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TRANSONIC PRESSURE MEASUREMENTS AND COMPARISON OF THEORY TO EXPERIMENT FOR AN ARROW-WING CONFIGURATION

Volume II: Experimental Data Report–Effects of Control Surface Deflection

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Thomas H. Hallstaff, and John T. Rogers

October 1975

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16. Abstract

A wind tunnel test of an arrow-wing-body configuration consisting of flat and twisted wings, as well as a variety of leading- and trailing-edge control surface deflections, has been conducted at Mach numbers from 0.4 to 1.1 to provide an experimental pressure data base for comparison with theoretical methods. Theory-to-experiment comparisons of detailed pressure distributions have been made using current state-of-the-art attached and separated flow methods. The purpose of these comparisons was to delineate conditions under which these theories are valid for both flat and twisted wings and to explore the use of empirical methods to correct the theoretical methods where theory is deficient.

This volume presents the experimental results showing the effects of full- and partial-span trailing-edge control surface deflection and partial-span leading-edge control surface deflection. Experimental data for the base configuration (flat wing) and the effects of wing twist, leading-edge shape, and leading-edge droop are presented in NASA CR-132727. NASA CR-132729 presents detailed comparisons of the experimental results with the predictions of attached flow methods. NASA CR-2610 summarizes the results of the entire investigation and discusses both the experimental results and theory-to-experiment comparisons.

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TRANSONIC PRESSURE MEASUREMENTS AND COMPARISON OF THEORY TO EXPERIMENT FOR AN ARROW-WING CONFIGURATION

VOLUME II: EXPERIMENTAL DATA REPORT-EFFECTS OF CONTROL SURFACE DEFLECTION

by Marjorie E. Manro, Kenneth J. R. Manning, Thomas H. Hallstaff,
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SUMMARY

A wind tunnel test of an arrow-wing body configuration consisting of flat and twisted wings, as well as a variety of leading- and trailing-edge control surface deflections, has been conducted at Mach numbers from 0.4 to 1.1 to provide an experimental pressure data base for comparison with theoretical methods. Theory-to-experiment comparisons of detailed pressure distributions have been made using current state-of-the-art attached and separated flow methods. The purpose of these comparisons was to delineate conditions under which these theories are valid for both flat and twisted wings and to explore the use of empirical methods to correct the theoretical methods where theory is deficient. The results of attempting to make empirical corrections to the theoretical methods and of using two-dimensional separation criteria to predict flow separation are shown.

This volume presents the experimental results showing the effects of full- and partial-span trailing-edge control surface deflection and partial-span leading-edge control surface deflection. Experimental data for the base configuration (flat wing) and the effects of wing twist, leading-edge shape, and leading-edge droop are presented in NASA CR-132727. NASA CR-132729 presents detailed comparisons of the experimental results with the predictions of attached flow methods. NASA CR-2610 summarizes the results of the entire investigation and discusses both the experimental results and the theory-to-experiment comparisons.

INTRODUCTION

Accurate analytical techniques for the prediction of the magnitude and distribution of aeroelastic loads are required in order to design, in an optimum manner, the structure of large flexible aircraft. Uncertainties in the characteristics of loads may result in an improper accounting for aeroelastic effects, leading to understrength or overweight designs and unacceptable fatigue life. Moreover, correct prediction of loads and the resultant structural deformations is essential to the determination of the aircraft stability and control characteristics and control power requirements. The alternative to the use of satisfactory analytical techniques is exorbitantly expensive, time-consuming wind tunnel testing for each aircraft configuration.

The problem of accurate load prediction becomes particularly acute for aircraft where critical design conditions occur in the transonic speed regime. In this region, at typical design angles of attack, the predictions are clouded by mixed flow, embedded shocks, separation, and vortex flow. The degree to which the intelligent application of either the best state-of-the-art theoretical techniques or a combination of theory and experiment can account for these flow conditions is known in only a few circumstances. Clearly, if we are to continue to improve the accuracy of our predictive techniques as well as quantify their limitations, detailed comparisons of theoretical and experimental pressures on configurations of interest must be made on a continuing basis.

In the design process, pressure data obtained from wind tunnel tests on a single wing shape (with twist and camber) are translated by means of an aeroelastic solution to the load distributions for the elastically deformed airplane. In this solution, equations are used which relate the changes in local pressure to changes in structural deformation. For typical high aspect ratio configurations at subsonic speeds, methods of incorporating experimental data in the elastic solution are well developed and have been substantiated by flight tests. However, for typical low aspect ratio configurations and/or transonic flight conditions where various nonlinear phenomena become important, no satisfactory methods have been developed for correcting the aeroelastic solutions with experimental data from rigid models. Until such a tool is available, the need will remain for wind tunnel test programs simulating each flight design condition on the flexible airplane.

While analytical methods for loads estimation exist, they do not cover the necessary ranges of configuration and critical flight conditions associated with large supersonic airplanes. The most serious situation is the lack of analytical procedures of verified accuracy for the determination of loads in the critical transonic speed regime. One reason for this situation is the newness of many of the techniques; another is the scarcity of the experimental pressure data required to validate the techniques. One comprehensive set of data for variations of wing twist of a 45^0 sweep wing was obtained by Mr. John P. Mugler, Jr., of the NASA Langley Research Center (refs. 1 through 5).

The purpose of this study was to obtain some of the required experimental data for a highly swept thin wing at subsonic and transonic Mach numbers and, at the same time, to provide comparisons with analytical predictions using some of the most advanced methods available. The study was viewed as a two-part effort consisting of an experimental task and a theory comparison task.

The objective of the experimental task was to provide measured load distributions on models which are deformed to simulate representative twist distributions and which have deflectable leading- and trailing-edge control surfaces. These load distributions were used in the theoretical task to assess the adequacy of existing analytical methods of estimation and to determine empirical corrections to methods that are not fully adequate in themselves.

The model chosen for this study was a wing-body combination with a leading-edge sweep of 71.2^0 and a wing thickness of 3.3% (see fig. 1). Model components included both flat and twisted wings, deflectable full-span and half-span leading- and trailing-edge control surfaces, and both rounded and sharp leading edges. The tests were conducted in the Boeing Transonic Wind Tunnel and covered the Mach range from 0.4 to 1.1 with angles of attack from -8^0 to +16^0 . The measurements included pressure data on both the wing and body, wing deflection measurements, total force and moment data, and oil flow pictures.

The theoretical calculations were carried out using current state-of-the-art linear and advanced separated-vortex techniques to predict detailed pressures over both the flat and twisted wings. Comparisons of theoretical and experimental pressures for both wings were made as well as for the incremental pressure due to twist. The latter is of interest since the calculation is similar to that required to correct basic wind tunnel results from rigid models for incremental aeroelastic effects. In addition, an empirical prediction of the incremental pressures was attempted by developing correctors to apply to the aerodynamic influence coefficient (AIC) matrix.

Predictions of nonlinear phenomena which are due to separated flow ahead of a deflected trailing-edge control surface were attempted using empirical techniques.

The results of the various aerodynamic calculations and theory-to-experiment comparisons have been used to point out areas where pure theory is inadequate for design, and to examine combined theoretical and empirical approaches to aeroelastic design based on lifting-surface solutions. Some preliminary results of this study were presented at the NASA Conference on Aeroelastic Analyses Requiring Advanced Computers held at the NASA Langley Research Center in March 1975 (ref. 6).

SYMBOLS

b	wing span, cm
BL	buttock line, cm; distance outboard from model plane of symmetry
c	section chord length, cm
$\bar{c}$, M.A.C.	mean aerodynamic chord length, cm
C_B	surface bending moment coefficient referenced to y_{ref}; positive wingtip up
C_C	surface chord force coefficient; positive aft
C_c	section chord force coefficient; positive aft
C_M	surface pitching moment coefficient, referenced to 0.25 M.A.C.; positive leading edge up
C_m	section pitching moment coefficient referenced to section leading edge; positive leading edge up
$C_{m.25c}$	section pitching moment coefficient referenced to section 0.25c; positive leading edge up
C_N	surface normal force coefficient; positive up
C_n	section normal force coefficient; positive up
C_p	pressure coefficient $= \frac{\text{measured pressure - reference pressure}}{q}$
D	body diameter, cm
M	Mach number
MS	model station, cm; measured aft along the body centerline from the nose
p_s	static pressure, kN/m^2
p_t	total pressure, kN/m^2
q	dynamic pressure, kN/m^2
S	reference area used for surface coefficients, cm^2
S_h	area of streamwise strip associated with a pressure station, cm^2; used in summation of section force coefficients (app. B)
x,y,z	general coordinates for distances in the longitudinal, lateral, and vertical directions, respectively
y_{ref}	distance outboard of model centerline of the bending moment reference point, cm

α	corrected angle of attack, degrees; the angle between the wing root chord and the relative wind measured in the model plane of symmetry; includes compensation for sting deflection, tunnel flow angularities, and wall effects; positive nose up with respect to relative wind
α_{sec}	wing twist angle relative to wing reference plane, degrees; positive leading edge up
ΔC_p	increment between adjacent lines on isobars
δ	control surface deflection, degrees; positive leading edge down for leading edge (see exception in app. B) and trailing edge down for trailing edge
η	fraction of wing semispan, y/(b/2)
Λ	sweep angle, degrees; measured from a line perpendicular to the model centerline, positive aft
ϕ	angle defining location of pressure orifices on the surface of the cylindrical body at a constant MS, degrees; measured from the top of the body

Subscripts:

L.E.	leading-edge control surface
r	wing root
s	referenced to segment of local chord
T.E.	trailing-edge control surface

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EXPERIMENTAL TASK

WIND TUNNEL MODELS

The configuration chosen for this study was a thin, low aspect ratio, highly swept wing mounted below the centerline of a high fineness ratio body. The general arrangement and characteristics of the model are shown in figure 1. Two complete wings were constructed, one with no camber or twist, and one with no camber but with a spanwise twist variation. Deflectable control surfaces were available on these wings.

FLAT WING

The mean surface of the flat wing is the wing reference plane. The nondimensional wing thickness distributions, shown in table 1, deviate slightly from a constant for all streamwise sections so that a finite thickness of 0.0254 cm (0.01 in.) could be maintained at the trailing edge (a manufacturing requirement). The wing was designed with a full-span, 25% chord, trailing-edge control surface. Sets of fixed angle brackets allowed streamwise deflections of $\pm 4.1^0$, $\pm 8.3^0$, $\pm 17.7^0$, and $\pm 30.2^0$, as well as 0.0^0. A removable full-span leading-edge control surface (15% of streamwise chord) was used in the undeflected position and also drooped 5.1^0 and 12.8^0 with fixed angle brackets. Both the leading- and trailing-edge control surfaces extended from the side of body (0.087 b/2) to the wingtip, and were split near midspan (0.570 b/2). Either the inboard or outboard portion of the control surfaces could be deflected separately and were rotated about points in the wing reference plane. An additional leading-edge control surface for this wing was constructed with a sharp (20^0 included angle) leading edge to examine the effects of leading-edge shape. The surface ordinates and slopes of this leading-edge segment were continuous with those of the flat wing at the leading-edge hingeline (table 1). The sharp leading edge was smoothly faired from 0.180 b/2 into the fixed portion of the rounded leading edge at 0.090 b/2.

TWISTED WING

The mean surface of the twisted wing was generated by rotating the streamwise section chord lines about the 75% local chord points (trailing-edge control surface hingeline). The spanwise variation of twist is shown in figure 2. The hingeline was straight and located in the wing reference plane at its inboard end (0.087 b/2) and 2.261 cm (0.890 in.) above the wing reference plane at the wingtip. The airfoil thickness distribution (table 1) and the trailing-edge control surface location and available deflections were identical to the flat wing.

BODY

The body was circular in cross section and had a straight centerline. The body geometry is shown in figure 1. The sting was an integral part of the model body.

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Table 1.—Wing Half–Thickness Distribution, Percent Chord

x/c, percent chord	0 b/2	0.09 b/2	0.20 b/2	0.35 b/2	0.50 b/2	0.65 b/2	0.80 b/2	0.93 b/2	1.00 b/2
Flat wing with rounded leading edge and twisted wing									
.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
.1250	.3359	.3359	.3359	.3359	.3360	.3360	.3360	.3362	.3364
.2500	.4506	.4506	.4506	.4506	.4507	.4507	.4508	.4509	.4512
.5000	.6064	.6064	.6064	.6064	.6065	.6065	.6066	.6068	.6072
.7500	.7247	.7247	.7247	.7248	.7248	.7249	.7250	.7253	.7258
1.0000	.8182	.8182	.8182	.8183	.8183	.8184	.8185	.8188	.8194
1.5000	.9520	.9520	.9520	.9521	.9522	.9523	.9525	.9530	.9538
2.5000	1.1191	1.1191	1.1192	1.1192	1.1194	1.1195	1.1199	1.1206	1.1219
5.0000	1.3448	1.3448	1.3449	1.3450	1.3453	1.3456	1.3462	1.3475	1.3497
8.5000	1.4809	1.4809	1.4811	1.4813	1.4816	1.4822	1.4832	1.4855	1.4892
10.0000	1.5195	1.5196	1.5197	1.5200	1.5204	1.5210	1.5222	1.5250	1.5293
12.5000	1.5444	1.5445	1.5447	1.5450	1.5456	1.5463	1.5479	1.5514	1.5568
15.0000	1.5630	1.5631	1.5634	1.5638	1.5644	1.5654	1.5673	1.5715	1.5781
17.5000	1.5720	1.5722	1.5724	1.5729	1.5737	1.5748	1.5770	1.5821	1.5898
20.0000	1.5813	1.5815	1.5818	1.5823	1.5832	1.5845	1.5871	1.5929	1.6018
30.0000	1.6214	1.6217	1.6222	1.6230	1.6242	1.6262	1.6301	1.6389	1.6522
40.0000	1.6398	1.6402	1.6408	1.6419	1.6435	1.6462	1.6514	1.6630	1.6807
45.0000	1.6282	1.6286	1.6293	1.6305	1.6324	1.6354	1.6413	1.6544	1.6742
50.0000	1.5901	1.5906	1.5914	1.5927	1.5948	1.5981	1.6046	1.6192	1.6412
60.0000	1.4344	1.4350	1.4359	1.4375	1.4400	1.4440	1.4518	1.4692	1.4956
65.0000	1.3121	1.3127	1.3137	1.3155	1.3181	1.3225	1.3310	1.3498	1.3784
70.0000	1.1627	1.1634	1.1644	1.1663	1.1692	1.1739	1.1831	1.2034	1.2341
72.5000	1.0792	1.0799	1.0810	1.0830	1.0860	1.0908	1.1003	1.1213	1.1532
75.0000	.9921	.9928	.9940	.9960	.9991	1.0041	1.0139	1.0357	1.0686
77.5000	.9006	.9013	.9025	.9046	.9078	.9129	.9231	.9456	.9796
80.0000	.8069	.8077	.8089	.8111	.8143	.8197	.8302	.8534	.8885
85.0000	.6132	.6140	.6153	.6176	.6211	.6268	.6379	.6626	.6999
90.0000	.4156	.4165	.4178	.4203	.4240	.4300	.4418	.4679	.5074
95.0000	.2153	.2162	.2177	.2202	.2241	.2305	.2430	.2706	.3122
100.0000	.0113	.0123	.0138	.0165	.0206	.0273	.0405	.0695	.1134
Sharp leading edge									
.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
.1250	.3359	.3359	.0293	.0307	.0329	.0364	.0433	.0585	.0815
.2500	.4506	.4506	.0557	.0580	.0614	.0670	.0781	.1024	.1392
.5000	.6064	.6064	.0998	.1021	.1055	.1111	.1222	.1465	.1833
.7500	.7247	.7247	.1439	.1462	.1496	.1552	.1663	.1906	.2274
1.0000	.8182	.8182	.1880	.1903	.1937	.1993	.2103	.2347	.2715
1.5000	.9520	.9520	.2761	.2784	.2818	.2875	.2985	.3229	.3596
2.5000	1.1191	1.1191	.4524	.4547	.4581	.4638	.4748	.4992	.5359
5.0000	1.3448	1.3448	.8933	.8956	.8990	.9046	.9156	.9400	.9768
8.5000	1.4809	1.4809	1.3413	1.3429	1.3453	1.3493	1.3570	1.3741	1.4001
10.0000	1.5195	1.5196	1.4547	1.4559	1.4578	1.4609	1.4669	1.4803	1.5007
12.5000	1.5444	1.5445	1.5203	1.5210	1.5221	1.5238	1.5272	1.5347	1.5461
15.0000	1.5630	1.5631	1.5634	1.5638	1.5644	1.5654	1.5673	1.5715	1.5781

WING-BODY INTERSECTION

The wing reference plane was located 3.149 cm (1.240 in.) below and parallel to (zero incidence) the body centerline. The apex of the wing was located 33.496 cm (13.187 in.) aft of the model nose.

PRESSURE ORIFICE LOCATIONS

All pressure orifices were located on the left side of the model and distributed as shown in figure 3 and tables 2 and 3. Both the flat wing with round leading edge and the twisted wing had 214 orifices with seven streamwise pressure stations of 31 or 30 orifices each. One of these orifices was located at the leading edge; the remainder were distributed so that upper and lower surface orifices were located at the same chordwise locations. The orifice locations on the sharp leading edge were identical except that the leading-edge orifices were omitted. The 83 orifices on the body were located at 15 stations along the length of the model. At each station, orifices were located at angles of 0^0, 45^0, 90^0, 135^0, and 180^0 measured from the top of the body. In the area of the wing-body intersection, the orifices which are nominally identified as being at 135^0 and 180^0 were located on the wing lower surface at the same lateral location as the orifices at 45^0 and 0^0, respectively, at that body station. Eight additional orifices were placed close to the juncture of the body with the wing upper surface.

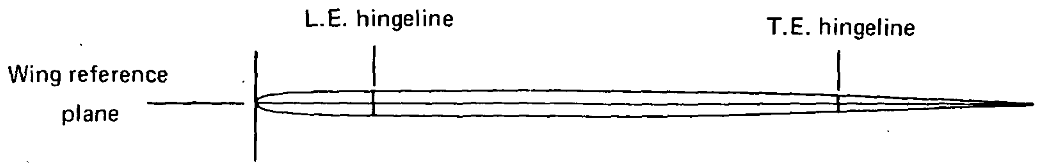
DESIGN AND CONSTRUCTION

The objectives of this study dictated that the contours and physical characteristics of the flat and twisted wings be as nearly identical as possible. The model was constructed of steel to minimize aeroelastic deflections and to provide strength for potential future testing to a Mach number of 3.0. The aft body was flared approximately 4^0 from 194.310 cm (76.500 in.) aft of the nose to provide the required safety factor on predicted loads (see fig. 1). The model size was selected as the best compromise between potential tunnel blockage and adequate room to install orifices in the model.

A computerized lofting program was used to provide the wing definition. This definition was then used to machine the model components using numerically controlled machines. The tolerance on the contour was +0.1524, -0.0 mm (+0.006, -0.0 in.). The leading- and trailing-edge control surfaces were cut from the wings after they had been machined to final contour. Cuts were made along the 15% chord line of the twisted wing to simulate the removable leading edge of the flat wing in order to duplicate more closely the elastic characteristics of the flat wing (see fig. 4). Fixed angle brackets, arranged as shown in figure 4, were used to obtain the required control surface deflections with all pivot points located midway between the upper and lower surfaces at the hingelines. The brackets were also machined on numerically controlled machines. The same sets of trailing-edge brackets were used on both the flat and twisted wings, and the same sets of leading-edge brackets were used for both the rounded and sharp leading edges. Tests were conducted with the twisted trailing-edge control surface combined with the flat wing. For this configuration with the trailing-edge control surface deflection defined as 0.0^0, a straight chord line was obtained only at 0.75 b/2. The relative spanwise twist distribution is shown in figure 2.

Table 2.—Wing Pressure Orifice Locations, Percent Local Chord

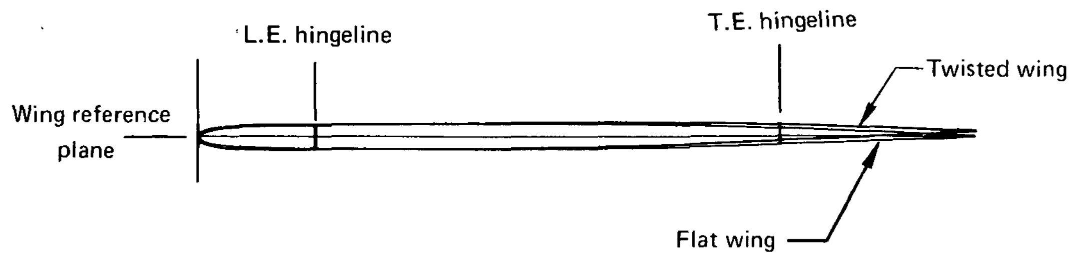
(a) Section at 0.09 $\frac{b}{2}$, chord = 102.89 cm



	Flat wing, α_{sec} = 0.0°				Twisted wing, α_{sec} = −0.01°	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
Nominal	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		---	---	0.00	
2.50	2.45	2.59	2.61	2.54	2.26	2.26
5.00	4.95	5.07	5.06	5.03	4.76	4.76
8.50	8.45	8.53	8.59	8.58	8.40	8.26
11.30	---	---	---	11.31	---	---
12.25	---	---	---	---	12.23	12.27
12.50	12.45	12.55	12.58	---	---	---
17.50	17.49	17.62			17.59	17.66
20.00	19.94	20.08			20.03	20.03
30.00	29.92	30.09			29.98	29.89
45.00	45.00	45.07			44.96	44.89
60.00	59.98	60.08			60.01	59.97
70.00	70.03	70.13			70.05	69.95
72.50	72.55	72.60			72.58	72.51
77.50	77.53	77.62			77.56	77.51
85.00	85.11	85.14			85.03	85.00
90.00	90.10	90.10			90.04	89.98
95.00	95.09	95.05			94.96	94.98

Table 2.—(Continued)

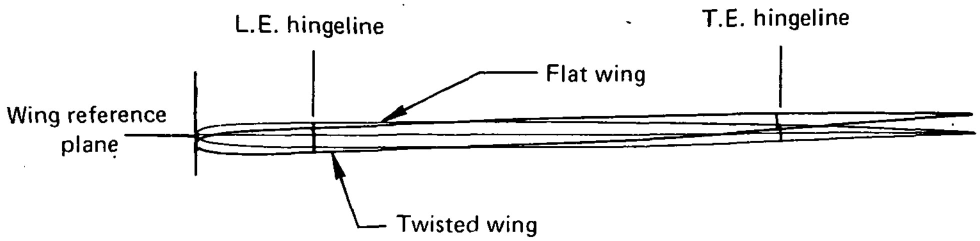
(b) Section at $0.20\frac{b}{2}$, chord = 91.80 cm



Nominal	Flat wing, $\alpha_{sec} = 0.0^{\circ}$				Twisted wing, $\alpha_{sec} = -0.47^{\circ}$	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		---	---	0.00	
2.50	2.59	2.69	2.62	2.65	2.52	2.42
5.00	5.05	5.00	5.14	5.14	5.00	4.93
8.50	8.54	8.59	8.67	8.62	8.52	8.40
11.40	---	---	---	11.37	---	---
12.50	12.54	12.49	12.63	---	12.53	12.42
17.50	17.63	17.61			17.65	17.52
20.00	20.08	20.07			20.00	19.90
30.00	30.04	30.09			30.02	29.89
45.00	45.08	45.09			45.03	44.92
60.00	60.02	60.13			60.03	59.91
70.00	70.11	70.13			70.06	69.96
72.50	72.63	72.61			72.55	72.50
77.50	77.59	77.65			77.59	77.52
85.00	85.07	85.13			85.02	85.00
90.00	90.14	90.11			90.07	89.97
95.00	95.14	95.10			95.05	95.08

Table 2.—(Continued)

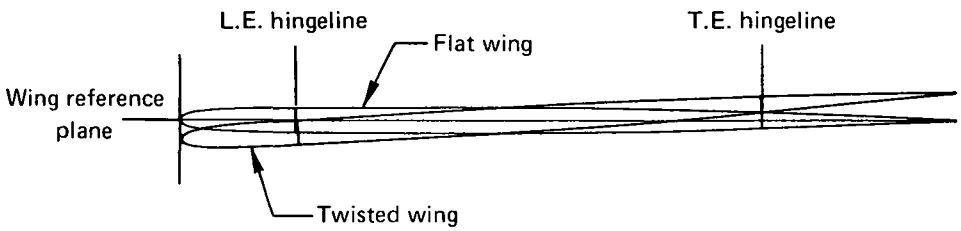
(c) Section at 0.35 $\frac{b}{2}$, chord = 76.69 cm



Nominal	Flat wing, α_{sec} = 0.0°				Twisted wing, α_{sec} = −1.70°	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		---	---	0.00	
2.50	2.45	2.59	2.59	2.58	2.39	2.33
5.00	4.93	5.07	5.11	5.04	5.12	4.78
8.50	8.60	8.54	8.65	8.63	8.49	8.32
10.50	---	---	---	10.46	---	---
11.00	---	11.03	---	---	---	---
12.50	12.37	---	12.57	---	12.50	12.33
17.50	17.64	17.63			17.54	17.53
20.00	20.00	20.09			19.94	19.84
30.00	30.01	30.10			29.88	29.87
45.00	44.99	45.09			44.96	44.79
60.00	60.03	60.08			59.97	59.89
70.00	70.07	70.08			70.03	69.90
72.50	72.55	72.58			72.56	72.44
77.50	77.60	77.61			77.54	77.51
85.00	85.11	85.14			85.08	84.96
90.00	90.06	90.09			89.89	89.89
95.00	95.07	95.09			94.95	94.86

Table 2.—(Continued)

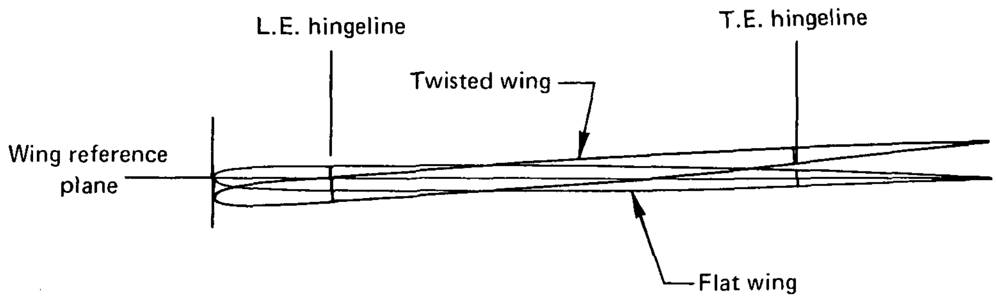
(d) Section at 0.50 $\frac{b}{2}$, chord = 61.57 cm



Nominal	Flat wing, α_{sec} = 0.0°				Twisted wing, α_{sec} = −2.85°	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		---	---	0.00	
2.50	2.47	2.53	2.69	2.60	2.44	2.38
5.00	4.99	4.95	5.13	5.06	4.92	4.80
8.50	8.48	8.38	8.66	8.61	8.46	8.38
10.10	---	---	---	10.14	---	---
11.10	---	11.08	---	---	---	---
12.50	12.39	---	12.61	---	12.50	12.31
17.50	17.64	17.52			17.54	17.24
20.00	19.98	19.97			19.92	19.83
30.00	30.07	30.06			29.91	29.85
45.00	44.98	45.06			45.00	44.85
60.00	59.97	60.00			59.95	59.92
70.00	70.07	70.10			70.03	69.88
72.50	72.65	72.61			72.56	72.44
77.50	77.66	77.65			77.61	77.43
85.00	85.19	85.18			84.85	84.90
90.00	90.22	90.12			89.93	89.93
95.00	95.05	94.94			94.88	94.93

Table 2.–(Continued)

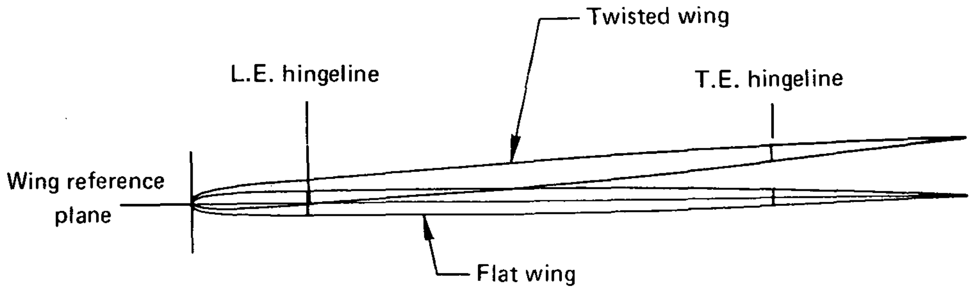
(e) Section at $0.65\frac{b}{2}$, chord = 46.46 cm



Nominal	Flat wing, α_{sec} = 0.0°				Twisted wing, α_{sec} = –3.59°	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		---	---	0.00	
2.50	2.56	2.66	2.49	2.38	2.18	2.49
5.00	5.06	5.12	4.94	4.95	4.76	5.01
8.50	8.55	8.55	8.46	8.40	8.32	8.45
12.20	---	---	12.12	---	12.21	---
12.60	12.57	---	---	---	---	---
17.50	17.60	17.65			17.24	17.44
20.00	20.17	20.11			19.70	19.88
30.00	30.05	30.11			30.26	29.73
45.00	45.16	45.23			44.75	44.89
60.00	60.13	60.13			59.81	59.87
70.00	69.89	70.12			69.92	69.90
72.50	72.59	72.69			72.38	72.49
77.50	77.74	77.76			77.22	77.49
85.00	85.25	85.32			84.79	84.93
90.00	90.22	90.21			89.70	89.92
95.00	95.13	95.27			95.12	94.86

Table 2.–(Continued)

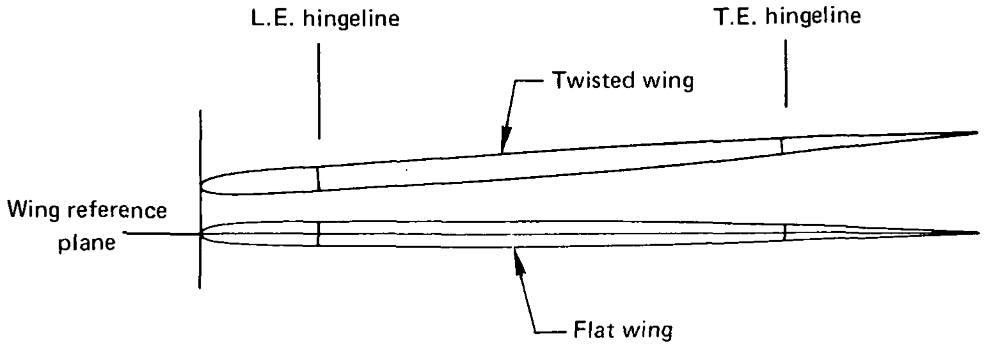
(f) Section at $0.80\frac{b}{2}$, chord = 31.35 cm



Nominal	Flat wing, α_{sec} = 0.0°				Twisted wing, α_{sec} = –3.84°	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		–––	–––	0.00	
2.50	2.55	2.47	2.50	2.46	2.33	2.43
5.00	5.01	5.02	5.01	4.93	4.86	4.74
8.50	8.55	8.59	8.58	8.41	8.32	–––
12.50	12.50	–––	12.58	–––	12.47	12.43
17.50	17.53	17.57			17.36	17.47
20.00	20.16	20.13			19.79	19.82
30.00	30.00	30.11			29.83	29.83
45.00	44.91	45.15			44.81	44.91
60.00	59.94	60.10			59.80	59.92
70.00	70.06	70.11			69.89	69.87
72.50	72.61	72.60			72.22	72.39
77.50	77.73	77.72			77.29	77.41
85.00	85.25	85.18			84.80	84.95
90.00	90.20	90.34			90.62	90.03
95.00	95.41	95.49			95.71	95.00

Table 2.—(Concluded)

(g) Section at $0.93\frac{b}{2}$, chord = 18.25 cm



Nominal	Flat wing, α_{sec} = 0.0°				Twisted wing, α_{sec} = −4.14°	
	Rounded leading edge		Sharp leading edge		Rounded leading edge	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
0.00	0.00		---	---	0.00	
2.51	1.70	1.81	2.12	1.86	1.74	2.59
5.00	4.38	4.68	4.72	4.52	4.41	4.65
8.50	7.89	8.24	8.21	8.06	7.92	8.23
11.59	---	---	---	---	11.59	---
12.25	12.33	---	12.19	---	---	---
17.50	17.36	16.60			16.60	17.49
20.00	19.78	19.81			19.58	19.96
30.00	29.67	29.00			29.17	29.62
45.00	44.70	44.80			44.12	44.44
60.00	59.68	59.47			59.18	59.71
70.00	69.69	70.33			68.99	69.31
72.50	72.15	71.89			71.59	72.01
77.50	77.38	77.31			76.80	77.12
85.00	84.62	84.90			84.54	84.82
90.00	89.51	89.81			89.21	89.74
95.00	94.46	94.68			94.41	94.56

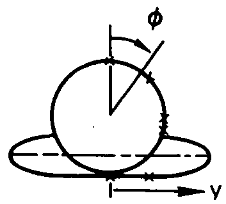


Table 3.— Body Pressure Orifice Locations

Nominal locations	x/L, percent body length														
	4.5	7.5	11.0	14.5	21.8	25.0	33.0	39.0	50.0	55.0	60.0	64.0	70.0	75.5	80.0
$\phi = 0.0°$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0*	0.0*	0.0*	0.0	0.0	0.0	0.0
$\phi = 45.0°$	44.3	44.3	44.5	44.7	44.4	44.8	45.0	44.8	45.0	44.8	44.8	45.0	44.8	45.0	44.8
$\phi = 90.0°$	90.0	89.9	90.5	90.3	90.4	89.9	90.1	90.2	90.2	90.0	89.9	89.9	89.8	90.1	89.8
$\phi \approx 110.0°$	---	---	---	---	110.2	110.0	110.1	110.1	110.2	116.8	119.9	124.2	---	---	---
Body, $\phi = 135.0°$ Flat wing, y = 3.094 cm Twisted wing, y = 3.094 cm	136.1	135.3	135.0	135.2	 3.025 3.132	 3.028 3.106	 3.028 3.048	 3.056 3.048	 3.071 3.005	 3.056 2.926	 3.043 3.094	 3.045 3.094	134.6	134.5	134.8
Body, $\phi = 180.0°$ Flat wing, y = 0.0 cm Twisted wing, y = 0.0 cm	180.0	180.0	180.0	180.0	 –.018 .020	 –.030 –.008	 –.064 –.041	 .081 –.043	 –.048 –.056	180.0*	180.0*	180.0	180.0	180.0	180.0

*for the first 149 runs, pressure readings at these orifices did not always stabilize

Pressure tubing used in this model was 1.016-mm (0.040-in.) o.d. Monel with a 0.1524-mm (0.006-in.) wall thickness. The major channels for wing pressure tubing were machined into the surface. The detailed grooves required to route tubing from the orifices to these channels were cut by hand. The pressure orifices were installed normal to and flush with the local surface. After installation of the pressure tubing, the surfaces were brought back to contour with solder. The tubing for body pressure orifices was run through the hollow center of the model body rather than in grooves in the outside contour. Tubing from all the orifices was routed through the hollow body to the scanivalves located in the body nose. Wiring from the scanivalves was routed through the body to the sting.

The nose portion of the body was removable to provide access to the fifteen 24-position scanivalves. Figure 1 shows the location on the aft body of the strain gages used to measure normal force and pitching moment.

WIND TUNNEL CAPABILITIES

The Boeing Transonic Wind Tunnel (BTWT) is a continuous-flow, closed-circuit, single-return facility with an operating range of Mach number from 0.0 to nearly 1.2. The test section is 2.438 by 3.658 by 4.420 m (8 by 12 by 14.5 ft) with 11.0 percent of the wall area in slots. The tunnel layout is shown in figure 5. The tunnel stagnation pressure is atmospheric with a total temperature range of 300 K to 356 K (540^0 to 640^0 Rankine). The variation with Mach number of Reynolds number based on the mean aerodynamic chord (M.A.C.) of this model is shown in figure 6, which also shows the variation of dynamic pressure with Mach number. The 26 856-kW (36 000-hp) wound-rotor induction motor in tandem with a 13 428-kW (18 000-hp) synchronous motor provides the power to drive a 7.315-m (24-ft) diameter fan up to a maximum speed of 470 rpm. The fan is made up of a 5.486-m (18-ft) diameter hub with 72 fixed-pitch fiberglass blades 0.914 m (36 in.) long in two stages and directs circuit air through two stages of 67 hollow steel stators.

DATA SYSTEM

The Boeing wind tunnel data system provides the capabilities of real-time test data acquisition, feedback control computation, and display. The data system consists of an Astrodata acquisition subsystem and a computing subsystem which uses a Xerox data system (XDS 9300) digital computer. The Astrodata system acquires signals from the sensors, conditions them, and passes them directly to the computer. Test data, averaged from up to 256 samples per test point, are recorded on a rapid-access data drum. As final computations are performed, selected on-line displays are provided on analog X-Y plotters and teletypewriters. Real-time computations and displays are performed every 200 milliseconds for control and test monitoring functions. Any test data may be retrieved from rapid-access drum storage and displayed on an oscilloscope. On-line programs also provide for preparation of magnetic tapes for plotting or interfacing with off-line programs. Figure 7 is a schematic of the data acquisition and reduction system.

MACH NUMBER

Mach number in the BTWT is referenced to the horizontal and lateral center of the test section at tunnel station 1000 which was the pitch point of this model (40% M.A.C.).

The pressures used to determine Mach number, p_s and p_t, are measured through permanently positioned sensors. Static pressure p_s is measured by a 103.42-kN/m² (15-psi) absolute transducer. A 103.42-kN/m² (15-psi) differential transducer is used to obtain total pressure by measuring $(p_t - p_s)$. These transducers are temperature compensated in addition to being in a ±1.11° C (±2° F) environment. Transducer performance is checked periodically, and both the static and differential transducers have shown a maximum deviation of ±0.02% of full scale.

The static pressure tap is located out of the test section above the ceiling in the pressure cap plenum. A correction is made to adjust this static pressure reading to the measured test section centerline static pressure determined during calibrations at station 1000. The tunnel total pressure is obtained from a total pressure probe mounted near the tunnel ceiling in the bellmouth throat (see fig. 5).

Signals from the pressure sensors are fed to the XDS 9300 computer. The XDS system computes and updates the Mach display five times per second. Accounting for the entire system, calculated Mach number is accurate within ±0.002. Data are recorded only when the tunnel is within a preselected Mach tolerance. For this test, a tolerance of ±0.003 was used.

DYNAMIC PRESSURE

The dynamic pressure q is computed from the Mach number and the corrected static pressure. The estimated tolerance on dynamic pressure is ±95.8 N/m² (±2.0 psf).

ANGLE OF ATTACK

The angle of attack of the reference point (0.25 M.A.C. for this model) for a sting-mounted model is determined from several increments. The input angle of attack is determined by an encoder mounted in the strut. This angle is accurate within ±0.02°. This angle is then modified by the effects of sting deflection, up-flow, and wall corrections.

Sting deflections due to load were determined during the calibration of the strain gages mounted on the integral sting body of the model. These deflections are known within ±0.02°. The corrections for sting deflection are based on the normal force and pitching moment loads obtained during wind-on data acquisition. The sting deflection was taken into account when setting test angles of attack to minimize the variation in final angle of attack for the various model configurations. The strain gages attached to the sting body of this model have an estimated accuracy of ±5% of full-scale reading. This means that the sting deflections based on maximum model loads were known within ±0.11°.

Up-flow corrections were made based on data obtained from upright and inverted runs on a calibration model of similar span. These corrections were less than 0.2°. It is believed the up-flow values are known within ±0.05°.

A correction to model angle was made for the effect of lift interference for 11% slotted walls. The lift interference is a function of the ratio of model-to-test section size, test section shape, C_N, and wall geometry. For $C_N = 1.0$, this correction is on the order of -0.48°. Due to the limited amount of experimental substantiation, it is felt that the wall correction could be in error by ±20%.

MODEL PRESSURES

The model was instrumented with fifteen 24-position scanivalves. Each scanivalve contained a 103.42-kN/m² (15-psi) differential Statham, variable resistance, unbonded strain gage transducer. These transducers are calibrated against a high accuracy standard and, if placed in a temperature-controlled environment, will read within an accuracy of 0.1% of full scale. For this test, the transducers were located inside the model and subjected to large temperature excursions. Temperatures recorded at the scanivalves indicate that the accuracy of readout was 0.75% of full-scale capability.

For the first 149 runs, the data filter for one of the scanivalves was inadvertently set at too low a cutoff frequency. This caused a lag which affected five body pressure measurements, producing a maximum error of approximately 0.684 kN/m² (0.1 psi) at an angle of attack of 16° and $M = 0.95$. Table 3 identifies the specific data affected.

TESTS AND DATA ACQUISITION

TESTS

Table 4 shows the 54 configurations that were tested. Photographs of some are shown in figures 8 through 13 and a diagram of the model installation in the BTWT is shown in figure 14. Pressure and total force data were obtained at Mach numbers of 0.40, 0.70, 0.85, 0.95, and 1.05 for all configurations and at Mach numbers of 1.00 and 1.11 for selected configurations. Table 4 shows the run numbers for each Mach number and configuration for which these data were obtained. A detailed listing of all test points is shown in appendix A.

Wingtip deflection pictures were taken for representative configurations at three Mach numbers to evaluate the stiffness of the wing. These were compared to wind-off reference pictures to determine the relative deflection and twist. Configurations included the flat and twisted wings, and trailing-edge control surfaces deflected +30.2°, 0.0°, and -17.7°. Whereas the tip did deflect (less than 2 cm), the change in incidence was negligible even at $M = 1.05$ and no corrections to the data were required due to model flexibility.

Some oil flow pictures were taken, predominately at $M = 0.95$ and an angle of attack of 8.0°.

Test angles of attack were from -8° to +16° in 2° increments. When testing at $M = 1.11$, the maximum angle was +8°, and for some of the negative (trailing edge up) trailing-edge control surface deflections only positive angles of attack were tested. A trip strip of No. 60 carborundum grit was used throughout the test with the exception of the first series. On the body, the trip strip was 0.32 cm (0.125 in.) wide and placed 2.54 cm (1 in.) from the nose. On the wing, it was 0.32 cm (0.125 in.) wide from the side

Table 4.—Summary of Test Conditions by Run Number

Leading edge deflection, deg	Mach number	Trailing edge deflection, deg																
		Full span									Outboard (inboard = 0.0)				Inboard (outboard = 0.0)			
		30.2	17.7	8.3	4.1	0.0	-4.1	-8.3	-17.7	-30.2	17.7	8.3	-8.3	-17.7	17.7	8.3	-8.3	-17.7
Flat wing, rounded leading edge, trip strip off																		
Full span = 0.0	0.40					10												
	0.70					15												
	0.85					7												
	0.95					16												
	1.05					14												
	1.11					9												
Flat wing, rounded leading edge, trip strip on																		
Full span = 0.0	0.40	37	32	46	48	21,269	55	78	66	75	280	275			252	259		
	0.70	34	29	43	50	23,263	57	80	63	72	277	271			248	255		
	0.85	36	31	45	52	25,267	59	82	65, 69	74	279	274			250	258		
	0.95	35	30	44	51	24,266	58	81	64, 68	73	278	273			249	257		
	1.00					268												
	1.05	33	28	42	49	22,264	56	79	62	71	276	272			247	256		
	1.11			40	47	20,262	54	77				270				254		
Inboard = 0.0 Outboard = 5.1	0.40					223					215	209	196	202	246	241	235	229
	0.70					218					211	205	192	198	243	237	231	228
	0.85					221					214	208	195	201	245	240	233	227
	0.95					220					213	207	194	200	244	239	232	226
	1.05					219					212	206	193	199	242	238	230	224
	1.11					217					210	204	191	197		236		

Table 4.—(Continued)

Leading edge deflection, deg	Mach number	Trailing edge deflection, deg																
		Full span									Outboard (inboard = 0.0)				Inboard (outboard = 0.0)			
		30.2	17.7	8.3	4.1	0.0	−4.1	−8.3	−17.7	−30.2	17.7	8.3	−8.3	−17.7	17.7	8.3	−8.3	−17.7
Flat wing, rounded leading edge, trip strip on																		
Inboard = 5.1	0.40					319					286	313			329	324		
Outboard = 0.0	0.70					315					283	311			326	321		
	0.85					318					285	312			328	323		
	0.95					317					284	310			327	322		
	1.05					316					282	308			325	320		
	1.11					314												
Full span = 5.1	0.40		177	149	138	183		189	132									
	0.70		173	145	140	179		185	134									
	0.85		175	148	142	182		188	136									
	0.95		174	147	141	181		187	135									
	1.05		172	146	139	180		186	133									
	1.11			144	137	178		184	131									
Full span = 12.8	0.40		118	115	109	98		85	126									
	0.70		121	112	105	100		87	128									
	0.85		123	114	108	102		89	130									
	0.95		122	113	107	101		88	129									
	1.05		120	111	106	99		86	127									
	1.11		116		104	97		84	124									

Table 4.—(Concluded)

Leading edge deflection, deg	Mach number	Trailing edge deflection, deg																
		Full span									Outboard (inboard = 0.0)				Inboard (outboard = 0.0)			
		30.2	17.7	8.3	4.1	0.0	-4.1	-8.3	-17.7	-30.2	17.7	8.3	-8.3	-17.7	17.7	8.3	-8.3	-17.7
Flat wing, sharp leading edge, trip strip on																		
Full span = 0.0	0.40					368												
	0.70					366												
	0.85					372												
	0.95					374												
	1.00					373												
	1.05					367												
	1.11					365												
Flat wing, twisted trailing edge, rounded leading edge, trip strip on																		
Full span = 0.0	0.40		352	347	342	337		358	363									
	0.70		349	344	339	333		354	360									
	0.85		351	346	341	336		356	362									
	0.95		350	345	340	335		357	361									
	1.05		348	343	338	334		353	359									
	1.11					332												
Twisted wing, rounded leading edge, trip strip on																		
Full span = 0.0	0.40	427	422	416	411	450		435	442									
	0.70	424	419	413	408	445		432	439									
	0.85	426	421	415	410	449		434	441									
	0.95	425	420	414	409	447		433	440									
	1.00					448												
	1.05	423	418	412	407	446		431	438									
	1.10					444												

of body to the midspan control surface break (0.57 b/2), and tapered to 0.16 cm (0.0625 in.) wide at the wingtip. On the upper surface of the wing, the trip strip was placed at 15% chord; and on the lower surface, it was placed just aft of the leading-edge control surface brackets (see fig. 4). Density of the grit was 4 to 5 grains per quarter inch.

DATA ACQUISITION AND INITIAL PROCESSING

The pressure data were recorded through the use of fifteen 24-position scanivalves located in the fore body of the model. Pressure transducers in the scanivalves measured the differential pressure between the local surface pressures and tunnel total pressure. Signals from the scanivalves, force and moment data, tunnel parameters, and model attitude angle were recorded on the Astrodata system and reduced using the XDS 9300 computer.

Final data (pressure coefficients, tunnel parameters, and model attitude) were merged on magnetic tapes, with appropriate configuration and test point identification for integration and plotting of these data.

A detailed description of the data editing and integration procedure and the data presentation are included in appendix B.

DATA TAPE DESCRIPTION

The experimental data are available from Mr. Percy J. Bobbitt of the NASA Langley Research Center on seven-track unlabeled tapes written by the Boeing Computer Services CDC 6600 computer. The tapes are written in binary (odd parity) mode at a density of 556 BPI. The first file of each tape and any program files are BCD (formatted) information. The data files are binary.

The data are provided separately for the wing and body. Pressure coefficients and integrated data are provided in separate files.

A description of each of the tape files follows.

- First file of each tape (BCD format with 80-column records).—This file contains an identification of the test and model and describes the content of the remaining files.

- Program files (BCD).—These files contain the source code of FORTRAN IV programs which may be used to provide listings of user-selected items in the data files.

- Data files (binary).—The first record contains geometry pertinent to the data which will follow (i.e., for pressure data, the spanwise location of each section and the arrays of x/c for which C_p's are listed; for integrated data, geometric constants used in the integrations). The remaining records each contain data for one test point. A list defining all test points is shown in appendix A.

RESULTS

The experimental results of this investigation are presented in figures 15 through 71 (table 5) and in NASA CR-132727 (table 6). Also summarized in table 6 are the comparisons of attached flow theories to experiment which are presented in NASA CR-132729. Since the results of the entire investigation are summarized and discussed in NASA CR-2610, no further discussion will be presented in this report. Instead, these data are presented here in more complete detail in order to make the maximum amount of data available. It should also be noted that both the experimental data and the theoretical data for attached flow methods are available on magnetic tape and copies may be obtained from Mr. Percy J. Bobbitt of the NASA Langley Research Center.

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June 1975

Table 5.—Figure Summary of Data Presentation

(a) Effect of Full-Span T.E. Deflection

	Mach number						
	0.40	0.70	0.85	0.95	1.00	1.05	1.11
Wing							
Flat wing, L.E. droop = 0.0°							
T.E. deflection = 8.3°	15		16			17	
T.E. deflection = -8.3°	18		19			20	
Effect of T.E. deflection	21,27	22	23,28	24		25,29	26
Flat wing, L.E. droop = 5.1°			30				
Flat wing, L.E. droop = 12.8°			31				
Twisted wing	32,35		33,36			34,37	
Flat wing, twisted T.E.	38		39			40	
Body							
Flat wing, L.E. droop = 0.0°							
T.E. deflection = 8.3°	63		64			65	
T.E. deflection = -8.3°	66		67			68	
Effect of T.E. deflection	69		70			71	

(b) Effect of Partial-Span L.E. and T.E. Deflection, M = 0.85, Wing Only

Leading-edge deflection, deg	Trailing-edge deflection, deg											
	Full span 0.0	Outboard (inboard = 0.0)					Inboard (outboard = 0.0)					Various combinations
		17.7	8.3	-8.3	-17.7	Comb.	17.7	8.3	-8.3	-17.7	Comb.	
Full span = 0.0		41	42			45	43	44			46	47
Inboard = 0.0, outboard = 5.1	48	51	52	53	54		55	56	57	58		
Inboard = 5.1, outboard = 0.0	49	59	60				61	62				
Combinations	50											

Table 6.—Summary of Additional Data Presentations

(a) Experimental Data Presented in NASA CR–132727

	Mach number						
	0.40	0.70	0.85	0.95	1.00	1.05	1.11
Wing							
Base configuration	α	α		α	α	α	α
L.E. shape	α ,E	α	α ,E	α	α	α,E	α
Wing twist	α ,E	α	α ,E	α	α	α,E	α
L.E. droop	α ,E	α	α ,E	α		α ,E	α
Body							
Base configuration	α	α	α	α	α	α	α
L.E. shape	α ,E		α ,E			α,E	
Wing twist	α ,E		α ,E			α,E	
L.E. droop	α ,E		α ,E			α,E	

(b) Comparison of Attached Flow Theories to Experimental Data Presented in NASA CR–132729

	Mach number						
	0.40	0.70	0.85	0.95	1.00	1.05	1.11
Wing							
Base configuration	X		X			X	
L.E. shape	X		X				
Wing twist	X		X			X	
L.E. droop	X		X			X	
T.E. deflection	X		X			X	
Partial span control surfaces			X				
Body							
Base configuration	X		X			X	
Wing twist	X		X			X	
L.E. droop	X		X			X	
T.E. deflection	X		X			X	

α = Angle of attack effect
E = Effect of configuration change

APPENDIX A

DETAILED TEST LOG

All test points for which pressure and force data were recorded are listed in tables A-1 through A-9. These tables include normal force and pitching moment coefficients obtained from strain gage measurements and by integrating the pressure data. Each test point is identified as a unique number within the test by the analysis number, where:

ANALYSIS NUMBER = 100 (RUN NUMBER) + POSITION IN RUN

Table A-1.—Experimental Data Test Point Log. Flat Wing, Rounded Leading Edge; L.E. Deflection, Full Span = 0.0°

(a) T.E. Deflection, Full Span = 0.0°, Trip Strip Off

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
707	.85	32.2(672)	-7.78	-.297(-.297)	.065(.064)
708	.85	32.2(673)	-5.88	-.215(-.212)	.049(.046)
709	.85	32.2(673)	-3.88	-.137(-.138)	.031(.030)
710	.85	32.2(673)	-1.92	-.065(-.065)	.013(.011)
711	.85	32.2(673)	.06	-.000(-.005)	-.000(.001)
712	.85	32.2(673)	2.06	.066(.058)	-.014(-.011)
713	.85	32.2(673)	4.02	.140(.130)	-.032(-.029)
714	.85	32.2(673)	5.98	.219(.206)	-.051(-.046)
715	.85	32.2(673)	7.95	.302(.294)	-.066(-.065)
716	.85	32.2(673)	9.89	.391(.379)	-.079(-.077)
717	.85	32.2(673)	11.85	.480(.463)	-.089(-.087)
718	.85	32.2(673)	13.82	.569(.558)	-.099(-.094)
719	.85	32.2(673)	15.64	.659(.653)	-.109(-.103)
901	1.11	40.7(850)	-7.74	-.314(-.313)	.079(.074)
902	1.11	40.7(851)	-5.78	-.231(-.234)	.062(.060)
903	1.11	40.7(850)	-3.83	-.149(-.152)	.041(.040)
904	1.11	40.7(850)	-1.86	-.071(-.073)	.018(.016)
906	1.11	40.7(850)	.11	-.001(-.006)	-.001(-.001)
907	1.11	40.7(850)	2.10	.072(.065)	-.020(-.019)
908	1.11	40.7(850)	4.04	.152(.142)	-.043(-.041)
909	1.11	40.7(850)	6.01	.236(.225)	-.065(-.062)
910	1.11	40.7(851)	7.95	.322(.312)	-.084(-.080)
1001	.40	10.3(215)	-7.73	-.260(-.266)	.056(.058)
1002	.40	10.2(214)	-5.76	-.186(-.196)	.040(.043)
1003	.40	10.2(213)	-3.80	-.117(-.126)	.024(.027)
1004	.40	10.2(213)	-1.83	-.051(-.059)	.010(.010)
1005	.40	10.2(214)	.13	.009(-.002)	-.001(.000)
1006	.40	10.2(214)	2.11	.070(.056)	-.012(-.010)
1007	.40	10.2(214)	4.08	.136(.125)	-.028(-.028)
1008	.40	10.2(214)	6.05	.209(.197)	-.045(-.044)
1009	.40	10.2(214)	8.01	.284(.269)	-.061(-.058)
1010	.40	10.2(214)	9.96	.373(.364)	-.076(-.076)
1011	.40	10.2(214)	11.93	.464(.451)	-.085(-.083)
1012	.40	10.2(214)	13.89	.551(.535)	-.092(-.091)
1013	.40	10.3(215)	15.85	.639(.623)	-.098(-.100)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
1408	1.05	39.2(818)	-7.81	-.325(-.328)	.080(.078)
1409	1.05	39.2(818)	-5.84	-.238(-.239)	.063(.060)
1410	1.05	39.2(818)	-3.88	-.155(-.157)	.041(.040)
1411	1.05	39.1(817)	-1.92	-.075(-.075)	.018(.015)
1412	1.05	39.2(818)	.04	-.005(-.010)	.000(.001)
1413	1.05	39.1(817)	2.04	.070(.060)	-.018(-.015)
1414	1.05	39.1(817)	3.98	.150(.140)	-.041(-.037)
1415	1.05	39.1(817)	5.94	.235(.226)	-.064(-.059)
1416	1.05	39.1(817)	7.91	.319(.312)	-.079(-.075)
1417	1.05	39.1(817)	9.86	.411(.405)	-.098(-.100)
1418	1.05	39.2(818)	11.82	.500(.491)	-.116(-.114)
1419	1.05	39.1(817)	13.77	.584(.576)	-.129(-.125)
1420	1.05	39.2(818)	15.72	.668(.654)	-.143(-.135)
1501	.70	25.2(527)	-7.76	-.277(-.283)	.060(.060)
1502	.70	25.2(526)	-5.81	-.201(-.206)	.046(.046)
1503	.70	25.2(526)	-3.84	-.126(-.130)	.028(.026)
1504	.70	25.2(526)	-1.86	-.057(-.062)	.012(.011)
1505	.70	25.2(527)	.11	.005(-.004)	-.001(.001)
1506	.70	25.2(526)	2.07	.069(.057)	-.014(-.010)
1507	.70	25.2(527)	4.03	.139(.124)	-.031(-.026)
1508	.70	25.2(527)	6.00	.216(.201)	-.050(-.046)
1509	.70	25.2(526)	7.97	.295(.281)	-.065(-.060)
1510	.70	25.2(526)	9.92	.383(.371)	-.079(-.076)
1511	.70	25.2(526)	11.87	.470(.452)	-.087(-.084)
1512	.70	25.2(526)	13.86	.559(.539)	-.094(-.092)
1513	.70	25.2(527)	15.80	.648(.635)	-.101(-.097)
1514	.70	25.2(527)	.10	.004(-.004)	.000(.001)
1601	.95	36.0(752)	-7.81	-.312(-.319)	.069(.071)
1602	.95	36.0(752)	-5.86	-.221(-.224)	.050(.049)
1603	.95	36.0(752)	-3.90	-.142(-.144)	.032(.031)
1604	.95	36.0(752)	-1.92	-.066(-.069)	.013(.012)
1605	.95	36.0(752)	.04	.000(-.007)	-.002(.001)
1606	.95	36.0(752)	2.01	.069(.057)	-.016(-.012)
1607	.95	36.0(752)	3.99	.146(.132)	-.037(-.031)
1608	.95	36.0(752)	5.95	.227(.216)	-.056(-.049)
1609	.95	36.0(752)	7.89	.313(.306)	-.071(-.070)
1610	.95	36.0(752)	9.84	.406(.395)	-.089(-.086)
1611	.95	36.0(752)	11.80	.499(.489)	-.104(-.102)
1612	.95	36.0(752)	13.77	.591(.584)	-.118(-.115)
1613	.95	36.0(752)	15.71	.678(.675)	-.130(-.125)

Table A-1.—(Continued)

(b) T.E. Deflection, Full Span = 0.0°, Trip Strip On (The trip strip was on for the remainder of the test.)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
2001	1.11	40.7(849)	-7.74	-.312(-.320)	.076(.077)
2002	1.11	40.7(850)	-5.78	-.230(-.235)	.059(.060)
2003	1.11	40.7(850)	-3.82	-.148(-.152)	.038(.040)
2004	1.11	40.7(849)	-1.86	-.070(-.072)	.015(.014)
2005	1.11	40.6(848)	.11	.000(-.006)	-.003(-.001)
2006	1.11	40.7(849)	2.09	.075(.063)	-.023(-.018)
2007	1.11	40.7(849)	4.03	.156(.142)	-.047(-.042)
2008	1.11	40.7(849)	6.00	.239(.227)	-.069(-.062)
2009	1.11	40.6(848)	7.96	.323(.315)	-.086(-.080)
2102	.40	10.2(214)	-5.77	-.191(-.195)	.044(.043)
2103	.40	10.3(215)	-3.80	-.119(-.122)	.027(.025)
2104	.40	10.2(214)	-1.83	-.054(-.058)	.013(.010)
2105	.40	10.2(214)	.14	.006(-.002)	.001(.000)
2106	.40	10.2(214)	2.11	.068(.057)	-.010(-.010)
2107	.40	10.2(214)	4.09	.136(.122)	-.027(-.025)
2108	.40	10.2(214)	6.05	.210(.199)	-.045(-.044)
2109	.40	10.2(214)	8.02	.284(.271)	-.060(-.059)
2110	.40	10.2(214)	9.97	.370(.367)	-.075(-.078)
2111	.40	10.2(214)	11.93	.463(.444)	-.087(-.087)
2112	.40	10.2(214)	13.89	.552(.534)	-.094(-.093)
2113	.40	10.2(214)	15.84	.641(.618)	-.100(-.102)
2201	1.05	39.2(818)	-7.80	-.324(-.329)	.077(.077)
2202	1.05	39.1(817)	-5.84	-.239(-.242)	.061(.061)
2203	1.05	39.2(818)	-3.88	-.155(-.157)	.040(.040)
2204	1.05	39.2(818)	-1.92	-.075(-.075)	.017(.016)
2205	1.05	39.2(818)	.04	-.004(-.012)	-.001(.001)
2206	1.05	39.2(818)	2.02	.069(.058)	-.019(-.014)
2207	1.05	39.2(818)	3.98	.150(.140)	-.042(-.038)
2208	1.05	39.2(818)	5.94	.235(.225)	-.064(-.059)
2209	1.05	39.2(818)	7.89	.318(.310)	-.080(-.075)
2211	1.05	39.2(818)	9.84	.412(.406)	-.101(-.102)
2212	1.05	39.2(819)	11.81	.498(.492)	-.116(-.115)
2213	1.05	39.2(818)	13.77	.582(.576)	-.128(-.125)
2214	1.05	39.2(818)	15.73	.665(.659)	-.142(-.136)
2301	.70	25.2(526)	-7.77	-.279(-.282)	.061(.060)
2302	.70	25.2(526)	-5.80	-.202(-.206)	.047(.046)
2303	.70	25.2(526)	-3.84	-.128(-.123)	.029(.025)
2304	.70	25.2(526)	-1.87	-.060(-.062)	.013(.011)
2305	.70	25.2(526)	.10	.002(-.004)	.001(.000)
2306	.70	25.2(527)	2.07	.066(.057)	-.012(-.011)
2307	.70	25.2(527)	4.04	.136(.125)	-.029(-.027)
2308	.70	25.2(527)	6.00	.212(.197)	-.047(-.044)
2309	.70	25.2(526)	7.97	.292(.282)	-.063(-.060)
2310	.70	25.2(527)	9.92	.380(.371)	-.077(-.076)
2311	.70	25.2(527)	11.89	.468(.453)	-.086(-.084)
2312	.70	25.2(527)	13.84	.554(.538)	-.092(-.092)
2313	.70	25.2(527)	15.80	.644(.635)	-.098(-.096)
2314	.70	25.2(527)	.10	.001(-.004)	.003(.001)
2401	.95	36.1(753)	-7.81	-.312(-.319)	.070(.071)
2402	.95	36.1(753)	-5.85	-.222(-.225)	.051(.049)
2403	.95	36.1(753)	-3.88	-.143(-.143)	.033(.031)
2404	.95	36.1(753)	-1.92	-.068(-.068)	.014(.012)
2405	.95	36.1(753)	.04	-.002(-.006)	.000(.001)
2406	.95	36.0(752)	2.01	.067(.058)	-.015(-.012)
2407	.95	36.1(753)	3.97	.143(.132)	-.035(-.031)
2408	.95	36.0(752)	5.94	.224(.214)	-.054(-.049)
2409	.95	36.1(753)	7.89	.311(.307)	-.070(-.071)
2410	.95	36.0(752)	9.84	.404(.397)	-.088(-.087)
2411	.95	36.1(753)	11.80	.496(.490)	-.102(-.102)
2413	.95	36.1(753)	13.76	.587(.586)	-.116(-.115)
2414	.95	36.1(753)	15.71	.676(.675)	-.128(-.125)
2501	.85	32.1(671)	-7.79	-.296(-.300)	.065(.065)
2502	.85	32.1(671)	-5.84	-.211(-.212)	.049(.046)
2503	.85	32.1(671)	-3.86	-.135(-.134)	.031(.027)
2504	.85	32.1(671)	-1.91	-.063(-.065)	.014(.011)
2505	.85	32.1(671)	.06	-.000(-.005)	.001(.000)
2506	.85	32.1(671)	2.03	.066(.058)	-.013(-.011)
2507	.85	32.1(671)	4.01	.140(.130)	-.031(-.029)
2508	.85	32.1(670)	5.97	.218(.206)	-.050(-.047)
2509	.85	32.1(671)	7.93	.301(.295)	-.065(-.065)
2510	.85	32.1(671)	9.88	.391(.380)	-.080(-.077)
2511	.85	32.1(670)	11.83	.478(.465)	-.089(-.087)
2512	.85	32.1(670)	13.80	.566(.557)	-.098(-.094)
2514	.85	32.2(672)	15.76	.657(.653)	-.108(-.103)

Table A-1.—(Continued)

(c) T.E. Deflection, Full Span = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
2806	1.05	39.1(817)	-7.89	-.075(-.072)	-.067(-.071)
2807	1.05	39.1(817)	-5.97	.012(.017)	-.086(-.089)
2808	1.05	39.1(816)	-3.99	.093(.101)	-.106(-.110)
2809	1.05	39.1(817)	-2.05	.161(.169)	-.122(-.125)
2810	1.05	39.1(817)	-.08	.227(.234)	-.137(-.141)
2811	1.05	39.1(817)	1.92	.294(.303)	-.152(-.158)
2812	1.05	39.1(817)	3.88	.363(.367)	-.168(-.169)
2813	1.05	39.1(817)	5.85	.433(.438)	-.180(-.178)
2814	1.05	39.1(817)	7.80	.505(.513)	-.188(-.186)
2815	1.05	39.1(817)	9.78	.580(.591)	-.196(-.201)
2816	1.05	39.1(817)	11.75	.647(.662)	-.198(-.205)
2817	1.05	39.1(817)	13.70	.712(.726)	-.200(-.202)
2818	1.05	39.1(817)	15.69	.776(.789)	-.201(-.201)
2901	.70	25.3(528)	-7.91	-.006(-.005)	-.077(-.076)
2902	.70	25.2(527)	-5.93	.068(.071)	-.093(-.094)
2903	.70	25.2(527)	-3.97	.132(.132)	-.106(-.105)
2904	.70	25.2(527)	-2.00	.190(.186)	-.116(-.112)
2905	.70	25.2(527)	-.04	.248(.244)	-.126(-.125)
2906	.70	25.2(526)	1.94	.312(.309)	-.138(-.138)
2907	.70	25.2(526)	3.93	.383(.377)	-.154(-.152)
2908	.70	25.2(526)	5.89	.451(.444)	-.166(-.162)
2909	.70	25.2(527)	7.84	.519(.517)	-.173(-.169)
2910	.70	25.2(527)	9.82	.604(.598)	-.185(-.182)
2911	.70	25.3(528)	11.76	.692(.673)	-.189(-.186)
2912	.70	25.2(527)	13.76	.754(.746)	-.194(-.185)
2913	.70	25.2(526)	15.72	.825(.823)	-.180(-.178)
2914	.70	25.2(526)	-.02	.247(.245)	-.124(-.125)
3001	.95	36.0(751)	-7.94	-.042(-.032)	-.075(-.081)
3002	.95	36.0(751)	-5.98	.041(.053)	-.091(-.097)
3003	.95	36.0(751)	-4.02	.119(.128)	-.111(-.115)
3004	.95	36.0(751)	-2.04	.181(.186)	-.123(-.123)
3005	.95	36.0(751)	-.10	.242(.245)	-.136(-.136)
3006	.95	36.0(751)	1.89	.309(.312)	-.151(-.151)
3007	.95	36.0(751)	3.86	.381(.381)	-.170(-.166)
3008	.95	36.0(751)	5.84	.450(.449)	-.182(-.175)
3009	.95	36.0(751)	7.78	.519(.526)	-.188(-.187)
3010	.95	36.0(751)	9.84	.601(.604)	-.199(-.197)
3011	.95	36.0(751)	11.71	.668(.675)	-.201(-.201)
3012	.95	36.0(751)	13.70	.734(.743)	-.197(-.197)
3013	.95	36.0(751)	15.65	.797(.809)	-.195(-.190)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
3101	.85	32.1(670)	-7.98	-.029(-.029)	-.071(-.073)
3102	.85	32.1(670)	-5.97	.056(.060)	-.090(-.093)
3103	.85	32.1(670)	-4.01	.123(.127)	-.104(-.108)
3104	.85	32.1(670)	-2.03	.181(.182)	-.114(-.115)
3105	.85	32.1(670)	-.08	.242(.243)	-.126(-.129)
3106	.85	32.1(670)	1.92	.309(.309)	-.141(-.143)
3107	.85	32.1(670)	3.89	.380(.379)	-.157(-.156)
3108	.85	32.1(670)	5.83	.450(.447)	-.170(-.167)
3109	.85	32.1(671)	7.81	.521(.524)	-.178(-.178)
3110	.85	32.1(670)	9.78	.607(.606)	-.192(-.190)
3111	.85	32.1(671)	11.76	.683(.684)	-.196(-.197)
3112	.85	32.1(670)	13.71	.750(.761)	-.192(-.196)
3113	.85	32.1(670)	15.67	.815(.830)	-.187(-.189)
3201	.40	10.2(213)	-7.86	.004(.005)	-.060(-.075)
3202	.40	10.2(213)	-5.90	.076(.075)	-.079(-.092)
3203	.40	10.2(213)	-3.93	.137(.135)	-.092(-.105)
3204	.40	10.2(213)	-1.97	.193(.189)	-.103(-.112)
3205	.40	10.2(214)	.05	.254(.249)	-.116(-.125)
3206	.40	10.2(213)	2.00	.314(.308)	-.128(-.136)
3207	.40	10.2(214)	3.98	.380(.375)	-.141(-.148)
3208	.40	10.2(213)	5.95	.443(.436)	-.151(-.156)
3209	.40	10.2(213)	7.92	.514(.506)	-.164(-.167)
3210	.40	10.2(213)	9.87	.593(.601)	-.173(-.182)
3211	.40	10.2(214)	11.82	.680(.675)	-.180(-.186)
3212	.40	10.2(213)	13.80	.753(.747)	-.178(-.187)
3213	.40	10.2(213)	15.75	.829(.825)	-.176(-.188)

Table A-1.—(Continued)

(d) T.E. Deflection, Full Span = 30.2°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
3321	1.05	39.0(815)	-7.95	.000(.022)	-.113(-.124)
3322	1.05	39.0(814)	-6.03	.084(.104)	-.128(-.138)
3323	1.05	39.0(814)	-4.04	.162(.186)	-.145(-.157)
3324	1.05	39.0(814)	-2.06	.228(.253)	-.159(-.171)
3325	1.05	39.0(815)	-.11	.286(.314)	-.170(-.184)
3326	1.05	39.0(814)	1.88	.349(.376)	-.182(-.196)
3327	1.05	39.0(814)	3.85	.411(.434)	-.192(-.201)
3328	1.05	39.0(814)	5.82	.475(.496)	-.199(-.208)
3329	1.05	39.0(814)	7.81	.546(.576)	-.207(-.222)
3330	1.05	39.0(814)	9.79	.617(.646)	-.214(-.233)
3331	1.05	38.9(813)	11.72	.678(.711)	-.213(-.233)
3332	1.05	39.0(815)	13.69	.736(.770)	-.211(-.227)
3333	1.05	39.0(814)	15.69	.791(.822)	-.205(-.219)
3401	.70	25.1(525)	-7.94	.087(.108)	-.120(-.127)
3402	.70	25.1(525)	-5.99	.157(.179)	-.134(-.143)
3403	.70	25.1(525)	-4.01	.218(.237)	-.146(-.154)
3404	.70	25.1(524)	-2.05	.277(.298)	-.158(-.168)
3405	.70	25.1(525)	-.08	.339(.359)	-.171(-.182)
3406	.70	25.1(525)	1.90	.404(.420)	-.185(-.193)
3407	.70	25.1(525)	3.87	.470(.485)	-.198(-.205)
3408	.70	25.1(524)	5.84	.535(.546)	-.208(-.212)
3409	.70	25.1(525)	7.82	.600(.617)	-.212(-.217)
3410	.70	25.1(525)	9.79	.681(.691)	-.222(-.225)
3411	.70	25.1(525)	11.76	.760(.770)	-.228(-.235)
3412	.70	25.1(524)	13.72	.822(.833)	-.218(-.228)
3413	.70	25.1(525)	15.69	.880(.895)	-.205(-.212)
3414	.70	25.1(525)	-.06	.337(.360)	-.169(-.183)
3501	.95	35.9(750)	-8.11	.036(.060)	-.120(-.132)
3502	.95	35.9(750)	-6.02	.120(.148)	-.135(-.147)
3503	.95	35.9(749)	-4.07	.191(.220)	-.151(-.164)
3504	.95	35.9(749)	-2.08	.251(.282)	-.163(-.179)
3505	.95	35.9(750)	-.11	.310(.338)	-.175(-.189)
3506	.95	35.9(750)	1.86	.372(.400)	-.189(-.204)
3507	.95	35.9(750)	3.83	.435(.457)	-.200(-.210)
3508	.95	35.9(750)	5.78	.497(.516)	-.208(-.212)
3509	.95	35.9(750)	7.77	.562(.587)	-.211(-.222)
3510	.95	35.9(750)	9.80	.639(.662)	-.221(-.231)
3511	.95	35.9(750)	11.71	.702(.730)	-.219(-.232)
3512	.95	35.9(750)	13.67	.763(.790)	-.214(-.222)
3513	.95	35.9(749)	15.66	.821(.852)	-.206(-.212)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
3601	.85	31.9(667)	-7.97	.062(.080)	-.115(-.123)
3602	.85	32.0(668)	-6.01	.141(.165)	-.132(-.144)
3603	.85	32.0(668)	-4.04	.205(.228)	-.146(-.157)
3604	.85	32.0(668)	-2.09	.265(.289)	-.158(-.171)
3605	.85	32.0(668)	-.12	.326(.348)	-.172(-.183)
3606	.85	32.0(668)	1.88	.391(.410)	-.186(-.196)
3607	.85	32.0(668)	3.85	.460(.480)	-.202(-.211)
3608	.85	32.0(668)	5.81	.527(.547)	-.213(-.221)
3609	.85	32.0(668)	7.78	.589(.613)	-.213(-.224)
3610	.85	32.0(669)	9.74	.670(.690)	-.227(-.236)
3611	.85	32.0(669)	11.70	.736(.760)	-.225(-.239)
3612	.95	32.0(669)	13.68	.793(.823)	-.215(-.229)
3613	.85	32.0(669)	15.66	.849(.876)	-.204(-.212)
3701	.40	10.2(213)	-7.87	.101(.119)	-.102(-.123)
3702	.40	10.2(213)	-5.94	.167(.183)	-.117(-.138)
3703	.40	10.2(213)	-3.97	.228(.242)	-.130(-.149)
3704	.40	10.2(213)	-2.00	.288(.302)	-.143(-.164)
3705	.40	10.2(213)	-.02	.350(.363)	-.159(-.178)
3706	.40	10.2(213)	1.94	.414(.427)	-.175(-.191)
3707	.40	10.2(213)	3.92	.477(.489)	-.188(-.202)
3708	.40	10.2(213)	5.88	.539(.551)	-.197(-.210)
3709	.40	10.2(213)	7.86	.604(.614)	-.206(-.217)
3710	.40	10.2(213)	9.82	.681(.703)	-.213(-.230)
3711	.40	10.2(213)	11.78	.769(.779)	-.221(-.234)
3712	.40	10.2(213)	13.77	.843(.854)	-.219(-.236)
3713	.40	10.2(213)	15.75	.905(.919)	-.209(-.228)

Table A-1.—(Continued)

(e) T.E. Deflection, Full Span = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
4004	1.11	40.5(845)	-7.80	-.185(-.193)	-.004(-.001)
4005	1.11	40.4(843)	-5.85	-.094(-.101)	-.028(-.025)
4006	1.11	40.4(843)	-3.87	-.013(-.019)	-.048(-.046)
4007	1.11	40.4(844)	-1.94	.061(.054)	-.068(-.064)
4008	1.11	40.4(844)	.05	.132(.121)	-.086(-.080)
4009	1.11	40.4(844)	2.02	.203(.190)	-.105(-.100)
4010	1.11	40.4(844)	4.00	.276(.268)	-.124(-.121)
4011	1.11	40.4(844)	5.95	.353(.346)	-.141(-.136)
4012	1.11	40.4(843)	7.91	.425(.419)	-.147(-.140)
4205	1.05	38.9(813)	-7.87	-.184(-.192)	-.006(-.004)
4206	1.05	38.9(813)	-5.92	-.092(-.097)	-.030(-.027)
4207	1.05	38.9(813)	-3.95	-.010(-.014)	-.051(-.048)
4208	1.05	38.9(813)	-2.00	.066(.060)	-.071(-.066)
4209	1.05	38.9(813)	-.02	.136(.126)	-.087(-.081)
4210	1.05	38.9(813)	1.97	.209(.202)	-.107(-.103)
4211	1.05	39.0(814)	3.95	.285(.278)	-.127(-.124)
4212	1.05	38.9(813)	5.86	.360(.353)	-.143(-.136)
4213	1.05	38.9(813)	7.83	.431(.424)	-.148(-.140)
4214	1.05	38.9(813)	9.80	.510(.509)	-.158(-.158)
4217	1.05	39.0(814)	11.80	.586(.584)	-.165(-.165)
4218	1.05	39.0(814)	13.73	.658(.659)	-.172(-.169)
4222	1.05	39.0(814)	15.70	.733(.733)	-.180(-.173)
4301	.70	25.2(526)	-7.83	-.136(-.136)	-.013(-.011)
4302	.70	25.1(525)	-5.88	-.060(-.059)	-.030(-.028)
4303	.70	25.1(525)	-3.92	.011(.010)	-.046(-.046)
4304	.70	25.2(526)	-1.93	.074(.070)	-.058(-.057)
4305	.70	25.1(525)	.05	.137(.128)	-.071(-.067)
4306	.70	25.2(526)	2.02	.202(.194)	-.085(-.083)
4307	.70	25.1(525)	3.99	.273(.264)	-.101(-.098)
4308	.70	25.1(525)	5.95	.345(.335)	-.116(-.112)
4309	.70	25.1(525)	7.91	.416(.409)	-.124(-.120)
4310	.70	25.1(525)	9.90	.504(.495)	-.137(-.134)
4311	.70	25.1(524)	11.82	.584(.571)	-.141(-.138)
4312	.70	25.1(525)	13.80	.665(.652)	-.142(-.141)
4313	.70	25.1(525)	15.78	.748(.738)	-.145(-.141)
4314	.70	25.1(525)	.04	.136(.128)	-.069(-.067)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
4401	.95	35.9(749)	-7.87	-.161(-.165)	-.012(-.013)
4402	.95	35.9(749)	-5.95	-.074(-.077)	-.030(-.031)
4403	.95	35.9(749)	-3.97	.004(.002)	-.049(-.049)
4404	.95	35.9(749)	-2.02	.073(.069)	-.064(-.063)
4405	.95	35.9(749)	-.02	.138(.132)	-.078(-.075)
4406	.95	35.9(749)	1.95	.209(.204)	-.096(-.094)
4407	.95	35.8(748)	3.90	.283(.276)	-.114(-.112)
4408	.95	35.8(748)	5.86	.359(.354)	-.131(-.127)
4409	.95	35.8(748)	7.84	.437(.436)	-.142(-.141)
4410	.95	35.8(748)	9.87	.523(.516)	-.155(-.151)
4411	.95	35.8(748)	11.80	.599(.594)	-.161(-.158)
4412	.95	35.9(749)	13.70	.674(.672)	-.166(-.161)
4413	.95	35.9(749)	15.68	.748(.750)	-.169(-.161)
4503	.85	32.0(668)	-7.85	-.149(-.154)	-.010(-.010)
4504	.85	32.0(669)	-5.92	-.067(-.068)	-.027(-.030)
4505	.85	32.0(669)	-3.96	.007(.005)	-.046(-.046)
4506	.85	32.0(669)	-1.99	.072(.069)	-.059(-.060)
4507	.85	32.0(669)	-.02	.135(.129)	-.072(-.071)
4508	.85	32.0(669)	1.99	.204(.198)	-.088(-.088)
4509	.85	32.0(669)	3.94	.276(.268)	-.106(-.103)
4510	.85	32.0(668)	5.94	.351(.343)	-.120(-.117)
4511	.85	32.0(668)	7.86	.424(.420)	-.128(-.128)
4512	.85	32.0(668)	9.81	.512(.504)	-.143(-.140)
4513	.85	32.0(669)	11.77	.593(.587)	-.150(-.149)
4514	.85	32.0(669)	13.78	.675(.673)	-.154(-.152)
4515	.85	32.0(668)	15.71	.754(.757)	-.158(-.153)
4601	.40	10.2(213)	-7.80	-.126(-.127)	-.002(-.010)
4602	.40	10.2(213)	-5.84	-.054(-.056)	-.020(-.027)
4603	.40	10.2(213)	-3.88	.014(.011)	-.036(-.043)
4604	.40	10.2(213)	-1.92	.073(.069)	-.048(-.053)
4605	.40	10.2(214)	.09	.134(.127)	-.060(-.064)
4606	.40	10.2(213)	2.04	.197(.190)	-.074(-.079)
4607	.40	10.2(214)	4.02	.267(.257)	-.091(-.093)
4608	.40	10.2(214)	6.01	.338(.328)	-.106(-.107)
4609	.40	10.2(214)	7.95	.407(.397)	-.117(-.118)
4610	.40	10.2(214)	10.01	.491(.489)	-.130(-.131)
4611	.40	10.2(214)	11.86	.578(.566)	-.137(-.136)
4612	.40	10.2(214)	13.81	.659(.645)	-.139(-.140)
4613	.40	10.2(214)	15.81	.744(.727)	-.140(-.144)

Table A-1.–(Continued)

(f) T.E. Deflection, Full Span = 4.1°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
4713	1.11	40.5(845)	-7.83	-.247(-.250)	.033(.034)
4714	1.11	40.5(846)	-5.81	-.159(-.161)	.012(.014)
4715	1.11	40.5(845)	-3.85	-.078(-.081)	-.008(-.006)
4716	1.11	40.5(845)	-1.89	.001(-.003)	-.031(-.028)
4717	1.11	40.5(845)	.08	.073(.064)	-.050(-.044)
4718	1.11	40.5(845)	2.05	.147(.135)	-.070(-.064)
4719	1.11	40.4(844)	4.00	.225(.213)	-.092(-.087)
4720	1.11	40.5(845)	5.97	.305(.297)	-.110(-.105)
4722	1.11	40.5(845)	7.93	.380(.371)	-.120(-.115)
4801	.40	10.2(212)	-7.77	-.193(-.192)	.026(.022)
4802	.40	10.2(212)	-5.80	-.121(-.123)	.010(.007)
4803	.40	10.2(213)	-3.81	-.051(-.052)	-.007(-.011)
4804	.40	10.2(213)	-1.87	.010(.008)	-.018(-.023)
4805	.40	10.2(213)	.11	.071(.065)	-.030(-.033)
4806	.40	10.2(214)	2.08	.134(.128)	-.043(-.046)
4807	.40	10.2(213)	4.05	.204(.196)	-.060(-.064)
4808	.40	10.2(213)	6.02	.276(.264)	-.076(-.076)
4809	.40	10.2(213)	7.99	.350(.340)	-.091(-.091)
4810	.40	10.2(213)	9.95	.433(.432)	-.103(-.107)
4811	.40	10.2(213)	11.90	.524(.514)	-.113(-.113)
4812	.40	10.2(213)	13.86	.612(.600)	-.118(-.119)
4813	.40	10.2(213)	15.82	.698(.688)	-.122(-.124)
4901	1.05	39.0(814)	-7.84	-.247(-.250)	.032(.031)
4902	1.05	39.0(814)	-5.88	-.161(-.164)	.012(.013)
4903	1.05	38.9(813)	-3.91	-.078(-.081)	-.008(-.007)
4904	1.05	39.0(814)	-1.95	.000(-.003)	-.030(-.028)
4905	1.05	39.0(815)	.01	.071(.064)	-.047(-.043)
4906	1.05	39.0(814)	1.98	.145(.134)	-.066(-.062)
4907	1.05	39.0(814)	3.94	.224(.214)	-.089(-.085)
4908	1.05	39.0(815)	5.91	.305(.298)	-.108(-.103)
4909	1.05	39.0(814)	7.86	.382(.375)	-.118(-.113)
4910	1.05	39.0(814)	9.82	.470(.465)	-.135(-.135)
4911	1.05	39.0(814)	11.79	.550(.544)	-.145(-.143)
4912	1.05	39.0(814)	13.74	.627(.625)	-.155(-.150)
4913	1.05	39.0(814)	15.70	.706(.706)	-.165(-.159)

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
5001	.70	25.1(524)	-7.81	-.204(-.206)	.025(.023)
5002	.70	25.0(523)	-5.85	-.128(-.129)	.010(.007)
5003	.70	25.1(524)	-3.88	-.056(-.057)	-.008(-.010)
5004	.70	25.0(523)	-1.91	.008(.007)	-.022(-.024)
5005	.70	25.0(523)	.06	.071(.066)	-.034(-.035)
5006	.70	25.1(524)	2.03	.136(.129)	-.049(-.048)
5007	.70	25.1(524)	4.00	.208(.199)	-.066(-.065)
5008	.70	25.1(524)	5.97	.283(.273)	-.083(-.081)
5009	.70	25.1(524)	7.94	.358(.351)	-.095(-.093)
5010	.70	25.1(524)	9.88	.445(.439)	-.108(-.109)
5011	.70	25.1(524)	11.84	.531(.519)	-.116(-.115)
5012	.70	25.0(523)	13.82	.615(.603)	-.120(-.121)
5013	.70	25.1(524)	15.77	.701(.693)	-.124(-.122)
5101	.95	35.9(750)	-7.85	-.233(-.236)	.027(.026)
5102	.95	35.9(750)	-5.90	-.145(-.145)	.008(.007)
5103	.95	35.9(750)	-3.92	-.067(-.066)	-.009(-.010)
5104	.95	35.9(750)	-1.96	.006(.005)	-.027(-.028)
5105	.95	35.9(750)	.01	.073(.068)	-.041(-.040)
5106	.95	35.9(750)	1.97	.143(.136)	-.058(-.056)
5107	.95	35.9(749)	3.94	.219(.209)	-.077(-.073)
5109	.95	35.9(750)	5.90	.298(.293)	-.094(-.092)
5110	.95	35.9(749)	7.85	.381(.380)	-.109(-.110)
5111	.95	35.9(749)	9.82	.472(.465)	-.127(-.124)
5112	.95	35.9(749)	11.77	.557(.550)	-.137(-.136)
5113	.95	35.9(749)	13.73	.641(.638)	-.147(-.143)
5114	.95	35.9(749)	15.69	.720(.723)	-.153(-.149)
5201	.85	31.9(667)	-7.82	-.218(-.221)	.026(.026)
5202	.85	32.0(668)	-5.86	-.136(-.135)	.010(.007)
5203	.85	32.0(668)	-3.90	-.062(-.063)	-.007(-.009)
5204	.85	32.0(668)	-1.93	.007(.006)	-.023(-.026)
5205	.85	32.0(668)	.04	.071(.066)	-.036(-.037)
5206	.85	32.0(668)	2.00	.138(.131)	-.051(-.051)
5207	.85	32.0(668)	3.97	.212(.204)	-.070(-.069)
5208	.85	31.9(667)	5.93	.288(.279)	-.087(-.084)
5209	.85	32.0(668)	7.89	.367(.364)	-.098(-.100)
5210	.85	31.9(667)	9.85	.458(.450)	-.114(-.113)
5211	.85	31.9(667)	11.80	.542(.534)	-.122(-.122)
5212	.85	32.0(668)	13.76	.627(.623)	-.129(-.128)
5213	.85	32.0(668)	15.74	.713(.714)	-.135(-.133)

Table A-1.—(Continued)

(g) T.E. Deflection, Full Span = -4.1°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
5404	1.11	40.5(846)	.15	-.071(-.082)	.043(.048)
5405	1.11	40.5(846)	2.11	.000(-.014)	.025(.031)
5406	1.11	40.5(845)	4.08	.080(.066)	.003(.008)
5407	1.11	40.5(845)	6.04	.162(.153)	-.019(-.014)
5408	1.11	40.5(845)	7.99	.251(.246)	-.041(-.038)
5501	.40	10.3(215)	.17	-.060(-.074)	.037(.035)
5502	.40	10.2(213)	2.15	.004(-.015)	.024(.025)
5503	.40	10.2(213)	4.11	.069(.048)	.009(.012)
5504	.40	10.2(213)	6.09	.141(.121)	-.008(-.006)
5505	.40	10.2(213)	8.05	.211(.195)	-.022(-.022)
5506	.40	10.2(213)	10.01	.292(.288)	-.037(-.041)
5507	.40	10.2(213)	11.96	.382(.371)	-.047(-.048)
5508	.40	10.2(212)	13.92	.473(.458)	-.055(-.056)
5509	.40	10.2(213)	15.89	.563(.482)	-.063(-.056)
5601	1.05	39.0(815)	.09	-.081(-.090)	.047(.050)
5602	1.05	39.0(815)	2.05	-.008(-.022)	.029(.035)
5603	1.05	39.0(815)	4.02	.071(.058)	.007(.013)
5604	1.05	39.0(815)	5.97	.153(.145)	-.014(-.009)
5605	1.05	39.0(815)	7.94	.243(.236)	-.034(-.031)
5606	1.05	39.0(815)	9.89	.334(.329)	-.055(-.055)
5607	1.05	39.0(814)	11.84	.422(.419)	-.072(-.073)
5609	1.05	39.0(815)	13.80	.512(.508)	-.089(-.086)
5610	1.05	39.0(815)	15.75	.600(.597)	-.106(-.101)

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
5701	.70	25.1(525)	.13	-.069(-.078)	.038(.038)
5702	.70	25.1(525)	2.10	-.005(-.016)	.025(.027)
5703	.70	25.1(525)	4.07	.062(.049)	.010(.013)
5704	.70	25.1(525)	6.05	.138(.126)	-.009(-.006)
5705	.70	25.1(525)	8.00	.215(.205)	-.023(-.022)
5706	.70	25.1(525)	9.96	.299(.293)	-.037(-.040)
5707	.70	25.1(524)	11.92	.387(.375)	-.047(-.048)
5708	.70	25.1(524)	13.88	.476(.462)	-.055(-.057)
5709	.70	25.1(524)	15.84	.569(.562)	-.064(-.064)
5710	.70	25.1(524)	.13	-.072(-.078)	.040(.038)
5801	.95	35.9(750)	.07	-.080(-.088)	.043(.045)
5802	.95	35.9(750)	2.05	-.011(-.021)	.029(.032)
5803	.95	35.9(750)	4.01	.062(.050)	.011(.014)
5804	.95	35.9(749)	5.98	.142(.133)	-.008(-.004)
5805	.95	35.9(750)	7.93	.231(.226)	-.027(-.027)
5806	.95	35.9(750)	9.98	.320(.311)	-.042(-.040)
5807	.95	35.9(750)	11.83	.410(.400)	-.055(-.054)
5808	.95	35.9(750)	13.78	.507(.503)	-.073(-.070)
5809	.95	35.9(750)	15.77	.604(.602)	-.089(-.085)
5901	.85	32.0(668)	.10	-.074(-.082)	.041(.041)
5902	.85	32.0(669)	2.08	-.007(-.019)	.028(.029)
5903	.85	32.0(669)	4.04	.063(.051)	.011(.012)
5904	.85	32.0(669)	6.01	.140(.128)	-.008(-.005)
5905	.85	32.0(669)	7.97	.222(.215)	-.023(-.025)
5906	.85	32.0(669)	9.91	.308(.298)	-.037(-.037)
5907	.85	32.0(669)	11.88	.396(.385)	-.047(-.048)
5908	.85	32.0(669)	13.83	.487(.480)	-.058(-.057)
5909	.85	32.0(669)	15.80	.579(.579)	-.069(-.068)

Table A-1.—(Continued)

(h) T.E. Deflection, Full Span = -17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
6207	1.05	39.0(814)	-.04	-.263(-.289)	.148(.165)
6208	1.05	39.0(814)	2.15	-.190(-.216)	.132(.146)
6209	1.05	39.0(814)	4.10	-.121(-.144)	.117(.130)
6210	1.05	39.0(815)	6.07	-.037(-.054)	.096(.105)
6211	1.05	39.0(815)	8.02	.057(.043)	.072(.080)
6212	1.05	39.0(815)	10.00	.155(.139)	.050(.056)
6213	1.05	39.0(815)	11.94	.240(.222)	.039(.048)
6214	1.05	39.0(815)	13.89	.334(.321)	.021(.029)
6218	1.05	39.0(814)	15.84	.426(.422)	.000(.006)
6303	.70	25.1(524)	.23	-.283(-.294)	.145(.148)
6304	.70	25.1(524)	2.22	-.218(-.230)	.132(.132)
6305	.70	25.1(524)	4.19	-.155(-.168)	.119(.121)
6306	.70	25.1(524)	6.15	-.089(-.101)	.106(.107)
6307	.70	25.1(525)	8.12	-.012(-.023)	.098(.088)
6308	.70	25.1(525)	10.06	.075(.067)	.073(.070)
6309	.70	25.1(525)	12.02	.167(.155)	.061(.058)
6310	.70	25.1(525)	13.99	.263(.250)	.048(.044)
6311	.70	25.1(525)	15.95	.368(.360)	.033(.029)
6312	.70	25.1(525)	.07	-.291(-.301)	.149(.150)
6401	.95	35.9(749)	.16	-.271(-.289)	.146(.154)
6402	.95	35.9(749)	2.15	-.208(-.223)	.133(.138)
6403	.95	35.9(749)	4.10	-.147(-.165)	.123(.128)
6404	.95	35.9(749)	6.10	-.071(-.088)	.106(.112)
6405	.95	35.9(749)	8.05	.016(-.003)	.088(.093)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
6406	.95	35.9(750)	9.99	.106(.087)	.073(.078)
6407	.95	35.9(750)	11.94	.199(.186)	.059(.063)
6408	.95	35.9(749)	13.89	.303(.294)	.041(.046)
6409	.95	35.9(750)	15.86	.403(.403)	.023(.024)
6501	.85	32.0(668)	.20	-.282(-.299)	.148(.152)
6502	.85	32.0(668)	2.19	-.218(-.232)	.135(.136)
6503	.85	32.0(669)	4.15	-.154(-.169)	.123(.125)
6504	.85	32.0(669)	6.11	-.085(-.098)	.108(.109)
6505	.85	32.0(668)	8.07	-.001(-.013)	.090(.090)
6506	.85	32.1(670)	10.04	.090(.074)	.075(.077)
6507	.85	32.0(669)	11.97	.180(.166)	.063(.063)
6508	.85	32.0(669)	13.94	.281(.272)	.048(.048)
6509	.85	32.0(669)	15.88	.378(.378)	.034(.033)
6601	.40	10.2(214)	.34	-.273(-.284)	.144(.140)
6602	.40	10.2(213)	2.28	-.211(-.221)	.131(.124)
6603	.40	10.2(213)	4.22	-.150(-.162)	.118(.112)
6604	.40	10.2(213)	6.19	-.086(-.100)	.105(.100)
6605	.40	10.2(213)	8.15	-.014(-.024)	.088(.082)
6606	.40	10.2(213)	10.13	.068(.062)	.073(.064)
6607	.40	10.2(213)	12.16	.161(.157)	.061(.052)
6610	.40	10.2(213)	14.03	.249(.241)	.050(.043)
6611	.40	10.2(213)	15.98	.347(.250)	.038(.042)

(i) T.E. Deflection, Full Span = -17.7°, Side-of-Body and Midspan L.E. Cuts Sealed. (For the remainder of the test, the side-of-body cut was sealed for inboard L.E. deflection = 0.0°. The midspan cut was sealed for full span L.E. deflections)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
6807	.95	35.8(748)	.17	-.273(-.292)	.146(.156)
6808	.95	35.8(748)	4.11	-.147(-.166)	.122(.128)
6810	.95	35.9(749)	8.03	.016(-.004)	.087(.094)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
6901	.85	32.0(668)	.21	-.284(-.299)	.147(.153)
6902	.85	32.0(668)	4.15	-.155(-.171)	.122(.125)
6903	.85	32.0(668)	8.07	.001(-.017)	.089(.094)

Table A-1.—(Continued)

(j) T.E. Deflection, Full Span = -30.2°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
7104	1.05	38.9(812)	-7.68	-.564(-.593)	.204(.220)
7105	1.05	38.9(812)	-5.70	-.492(-.524)	.195(.213)
7106	1.05	38.9(812)	-3.74	-.428(-.458)	.189(.206)
7107	1.05	38.8(811)	-1.79	-.364(-.400)	.178(.197)
7108	1.05	38.9(812)	.21	-.301(-.340)	.165(.186)
7109	1.05	38.9(812)	2.18	-.240(-.278)	.154(.174)
7110	1.05	38.9(812)	4.15	-.176(-.210)	.142(.159)
7111	1.05	38.9(812)	6.10	-.097(-.127)	.125(.141)
7112	1.05	38.8(811)	8.07	-.009(-.042)	.106(.124)
7113	1.05	38.9(812)	10.00	.089(.056)	.085(.098)
7114	1.05	38.9(812)	11.95	.189(.159)	.062(.077)
7115	1.05	38.8(811)	13.91	.285(.266)	.044(.054)
7116	1.05	38.9(812)	15.88	.360(.345)	.042(.050)
7201	.70	25.0(522)	-7.60	-.626(-.640)	.222(.226)
7202	.70	25.0(523)	-5.64	-.553(-.567)	.212(.215)
7203	.70	25.0(523)	-3.68	-.480(-.495)	.199(.201)
7204	.70	24.9(521)	-1.70	-.410(-.429)	.183(.188)
7205	.70	25.0(522)	.25	-.347(-.369)	.169(.177)
7206	.70	24.9(521)	2.24	-.284(-.306)	.155(.162)
7207	.70	24.9(521)	4.22	-.223(-.245)	.144(.149)
7208	.70	25.0(522)	6.19	-.162(-.187)	.133(.140)
7209	.70	25.0(522)	8.15	-.089(-.114)	.120(.126)
7210	.70	25.0(523)	10.12	.001(-.020)	.104(.107)
7211	.70	25.0(523)	12.06	.088(.070)	.093(.091)
7212	.70	25.0(522)	14.03	.171(.154)	.091(.088)
7213	.70	25.0(523)	15.98	.257(.249)	.089(.086)
7214	.70	25.0(523)	.28	-.347(-.369)	.171(.177)
7301	.95	35.8(747)	-7.70	-.579(-.601)	.211(.218)
7302	.95	35.8(747)	-5.72	-.503(-.529)	.200(.211)
7303	.95	35.7(746)	-3.75	-.435(-.460)	.190(.199)
7304	.95	35.8(747)	-1.79	-.373(-.404)	.179(.193)
7305	.95	35.7(746)	.18	-.311(-.345)	.165(.181)
7306	.95	35.8(747)	2.18	-.250(-.281)	.152(.165)
7307	.95	35.7(746)	4.14	-.191(-.222)	.142(.153)
7308	.95	35.7(746)	6.12	-.119(-.151)	.126(.138)
7309	.95	35.7(746)	8.07	-.037(-.069)	.111(.122)
7310	.95	35.8(747)	10.07	.054(.022)	.095(.106)
7311	.95	35.8(747)	11.98	.144(.120)	.082(.089)
7312	.95	35.8(747)	13.92	.231(.216)	.076(.081)
7313	.95	35.8(747)	15.90	.321(.298)	.068(.077)
7401	.85	31.8(665)	-8.27	-.631(-.658)	.221(.230)
7402	.85	31.8(665)	-5.68	-.540(-.566)	.214(.223)
7403	.85	31.9(666)	-3.71	-.469(-.495)	.201(.210)
7404	.85	31.9(666)	-2.72	-.435(-.462)	.193(.203)
7405	.85	31.8(665)	.24	-.339(-.369)	.173(.185)
7406	.85	31.9(666)	2.21	-.275(-.305)	.159(.170)
7407	.85	31.9(666)	4.19	-.213(-.241)	.146(.154)
7408	.85	31.9(666)	6.16	-.147(-.178)	.132(.142)
7409	.85	31.9(666)	8.11	-.065(-.098)	.116(.127)
7410	.85	31.8(665)	10.16	.029(.002)	.100(.106)
7411	.85	31.8(665)	12.03	.117(.093)	.087(.091)
7412	.85	31.9(666)	13.96	.198(.182)	.086(.089)
7413	.85	31.8(665)	15.93	.283(.277)	.084(.082)
7501	.40	10.2(213)	-7.55	-.622(-.630)	.227(.223)
7502	.40	10.2(213)	-5.58	-.548(-.560)	.214(.208)
7503	.40	10.2(212)	-3.63	-.482(-.490)	.202(.196)
7504	.40	10.2(214)	-1.65	-.416(-.435)	.188(.189)
7505	.40	10.2(213)	.33	-.352(-.367)	.173(.172)
7506	.40	10.2(213)	2.29	-.292(-.309)	.161(.158)
7507	.40	10.2(213)	4.28	-.234(-.249)	.150(.146)
7508	.40	10.2(213)	6.23	-.174(-.192)	.139(.137)
7509	.40	10.2(213)	8.21	-.109(-.130)	.128(.126)
7510	.40	10.2(213)	10.19	-.026(-.044)	.114(.109)
7511	.40	10.2(213)	12.12	.059(.041)	.103(.097)
7512	.40	10.2(212)	14.08	.140(.126)	.099(.091)
7513	.40	10.2(212)	16.05	.225(.136)	.096(.100)

Table A-1.–(Concluded)

(k) T.E. Deflection, Full Span = -8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
7705	1.11	40.3(841)	.20	-.144(-.156)	.088(.095)
7706	1.11	40.2(840)	2.21	-.072(-.088)	.071(.079)
7707	1.11	40.2(840)	4.13	.005(-.012)	.050(.058)
7708	1.11	40.2(840)	6.08	.094(.080)	.025(.031)
7709	1.11	40.3(841)	8.00	.184(.170)	.001(.007)
7801	.40	10.2(212)	-7.64	-.415(-.421)	.133(.133)
7802	.40	10.2(213)	-5.68	-.338(-.340)	.117(.116)
7803	.40	10.2(213)	-3.75	-.267(-.278)	.102(.105)
7804	.40	10.2(212)	-1.77	-.200(-.209)	.087(.086)
7805	.40	10.2(213)	.22	-.136(-.146)	.074(.072)
7806	.40	10.2(213)	2.21	-.073(-.087)	.062(.061)
7807	.40	10.2(213)	4.16	-.011(-.027)	.050(.050)
7808	.40	10.2(213)	6.13	.057(.042)	.034(.032)
7809	.40	10.2(213)	8.07	.136(.121)	.015(.013)
7810	.40	10.2(213)	10.03	.224(.209)	.000(-.003)
7811	.40	10.2(212)	12.01	.312(.297)	-.011(-.014)
7812	.40	10.2(212)	14.01	.402(.389)	-.020(-.025)
7813	.40	10.2(212)	15.93	.489(.474)	-.029(-.034)
7901	1.05	38.9(812)	-7.71	-.467(-.473)	.164(.166)
7902	1.05	38.8(810)	-5.78	-.389(-.397)	.151(.155)
7903	1.05	38.8(810)	-3.78	-.310(-.318)	.136(.141)
7904	1.05	38.7(809)	-1.88	-.237(-.248)	.118(.123)
7905	1.05	38.8(810)	.12	-.162(-.171)	.097(.099)
7906	1.05	38.7(809)	2.11	-.089(-.102)	.079(.084)
7907	1.05	38.8(810)	4.08	-.011(-.027)	.059(.065)
7908	1.05	38.7(809)	6.03	.079(.063)	.033(.036)
7909	1.05	38.7(809)	7.96	.172(.157)	.009(.015)
7910	1.05	38.7(809)	9.94	.267(.259)	-.013(-.012)
7911	1.05	38.8(810)	11.89	.359(.351)	-.032(-.029)
7912	1.05	38.8(810)	13.83	.445(.441)	-.048(-.044)
7913	1.05	38.8(811)	15.78	.535(.527)	-.066(-.065)
8005	.70	25.0(523)	.08	-.149(-.156)	.076(.077)
8006	.70	25.1(524)	2.16	-.082(-.092)	.063(.065)
8007	.70	25.0(522)	4.11	-.018(-.030)	.051(.054)
8008	.70	25.0(523)	6.09	.057(.043)	.031(.035)
8009	.70	25.0(522)	8.06	.142(.129)	.013(.016)
8010	.70	25.0(522)	9.98	.229(.216)	-.000(.002)
8011	.70	25.0(522)	11.96	.318(.305)	-.012(-.012)
8012	.70	25.0(522)	13.92	.409(.396)	-.023(-.023)
8013	.70	25.0(522)	15.90	.501(.495)	-.032(-.030)
8101	.95	35.6(744)	.11	-.169(-.176)	.093(.094)
8102	.95	35.6(744)	2.10	-.098(-.110)	.076(.080)
8103	.95	35.6(744)	4.08	-.026(-.040)	.060(.065)
8104	.95	35.7(745)	6.05	.063(.048)	.036(.041)
8105	.95	35.7(745)	7.97	.150(.136)	.018(.023)
8106	.95	35.7(745)	9.92	.241(.227)	.002(.005)
8107	.95	35.7(745)	11.87	.338(.325)	-.015(-.011)
8108	.95	35.7(745)	13.86	.437(.428)	-.033(-.028)
8109	.95	35.7(746)	15.81	.532(.533)	-.050(-.048)
8202	.85	31.8(665)	1.85	-.097(-.103)	.072(.071)
8203	.85	31.8(665)	2.12	-.088(-.099)	.069(.071)
8204	.85	31.8(665)	4.10	-.021(-.034)	.055(.058)
8205	.85	31.8(665)	6.04	.059(.045)	.034(.037)
8206	.85	31.8(665)	8.00	.145(.130)	.017(.020)
8207	.85	31.8(665)	9.98	.235(.221)	.002(.004)
8208	.85	31.8(665)	11.95	.327(.315)	-.011(-.011)
8209	.85	31.8(665)	13.88	.418(.411)	-.023(-.022)
8210	.85	31.8(665)	15.84	.510(.509)	-.032(-.034)

Table A-2.—Experimental Data Test Point Log. Flat Wing, Rounded Leading Edge; L.E. Deflection, Full Span = 12.8°

(a) T.E. Deflection, Full Span = -8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
8408	1.11	40.4(843)	.19	-.155(-.168)	.083(.093)
8409	1.11	40.3(842)	2.16	-.079(-.095)	.065(.074)
8410	1.11	40.3(841)	4.12	-.004(-.020)	.046(.054)
8411	1.11	40.3(842)	6.12	.074(.062)	.025(.031)
8412	1.11	40.3(842)	8.05	.158(.152)	-.000(.004)
8503	.40	10.2(213)	.21	-.148(-.163)	.070(.069)
8504	.40	10.2(213)	2.18	-.081(-.094)	.059(.058)
8505	.40	10.2(213)	4.18	-.015(-.029)	.045(.046)
8506	.40	10.2(213)	6.13	.049(.034)	.032(.032)
8507	.40	10.2(212)	8.09	.118(.109)	.017(.013)
8508	.40	10.2(212)	10.10	.195(.194)	-.002(-.008)
8509	.40	10.2(212)	12.05	.278(.282)	-.024(-.031)
8510	.40	10.2(212)	13.98	.359(.360)	-.041(-.043)
8511	.40	10.2(212)	15.96	.444(.466)	-.055(-.065)
8603	1.05	38.9(812)	2.10	-.094(-.111)	.073(.080)
8604	1.05	38.9(812)	4.08	-.017(-.034)	.053(.060)
8605	1.05	38.8(811)	6.04	.062(.059)	.032(.036)
8606	1.05	38.8(811)	7.97	.145(.137)	.008(.011)
8607	1.05	38.9(812)	9.98	.238(.232)	-.020(-.015)
8608	1.05	38.8(811)	11.94	.328(.336)	-.042(-.042)
8609	1.05	38.8(811)	13.89	.416(.423)	-.061(-.064)
8610	1.05	38.8(811)	15.82	.501(.501)	-.078(-.075)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
8702	.70	25.1(524)	.17	-.159(-.166)	.075(.076)
8703	.70	25.0(522)	2.14	-.090(-.099)	.061(.063)
8704	.70	25.0(522)	4.12	-.023(-.033)	.047(.049)
8705	.70	25.0(522)	6.08	.046(.035)	.031(.034)
8706	.70	25.0(522)	8.04	.120(.112)	.014(.017)
8707	.70	24.9(521)	10.01	.199(.196)	-.006(-.005)
8708	.70	25.0(522)	11.97	.287(.281)	-.027(-.023)
8709	.70	25.0(522)	13.92	.372(.377)	-.039(-.040)
8710	.70	25.0(522)	15.88	.461(.463)	-.051(-.052)
8801	.95	35.8(747)	.13	-.182(-.191)	.091(.093)
8802	.95	35.8(748)	2.09	-.107(-.117)	.073(.077)
8803	.95	35.8(747)	4.06	-.032(-.044)	.055(.060)
8804	.95	35.8(747)	6.02	.045(.034)	.035(.040)
8805	.95	35.8(747)	7.98	.124(.117)	.016(.020)
8806	.95	35.8(747)	9.93	.213(.209)	-.007(-.003)
8807	.95	35.8(747)	11.89	.303(.314)	-.026(-.028)
8808	.95	35.8(747)	13.84	.400(.402)	-.046(-.046)
8809	.95	35.8(747)	15.81	.492(.499)	-.062(-.059)
8901	.85	31.9(666)	.14	-.166(-.176)	.082(.087)
8902	.85	31.9(666)	2.12	-.094(-.105)	.066(.068)
8903	.85	31.9(666)	4.08	-.025(-.037)	.051(.053)
8904	.85	31.9(666)	6.05	.046(.034)	.034(.037)
8905	.85	31.9(666)	8.00	.122(.115)	.016(.017)
8906	.85	31.9(666)	9.97	.206(.203)	-.006(-.006)
8907	.85	31.9(666)	11.93	.294(.295)	-.025(-.025)
8908	.85	31.9(666)	13.88	.383(.389)	-.039(-.042)
8909	.85	31.8(665)	15.84	.473(.472)	-.051(-.047)

Table A-2.—(Continued)

(b) T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
9701	1.11	40.5(845)	-7.79	-.339(-.356)	.070(.070)
9702	1.11	40.5(846)	-5.82	-.253(-.264)	.051(.053)
9703	1.11	40.5(845)	-3.85	-.167(-.171)	.031(.035)
9704	1.11	40.5(846)	-1.87	-.083(-.089)	.010(.016)
9705	1.11	40.5(846)	.09	-.005(-.016)	-.011(-.004)
9706	1.11	40.6(847)	2.06	.073(.057)	-.030(-.023)
9707	1.11	40.5(846)	4.03	.151(.135)	-.051(-.046)
9708	1.11	40.5(846)	5.99	.228(.217)	-.071(-.069)
9709	1.11	40.5(846)	7.96	.309(.306)	-.093(-.093)
9801	.40	10.2(212)	-7.73	-.294(-.304)	.055(.047)
9802	.40	10.2(212)	-5.77	-.214(-.228)	.044(.035)
9803	.40	10.2(213)	-3.79	-.136(-.153)	.030(.022)
9804	.40	10.2(213)	-1.83	-.063(-.080)	.017(.009)
9805	.40	10.2(213)	.15	.006(-.011)	.004(-.004)
9806	.40	10.2(213)	2.12	.071(.054)	-.010(-.015)
9807	.40	10.2(213)	4.09	.136(.116)	-.025(-.027)
9808	.40	10.2(213)	6.06	.204(.188)	-.042(-.046)
9809	.40	10.2(213)	8.02	.279(.270)	-.062(-.070)
9810	.40	10.2(213)	9.99	.360(.347)	-.083(-.083)
9811	.40	10.2(213)	11.95	.445(.440)	-.104(-.109)
9812	.40	10.2(213)	13.92	.529(.511)	-.121(-.114)
9813	.40	10.2(213)	15.89	.618(.618)	-.136(-.137)
9901	1.05	39.0(815)	-7.85	-.349(-.365)	.073(.071)
9902	1.05	39.0(815)	-5.88	-.261(-.273)	.054(.055)
9903	1.05	39.0(815)	-3.91	-.173(-.175)	.032(.036)
9904	1.05	39.0(814)	-1.94	-.088(-.093)	.012(.016)
9905	1.05	39.0(815)	.03	-.009(-.020)	-.007(-.004)
9906	1.05	39.0(814)	2.01	.070(.053)	-.026(-.020)
9907	1.05	39.0(815)	3.97	.147(.133)	-.046(-.043)
9908	1.05	39.0(815)	5.94	.227(.215)	-.069(-.067)
9909	1.05	39.0(815)	7.91	.310(.307)	-.091(-.092)
9910	1.05	39.0(815)	9.87	.392(.390)	-.110(-.108)
9911	1.05	39.0(815)	11.84	.479(.482)	-.130(-.129)
9912	1.05	39.0(815)	13.82	.560(.563)	-.144(-.146)
9913	1.05	39.0(815)	15.82	.646(.645)	-.160(-.154)
10001	.70	25.1(525)	-7.81	-.308(-.320)	.051(.047)
10002	.70	25.1(525)	-5.83	-.226(-.233)	.038(.038)
10003	.70	25.1(525)	-3.86	-.148(-.154)	.024(.025)
10004	.70	25.1(525)	-1.88	-.072(-.085)	.011(.011)
10005	.70	25.1(525)	.10	-.001(-.014)	-.004(-.003)
10006	.70	25.1(525)	2.07	.066(.053)	-.016(-.016)
10007	.70	25.1(525)	4.05	.134(.119)	-.031(-.028)
10008	.70	25.2(526)	6.02	.204(.193)	-.049(-.048)
10009	.70	25.1(525)	7.99	.283(.272)	-.069(-.066)
10010	.70	25.1(525)	9.96	.363(.361)	-.087(-.089)
10011	.70	25.1(525)	11.93	.450(.438)	-.106(-.099)
10012	.70	25.1(525)	13.90	.541(.540)	-.122(-.117)
10013	.70	25.1(525)	15.89	.631(.627)	-.132(-.128)
10101	.95	35.9(750)	-7.88	-.337(-.352)	.062(.055)
10102	.95	35.9(750)	-5.91	-.249(-.256)	.045(.042)
10103	.95	35.9(750)	-3.92	-.163(-.170)	.027(.026)
10104	.95	35.9(750)	-1.95	-.082(-.092)	.011(.011)
10105	.95	35.9(750)	.02	-.007(-.016)	-.005(-.004)
10106	.95	35.9(750)	2.01	.066(.054)	-.020(-.018)
10107	.95	35.9(750)	3.99	.139(.126)	-.037(-.034)
10108	.95	35.9(750)	5.95	.215(.204)	-.057(-.054)
10109	.95	35.9(750)	7.92	.297(.295)	-.077(-.078)
10110	.95	35.9(750)	9.89	.381(.375)	-.096(-.092)
10111	.95	35.9(750)	11.86	.474(.482)	-.119(-.119)
10112	.95	35.9(750)	13.83	.566(.571)	-.137(-.137)
10113	.95	35.9(750)	15.82	.660(.653)	-.154(-.147)
10201	.85	32.0(668)	-7.85	-.322(-.335)	.057(.049)
10202	.85	32.0(668)	-5.87	-.237(-.246)	.042(.039)
10203	.85	32.0(668)	-3.89	-.155(-.160)	.027(.025)
10204	.85	32.0(669)	-1.91	-.077(-.087)	.012(.012)
10205	.85	32.0(668)	.05	-.005(-.015)	-.003(-.003)
10206	.85	32.0(668)	2.05	.066(.053)	-.017(-.017)
10207	.85	32.0(668)	4.02	.136(.120)	-.034(-.030)
10208	.85	32.0(669)	5.99	.209(.197)	-.052(-.050)
10209	.85	32.0(669)	7.96	.288(.278)	-.072(-.067)
10210	.85	32.0(669)	9.93	.368(.359)	-.088(-.084)
10211	.85	32.0(669)	11.91	.460(.459)	-.109(-.108)
10212	.85	32.0(669)	13.88	.549(.551)	-.124(-.122)
10213	.85	32.0(669)	15.87	.641(.637)	-.136(-.129)

Table A-2.—(Continued)

(c) T.E. Deflection, Full Span = 4.1°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
10404	1.11	40.5(846)	-7.76	-.269(-.284)	.027(.028)
10405	1.11	40.6(848)	-5.79	-.184(-.193)	.008(.012)
10406	1.11	40.6(847)	-3.84	-.098(-.099)	-.013(-.007)
10407	1.11	40.6(847)	-1.88	-.015(-.018)	-.033(-.025)
10408	1.11	40.6(847)	.10	.065(.056)	-.054(-.047)
10409	1.11	40.6(848)	2.04	.140(.128)	-.074(-.066)
10410	1.11	40.6(847)	4.00	.216(.204)	-.095(-.089)
10411	1.11	40.6(847)	5.97	.291(.282)	-.113(-.107)
10412	1.11	40.6(847)	7.95	.369(.366)	-.132(-.128)
10501	.70	25.1(525)	-7.79	-.234(-.242)	.014(.011)
10502	.70	25.1(525)	-5.83	-.155(-.157)	-.000(.001)
10503	.70	25.2(526)	-3.87	-.079(-.082)	-.012(-.011)
10504	.70	25.2(526)	-1.91	-.004(-.011)	-.028(-.025)
10505	.70	25.1(525)	.07	.067(.058)	-.042(-.039)
10506	.70	25.1(525)	2.03	.133(.124)	-.055(-.051)
10507	.70	25.1(525)	4.02	.200(.190)	-.069(-.065)
10508	.70	25.1(525)	5.98	.269(.262)	-.085(-.083)
10509	.70	25.1(525)	7.94	.345(.337)	-.102(-.096)
10510	.70	25.1(525)	9.90	.424(.417)	-.119(-.113)
10511	.70	25.1(525)	11.87	.503(.500)	-.133(-.127)
10512	.70	25.2(526)	13.83	.597(.605)	-.153(-.150)
10513	.70	25.2(526)	15.79	.685(.685)	-.161(-.155)
10514	.70	25.1(525)	.07	.066(.058)	-.039(-.039)
10601	1.05	39.1(817)	-7.78	-.271(-.286)	.029(.027)
10602	1.05	39.1(816)	-5.86	-.187(-.197)	.011(.012)
10603	1.05	39.1(816)	-3.90	-.101(-.102)	-.010(-.006)
10604	1.05	39.1(817)	-1.95	-.018(-.021)	-.030(-.026)
10605	1.05	39.1(816)	.01	.062(.055)	-.051(-.046)
10606	1.05	39.1(816)	1.99	.141(.128)	-.071(-.064)
10607	1.05	39.1(816)	3.95	.218(.208)	-.092(-.088)
10608	1.05	39.1(816)	5.92	.296(.286)	-.113(-.108)
10609	1.05	39.1(816)	7.87	.372(.370)	-.130(-.129)
10610	1.05	39.1(817)	9.84	.451(.444)	-.146(-.138)
10611	1.05	39.1(817)	11.80	.529(.531)	-.160(-.156)
10612	1.05	39.1(816)	13.74	.605(.612)	-.172(-.172)
10613	1.05	39.0(815)	15.73	.683(.687)	-.183(-.178)
10701	.95	36.0(751)	-7.84	-.256(-.268)	.018(.012)
10702	.95	36.0(751)	-5.89	-.170(-.176)	.002(.000)
10703	.95	36.0(751)	-3.92	-.088(-.094)	-.013(-.014)
10704	.95	36.0(751)	-1.96	-.009(-.015)	-.030(-.028)
10705	.95	36.0(752)	.01	.066(.059)	-.045(-.044)
10706	.95	36.0(751)	1.98	.138(.129)	-.061(-.058)
10707	.95	36.0(751)	3.94	.210(.202)	-.078(-.075)
10708	.95	36.0(752)	5.90	.286(.277)	-.098(-.094)
10709	.95	36.0(751)	7.87	.364(.363)	-.116(-.114)
10710	.95	36.0(752)	9.83	.443(.444)	-.132(-.129)
10711	.95	36.0(752)	11.80	.529(.540)	-.151(-.151)
10712	.95	36.0(752)	13.74	.618(.625)	-.170(-.169)
10713	.95	36.0(752)	15.70	.701(.711)	-.181(-.173)
10801	.85	32.1(671)	-7.82	-.244(-.257)	.018(.010)
10802	.85	32.1(671)	-5.85	-.162(-.169)	.004(.000)
10803	.85	32.1(671)	-3.90	-.084(-.087)	-.010(-.012)
10804	.85	32.1(671)	-1.94	-.008(-.014)	-.025(-.026)
10805	.85	32.1(671)	.03	.065(.059)	-.040(-.041)
10806	.85	32.1(671)	2.02	.134(.125)	-.054(-.054)
10807	.85	32.1(671)	3.97	.203(.194)	-.071(-.070)
10808	.85	32.1(671)	5.96	.277(.274)	-.090(-.093)
10809	.85	32.1(670)	7.89	.352(.352)	-.106(-.107)
10810	.85	32.1(670)	9.87	.430(.421)	-.121(-.114)
10811	.85	32.1(671)	11.83	.515(.515)	-.139(-.134)
10812	.85	32.1(671)	13.76	.606(.612)	-.156(-.154)
10813	.85	32.1(671)	14.78	.652(.653)	-.163(-.157)
10815	.85	32.1(671)	15.73	.692(.700)	-.165(-.160)
10901	.40	10.3(215)	-7.76	-.224(-.229)	.024(.014)
10902	.40	10.3(215)	-5.80	-.149(-.151)	.012(.003)
10903	.40	10.2(214)	-3.81	-.075(-.081)	-.001(-.011)
10904	.40	10.2(214)	-1.88	-.004(-.015)	-.015(-.024)
10905	.40	10.2(214)	.13	.066(.059)	-.029(-.037)
10906	.40	10.2(214)	2.08	.130(.123)	-.042(-.049)
10907	.40	10.2(214)	4.06	.195(.185)	-.058(-.061)
10908	.40	10.2(214)	6.03	.262(.252)	-.075(-.077)
10909	.40	10.2(213)	7.99	.334(.340)	-.092(-.104)
10910	.40	10.2(213)	9.95	.413(.411)	-.111(-.112)
10911	.40	10.2(214)	11.93	.492(.494)	-.128(-.131)
10912	.40	10.2(214)	13.88	.579(.575)	-.145(-.141)
10913	.40	10.2(213)	15.83	.669(.672)	-.162(-.161)

(d) T.E. Deflection, Full Span = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
11104	1.05	39.1(817)	-7.84	-.214(-.227)	-.009(-.010)
11105	1.05	39.1(816)	-5.89	-.125(-.135)	-.030(-.026)
11106	1.05	39.1(817)	-3.93	-.040(-.037)	-.049(-.045)
11107	1.05	39.1(817)	-1.97	.042(.043)	-.069(-.064)
11108	1.05	39.1(817)	-.01	.121(.116)	-.088(-.083)
11109	1.05	39.1(817)	1.95	.200(.194)	-.109(-.103)
11110	1.05	39.2(818)	3.92	.276(.268)	-.129(-.125)
11111	1.05	39.1(817)	5.90	.348(.336)	-.143(-.138)
11112	1.05	39.2(818)	7.84	.421(.414)	-.159(-.153)
11113	1.05	39.1(817)	9.83	.497(.487)	-.174(-.162)
11114	1.05	39.1(817)	11.78	.570(.571)	-.185(-.176)
11115	1.05	39.1(817)	13.73	.641(.649)	-.193(-.193)
11116	1.05	39.1(817)	15.71	.714(.719)	-.202(-.194)
11201	.70	25.3(528)	-7.83	-.167(-.176)	-.021(-.022)
11202	.70	25.2(526)	-5.87	-.088(-.092)	-.034(-.032)
11203	.70	25.2(526)	-3.91	-.013(-.014)	-.047(-.044)
11204	.70	25.2(526)	-1.95	.060(.053)	-.060(-.059)
11205	.70	25.2(526)	.03	.129(.121)	-.073(-.071)
11206	.70	25.2(526)	2.02	.194(.189)	-.086(-.083)
11207	.70	25.2(526)	3.98	.260(.250)	-.101(-.095)
11208	.70	25.2(527)	5.95	.330(.329)	-.117(-.120)
11209	.70	25.2(527)	7.90	.404(.404)	-.132(-.130)
11210	.70	25.3(528)	9.90	.477(.466)	-.144(-.134)
11211	.70	25.3(528)	11.83	.560(.552)	-.162(-.151)
11212	.70	25.3(528)	13.80	.649(.657)	-.178(-.173)
11213	.70	25.3(528)	15.76	.731(.733)	-.186(-.177)
11214	.70	25.2(527)	.10	.131(.123)	-.073(-.072)
11301	.95	36.0(751)	-8.02	-.195(-.209)	-.017(-.023)
11302	.95	36.0(752)	-7.87	-.189(-.202)	-.019(-.024)
11303	.95	36.0(752)	-5.91	-.102(-.106)	-.035(-.037)
11304	.95	36.0(752)	-3.96	-.022(-.026)	-.049(-.051)
11305	.95	36.0(752)	-1.98	.055(.053)	-.065(-.065)
11306	.95	36.0(752)	-.03	.126(.122)	-.079(-.078)
11307	.95	36.0(752)	1.95	.199(.196)	-.096(-.094)
11308	.95	36.0(752)	3.91	.270(.271)	-.113(-.116)
11309	.95	36.1(753)	5.88	.348(.341)	-.134(-.130)
11310	.95	36.0(752)	7.86	.422(.417)	-.149(-.143)
11311	.95	36.0(752)	9.82	.497(.493)	-.164(-.156)
11312	.95	36.0(752)	11.76	.581(.591)	-.184(-.178)
11313	.95	36.0(752)	13.72	.657(.665)	-.194(-.190)
11314	.95	36.0(752)	15.69	.735(.746)	-.201(-.191)

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
11401	.85	32.1(671)	-7.89	-.179(-.191)	-.019(-.023)
11402	.85	32.1(671)	-5.90	-.095(-.103)	-.034(-.035)
11403	.85	32.1(671)	-3.92	-.017(-.019)	-.048(-.047)
11404	.85	32.1(671)	-1.96	.057(.053)	-.062(-.061)
11405	.85	32.1(671)	-.02	.127(.121)	-.076(-.075)
11406	.85	32.1(671)	1.96	.195(.190)	-.090(-.088)
11407	.85	32.1(671)	3.93	.264(.257)	-.106(-.103)
11408	.85	32.1(671)	5.93	.338(.333)	-.123(-.122)
11409	.85	32.1(671)	7.87	.413(.413)	-.139(-.138)
11410	.85	32.2(672)	9.83	.486(.478)	-.151(-.141)
11411	.85	32.1(671)	11.79	.570(.572)	-.168(-.162)
11412	.85	32.2(672)	13.75	.656(.663)	-.184(-.180)
11413	.85	32.1(671)	15.71	.738(.745)	-.191(-.183)
11501	.40	10.2(214)	-7.78	-.160(-.158)	-.008(-.016)
11502	.40	10.2(214)	-5.82	-.084(-.082)	-.019(-.027)
11503	.40	10.2(214)	-3.85	-.010(-.017)	-.032(-.043)
11504	.40	10.2(213)	-1.89	.060(.053)	-.045(-.056)
11505	.40	10.2(214)	.08	.125(.120)	-.057(-.068)
11506	.40	10.2(214)	2.06	.188(.183)	-.069(-.078)
11507	.40	10.2(213)	4.03	.252(.247)	-.085(-.092)
11508	.40	10.2(214)	6.01	.317(.314)	-.099(-.107)
11509	.40	10.2(214)	7.98	.388(.389)	-.115(-.125)
11510	.40	10.2(214)	9.94	.461(.474)	-.130(-.142)
11511	.40	10.2(214)	11.90	.540(.538)	-.147(-.149)
11512	.40	10.2(214)	13.86	.625(.629)	-.165(-.165)
11513	.40	10.2(214)	15.82	.715(.728)	-.182(-.185)

Table A-2.—(Continued)

(e) T.E. Deflection, Full Span = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
11613	1.11	40.6(848)	-7.80	-.122(-.116)	-.060(-.068)
11614	1.11	40.6(848)	-3.93	.050(.059)	-.102(-.099)
11615	1.11	40.6(848)	.03	.206(.209)	-.138(-.135)
11616	1.11	40.6(848)	4.01	.347(.350)	-.170(-.171)
11801	.40	10.2(214)	-7.84	-.030(-.031)	-.080(-.078)
11802	.40	10.2(214)	-5.88	.043(.043)	-.090(-.088)
11803	.40	10.2(214)	-3.90	.113(.111)	-.101(-.099)
11804	.40	10.2(214)	-1.96	.181(.175)	-.113(-.112)
11805	.40	10.2(214)	.05	.250(.242)	-.127(-.125)
11806	.40	10.2(214)	1.99	.310(.303)	-.139(-.138)
11807	.40	10.2(214)	3.96	.370(.361)	-.150(-.147)
11808	.40	10.2(214)	5.95	.432(.434)	-.162(-.168)
11809	.40	10.2(214)	7.91	.497(.486)	-.174(-.163)
11810	.40	10.2(214)	9.88	.565(.575)	-.185(-.188)
11811	.40	10.2(214)	11.86	.638(.628)	-.198(-.187)
11812	.40	10.2(214)	13.80	.731(.747)	-.220(-.219)
11813	.40	10.2(214)	15.78	.815(.819)	-.234(-.226)
12005	1.05	39.1(817)	-7.91	-.115(-.122)	-.067(-.067)
12006	1.05	39.1(816)	-5.97	-.025(-.027)	-.087(-.084)
12007	1.05	39.1(817)	-4.00	.062(.071)	-.108(-.101)
12008	1.05	39.1(817)	-2.06	.141(.144)	-.125(-.118)
12009	1.05	39.1(816)	-.05	.219(.215)	-.143(-.137)
12010	1.05	39.1(817)	1.94	.292(.291)	-.159(-.156)
12011	1.05	39.1(816)	3.88	.357(.359)	-.172(-.172)
12012	1.05	39.1(817)	5.87	.421(.425)	-.182(-.182)
12013	1.05	39.1(817)	7.81	.487(.485)	-.194(-.185)
12014	1.05	39.1(817)	9.78	.558(.579)	-.206(-.210)
12015	1.05	39.1(817)	11.75	.623(.648)	-.212(-.216)
12016	1.05	39.1(817)	13.73	.694(.714)	-.221(-.225)
12017	1.05	39.1(817)	15.64	.750(.774)	-.220(-.221)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
12102	.70	25.2(527)	-7.87	-.043(-.055)	-.081(-.079)
12103	.70	25.2(527)	-5.90	.032(.025)	-.091(-.085)
12104	.70	25.2(527)	-3.96	.107(.104)	-.105(-.101)
12105	.70	25.2(527)	-1.99	.178(.172)	-.118(-.115)
12106	.70	25.2(527)	-.03	.245(.238)	-.131(-.126)
12107	.70	25.2(527)	1.98	.308(.298)	-.143(-.137)
12108	.70	25.2(527)	3.93	.373(.369)	-.158(-.157)
12109	.70	25.2(526)	5.88	.440(.430)	-.172(-.164)
12110	.70	25.2(526)	7.88	.502(.510)	-.178(-.180)
12111	.70	25.2(526)	9.82	.572(.567)	-.190(-.181)
12112	.70	25.2(526)	11.79	.654(.667)	-.207(-.205)
12113	.70	25.2(526)	13.79	.741(.753)	-.221(-.216)
12114	.70	25.2(526)	15.72	.814(.829)	-.223(-.220)
12115	.70	25.2(527)	-.01	.243(.238)	-.130(-.126)
12201	.95	36.1(753)	-7.91	-.076(-.082)	-.078(-.083)
12202	.95	36.0(752)	-5.97	.004(.001)	-.089(-.088)
12203	.95	36.0(752)	-4.03	.087(.083)	-.108(-.104)
12204	.95	36.0(752)	-2.07	.163(.164)	-.124(-.121)
12205	.95	36.0(752)	-.06	.236(.233)	-.140(-.136)
12206	.95	36.0(751)	1.89	.305(.305)	-.156(-.155)
12207	.95	36.0(752)	3.86	.373(.372)	-.173(-.170)
12208	.95	36.0(752)	5.81	.439(.441)	-.187(-.183)
12209	.95	36.0(752)	7.79	.503(.503)	-.196(-.189)
12210	.95	36.0(752)	9.82	.573(.581)	-.206(-.201)
12211	.95	36.0(752)	11.75	.647(.666)	-.220(-.217)
12212	.95	36.0(752)	13.74	.719(.735)	-.227(-.226)
12213	.95	36.0(751)	15.69	.783(.807)	-.224(-.221)
12301	.85	32.1(671)	-7.90	-.061(-.073)	-.077(-.079)
12302	.85	32.1(671)	-5.93	.020(.011)	-.090(-.086)
12303	.85	32.1(671)	-3.98	.097(.092)	-.105(-.099)
12304	.85	32.1(671)	-2.07	.168(.163)	-.118(-.115)
12305	.85	32.1(670)	-.05	.239(.233)	-.133(-.128)
12306	.85	32.1(671)	-.04	.239(.233)	-.133(-.128)
12307	.85	32.1(670)	1.94	.304(.296)	-.146(-.141)
12308	.85	32.1(670)	3.91	.373(.371)	-.163(-.162)
12309	.85	32.1(670)	5.86	.441(.439)	-.177(-.172)
12310	.85	32.1(670)	7.82	.505(.506)	-.184(-.179)
12311	.85	32.1(670)	9.80	.576(.577)	-.196(-.188)
12312	.85	32.1(671)	11.76	.657(.675)	-.213(-.210)
12313	.85	32.1(671)	13.71	.735(.753)	-.225(-.224)
12314	.85	32.1(671)	15.69	.804(.824)	-.224(-.221)

Table A-2.—(Concluded)

(f) T.E. Deflection, Full Span = -17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
12405	1.11	40.7(850)	.24	-.246(-.276)	.133(.156)
12406	1.11	40.7(849)	4.20	-.105(-.132)	.102(.118)
12407	1.11	40.7(849)	8.11	.046(.024)	.057(.081)
12601	.40	10.3(215)	.29	-.289(-.301)	.135(.137)
12602	.40	10.3(215)	2.26	-.223(-.233)	.123(.124)
12603	.40	10.2(214)	4.22	-.155(-.166)	.108(.111)
12604	.40	10.2(214)	6.22	-.089(-.101)	.094(.097)
12605	.40	10.2(214)	8.16	-.022(-.034)	.080(.083)
12606	.40	10.2(214)	10.12	.046(.038)	.066(.068)
12607	.40	10.2(214)	12.08	.119(.115)	.051(.052)
12608	.40	10.2(214)	14.05	.204(.204)	.030(.030)
12610	.40	10.2(214)	16.05	.292(.305)	.012(.008)
12701	1.05	39.2(818)	.19	-.269(-.303)	.143(.167)
12702	1.05	39.2(818)	2.15	-.197(-.228)	.127(.149)
12703	1.05	39.2(818)	4.15	-.125(-.152)	.111(.127)
12704	1.05	39.2(818)	6.07	-.054(-.078)	.095(.109)
12705	1.05	39.2(818)	8.04	.023(.002)	.076(.089)
12706	1.05	39.2(818)	10.00	.110(.095)	.056(.068)
12707	1.05	39.2(818)	11.97	.198(.198)	.037(.040)
12708	1.05	39.2(819)	13.95	.290(.288)	.017(.020)
12709	1.05	39.2(818)	15.88	.380(.368)	-.003(.012)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
12801	.70	25.3(528)	.24	-.297(-.312)	.143(.149)
12802	.70	25.3(528)	2.21	-.228(-.241)	.129(.134)
12803	.70	25.3(528)	4.17	-.160(-.175)	.114(.119)
12804	.70	25.3(528)	6.14	-.093(-.108)	.100(.105)
12805	.70	25.2(527)	8.15	-.021(-.032)	.084(.089)
12806	.70	25.2(527)	10.06	.049(.040)	.070(.075)
12807	.70	25.3(528)	12.06	.129(.126)	.053(.055)
12808	.70	25.3(528)	14.00	.218(.220)	.035(.036)
12809	.70	25.2(527)	15.97	.311(.309)	.021(.021)
12810	.70	25.3(528)	.24	-.299(-.313)	.144(.150)
12901	.95	36.1(753)	.18	-.292(-.316)	.151(.163)
12902	.95	36.1(753)	2.16	-.218(-.241)	.132(.142)
12903	.95	36.1(753)	4.12	-.150(-.173)	.117(.127)
12904	.95	36.1(753)	6.08	-.082(-.105)	.102(.114)
12905	.95	36.0(752)	8.06	-.010(-.030)	.086(.099)
12906	.95	36.0(752)	10.04	.068(.051)	.070(.082)
12907	.95	36.1(753)	11.96	.157(.149)	.052(.061)
12908	.95	36.1(753)	13.90	.251(.243)	.034(.041)
12909	.95	36.0(752)	15.87	.350(.346)	.016(.027)
13001	.85	32.2(672)	.21	-.299(-.320)	.148(.155)
13002	.85	32.2(672)	2.21	-.227(-.249)	.132(.141)
13003	.85	32.2(672)	4.13	-.160(-.180)	.117(.125)
13004	.85	32.2(672)	6.14	-.089(-.108)	.101(.109)
13005	.85	32.1(671)	8.07	-.019(-.035)	.087(.095)
13006	.85	32.1(671)	10.02	.053(.040)	.072(.079)
13007	.85	32.2(672)	12.03	.142(.133)	.052(.059)
13008	.85	32.2(672)	13.95	.232(.231)	.037(.040)
13009	.85	32.1(671)	15.92	.327(.324)	.023(.027)

Table A-3.—Experimental Data Test Point Log. Flat Wing, Rounded Leading Edge; L.E. Deflection, Full Span = 5.1°

(a) T.E. Deflection, Full Span = -17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
13127	1.11	40.6(848)	.22	-.236(-.264)	.133(.155)
13128	1.11	40.6(848)	4.17	-.104(-.131)	.107(.122)
13129	1.11	40.6(848)	8.09	.056(.041)	.066(.075)
13201	.40	10.2(214)	.28	-.275(-.292)	.138(.143)
13202	.40	10.2(214)	2.25	-.211(-.227)	.124(.126)
13203	.40	10.2(214)	4.22	-.150(-.166)	.112(.114)
13204	.40	10.2(214)	6.19	-.086(-.102)	.099(.101)
13205	.40	10.2(213)	8.15	-.023(-.035)	.087(.086)
13206	.40	10.2(214)	10.12	.052(.041)	.069(.068)
13207	.40	10.2(214)	12.09	.129(.126)	.054(.050)
13208	.40	10.2(213)	14.05	.215(.204)	.039(.037)
13209	.40	10.2(213)	16.00	.310(.304)	.026(.019)
13301	1.05	39.1(817)	.17	-.259(-.283)	.144(.164)
13302	1.05	39.1(816)	2.14	-.191(-.219)	.128(.147)
13303	1.05	39.1(816)	4.11	-.125(-.150)	.115(.131)
13304	1.05	39.1(817)	6.08	-.052(-.074)	.098(.112)
13305	1.05	39.1(817)	8.04	.034(.017)	.076(.088)
13306	1.05	39.1(817)	9.99	.126(.110)	.057(.066)
13307	1.05	39.1(817)	11.94	.270(.203)	.038(.044)
13308	1.05	39.1(817)	13.89	.309(.288)	.023(.032)
13309	1.05	39.1(816)	15.85	.405(.390)	.001(.010)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
13401	.70	25.1(525)	.23	-.286(-.302)	.146(.152)
13402	.70	25.1(525)	2.22	-.220(-.237)	.132(.136)
13403	.70	25.1(525)	4.18	-.156(-.172)	.118(.122)
13404	.70	25.2(526)	6.15	-.091(-.106)	.104(.108)
13405	.70	25.2(526)	8.12	-.024(-.037)	.090(.093)
13406	.70	25.2(526)	10.07	.056(.046)	.073(.075)
13407	.70	25.2(526)	12.03	.146(.136)	.057(.058)
13408	.70	25.2(526)	13.98	.238(.231)	.045(.043)
13409	.70	25.1(525)	15.95	.337(.331)	.031(.026)
13410	.70	25.2(526)	.23	-.291(-.303)	.149(.152)
13501	.95	36.0(752)	.17	-.275(-.294)	.146(.156)
13502	.95	36.0(751)	2.15	-.209(-.228)	.131(.140)
13503	.95	36.0(752)	4.11	-.146(-.169)	.120(.130)
13504	.95	36.0(752)	6.09	-.083(-.106)	.108(.119)
13505	.95	36.0(752)	8.05	-.004(-.024)	.089(.099)
13506	.95	36.0(752)	10.00	.084(.064)	.073(.081)
13507	.95	36.0(752)	11.95	.176(.157)	.058(.067)
13508	.95	36.0(752)	13.90	.274(.258)	.042(.047)
13509	.95	36.0(752)	15.86	.381(.369)	.022(.026)
13601	.85	32.1(670)	.20	-.286(-.303)	.148(.154)
13602	.85	32.1(670)	2.18	-.220(-.239)	.134(.140)
13603	.85	32.1(670)	4.14	-.155(-.174)	.120(.126)
13604	.85	32.1(670)	6.12	-.089(-.108)	.107(.114)
13605	.85	32.1(670)	9.08	-.018(-.036)	.092(.098)
13606	.85	32.1(670)	10.04	.070(.056)	.074(.078)
13607	.85	32.1(670)	11.99	.160(.145)	.060(.063)
13608	.85	32.1(670)	13.94	.253(.241)	.047(.047)
13609	.85	32.1(670)	15.90	.356(.346)	.031(.031)

Table A-3.—(Continued)

(b) T.E. Deflection, Full Span = 4.1°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
13706	1.11	40.6(848)	-5.80	-.174(-.176)	.013(.016)
13707	1.11	40.7(849)	-3.84	-.088(-.094)	-.009(-.006)
13708	1.11	40.6(847)	-1.88	-.005(-.011)	-.031(-.026)
13709	1.11	40.6(848)	.07	.070(.065)	-.050(-.045)
13710	1.11	40.6(848)	2.04	.143(.134)	-.070(-.063)
13711	1.11	40.6(848)	4.01	.220(.211)	-.092(-.088)
13712	1.11	40.6(848)	5.97	.298(.286)	-.113(-.107)
13713	1.11	40.6(847)	7.92	.374(.362)	-.128(-.120)
13801	.40	10.2(214)	.12	.066(.065)	-.028(-.034)
13802	.40	10.3(215)	-7.76	-.219(-.215)	.028(.020)
13803	.40	10.2(214)	-5.79	-.139(-.145)	.015(.006)
13804	.40	10.2(214)	-3.83	-.063(-.063)	-.001(-.007)
13805	.40	10.2(214)	-1.86	.006(.007)	-.016(-.023)
13806	.40	10.2(214)	.12	.068(.066)	-.028(-.035)
13807	.40	10.2(214)	2.08	.129(.125)	-.041(-.045)
13808	.40	10.2(214)	4.05	.193(.184)	-.056(-.056)
13809	.40	10.2(214)	6.03	.260(.262)	-.071(-.080)
13810	.40	10.2(214)	7.98	.333(.331)	-.088(-.093)
13811	.40	10.2(214)	9.95	.418(.411)	-.109(-.109)
13812	.40	10.2(214)	11.90	.506(.502)	-.126(-.127)
13813	.40	10.2(214)	13.85	.592(.585)	-.137(-.136)
13814	.40	10.2(214)	15.84	.681(.608)	-.143(-.135)
13901	1.05	39.1(817)	-7.83	-.263(-.267)	.031(.033)
13902	1.05	39.1(816)	-5.87	-.178(-.180)	.012(.017)
13903	1.05	39.1(817)	-3.91	-.090(-.096)	-.009(-.007)
13904	1.05	39.1(816)	-1.96	-.006(-.010)	-.031(-.027)
13905	1.05	39.1(816)	.02	.070(.064)	-.050(-.045)
13906	1.05	39.1(817)	1.98	.142(.132)	-.068(-.060)
13907	1.05	39.1(817)	3.94	.220(.213)	-.090(-.086)
13908	1.05	39.1(817)	5.91	.298(.288)	-.111(-.105)
13909	1.05	39.1(817)	7.86	.376(.363)	-.126(-.117)
13910	1.05	39.1(817)	9.83	.463(.456)	-.144(-.138)
13911	1.05	39.1(817)	11.79	.542(.533)	-.154(-.148)
13912	1.05	39.1(816)	13.75	.618(.609)	-.161(-.159)
13913	1.05	39.1(817)	15.73	.695(.689)	-.170(-.164)

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
14001	.70	25.2(526)	-7.80	-.223(-.226)	.021(.020)
14002	.70	25.2(526)	-5.83	-.144(-.146)	.009(.007)
14003	.70	25.2(526)	-3.87	-.067(-.067)	-.006(-.007)
14004	.70	25.2(526)	-1.91	.006(.006)	-.023(-.025)
14005	.70	25.2(526)	.06	.069(.066)	-.035(-.037)
14006	.70	25.2(526)	2.04	.133(.127)	-.048(-.048)
14007	.70	25.2(526)	4.01	.199(.192)	-.064(-.062)
14008	.70	25.2(526)	5.97	.273(.268)	-.082(-.084)
14009	.70	25.2(526)	7.94	.346(.336)	-.097(-.092)
14010	.70	25.2(527)	9.89	.432(.422)	-.113(-.110)
14011	.70	25.2(527)	11.86	.516(.509)	-.122(-.120)
14012	.70	25.2(526)	13.82	.601(.592)	-.130(-.126)
14013	.70	25.2(526)	15.79	.688(.678)	-.136(-.135)
14013	.70	25.2(526)	15.79	.688(.678)	-.136(-.135)
14014	.70	25.2(527)	.06	.068(.066)	-.035(-.037)
14101	.95	36.0(751)	-7.84	-.244(-.240)	.020(.021)
14102	.95	36.0(751)	-5.88	-.160(-.162)	.007(.007)
14103	.95	36.0(752)	-3.92	-.077(-.078)	-.010(-.009)
14104	.95	36.0(751)	-1.96	.003(-.000)	-.029(-.027)
14105	.95	36.0(752)	.01	.072(.069)	-.043(-.041)
14106	.95	36.0(751)	1.97	.139(.134)	-.058(-.055)
14107	.95	36.0(752)	3.94	.212(.207)	-.076(-.075)
14108	.95	36.0(751)	5.90	.289(.282)	-.095(-.091)
14109	.95	36.0(752)	7.86	.368(.357)	-.113(-.104)
14110	.95	36.0(752)	9.81	.464(.454)	-.137(-.129)
14111	.95	36.0(752)	11.76	.548(.537)	-.148(-.138)
14112	.95	36.0(752)	13.72	.628(.622)	-.155(-.152)
14113	.95	36.0(752)	15.70	.711(.705)	-.162(-.157)
14201	.85	32.1(671)	-7.83	-.234(-.232)	.021(.022)
14202	.85	32.1(671)	-5.86	-.152(-.156)	.009(.007)
14203	.85	32.1(671)	-3.91	-.073(-.073)	-.007(-.008)
14204	.85	32.1(671)	-1.94	.004(.003)	-.025(-.026)
14205	.85	32.1(671)	.03	.070(.067)	-.038(-.039)
14206	.85	32.1(671)	1.99	.134(.129)	-.051(-.051)
14207	.85	32.1(670)	3.98	.204(.200)	-.068(-.069)
14208	.85	32.1(671)	5.94	.279(.273)	-.087(-.086)
14209	.85	32.1(671)	7.90	.355(.342)	-.102(-.095)
14210	.85	32.1(671)	9.85	.447(.445)	-.122(-.121)
14211	.85	32.1(671)	11.83	.529(.522)	-.129(-.125)
14212	.85	32.1(671)	13.77	.613(.607)	-.137(-.135)
14213	.85	32.1(671)	15.73	.702(.696)	-.145(-.143)

Table A-3.–(Continued)

(c) T.E. Deflection, Full Span = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
14404	1.11	40.6(848)	-7.80	-.199(-.208)	-.010(-.004)
14405	1.11	40.6(848)	-5.83	-.111(-.115)	-.030(-.023)
14406	1.11	40.6(847)	-3.87	-.025(-.033)	-.051(-.045)
14407	1.11	40.6(848)	-1.92	.058(.050)	-.072(-.063)
14408	1.11	40.6(848)	.12	.135(.127)	-.091(-.083)
14409	1.11	40.6(848)	2.00	.201(.191)	-.107(-.099)
14410	1.11	40.6(848)	4.00	.276(.267)	-.127(-.124)
14411	1.11	40.6(848)	5.94	.351(.339)	-.146(-.140)
14412	1.11	40.6(848)	7.91	.420(.411)	-.156(-.148)
14501	.70	25.2(526)	-7.82	-.153(-.158)	-.017(-.013)
14502	.70	25.2(526)	-5.86	-.074(-.076)	-.030(-.027)
14503	.70	25.2(527)	-3.88	.004(.002)	-.046(-.042)
14504	.70	25.2(527)	-1.93	.074(.071)	-.061(-.058)
14505	.70	25.2(527)	.01	.135(.128)	-.073(-.068)
14506	.70	25.2(527)	2.02	.199(.189)	-.085(-.079)
14507	.70	25.2(527)	3.98	.266(.259)	-.100(-.098)
14508	.70	25.2(527)	5.94	.336(.328)	-.116(-.113)
14509	.70	25.3(528)	7.92	.408(.396)	-.129(-.121)
14510	.70	25.2(527)	9.86	.493(.481)	-.144(-.136)
14511	.70	25.2(527)	11.83	.572(.565)	-.151(-.146)
14512	.70	25.2(527)	13.79	.652(.644)	-.155(-.149)
14513	.70	25.2(527)	15.77	.736(.729)	-.159(-.157)
14601	1.05	39.1(817)	-7.85	-.198(-.205)	-.006(-.005)
14602	1.05	39.1(817)	-3.96	-.024(-.033)	-.048(-.045)
14603	1.05	39.1(816)	-1.97	.061(.054)	-.069(-.065)
14604	1.05	39.2(818)	-.02	.134(.129)	-.087(-.083)
14605	1.05	39.1(817)	1.94	.206(.196)	-.106(-.100)
14606	1.05	39.1(817)	3.91	.280(.272)	-.126(-.124)
14607	1.05	39.1(817)	5.87	.354(.347)	-.144(-.142)
14608	1.05	39.1(817)	7.85	.427(.424)	-.156(-.151)
14609	1.05	39.1(817)	9.89	.509(.505)	-.169(-.165)
14610	1.05	39.1(817)	11.78	.581(.577)	-.177(-.172)
14611	1.05	39.1(817)	13.75	.652(.649)	-.181(-.178)
14612	1.05	39.1(817)	15.70	.722(.722)	-.186(-.182)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
14701	.95	36.0(752)	-7.89	-.174(-.175)	-.019(-.015)
14702	.95	36.0(751)	-5.92	-.089(-.094)	-.034(-.031)
14703	.95	36.0(751)	-3.95	-.006(-.007)	-.050(-.047)
14704	.95	36.0(751)	-1.99	.071(.066)	-.067(-.063)
14705	.95	36.0(752)	-.04	.137(.132)	-.081(-.076)
14706	.95	36.0(751)	1.94	.205(.199)	-.096(-.090)
14707	.95	36.0(751)	3.92	.277(.272)	-.114(-.111)
14708	.95	36.0(751)	5.86	.351(.343)	-.131(-.125)
14709	.95	36.0(751)	7.83	.429(.419)	-.148(-.139)
14710	.95	36.0(751)	9.86	.521(.509)	-.170(-.159)
14711	.95	36.0(752)	11.75	.595(.535)	-.176(-.165)
14712	.95	36.0(752)	13.71	.667(.662)	-.178(-.172)
14713	.95	36.0(752)	15.69	.743(.737)	-.180(-.173)
14801	.85	32.1(670)	-7.83	-.163(-.164)	-.015(-.014)
14802	.85	32.1(670)	-5.90	-.083(-.087)	-.028(-.029)
14803	.85	32.1(670)	-3.95	-.004(-.006)	-.044(-.043)
14804	.85	32.1(670)	-1.96	.071(.068)	-.061(-.060)
14805	.85	32.1(671)	-.01	.134(.130)	-.073(-.072)
14806	.85	32.1(670)	1.98	.199(.191)	-.087(-.083)
14807	.85	32.1(670)	3.94	.268(.264)	-.103(-.104)
14808	.85	32.1(670)	5.91	.341(.332)	-.119(-.116)
14809	.85	32.1(670)	7.85	.416(.405)	-.134(-.127)
14810	.85	32.1(670)	9.83	.505(.501)	-.152(-.148)
14811	.85	32.1(671)	11.80	.584(.576)	-.158(-.151)
14812	.85	32.1(671)	13.76	.663(.658)	-.163(-.160)
14813	.85	32.1(670)	15.74	.747(.745)	-.169(-.167)
14901	.40	10.2(214)	-7.80	-.150(-.152)	-.002(-.011)
14902	.40	10.2(214)	-5.81	-.069(-.075)	-.017(-.026)
14903	.40	10.2(213)	-3.86	.006(.004)	-.032(-.040)
14904	.40	10.2(213)	-1.89	.073(.071)	-.046(-.055)
14905	.40	10.2(213)	.08	.132(.127)	-.058(-.065)
14906	.40	10.2(214)	2.05	.192(.186)	-.069(-.075)
14907	.40	10.2(214)	4.02	.256(.249)	-.083(-.090)
14908	.40	10.2(214)	5.99	.322(.316)	-.099(-.106)
14909	.40	10.2(214)	7.96	.394(.392)	-.114(-.122)
14910	.40	10.2(214)	9.94	.475(.463)	-.133(-.132)
14911	.40	10.2(214)	11.87	.561(.553)	-.148(-.150)
14912	.40	10.2(214)	13.85	.645(.643)	-.157(-.158)
14913	.40	10.2(213)	15.80	.730(.717)	-.162(-.164)

Table A-3.–(Continued)

(d) T.E. Deflection, Full Span = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
17204	1.05	39.0(815)	-7.91	-.092(-.093)	-.072(-.068)
17205	1.05	39.0(815)	-5.94	-.001(.004)	-.093(-.088)
17206	1.05	39.1(816)	-3.99	.083(.083)	-.112(-.107)
17207	1.05	39.1(816)	-2.04	.161(.163)	-.129(-.125)
17208	1.05	39.1(816)	-.08	.229(.229)	-.144(-.138)
17209	1.05	39.0(815)	1.90	.295(.300)	-.158(-.159)
17210	1.05	39.1(816)	3.89	.362(.367)	-.172(-.172)
17211	1.05	39.1(816)	5.83	.431(.432)	-.187(-.185)
17212	1.05	39.1(816)	7.82	.494(.502)	-.192(-.190)
17213	1.05	39.0(815)	9.78	.569(.572)	-.202(-.199)
17214	1.05	39.1(816)	11.76	.635(.646)	-.205(-.210)
17215	1.05	39.1(816)	13.71	.702(.713)	-.208(-.213)
17217	1.05	39.1(816)	15.69	.763(.779)	-.206(-.210)
17301	.70	25.2(526)	-8.07	-.030(-.037)	-.083(-.075)
17302	.70	25.2(526)	-7.88	-.022(-.029)	-.085(-.076)
17303	.70	25.2(526)	-5.93	.055(.052)	-.096(-.090)
17304	.70	25.2(526)	-3.97	.129(.126)	-.110(-.104)
17305	.70	25.2(526)	-2.00	.194(.188)	-.123(-.116)
17306	.70	25.2(526)	-.02	.253(.243)	-.133(-.123)
17307	.70	25.2(526)	1.95	.315(.309)	-.145(-.141)
17308	.70	25.2(526)	3.92	.382(.373)	-.160(-.153)
17309	.70	25.2(526)	5.89	.452(.442)	-.175(-.167)
17310	.70	25.2(526)	7.87	.519(.507)	-.183(-.173)
17312	.70	25.2(527)	9.83	.587(.578)	-.186(-.180)
17313	.70	25.2(526)	11.76	.666(.660)	-.195(-.190)
17314	.70	25.2(527)	13.76	.742(.740)	-.197(-.194)
17315	.70	25.2(526)	15.71	.816(.812)	-.196(-.196)
17401	.95	36.0(752)	-7.96	-.061(-.059)	-.076(-.072)
17402	.95	36.0(751)	-5.96	.026(.022)	-.093(-.088)
17403	.95	36.0(751)	-4.01	.110(.113)	-.112(-.110)
17404	.95	35.9(750)	-2.06	.182(.183)	-.128(-.125)
17405	.95	36.0(751)	-.09	.246(.243)	-.141(-.135)
17406	.95	36.0(751)	1.90	.311(.316)	-.156(-.156)
17407	.95	36.0(751)	3.87	.379(.381)	-.172(-.170)
17408	.95	36.0(751)	5.84	.450(.445)	-.190(-.180)
17409	.95	36.0(751)	7.79	.512(.512)	-.195(-.187)
17410	.95	36.0(751)	9.75	.585(.585)	-.204(-.197)
17411	.95	36.0(751)	11.71	.662(.662)	-.215(-.205)
17412	.95	36.0(751)	13.70	.729(.734)	-.212(-.211)
17413	.95	36.0(751)	15.69	.794(.798)	-.207(-.203)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
17501	.85	32.1(671)	-7.92	-.043(-.046)	-.076(-.070)
17502	.85	32.1(671)	-5.95	.042(.036)	-.093(-.090)
17503	.85	32.1(670)	-3.99	.119(.119)	-.108(-.106)
17504	.85	32.1(670)	-2.05	.186(.183)	-.122(-.118)
17505	.85	32.1(670)	-.05	.247(.241)	-.132(-.126)
17506	.85	32.1(670)	1.93	.312(.309)	-.147(-.145)
17507	.85	32.1(670)	3.88	.378(.374)	-.161(-.158)
17508	.85	32.1(670)	5.85	.450(.442)	-.178(-.169)
17509	.85	32.1(670)	7.81	.520(.513)	-.189(-.179)
17510	.85	32.1(670)	9.79	.594(.592)	-.196(-.191)
17511	.85	32.1(670)	11.74	.670(.670)	-.203(-.197)
17512	.85	32.1(670)	13.72	.746(.751)	-.207(-.208)
17513	.85	32.1(670)	15.68	.813(.820)	-.202(-.204)
17701	.40	10.3(215)	-7.84	-.016(-.024)	-.067(-.073)
17702	.40	10.3(215)	-5.88	.060(.048)	-.079(-.085)
17703	.40	10.2(214)	-3.93	.134(.127)	-.096(-.099)
17704	.40	10.2(214)	-1.95	.196(.187)	-.108(-.111)
17705	.40	10.2(214)	.03	.253(.242)	-.119(-.120)
17706	.40	10.3(215)	2.00	.314(.303)	-.132(-.133)
17707	.40	10.2(214)	3.96	.375(.363)	-.145(-.146)
17708	.40	10.2(214)	5.93	.437(.430)	-.157(-.158)
17709	.40	10.2(214)	7.93	.506(.494)	-.170(-.168)
17710	.40	10.2(214)	9.89	.577(.571)	-.181(-.179)
17711	.40	10.2(214)	11.83	.659(.645)	-.194(-.191)
17712	.40	10.2(214)	13.82	.742(.737)	-.202(-.199)
17713	.40	10.2(214)	15.77	.823(.810)	-.205(-.205)

Table A-3.—(Continued)

(e) T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
17810	1.11	40.6(848)	-7.73	-.329(-.337)	.075(.075)
17811	1.11	40.6(848)	-5.75	-.243(-.247)	.057(.060)
17812	1.11	40.6(847)	-3.81	-.157(-.164)	.036(.037)
17813	1.11	40.6(847)	-1.86	-.074(-.077)	.016(.017)
17814	1.11	40.6(847)	.14	.002(-.002)	-.006(-.003)
17815	1.11	40.6(847)	2.07	.073(.063)	-.024(-.019)
17816	1.11	40.6(847)	4.07	.151(.138)	-.046(-.040)
17817	1.11	40.6(847)	6.03	.232(.220)	-.069(-.065)
17818	1.11	40.6(847)	7.99	.316(.305)	-.091(-.085)
17901	.70	25.2(526)	-7.76	-.298(-.302)	.057(.058)
17902	.70	25.2(526)	-5.79	-.216(-.220)	.044(.044)
17903	.70	25.2(526)	-3.83	-.138(-.139)	.029(.029)
17904	.70	25.2(526)	-1.89	-.064(-.067)	.013(.013)
17905	.70	25.2(526)	.09	.001(-.003)	-.001(-.001)
17906	.70	25.2(526)	2.11	.066(.058)	-.013(-.013)
17907	.70	25.2(526)	4.07	.131(.122)	-.027(-.025)
17908	.70	25.2(526)	6.00	.202(.193)	-.045(-.044)
17909	.70	25.2(526)	8.00	.281(.267)	-.064(-.058)
17910	.70	25.2(526)	10.01	.370(.358)	-.082(-.078)
17911	.70	25.2(526)	11.94	.454(.447)	-.092(-.091)
17912	.70	25.2(526)	13.85	.540(.531)	-.101(-.098)
17913	.70	25.2(527)	14.85	.585(.575)	-.105(-.103)
17914	.70	25.2(526)	15.83	.633(.622)	-.111(-.110)
18001	1.05	39.1(817)	-7.82	-.339(-.347)	.079(.077)
18002	1.05	39.1(816)	-5.83	-.251(-.254)	.060(.062)
18003	1.05	39.1(816)	-3.88	-.163(-.169)	.039(.039)
18004	1.05	39.1(816)	-1.90	-.078(-.082)	.016(.018)
18005	1.05	39.1(816)	.04	-.003(-.007)	-.002(-.002)
18006	1.05	39.1(816)	2.03	.069(.060)	-.020(-.017)
18007	1.05	39.1(817)	4.00	.145(.135)	-.041(-.038)
18008	1.05	39.1(816)	5.97	.229(.216)	-.067(-.061)
18009	1.05	39.1(816)	7.89	.314(.305)	-.089(-.083)
18010	1.05	39.1(816)	9.86	.406(.396)	-.110(-.105)
18011	1.05	39.1(817)	11.82	.488(.480)	-.122(-.118)
18013	1.05	39.1(816)	13.78	.570(.561)	-.134(-.133)
18015	1.05	39.1(816)	15.76	.654(.647)	-.147(-.142)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
18101	.95	36.0(752)	-7.80	-.326(-.323)	.069(.066)
18102	.95	36.0(751)	-5.89	-.240(-.244)	.052(.050)
18103	.95	36.0(751)	-3.98	-.153(-.154)	.033(.033)
18104	.95	36.0(752)	-1.95	-.073(-.077)	.015(.015)
18105	.95	36.0(751)	.04	-.002(-.005)	-.001(-.001)
18106	.95	36.0(751)	2.05	.067(.060)	-.016(-.014)
18107	.95	36.0(751)	4.00	.137(.128)	-.032(-.029)
18108	.95	35.9(750)	5.93	.215(.208)	-.053(-.052)
18109	.95	36.0(751)	7.89	.299(.291)	-.073(-.069)
18110	.95	36.0(751)	9.86	.394(.384)	-.095(-.091)
18111	.95	36.0(752)	11.79	.483(.474)	-.109(-.104)
18112	.95	36.0(752)	13.75	.574(.568)	-.124(-.122)
18113	.95	36.0(752)	15.73	.666(.657)	-.137(-.132)
18201	.85	32.1(670)	-7.80	-.312(-.312)	.063(.062)
18202	.85	32.0(669)	-5.82	-.227(-.232)	.049(.046)
18203	.85	32.1(670)	-3.89	-.147(-.147)	.033(.031)
18204	.85	32.1(670)	-1.89	-.068(-.071)	.015(.014)
18205	.85	32.1(670)	.07	-.001(-.004)	.000(-.001)
18206	.85	32.0(669)	2.04	.064(.059)	-.013(-.013)
18207	.85	32.1(670)	3.99	.132(.122)	-.028(-.026)
18208	.85	32.1(670)	5.99	.209(.202)	-.049(-.049)
18209	.85	32.1(670)	7.94	.287(.276)	-.066(-.063)
18210	.85	32.1(670)	10.03	.386(.379)	-.087(-.087)
18211	.85	32.1(670)	11.91	.467(.459)	-.095(-.092)
18212	.85	32.1(670)	13.90	.556(.546)	-.105(-.104)
18213	.85	32.1(670)	15.79	.646(.638)	-.116(-.113)
18301	.40	10.2(214)	-7.72	-.295(-.296)	.068(.056)
18302	.40	10.2(213)	-5.76	-.212(-.217)	.053(.041)
18303	.40	10.2(213)	-3.84	-.136(-.136)	.038(.028)
18304	.40	10.2(214)	-1.85	-.061(-.062)	.021(.011)
18305	.40	10.2(214)	.11	.001(-.004)	.009(-.001)
18306	.40	10.2(214)	2.14	.065(.058)	-.004(-.012)
18307	.40	10.2(214)	4.09	.127(.117)	-.018(-.024)
18308	.40	10.2(214)	6.05	.193(.187)	-.033(-.041)
18309	.40	10.2(214)	8.04	.271(.266)	-.054(-.062)
18310	.40	10.2(214)	9.98	.353(.341)	-.075(-.077)
18311	.40	10.2(214)	11.93	.442(.437)	-.093(-.098)
18312	.40	10.2(214)	13.92	.530(.521)	-.106(-.106)
18313	.40	10.2(214)	15.86	.619(.605)	-.114(-.115)

Table A-3.—(Concluded)

(f) T.E. Deflection, Full Span = -8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
18405	1.11	40.6(848)	.05	-.152(-.155)	.088(.092)
18406	1.11	40.6(847)	4.12	-.003(-.011)	.050(.055)
18407	1.11	40.6(848)	8.03	.168(.161)	.000(.006)
18501	.70	25.1(525)	.18	-.148(-.160)	.073(.080)
18502	.70	25.2(526)	2.16	-.082(-.095)	.060(.065)
18503	.70	25.1(525)	4.14	-.017(-.031)	.047(.053)
18504	.70	25.1(525)	6.08	.050(.036)	.033(.038)
18505	.70	25.1(525)	8.05	.128(.113)	.012(.017)
18506	.70	25.1(525)	9.99	.213(.201)	-.006(-.003)
18507	.70	25.1(525)	11.94	.298(.283)	-.019(-.017)
18508	.70	25.1(525)	13.92	.388(.380)	-.030(-.029)
18509	.70	25.2(526)	15.92	.482(.471)	-.040(-.041)
18510	.70	25.1(525)	.18	-.151(-.154)	.077(.076)
18601	1.05	39.1(817)	.09	-.165(-.162)	.096(.095)
18602	1.05	39.1(817)	2.12	-.089(-.093)	.076(.078)
18603	1.05	39.1(816)	4.08	-.016(-.023)	.058(.061)
18604	1.05	39.1(817)	6.01	.064(.055)	.035(.039)
18605	1.05	39.1(817)	8.00	.156(.150)	.009(.013)
18606	1.05	39.1(817)	9.93	.250(.244)	-.016(-.010)
18607	1.05	39.1(817)	11.92	.344(.340)	-.037(-.036)
18608	1.05	39.1(817)	13.88	.434(.427)	-.055(-.054)
18609	1.05	39.1(817)	15.81	.519(.520)	-.069(-.068)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
18701	.95	36.0(752)	.12	-.170(-.171)	.091(.091)
18702	.95	36.0(752)	2.09	-.098(-.102)	.073(.074)
18703	.95	36.0(752)	4.05	-.028(-.034)	.057(.060)
18704	.95	36.0(752)	6.03	.048(.042)	.038(.041)
18705	.95	36.0(751)	8.00	.136(.126)	.014(.021)
18706	.95	36.0(752)	9.97	.228(.218)	-.004(.001)
18707	.95	36.0(752)	11.91	.320(.311)	-.019(-.015)
18708	.95	36.0(752)	13.87	.419(.411)	-.037(-.034)
18709	.95	36.0(752)	15.82	.512(.502)	-.051(-.045)
18801	.85	32.1(670)	.13	-.157(-.162)	.081(.083)
18802	.85	32.1(670)	2.13	-.088(-.095)	.066(.067)
18803	.85	32.1(670)	4.07	-.022(-.032)	.052(.055)
18804	.85	32.1(671)	6.06	.050(.039)	.035(.039)
18805	.85	32.1(670)	8.02	.130(.118)	.015(.019)
18806	.85	32.1(671)	9.96	.219(.211)	-.003(.000)
18807	.85	32.1(671)	11.92	.307(.298)	-.016(-.014)
18808	.85	32.1(671)	13.89	.400(.391)	-.029(-.029)
18809	.85	32.1(670)	15.83	.491(.482)	-.040(-.039)
18901	.40	10.2(214)	.21	-.136(-.172)	.074(.084)
18902	.40	10.2(214)	2.17	-.072(-.105)	.061(.068)
18903	.40	10.2(214)	4.14	-.009(-.042)	.047(.055)
18904	.40	10.3(215)	6.13	.055(.027)	.035(.040)
18905	.40	10.3(215)	9.09	.125(.103)	.017(.018)
18906	.40	10.3(215)	10.03	.203(.182)	-.003(-.000)
18907	.40	10.3(215)	12.01	.286(.278)	-.020(-.022)
18908	.40	10.2(214)	13.99	.373(.358)	-.032(-.033)
18909	.40	10.3(215)	15.96	.464(.450)	-.042(-.046)

Table A-4.—Experimental Data Test Point Log. Flat Wing, Rounded Leading Edge; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°

(a) T.E. Deflection, Inboard = 0.0°, Outboard = -8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
19104	1.11	40.7(850)	.12	-.024(-.023)	.018(.020)
19105	1.11	40.6(848)	4.05	.127(.120)	-.022(-.019)
19106	1.11	40.6(848)	7.96	.304(.302)	-.072(-.069)
19201	.70	25.2(527)	.11	-.029(-.036)	.026(.026)
19202	.70	25.2(527)	2.08	.035(.025)	.014(.015)
19203	.70	25.2(526)	4.05	.101(.089)	-.000(.002)
19204	.70	25.2(526)	6.01	.176(.162)	-.020(-.018)
19205	.70	25.2(527)	7.97	.262(.251)	-.041(-.037)
19206	.70	25.2(527)	9.94	.344(.337)	-.050(-.051)
19207	.70	25.2(526)	11.90	.435(.426)	-.064(-.065)
19208	.70	25.2(526)	13.84	.536(.527)	-.083(-.084)
19209	.70	25.2(526)	15.80	.645(.639)	-.102(-.102)
19210	.70	25.2(526)	.12	-.030(-.035)	.028(.026)
19301	1.05	39.2(818)	.05	-.029(-.031)	.023(.023)
19302	1.05	39.1(817)	2.03	.043(.035)	.005(.009)
19303	1.05	39.1(817)	4.00	.121(.110)	-.016(-.011)
19304	1.05	39.1(817)	5.95	.209(.198)	-.043(-.036)
19305	1.05	39.2(818)	7.90	.300(.293)	-.066(-.061)
19306	1.05	39.2(818)	9.87	.386(.382)	-.081(-.079)
19307	1.05	39.2(818)	11.81	.473(.465)	-.095(-.088)
19308	1.05	39.2(818)	13.77	.560(.559)	-.110(-.107)
19309	1.05	39.2(818)	15.74	.647(.648)	-.126(-.124)
19401	.95	36.1(753)	.05	-.029(-.034)	.025(.026)
19402	.95	36.1(753)	2.02	.038(.029)	.011(.013)
19403	.95	36.0(752)	3.99	.110(.099)	-.006(-.002)
19404	.95	36.0(752)	5.94	.194(.179)	-.029(-.023)
19405	.95	36.0(752)	7.90	.282(.276)	-.049(-.046)
19406	.95	36.0(752)	9.87	.370(.362)	-.062(-.060)
19407	.95	36.1(753)	11.81	.471(.463)	-.084(-.079)
19408	.95	36.0(752)	13.76	.570(.567)	-.103(-.100)
19409	.95	36.1(753)	15.72	.661(.655)	-.116(-.112)
19501	.85	32.1(671)	.09	-.030(-.036)	.028(.027)
19502	.85	32.2(672)	2.06	.035(.027)	.015(.015)
19503	.85	32.1(671)	4.02	.104(.093)	-.001(.000)
19504	.85	32.2(672)	5.98	.184(.169)	-.023(-.020)
19505	.85	32.1(671)	7.94	.269(.259)	-.042(-.040)
19506	.85	32.1(671)	9.90	.353(.348)	-.053(-.054)
19507	.85	32.1(671)	11.85	.446(.434)	-.067(-.065)
19508	.85	32.1(671)	13.80	.545(.542)	-.084(-.085)
19509	.85	32.1(671)	15.77	.641(.641)	-.097(-.098)
19601	.40	10.2(214)	.17	-.031(-.043)	.043(.030)
19602	.40	10.2(214)	2.13	.031(.018)	.031(.018)
19603	.40	10.2(214)	4.10	.094(.081)	.016(.005)
19604	.40	10.2(214)	6.07	.165(.153)	-.002(-.015)
19605	.40	10.3(215)	8.03	.247(.236)	-.025(-.037)
19606	.40	10.3(215)	9.99	.330(.322)	-.038(-.050)
19607	.40	10.3(215)	11.95	.414(.409)	-.048(-.061)
19608	.40	10.3(215)	13.90	.517(.512)	-.068(-.085)
19609	.40	10.3(215)	15.85	.623(.613)	-.088(-.101)

Table A-4.—(Continued)

(b) T.E. Deflection, Inboard = 0.0°, Outboard = −17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
19705	1.11	40.7(850)	.13	−.045(−.049)	.037(.042)
19706	1.11	40.7(849)	4.07	.104(.091)	−.001(.007)
19707	1.11	40.6(848)	7.97	.289(.284)	−.058(−.054)
19801	.70	25.3(528)	.13	−.058(−.067)	.048(.051)
19802	.70	25.3(528)	2.10	.004(−.007)	.037(.040)
19803	.70	25.2(527)	4.06	.070(.058)	.023(.027)
19804	.70	25.2(527)	6.03	.146(.130)	.003(.008)
19805	.70	25.2(527)	7.98	.238(.227)	−.023(−.019)
19806	.70	25.2(527)	9.95	.328(.324)	−.039(−.040)
19807	.70	25.2(527)	11.89	.422(.416)	−.055(−.057)
19808	.70	25.2(527)	13.85	.526(.525)	−.075(−.081)
19809	.70	25.2(526)	15.81	.638(.642)	−.098(−.104)
19810	.70	25.2(527)	.13	−.060(−.065)	.052(.050)
19901	1.05	39.2(819)	.07	−.052(−.056)	.043(.045)
19902	1.05	39.2(819)	2.05	.019(.009)	.026(.032)
19903	1.05	39.2(818)	4.01	.096(.083)	.006(.013)
19904	1.05	39.1(817)	5.95	.188(.175)	−.024(−.014)
19905	1.05	39.2(818)	7.91	.284(.279)	−.052(−.048)
19906	1.05	39.2(818)	9.87	.376(.371)	−.072(−.069)
19907	1.05	39.2(818)	11.82	.466(.455)	−.089(−.079)
19908	1.05	39.2(818)	13.77	.554(.563)	−.105(−.107)
19909	1.05	39.2(818)	15.74	.640(.644)	−.120(−.120)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
20003	.95	36.1(753)	.07	−.055(−.063)	.046(.050)
20004	.95	36.0(752)	2.03	.011(.001)	.033(.038)
20005	.95	36.1(753)	4.01	.082(.070)	.016(.022)
20006	.95	36.1(753)	5.95	.170(.156)	−.010(−.002)
20007	.95	36.1(753)	7.91	.266(.262)	−.036(−.033)
20008	.95	36.1(753)	9.86	.359(.353)	−.054(−.052)
20009	.95	36.1(753)	11.81	.463(.455)	−.077(−.072)
20010	.95	36.1(753)	13.76	.565(.567)	−.099(−.098)
20011	.95	36.0(752)	15.72	.657(.658)	−.113(−.112)
20101	.85	32.1(671)	.10	−.057(−.065)	.050(.050)
20102	.85	32.1(671)	2.07	.007(−.003)	.037(.040)
20103	.85	32.1(671)	4.04	.075(.064)	.022(.025)
20104	.85	32.2(672)	5.99	.157(.141)	−.002(.004)
20105	.85	32.2(672)	7.95	.250(.241)	−.027(−.025)
20106	.85	32.1(671)	9.90	.340(.337)	−.044(−.044)
20107	.85	32.1(671)	11.85	.436(.427)	−.060(−.058)
20108	.85	32.2(672)	13.80	.538(.539)	−.078(−.081)
20109	.85	32.1(671)	15.76	.637(.645)	−.094(−.101)
20201	.40	10.3(215)	.18	−.062(−.074)	.063(.054)
20202	.40	10.3(215)	2.14	−.000(−.012)	.050(.042)
20203	.40	10.3(215)	4.12	.063(.050)	.036(.029)
20204	.40	10.3(215)	6.09	.132(.121)	.018(.010)
20205	.40	10.3(215)	8.04	.217(.208)	−.007(−.015)
20206	.40	10.3(215)	10.00	.310(.303)	−.029(−.037)
20207	.40	10.3(215)	11.95	.398(.395)	−.042(−.051)
20208	.40	10.2(214)	13.91	.504(.503)	−.064(−.077)
20209	.40	10.2(214)	15.85	.615(.609)	−.087(−.098)

Table A-4.—(Continued)

(c) T.E. Deflection, Inboard = 0.0°, Outboard = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
20403	1.11	40.7(850)	-7.74	-.308(-.316)	.070(.072)
20404	1.11	40.7(850)	-3.82	-.131(-.132)	.020(.018)
20405	1.11	40.7(850)	.10	.024(.020)	-.026(-.024)
20406	1.11	40.7(850)	4.04	.171(.160)	-.064(-.059)
20407	1.11	40.7(849)	7.95	.332(.329)	-.098(-.097)
20501	.70	25.3(528)	-7.78	-.265(-.271)	.044(.048)
20502	.70	25.3(528)	-5.81	-.180(-.183)	.024(.025)
20503	.70	25.3(528)	-3.85	-.106(-.109)	.007(.007)
20504	.70	25.3(528)	-1.89	-.034(-.035)	-.011(-.011)
20505	.70	25.3(529)	.08	.030(.025)	-.024(-.023)
20506	.70	25.3(529)	2.06	.094(.086)	-.036(-.034)
20507	.70	25.3(528)	4.03	.159(.146)	-.049(-.044)
20508	.70	25.3(528)	5.99	.231(.221)	-.066(-.065)
20509	.70	25.3(528)	7.95	.307(.298)	-.078(-.075)
20510	.70	25.3(528)	9.92	.379(.372)	-.080(-.077)
20511	.70	25.3(528)	11.88	.461(.453)	-.085(-.085)
20512	.70	25.3(528)	13.84	.553(.545)	-.096(-.096)
20513	.70	25.2(527)	15.80	.651(.644)	-.108(-.103)
20514	.70	25.3(528)	.09	.029(.026)	-.022(-.023)
20601	1.05	39.2(819)	-7.80	-.319(-.327)	.072(.075)
20602	1.05	39.2(819)	-5.85	-.224(-.227)	.046(.046)
20603	1.05	39.2(819)	-3.88	-.135(-.138)	.020(.019)
20604	1.05	39.2(819)	-1.93	-.054(-.059)	-.004(-.003)
20605	1.05	39.2(819)	.03	.020(.016)	-.023(-.022)
20606	1.05	39.2(819)	2.00	.091(.083)	-.040(-.036)
20607	1.05	39.2(819)	3.97	.166(.156)	-.059(-.055)
20608	1.05	39.2(819)	5.93	.248(.239)	-.080(-.075)
20609	1.05	39.2(819)	7.88	.332(.326)	-.096(-.092)
20610	1.05	39.2(819)	9.85	.413(.411)	-.106(-.106)
20611	1.05	39.2(819)	11.81	.497(.492)	-.118(-.112)
20612	1.05	39.2(819)	13.77	.583(.578)	-.132(-.125)
20613	1.05	39.2(818)	15.72	.672(.669)	-.149(-.144)
20702	.95	36.1(754)	-7.81	-.300(-.306)	.059(.059)
20703	.95	36.1(754)	-5.86	-.206(-.208)	.035(.034)
20704	.95	36.1(753)	-3.91	-.121(-.125)	.013(.012)
20705	.95	36.1(753)	-1.94	-.044(-.047)	-.007(-.007)
20706	.95	36.1(754)	.03	.025(.021)	-.023(-.023)
20707	.95	36.1(754)	1.99	.091(.085)	-.036(-.035)
20708	.95	36.1(754)	3.96	.161(.152)	-.052(-.049)
20709	.95	36.1(754)	5.92	.238(.229)	-.070(-.066)
20710	.95	36.1(753)	7.89	.318(.313)	-.081(-.077)
20711	.95	36.1(754)	9.85	.396(.389)	-.087(-.083)
20712	.95	36.1(753)	11.80	.489(.479)	-.101(-.094)
20713	.95	36.1(753)	13.75	.584(.579)	-.117(-.109)
20715	.95	36.1(754)	15.71	.680(.673)	-.134(-.126)
20801	.85	32.2(672)	-7.80	-.282(-.287)	.052(.052)
20802	.85	32.2(672)	-5.84	-.192(-.193)	.030(.028)
20803	.85	32.2(672)	-3.87	-.113(-.116)	.011(.009)
20804	.85	32.2(672)	-1.91	-.039(-.041)	-.008(-.009)
20805	.85	32.2(672)	.05	.027(.023)	-.022(-.023)
20806	.85	32.2(672)	2.03	.092(.085)	-.034(-.034)
20807	.85	32.2(672)	3.99	.159(.149)	-.049(-.046)
20808	.85	32.2(672)	5.96	.234(.223)	-.067(-.065)
20809	.85	32.2(672)	7.92	.311(.301)	-.078(-.075)
20810	.85	32.2(672)	9.88	.385(.379)	-.081(-.079)
20811	.85	32.2(672)	11.84	.469(.459)	-.088(-.085)
20812	.85	32.2(673)	13.79	.562(.556)	-.100(-.096)
20813	.85	32.2(672)	15.75	.656(.651)	-.112(-.107)
20901	.40	10.2(214)	-7.74	-.253(-.255)	.053(.045)
20902	.40	10.2(214)	-5.78	-.172(-.174)	.032(.023)
20903	.40	10.3(215)	-3.81	-.099(-.103)	.015(.006)
20904	.40	10.3(215)	-1.84	-.030(-.031)	-.002(-.012)
20905	.40	10.3(215)	.13	.031(.026)	-.014(-.023)
20906	.40	10.3(215)	2.10	.091(.085)	-.026(-.033)
20907	.40	10.3(215)	4.08	.153(.145)	-.039(-.043)
20908	.40	10.3(215)	6.04	.221(.215)	-.055(-.062)
20909	.40	10.3(215)	8.00	.298(.290)	-.073(-.077)
20910	.40	10.3(215)	9.97	.371(.363)	-.076(-.080)
20911	.40	10.3(215)	11.93	.447(.442)	-.080(-.084)
20912	.40	10.3(215)	13.89	.539(.533)	-.091(-.098)
20913	.40	10.3(215)	15.85	.634(.624)	-.101(-.107)

Table A-4.—(Continued)

(d) T.E. Deflection, Inboard = 0.0°, Outboard = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
21009	1.11	40.7(850)	4.02	.188(.187)	-.080(-.082)
21010	1.11	40.7(850)	7.94	.350(.348)	-.114(-.114)
21101	.70	25.3(529)	-7.80	-.234(-.239)	.020(.024)
21102	.70	25.3(529)	-5.83	-.149(-.152)	-.001(.001)
21103	.70	25.3(528)	-3.86	-.075(-.078)	-.017(-.016)
21104	.70	25.3(528)	.06	.060(.053)	-.047(-.045)
21105	.70	25.3(528)	2.06	.123(.114)	-.059(-.055)
21106	.70	25.3(528)	4.02	.188(.175)	-.072(-.066)
21107	.70	25.3(528)	5.97	.256(.246)	-.086(-.085)
21108	.70	25.3(528)	7.94	.330(.321)	-.096(-.093)
21109	.70	25.3(528)	9.91	.398(.390)	-.094(-.090)
21110	.70	25.3(529)	11.86	.476(.465)	-.097(-.094)
21111	.70	25.3(529)	13.83	.566(.554)	-.106(-.102)
21112	.70	25.3(529)	15.79	.663(.651)	-.117(-.108)
21209	1.05	39.3(820)	-7.80	-.302(-.311)	.058(.062)
21210	1.05	39.3(820)	-5.87	-.204(-.209)	.029(.030)
21211	1.05	39.2(819)	-3.90	-.112(-.113)	.000(-.003)
21212	1.05	39.2(819)	-1.95	-.030(-.034)	-.024(-.025)
21213	1.05	39.3(820)	.01	.044(.040)	-.044(-.044)
21214	1.05	39.3(820)	2.01	.115(.106)	-.061(-.057)
21215	1.05	39.3(820)	3.96	.188(.181)	-.079(-.076)
21216	1.05	39.3(820)	5.93	.269(.256)	-.098(-.091)
21217	1.05	39.3(820)	7.87	.350(.348)	-.112(-.110)
21218	1.05	39.2(819)	9.83	.427(.424)	-.118(-.117)
21219	1.05	39.3(820)	11.81	.508(.508)	-.128(-.127)
21220	1.05	39.3(820)	13.76	.593(.593)	-.141(-.138)
21221	1.05	39.3(820)	15.73	.681(.684)	-.157(-.156)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
21301	.95	36.1(755)	-7.82	-.279(-.282)	.038(.039)
21302	.95	36.1(754)	-5.87	-.180(-.183)	.012(.014)
21303	.95	36.1(754)	-3.92	-.095(-.099)	-.011(-.010)
21304	.95	36.1(754)	-1.96	-.017(-.020)	-.032(-.030)
21305	.95	36.1(755)	.00	.051(.046)	-.047(-.045)
21306	.95	36.1(754)	1.99	.119(.110)	-.062(-.056)
21307	.95	36.1(755)	3.96	.188(.180)	-.076(-.073)
21308	.95	36.1(754)	5.90	.262(.249)	-.091(-.084)
21309	.95	36.1(755)	7.88	.339(.334)	-.100(-.095)
21310	.95	36.1(754)	9.86	.414(.405)	-.101(-.097)
21311	.95	36.1(754)	11.79	.502(.492)	-.111(-.105)
21312	.95	36.1(755)	13.75	.596(.591)	-.127(-.119)
21313	.95	36.1(755)	15.70	.690(.684)	-.142(-.135)
21401	.85	32.3(674)	-7.81	-.256(-.261)	.030(.032)
21402	.85	32.2(673)	-5.85	-.163(-.165)	.006(.006)
21403	.85	32.2(673)	-3.88	-.084(-.087)	-.013(-.014)
21404	.85	32.2(673)	-2.90	-.047(-.051)	-.022(-.022)
21405	.85	32.2(672)	.06	.056(.051)	-.046(-.045)
21406	.85	32.3(674)	2.01	.120(.111)	-.059(-.055)
21407	.85	32.3(674)	3.99	.187(.179)	-.073(-.070)
21408	.85	32.3(674)	5.94	.260(.248)	-.088(-.086)
21409	.85	32.3(674)	7.92	.334(.325)	-.097(-.094)
21410	.85	32.3(674)	9.88	.404(.398)	-.096(-.094)
21411	.85	32.2(673)	11.85	.485(.473)	-.100(-.095)
21412	.85	32.3(674)	13.79	.575(.569)	-.110(-.105)
21413	.85	32.2(673)	15.76	.669(.664)	-.122(-.115)
21501	.40	10.3(215)	-7.75	-.214(-.222)	.023(.021)
21502	.40	10.3(215)	-5.80	-.137(-.141)	.004(-.001)
21503	.40	10.3(215)	-3.84	-.065(-.071)	-.013(-.018)
21504	.40	10.3(215)	-1.86	.004(.000)	-.030(-.036)
21505	.40	10.3(215)	.13	.063(.057)	-.040(-.045)
21506	.40	10.3(215)	2.08	.123(.115)	-.051(-.054)
21507	.40	10.3(215)	4.06	.185(.172)	-.064(-.063)
21508	.40	10.3(215)	6.03	.252(.247)	-.078(-.086)
21509	.40	10.3(215)	8.00	.323(.312)	-.091(-.093)
21510	.40	10.3(215)	9.97	.394(.384)	-.093(-.095)
21511	.40	10.3(215)	11.92	.467(.457)	-.095(-.095)
21512	.40	10.3(215)	13.88	.556(.544)	-.104(-.104)
21513	.40	10.3(215)	15.85	.650(.633)	-.113(-.112)

Table A-4.—(Continued)

(e) T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
21709	1.11	40.8(852)	-7.74	-.325(-.328)	.082(.083)
21711	1.11	40.8(852)	-3.80	-.150(-.152)	.039(.040)
21712	1.11	40.8(852)	.12	.001(-.004)	-.004(-.001)
21713	1.11	40.8(852)	4.06	.151(.138)	-.043(-.037)
21714	1.11	40.8(852)	7.97	.319(.312)	-.084(-.079)
21801	.70	25.3(528)	-7.77	-.287(-.294)	.063(.068)
21804	.70	25.4(530)	-5.80	-.204(-.208)	.045(.046)
21805	.70	25.3(529)	-3.82	-.132(-.138)	.030(.031)
21806	.70	25.3(528)	-1.87	-.061(-.064)	.013(.013)
21807	.70	25.3(529)	.10	.003(-.003)	-.000(.001)
21808	.70	25.3(528)	2.06	.066(.057)	-.012(-.010)
21809	.70	25.3(529)	4.06	.133(.121)	-.026(-.023)
21810	.70	25.3(529)	6.02	.206(.195)	-.045(-.044)
21812	.70	25.3(529)	7.96	.285(.276)	-.059(-.056)
21813	.70	25.3(529)	9.97	.362(.358)	-.064(-.064)
21814	.70	25.3(529)	11.89	.447(.442)	-.074(-.076)
21815	.70	25.3(529)	13.85	.542(.537)	-.087(-.090)
21816	.70	25.3(529)	15.82	.641(.636)	-.099(-.097)
21901	1.05	39.3(821)	-7.78	-.330(-.338)	.087(.086)
21902	1.05	39.3(820)	-5.82	-.239(-.242)	.064(.062)
21903	1.05	39.3(820)	-3.89	-.156(-.160)	.042(.041)
21904	1.05	39.3(820)	-1.92	-.077(-.076)	.019(.018)
21905	1.05	39.3(821)	.06	-.002(-.005)	-.002(-.000)
21906	1.05	39.3(821)	2.01	.069(.060)	-.019(-.015)
21907	1.05	39.3(821)	4.01	.146(.134)	-.039(-.034)
21908	1.05	39.3(821)	5.92	.229(.218)	-.062(-.056)
21909	1.05	39.3(821)	7.89	.315(.307)	-.080(-.074)
21910	1.05	39.3(821)	9.87	.398(.393)	-.091(-.087)
21911	1.05	39.3(821)	11.81	.482(.480)	-.104(-.101)
21912	1.05	39.3(820)	13.78	.571(.565)	-.120(-.112)
21913	1.05	39.3(820)	15.73	.660(.656)	-.138(-.130)
22001	.95	36.1(755)	-7.79	-.317(-.322)	.075(.073)
22002	.95	36.1(754)	-5.86	-.227(-.228)	.054(.052)
22003	.95	36.1(755)	-3.90	-.146(-.152)	.035(.036)
22004	.95	36.1(754)	-1.93	-.070(-.074)	.016(.017)
22005	.95	36.1(755)	.04	-.001(-.006)	.000(.001)
22006	.95	36.1(755)	2.01	.066(.058)	-.014(-.011)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
22007	.95	36.1(755)	4.00	.137(.126)	-.030(-.025)
22008	.95	36.1(755)	5.95	.217(.206)	-.049(-.045)
22009	.95	36.1(755)	7.90	.299(.294)	-.064(-.060)
22010	.95	36.1(755)	9.85	.380(.374)	-.072(-.070)
22011	.95	36.1(755)	11.82	.478(.469)	-.090(-.085)
22012	.95	36.1(755)	13.77	.574(.569)	-.108(-.101)
22013	.95	36.2(756)	15.73	.669(.663)	-.123(-.117)
22101	.85	32.3(674)	-7.80	-.302(-.308)	.070(.069)
22102	.85	32.2(673)	-5.83	-.215(-.217)	.051(.049)
22103	.85	32.2(673)	-3.86	-.139(-.146)	.035(.034)
22104	.85	32.3(674)	-1.90	-.067(-.071)	.017(.015)
22105	.85	32.2(673)	.07	.000(-.006)	.002(.001)
22106	.85	32.2(673)	2.02	.065(.056)	-.011(-.010)
22107	.85	32.3(674)	4.02	.133(.122)	-.026(-.023)
22108	.85	32.2(673)	5.98	.211(.197)	-.046(-.043)
22109	.85	32.3(674)	7.94	.290(.280)	-.059(-.057)
22110	.85	32.2(673)	9.90	.368(.362)	-.065(-.065)
22111	.85	32.3(674)	11.85	.455(.445)	-.075(-.074)
22112	.85	32.2(673)	13.81	.549(.547)	-.089(-.088)
22114	.85	32.3(674)	15.77	.643(.643)	-.099(-.100)
22201	.95	36.1(755)	.04	-.001(-.005)	.001(.000)
22301	.40	10.3(215)	-7.73	-.268(-.282)	.067(.066)
22302	.40	10.3(215)	-5.75	-.194(-.204)	.050(.047)
22303	.40	10.3(215)	-3.79	-.125(-.135)	.034(.031)
22304	.40	10.3(215)	-1.84	-.057(-.063)	.019(.013)
22305	.40	10.3(215)	.14	.005(-.004)	.006(.001)
22306	.40	10.3(215)	2.12	.067(.055)	-.005(-.009)
22307	.40	10.3(215)	4.10	.129(.117)	-.018(-.021)
22308	.40	10.3(215)	6.06	.199(.186)	-.035(-.039)
22309	.40	10.3(215)	8.03	.279(.266)	-.055(-.058)
22310	.40	10.3(215)	9.99	.354(.343)	-.062(-.065)
22311	.40	10.3(215)	11.95	.435(.427)	-.068(-.074)
22312	.40	10.3(215)	13.90	.529(.523)	-.082(-.091)
22313	.40	10.3(215)	15.84	.627(.615)	-.095(-.101)

Table A-4.—(Continued)

(f) T.E. Deflection, Inboard = -17.7°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
22411	1.05	39.3(820)	.16	-.234(-.260)	.124(.142)
22412	1.05	39.3(820)	2.12	-.166(-.192)	.108(.124)
22413	1.05	39.3(820)	4.10	-.097(-.122)	.094(.109)
22414	1.05	39.3(820)	6.05	-.023(-.045)	.079(.094)
22415	1.05	39.3(820)	8.04	.062(.044)	.063(.077)
22416	1.05	39.3(820)	9.97	.158(.147)	.040(.047)
22417	1.05	39.3(820)	11.93	.262(.259)	.014(.018)
22418	1.05	39.3(821)	13.88	.364(.365)	-.010(-.012)
22419	1.05	39.3(820)	15.84	.459(.460)	-.033(-.035)
22601	.95	36.1(755)	.16	-.239(-.259)	.119(.127)
22602	.95	36.1(754)	2.12	-.173(-.195)	.103(.112)
22603	.95	36.1(754)	4.10	-.109(-.133)	.091(.100)
22604	.95	36.1(754)	6.07	-.044(-.067)	.081(.090)
22605	.95	36.1(755)	8.05	.034(.016)	.068(.076)
22606	.95	36.1(755)	9.97	.127(.108)	.048(.055)
22607	.95	36.2(756)	11.92	.234(.221)	.026(.033)
22608	.95	36.1(755)	13.87	.341(.331)	.004(.012)
22610	.95	36.1(755)	15.84	.443(.441)	-.017(-.014)
22701	.85	32.2(673)	.21	-.243(-.260)	.115(.119)
22702	.85	32.2(673)	2.17	-.174(-.193)	.098(.102)
22703	.85	32.2(673)	4.12	-.109(-.128)	.085(.089)
22704	.85	32.2(673)	6.10	-.041(-.060)	.071(.075)
22705	.85	32.3(674)	8.06	.031(.013)	.060(.064)
22706	.85	32.3(674)	10.03	.120(.103)	.045(.050)
22707	.85	32.3(674)	11.98	.215(.200)	.030(.033)
22708	.85	32.3(674)	13.93	.322(.313)	.011(.013)
22709	.85	32.2(673)	15.87	.418(.414)	-.003(-.002)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
22801	.70	25.3(528)	.20	-.232(-.245)	.103(.106)
22802	.70	25.3(528)	2.18	-.163(-.178)	.087(.089)
22803	.70	25.3(528)	4.17	-.098(-.114)	.074(.076)
22804	.70	25.3(528)	6.13	-.033(-.050)	.062(.064)
22805	.70	25.3(528)	8.08	.033(.019)	.051(.054)
22806	.70	25.3(529)	10.06	.117(.102)	.038(.042)
22807	.70	25.3(529)	11.99	.203(.190)	.028(.028)
22808	.70	25.3(528)	13.98	.305(.293)	.011(.011)
22809	.70	25.3(528)	15.93	.411(.404)	-.005(-.003)
22810	.70	25.3(529)	.23	-.233(-.244)	.105(.106)
22901	.40	10.3(215)	.26	-.214(-.228)	.096(.094)
22902	.40	10.3(215)	2.23	-.148(-.162)	.081(.078)
22903	.40	10.3(215)	4.21	-.087(-.102)	.068(.067)
22904	.40	10.3(215)	6.15	-.026(-.043)	.057(.056)
22905	.40	10.3(215)	8.13	.038(.023)	.046(.043)
22906	.40	10.2(214)	10.11	.111(.100)	.036(.031)
22907	.40	10.3(215)	12.08	.192(.179)	.028(.024)
22908	.40	10.2(214)	14.03	.280(.270)	.017(.011)
22909	.40	10.2(214)	15.98	.379(.369)	.005(-.004)

Table A-4.—(Continued)

(g) T.E. Deflection, Inboard = -8.3°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
23011	1.05	39.2(819)	.12	-.142(-.151)	.075(.081)
23012	1.05	39.2(819)	2.11	-.068(-.079)	.056(.062)
23013	1.05	39.2(819)	4.05	.005(-.007)	.039(.044)
23014	1.05	39.2(819)	6.01	.086(.074)	.020(.029)
23015	1.05	39.3(820)	7.97	.174(.167)	-.000(.007)
23016	1.05	39.3(820)	9.90	.267(.257)	-.020(-.015)
23017	1.05	39.3(820)	11.87	.362(.356)	-.040(-.035)
23018	1.05	39.3(820)	13.84	.453(.450)	-.058(-.053)
23020	1.05	39.3(820)	15.78	.544(.542)	-.078(-.074)
23101	.70	25.2(526)	-7.69	-.421(-.431)	.122(.127)
23102	.70	25.2(527)	-5.73	-.336(-.344)	.103(.106)
23103	.70	25.2(526)	-3.78	-.262(-.268)	.087(.088)
23104	.70	25.2(526)	-1.83	-.189(-.194)	.069(.070)
23105	.70	25.2(527)	.20	-.116(-.122)	.051(.053)
23106	.70	25.2(527)	2.14	-.052(-.061)	.038(.040)
23107	.70	25.3(528)	4.11	.013(.001)	.026(.029)
23108	.70	25.3(528)	6.08	.081(.067)	.012(.015)
23109	.70	25.3(528)	8.02	.155(.144)	-.003(-.000)
23110	.70	25.3(528)	10.08	.236(.227)	-.010(-.008)
23111	.70	25.3(528)	11.96	.319(.309)	-.019(-.019)
23112	.70	25.2(527)	13.98	.415(.408)	-.032(-.033)
23113	.70	25.2(527)	15.89	.510(.506)	-.044(-.041)
23114	.70	25.3(528)	.16	-.118(-.124)	.053(.053)
23201	.95	36.1(755)	.06	-.145(-.153)	.070(.073)
23202	.95	36.1(754)	2.08	-.070(-.079)	.051(.055)
23203	.95	36.1(754)	4.05	.000(-.011)	.036(.040)
23204	.95	36.1(754)	6.02	.075(.062)	.020(.026)
23205	.95	36.1(754)	8.04	.161(.151)	.004(.011)
23206	.95	36.1(754)	9.93	.246(.236)	-.009(-.003)
23207	.95	36.1(755)	11.88	.347(.335)	-.028(-.020)
23208	.95	36.1(754)	13.83	.445(.444)	-.046(-.041)
23209	.95	36.1(754)	15.83	.544(.542)	-.062(-.058)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
23301	.85	32.2(673)	.12	-.126(-.134)	.058(.060)
23302	.85	32.2(673)	2.10	-.058(-.069)	.044(.046)
23303	.85	32.2(672)	4.07	.008(-.004)	.030(.034)
23304	.85	32.2(673)	6.04	.079(.065)	.015(.019)
23305	.85	32.2(672)	8.00	.157(.144)	.001(.005)
23306	.85	32.2(672)	10.06	.242(.232)	-.008(-.005)
23307	.85	32.2(673)	11.90	.327(.316)	-.019(-.016)
23308	.85	32.2(672)	13.89	.425(.420)	-.033(-.031)
23309	.85	32.2(672)	15.84	.519(.519)	-.045(-.045)
23501	.40	10.2(214)	.20	-.106(-.117)	.050(.049)
23502	.40	10.3(215)	2.20	-.041(-.054)	.037(.036)
23503	.40	10.2(214)	4.15	.020(.004)	.025(.026)
23504	.40	10.3(215)	6.14	.084(.069)	.013(.012)
23505	.40	10.3(215)	8.08	.156(.140)	-.004(-.005)
23506	.40	10.3(215)	10.04	.230(.216)	-.012(-.014)
23507	.40	10.3(215)	11.99	.308(.297)	-.018(-.020)
23508	.40	10.3(215)	13.98	.399(.390)	-.028(-.034)
23509	.40	10.2(214)	15.93	.490(.480)	-.038(-.045)

Table A-4.—(Continued)

(h) T.E. Deflection, Inboard = 8.3°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
23605	1.11	40.7(851)	-7.79	-.204(-.214)	.010(.017)
23606	1.11	40.7(850)	-3.84	-.037(-.049)	-.029(-.019)
23607	1.11	40.7(850)	.07	.110(.100)	-.066(-.059)
23608	1.11	40.7(851)	4.03	.259(.248)	-.108(-.102)
23610	1.11	40.7(849)	6.95	.376(.369)	-.134(-.129)
23701	.70	25.3(529)	-7.80	-.167(-.170)	.012(.012)
23702	.70	25.2(527)	-5.88	-.094(-.097)	-.002(-.003)
23703	.70	25.2(527)	-3.90	-.026(-.029)	-.016(-.016)
23704	.70	25.2(527)	-1.91	.041(.038)	-.031(-.032)
23705	.70	25.2(527)	.06	.103(.098)	-.043(-.042)
23706	.70	25.3(528)	2.05	.167(.160)	-.056(-.054)
23707	.70	25.2(527)	3.99	.234(.227)	-.072(-.071)
23708	.70	25.2(527)	5.98	.310(.303)	-.091(-.090)
23709	.70	25.3(528)	7.92	.389(.385)	-.105(-.104)
23710	.70	25.3(528)	9.87	.462(.462)	-.109(-.109)
23711	.70	25.3(529)	11.87	.548(.546)	-.119(-.121)
23712	.70	25.3(528)	13.82	.649(.647)	-.138(-.140)
23713	.70	25.3(528)	15.76	.746(.745)	-.152(-.149)
23714	.70	25.2(527)	.05	.102(.097)	-.041(-.042)
23801	1.05	39.2(819)	-7.87	-.205(-.217)	.013(.016)
23802	1.05	39.2(819)	-5.88	-.116(-.126)	-.008(-.004)
23803	1.05	39.2(819)	-3.96	-.037(-.047)	-.026(-.021)
23804	1.05	39.2(819)	-1.99	.039(.030)	-.046(-.041)
23805	1.05	39.2(819)	.01	.111(.101)	-.065(-.058)
23806	1.05	39.2(819)	1.96	.184(.171)	-.084(-.075)
23807	1.05	39.2(819)	3.93	.258(.252)	-.105(-.102)
23808	1.05	39.3(820)	5.89	.340(.333)	-.127(-.122)
23809	1.05	39.2(819)	7.82	.419(.416)	-.142(-.134)
23810	1.05	39.2(819)	9.82	.491(.488)	-.145(-.141)
23811	1.05	39.2(819)	11.77	.565(.563)	-.151(-.144)
23812	1.05	39.2(819)	13.77	.646(.646)	-.162(-.155)
23813	1.05	39.2(819)	15.70	.723(.716)	-.173(-.160)
23901	.95	36.1(753)	-7.87	-.185(-.188)	.006(.007)
23902	.95	36.1(754)	-5.92	-.102(-.106)	-.009(-.007)
23903	.95	36.1(753)	-3.94	-.027(-.032)	-.024(-.021)
23904	.95	36.1(754)	-1.98	.044(.040)	-.040(-.038)
23905	.95	36.1(754)	-.01	.110(.105)	-.054(-.051)
23906	.95	36.1(753)	1.96	.178(.172)	-.070(-.065)
23907	.95	36.1(754)	3.91	.252(.246)	-.090(-.087)
23908	.95	36.1(753)	5.88	.330(.321)	-.109(-.101)
23909	.95	36.1(753)	7.88	.414(.416)	-.126(-.122)
23910	.95	36.1(753)	9.88	.490(.486)	-.132(-.127)
23911	.95	36.1(754)	11.77	.573(.567)	-.141(-.136)
23912	.95	36.1(754)	13.74	.661(.659)	-.156(-.149)
23913	.95	36.1(754)	15.69	.738(.729)	-.162(-.148)
24001	.85	32.2(672)	-7.84	-.176(-.180)	.009(.011)
24002	.85	32.2(673)	-5.89	-.096(-.100)	-.005(-.004)
24003	.85	32.2(673)	-3.94	-.027(-.033)	-.019(-.017)
24004	.85	32.2(673)	-1.99	.041(.038)	-.034(-.034)
24005	.85	32.2(673)	.01	.106(.100)	-.047(-.046)
24006	.85	32.2(672)	2.02	.172(.165)	-.061(-.058)
24007	.85	32.2(673)	3.97	.243(.237)	-.080(-.079)
24008	.85	32.2(673)	5.94	.321(.310)	-.099(-.093)
24009	.85	32.2(673)	7.88	.398(.397)	-.111(-.111)
24010	.85	32.2(672)	9.87	.473(.472)	-.116(-.115)
24011	.85	32.2(673)	11.81	.558(.550)	-.125(-.120)
24012	.85	32.2(673)	13.77	.650(.649)	-.139(-.134)
24013	.85	32.2(673)	15.73	.736(.736)	-.148(-.141)
24101	.40	10.3(215)	-7.76	-.160(-.163)	.028(.015)
24102	.40	10.3(215)	-5.83	-.092(-.095)	.014(.000)
24103	.40	10.3(215)	-3.87	-.025(-.029)	-.002(-.013)
24104	.40	10.3(215)	-1.90	.037(.035)	-.015(-.028)
24105	.40	10.3(215)	.10	.096(.093)	-.026(-.038)
24106	.40	10.3(215)	2.09	.158(.154)	-.040(-.050)
24107	.40	10.3(215)	4.06	.222(.216)	-.055(-.062)
24108	.40	10.3(215)	4.06	.221(.216)	-.056(-.062)
24109	.40	10.3(215)	6.02	.292(.288)	-.074(-.083)
24110	.40	10.3(215)	7.99	.375(.370)	-.095(-.102)
24111	.40	10.3(215)	9.94	.448(.449)	-.100(-.108)
24112	.40	10.3(215)	11.91	.530(.534)	-.108(-.119)
24113	.40	10.3(215)	13.86	.630(.632)	-.127(-.139)
24114	.40	10.3(215)	15.83	.734(.727)	-.144(-.151)

Table A-4.—(Concluded)

(i) T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
24205	1.05	39.2(819)	-7.92	-.093(-.080)	-.056(-.057)
24206	1.05	39.2(819)	-5.95	-.010(-.004)	-.071(-.069)
24207	1.05	39.2(818)	-3.98	.069(.072)	-.089(-.086)
24208	1.05	39.2(818)	-2.03	.137(.138)	-.104(-.101)
24209	1.05	39.2(819)	-.03	.204(.205)	-.119(-.115)
24210	1.05	39.2(819)	1.90	.271(.272)	-.135(-.132)
24211	1.05	39.2(819)	3.89	.343(.346)	-.154(-.152)
24212	1.05	39.2(818)	5.83	.419(.423)	-.171(-.170)
24214	1.05	39.2(819)	7.82	.492(.507)	-.181(-.184)
24215	1.05	39.2(819)	9.81	.566(.569)	-.189(-.185)
24216	1.05	39.2(819)	11.73	.629(.636)	-.187(-.185)
24217	1.05	39.2(918)	13.74	.703(.719)	-.193(-.195)
24218	1.05	39.2(819)	15.69	.770(.774)	-.198(-.189)
24301	.70	25.3(528)	-7.86	-.057(-.060)	-.037(-.036)
24302	.70	25.3(528)	-5.92	.015(.010)	-.052(-.050)
24303	.70	25.3(528)	-3.92	.083(.080)	-.066(-.066)
24304	.70	25.3(528)	-1.99	.143(.137)	-.078(-.076)
24305	.70	25.2(527)	.00	.204(.197)	-.090(-.088)
24306	.70	25.2(527)	1.99	.270(.262)	-.105(-.102)
24307	.70	25.2(527)	3.96	.340(.333)	-.123(-.122)
24308	.70	25.2(527)	5.92	.415(.402)	-.141(-.135)
24309	.70	25.2(527)	7.85	.490(.490)	-.154(-.154)
24310	.70	25.2(527)	9.92	.562(.561)	-.158(-.155)
24311	.70	25.2(527)	11.82	.644(.640)	-.165(-.165)
24312	.70	25.2(527)	13.78	.743(.738)	-.185(-.183)
24313	.70	25.2(527)	15.73	.834(.833)	-.195(-.191)
24314	.70	25.2(527)	.01	.202(.199)	-.088(-.088)
24401	.95	36.1(754)	-7.91	-.069(-.064)	-.053(-.053)
24402	.95	36.1(754)	-6.02	.007(.009)	-.065(-.063)
24403	.95	36.1(753)	-3.99	.082(.083)	-.081(-.079)
24404	.95	36.1(753)	-2.02	.147(.149)	-.094(-.093)
24405	.95	36.1(753)	-.05	.210(.208)	-.108(-.104)
24406	.95	36.1(753)	1.92	.278(.278)	-.126(-.123)
24407	.95	36.1(753)	3.87	.350(.349)	-.145(-.142)
24408	.95	36.1(754)	5.83	.431(.424)	-.169(-.159)
24409	.95	36.1(753)	7.80	.517(.522)	-.191(-.186)
24410	.95	36.1(753)	9.88	.588(.588)	-.192(-.186)
24411	.95	36.1(753)	11.72	.650(.648)	-.188(-.181)
24412	.95	36.1(753)	13.71	.724(.725)	-.192(-.183)
24413	.95	36.1(754)	15.68	.799(.795)	-.197(-.186)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
24501	.85	32.2(672)	-7.90	-.063(-.066)	-.043(-.042)
24502	.85	32.2(672)	-5.96	.014(.010)	-.057(-.056)
24503	.85	32.2(672)	-3.96	.083(.081)	-.071(-.071)
24504	.85	32.2(672)	-2.01	.144(.142)	-.083(-.083)
24505	.85	32.2(672)	-.03	.206(.201)	-.095(-.094)
24506	.85	32.2(672)	1.96	.274(.271)	-.112(-.112)
24507	.85	32.2(672)	3.91	.345(.341)	-.131(-.129)
24508	.85	32.2(672)	5.85	.421(.410)	-.149(-.142)
24509	.85	32.1(671)	7.82	.496(.502)	-.162(-.163)
24510	.85	32.2(672)	9.79	.569(.574)	-.166(-.167)
24511	.85	32.2(672)	11.75	.647(.642)	-.171(-.167)
24512	.85	32.2(672)	13.72	.731(.735)	-.182(-.178)
24513	.85	32.2(672)	15.69	.814(.813)	-.189(-.181)
24601	.40	10.3(216)	-7.83	-.058(-.071)	-.016(-.025)
24602	.40	10.3(215)	-5.86	.012(-.001)	-.034(-.039)
24603	.40	10.2(214)	-3.90	.077(.066)	-.050(-.054)
24604	.40	10.2(214)	-1.93	.138(.126)	-.062(-.066)
24605	.40	10.3(215)	.06	.199(.187)	-.075(-.078)
24606	.40	10.2(214)	2.02	.261(.246)	-.089(-.090)
24607	.40	10.2(214)	3.98	.328(.320)	-.107(-.113)
24608	.40	10.2(214)	5.95	.399(.388)	-.124(-.128)
24609	.40	10.2(214)	7.92	.477(.464)	-.142(-.143)
24610	.40	10.2(214)	9.89	.551(.547)	-.148(-.152)
24611	.40	10.2(213)	11.87	.634(.633)	-.157(-.163)
24612	.40	10.2(214)	13.82	.734(.727)	-.176(-.180)
24613	.40	10.2(214)	15.76	.834(.817)	-.192(-.190)

Table A-5.—Experimental Data Test Point Log. Flat Wing, Rounded Leading Edge; L.E. Deflection, Full Span = 0.0°

(a) T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
24715	1.05	39.2(819)	-7.92	-.090(-.081)	-.057(-.058)
24716	1.05	39.2(819)	-5.94	-.007(-.003)	-.072(-.069)
24717	1.05	39.2(819)	-4.00	.071(.075)	-.089(-.087)
24718	1.05	39.2(819)	-2.01	.140(.141)	-.104(-.101)
24719	1.05	39.2(818)	-.06	.206(.205)	-.119(-.116)
24720	1.05	39.2(819)	1.92	.275(.274)	-.137(-.136)
24721	1.05	39.2(819)	3.86	.346(.347)	-.154(-.152)
24722	1.05	39.2(819)	5.87	.423(.424)	-.169(-.166)
24723	1.05	39.2(819)	7.84	.498(.492)	-.178(-.170)
24724	1.05	39.2(819)	9.84	.575(.572)	-.189(-.183)
24725	1.05	39.2(819)	11.77	.642(.643)	-.193(-.187)
24726	1.05	39.2(819)	13.71	.707(.723)	-.194(-.197)
24727	1.05	39.2(819)	15.67	.774(.779)	-.199(-.192)
24801	.70	25.3(528)	-7.88	-.054(-.056)	-.036(-.037)
24802	.70	25.2(527)	-5.91	.022(.020)	-.053(-.054)
24803	.70	25.2(527)	-3.92	.085(.082)	-.065(-.066)
24804	.70	25.2(527)	-1.98	.145(.139)	-.076(-.076)
24805	.70	25.2(527)	-.01	.206(.197)	-.089(-.087)
24806	.70	25.2(527)	1.99	.275(.269)	-.106(-.107)
24807	.70	25.2(527)	3.96	.347(.335)	-.124(-.120)
24808	.70	25.2(527)	5.90	.422(.412)	-.142(-.138)
24809	.70	25.3(528)	7.85	.505(.492)	-.157(-.153)
24810	.70	25.3(528)	9.84	.595(.582)	-.173(-.168)
24811	.70	25.3(528)	11.79	.692(.665)	-.186(-.191)
24812	.70	25.3(529)	13.73	.762(.745)	-.192(-.184)
24813	.70	25.3(528)	15.70	.842(.825)	-.195(-.182)
24901	.95	36.1(754)	-7.93	-.067(-.060)	-.054(-.055)
24902	.95	36.1(754)	-5.98	.011(.016)	-.067(-.066)
24903	.95	36.1(754)	-4.01	.085(.086)	-.081(-.080)
24904	.95	36.1(754)	-2.04	.148(.149)	-.093(-.092)
24905	.95	36.1(754)	-.05	.213(.212)	-.109(-.106)
24906	.95	36.1(754)	1.92	.282(.281)	-.127(-.124)
24907	.95	36.1(753)	3.87	.356(.348)	-.147(-.139)
24908	.95	36.1(754)	5.83	.435(.429)	-.167(-.160)
24909	.95	36.1(754)	7.79	.517(.511)	-.184(-.176)
24910	.95	36.1(754)	9.78	.595(.587)	-.193(-.185)
24911	.95	36.1(754)	11.72	.663(.665)	-.195(-.191)
24912	.95	36.1(754)	13.69	.738(.740)	-.200(-.193)
24913	.95	36.1(754)	15.64	.811(.809)	-.205(-.196)
25001	.85	32.3(674)	-7.91	-.059(-.059)	-.045(-.045)
25002	.85	32.2(673)	-5.94	.019(.018)	-.059(-.059)
25003	.85	32.2(673)	-4.00	.085(.083)	-.071(-.072)
25004	.85	32.2(673)	-2.01	.146(.143)	-.083(-.083)
25005	.85	32.2(672)	-.07	.208(.203)	-.097(-.095)
25006	.85	32.2(672)	1.94	.279(.276)	-.114(-.115)
25007	.85	32.2(672)	3.89	.351(.342)	-.132(-.128)
25008	.85	32.2(672)	5.87	.431(.421)	-.152(-.147)
25009	.85	32.2(672)	7.83	.516(.506)	-.169(-.165)
25010	.85	32.2(673)	9.76	.605(.596)	-.188(-.181)
25011	.85	32.2(673)	11.74	.686(.674)	-.197(-.188)
25012	.85	32.2(672)	13.71	.762(.760)	-.201(-.195)
25013	.85	32.2(672)	15.68	.837(.833)	-.203(-.194)
25201	.40	10.3(215)	-7.84	-.052(-.056)	-.017(-.028)
25202	.40	10.3(215)	-5.89	.019(.013)	-.035(-.045)
25203	.40	10.3(215)	-3.88	.081(.072)	-.048(-.056)
25204	.40	10.3(215)	-1.92	.140(.130)	-.060(-.067)
25205	.40	10.2(214)	.01	.198(.188)	-.073(-.078)
25206	.40	10.2(214)	2.03	.265(.256)	-.090(-.097)
25207	.40	10.2(214)	3.99	.334(.324)	-.108(-.114)
25208	.40	10.2(214)	5.93	.405(.389)	-.124(-.125)
25209	.40	10.2(214)	7.94	.485(.470)	-.139(-.142)
25210	.40	10.2(214)	9.88	.573(.558)	-.154(-.157)
25211	.40	10.2(214)	11.83	.661(.647)	-.167(-.171)
25212	.40	10.2(214)	13.82	.749(.733)	-.177(-.181)
25213	.40	10.3(215)	15.75	.835(.817)	-.184(-.186)

Table A-5.–(Continued)

(b) T.E. Deflection, Inboard = 8.3°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
25404	1.11	40.7(849)	-7.81	-.202(-.210)	.013(.016)
25406	1.11	40.6(847)	-3.87	-.033(-.040)	-.030(-.023)
25407	1.11	40.6(847)	.06	.110(.099)	-.066(-.057)
25408	1.11	40.6(847)	4.01	.260(.249)	-.108(-.101)
25409	1.11	40.6(848)	7.90	.424(.409)	-.145(-.136)
25501	.70	25.2(527)	-7.82	-.165(-.166)	.011(.011)
25502	.70	25.2(527)	-5.88	-.089(-.090)	-.003(-.003)
25503	.70	25.2(526)	-3.90	-.020(-.022)	-.020(-.021)
25504	.70	25.2(527)	-1.93	.042(.038)	-.031(-.031)
25505	.70	25.2(526)	.01	.103(.097)	-.043(-.042)
25506	.70	25.2(527)	2.05	.170(.162)	-.058(-.055)
25507	.70	25.2(526)	4.01	.241(.233)	-.076(-.074)
25508	.70	25.2(527)	5.94	.318(.309)	-.094(-.090)
25509	.70	25.2(526)	7.93	.406(.394)	-.111(-.107)
25510	.70	25.2(526)	9.89	.493(.480)	-.125(-.120)
25511	.70	25.2(526)	11.85	.581(.565)	-.137(-.133)
25512	.70	25.2(526)	13.79	.667(.651)	-.146(-.140)
25513	.70	25.2(526)	15.78	.755(.742)	-.152(-.142)
25514	.70	25.2(527)	.04	.103(.098)	-.042(-.042)
25601	1.05	39.1(817)	-7.84	-.202(-.210)	.011(.015)
25602	1.05	39.1(817)	-5.90	-.116(-.124)	-.008(-.004)
25603	1.05	39.2(818)	-3.95	-.032(-.040)	-.030(-.024)
25604	1.05	39.1(817)	-1.98	.042(.034)	-.047(-.042)
25605	1.05	39.1(817)	.02	.112(.103)	-.064(-.057)
25606	1.05	39.1(816)	1.97	.186(.176)	-.084(-.079)
25607	1.05	39.1(816)	3.93	.265(.255)	-.107(-.102)
25608	1.05	39.1(816)	5.89	.347(.334)	-.127(-.118)
25609	1.05	39.1(817)	7.85	.429(.422)	-.142(-.137)
25610	1.05	39.1(817)	9.82	.508(.496)	-.154(-.145)
25611	1.05	39.2(818)	11.77	.582(.581)	-.162(-.158)
25612	1.05	39.1(817)	13.75	.660(.662)	-.172(-.168)
25613	1.05	39.1(817)	15.70	.733(.729)	-.179(-.168)
25701	.95	36.0(752)	-7.87	-.181(-.184)	.005(.004)
25702	.95	36.0(752)	-5.91	-.100(-.104)	-.008(-.006)
25703	.95	36.0(752)	-3.98	-.021(-.023)	-.026(-.026)
25704	.95	36.0(752)	-1.99	.045(.041)	-.039(-.038)
25705	.95	36.0(752)	-.04	.109(.104)	-.053(-.050)
25706	.95	36.0(751)	1.94	.180(.177)	-.070(-.070)
25707	.95	36.0(751)	3.93	.258(.250)	-.092(-.087)
25708	.95	36.0(751)	5.87	.341(.335)	-.113(-.110)
25709	.95	36.0(751)	7.85	.434(.426)	-.136(-.131)
25710	.95	36.0(751)	9.77	.516(.504)	-.151(-.143)
25711	.95	36.0(751)	11.76	.600(.594)	-.161(-.155)
25712	.95	36.0(751)	13.72	.678(.677)	-.168(-.161)
25713	.95	36.0(751)	15.66	.752(.747)	-.172(-.161)
25801	.85	32.1(671)	-7.85	-.172(-.172)	.009(.008)
25802	.85	32.1(670)	-5.91	-.095(-.098)	-.004(-.004)
25803	.85	32.1(670)	-3.95	-.021(-.022)	-.022(-.023)
25804	.85	32.1(670)	-1.96	.044(.039)	-.035(-.034)
25805	.85	32.1(670)	.01	.107(.101)	-.047(-.046)
25806	.85	32.1(670)	1.99	.175(.167)	-.063(-.060)
25807	.85	32.1(670)	3.95	.250(.239)	-.083(-.079)
25808	.85	32.1(670)	5.90	.330(.319)	-.102(-.097)
25809	.85	32.1(670)	7.86	.417(.405)	-.120(-.115)
25810	.85	32.1(670)	9.82	.507(.493)	-.136(-.129)
25811	.85	32.1(671)	11.78	.595(.581)	-.150(-.141)
25812	.85	32.1(671)	13.74	.683(.670)	-.162(-.150)
25813	.85	32.1(670)	15.72	.766(.755)	-.167(-.155)
25901	.40	10.2(214)	-7.78	-.157(-.156)	.025(.013)
25902	.40	10.2(214)	-5.83	-.084(-.086)	.007(-.003)
25903	.40	10.2(214)	-3.87	-.020(-.022)	-.008(-.018)
25904	.40	10.2(214)	-1.86	.039(.036)	-.018(-.028)
25905	.40	10.3(215)	.10	.098(.094)	-.029(-.038)
25906	.40	10.3(215)	2.07	.160(.152)	-.043(-.048)
25907	.40	10.3(215)	4.06	.228(.273)	-.061(-.068)
25908	.40	10.3(215)	6.00	.299(.293)	-.078(-.083)
25909	.40	10.3(215)	7.98	.382(.373)	-.095(-.099)
25910	.40	10.3(215)	9.98	.476(.467)	-.111(-.116)
25911	.40	10.3(215)	11.89	.562(.552)	-.124(-.127)
25912	.40	10.2(214)	13.84	.651(.639)	-.134(-.138)
25913	.40	10.2(214)	15.80	.743(.729)	-.143(-.146)

Table A-5.–(Continued)

(c) T.E. Deflection, Full Span = 0.0° (Repeat series)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
26204	1.11	40.6(848)	-7.72	-.318(-.325)	.080(.083)
26205	1.11	40.6(848)	-3.81	-.146(-.151)	.037(.040)
26206	1.11	40.6(847)	.11	.001(-.006)	-.003(.000)
26207	1.11	40.6(848)	4.07	.157(.142)	-.046(-.040)
26208	1.11	40.6(848)	7.98	.331(.318)	-.090(-.084)
26301	.70	25.2(526)	-7.74	-.281(-.285)	.063(.061)
26302	.70	25.2(526)	-5.84	-.203(-.203)	.048(.044)
26303	.70	25.1(525)	-3.84	-.126(-.129)	.029(.027)
26304	.70	25.2(526)	-1.87	-.060(-.064)	.014(.012)
26305	.70	25.2(526)	.08	.002(-.005)	.002(.001)
26306	.70	25.2(526)	2.05	.065(.057)	-.010(-.010)
26307	.70	25.2(526)	4.03	.135(.124)	-.027(-.026)
26308	.70	25.2(526)	6.03	.214(.200)	-.047(-.044)
26309	.70	25.2(526)	7.98	.300(.286)	-.064(-.061)
26310	.70	25.1(525)	9.91	.385(.369)	-.075(-.072)
26311	.70	25.1(525)	11.91	.471(.454)	-.084(-.082)
26312	.70	25.1(525)	13.86	.557(.543)	-.091(-.090)
26313	.70	25.1(525)	15.83	.647(.640)	-.098(-.096)
26314	.70	25.2(526)	.11	.002(-.002)	.003(.001)
26401	1.05	39.1(817)	-7.76	-.325(-.329)	.083(.082)
26402	1.05	39.1(816)	-5.84	-.237(-.241)	.062(.061)
26403	1.05	39.1(817)	-3.86	-.150(-.155)	.039(.040)
26404	1.05	39.1(816)	-1.91	-.072(-.076)	.016(.017)
26405	1.05	39.1(817)	.08	-.001(-.008)	-.001(.001)
26406	1.05	39.1(817)	2.03	.070(.059)	-.018(-.014)
26407	1.05	39.1(817)	3.99	.151(.138)	-.042(-.036)
26408	1.05	39.1(817)	5.96	.241(.229)	-.067(-.060)
26409	1.05	39.1(817)	7.87	.329(.318)	-.088(-.082)
26410	1.05	39.1(817)	9.89	.416(.405)	-.103(-.096)
26411	1.05	39.1(817)	11.82	.499(.494)	-.115(-.112)
26412	1.05	39.1(817)	13.76	.580(.580)	-.127(-.124)
26413	1.05	39.1(817)	15.76	.668(.666)	-.143(-.138)
26601	.95	36.0(752)	-7.81	-.312(-.316)	.072(.071)
26602	.95	36.0(752)	-5.85	-.222(-.225)	.053(.051)
26603	.95	36.0(752)	-3.89	-.139(-.145)	.033(.033)
26604	.95	36.0(752)	-1.92	-.065(-.069)	.014(.013)
26605	.95	36.0(752)	.05	-.000(-.006)	.001(.001)
26606	.95	36.0(752)	2.00	.066(.058)	-.013(-.011)
26607	.95	36.0(751)	3.99	.143(.132)	-.033(-.031)
26608	.95	36.0(751)	5.93	.279(.217)	-.055(-.051)
26609	.95	36.0(751)	7.88	.317(.303)	-.073(-.067)
26610	.95	36.0(751)	9.85	.406(.393)	-.088(-.083)
26611	.95	36.0(751)	11.82	.498(.491)	-.103(-.100)
26612	.95	36.0(752)	13.77	.589(.585)	-.117(-.112)
26613	.95	36.0(752)	15.71	.678(.672)	-.130(-.124)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
26701	.85	32.2(672)	-7.78	-.297(-.298)	.067(.065)
26702	.85	32.1(671)	-5.81	-.212(-.213)	.051(.047)
26703	.85	32.1(671)	-3.87	-.133(-.138)	.031(.032)
26704	.85	32.2(672)	-1.90	-.062(-.066)	.014(.013)
26705	.85	32.2(672)	.07	.001(-.005)	.001(.001)
26706	.85	32.1(671)	2.06	.067(.058)	-.012(-.011)
26707	.85	32.1(671)	3.99	.138(.127)	-.030(-.029)
26708	.85	32.1(671)	5.96	.222(.209)	-.052(-.048)
26709	.85	32.1(671)	7.92	.307(.292)	-.067(-.064)
26710	.85	32.1(671)	9.88	.393(.377)	-.079(-.075)
26711	.85	32.1(670)	11.87	.480(.466)	-.089(-.085)
26712	.85	32.1(671)	13.90	.573(.564)	-.099(-.095)
26713	.85	32.1(671)	15.79	.660(.653)	-.108(-.104)
26802	1.00	37.6(786)	-7.82	-.325(-.333)	.081(.079)
26803	1.00	37.6(786)	-5.87	-.233(-.237)	.059(.056)
26805	1.00	37.6(786)	-3.90	-.145(-.149)	.036(.035)
26806	1.00	37.7(787)	-1.95	-.069(-.072)	.015(.014)
26807	1.00	37.6(786)	.02	-.002(-.007)	.000(.001)
26808	1.00	37.6(786)	1.99	.068(.059)	-.016(-.012)
26809	1.00	37.6(786)	3.96	.147(.136)	-.037(-.033)
26810	1.00	37.7(787)	5.90	.237(.226)	-.062(-.057)
26811	1.00	37.6(785)	7.87	.327(.317)	-.082(-.077)
26812	1.00	37.6(786)	9.83	.414(.401)	-.097(-.091)
26813	1.00	37.6(786)	11.78	.500(.492)	-.110(-.105)
26814	1.00	37.6(786)	13.75	.586(.580)	-.122(-.114)
26815	1.00	37.6(786)	15.70	.672(.664)	-.134(-.127)
26901	.40	10.2(214)	-7.75	-.266(-.269)	.068(.059)
26902	.40	10.3(215)	-5.77	-.188(-.194)	.047(.044)
26903	.40	10.3(215)	-3.80	-.118(-.123)	.030(.024)
26904	.40	10.3(215)	-1.83	-.055(-.061)	.016(.011)
26905	.40	10.3(215)	.14	.006(-.003)	.005(.001)
26906	.40	10.3(215)	2.11	.067(.056)	-.007(-.010)
26907	.40	10.3(215)	4.10	.132(.120)	-.023(-.023)
26908	.40	10.3(215)	6.07	.206(.193)	-.042(-.043)
26910	.40	10.3(215)	8.00	.289(.272)	-.061(-.060)
26911	.40	10.2(214)	9.97	.379(.361)	-.074(-.073)
26913	.40	10.2(214)	11.91	.463(.445)	-.082(-.082)
26914	.40	10.2(214)	13.88	.551(.529)	-.091(-.091)
26915	.40	10.2(214)	15.87	.642(.621)	-.099(-.099)

Table A-5.–(Continued)

(d) T.E. Deflection, Inboard = 0.0°, Outboard = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
27006	1.11	40.6(848)	-7.75	-.307(-.315)	.068(.072)
27007	1.11	40.6(848)	-3.83	-.125(-.129)	.016(.017)
27008	1.11	40.6(848)	.11	.026(.021)	-.026(-.024)
27009	1.11	40.6(848)	4.02	.177(.165)	-.067(-.062)
27010	1.11	40.6(848)	7.97	.344(.330)	-.102(-.095)
27101	.70	25.2(527)	-7.76	-.256(-.258)	.042(.041)
27102	.70	25.2(527)	-5.82	-.173(-.172)	.024(.021)
27103	.70	25.2(527)	-3.84	-.095(-.097)	.003(.001)
27104	.70	25.2(527)	-1.88	-.029(-.034)	-.011(-.013)
27105	.70	25.2(527)	.07	.032(.026)	-.023(-.023)
27106	.70	25.2(527)	2.05	.097(.086)	-.036(-.034)
27107	.70	25.2(527)	4.02	.165(.154)	-.052(-.051)
27108	.70	25.2(527)	5.98	.242(.228)	-.070(-.067)
27109	.70	25.2(527)	7.97	.325(.309)	-.083(-.079)
27110	.70	25.2(527)	9.91	.404(.385)	-.090(-.084)
27111	.70	25.2(527)	11.88	.484(.464)	-.094(-.089)
27112	.70	25.2(526)	13.86	.570(.550)	-.101(-.095)
27113	.70	25.2(526)	15.80	.659(.646)	-.108(-.101)
27114	.70	25.2(527)	.07	.031(.026)	-.022(-.023)
27201	1.05	39.1(817)	-7.83	-.313(-.323)	.071(.074)
27202	1.05	39.1(817)	-5.86	-.218(-.224)	.044(.044)
27203	1.05	39.1(817)	-3.89	-.127(-.132)	.016(.017)
27204	1.05	39.1(817)	-1.93	-.046(-.048)	-.008(-.008)
27205	1.05	39.1(817)	.03	.023(.017)	-.024(-.022)
27206	1.05	39.1(816)	2.02	.096(.085)	-.042(-.036)
27207	1.05	39.1(817)	3.98	.175(.163)	-.063(-.060)
27208	1.05	39.1(816)	5.92	.259(.248)	-.084(-.078)
27209	1.05	39.1(817)	7.87	.343(.330)	-.100(-.093)
27210	1.05	39.1(816)	9.83	.424(.410)	-.110(-.102)
27211	1.05	39.1(816)	11.83	.510(.503)	-.125(-.120)
27212	1.05	39.1(817)	13.78	.595(.589)	-.139(-.132)
27213	1.05	39.1(816)	15.75	.682(.678)	-.155(-.151)
27301	.95	36.0(751)	-7.82	-.293(-.299)	.056(.055)
27302	.95	36.0(751)	-5.86	-.198(-.203)	.032(.032)
27303	.95	36.0(751)	-3.90	-.112(-.117)	.010(.009)
27304	.95	36.0(751)	-1.95	-.038(-.042)	-.010(-.011)
27305	.95	36.0(751)	.04	.028(.022)	-.023(-.023)
27306	.95	36.0(751)	1.99	.095(.085)	-.037(-.034)
27307	.95	36.0(752)	3.96	.169(.160)	-.056(-.054)
27308	.95	36.0(752)	5.92	.252(.241)	-.075(-.071)
27309	.95	36.0(752)	7.87	.335(.321)	-.088(-.083)
27310	.95	36.0(751)	9.85	.418(.402)	-.098(-.090)
27311	.95	36.0(751)	11.80	.506(.495)	-.110(-.103)
27312	.95	36.0(752)	13.74	.597(.590)	-.124(-.116)
27313	.95	36.0(751)	15.70	.689(.682)	-.138(-.132)
27401	.85	32.1(671)	-7.79	-.274(-.276)	.049(.047)
27402	.85	32.1(671)	-5.84	-.186(-.188)	.029(.026)
27403	.85	32.1(671)	-3.88	-.104(-.109)	.007(.007)
27404	.85	32.1(671)	-1.93	-.034(-.038)	-.010(-.012)
27405	.85	32.1(671)	.04	.029(.023)	-.022(-.023)
27406	.85	32.1(671)	2.02	.095(.085)	-.036(-.034)
27407	.85	32.1(671)	4.00	.167(.158)	-.054(-.054)
27408	.85	32.1(671)	5.96	.248(.236)	-.073(-.070)
27409	.85	32.1(670)	7.92	.328(.313)	-.085(-.080)
27410	.85	32.1(671)	9.87	.407(.388)	-.090(-.083)
27411	.85	32.1(670)	11.83	.490(.472)	-.097(-.090)
27412	.85	32.1(670)	13.81	.579(.566)	-.107(-.099)
27413	.85	32.1(670)	15.75	.670(.662)	-.117(-.111)
27502	.40	10.2(214)	-7.75	-.236(-.239)	.044(.038)
27503	.40	10.2(213)	-5.78	-.157(-.162)	.023(.020)
27504	.40	10.2(214)	-3.83	-.086(-.090)	.005(-.000)
27505	.40	10.2(214)	-1.84	-.023(-.029)	-.008(-.013)
27506	.40	10.2(214)	.14	.036(.029)	-.018(-.023)
27507	.40	10.2(214)	2.12	.097(.088)	-.029(-.033)
27508	.40	10.2(214)	4.07	.162(.153)	-.044(-.049)
27509	.40	10.2(214)	6.05	.236(.225)	-.063(-.067)
27510	.40	10.2(214)	8.01	.317(.301)	-.079(-.080)
27511	.40	10.2(214)	9.97	.402(.383)	-.089(-.089)
27512	.40	10.2(214)	11.94	.482(.461)	-.094(-.092)
27513	.40	10.2(214)	13.89	.566(.541)	-.100(-.097)
27514	.40	10.2(214)	15.82	.653(.628)	-.107(-.104)

(e) T.E. Deflection, Inboard = 0.0°, Outboard = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
27610	1.05	39.1(817)	-7.81	-.300(-.309)	.055(.060)
27611	1.05	39.1(816)	-5.86	-.199(-.203)	.025(.025)
27612	1.05	39.1(817)	-3.91	-.104(-.108)	-.006(-.005)
27613	1.05	39.1(817)	-1.95	-.023(-.025)	-.029(-.030)
27614	1.05	39.1(816)	.03	.046(.043)	-.046(-.044)
27615	1.05	39.1(817)	2.01	.118(.108)	-.062(-.057)
27616	1.05	39.1(817)	3.97	.194(.185)	-.082(-.078)
27617	1.05	39.1(817)	5.92	.276(.270)	-.100(-.097)
27618	1.05	39.1(817)	7.89	.358(.345)	-.112(-.105)
27619	1.05	39.1(817)	9.84	.436(.424)	-.121(-.112)
27620	1.05	39.1(817)	11.78	.517(.511)	-.132(-.127)
27621	1.05	39.1(817)	13.77	.602(.601)	-.146(-.143)
27622	1.05	39.1(817)	15.74	.689(.692)	-.162(-.163)
27701	.70	25.2(526)	-7.78	-.227(-.230)	.020(.018)
27702	.70	25.2(526)	-5.84	-.141(-.142)	-.001(-.004)
27703	.70	25.2(526)	-3.86	-.063(-.065)	-.022(-.024)
27704	.70	25.2(526)	-1.90	.000(-.003)	-.035(-.036)
27705	.70	25.2(526)	.06	.061(.055)	-.047(-.046)
27706	.70	25.2(526)	2.05	.125(.114)	-.059(-.056)
27707	.70	25.2(526)	4.00	.193(.184)	-.074(-.074)
27708	.70	25.2(526)	5.99	.269(.258)	-.092(-.090)
27709	.70	25.2(526)	7.94	.344(.331)	-.099(-.096)
27710	.70	25.2(526)	9.92	.418(.401)	-.100(-.095)
27711	.70	25.2(526)	11.88	.496(.474)	-.103(-.096)
27712	.70	25.2(526)	13.82	.579(.558)	-.109(-.101)
27713	.70	25.2(527)	15.81	.670(.655)	-.116(-.107)
27714	.70	25.2(526)	.06	.061(.056)	-.045(-.046)
27801	.95	36.0(752)	-7.81	-.272(-.277)	.037(.038)
27802	.95	36.0(752)	-5.88	-.174(-.179)	.011(.011)
27803	.95	36.0(752)	-3.93	-.086(-.089)	-.015(-.015)
27804	.95	36.0(751)	-1.95	-.011(-.014)	-.034(-.034)
27805	.95	36.0(751)	.03	.053(.048)	-.046(-.045)
27806	.95	36.0(752)	2.00	.121(.112)	-.061(-.057)
27807	.95	36.0(752)	3.94	.193(.183)	-.078(-.075)
27808	.95	36.0(752)	5.91	.273(.263)	-.094(-.090)
27809	.95	36.0(752)	7.88	.351(.338)	-.102(-.096)
27810	.95	36.0(752)	9.85	.430(.412)	-.108(-.099)
27811	.95	36.0(752)	11.79	.516(.504)	-.119(-.110)
27812	.95	36.0(752)	13.76	.608(.603)	-.133(-.126)
27813	.95	36.0(752)	15.72	.700(.696)	-.148(-.142)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
27901	.85	32.1(671)	-7.82	-.251(-.254)	.028(.028)
27902	.85	32.1(671)	-5.86	-.158(-.160)	.006(.003)
27903	.85	32.1(671)	-3.91	-.075(-.079)	-.017(-.018)
27904	.85	32.1(671)	-1.95	-.006(-.009)	-.033(-.035)
27905	.85	32.1(671)	.04	.056(.052)	-.045(-.046)
27906	.85	32.1(671)	2.02	.122(.113)	-.058(-.056)
27907	.85	32.1(671)	3.97	.192(.185)	-.075(-.076)
27908	.85	32.1(671)	5.94	.271(.261)	-.092(-.091)
27909	.85	32.1(671)	7.90	.345(.332)	-.098(-.096)
27910	.85	32.1(671)	9.86	.419(.401)	-.100(-.093)
27911	.85	32.1(671)	11.82	.500(.480)	-.106(-.096)
27912	.85	32.1(671)	13.80	.589(.575)	-.116(-.106)
27913	.85	32.1(671)	15.73	.680(.672)	-.126(-.119)
28001	.40	10.2(214)	-7.76	-.209(-.210)	.024(.014)
28002	.40	10.2(214)	-5.79	-.126(-.128)	.007(-.006)
28003	.40	10.2(214)	-3.83	-.056(-.058)	-.016(-.026)
28004	.40	10.2(214)	-1.85	.006(.003)	-.029(-.037)
28005	.40	10.2(214)	.12	.064(.059)	-.039(-.046)
28006	.40	10.2(214)	2.10	.125(.116)	-.051(-.054)
28007	.40	10.2(214)	4.07	.190(.185)	-.066(-.074)
28008	.40	10.2(214)	6.04	.262(.254)	-.083(-.089)
28009	.40	10.2(214)	8.00	.342(.329)	-.098(-.100)
28010	.40	10.2(214)	9.94	.419(.403)	-.102(-.104)
28011	.40	10.2(214)	11.90	.494(.475)	-.104(-.102)
28012	.40	10.2(214)	13.88	.576(.552)	-.107(-.105)
28013	.40	10.2(214)	15.84	.663(.639)	-.112(-.109)

Table A-6.—Experimental Data Test Point Log. Flat Wing, Rounded Leading Edge; L.E. Deflection, Inboard = 5.1°, Outboard = 0.0°

(a) T.E. Deflection, Inboard = 0.0°, Outboard = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
28204	1.05	39.1(817)	-7.82	-.303(-.304)	.049(.051)
28205	1.05	39.1(817)	-5.84	-.208(-.215)	.023(.026)
28206	1.05	39.1(816)	-3.91	-.114(-.123)	-.005(-.004)
28207	1.05	39.1(816)	-1.96	-.026(-.029)	-.031(-.030)
28208	1.05	39.1(817)	.02	.046(.042)	-.048(-.046)
28209	1.05	39.1(816)	1.99	.118(.109)	-.066(-.060)
28210	1.05	39.1(816)	3.95	.195(.186)	-.086(-.083)
28211	1.05	39.1(816)	5.92	.277(.272)	-.107(-.106)
28212	1.05	39.1(817)	7.88	.354(.347)	-.122(-.117)
28213	1.05	39.1(817)	9.84	.435(.425)	-.133(-.128)
28214	1.05	39.1(817)	11.82	.512(.500)	-.141(-.134)
28215	1.05	39.1(817)	13.76	.593(.582)	-.154(-.149)
28216	1.05	39.1(816)	15.73	.678(.667)	-.167(-.162)
28301	.70	25.2(527)	-7.82	-.244(-.253)	.018(.023)
28302	.70	25.2(527)	-5.81	-.154(-.159)	-.002(-.000)
28303	.70	25.2(527)	-3.88	-.069(-.072)	-.024(-.022)
28304	.70	25.2(526)	-1.91	-.000(-.003)	-.040(-.037)
28305	.70	25.2(527)	.09	.063(.057)	-.052(-.048)
28306	.70	25.2(526)	2.05	.127(.115)	-.065(-.058)
28307	.70	25.2(526)	4.01	.195(.185)	-.079(-.077)
28308	.70	25.2(526)	5.98	.270(.258)	-.097(-.092)
28309	.70	25.2(527)	7.95	.339(.330)	-.107(-.102)
28310	.70	25.2(527)	9.91	.416(.409)	-.117(-.114)
28311	.70	25.2(527)	11.85	.493(.482)	-.121(-.117)
28312	.70	25.2(527)	13.82	.572(.552)	-.124(-.114)
28313	.70	25.2(527)	15.79	.663(.636)	-.132(-.121)
28314	.70	25.2(527)	.07	.062(.057)	-.049(-.048)
28401	.95	35.9(750)	-7.82	-.279(-.284)	.034(.033)
28402	.95	36.0(752)	-5.88	-.186(-.194)	.012(.013)
28403	.95	36.0(752)	-3.93	-.095(-.100)	-.012(-.011)
28404	.95	36.0(752)	-1.97	-.014(-.018)	-.034(-.034)
28405	.95	36.0(752)	.01	.053(.048)	-.047(-.047)
28406	.95	36.0(752)	2.01	.121(.111)	-.062(-.058)
28407	.95	36.0(752)	3.96	.193(.185)	-.080(-.078)
28408	.95	36.0(751)	5.93	.271(.265)	-.098(-.098)
28409	.95	36.0(751)	7.86	.344(.334)	-.109(-.104)
28410	.95	36.0(751)	9.82	.429(.416)	-.122(-.115)
28411	.95	36.0(752)	11.81	.510(.495)	-.129(-.119)
28412	.95	36.0(752)	13.74	.595(.579)	-.140(-.130)
28413	.95	36.0(752)	15.71	.686(.674)	-.153(-.146)

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
28501	.85	32.1(670)	-7.80	-.263(-.266)	.029(.028)
28502	.85	32.1(671)	-5.86	-.172(-.182)	.009(.007)
28503	.85	32.1(670)	-3.90	-.084(-.088)	-.015(-.015)
28504	.85	32.1(671)	-1.93	-.008(-.010)	-.034(-.036)
28506	.85	32.2(672)	.03	.056(.054)	-.046(-.048)
28507	.85	32.1(671)	2.02	.122(.113)	-.060(-.058)
28508	.85	32.1(671)	3.99	.193(.186)	-.077(-.079)
28509	.85	32.1(670)	5.93	.269(.261)	-.095(-.095)
28510	.85	32.1(670)	7.90	.340(.331)	-.105(-.103)
28511	.85	32.1(670)	9.86	.419(.415)	-.115(-.115)
28513	.85	32.1(671)	11.82	.495(.486)	-.118(-.114)
28514	.85	32.1(671)	13.80	.579(.560)	-.125(-.117)
28515	.85	32.2(672)	15.76	.672(.652)	-.136(-.126)
28601	.40	10.2(213)	-7.76	-.233(-.238)	.025(.017)
28602	.40	10.2(213)	-5.79	-.145(-.156)	.006(-.002)
28603	.40	10.2(213)	-3.84	-.065(-.068)	-.014(-.023)
28604	.40	10.2(214)	-1.84	.005(.004)	-.029(-.038)
28605	.40	10.2(214)	.13	.065(.060)	-.040(-.048)
28606	.40	10.2(214)	2.08	.126(.118)	-.051(-.058)
28607	.40	10.2(214)	4.04	.192(.185)	-.068(-.076)
28608	.40	10.2(214)	6.03	.266(.257)	-.085(-.092)
28609	.40	10.2(214)	8.00	.337(.326)	-.099(-.102)
28610	.40	10.2(214)	9.95	.407(.397)	-.108(-.110)
28611	.40	10.2(214)	11.93	.492(.477)	-.124(-.125)
28612	.40	10.2(214)	13.87	.571(.560)	-.131(-.131)
28613	.40	10.2(214)	15.77	.651(.626)	-.135(-.131)

Table A-6.—(Continued)

(b) T.E. Deflection, Inboard = 0.0°, Outboard = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
30817	1.05	39.1(816)	-2.00	-.050(-.055)	-.012(-.009)
30818	1.05	39.0(815)	.07	.026(.019)	-.030(-.025)
30819	1.05	39.0(815)	2.11	.102(.090)	-.049(-.040)
30820	1.05	39.1(816)	3.94	.176(.164)	-.069(-.064)
30821	1.05	39.0(815)	6.02	.262(.257)	-.092(-.087)
30822	1.05	39.0(815)	7.97	.342(.332)	-.108(-.101)
30823	1.05	39.0(815)	9.84	.423(.414)	-.124(-.117)
30825	1.05	39.0(815)	12.11	.513(.503)	-.134(-.130)
30826	1.05	39.1(816)	13.78	.586(.576)	-.146(-.142)
30901	.70	25.1(525)	-7.78	-.261(-.270)	.035(.035)
30902	.70	25.1(525)	-3.79	-.097(-.100)	.002(.000)
30903	.70	25.2(526)	.09	.032(.026)	-.024(-.025)
30904	.70	25.2(526)	4.03	.165(.155)	-.054(-.054)
30905	.70	25.1(525)	8.02	.315(.307)	-.086(-.083)
31001	.95	35.9(750)	-7.83	-.291(-.295)	.042(.043)
31002	.95	35.9(750)	-5.83	-.202(-.210)	.026(.027)
31003	.95	35.9(750)	-3.93	-.119(-.125)	.008(.009)
31004	.95	35.9(750)	-2.02	-.042(-.045)	-.012(-.012)
31005	.95	35.9(750)	.10	.029(.024)	-.026(-.026)
31009	.95	36.0(751)	2.00	.095(.086)	-.040(-.038)
31010	.95	36.0(751)	4.01	.171(.161)	-.060(-.058)
31011	.95	35.9(750)	5.89	.247(.238)	-.079(-.076)
31012	.95	35.9(750)	7.87	.326(.314)	-.094(-.087)
31013	.95	36.0(751)	9.89	.418(.404)	-.112(-.104)
31014	.95	35.9(750)	11.87	.502(.487)	-.121(-.111)
31015	.95	36.0(751)	13.76	.587(.575)	-.133(-.127)
31017	.95	36.0(751)	15.71	.677(.664)	-.146(-.138)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
31101	.70	25.2(526)	-7.78	-.262(-.269)	.036(.035)
31102	.70	25.1(525)	-5.77	-.179(-.185)	.022(.020)
31103	.70	25.1(525)	-3.92	-.103(-.105)	.004(.002)
31104	.70	25.1(525)	-1.87	-.030(-.033)	-.013(-.014)
31105	.70	25.1(525)	.09	.032(.026)	-.024(-.025)
31106	.70	25.2(526)	2.09	.097(.087)	-.038(-.036)
31107	.70	25.2(526)	3.98	.164(.154)	-.053(-.053)
31108	.70	25.1(525)	6.01	.241(.229)	-.072(-.070)
31109	.70	25.1(525)	7.94	.312(.303)	-.085(-.082)
31110	.70	25.1(525)	10.09	.402(.396)	-.101(-.100)
31111	.70	25.1(525)	11.96	.479(.470)	-.108(-.106)
31112	.70	25.2(526)	13.93	.562(.545)	-.113(-.106)
31113	.70	25.2(526)	15.86	.652(.631)	-.122(-.116)
31114	.70	25.2(526)	.07	.030(.025)	-.023(-.025)
31201	.85	32.1(670)	-7.76	-.275(-.277)	.038(.038)
31202	.85	32.0(669)	-5.91	-.196(-.204)	.024(.024)
31203	.85	32.0(669)	-3.84	-.108(-.112)	.005(.006)
31204	.85	32.0(669)	-1.98	-.037(-.040)	-.012(-.013)
31205	.85	32.0(669)	.05	.029(.024)	-.025(-.025)
31206	.85	32.0(669)	2.07	.096(.087)	-.039(-.036)
31207	.85	32.0(669)	4.04	.169(.160)	-.057(-.056)
31208	.85	32.0(669)	5.94	.244(.234)	-.075(-.072)
31209	.85	32.0(669)	7.97	.321(.311)	-.089(-.085)
31210	.85	32.0(669)	9.92	.404(.400)	-.103(-.102)
31211	.85	32.0(669)	11.92	.488(.475)	-.110(-.103)
31212	.85	32.1(670)	13.87	.572(.555)	-.118(-.111)
31213	.85	32.0(669)	15.84	.665(.646)	-.129(-.119)
31301	.40	10.2(214)	-7.73	-.254(-.256)	.043(.032)
31302	.40	10.2(213)	-5.83	-.173(-.184)	.029(.018)
31303	.40	10.2(213)	-3.82	-.094(-.098)	.011(-.001)
31304	.40	10.2(213)	-1.90	-.028(-.030)	-.003(-.014)
31305	.40	10.2(213)	.14	.033(.029)	-.015(-.025)
31306	.40	10.2(214)	2.13	.096(.089)	-.027(-.036)
31307	.40	10.2(213)	4.06	.162(.155)	-.045(-.053)
31308	.40	10.2(214)	6.11	.240(.229)	-.064(-.070)
31309	.40	10.2(213)	8.05	.311(.300)	-.080(-.082)
31310	.40	10.2(214)	9.97	.383(.374)	-.092(-.093)
31311	.40	10.2(213)	11.98	.473(.460)	-.112(-.112)
31312	.40	10.2(213)	13.94	.558(.547)	-.122(-.121)
31313	.40	10.2(213)	15.80	.639(.616)	-.127(-.124)

Table A-6.—(Continued)

(c) T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
31411	1.11	40.6(847)	-7.74	-.317(-.323)	.066(.068)
31413	1.11	40.6(847)	-3.80	-.148(-.158)	.031(.035)
31414	1.11	40.5(846)	.26	.007(.002)	-.007(-.004)
31415	1.11	40.5(846)	4.11	.158(.145)	-.050(-.044)
31416	1.11	40.5(846)	8.01	.321(.311)	-.094(-.087)
31501	.70	25.2(526)	-7.79	-.281(-.288)	.047(.049)
31502	.70	25.1(525)	-5.74	-.203(-.209)	.040(.039)
31503	.70	25.1(525)	-3.90	-.132(-.134)	.025(.025)
31504	.70	25.1(525)	-1.94	-.063(-.065)	.011(.010)
31505	.70	25.2(526)	.12	.001(-.003)	-.001(-.001)
31506	.70	25.2(526)	2.01	.063(.056)	-.013(-.012)
31507	.70	25.2(526)	4.04	.134(.124)	-.030(-.029)
31508	.70	25.1(525)	6.04	.212(.200)	-.050(-.045)
31509	.70	25.1(525)	7.99	.287(.279)	-.066(-.063)
31510	.70	25.1(525)	10.06	.378(.371)	-.085(-.083)
31511	.70	25.1(525)	11.92	.459(.452)	-.096(-.094)
31512	.70	25.1(525)	13.84	.544(.531)	-.105(-.100)
31513	.70	25.1(525)	15.86	.641(.625)	-.116(-.113)
31514	.70	25.1(525)	.07	-.001(-.005)	.001(-.000)
31601	1.05	39.0(815)	-7.79	-.322(-.327)	.068(.070)
31602	1.05	39.0(815)	-5.81	-.239(-.246)	.054(.054)
31603	1.05	39.0(815)	-3.83	-.151(-.162)	.034(.035)
31604	1.05	39.0(815)	-1.88	-.071(-.076)	.013(.013)
31605	1.05	39.0(815)	.05	-.002(-.008)	-.003(-.002)
31606	1.05	39.0(815)	2.16	.076(.067)	-.023(-.019)
31607	1.05	39.0(815)	4.14	.157(.145)	-.047(-.042)
31608	1.05	39.0(815)	5.98	.237(.227)	-.070(-.064)
31609	1.05	39.0(815)	7.93	.321(.312)	-.090(-.085)
31610	1.05	39.1(816)	9.90	.410(.403)	-.111(-.106)
31611	1.05	39.0(815)	11.85	.492(.483)	-.124(-.120)
31613	1.05	39.1(816)	13.78	.574(.565)	-.136(-.135)
31614	1.05	39.0(815)	15.77	.659(.649)	-.150(-.144)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
31701	.95	36.0(751)	-7.86	-.306(-.308)	.054(.054)
31702	.95	36.0(751)	-5.79	-.221(-.227)	.042(.043)
31703	.95	35.9(750)	-3.87	-.141(-.147)	.027(.030)
31704	.95	36.0(751)	-1.95	-.068(-.070)	.010(.010)
31705	.95	36.0(751)	.10	.001(-.003)	-.003(-.002)
31706	.95	36.0(751)	2.03	.067(.059)	-.017(-.014)
31707	.95	35.9(750)	4.02	.144(.134)	-.038(-.034)
31708	.95	35.9(750)	6.04	.227(.218)	-.059(-.054)
31709	.95	36.0(751)	8.01	.310(.301)	-.077(-.071)
31710	.95	36.0(751)	9.77	.395(.384)	-.097(-.090)
31711	.95	36.0(751)	11.79	.487(.478)	-.112(-.106)
31712	.95	36.0(751)	13.79	.590(.572)	-.127(-.124)
31713	.95	36.0(752)	15.75	.670(.659)	-.140(-.134)
31801	.85	32.1(670)	-7.83	-.292(-.296)	.050(.051)
31802	.85	32.1(670)	-5.86	-.215(-.223)	.042(.041)
31803	.85	32.1(670)	-3.89	-.136(-.141)	.027(.029)
31805	.85	32.1(670)	-1.90	-.063(-.065)	.011(.010)
31806	.85	32.1(670)	.07	.001(-.004)	-.001(-.001)
31807	.85	32.1(670)	2.09	.068(.060)	-.015(-.014)
31808	.85	32.1(670)	3.98	.137(.128)	-.033(-.031)
31809	.85	32.1(670)	5.95	.217(.206)	-.054(-.049)
31812	.85	32.1(670)	7.95	.295(.287)	-.069(-.066)
31813	.85	32.0(669)	9.87	.381(.378)	-.086(-.086)
31814	.85	32.0(669)	11.89	.472(.461)	-.099(-.094)
31815	.85	32.0(669)	13.82	.559(.547)	-.110(-.107)
31816	.85	32.0(669)	15.76	.652(.638)	-.122(-.117)
31901	.40	10.2(213)	-7.73	-.275(-.276)	.055(.047)
31902	.40	10.2(213)	-5.81	-.199(-.209)	.045(.038)
31904	.40	10.2(214)	-3.80	-.123(-.126)	.028(.022)
31905	.40	10.2(213)	-1.83	-.058(-.059)	.015(.009)
31906	.40	10.2(213)	.15	.002(-.002)	.004(-.001)
31907	.40	10.2(213)	2.12	.064(.058)	-.009(-.012)
31908	.40	10.2(213)	4.12	.132(.124)	-.026(-.028)
31911	.40	10.2(214)	6.05	.204(.196)	-.045(-.046)
31912	.40	10.2(213)	8.01	.278(.267)	-.061(-.059)
31913	.40	10.2(213)	10.00	.358(.350)	-.077(-.076)
31914	.40	10.2(213)	11.93	.447(.437)	-.098(-.096)
31915	.40	10.2(213)	13.91	.536(.526)	-.112(-.109)
31916	.40	10.2(213)	15.80	.623(.604)	-.120(-.117)

(d) T.E. Deflection, Inboard = 8.3°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
32012	1.05	39.1(816)	-7.87	-.204(-.208)	-.001(.003)
32013	1.05	39.1(816)	-5.92	-.115(-.128)	-.019(-.012)
32014	1.05	39.1(816)	-3.94	-.033(-.041)	-.035(-.031)
32015	1.05	39.1(816)	-1.97	.043(.036)	-.051(-.047)
32016	1.05	39.1(817)	-.01	.113(.103)	-.067(-.061)
32017	1.05	39.1(816)	1.99	.189(.180)	-.089(-.083)
32018	1.05	39.1(816)	3.92	.266(.255)	-.112(-.106)
32020	1.05	39.1(816)	5.92	.346(.334)	-.132(-.125)
32022	1.05	39.1(816)	7.86	.420(.410)	-.147(-.139)
32023	1.05	39.1(816)	9.82	.502(.494)	-.162(-.155)
32024	1.05	39.1(816)	11.78	.579(.570)	-.173(-.167)
32025	1.05	39.1(816)	13.72	.651(.642)	-.179(-.175)
32026	1.05	39.1(816)	15.69	.723(.724)	-.185(-.187)
32101	.70	25.2(526)	-7.81	-.164(-.169)	-.001(-.001)
32102	.70	25.2(526)	-5.82	-.090(-.095)	-.009(-.009)
32103	.70	25.2(526)	-3.89	-.019(-.021)	-.024(-.024)
32104	.70	25.2(526)	-1.94	.042(.039)	-.033(-.033)
32105	.70	25.2(526)	.06	.104(.098)	-.045(-.044)
32106	.70	25.2(526)	2.07	.171(.162)	-.060(-.058)
32108	.70	25.2(527)	4.00	.243(.234)	-.079(-.077)
32109	.70	25.2(526)	5.97	.317(.305)	-.095(-.090)
32110	.70	25.2(526)	7.94	.391(.386)	-.111(-.108)
32111	.70	25.2(526)	9.93	.478(.473)	-.129(-.126)
32113	.70	25.2(526)	11.86	.565(.558)	-.142(-.141)
32115	.70	25.2(526)	13.81	.654(.640)	-.153(-.147)
32116	.70	25.1(525)	15.78	.746(.730)	-.165(-.162)
32117	.70	25.2(526)	.04	.102(.098)	-.043(-.043)
32201	.95	36.0(752)	-7.87	-.182(-.185)	-.006(-.006)
32202	.95	36.0(752)	-5.90	-.100(-.106)	-.018(-.016)
32203	.95	36.0(751)	-3.93	-.021(-.023)	-.032(-.031)
32204	.95	36.0(751)	-2.02	.044(.040)	-.043(-.041)
32205	.95	36.0(752)	-.01	.111(.107)	-.056(-.053)
32206	.95	36.0(752)	1.97	.183(.179)	-.074(-.073)
32207	.95	36.0(751)	3.92	.260(.249)	-.096(-.089)
32208	.95	36.0(751)	5.89	.338(.331)	-.117(-.110)
32209	.95	36.0(752)	7.82	.420(.413)	-.138(-.131)
32210	.95	36.0(751)	9.83	.512(.501)	-.161(-.152)
32211	.95	36.0(751)	11.76	.593(.579)	-.173(-.161)
32212	.95	36.0(751)	13.72	.675(.666)	-.183(-.178)
32213	.95	36.0(752)	15.69	.750(.742)	-.186(-.180)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
32301	.85	32.1(670)	-7.84	-.172(-.174)	-.004(-.004)
32302	.85	32.1(670)	-5.89	-.096(-.104)	-.012(-.013)
32303	.85	32.1(670)	-3.90	-.020(-.023)	-.027(-.027)
32304	.85	32.1(670)	-1.95	.044(.040)	-.037(-.037)
32305	.85	32.1(670)	.01	.106(.101)	-.048(-.047)
32306	.85	32.1(670)	1.97	.174(.166)	-.064(-.063)
32307	.85	32.1(670)	3.99	.251(.241)	-.085(-.081)
32308	.85	32.1(670)	5.99	.329(.320)	-.104(-.099)
32309	.85	32.1(670)	7.90	.403(.395)	-.119(-.114)
32310	.85	32.1(670)	9.82	.493(.490)	-.139(-.138)
32311	.85	32.1(670)	11.78	.581(.570)	-.154(-.146)
32312	.85	32.1(670)	13.74	.669(.657)	-.168(-.162)
32313	.85	32.1(670)	15.70	.760(.748)	-.180(-.173)
32401	.40	10.2(214)	-7.78	-.162(-.165)	.014(.001)
32402	.40	10.2(214)	-5.82	-.086(-.096)	.003(-.008)
32403	.40	10.2(214)	-3.85	-.019(-.023)	-.009(-.021)
32404	.40	10.2(214)	-1.88	.041(.038)	-.018(-.030)
32405	.40	10.2(214)	.10	.099(.094)	-.029(-.040)
32406	.40	10.2(214)	2.07	.163(.153)	-.044(-.050)
32407	.40	10.2(214)	4.04	.230(.224)	-.062(-.071)
32408	.40	10.2(214)	6.00	.303(.293)	-.079(-.084)
32409	.40	10.2(213)	7.97	.376(.371)	-.095(-.101)
32410	.40	10.2(213)	9.94	.453(.449)	-.111(-.116)
32411	.40	10.2(213)	11.89	.542(.533)	-.131(-.135)
32412	.40	10.2(213)	13.85	.632(.628)	-.147(-.151)
32414	.40	10.2(213)	15.82	.724(.706)	-.157(-.159)

Table A-6.—(Concluded)

(e) T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
32505	1.05	39.1(817)	-7.91	-.100(-.088)	-.062(-.051)
32506	1.05	39.1(816)	-5.95	-.008(-.002)	-.082(-.072)
32507	1.05	39.1(817)	-3.98	.070(.072)	-.096(-.088)
32508	1.05	39.1(817)	-2.02	.139(.142)	-.107(-.100)
32509	1.05	39.1(817)	-.06	.205(.204)	-.121(-.114)
32510	1.05	39.1(817)	1.92	.275(.272)	-.139(-.135)
32511	1.05	39.1(817)	3.88	.347(.343)	-.157(-.154)
32512	1.05	39.1(817)	5.85	.417(.412)	-.171(-.167)
32513	1.05	39.1(817)	7.80	.488(.483)	-.185(-.182)
32514	1.05	39.1(817)	9.78	.559(.547)	-.191(-.188)
32515	1.05	39.1(817)	11.74	.632(.613)	-.199(-.196)
32516	1.05	39.1(817)	13.71	.694(.685)	-.199(-.205)
32518	1.05	39.2(818)	15.68	.767(.762)	-.207(-.220)
32601	.70	25.2(527)	-7.88	-.059(-.050)	-.048(-.046)
32602	.70	25.2(526)	-5.90	.018(.025)	-.059(-.060)
32603	.70	25.2(527)	-3.94	.082(.091)	-.069(-.069)
32604	.70	25.2(527)	-1.98	.144(.149)	-.079(-.080)
32605	.70	25.2(527)	.01	.205(.205)	-.092(-.091)
32606	.70	25.2(527)	1.96	.273(.273)	-.109(-.113)
32607	.70	25.2(527)	3.94	.345(.338)	-.127(-.128)
32608	.70	25.2(527)	5.89	.418(.413)	-.144(-.146)
32609	.70	25.2(526)	7.86	.491(.486)	-.159(-.163)
32610	.70	25.2(526)	9.82	.571(.563)	-.174(-.178)
32611	.70	25.2(527)	11.79	.657(.646)	-.188(-.194)
32612	.70	25.2(526)	13.75	.742(.724)	-.198(-.203)
32613	.70	25.2(526)	15.71	.832(.813)	-.209(-.220)
32701	.95	36.0(752)	-7.93	-.075(-.053)	-.061(-.060)
32702	.95	36.0(752)	-5.97	.010(.027)	-.076(-.076)
32703	.95	36.0(752)	-3.99	.082(.099)	-.086(-.086)
32704	.95	36.0(752)	-2.03	.147(.164)	-.097(-.100)
32705	.95	36.0(752)	-.06	.212(.227)	-.111(-.115)
32706	.95	36.0(752)	1.90	.281(.293)	-.129(-.134)
32707	.95	36.0(752)	3.88	.354(.358)	-.149(-.150)
32708	.95	36.0(752)	5.83	.430(.431)	-.170(-.170)
32709	.95	36.0(752)	7.79	.507(.513)	-.190(-.194)
32710	.95	36.0(752)	9.75	.583(.583)	-.201(-.205)
32711	.95	36.0(752)	11.72	.660(.652)	-.211(-.210)
32712	.95	36.0(752)	13.69	.714(.710)	-.199(-.209)
32713	.95	36.0(752)	15.66	.796(.791)	-.209(-.220)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
32801	.85	32.1(670)	-7.90	-.065(-.049)	-.054(-.053)
32802	.85	32.1(670)	-5.94	.015(.023)	-.066(-.067)
32803	.85	32.1(670)	-3.97	.083(.093)	-.076(-.077)
32804	.85	32.1(670)	-2.01	.145(.154)	-.086(-.087)
32805	.85	32.1(670)	-.03	.208(.213)	-.099(-.100)
32806	.85	32.1(671)	1.94	.277(.282)	-.117(-.122)
32807	.85	32.1(671)	3.90	.351(.348)	-.136(-.137)
32808	.85	32.1(670)	5.86	.424(.424)	-.153(-.156)
32809	.85	32.1(671)	7.82	.499(.498)	-.169(-.172)
32810	.85	32.1(670)	9.78	.586(.585)	-.190(-.195)
32811	.85	32.1(670)	11.75	.673(.666)	-.204(-.207)
32812	.85	32.1(670)	13.69	.754(.745)	-.214(-.222)
32813	.85	32.1(670)	15.67	.828(.819)	-.215(-.226)
32901	.40	10.2(214)	-7.82	-.067(-.053)	-.025(-.037)
32902	.40	10.2(214)	-5.87	.010(.018)	-.038(-.051)
32903	.40	10.2(214)	-3.89	.075(.081)	-.047(-.060)
32904	.40	10.2(214)	-1.92	.135(.140)	-.059(-.071)
32905	.40	10.2(214)	.05	.196(.196)	-.073(-.083)
32906	.40	10.2(214)	2.02	.261(.261)	-.090(-.103)
32907	.40	10.3(215)	3.99	.332(.328)	-.109(-.121)
32908	.40	10.2(214)	5.96	.402(.393)	-.125(-.134)
32909	.40	10.2(214)	7.92	.472(.469)	-.141(-.152)
32910	.40	10.2(214)	9.89	.546(.545)	-.155(-.170)
32911	.40	10.2(214)	11.85	.625(.621)	-.168(-.186)
32912	.40	10.2(214)	13.80	.720(.714)	-.188(-.202)
32914	.40	10.2(214)	15.77	.812(.789)	-.199(-.213)

Table A-7.—Experimental Data Test Point Log. Flat Wing, Twisted Trailing Edge, Rounded Leading Edge; L.E. Deflection, Full Span = 0.0°

(a) T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
33214	1.11	40.7(849)	-7.75	-.278(-.283)	.060(.061)
33215	1.11	40.6(848)	-3.83	-.110(-.120)	.018(.022)
33216	1.11	40.7(849)	.09	.036(.027)	-.020(-.016)
33217	1.11	40.7(849)	4.02	.184(.177)	-.064(-.058)
33218	1.11	40.7(849)	7.95	.359(.348)	-.102(-.099)
33301	.70	25.2(527)	-7.78	-.244(-.245)	.048(.047)
33302	.70	25.2(527)	-5.83	-.167(-.169)	.033(.033)
33303	.70	25.2(527)	-3.92	-.093(-.095)	.014(.014)
33304	.70	25.2(527)	-1.88	-.029(-.033)	.001(.001)
33305	.70	25.2(527)	.09	.033(.027)	-.011(-.010)
33306	.70	25.2(527)	2.05	.097(.088)	-.024(-.022)
33307	.70	25.3(528)	4.03	.167(.153)	-.040(-.040)
33309	.70	25.2(527)	7.95	.329(.317)	-.074(-.072)
33310	.70	25.2(527)	9.90	.414(.402)	-.085(-.084)
33311	.70	25.2(527)	11.87	.500(.486)	-.094(-.095)
33312	.70	25.2(527)	13.83	.586(.574)	-.102(-.103)
33313	.70	25.2(527)	15.78	.677(.667)	-.110(-.108)
33314	.70	25.3(528)	.08	.032(.027)	-.008(-.010)
33401	1.05	39.2(818)	-7.82	-.284(-.286)	.061(.061)
33402	1.05	39.2(818)	-5.87	-.199(-.201)	.042(.041)
33403	1.05	39.2(818)	-3.89	-.113(-.119)	.019(.022)
33404	1.05	39.2(818)	-1.92	-.036(-.041)	-.002(-.001)
33405	1.05	39.2(818)	.05	.034(.027)	-.019(-.016)
33406	1.05	39.2(818)	1.99	.107(.096)	-.037(-.034)
33407	1.05	39.2(818)	3.98	.187(.175)	-.060(-.056)
33408	1.05	39.2(818)	5.93	.274(.262)	-.083(-.077)
33409	1.05	39.2(818)	7.87	.360(.348)	-.101(-.097)
33410	1.05	39.2(818)	9.84	.442(.429)	-.113(-.108)
33411	1.05	39.2(818)	11.79	.526(.517)	-.126(-.123)
33412	1.05	39.2(818)	13.76	.610(.603)	-.140(-.134)
33413	1.05	39.2(818)	15.72	.693(.680)	-.154(-.146)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
33501	.95	36.0(752)	-7.83	-.267(-.269)	.051(.050)
33502	.95	36.1(753)	-5.80	-.186(-.190)	.037(.036)
33503	.95	36.0(752)	-3.91	-.103(-.107)	.016(.017)
33504	.95	36.0(752)	-1.96	-.033(-.036)	.000(-.001)
33505	.95	36.1(753)	-.01	.032(.027)	-.013(-.013)
33506	.95	36.1(753)	2.00	.103(.095)	-.029(-.026)
33507	.95	36.1(753)	3.97	.179(.170)	-.048(-.046)
33508	.95	36.1(753)	5.90	.263(.254)	-.069(-.066)
33509	.95	36.1(753)	7.89	.353(.344)	-.088(-.086)
33510	.95	36.1(754)	9.82	.439(.429)	-.102(-.100)
33511	.95	36.1(753)	11.79	.530(.523)	-.116(-.116)
33513	.95	36.1(753)	13.74	.620(.614)	-.131(-.127)
33516	.95	36.1(753)	15.69	.707(.700)	-.143(-.138)
33601	.85	32.2(672)	-7.82	-.257(-.258)	.051(.049)
33602	.85	32.1(671)	-5.85	-.177(-.178)	.036(.034)
33603	.85	32.1(671)	-3.89	-.099(-.102)	.017(.016)
33604	.85	32.2(672)	-1.92	-.032(-.035)	.002(.000)
33605	.85	32.2(672)	.07	.033(.028)	-.011(-.012)
33606	.85	32.1(671)	2.02	.098(.090)	-.024(-.023)
33607	.85	32.2(672)	4.01	.172(.163)	-.043(-.043)
33608	.85	32.2(672)	5.95	.253(.242)	-.062(-.061)
33609	.85	32.2(672)	7.91	.338(.326)	-.077(-.077)
33610	.85	32.2(672)	9.89	.424(.414)	-.089(-.089)
33611	.85	32.2(672)	11.82	.508(.501)	-.098(-.101)
33612	.85	32.2(672)	13.78	.599(.593)	-.109(-.110)
33613	.85	32.2(673)	15.72	.691(.682)	-.121(-.117)
33701	.40	10.3(215)	-7.75	-.231(-.233)	.062(.047)
33702	.40	10.3(215)	-5.80	-.158(-.164)	.043(.034)
33703	.40	10.2(214)	-3.81	-.089(-.093)	.025(.014)
33704	.40	10.2(214)	-1.84	-.029(-.032)	.013(.001)
33705	.40	10.2(214)	.12	.031(.025)	.002(-.009)
33707	.40	10.2(214)	2.10	.091(.084)	-.012(-.020)
33708	.40	10.2(214)	4.08	.159(.151)	-.028(-.036)
33709	.40	10.2(214)	6.03	.230(.222)	-.045(-.054)
33710	.40	10.2(214)	8.00	.313(.302)	-.062(-.070)
33711	.40	10.2(214)	9.97	.403(.389)	-.074(-.083)
33712	.40	10.3(215)	11.91	.487(.475)	-.083(-.093)
33713	.40	10.2(214)	13.90	.576(.560)	-.092(-.102)
33714	.40	10.2(214)	15.82	.665(.659)	-.100(-.110)

