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Effects in Adaptive Wall
Testing of a 7-Inch Chord
CAST-10-2/DOA 2 Airfoil Model

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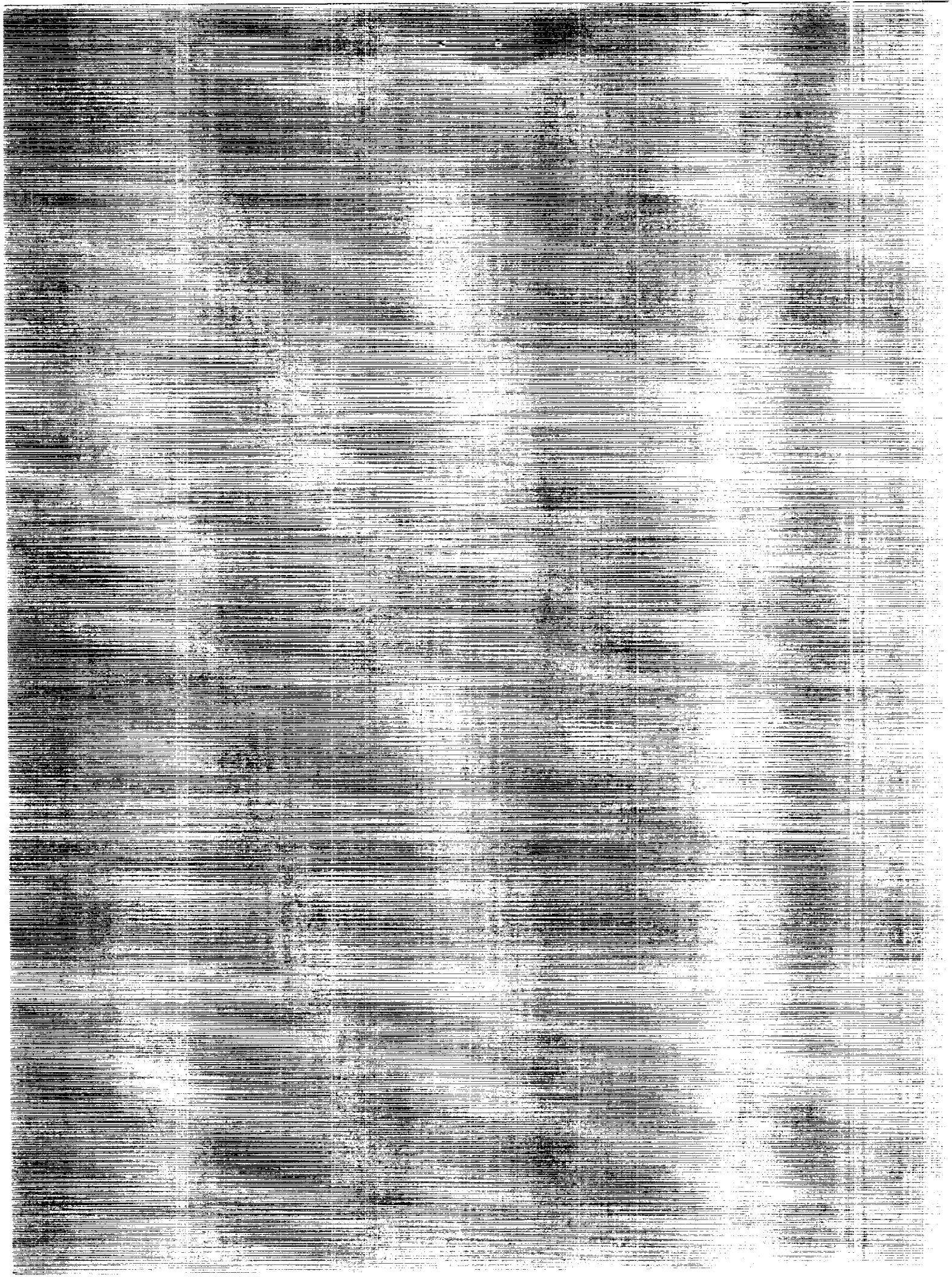*Hampton, Virginia*

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SUMMARY

This report summarizes the results of the residual interference calculations from tests of a CAST-10-2/DOA 2 airfoil model. The tests were carried out on a 7.1-inch chord model in the Langley 0.3-meter Transonic Cryogenic Tunnel adaptive wall test section with a nominal cross-section of 13-inch x 13-inches. The test data obtained on the same model during different tunnel entries showed different levels of residual interference. The study shows that for valid comparison of test data from adaptive wall tunnels, it is necessary to consider the effect of the residual interference, in particular the blockage correction to the test Mach number.

INTRODUCTION

The Langley 0.3-meter Transonic Cryogenic Tunnel[1] (0.3-m TCT) adaptive wall test section has been in operation since 1986. The test section is two-dimensional with rigid side walls and adjustable top and bottom walls. During airfoil tests, the top and bottom walls are shaped iteratively to nearly free air streamline shapes. In the final converged shapes, the wall interference effects on the airfoil test data are likely to be small.

A recently completed test program under a cooperative agreement between the NASA Langley Research Center, National Aeronautical Establishment (NAE, Canada) and ONERA (France), provided an opportunity to study the effectiveness of wall adaptation in reducing the wall interference. The program comprised testing two models of the CAST-10-2/DOA 2 airfoil in the Langley 0.3-m TCT. The model chords were 9.0 and 7.1 inches respectively.

The larger model (9.0 inch chord) was also tested[2,3] in the National Aeronautical Establishment (Canada) 15 inches x 60 inches tunnel with conventional perforated walls. The smaller model (7.1-inch chord) was tested in the ONERA/CERT T2 tunnel[4]. The T2 tunnel has an adaptive wall test section. The tests in the Langley 0.3-m TCT involved different tunnel entries of both the models. This extensive test program provided an opportunity to evaluate the adaptive wall technique, tunnel-to-tunnel comparisons and long term repeatability of test data in the same tunnel. The results of these studies are given various papers[5].

The 0.3-m TCT test program demonstrated the need to assess the quality of streamlining in adaptive wall tunnels. Wall position control at discrete points, approximations in wall adjustment strategies and complex flow situations at high airfoil incidences introduce difficulties in achiev-

ing interference free test data from an adaptive wind tunnel. The tests on the larger model in the 0.3-m TCT showed that significant blockage corrections were needed to some of the data when the model was tested during different entries. Reference 6 discusses the details and shows that a careful evaluation of the residual interference is necessary to judge the quality of wall adaptation.

This report discusses briefly the residual interference effects present in the smaller model tests. The residual interference assessment used for evaluation of the test data is based on the Cauchy Integral formula[7,8]. The method does not require any model representation and the wall interference is evaluated using measured top and bottom wall positions and pressures. The method is simple and can be used on-line to insure that the interference corrections on the test data are small.

NOMENCLATURE

c	model chord
C_d	section wake drag force coefficient
$C_{m,.25c}$	pitching moment coefficient at airfoil quarter chord location
C_n	section normal force coefficient
C_p	pressure coefficient
M	Mach number
P	Point number
R	Run number
R_c	Reynolds number based on chord
T	Test number
x	distance from airfoil quarter chord location
α	model incidence
ΔM	correction to test Mach number
$\Delta\alpha$	correction to model incidence

APPARATUS

The 0.3-m TCT adaptive wall test section is 67 inches long and has a nominal cross section of 13 inches x 13 inches. Individual stepper motors drive the adjustable top and bottom walls at 21 jack stations on each wall (figure 1). The first eighteen jacks are used in adapting the wall to

streamline shapes. The last three jacks provide a smooth entry into the tunnel diffuser. The tunnel reference static pressure is measured on the top wall at a distance of 31.25 inches upstream of the model mounting turntable center. The model was mounted symmetrically on the turntable with its leading edge at a distance of 3.55 inch upstream of the center. The wall adjustment method employed in these tests is based on the predictive strategy developed by the University of Southampton[9,10]. For the smaller model, the test section height to chord ratio was about 1.8 in the 0.3-m TCT and about 2 for the T2 tunnel. The corresponding model aspect ratios (span/chord) were also about 1.8 and 2, respectively.

EXPERIMENTAL PROGRAM

The ONERA 7.1-inch chord model was tested in the 0.3-m TCT during three different tunnel entries. During the first entry (*Test No. 212*) in May 1987, the tests covered a broad range of Mach numbers and Reynolds numbers. The second entry (*Test No. 216*) in November 1987 comprised mainly testing at 4 and 20 million Reynolds numbers in the Mach number range 0.70 – 0.78.

After the conclusion of the second series of tests, it was suspected that the airfoil data obtained might have unacceptably high interference levels. This was due to some uncertainties in the wall adjustment technique then in use at the 0.3-m TCT. Hence, a third entry (*Test No. 224*) was made in August 1988 to examine some of the differences in the test data.

Reference 11 gives the major results of the the 0.3-m TCT tests and their comparison with the ONERA T2 tunnel data. The study shows differences at high Mach number conditions requiring further examination of the test data for the residual interference effects.

RESULTS AND DISCUSSION

No attempt has been made in this report to present the test data for all the conditions and entries. A summary of the measured force coefficients data and the calculated corrections at the airfoil quarter chord location are tabulated in Tables I and II for some selected test conditions. Representative data points from the second and third entries (*Test Nos. 216 and 224*), at a test Mach number of 0.765 and Reynolds number of 20×10^6, are presented for detailed analysis.

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Fig 2a shows a comparison of the measured normal force coefficient variation with angle of attack for the two entries. The two sets of data at the same reference Mach number of 0.765, agree closely up to a normal force coefficient of about 0.6 corresponding to an angle of attack of about 1.0 degrees. At higher angles of attack, the results of the second entry (*Test No. 216*) show much lower normal force coefficients than the data in the third entry (*Test No. 224*). This trend is also reflected in the variation of the drag coefficient (fig. 2b). For normal force coefficients higher than about 0.6, the measured drag coefficients are much higher in the second entry (*Test No. 216*).

In both the tunnel entries, the wall shapes satisfied the conditions specified for wall streamlining[10]. Hence, the difference in the test data between the two entries suggest that the residual interference levels are different in the two tests. The different blockage corrections leads to different effective Mach numbers in the two tests even though the tunnel reference Mach number was at the same value of 0.765. This discrepancy is similar to the observations on the 9-inch chord model tests[6] in the 0.3-m TCT.

To examine further, the residual interferences were evaluated for the both the entries. Interference calculations using measured wall shapes and pressures were made to determine the blockage and incidence corrections along the tunnel center line. The results of the interference calculations are tabulated in Appendices A and B. Table 2a and 2b give the global corrections for test Mach number and incidence corresponding to values at the airfoil quarter chord location.

Figures 3a and b show the Mach number correction along the test section center line for the second entry data (*Test No. 216*) for different model incidences. For all model incidences, the Mach number correction is positive near the model region which results in a higher effective Mach number. The correction at the origin corresponding to airfoil quarter chord location is in the range of .002 to .007 for different angles of attack. The corresponding incidence correction variation along the tunnel centerline is shown in figures 3c and d. The trend is similar, in the model region, for all the angles of attack tested. The correction at the quarter chord point is small ($\simeq$ -0.03 deg). However, the correction varies nearly linearly in the model region which results in a camber correction.

The corresponding corrections for the same nominal test conditions in the third entry (*Test No. 224*) are shown in figures 4a-4d. In this entry, it is observed that the Mach number correction (fig. 4a-4b) varies considerably along the centerline. Except for the lowest angle of attack of

-1.00 degree, the corrections in the model region are negative. The maximum correction is about -.007. This results in a lower effective Mach number for the same nominal reference Mach number of 0.765. The incidence corrections (fig. 4c-d) show a similar trend as in the second entry. The gradients in the model region, and the magnitude of the incidence correction forward of, and behind the model region are smaller.

The above blockage corrections suggest that the effective Mach numbers in the model region in the second entry (*Test No. 216*) are generally higher by about 0.01 compared to effective Mach numbers in the third entry (*Test No. 224*). These differences appear to be due to the sensitivity of the predictive wall adjustment strategy to initial wall shapes. Hence, it is difficult to draw a specific conclusion about the nature of blockage distribution along the centerline.

To understand the extent to which the airfoil characteristics change due to the different nature of the blockage correction, it is necessary to compare the pressure distributions rather than the global characteristics. Figures 5a and b, show the comparison for two different model incidences. At an angle of attack of about 1 deg. (Fig. 5a), the normal force coefficients are 0.612 and 0.673 for the second and third entries, respectively. The pressure distributions agree closely on the upper surface for about 80 percent of the chord. However, towards the trailing edge the data from the second entry (*Test No. 216*) shows a strong separation. The data from third entry (*Test No. 224*) for which the effective test Mach number is lower shows attached flow. The trailing edge separation is exhibited more predominantly at the higher angle of attack of about 2 degrees (Fig. 5b)

The above comparison shows the strong effect of residual interference, in particularly the blockage correction to Mach number. Regarding the angle of attack correction; it must be noted that it is often difficult to calculate correctly. However, the angle of attack correction appears mainly as a constant and does not influence the flow mechanism, at least to a first order. The blockage correction tends to be more accurate due to the self correcting nature of the correction method[12].

CONCLUSIONS

The study illustrates that the differences in test data observed during separate entries are due to the different levels of residual interference. For valid comparisons of test data from adaptive wall techniques, it appears necessary to quantify the residual interference, in particular the

blockage correction to the Mach number. The correction to Mach number in the third entry (*Test No. 224*) is about the same order of magnitude as found in the second entry (*Test No. 216*), but of opposite sign, giving a lower effective Mach number for the third entry. The lower effective Mach number suppresses separation behind the shock which results in increased lift and reduced drag for the same model incidence. The experience[6] with tests on the 9-inch chord model of the same airfoil suggests that lower effective Mach number often results in better correlation between various test data. Therefore, it appears that the adaptive wall test data may give favorable agreement with the other data when the residual correction to the test Mach number is negative. Further, it is necessary to examine methods to eliminate the correction due to gradients in the blockage and upwash velocity distributions.

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Table I: Summary of Test Data and Calculated Corrections (Entry II)

Test	Run	Point	M_{inf}	$R_{c,mil}$	α	c_n	c_m	c_d	ΔM	$\Delta\alpha$
216	10	89	0.700	19.9	1.00	0.628	-0.068	0.0089	-0.002	0.22
216	10	90	0.709	20.0	1.00	0.654	-0.071	0.0095	-0.005	0.22
216	10	91	0.720	20.0	1.00	0.659	-0.071	0.0102	0.001	0.21
216	10	92	0.731	20.0	1.00	0.686	-0.075	0.0124	-0.004	0.24
216	10	93	0.740	20.0	0.99	0.712	-0.082	0.0163	0.001	0.23
216	10	94	0.753	20.0	0.99	0.722	-0.092	0.0212	-0.005	0.22
216	10	95	0.764	20.1	0.99	0.676	-0.097	0.0257	0.007	-0.03
216	10	96	0.770	20.1	0.99	0.622	-0.089	0.0285	0.007	-0.04
216	10	97	0.767	20.0	0.99	0.617	-0.089	0.0298	0.004	-0.02
216	10	98	0.771	20.0	0.99	0.569	-0.082	0.0324	0.003	-0.03
216	10	99	0.782	20.0	0.99	0.516	-0.077	0.0360	0.004	-0.04
216	10	100	0.791	20.0	0.99	0.458	-0.070	0.0373	0.006	-0.02
216	10	101	0.801	20.0	0.99	0.391	-0.061	0.0364	0.010	-0.01
216	11	102	0.781	20.0	-1.01	0.301	-0.092	0.0151	0.008	-0.06
216	11	103	0.782	20.0	-0.03	0.458	-0.089	0.0209	0.008	-0.03
216	11	104	0.782	20.0	1.18	0.519	-0.073	0.0405	0.006	-0.03
216	11	105	0.780	20.0	1.97	0.550	-0.065	0.0585	0.007	-0.02
216	12	110	0.781	19.9	-1.98	0.121	-0.088	0.0131	0.008	-0.03
216	12	112	0.781	20.0	-0.37	0.414	-0.091	0.0175	0.005	-0.06
216	12	113	0.781	20.0	-0.27	0.430	-0.091	0.0181	0.006	-0.03
216	12	114	0.782	20.0	0.37	0.504	-0.087	0.0233	0.007	0.00
216	12	115	0.783	20.0	0.77	0.519	-0.081	0.0296	0.007	-0.03
216	12	116	0.783	20.0	1.17	0.530	-0.075	0.0406	0.005	-0.01
216	12	117	0.784	20.0	1.52	0.529	-0.070	0.0511	0.008	-0.01
216	13	118	0.766	20.0	-2.01	0.122	-0.086	0.0102	0.002	-0.05
216	13	119	0.766	20.0	-1.33	0.252	-0.086	0.0101	0.003	-0.02
216	13	120	0.766	20.0	-0.39	0.445	-0.088	0.0111	0.004	-0.03
216	13	121	0.766	20.0	0.42	0.591	-0.096	0.0172	0.003	-0.01
216	13	122	0.766	20.0	0.98	0.612	-0.089	0.0268	0.004	-0.03
216	13	123	0.766	20.0	1.16	0.610	-0.084	0.0322	0.007	-0.02
216	13	124	0.766	20.0	1.56	0.642	-0.081	0.0415	0.005	-0.01
216	13	125	0.767	20.0	1.73	0.634	-0.077	0.0473	0.006	-0.01
216	13	126	0.766	20.0	1.94	0.626	-0.073	0.0523	0.005	-0.03
216	14	128	0.701	20.0	0.98	0.621	-0.065	0.0105	-0.002	0.25
216	14	129	0.714	20.1	0.99	0.647	-0.065	0.0116	0.003	0.24
216	14	130	0.721	20.0	1.00	0.649	-0.065	0.0114	-0.004	0.24
216	14	131	0.731	20.0	1.00	0.657	-0.066	0.0126	-0.002	0.21
216	14	132	0.741	20.0	1.00	0.700	-0.074	0.0162	-0.001	0.23
216	14	134	0.751	20.0	1.00	0.684	-0.087	0.0200	0.004	-0.03
216	14	135	0.762	20.0	1.00	0.641	-0.084	0.0261	0.004	-0.01
216	14	136	0.766	20.0	1.00	0.608	-0.081	0.0286	0.005	-0.03
216	14	137	0.771	20.0	1.00	0.581	-0.077	0.0315	0.006	-0.06
216	14	138	0.781	20.0	1.00	0.515	-0.068	0.0404	0.006	-0.02
216	14	139	0.791	20.0	1.00	0.455	-0.063	0.0361	0.005	-0.05
216	14	141	0.803	20.0	1.00	0.388	-0.056	0.0343	0.006	0.00
216	15	142	0.780	20.0	-1.94	0.148	-0.082	0.0119	0.004	-0.04
216	15	143	0.780	20.0	-1.03	0.304	-0.082	0.0136	0.006	-0.03
216	15	144	0.780	20.0	-0.39	0.425	-0.084	0.0161	0.004	-0.03
216	15	145	0.780	20.0	-0.29	0.427	-0.084	0.0173	0.004	-0.02
216	15	146	0.780	20.0	-0.03	0.458	-0.083	0.0200	0.003	-0.05
216	15	147	0.780	20.0	0.36	0.481	-0.077	0.0242	0.004	-0.03
216	15	148	0.779	20.0	0.79	0.516	-0.073	0.0277	0.005	-0.01
216	15	149	0.781	20.0	1.18	0.531	-0.069	0.0454	0.004	-0.01
216	15	150	0.782	20.0	1.52	0.537	-0.065	0.0524	0.005	-0.02
216	15	151	0.782	20.0	1.94	0.555	-0.062	0.0587	0.006	-0.03

continued.

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Table I: Summary of Test Data and Calculated Corrections (Entry II)

Test	Run	Point	M_{inf}	$R_{c,mil}$	α	c_n	c_m	c_d	ΔM	$\Delta \alpha$
216	16	154	0.766	20.0	-1.98	0.142	-0.081	0.0106	0.004	-0.05
216	16	155	0.766	20.0	-1.33	0.252	-0.079	0.0106	0.005	-0.04
216	16	156	0.766	20.0	-0.30	0.447	-0.083	0.0133	0.006	-0.04
216	16	157	0.766	20.0	0.44	0.570	-0.086	0.0164	0.005	-0.03
216	16	158	0.766	20.0	0.98	0.608	-0.081	0.0286	0.007	-0.01
216	16	159	0.766	20.0	1.16	0.606	-0.076	0.0351	0.004	-0.01
216	16	160	0.766	20.0	1.52	0.633	-0.074	0.0469	0.011	-0.03
216	16	161	0.766	20.0	1.77	0.633	-0.070	0.0499	0.005	-0.02
216	16	162	0.766	20.0	1.93	0.641	-0.069	0.0531	0.006	-0.03
216	16	163	0.766	20.0	2.12	0.636	-0.066	0.0566	0.006	-0.01
216	16	164	0.767	20.0	2.35	0.633	-0.063	0.0597	0.007	-0.04
216	17	165	0.699	20.1	-2.03	0.127	-0.071	0.0085	-0.001	0.08
216	17	166	0.700	20.0	-1.20	0.258	-0.071	0.0086	0.001	0.10
216	17	167	0.700	20.0	-0.40	0.392	-0.068	0.0089	-0.001	0.20
216	17	168	0.700	20.0	0.59	0.537	-0.065	0.0091	-0.004	0.20
216	17	169	0.700	20.0	1.33	0.659	-0.062	0.0109	-0.000	0.21
216	17	170	0.700	20.0	2.30	0.866	-0.070	0.0188	0.003	-0.01
216	18	171	0.766	30.1	0.24	0.553	-0.090	0.0175	0.003	-0.04
216	18	172	0.765	25.0	0.24	0.552	-0.088	0.0153	0.001	-0.03
216	18	173	0.767	20.0	0.24	0.534	-0.087	0.0169	0.003	-0.02
216	18	174	0.767	15.1	0.24	0.521	-0.083	0.0159	0.004	-0.02
216	18	175	0.765	10.0	0.23	0.494	-0.075	0.0138	0.003	-0.05
216	18	176	0.765	4.0	0.20	0.414	-0.059	0.0151	0.008	-0.06
216	19	179	0.701	4.0	-0.98	0.214	-0.057	0.0106	-0.008	-0.03
216	19	180	0.701	4.0	-0.98	0.246	-0.056	0.0110	0.002	0.18
216	19	181	0.701	4.0	0.00	0.359	-0.054	0.0112	-0.007	0.03
216	19	182	0.701	4.0	0.00	0.408	-0.051	0.0117	-0.000	0.35
216	19	183	0.701	4.0	0.95	0.514	-0.053	0.0120	-0.006	0.05
216	19	184	0.701	4.0	0.95	0.583	-0.048	0.0133	0.002	0.51
216	19	185	0.701	4.0	1.97	0.730	-0.051	0.0158	-0.000	0.23
216	19	186	0.699	4.0	1.97	0.813	-0.051	0.0199	-0.001	0.74
216	19	187	0.700	4.0	2.99	0.936	-0.064	0.0355	0.009	0.29
216	20	188	0.771	4.0	-0.99	0.185	-0.055	0.0124	-0.006	-0.03
216	20	189	0.770	4.0	-0.99	0.222	-0.054	0.0133	0.008	0.14
216	20	190	0.769	4.0	-0.02	0.371	-0.055	0.0134	-0.003	0.05
216	20	191	0.771	4.0	-0.02	0.428	-0.060	0.0201	0.006	0.36
216	20	192	0.771	4.0	0.96	0.494	-0.055	0.0286	0.016	0.15
216	20	193	0.771	4.0	0.96	0.468	-0.049	0.0385	0.012	0.41
216	20	194	0.771	4.0	1.98	0.512	-0.044	0.0563	0.017	0.19
216	20	195	0.771	4.0	1.98	0.495	-0.041	0.0610	0.017	0.45
216	21	198	0.770	4.0	-0.99	0.179	-0.056	0.0123	-0.002	-0.05
216	21	199	0.771	4.0	-0.99	0.177	-0.055	0.0123	-0.001	-0.03
216	21	200	0.771	4.0	-0.99	0.216	-0.054	0.0135	0.012	0.13
216	21	201	0.772	4.0	0.96	0.460	-0.049	0.0495	0.018	0.39

concluded.

