

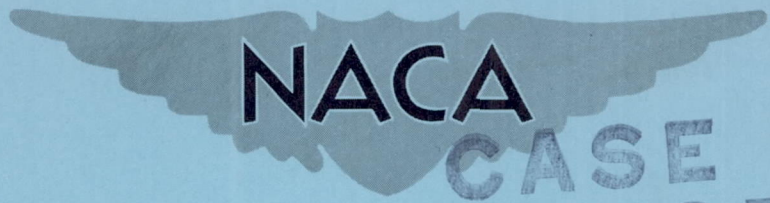
3040

340

CONFIDENTIAL

Copy
RM H54H06

NACA RM H54H06



CASE FILE
COPY

RESEARCH MEMORANDUM

WING PRESSURE DISTRIBUTIONS AT LOW LIFT
FOR THE XF-92A DELTA-WING AIRPLANE
AT TRANSONIC SPEEDS

By Earl R. Keener

High-Speed Flight Station
Edwards, Calif.

CLASSIFICATION CHANGED TO UNCLASSIFIED
AUTHORITY: PUBLICATION ANNOUNCEMENT NO. 1
EFFECTIVE DATE: SEPTEMBER 17, 1958
WHL

CLASSIFIED DOCUMENT

This material contains information affecting the National Defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

WASHINGTON
October 20, 1954

CONFIDENTIAL

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

RESEARCH MEMORANDUM

WING PRESSURE DISTRIBUTIONS AT LOW LIFT

FOR THE XF-92A DELTA-WING AIRPLANE

AT TRANSONIC SPEEDS

By Earl R. Keener

SUMMARY

Chordwise pressure distributions were measured over the left wing of the Convair XF-92A delta-wing airplane at low lift to determine the effects of Mach number upon the wing characteristics at transonic speeds. The data were obtained throughout the Mach number range of 0.74 to 1.01.

The critical Mach number of the basic wing was 0.83 for an airplane normal-force coefficient of 0.09. However, the elevon-actuator fairing on the lower surface of each wing near the tip induced local high velocities which reduced the critical Mach number to about 0.81. The large degree of sweep, the high degree of taper, and the deflected constant-chord elevon produced three-dimensional effects that resulted in a considerable variation of the section pressure distributions along the span.

The spanwise load distributions were roughly triangular in shape. The lateral location of the center of pressure of the wing panel varied with Mach number between 30 and 38 percent of the panel span. The chordwise location of the center of pressure of the wing panel varied with Mach number between 6 and 25 percent of the wing-panel mean aerodynamic chord. The ratio of the normal force of the wing to the total airplane normal force varied from 0.66 at the lower Mach numbers to 0.83 at the higher Mach numbers.

INTRODUCTION

Flight tests of the Convair XF-92A delta-wing airplane were conducted at the NACA High-Speed Flight Station at Edwards, Calif. Throughout the tests chordwise pressure distributions were measured over the left wing to determine the chordwise and spanwise load distributions of

the 60° delta wing. During the course of the flight tests the airplane was flown to a Mach number of 1.01 in dives. Because of the interest in the effect of Mach number upon the load characteristics of the delta-wing configuration, the results of the pressure-distribution data obtained from these dives are presented herein.

SYMBOLS

- $b/2$ wing semispan, 15.67 ft
- $b'/2$ wing-panel semispan, spanwise distance from row A (0.197b/2) to wing tip, 12.58 ft
- C_{NA} airplane normal-force coefficient, W_n/qS
- C_B' wing-panel bending-moment coefficient about row A
 $(0.197b/2), \int_0^1 c_n \frac{c}{\bar{c}} \frac{2y'}{b'} d \frac{2y'}{b'}$
- C_N' wing-panel normal-force coefficient, $\int_0^1 c_n \frac{c}{\bar{c}} d \frac{2y'}{b'}$
- $\frac{C_N'(S'/S)}{C_{NA}}$ ratio of the normal force of the wing to the total airplane normal force (assuming the load on the right wing panel to be equal to that measured for the left)
- C_m' wing-panel pitching-moment coefficient about $0.25c'$,
 $\frac{\bar{c}}{c'} \int_0^1 c_m \left(\frac{c}{\bar{c}}\right)^2 d \frac{2y'}{b'}$
- c local wing chord parallel to plane of symmetry, ft
- $\bar{c}$ average chord of wing panel, 10.90 ft
- $c', \text{ M.A.C.}'$ mean aerodynamic chord of the wing panel,
 $\frac{2}{S'} \int_0^{b'/2} c^2 dy', 14.5 \text{ ft}$
- c_m section pitching-moment coefficient about a line perpendicular to longitudinal axis of airplane, passing through $0.25c'$, $c_{mC/4} + 0.75\left(1 - \frac{c'}{\bar{c}}\right)c_n$

