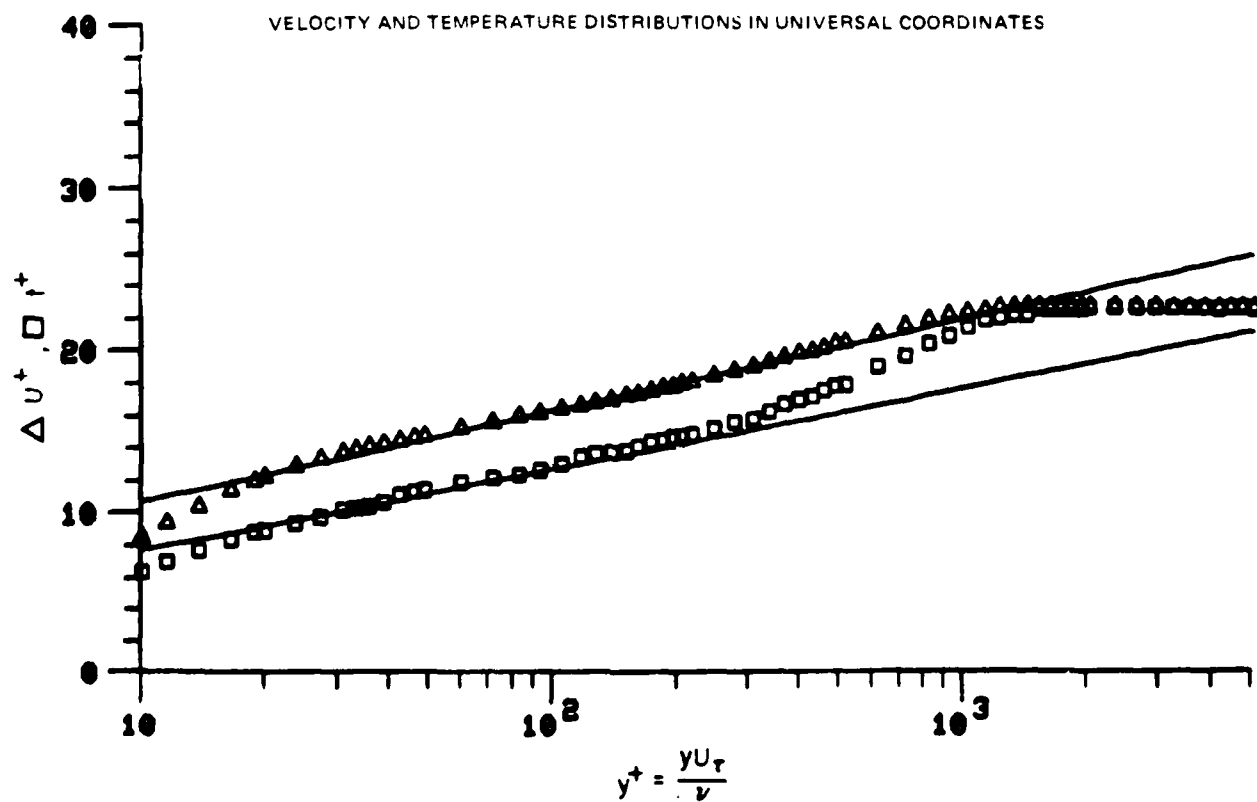
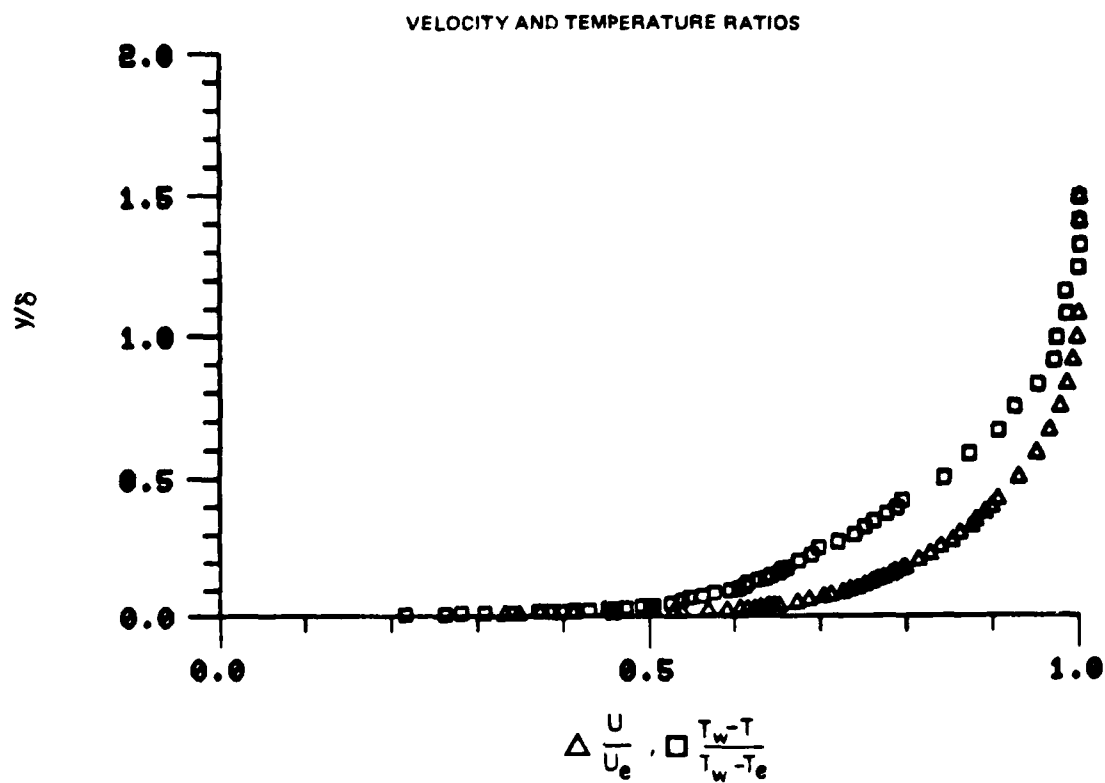