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Table II: Summary of Test Data and Calculated Corrections (Entry III)

Test	Run	Point	M_{inf}	$R_{c,mil}$	α	c_n	c_m	c_d	$\Delta M'$	$\Delta\alpha$
224	2	9	0.701	3.7	-0.99	0.218	-0.059	0.0088	-0.001	-0.04
224	2	10	0.701	3.7	-0.01	0.352	-0.057	0.0080	-0.000	-0.04
224	2	11	0.701	3.7	0.98	0.510	-0.054	0.0094	-0.003	-0.04
224	2	12	0.701	3.7	2.00	0.705	-0.055	0.0121	-0.001	-0.02
224	2	13	0.700	3.7	2.94	0.897	-0.062	0.0226	-0.002	-0.02
224	2	14	0.700	3.7	4.01	1.030	-0.061	0.0427	-0.002	-0.02
224	2	15	0.700	3.7	4.95	0.995	-0.055	0.0605	-0.001	-0.01
224	3	16	0.767	4.0	-0.99	0.210	-0.060	0.0092	-0.002	-0.05
224	3	17	0.766	4.0	-0.06	0.402	-0.060	0.0088	0.001	-0.04
224	3	18	0.766	4.0	0.23	0.464	-0.062	0.0097	-0.003	-0.04
224	3	19	0.767	4.0	0.91	0.587	-0.072	0.0167	-0.001	-0.04
224	3	20	0.766	4.0	1.46	0.643	-0.073	0.0252	-0.003	-0.04
224	3	21	0.767	4.0	1.98	0.645	-0.066	0.0383	0.001	-0.03
224	3	22	0.767	. 4.0	2.48	0.667	-0.061	0.0567	0.001	-0.04
224	3	23	0.766	4.0	1.48	0.651	-0.074	0.0260	-0.002	-0.03
224	5	31	0.766	20.0	-1.03	0.319	-0.084	0.0104	0.005	-0.05
224	5	32	0.766	20.0	0.03	0.529	-0.093	0.0170	0.005	-0.03
224	5	33	0.766	20.0	0.23	0.564	-0.094	0.0177	0.002	-0.03
224	5	34	0.766	20.0	0.99	0.586	-0.081	0.0282	0.003	-0.05
224	5	35	0.766	20.0	1.48	0.615	-0.076	0.0425	0.004	-0.05
224	5	36	0.766	20.0	1.97	0.615	-0.069	0.0542	0.008	-0.05
224	5	37	0.766	20.0	-1.98	0.145	-0.082	0.0098	0.003	-0.05
224	16	97	0.765	21.3	-1.03	0.304	-0.083	0.0097	0.003	-0.03
224	16	98	0.765	21.4	-0.01	0.503	-0.083	0.0105	0.001	-0.04
224	16	99	0.765	21.4	0.24	0.554	-0.084	0.0105	-0.007	-0.04
224	16	100	0.765	21.3	0.97	0.674	-0.094	0.0210	-0.001	-0.04
224	16	101	0.765	21.3	1.47	0.667	-0.081	0.0346	-0.001	-0.04
224	16	102	0.765	21.3	1.94	0.686	-0.076	0.0449	-0.003	-0.02
224	17	103	0.765	20.1	-1.00	0.313	-0.083	0.0102	0.008	-0.03
224	17	104	0.765	20.1	-0.03	0.499	-0.082	0.0101	-0.005	-0.03
224	17	105	0.765	20.1	0.23	0.551	-0.084	0.0111	-0.004	-0.03
224	17	106	0.765	20.1	0.96	0.673	-0.092	0.0207	-0.004	-0.01
224	17	107	0.765	20.0	1.46	0.689	-0.084	0.0326	-0.006	-0.02
224	17	108	0.765	20.0	1.96	0.685	-0.075	0.0443	-0.006	-0.02
224	17	109	0.765	20.0	2.44	0.687	-0.070	0.0570	-0.002	-0.01
224	17	110	0.765	20.0	2.94	0.697	-0.065	0.0641	-0.002	-0.02
224	18	111	0.765	4.1	-0.98	0.321	-0.080	0.0133	-0.006	-0.06
224	19	118	0.765	4.1	-1.01	0.326	-0.080	0.0150	0.004	-0.04
224	19	120	0.765	4.1	-0.02	0.450	-0.072	0.0107	-0.003	-0.05
224	19	121	0.765	4.1	0.23	0.527	-0.076	0.0127	0.002	-0.05
224	19	122	0.765	4.1	0.99	0.657	-0.086	0.0234	-0.004	-0.04
224	19	123	0.765	4.1	1.48	0.649	-0.077	0.0447	0.000	-0.03
224	19	124	0.765	4.1	1.97	0.662	-0.072	0.0234	-0.003	-0.05
224	20	125	0.765	4.1	-0.01	0.454	-0.072	0.0107	-0.003	-0.03
224	20	126	0.765	4.1	0.23	0.533	-0.078	0.0122	-0.003	-0.04
224	20	127	0.765	4.1	0.98	0.643	-0.085	0.0260	-0.001	-0.04
224	20	128	0.765	4.1	1.47	0.650	-0.076	0.0417	-0.003	-0.04
224	20	129	0.765	4.1	1.97	0.659	-0.072	0.0571	0.001	-0.05
224	20	130	0.765	4.1	2.45	0.684	-0.070	0.0653	-0.004	0.00
224	20	131	0.765	4.1	2.95	0.690	-0.073	0.0823	0.000	-0.01
224	21	132	0.700	4.0	-0.99	0.265	-0.069	0.0098	0.000	-0.05
224	21	133	0.700	4.0	-0.02	0.391	-0.063	0.0085	-0.003	-0.04
224	21	134	0.700	4.0	0.23	0.427	-0.061	0.0085	-0.002	-0.03
224	21	135	0.700	4.0	0.97	0.522	-0.057	0.0094	-0.004	-0.03
224	21	136	0.700	4.0	1.48	0.622	-0.058	0.0106	-0.003	-0.02
224	21	137	0.700	4.0	1.97	0.724	-0.059	0.0127	-0.004	-0.02

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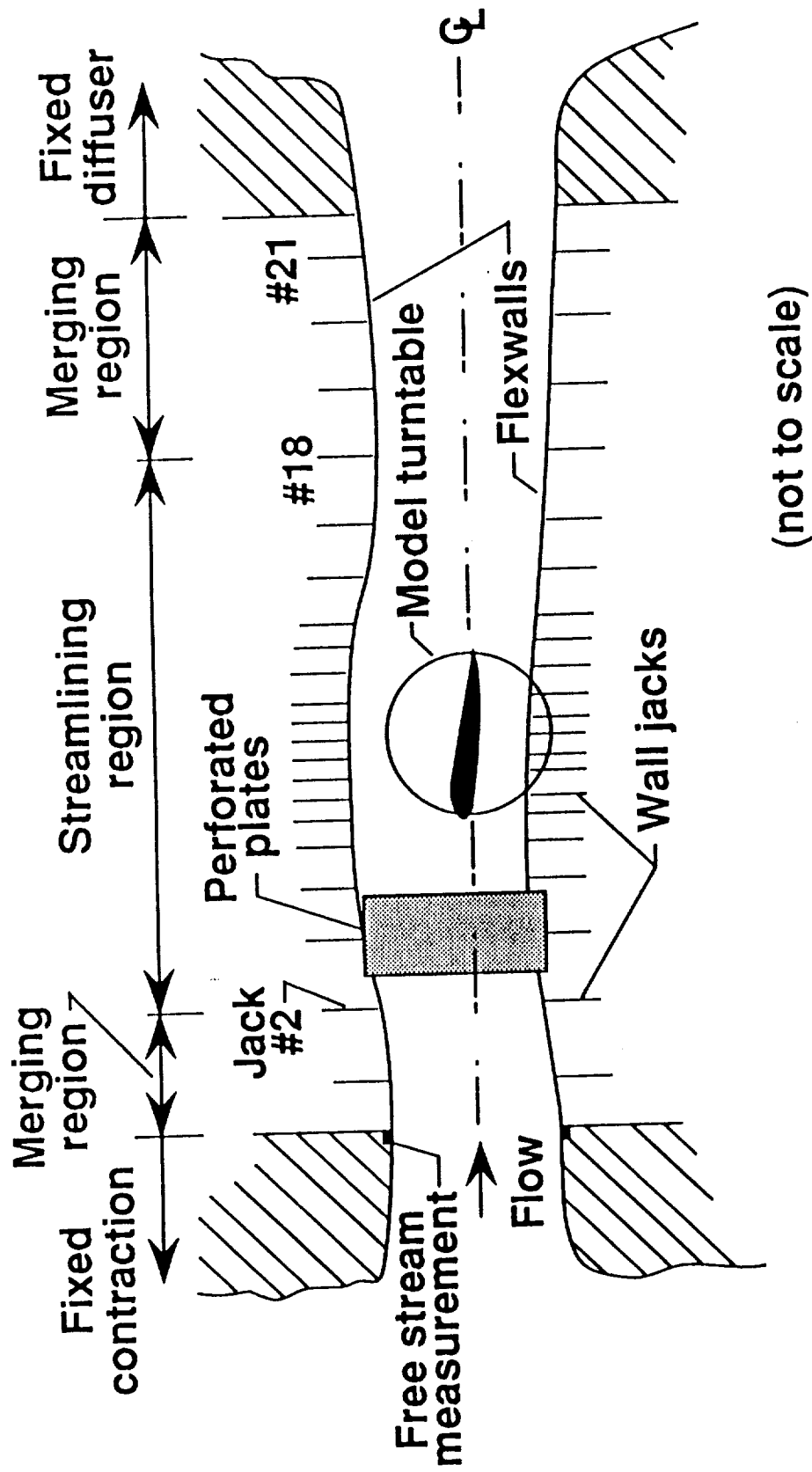
Fig. 1: 0.3-m TCT Adaptive Wall Test Section layout
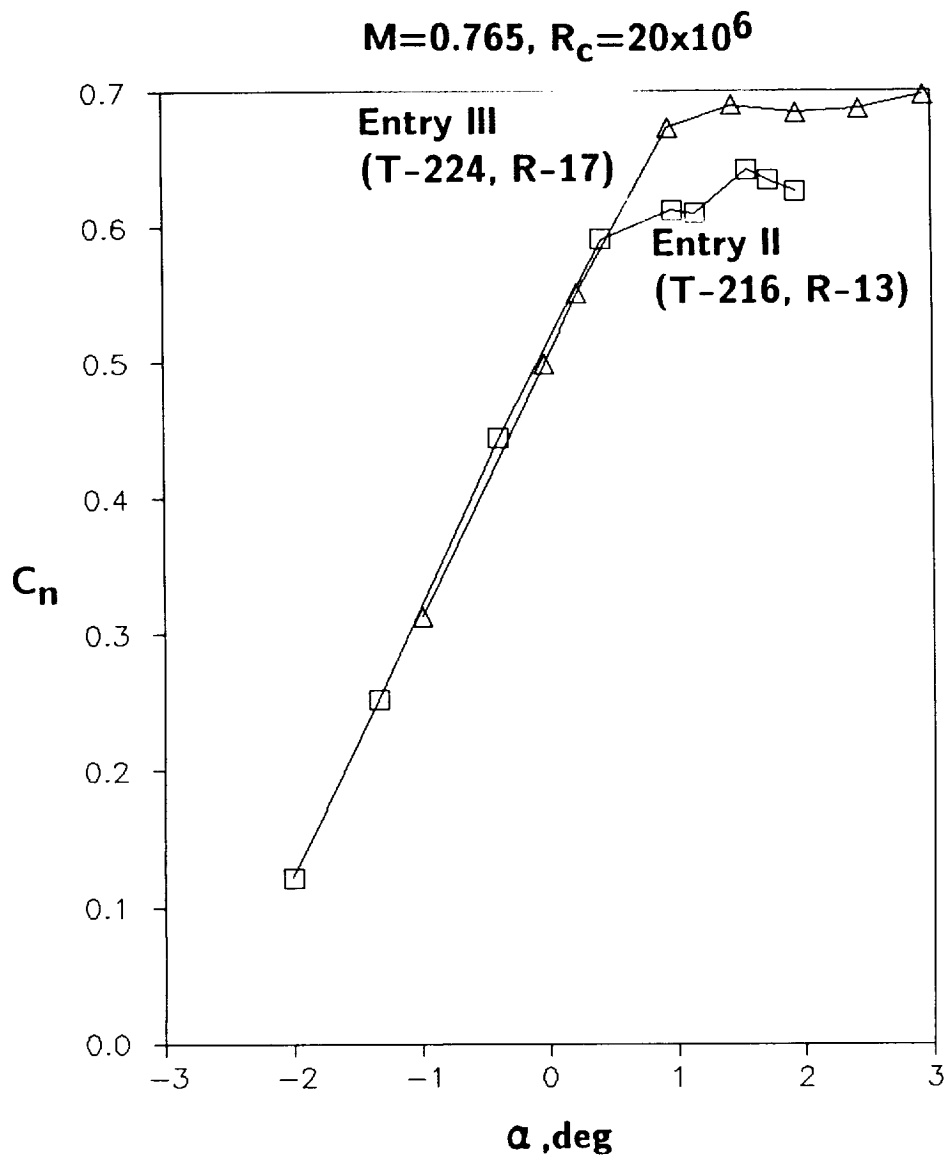
Fig. 2a: Comparison of normal force coefficient measurements
from two different entries.
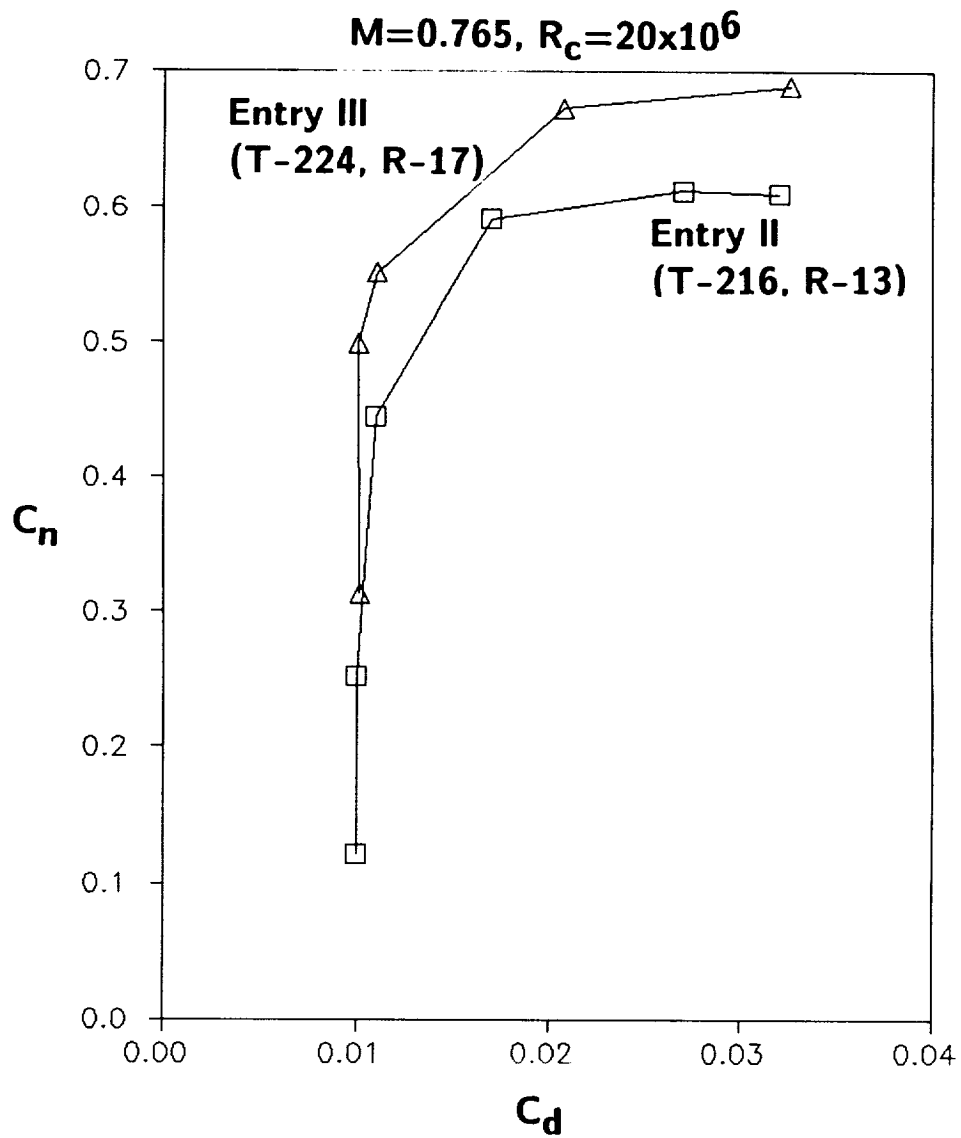
Fig. 2b: Comparison of drag variation with normal force from two different entries.

Fig. 3a: Blockage correction variation along the test section centerline for different angles of attack (Test: 216)

Fig. 3b: Blockage correction variation along the test section
          centerline for different angles of Attack (Test: 216)

M=0.765, $R_c=20 \times 10^6$ (Entry II, T-216)
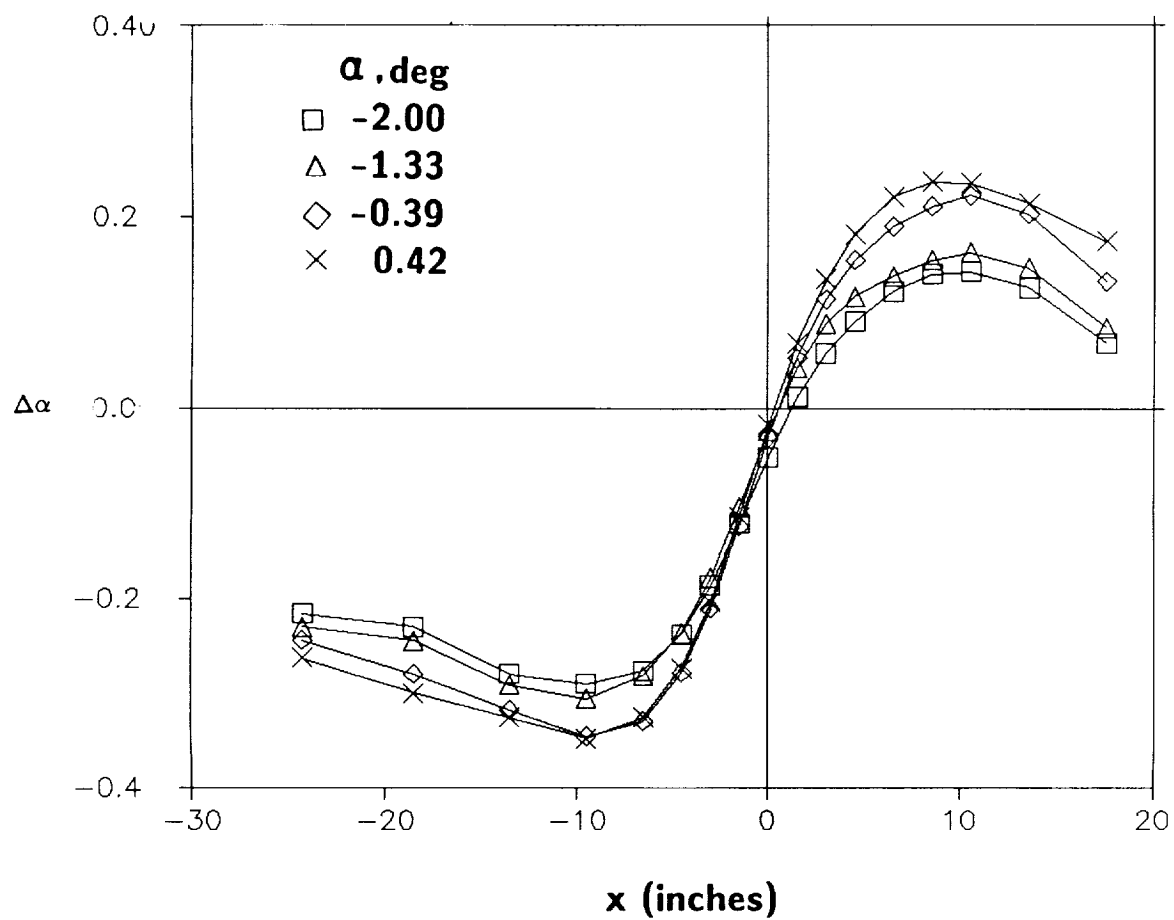
Fig. 3c: Incidence correction variation along the test section centerline for different angles of attack (Test: 216)