$c_m \left(\frac{c}{c} \right)^2$	section pitching-moment parameter
$c_{m_c}/4$	section pitching-moment coefficient about $0.25c$, $\int_0^1 \frac{p_l - p_u}{q} \left(0.25 - \frac{x}{c} \right) d \frac{x}{c}$
c_n	section normal-force coefficient, $\int_0^1 \frac{p_l - p_u}{q} d \frac{x}{c}$
$\frac{c_n}{C_N'} \left(\frac{c}{c} \right)$	section normal-load parameter
M	free-stream Mach number
n	normal-load factor
P	pressure coefficient, $\frac{p - p_o}{q}$
P_{cr}	critical pressure coefficient (pressure coefficient at sonic velocity), $\frac{2}{\gamma M^2} \left[\left(\frac{2}{\gamma + 1} + \frac{\gamma - 1}{\gamma + 1} M^2 \right)^{\frac{\gamma}{\gamma - 1}} - 1 \right]$
p	local static pressure, lb/sq ft
p_o	free-stream static pressure, lb/sq ft
p_l	local static pressure on lower wing surface, lb/sq ft
p_u	local static pressure on upper wing surface, lb/sq ft
q	free-stream dynamic pressure, lb/sq ft
S	total wing area, including area projected through fuselage, 425.0 sq ft
$S'/2$	area of wing panel outboard of row A ($0.197b/2$), 137.1 sq ft
W	airplane weight, lb

x	chordwise distance rearward of leading edge of local chord, ft
x/c	fraction of chord
x' _{cp}	chordwise location of center of pressure of wing panel, $\left(-\frac{C_{m'}}{C_{N'}} + 0.25\right)100$, percent b'/2
y'	spanwise distance outboard of row A (0.197b/2), ft
$\frac{y'}{b'/2}$	fraction of semispan
y' _{cp}	lateral location of center of pressure of wing panel, $\left(\frac{C_B}{C_{N'}}\right)100$, percent b'/2
α	airplane angle of attack, deg
δ_{eL}	deflection of left elevon, deg
γ	ratio of specific heats

DESCRIPTION OF AIRPLANE

The Convair XF-92A delta-wing airplane used in these tests is shown in figure 1. A three-view drawing of the airplane showing the general overall dimensions is shown in figure 2. Other pertinent dimensions are given in table I and in the symbols.

The wing plan form is an equilateral triangle, which has an aspect ratio of 2.31. The wing is untwisted and has no incidence. An NACA 65(06)-006.5 airfoil section is employed at all streamwise stations. Table II gives the ordinates of the airfoil section.

Longitudinal control is obtained by means of full-span unsealed elevons, which have a constant chord aft of the hinge line with a small horn balance at the tip (fig. 2).

INSTRUMENTATION

Standard NACA instruments were used to record indicated free-stream static and dynamic pressures, normal acceleration, angle of attack, angle of sideslip, elevon position, rolling and pitching angular velocity, and rolling and pitching angular acceleration. The airspeed head was mounted on a boom which projects from the nose of the airplane. The angle-of-attack and angle-of-sideslip vanes were attached to the nose boom. Wing pressures were measured by NACA type recording manometers. All instruments were synchronized by a common timer.

Flush-type static-pressure orifices installed in the left wing were arranged in five chordwise rows, the chordwise and spanwise locations of which are given in table III. The orifices were connected through the wing to the manometers in the instrument compartment by 1/4-inch inside-diameter tubing. It was necessary to pass the pressure tubing from the orifices on the elevon through the elevon-actuator fairing. As a result the fairing was larger than that necessary to house the elevon actuator alone.

TESTS

The test data presented herein were obtained from three dives: one at Mach numbers from 0.74 to 0.87, another at Mach numbers from 0.90 to 0.97, and a third at Mach numbers from 0.98 to 1.01, each on different flights. The altitudes varied from 23,000 to 13,000 feet for the first dive and from 40,000 to 30,000 feet for the other two dives.

REDUCTION OF DATA

Mach number and free-stream static pressure were obtained from the indicated free-stream static and dynamic pressures by the radar tracking method of reference 1. The static pressure over the upper and lower surfaces was measured at each of the five wing sections relative to the pressure in the instrument compartment. The instrument compartment pressure was measured relative to the indicated free-stream static pressure, which was corrected to free-stream static pressure as described above. Lag in the pressure recording system due to orifice tube length was determined by the method for photographic instruments presented in reference 2. The lag was found to be negligible for the rates of change of pressure due to change in altitude or speed encountered in the dives.

It was desired that the data from these dives show the variation with Mach number of the wing characteristics of a delta-wing aircraft at a low lift coefficient and at flight conditions for which the airplane was in balance (zero angular velocity and acceleration). Since the longitudinal control of the XF-92A airplane is obtained by means of elevons on the wing, the characteristics of the wing at zero elevon deflection could not be obtained. However, it was possible to select data points for pressure distributions from these dives at near-balanced conditions at an airplane normal-force coefficient of 0.09 ± 0.02 , for which the left elevon deflection was $2^\circ \pm 0.5^\circ$ up. The maximum aileron deflection for these data points was 1.3° ; however, the aileron angle for most of the points was less than 1° . Distributions were selected throughout each dive at Mach number intervals of about 0.01.

The measured orifice pressures were reduced to pressure coefficients, and the chordwise distributions of these pressure coefficients were plotted for each of the five wing sections at each of the test points selected. Section normal-force coefficients and section pitching-moment coefficients were obtained by mechanical integration of the chordwise pressure distributions.

Spanwise load and pitching-moment distributions were obtained from the integrated section characteristics. The portion of the left wing outboard of row A ($0.197b/2$) was treated as an isolated panel, and the coefficients obtained from integration of the spanwise distributions were based upon the geometric properties of the panel.