Table A-7.—(Continued)

(b) T.E. Deflection, Full Span = 4.1°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
33814	1.05	39.1(817)	-7.86	-.218(-.220)	.016(.018)
33815	1.05	39.1(817)	-5.89	-.129(-.130)	-.006(-.002)
33816	1.05	39.2(818)	-3.93	-.042(-.045)	-.028(-.023)
33817	1.05	39.2(818)	-1.97	.034(.030)	-.048(-.043)
33818	1.05	39.1(817)	-.01	.104(.095)	-.065(-.056)
33821	1.05	39.1(817)	1.98	.175(.171)	-.080(-.079)
33822	1.05	39.1(817)	3.95	.254(.248)	-.102(-.100)
33823	1.05	39.1(817)	5.89	.334(.322)	-.120(-.113)
33824	1.05	39.2(818)	7.86	.415(.404)	-.135(-.128)
33825	1.05	39.2(818)	9.82	.491(.479)	-.143(-.135)
33826	1.05	39.2(818)	11.78	.568(.563)	-.151(-.146)
33827	1.05	39.1(817)	13.74	.645(.641)	-.161(-.153)
33829	1.05	39.1(817)	15.74	.725(.719)	-.172(-.163)
33901	.70	25.2(527)	-7.83	-.174(-.177)	.012(.012)
33902	.70	25.2(526)	-5.92	-.093(-.096)	-.005(-.003)
33905	.70	25.2(527)	-3.87	-.024(-.021)	-.022(-.024)
33906	.70	25.2(526)	-1.93	.037(.036)	-.034(-.034)
33907	.70	25.2(526)	.07	.101(.096)	-.046(-.045)
33908	.70	25.2(526)	2.01	.164(.156)	-.059(-.057)
33909	.70	25.2(526)	3.99	.235(.228)	-.076(-.077)
33910	.70	25.2(526)	5.96	.310(.309)	-.093(-.090)
33911	.70	25.2(527)	7.93	.395(.382)	-.107(-.104)
33912	.70	25.2(526)	9.90	.477(.465)	-.116(-.114)
33913	.70	25.2(527)	11.82	.556(.544)	-.121(-.121)
33914	.70	25.2(527)	13.80	.638(.629)	-.125(-.126)
33915	.70	25.2(526)	15.76	.723(.716)	-.131(-.128)
33916	.70	25.2(526)	.05	.101(.096)	-.045(-.045)
34001	.95	36.1(753)	-7.87	-.196(-.199)	.010(.009)
34002	.95	36.0(752)	-5.89	-.112(-.113)	-.006(-.005)
34003	.95	36.0(752)	-3.95	-.029(-.029)	-.027(-.026)
34004	.95	36.0(751)	-1.99	.037(.036)	-.041(-.040)
34005	.95	36.0(752)	-.03	.103(.099)	-.055(-.052)
34006	.95	36.0(752)	1.97	.173(.169)	-.071(-.068)
34007	.95	36.0(752)	3.94	.248(.243)	-.089(-.087)
34008	.95	36.0(752)	5.87	.329(.322)	-.109(-.105)
34009	.95	36.0(752)	7.84	.416(.407)	-.127(-.122)
34010	.95	36.0(752)	9.80	.495(.486)	-.136(-.131)
34011	.95	36.1(753)	11.75	.575(.571)	-.144(-.140)
34012	.95	36.1(753)	13.74	.657(.655)	-.152(-.146)
34013	.95	36.0(752)	15.69	.736(.731)	-.159(-.152)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
34101	.85	32.1(671)	-7.83	-.184(-.183)	.013(.011)
34102	.85	32.1(671)	-5.90	-.104(-.105)	-.003(-.004)
34103	.85	32.1(670)	-3.94	-.028(-.027)	-.022(-.024)
34104	.85	32.1(671)	-1.95	.037(.036)	-.035(-.037)
34105	.85	32.1(671)	.03	.101(.097)	-.048(-.048)
34106	.85	32.1(671)	1.99	.167(.162)	-.063(-.062)
34107	.85	32.1(671)	3.97	.240(.233)	-.081(-.080)
34108	.85	32.1(671)	5.94	.320(.311)	-.099(-.095)
34109	.85	32.2(672)	7.88	.402(.393)	-.112(-.110)
34110	.85	32.2(672)	9.86	.485(.477)	-.121(-.120)
34111	.85	32.1(671)	11.81	.566(.560)	-.128(-.130)
34112	.85	32.2(672)	13.75	.649(.647)	-.136(-.135)
34113	.85	32.1(671)	15.71	.734(.730)	-.143(-.138)
34201	.40	10.2(214)	-7.78	-.160(-.163)	.023(.013)
34202	.40	10.2(214)	-5.83	-.087(-.090)	.005(-.004)
34203	.40	10.2(214)	-3.86	-.022(-.024)	-.011(-.020)
34204	.40	10.2(214)	-1.88	.038(.034)	-.021(-.031)
34205	.40	10.2(214)	.09	.097(.092)	-.033(-.042)
34206	.40	10.2(214)	2.09	.160(.152)	-.045(-.053)
34207	.40	10.2(214)	4.03	.226(.220)	-.061(-.071)
34208	.40	10.2(214)	6.00	.296(.286)	-.076(-.084)
34209	.40	10.2(214)	7.97	.378(.367)	-.092(-.100)
34210	.40	10.2(214)	9.92	.464(.452)	-.103(-.111)
34211	.40	10.2(214)	11.90	.546(.535)	-.111(-.119)
34212	.40	10.2(214)	13.87	.630(.619)	-.116(-.126)
34213	.40	10.2(214)	15.82	.716(.706)	-.121(-.131)

Table A-7.—(Continued)

(c) T.E. Deflection, Full Span = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
34315	1.05	39.1(817)	-7.89	-.152(-.151)	-.026(-.024)
34317	1.05	39.1(816)	-5.92	-.061(-.063)	-.047(-.042)
34318	1.05	39.1(816)	-3.95	.023(.025)	-.069(-.066)
34320	1.05	39.1(816)	-2.00	.093(.094)	-.084(-.081)
34321	1.05	39.1(816)	-.02	.162(.157)	-.100(-.093)
34323	1.05	39.0(815)	1.93	.230(.228)	-.116(-.114)
34324	1.05	39.1(816)	3.91	.305(.302)	-.135(-.133)
34325	1.05	39.0(815)	5.88	.377(.373)	-.145(-.140)
34326	1.05	39.1(816)	7.82	.457(.450)	-.160(-.154)
34327	1.05	39.1(816)	9.81	.533(.525)	-.168(-.161)
34328	1.05	39.1(816)	11.75	.601(.604)	-.170(-.169)
34329	1.05	39.0(815)	13.76	.676(.679)	-.177(-.173)
34330	1.05	39.0(815)	15.68	.745(.743)	-.183(-.176)
34401	.70	25.1(525)	-7.86	-.106(-.109)	-.025(-.022)
34402	.70	25.1(525)	-5.90	-.028(-.029)	-.042(-.039)
34403	.70	25.1(524)	-3.92	.040(.039)	-.057(-.056)
34404	.70	25.1(525)	-1.95	.102(.098)	-.069(-.067)
34405	.70	25.1(525)	.03	.163(.157)	-.081(-.077)
34406	.70	25.1(525)	1.98	.228(.222)	-.094(-.093)
34407	.70	25.1(525)	3.98	.297(.290)	-.110(-.108)
34408	.70	25.1(525)	5.95	.371(.363)	-.124(-.121)
34409	.70	25.1(525)	7.89	.451(.441)	-.136(-.133)
34410	.70	25.1(525)	9.85	.531(.521)	-.144(-.141)
34411	.70	25.2(526)	11.83	.608(.600)	-.147(-.148)
34412	.70	25.1(525)	13.78	.686(.680)	-.148(-.149)
34413	.70	25.2(526)	15.77	.767(.763)	-.151(-.148)
34414	.70	25.2(526)	.02	.162(.158)	-.078(-.077)
34501	.95	36.0(751)	-7.90	-.127(-.124)	-.029(-.031)
34502	.95	35.9(750)	-5.93	-.043(-.041)	-.045(-.045)
34503	.95	35.9(750)	-3.98	.036(.040)	-.064(-.065)
34504	.95	35.9(750)	-2.02	.101(.103)	-.077(-.077)
34505	.95	35.9(750)	-.04	.166(.163)	-.091(-.087)
34506	.95	35.9(750)	1.94	.234(.231)	-.107(-.103)
34507	.95	35.9(750)	3.89	.306(.305)	-.124(-.122)
34508	.95	35.9(750)	5.86	.386(.382)	-.143(-.139)
34509	.95	35.9(750)	7.81	.467(.461)	-.157(-.152)
34510	.95	35.9(750)	9.78	.543(.535)	-.164(-.157)
34511	.95	36.0(751)	11.74	.616(.614)	-.168(-.163)
34512	.95	36.0(751)	13.73	.690(.691)	-.171(-.164)
34513	.95	36.0(751)	15.68	.764(.762)	-.174(-.167)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
34601	.85	32.1(670)	-7.87	-.117(-.116)	-.025(-.025)
34602	.85	32.1(670)	-5.92	-.035(-.035)	-.041(-.041)
34603	.85	32.1(670)	-3.97	.037(.038)	-.058(-.059)
34604	.85	32.1(670)	-1.99	.101(.099)	-.071(-.070)
34605	.85	32.1(670)	-.03	.163(.158)	-.083(-.080)
34606	.85	32.1(670)	1.96	.231(.227)	-.099(-.098)
34607	.85	32.1(670)	3.93	.302(.297)	-.115(-.113)
34608	.85	32.0(669)	5.90	.379(.371)	-.131(-.127)
34609	.85	32.0(669)	7.84	.459(.451)	-.144(-.141)
34610	.85	32.1(670)	9.82	.539(.533)	-.152(-.150)
34611	.85	32.1(670)	11.76	.616(.611)	-.157(-.156)
34612	.85	32.0(669)	13.73	.695(.694)	-.161(-.159)
34613	.85	32.1(670)	15.70	.772(.771)	-.164(-.160)
34701	.40	10.2(214)	-7.81	-.097(-.105)	-.007(-.015)
34702	.40	10.2(213)	-5.85	-.022(-.031)	-.028(-.033)
34703	.40	10.2(213)	-3.90	.039(.033)	-.042(-.049)
34703	.40	10.2(213)	-3.90	.039(.033)	-.042(-.049)
34704	.40	10.2(213)	-1.90	.098(.092)	-.052(-.060)
34705	.40	10.2(213)	.09	.158(.151)	-.065(-.070)
34706	.40	10.2(213)	2.04	.220(.214)	-.078(-.085)
34707	.40	10.2(213)	4.01	.285(.281)	-.093(-.102)
34708	.40	10.2(213)	6.01	.355(.344)	-.107(-.112)
34709	.40	10.2(213)	7.94	.433(.425)	-.121(-.127)
34710	.40	10.2(213)	9.89	.517(.507)	-.131(-.137)
34711	.40	10.2(213)	11.88	.598(.590)	-.136(-.144)
34712	.40	10.2(213)	13.82	.677(.670)	-.140(-.149)
34713	.40	10.2(213)	15.86	.764(.756)	-.143(-.152)

Table A-7.—(Continued)

(d) T.E. Deflection, Full Span = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
34805	1.05	39.0(814)	-7.92	-.049(-.040)	-.087(-.085)
34806	1.05	39.0(814)	-5.96	.034(.045)	-.101(-.101)
34807	1.05	38.9(813)	-4.01	.113(.124)	-.119(-.119)
34808	1.05	38.9(813)	-2.06	.180(.189)	-.134(-.133)
34809	1.05	38.9(813)	-.07	.244(.254)	-.147(-.149)
34811	1.05	39.0(814)	3.87	.375(.386)	-.173(-.175)
34812	1.05	38.9(813)	5.83	.439(.461)	-.177(-.189)
34813	1.05	39.0(814)	7.83	.514(.530)	-.198(-.194)
34814	1.05	39.0(814)	9.84	.588(.606)	-.195(-.204)
34816	1.05	38.9(813)	11.72	.651(.682)	-.196(-.214)
34817	1.05	39.0(814)	13.74	.717(.746)	-.198(-.209)
34819	1.05	39.0(814)	15.71	.779(.827)	-.198(-.224)
34906	.70	25.1(525)	-7.90	.013(.024)	-.085(-.086)
34907	.70	25.1(524)	-5.94	.087(.098)	-.101(-.102)
34908	.70	25.1(524)	-3.96	.149(.155)	-.113(-.111)
34909	.70	25.1(524)	-2.00	.208(.211)	-.123(-.119)
34911	.70	25.1(524)	1.96	.337(.338)	-.152(-.149)
34912	.70	25.1(524)	1.93	.336(.337)	-.151(-.149)
34913	.70	25.1(524)	3.91	.406(.402)	-.167(-.161)
34914	.70	25.1(524)	5.88	.474(.470)	-.177(-.172)
34915	.70	25.1(524)	7.85	.549(.548)	-.185(-.184)
34916	.70	25.0(523)	9.82	.629(.629)	-.193(-.193)
34917	.70	25.1(524)	11.80	.703(.706)	-.195(-.200)
34918	.70	25.1(524)	13.73	.772(.777)	-.193(-.197)
34919	.70	25.1(524)	15.71	.842(.851)	-.188(-.190)
34920	.70	25.1(524)	-.03	.270(.272)	-.134(-.133)
35001	.95	35.9(750)	-7.96	-.018(-.001)	-.090(-.094)
35002	.95	35.8(748)	-6.00	.063(.081)	-.104(-.109)
35003	.95	35.9(749)	-4.03	.137(.155)	-.121(-.125)
35004	.95	35.9(749)	-2.05	.200(.212)	-.134(-.133)
35005	.95	35.9(749)	-.10	.262(.276)	-.148(-.150)
35006	.95	35.8(748)	1.88	.328(.342)	-.162(-.166)
35007	.95	35.9(749)	3.85	.396(.406)	-.178(-.178)
35008	.95	35.8(748)	5.80	.462(.473)	-.186(-.188)
35009	.95	35.8(748)	7.77	.532(.541)	-.193(-.192)
35010	.95	35.8(748)	9.77	.608(.616)	-.202(-.201)
35011	.95	35.9(749)	11.70	.676(.694)	-.204(-.208)
35013	.95	35.8(748)	13.71	.742(.760)	-.201(-.202)
35014	.95	35.9(750)	15.65	.807(.822)	-.199(-.198)

Analysis number	Mach number	Dynamic pressure, kN/m^2 (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
35101	.85	31.9(667)	-7.92	-.002(-.003)	-.086(-.058)
35102	.85	32.0(668)	-5.97	.077(.083)	-.101(-.099)
35103	.85	32.0(668)	-4.01	.142(.146)	-.114(-.112)
35104	.85	32.0(668)	-2.05	.207(.204)	-.125(-.121)
35105	.85	32.0(669)	-.06	.266(.267)	-.140(-.136)
35106	.85	32.0(668)	1.95	.333(.335)	-.154(-.152)
35108	.85	32.0(668)	3.86	.401(.400)	-.170(-.165)
35109	.85	32.0(668)	5.83	.471(.471)	-.181(-.177)
35110	.85	32.0(668)	7.80	.545(.550)	-.190(-.190)
35111	.85	32.0(668)	9.77	.621(.626)	-.196(-.196)
35112	.85	32.0(668)	11.76	.699(.709)	-.203(-.207)
35113	.85	32.0(668)	13.71	.764(.782)	-.198(-.204)
35114	.85	32.0(668)	15.66	.828(.846)	-.193(-.197)
35201	.40	10.2(212)	-7.89	.028(.012)	-.073(-.069)
35202	.40	10.2(212)	-5.90	.097(.081)	-.090(-.085)
35203	.40	10.2(212)	-3.93	.156(.140)	-.101(-.096)
35204	.40	10.2(212)	-1.96	.213(.196)	-.112(-.105)
35205	.40	10.2(213)	.01	.273(.254)	-.124(-.116)
35206	.40	10.2(213)	2.01	.338(.323)	-.140(-.136)
35207	.40	10.2(212)	3.95	.402(.389)	-.154(-.150)
35208	.40	10.2(212)	5.92	.471(.456)	-.168(-.162)
35209	.40	10.2(212)	7.89	.542(.530)	-.175(-.174)
35210	.40	10.2(213)	9.86	.628(.618)	-.186(-.188)
35211	.40	10.2(212)	11.86	.706(.702)	-.190(-.196)
35212	.40	10.2(212)	13.78	.779(.777)	-.190(-.198)
35213	.40	10.2(212)	15.74	.852(.851)	-.186(-.195)

Table A-7.—(Continued)

(e) T.E. Deflection, Full Span = -8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
35317	1.05	39.0(815)	.10	-.124(-.133)	.077(.082)
35318	1.05	39.0(814)	2.07	-.051(-.063)	.059(.066)
35319	1.05	39.0(814)	4.05	.028(.017)	.038(.044)
35320	1.05	39.0(814)	6.00	.119(.106)	.012(.018)
35321	1.05	39.0(914)	7.93	.211(.199)	-.011(-.006)
35322	1.05	39.0(814)	9.90	.302(.294)	-.031(-.029)
35323	1.05	39.0(814)	11.86	.392(.387)	-.048(-.046)
35324	1.05	39.0(815)	13.83	.485(.482)	-.067(-.064)
35325	1.05	39.0(814)	15.78	.580(.573)	-.088(-.085)
35402	.70	25.1(525)	.13	-.115(-.122)	.066(.066)
35403	.70	25.1(525)	2.10	-.051(-.061)	.053(.055)
35404	.70	25.1(525)	4.14	.016(.004)	.040(.042)
35405	.70	25.1(525)	6.07	.090(.076)	.021(.023)
35406	.70	25.1(525)	8.04	.177(.166)	.004(.003)
35407	.70	25.1(525)	9.98	.263(.253)	-.009(-.012)
35408	.70	25.1(524)	11.98	.351(.342)	-.020(-.025)
35409	.70	25.1(524)	13.92	.440(.434)	-.031(-.035)
35410	.70	25.1(524)	15.90	.538(.534)	-.043(-.045)
35501	.95	35.9(750)	.11	-.128(-.133)	.076(.075)
35502	.95	35.9(749)	2.13	-.057(-.064)	.059(.061)
35503	.95	35.9(749)	4.10	.015(.005)	.043(.046)
35504	.95	35.9(750)	6.02	.101(.092)	.020(.023)
35505	.95	35.9(749)	7.96	.189(.180)	.002(.005)
35506	.95	35.9(750)	10.01	.286(.276)	-.015(-.015)
35507	.95	35.9(750)	11.88	.377(.367)	-.031(-.028)
35508	.95	35.9(750)	13.83	.477(.470)	-.051(-.045)
35509	.95	35.9(750)	15.78	.581(.577)	-.073(-.070)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
35603	.85	32.0(669)	.12	-.119(-.127)	.069(.070)
35604	.85	32.0(669)	2.12	-.053(-.062)	.056(.057)
35605	.85	32.0(669)	4.04	.013(.002)	.042(.045)
35606	.85	32.0(669)	6.03	.096(.084)	.020(.022)
35607	.85	32.0(669)	8.00	.182(.170)	.004(.005)
35608	.85	32.0(669)	9.95	.271(.263)	-.010(-.013)
35609	.85	32.0(669)	11.91	.359(.352)	-.022(-.025)
35610	.85	32.0(669)	13.86	.452(.448)	-.035(-.035)
35611	.85	32.0(669)	15.81	.550(.546)	-.048(-.049)
35701	.95	35.9(750)	.05	-.129(-.135)	.076(.075)
35702	.95	35.9(749)	2.06	-.059(-.067)	.060(.062)
35703	.95	35.9(749)	4.03	.012(.002)	.044(.047)
35704	.95	35.9(749)	6.01	.100(.091)	.021(.023)
35705	.95	35.9(749)	7.99	.190(.181)	.003(.005)
35706	.95	35.9(749)	9.96	.283(.274)	-.013(-.015)
35707	.95	35.9(750)	11.87	.376(.367)	-.030(-.027)
35708	.95	35.9(750)	13.81	.475(.469)	-.049(-.044)
35709	.95	35.9(750)	15.76	.579(.575)	-.072(-.069)
35801	.40	10.2(214)	.20	-.108(-.118)	.071(.062)
35802	.40	10.2(214)	2.18	-.045(-.058)	.058(.051)
35803	.40	10.2(213)	4.13	.017(.002)	.045(.040)
35804	.40	10.2(213)	6.09	.086(.072)	.030(.021)
35805	.40	10.2(213)	8.13	.169(.157)	.012(.001)
35806	.40	10.2(214)	10.02	.253(.241)	-.001(-.013)
35807	.40	10.2(213)	12.02	.338(.331)	-.010(-.026)
35808	.40	10.2(213)	13.96	.425(.418)	-.020(-.036)
35809	.40	10.2(214)	15.90	.518(.511)	-.031(-.047)

Table A-7.—(Concluded)

(f) T.E. Deflection, Full Span = -17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
35912	1.05	39.0(815)	.17	-.245(-.266)	.141(.158)
35913	1.05	39.0(814)	2.14	-.178(-.198)	.126(.141)
35914	1.05	39.0(814)	4.10	-.104(-.126)	.110(.125)
35915	1.05	39.0(814)	6.06	-.018(-.039)	.088(.100)
35916	1.05	39.0(814)	8.02	.075(.053)	.067(.079)
35917	1.05	39.0(814)	9.96	.171(.155)	.046(.052)
35918	1.05	39.0(815)	11.91	.264(.242)	.030(.043)
35919	1.05	39.0(814)	13.87	.360(.345)	.009(.020)
35920	1.05	39.0(814)	15.84	.453(.443)	-.011(-.004)
36001	.70	25.1(525)	.22	-.261(-.275)	.137(.142)
36002	.70	25.1(525)	2.19	-.197(-.210)	.124(.127)
36003	.70	25.1(525)	4.17	-.133(-.148)	.112(.116)
36004	.70	25.1(525)	6.14	-.066(-.081)	.098(.101)
36005	.70	25.1(525)	8.09	.020(.005)	.080(.082)
36006	.70	25.1(525)	10.05	.108(.094)	.065(.066)
36007	.70	25.1(525)	12.00	.198(.184)	.053(.050)
36008	.70	25.1(525)	13.96	.293(.283)	.039(.036)
36009	.70	25.1(525)	15.91	.393(.386)	.025(.023)
36010	.70	25.1(525)	.23	-.262(-.276)	.139(.143)
36101	.95	35.9(749)	.17	-.263(-.280)	.144(.155)
36102	.95	35.9(750)	2.14	-.198(-.212)	.130(.137)
36103	.95	35.9(750)	4.11	-.134(-.153)	.119(.128)
36104	.95	35.9(750)	6.07	-.054(-.072)	.100(.108)
36105	.95	35.9(750)	8.02	.031(.015)	.084(.091)
36106	.95	35.9(750)	9.97	.125(.110)	.068(.072)
36107	.95	35.9(750)	11.93	.224(.210)	.051(.057)
36108	.95	35.9(750)	13.88	.328(.318)	.031(.038)
36109	.95	35.9(750)	15.83	.433(.426)	.010(.014)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
36202	.85	32.0(668)	.20	-.267(-.283)	.143(.150)
36203	.85	32.0(669)	2.17	-.200(-.212)	.128(.131)
36204	.85	32.0(669)	4.13	-.135(-.151)	.116(.121)
36205	.85	32.0(669)	6.10	-.062(-.078)	.099(.105)
36206	.85	32.0(669)	8.07	.024(.007)	.083(.087)
36207	.85	32.0(669)	10.01	.115(.100)	.067(.070)
36208	.85	32.0(669)	11.96	.208(.194)	.054(.055)
36209	.85	32.0(669)	13.91	.308(.298)	.038(.040)
36210	.85	32.0(668)	15.88	.405(.398)	.025(.026)
36301	.40	10.2(213)	.26	-.247(-.266)	.134(.134)
36302	.40	10.2(213)	2.25	-.185(-.202)	.120(.119)
36303	.40	10.2(214)	4.21	-.125(-.143)	.108(.109)
36304	.40	10.2(214)	6.17	-.062(-.079)	.096(.095)
36305	.40	10.2(214)	8.14	.013(-.003)	.080(.076)
36306	.40	10.2(214)	10.10	.100(.084)	.066(.061)
36307	.40	10.2(214)	12.06	.187(.173)	.054(.047)
36308	.40	10.2(214)	14.02	.278(.265)	.042(.033)
36309	.40	10.2(214)	15.97	.373(.363)	.030(.019)

Table A-8.—Experimental Data Test Point Log. Flat Wing, Sharp Leading Edge; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
36504	1.11	40.5(845)	-7.71	-.325(-.333)	.082(.081)
36505	1.11	40.4(844)	-5.79	-.237(-.249)	.063(.062)
36506	1.11	40.5(845)	-3.82	-.149(-.161)	.040(.041)
36507	1.11	40.4(844)	-1.87	-.069(-.077)	.016(.017)
36508	1.11	40.4(844)	.12	.003(-.006)	-.001(.000)
36509	1.11	40.4(844)	2.10	.074(.066)	-.020(-.017)
36510	1.11	40.4(844)	4.05	.156(.149)	-.044(-.040)
36511	1.11	40.4(844)	6.01	.245(.242)	-.065(-.063)
36512	1.11	40.4(844)	7.95	.332(.327)	-.084(-.081)
36605	.70	25.1(525)	-7.75	-.300(-.306)	.060(.057)
36606	.70	25.0(523)	-5.80	-.218(-.225)	.047(.044)
36607	.70	25.1(524)	-3.84	-.134(-.142)	.030(.029)
36608	.70	25.1(524)	-1.88	-.060(-.066)	.012(.012)
36609	.70	25.1(524)	.11	.002(-.002)	-.000(.001)
36610	.70	25.1(524)	2.07	.066(.062)	-.013(-.012)
36611	.70	25.1(524)	4.05	.142(.137)	-.031(-.028)
36612	.70	25.1(524)	6.01	.228(.222)	-.048(-.044)
36613	.70	25.1(524)	7.96	.310(.306)	-.059(-.056)
36614	.70	25.0(523)	9.92	.395(.391)	-.068(-.066)
36615	.70	25.0(523)	11.87	.481(.478)	-.075(-.073)
36616	.70	25.0(523)	14.49	.603(.605)	-.085(-.082)
36617	.70	25.0(523)	15.79	.668(.669)	-.092(-.089)
36618	.70	25.1(524)	.10	.002(-.003)	.001(.001)
36702	1.05	38.9(813)	-7.79	-.334(-.343)	.083(.082)
36703	1.05	38.9(813)	-5.81	-.245(-.253)	.063(.063)
36704	1.05	38.9(813)	-3.90	-.154(-.166)	.040(.040)
36705	1.05	38.9(813)	-1.93	-.072(-.079)	.016(.016)
36706	1.05	38.9(813)	.02	-.003(-.011)	-.002(.001)
36707	1.05	38.9(812)	2.04	.071(.062)	-.020(-.016)
36708	1.05	38.9(813)	4.01	.154(.149)	-.044(-.039)
36709	1.05	38.9(813)	5.92	.244(.239)	-.067(-.060)
36710	1.05	38.9(813)	7.87	.333(.329)	-.085(-.080)
36711	1.05	38.9(813)	9.85	.421(.419)	-.099(-.095)
36712	1.05	38.9(813)	11.80	.507(.507)	-.113(-.107)
36713	1.05	38.9(813)	13.76	.593(.596)	-.127(-.121)
36714	1.05	38.9(813)	15.71	.683(.684)	-.144(-.138)
36801	.40	10.2(213)	-7.74	-.288(-.297)	.058(.054)
36802	.40	10.2(213)	-5.76	-.208(-.217)	.047(.042)
36803	.40	10.2(213)	-3.79	-.126(-.135)	.031(.027)
36804	.40	10.2(213)	-1.84	-.055(-.062)	.016(.012)
36805	.40	10.2(213)	.13	.004(-.001)	.005(.001)
36806	.40	10.2(213)	2.10	.065(.062)	-.007(-.011)
36807	.40	10.2(213)	4.08	.139(.135)	-.024(-.026)
36808	.40	10.2(213)	6.08	.226(.220)	-.040(-.041)
36809	.40	10.2(213)	8.00	.305(.300)	-.051(-.052)
36810	.40	10.2(213)	9.99	.392(.385)	-.059(-.062)
36811	.40	10.2(213)	11.91	.476(.469)	-.065(-.069)
36812	.40	10.2(213)	13.88	.567(.559)	-.072(-.075)
36813	.40	10.2(213)	15.85	.660(.654)	-.077(-.079)
37230	.85	31.9(667)	-7.78	-.311(-.314)	.061(.061)
37231	.85	31.9(667)	-5.82	-.226(-.230)	.048(.047)
37232	.85	31.9(666)	-3.87	-.140(-.147)	.029(.031)
37233	.85	31.9(666)	-1.89	-.063(-.067)	.010(.013)
37234	.85	31.9(666)	.08	.001(-.003)	-.003(.001)
37235	.85	31.9(667)	2.03	.067(.063)	-.016(-.013)
37236	.85	31.9(666)	3.99	.144(.140)	-.035(-.030)
37237	.85	31.9(666)	5.95	.232(.226)	-.053(-.046)
37238	.85	31.9(667)	7.92	.317(.312)	-.066(-.059)
37239	.85	31.9(666)	9.88	.403(.400)	-.076(-.071)
37240	.85	31.9(667)	11.84	.491(.488)	-.084(-.079)
37241	.85	31.9(667)	13.79	.582(.583)	-.094(-.089)
37242	.85	31.9(667)	15.75	.681(.681)	-.108(-.102)
37301	1.00	37.4(781)	-7.82	-.334(-.339)	.080(.075)
37302	1.00	37.4(782)	-5.86	-.244(-.254)	.061(.059)
37303	1.00	37.4(782)	-3.91	-.152(-.162)	.038(.036)
37304	1.00	37.4(782)	-1.95	-.070(-.078)	.015(.016)
37305	1.00	37.4(782)	.01	-.002(-.007)	-.001(.001)
37306	1.00	37.4(782)	1.99	.067(.062)	-.016(-.014)
37307	1.00	37.4(782)	3.96	.150(.147)	-.039(-.035)
37308	1.00	37.5(783)	5.91	.244(.240)	-.062(-.057)
37309	1.00	37.4(782)	7.85	.332(.328)	-.080(-.074)
37310	1.00	37.4(782)	9.81	.420(.417)	-.095(-.088)
37311	1.00	37.4(782)	11.78	.509(.507)	-.108(-.100)
37312	1.00	37.4(782)	13.74	.598(.596)	-.121(-.112)
37314	1.00	37.4(782)	15.68	.690(.688)	-.138(-.126)
37405	.95	35.8(749)	-7.80	-.322(-.329)	.069(.067)
37406	.95	35.8(747)	-5.84	-.233(-.241)	.052(.052)
37407	.95	35.8(747)	-3.88	-.144(-.152)	.032(.032)
37408	.95	35.8(747)	-1.92	-.066(-.071)	.012(.014)
37409	.95	35.8(747)	.03	-.001(-.005)	-.002(.001)
37410	.95	35.8(747)	2.00	.067(.062)	-.016(-.013)
37411	.95	35.8(747)	3.98	.146(.143)	-.036(-.032)
37412	.95	35.8(747)	5.94	.237(.233)	-.056(-.050)
37413	.95	35.8(747)	7.89	.324(.321)	-.072(-.065)
37414	.95	35.8(748)	9.84	.414(.414)	-.086(-.081)
37415	.95	35.8(748)	11.79	.506(.508)	-.100(-.096)
37416	.95	35.8(748)	13.76	.600(.602)	-.114(-.107)
37417	.95	35.8(748)	15.70	.698(.696)	-.133(-.123)

Table A-9.—Experimental Data Test Point Log. Twisted Wing, Rounded Leading Edge; L.E. Deflection, Full Span = 0.0°

(a) T.E. Deflection, Full Span = 4.1°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
40705	1.05	38.9(812)	-7.78	-.322(-.320)	.066(.065)
40706	1.05	38.9(812)	-5.83	-.242(-.233)	.050(.046)
40707	1.05	38.8(811)	-3.86	-.160(-.153)	.031(.027)
40708	1.05	38.9(812)	-1.94	-.079(-.076)	.010(.007)
40710	1.05	38.9(812)	.05	.001(.001)	-.013(-.015)
40711	1.05	38.9(812)	2.03	.073(.070)	-.031(-.032)
40712	1.05	38.9(812)	3.99	.144(.138)	-.047(-.045)
40713	1.05	38.9(812)	5.94	.220(.215)	-.067(-.068)
40714	1.05	38.9(812)	7.89	.304(.294)	-.086(-.084)
40715	1.05	38.9(812)	9.87	.391(.383)	-.100(-.101)
40717	1.05	38.9(812)	11.83	.477(.467)	-.113(-.111)
40718	1.05	38.9(812)	13.78	.560(.552)	-.125(-.122)
40719	1.05	38.9(812)	15.75	.640(.630)	-.136(-.130)
40805	.70	25.0(522)	-7.78	-.290(-.291)	.049(.050)
40806	.70	25.0(522)	-5.81	-.211(-.214)	.038(.037)
40807	.70	25.0(523)	-3.83	-.132(-.137)	.022(.022)
40808	.70	25.0(523)	-1.87	-.058(-.064)	.004(.005)
40809	.70	25.0(523)	.10	.008(.003)	-.011(-.011)
40810	.70	25.0(523)	2.08	.073(.065)	-.023(-.022)
40811	.70	25.0(522)	4.03	.135(.126)	-.035(-.033)
40812	.70	25.0(522)	6.01	.201(.192)	-.048(-.049)
40813	.70	25.0(523)	7.98	.274(.263)	-.064(-.064)
40814	.70	25.0(522)	9.94	.365(.354)	-.083(-.082)
40815	.70	25.0(523)	11.87	.453(.442)	-.094(-.094)
40816	.70	25.0(523)	13.85	.540(.525)	-.101(-.101)
40817	.70	25.1(524)	15.82	.626(.611)	-.106(-.103)
40818	.70	25.0(523)	.10	.009(.004)	-.010(-.011)
40901	.95	35.7(746)	-7.82	-.313(-.314)	.054(.053)
40902	.95	35.7(746)	-5.86	-.231(-.226)	.041(.038)
40903	.95	35.7(746)	-3.90	-.149(-.148)	.025(.024)
40904	.95	35.7(746)	-1.93	-.068(-.069)	.006(.006)
40905	.95	35.8(747)	.01	.005(.006)	-.014(-.015)
40906	.95	35.8(747)	2.00	.074(.073)	-.028(-.028)
40907	.95	35.8(747)	3.97	.141(.139)	-.042(-.041)
40908	.95	35.8(747)	5.92	.213(.210)	-.058(-.058)
40909	.95	35.8(747)	7.90	.299(.296)	-.079(-.079)
40910	.95	35.8(747)	9.86	.389(.386)	-.095(-.096)
40911	.95	35.8(747)	11.83	.476(.470)	-.105(-.103)
40912	.95	35.8(747)	13.77	.564(.564)	-.117(-.117)
40913	.95	35.8(747)	15.74	.650(.647)	-.127(-.123)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
41005	.85	31.9(666)	-7.80	-.300(-.300)	.052(.050)
41006	.85	31.8(665)	-5.82	-.220(-.216)	.040(.035)
41007	.85	31.9(666)	-3.87	-.141(-.145)	.025(.025)
41008	.85	31.9(666)	-1.91	-.063(-.065)	.006(.006)
41009	.85	31.9(666)	.07	.007(.006)	-.012(-.013)
41010	.95	31.9(666)	2.03	.072(.070)	-.025(-.025)
41011	.85	31.9(666)	4.00	.137(.133)	-.037(-.037)
41012	.85	31.9(666)	5.97	.206(.203)	-.052(-.054)
41013	.85	31.9(666)	7.95	.287(.282)	-.071(-.072)
41014	.85	31.9(666)	9.91	.377(.371)	-.087(-.088)
41015	.85	31.9(667)	11.86	.463(.455)	-.096(-.097)
41016	.85	31.9(666)	13.81	.552(.540)	-.106(-.101)
41017	.85	31.9(666)	15.78	.637(.630)	-.112(-.108)
41101	.40	10.2(212)	-7.69	-.275(-.274)	.055(.048)
41102	.40	10.2(212)	-5.75	-.199(-.206)	.042(.041)
41103	.40	10.2(212)	-3.80	-.124(-.129)	.026(.024)
41104	.40	10.2(212)	-1.82	-.055(-.056)	.009(.003)
41105	.40	10.2(212)	.15	.007(.006)	-.004(-.010)
41106	.40	10.2(212)	2.10	.068(.066)	-.015(-.021)
41107	.40	10.2(212)	4.08	.129(.125)	-.027(-.032)
41108	.40	10.2(212)	6.06	.192(.188)	-.039(-.045)
41109	.40	10.2(212)	8.04	.259(.256)	-.053(-.062)
41110	.40	10.2(212)	10.00	.345(.340)	-.074(-.081)
41111	.40	10.2(212)	11.93	.436(.427)	-.091(-.097)
41112	.40	10.2(212)	13.89	.524(.512)	-.101(-.106)
41113	.40	10.2(212)	15.87	.614(.603)	-.108(-.112)

Table A-9.—(Continued)

(b) T.E. Deflection, Full Span = 8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
41211	1.05	38.8(811)	-7.84	-.265(-.273)	.026(.030)
41212	1.05	38.7(809)	-5.87	-.179(-.177)	.007(.007)
41213	1.05	38.8(810)	-3.90	-.092(-.094)	-.014(-.012)
41214	1.05	38.8(811)	-1.94	-.008(-.010)	-.036(-.035)
41215	1.05	38.8(810)	.02	.069(.064)	-.057(-.054)
41216	1.05	38.8(810)	1.97	.137(.131)	-.072(-.069)
41217	1.05	38.8(810)	3.94	.209(.203)	-.090(-.088)
41218	1.05	38.8(810)	5.91	.285(.278)	-.110(-.109)
41219	1.05	38.8(810)	7.88	.363(.350)	-.123(-.115)
41220	1.05	38.8(810)	9.84	.446(.433)	-.134(-.128)
41221	1.05	38.8(810)	11.81	.525(.516)	-.141(-.138)
41223	1.05	38.8(810)	13.64	.596(.592)	-.149(-.146)
41224	1.05	38.8(810)	15.75	.676(.670)	-.156(-.150)
41302	.70	24.9(521)	-7.78	-.221(-.219)	.016(.015)
41303	.70	24.9(521)	-5.84	-.141(-.141)	.003(.002)
41304	.70	24.9(521)	-3.88	-.063(-.063)	-.013(-.015)
41305	.70	24.9(520)	-1.92	.011(.010)	-.033(-.034)
41306	.70	24.9(521)	.07	.076(.073)	-.046(-.046)
41307	.70	24.9(520)	2.01	.137(.132)	-.057(-.057)
41308	.70	24.9(520)	4.01	.200(.193)	-.068(-.067)
41309	.70	24.9(520)	5.98	.267(.261)	-.082(-.084)
41310	.70	24.9(520)	7.94	.340(.332)	-.098(-.099)
41311	.70	24.9(520)	9.89	.428(.420)	-.114(-.114)
41312	.70	24.9(520)	11.87	.514(.507)	-.123(-.124)
41313	.70	24.9(520)	13.82	.595(.584)	-.127(-.129)
41314	.70	24.9(520)	15.78	.676(.666)	-.129(-.128)
41315	.70	24.9(520)	.07	.077(.072)	-.044(-.046)
41401	.95	35.7(745)	-7.94	-.251(-.252)	.018(.017)
41402	.95	35.7(745)	-5.89	-.160(-.157)	.001(-.001)
41403	.95	35.7(745)	-3.92	-.076(-.076)	-.015(-.015)
41404	.95	35.7(745)	-1.98	.005(.004)	-.035(-.035)
41405	.95	35.7(745)	.01	.076(.074)	-.052(-.052)
41406	.95	35.6(744)	1.96	.140(.139)	-.065(-.064)
41407	.95	35.6(744)	3.95	.208(.205)	-.079(-.078)
41408	.95	35.6(744)	5.92	.280(.275)	-.096(-.095)
41409	.95	35.6(744)	7.87	.361(.360)	-.114(-.116)
41410	.95	35.6(744)	9.84	.445(.442)	-.126(-.127)
41411	.95	35.6(744)	11.79	.525(.519)	-.132(-.130)
41412	.95	35.6(744)	13.73	.606(.605)	-.140(-.140)
41413	.95	35.7(745)	15.71	.686(.681)	-.146(-.142)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
41505	.85	31.9(666)	-7.80	-.232(-.234)	.014(.016)
41506	.85	31.8(665)	-5.86	-.150(-.148)	.000(-.001)
41507	.85	31.8(665)	-3.89	-.069(-.073)	-.015(-.013)
41508	.85	31.8(665)	-1.93	.009(.008)	-.036(-.035)
41509	.85	31.8(665)	.02	.075(.072)	-.050(-.049)
41510	.85	31.8(665)	2.00	.139(.135)	-.062(-.060)
41511	.85	31.8(665)	3.97	.203(.198)	-.074(-.072)
41512	.85	31.8(665)	5.95	.273(.269)	-.090(-.089)
41513	.85	31.8(665)	7.91	.351(.346)	-.107(-.106)
41514	.85	31.8(665)	9.87	.439(.432)	-.121(-.119)
41515	.85	31.8(665)	11.84	.521(.515)	-.127(-.126)
41516	.85	31.8(665)	13.78	.604(.596)	-.134(-.130)
41517	.85	31.8(664)	15.74	.684(.680)	-.136(-.134)
41601	.40	10.2(212)	-7.76	-.209(-.225)	.026(.025)
41602	.40	10.2(212)	-5.80	-.130(-.148)	.011(.013)
41603	.40	10.2(212)	-3.84	-.057(-.068)	-.006(-.006)
41604	.40	10.2(213)	-1.85	.010(.005)	-.023(-.028)
41605	.40	10.2(213)	.12	.071(.066)	-.035(-.040)
41606	.40	10.1(211)	2.08	.131(.126)	-.046(-.051)
41607	.40	10.1(211)	4.06	.192(.186)	-.058(-.061)
41608	.40	10.1(211)	6.03	.255(.251)	-.070(-.077)
41609	.40	10.1(211)	8.01	.322(.320)	-.084(-.094)
41610	.40	10.1(211)	9.97	.404(.400)	-.103(-.110)
41611	.40	10.1(211)	11.92	.495(.487)	-.118(-.124)
41612	.40	10.1(211)	13.89	.581(.570)	-.125(-.132)
41613	.40	10.1(211)	15.83	.664(.658)	-.130(-.136)

Table A-9.—(Continued)

(c) T.E. Deflection, Full Span = 17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
41804	1.05	38.7(809)	-7.87	-.153(-.150)	-.043(-.039)
41805	1.05	38.6(807)	-5.93	-.065(-.057)	-.062(-.060)
41806	1.05	38.7(808)	-3.98	.019(.019)	-.081(-.075)
41807	1.05	38.7(808)	-2.00	.100(.102)	-.100(-.097)
41808	1.05	38.7(808)	-.04	.168(.168)	-.115(-.110)
41809	1.05	38.6(807)	1.96	.231(.230)	-.126(-.120)
41810	1.05	38.7(808)	3.92	.294(.294)	-.138(-.138)
41811	1.05	38.7(808)	5.87	.358(.363)	-.148(-.153)
41812	1.05	38.7(808)	7.85	.431(.429)	-.157(-.156)
41814	1.05	38.6(807)	9.80	.509(.508)	-.166(-.168)
41815	1.05	38.7(808)	11.75	.586(.593)	-.174(-.181)
41817	1.05	38.7(808)	13.73	.655(.662)	-.177(-.182)
41818	1.05	38.7(808)	15.69	.718(.725)	-.175(-.181)
41902	.70	24.9(521)	-7.86	-.088(-.088)	-.052(-.049)
41903	.70	24.9(521)	-5.91	-.009(-.013)	-.064(-.060)
41904	.70	24.9(521)	-3.93	.067(.062)	-.079(-.075)
41905	.70	24.9(521)	-1.97	.132(.126)	-.093(-.089)
41906	.70	24.9(521)	.01	.191(.184)	-.103(-.098)
41907	.70	25.0(522)	1.97	.250(.241)	-.113(-.106)
41908	.70	24.9(521)	3.94	.314(.306)	-.126(-.123)
41909	.70	24.9(521)	5.93	.382(.374)	-.141(-.139)
41910	.70	24.9(521)	7.88	.450(.440)	-.152(-.149)
41911	.70	24.9(521)	9.84	.533(.526)	-.164(-.164)
41912	.70	24.9(521)	11.82	.617(.612)	-.172(-.172)
41913	.70	24.9(521)	13.75	.691(.683)	-.173(-.176)
41914	.70	24.9(520)	15.75	.762(.758)	-.168(-.171)
41915	.70	24.9(521)	.00	.189(.184)	-.100(-.098)
42005	.95	35.6(744)	-7.90	-.124(-.125)	-.051(-.046)
42006	.95	35.6(744)	-5.93	-.038(-.032)	-.065(-.062)
42007	.95	35.6(744)	-3.98	.044(.045)	-.082(-.077)
42008	.95	35.6(744)	-2.02	.121(.122)	-.101(-.097)
42009	.95	35.6(744)	-.05	.183(.184)	-.113(-.109)
42010	.95	35.6(744)	1.91	.245(.244)	-.125(-.120)
42011	.95	35.6(744)	3.90	.311(.312)	-.139(-.137)
42012	.95	35.6(744)	5.84	.379(.377)	-.155(-.151)
42013	.95	35.6(744)	7.82	.445(.444)	-.162(-.159)
42014	.95	35.7(745)	9.78	.527(.526)	-.173(-.170)
42015	.95	35.7(745)	11.76	.603(.605)	-.178(-.179)
42016	.95	35.7(745)	13.71	.673(.676)	-.179(-.179)
42017	.95	35.7(745)	15.68	.740(.740)	-.176(-.172)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
42101	.85	31.7(663)	-7.88	-.104(-.107)	-.052(-.046)
42102	.85	31.7(663)	-5.93	-.024(-.023)	-.064(-.061)
42103	.85	31.8(664)	-3.97	.056(.053)	-.080(-.075)
42104	.85	31.8(664)	-2.00	.126(.124)	-.095(-.091)
42105	.85	31.7(663)	-.02	.186(.182)	-.106(-.101)
42106	.85	31.7(663)	1.96	.247(.242)	-.117(-.111)
42107	.85	31.7(663)	3.94	.312(.309)	-.130(-.127)
42108	.85	31.8(664)	5.88	.380(.375)	-.146(-.142)
42109	.85	31.8(664)	7.84	.451(.445)	-.158(-.153)
42110	.85	31.8(664)	9.83	.534(.531)	-.168(-.166)
42111	.85	31.8(664)	11.76	.612(.612)	-.174(-.174)
42112	.85	31.8(664)	13.72	.689(.694)	-.178(-.181)
42114	.85	31.8(665)	15.70	.756(.763)	-.172(-.175)
42201	.40	10.1(211)	-7.81	-.077(-.075)	-.039(-.049)
42202	.40	10.1(211)	-5.89	-.001(-.005)	-.053(-.058)
42203	.40	10.2(212)	-3.88	.069(.068)	-.068(-.073)
42204	.40	10.1(211)	-1.91	.131(.129)	-.081(-.086)
42205	.40	10.2(212)	.06	.189(.184)	-.091(-.094)
42206	.40	10.1(211)	2.04	.248(.239)	-.102(-.102)
42207	.40	10.2(212)	4.02	.307(.300)	-.113(-.115)
42208	.40	10.2(212)	5.97	.369(.365)	-.126(-.131)
42209	.40	10.2(212)	7.94	.437(.431)	-.140(-.146)
42210	.40	10.2(212)	9.90	.511(.504)	-.152(-.156)
42211	.40	10.2(212)	11.87	.599(.593)	-.165(-.172)
42212	.40	10.2(212)	13.80	.692(.672)	-.171(-.179)
42213	.40	10.2(212)	15.79	.761(.758)	-.172(-.180)

Table A-9.—(Continued)

(d) T.E. Deflection, Full Span = 30.2°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
42310	1.05	38.7(809)	-7.95	-.084(-.061)	-.080(-.089)
42311	1.05	38.7(809)	-5.96	.006(.033)	-.099(-.110)
42312	1.05	38.8(810)	-4.00	.087(.113)	-.115(-.127)
42313	1.05	38.8(810)	-2.04	.162(.188)	-.131(-.144)
42314	1.05	38.7(809)	-.07	.224(.252)	-.143(-.156)
42316	1.05	38.8(810)	1.90	.281(.311)	-.150(-.167)
42317	1.05	38.7(809)	3.88	.342(.370)	-.161(-.176)
42318	1.05	38.8(810)	5.86	.406(.435)	-.172(-.189)
42319	1.05	38.8(810)	7.81	.467(.494)	-.173(-.190)
42320	1.05	38.8(810)	9.78	.546(.573)	-.184(-.202)
42321	1.05	38.8(810)	11.76	.616(.648)	-.186(-.209)
42323	1.05	38.8(810)	13.71	.680(.719)	-.187(-.212)
42324	1.05	38.8(810)	15.71	.741(.771)	-.184(-.203)
42401	.70	25.0(523)	-7.91	.005(.026)	-.092(-.100)
42402	.70	25.1(524)	-5.95	.087(.107)	-.107(-.117)
42403	.70	25.0(523)	-3.97	.157(.179)	-.121(-.133)
42404	.70	25.0(522)	-2.05	.213(.236)	-.130(-.142)
42405	.70	25.0(523)	-.03	.272(.292)	-.140(-.150)
42406	.70	25.0(523)	1.94	.330(.352)	-.151(-.164)
42407	.70	25.0(522)	3.93	.395(.415)	-.165(-.178)
42408	.70	25.0(522)	5.87	.461(.475)	-.179(-.189)
42409	.70	25.0(522)	7.85	.529(.544)	-.191(-.200)
42410	.70	25.0(522)	9.84	.600(.616)	-.192(-.204)
42411	.70	25.0(522)	11.76	.681(.696)	-.200(-.210)
42412	.70	25.0(522)	13.75	.760(.775)	-.206(-.222)
42413	.70	25.0(523)	15.72	.821(.842)	-.194(-.211)
42414	.70	25.0(523)	-.03	.271(.292)	-.138(-.150)
42502	.95	35.7(746)	-7.93	-.038(-.016)	-.093(-.103)
42503	.95	35.7(746)	-5.98	.043(.073)	-.105(-.120)
42504	.95	35.7(746)	-4.03	.120(.152)	-.120(-.137)
42505	.95	35.7(746)	-2.05	.190(.223)	-.135(-.154)
42506	.95	35.7(746)	-.08	.246(.277)	-.145(-.161)
42507	.95	35.7(746)	1.90	.304(.334)	-.155(-.172)
42508	.95	35.7(746)	3.86	.364(.391)	-.167(-.182)
42509	.95	35.8(747)	5.81	.428(.453)	-.180(-.195)
42510	.95	35.8(747)	7.80	.487(.512)	-.182(-.195)
42511	.95	35.8(747)	9.75	.563(.584)	-.190(-.201)
42512	.95	35.8(747)	11.78	.643(.671)	-.193(-.215)
42513	.95	35.7(746)	13.69	.707(.734)	-.196(-.210)
42514	.95	35.8(747)	15.67	.769(.794)	-.189(-.200)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
42601	.85	31.9(666)	-7.93	-.021(.003)	-.088(-.099)
42602	.85	31.9(666)	-5.97	.061(.089)	-.102(-.117)
42603	.85	31.9(666)	-4.00	.141(.168)	-.120(-.134)
42604	.85	31.9(666)	-2.03	.202(.228)	-.130(-.145)
42605	.85	31.9(666)	-.07	.259(.283)	-.140(-.153)
42606	.85	31.9(666)	1.92	.319(.342)	-.152(-.166)
42607	.85	31.9(666)	3.86	.382(.403)	-.166(-.178)
42608	.85	31.9(666)	5.85	.450(.469)	-.181(-.193)
42609	.85	31.9(666)	7.82	.519(.537)	-.192(-.201)
42610	.85	31.9(666)	9.77	.582(.601)	-.188(-.198)
42611	.85	31.9(666)	11.74	.665(.687)	-.200(-.214)
42612	.85	31.9(666)	13.72	.734(.767)	-.198(-.219)
42613	.85	31.9(667)	15.69	.792(.819)	-.187(-.202)
42701	.40	10.2(213)	-7.88	.019(.046)	-.069(-.099)
42702	.40	10.2(214)	-5.89	.097(.122)	-.087(-.115)
42703	.40	10.2(212)	-3.94	.160(.189)	-.099(-.130)
42704	.40	10.2(212)	-1.97	.219(.244)	-.111(-.139)
42705	.40	10.2(212)	.01	.276(.298)	-.122(-.147)
42706	.40	10.2(213)	1.99	.335(.357)	-.135(-.159)
42707	.40	10.2(213)	3.96	.395(.416)	-.147(-.173)
42708	.40	10.2(213)	5.92	.457(.478)	-.159(-.187)
42709	.40	10.2(213)	7.90	.520(.538)	-.170(-.196)
42710	.40	10.2(212)	9.86	.585(.602)	-.175(-.201)
42711	.40	10.2(212)	11.83	.668(.688)	-.184(-.211)
42712	.40	10.2(213)	13.78	.753(.767)	-.192(-.220)
42713	.40	10.2(212)	15.76	.834(.856)	-.197(-.227)

Table A-9.—(Continued)

(e) T.E. Deflection, Full Span = -8.3°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
43101	1.05	38.9(813)	.16	-.240(-.256)	.131(.146)
43103	1.05	38.9(812)	2.14	-.165(-.182)	.112(.124)
43104	1.05	38.9(812)	4.10	-.090(-.106)	.093(.103)
43105	1.05	38.9(812)	6.05	-.017(-.034)	.076(.085)
43106	1.05	38.9(812)	8.02	.077(.062)	.050(.059)
43107	1.05	38.9(812)	9.97	.176(.161)	.026(.034)
43108	1.05	38.9(813)	11.90	.274(.262)	.005(.010)
43109	1.05	38.9(813)	13.86	.372(.355)	-.015(-.006)
43111	1.05	38.8(811)	15.82	.468(.451)	-.036(-.025)
43202	.70	25.1(524)	.21	-.217(-.227)	.107(.111)
43203	.70	25.1(524)	2.17	-.149(-.158)	.091(.092)
43204	.70	25.1(524)	4.15	-.084(-.093)	.078(.079)
43205	.70	25.1(524)	6.11	-.020(-.030)	.066(.067)
43206	.70	25.1(525)	8.08	.046(.036)	.054(.053)
43207	.70	25.1(524)	10.03	.137(.126)	.033(.031)
43208	.70	25.1(524)	12.00	.226(.218)	.020(.016)
43209	.70	25.1(525)	13.94	.317(.306)	.008(.004)
43210	.70	25.1(524)	15.91	.415(.403)	-.004(-.007)
43301	.95	35.8(747)	.16	-.247(-.259)	.128(.136)
43302	.95	35.8(747)	2.13	-.172(-.179)	.108(.112)
43303	.95	35.8(748)	4.09	-.100(-.109)	.091(.094)
43304	.95	35.8(748)	6.06	-.030(-.041)	.075(.080)
43305	.95	35.8(748)	8.02	.054(.042)	.055(.059)
43306	.95	35.8(748)	9.97	.148(.141)	.037(.038)
43307	.95	35.8(748)	11.92	.242(.232)	.023(.025)
43308	.95	35.8(748)	13.86	.345(.331)	.004(.010)
43309	.95	35.8(747)	15.83	.450(.445)	-.017(-.016)
43401	.85	31.9(667)	.17	-.228(-.241)	.116(.121)
43402	.85	31.9(667)	2.15	-.157(-.166)	.098(.100)
43403	.85	32.0(668)	4.11	-.090(-.098)	.084(.084)
43404	.85	32.0(668)	6.08	-.023(-.033)	.070(.072)
43405	.85	32.0(668)	8.05	.050(.039)	.054(.054)
43406	.85	32.0(668)	10.00	.142(.132)	.036(.035)
43407	.85	32.0(668)	11.95	.232(.223)	.024(.020)
43408	.85	32.0(668)	13.89	.329(.318)	.009(.009)
43409	.85	32.0(668)	15.87	.428(.422)	-.005(-.006)
43501	.40	10.2(213)	.25	-.203(-.219)	.108(.103)
43502	.40	10.2(213)	2.22	-.138(-.152)	.092(.086)
43503	.40	10.2(213)	4.19	-.076(-.090)	.079(.074)
43504	.40	10.2(213)	6.15	-.014(-.029)	.068(.063)
43505	.40	10.2(213)	8.13	.048(.033)	.057(.050)
43506	.40	10.2(214)	10.08	.125(.112)	.038(.029)
43507	.40	10.2(214)	12.05	.213(.201)	.022(.011)
43508	.40	10.2(214)	14.00	.301(.288)	.010(-.002)
43509	.40	10.2(214)	15.96	.394(.383)	-.001(-.014)

Table A-9.–(Continued)

(f) T.E. Deflection, Full Span = -17.7°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
43805	1.05	39.0(814)	-7.65	-.610(-.638)	.222(.244)
43806	1.05	39.0(814)	-5.68	-.537(-.565)	.211(.234)
43807	1.05	39.0(814)	-3.73	-.463(-.494)	.199(.221)
43808	1.05	39.0(815)	-1.78	-.397(-.425)	.191(.210)
43809	1.05	39.0(815)	.22	-.327(-.358)	.176(.199)
43810	1.05	39.0(815)	2.20	-.259(-.291)	.161(.184)
43811	1.05	39.0(814)	4.15	-.193(-.222)	.147(.166)
43812	1.05	39.0(815)	6.11	-.123(-.150)	.132(.149)
43814	1.05	39.0(815)	8.10	-.032(-.064)	.111(.127)
43815	1.05	39.0(815)	10.01	.067(.035)	.088(.103)
43817	1.05	39.0(815)	11.97	.169(.142)	.065(.077)
43818	1.05	39.0(815)	13.92	.265(.236)	.048(.066)
43819	1.05	39.0(815)	15.90	.361(.343)	.029(.040)
43905	.70	25.1(525)	-7.58	-.648(-.659)	.215(.222)
43906	.70	25.1(525)	-5.64	-.573(-.583)	.208(.212)
43907	.70	25.1(524)	-3.66	-.499(-.515)	.199(.209)
43908	.70	25.1(524)	-1.70	-.428(-.442)	.188(.196)
43909	.70	25.1(524)	.26	-.357(-.378)	.174(.185)
43910	.70	25.1(524)	2.23	-.288(-.308)	.158(.169)
43911	.70	25.1(524)	4.24	-.219(-.237)	.142(.149)
43912	.70	25.1(525)	6.19	-.154(-.170)	.129(.134)
43913	.70	25.1(524)	8.16	-.088(-.104)	.117(.120)
43914	.70	25.1(525)	10.13	-.004(-.020)	.100(.102)
43915	.70	25.2(526)	12.06	.085(.070)	.086(.087)
43916	.70	25.1(525)	14.03	.176(.163)	.074(.072)
43917	.70	25.2(526)	15.97	.274(.261)	.061(.061)
43918	.70	25.2(526)	.28	-.357(-.378)	.175(.185)
44001	.95	35.9(749)	.20	-.347(-.369)	.180(.192)
44002	.95	35.9(750)	2.18	-.278(-.302)	.163(.176)
44003	.95	35.9(749)	4.16	-.211(-.232)	.147(.158)
44004	.95	35.9(750)	6.12	-.147(-.169)	.135(.144)
44005	.95	35.9(749)	8.07	-.072(-.095)	.119(.129)
44006	.95	35.9(750)	10.05	.020(.002)	.103(.109)
44007	.95	35.9(750)	11.97	.112(.093)	.089(.095)
44008	.95	35.9(750)	13.93	.212(.196)	.074(.081)
44009	.95	35.9(750)	15.87	.317(.308)	.054(.057)

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
44105	.85	32.0(669)	-.04	-.369(-.388)	.181(.191)
44106	.85	32.1(670)	.22	-.358(-.379)	.178(.189)
44107	.85	32.0(669)	2.23	-.290(-.313)	.164(.177)
44108	.85	32.0(669)	4.20	-.221(-.242)	.148(.157)
44109	.85	32.0(669)	6.16	-.154(-.173)	.133(.140)
44110	.85	32.0(668)	8.12	-.085(-.105)	.119(.126)
44111	.85	32.0(669)	10.08	.004(-.018)	.103(.110)
44112	.85	32.1(670)	12.03	.097(.077)	.089(.092)
44113	.85	32.1(670)	13.98	.192(.176)	.076(.081)
44114	.85	32.0(669)	15.93	.296(.283)	.060(.064)
44201	.40	10.2(214)	.30	-.344(-.360)	.165(.171)
44202	.40	10.2(213)	2.29	-.278(-.293)	.150(.155)
44203	.40	10.2(213)	4.24	-.215(-.225)	.137(.137)
44204	.40	10.2(213)	6.21	-.153(-.161)	.125(.123)
44205	.40	10.2(213)	8.18	-.089(-.099)	.113(.111)
44206	.40	10.2(214)	10.18	-.015(-.028)	.097(.095)
44207	.40	10.2(213)	12.11	.070(.056)	.082(.079)
44208	.40	10.2(213)	14.09	.158(.144)	.069(.065)
44210	.40	10.2(213)	16.05	.250(.237)	.057(.053)

Table A-9.—(Concluded)

(g) T.E. Deflection, Full Span = 0.0°

Analysis number	Mach number	Dynamic pressure, kN/m² (psf)	Angle of attack, deg	Normal force coefficient, bal (integ press.)	Pitching moment coefficient, bal (integ press.)
44402	1.10	40.3(841)	-7.69	-.391(-.398)	.108(.112)
44403	1.10	40.3(841)	-5.75	-.311(-.314)	.093(.096)
44404	1.10	40.3(841)	-3.78	-.226(-.232)	.074(.076)
44406	1.10	40.3(841)	-1.83	-.143(-.151)	.052(.056)
44407	1.10	40.3(842)	.17	-.063(-.072)	.027(.032)
44408	1.10	40.3(841)	2.08	.007(-.002)	.010(.012)
44409	1.10	40.3(841)	4.09	.077(.066)	-.005(-.002)
44411	1.10	40.3(841)	6.01	.153(.139)	-.026(-.022)
44412	1.10	40.3(841)	7.97	.239(.228)	-.046(-.044)
44501	.70	25.1(525)	-7.74	-.366(-.365)	.087(.086)
44502	.70	25.1(524)	-5.76	-.284(-.284)	.075(.072)
44503	.70	25.1(525)	-3.81	-.204(-.208)	.061(.059)
44504	.70	25.1(524)	-1.86	-.129(-.136)	.043(.044)
44505	.70	25.1(525)	.15	-.057(-.064)	.025(.024)
44506	.70	25.1(524)	2.10	.006(-.002)	.012(.012)
44507	.70	25.1(525)	4.08	.068(.058)	.001(.002)
44508	.70	25.1(525)	6.03	.131(.119)	-.010(-.009)
44509	.70	25.1(524)	7.99	.202(.193)	-.026(-.029)
44510	.70	25.1(525)	9.96	.294(.281)	-.046(-.047)
44511	.70	25.1(524)	11.92	.384(.373)	-.059(-.059)
44512	.70	25.1(524)	13.90	.475(.460)	-.069(-.070)
44513	.70	25.1(524)	15.85	.565(.551)	-.076(-.076)
44514	.70	25.1(524)	.13	-.057(-.065)	.026(.025)
44604	1.05	39.0(815)	-7.75	-.405(-.412)	.111(.115)
44605	1.05	39.0(815)	-5.80	-.322(-.325)	.096(.099)
44606	1.05	39.0(814)	-3.86	-.235(-.239)	.077(.078)
44607	1.05	39.0(815)	-1.89	-.150(-.156)	.053(.056)
44608	1.05	39.0(814)	.07	-.071(-.077)	.029(.033)
44609	1.05	39.0(815)	2.04	.001(-.006)	.010(.015)
44610	1.05	39.0(814)	4.01	.071(.062)	-.004(-.000)
44611	1.05	39.0(814)	5.98	.145(.135)	-.021(-.020)
44612	1.05	39.0(814)	7.95	.237(.224)	-.047(-.042)
44613	1.05	39.0(815)	9.91	.329(.317)	-.066(-.062)
44614	1.05	39.0(815)	11.85	.419(.408)	-.082(-.075)
44615	1.05	39.0(814)	13.81	.506(.504)	-.096(-.095)
44616	1.05	39.0(815)	15.79	.591(.587)	-.110(-.106)
44701	.95	35.9(750)	-7.78	-.397(-.404)	.099(.100)
44702	.95	35.9(749)	-5.83	-.312(-.312)	.085(.085)
44703	.95	35.9(749)	-3.90	-.228(-.227)	.069(.067)
44704	.95	35.9(749)	-1.91	-.143(-.145)	.047(.048)
44705	.95	35.9(749)	.09	-.065(-.070)	.027(.028)
44706	.95	35.9(749)	2.05	.002(-.004)	.012(.014)
44707	.95	35.9(749)	4.03	.068(.061)	-.001(.002)
44708	.95	35.9(749)	5.98	.136(.127)	-.015(-.012)
44709	.95	35.9(749)	7.94	.222(.213)	-.035(-.034)
44710	.95	35.9(749)	9.88	.313(.307)	-.053(-.053)
44711	.95	35.9(749)	11.83	.406(.395)	-.067(-.064)
44712	.95	35.9(749)	13.78	.501(.490)	-.083(-.077)
44713	.95	35.9(750)	15.74	.595(.587)	-.099(-.094)
44805	1.00	37.5(783)	-7.79	-.404(-.407)	.109(.106)
44806	1.00	37.5(784)	-5.84	-.321(-.322)	.093(.092)
44807	1.00	37.5(784)	-3.85	-.234(-.235)	.073(.073)
44808	1.00	37.5(783)	-1.91	-.149(-.149)	.050(.050)
44809	1.00	37.5(784)	.04	-.070(-.071)	.028(.029)
44810	1.00	37.5(784)	2.02	.001(-.004)	.011(.014)
44811	1.00	37.5(784)	4.01	.068(.061)	-.002(.002)
44812	1.00	37.5(784)	5.94	.139(.130)	-.017(-.014)
44813	1.00	37.5(784)	7.92	.230(.222)	-.041(-.039)
44814	1.00	37.5(783)	9.88	.324(.317)	-.059(-.060)
44815	1.00	37.6(785)	11.82	.416(.405)	-.076(-.070)
44817	1.00	37.5(784)	15.75	.596(.589)	-.105(-.099)
44901	.85	32.0(668)	-7.73	-.379(-.382)	.090(.091)
44902	.85	32.0(669)	-5.80	-.298(-.296)	.079(.076)
44903	.85	32.0(668)	-3.83	-.215(-.220)	.064(.065)
44904	.85	32.0(668)	-1.88	-.136(-.141)	.045(.047)
44906	.85	32.0(668)	.09	-.063(-.068)	.027(.026)
44907	.85	32.0(669)	2.08	.003(-.002)	.013(.013)
44908	.85	32.0(668)	4.03	.066(.059)	.001(.002)
44909	.85	32.0(668)	5.99	.131(.122)	-.012(-.011)
44910	.85	32.0(668)	7.98	.211(.202)	-.031(-.031)
44911	.85	32.0(668)	9.92	.301(.293)	-.048(-.048)
44912	.85	32.0(668)	11.88	.390(.380)	-.059(-.060)
44913	.85	32.0(669)	13.84	.483(.472)	-.070(-.068)
44914	.85	32.0(668)	15.79	.574(.565)	-.080(-.077)
45001	.40	10.2(214)	-7.69	-.355(-.353)	.095(.083)
45002	.40	10.2(212)	-5.74	-.274(-.282)	.081(.076)
45003	.40	10.2(213)	-3.76	-.196(-.200)	.065(.058)
45004	.40	10.2(213)	-1.80	-.122(-.128)	.046(.040)
45006	.40	10.2(213)	.17	-.057(-.062)	.029(.024)
45007	.40	10.2(213)	2.15	.005(-.002)	.017(.013)
45008	.40	10.2(213)	4.12	.064(.057)	.006(.003)
45009	.40	10.2(213)	6.09	.124(.116)	-.004(-.008)
45010	.40	10.2(213)	8.05	.189(.183)	-.018(-.025)
45011	.40	10.2(213)	10.03	.275(.265)	-.040(-.045)
45012	.40	10.2(214)	11.96	.368(.355)	-.058(-.063)
45013	.40	10.2(214)	13.94	.458(.444)	-.069(-.074)
45014	.40	10.2(213)	15.91	.549(.537)	-.078(-.082)

APPENDIX B

DATA REDUCTION AND PRESENTATION

DATA EDITING AND INTEGRATION PROCEDURE

DATA EDITING

Some cases were encountered with these data where the methods of data editing available within the integration programs were not adequate. During approximately the first half of the test, the scanivalve which recorded lower surface wing box (between the hingelines) pressures for the sections at 2 y/b = 0.09, 0.20, 0.35, and 0.50 was intermittent at an angle of attack of 16°. This problem was eventually traced to an electrical problem in the strut. Rather than sacrifice all of these data, these incorrect measurements were replaced by extrapolating the data from angles of attack of 12° and 14°.

Because the plotting program assumes that geometry for all configurations is the same and the chordwise location of orifices on the various model parts was not absolutely identical, points were added as required. Therefore, some interpolations or extrapolations using selected orifices were done before the integration program was used. The row of orifices on the body at the wing-body intersection was extended in front of the wing and aft of the wing by interpolating between the orifices located at 90° and 135°.

To obtain comparisons of the results of some of the theoretical methods, the experimental data were required as a loading parameter along the body length or as pressure distributions at constant body stations. To obtain this information, a set of body stations was selected and at each of these, orifices were defined so that the interpolation would be along constant x/c lines on the streamwise wing sections. A linear interpolation was performed between buttock lines. This representation was verified by comparing the integrations of these data to those obtained using the data at the actual orifices. All three integrated coefficients matched within 1%.

Several methods were introduced into the integration program to replace or add data points to account for:

- Plugged or leaking orifices or bad data points
- Extrapolating the data to leading and trailing edges
- Hingeline discontinuities in the pressure data

These procedures were selected by code for each point. The codes are described in the following list and are illustrated in figure B-1. An additional use of these codes is to ensure that only measured pressure data ($CODE_i = 0$) are identified with symbols on the plots.

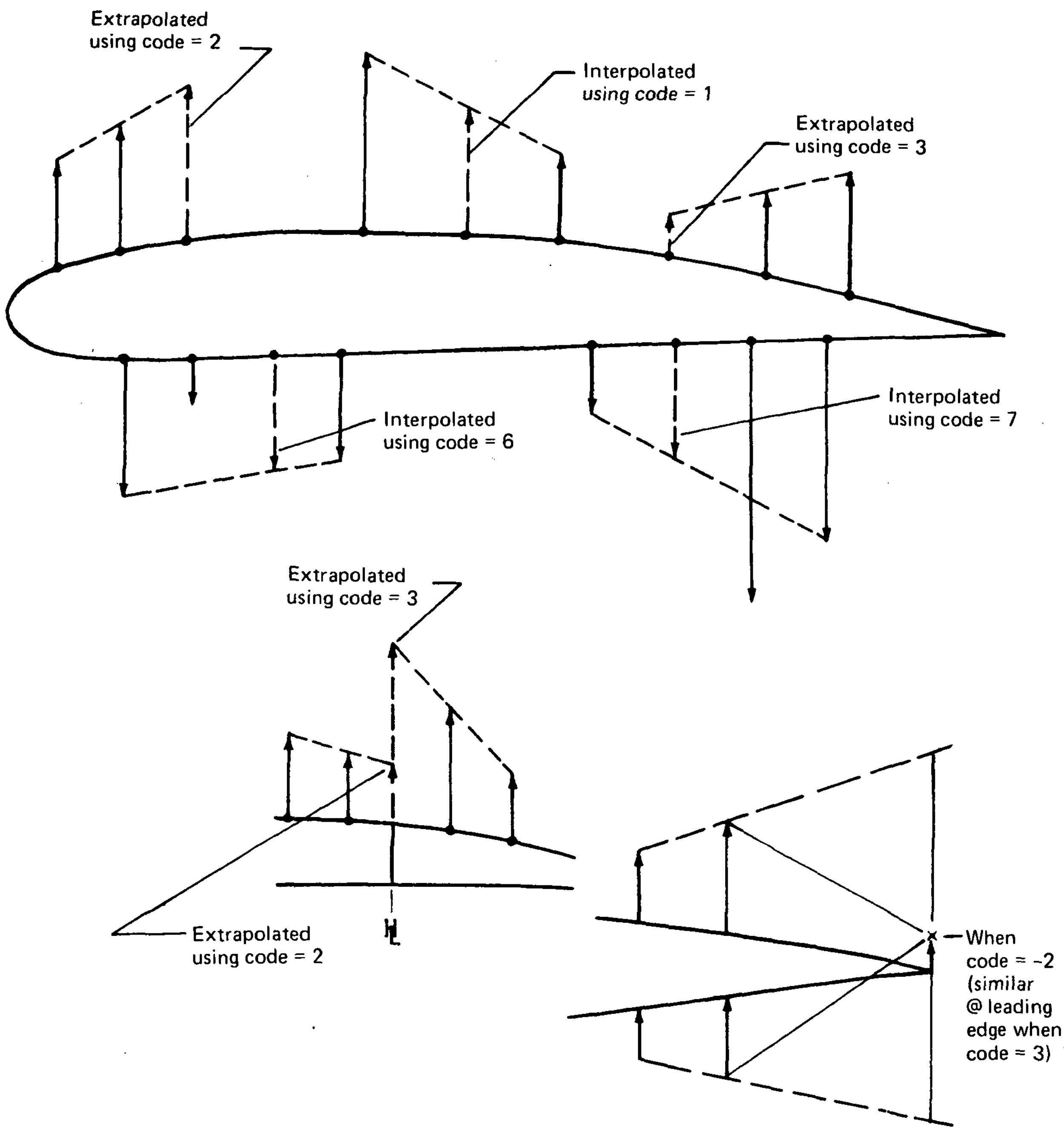


Figure B-1.—Codes Used To Interpolate and Extrapolate

If $CODE_i$ = 0, use pressure as entered on tape (measured pressure)

= 20, use pressure as entered on tape (previously replaced value)

= 1, interpolate from adjacent points

= 2, extrapolate from two preceding points

= 3, extrapolate from two following points

= 4, set equal to preceding point

= 5, set equal to following point

= 6, interpolate using points (i-2) and (i+1)

= 7, interpolate using points (i-1) and (i+2)

If $CODE_i$ = negative of above, evaluate as above but average with corresponding point on opposite surface—used for leading and trailing edges of section only

where

i identifies the position of the point from the leading edge of the upper or lower surface per section

Editing of the pressure data is done in the following order:

1. Each section is done separately.

2. Each surface (upper or lower) per section is done in the following sequence:

   a. Starting at leading edge, points with codes of 1, 2, and 4

   b. Starting at trailing edge, points with codes of 3, 5, 6, and 7

3. Leading- and trailing-edge points with negative codes are evaluated. Upper and lower surface codes need not both be negative and need not be the same negative code.

4. Extrapolated pressure coefficients are checked to see that they are greater than vacuum and less than stagnation pressure. These limits are shown in figure B-2 for the range of Mach numbers tested. This option was not used for theoretical data.

   a. Vacuum, equation valid for all Mach numbers

$$C_{p,vacuum} = -\frac{2.0}{\gamma M^2} \qquad \text{(B-1)}$$

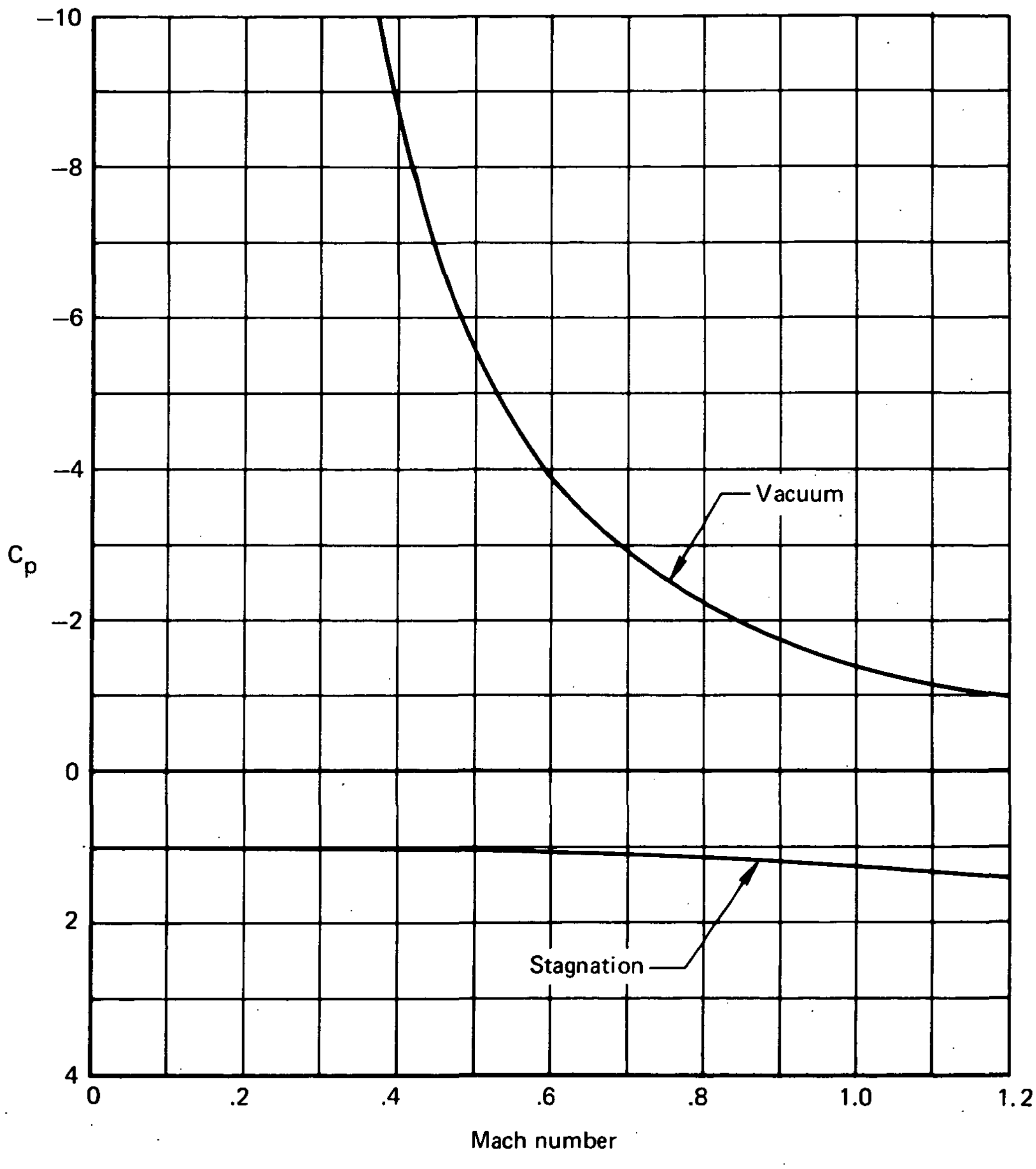


Figure B-2.—Pressure Limits Applied to Experimental Data

b. Stagnation pressure, equation is dependent on type of flow

For isentropic flow:

$$C_{p,stag} = \frac{2.0}{\gamma M^2}\left\{\left[1.0 + 0.5(\gamma - 1.0)M^2\right]^{\frac{\gamma}{\gamma-1.0}} - 1.0\right\} \tag{B-2}$$

Across a normal shock wave:

$$C_{p,stag} = \frac{2.0}{\gamma M^2}\left\{\left[\frac{\gamma + 1.0}{2.0} M^2\right]^{\frac{\gamma}{\gamma-1.0}}\left[\frac{\gamma + 1.0}{2.0\,\gamma M^2 - (\gamma-1.0)}\right]^{\frac{1.0}{\gamma-1.0}} - 1.0\right\} \tag{B-3}$$

Equation (B-2) is used for $M \leq 1.0$. An average of equations (B-2) and (B-3) is used for $M > 1.0$.

where

M is Mach number
γ is gas constant ≈ 1.40 for air

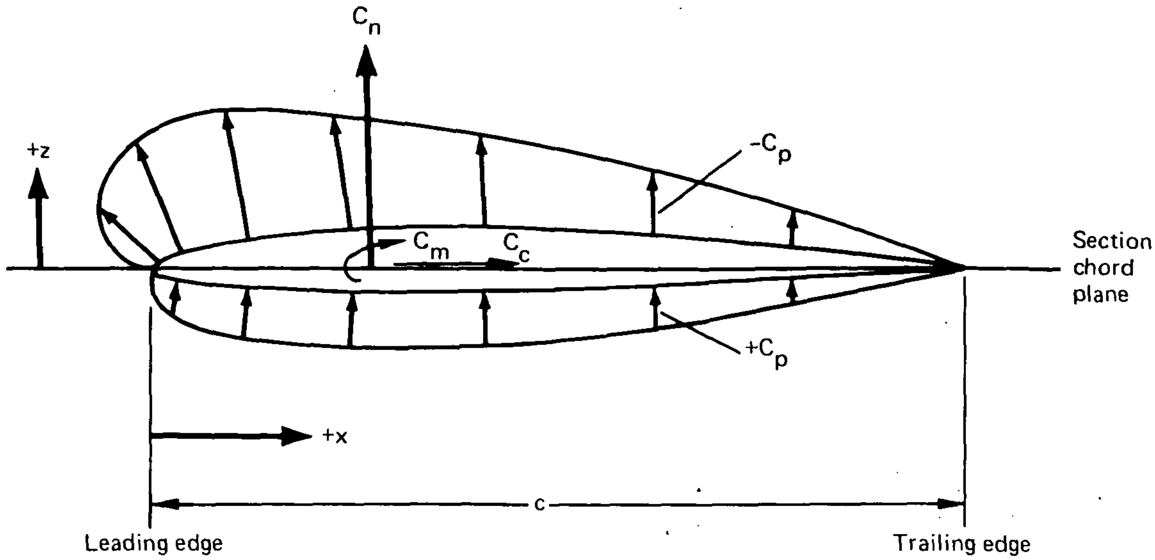
CALCULATION OF NET PRESSURE COEFFICIENTS

The net lift distribution on the section is calculated by:

$$C_{p,net} = C_{p,lower} - C_{p,upper} \tag{B-4}$$

INTEGRATION OF PRESSURE DATA

To account for the effects on integrated coefficients of the deflected control surfaces, each streamwise section (of which there are NSECT) is divided into segments (of which there are NSEG). These segments are the leading-edge control surface, wing box, and trailing-edge control surface. The upper and lower surfaces of each are integrated separately over the number of points available ((number of orifices + 2) = NP1) and are based on the segment chord length c. Sign conventions are shown in the following sketch. The equations, which use a rectangular integration process, follow.



Segment Coefficients

Integration of the pressures for each segment per surface per section is the first step.

- Normal force coefficient $C_{n,s}$

$$C_{n,s} = 0.5 \sum_{i=2}^{NP1} \left[(C_p)_i + (C_p)_{i-1}\right]\left[\left(\frac{x}{c}\right)_i - \left(\frac{x}{c}\right)_{i-1}\right] \tag{B-5}$$

$$C_{n,s,net} = C_{n,s,lower} - C_{n,s,upper} \tag{B-6}$$

- Chord force coefficient $C_{c,s}$

$$C_{c,s} = 0.5 \sum_{i=2}^{NP1} \left[(C_p)_i + (C_p)_{i-1}\right]\left[\left(\frac{z}{c}\right)_i - \left(\frac{z}{c}\right)_{i-1}\right] \tag{B-7}$$

$$C_{c,s,net} = C_{c,s,upper} - C_{c,s,lower} \tag{B-8}$$

- Pitching moment coefficient about segment leading edge $C_{m,s}$

$$C_{m,s} = 0.5 \sum_{i=2}^{NP1} \left[\left(C_p\right)_i + \left(C_p\right)_{i-1} \right] \left[\left(\frac{x}{c}\right)_{i-1} + \frac{\left(\frac{x}{c}\right)_i - \left(\frac{x}{c}\right)_{i-1}}{2.0} \right] \left[\left(\frac{x}{c}\right)_i - \left(\frac{x}{c}\right)_{i-1} \right]$$

$$= 0.25 \sum_{i=2}^{NP1} \left[\left(C_p\right)_i + \left(C_p\right)_{i-1} \right] \left[\left(\frac{x}{c}\right)_i^2 - \left(\frac{x}{c}\right)_{i-1}^2 \right] \quad \text{(B-9)}$$

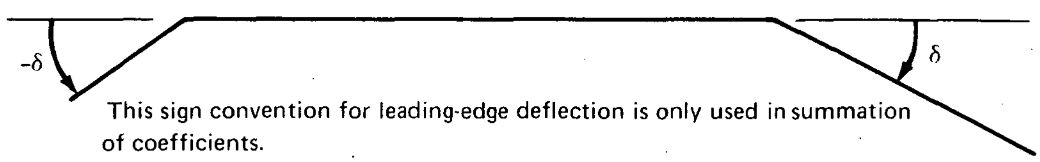
$$C_{m,s,net} = C_{m,s,upper} - C_{m,s,lower} \quad \text{(B-10)}$$

- Pitching moment coefficient about 0.25 c of segment $C_{m.25c,s}$

$$C_{m.25c,s} = C_{m,s} + 0.25\ C_{n,s} \quad \text{(B-11)}$$

Section Coefficients

Total section coefficients are obtained by summing the segment coefficients, taking into account segment deflections as defined in the following sketch and segment chord lengths. These coefficients are based on the section chord length c_T.



- Normal force coefficient C_n

$$C_n = \sum_{j=1}^{NSEG} \left(C_{n,s}\right)_j \left(\frac{c_s}{c}\right)_j \cos \delta_j - \sum_{j=1}^{NSEG} \left(C_{c,s}\right)_j \left(\frac{c_s}{c}\right)_j \sin \delta_j \quad \text{(B-12)}$$

- Chord force coefficient C_c

$$C_c = \sum_{j=1}^{NSEG} \left(C_{c,s}\right)_j \left(\frac{c_s}{c}\right)_j \cos \delta_j + \sum_{j=1}^{NSEG} \left(C_{n,s}\right)_j \left(\frac{c_s}{c}\right)_j \sin \delta_j \quad \text{(B-13)}$$

- Pitching moment coefficient about section leading edge C_m

$$C_m = \sum_{j=1}^{NSEG} (C_{m,s})_j \left(\frac{c_s}{c}\right)_j^2 + \left[(C_{n,s})_1 \left(1.0 - \cos\delta_1\right) + (C_{c,s})_1 \sin\delta_1\right]\left(\frac{c_s}{c}\right)_1^2$$
$$- \sum_{j=2}^{NSEG} \left[(C_{n,s})_j \cos\delta_j - (C_{c,s})_j \sin\delta_j\right]\left(\frac{c_s}{c}\right)_1 \left[\frac{x_{L.E.,s} - x_{L.E.}}{c}\right] \qquad \text{(B-14)}$$

where

c_s is segment chord, cm

c is section chord, cm

δ is deflection of segment relative to section chord plane, leading edge up, degrees

$x_{L.E.,s}$ is leading edge of segment, cm

$x_{L.E.}$ is leading edge of section, cm

- Pitching moment coefficient about 0.25 c of section $C_{m.25c}$

$$C_{m.25c} = C_m + 0.25\, C_n \qquad \text{(B-15)}$$

Total Surface Coefficients

To obtain total surface coefficients, the assumption is made that the section coefficients apply for a finite distance on both sides of each row of orifices. The equations for total surface coefficients are as follows:

- Normal force coefficient C_N

$$C_N = \frac{1}{S} \sum_{k=1}^{NSECT} (C_n)_k (S_h)_k \qquad \text{(B-16)}$$

- Chord force coefficient C_C

$$C_C = \frac{1}{S} \sum_{k=1}^{NSECT} (C_c)_k (S_h)_k \qquad \text{(B-17)}$$

- Bending moment coefficient C_B

$$C_B = \frac{1}{S\,(b/2)} \sum_{k=1}^{NSECT} \left(C_n\right)_k \left(S_h y\right)_k \tag{B-18}$$

- Pitching moment coefficient C_M about 0.25 M.A.C.

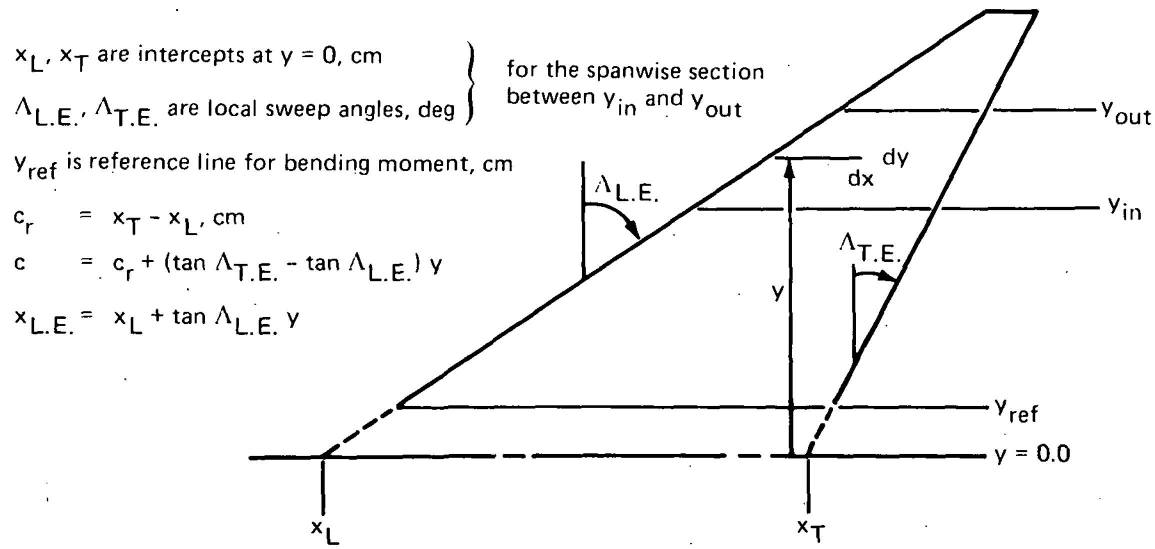
$$C_M = \frac{1}{S\bar{c}} \sum_{k=1}^{NSECT} \left(\left(C_m\right)_k \left(S_h c\right)_k + \left(C_n\right)_k \left(S_h\right)_k \left\{ x_{ref} - \left[\left(x_{L.E.}\right)_k - x_{L.E.,M.A.C.} \right] \right\} \right) \tag{B-19}$$

where

$\bar{c}$	is reference chord for pitching moment, cm
$x_{L.E.,M.A.C.}$	is leading edge of M.A.C., cm
x_{ref}	is reference station for pitching moment, cm (0.25 M.A.C.)
$x_{L.E.}$	is leading edge of section chord, cm
b/2	is reference length for bending moment, cm

Determination of Geometric Constants Required for Integration

To obtain total surface coefficients, the assumption is made that the section coefficients apply for a finite distance on both sides of each row of orifices. The input geometry required to calculate the areas, and products of area and length required for the summation of total surface coefficients, are shown in the following sketch.



- **Section area:**

$$S_h = \int_{y_{in}}^{y_{out}} \int_{x_L + \tan \Lambda_{L.E.} y}^{x_T + \tan \Lambda_{T.E.} y} dy\, dx$$

$$= c_r \left(y_{out} - y_{in}\right) + 0.5 \left(\tan \Lambda_{T.E.} - \tan \Lambda_{L.E.}\right) \left(y_{out}^2 - y_{in}^2\right) \qquad \text{(B-20)}$$

- **Product of section area and mean chord:**

$$S_h c = \int_{y_{in}}^{y_{out}} \int_{x_L + \tan \Lambda_{L.E.} y}^{x_T + \tan \Lambda_{T.E.} y} c\, dy\, dx$$

$$= c_r^2 \left(y_{out} - y_{in}\right) + c_r \left(\tan \Lambda_{T.E.} - \tan \Lambda_{L.E.}\right) \left(y_{out}^2 - y_{in}^2\right)$$

$$+ \frac{\left(\tan \Lambda_{T.E.} - \tan_{L.E.}\right)^2}{3.0} \left(y_{out}^3 - y_{in}^3\right) \qquad \text{(B-21)}$$

- **Product of section area and moment arm:**

$$S_h y = \int_{y_{in}}^{y_{out}} \int_{x_L + \tan \Lambda_{L.E.} y}^{x_T + \tan \Lambda_{T.E.} y} \left(y - y_{ref}\right) dy\, dx$$

$$= \frac{c_r - \left(\tan \Lambda_{T.E.} - \tan \Lambda_{L.E.}\right) y_{ref}}{2.0} \left(y_{out}^2 - y_{in}^2\right)$$

$$+ \frac{\left(\tan \Lambda_{T.E.} - \tan \Lambda_{L.E.}\right)}{3.0} \left(y_{out}^3 - y_{in}^3\right) - c_r\, y_{ref} \left(y_{out} - y_{in}\right) \qquad \text{(B-22)}$$

- **Product of section area and leading edge coordinate:**

$$S_h x = \int_{y_{in}}^{y_{out}} \int_{x_L + \tan \Lambda_{L.E.} y}^{x_T + \tan \Lambda_{T.E.} y} x_{L.E.}\, dy\, dx$$

$$= x_L\, c_r \left(y_{out} - y_{in}\right) + \frac{\tan \Lambda_{L.E.}\, c_r + x_L \left(\tan \Lambda_{T.E.} - \tan \Lambda_{L.E.}\right)}{2.0} \left(y_{out}^2 - y_{in}^2\right)$$

$$+ \tan \Lambda_{L.E.} \frac{\left(\tan \Lambda_{T.E.} - \tan \Lambda_{L.E.}\right)}{3.0} \left(y_{out}^3 - y_{in}^3\right) \qquad \text{(B-23)}$$

- Total surface reference area:

$$S = \sum_{k=1}^{NSECT} \left(S_h\right)_k \tag{B-24}$$

- M.A.C. and X coordinate of M.A.C. leading edge:

$$\bar{c} = \frac{1}{S} \sum_{k=1}^{NSECT} \left(S_h c\right)_k \tag{B-25}$$

$$x_{L.E.,M.A.C.} = \frac{1}{S} \sum_{k=1}^{NSECT} \left(S_h x\right)_k \tag{B-26}$$

The required integration constants for the wing and body are shown in table B-1.

DATA PRESENTATION

Computer programs were used to generate plots in order to minimize the amount of manual labor. The following sections describe the forms of data presentation used in this report.

PRESSURE COEFFICIENTS

Chordwise distributions of upper surface, lower surface, and net (lower-upper) pressure coefficients are plotted as a function of local x/c. Any interpolated or extrapolated values are used in fairing the lines, but only actual measured values are plotted as symbols. In cases where the measurement at a particular orifice was not valid for a particular test point, the symbol is not shown on the plot either for local surface or net distributions. Longitudinal pressure distributions of surface pressures are presented for the body.

The variation of net pressure coefficients with angle of attack at specific orifice locations is compared with theoretical predictions.

Isobar plots are drawn on the surface planform after interpolating the pressure coefficients from the input locations (for this model all interpolated and extrapolated data from the integration program were used) to a more dense rectangular grid of streamwise lines (orifice stations are retained) and constant percent chord lines. This is a linear interpolation and extrapolation process which ignores the presence of all discontinuities such as deflected control surfaces. The final isobars in the regions near such discontinuities will therefore be inaccurate.

Table B-1.—Integration Constants

Reference area = 3128.45 cm^2
M.A.C. = 75.311 cm
Half span = 50.80 cm

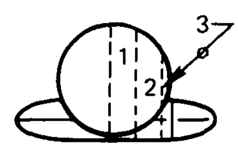
Pitching moment referenced to 0.25 M.A.C.
Bending moment referenced to 0.086 $\frac{b}{2}$ (y_{ref} = 4.374 cm)
L.E. of M.A.C. @ B.S. 87.760 cm

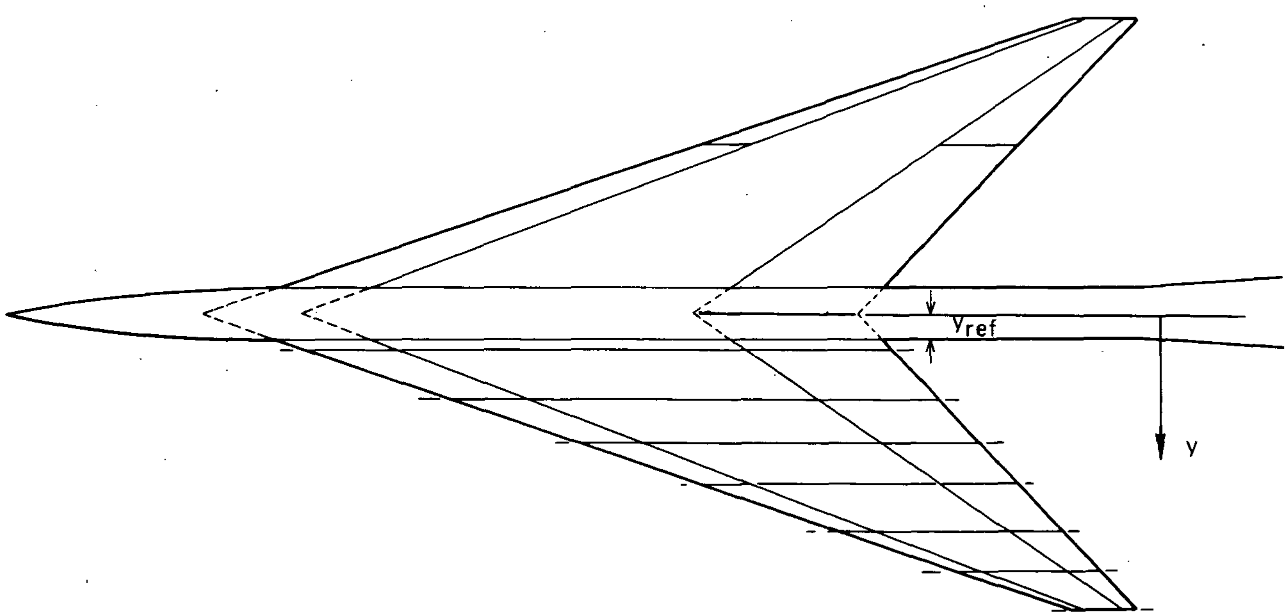
Wing

2y/b	$\frac{\Delta y}{(b/2)}$	Area cm^2	Area • chord cm^3	Area • $(y-y_{ref})$ cm^3
0.09	0.0425	219.69	22 357.	167.
0.20	0.1575	733.51	67 415.	4 206.
0.35	0.1500	580.54	44 374.	7 857.
0.50	0.1400	437.93	27 084.	9 148.
0.65	0.1600	377.64	17 722.	10 729.
0.80	0.1300	210.35	6 794.	7 528.
0.93	0.1400	129.79	2 487.	5 505.

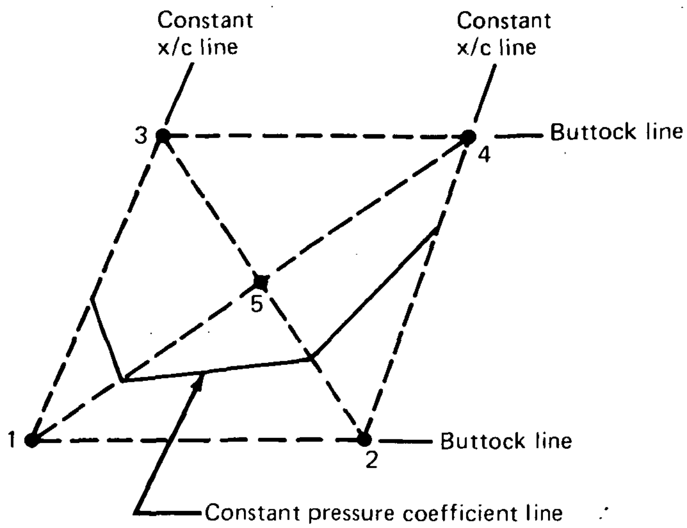
Body

Longitudinal section	Area cm^2	Area • L cm^3
1	356.61	81 258.
2	504.32	114 916.
3	70.94	16 164.





Each set of four adjacent points in the rectangular grid is treated in turn and a fifth point is added to form four triangles as shown in the following sketch. The pressure coefficient at the center point is calculated by averaging the outer four.



The values of pressure coefficient which will be mapped are determined by marking off a series of specified increments above and below zero, up to the maximum and minimum pressure coefficients which exist in the rectangular grid. The upper and lower surfaces are treated separately and can have different increments between isobars.

The isobars are drawn by checking each triangle to determine if the pressure coefficients at the ends of any triangle side are above and below the desired value, in which case the isobar must cross that triangle side. The location of the crossing is found by linear interpolation between the end points, and when two adjacent triangle sides are found to contain the desired pressure coefficient a small segment of the isobar is drawn. As each set of four points is processed, the whole isobar will be constructed from many of these small segments. A letter symbol identifying the pressure coefficient value is generated wherever an isobar crosses one of the rows of orifices.

SECTION AND SPANWISE LOADING CHARACTERISTICS

Section aerodynamic coefficients C_n and C_m are presented as a function of angle of attack.

The spanwise loading is illustrated by plots of the loading parameters $C_n c/\bar{c}$ and $C_{m.25c}\, c^2/\bar{c}^{\,2}$ along the span of the surfaces.

TOTAL SURFACE CHARACTERISTICS

The total surface coefficients C_N, C_M, and C_B are shown as a function of angle of attack.

REFERENCES

1. Mugler, John P., Jr.: *Basic Pressure Measurements at Transonic Speeds on a Thin 45° Sweptback Highly Tapered Wing With Systematic Spanwise Twist Variations–Untwisted Wing.* NASA MEMO 10-20-58L, 1958.

2. Mugler, John P., Jr.: *Basic Pressure Measurements at Transonic Speeds on a Thin 45° Sweptback Highly Tapered Wing With Systematic Spanwise Twist Variations–Wing With Linear Spanwise Twist Variation.* NASA MEMO 12-28-58L, 1959.

3. Mugler, John P., Jr.: *Basic Pressure Measurements at Transonic Speeds on a Thin 45° Sweptback Highly Tapered Wing With Systematic Spanwise Twist Variations–Wing With Quadratic Spanwise Twist Variation.* NASA MEMO 2024-59L, 1959.

4. Mugler, John P., Jr.: *Basic Pressure Measurements at Transonic Speeds on a Thin 45° Sweptback Highly Tapered Wing With Systematic Spanwise Twist Variations–Wing With Cubic Spanwise Twist Variation.* NASA MEMO 5-12-59L, 1959.

5. Mugler, John P., Jr.; and Woodall, Elizabeth R.: *Basic Pressure Measurements at a Mach Number of 1.43 on a Thin 45° Sweptback Highly Tapered Wing With Systematic Spanwise Twist Variations.* NASA Technical Note D-528, 1960.

6. Manro, Marjorie E.; Tinoco, Edward N.; Bobbitt, Percy J.; and Rogers, John T.: "Comparison of Theoretical and Experimental Pressure Distributions on an Arrow-Wing Configuration at Transonic Speed." *Aerodynamic Analyses Requiring Advanced Computers.* NASA SP-347, 1975, pp. 1141-1188.

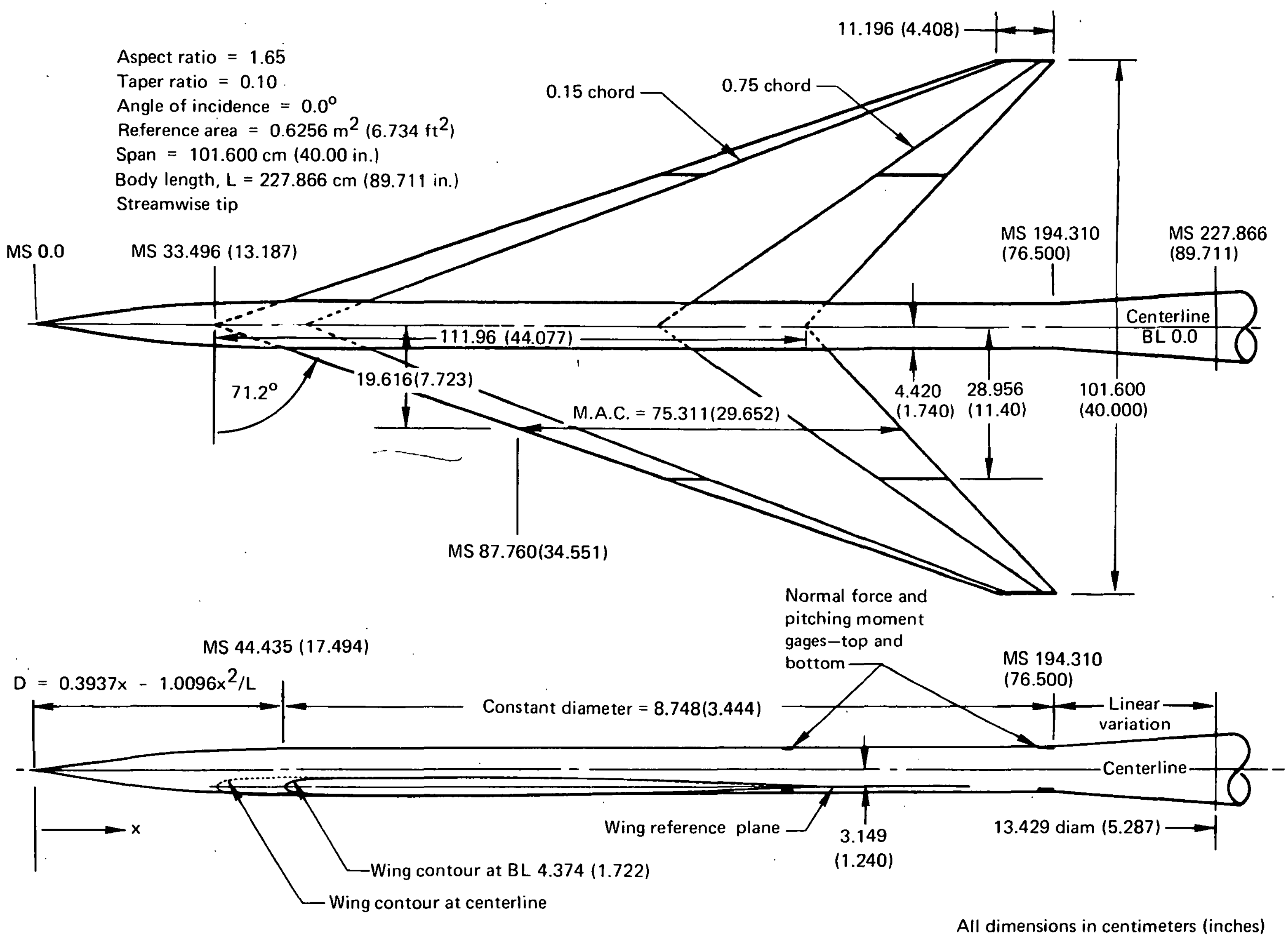


Figure 1.—General Arrangement and Characteristics

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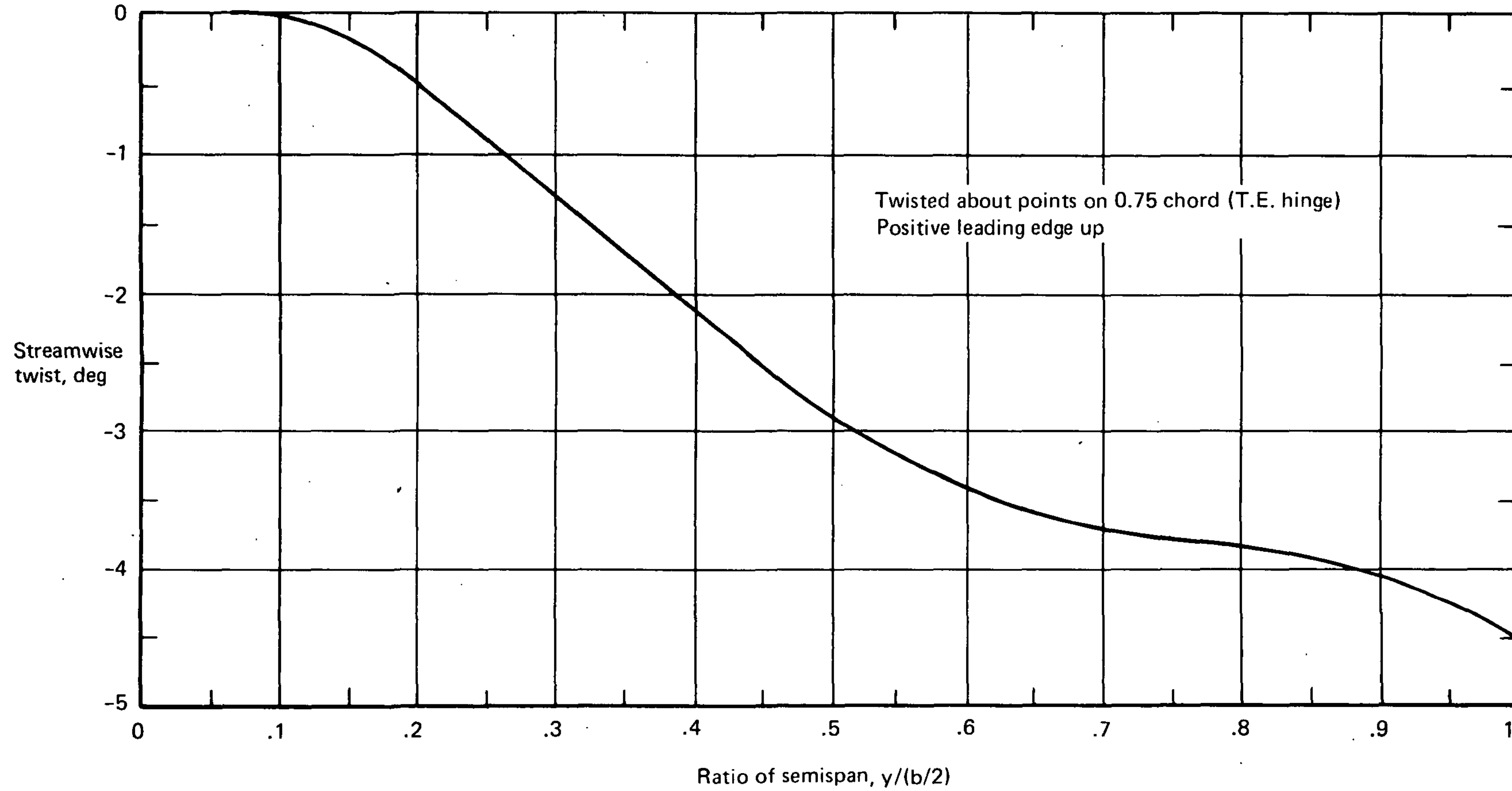


Figure 2.—Spanwise Twist Distribution for the Model Wing

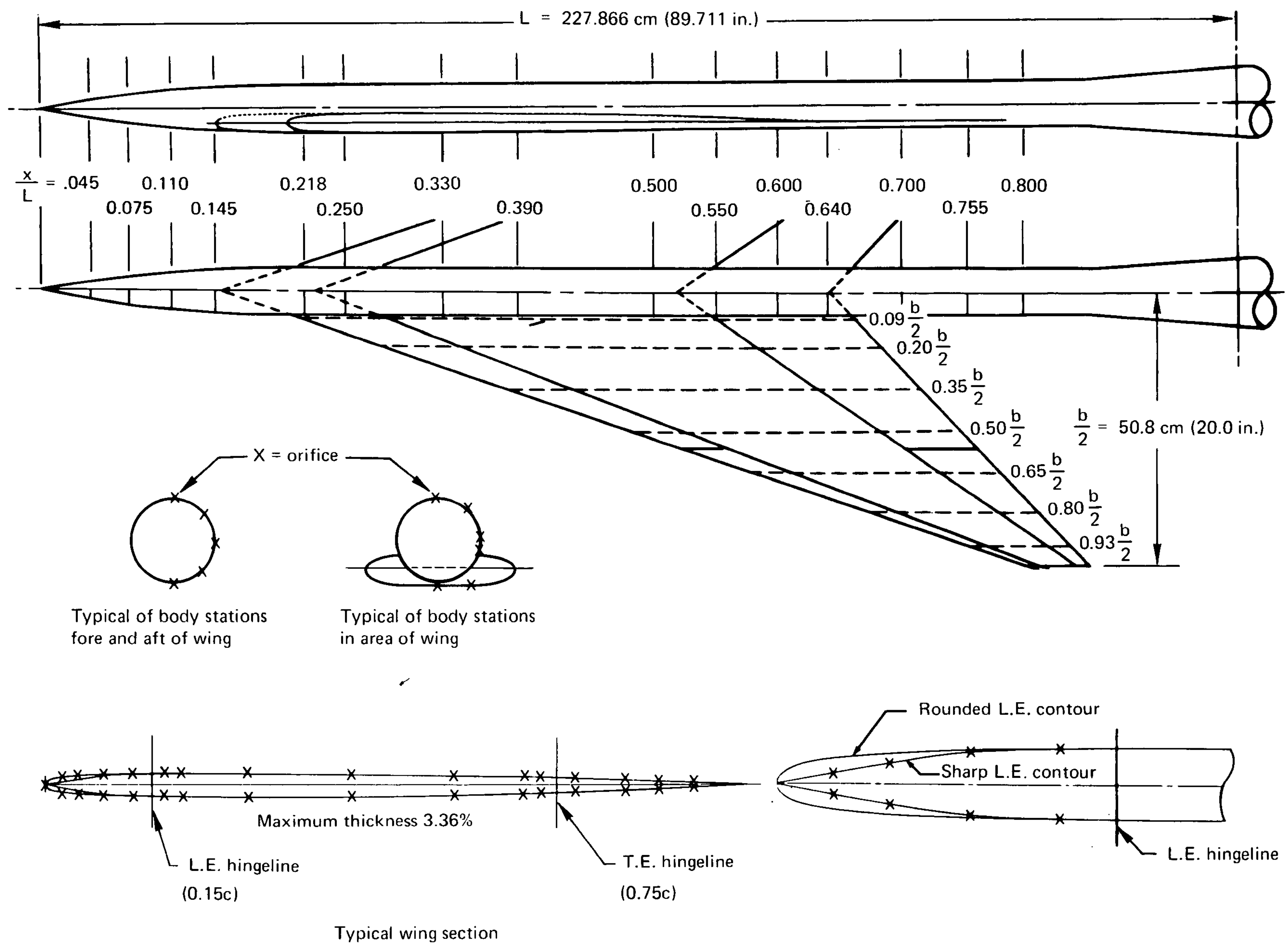


Figure 3.—Pressure Orifice Locations

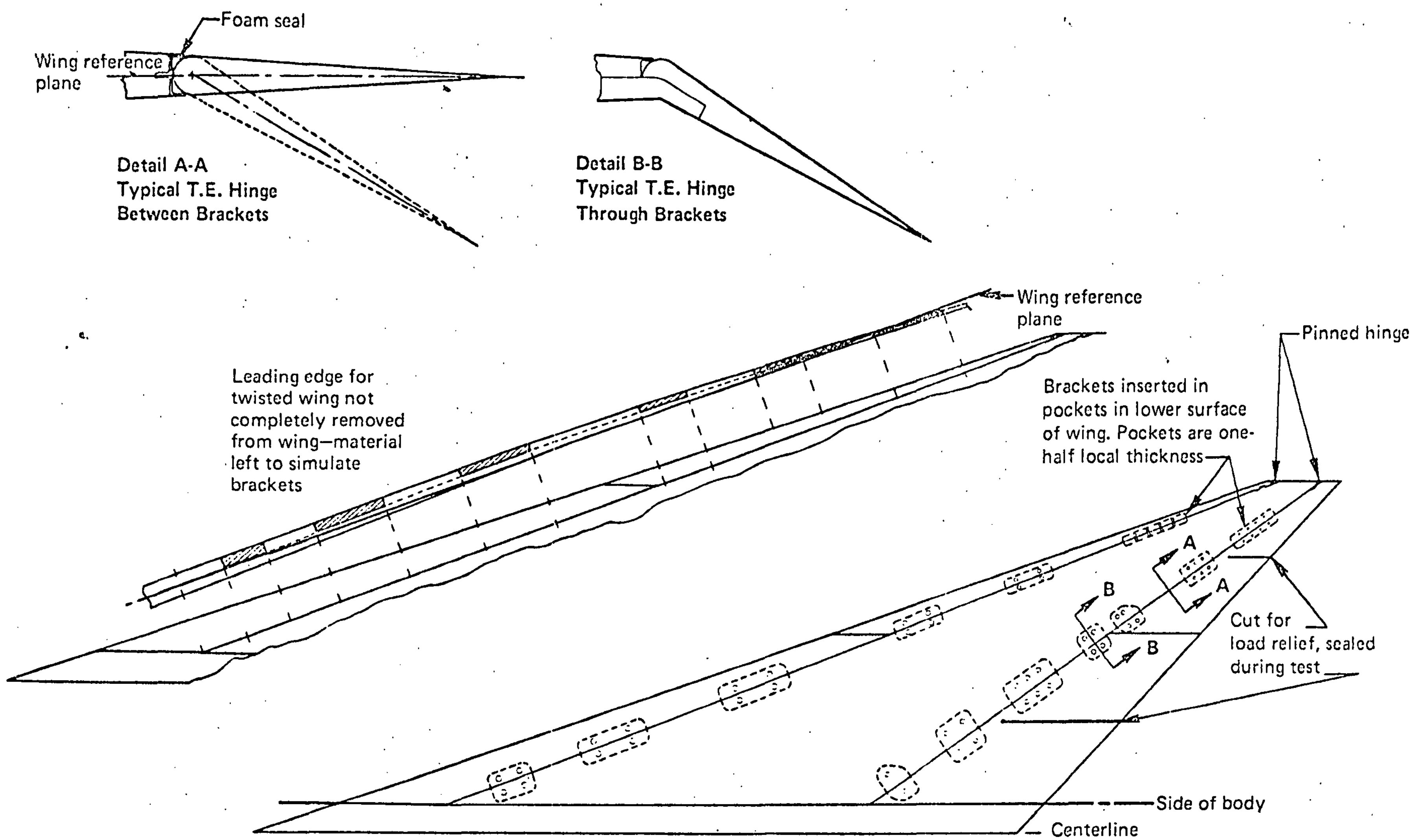
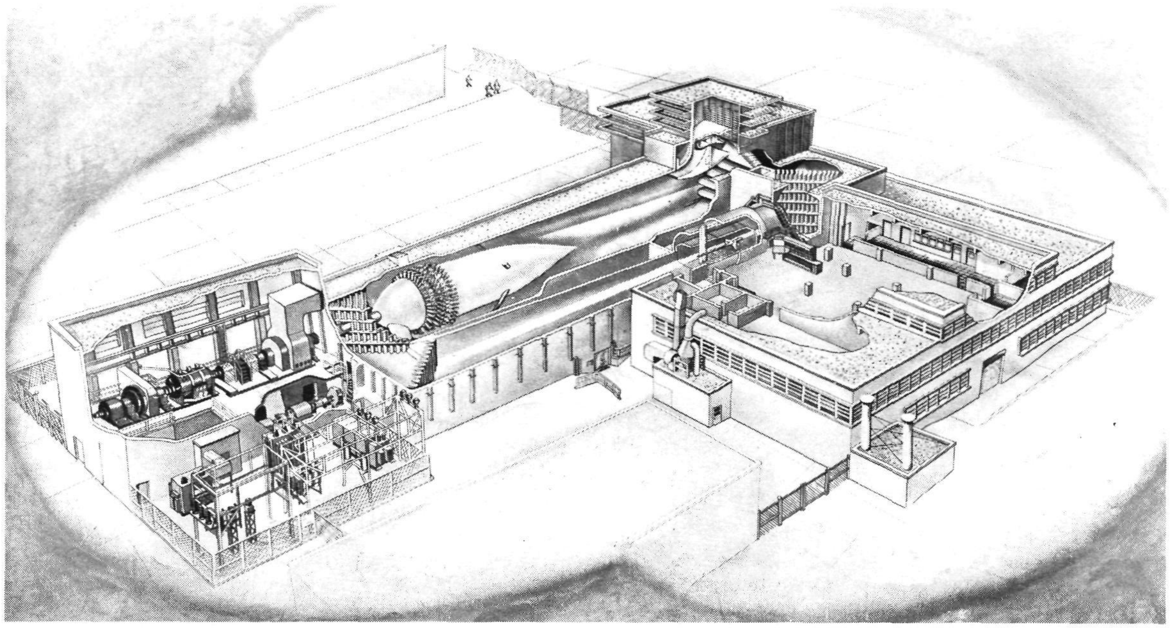
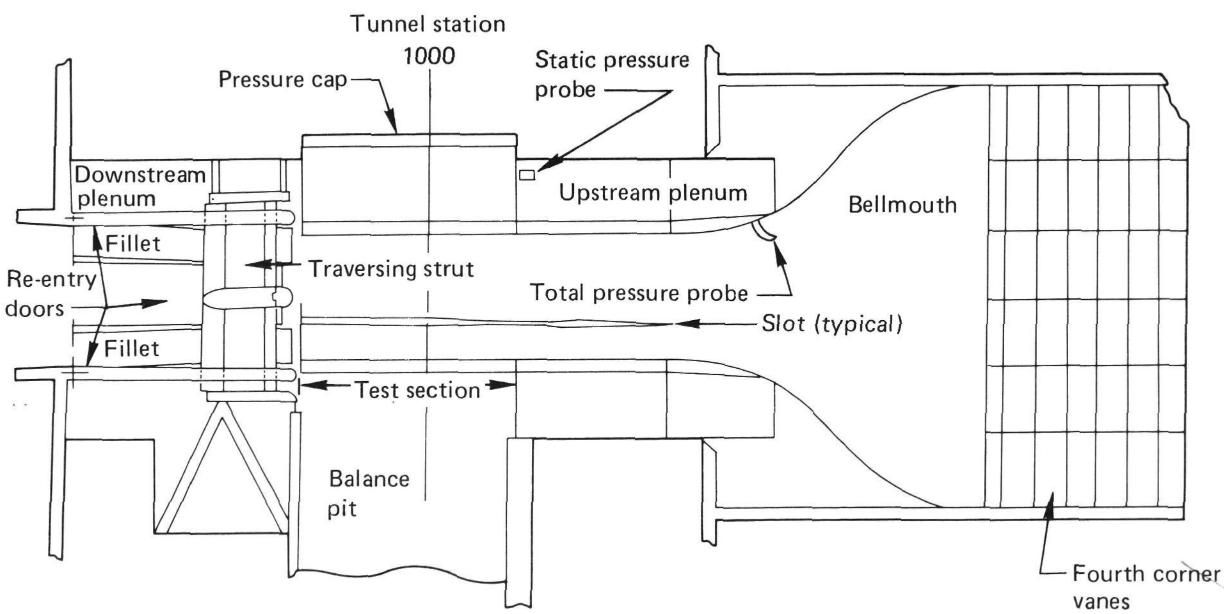


Figure 4.—Control Surface Bracket Details



(a) **Schematic**



(b) **Test Section**

Figure 5.—Boeing Transonic Wind Tunnel

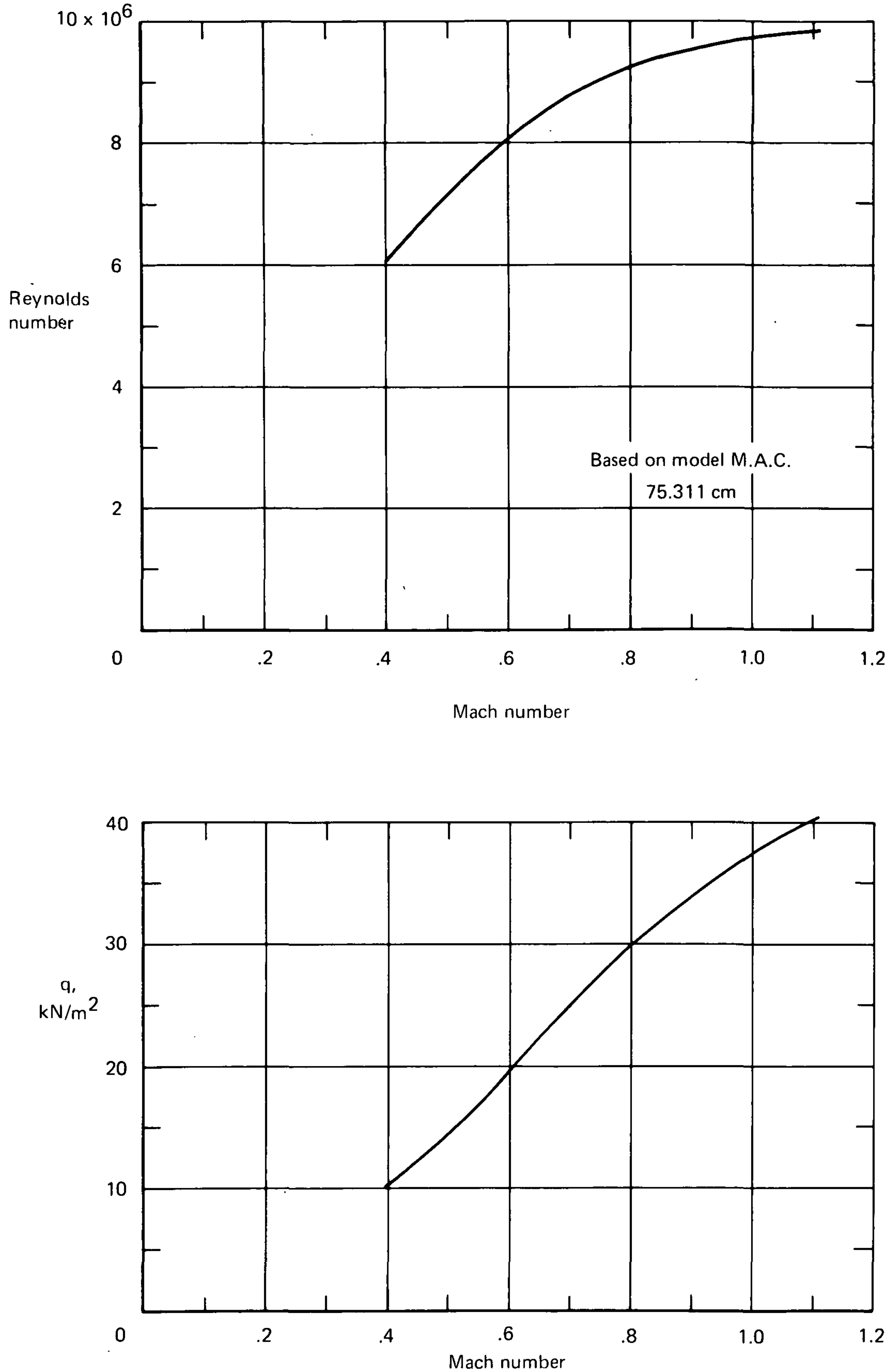


Figure 6.— Variation of Reynolds Number and Dynamic Pressure With Mach Number

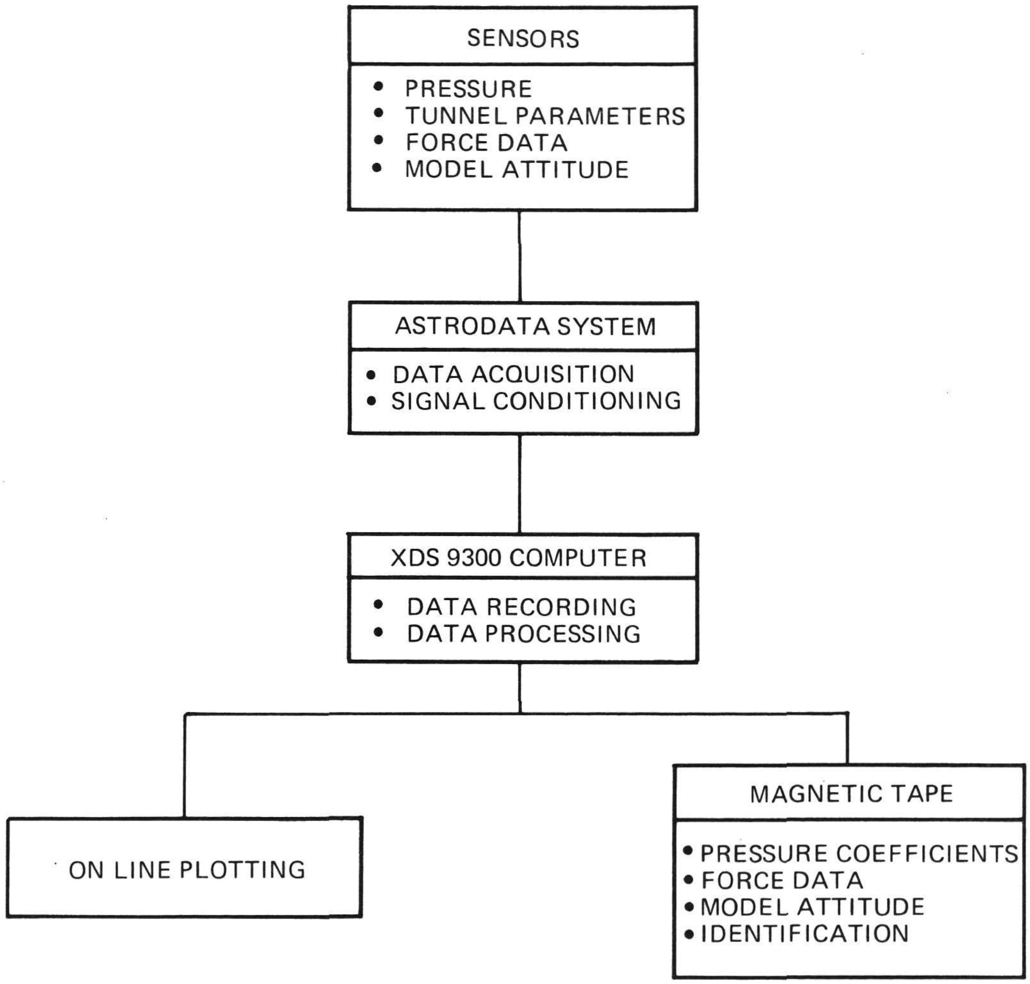


Figure 7.— Data Acquisition and Reduction System—Boeing Transonic Wind Tunnel

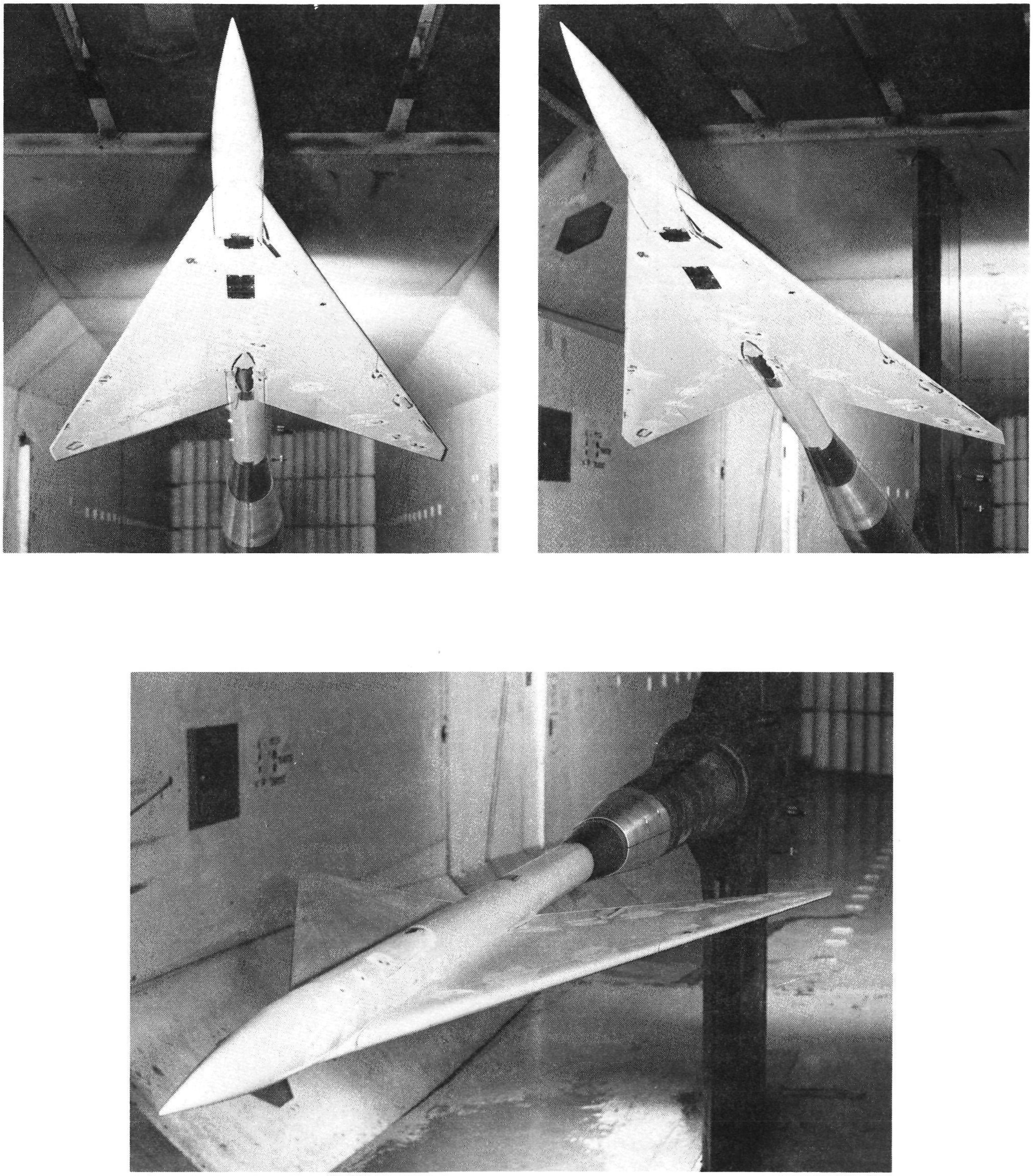


Figure 8.—Wind Tunnel Photographs—Flat Wing, Rounded L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = 0.0°

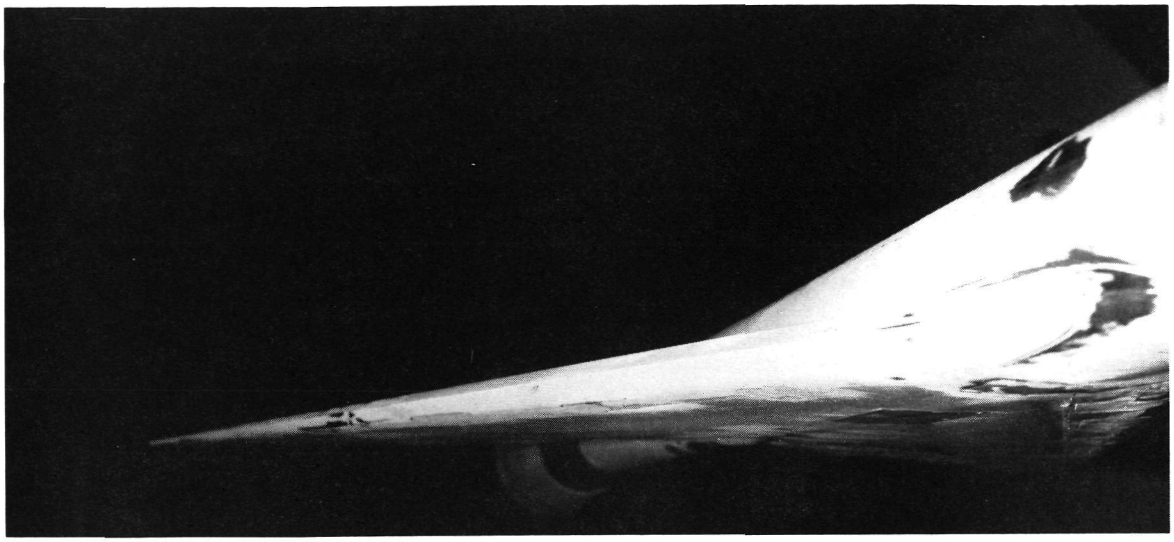


Figure 9.—Wind Tunnel Photograph—Flat Wing, Sharp L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = 0.0°

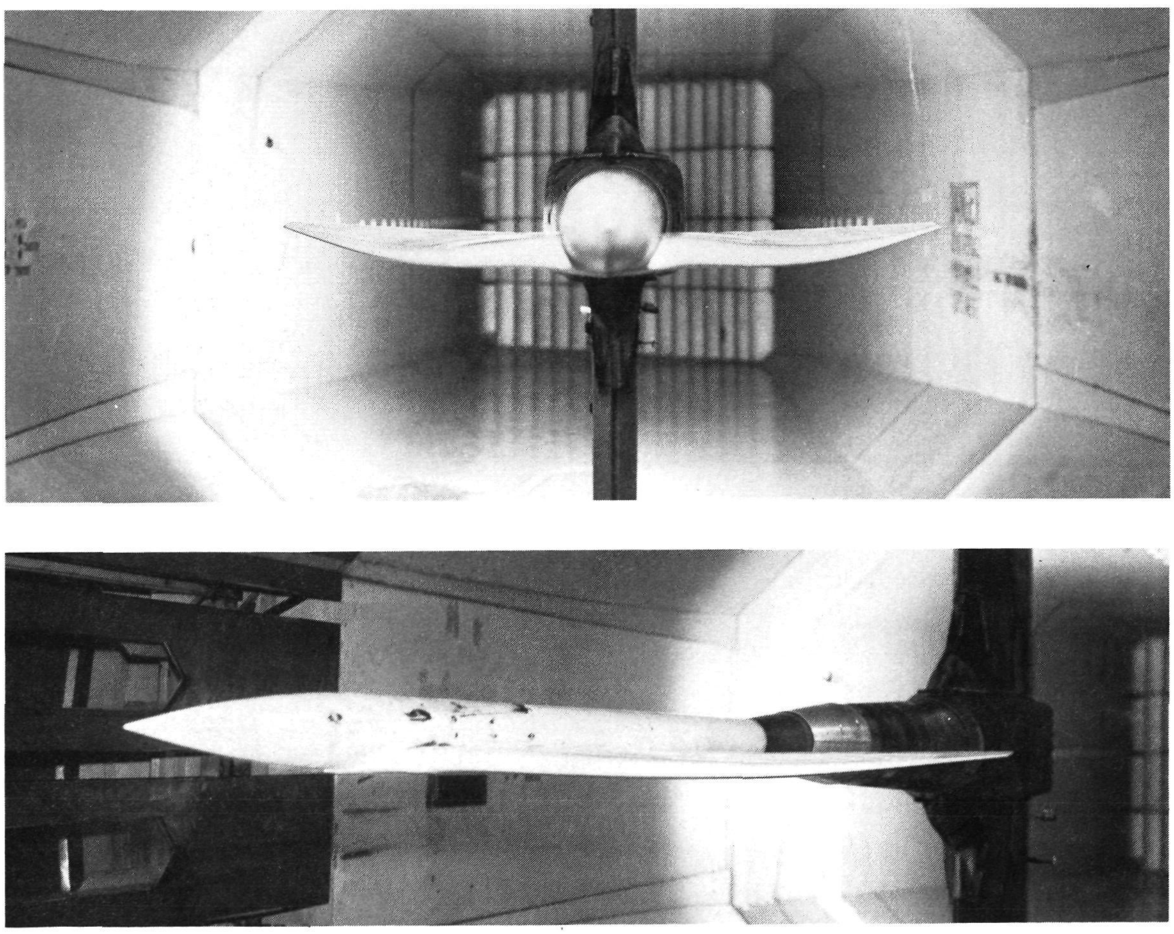


Figure 10.—Wind Tunnel Photographs—Twisted Wing, Rounded L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = 4.1°

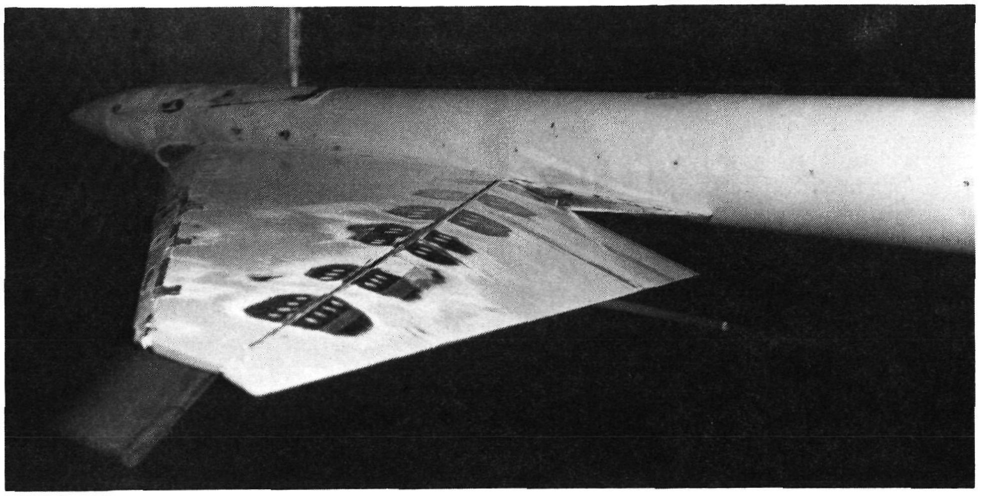


Figure 11.—Wind Tunnel Photograph—Flat Wing, Rounded L.E.; L.E. Deflection, Full Span = 12.8°; T.E. Deflection, Full Span = 8.3°

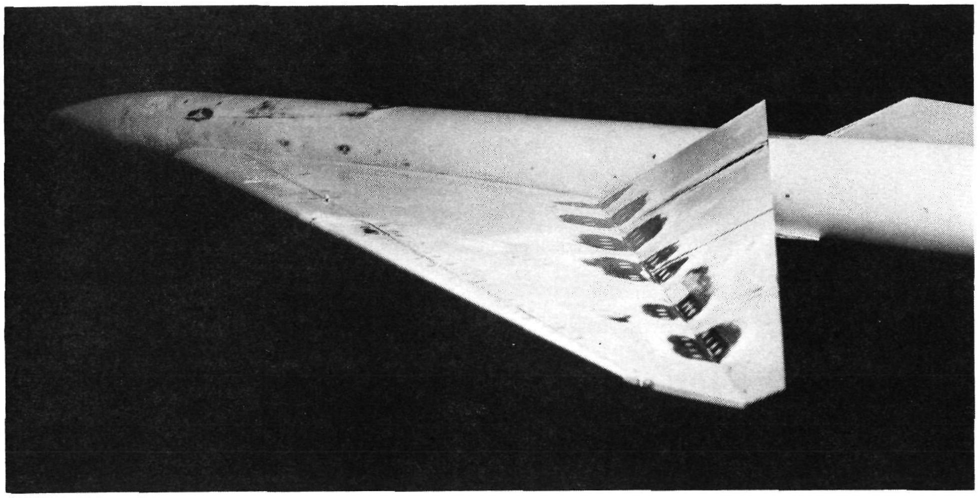


Figure 12.—Wind Tunnel Photograph—Flat Wing, Rounded L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = –30.2°

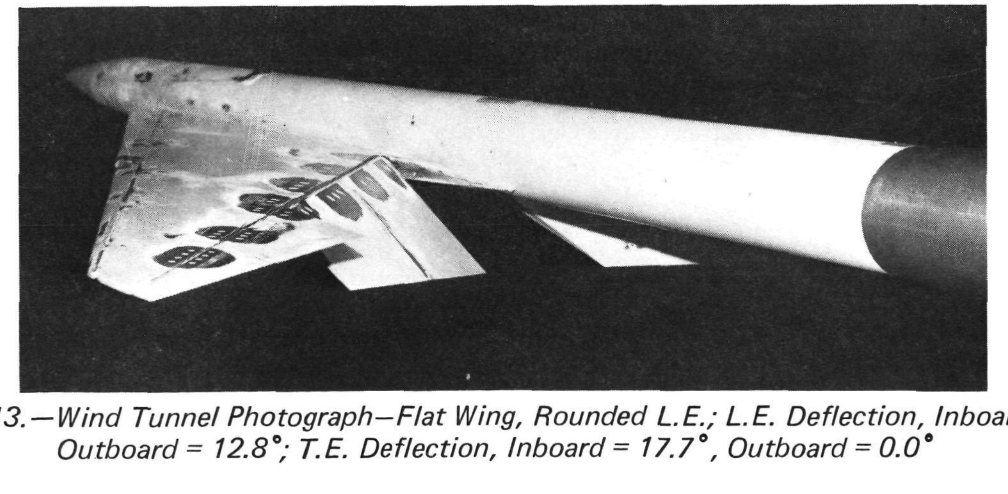


Figure 13.—Wind Tunnel Photograph—Flat Wing, Rounded L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 12.8°; T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°

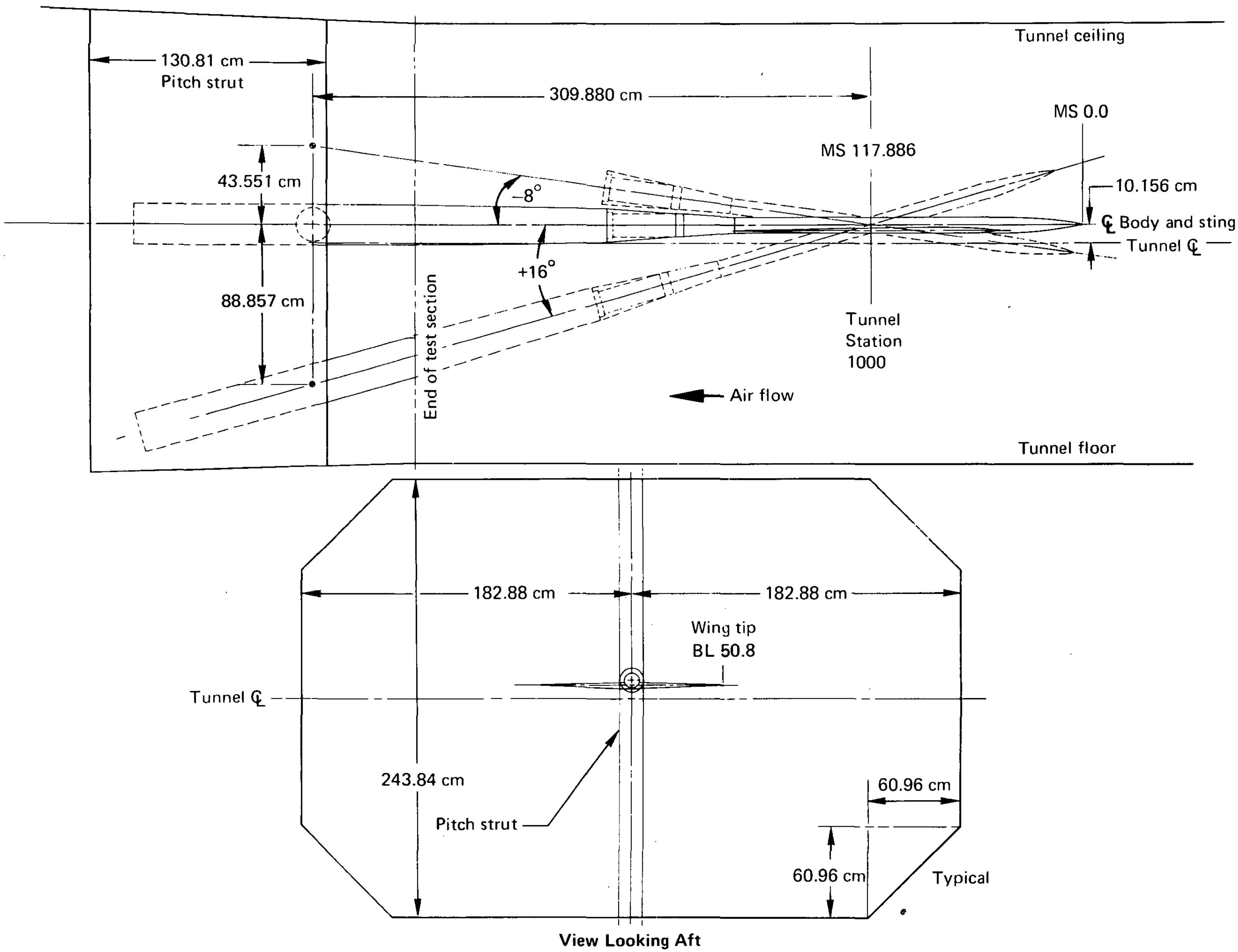
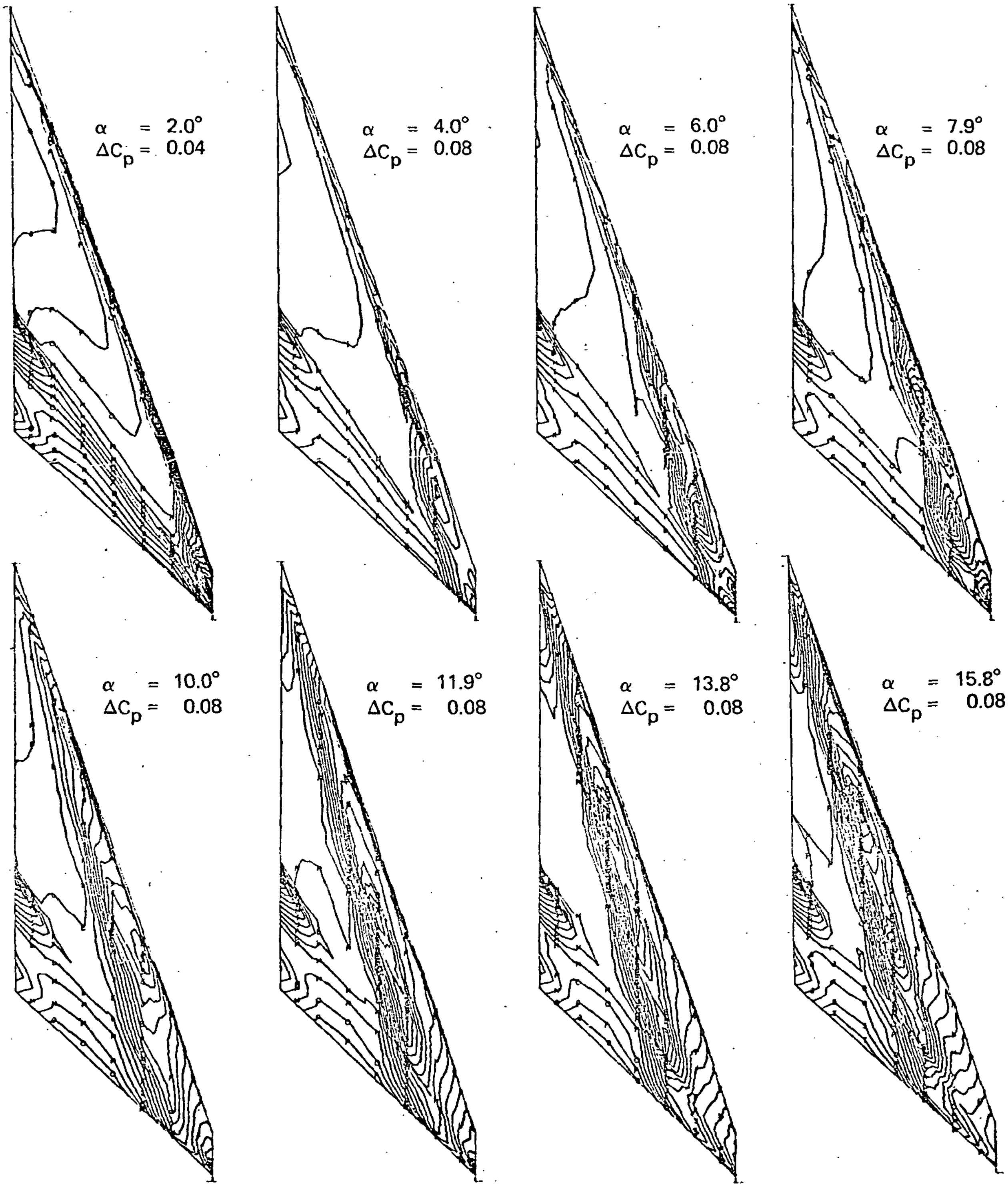


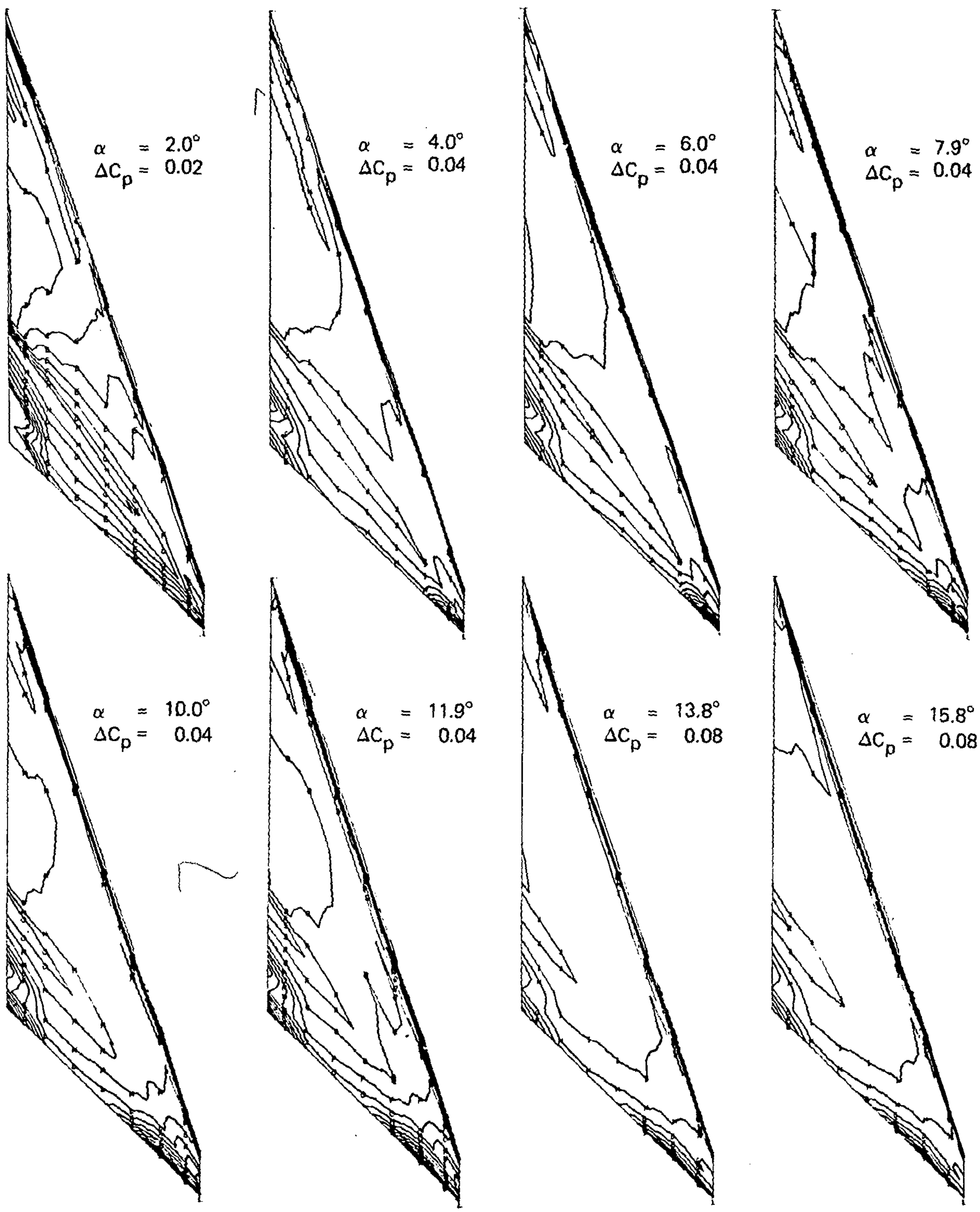
Figure 14.—Model Installation Diagram



Note: ΔC_p = increment between adjacent isobars

(a) Upper Surface Isobars

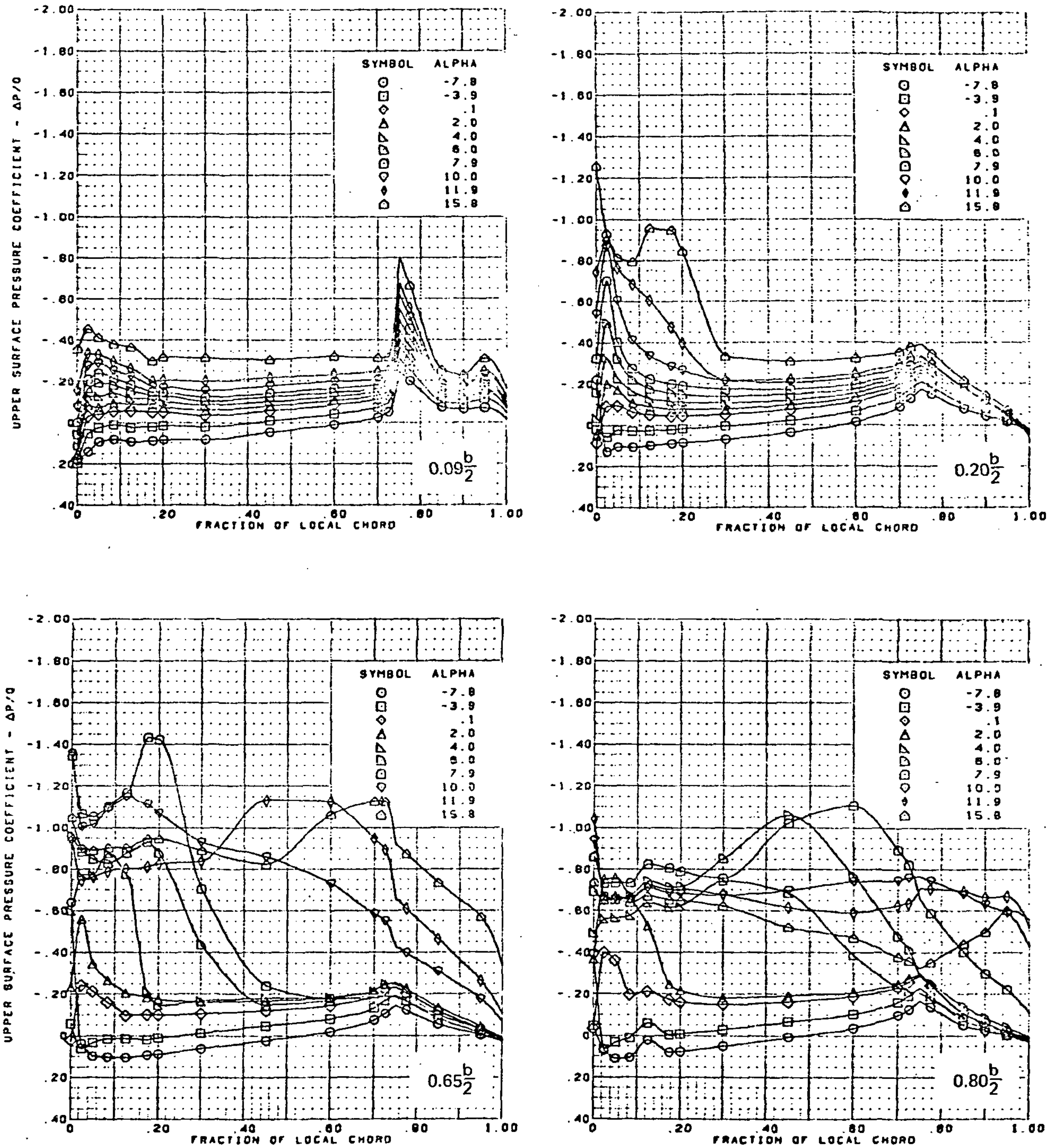
Figure 15.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = +8.3°; M = 0.40



Note: ΔC_p = increment between adjacent isobars

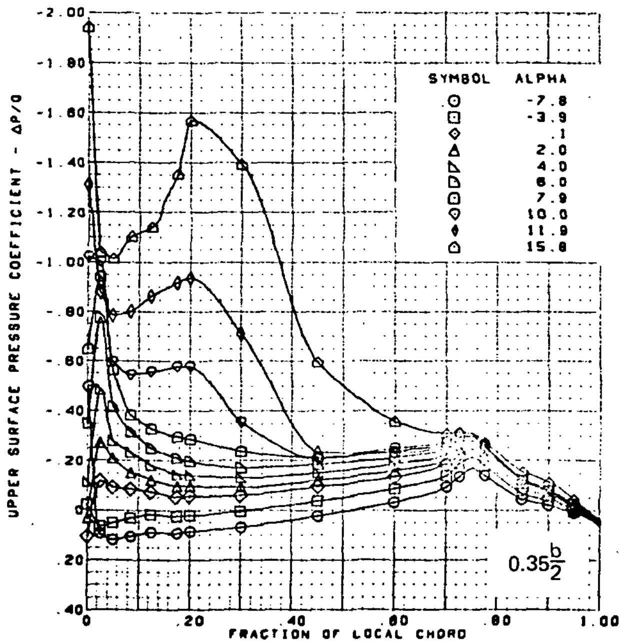
(b) Lower Surface Isobars

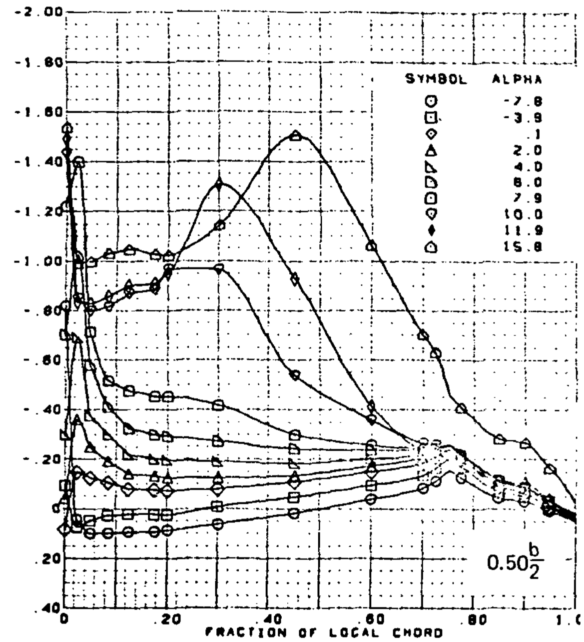
Figure 15.–(Continued)

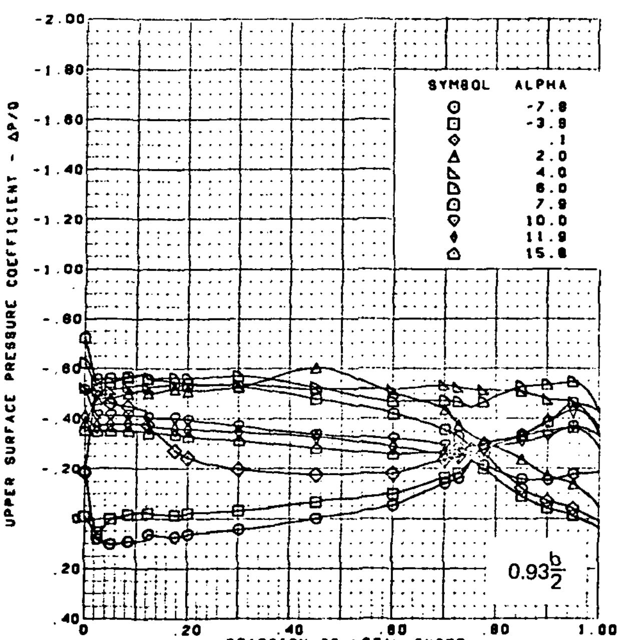


(c) Upper Surface Chordwise Pressure Distributions

Figure 15.–(Continued)



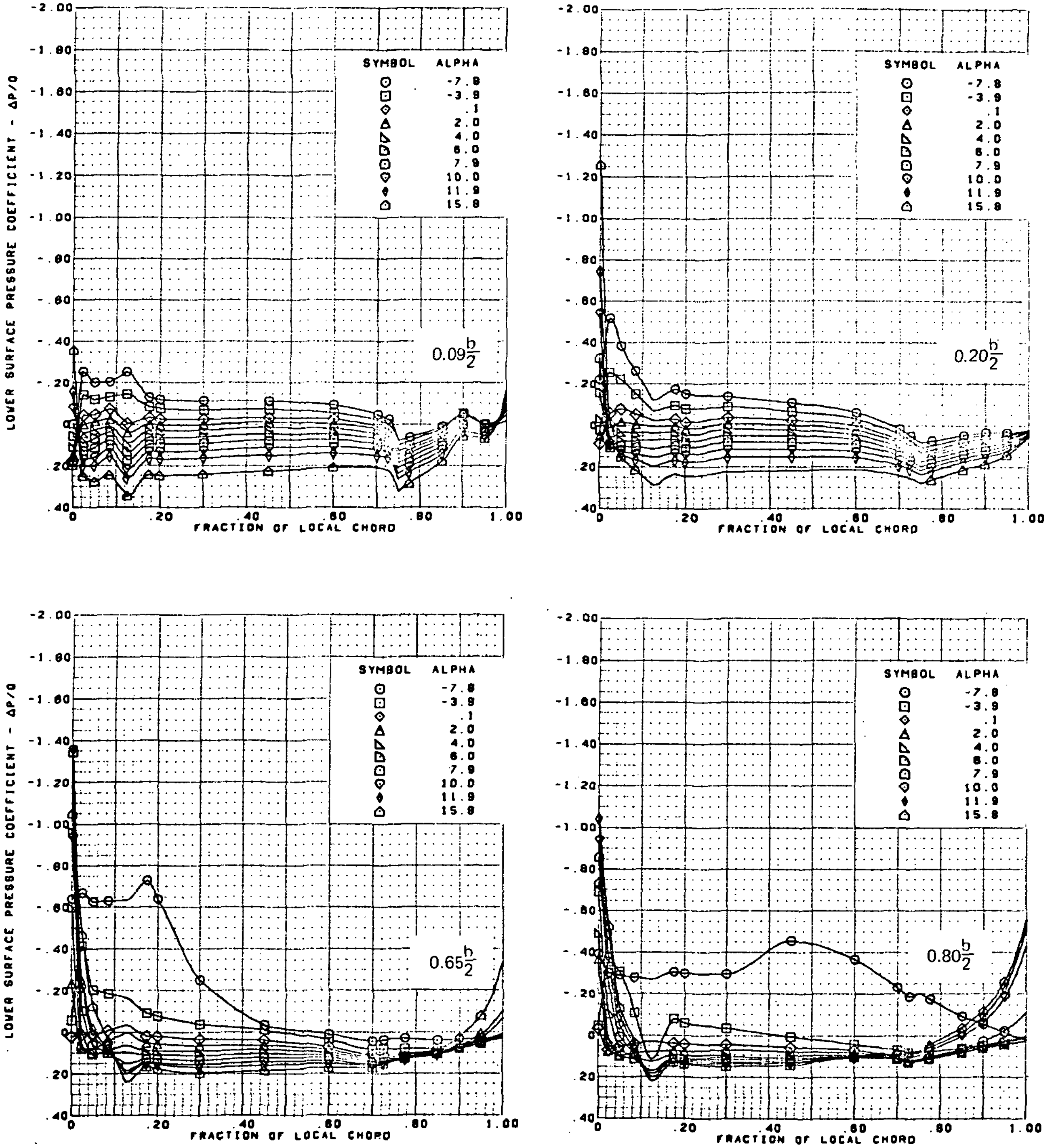




M = 0.40 (run 46)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

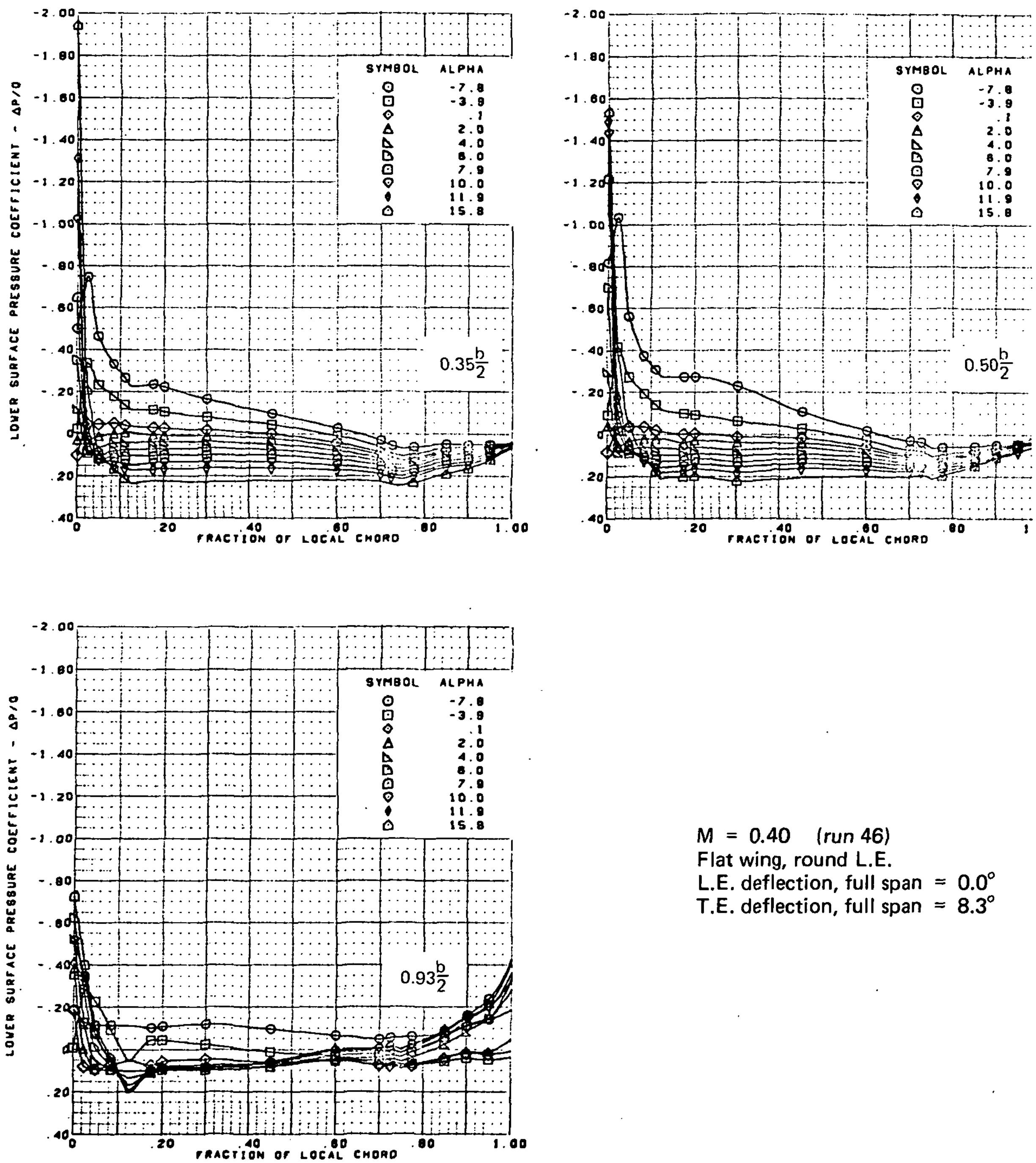
(c) (Concluded)

Figure 15.–(Continued)



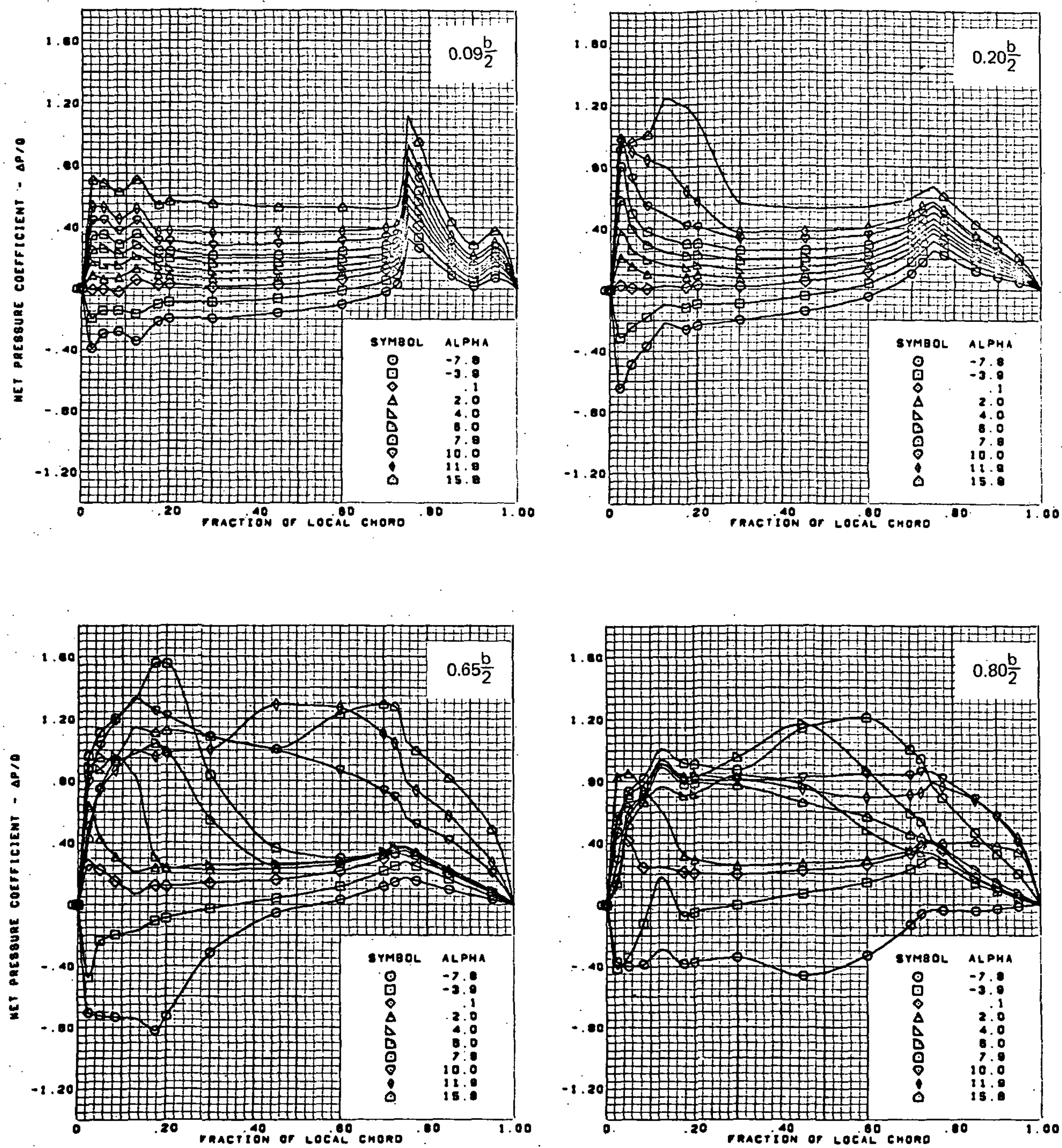
(d) Lower Surface Chordwise Pressure Distributions

Figure 15.–(Continued)



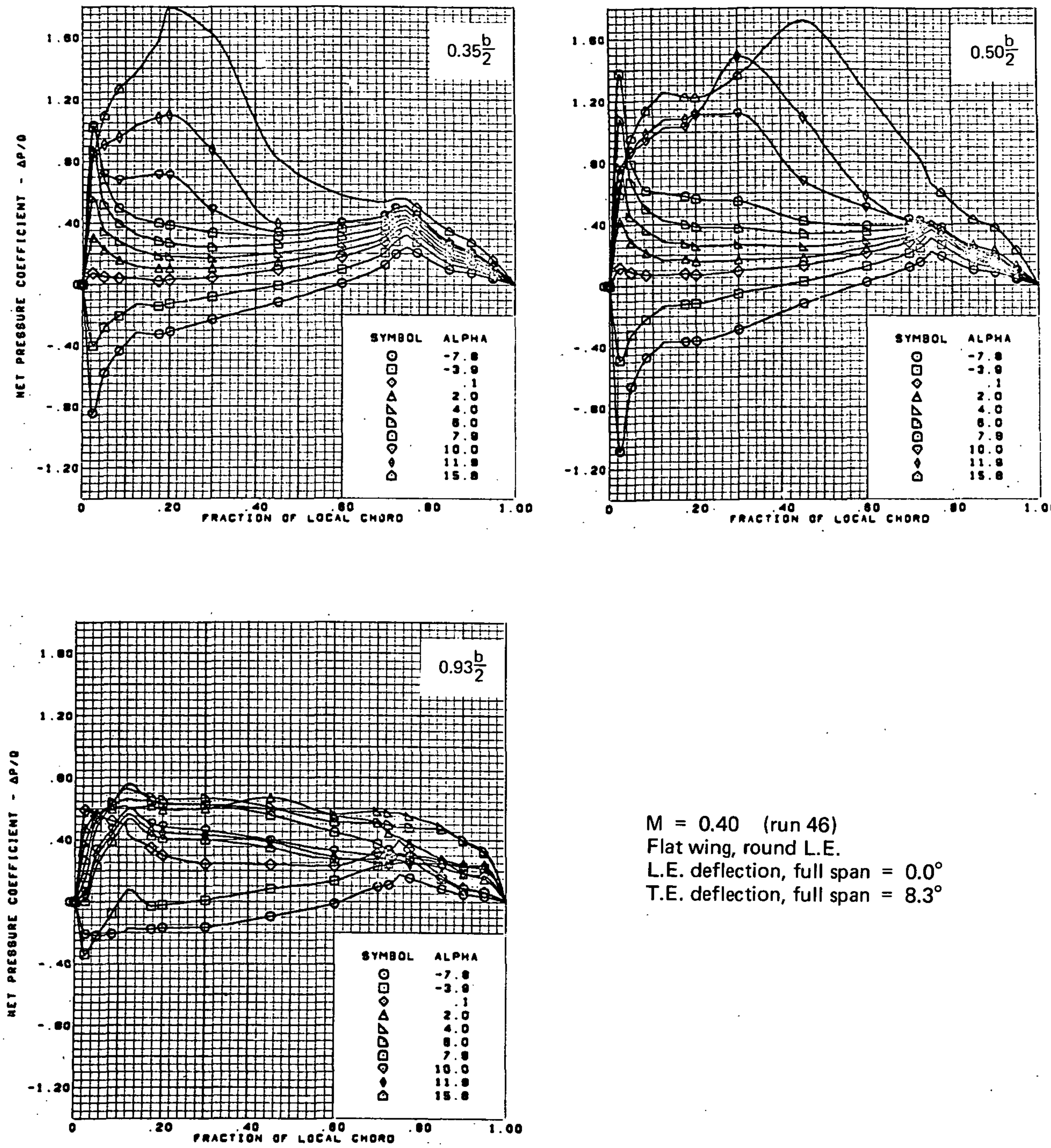
(d) (Concluded)

Figure 15.–(Continued)



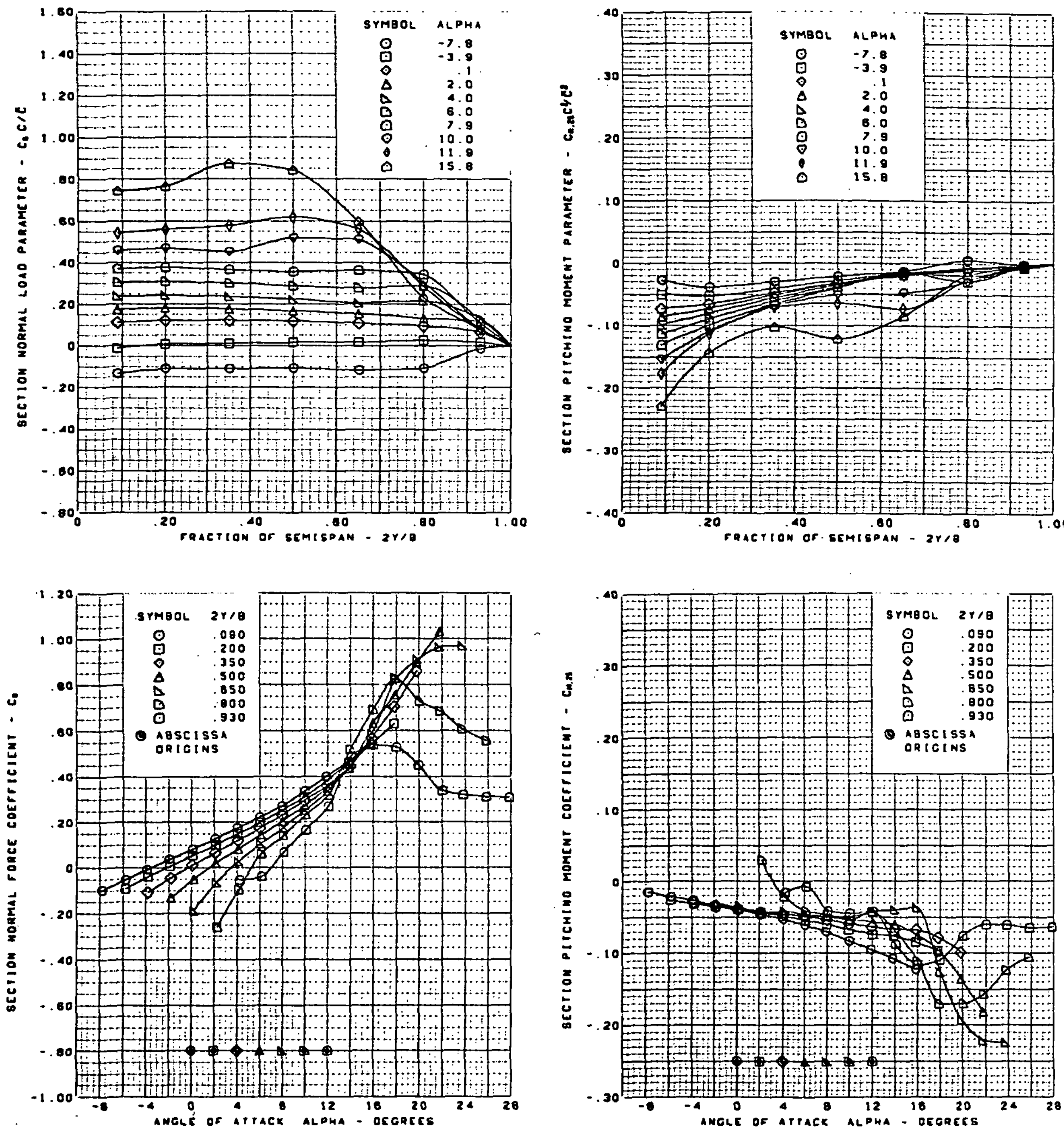
(e) Net Chordwise Pressure Distributions

Figure 15.-(Continued)



(e) (Concluded)

Figure 15.–(Continued)



M = 0.40 (run 46)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

(f) Spanload Distributions and Section Aerodynamic Coefficients

Figure 15.–(Concluded)

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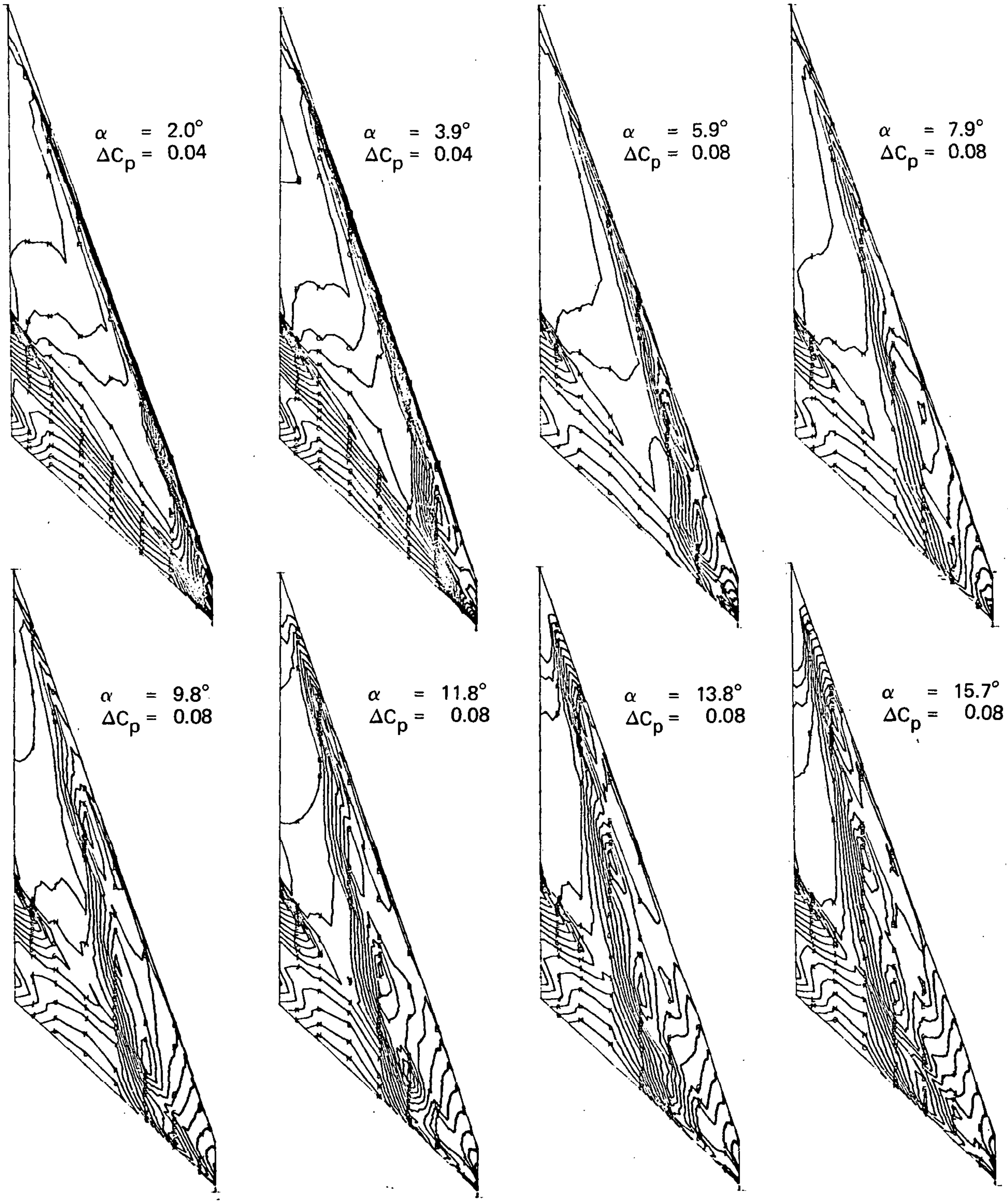
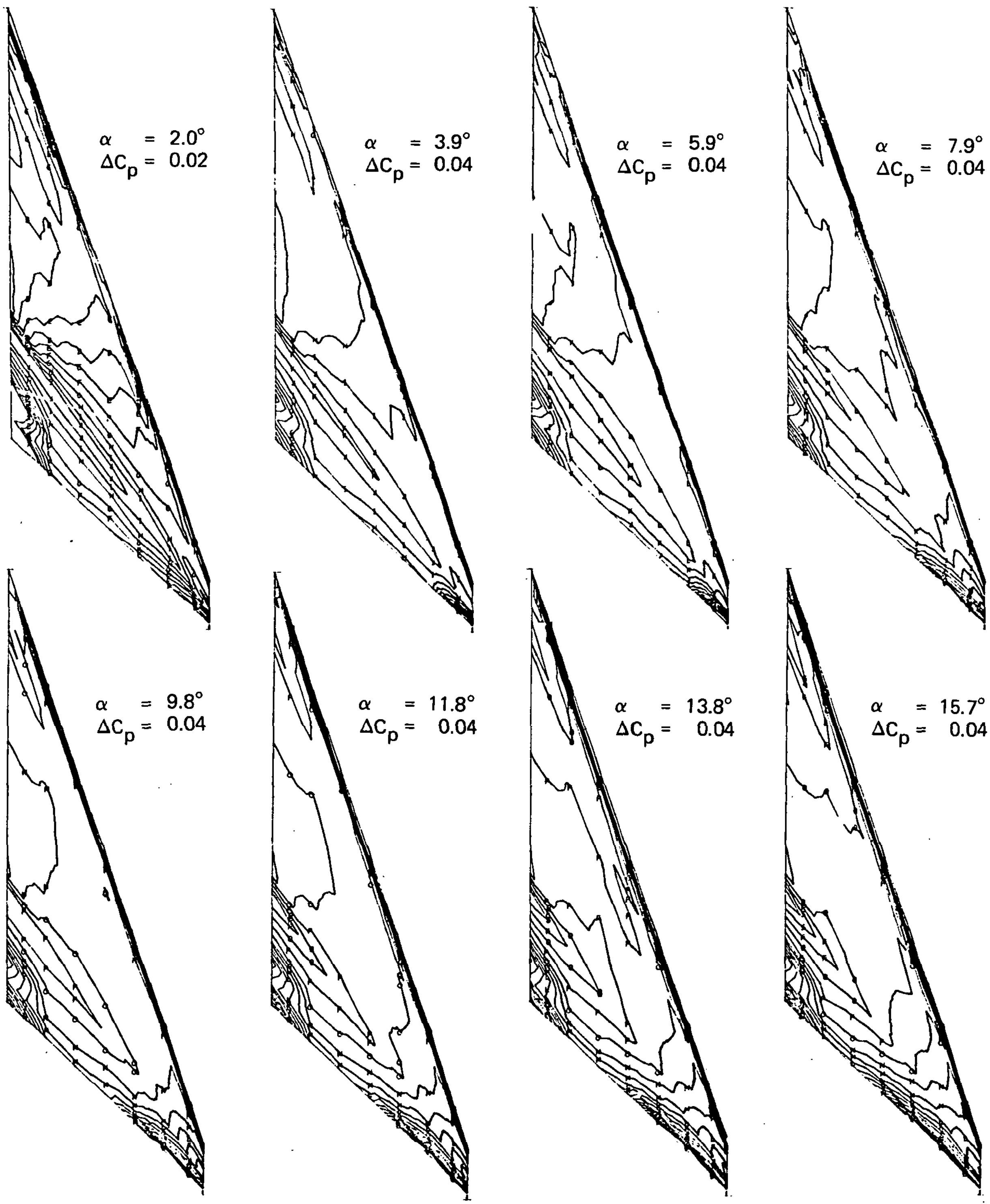


Note: ΔC_p = increment between adjacent isobars

(a) Upper Surface Isobars

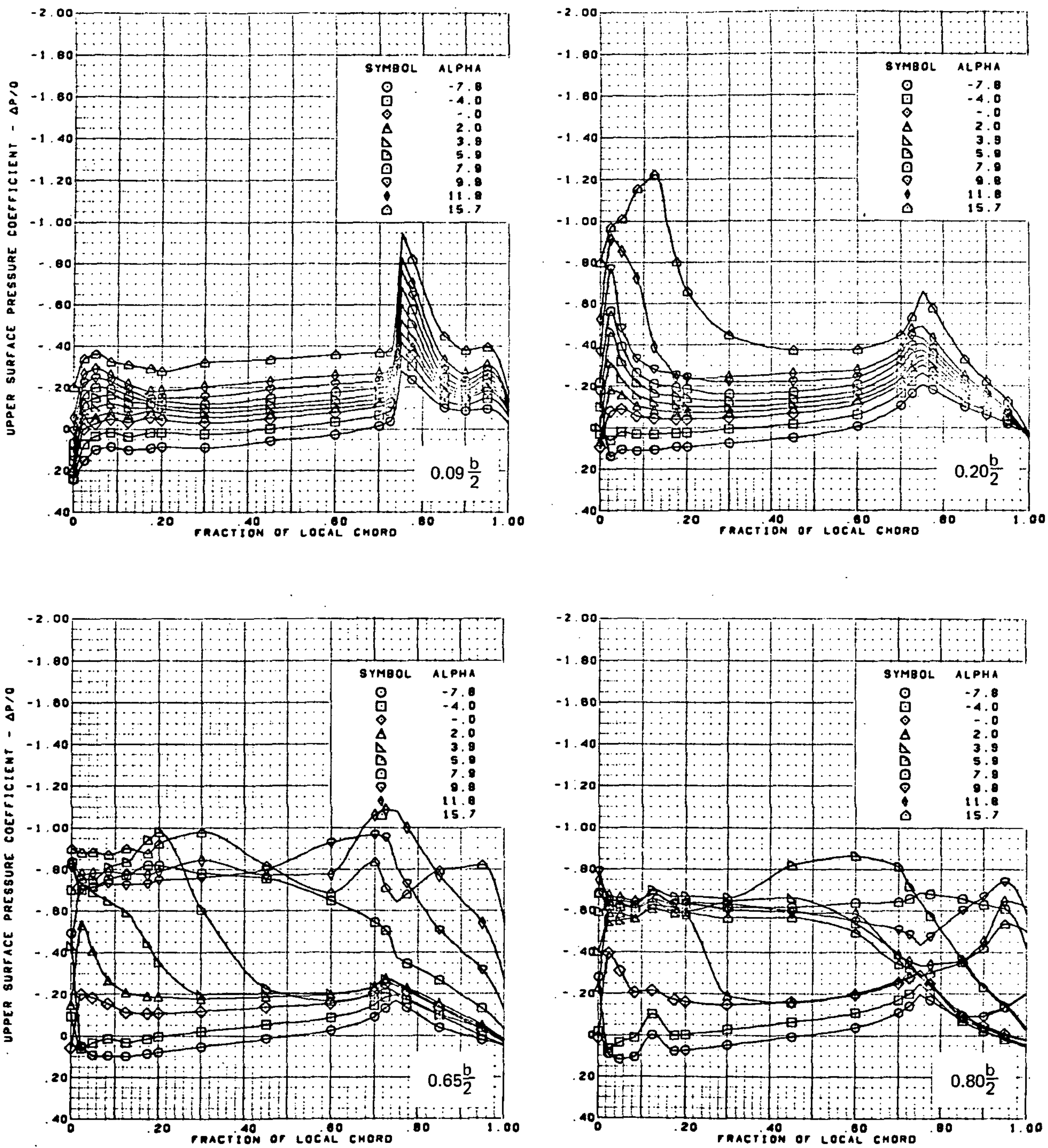
Figure 16.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = +8.3°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

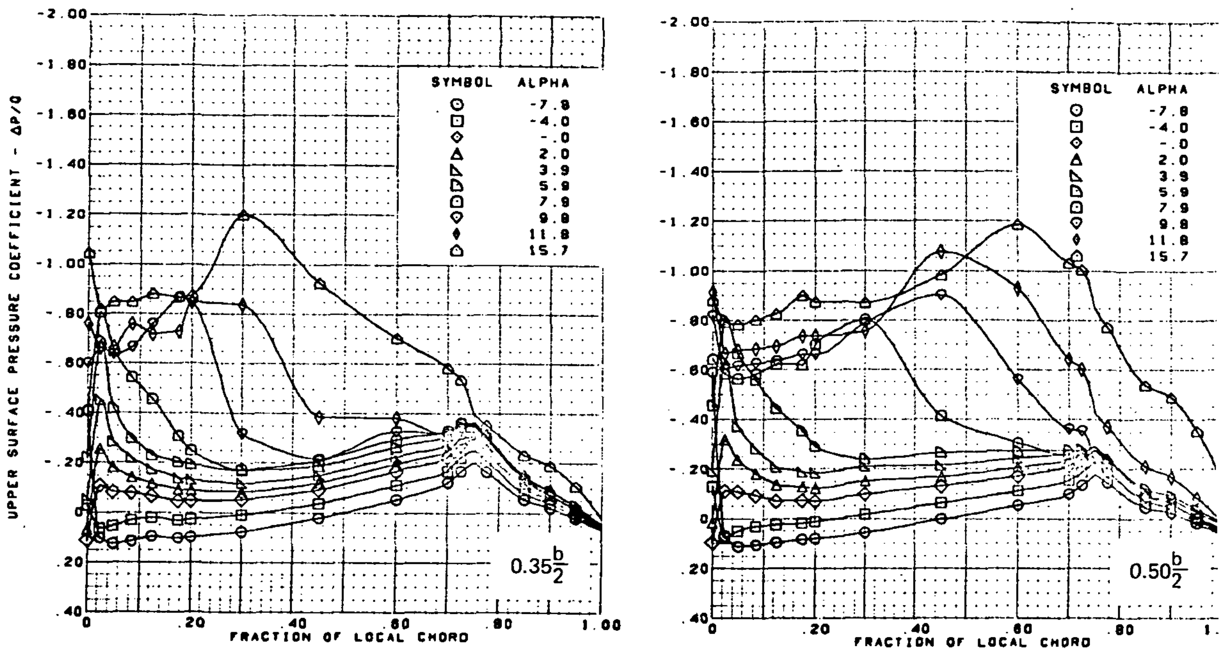
(b) Lower Surface Isobars

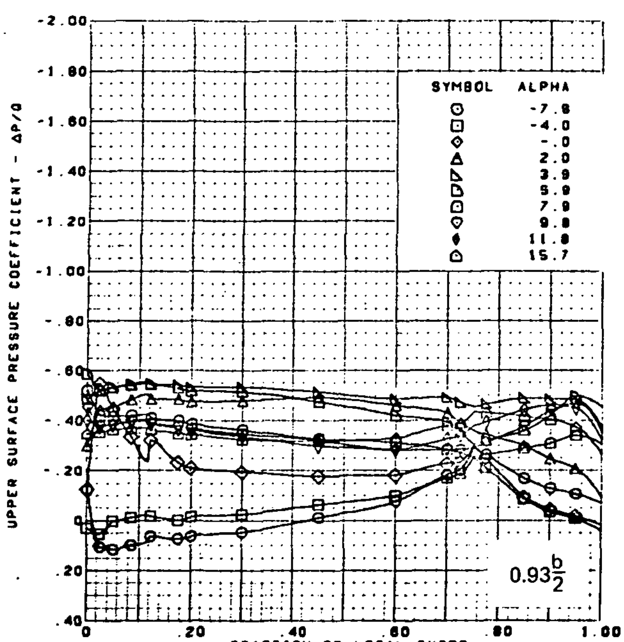
Figure 16.-(Continued)



(c) Upper Surface Chordwise Pressure Distributions

Figure 16.–(Continued)

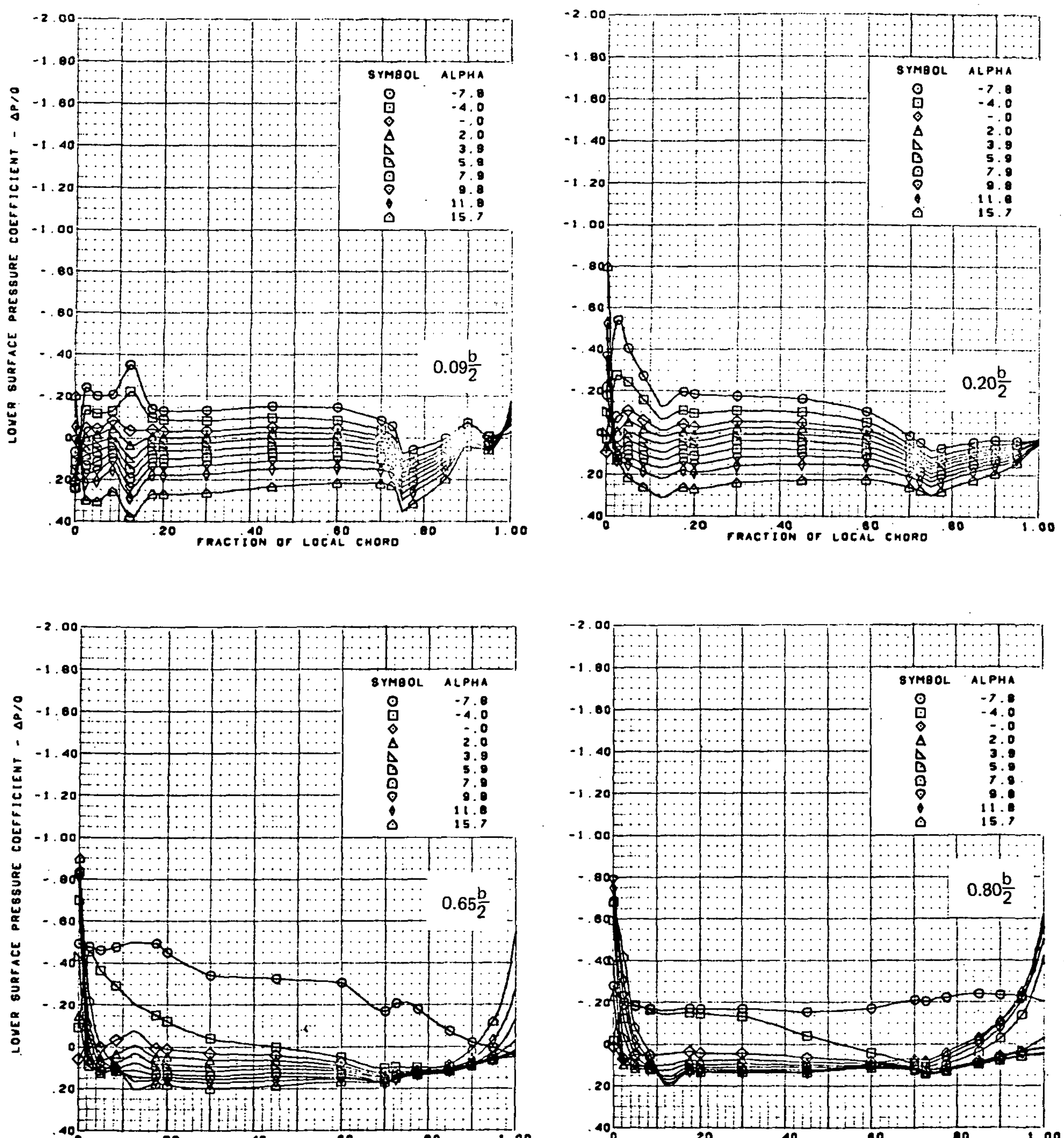




M = 0.85 (run 45)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

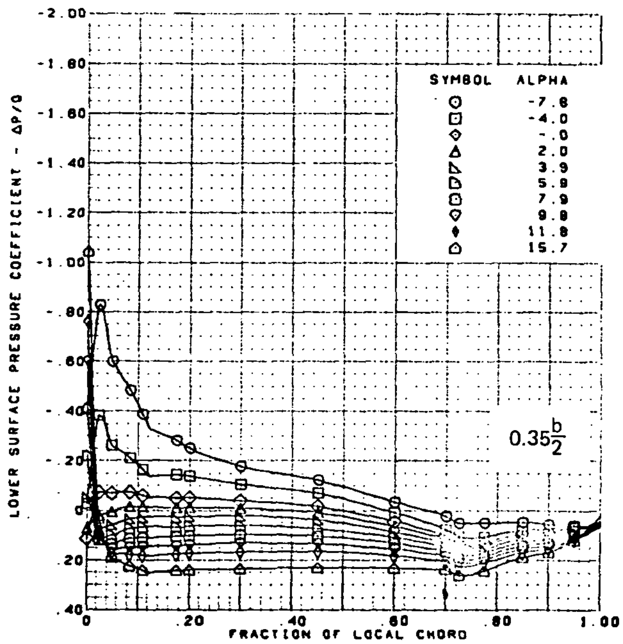
(e) (Concluded)

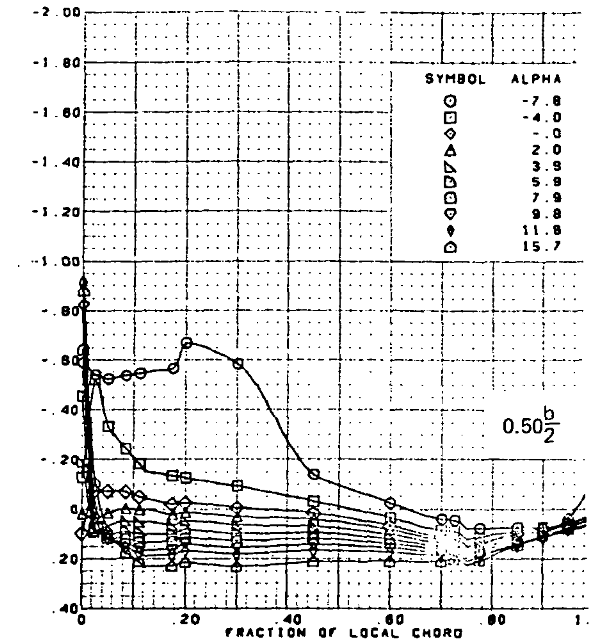
Figure 16.-(Continued)

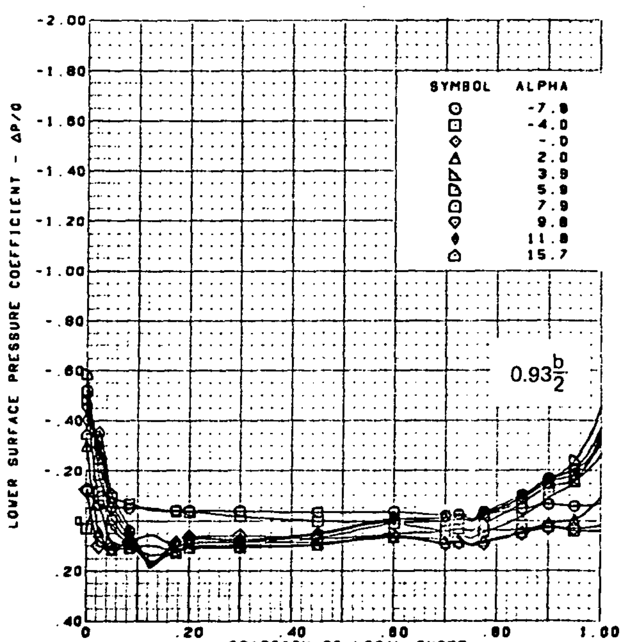


(d) Lower Surface Chordwise Pressure Distributions

Figure 16.–(Continued)



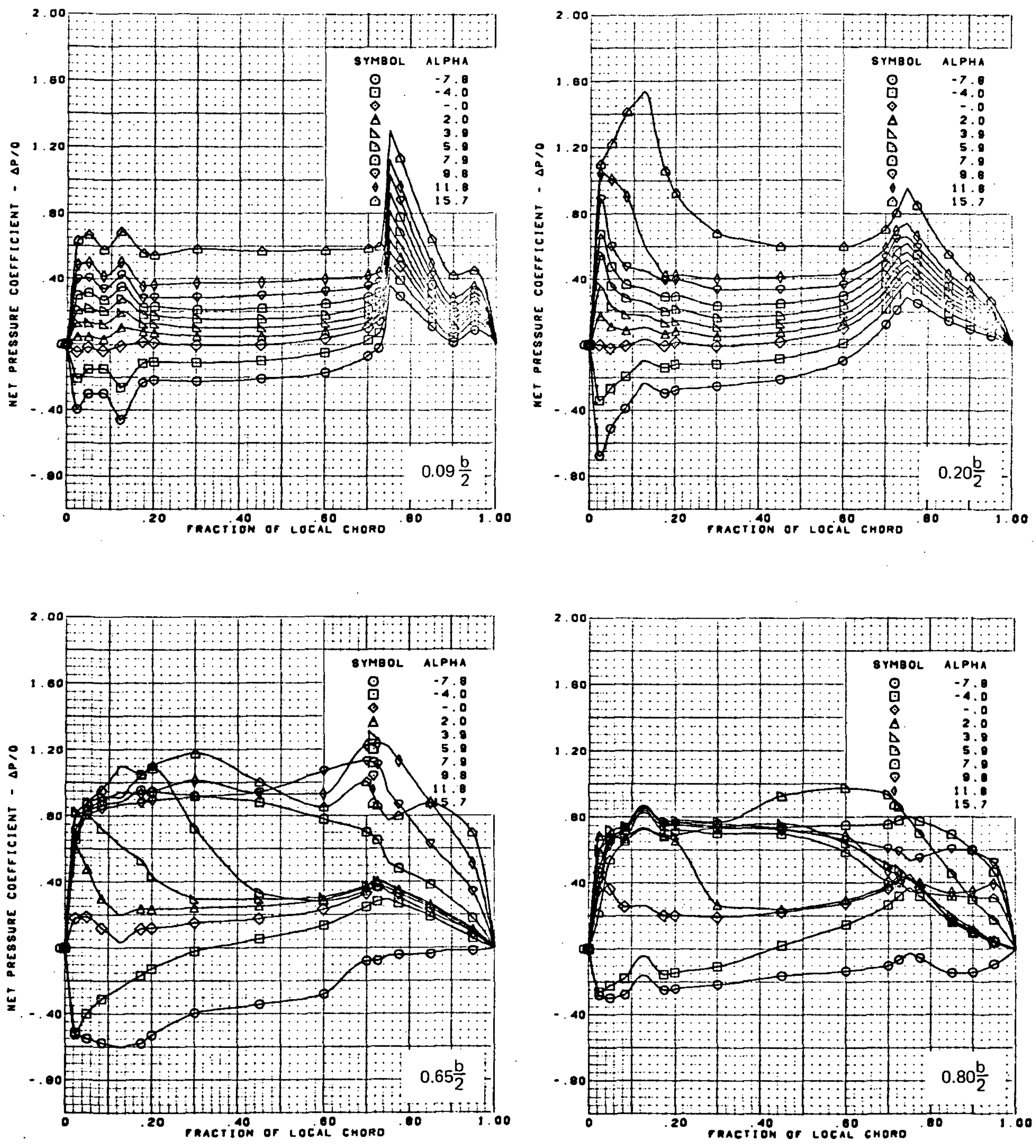




M = 0.85 (run 45)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

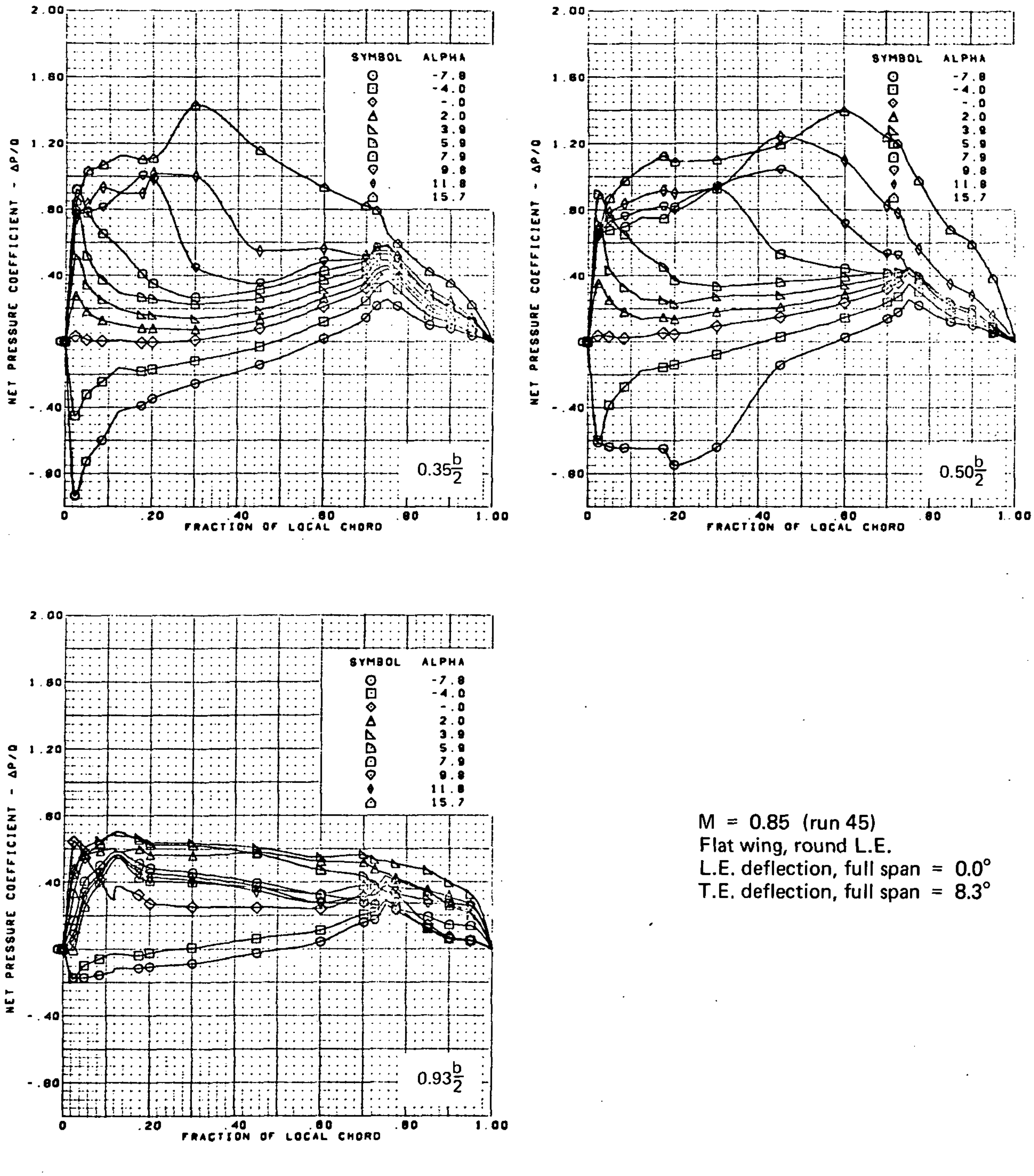
(d) (Concluded)

Figure 16.-(Continued)



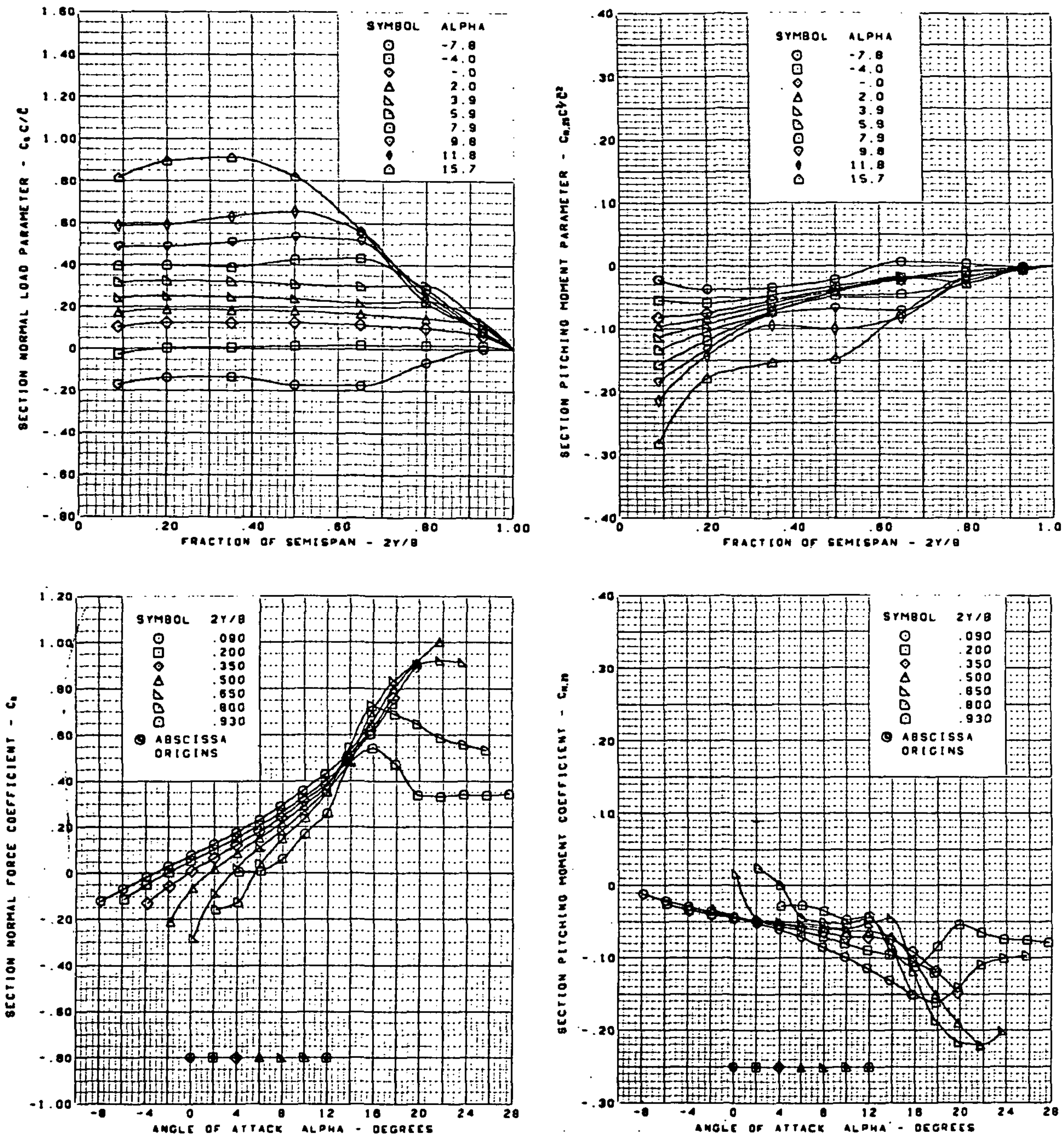
(e) Net Chordwise Pressure Distributions

Figure 16.–(Continued)



(e) (Concluded)

Figure 16.–(Continued)



M = 0.85 (run 45)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

(f) Spanload Distributions and Section Aerodynamic Coefficients

Figure 16.– (Concluded)

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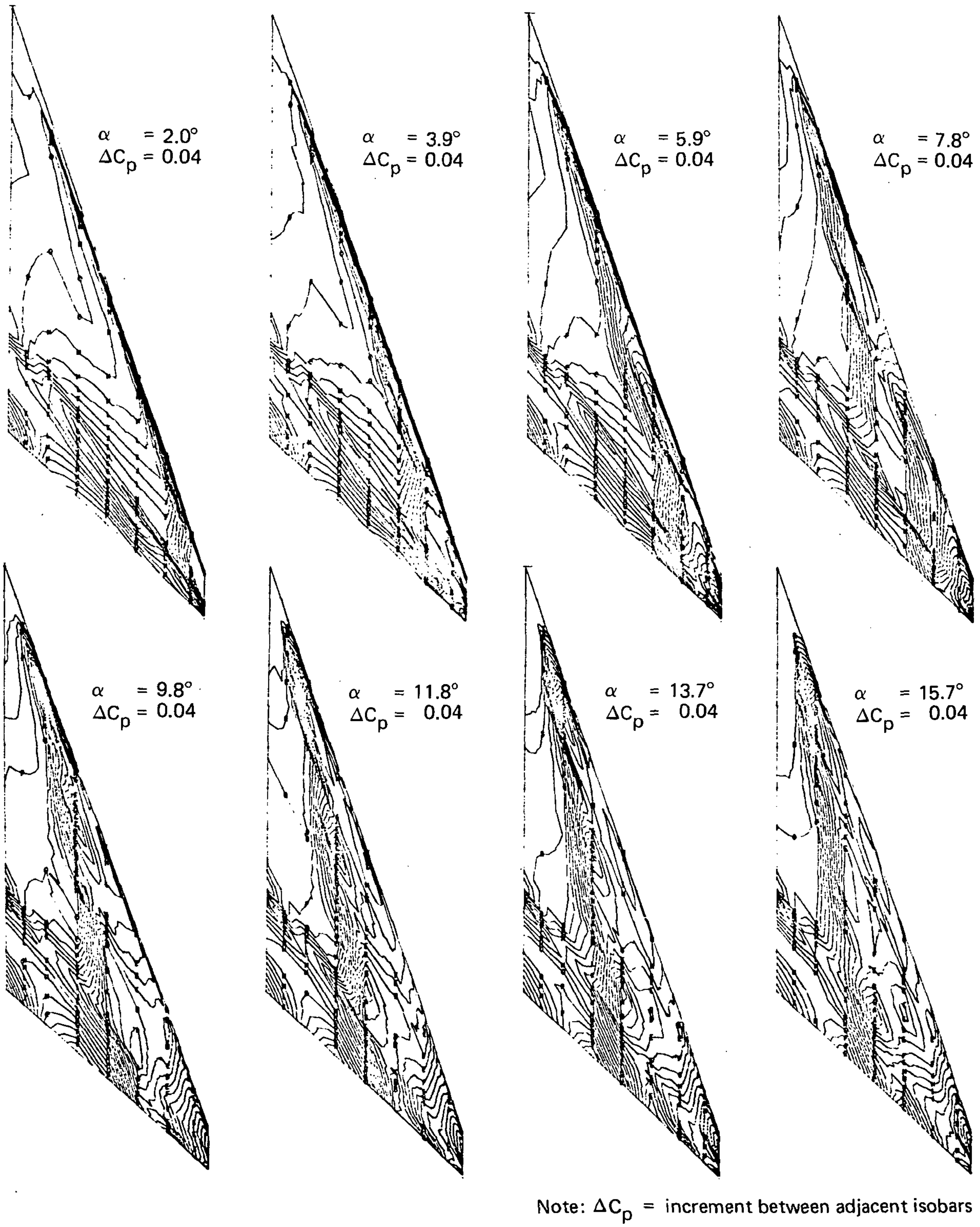
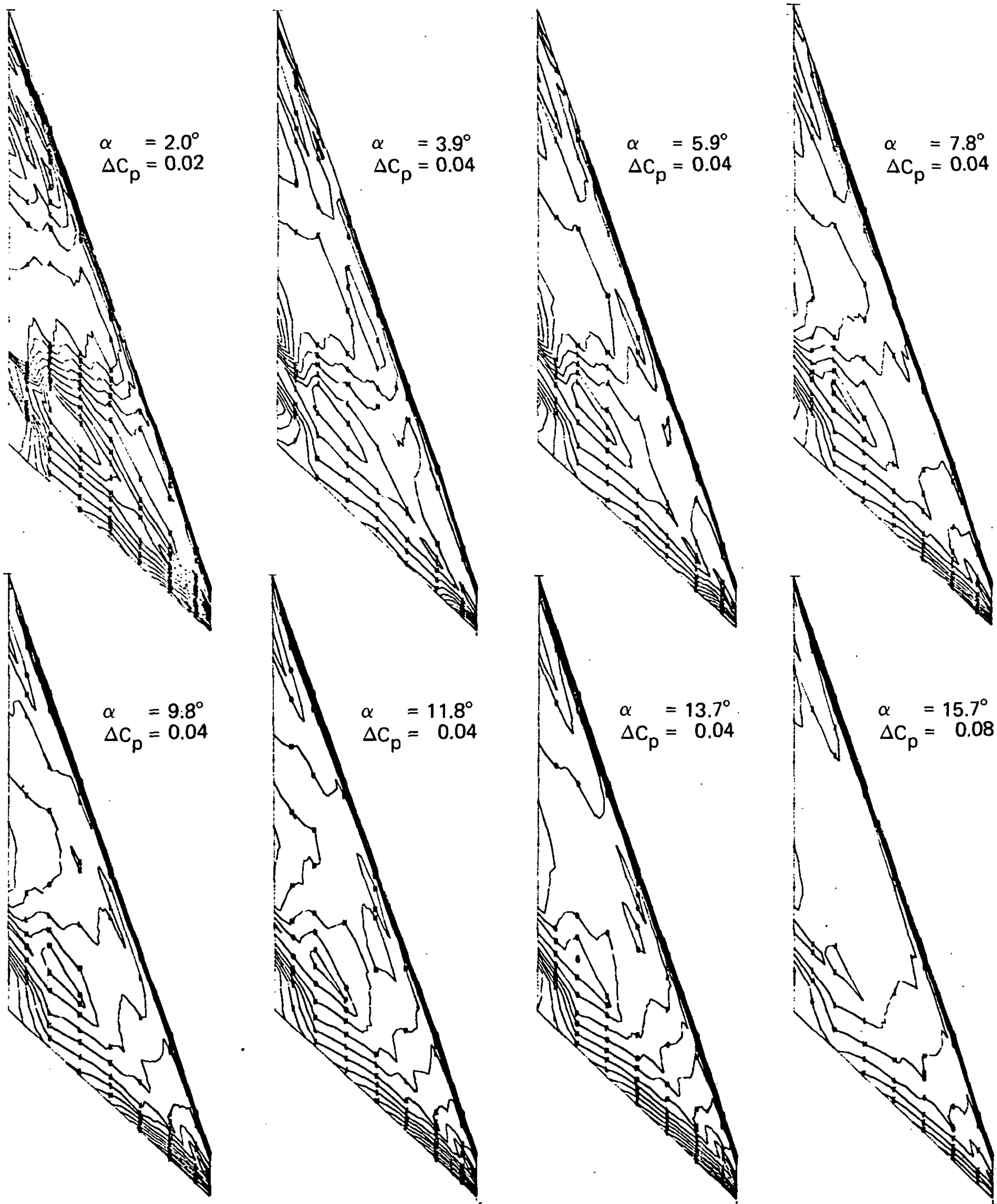


(a) Upper Surface Isobars

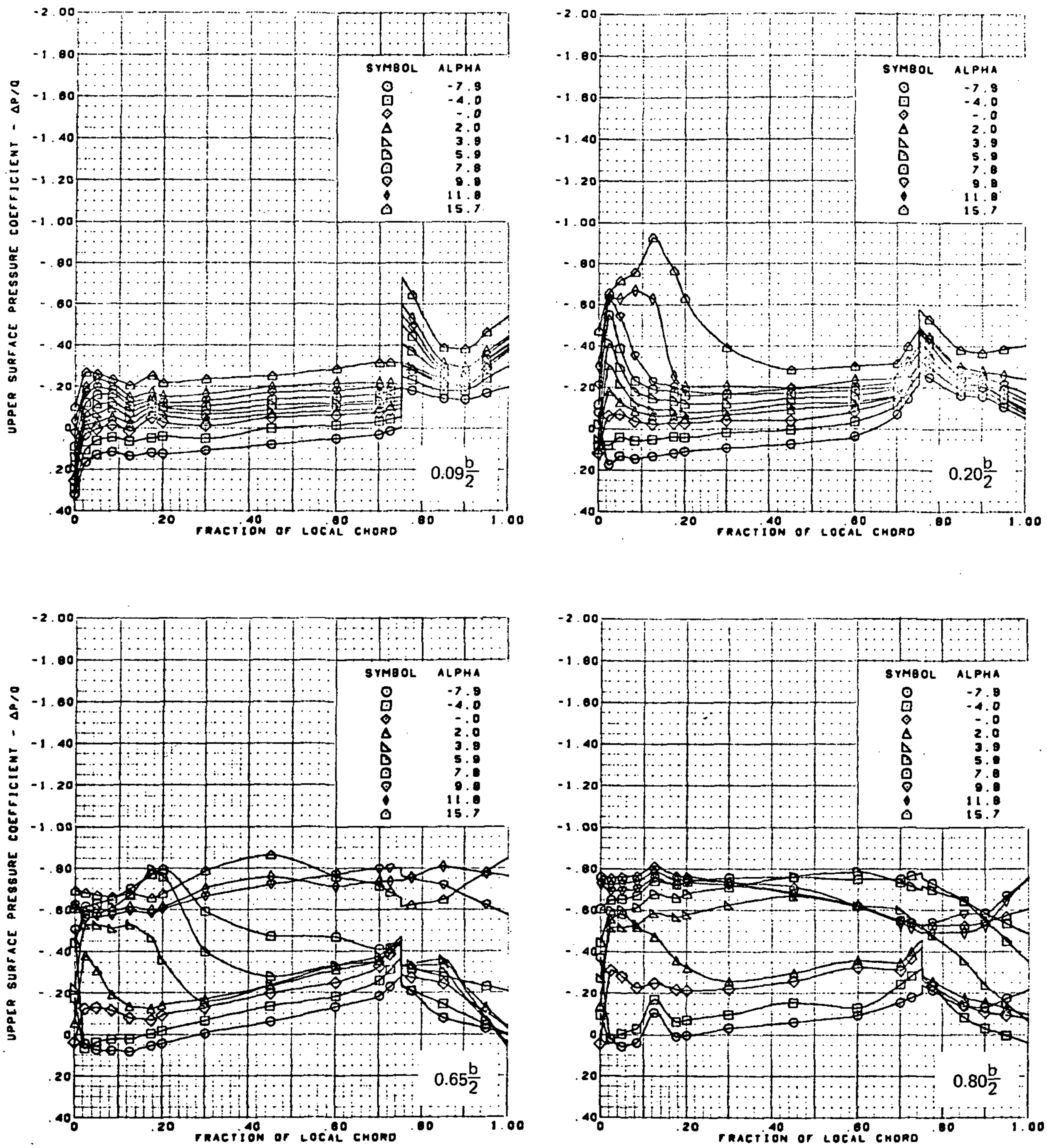
Figure 17.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = +8.3°; M = 1.05



Note: ΔC_p = increment between adjacent isobars

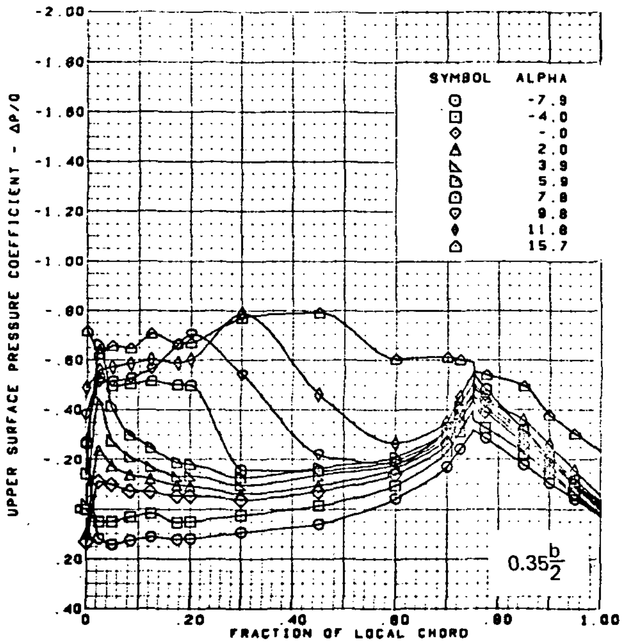
(b) Lower Surface Isobars

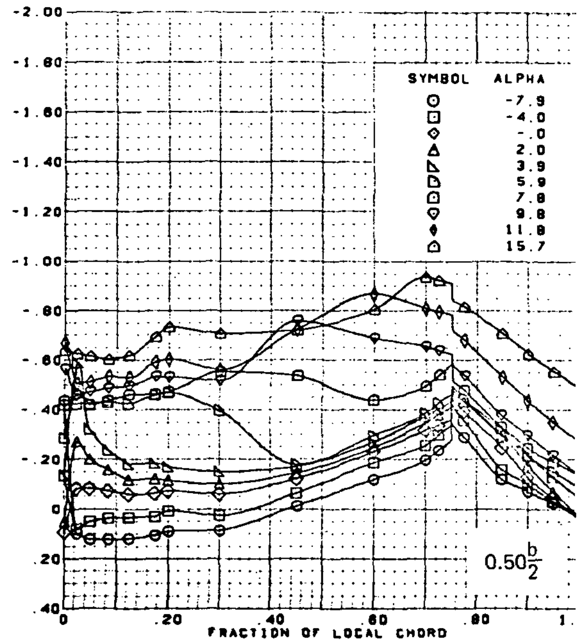
Figure 17.–(Continued)

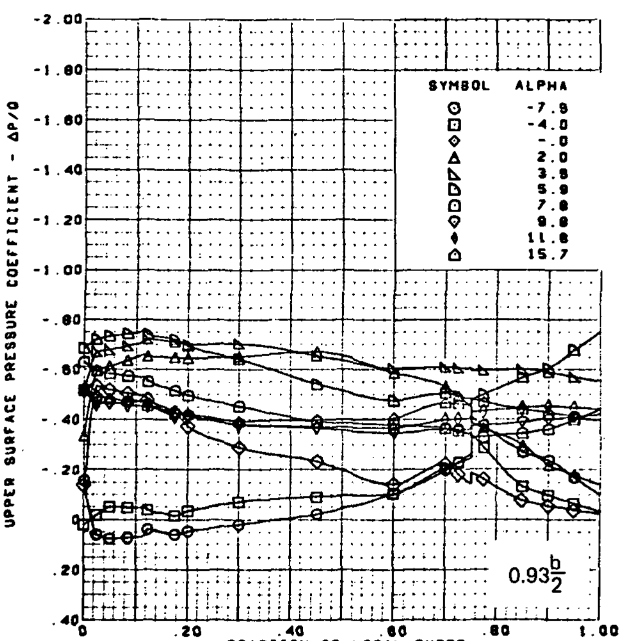


(c) Upper Surface Chordwise Pressure Distributions

Figure 17.–(Continued)



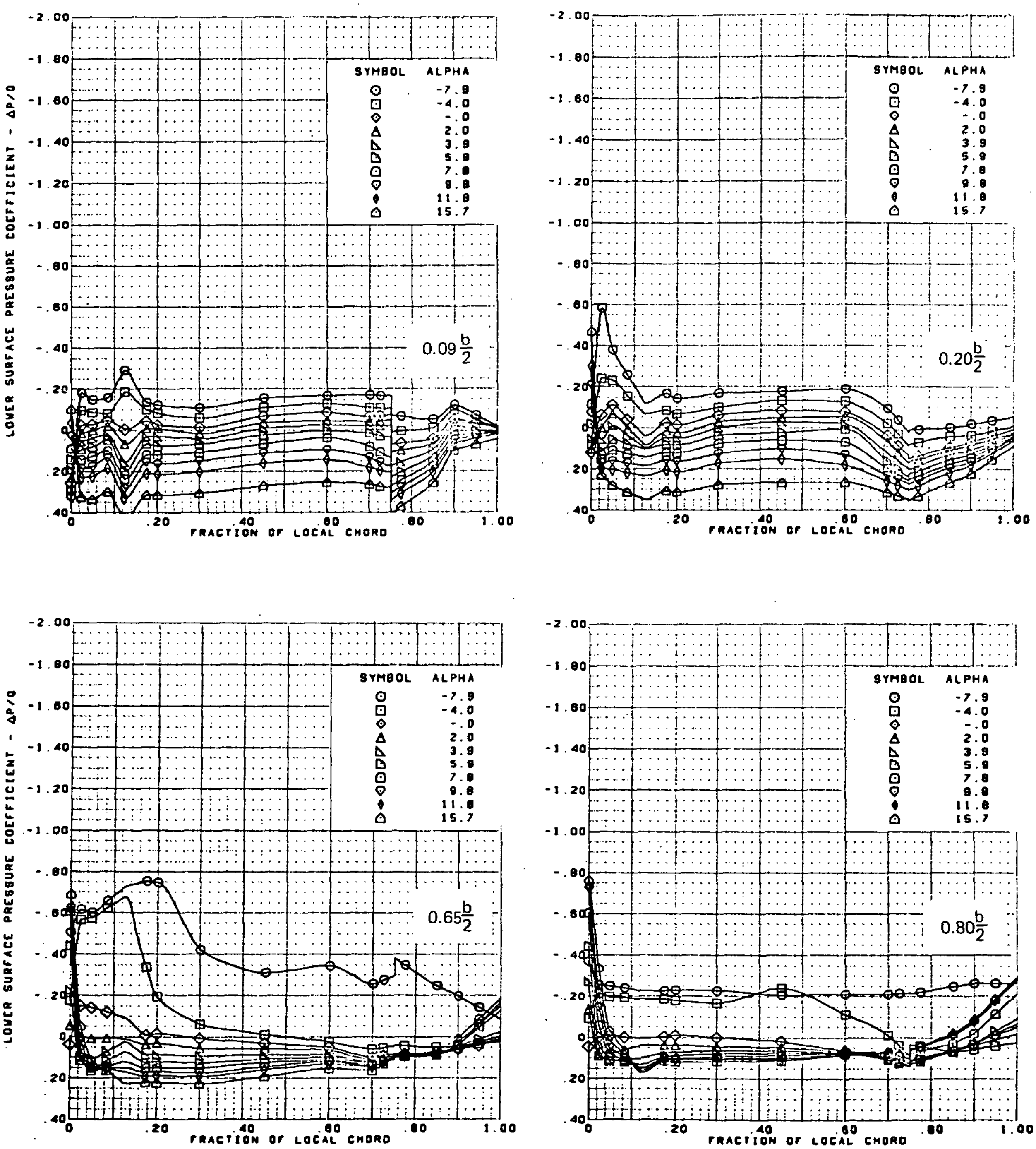




M = 1.05 (run 42)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

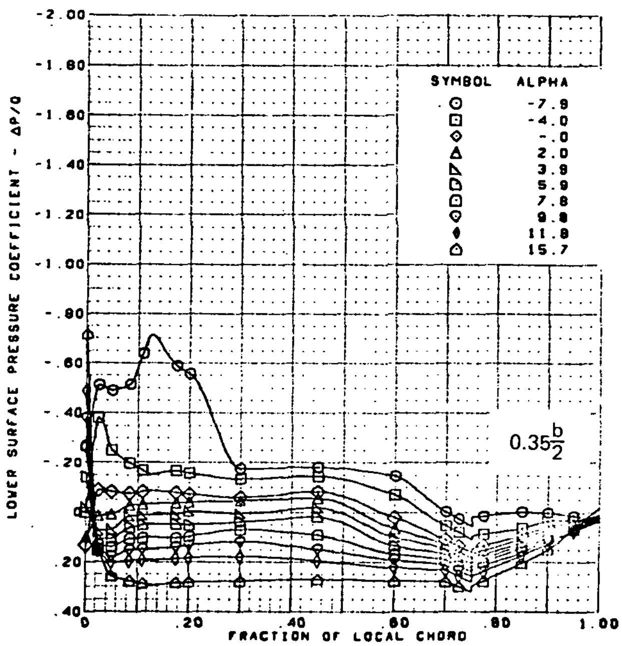
(c) (Concluded)

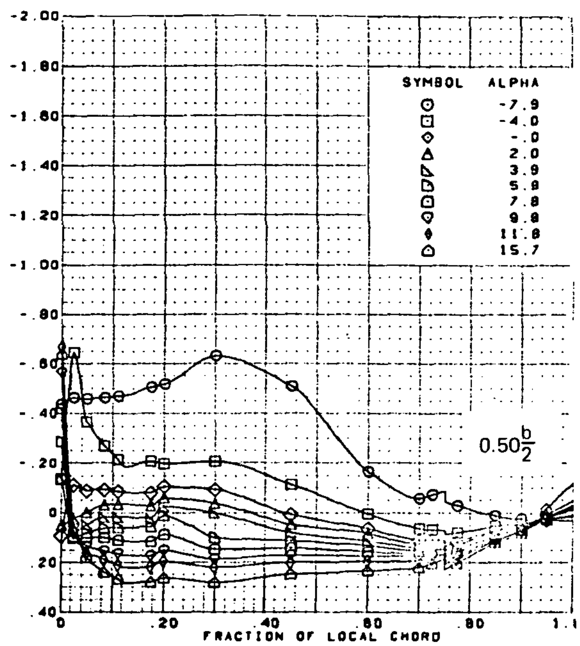
Figure 17.–(Continued)

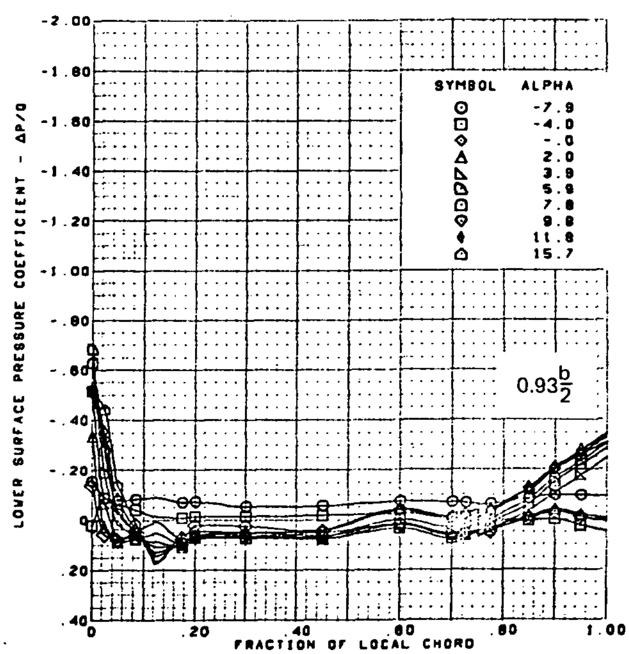


(d) Lower Surface Chordwise Pressure Distributions

Figure 17.–(Continued)



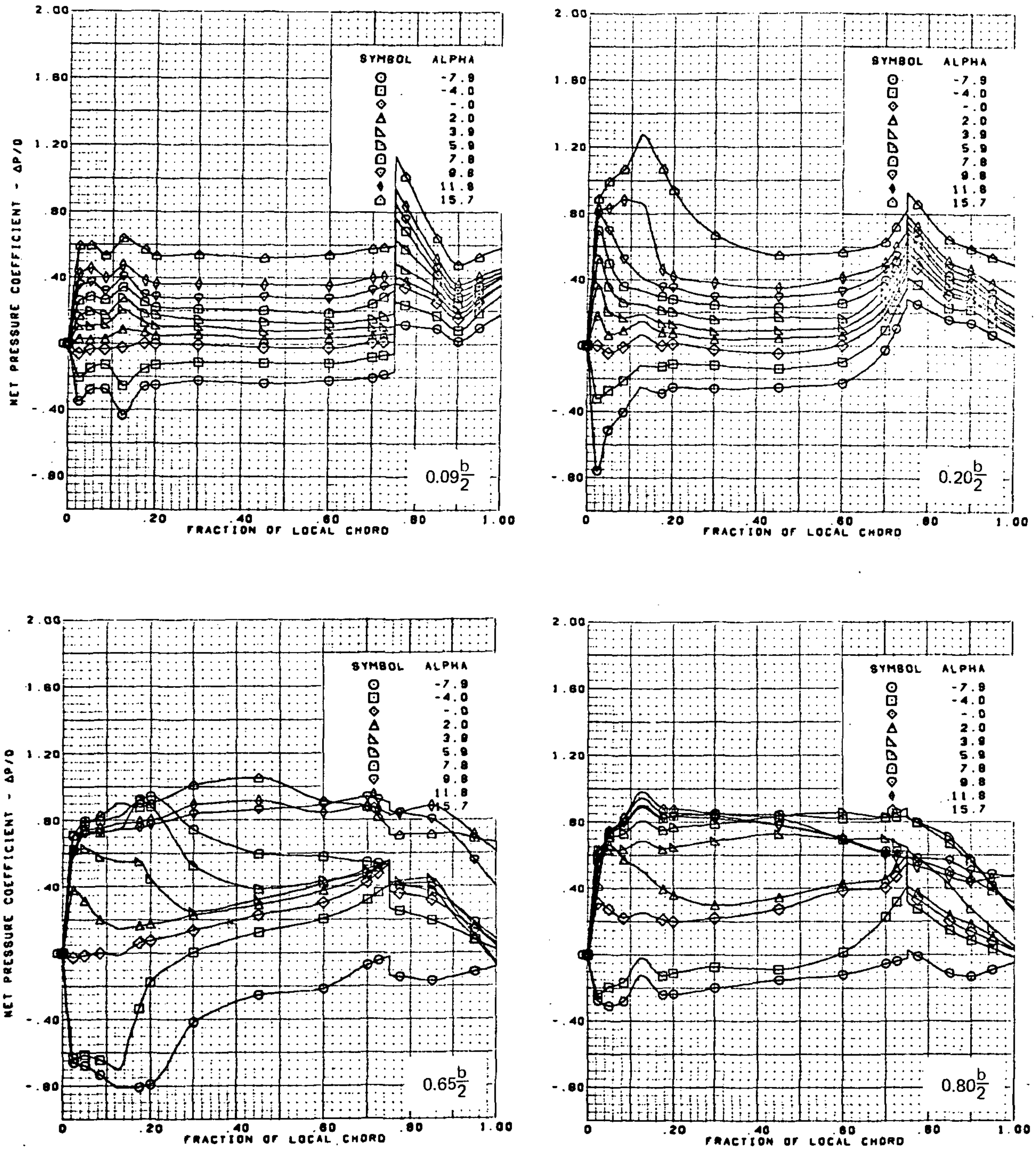




M = 1.05 (run 42)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

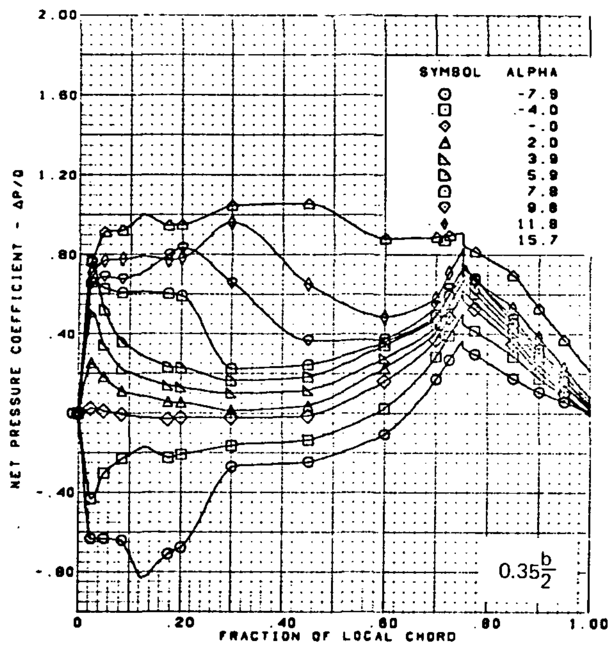
(d) (Concluded)

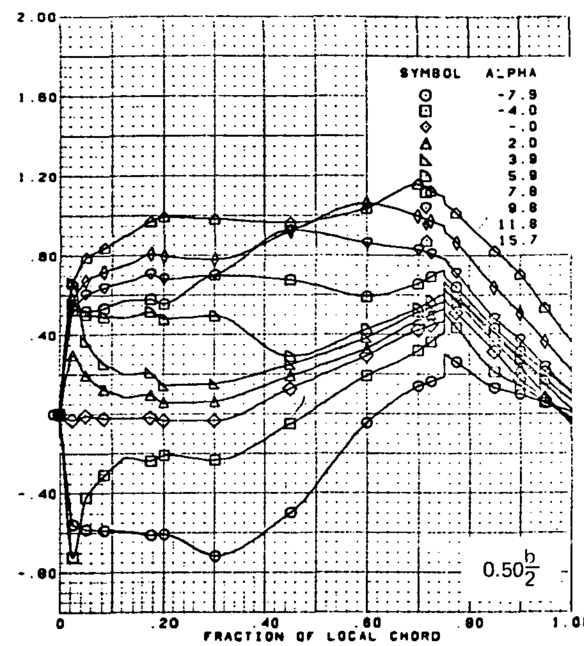
Figure 17.-(Continued)

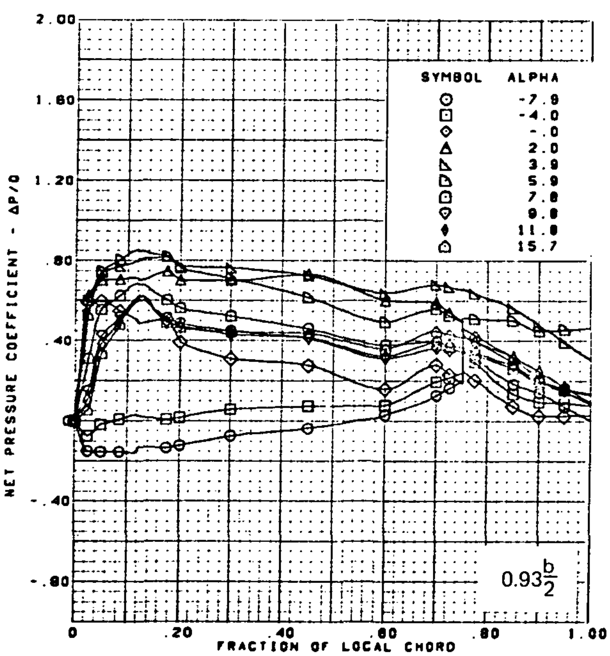


(e) Net Chordwise Pressure Distributions

Figure 17.–(Continued)



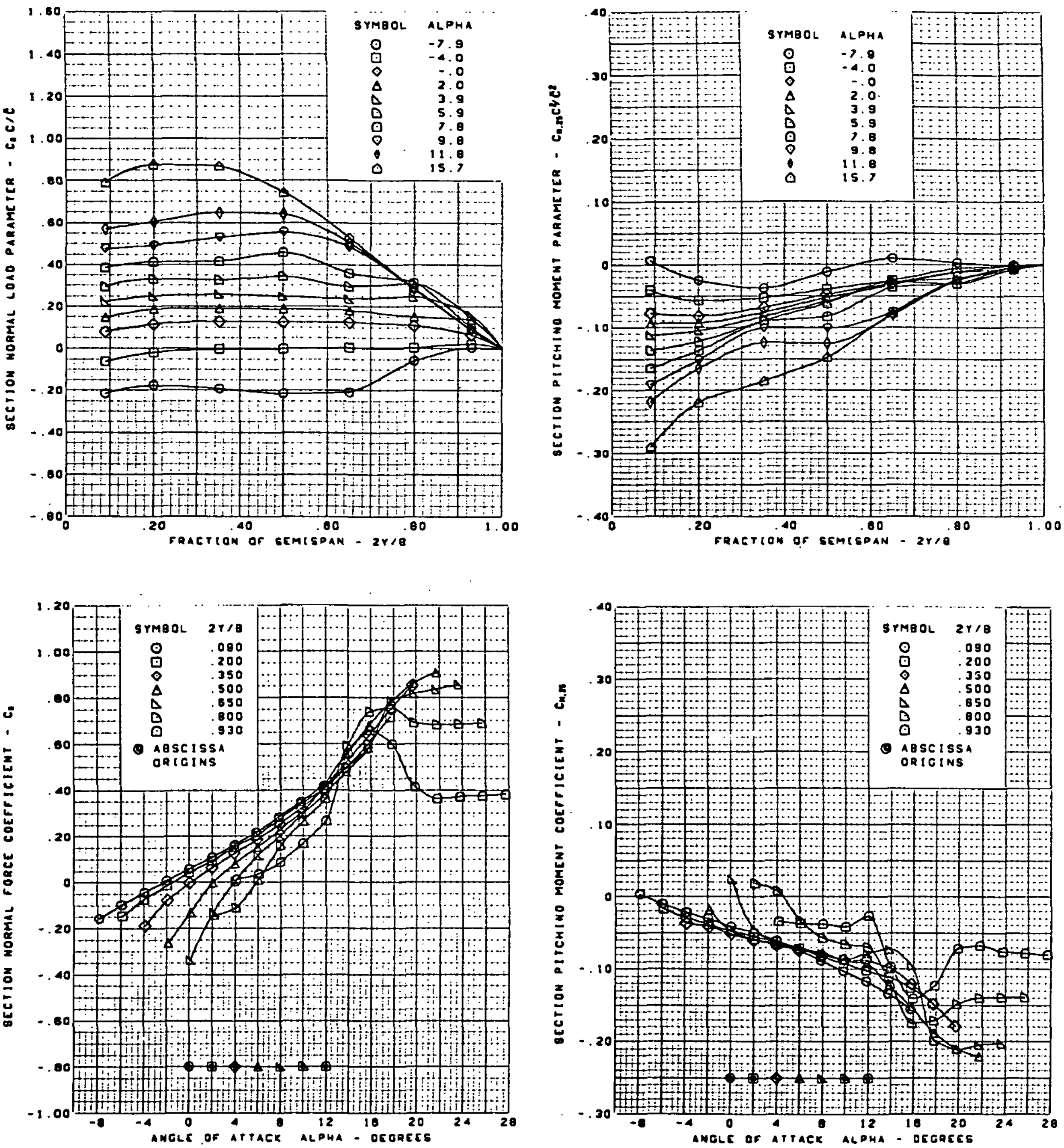




M = 1.05 (run 42)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

(e) (Concluded)

Figure 17.–(Continued)



M = 1.05 (run 42)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

(f) Spanload Distributions and Section Aerodynamic Coefficients

Figure 17.– (Concluded)

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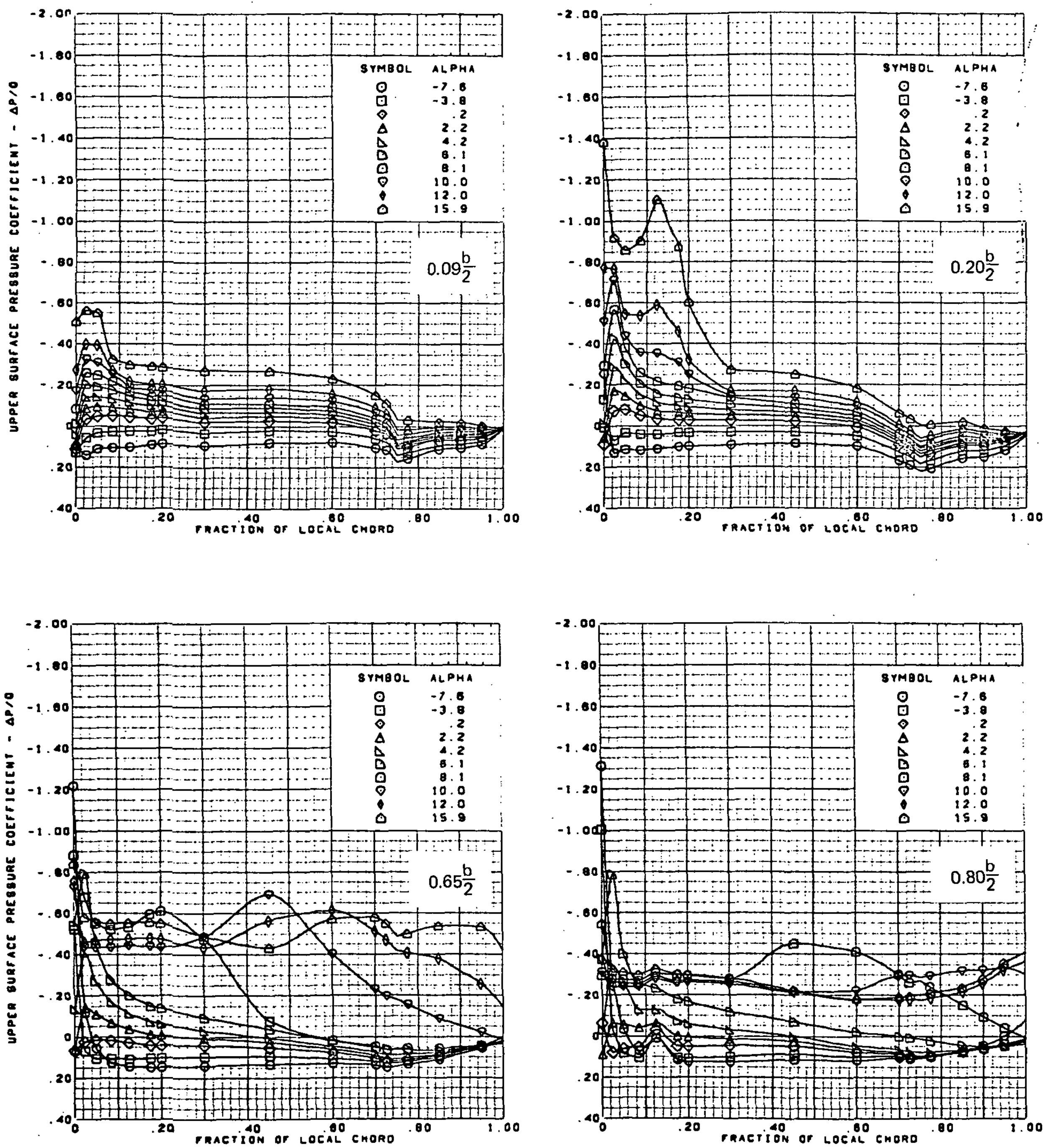
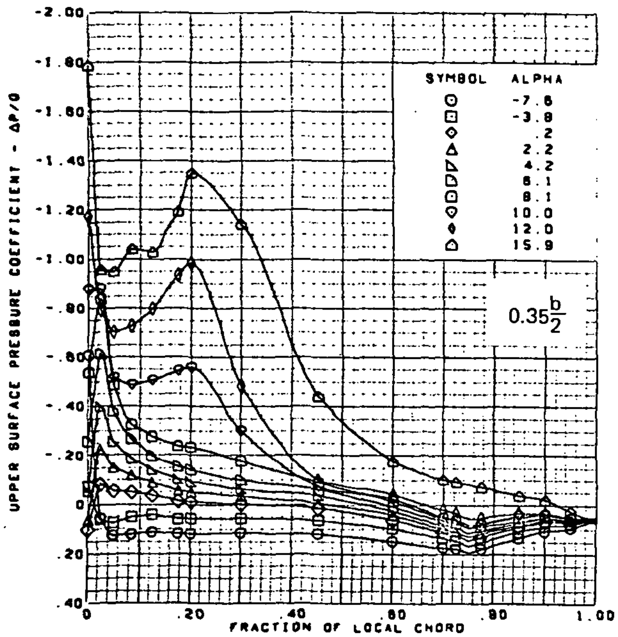
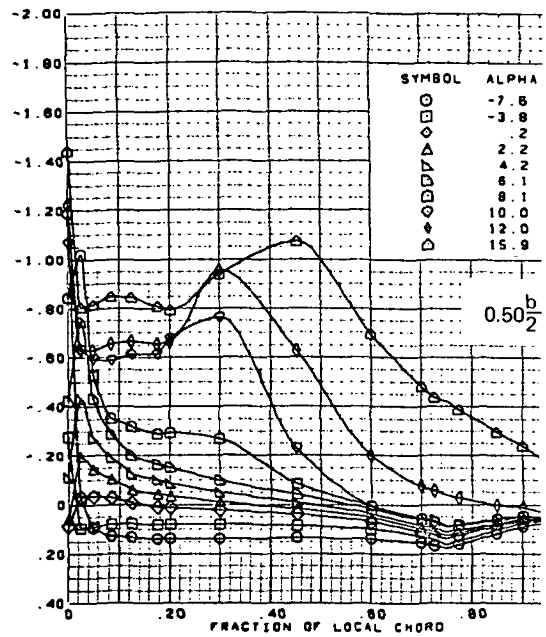
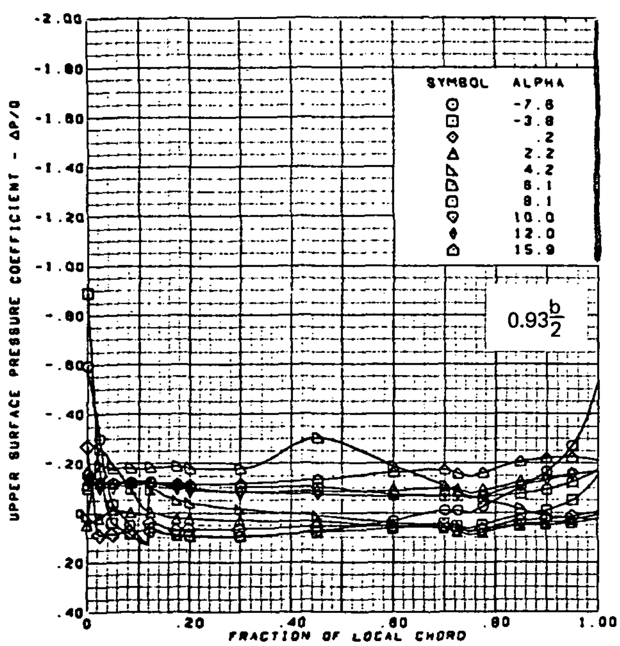


(a) Upper Surface Chordwise Pressure Distributions

Figure 18.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = -8.3°; M = 0.40



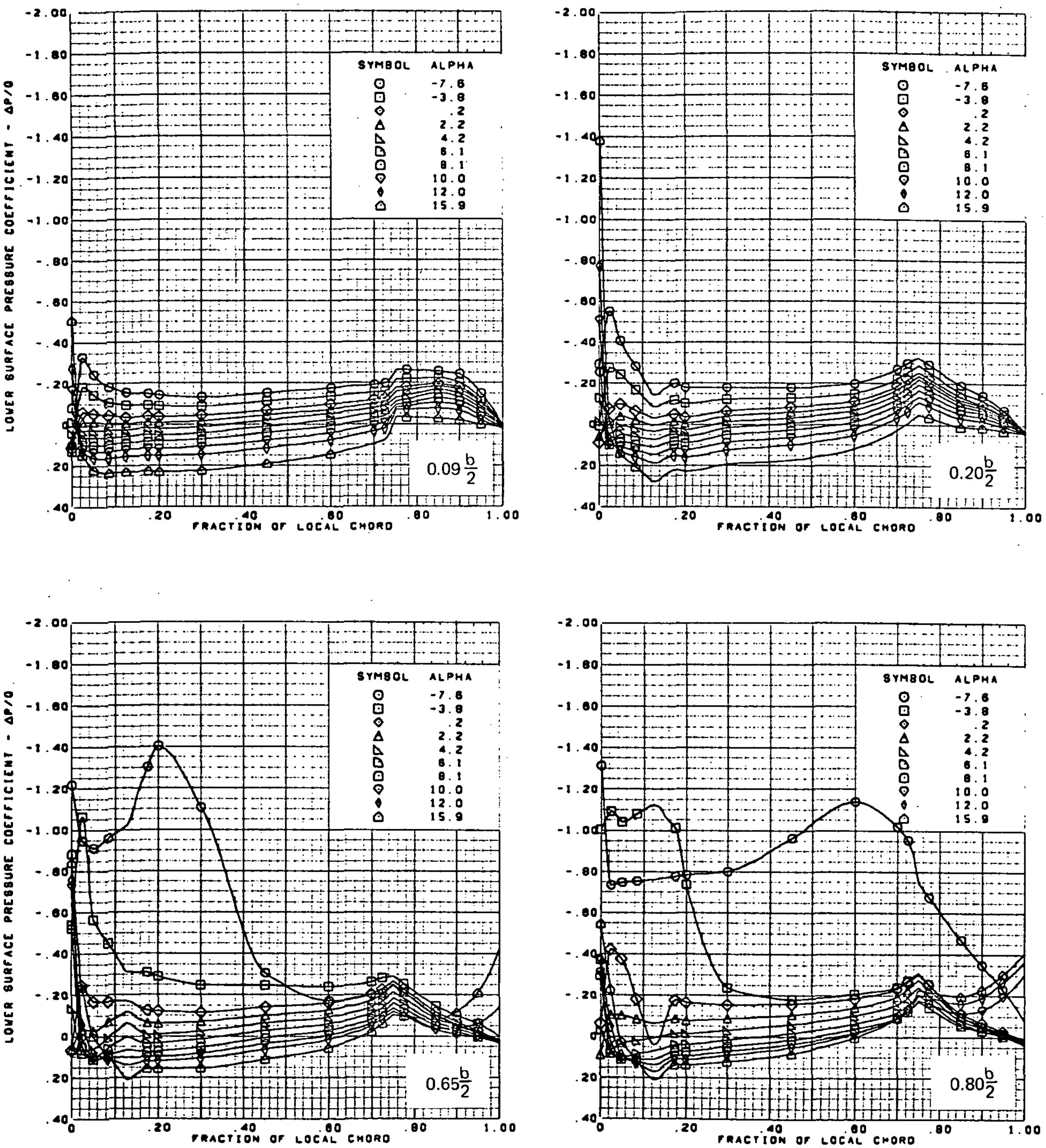




M = 0.40 (run 78)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

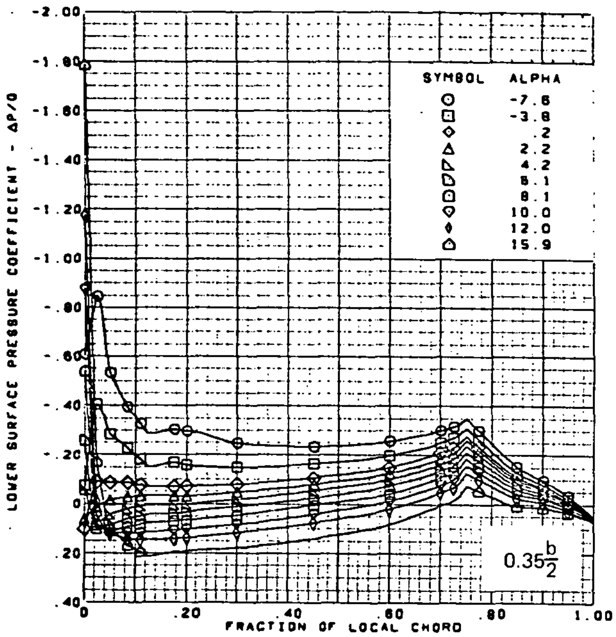
(a) (Concluded)

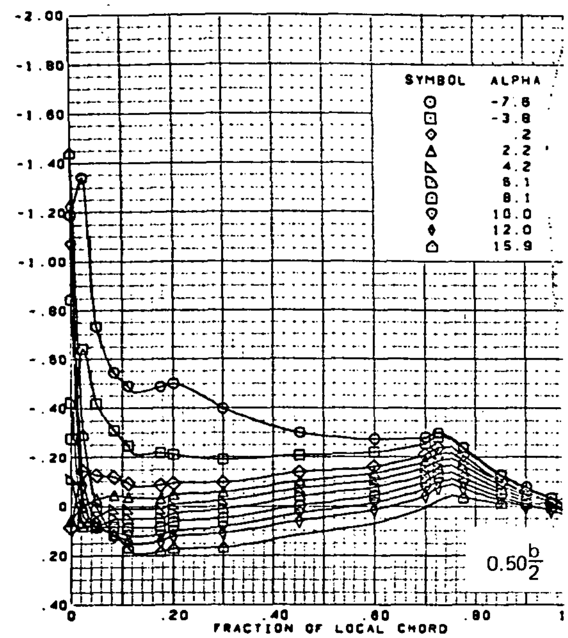
Figure 18.–(Continued)

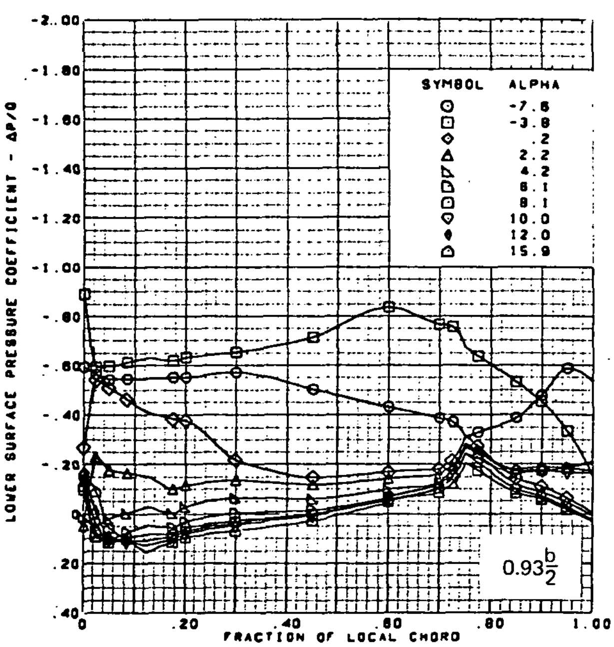


(b) Lower Surface Chordwise Pressure Distributions

Figure 18.–(Continued)



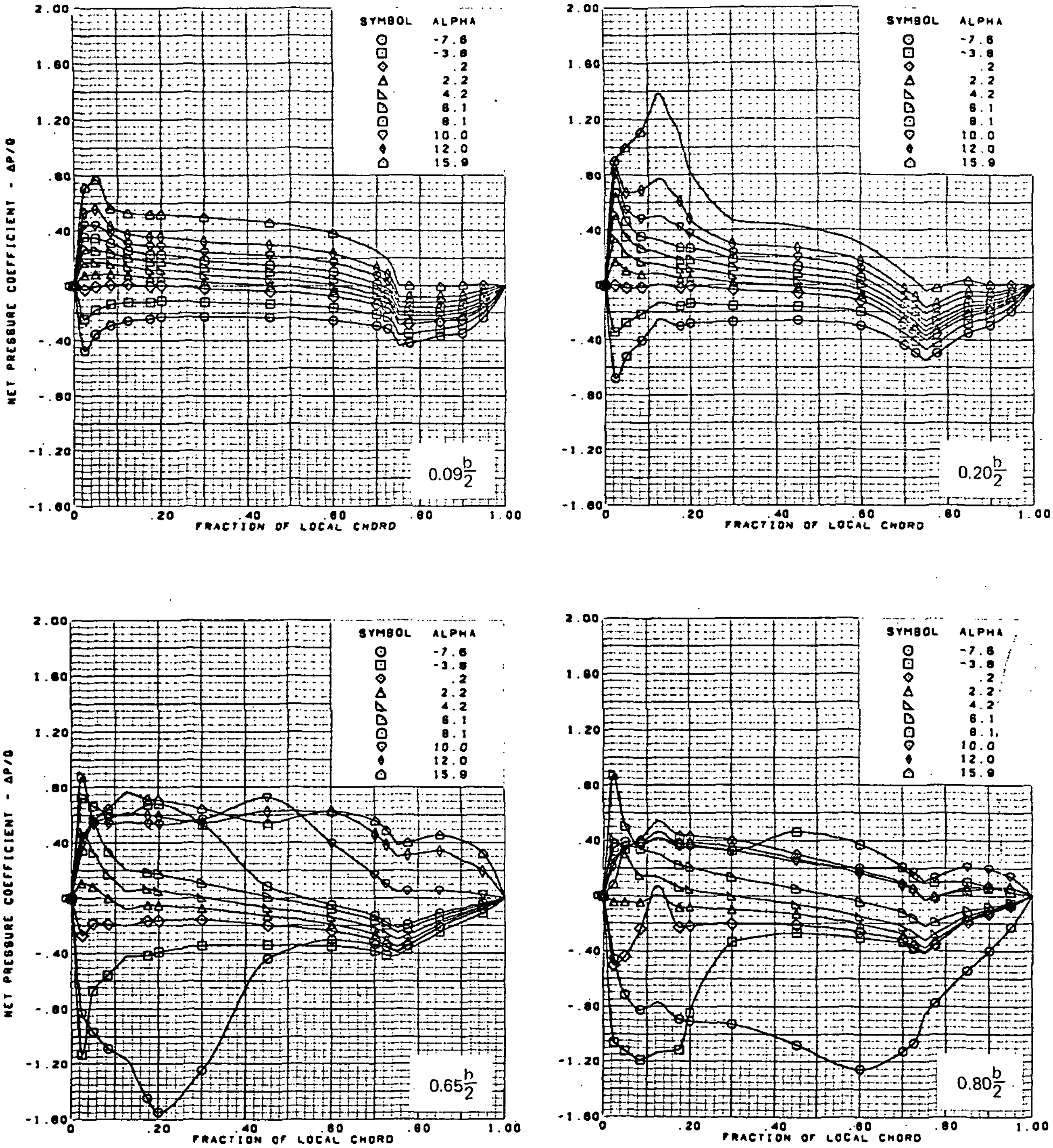




M = 0.40 (run 78)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

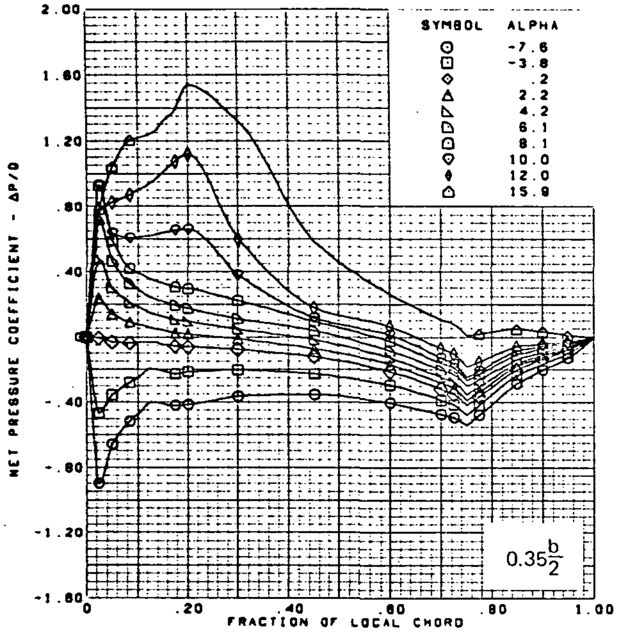
(b) (Concluded)