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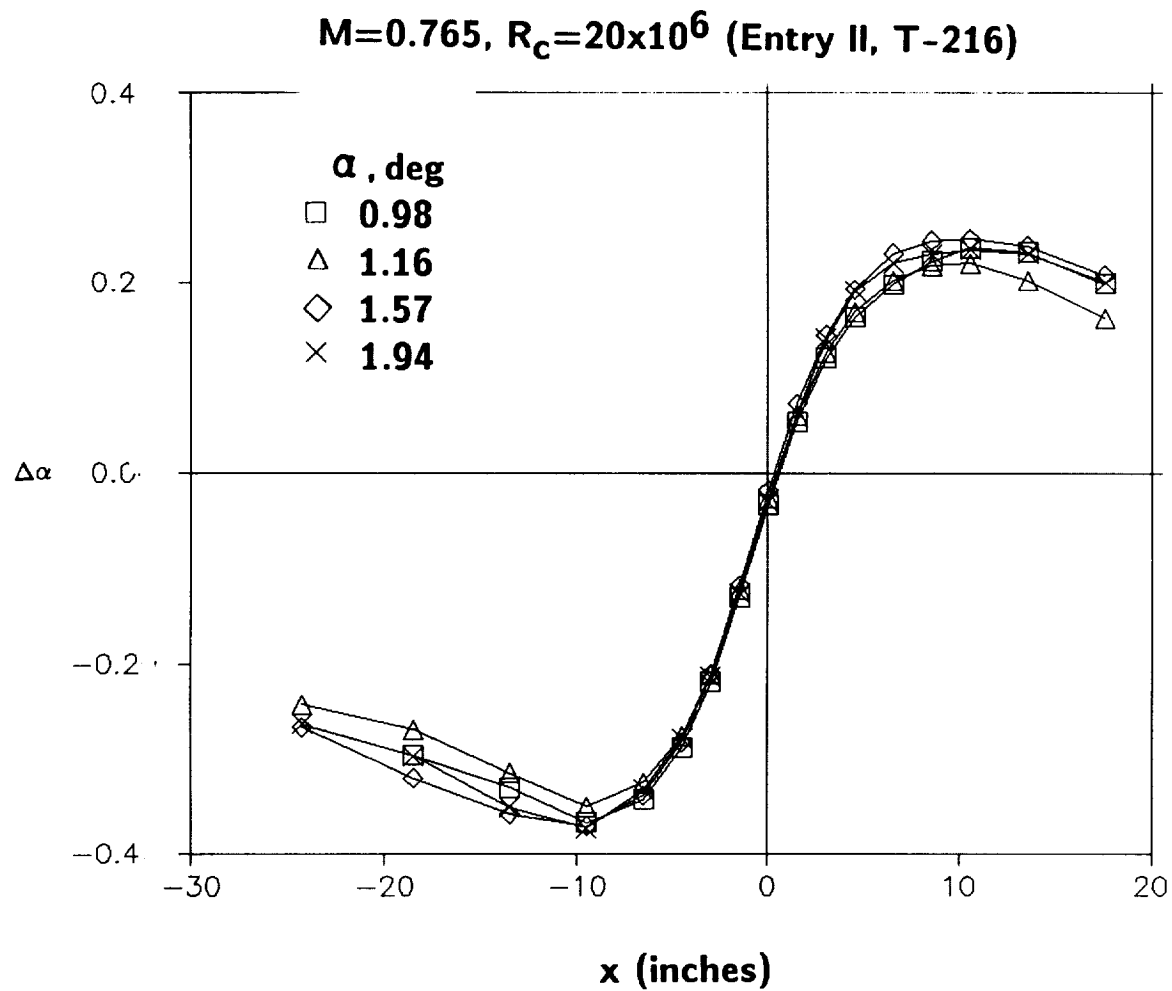
Fig. 3d: Incidence correction variation along the test section centerline for different angles of attack (Test: 216)
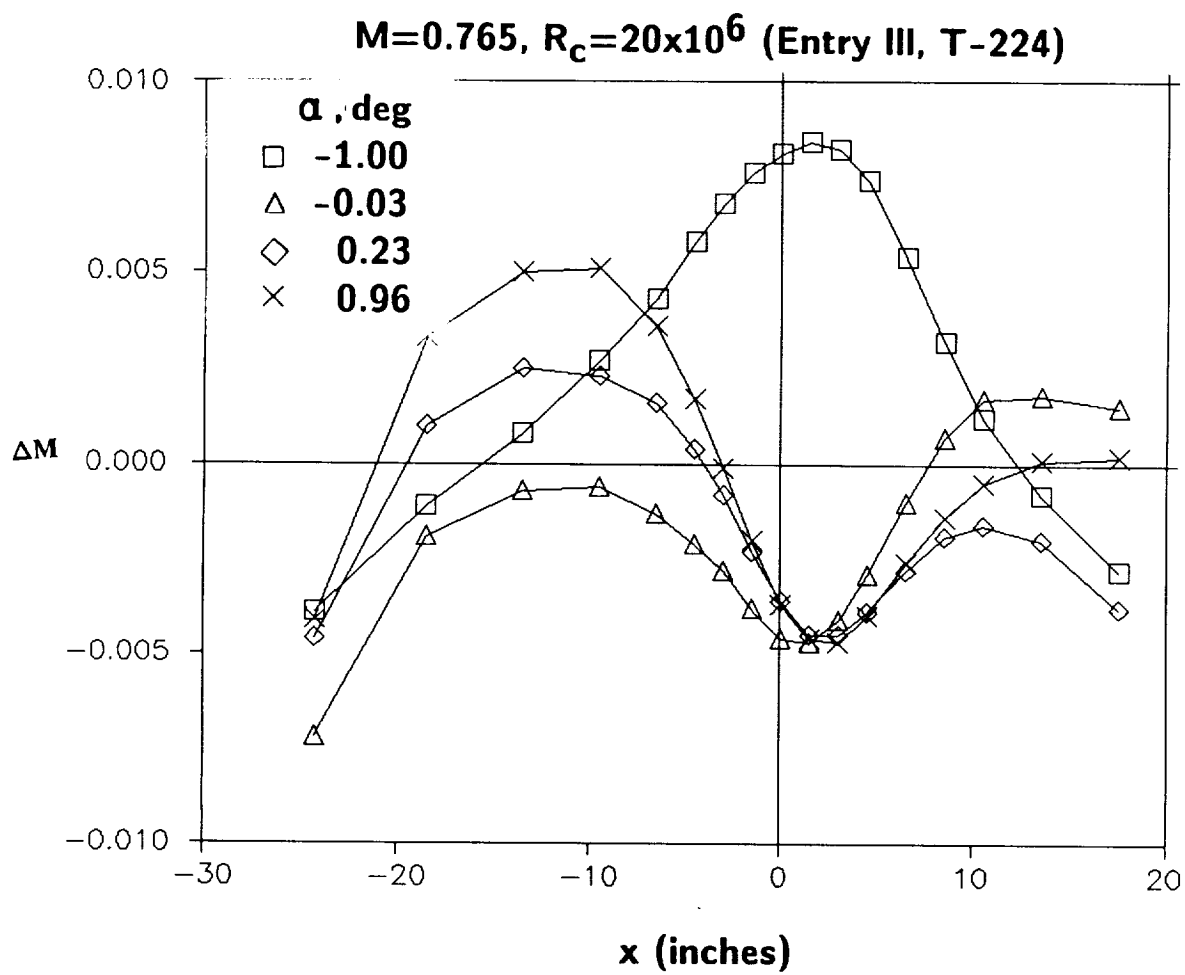
Fig. 4a: Blockage correction variation along the test section centerline for different angles of attack (Test: 224)
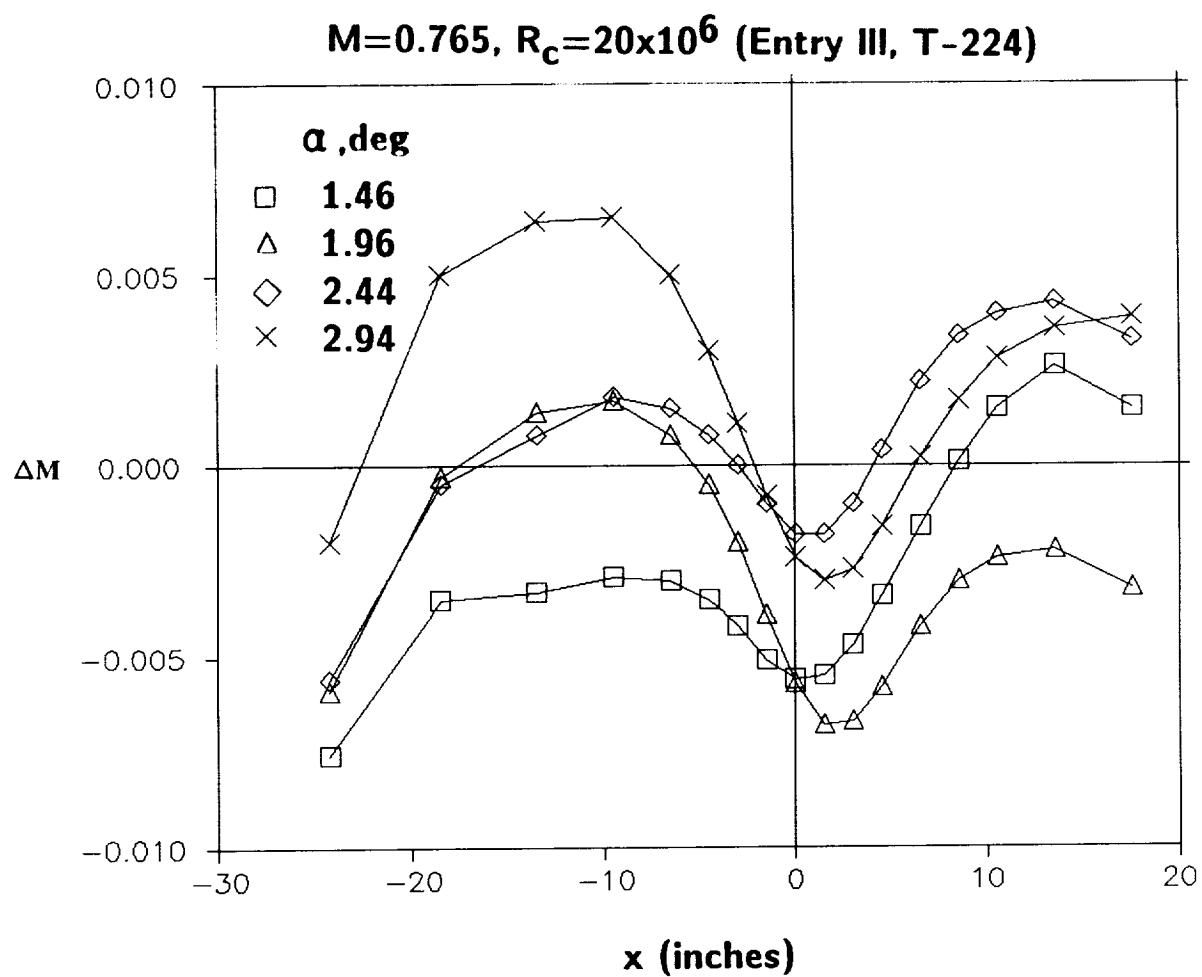
Fig. 4b: Blockage correction variation along the test section centerline for different angles of attack (Test: 224)
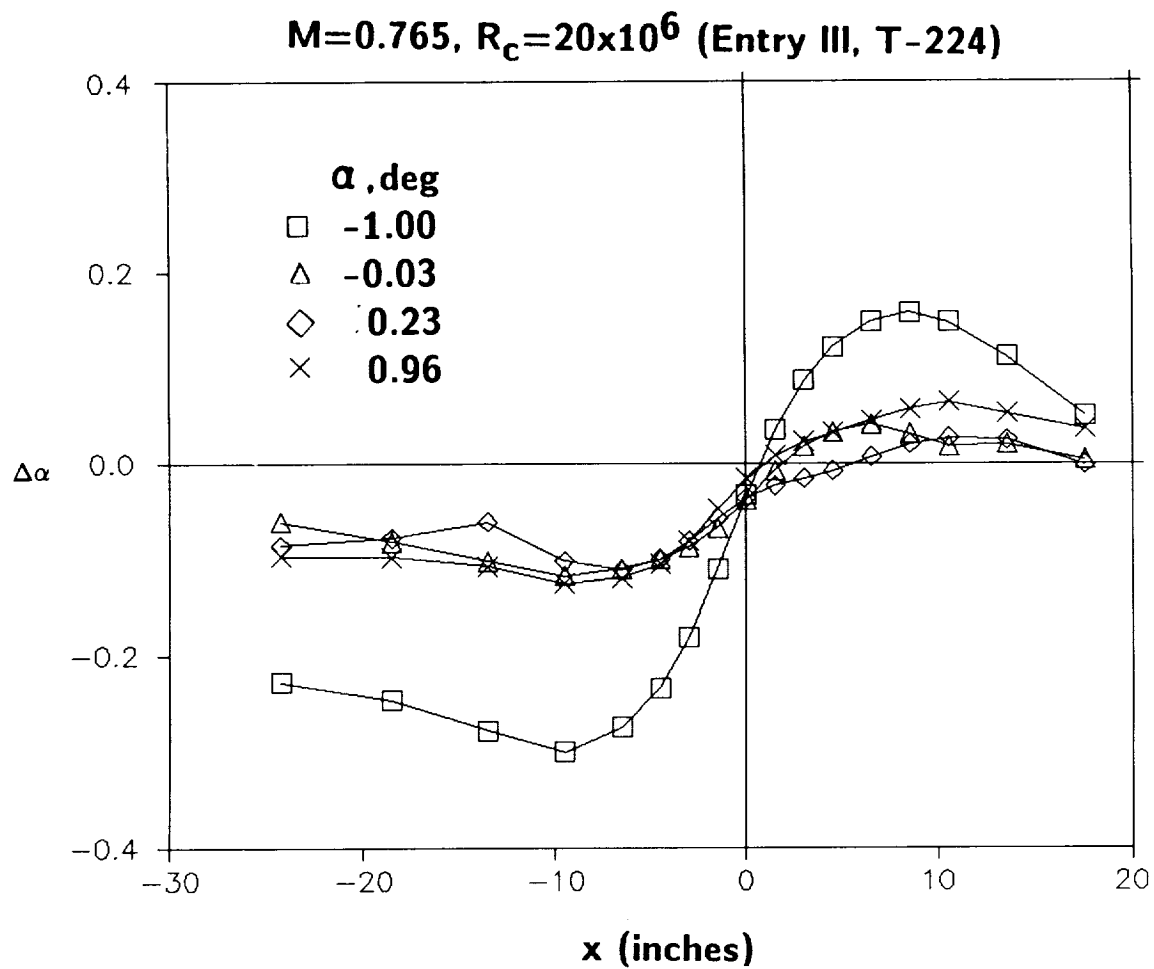
Fig. 4c: Incidence correction variation along the test section - centerline for different angles of attack (Test: 224)

Fig. 4d: Incidence correction variation along the test section
            centerline for different angles of attack (Test: 224)

$$M{=}0.765, R_c{=}20{\times}10^6, \alpha{=}.95 \text{ deg.}$$

	C_n	Entry	
□	0.612	II	(T-216, P-122)
△	0.673	III	(T-224, P-106)

Fig. 5a: Comparison of airfoil pressure distribution from two different tunnel entries.

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$M = 0.765, R_c = 20 \times 10^6, a = 1.95$ deg.

C_p

-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5

C_n	Entry
□ 0.626	II (T-216, P-126)
△ 0.685	III (T-224, P-108)

0

x/c

1
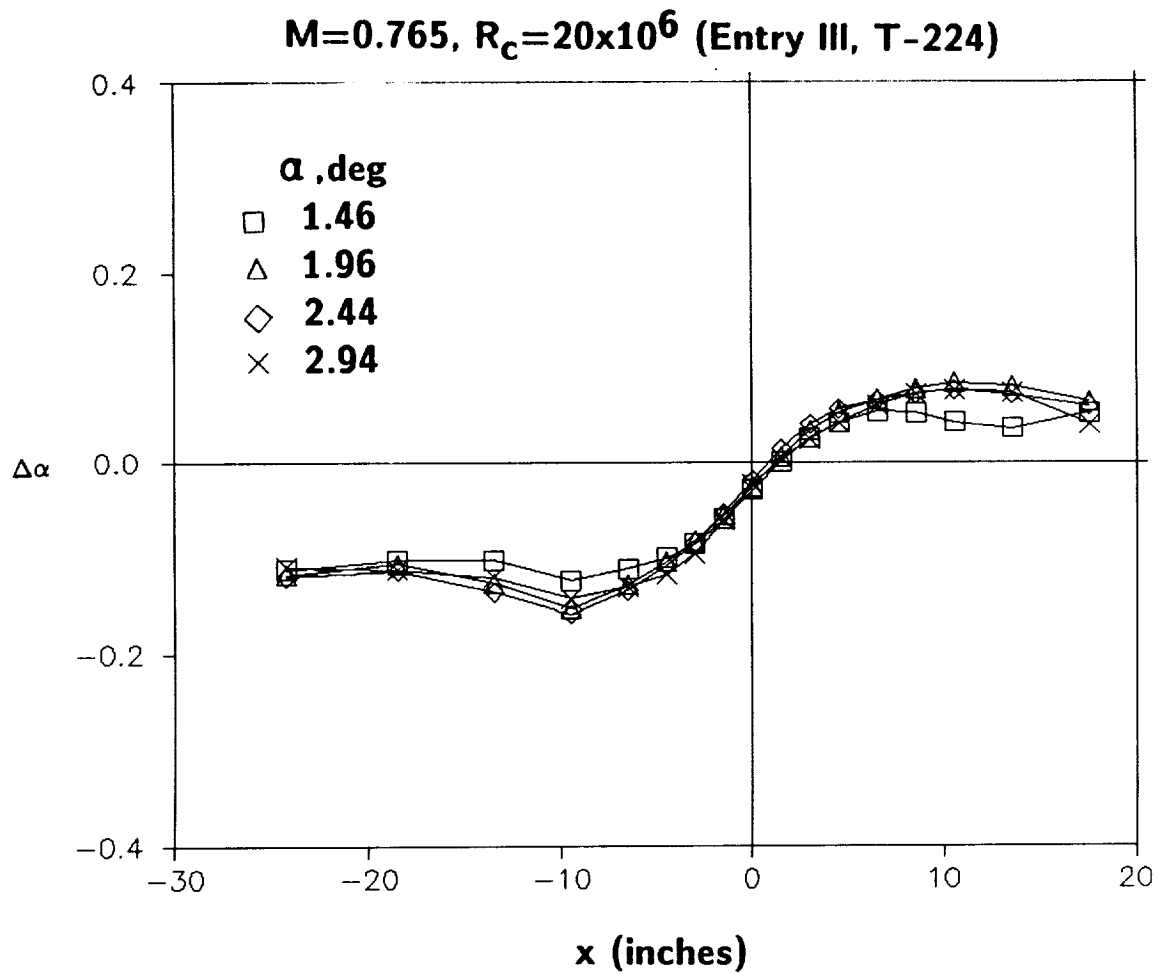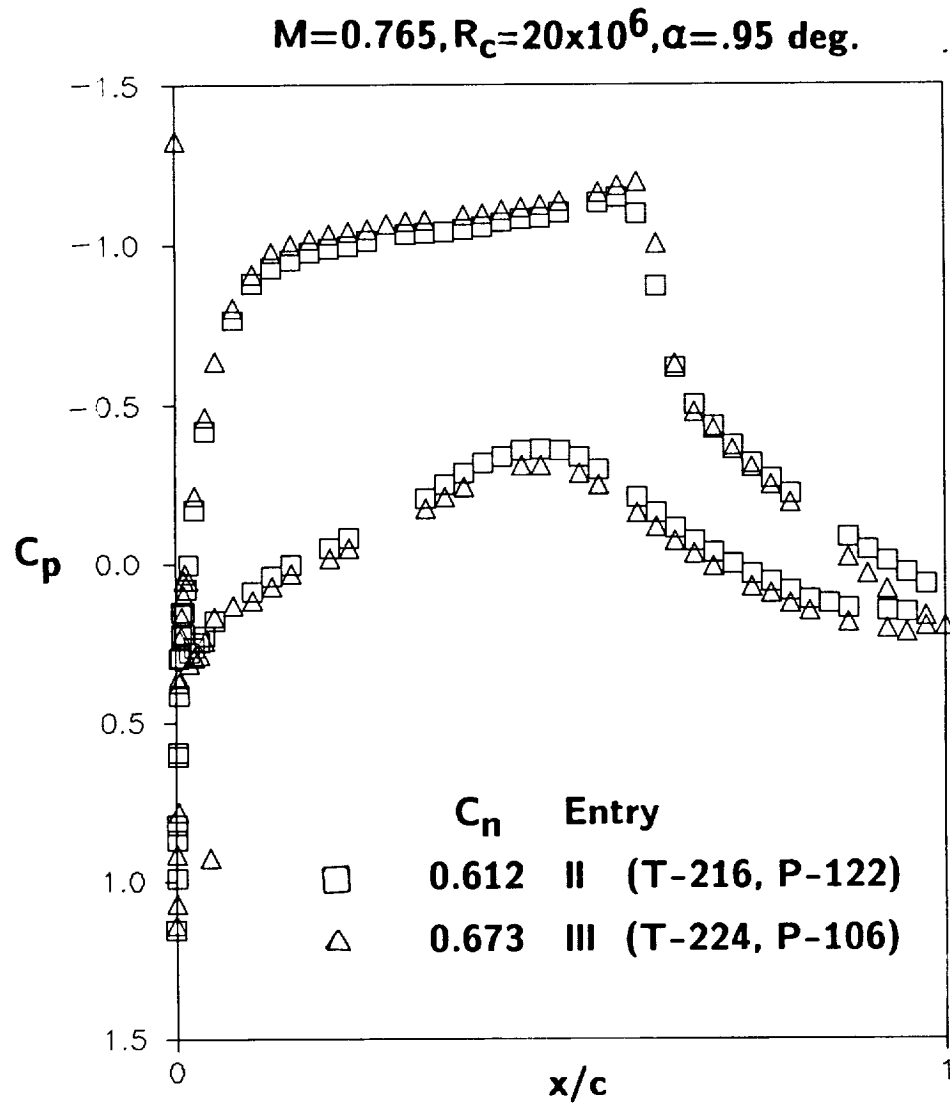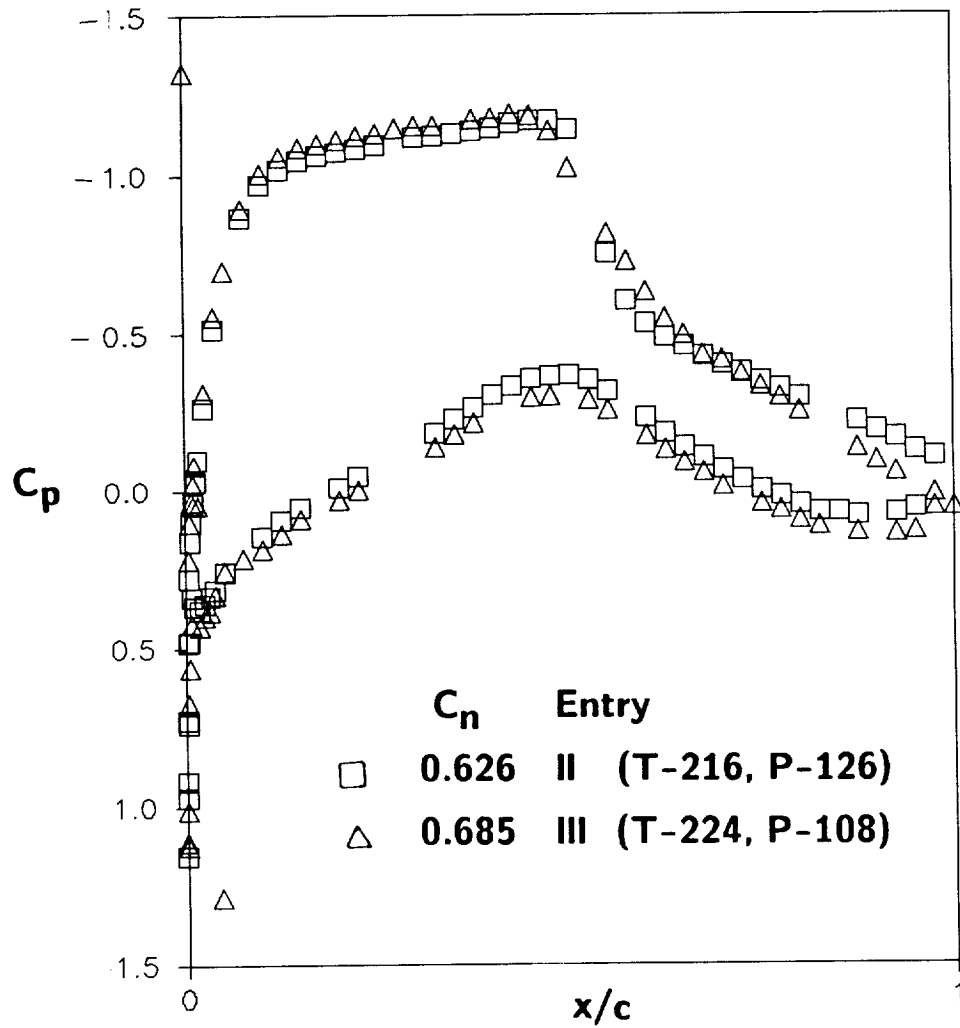
Fig. 5b: Comparison of airfoil pressure distribution from two
different tunnel entries.

Appendix A

Wall Interference Calculations for Test 216 (Entry II, Run 13)

TOTAL T: Total temperature (Rankine)

UINF: Free stream velocity (feet per second)

X: Distance from airfoil quarter chord location (inches)

CPT: Top wall pressure coefficient

CPB: Bottom wall pressure coefficient

ZT: Top wall movement (inches)

ZB: Bottom wall movement (inches)