Figure 39. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.22

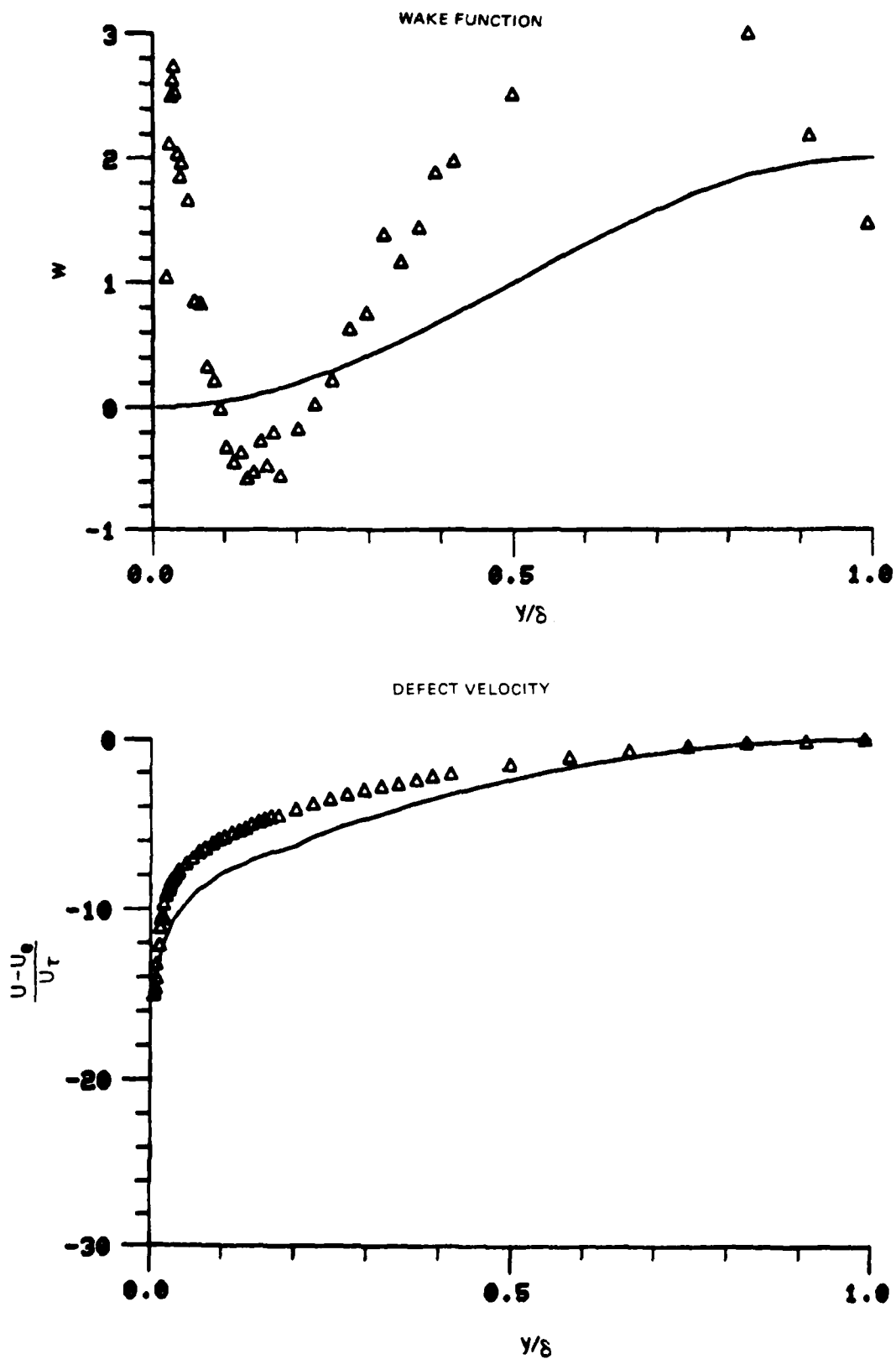


Figure 39. Boundary Layer Velocity Profiles
Run No.1 Point No.22

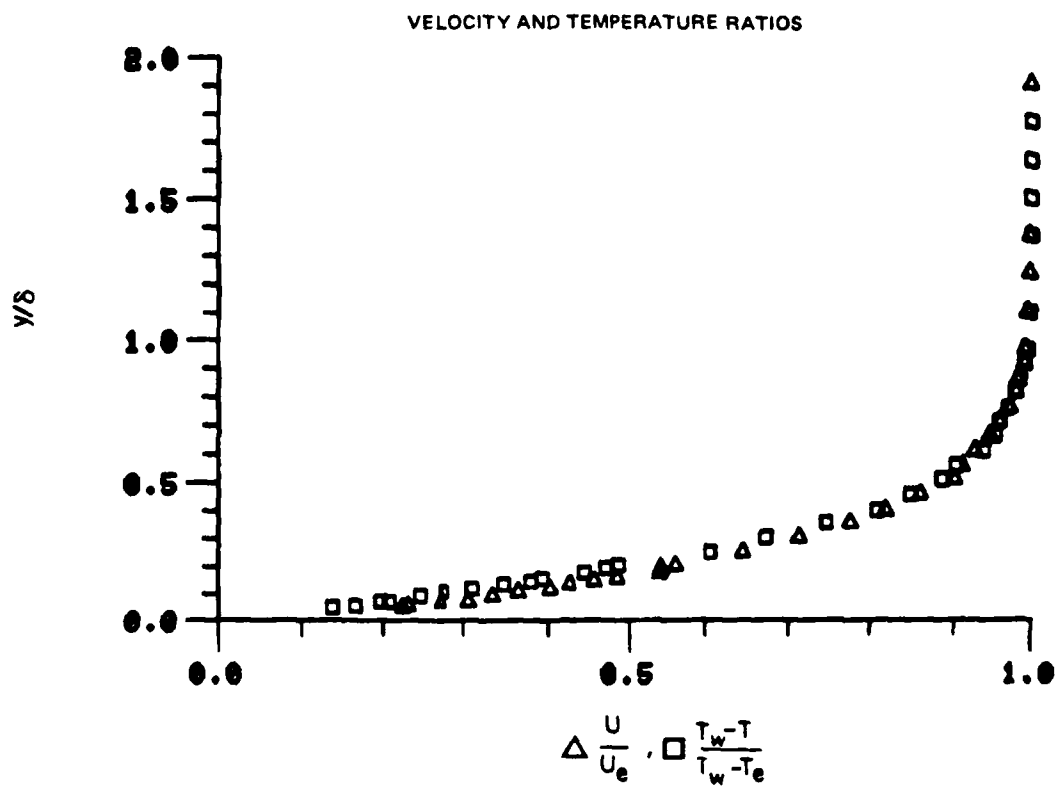


Figure 40. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.4

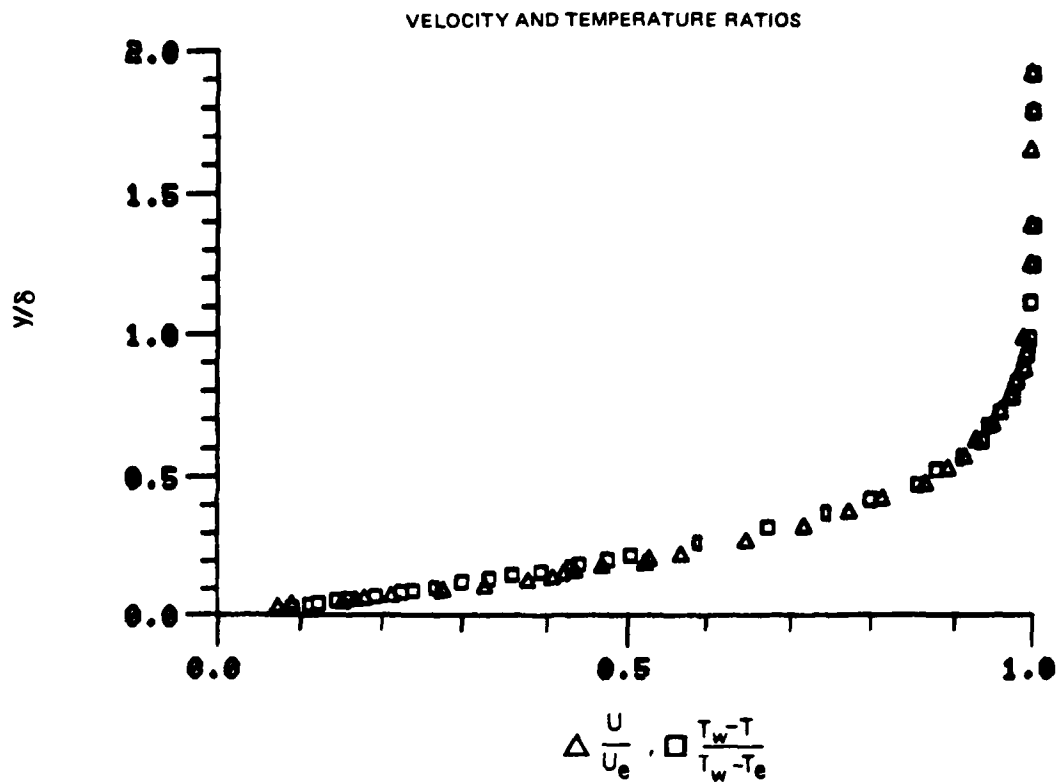


Figure 41. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.5

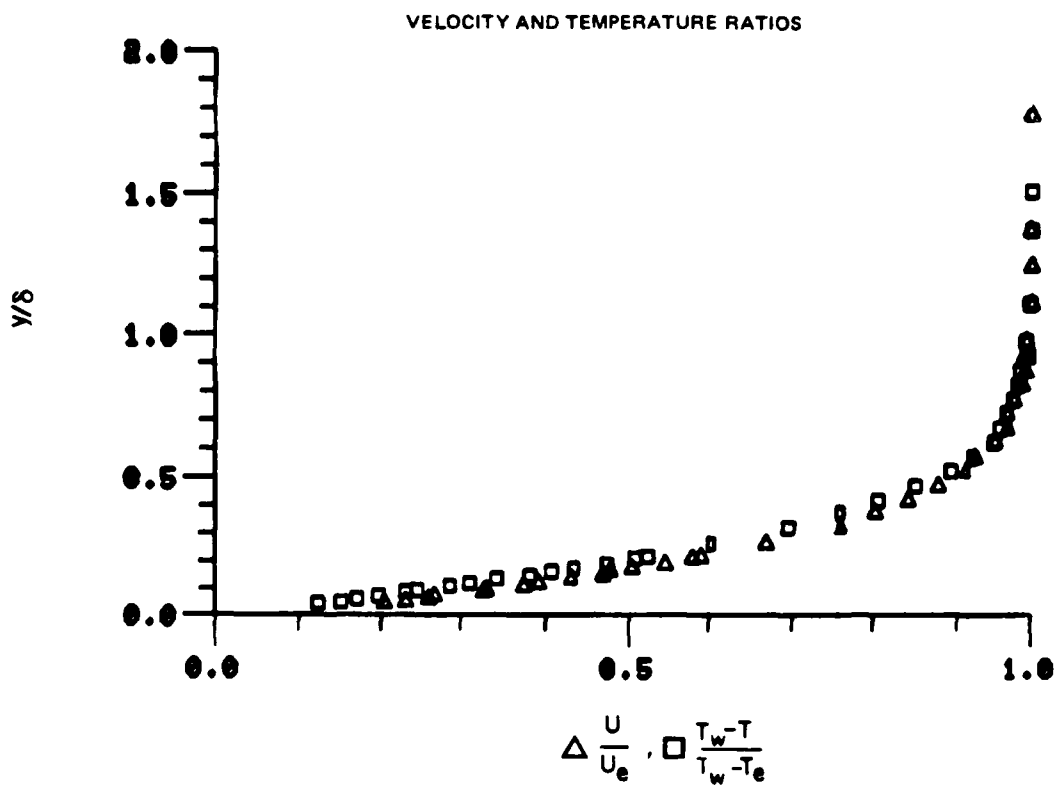


Figure 42. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.6

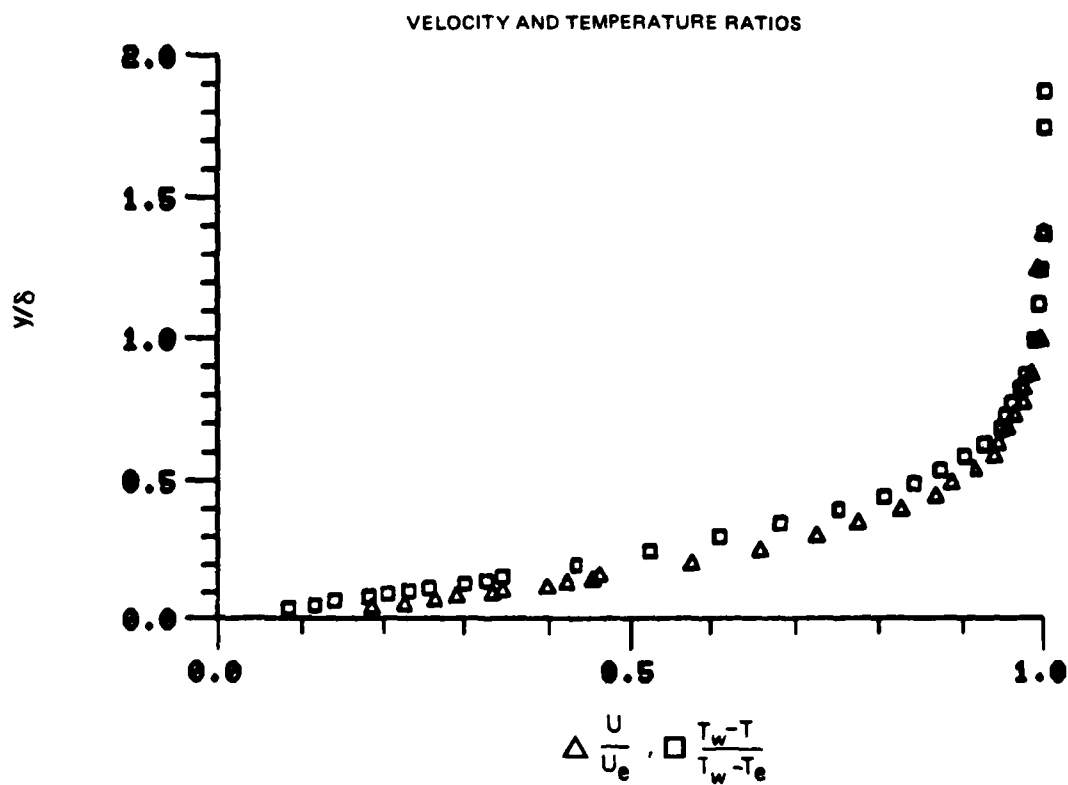


Figure 43. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.7

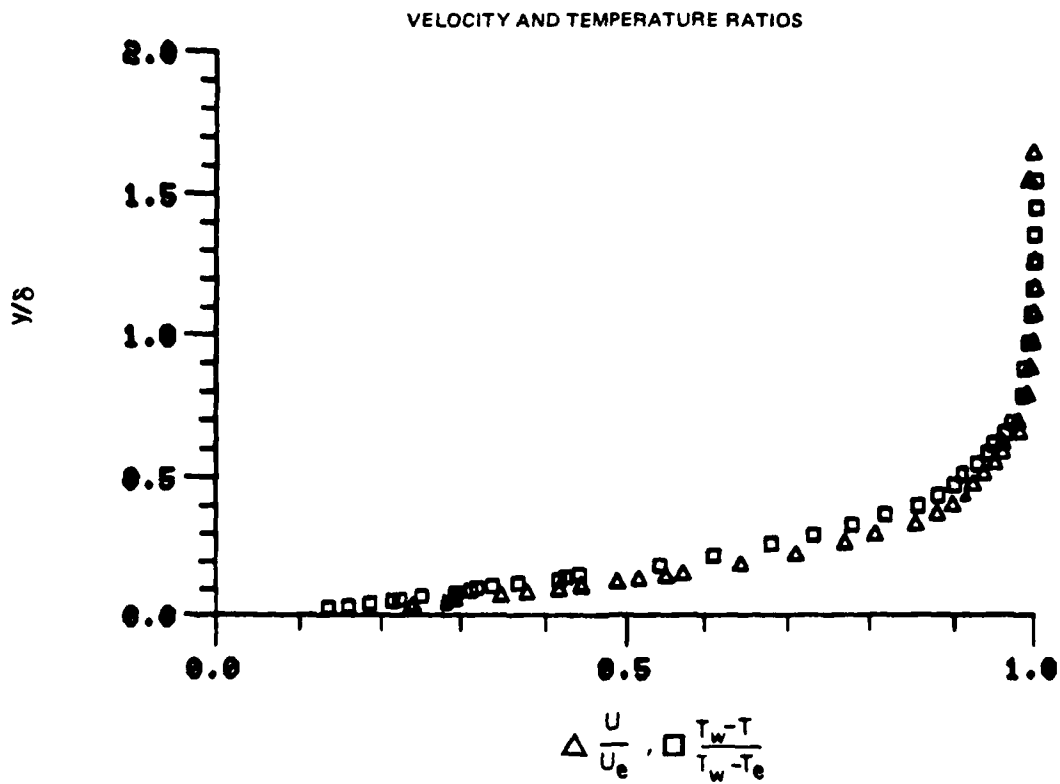


Figure 44. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 9

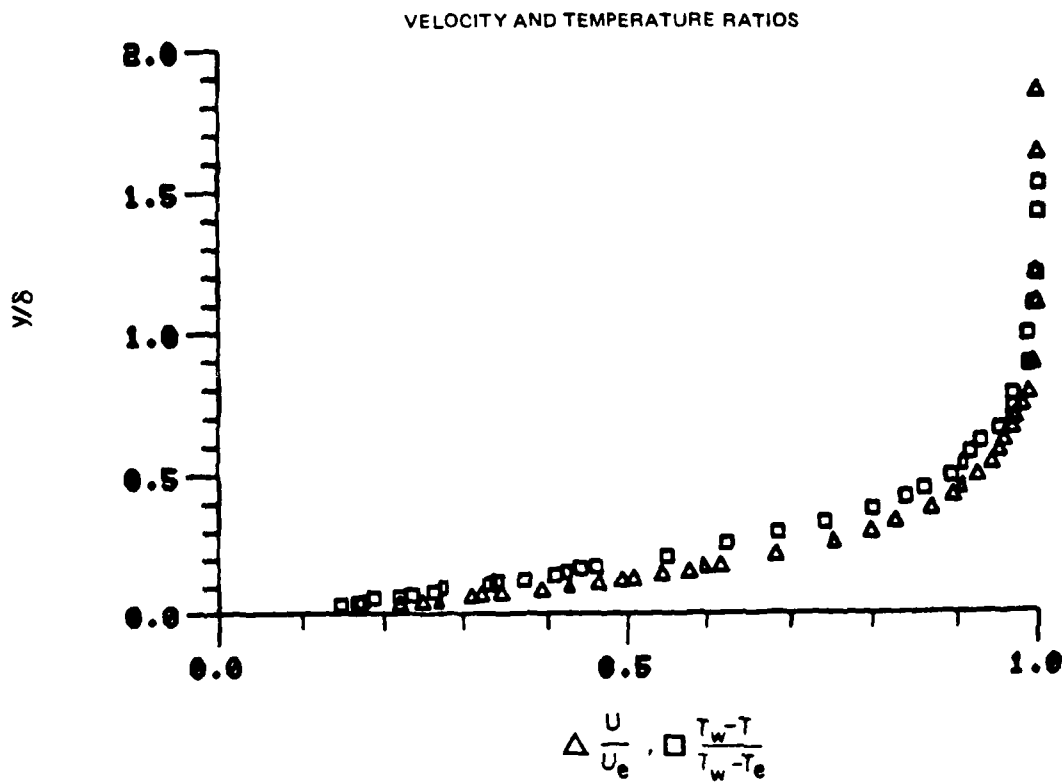


Figure 45. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 10

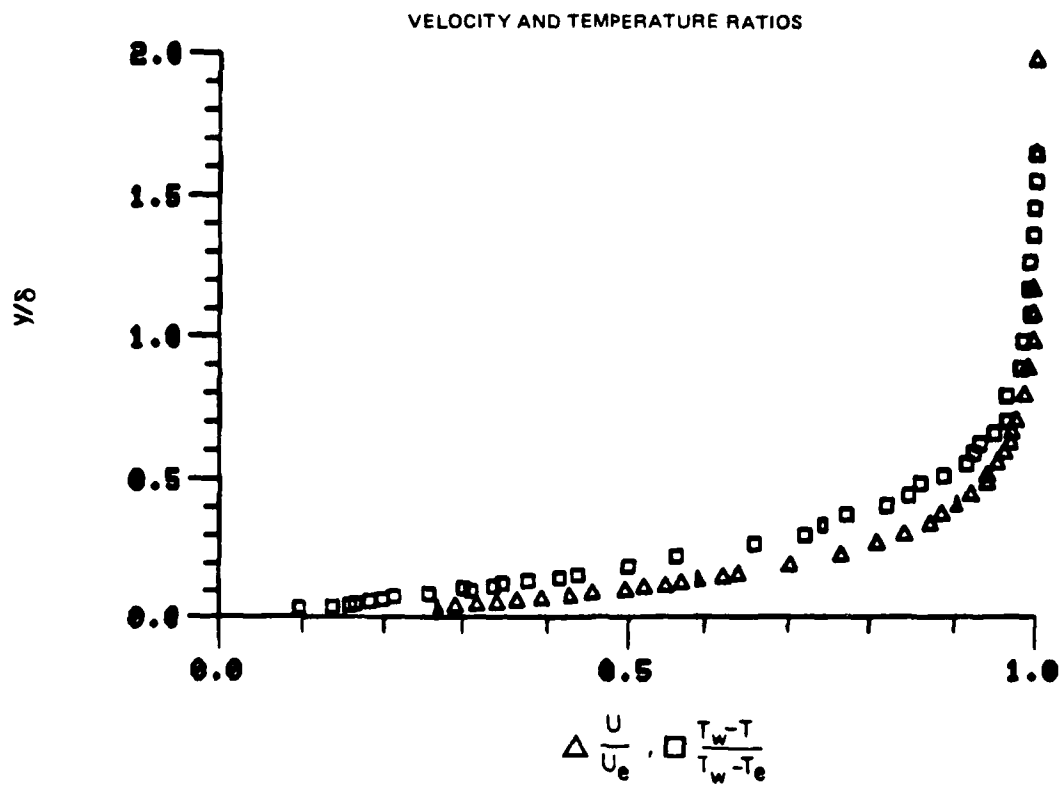


Figure 46. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 11

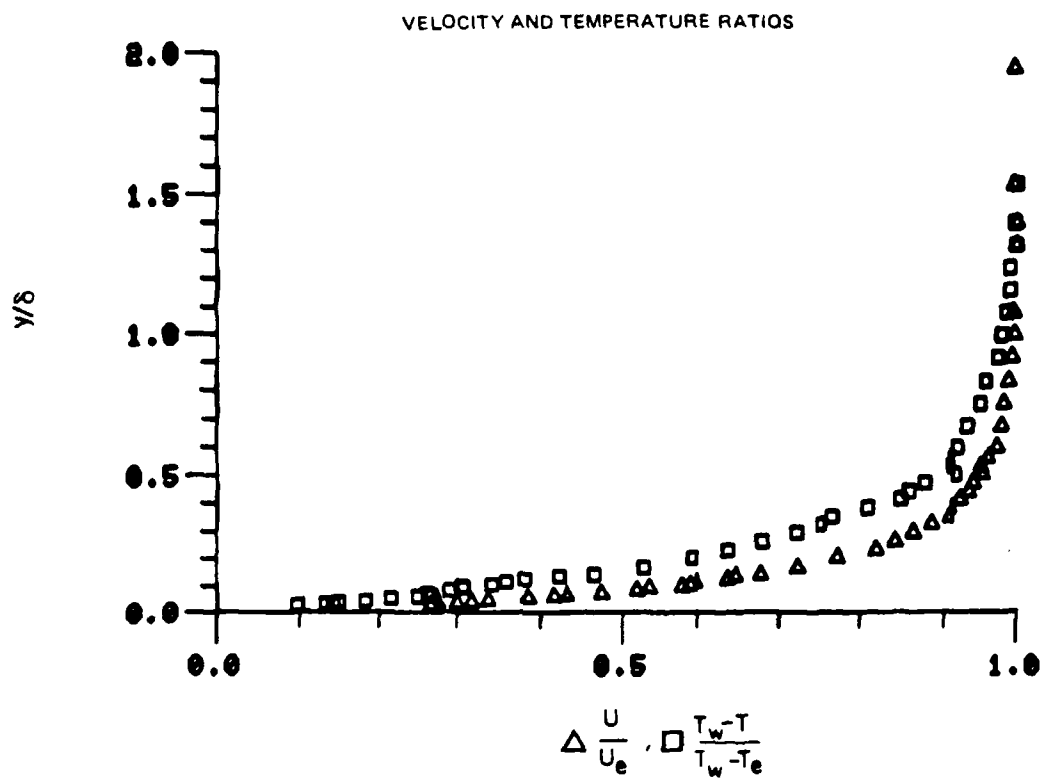


Figure 47. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.12

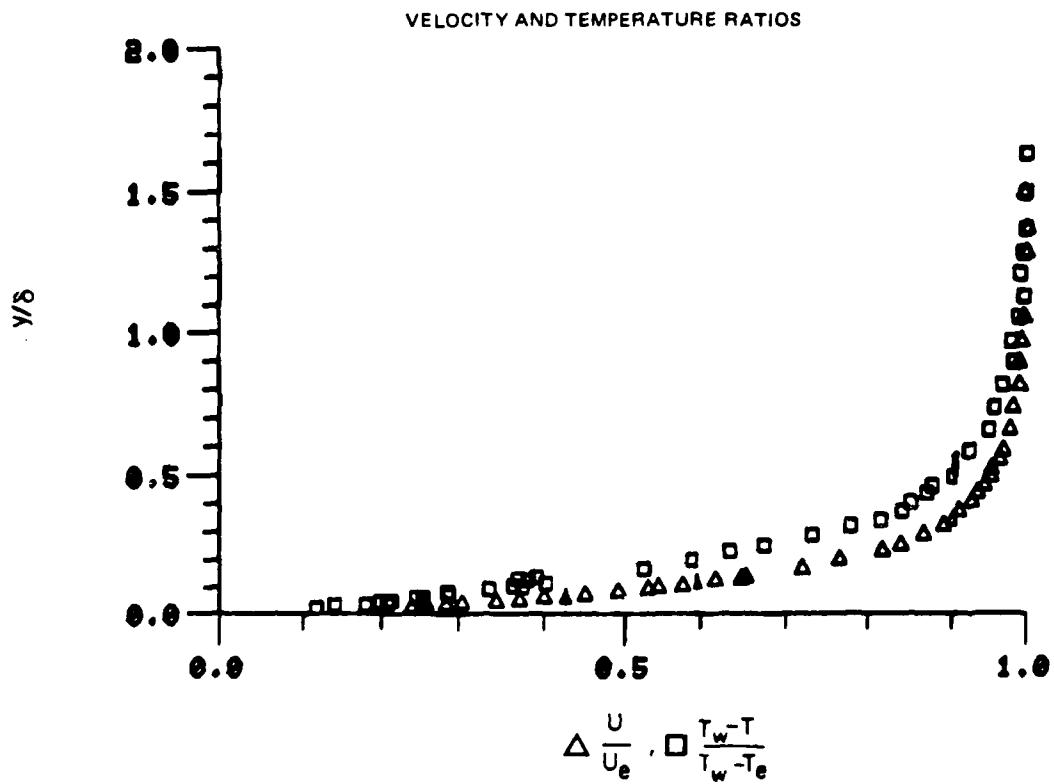


Figure 48. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.13

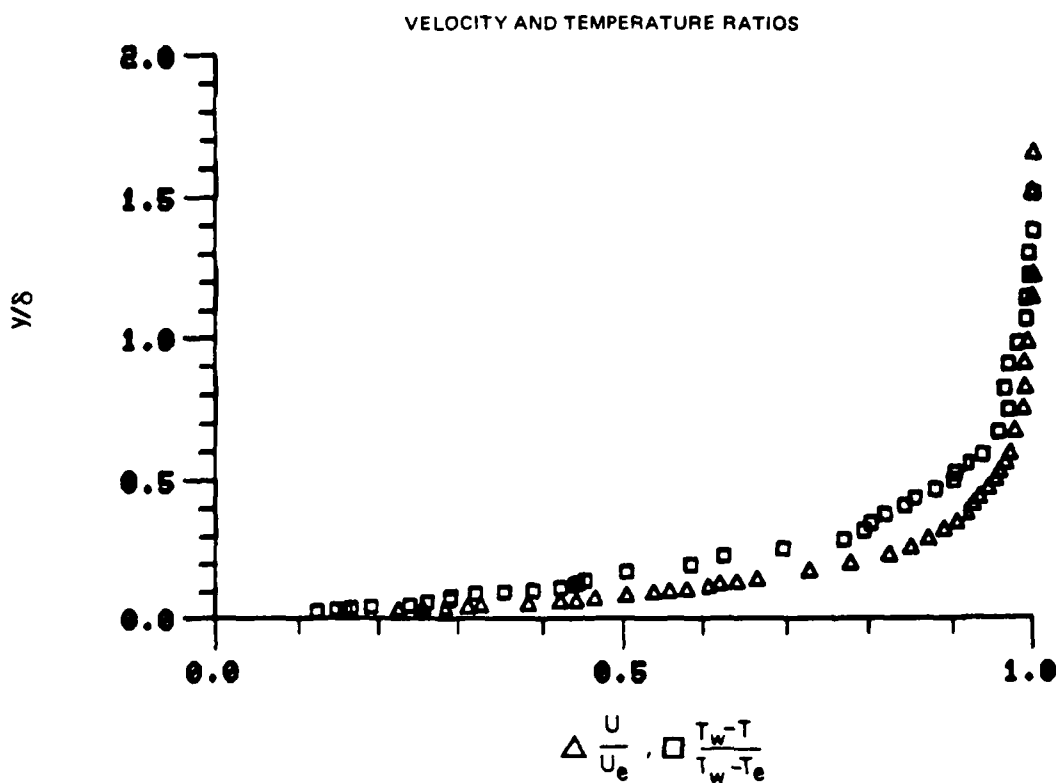


Figure 49. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.14

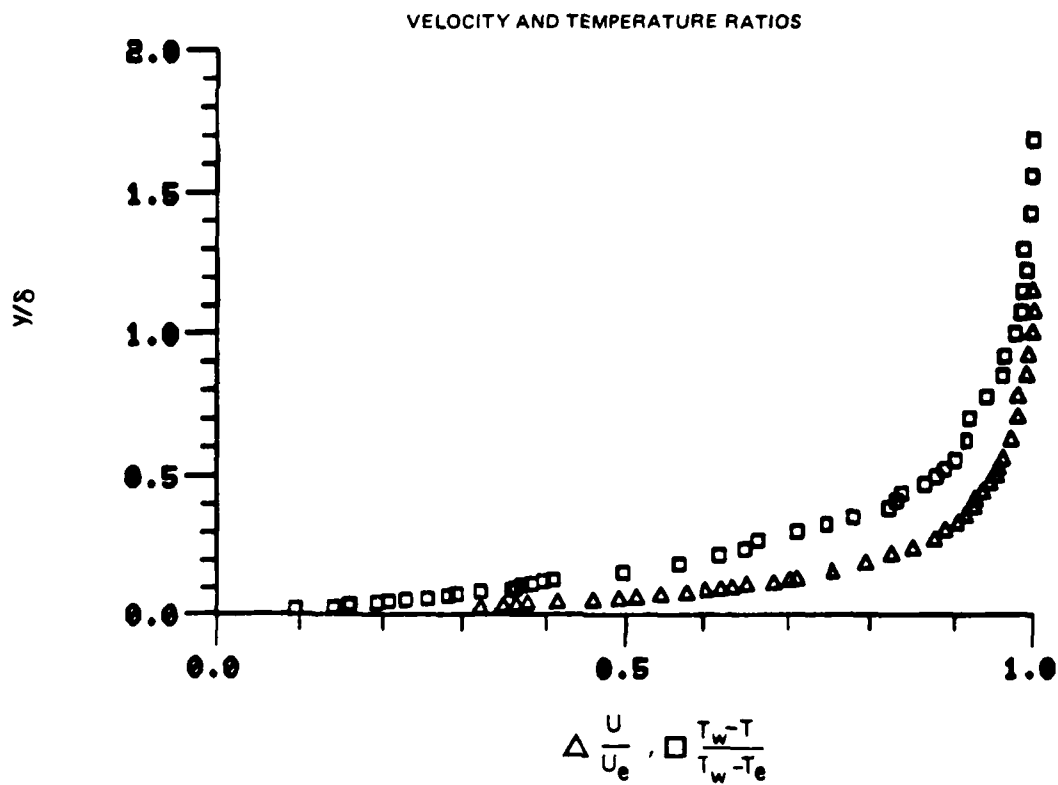


Figure 50. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.15

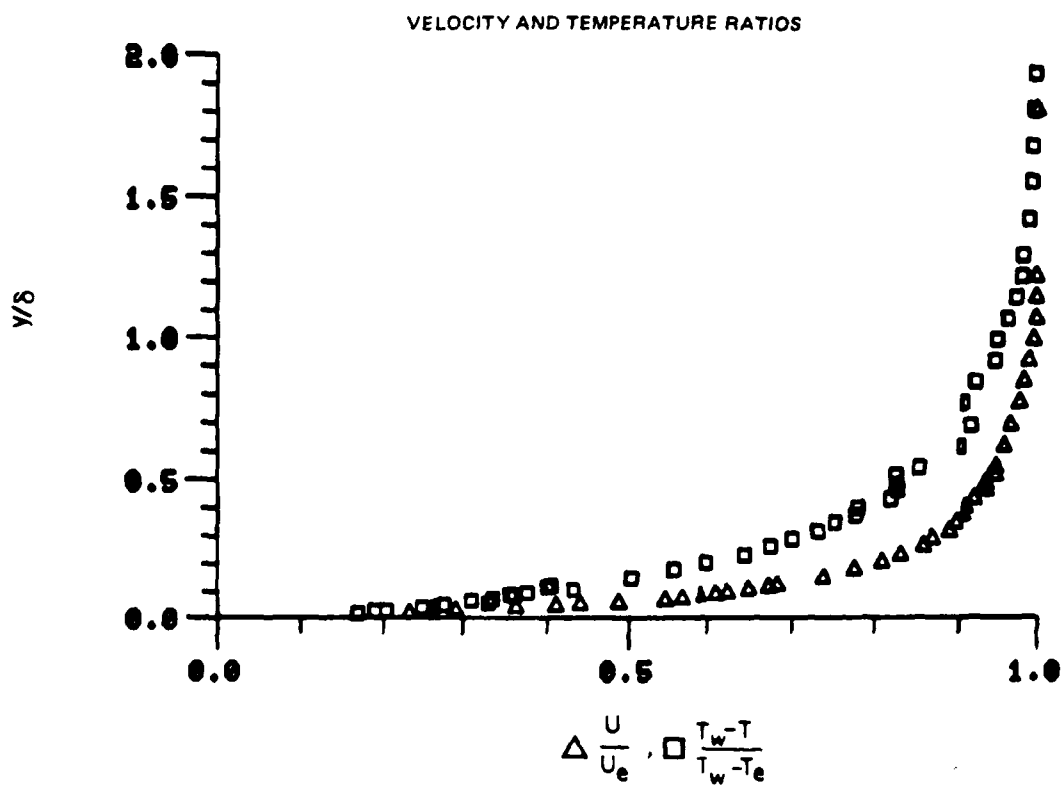


Figure 51. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 16

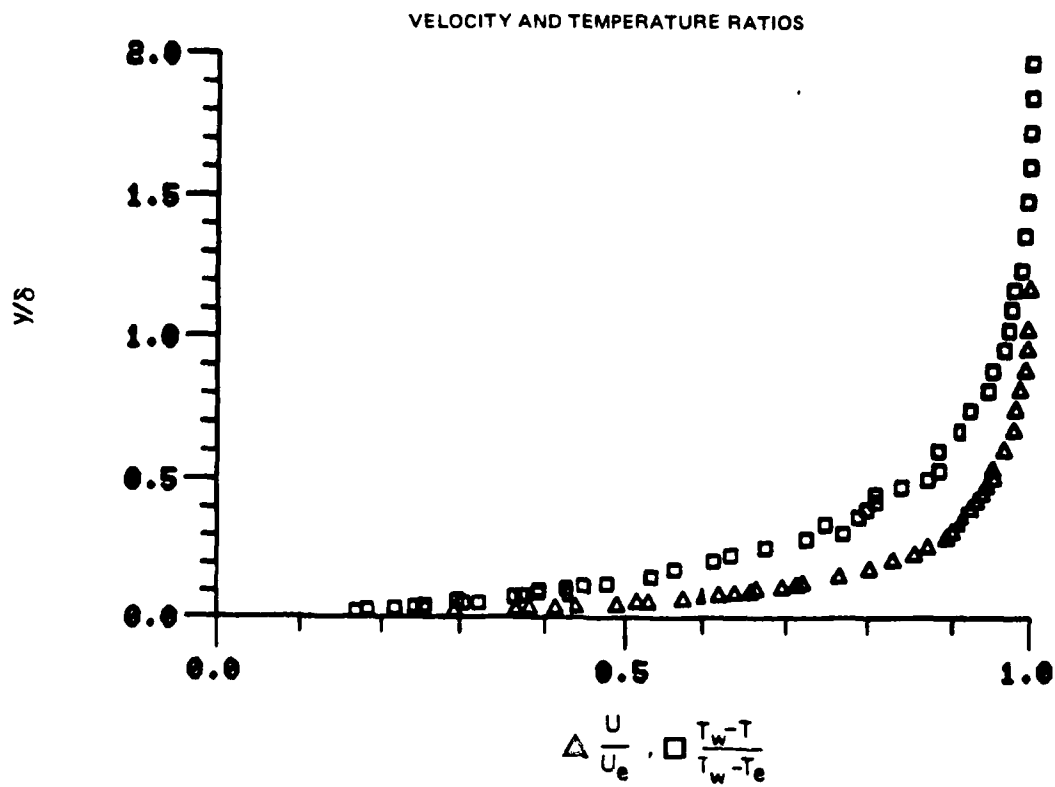


Figure 52. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.17

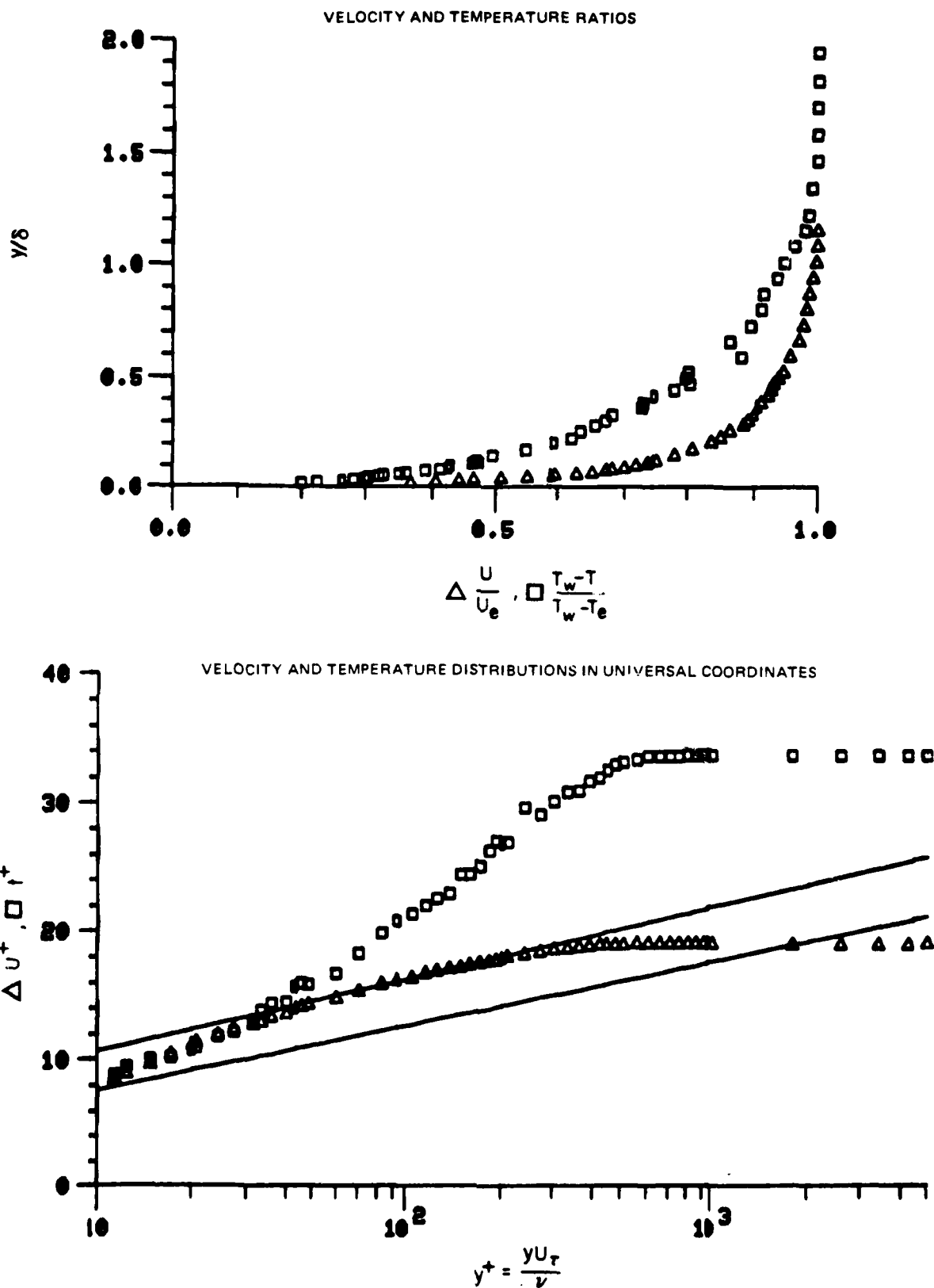


Figure 53. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.19

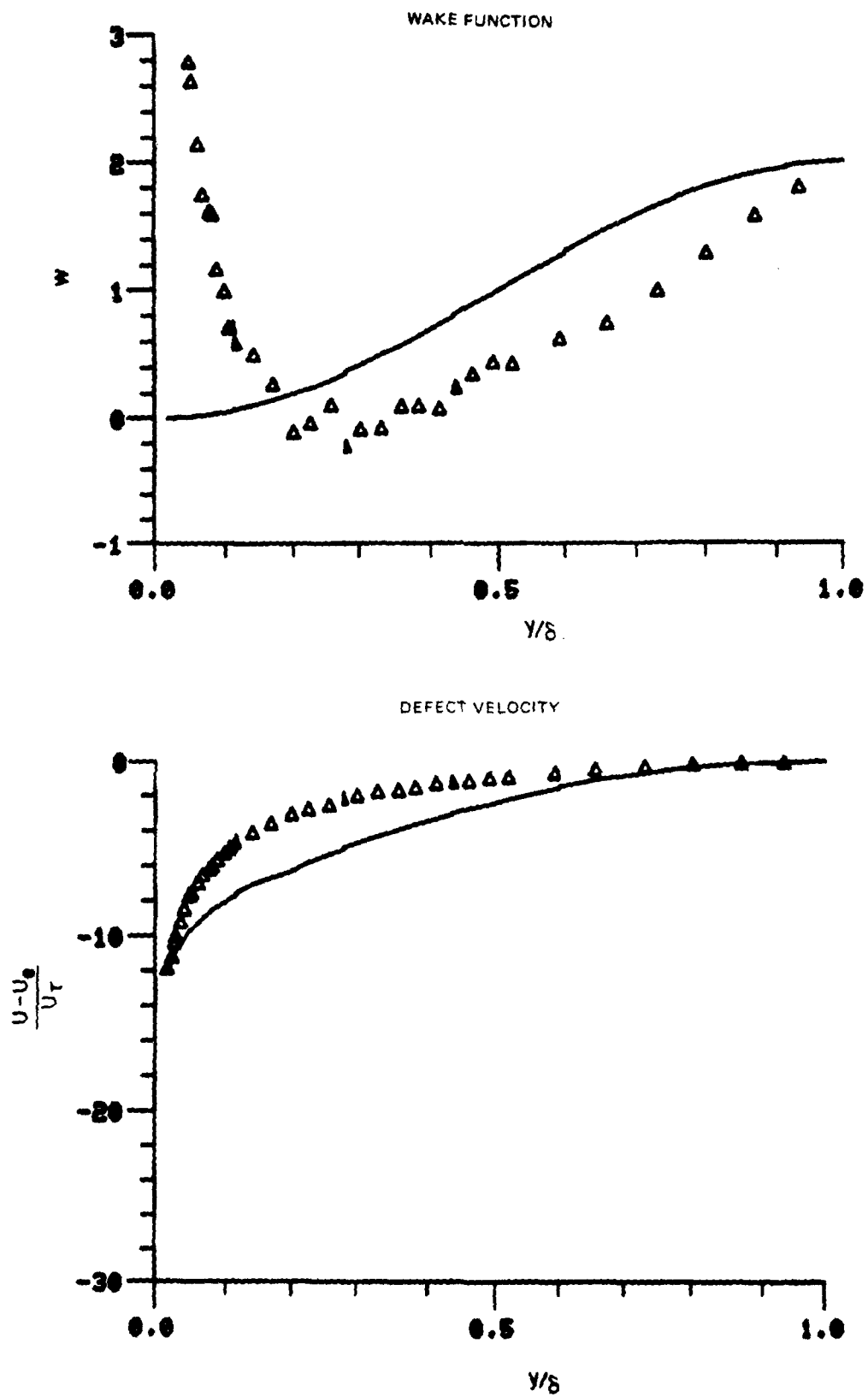


Figure 53. Boundary Layer Velocity Profiles
Run No.3 Point No.19

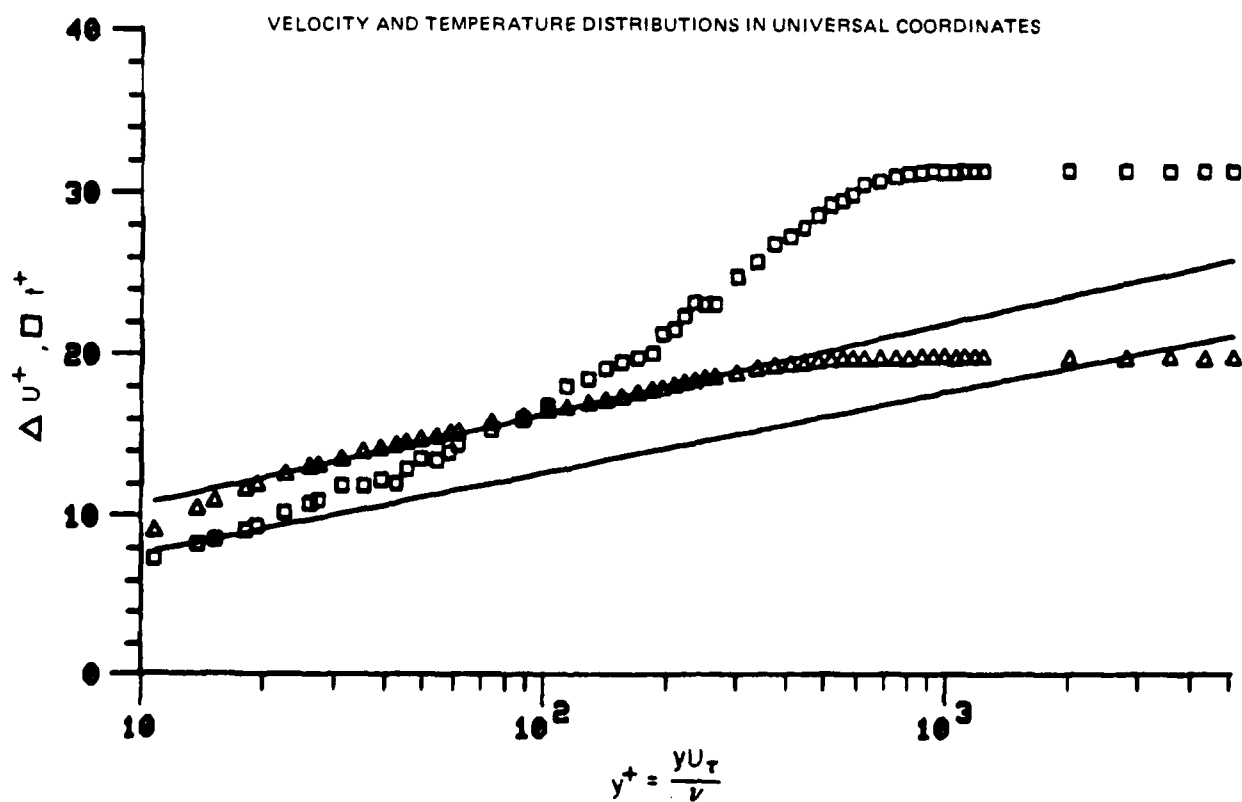
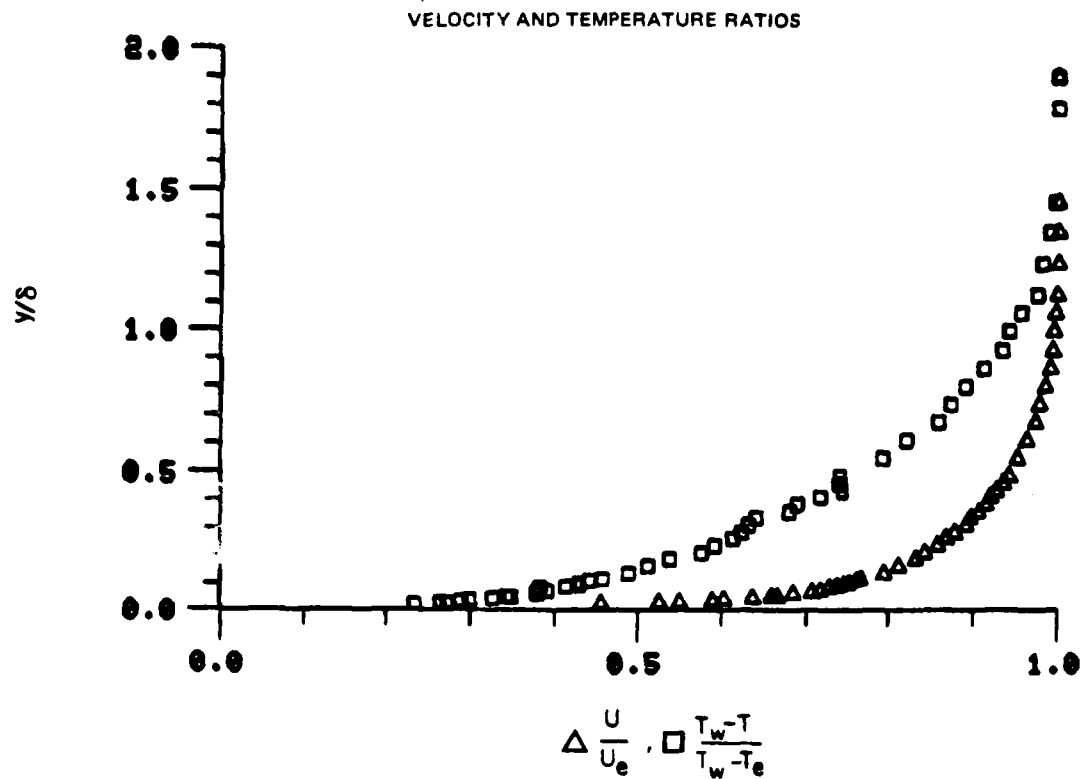