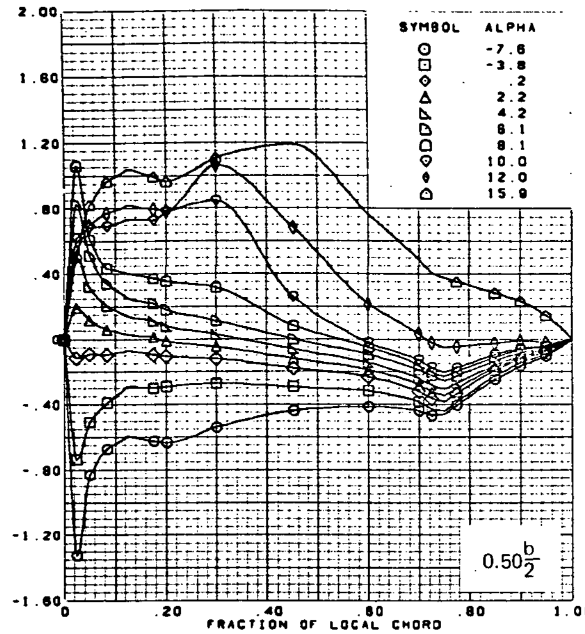
Figure 18.-(Continued)

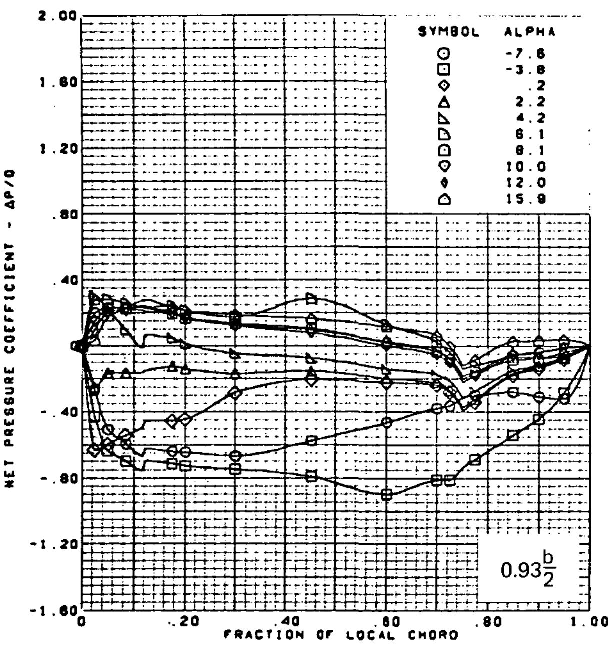


(c) Net Chordwise Pressure Distributions

Figure 18.–(Continued)



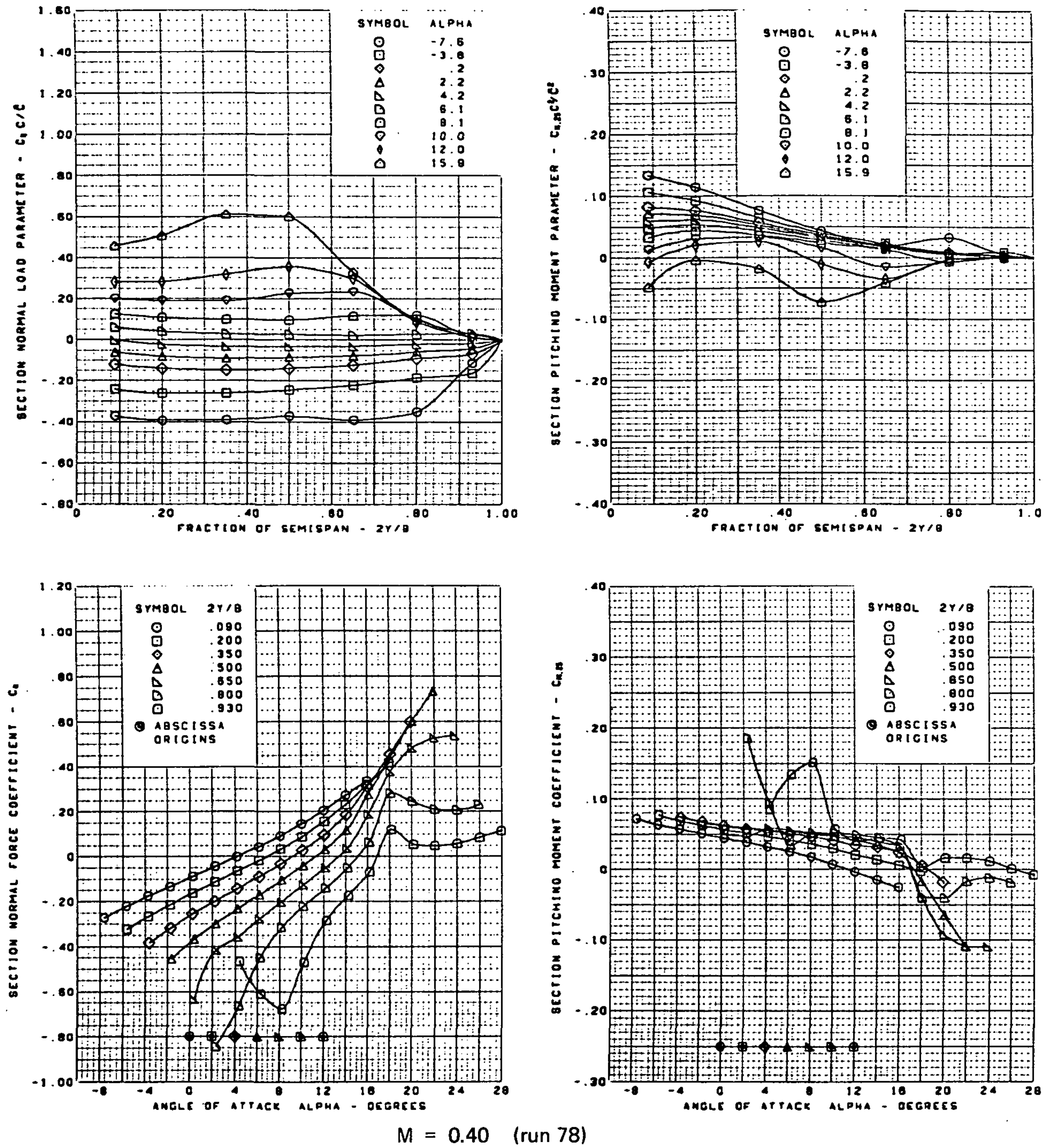




M = 0.40 (run 78)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

(c) (Concluded)

Figure 18.–(Continued)



M = 0.40 (run 78)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 18.– (Concluded)

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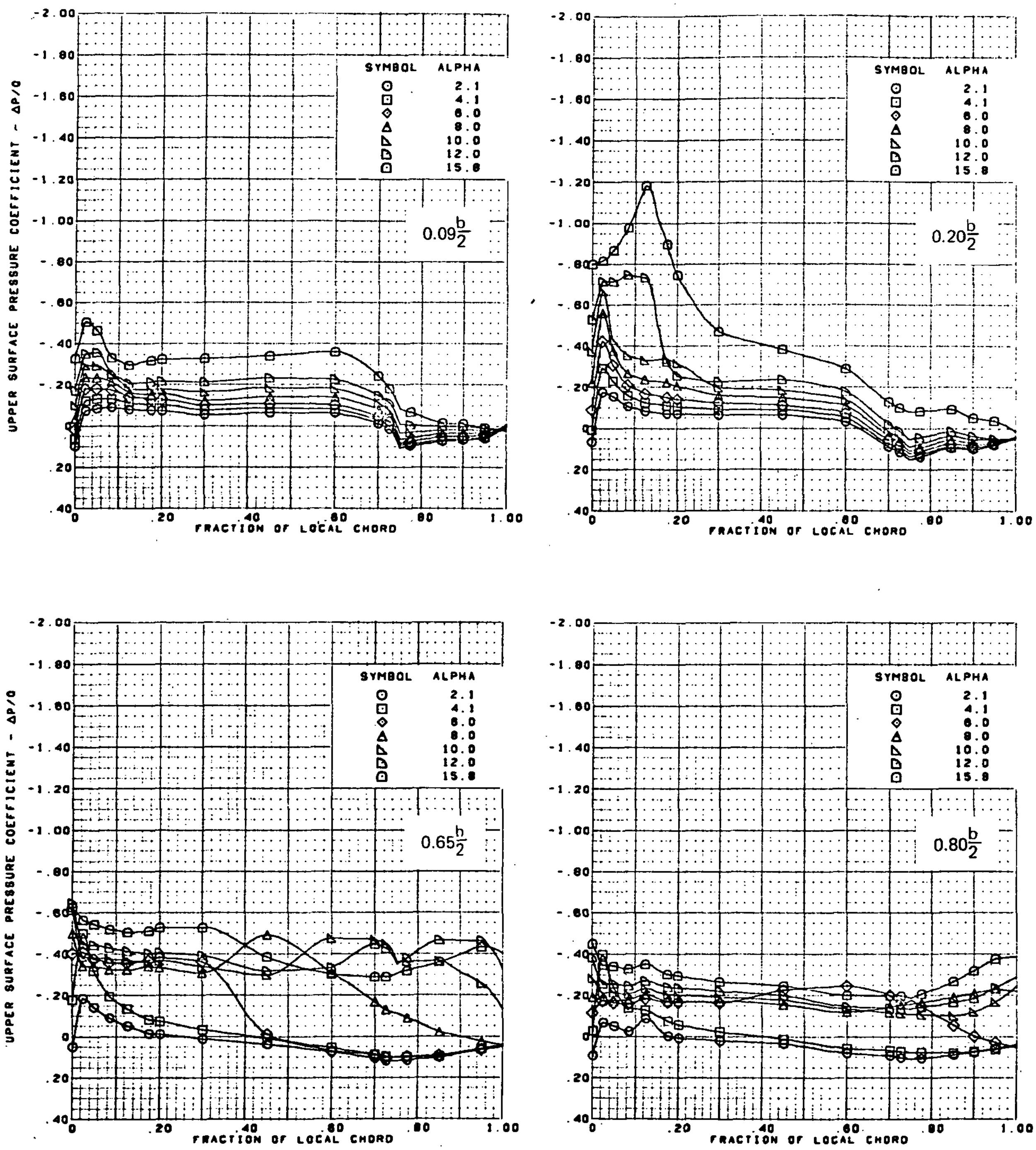
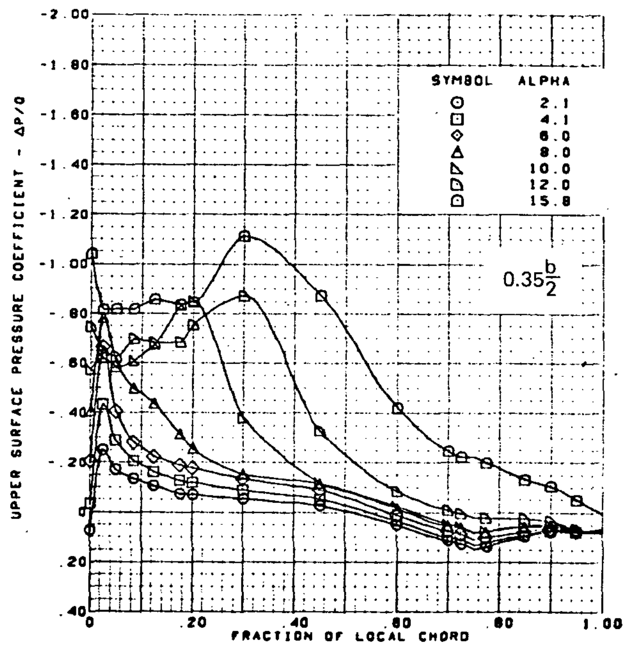
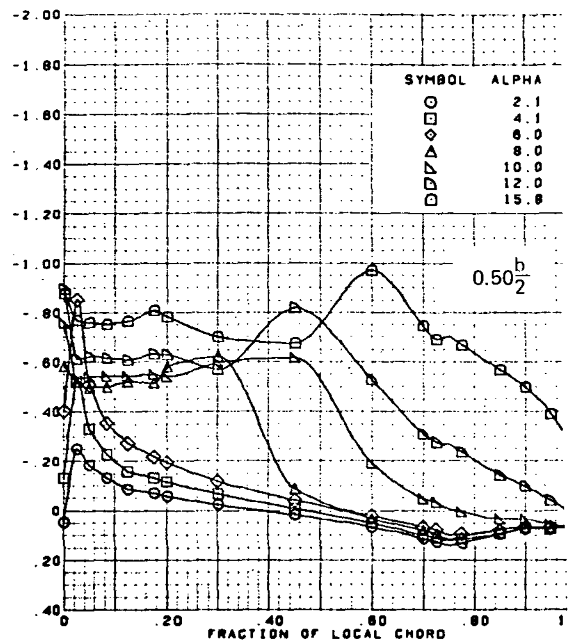
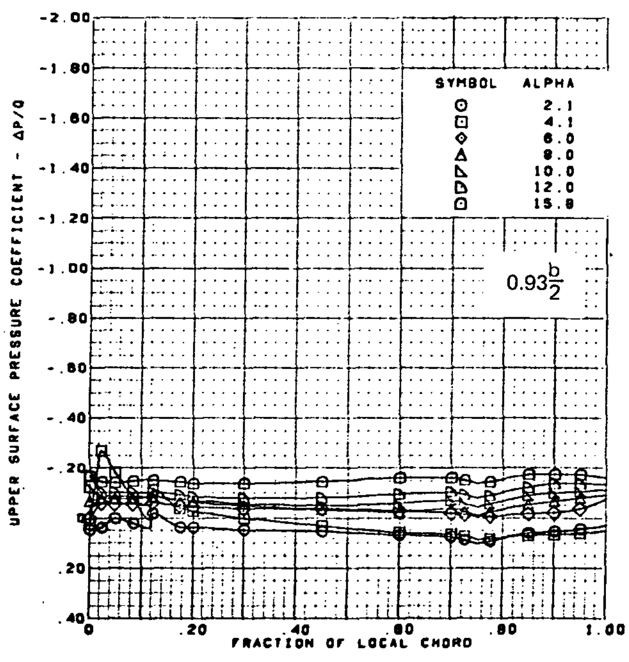


(a) Upper Surface Chordwise Pressure Distributions

Figure 19.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = -8.3°; M = 0.85



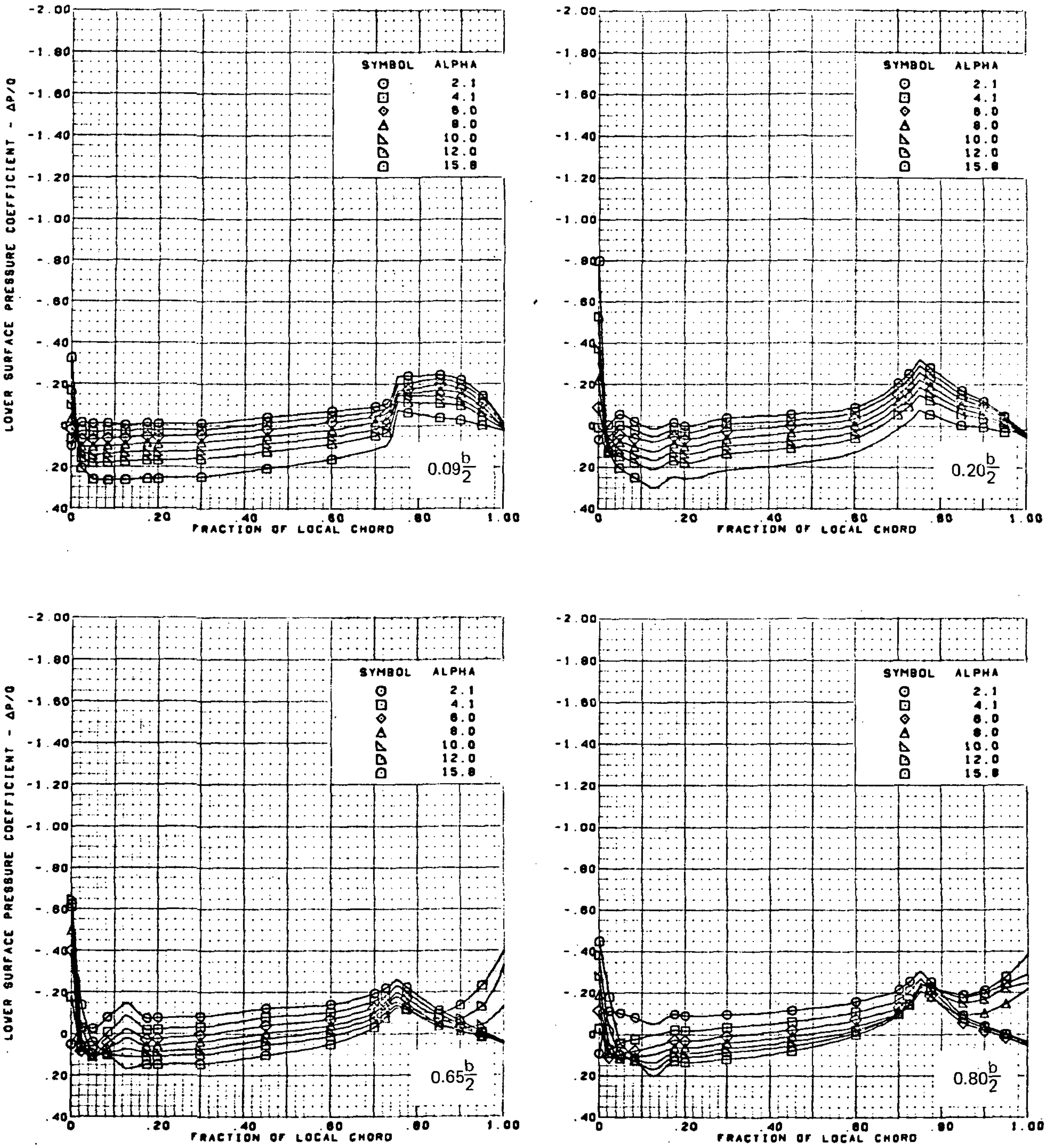




M = 0.85 (run 82)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

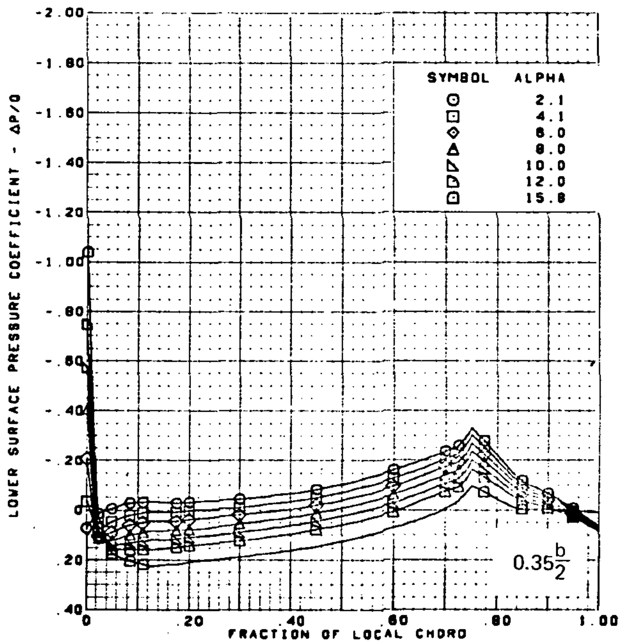
(a) (Concluded)

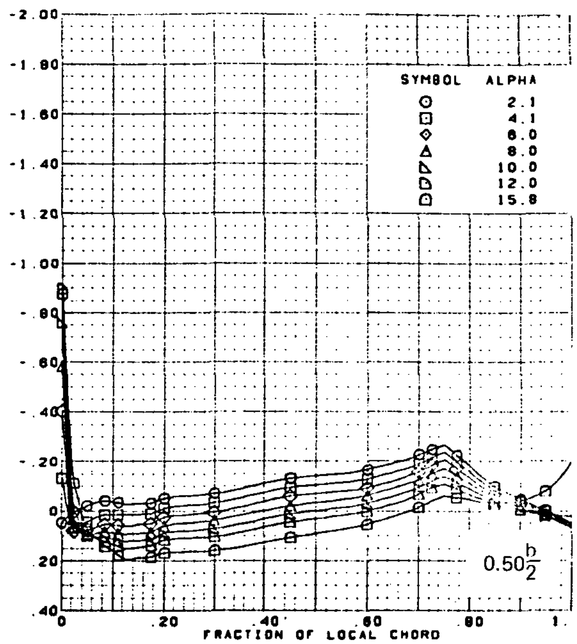
Figure 19.–(Continued)

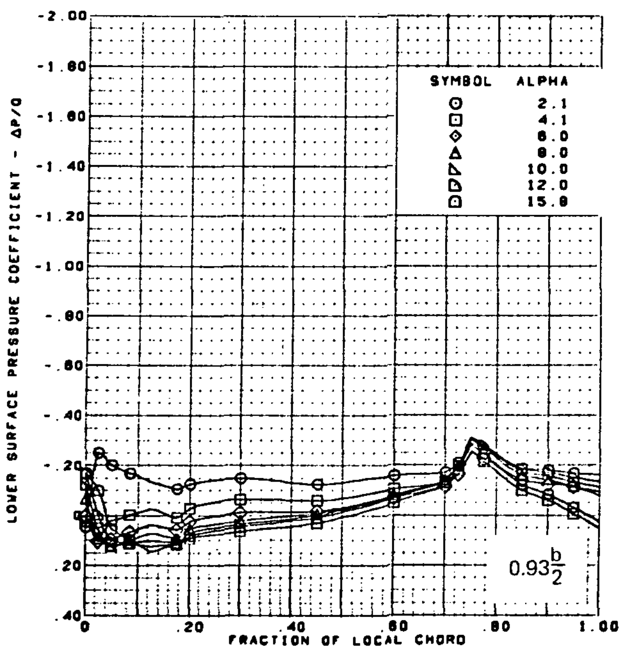


(b) Lower Surface Chordwise Pressure Distributions

Figure 19.–(Continued)



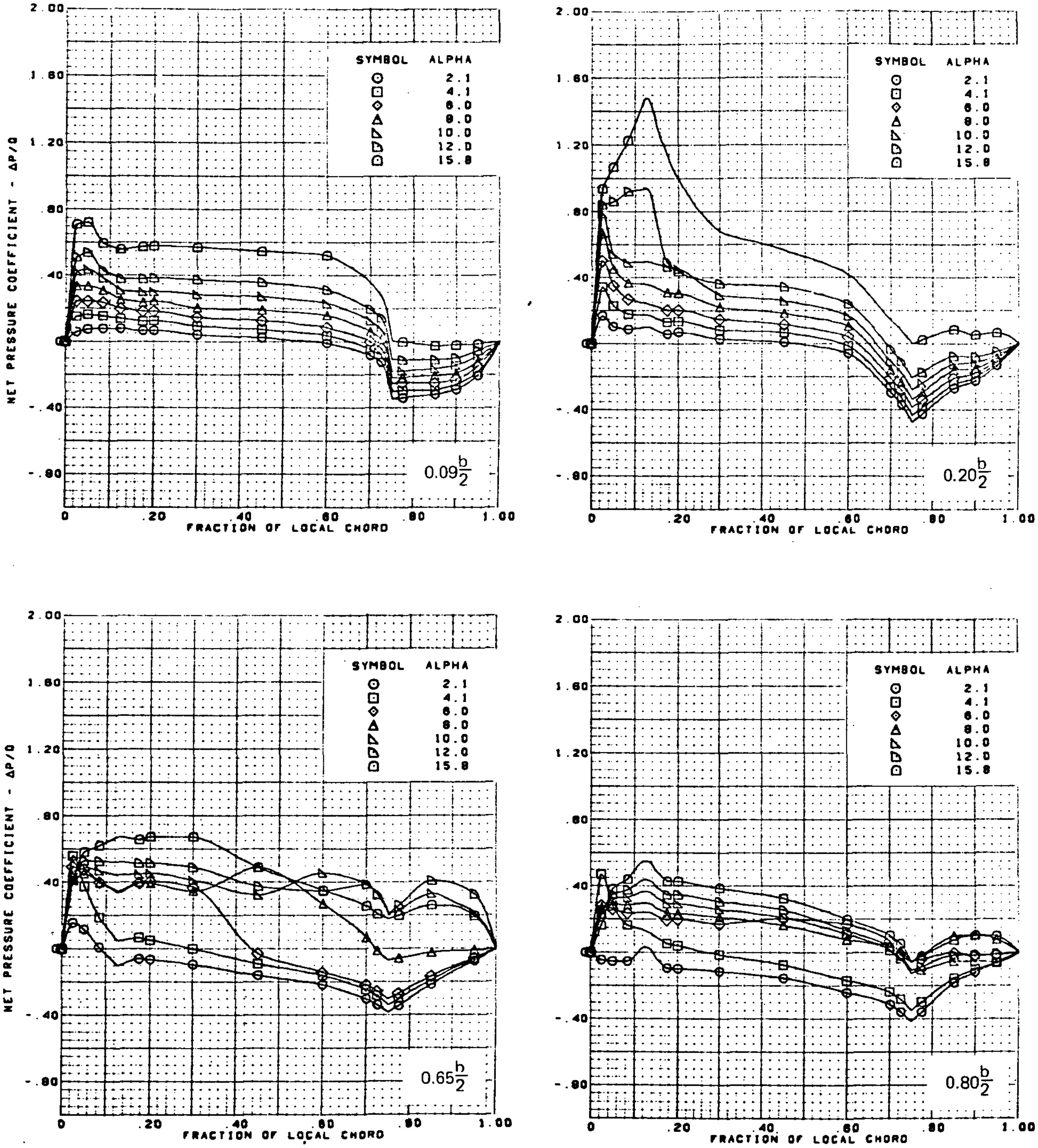




M = 0.85 (run 82)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

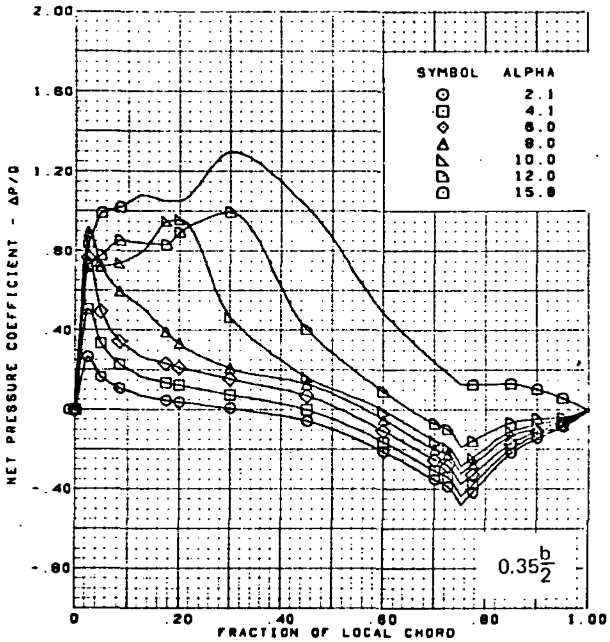
(b) (Concluded)

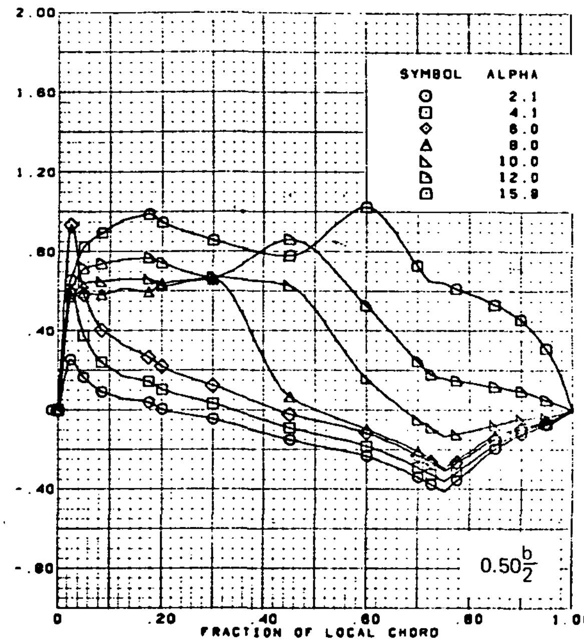
Figure 19.–(Continued)

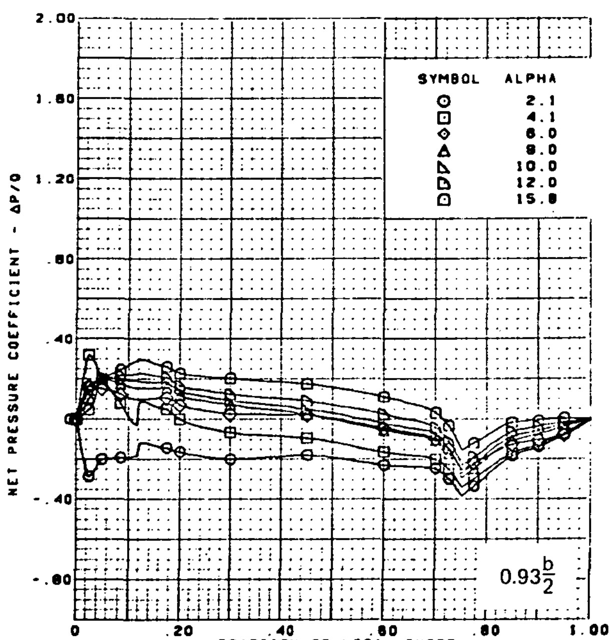


(c) Net Chordwise Pressure Distributions

Figure 19.–(Continued)



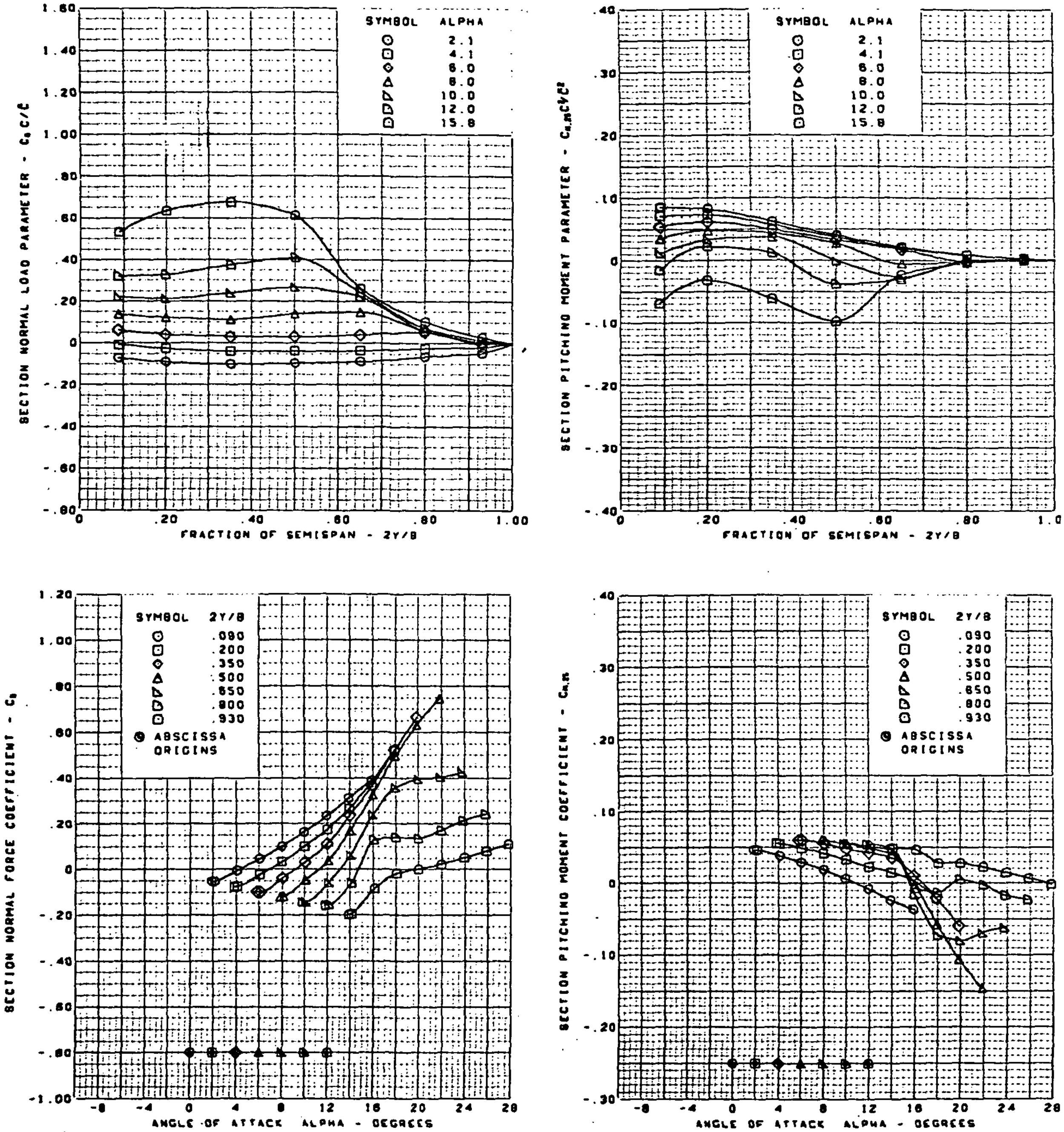




M = 0.85 (run 82)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

(c) **(Concluded)**

Figure 19.–(Continued)



M = 0.85 (run 82)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

(d) Spanload Distributions and Section Aerodynamic Coefficients

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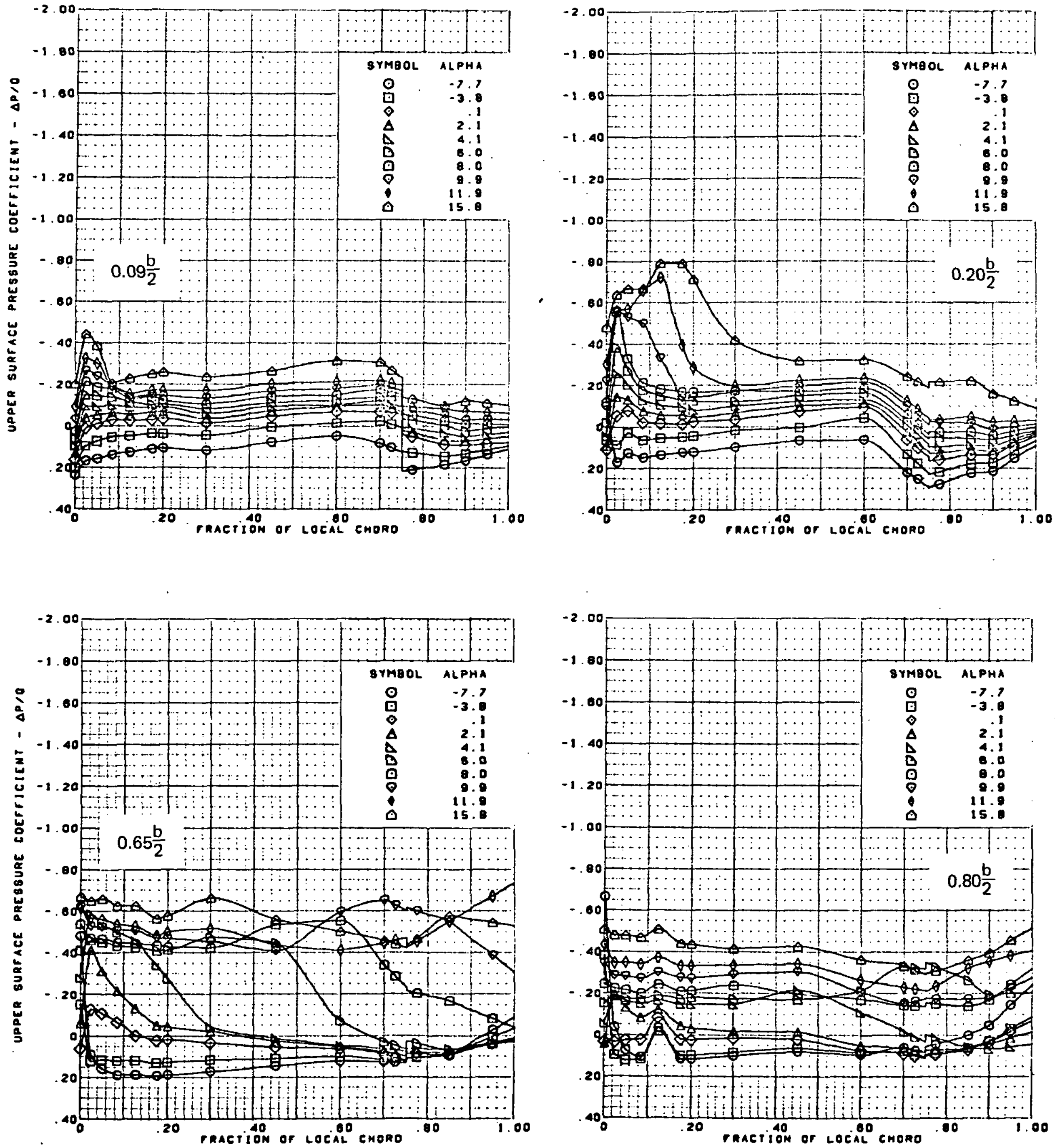
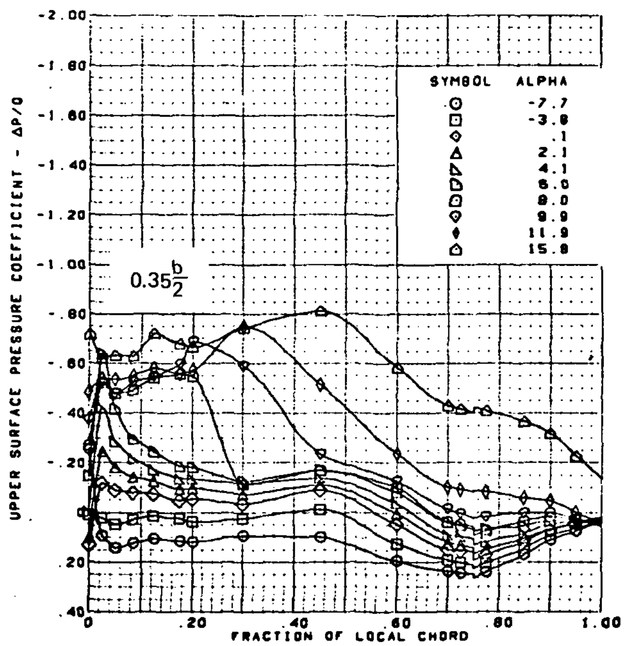
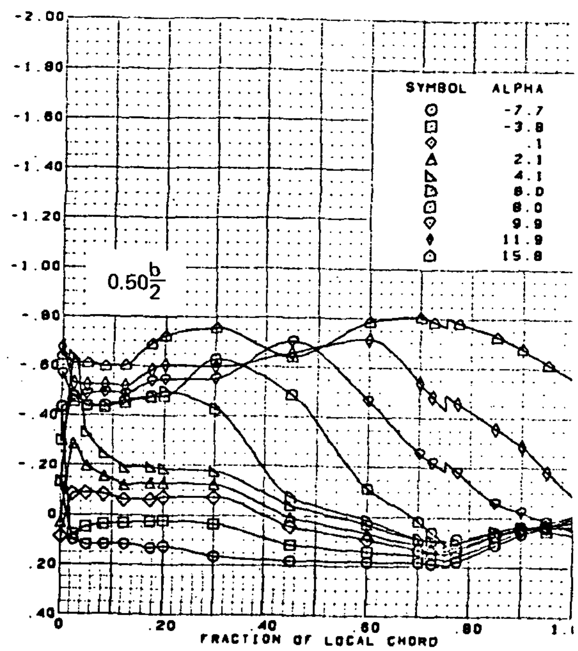
Figure 19.– (Concluded)

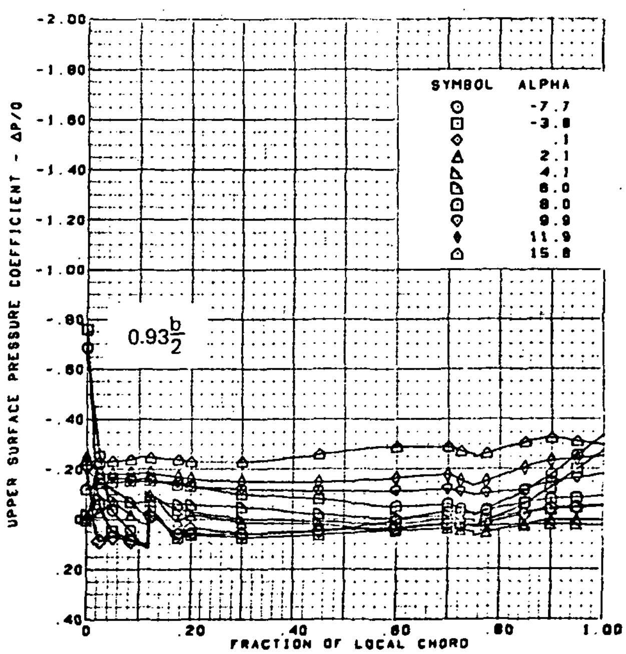


(a) Upper Surface Chordwise Pressure Distributions

Figure 20.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = -8.3°; M = 1.05



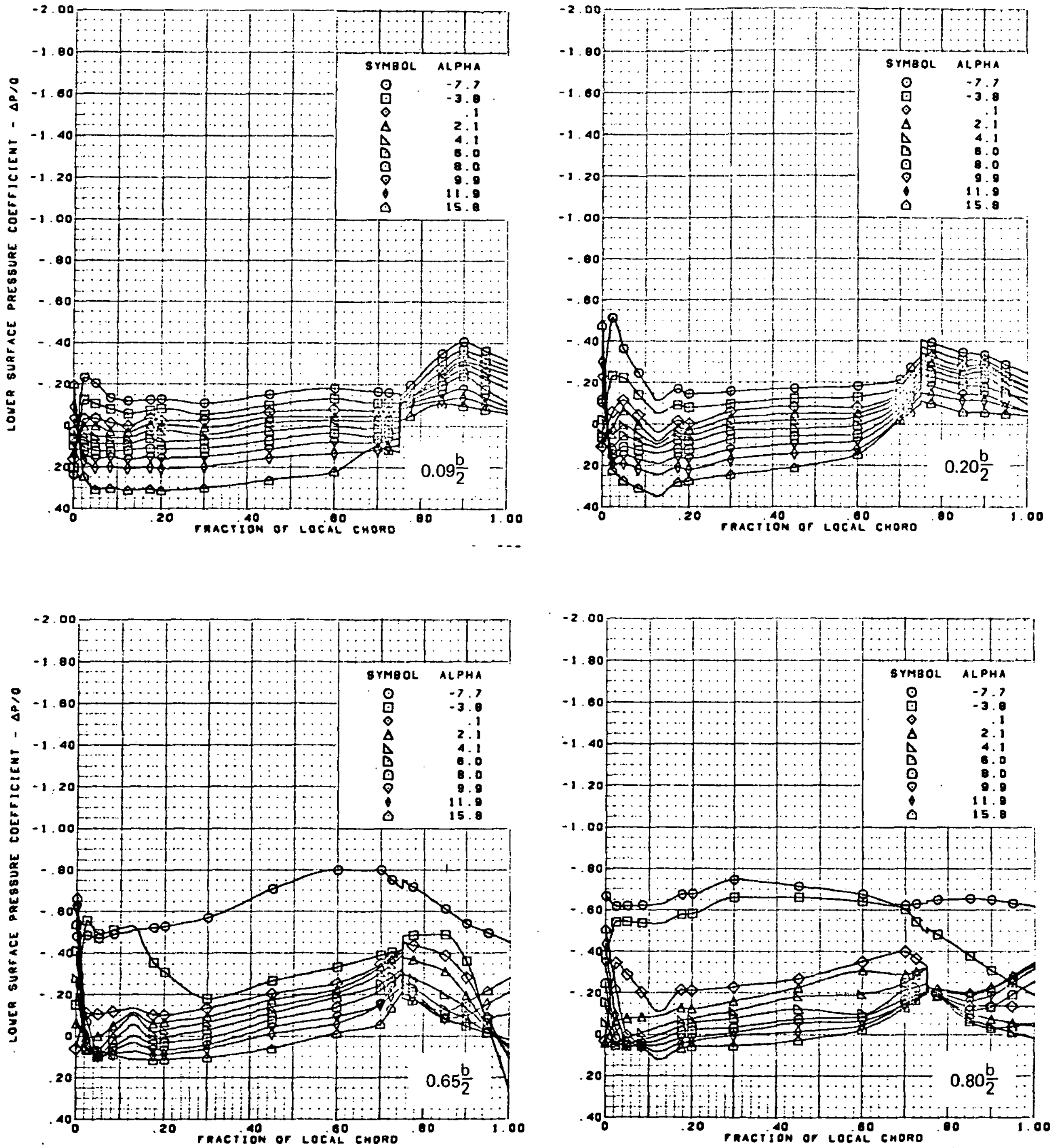




M = 1.05 (run 79)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

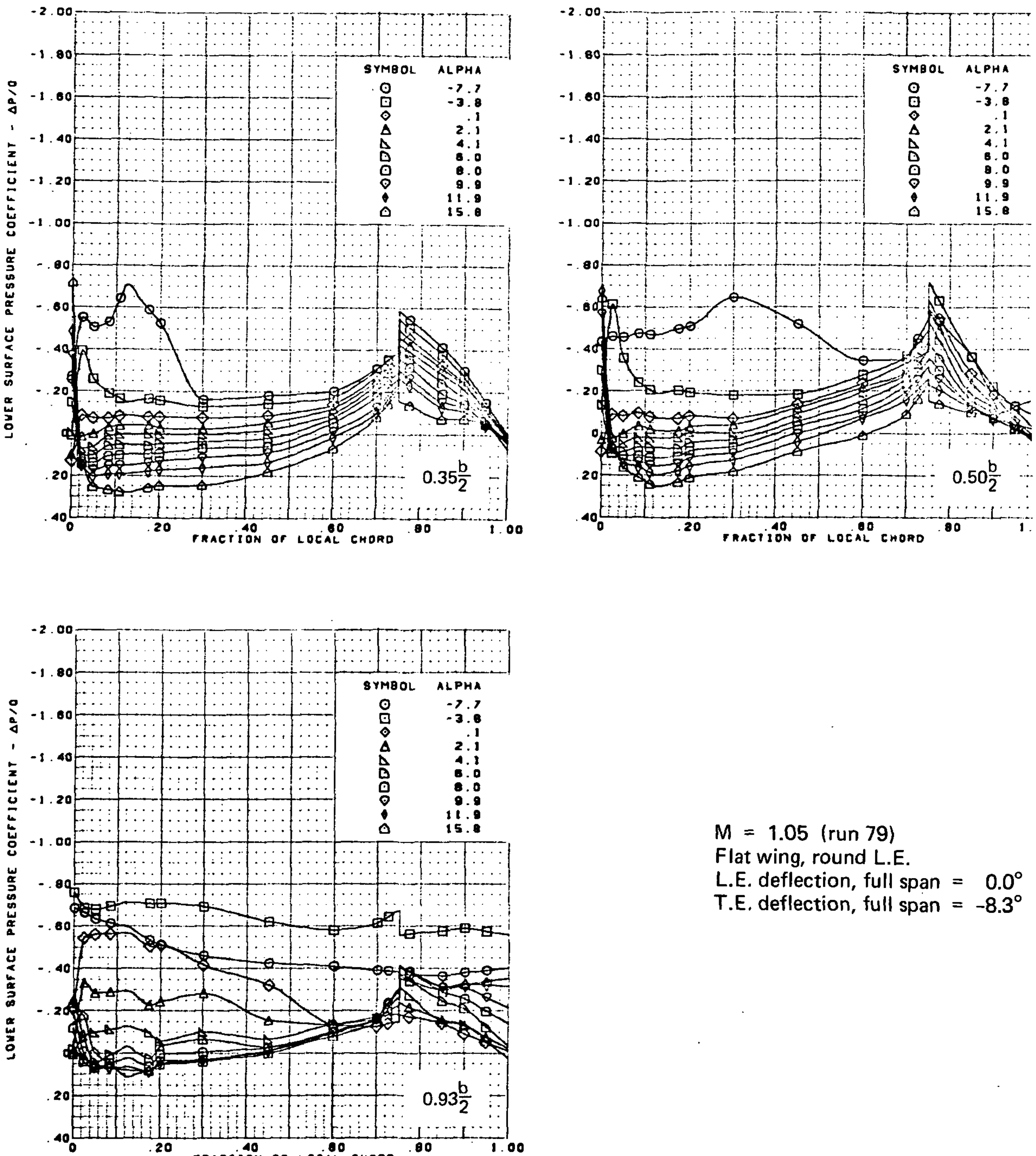
(a) (Concluded)

Figure 20.–(Continued)



(b) Lower Surface Chordwise Pressure Distributions

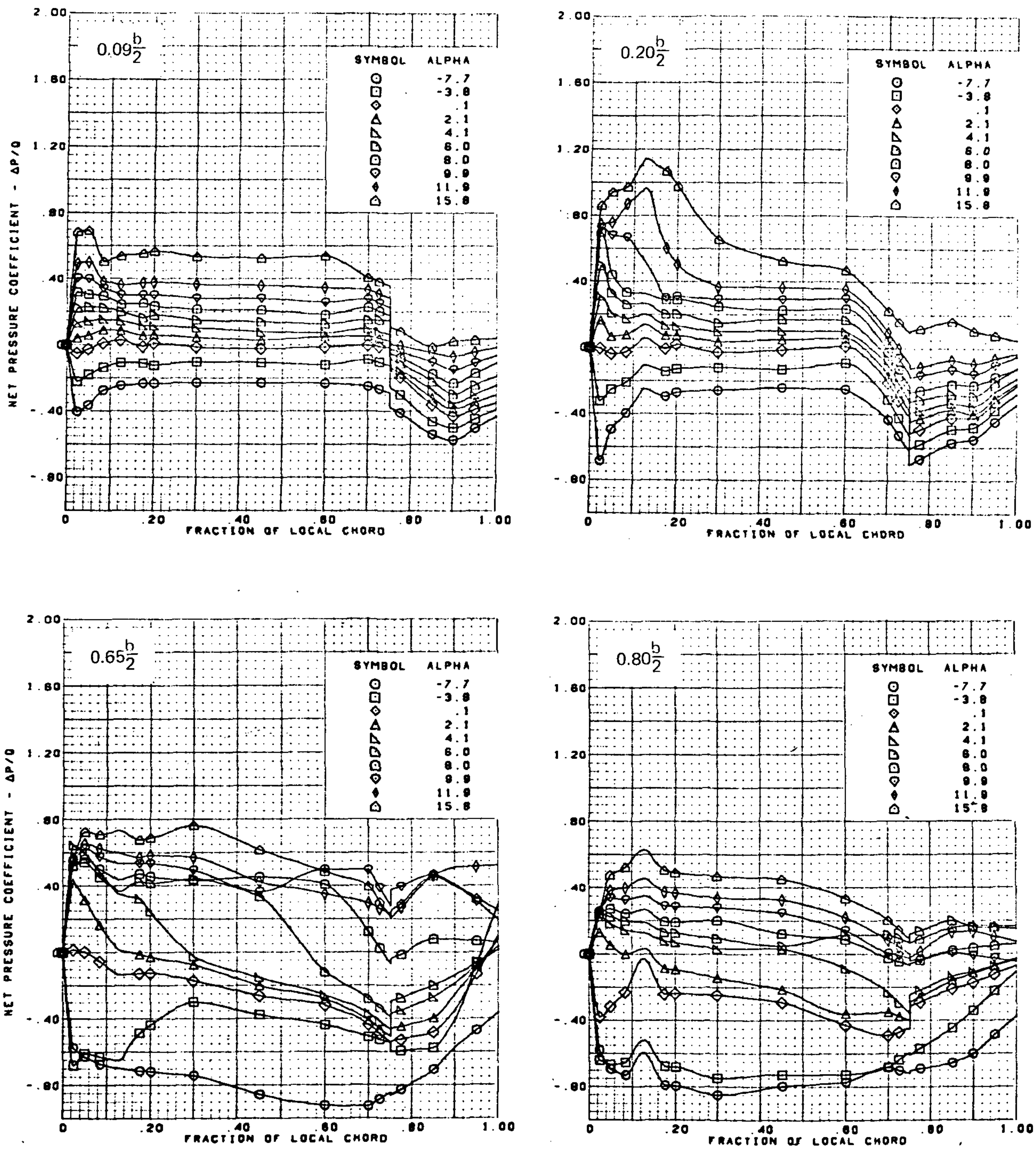
Figure 20.-(Continued)



M = 1.05 (run 79)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

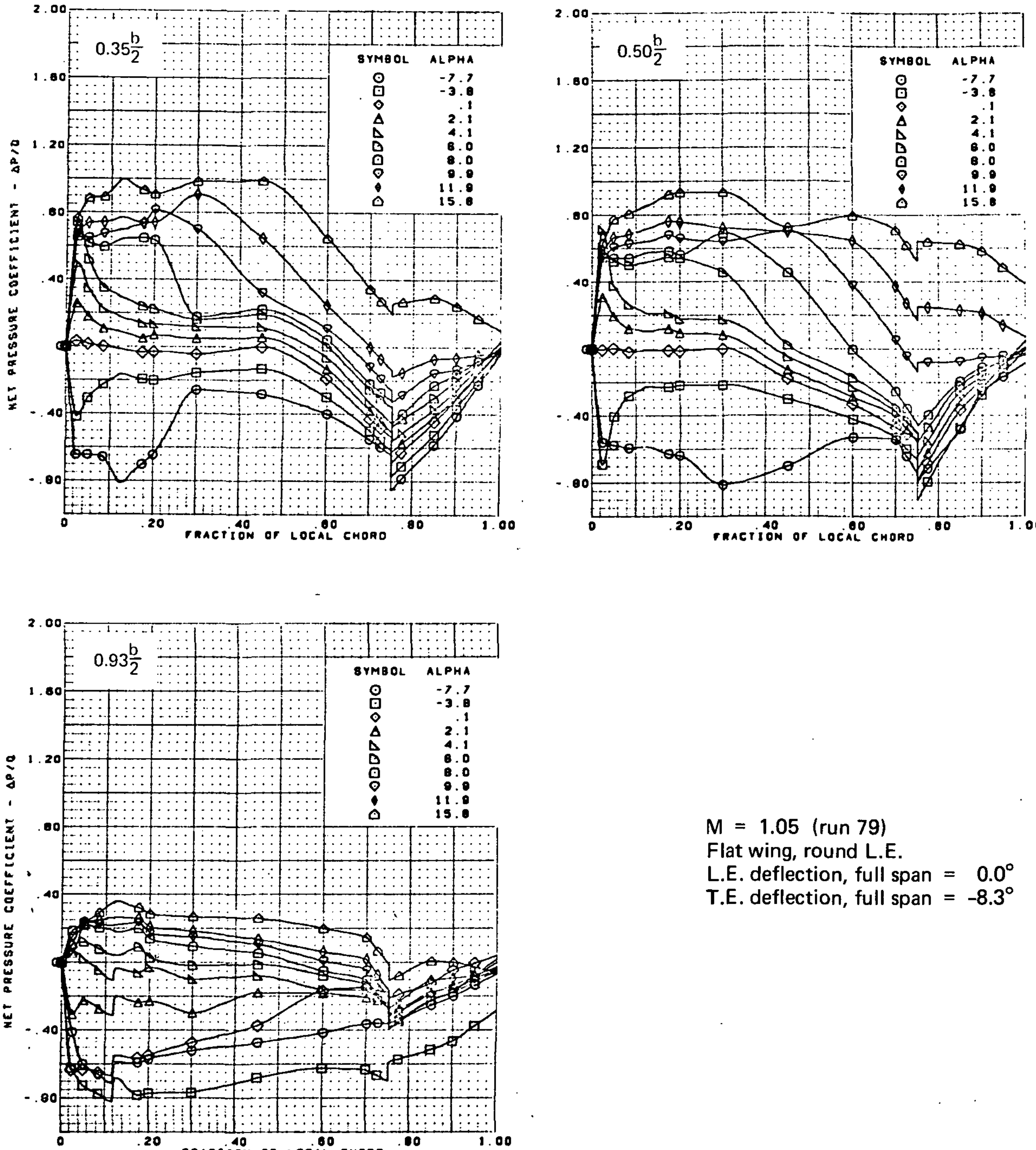
(b) (Concluded)

Figure 20.–(Continued)



(c) Net Chordwise Pressure Distributions

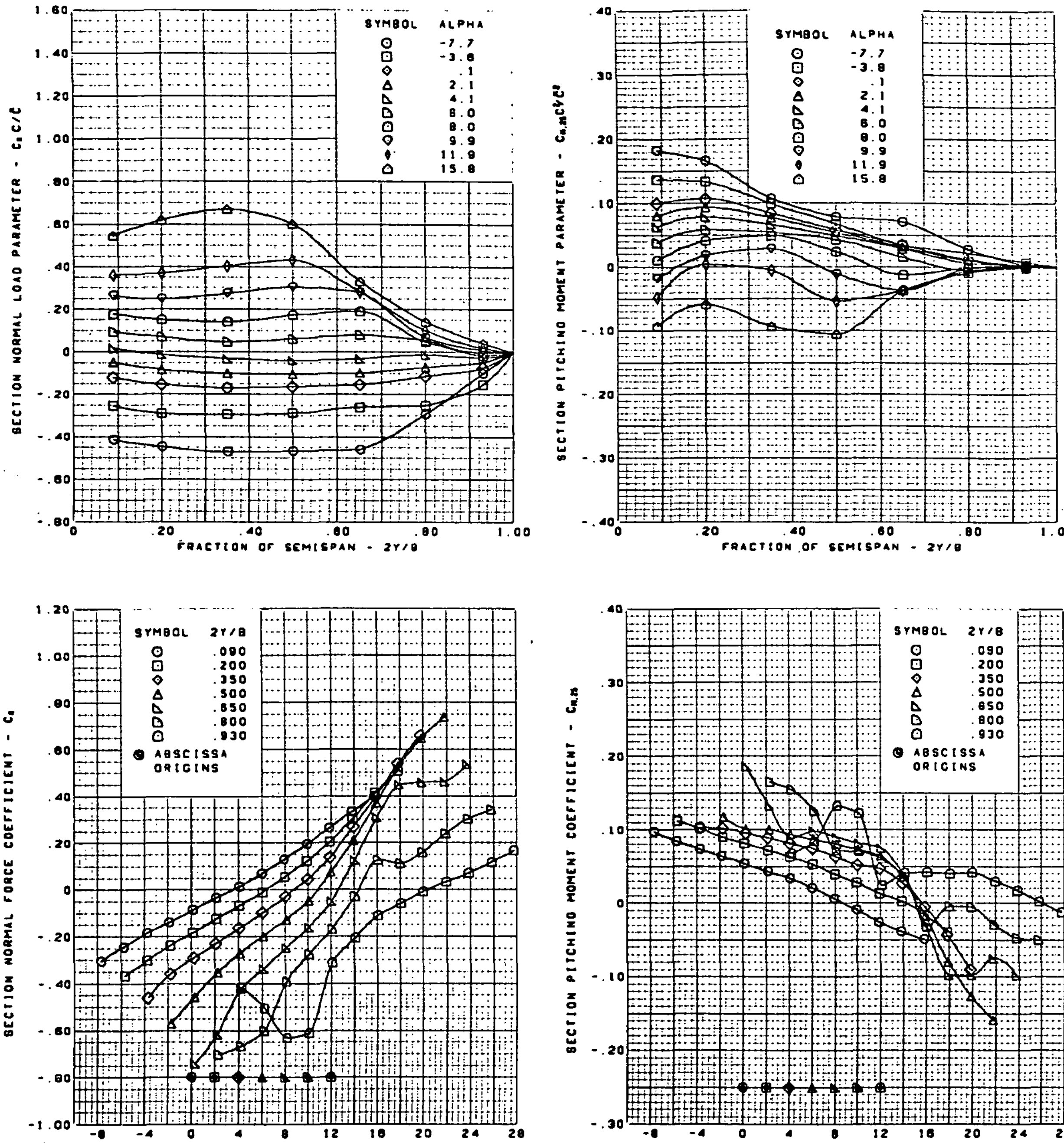
Figure 20.-(Continued)



M = 1.05 (run 79)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

(c) (Concluded)

Figure 20.–(Continued)



M = 1.05 (run 79)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 20.– (Concluded)

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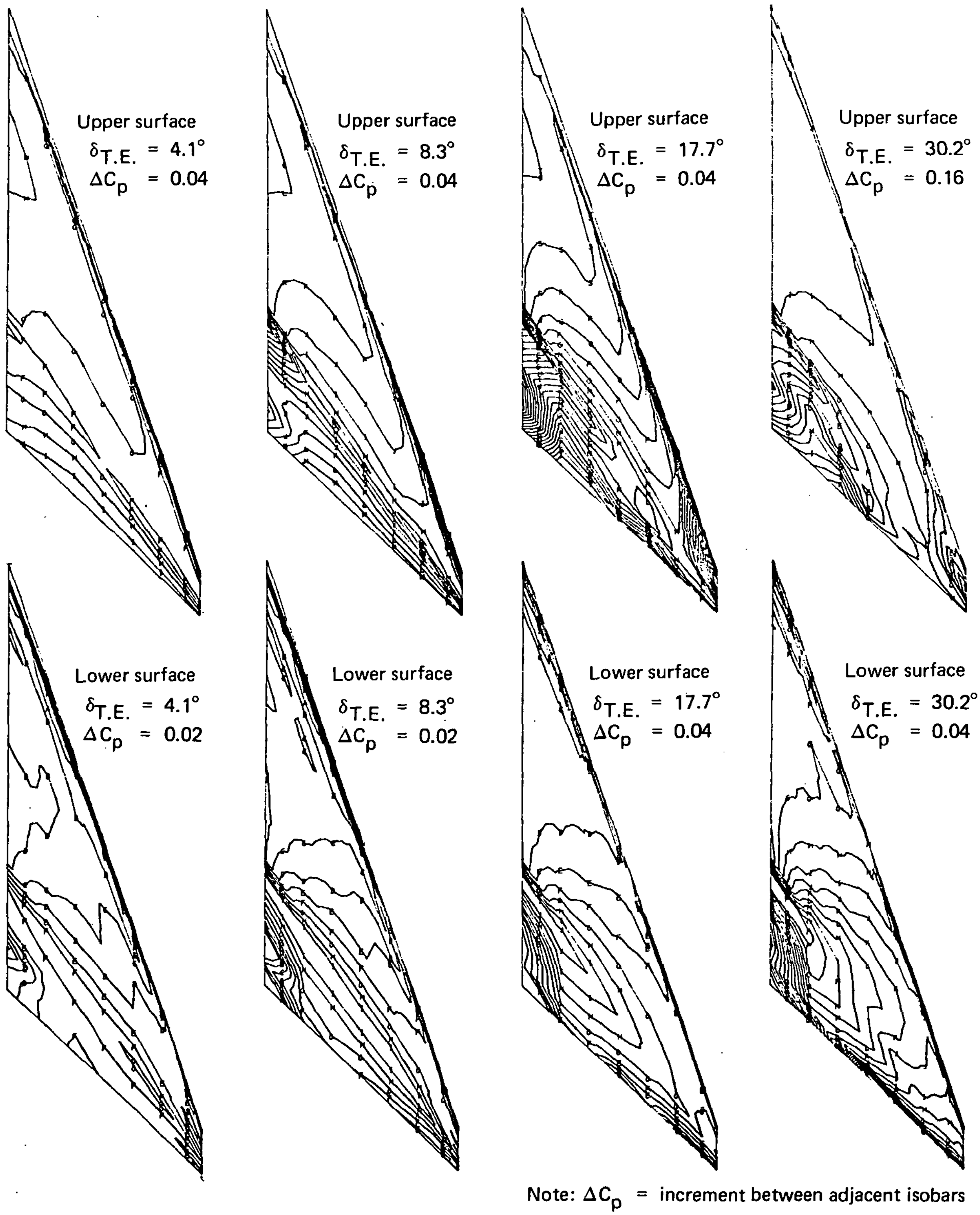

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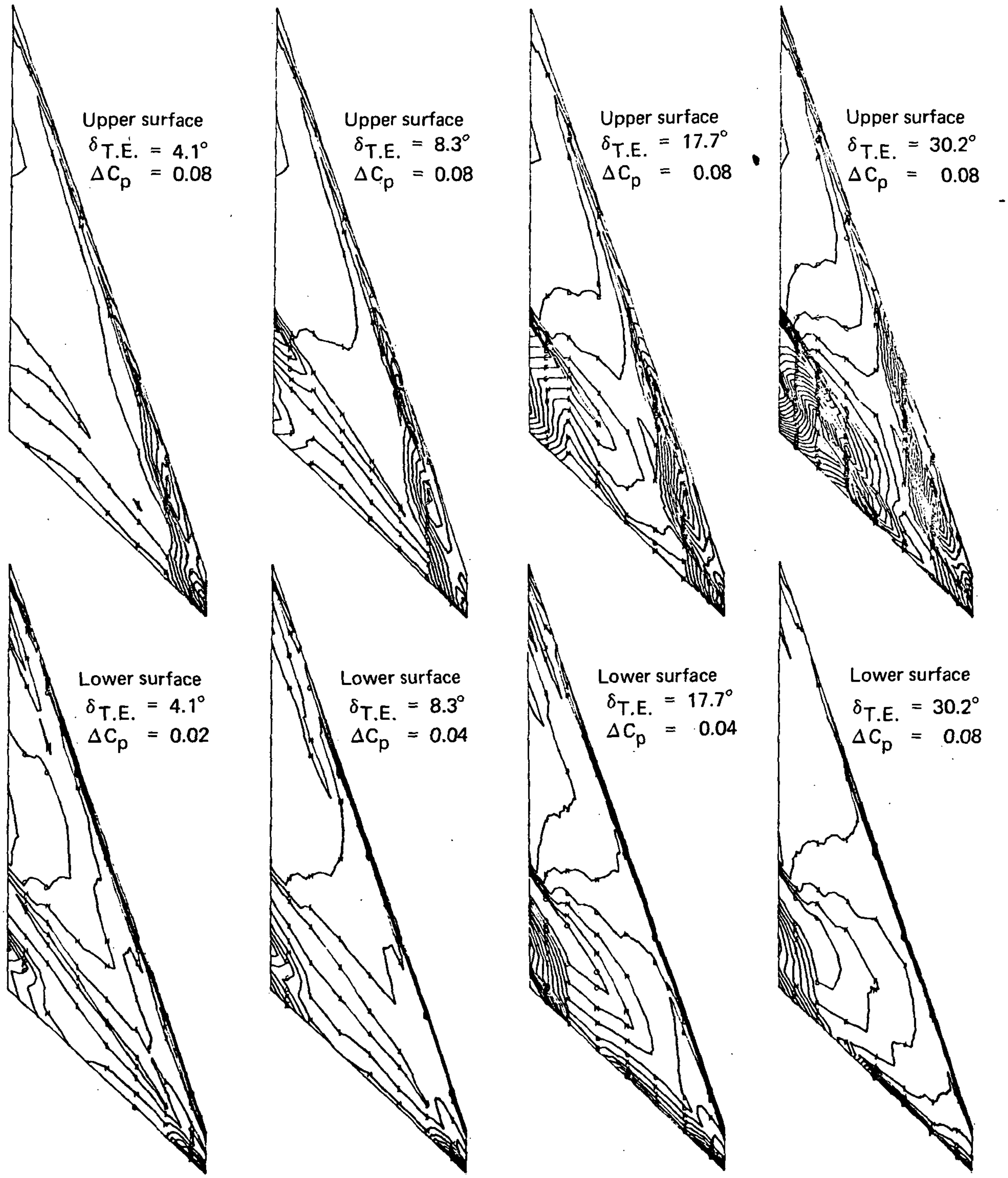
(a) Isobars, $\alpha \approx 0.0°$

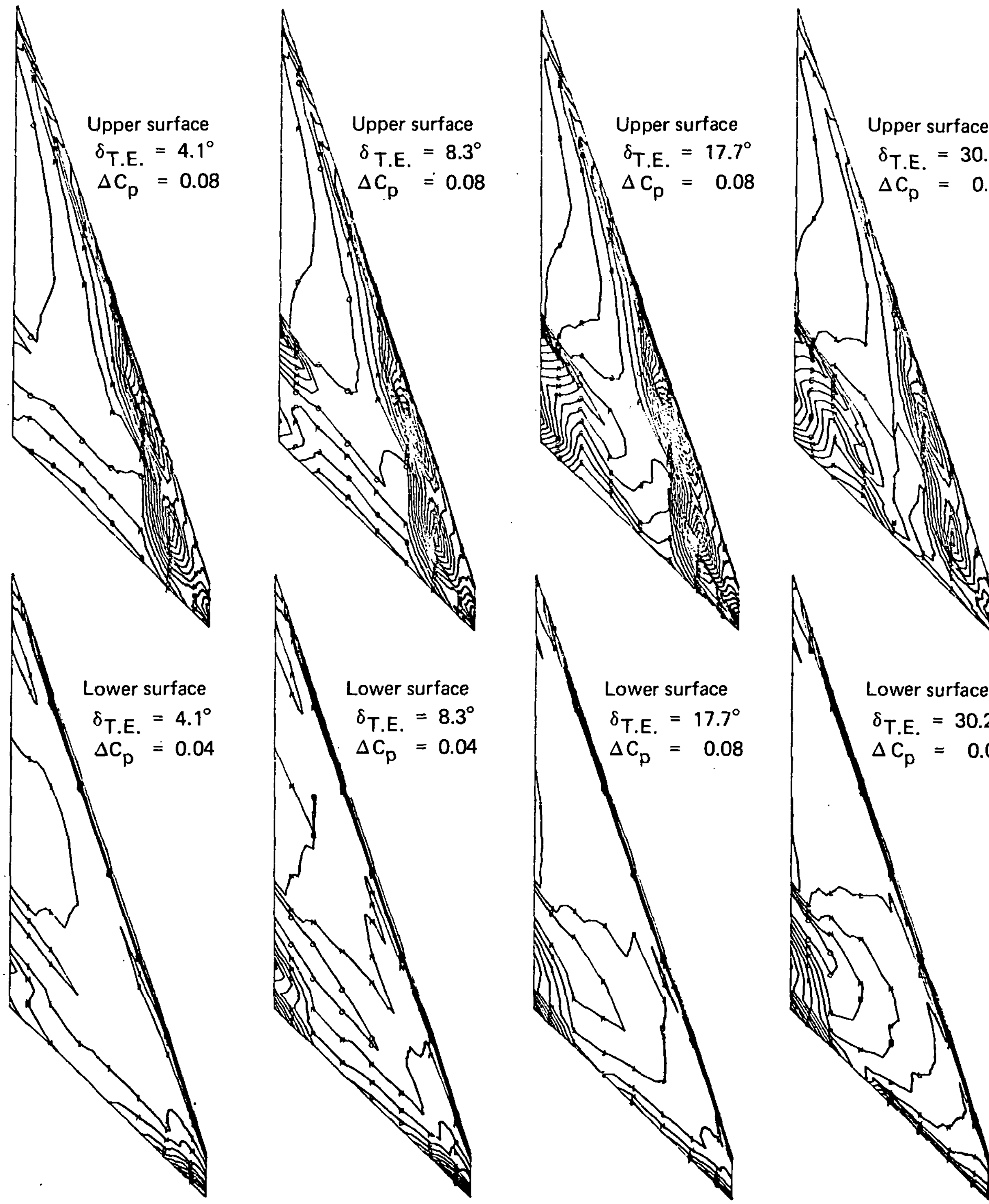
Figure 21.—Wing Experimental Data—Effect of Full Span T.E. Deflection and Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.40



Note: ΔC_p = increment between adjacent isobars

(b) Isobars, $\alpha \approx 4.0°$

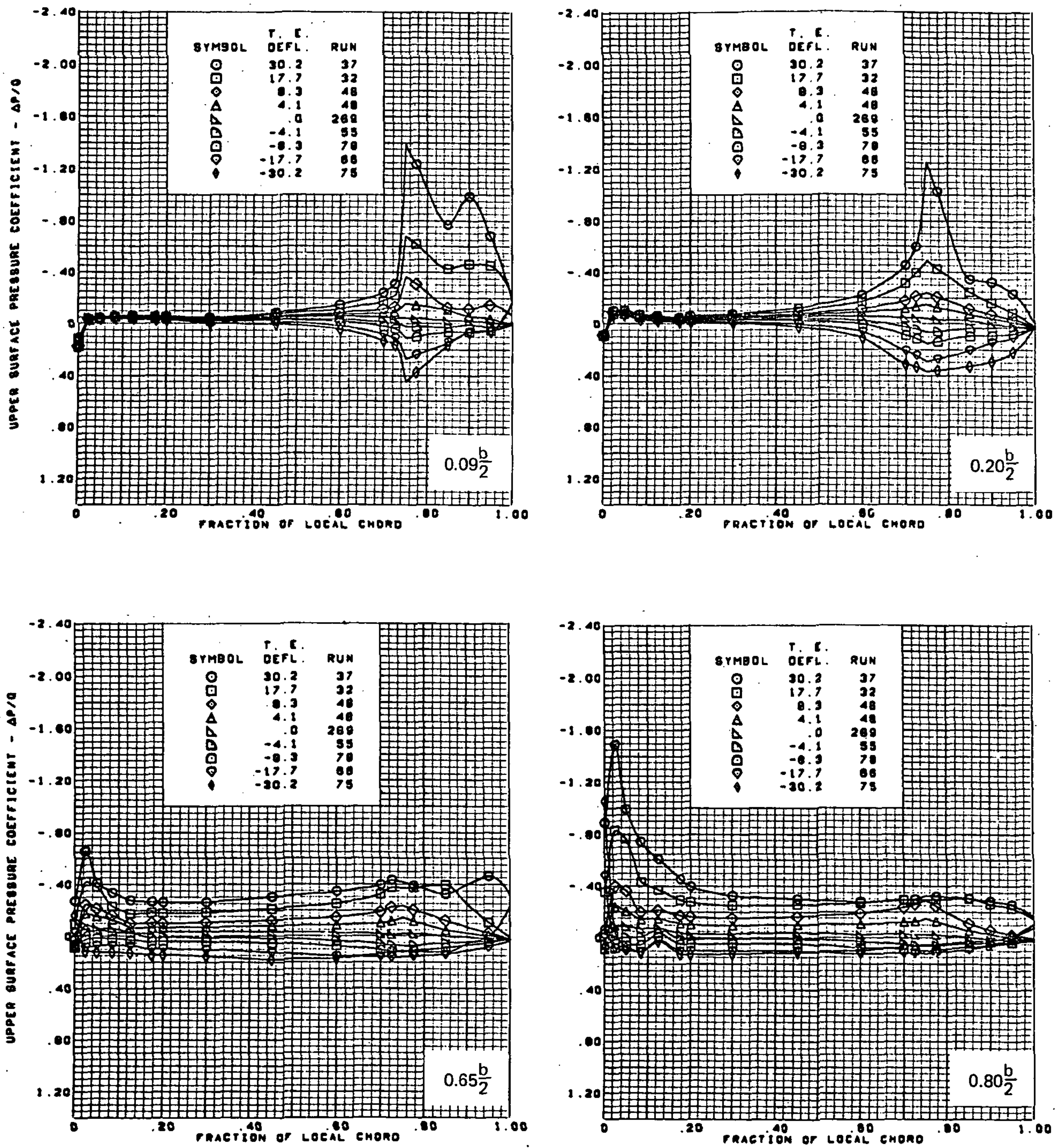
Figure 21.–(Continued)



Note: ΔC_p = increment between adjacent isobars

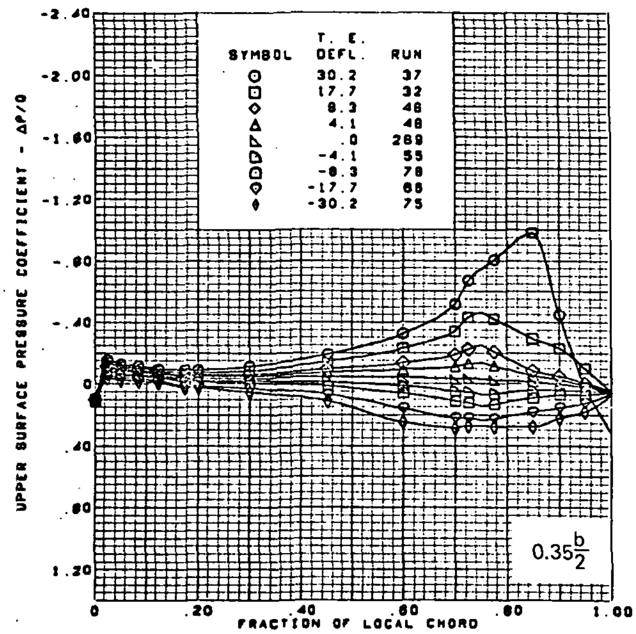
(c) Isobars, $\alpha \approx 8.0°$

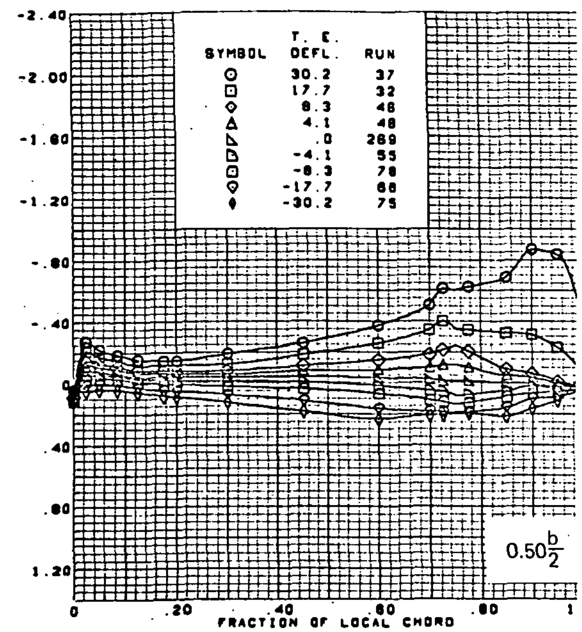
Figure 21.–(Continued)

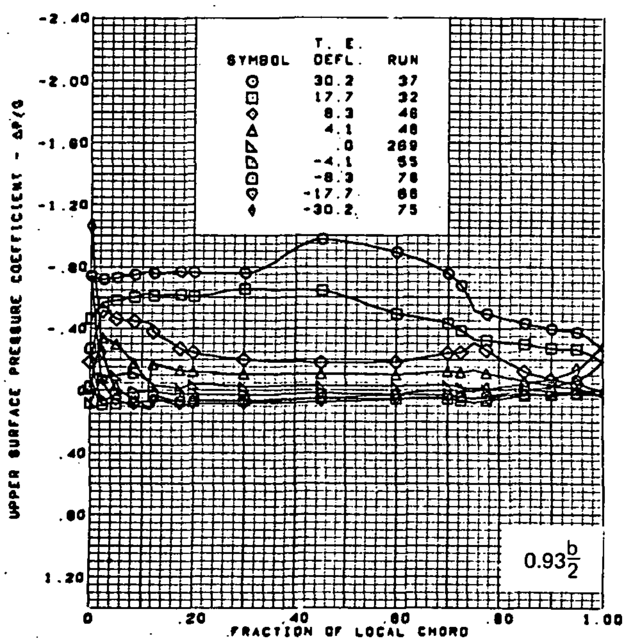


(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0^\circ$

Figure 21.–(Continued)



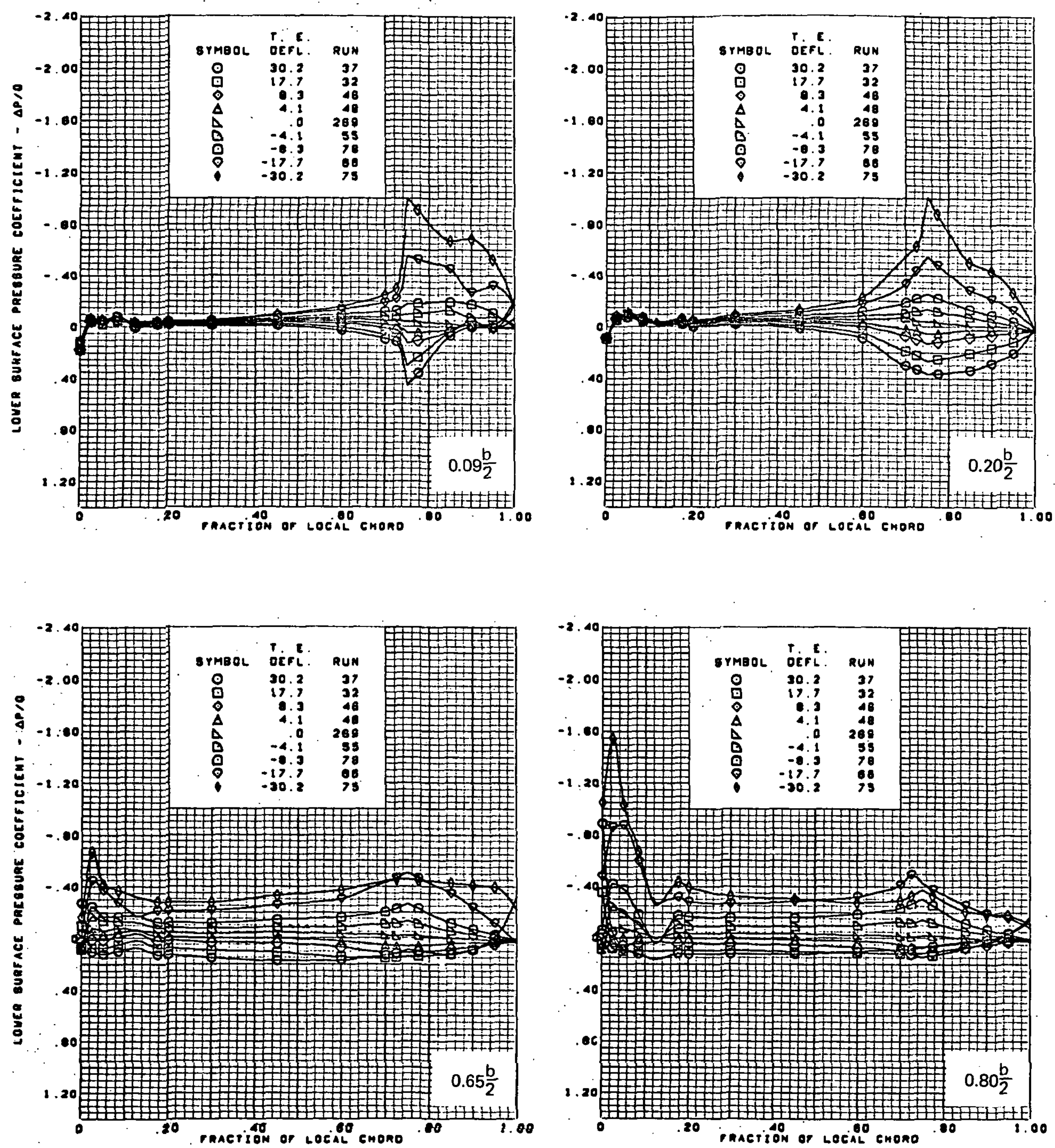




M = 0.40
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

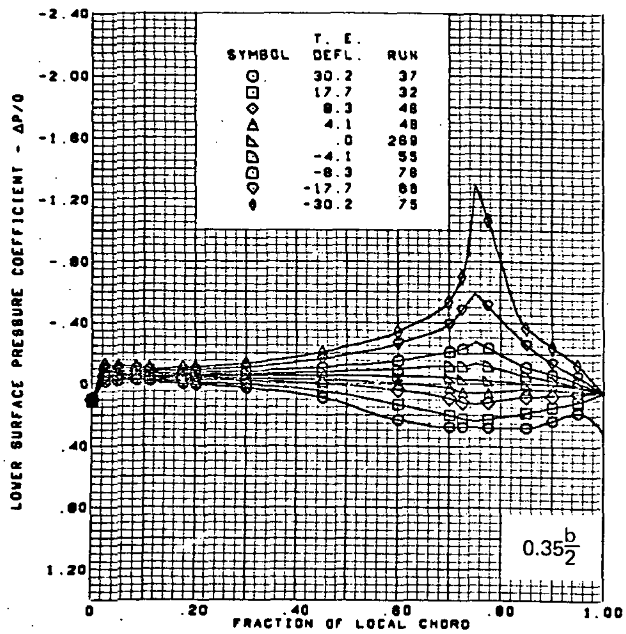
(d) (Concluded)

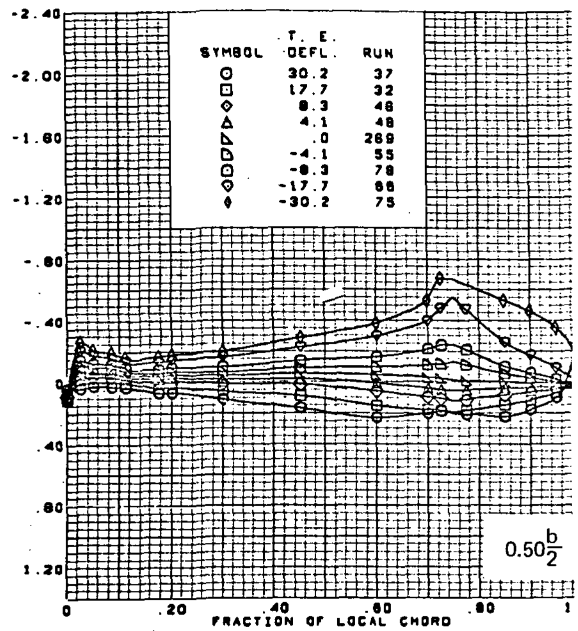
Figure 21.–(Continued)

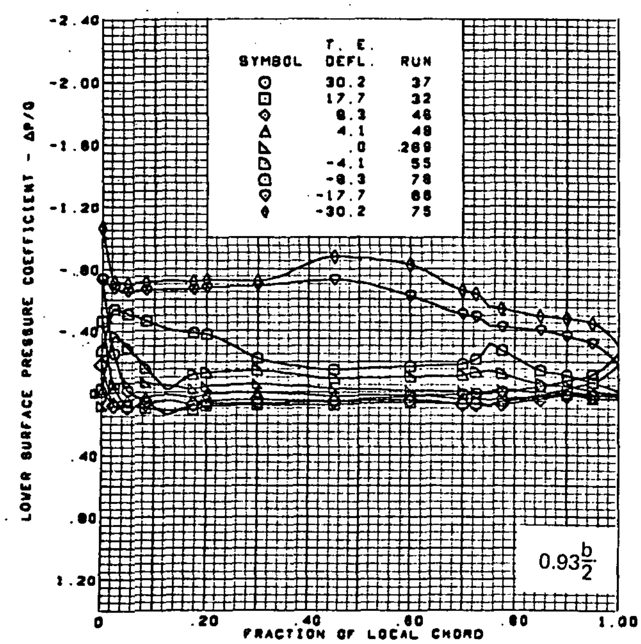


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 21.–(Continued)



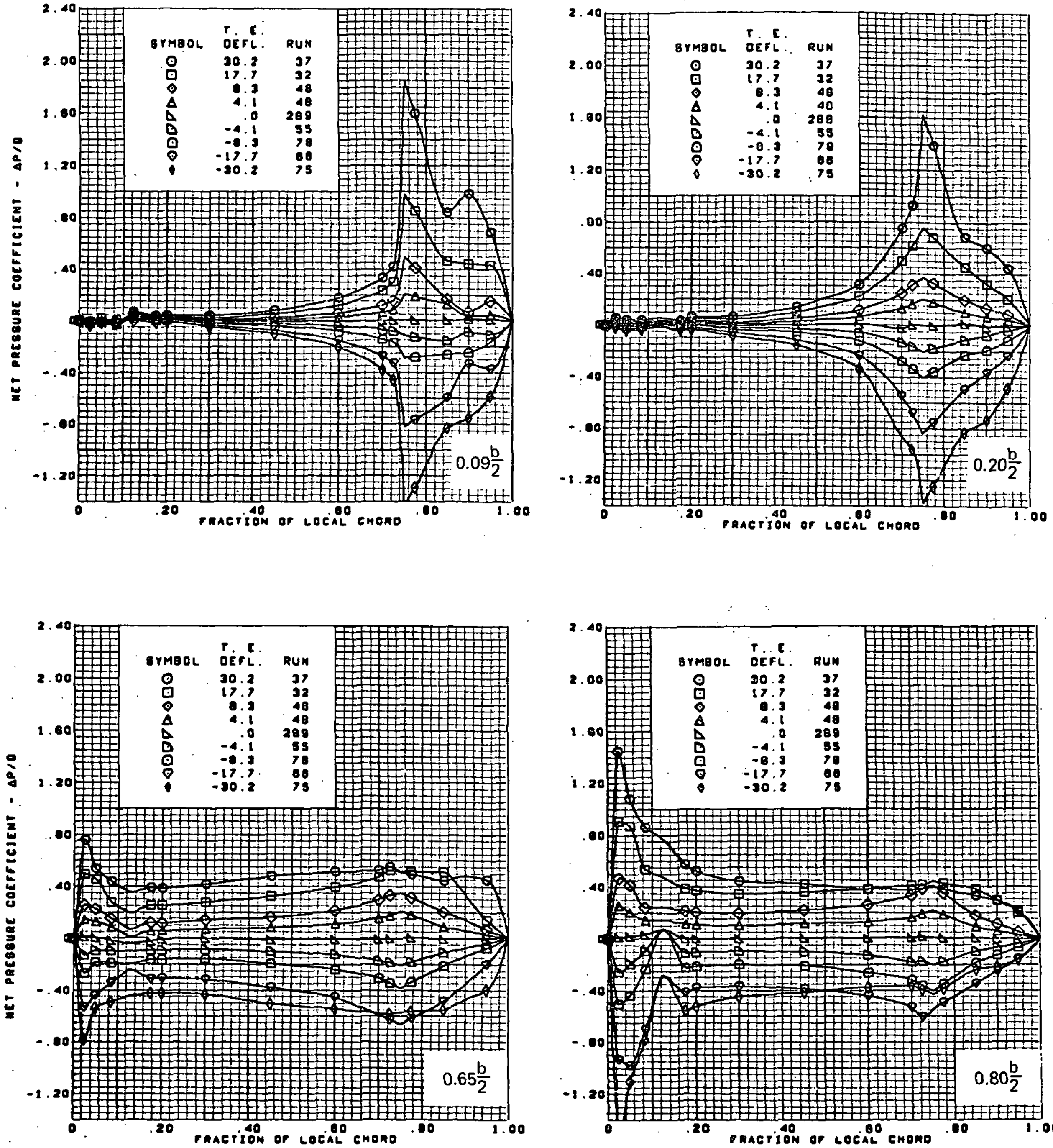




M = 0.40
$\alpha \approx$ 0.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

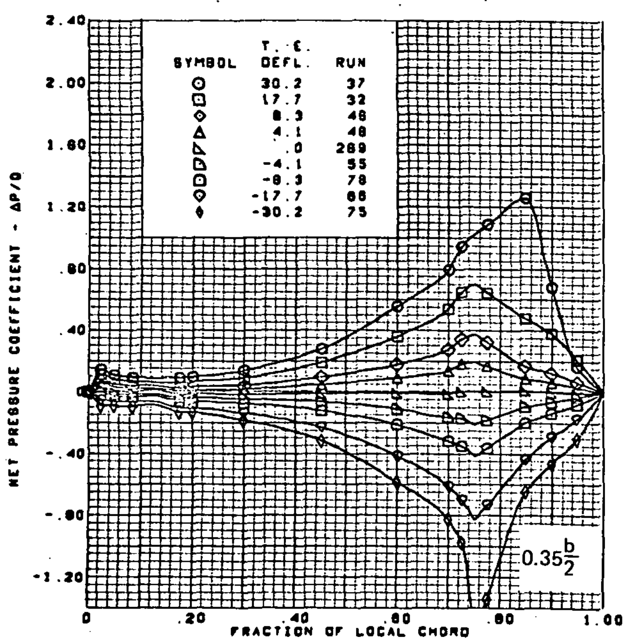
(e) (Concluded)

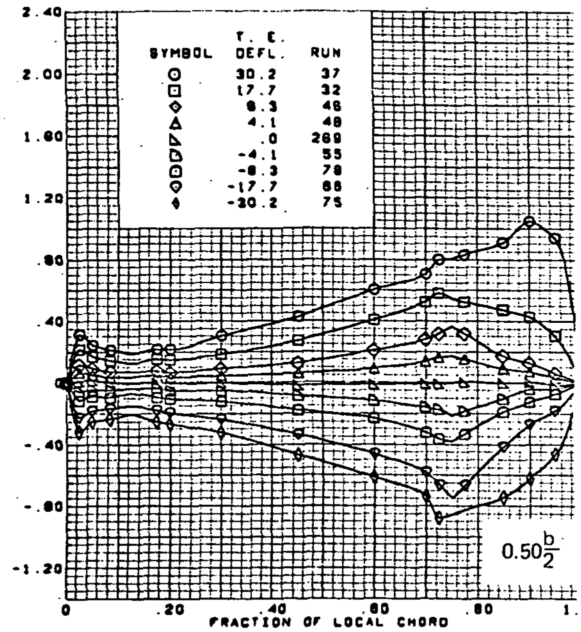
Figure 21.-(Continued)

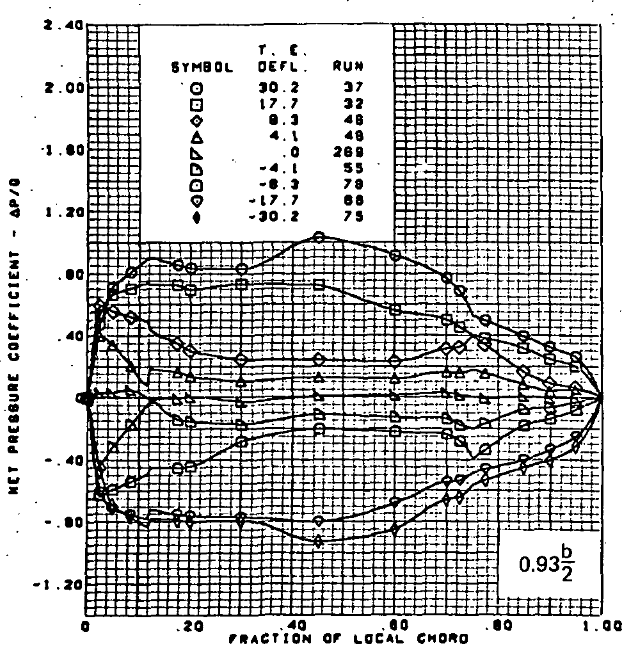


(f) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 21.–(Continued)



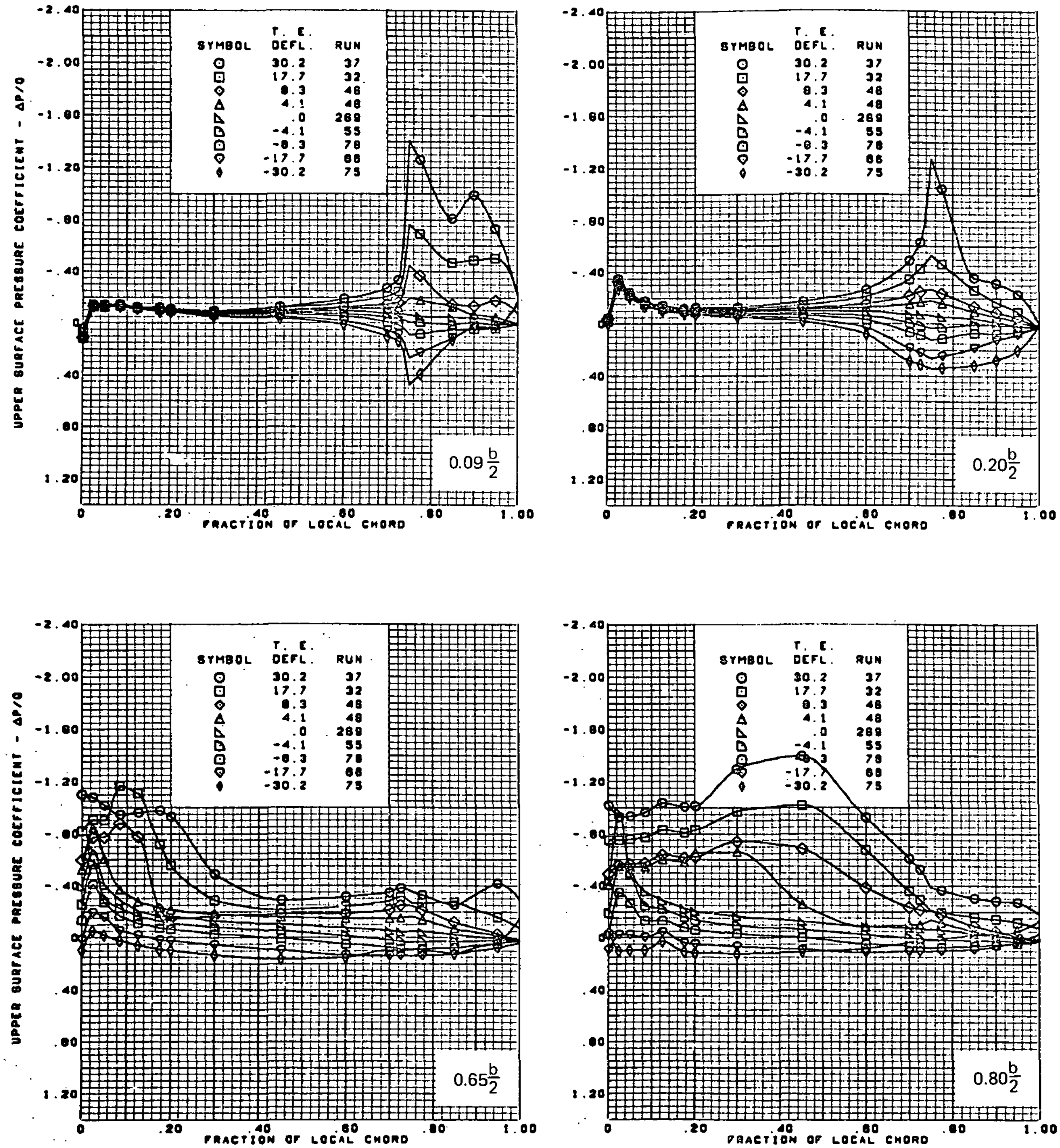




M = 0.40
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

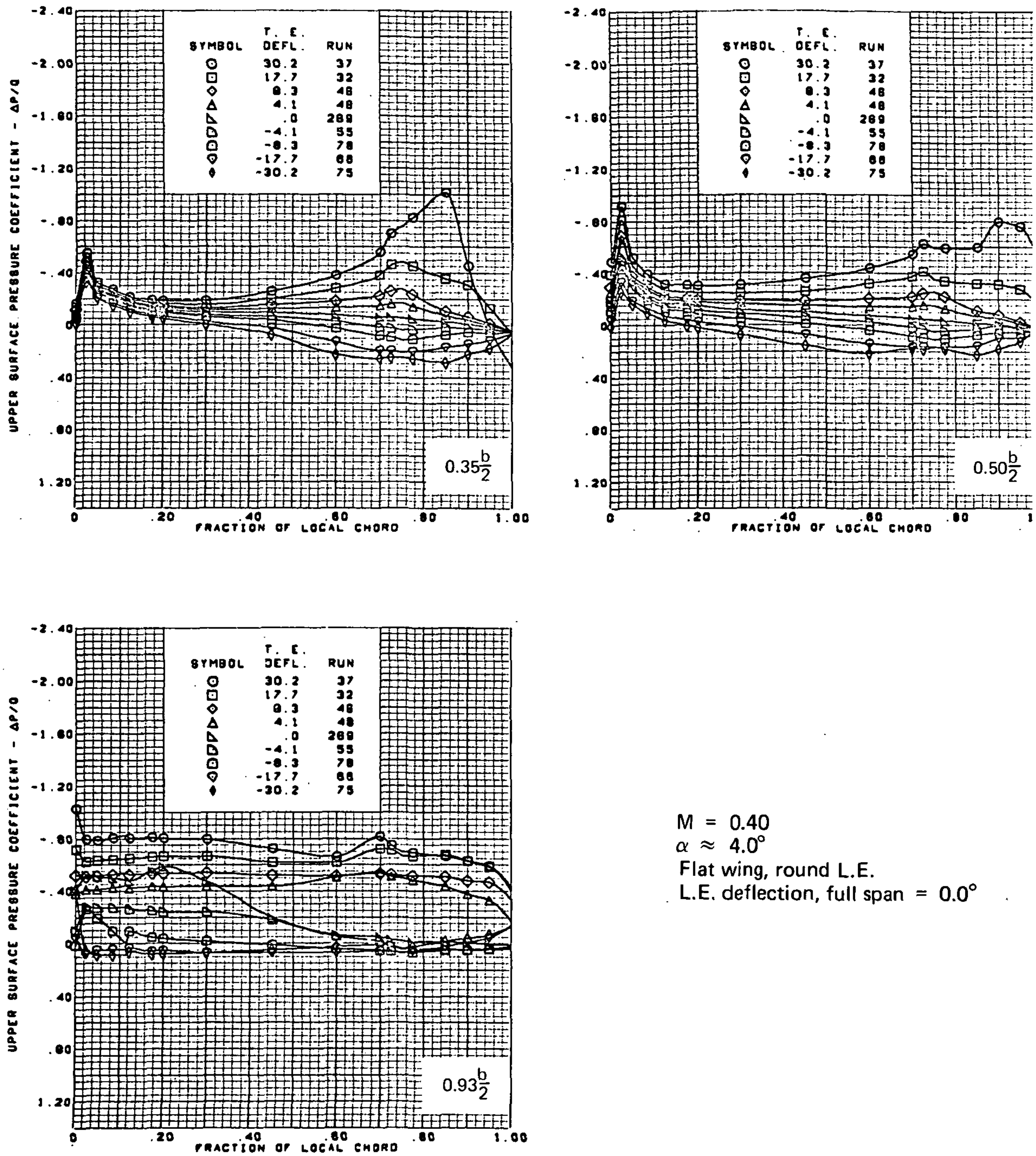
(f) (Concluded)

Figure 21.–(Continued)



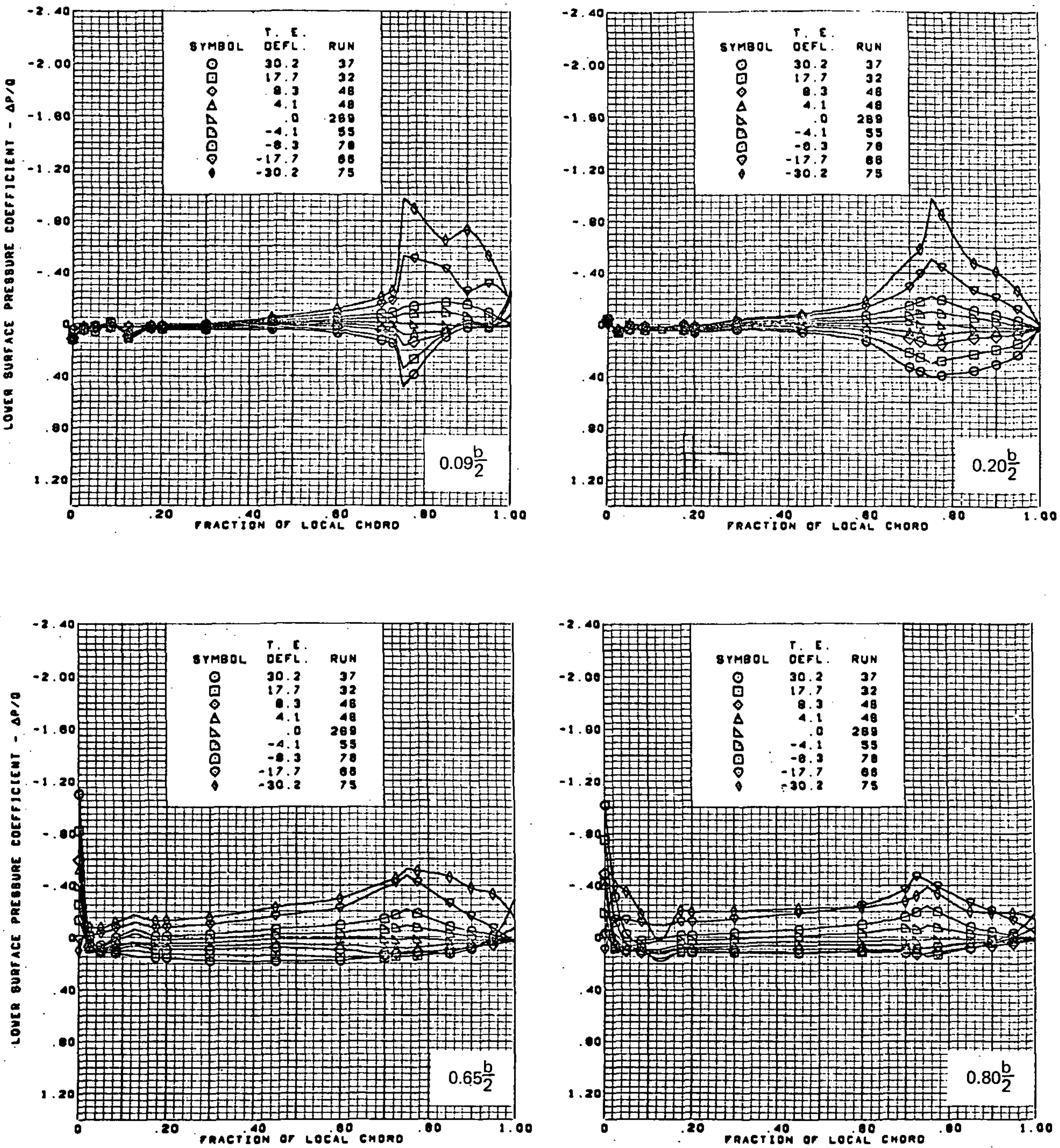
(g) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^\circ$

Figure 21.–(Continued)



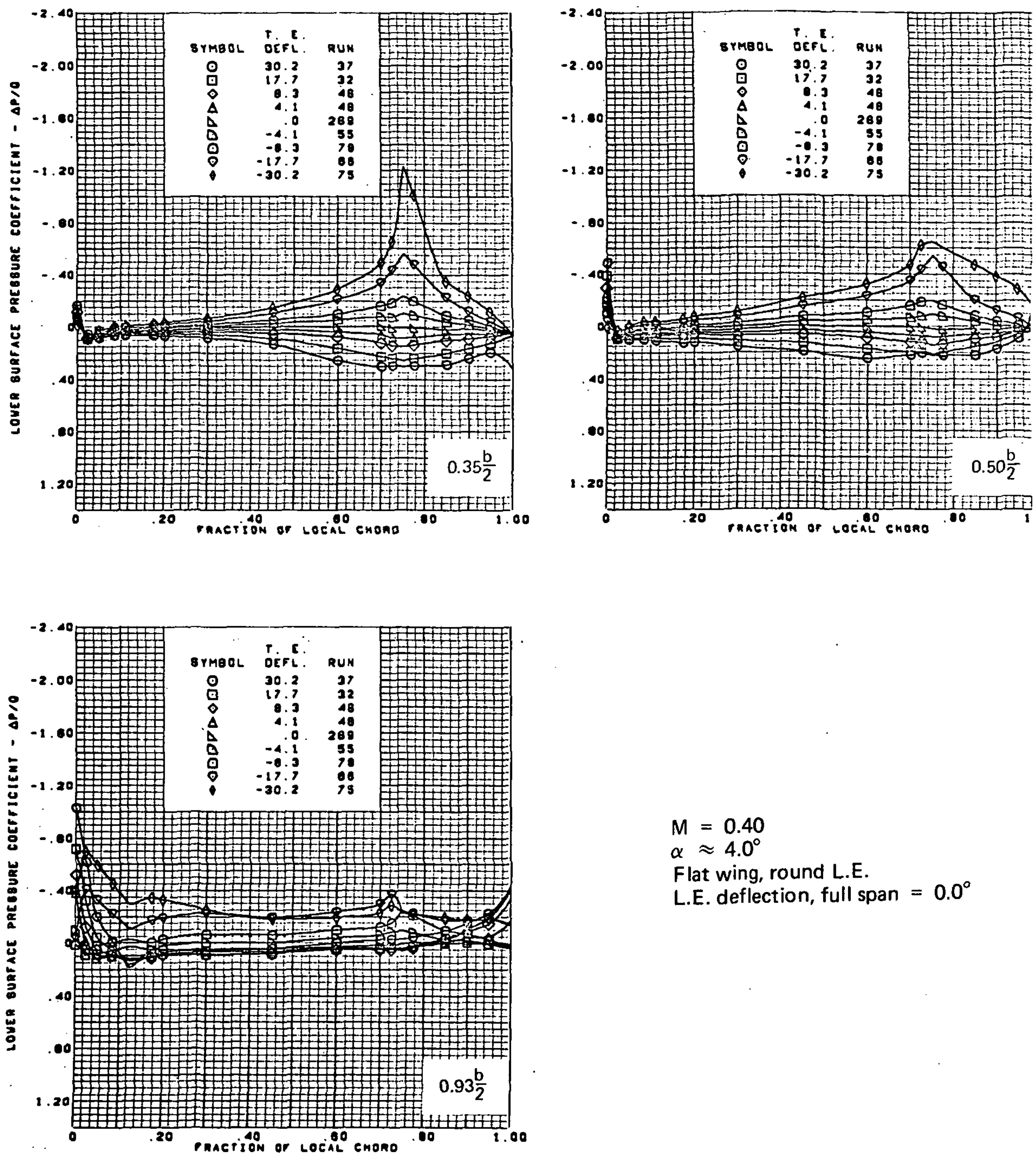
(g) (Concluded)

Figure 21.-(Continued)



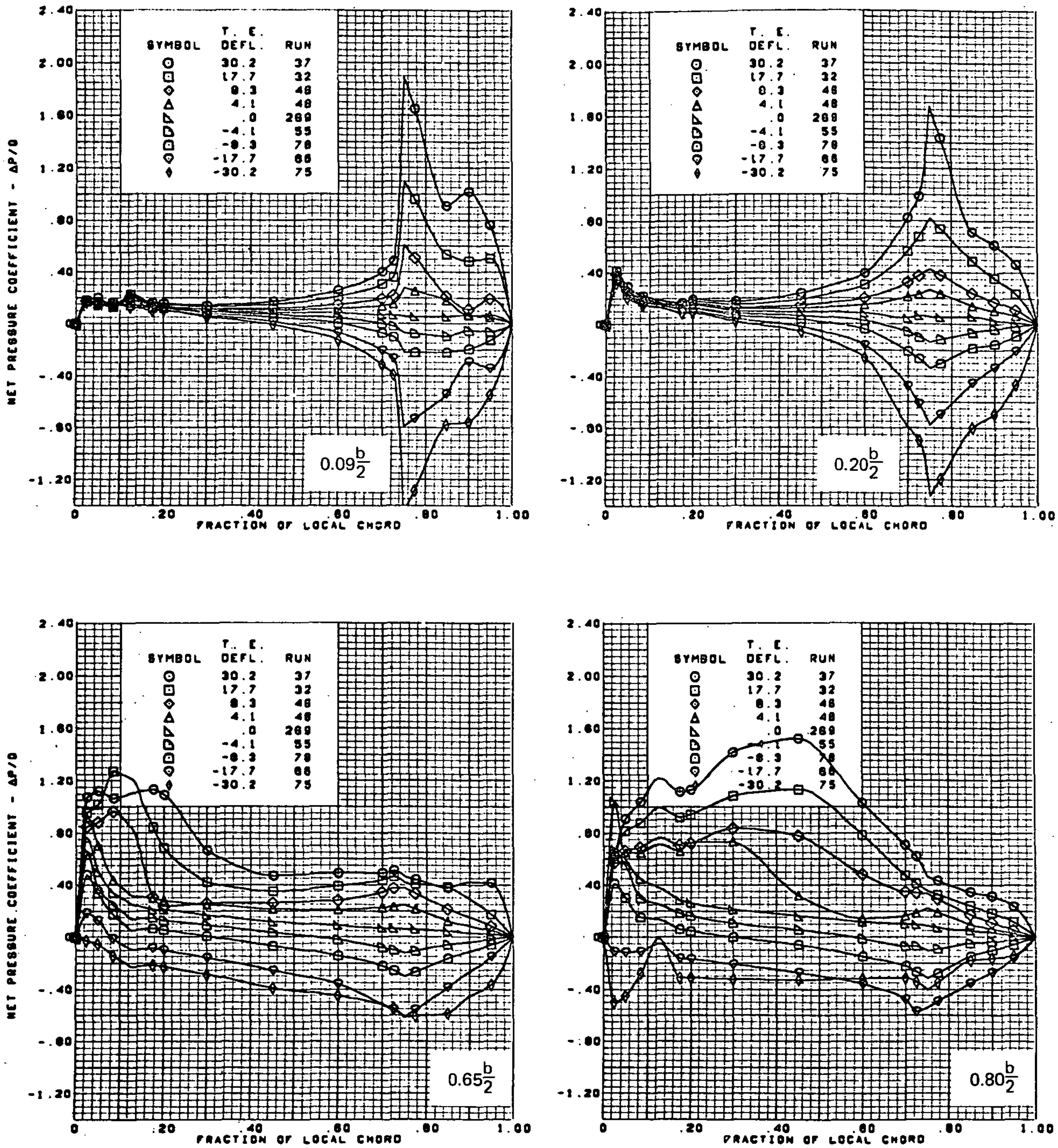
(h) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^\circ$

Figure 21.–(Continued)



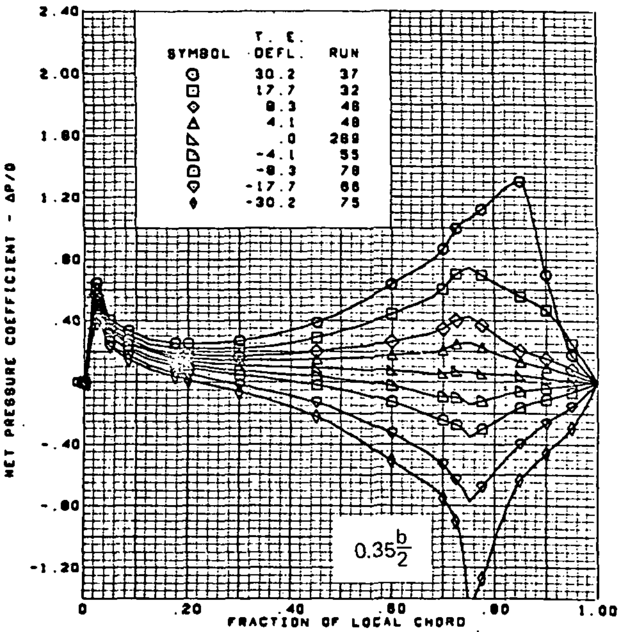
(h) (Concluded)

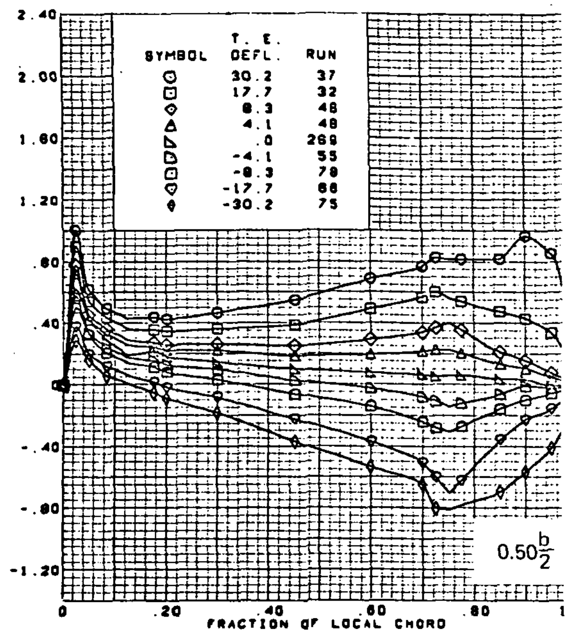
Figure 21.–(Continued)

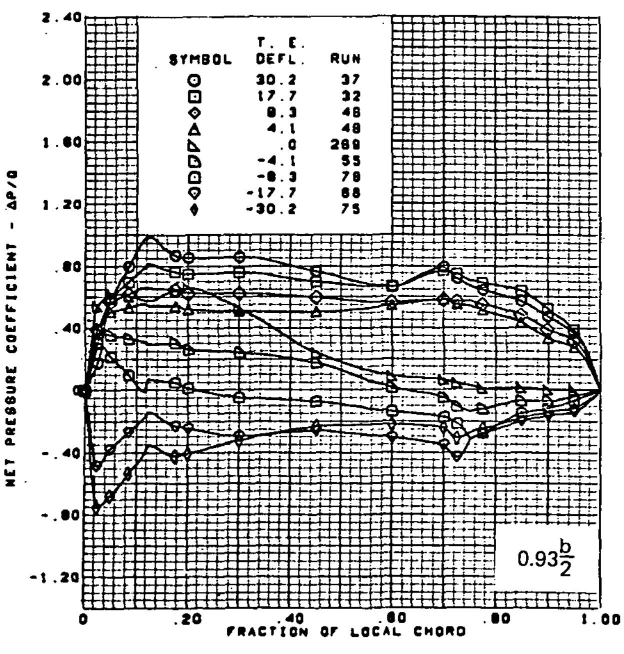


(i) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 21.–(Continued)



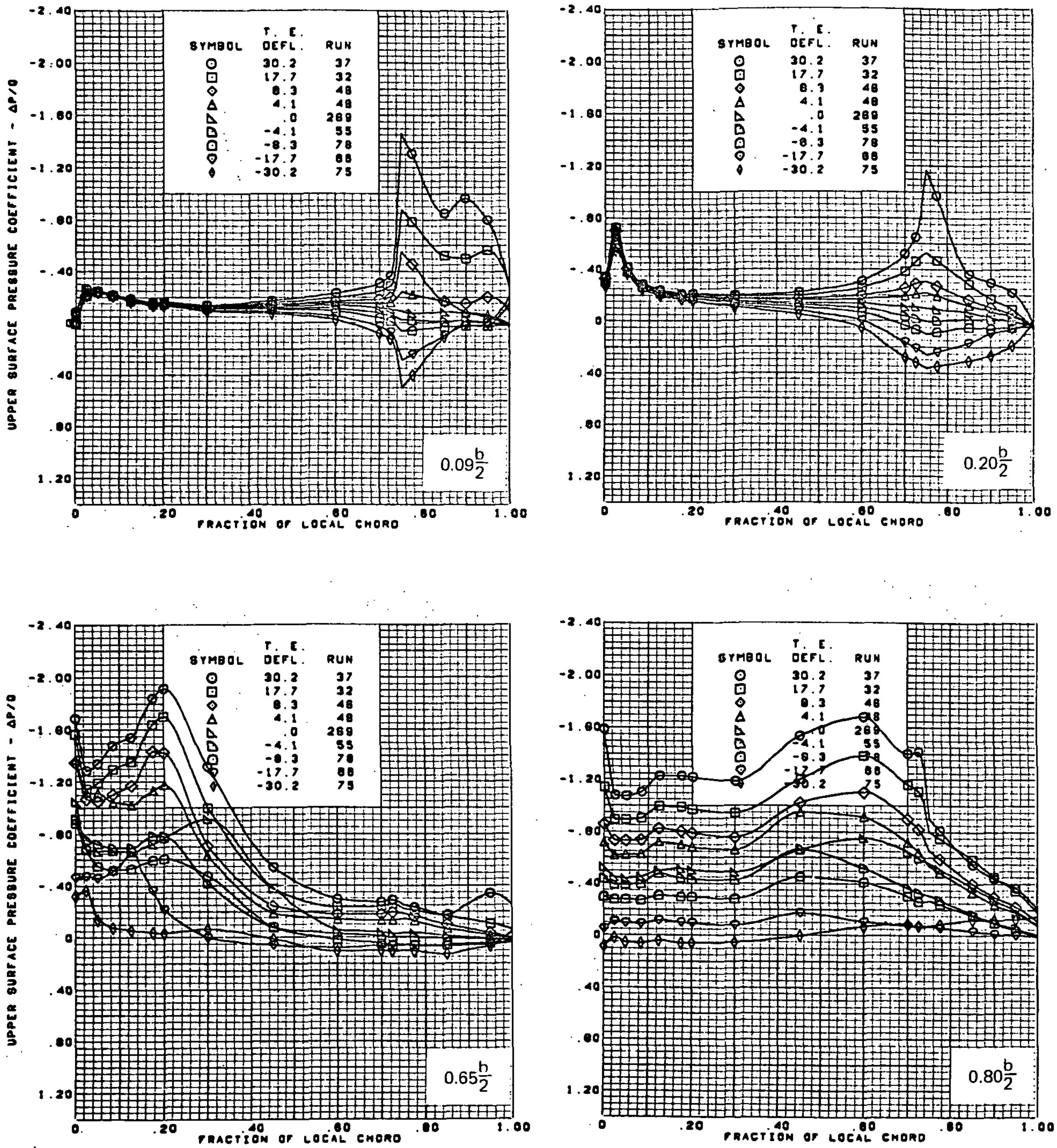




M = 0.40
$\alpha \approx 4.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

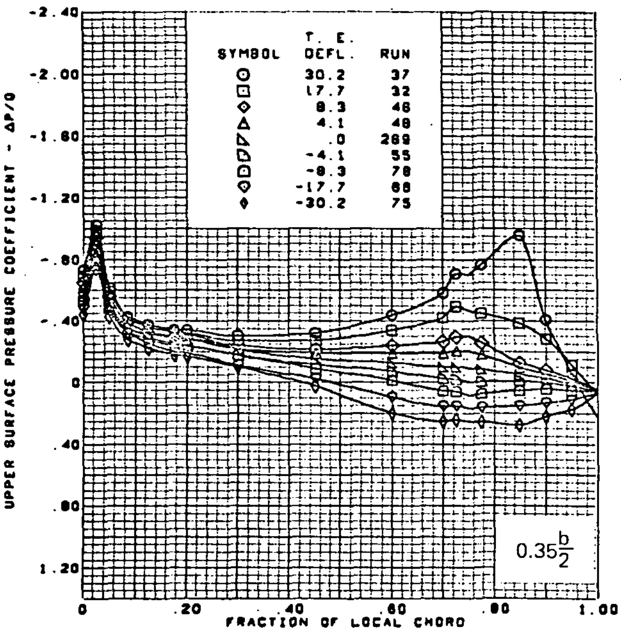
(i) (Concluded)

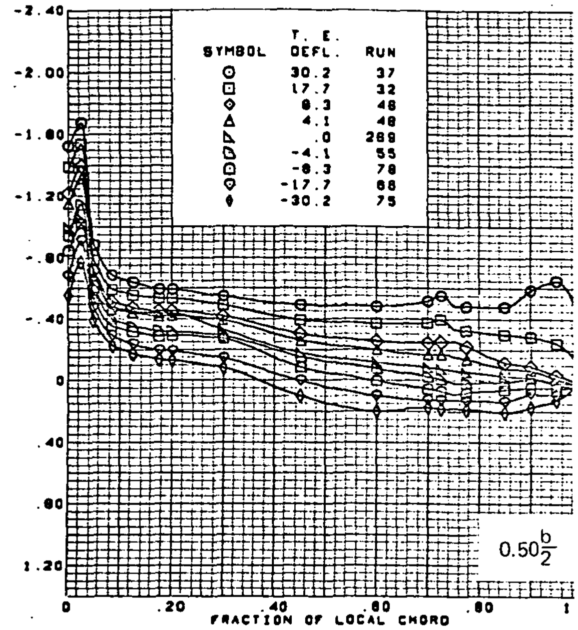
Figure 21.-(Continued)

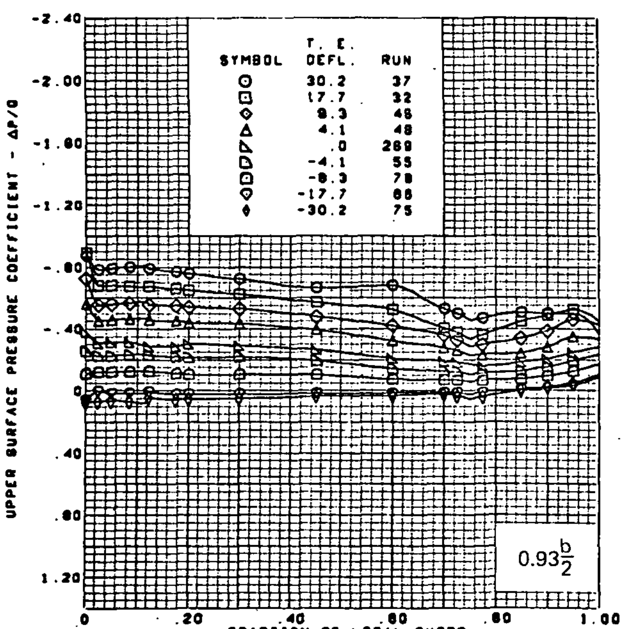


(j) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 8.0^\circ$

Figure 21.–(Continued)



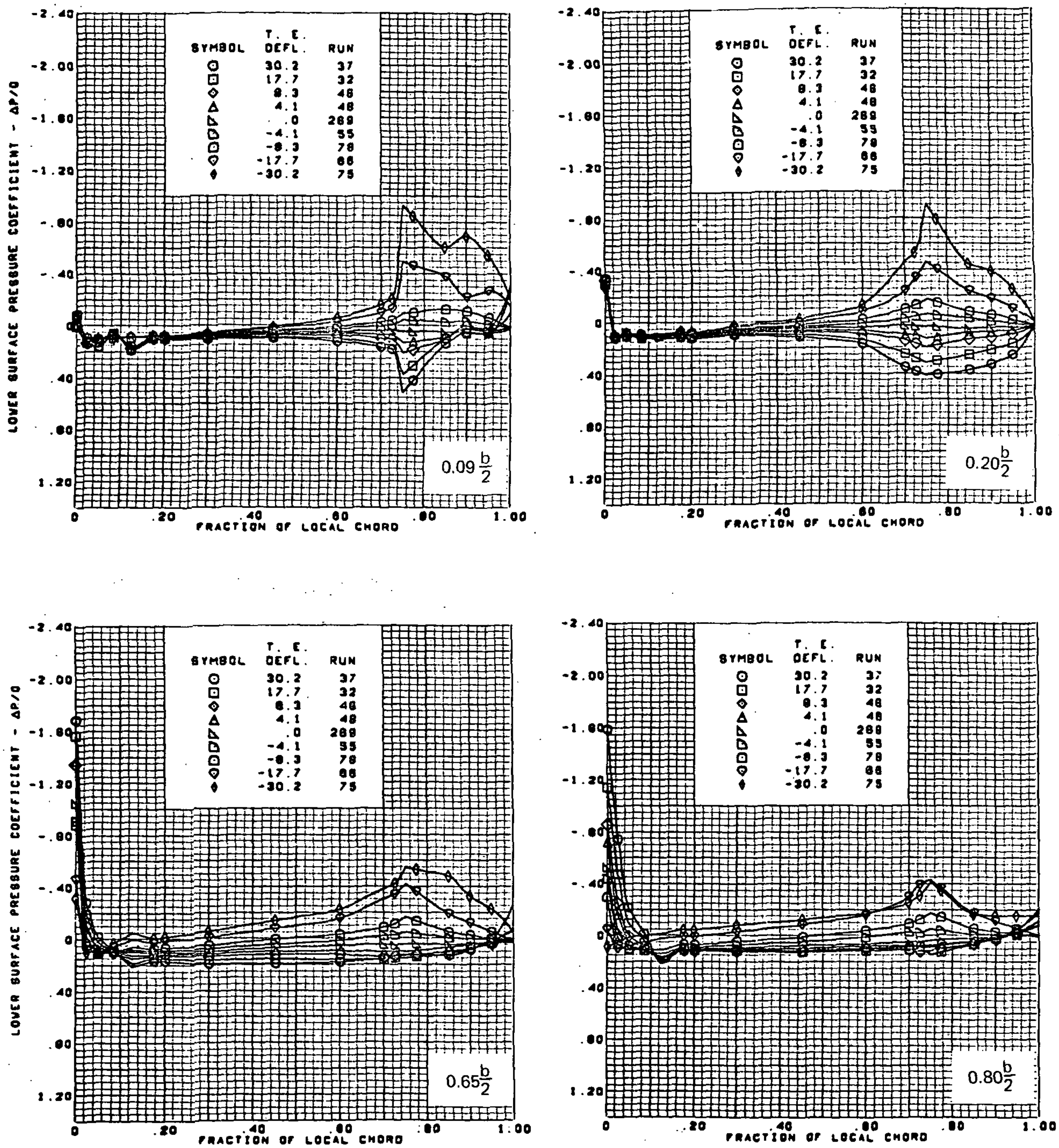




M = 0.40
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

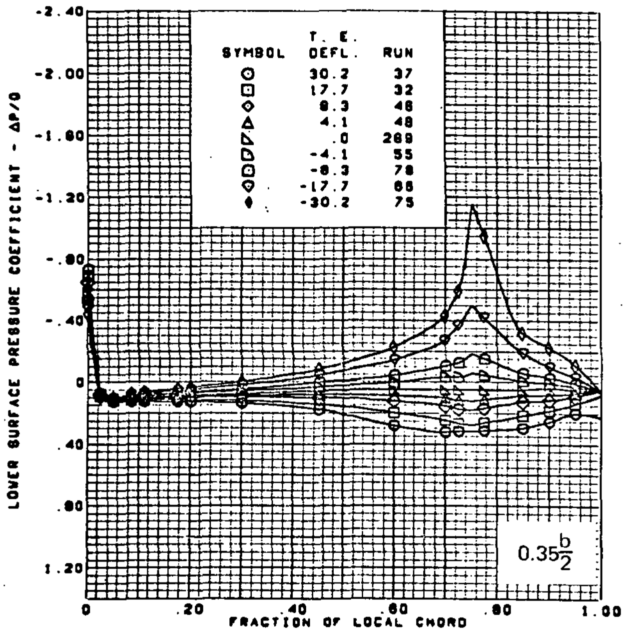
(j) (Concluded)

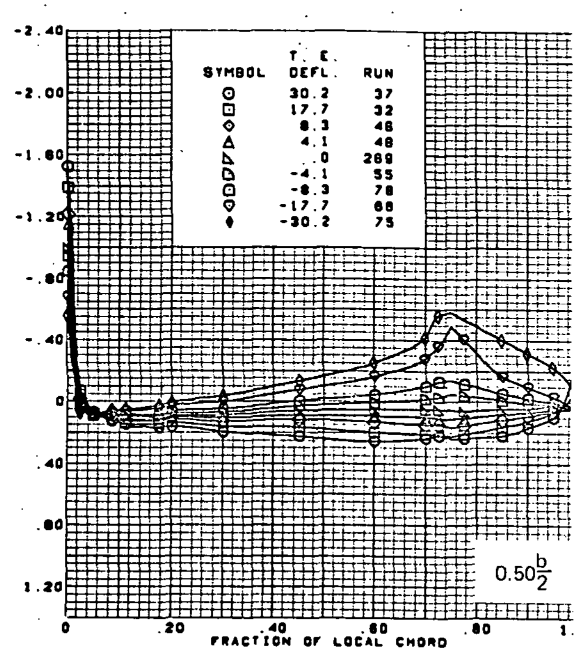
Figure 21.–(Continued)

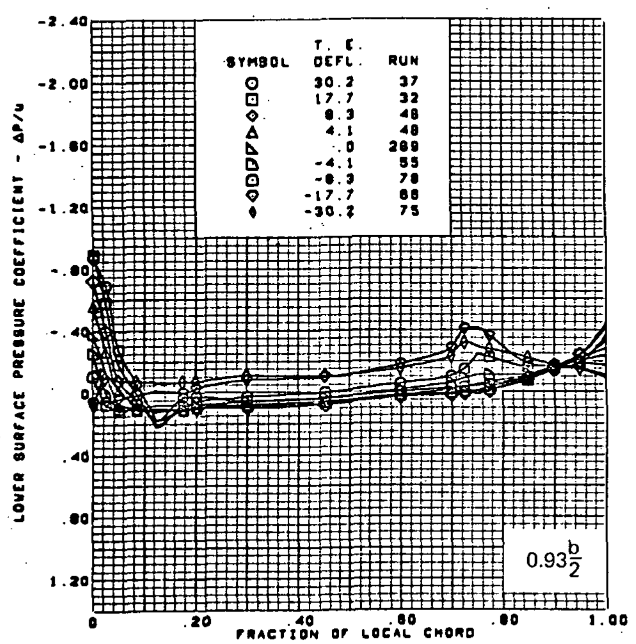


(k) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 8.0°$

Figure 21.–(Continued)



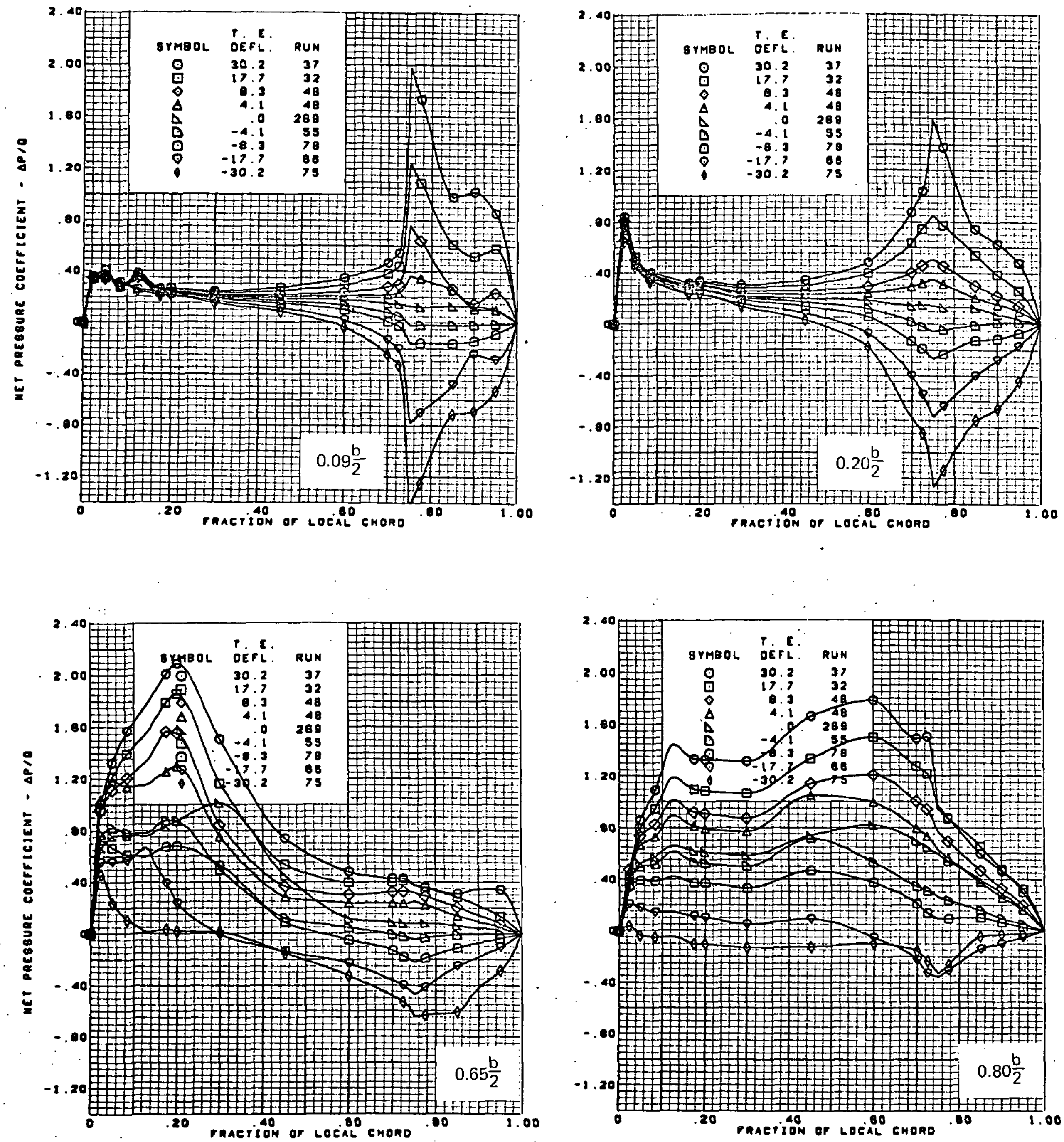




M = 0.40
$\alpha \approx 8.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

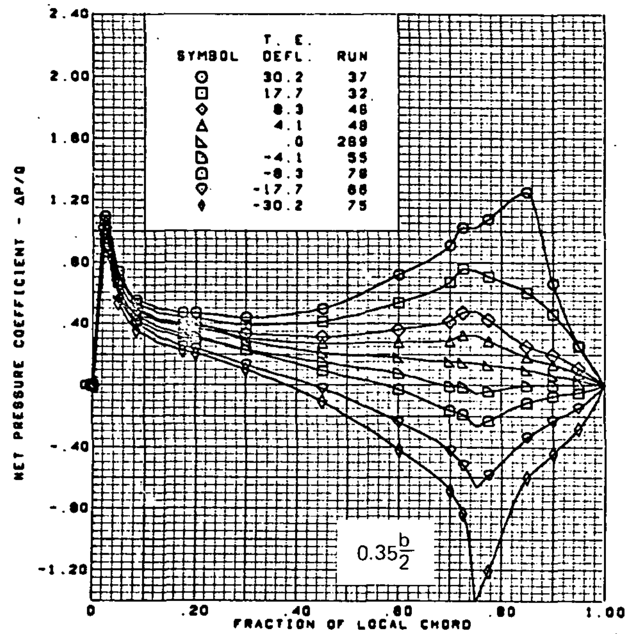
(k) (Concluded)

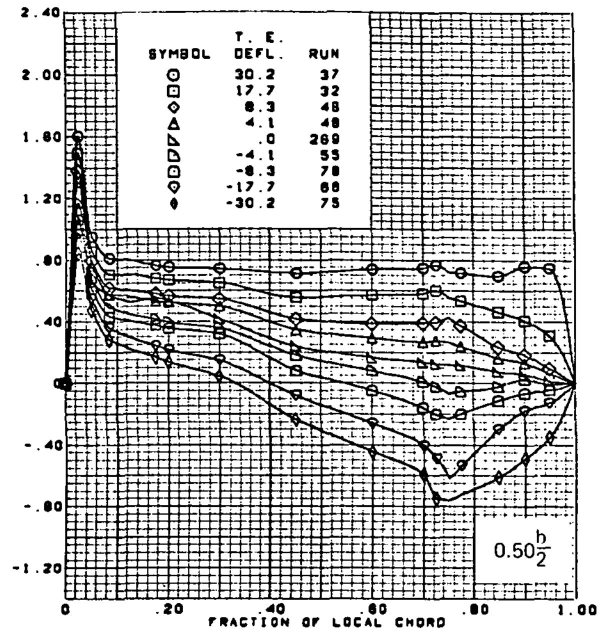
Figure 21.–(Continued)

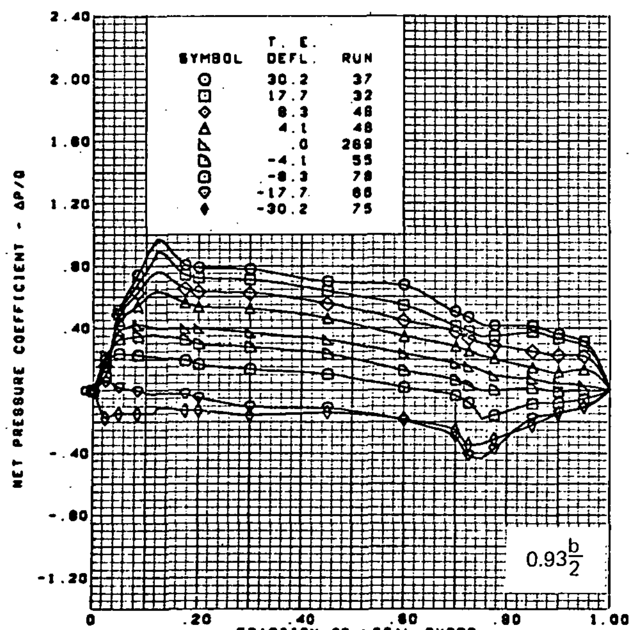


(l) Net Chordwise Pressure Distributions, $\alpha \approx 8.0°$

Figure 21.-(Continued)



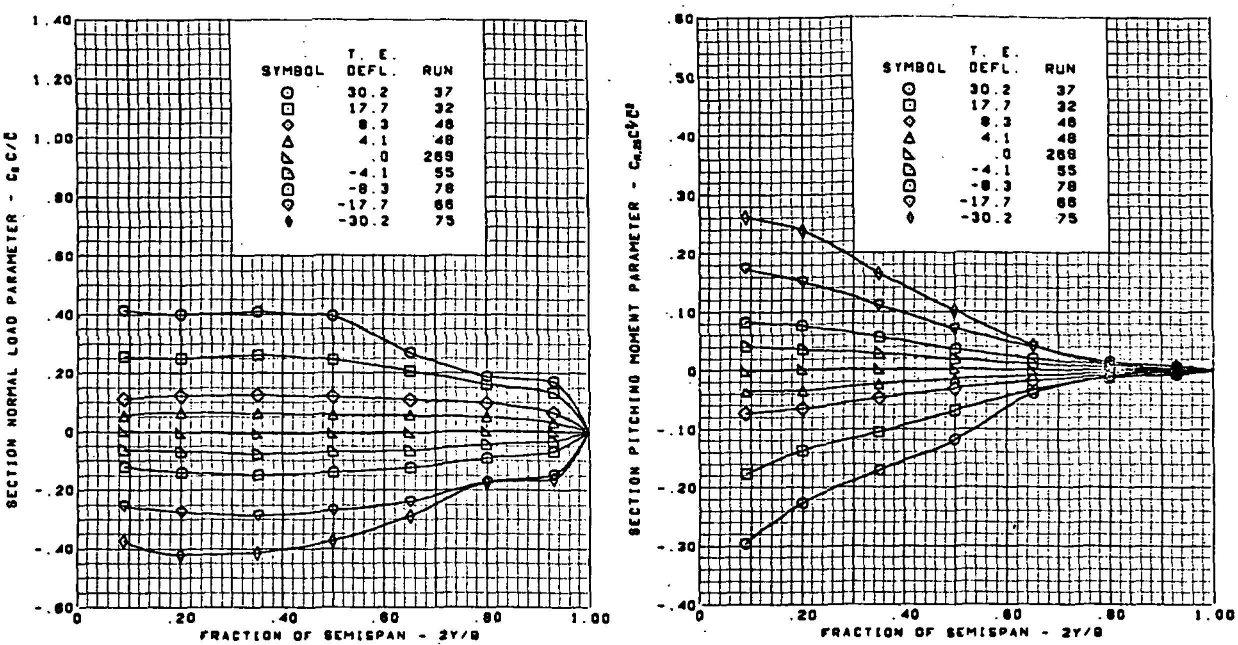




M = 0.40
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(l) (Concluded)

Figure 21.–(Continued)



M = 0.40
$\alpha \approx 0.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(m) Spanload Distributions, $\alpha \approx 0.0^\circ$

Figure 21.-(Continued)

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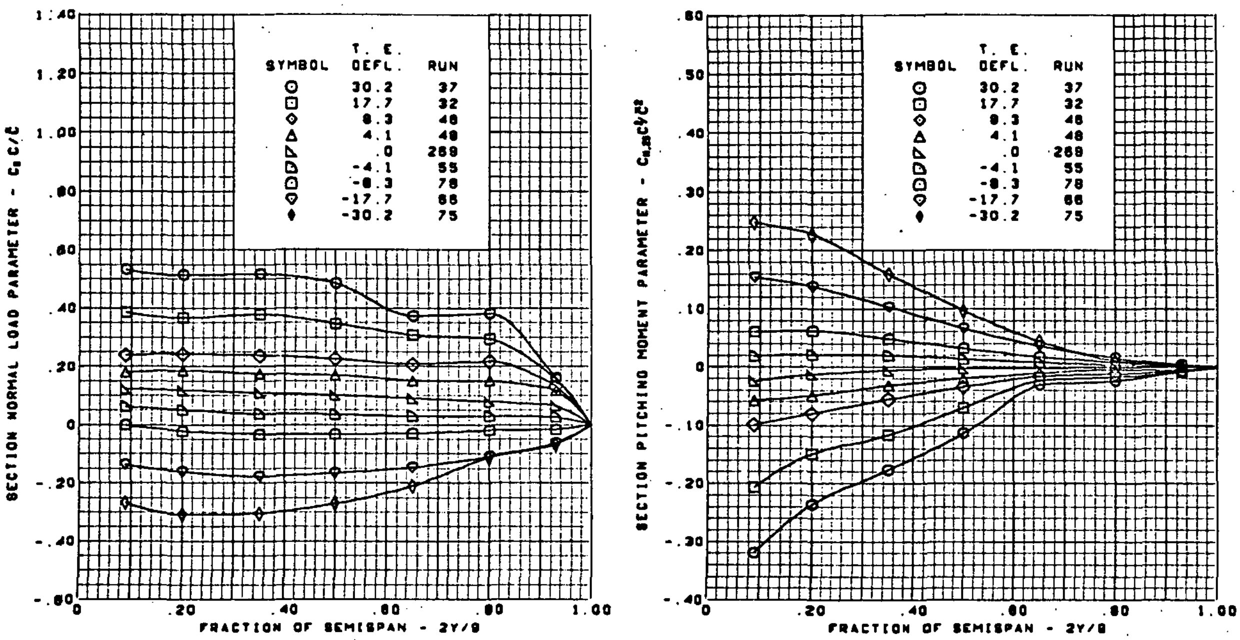
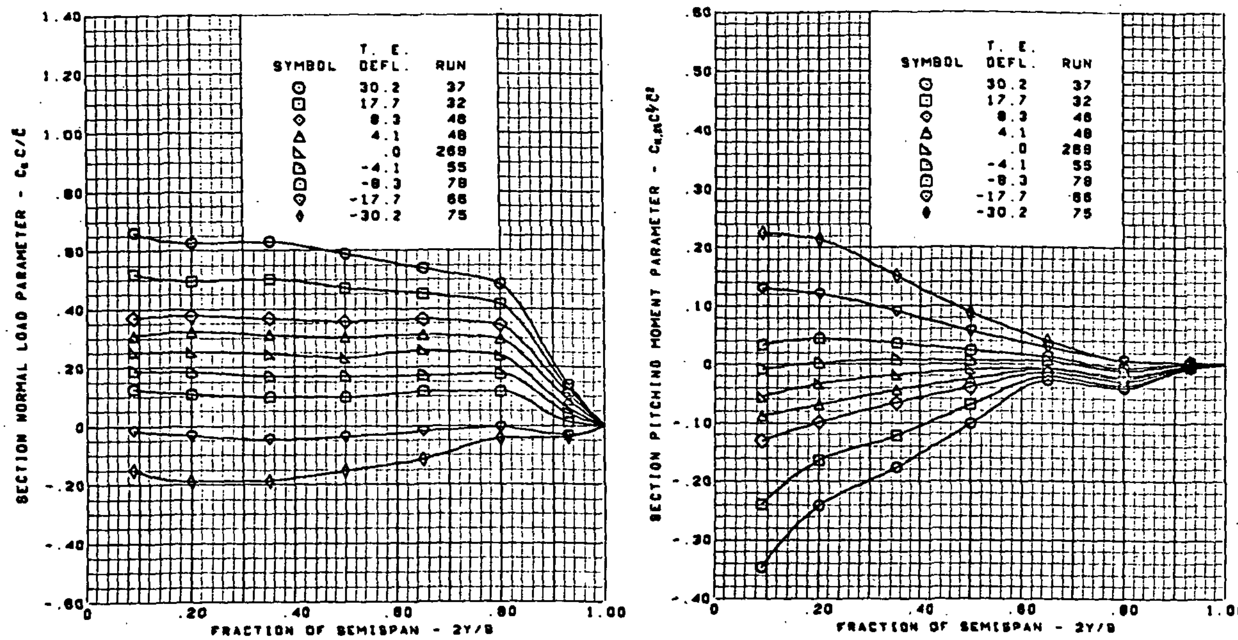


M = 0.40
$\alpha \approx 4.0^{\circ}$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(n) Spanload Distributions, $\alpha \approx 4.0^{\circ}$

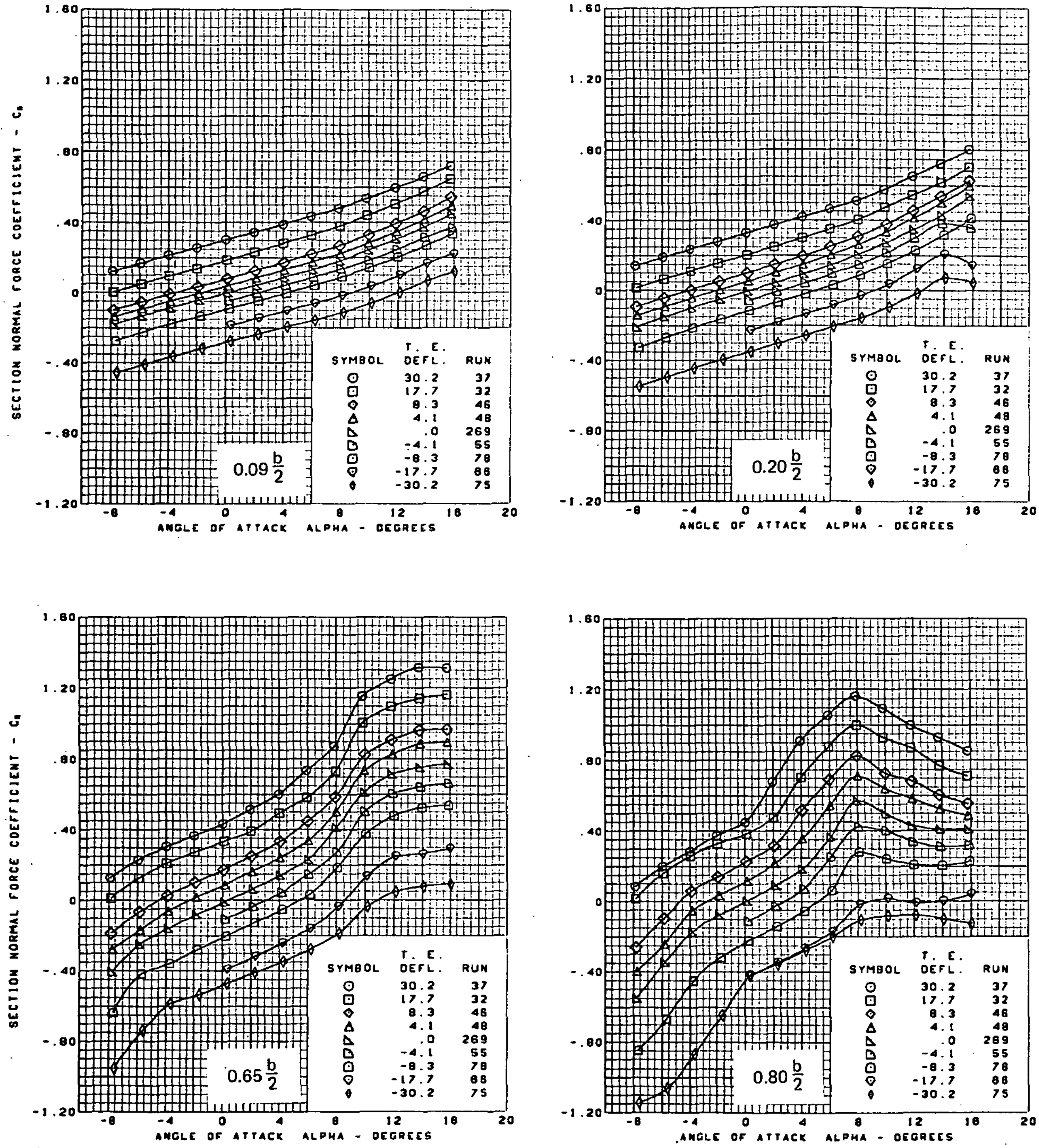
Figure 21.–(Continued)



M = 0.40
α ≈ 8.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

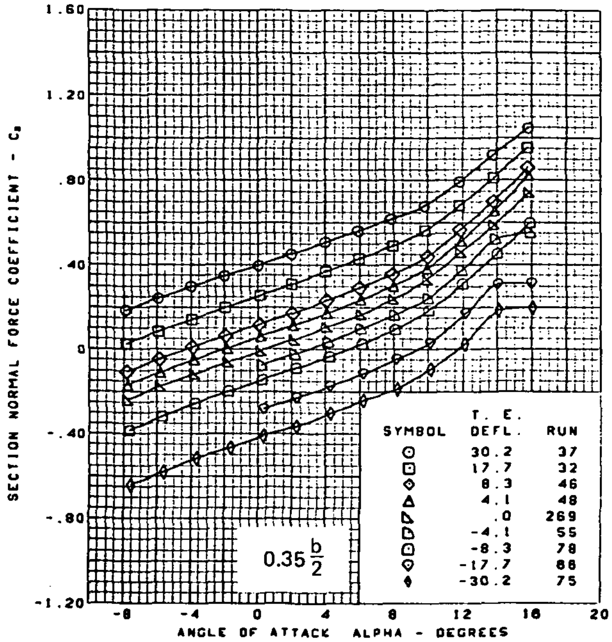
(o) Spanload Distributions, α ≈ 8.0°

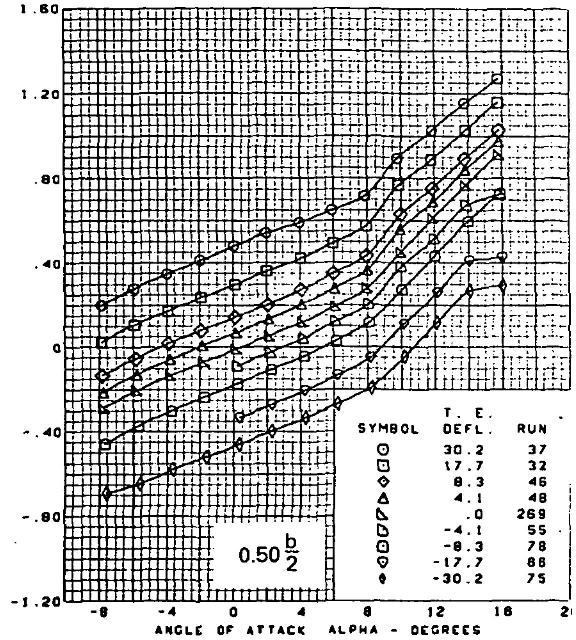
Figure 21.–(Continued)

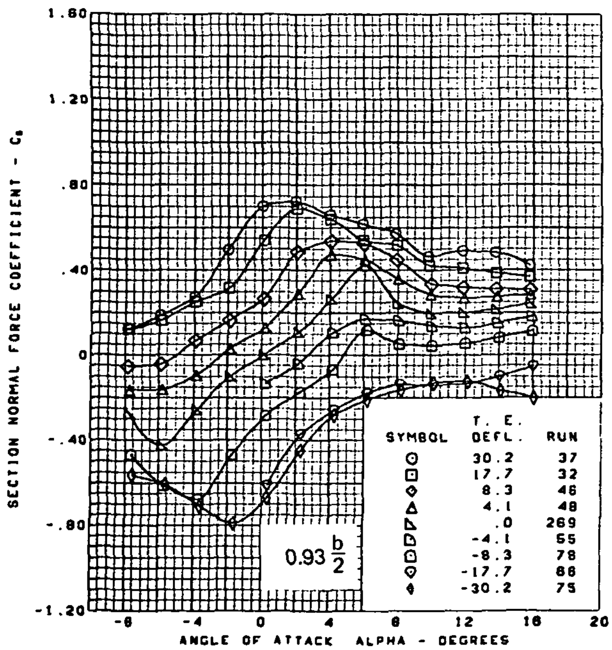


(p) Section Aerodynamic Coefficients — Normal Force

Figure 21.–(Continued)



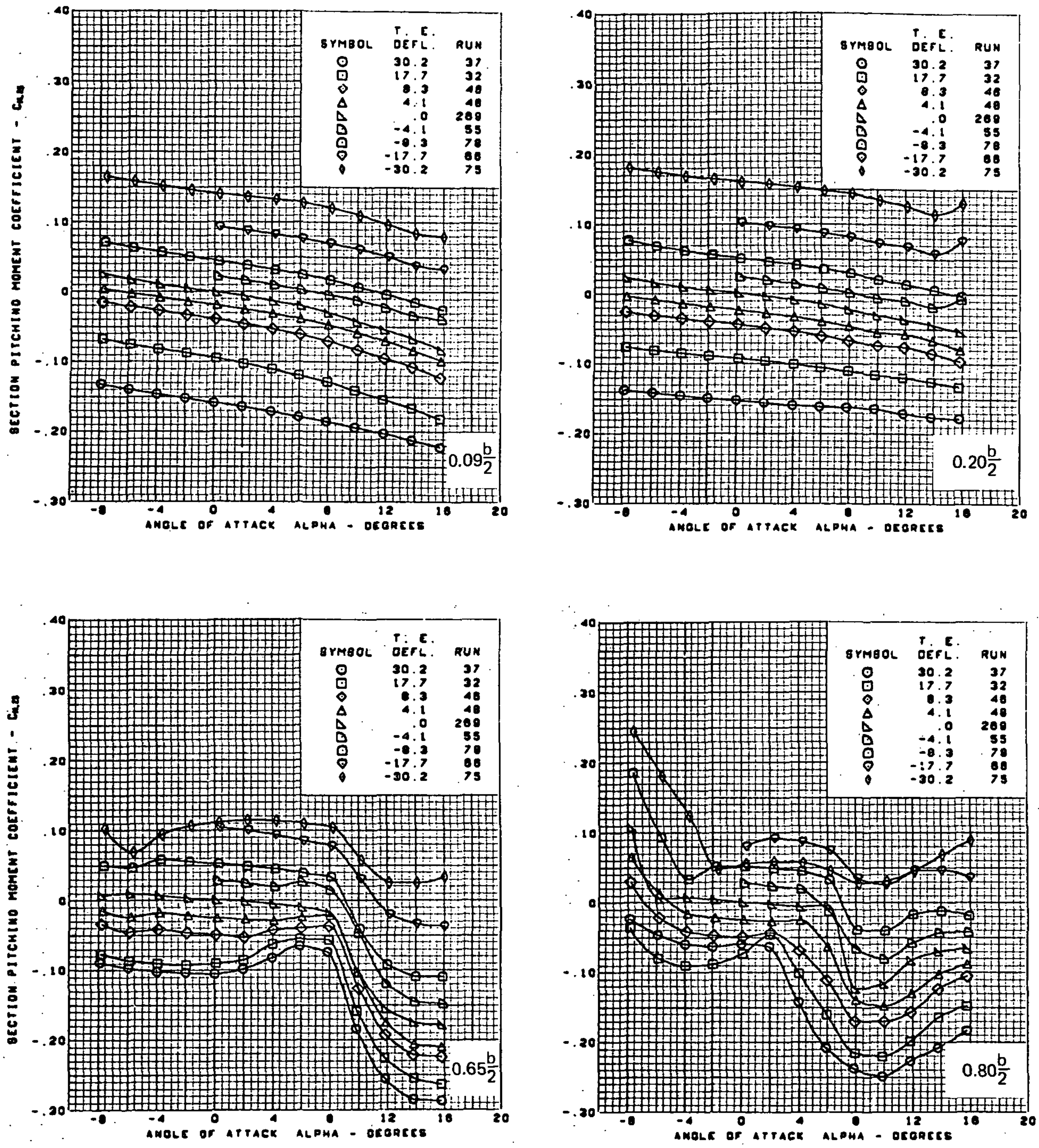




M = 0.40
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

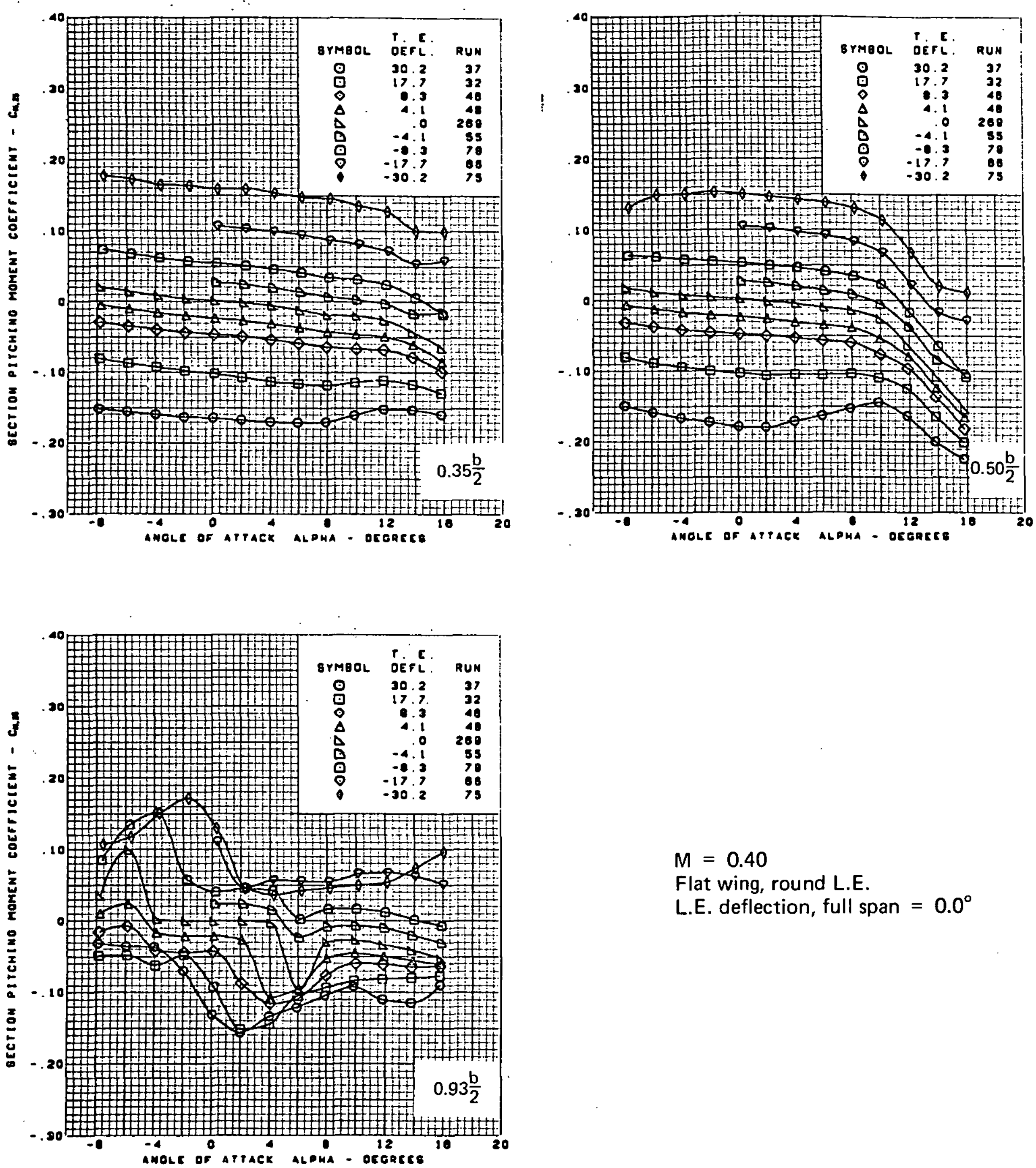
(p) (Concluded)

Figure 21.-(Continued)



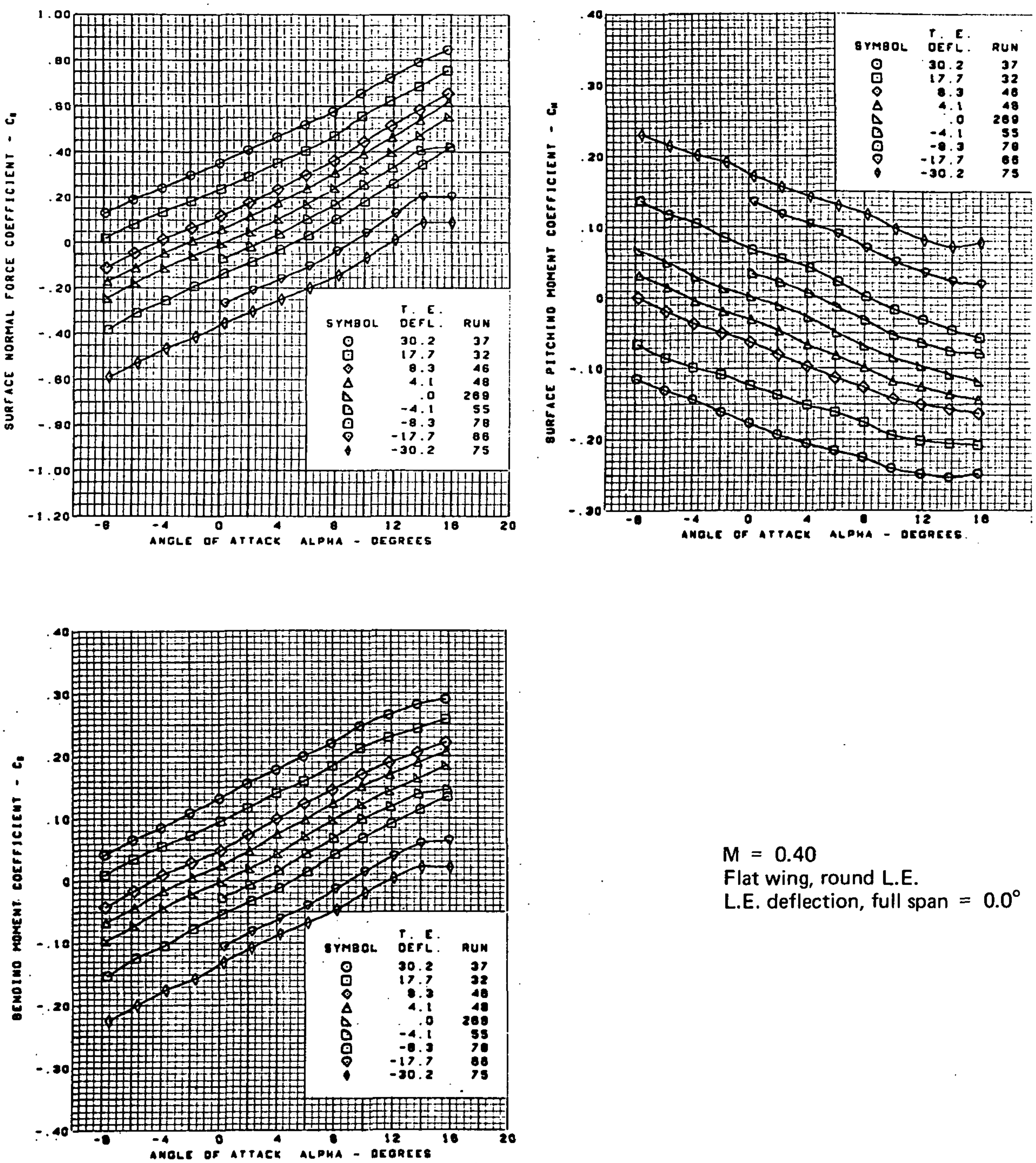
(q) *Section Aerodynamic Coefficients — Pitching Moment*

Figure 21.-(Continued)



(q) (Concluded)

Figure 21.–(Continued)



(r) Wing Aerodynamic Coefficients

Figure 21.–(Concluded)

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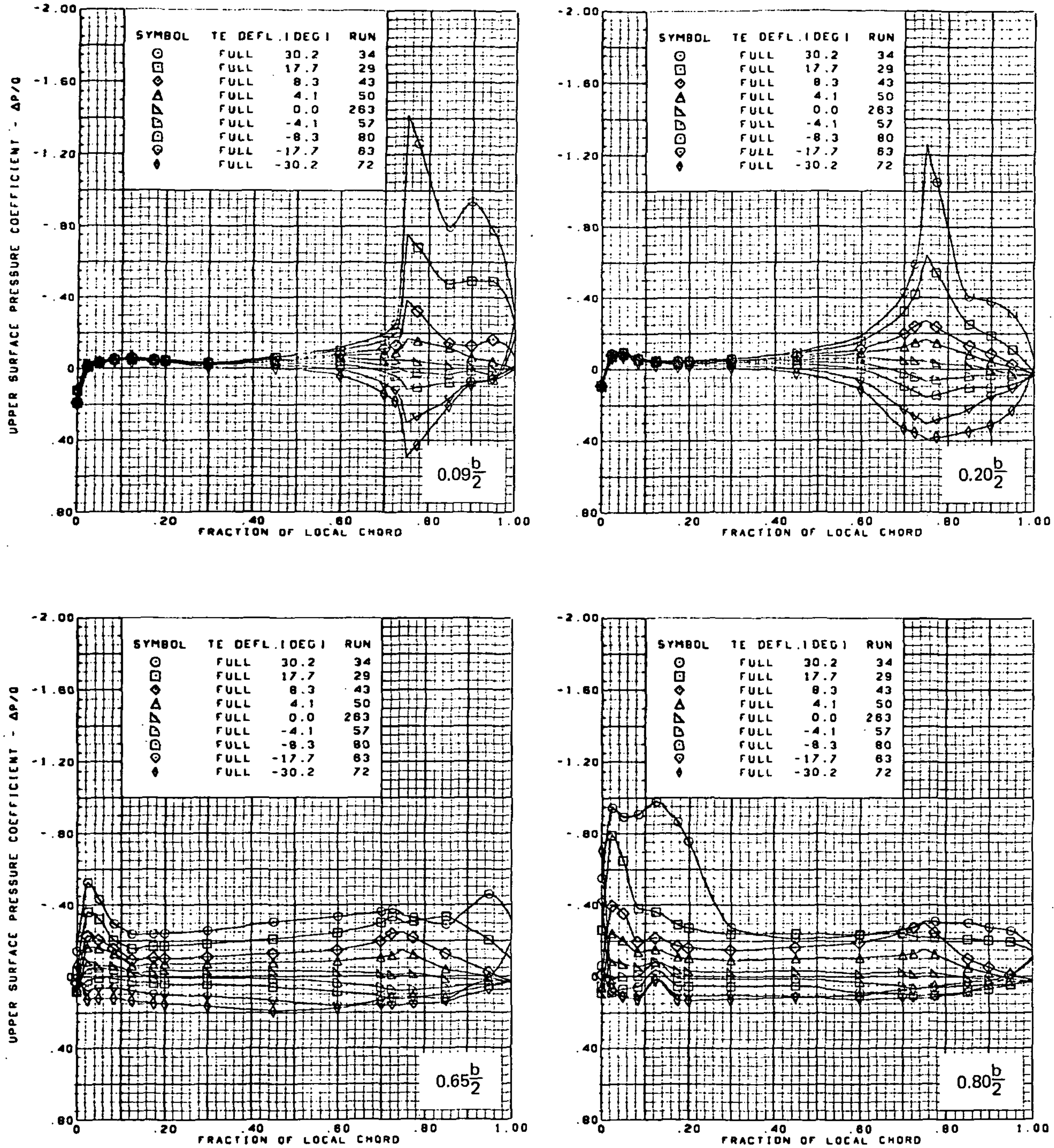
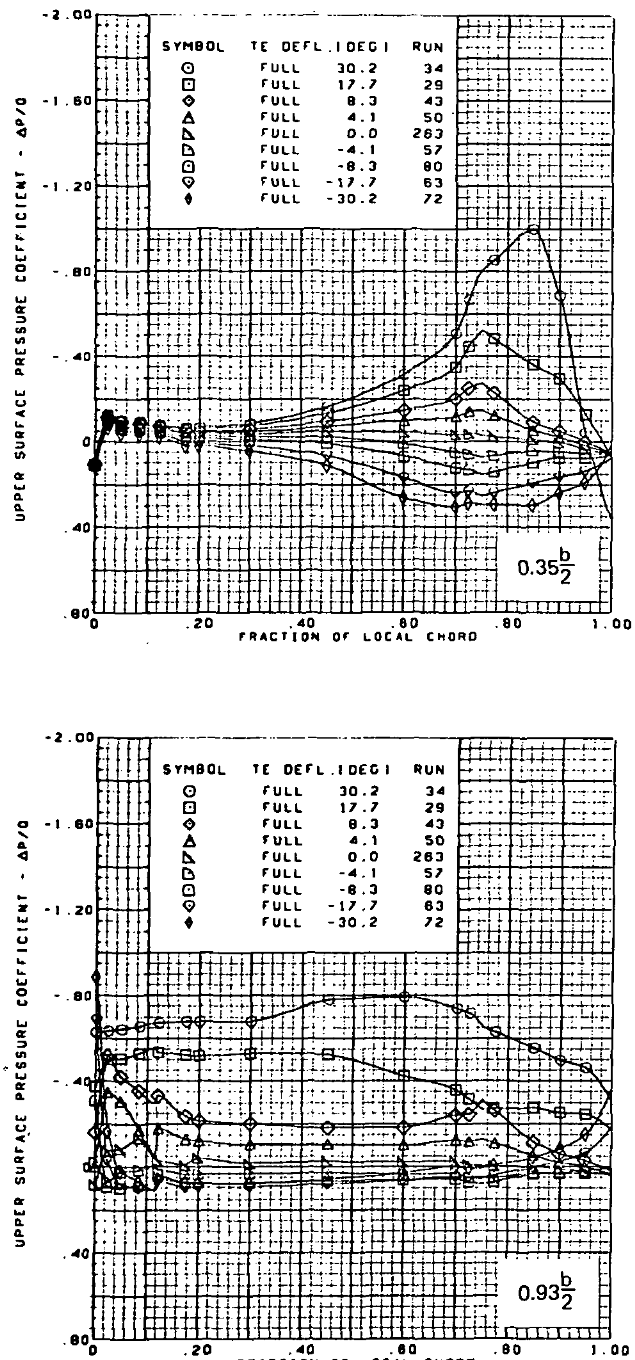


(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

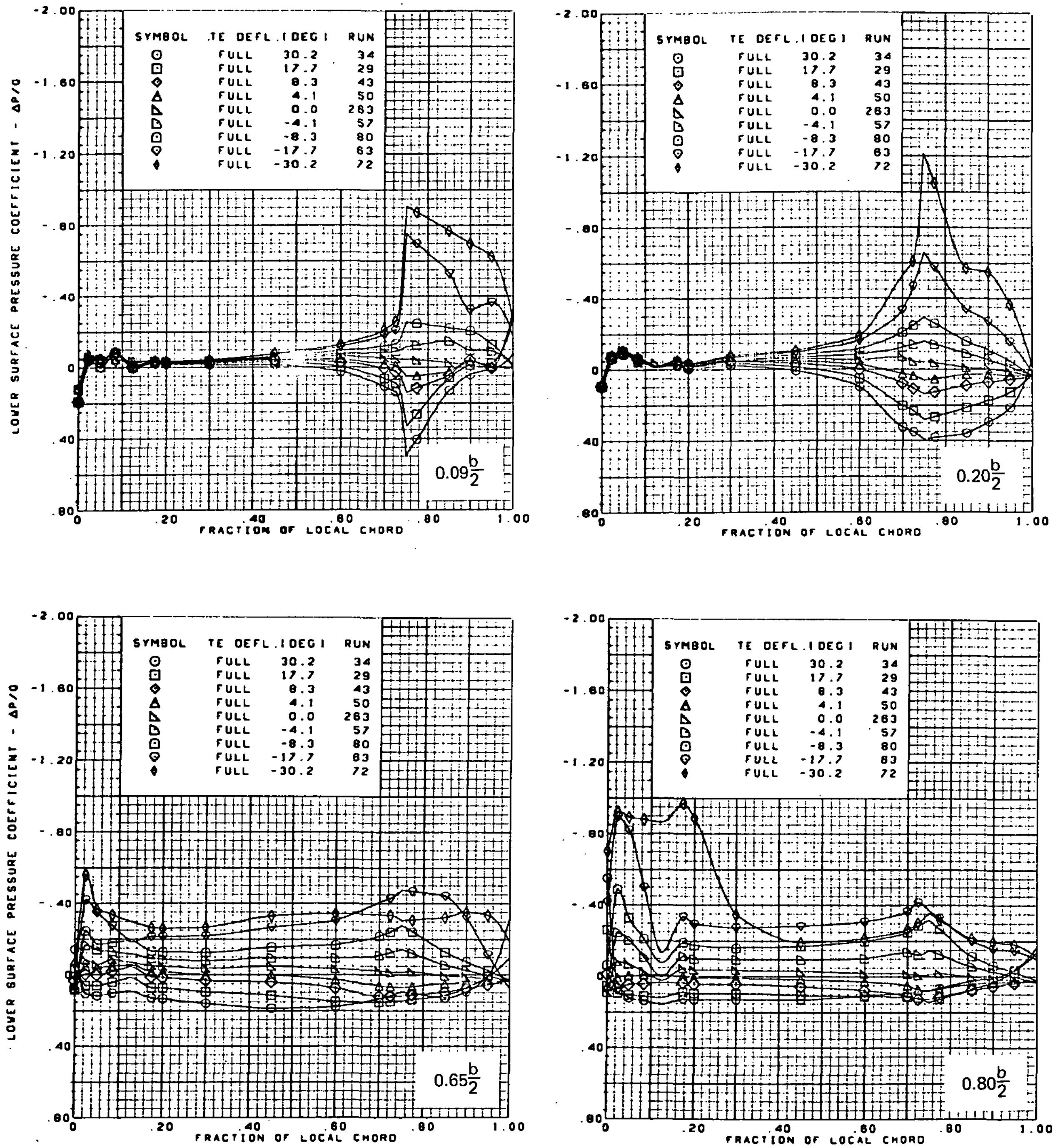
Figure 22.—Wing Experimental Data—Effect of Full Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.70



M = 0.70
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

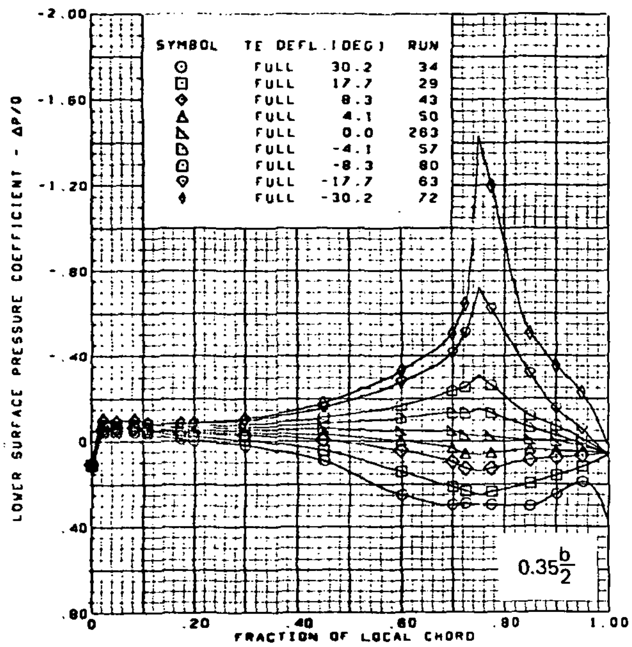
(a) (Concluded)

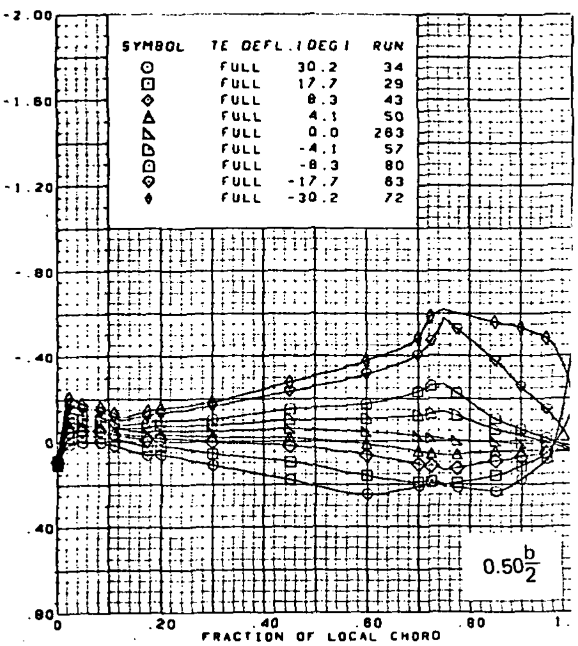
Figure 22.–(Continued)

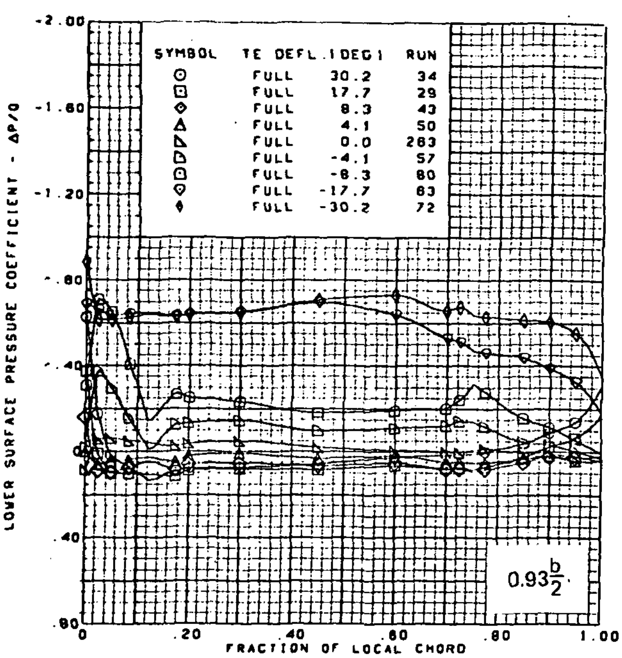


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 22.–(Continued)



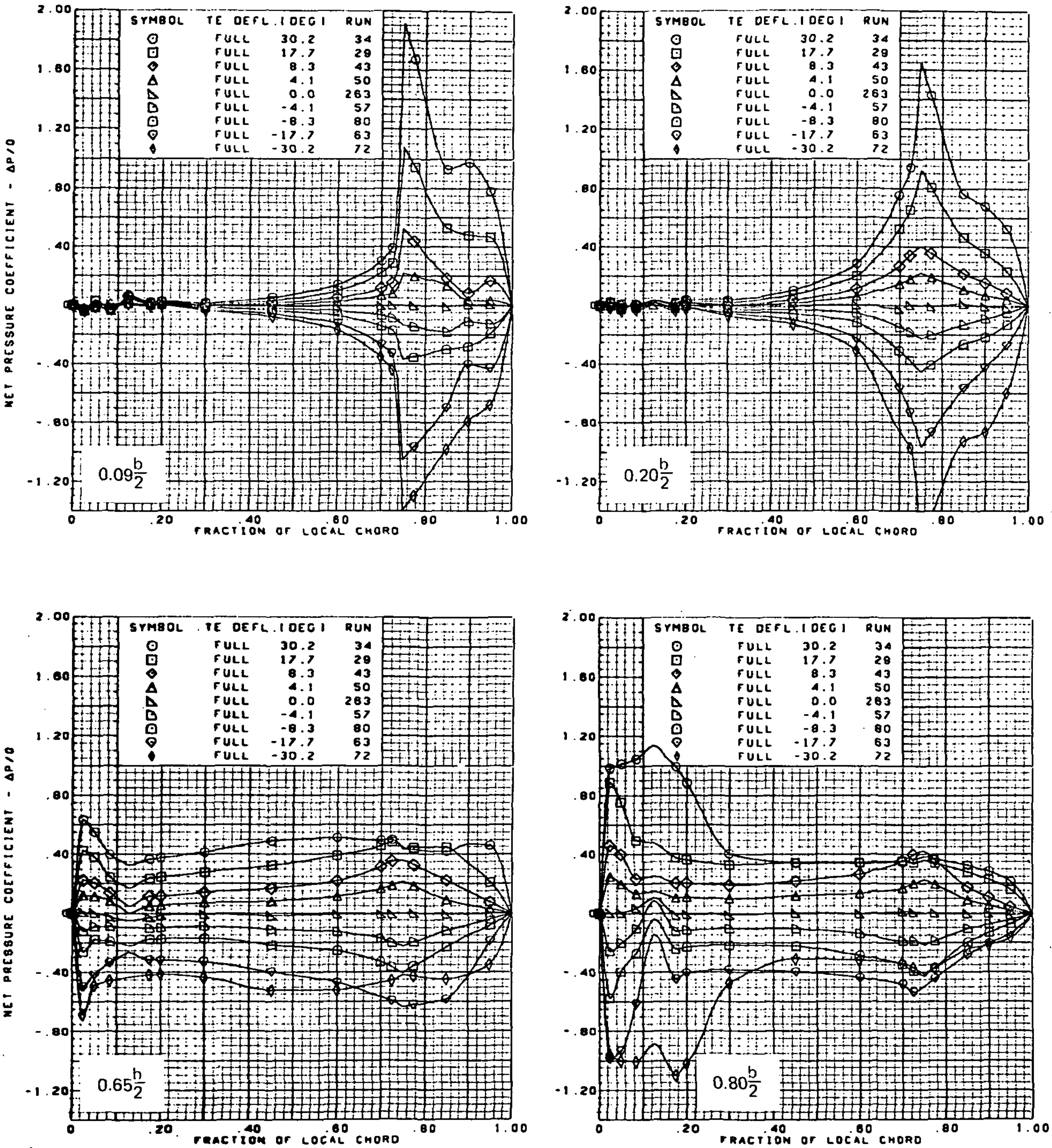




M = 0.70
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

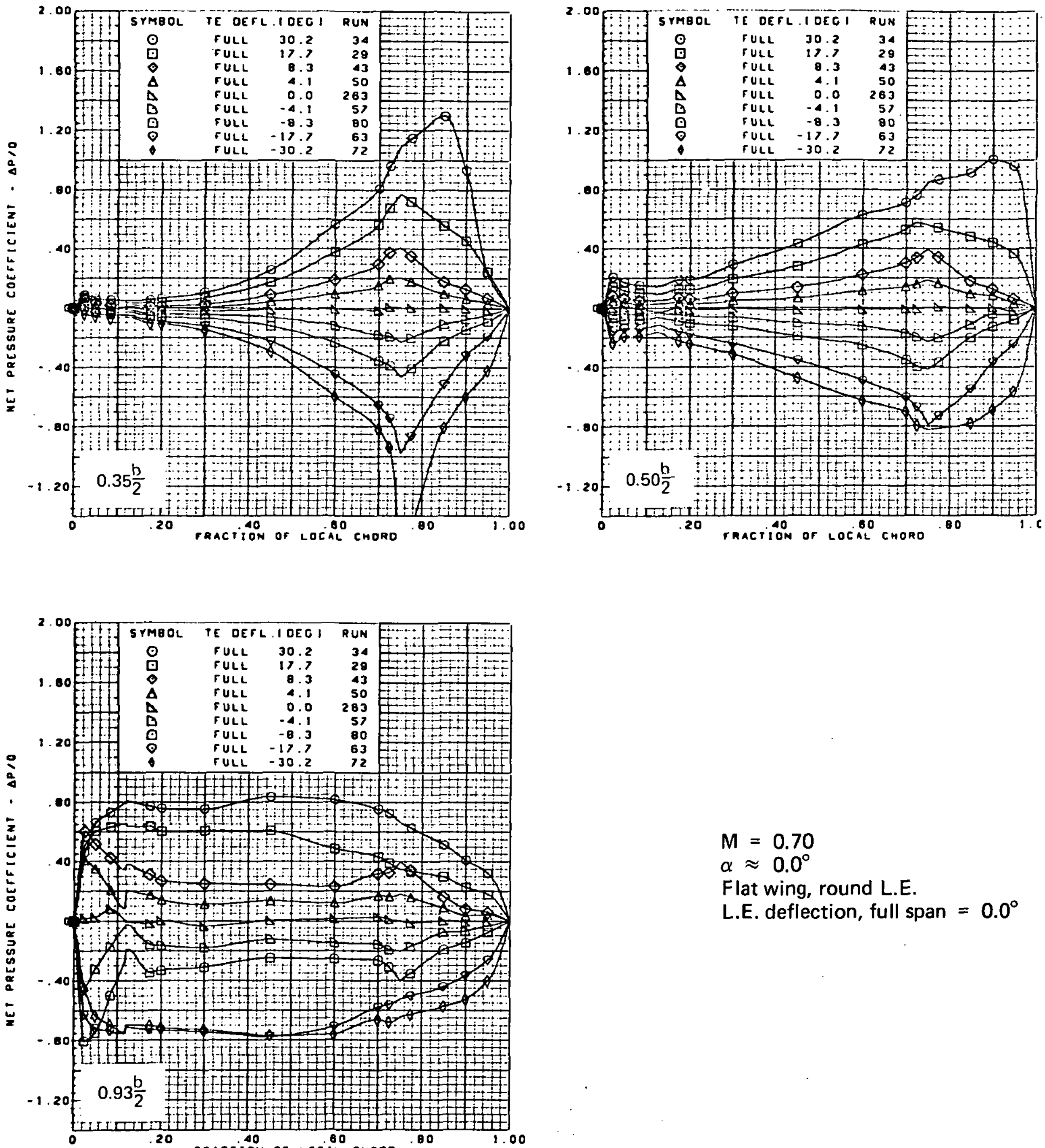
(b) (Concluded)

Figure 22.–(Continued)



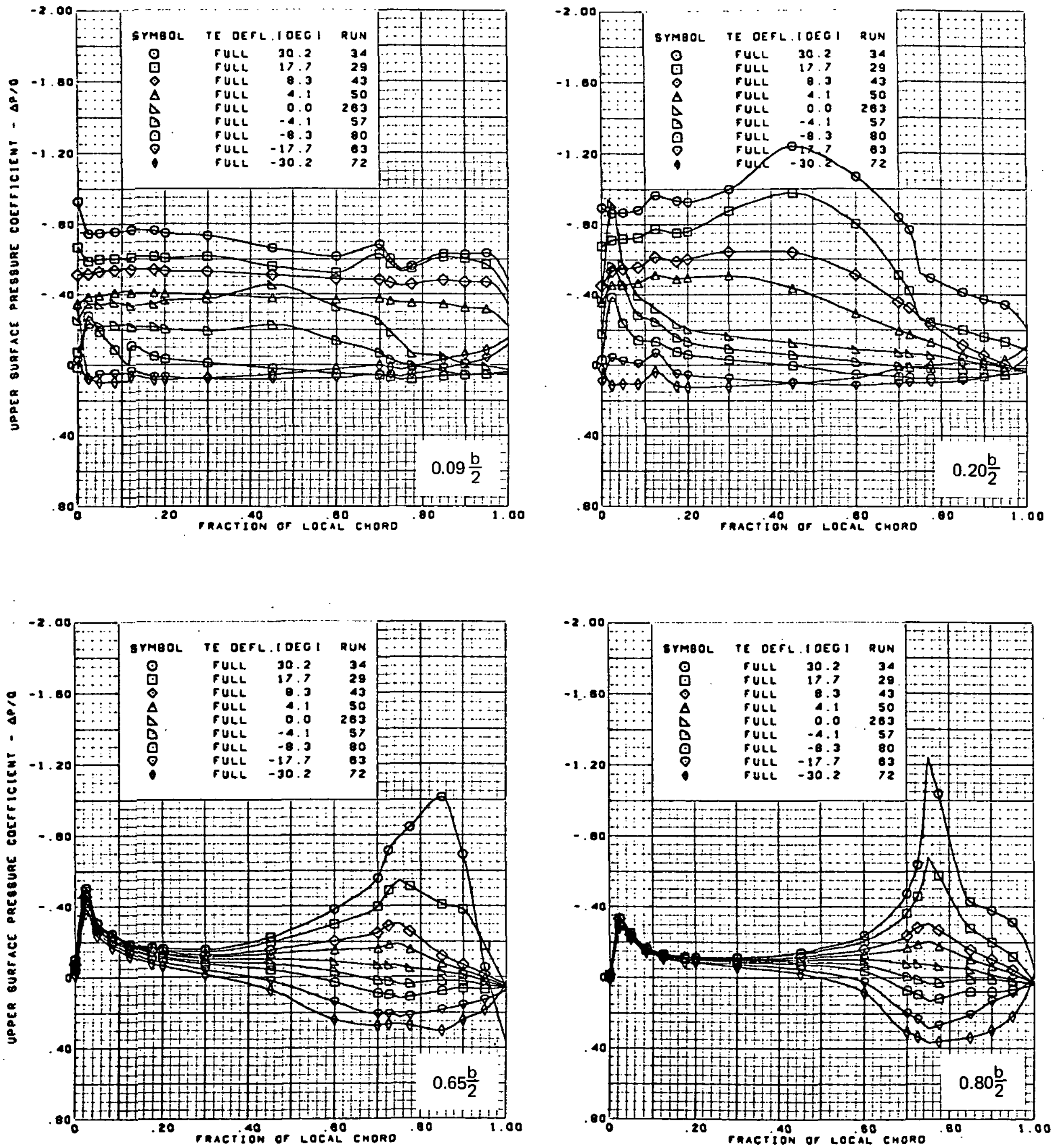
(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 22.–(Continued)



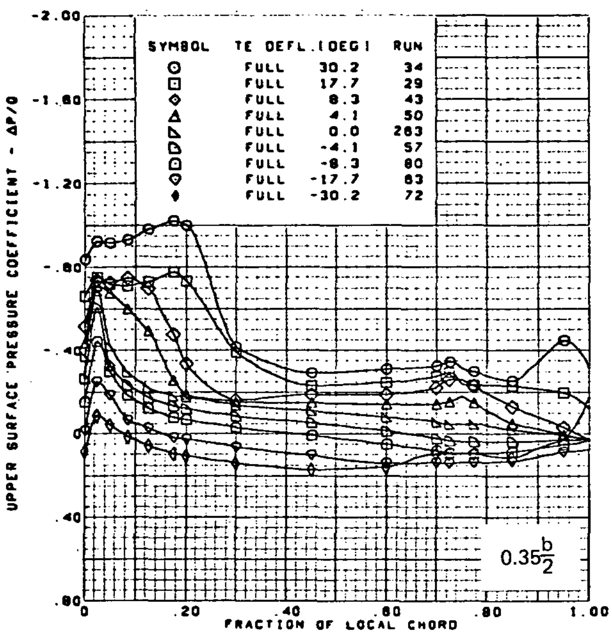
(c) (Concluded)

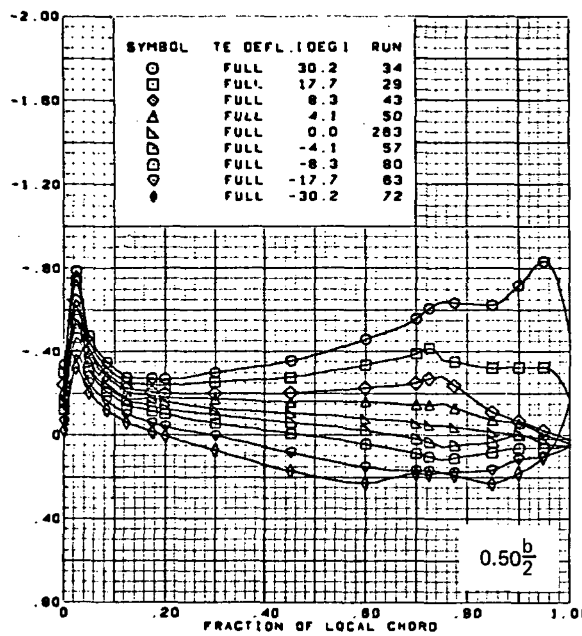
Figure 22.–(Continued)

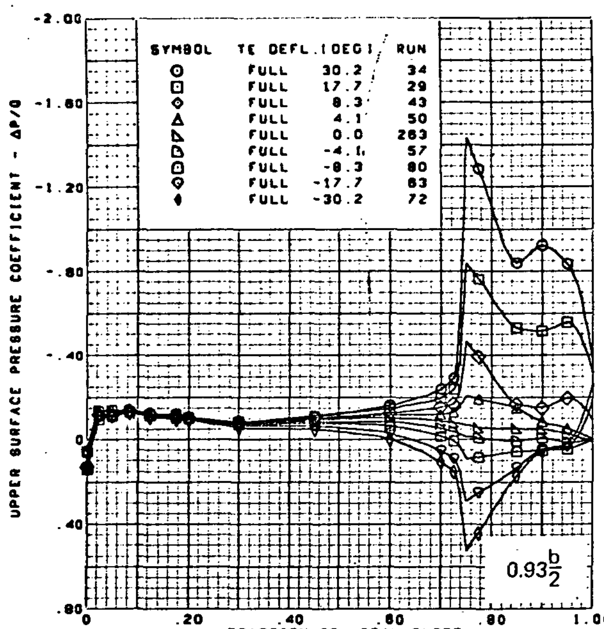


(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 22.–(Continued)



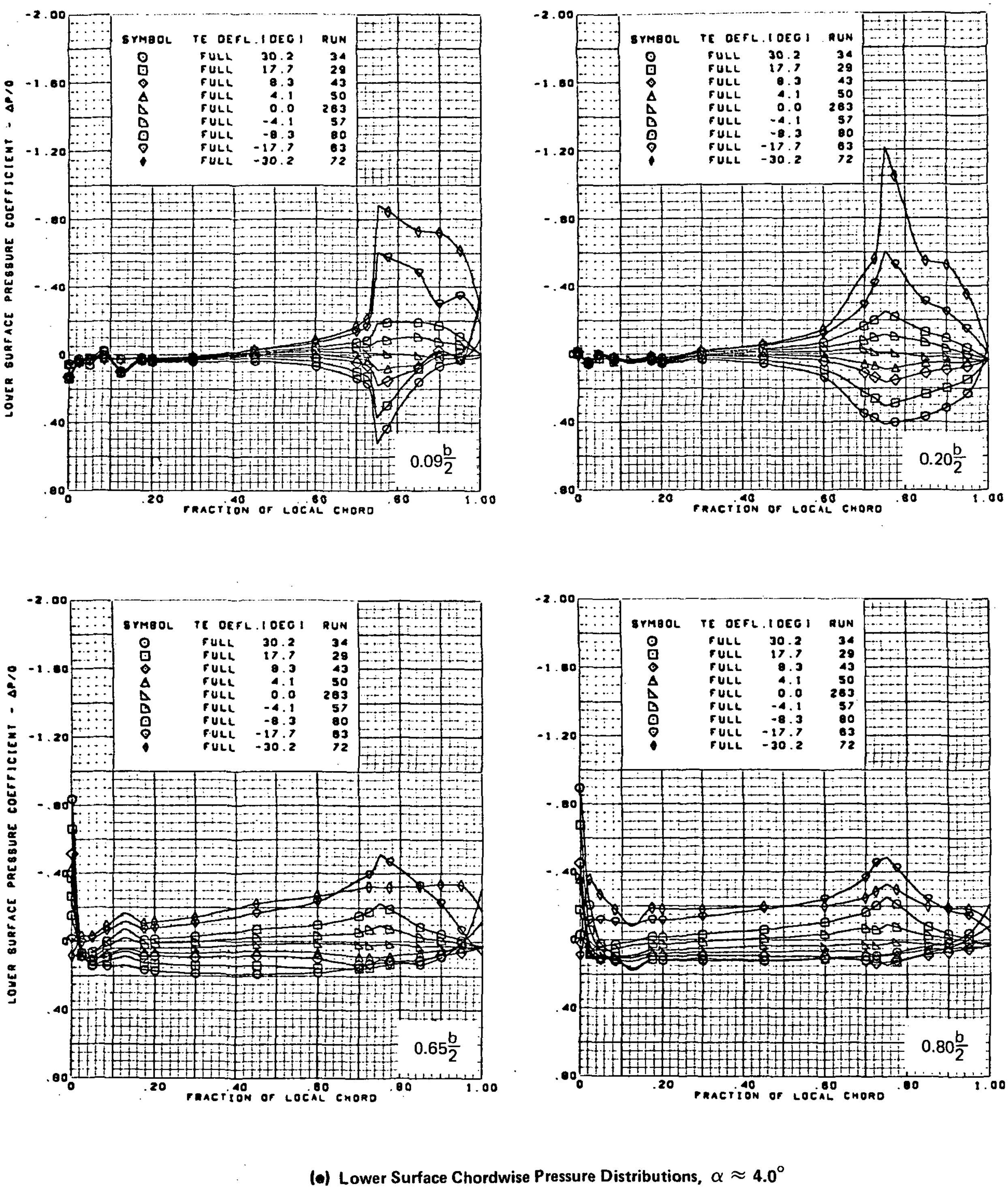




M = 0.70
$\alpha \approx 4.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

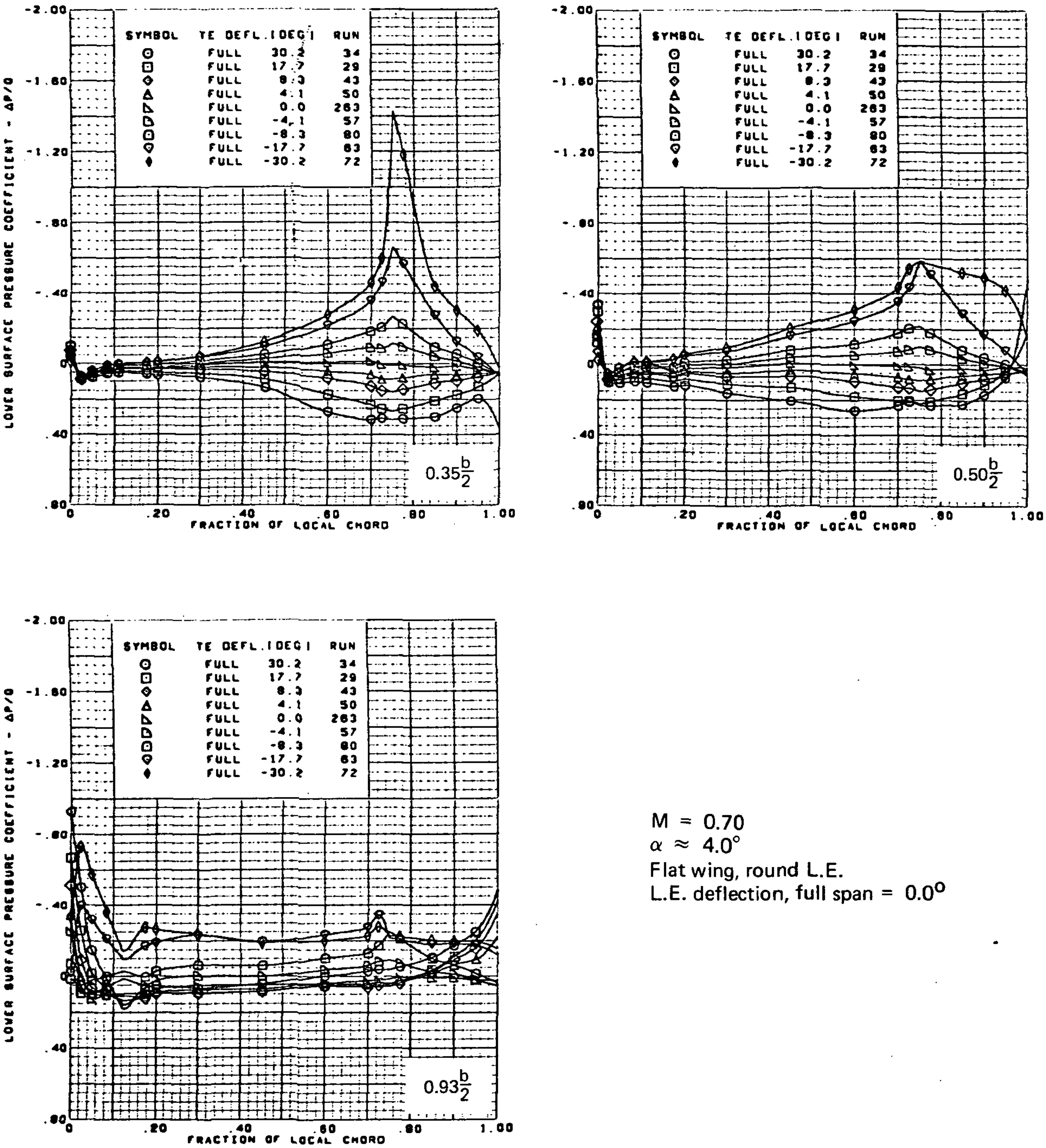
(d) (Concluded)

Figure 22.–(Continued)



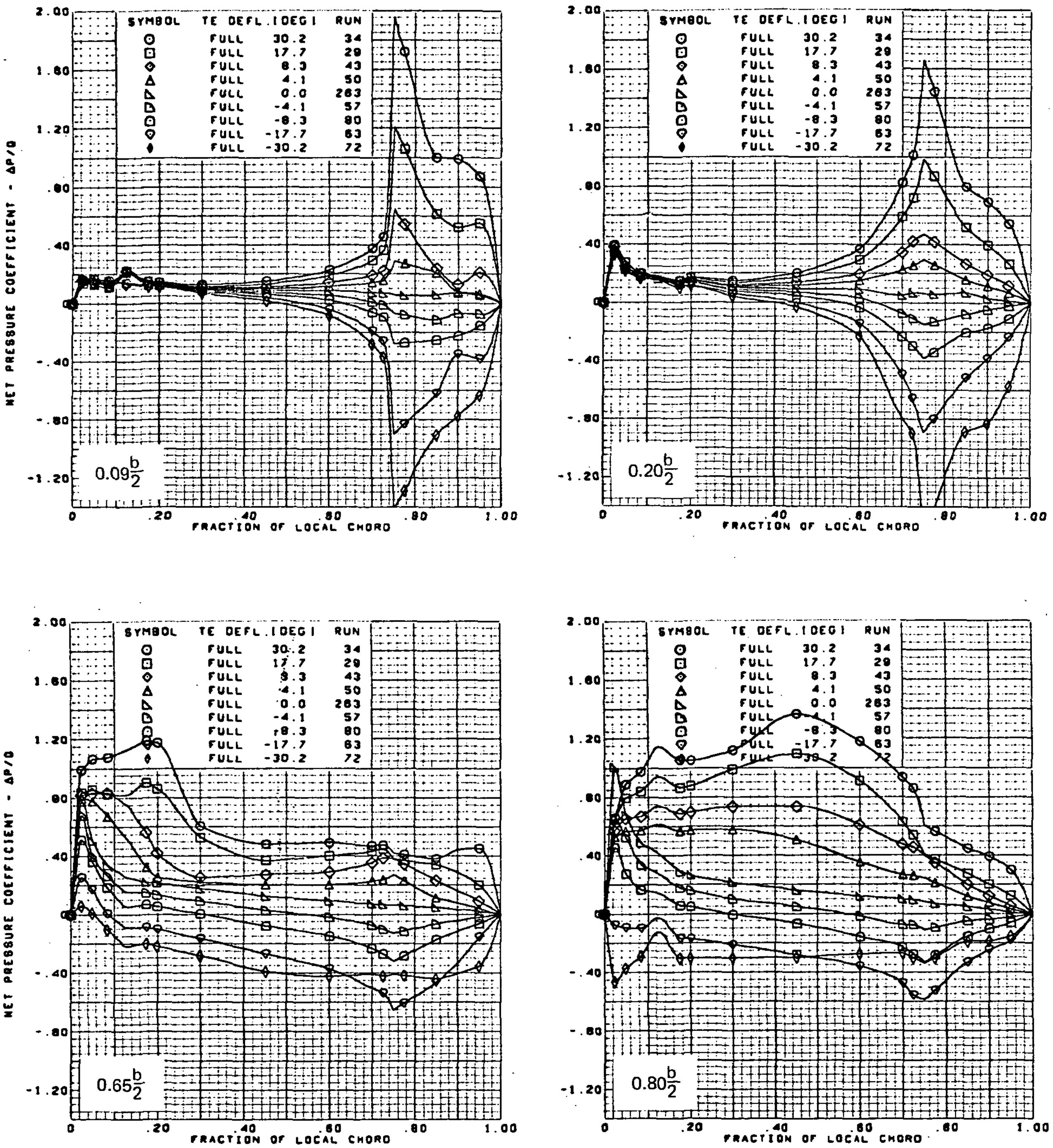
(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 22.–(Continued)



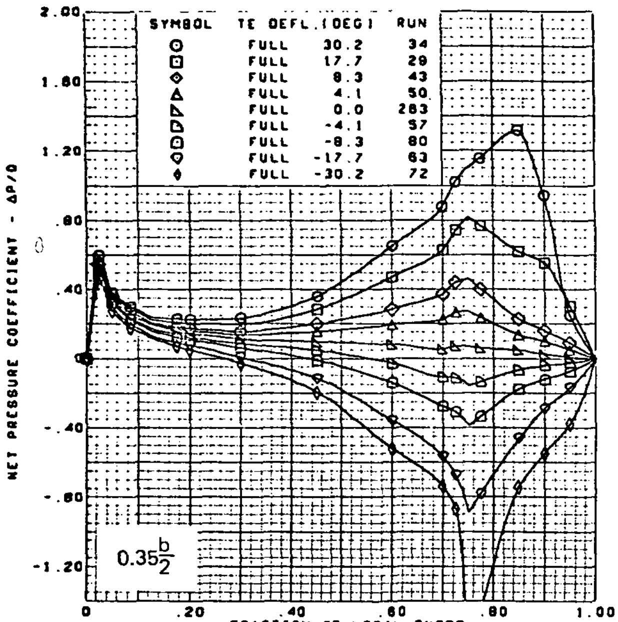
(e) (Concluded)

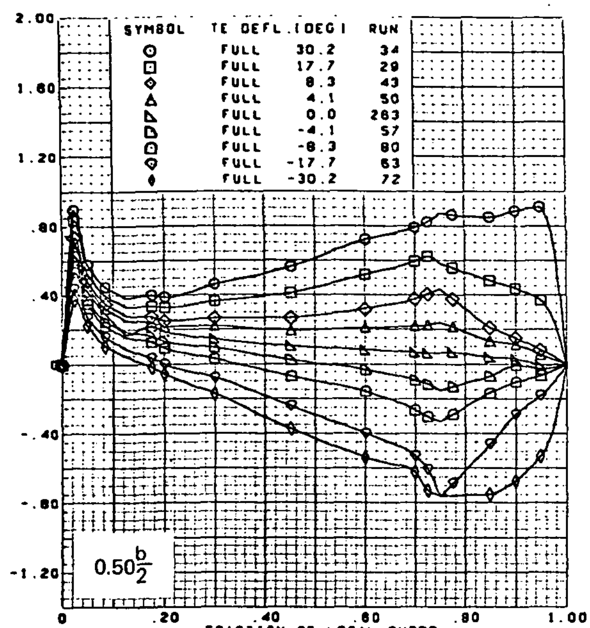
Figure 22.–(Continued)

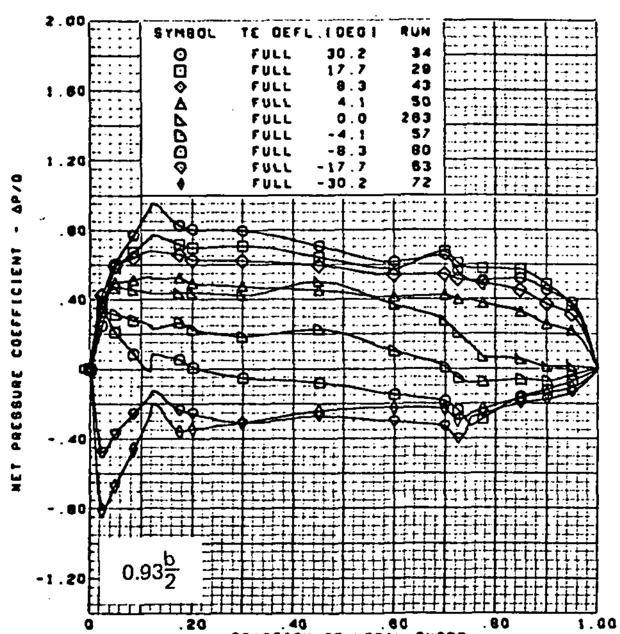


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 22.–(Continued)



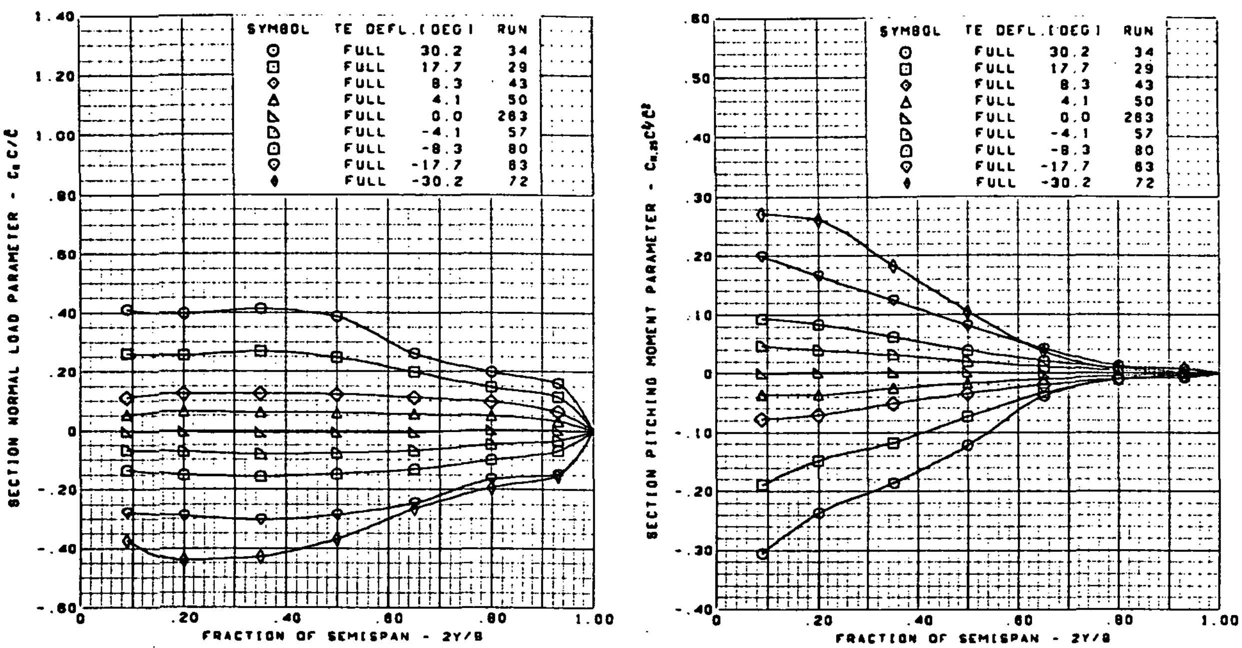




M = 0.70
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

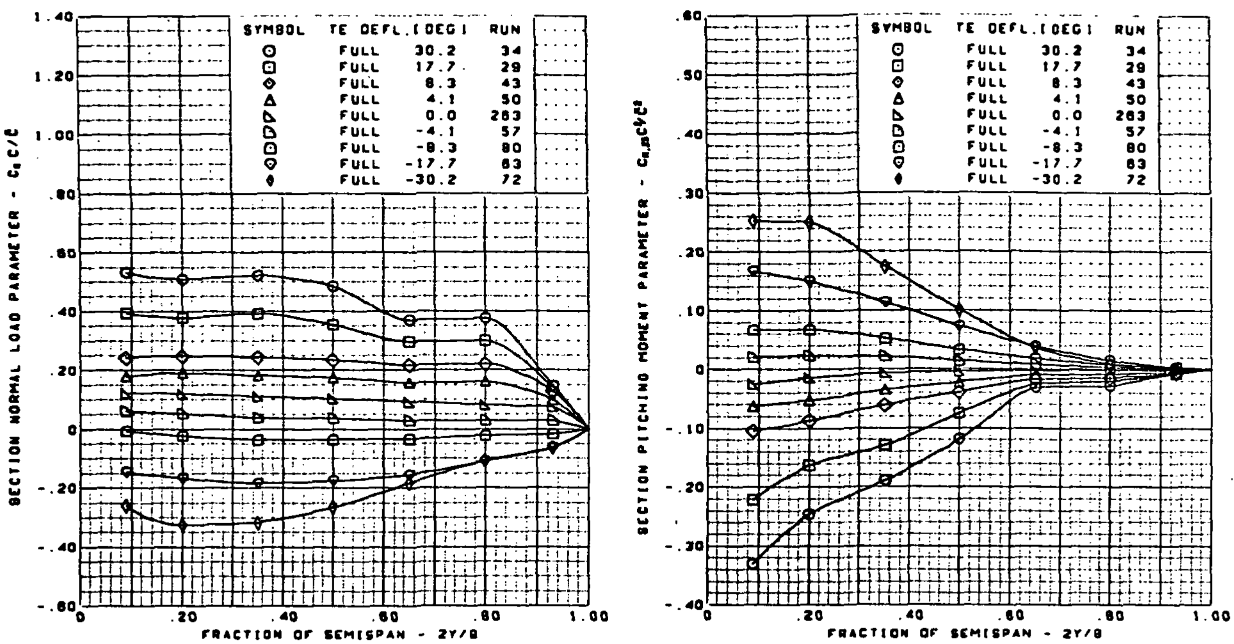
Figure 22.–(Continued)



M = 0.70
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

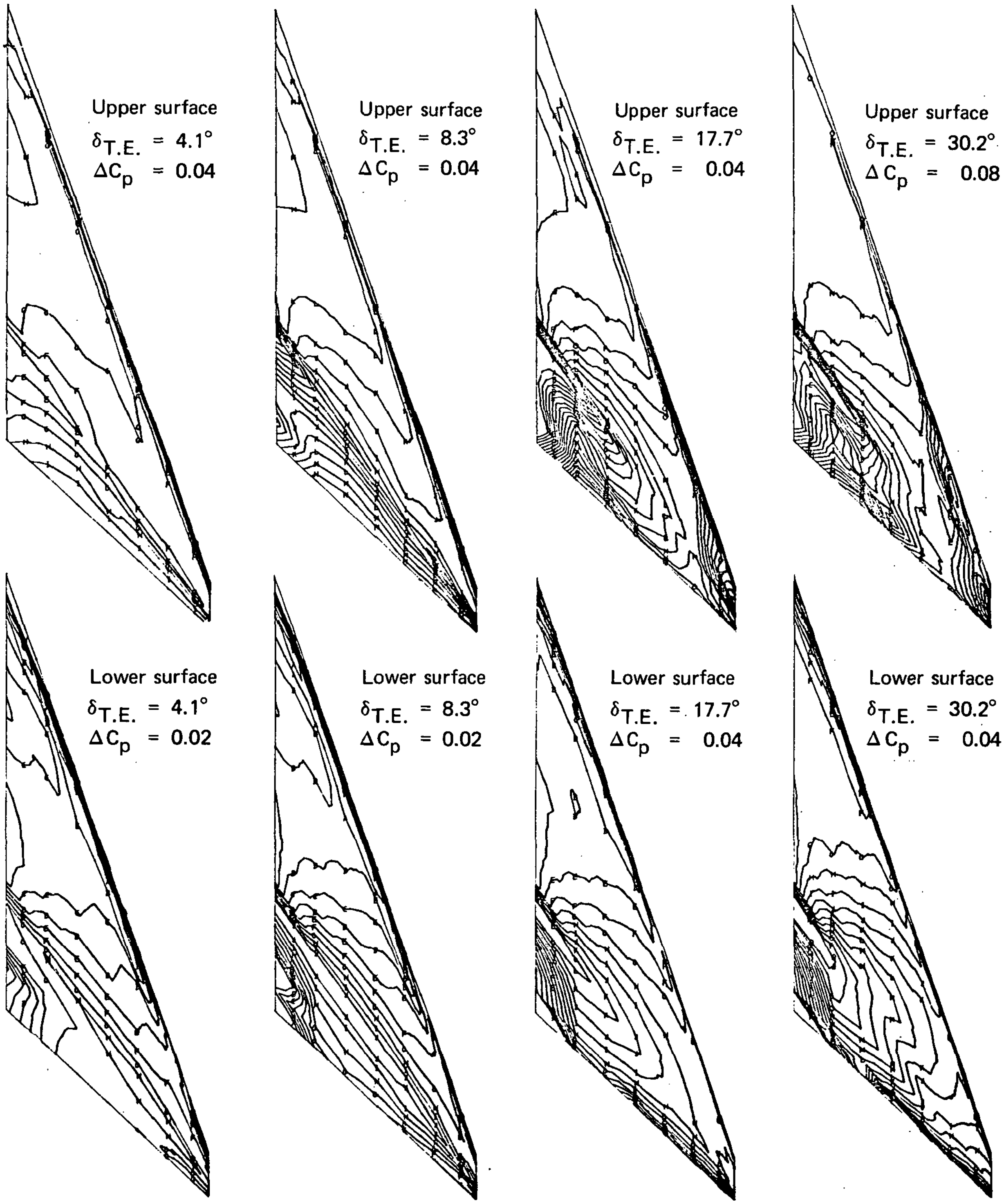
Figure 22.–(Continued)



M = 0.70
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(h) Spanload Distributions, $\alpha \approx 4.0°$

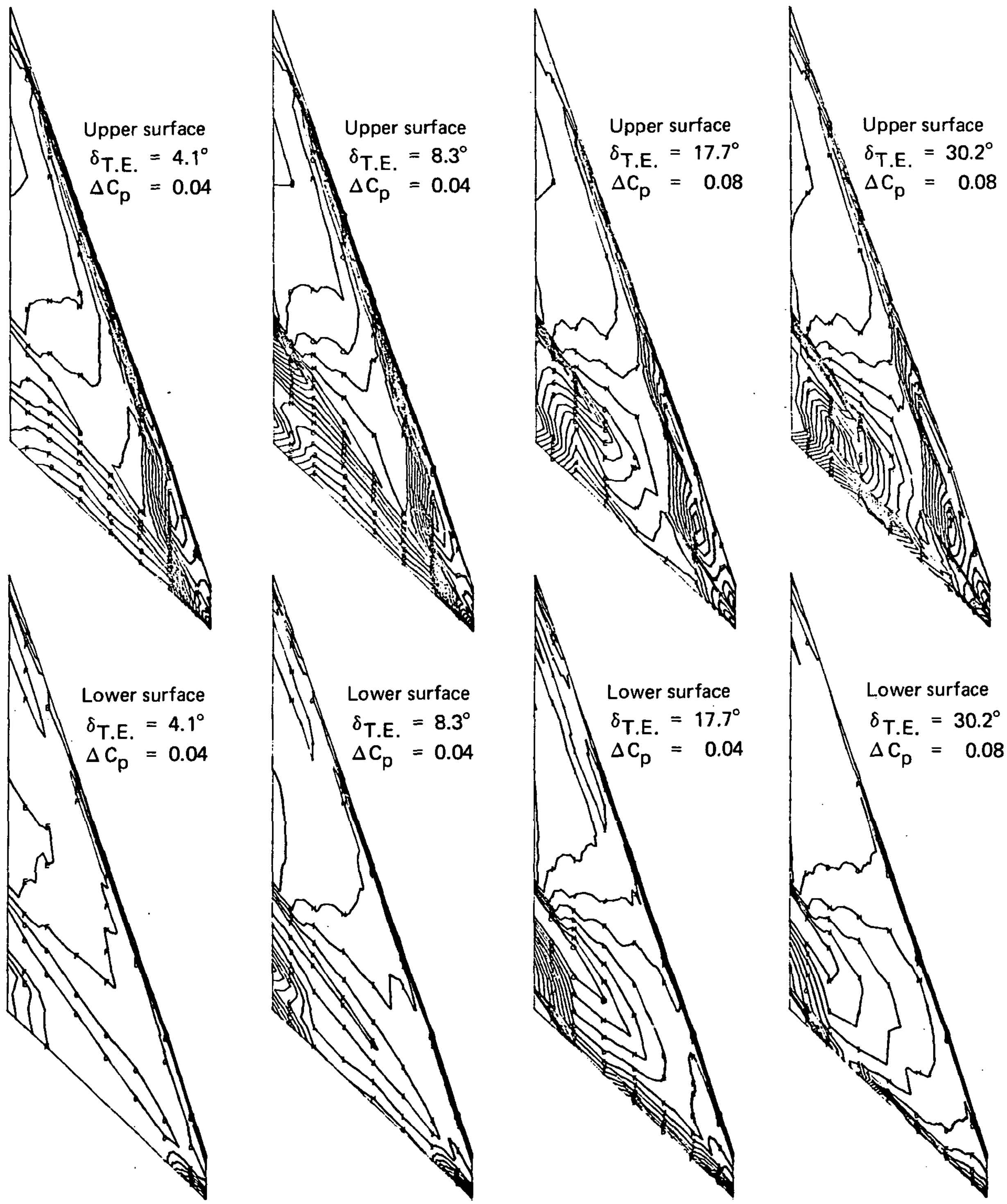
Figure 22.-(Concluded)



Note: ΔC_p = increment between adjacent isobars

(a) Isobars, $\alpha \approx 0.0°$

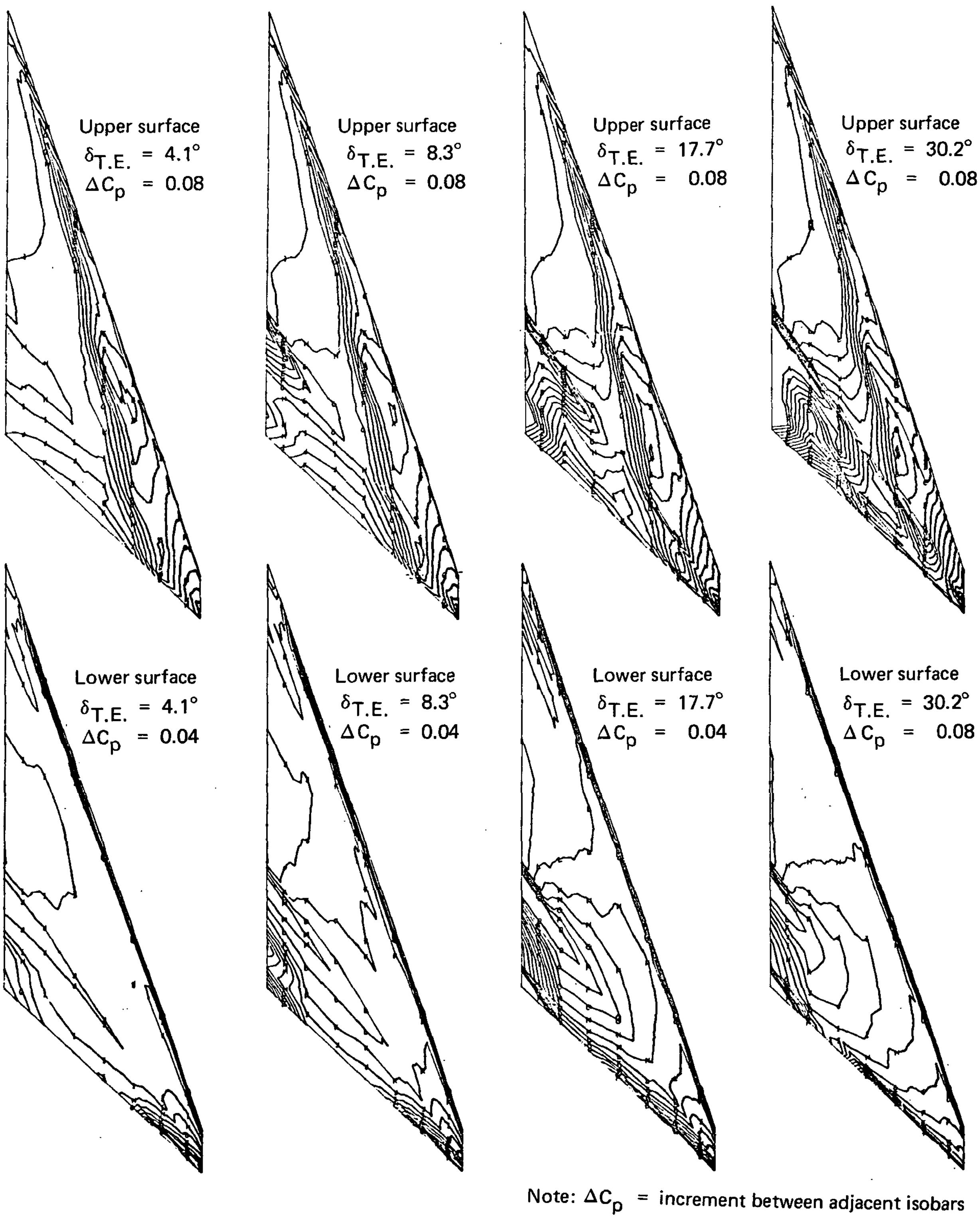
Figure 23.—Wing Experimental Data—Effect of Full Span T.E. Deflection and Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

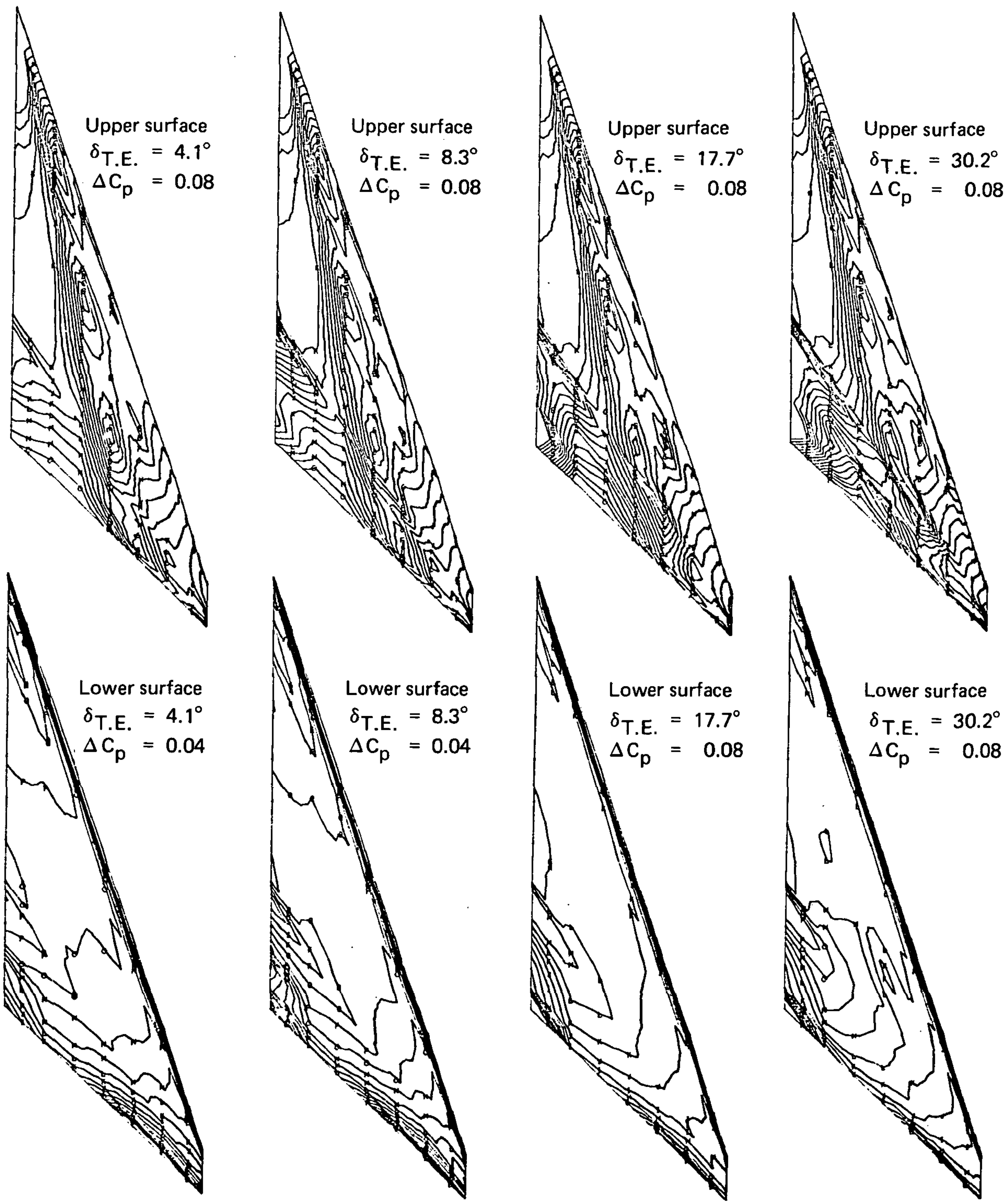
(b) Isobars, $\alpha \approx 4.0°$

Figure 23.-(Continued)



(c) Isobars, $\alpha \approx 8.0°$

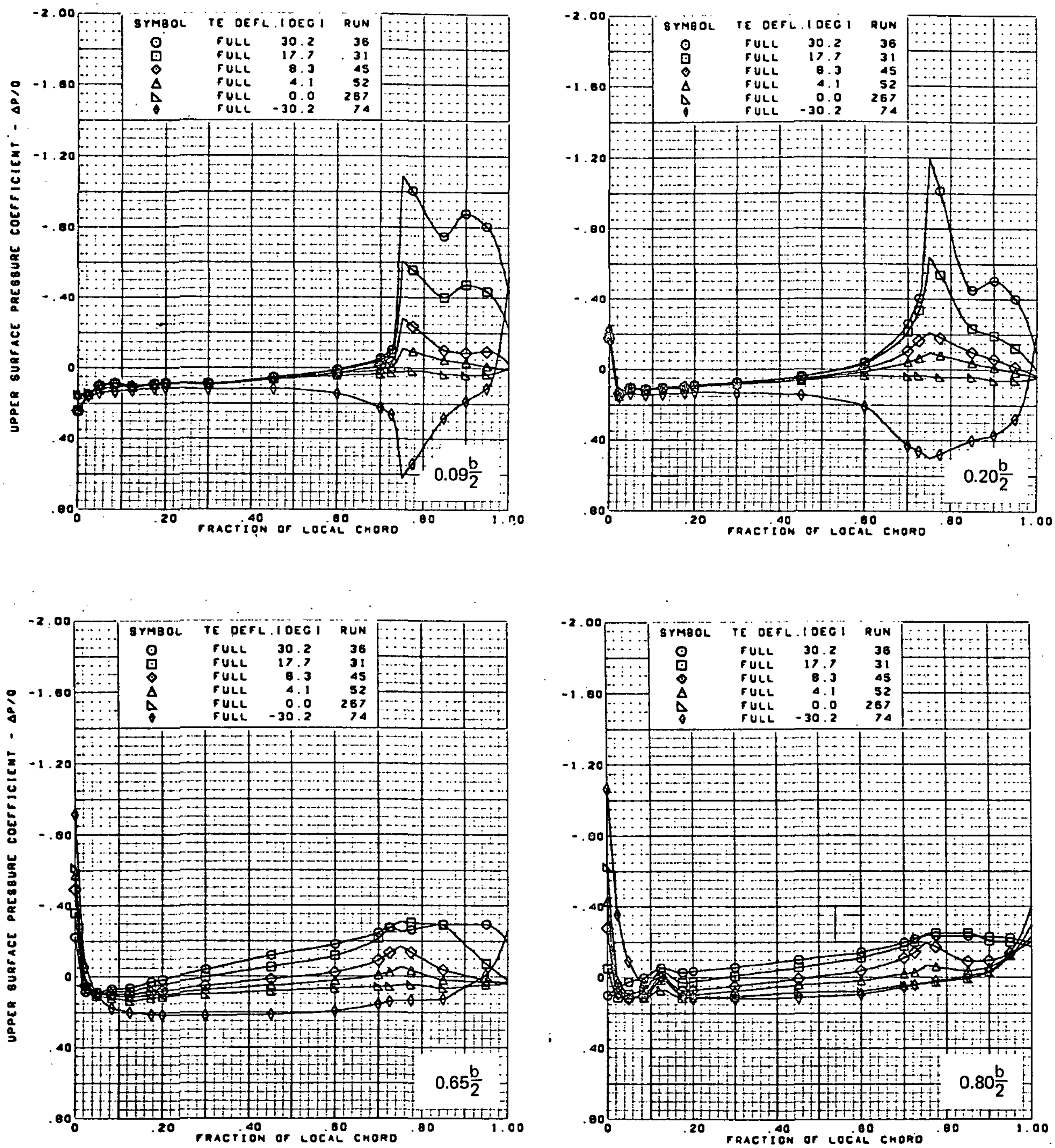
Figure 23.–(Continued)



Note: ΔC_p = increment between adjacent isobars

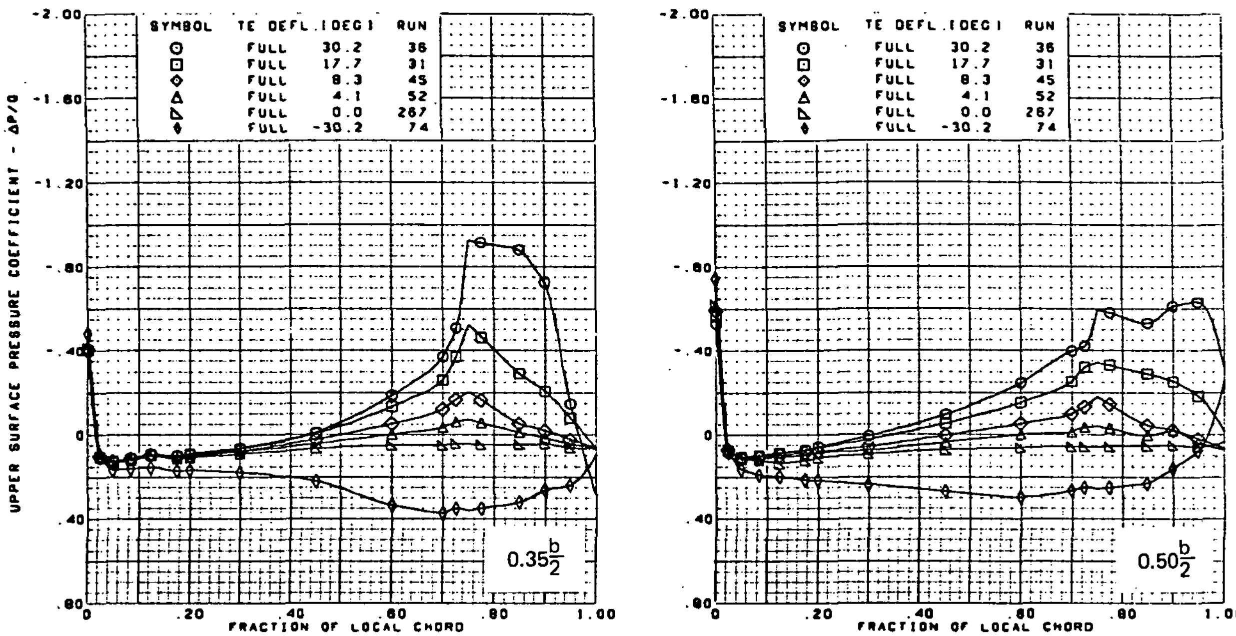
(d) Isobars, $\alpha \approx 16.0°$

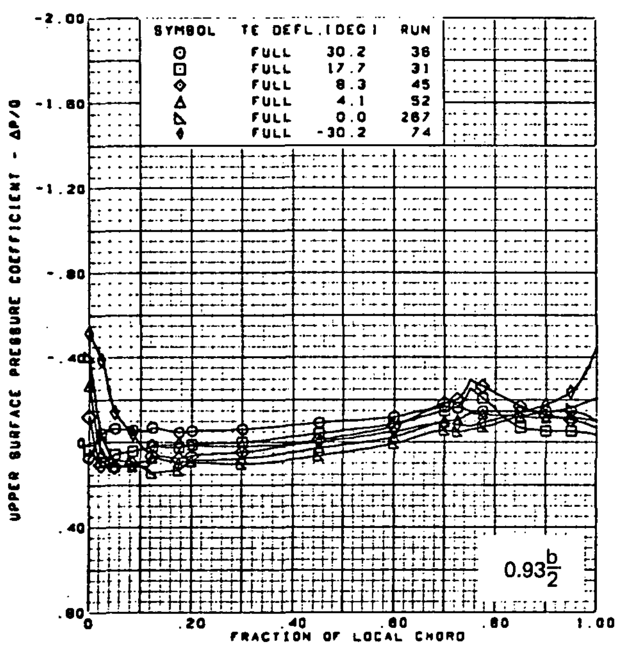
Figure 23.–(Continued)



(e) Upper Surface Chordwise Pressure Distributions, $\alpha \approx -8.0°$

Figure 23.–(Continued)

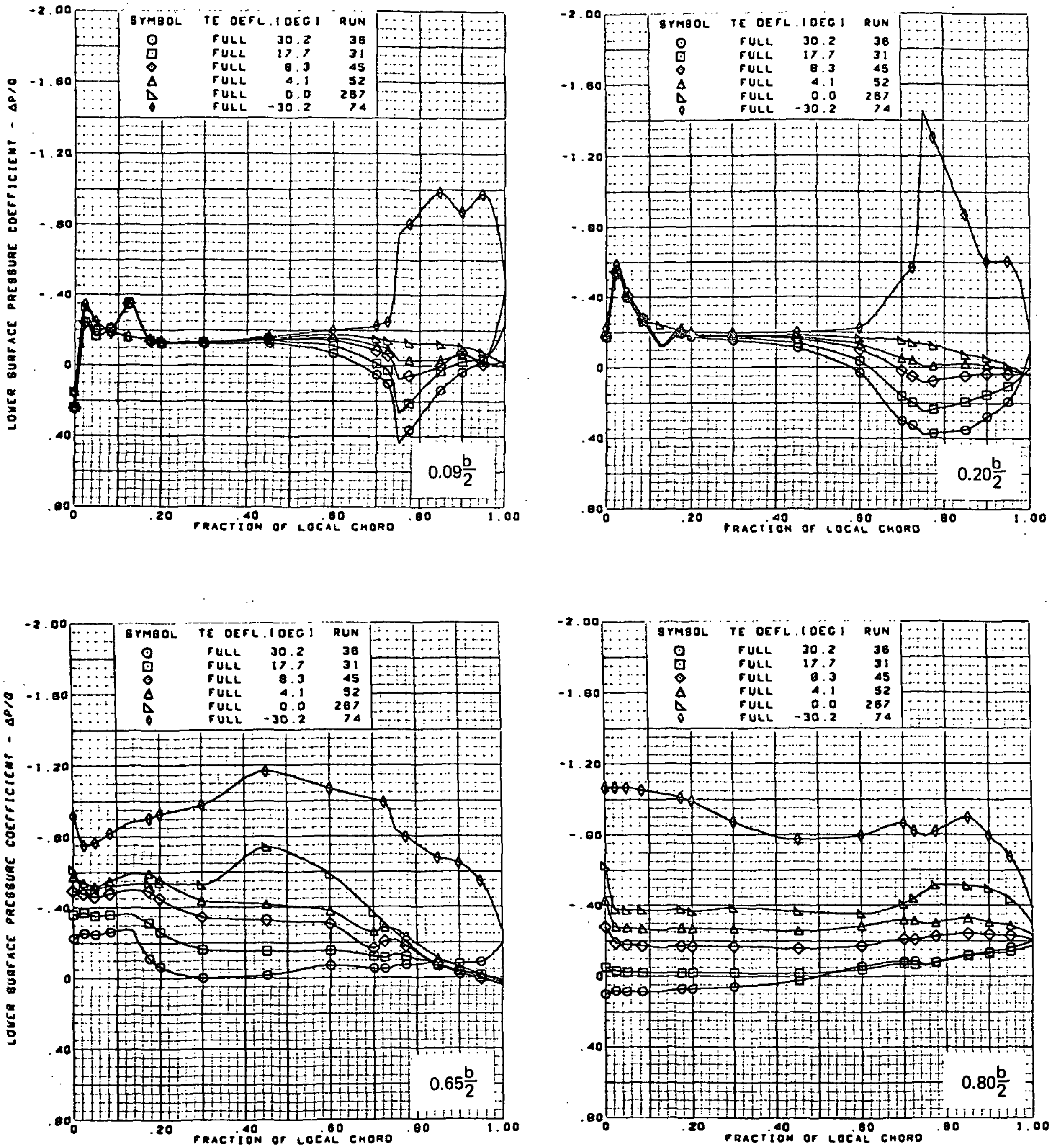




M = 0.85
$\alpha \approx$ -8.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

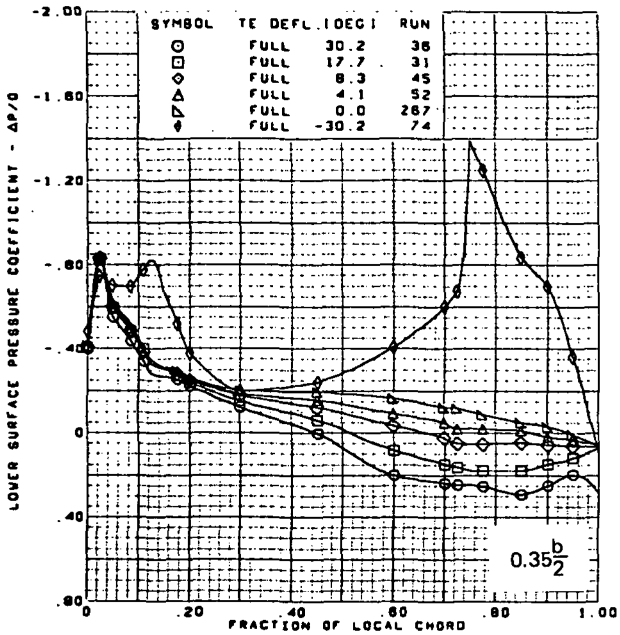
(e) (Concluded)

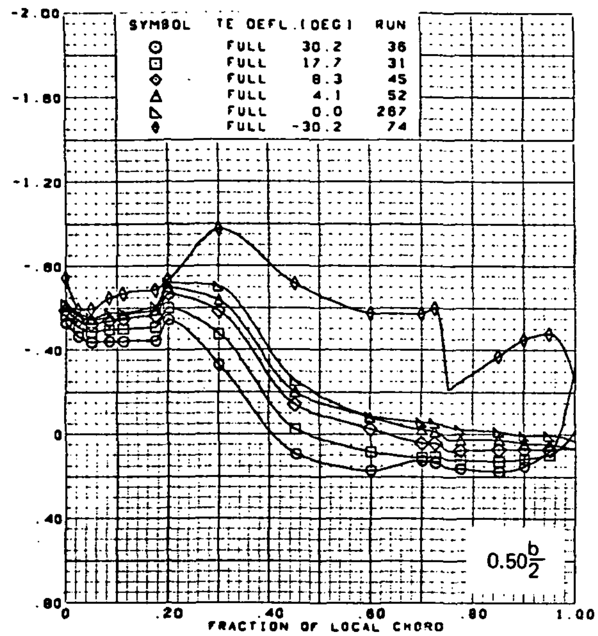
Figure 23.–(Continued)

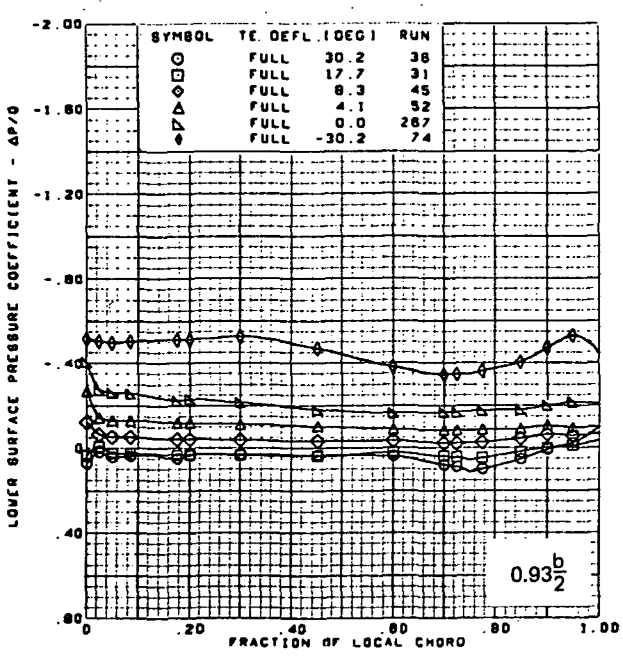


(f) Lower Surface Chordwise Pressure Distributions, $\alpha \approx -8.0^{\circ}$

Figure 23.–(Continued)



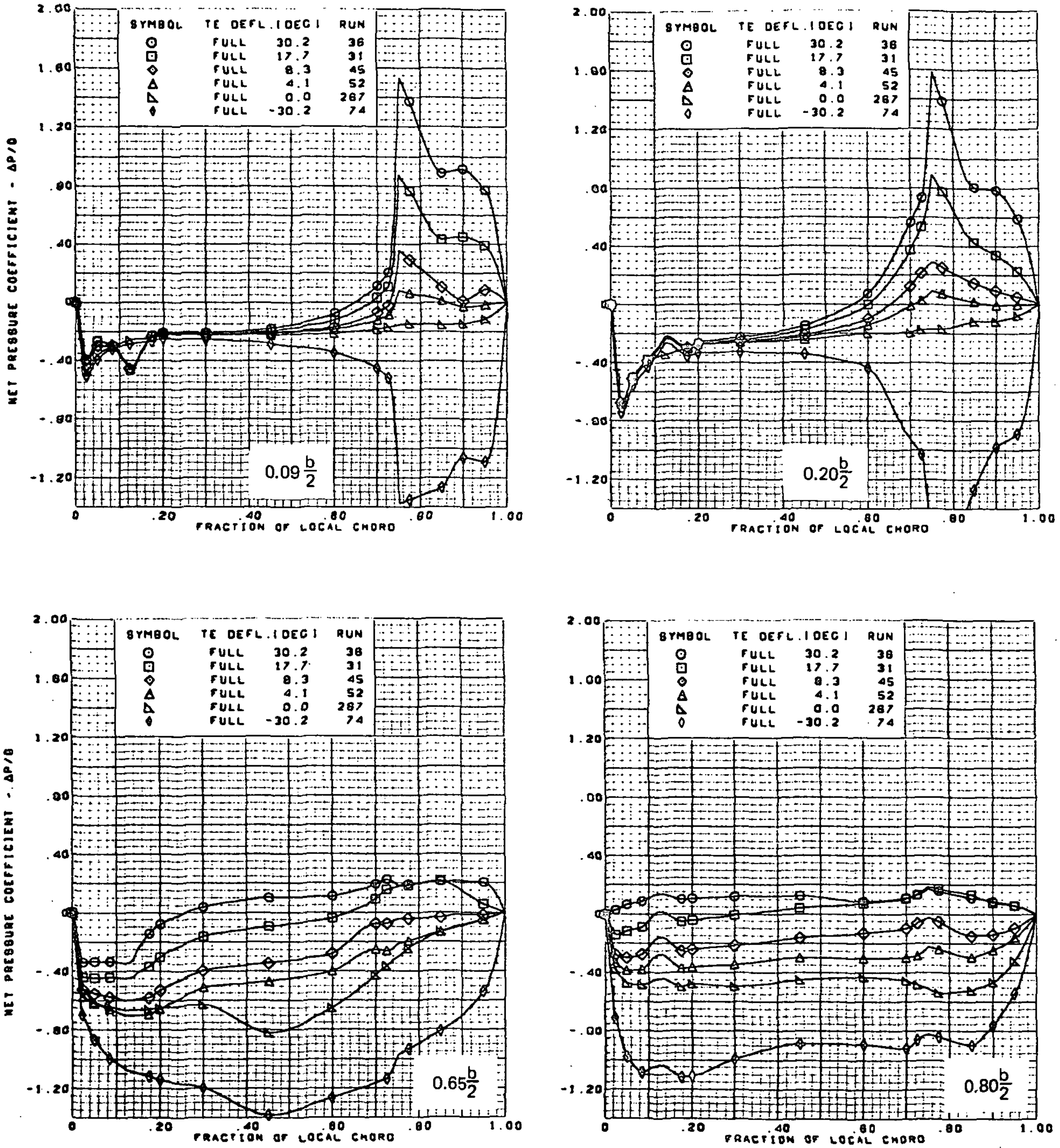




M = 0.85
$\alpha \approx -8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

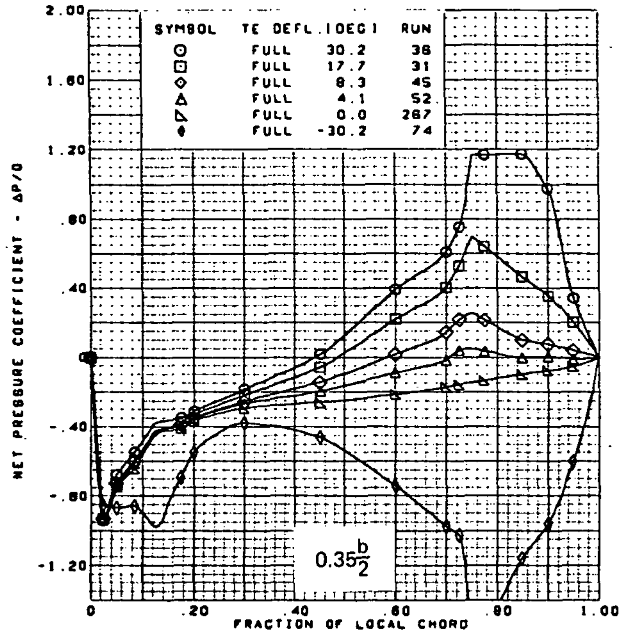
(f) (Concluded)

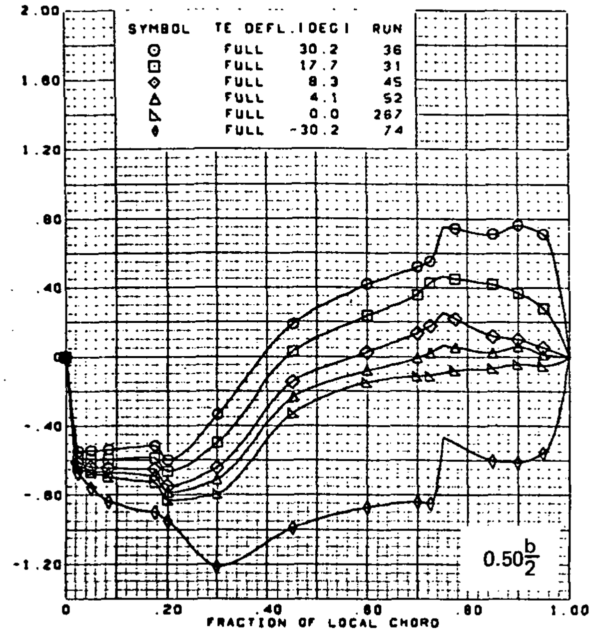
Figure 23.–(Continued)

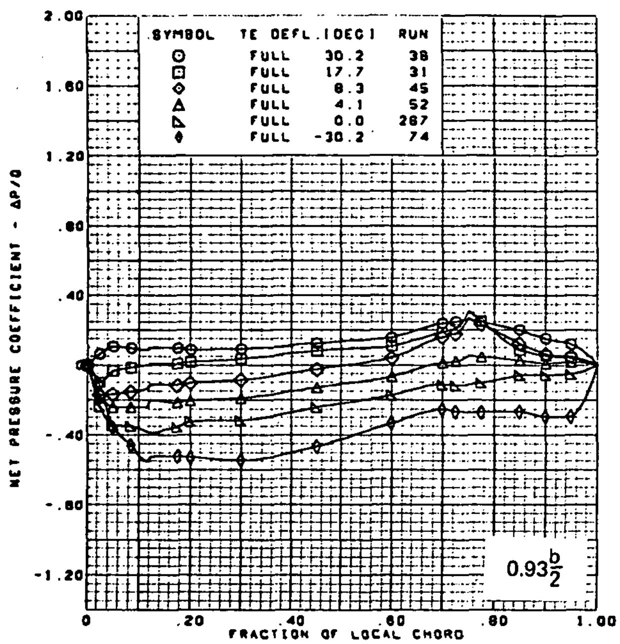


(g) Net Chordwise Pressure Distributions, $\alpha \approx -8.0^{\circ}$

Figure 23.–(Continued)



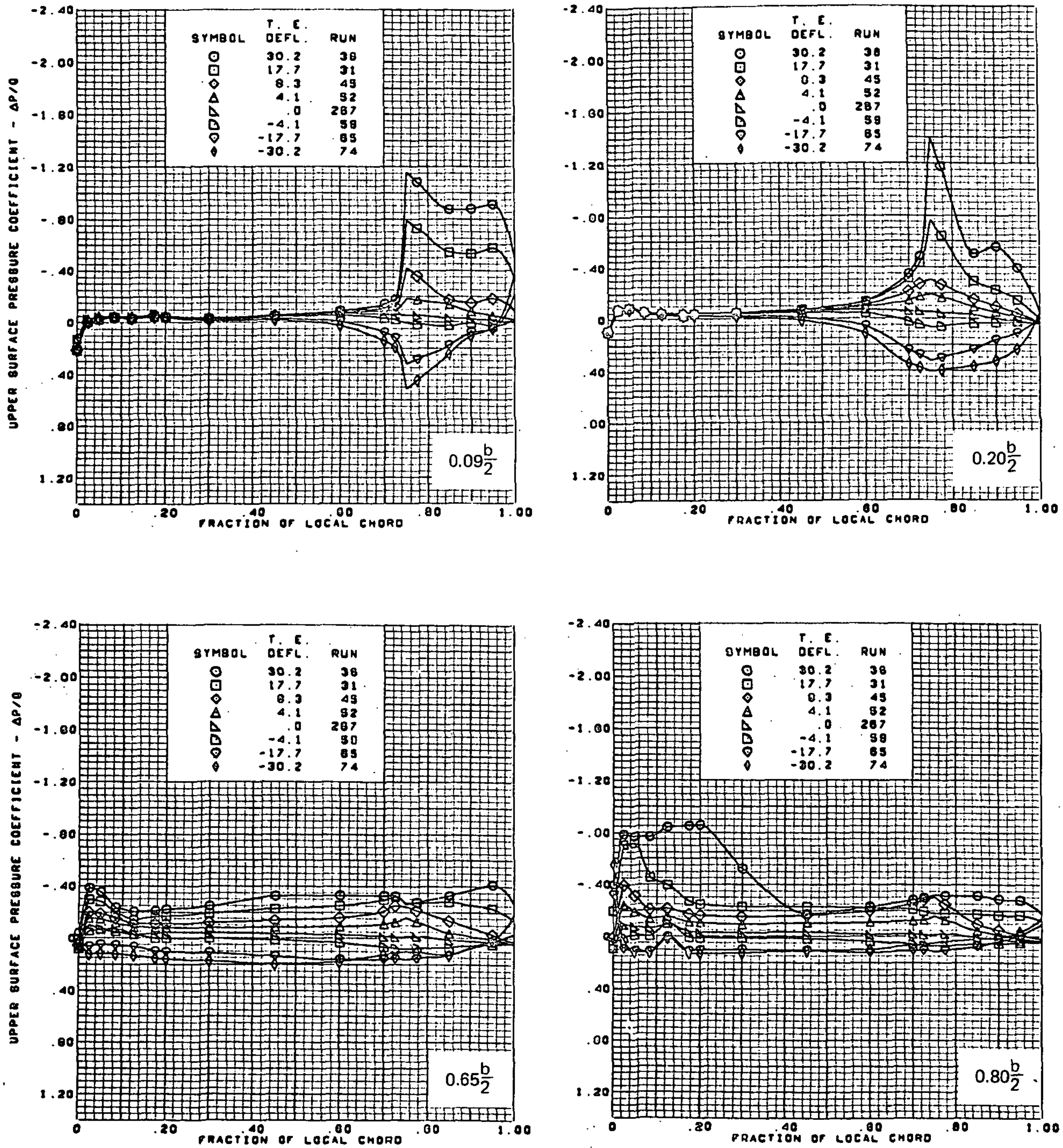




M = 0.85
$\alpha \approx$ -8.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

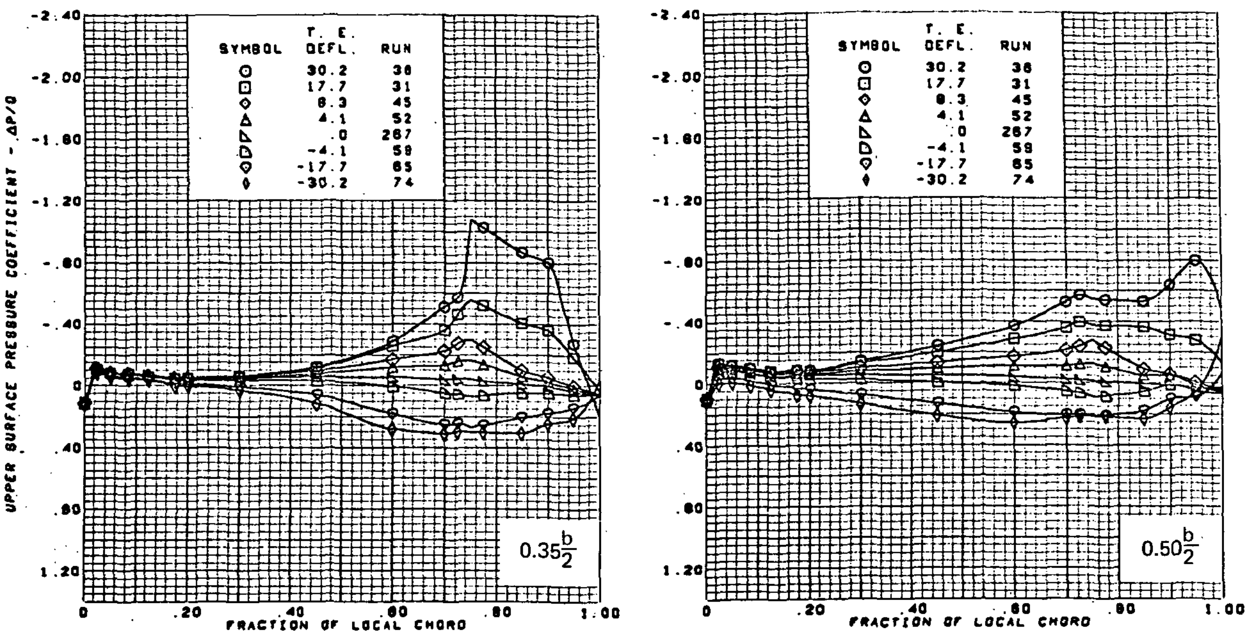
(g) (Concluded)

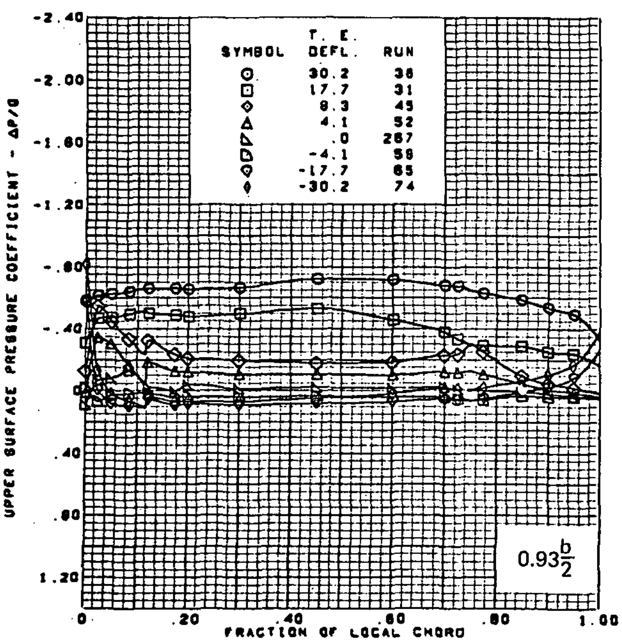
Figure 23.–(Continued)



(h) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 23.–(Continued)

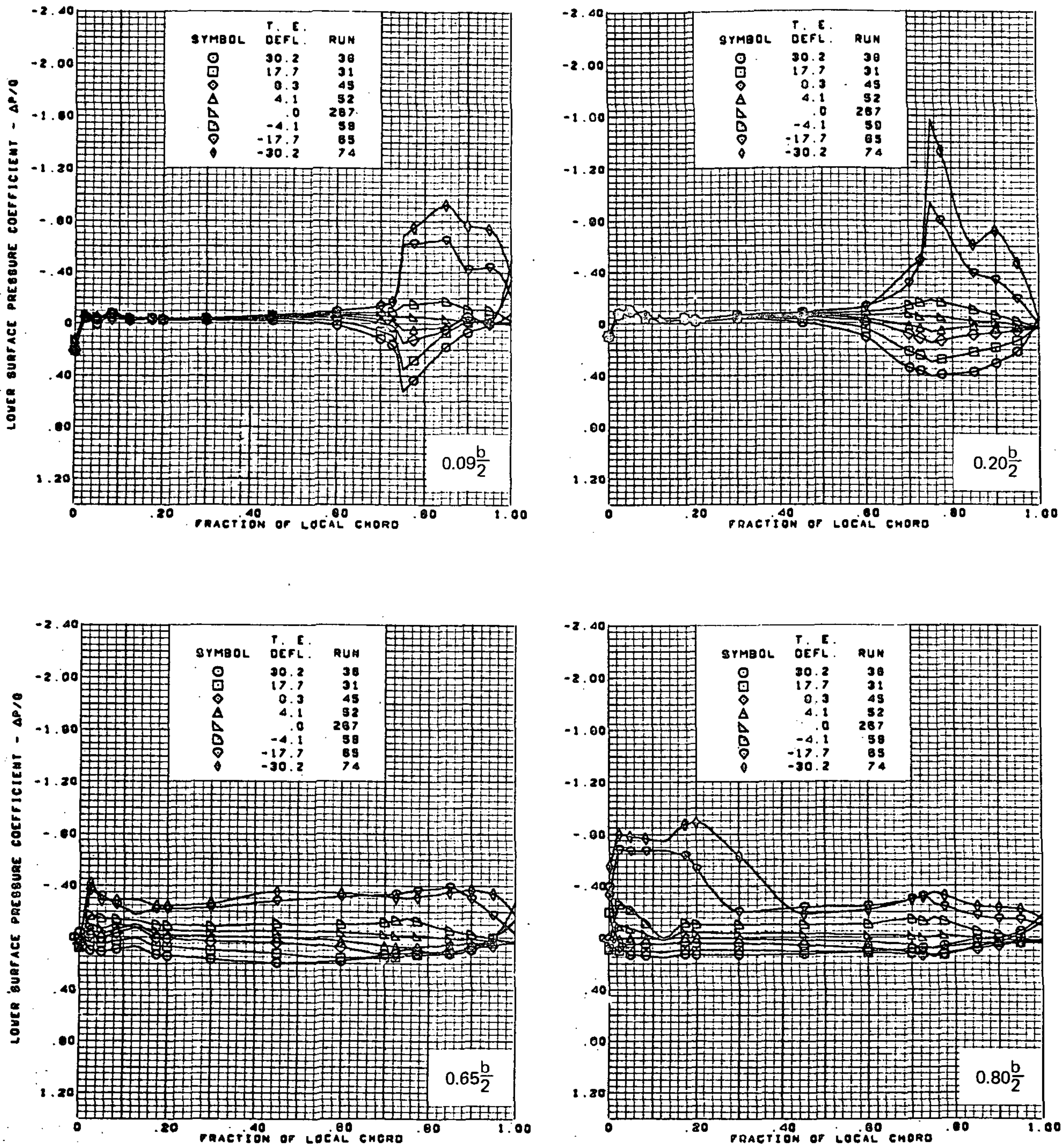




M = 0.85
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

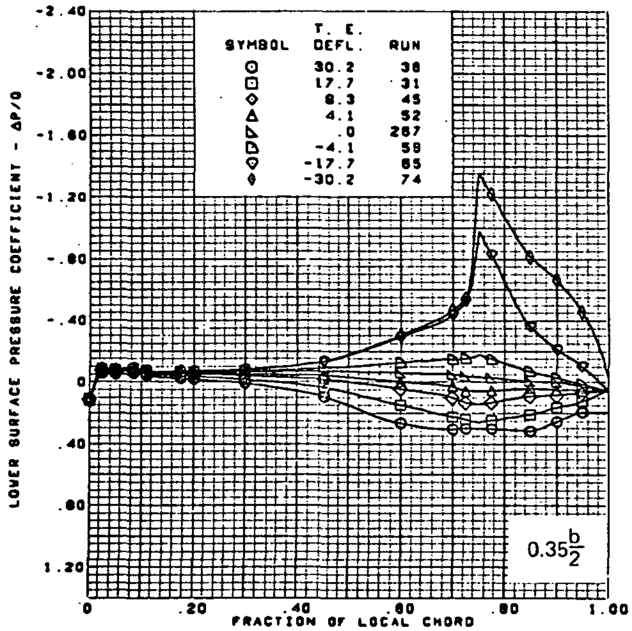
(h) (Concluded)

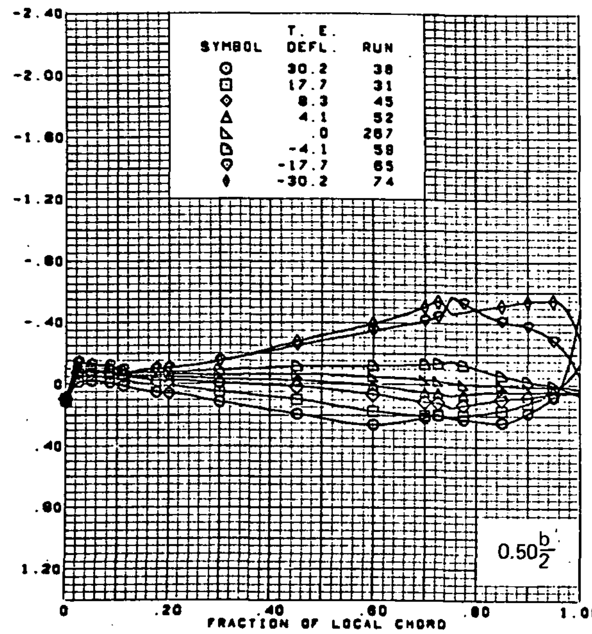
Figure 23.–(Continued)

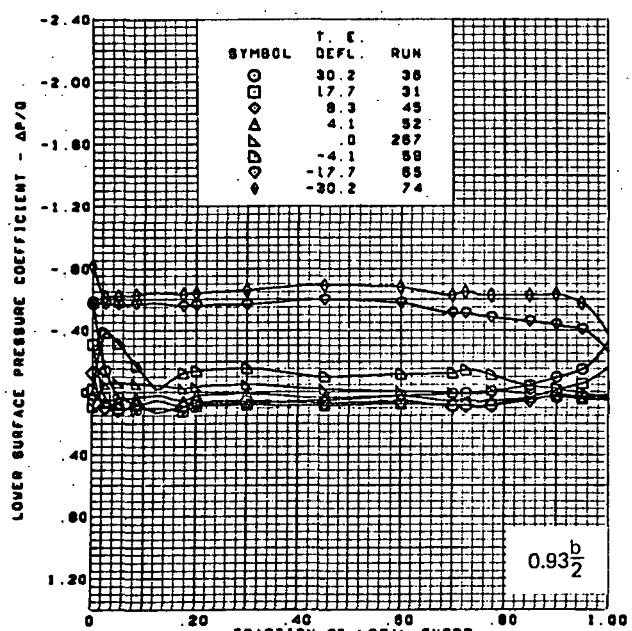


(i) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 23.–(Continued)