ACCURACY

The accuracy of the test results is estimated to be within the following limits:

M		± 0.01
P		± 0.02
c_n		± 0.03
$c_{m_c/4}$		± 0.006
C_{N_A}		± 0.02
α , deg		± 1.0
δ_{e_L} , deg		± 0.2

RESULTS AND DISCUSSION

Chordwise Pressure Distributions

The pressure coefficients and aerodynamic characteristics of the reduced flight data are presented in table IV. From the data of table IV, Mach numbers were selected that defined the changes in the chordwise pressure distributions that occurred as the Mach number was increased from 0.74 to 1.01. The distributions at these selected Mach numbers are presented in figure 3 for each of the five chordwise rows of orifices. For clarity the upper and lower surfaces are shown separately. The critical pressure coefficient is noted in each pressure diagram.

M = 0.74 to 0.87.- At the lowest Mach number presented, 0.74, both upper- and lower-surface pressure distributions were subcritical as can be seen in figure 3. As the Mach number increased, the midchord pressure coefficients became more negative until local sonic velocity was reached behind the midchord at each section, except on the upper surface of the wing tip where the critical pressure coefficient was reached near the leading edge. From inspection of data, the critical Mach number (the free-stream Mach number at which local sonic velocity was reached) at a C_{NA} of 0.09 was 0.83 for the upper surface and 0.85 for most of the lower surface. However, row D became critical on the lower surface at a Mach number of 0.81 because of the local induced velocities associated with the presence of the elevon-actuator fairing, shown in table III(b), and row E became critical at a Mach number of 0.87 because it is located on the elevon, which was at a lower angle of attack relative to the fixed wing.

M = 0.87.- In the pressure distributions of figure 3, the rapid pressure recoveries at a Mach number of 0.87 indicate that shock waves existed on each surface. At this Mach number, the effect of the elevon-actuator fairing upon the lower-surface pressures became quite large and may be seen in the pressure distributions at row D. The fairing caused high local induced velocities, which resulted in a secondary shock wave ahead of the main shock wave. Other irregularities in the pressure distributions may be attributed to the deflection of the elevon, leakage of air through the elevon junction, and wing-skin deformations. The last effect is a result of the fact that the skin is not stressed, hence it has a tendency to deform between spars and ribs. This was evident from inspection of photographs (unpublished) of portions of the wing surface taken on the ground and in flight. The irregularities correlate with the spar and rib locations and are especially noticeable for the inboard sections, where the spacing between the wing structure is quite large. When the local velocities were supersonic, the deformations in the wing surface caused expansion waves and shock waves which in some cases were

quite strong, as shown by the irregularities in the pressure distributions for row A (fig. 3(a)).

M = 0.90.- Figure 4 is presented to show the spanwise relationship of the pressure distributions of figure 3 at Mach numbers of 0.74, 0.90, and 1.01. At a Mach number of 0.90 the main shock wave on the upper surface was parallel to the trailing edge and located a short distance ahead of the elevon junction. On the lower surface, two large shock waves may be detected in the pressure distributions. One is located considerably ahead of the elevon junction and runs parallel to it from the fuselage outboard past row D. The other is located behind the elevon junction and extends from the tip inboard past row C, where it dissipates. The latter shock is the result of the presence of the elevon-actuator fairing. Were it not for the fairing, there probably would be only one shock wave extending from the fuselage to the wing tip.

M = 0.94 to 0.96.- Figure 3 shows that the trailing-edge pressures decreased rapidly on both surfaces between Mach numbers of 0.94 and 0.96. This effect was caused by the rearward movement of the shock waves to the trailing edge, accompanied by an indeterminable amount of separation.

M = 1.01.- Figure 4(c) shows that the main shock waves on both surfaces were at the trailing edge at a Mach number of 1.01, with a noticeable oblique shock on the upper surface at the elevon junction attributed to the upward deflection of the elevon. As mentioned before, large secondary effects occurred as a result of the elevon-actuator fairing and the wing-skin deformations.

It may also be seen in figure 4 that at all Mach numbers presented, there was considerable variation of the section pressure distributions along the span. This variation can be attributed to the large degree of sweep, the high degree of taper, and the deflected constant-chord elevon which produced appreciable three-dimensional effects.

Wing Loads

Figure 5 shows the spanwise load distributions at representative Mach numbers. The load distributions for the wing with undeflected elevon would be expected to be elliptical at the low lift coefficients of these tests, as shown in reference 3. This reference includes spanwise load distributions calculated by use of both the Weissinger theory and the slender-body theory at several subsonic Mach numbers. The load distributions in figure 5 for the XF-92A wing are roughly triangular rather than elliptical in shape throughout the Mach number range tested. This may be attributed to the upward deflection of the constant-chord elevon which caused a reduction in load from that of zero deflection. The reduction was progressively larger for the outboard wing sections,

since an increasingly larger percent of the local chord is taken up by the elevon as the tip is approached.

The distributions in figure 5 show some variation with Mach number. The effect of this variation on the bending-moment coefficient and the lateral position of the center of pressure of the wing panel may be seen in figure 6. The center of pressure was located at 38 percent of the panel at a Mach number of 0.74. As the Mach number increased, the center of pressure moved inboard to 33 percent at a Mach number of 0.84, outboard to 38 percent at a Mach number of 0.94, and inboard again to near 30 percent at a Mach number of 1.01.