Figure 54. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.20

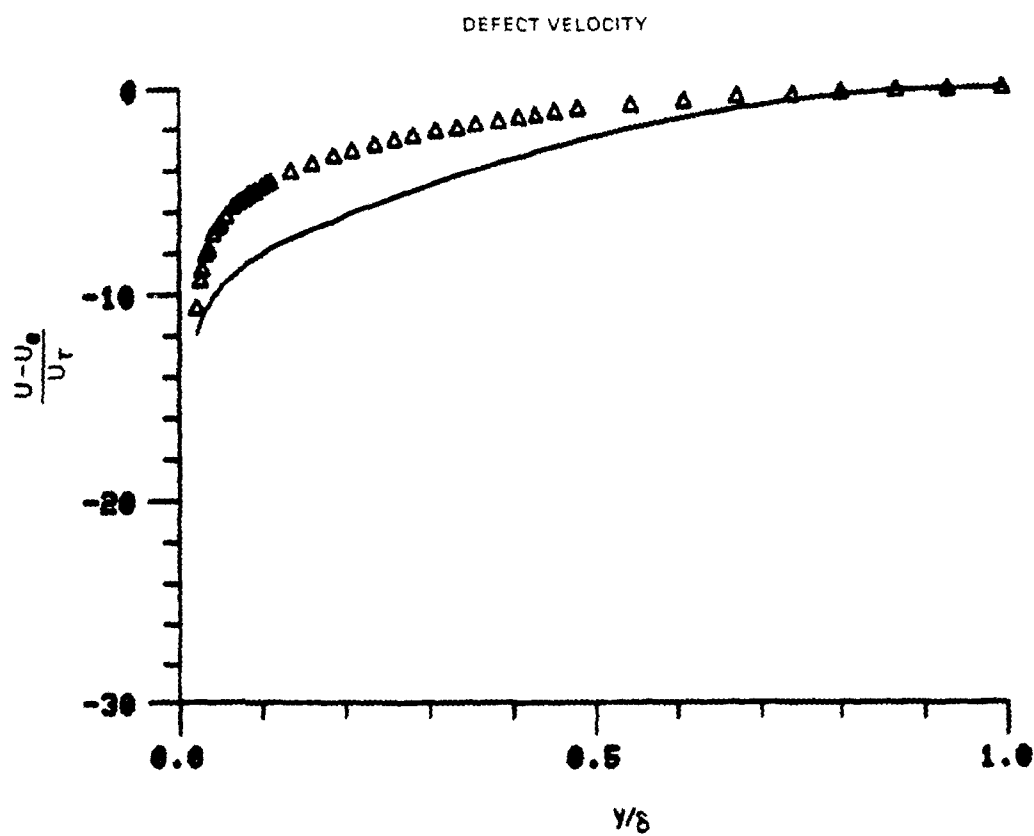
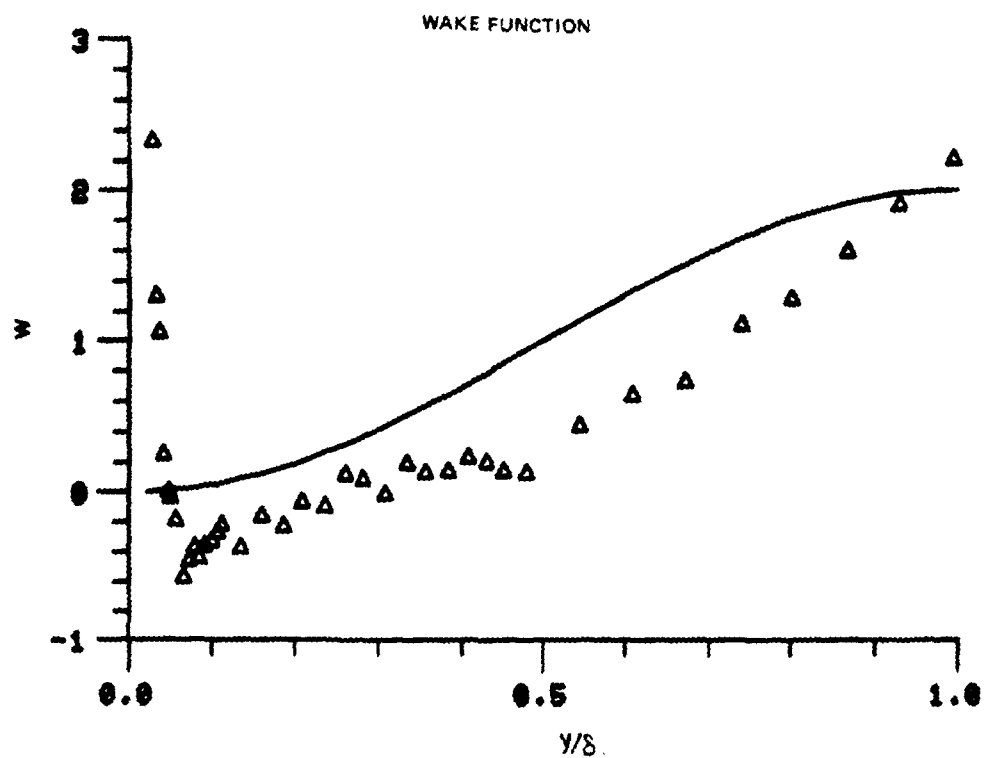


Figure 54. Boundary Layer Velocity Profiles
Run No.3 Point No.20

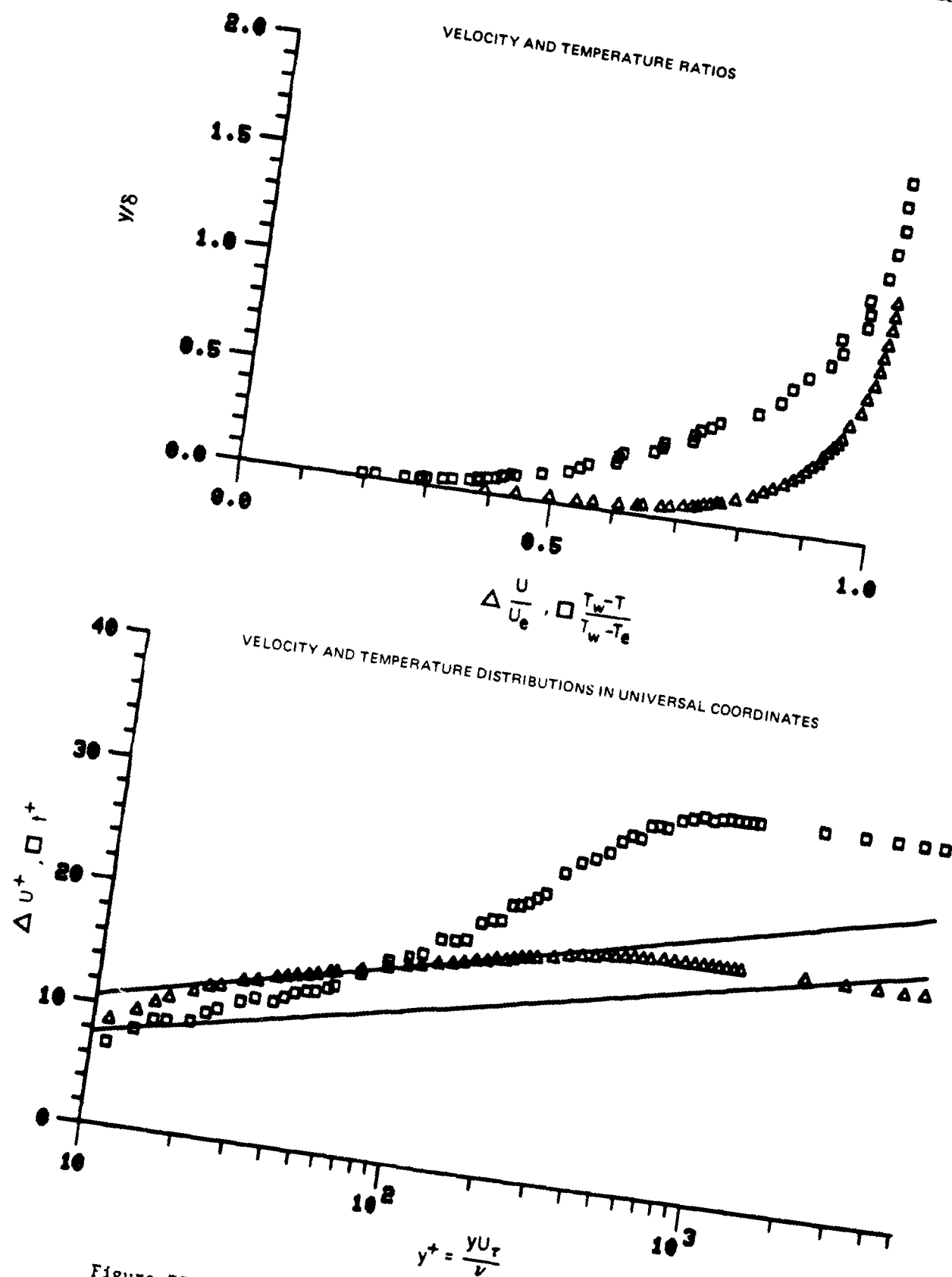


Figure 55. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.21

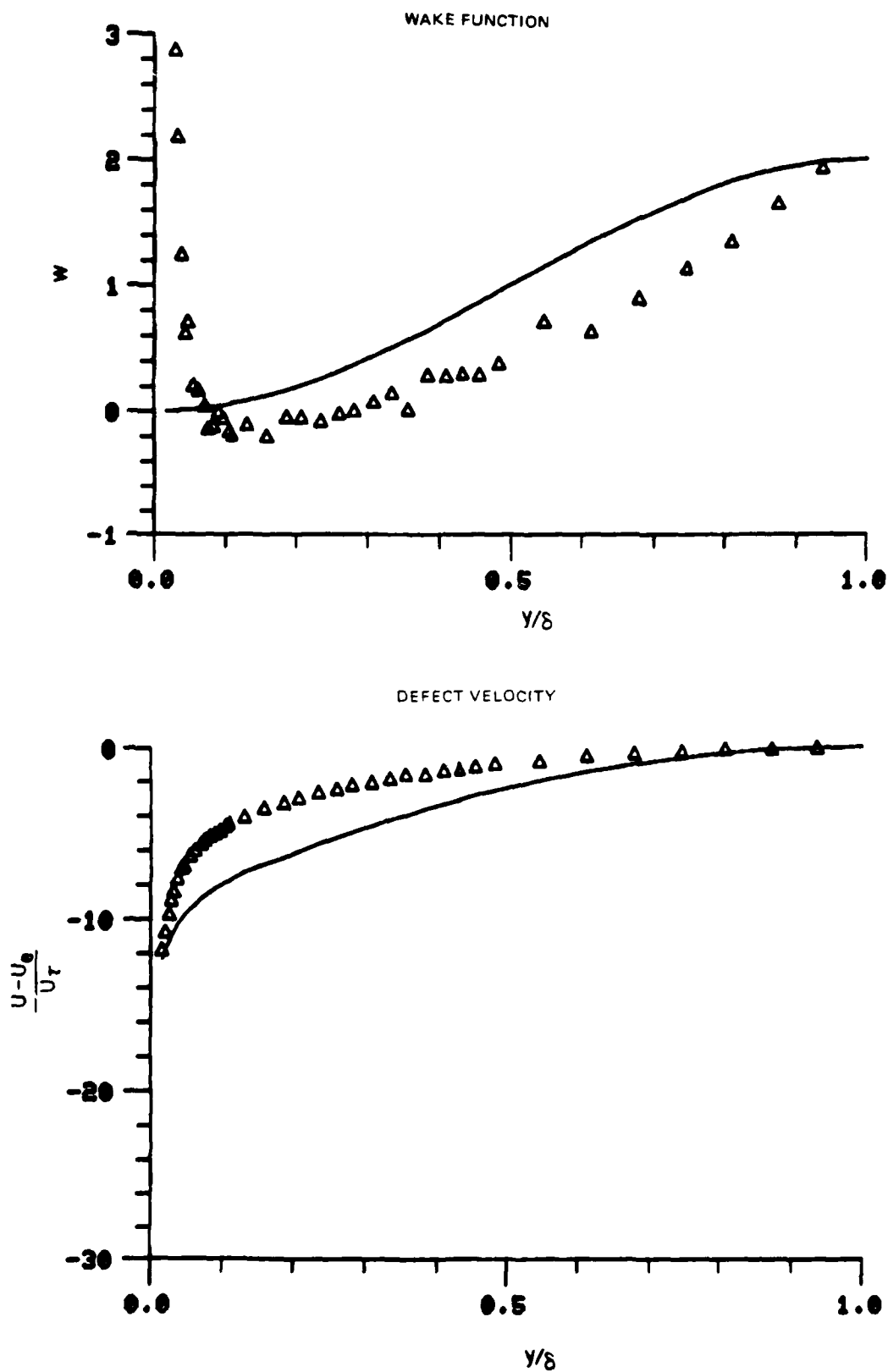


Figure 55. Boundary Layer Velocity Profiles
Run No.3 Point No.21

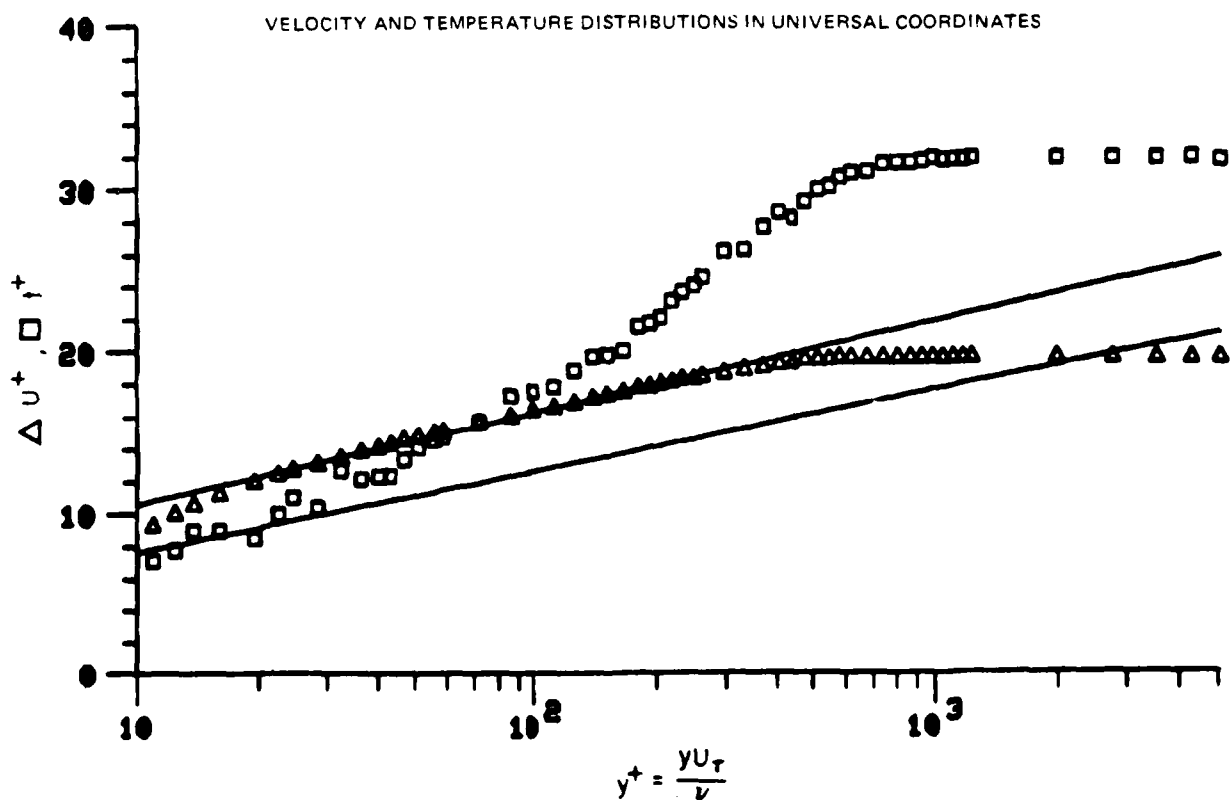
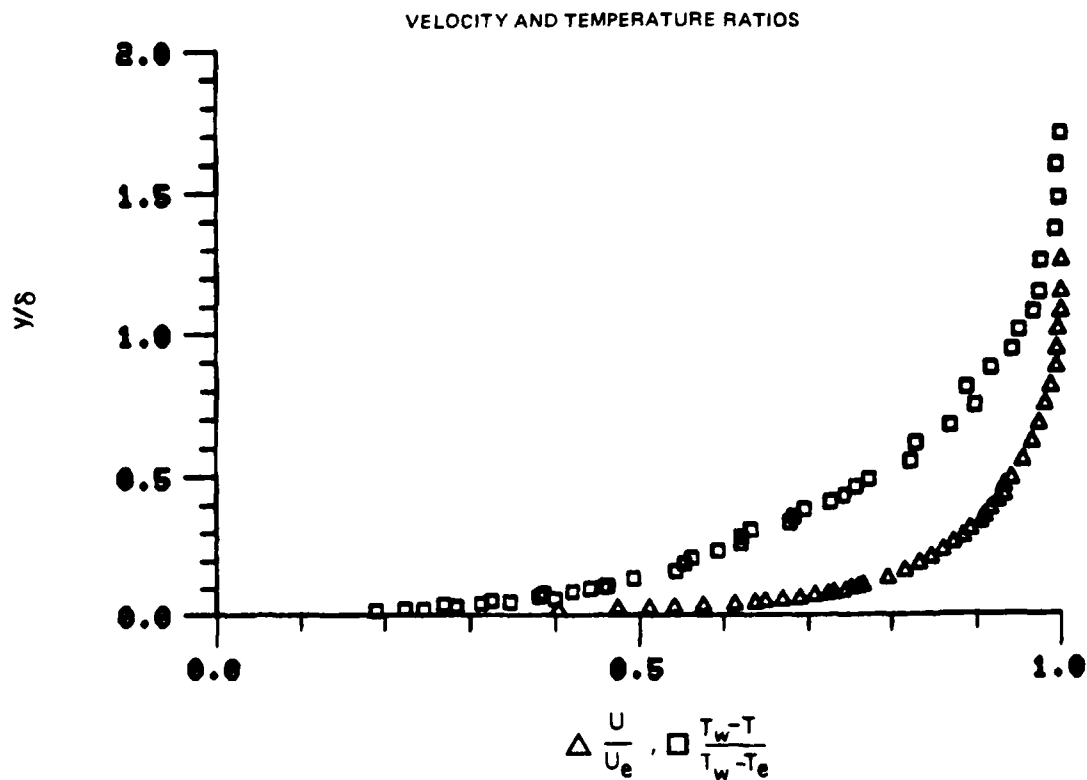


Figure 56. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.22

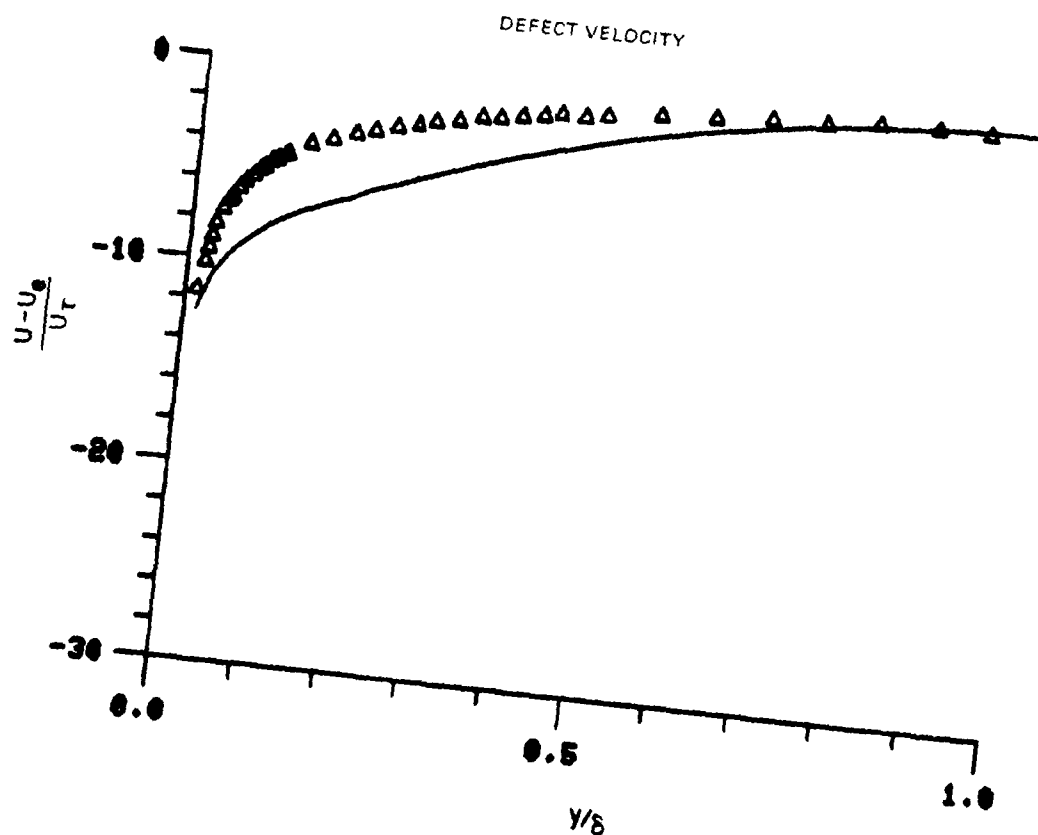
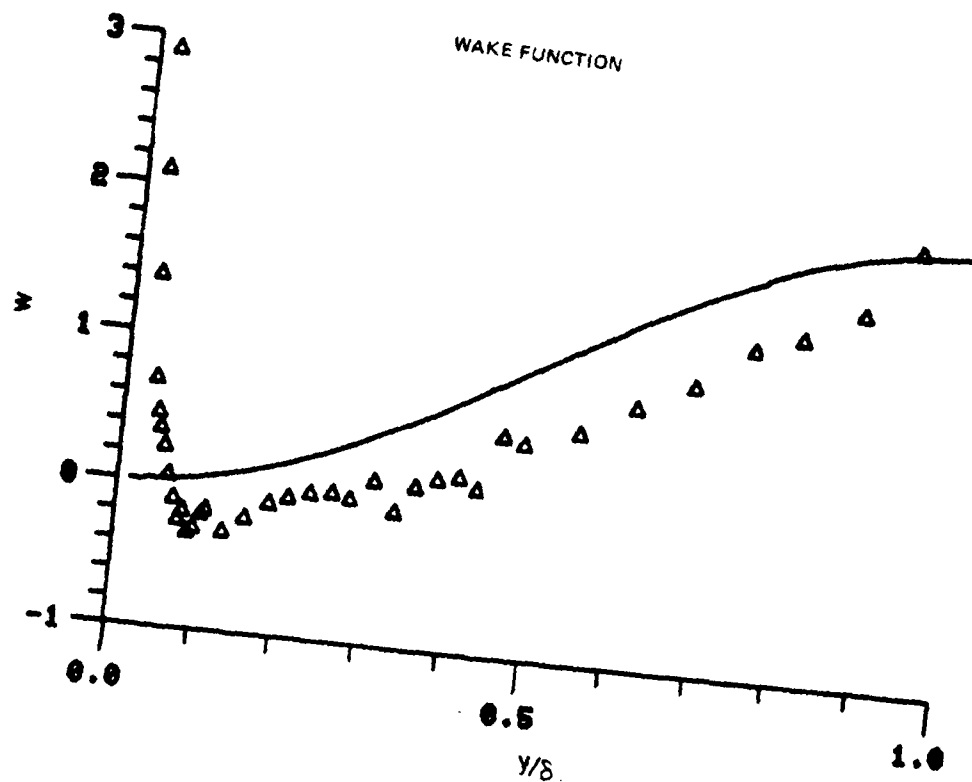