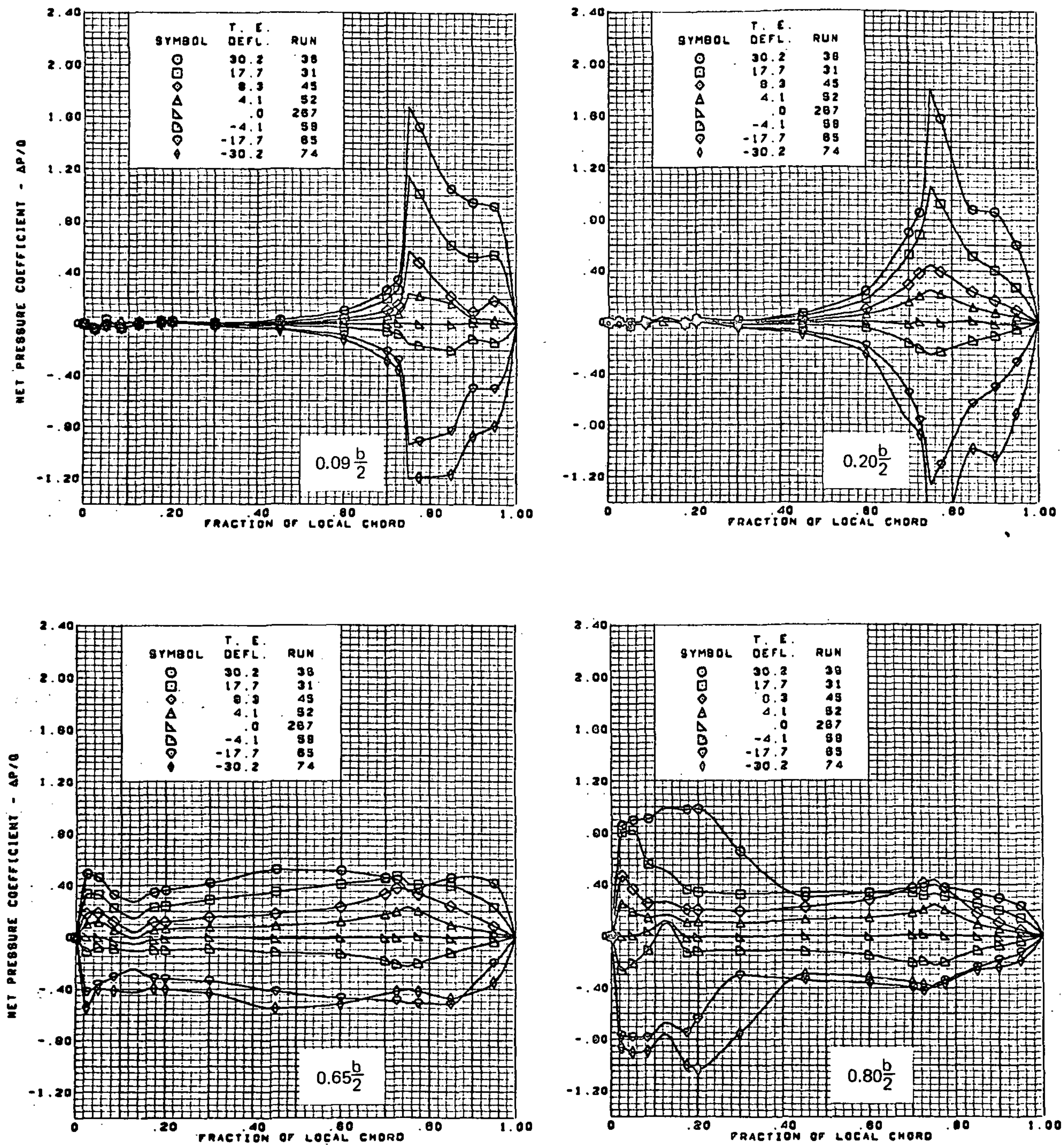




M = 0.85
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

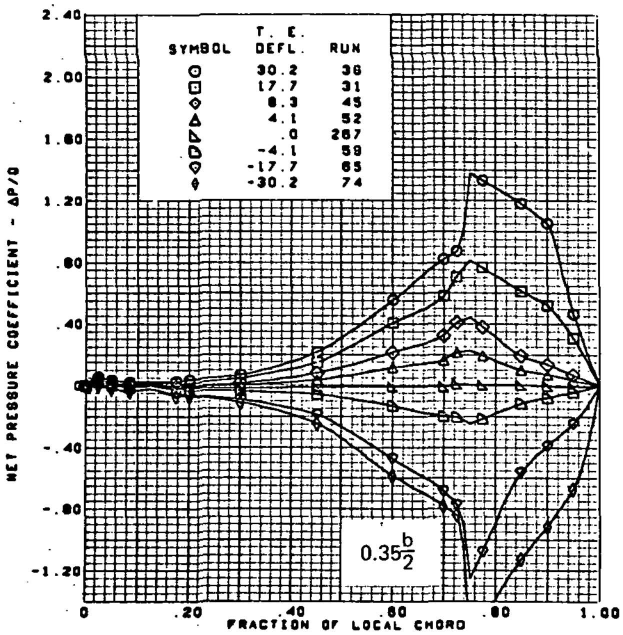
(i) (Concluded)

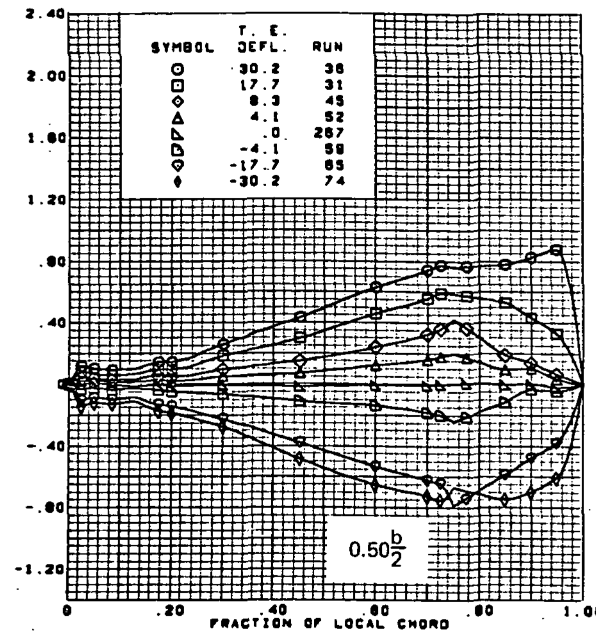
Figure 23.–(Continued)

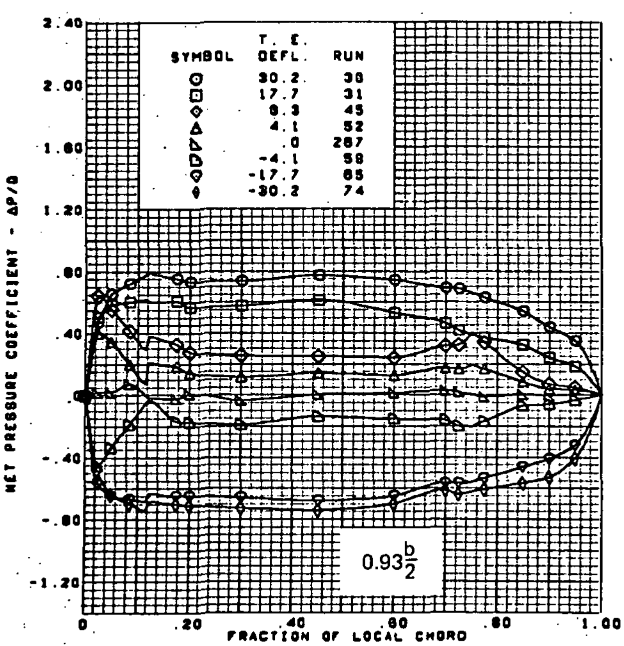


(j) Net Chordwise Pressure Distributions, $\alpha \approx 0.0^\circ$

Figure 23.–(Continued)



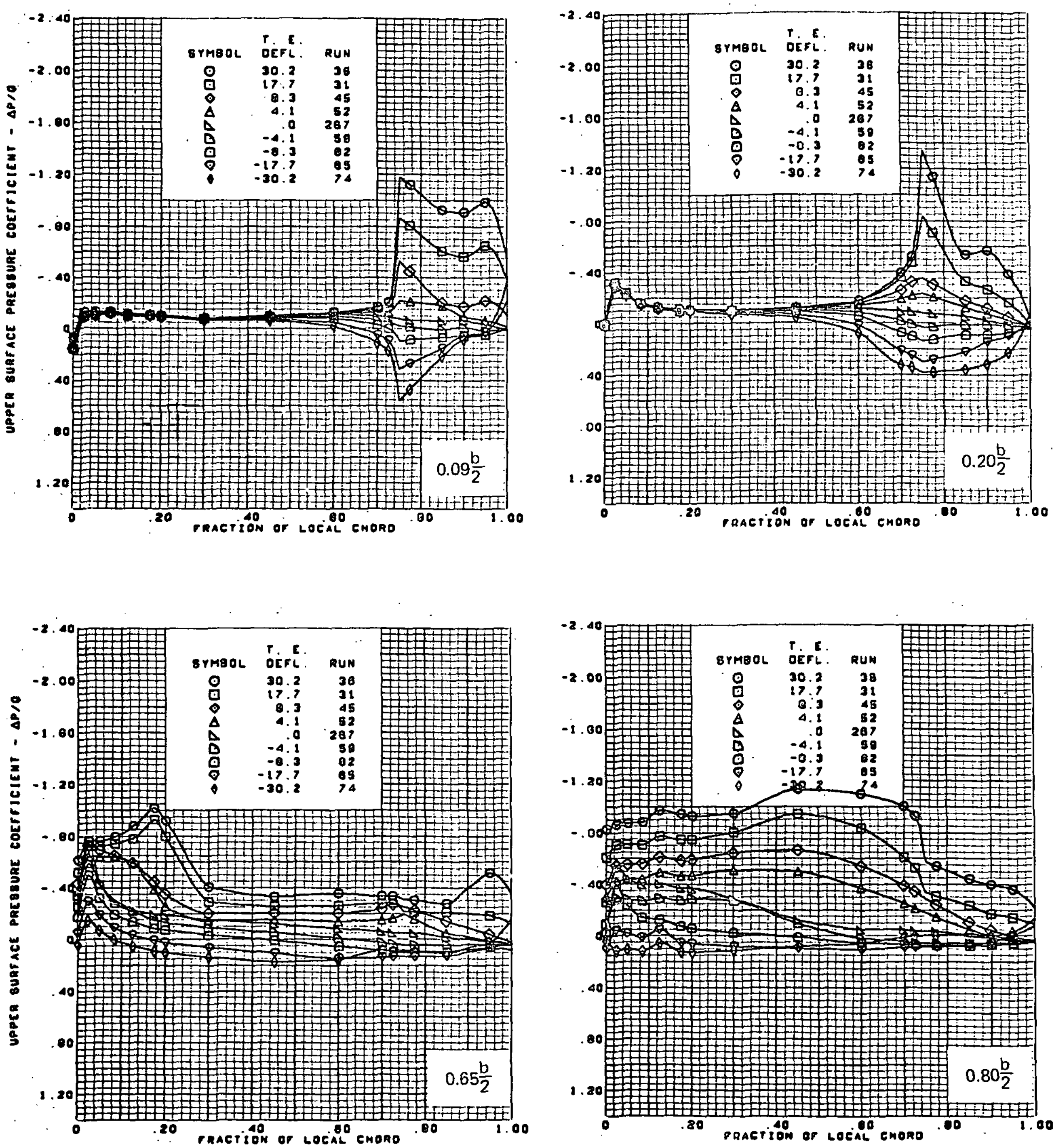




M = 0.85
$\alpha \approx 0.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

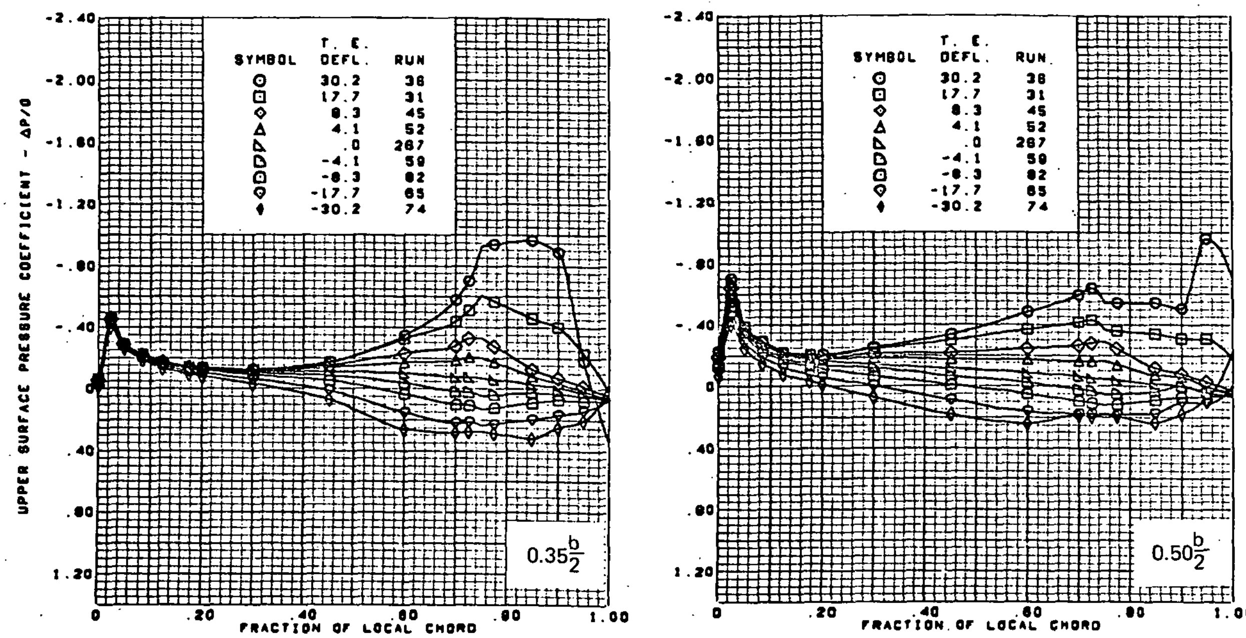
(j) (Concluded)

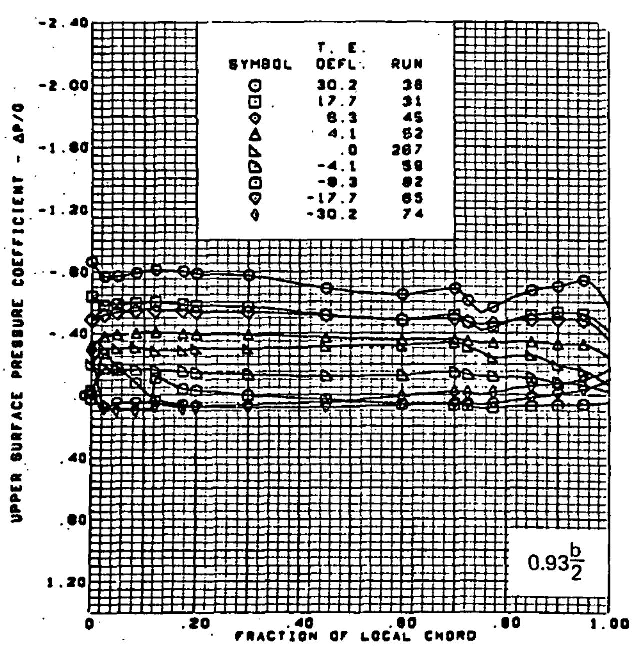
Figure 23.–(Continued)



(k) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^\circ$

Figure 23.-(Continued)

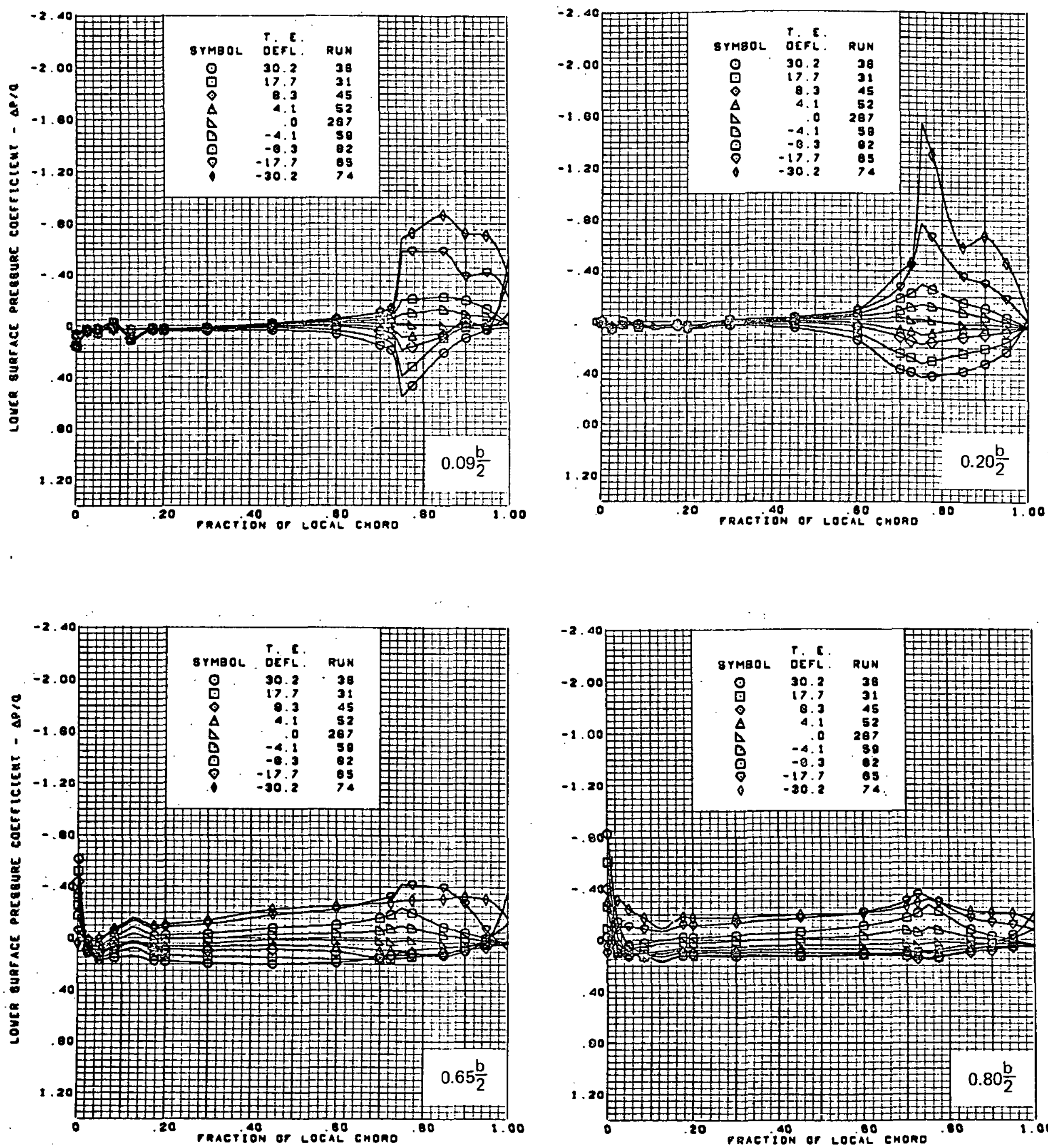




M = 0.85
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

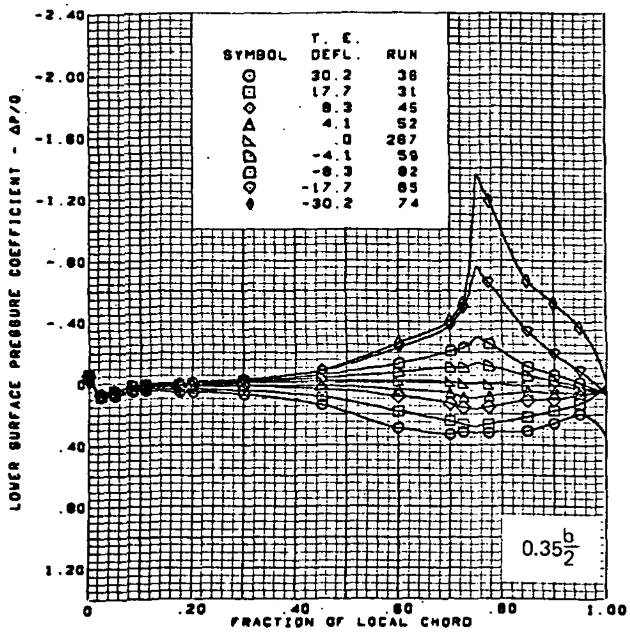
(k) (Concluded)

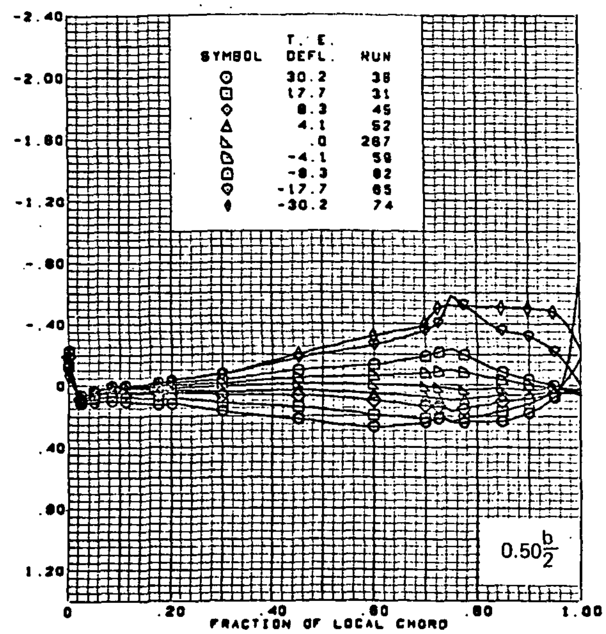
Figure 23.–(Continued)

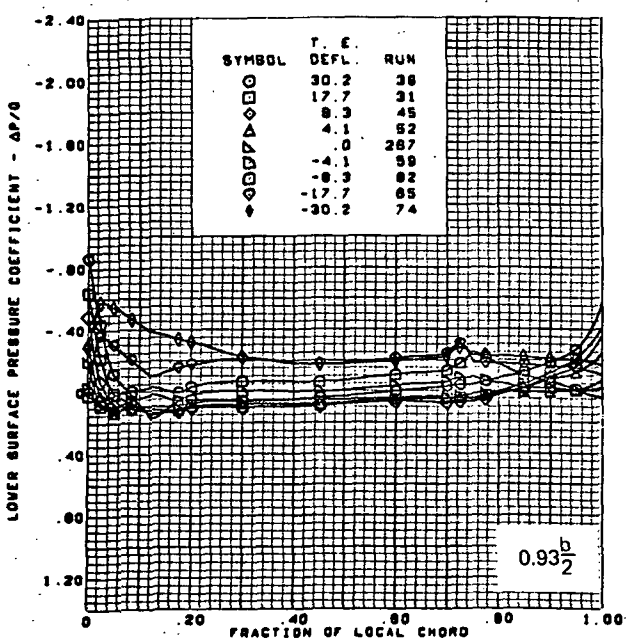


(l) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 23.–(Continued)



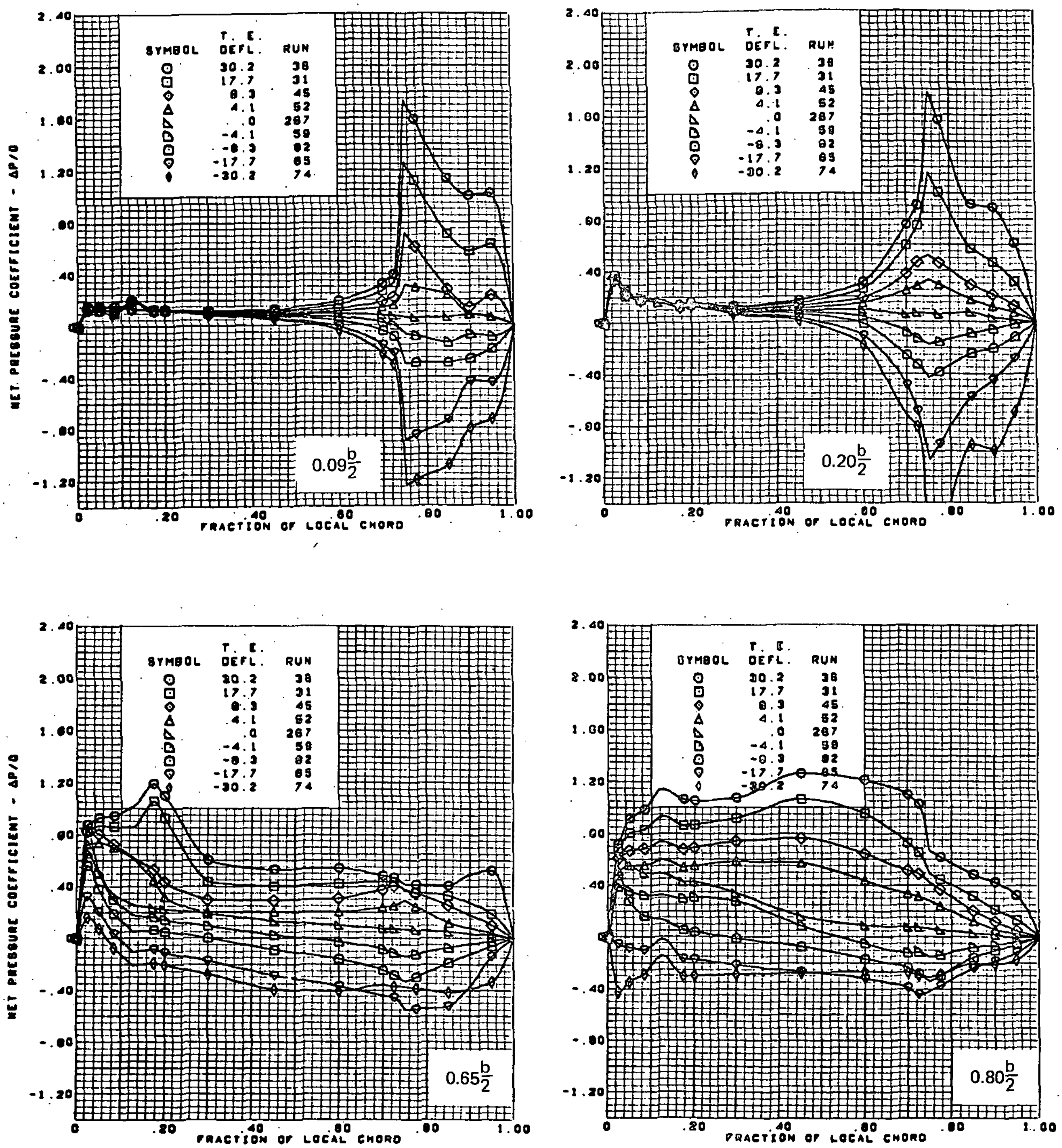




M = 0.85
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

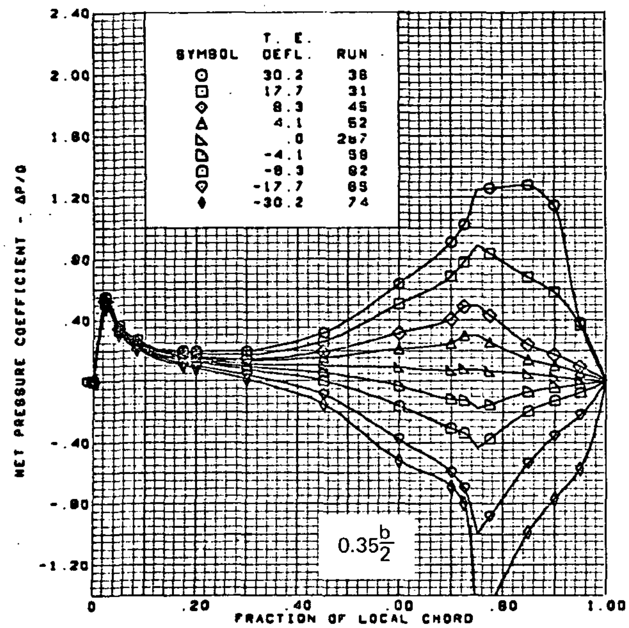
(l) (Concluded)

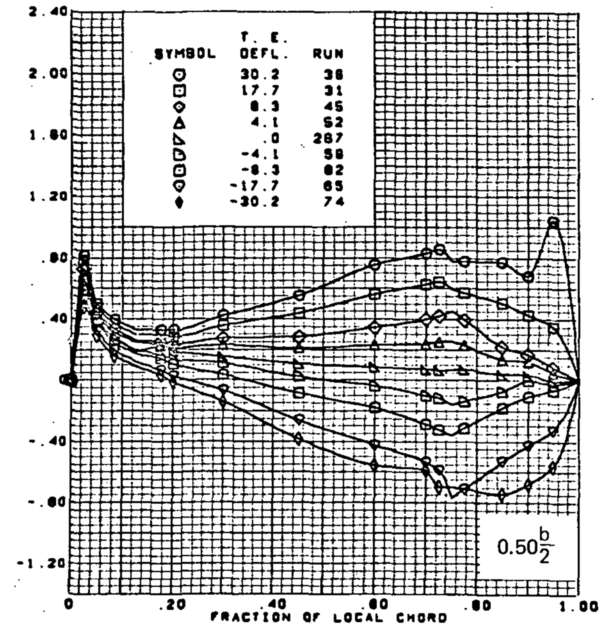
Figure 23.–(Continued)

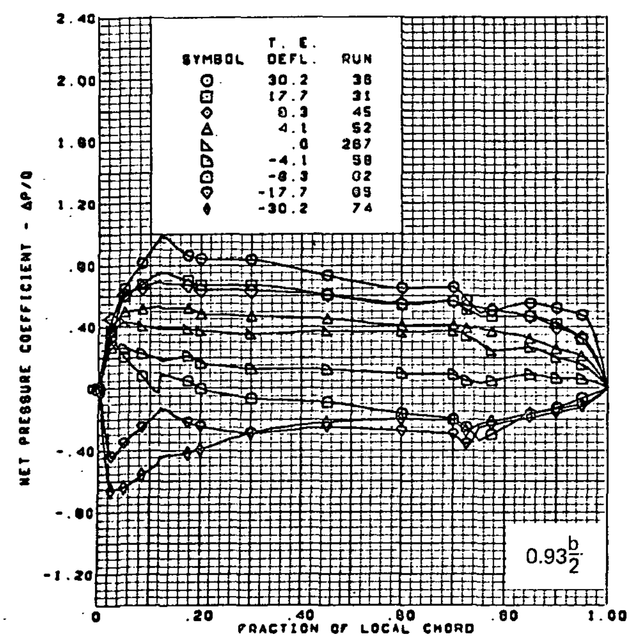


(m) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 23.–(Continued)



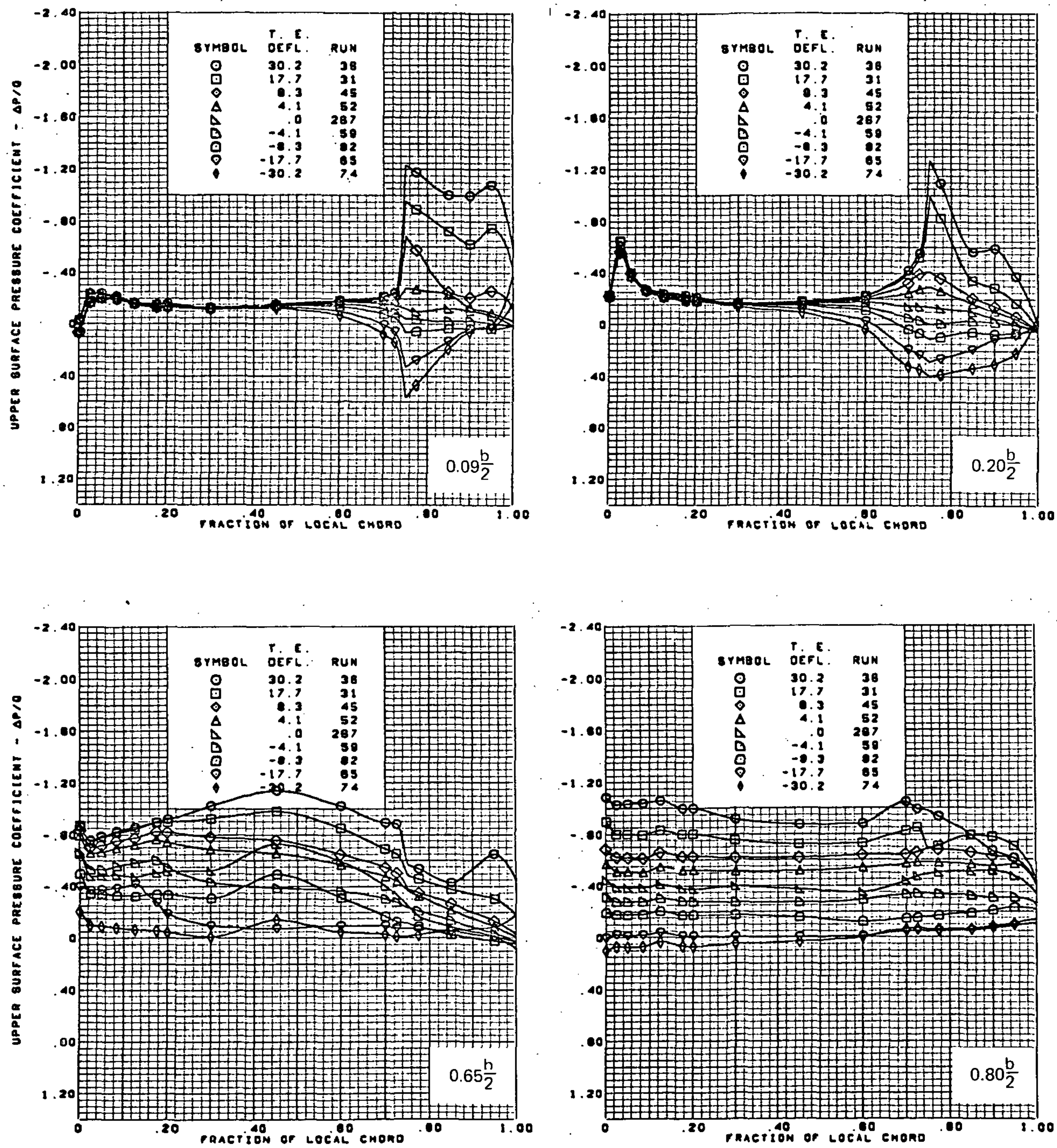




M = 0.85
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

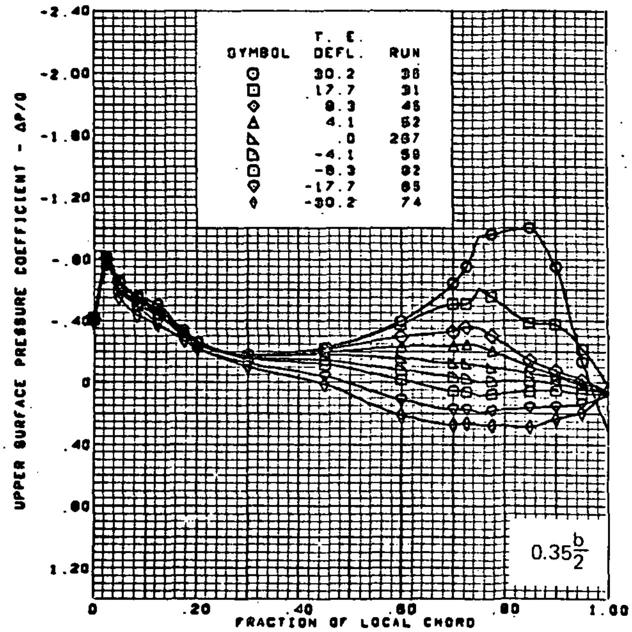
(m) (Concluded)

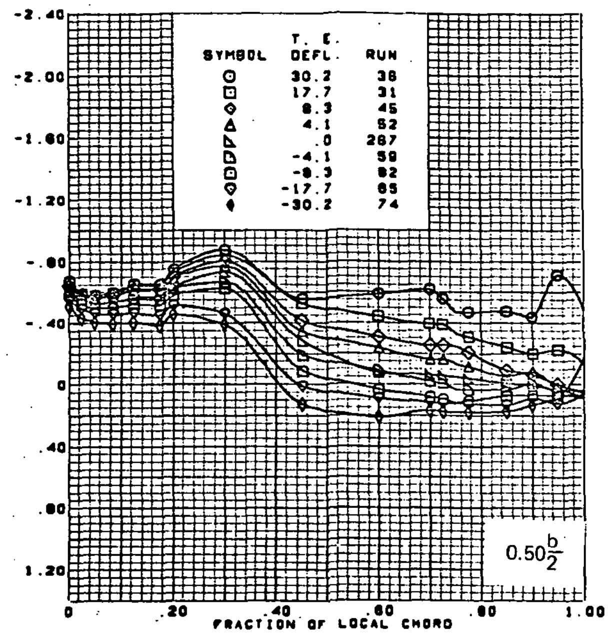
Figure 23.–(Continued)

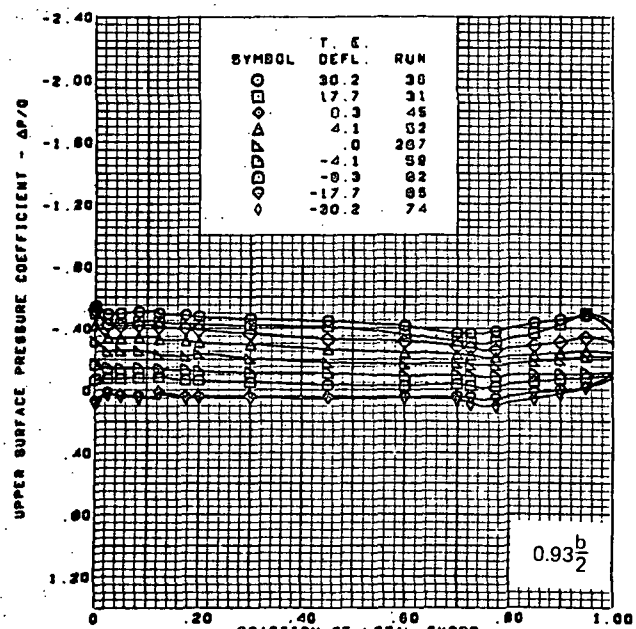


(n) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 8.0^{\circ}$

Figure 23.-(Continued)



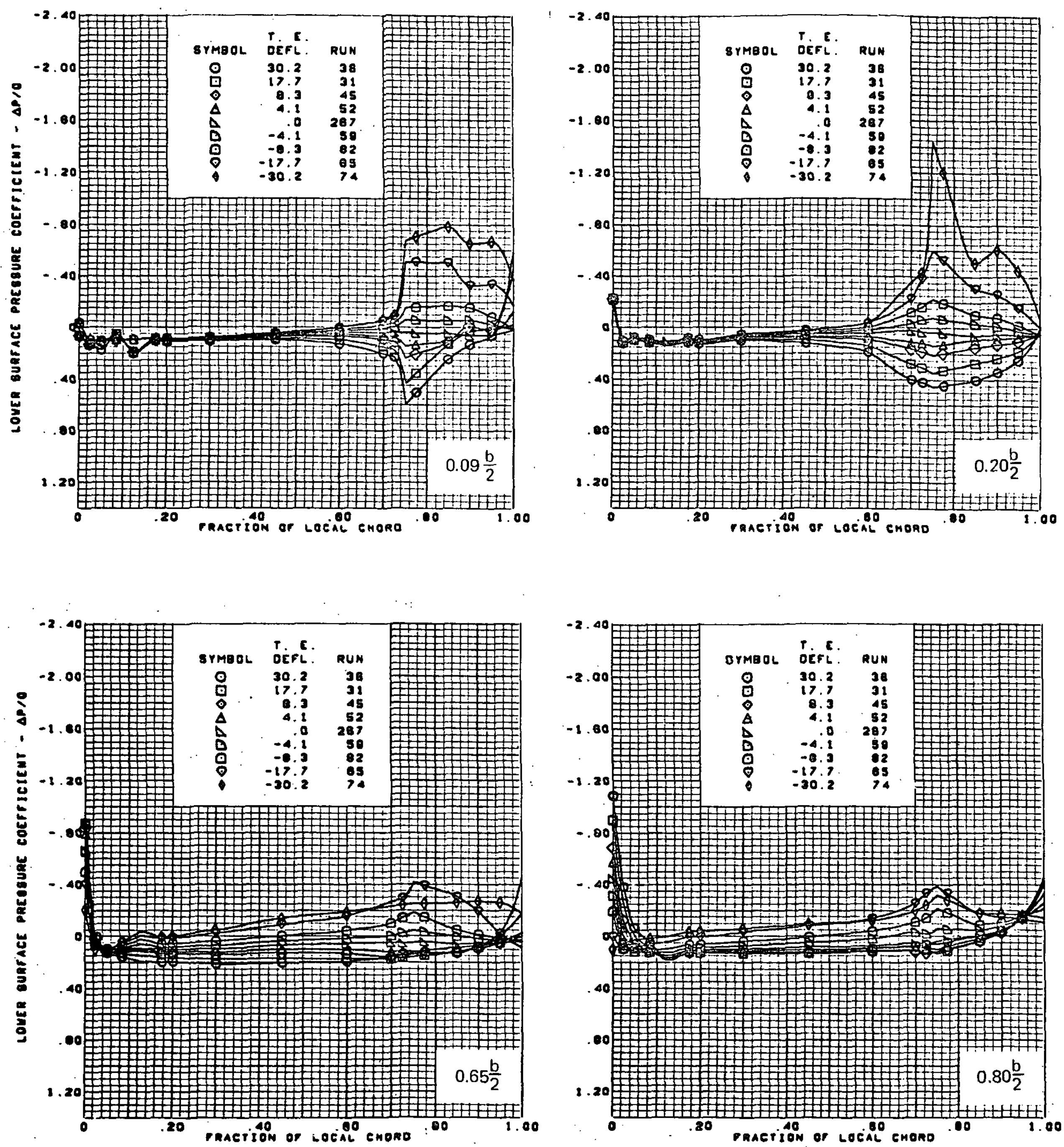




M = 0.85
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

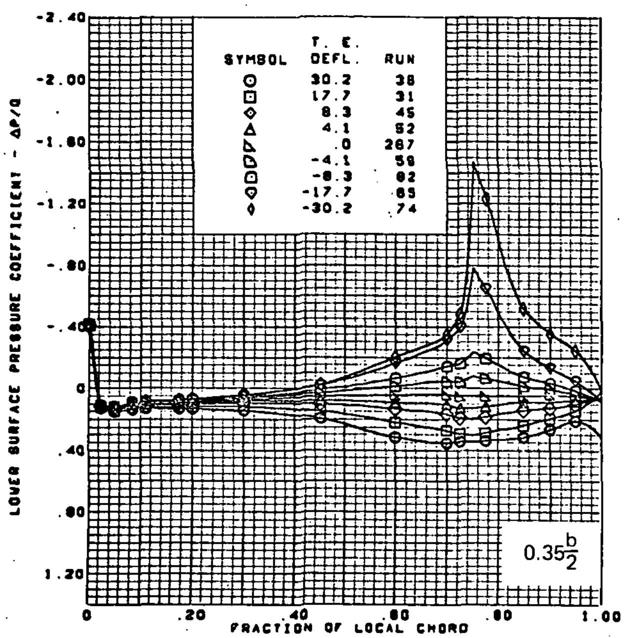
(m) (Concluded)

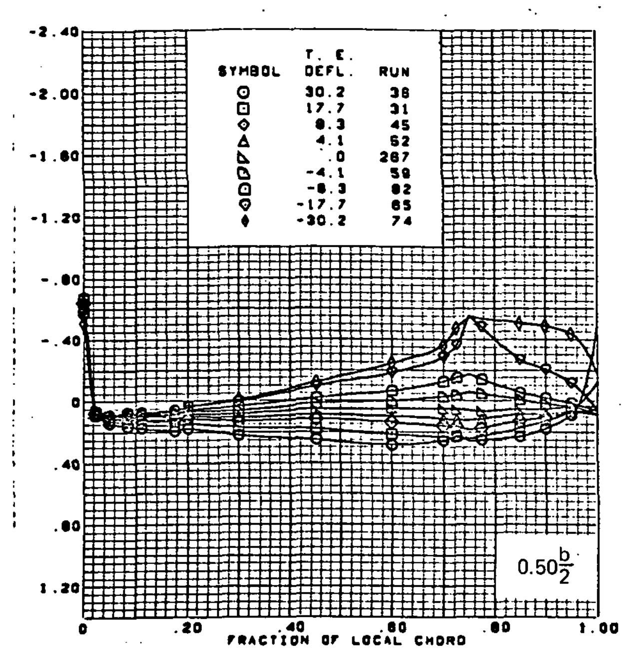
Figure 23.–(Continued)

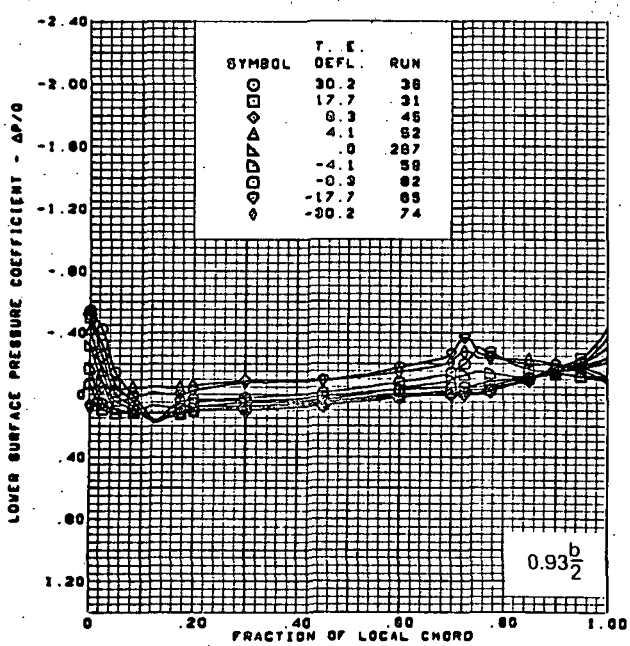


(o) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 8.0^{\circ}$

Figure 23.–(Continued)



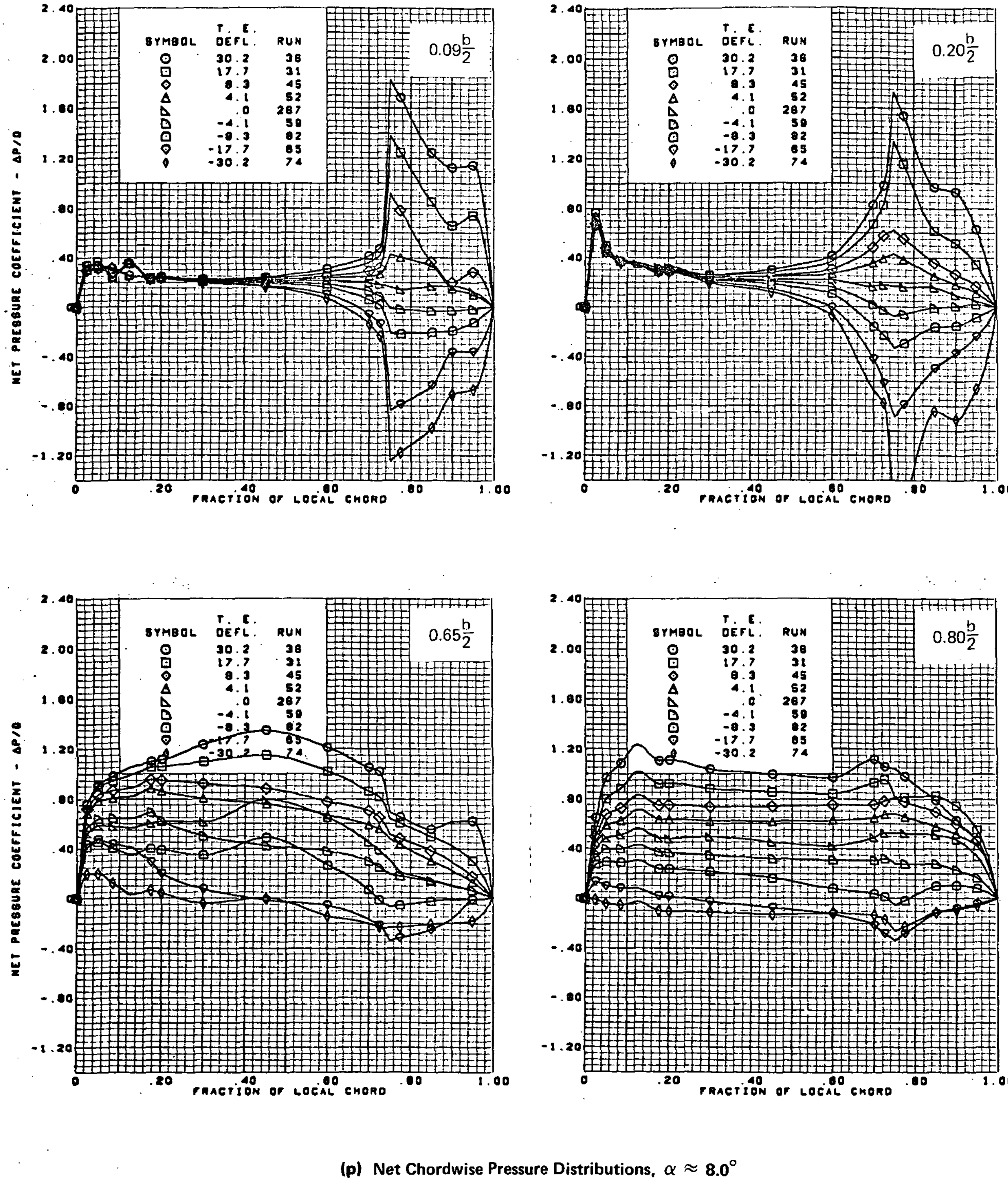




M = 0.85
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

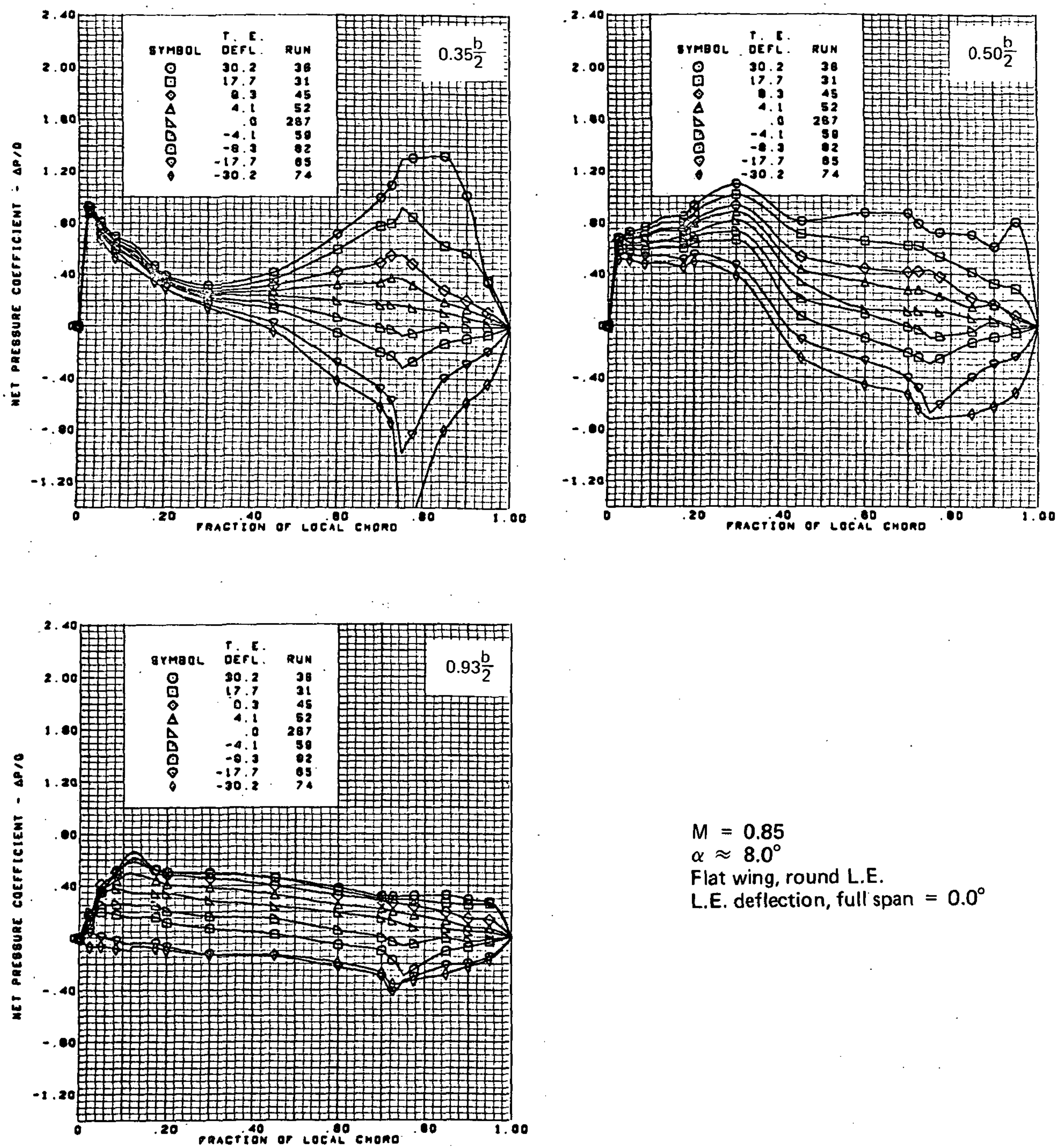
(e) (Concluded)

Figure 23.–(Continued)



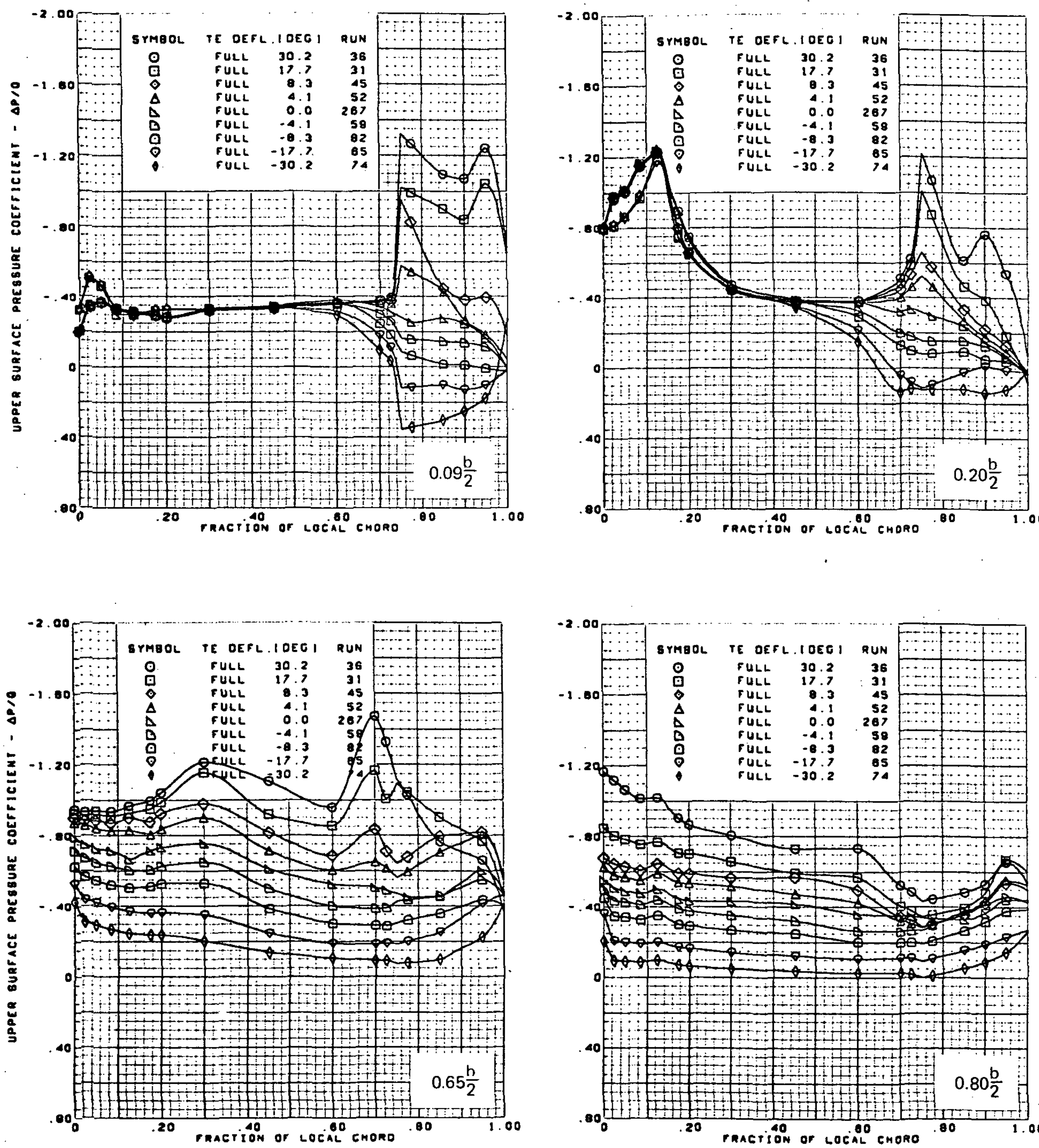
(p) Net Chordwise Pressure Distributions, $\alpha \approx 8.0^{\circ}$

Figure 23.–(Continued)



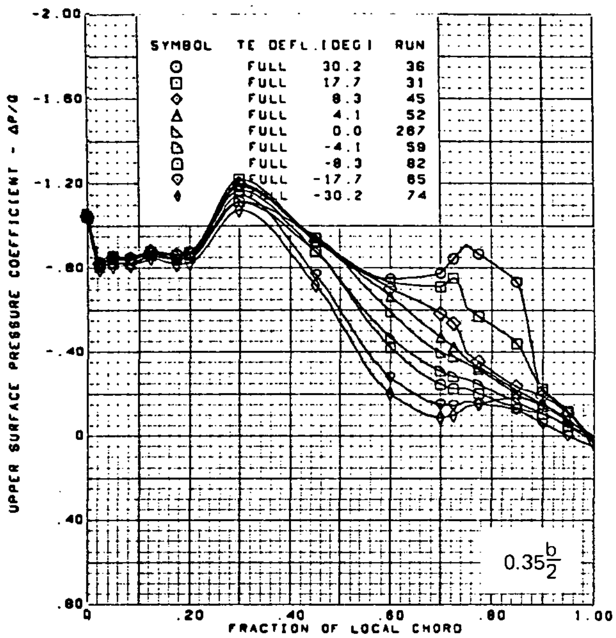
(p) (Concluded)

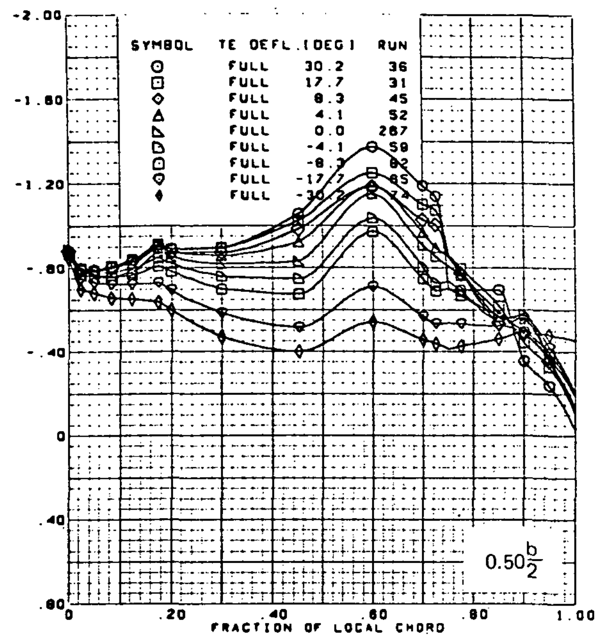
Figure 23.–(Continued)

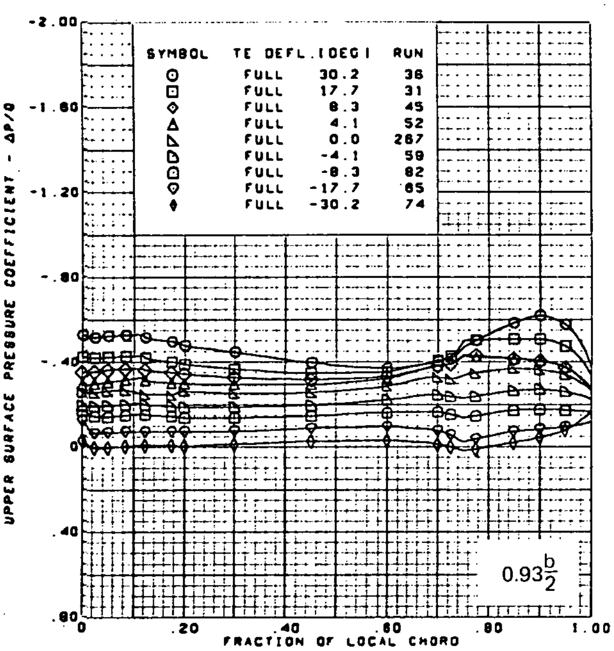


(q) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 16.0^{\circ}$

Figure 23.–(Continued)



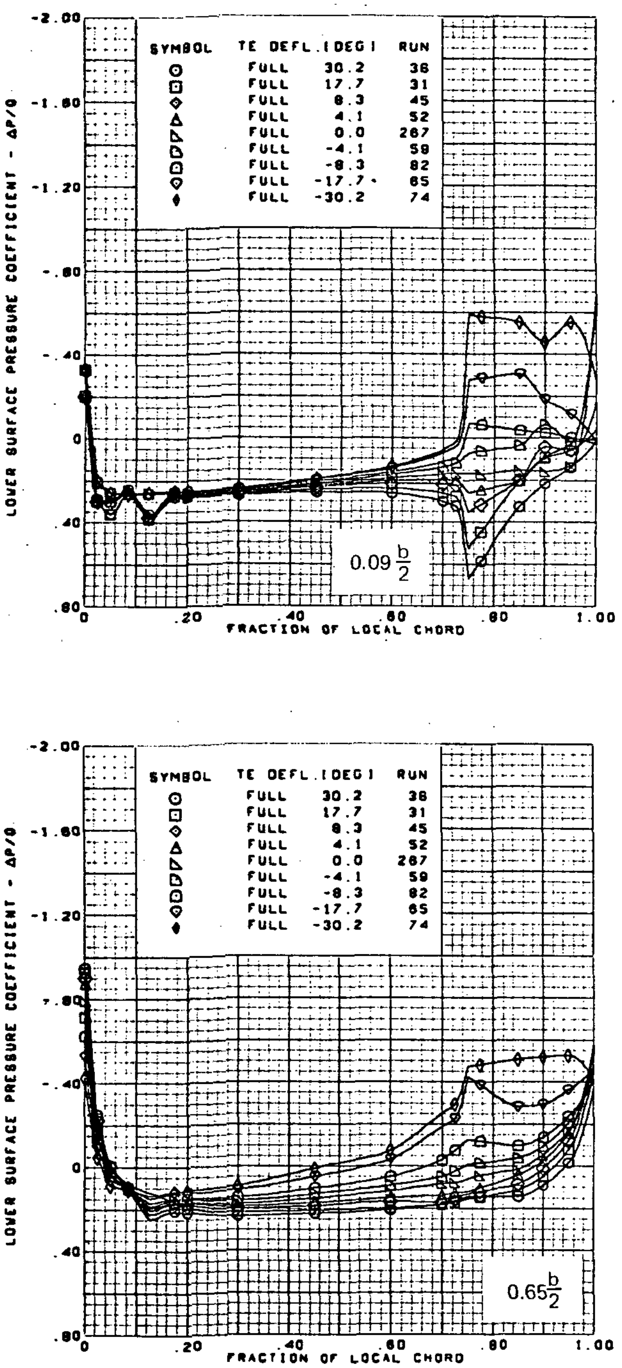




M = 0.85
$\alpha \approx 16.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

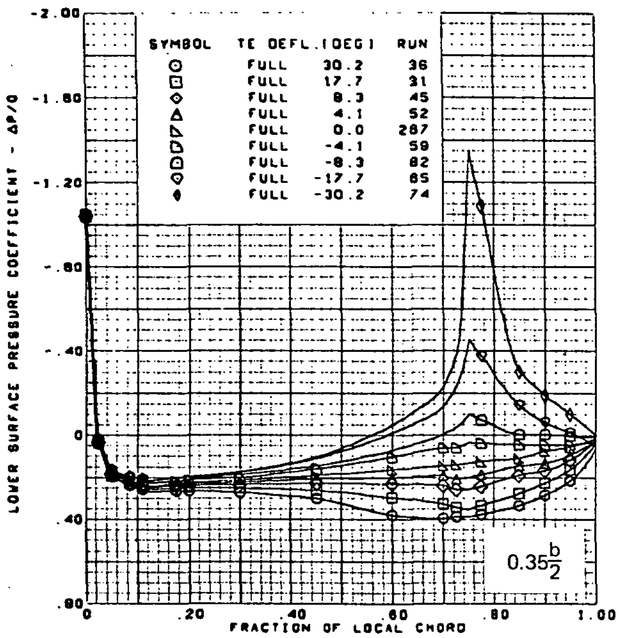
(q) (Concluded)

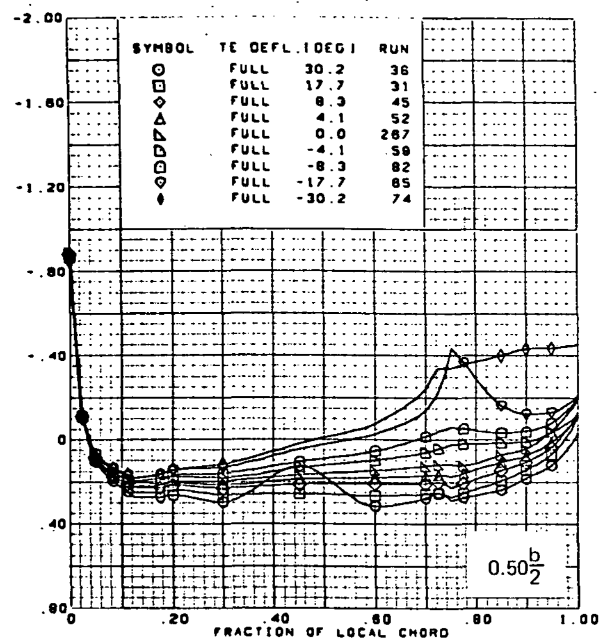
Figure 23.–(Continued)

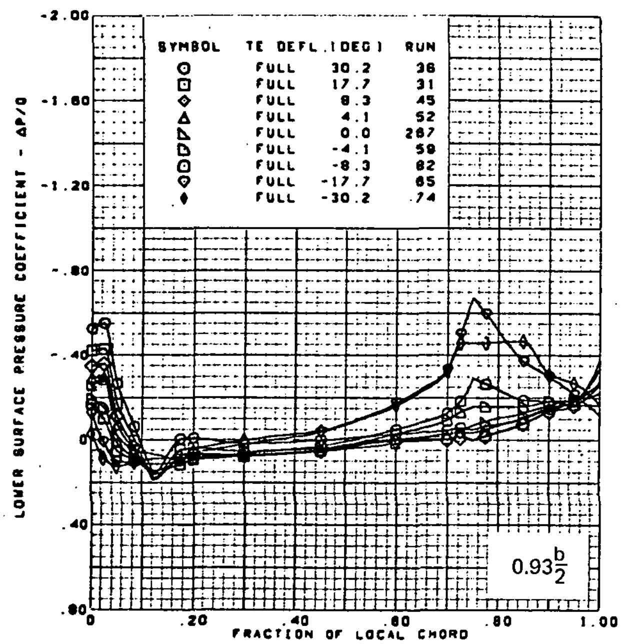


(r) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 16.0^{\circ}$

Figure 23.–(Continued)



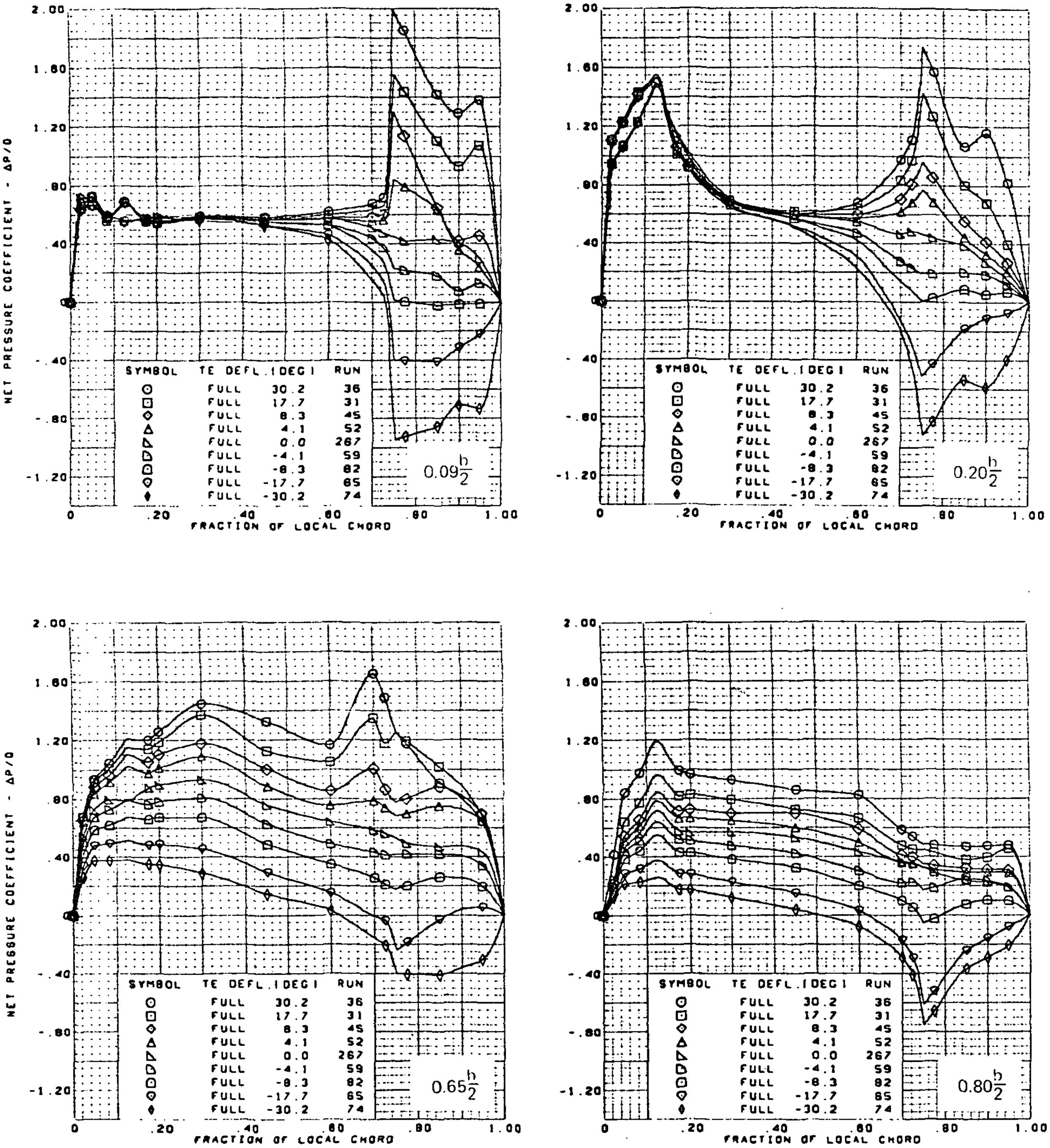




M = 0.85
α $\approx$ 16.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

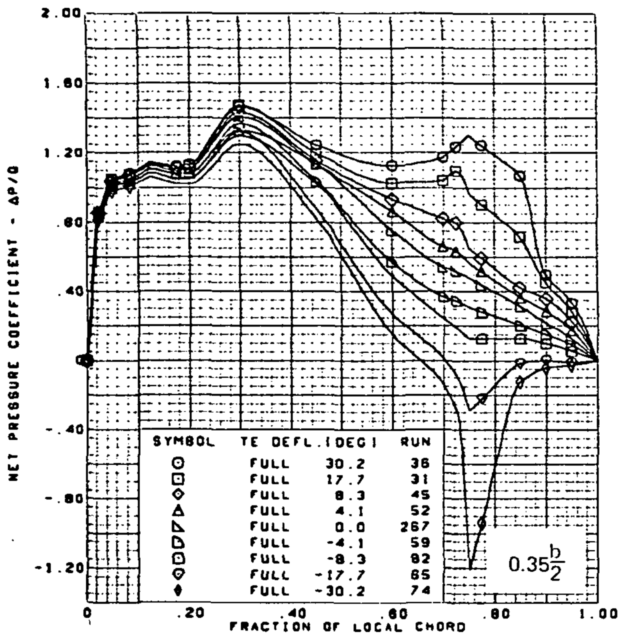
(r) (Concluded)

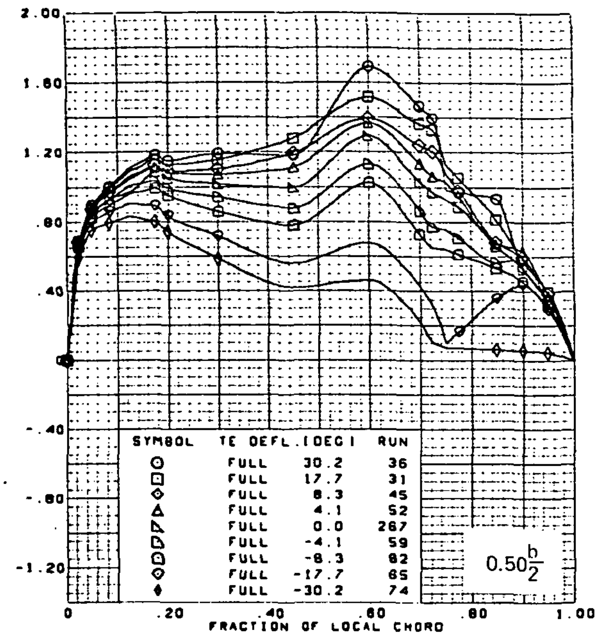
Figure 23.–(Continued)

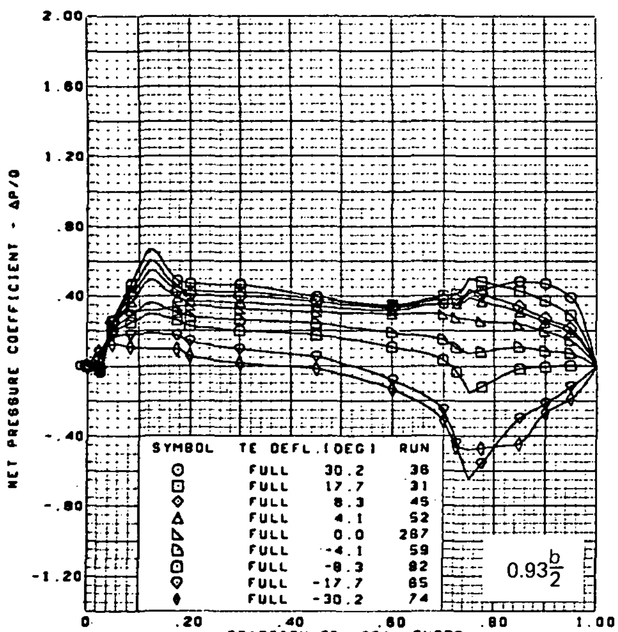


(s) Net Chordwise Pressure Distributions, $\alpha \approx 16.0^{\circ}$

Figure 23.-(Continued)



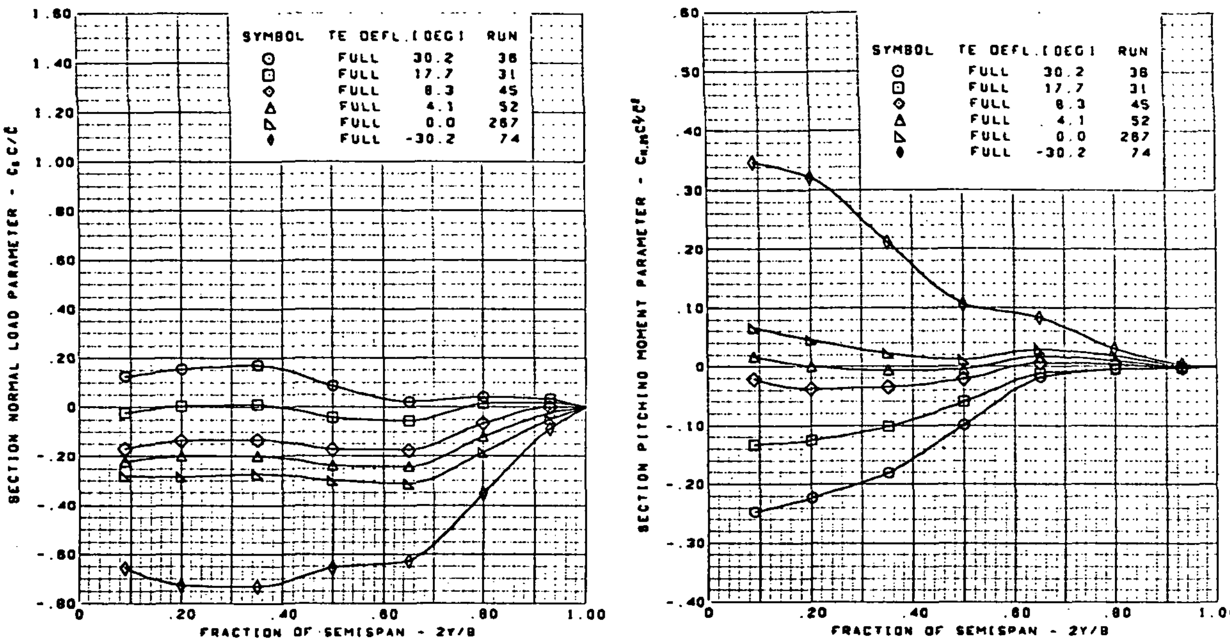




M = 0.85
$\alpha \approx 16.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(a) (Concluded)

Figure 23.–(Continued)



M = 0.85
$\alpha \approx$ -8.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(t) Spanload Distributions, $\alpha \approx$ **-8.0°**

Figure 23.–(Continued)

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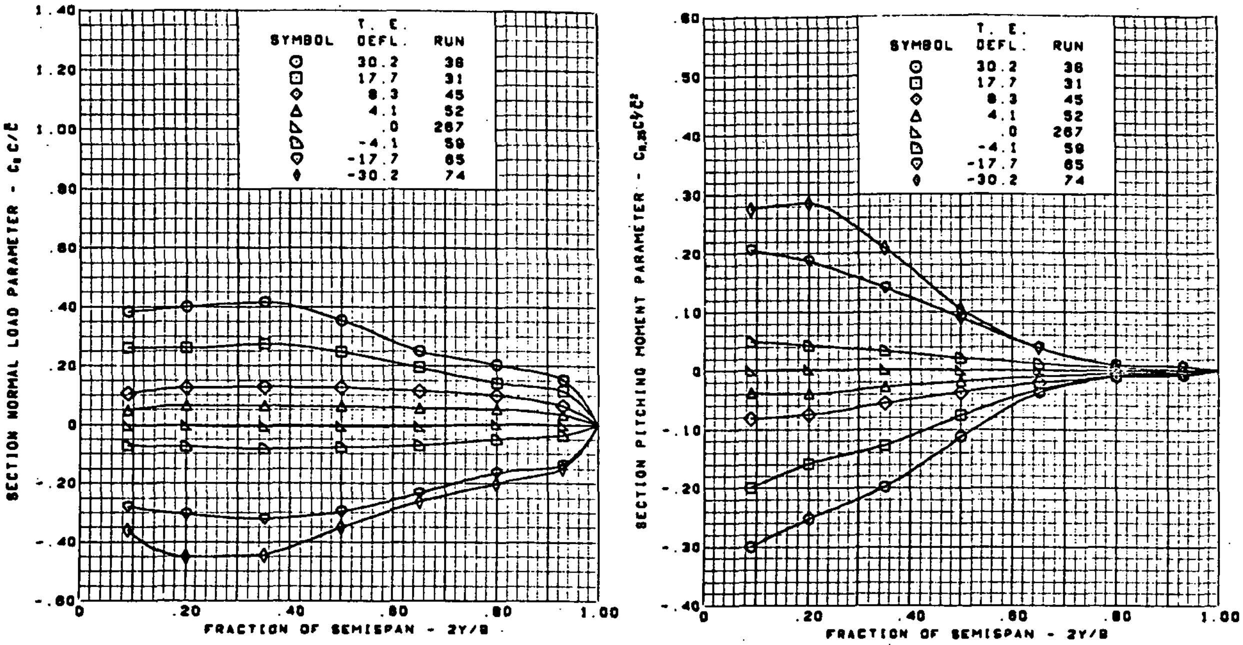
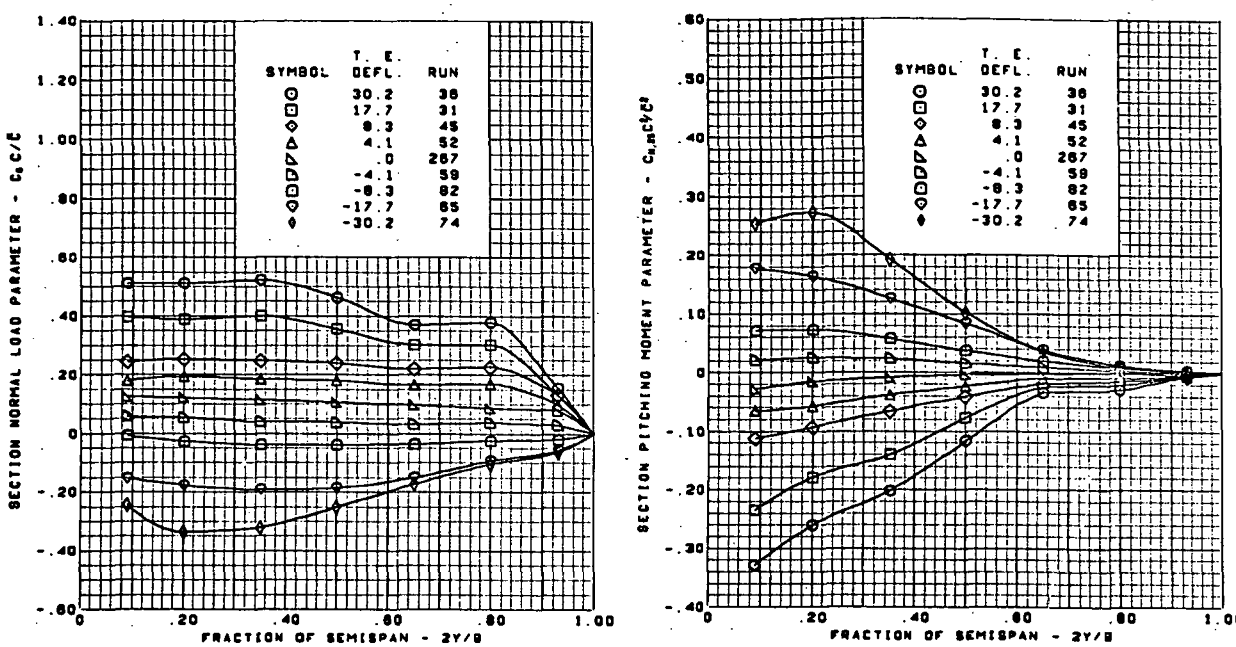


M = 0.85
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(u) Spanload Distributions, $\alpha \approx 0.0°$

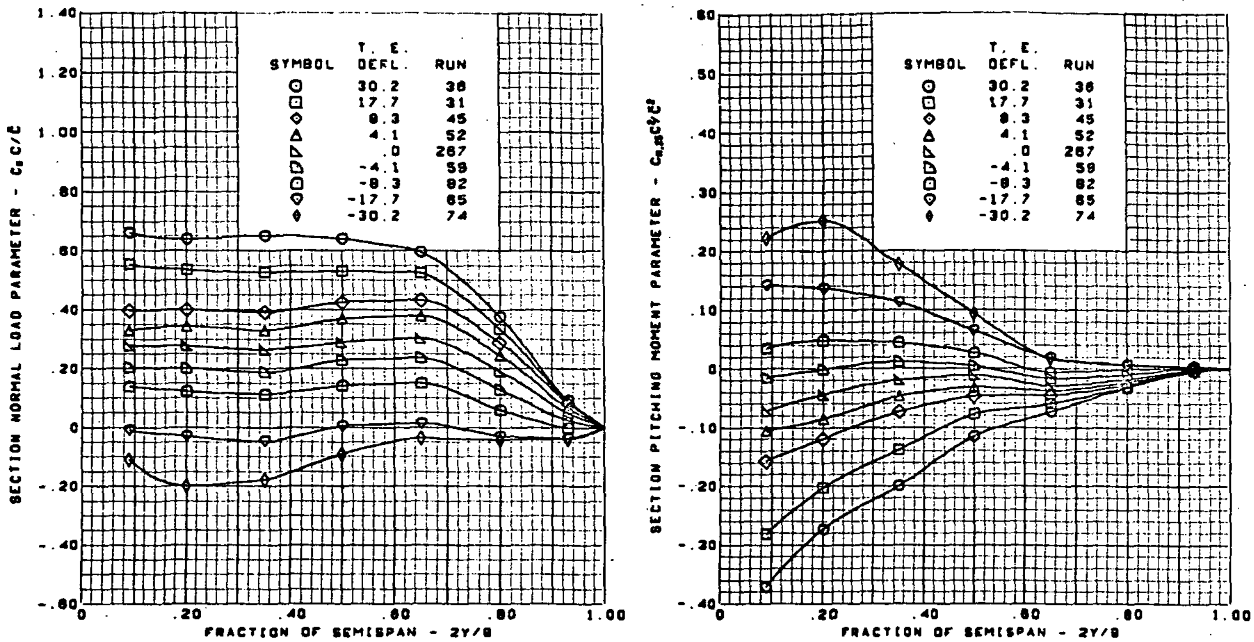
Figure 23.–(Continued)



M = 0.85
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(v) Spanload Distributions, $\alpha \approx 4.0°$

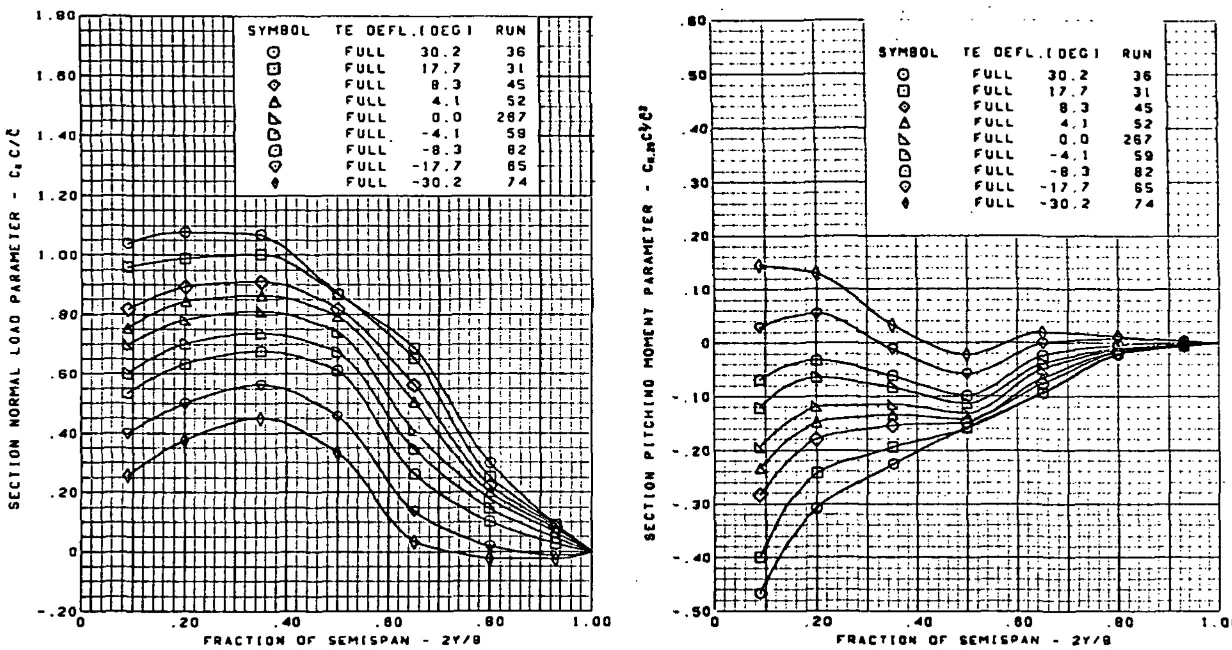
Figure 23:–(Continued)



M = 0.85
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(w) Spanload Distributions, $\alpha \approx 8.0°$

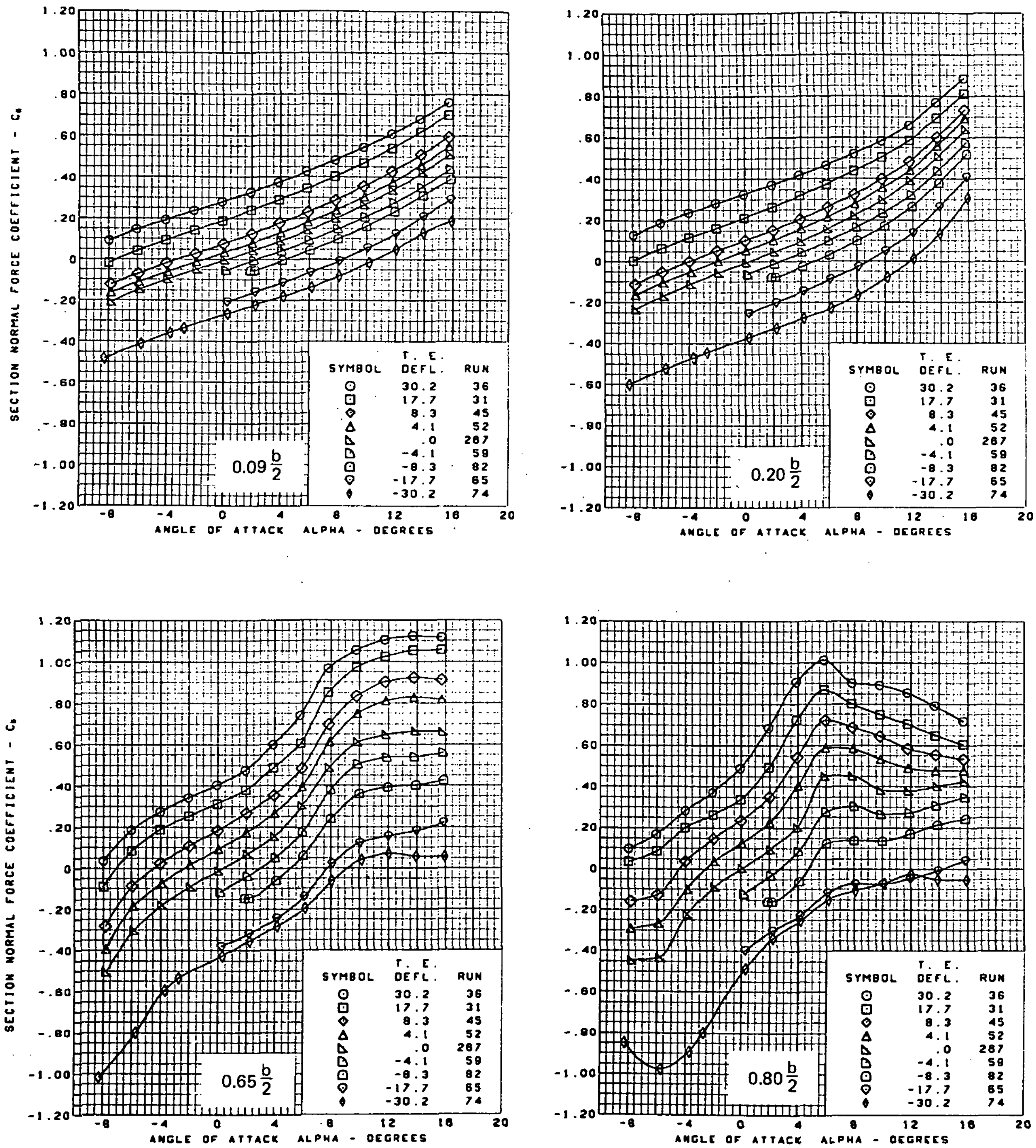
Figure 23.–(Continued)



M = 0.85
$\alpha \approx 16.0^{\circ}$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

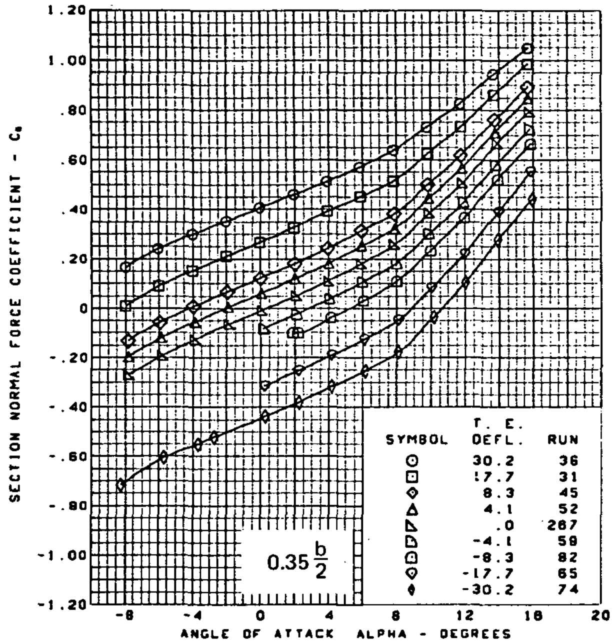
(x) Spanload Distributions, $\alpha \approx 16.0^{\circ}$

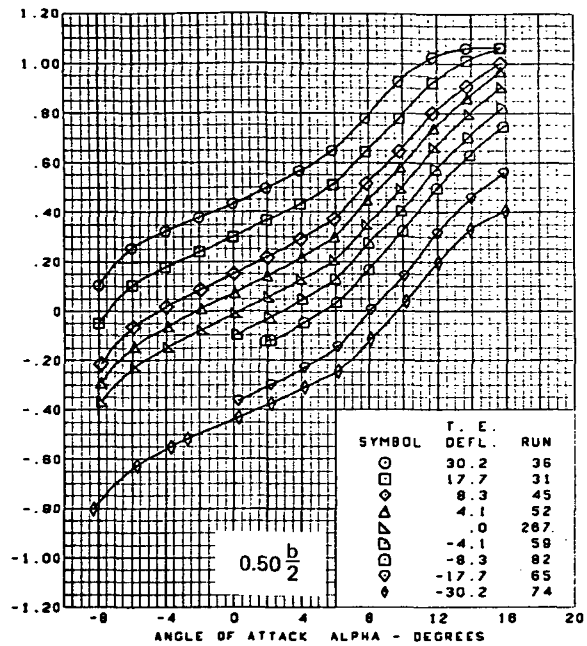
Figure 23.–(Continued)

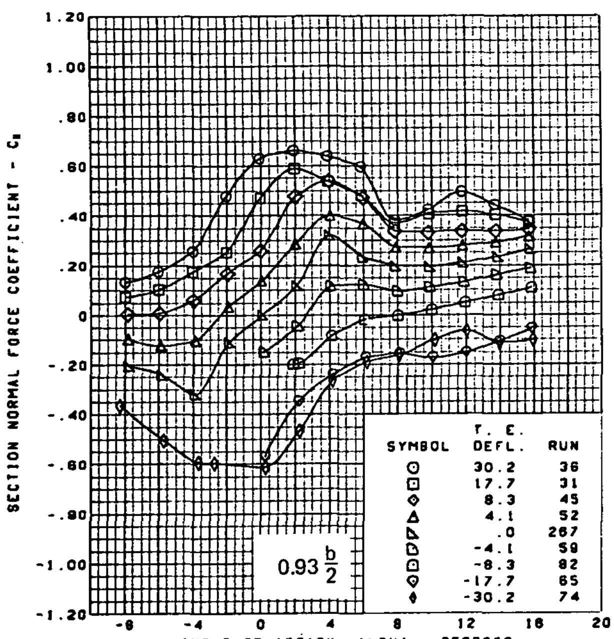


(y) Section Aerodynamic Coefficients — Normal Force

Figure 23.–(Continued)



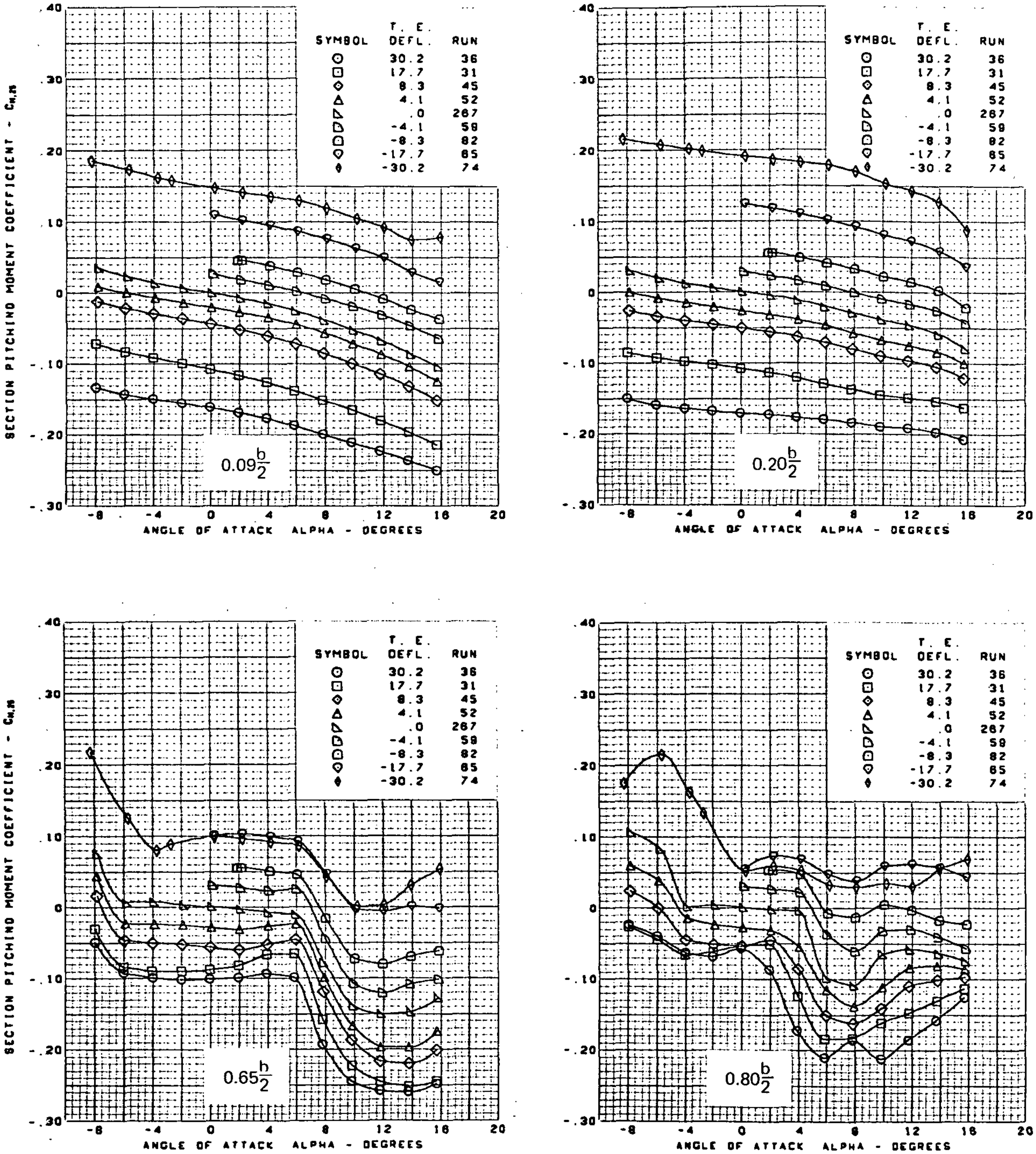




M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

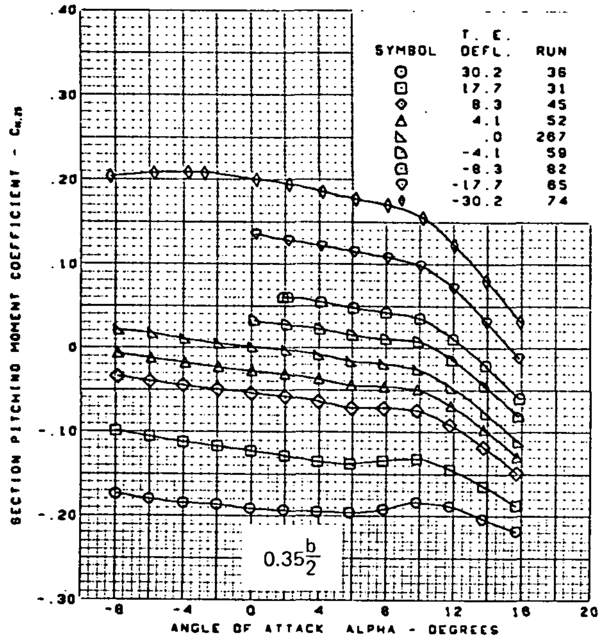
(y) (Concluded)

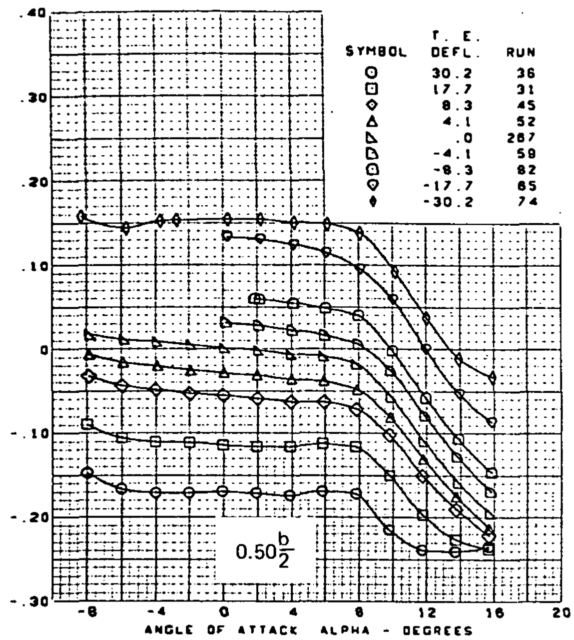
Figure 23.–(Continued)

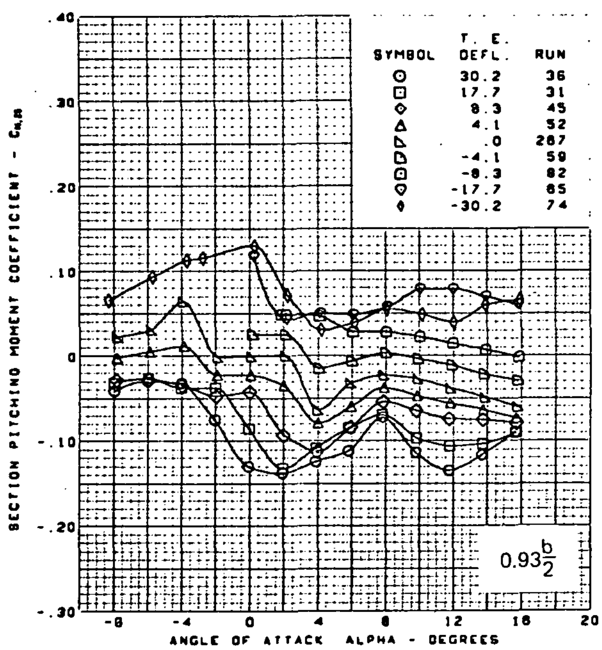


(z) Section Aerodynamic Coefficient — Pitching Moment

Figure 23.-(Continued)



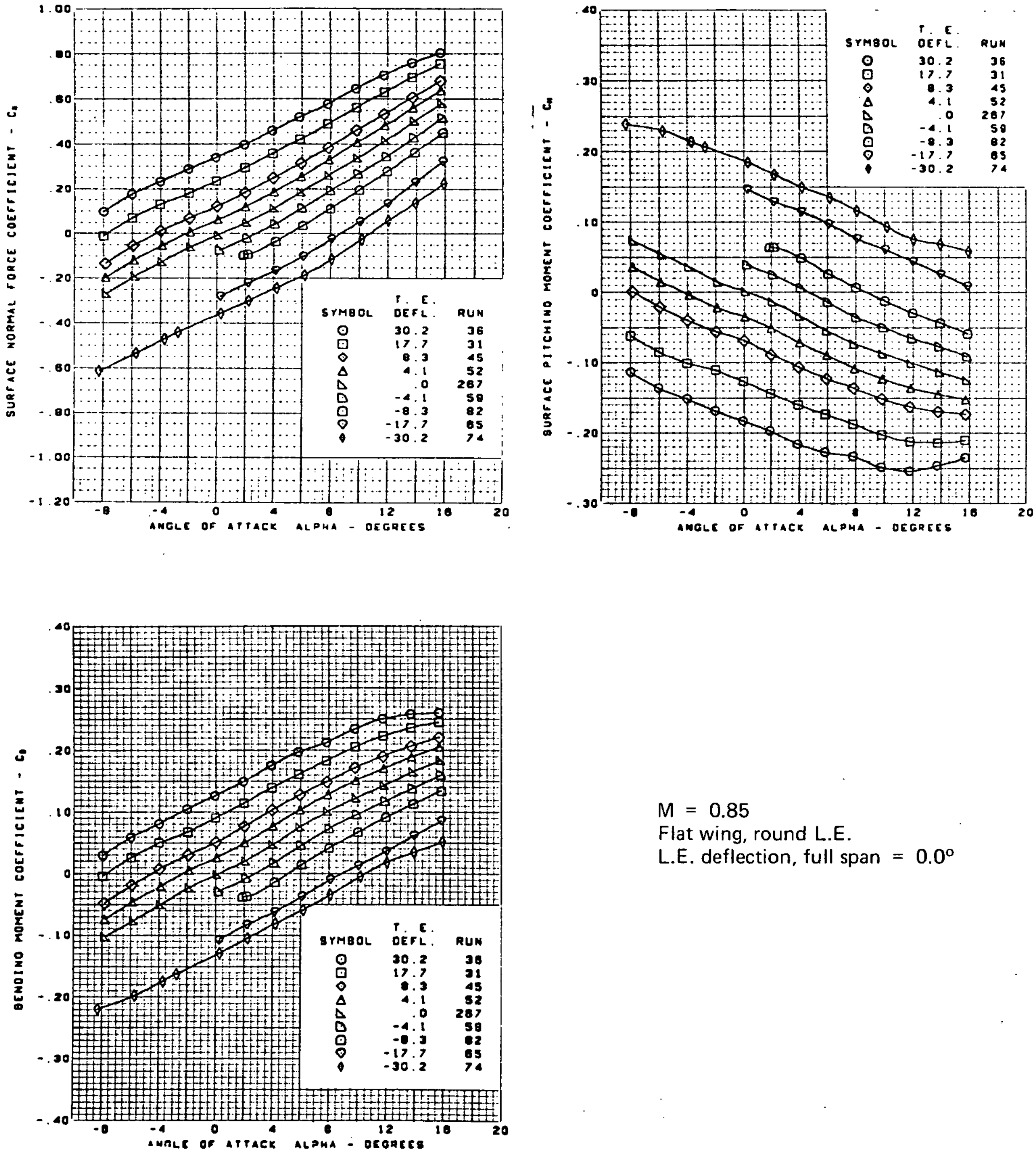




M = 0.85
Flat wing, round L.E.
T.E. deflection, full span = 0.0°

(z) (Concluded)

Figure 23.–(Continued)



(ae) Wing Aerodynamic Coefficients

Figure 23.–(Concluded)

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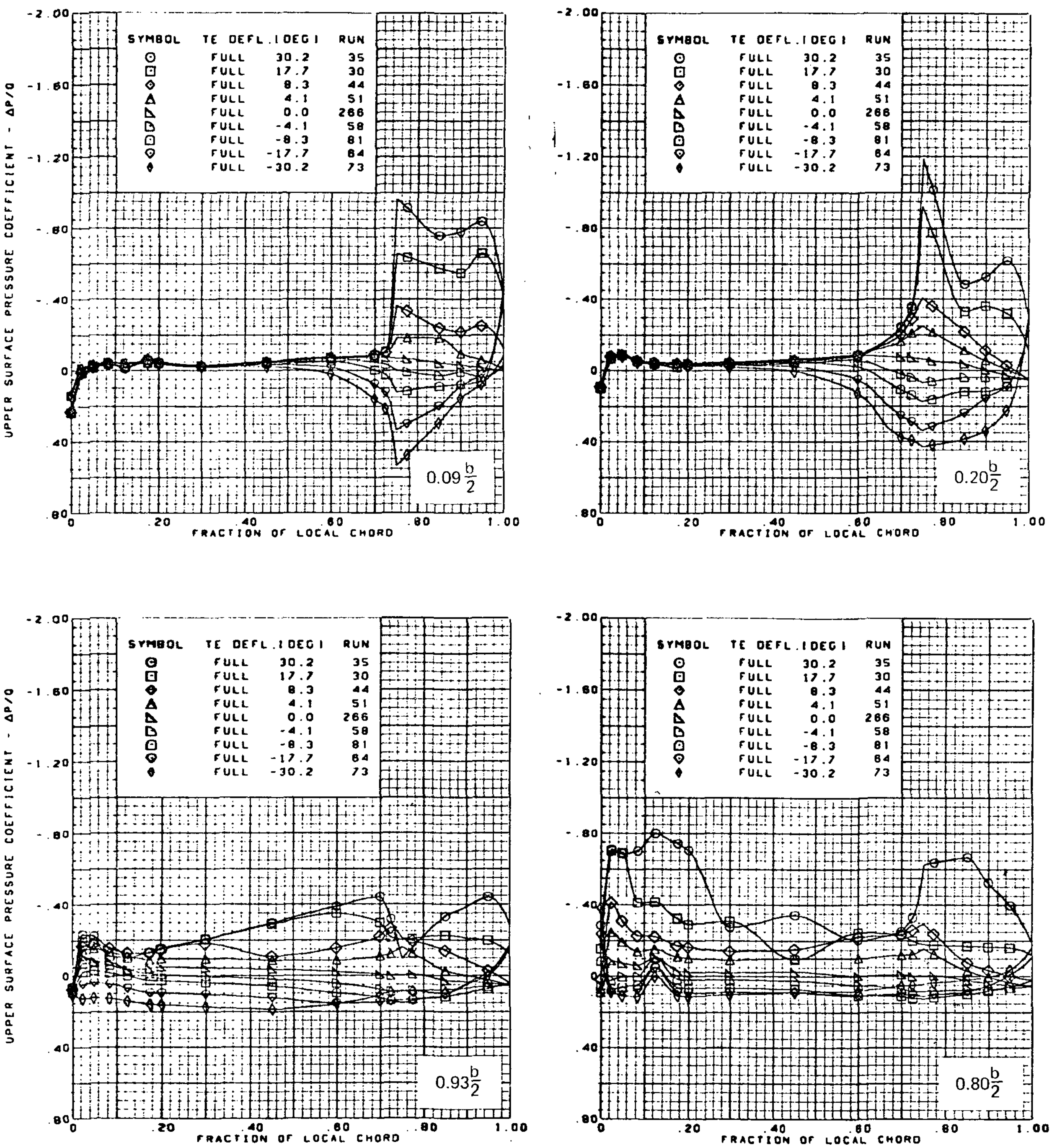
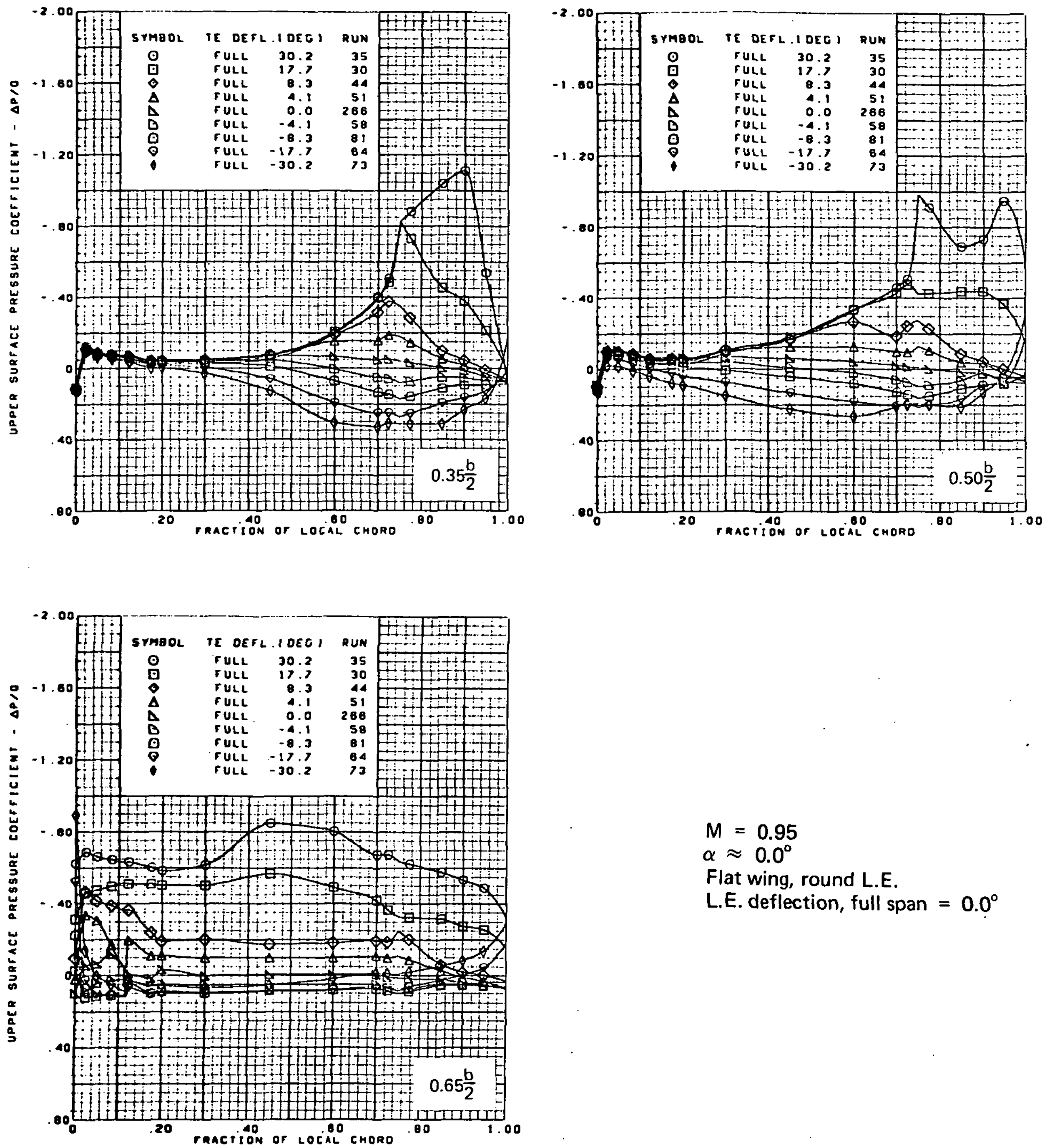


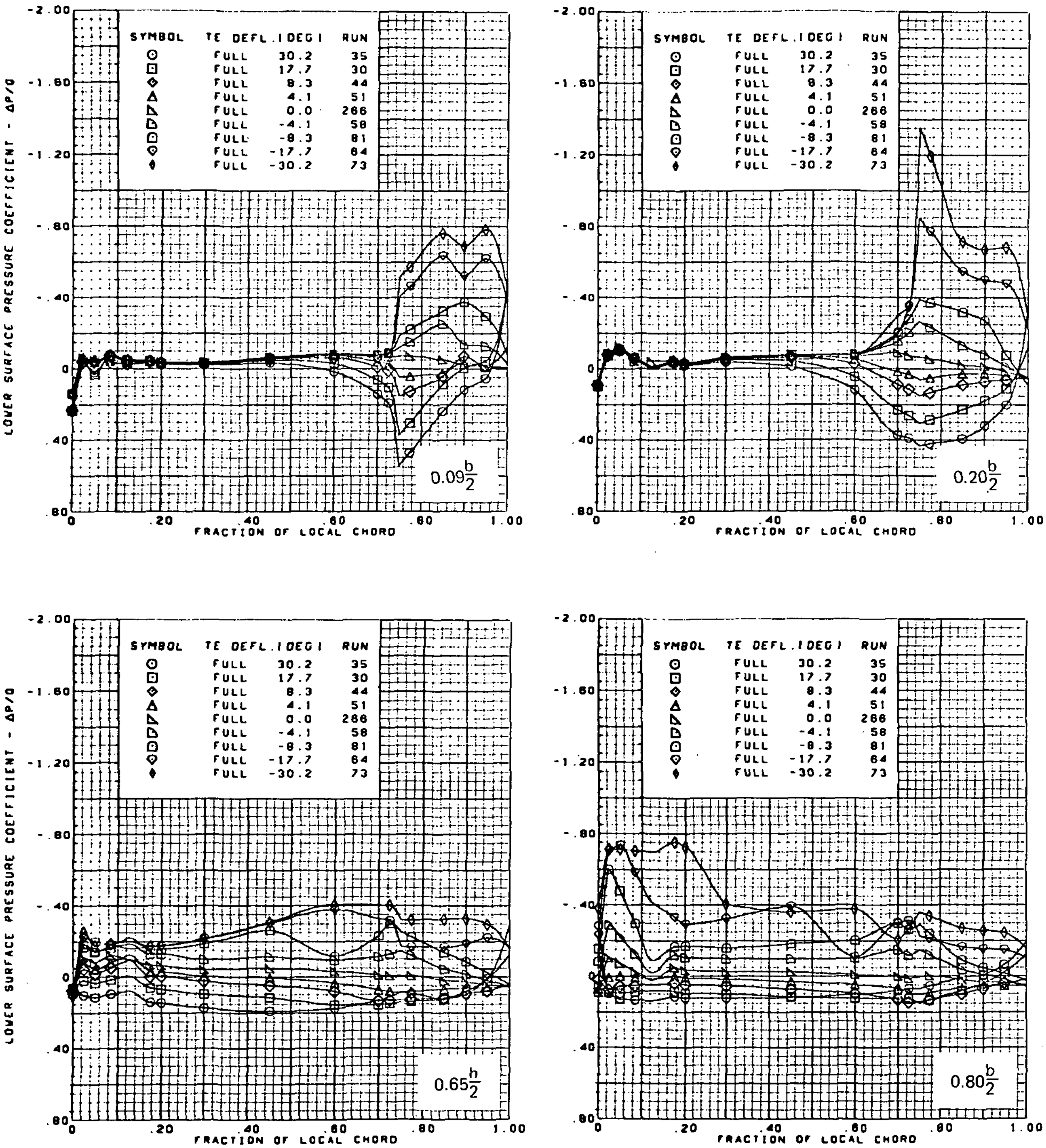
(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 24.—Wing Experimental Data—Effect of Full Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.95



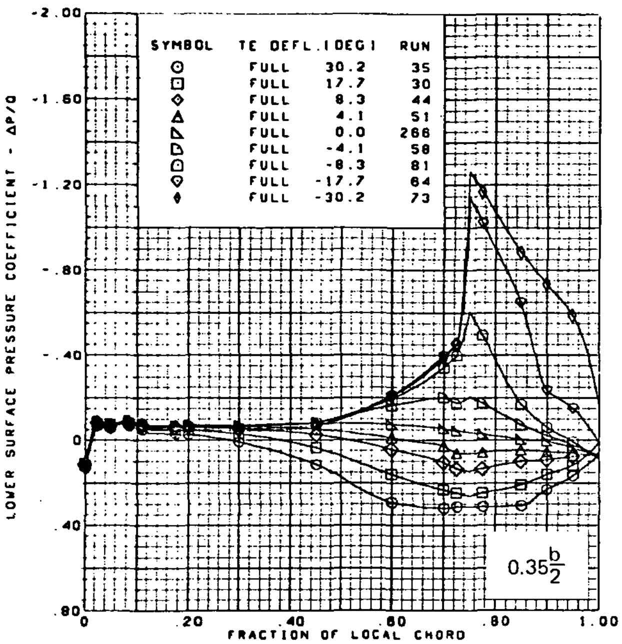
(a) (Concluded)

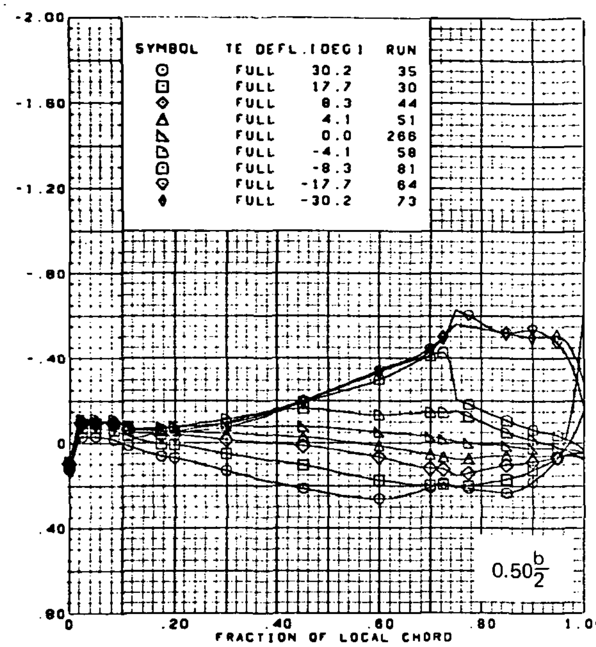
Figure 24.–(Continued)

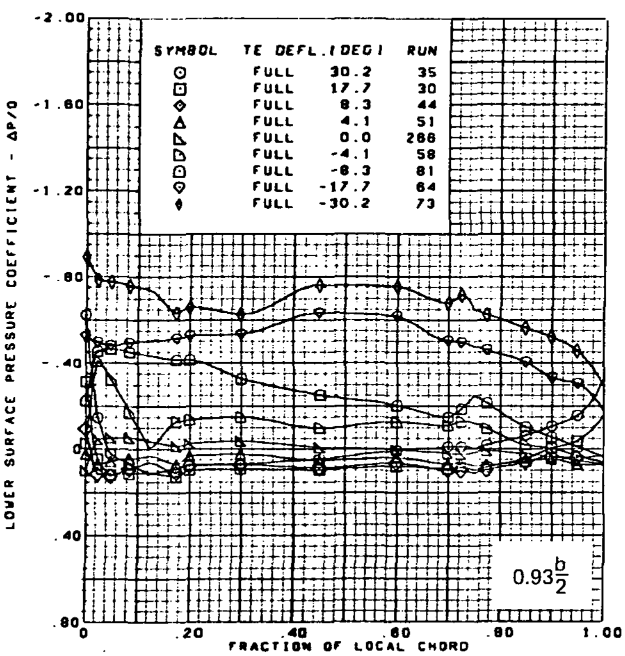


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 24.–(Continued)



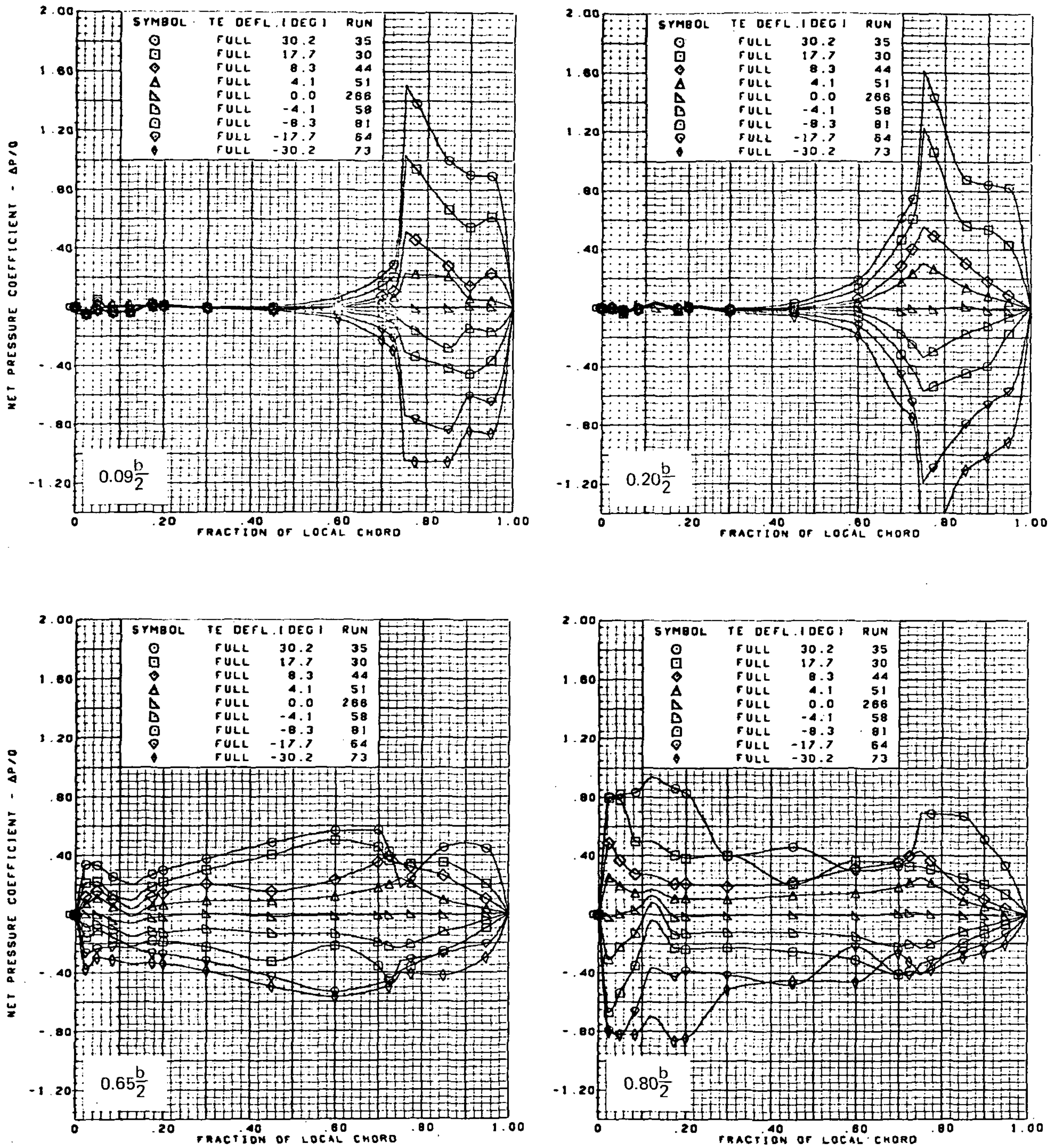




M = 0.95
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

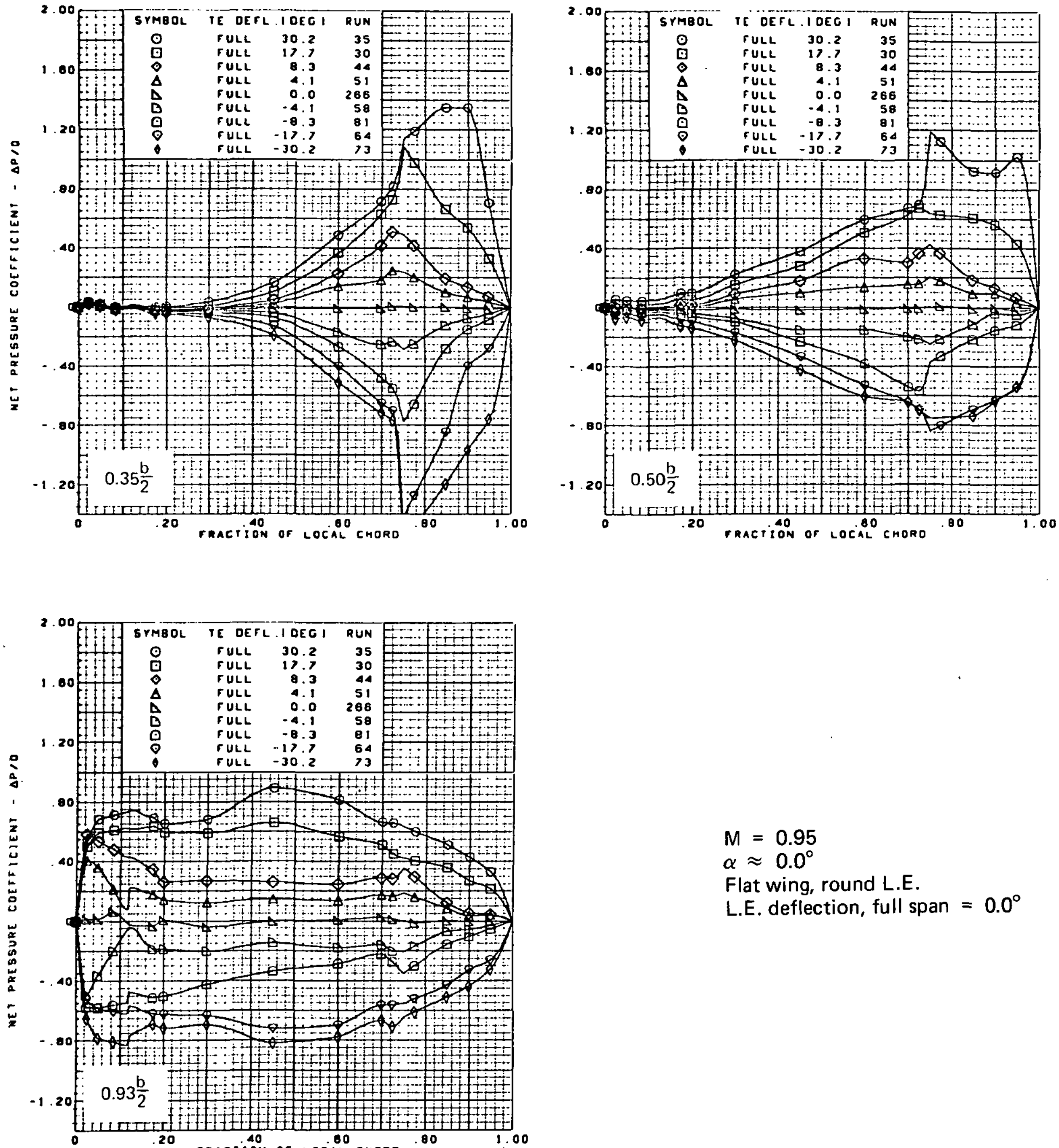
(b) (Concluded)

Figure 24.-(Continued)



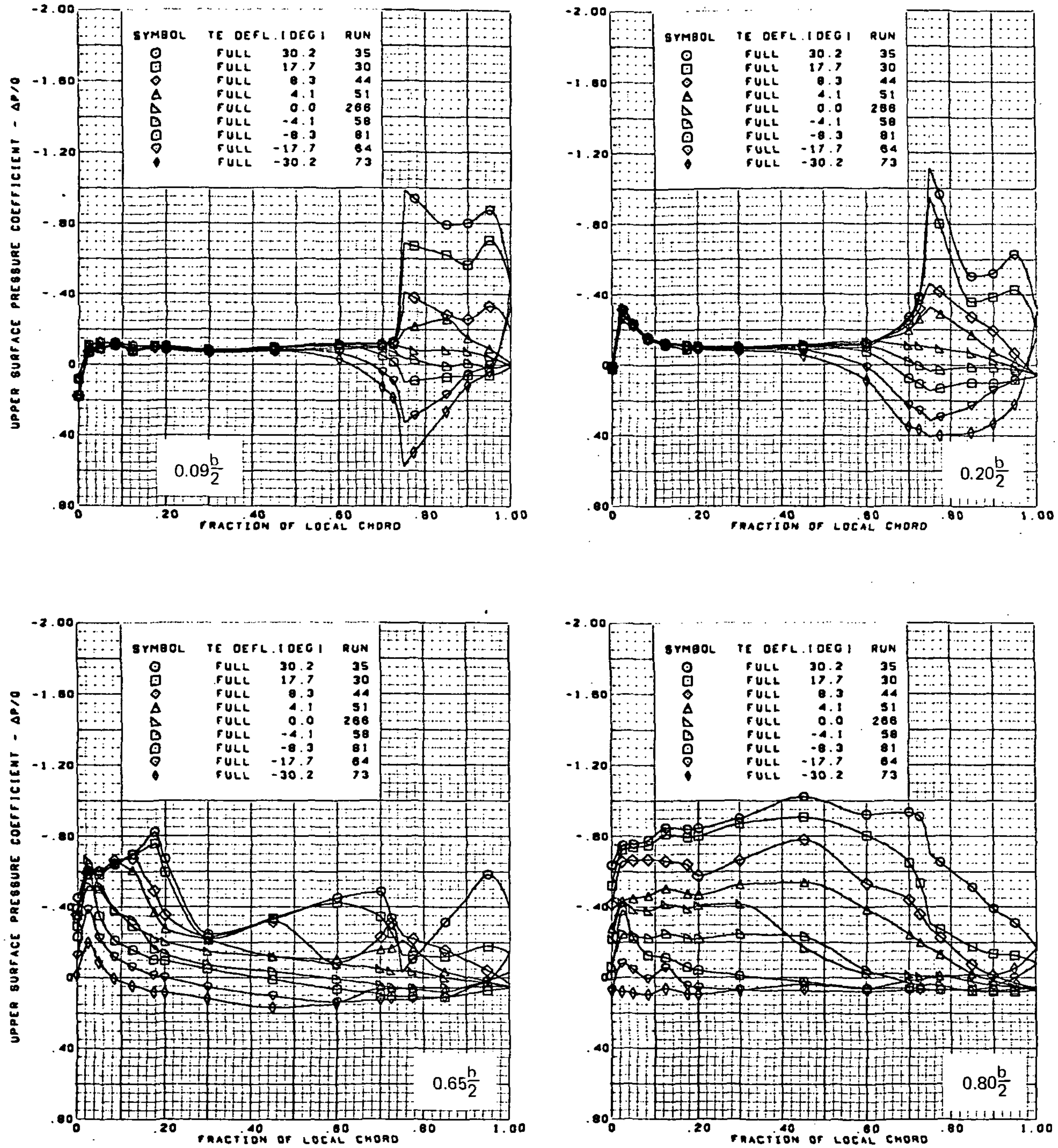
(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 24.–(Continued)



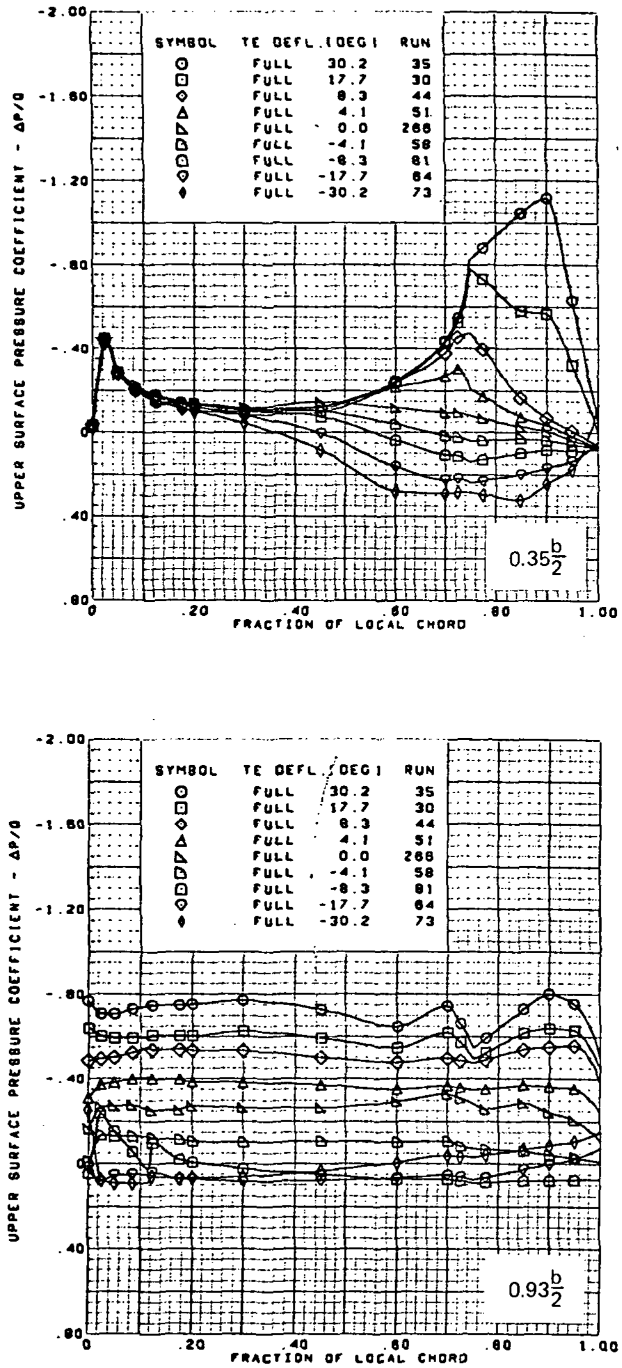
(c) (Concluded)

Figure 24.–(Continued)



(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^\circ$.

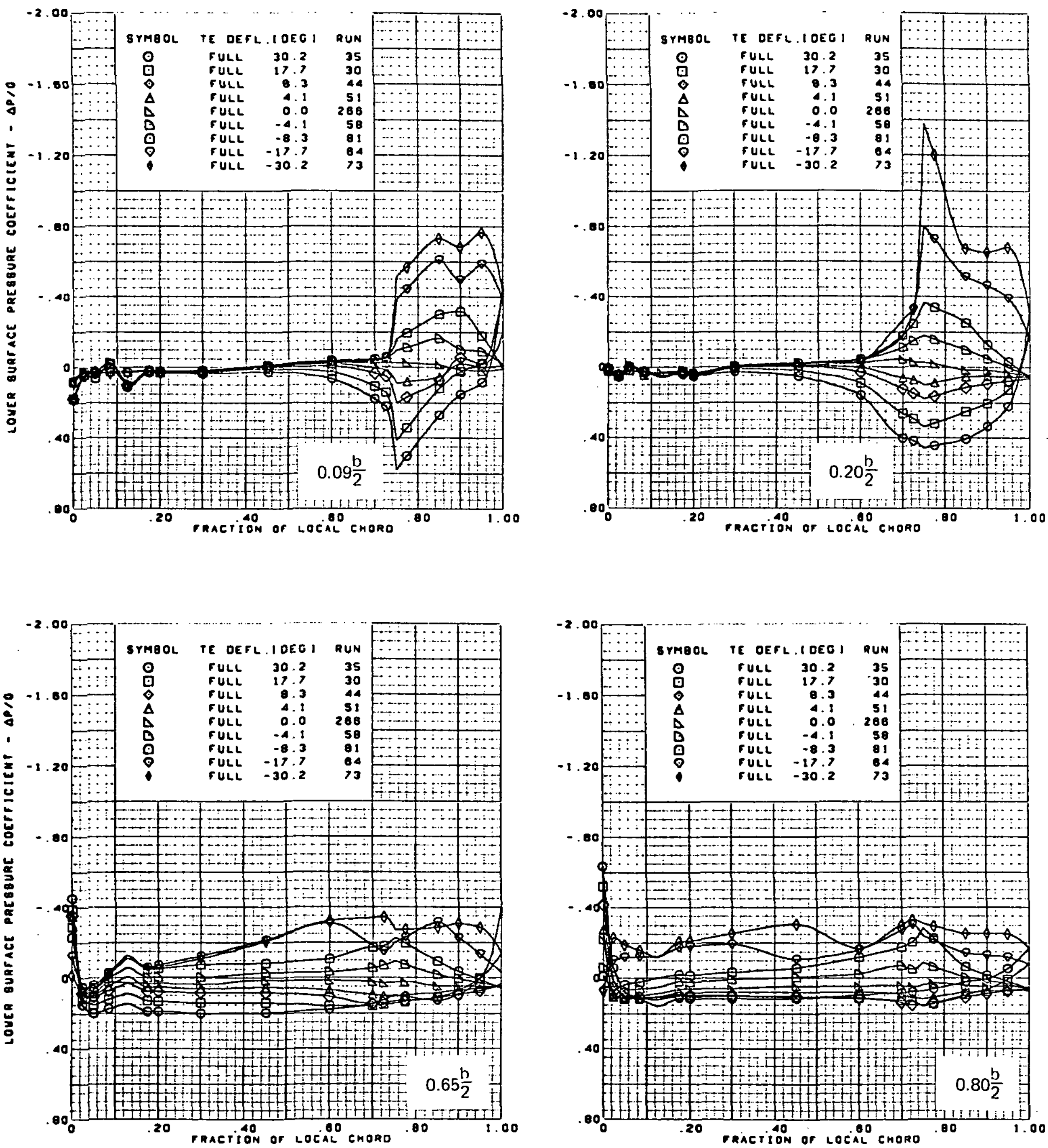
Figure 24.–(Continued)



M = 0.95
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

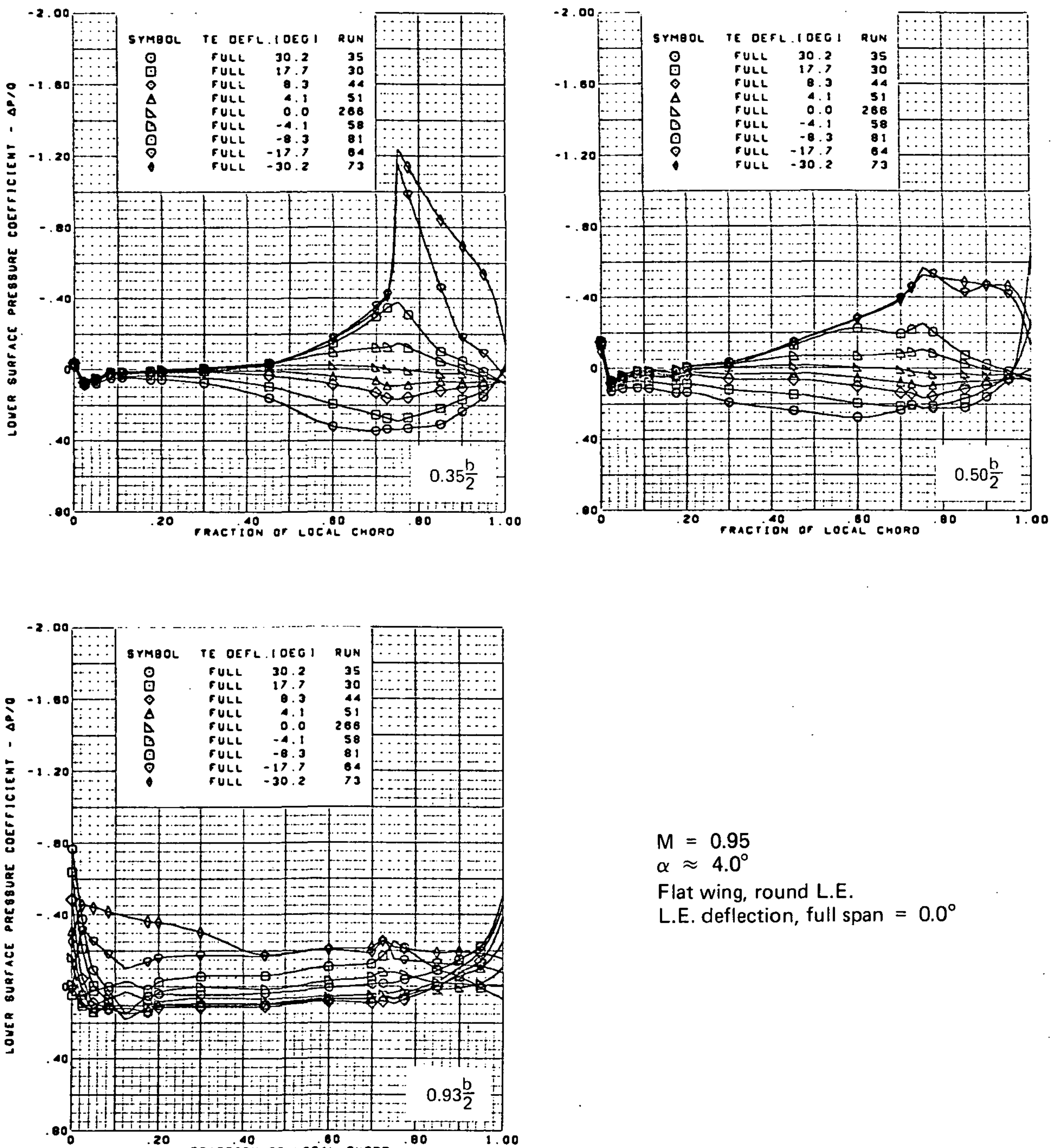
(d) **(Concluded)**

Figure 24.–(Continued)



(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

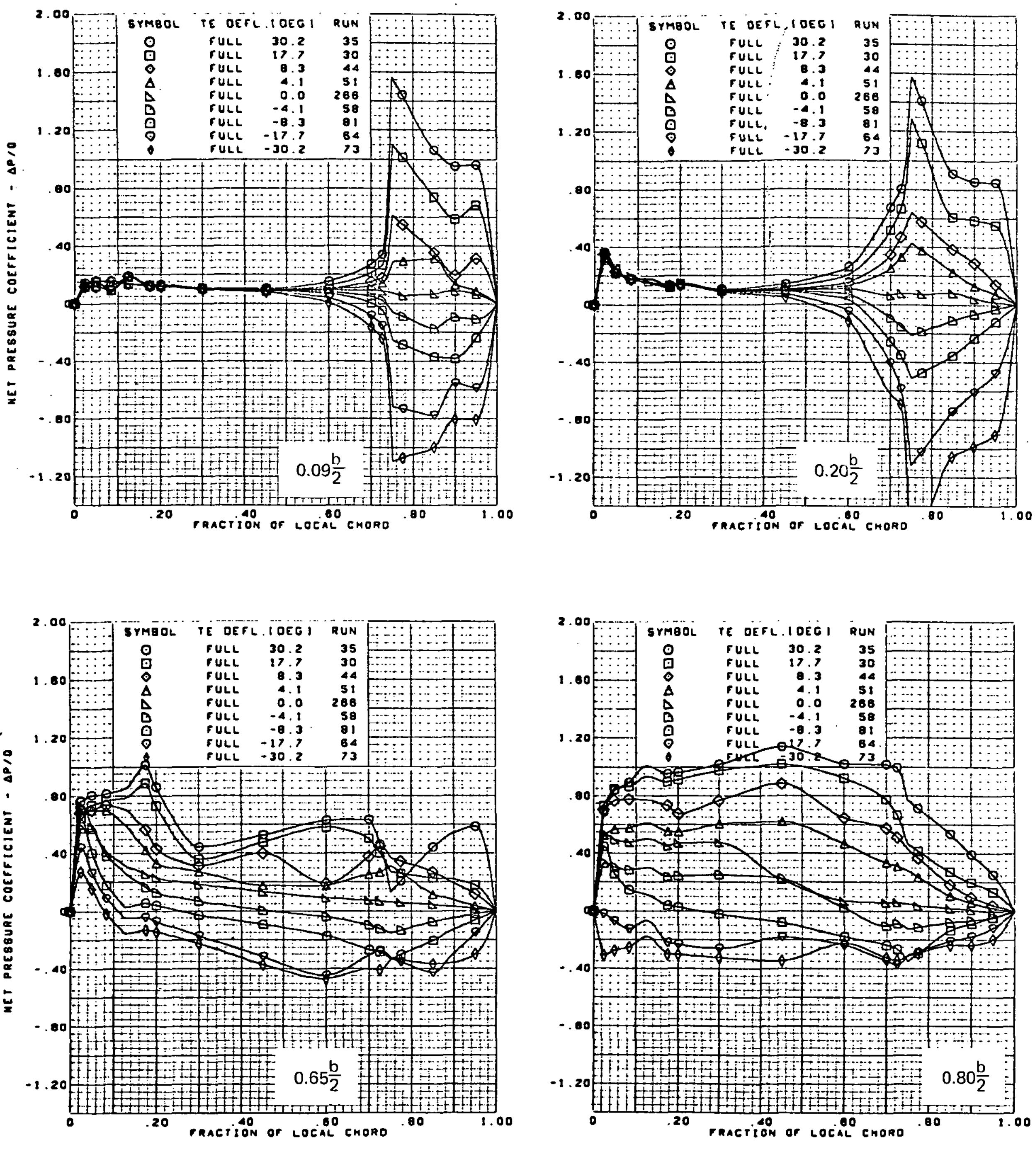
Figure 24.–(Continued)



M = 0.95
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

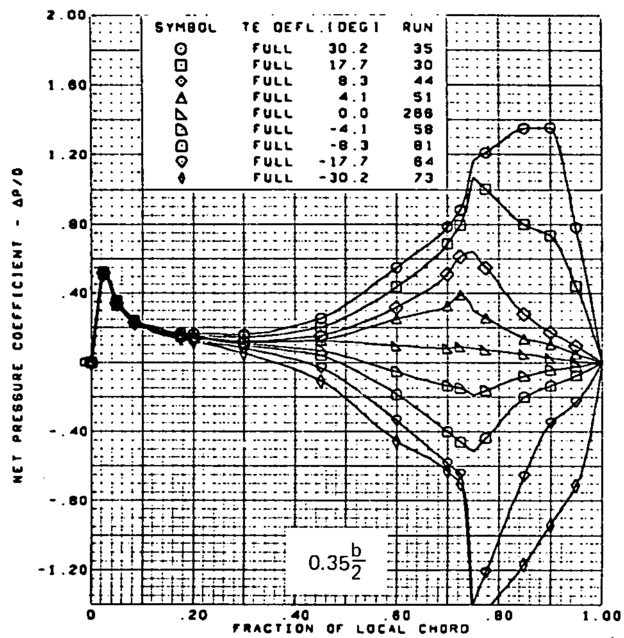
(e) (Concluded)

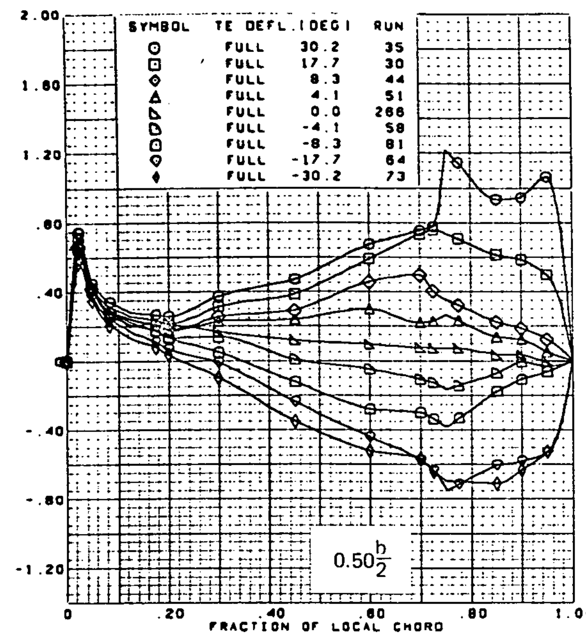
Figure 24.–(Continued)

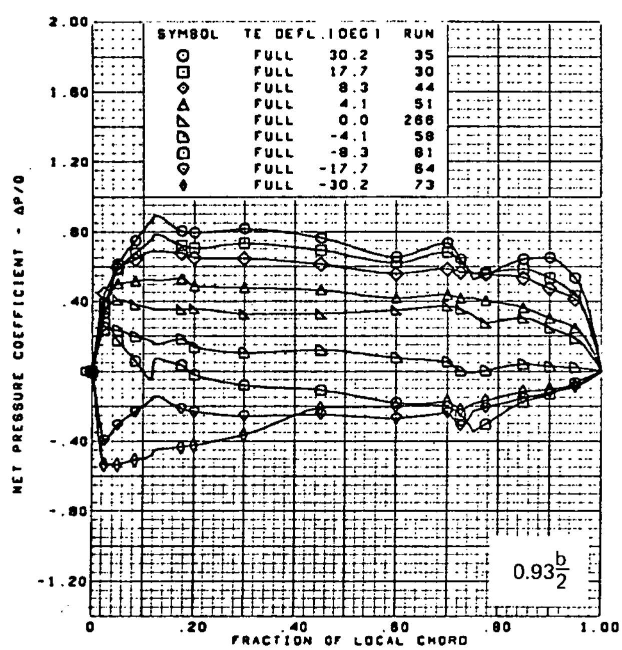


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 24.-(Continued)



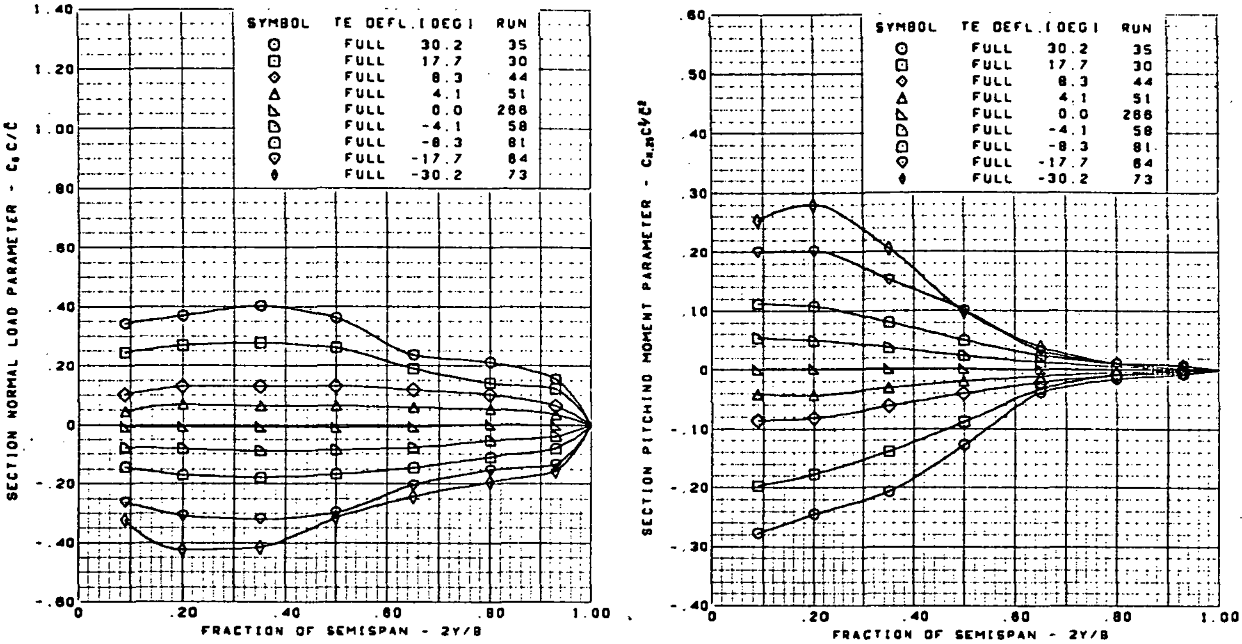




M = 0.95
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

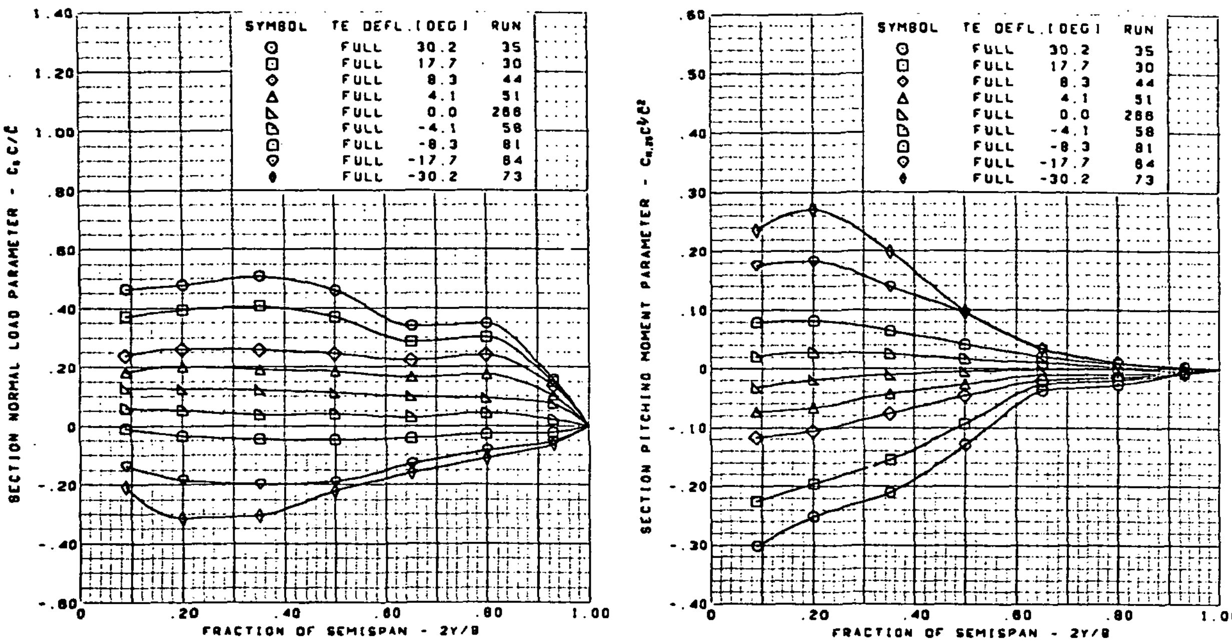
Figure 24.–(Continued)



M = 0.95
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

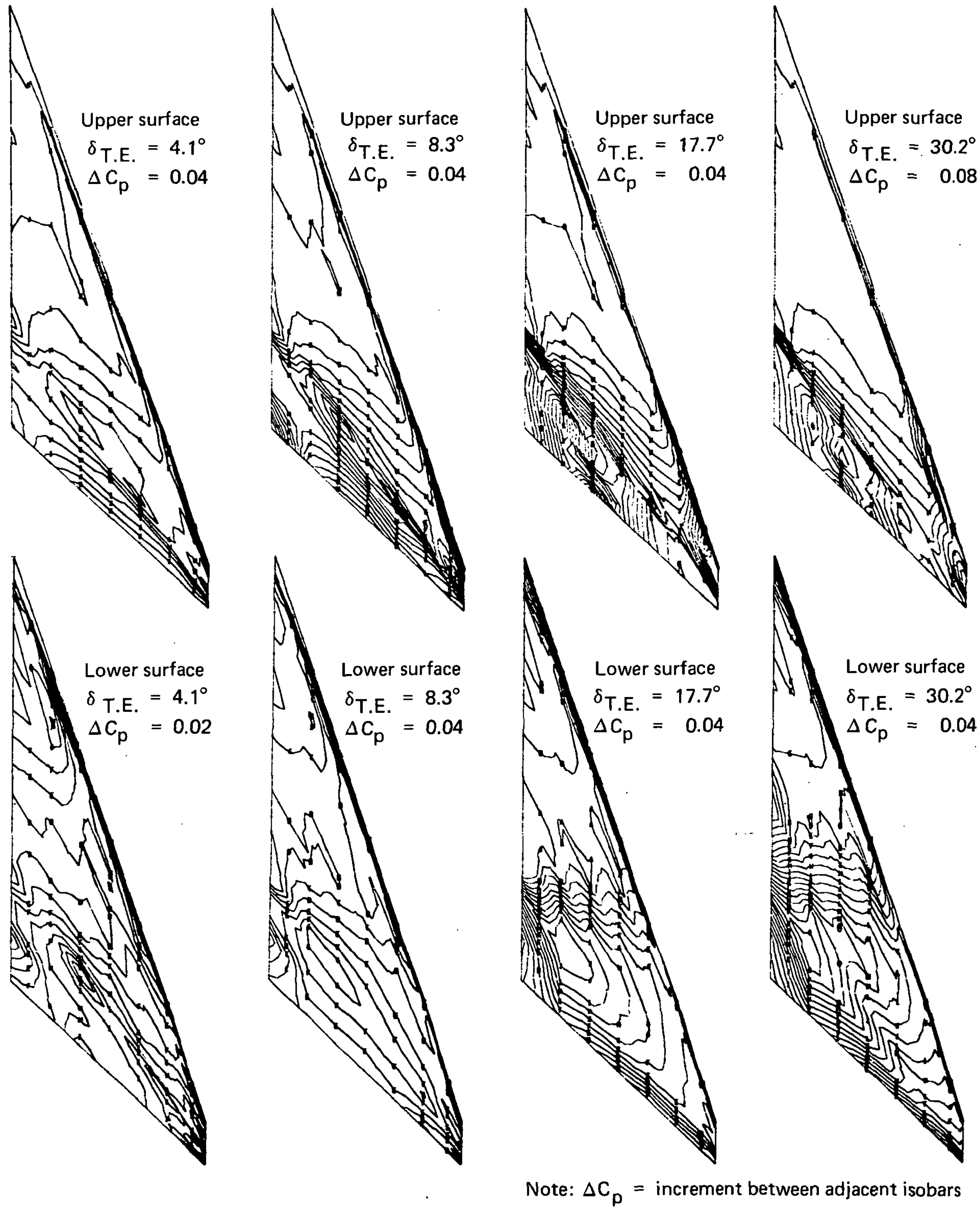
Figure 24.–(Continued)



M = 0.95
α ≈ 4.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(h) Spanload Distributions, α ≈ 4.0°

Figure 24.- (Concluded)



(a) Isobars, $\alpha \approx 0.0°$

Figure 25.—Wing Experimental Data—Effect of Full Span T.E. Deflection and Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span ≈ 0.0°; M = 1.05

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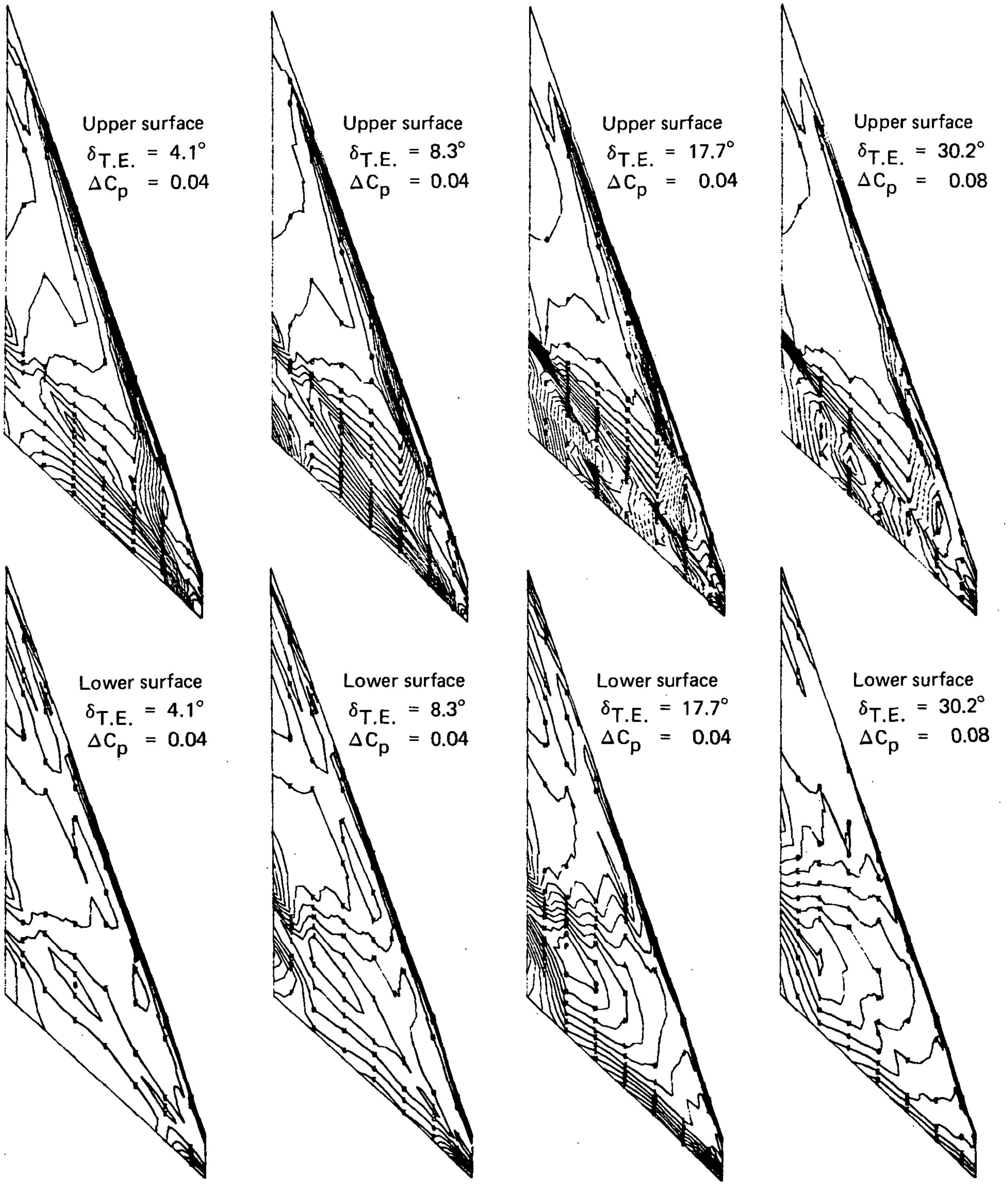
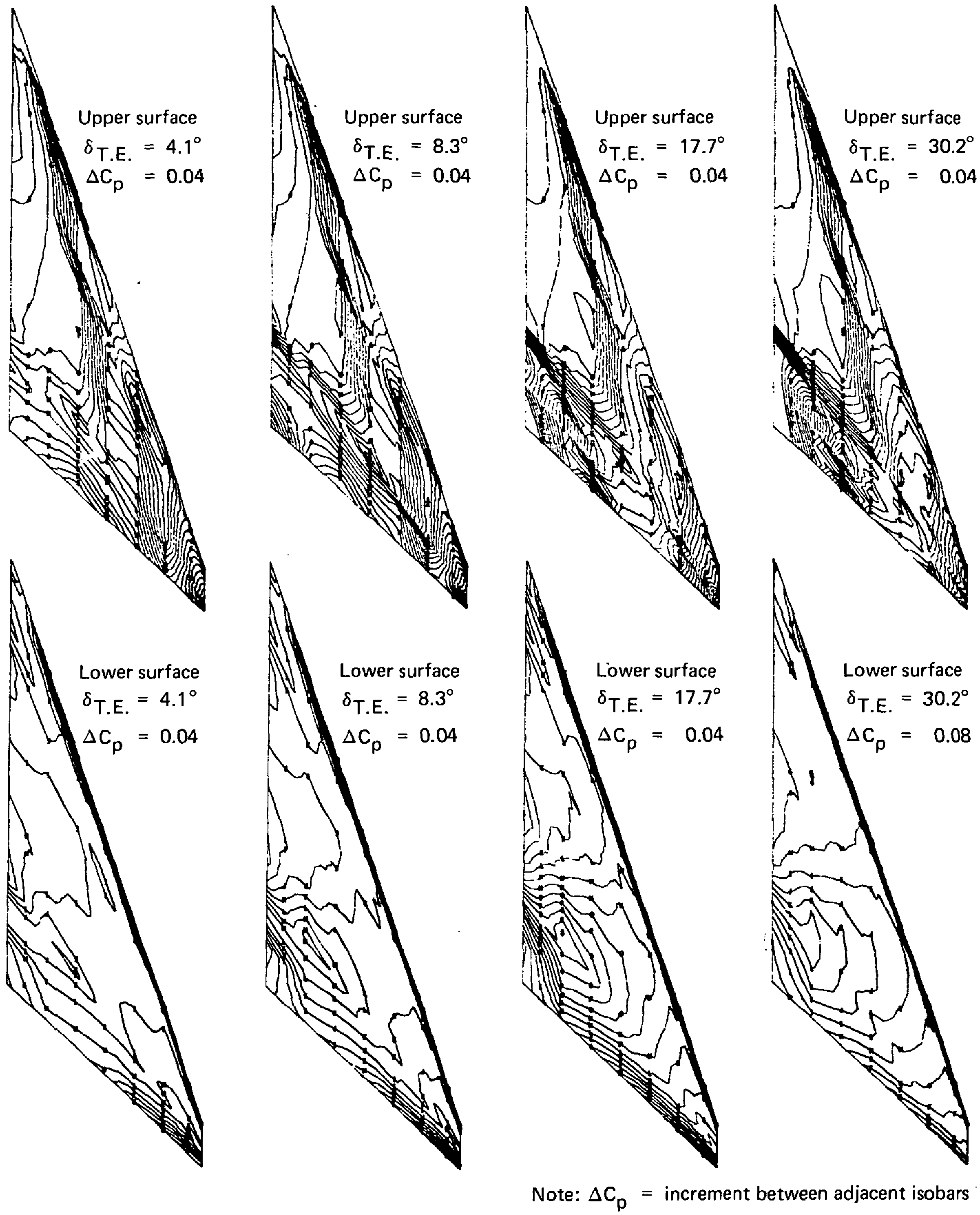


Note: ΔC_p = increment between adjacent isobars

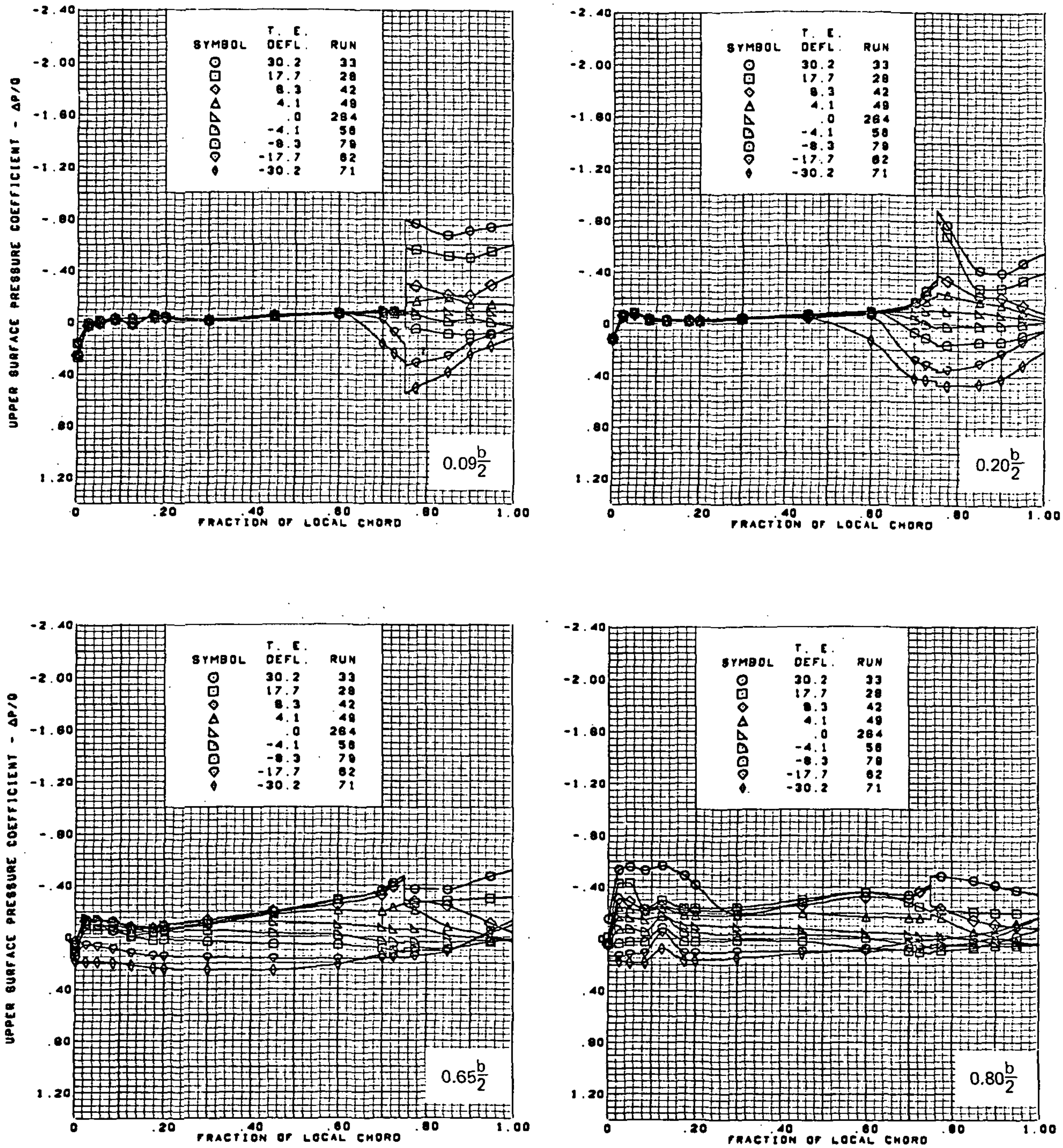
(b) Isobars, $\alpha \approx 4.0°$

Figure 25.–(Continued)



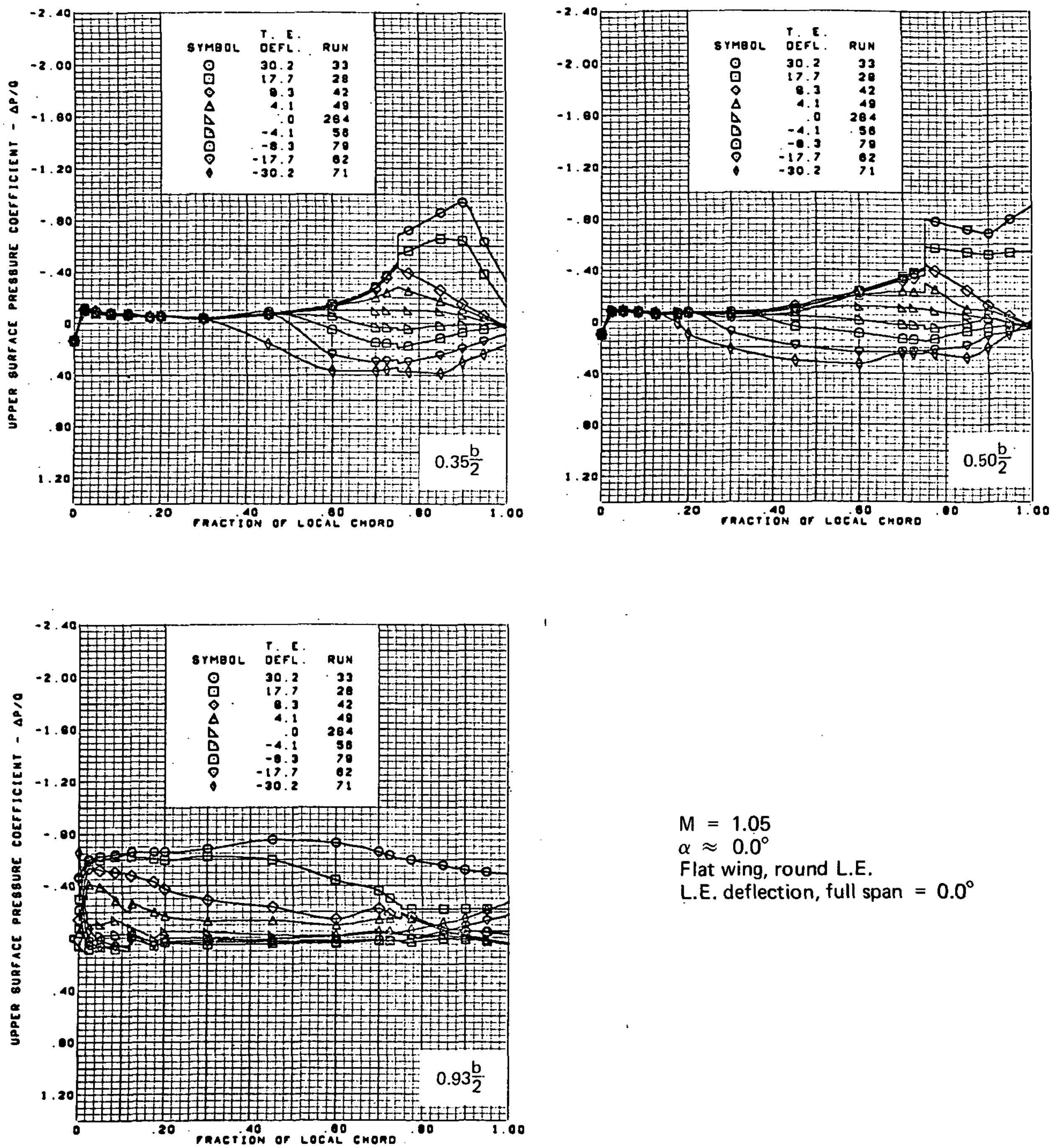
(c) Isobars, $\alpha \approx 8.0°$

Figure 25.–(Continued)



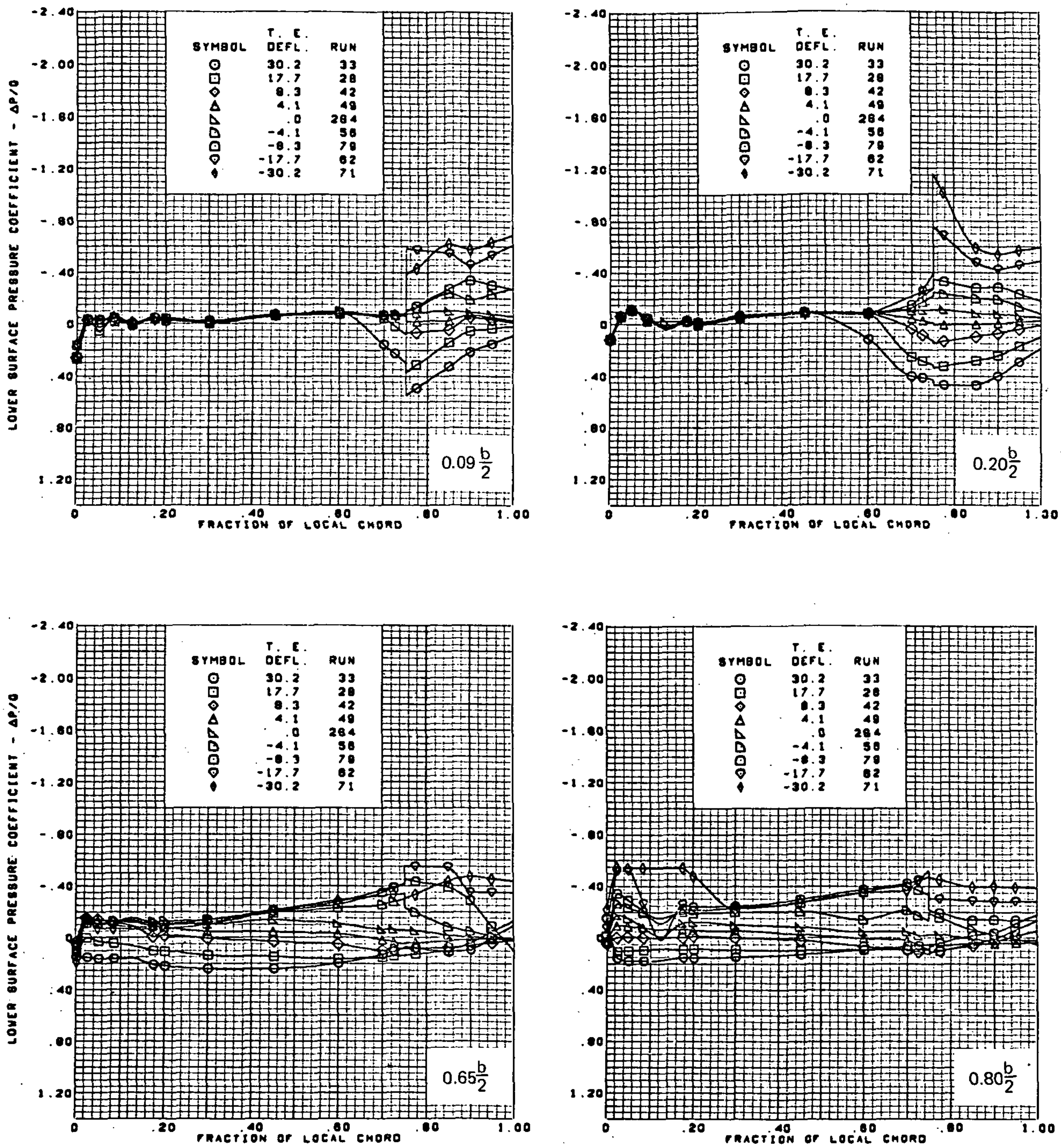
(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 25.–(Continued)



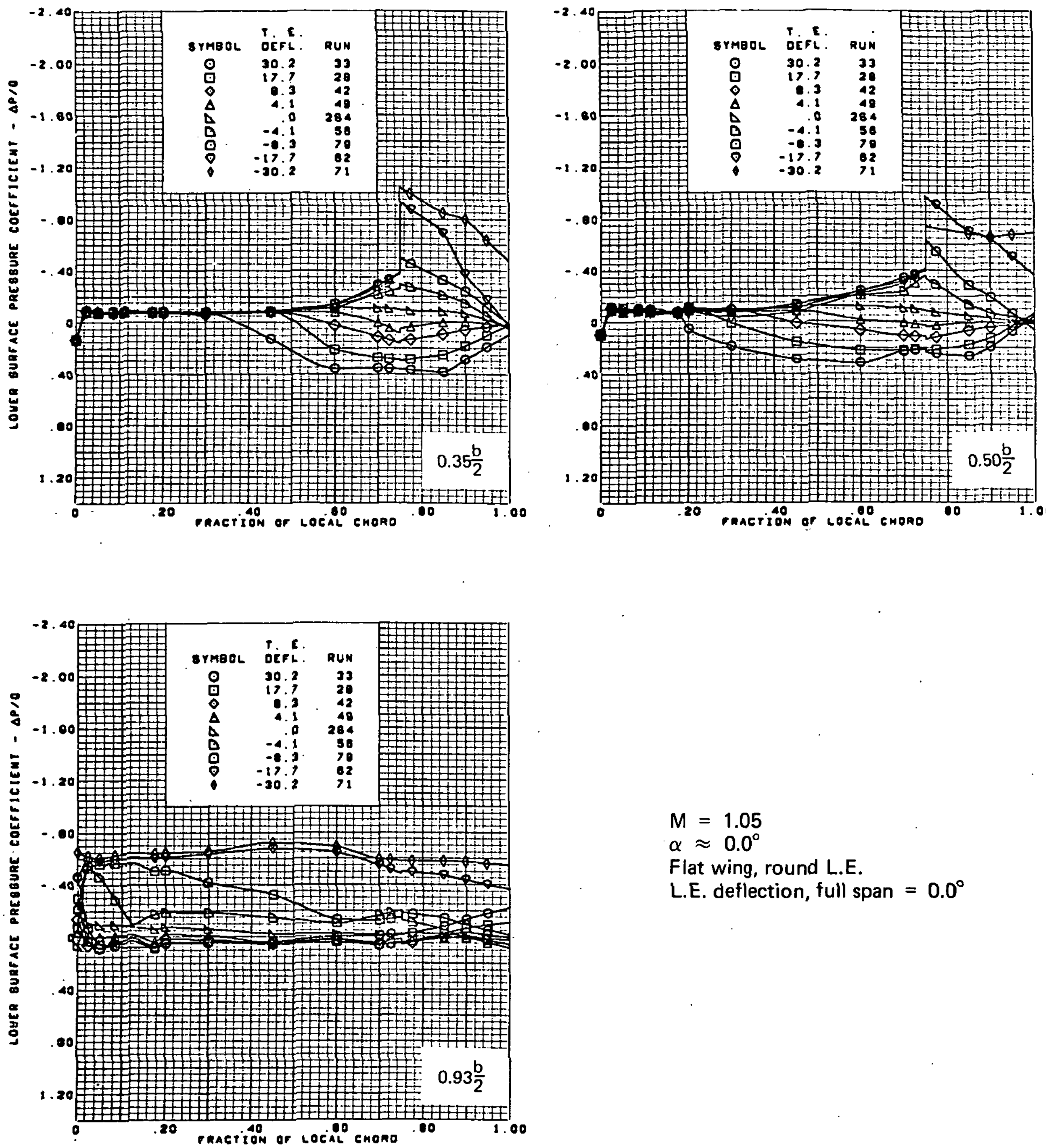
(d) (Concluded)

Figure 25.–(Continued)



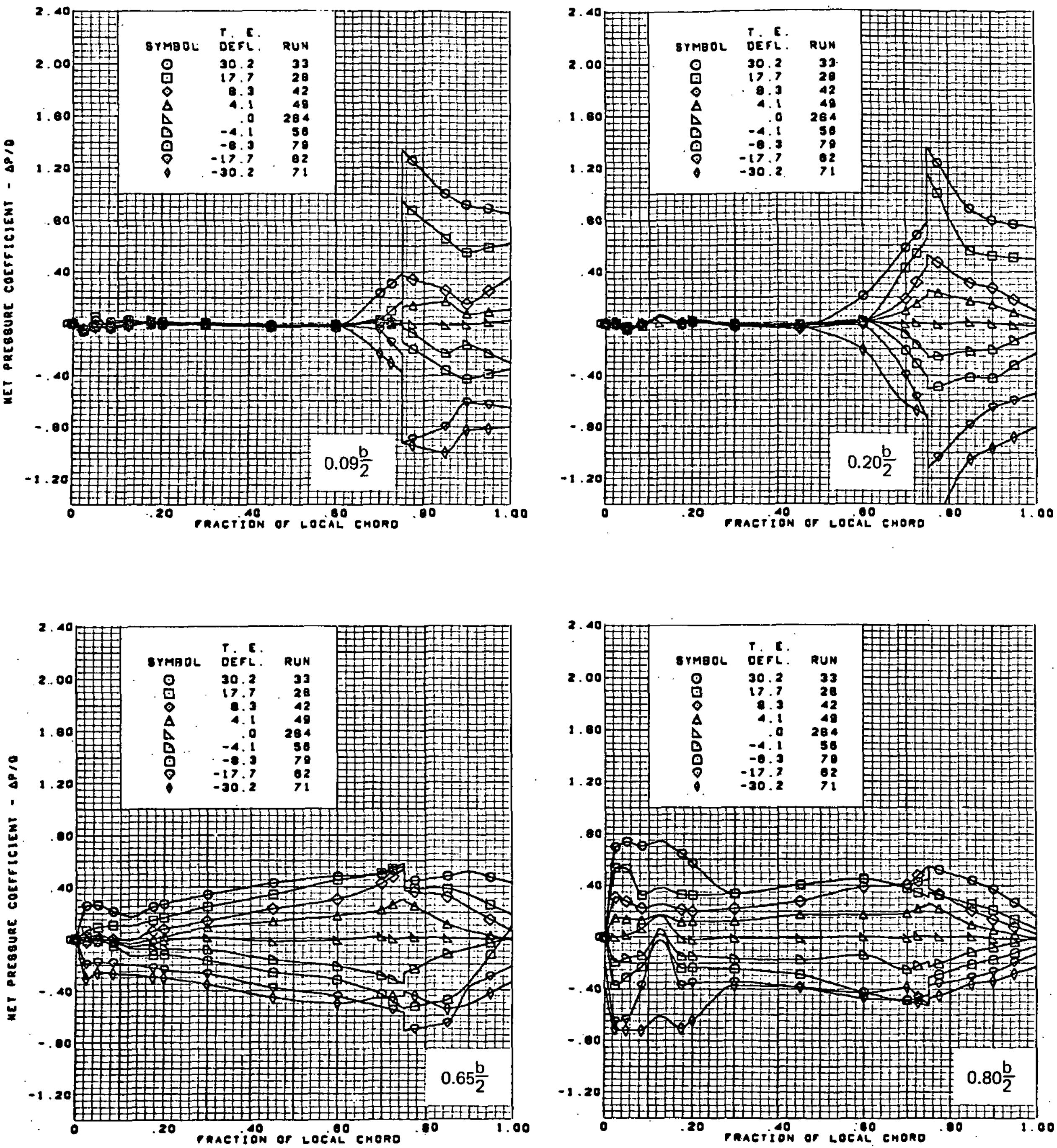
(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 25.–(Continued)



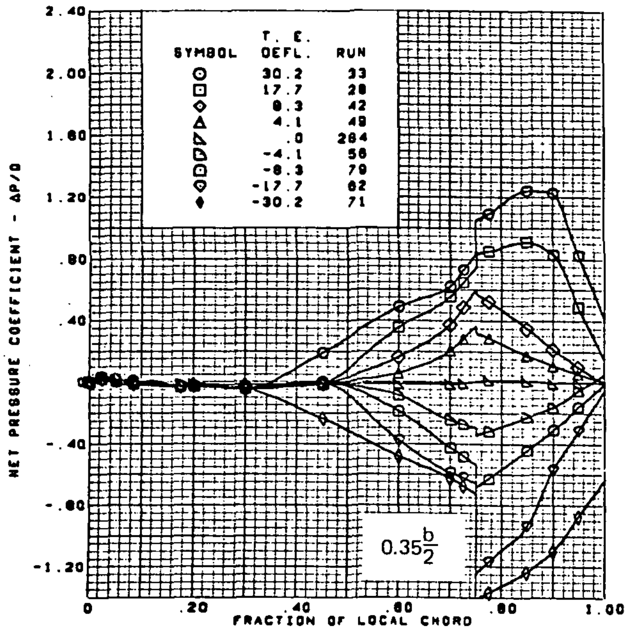
(e) (Concluded)

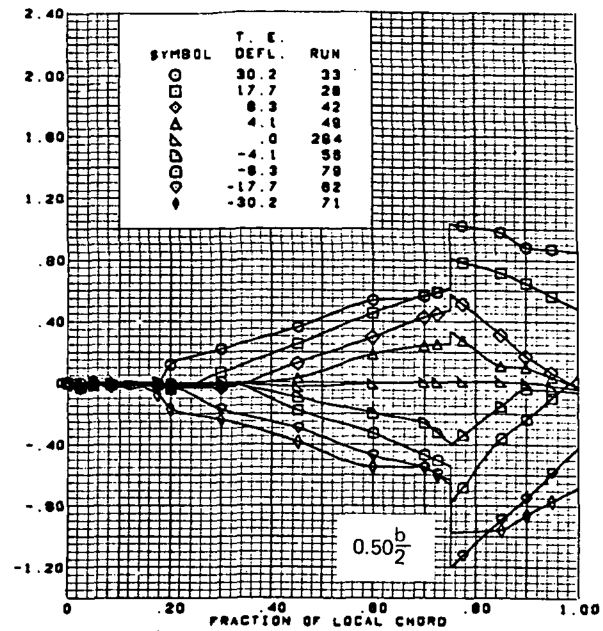
Figure 25.–(Continued)

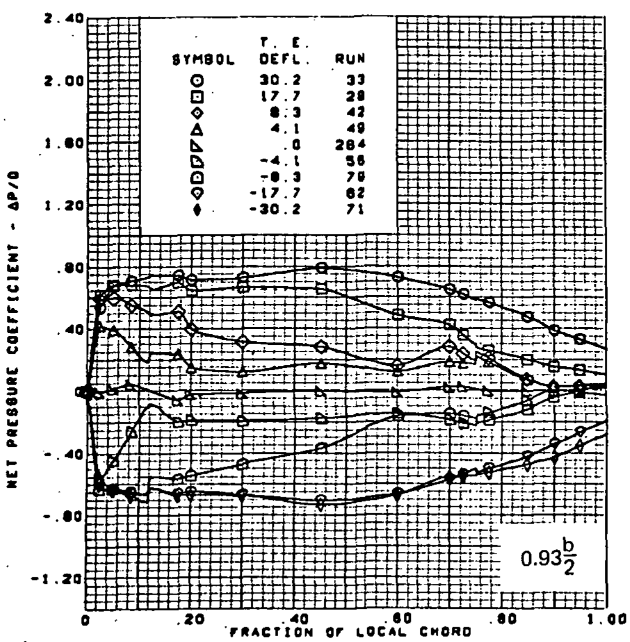


(f) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 25.-(Continued)



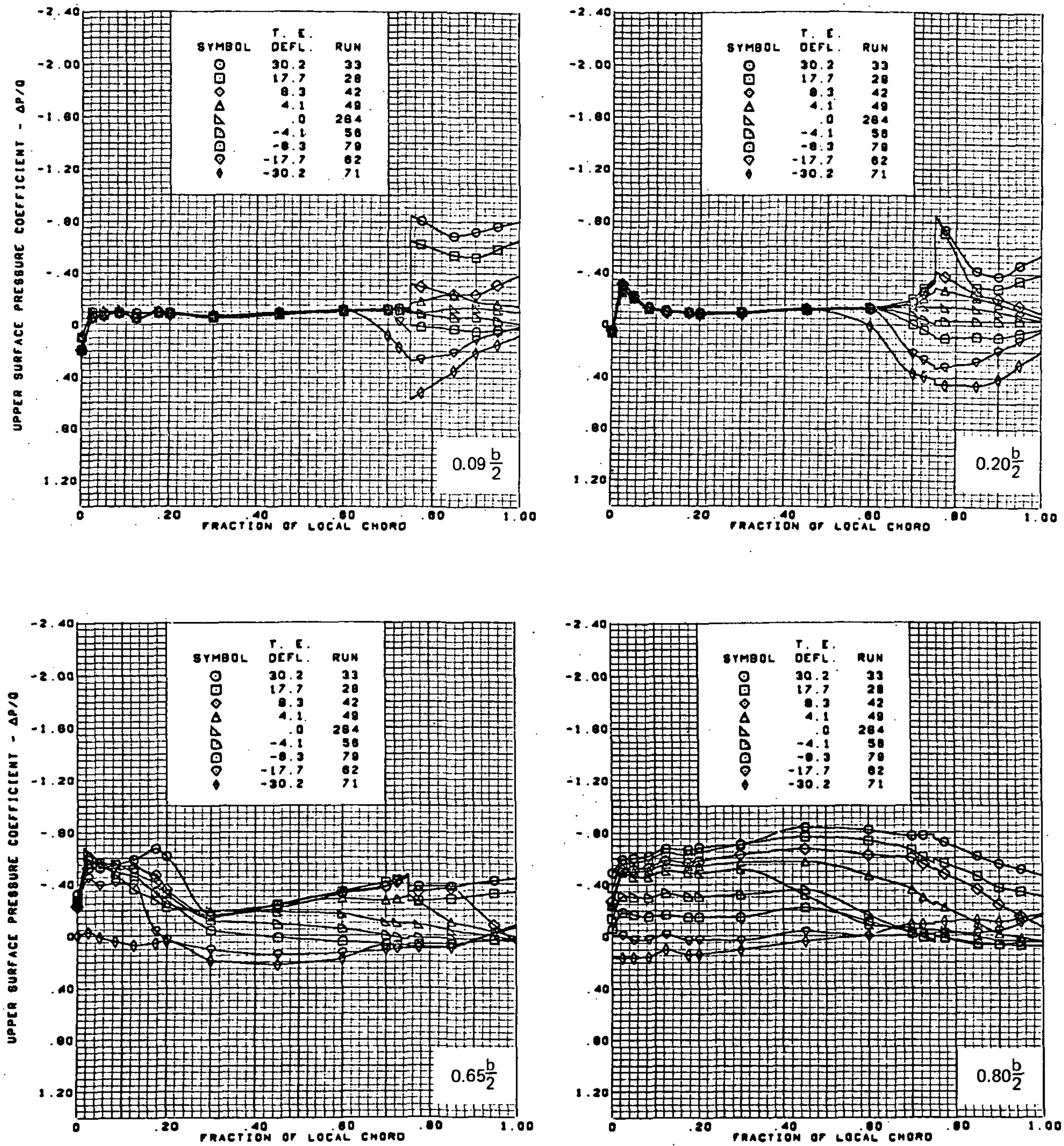




M = 1.05
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

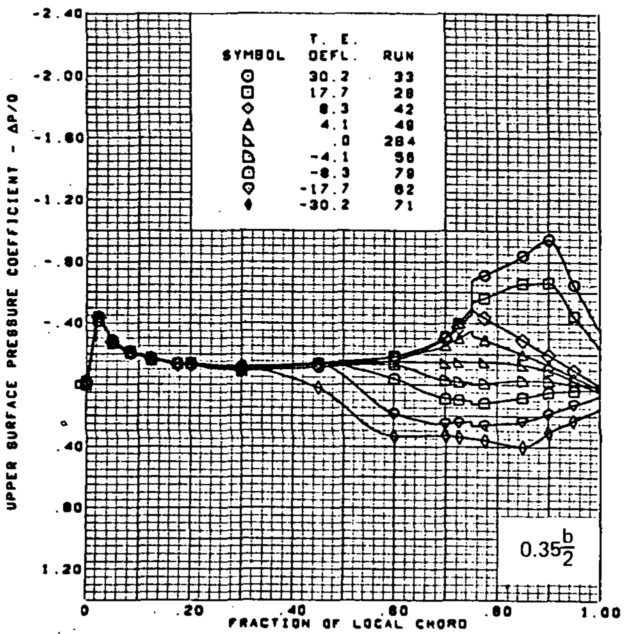
(f) (Concluded)

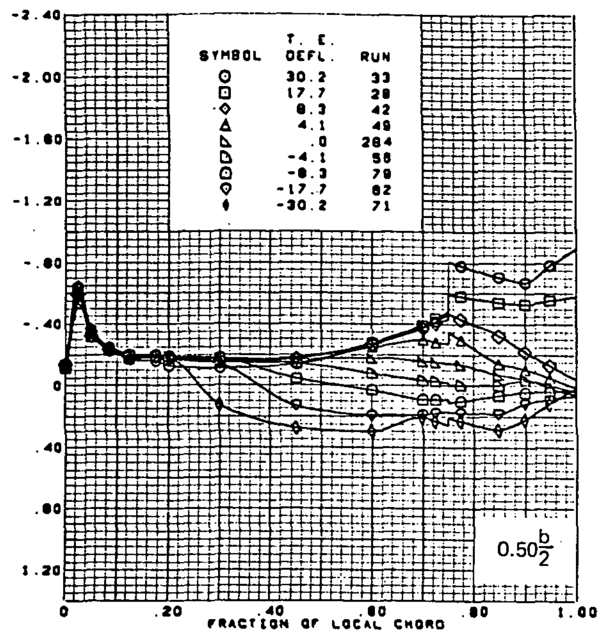
Figure 25.–(Continued)

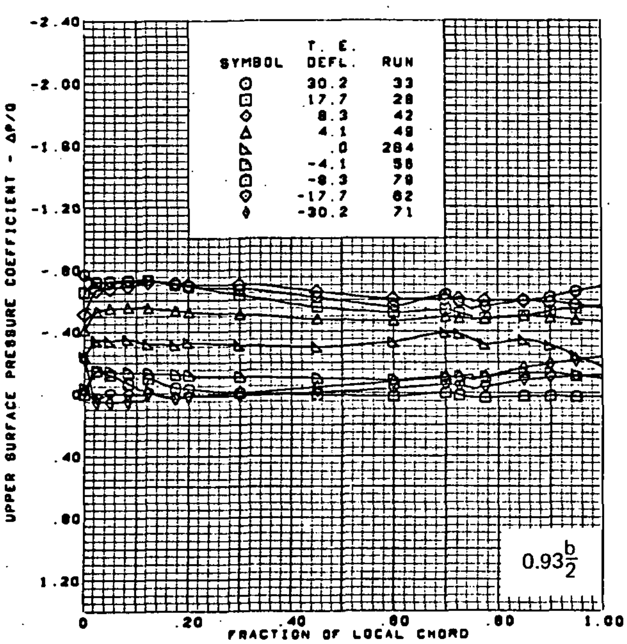


(g) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 25.-(Continued)



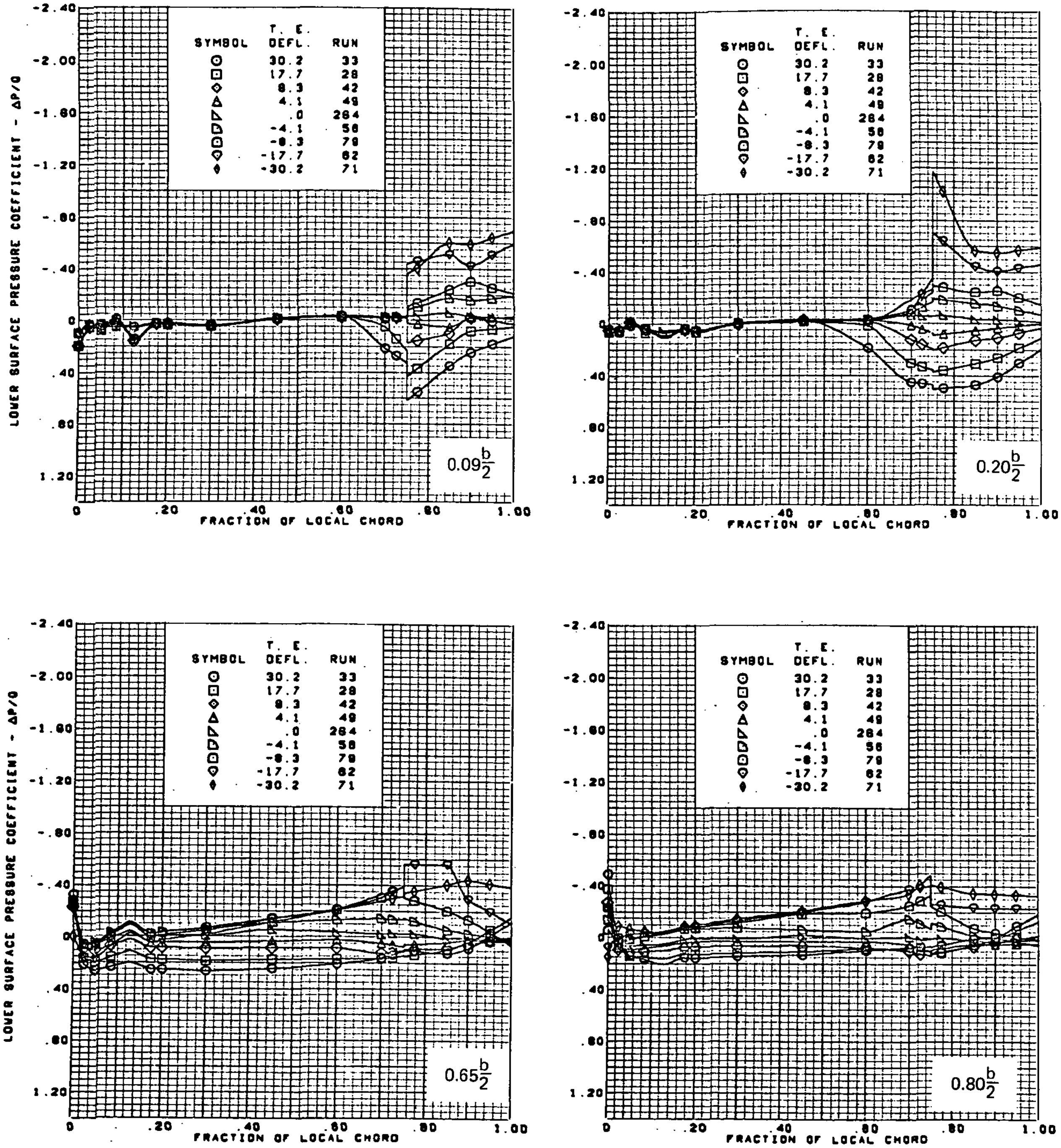




$M = 1.05$
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

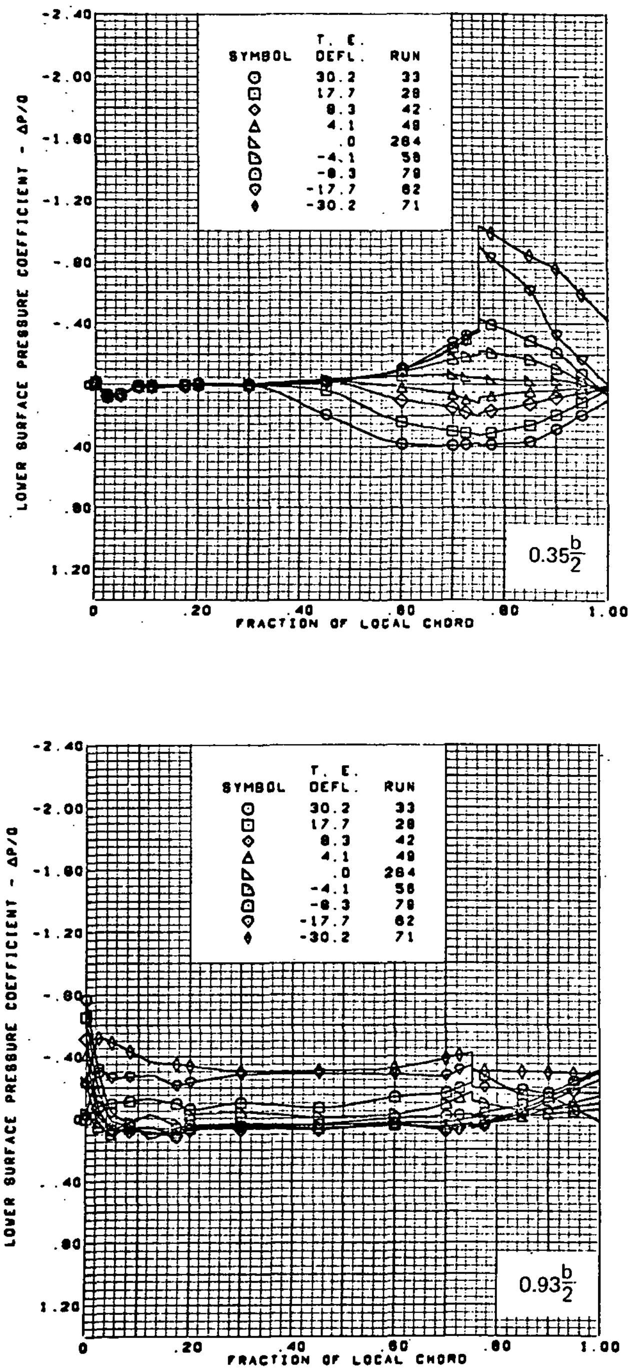
(g) (Concluded)

Figure 25.–(Continued)



(h) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

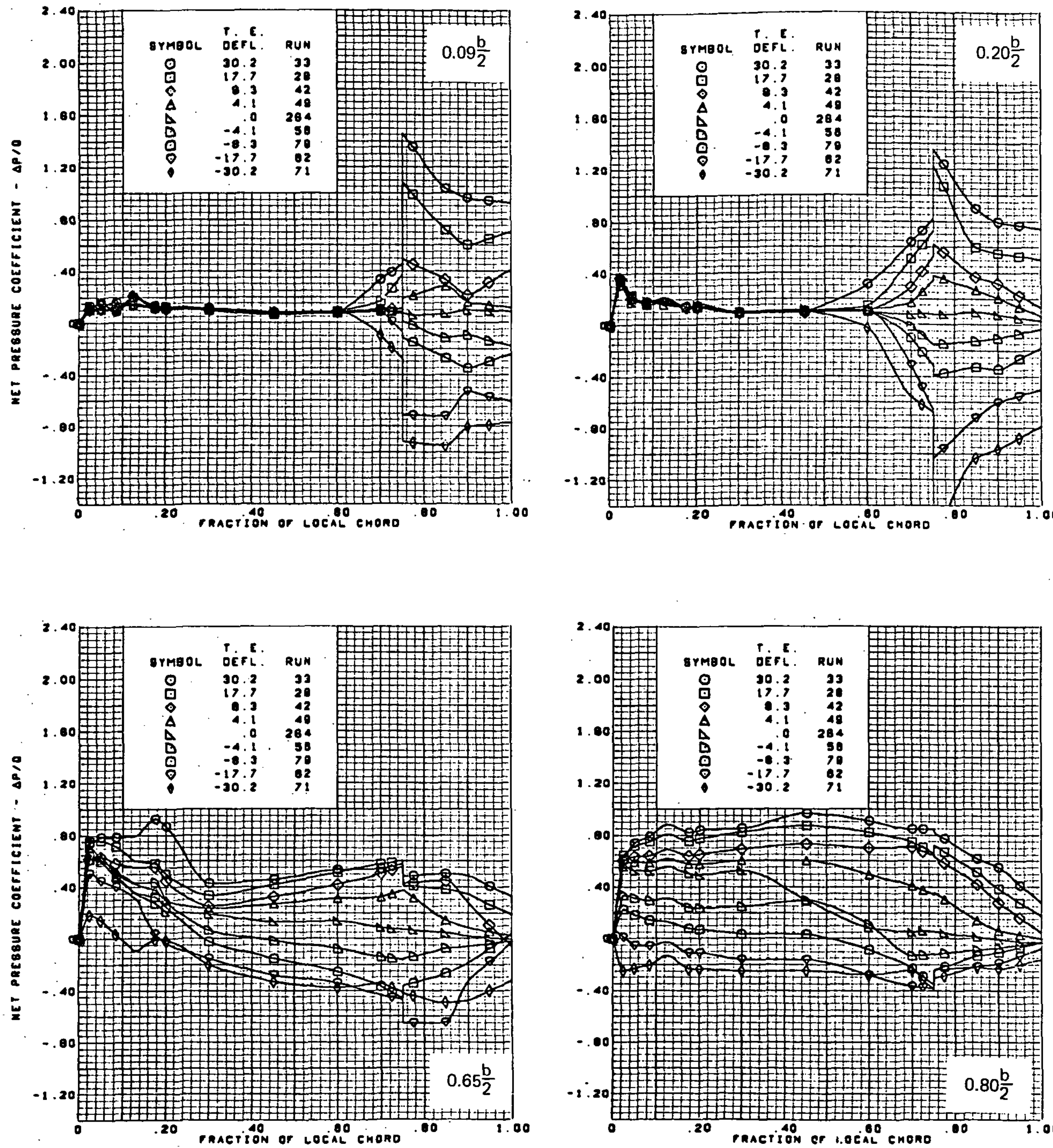
Figure 25.–(Continued)



M = 1.05
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

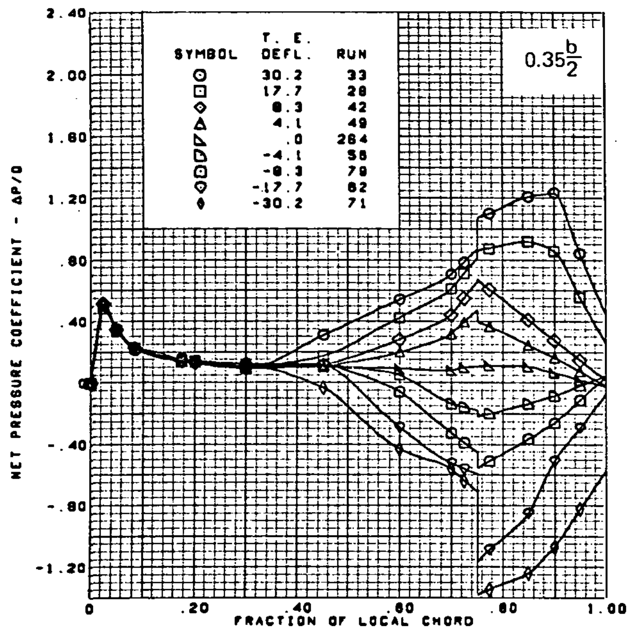
(h) (Concluded)

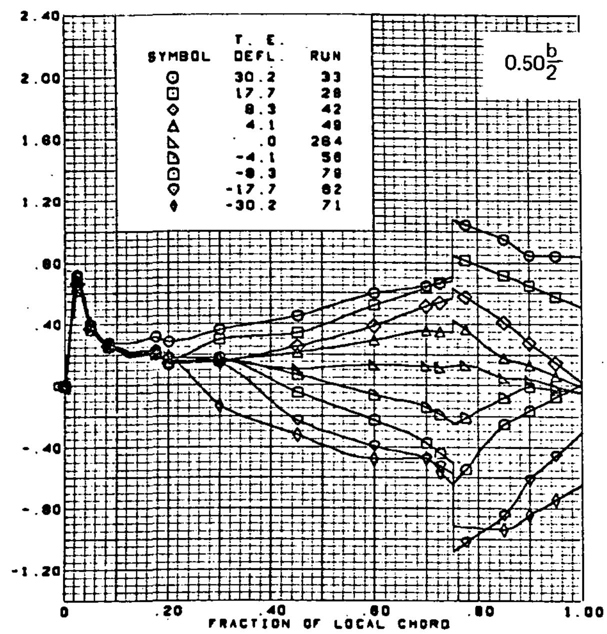
Figure 25.–(Continued)

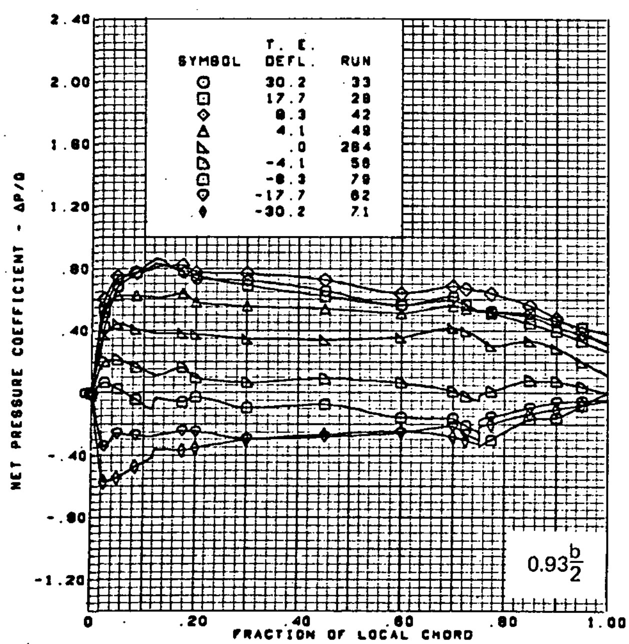


(i) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 25.-(Continued)



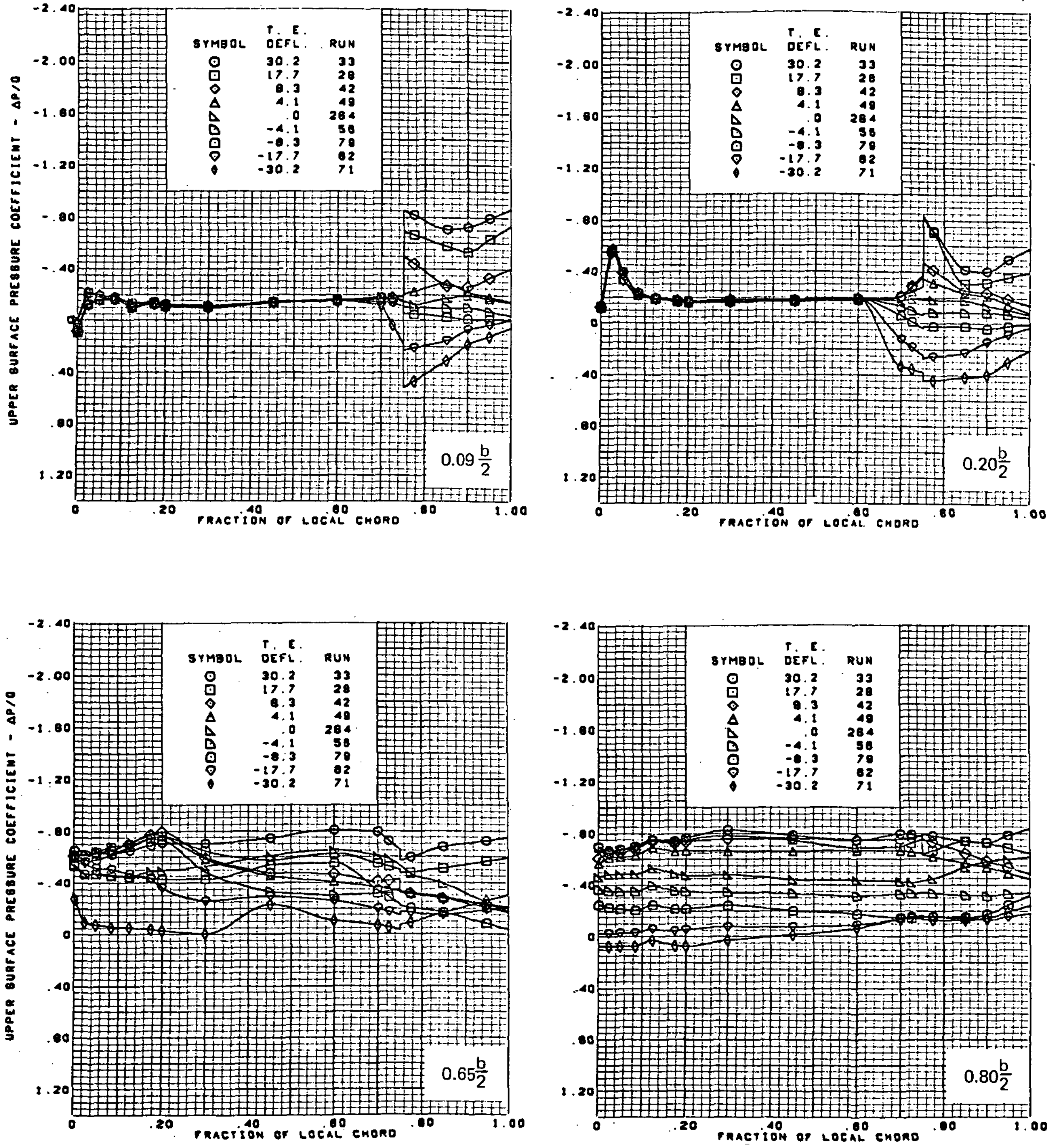




M = 1.05
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

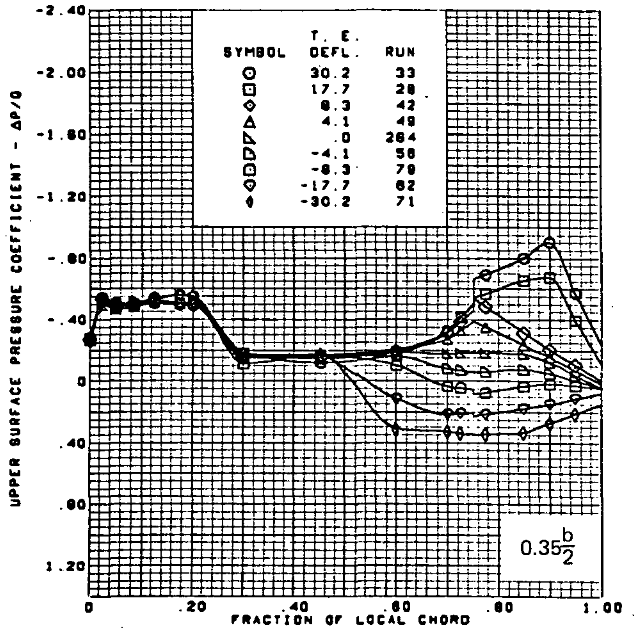
(i) (Concluded)

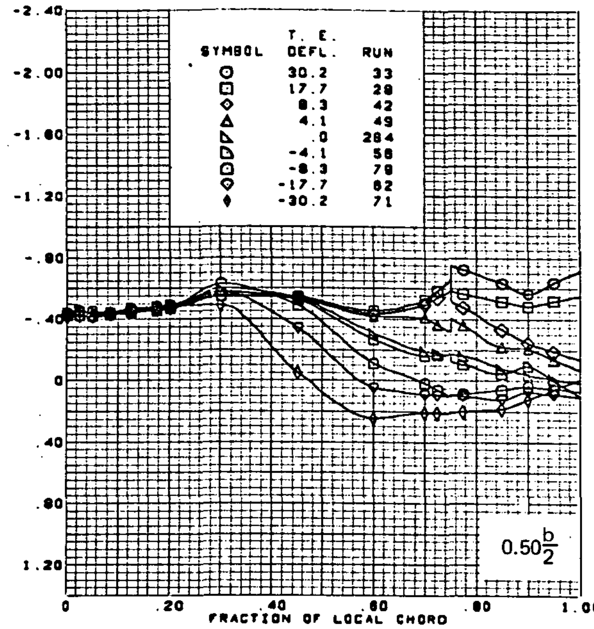
Figure 25.–(Continued)

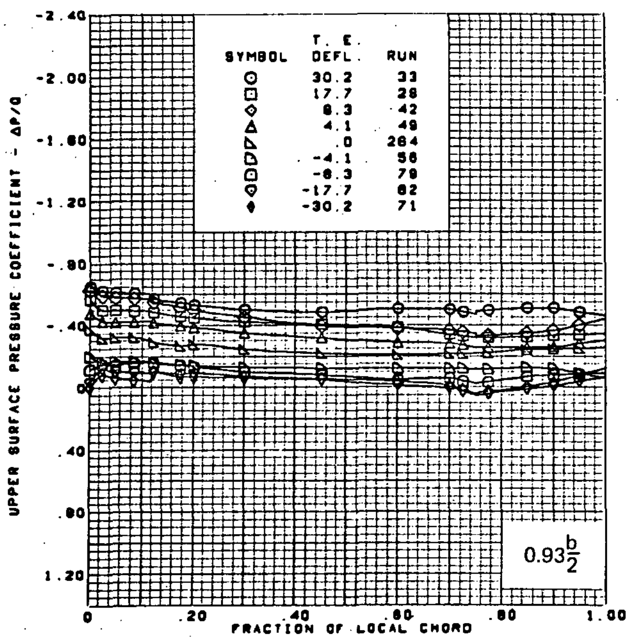


(j) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 8.0^\circ$

Figure 25.–(Continued)



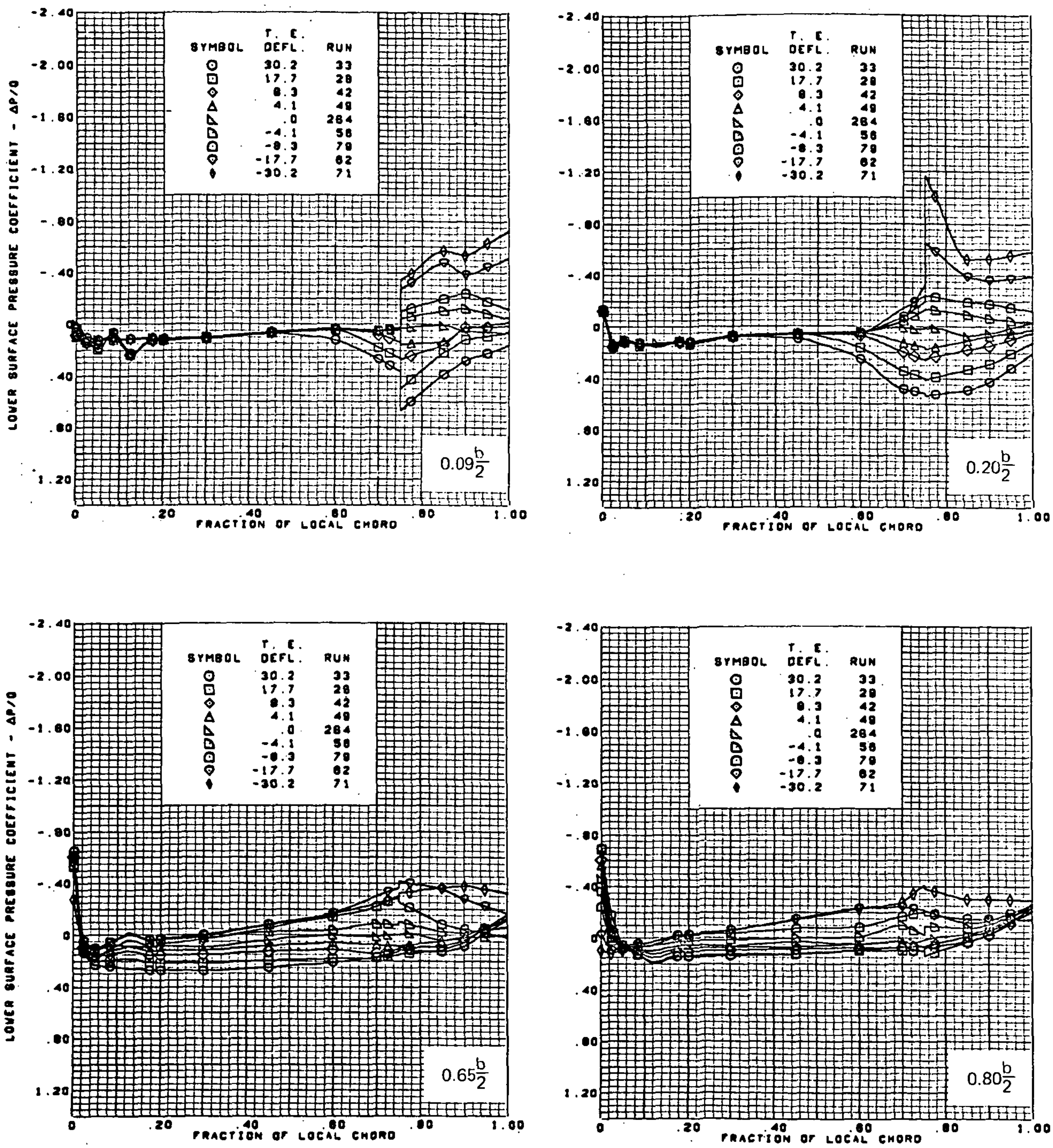




$M = 1.05$
$\alpha \approx 8.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

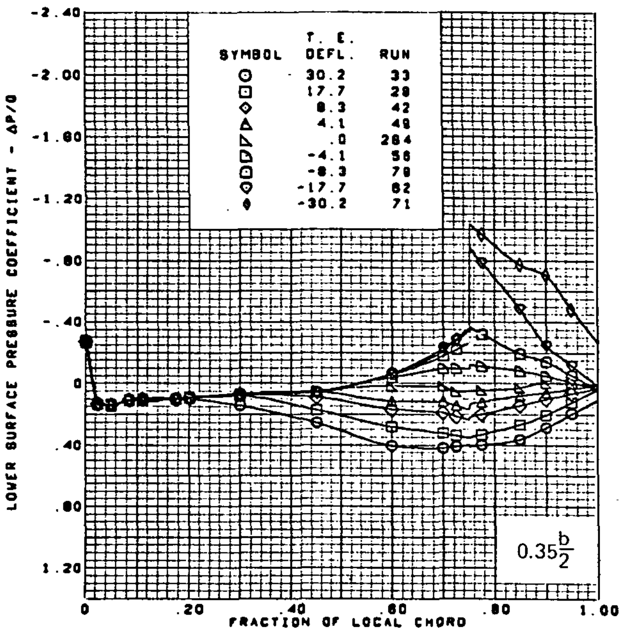
(j) (Concluded)

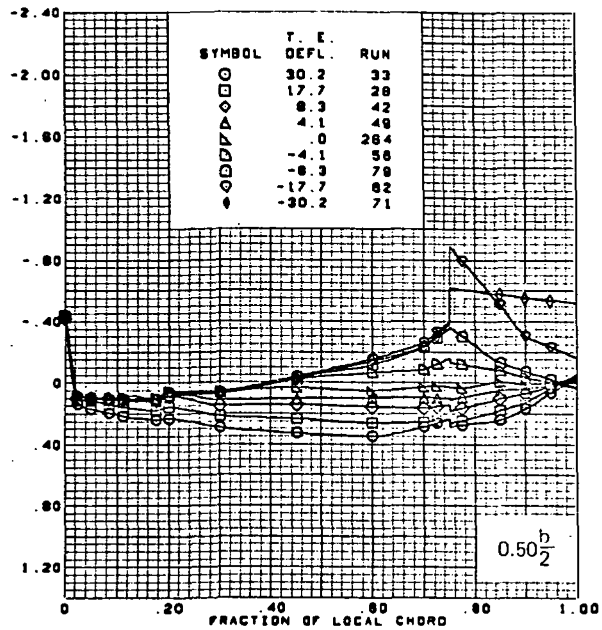
Figure 25.-(Continued)

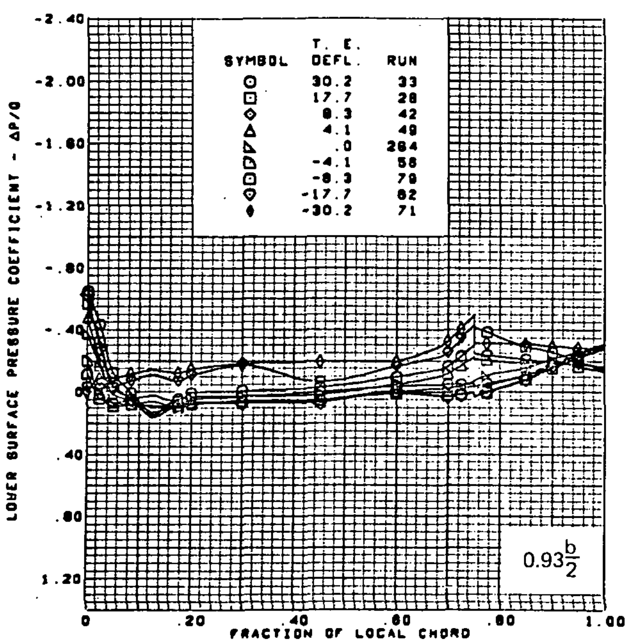


(k) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 8.0°$

Figure 25.–(Continued)



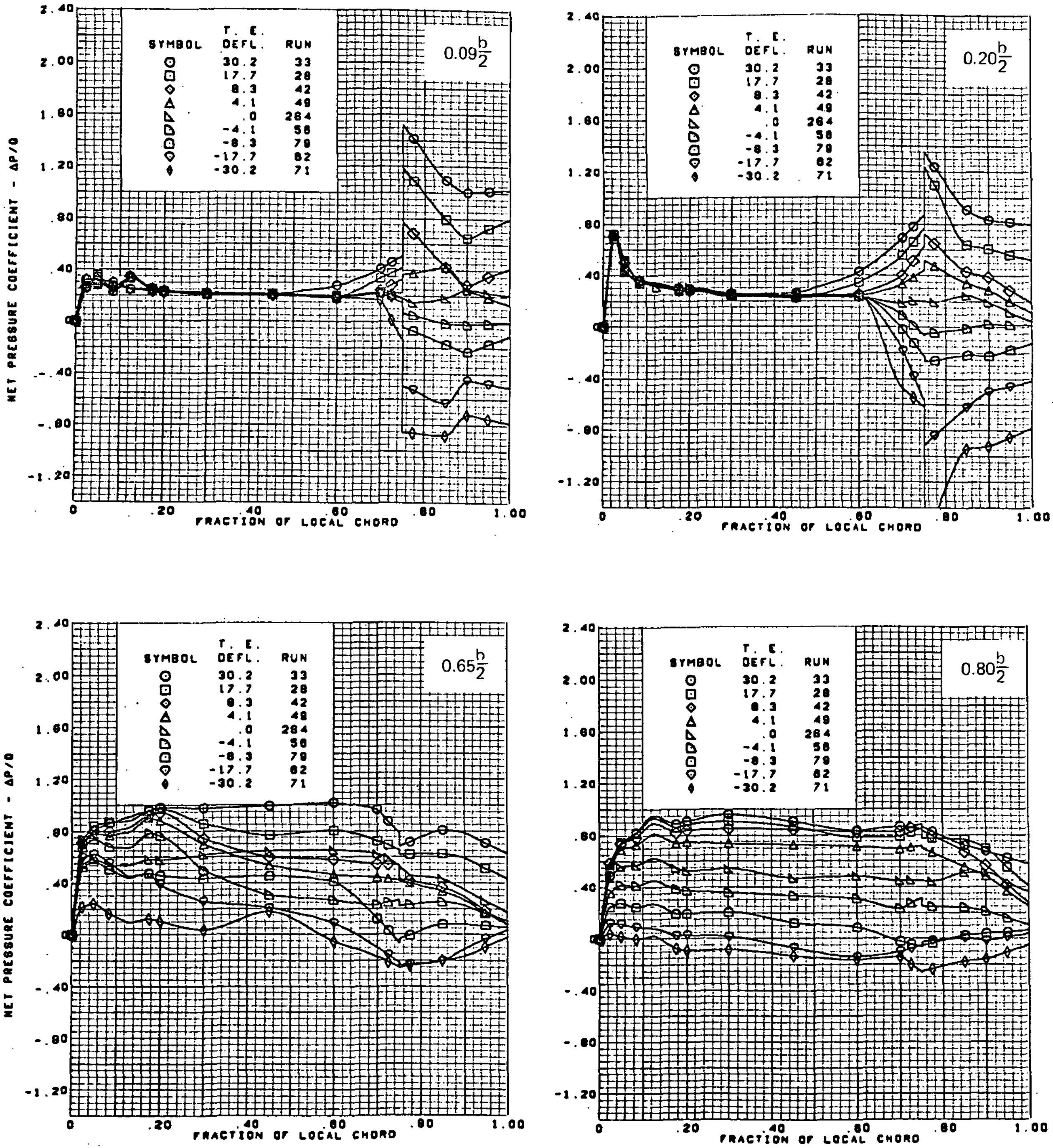




M = 1.05
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

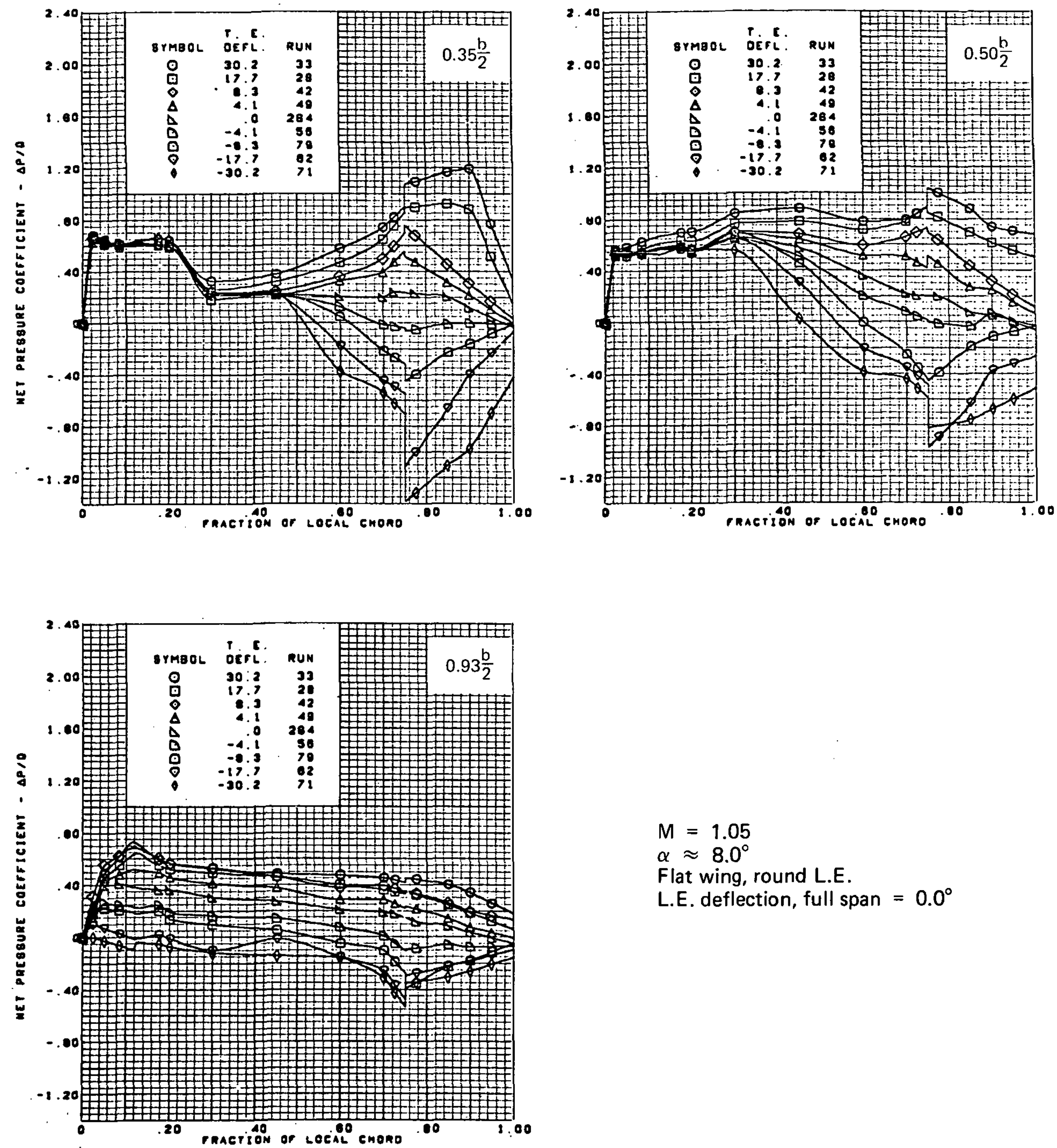
(k) **(Concluded)**

Figure 25.–(Continued)



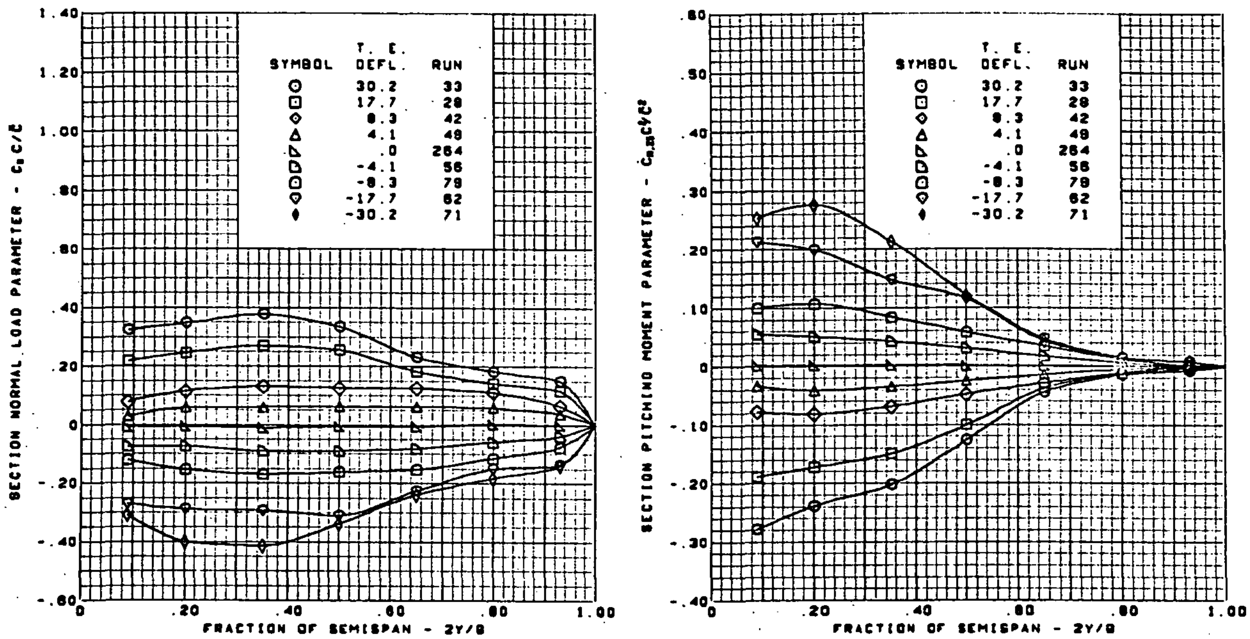
(l) Net Chordwise Pressure Distributions, $\alpha \approx 8.0^{\circ}$

Figure 25.–(Continued)



(l) (Concluded)

Figure 25.–(Continued)



M = 1.05
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(m) Spanload Distributions, $\alpha \approx 0.0°$

Figure 25.–(Continued)

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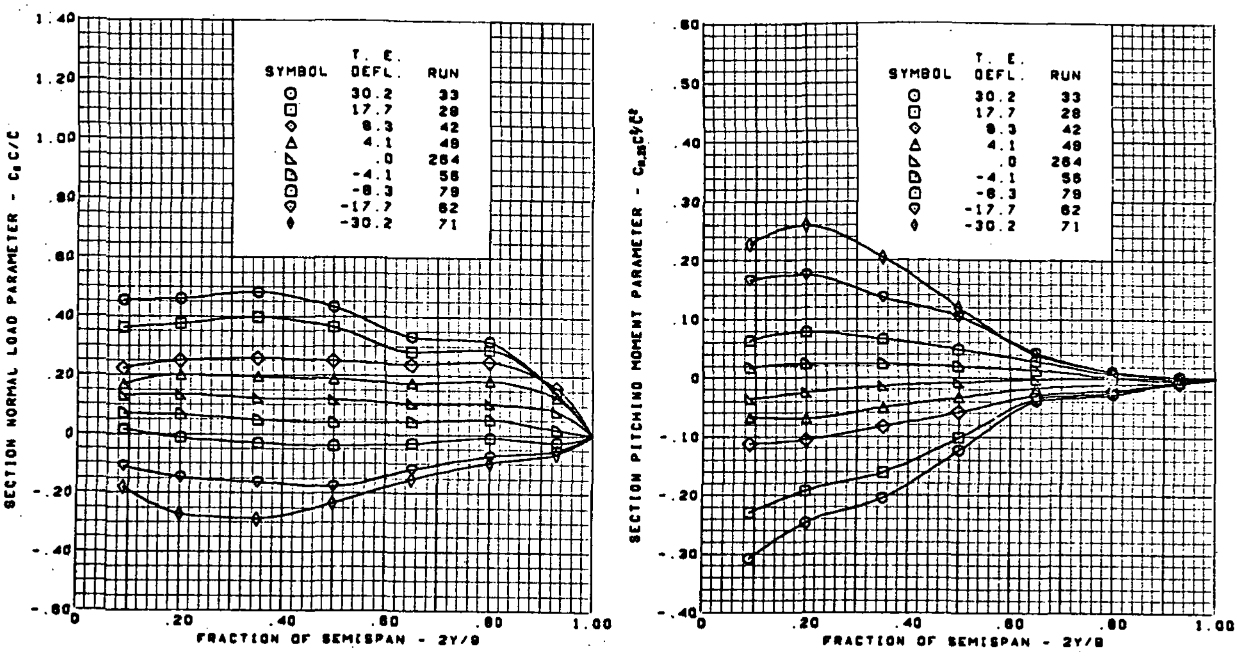
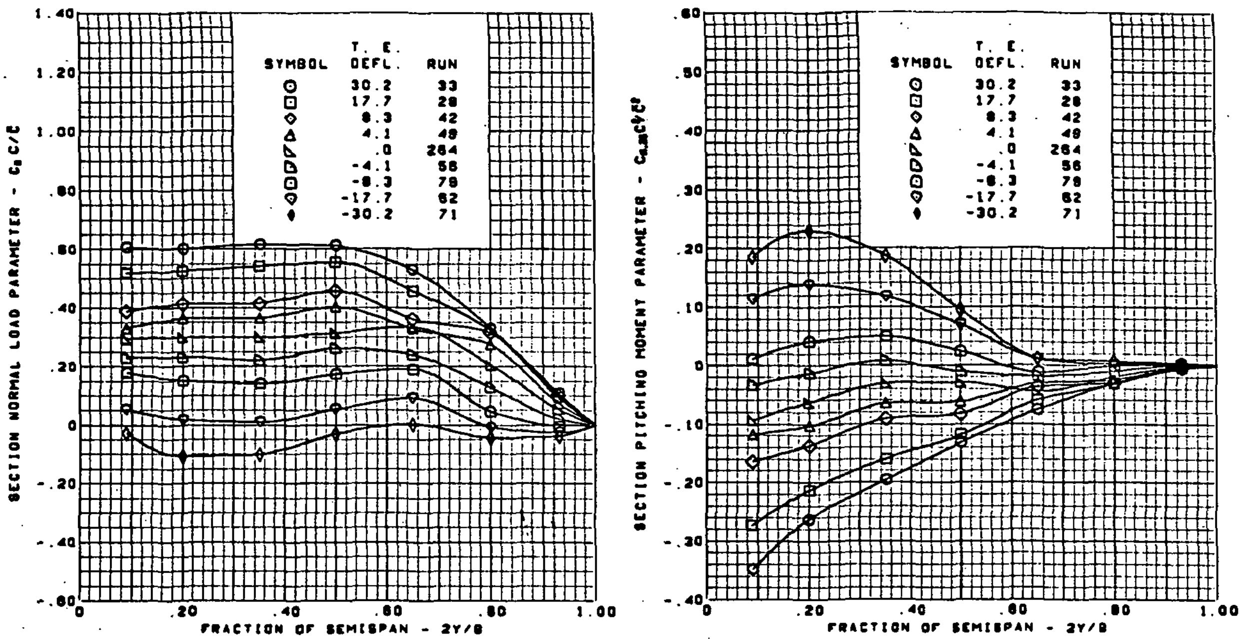


M = 1.05
$\alpha \approx 4.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(n) Spanload Distributions, $\alpha \approx 4.0^\circ$

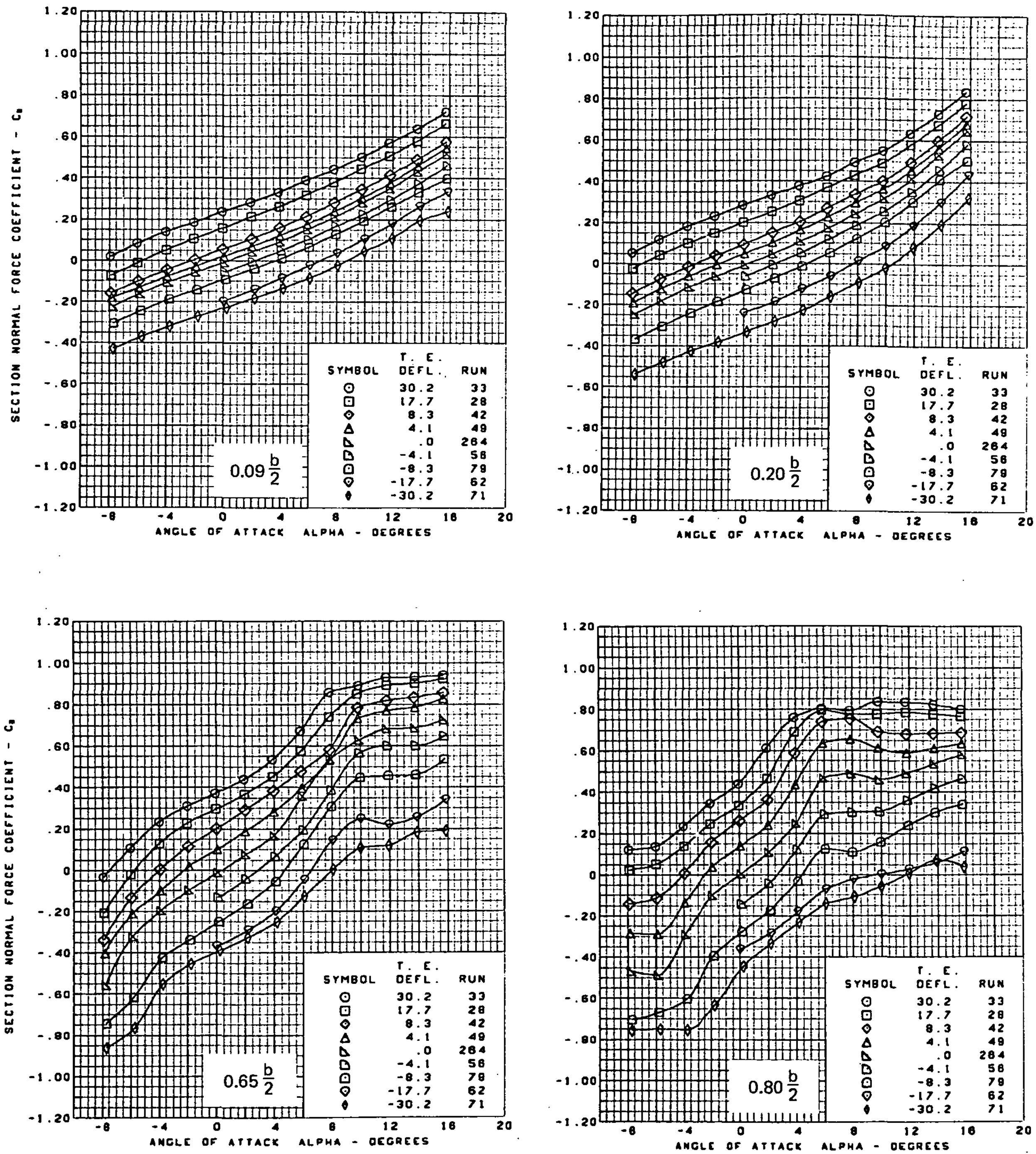
Figure 25.–(Continued)



M = 1.05
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

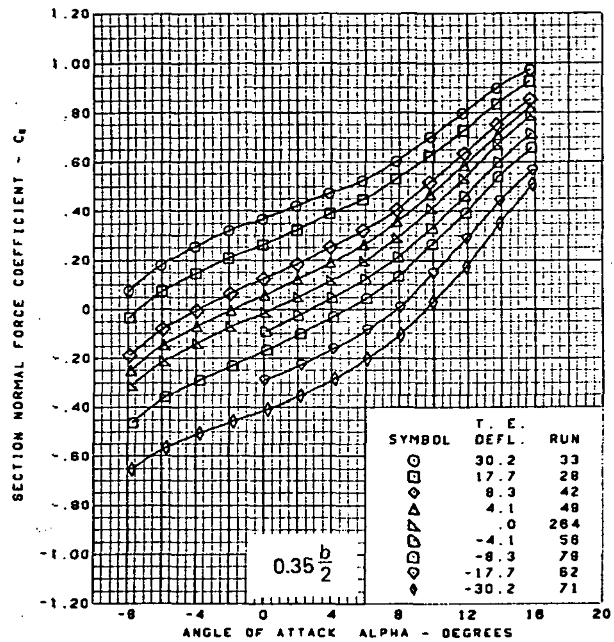
(o) Spanload Distributions, $\alpha \approx 8.0°$

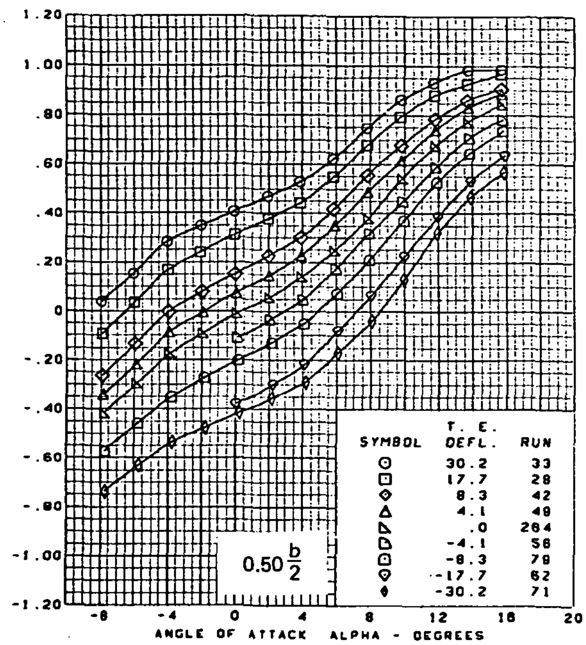
Figure 25.–(Continued)

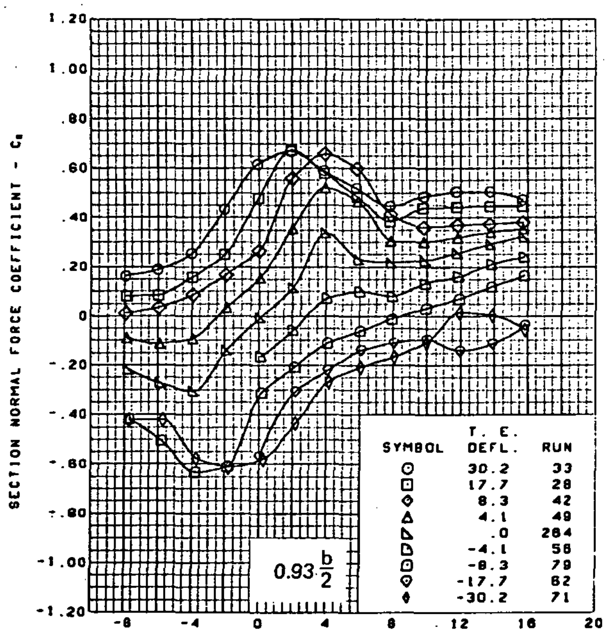


(p) Section Aerodynamic Coefficients — Normal Force

Figure 25.-(Continued)



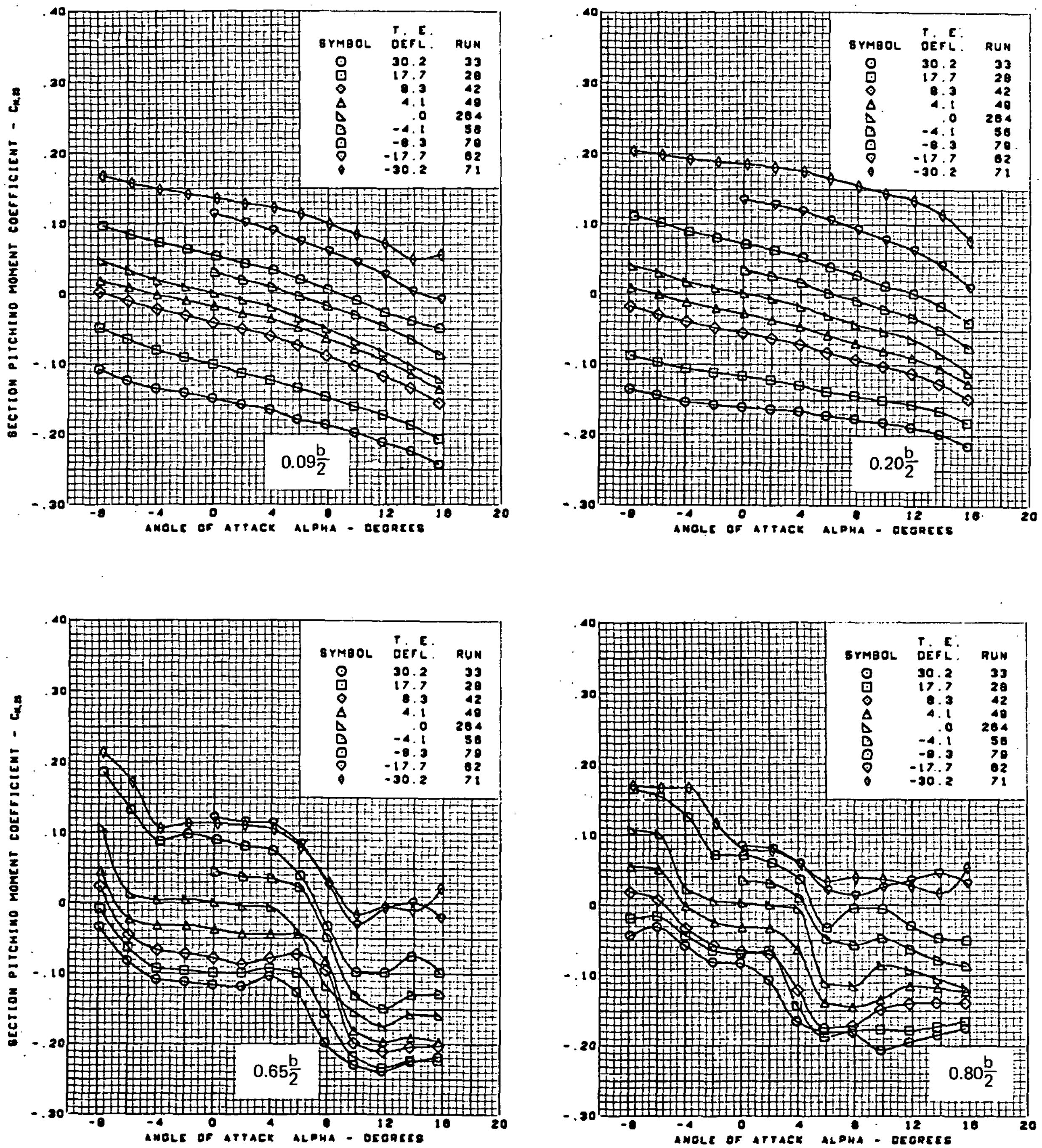




M = 1.05
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

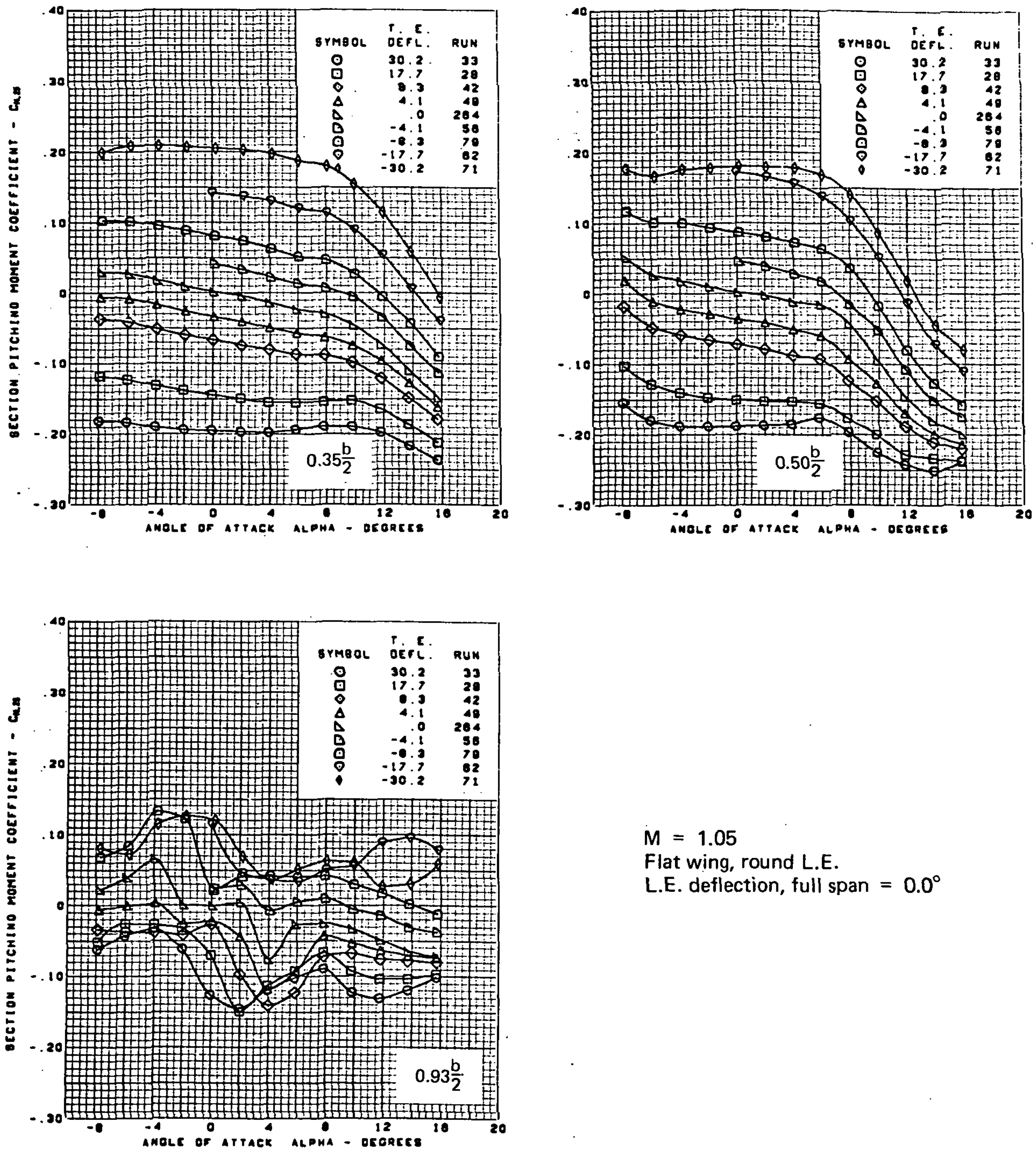
(p) (Concluded)

Figure 25.–(Continued)



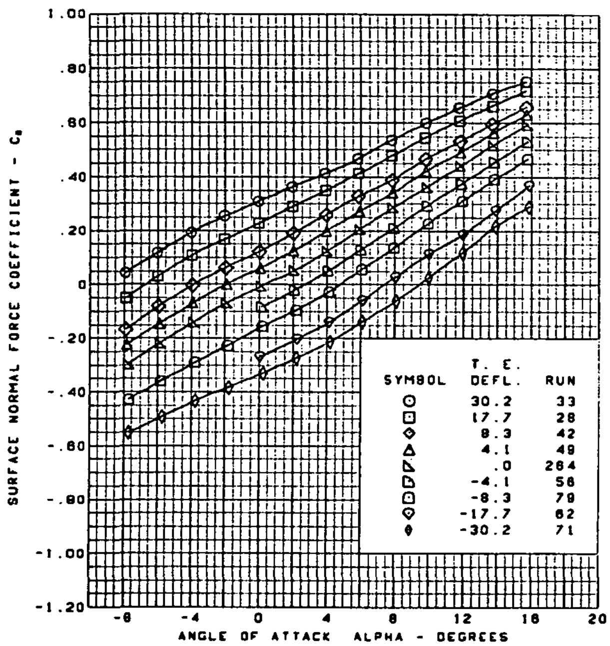
(q) Section Aerodynamic Coefficients – Pitching Moment

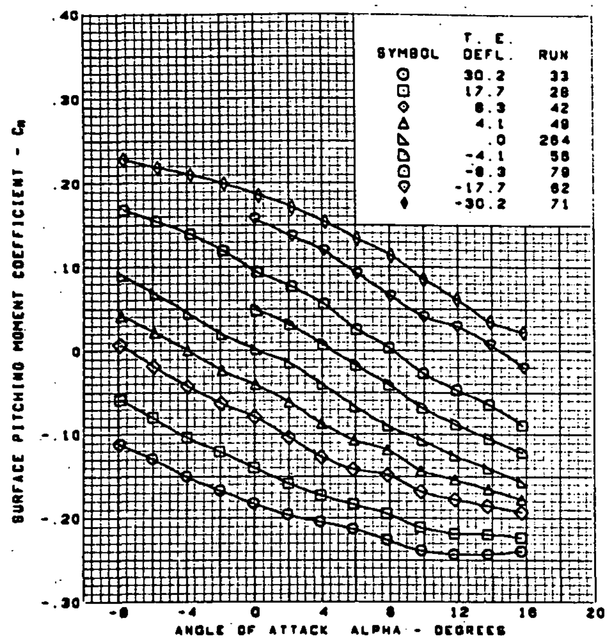
Figure 25.–(Continued)

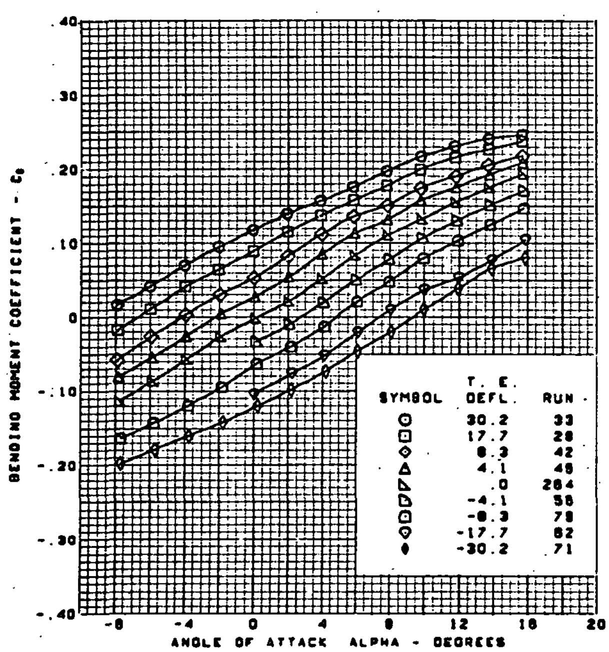


(q) (Concluded)

Figure 25.–(Continued)







M = 1.05
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(r) Wing Aerodynamic Coefficients

Figure 25.–(Concluded)

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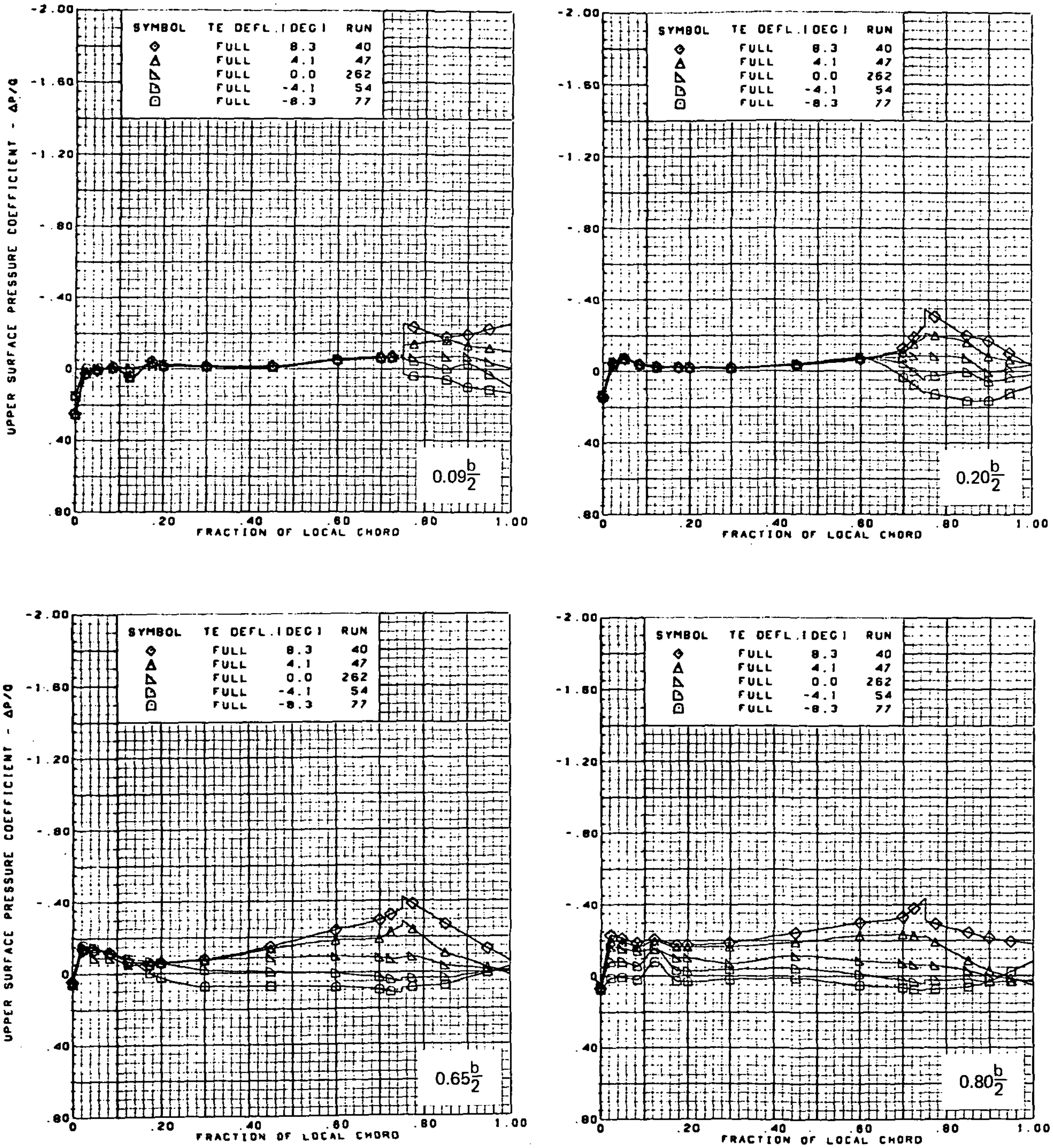
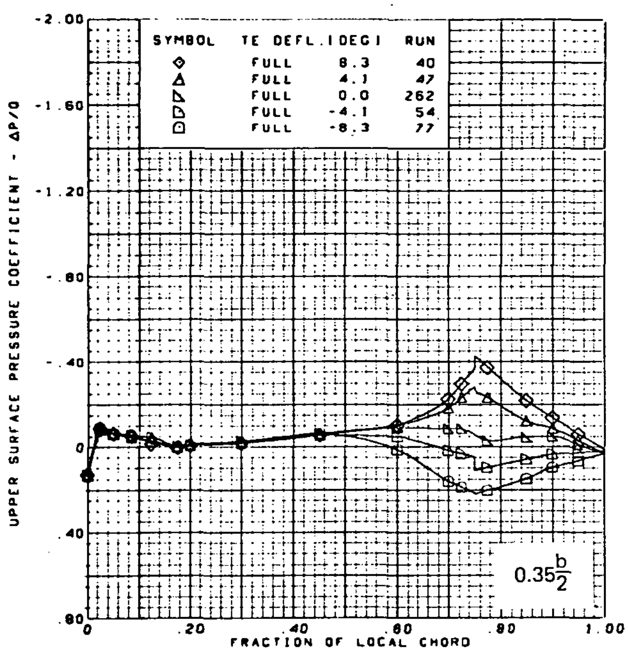
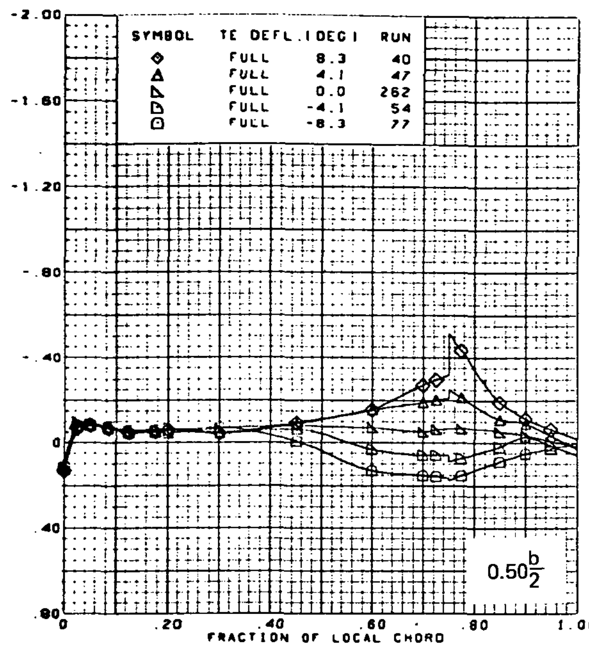
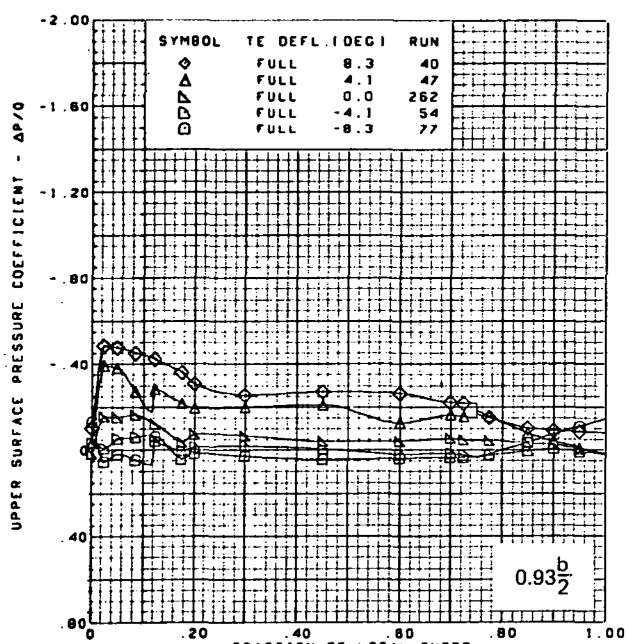


(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 26.—Wing Experimental Data—Effect of Full Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 1.11