DM: Correction to Mach number

DA: Correction to angle of attack (degrees)

```
TEST :  216                    NASA LANGLEY 0.3-M TCT
RUN  :   13                    ADAPTIVE WALL TEST SECTION

POINT: 118                                      TOTAL T= 288.68 R
MACH = .766                                     UINF  = 603.55 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1   -29.475    .0000     .0000   -29.475    .0000     .0000
  2   -24.225    .0334    -.0041   -24.225    .0280    -.0314    -.0043    -.216
  3   -18.475    .0329     .0084   -18.475    .0282    -.0330    -.0055    -.230
  4   -13.475    .0163     .0346   -13.475    .0396    -.0591    -.0057    -.280
  5    -9.475    .0278     .0409    -9.475    .0454    -.0891    -.0055    -.291
  6    -6.475    .0384     .0402    -6.475    .0369    -.1250    -.0038    -.277
  7    -4.475    .0463     .0492    -4.475    .0300    -.1518    -.0021    -.238
  8    -2.975   -.0050     .0848    -2.975    .0210    -.1803    -.0008    -.187
  9    -1.475   -.0635     .1327    -1.475   -.0106    -.2108     .0007    -.121
 10      .025   -.1081     .1678      .025   -.0251    -.2264     .0020    -.051
 11     1.525   -.1660     .2062     1.525   -.1084    -.2489     .0031     .012
 12     3.025   -.1419     .2067     3.025   -.0594    -.2170     .0035     .058
 13     4.525   -.1014     .1930     4.525   -.0120    -.1894     .0032     .091
 14     6.525   -.0416     .1667     6.525    .0190    -.1711     .0014     .122
 15     8.525   -.0017     .1548     8.525    .0320    -.1598    -.0009     .140
 16    10.525    .0143     .1531    10.525    .0471    -.1558    -.0029     .143
 17    13.525    .0045     .1539    13.525    .0429    -.1571    -.0044     .126
 18    17.525    .0075     .1566    17.525    .0115    -.1924    -.0054     .069
 19    22.525    .0096     .1516    22.525   -.0035    -.2200

CORRECTIONS AT AIRFOIL QUARTER CHORD:
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DELTA M                    =    .00200
CORRECTED MACH NUMBER      =    .76810
CORRECTION TO AOA (DEG)=   -.05204


TEST :  216                    NASA LANGLEY 0.3-M TCT
RUN  :   13                    ADAPTIVE WALL TEST SECTION

POINT: 119                                      TOTAL T= 288.59 R
MACH = .766                                     UINF  = 603.18 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1   -29.475    .0000     .0000   -29.475    .0000     .0000
  2   -24.225    .0332     .0022   -24.225    .0252    -.0193    -.0031    -.230
  3   -18.475    .0218     .0199   -18.475    .0221    -.0117    -.0024    -.245
  4   -13.475    .0048     .0565   -13.475    .0292    -.0211    -.0015    -.292
  5    -9.475    .0087     .0750    -9.475    .0388    -.0383    -.0012    -.307
  6    -6.475    .0117     .0938    -6.475    .0309    -.0681    -.0005    -.282
  7    -4.475    .0309     .1178    -4.475    .0466    -.0872     .0002    -.237
  8    -2.975   -.0249     .1581    -2.975    .0400    -.1108     .0011    -.179
  9    -1.475   -.1093     .2144    -1.475    .0049    -.1379     .0022    -.104
 10      .025   -.1454     .2513      .025   -.0009    -.1477     .0033    -.024
 11     1.525   -.2097     .2888     1.525   -.0755    -.1563     .0041     .043
 12     3.025   -.1530     .2834     3.025   -.0221    -.1425     .0043     .089
 13     4.525   -.1091     .2669     4.525   -.0001    -.1188     .0038     .117
 14     6.525   -.0573     .2294     6.525    .0228    -.1090     .0024     .138
 15     8.525   -.0111     .2055     8.525    .0379    -.1049     .0007     .155
 16    10.525   -.0029     .1903    10.525    .0480    -.1019    -.0005     .163
 17    13.525   -.0076     .1814    13.525    .0352    -.1056    -.0011     .147
 18    17.525   -.0029     .1752    17.525    .0080    -.1532    -.0023     .085
 19    22.525    .0032     .1626    22.525   -.0091    -.1933

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                    =    .00331
CORRECTED MACH NUMBER      =    .76902
CORRECTION TO AOA (DEG)=   -.02487
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TEST : 216   NASA LANGLEY 0.3-M TCT
RUN : 13   ADAPTIVE WALL TEST SECTION

POINT: 120   TOTAL T= 288.80 R
MACH = .766   UINF =´603.66 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0265	.0120	-24.225	.0210	-.0039	-.0004	-.244
3	-18.475	.0059	.0391	-18.475	.0083	.0219	.0023	-.280
4	-13.475	-.0047	.0863	-13.475	.0253	.0280	.0026	-.319
5	-9.475	-.0050	.1355	-9.475	.0405	.0282	.0019	-.347
6	-6.475	-.0013	.1701	-6.475	.0428	.0123	.0020	-.331
7	-4.475	-.0019	.2071	-4.475	.0636	.0023	.0024	-.279
8	-2.975	-.0640	.2641	-2.975	.0620	-.0135	.0027	-.211
9	-1.475	-.1593	.3349	-1.475	.0439	-.0359	.0031	-.124
10	.025	-.1971	.3806	.025	.0526	-.0489	.0037	-.030
11	1.525	-.2480	.4194	1.525	-.0076	-.0640	.0045	.053
12	3.025	-.2045	.3997	3.025	-.0008	-.0470	.0052	.114
13	4.525	-.1529	.3663	4.525	.0142	-.0346	.0055	.155
14	6.525	-.0704	.3178	6.525	.0397	-.0319	.0047	.190
15	8.525	-.0238	.2826	8.525	.0410	-.0372	.0035	.211
16	10.525	-.0223	.2599	10.525	.0509	-.0453	.0026	.222
17	13.525	-.0191	.2409	13.525	.0284	-.0659	.0021	.203
18	17.525	-.0151	.2179	17.525	.0010	-.1269	.0011	.133
19	22.525	-.0089	.1909	22.525	-.0194	-.1790		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   .00365
CORRECTED MACH NUMBER   =   .76972
CORRECTION TO AOA (DEG)=   -.03163

TEST : 216   NASA LANGLEY 0.3-M TCT
RUN : 13   ADAPTIVE WALL TEST SECTION

POINT: 121   TOTAL T= 288.89 R
MACH = .766   UINF = 603.94 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0404	.0216	-24.225	.0346	.0058	-.0041	-.263
3	-18.475	.0124	.0598	-18.475	.0207	.0351	-.0012	-.301
4	-13.475	.0067	.1169	-13.475	.0382	.0559	-.0005	-.327
5	-9.475	-.0051	.1847	-9.475	.0565	.0686	-.0005	-.349
6	-6.475	-.0018	.2371	-6.475	.0615	.0635	.0002	-.327
7	-4.475	-.0127	.2883	-4.475	.0789	.0598	.0010	-.274
8	-2.975	-.0775	.3539	-2.975	.0859	.0483	.0018	-.204
9	-1.475	-.2009	.4363	-1.475	.0664	.0312	.0026	-.114
10	.025	-.2472	.4941	.025	.0676	.0198	.0034	-.017
11	1.525	-.3478	.5391	1.525	-.0039	-.0013	.0041	.069
12	3.025	-.2345	.5088	3.025	.0256	.0096	.0043	.135
13	4.525	-.1601	.4646	4.525	.0412	.0106	.0040	.182
14	6.525	-.0844	.4060	6.525	.0437	.0090	.0030	.221
15	8.525	-.0318	.3556	8.525	.0467	-.0033	.0016	.236
16	10.525	-.0217	.3236	10.525	.0440	-.0167	.0004	.235
17	13.525	-.0121	.2893	13.525	.0459	-.0475	-.0009	.214
18	17.525	-.0146	.2542	17.525	.0077	-.1092	-.0018	.175
19	22.525	.0068	.2153	22.525	.0054	-.1679		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   .00343
CORRECTED MACH NUMBER   =   .76976
CORRECTION TO AOA (DEG)=   -.01867

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```
TEST :  216                    NASA LANGLEY 0.3-M TCT
RUN  :   13                    ADAPTIVE WALL TEST SECTION

POINT:  122                                        TOTAL T= 288.94 R
MACH = .766                                        UINF   = 603.61 FPS

  NO     X       CPT      ZT       X       CPB      ZB       DM       DA

   1  -29.475   .0000    .0000  -29.475   .0000    .0000
   2  -24.225   .0446    .0271  -24.225   .0386    .0061   -.0054   -.264
   3  -18.475   .0172    .0689  -18.475   .0278    .0402   -.0033   -.296
   4  -13.475   .0204    .1306  -13.475   .0505    .0676   -.0030   -.330
   5   -9.475   .0004    .2009   -9.475   .0621    .0841   -.0020   -.367
   6   -6.475   .0010    .2546   -6.475   .0692    .0828   -.0006   -.343
   7   -4.475  -.0166    .3097   -4.475   .0914    .0855    .0007   -.288
   8   -2.975  -.0776    .3800   -2.975   .0911    .0737    .0017   -.219
   9   -1.475  -.2124    .4665   -1.475   .0747    .0536    .0027   -.130
  10     .025  -.2591    .5284     .025   .0724    .0422    .0036   -.033
  11    1.525  -.3756    .5769    1.525   .0099    .0166    .0043    .054
  12    3.025  -.2453    .5426    3.025   .0278    .0252    .0046    .120
  13    4.525  -.1692    .4949    4.525   .0305    .0255    .0042    .163
  14    6.525  -.0827    .4318    6.525   .0502    .0174    .0028    .198
  15    8.525  -.0330    .3775    8.525   .0561   -.0018    .0010    .223
  16   10.525  -.0162    .3483   10.525   .0544   -.0166   -.0005    .237
  17   13.525  -.0175    .3149   13.525   .0522   -.0538   -.0018    .232
  18   17.525  -.0108    .2797   17.525   .0093   -.1166   -.0024    .199
  19   22.525  -.0014    .2352   22.525   .0002   -.1790

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                   =    .00359
CORRECTED MACH NUMBER     =    .76938
CORRECTION TO AOA (DEG)=     -.03437


TEST :  216                    NASA LANGLEY 0.3-M TCT
RUN  :   13                    ADAPTIVE WALL TEST SECTION

POINT:  123                                        TOTAL T= 289.06 R
MACH = .766                                        UINF   = 603.78 FPS

  NO     X       CPT      ZT       X       CPB      ZB       DM       DA

   1  -29.475   .0000    .0000  -29.475   .0000    .0000
   2  -24.225   .0380    .0266  -24.225   .0366    .0063   -.0036   -.242
   3  -18.475   .0113    .0687  -18.475   .0190    .0419   -.0006   -.269
   4  -13.475   .0155    .1301  -13.475   .0409    .0678   -.0001   -.315
   5   -9.475  -.0101    .2009   -9.475   .0560    .0844    .0011   -.350
   6   -6.475  -.0055    .2546   -6.475   .0566    .0834    .0027   -.325
   7   -4.475  -.0224    .3098   -4.475   .0778    .0855    .0040   -.276
   8   -2.975  -.0842    .3801   -2.975   .0808    .0732    .0049   -.210
   9   -1.475  -.2167    .4668   -1.475   .0685    .0543    .0059   -.122
  10     .025  -.2672    .5286     .025   .0625    .0424    .0068   -.026
  11    1.525  -.3954    .5775    1.525  -.0062    .0198    .0075    .061
  12    3.025  -.2556    .5429    3.025   .0158    .0257    .0075    .126
  13    4.525  -.1710    .4952    4.525   .0303    .0259    .0069    .169
  14    6.525  -.0899    .4320    6.525   .0390    .0180    .0052    .202
  15    8.525  -.0185    .3775    8.525   .0531   -.0013    .0032    .218
  16   10.525  -.0255    .3486   10.525   .0423   -.0161    .0016    .221
  17   13.525  -.0175    .3154   13.525   .0444   -.0539   -.0001    .202
  18   17.525  -.0108    .2800   17.525   .0094   -.1170   -.0014    .162
  19   22.525  -.0051    .2355   22.525  -.0041   -.1827

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                   =    .00683
CORRECTED MACH NUMBER     =    .77269
CORRECTION TO AOA (DEG)=     -.02742
```

POINT: 124   TOTAL T=-289.09 R
MACH = .766   UINF = 604.15 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0426	.0306	-24.225	.0361	.0065	-.0041	-.266
3	-18.475	.0167	.0728	-18.475	.0247	.0402	-.0016	-.320
4	-13.475	.0136	.1348	-13.475	.0464	.0644	-.0008	-.358
5	-9.475	-.0087	.2101	-9.475	.0622	.0773	.0002	-.371
6	-6.475	-.0075	.2679	-6.475	.0640	.0779	.0016	-.338
7	-4.475	-.0267	.3250	-4.475	.0802	.0772	.0027	-.282
8	-2.975	-.0835	.4012	-2.975	.0943	.0627	.0034	-.210
9	-1.475	-.2211	.4919	-1.475	.0816	.0440	.0042	-.118
10	.025	-.2690	.5566	.025	.0742	.0296	.0051	-.018
11	1.525	-.3942	.6068	1.525	.0097	.0006	.0061	.073
12	3.025	-.2646	.5642	3.025	.0180	.0109	.0068	.144
13	4.525	-.1826	.5144	4.525	.0209	.0099	.0068	.193
14	6.525	-.1005	.4505	6.525	.0341	.0009	.0055	.231
15	8.525	-.0295	.4016	8.525	.0437	-.0155	.0035	.244
16	10.525	-.0287	.3653	10.525	.0431	-.0327	.0018	.246
17	13.525	-.0192	.3302	13.525	.0446	-.0668	-.0002	.239
18	17.525	-.0083	.2984	17.525	.0154	-.1303	-.0022	.208
19	22.525	-.0010	.2535	22.525	-.0017	-.1908		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   .00511
CORRECTED MACH NUMBER   =   .77145
CORRECTION TO AOA (DEG)=   -.01975

POINT: 125   TOTAL T= 289.07 R
MACH = .767   UINF = 604.78 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0427	.0302	-24.225	.0395	.0068	-.0040	-.254
3	-18.475	.0108	.0725	-18.475	.0176	.0431	-.0002	-.282
4	-13.475	.0095	.1376	-13.475	.0398	.0761	.0005	-.323
5	-9.475	-.0016	.2149	-9.475	.0644	.0932	.0006	-.358
6	-6.475	-.0048	.2759	-6.475	.0671	.0942	.0019	-.333
7	-4.475	-.0276	.3347	-4.475	.0892	.0964	.0032	-.277
8	-2.975	-.0874	.4093	-2.975	.0928	.0822	.0042	-.205
9	-1.475	-.2254	.5009	-1.475	.0808	.0659	.0052	-.113
10	.025	-.2740	.5666	.025	.0755	.0510	.0062	-.016
11	1.525	-.4116	.6173	1.525	.0021	.0281	.0071	.069
12	3.025	-.2540	.5769	3.025	.0268	.0268	.0076	.134
13	4.525	-.1807	.5265	4.525	.0242	.0233	.0074	.182
14	6.525	-.1063	.4633	6.525	.0329	.0132	.0063	.223
15	8.525	-.0437	.4096	8.525	.0450	-.0024	.0046	.243
16	10.525	-.0257	.3729	10.525	.0442	-.0194	.0032	.247
17	13.525	-.0207	.3352	13.525	.0384	-.0556	.0018	.228
18	17.525	-.0176	.2984	17.525	.0040	-.1269	.0006	.184
19	22.525	-.0081	.2530	22.525	-.0090	-.1878		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   .00622
CORRECTED MACH NUMBER   =   .77348
CORRECTION TO AOA (DEG)=   -.01773

```
TEST :  216                    NASA LANGLEY 0.3-M TCT
RUN  :   13                    ADAPTIVE WALL TEST SECTION

POINT:  126                                      TOTAL T= 289.20 R
MACH = .766                                      UINF  = 604.04 FPS

  NO      X        CPT       ZT        X         CPB       ZB        DM        DA

   1  -29.475    .0000     .0000    -29.475    .0000     .0000
   2  -24.225    .0381     .0270    -24.225    .0342     .0102    -.0029    -.263
   3  -18.475    .0104     .0689    -18.475    .0184     .0491     .0008    -.297
   4  -13.475    .0054     .1298    -13.475    .0360     .0835     .0022    -.351
   5   -9.475   -.0136     .2059     -9.475    .0584     .0941     .0025    -.373
   6   -6.475   -.0101     .2670     -6.475    .0635     .0954     .0034    -.332
   7   -4.475   -.0273     .3298     -4.475    .0837     .0990     .0042    -.279
   8   -2.975   -.0926     .4030     -2.975    .0928     .0830     .0047    -.213
   9   -1.475   -.2318     .4969     -1.475    .0709     .0678     .0050    -.126
  10     .025   -.2700     .5668       .025    .0776     .0436     .0053    -.030
  11    1.525   -.3966     .6175      1.525    .0230     .0182     .0054     .063
  12    3.025   -.2655     .5752      3.025    .0325     .0161     .0055     .140
  13    4.525   -.1741     .5296      4.525    .0311     .0211     .0051     .191
  14    6.525   -.0886     .4669      6.525    .0466     .0040     .0037     .221
  15    8.525   -.0355     .4105      8.525    .0458    -.0117     .0023     .230
  16   10.525   -.0246     .3679     10.525    .0527    -.0302     .0014     .235
  17   13.525   -.0244     .3280     13.525    .0337    -.0666     .0007     .231
  18   17.525   -.0141     .2878     17.525    .0092    -.1312    -.0004     .201
  19   22.525   -.0071     .2458     22.525   -.0080    -.1926

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                 =     .00525
CORRECTED MACH NUMBER   =     .77127
CORRECTION TO AOA (DEG)=    -.03111
```

Appendix B

Wall Interference Calculations for Test 224
(Entry III, Run 2, 3, 5, 16, 17, 18, 19, 20, 21)

TOTAL T: Total temperature (Rankine)

UINF: Free stream velocity (feet per second)

X: Distance from airfoil quarter chord location (inches)

CPT: Top wall pressure coefficient

CPB: Bottom wall pressure coefficient

ZT: Top wall movement (inches)

ZB: Bottom wall movement (inches)

DM: Correction to Mach number

DA: Correction to angle of attack (degrees)

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN :   2   ADAPTIVE WALL TEST SECTION

POINT: 9   TOTAL T= 505.38 R
MACH = .701   UINF = 736.63 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0393	.0206	-24.225	.0161	.0206	-.0010	-.014
3	-18.475	-.0007	.0379	-18.475	.0095	.0346	.0022	-.084
4	-13.475	.0115	.0698	-13.475	.0184	.0409	.0029	-.070
5	-9.475	-.0163	.1291	-9.475	.0177	.0260	.0028	-.066
6	-6.475	.0011	.1731	-6.475	.0201	.0052	.0020	-.058
7	-4.475	-.0107	.2099	-4.475	.0187	-.0153	.0012	-.055
8	-2.975	-.0115	.2559	-2.975	.0159	-.0395	.0004	-.050
9	-1.475	-.0715	.3108	-1.475	.0034	-.0699	-.0003	-.045
10	.025	-.0919	.3540	.025	-.0048	-.0903	-.0009	-.040
11	1.525	-.1092	.3729	1.525	-.0374	-.1137	-.0011	-.036
12	3.025	-.0738	.3653	3.025	-.0145	-.1072	-.0011	-.033
13	4.525	-.0741	.3505	4.525	.0000	-.0942	-.0009	-.030
14	6.525	-.0393	.3154	6.525	.0311	-.0741	-.0005	-.027
15	8.525	-.0195	.2802	8.525	.0177	-.0722	-.0001	-.025
16	10.525	-.0003	.2559	10.525	.0248	-.0763	.0003	-.026
17	13.525	-.0146	.2462	13.525	.0120	-.0935	.0005	-.034
18	17.525	-.0134	.2294	17.525	.0033	-.1300	.0005	-.046
19	22.525	-.0090	.2018	22.525	-.0185	-.1663		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   = -.00085
CORRECTED MACH NUMBER   =   .69972
CORRECTION TO AOA (DEG)= -.04003

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN :   2   ADAPTIVE WALL TEST SECTION

POINT: 10   TOTAL T= 505.44 R
MACH = .701   UINF = 736.69 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0389	.0285	-24.225	.0201	.0281	-.0019	-.039
3	-18.475	.0023	.0619	-18.475	.0171	.0515	.0008	-.095
4	-13.475	.0081	.1069	-13.475	.0220	.0728	.0020	-.058
5	-9.475	-.0203	.1865	-9.475	.0267	.0805	.0022	-.056
6	-6.475	-.0115	.2431	-6.475	.0297	.0749	.0017	-.048
7	-4.475	-.0322	.2966	-4.475	.0369	.0660	.0011	-.047
8	-2.975	-.0331	.3410	-2.975	.0370	.0524	.0007	-.046
9	-1.475	-.1115	.4042	-1.475	.0187	.0343	.0002	-.046
10	.025	-.1287	.4439	.025	.0155	.0122	-.0003	-.048
11	1.525	-.1457	.4611	1.525	-.0158	-.0056	-.0007	-.050
12	3.025	-.0919	.4468	3.025	.0127	-.0090	-.0010	-.053
13	4.525	-.0929	.4244	4.525	.0141	-.0057	-.0012	-.054
14	6.525	-.0478	.3799	6.525	.0438	-.0010	-.0013	-.051
15	8.525	-.0235	.3366	8.525	.0332	-.0102	-.0014	-.044
16	10.525	-.0047	.3036	10.525	.0382	-.0222	-.0014	-.036
17	13.525	-.0133	.2779	13.525	.0274	-.0493	-.0012	-.029
18	17.525	-.0115	.2475	17.525	.0092	-.0980	-.0012	-.027
19	22.525	-.0003	.2055	22.525	-.0092	-.1474		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   = -.00027
CORRECTED MACH NUMBER   =   .70031
CORRECTION TO AOA (DEG)= -.04765

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    2                 ADAPTIVE WALL TEST SECTION

POINT:   11                                      TOTAL T= 505.53 R
MACH = .701                                      UINF   = 736.73 FPS

  NO     X       CPT      ZT        X       CPB      ZB       DM       DA

   1  -29.475   .0000    .0000   -29.475   .0000    .0000
   2  -24.225   .0404    .0374   -24.225   .0296    .0360   -.0026   -.062
   3  -18.475  -.0028    .0882   -18.475   .0133    .0800    .0013   -.100
   4  -13.475   .0065    .1478   -13.475   .0251    .1229    .0024   -.093
   5   -9.475  -.0312    .2484    -9.475   .0355    .1422    .0022   -.097
   6   -6.475  -.0236    .3237    -6.475   .0458    .1494    .0011   -.080
   7   -4.475  -.0533    .3936    -4.475   .0623    .1503    .0000   -.071
   8   -2.975  -.0624    .4492    -2.975   .0620    .1422   -.0009   -.063
   9   -1.475  -.1446    .5228    -1.475   .0644    .1240   -.0018   -.054
  10     .025  -.1590    .5681      .025   .0576    .1025   -.0025   -.045
  11    1.525  -.1733    .5819     1.525   .0256    .0785   -.0029   -.037
  12    3.025  -.1141    .5572     3.025   .0420    .0754   -.0030   -.031
  13    4.525  -.1073    .5271     4.525   .0398    .0720   -.0028   -.026
  14    6.525  -.0607    .4688     6.525   .0611    .0727   -.0023   -.020
  15    8.525  -.0340    .4113     8.525   .0394    .0561   -.0018   -.011
  16   10.525  -.0236    .3691    10.525   .0458    .0349   -.0015    .001
  17   13.525  -.0183    .3322    13.525   .0302   -.0055   -.0013    .011
  18   17.525  -.0164    .2842    17.525   .0080   -.0637   -.0013    .010
  19   22.525   .0036    .2284    22.525  -.0016   -.1314

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =   -.00251
CORRECTED MACH NUMBER      =    .69805
CORRECTION TO AOA (DEG)=        -.04496


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    2                 ADAPTIVE WALL TEST SECTION

POINT:   12                                      TOTAL T= 505.84 R
MACH = .701                                      UINF   = 737.01 FPS

  NO     X       CPT      ZT        X       CPB      ZB       DM       DA

   1  -29.475   .0000    .0000   -29.475   .0000    .0000
   2  -24.225   .0350    .0375   -24.225   .0420    .0361   -.0031   -.124
   3  -18.475  -.0013    .1085   -18.475   .0169    .1065    .0012   -.082
   4  -13.475   .0074    .1908   -13.475   .0312    .1760    .0026   -.094
   5   -9.475  -.0368    .3194    -9.475   .0460    .2126    .0027   -.116
   6   -6.475  -.0434    .4127    -6.475   .0590    .2382    .0020   -.094
   7   -4.475  -.0876    .5030    -4.475   .0834    .2501    .0010   -.075
   8   -2.975  -.0931    .5732    -2.975   .0909    .2486    .0002   -.059
   9   -1.475   -.2040   .6626    -1.475   .0936    .2361   -.0007   -.042
  10     .025  -.2221    .7128      .025   .0908    .2168   -.0013   -.025
  11    1.525  -.2262    .7209     1.525   .0583    .1916   -.0016   -.011
  12    3.025  -.1558    .6847     3.025   .0631    .1833   -.0014    .001
  13    4.525  -.1351    .6403     4.525   .0583    .1728   -.0009    .011
  14    6.525  -.0920    .5662     6.525   .0661    .1616   -.0002    .023
  15    8.525  -.0530    .4964     8.525   .0459    .1345    .0005    .033
  16   10.525  -.0263    .4389    10.525   .0455    .1048    .0010    .042
  17   13.525  -.0363    .3868    13.525   .0228    .0533    .0014    .044
  18   17.525  -.0228    .3231    17.525   .0088   -.0223    .0011    .050
  19   22.525  -.0080    .2509    22.525  -.0056   -.1028

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =   -.00133
CORRECTED MACH NUMBER      =    .69928
CORRECTION TO AOA (DEG)=        -.02512
```

```
TEST :  224                      NASA LANGLEY 0.3-M TCT
RUN  :    2                      ADAPTIVE WALL TEST SECTION

POINT:   13                                      TOTAL T= 506.27 R
MACH = .700                                      UINF   = 737.17 FPS

  NO     X       CPT       ZT        X        CPB       ZB        DM        DA

   1  -29.475   .0000    .0000   -29.475    .0000    .0000
   2  -24.225   .0307    .0376   -24.225    .0579    .0364    -.0036    -.177
   3  -18.475  -.0011    .1366   -18.475    .0158    .1332     .0011    -.068
   4  -13.475   .0116    .2397   -13.475    .0428    .2247     .0023    -.106
   5   -9.475  -.0426    .3943    -9.475    .0583    .2818     .0025    -.135
   6   -6.475  -.0490    .5141    -6.475    .0800    .3226     .0018    -.122
   7   -4.475  -.1007    .6229    -4.475    .1077    .3425     .0008    -.107
   8   -2.975  -.1195    .7074    -2.975    .1176    .3442     .0000    -.087
   9   -1.475  -.2593    .8134    -1.475    .1272    .3333    -.0009    -.058
  10     .025  -.3031    .8757      .025    .1234    .3112    -.0015    -.023
  11    1.525  -.2963    .8876     1.525    .0920    .2829    -.0018     .012
  12    3.025  -.1949    .8369     3.025    .0964    .2709    -.0016     .041
  13    4.525  -.1675    .7817     4.525    .0760    .2529    -.0011     .062
  14    6.525  -.1063    .6939     6.525    .0846    .2312    -.0004     .081
  15    8.525  -.0650    .6117     8.525    .0565    .1929     .0003     .091
  16   10.525  -.0363    .5420    10.525    .0506    .1540     .0007     .096
  17   13.525  -.0394    .4767    13.525    .0319    .0873     .0010     .094
  18   17.525  -.0224    .3951    17.525    .0159   -.0031     .0006     .108
  19   22.525  -.0140    .3048    22.525   -.0077   -.0959

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =    -.00151
CORRECTED MACH NUMBER      =     .69895
CORRECTION TO AOA (DEG)=        -.02362


TEST :  224                      NASA LANGLEY 0.3-M TCT
RUN  :    2                      ADAPTIVE WALL TEST SECTION

POINT:   14                                      TOTAL T= 506.78 R
MACH = .700                                      UINF   = 737.40 FPS

  NO     X       CPT       ZT        X        CPB       ZB        DM        DA

   1  -29.475   .0000    .0000   -29.475    .0000    .0000
   2  -24.225   .0226    .0376   -24.225    .0604    .0364    -.0024    -.214
   3  -18.475  -.0013    .1593   -18.475    .0170    .1403     .0019    -.060
   4  -13.475   .0107    .2789   -13.475    .0447    .2434     .0030    -.112
   5   -9.475  -.0485    .4505    -9.475    .0631    .3088     .0031    -.151
   6   -6.475  -.0539    .5861    -6.475    .0898    .3568     .0021    -.139
   7   -4.475  -.1193    .7087    -4.475    .1200    .3797     .0009    -.121
   8   -2.975  -.1319    .8037    -2.975    .1386    .3834    -.0002    -.096
   9   -1.475  -.2821    .9248    -1.475    .1521    .3714    -.0013    -.062
  10     .025  -.3299    .9986      .025    .1442    .3483    -.0020    -.021
  11    1.525  -.3505   1.0106     1.525    .1147    .3169    -.0022     .021
  12    3.025  -.2261    .9501     3.025    .1132    .2991    -.0018     .061
  13    4.525  -.1928    .8870     4.525    .0875    .2739    -.0012     .095
  14    6.525  -.1159    .7946     6.525    .0924    .2466    -.0002     .125
  15    8.525  -.0750    .7000     8.525    .0581    .2040     .0007     .135
  16   10.525  -.0345    .6264    10.525    .0507    .1615     .0015     .133
  17   13.525  -.0530    .5485    13.525    .0300    .0874     .0024     .122
  18   17.525  -.0342    .4572    17.525    .0097   -.0097     .0027     .148
  19   22.525  -.0220    .3537    22.525   -.0134   -.1060