Figure 56. Boundary Layer Velocity Profiles
Run No. 3 Point No. 22

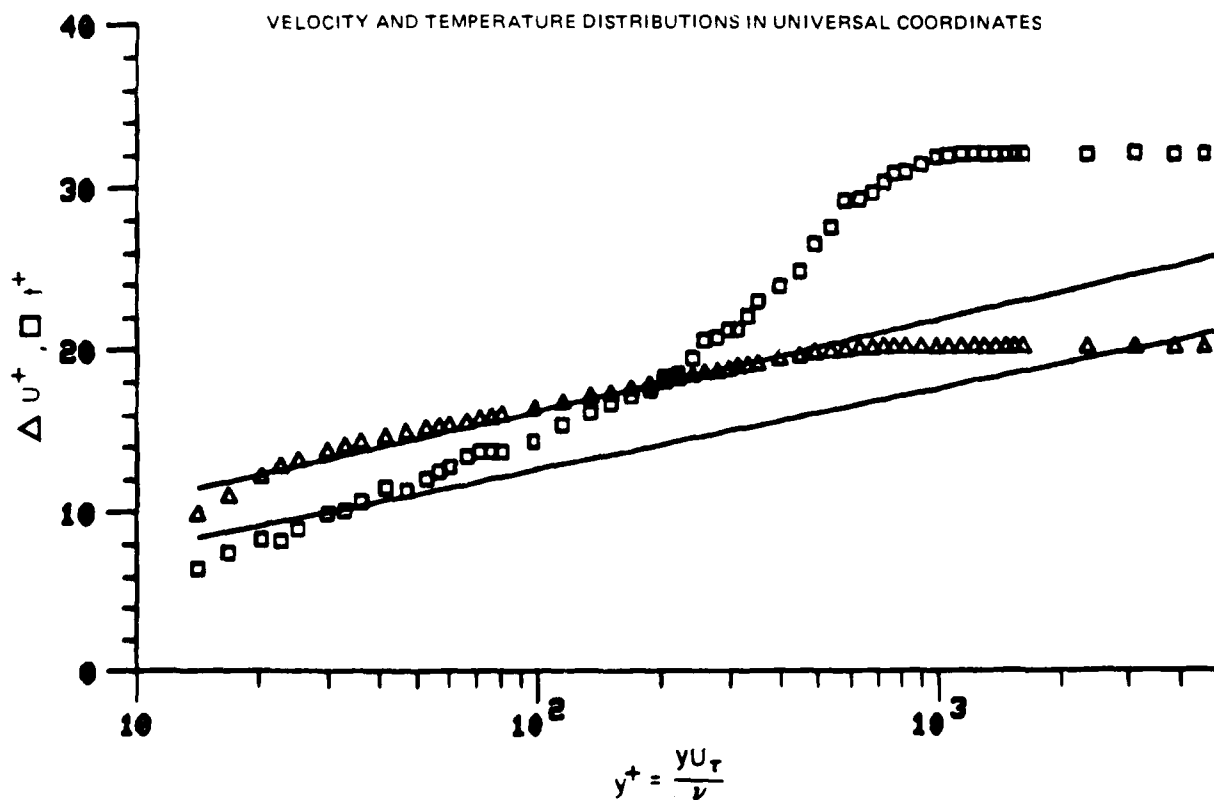
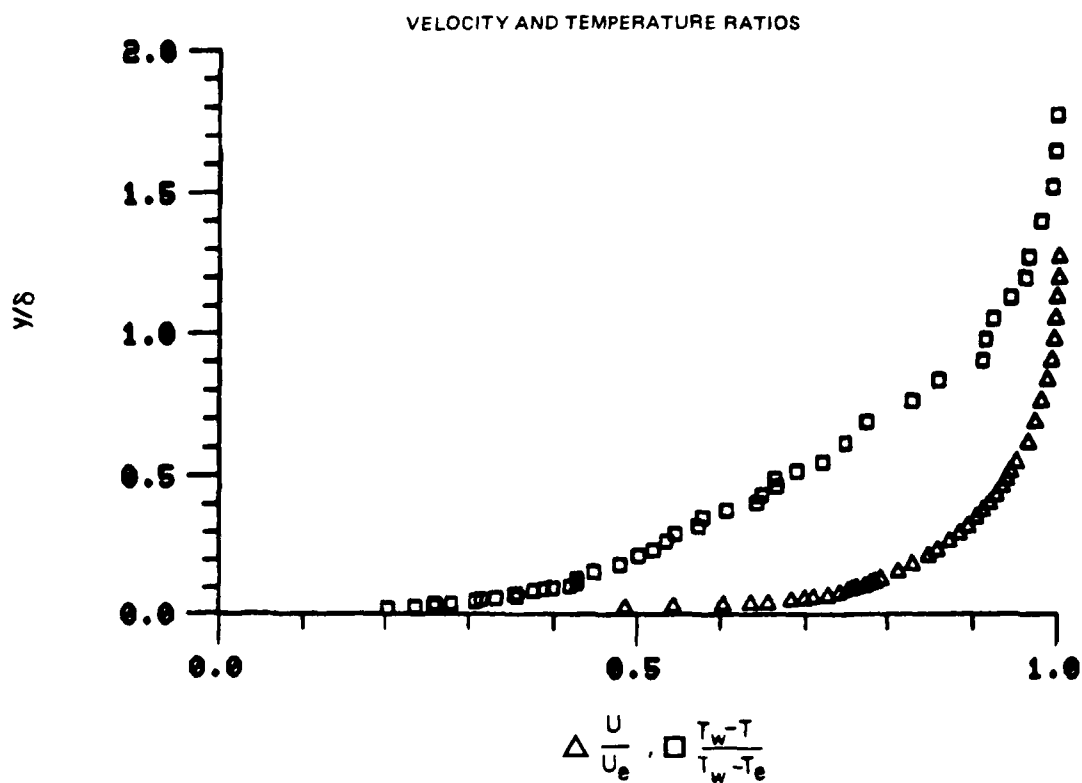