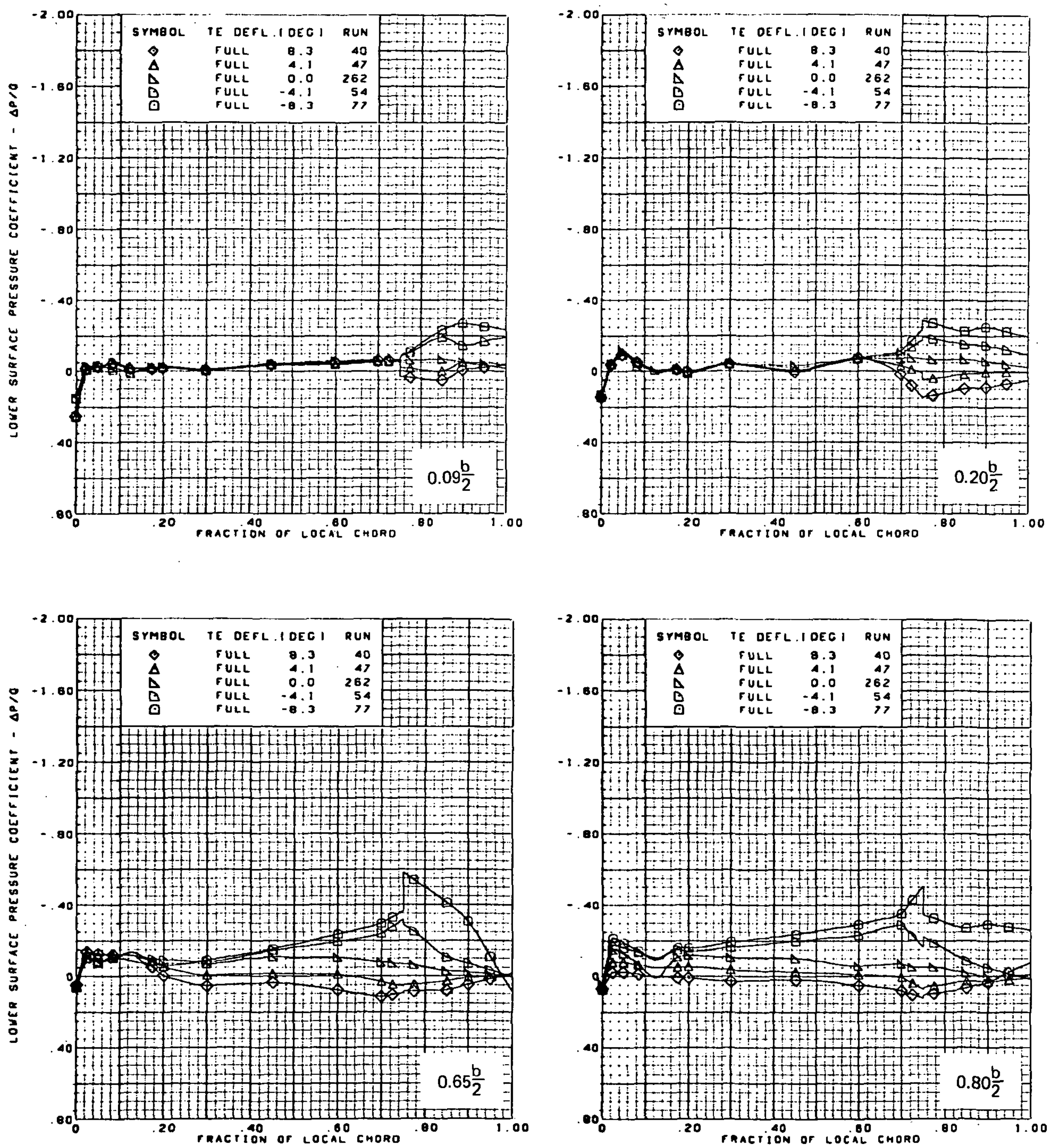




$M = 1.11$
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

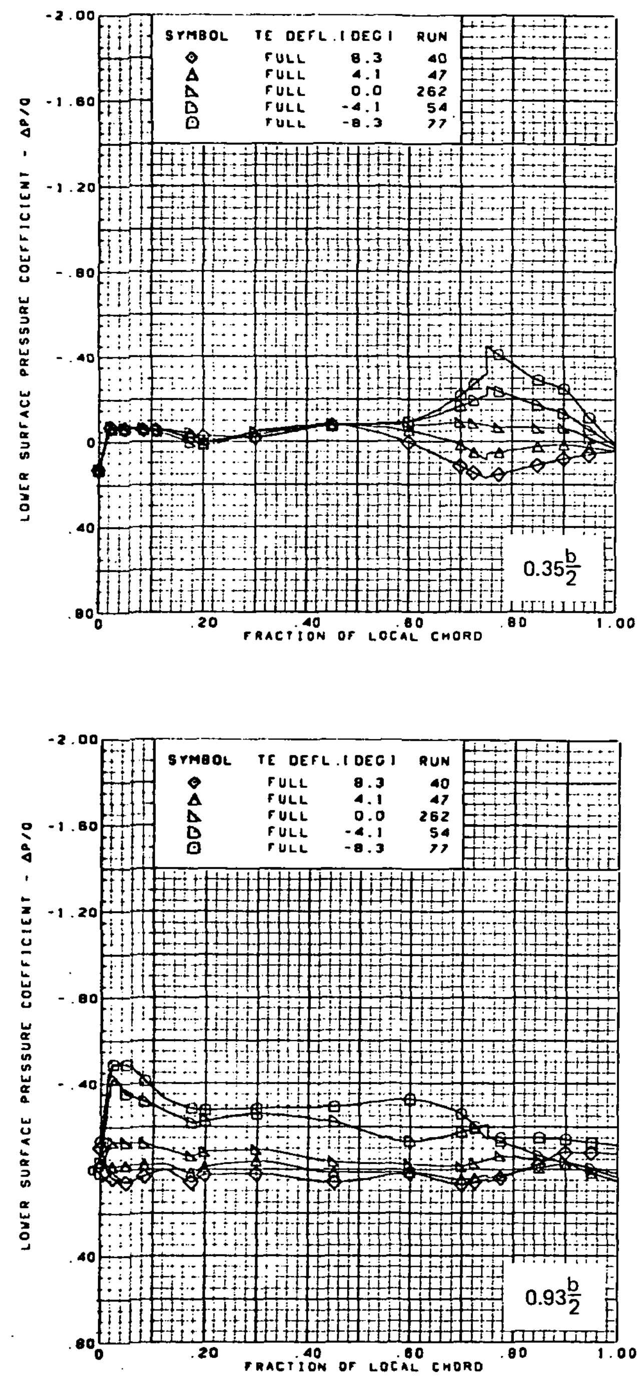
(a) (Concluded)

Figure 26.–(Continued)



(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

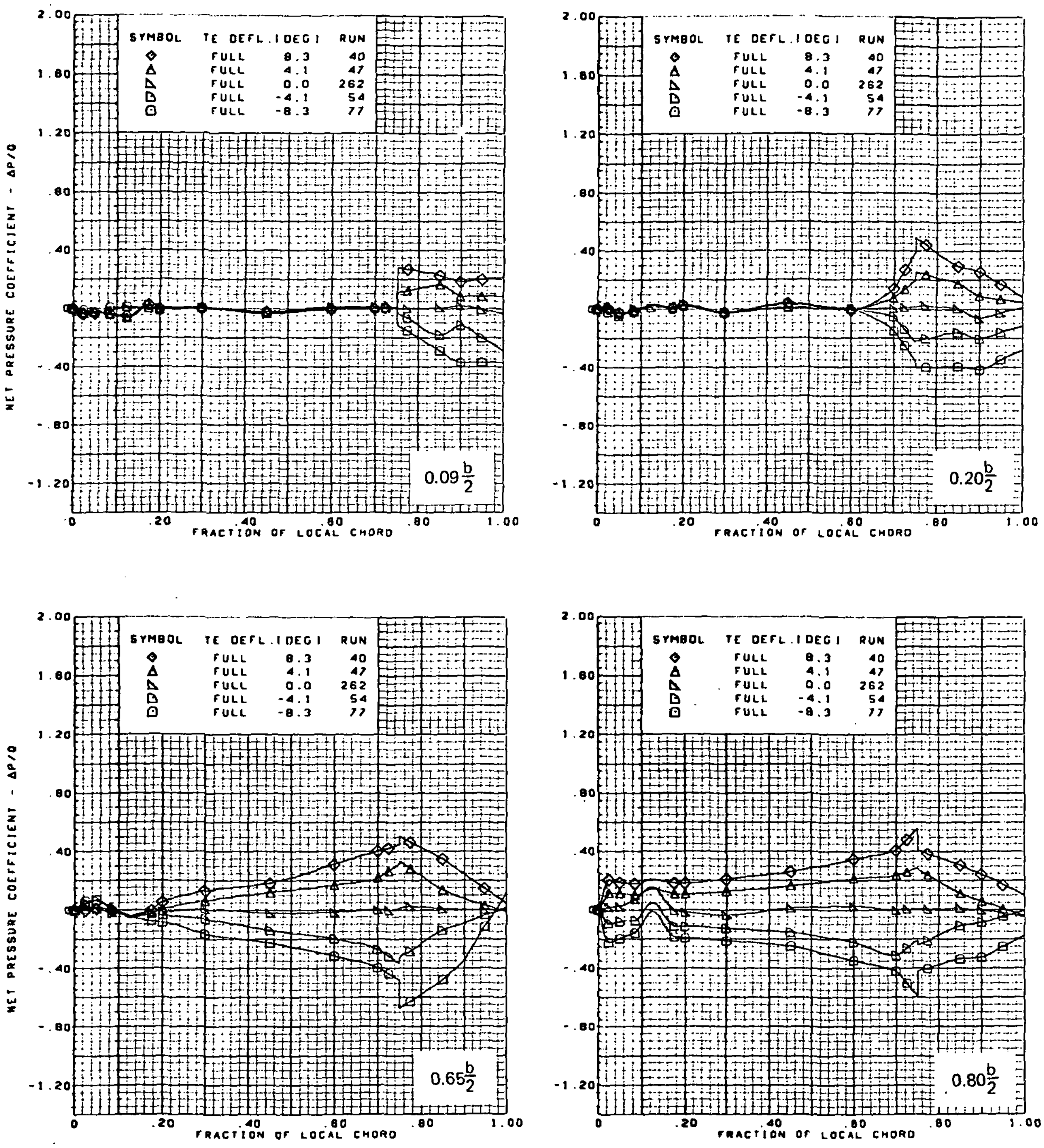
Figure 26.–(Continued)



M = 1.11
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

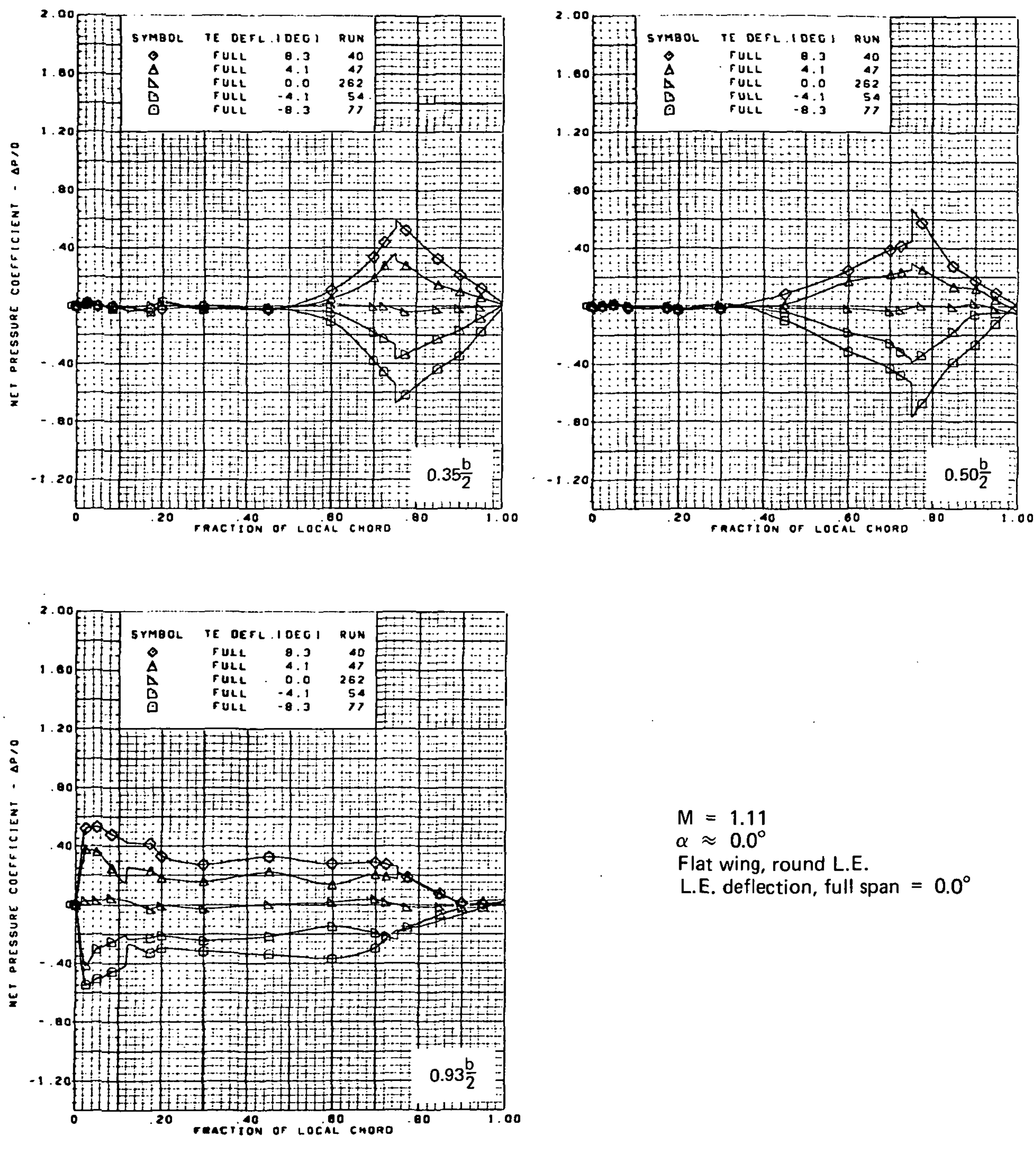
(b) (Concluded)

Figure 26.–(Continued)



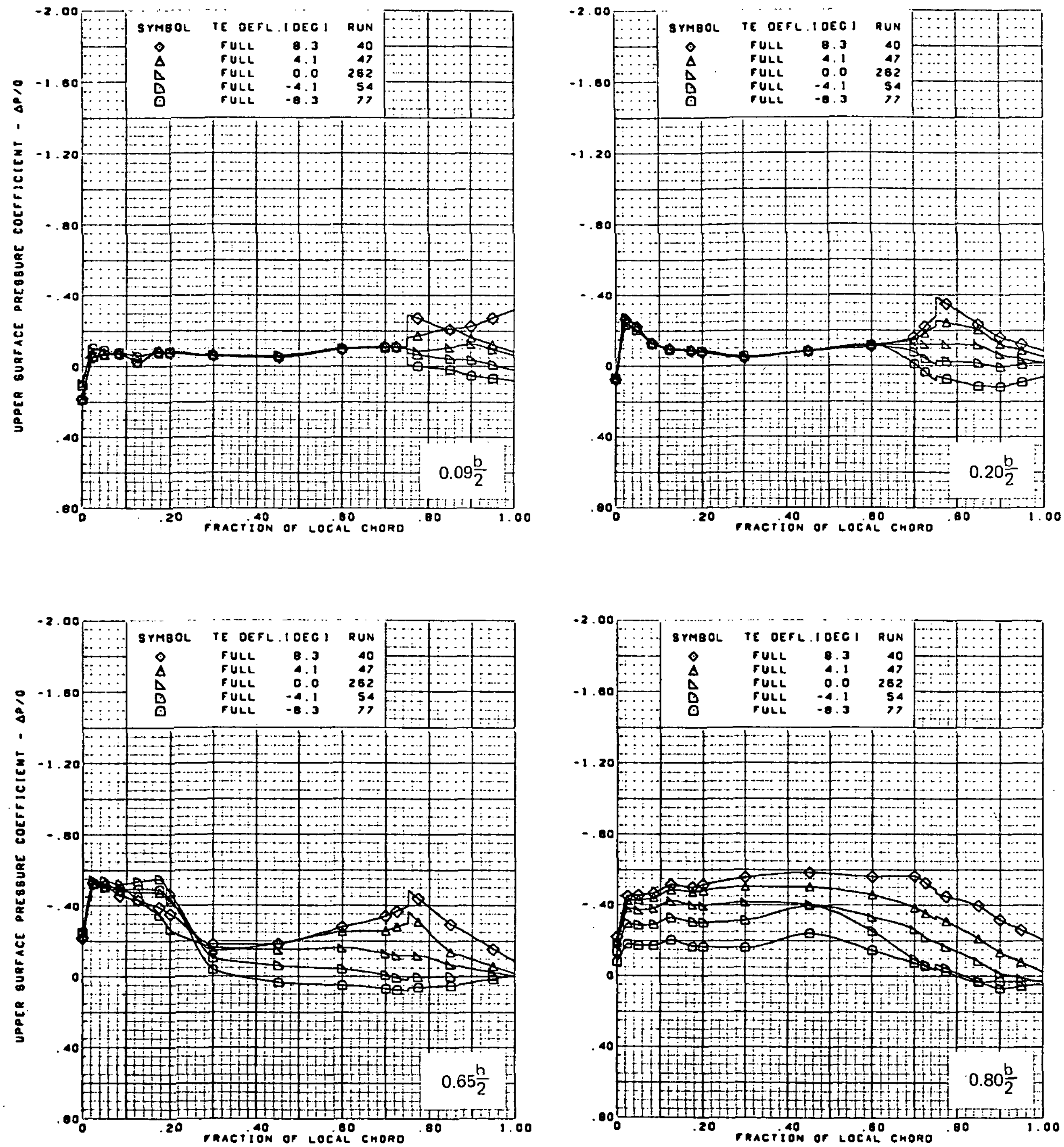
(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0^{\circ}$

Figure 26.–(Continued)



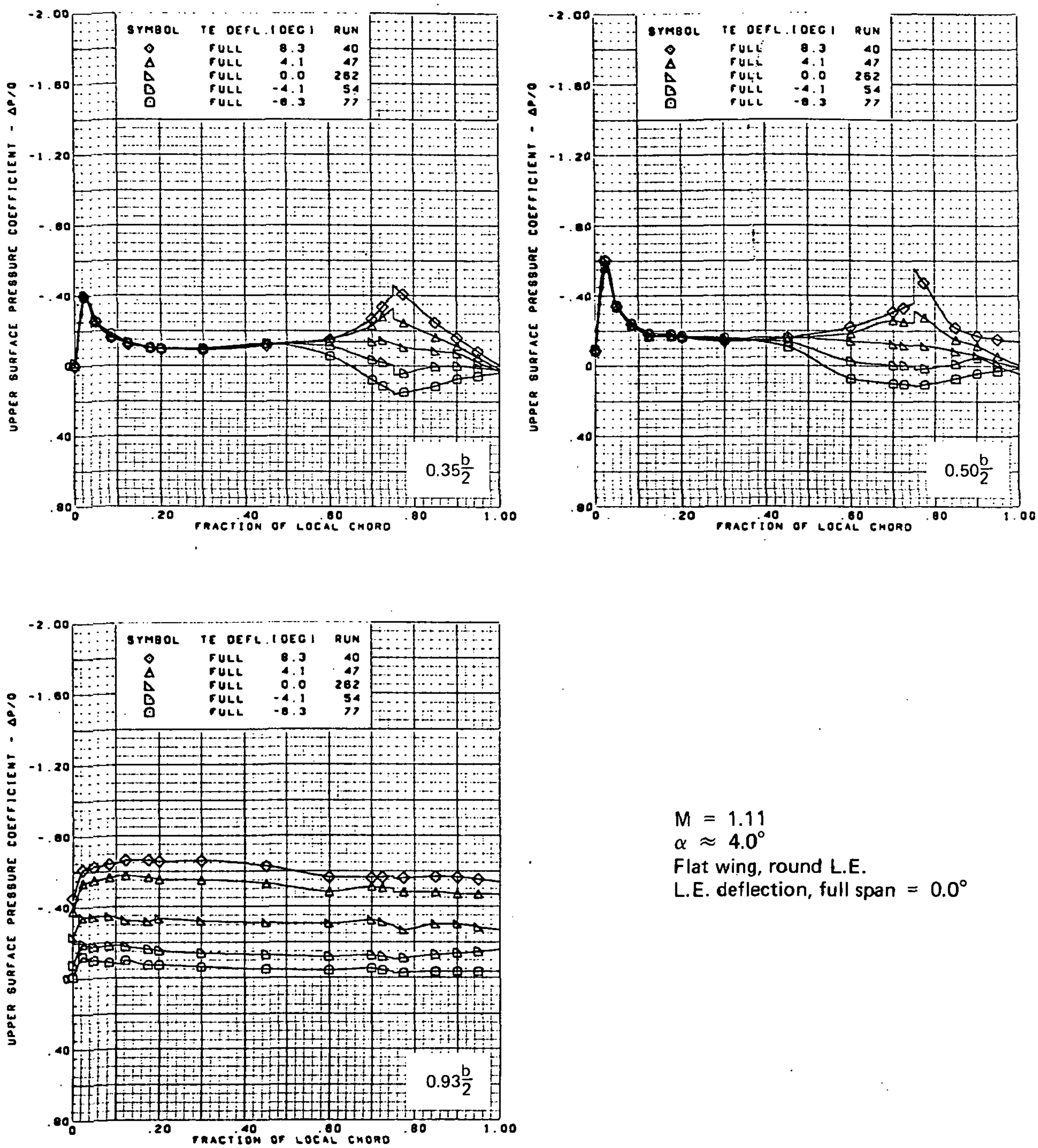
(c) (Concluded)

Figure 26.–(Continued)



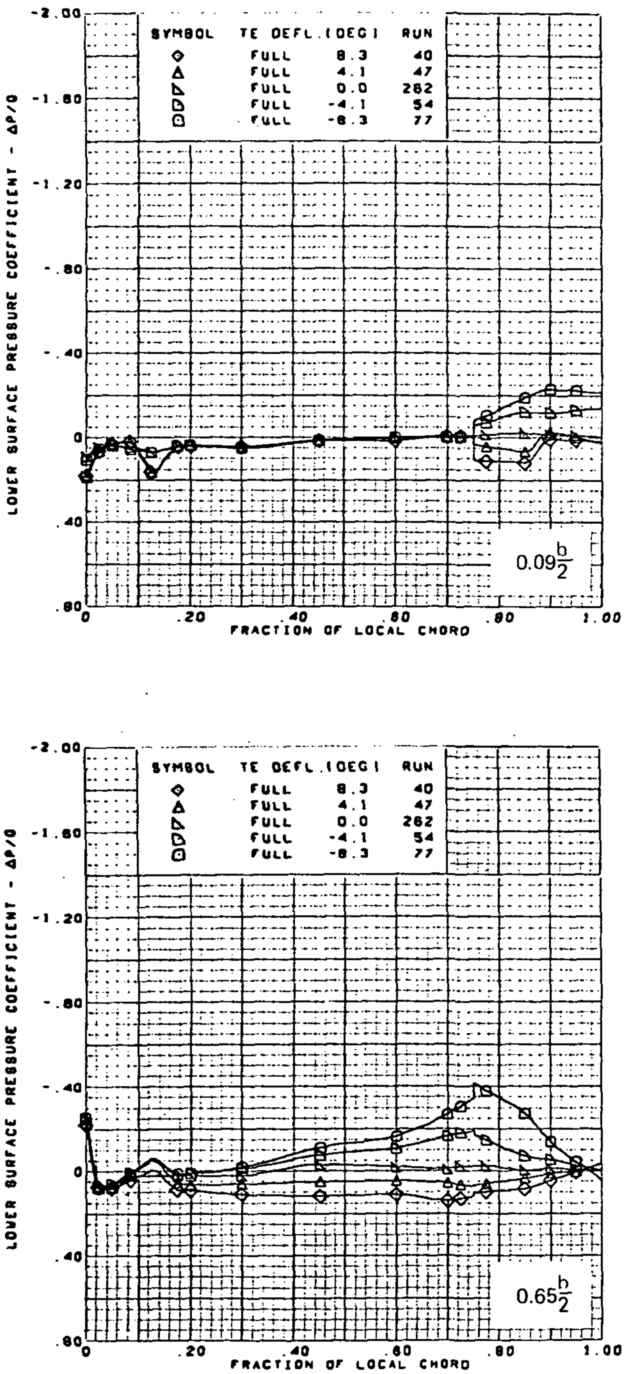
(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^\circ$

Figure 26.-(Continued)



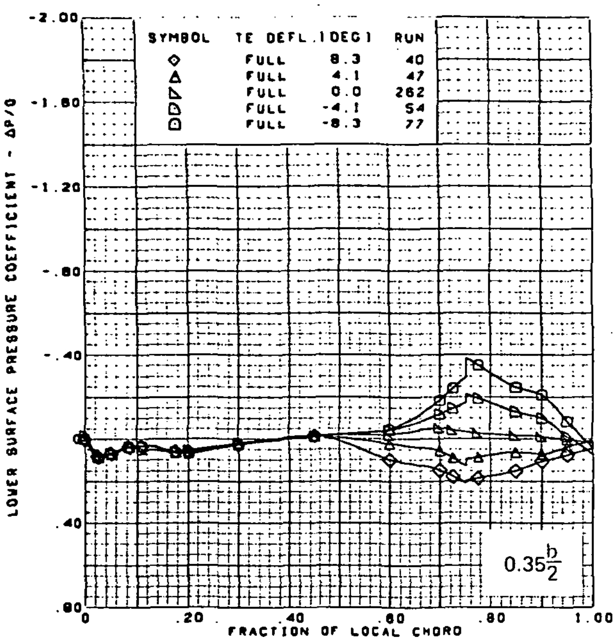
(d) (Concluded)

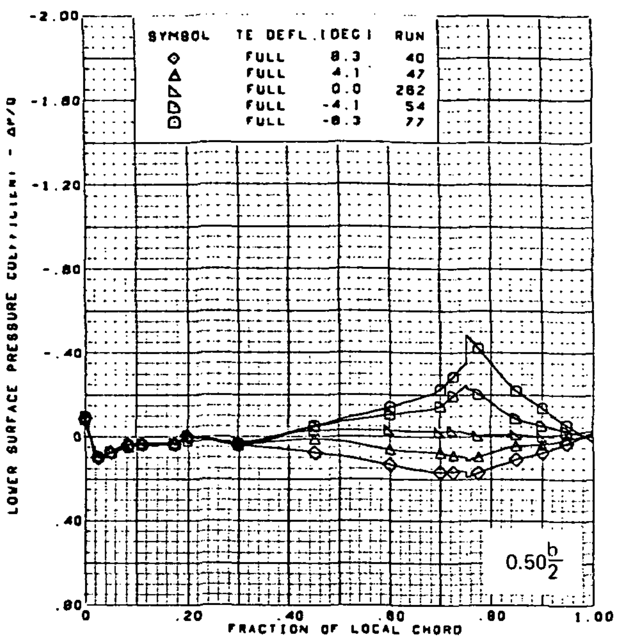
Figure 26.–(Continued)

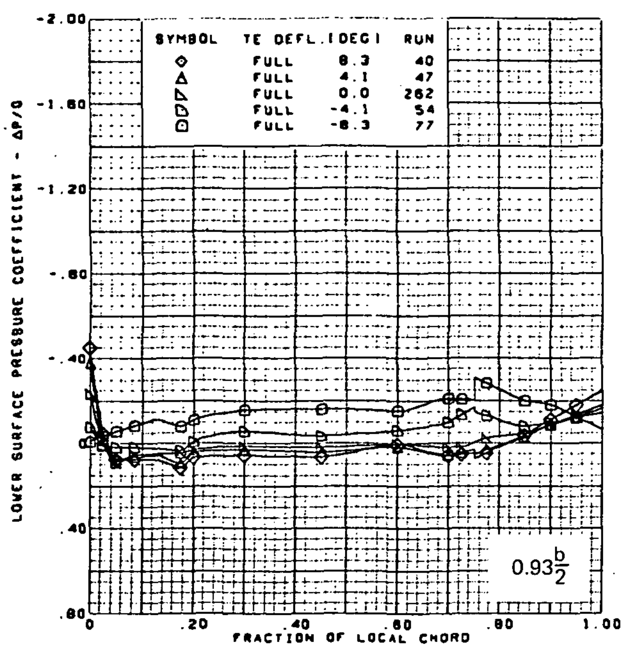


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 26.-(Continued)



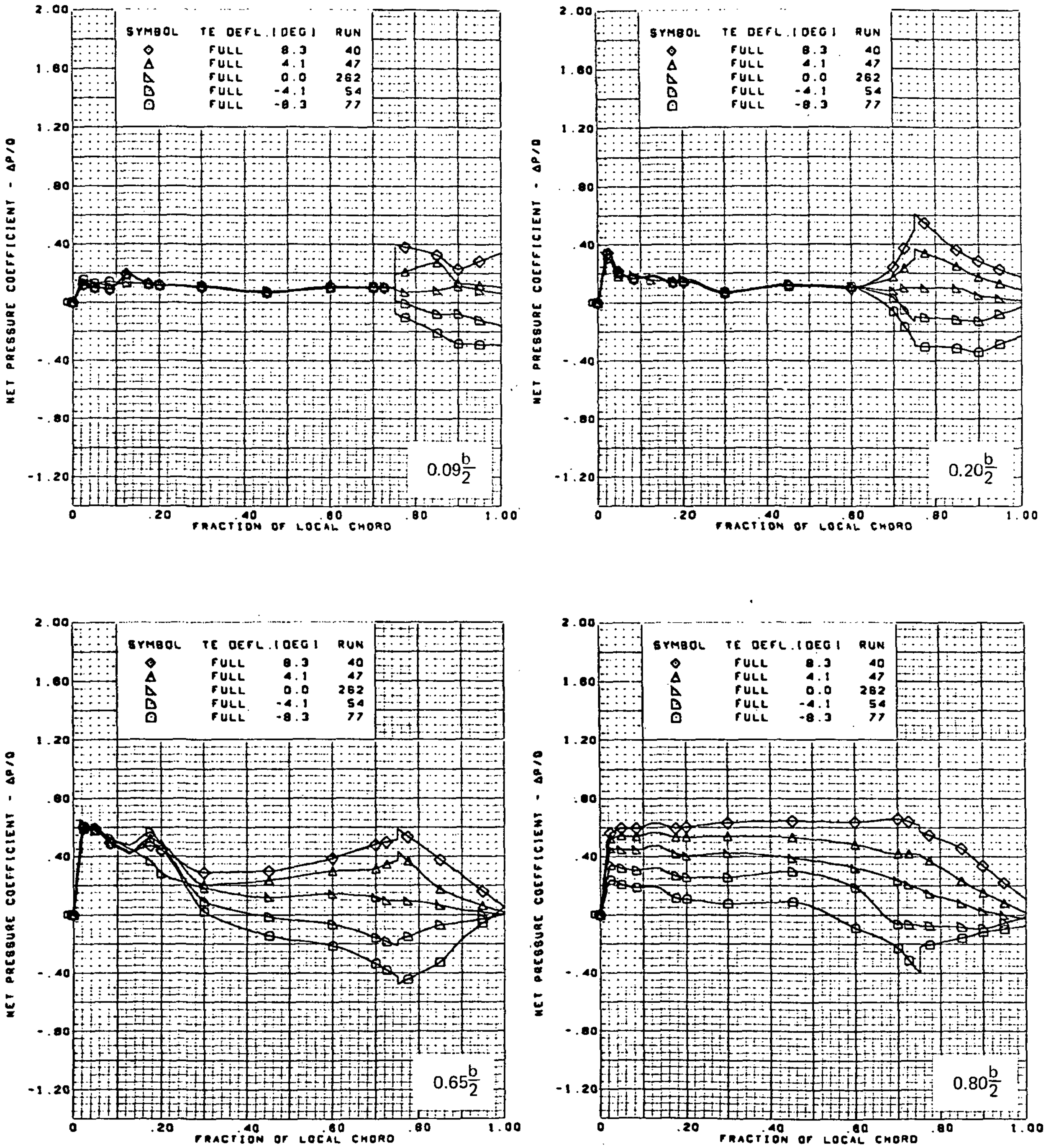




M = 1.11
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

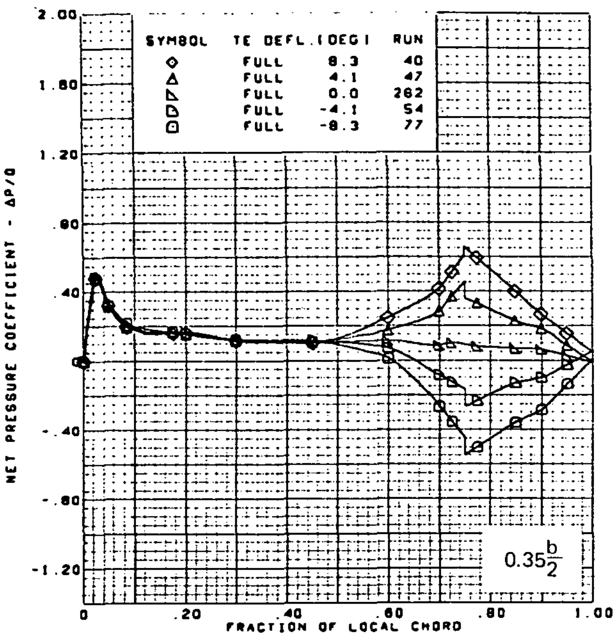
(e) (Concluded)

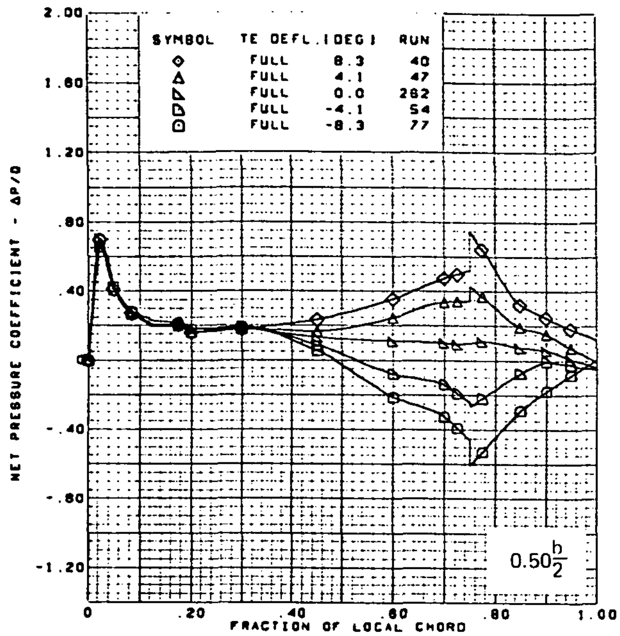
Figure 26.–(Continued)

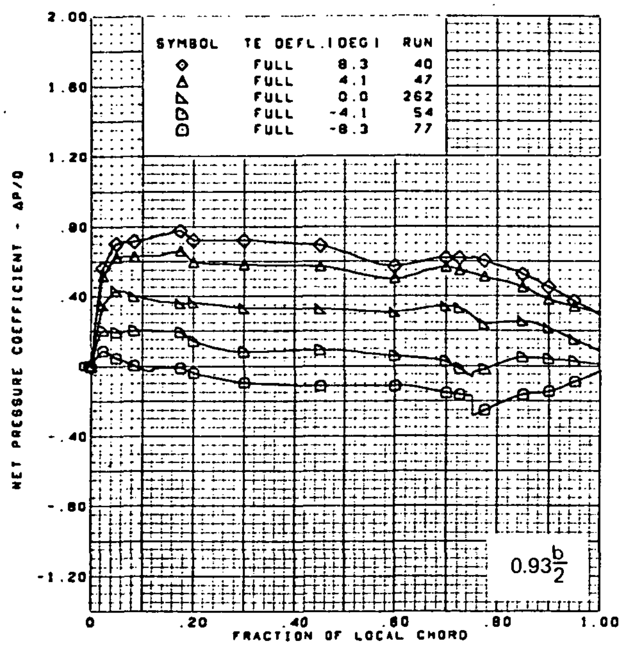


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 26.–(Continued)



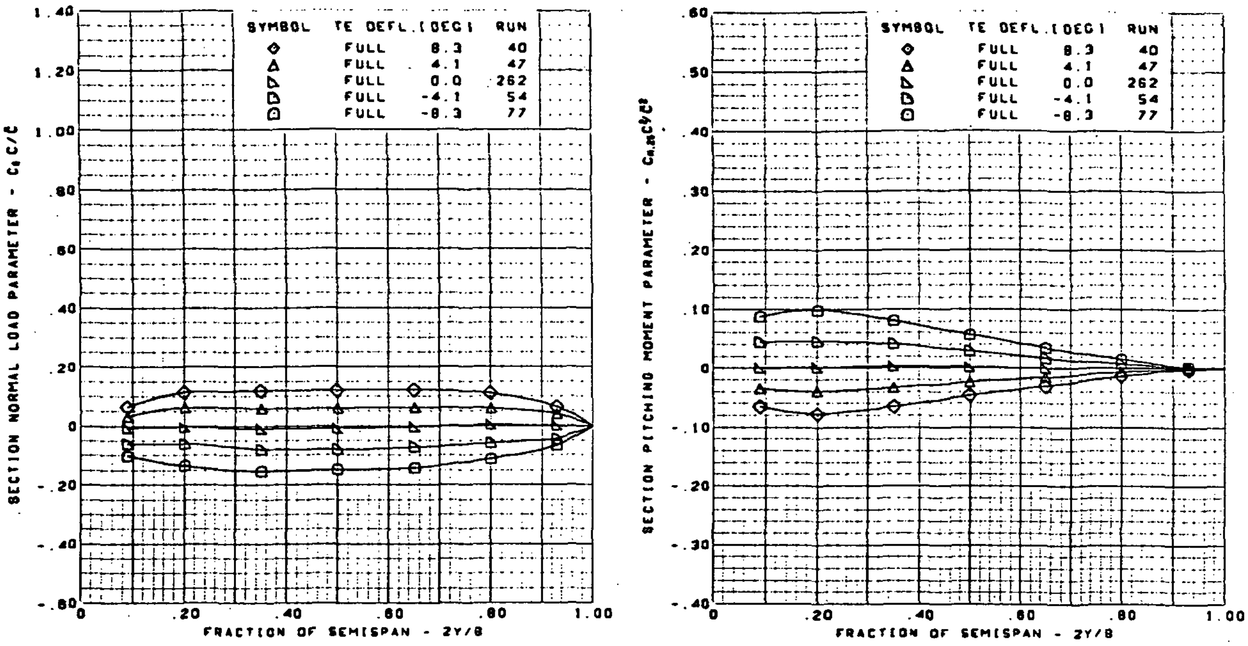




M = 1.11
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

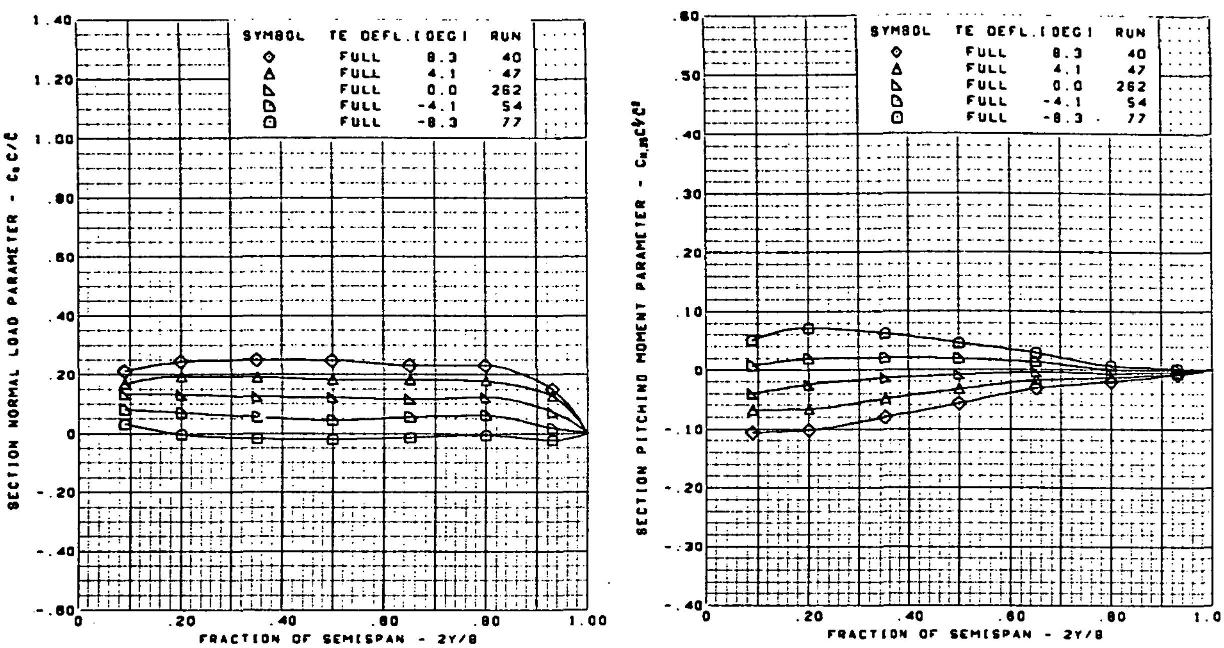
Figure 26.–(Continued)



M = 1.11
$\alpha \approx 0.0^\circ$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0^\circ$

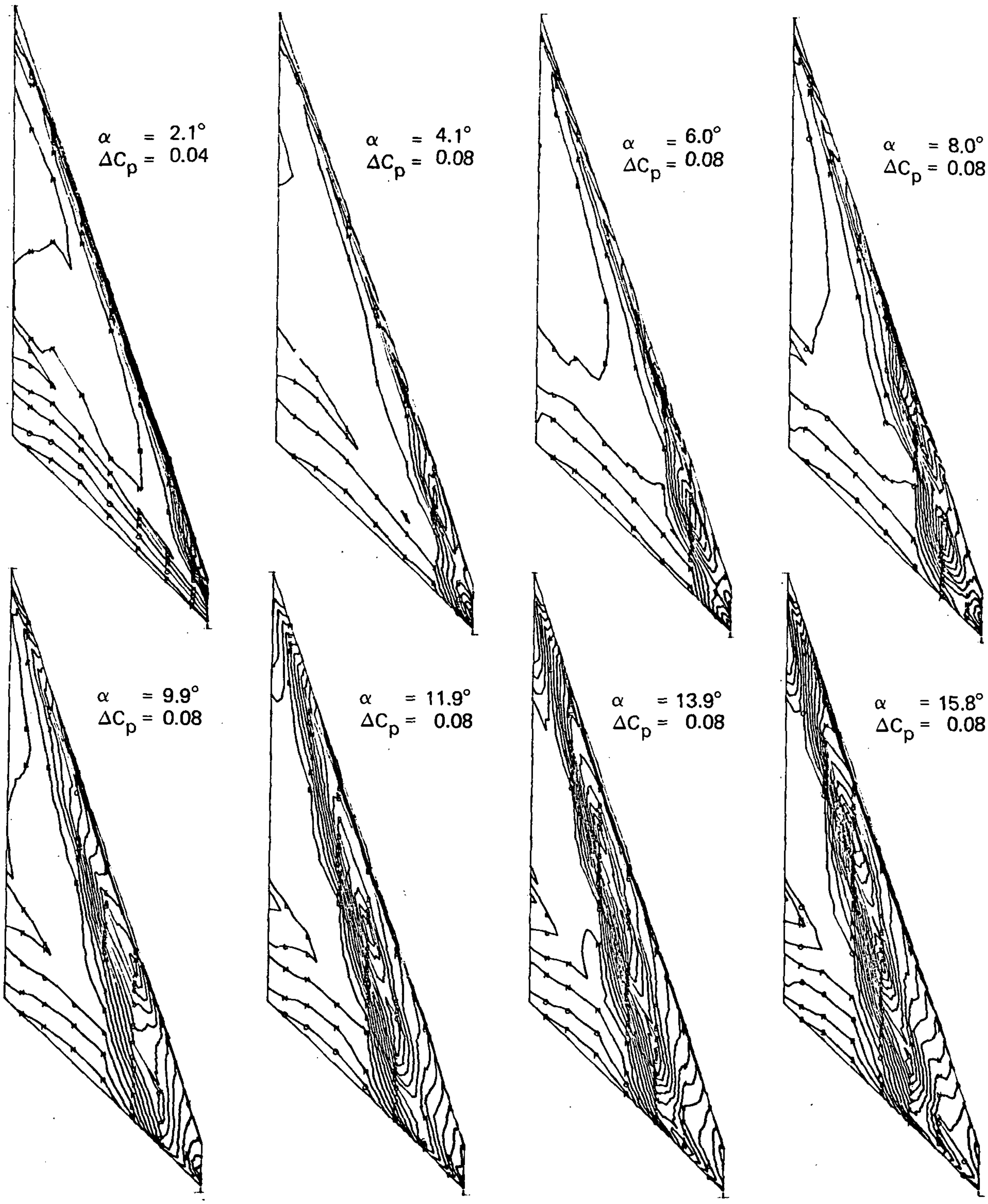
Figure 26.–(Continued)



M = 1.11
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(h) Spanload Distributions, $\alpha \approx 4.0°$

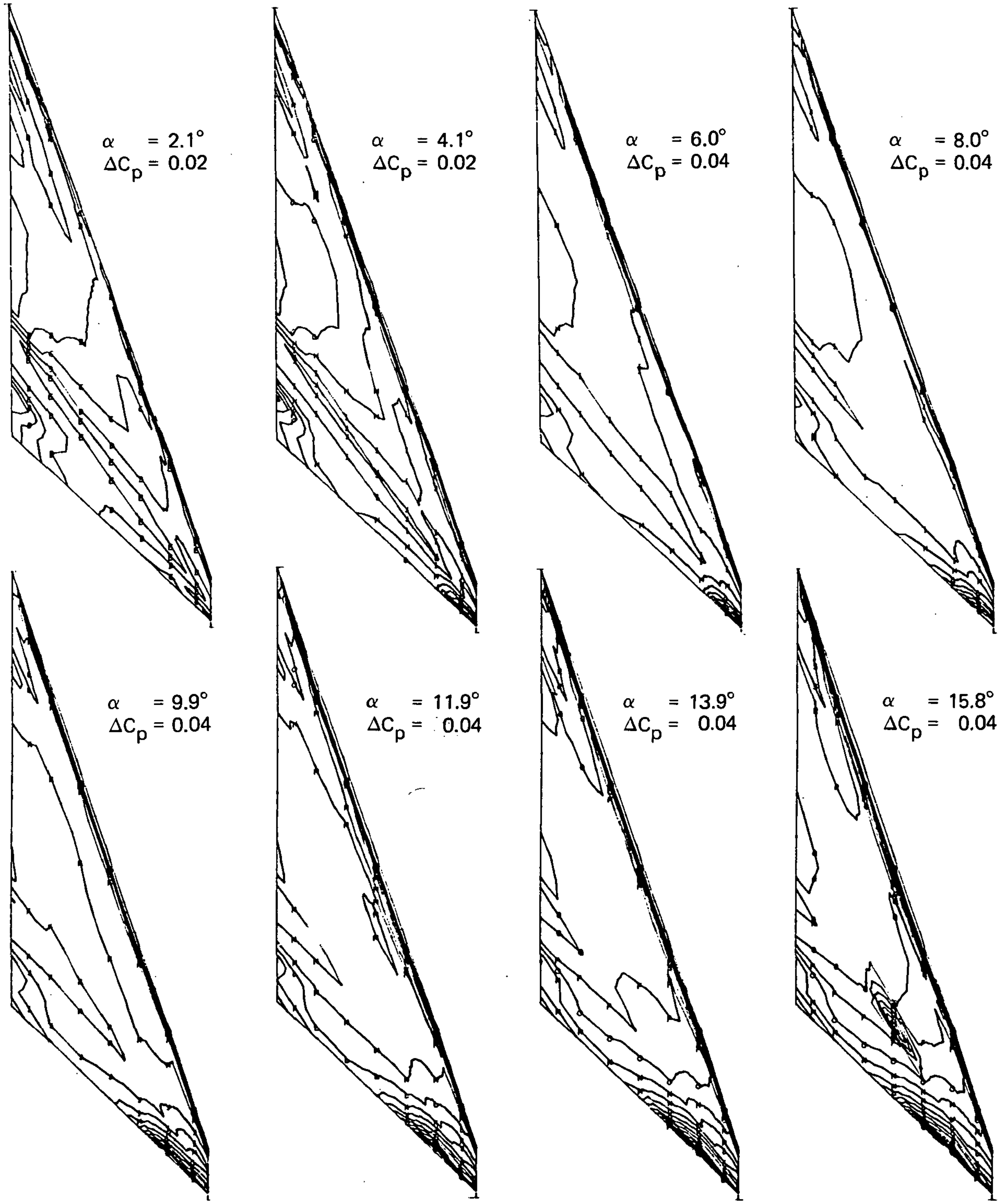
Figure 26.–(Concluded)



Note: ΔC_p = increment between adjacent isobars

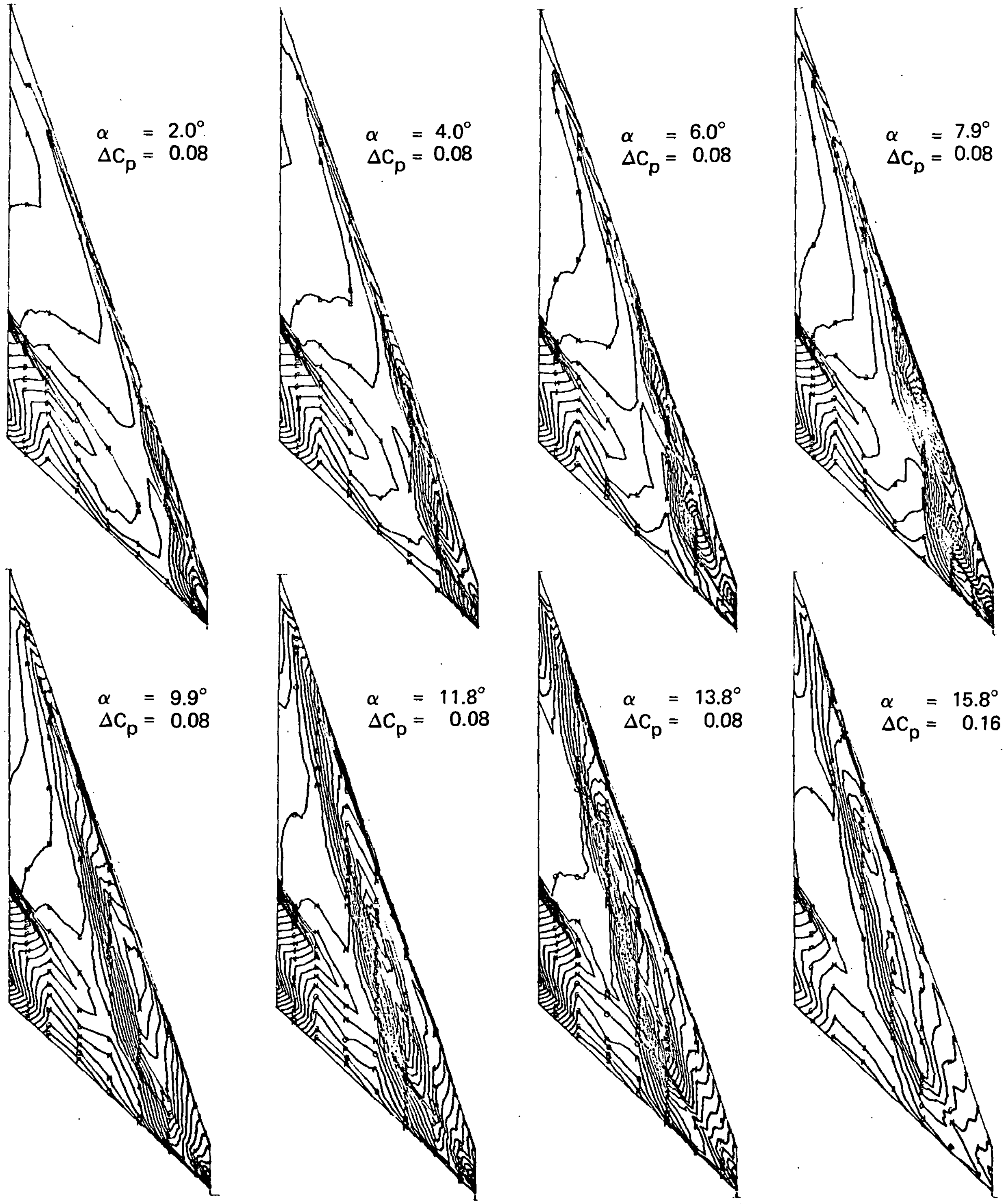
(a) Upper Surface Isobars; T.E. Deflection, Full Span = 4.1°

Figure 27.— Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.40



(b) Lower Surface Isobars; T.E. Deflection, Full Span = 4.1°

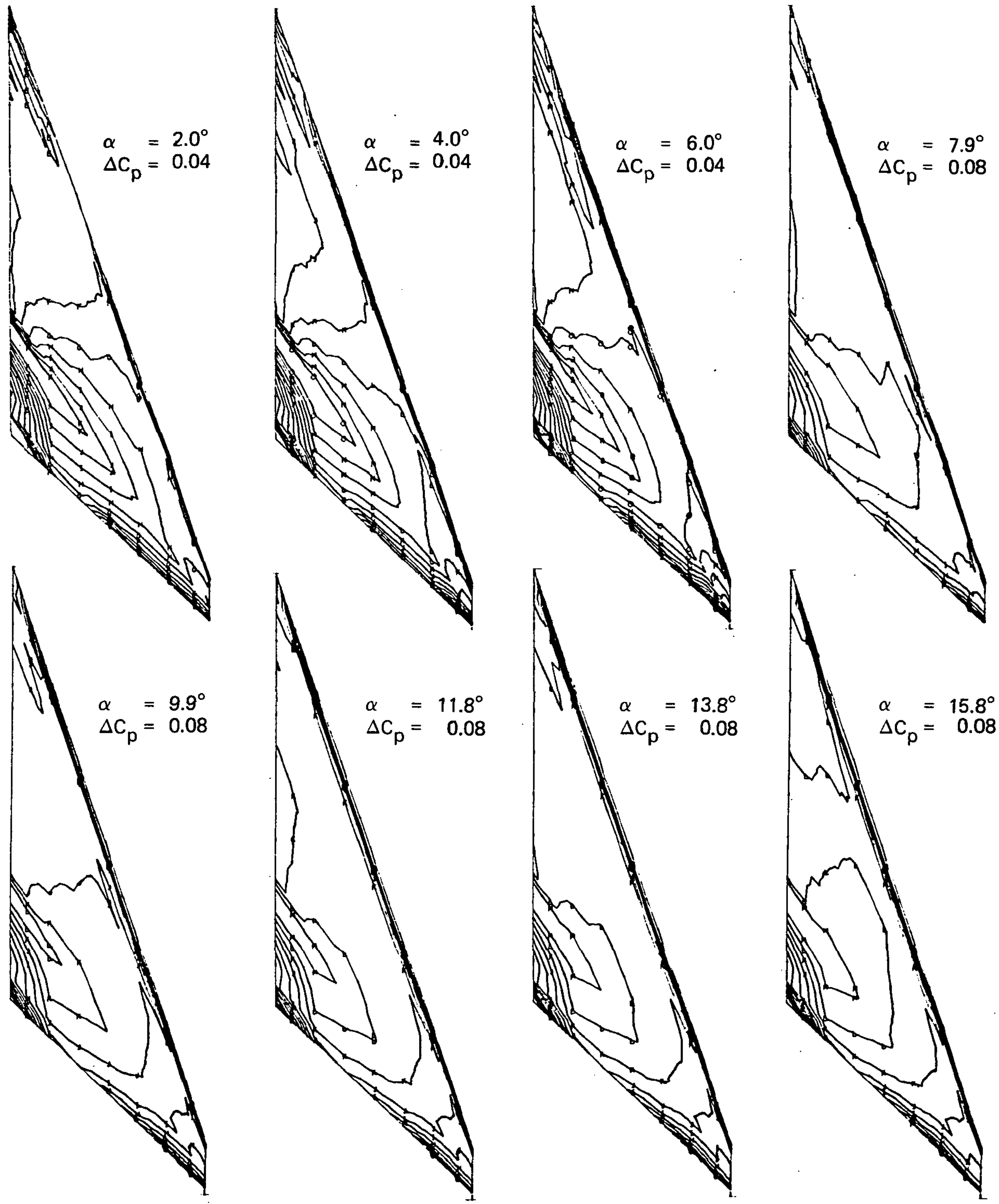
Figure 27.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(c) Upper Surface Isobars; T.E. Deflection, Full Span = 17.7°

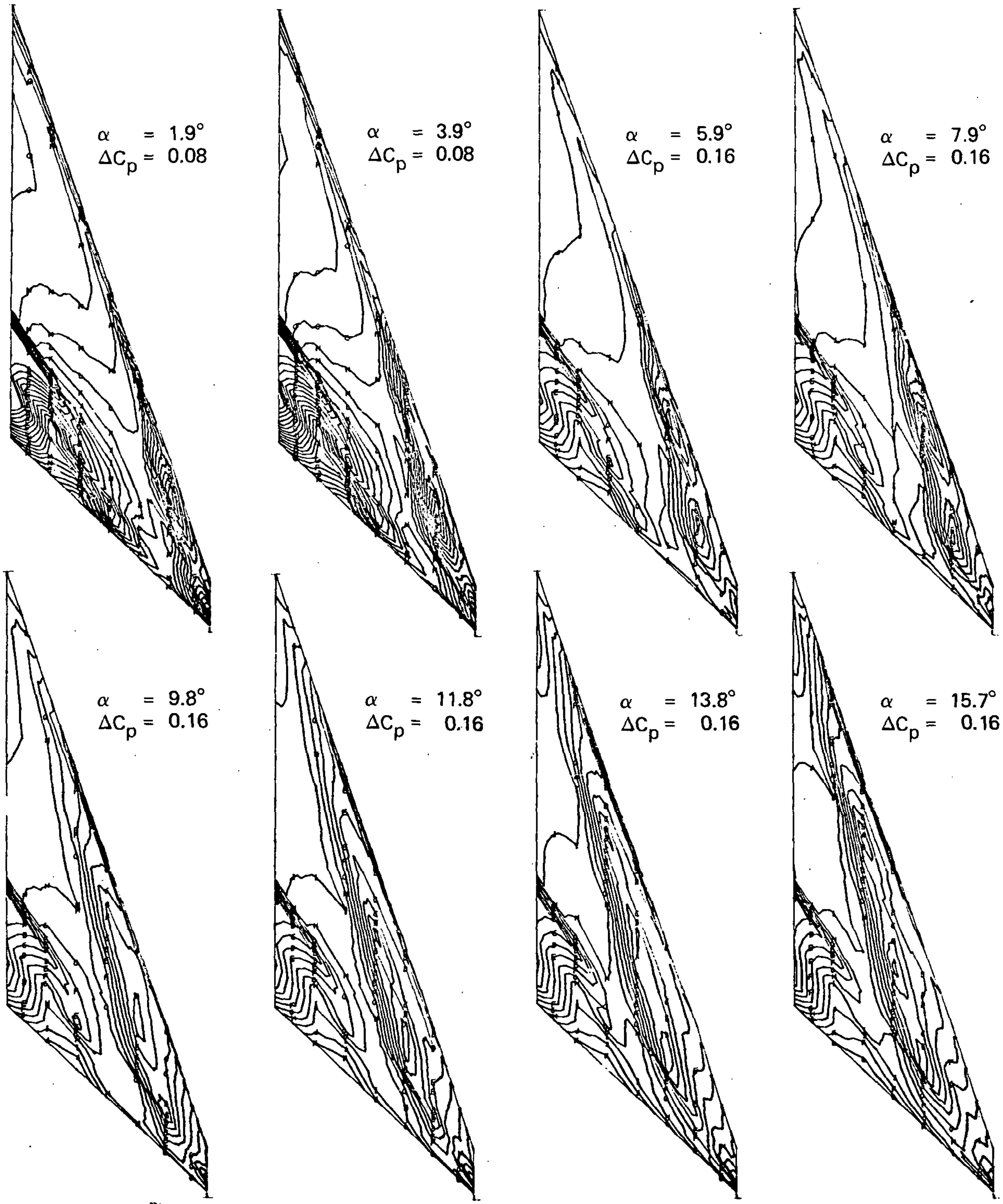
Figure 27.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(d) Lower Surface Isobars; T.E. Deflection, Full Span = 17.7°

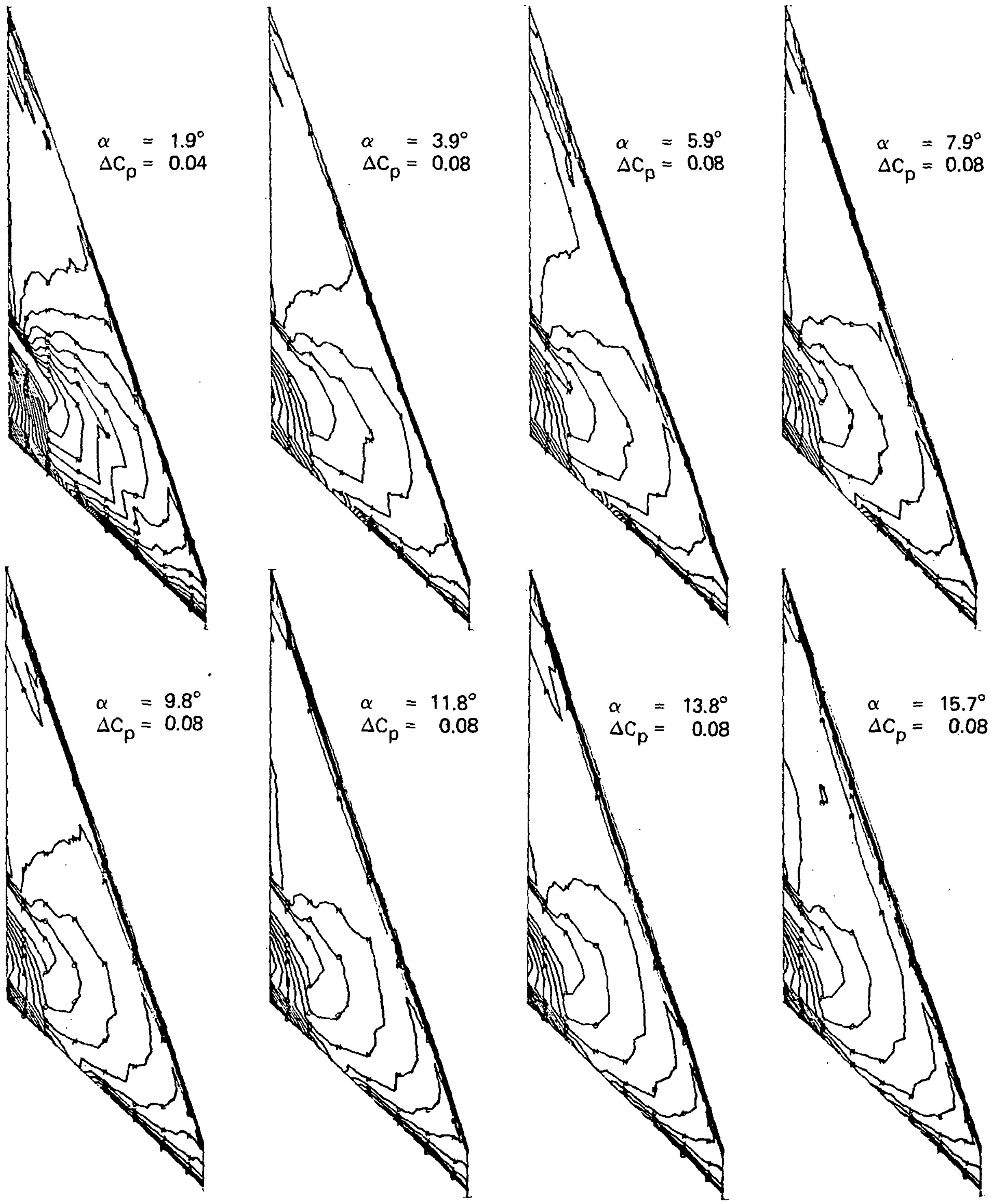
Figure 27.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(e) Upper Surface Isobars; T.E. Deflection, Full Span = 30.2°

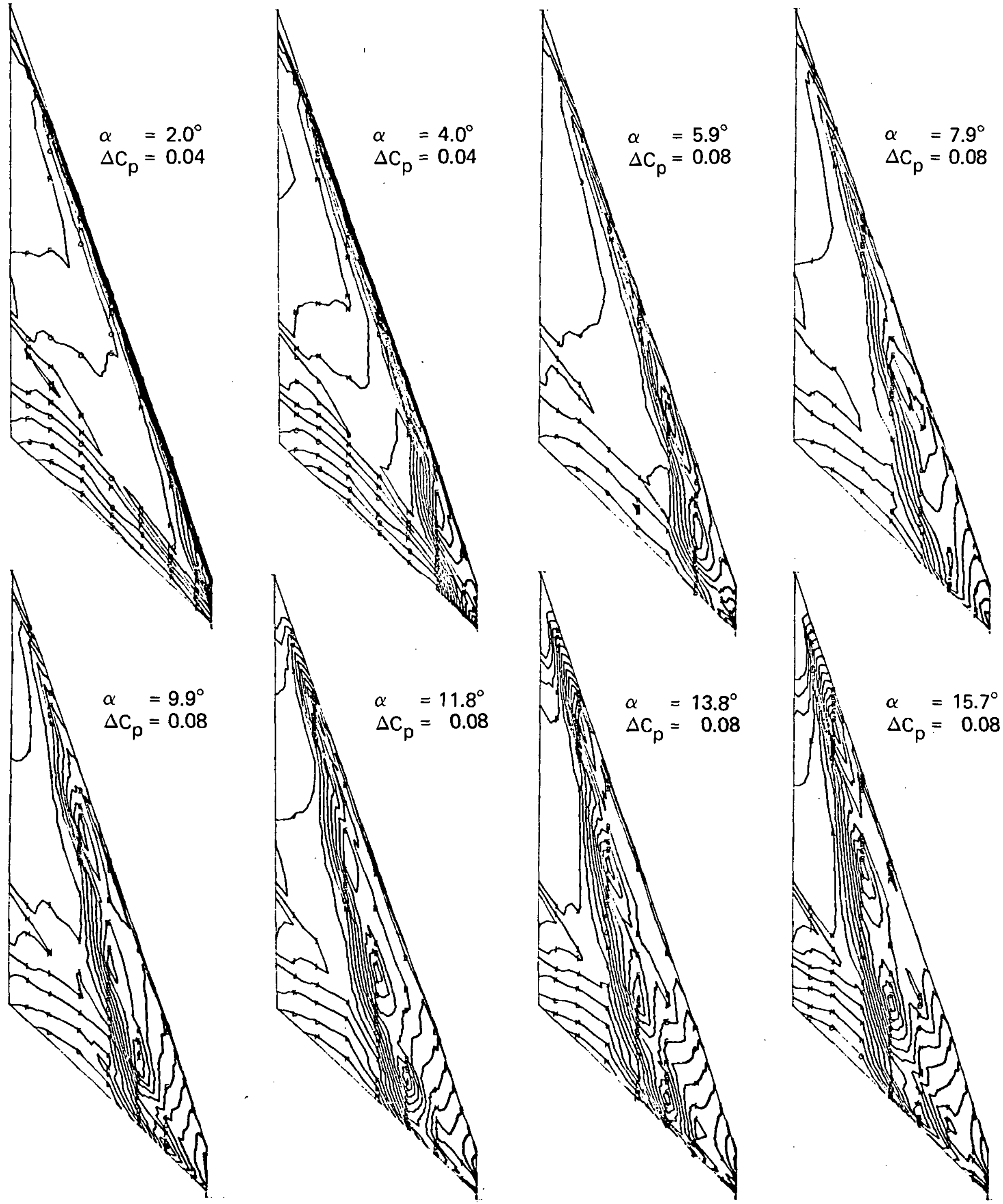
Figure 27.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(f) Lower Surface Isobars; T.E. Deflection, Full Span = 30.2°

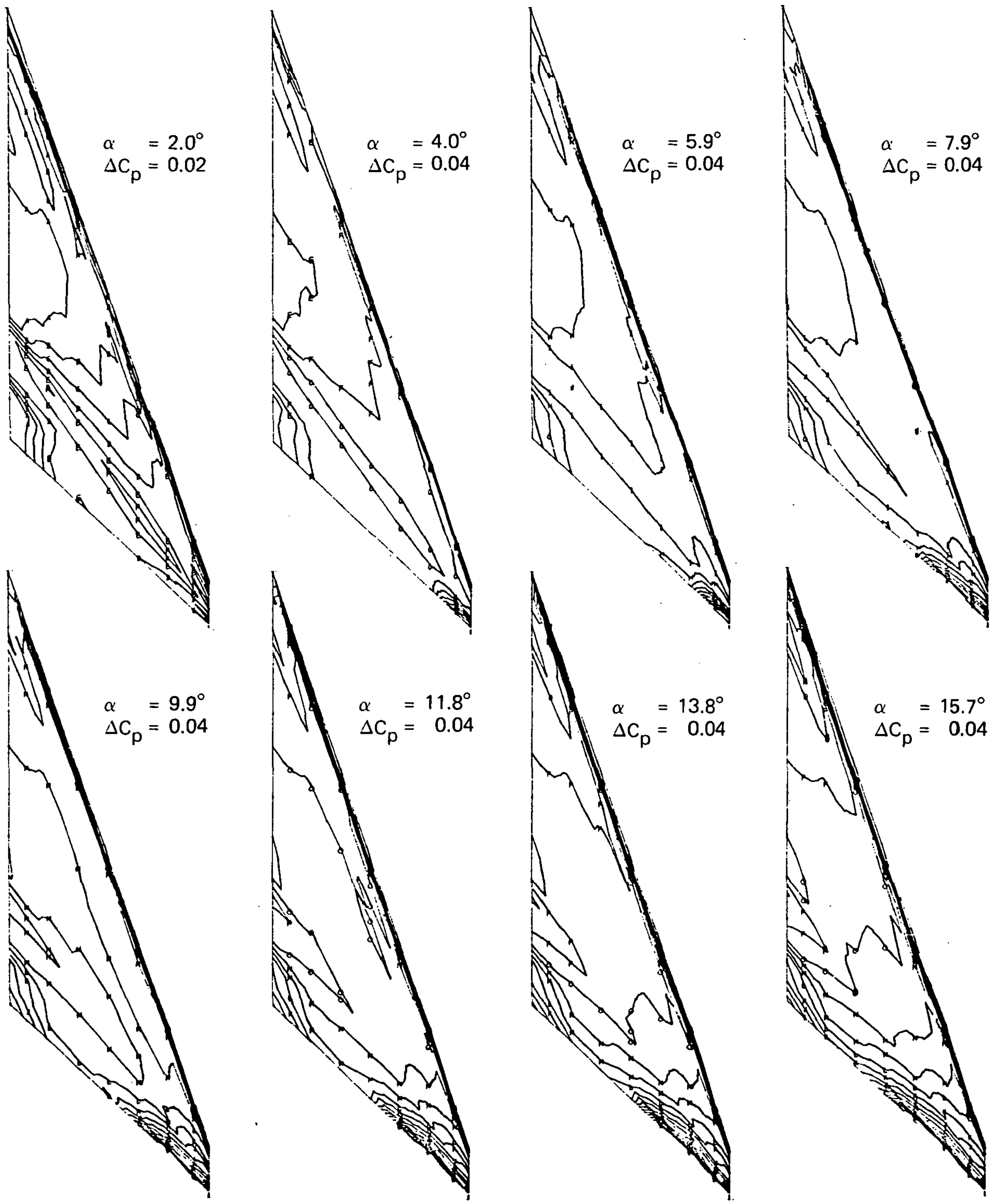
Figure 27.-(Concluded)



Note: ΔC_p = increment between adjacent isobars

(a) Upper Surface Isobars; T.E. Deflection, Full Span = 4.1°

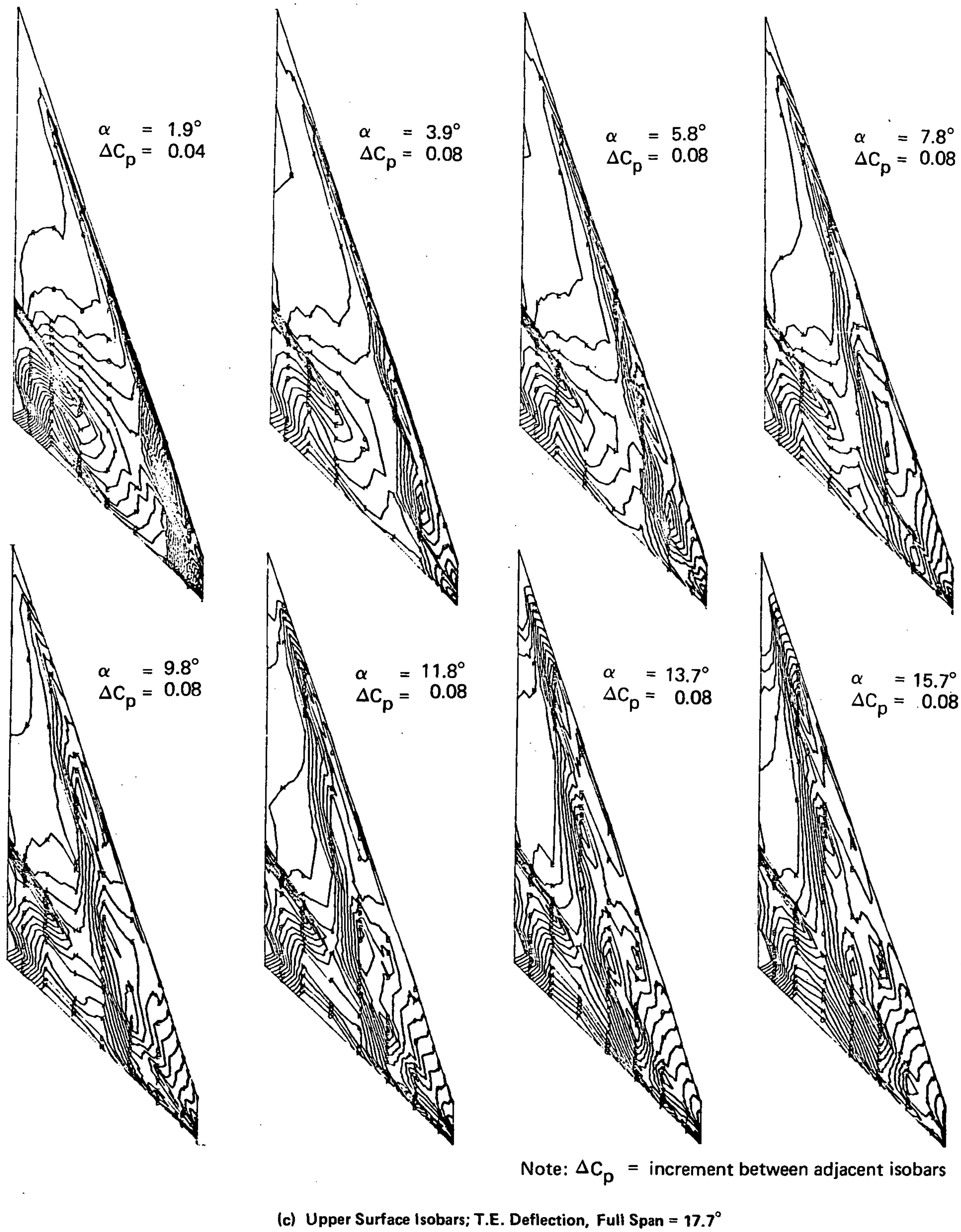
Figure 28. — Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars; T.E. Deflection, Full Span = 4.1°

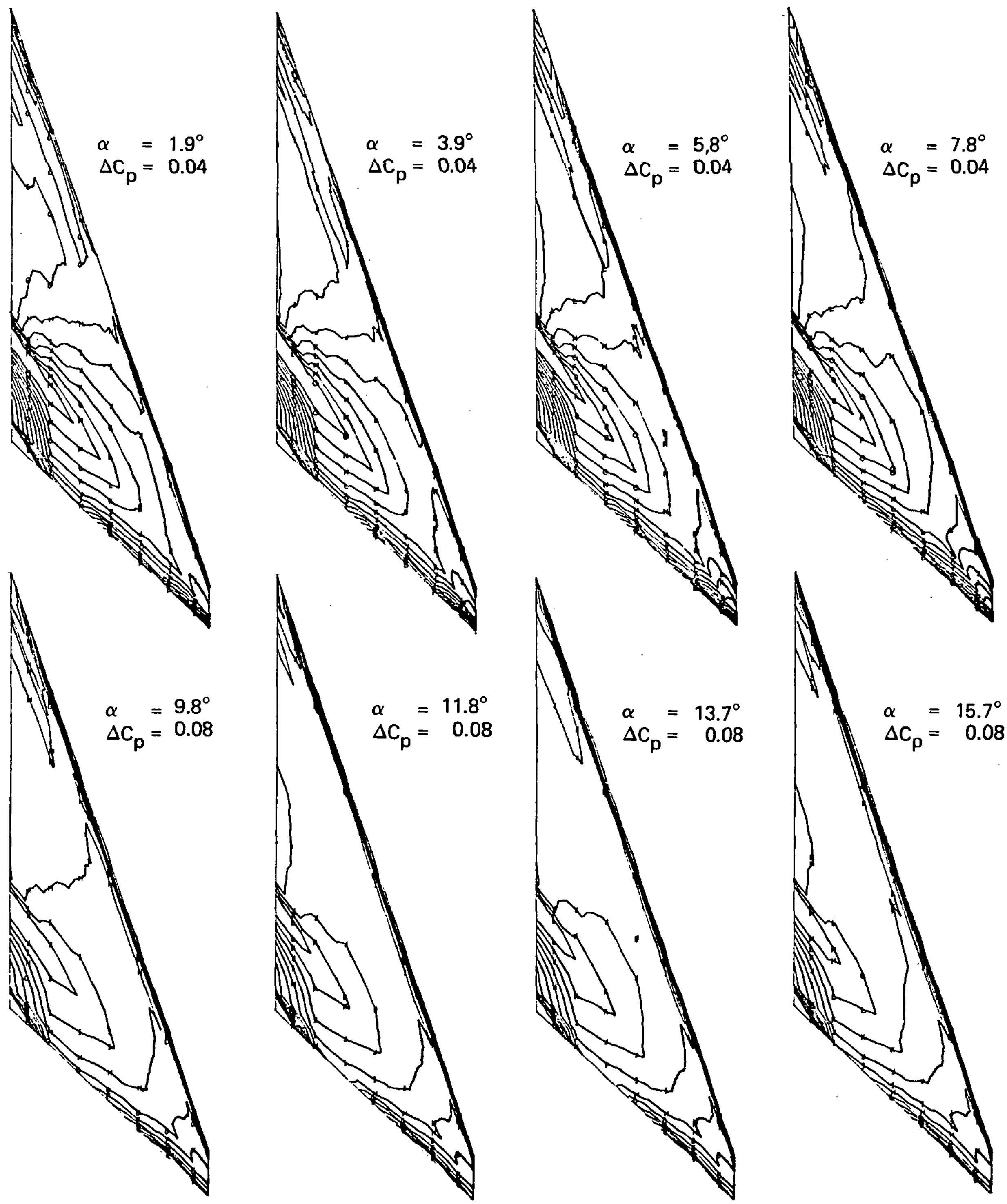
Figure 28.-(Continued)



Note: ΔC_p = increment between adjacent isobars

(c) Upper Surface Isobars; T.E. Deflection, Full Span = 17.7°

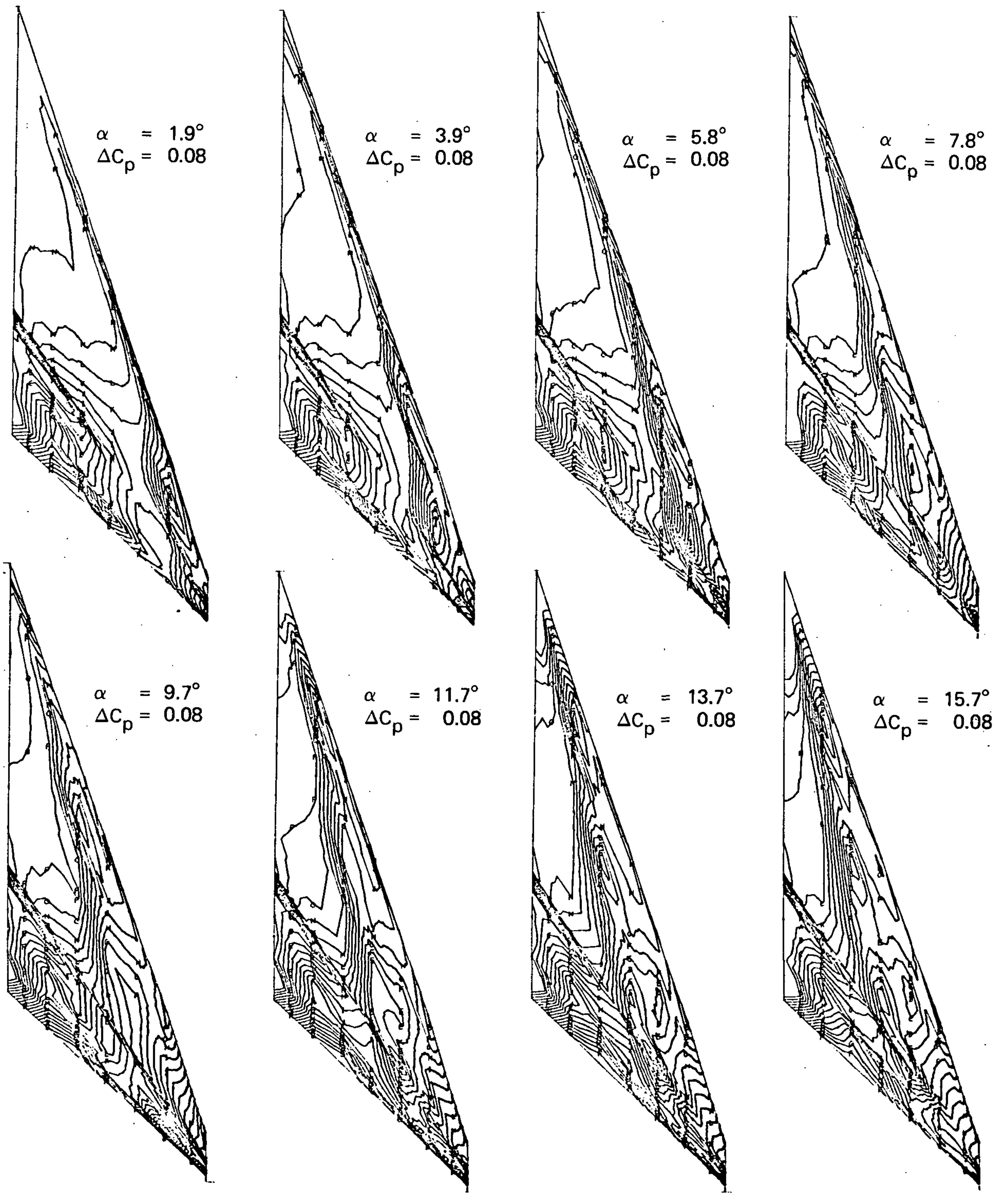
Figure 28.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(d) Lower Surface Isobars; T.E. Deflection, Full Span = 17.7°

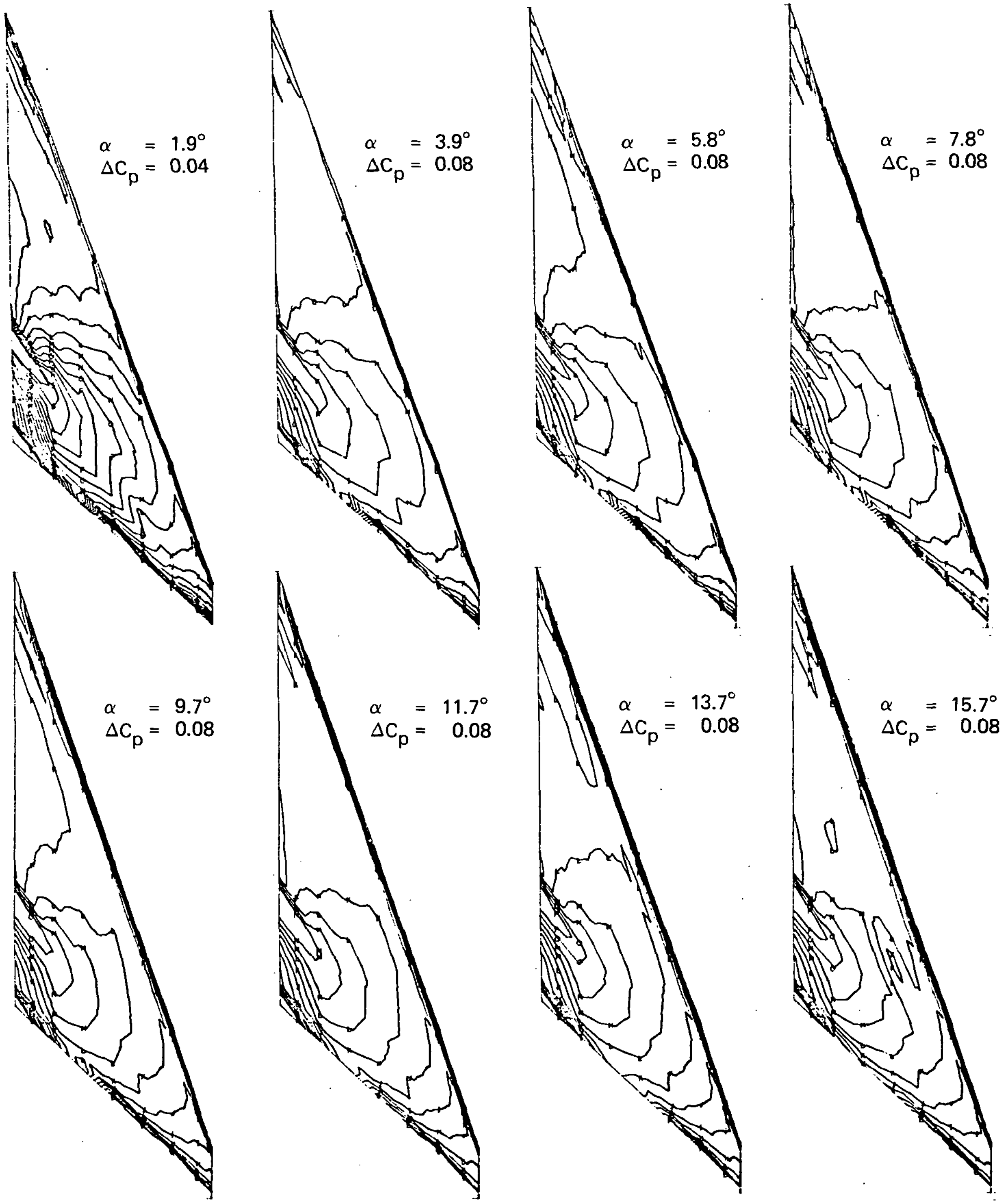
Figure 28.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(e) Upper Surface Isobars; T.E. Deflection, Full Span = 30.2°

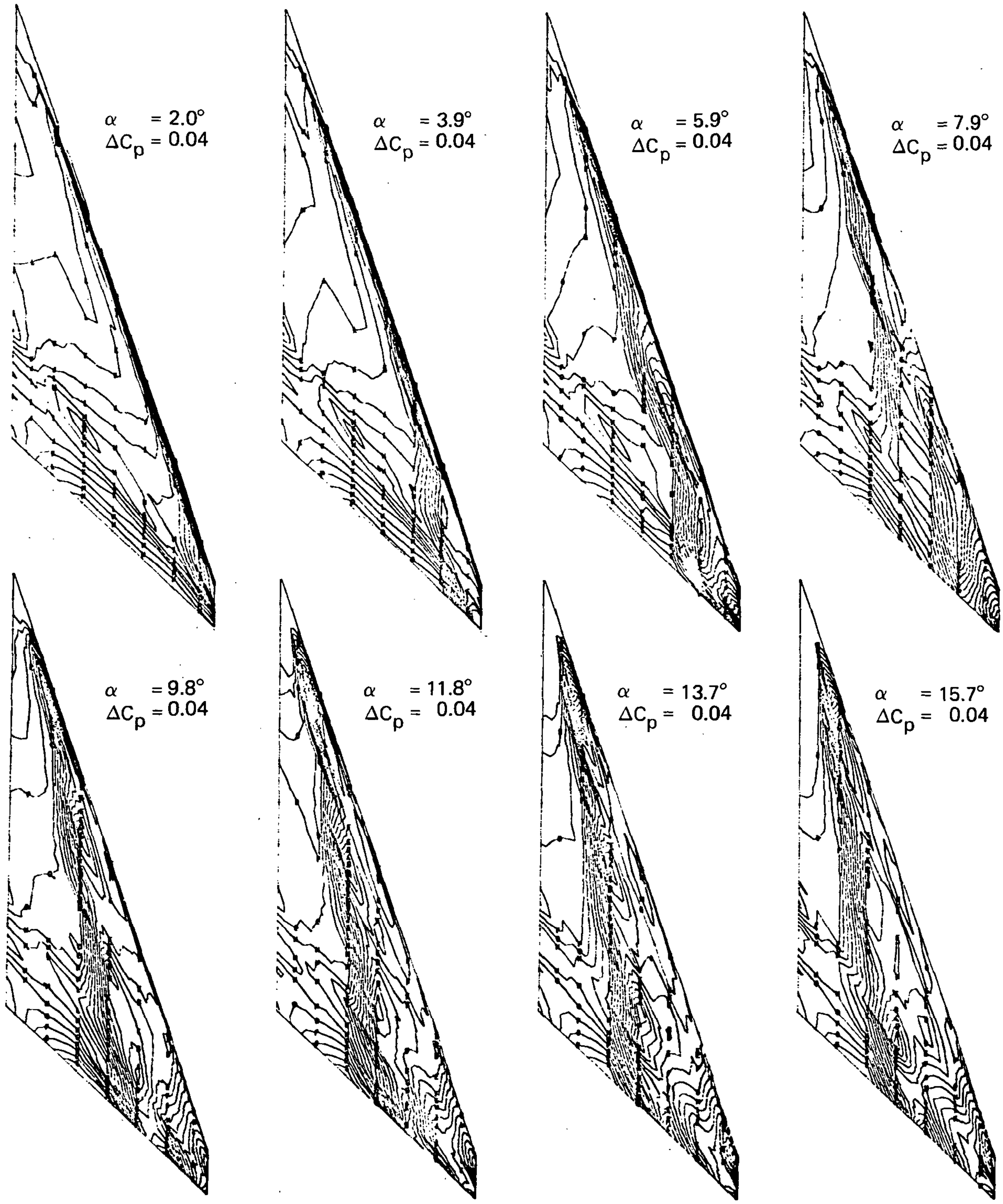
Figure 28.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(f) Lower Surface Isobars; T.E. Deflection, Full Span = 30.2°

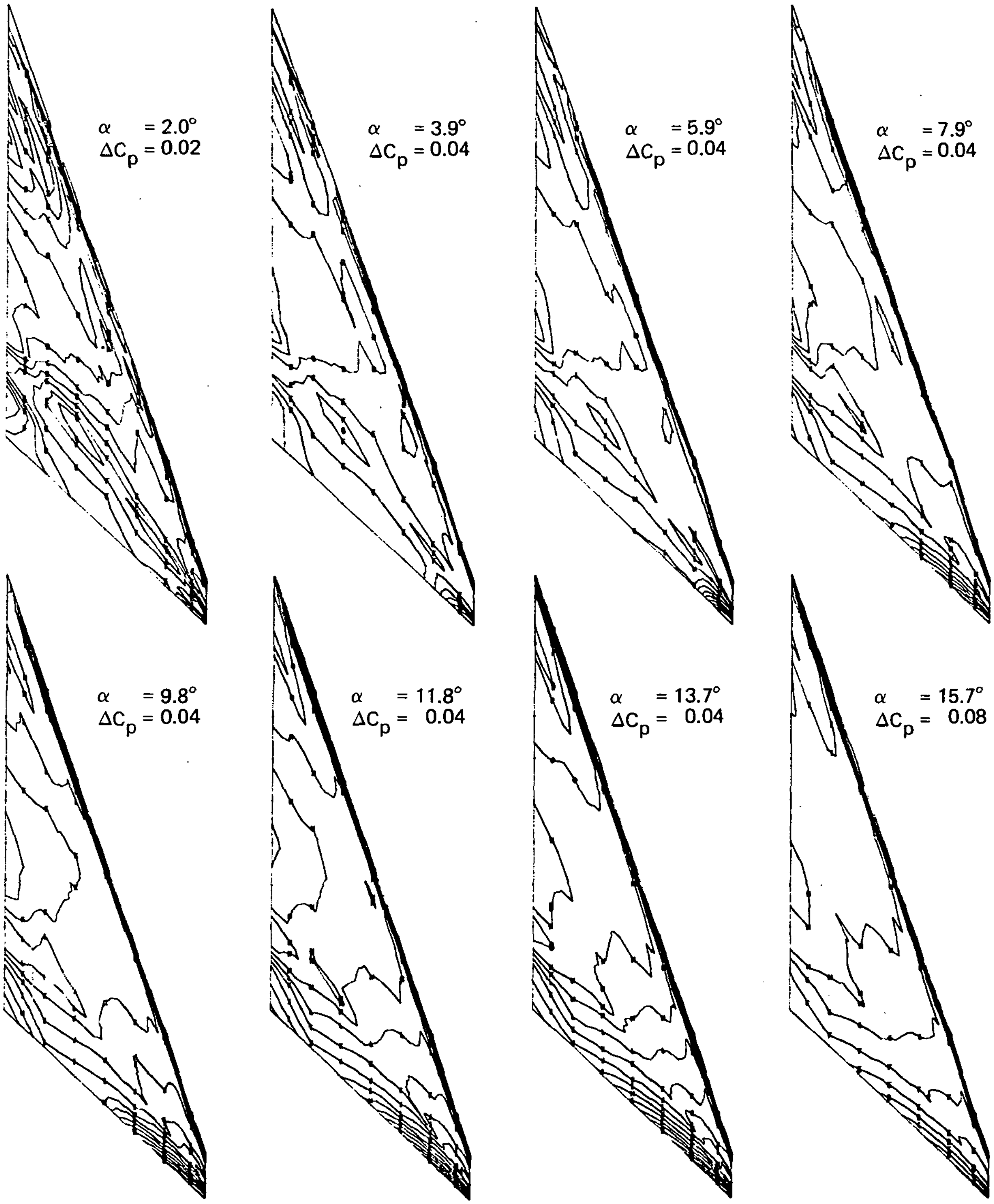
Figure 28.–(Concluded)



Note: ΔC_p = increment between adjacent isobars

(a) Upper Surface Isobars; T.E. Deflection, Full Span = 4.1°

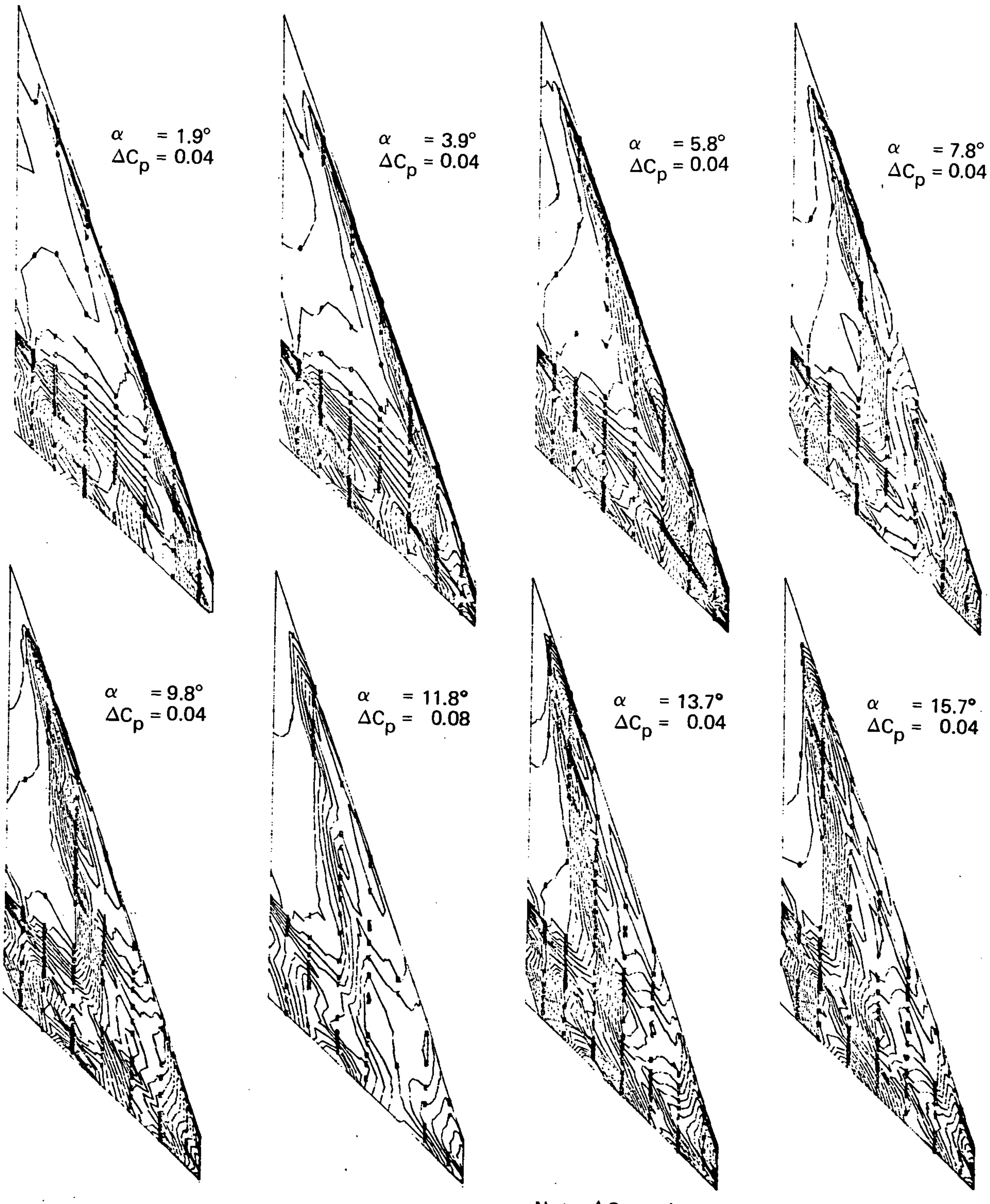
Figure 29. — Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 1.05



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars; T.E. Deflection, Full Span = 4.1°

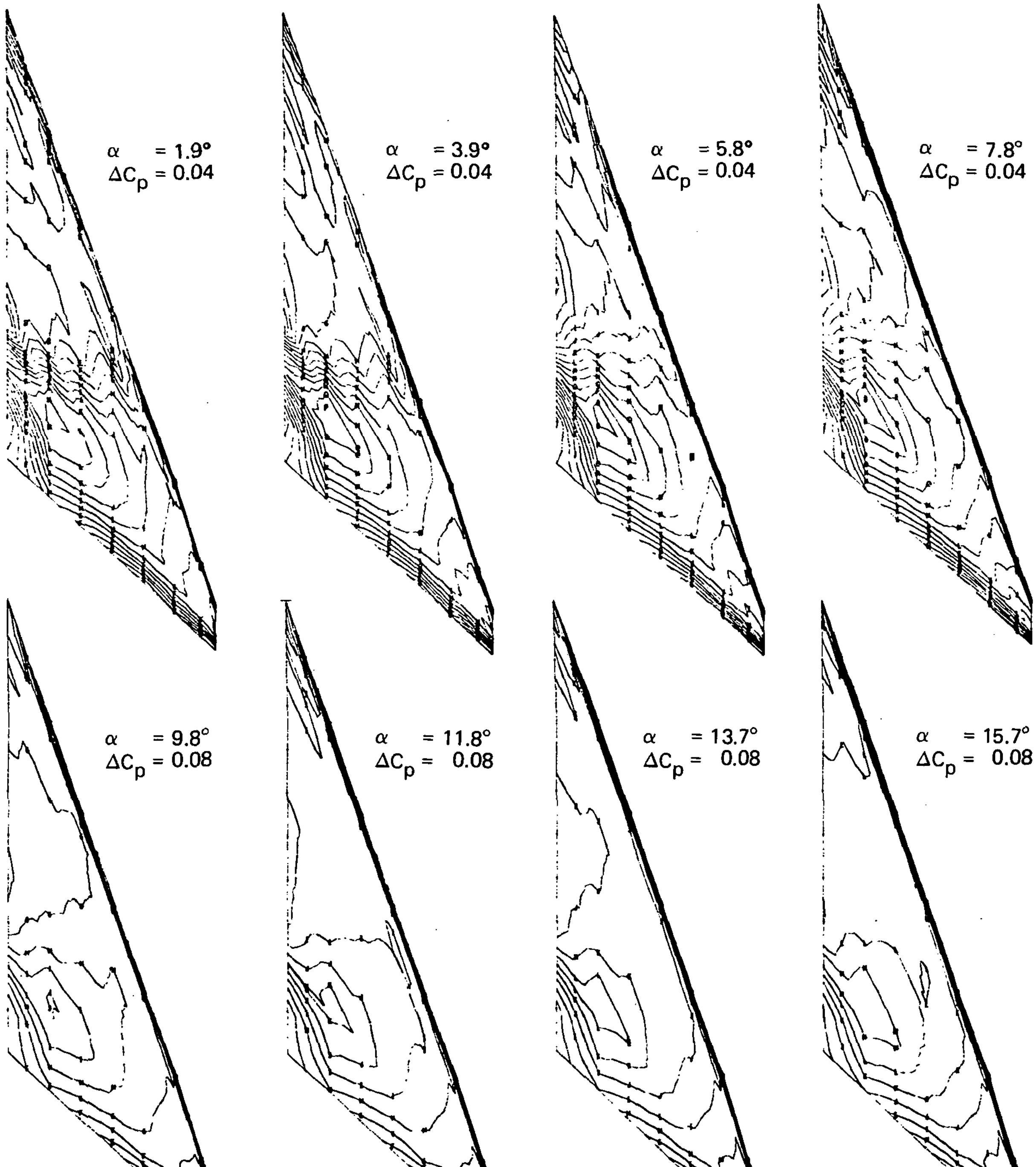
Figure 29.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(c) Upper Surface Isobars; T.E. Deflection, Full Span = 17.7°

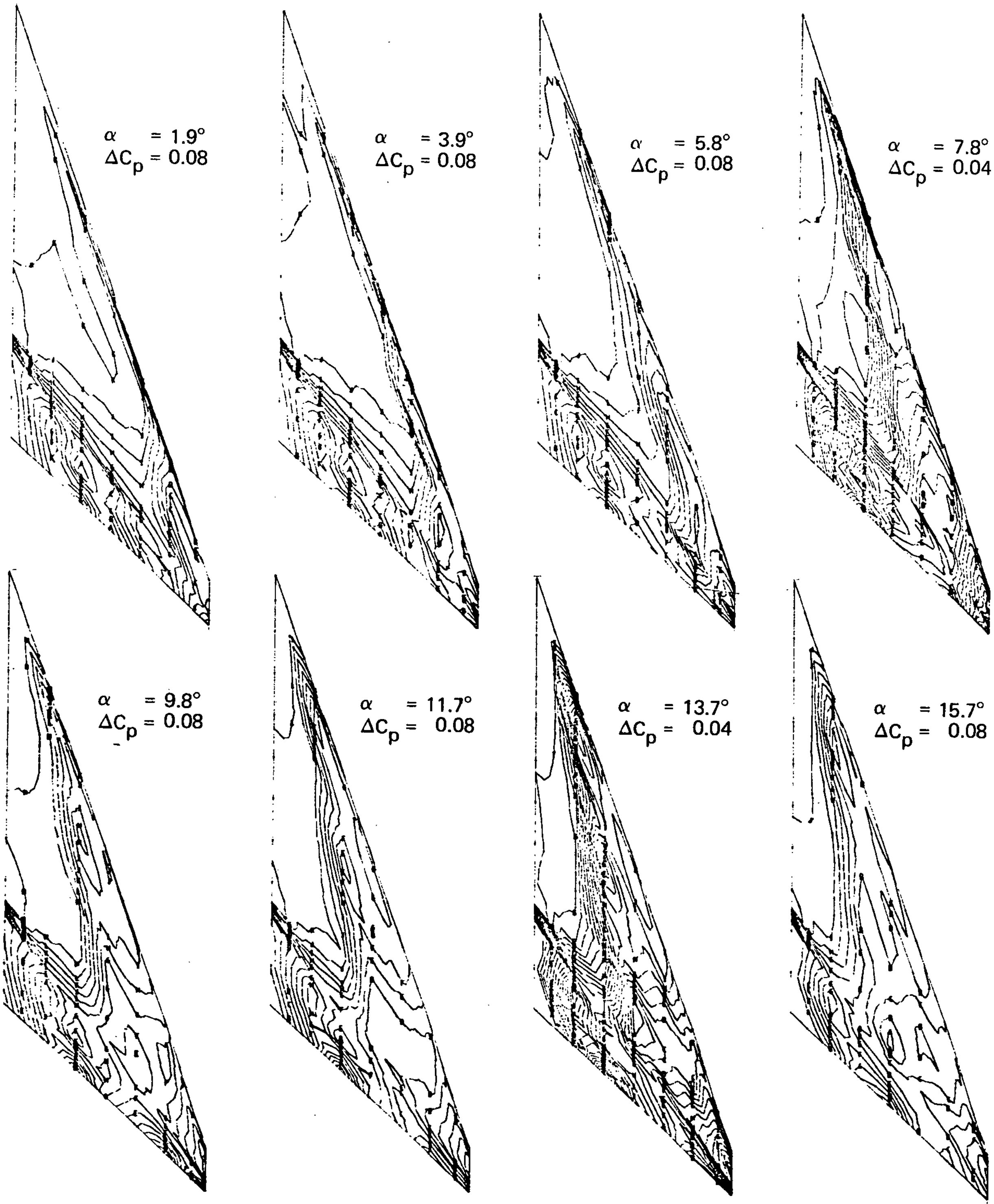
Figure 29.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(d) Lower Surface Isobars; T.E. Deflection, Full Span = 17.7°

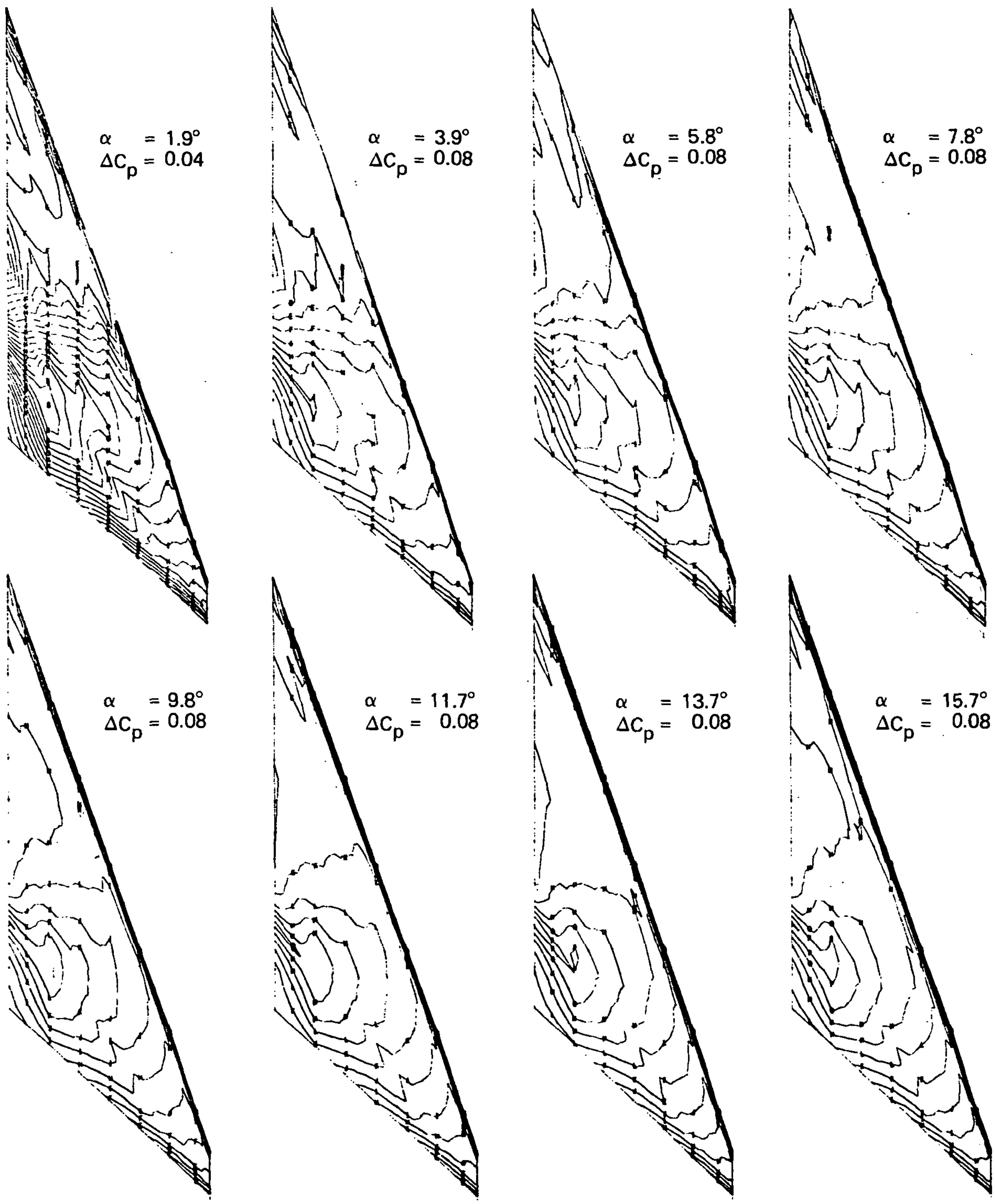
Figure 29.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(e) Upper Surface Isobars; T.E. Deflection, Full Span = 30.2°

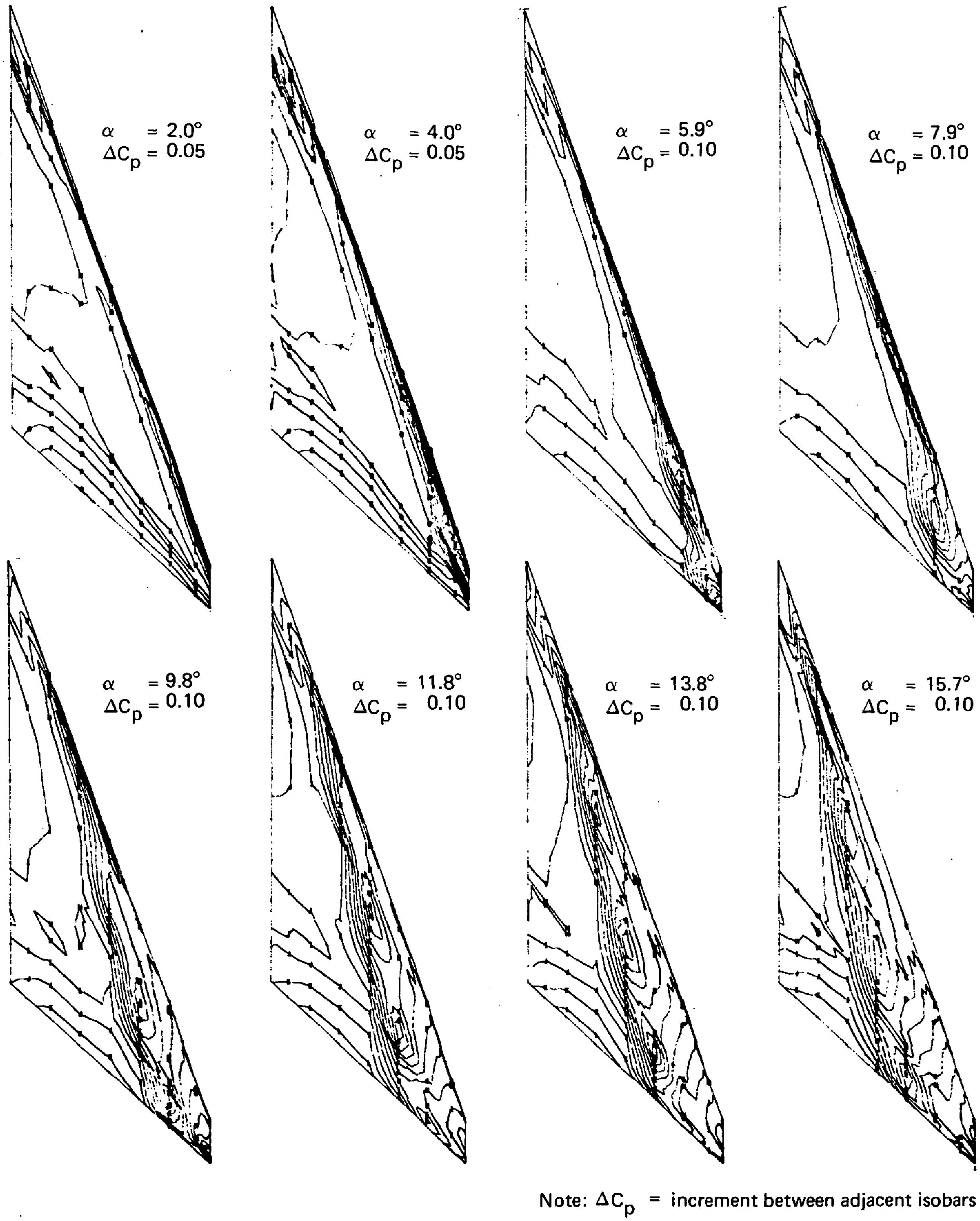
Figure 29.–(Continued)



Note: ΔC_p = increment between adjacent isobars

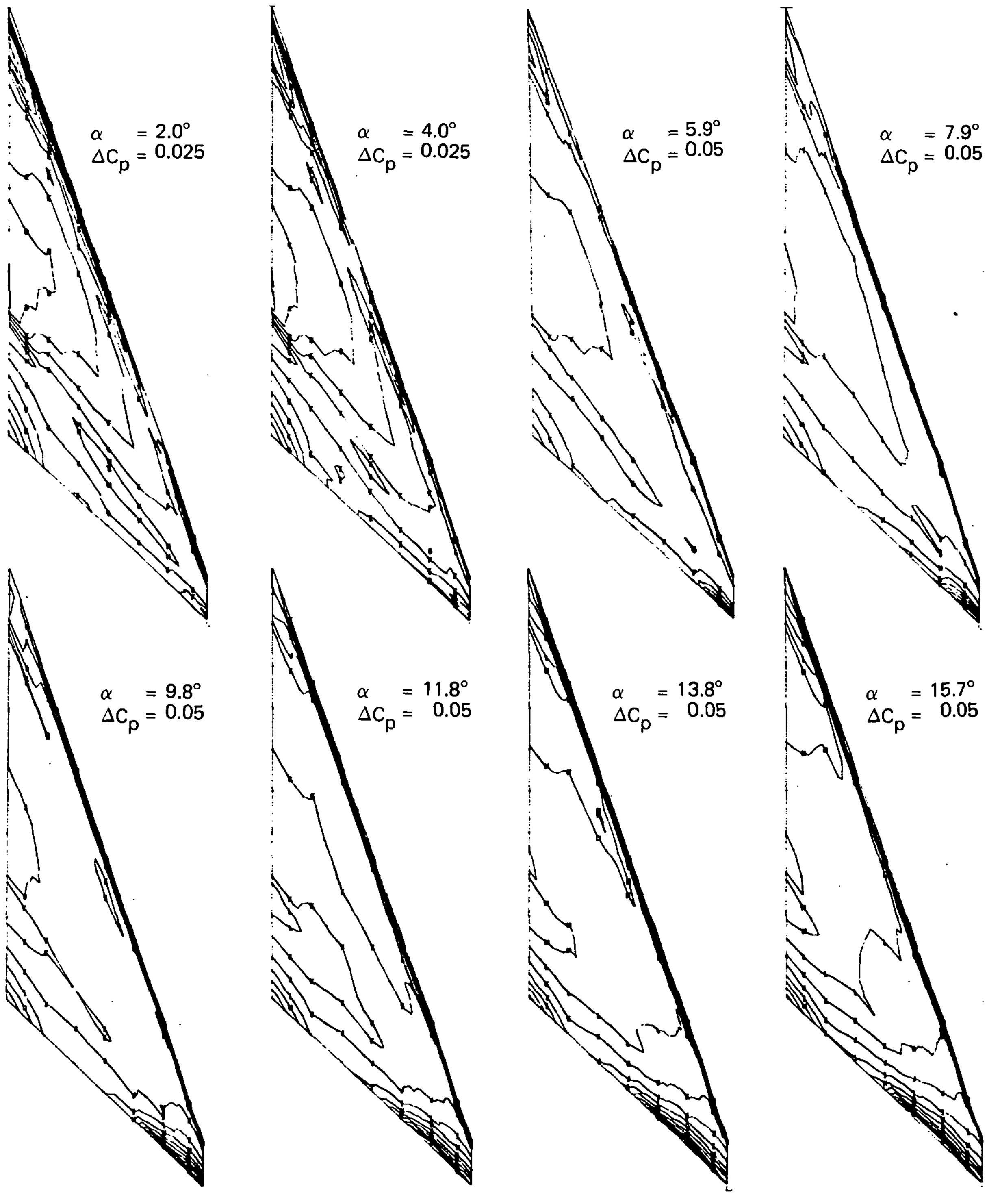
(f) Lower Surface Isobars; T.E. Deflection, Full Span = 30.2°

Figure 29.– (Concluded)



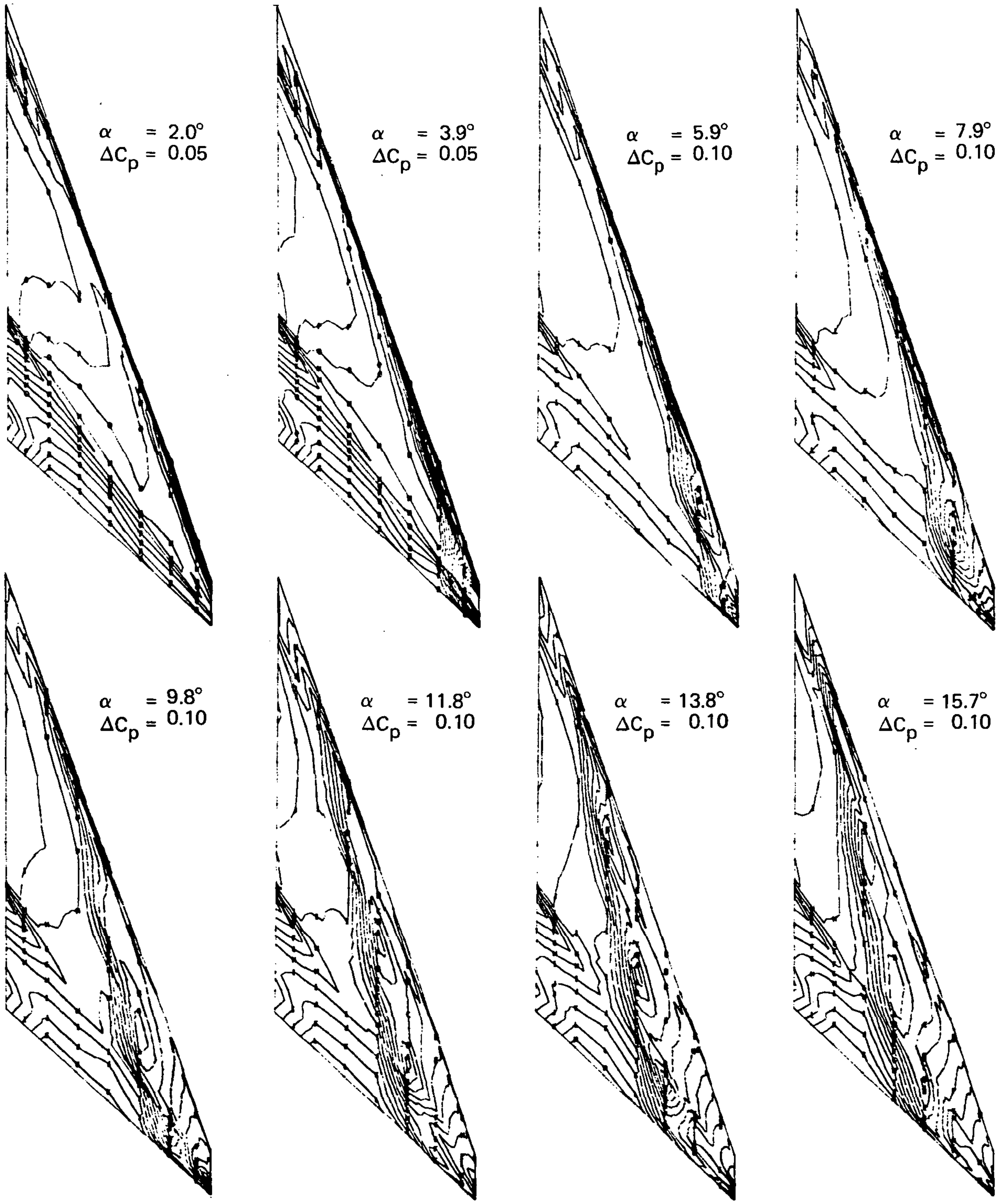
(a) Upper Surface Isobars; T.E. Deflection, Full Span = 4.1°

Figure 30.— Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 5.1°; M = 0.85



(b) Lower Surface Isobars; T.E. Deflection, Full Span = 4.1°

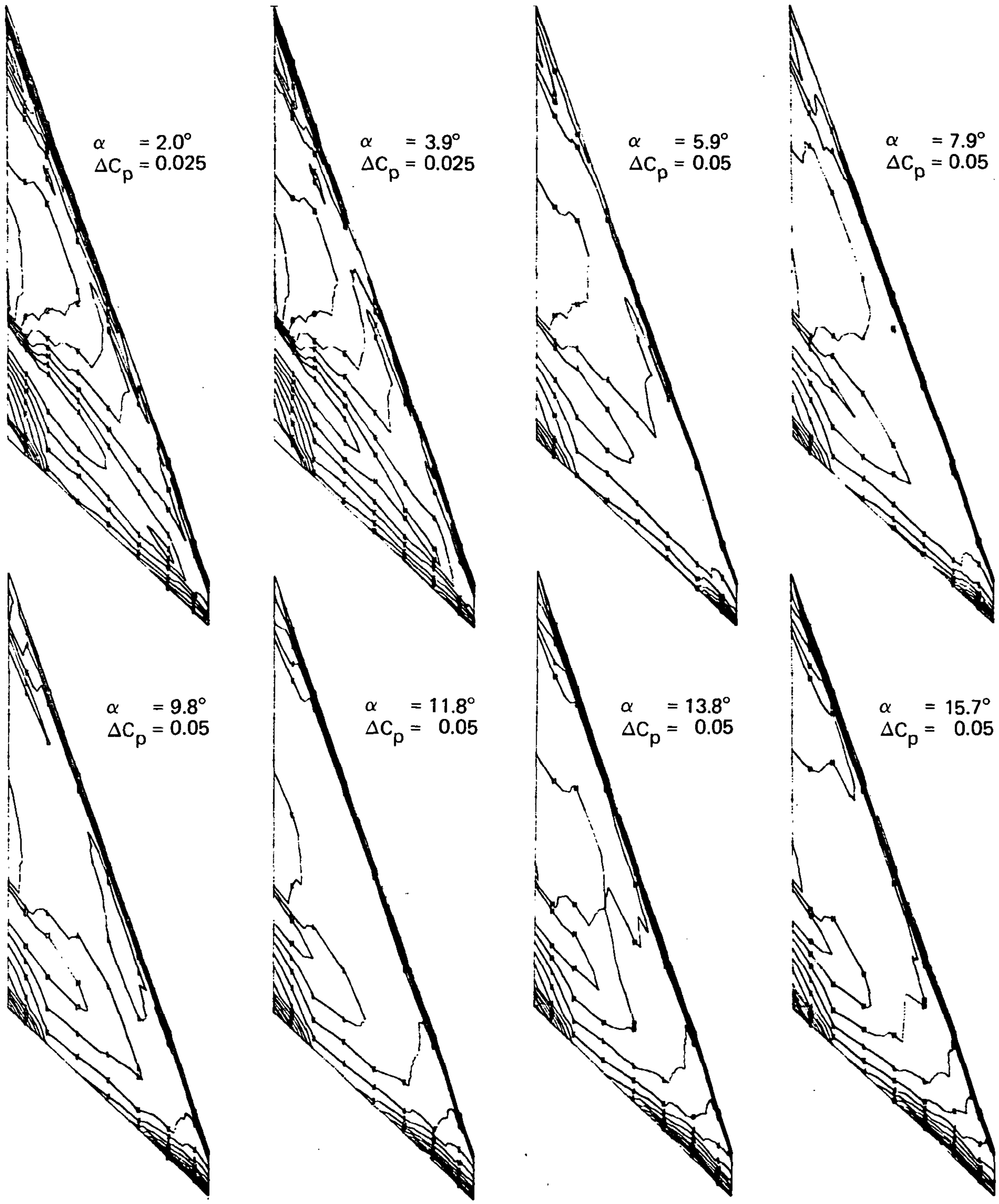
Figure 30.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(c) Upper Surface Isobars; T.E. Deflection, Full Span = 8.3°

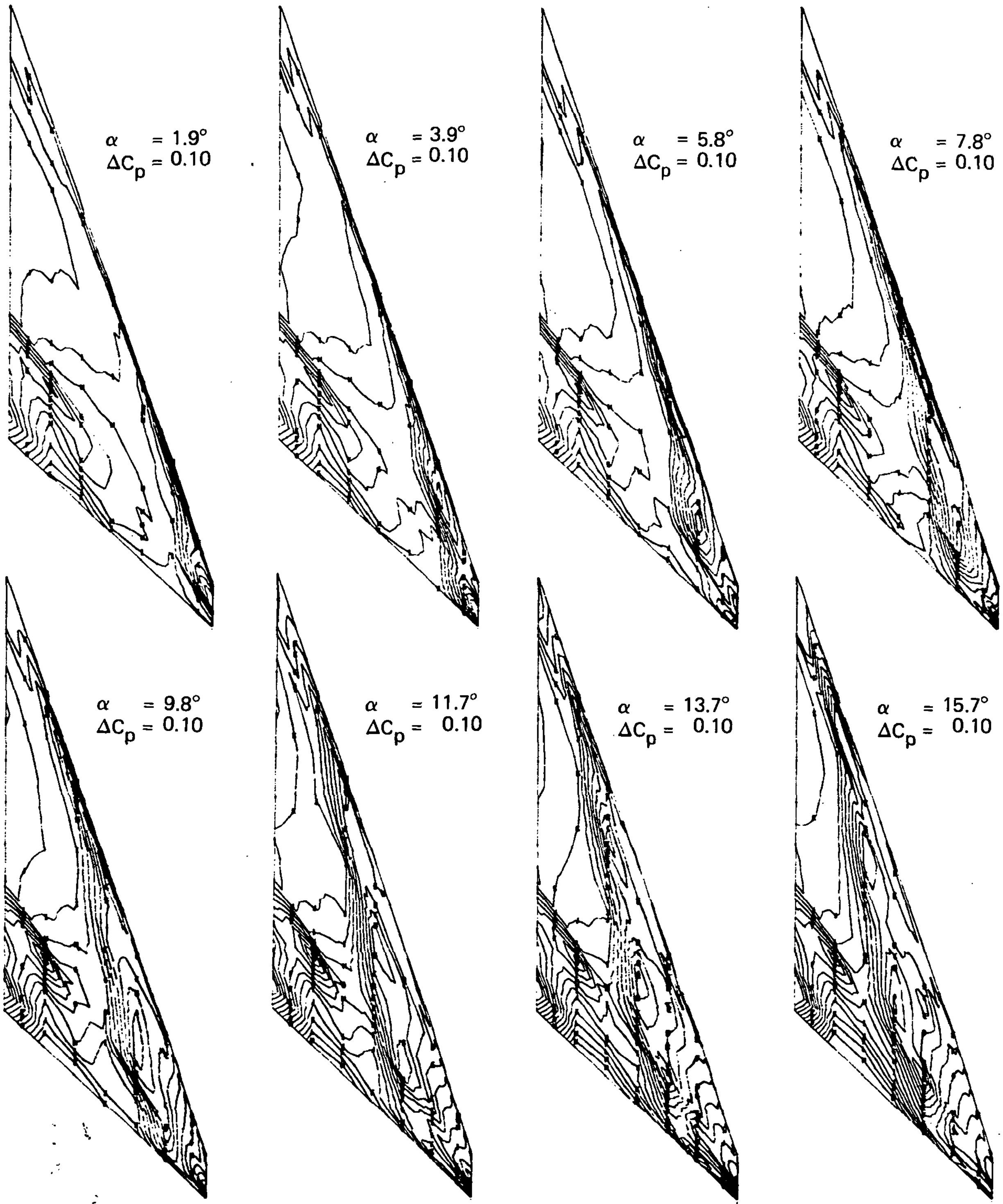
Figure 30.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(d) Lower Surface Isobars; T.E. Deflection, Full Span = 8.3°

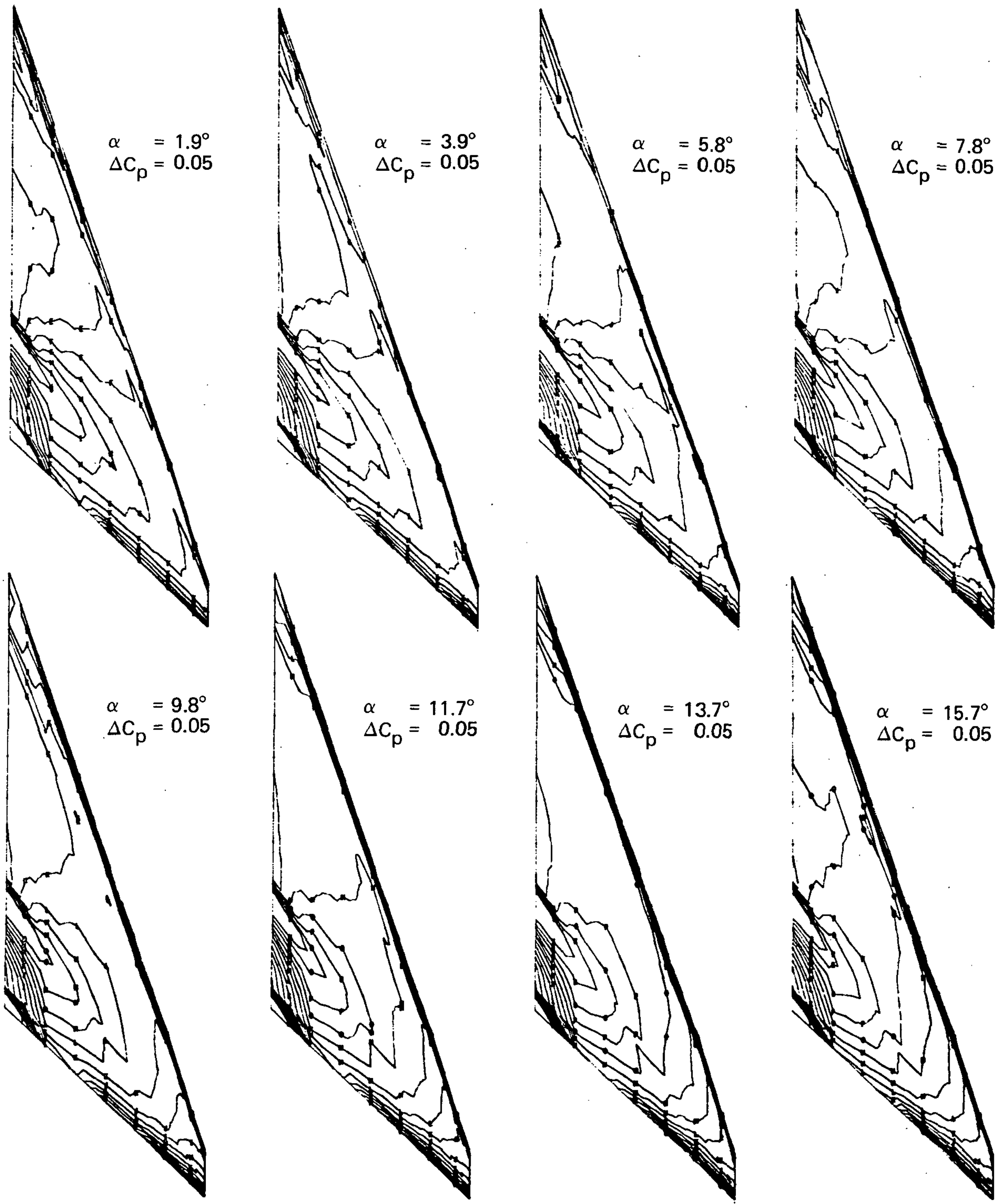
Figure 30.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(e) Upper Surface Isobars; T.E. Deflection, Full Span = 17.7°

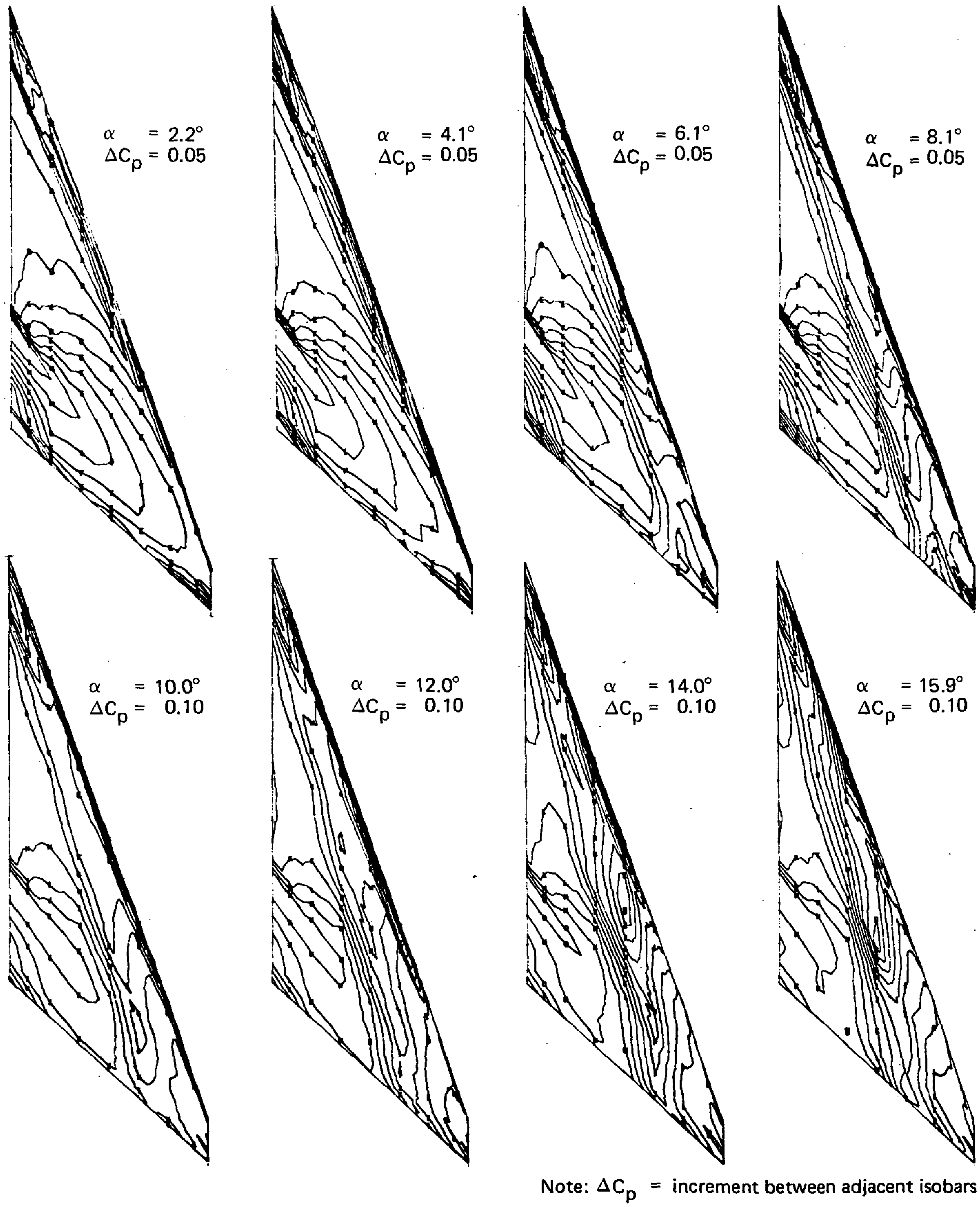
Figure 30.–(Continued)



Note: ΔC_p = increment between adjacent isobars

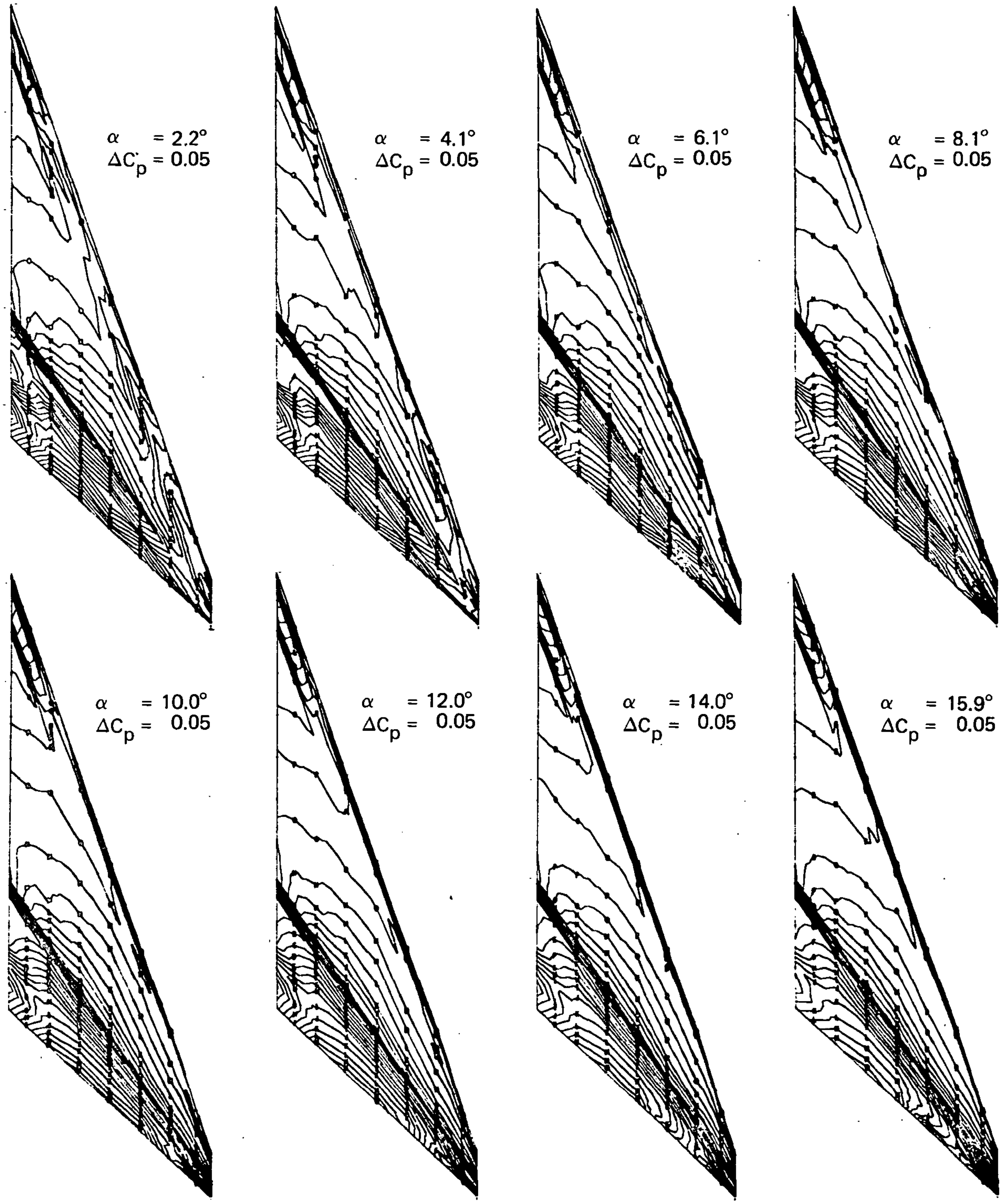
(f) Lower Surface Isobars; T.E. Deflection, Full Span = 17.7°

Figure 30.–(Concluded)



(a) Upper Surface Isobars; T.E. Deflection, Full Span = -17.7°

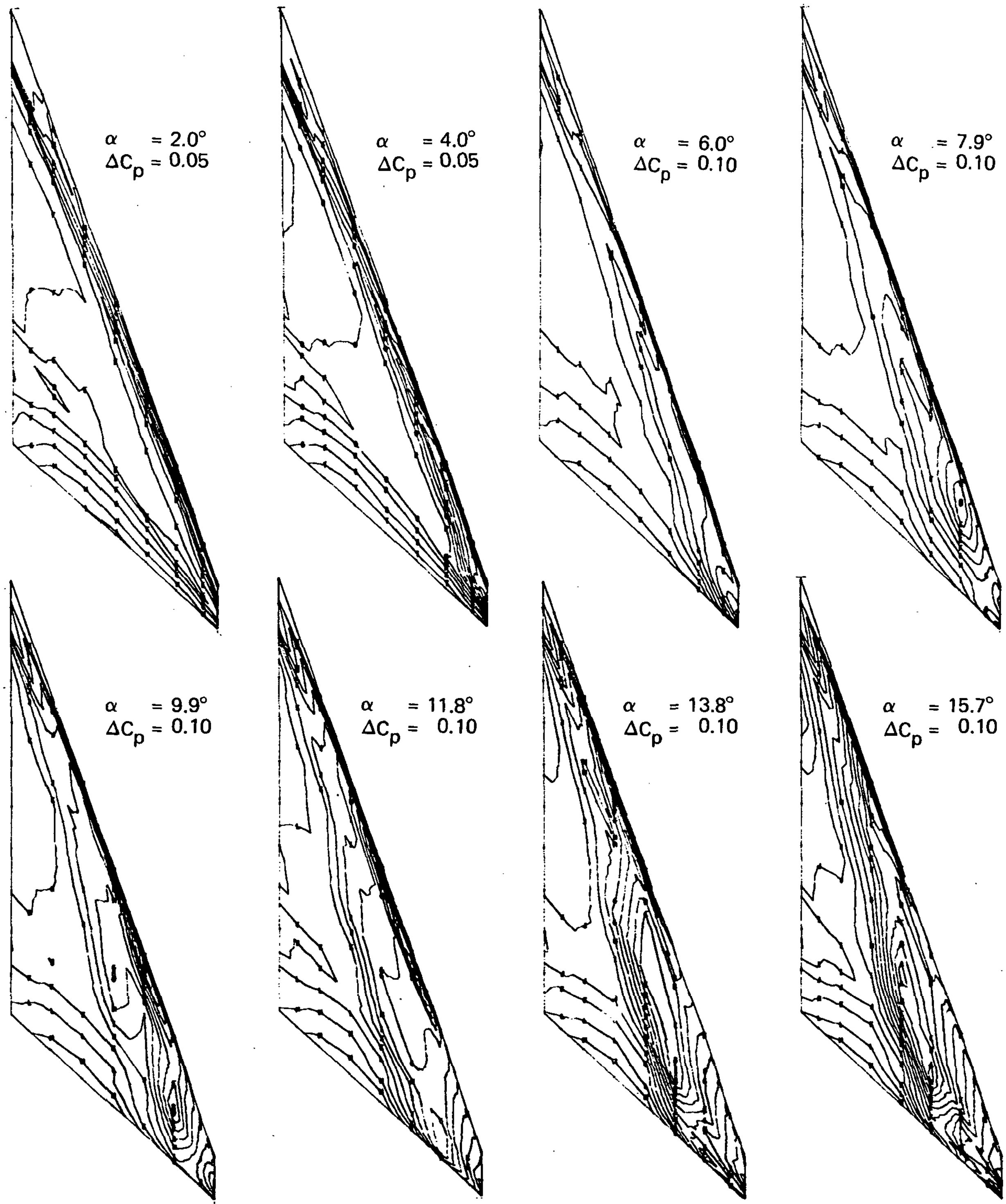
Figure 31.– Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 12.8°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars; T.E. Deflection, Full Span = -17.7°

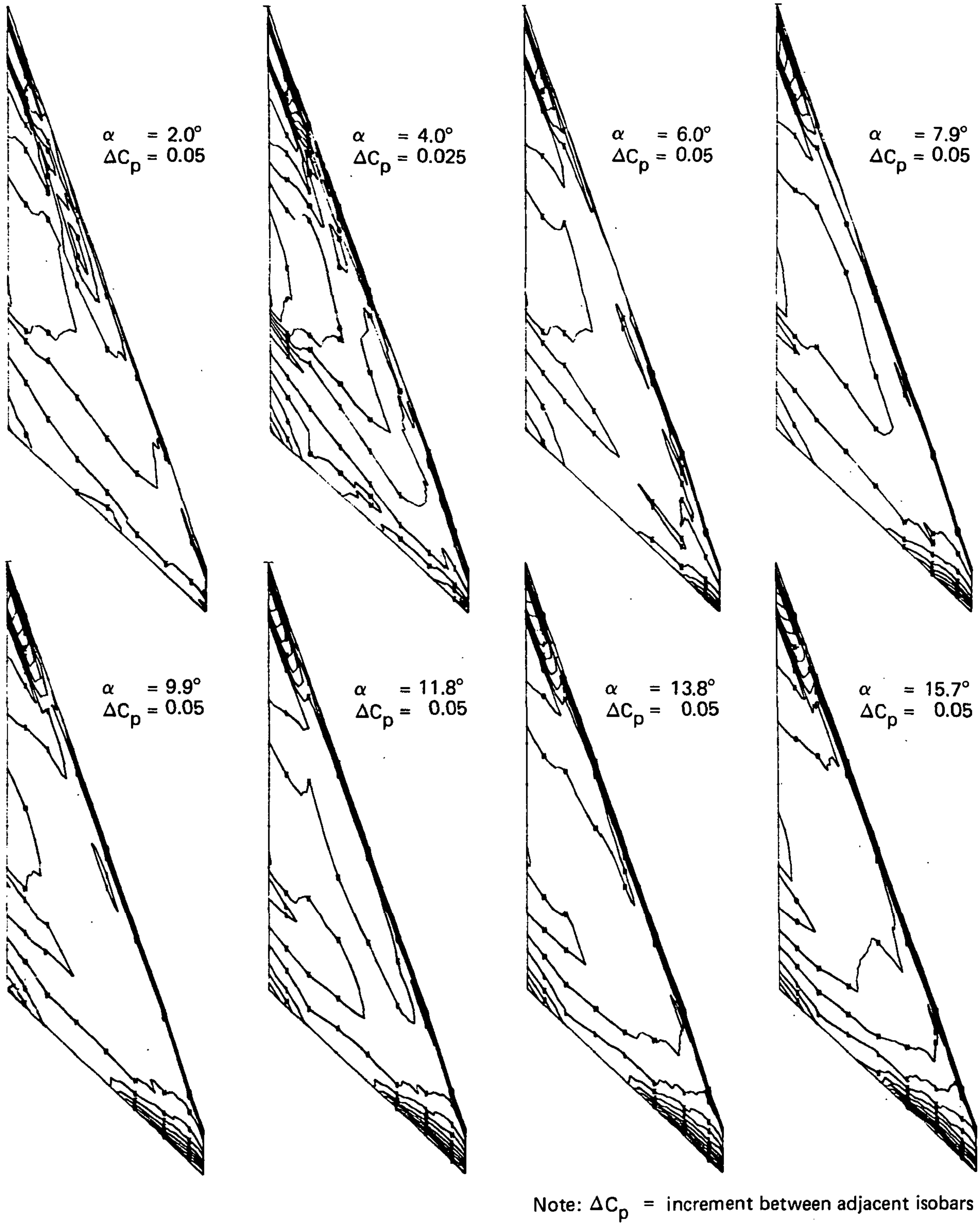
Figure 31.–(Continued)



Note: ΔC_p = increment between adjacent isobars

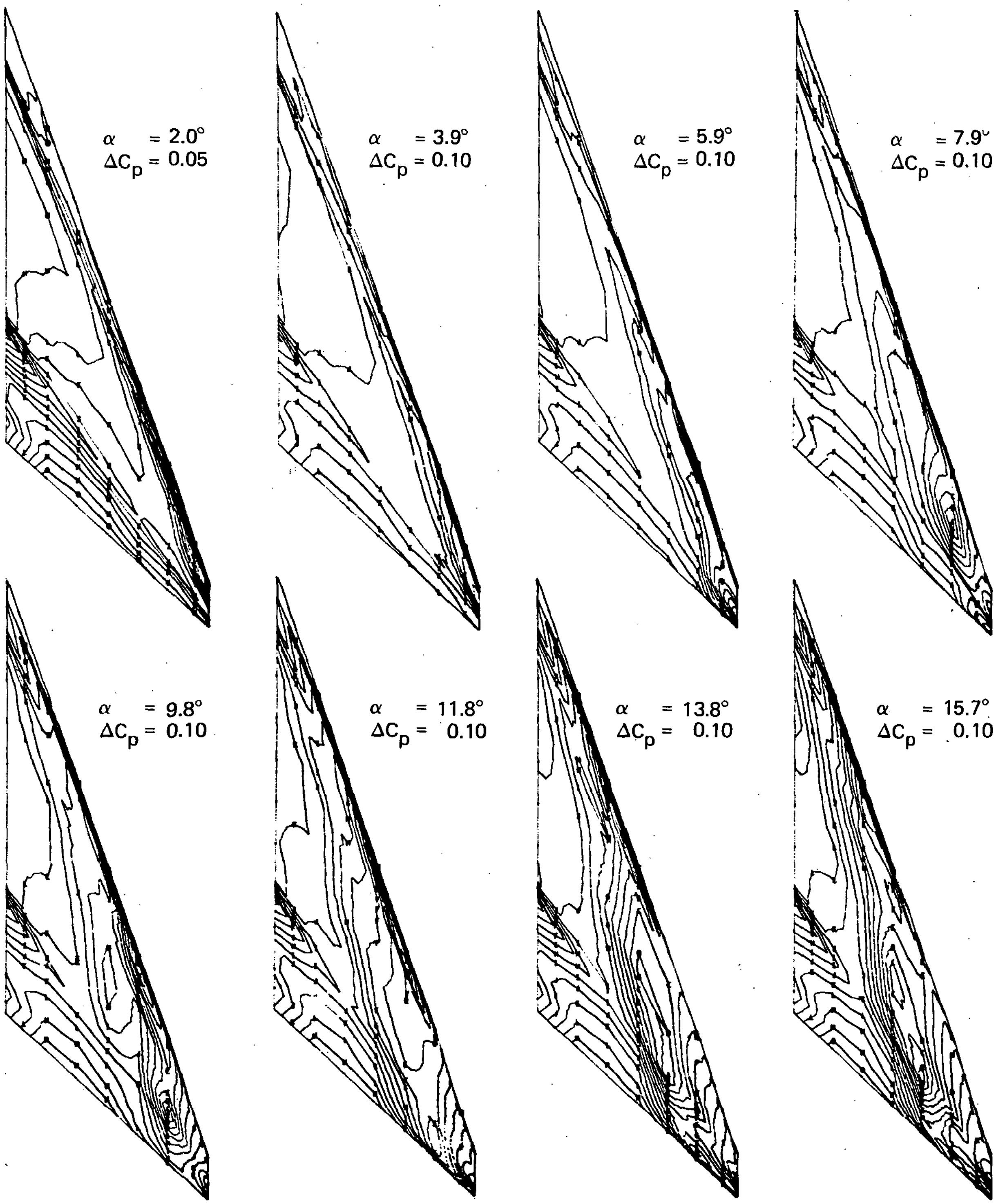
(c) Upper Surface Isobars; T.E. Deflection, Full Span = 4.1°

Figure 31.–(Continued)



(d) Lower Surface Isobars; T.E. Deflection, Full Span = 4.1°

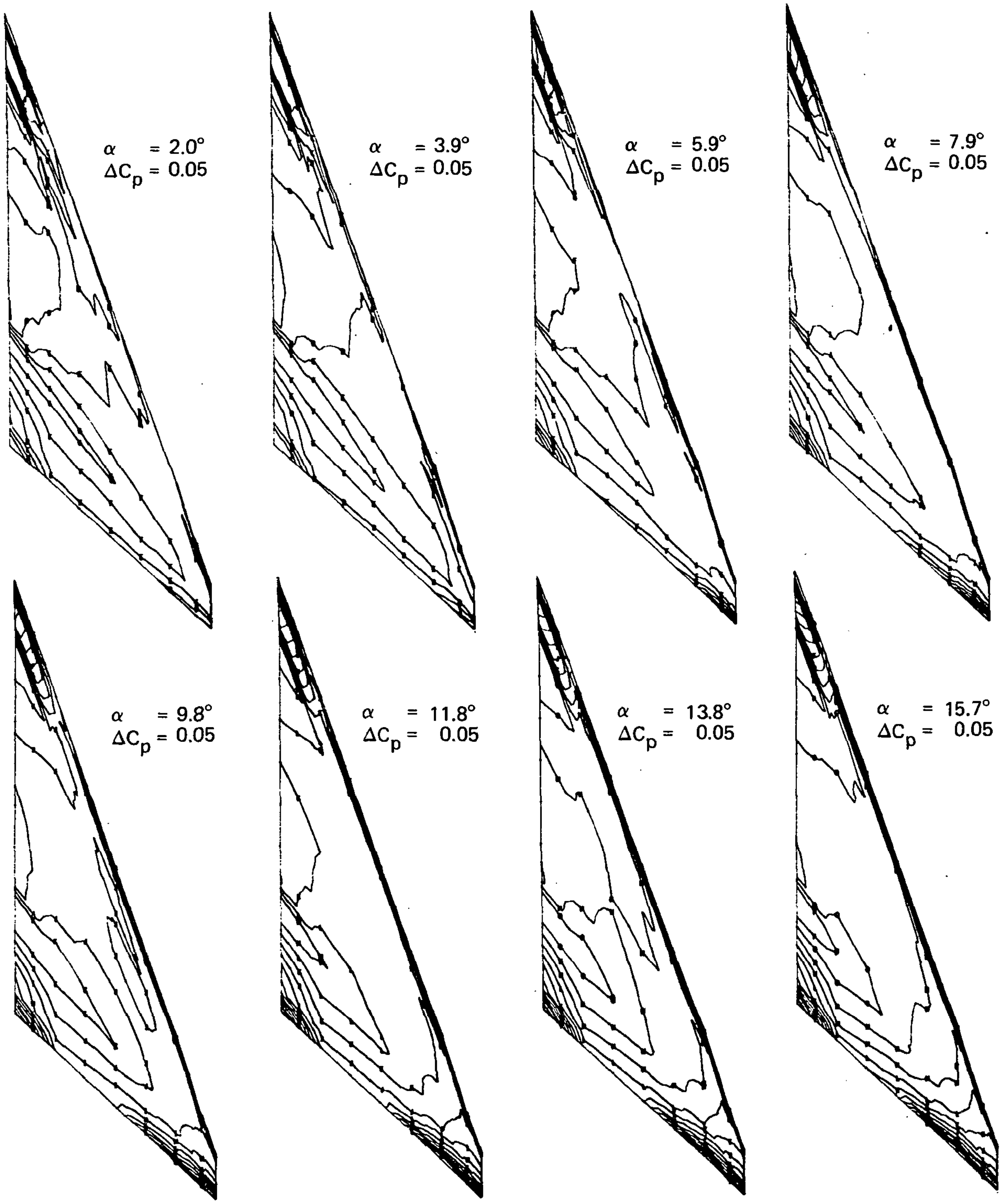
Figure 31.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(e) Upper Surface Isobars; T.E. Deflection, Full Span = 8.3°

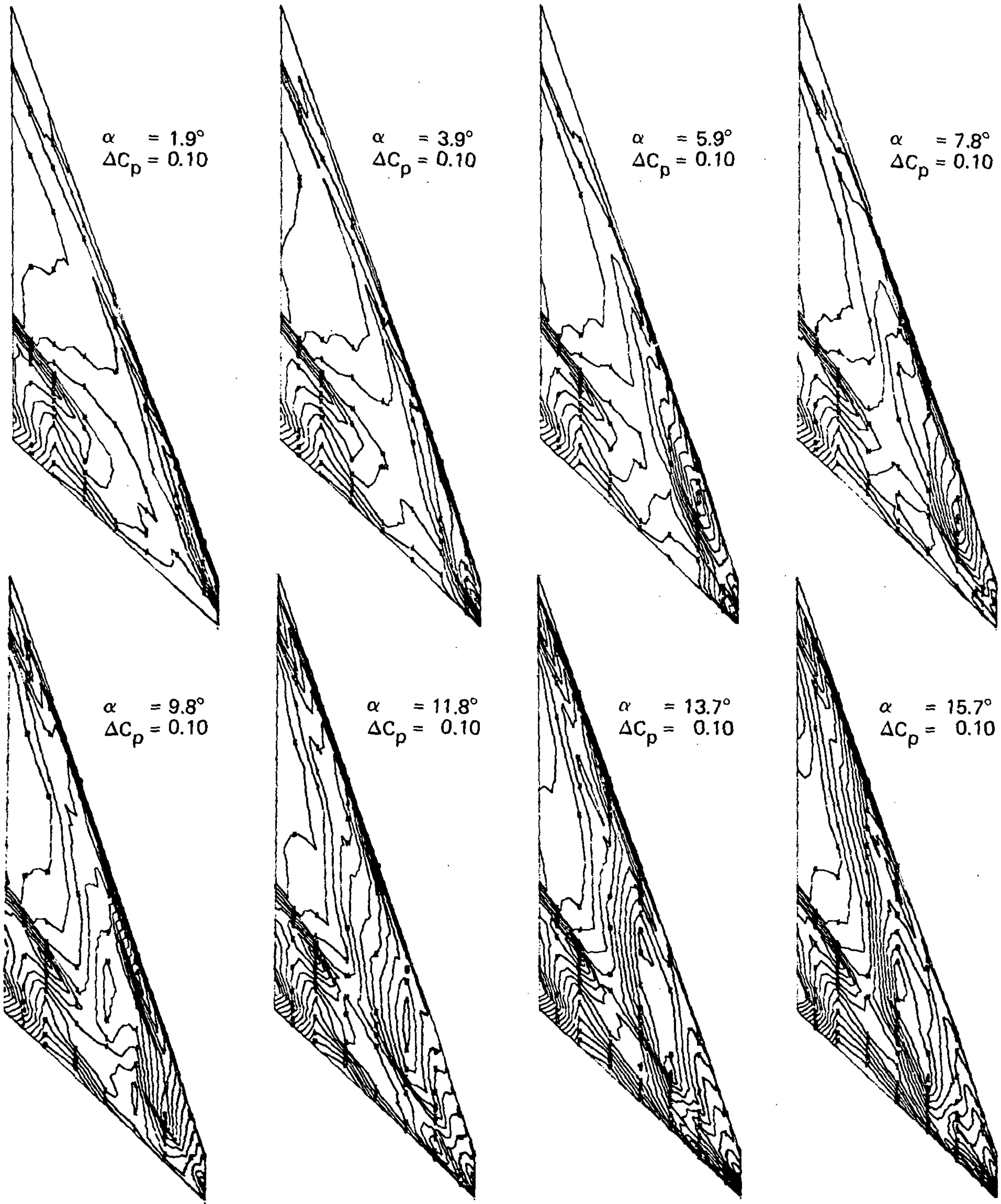
Figure 31.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(f) Lower Surface Isobars; T.E. Deflection, Full Span = 8.3°

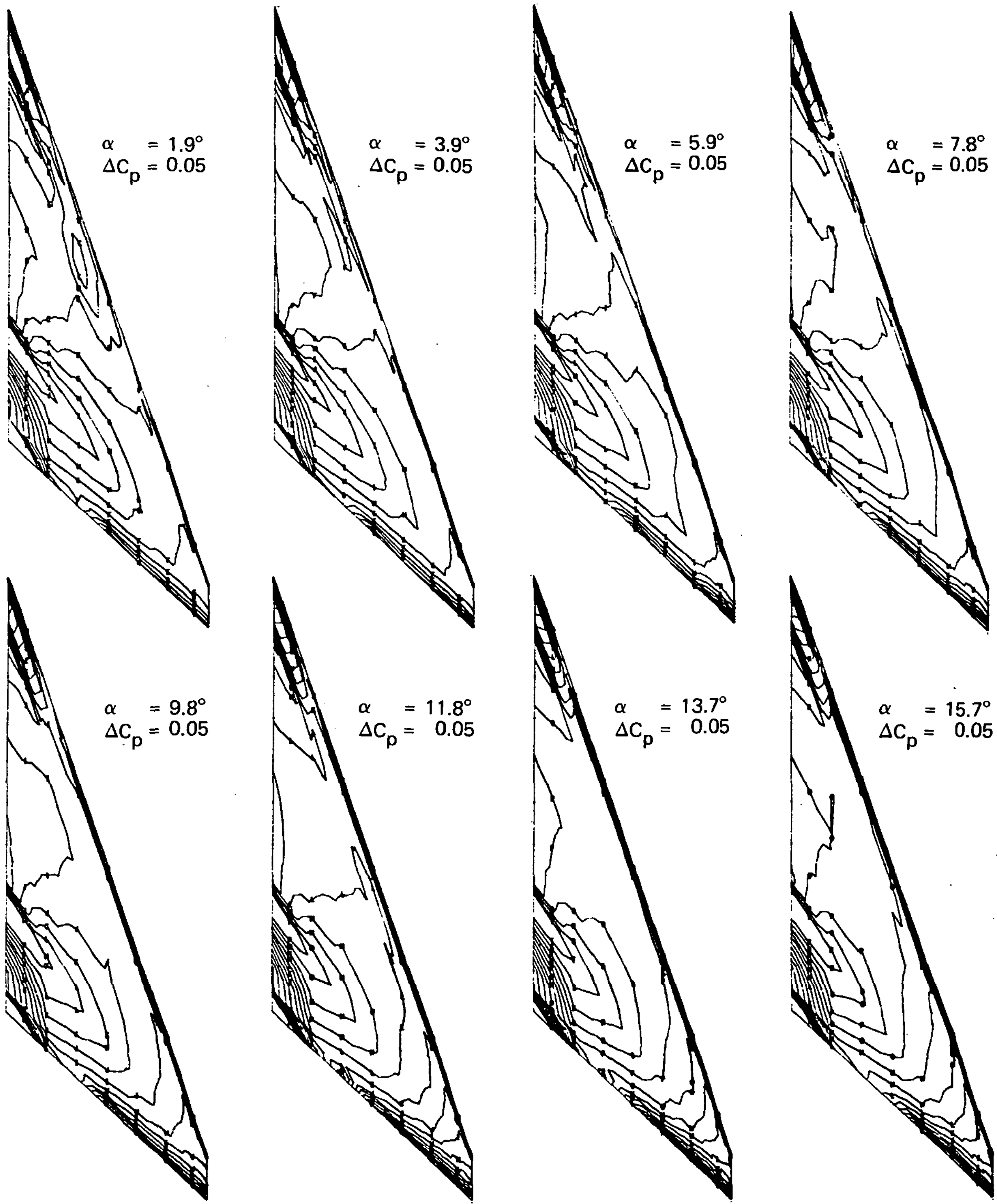
Figure 31.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(g) Upper Surface Isobars; T.E. Deflection, Full Span = 17.7°

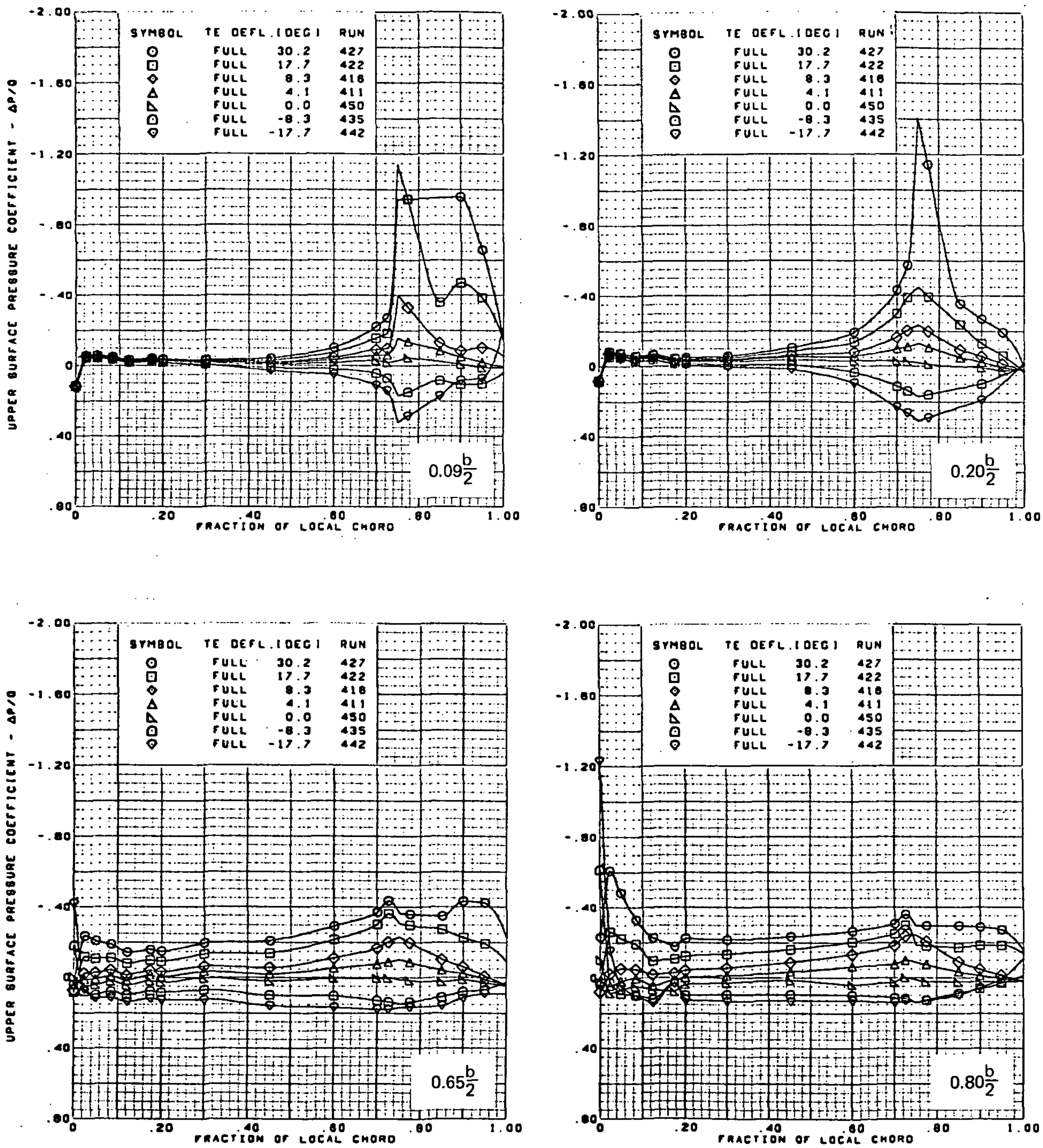
Figure 31.–(Continued)



Note: ΔC_p = increment between adjacent isobars

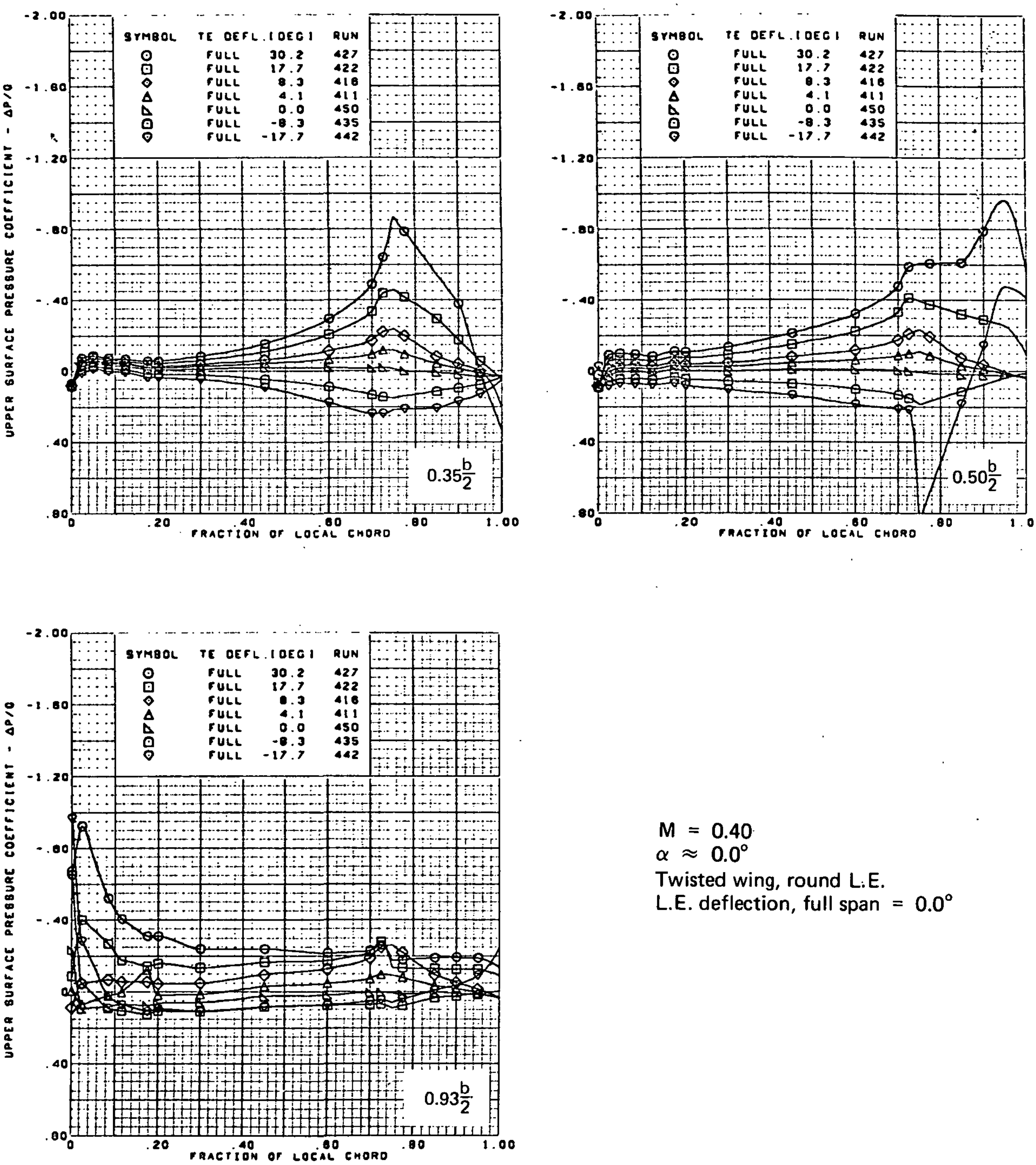
(h) Lower Surface Isobars; T.E. Deflection, Full Span = 17.7°

Figure 31.–l (Concluded)



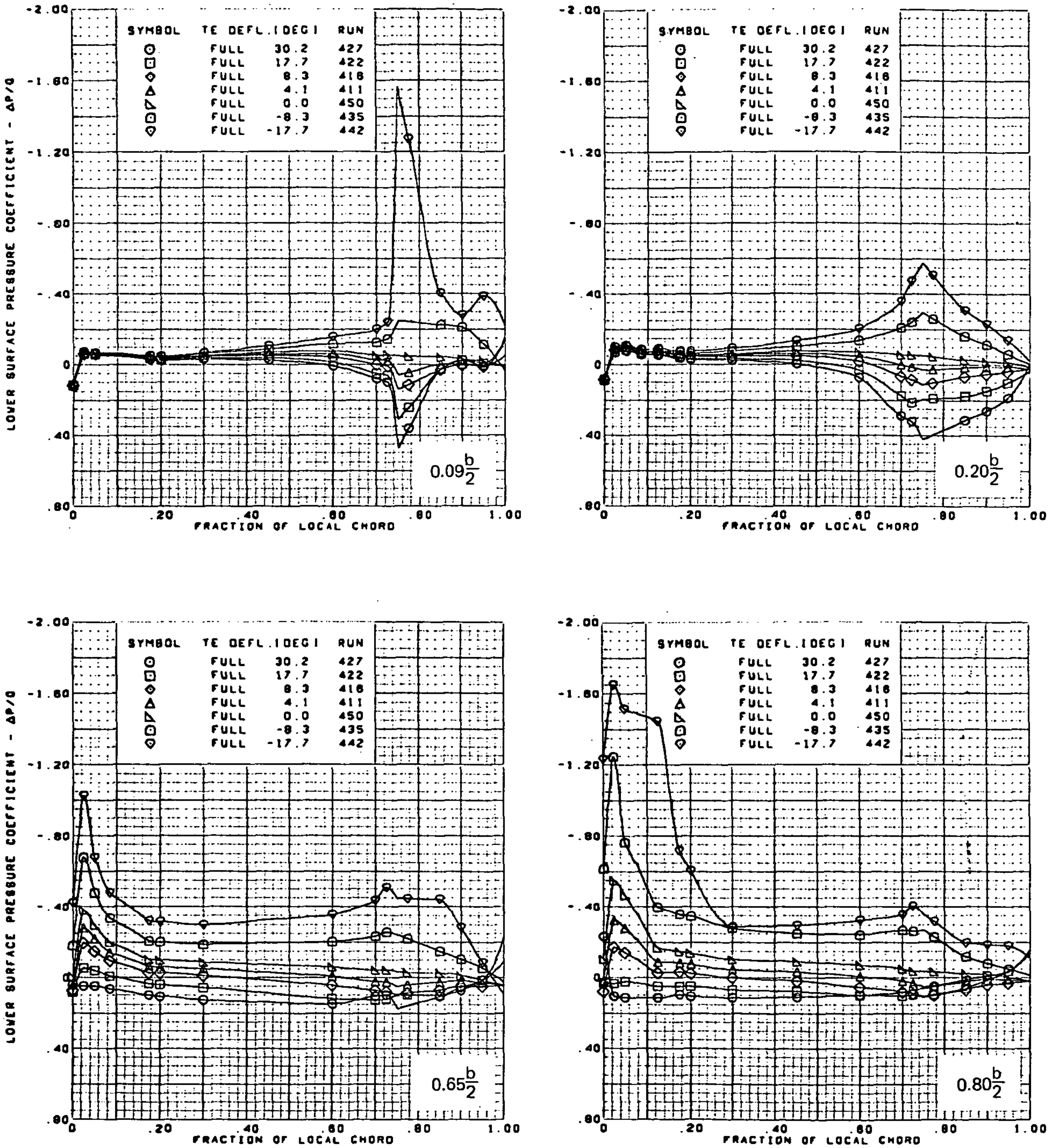
(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 32.–Wing Experimental Data—Effect of Full Span T.E. Deflection; Twisted Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.40



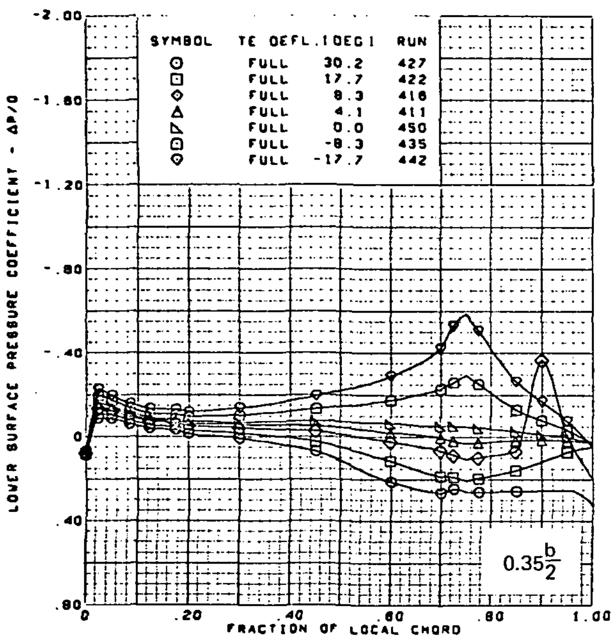
(e) (Concluded)

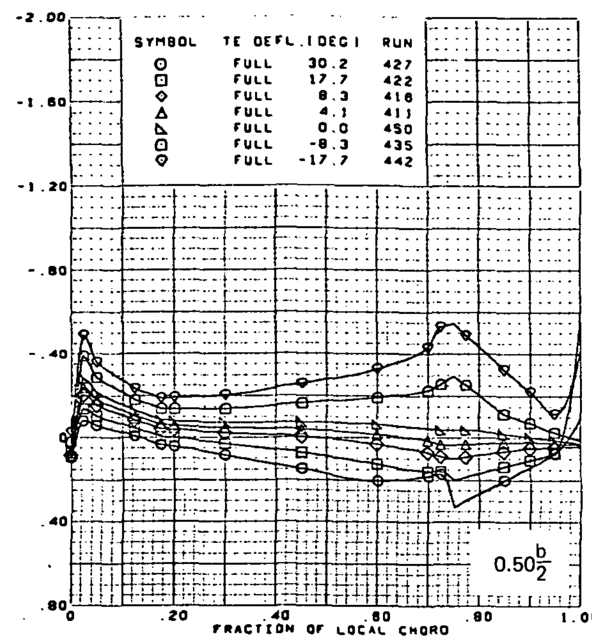
Figure 32.–(Continued)

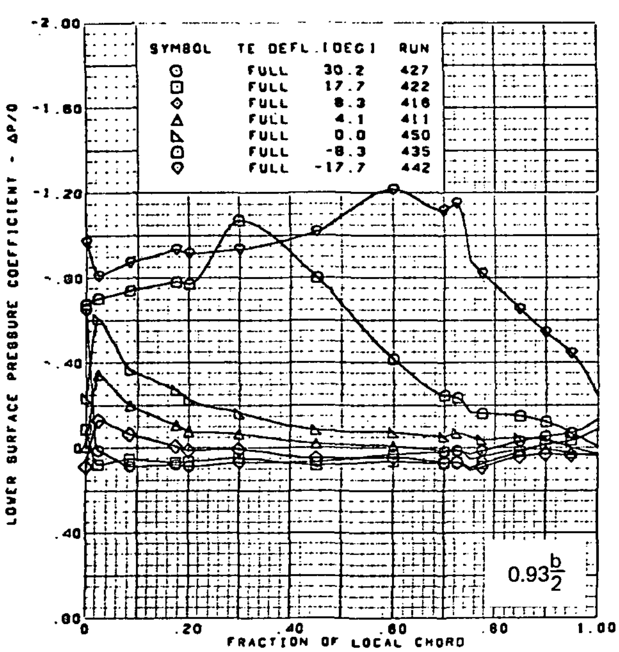


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0^\circ$

Figure 32.-(Continued)



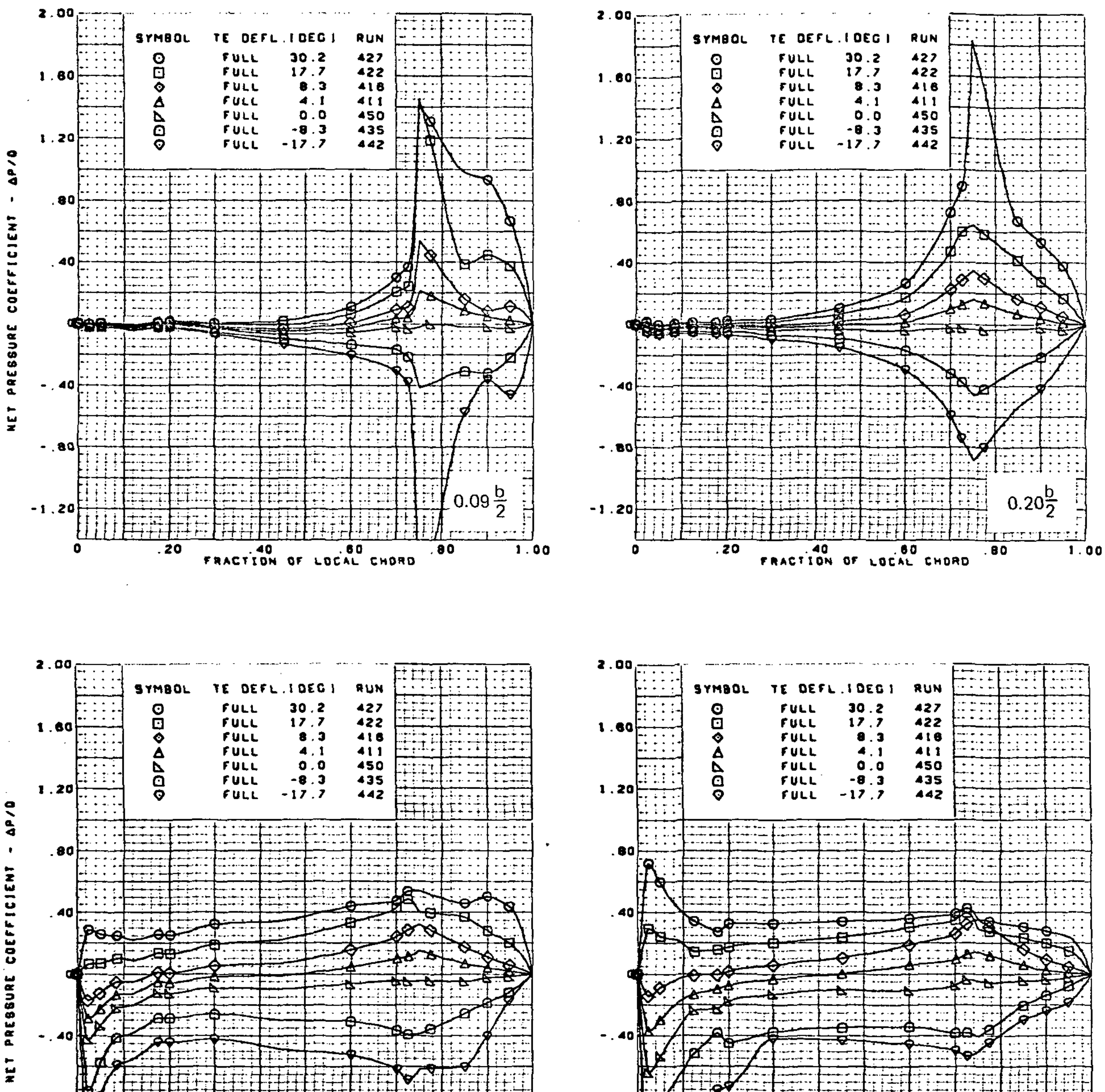




M = 0.40
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

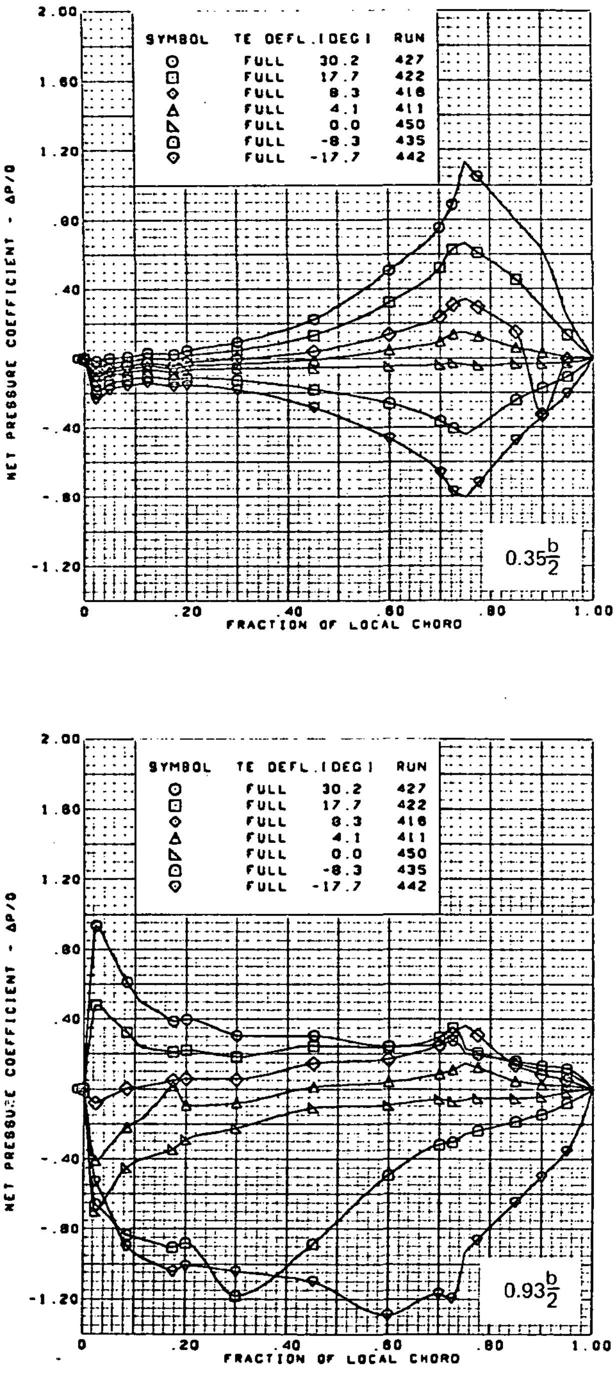
(b) (Concluded)

Figure 32.–(Continued)



(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

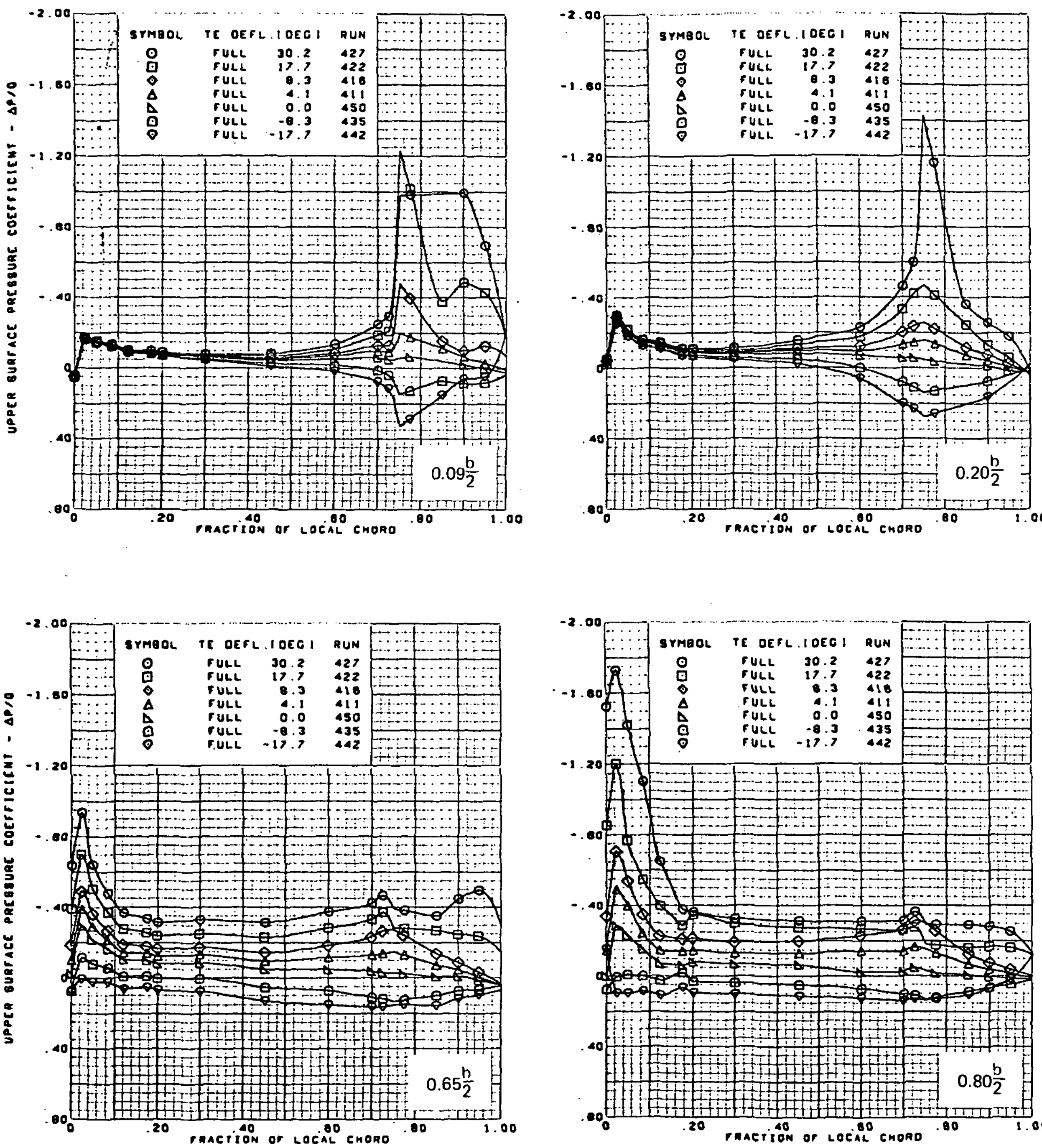
Figure 32.–(Continued)



M = 0.40
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

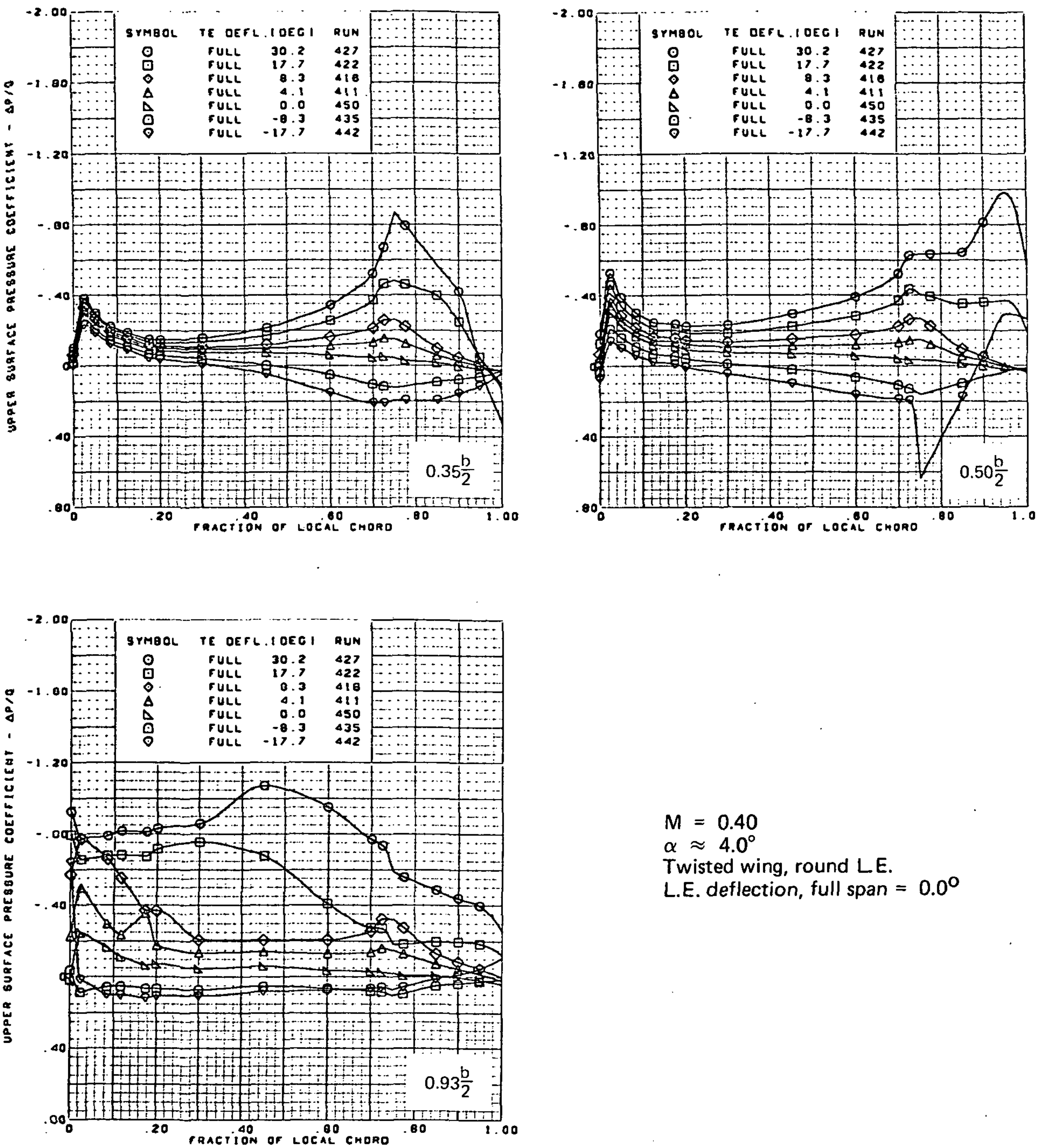
(c) (Concluded)

Figure 32.–(Continued)



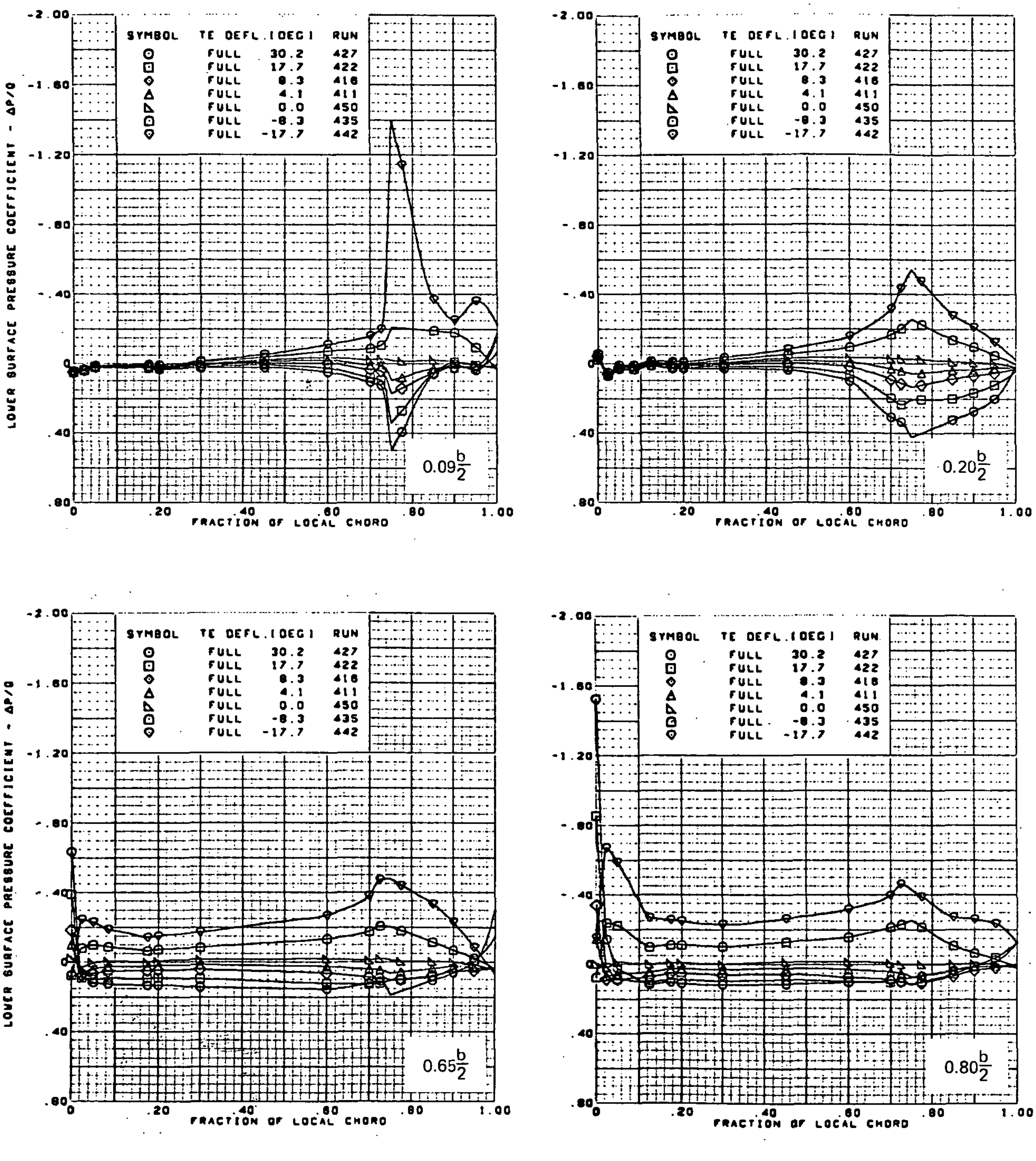
(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 32.-(Continued)



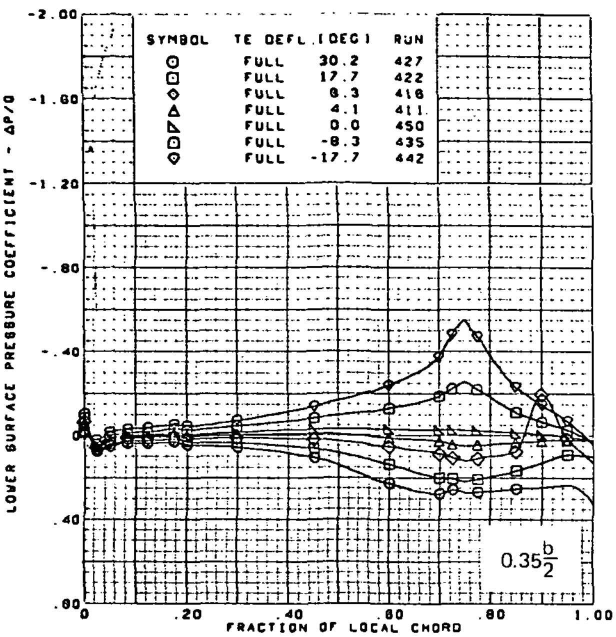
(d) (Concluded)

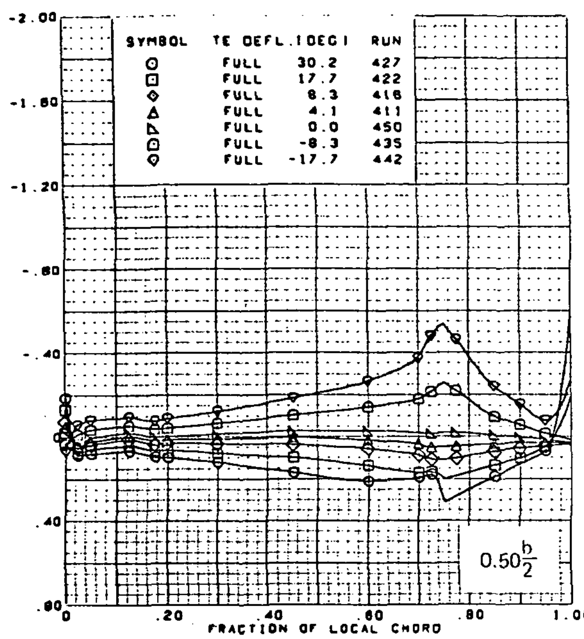
Figure 32.–(Continued)

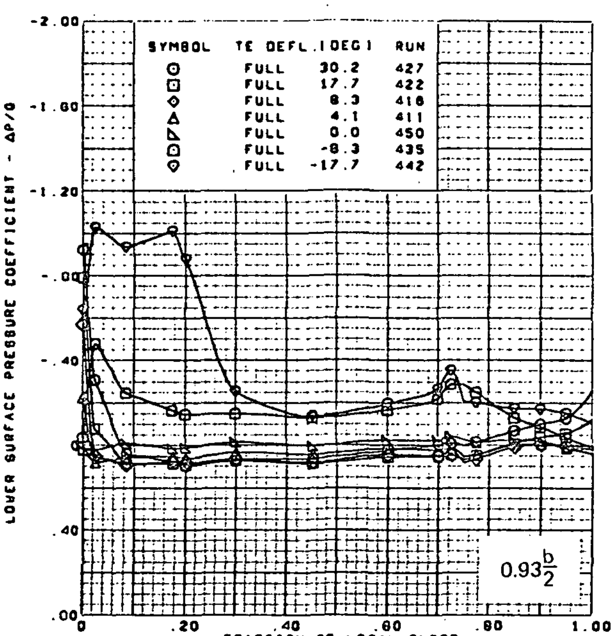


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 32.–(Continued)



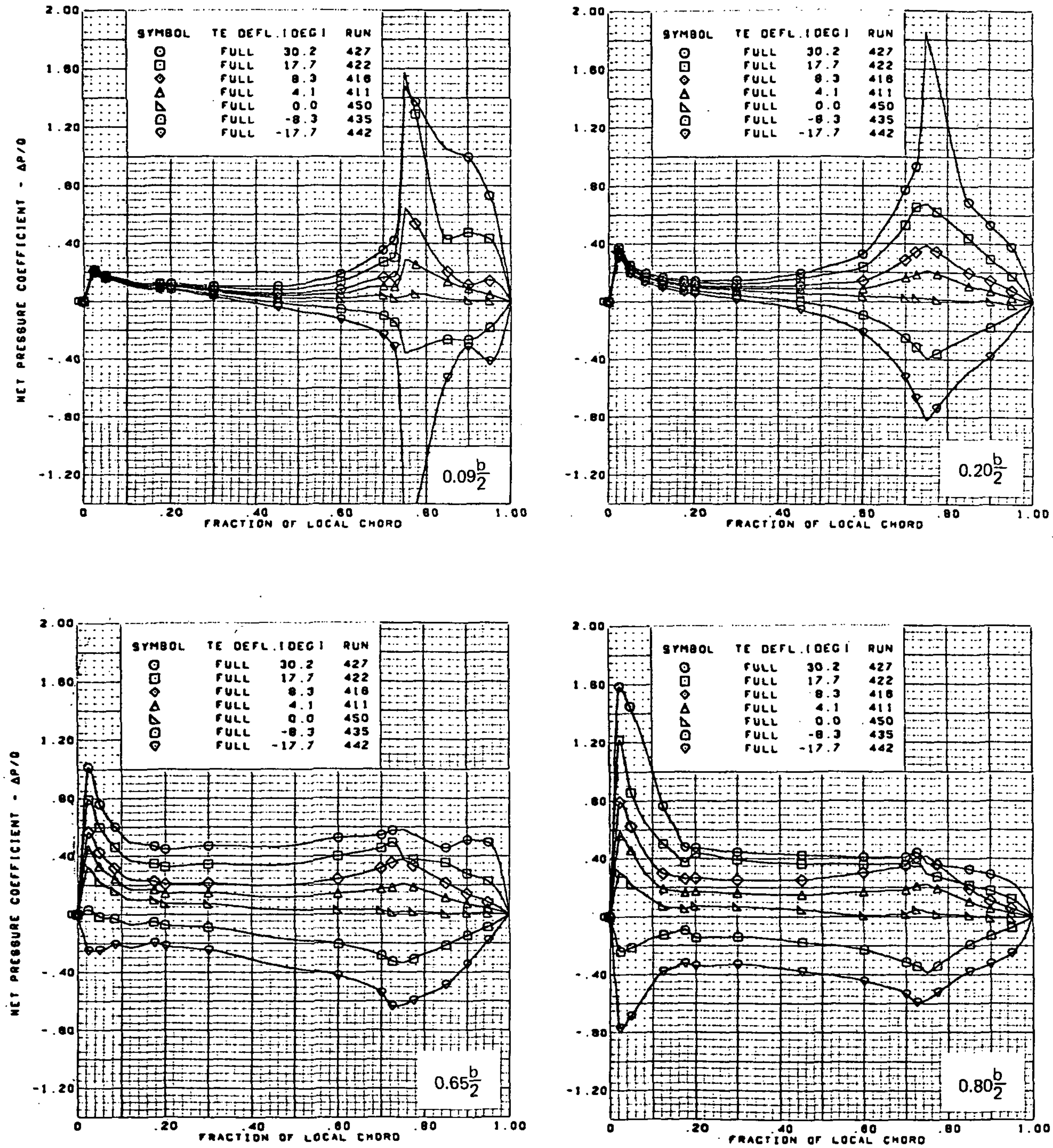




$M = 0.40$
$\alpha \approx 4.0^\circ$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

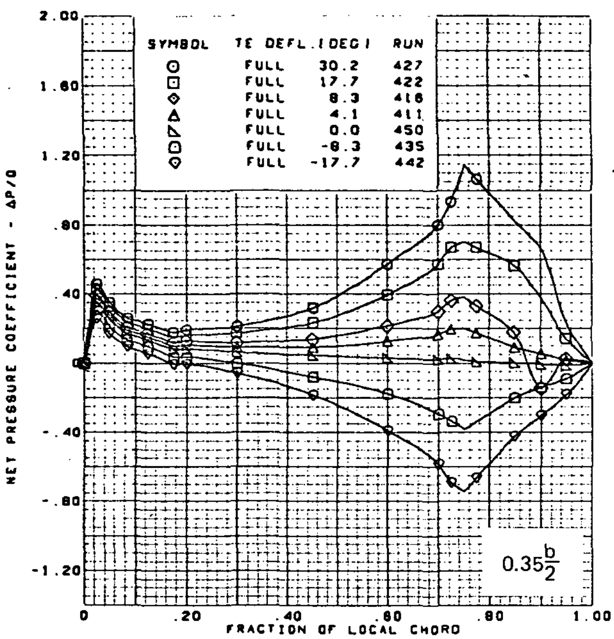
(c) (Concluded)

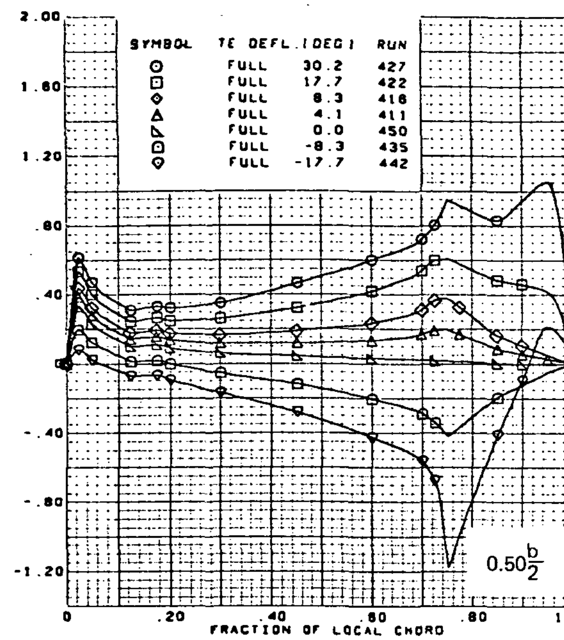
Figure 32.–(Continued)

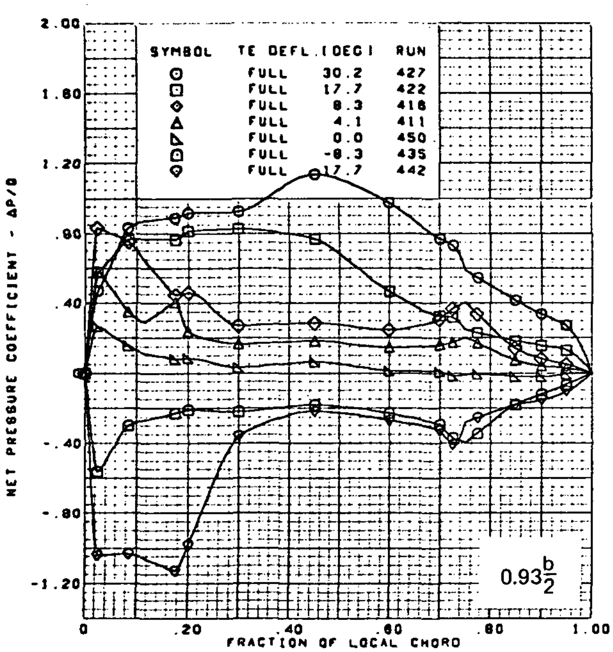


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 32.–(Continued)



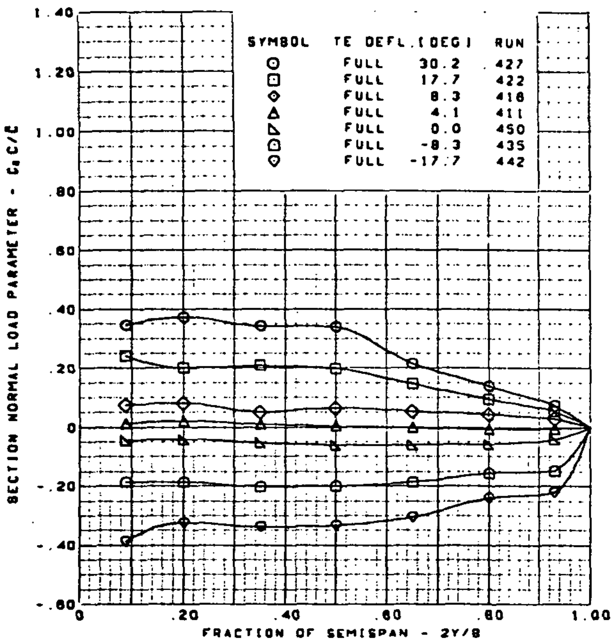


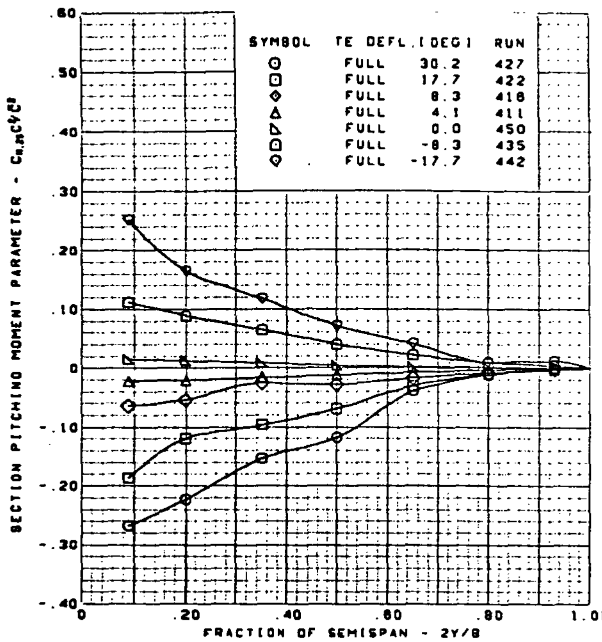


M = 0.40
$\alpha \approx 4.0^\circ$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

Figure 32.–(Continued)

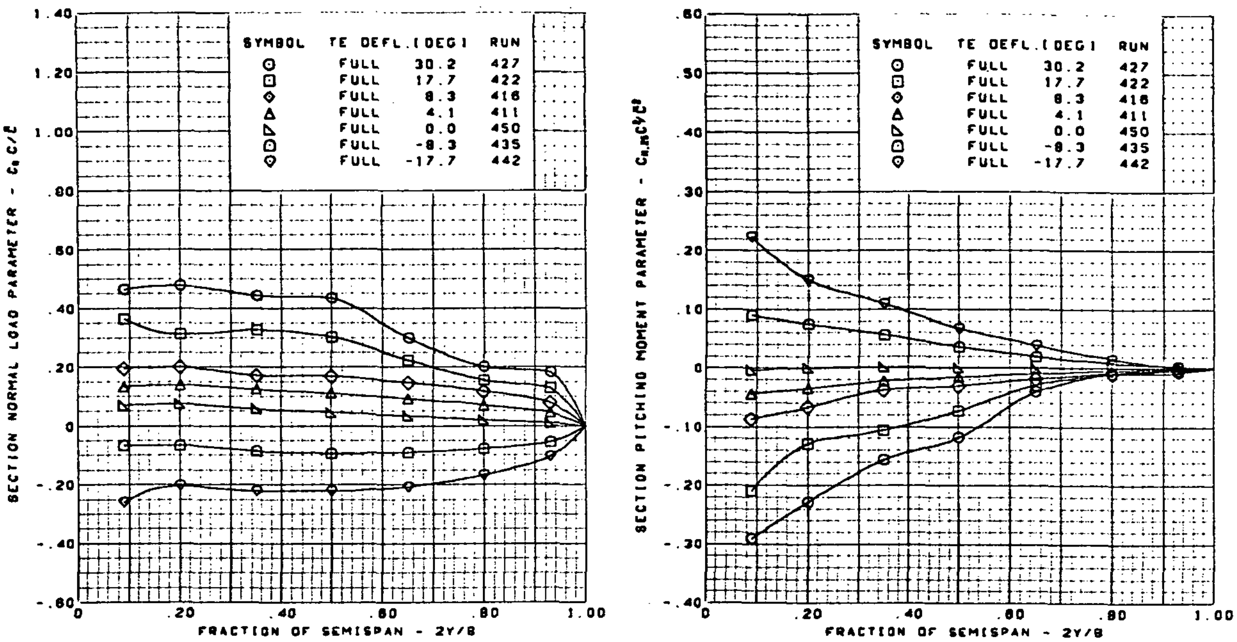




M = 0.40
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx$ **0.0°**

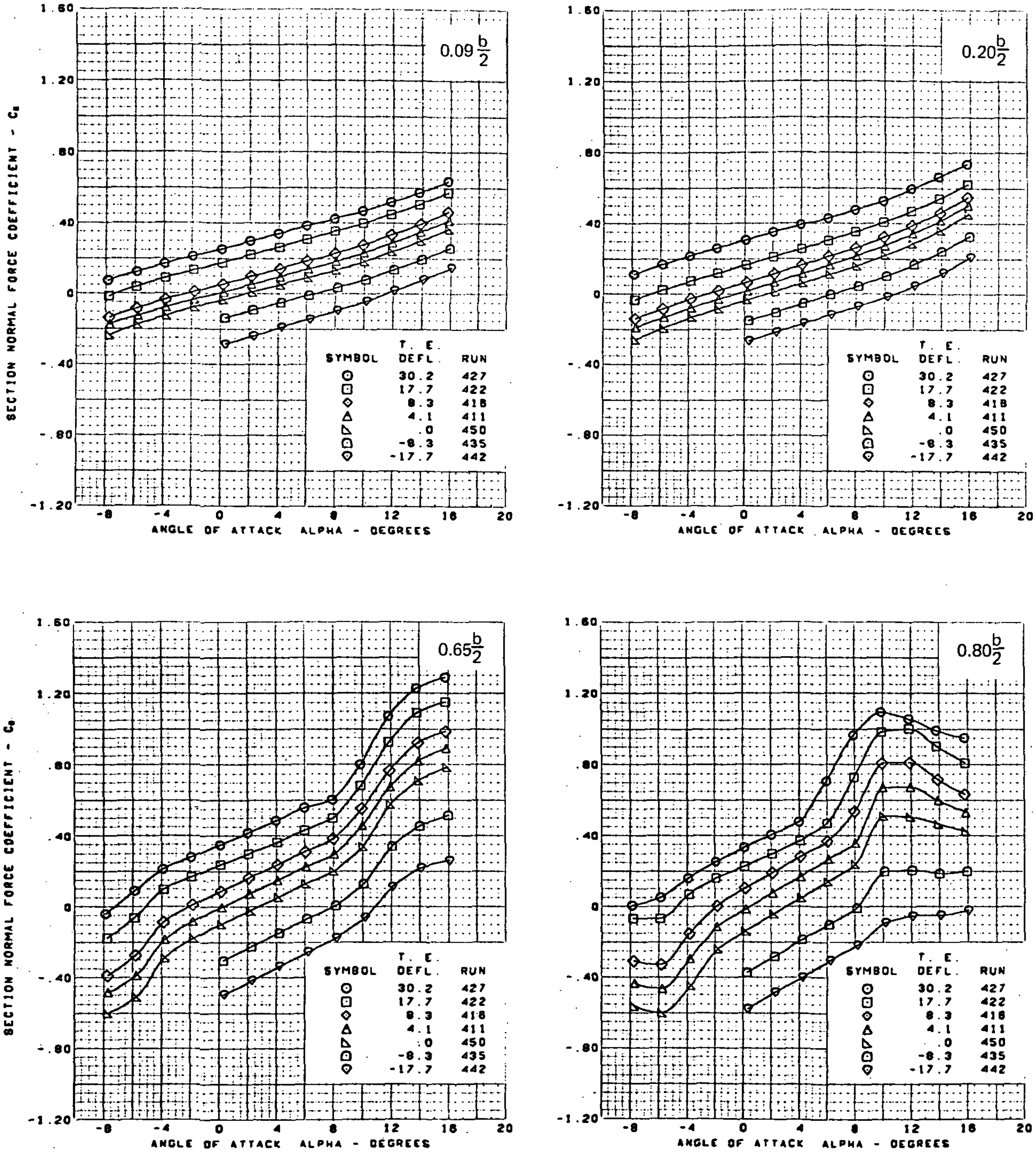
Figure 32.–(Continued)



M = 0.40
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

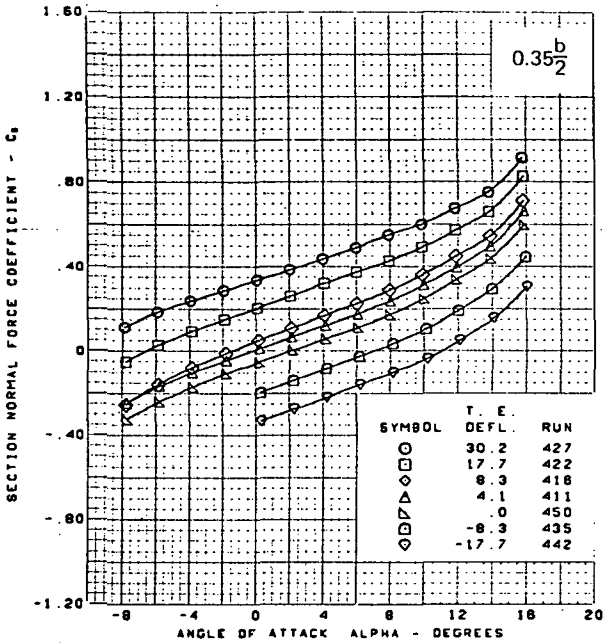
(h) Spanload Distributions, $\alpha \approx 4.0°$

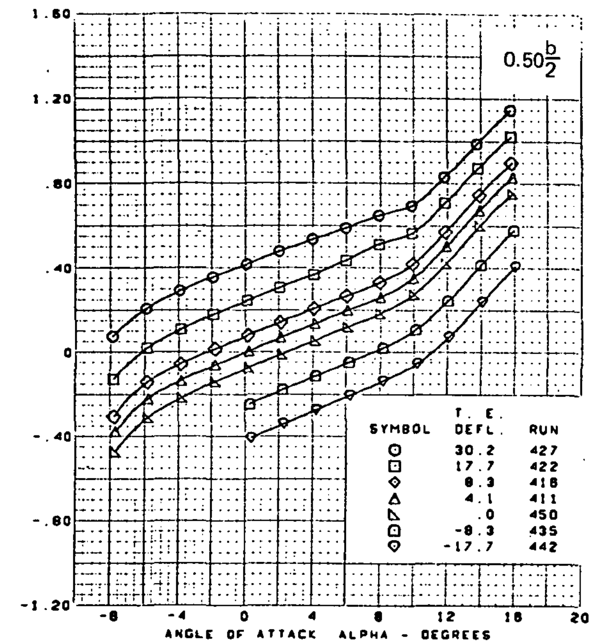
Figure 32.-(Continued)

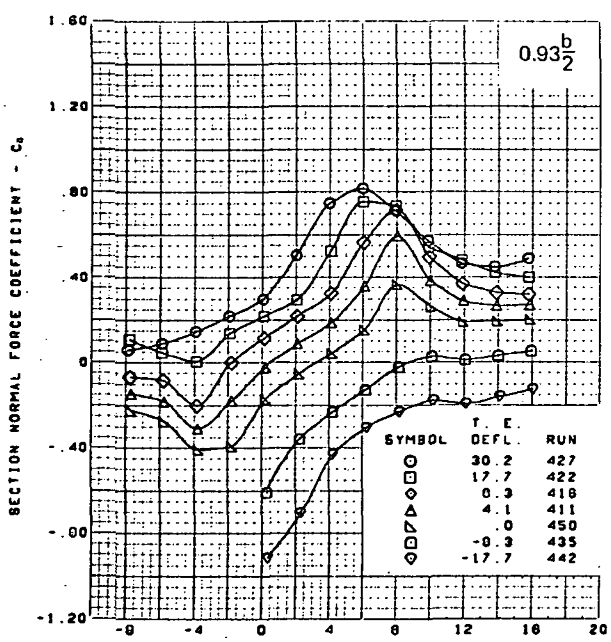


(i) Section Aerodynamic Coefficients — Normal Force

Figure 32.-(Continued)



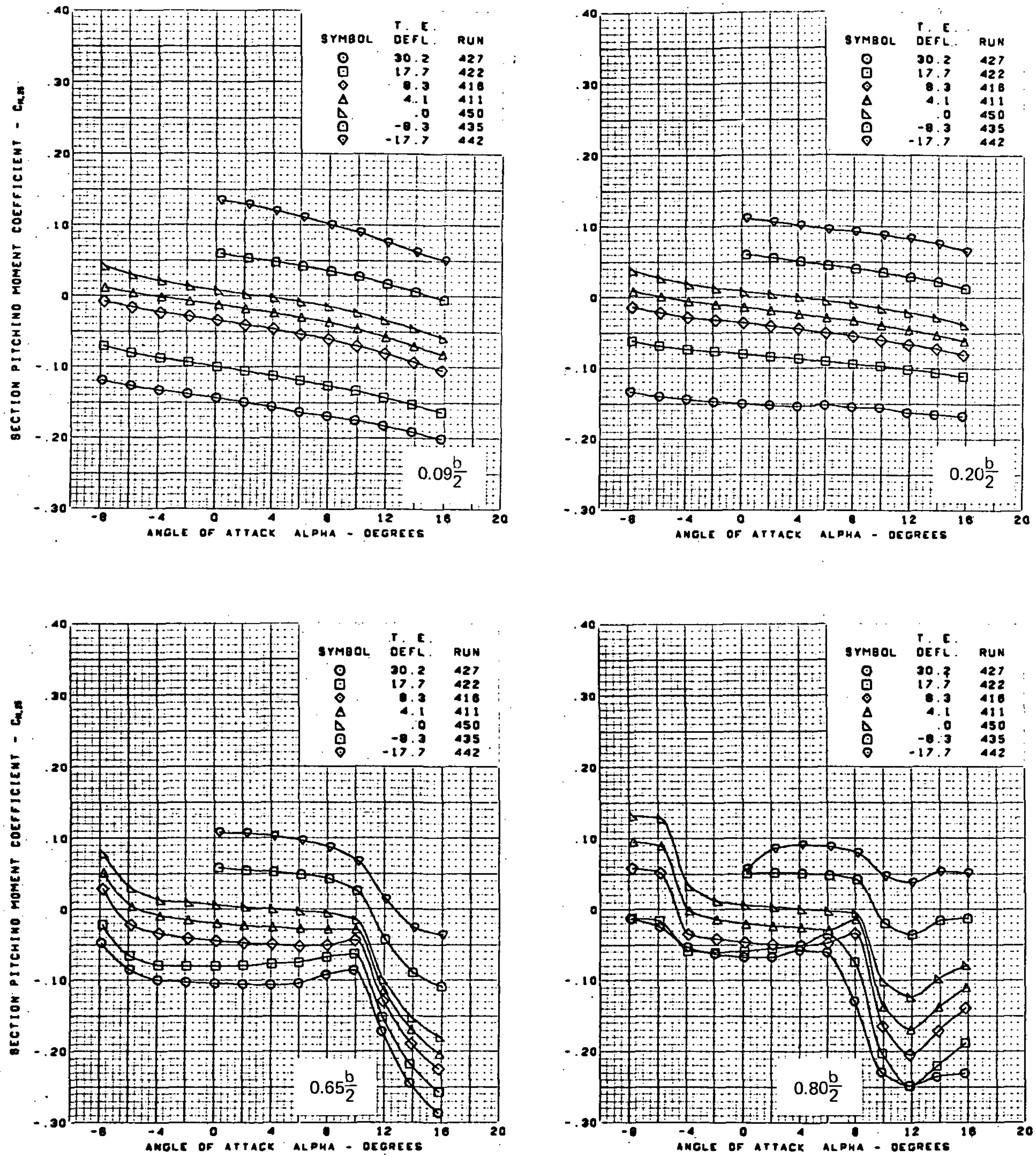




M = 0.40
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

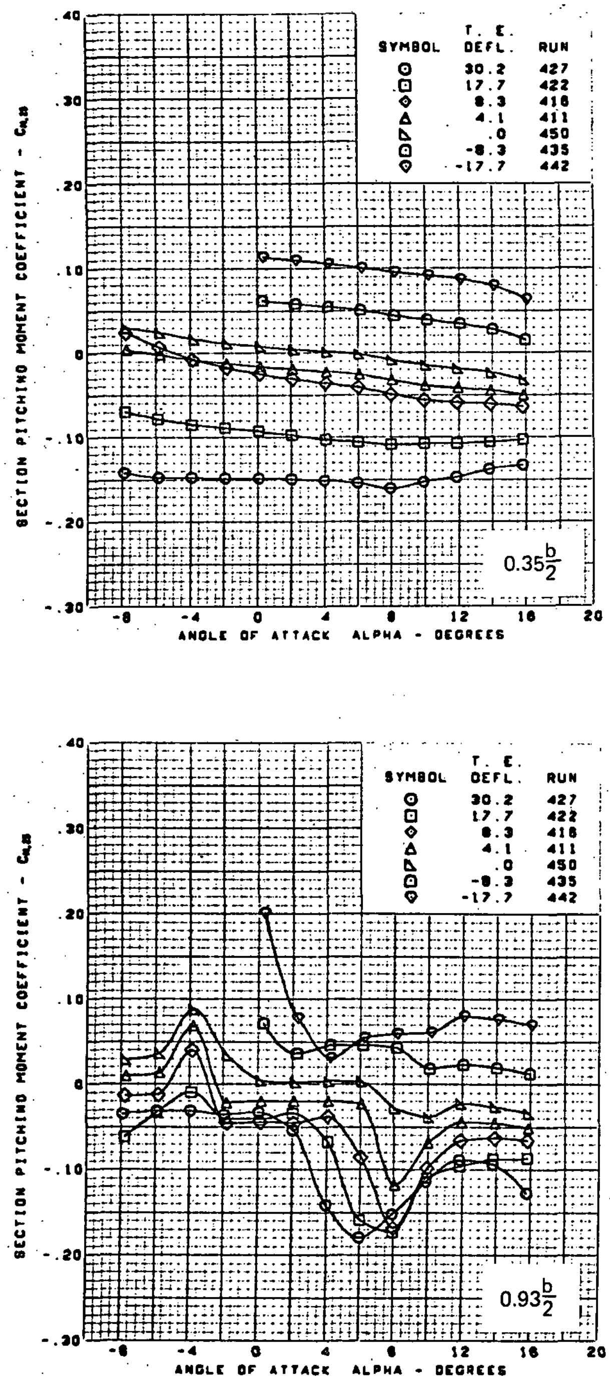
(i) (Concluded)

Figure 32.-(Continued)



(j) Section Aerodynamic Coefficients — Pitching Moment

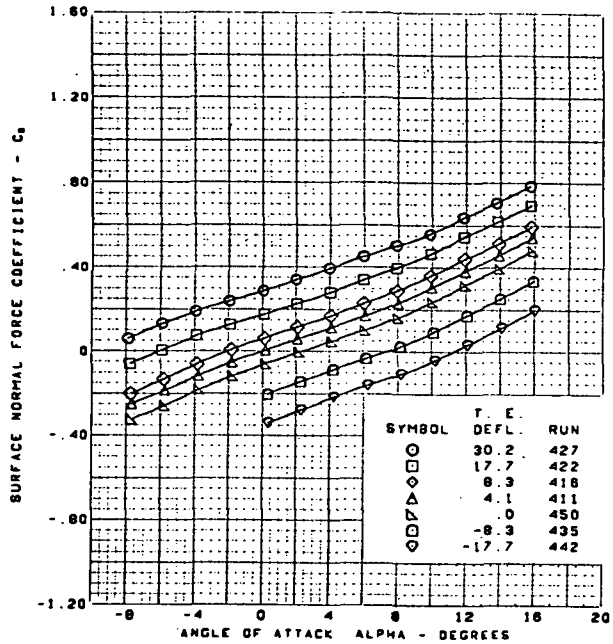
Figure 32.–(Continued)

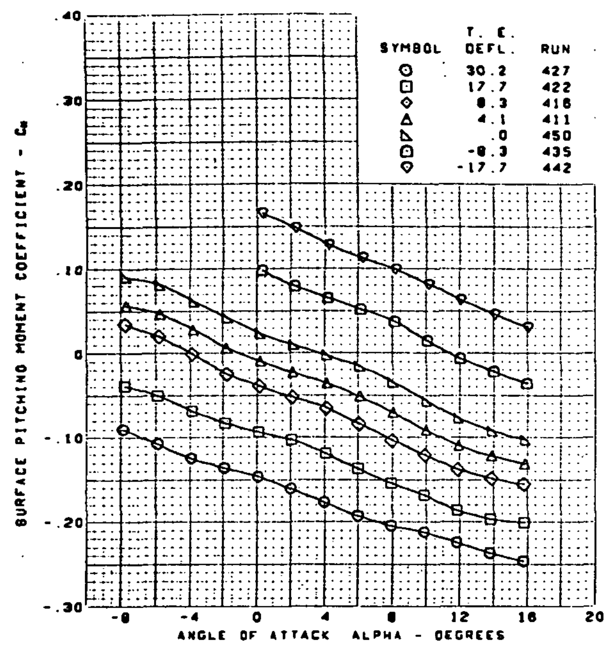


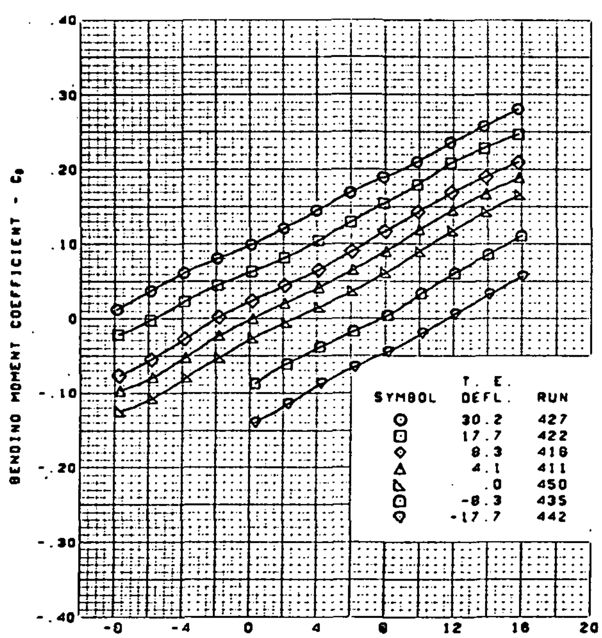
M = 0.40
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(j) (Concluded)

Figure 32.–(Continued)







M = 0.40
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(k) Wing Aerodynamic Coefficients

Figure 32.–(Concluded)

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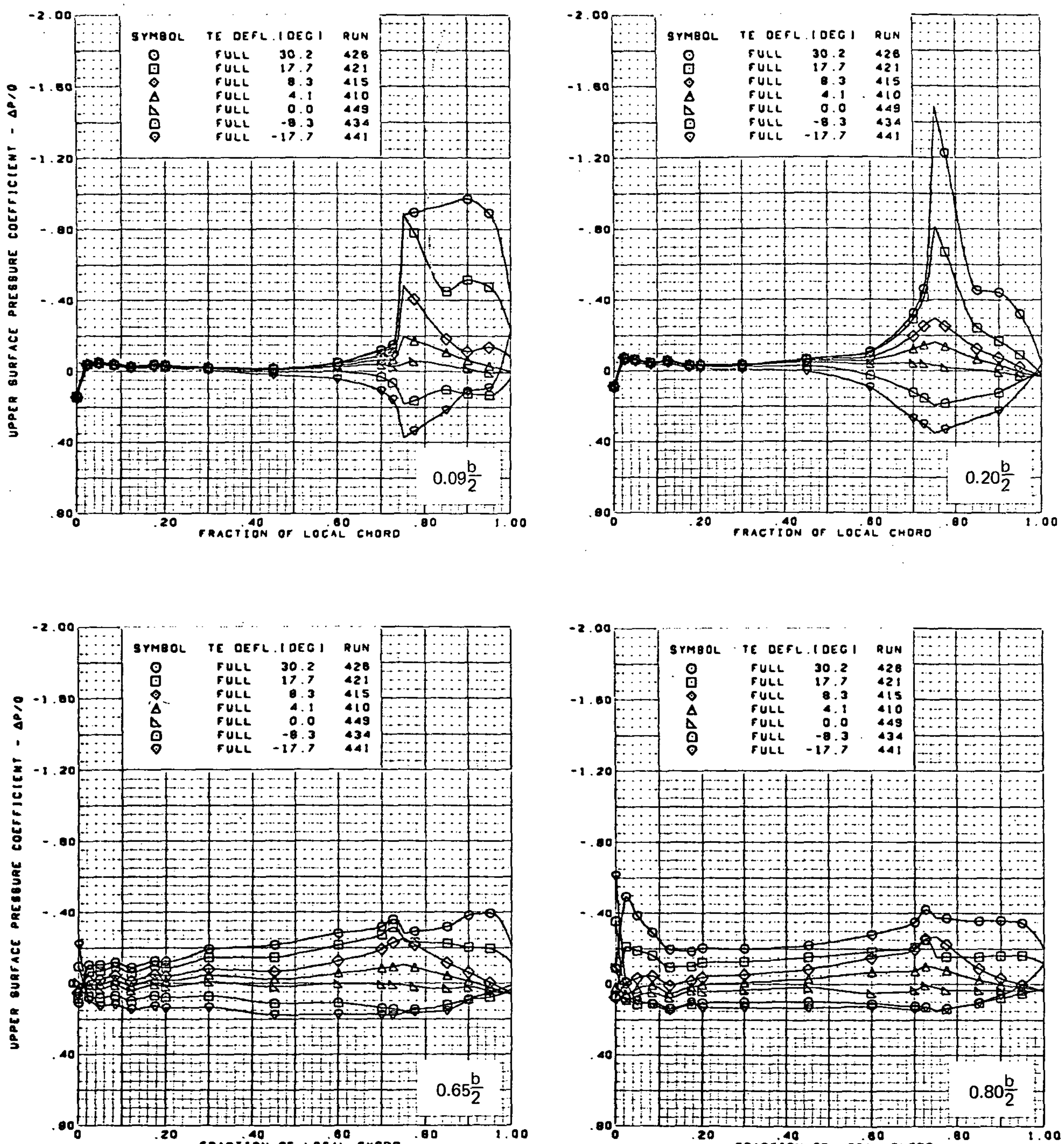
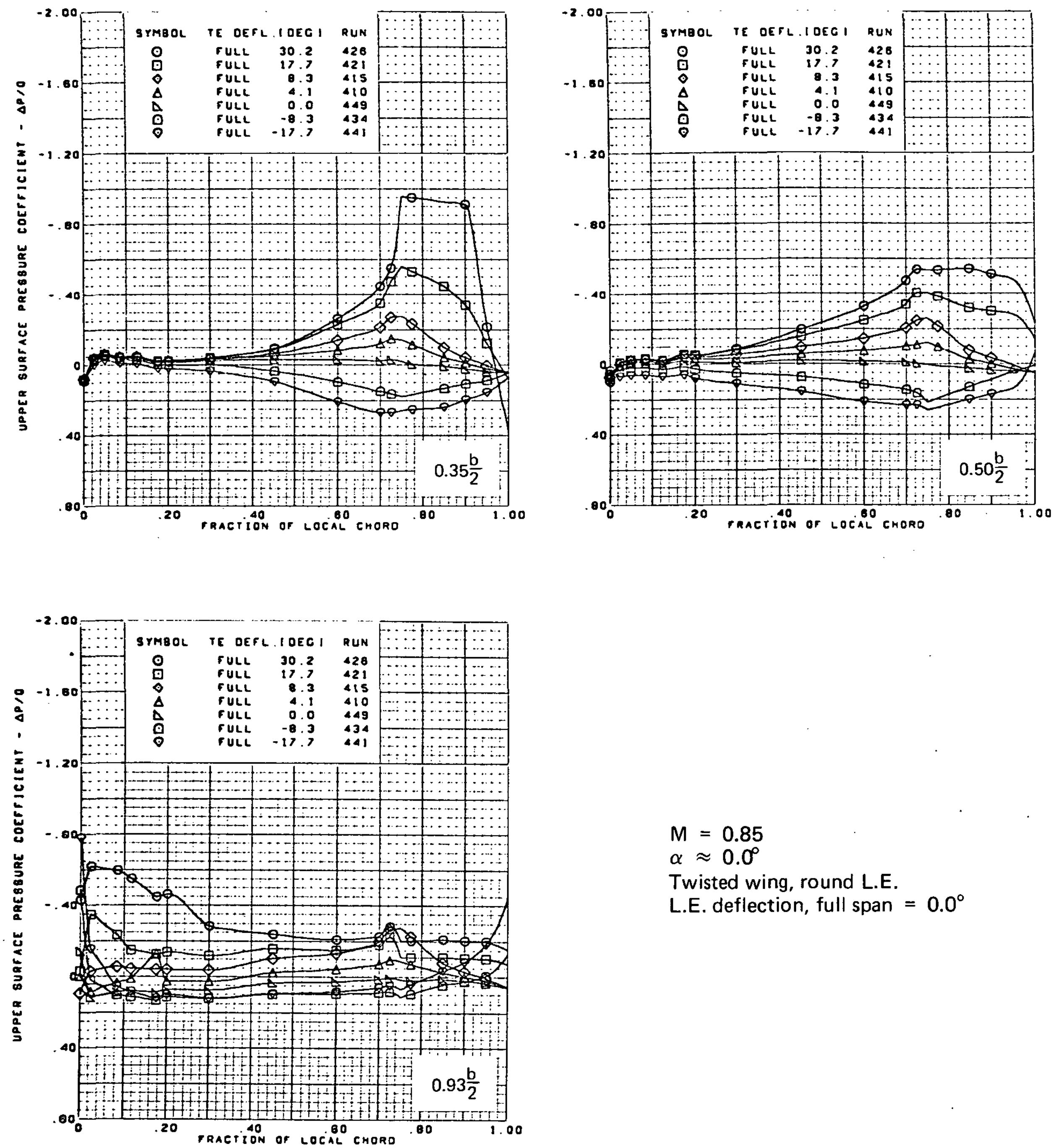


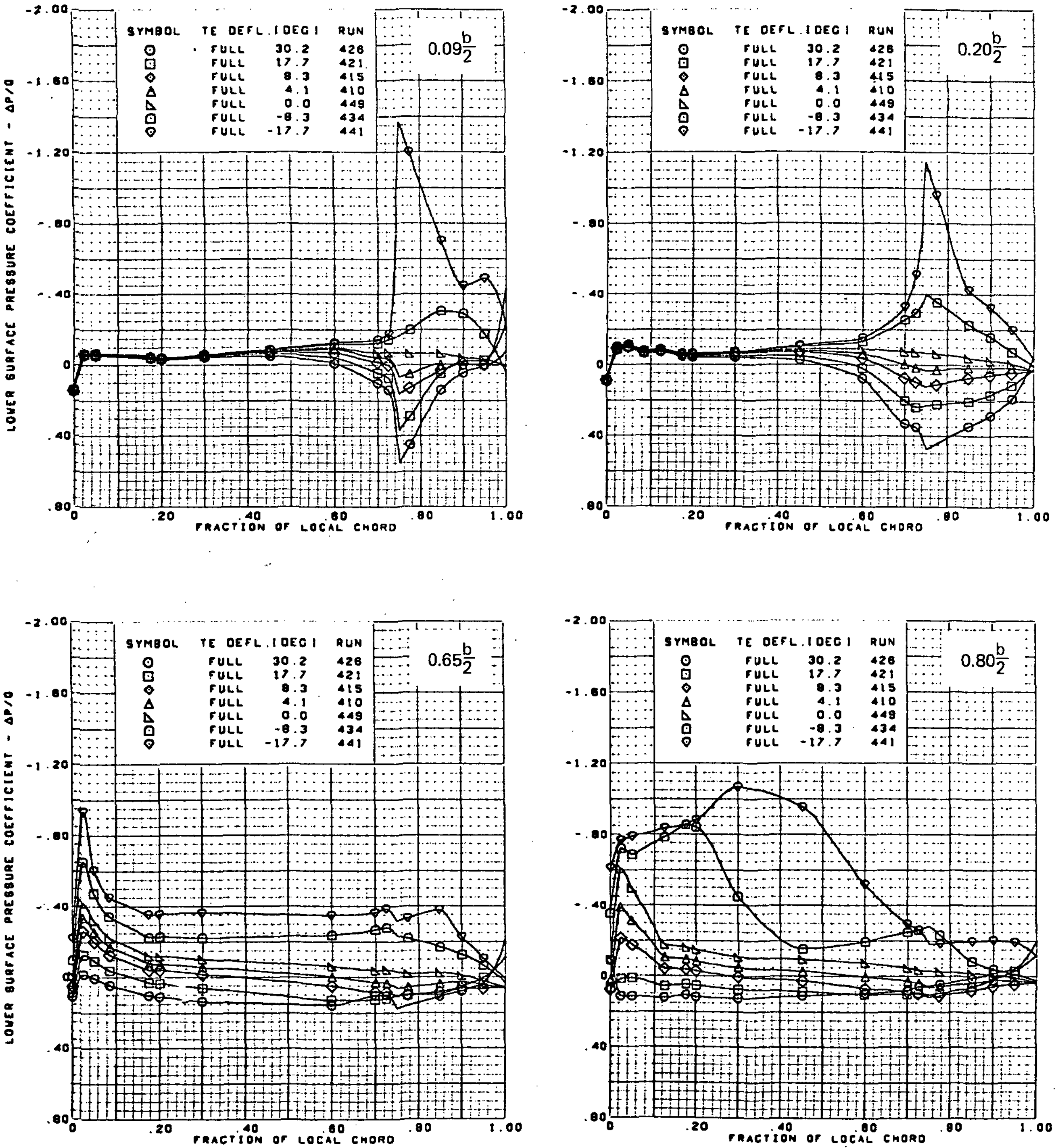
(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 33.–Wing Experimental Data—Effect of Full Span T.E. Deflection; Twisted Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85



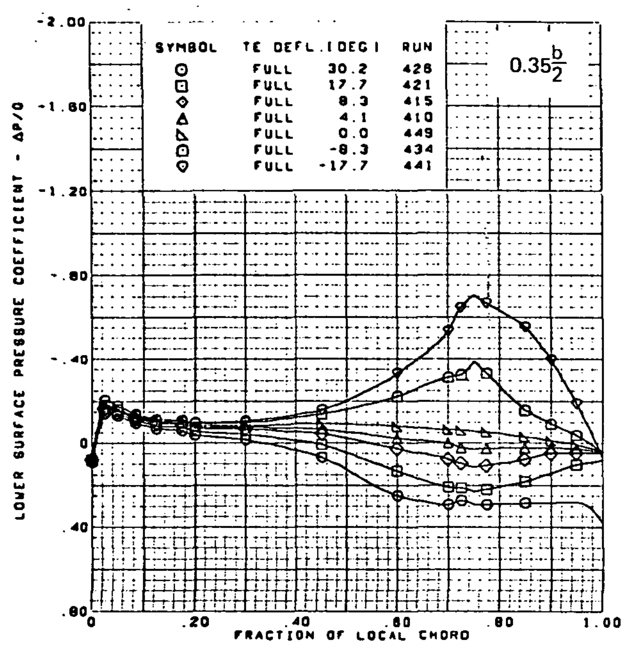
(a) (Concluded)

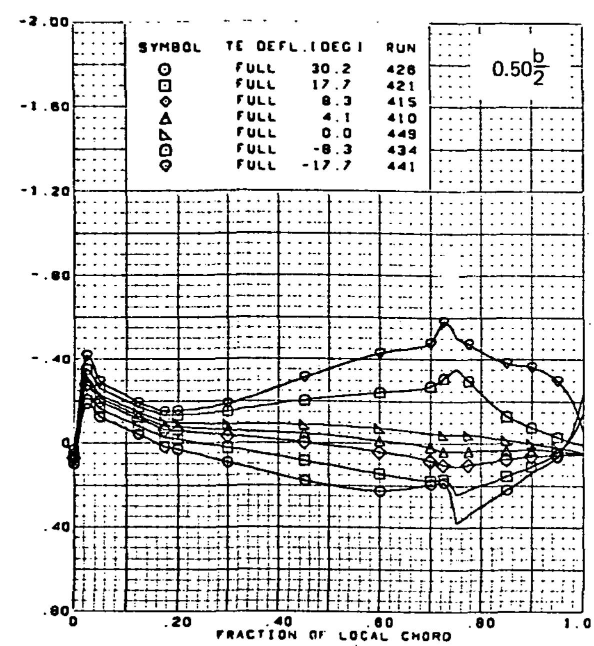
Figure 33.–(Continued)

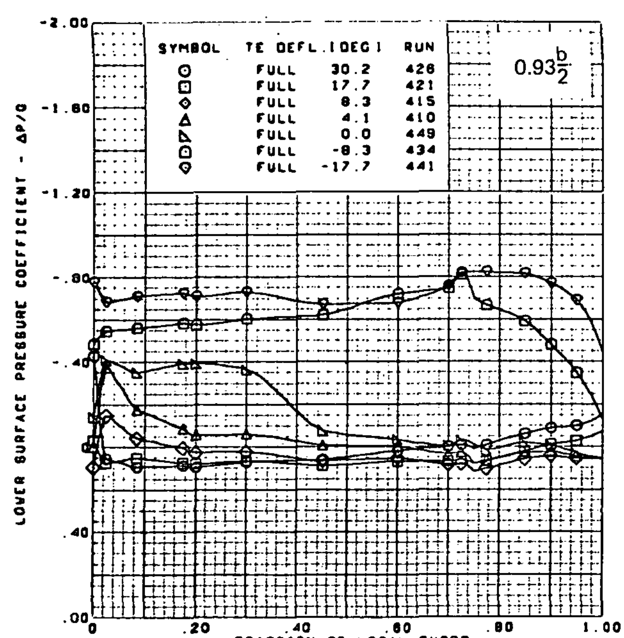


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 33.–(Continued)



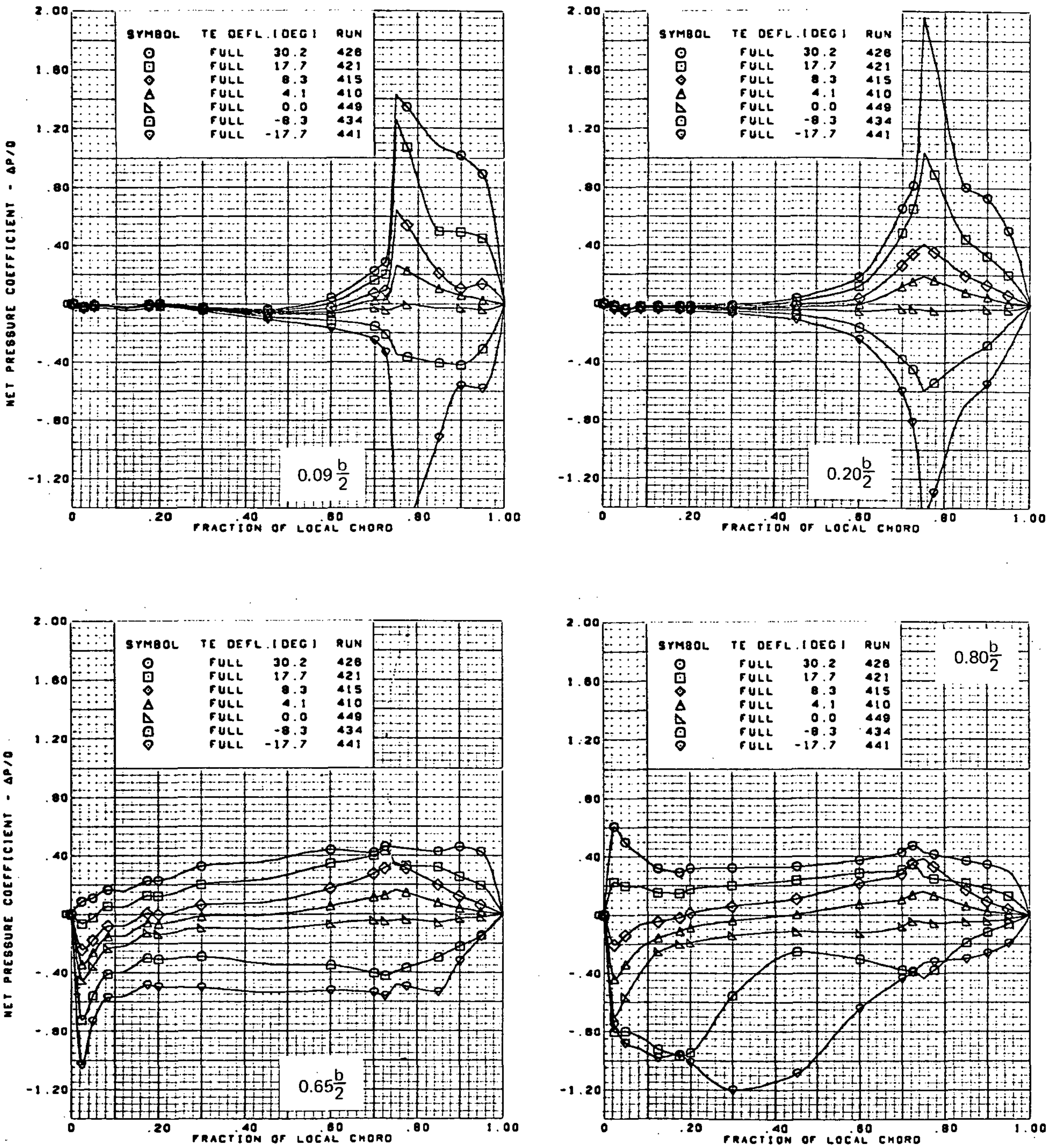




M = 0.85
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

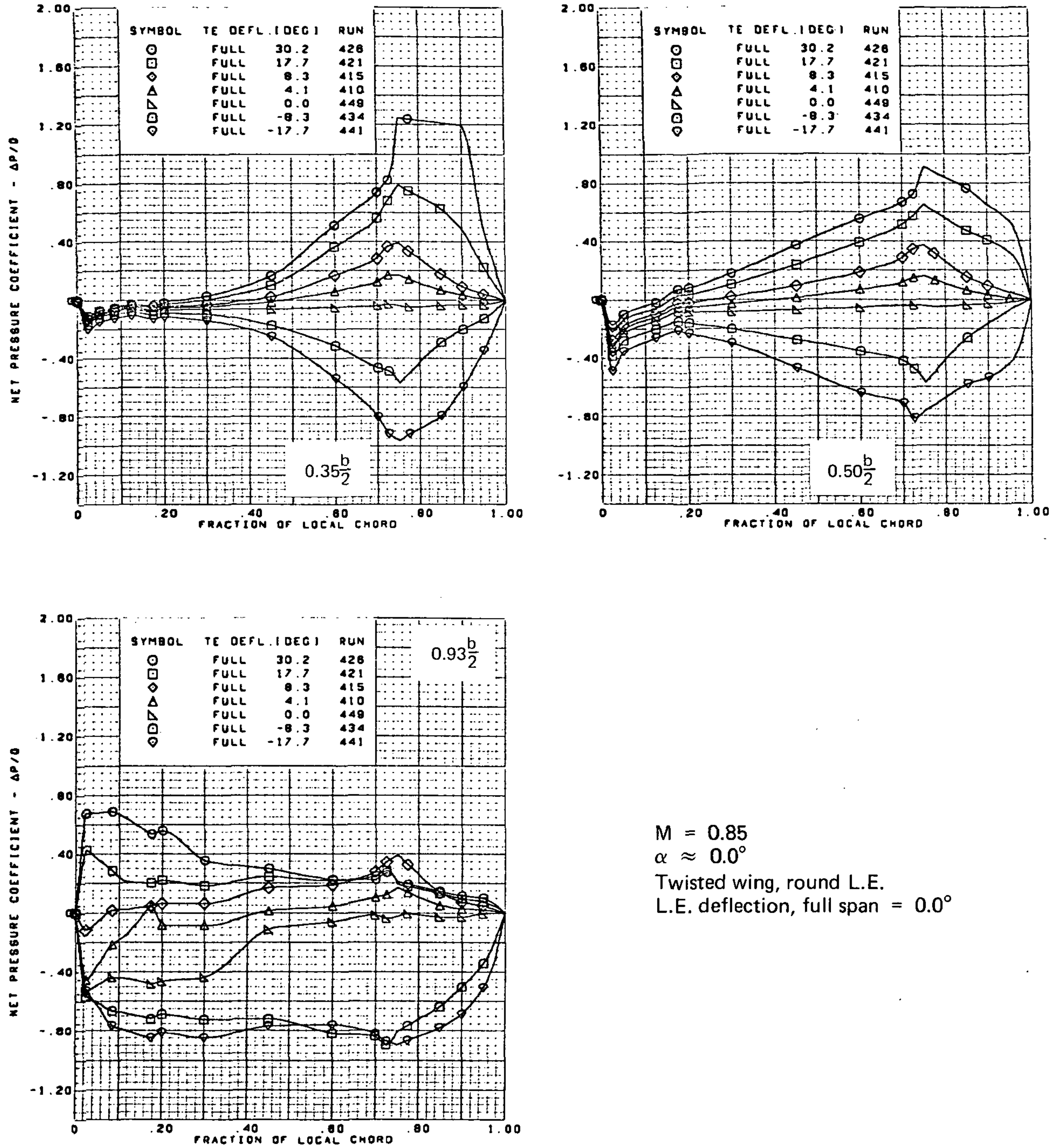
(b) (Concluded)

Figure 33.–(Continued)



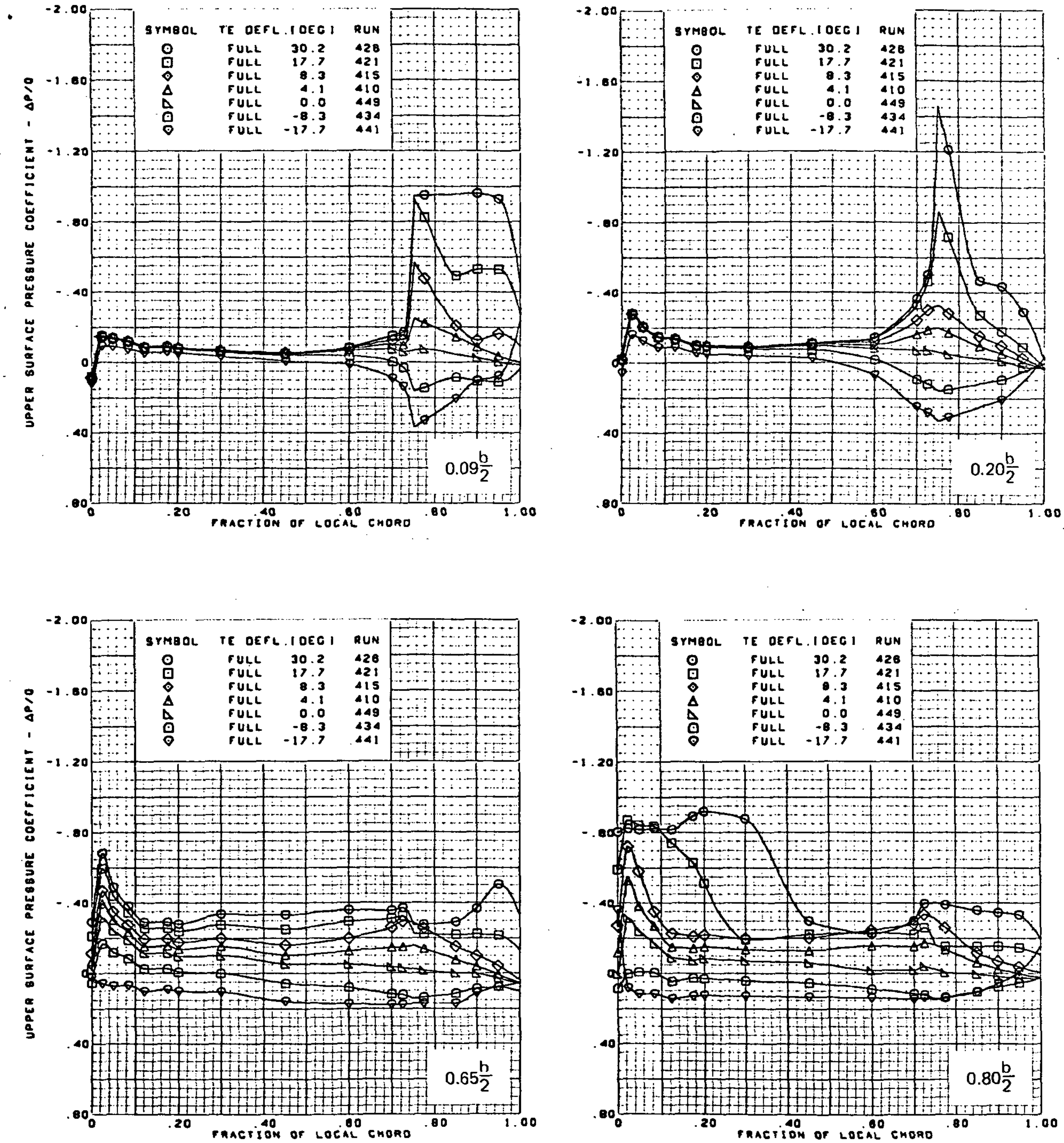
(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 33.–(Continued)



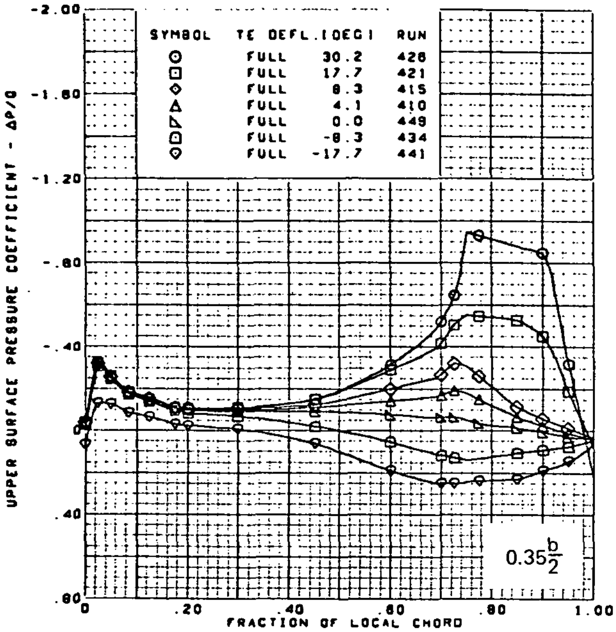
(c) (Concluded)

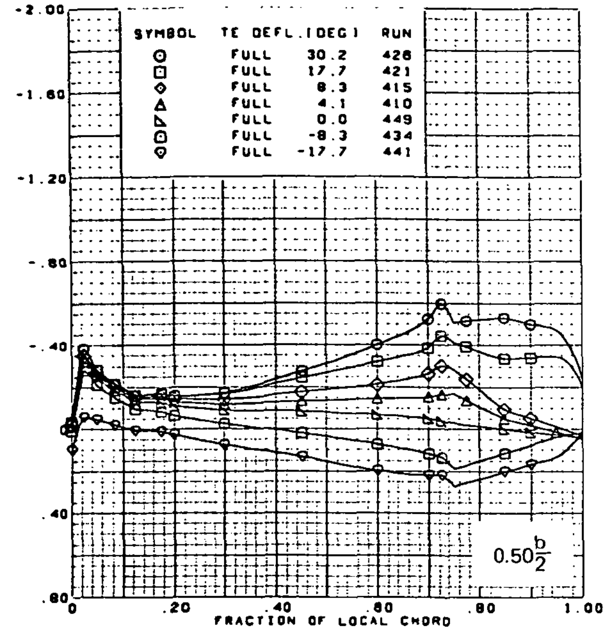
Figure 33.–(Continued)

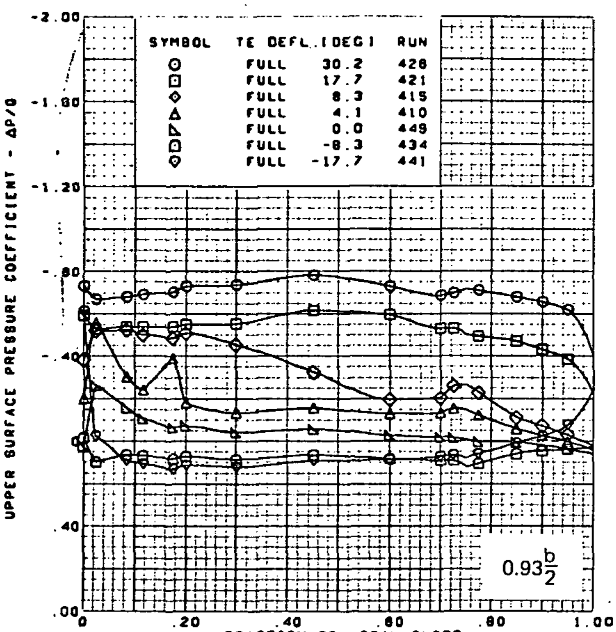


(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^\circ$

Figure 33.–(Continued)



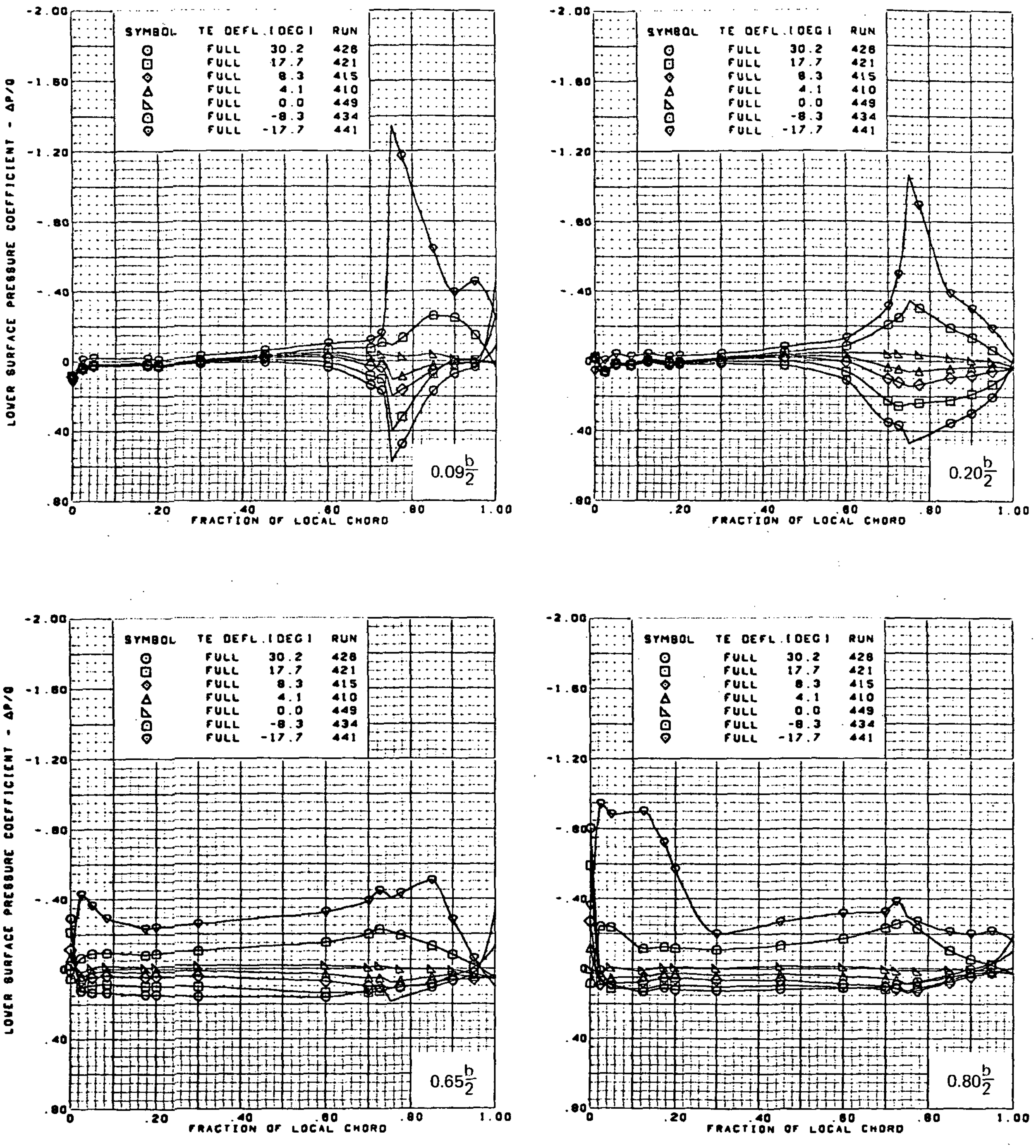




M = 0.85
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

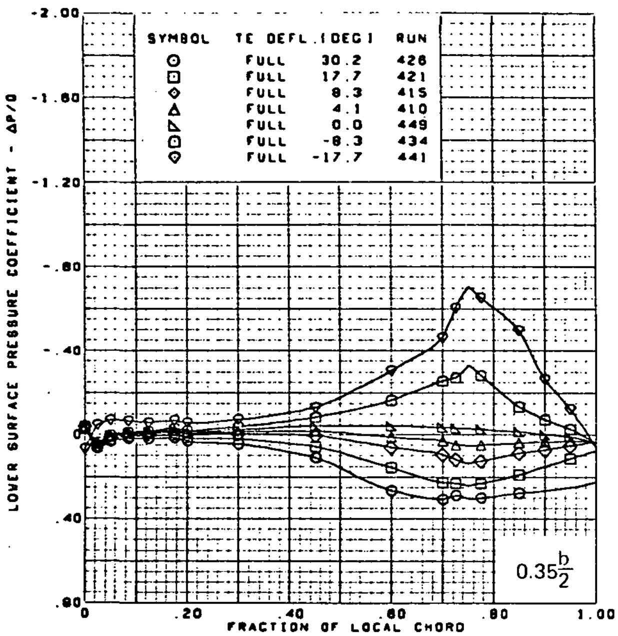
(d) (Concluded)

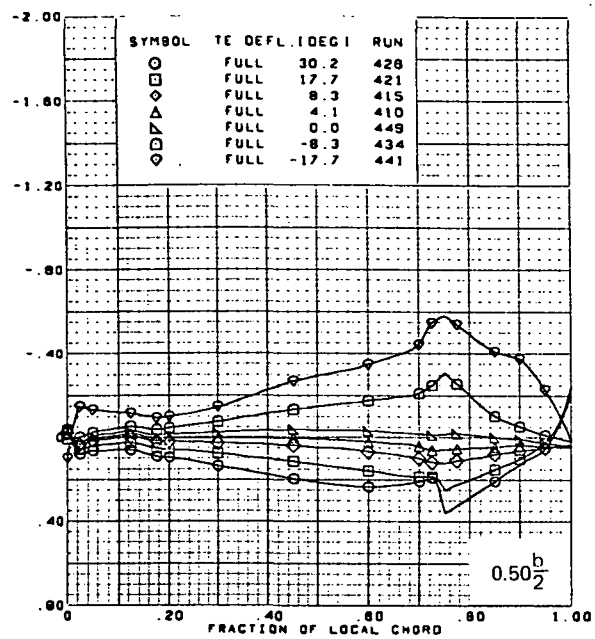
Figure 33.–(Continued)

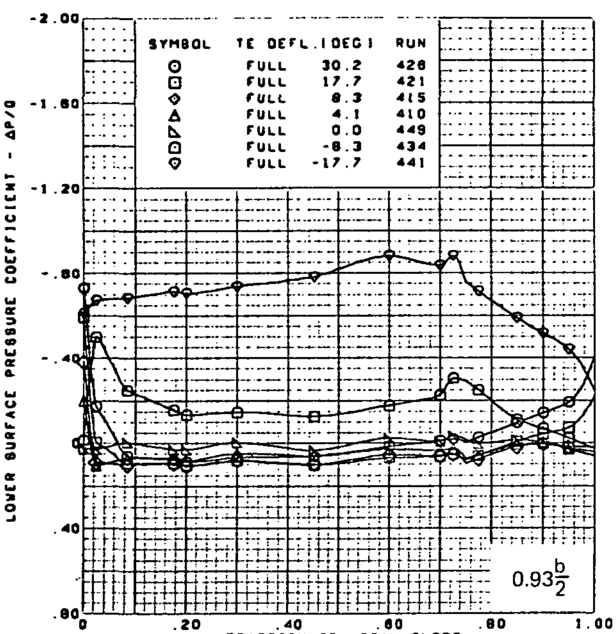


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 33.–(Continued)



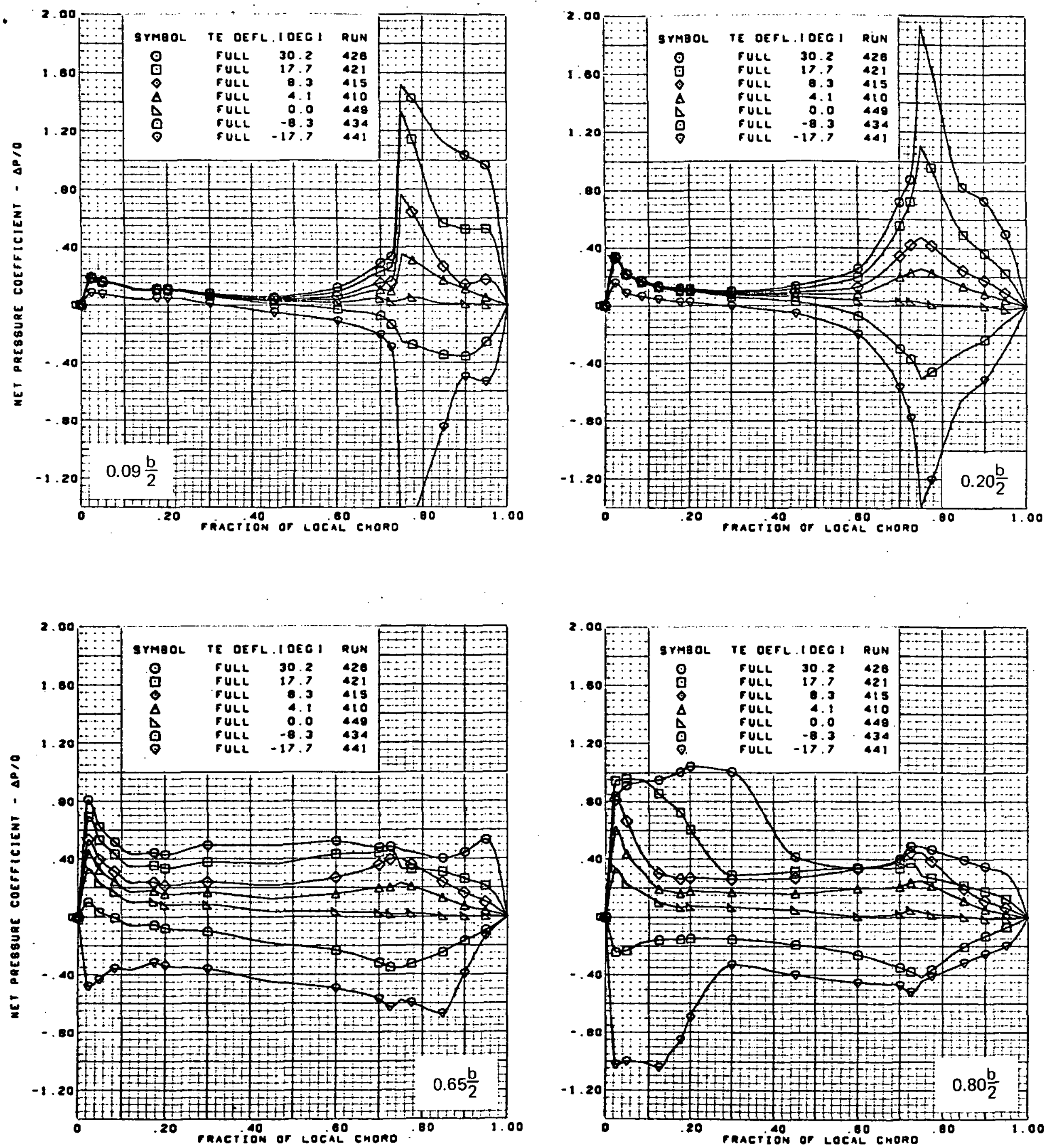




M = 0.85
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

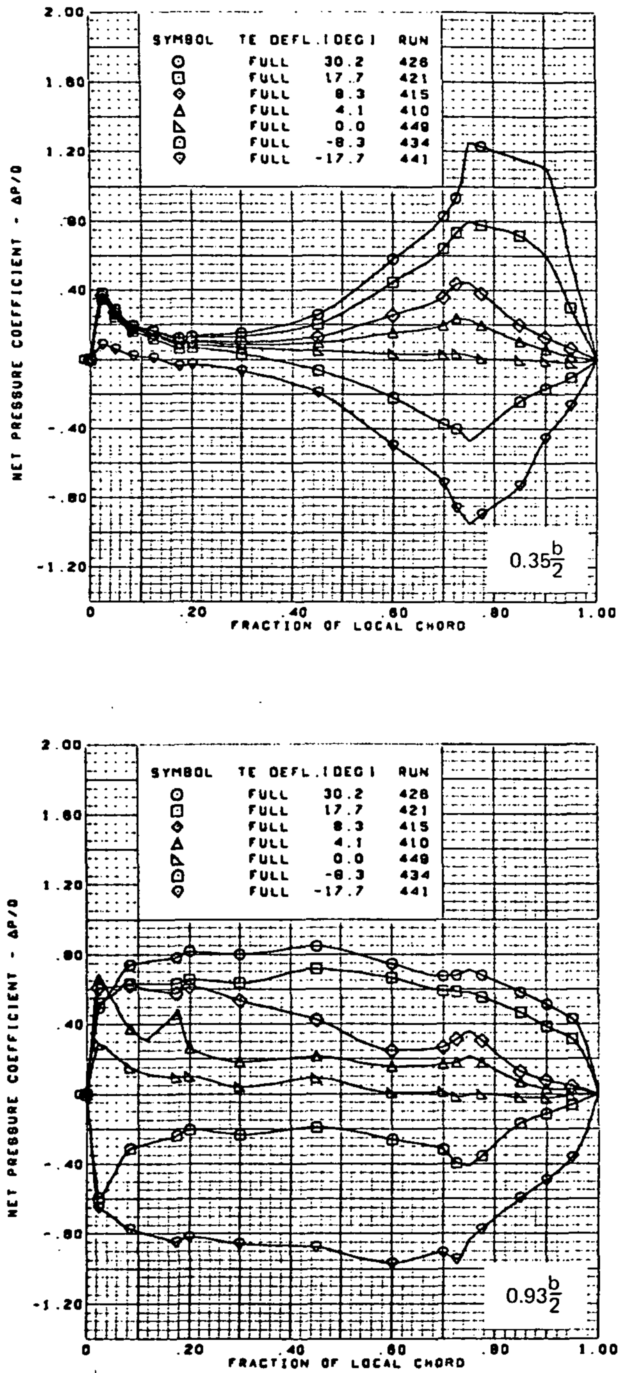
(e) (Concluded)