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =    -.00200
CORRECTED MACH NUMBER      =     .69831
CORRECTION TO AOA (DEG)=        -.02195
```

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```
TEST : 224                      NASA LANGLEY 0.3-M TCT
RUN  :   2                      ADAPTIVE WALL TEST SECTION

POINT:   15                                        TOTAL T= 506.93 R
MACH = .700                                        UINF  = 737.59 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1  -29.475    .0000     .0000    -29.475    .0000     .0000
  2  -24.225    .0194     .0373    -24.225    .0557     .0358    -.0011    -.211
  3  -18.475   -.0014     .1569    -18.475    .0160     .1333     .0028    -.066
  4  -13.475    .0111     .2751    -13.475    .0425     .2318     .0038    -.117
  5   -9.475   -.0480     .4463     -9.475    .0660     .2943     .0037    -.158
  6   -6.475   -.0477     .5800     -6.475    .0931     .3352     .0027    -.140
  7   -4.475   -.1068     .7043     -4.475    .1196     .3554     .0017    -.121
  8   -2.975   -.1301     .7989     -2.975    .1391     .3564     .0008    -.096
  9   -1.475   -.2920     .9156     -1.475    .1458     .3392     .0000    -.058
 10    .025    -.3208     .9944      .025     .1419     .3092    -.0005    -.012
 11   1.525    -.3495    1.0081     1.525     .1045     .2739    -.0004     .031
 12   3.025    -.2240     .9571     3.025     .0901     .2557     .0001     .066
 13   4.525    -.2000     .8989     4.525     .0687     .2281     .0009     .091
 14   6.525    -.1383     .8079     6.525     .0724     .1975     .0020     .113
 15   8.525    -.0820     .7219     8.525     .0469     .1566     .0030     .122
 16  10.525    -.0561     .6440    10.525     .0357     .1159     .0036     .122
 17  13.525    -.0522     .5710    13.525     .0256     .0449     .0041     .116
 18  17.525    -.0413     .4763    17.525     .0028    -.0496     .0041     .140
 19  22.525    -.0238     .3769    22.525    -.0153    -.1433

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                   =   -.00051
CORRECTED MACH NUMBER     =    .69988
CORRECTION TO AOA (DEG)=   -.01327


TEST : 224                      NASA LANGLEY 0.3-M TCT
RUN  :   3                      ADAPTIVE WALL TEST SECTION

POINT:   16                                        TOTAL T= 506.29 R
MACH = .767                                        UINF  = 799.68 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1  -29.475    .0000     .0000    -29.475    .0000     .0000
  2  -24.225    .0585     .0218    -24.225    .0349     .0104    -.0059    -.023
  3  -18.475    .0169     .0422    -18.475    .0282     .0199    -.0026    -.097
  4  -13.475    .0354     .0736    -13.475    .0399     .0156    -.0017    -.068
  5   -9.475   -.0010     .1316     -9.475    .0327     .0024     .0000    -.067
  6   -6.475    .0104     .1750     -6.475    .0248    -.0241     .0002    -.060
  7   -4.475    .0025     .2218     -4.475    .0226    -.0530    -.0005    -.062
  8   -2.975    .0000     .2686     -2.975    .0200    -.0812    -.0012    -.062
  9   -1.475    .0714     .3326     -1.475    .0026    -.1179    -.0019    -.059
 10    .025    -.1112     .3885      .025    -.0185    -.1522    -.0021    -.057
 11   1.525    -.1487     .4098     1.525    -.0674    -.1695    -.0016    -.056
 12   3.025    -.1029     .3945     3.025    -.0384    -.1611    -.0007    -.056
 13   4.525    -.1023     .3720     4.525    -.0202    -.1432     .0004    -.054
 14   6.525    -.0399     .3286     6.525     .0310    -.1167     .0019    -.049
 15   8.525    -.0278     .2863     8.525     .0070    -.1046     .0034    -.045
 16  10.525    -.0154     .2604    10.525     .0159    -.1049     .0045    -.045
 17  13.525    -.0278     .2487    13.525     .0052    -.1164     .0054    -.056
 18  17.525    -.0298     .2369    17.525    -.0152    -.1612     .0047    -.103
 19  22.525     .0017     .2123    22.525    -.0318    -.2073

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                   =   -.00210
CORRECTED MACH NUMBER     =    .76441
CORRECTION TO AOA (DEG)=   -.05669
```

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    3                  ADAPTIVE WALL TEST SECTION

POINT:   17                                   TOTAL T= 506.43 R
MACH = .766                                   UINF   = 799.68 FPS

  NO      X       CPT      ZT       X       CPB      ZB       DM       DA

   1   -29.475   .0000    .0000   -29.475   .0000    .0000
   2   -24.225   .0480    .0331   -24.225   .0248    .0251   -.0024   -.043
   3   -18.475  -.0037    .0624   -18.475   .0134    .0478    .0029   -.115
   4   -13.475   .0118    .1078   -13.475   .0242    .0684    .0046   -.072
   5    -9.475  -.0279    .1848    -9.475   .0235    .0769    .0057   -.074
   6    -6.475  -.0099    .2482    -6.475   .0314    .0671    .0046   -.068
   7    -4.475  -.0276    .3123    -4.475   .0420    .0519    .0033   -.073
   8    -2.975  -.0363    .3669    -2.975   .0400    .0336    .0023   -.073
   9    -1.475  -.1403    .4425    -1.475   .0208    .0061    .0013   -.065
  10     .025   -.1809    .4942     .025    .0248   -.0272    .0005   -.047
  11    1.525   -.2218    .5177    1.525   -.0229   -.0477    .0001   -.025
  12    3.025   -.1358    .4934    3.025   -.0006   -.0446    .0002   -.008
  13    4.525   -.1048    .4583    4.525    .0127   -.0374    .0005    .002
  14    6.525   -.0601    .4015    6.525    .0451   -.0246    .0012    .014
  15    8.525   -.0256    .3464    8.525    .0300   -.0241    .0021    .020
  16   10.525   -.0066    .3108   10.525    .0295   -.0342    .0028    .018
  17   13.525   -.0231    .2870   13.525    .0170   -.0640    .0032    .005
  18   17.525   -.0205    .2621   17.525   -.0061   -.1232    .0025   -.028
  19   22.525   -.0056    .2279   22.525   -.0240   -.1756

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                     =     .00050
CORRECTED MACH NUMBER   =     .76689
CORRECTION TO AOA (DEG)=    -.04723


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    3                  ADAPTIVE WALL TEST SECTION

POINT:   18                                   TOTAL T= 506.38 R
MACH = .766                                   UINF   = 799.71 FPS

  NO      X       CPT      ZT       X       CPB      ZB       DM       DA

   1   -29.475   .0000    .0000   -29.475   .0000    .0000
   2   -24.225   .0471    .0334   -24.225   .0289    .0294   -.0030   -.051
   3   -18.475  -.0018    .0714   -18.475   .0141    .0586    .0022   -.111
   4   -13.475   .0148    .1226   -13.475   .0272    .0870    .0031   -.097
   5    -9.475  -.0174    .2074    -9.475   .0390    .0948    .0032   -.106
   6    -6.475  -.0092    .2758    -6.475   .0429    .0903    .0021   -.089
   7    -4.475  -.0344    .3444    -4.475   .0573    .0795    .0008   -.081
   8    -2.975  -.0396    .4064    -2.975   .0573    .0608   -.0005   -.072
   9    -1.475  -.1445    .4909    -1.475   .0445    .0340   -.0017   -.060
  10     .025   -.1977    .5499     .025    .0358    .0023   -.0026   -.046
  11    1.525   -.2240    .5785    1.525   -.0023   -.0213   -.0030   -.032
  12    3.025   -.1419    .5389    3.025    .0184   -.0198   -.0027   -.020
  13    4.525   -.1084    .4973    4.525    .0280   -.0124   -.0020   -.010
  14    6.525   -.0603    .4356    6.525    .0487   -.0004   -.0008   -.003
  15    8.525   -.0174    .3765    8.525    .0368   -.0072    .0003   -.007
  16   10.525   -.0071    .3380   10.525    .0314   -.0207    .0010   -.020
  17   13.525   -.0156    .3082   13.525    .0190   -.0575    .0016   -.047
  18   17.525   -.0303    .2766   17.525    .0042   -.1172    .0015   -.039
  19   22.525   -.0142    .2317   22.525   -.0080   -.1762

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                     =    -.00263
CORRECTED MACH NUMBER   =     .76384
CORRECTION TO AOA (DEG)=    -.04603
```

```
TEST :  224                         NASA LANGLEY 0.3-M TCT
RUN  :    3                       ADAPTIVE WALL TEST SECTION

POINT:   19                                          TOTAL T= 506.76 R
MACH = .767                                          UINF   = 800.09 FPS

  NO      X        CPT       ZT        X        CPB       ZB        DM        DA

   1  -29.475    .0000     .0000   -29.475    .0000     .0000
   2  -24.225    .0519     .0409   -24.225    .0359     .0351    -.0042    -.061
   3  -18.475    .0017     .0871   -18.475    .0210     .0740     .0007    -.116
   4  -13.475    .0256     .1526   -13.475    .0410     .1098     .0018    -.092
   5   -9.475   -.0261     .2458    -9.475    .0438     .1391     .0035    -.103
   6   -6.475   -.0124     .3324    -6.475    .0533     .1382     .0026    -.097
   7   -4.475   -.0298     .4129    -4.475    .0698     .1286     .0015    -.097
   8   -2.975   -.0616     .4809    -2.975    .0694     .1154     .0006    -.089
   9   -1.475   -.1836     .5712    -1.475    .0620     .0900    -.0003    -.070
  10     .025   -.2303     .6493      .025    .0570     .0554    -.0009    -.044
  11    1.525   -.3183     .6762     1.525    .0079     .0323    -.0011    -.018
  12    3.025   -.1785     .6327     3.025    .0240     .0327    -.0008     .001
  13    4.525   -.1316     .5807     4.525    .0308     .0309    -.0003     .015
  14    6.525   -.0736     .5098     6.525    .0605     .0349     .0003     .032
  15    8.525   -.0313     .4447     8.525    .0436     .0218     .0009     .039
  16   10.525   -.0120     .3983    10.525    .0406     .0032     .0014     .038
  17   13.525   -.0257     .3562    13.525    .0252    -.0371     .0020     .025
  18   17.525   -.0190     .3149    17.525    .0002    -.1081     .0017    -.004
  19   22.525   -.0101     .2619    22.525   -.0227    -.1743

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                     =   -.00092
CORRECTED MACH NUMBER       =    .76563
CORRECTION TO AOA (DEG)=    -.04424


TEST :  224                         NASA LANGLEY 0.3-M TCT
RUN  :    3                       ADAPTIVE WALL TEST SECTION

POINT:   20                                          TOTAL T= 506.83 R
MACH = .766                                          UINF   = 800.01 FPS

  NO      X        CPT       ZT        X        CPB       ZB        DM        DA

   1  -29.475    .0000     .0000   -29.475    .0000     .0000
   2  -24.225    .0381     .0368   -24.225    .0290     .0389    -.0014    -.073
   3  -18.475   -.0020     .0986   -18.475    .0160     .0796     .0031    -.105
   4  -13.475    .0167     .1689   -13.475    .0331     .1242     .0040    -.099
   5   -9.475   -.0311     .2766    -9.475    .0432     .1513     .0046    -.118
   6   -6.475   -.0179     .3676    -6.475    .0559     .1566     .0032    -.109
   7   -4.475   -.0482     .4536    -4.475    .0740     .1509     .0016    -.102
   8   -2.975   -.0658     .5313    -2.975    .0820     .1396     .0001    -.091
   9   -1.475   -.1957     .6291    -1.475    .0740     .1141    -.0014    -.072
  10     .025   -.2438     .7115      .025    .0741     .0787    -.0027    -.046
  11    1.525   -.3336     .7417     1.525    .0368     .0549    -.0033    -.017
  12    3.025   -.1819     .6940     3.025    .0485     .0481    -.0030     .009
  13    4.525   -.1359     .6391     4.525    .0470     .0487    -.0022     .028
  14    6.525   -.0804     .5575     6.525    .0638     .0496    -.0008     .044
  15    8.525   -.0390     .4850     8.525    .0432     .0370     .0006     .048
  16   10.525   -.0156     .4298    10.525    .0428     .0163     .0017     .046
  17   13.525   -.0315     .3811    13.525    .0236    -.0264     .0028     .039
  18   17.525   -.0214     .3325    17.525    .0008    -.0985     .0026     .016
  19   22.525   -.0151     .2759    22.525   -.0254    -.1693

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                     =   -.00271
CORRECTED MACH NUMBER       =    .76370
CORRECTION TO AOA (DEG)=    -.04637
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TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    3                    ADAPTIVE WALL TEST SECTION

POINT:   21                                        TOTAL T= 506.77 R
MACH = .767                                        UINF  = 800.13 FPS

 NO      X       CPT      ZT        X       CPB      ZB        DM       DA

  1  -29.475    .0000    .0000   -29.475    .0000    .0000
  2  -24.225    .0361    .0371   -24.225    .0294    .0389   -.0003   -.072
  3  -18.475   -.0066    .1012   -18.475    .0109    .0833    .0049   -.098
  4  -13.475    .0151    .1724   -13.475    .0333    .1305    .0062   -.091
  5   -9.475   -.0440    .2769    -9.475    .0334    .1660    .0079   -.110
  6   -6.475   -.0226    .3739    -6.475    .0542    .1692    .0058   -.106
  7   -4.475   -.0345    .4685    -4.475    .0829    .1579    .0037   -.103
  8   -2.975   -.0732    .5398    -2.975    .0868    .1488    .0024   -.090
  9   -1.475   -.2038    .6401    -1.475    .0825    .1218    .0013   -.065
 10     .025   -.2384    .7285      .025    .0777    .0835    .0007   -.036
 11    1.525   -.3616    .7548     1.525    .0179    .0623    .0010   -.009
 12    3.025   -.2070    .7061     3.025    .0270    .0520    .0017    .010
 13    4.525   -.1525    .6578     4.525    .0224    .0448    .0024    .022
 14    6.525   -.0976    .5804     6.525    .0475    .0383    .0034    .033
 15    8.525   -.0513    .5097     8.525    .0333    .0230    .0044    .037
 16   10.525   -.0241    .4536    10.525    .0320    .0036    .0053    .036
 17   13.525   -.0419    .4065    13.525    .0146   -.0375    .0065    .024
 18   17.525   -.0401    .3571    17.525   -.0105   -.1133    .0064    .007
 19   22.525   -.0195    .2983    22.525   -.0295   -.1842

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                      =    .00072
CORRECTED MACH NUMBER        =    .76731
CORRECTION TO AOA (DEG)=     -.03612


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    3                    ADAPTIVE WALL TEST SECTION

POINT:   22                                        TOTAL T= 506.39 R
MACH = .767                                        UINF  = 799.76 FPS

 NO      X       CPT      ZT        X       CPB      ZB        DM       DA

  1  -29.475    .0000    .0000   -29.475    .0000    .0000
  2  -24.225    .0363    .0416   -24.225    .0271    .0386    .0003   -.077
  3  -18.475   -.0048    .1044   -18.475    .0133    .0842    .0058   -.115
  4  -13.475    .0050    .1736   -13.475    .0258    .1342    .0084   -.090
  5   -9.475   -.0424    .2911    -9.475    .0326    .1644    .0096   -.109
  6   -6.475   -.0257    .3880    -6.475    .0492    .1716    .0081   -.107
  7   -4.475   -.0663    .4836    -4.475    .0681    .1696    .0063   -.112
  8   -2.975   -.0788    .5632    -2.975    .0812    .1482    .0045   -.103
  9   -1.475   -.2166    .6678    -1.475    .0771    .1202    .0027   -.079
 10     .025   -.2751    .7534      .025    .0708    .0801    .0011   -.045
 11    1.525   -.3530    .7931     1.525    .0327    .0483    .0003   -.011
 12    3.025   -.1990    .7436     3.025    .0332    .0359    .0003    .016
 13    4.525   -.1585    .6902     4.525    .0259    .0303    .0008    .033
 14    6.525   -.0970    .6153     6.525    .0512    .0288    .0017    .045
 15    8.525   -.0507    .5412     8.525    .0348    .0156    .0027    .043
 16   10.525   -.0252    .4820    10.525    .0350   -.0036    .0035    .036
 17   13.525   -.0378    .4339    13.525    .0256   -.0470    .0041    .028
 18   17.525   -.0321    .3821    17.525   -.0021   -.1206    .0038    .012
 19   22.525   -.0150    .3164    22.525   -.0223   -.1942

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                      =    .00112
CORRECTED MACH NUMBER        =    .76763
CORRECTION TO AOA (DEG)=     -.04512
```

```
TEST :  224                          NASA LANGLEY 0.3-M TCT
RUN  :    3                       ADAPTIVE WALL TEST SECTION

POINT:   23                                           TOTAL T= 506.81 R
MACH = .766                                           UINF   = 799.94 FPS

    NO      X       CPT      ZT        X        CPB      ZB       DM       DA

     1  -29.475   .0000    .0000   -29.475    .0000    .0000
     2  -24.225   .0408    .0350   -24.225    .0413    .0355    -.0038    -.089
     3  -18.475   .0049    .1025   -18.475    .0226    .0721     .0001    -.102
     4  -13.475  -.0270    .1717   -13.475    .0449    .1135     .0001    -.106
     5   -9.475  -.0180    .2837    -9.475    .0512    .1307     .0010    -.130
     6   -6.475  -.0108    .3671    -6.475    .0624    .1390     .0009    -.115
     7   -4.475  -.0594    .4504    -4.475    .0737    .1371     .0005    -.102
     8   -2.975  -.0621    .5252    -2.975    .0745    .1236    -.0003    -.087
     9   -1.475  -.1943    .6268    -1.475    .0700    .0977    -.0012    -.066
    10     .025  -.2588    .7003      .025    .0629    .0660    -.0020    -.038
    11    1.525  -.3370    .7391     1.525    .0174    .0341    -.0022    -.008
    12    3.025  -.1870    .6899     3.025    .0281    .0354    -.0018     .017
    13    4.525  -.1510    .6316     4.525    .0343    .0413    -.0009     .034
    14    6.525  -.0928    .5533     6.525    .0524    .0489     .0002     .049
    15    8.525  -.0421    .4799     8.525    .0414    .0386     .0007     .055
    16   10.525  -.0142    .4301    10.525    .0474    .0209     .0006     .055
    17   13.525  -.0224    .3893    13.525    .0351   -.0221     .0000     .043
    18   17.525  -.0178    .3413    17.525    .0116   -.0872    -.0010     .015
    19   22.525   .0051    .2803    22.525   -.0034   -.1646

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                     =  -.00200
CORRECTED MACH NUMBER       =   .76435
CORRECTION TO AOA (DEG)=  -.03825


TEST :  224                          NASA LANGLEY 0.3-M TCT
RUN  :    5                       ADAPTIVE WALL TEST SECTION

POINT:   31                                           TOTAL T= 288.90 R
MACH = .766                                           UINF   = 603.68 FPS

    NO      X       CPT      ZT        X        CPB      ZB       DM       DA

     1  -29.475   .0000    .0000   -29.475    .0000    .0000
     2  -24.225   .0562    .0045   -24.225    .0450   -.0145    -.0078    -.248
     3  -18.475   .0178    .0203   -18.475    .0296    .0026    -.0043    -.287
     4  -13.475   .0315    .0396   -13.475    .0415   -.0046    -.0031    -.312
     5   -9.475   .0044    .0780    -9.475    .0451   -.0185    -.0014    -.323
     6   -6.475   .0176    .1131    -6.475    .0423   -.0448     .0001    -.303
     7   -4.475  -.0059    .1433    -4.475    .0393   -.0622     .0016    -.271
     8   -2.975  -.0247    .1835    -2.975    .0374   -.0880     .0029    -.220
     9   -1.475  -.1236    .2455    -1.475    .0176   -.1196     .0041    -.143
    10     .025  -.1967    .2926      .025   -.0061   -.1363     .0053    -.053
    11    1.525  -.2700    .3344     1.525   -.0758   -.1548     .0060     .031
    12    3.025  -.1644    .3119     3.025   -.0307   -.1364     .0061     .095
    13    4.525  -.1305    .2872     4.525   -.0053   -.1158     .0054     .138
    14    6.525  -.0542    .2545     6.525    .0389   -.0982     .0035     .168
    15    8.525  -.0137    .2242     8.525    .0377   -.0991     .0014     .175
    16   10.525   .0072    .2080    10.525    .0428   -.1055    -.0002     .166
    17   13.525  -.0117    .1987    13.525    .0266   -.1221    -.0017     .136
    18   17.525   .0018    .1930    17.525    .0177   -.1685    -.0041     .079
    19   22.525   .0086    .1756    22.525   -.0065   -.2177

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                     =   .00527
CORRECTED MACH NUMBER       =   .77123
CORRECTION TO AOA (DEG)=  -.05402
```

```
TEST :   224                        NASA LANGLEY 0.3-M TCT
RUN  :     5                      ADAPTIVE WALL TEST SECTION

POINT:    32                                        TOTAL T= 289.02 R
MACH = .766                                         UINF   = 603.78 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1  -29.475    .0000    .0000    -29.475    .0000    .0000
  2  -24.225    .0510    .0164    -24.225    .0443   -.0046    -.0063    -.275
  3  -18.475    .0081    .0462    -18.475    .0231    .0274    -.0019    -.307
  4  -13.475    .0272    .0814    -13.475    .0416    .0413    -.0010    -.336
  5   -9.475   -.0062    .1450     -9.475    .0506    .0448     .0003    -.360
  6   -6.475    .0008    .1965     -6.475    .0554    .0343     .0015    -.329
  7   -4.475   -.0336    .2468     -4.475    .0660    .0259     .0025    -.278
  8   -2.975   -.0551    .3025     -2.975    .0700    .0081     .0034    -.212
  9   -1.475   -.1737    .3824     -1.475    .0496   -.0146     .0043    -.128
 10     .025   -.2469    .4449       .025    .0348   -.0275     .0053    -.037
 11    1.525   -.3552    .4868      1.525   -.0151   -.0470     .0061     .046
 12    3.025   -.2134    .4478      3.025    .0012   -.0331     .0065     .112
 13    4.525   -.1552    .4060      4.525    .0099   -.0248     .0061     .156
 14    6.525   -.0759    .3552      6.525    .0535   -.0215     .0044     .192
 15    8.525   -.0250    .3099      8.525    .0453   -.0321     .0025     .205
 16   10.525   -.0004    .2800     10.525    .0482   -.0479     .0012     .202
 17   13.525   -.0226    .2553     13.525    .0292   -.0766     .0002     .183
 18   17.525   -.0050    .2322     17.525    .0141   -.1293    -.0016     .133
 19   22.525   -.0051    .1994     22.525   -.0141   -.1931
```

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
```
DELTA M                   =     .00529
CORRECTED MACH NUMBER     =    .77121
CORRECTION TO AOA (DEG)=    -.03845
```

```
TEST :   224                        NASA LANGLEY 0.3-M TCT
RUN  :     5                      ADAPTIVE WALL TEST SECTION