Figure 57. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.23

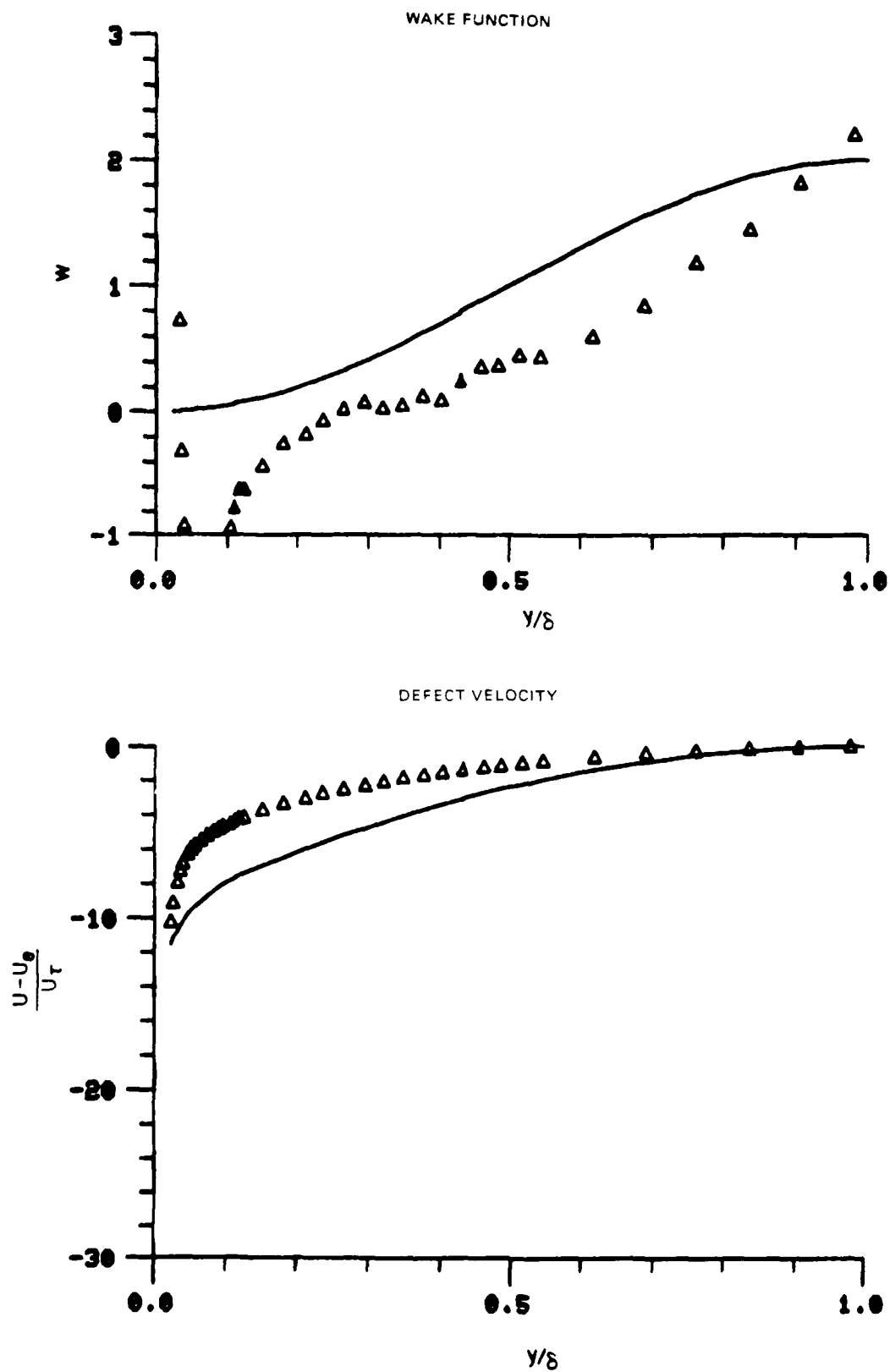


Figure 57. Boundary Layer Velocity Profiles
Run No.3 Point No.23

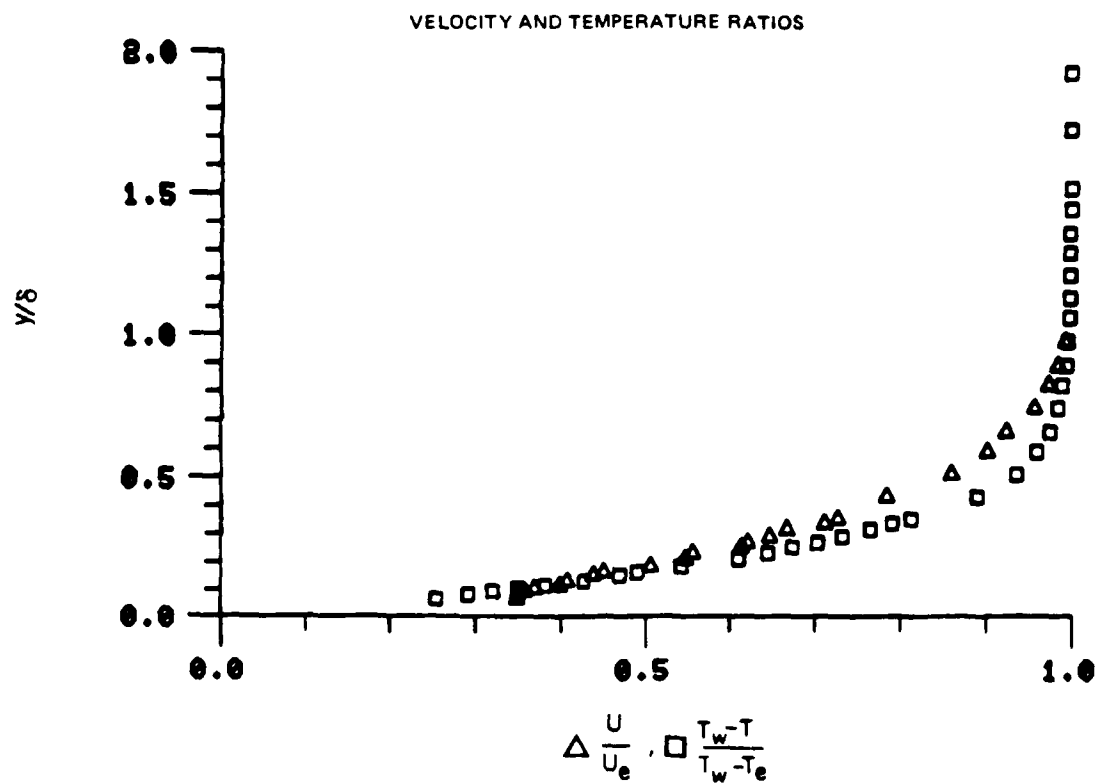


Figure 58. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.19

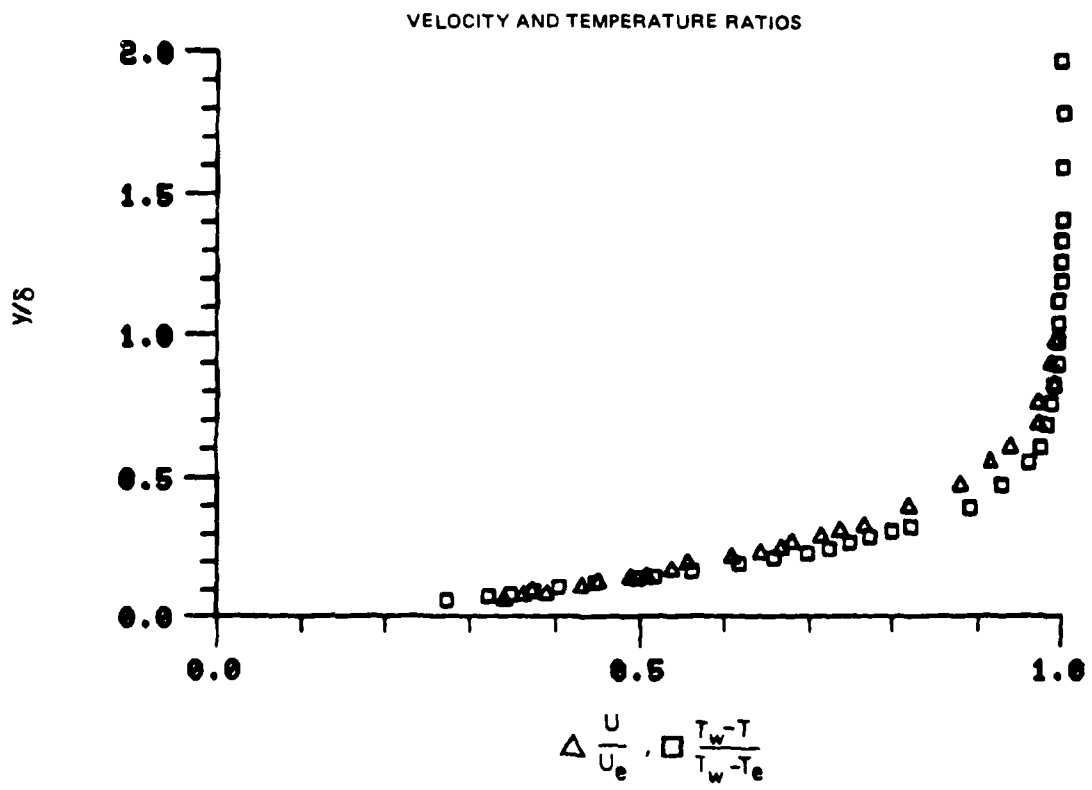


Figure 59. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 20

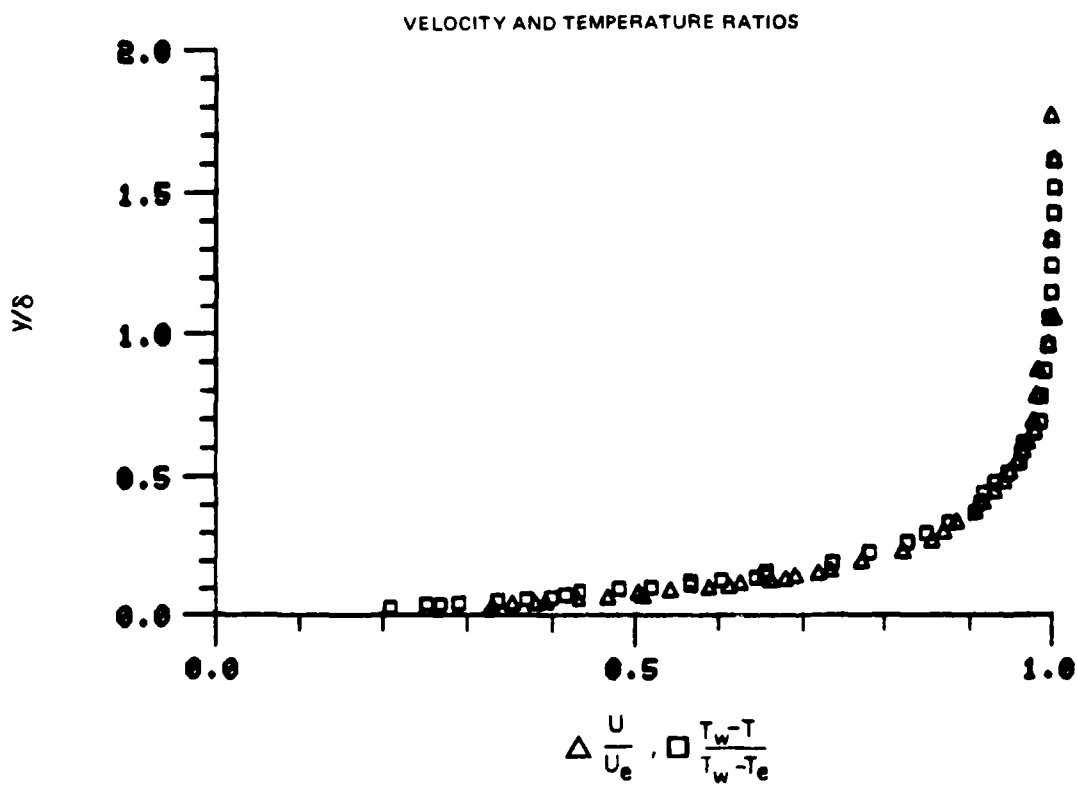


Figure 60. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 15

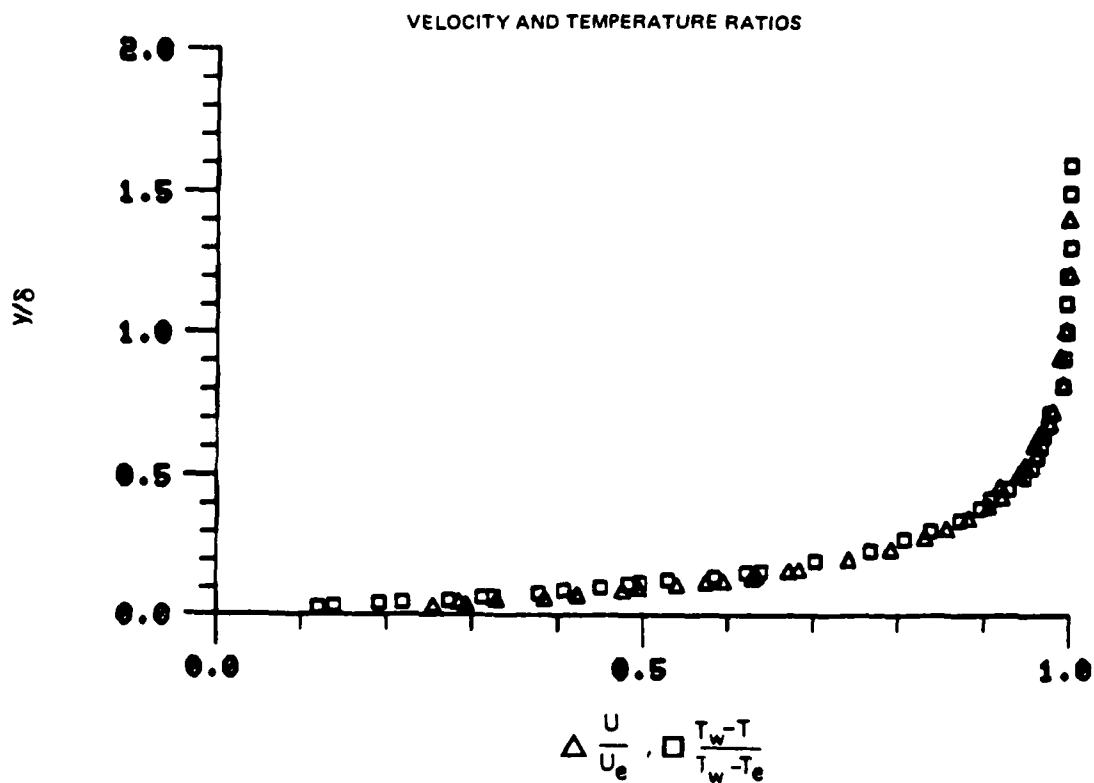


Figure 61. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 16

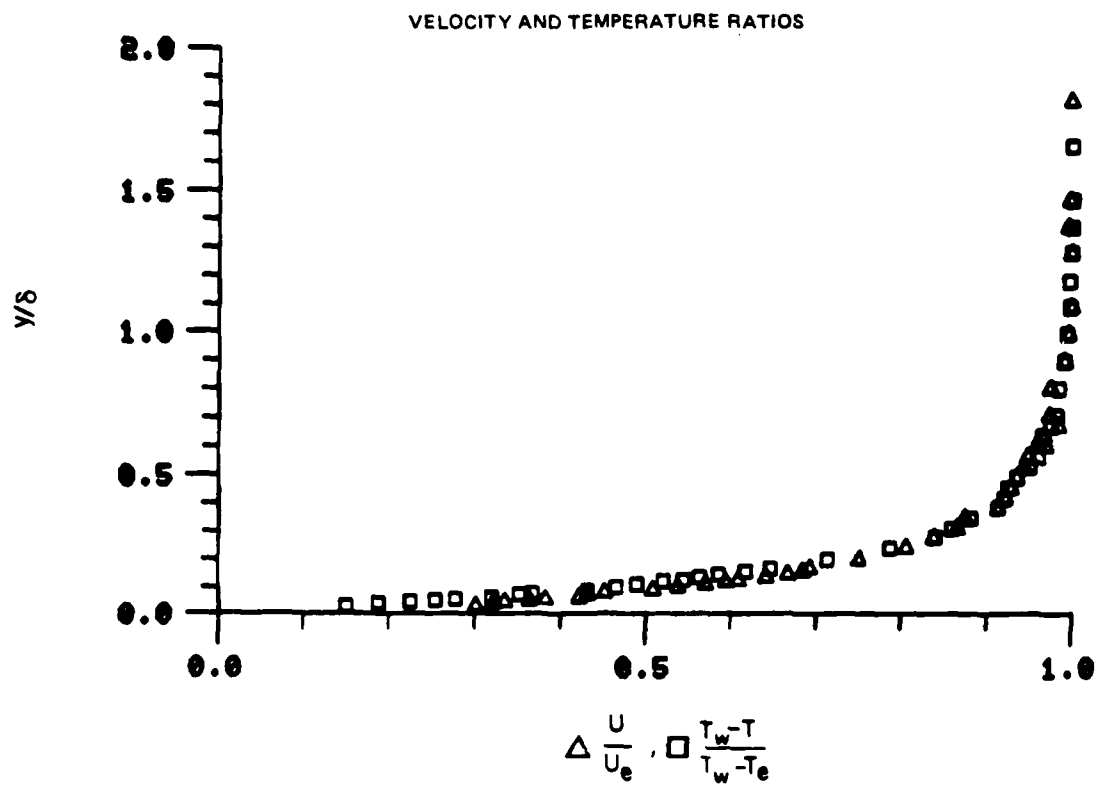


Figure 62. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.17

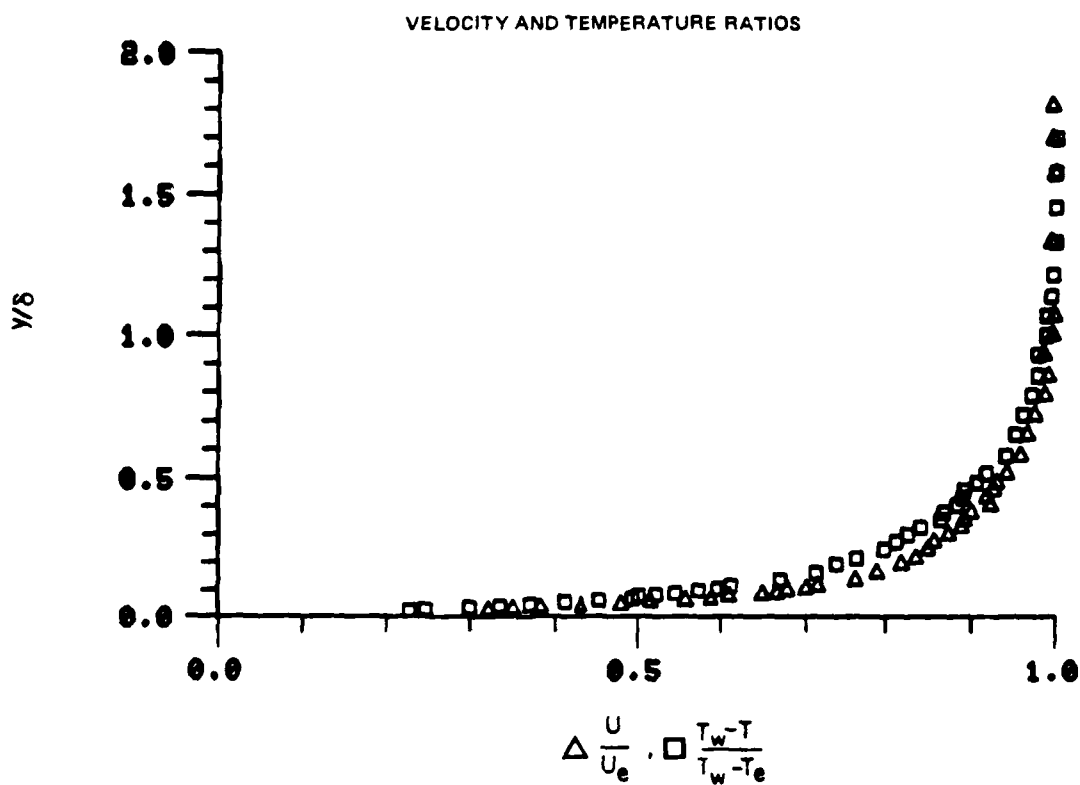


Figure 63. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 12

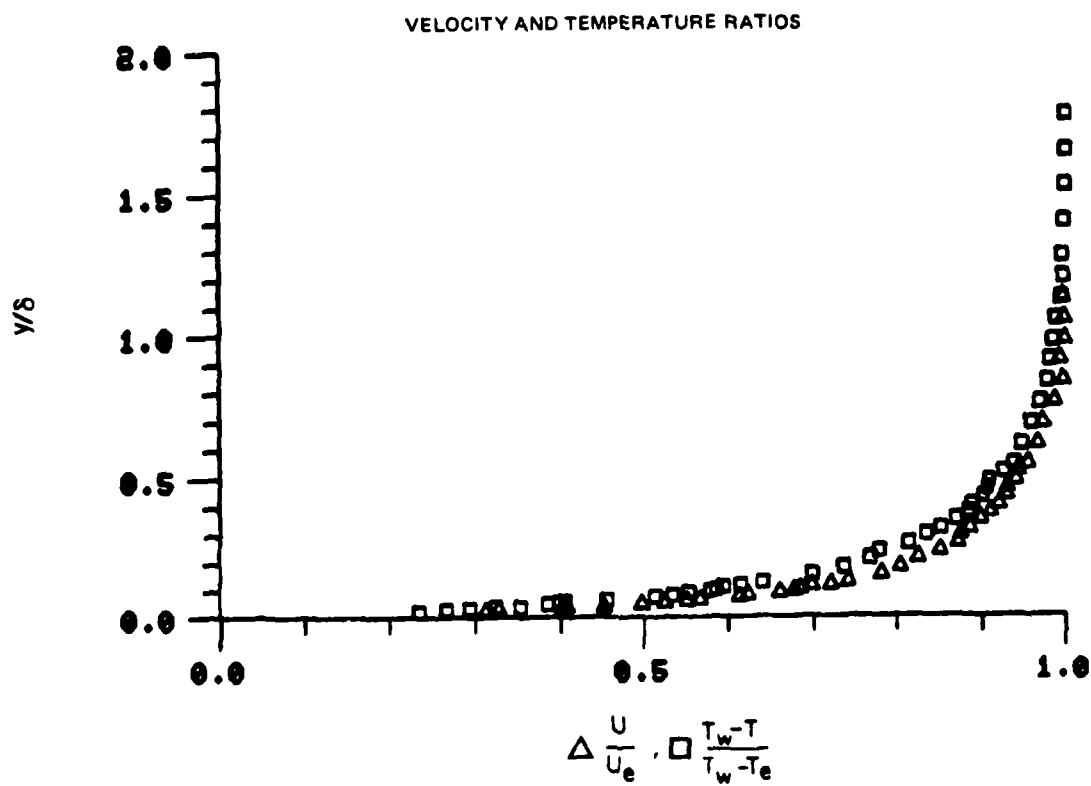


Figure 64. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 13

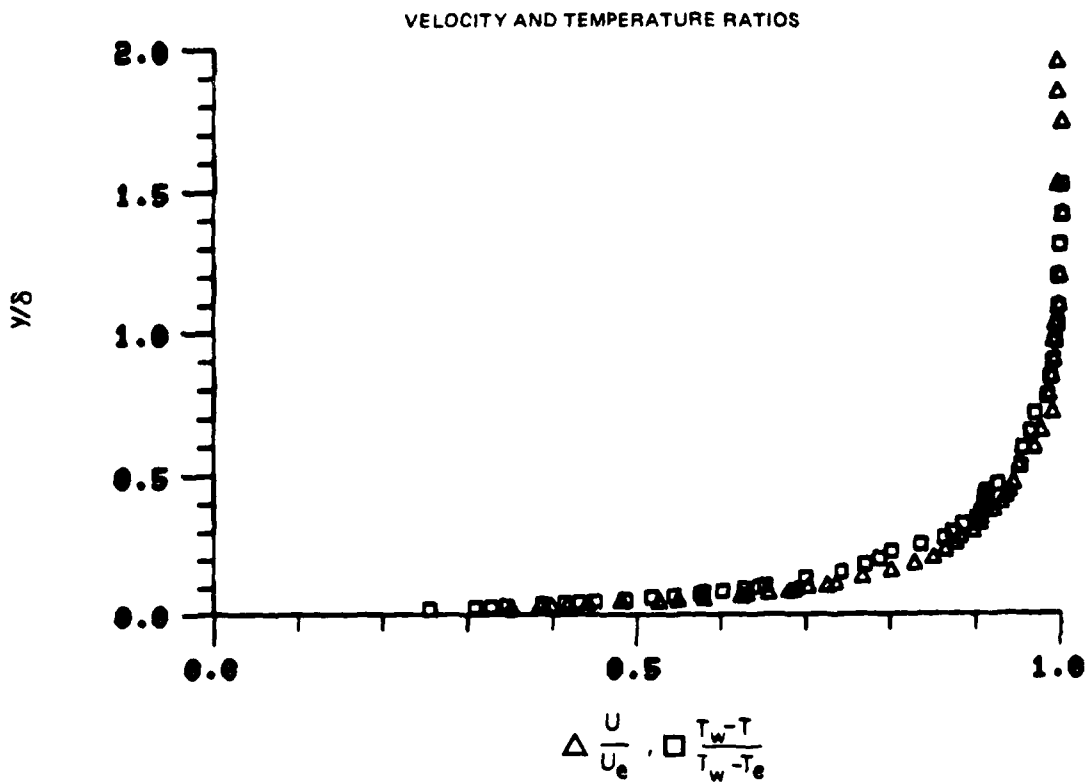


Figure 65. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 14

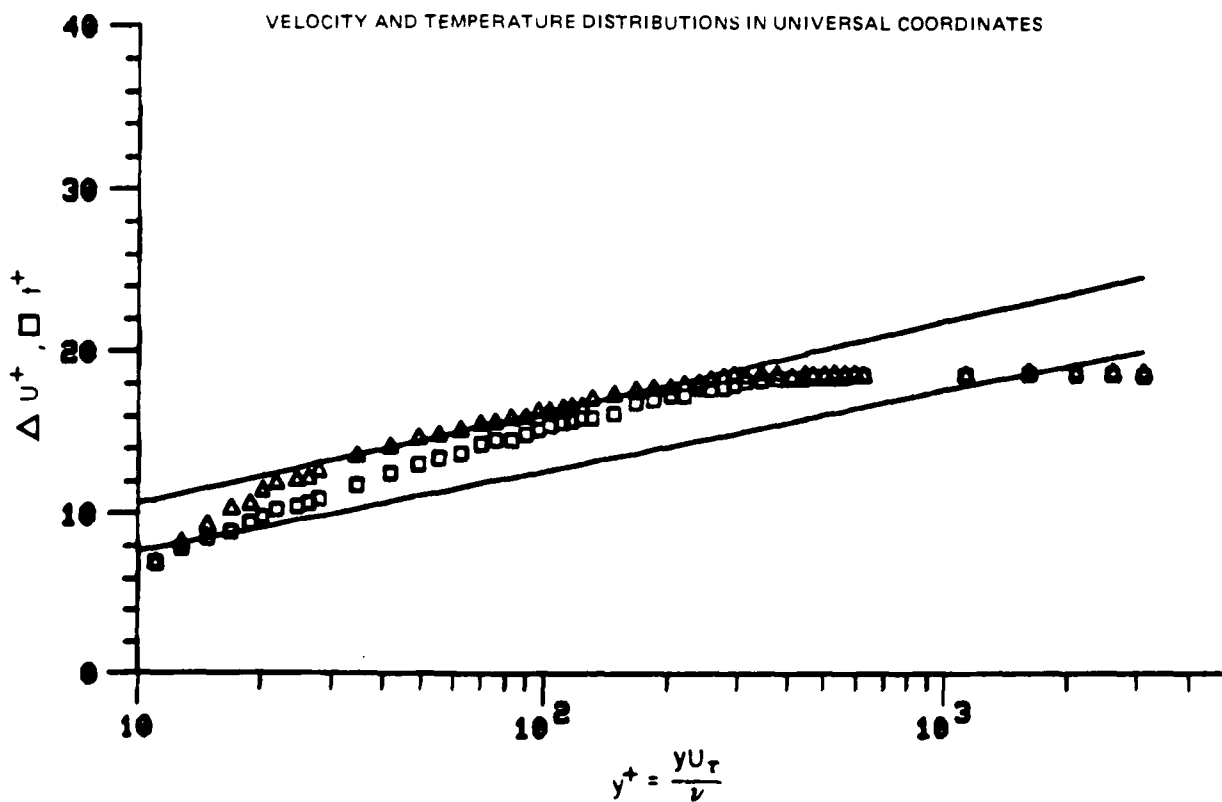
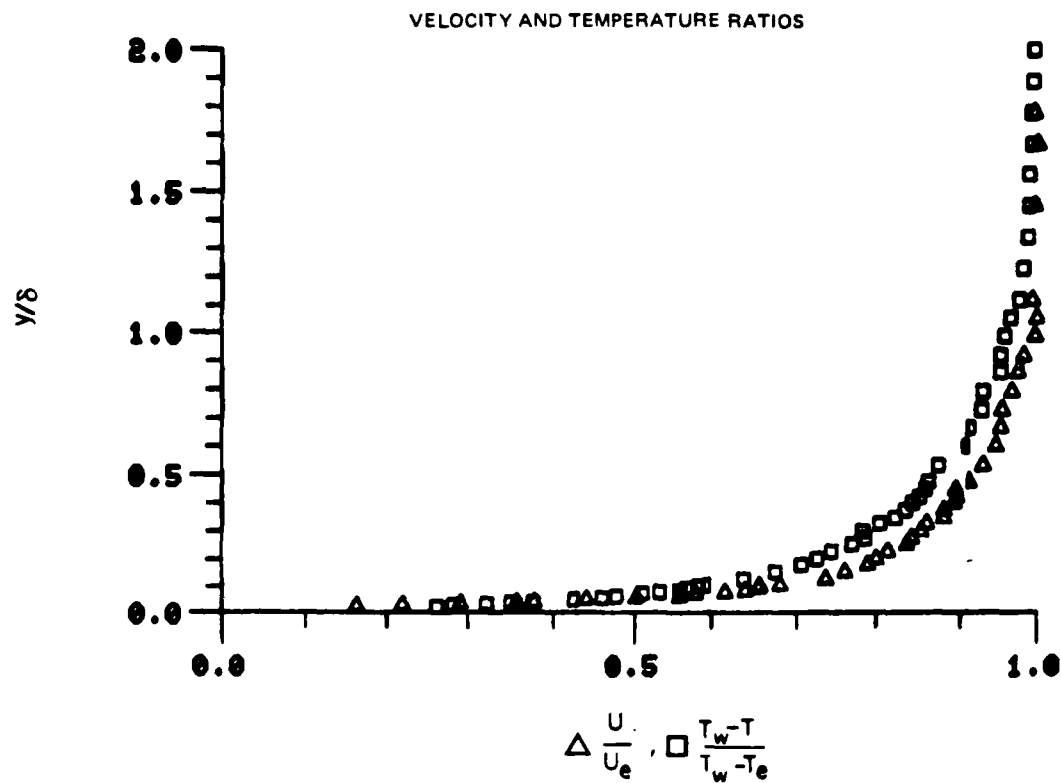


Figure 66. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.10

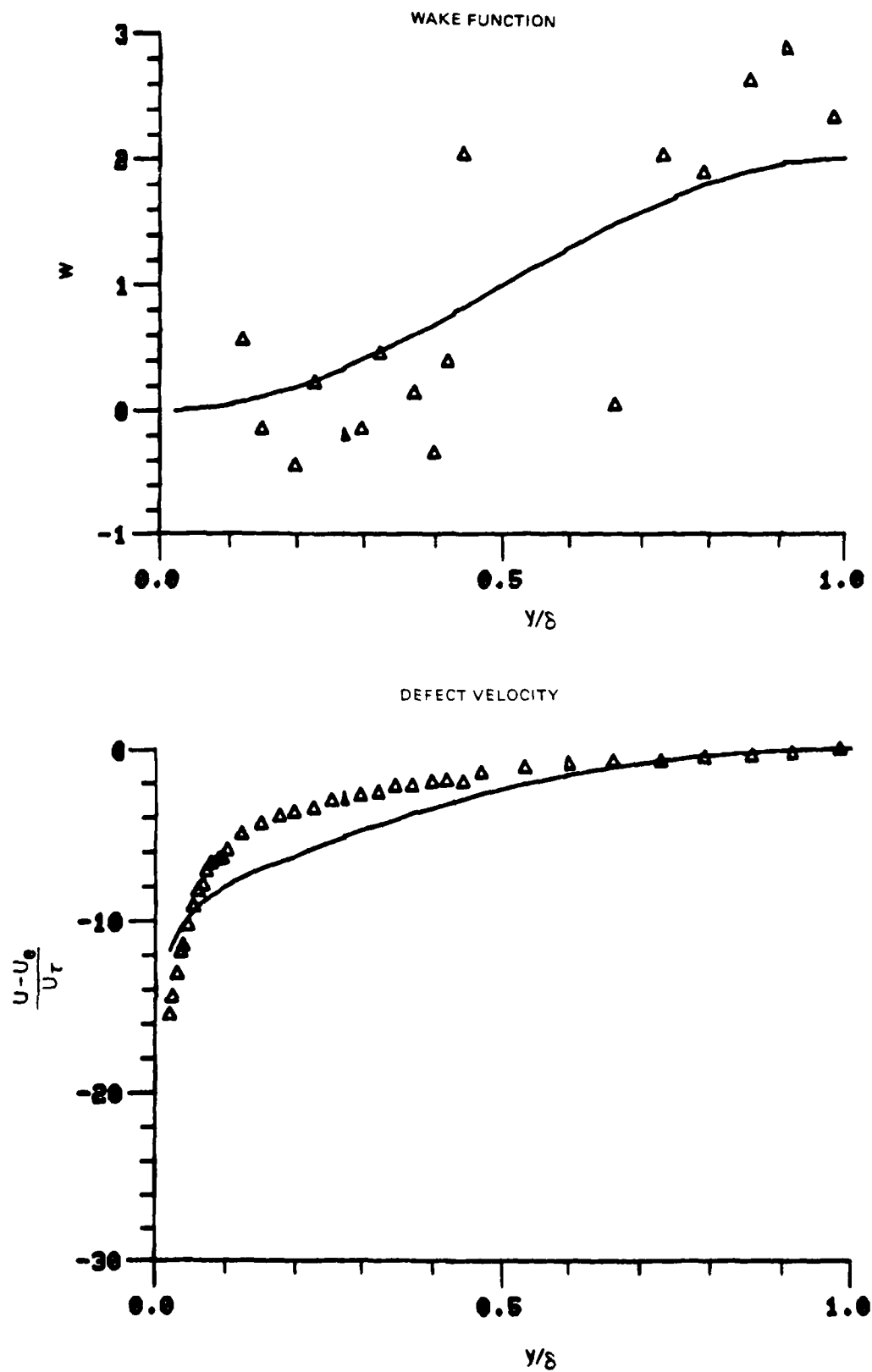


Figure 66. Boundary Layer Velocity Profiles
Run No. 4 Point No. 10

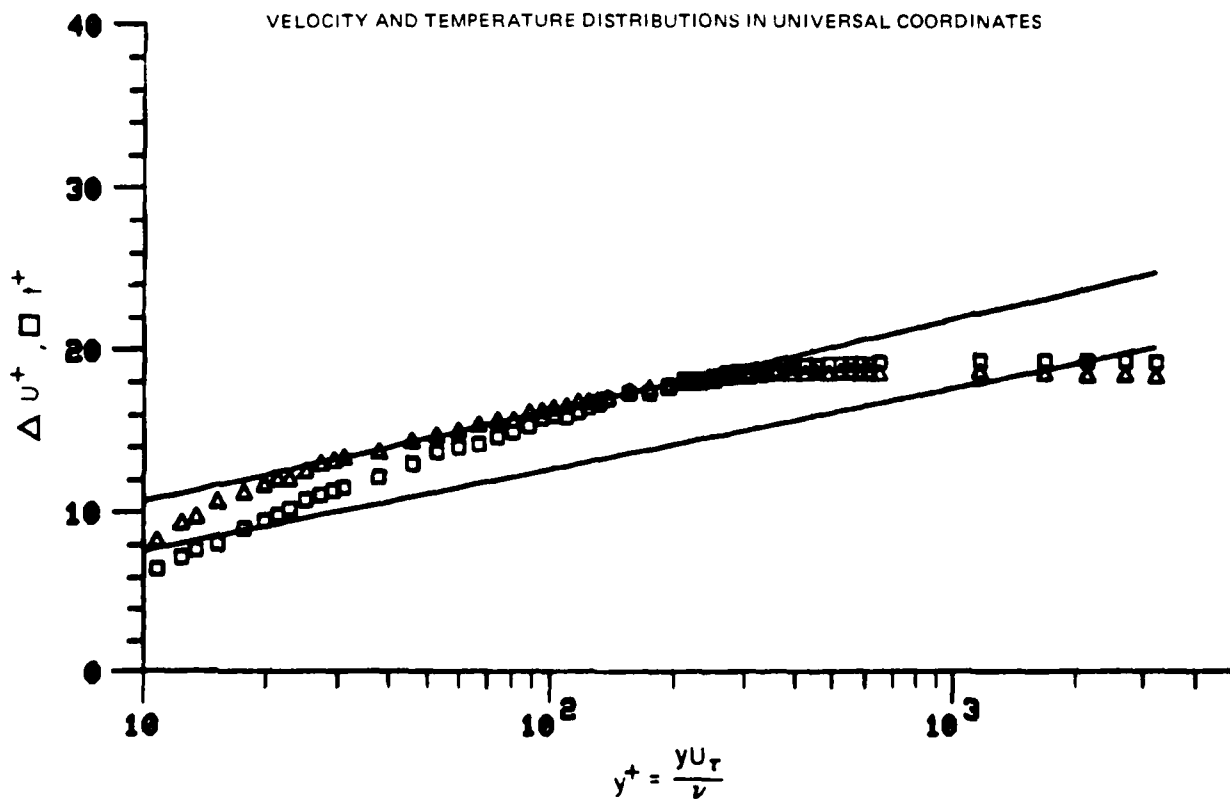
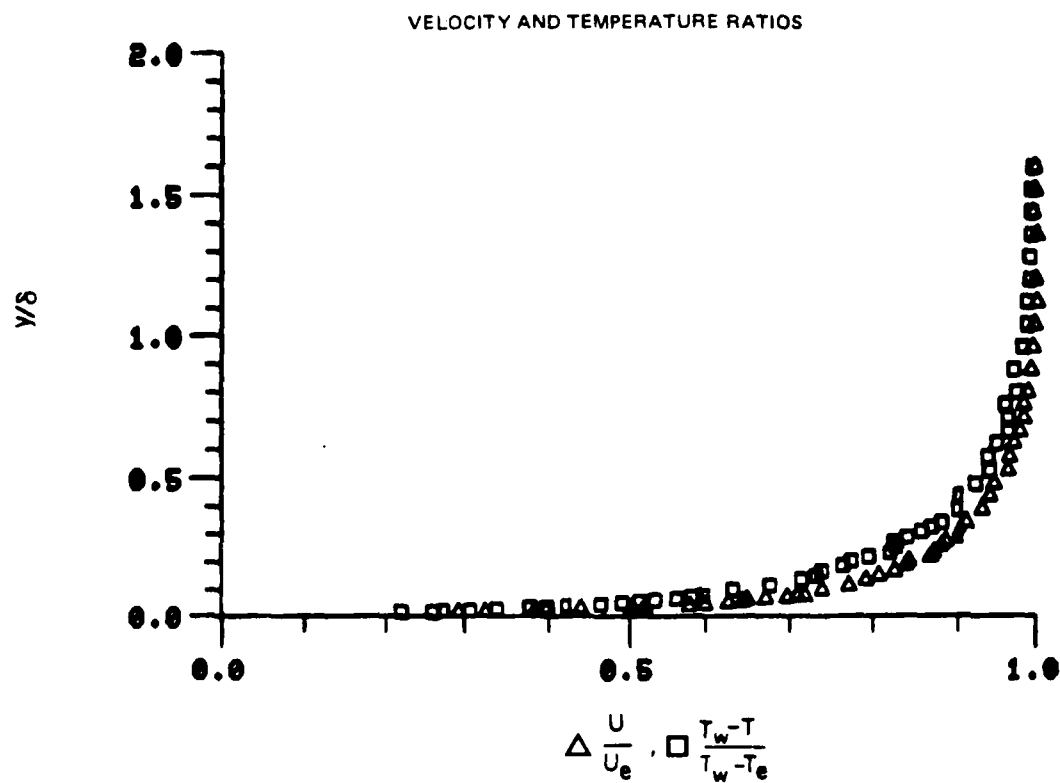


Figure 67. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.11

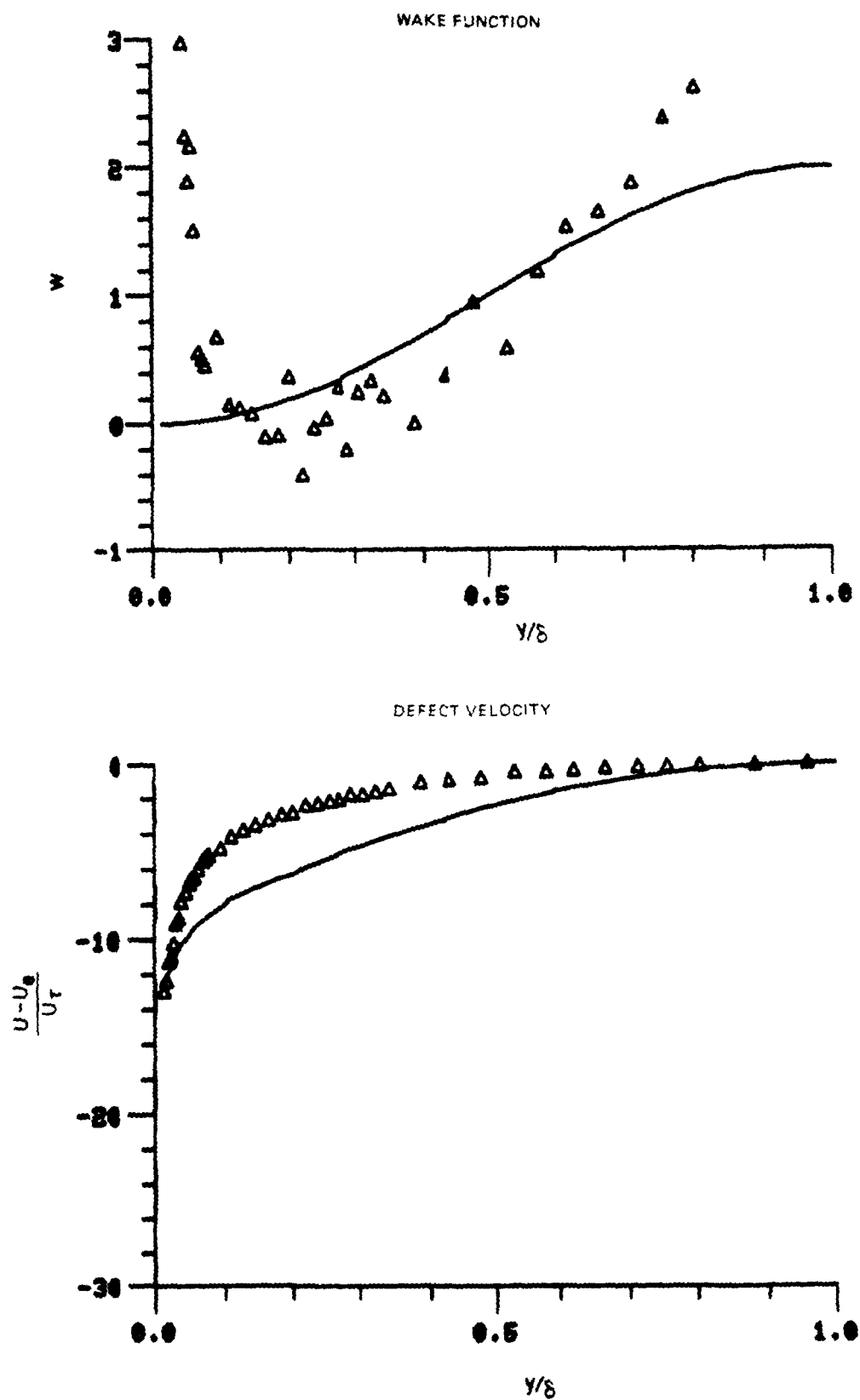


Figure 67. Boundary Layer Velocity Profiles
Run No.4 Point No.11

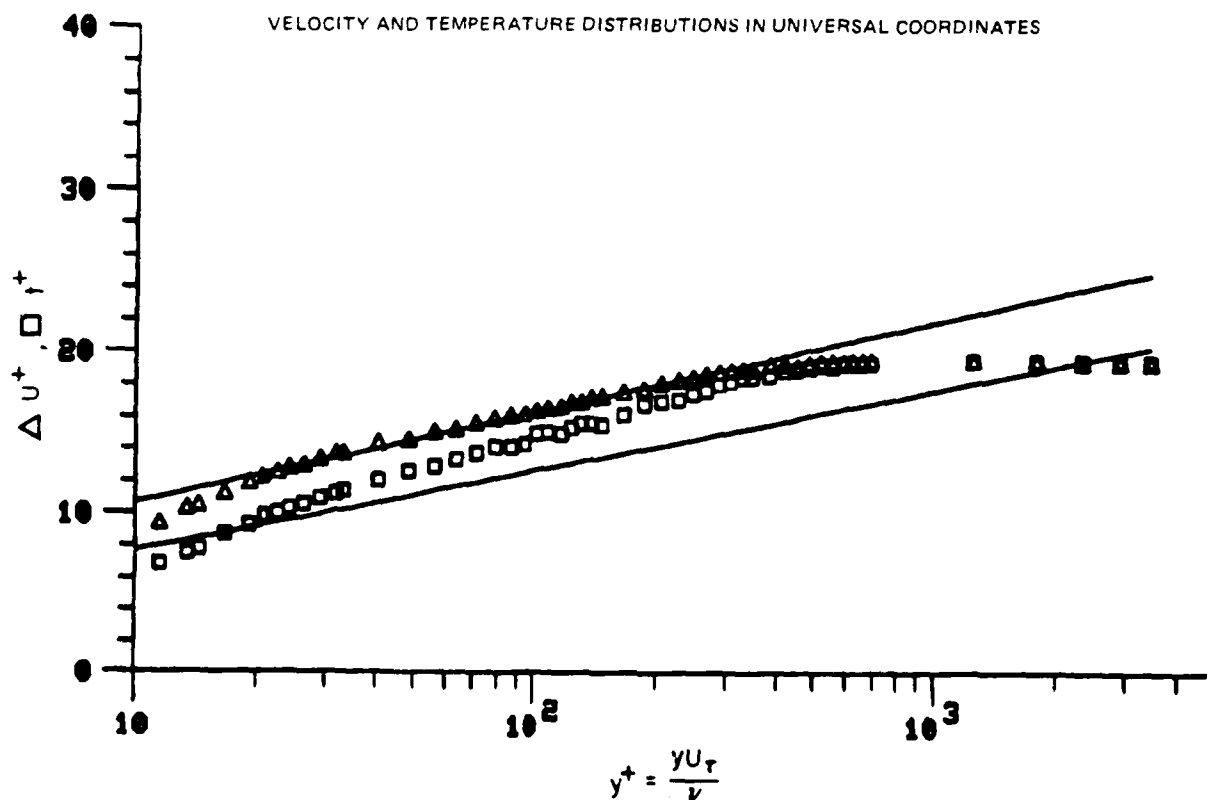
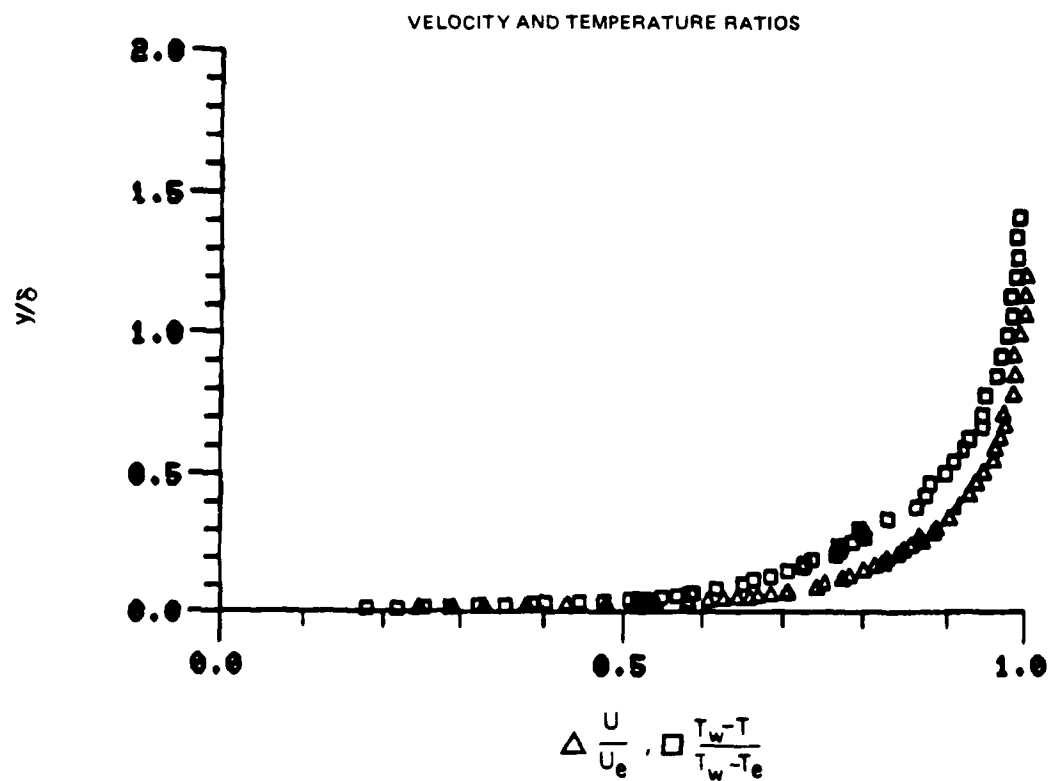