Figure 33.–(Continued)



(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

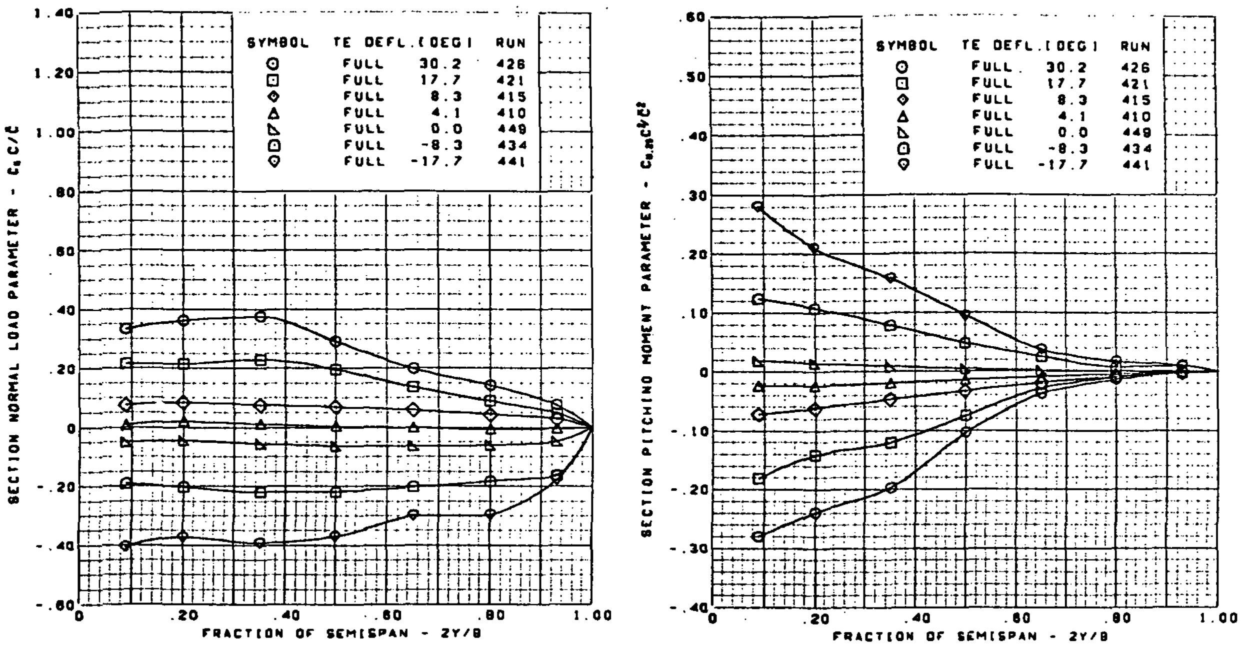
Figure 33.–(Continued)



M = 0.85
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

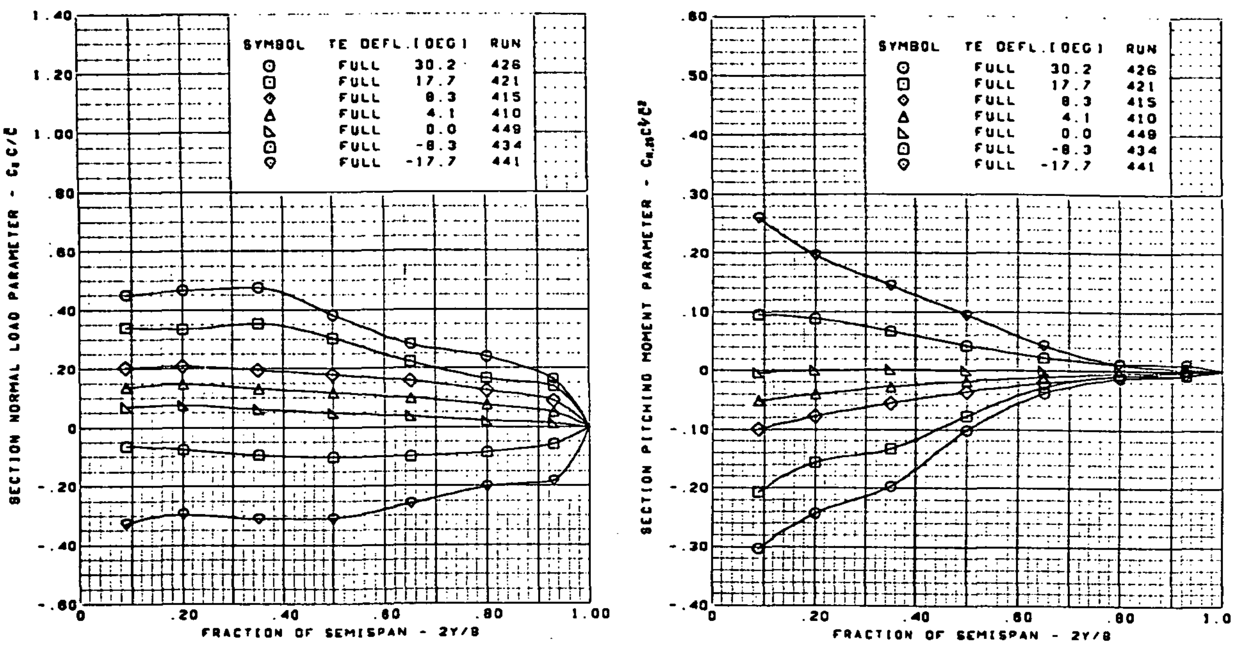
Figure 33.–(Continued)



M = 0.85
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

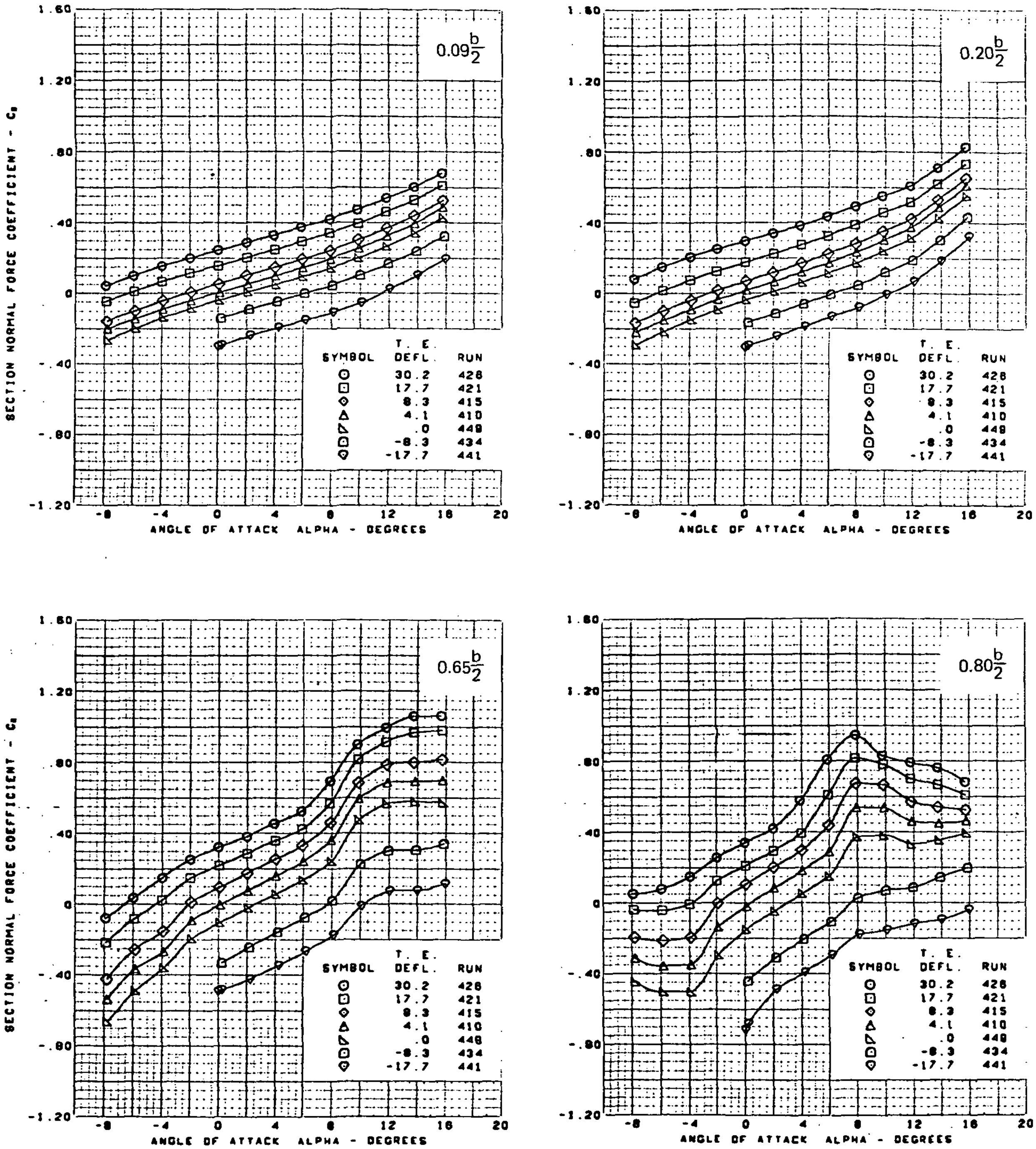
Figure 33.–(Continued)



M = 0.85
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

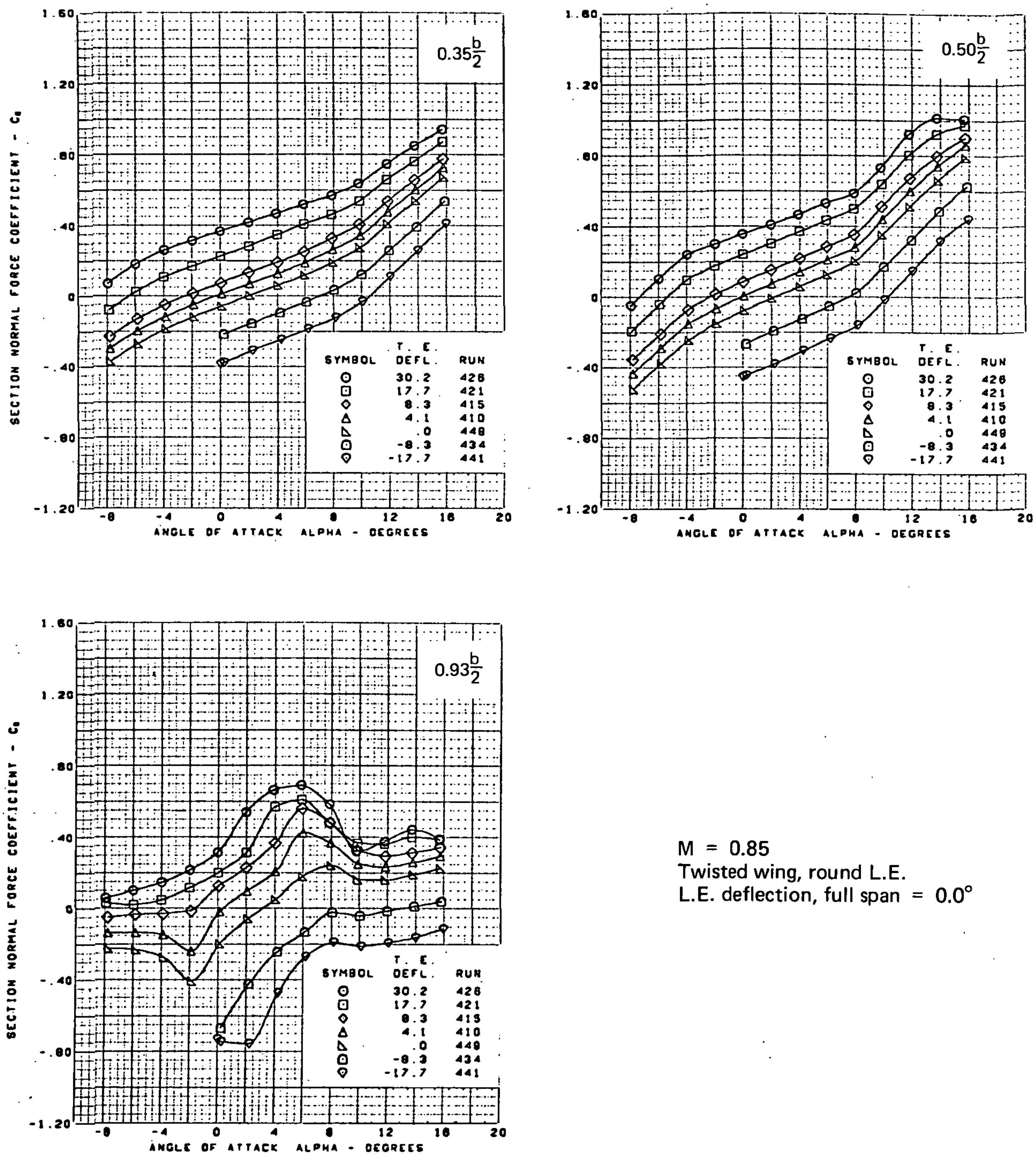
(h) Spanload Distributions, $\alpha \approx 4.0°$

Figure 33.–(Continued)



(i) Section Aerodynamic Coefficients — Normal Force

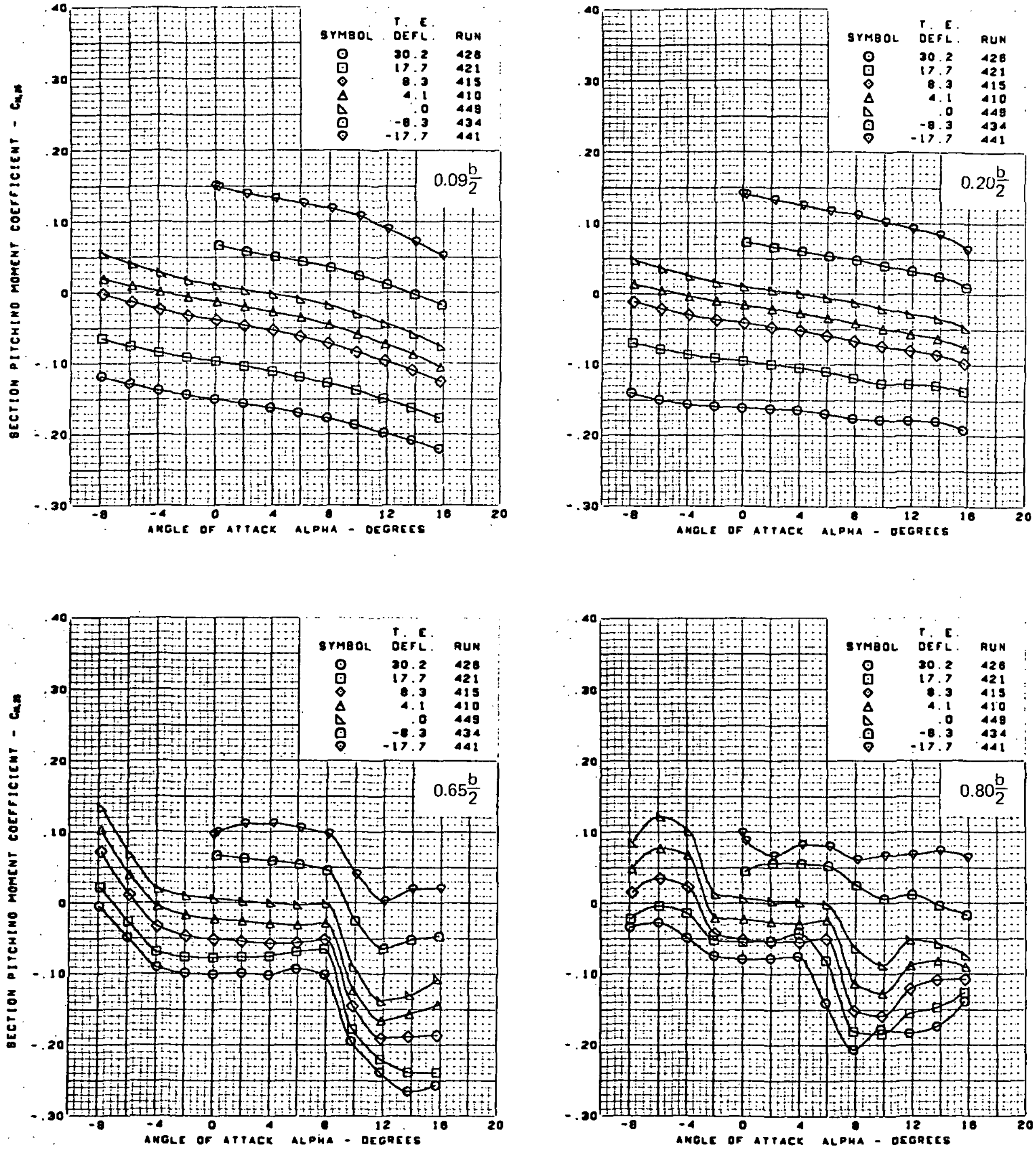
Figure 33.–(Continued)



M = 0.85
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

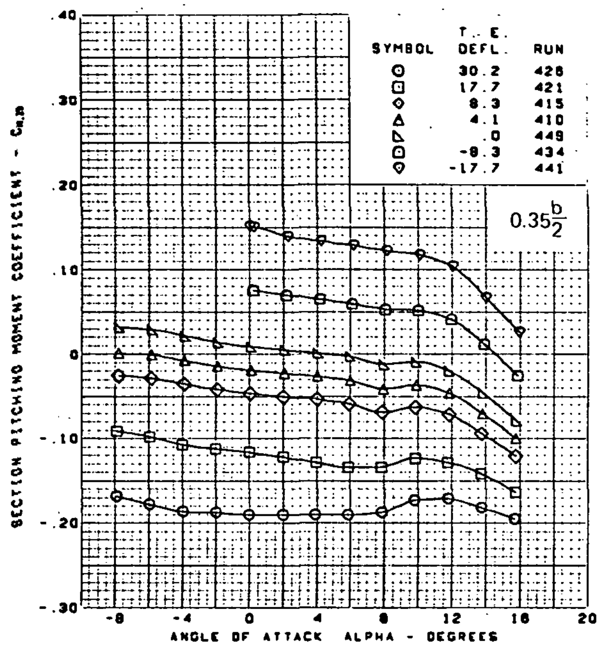
(i) (Concluded)

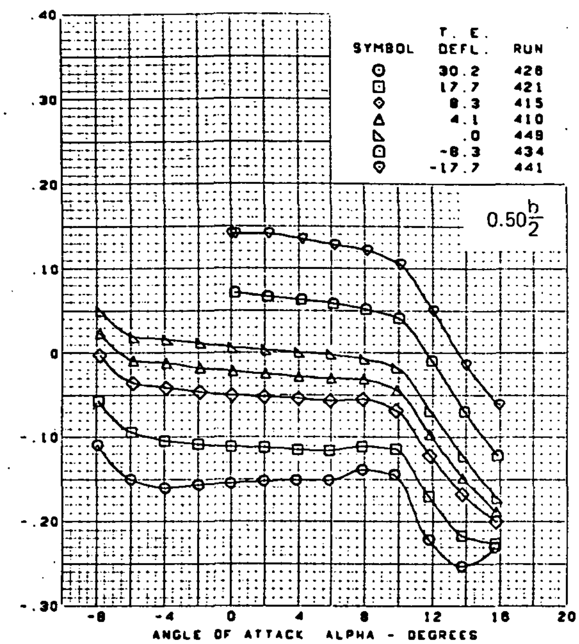
Figure 33.–(Continued)

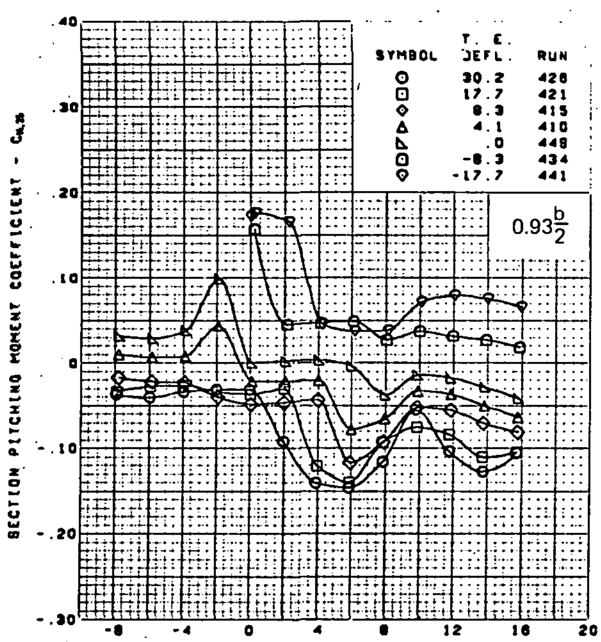


(j) Section Aerodynamic Coefficients — Pitching Moment

Figure 33.–(Continued)



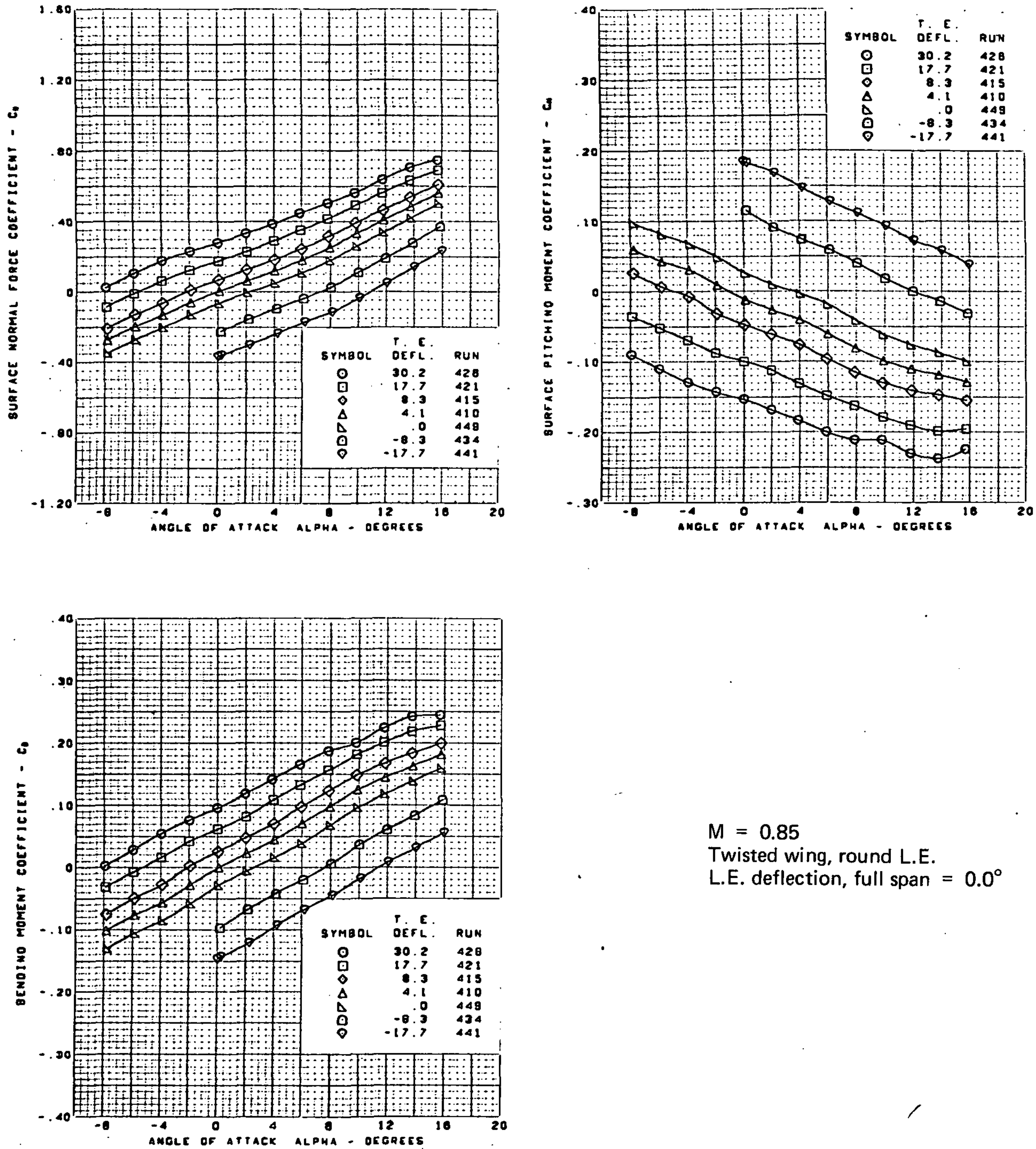




M = 0.85
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(j) (Concluded)

Figure 33.–(Continued)



(k) Wing Aerodynamic Coefficients

Figure 33.–(Concluded)

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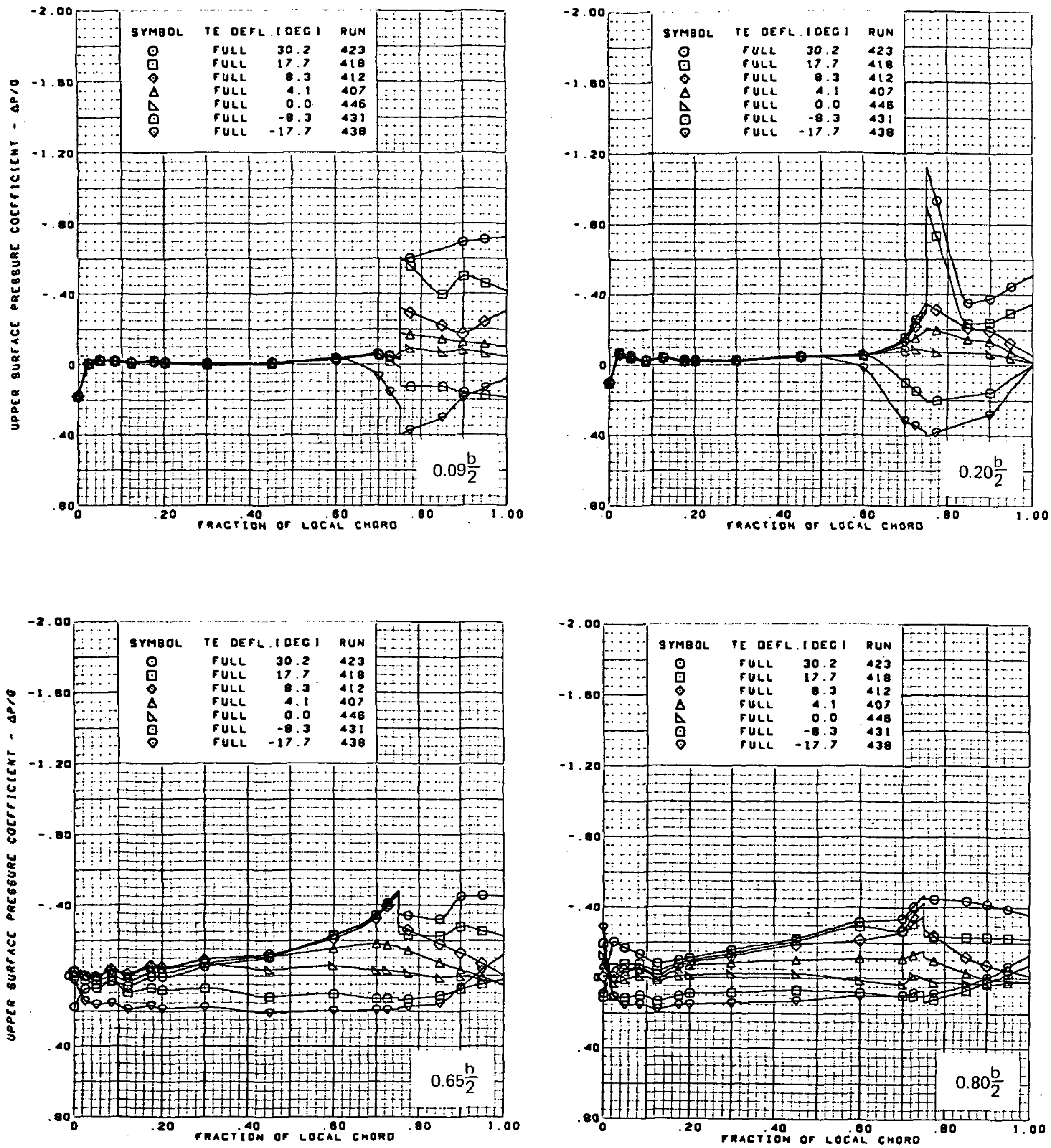
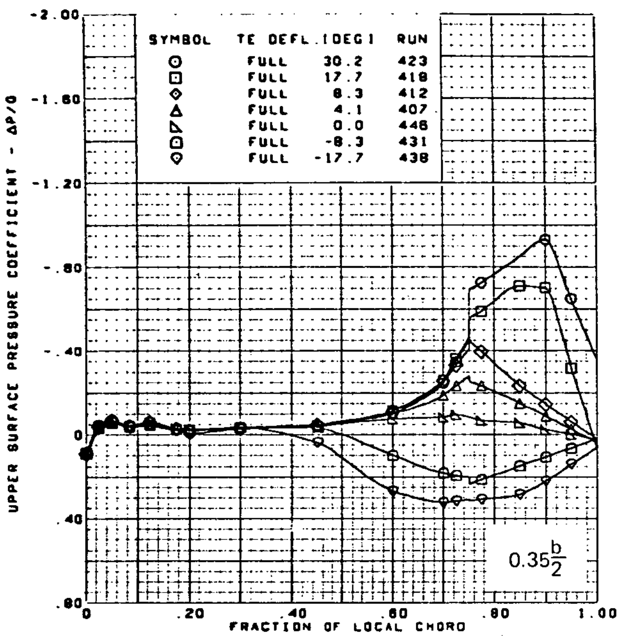
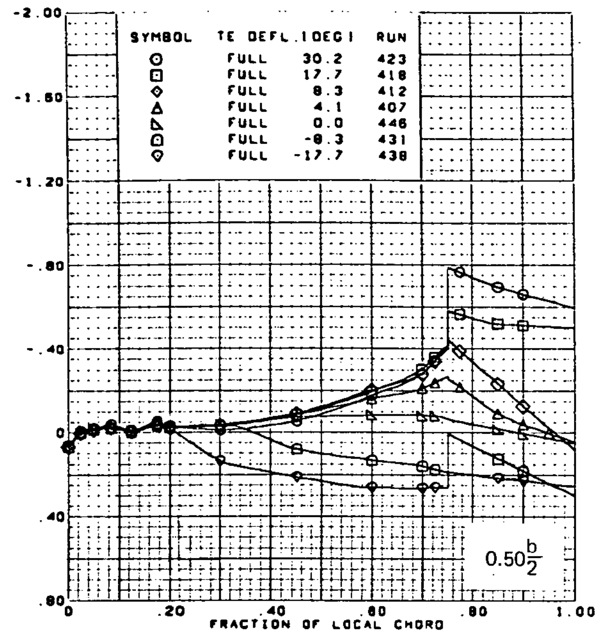
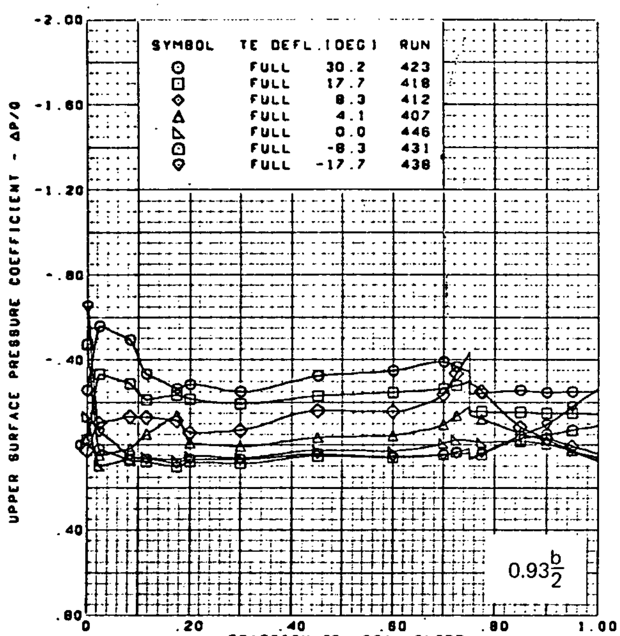


(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 34.—Wing Experimental Data—Effect of Full Span T.E. Deflection; Twisted Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 1.05



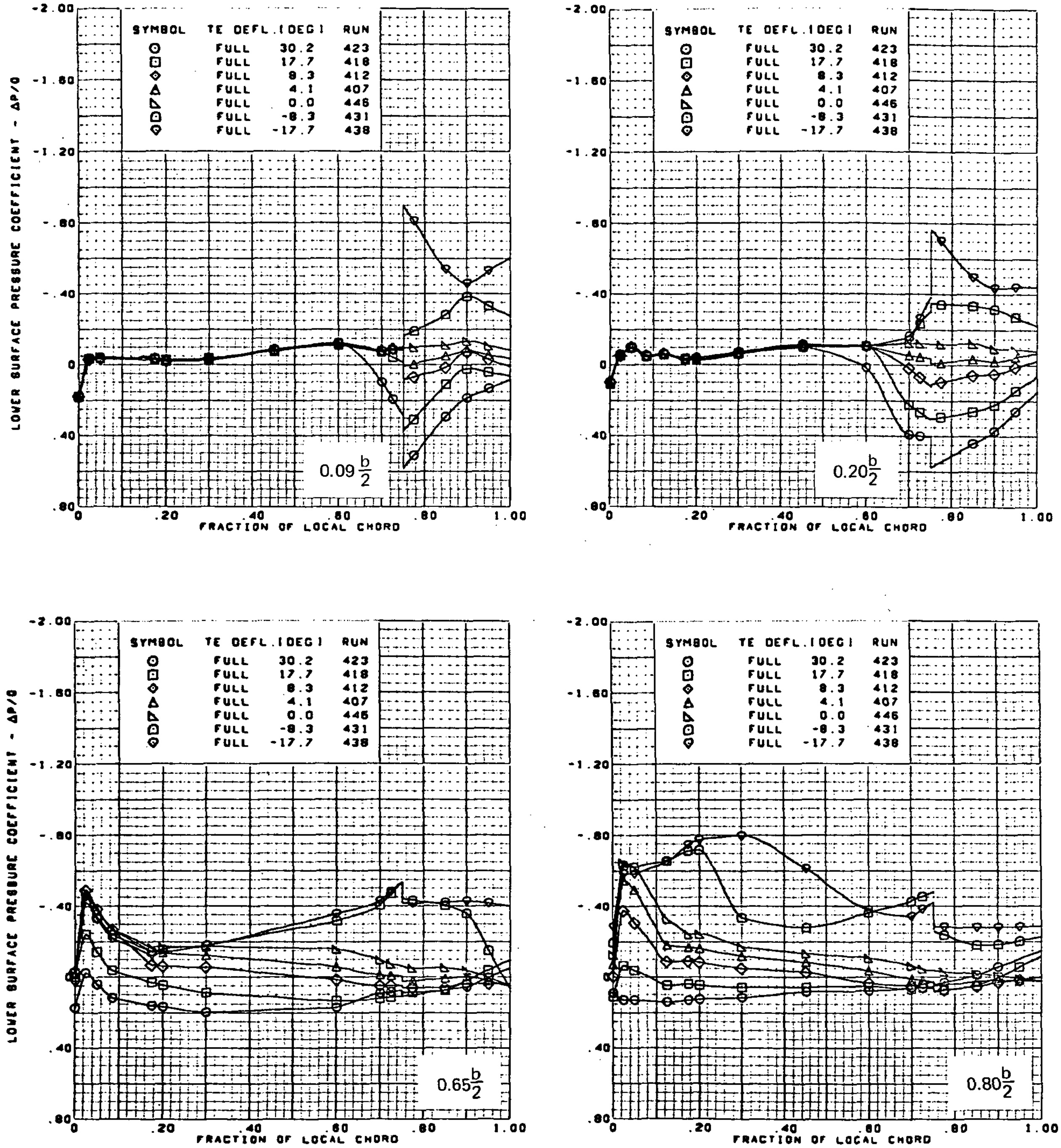




M = 1.05
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

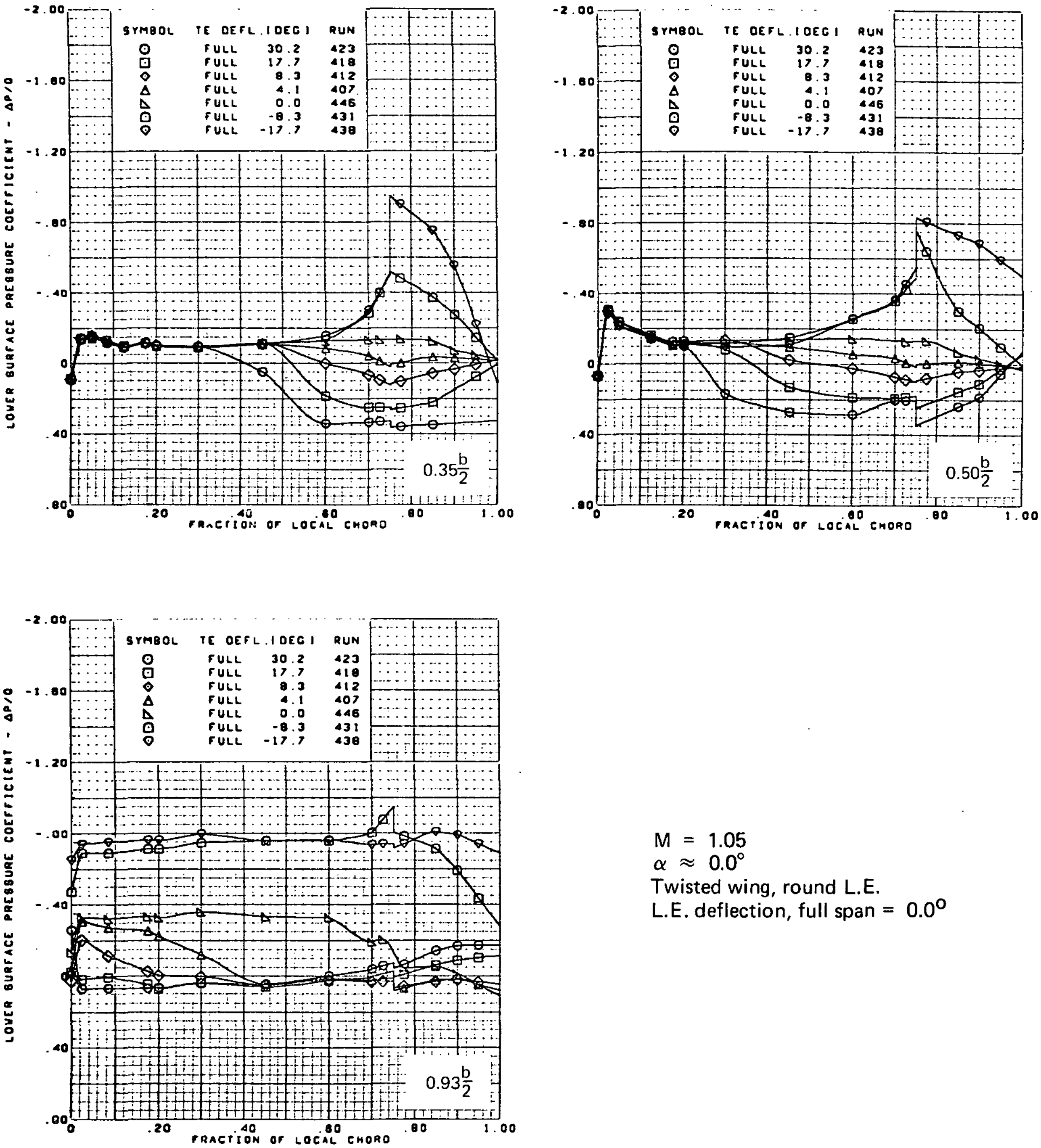
(a) (Concluded)

Figure 34.-(Continued)



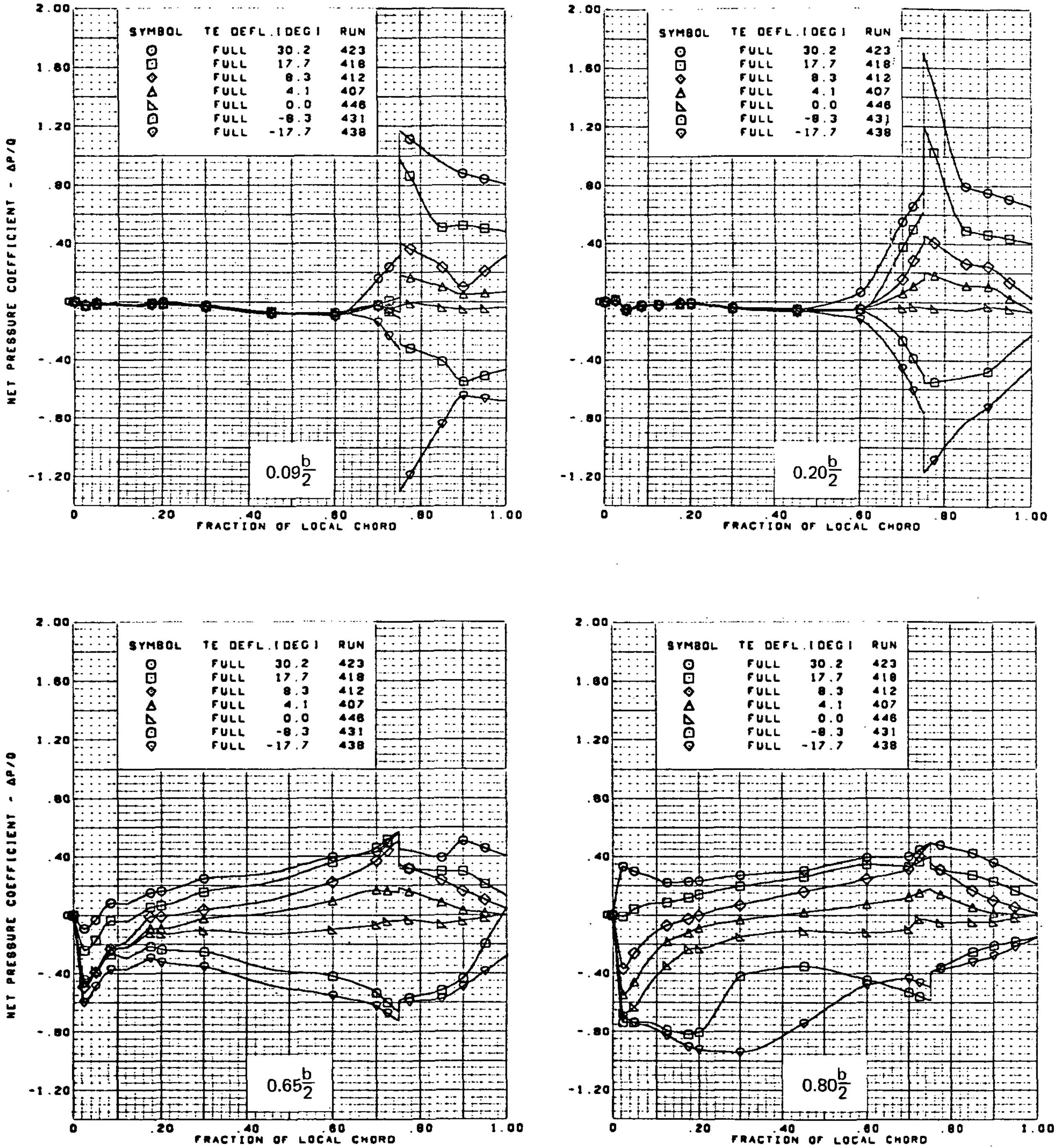
(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 34.–(Continued)



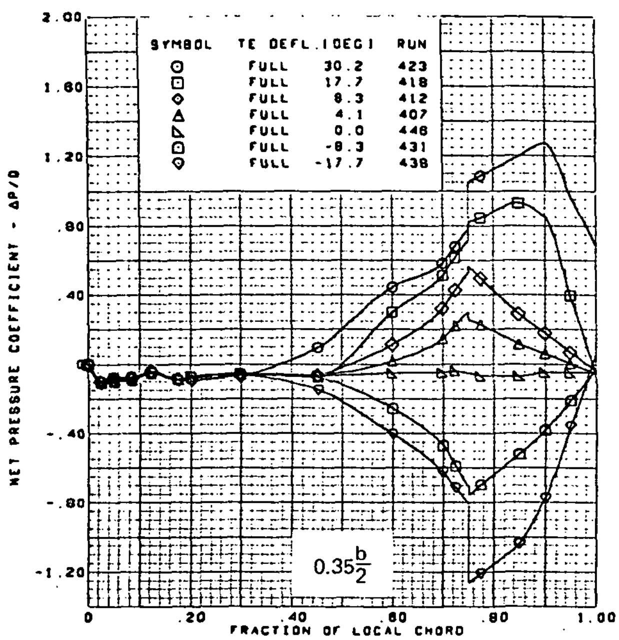
(b) (Concluded)

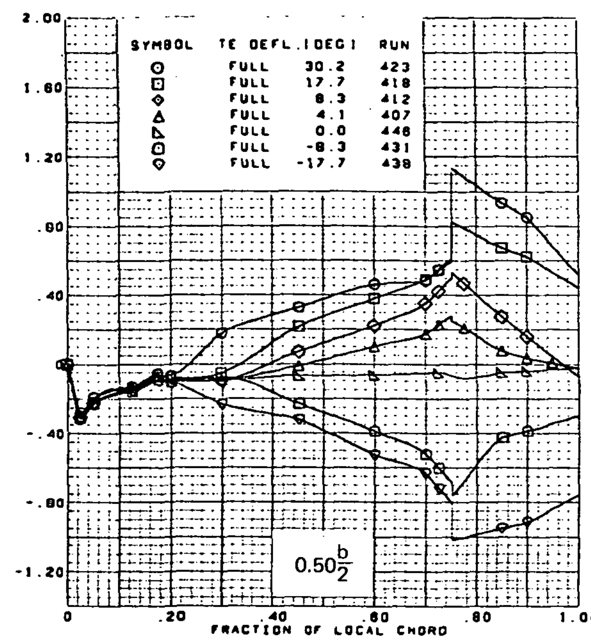
Figure 34.–(Continued)

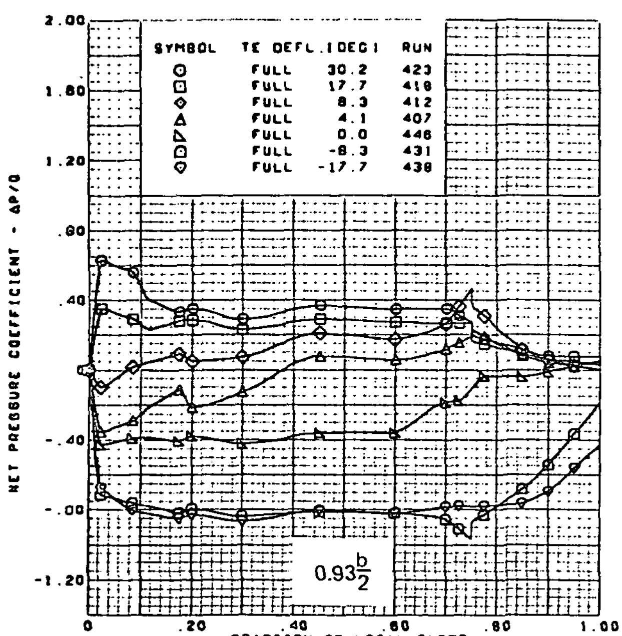


(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 34.–(Continued)



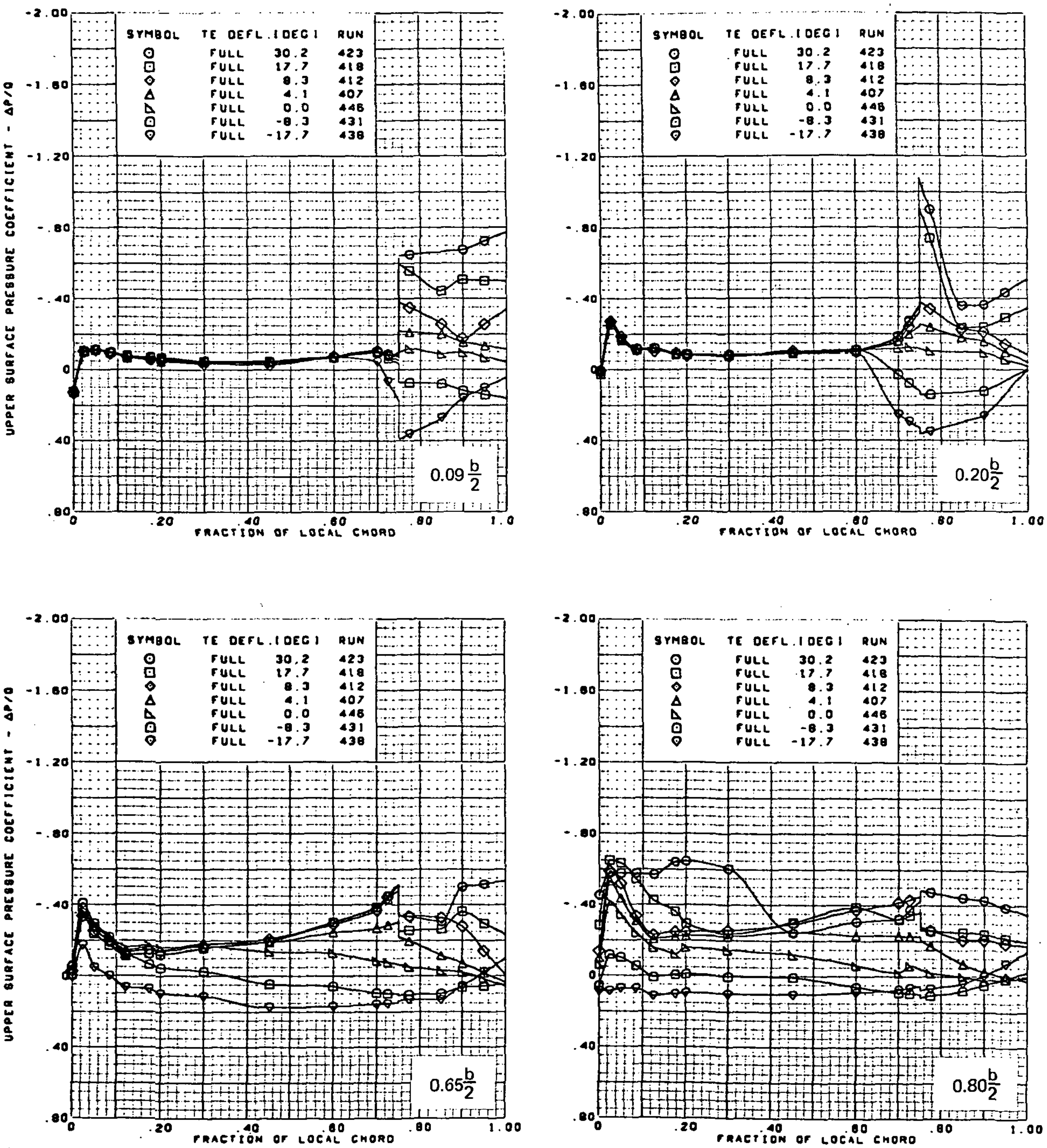




$M = 1.05$
$\alpha \approx 0.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0^{o}

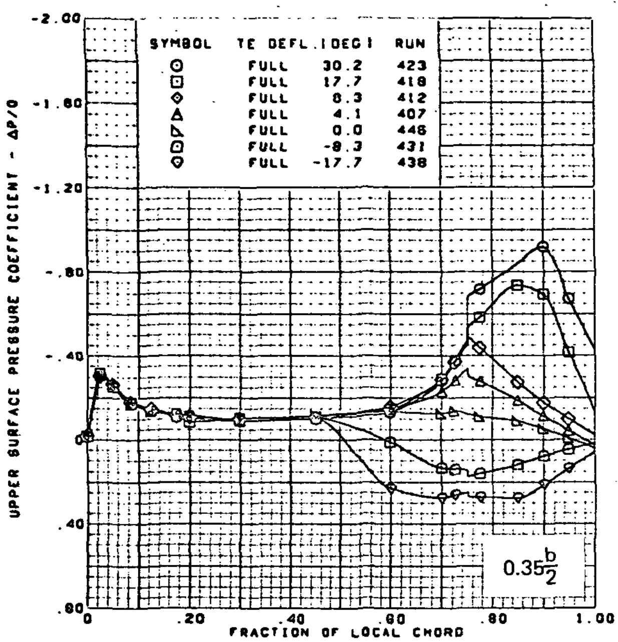
(c) (Concluded)

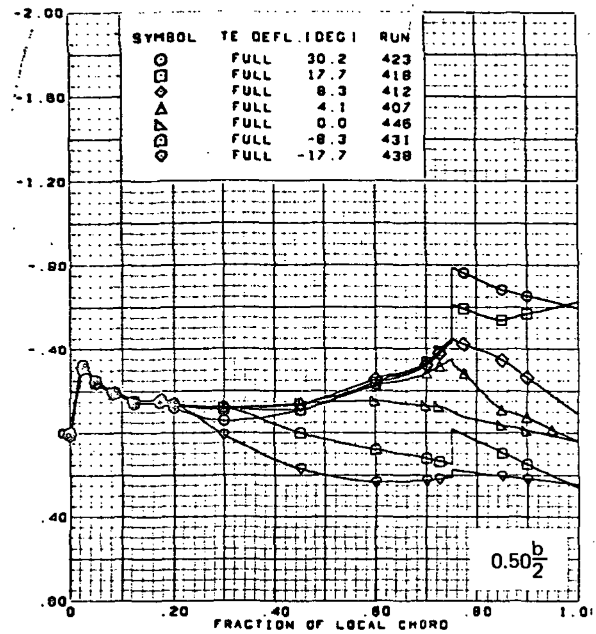
Figure 34.–(Continued)

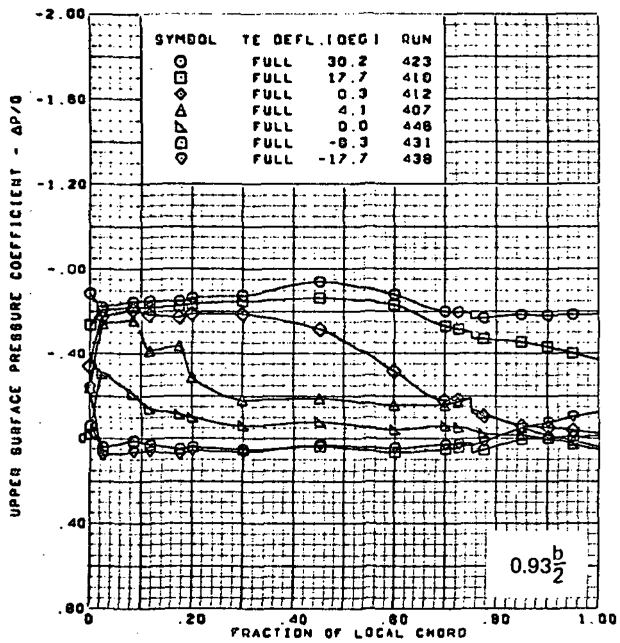


(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 34.–(Continued)



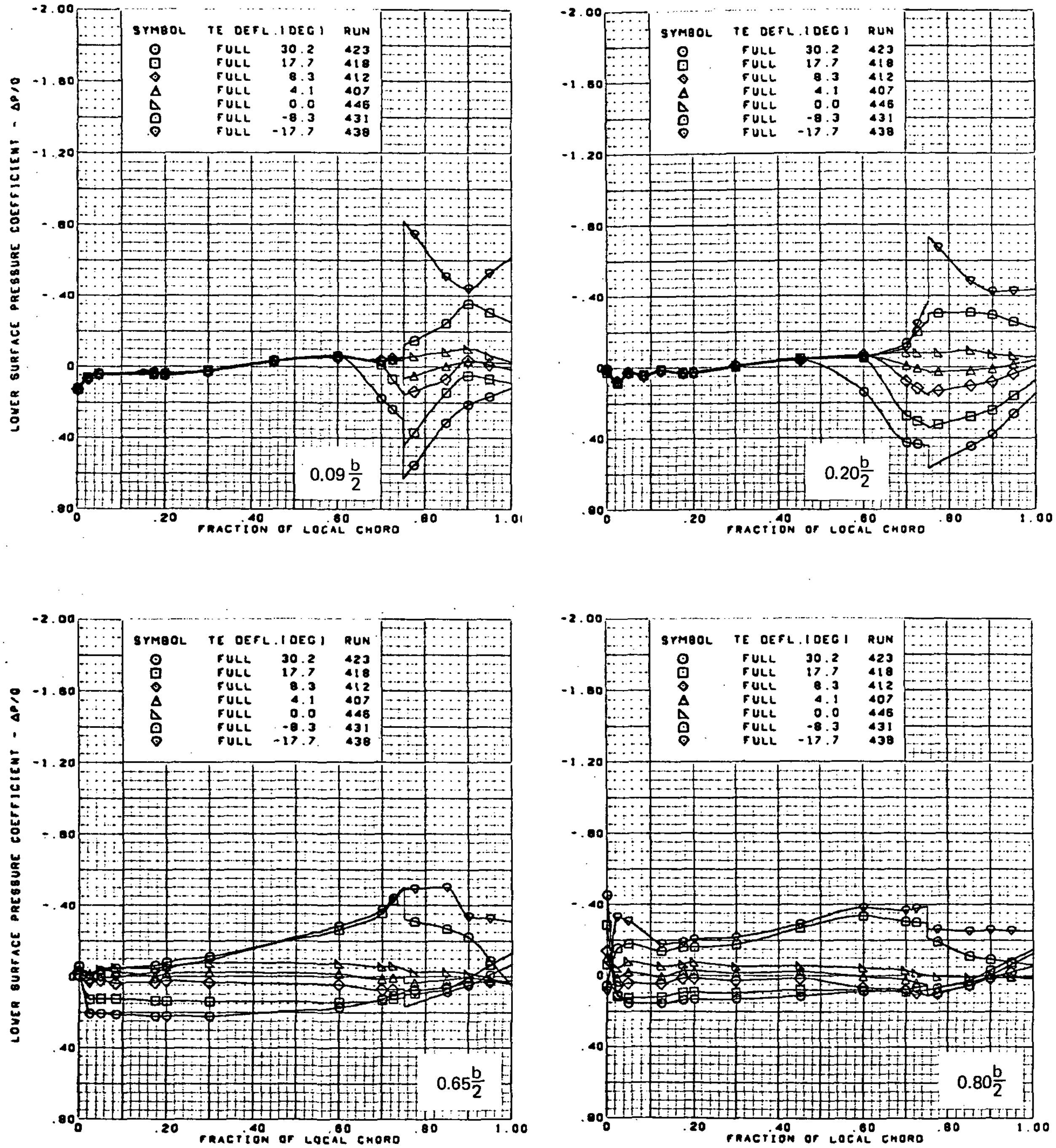




M = 1.05
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

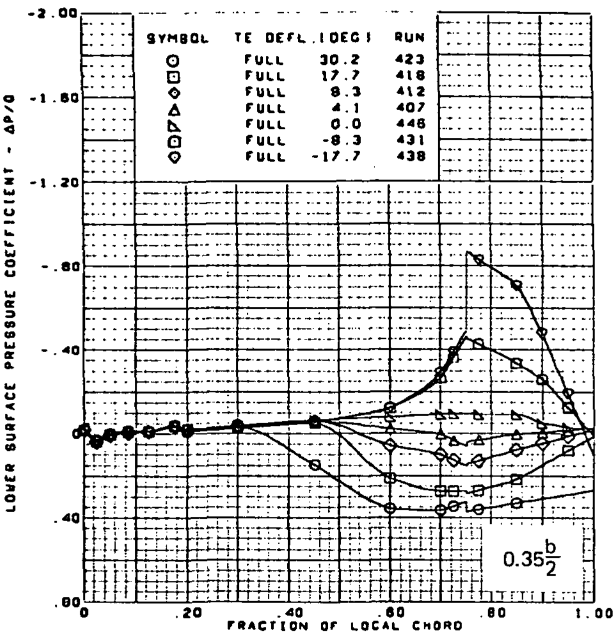
(d) (Concluded)

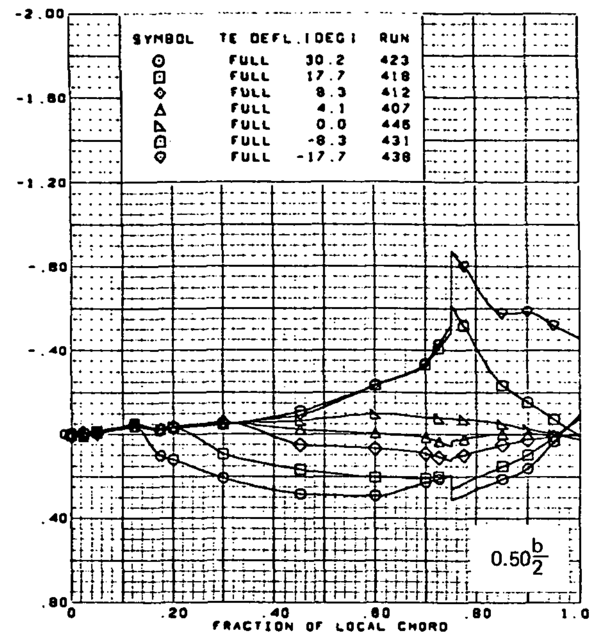
Figure 34.–(Continued)

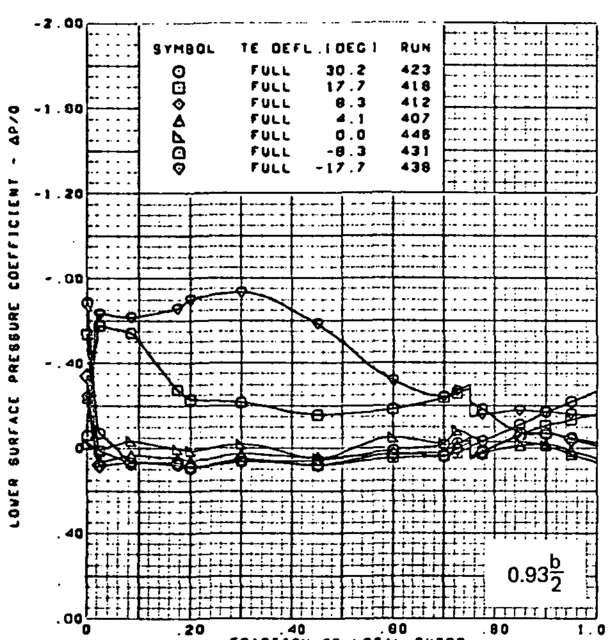


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 34.–(Continued)



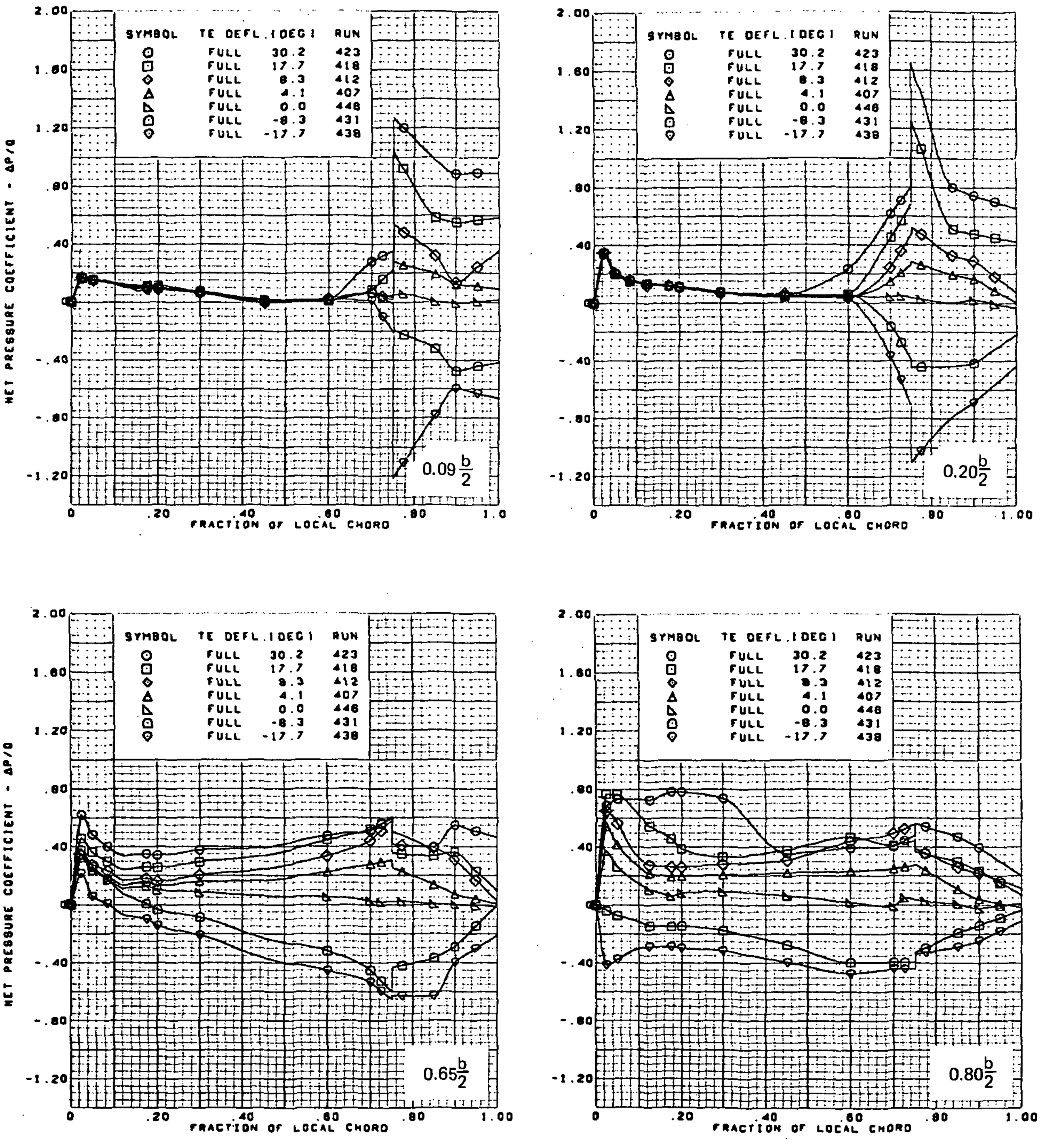




M = 1.05
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

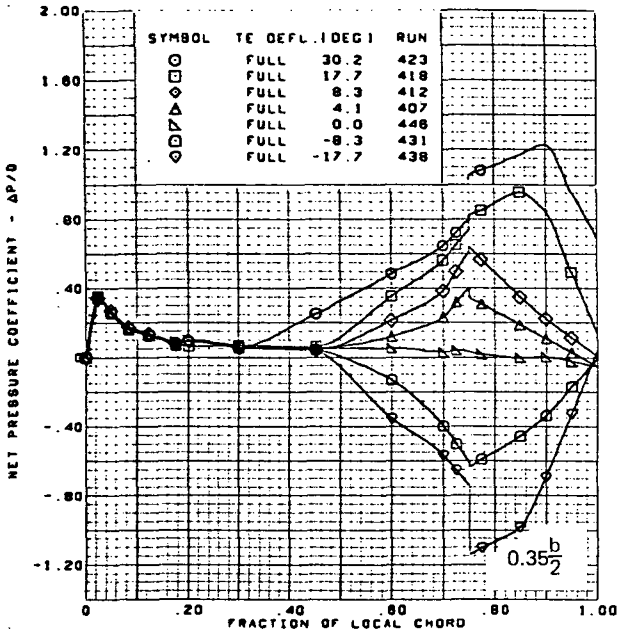
(e) (Concluded)

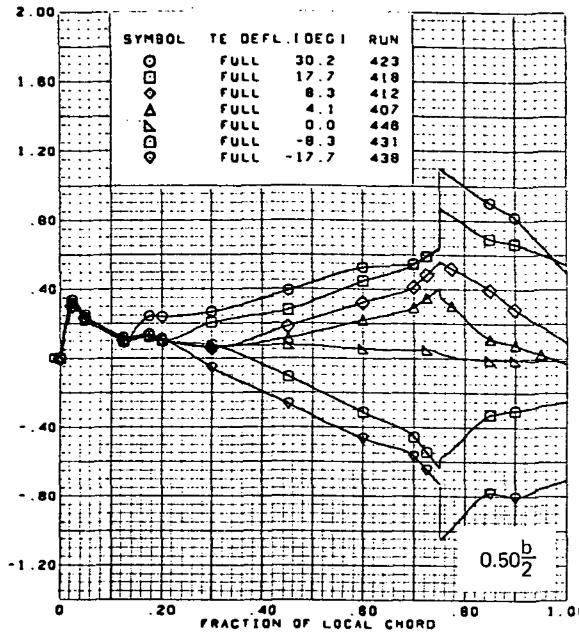
Figure 34.–(Continued)

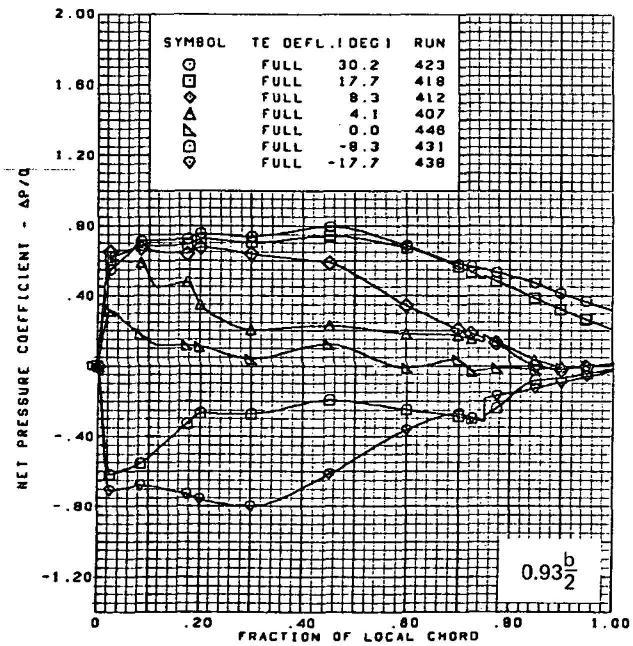


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 34.–(Continued)



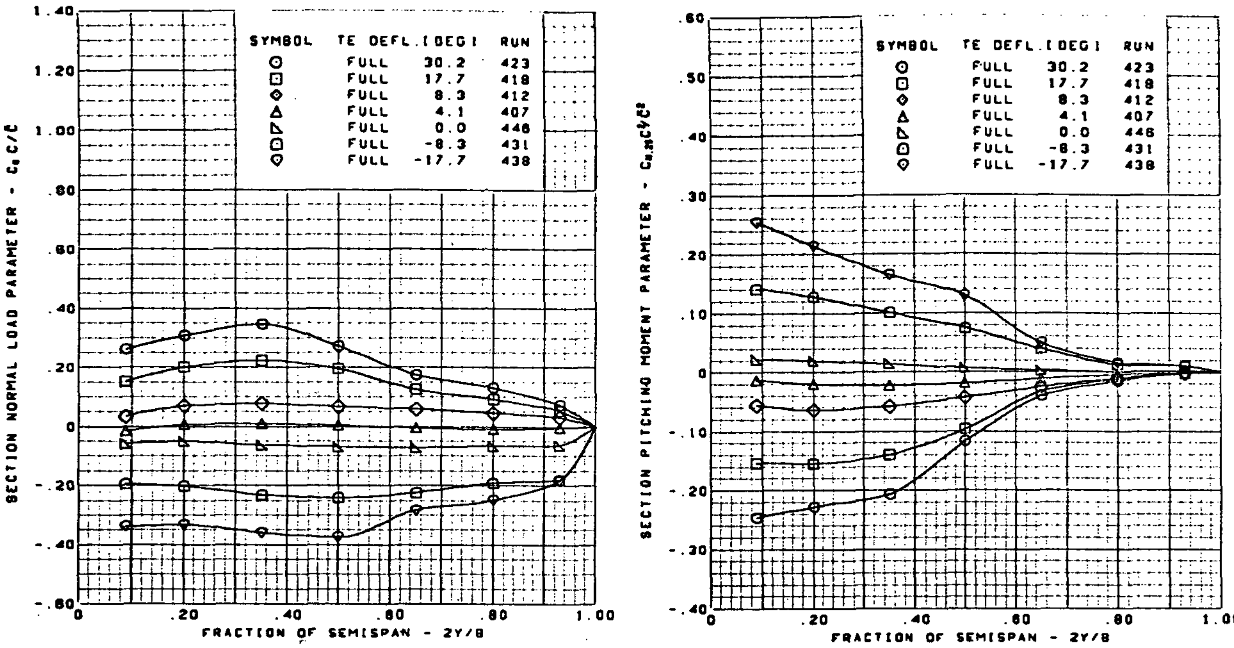




M = 1.05
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

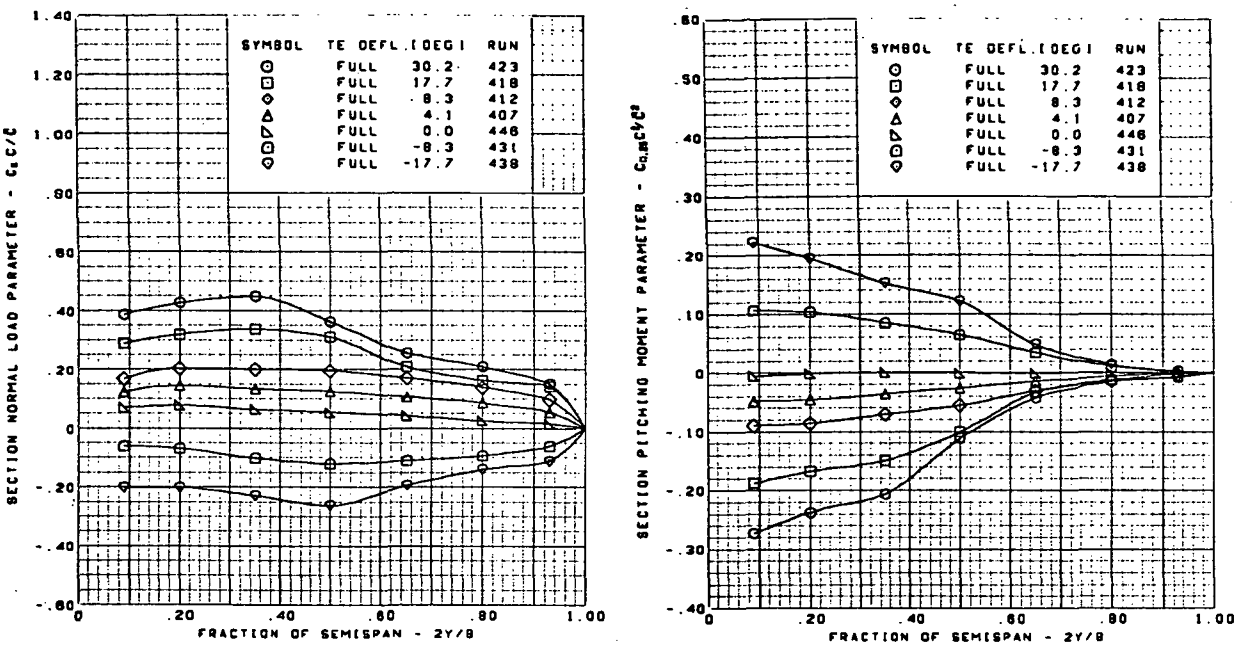
Figure 34.-(Continued)



M = 1.05
α ≈ 0.0°
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

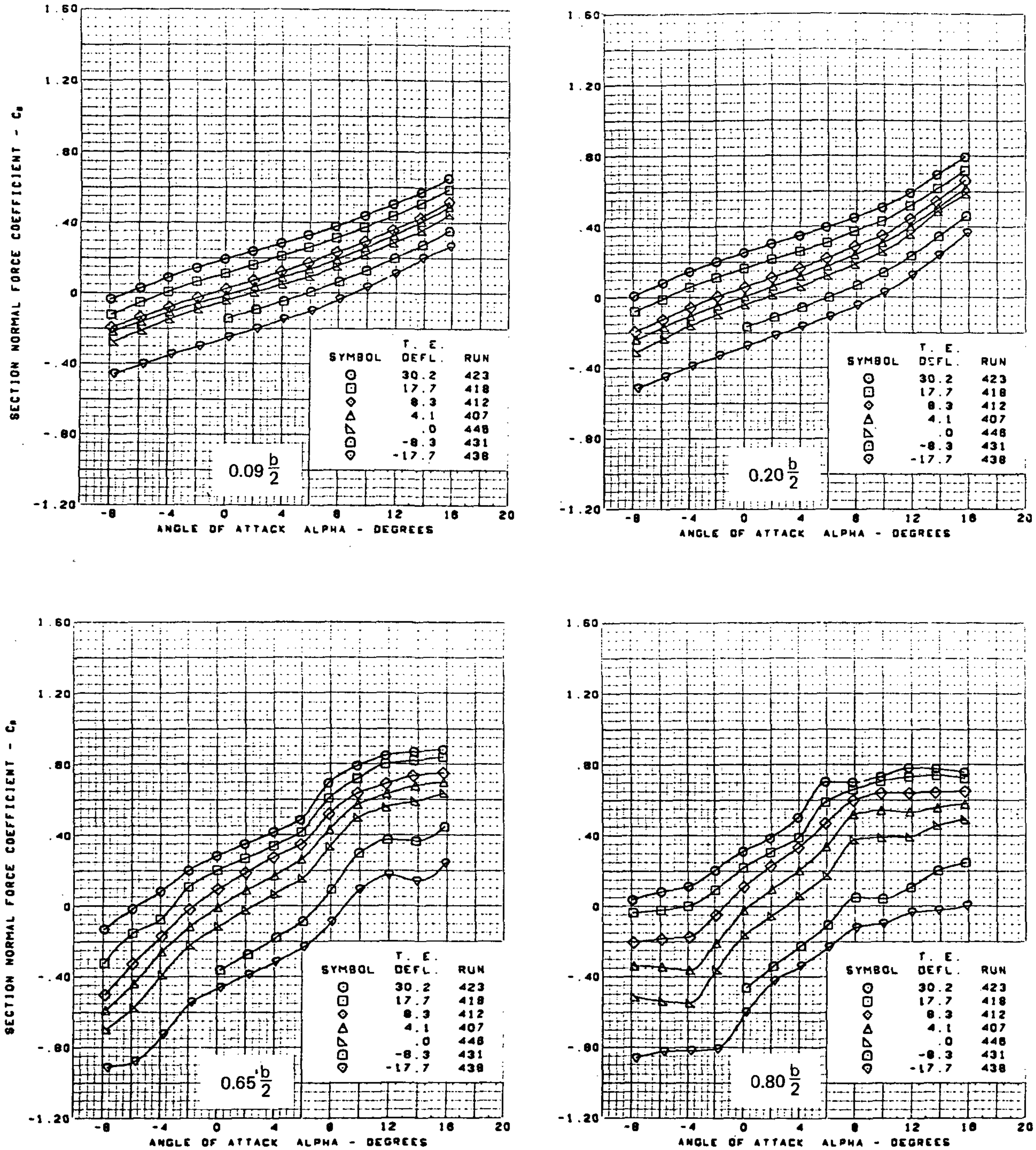
Figure 34.–(Continued)



M = 1.05
$\alpha \approx 4.0°$
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

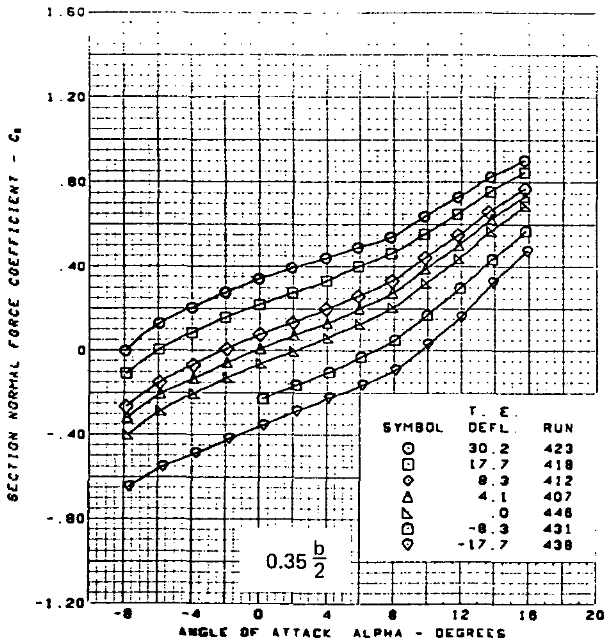
(h) Spanload Distributions, $\alpha \approx 4.0°$

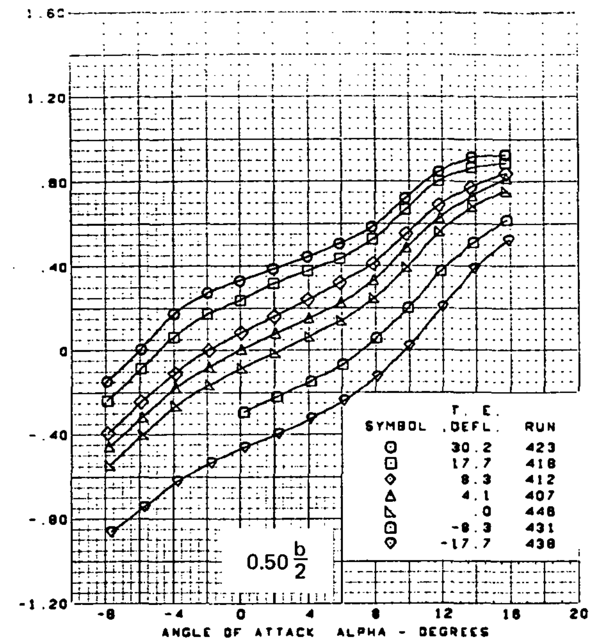
Figure 34.-(Continued)

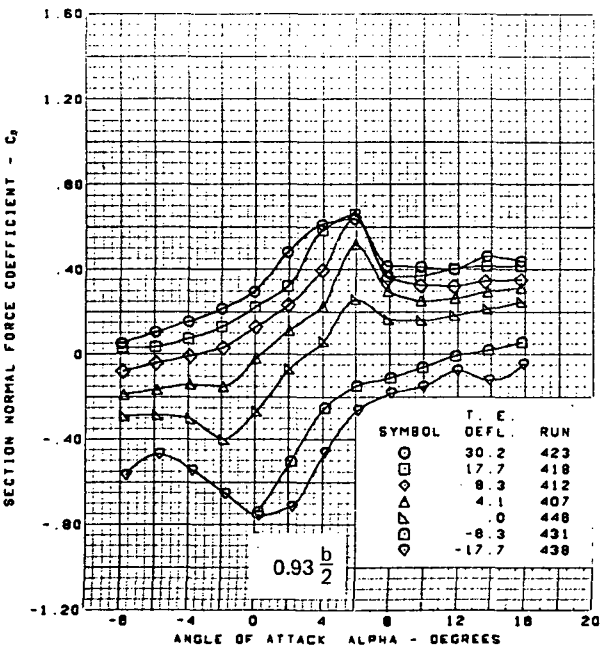


(i) Section Aerodynamic Coefficients — Normal Force

Figure 34.-(Continued)



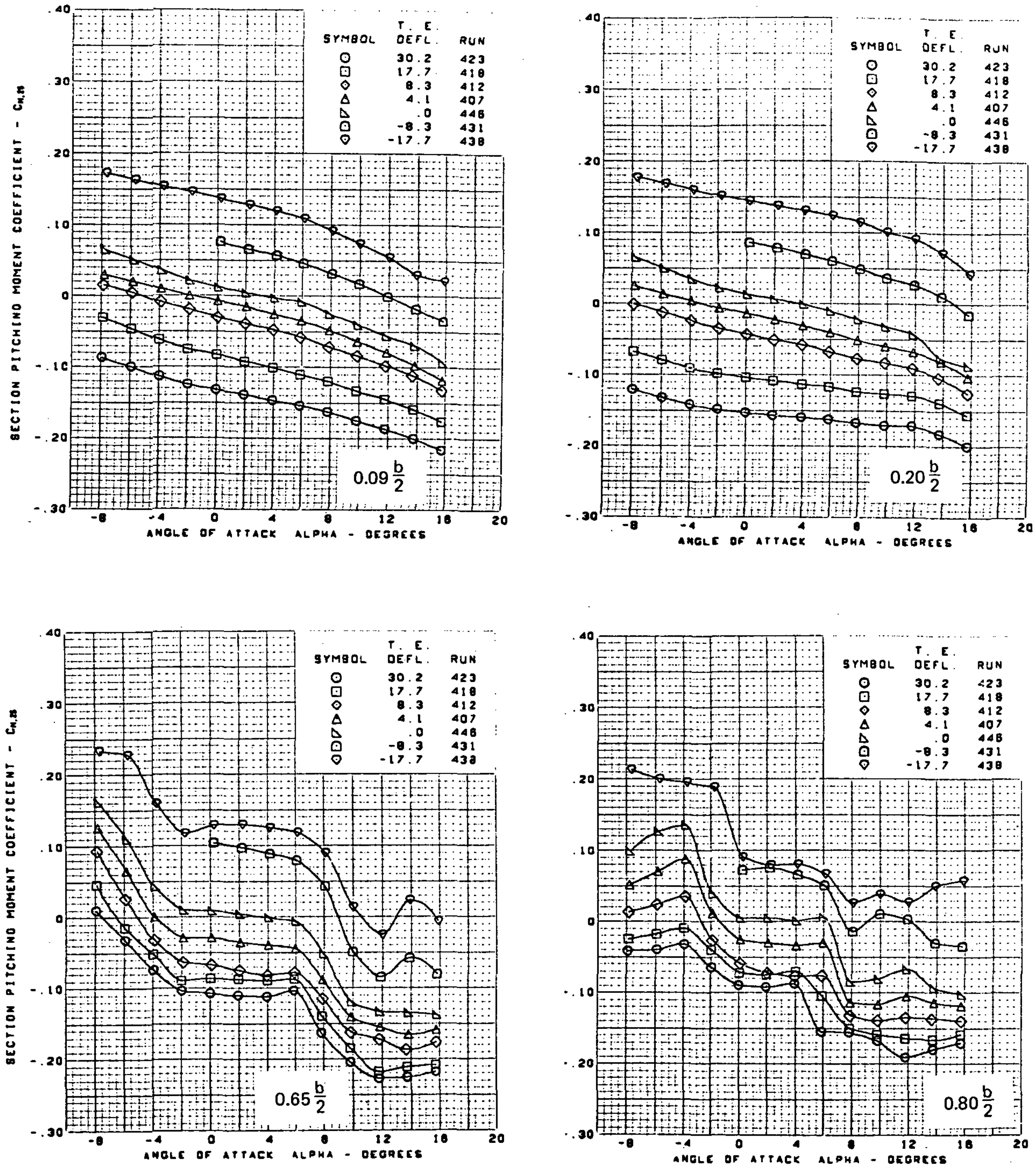




M = 1.05
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

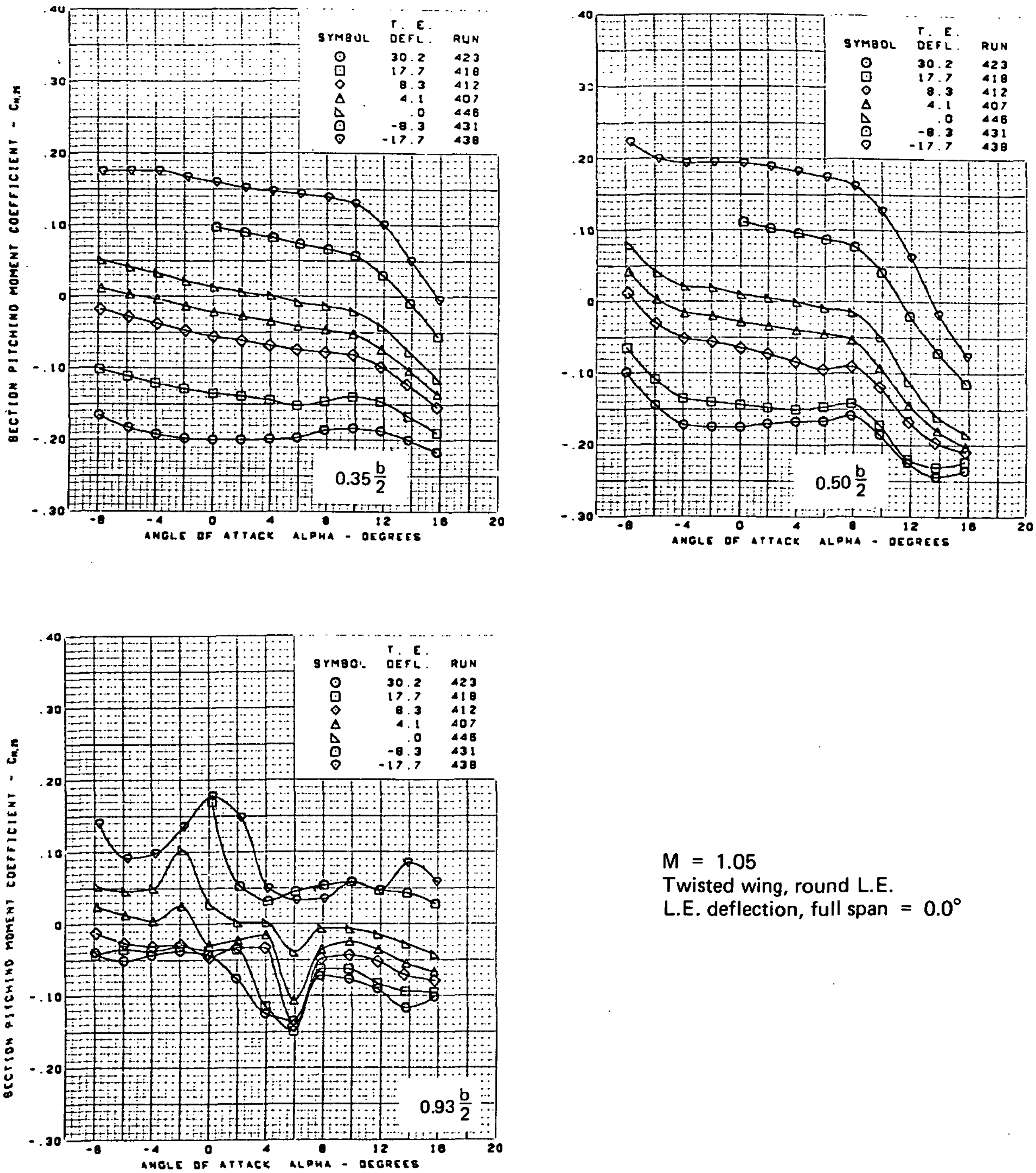
(i) (Concluded)

Figure 34.–(Continued)



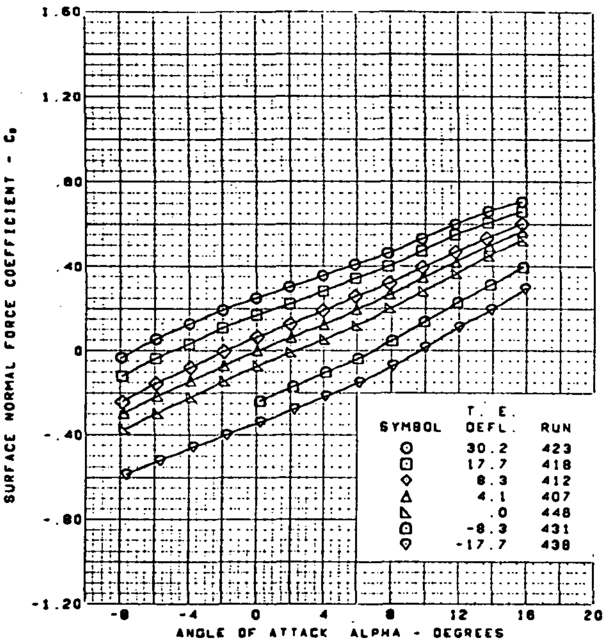
(j) Section Aerodynamic Coefficients — Pitching Moment

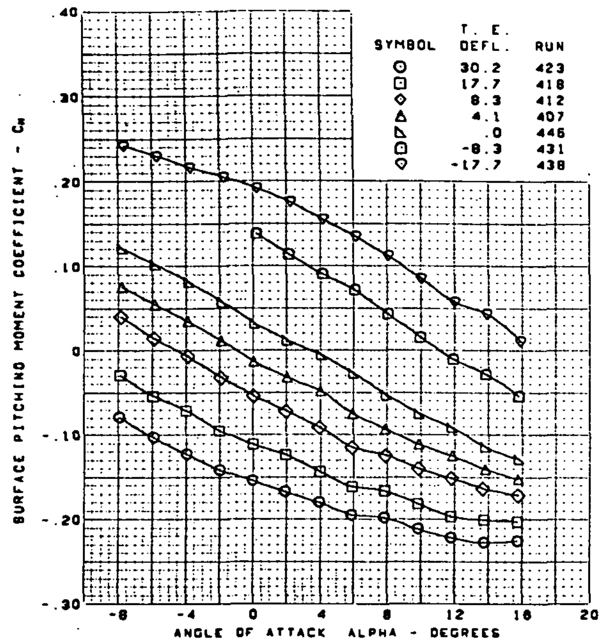
Figure 34.–(Continued)

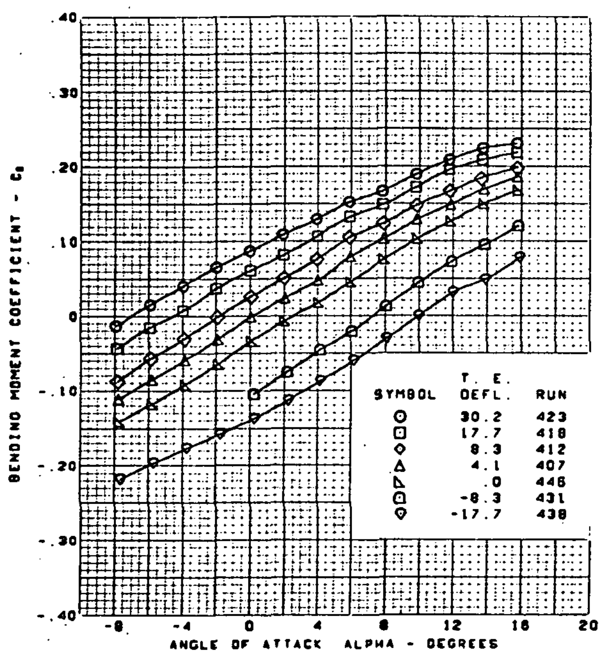


(j) (Concluded)

Figure 34.–(Continued)







M = 1.05
Twisted wing, round L.E.
L.E. deflection, full span = 0.0°

(k) Wing Aerodynamic Coefficients

Figure 34.–(Concluded)

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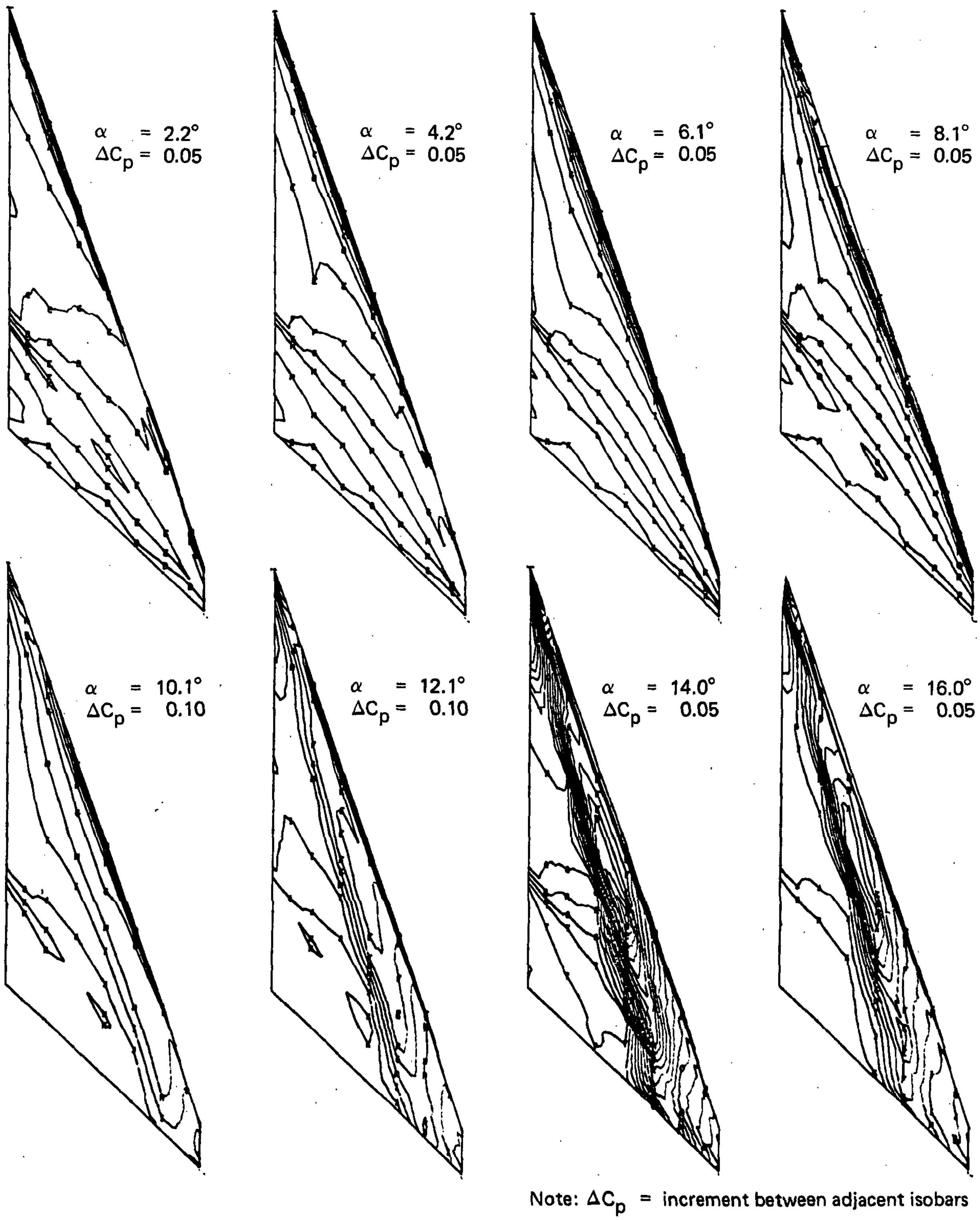
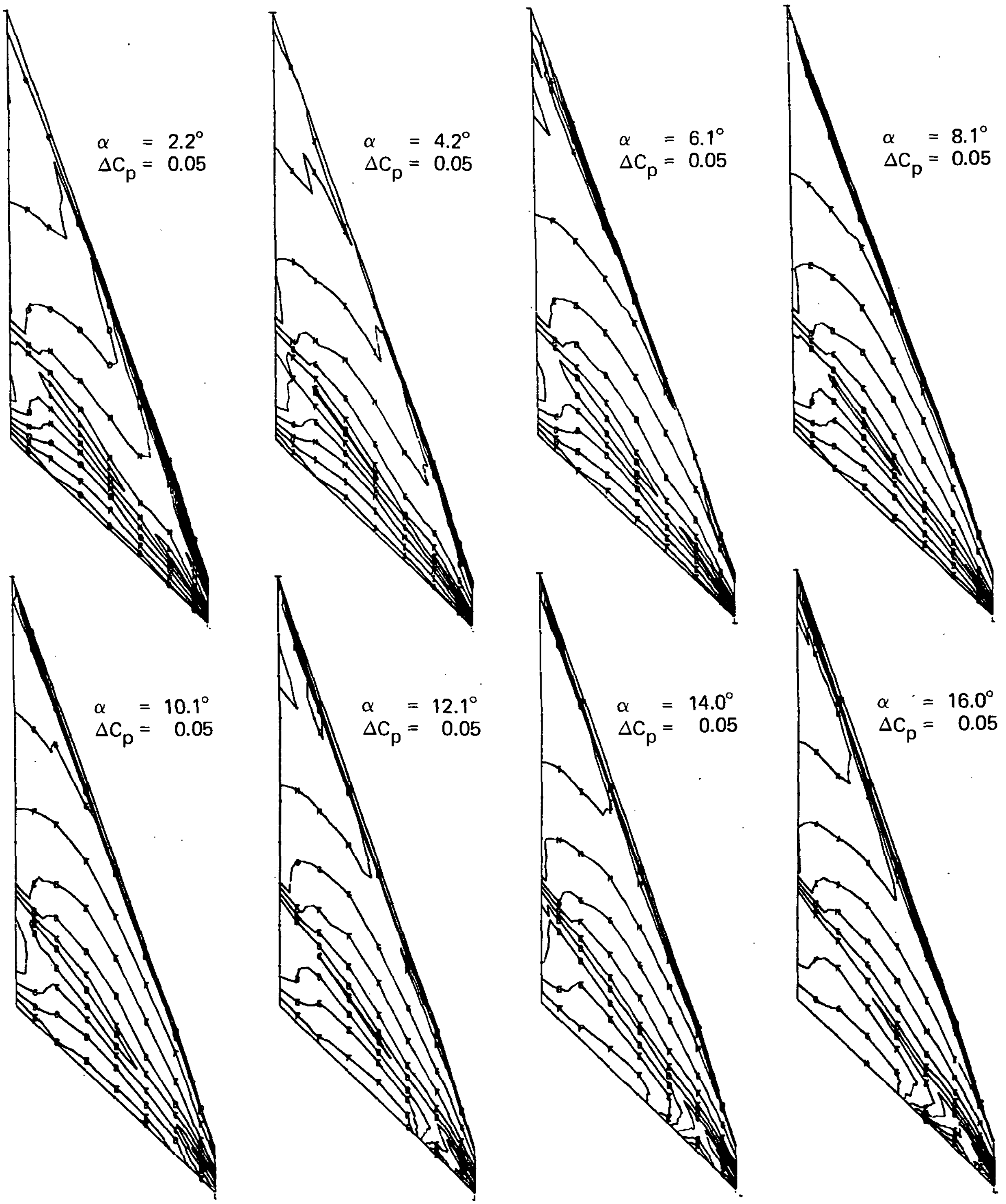


(a) Upper Surface Isobars; T.E. Deflection, Full Span = -8.3°

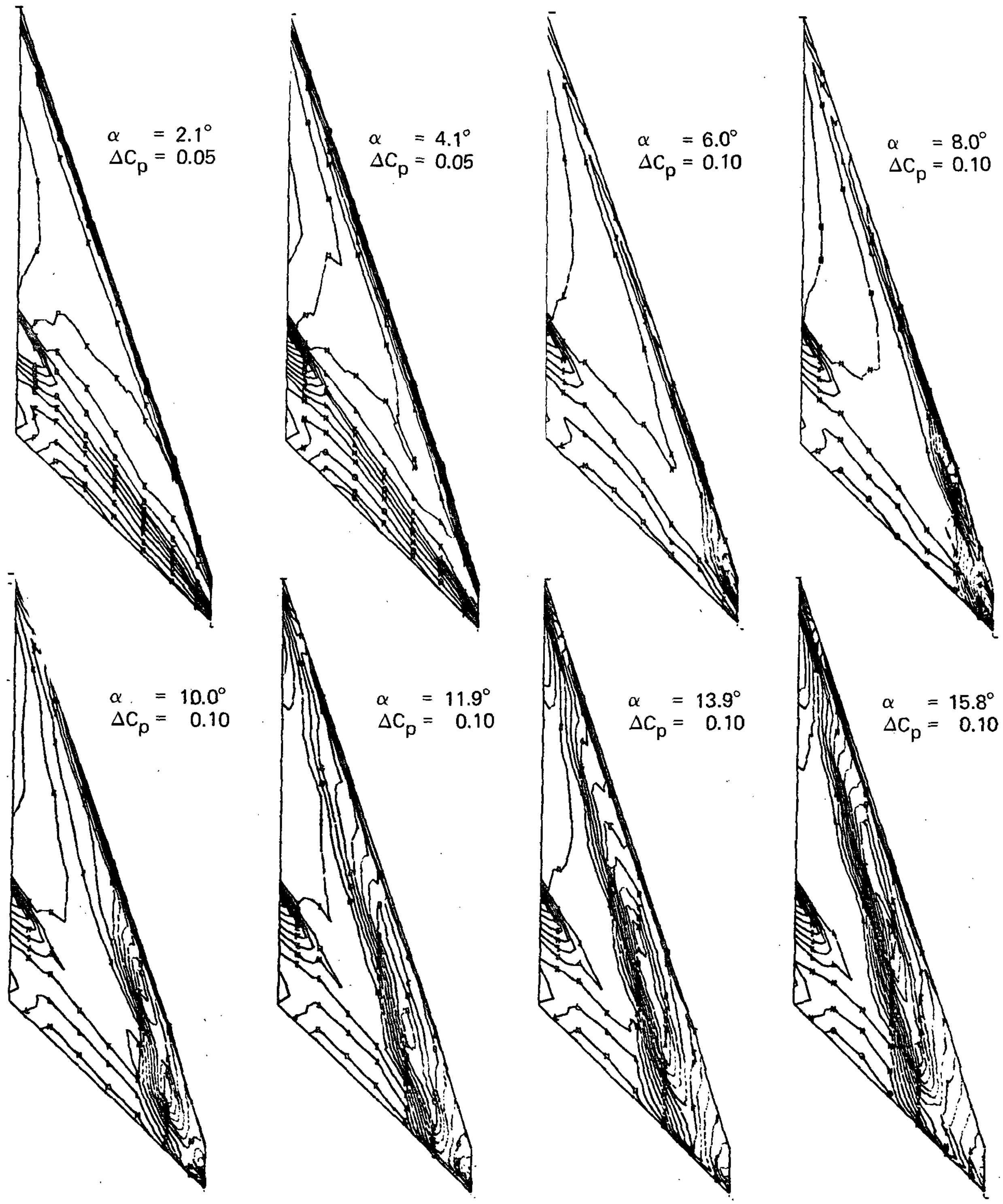
Figure 35.- Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Twisted Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.40



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars; T.E. Deflection, Full Span = -8.3°

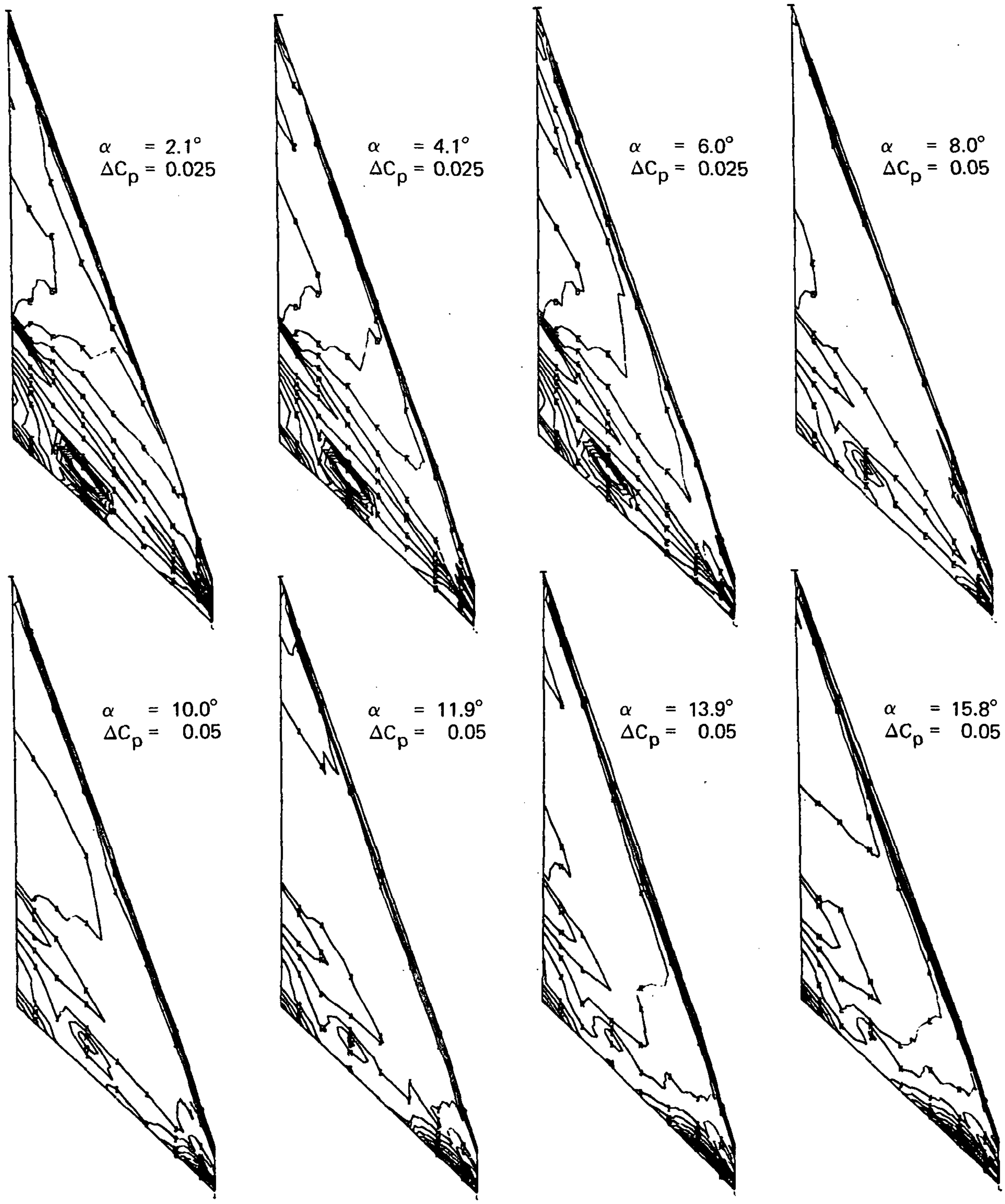
Figure 35.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(c) Upper Surface Isobars; T.E. Deflection, Full Span = 8.3°

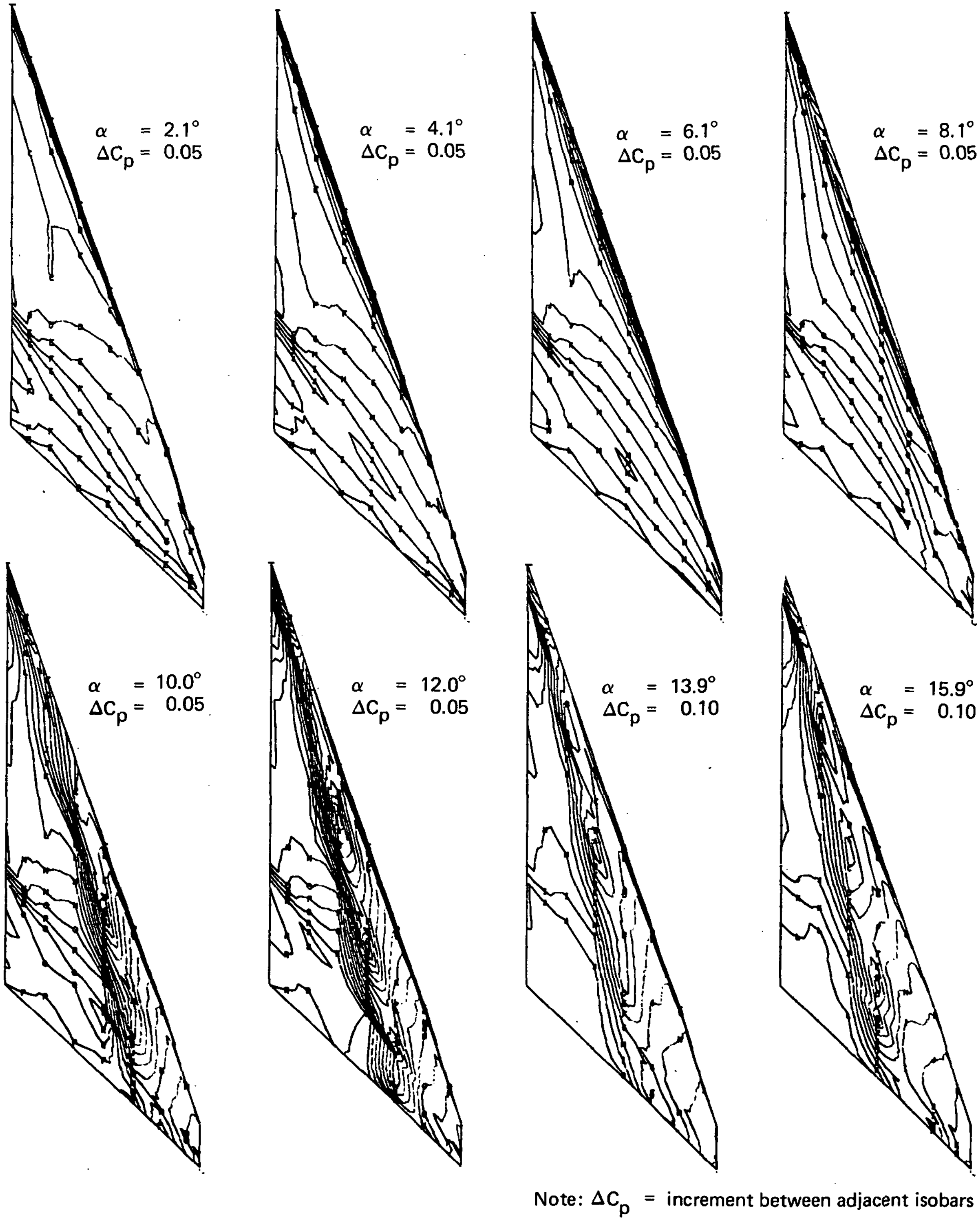
Figure 35.–(Continued)



Note: ΔC_p = increment between adjacent isobars

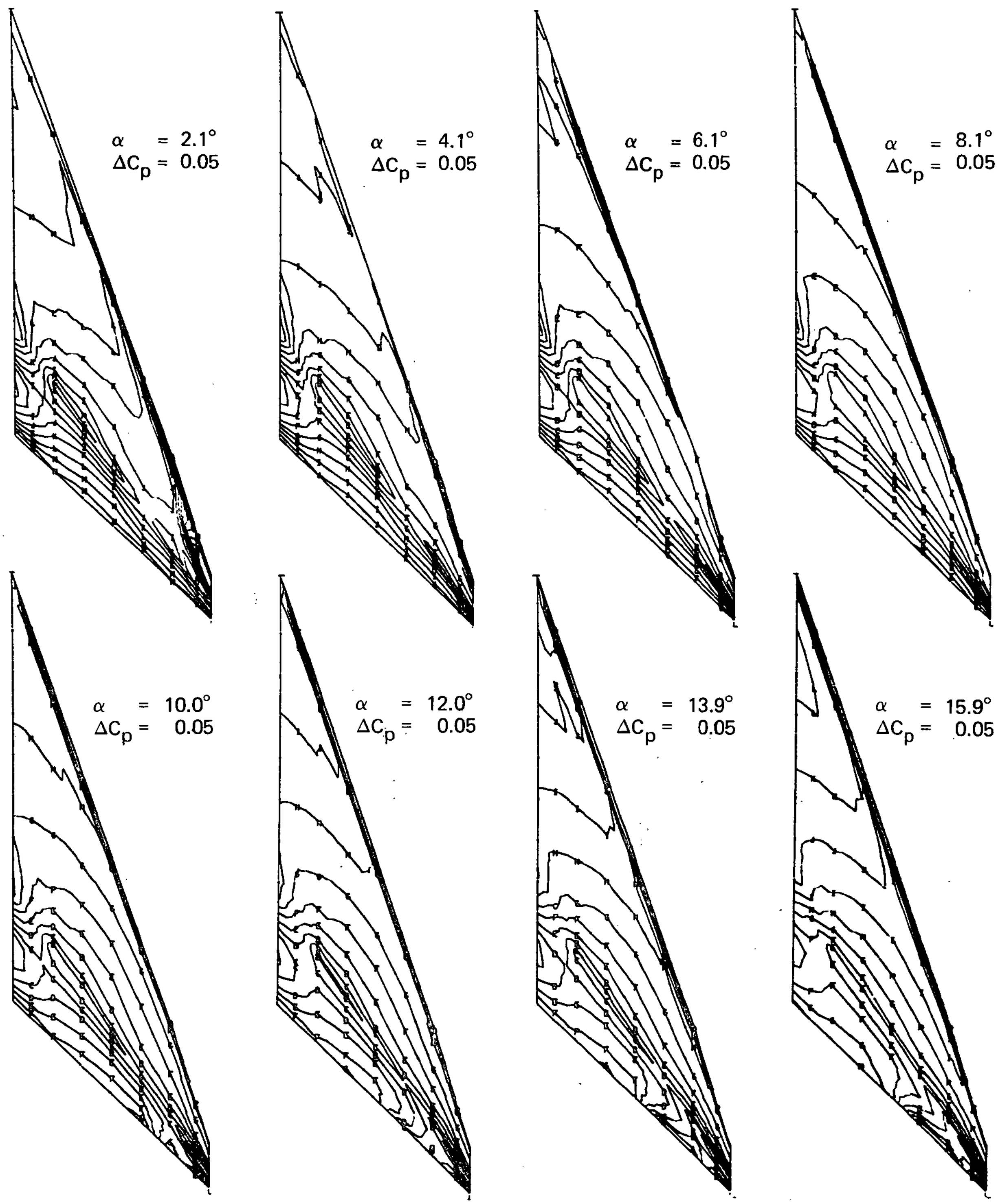
(d) Lower Surface Isobars; T.E. Deflection, Full Span = 8.3°

Figure 35.–(Concluded)



(a) Upper Surface Isobars; T.E. Deflection, Full Span = -8.3°

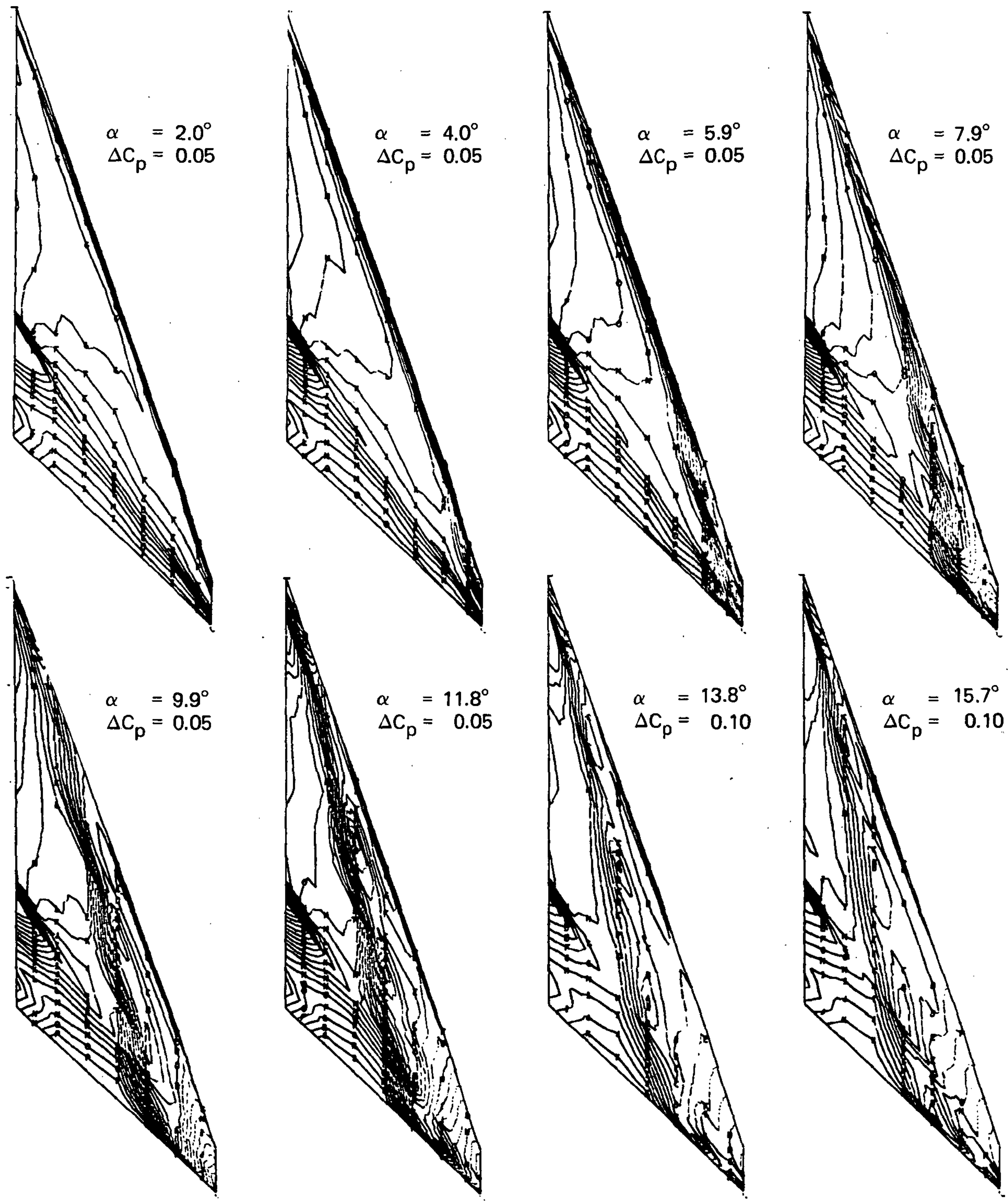
Figure 36.– Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Twisted Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars; T.E. Deflection, Full Span = -8.3°

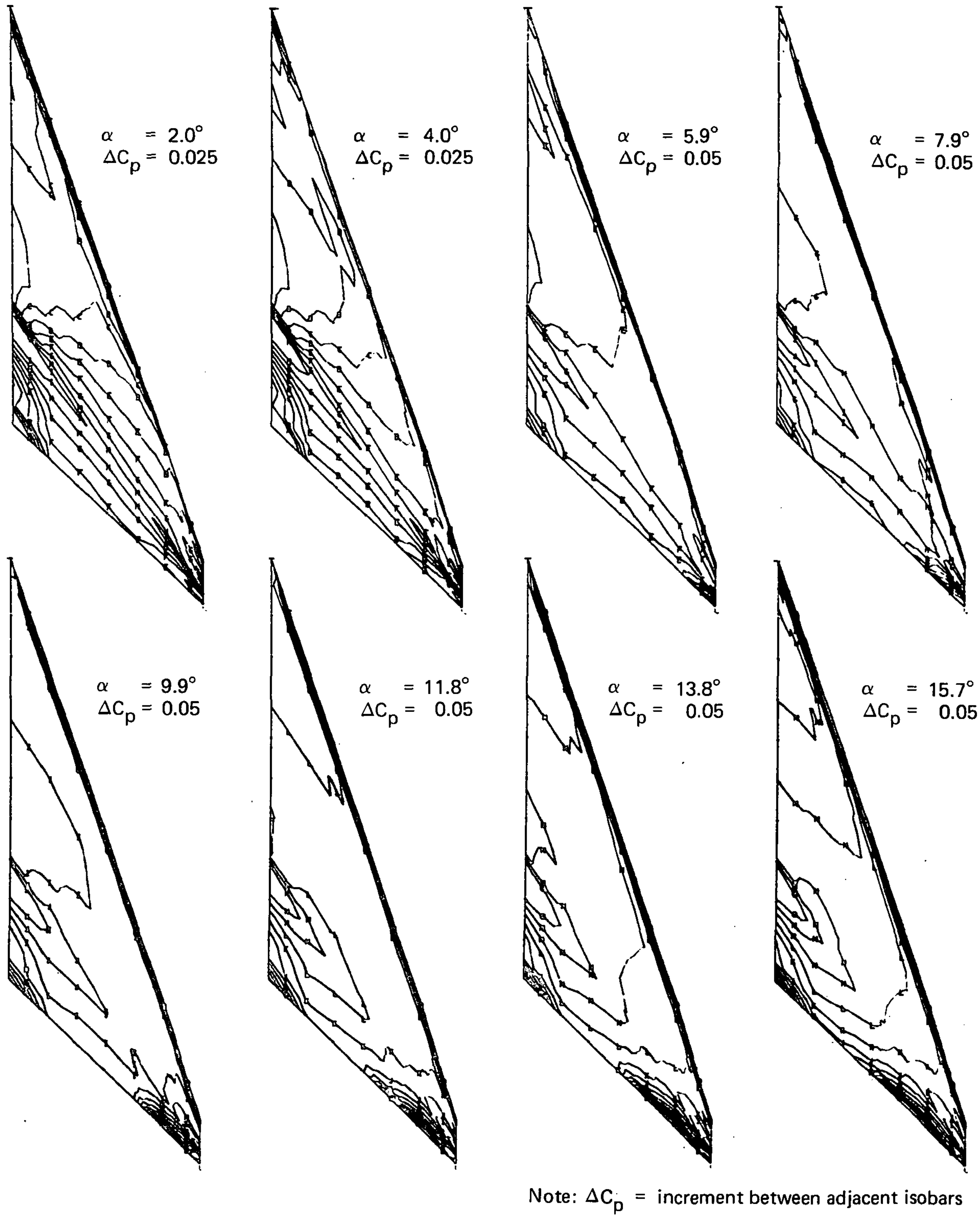
Figure 36.–(Continued)



Note: ΔC_p = increment between adjacent isobars

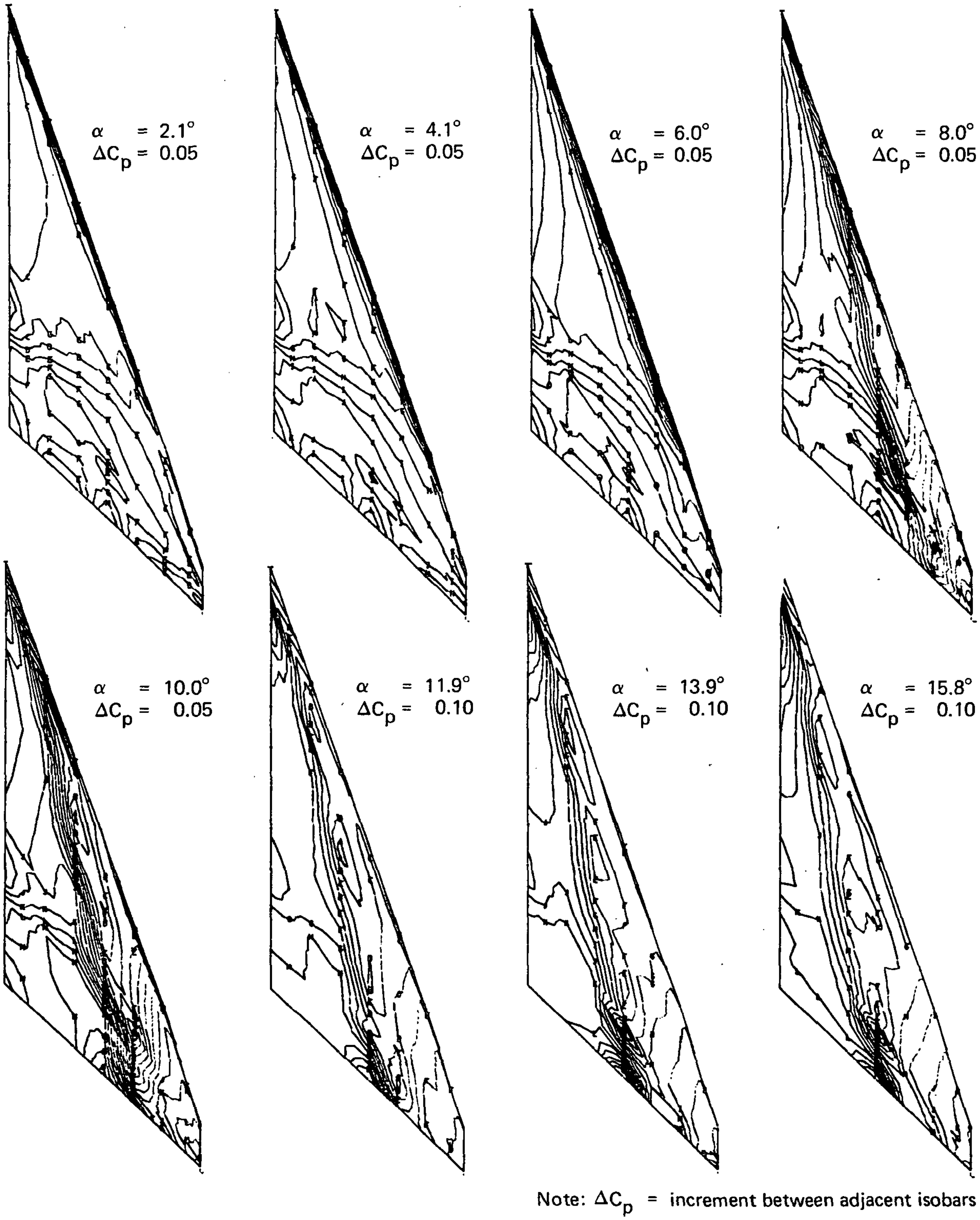
(c) Upper Surface Isobars; T.E. Deflection, Full Span = 8.3°

Figure 36.–(Continued)



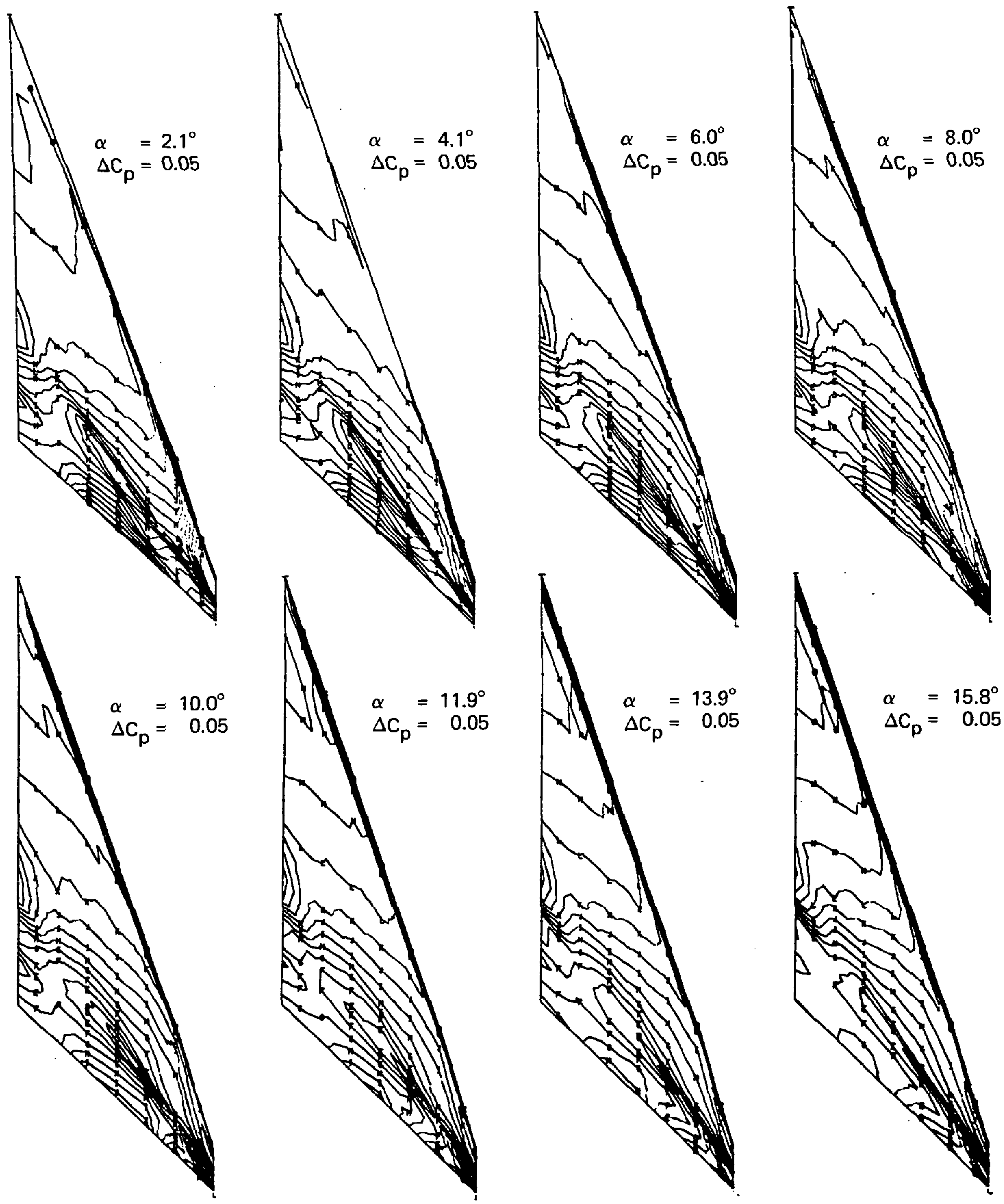
(d) Lower Surface Isobars; T.E. Deflection, Full Span = 8.3°

Figure 36.–(Concluded)



(a) Upper Surface Isobars; T.E. Deflection, Full Span = -8.3°

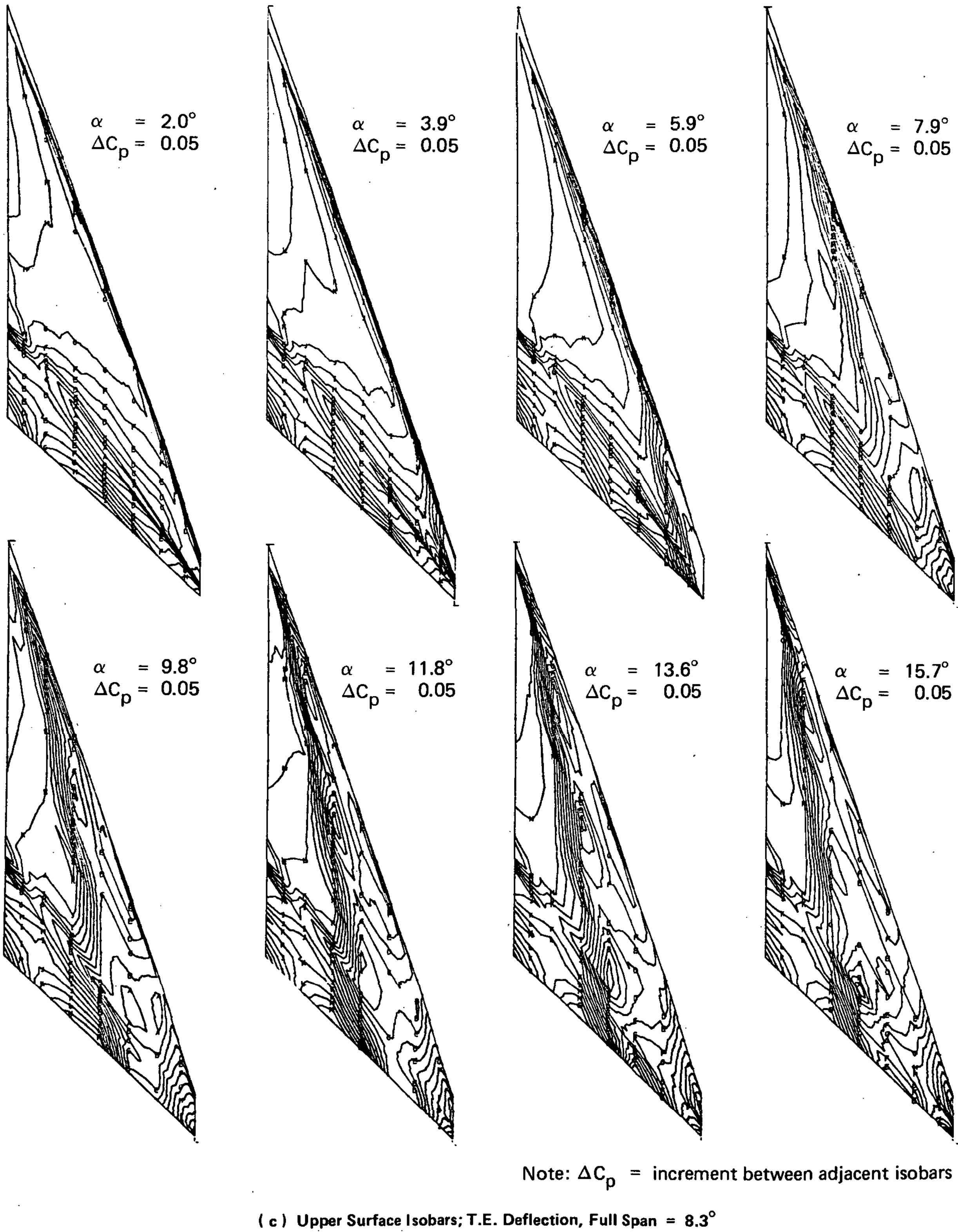
Figure 37.— Wing Experimental Data—Effect of Angle of Attack and Trailing Edge Deflection; Twisted Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 1.05



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars; T.E. Deflection, Full Span = -8.3°

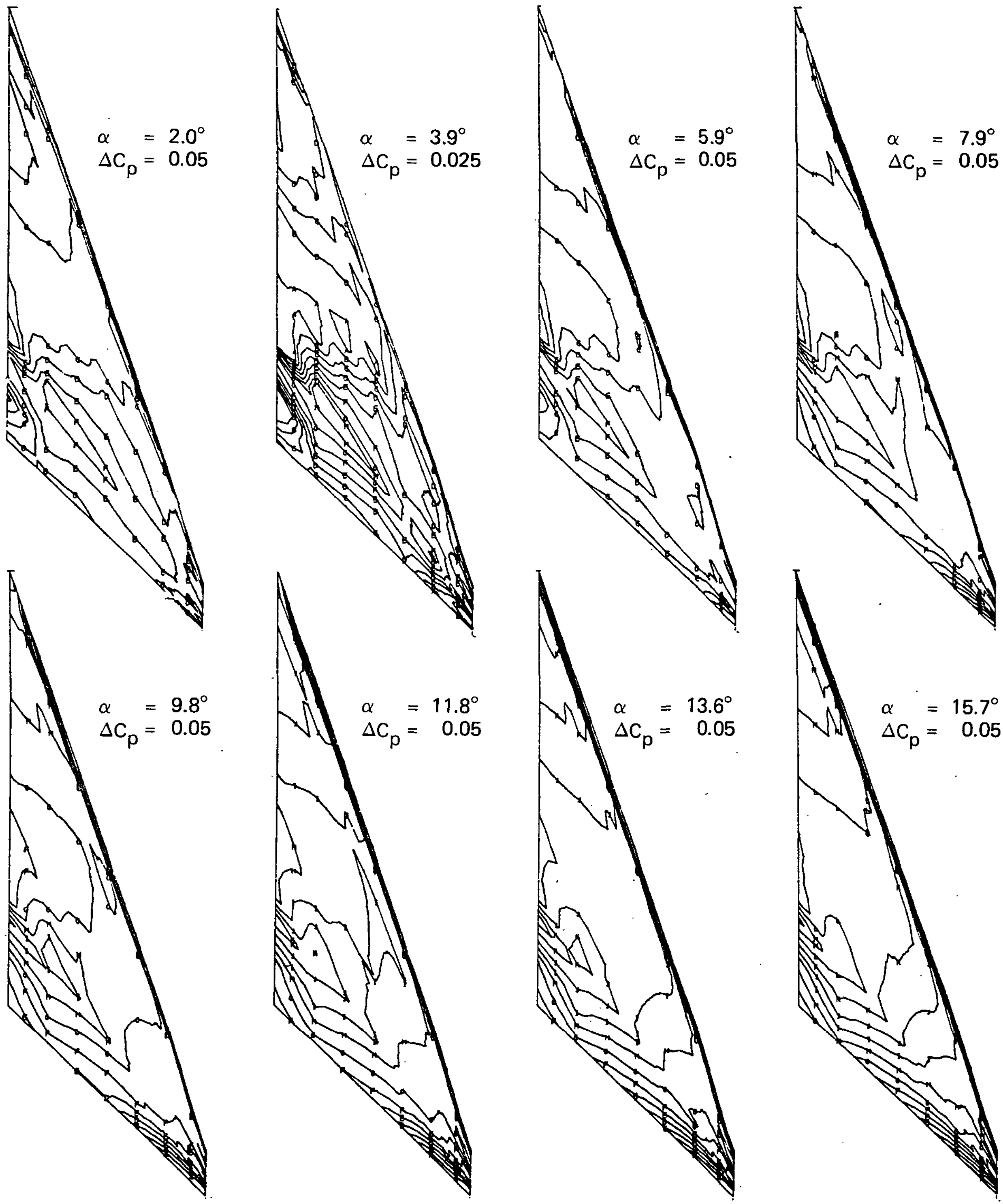
Figure 37.–(Continued)



Note: ΔC_p = increment between adjacent isobars

(c) Upper Surface Isobars; T.E. Deflection, Full Span = 8.3°

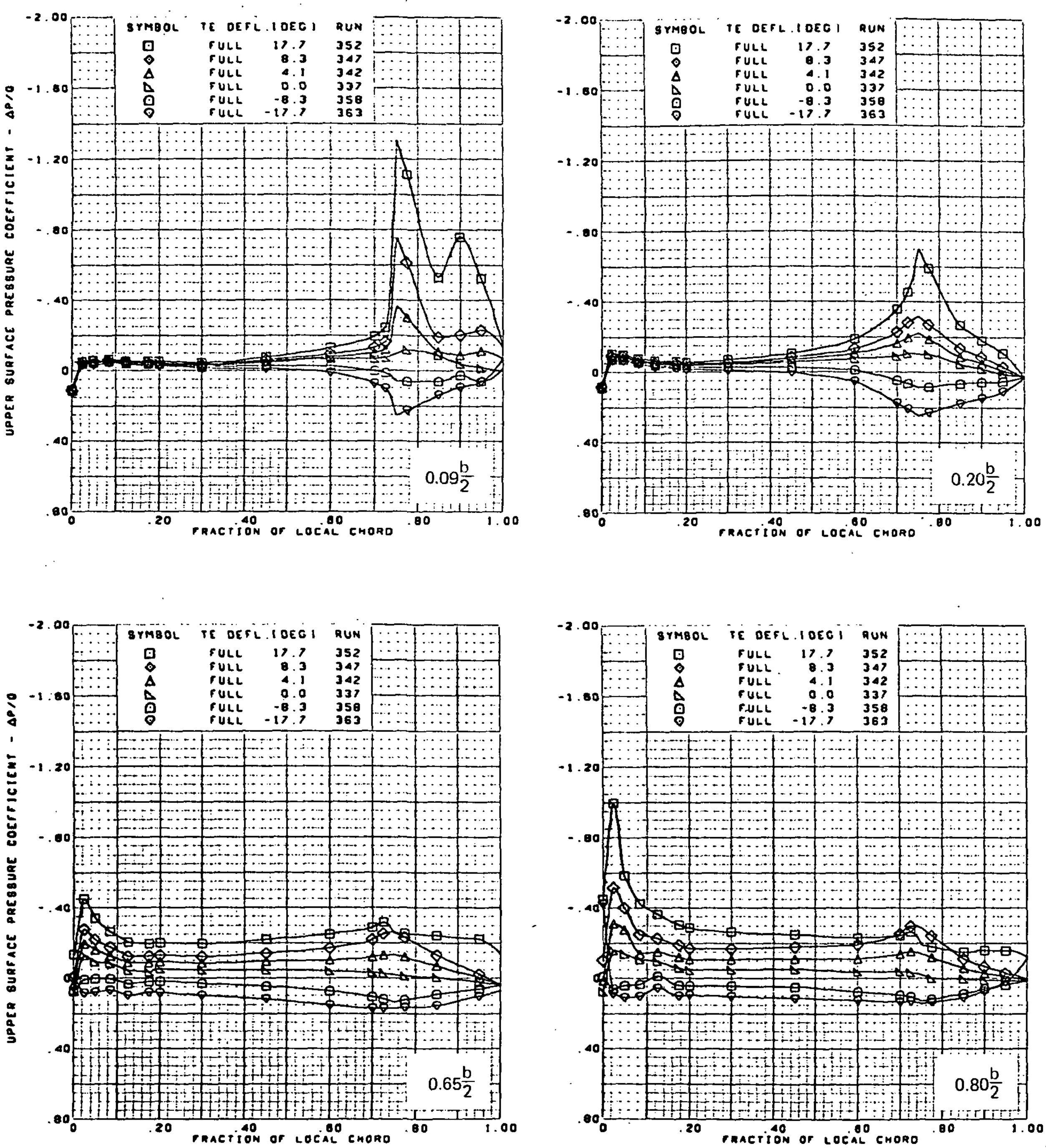
Figure 37.–(Continued)



Note: ΔC_p = increment between adjacent isobars

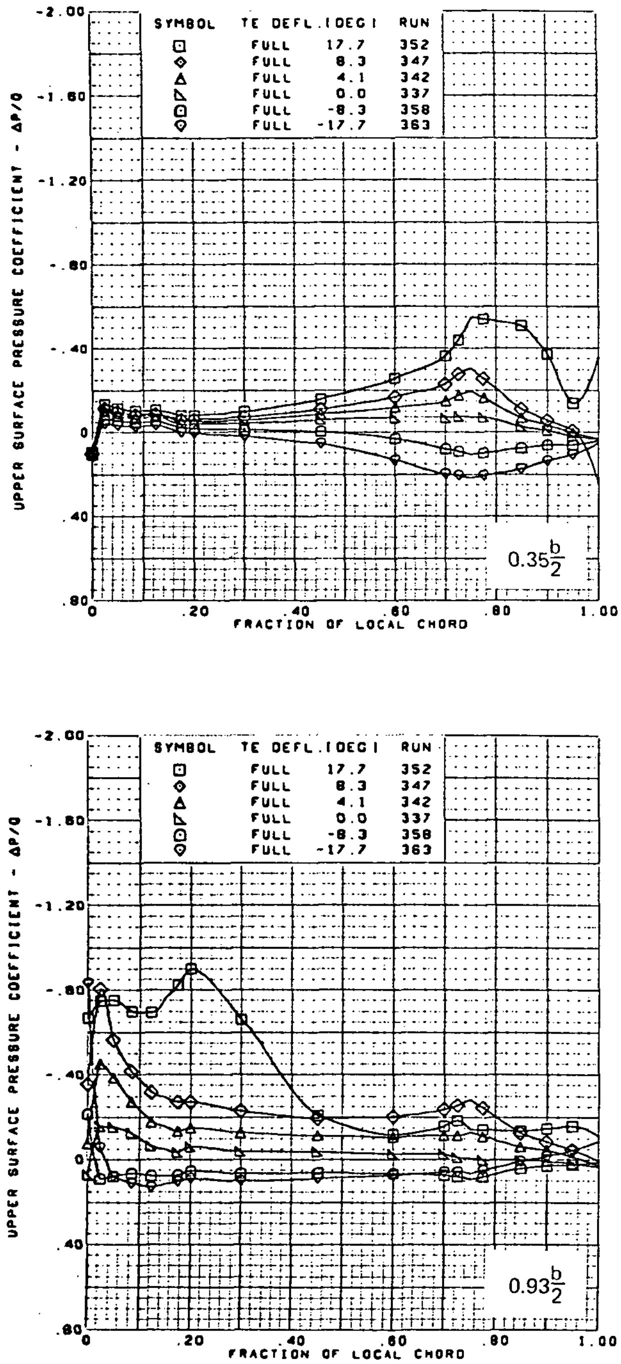
(d) Lower Surface Isobars; T.E. Deflection, Full Span = 8.3°

Figure 37.– (Concluded)



(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

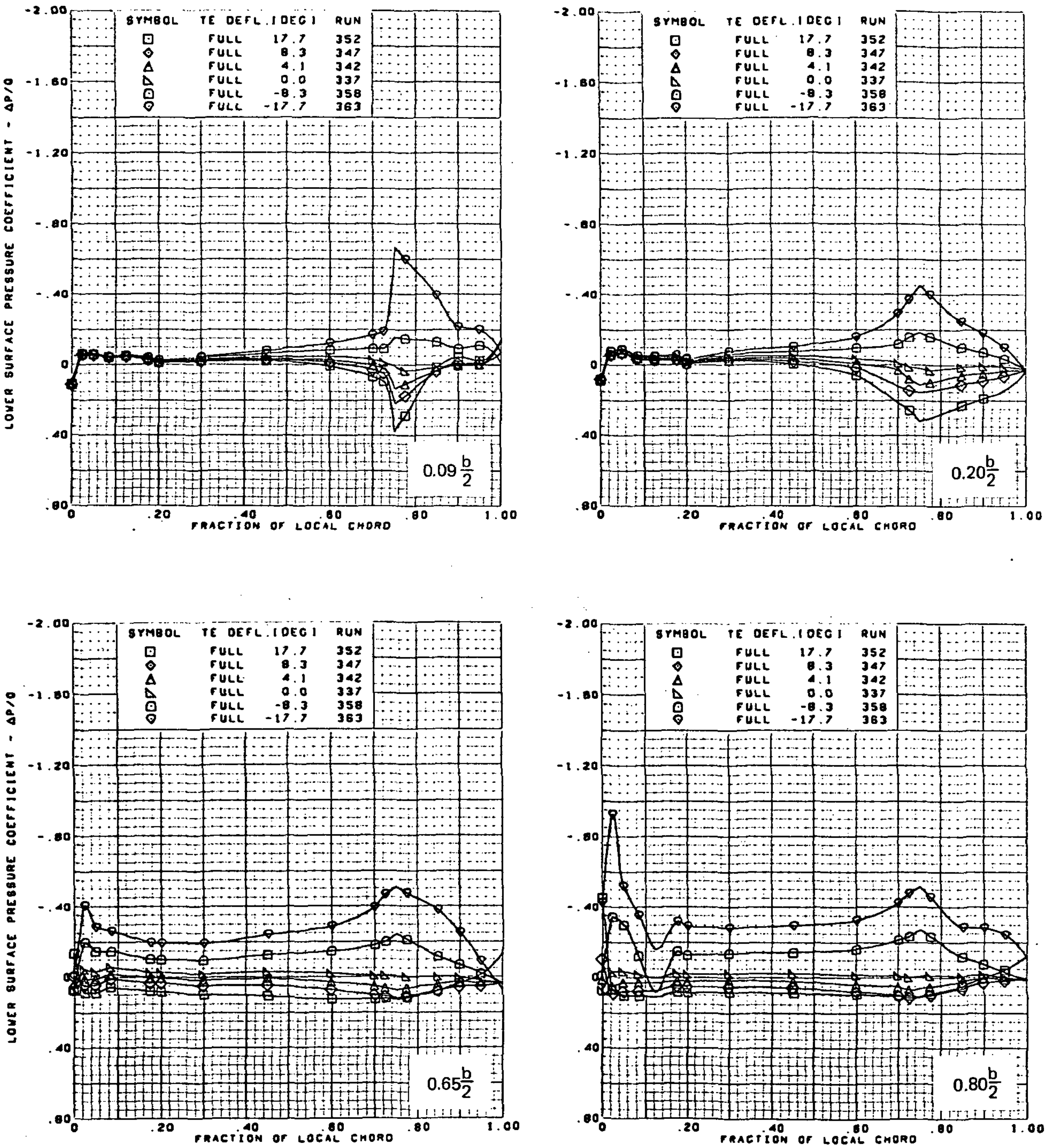
Figure 38.-Wing Experimental Data—Effect of Full Span T.E. Deflection; Flat Wing, Twisted T.E., Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.40



M = 0.40
α ≈ 0.0°
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

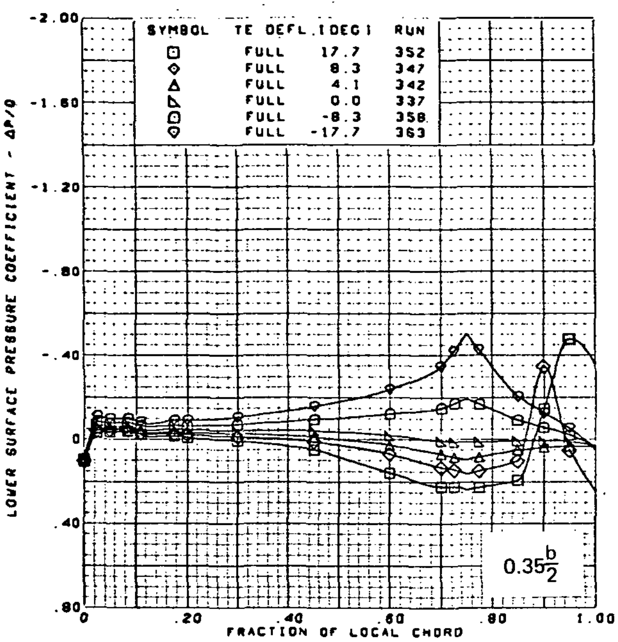
(a) (Concluded)

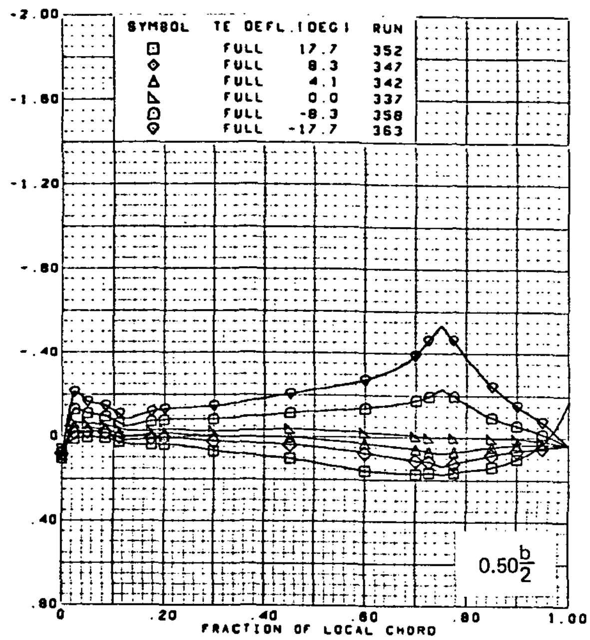
Figure 38.–(Continued)

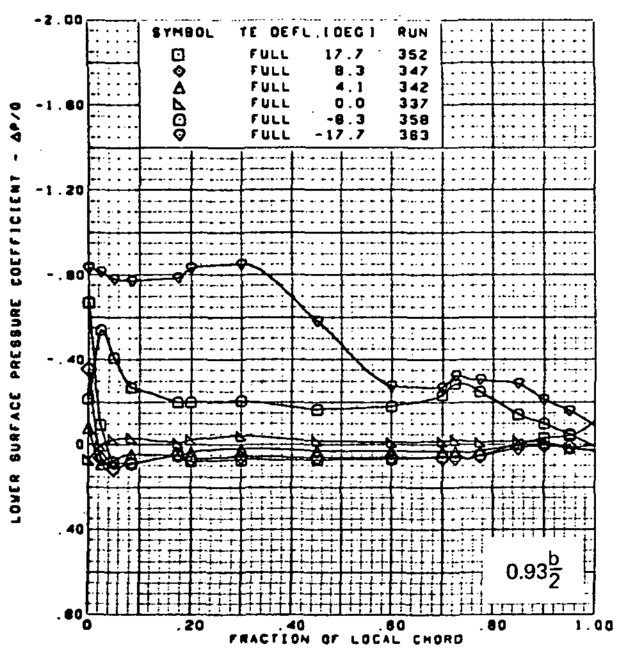


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0^{\circ}$

Figure 38.–(Continued)



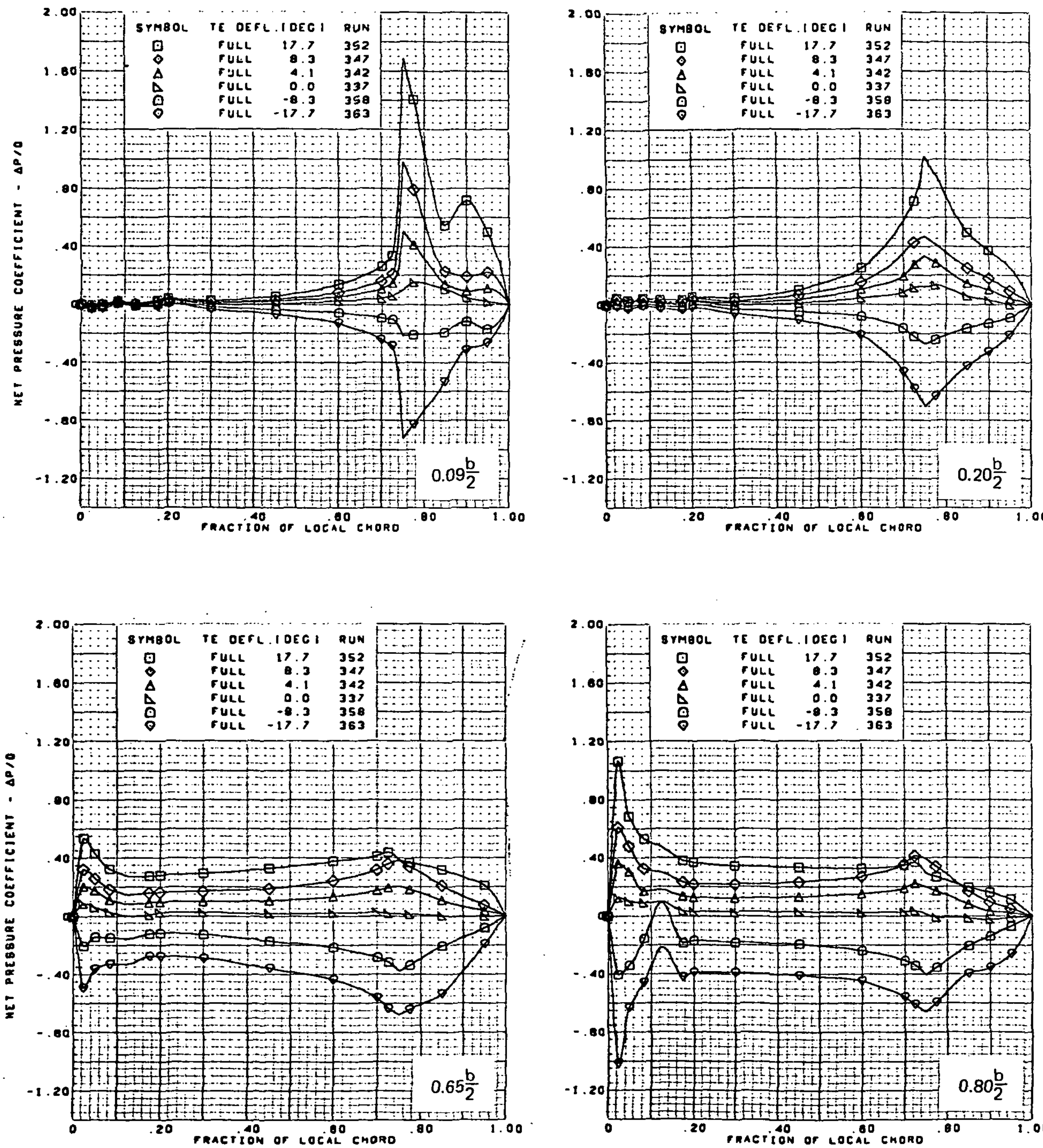




M = 0.40
$\alpha \approx 0.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

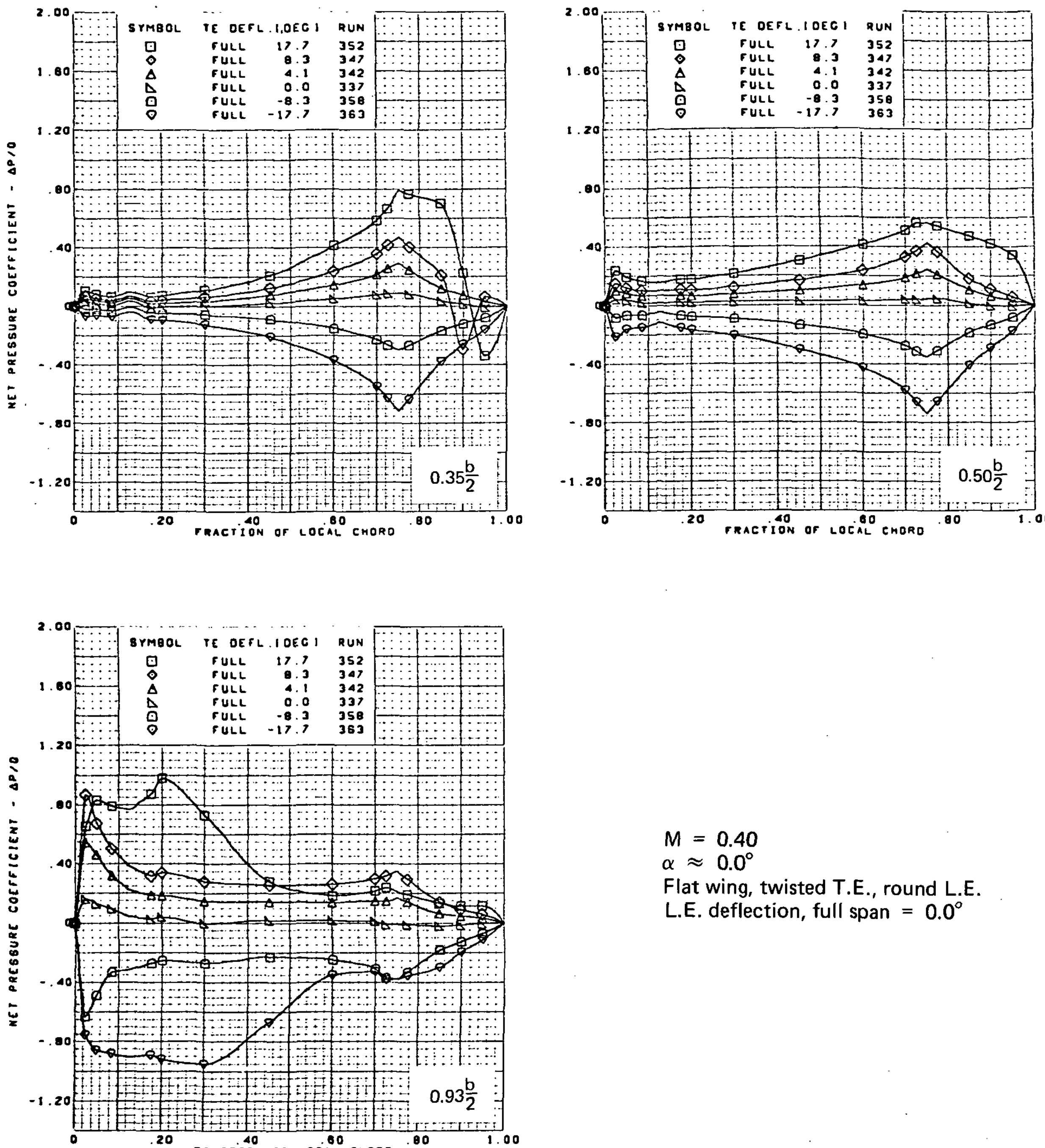
(b) (Concluded)

Figure 38.–(Continued)



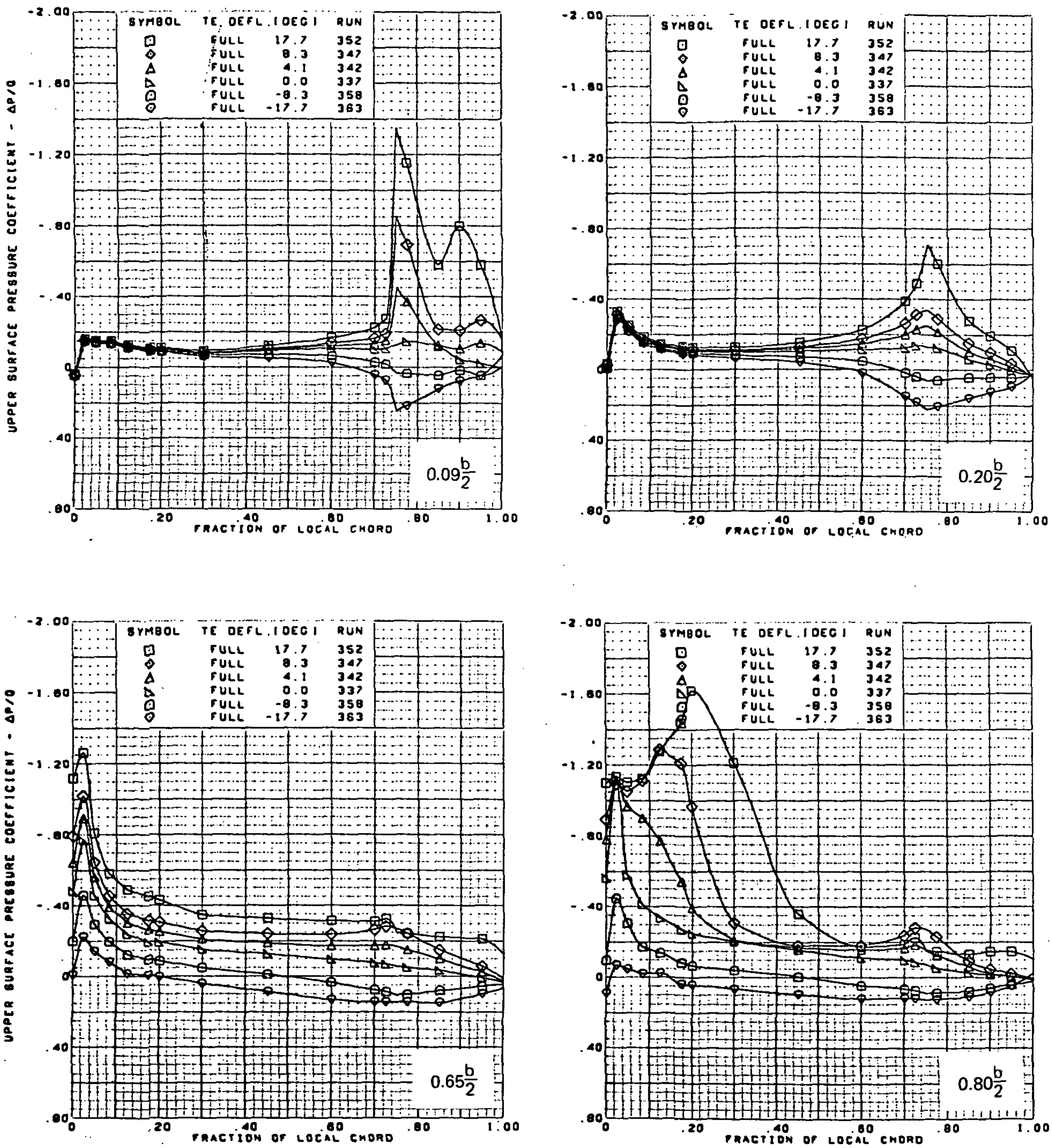
(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0^{\circ}$

Figure 38.–(Continued)



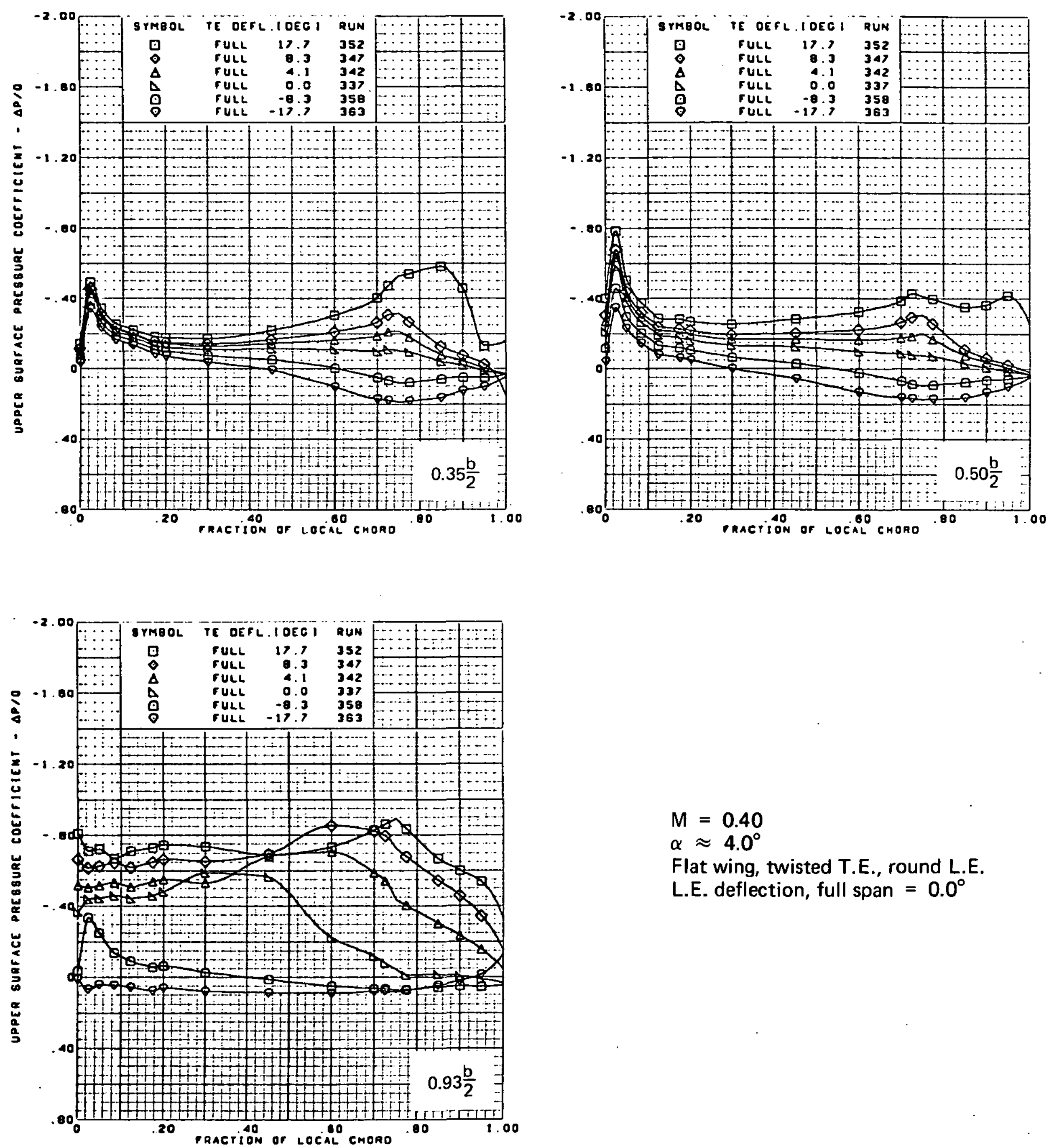
(c) (Concluded)

Figure 38.–(Continued)



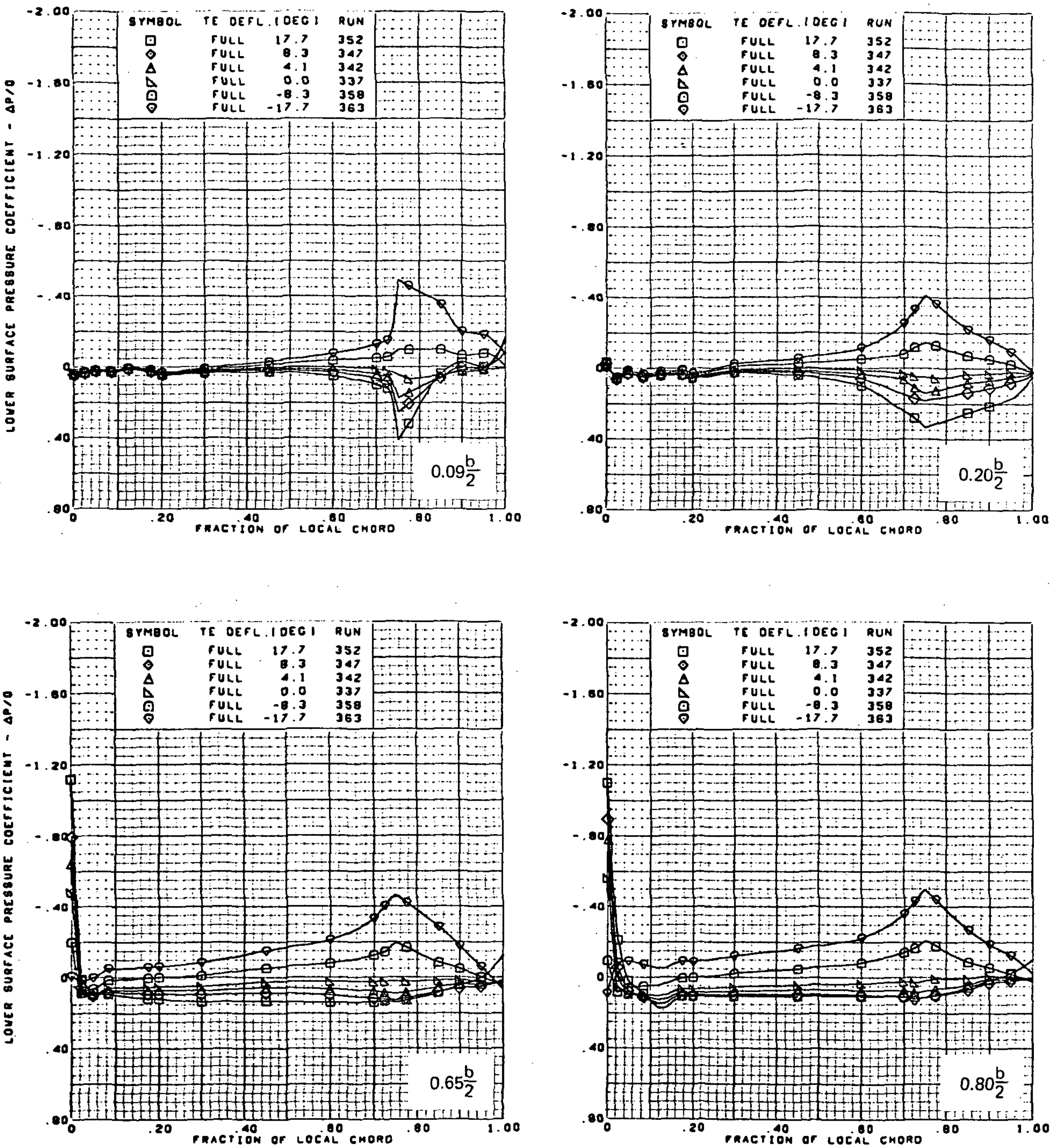
(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 38.–(Continued)



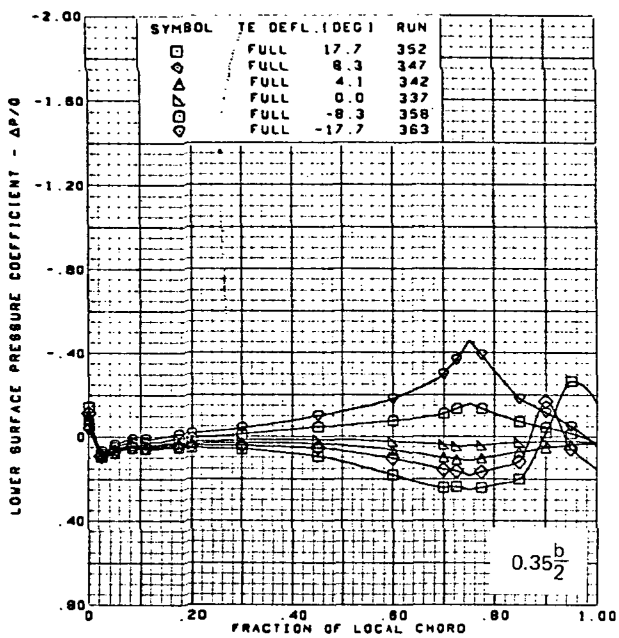
(d) (Concluded)

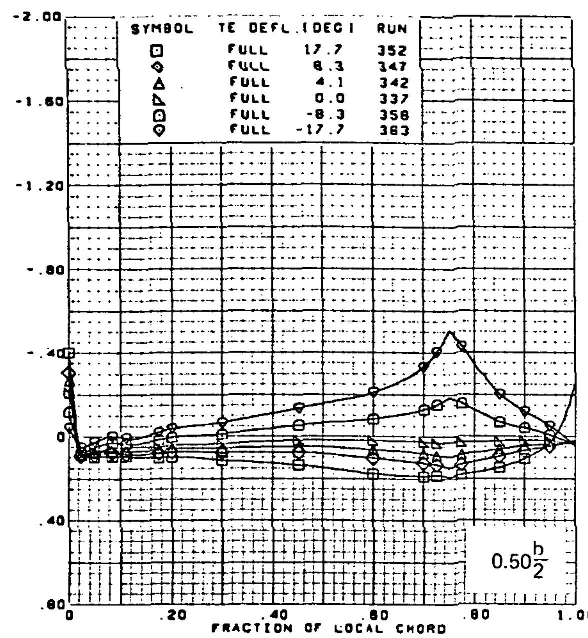
Figure 38.–(Continued)

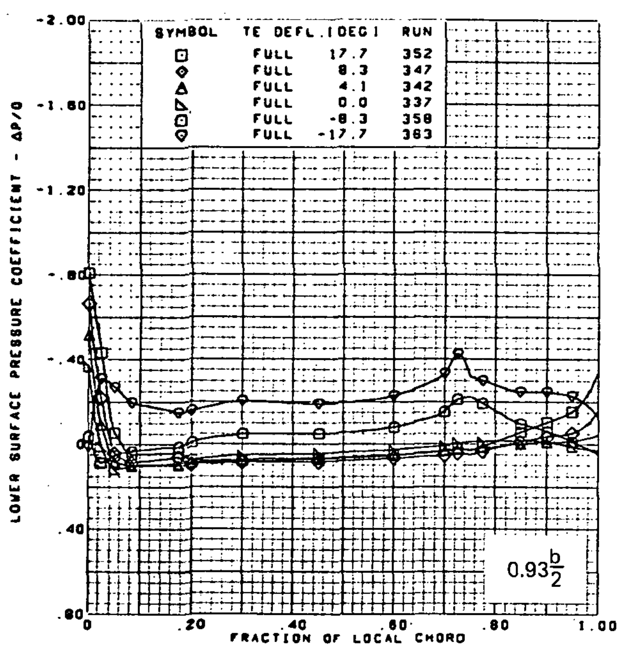


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 38.–(Continued)



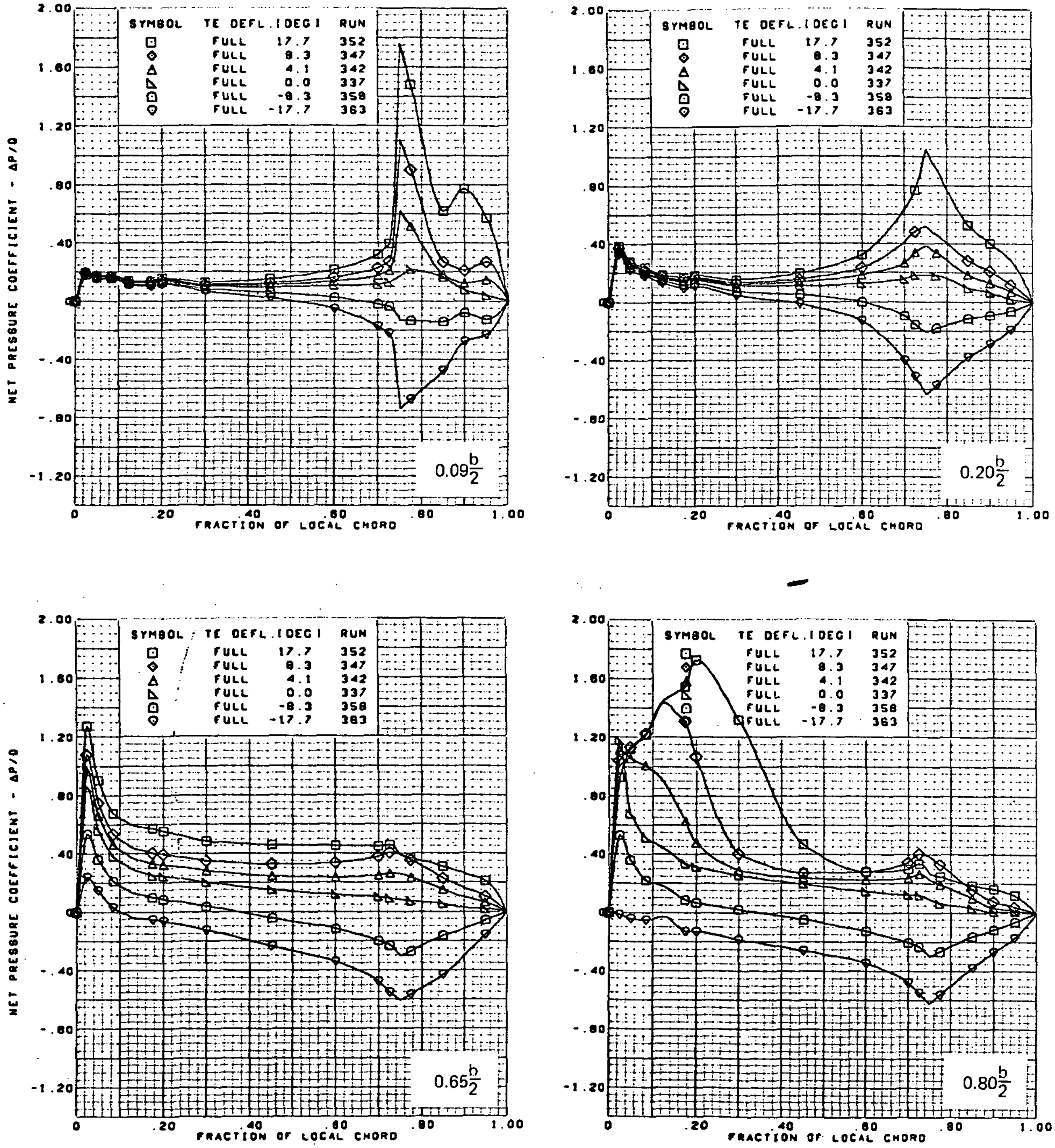




M = 0.40
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

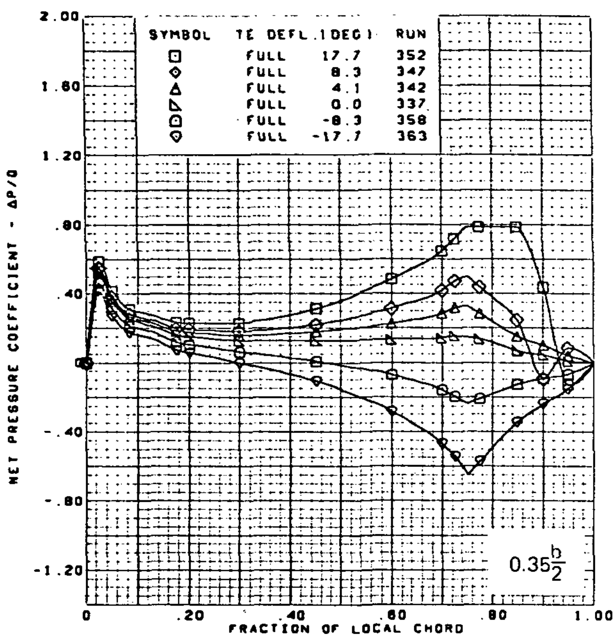
(e) (Concluded)

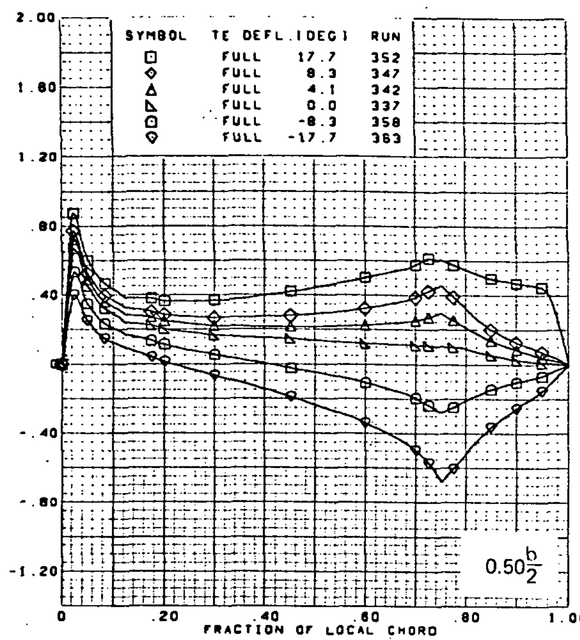
Figure 38.–(Continued)

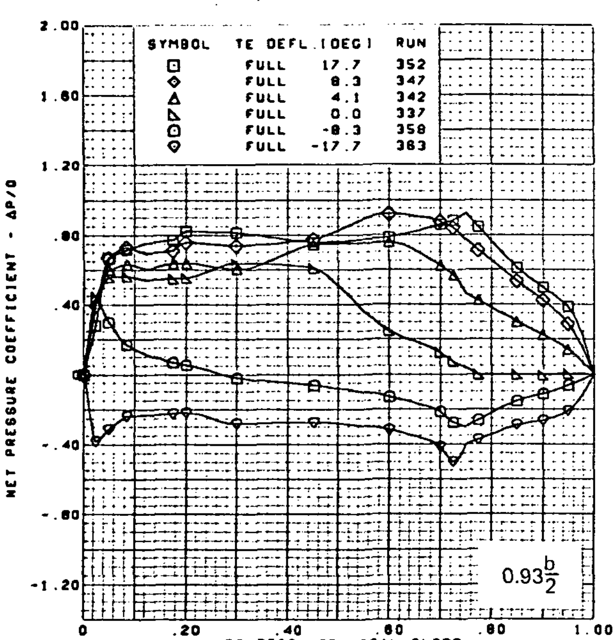


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 38.-(Continued)



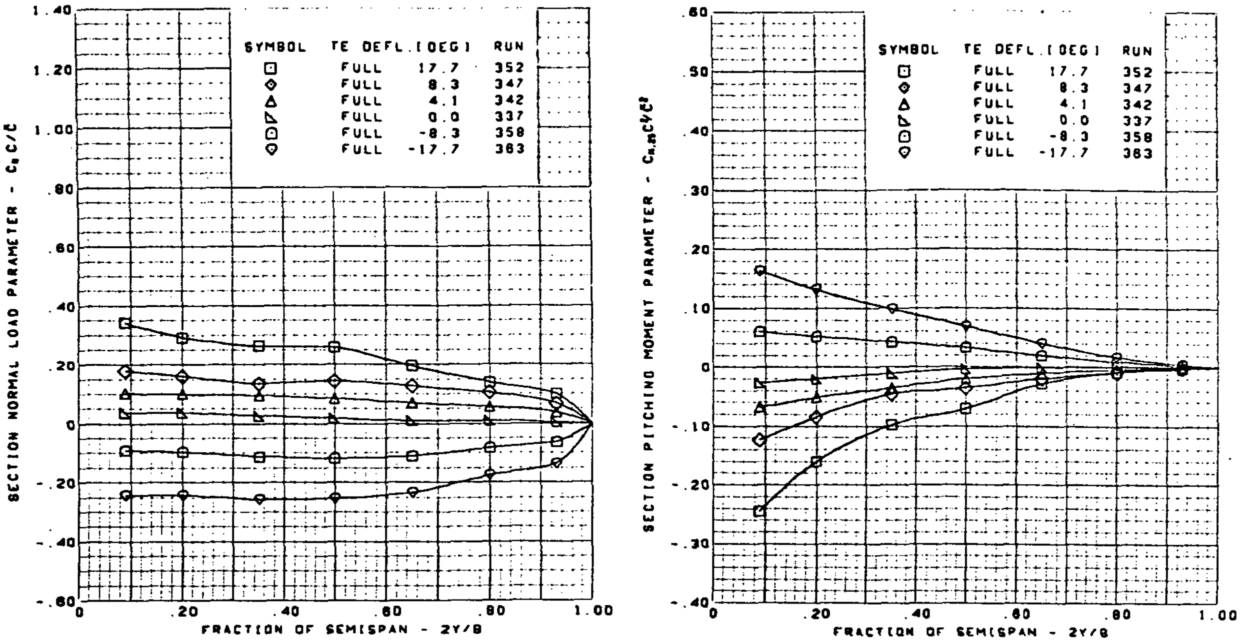




$M = 0.40$
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

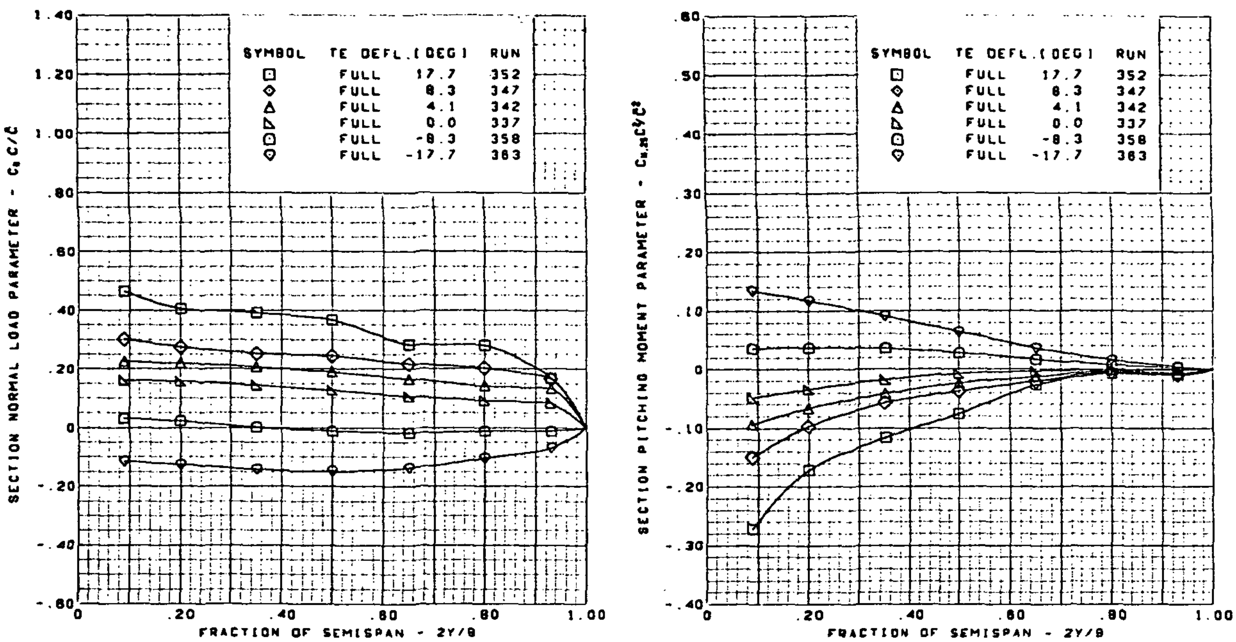
Figure 38.–(Continued)



M = 0.40
$\alpha \approx 0.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

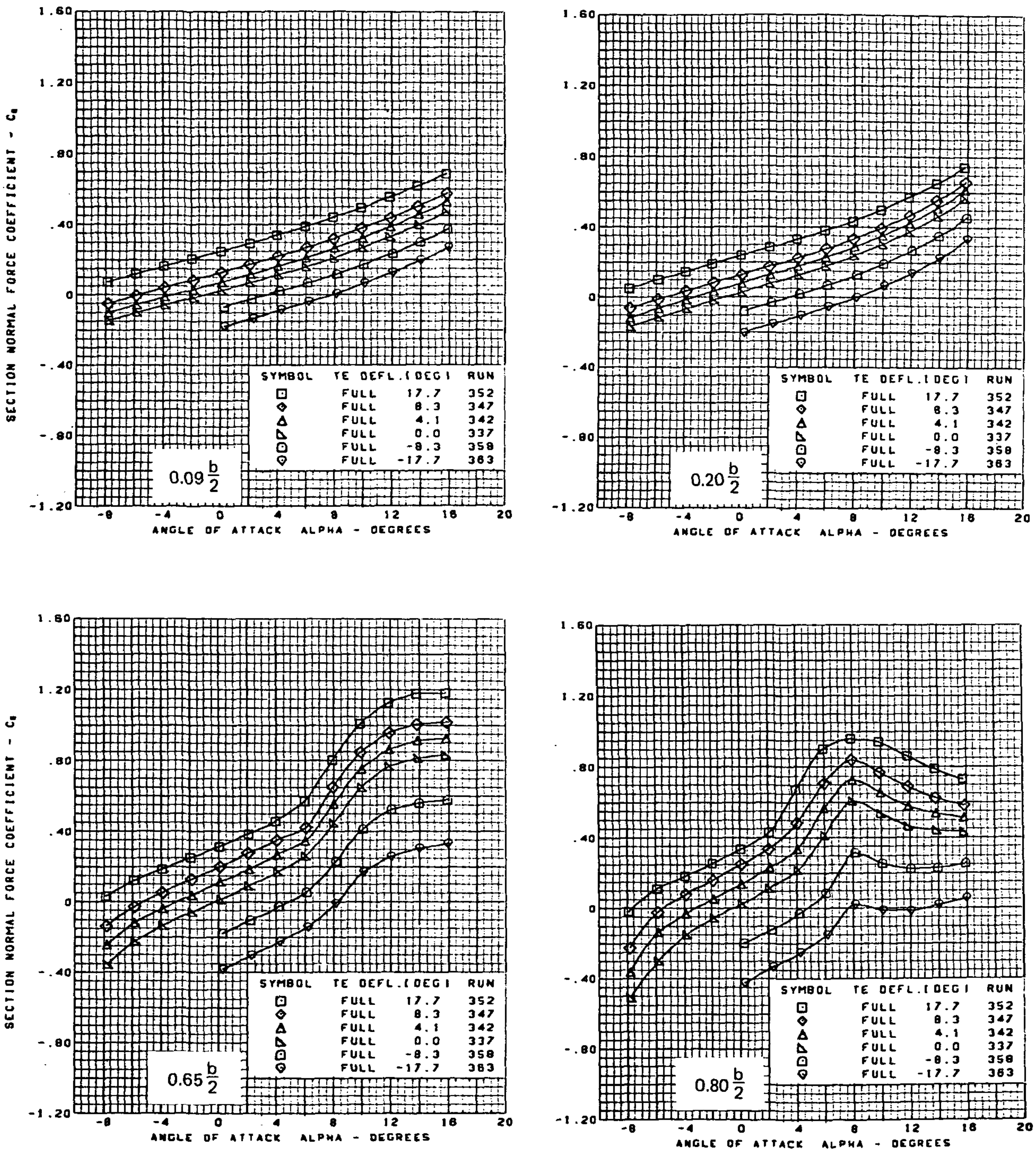
Figure 38.–(Continued)



M = 0.40
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

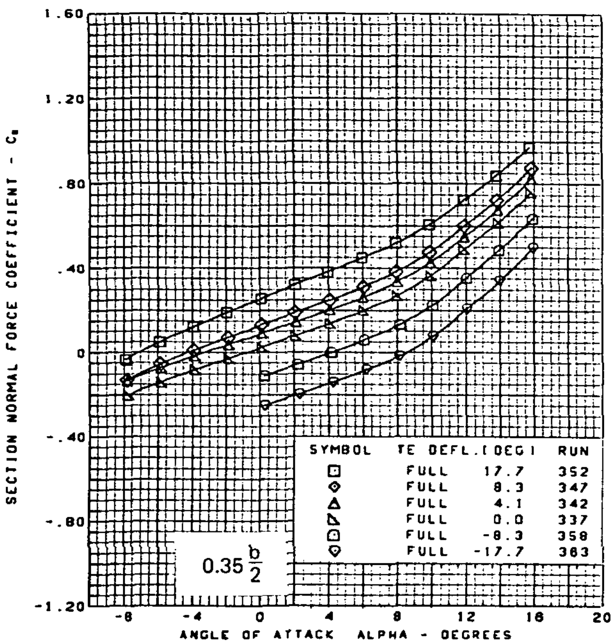
(h) Spanload Distributions, $\alpha \approx 4.0°$

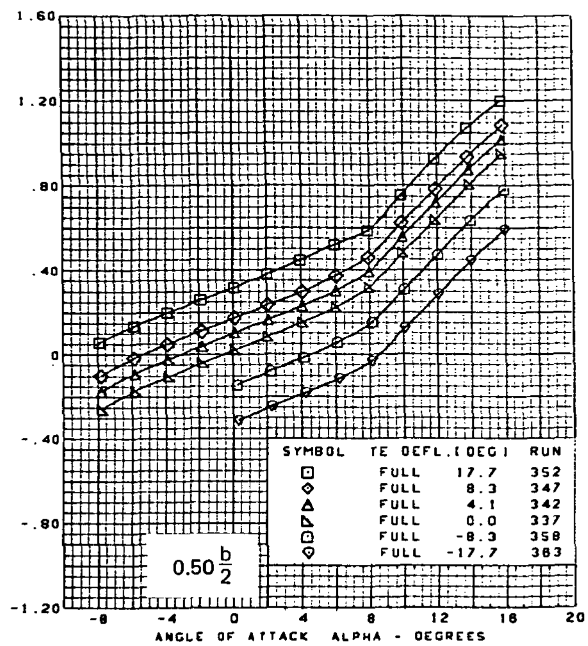
Figure 38.-(Continued)

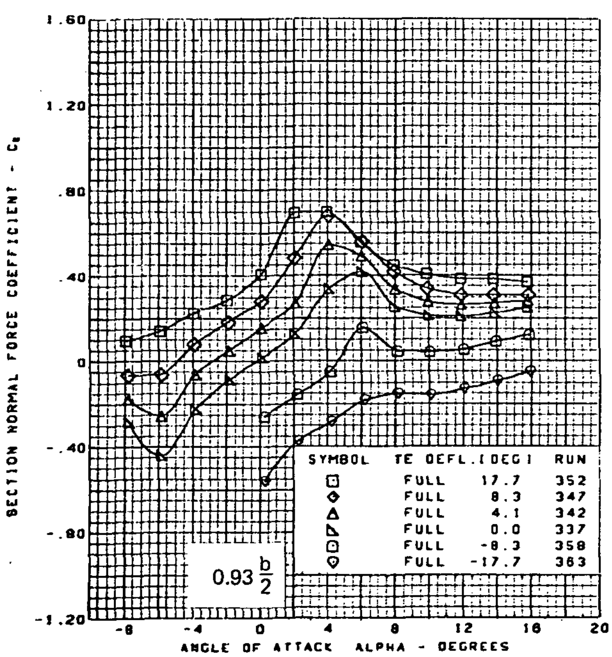


(i) Section Aerodynamic Coefficients – Normal Force

Figure 38.–(Continued)



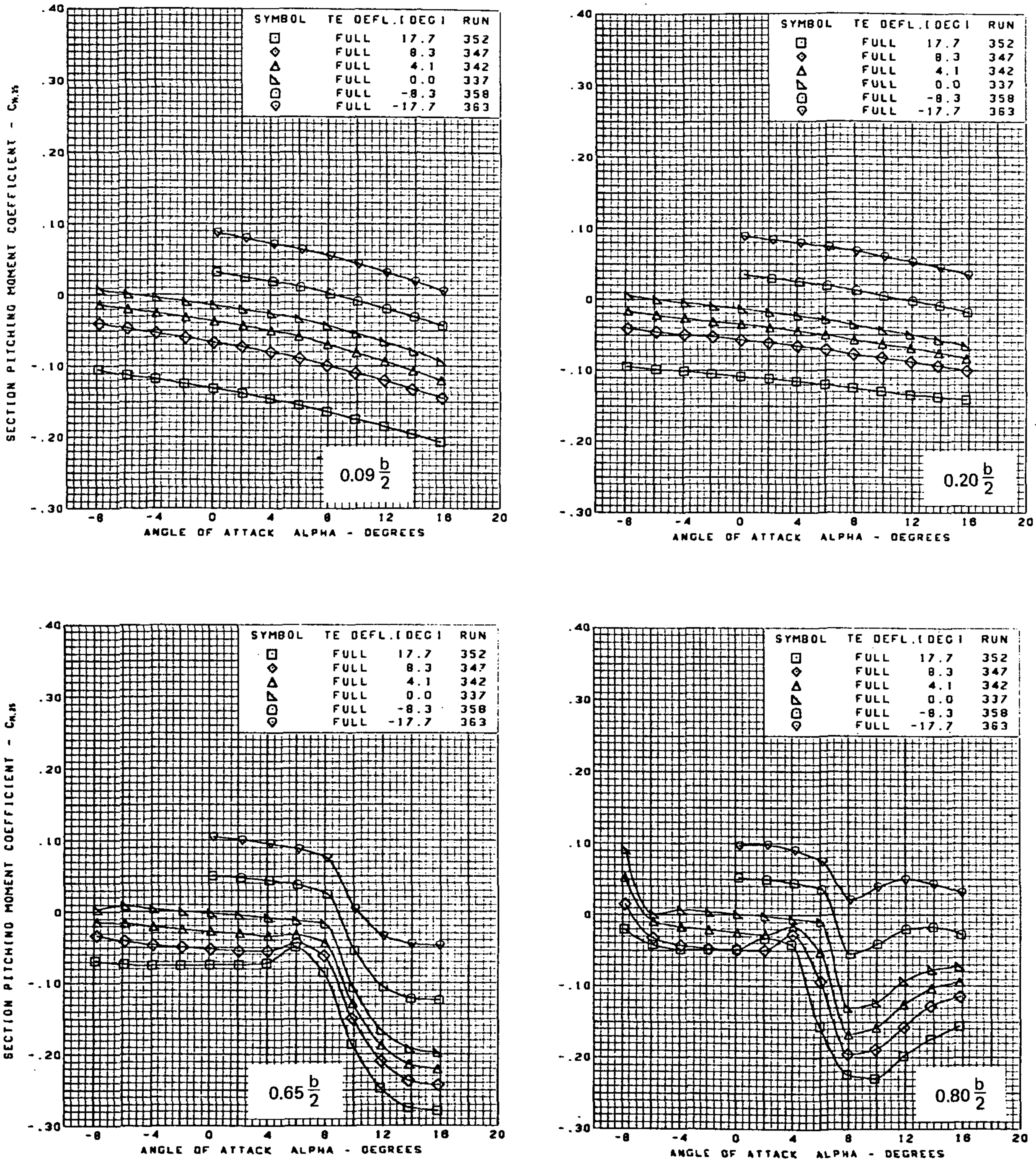




M = 0.40
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

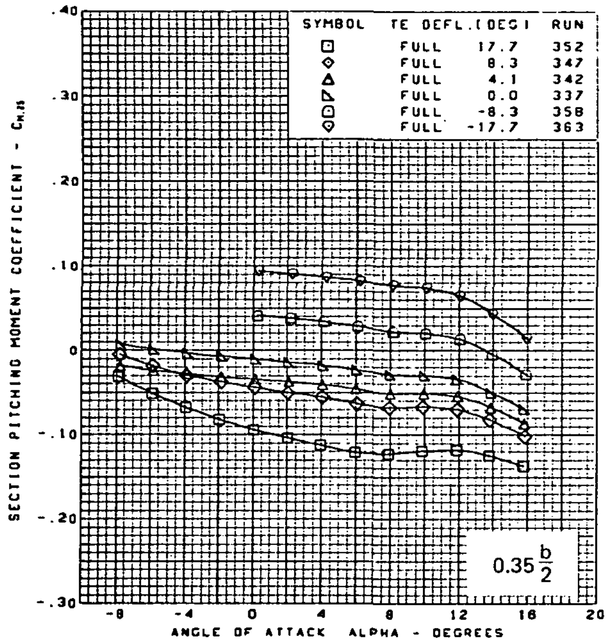
(i) (Concluded)

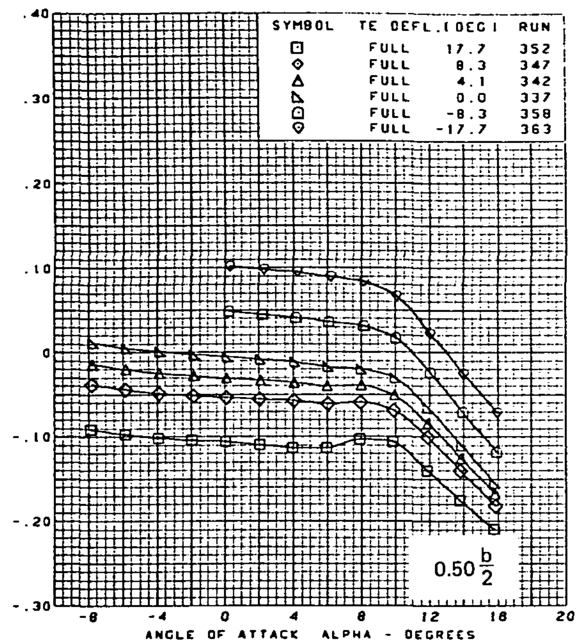
Figure 38.–(Continued)

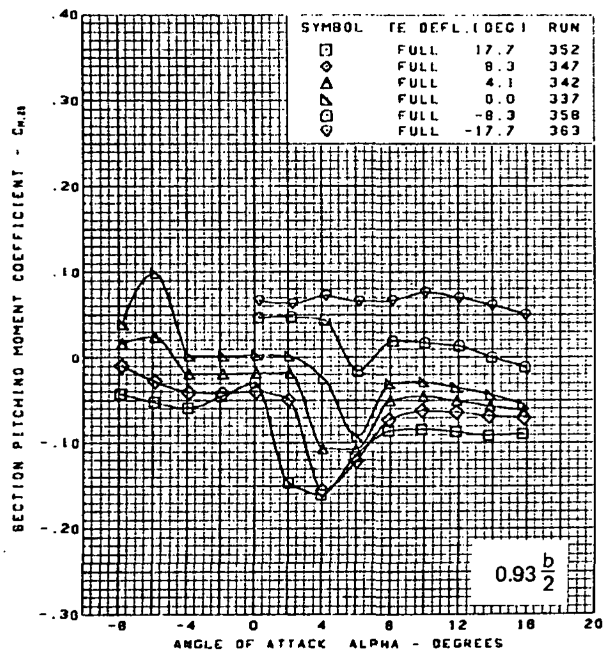


(j) Section Aerodynamic Coefficients – Pitching Moment

Figure 38.-(Continued)



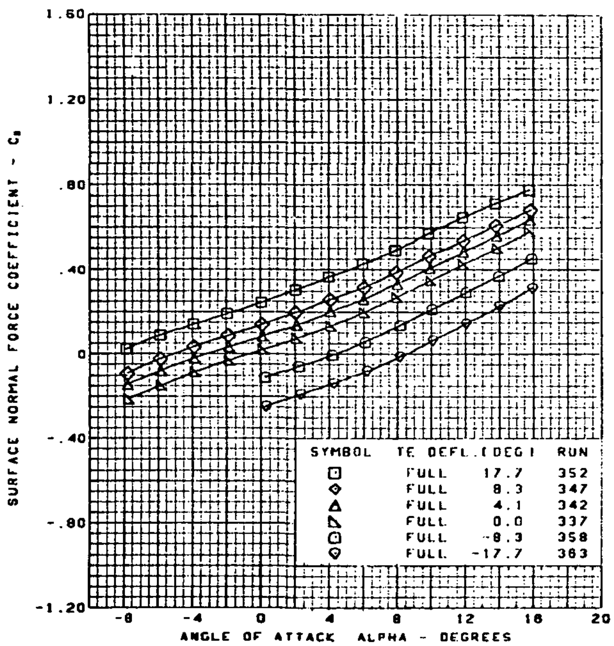


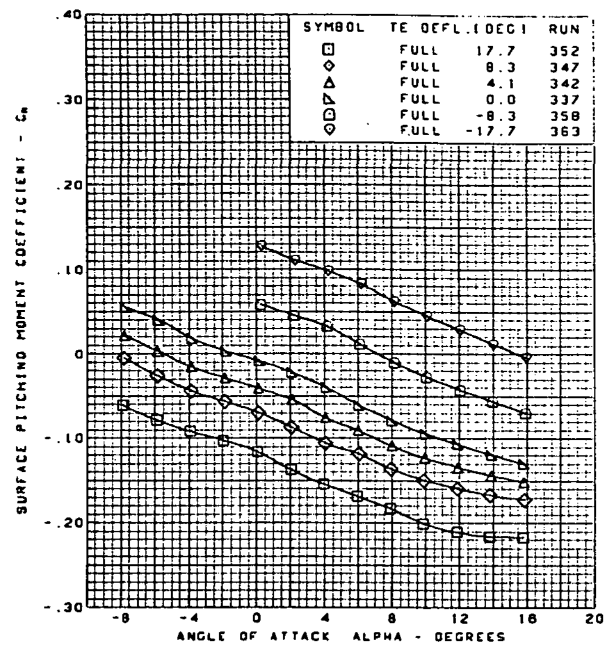


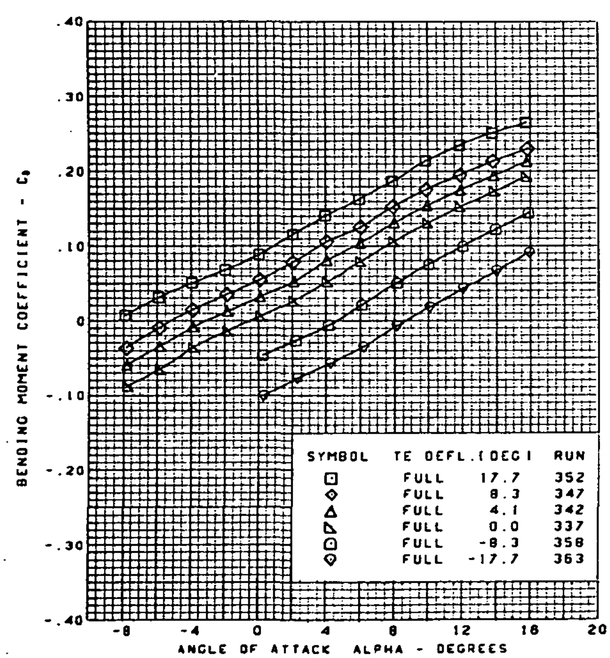
M = 0.40
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

(j) (Concluded)

Figure 38.–(Continued)







M = 0.40
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

(k) Wing Aerodynamic Coefficients

Figure 38.-(Concluded)

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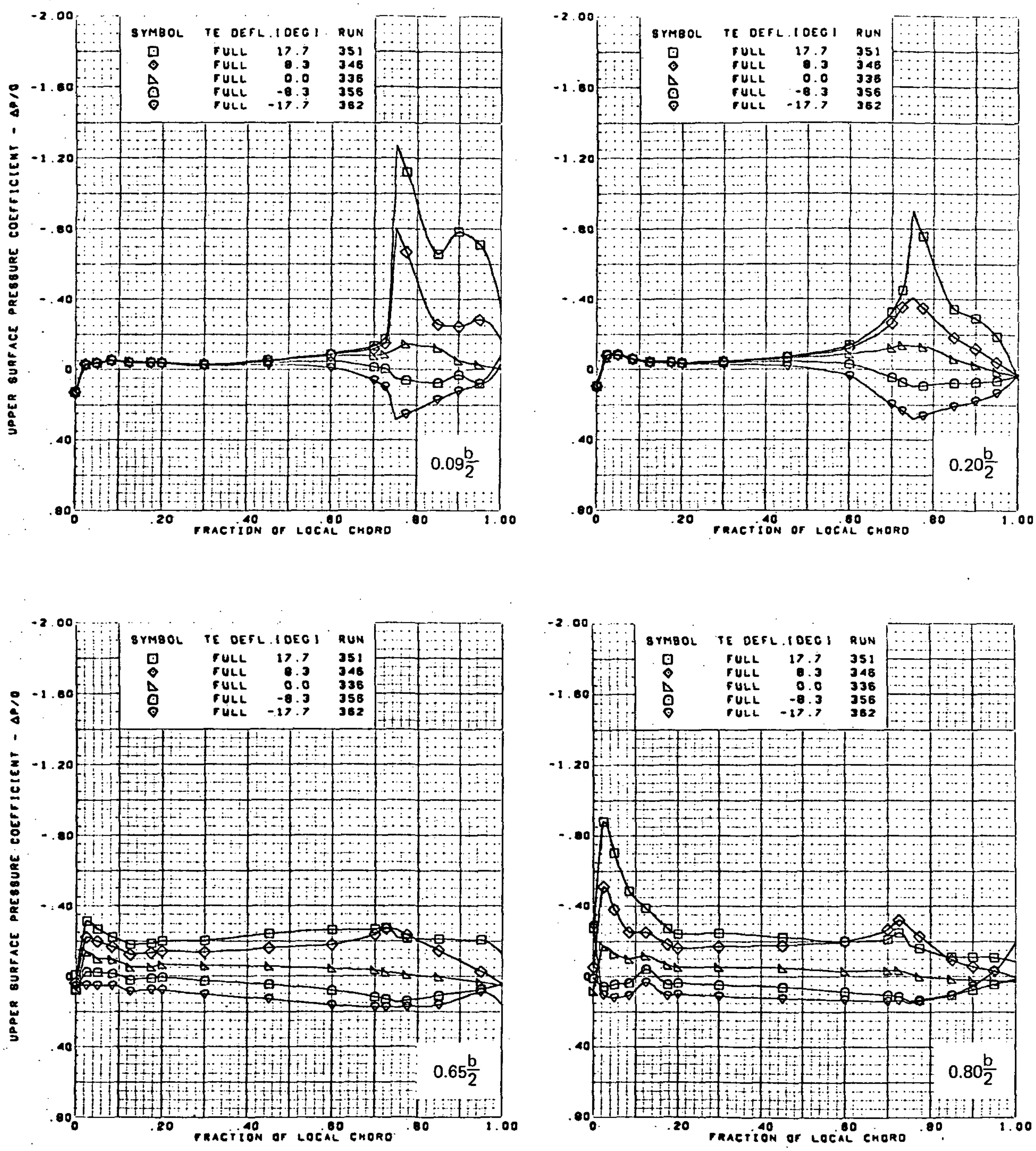
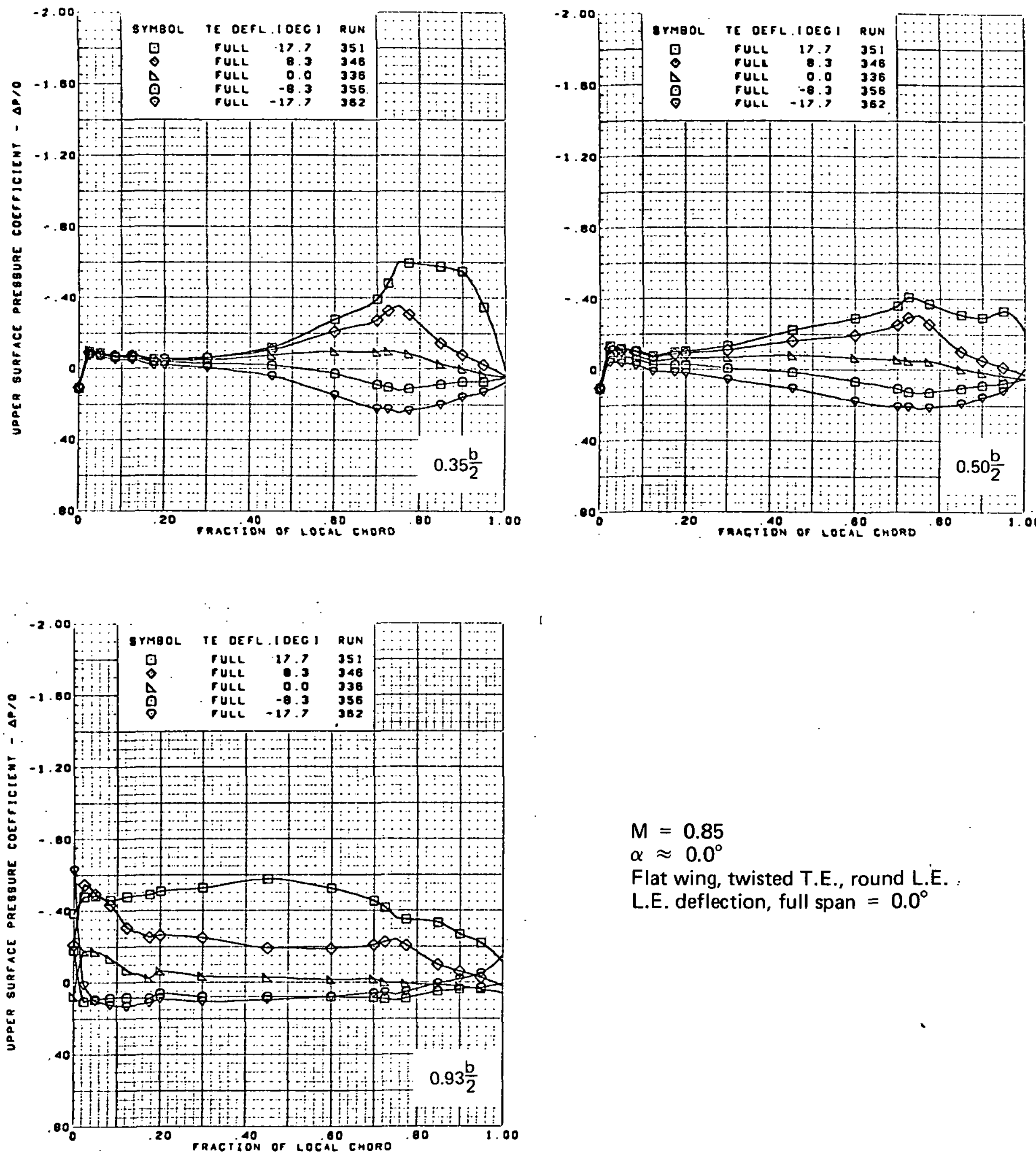


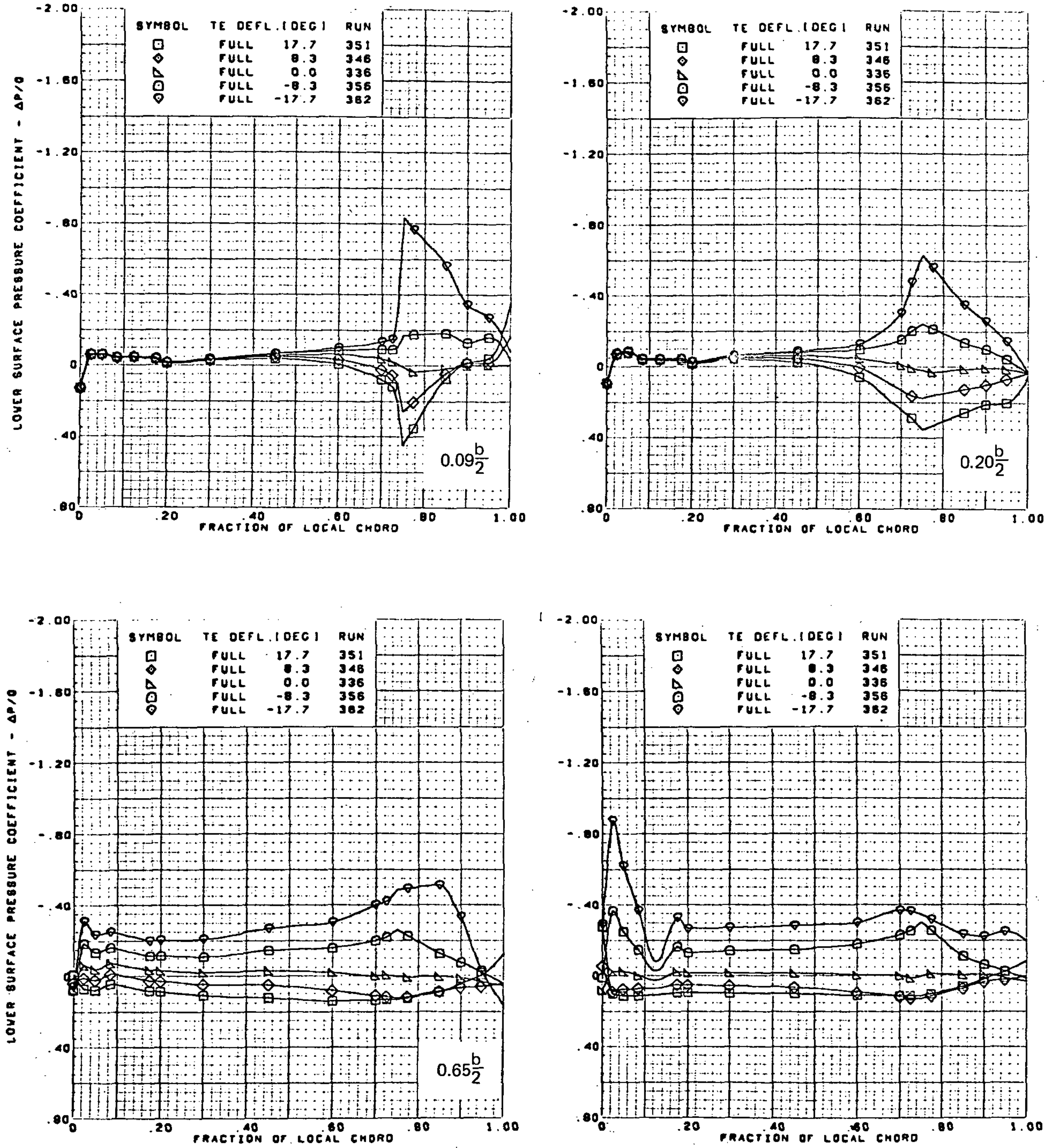
(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0^{\circ}$

Figure 39.-Wing Experimental Data—Effect of Full Span T.E. Deflection; Flat Wing, Twisted T.E., Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85



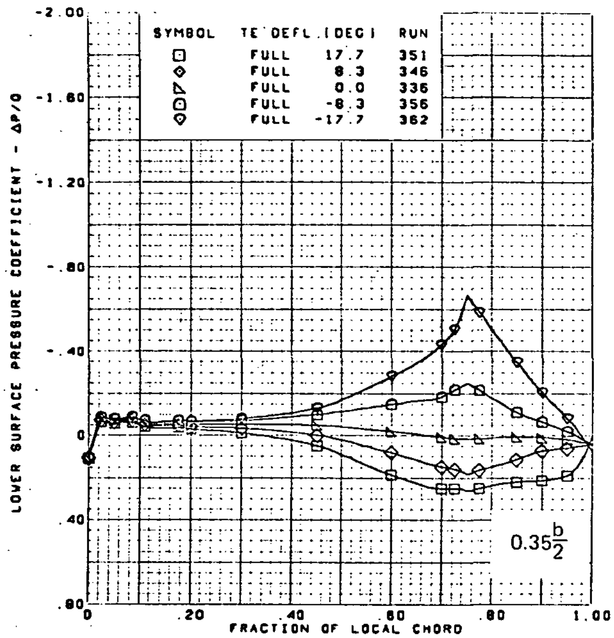
(a) (Concluded)

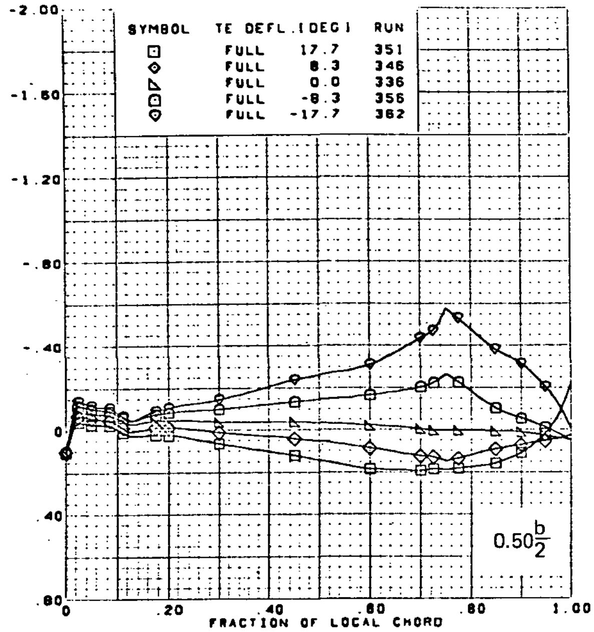
Figure 39.–(Continued)

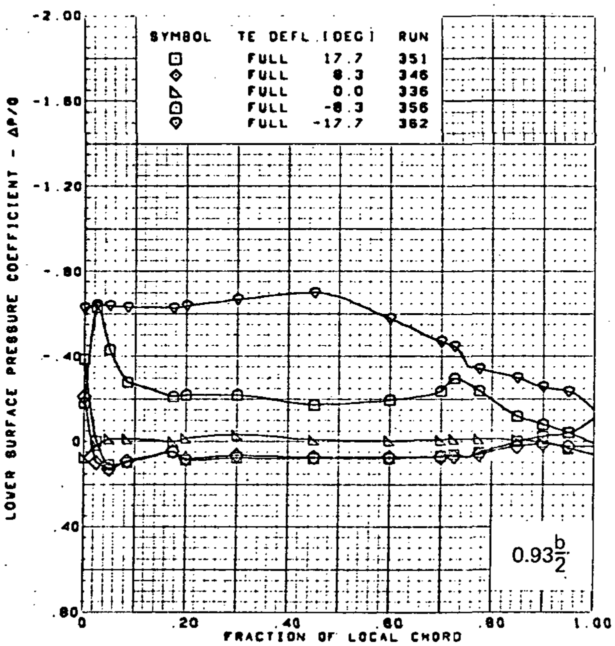


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 39.–(Continued)



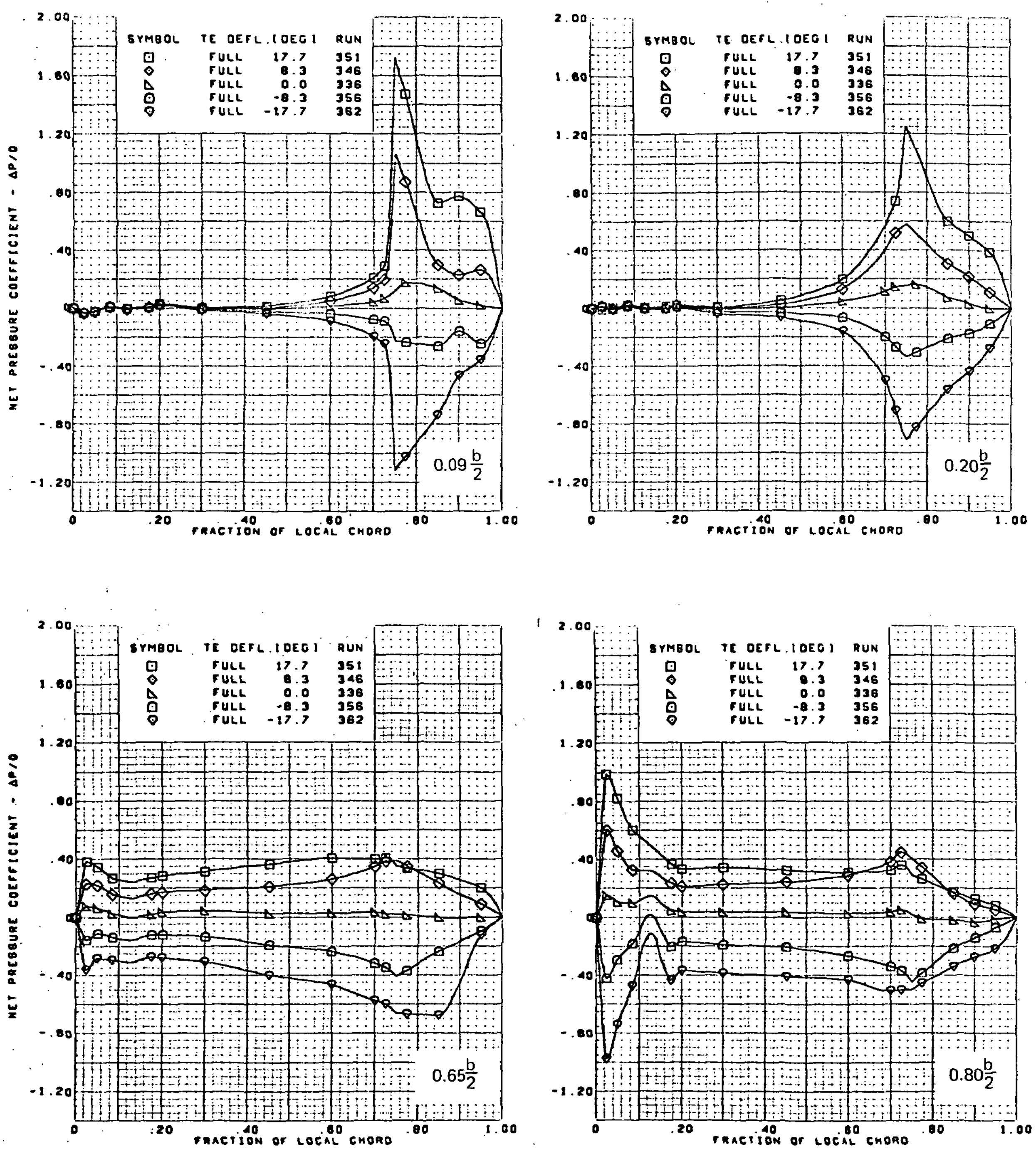




$M = 0.85$
$\alpha \approx 0.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

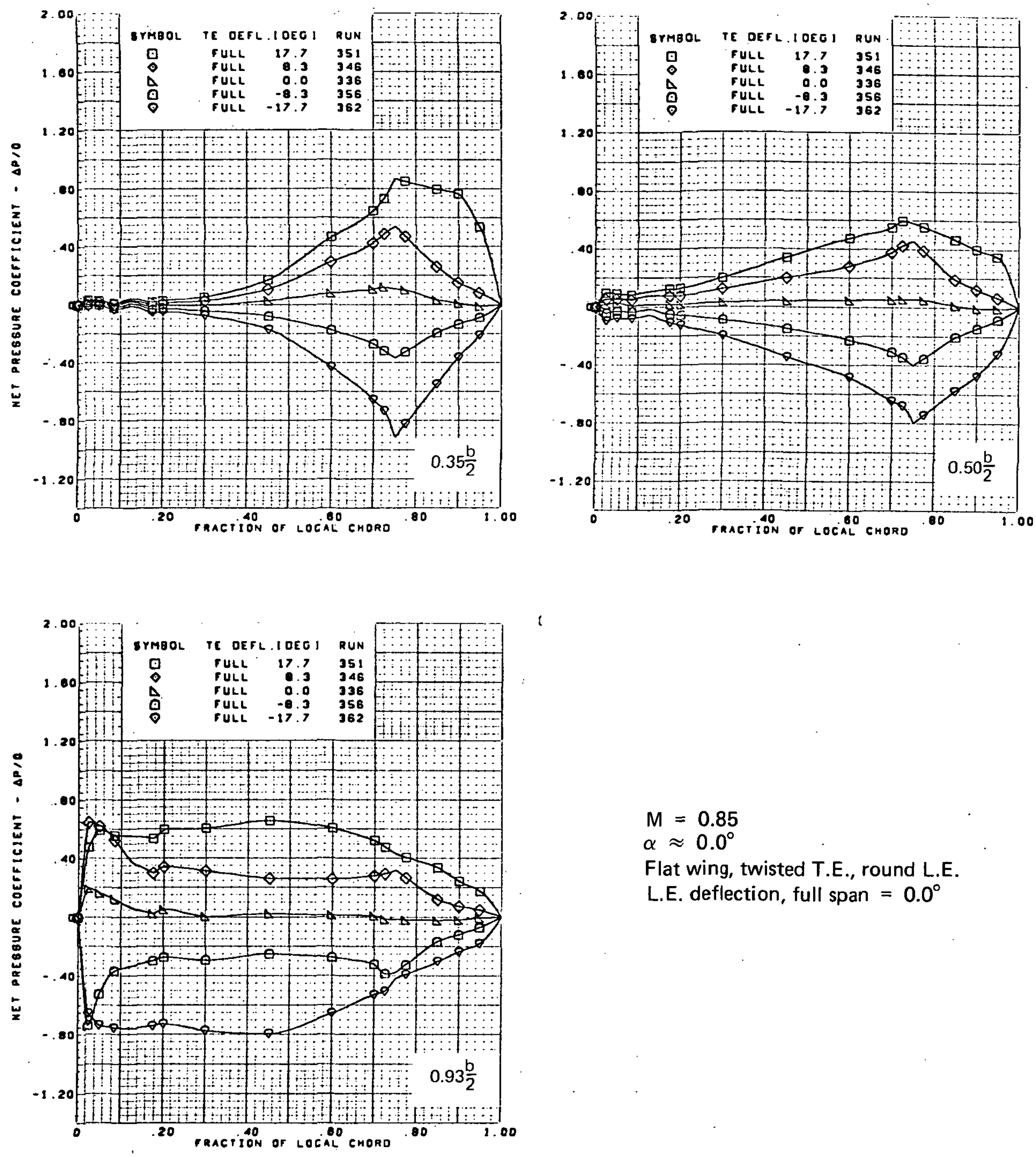
(b) (Concluded)

Figure 39.–(Continued)



(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

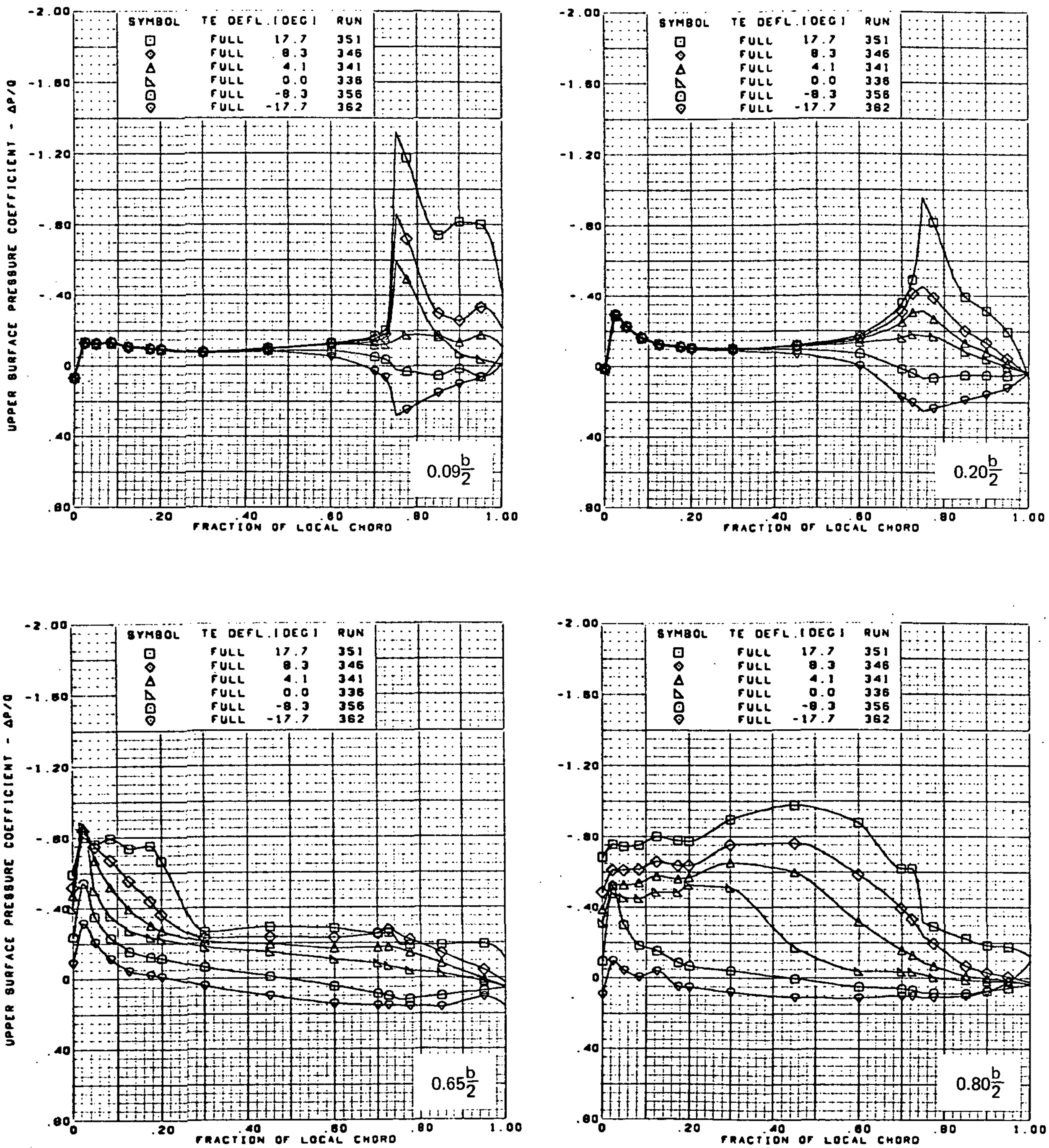
Figure 39.–(Continued)



M = 0.85
α ≈ 0.0°
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

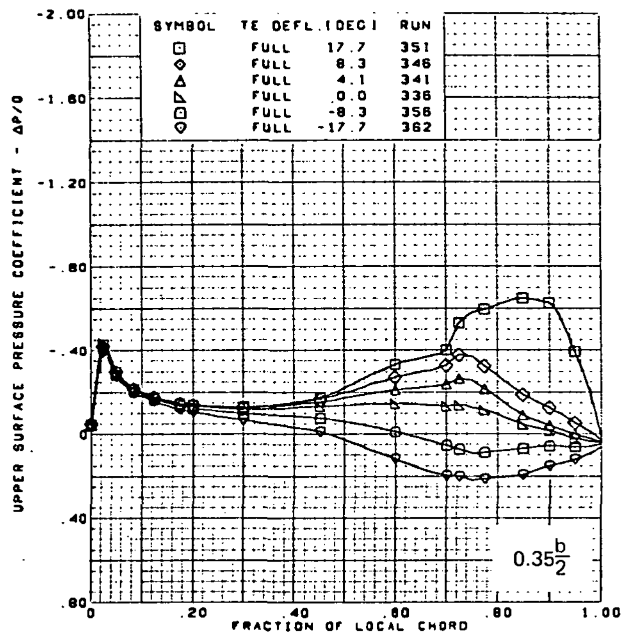
(c) (Concluded)

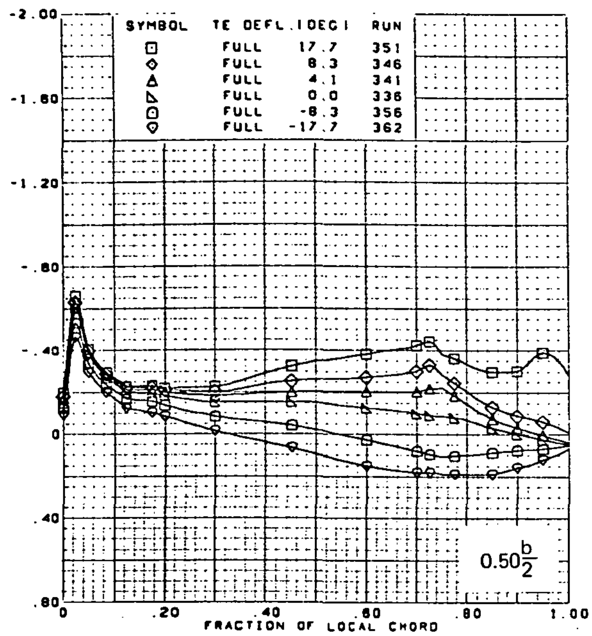
Figure 39.–(Continued)

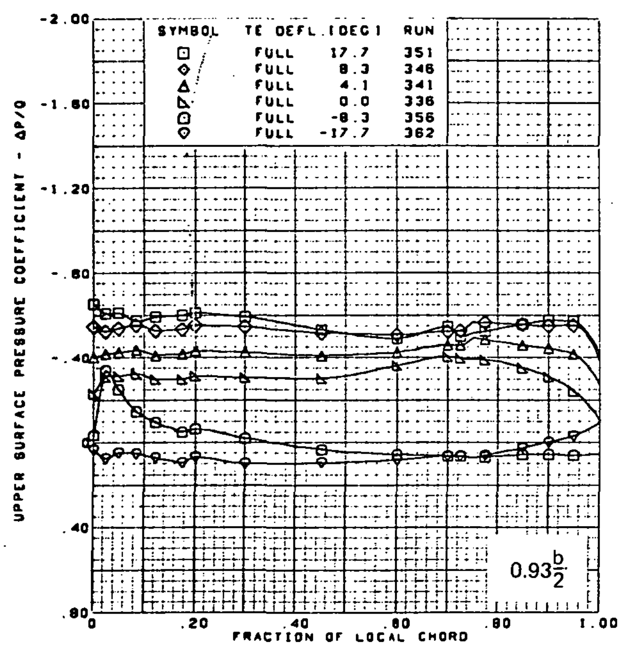


(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 39.–(Continued)



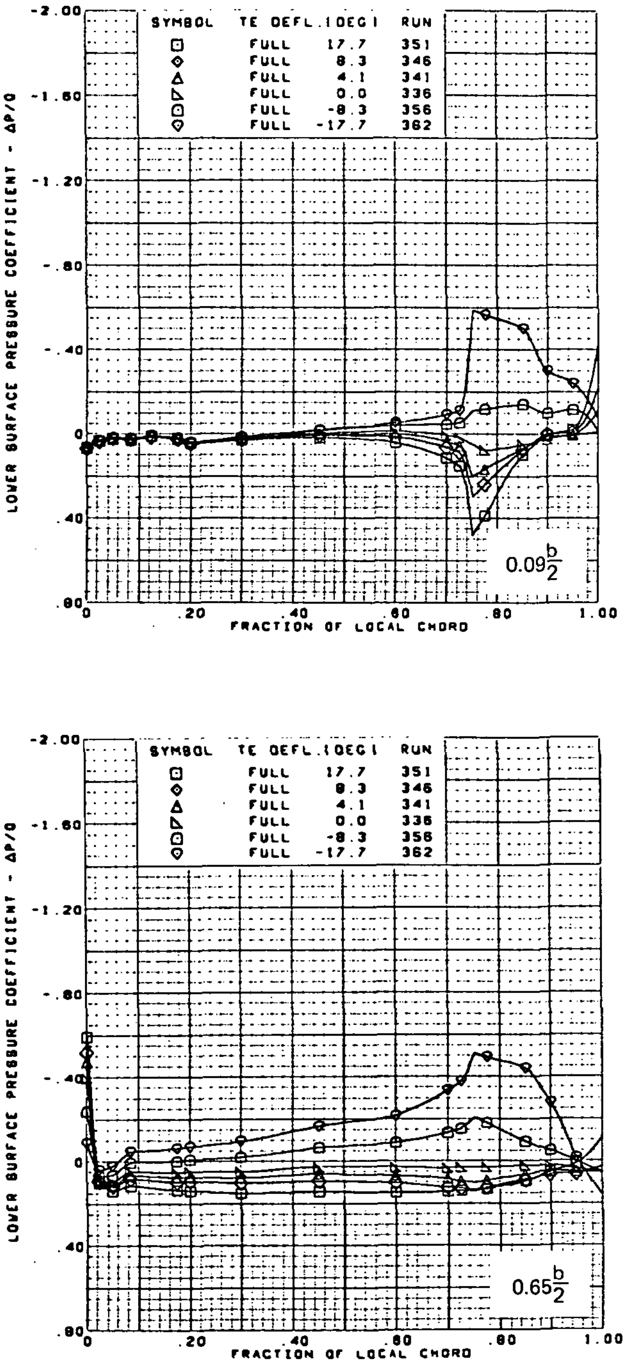




$M = 0.85$
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

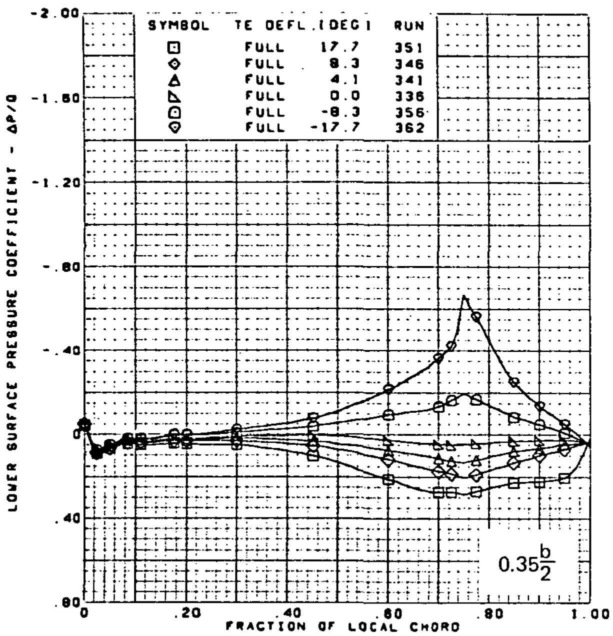
(d) (Concluded)

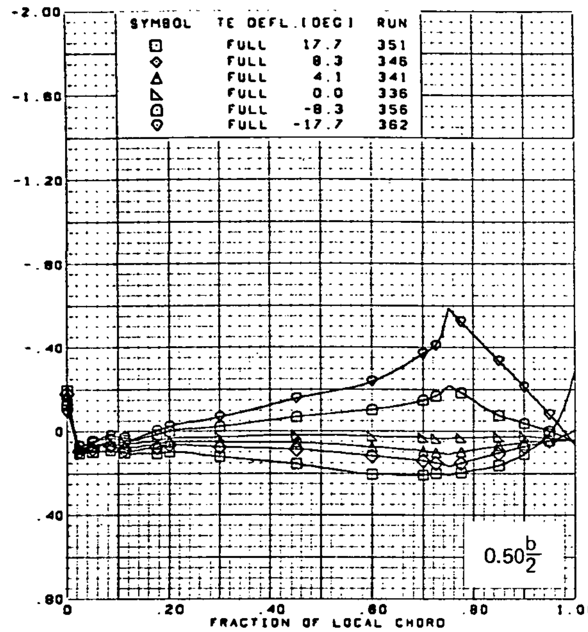
Figure 39.–(Continued)

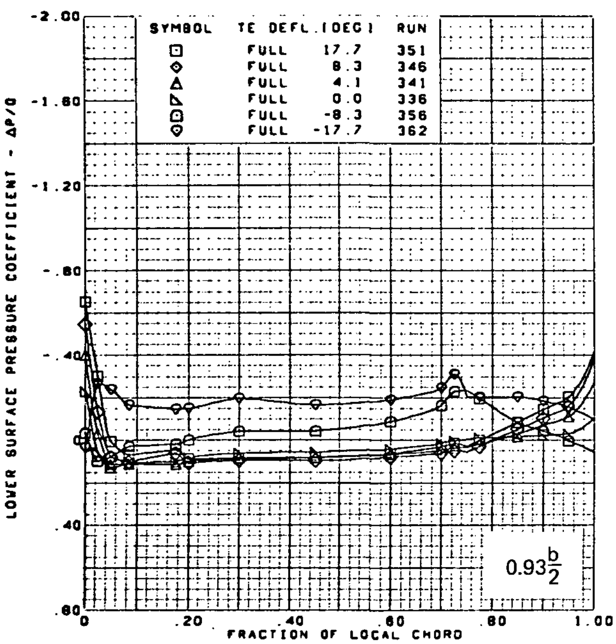


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0^{\circ}$

Figure 39.–(Continued)



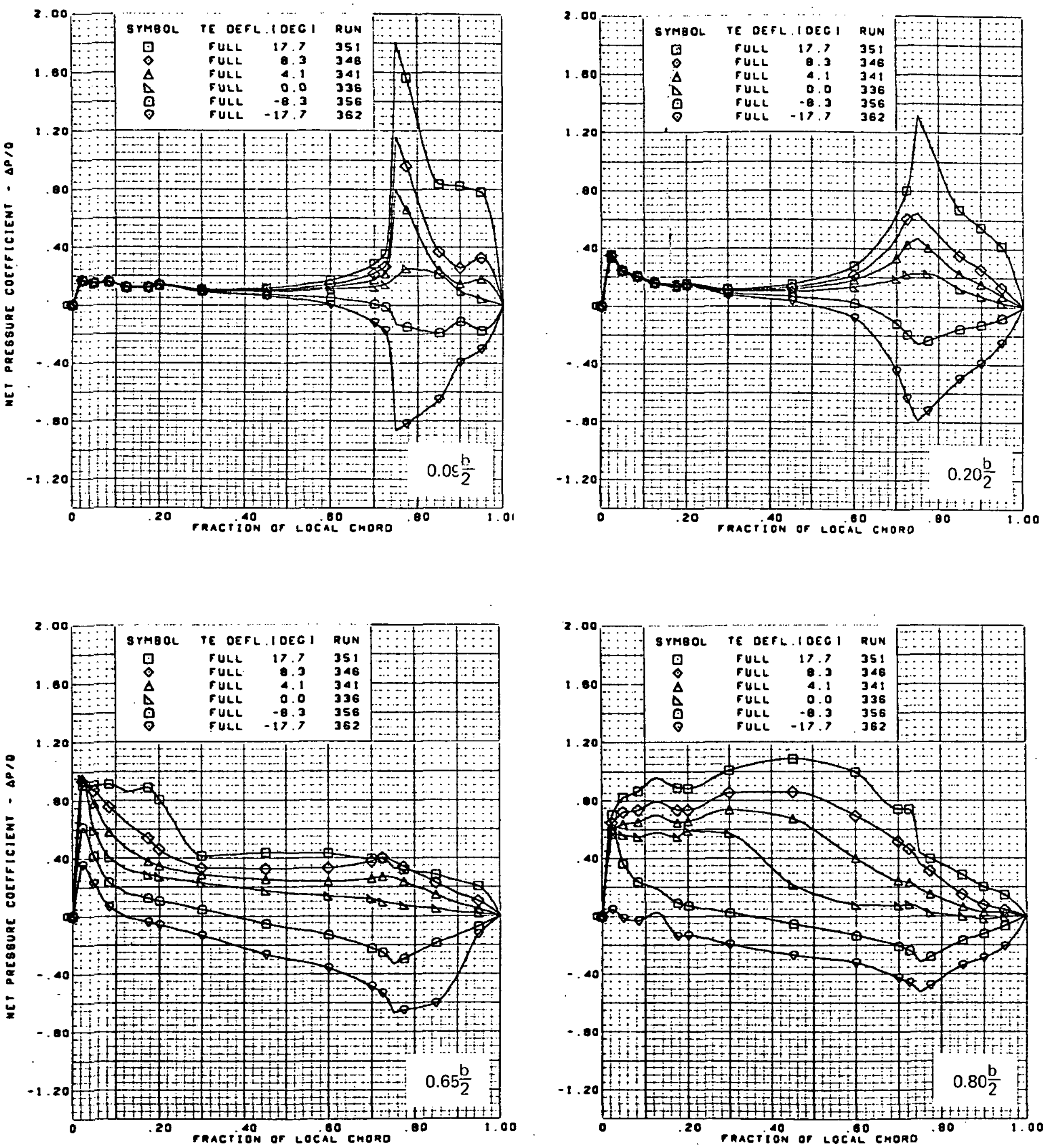




$M = 0.85$
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

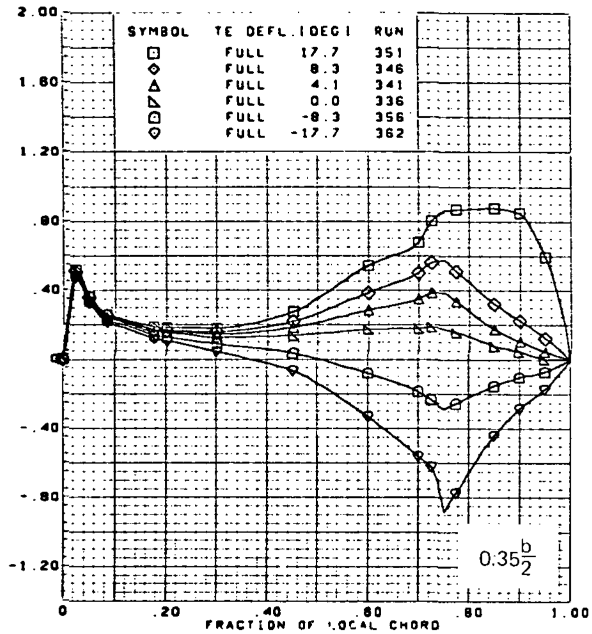
(e) (Concluded)

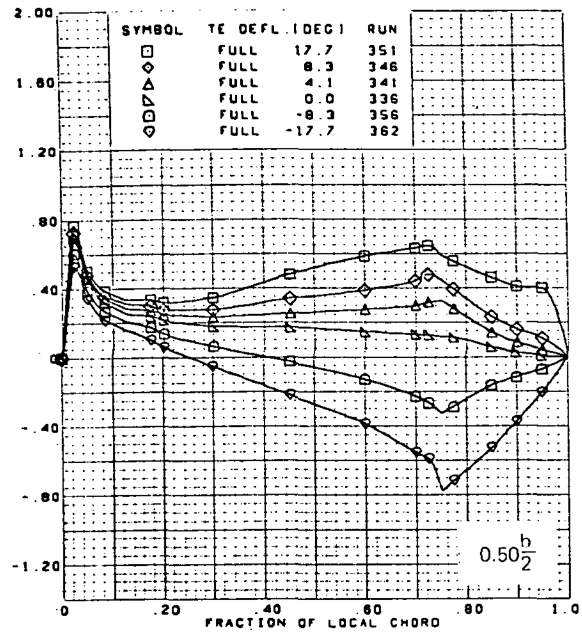
Figure 39.–(Continued)

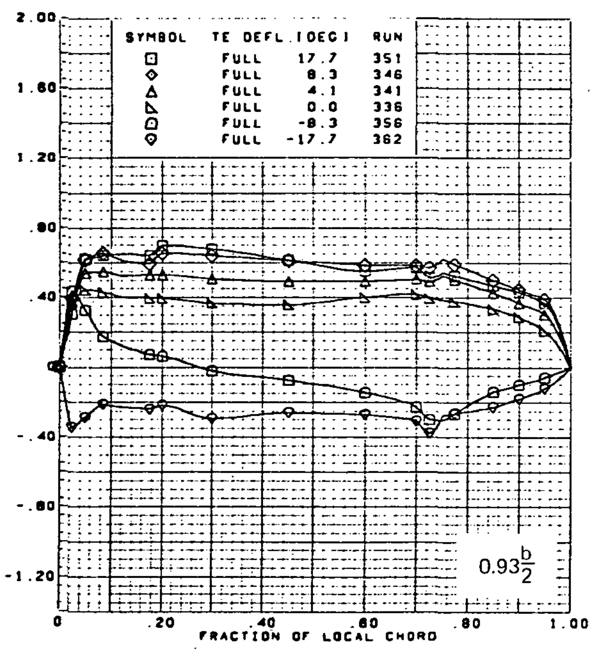


(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 39.–(Continued)



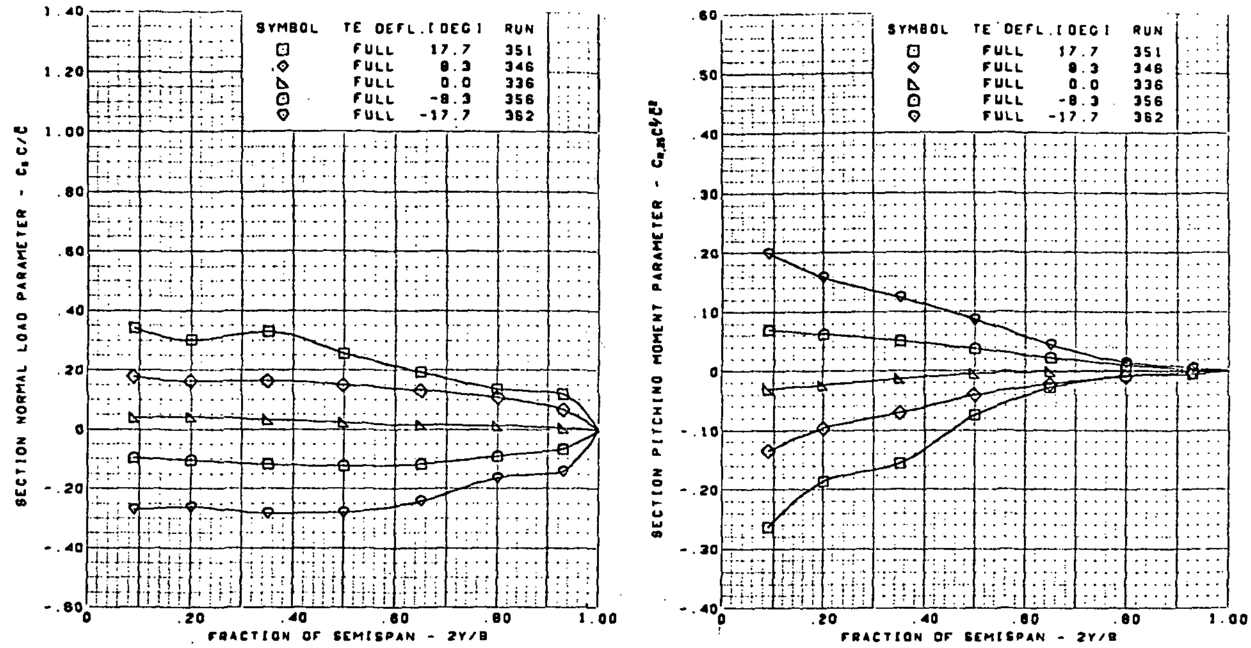




M = 0.85
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

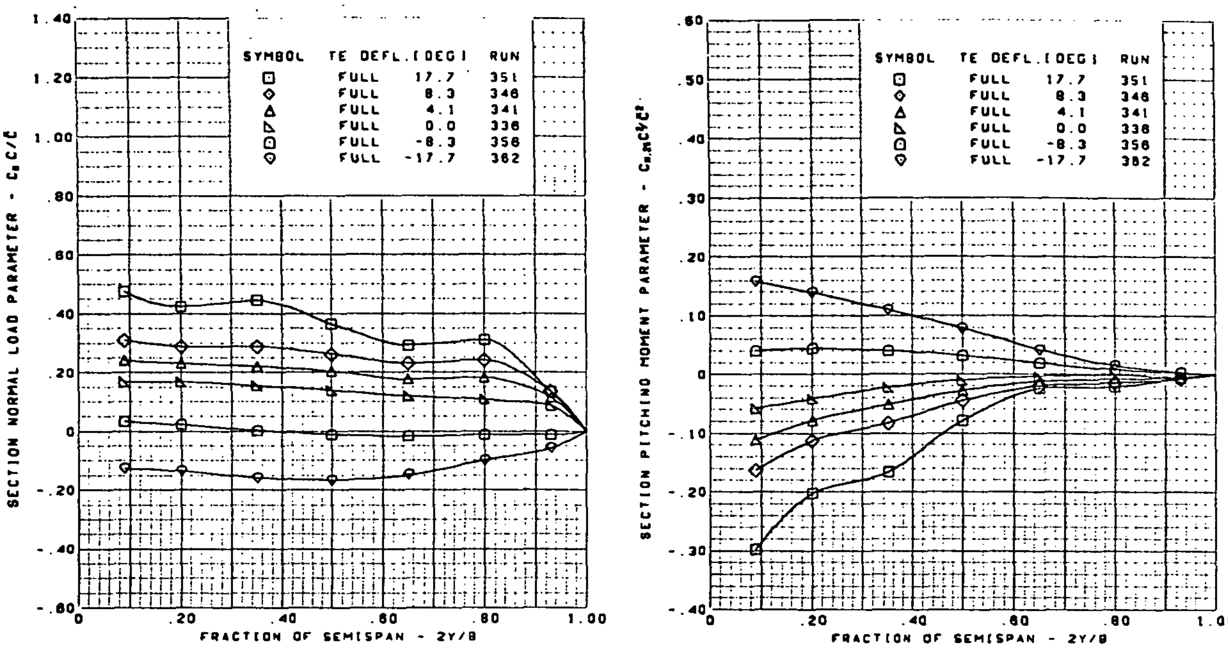
Figure 39.–(Continued)



M = 0.85
$\alpha \approx 0.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

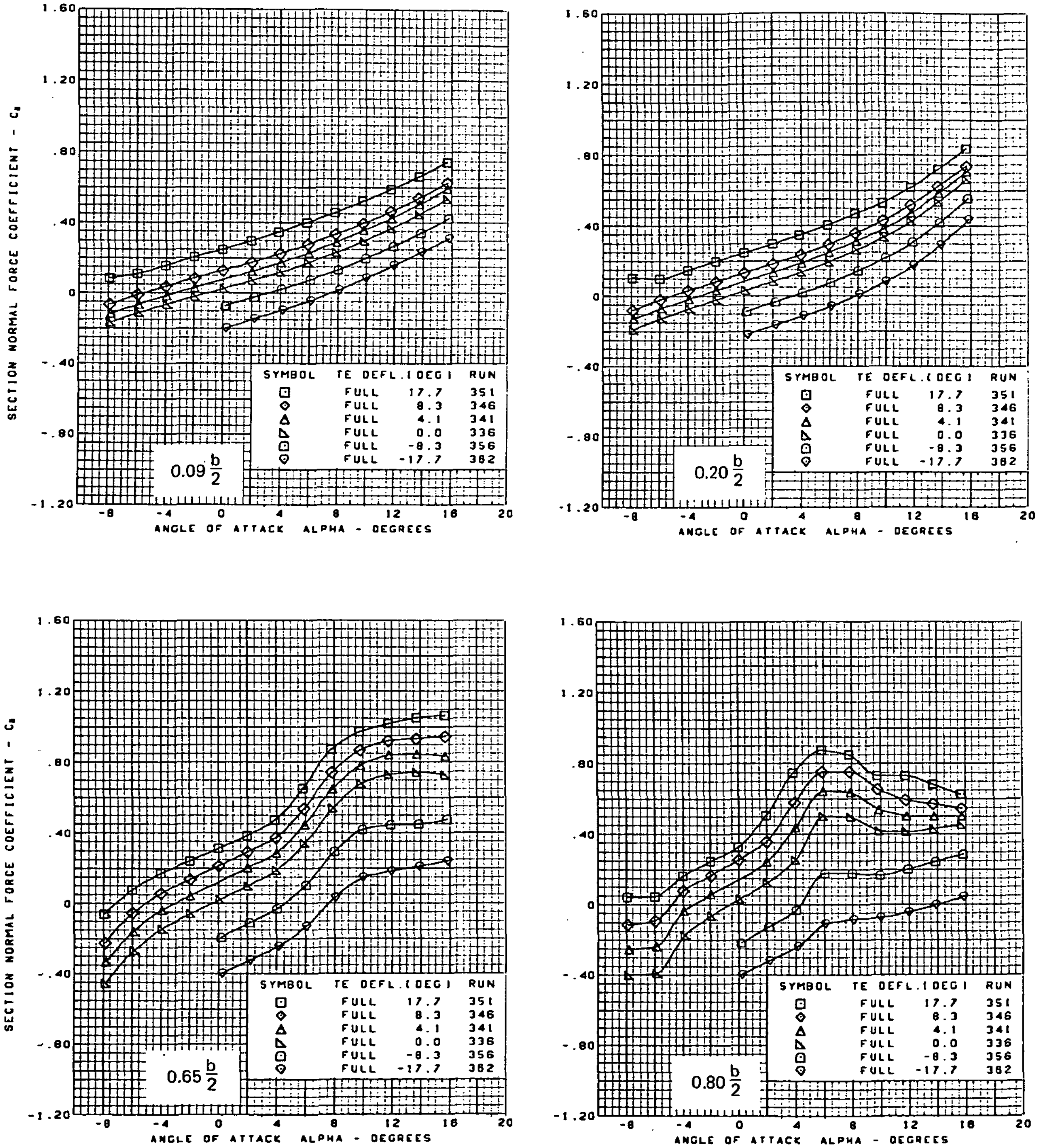
Figure 39.–(Continued)



M = 0.85
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

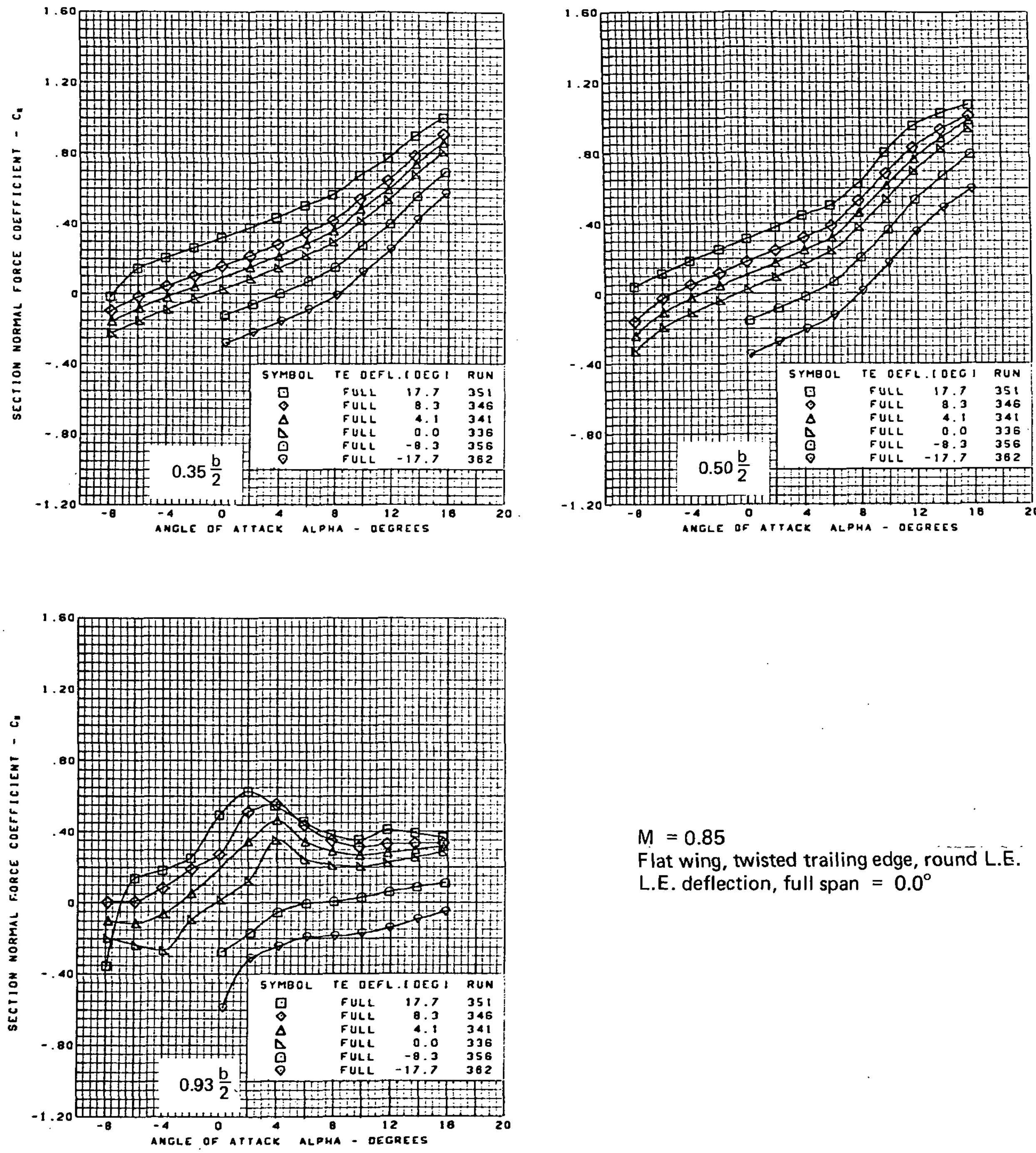
(h) Spanload Distributions, $\alpha \approx 4.0°$

Figure 39.–(Continued)



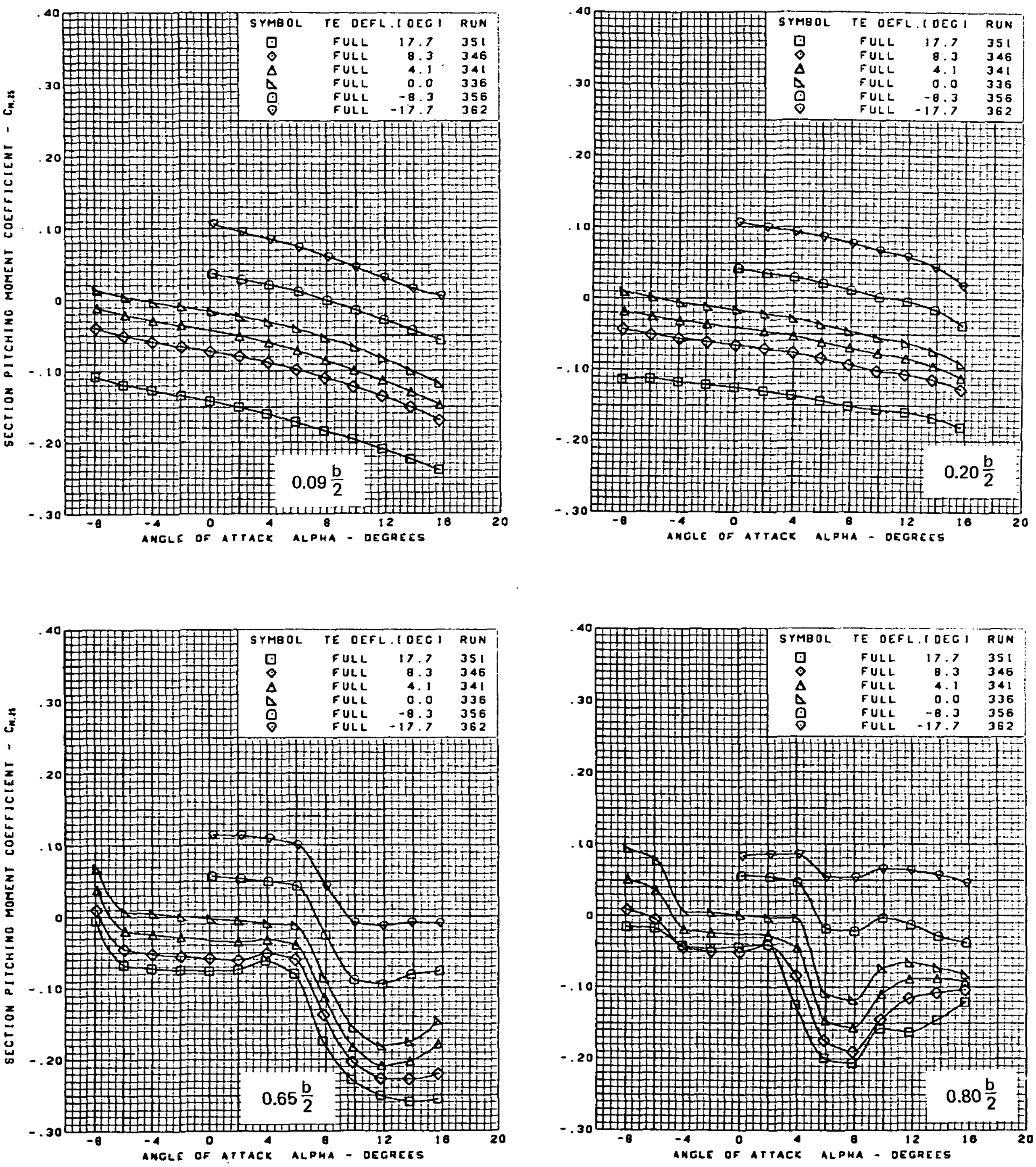
(i) Section Aerodynamic Coefficients — Normal Force