POINT:    33                                        TOTAL T= 288.95 R
MACH = .766                                         UINF   = 603.69 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1  -29.475    .0000    .0000    -29.475    .0000    .0000
  2  -24.225    .0515    .0225    -24.225    .0401    .0047    -.0066    -.243
  3  -18.475    .0138    .0571    -18.475    .0312    .0378    -.0036    -.288
  4  -13.475    .0347    .1007    -13.475    .0431    .0560    -.0028    -.344
  5   -9.475   -.0048    .1659     -9.475    .0570    .0578    -.0015    -.384
  6   -6.475   -.0004    .2229     -6.475    .0594    .0481    -.0004    -.352
  7   -4.475   -.0389    .2727     -4.475    .0686    .0427     .0005    -.300
  8   -2.975   -.0458    .3347     -2.975    .0785    .0251     .0011    -.231
  9   -1.475   -.1910    .4080     -1.475    .0691   -.0027     .0017    -.136
 10     .025   -.2563    .4795       .025    .0462   -.0119     .0023    -.031
 11    1.525   -.3702    .5202      1.525   -.0042   -.0311     .0026     .060
 12    3.025   -.2013    .4848      3.025    .0164   -.0213     .0023     .125
 13    4.525   -.1342    .4399      4.525    .0354   -.0154     .0015     .168
 14    6.525   -.0733    .3826      6.525    .0666   -.0162    -.0003     .207
 15    8.525   -.0199    .3361      8.525    .0589   -.0293    -.0020     .229
 16   10.525    .0073    .3020     10.525    .0542   -.0450    -.0033     .231
 17   13.525   -.0072    .2719     13.525    .0372   -.0761    -.0044     .214
 18   17.525    .0035    .2532     17.525    .0274   -.1301    -.0066     .184
 19   22.525    .0157    .2220     22.525    .0062   -.1868
```

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
```
DELTA M                   =     .00230
CORRECTED MACH NUMBER     =    .76819
CORRECTION TO AOA (DEG)=    -.03253
```

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN :   5   ADAPTIVE WALL TEST SECTION

POINT: 34   TOTAL T= 289.12 R
MACH = .766   UINF   = 603.89 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0655	.0262	-24.225	.0574	.0050	-.0100	-.252
3	-18.475	.0179	.0655	-18.475	.0385	.0458	-.0051	-.288
4	-13.475	.0307	.1059	-13.475	.0476	.0740	-.0025	-.311
5	-9.475	-.0101	.1841	-9.475	.0548	.0833	-.0002	-.331
6	-6.475	-.0053	.2458	-6.475	.0614	.0835	.0011	-.302
7	-4.475	-.0405	.3069	-4.475	.0728	.0794	.0019	-.260
8	-2.975	-.0559	.3729	-2.975	.0804	.0654	.0024	-.208
9	-1.475	-.1950	.4637	-1.475	.0649	.0445	.0028	-.138
10	.025	-.2783	.5311	.025	.0547	.0242	.0032	-.058
11	1.525	-.3899	.5789	1.525	.0096	-.0004	.0034	.020
12	3.025	-.2166	.5314	3.025	.0216	.0053	.0033	.081
13	4.525	-.1547	.4776	4.525	.0269	.0072	.0027	.125
14	6.525	-.0795	.4174	6.525	.0583	.0030	.0009	.165
15	8.525	-.0220	.3662	8.525	.0613	-.0154	-.0014	.186
16	10.525	.0029	.3293	10.525	.0563	-.0356	-.0034	.193
17	13.525	.0027	.3058	13.525	.0575	-.0777	-.0054	.183
18	17.525	-.0044	.2738	17.525	.0200	-.1361	-.0061	.146
19	22.525	.0119	.2317	22.525	.0012	-.2005		

CORRECTIONS AT AIRFOIL QUARTER CHORD:

DELTA M   =   .00319
CORRECTED MACH NUMBER   =   .76911
CORRECTION TO AOA (DEG)=   -.05937

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN :   5   ADAPTIVE WALL TEST SECTION

POINT: 35   TOTAL T= 289.15 R
MACH = .766   UINF   = 603.98 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0538	.0262	-24.225	.0472	.0050	-.0068	-.262
3	-18.475	.0112	.0697	-18.475	.0286	.0454	-.0025	-.303
4	-13.475	.0303	.1151	-13.475	.0480	.0720	-.0014	-.335
5	-9.475	-.0059	.1993	-9.475	.0571	.0834	.0000	-.379
6	-6.475	-.0030	.2634	-6.475	.0674	.0777	.0011	-.362
7	-4.475	-.0462	.3235	-4.475	.0854	.0721	.0019	-.308
8	-2.975	-.0652	.3914	-2.975	.0875	.0536	.0026	-.237
9	-1.475	-.2057	.4820	-1.475	.0793	.0290	.0032	-.146
10	.025	-.2844	.5585	.025	.0601	.0134	.0039	-.050
11	1.525	-.4082	.6051	1.525	.0020	-.0157	.0045	.036
12	3.025	-.2374	.5535	3.025	.0141	-.0107	.0047	.102
13	4.525	-.1689	.5073	4.525	.0136	-.0093	.0041	.147
14	6.525	-.0861	.4469	6.525	.0582	-.0146	.0023	.181
15	8.525	-.0281	.3946	8.525	.0523	-.0285	.0003	.195
16	10.525	-.0115	.3498	10.525	.0630	-.0476	-.0011	.206
17	13.525	-.0154	.3190	13.525	.0432	-.0859	-.0023	.214
18	17.525	-.0072	.2866	17.525	.0135	-.1459	-.0036	.171
19	22.525	.0082	.2439	22.525	-.0012	-.2130		

CORRECTIONS AT AIRFOIL QUARTER CHORD:

DELTA M   =   .00389
CORRECTED MACH NUMBER   =   .76990
CORRECTION TO AOA (DEG)=   -.05112

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    5                    ADAPTIVE WALL TEST SECTION

POINT:   36                                     TOTAL T= 289.19 R
MACH = .766                                     UINF  = 603.97 FPS

 NO     X       CPT      ZT        X       CPB      ZB       DM        DA

  1  -29.475   .0000    .0000   -29.475   .0000    .0000
  2  -24.225   .0580    .0298   -24.225   .0489    .0047   -.0068    -.264
  3  -18.475   .0109    .0702   -18.475   .0309    .0454   -.0019    -.301
  4  -13.475   .0256    .1173   -13.475   .0432    .0757    .0004    -.330
  5   -9.475  -.0114    .2003    -9.475   .0559    .0849    .0022    -.360
  6   -6.475  -.0048    .2671    -6.475   .0649    .0859    .0038    -.340
  7   -4.475  -.0468    .3275    -4.475   .0779    .0819    .0052    -.297
  8   -2.975  -.0691    .3959    -2.975   .0850    .0629    .0063    -.233
  9   -1.475  -.2155    .4842    -1.475   .0674    .0417    .0075    -.145
 10     .025  -.3244    .5587      .025   .0594    .0225    .0084    -.050
 11    1.525  -.4161    .6156     1.525  -.0185   -.0089    .0089     .032
 12    3.025  -.2347    .5602     3.025   .0050   -.0131    .0089     .091
 13    4.525  -.1829    .5097     4.525  -.0016   -.0149    .0083     .133
 14    6.525  -.1004    .4508     6.525   .0442   -.0204    .0063     .170
 15    8.525  -.0329    .4042     8.525   .0488   -.0409    .0040     .184
 16   10.525  -.0177    .3621    10.525   .0411   -.0598    .0025     .181
 17   13.525  -.0222    .3263    13.525   .0322   -.0955    .0014     .155
 18   17.525  -.0151    .2906    17.525   .0056   -.1644   -.0002     .097
 19   22.525  -.0084    .2400    22.525  -.0076   -.2384

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                  =     .00836
CORRECTED MACH NUMBER    =     .77430
CORRECTION TO AOA (DEG)=      -.05141
```

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :    5                    ADAPTIVE WALL TEST SECTION

POINT:   37                                     TOTAL T= 288.83 R
MACH = .766                                     UINF  = 603.63 FPS

 NO     X       CPT      ZT        X       CPB      ZB       DM        DA

  1  -29.475   .0000    .0000   -29.475   .0000    .0000
  2  -24.225   .0480   -.0061   -24.225   .0319   -.0248   -.0053    -.202
  3  -18.475   .0160    .0052   -18.475   .0237   -.0229   -.0029    -.248
  4  -13.475   .0302    .0093   -13.475   .0324   -.0481   -.0025    -.285
  5   -9.475   .0114    .0284    -9.475   .0342   -.0824   -.0017    -.300
  6   -6.475   .0313    .0438    -6.475   .0320   -.1249   -.0011    -.280
  7   -4.475   .0192    .0619    -4.475   .0244   -.1570   -.0001    -.247
  8   -2.975   .0126    .0898    -2.975   .0175   -.1894    .0008    -.198
  9   -1.475  -.0738    .1338    -1.475  -.0178   -.2261    .0019    -.128
 10     .025  -.1271    .1845      .025  -.0339   -.2443    .0030    -.049
 11    1.525  -.1892    .2169     1.525  -.1057   -.2610    .0039     .020
 12    3.025  -.1160    .2066     3.025  -.0492   -.2358    .0043     .074
 13    4.525  -.0996    .1908     4.525  -.0243   -.2057    .0041     .112
 14    6.525  -.0410    .1686     6.525   .0289   -.1800    .0029     .142
 15    8.525  -.0036    .1500     8.525   .0225   -.1680    .0013     .151
 16   10.525   .0188    .1421    10.525   .0344   -.1690    .0000     .144
 17   13.525   .0045    .1428    13.525   .0206   -.1752   -.0008     .124
 18   17.525  -.0048    .1564    17.525   .0043   -.2017   -.0016     .093
 19   22.525  -.0068    .1627    22.525  -.0170   -.2271

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                  =     .00300
CORRECTED MACH NUMBER    =     .76898
CORRECTION TO AOA (DEG)=      -.05072
```

```
TEST  :   224                    NASA LANGLEY 0.3-M TCT
RUN   :    16                    ADAPTIVE WALL TEST SECTION

POINT:    97                                        TOTAL T= 271.12 R
MACH = .765                                         UINF   = 584.09 FPS

  NO      X       CPT      ZT        X        CPB      ZB       DM       DA

   1  -29.475   .0000    .0000   -29.475    .0000    .0000
   2  -24.225   .0483    .0051   -24.225    .0414   -.0189   -.0060   -.258
   3  -18.475   .0073    .0164   -18.475    .0237    .0036   -.0019   -.261
   4  -13.475   .0259    .0398   -13.475    .0341   -.0010   -.0011   -.283
   5   -9.475   .0005    .0814    -9.475    .0372   -.0165   -.0005   -.316
   6   -6.475   .0152    .1140    -6.475    .0480   -.0471   -.0001   -.289
   7   -4.475  -.0065    .1446    -4.475    .0440   -.0639    .0009   -.242
   8   -2.975  -.0233    .1856    -2.975    .0380   -.0869    .0017   -.185
   9   -1.475  -.1260    .2502    -1.475    .0144   -.1177    .0025   -.111
  10     .025  -.1852    .2966      .025   -.0045   -.1348    .0032   -.033
  11    1.525  -.2262    .3368     1.525   -.0591   -.1483    .0036    .032
  12    3.025  -.1521    .3163     3.025   -.0263   -.1346    .0035    .077
  13    4.525  -.1243    .2900     4.525   -.0088   -.1150    .0028    .105
  14    6.525  -.0446    .2631     6.525    .0471   -.0973    .0010    .125
  15    8.525  -.0130    .2236     8.525    .0465   -.0988   -.0010    .139
  16   10.525   .0075    .2065    10.525    .0614   -.1042   -.0024    .155
  17   13.525  -.0068    .1972    13.525    .0346   -.1209   -.0034    .153
  18   17.525   .0050    .1926    17.525    .0130   -.1676   -.0050    .090
  19   22.525   .0116    .1741    22.525   -.0014   -.2168

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------------
DELTA M                   =    .00320
CORRECTED MACH NUMBER     =    .76810
CORRECTION TO AOA (DEG)=   -.03402


TEST  :   224                    NASA LANGLEY 0.3-M TCT
RUN   :    16                    ADAPTIVE WALL TEST SECTION

POINT:    98                                        TOTAL T= 271.07 R
MACH = .765                                         UINF   = 583.88 FPS

  NO      X       CPT      ZT        X        CPB      ZB       DM       DA

   1  -29.475   .0000    .0000   -29.475    .0000    .0000
   2  -24.225   .0375    .0257   -24.225    .0302    .0312   -.0025   -.074
   3  -18.475  -.0089    .0670   -18.475    .0091    .0772    .0041   -.092
   4  -13.475   .0053    .1104   -13.475    .0245    .1249    .0061   -.094
   5   -9.475  -.0279    .1992    -9.475    .0284    .1331    .0065   -.114
   6   -6.475  -.0185    .2639    -6.475    .0392    .1361    .0059   -.106
   7   -4.475  -.0458    .3274    -4.475    .0457    .1316    .0049   -.098
   8   -2.975  -.0548    .3912    -2.975    .0510    .1182    .0037   -.087
   9   -1.475  -.1676    .4776    -1.475    .0430    .0897    .0022   -.071
  10     .025  -.2141    .5458      .025    .0326    .0606    .0007   -.049
  11    1.525  -.2700    .5812     1.525   -.0098    .0266   -.0003   -.023
  12    3.025  -.1459    .5343     3.025    .0382    .0371   -.0004    .006
  13    4.525  -.1217    .4913     4.525    .0390    .0512    .0004    .030
  14    6.525  -.0763    .4208     6.525    .0493    .0731    .0017    .045
  15    8.525  -.0311    .3609     8.525    .0439    .0665    .0027    .044
  16   10.525  -.0154    .3174    10.525    .0381    .0507    .0031    .039
  17   13.525  -.0235    .2800    13.525    .0298    .0131    .0031    .035
  18   17.525  -.0161    .2472    17.525    .0015   -.0519    .0018    .014
  19   22.525  -.0105    .2112    22.525   -.0155   -.1258

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------------
DELTA M                   =    .00067
CORRECTED MACH NUMBER     =    .76535
CORRECTION TO AOA (DEG)=   -.04925
```

```
TEST :   224                    NASA LANGLEY 0.3-M TCT
RUN  :    16                    ADAPTIVE WALL TEST SECTION

POINT:   99                                        TOTAL T= 271.03 R
MACH = .765                                        UINF  = 583.83 FPS

NO      X       CPT      ZT        X        CPB      ZB        DM       DA

 1   -29.475   .0000    .0000   -29.475    .0000    .0000
 2   -24.225   .0385    .0285   -24.225    .0317    .0358    -.0042    -.074
 3   -18.475   .0038    .0775   -18.475    .0225    .0786    -.0004    -.086
 4   -13.475   .0208    .1307   -13.475    .0402    .1301     .0002    -.080
 5    -9.475  -.0067    .2251    -9.475    .0455    .1472     .0001    -.117
 6    -6.475  -.0055    .2985    -6.475    .0594    .1527    -.0011    -.119
 7    -4.475  -.0362    .3701    -4.475    .0784    .1498    -.0025    -.109
 8    -2.975  -.0424    .4361    -2.975    .0753    .1367    -.0041    -.094
 9    -1.475  -.1556    .5305    -1.475    .0787    .1059    -.0058    -.072
10     .025   -.2029    .5994     .025     .0687    .0798    -.0073    -.046
11    1.525   -.2566    .6392    1.525     .0282    .0449    -.0079    -.022
12    3.025   -.1262    .5881    3.025     .0626    .0552    -.0072    -.001
13    4.525   -.1199    .5367    4.525     .0499    .0689    -.0056     .014
14    6.525   -.0679    .4601    6.525     .0686    .0857    -.0031     .025
15    8.525   -.0331    .3929    8.525     .0541    .0747    -.0011     .032
16   10.525   -.0194    .3451   10.525     .0400    .0588     .0001     .035
17   13.525   -.0156    .3084   13.525     .0361    .0188     .0005     .023
18   17.525   -.0226    .2638   17.525     .0072   -.0539     .0001     .008
19   22.525    .0002    .2192   22.525    -.0107   -.1222      .

CORRECTIONS AT AIRFOIL QUARTER CHORD:
------------------------------------
DELTA M                   =   -.00727
CORRECTED MACH NUMBER     =    .75740
CORRECTION TO AOA (DEG)=   -.04676


TEST :   224                    NASA LANGLEY 0.3-M TCT
RUN  :    16                    ADAPTIVE WALL TEST SECTION

POINT:   100                                       TOTAL T= 271.22 R
MACH = .765                                        UINF  = 583.97 FPS

NO      X       CPT      ZT        X        CPB      ZB        DM       DA

 1   -29.475   .0000    .0000   -29.475    .0000    .0000
 2   -24.225   .0471    .0379   -24.225    .0433    .0365    -.0048    -.104
 3   -18.475  -.0106    .0912   -18.475    .0126    .0936     .0023    -.103
 4   -13.475   .0198    .1562   -13.475    .0410    .1544     .0028    -.099
 5    -9.475  -.0271    .2628    -9.475    .0491    .1823     .0034    -.113
 6    -6.475  -.0129    .3492    -6.475    .0649    .1996     .0028    -.094
 7    -4.475  -.0562    .4333    -4.475    .0784    .2036     .0020    -.086
 8    -2.975  -.0573    .5066    -2.975    .0826    .1952     .0011    -.078
 9    -1.475  -.1918    .6108    -1.475    .0824    .1722     .0001    -.064
10     .025   -.2492    .6888     .025     .0660    .1440    -.0006    -.046
11    1.525   -.3615    .7316    1.525     .0242    .1173    -.0006    -.029
12    3.025   -.1983    .6773    3.025     .0448    .1202    -.0001    -.014
13    4.525   -.1472    .6159    4.525     .0492    .1176     .0010    -.001
14    6.525   -.0954    .5304    6.525     .0624    .1240     .0026     .017
15    8.525   -.0477    .4572    8.525     .0464    .1091     .0040     .025
16   10.525   -.0406    .3995   10.525     .0370    .0858     .0047     .031
17   13.525   -.0323    .3536   13.525     .0268    .0368     .0047     .030
18   17.525   -.0279    .2969   17.525     .0012   -.0402     .0037     .010
19   22.525   -.0152    .2372   22.525    -.0155   -.1219

CORRECTIONS AT AIRFOIL QUARTER CHORD:
------------------------------------
DELTA M                   =   -.00055
CORRECTED MACH NUMBER     =    .76402
CORRECTION TO AOA (DEG)=   -.04620
```

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   16                    ADAPTIVE WALL TEST SECTION

POINT:  101                                        TOTAL T= 271.41 R
MACH = .765                                        UINF  = 584.18 FPS

  NO     X      CPT      ZT         X      CPB      ZB       DM       DA

   1  -29.475  .0000   .0000    -29.475  .0000   .0000
   2  -24.225  .0390   .0377    -24.225  .0403   .0365   -.0030   -.086
   3  -18.475 -.0107   .0971    -18.475  .0068   .0979    .0042   -.087
   4  -13.475  .0067   .1609    -13.475  .0348   .1602    .0057   -.071
   5   -9.475 -.0326   .2717     -9.475  .0435   .1993    .0066   -.076
   6   -6.475 -.0280   .3598     -6.475  .0511   .2181    .0060   -.069
   7   -4.475 -.0646   .4446     -4.475  .0715   .2250    .0047   -.069
   8   -2.975 -.0683   .5220     -2.975  .0802   .2173    .0030   -.065
   9   -1.475 -.1997   .6300     -1.475  .0836   .1933    .0010   -.056
  10    .025  -.2596   .7108       .025  .0781   .1611   -.0009   -.040
  11   1.525  -.3479   .7564      1.525  .0381   .1296   -.0022   -.023
  12   3.025  -.1868   .7016      3.025  .0644   .1221   -.0026   -.005
  13   4.525  -.1407   .6418      4.525  .0544   .1164   -.0025    .014
  14   6.525  -.0809   .5579      6.525  .0791   .1151   -.0018    .041
  15   8.525  -.0352   .4845      8.525  .0627   .0966   -.0010    .061
  16  10.525  -.0168   .4296     10.525  .0487   .0719   -.0005    .071
  17  13.525  -.0140   .3831     13.525  .0404   .0214   -.0002    .065
  18  17.525  -.0131   .3345     17.525  .0033  -.0508    .0001    .013
  19  22.525  -.0130   .2668     22.525 -.0181  -.1333

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                  =  -.00084
CORRECTED MACH NUMBER    =   .76373
CORRECTION TO AOA (DEG)= -.04061


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   16                    ADAPTIVE WALL TEST SECTION

POINT:  102                                        TOTAL T= 271.43 R
MACH = .765                                        UINF  = 584.37 FPS

  NO     X      CPT      ZT         X      CPB      ZB       DM       DA

   1  -29.475  .0000   .0000    -29.475  .0000   .0000
   2  -24.225  .0404   .0366    -24.225  .0421   .0360   -.0037   -.106
   3  -18.475 -.0038   .1009    -18.475  .0123   .0953    .0023   -.122
   4  -13.475  .0188   .1659    -13.475  .0413   .1522    .0027   -.155
   5   -9.475 -.0231   .2734     -9.475  .0551   .1806    .0030   -.182
   6   -6.475 -.0166   .3603     -6.475  .0698   .1937    .0021   -.161
   7   -4.475 -.0559   .4458     -4.475  .0924   .1956    .0009   -.140
   8   -2.975 -.0651   .5224     -2.975  .0982   .1845   -.0005   -.113
   9   -1.475 -.2026   .6308     -1.475  .1022   .1560   -.0021   -.075
  10    .025  -.2663   .7126       .025  .0854   .1234   -.0035   -.029
  11   1.525  -.3556   .7594      1.525  .0513   .0840   -.0043    .019
  12   3.025  -.1937   .7057      3.025  .0608   .0820   -.0041    .060
  13   4.525  -.1407   .6481      4.525  .0529   .0831   -.0033    .089
  14   6.525  -.0920   .5680      6.525  .0704   .0853   -.0020    .110
  15   8.525  -.0411   .4961      8.525  .0531   .0717   -.0010    .114
  16  10.525  -.0185   .4403     10.525  .0487   .0486   -.0004    .110
  17  13.525  -.0190   .3947     13.525  .0420   .0025   -.0002    .095
  18  17.525  -.0200   .3397     17.525  .0076  -.0715   -.0001    .061
  19  22.525  -.0073   .2796     22.525 -.0148  -.1494

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                  =  -.00347
CORRECTED MACH NUMBER    =   .76136
CORRECTION TO AOA (DEG)= -.02943
```

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   17                    ADAPTIVE WALL TEST SECTION

POINT: 103                                        TOTAL T= 271.04 R
MACH = .765                                       UINF   = 583.90 FPS

NO      X        CPT      ZT         X        CPB       ZB        DM       DA

 1  -29.475    .0000    .0000    -29.475    .0000    .0000
 2  -24.225    .0379    .0046    -24.225    .0320   -.0137    -.0039    -.228
 3  -18.475    .0113    .0299    -18.475    .0220   -.0003    -.0011    -.247
 4  -13.475    .0190    .0472    -13.475    .0310    .0031     .0008    -.278
 5   -9.475   -.0081    .0904     -9.475    .0304   -.0131     .0027    -.300
 6   -6.475    .0005    .1199     -6.475    .0318   -.0367     .0043    -.275
 7   -4.475   -.0200    .1514     -4.475    .0260   -.0531     .0058    -.234
 8   -2.975   -.0416    .1893     -2.975    .0232   -.0759     .0068    -.181
 9   -1.475   -.1423    .2528     -1.475    .0002   -.1039     .0076    -.110
10     .025   -.1927    .3034       .025   -.0179   -.1221     .0081    -.033
11    1.525   -.2541    .3385      1.525   -.0742   -.1406     .0084     .035
12    3.025   -.1666    .3158      3.025   -.0343   -.1208     .0082     .087
13    4.525   -.1256    .2922      4.525   -.0133   -.1009     .0074     .122
14    6.525   -.0610    .2571      6.525    .0390   -.0838     .0054     .149
15    8.525   -.0209    .2275      8.525    .0359   -.0846     .0032     .158
16   10.525    .0059    .2104     10.525    .0346   -.0916     .0012     .148
17   13.525   -.0069    .2061     13.525    .0345   -.1133    -.0008     .112
18   17.525   -.0050    .1954     17.525    .0089   -.1632    -.0028     .050
19   22.525    .0092    .1779     22.525   -.0085   -.2150

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                   =    .00812
CORRECTED MACH NUMBER     =    .77287
CORRECTION TO AOA (DEG)=   -.03450


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   17                    ADAPTIVE WALL TEST SECTION

POINT: 104                                        TOTAL T= 271.00 R
MACH = .765                                       UINF   = 583.97 FPS

NO      X        CPT      ZT         X        CPB       ZB        DM       DA

 1  -29.475    .0000    .0000    -29.475    .0000    .0000
 2  -24.225    .0508    .0294    -24.225    .0467    .0253    -.0072    -.061
 3  -18.475    .0085    .0763    -18.475    .0216    .0739    -.0019    -.082
 4  -13.475    .0227    .1227    -13.475    .0392    .1166    -.0007    -.102
 5   -9.475   -.0125    .2125     -9.475    .0463    .1270    -.0006    -.117
 6   -6.475    .0013    .2772     -6.475    .0595    .1336    -.0013    -.110
 7   -4.475   -.0220    .3373     -4.475    .0691    .1285    -.0021    -.100
 8   -2.975   -.0397    .4000     -2.975    .0644    .1201    -.0028    -.087
 9   -1.475   -.1335    .4856     -1.475    .0676    .0919    -.0038    -.067
10     .025   -.1990    .5510       .025    .0534    .0643    -.0046    -.038
11    1.525   -.2755    .5843      1.525    .0089    .0398    -.0047    -.007
12    3.025   -.1245    .5448      3.025    .0466    .0513    -.0041     .018
13    4.525   -.1191    .4964      4.525    .0364    .0627    -.0029     .033
14    6.525   -.0584    .4278      6.525    .0704    .0805    -.0010     .041
15    8.525   -.0306    .3676      8.525    .0381    .0793     .0007     .031
16   10.525   -.0182    .3194     10.525    .0364    .0604     .0017     .018
17   13.525   -.0171    .2867     13.525    .0396    .0182     .0018     .020
18   17.525   -.0218    .2507     17.525   -.0027   -.0470     .0015     .004
19   22.525   -.0068    .2134     22.525   -.0164   -.1194

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                   =   -.00457
CORRECTED MACH NUMBER     =    .76034
CORRECTION TO AOA (DEG)=   -.03839
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TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   17                 ADAPTIVE WALL TEST SECTION

POINT: 105                                        TOTAL T= 271.01 R
MACH = .765                                       UINF  = 583.92 FPS

NO     X       CPT      ZT        X       CPB      ZB       DM       DA

 1  -29.475   .0000    .0000   -29.475   .0000    .0000
 2  -24.225   .0427    .0294   -24.225   .0387    .0257   -.0046   -.086
 3  -18.475  -.0016    .0765   -18.475   .0178    .0741    .0010   -.078
 4  -13.475   .0109    .1287   -13.475   .0304    .1226    .0025   -.061
 5   -9.475  -.0027    .2231    -9.475   .0402    .1431    .0023   -.102
 6   -6.475  -.0143    .2946    -6.475   .0476    .1501    .0016   -.111
 7   -4.475  -.0355    .3680    -4.475   .0682    .1480    .0004   -.100
 8   -2.975  -.0564    .4306    -2.975   .0734    .1377   -.0008   -.081
 9   -1.475  -.1669    .5267    -1.475   .0665    .1136   -.0023   -.057
10     .025  -.2174    .5966      .025   .0536    .0890   -.0036   -.036
11    1.525  -.2605    .6319     1.525   .0222    .0627   -.0045   -.023
12    3.025  -.1475    .5908     3.025   .0436    .0675   -.0045   -.016
13    4.525  -.1159    .5384     4.525   .0492    .0727   -.0039   -.008
14    6.525  -.0719    .4643     6.525   .0711    .0816   -.0028    .007
15    8.525  -.0235    .4006     8.525   .0659    .0744   -.0019    .020
16   10.525  -.0081    .3550    10.525   .0487    .0505   -.0016    .027
17   13.525  -.0152    .3207    13.525   .0376    .0063   -.0020    .025
18   17.525  -.0006    .2839    17.525   .0201   -.0672   -.0038   -.001
19   22.525  -.0006    .2379    22.525  -.0074   -.1412