Figure 7 shows the contribution of the wing to the total airplane normal force, assuming that the corresponding right wing panel carries the same aerodynamic load as the left wing panel. The value of the ratio $C_N'(S'/S)/C_{N_A}$ was about 0.66 at Mach numbers of 0.74 to 0.85.

Between Mach numbers of 0.85 and 0.96, the ratio increased from about 0.66 to about 0.83 where it remained to a Mach number of 1.01 (test limit).

Wing Pitching Moments

Figure 8 shows the spanwise pitching-moment distributions at representative Mach numbers. Effects of the elevon-actuator fairing and the elevon-horn junction between rows D and E cannot be accurately determined; hence an arbitrary fairing of the distributions is used based on rows A through D out to the elevon-horn junction and on row E over the elevon horn, which is at a different angle of attack relative to the fixed wing. At a Mach number of 0.74, the pitching-moment parameter was positive over inboard sections, decreasing to negative values near the tip. At a Mach number of 1.01 the pitching-moment parameter was constant over the span, except over the elevon horn. At intermediate Mach numbers the distributions changed progressively with Mach number, except in the region between row C and the elevon-horn junction at Mach numbers near 0.87. The distributions in this region do not change progressively with Mach number because of the local effect of the elevon-actuator fairing.

The chordwise location of the center of pressure of the wing panel is shown in figure 9. It was located at about 14 percent of the wing-panel mean aerodynamic chord at Mach numbers of 0.74 to 0.81. As the Mach number increased to 0.87 the center of pressure moved forward to about 6 percent. This was a result of the supersonic expansion of the local pressures over the elevon-actuator fairing, (which was mentioned in the discussion of the chordwise pressure distributions). The expansion caused a local down load which may be seen in the pressure distributions for row D at a Mach number of 0.87 (fig. 3(d)). Between Mach

numbers of 0.87 and 0.96 the center of pressure moved rearward to about 25 percent, where it remained up to the maximum Mach number tested (1.01). The rearward movement of the center of pressure may be attributed to the formation and rearward movement of the shock waves. This tended to relieve the down load on the elevon. At Mach numbers between 0.94 and 1.01 the rearward movement of the main shock waves on each surface to the trailing edge, had little effect upon the center of pressure. Apparently the effect of the rearward movement of the shock wave on the upper surface was canceled by the effect of the rearward movement of the shock wave on the lower surface.

CONCLUSIONS

The following conclusions may be drawn from the results of the low-lift flight data presented in this paper for the delta wing of the Convair XF-92A airplane:

1. The critical Mach number of the basic wing was 0.83 for an airplane normal-force coefficient of 0.09. However, the elevon-actuator fairing on the lower surface of each wing near the tip induced local high velocities which reduced the critical Mach number to about 0.81.
2. The large degree of sweep, the high degree of taper, and the deflected constant-chord elevon produced three-dimensional effects that resulted in a considerable variation of the section pressure distributions along the span.
3. The spanwise load distributions were roughly triangular in shape.
4. The lateral location of the center of pressure of the wing panel varied with Mach number between 30 and 38 percent of the panel span.
5. The chordwise location of the center of pressure of the wing panel varied with Mach number between 6 and 25 percent of the wing-panel mean aerodynamic chord.

6. The ratio of the normal force of the wing to the total airplane normal force varied from 0.66 at the lower Mach numbers to 0.83 at the higher Mach numbers.

High Speed Flight Station,
National Advisory Committee for Aeronautics,
Edwards, Calif., July 21, 1954.

REFERENCES

1. Zalovcik, John A.: A Radar Method of Calibrating Airspeed Installations on Airplanes in Maneuvers at High Altitudes and at Transonic and Supersonic Speeds. NACA Rep. 985, 1950. (Supersedes NACA TN 1979.)
2. Huston, Wilber B.: Accuracy of Airspeed Measurements and Flight Calibration Procedures. NACA Rep. 919, 1948. (Supersedes NACA TN 1605.)
3. Smith, Donald W., and Reed, Verlin D.: A Comparison of the Chordwise Pressure Distribution and Spanwise Distribution of Loading at Subsonic Speeds on Two Triangular Wings of Aspect Ratio 2 Having NACA 0005 and 0008 Sections. NACA RM A51121, 1952.

TABLE I

PHYSICAL CHARACTERISTICS OF THE XF-92A AIRPLANE

Wing:

Area, sq ft	425
Span, ft	31.33
Airfoil section	NACA 65(06)-006.5
Mean aerodynamic chord, ft	18.09
Aspect ratio	2.31
Root chord, ft	27.13
Tip chord	0
Taper ratio	0
Sweepback (leading edge), deg	60
Incidence, deg	0
Dihedral (chord plane), deg	0

Elevons:

Area (total, both, aft of hinge line) sq ft	76.19
Span (one elevon), ft	13.35
Chord (aft of hinge line, constant except at tip), ft	3.05
Movement, deg	
Elevator:	
Up	15
Down	5
Aileron, total	10
Operation	Hydraulic

Vertical tail:

Area, sq ft	75.35
Height, above fuselage center line, ft	11.50

Rudder:

Area, sq ft	15.53
Span, ft	9.22
Travel, deg	±8.5
Operation	Hydraulic

Fuselage:

Length, ft	42.80
----------------------	-------

Power plant:

Engine	Allison J33-A-29 with afterburner
Rating:	
Static thrust at sea level, lb	5600
Static thrust at sea level with afterburner, lb	7500

Weight:

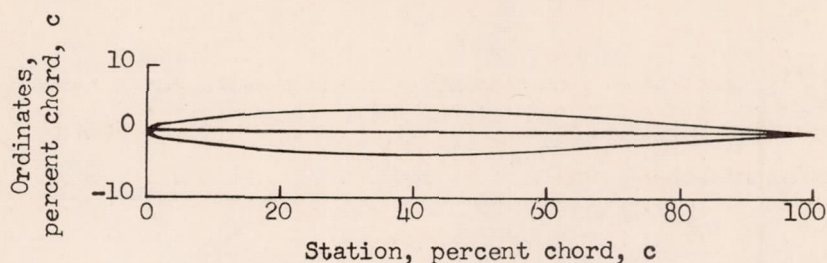
Gross weight (560 gal fuel), lb	15,560
Empty weight, lb	11,808

Center-of-gravity locations:

Gross weight (560 gal fuel), percent M.A.C.	25.5
Empty weight, percent M.A.C.	29.2
Moment of inertia in pitch, slug-ft ²	35,000

TABLE II

PROFILE AND ORDINATES OF THE AIRFOIL SECTION

NACA 65₍₀₆₎-006.5

[Stations and ordinates given in percent of
airfoil chord]

Upper surface		Lower surface	
Station	Ordinate	Station	Ordinate
0	0	0	0
.50	.516	.50	-.516
.75	.622	.75	-.622
1.25	.777	1.25	-.777
2.5	1.036	2.5	-1.036
5.0	1.419	5.0	-1.419
7.5	1.721	7.5	-1.721
10	1.976	10	-1.976
15	2.380	15	-2.380
20	2.689	20	-2.689
25	2.922	25	-2.922
30	3.090	30	-3.090
35	3.198	35	-3.198
40	3.248	40	-3.248
45	3.232	45	-3.232
50	3.142	50	-3.142
55	2.969	55	-2.969
60	2.728	60	-2.728
65	2.433	65	-2.433
70	2.096	70	-2.096
75	1.727	75	-1.727
80	1.336	80	-1.336
85	.937	85	-.937
90	.552	90	-.552
95	.211	95	-.211
100	0	100	0
L. E. radius: 0.282			

TABLE III

LOCATION OF STATIC-PRESSURE ORIFICES

(a) Chordwise location

Orifice	Chordwise Station									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0	---	0	---	0	---	0	---	0	---
2	2.5	2.5	2.5	2.5	5.0	5.0	2.5	---	10.0	10.0
3	5.0	5.0	5.0	5.0	9.0	9.0	5.8	5.8	20.0	20.0
4	7.5	7.5	9.3	9.3	15.0	15.0	10.0	10.0	35.0	35.0
5	10.0	10.0	11.8	---	20.0	20.0	20.4	20.4	51.3	51.3
6	12.5	12.5	15.0	15.0	29.7	29.7	30.0	30.0	80.0	80.0
7	15.0	15.0	19.5	19.5	40.0	40.0	40.0	40.0	95.0	95.0
8	20.0	20.0	25.2	25.2	50.0	50.0	50.0	50.0		
9	25.0	25.0	30.0	30.0	60.0	60.0	60.0	60.0		
10	30.9	30.9	40.5	40.5	70.0	70.0	65.0	65.0		
11	35.0	35.0	50.0	50.0	75.0	---	70.0	70.0		
12	40.0	40.0	59.1	59.1	80.0	80.0	80.0	80.0		
13	45.0	45.0	70.0	70.0	85.0	85.0	85.0	85.0		
14	50.0	50.0	80.0	80.0	95.0	95.0	95.0	95.0		
15	55.0	55.0	83.9	---						
16	60.0	60.0	90.0	90.0						
17	65.0	65.0	95.0	95.0						
18	70.0	70.0								
19	75.0	75.0								
20	83.0	83.0								
21	86.5	86.5								
22	90.0	90.0								
23	95.0	95.0								

CONFIDENTIAL

14

CONFIDENTIAL

NACA RM H54H06

TABLE III - Concluded
LOCATION OF STATIC-PRESSURE ORIFICES

(b) Spanwise location

Orifice row	A	B	C	D	E
Chord length, c, feet	21.79	18.32	13.74	9.81	3.30
Distance from airplane $\bar{c}$, percent $b/2$	19.7	32.5	49.4	63.9	87.8
Distance from row A, percent $b'/2$	0	16.0	37.0	55.0	84.9