Figure 39.–(Continued)



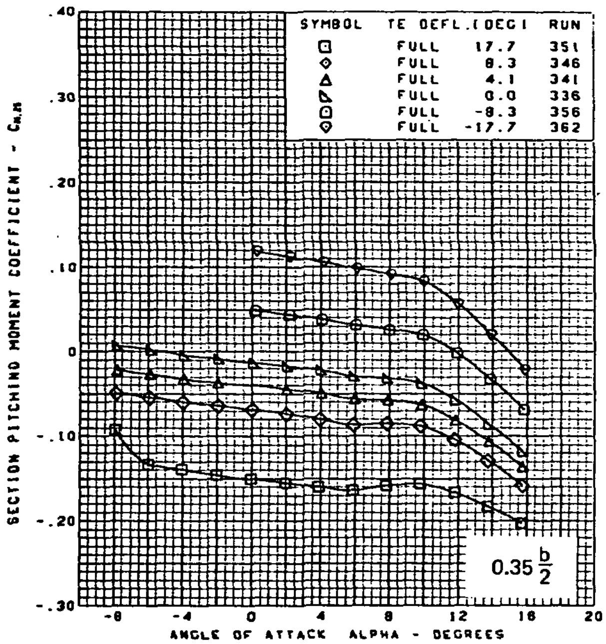
(i) (Concluded)

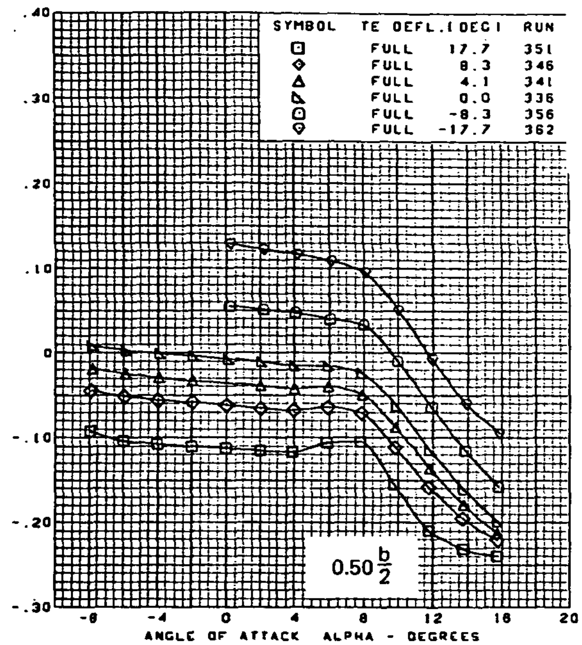
Figure 39.–(Continued)

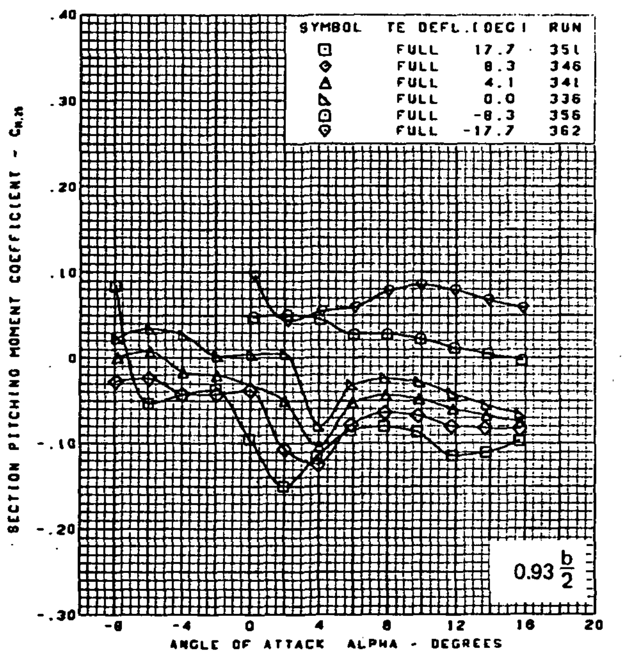


(j) Section Aerodynamic Coefficients – Pitching Moment

Figure 39.–(Continued)



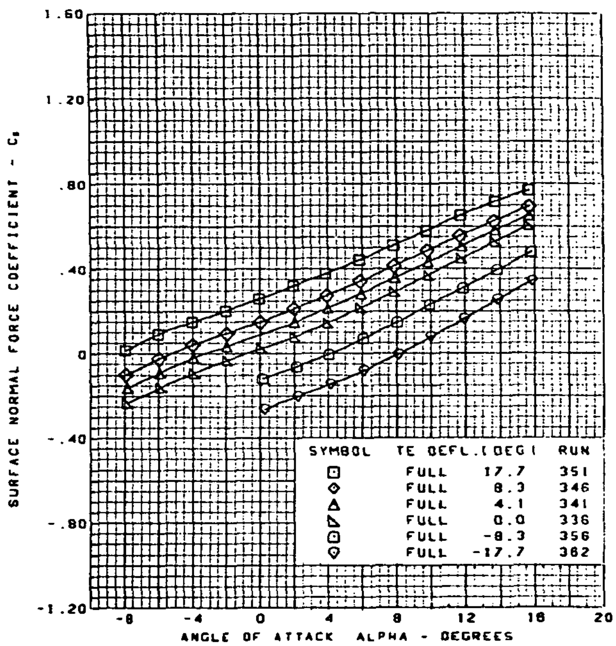


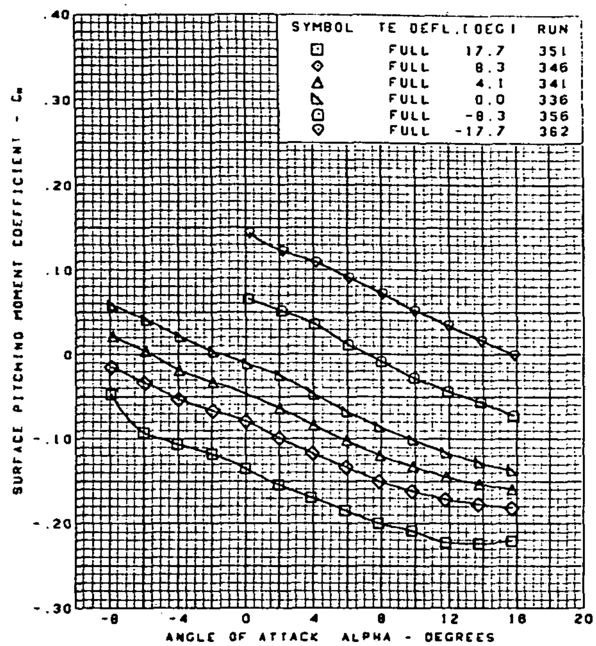


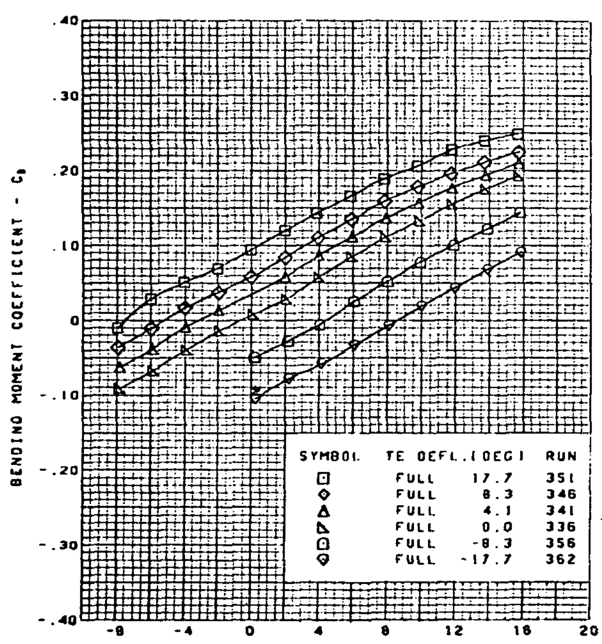
M = 0.85
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

(j) (Concluded)

Figure 39.–(Continued)







M = 0.85
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

(k) Wing Aerodynamic Coefficients

Figure 39.–(Concluded)

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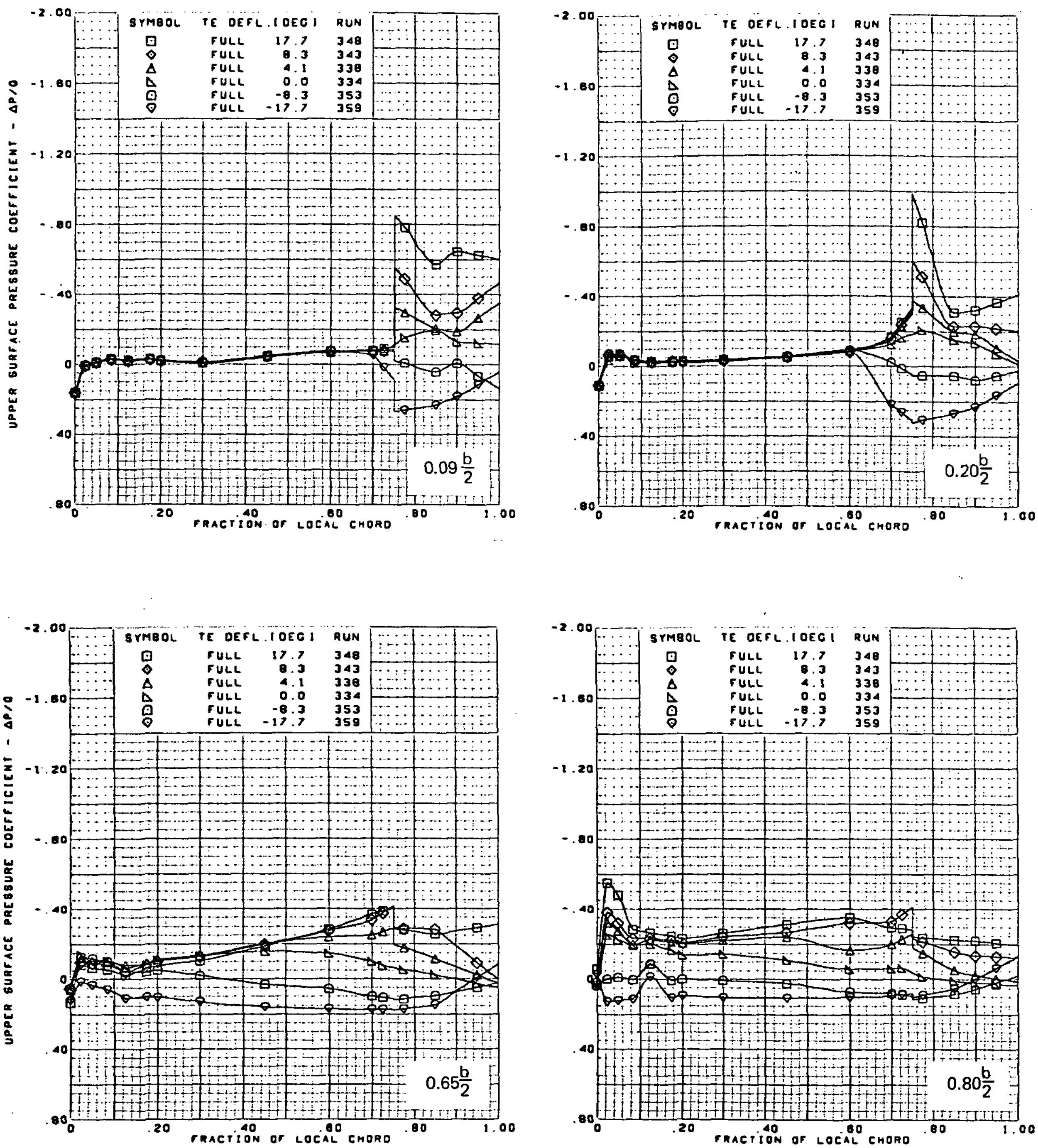
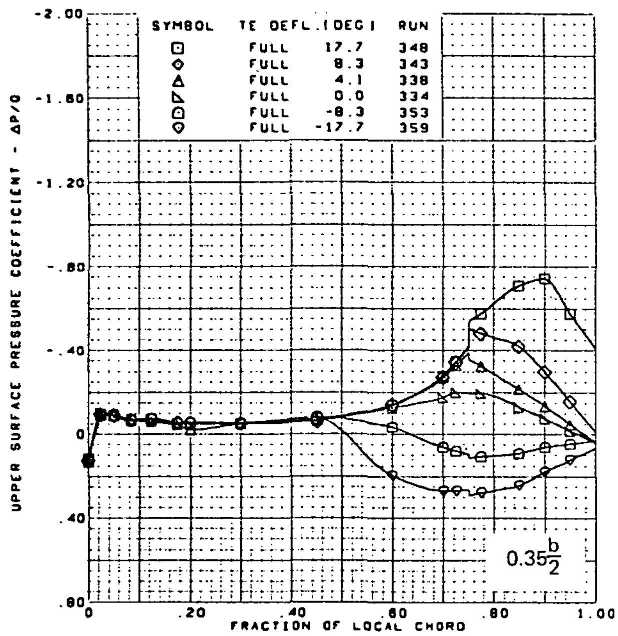
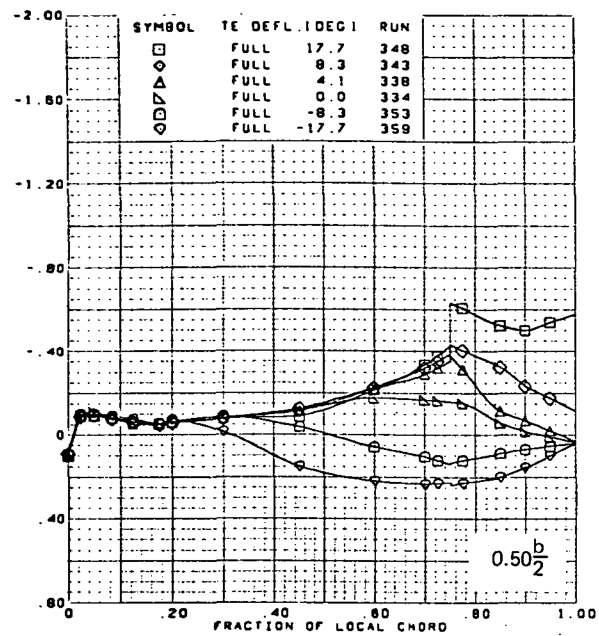
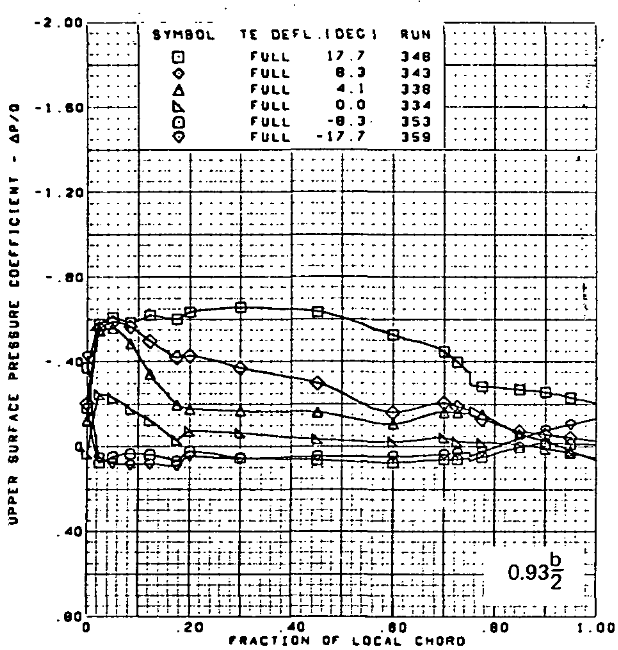


(a) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 40.—Wing Experimental Data—Effect of Full Span T.E. Deflection; Flat Wing, Twisted T.E., Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 1.05



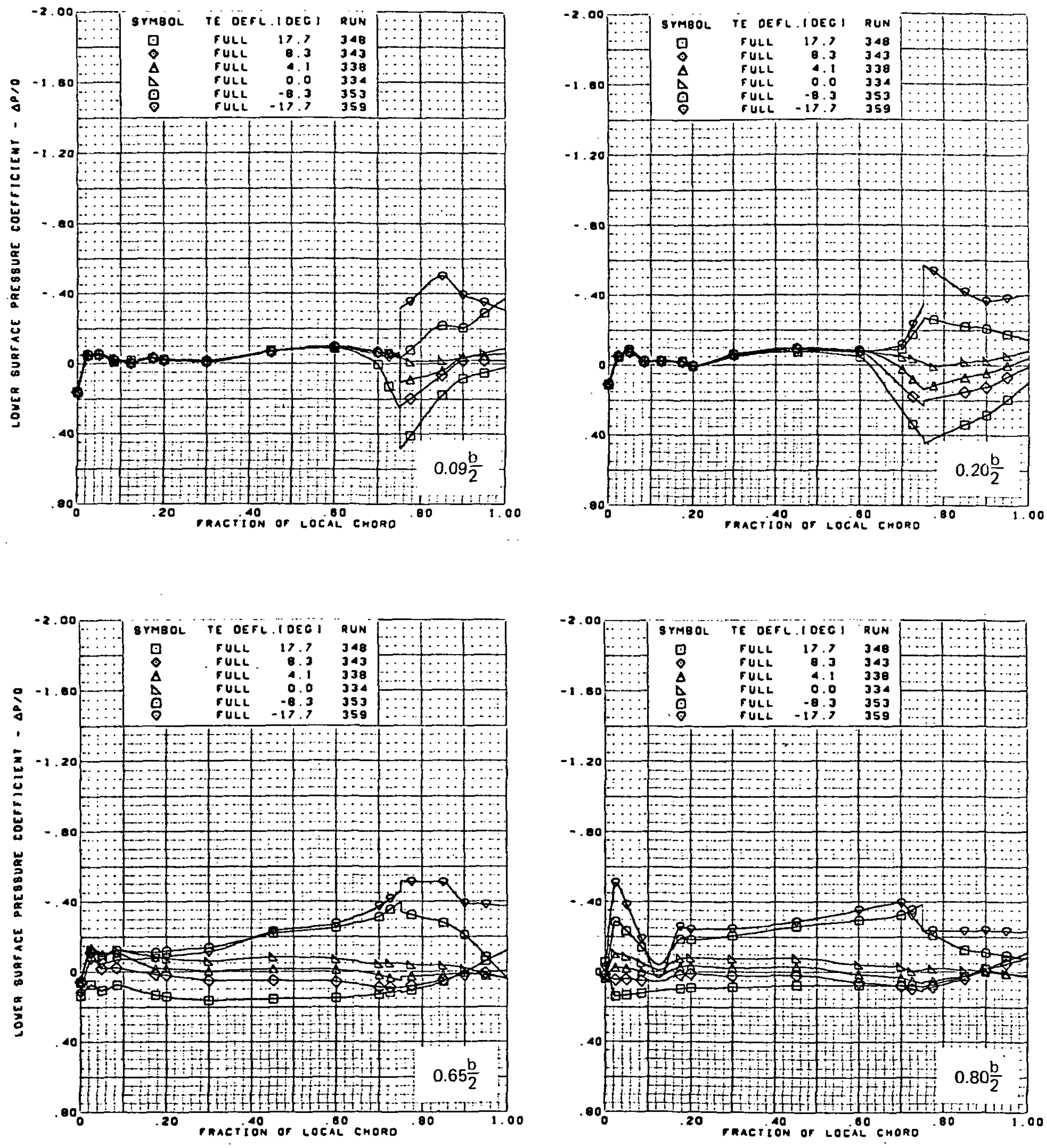




M = 1.05
$\alpha \approx 0.0^\circ$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

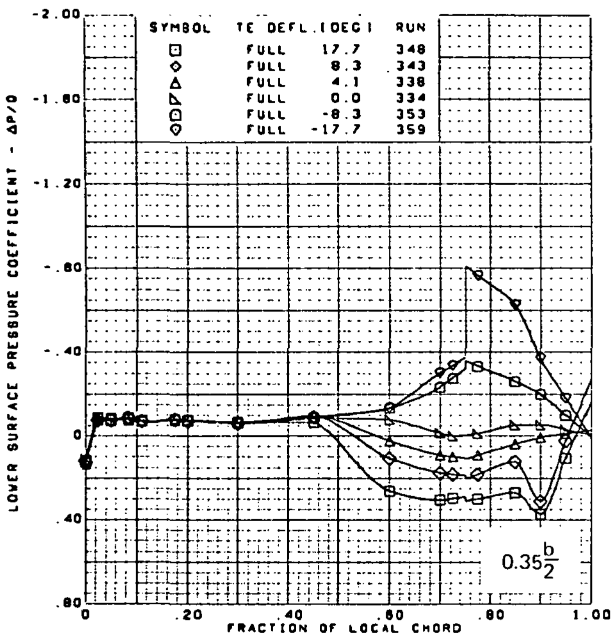
(a) (Concluded)

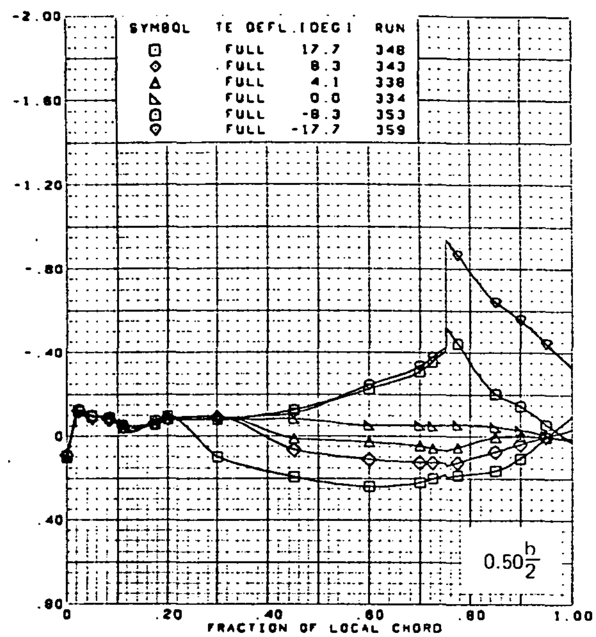
Figure 40.–(Continued)

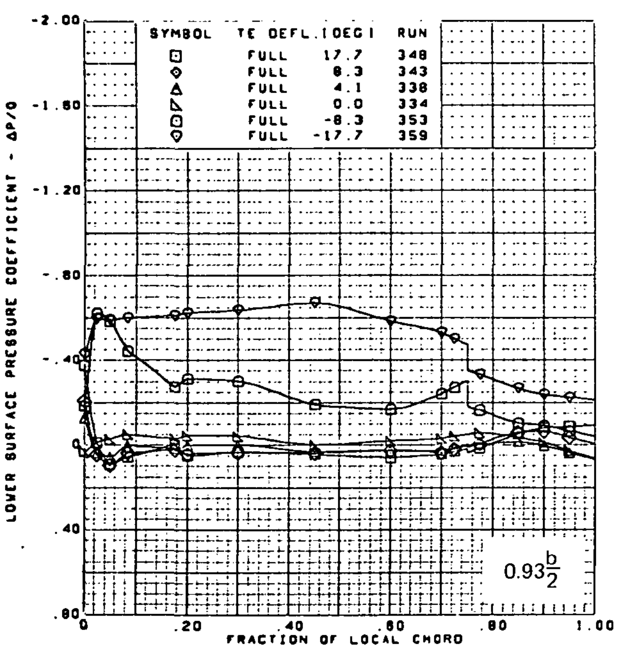


(b) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 40.–(Continued)



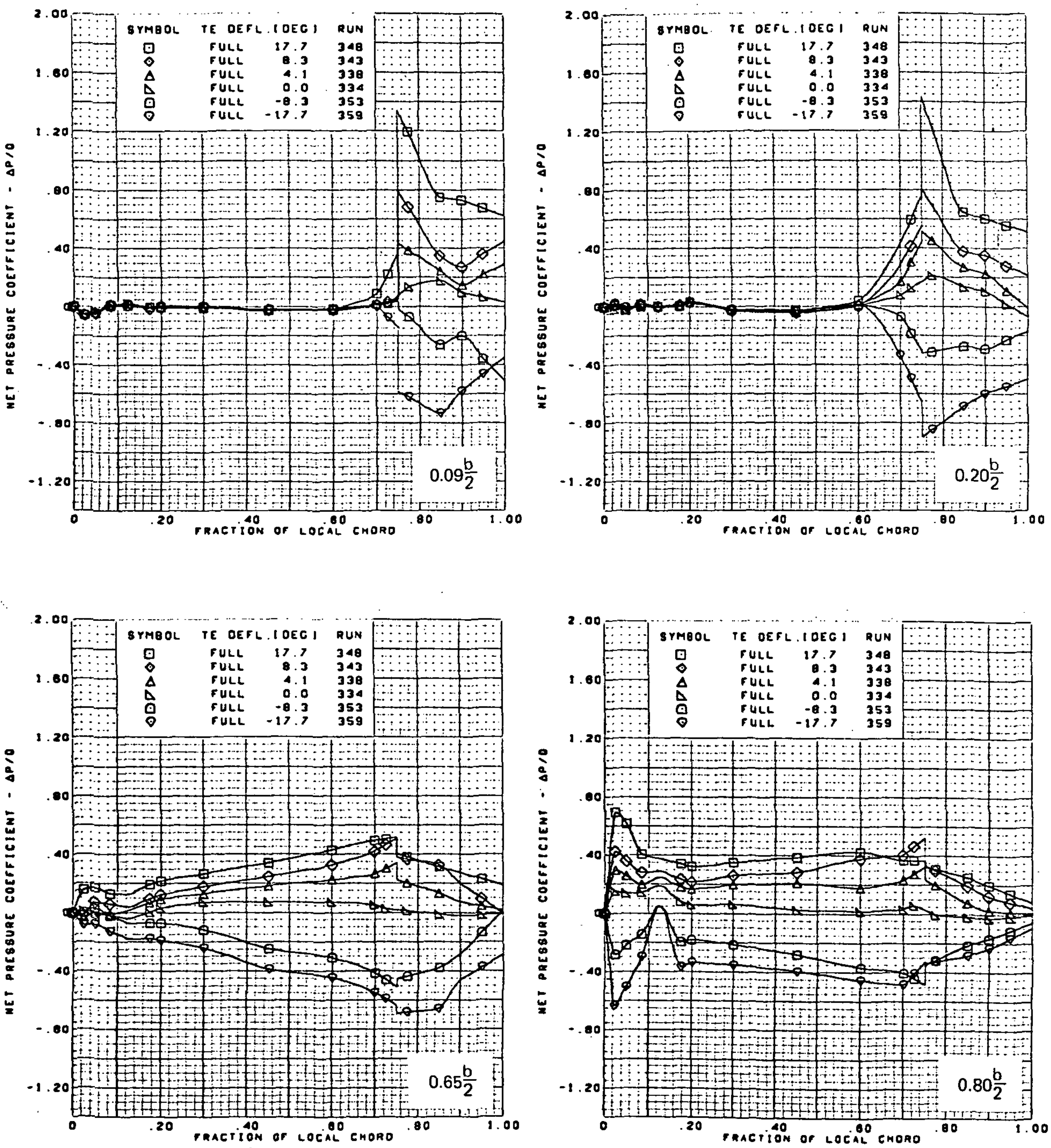




M = 1.05
$\alpha \approx 0.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

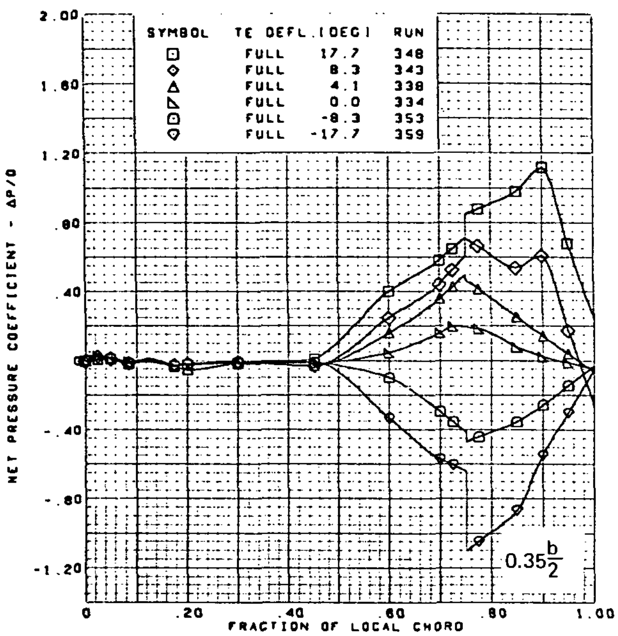
(b) (Concluded)

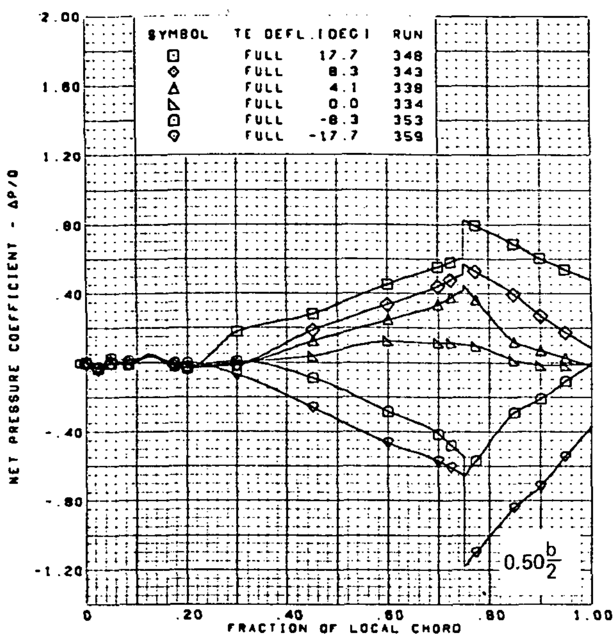
Figure 40.–(Continued)

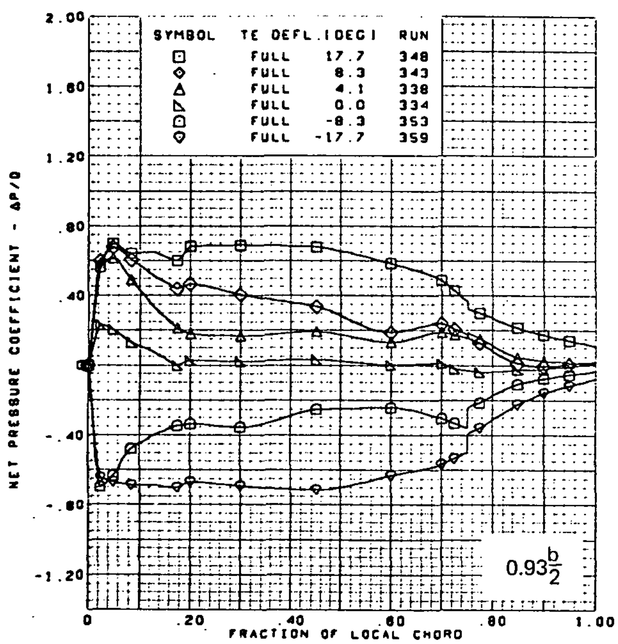


(c) Net Chordwise Pressure Distributions, $\alpha \approx 0.0°$

Figure 40.-(Continued)



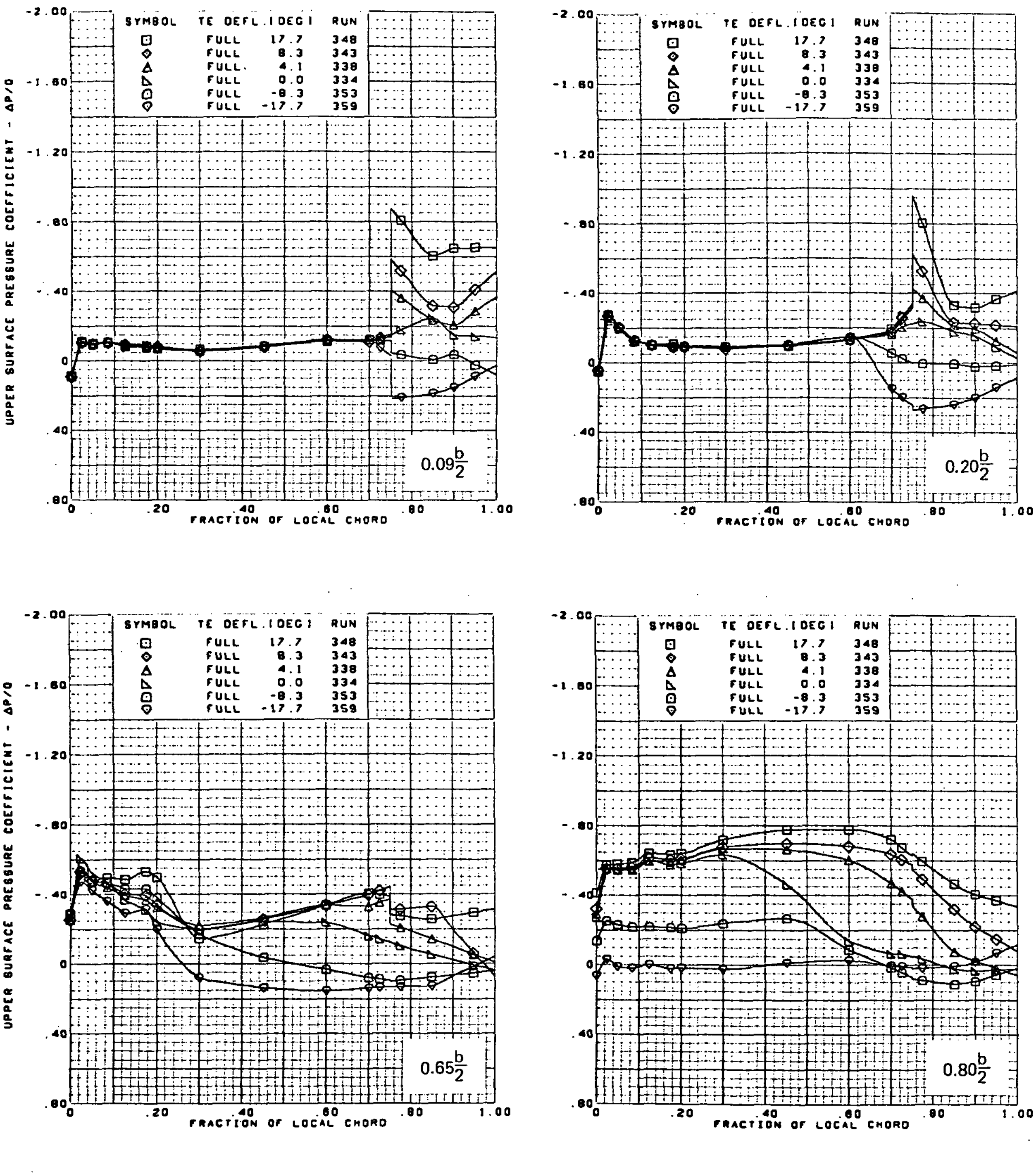




M = 1.05
$\alpha \approx 0.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

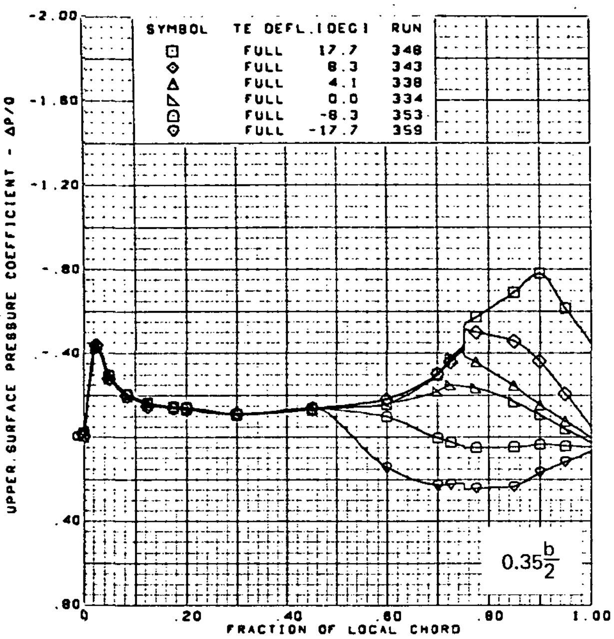
(c) (Concluded)

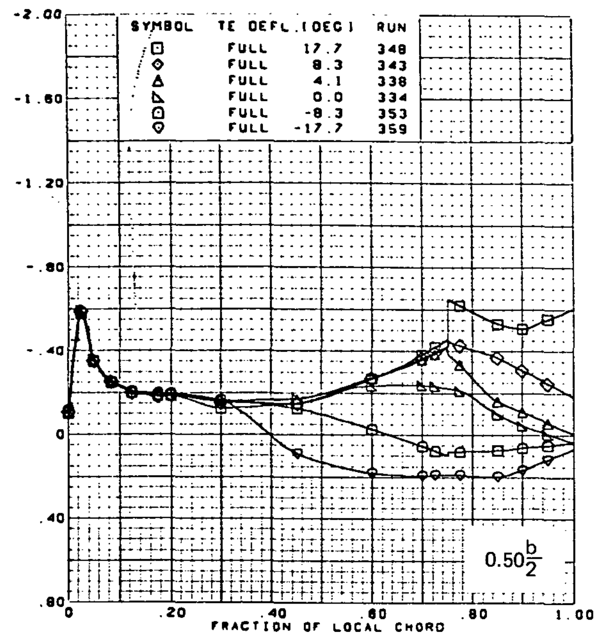
Figure 40.–(Continued)

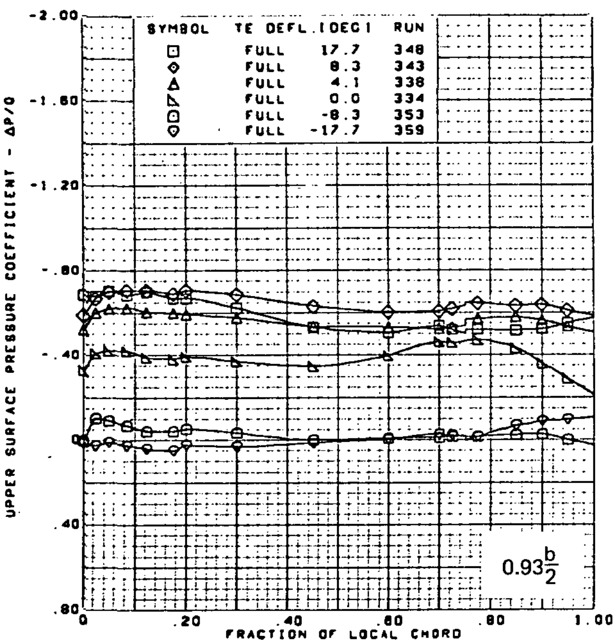


(d) Upper Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 40.–(Continued)



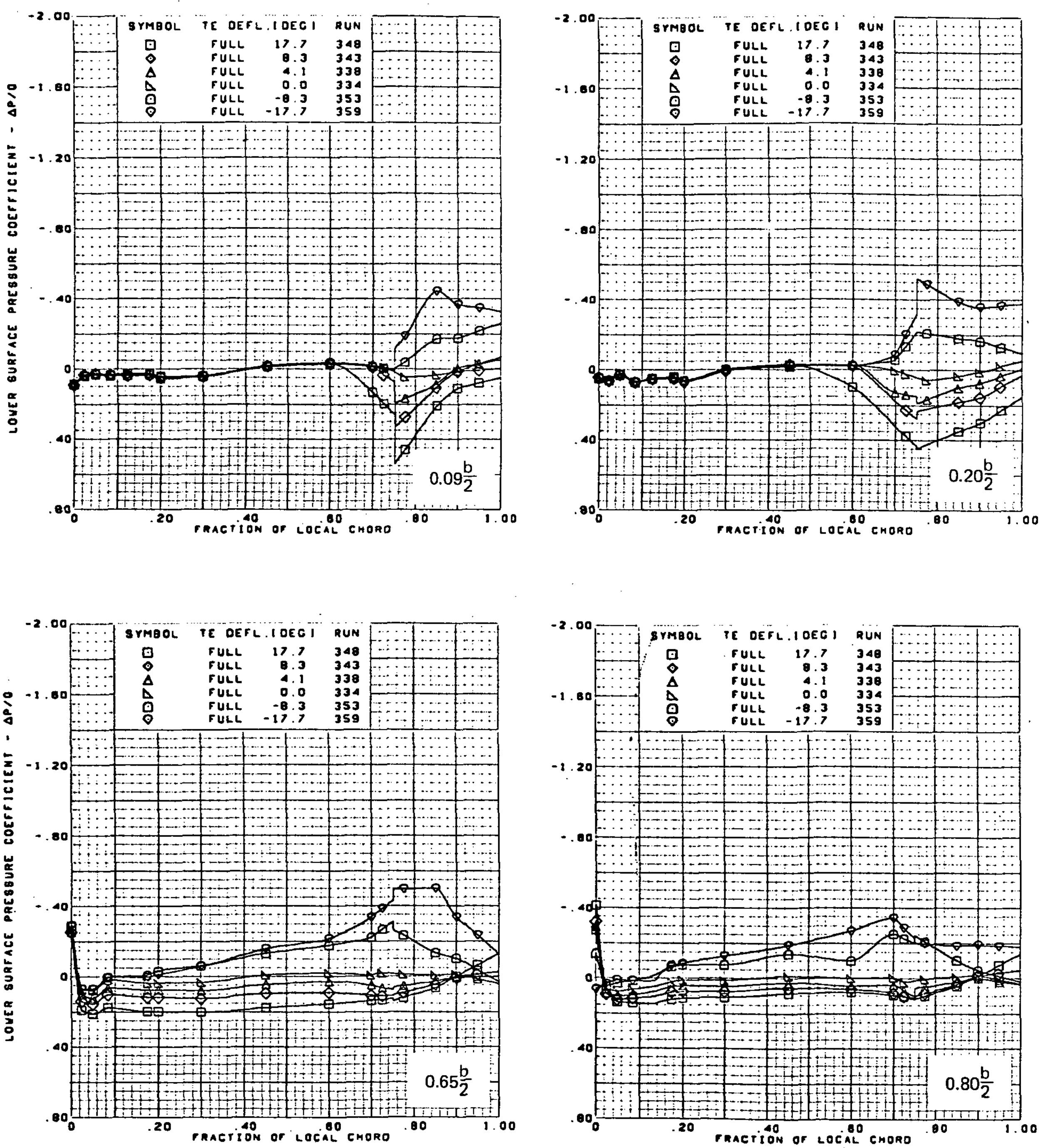




M = 1.05
$\alpha \approx 4.0^\circ$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

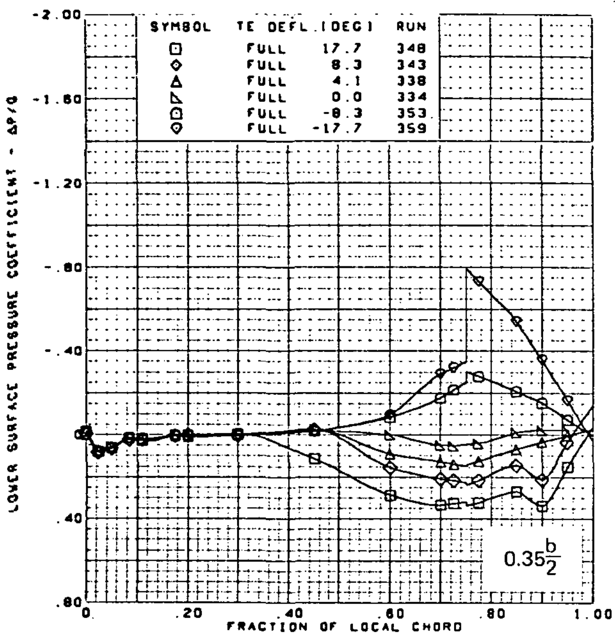
(d) (Concluded)

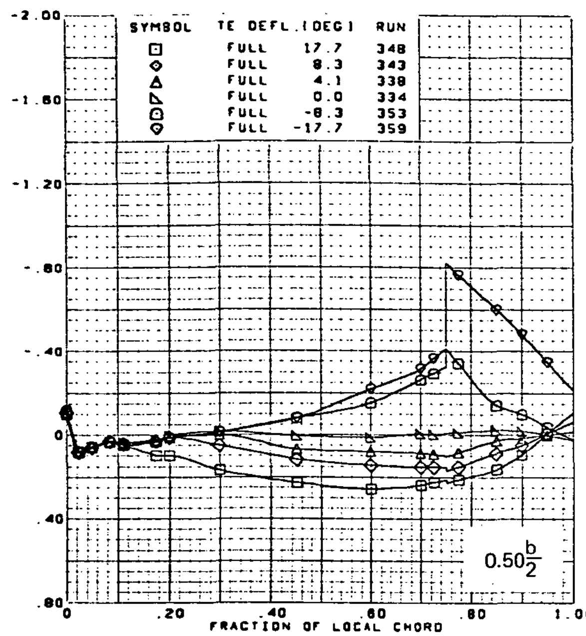
Figure 40.–(Continued)

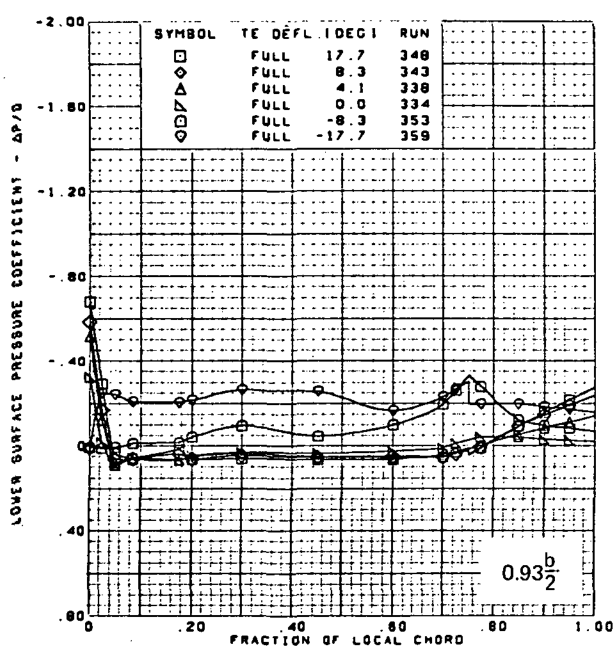


(e) Lower Surface Chordwise Pressure Distributions, $\alpha \approx 4.0°$

Figure 40.–(Continued)



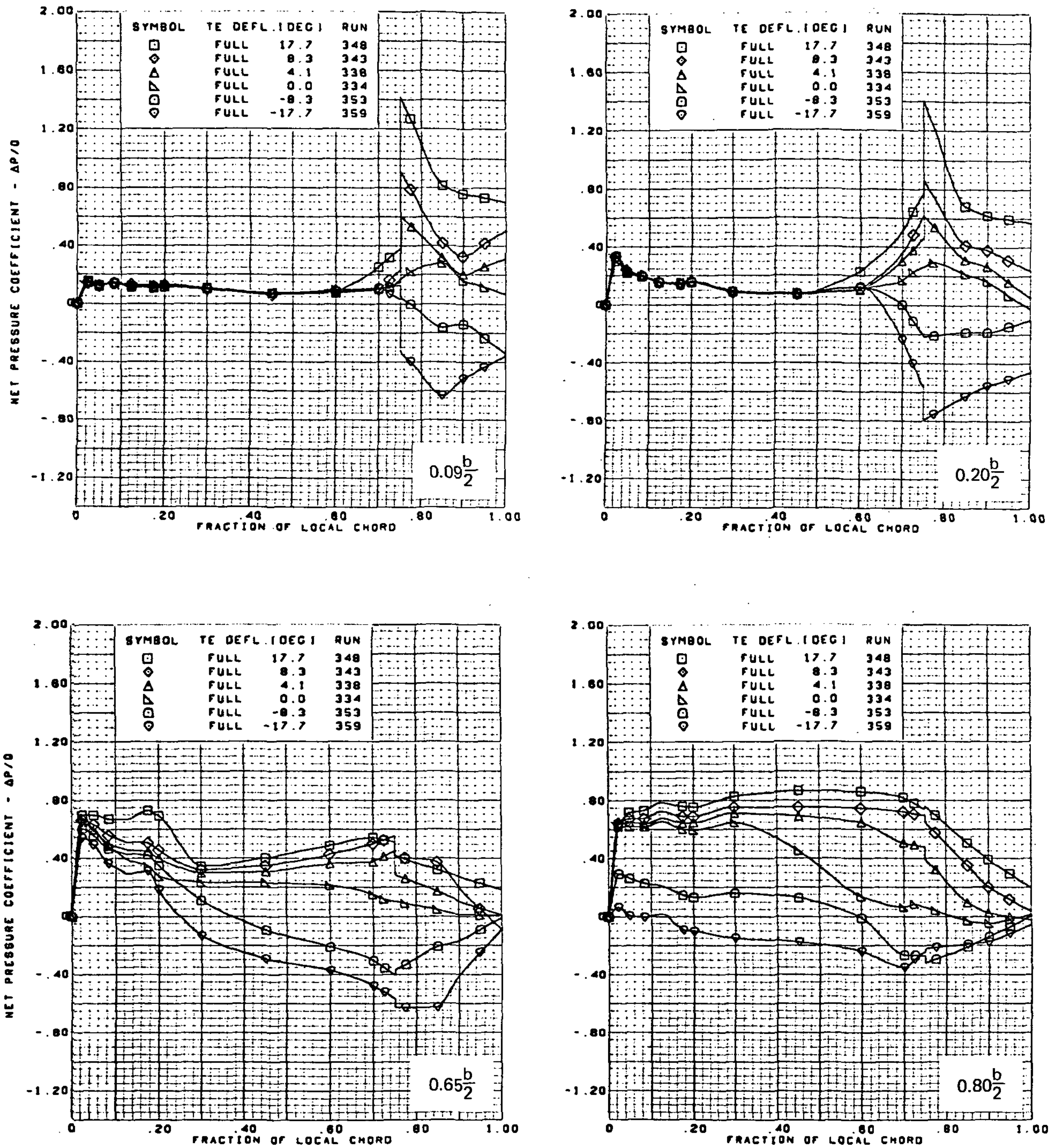




M = 1.05
$\alpha \approx 4.0^\circ$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

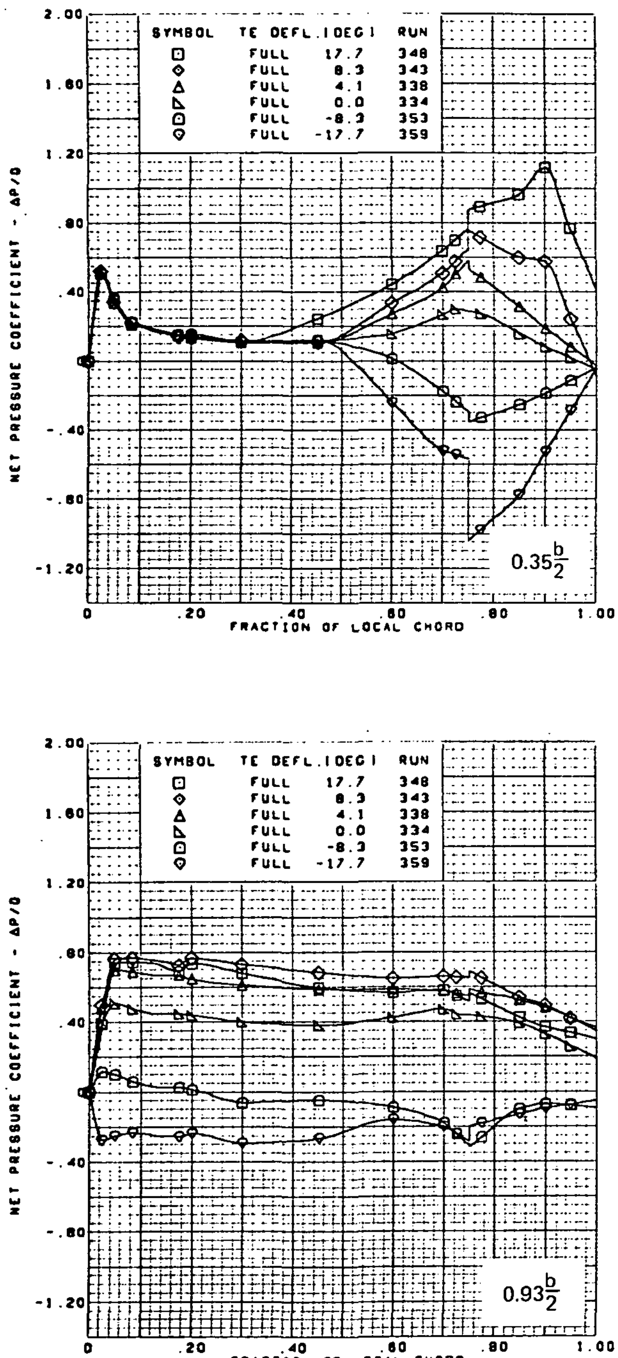
(e) (Concluded)

Figure 40.–(Continued)



(f) Net Chordwise Pressure Distributions, $\alpha \approx 4.0°$

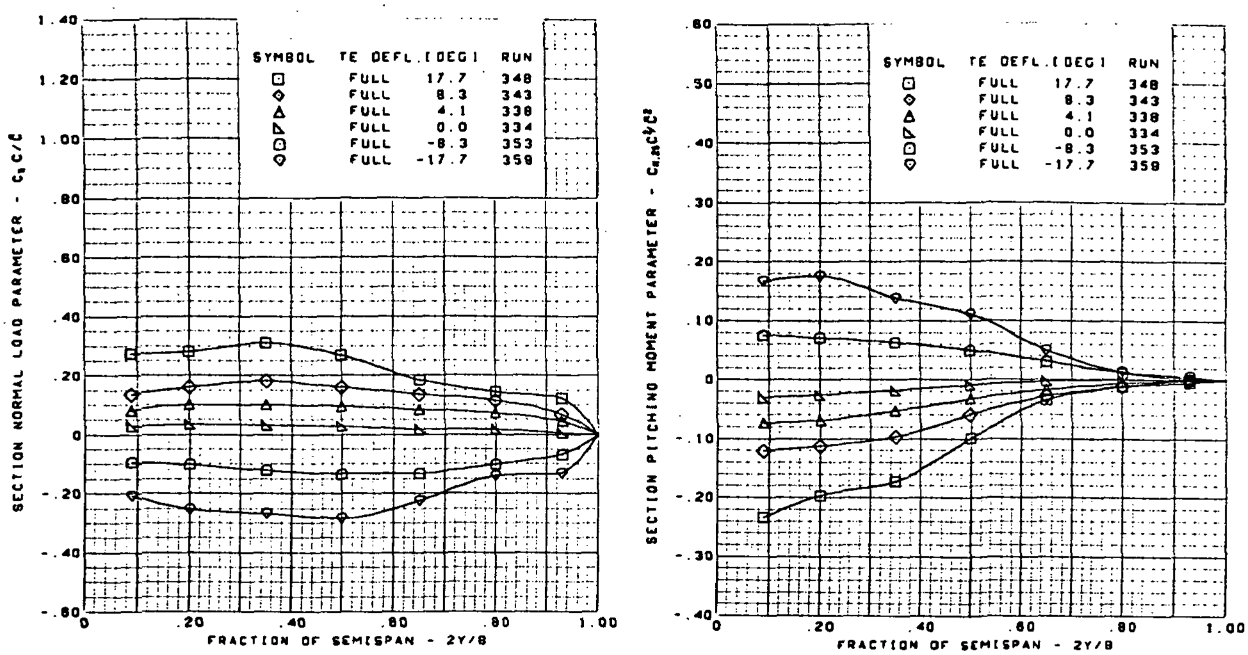
Figure 40.–(Continued)



M = 1.05
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

(f) (Concluded)

Figure 40.–(Continued)



M = 1.05

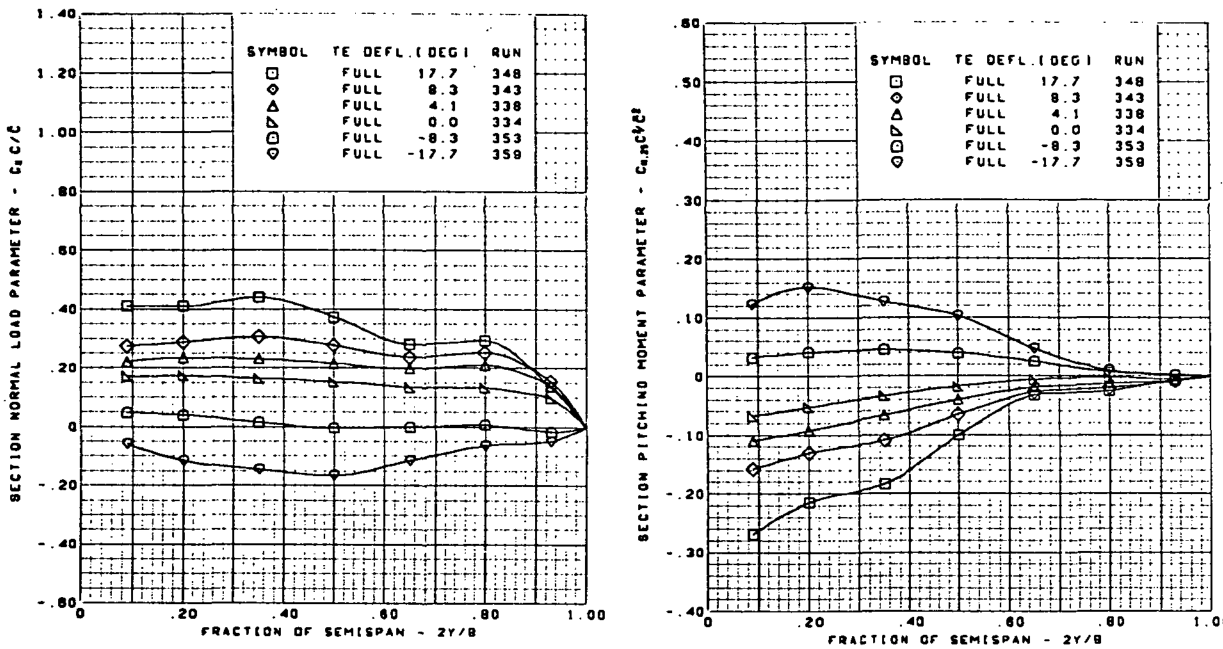
$\alpha \approx 0.0°$

Flat wing, twisted T.E., round L.E.

L.E. deflection, full span = 0.0°

(g) Spanload Distributions, $\alpha \approx 0.0°$

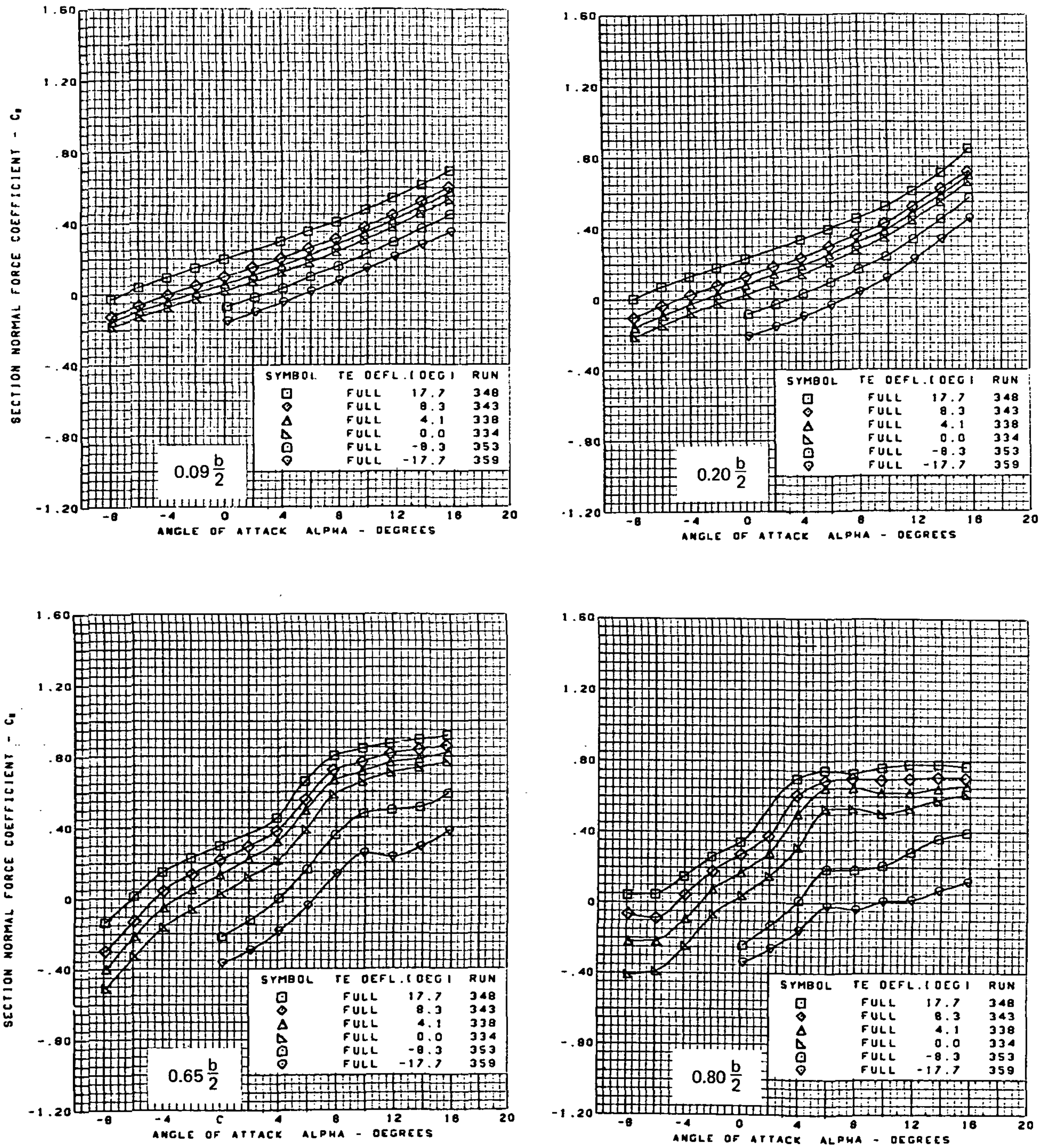
Figure 40.–(Continued)



M = 1.05
$\alpha \approx 4.0°$
Flat wing, twisted T.E., round L.E.
L.E. deflection, full span = 0.0°

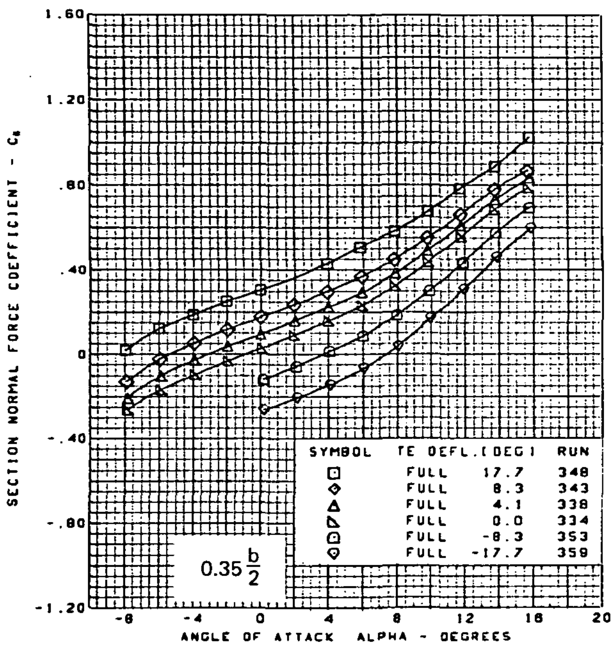
(h) Spanload Distributions, $\alpha \approx 4.0°$

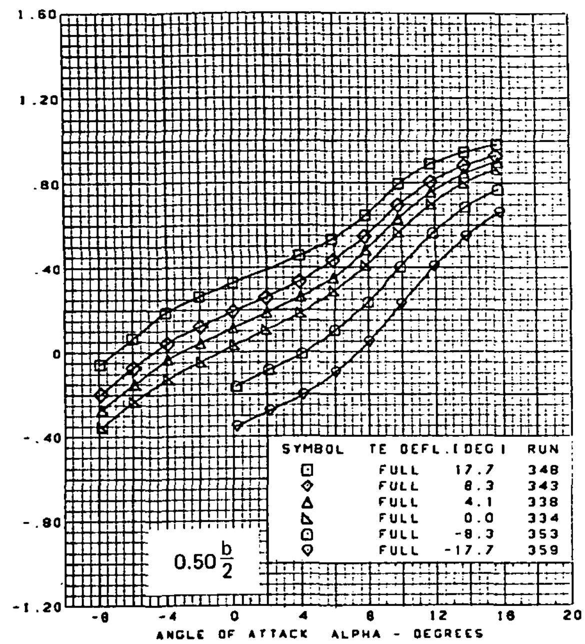
Figure 40.–(Continued)

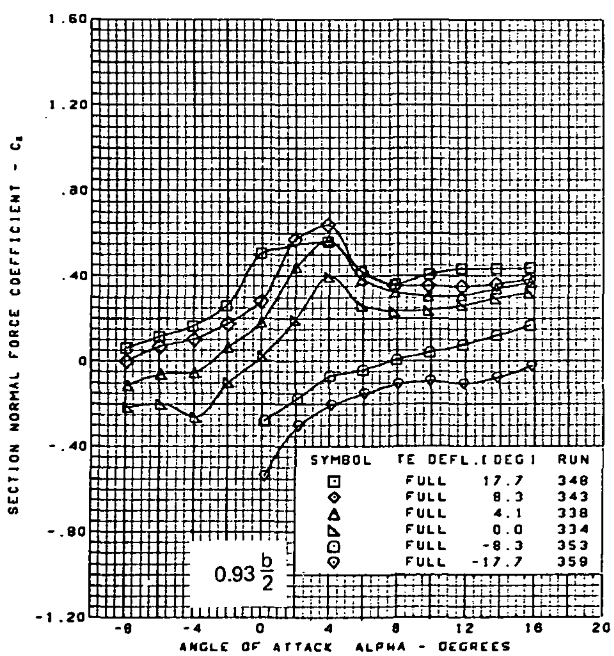


(i) Section Aerodynamic Coefficients — Normal Force

Figure 40.–(Continued)



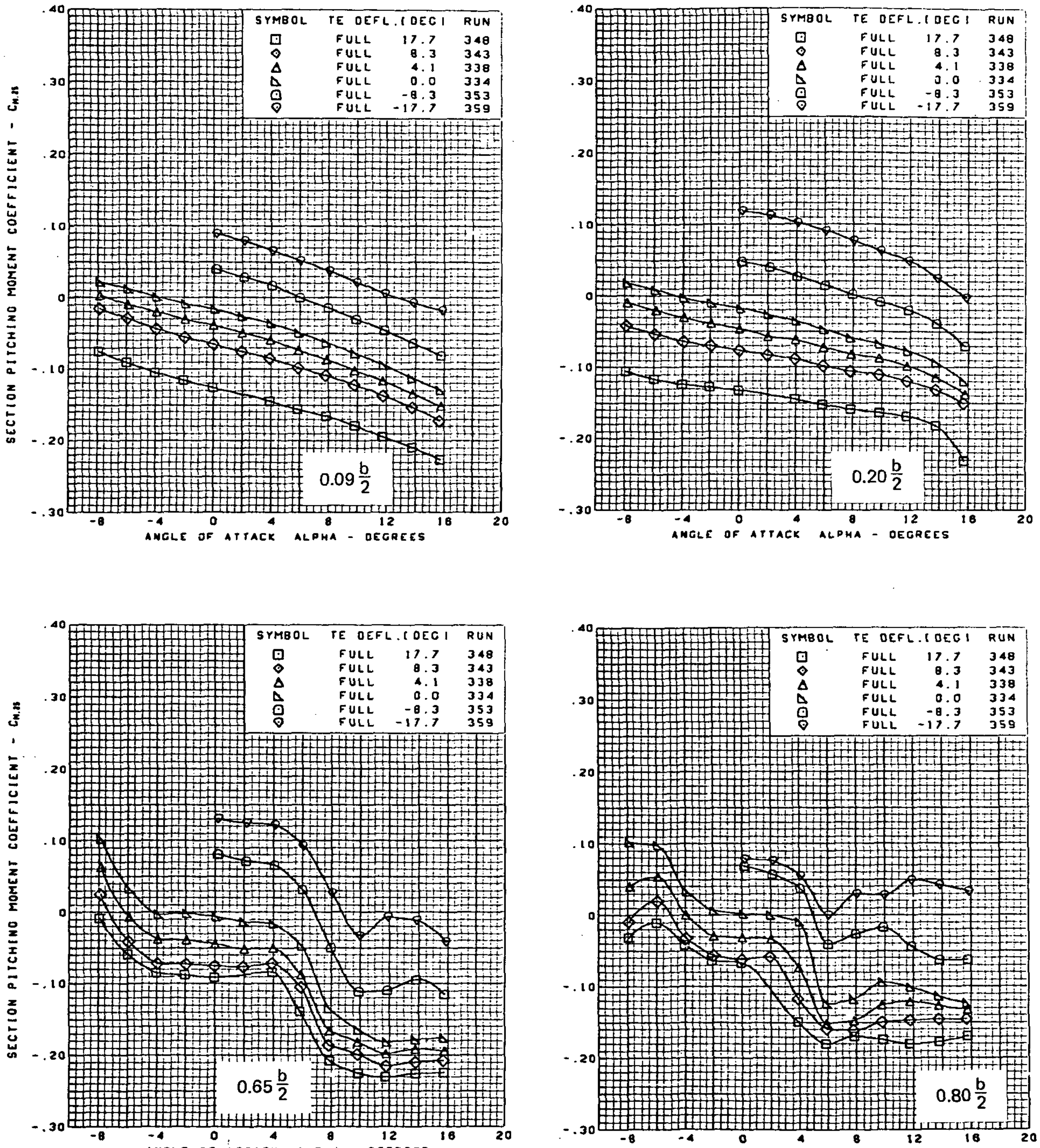




M = 1.05
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

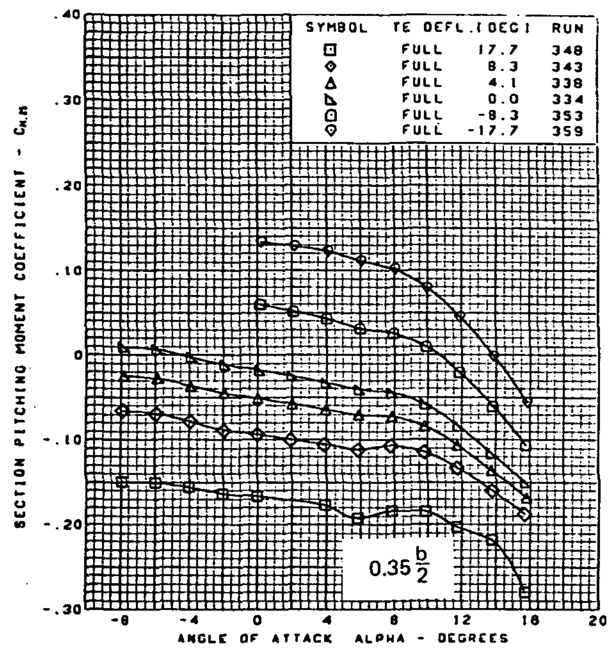
(i) (Concluded)

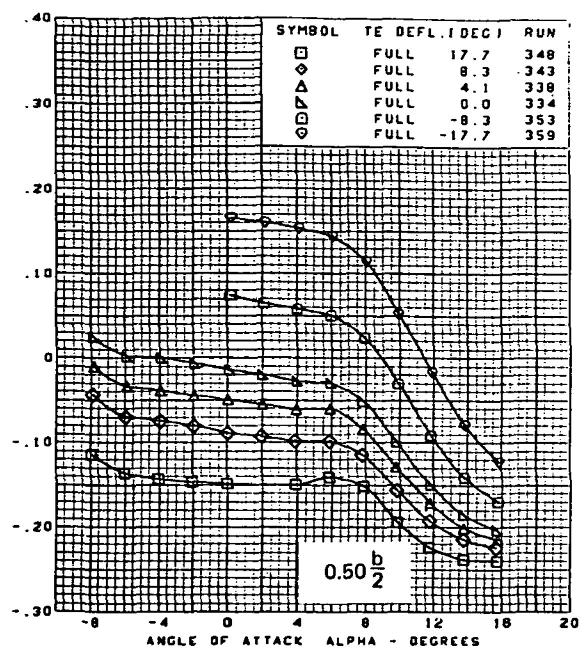
Figure 40.–(Continued)

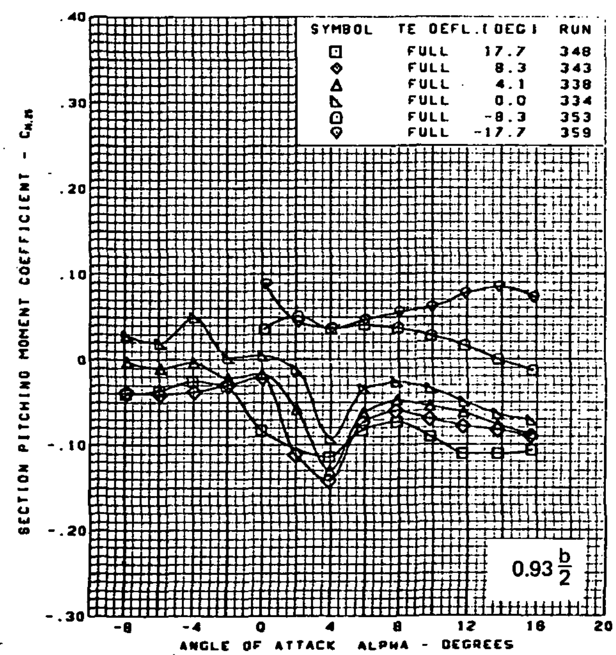


(j) Section Aerodynamic Coefficients — Pitching Moment

Figure 40.–(Continued)



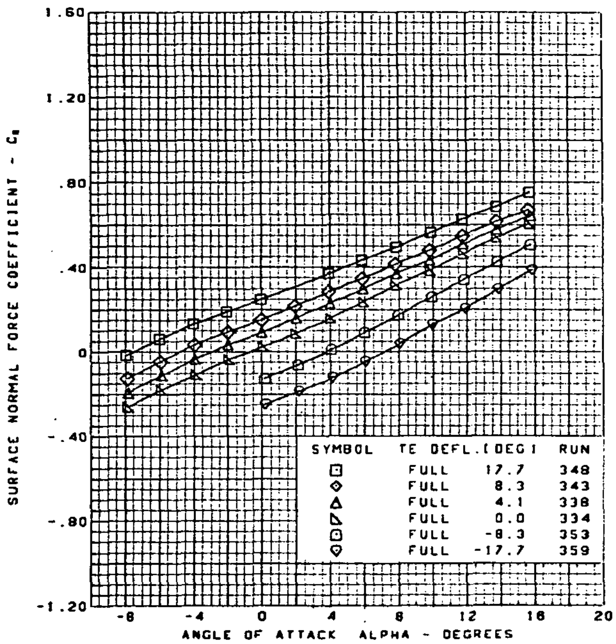


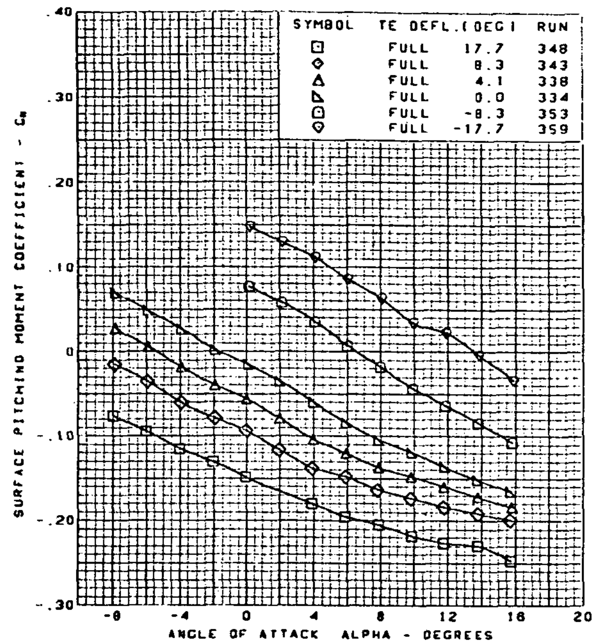


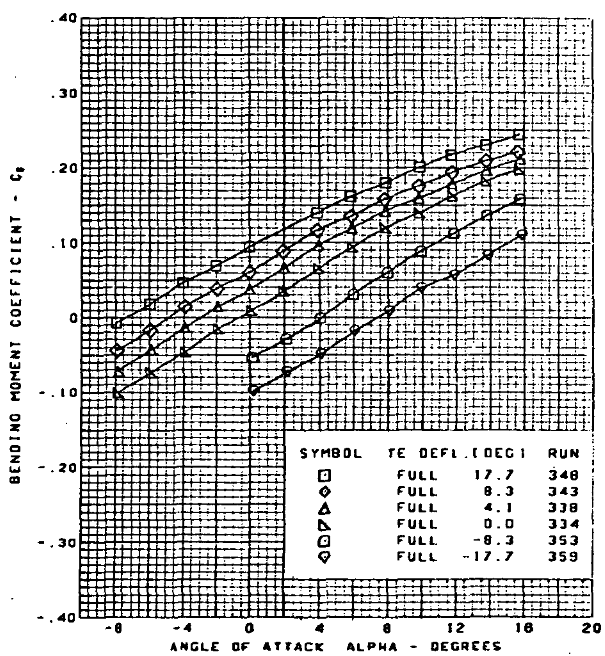
M = 0.85
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

(j) (Concluded)

Figure 40.–(Continued)







M = 1.05
Flat wing, twisted trailing edge, round L.E.
L.E. deflection, full span = 0.0°

(k) Wing Aerodynamic Coefficients

Figure 40.–(Concluded)

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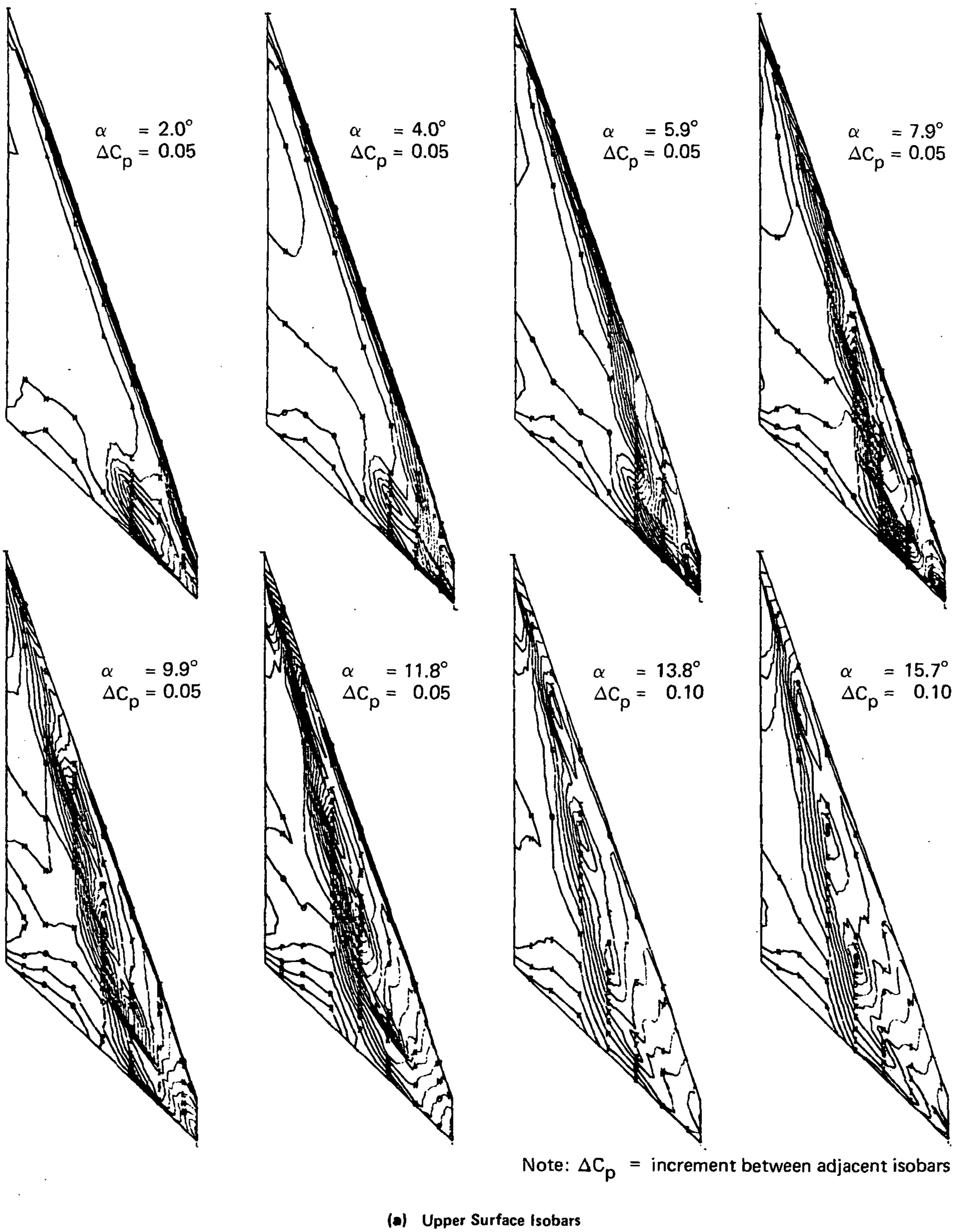
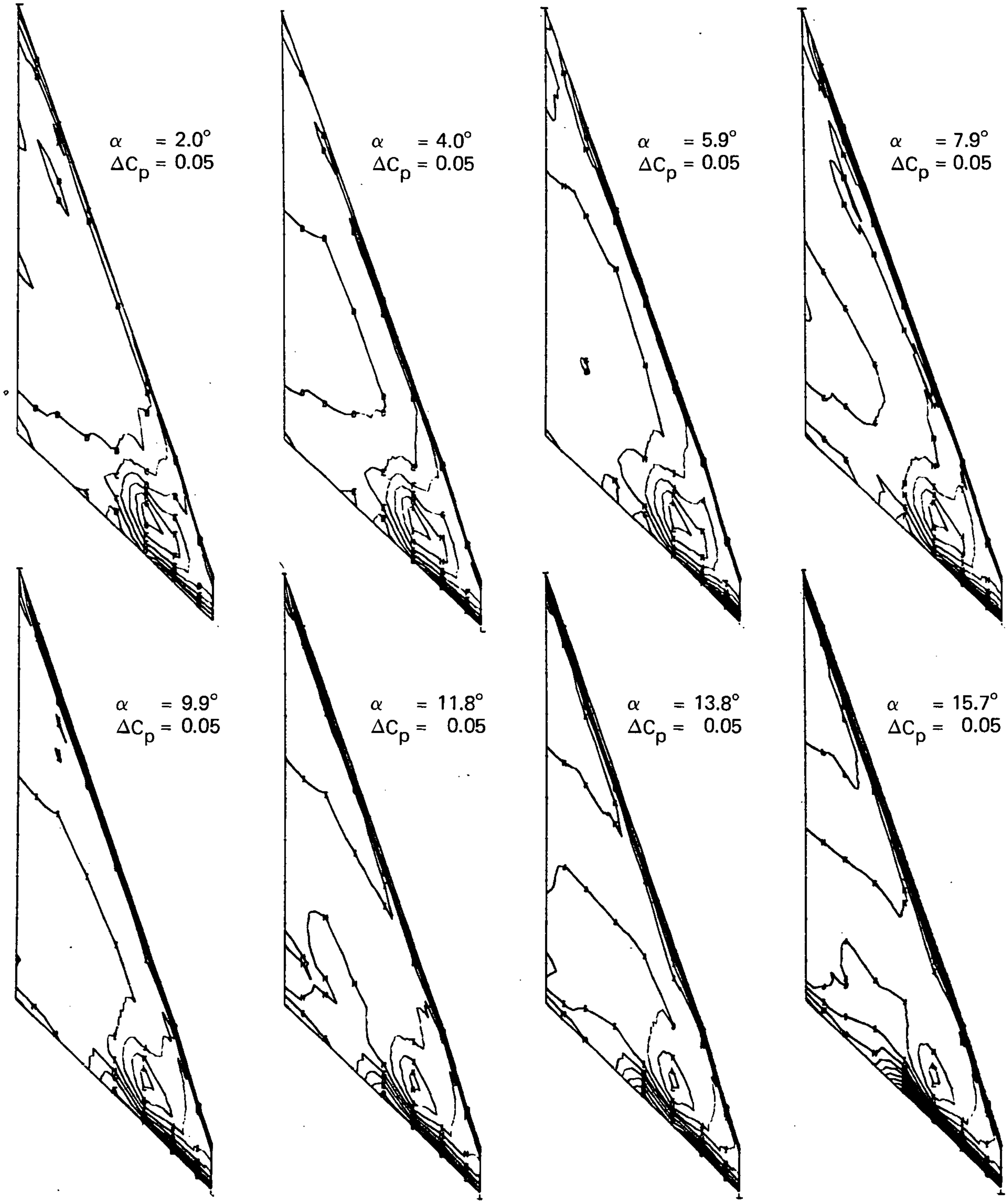


Note: ΔC_p = increment between adjacent isobars

(a) Upper Surface Isobars

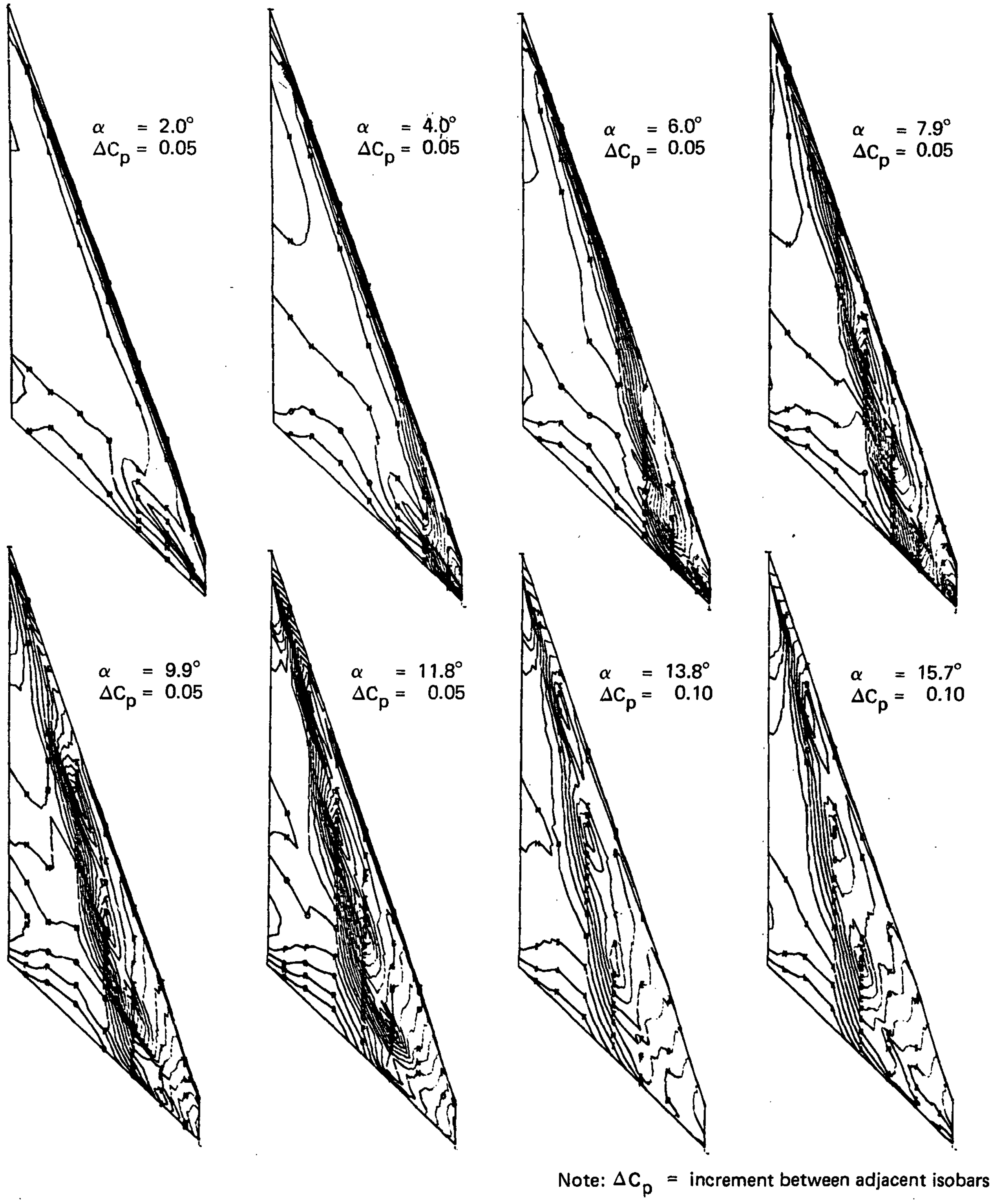
Figure 41.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Inboard = 0.0°, Outboard = 17.7°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

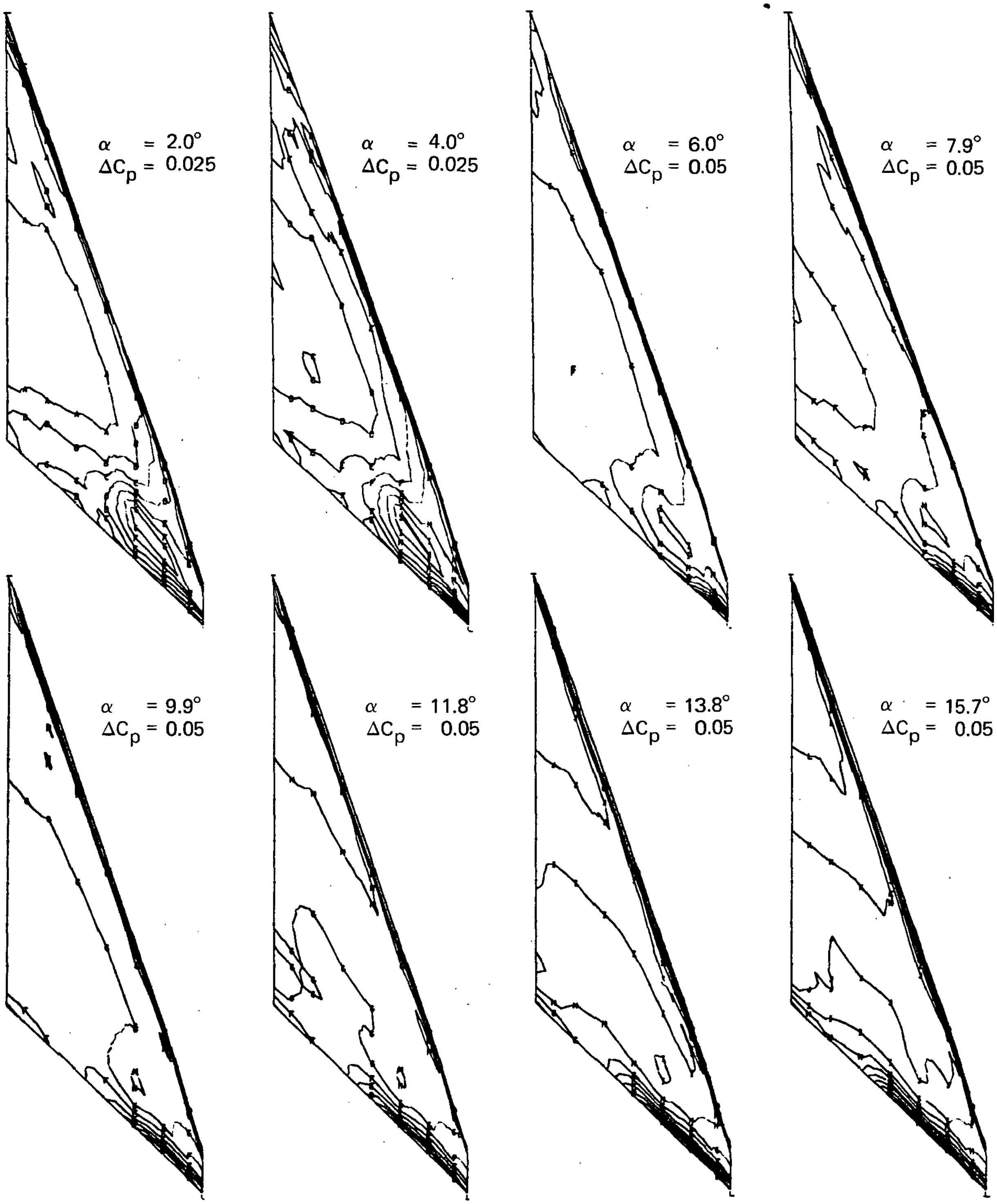
(b) Lower Surface Isobars

Figure 41.–(Concluded)



(a) Upper Surface Isobars

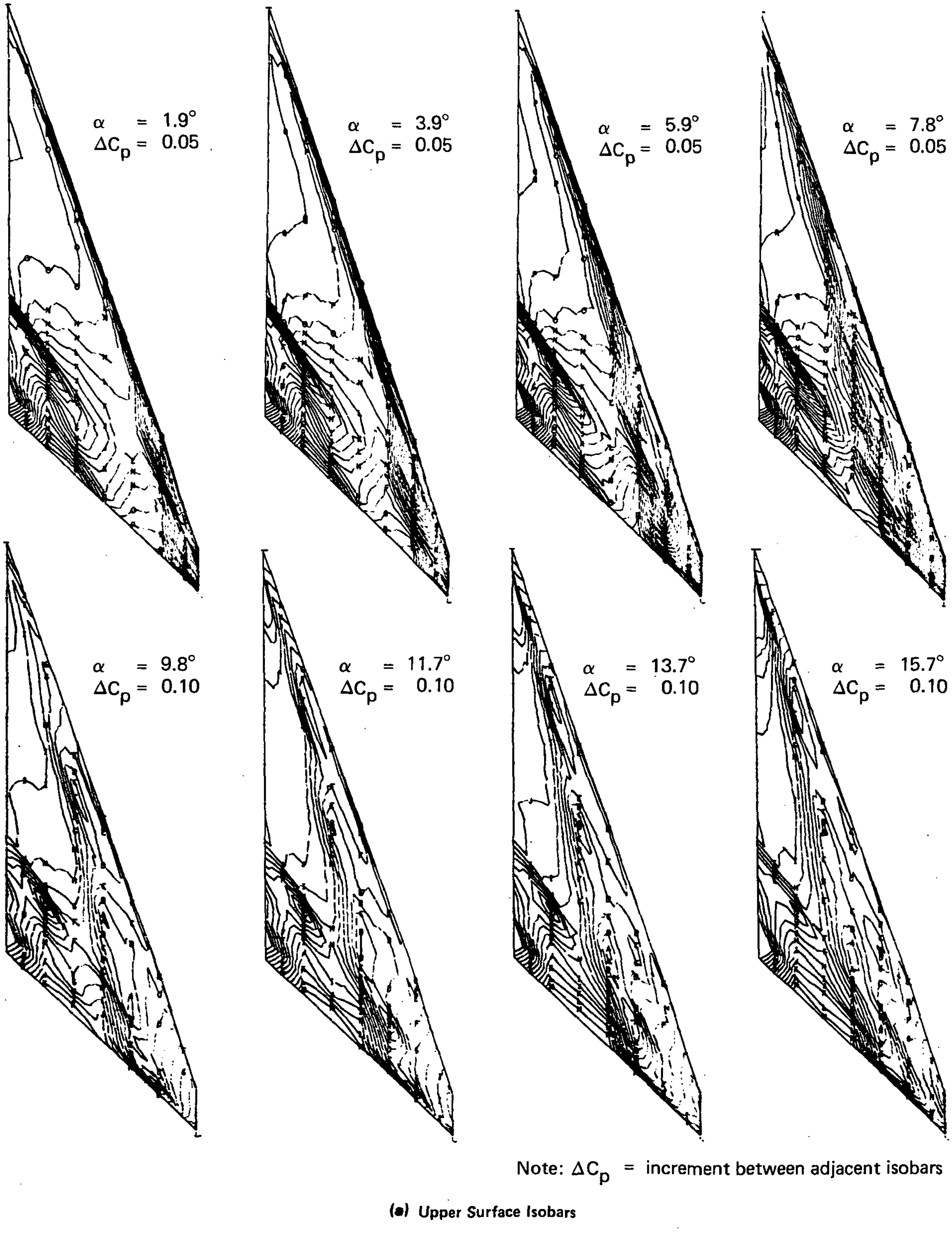
Figure 42.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Inboard = 0.0°, Outboard = 8.3°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

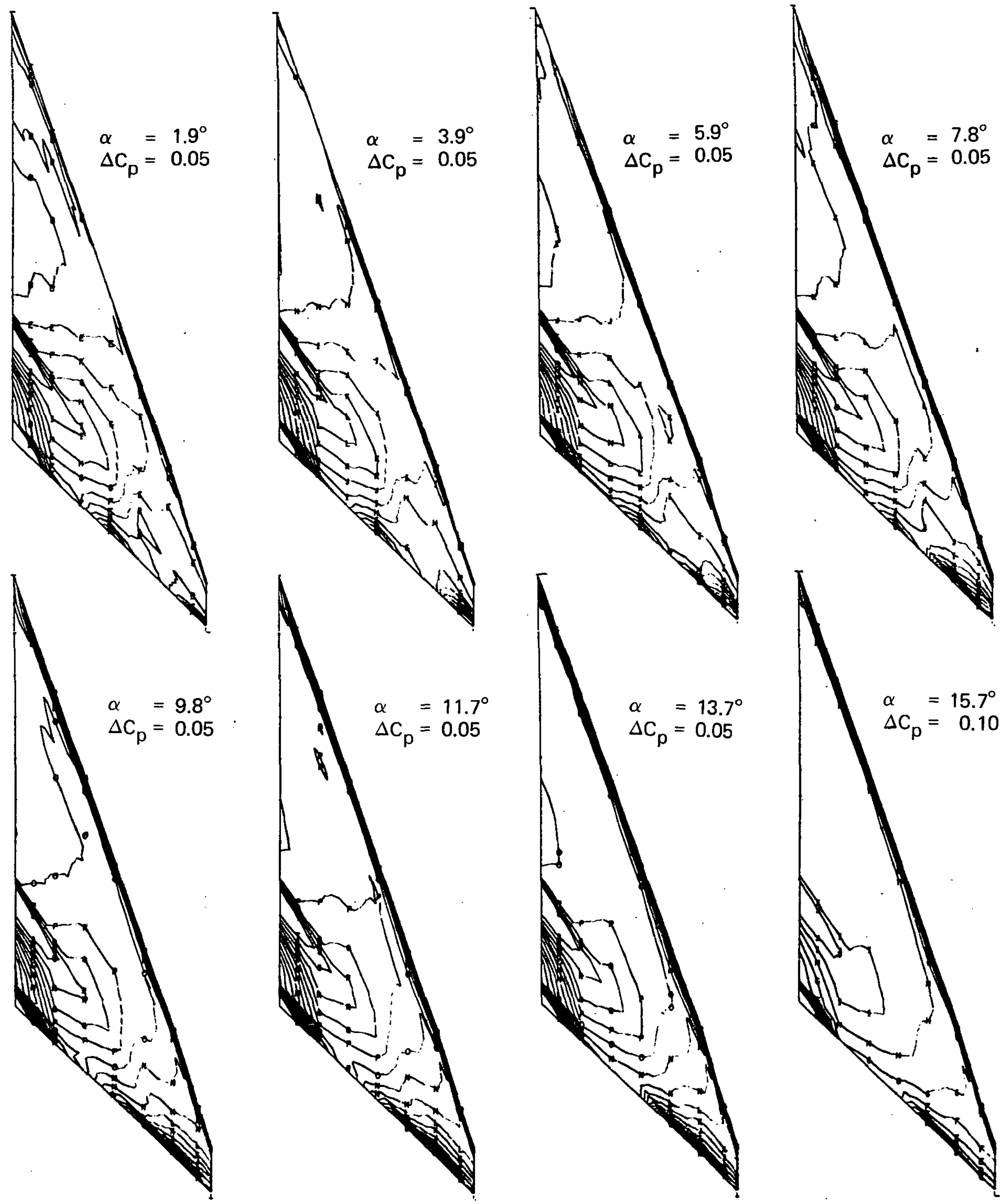
(b) Lower Surface Isobars

Figure 42.–(Concluded)



(a) Upper Surface Isobars

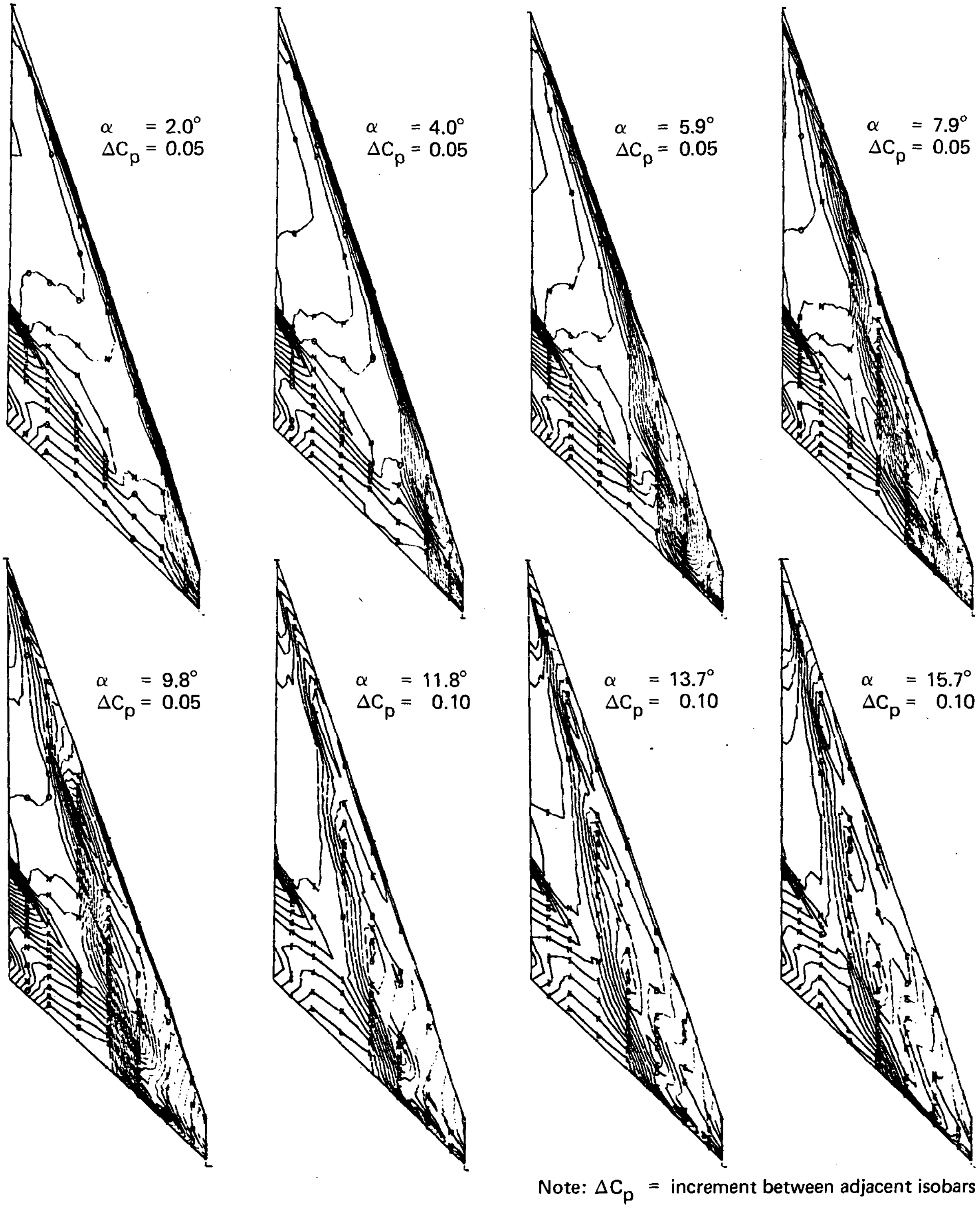
Figure 43.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

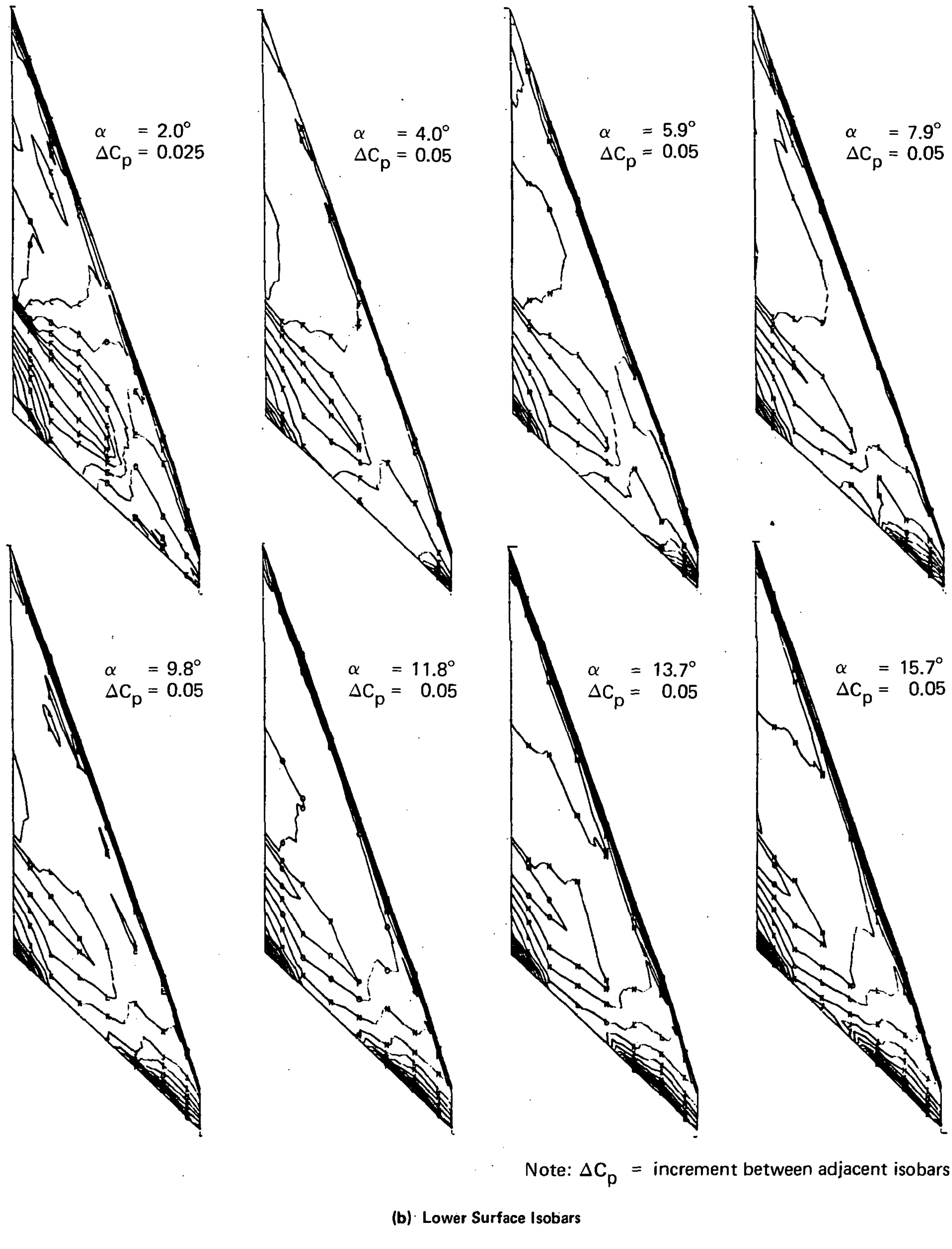
(b) Lower Surface Isobars

Figure 43.–(Concluded)



(a) Upper Surface Isobars

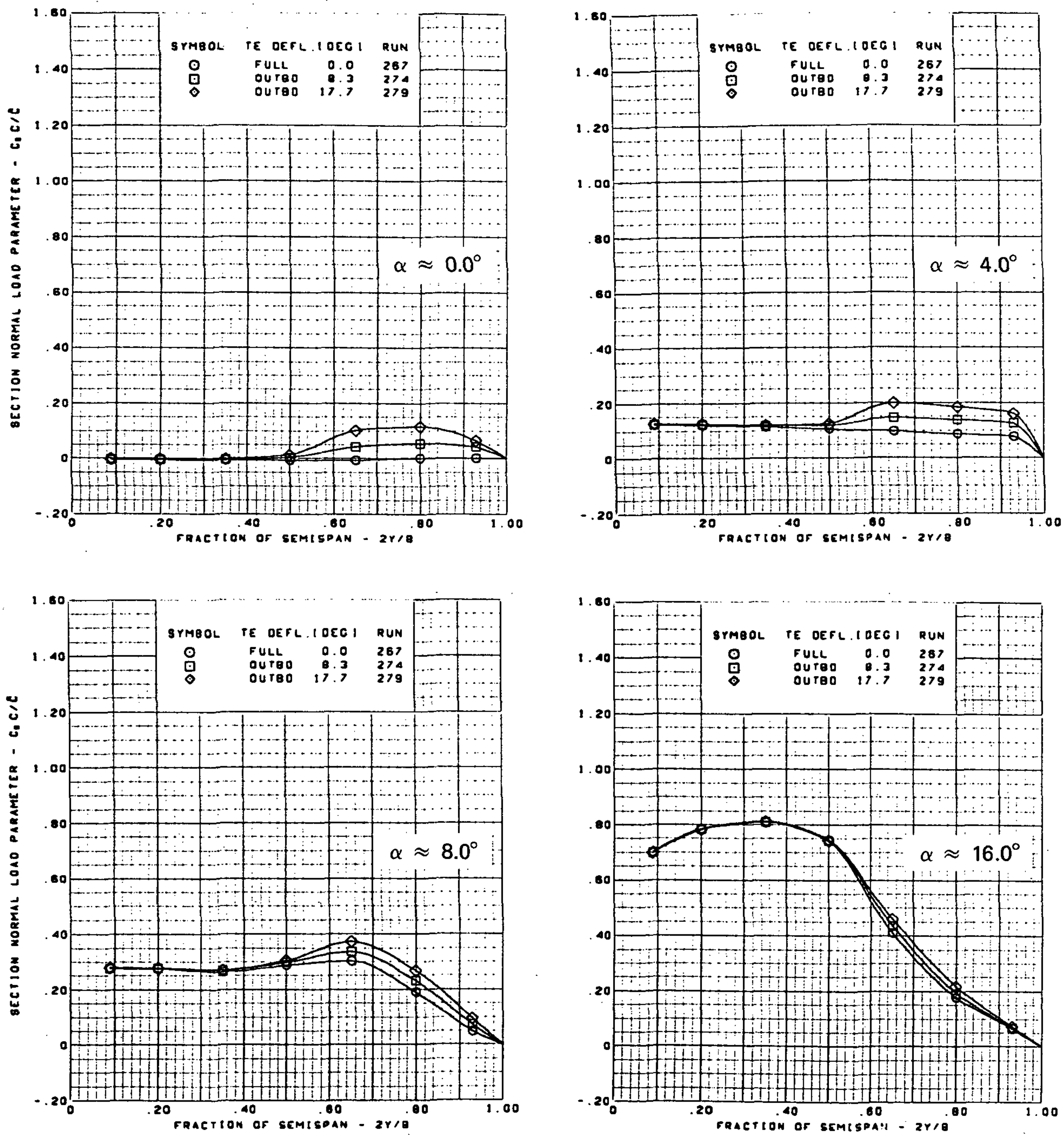
Figure 44.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Inboard = 8.3°, Outboard = 0.0°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

(b) Lower Surface Isobars

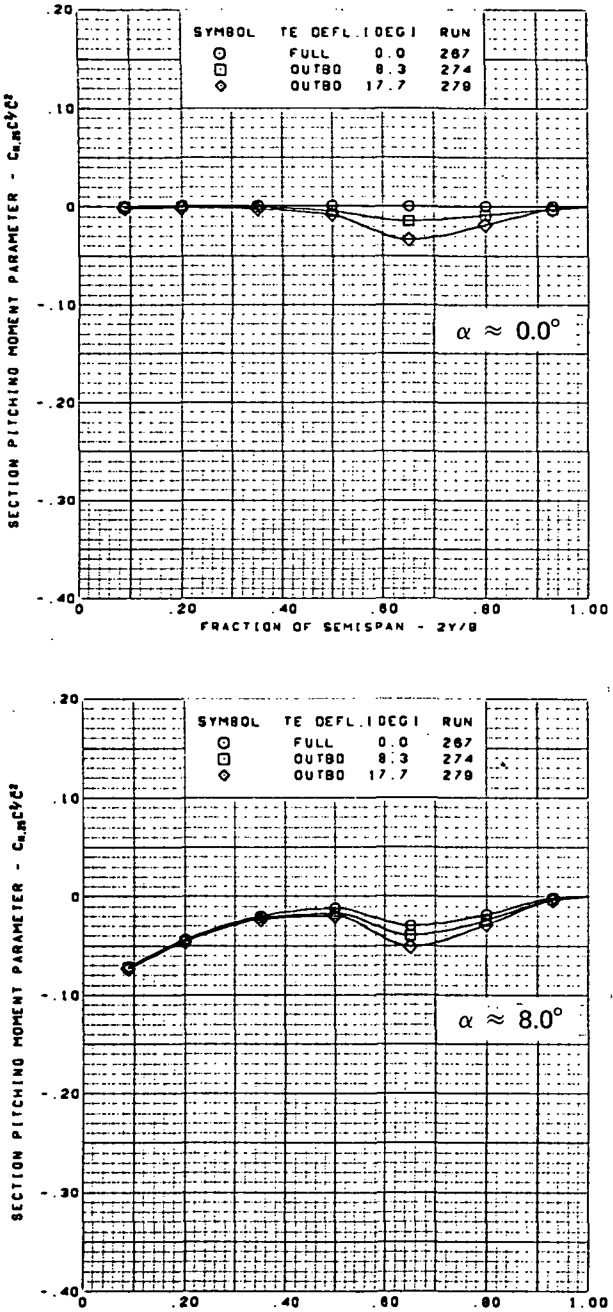
Figure 44.–(Concluded)



M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, inboard = 0.0°

(a) Spanload Distributions—Normal Force

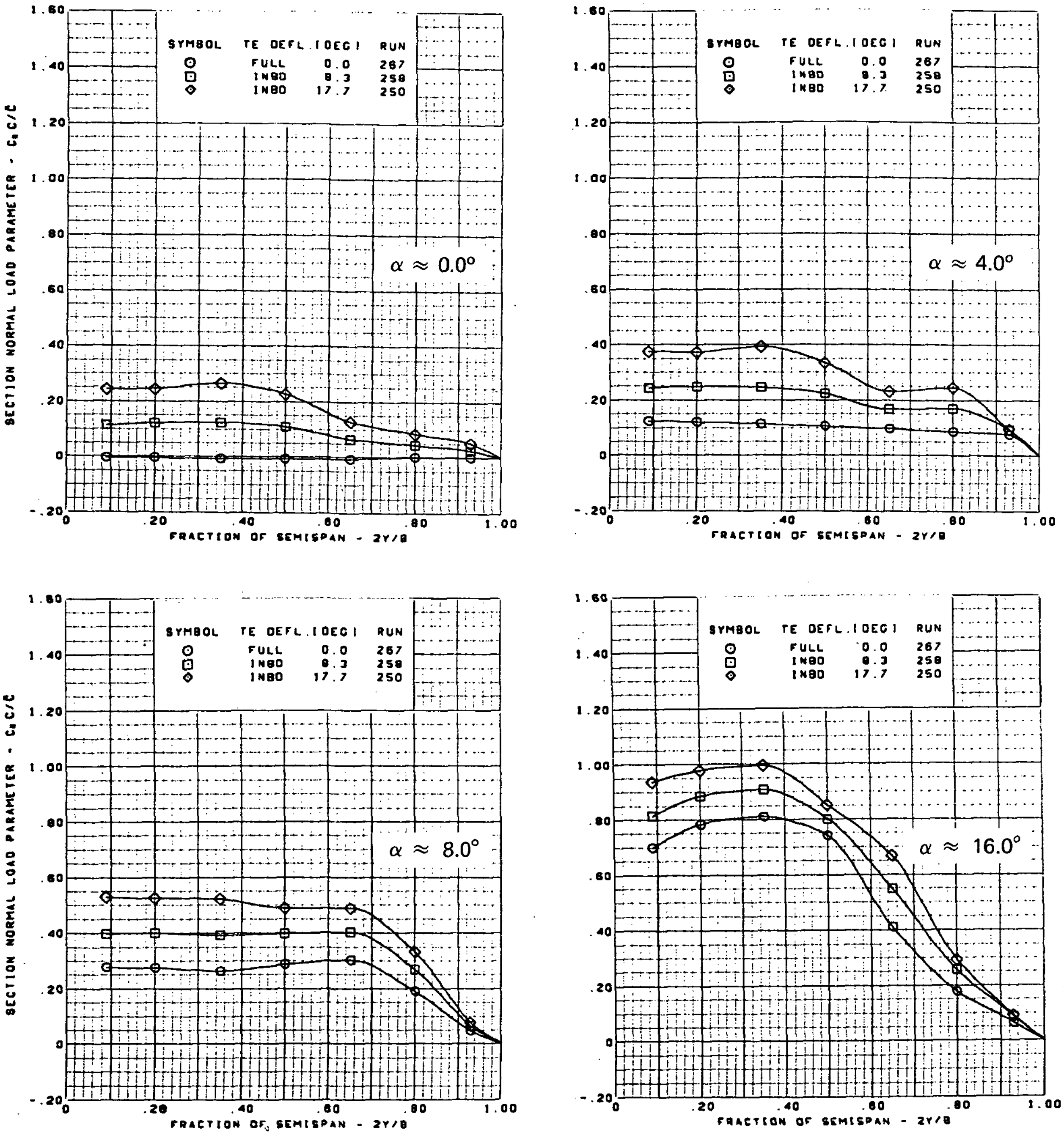
Figure 45.—Wing Experimental Data—Effect of Partial Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Inboard = 0.0°; M = 0.85



M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, inboard = 0.0°

(b) Spanload Distributions—Pitching Moment

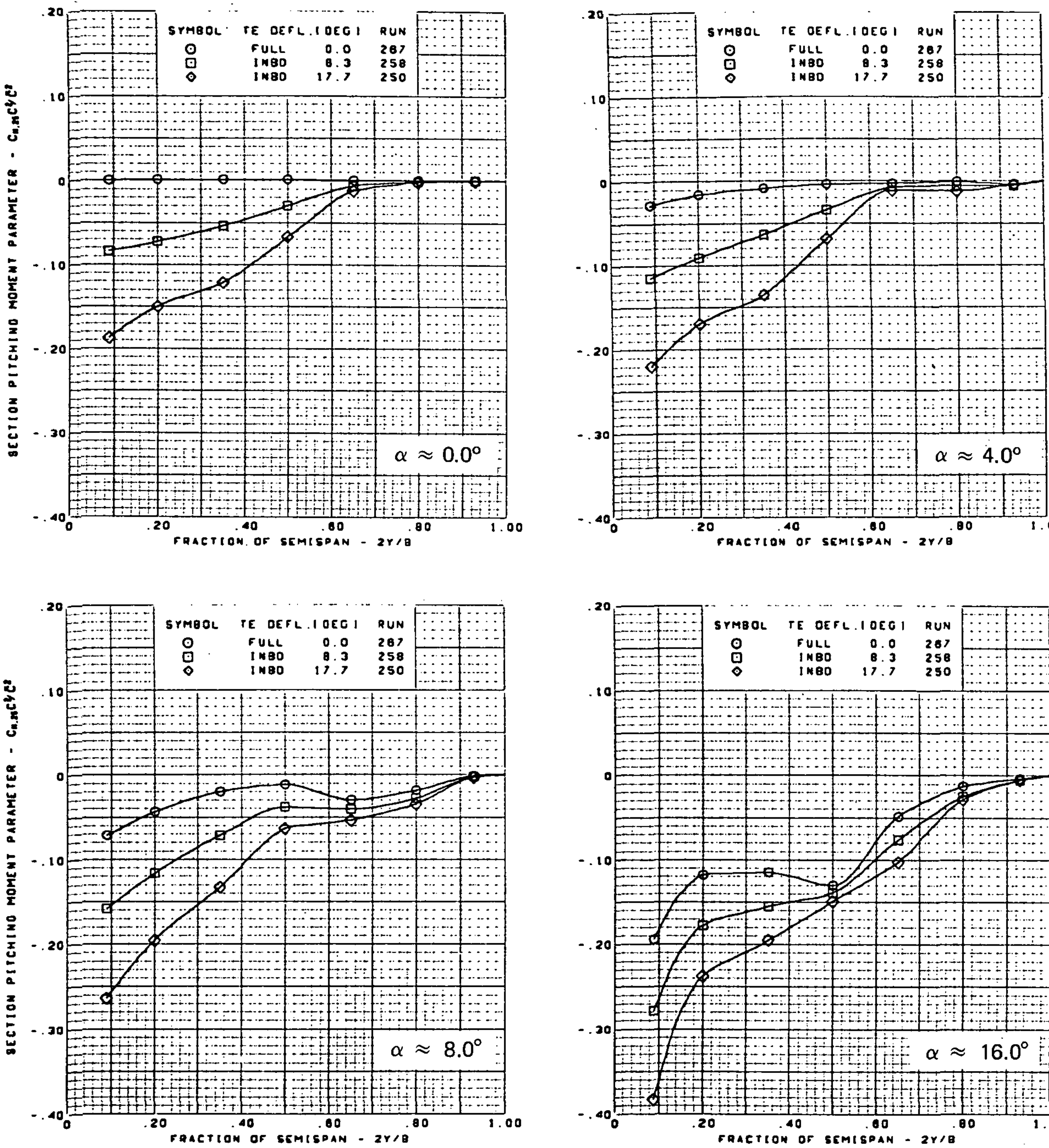
Figure 45.–(Concluded)



M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, outboard = 0.0°

(a) Spanload Distributions—Normal Force

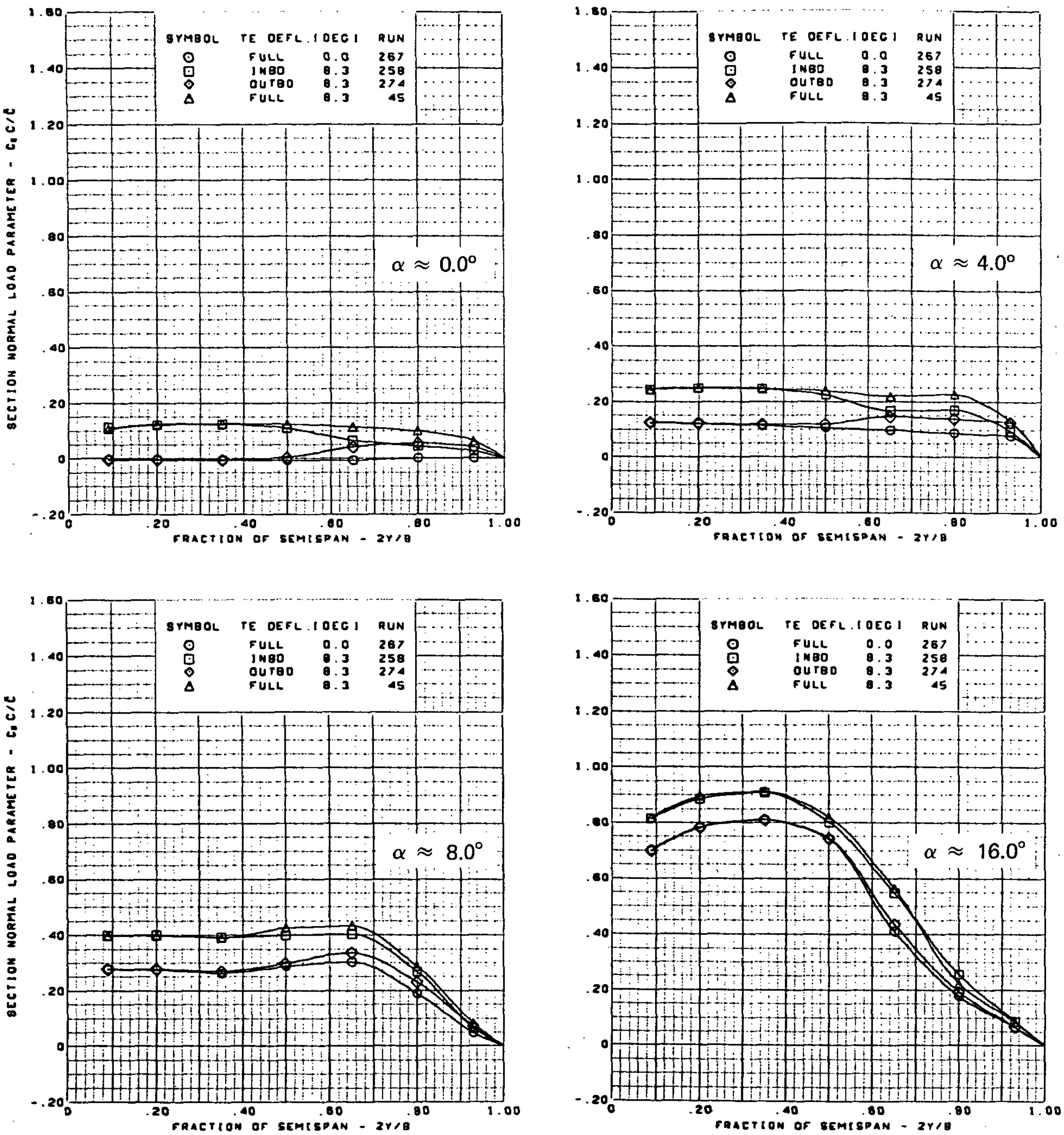
Figure 46.—Wing Experimental Data—Effect of Partial Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Outboard = 0.0°; M = 0.85



M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, outboard = 0.0°

(b) Spanload Distributions—Pitching Moment

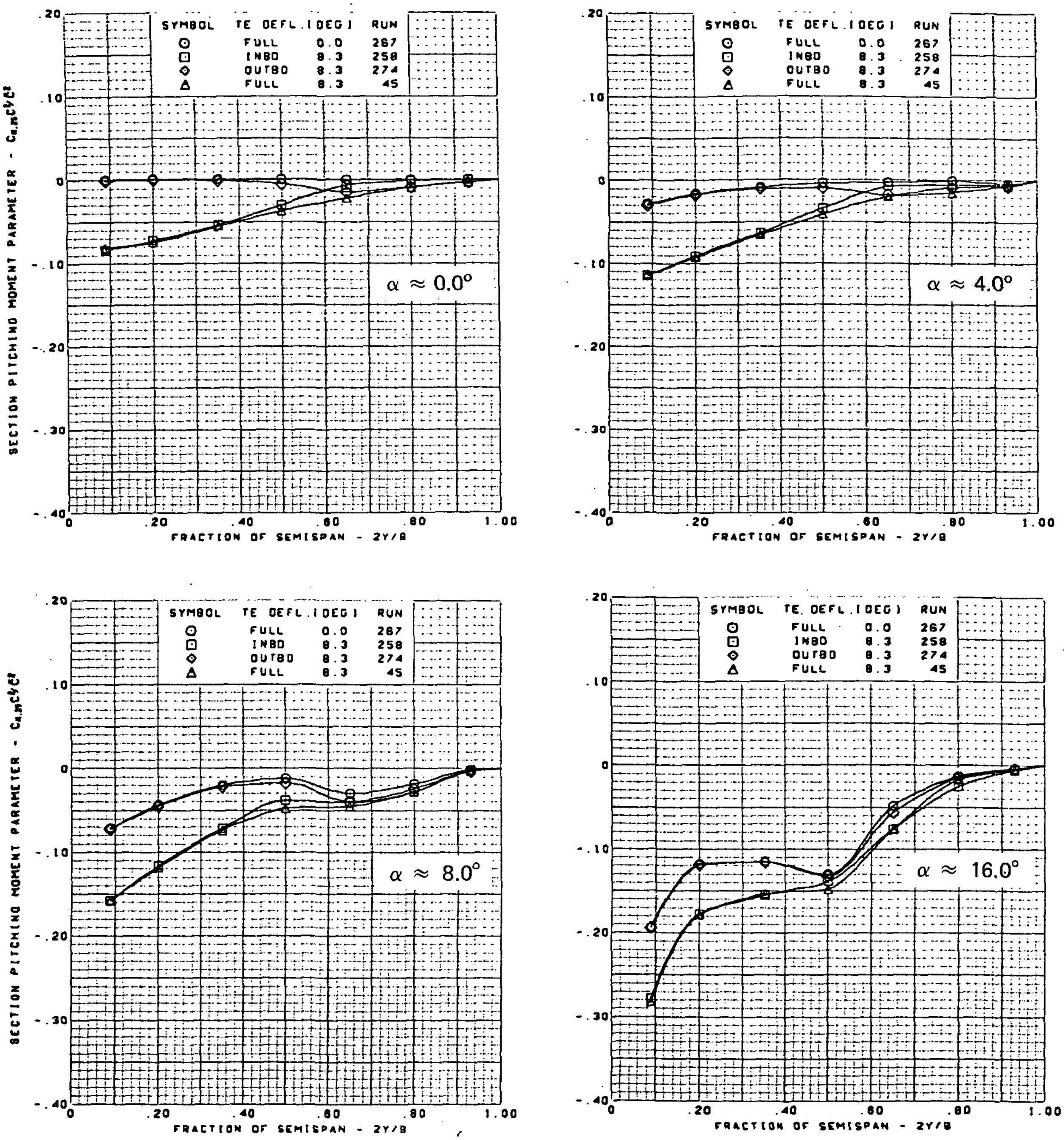
Figure 46.–(Concluded)



M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(e) Spanload Distributions—Normal Force

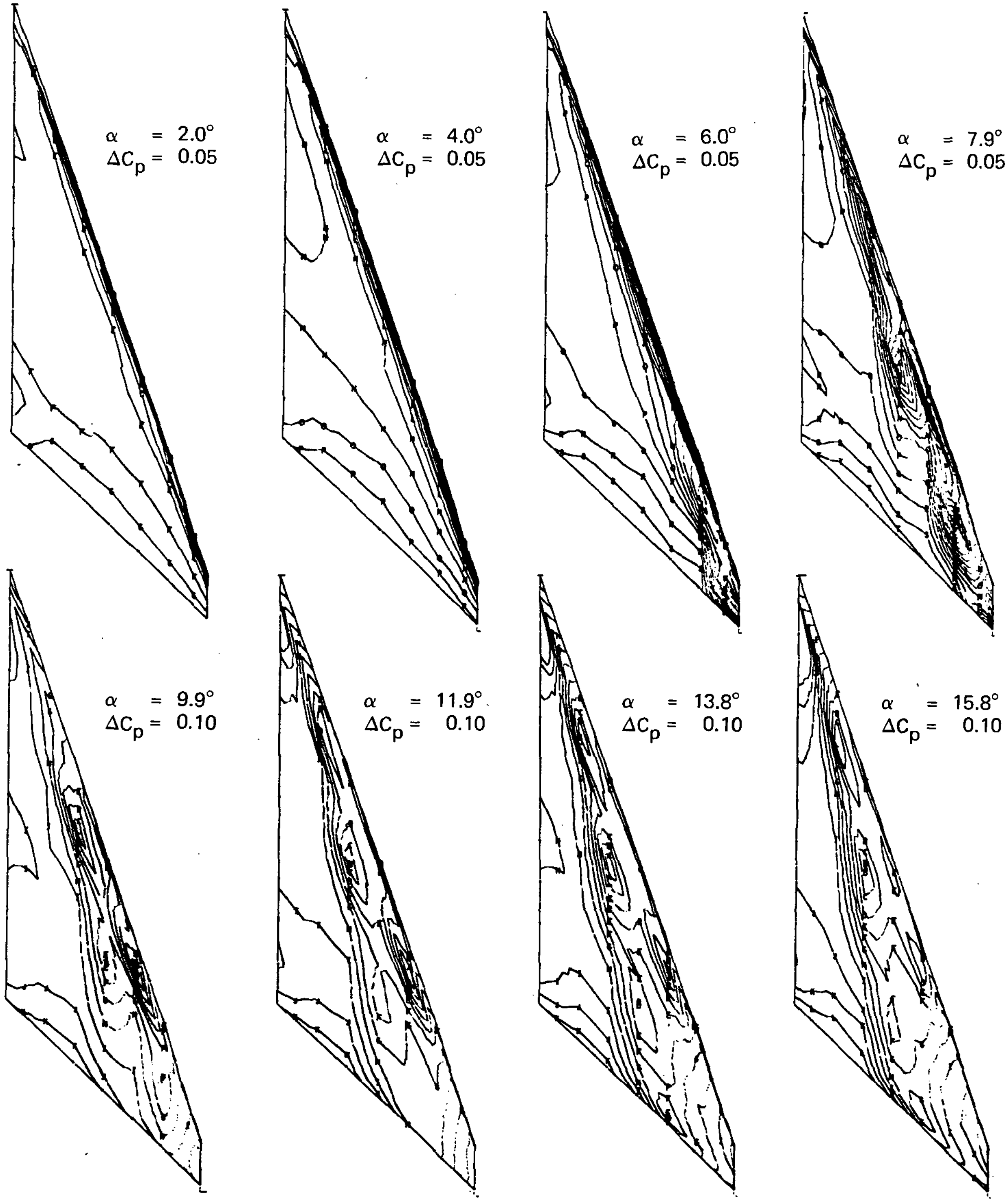
Figure 47.—Wing Experimental Data—Effect of Partial Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85



M = 0.85
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(b) Spanload Distributions—Pitching Moment

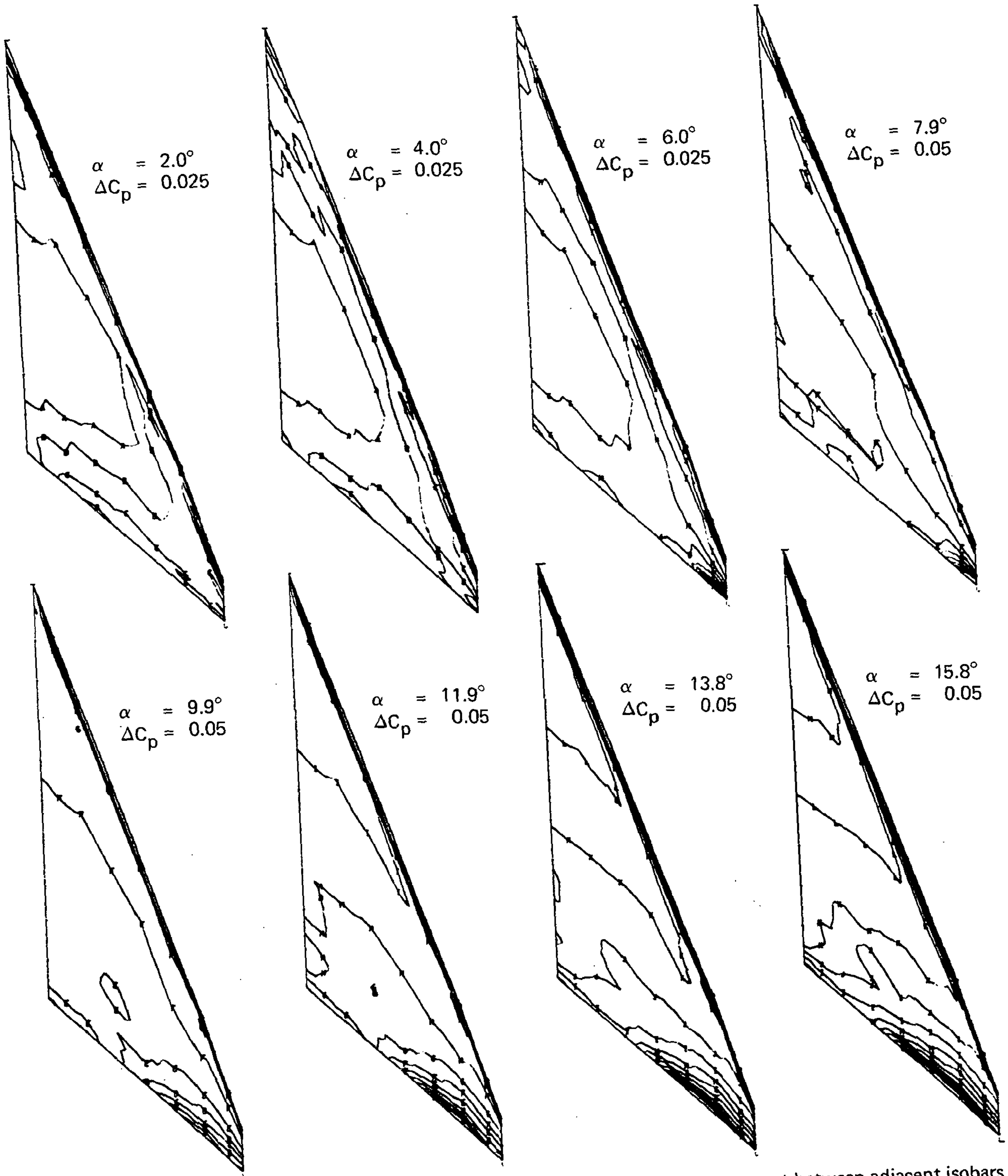
Figure 47.- (Concluded)



Note: ΔC_p = increment between adjacent isobars

(a) Upper Surface Isobars

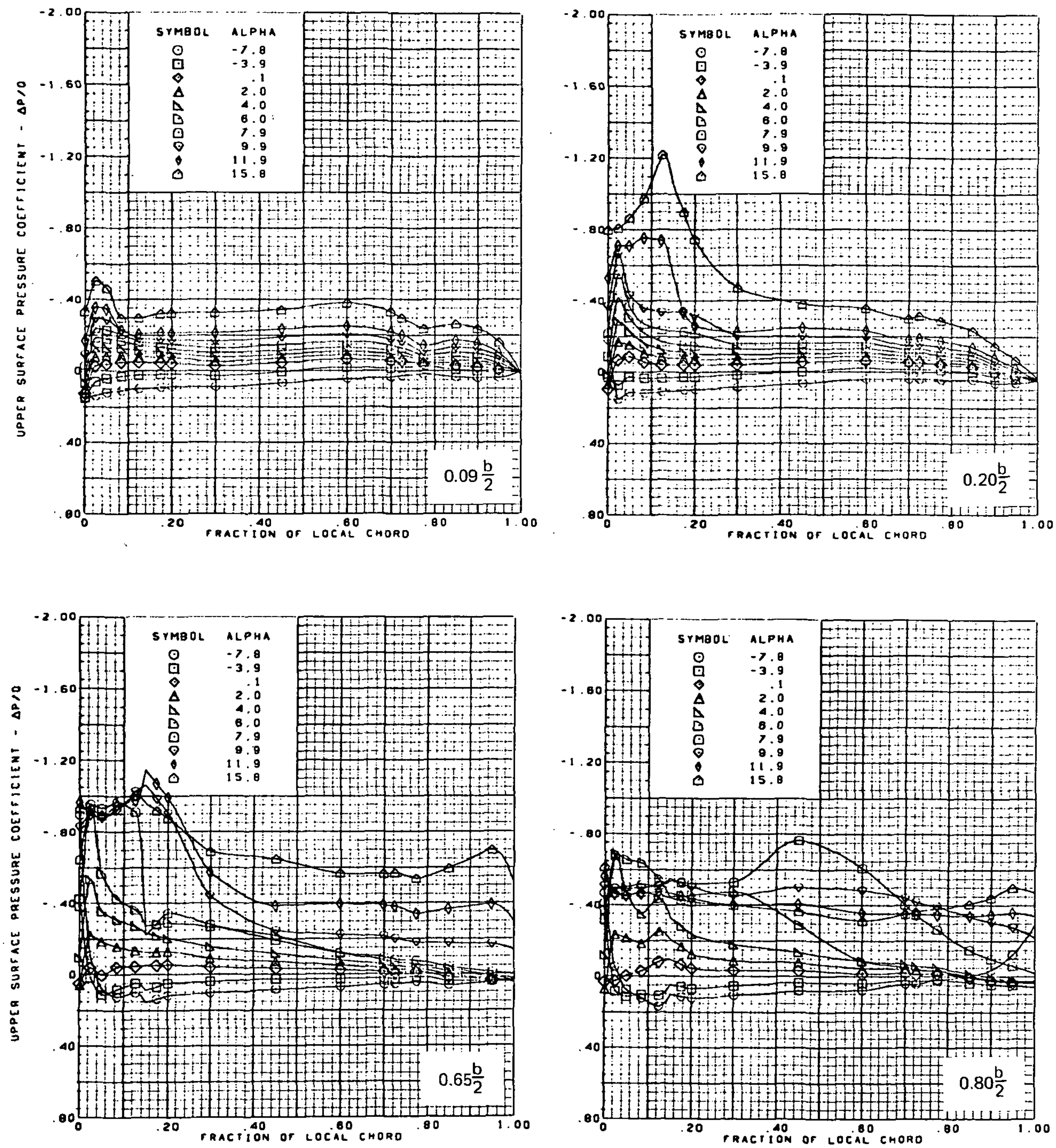
Figure 48.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Full Span = 0.0°; M = 0.85



Note: ΔC_p = increment between adjacent isobars

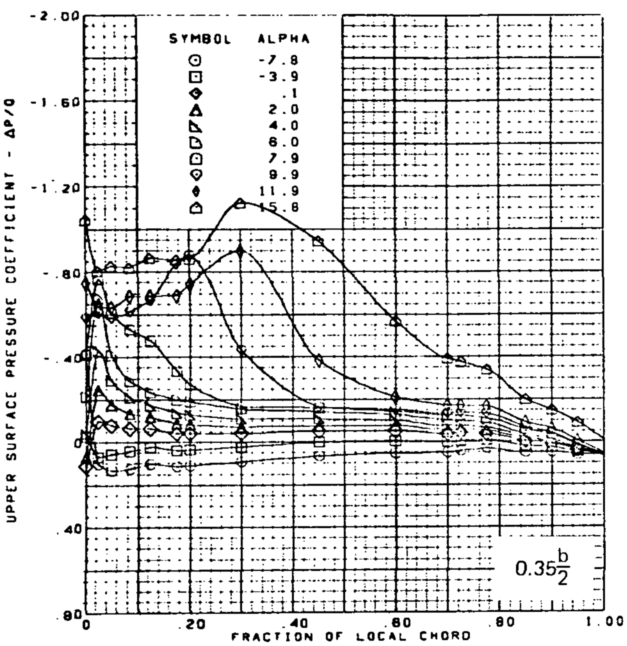
(b) Lower Surface Isobars

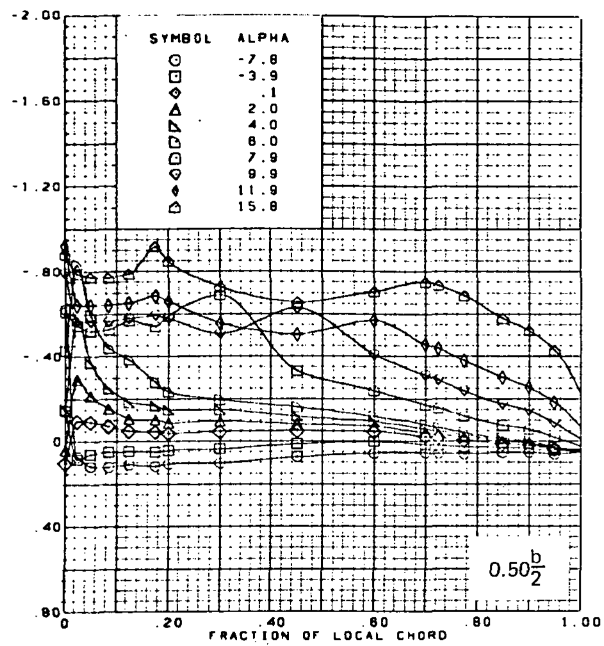
Figure 48.–(Continued)

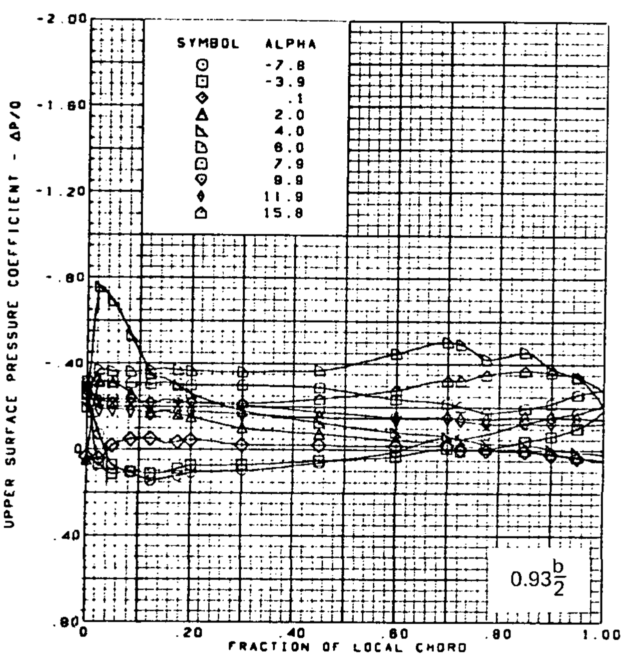


(c) Upper Surface Chordwise Pressure Distributions

Figure 48.–(Continued)



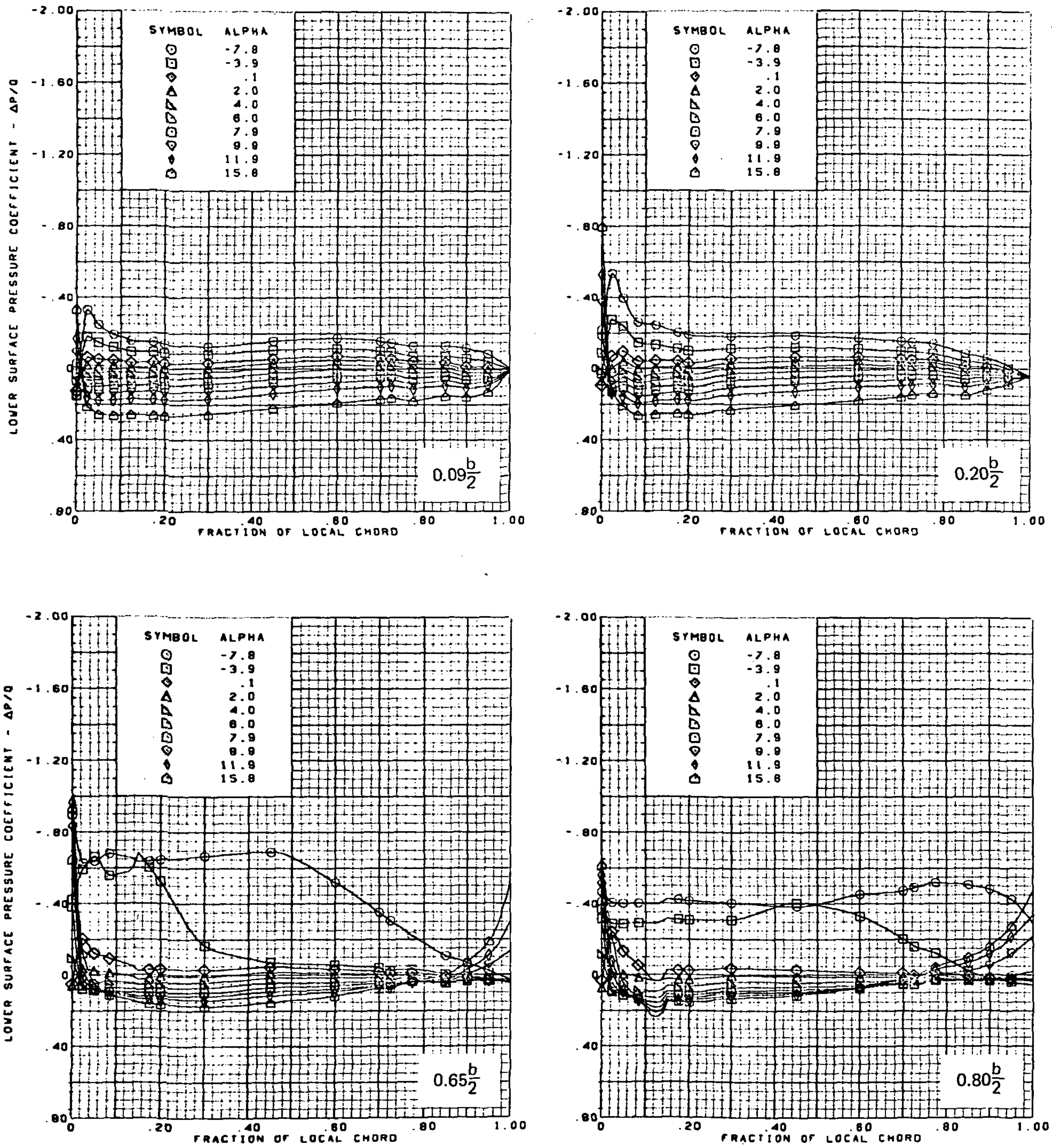




M = 0.85 (run 221)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, full span = 0.0°

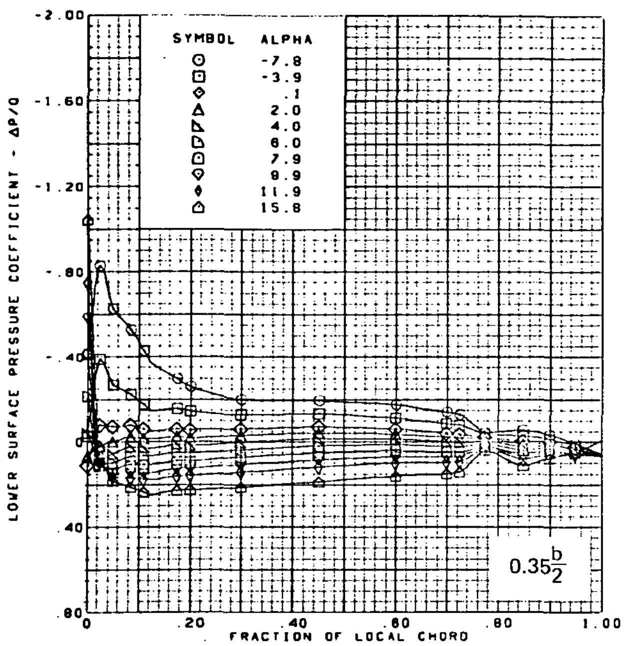
(c) (Concluded)

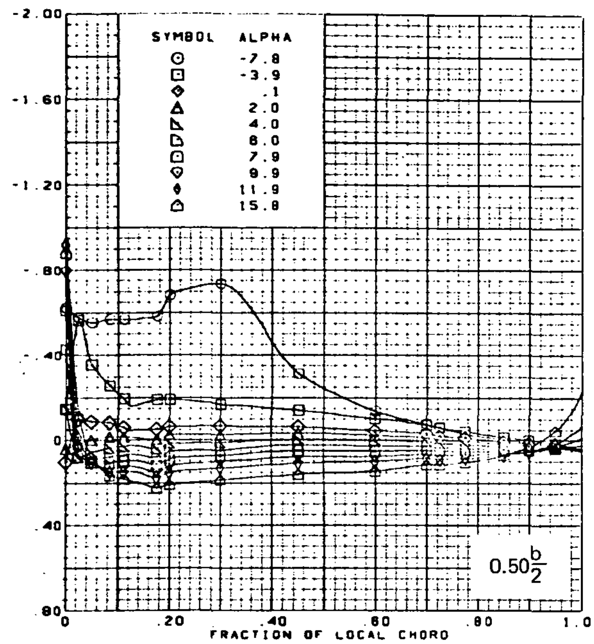
Figure 48.–(Continued)

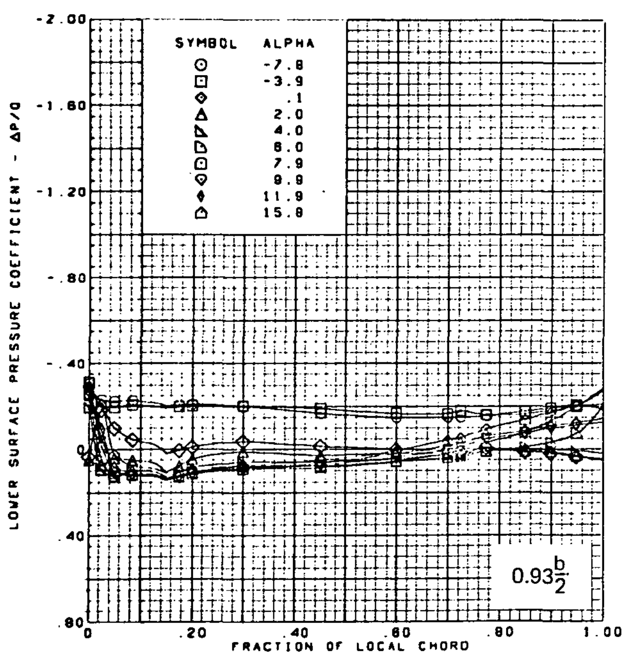


(d) Lower Surface Chordwise Pressure Distributions

Figure 48.–(Continued)



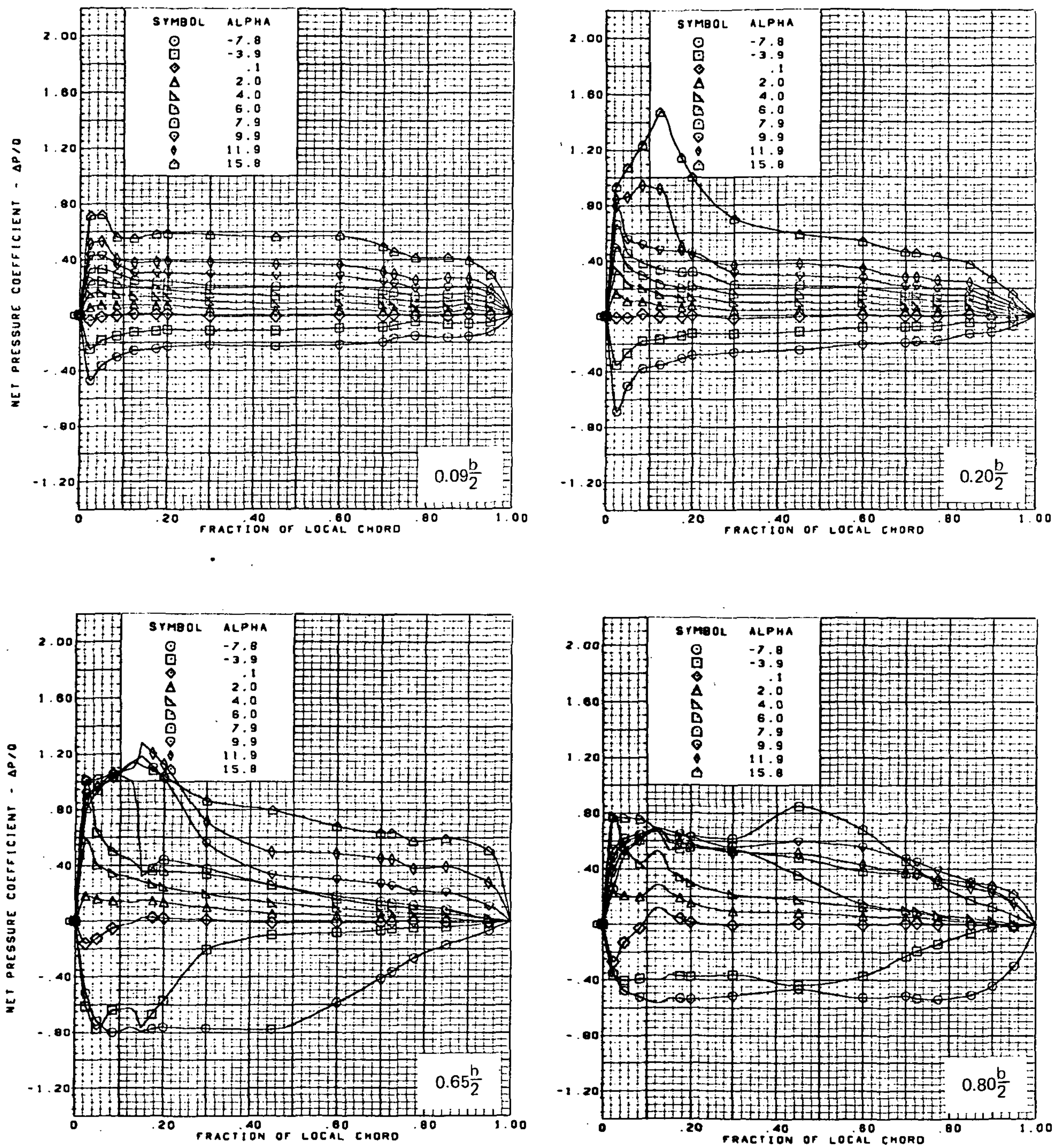




M = 0.85 (run 221)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, full span = 0.0°

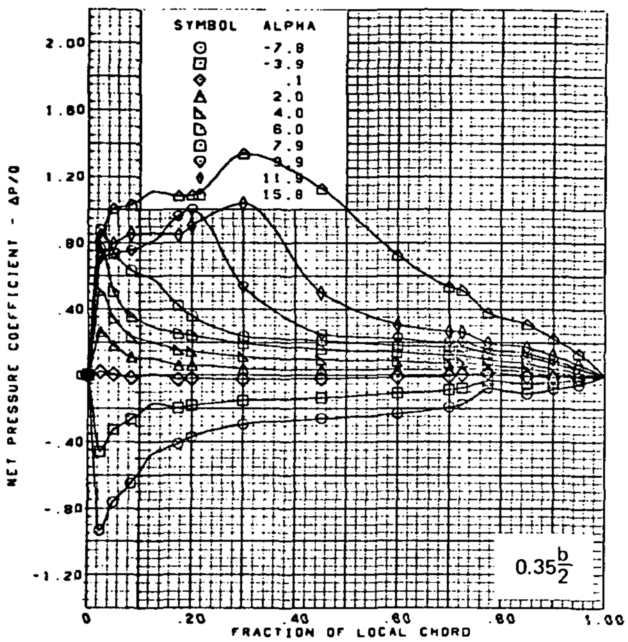
(d) (Concluded)

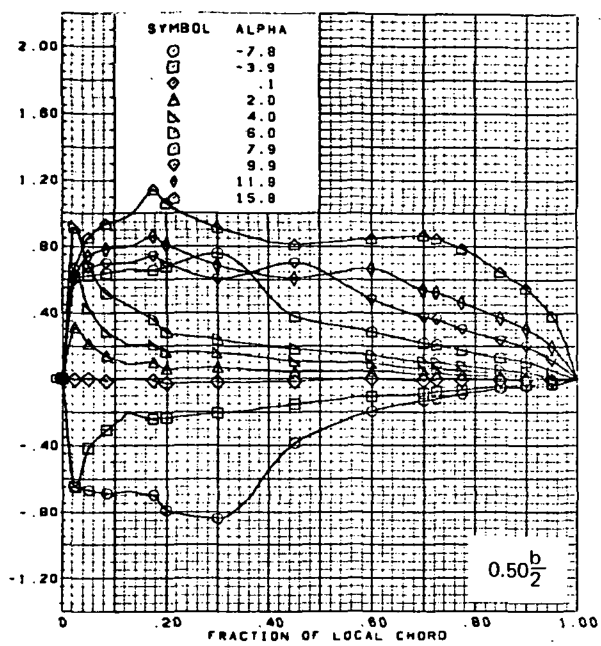
Figure 48.–(Continued)

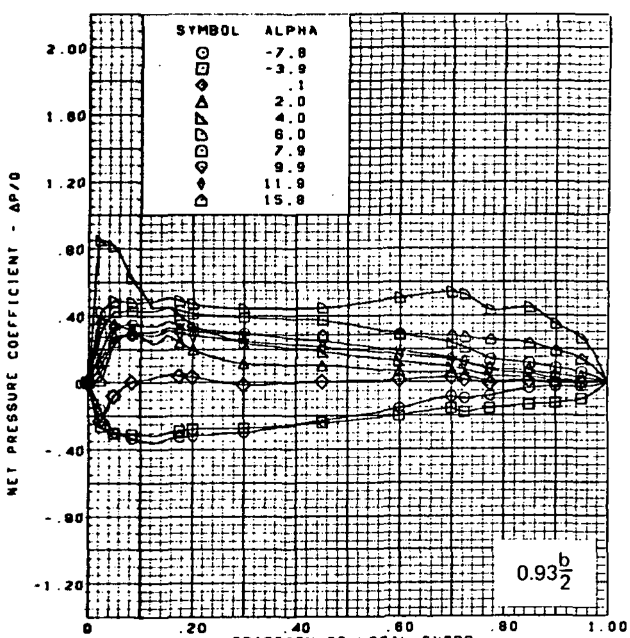


(e) Net Chordwise Pressure Distributions

Figure 48.–(Continued)



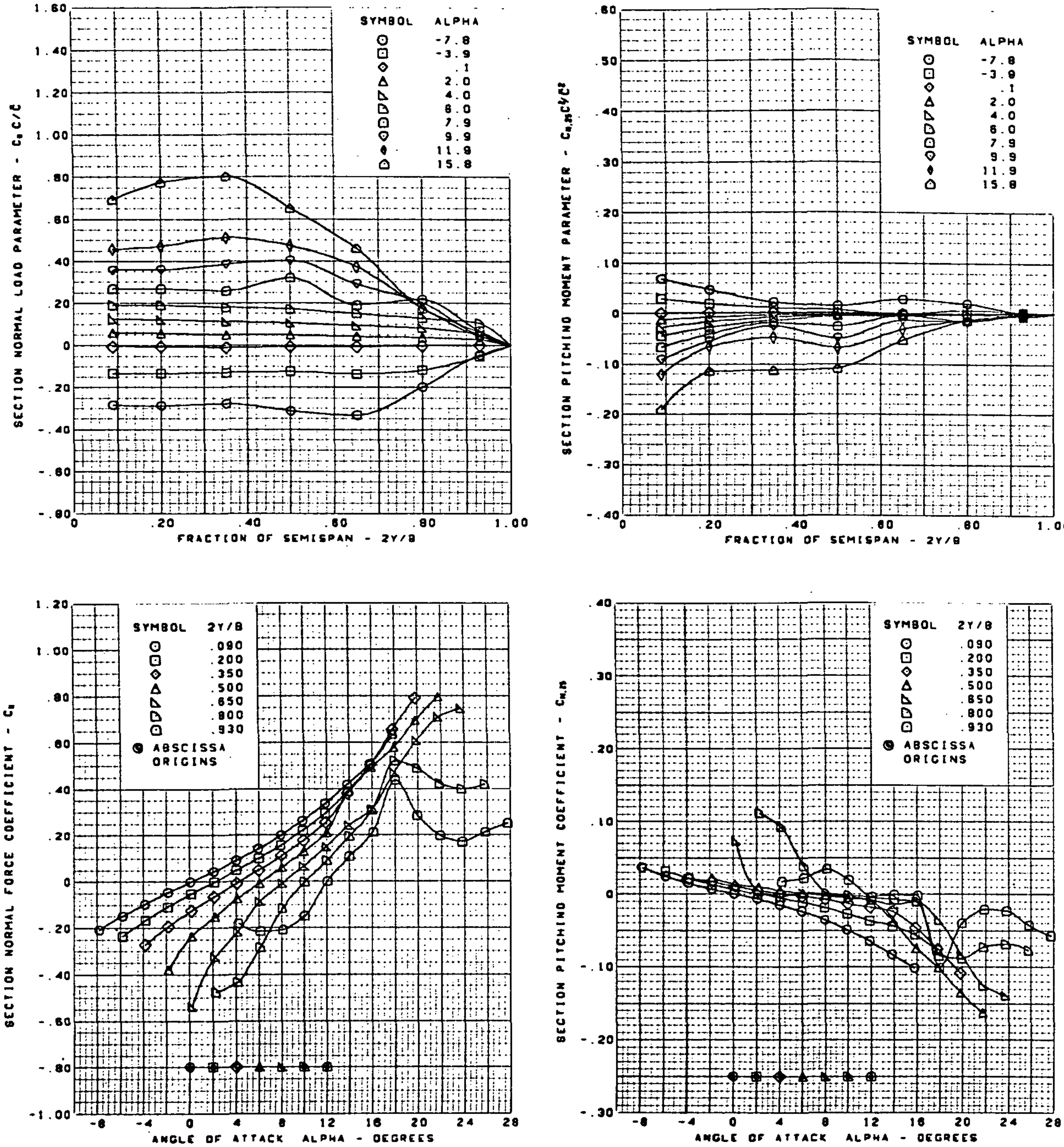




M = 0.85 (run 221)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, full span = 0.0°

(e) (Concluded)

Figure 48.–(Continued)



M = 0.85 (run 221)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, full span = 0.0°

(f) Spanload Distributions and Section Aerodynamic Coefficients

Figure 48.–(Concluded)

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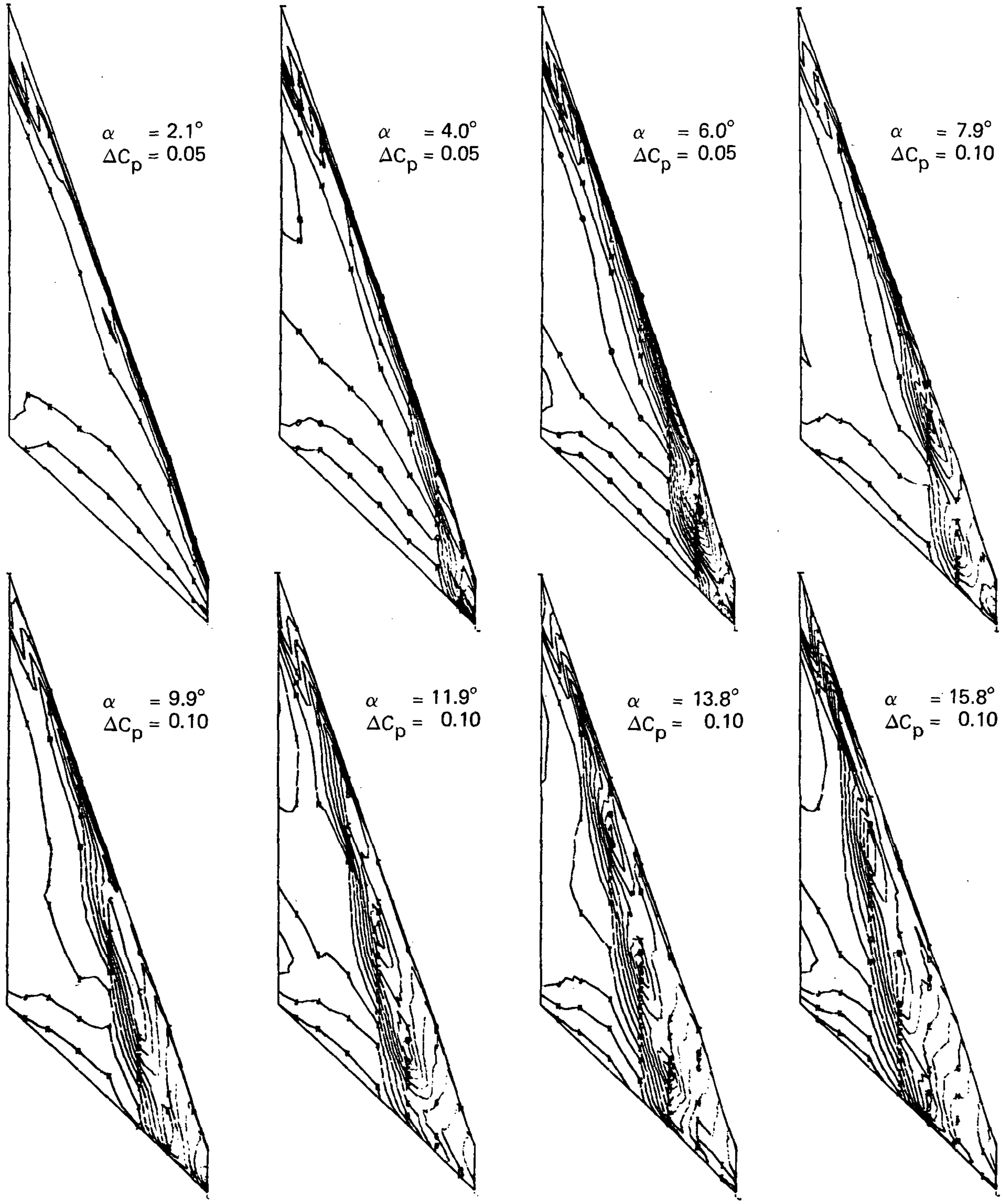
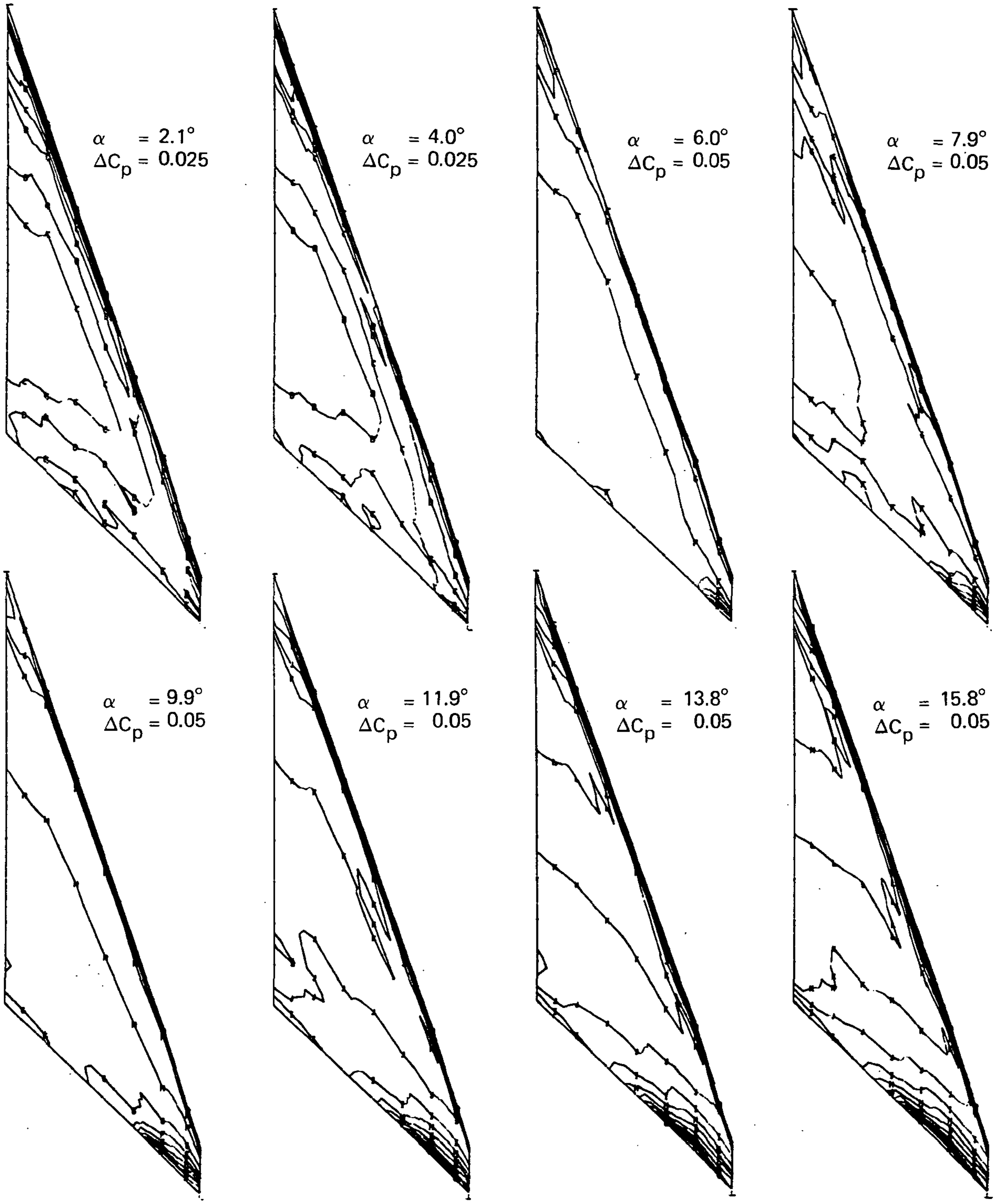


Note: ΔC_p = increment between adjacent isobars

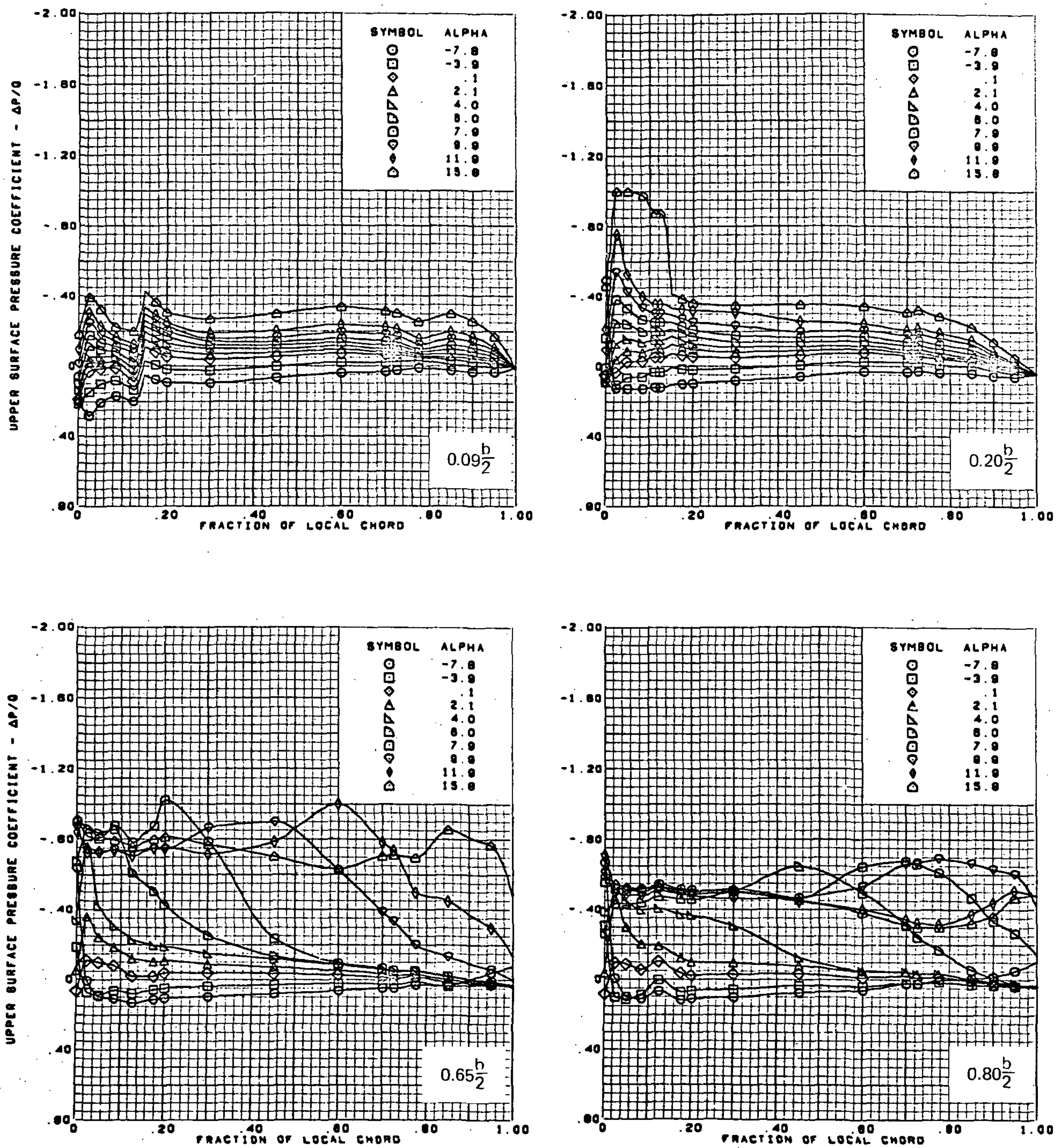
(a) Upper Surface Isobars

Figure 49.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E., L.E. Deflection, Inboard = 5.1°, Outboard = 0.0°; T.E. Deflection, Full Span = 0.0°; M = 0.85



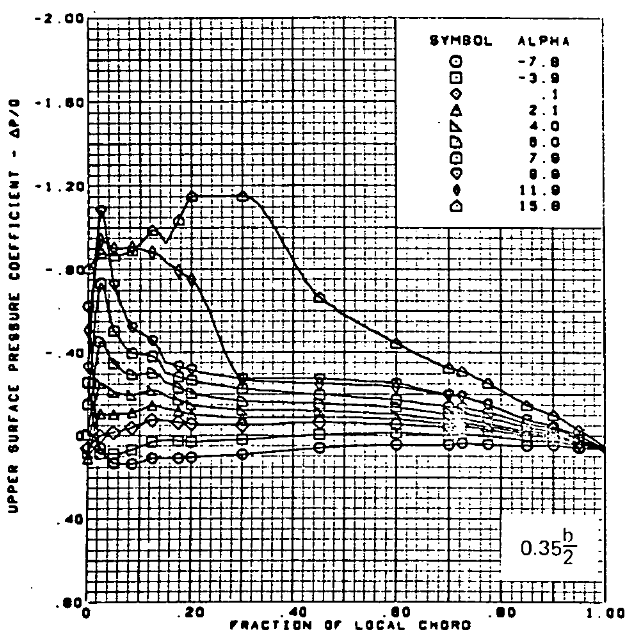
(b) Lower Surface Isobars

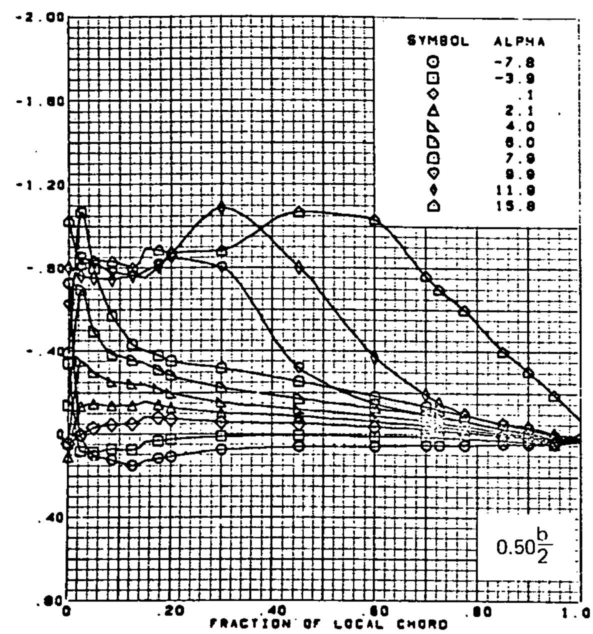
Figure 49.–(Continued)

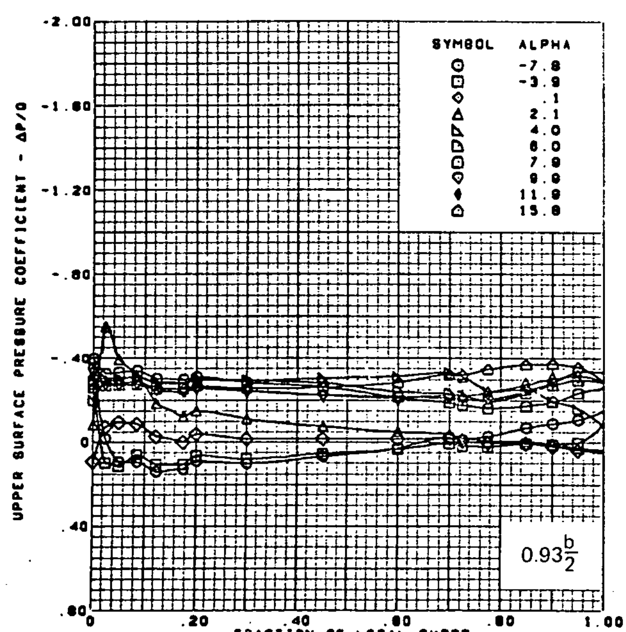


(c) Upper Surface Chordwise Pressure Distributions

Figure 49.–(Continued)



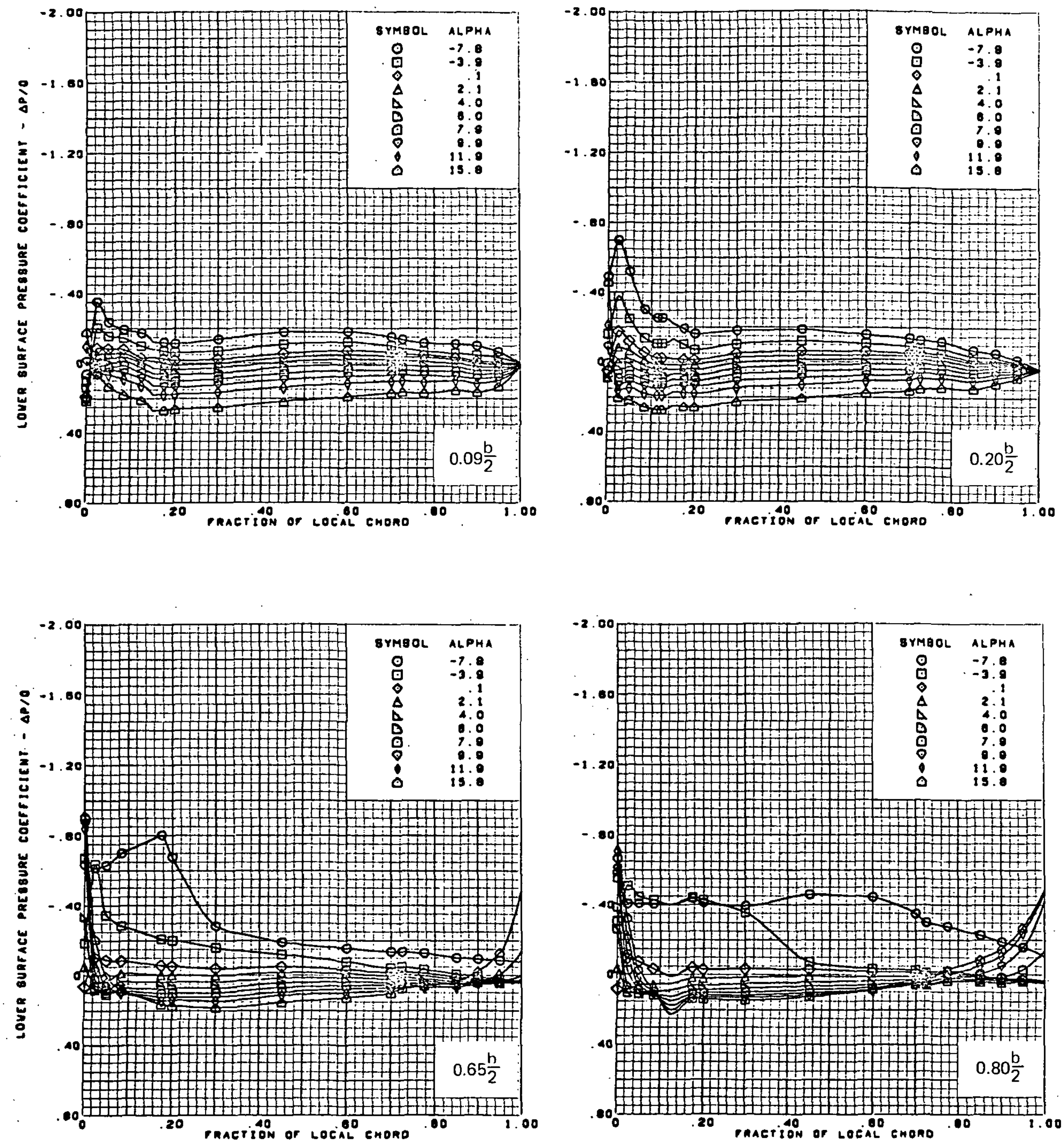




M = 0.85 (run 318)
Flat wing, round L.E.
L.E. deflection, inboard = 5.1° , outboard = 0.0°
T.E. deflection, full span = 0.0°

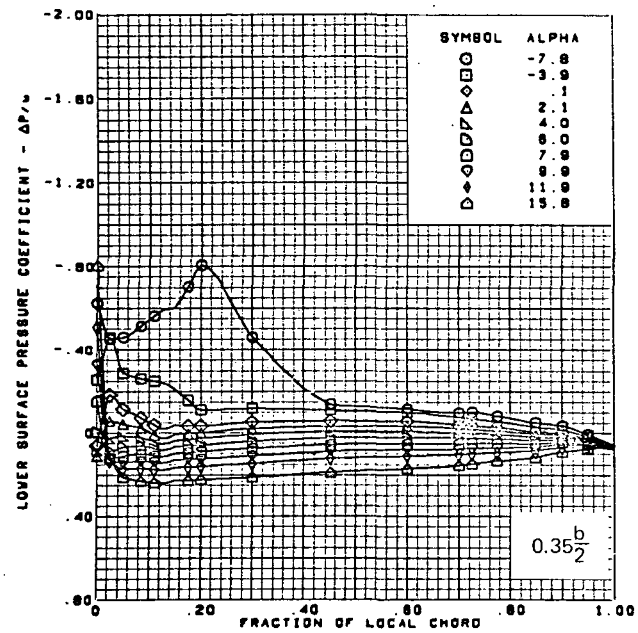
(c) (Concluded)

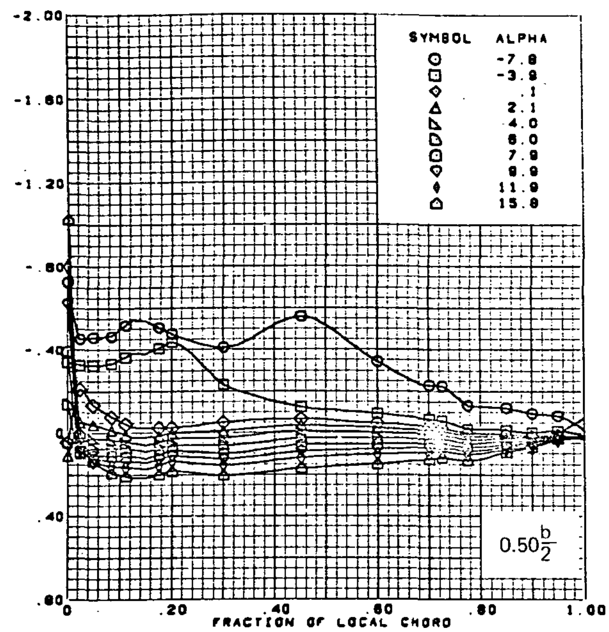
Figure 49.–(Continued)

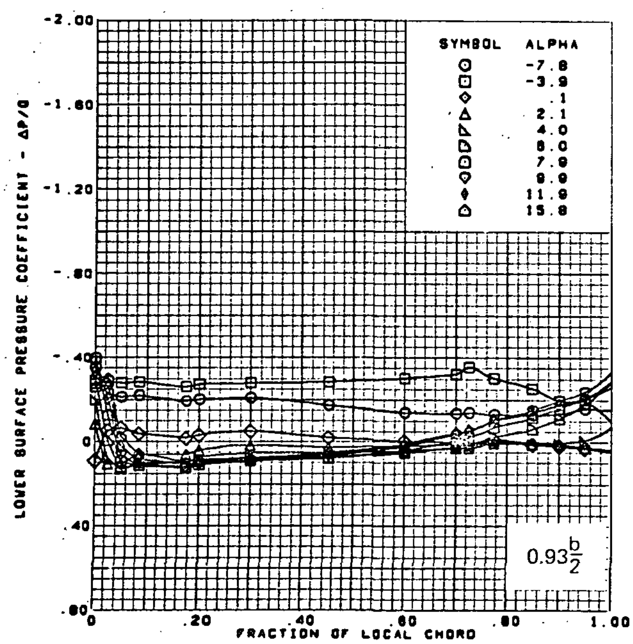


(d) Lower Surface Chordwise Pressure Distributions

Figure 49.–(Continued)



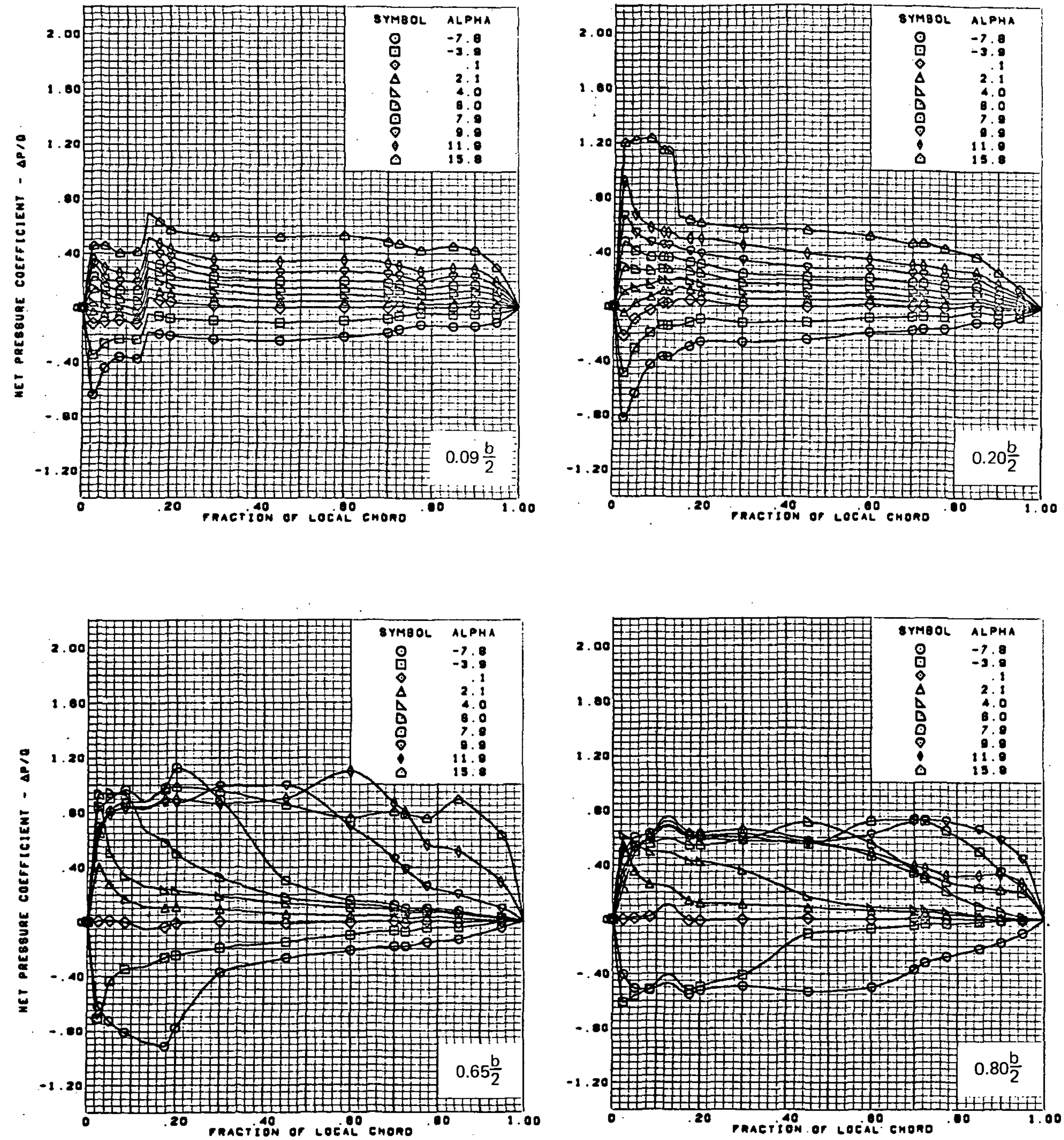




M = 0.85 (run 318)
Flat wing, round L.E.
L.E. deflection, inboard = 5.1°, outboard = 0.0°
T.E. deflection, full span = 0.0°

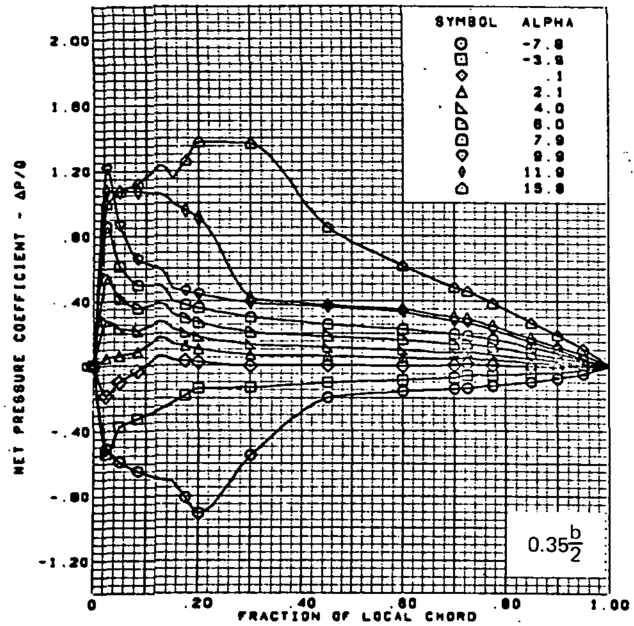
(d) (Concluded)

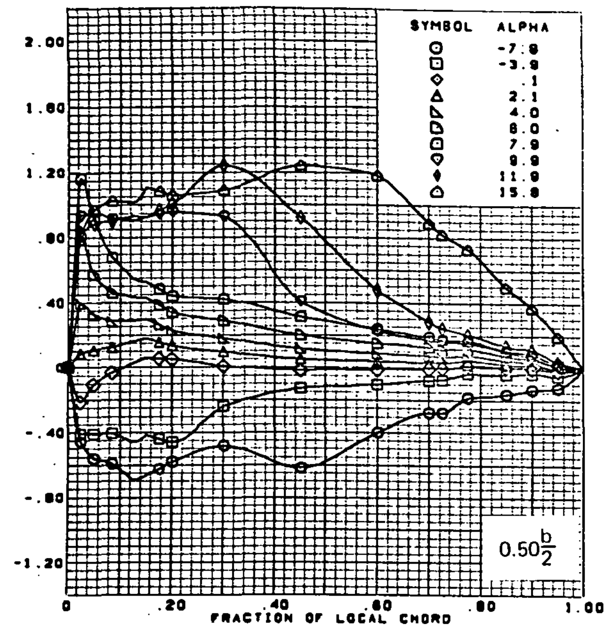
Figure 49.–(Continued)

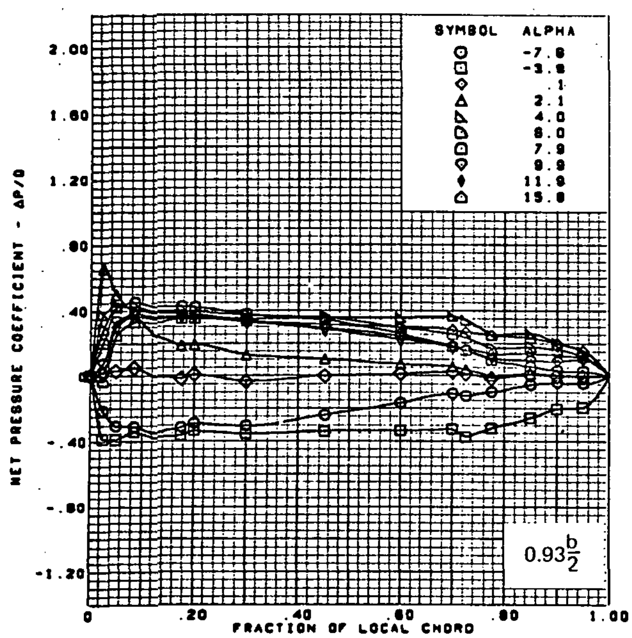


(e) Net Chordwise Pressure Distributions

Figure 49.–(Continued)







M = 0.85 (run 318)
Flat wing, round L.E.
L.E. deflection, inboard = 5.1° , outboard = 0.0°
T.E. deflection, full span = 0.0°

(e) (Concluded)

Figure 49.-(Continued)

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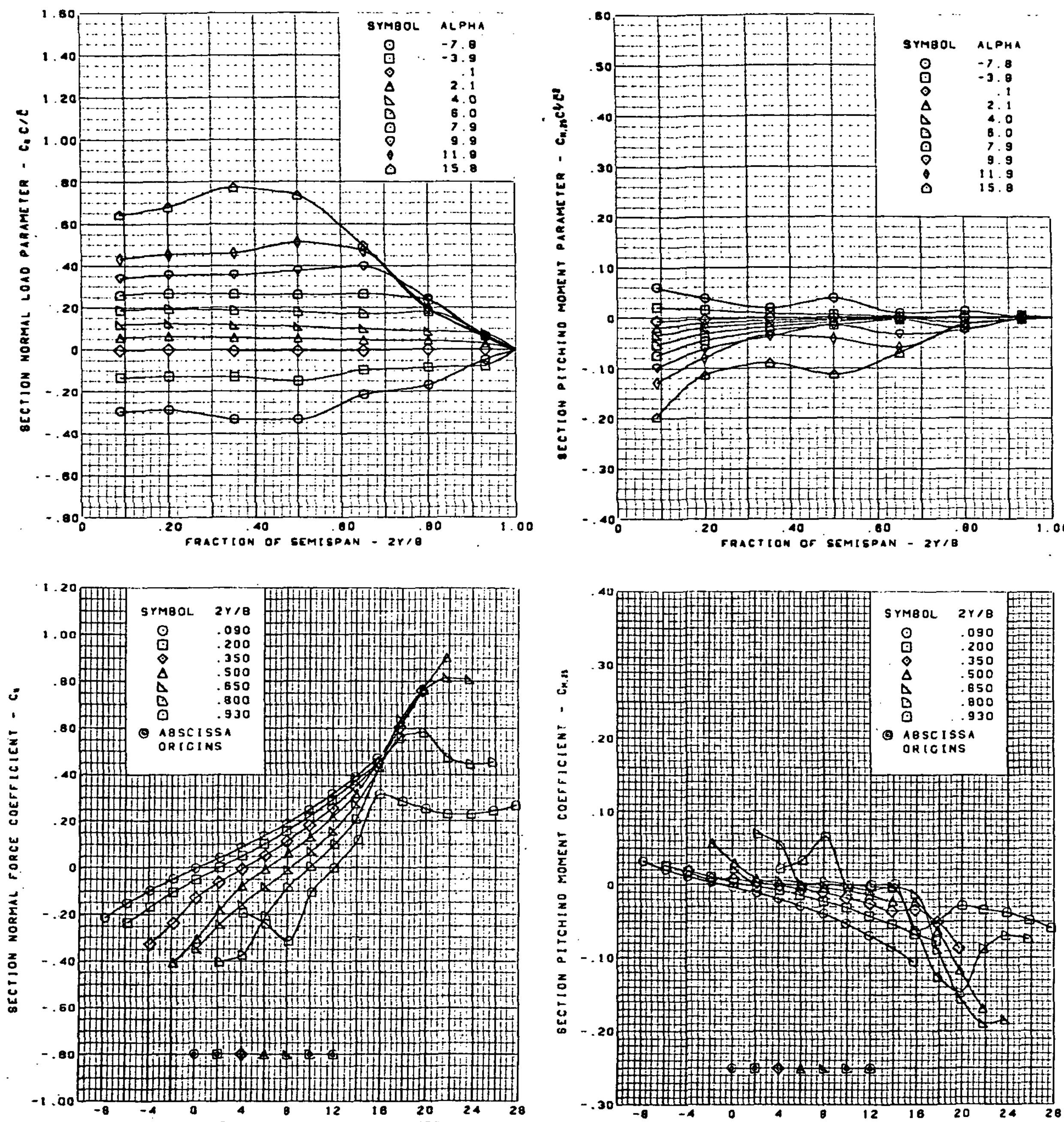

M = 0.85 (run 318)
Flat wing, round L.E.
L.E. deflection, inboard = 5.1°, outboard = 0.0°
T.E. deflection, full span = 0.0°

(f) Spanload Distributions and Section Aerodynamic Coefficients

Figure 49.–(Concluded)

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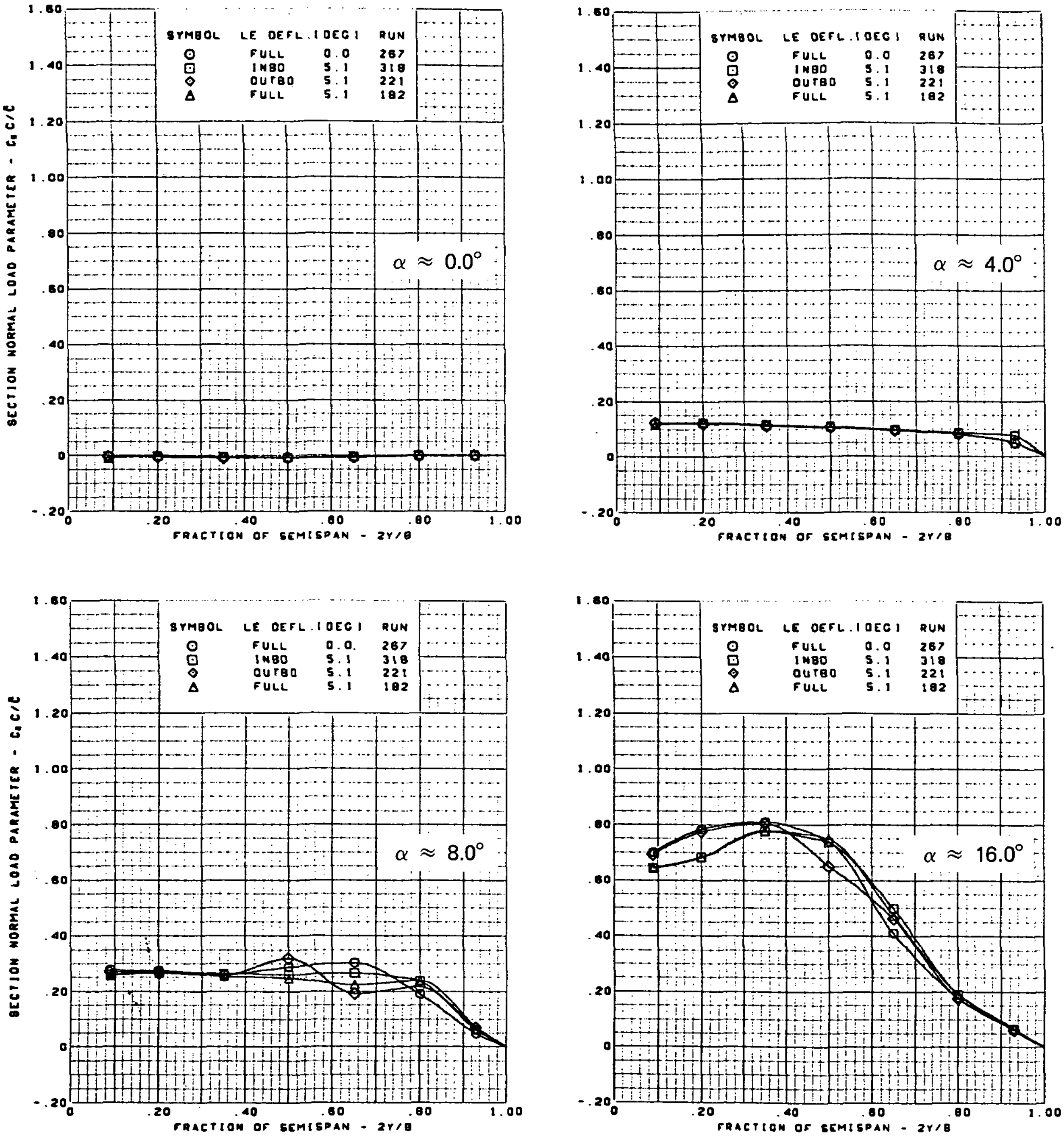
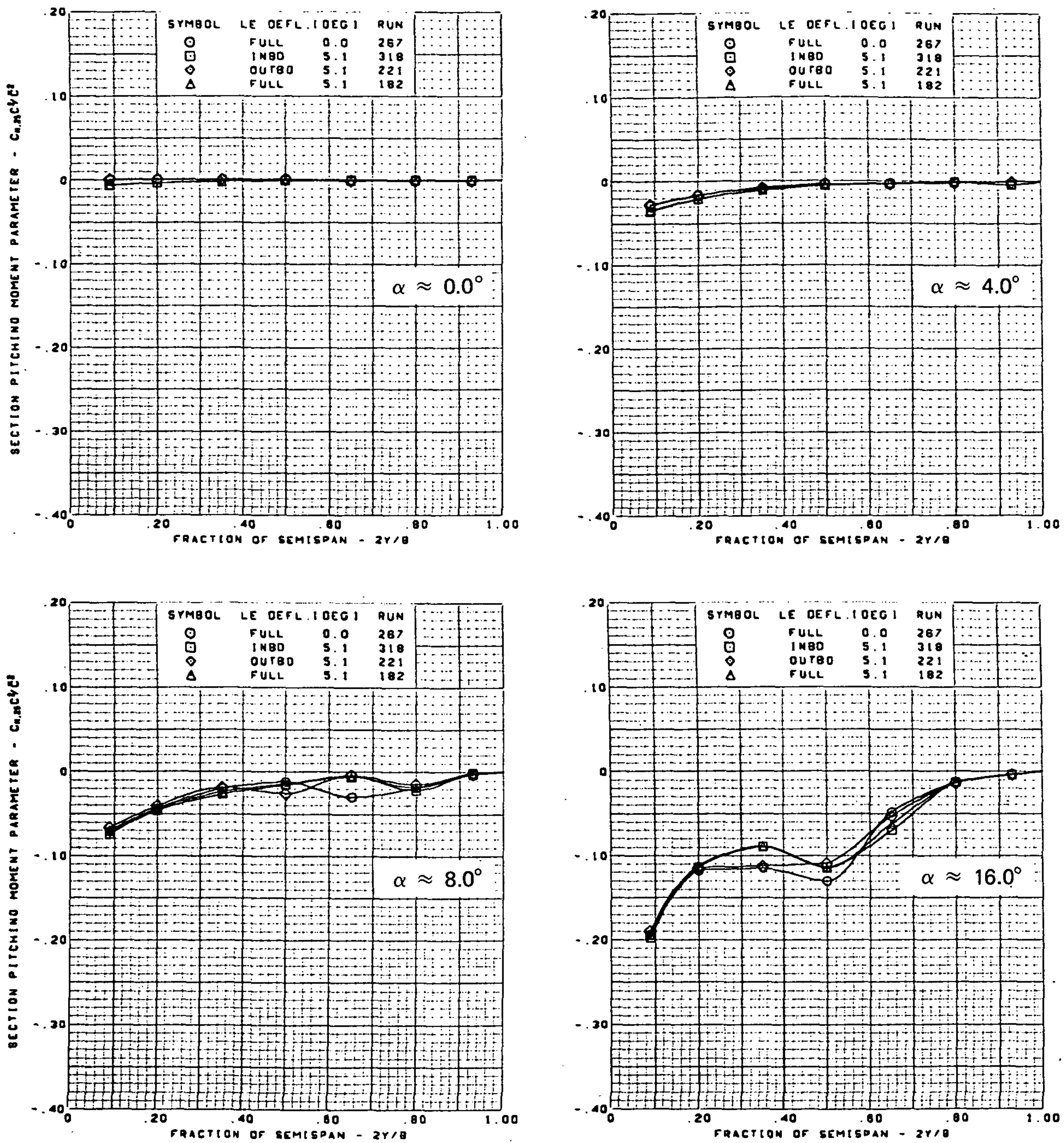


M = 0.85
Flat wing, round L.E.
T.E. deflection, full span = 0.0°

(a) Spanload Distributions—Normal Force

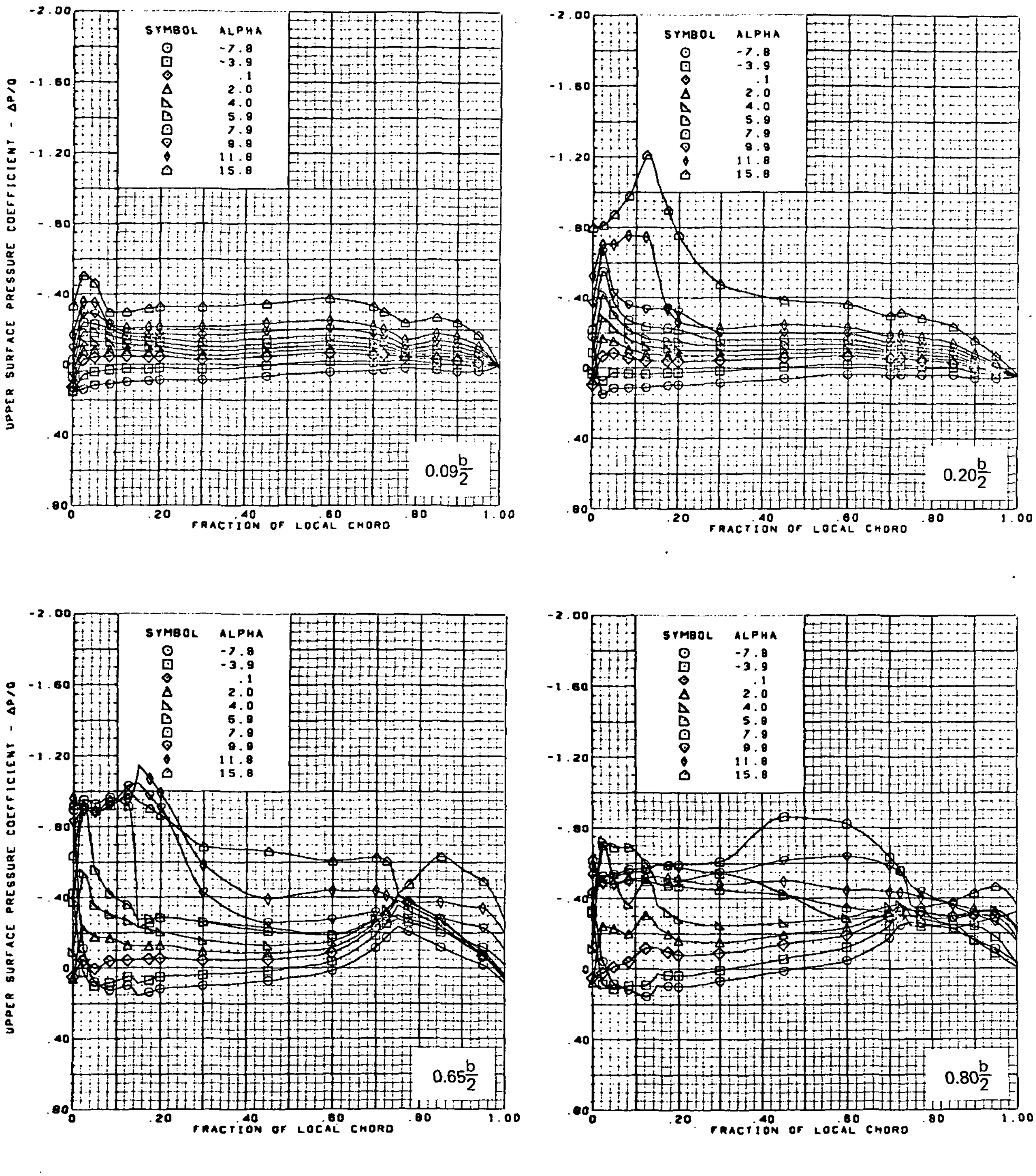
Figure 50.—Wing Experimental Data—Effect of Partial Span L.E. Deflection; Flat Wing, Round L.E.; T.E. Deflection, Full Span = 0.0°; M = 0.85



M = 0.85
Flat wing, round L.E.
T.E. deflection, full span = 0.0°

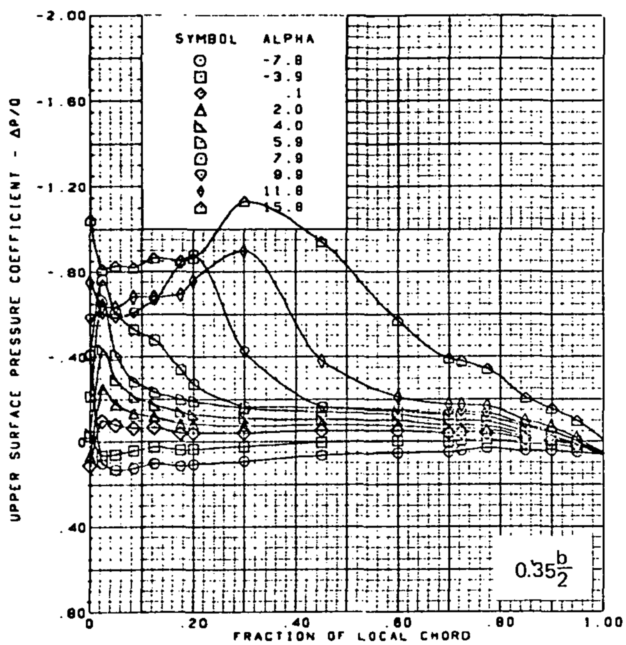
(b) Spanload Distributions—Pitching Moment

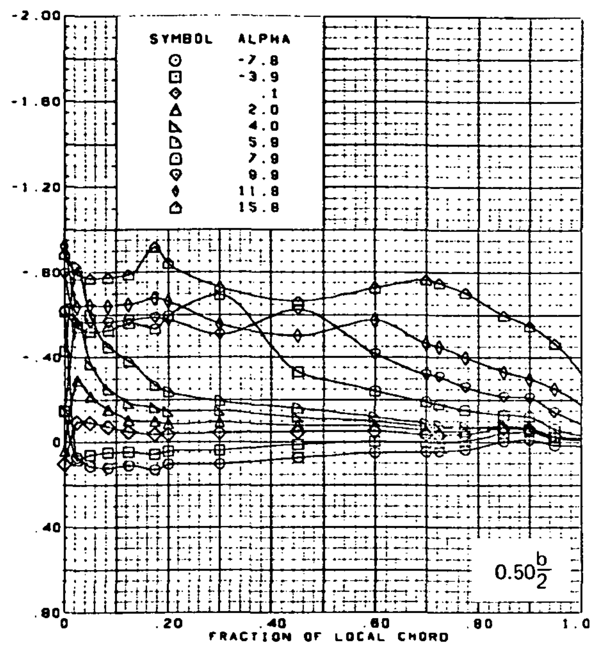
Figure 50.–(Concluded)

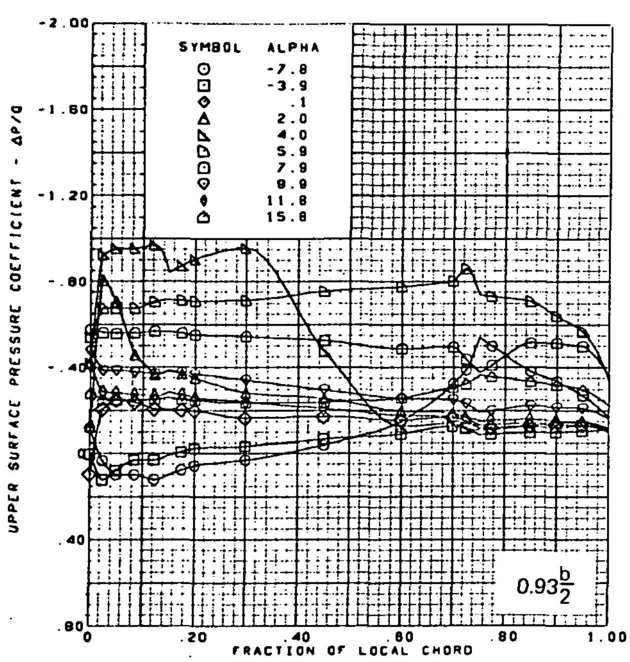


(a) Upper Surface Chordwise Pressure Distributions

Figure 51.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing; Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = 0.0°, Outboard = 17.7°; M = 0.85



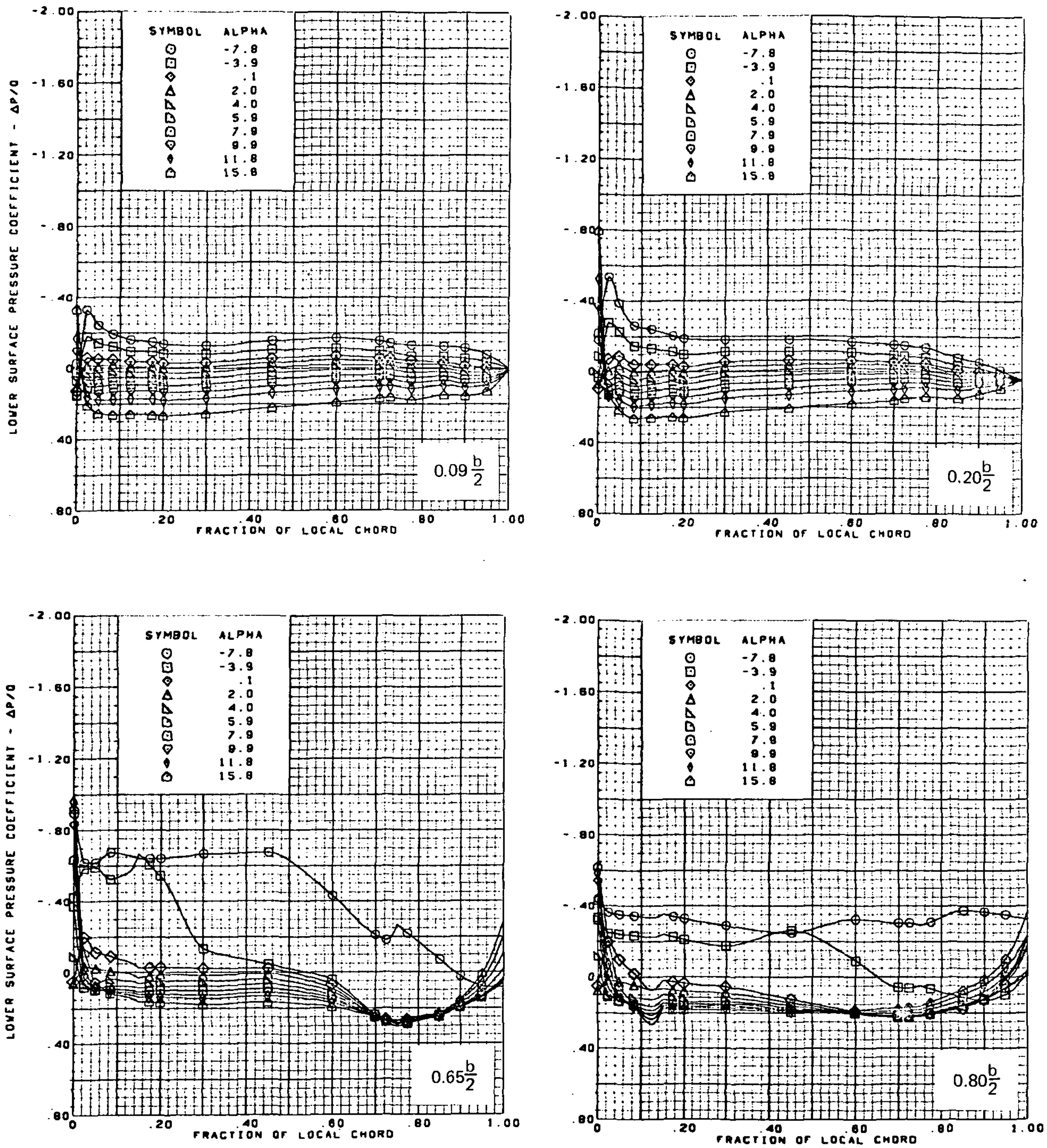




M = 0.85 (run 214)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 17.7°

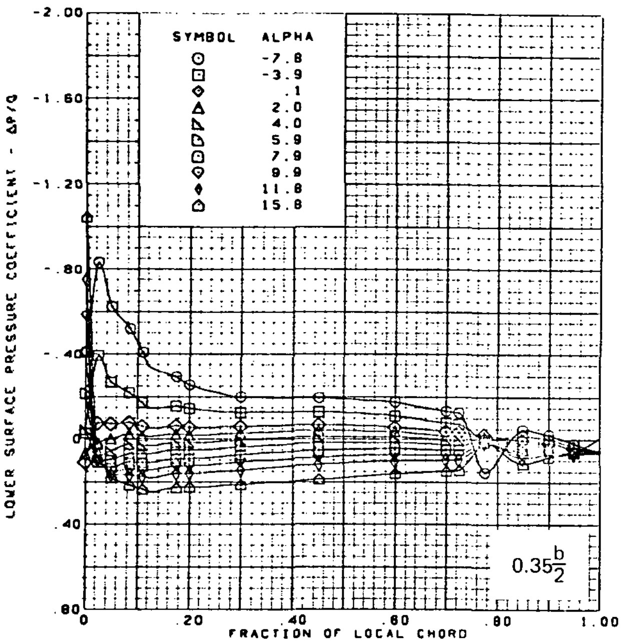
(a) (Concluded)

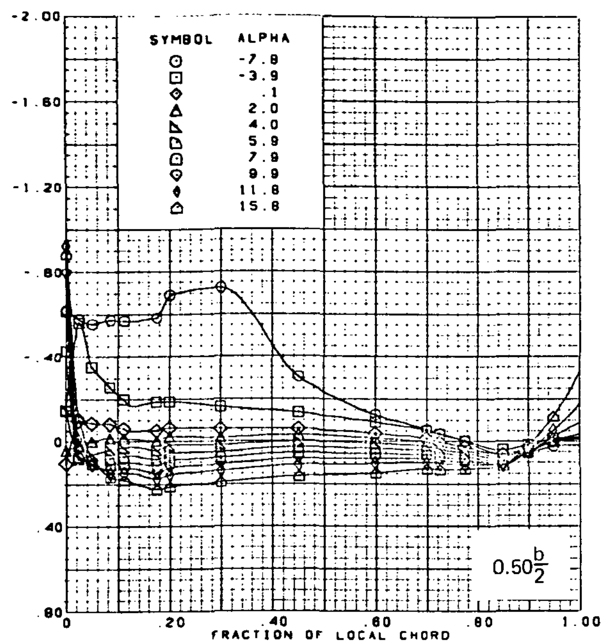
Figure 51.-(Continued)

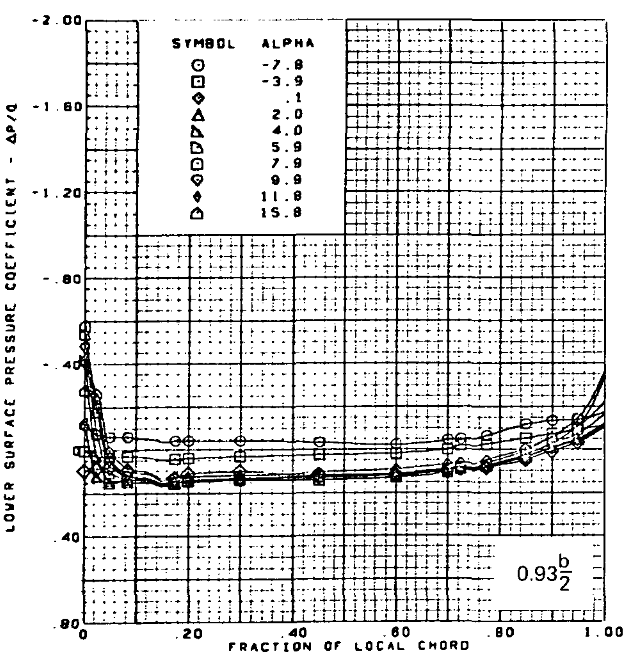


(b) Lower Surface Chordwise Pressure Distributions

Figure 51.–(Continued)



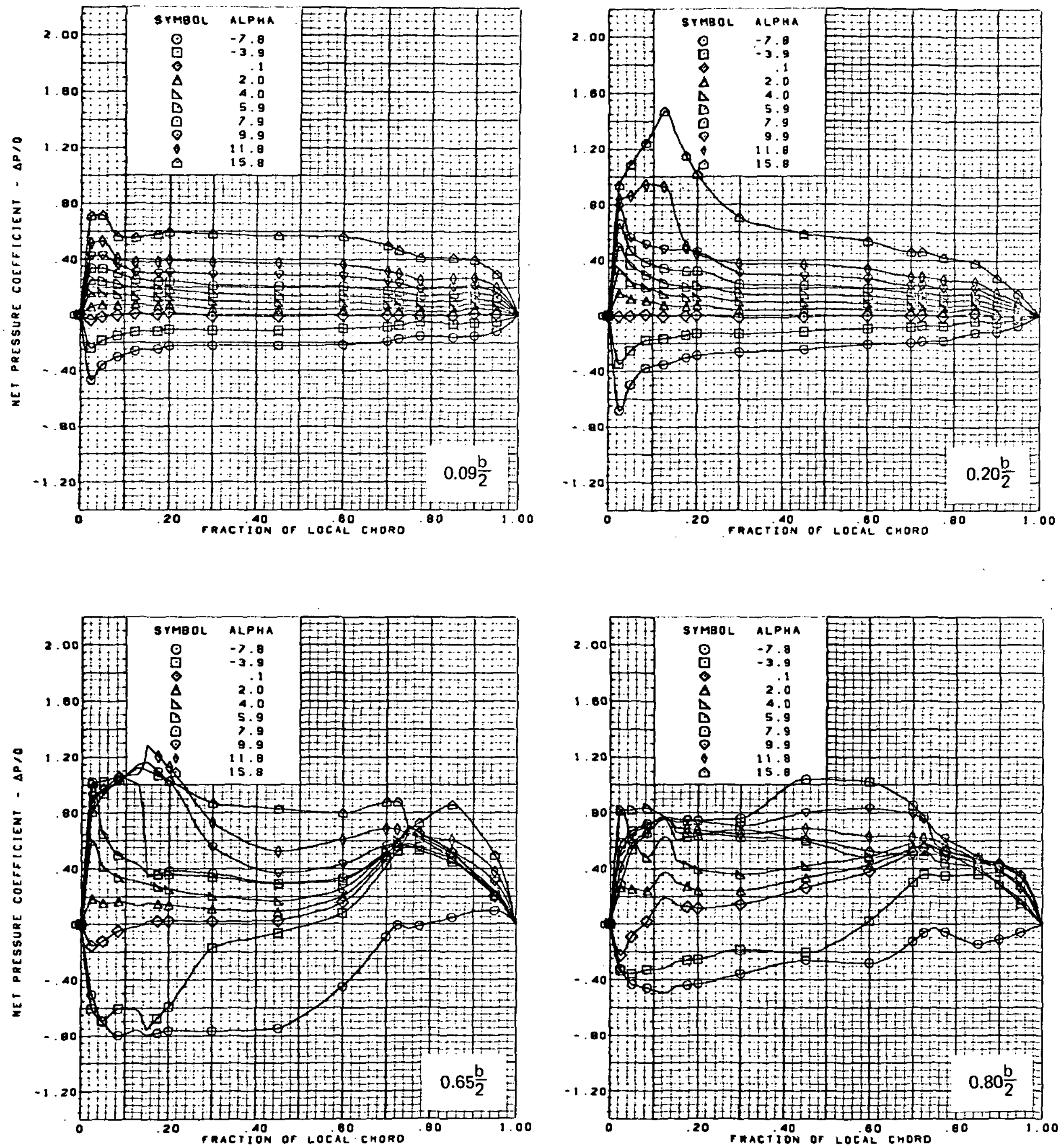




M = 0.85 (run 214)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 17.7°

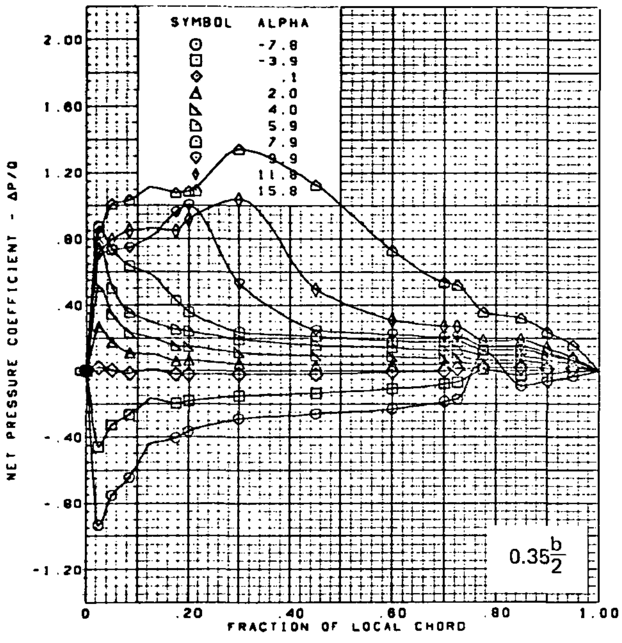
(b) (Concluded)

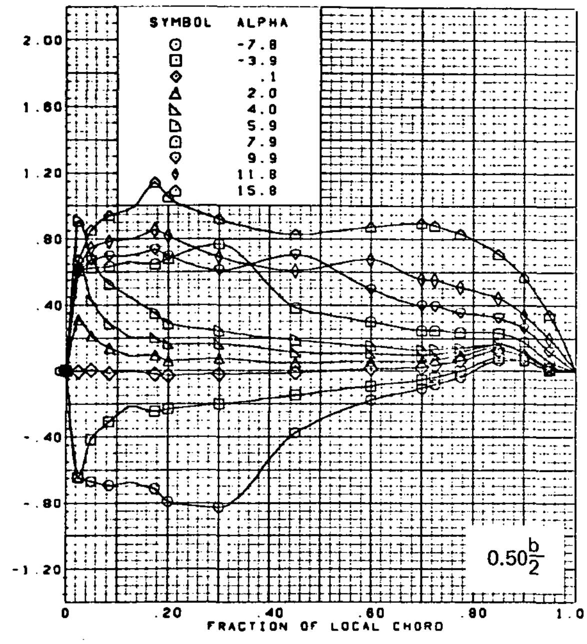
Figure 51.–(Continued)

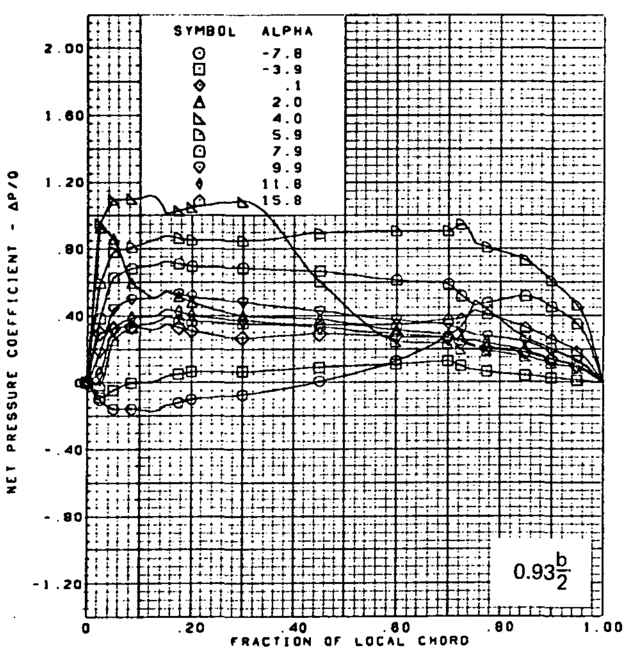


(c) Net Chordwise Pressure Distributions

Figure 51.–(Continued)



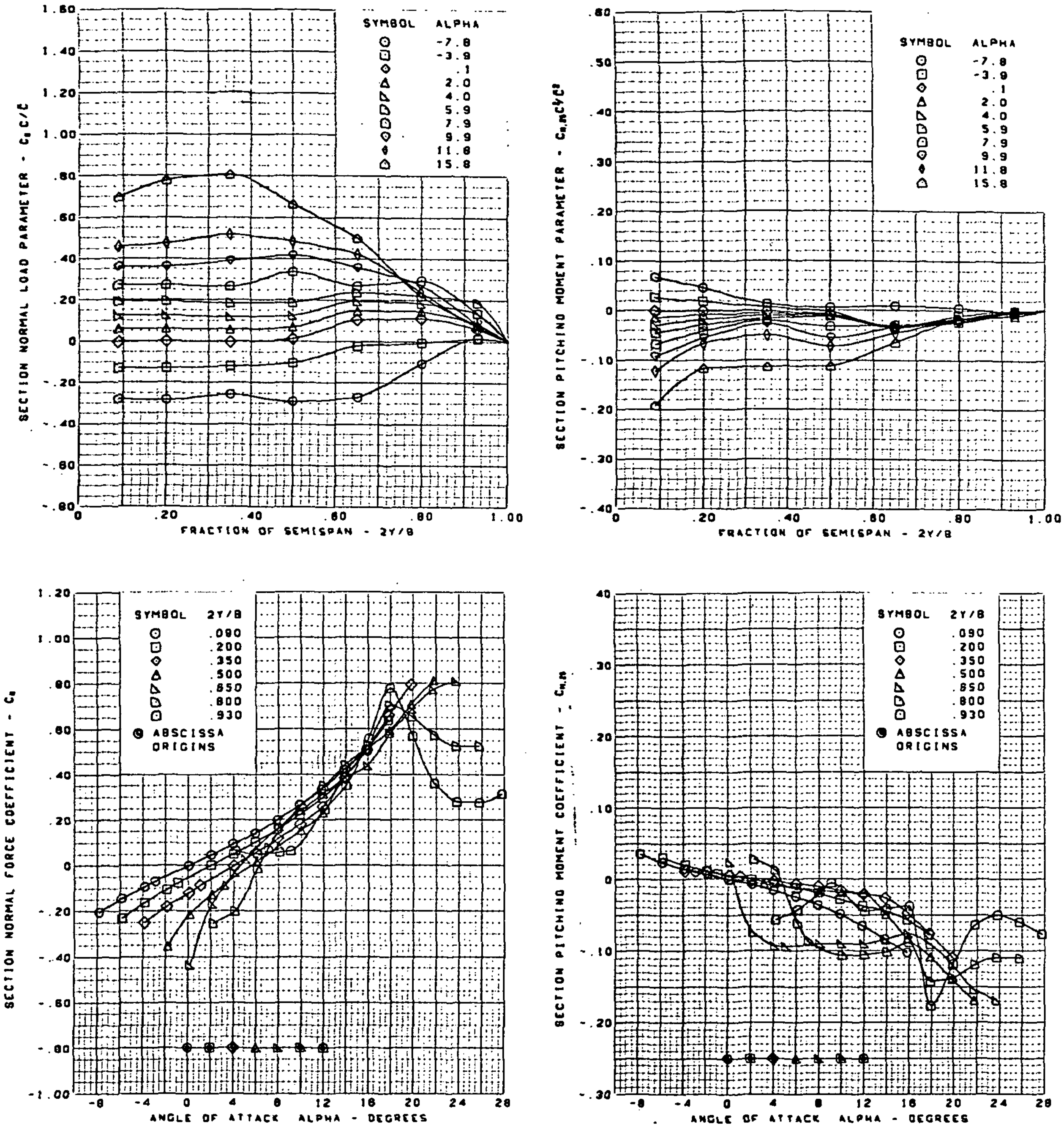




M = 0.85 (run 214)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 17.7°

(c) (Concluded)

Figure 51.–(Continued)



M = 0.85 (run 214)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 17.7°

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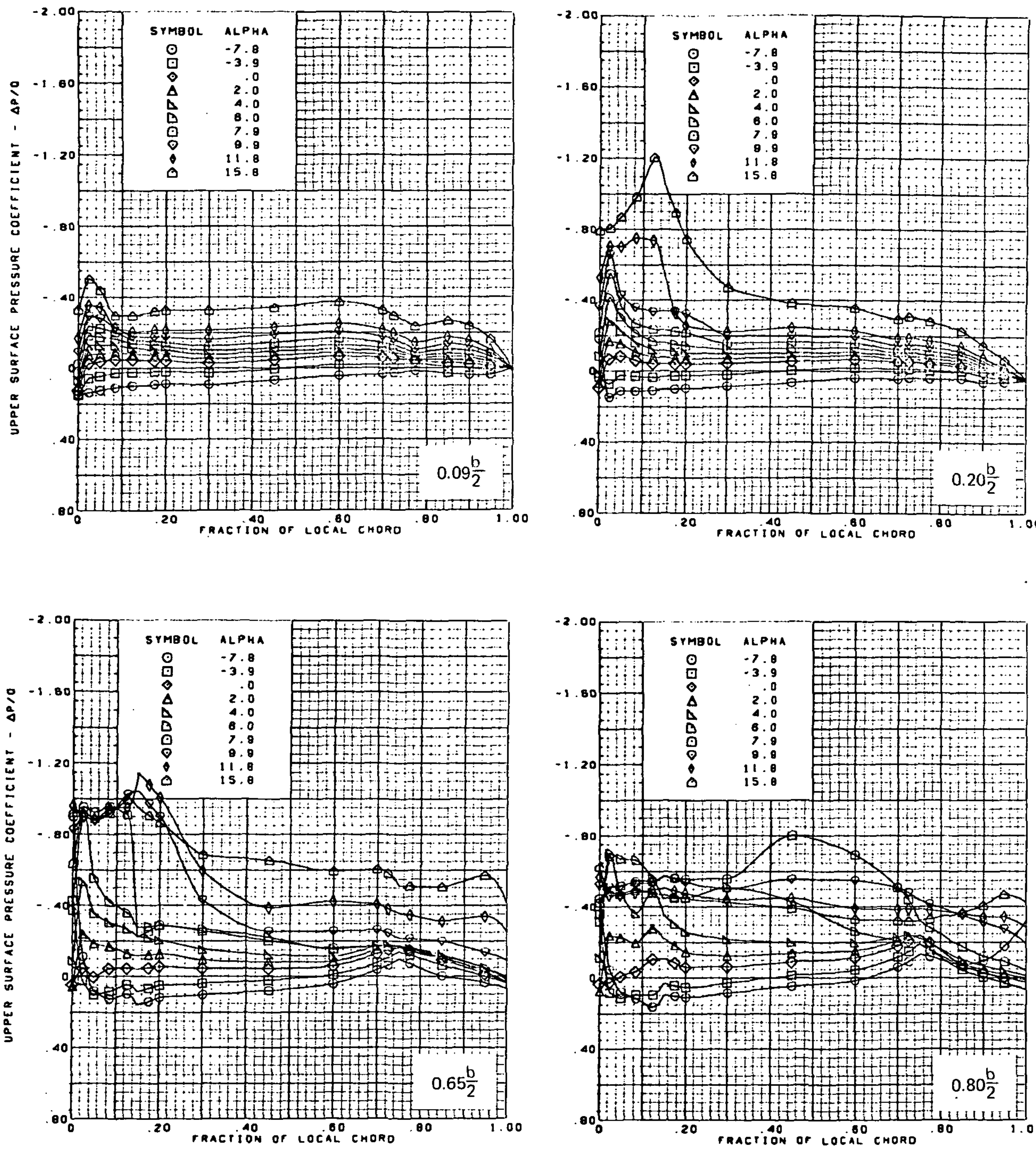
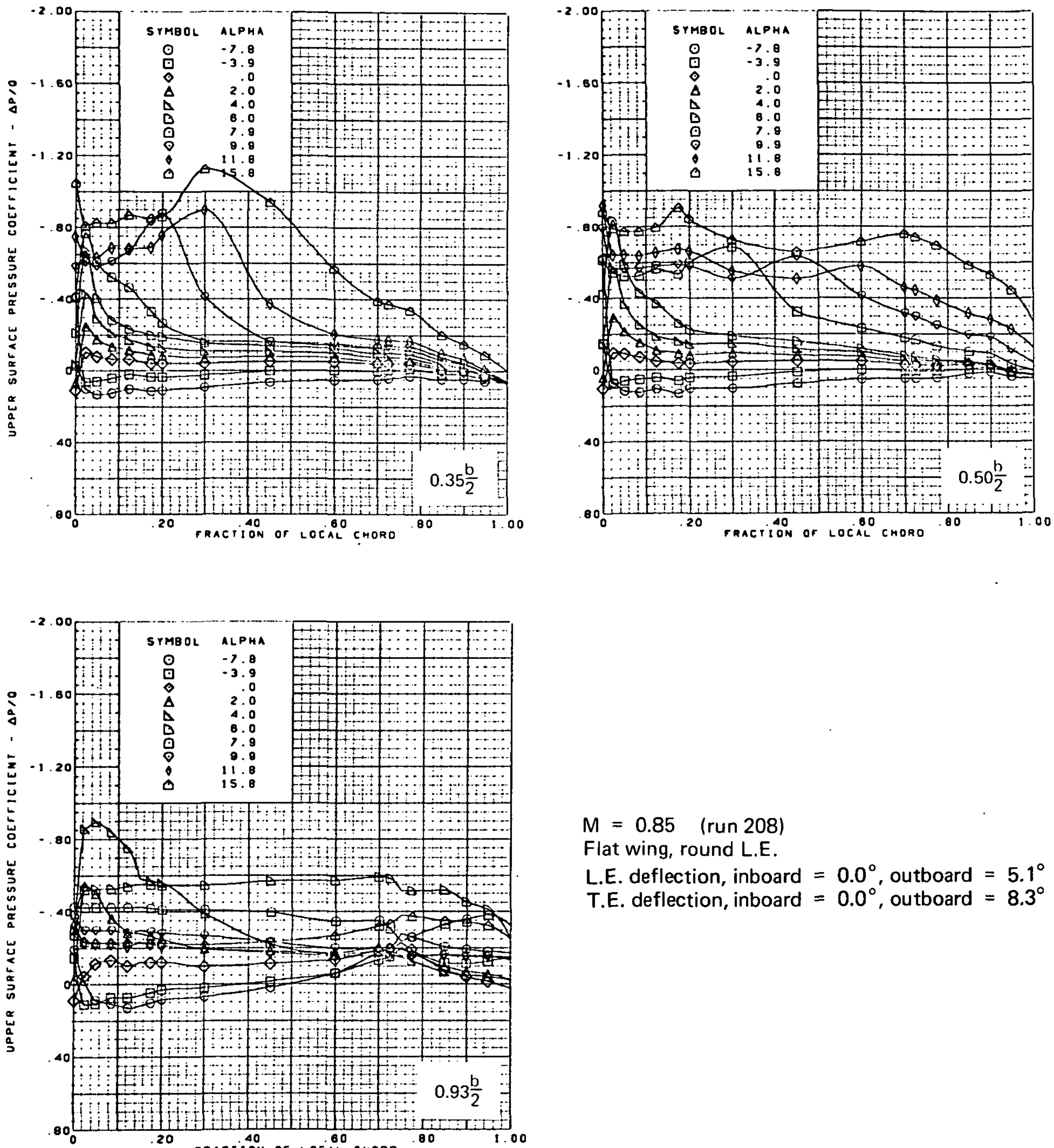
(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 51.–(Concluded)



(a) Upper Surface Chordwise Pressure Distributions

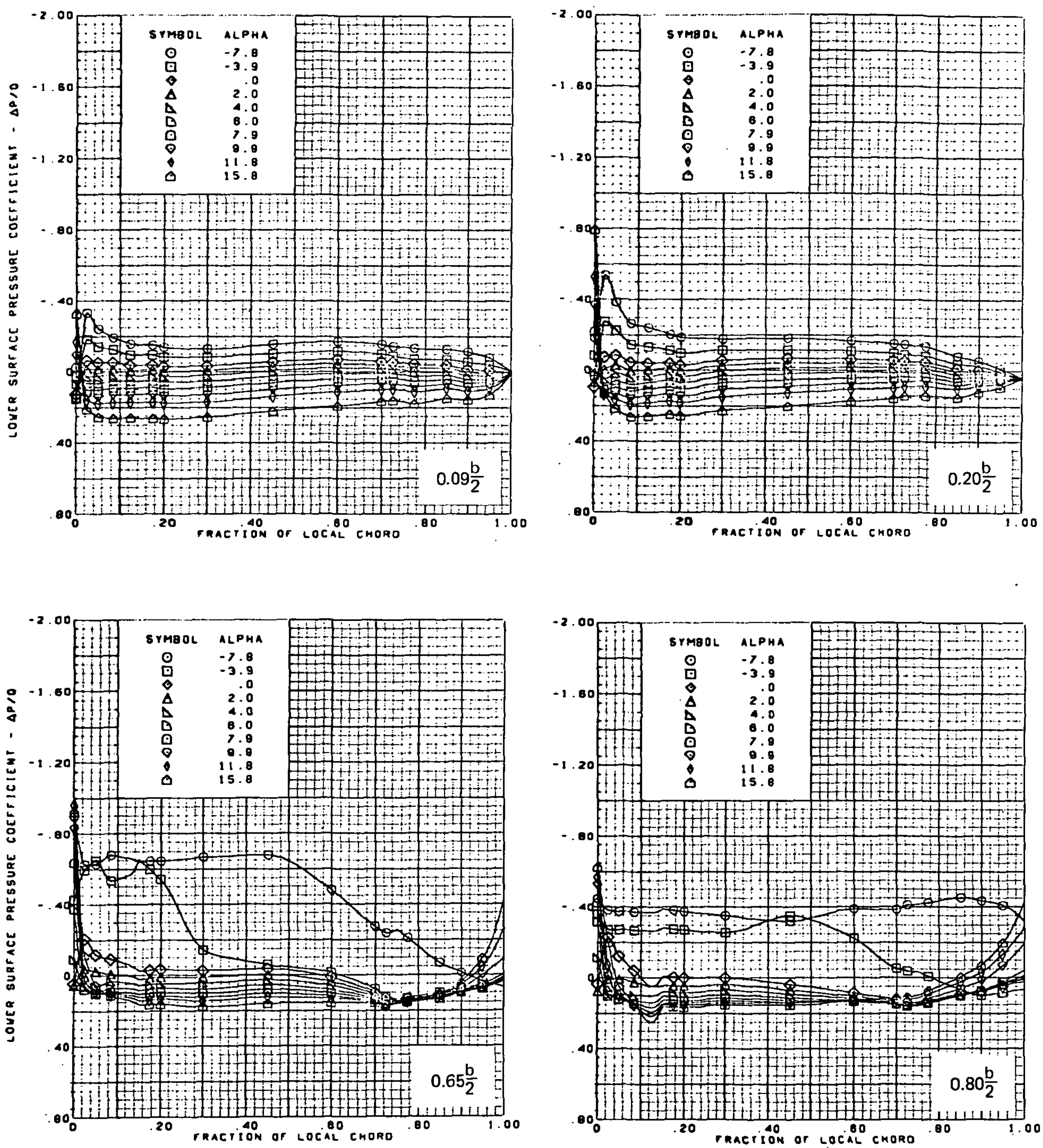
Figure 52.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = 0.0°, Outboard = 8.3°; M = 0.85



M = 0.85 (run 208)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 8.3°

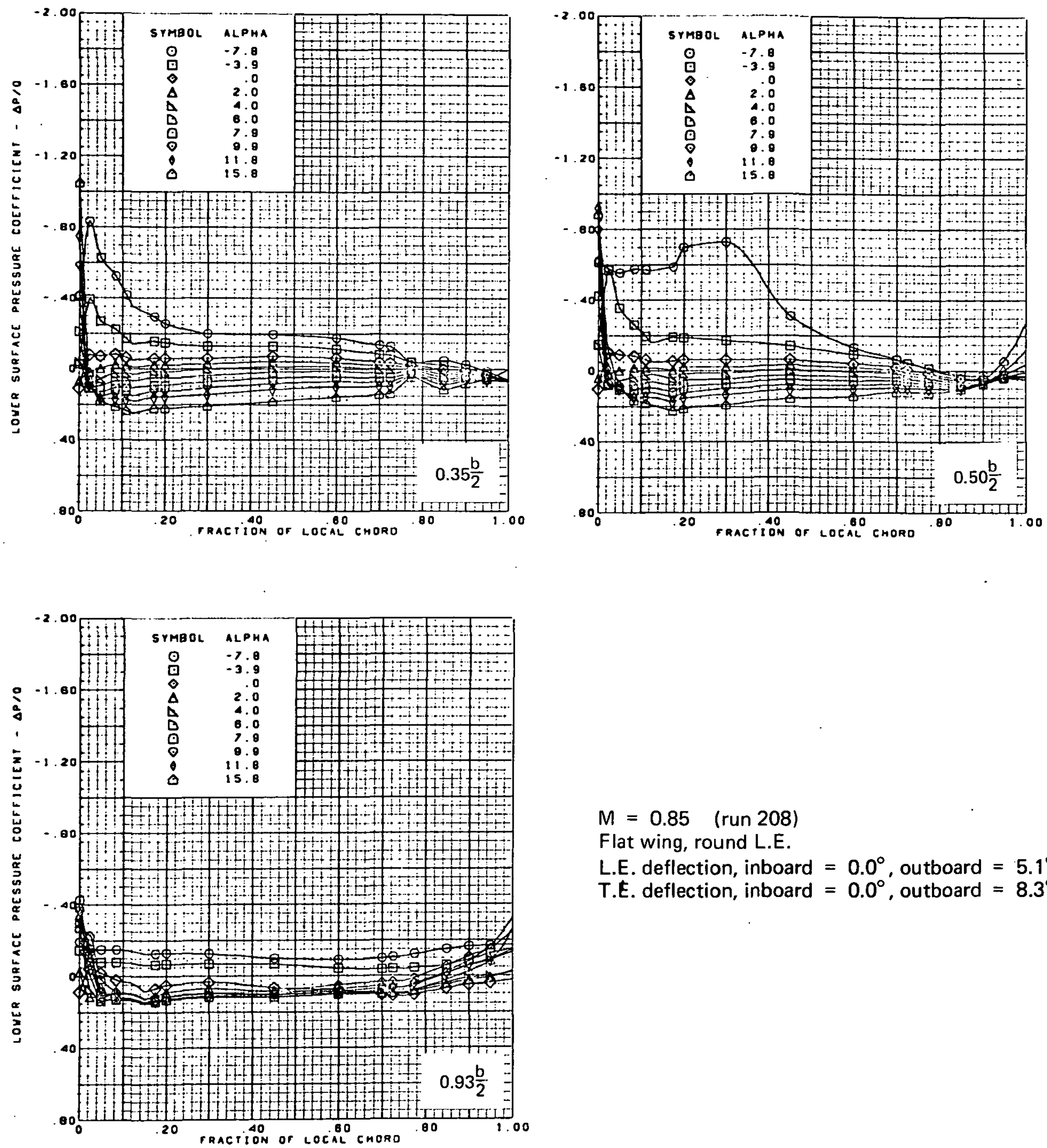
(a) (Concluded)

Figure 52.–(Continued)



(b) Lower Surface Chordwise Pressure Distributions

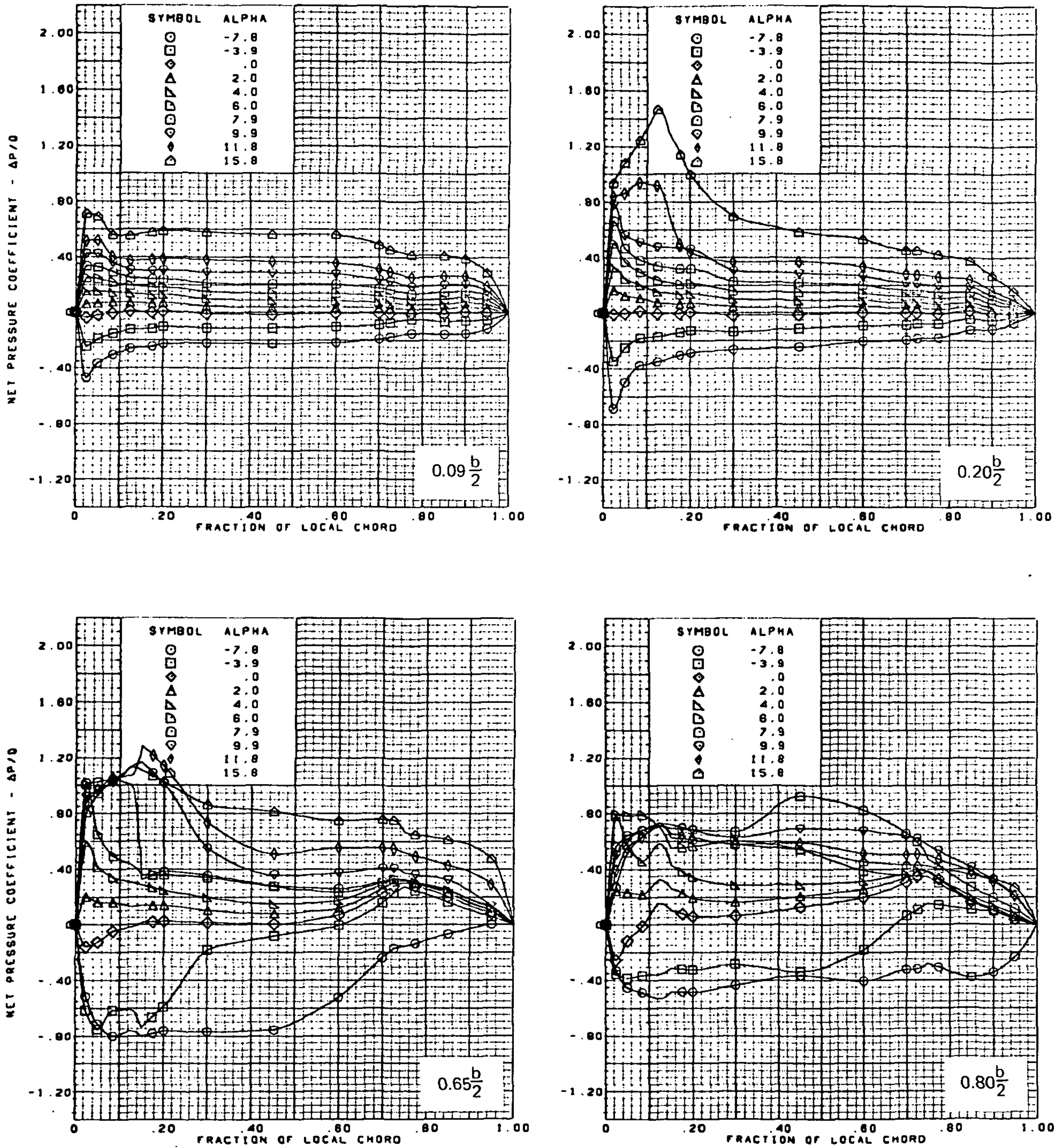
Figure 52.–(Continued)



M = 0.85 (run 208)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 8.3°

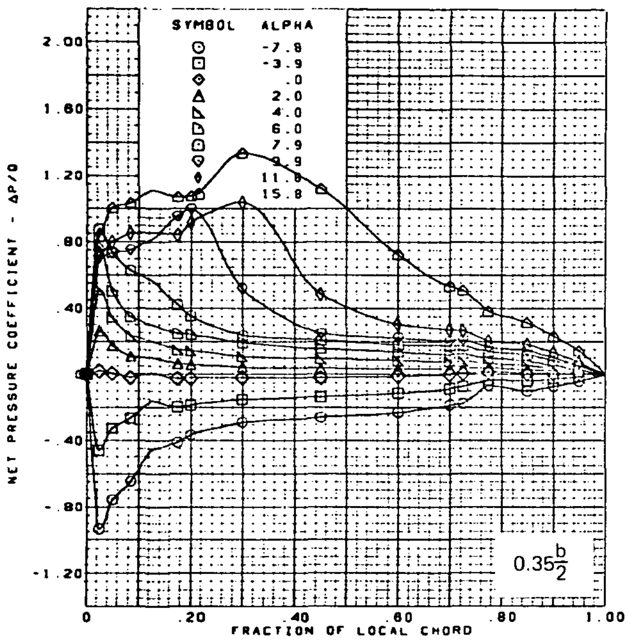
(b) (Concluded)

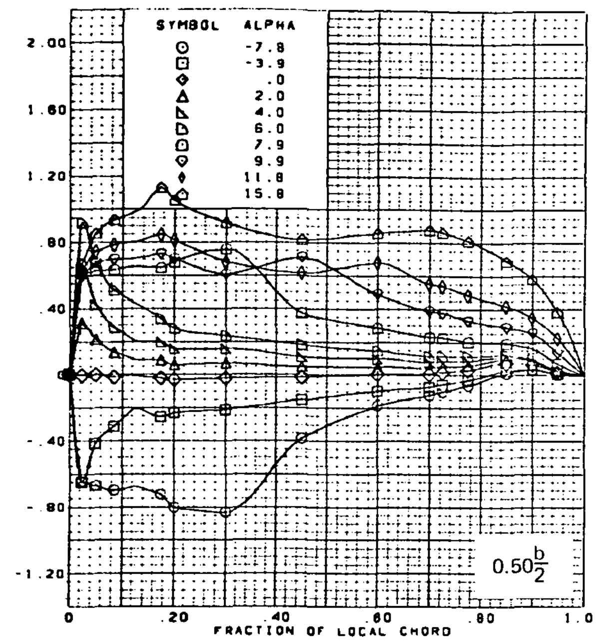
Figure 52.–(Continued)

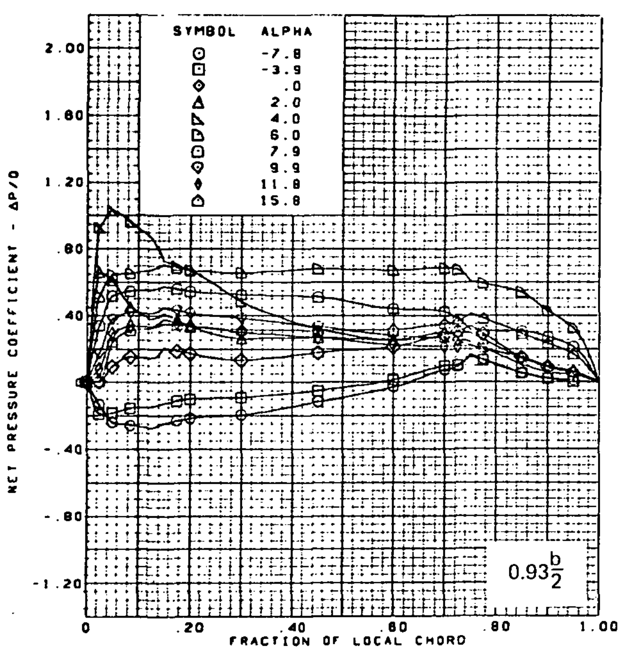


(c) Net Chordwise Pressure Distributions

Figure 52.–(Continued)



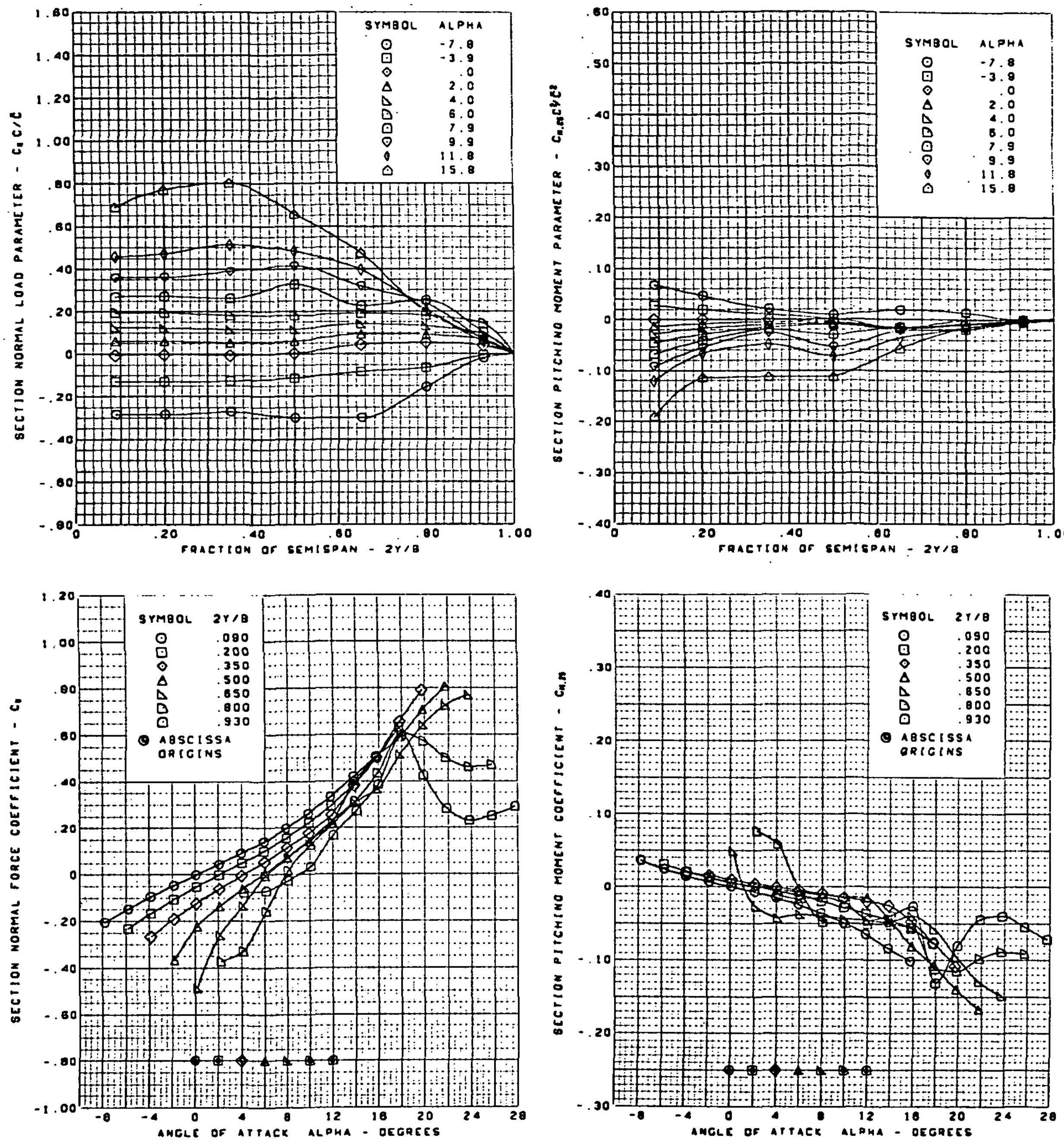




M = 0.85 (run 208)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 8.3°

(c) (Concluded)

Figure 52.–(Continued)



M = 0.85 (run 208)
Flat wing, round L.E.