Figure 68. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 9

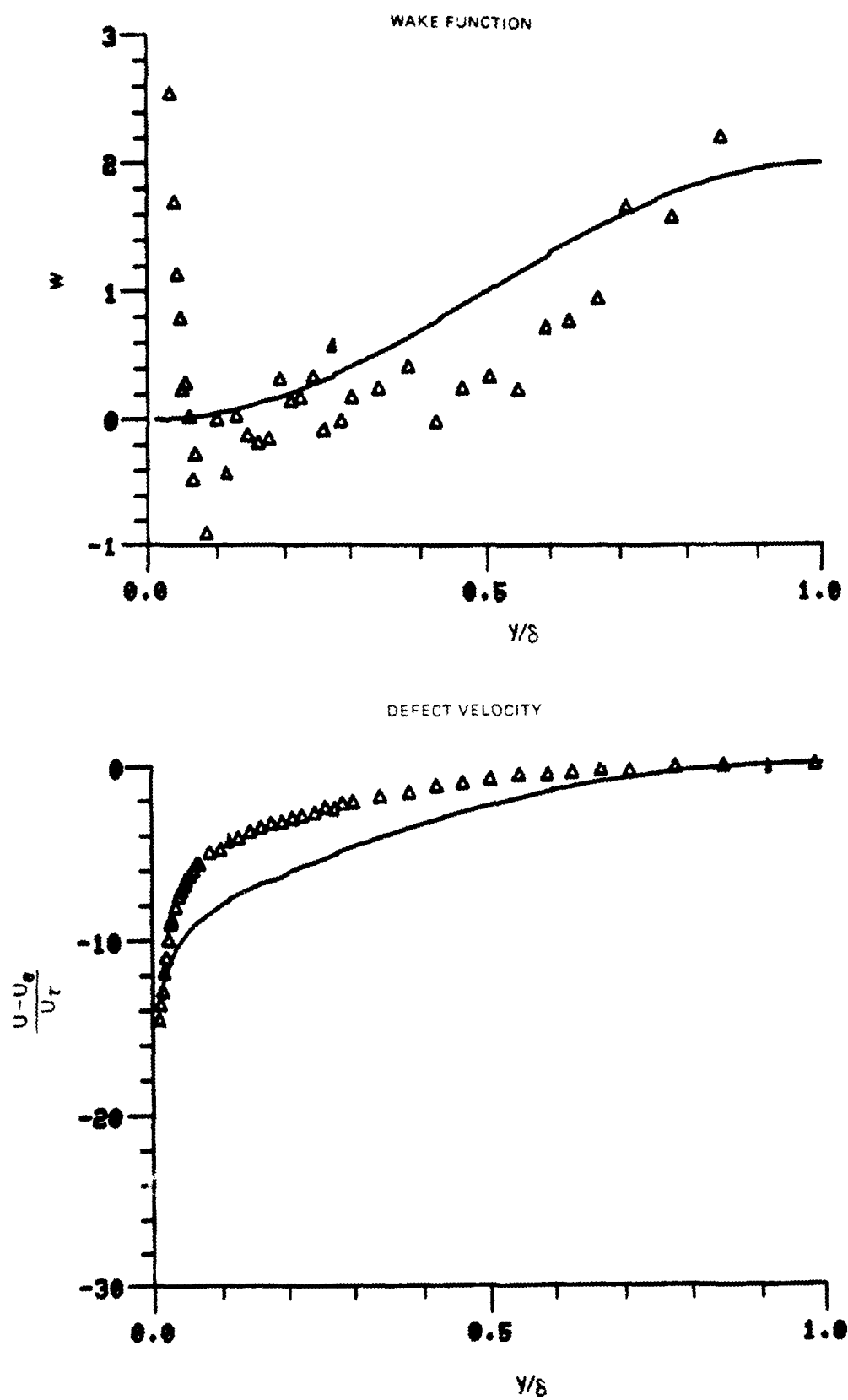


Figure 68. Boundary Layer Velocity Profiles
Run No.4 Point No. 9

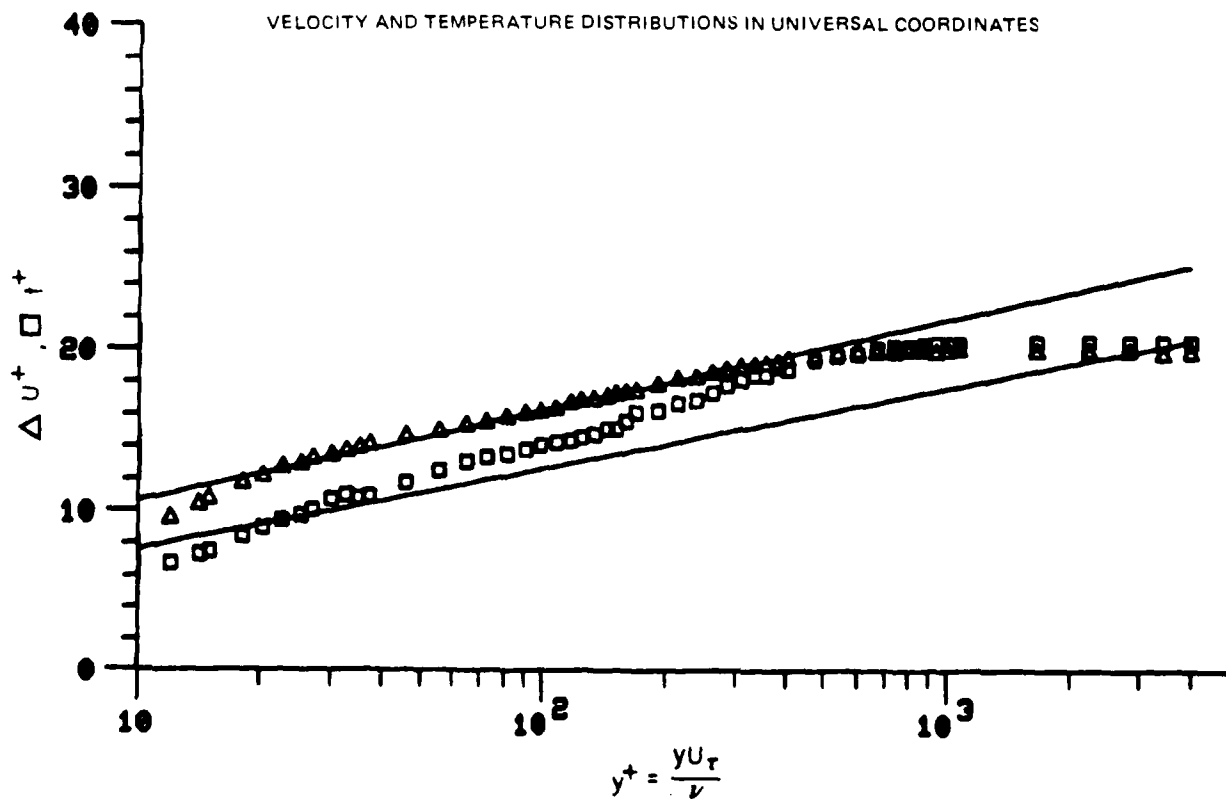
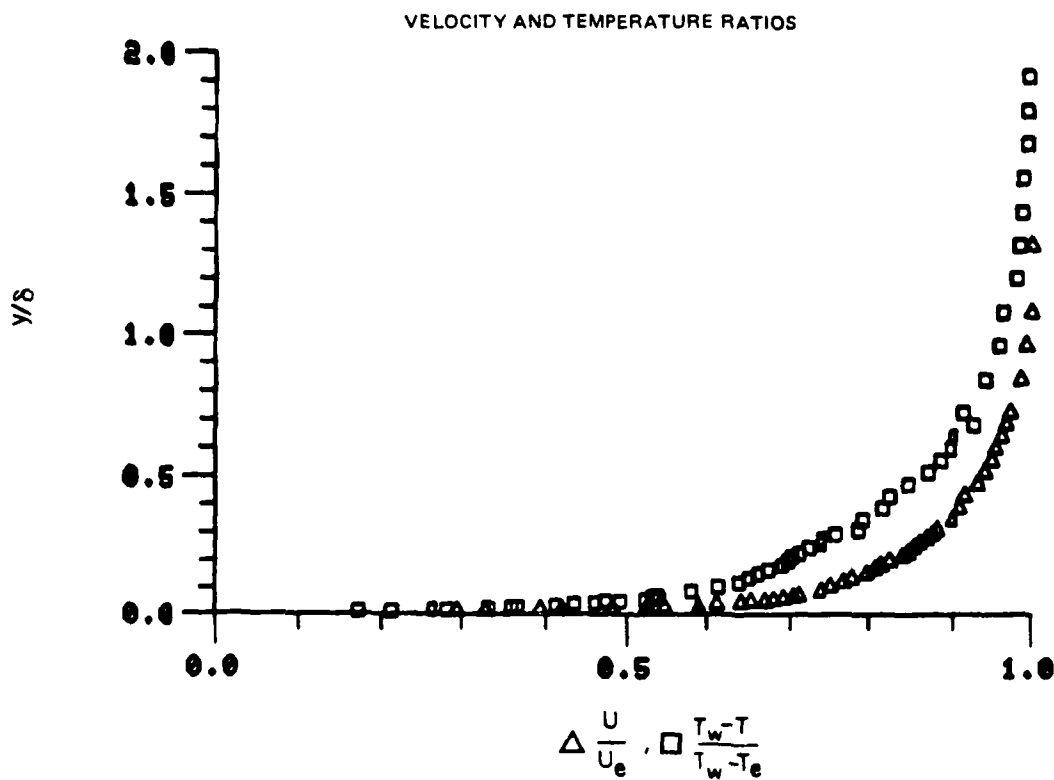


Figure 69. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.6

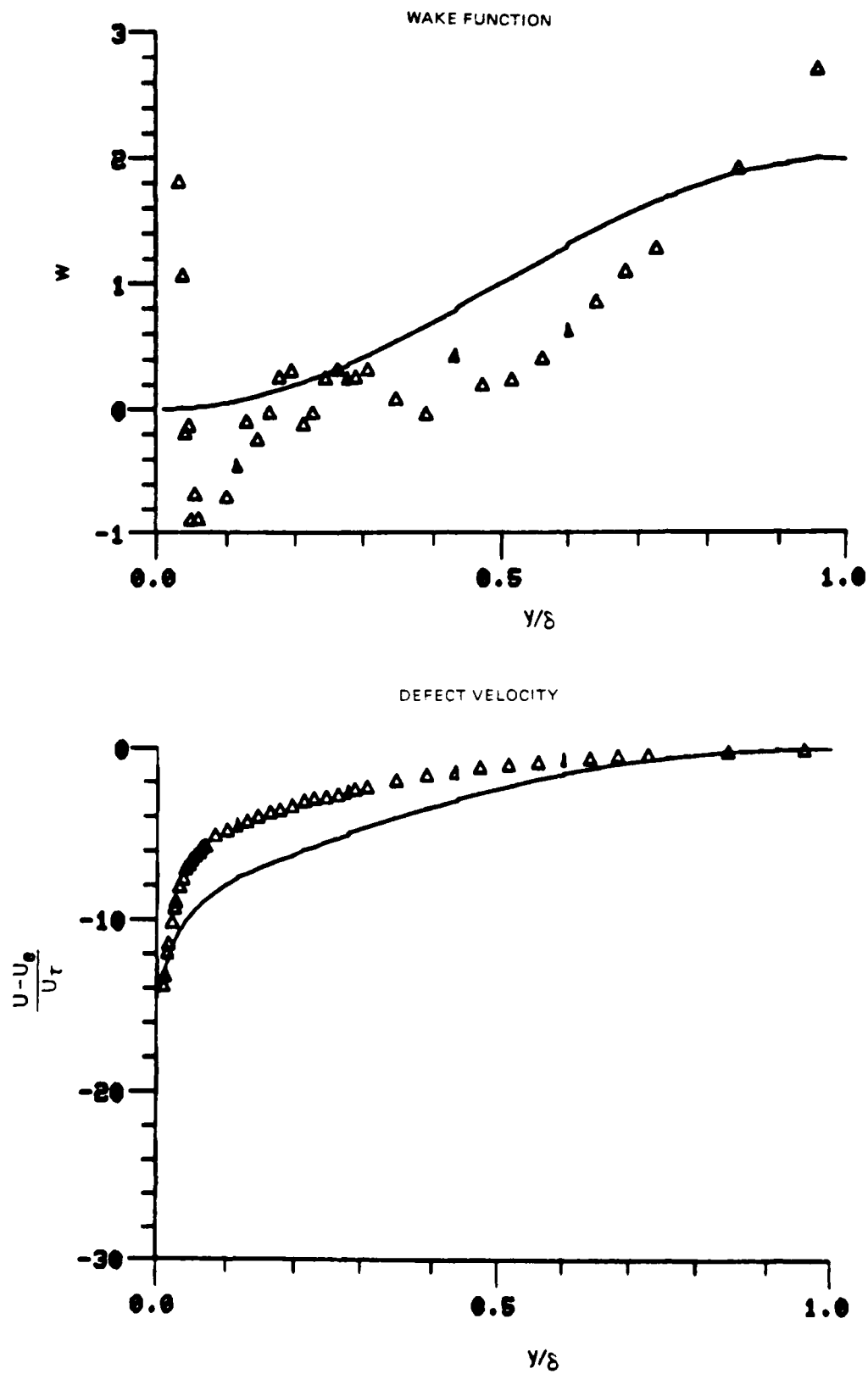


Figure 69. Boundary Layer Velocity Profiles
Run No.4 Point No.6

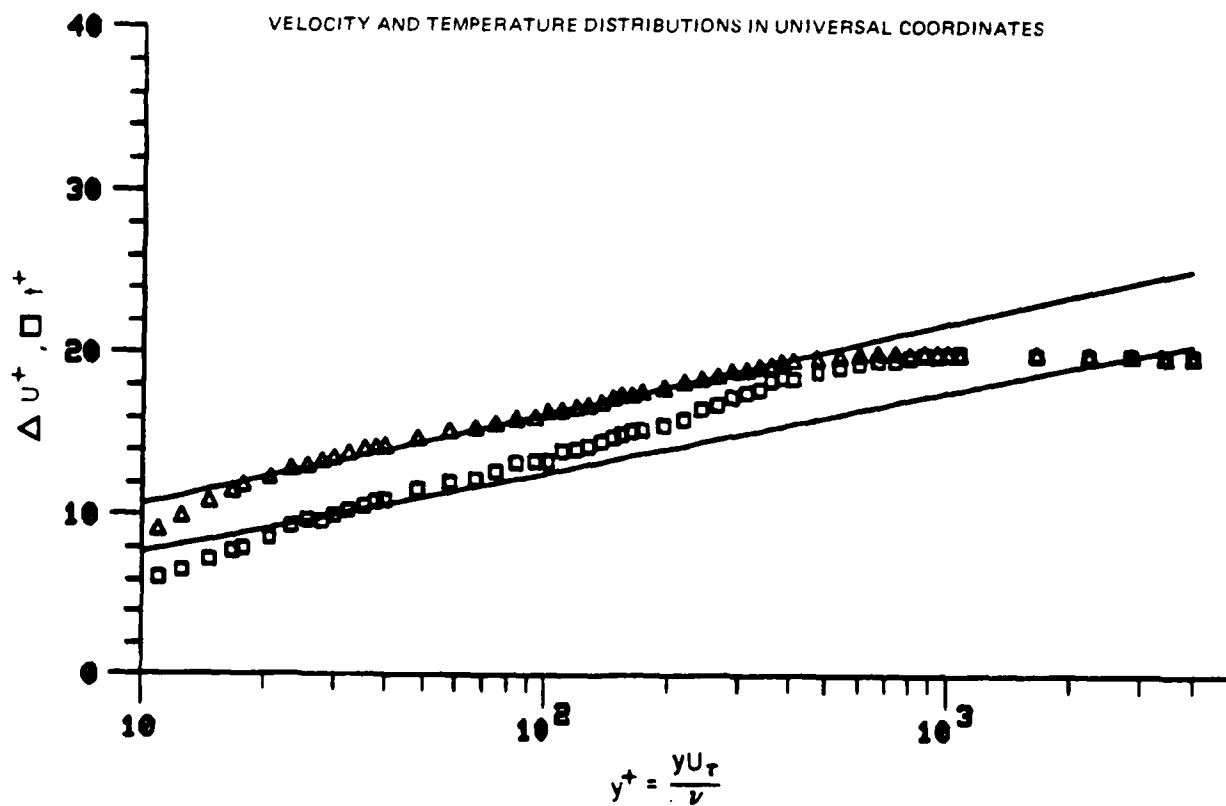
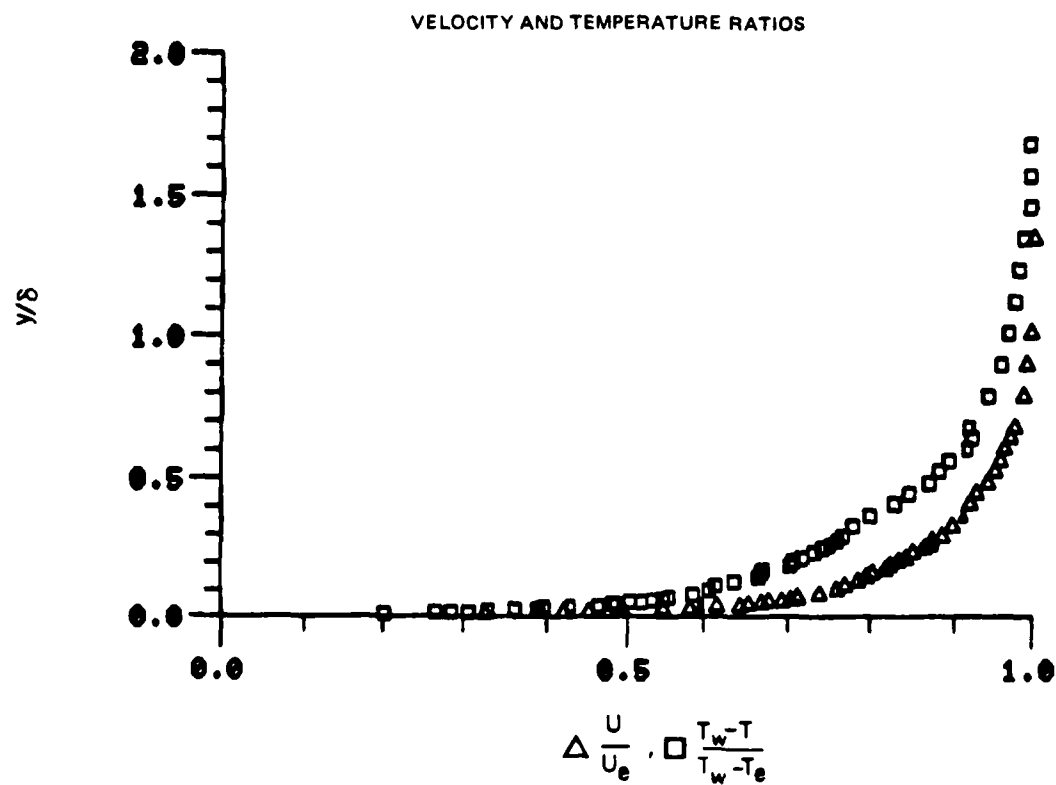


Figure 70. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 7

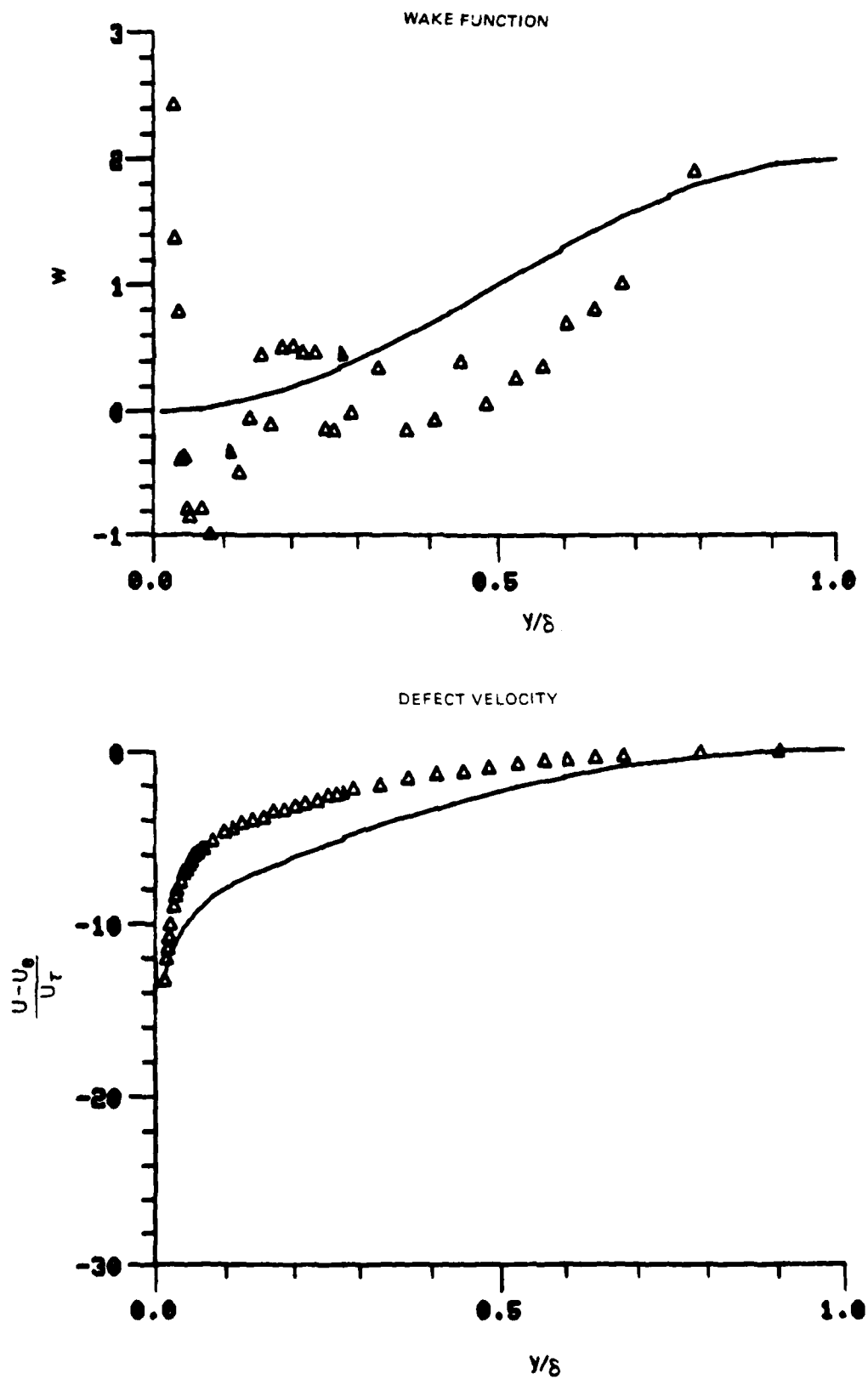


Figure 70. Boundary Layer Velocity Profiles
Run No.4 Point No.7

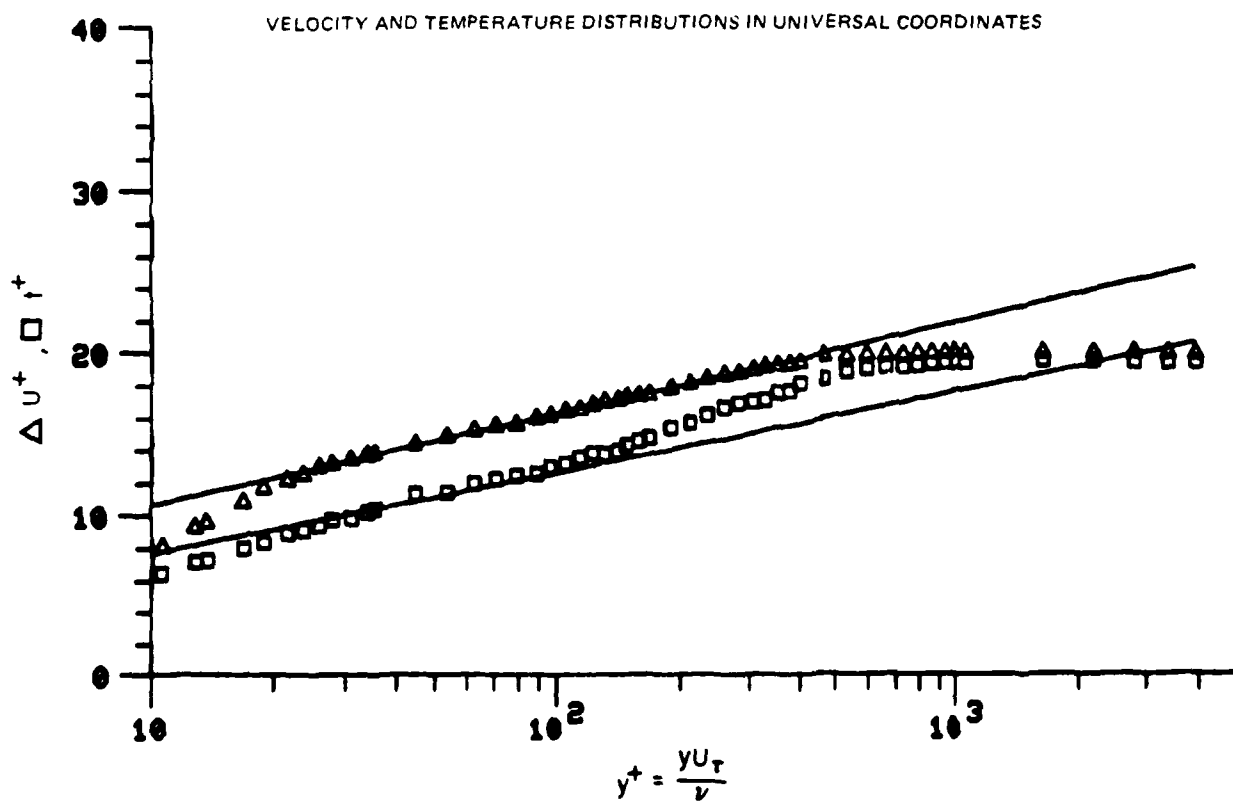
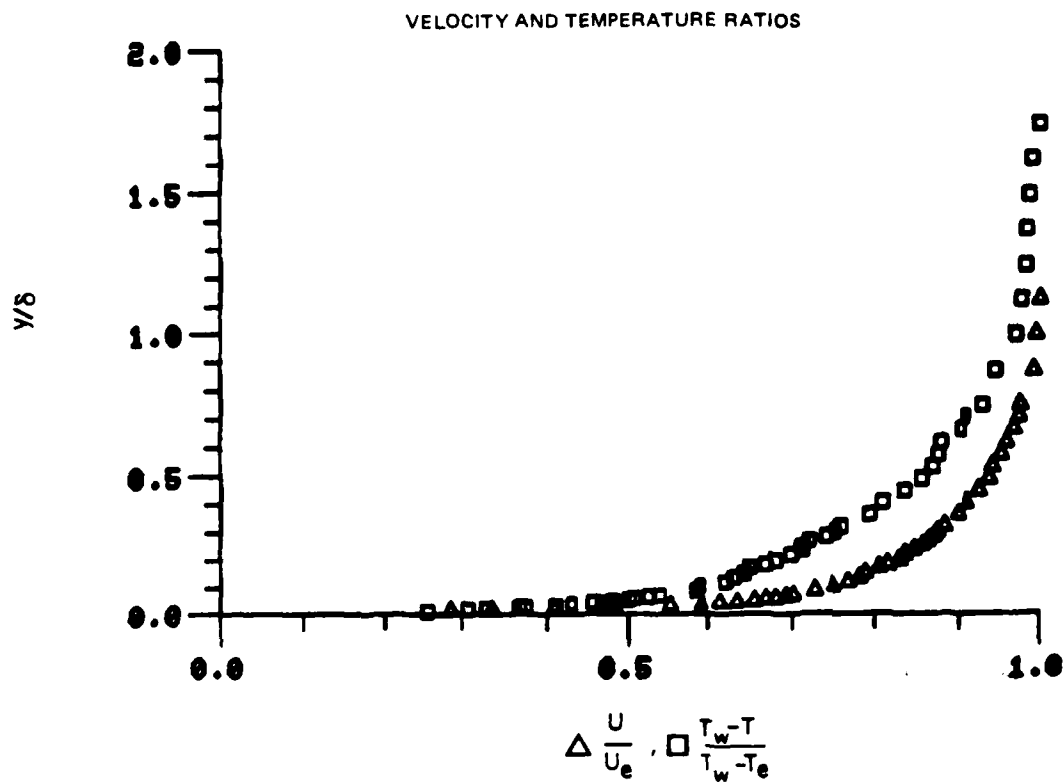