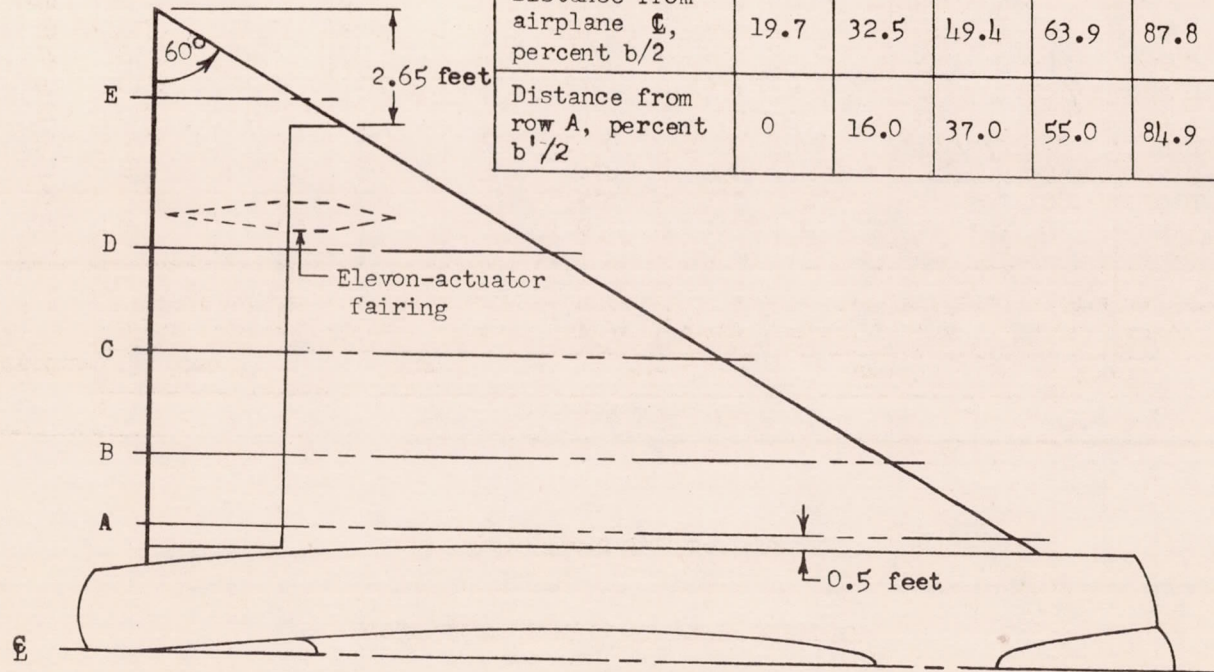


TABLE IV

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(a) \quad M = 0.742 \quad \alpha = 2.3^\circ$$

$$C_{NA} = 0.109 \quad \delta_{eL} = 1.7^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.228	-----	0.045	-----	-0.120	-----	-0.361	-----	-0.226	-----
2	-.211	0.175	-.286	0.135	-.316	0.090	-.467	-----	-.376	0.030
3	-.190	.120	-.211	.075	-.271	.015	-.406	0.090	-.301	-.045
4	-.150	.105	-.211	.045	-.301	.015	-.346	.024	-.301	-.166
5	-.150	.066	-.181	-----	-.286	-.069	-.301	-.015	-.301	-.181
6	-.135	.030	-.211	.030	-.331	-.120	-.316	-.036	-.105	-.045
7	-.150	.030	-.181	.045	-.286	-.120	-.286	-.084	.015	.030
8	-.135	-.039	-.226	-.060	-.286	-.150	-.241	-.166		
9	-.120	-.075	-.211	-.060	-.211	-.150	-.166	-.241		
10	-.150	.030	-.271	-.105	-.090	-.120	-.105	-.241		
11	-.166	-.030	-.286	-.211	-.030	-----	.000	-.346		
12	-.226	-.105	-.271	-.226	.015	-.181	-.021	-.075		
13	-.256	-.120	-.150	-.120	.000	-.075	.045	-.030		
14	-.271	-.196	-.045	-.045	.060	.045	.060	.060		
15	-.226	-.181	.060	-----						
16	-.286	-.241	.015	-.024						
17	-.271	-.211	.060	.030						
18	-.271	-.166								
19	-.166	-.105								
20	-.045	-.030								
21	-.021	-.105								
22	.030	-.030								
23	.030	.006								

Integrated section aerodynamic characteristics					
c_n	0.094	0.102	0.117	0.109	0.165
$c_{mC/4}$	.0016	.0080	.0173	.0330	-.0048

Integrated panel aerodynamic characteristics	
$C_N' = 0.112$	x'_{cp} (percent c') = 16.7
$C_B' = .042$	y'_{cp} (percent $b'/2$) = 37.5
$C_m' = .0093$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(b) \quad M = 0.750$$

$$C_{NA} = 0.111$$

$$\alpha = 2.2^\circ$$

$$\delta_{eL} = 1.7^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.240	-----	0.023	-----	-0.121	-----	-0.381	-----	-0.223	-----
2	-.194	0.176	-.295	0.139	-.324	0.095	-.483	-----	-.381	0.023
3	-.173	.124	-.208	.081	-.266	.023	-.410	0.095	-.280	-.049
4	-.136	.110	-.223	.052	-.295	.009	-.353	.017	-.295	-.165
5	-.136	.072	-.179	-----	-.280	-.072	-.309	-.020	-.309	-.179
6	-.130	.038	-.208	.038	-.324	-.107	-.324	-.026	-.092	-.035
7	-.136	.038	-.194	.052	-.295	-.121	-.280	-.072	.023	.038
8	-.136	-.029	-.223	-.049	-.295	-.150	-.251	-.179		
9	-.107	-.064	-.208	-.049	-.194	-.150	-.165	-.251		
10	-.136	.023	-.266	-.107	-.092	-.107	-.092	-.237		
11	-.165	-.020	-.295	-.194	-.035	-----	.009	-.367		
12	-.223	-.107	-.266	-.223	.023	-.179	-.012	-.078		
13	-.266	-.107	-.150	-.107	.009	-.078	.081	-.020		
14	-.251	-.208	-.035	-.049	.066	.052	.066	.066		
15	-.223	-.165	.066	-----						
16	-.295	-.237	.023	-.014						
17	-.266	-.208	.066	.038						
18	-.266	-.150								
19	-.179	-.110								
20	-.035	-.035								
21	-.012	-.107								
22	.038	-.035								
23	.038	.014								