L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = 8.3°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 52.- (Concluded)

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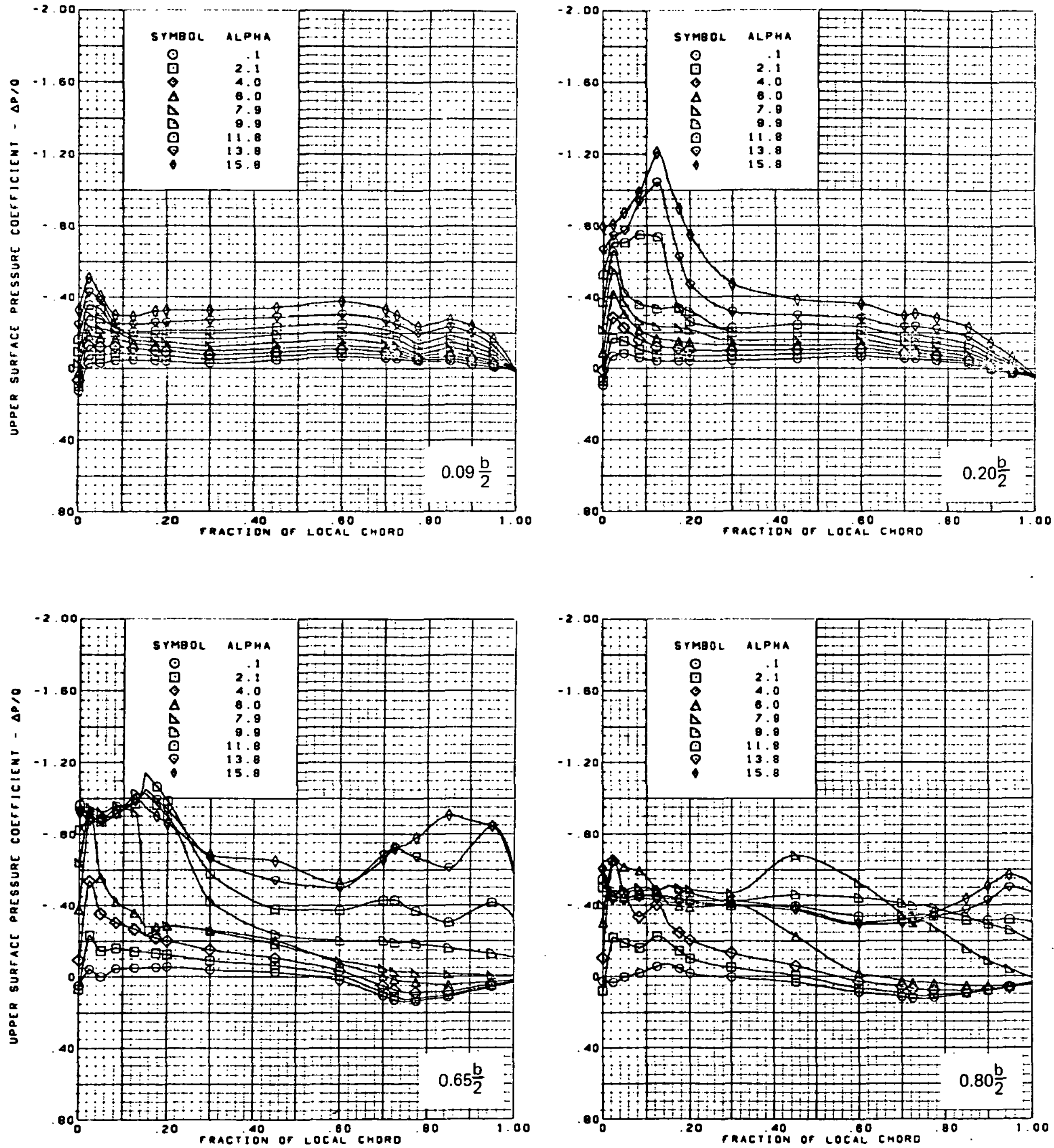
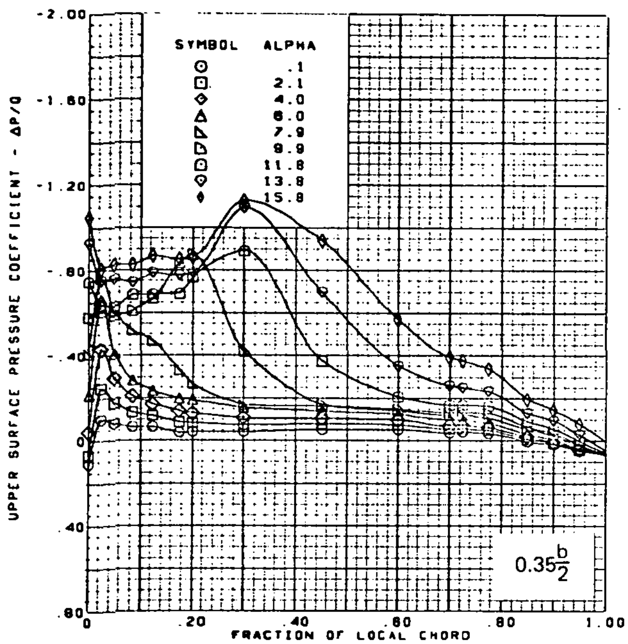
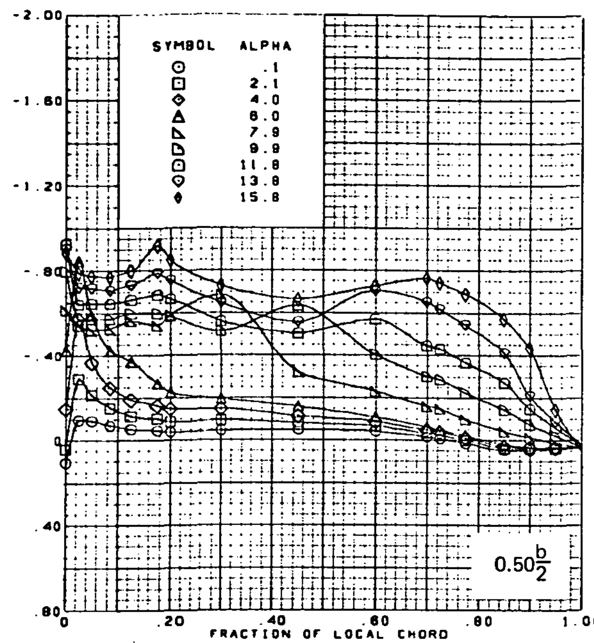
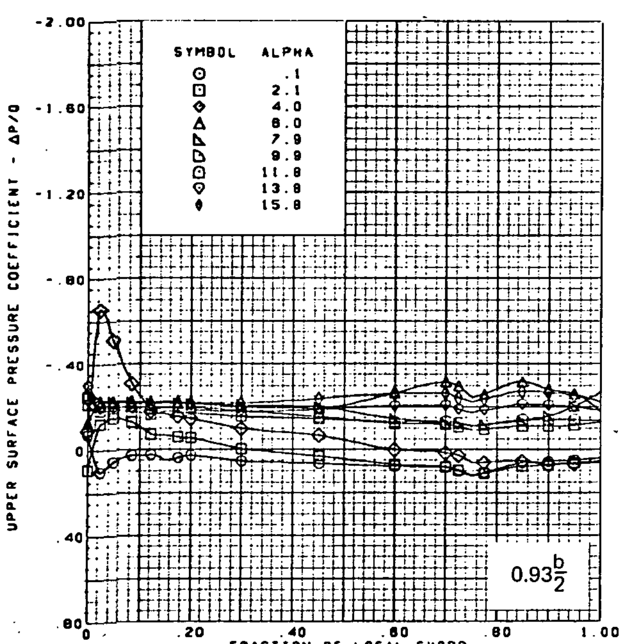


(a) Upper Surface Chordwise Pressure Distributions

Figure 53.–Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = 0.0°, Outboard = -8.3°; M = 0.85



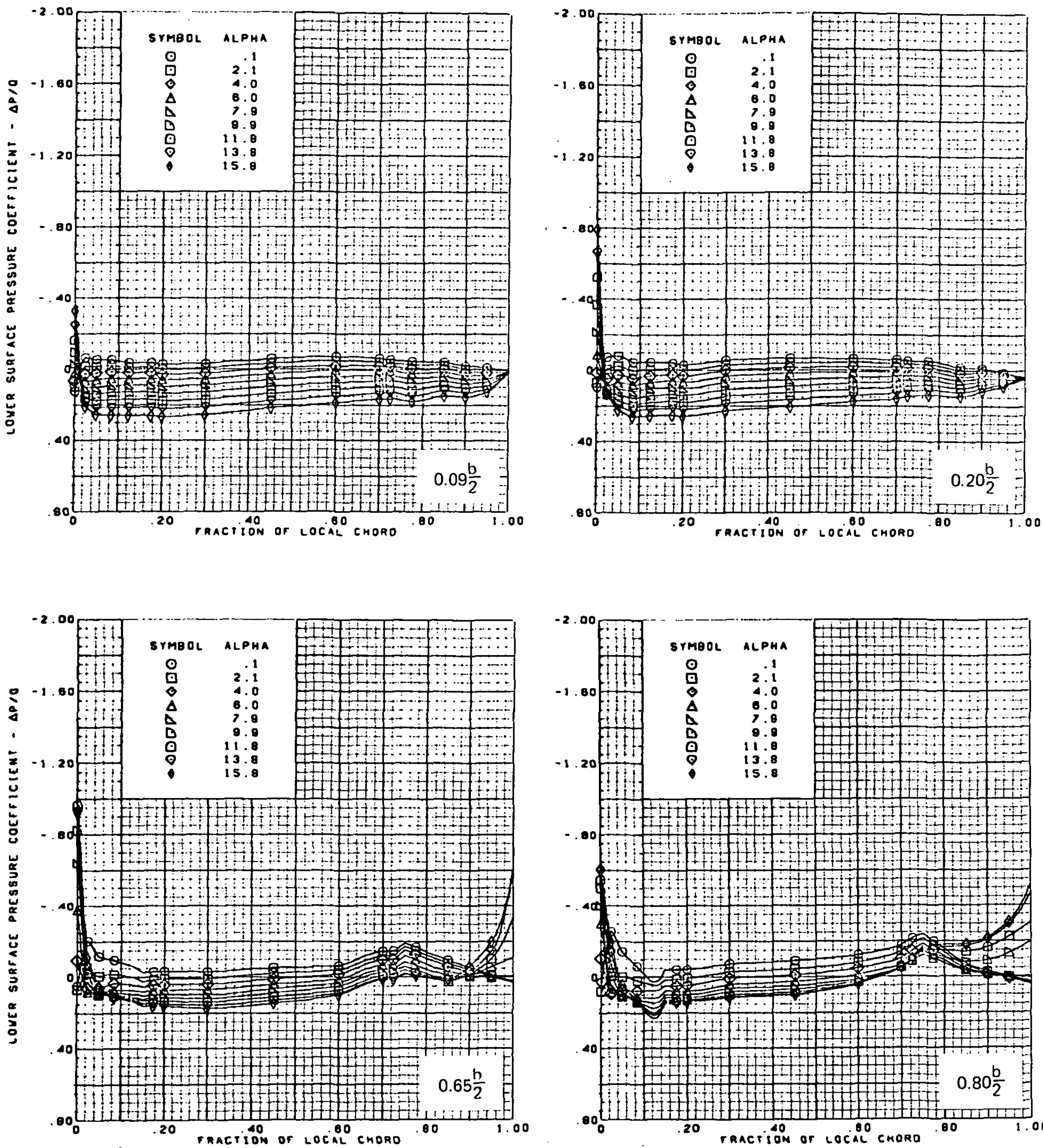




M = 0.85 (run 195)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -8.3°

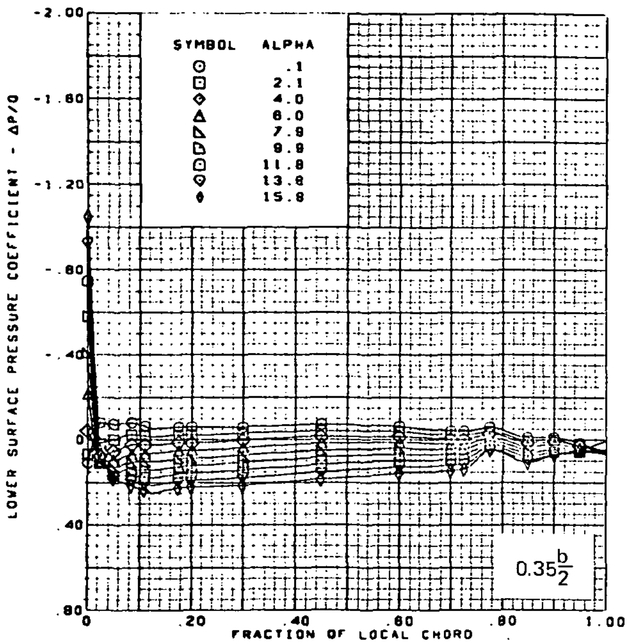
(a) (Concluded)

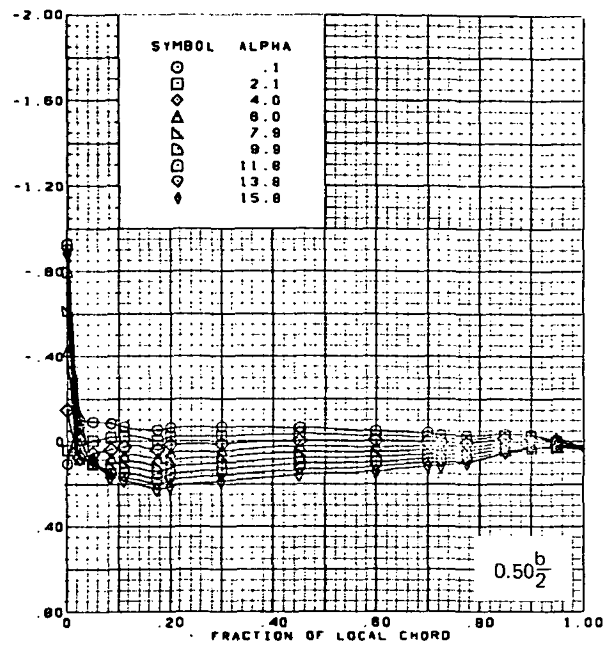
Figure 53.–(Continued)

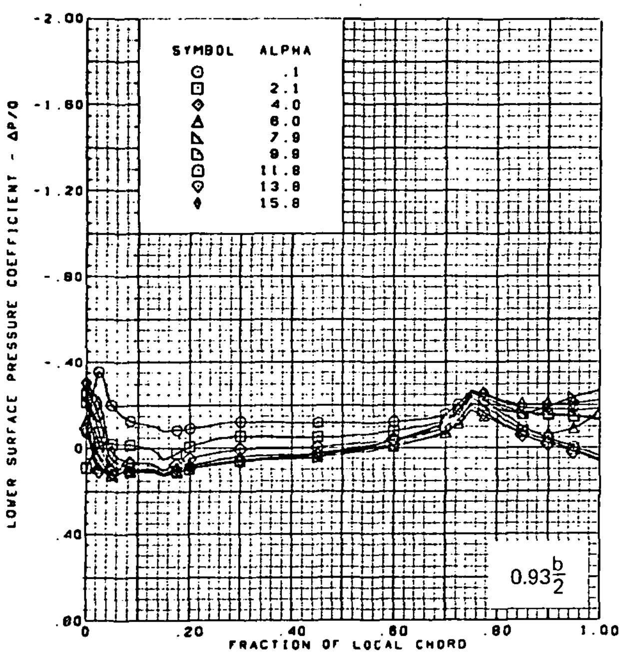


(b): Lower Surface Chordwise Pressure Distributions

Figure 53.–(Continued)



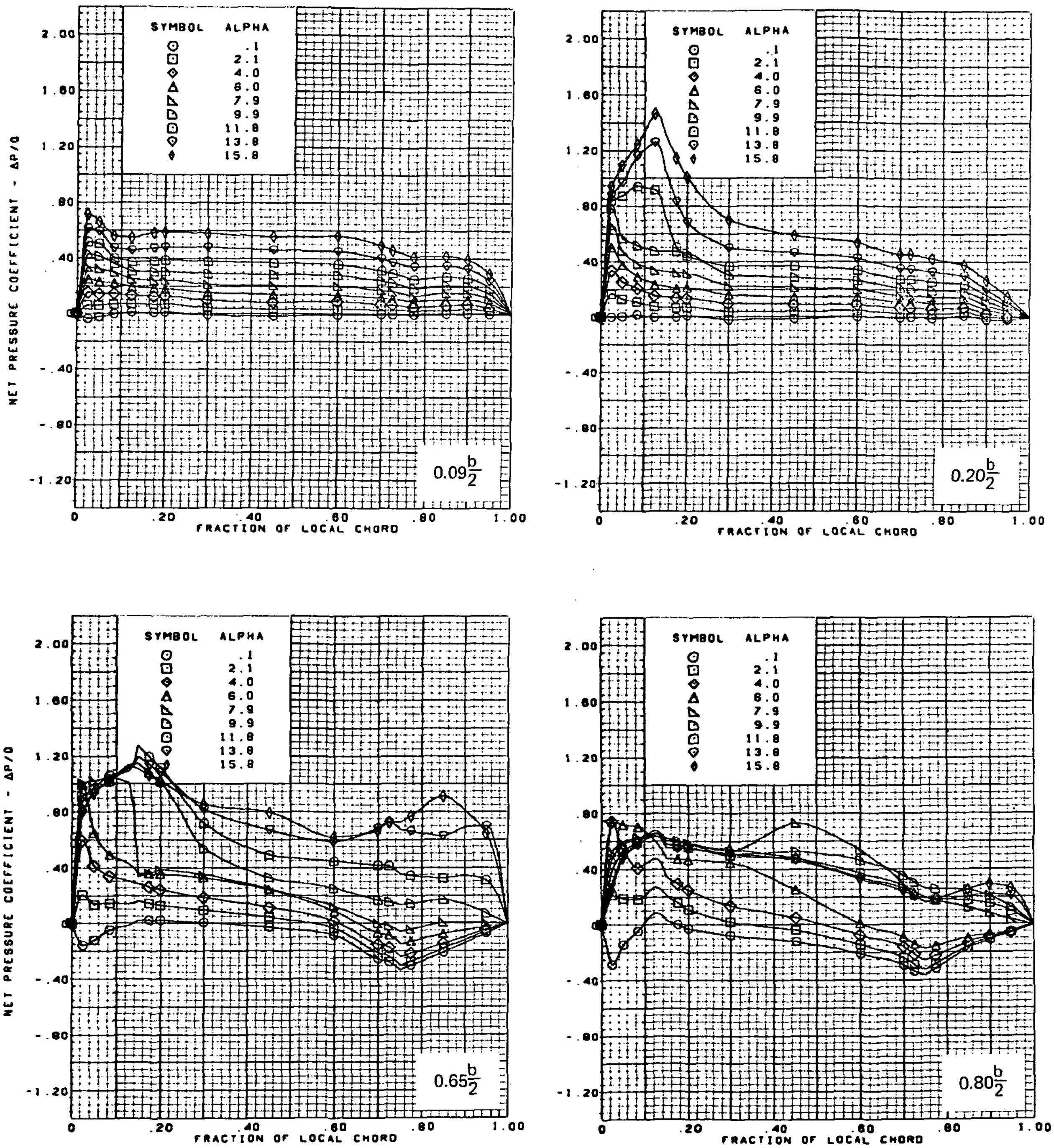




M = 0.85 (run 195)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -8.3°

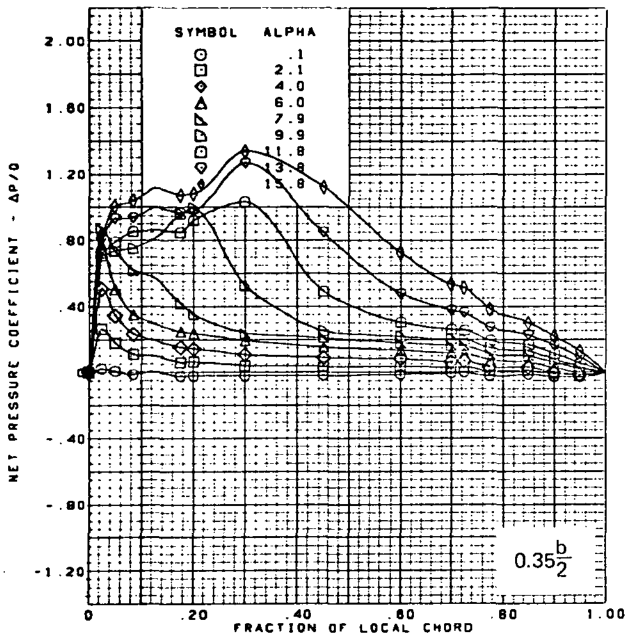
(b) (Concluded)

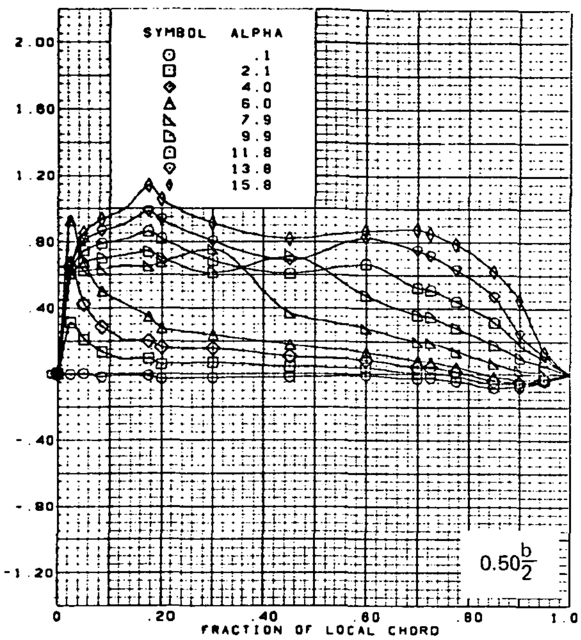
Figure 53.–(Continued)

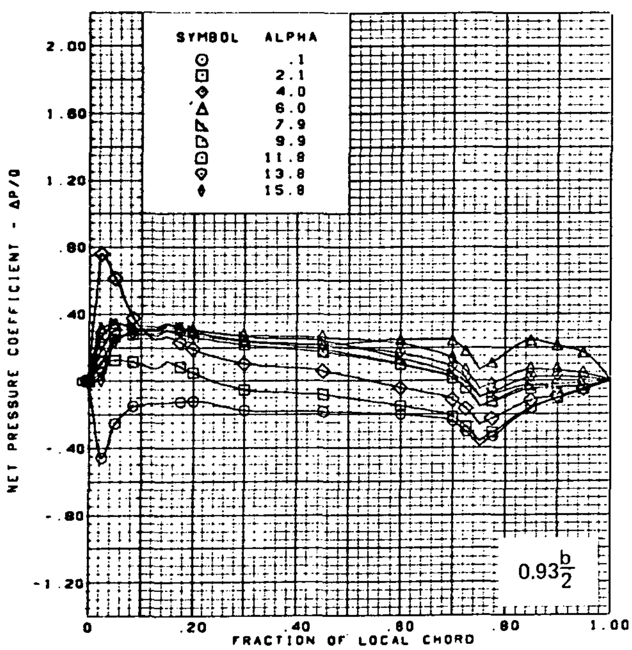


(c) Net Chordwise Pressure Distributions

Figure 53.–(Continued)



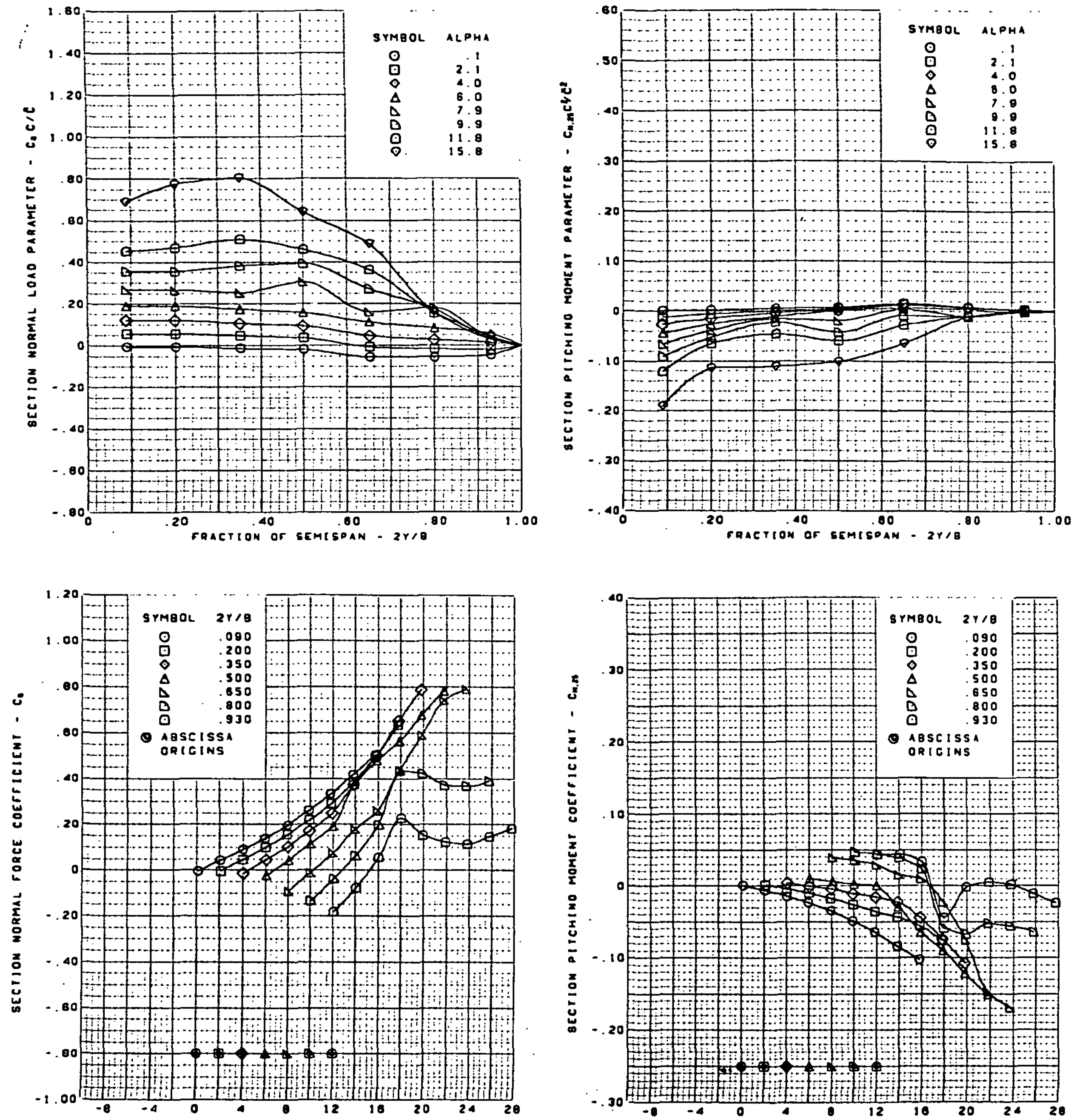




M = 0.85 (run 195)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -8.3°

(c) (Concluded)

Figure 53.–(Continued)



M = 0.85 (run 195)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -8.3°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 53.–(Concluded)

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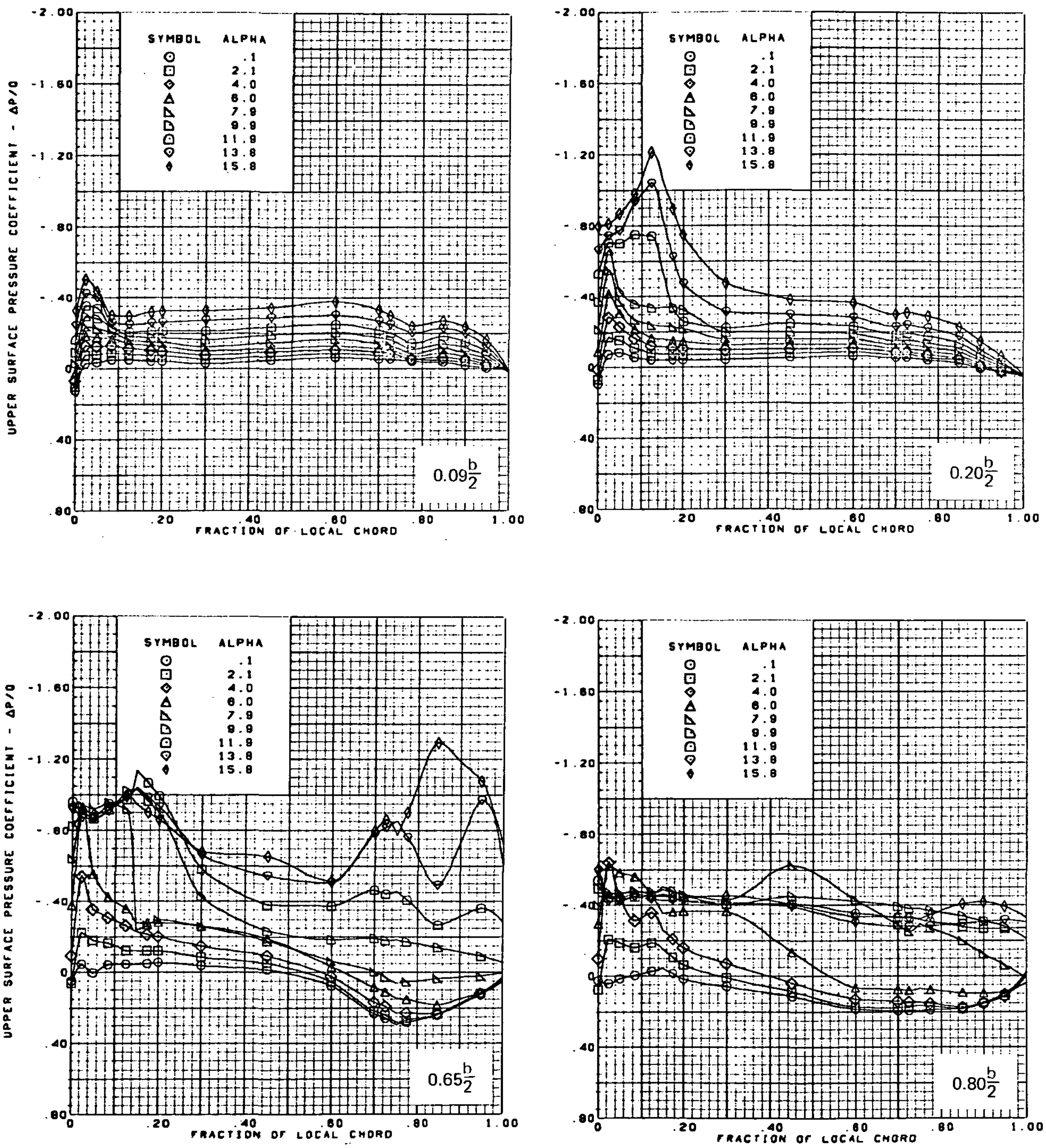
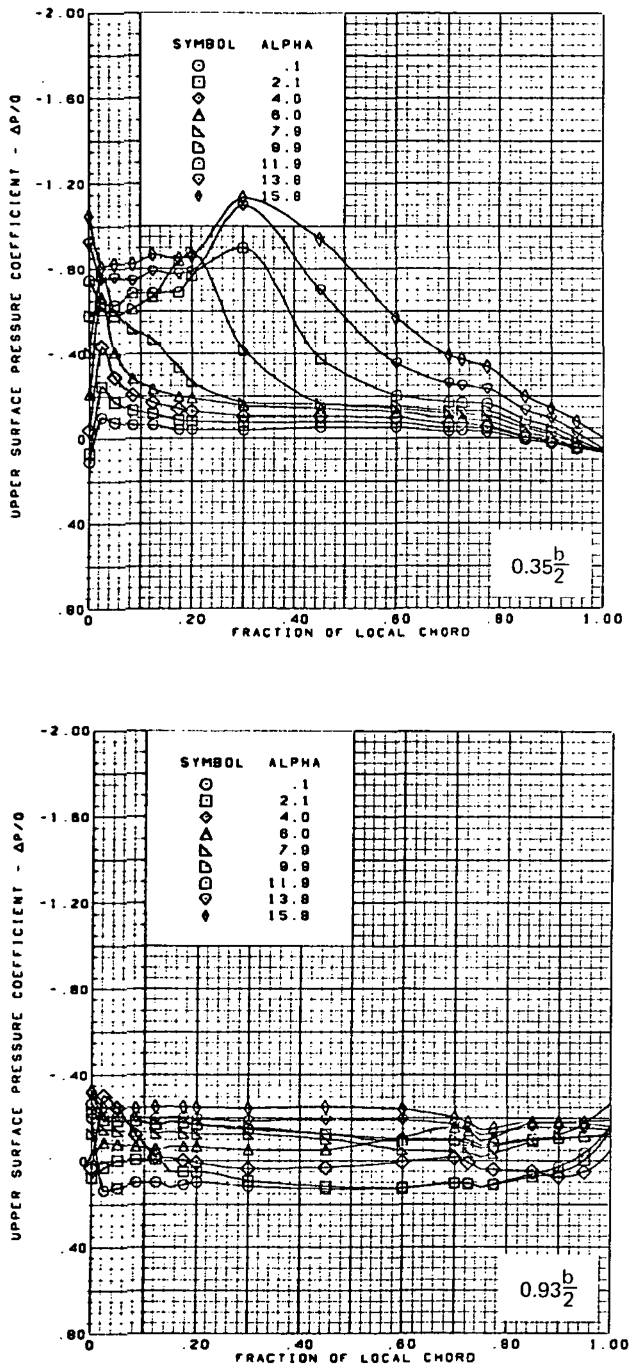


(a) Upper Surface Chordwise Pressure Distributions

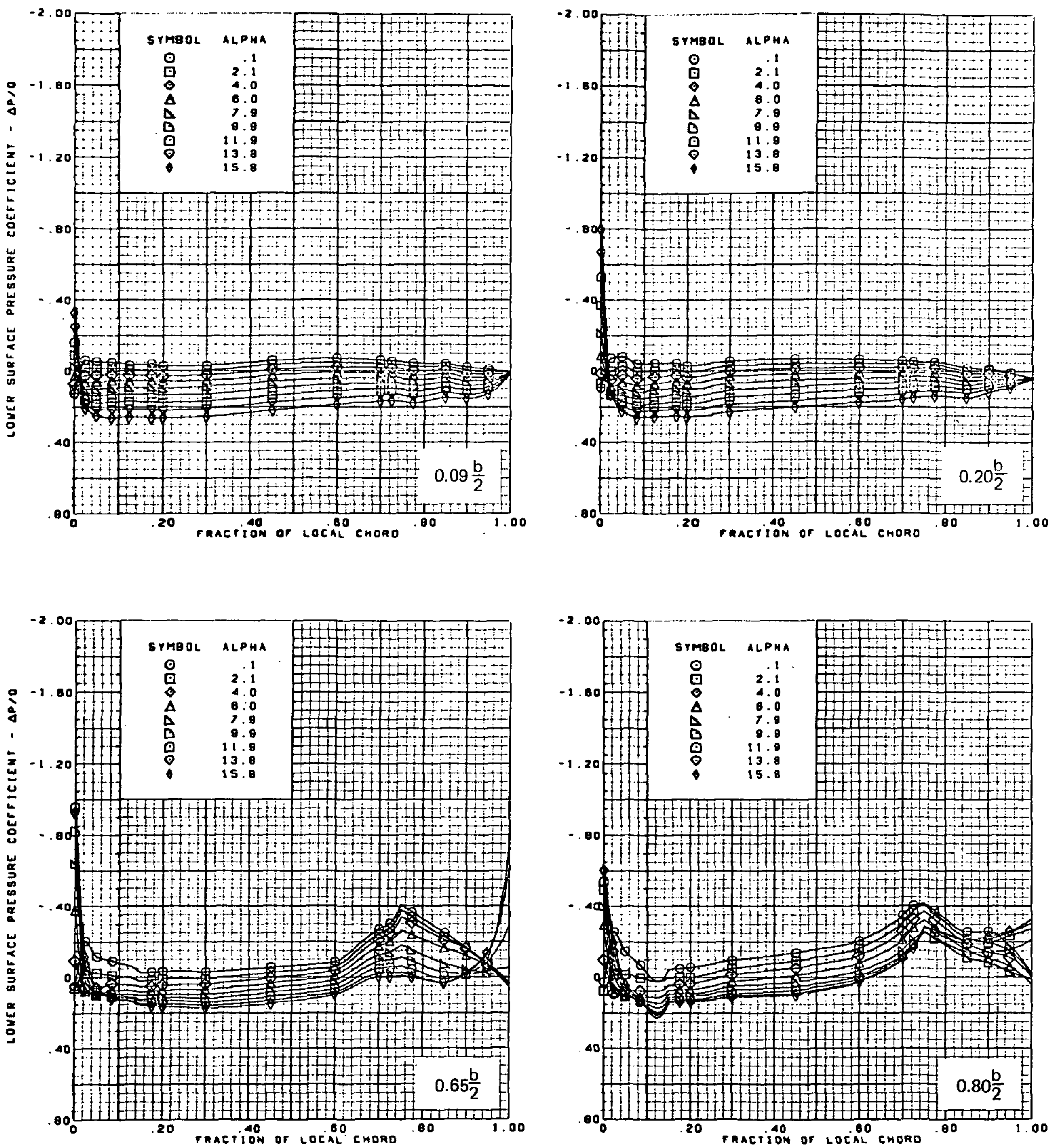
Figure 54.—Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = 0.0°, Outboard = -17.7°; M = 0.85



M = 0.85 (run 201)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -17.7°

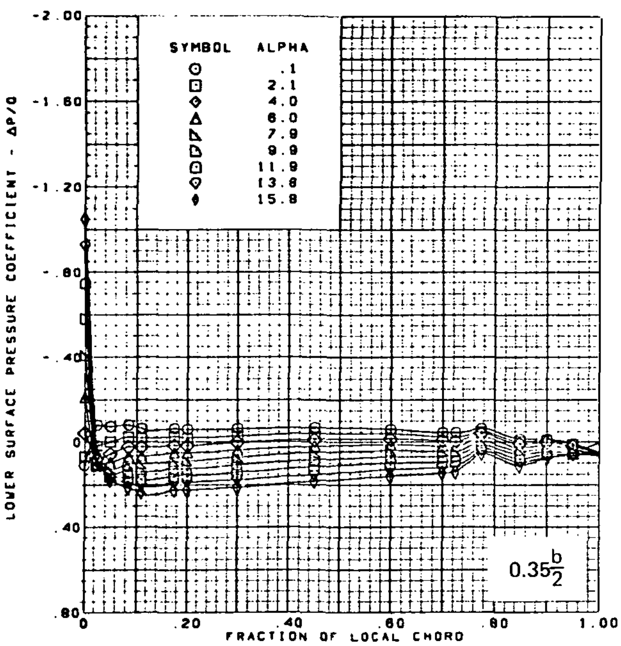
(a) (Concluded)

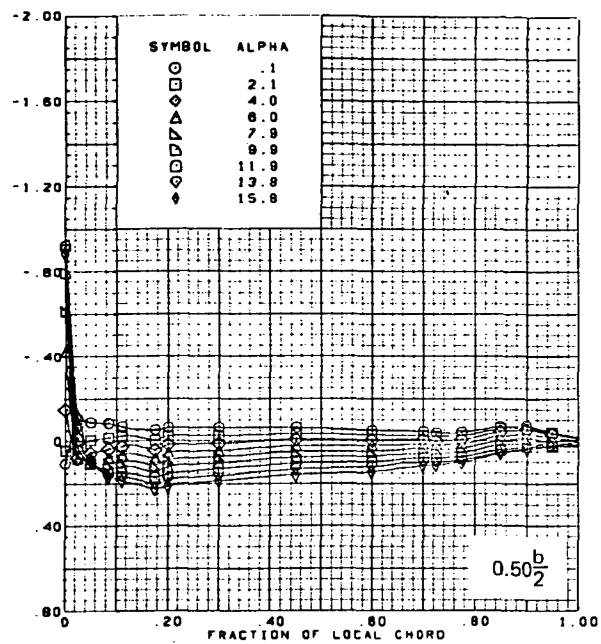
Figure 54.–(Continued)

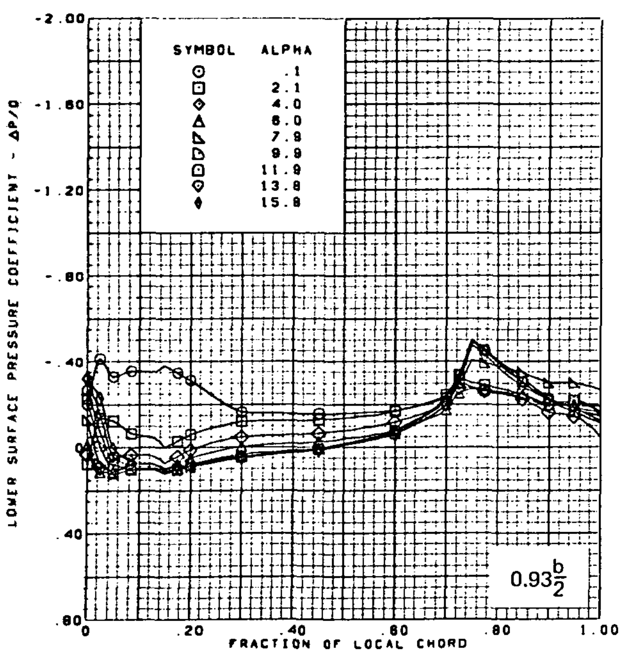


(b) Lower Surface Chordwise Pressure Distributions

Figure 54.–(Continued)



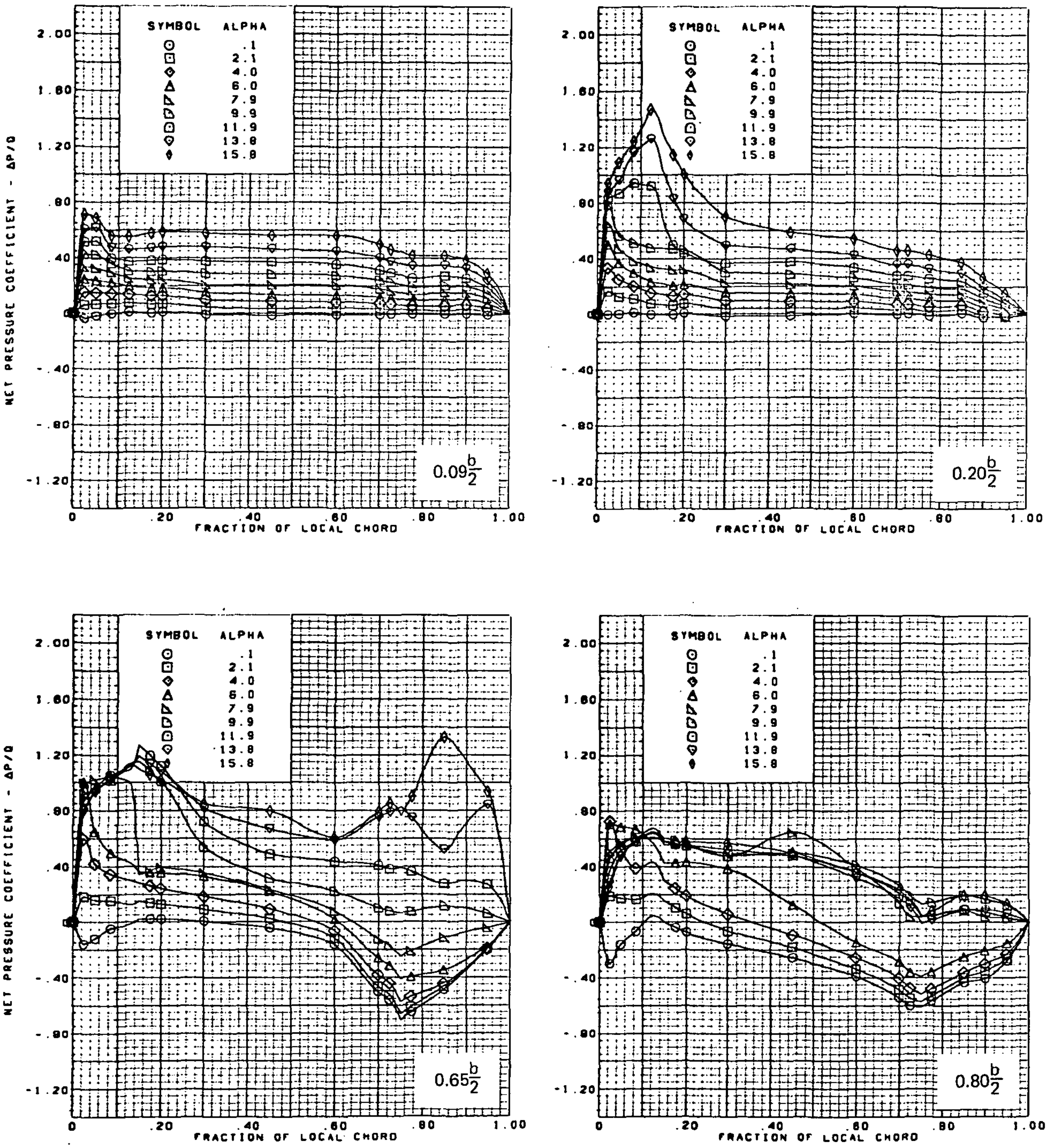




M = 0.85 (run 201)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -17.7°

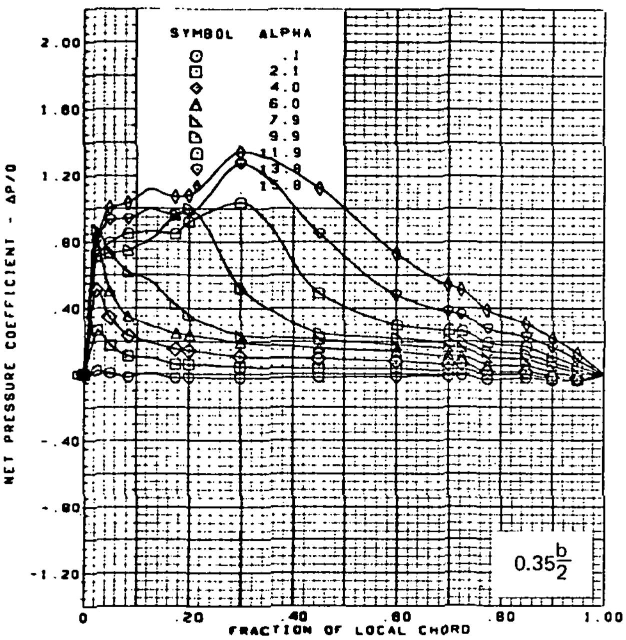
(b) (Concluded)

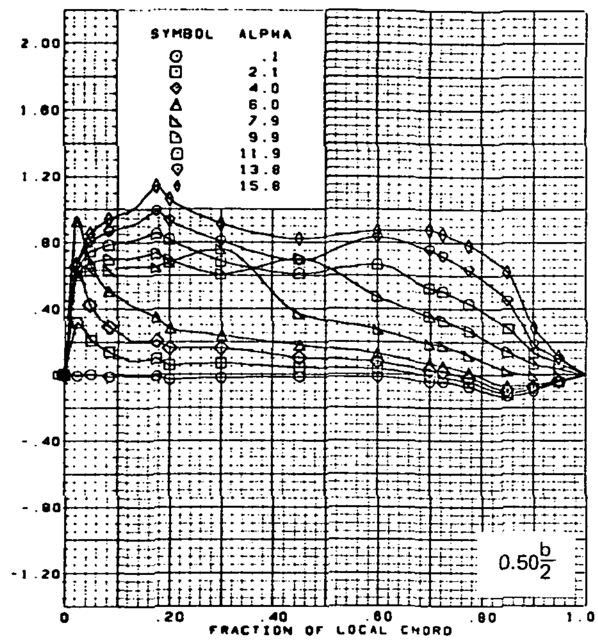
Figure 54.–(Continued)

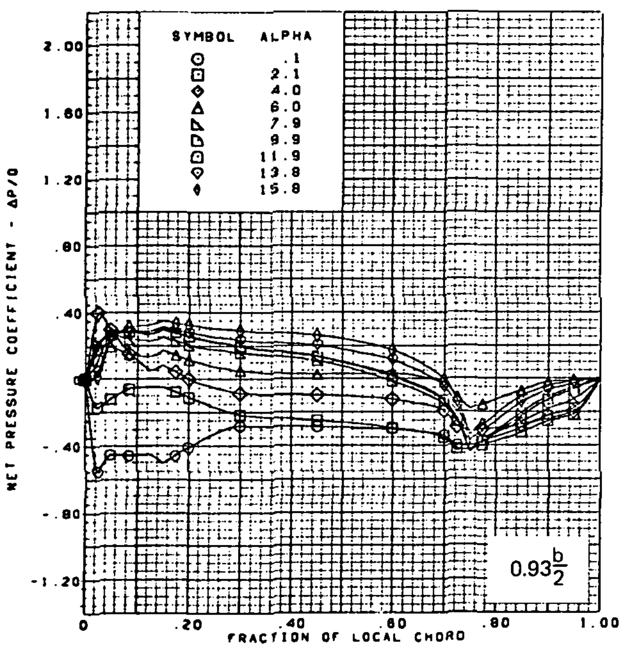


(c) Net Chordwise Pressure Distributions

Figure 54.–(Continued)



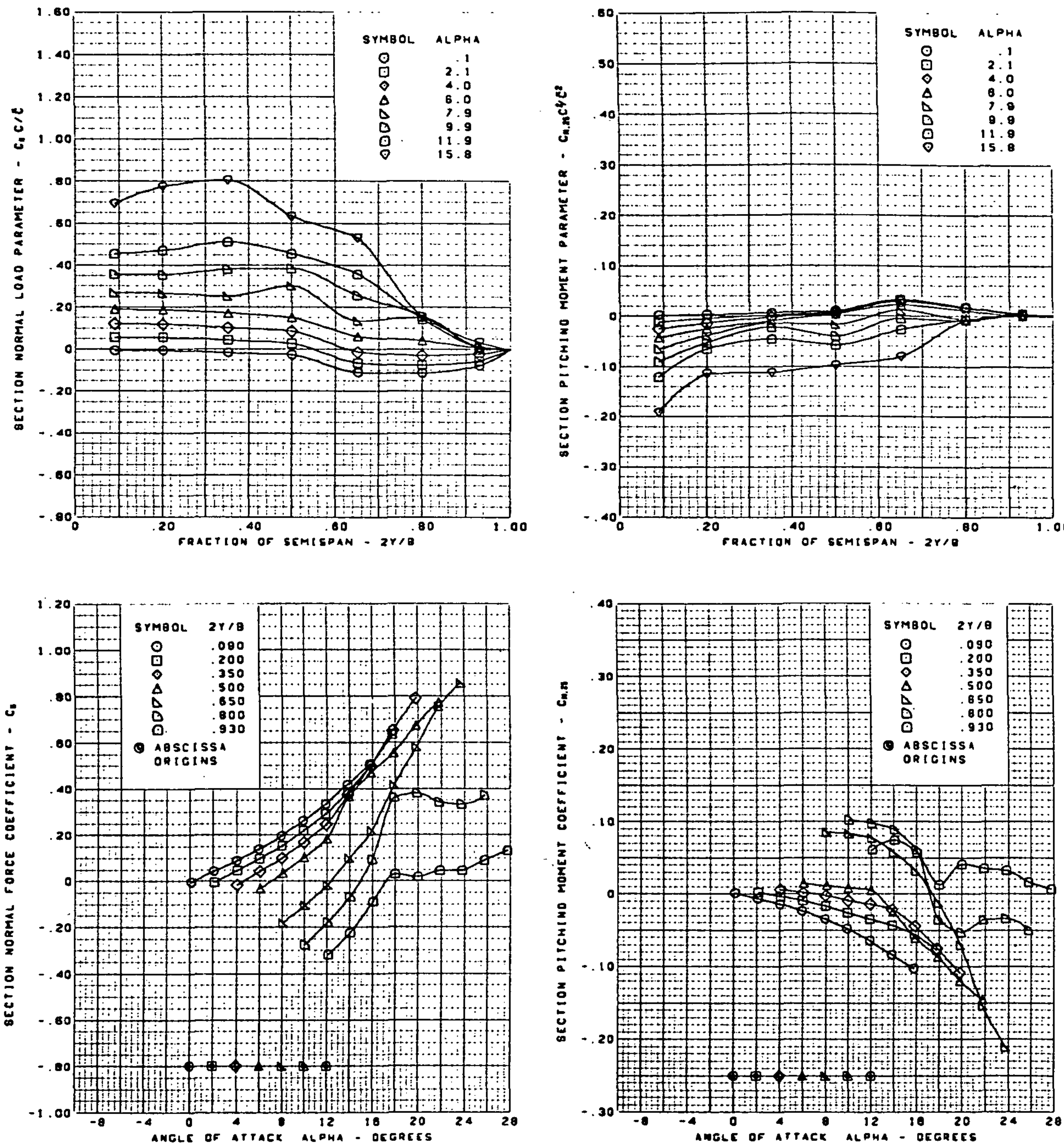




M = 0.85 (run 201)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -17.7°

(c) (Concluded)

Figure 54.–(Continued)



M = 0.85 (run 201)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 0.0°, outboard = -17.7°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 54.–(Concluded)

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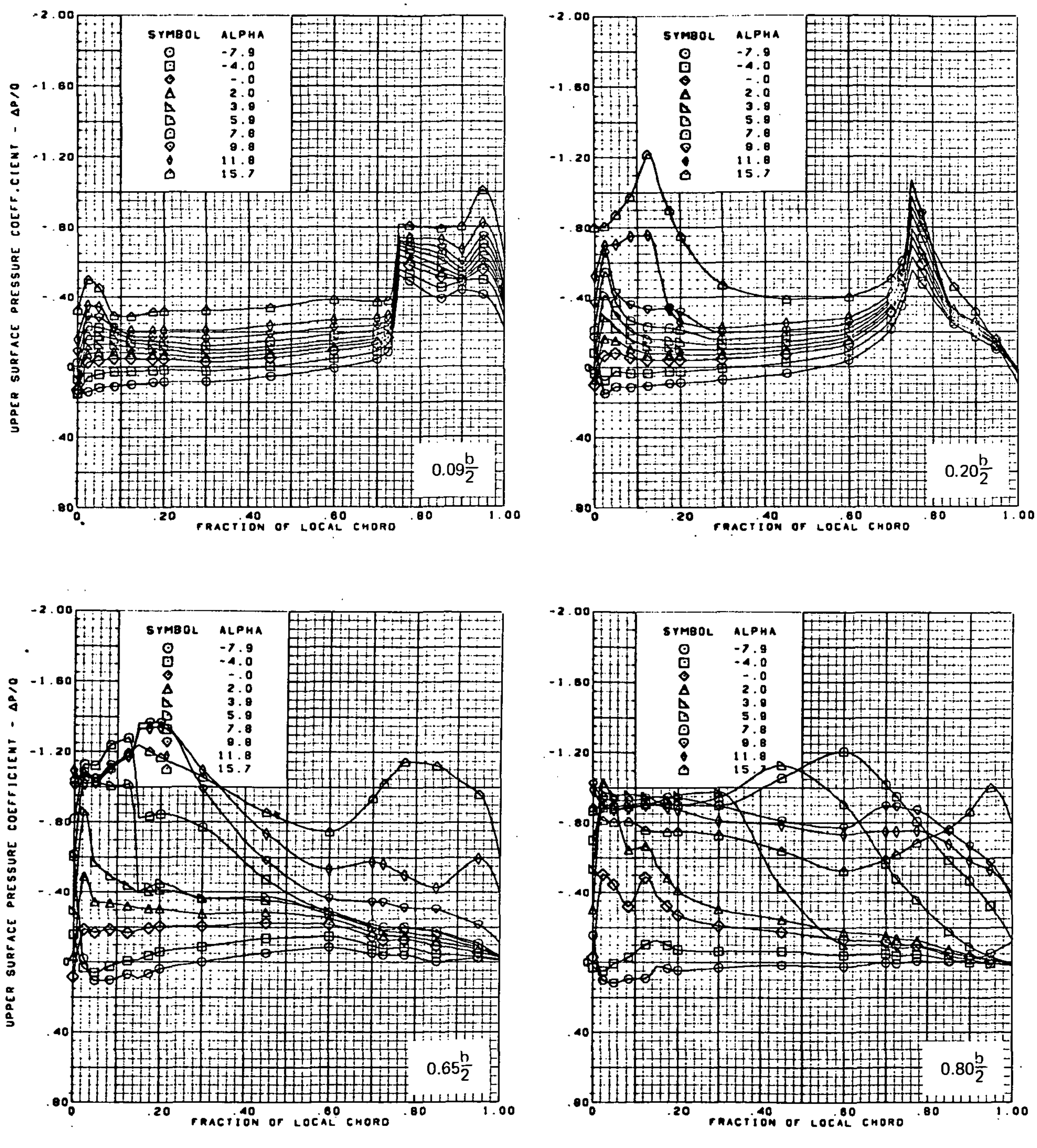
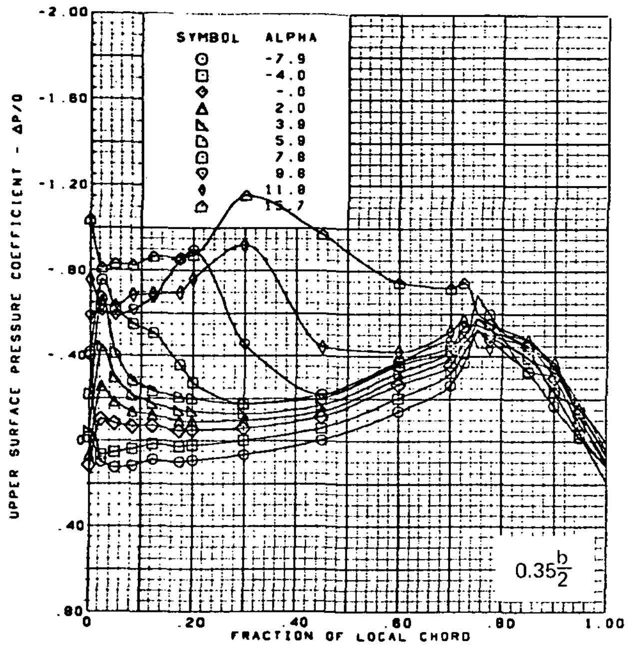
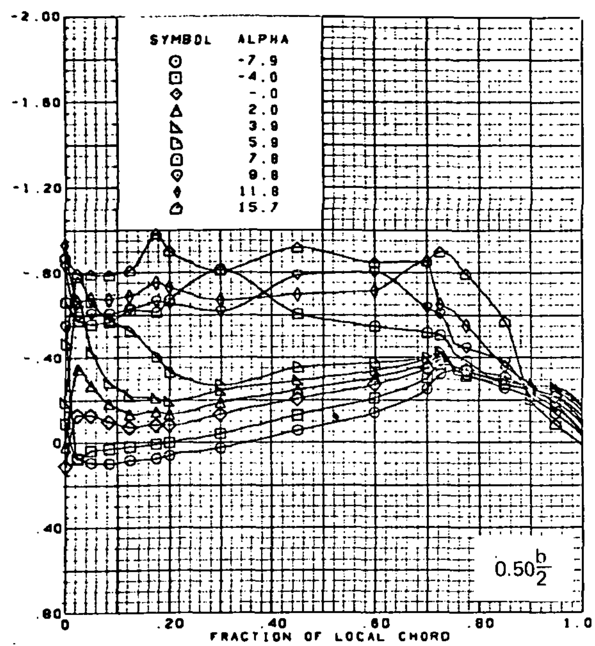
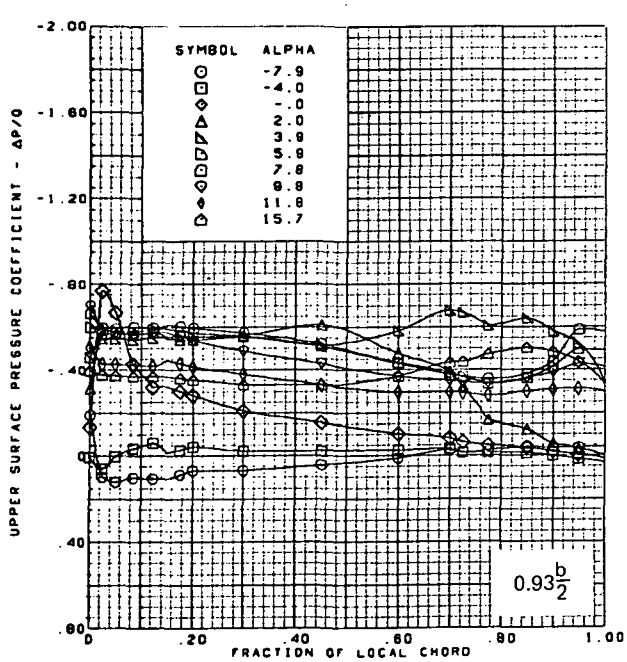


(a) Upper Surface Chordwise Pressure Distributions

Figure 55.–Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°; M = 0.85



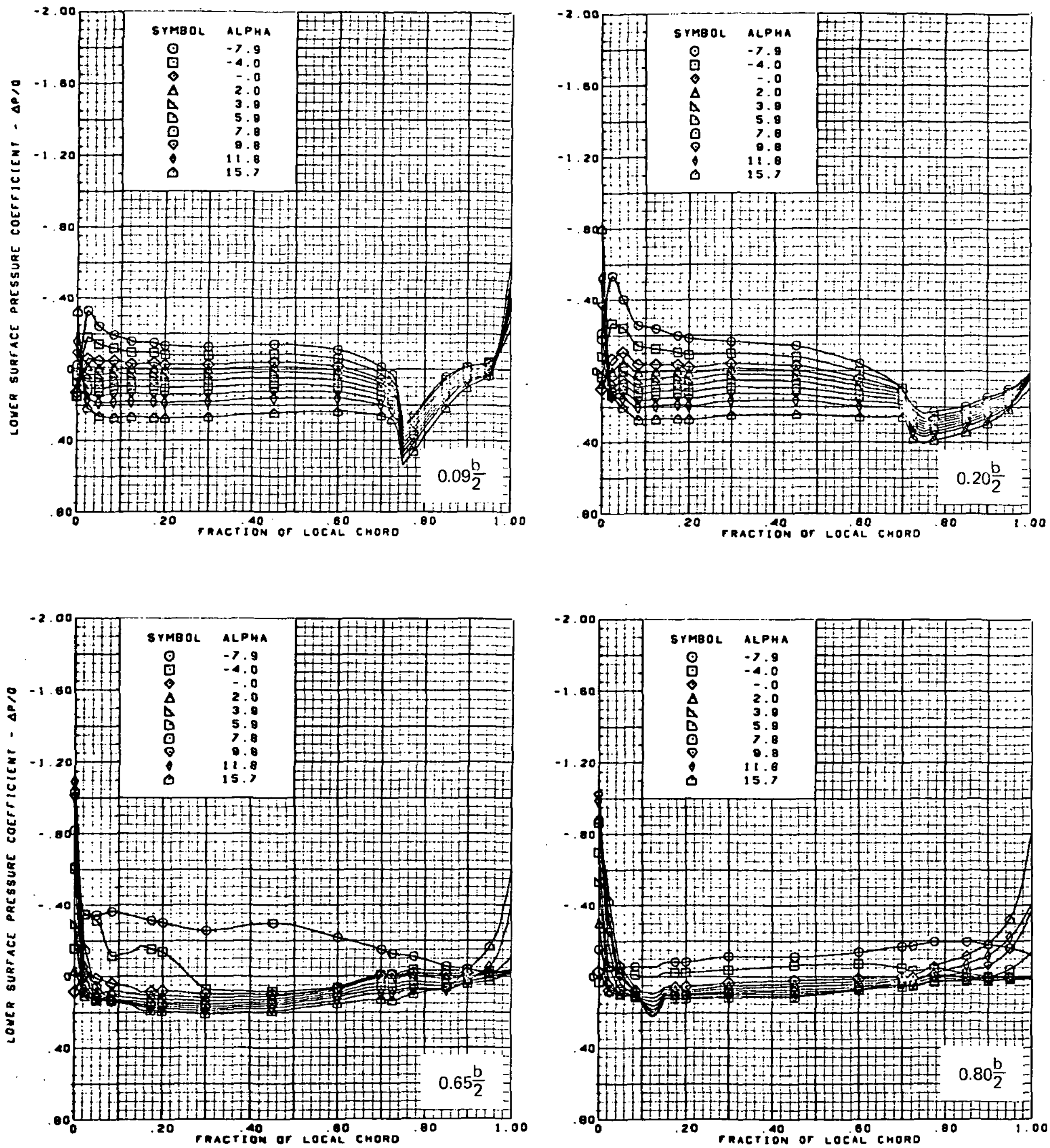




M = 0.85 (run 245)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 17.7°, outboard = 0.0°

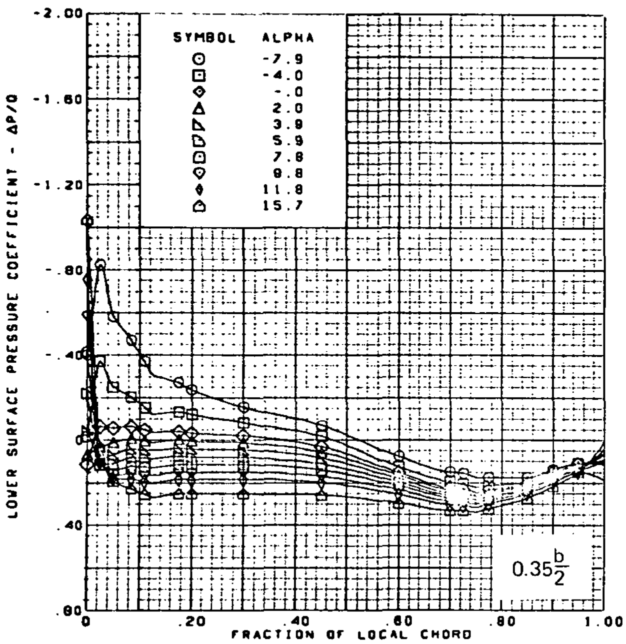
(a) (Concluded)

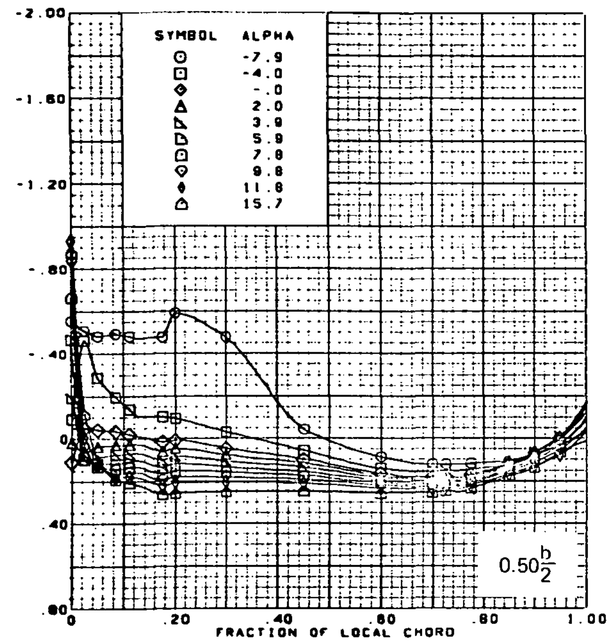
Figure 55.–(Continued)

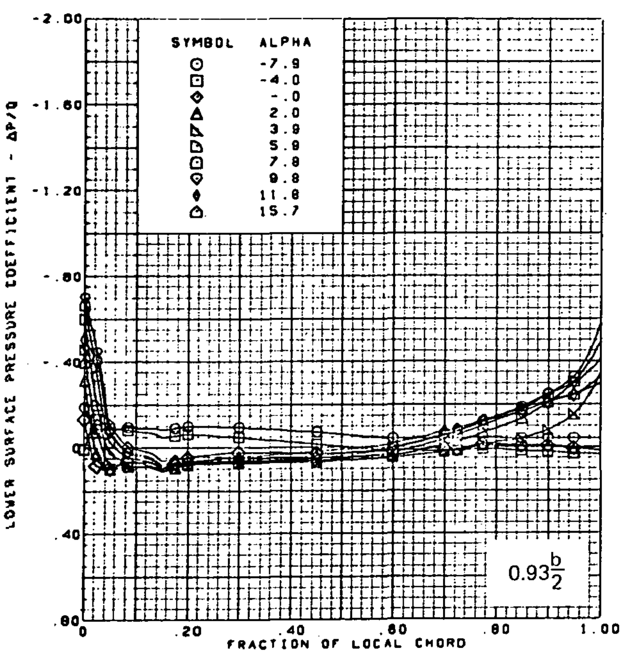


(b) Lower Surface Chordwise Pressure Distributions

Figure 55.–(Continued)



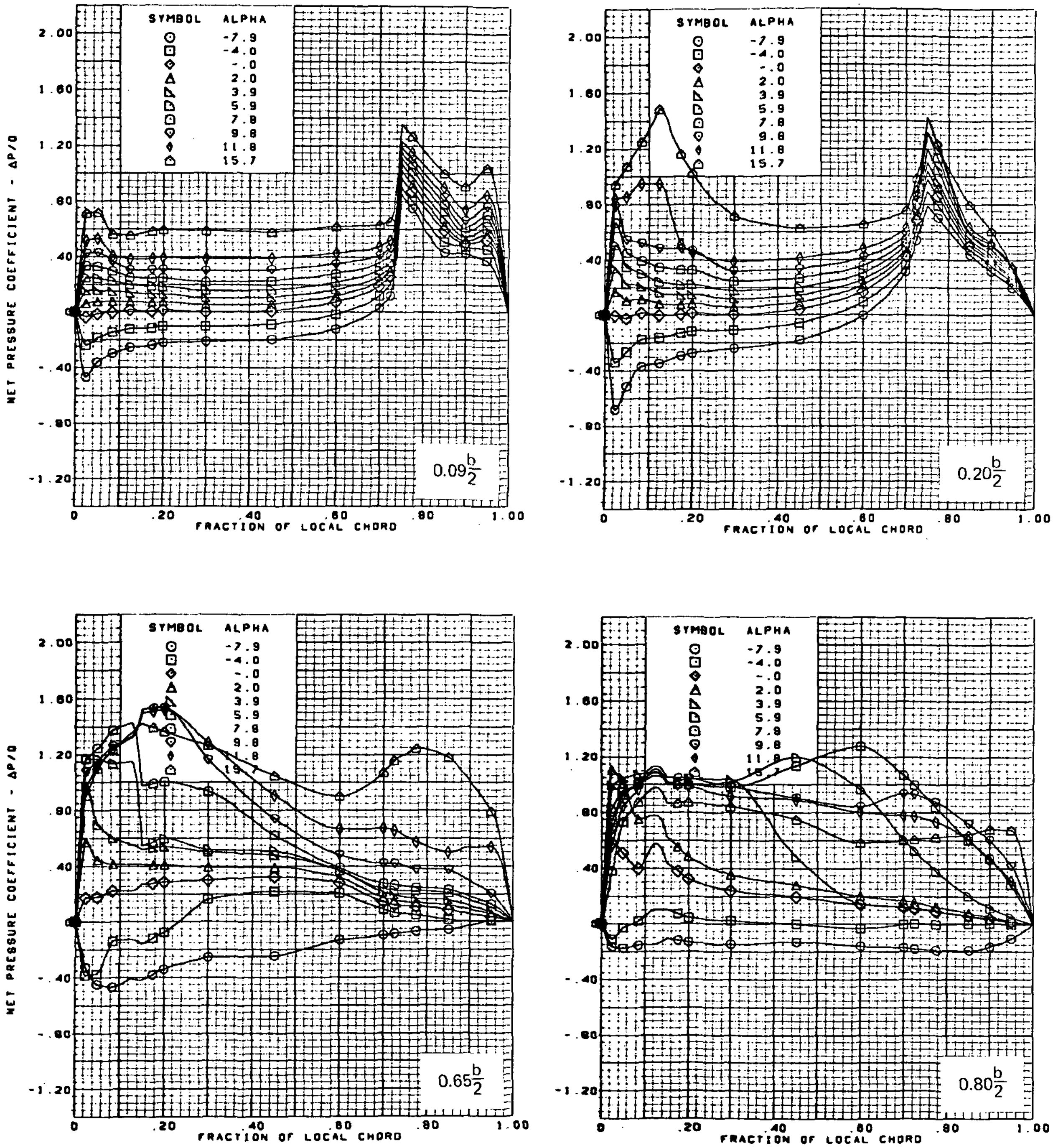




M = 0.85 (run 245)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 17.7°, outboard = 0.0°

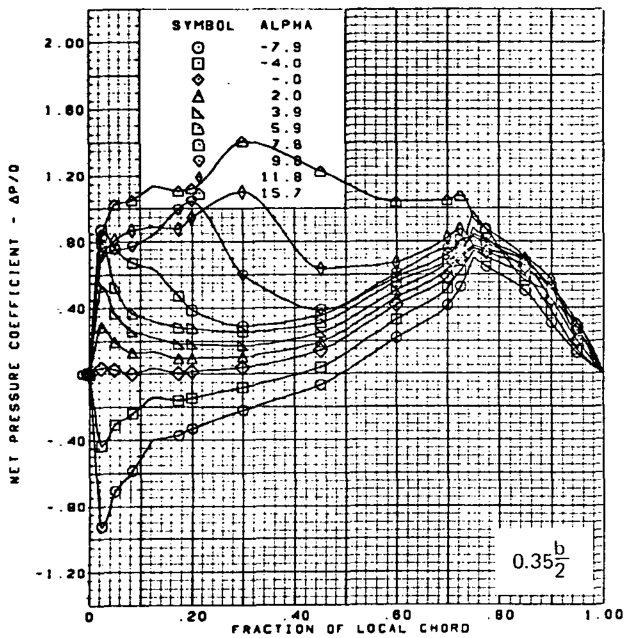
(b) (Concluded)

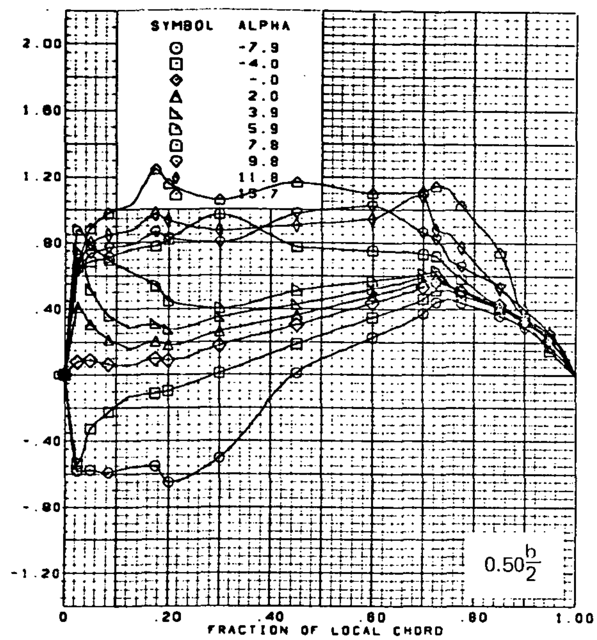
Figure 55.–(Continued)

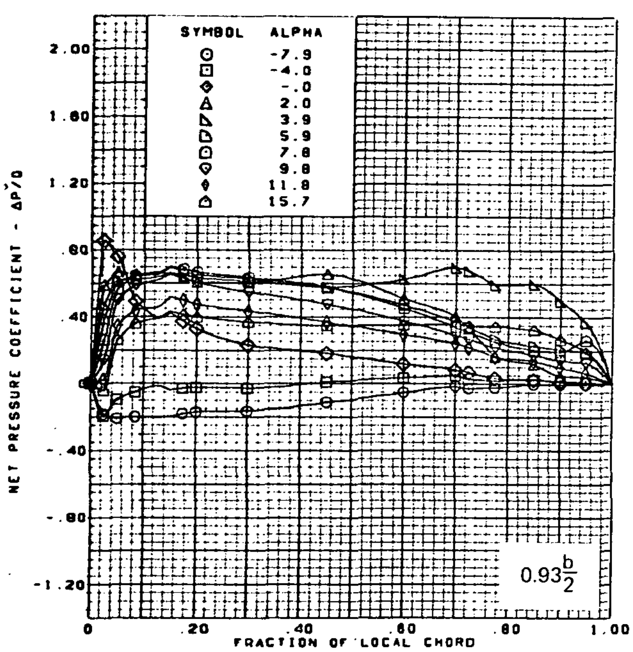


(c) Net Chordwise Pressure Distributions

Figure 55.–(Continued)



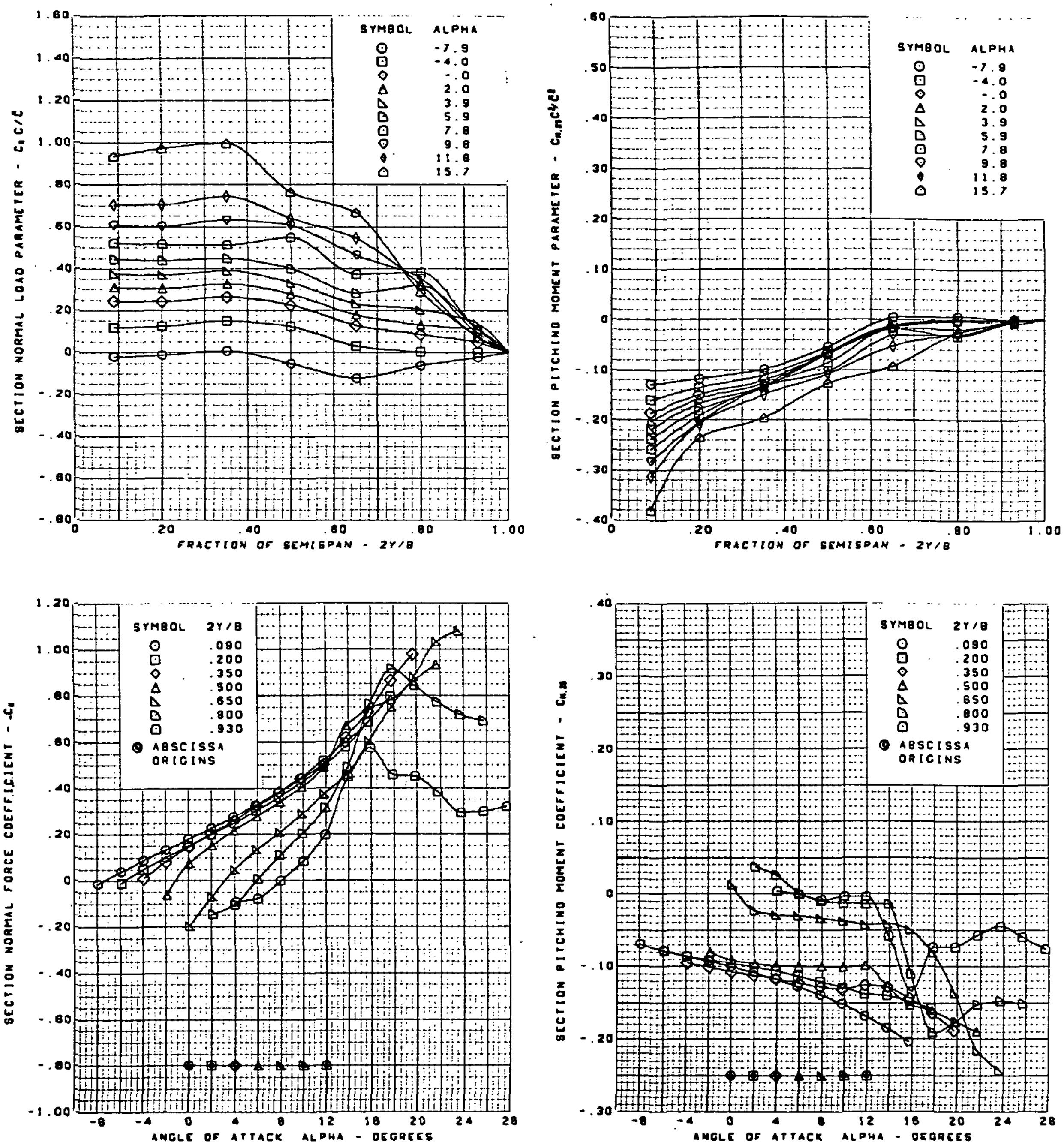




M = 0.85 (run 245)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 17.7°, outboard = 0.0°

(c) (Concluded)

Figure 55.–(Continued)



M = 0.85 (run 245)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 17.7°, outboard = 0.0°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 55.–(Concluded)

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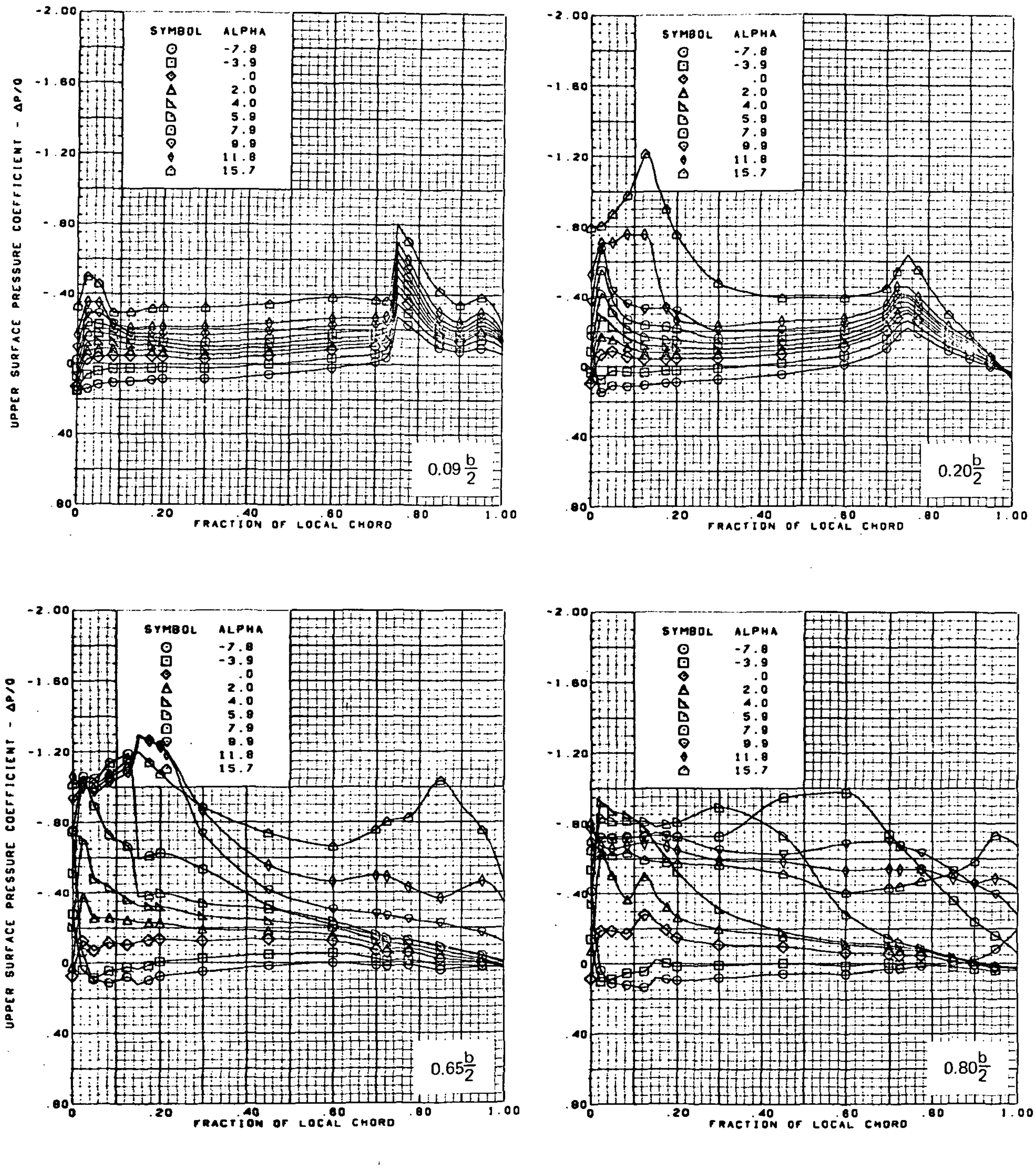
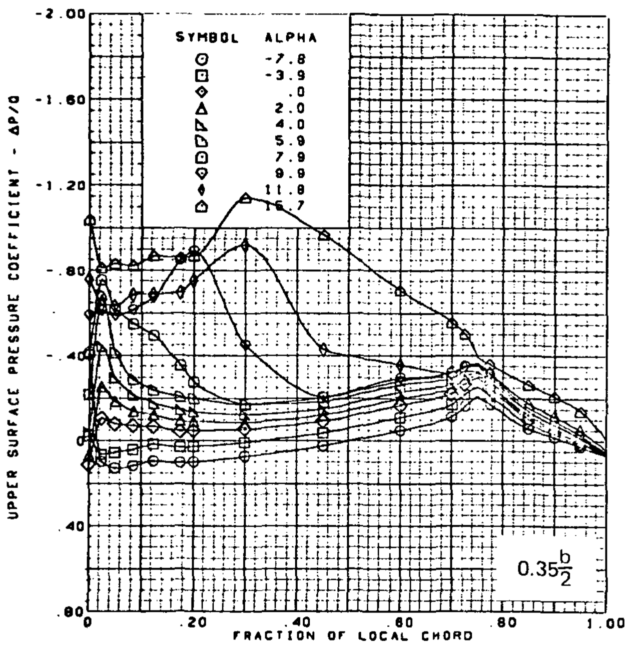
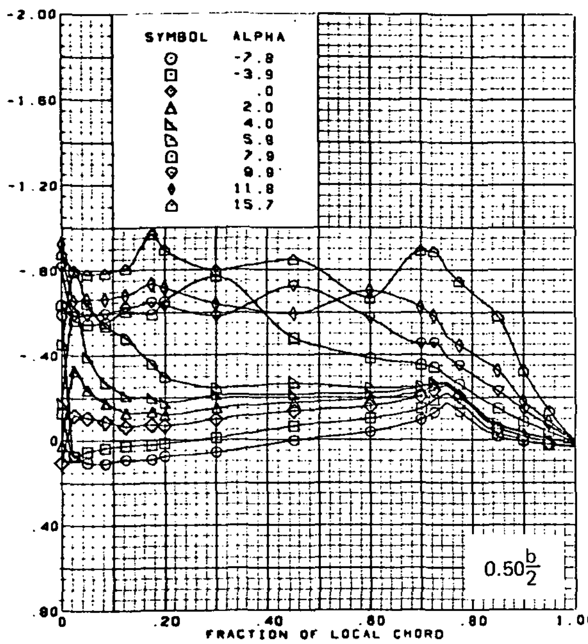
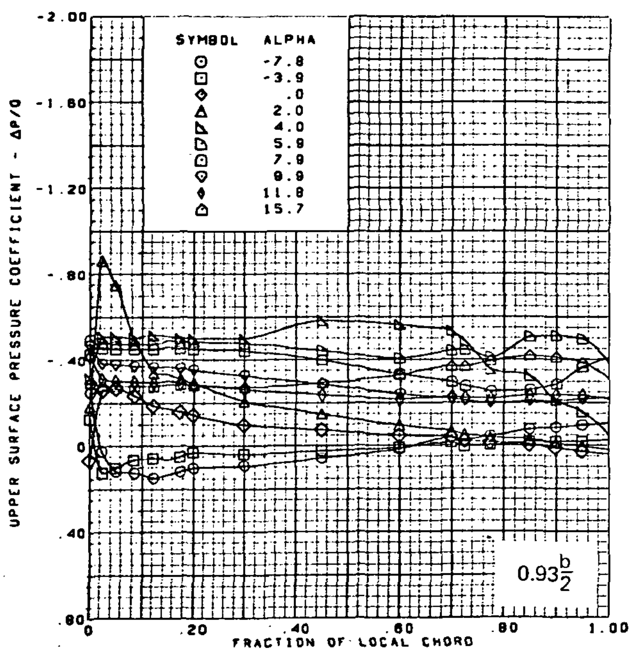


(a) Upper Surface Chordwise Pressure Distributions

Figure 56.–Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = 8.3°, Outboard = 0.0°; M = 0.85



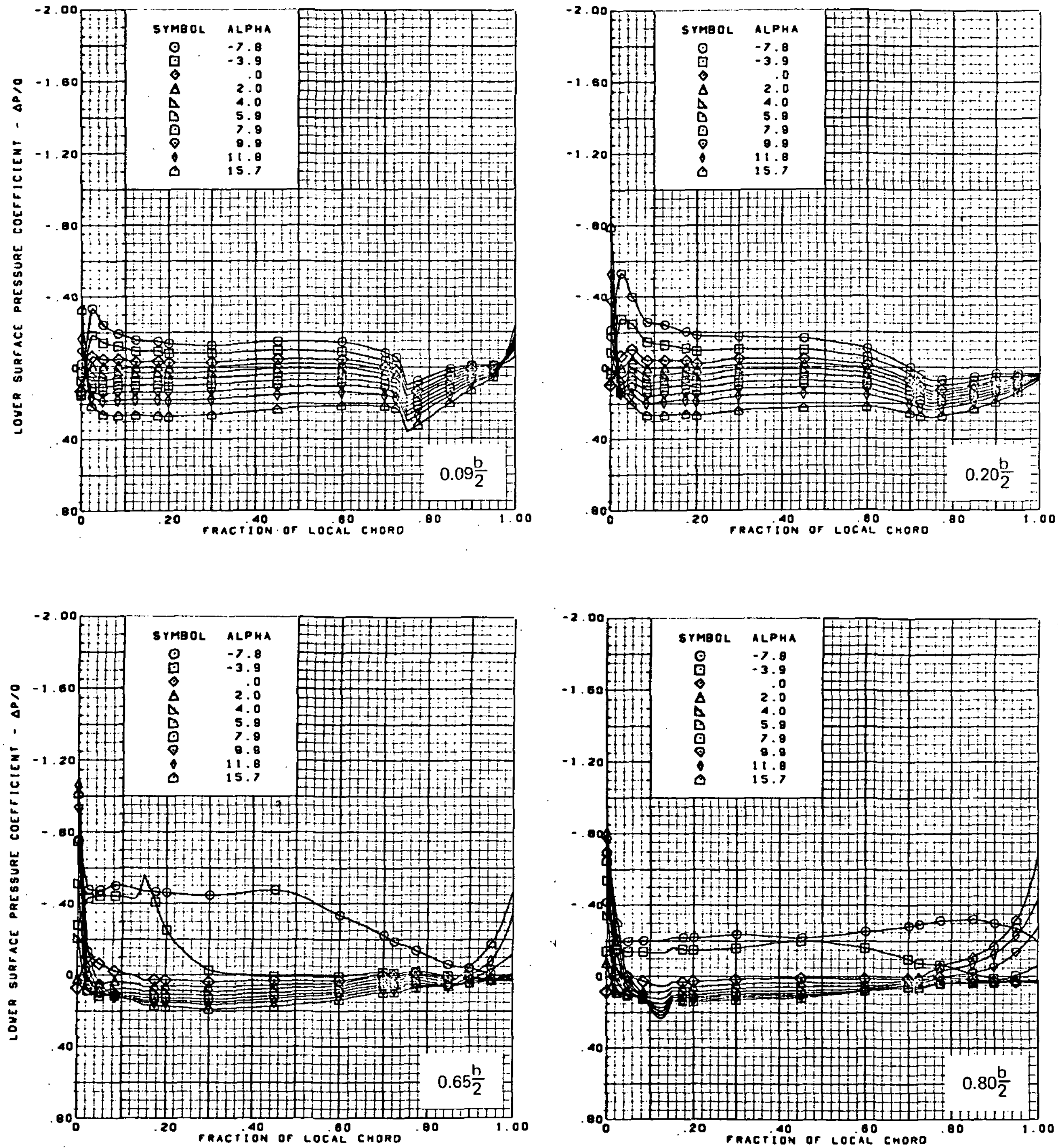




M = 0.85 (run 240)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 8.3°, outboard = 0.0°

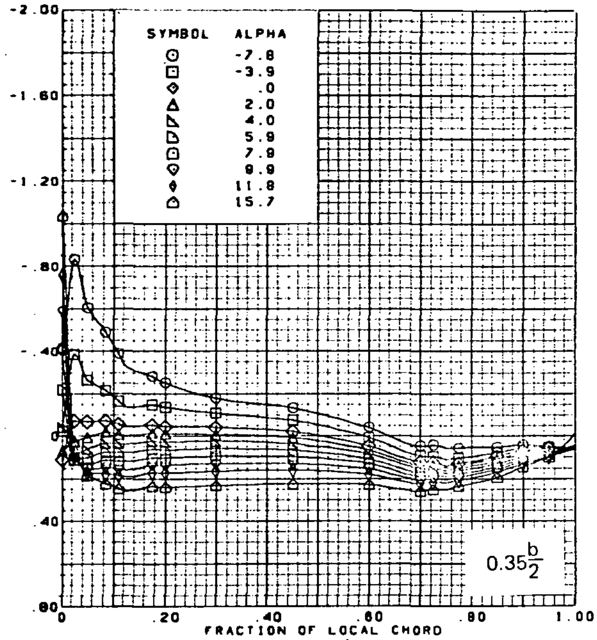
(a) (Concluded)

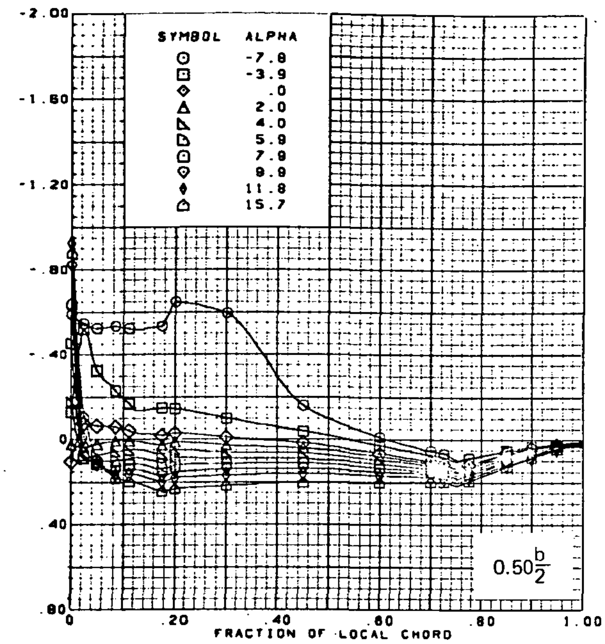
Figure 56.–(Continued)

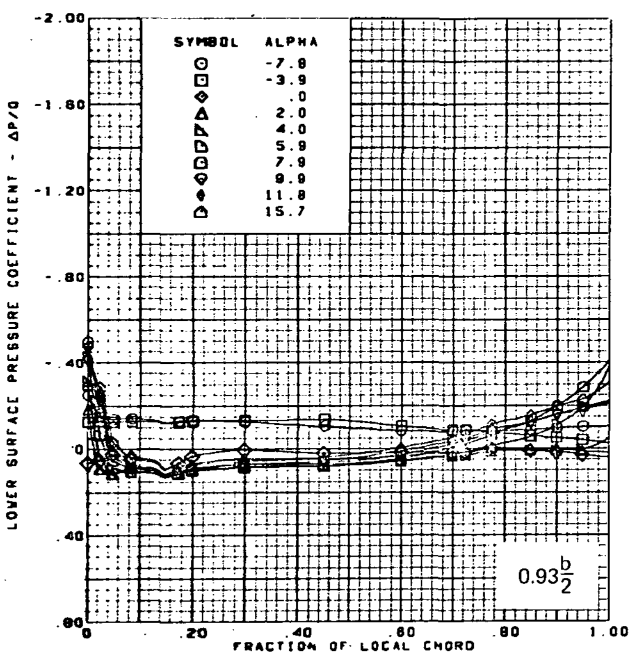


(b) Lower Surface Chordwise Pressure Distributions

Figure 56.–(Continued)



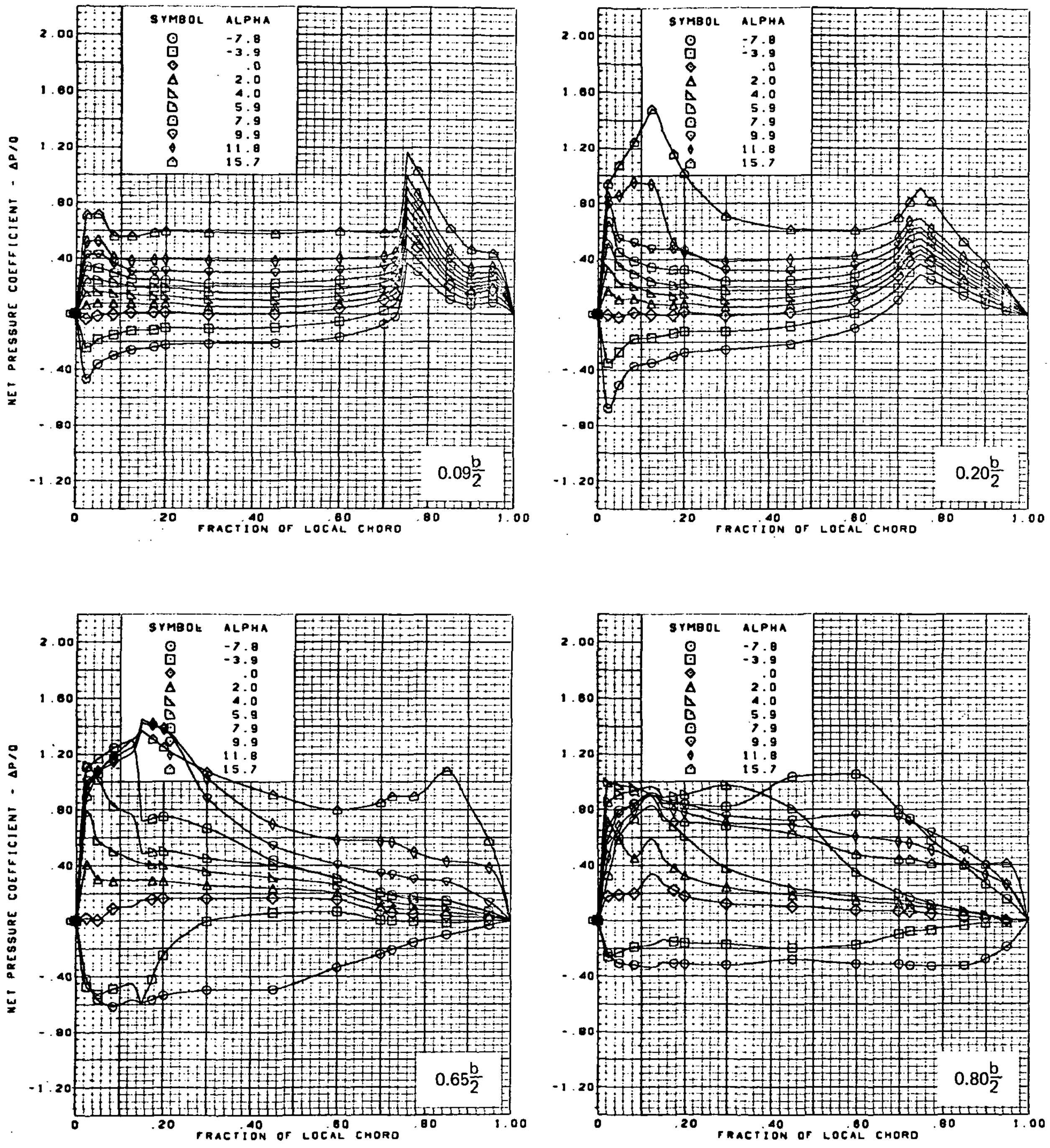




M = 0.85 (run 240)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 8.3°, outboard = 0.0°

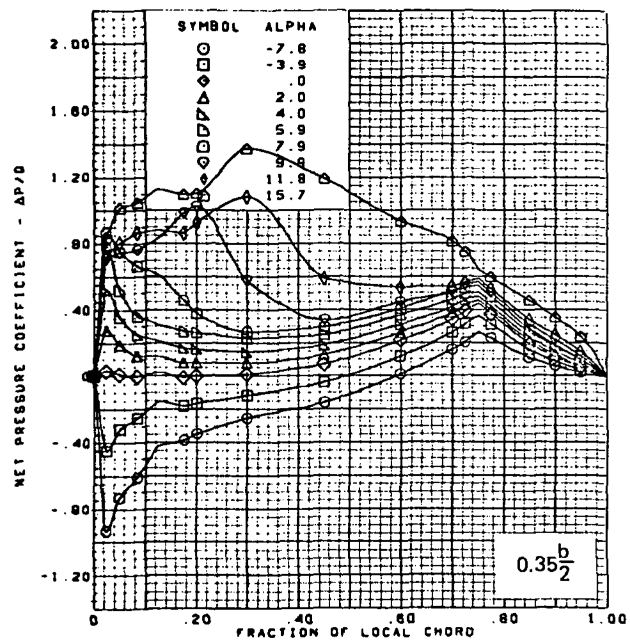
(b) (Concluded)

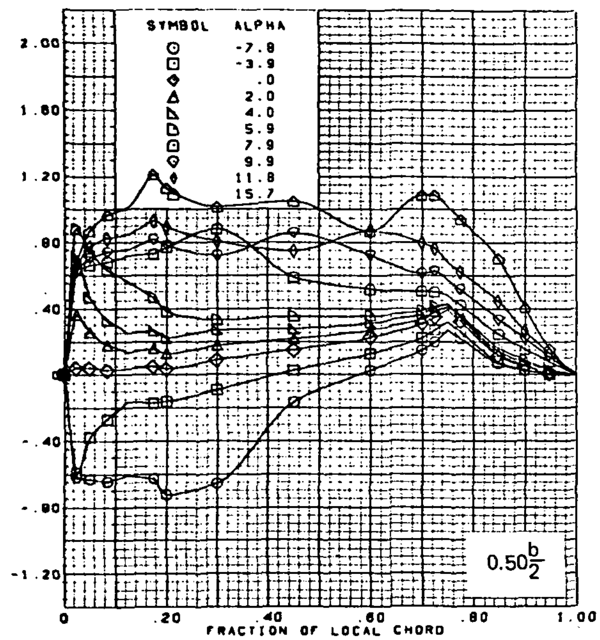
Figure 56.–(Continued)

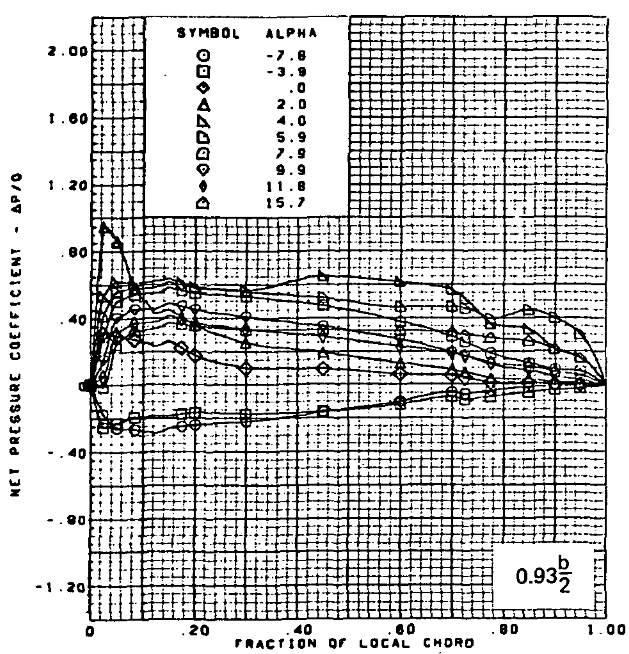


(c) Net Chordwise Pressure Distributions

Figure 56.–(Continued)



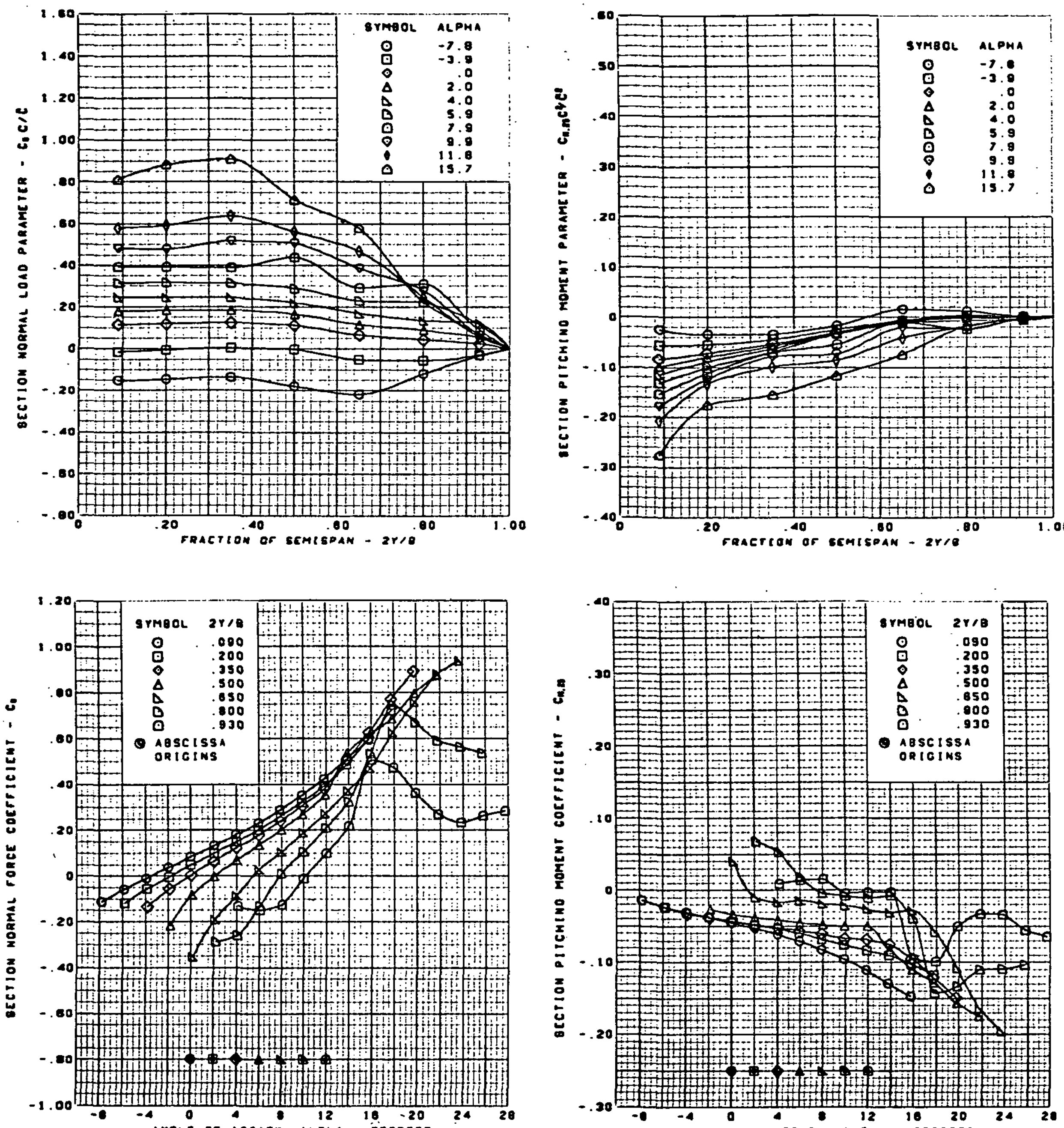




M = 0.85 (run 240)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 8.3°, outboard = 0.0°

(c) (Concluded)

Figure 56.–(Continued)



M = 0.85 (run 240)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = 8.3°, outboard = 0.0°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 56.–(Concluded)

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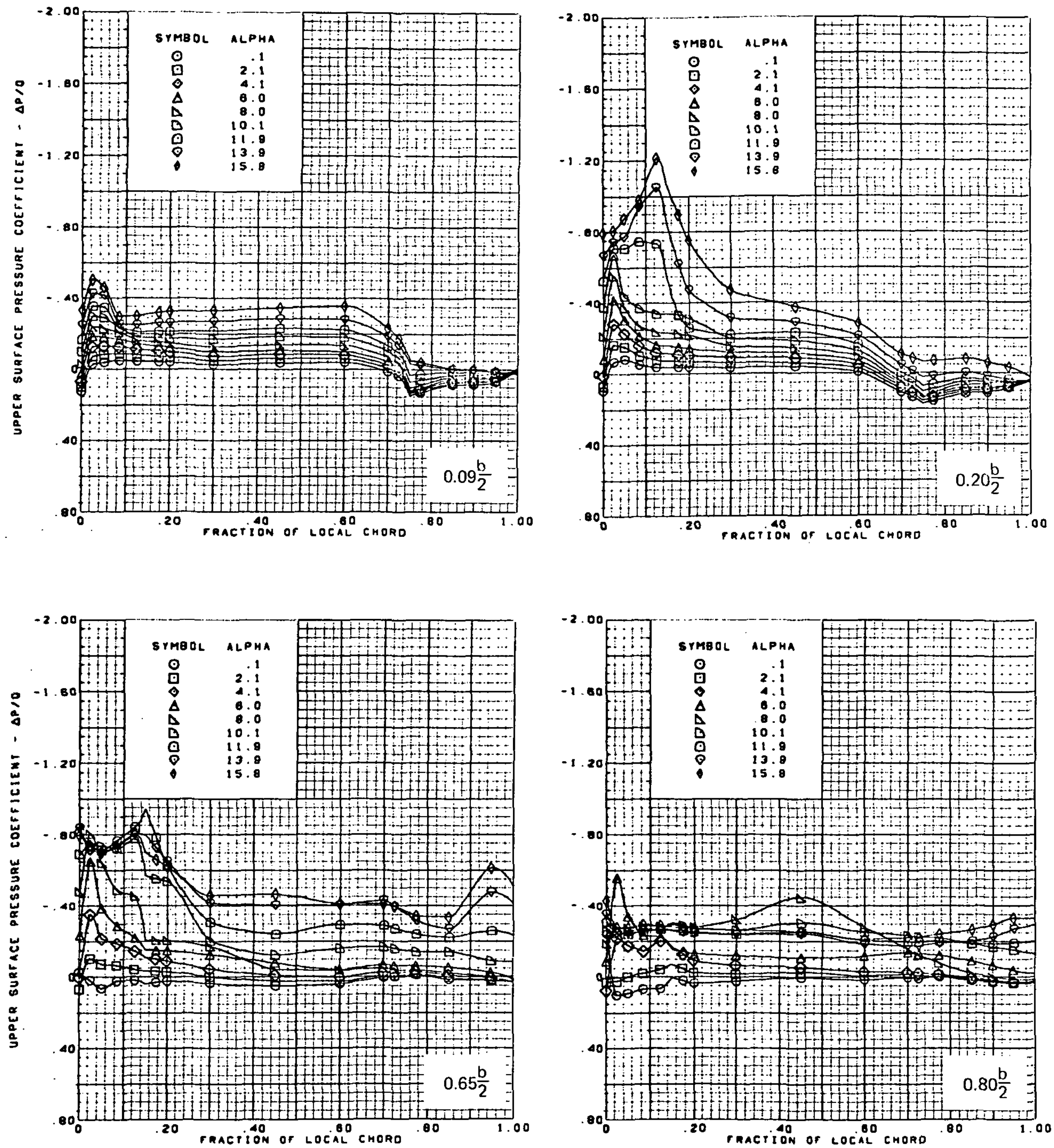
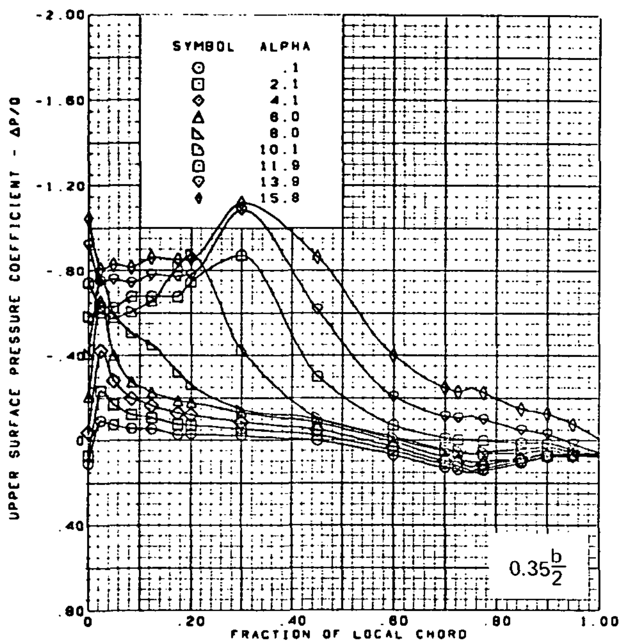
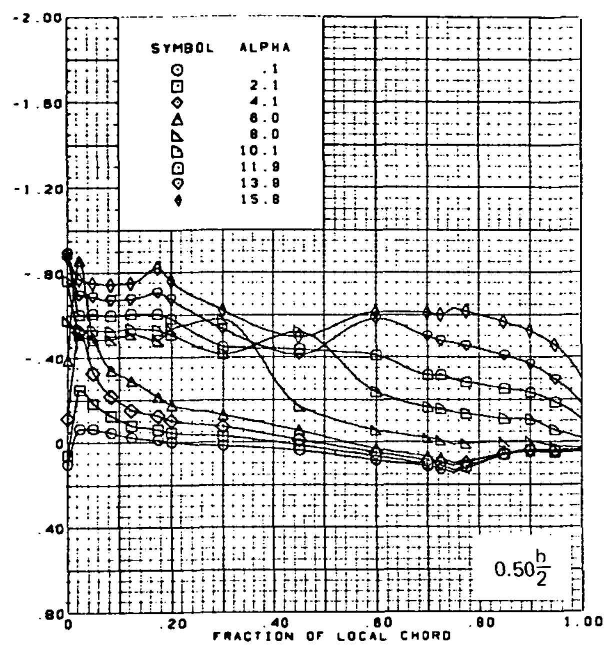
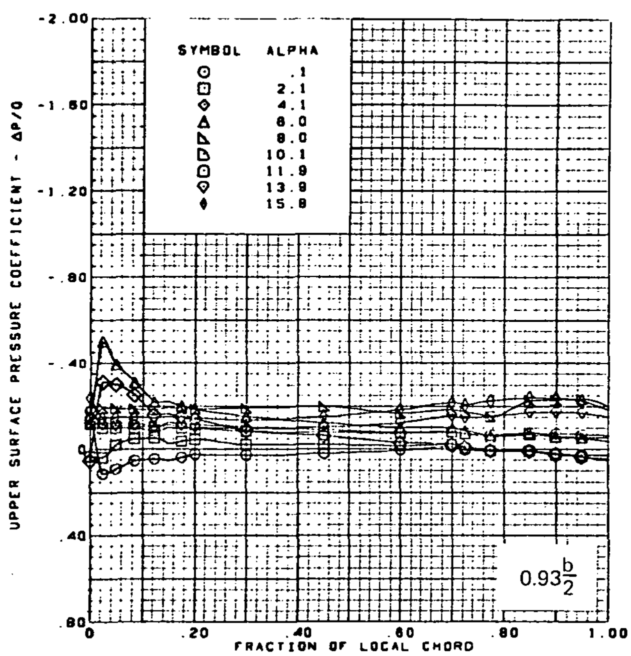


(a) Upper Surface Chordwise Pressure Distributions

Figure 57.–Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = -8.3°, Outboard = 0.0°; M = 0.85



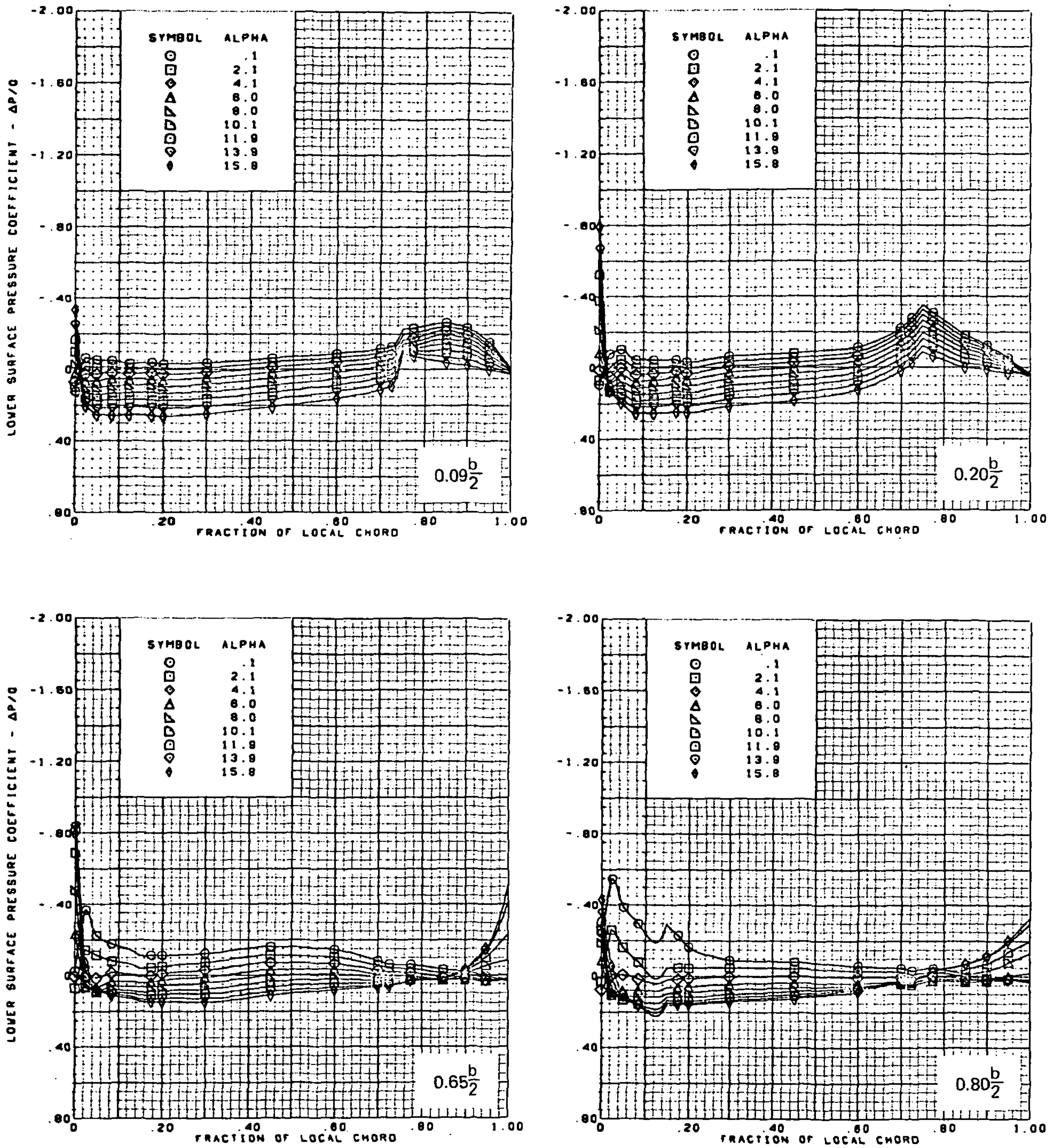




M = 0.85 (run 233)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -8.3°, outboard = 0.0°

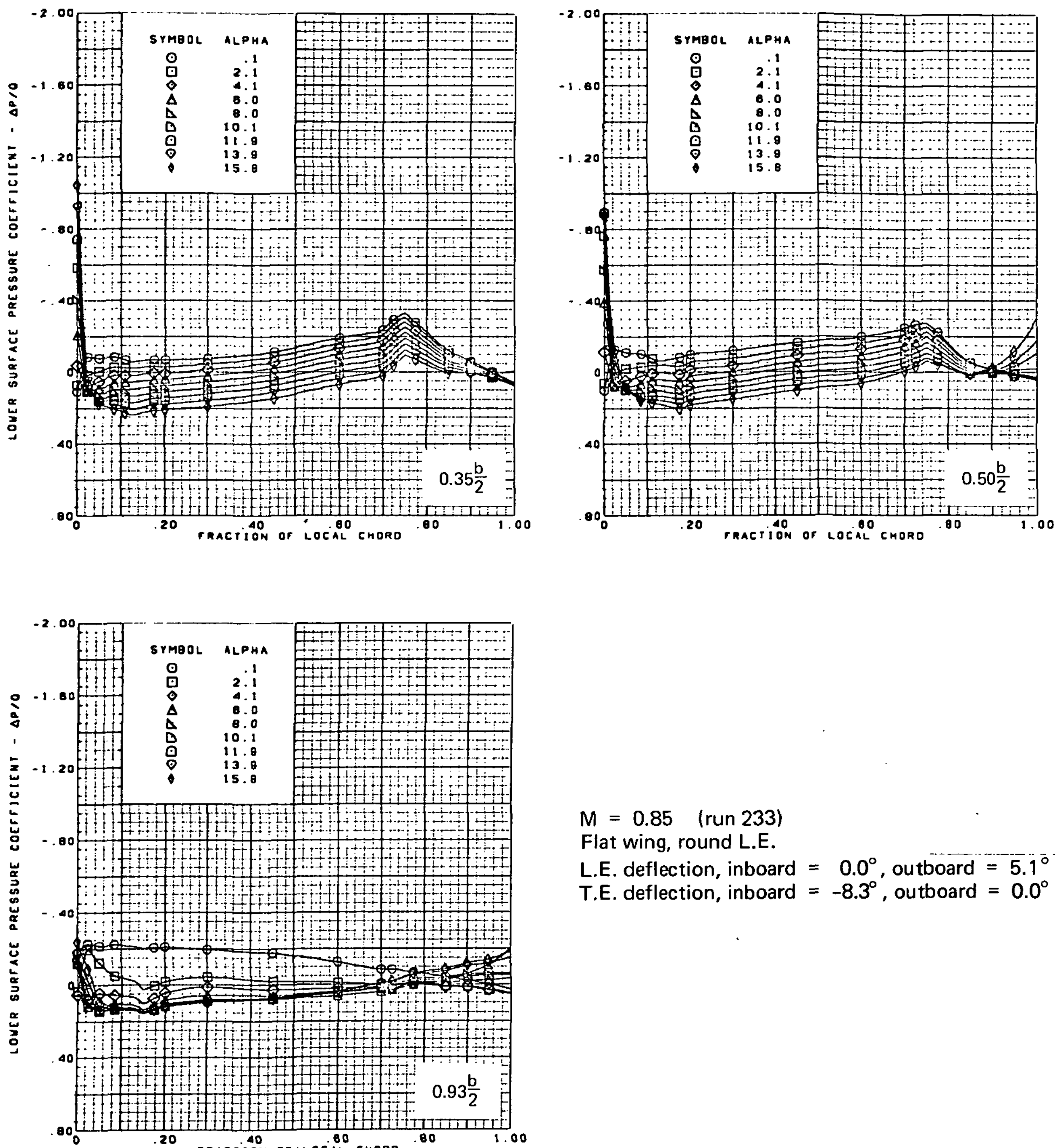
(a) (Concluded)

Figure 57.-(Continued)



(b) Lower Surface Chordwise Pressure Distributions

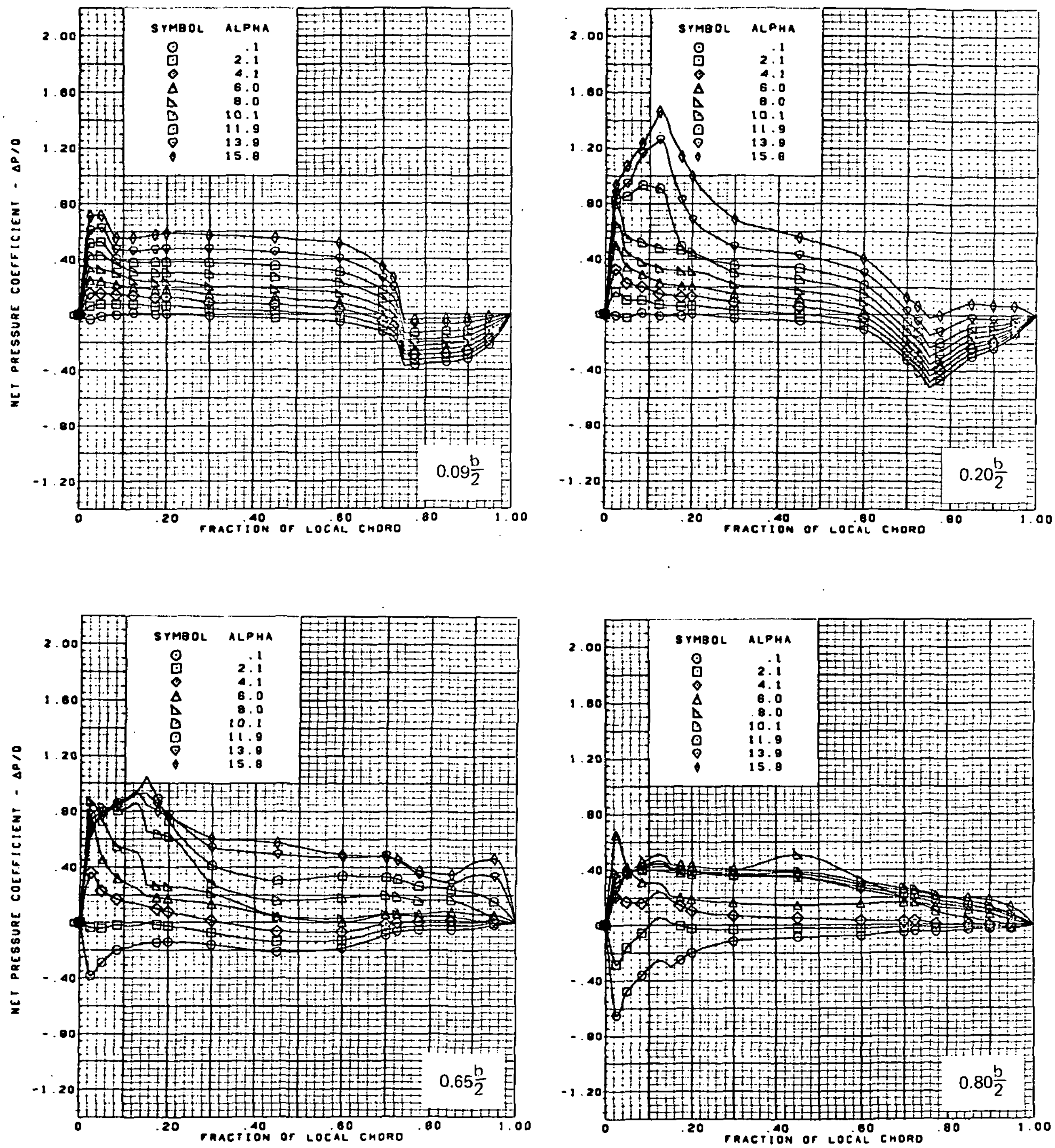
Figure 57.–(Continued)



M = 0.85 (run 233)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -8.3°, outboard = 0.0°

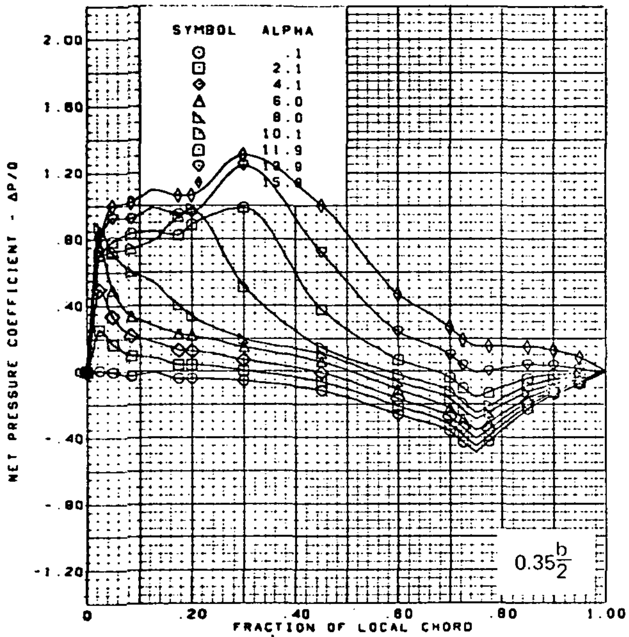
(b) (Concluded)

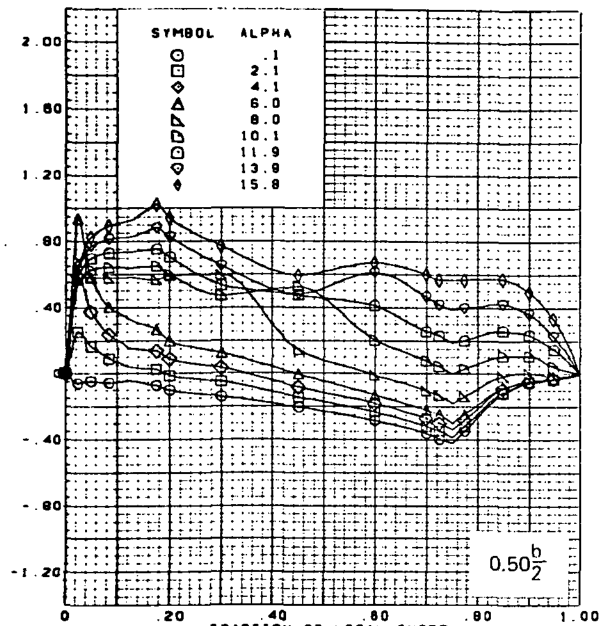
Figure 57.–(Continued)

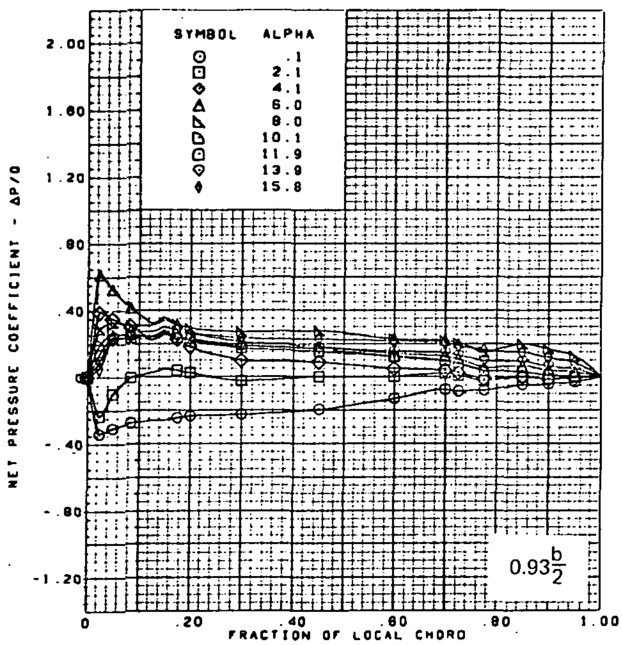


(c) Net Chordwise Pressure Distributions

Figure 57.-(Continued)



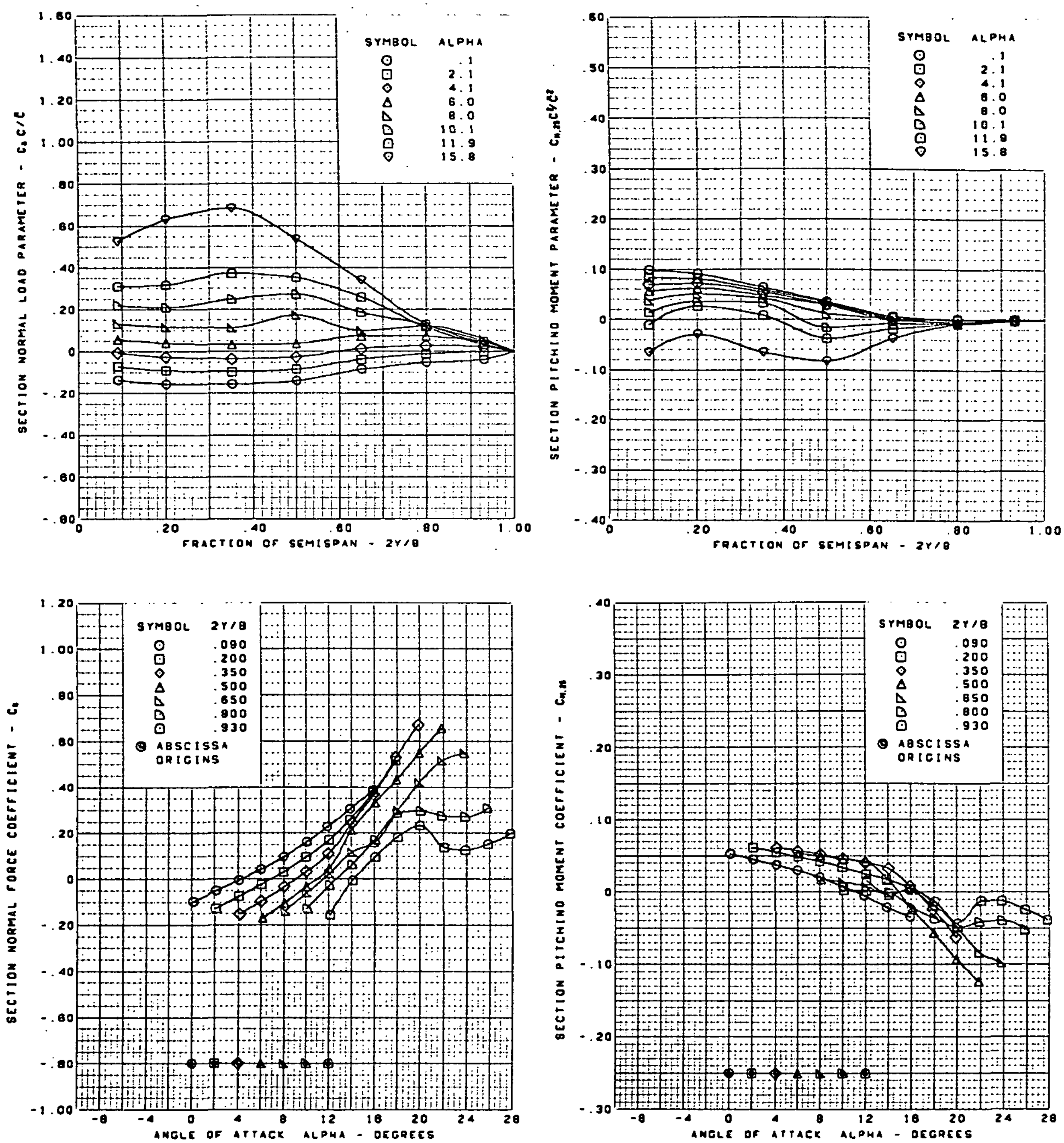




M = 0.85 (run 233)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -8.3°, outboard = 0.0°

(c) (Concluded)

Figure 57.–(Continued)



M = 0.85 (run 233)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -8.3°, outboard = 0.0°

(d) Spanload Distributions and Section Aerodynamic Coefficients

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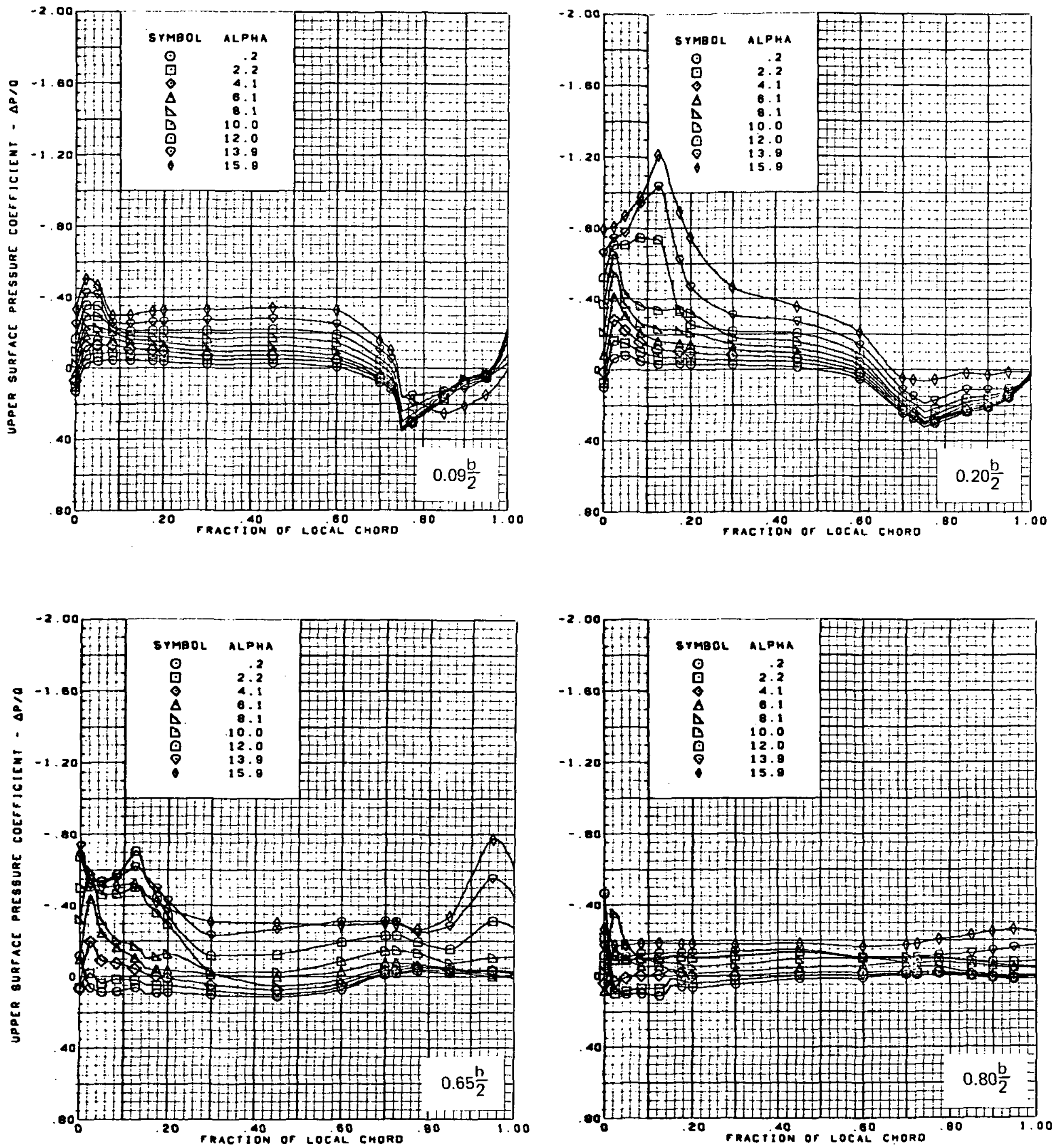
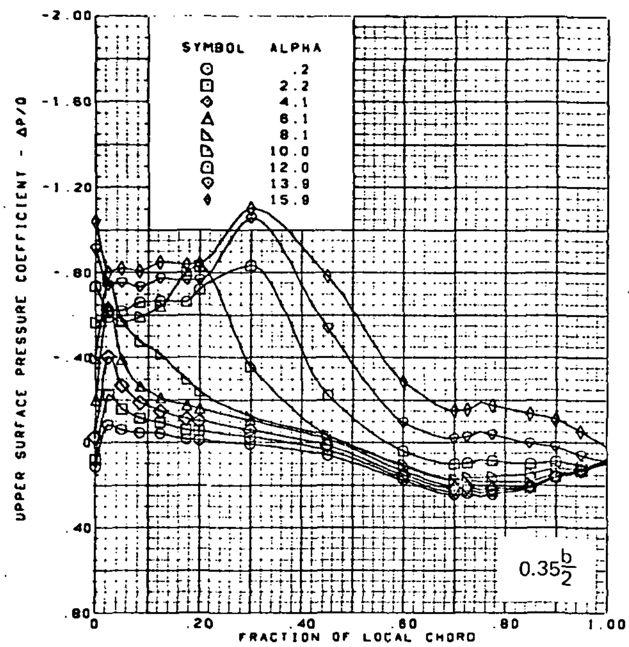
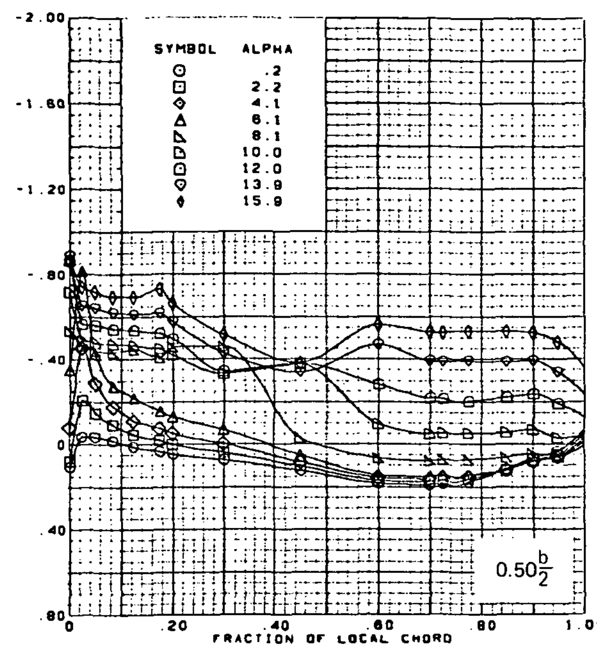
Figure 57.–(Concluded)

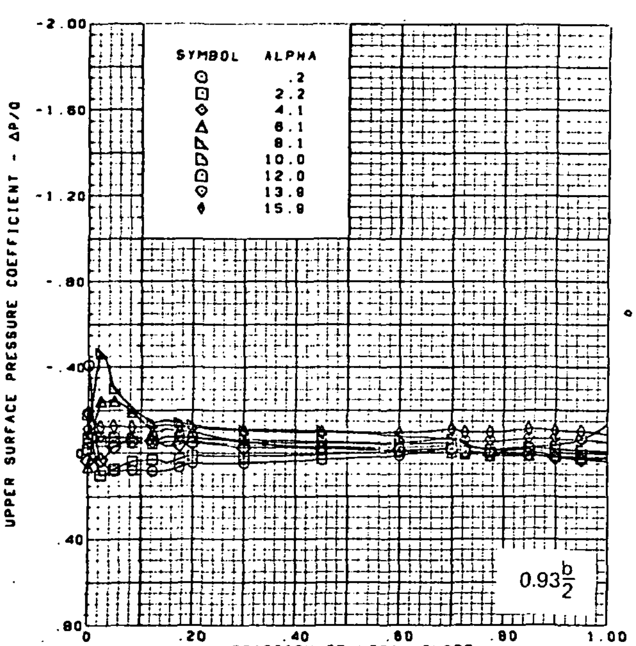


(a) Upper Surface Chordwise Pressure Distributions

Figure 58.–Wing Experimental Data—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 0.0°, Outboard = 5.1°; T.E. Deflection, Inboard = -17.7°, Outboard = 0.0°; M = 0.85



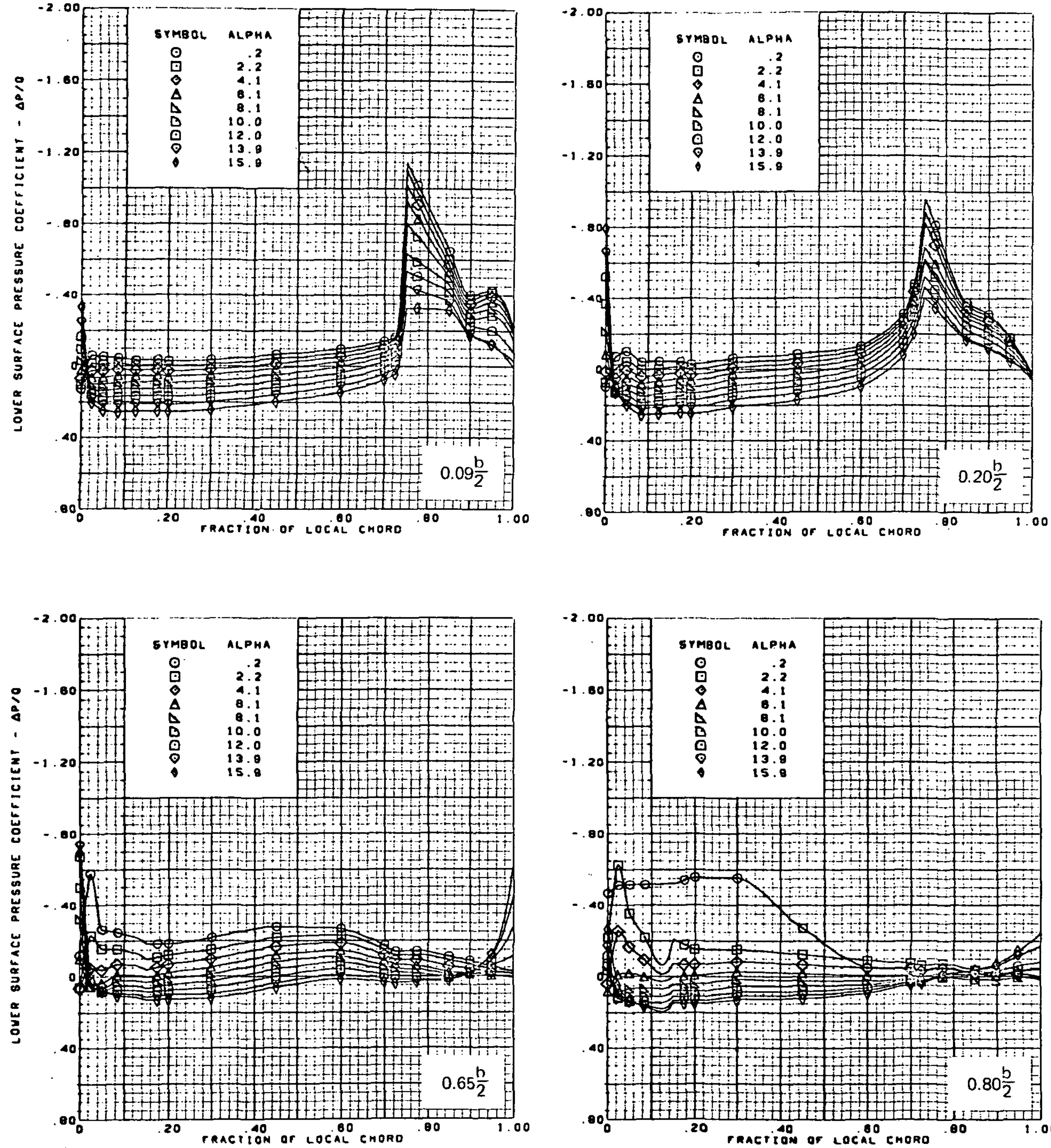




M = 0.85 (run 227)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -17.7°, outboard = 0.0°

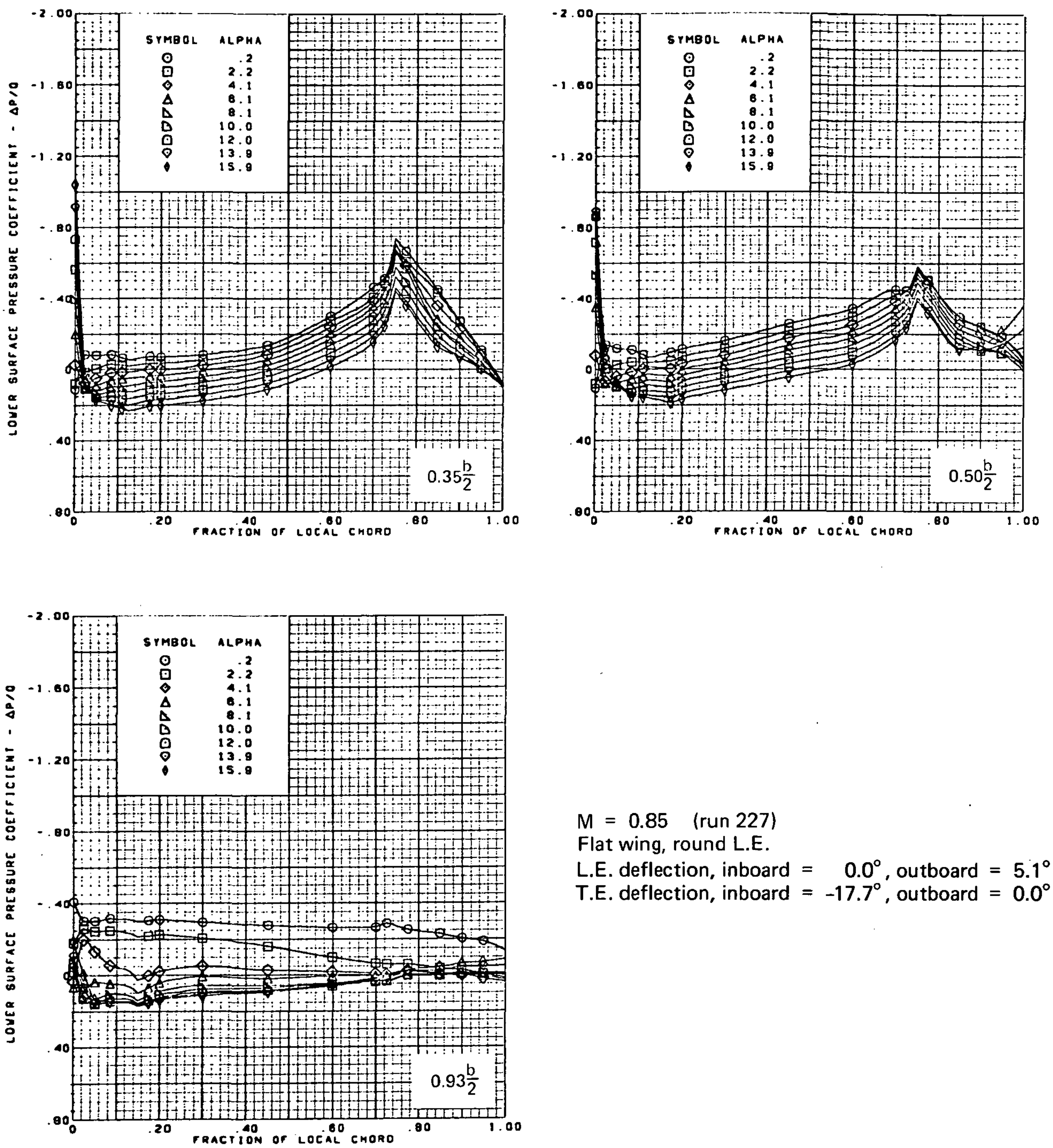
(a) (Concluded)

Figure 58.-(Continued)



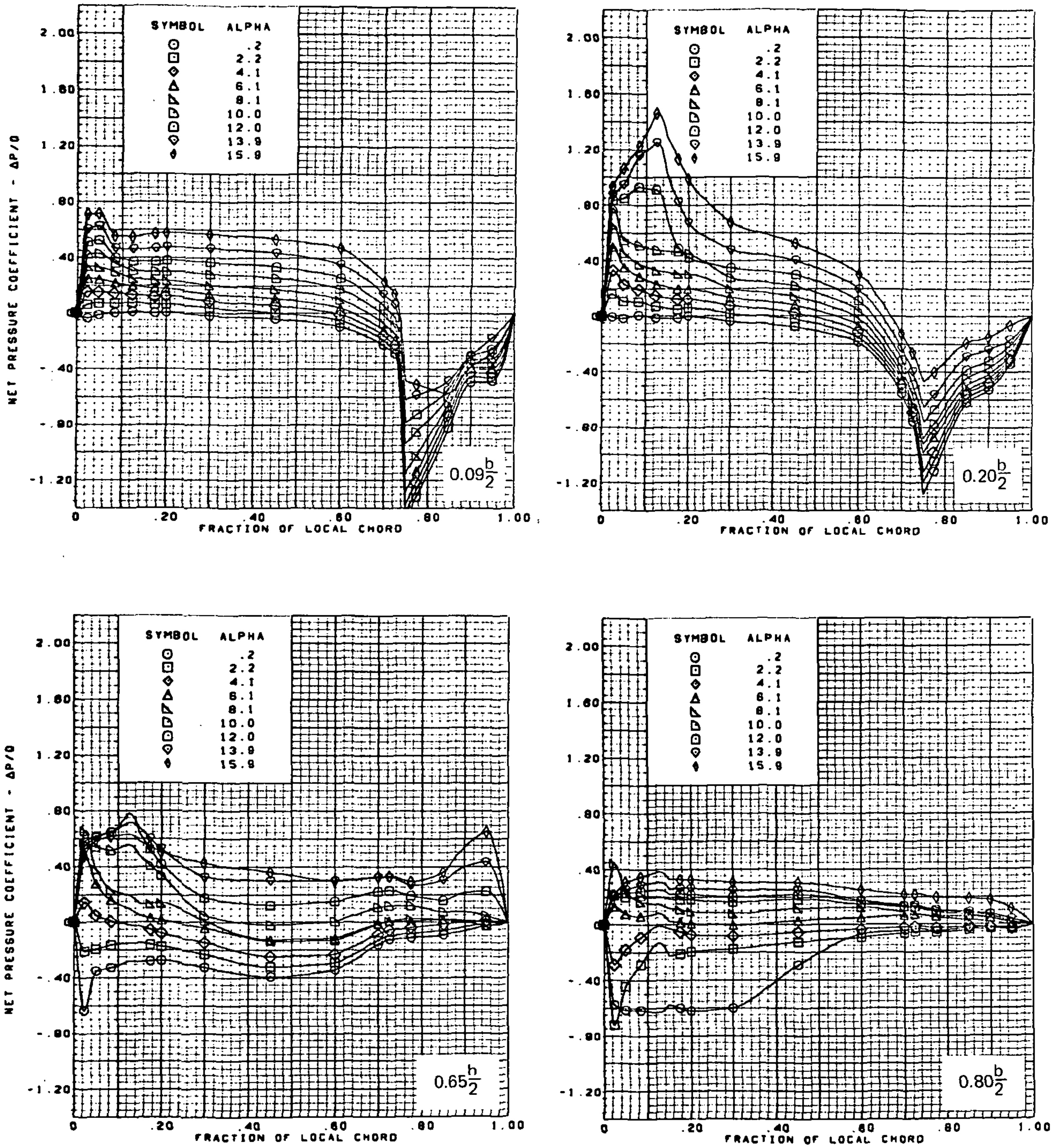
(b) Lower Surface Chordwise Pressure Distributions

Figure 58.–(Continued)



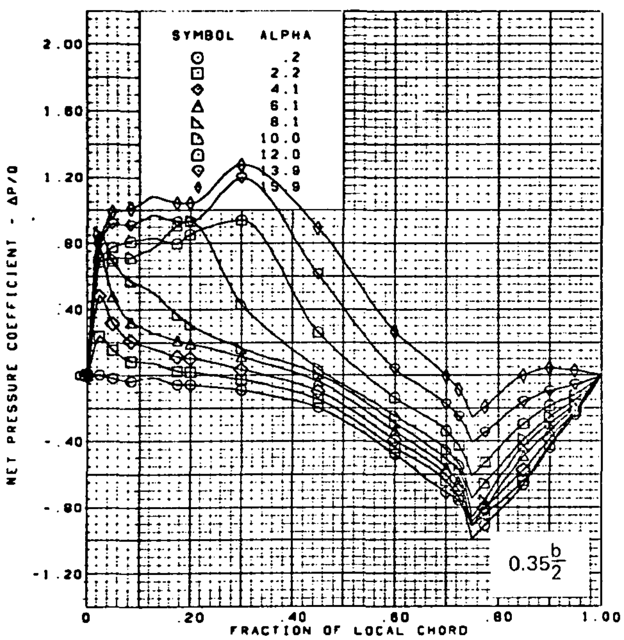
(b) (Concluded)

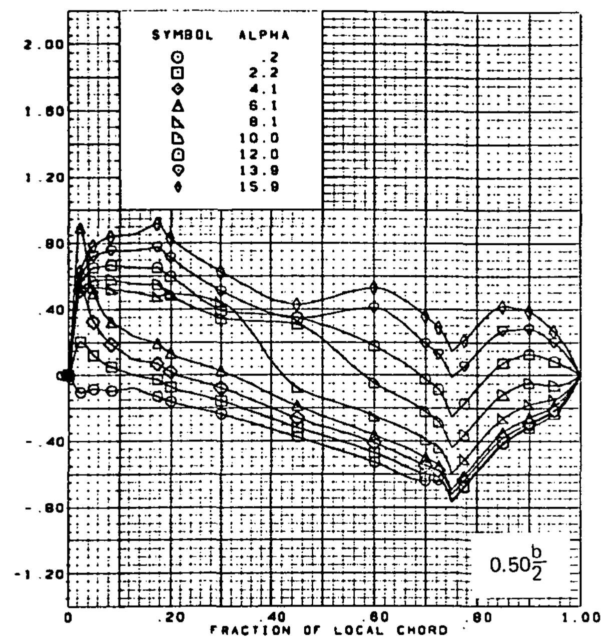
Figure 58.–(Continued)

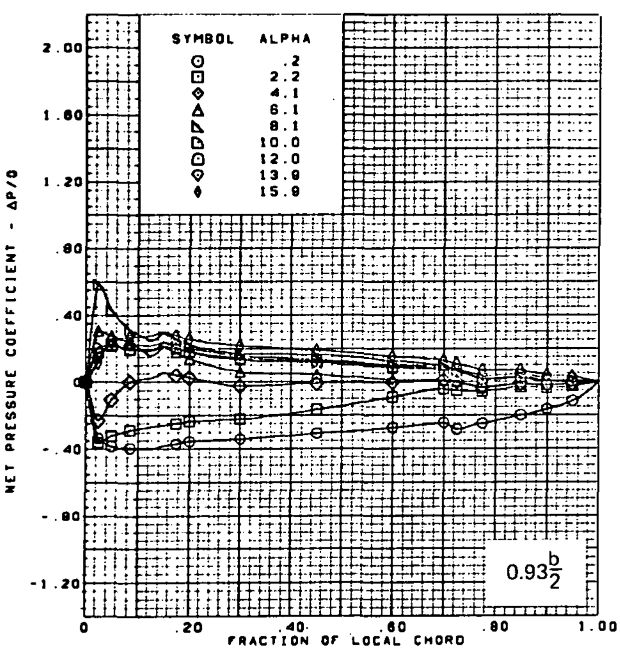


(c) Net Chordwise Pressure Distributions

Figure 58.–(Continued)



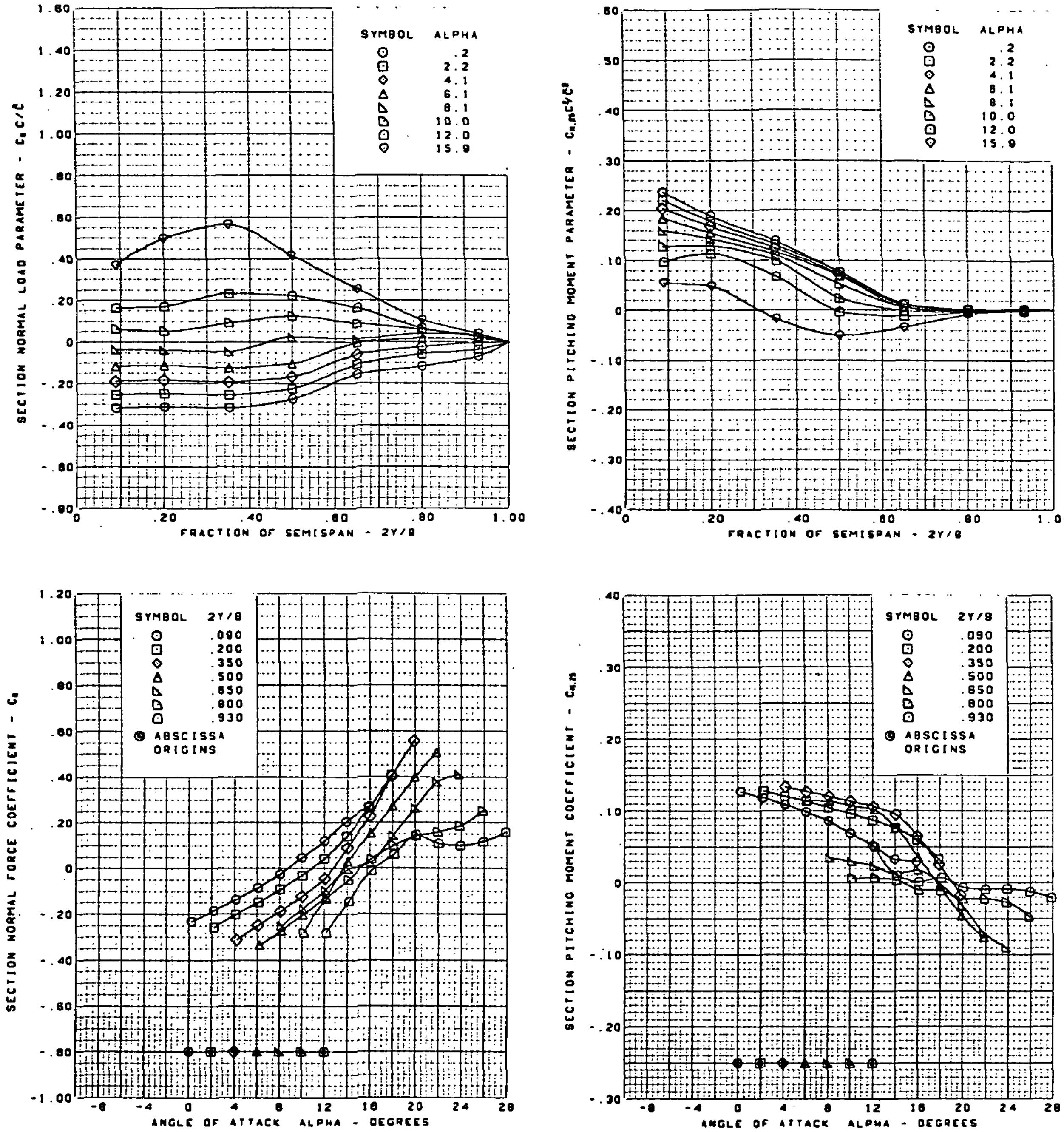




M = 0.85 (run 227)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -17.7°, outboard = 0.0°

(c) (Concluded)

Figure 58.–(Continued)



M = 0.85 (run 227)
Flat wing, round L.E.
L.E. deflection, inboard = 0.0°, outboard = 5.1°
T.E. deflection, inboard = -17.7°, outboard = 0.0°

(d) Spanload Distributions and Section Aerodynamic Coefficients

Figure 58.– (Concluded)

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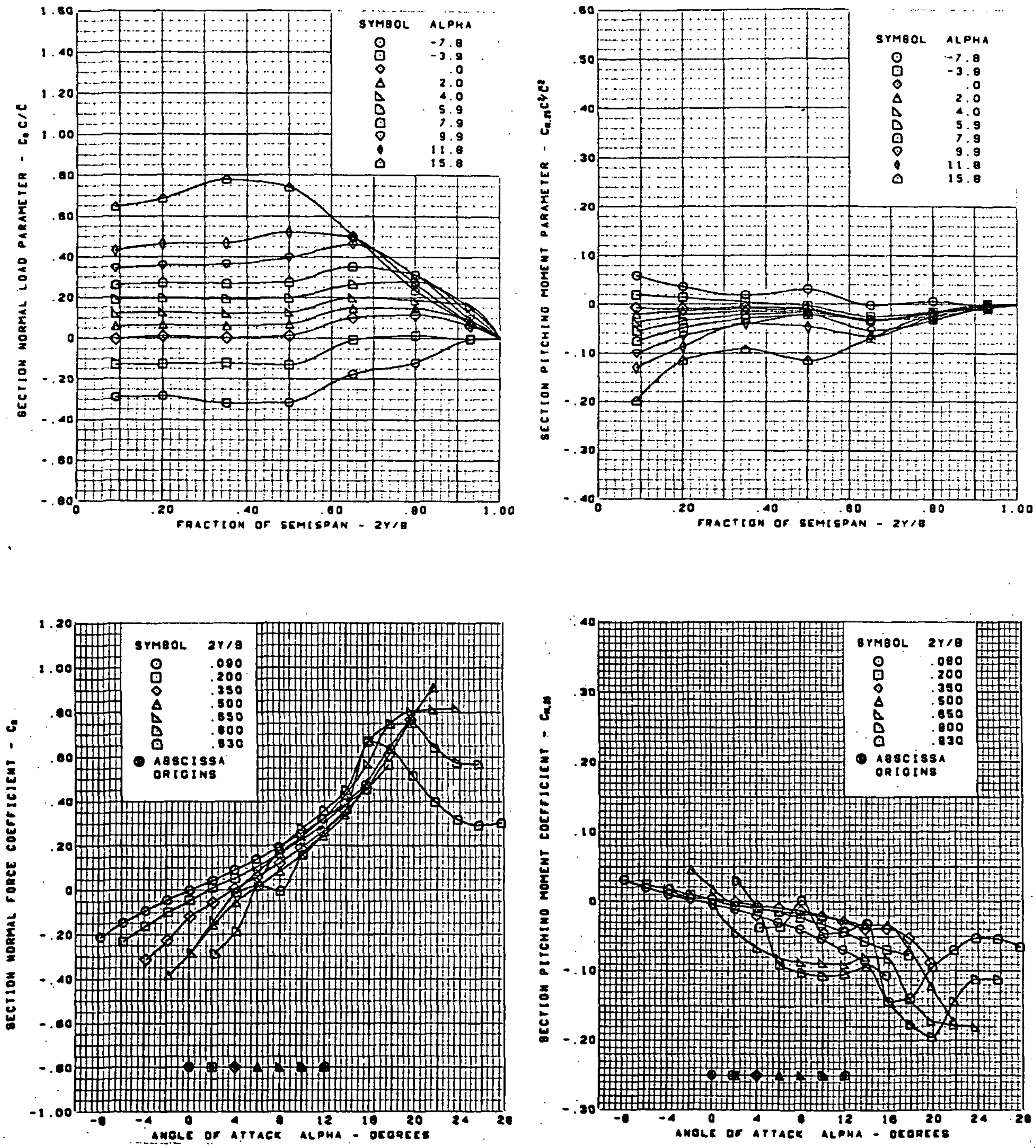
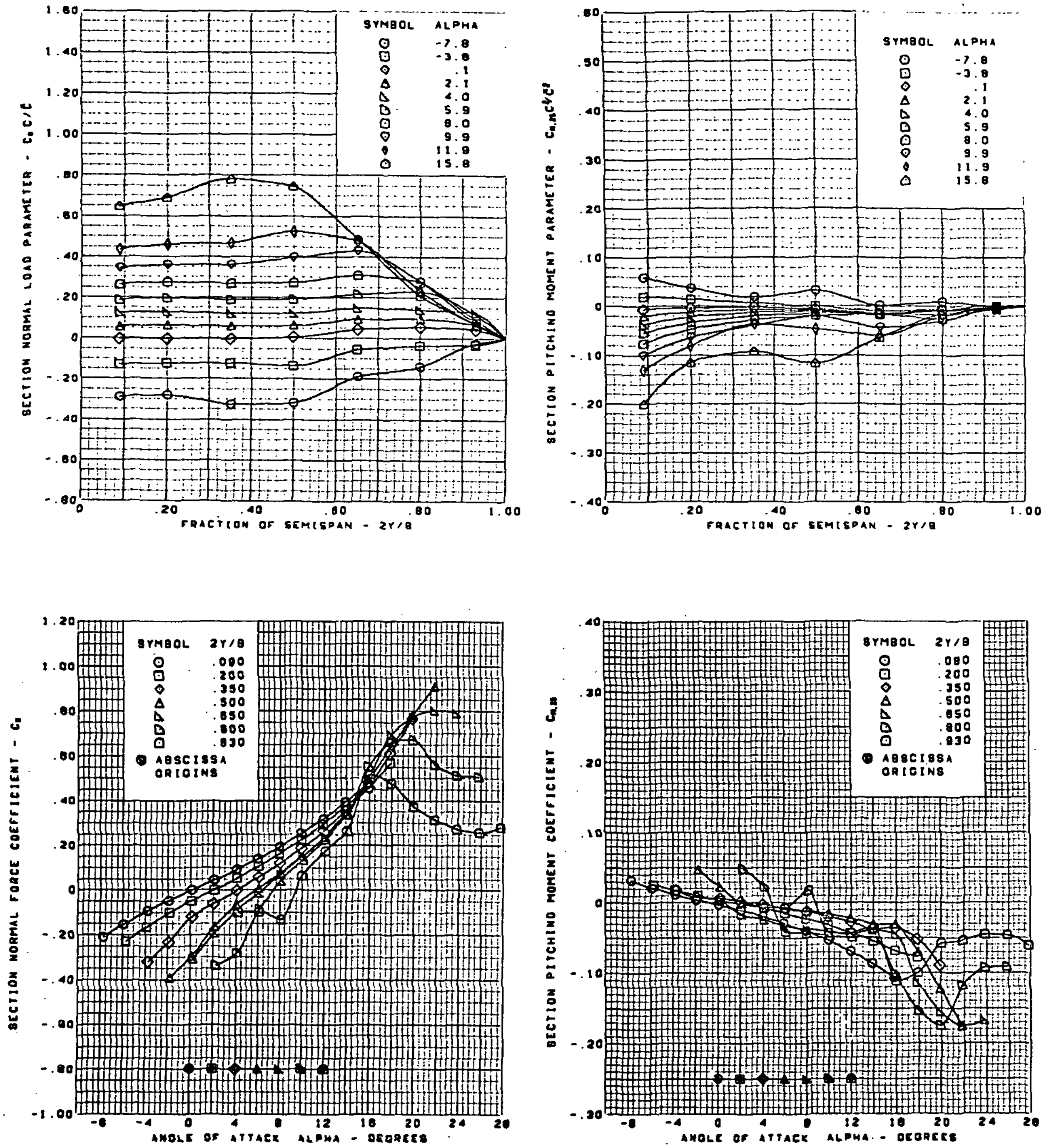


M = 0.85 (run 285)
Flat wing, round L.E.

L.E. deflection, inboard = 5.1°, outboard = 0.0°
T.E. deflection, inboard = 0.0°, outboard = 17.7°

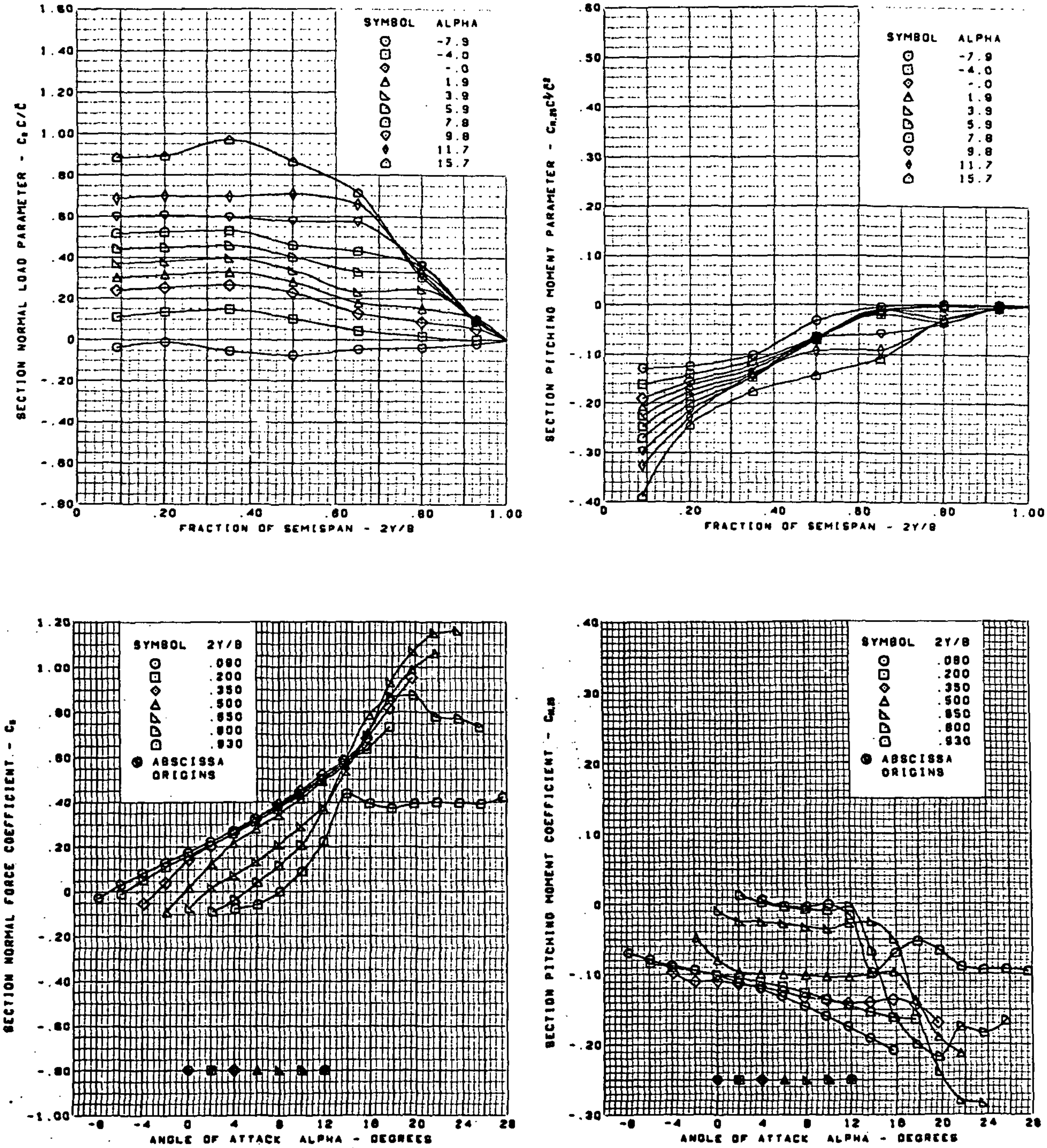
Figure 59.–Wing Experimental Data—Spanload Distributions and Section Aerodynamic Coefficients; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 5.1°, Outboard = 0.0°; T.E. Deflection, Inboard = 0.0°, Outboard = 17.7°; M = 0.85



M ≈ 0.85 (run 328)
Flat wing, round L.E.

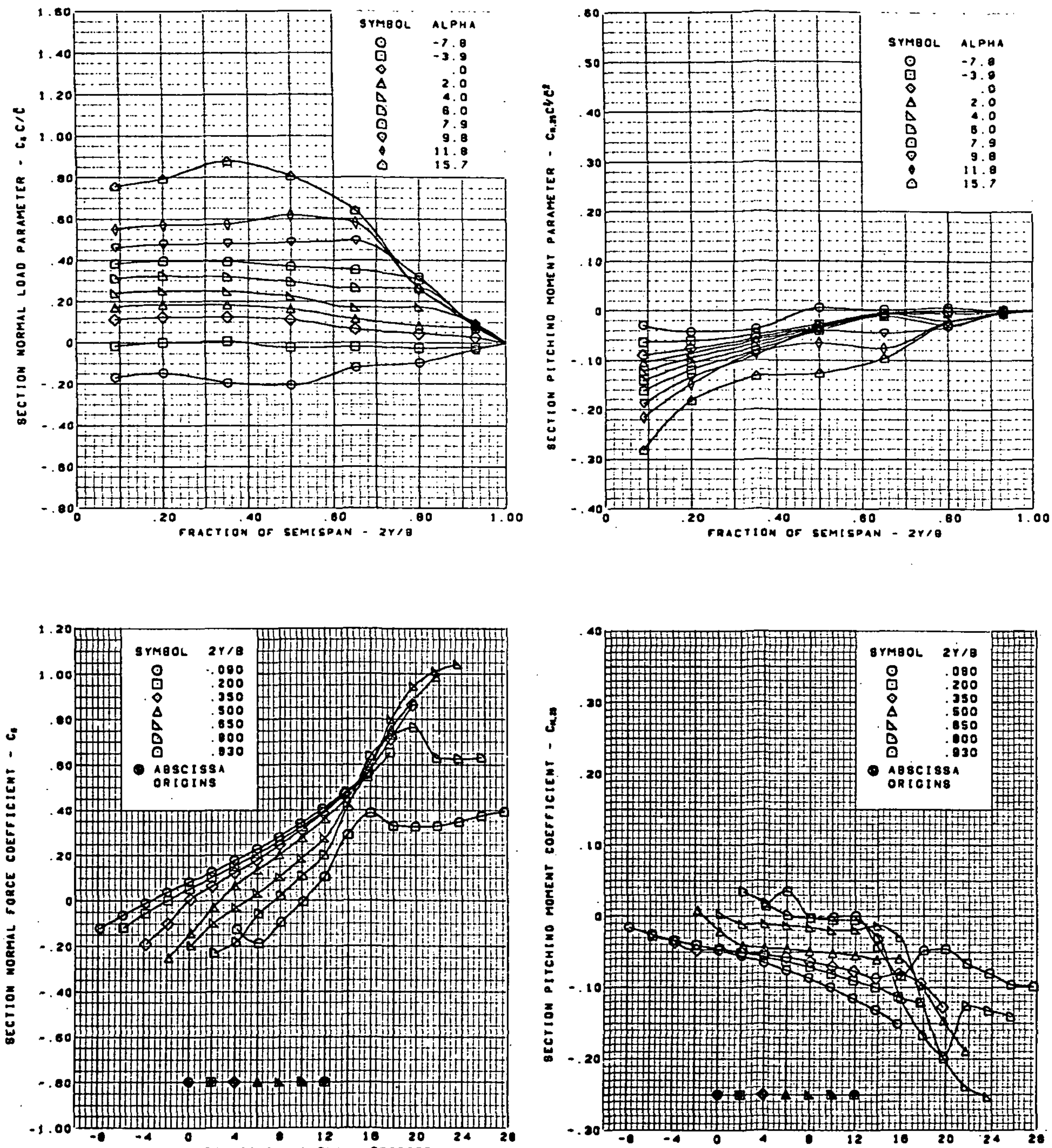
L.E. deflection, inboard = 5.1°, outboard = 0.0°
T.E. deflection, inboard = 0.0°, outboard = 8.3°

Figure 60.– Wing Experimental Data—Spanload Distributions and Section Aerodynamic Coefficients; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 5.1°, Outboard = 0.0°; T.E. Deflection, Inboard = 0.0°, Outboard = 8.3°; M = 0.85



M = 0.85 (run 328)
Flat wing, round L.E.
L.E. deflection, inboard = 5.1°, outboard = 0.0°
T.E. deflection, inboard = 17.7°, outboard = 0.0°

Figure 61.–Wing Experimental Data—Spanload Distributions and Section Aerodynamic Coefficients; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 5.1°, Outboard = 0.0°; T.E. Deflection, Inboard = 17.7°, Outboard = 0.0°; M = 0.85



M = 0.85 (run 323)
Flat wing, round L.E.
L.E. deflection, inboard = 5.1°, outboard = 0.0°
T.E. deflection, inboard = 8.3°, outboard = 0.0°

Figure 62.–Wing Experimental Data—Spanload Distributions and Section Aerodynamic Coefficients; Flat Wing, Round L.E.; L.E. Deflection, Inboard = 5.1°, Outboard = 0.0°; T.E. Deflection, Inboard = 8.3°, Outboard = 0.0°; M = 0.85

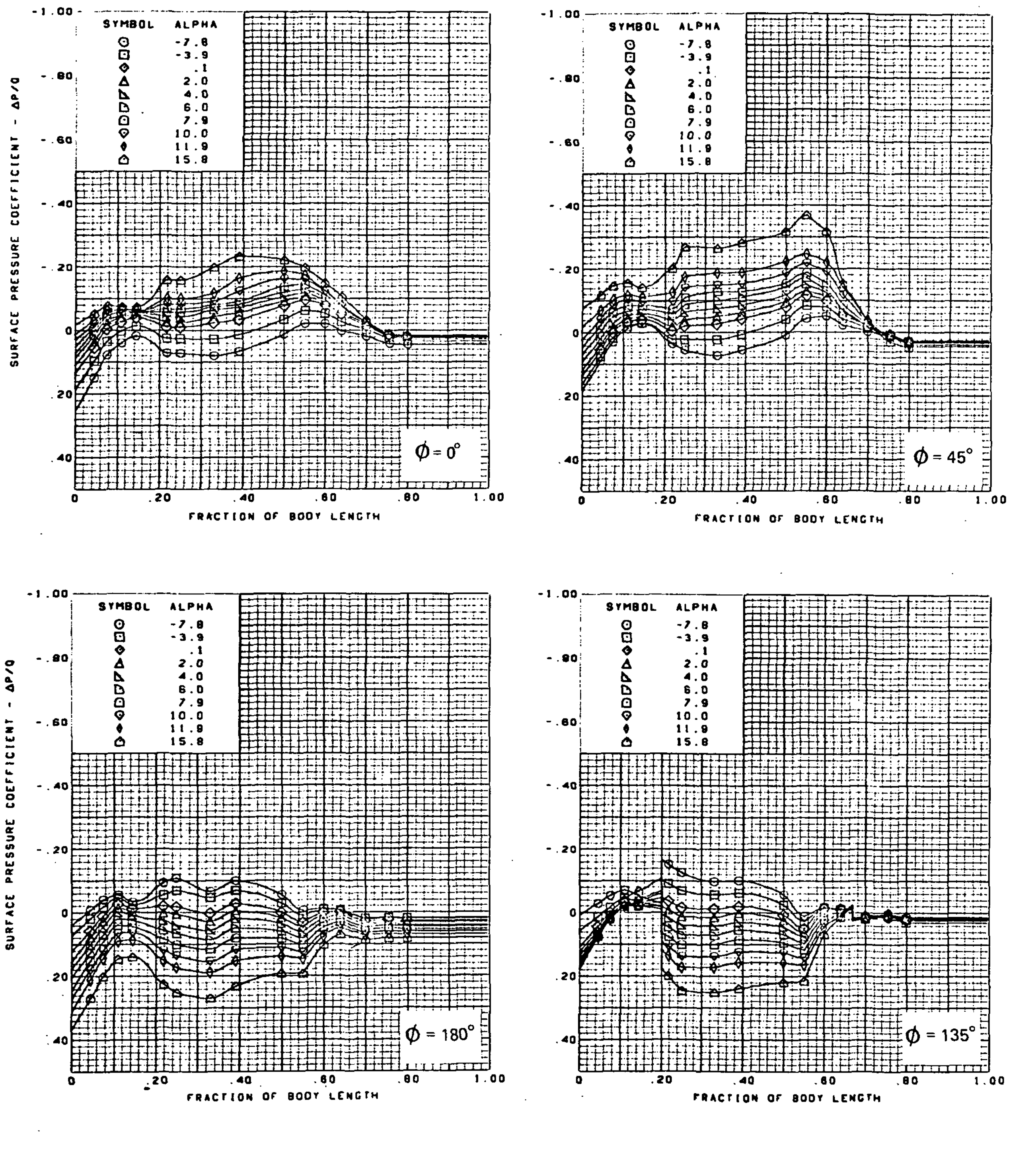
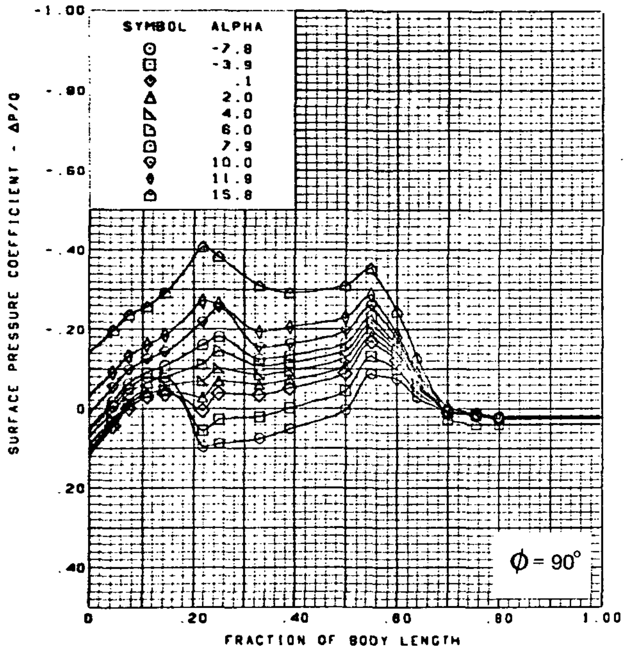
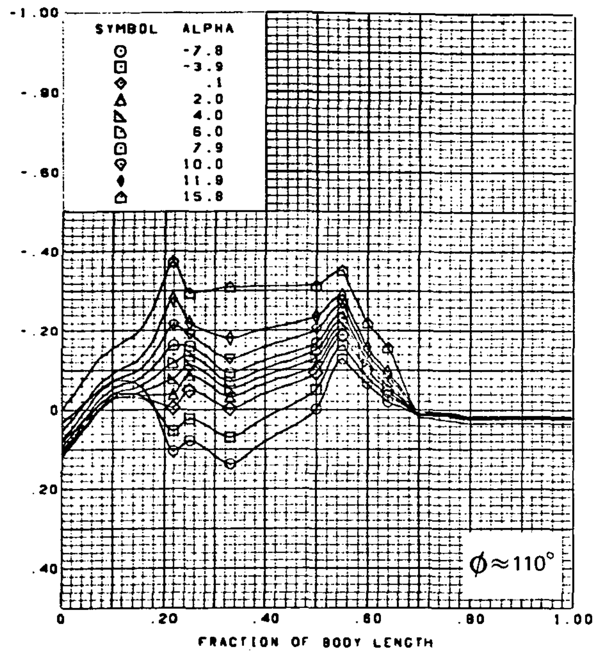
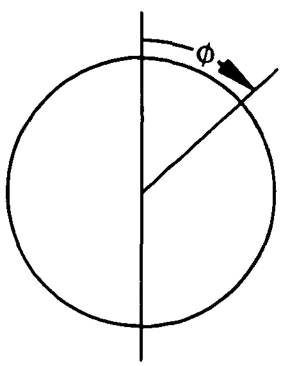


Figure 63.—Body Surface Longitudinal Pressure Distributions—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = +8.3°; M = 0.40







M = 0.40 (run 46)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

Figure 63.- (Concluded)

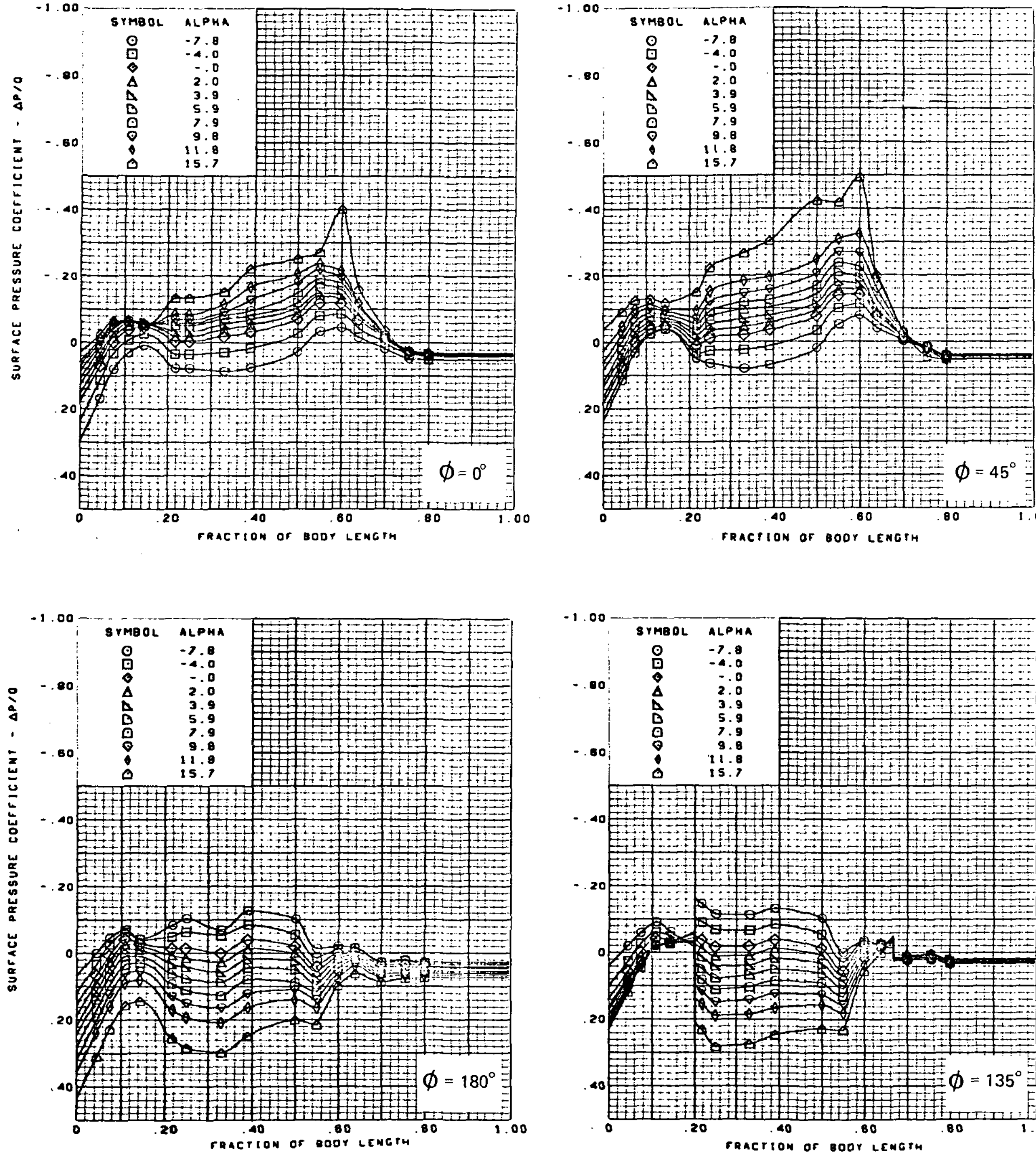
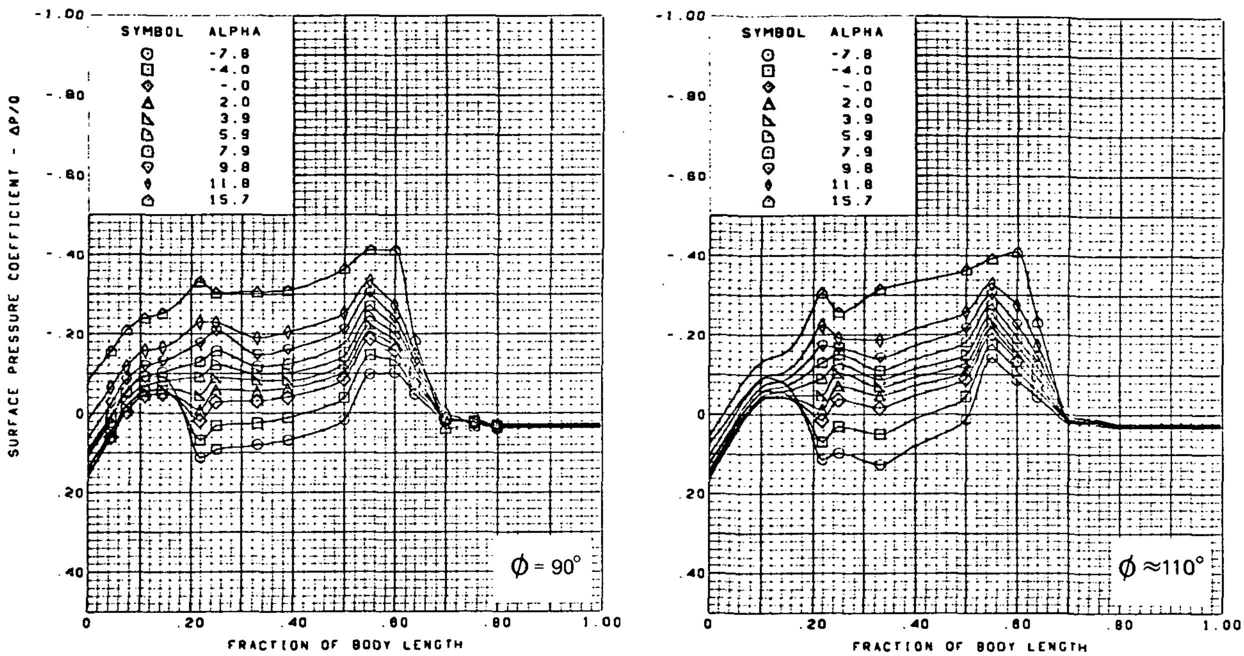
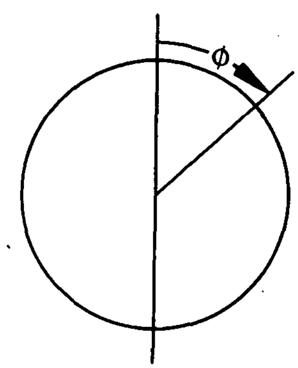


Figure 64.–Body Surface Longitudinal Pressure Distributions—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = +8.3°; M = 0.85





M = 0.85 (run 145)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

Figure 64.–(Concluded)

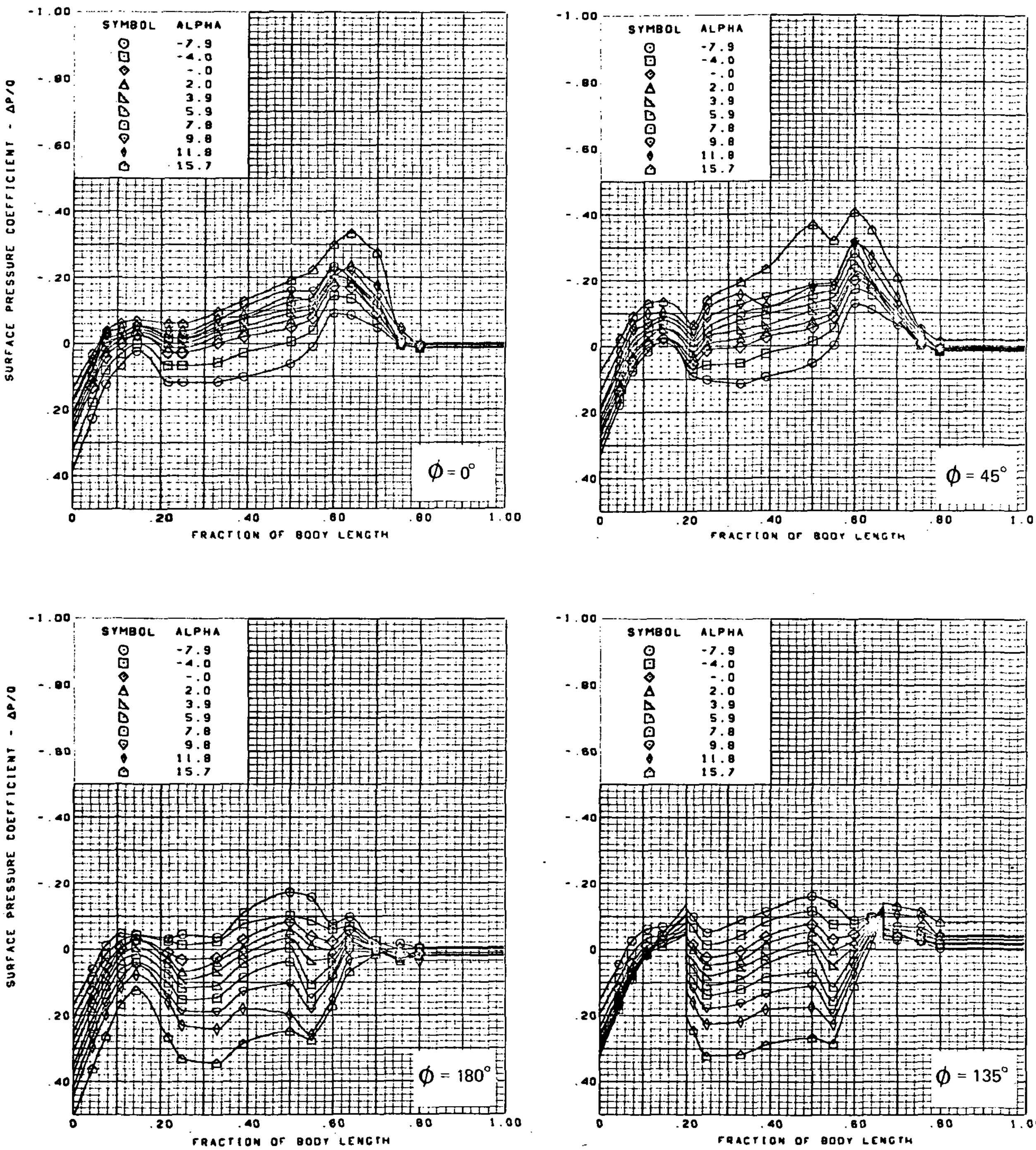
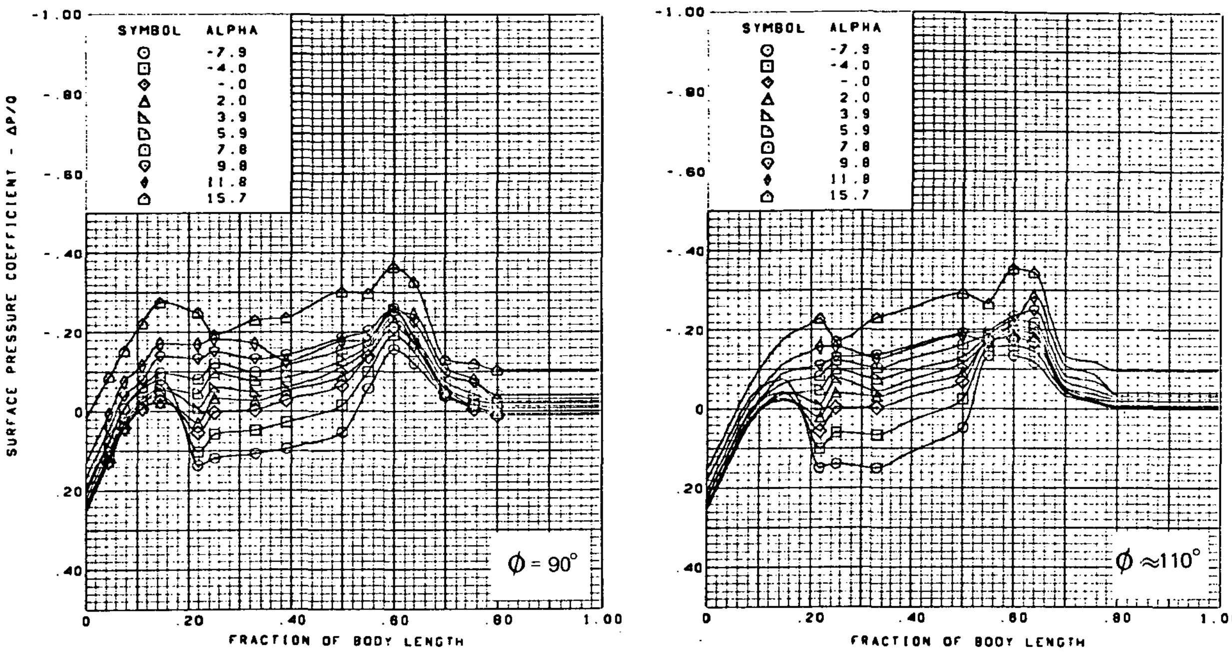
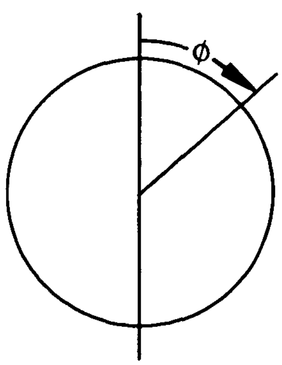


Figure 65.–Body Surface Longitudinal Pressure Distributions—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = +8.3°; M = 1.05





M = 1.05 (run 42)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = 8.3°

Figure 65.–(Concluded)

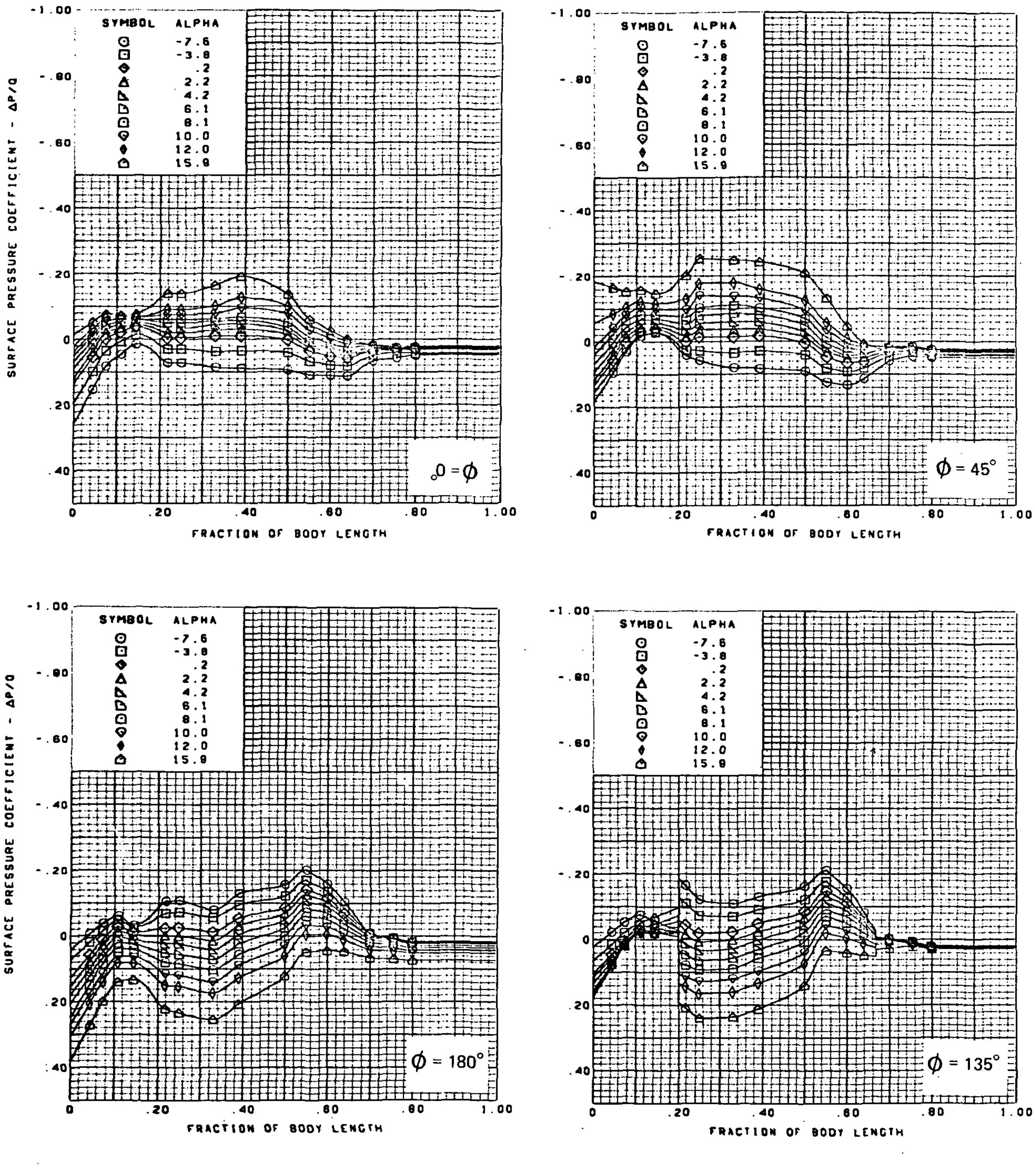
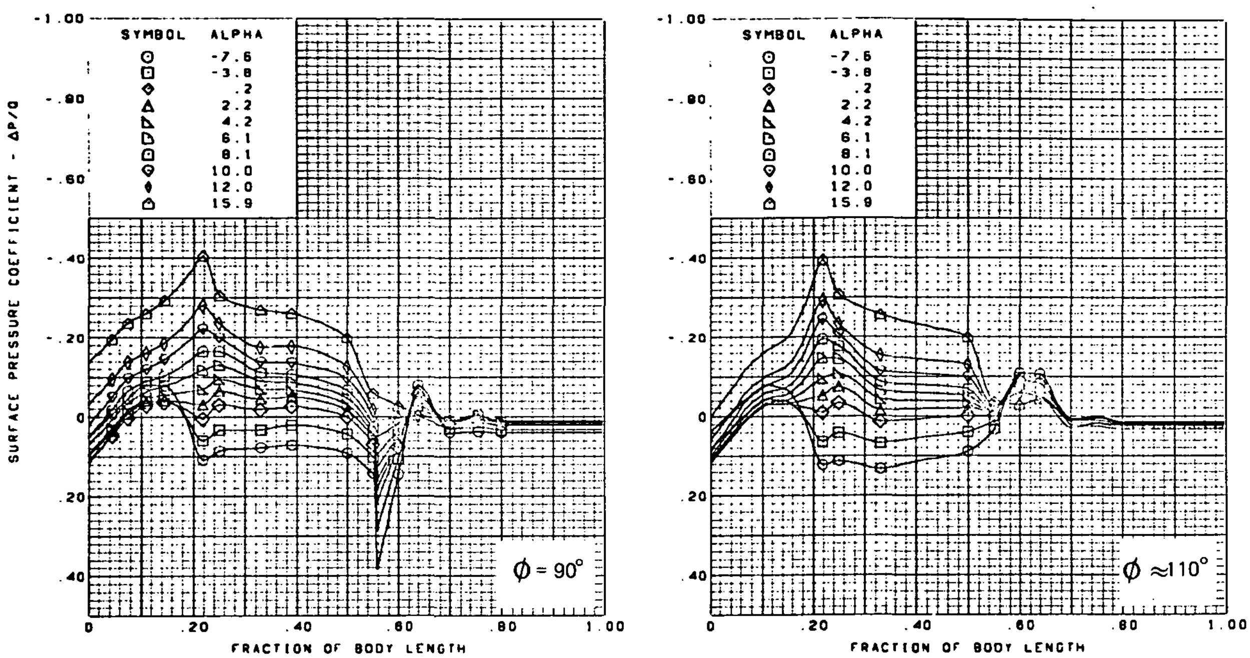
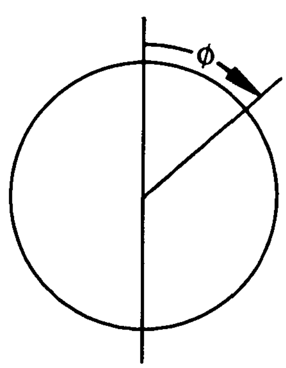


Figure 66.–Body Surface Longitudinal Pressure Distributions—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = -8.3°; M = 0.40





M = 0.40 (run 78)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

Figure 66.–(Concluded)

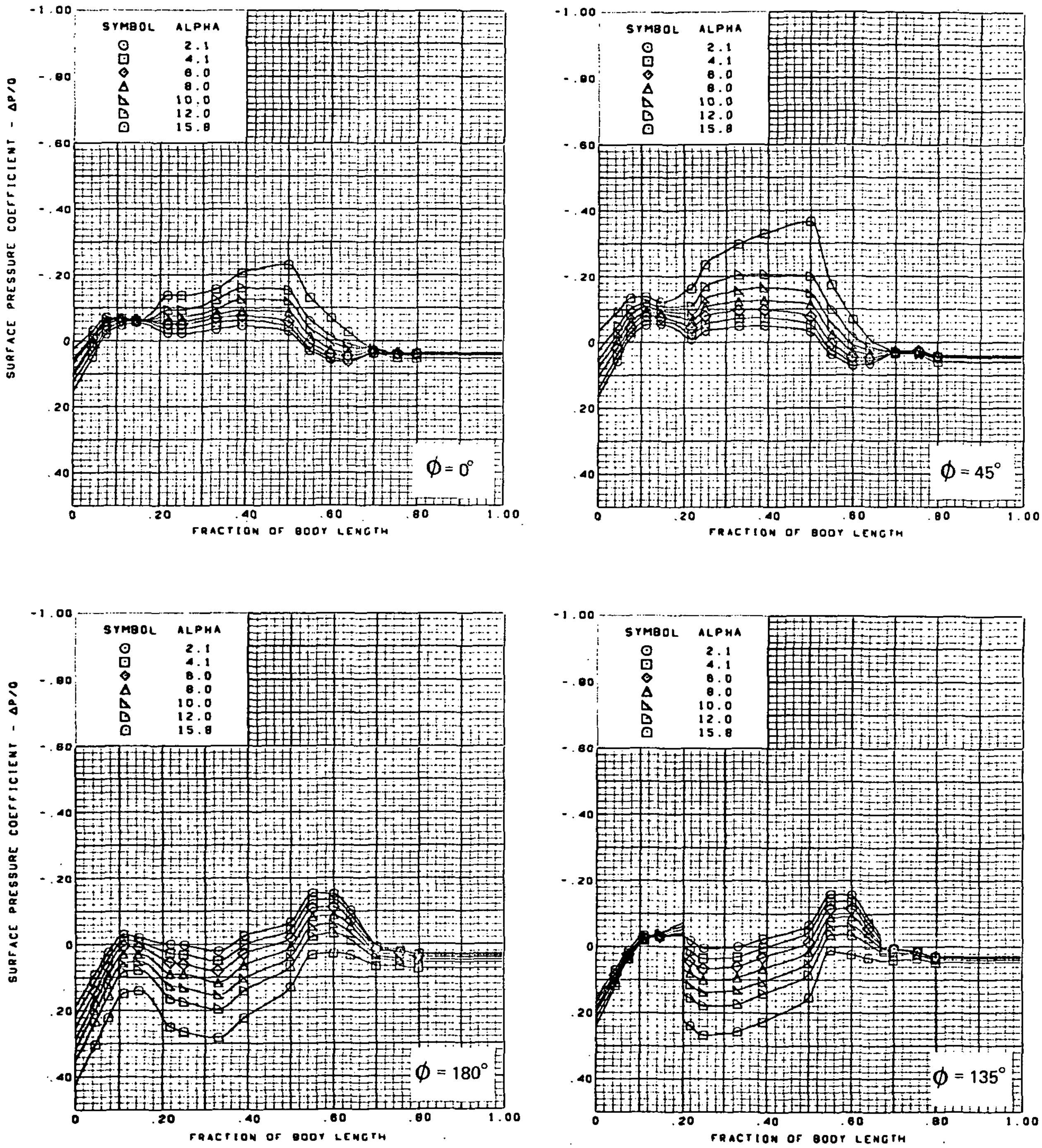
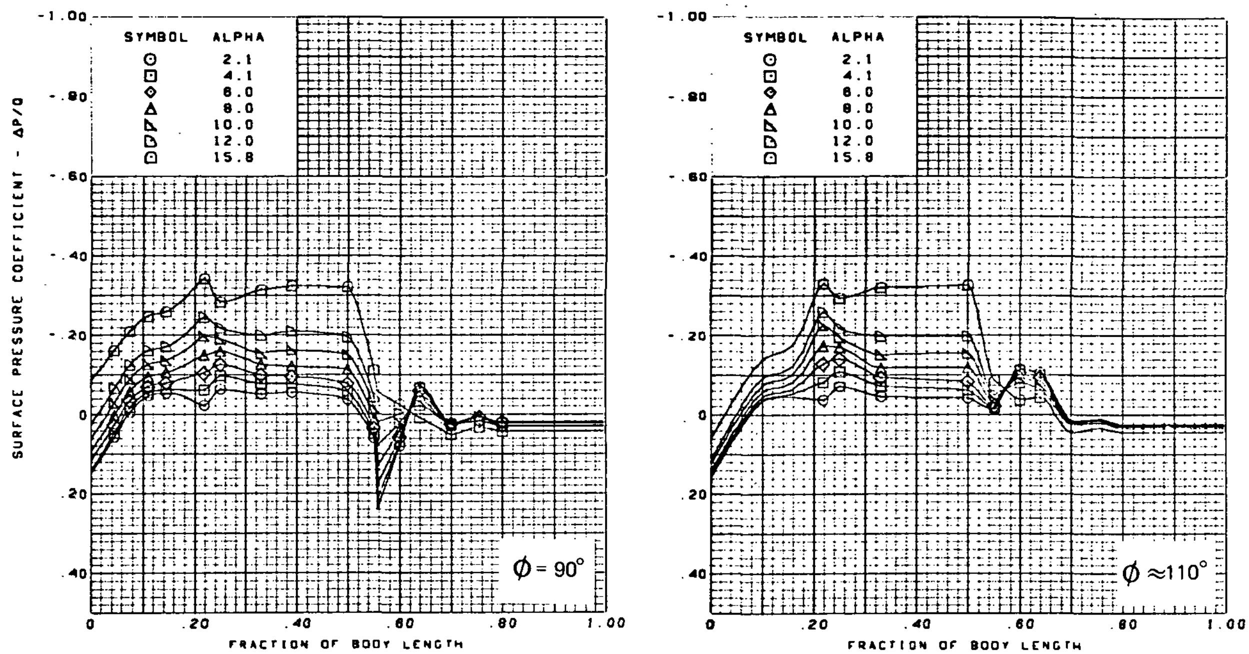
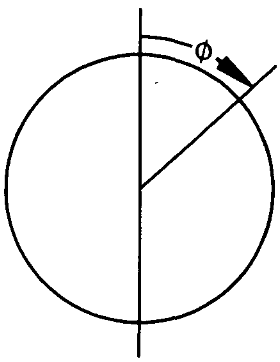


Figure 67.–Body Surface Longitudinal Pressure Distributions—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = -8.3°; M = 0.85





M = 0.85 (run 82)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

Figure 67.–(Concluded)

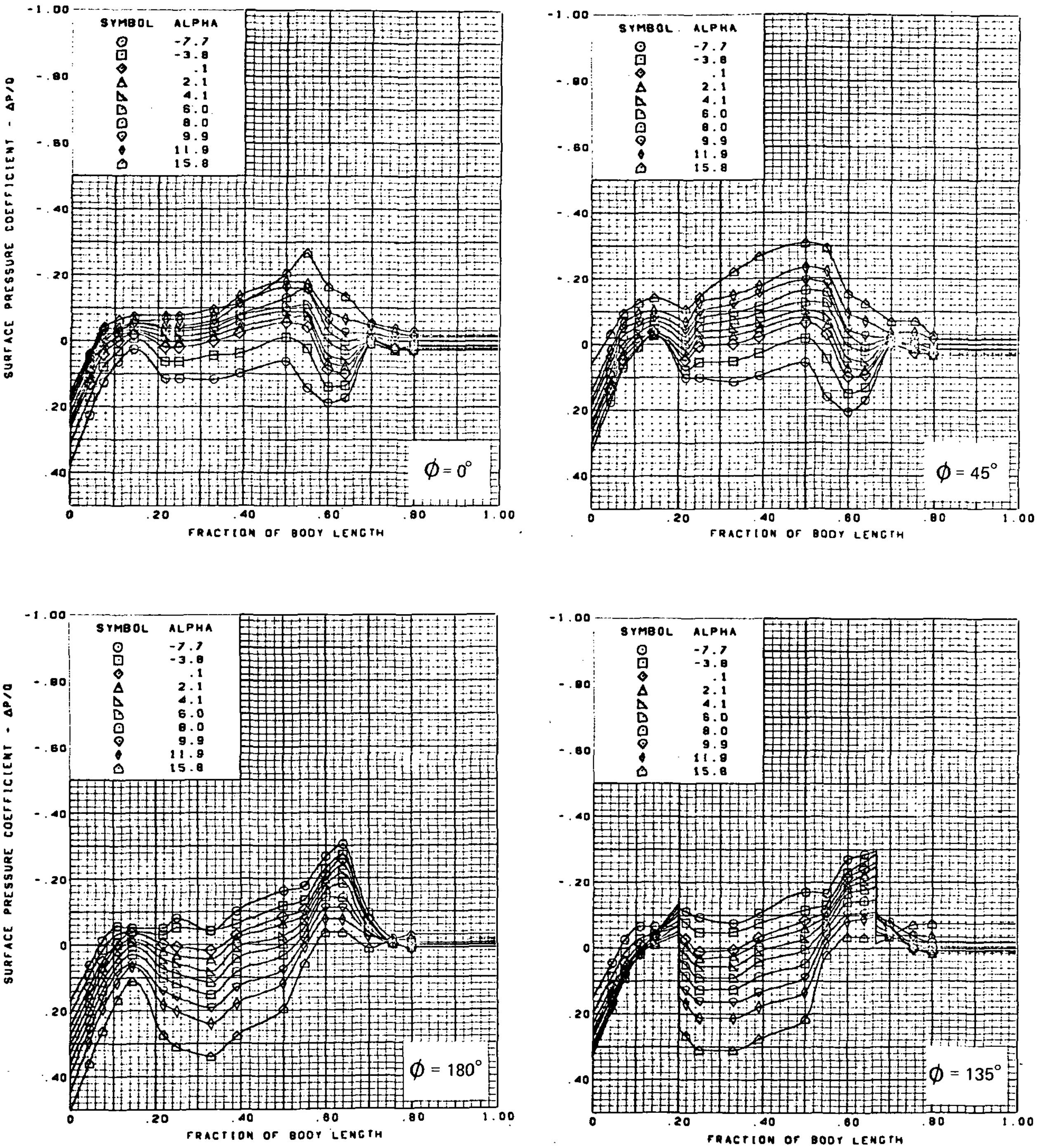
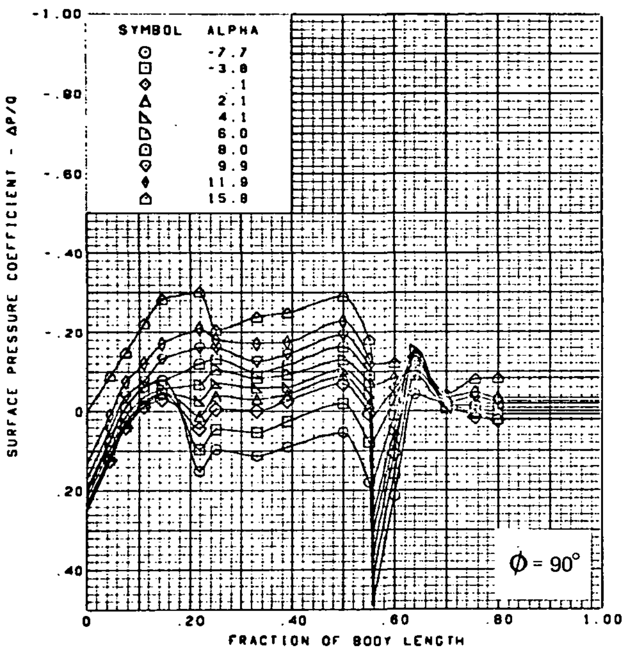
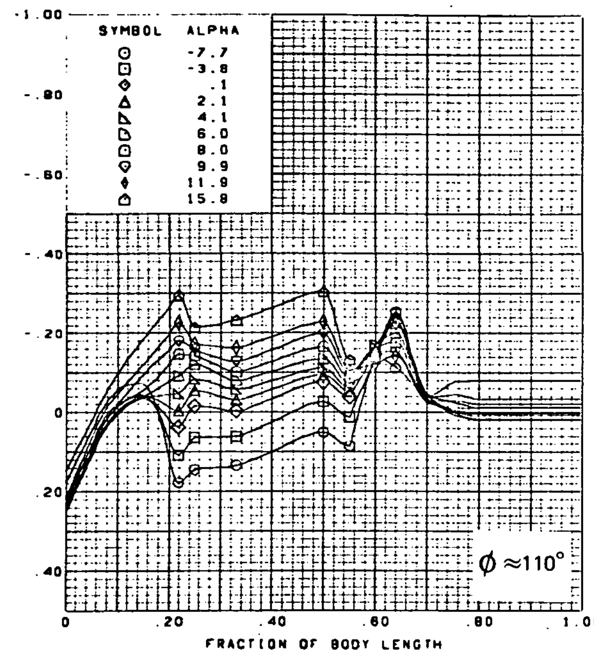
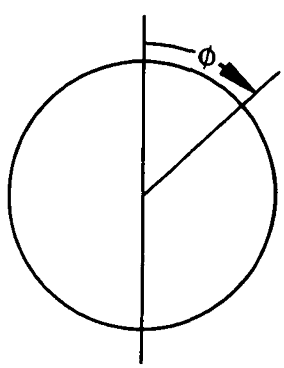


Figure 68.–Body Surface Longitudinal Pressure Distributions—Effect of Angle of Attack; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; T.E. Deflection, Full Span = -8.3°; M = 1.05

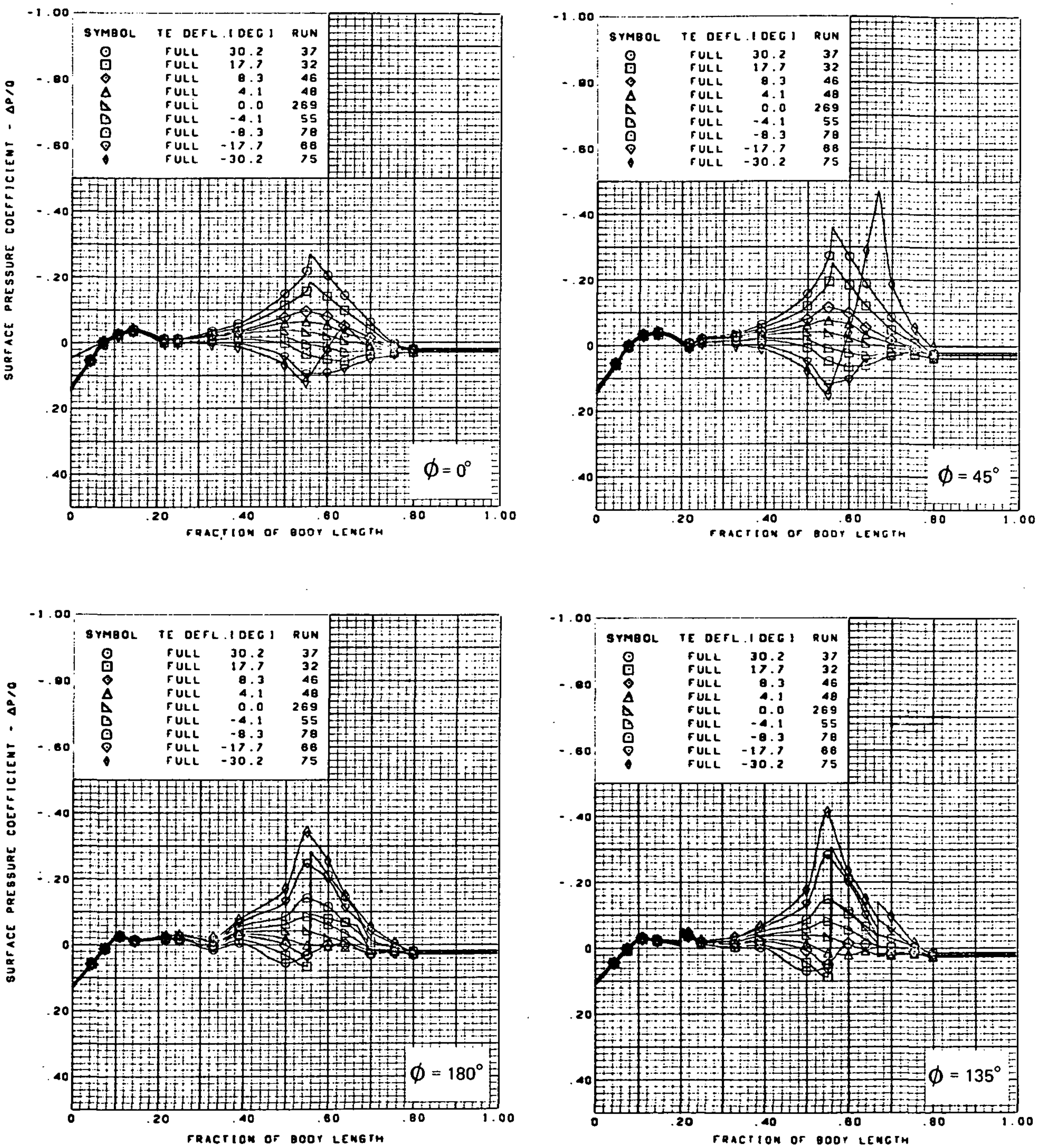






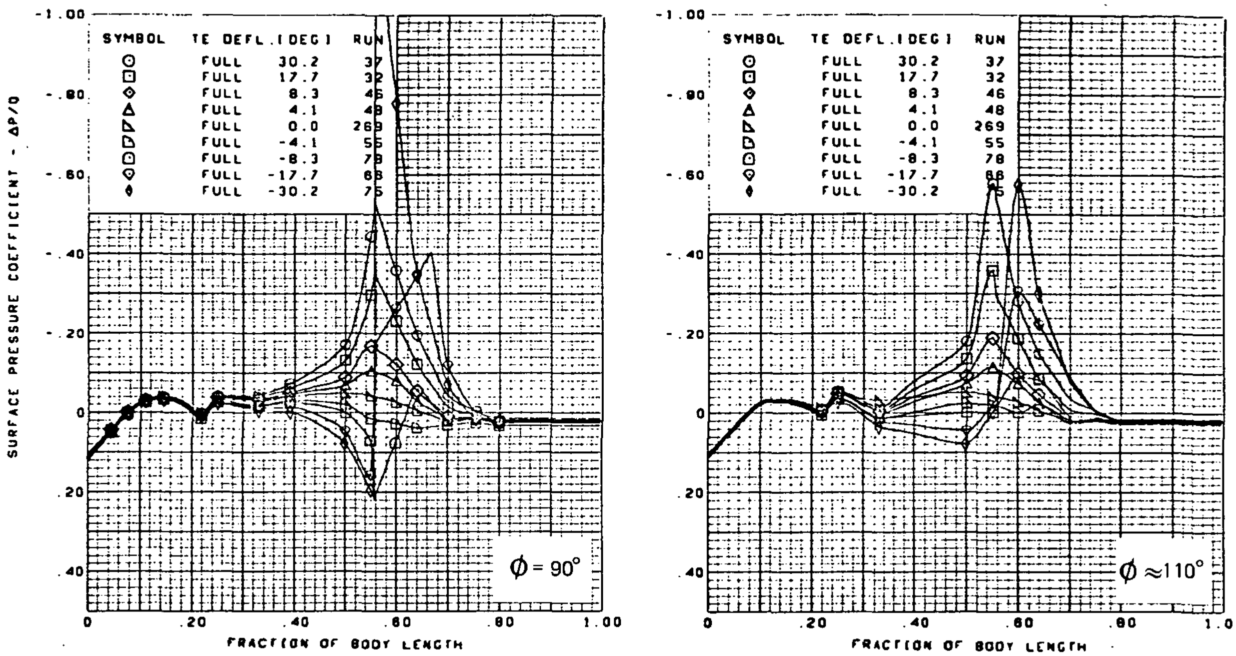
M = 1.05 (run 79)
Flat wing, round L.E.
L.E. deflection, full span = 0.0°
T.E. deflection, full span = -8.3°

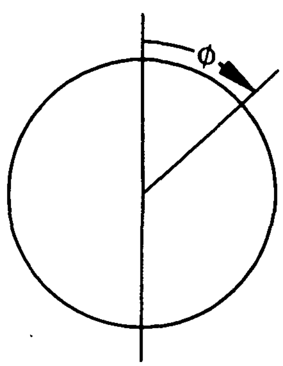
Figure 68.–(Concluded)



(a) $\alpha \approx 0.0°$

Figure 69.–Body Surface Longitudinal Pressure Distributions—Effect of Full Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.40

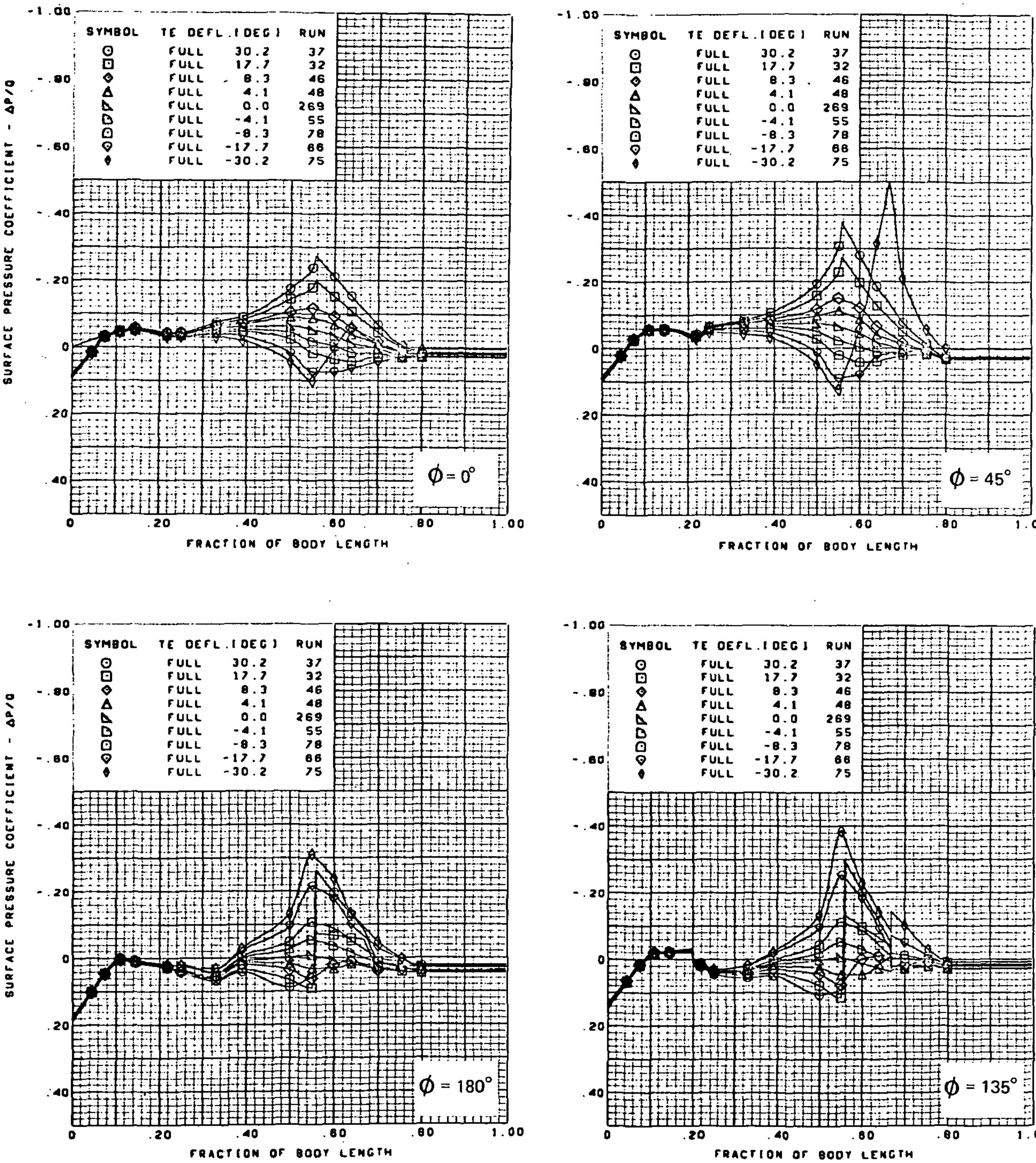




M = 0.40
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

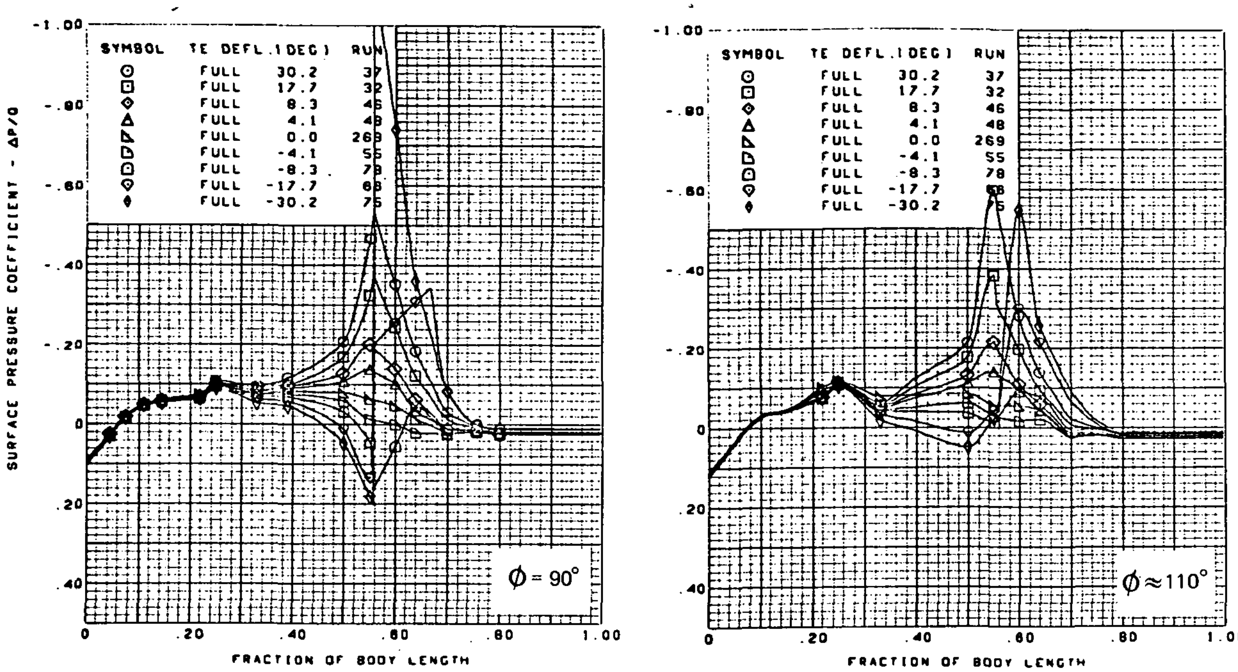
(a) (Concluded)

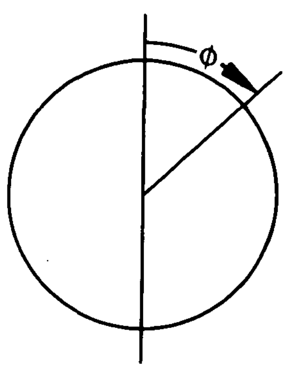
Figure 69.–(Continued)



(b) $\alpha \approx 4.0°$

Figure 69.–(Continued)

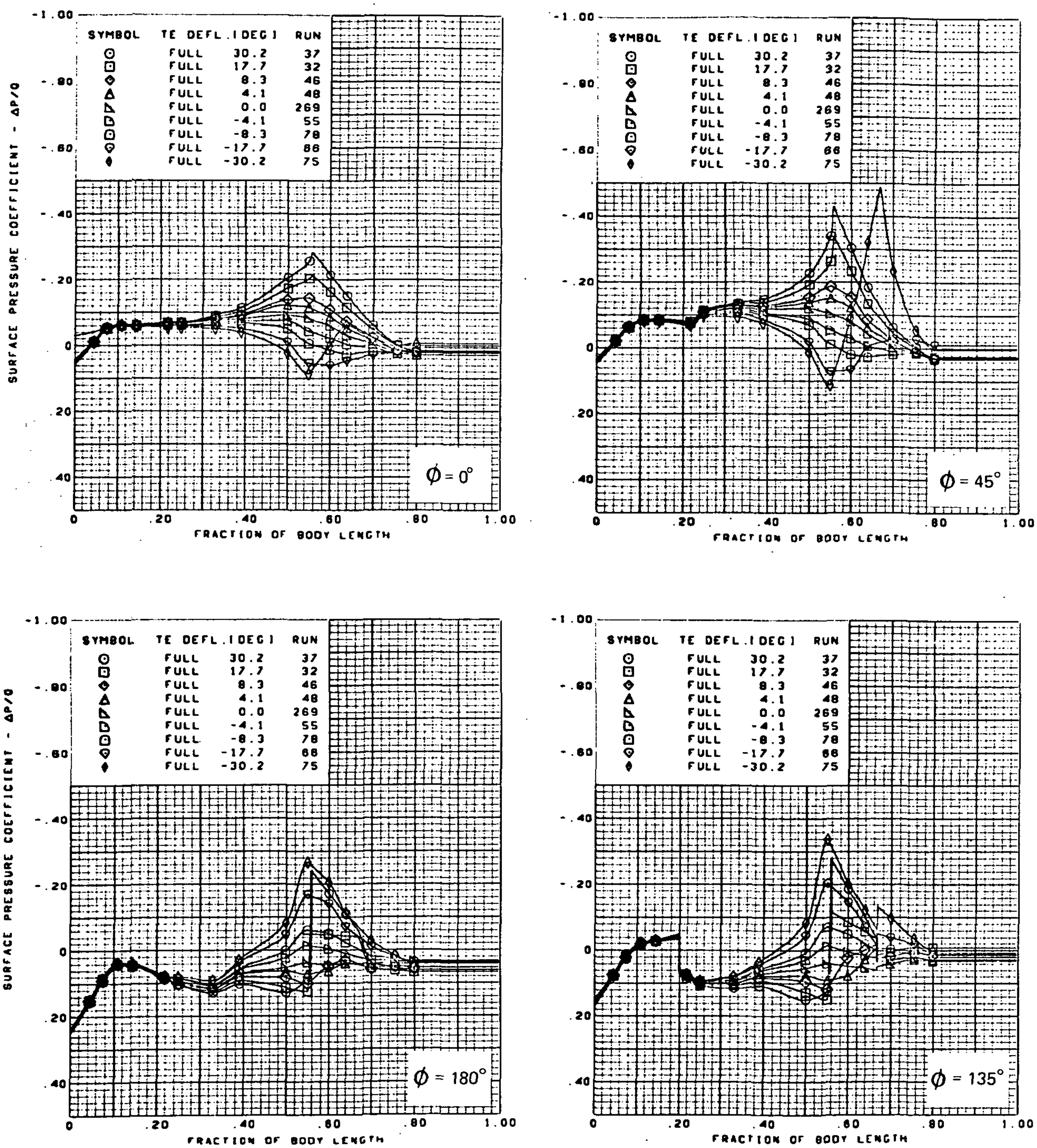




M = 0.40
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

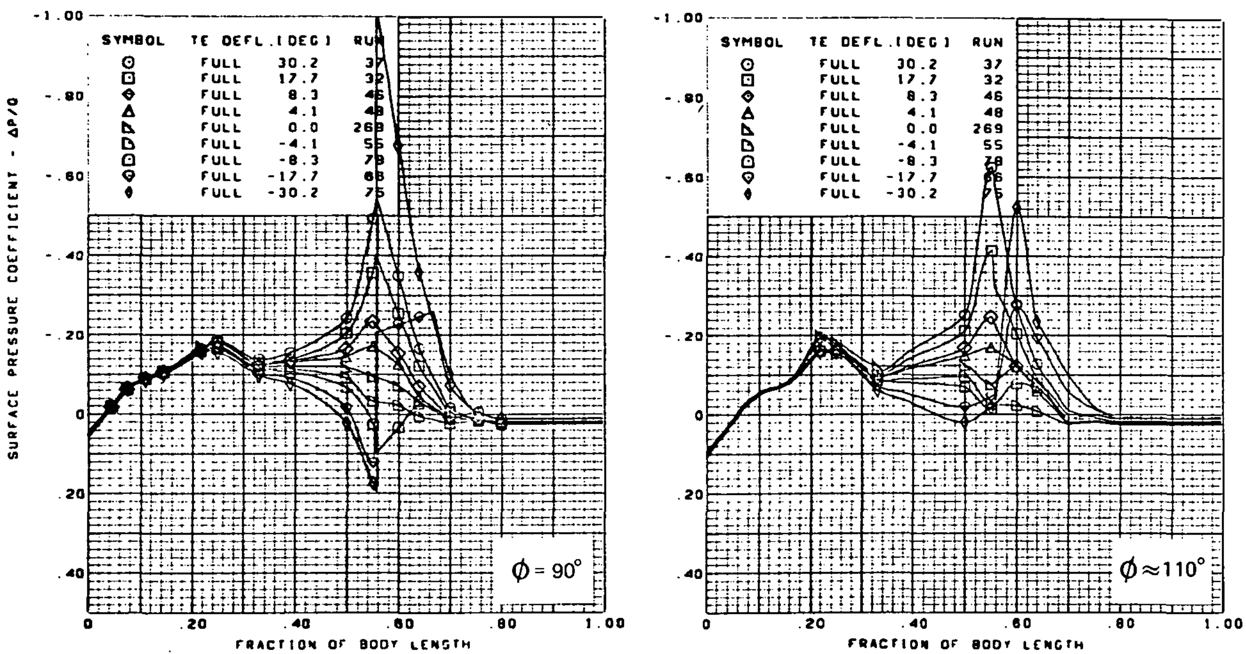
(b) (Concluded)

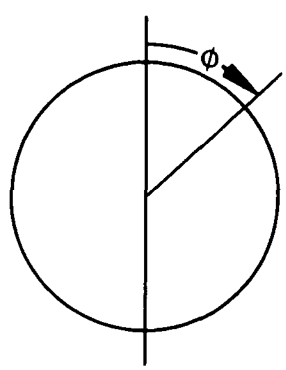
Figure 69.–(Continued)



(c) $\alpha \approx 8.0°$

Figure 69.–(Continued)

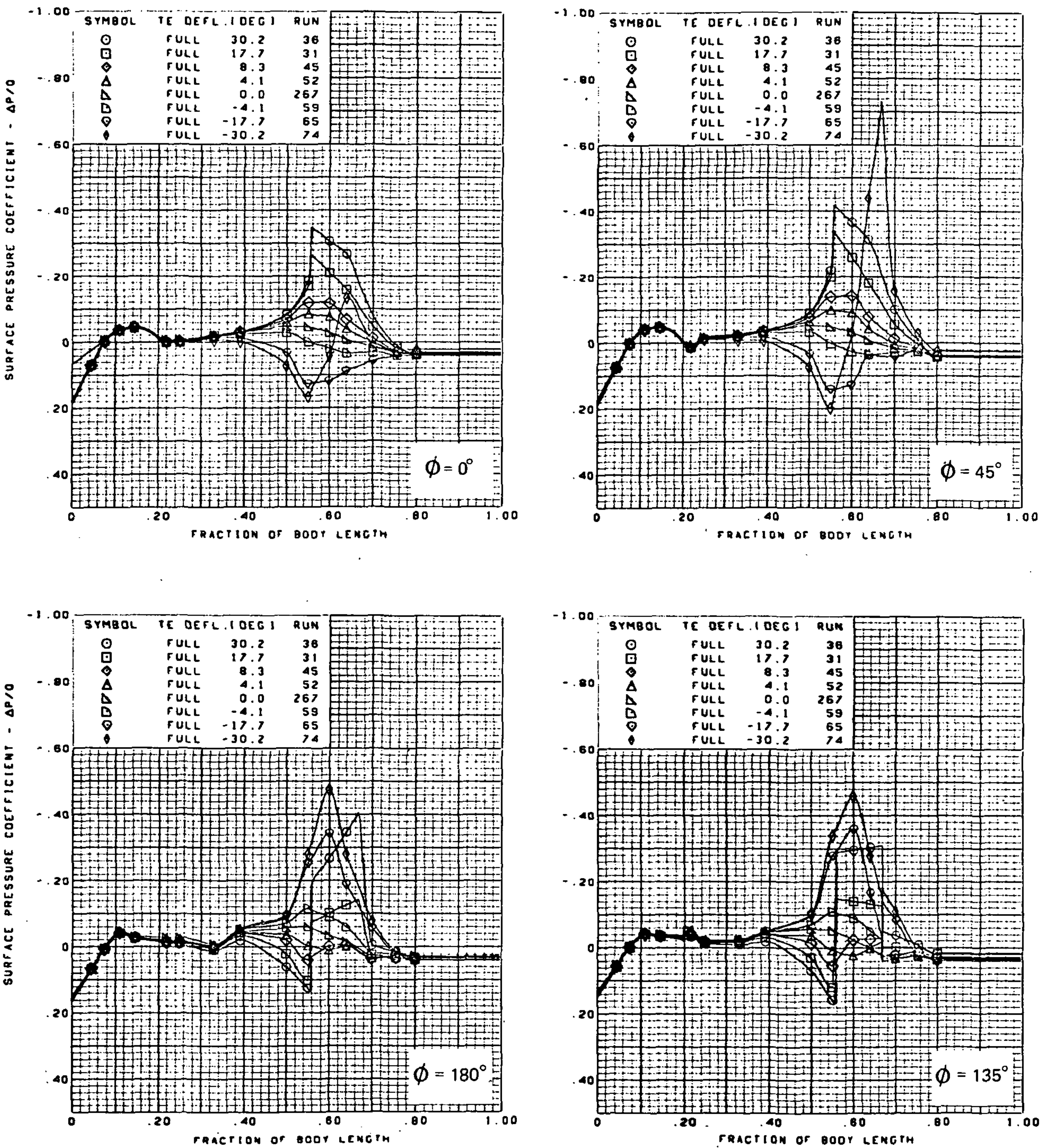




M = 0.40
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

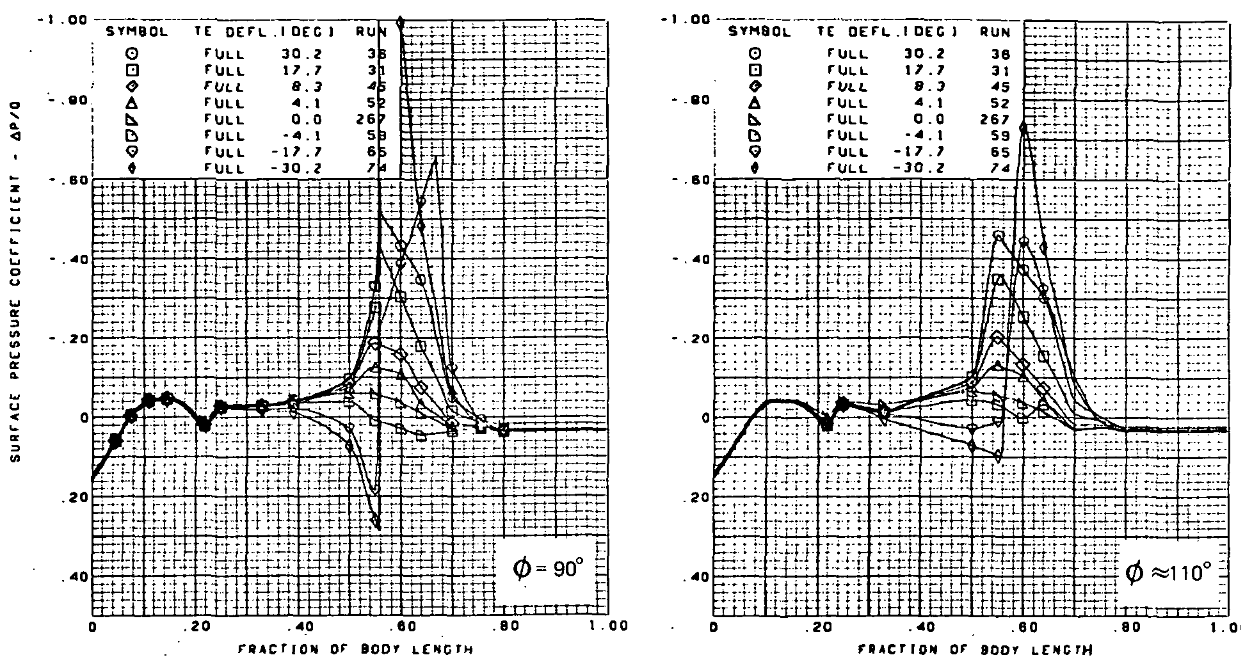
(c) (Concluded)

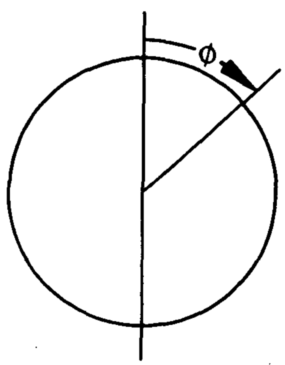
Figure 69.–(Concluded)



(a) $\alpha \approx 0.0°$

Figure 70.–Body Surface Longitudinal Pressure Distributions—Effect of Full Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 0.85

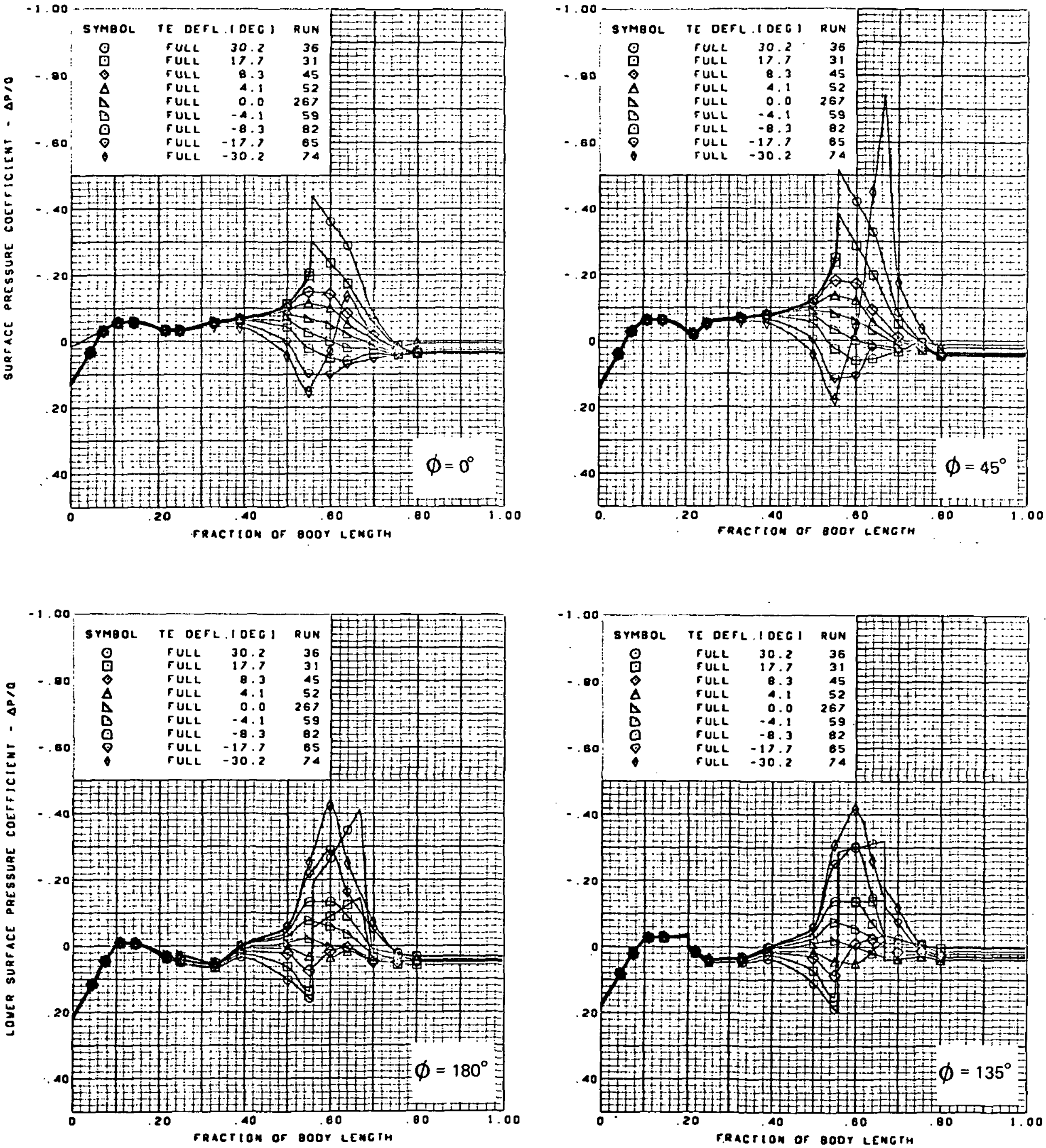




M = 0.85
α ≈ 0.0°
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

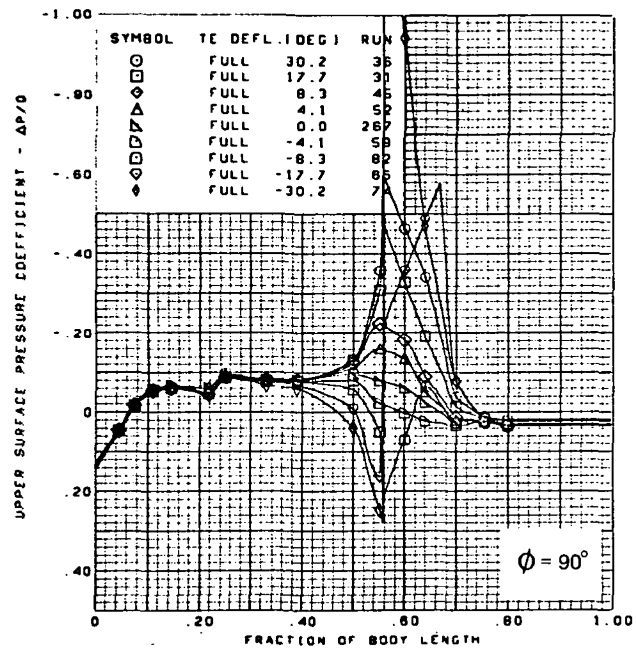
(a) (Concluded)

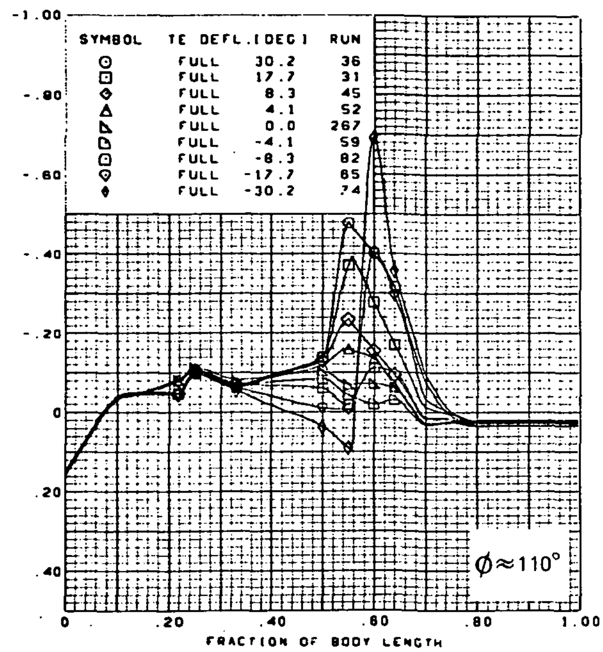
Figure 70.–(Continued)

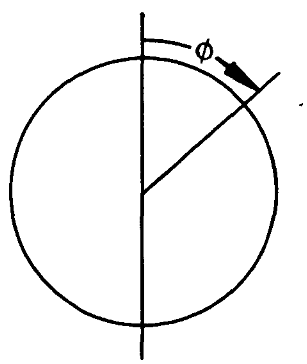


(b) $\alpha \approx 4.0°$

Figure 70.–(Continued)



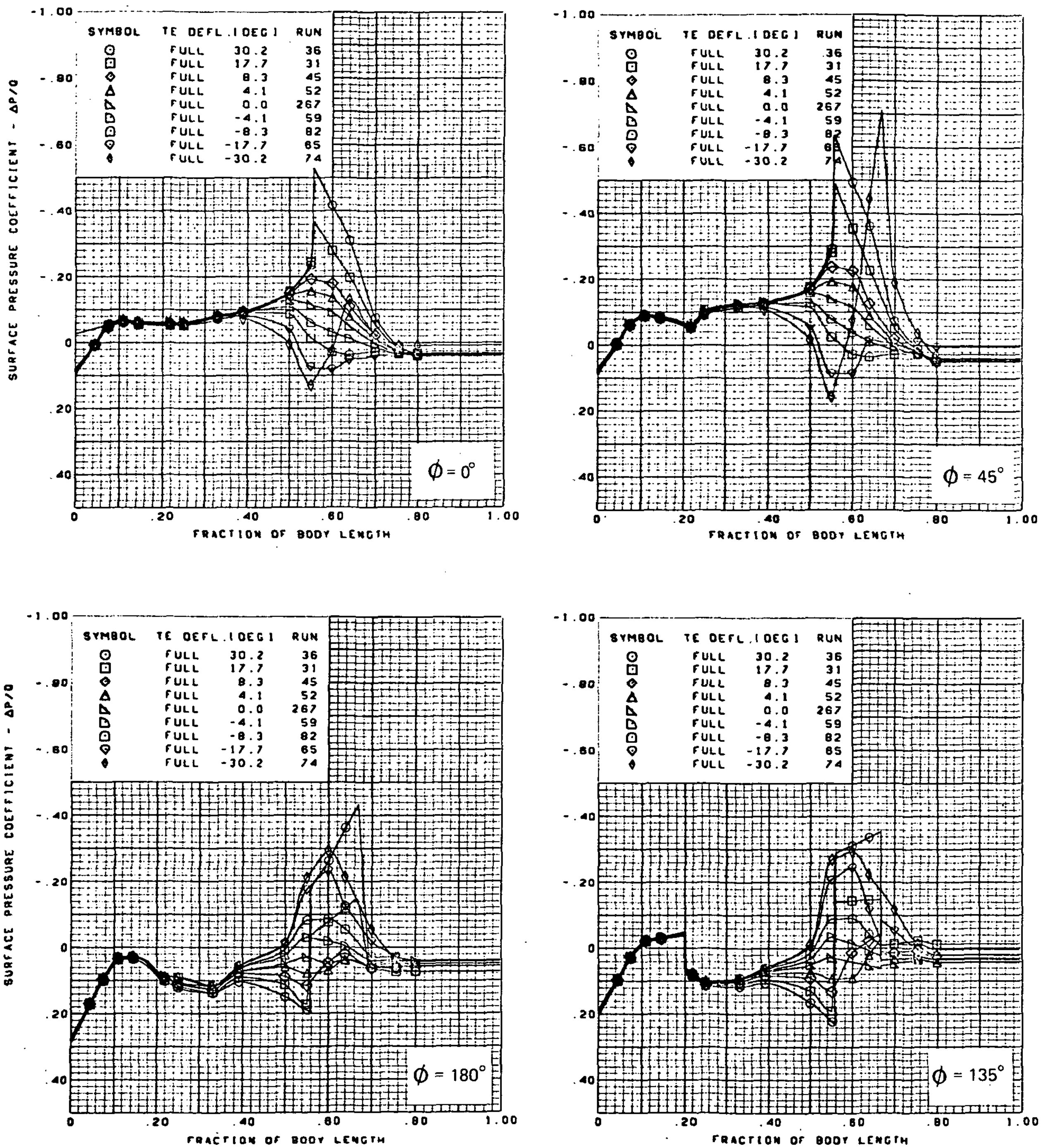




M = 0.85
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

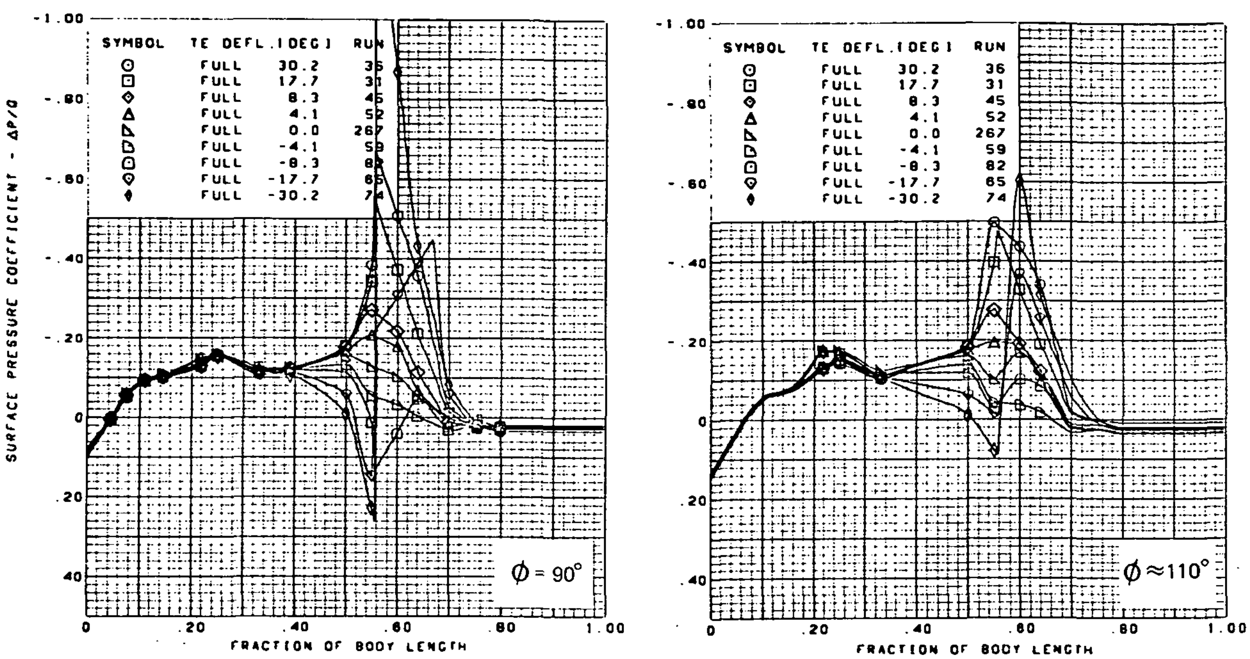
(b) (Concluded)

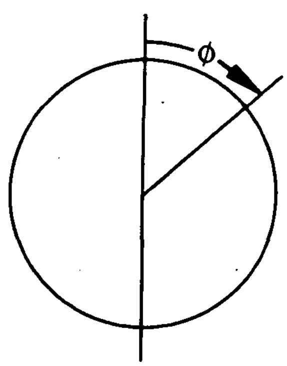
Figure 70.–(Continued)



(c) $\alpha \approx 8.0°$

Figure 70.–(Continued)

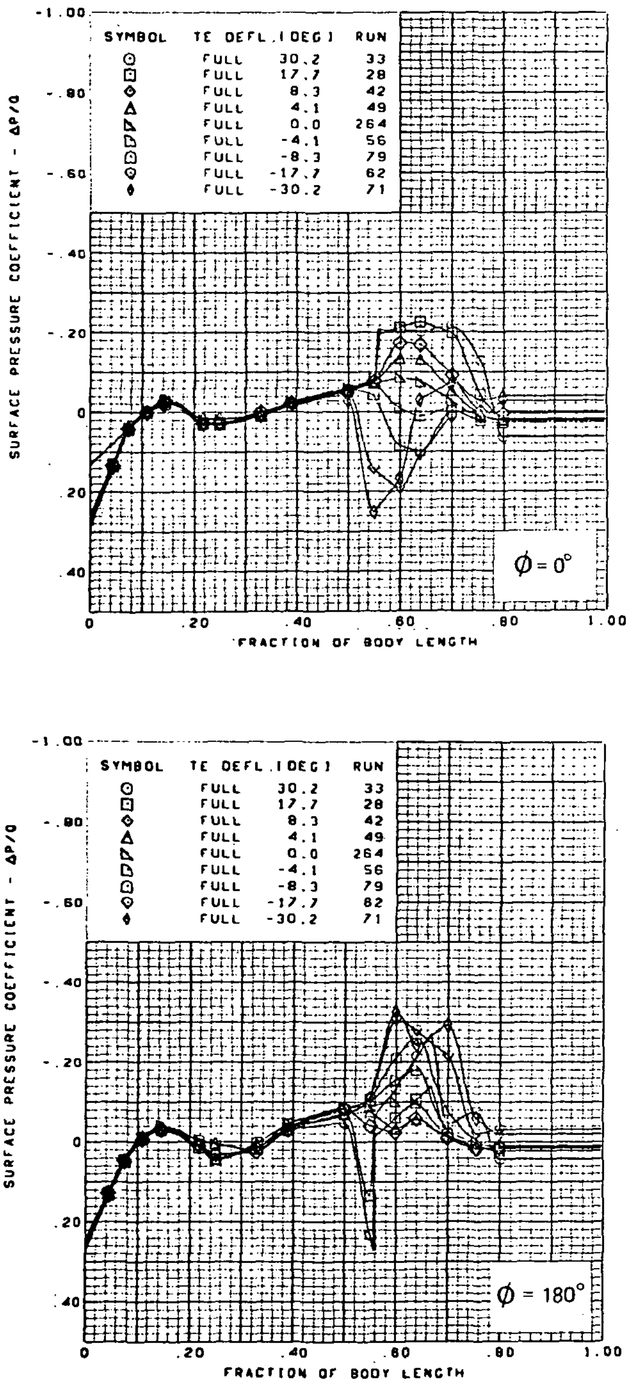




M = 0.85
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

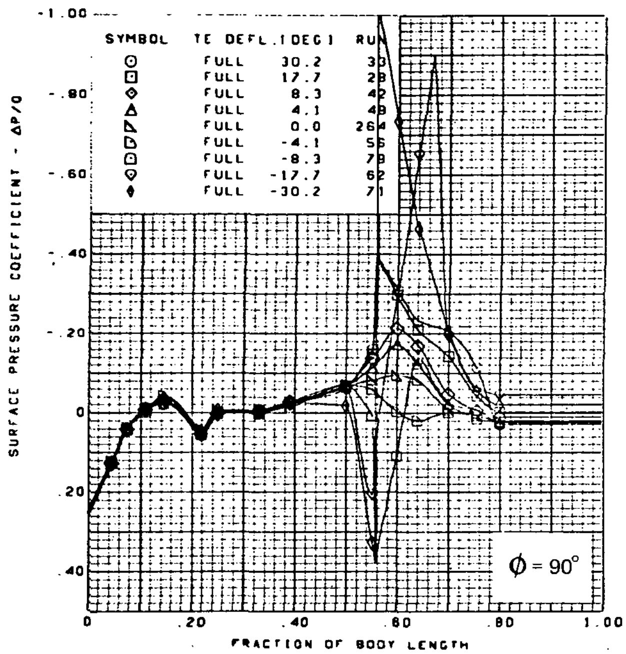
(c) (Concluded)

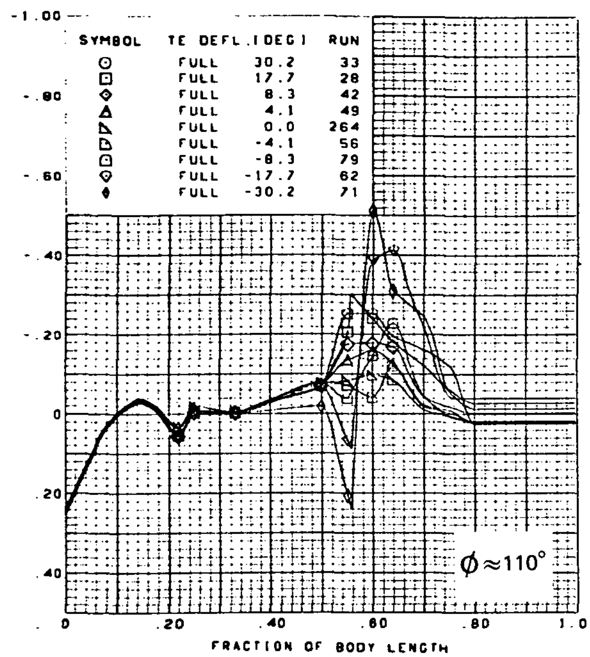
Figure 70.-(Concluded)

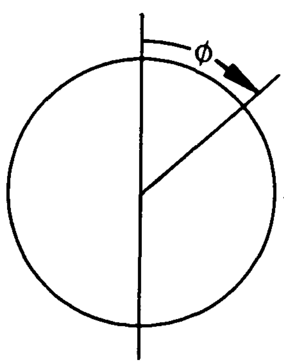


(a) $\alpha \approx 0.0°$

Figure 71.–Body Surface Longitudinal Pressure Distributions—Effect of Full Span T.E. Deflection; Flat Wing, Round L.E.; L.E. Deflection, Full Span = 0.0°; M = 1.05



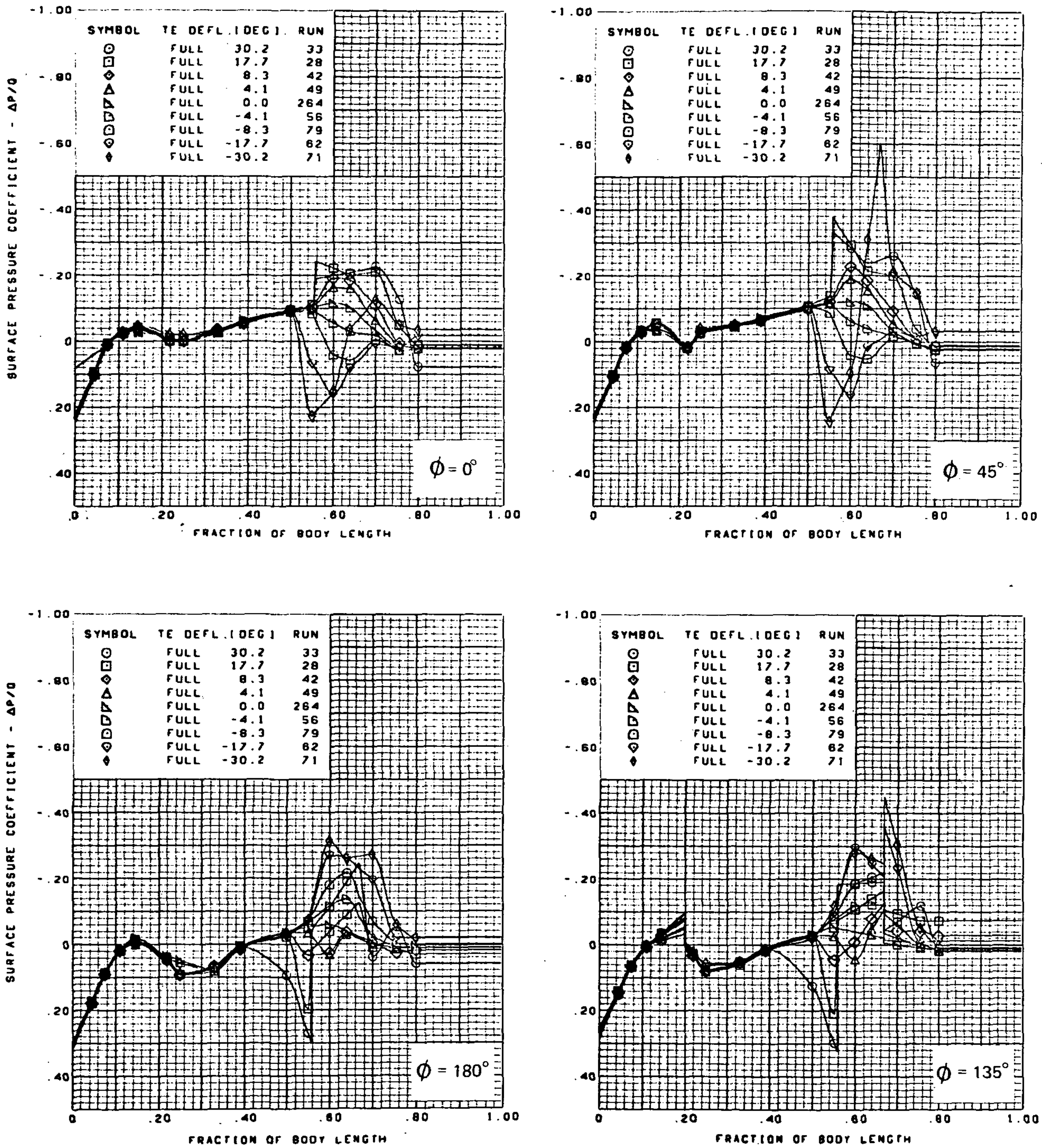




M = 1.05
$\alpha \approx 0.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

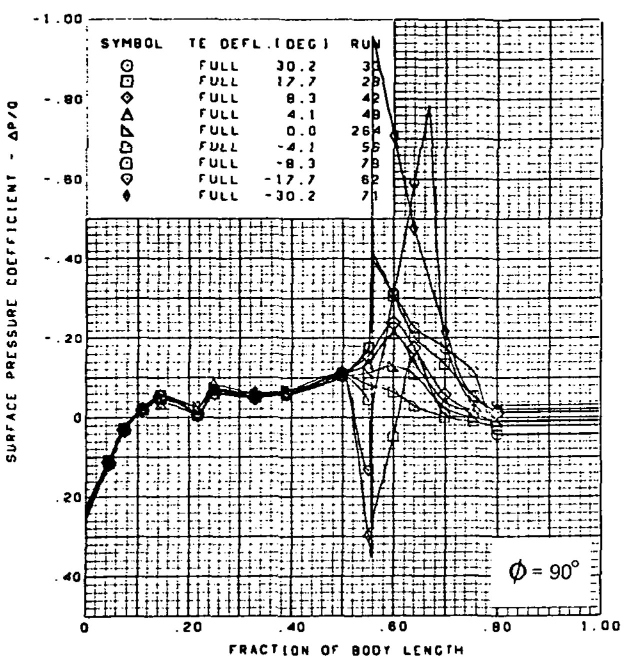
(a) (Concluded)

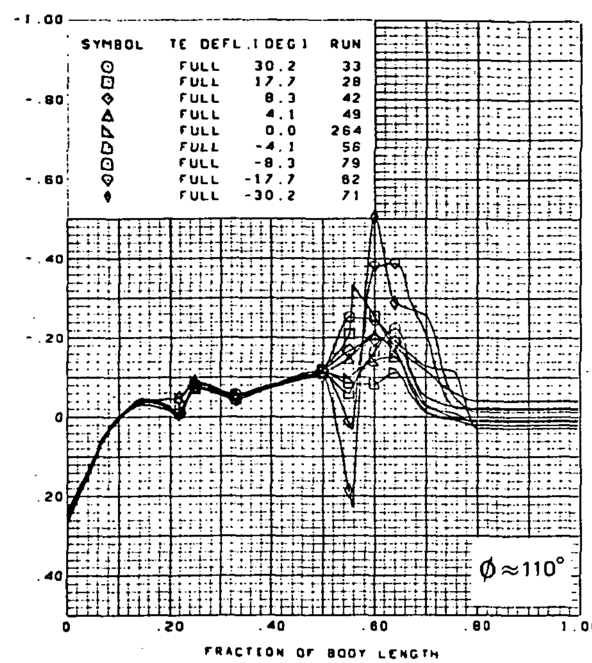
Figure 71.–(Continued)

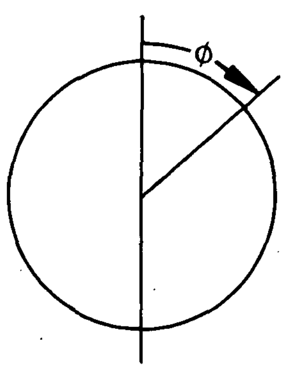


(b) $\alpha \approx 4.0^{\circ}$

Figure 71.–(Continued)



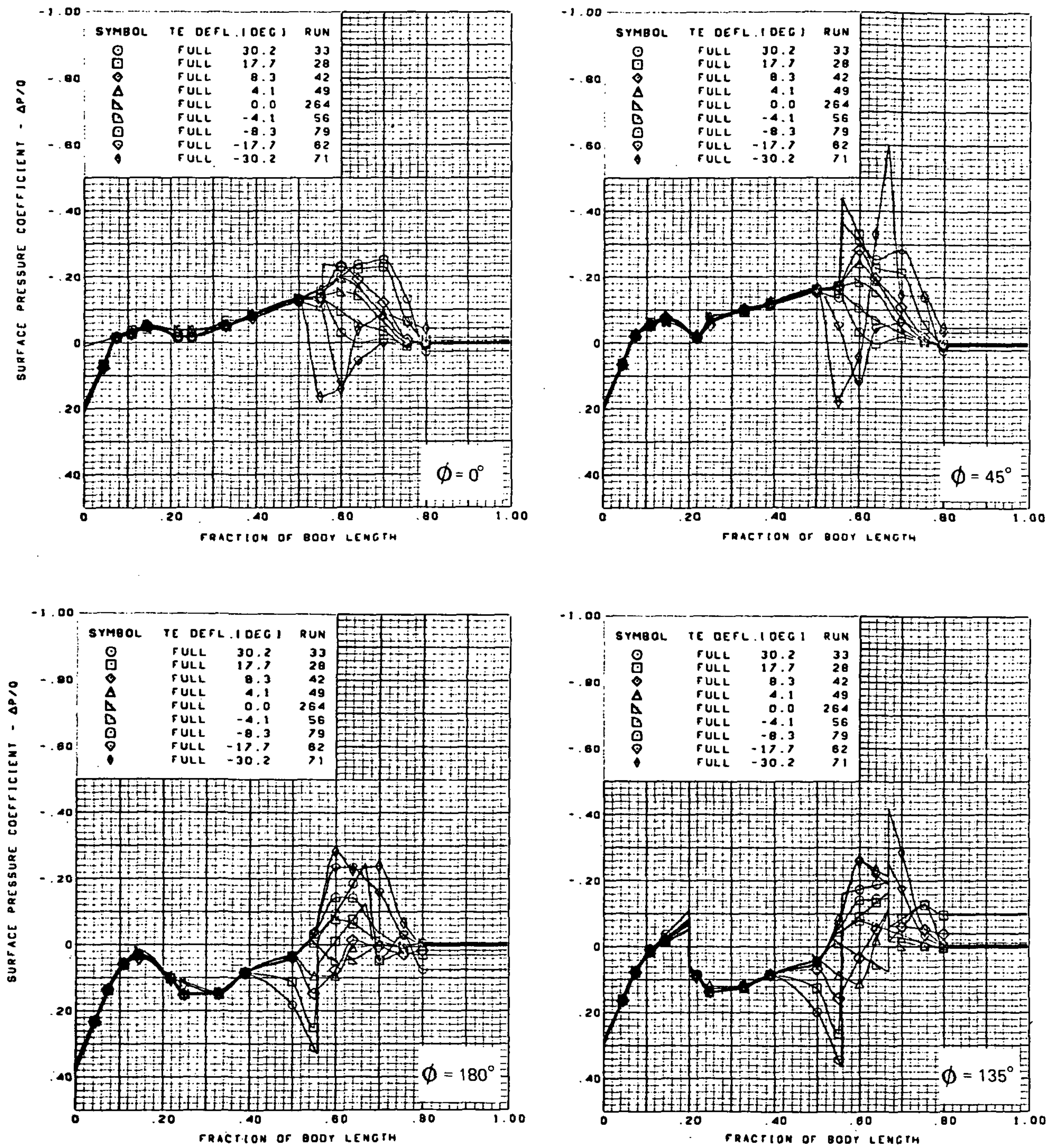




M = 1.05
$\alpha \approx 4.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

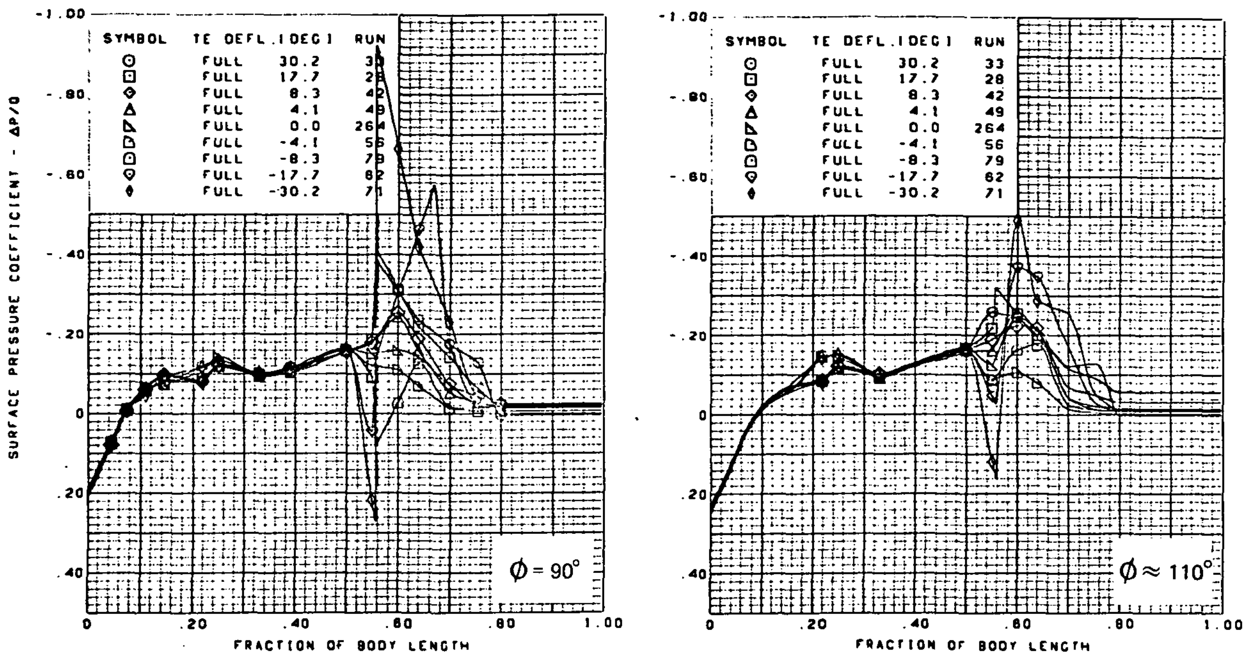
(b) (Concluded)

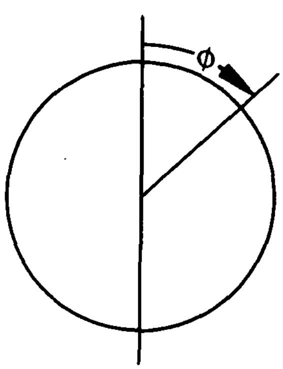
Figure 71.–(Continued)



(c) $\alpha \approx 8.0^{\circ}$

Figure 71.–(Continued)





M = 1.05
$\alpha \approx 8.0°$
Flat wing, round L.E.
L.E. deflection, full span = 0.0°

(c) (Concluded)

Figure 7.1.–(Concluded)

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