Figure 71. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 8

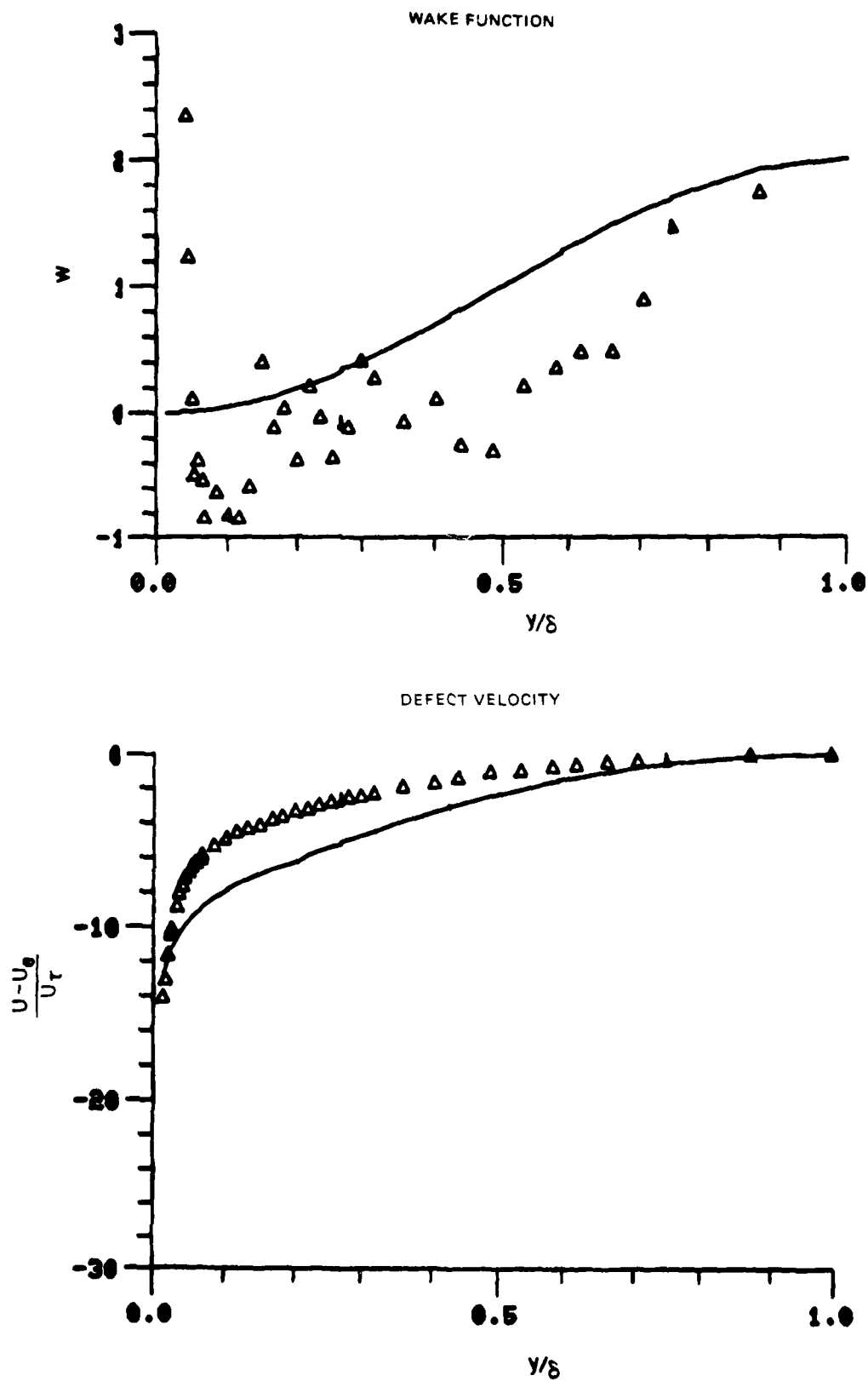


Figure 71. Boundary Layer Velocity Profiles
Run No. 4 Point No. 8

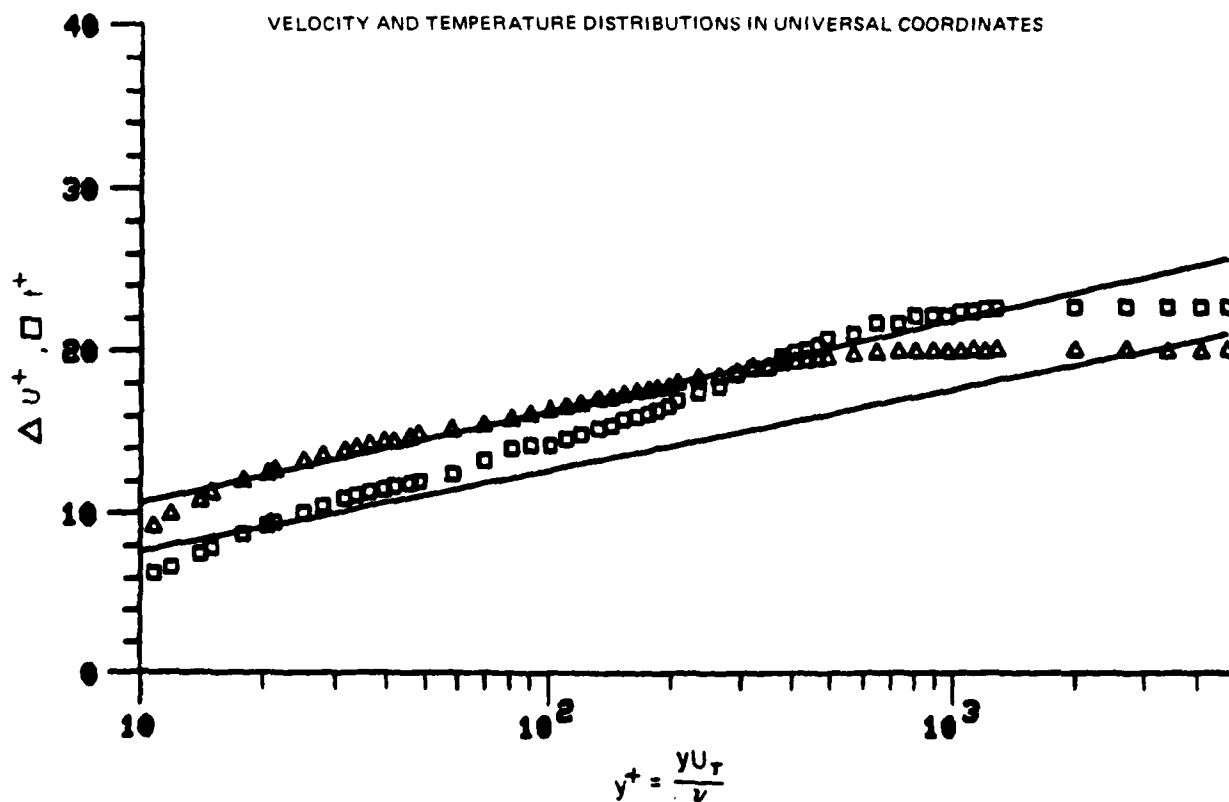
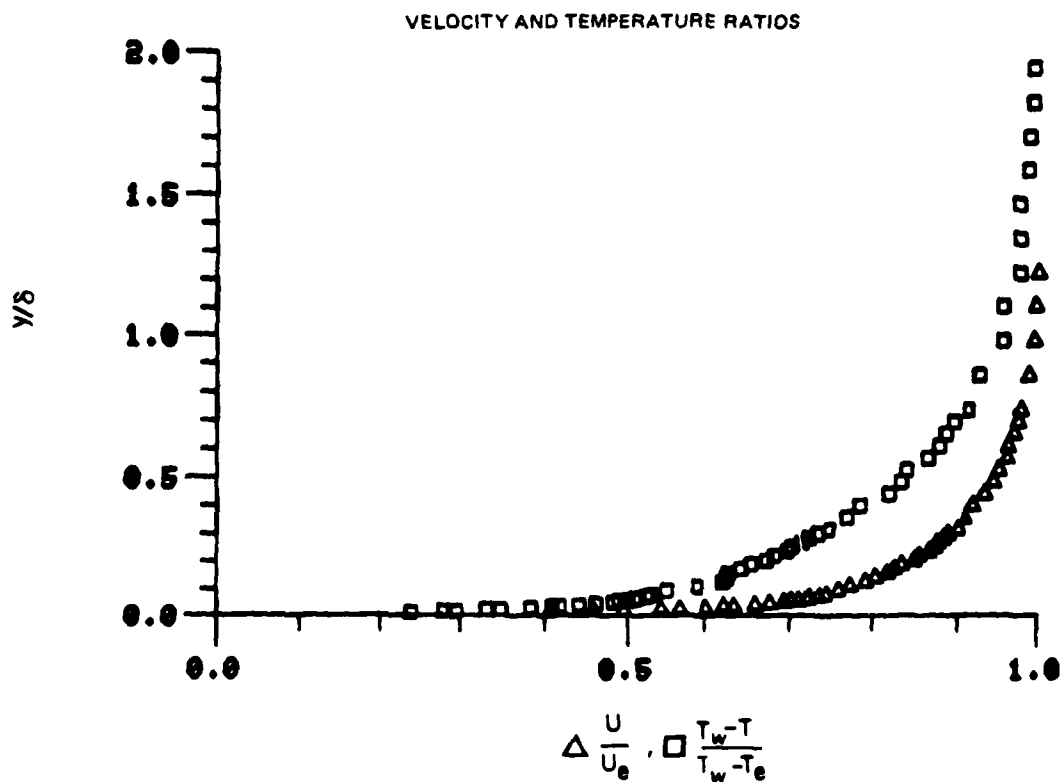


Figure 72. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 5

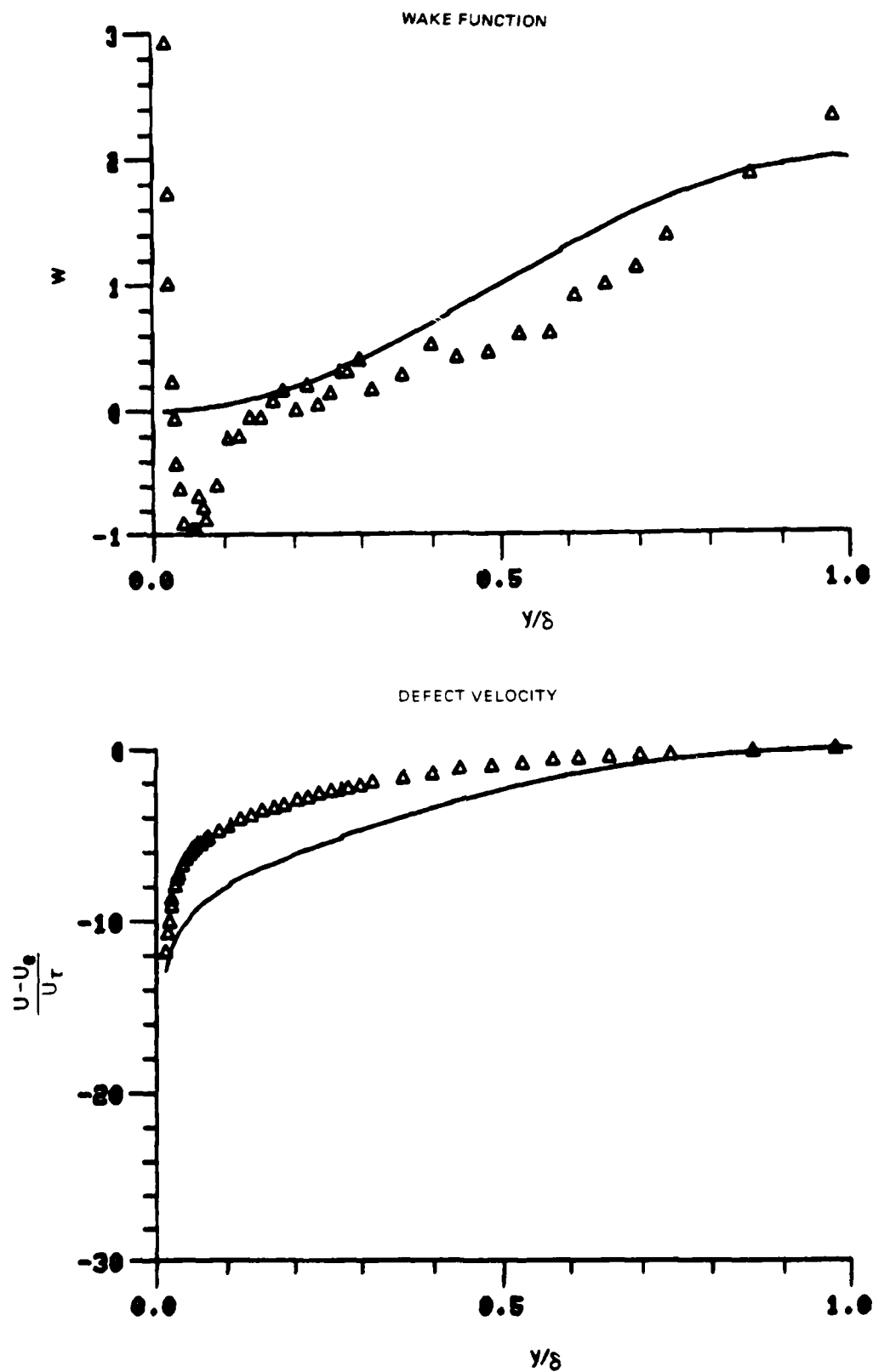


Figure 72. Boundary Layer Velocity Profiles
Run No.4 Point No.5

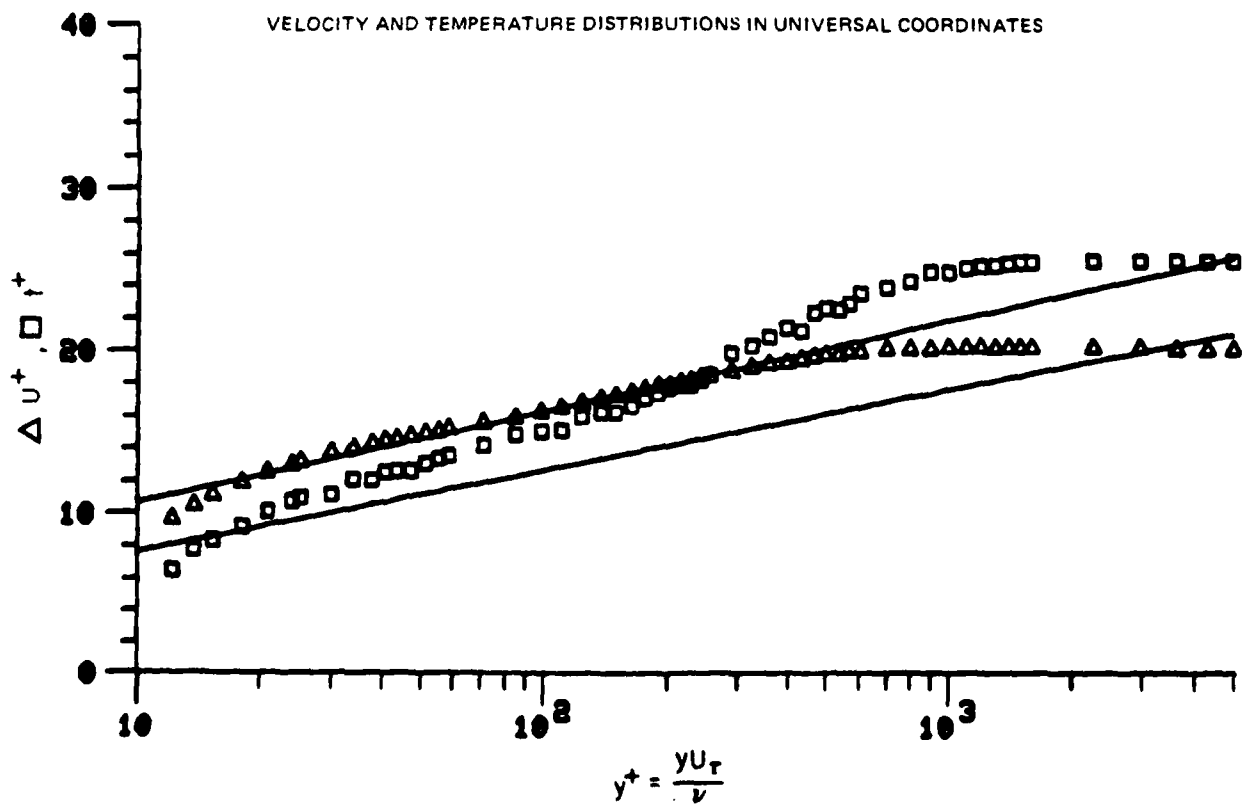
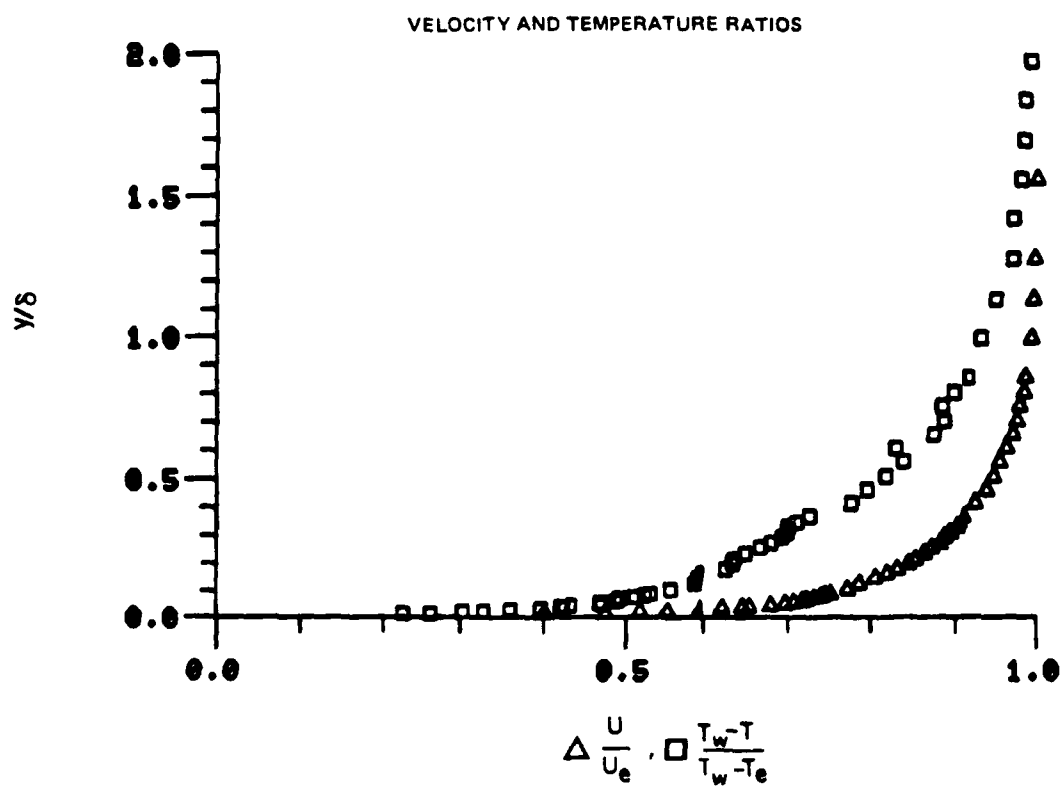