Integrated section aerodynamic characteristics					
c_n	0.095	0.108	0.114	0.101	0.170
$c_{m_c/4}$	-.0010	.0086	.0173	.0371	-.0067

Integrated panel aerodynamic characteristics	
$C_N' = 0.109$	x'_{cp} (percent c') = 15.6
$C_B' = .041$	y'_{cp} (percent $b'/2$) = 37.6
$C_m' = .0102$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

(c) $M = 0.762$

$C_{N_A} = 0.096$

$\alpha = 1.8^\circ$

$\delta_{e_L} = 1.6^\circ \text{ up}$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.242	-----	0.079	-----	-0.044	-----	-0.248	-----	-0.152	-----
2	-.179	0.155	-.248	0.133	-.288	0.065	-.411	-----	-.343	0.011
3	-.160	.106	-.193	.065	-.247	.011	-.370	0.079	-.302	-.071
4	-.139	.106	-.193	.041	-.275	-.003	-.329	-.008	-.275	-.180
5	-.125	.057	-.180	-----	-.275	-.092	-.302	-.030	-.302	-.193
6	-.122	.024	-.193	.024	-.316	-.125	-.316	-.049	-.098	-.044
7	-.125	.011	-.180	.024	-.275	-.139	-.288	-.092	.024	.024
8	-.126	-.038	-.220	-.057	-.288	-.166	-.248	-.193		
9	-.112	-.071	-.207	-.071	-.193	-.152	-.166	-.261		
10	-.139	.011	-.261	-.125	-.098	-.112	-.098	-.248		
11	-.166	-.030	-.288	-.207	-.030	-----	-.003	-.356		
12	-.207	-.112	-.275	-.248	.011	-.180	-.008	-.071		
13	-.248	-.112	-.152	-.125	.011	-.084	.079	-.030		
14	-.261	-.193	-.044	-.057	.065	.052	.065	.065		
15	-.220	-.180	.052	-----						
16	-.288	-.248	.011	-.024						
17	-.261	-.220	.052	.038						
18	-.261	-.166								
19	-.180	-.112								
20	-.044	-.030								
21	-.022	-.098								
22	.024	-.030								
23	.038	.016								

Integrated section aerodynamic characteristics					
c_n	0.083	0.093	0.095	0.090	0.150
$c_{m_{c/4}}$	.0000	.0099	.0116	.0365	-.0042

Integrated panel aerodynamic characteristics	
$C_{N'} = 0.100$	x'_{cp} (percent c') = 12.2
$C_{B'} = .037$	y'_{cp} (percent $b'/2$) = 37.0
$C_m' = .0128$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(d) \quad M = 0.770 \quad \alpha = 1.6^\circ$$

$$C_{N_A} = 0.090 \quad \delta_{e_L} = 1.6^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.259	-----	0.102	-----	-0.029	-----	-0.186	-----	-0.107	-----
2	-.173	0.149	-.238	0.128	-.278	0.063	-.383	-----	-.330	-0.016
3	-.155	.089	-.186	.063	-.238	-.003	-.356	0.063	-.278	-.081
4	-.134	.102	-.212	.024	-.265	-.016	-.317	-.021	-.265	-.199
5	-.121	.055	-.173	-----	-.265	-.012	-.291	-.042	-.304	-.199
6	-.118	.024	-.186	.010	-.317	-.134	-.304	-.047	-.094	-.042
7	-.121	.010	-.173	.024	-.278	-.147	-.278	-.102	.024	.024
8	-.121	-.050	-.225	-.068	-.291	-.173	-.252	-.186		
9	-.107	-.081	-.199	-.081	-.199	-.160	-.160	-.265		
10	-.134	.010	-.265	-.121	-.107	-.121	-.094	-.252		
11	-.160	-.029	-.291	-.225	-.029	-----	-.003	-.369		
12	-.212	-.121	-.278	-.252	.010	-.186	-.008	-.068		
13	-.252	-.107	-.160	-.120	.010	-.081	.076	-.029		
14	-.265	-.199	-.042	-.055	.063	.050	.063	.063		
15	-.225	-.186	.050	-----						
16	-.291	-.252	.010	-.024						
17	-.265	-.238	.050	.037						
18	-.265	-.173								
19	-.186	-.107								
20	-.042	-.029								
21	-.021	-.107								
22	.024	-.029								
23	.037	.016								

Integrated section aerodynamic characteristics					
c_n	0.088	0.086	0.092	0.079	0.129
$c_{m_c}/4$	-.0048	.0080	.0163	.0346	-.0019