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                   =  -.00363
CORRECTED MACH NUMBER     =   .76120
CORRECTION TO AOA (DEG)=   -.03646


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   17                 ADAPTIVE WALL TEST SECTION

POINT: 106                                        TOTAL T= 271.27 R
MACH = .765                                       UINF  = 584.29 FPS

NO     X       CPT      ZT        X       CPB      ZB       DM       DA

 1  -29.475   .0000    .0000   -29.475   .0000    .0000
 2  -24.225   .0414    .0365   -24.225   .0455    .0280   -.0041   -.097
 3  -18.475  -.0058    .0929   -18.475   .0094    .0986    .0033   -.098
 4  -13.475   .0057    .1547   -13.475   .0319    .1527    .0050   -.107
 5   -9.475  -.0297    .2643    -9.475   .0412    .1846    .0051   -.125
 6   -6.475  -.0206    .3485    -6.475   .0569    .1999    .0036   -.119
 7   -4.475  -.0592    .4315    -4.475   .0783    .2009    .0017   -.105
 8   -2.975  -.0612    .5075    -2.975   .0941    .1865   -.0001   -.081
 9   -1.475  -.1905    .6135    -1.475   .0940    .1679   -.0020   -.048
10     .025  -.2572    .6918      .025   .0764    .1407   -.0037   -.016
11    1.525  -.3266    .7395     1.525   .0444    .1089   -.0046    .008
12    3.025  -.1802    .6867     3.025   .0596    .1134   -.0047    .023
13    4.525  -.1276    .6259     4.525   .0653    .1143   -.0040    .032
14    6.525  -.0801    .5411     6.525   .0791    .1195   -.0026    .045
15    8.525  -.0361    .4628     8.525   .0651    .1026   -.0014    .057
16   10.525  -.0129    .4102    10.525   .0551    .0801   -.0005    .064
17   13.525  -.0208    .3654    13.525   .0360    .0299    .0001    .052
18   17.525  -.0199    .3090    17.525   .0120   -.0451    .0002    .036
19   22.525  -.0116    .2540    22.525  -.0187   -.1237

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                   =  -.00366
CORRECTED MACH NUMBER     =   .76130
CORRECTION TO AOA (DEG)=   -.01680
```

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NASA LANGLEY 0.3-M TCT
ADAPTIVE WALL TEST SECTION

POINT: 107
MACH = .765

TOTAL T= 271.35 R
UINF = 584.32 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0496	.0362	-24.225	.0528	.0290	-.0076	-.112
3	-18.475	.0105	.1022	-18.475	.0313	.0902	-.0035	-.102
4	-13.475	.0326	.1673	-13.475	.0570	.1464	-.0033	-.102
5	-9.475	-.0042	.2802	-9.475	.0690	.1780	-.0029	-.123
6	-6.475	-.0003	.3650	-6.475	.0828	.1955	-.0030	-.111
7	-4.475	-.0402	.4508	-4.475	.0967	.1991	-.0035	-.100
8	-2.975	-.0509	.5264	-2.975	.1009	.1897	-.0042	-.085
9	-1.475	-.1876	.6333	-1.475	.1018	.1610	-.0051	-.060
10	.025	-.2479	.7133	.025	.0832	.1315	-.0056	-.029
11	1.525	-.3521	.7571	1.525	.0296	.0978	-.0055	.001
12	3.025	-.1993	.6998	3.025	.0628	.1066	-.0047	.026
13	4.525	-.1433	.6404	4.525	.0486	.1071	-.0034	.042
14	6.525	-.0803	.5528	6.525	.0775	.1133	-.0016	.054
15	8.525	-.0399	.4777	8.525	.0526	.1000	.0001	.053
16	10.525	-.0164	.4171	10.525	.0451	.0796	.0015	.043
17	13.525	-.0378	.3628	13.525	.0280	.0309	.0026	.036
18	17.525	-.0244	.3116	17.525	.0114	-.0475	.0015	.053
19	22.525	-.0078	.2600	22.525	-.0154	-.1255		

CORRECTIONS AT AIRFOIL QUARTER CHORD:

DELTA M = -.00564
CORRECTED MACH NUMBER = .75923
CORRECTION TO AOA (DEG)= -.02971

NASA LANGLEY 0.3-M TCT
ADAPTIVE WALL TEST SECTION

POINT: 108
MACH = .765

TOTAL T= 271.51 R
UINF = 584.56 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0471	.0373	-24.225	.0496	.0279	-.0059	-.117
3	-18.475	.0040	.1047	-18.475	.0237	.0906	-.0003	-.106
4	-13.475	.0188	.1701	-13.475	.0402	.1498	.0014	-.126
5	-9.475	-.0216	.2835	-9.475	.0551	.1785	.0017	-.153
6	-6.475	-.0154	.3703	-6.475	.0730	.1928	.0008	-.128
7	-4.475	-.0541	.4561	-4.475	.0881	.1974	-.0005	-.104
8	-2.975	-.0646	.5386	-2.975	.0975	.1892	-.0020	-.082
9	-1.475	-.2052	.6485	-1.475	.0968	.1639	-.0039	-.056
10	.025	-.2580	.7312	.025	.0907	.1302	-.0057	-.026
11	1.525	-.3333	.7778	1.525	.0566	.0955	-.0068	.006
12	3.025	-.1836	.7215	3.025	.0756	.0898	-.0067	.034
13	4.525	-.1354	.6615	4.525	.0583	.0955	-.0058	.053
14	6.525	-.0838	.5762	6.525	.0743	.0947	-.0042	.067
15	8.525	-.0364	.4967	8.525	.0660	.0796	-.0030	.078
16	10.525	-.0111	.4450	10.525	.0556	.0578	-.0024	.084
17	13.525	-.0260	.3951	13.525	.0435	.0089	-.0022	.081
18	17.525	-.0054	.3441	17.525	.0206	-.0684	-.0032	.065
19	22.525	-.0009	.2842	22.525	-.0078	-.1476		

CORRECTIONS AT AIRFOIL QUARTER CHORD:

DELTA M = -.00569
CORRECTED MACH NUMBER = .75928
CORRECTION TO AOA (DEG)= -.02613

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN : 17   ADAPTIVE WALL TEST SECTION

POINT: 109   TOTAL T= 271.60 R
MACH = .765   UINF = 584.76 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0457	.0371	-24.225	.0485	.0284	-.0056	-.119
3	-18.475	.0070	.1045	-18.475	.0249	.0908	-.0005	-.113
4	-13.475	.0253	.1699	-13.475	.0478	.1503	.0008	-.135
5	-9.475	-.0205	.2833	-9.475	.0564	.1789	.0018	-.159
6	-6.475	-.0113	.3704	-6.475	.0777	.1938	.0015	-.134
7	-4.475	-.0555	.4561	-4.475	.0883	.1977	.0008	-.108
8	-2.975	-.0599	.5386	-2.975	.1022	.1895	.0000	-.084
9	-1.475	-.2090	.6488	-1.475	.0956	.1637	-.0010	-.054
10	.025	-.2677	.7317	.025	.0824	.1297	-.0018	-.019
11	1.525	-.3695	.7783	1.525	.0403	.0982	-.0018	.014
12	3.025	-.2044	.7221	3.025	.0514	.0900	-.0010	.041
13	4.525	-.1578	.6618	4.525	.0321	.0954	.0004	.057
14	6.525	-.1042	.5766	6.525	.0549	.0946	.0022	.066
15	8.525	-.0571	.4975	8.525	.0452	.0798	.0034	.073
16	10.525	-.0231	.4453	10.525	.0424	.0582	.0040	.077
17	13.525	-.0426	.3955	13.525	.0277	.0087	.0043	.072
18	17.525	-.0277	.3440	17.525	.0001	-.0679	.0033	.060
19	22.525	-.0122	.2845	22.525	-.0199	-.1478		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -

DELTA M   = -.00177
CORRECTED MACH NUMBER   =   .76335
CORRECTION TO AOA (DEG)= -.01983

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN : 17   ADAPTIVE WALL TEST SECTION

POINT: 110   TOTAL T= 271.48 R
MACH = .765   UINF = 584.65 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0385	.0365	-24.225	.0393	.0388	-.0020	-.109
3	-18.475	-.0099	.1001	-18.475	.0117	.1030	.0050	-.112
4	-13.475	.0092	.1681	-13.475	.0339	.1630	.0064	-.120
5	-9.475	-.0302	.2855	-9.475	.0490	.1919	.0065	-.142
6	-6.475	-.0256	.3797	-6.475	.0639	.2068	.0050	-.130
7	-4.475	-.0520	.4745	-4.475	.0889	.2036	.0030	-.117
8	-2.975	-.0743	.5553	-2.975	.1011	.1910	.0011	-.095
9	-1.475	-.2168	.6691	-1.475	.1052	.1579	-.0008	-.061
10	.025	-.2619	.7577	.025	.0908	.1231	-.0024	-.024
11	1.525	-.3530	.8030	1.525	.0494	.0914	-.0030	.004
12	3.025	-.1880	.7504	3.025	.0548	.0737	-.0027	.025
13	4.525	-.1563	.6918	4.525	.0375	.0695	-.0016	.042
14	6.525	-.1090	.6101	6.525	.0612	.0668	.0002	.061
15	8.525	-.0545	.5355	8.525	.0445	.0534	.0017	.073
16	10.525	-.0302	.4769	10.525	.0410	.0313	.0028	.077
17	13.525	-.0379	.4276	13.525	.0292	-.0164	.0036	.074
18	17.525	-.0333	.3725	17.525	-.0075	-.0886	.0039	.041
19	22.525	-.0145	.3036	22.525	-.0192	-.1706		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -

DELTA M   = -.00235
CORRECTED MACH NUMBER   =   .76280
CORRECTION TO AOA (DEG)= -.02485

```
TEST :  224                          NASA LANGLEY 0.3-M TCT
RUN  :   18                          ADAPTIVE WALL TEST SECTION

POINT:  111                                          TOTAL T= 505.00 R
MACH = .765                                          UINF  = 797.45 FPS

NO      X        CPT      ZT         X        CPB       ZB         DM        DA

 1   -29.475   .0000    .0000    -29.475    .0000     .0000
 2   -24.225   .0797    .0214    -24.225    .0539    -.0289      -.0129     -.234
 3   -18.475   .0410    .0565    -18.475    .0547    -.0341      -.0133     -.307
 4   -13.475   .0579    .0819    -13.475    .0628    -.0512      -.0134     -.322
 5    -9.475   .0277    .1356     -9.475    .0658    -.0794      -.0124     -.345
 6    -6.475   .0413    .1677     -6.475    .0672    -.1114      -.0108     -.316
 7    -4.475  -.0047    .2026     -4.475    .0552    -.1335      -.0091     -.270
 8    -2.975  -.0091    .2391     -2.975    .0494    -.1546      -.0077     -.213
 9    -1.475  -.1182    .3006     -1.475    .0220    -.1842      -.0066     -.139
10      .025  -.1506    .3480       .025    .0204    -.2051      -.0056     -.058
11     1.525  -.1958    .3818      1.525   -.0251    -.2238      -.0045      .018
12     3.025  -.1464    .3516      3.025   -.0232    -.1987      -.0034      .079
13     4.525  -.1147    .3282      4.525    .0042    -.1707      -.0027      .121
14     6.525  -.0549    .2867      6.525    .0398    -.1481      -.0033      .151
15     8.525  -.0023    .2568      8.525    .0518    -.1467      -.0049      .164
16    10.525   .0199    .2383     10.525    .0552    -.1496      -.0066      .162
17    13.525   .0077    .2302     13.525    .0494    -.1696      -.0083      .143
18    17.525   .0201    .2172     17.525    .0258    -.2107      -.0096      .086
19    22.525   .0199    .1945     22.525    .0053    -.2460
```

CORRECTIONS AT AIRFOIL QUARTER CHORD:

```
DELTA M                   =   -.00566
CORRECTED MACH NUMBER     =    .75955
CORRECTION TO AOA (DEG)=     -.05929
```

```
TEST :  224                          NASA LANGLEY 0.3-M TCT
RUN  :   19                          ADAPTIVE WALL TEST SECTION

POINT:  118                                          TOTAL T= 505.94 R
MACH = .765                                          UINF  = 797.97 FPS

NO      X        CPT      ZT         X        CPB       ZB         DM        DA

 1   -29.475   .0000    .0000    -29.475    .0000     .0000
 2   -24.225   .0471    .0120    -24.225    .0274    -.0202      -.0036     -.219
 3   -18.475   .0105    .0335    -18.475    .0214    -.0091      -.0009     -.272
 4   -13.475   .0238    .0572    -13.475    .0287    -.0194       .0000     -.303
 5    -9.475  -.0034    .1033     -9.475    .0308    -.0441       .0008     -.324
 6    -6.475   .0042    .1387     -6.475    .0338    -.0709       .0013     -.297
 7    -4.475  -.0155    .1756     -4.475    .0450    -.0926       .0021     -.254
 8    -2.975  -.0261    .2088     -2.975    .0311    -.1127       .0029     -.198
 9    -1.475  -.1310    .2663     -1.475    .0154    -.1436       .0037     -.124
10      .025  -.1900    .3172       .025   -.0086    -.1654       .0045     -.046
11     1.525  -.1950    .3453      1.525   -.0664    -.1764       .0051      .017
12     3.025  -.1609    .3270      3.025   -.0313    -.1615       .0053      .061
13     4.525  -.1257    .3042      4.525   -.0108    -.1455       .0049      .095
14     6.525  -.0593    .2706      6.525    .0343    -.1316       .0032      .128
15     8.525  -.0097    .2486      8.525    .0423    -.1331       .0013      .141
16    10.525   .0012    .2262     10.525    .0332    -.1361      -.0001      .137
17    13.525  -.0087    .2233     13.525    .0318    -.1610      -.0016      .118
18    17.525  -.0008    .2139     17.525    .0058    -.2032      -.0032      .060
19    22.525   .0079    .1978     22.525   -.0117    -.2491
```

CORRECTIONS AT AIRFOIL QUARTER CHORD:

```
DELTA M                   =    .00445
CORRECTED MACH NUMBER     =    .76943
CORRECTION TO AOA (DEG)=     -.04754
```

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN : 19   ADAPTIVE WALL TEST SECTION

POINT: 120   TOTAL T= 506.24 R
MACH = .765   UINF = 798.20 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0466	.0278	-24.225	.0347	.0184	-.0039	-.061
3	-18.475	.0010	.0694	-18.475	.0186	.0535	.0011	-.072
4	-13.475	.0172	.1232	-13.475	.0279	.0805	.0018	-.056
5	-9.475	-.0101	.2126	-9.475	.0384	.0845	.0016	-.075
6	-6.475	-.0045	.2795	-6.475	.0415	.0839	.0009	-.075
7	-4.475	-.0387	.3450	-4.475	.0520	.0766	.0000	-.081
8	-2.975	-.0331	.3982	-2.975	.0499	.0564	-.0011	-.079
9	-1.475	-.1475	.4742	-1.475	.0431	.0285	-.0024	-.070
10	.025	-.1619	.5410	.025	.0356	-.0011	-.0035	-.060
11	1.525	-.2034	.5677	1.525	-.0076	-.0301	-.0039	-.053
12	3.025	-.1350	.5316	3.025	.0184	-.0203	-.0033	-.046
13	4.525	-.1096	.4848	4.525	.0326	-.0106	-.0022	-.033
14	6.525	-.0613	.4251	6.525	.0521	.0035	-.0006	-.010
15	8.525	-.0293	.3686	8.525	.0399	.0018	.0008	.004
16	10.525	-.0125	.3322	10.525	.0333	-.0112	.0015	.008
17	13.525	-.0241	.3062	13.525	.0210	-.0477	.0017	-.001
18	17.525	-.0157	.2746	17.525	.0020	-.1082	.0008	-.028
19	22.525	-.0054	.2369	22.525	-.0191	-.1689		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   = -.00349
CORRECTED MACH NUMBER =   .76148
CORRECTION TO AOA (DEG)= -.05991

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN : 19   ADAPTIVE WALL TEST SECTION

POINT: 121   TOTAL T= 506.30 R
MACH = .765   UINF = 798.20 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0430	.0319	-24.225	.0355	.0183	-.0029	-.086
3	-18.475	.0002	.0834	-18.475	.0158	.0597	.0026	-.094
4	-13.475	.0106	.1390	-13.475	.0241	.0973	.0048	-.102
5	-9.475	-.0266	.2342	-9.475	.0318	.1053	.0056	-.117
6	-6.475	-.0178	.3083	-6.475	.0403	.1102	.0052	-.103
7	-4.475	-.0603	.3817	-4.475	.0538	.1064	.0046	-.097
8	-2.975	-.0514	.4439	-2.975	.0533	.0916	.0038	-.088
9	-1.475	-.1776	.5311	-1.475	.0433	.0657	.0030	-.072
10	.025	-.2212	.5938	.025	.0376	.0395	.0024	-.050
11	1.525	-.2883	.6266	1.525	-.0080	.0127	.0023	-.027
12	3.025	-.1754	.5823	3.025	.0154	.0205	.0027	-.007
13	4.525	-.1332	.5366	4.525	.0272	.0267	.0034	.009
14	6.525	-.0806	.4672	6.525	.0477	.0344	.0045	.023
15	8.525	-.0407	.4071	8.525	.0296	.0290	.0054	.023
16	10.525	-.0228	.3606	10.525	.0298	.0095	.0060	.020
17	13.525	-.0409	.3272	13.525	.0127	-.0326	.0062	.023
18	17.525	-.0255	.2893	17.525	-.0054	-.0938	.0052	.009
19	22.525	-.0209	.2446	22.525	-.0314	-.1586		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   .00237
CORRECTED MACH NUMBER =   .76729
CORRECTION TO AOA (DEG)= -.05073

TEST : 224
RUN : 19

POINT: 122
MACH = .765

TOTAL T= 506.66 R
UINF = 798.54 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0424	.0359	-24.225	.0462	.0170	-.0038	-.102
3	-18.475	-.0001	.0998	-18.475	.0156	.0774	.0023	-.071
4	-13.475	.0120	.1695	-13.475	.0274	.1260	.0040	-.094
5	-9.475	-.0254	.2828	-9.475	.0433	.1469	.0036	-.123
6	-6.475	-.0169	.3736	-6.475	.0559	.1575	.0021	-.115
7	-4.475	-.0595	.4596	-4.475	.0801	.1568	.0004	-.106
8	-2.975	-.0638	.5305	-2.975	.0832	.1477	-.0011	-.092
9	-1.475	-.1930	.6343	-1.475	.0823	.1230	-.0029	-.071
10	.025	-.2356	.7097	.025	.0798	.0896	-.0044	-.043
11	1.525	-.3196	.7488	1.525	.0403	.0560	-.0051	-.012
12	3.025	-.1731	.6964	3.025	.0608	.0630	-.0047	.015
13	4.525	-.1298	.6367	4.525	.0582	.0669	-.0034	.035
14	6.525	-.0857	.5518	6.525	.0657	.0730	-.0015	.052
15	8.525	-.0335	.4827	8.525	.0523	.0610	.0001	.054
16	10.525	-.0129	.4266	10.525	.0432	.0414	.0012	.043
17	13.525	-.0289	.3822	13.525	.0320	-.0125	.0021	.030
18	17.525	-.0255	.3291	17.525	-.0011	-.0848	.0026	.023
19	22.525	-.0161	.2708	22.525	-.0240	-.1535		

CORRECTIONS AT AIRFOIL QUARTER CHORD:

DELTA M   = -.00438
CORRECTED MACH NUMBER   = .76060
CORRECTION TO AOA (DEG)= -.04396

TEST : 224
RUN : 19

POINT: 123
MACH = .765

TOTAL T= 506.67 R
UINF = 798.54 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0419	.0359	-24.225	.0455	.0171	-.0033	-.107
3	-18.475	-.0006	.0998	-18.475	.0155	.0774	.0028	-.077
4	-13.475	.0149	.1694	-13.475	.0295	.1260	.0044	-.103
5	-9.475	-.0242	.2830	-9.475	.0446	.1471	.0045	-.134
6	-6.475	-.0163	.3741	-6.475	.0582	.1577	.0037	-.124
7	-4.475	-.0687	.4601	-4.475	.0800	.1572	.0028	-.110
8	-2.975	-.0640	.5311	-2.975	.0818	.1478	.0019	-.091
9	-1.475	-.2031	.6350	-1.475	.0781	.1230	.0010	-.065
10	.025	-.2545	.7105	.025	.0678	.0896	.0003	-.031
11	1.525	-.3553	.7496	1.525	.0280	.0568	.0003	.007
12	3.025	-.1920	.6972	3.025	.0426	.0628	.0013	.038
13	4.525	-.1503	.6374	4.525	.0336	.0665	.0030	.058
14	6.525	-.1058	.5530	6.525	.0451	.0728	.0052	.070
15	8.525	-.0532	.4835	8.525	.0318	.0606	.0070	.066
16	10.525	-.0320	.4275	10.525	.0231	.0410	.0080	.052
17	13.525	-.0457	.3827	13.525	.0135	-.0128	.0085	.034
18	17.525	-.0372	.3296	17.525	-.0146	-.0852	.0082	.020
19	22.525	-.0288	.2716	22.525	-.0403	-.1539		

CORRECTIONS AT AIRFOIL QUARTER CHORD:

DELTA M   = .00028
CORRECTED MACH NUMBER   = .76525
CORRECTION TO AOA (DEG)= -.03134

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   19                    ADAPTIVE WALL TEST SECTION

POINT:  124                                        TOTAL T= 506.60 R
MACH = .765                                        UINF  = 798.48 FPS

 NO      X       CPT      ZT       X        CPB       ZB        DM        DA

  1  -29.475   .0000   .0000   -29.475   .0000    .0000
  2  -24.225   .0435   .0357   -24.225   .0458    .0249   -.0037    -.104
  3  -18.475   .0027   .1027   -18.475   .0175    .0832    .0025    -.096
  4  -13.475   .0099   .1707   -13.475   .0308    .1327    .0047    -.101
  5   -9.475  -.0253   .2906    -9.475   .0441    .1581    .0050    -.113
  6   -6.475  -.0183   .3858    -6.475   .0585    .1738    .0039    -.107
  7   -4.475  -.0810   .4769    -4.475   .0769    .1745    .0024    -.103
  8   -2.975  -.0675   .5575    -2.975   .0851    .1611    .0006    -.095
  9   -1.475  -.1942   .6678    -1.475   .0851    .1319   -.0014    -.081
 10     .025  -.2561   .7467      .025   .0836    .0941   -.0032    -.056
 11    1.525  -.3422   .7881     1.525   .0468    .0540   -.0041    -.024
 12    3.025  -.1870   .7340     3.025   .0511    .0534   -.0038     .007
 13    4.525  -.1477   .6747     4.525   .0477    .0523   -.0028     .030
 14    6.525  -.0918   .5965     6.525   .0540    .0546   -.0013     .044
 15    8.525  -.0392   .5188     8.525   .0561    .0409    .0000     .046
 16   10.525  -.0193   .4594    10.525   .0453    .0207    .0010     .046
 17   13.525  -.0329   .4134    13.525   .0290   -.0282    .0018     .039
 18   17.525  -.0239   .3548    17.525   .0018   -.1018    .0017     .021
 19   22.525  -.0111   .2930    22.525  -.0162   -.1759

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =   -.00319
CORRECTED MACH NUMBER      =    .76178
CORRECTION TO AOA (DEG)=       -.05692


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   20                    ADAPTIVE WALL TEST SECTION

POINT:  125                                        TOTAL T= 506.20 R
MACH = .765                                        UINF  = 798.16 FPS

 NO      X       CPT      ZT       X        CPB       ZB        DM        DA

  1  -29.475   .0000   .0000   -29.475   .0000    .0000
  2  -24.225   .0561   .0320   -24.225   .0437    .0202   -.0062    -.039
  3  -18.475   .0101   .0775   -18.475   .0229    .0561   -.0006    -.078
  4  -13.475   .0139   .1238   -13.475   .0270    .0861    .0022    -.075
  5   -9.475  -.0196   .2110    -9.475   .0323    .0914    .0030    -.076
  6   -6.475  -.0090   .2792    -6.475   .0425    .0915    .0024    -.062
  7   -4.475  -.0438   .3431    -4.475   .0468    .0840    .0014    -.059
  8   -2.975  -.0424   .4042    -2.975   .0440    .0653    .0001    -.056
  9   -1.475  -.1302   .4864    -1.475   .0436    .0351   -.0014    -.048
 10     .025  -.2042   .5482      .025   .0270    .0049   -.0028    -.037
 11    1.525  -.2002   .5780     1.525  -.0003   -.0240   -.0034    -.025
 12    3.025  -.1255   .5395     3.025   .0153   -.0165   -.0031    -.014
 13    4.525  -.1051   .4977     4.525   .0317   -.0022   -.0020    -.004
 14    6.525  -.0701   .4347     6.525   .0477    .0136   -.0002     .009
 15    8.525  -.0298   .3788     8.525   .0391    .0132    .0012     .017
 16   10.525  -.0121   .3403    10.525   .0327    .0014    .0020     .015
 17   13.525  -.0225   .3150    13.525   .0227   -.0345    .0024    -.001
 18   17.525  -.0232   .2805    17.525  -.0035   -.0962    .0019    -.031
 19   22.525  -.0051   .2413    22.525  -.0181   -.1560

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =   -.00277
CORRECTED MACH NUMBER      =    .76219
CORRECTION TO AOA (DEG)=       -.03676
```