Figure 73. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 2

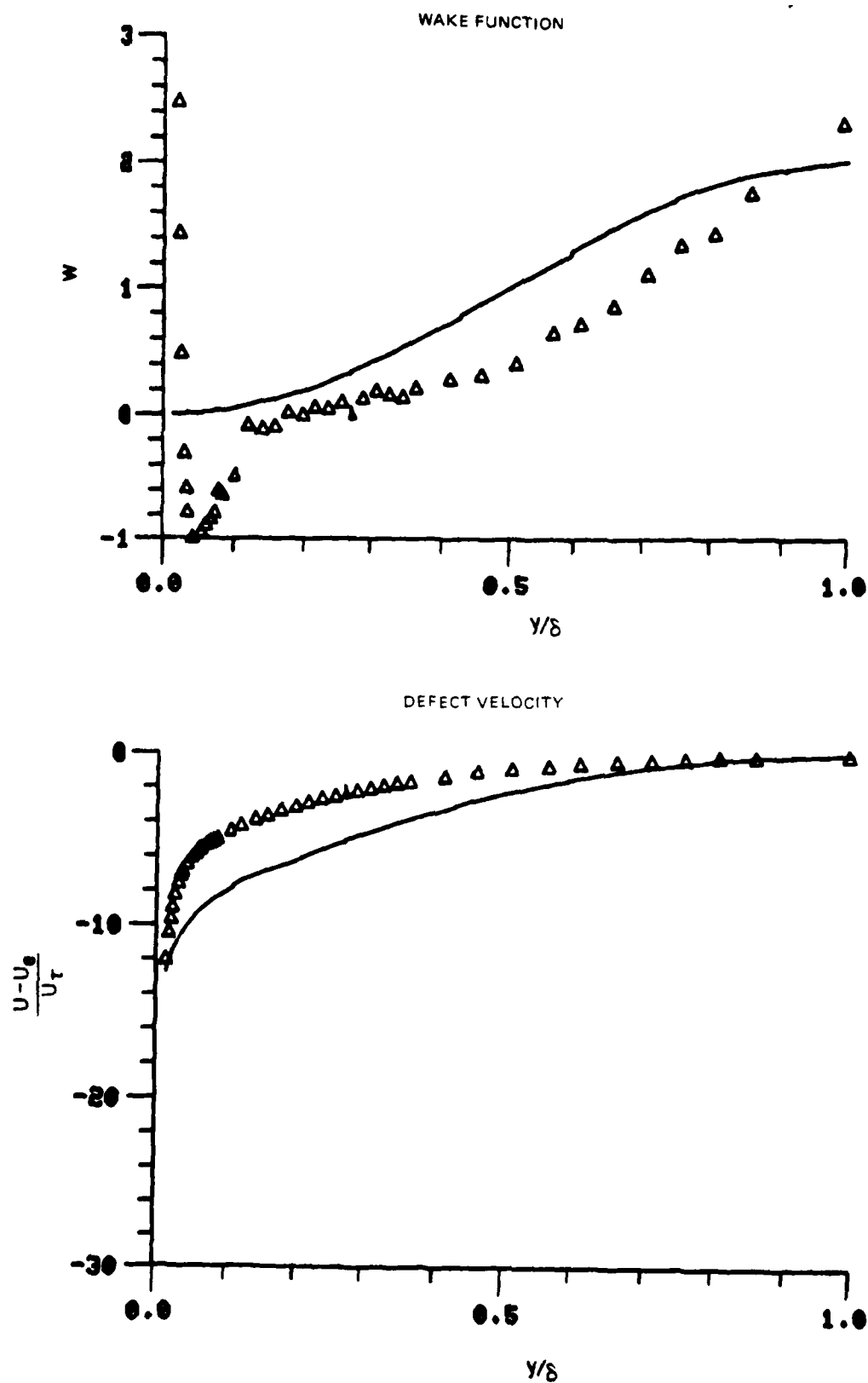


Figure 73. Boundary Layer Velocity Profiles
Run No.4 Point No.2

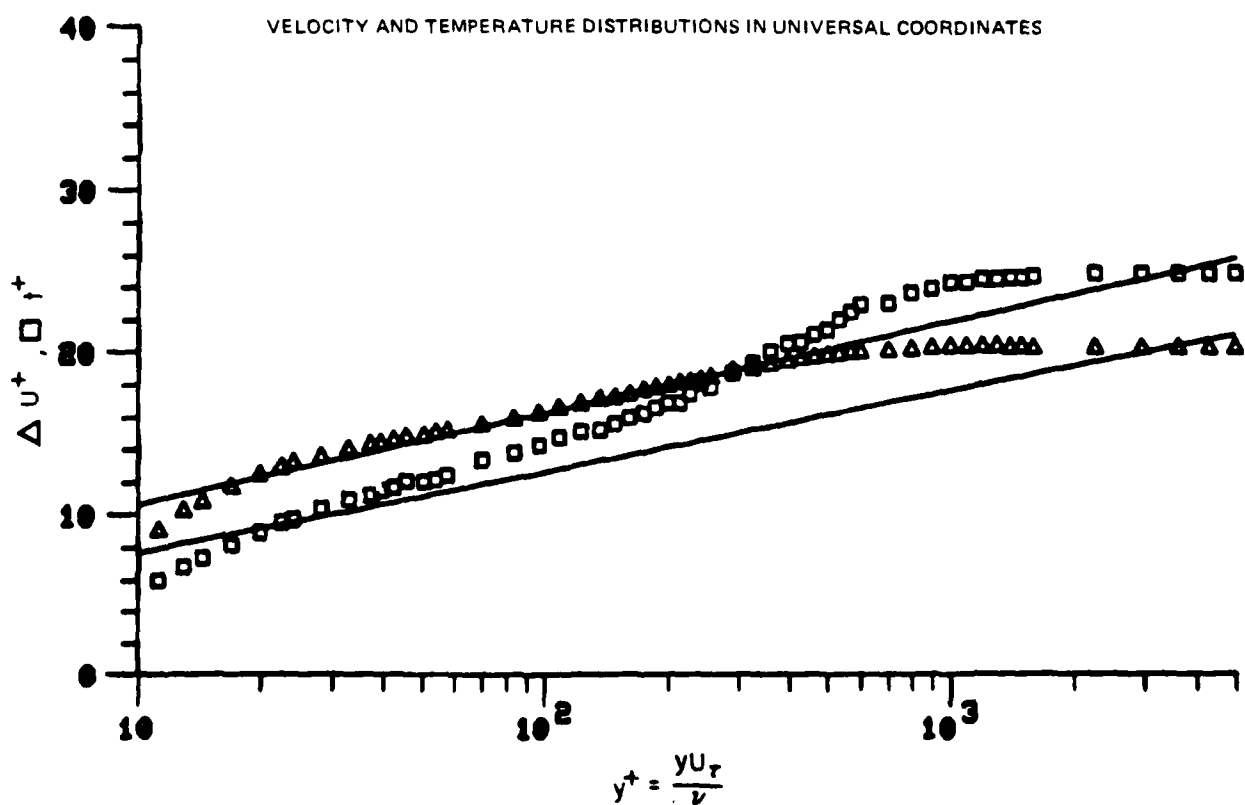
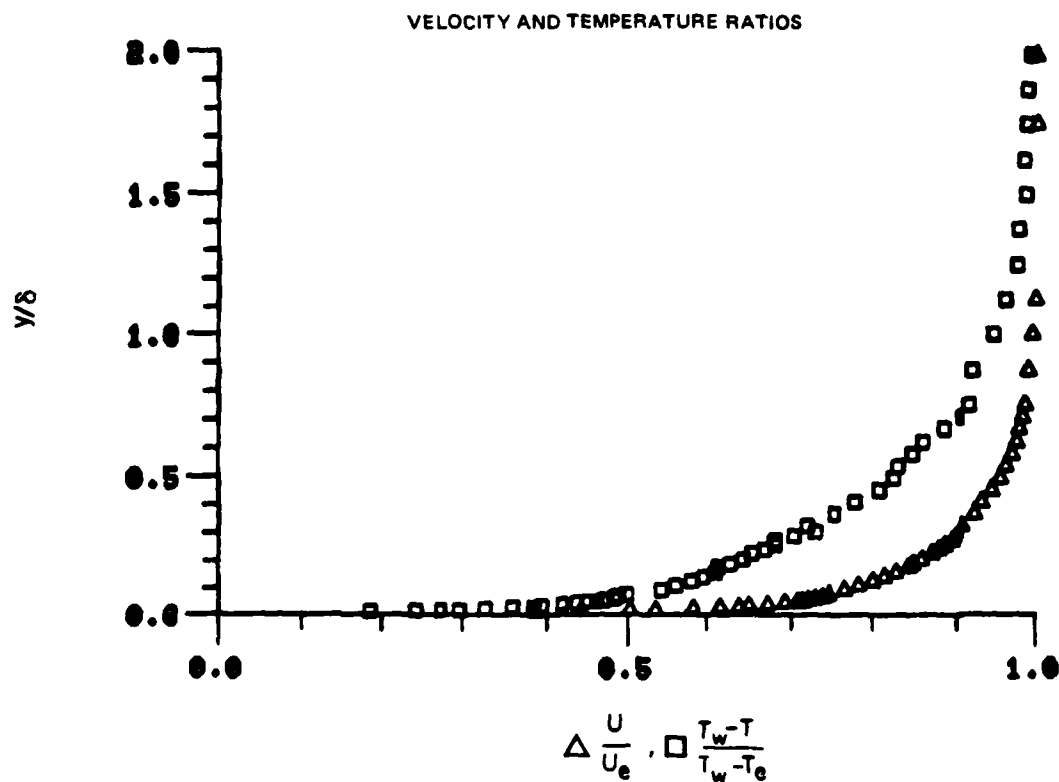


Figure 74. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 3

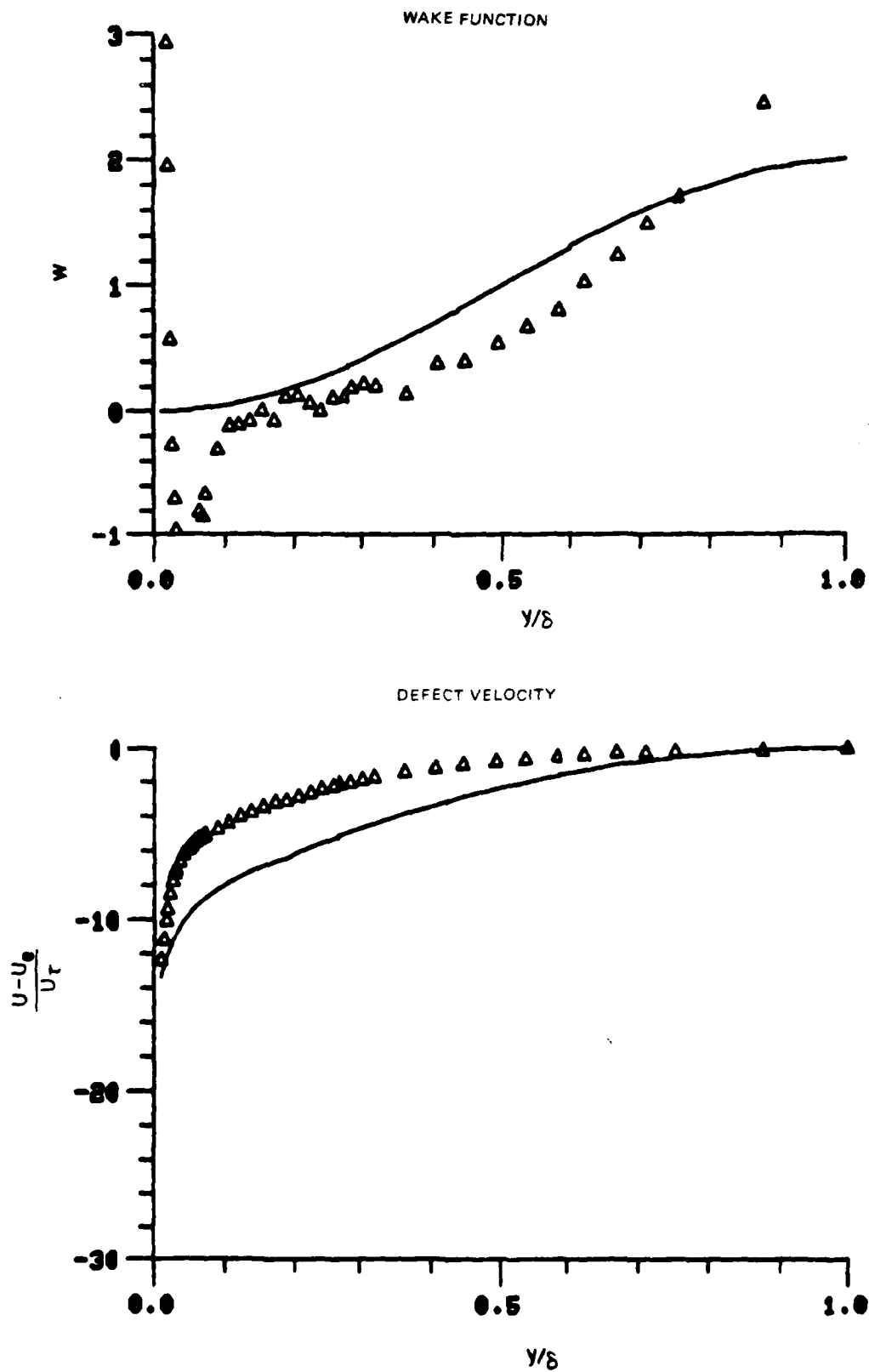


Figure 74. Boundary Layer Velocity Profiles
Run No. 4 Point No. 3

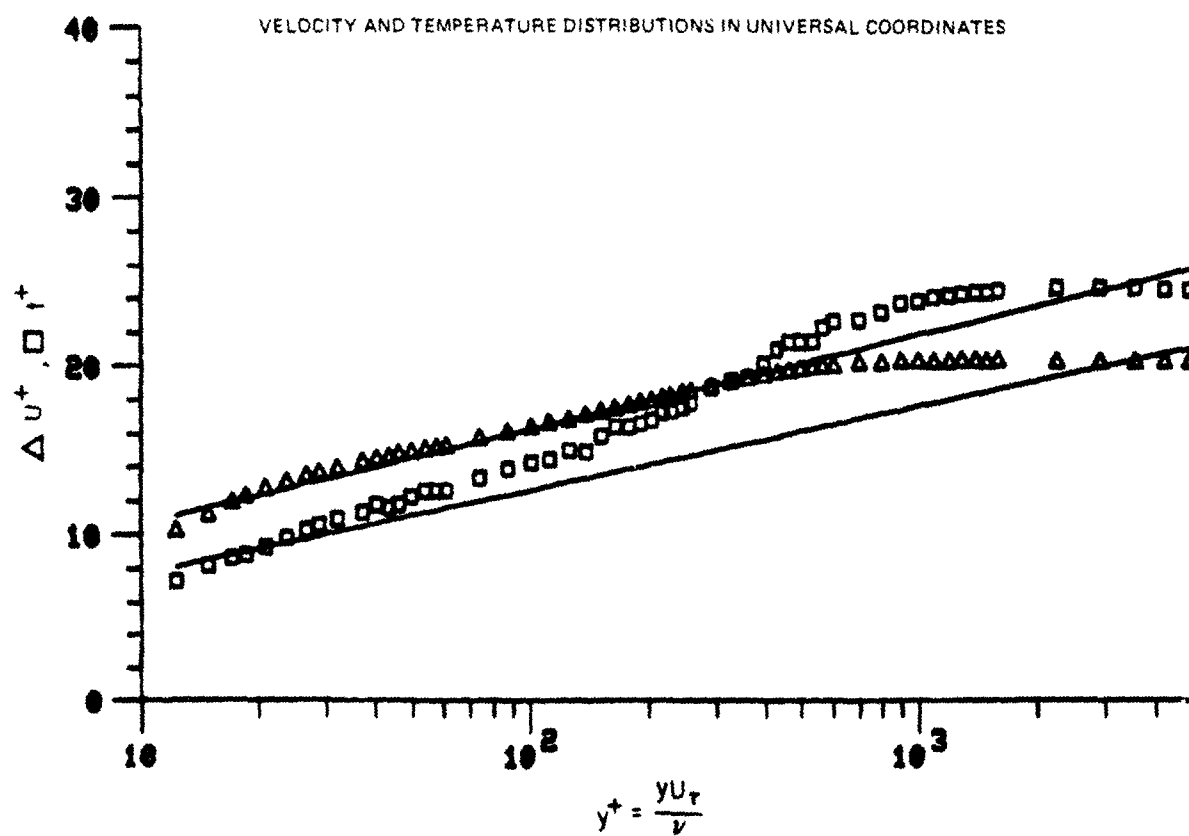
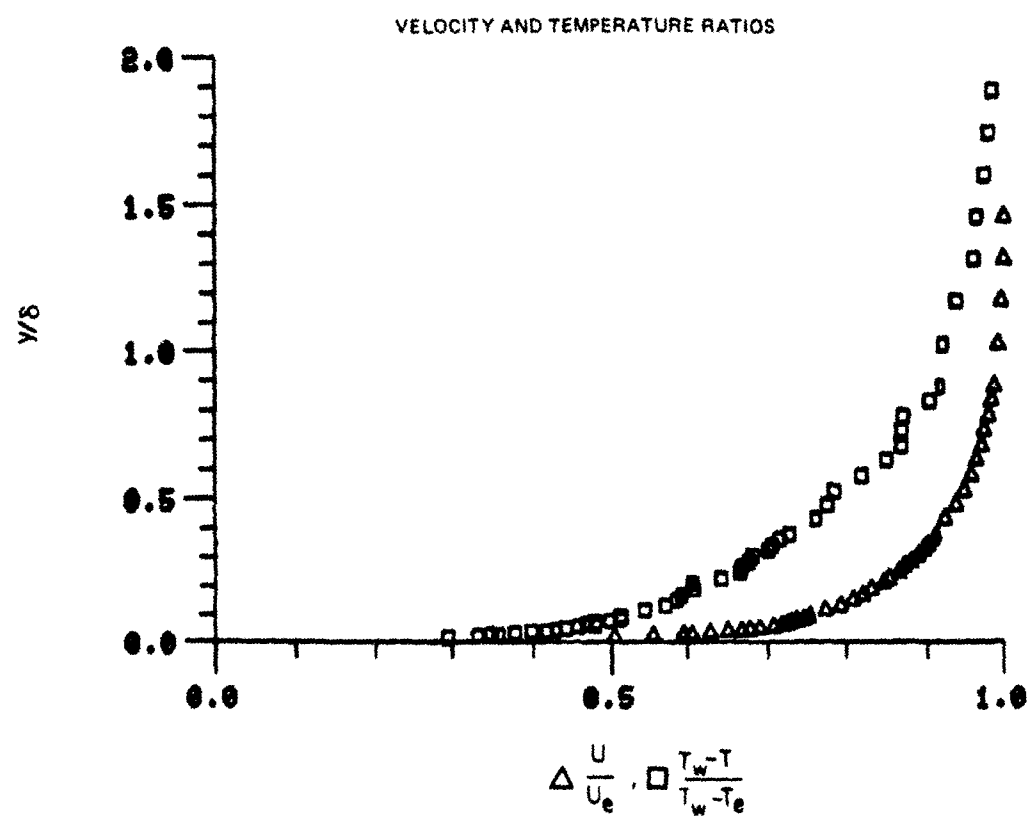


Figure 75. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 4

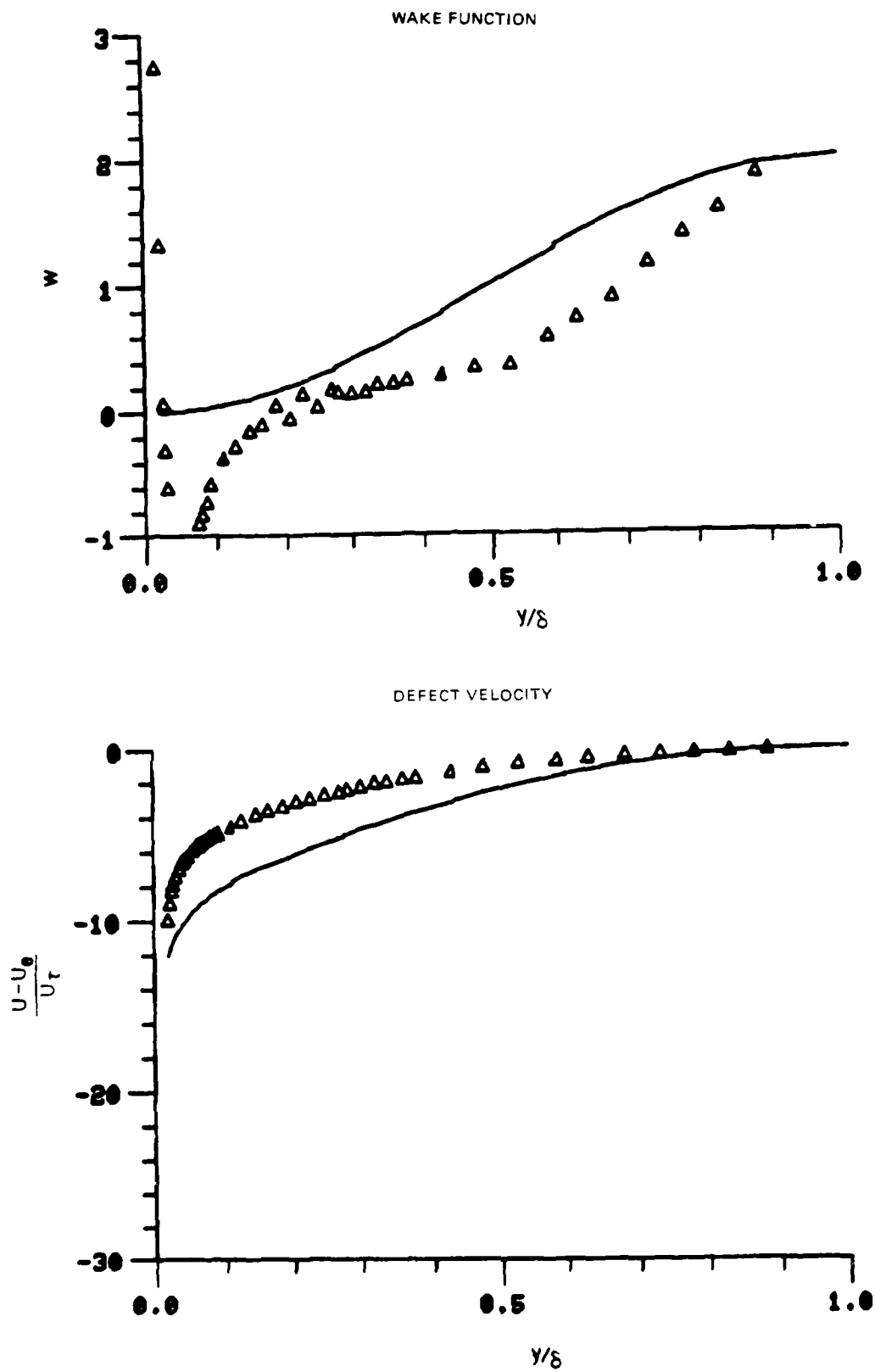


Figure 75. Boundary Layer Velocity Profiles
Run No.4 Point No.4

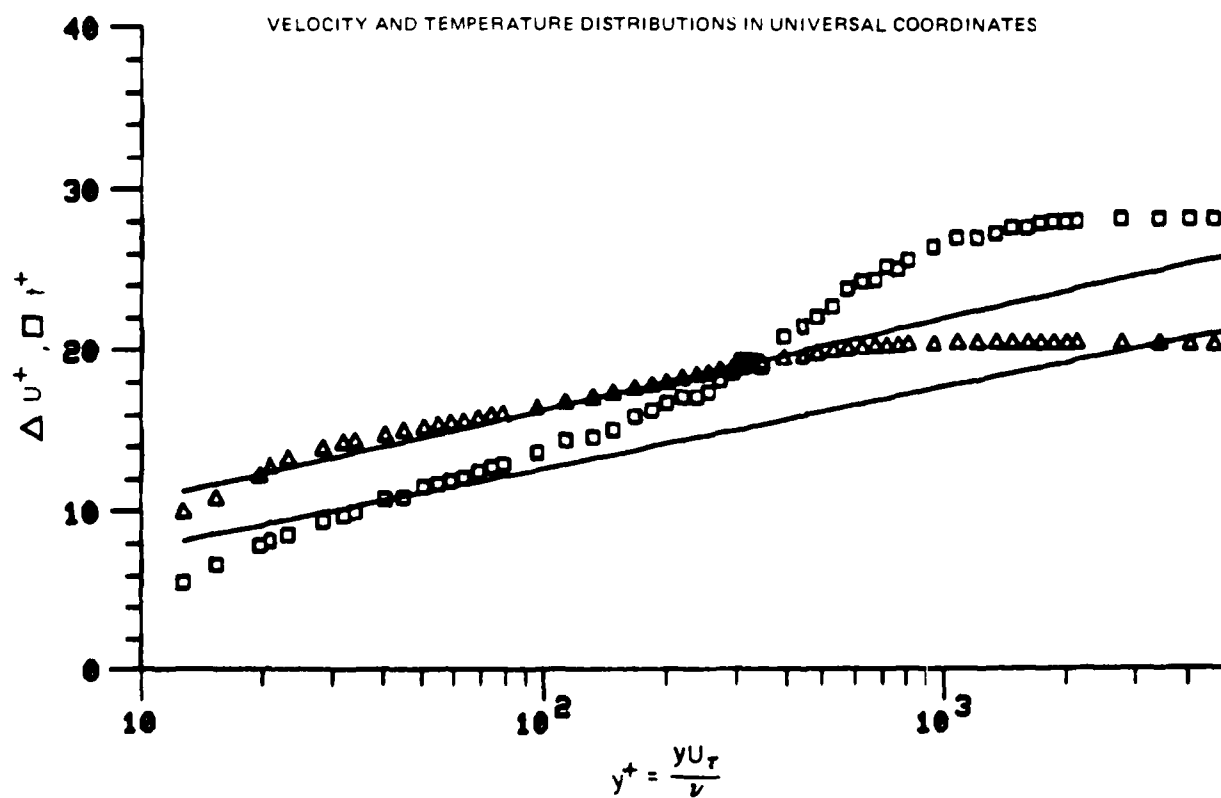
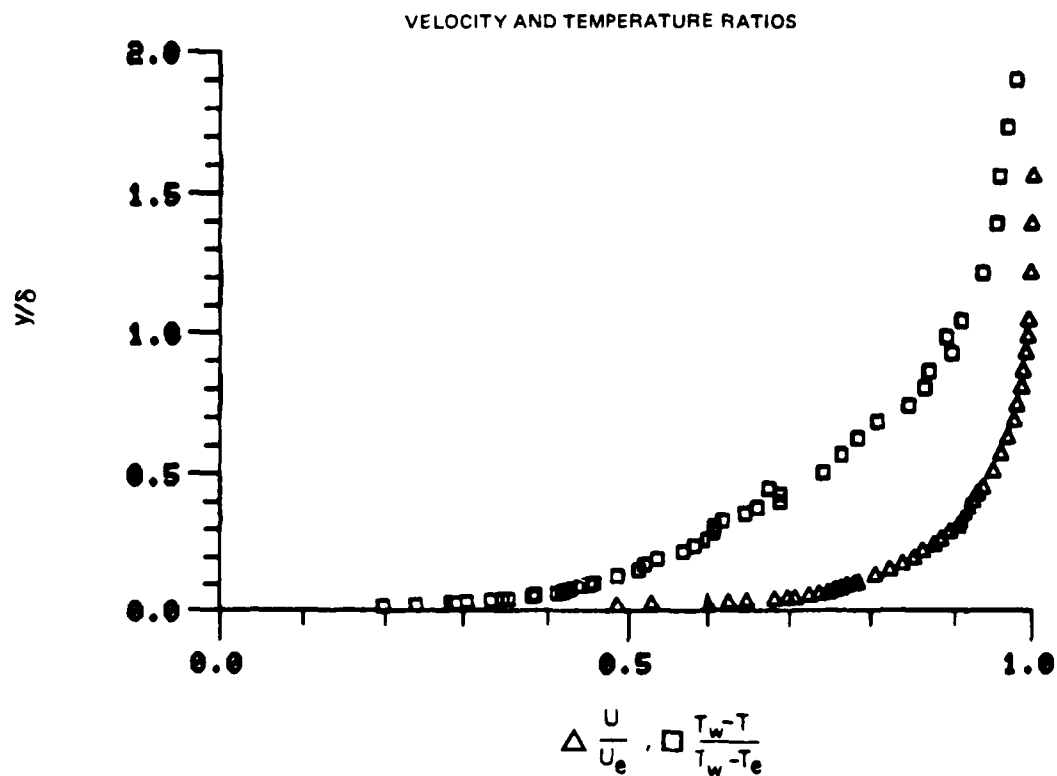


Figure 76. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 1

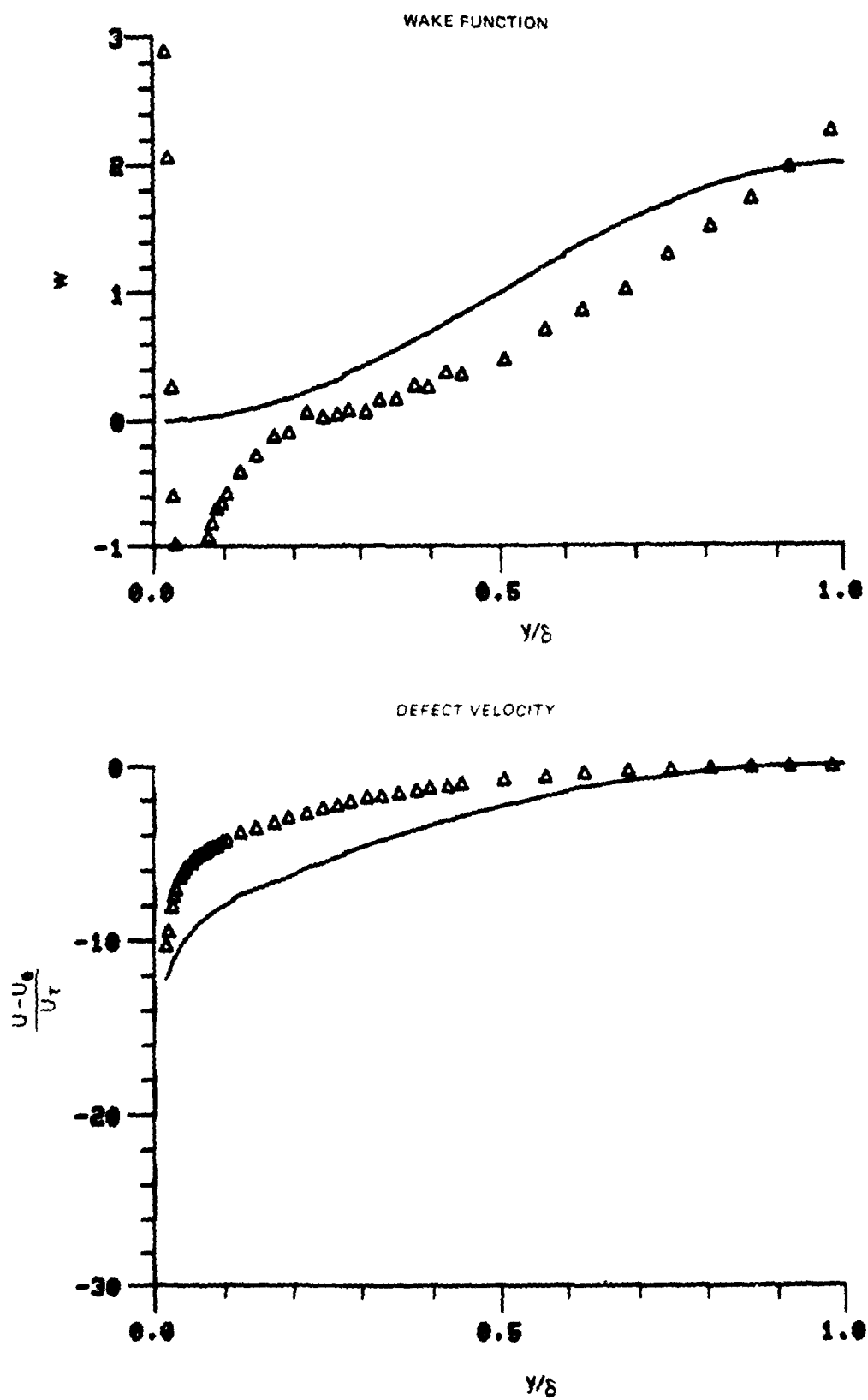


Figure 76. Boundary Layer Velocity Profiles
Run No. 4 Point No. 1