TEST : 224
RUN : 20

NASA LANGLEY 0.3-M TCT
ADAPTIVE WALL TEST SECTION

POINT: 126
MACH = .765

TOTAL T= 506.20 R
UINF = 797.99 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0477	.0319	-24.225	.0387	.0205	-.0043	-.082
3	-18.475	.0034	.0825	-18.475	.0205	.0608	.0007	-.094
4	-13.475	.0179	.1390	-13.475	.0316	.0972	.0021	-.088
5	-9.475	-.0171	.2352	-9.475	.0407	.1093	.0024	-.103
6	-6.475	-.0076	.3119	-6.475	.0484	.1129	.0016	-.096
7	-4.475	-.0490	.3838	-4.475	.0649	.1078	.0005	-.090
8	-2.975	-.0492	.4440	-2.975	.0663	.0932	-.0005	-.077
9	-1.475	-.1611	.5393	-1.475	.0593	.0651	-.0017	-.059
10	.025	-.2049	.6006	.025	.0472	.0388	-.0026	-.040
11	1.525	-.2642	.6287	1.525	.0055	.0115	-.0029	-.023
12	3.025	-.1378	.5874	3.025	.0346	.0170	-.0024	-.009
13	4.525	-.1208	.5401	4.525	.0357	.0264	-.0015	.000
14	6.525	-.0607	.4726	6.525	.0595	.0357	.0001	.005
15	8.525	-.0335	.4082	8.525	.0448	.0266	.0016	.008
16	10.525	-.0175	.3653	10.525	.0356	.0104	.0028	.007
17	13.525	-.0290	.3308	13.525	.0201	-.0323	.0038	-.005
18	17.525	-.0251	.2902	17.525	-.0072	-.0963	.0041	-.036
19	22.525	-.0258	.2379	22.525	-.0282	-.1655		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -

DELTA M   = -.00261
CORRECTED MACH NUMBER   =   .76217
CORRECTION TO AOA (DEG)= -.04026

TEST : 224
RUN : 20

NASA LANGLEY 0.3-M TCT
ADAPTIVE WALL TEST SECTION

POINT: 127
MACH = .765

TOTAL T= 506.56 R
UINF = 798.32 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0458	.0370	-24.225	.0405	.0284	-.0037	-.087
3	-18.475	.0029	.0965	-18.475	.0187	.0782	.0018	-.109
4	-13.475	.0147	.1627	-13.475	.0318	.1188	.0034	-.113
5	-9.475	-.0269	.2716	-9.475	.0429	.1395	.0039	-.116
6	-6.475	-.0178	.3588	-6.475	.0563	.1528	.0031	-.094
7	-4.475	-.0598	.4438	-4.475	.0723	.1554	.0021	-.086
8	-2.975	-.0589	.5142	-2.975	.0794	.1458	.0011	-.078
9	-1.475	-.1918	.6153	-1.475	.0731	.1199	-.0001	-.064
10	.025	-.2384	.6898	.025	.0656	.0900	-.0011	-.045
11	1.525	-.3343	.7261	1.525	.0232	.0607	-.0013	-.024
12	3.025	-.1794	.6762	3.025	.0429	.0620	-.0009	-.006
13	4.525	-.1427	.6192	4.525	.0420	.0629	.0001	.009
14	6.525	-.0902	.5364	6.525	.0580	.0662	.0015	.025
15	8.525	-.0404	.4696	8.525	.0461	.0524	.0025	.031
16	10.525	-.0164	.4157	10.525	.0402	.0292	.0031	.027
17	13.525	-.0308	.3725	13.525	.0247	-.0198	.0037	.017
18	17.525	-.0261	.3232	17.525	-.0041	-.0943	.0034	-.006
19	22.525	-.0197	.2670	22.525	-.0222	-.1703		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -

DELTA M   = -.00104
CORRECTED MACH NUMBER   =   .76379
CORRECTION TO AOA (DEG)= -.04530

54

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TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   20                   ADAPTIVE WALL TEST SECTION

POINT:  128                                        TOTAL T= 506.69 R
MACH = .765                                        UINF   = 798.47 FPS

 NO      X       CPT      ZT        X       CPB      ZB        DM       DA

  1  -29.475   .0000    .0000   -29.475   .0000    .0000
  2  -24.225   .0405    .0368   -24.225   .0363    .0282    -.0023    -.103
  3  -18.475  -.0025    .1004   -18.475   .0168    .0783     .0028    -.103
  4  -13.475   .0147    .1728   -13.475   .0311    .1243     .0037    -.104
  5   -9.475  -.0251    .2874    -9.475   .0463    .1479     .0035    -.124
  6   -6.475  -.0166    .3786    -6.475   .0630    .1611     .0023    -.105
  7   -4.475  -.0655    .4671    -4.475   .0847    .1631     .0011    -.091
  8   -2.975  -.0607    .5396    -2.975   .0858    .1571    -.0002    -.080
  9   -1.475  -.1976    .6458    -1.475   .0838    .1300    -.0016    -.065
 10     .025  -.2458    .7215      .025   .0755    .0977    -.0030    -.045
 11    1.525  -.3365    .7613     1.525   .0383    .0610    -.0037    -.018
 12    3.025  -.1858    .7065     3.025   .0569    .0604    -.0035     .009
 13    4.525  -.1383    .6498     4.525   .0527    .0589    -.0028     .033
 14    6.525  -.0817    .5702     6.525   .0672    .0587    -.0016     .056
 15    8.525  -.0363    .4984     8.525   .0565    .0439    -.0005     .065
 16   10.525  -.0154    .4442    10.525   .0455    .0222     .0004     .065
 17   13.525  -.0256    .3975    13.525   .0293   -.0278     .0013     .051
 18   17.525  -.0214    .3433    17.525   .0010   -.1021     .0017     .026
 19   22.525  -.0139    .2832    22.525  -.0243   -.1707

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =    -.00295
CORRECTED MACH NUMBER      =     .76193
CORRECTION TO AOA (DEG)=        -.04497


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   20                   ADAPTIVE WALL TEST SECTION

POINT:  129                                        TOTAL T= 506.70 R
MACH = .765                                        UINF   = 798.57 FPS

 NO      X       CPT      ZT        X       CPB      ZB        DM       DA

  1  -29.475   .0000    .0000   -29.475   .0000    .0000
  2  -24.225   .0420    .0370   -24.225   .0428    .0285    -.0027    -.082
  3  -18.475   .0003    .1094   -18.475   .0167    .0829     .0033    -.073
  4  -13.475   .0093    .1794   -13.475   .0283    .1344     .0059    -.079
  5   -9.475  -.0350    .2976    -9.475   .0380    .1603     .0069    -.088
  6   -6.475  -.0224    .3948    -6.475   .0529    .1751     .0060    -.080
  7   -4.475  -.0678    .4871    -4.475   .0738    .1759     .0050    -.083
  8   -2.975  -.0709    .5615    -2.975   .0695    .1698     .0038    -.083
  9   -1.475  -.2166    .6689    -1.475   .0719    .1367     .0023    -.073
 10     .025  -.2669    .7495      .025   .0626    .1017     .0008    -.052
 11    1.525  -.3582    .7936     1.525   .0366    .0661     .0000    -.027
 12    3.025  -.1912    .7415     3.025   .0349    .0632     .0001    -.008
 13    4.525  -.1530    .6841     4.525   .0328    .0589     .0008     .003
 14    6.525  -.1041    .6013     6.525   .0456    .0590     .0019     .009
 15    8.525  -.0460    .5254     8.525   .0450    .0448     .0026     .011
 16   10.525  -.0265    .4706    10.525   .0384    .0222     .0028     .010
 17   13.525  -.0323    .4207    13.525   .0314   -.0298     .0024     .008
 18   17.525  -.0183    .3662    17.525   .0097   -.1043     .0015     .010
 19   22.525  -.0160    .2997    22.525  -.0218   -.1756

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                    =     .00086
CORRECTED MACH NUMBER      =     .76584
CORRECTION TO AOA (DEG)=        -.05243
```

```
TEST : 224                        NASA LANGLEY 0.3-M TCT
RUN  :  20                      ADAPTIVE WALL TEST SECTION

POINT: 130                                        TOTAL T= 506.73 R
MACH = .765                                       UINF  = 798.69 FPS

 NO      X      CPT      ZT       X       CPB      ZB       DM       DA

  1  -29.475  .0000   .0000   -29.475   .0000   .0000
  2  -24.225  .0376   .0370   -24.225   .0375   .0283   -.0013   -.119
  3  -18.475 -.0043   .1096   -18.475   .0148   .0805    .0038   -.118
  4  -13.475  .0214   .1862   -13.475   .0386   .1258    .0039   -.136
  5   -9.475 -.0287   .3079    -9.475   .0476   .1478    .0040   -.161
  6   -6.475 -.0157   .4046    -6.475   .0737   .1582    .0027   -.135
  7   -4.475 -.0796   .5005    -4.475   .0893   .1558    .0011   -.106
  8   -2.975 -.0680   .5815    -2.975   .0977   .1440   -.0005   -.078
  9   -1.475 -.2110   .6951    -1.475   .1011   .1112   -.0022   -.045
 10     .025 -.2639   .7779      .025   .0897   .0763   -.0036   -.009
 11    1.525 -.3546   .8224     1.525   .0380   .0347   -.0042    .024
 12    3.025 -.1824   .7689     3.025   .0496   .0328   -.0039    .047
 13    4.525 -.1526   .7118     4.525   .0450   .0268   -.0029    .063
 14    6.525 -.0997   .6305     6.525   .0572   .0266   -.0013    .078
 15    8.525 -.0513   .5545     8.525   .0466   .0138    .0001    .085
 16   10.525 -.0259   .4978    10.525   .0424  -.0087    .0008    .085
 17   13.525 -.0293   .4500    13.525   .0307  -.0564    .0011    .073
 18   17.525 -.0196   .3901    17.525   .0039  -.1313    .0011    .039
 19   22.525 -.0126   .3217    22.525  -.0203  -.2008
```

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -

```
DELTA M                   =  -.00362
CORRECTED MACH NUMBER     =   .76146
CORRECTION TO AOA (DEG)=   -.00916
```

```
TEST : 224                        NASA LANGLEY 0.3-M TCT
RUN  :  20                      ADAPTIVE WALL TEST SECTION

POINT: 131                                        TOTAL T= 506.72 R
MACH = .765                                       UINF  = 798.66 FPS

 NO      X      CPT      ZT       X       CPB      ZB       DM       DA

  1  -29.475  .0000   .0000   -29.475   .0000   .0000
  2  -24.225  .0490   .0367   -24.225   .0461   .0281   -.0039   -.126
  3  -18.475  .0093   .1083   -18.475   .0268   .0795    .0008   -.138
  4  -13.475  .0249   .1838   -13.475   .0423   .1239    .0021   -.158
  5   -9.475 -.0184   .3045    -9.475   .0566   .1456    .0029   -.185
  6   -6.475 -.0148   .4001    -6.475   .0733   .1555    .0026   -.161
  7   -4.475 -.0732   .4949    -4.475   .0953   .1529    .0019   -.133
  8   -2.975 -.0653   .5753    -2.975   .0988   .1410    .0011   -.102
  9   -1.475 -.2148   .6880    -1.475   .1001   .1081    .0004   -.062
 10     .025 -.2770   .7699      .025   .0838   .0734    .0000   -.015
 11    1.525 -.3889   .8138     1.525   .0317   .0351    .0005    .031
 12    3.025 -.2087   .7611     3.025   .0336   .0305    .0017    .067
 13    4.525 -.1793   .7045     4.525   .0236   .0249    .0033    .091
 14    6.525 -.1235   .6239     6.525   .0295   .0252    .0053    .108
 15    8.525 -.0704   .5495     8.525   .0275   .0127    .0065    .111
 16   10.525 -.0387   .4929    10.525   .0278  -.0093    .0070    .106
 17   13.525 -.0404   .4458    13.525   .0146  -.0563    .0070    .084
 18   17.525 -.0334   .3866    17.525  -.0112  -.1319    .0067    .038
 19   22.525 -.0267   .3188    22.525  -.0363  -.2003
```

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -

```
DELTA M                   =   .00003
CORRECTED MACH NUMBER     =   .76509
CORRECTION TO AOA (DEG)=   -.01570
```

```
TEST  :  224                     NASA LANGLEY 0.3-M TCT
RUN   :   21                   ADAPTIVE WALL TEST SECTION

POINT:  132                                          TOTAL T= 505.38 R
MACH = .700                                          UINF   = 735.81 FPS

  NO      X        CPT       ZT        X        CPB       ZB        DM        DA

   1  -29.475    .0000    .0000    -29.475    .0000    .0000
   2  -24.225    .0404    .0216    -24.225    .0180    .0176    -.0015    -.054
   3  -18.475   -.0018    .0433    -18.475    .0109    .0328     .0019    -.121
   4  -13.475    .0075    .0726    -13.475    .0179    .0433     .0033    -.095
   5   -9.475   -.0202    .1312     -9.475    .0140    .0380     .0041    -.088
   6   -6.475   -.0126    .1768     -6.475    .0116    .0253     .0037    -.083
   7   -4.475   -.0278    .2222     -4.475    .0213    .0067     .0028    -.082
   8   -2.975   -.0217    .2642     -2.975    .0146   -.0156     .0018    -.078
   9   -1.475   -.0909    .3204     -1.475    .0033   -.0433     .0008    -.070
  10     .025   -.0983    .3698       .025    .0058   -.0745    -.0001    -.059
  11    1.525   -.1286    .3904      1.525   -.0307   -.0903    -.0005    -.048
  12    3.025   -.0776    .3760      3.025    .0040   -.0842    -.0004    -.037
  13    4.525   -.0834    .3520      4.525    .0050   -.0675     .0002    -.026
  14    6.525   -.0537    .3129      6.525    .0273   -.0449     .0010    -.014
  15    8.525   -.0248    .2731      8.525    .0245   -.0386     .0018    -.009
  16   10.525   -.0124    .2472     10.525    .0214   -.0421     .0021    -.011
  17   13.525   -.0258    .2328     13.525    .0134   -.0649     .0019    -.025
  18   17.525   -.0122    .2152     17.525    .0029   -.1201     .0002    -.044
  19   22.525    .0043    .1919     22.525   -.0099   -.1712

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                      =   -.00006
CORRECTED MACH NUMBER        =    .69965
CORRECTION TO AOA (DEG)=          -.05966


TEST  :  224                     NASA LANGLEY 0.3-M TCT
RUN   :   21                   ADAPTIVE WALL TEST SECTION

POINT:  133                                          TOTAL T= 505.39 R
MACH = .700                                          UINF   = 735.80 FPS

  NO      X        CPT       ZT        X        CPB       ZB        DM        DA

   1  -29.475    .0000    .0000    -29.475    .0000    .0000
   2  -24.225    .0379    .0221    -24.225    .0308    .0215    -.0024    -.063
   3  -18.475   -.0031    .0630    -18.475    .0110    .0618     .0016    -.069
   4  -13.475    .0100    .1117    -13.475    .0210    .0903     .0027    -.069
   5   -9.475   -.0245    .1941     -9.475    .0253    .0968     .0029    -.077
   6   -6.475   -.0197    .2579     -6.475    .0279    .0964     .0021    -.072
   7   -4.475   -.0395    .3166     -4.475    .0437    .0886     .0010    -.073
   8   -2.975   -.0470    .3612     -2.975    .0339    .0732    -.0002    -.069
   9   -1.475   -.1156    .4343     -1.475    .0391    .0455    -.0015    -.059
  10     .025   -.1263    .4774       .025    .0414    .0154    -.0027    -.043
  11    1.525   -.1411    .5037      1.525    .0082   -.0099    -.0033    -.026
  12    3.025   -.0880    .4802      3.025    .0249   -.0047    -.0032    -.011
  13    4.525   -.0921    .4510      4.525    .0280    .0084    -.0026     .000
  14    6.525   -.0603    .3975      6.525    .0450    .0229    -.0016     .009
  15    8.525   -.0271    .3536      8.525    .0319    .0202    -.0009     .009
  16   10.525   -.0087    .3202     10.525    .0330    .0070    -.0005     .001
  17   13.525   -.0210    .2892     13.525    .0239   -.0274    -.0005    -.009
  18   17.525   -.0119    .2557     17.525    .0081   -.0794    -.0011    -.009
  19   22.525    .0047    .2174     22.525   -.0065   -.1373

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
DELTA M                      =   -.00266
CORRECTED MACH NUMBER        =    .69703
CORRECTION TO AOA (DEG)=          -.04368
```

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN : 21   ADAPTIVE WALL TEST SECTION

POINT: 134   TOTAL T= 505.46 R
MACH = .700   UINF = 735.72 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0445	.0258	-24.225	.0368	.0218	-.0038	-.083
3	-18.475	.0059	.0701	-18.475	.0197	.0620	-.0003	-.100
4	-13.475	.0137	.1211	-13.475	.0277	.0911	.0009	-.098
5	-9.475	-.0171	.2111	-9.475	.0363	.0980	.0011	-.100
6	-6.475	-.0182	.2753	-6.475	.0385	.1008	.0009	-.081
7	-4.475	-.0465	.3364	-4.475	.0515	.1002	.0004	-.071
8	-2.975	-.0462	.3831	-2.975	.0485	.0873	-.0002	-.060
9	-1.475	-.1337	.4536	-1.475	.0455	.0611	-.0010	-.046
10	.025	-.1347	.5015	.025	.0421	.0406	-.0016	-.031
11	1.525	-.1505	.5231	1.525	.0106	.0173	-.0019	-.020
12	3.025	-.1056	.4983	3.025	.0272	.0186	-.0016	-.012
13	4.525	-.0992	.4690	4.525	.0280	.0241	-.0009	-.004
14	6.525	-.0672	.4164	6.525	.0409	.0332	.0001	.007
15	8.525	-.0294	.3645	8.525	.0399	.0262	.0010	.017
16	10.525	-.0224	.3291	10.525	.0296	.0123	.0017	.026
17	13.525	-.0277	.3049	13.525	.0166	-.0226	.0020	.022
18	17.525	-.0143	.2723	17.525	-.0019	-.0762	.0018	-.012
19	22.525	-.0174	.2176	22.525	-.0192	-.1369		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   -.00162
CORRECTED MACH NUMBER =   .69794
CORRECTION TO AOA (DEG)=   -.03123

TEST : 224   NASA LANGLEY 0.3-M TCT
RUN : 21   ADAPTIVE WALL TEST SECTION

POINT: 135   TOTAL T= 505.48 R
MACH = .700   UINF = 735.77 FPS

NO	X	CPT	ZT	X	CPB	ZB	DM	DA
1	-29.475	.0000	.0000	-29.475	.0000	.0000		
2	-24.225	.0463	.0354	-24.225	.0339	.0366	-.0038	-.083
3	-18.475	-.0010	.0874	-18.475	.0170	.0764	-.0001	-.121
4	-13.475	.0137	.1478	-13.475	.0323	.1195	.0006	-.111
5	-9.475	-.0233	.2485	-9.475	.0407	.1381	.0005	-.121
6	-6.475	-.0212	.3232	-6.475	.0506	.1468	-.0002	-.105
7	-4.475	-.0648	.3934	-4.475	.0643	.1481	-.0011	-.091
8	-2.975	-.0553	.4476	-2.975	.0699	.1399	-.0019	-.077
9	-1.475	-.1497	.5205	-1.475	.0702	.1214	-.0029	-.059
10	.025	-.1558	.5660	.025	.0676	.0990	-.0036	-.039
11	1.525	-.1773	.5819	1.525	.0338	.0732	-.0041	-.020
12	3.025	-.1185	.5569	3.025	.0470	.0714	-.0042	-.005
13	4.525	-.1022	.5261	4.525	.0461	.0689	-.0040	.006
14	6.525	-.0600	.4679	6.525	.0611	.0693	-.0036	.015
15	8.525	-.0250	.4105	8.525	.0544	.0540	-.0032	.021
16	10.525	-.0090	.3685	10.525	.0480	.0341	-.0028	.025
17	13.525	-.0192	.3312	13.525	.0307	-.0098	-.0024	.022
18	17.525	-.0083	.2815	17.525	.0163	-.0676	-.0021	.025
19	22.525	-.0057	.2241	22.525	-.0071	-.1321		

CORRECTIONS AT AIRFOIL QUARTER CHORD:
- -
DELTA M   =   -.00362
CORRECTED MACH NUMBER =   .69597
CORRECTION TO AOA (DEG)=   -.03927

```
TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   21                    ADAPTIVE WALL TEST SECTION

POINT:  136                                     TOTAL  T= 505.66 R
MACH = .700                                     UINF   = 735.95 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1   -29.475    .0000     .0000    -29.475    .0000     .0000
  2   -24.225    .0356     .0363    -24.225    .0432     .0261    -.0033    -.117
  3   -18.475   -.0024     .1012    -18.475    .0148     .0896     .0007    -.082
  4   -13.475    .0106     .1717    -13.475    .0303     .1468     .0020    -.097
  5    -9.475   -.0341     .2821     -9.475    .0423     .1798     .0025    -.108
  6    -6.475   -.0346     .3672     -6.475    .0531     .2038     .0021    -.091
  7    -4.475   -.0796     .4439     -4.475    .0687     .2117     .0011    -.080
  8    -2.975   -.0817     .5090     -2.975    .0766     .2077     .0000    -.069
  9    -1.475   -.1811     .5970     -1.475    .0836     .1874    -.0014    -.050
 10     .025    -.1898     .6438      .025     .0856     .1534    -.0026    -.022
 11    1.525    -.2030     .6699     1.525     .0544     .1180    -.0032     .012
 12    3.025    -.1415     .6258     3.025     .0609     .1309    -.0031     .040
 13    4.525    -.1157     .5907     4.525     .0541     .1273    -.0025     .057
 14    6.525    -.0765     .5228     6.525     .0635     .1272    -.0015     .065
 15    8.525    -.0409     .4594     8.525     .0477     .1079    -.0005     .064
 16   10.525    -.0228     .4069    10.525     .0382     .0859     .0003     .059
 17   13.525    -.0316     .3603    13.525     .0250     .0371     .0009     .050
 18   17.525    -.0222     .3069    17.525     .0054    -.0341     .0004     .054
 19   22.525    -.0020     .2505    22.525    -.0032    -.1119

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                    =   -.00260
CORRECTED MACH NUMBER      =    .69705
CORRECTION TO AOA (DEG)=       -.02221


TEST :  224                    NASA LANGLEY 0.3-M TCT
RUN  :   21                    ADAPTIVE WALL TEST SECTION

POINT:  137                                     TOTAL  T= 505.80 R
MACH = .700                                     UINF   = 736.07 FPS

 NO      X        CPT       ZT        X        CPB       ZB        DM        DA

  1   -29.475    .0000     .0000    -29.475    .0000     .0000
  2   -24.225    .0382     .0361    -24.225    .0454     .0367    -.0043    -.132
  3   -18.475    .0014     .1124    -18.475    .0200     .1045    -.0005    -.095
  4   -13.475    .0111     .1922    -13.475    .0356     .1726     .0009    -.104
  5    -9.475   -.0384     .3200     -9.475    .0452     .2120     .0011    -.120
  6    -6.475   -.0407     .4166     -6.475    .0654     .2391     .0002    -.099
  7    -4.475   -.0876     .5025     -4.475    .0862     .2517    -.0009    -.078
  8    -2.975   -.0945     .5748     -2.975    .0931     .2530    -.0020    -.060
  9    -1.475   -.2101     .6604     -1.475    .0978     .2378    -.0032    -.040
 10     .025    -.2211     .7113      .025     .0934     .2191    -.0043    -.021
 11    1.525    -.2162     .7212     1.525     .0648     .1936    -.0052    -.006
 12    3.025    -.1359     .6833     3.025     .0798     .1853    -.0057     .005
 13    4.525    -.1215     .6373     4.525     .0704     .1722    -.0060     .016
 14    6.525    -.0686     .5681     6.525     .0879     .1613    -.0061     .032
 15    8.525    -.0305     .4957     8.525     .0721     .1350    -.0060     .046
 16   10.525    -.0048     .4406    10.525     .0676     .1043    -.0059     .061
 17   13.525    -.0185     .3826    13.525     .0489     .0526    -.0057     .079
 18   17.525     .0052     .3298    17.525     .0296    -.0241    -.0062     .091
 19   22.525     .0148     .2578    22.525     .0150    -.1039

CORRECTIONS AT AIRFOIL QUARTER CHORD:
-------------------------------------
DELTA M                    =   -.00431
CORRECTED MACH NUMBER      =    .69535
CORRECTION TO AOA (DEG)=       -.02127
```

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16. Abstract

This report examines the residual interferences present in the testing of a CAST10-2/DOA2 airfoil model the Langley 0.3-m Transonic Cryogenic Tunnel (0.3-m TCT). The 7.1-inch chord airfoil model was tested in the 0.3-m TCT adaptive wall test section with a nominal 13-inch square cross-section. The test data obtained on the same model during different tunnel entries showed different levels of residual interference. The present study shows that for valid comparison of the test data from adaptive wall tunnels, it is necessary to account for residual interferences, in particular the blockage correction to the Mach number.

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