Integrated panel aerodynamic characteristics	
$C_N' = 0.094$	x'_{cp} (percent c') = 13.2
$C_B' = .030$	y'_{cp} (percent $b'/2$) = 31.9
$C_m' = .0111$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(e) \quad M = 0.782$$

$$C_{NA} = 0.100$$

$$\alpha = 1.8^\circ$$

$$\delta_{eL} = 1.8^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.253	-----	0.083	-----	-0.063	-----	-0.270	-----	-0.160	-----
2	-.197	0.151	-.270	0.131	-.306	0.070	-.428	-----	-.367	-0.002
3	-.168	.107	-.197	.070	-.258	.010	-.391	0.083	-.306	-.087
4	-.124	.107	-.197	.022	-.282	-.002	-.343	-.007	-.282	-.197
5	-.136	.051	-.160	-----	-.282	-.095	-.318	-.039	-.306	-.197
6	-.112	.022	-.185	.022	-.330	-.124	-.330	-.044	-.100	-.039
7	-.124	.022	-.173	.022	-.294	-.148	-.306	-.095	.034	.034
8	-.100	-.046	-.221	-.075	-.306	-.160	-.258	-.197		
9	-.112	-.075	-.209	-.075	-.209	-.160	-.172	-.270		
10	-.124	.010	-.270	-.136	-.100	-.124	-.100	-.258		
11	-.160	-.027	-.294	-.233	-.027	-----	.010	-.391		
12	-.209	-.124	-.294	-.233	.022	-.197	-.007	-.087		
13	-.258	-.124	-.172	-.124	.010	-.087	.083	-.027		
14	-.270	-.197	-.039	-.051	.070	.058	.070	.070		
15	-.221	-.185	.070	-----						
16	-.306	-.233	.022	-.022						
17	-.282	-.233	.058	.034						
18	-.270	-.173								
19	-.197	-.124								
20	-.051	-.039								
21	-.007	-.112								
22	.034	-.027								
23	.041	.015								

Integrated section aerodynamic characteristics					
c_n	0.082	0.094	0.103	0.091	0.143
$c_{mc}/4$	.0010	.0077	.0118	.0374	-.0048

Integrated panel aerodynamic characteristics	
$C_N' = 0.103$	x'_{cp} (percent c') = 14.2
$C_B' = .036$	y'_{cp} (percent $b'/2$) = 35.0
$C_m' = .0111$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

(f) $M = 0.793$

$C_{NA} = 0.098$

$\alpha = 1.6^\circ$

$\delta_{eL} = 1.7^\circ \text{ up}$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.269	-----	0.097	-----	-0.041	-----	-0.214	-----	-0.122	-----
2	-.179	0.147	-.248	0.131	-.283	0.074	-.409	-----	-.352	-0.007
3	-.163	.108	-.191	.062	-.248	.005	-.375	0.062	-.283	-.087
4	-.110	.097	-.191	.028	-.283	-.007	-.340	-.014	-.271	-.202
5	-.133	.055	-.156	-----	-.271	-.094	-.306	-.041	-.306	-.202
6	-.122	.016	-.191	.016	-.340	-.133	-.329	-.046	-.087	-.041
7	-.122	.016	-.179	.016	-.294	-.156	-.294	-.094	.039	.039
8	-.122	-.048	-.225	-.076	-.306	-.168	-.260	-.191		
9	-.099	-.076	-.202	-.076	-.214	-.156	-.168	-.283		
10	-.133	.016	-.271	-.133	-.099	-.122	-.099	-.260		
11	-.156	-.030	-.306	-.225	-.030	-----	.016	-.409		
12	-.214	-.122	-.294	-.248	.028	-.202	-.012	-.087		
13	-.260	-.122	-.179	-.110	.016	-.076	.062	-.018		
14	-.271	-.191	-.041	-.053	.074	.062	.074	.074		
15	-.225	-.191	.074	-----						
16	-.306	-.248	.016	-.025						
17	-.283	-.248	.062	.039						
18	-.283	-.179								
19	-.191	-.122								
20	-.053	-.030								
21	-.023	-.099								
22	.028	-.018								
23	.051	.021								

Integrated section aerodynamic characteristics					
c_n	0.083	0.091	0.104	0.082	0.133
$c_{mC}/4$	-.0006	.0077	.0112	.0381	-.0026

Integrated panel aerodynamic characteristics	
$C_N' = 0.094$	x'_{cp} (percent c') = 15.6
$C_B' = .031$	y'_{cp} (percent $b'/2$) = 33.0
$C_m' = .0088$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(g) \quad M = 0.798 \quad \alpha = 1.4^\circ$$

$$C_{N_A} = 0.088 \quad \delta_{e_L} = 1.5^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.285	-----	0.118	-----	0.007	-----	-0.138	-----	-0.083	-----
2	-.172	0.147	-.227	0.129	-.272	0.062	-.361	-----	-.339	-0.017
3	-.156	.096	-.172	.062	-.239	-.004	-.339	0.051	-.272	-.105
4	-.116	.085	-.183	.018	-.272	-.027	-.316	-.031	-.261	-.216
5	-.127	.045	-.149	-----	-.272	-.100	-.306	-.049	-.306	-.205
6	-.105	.018	-.183	.007	-.328	-.149	-.328	-.054	-.094	-.049
7	-.116	.007	-.172	.018	-.294	-.161	-.294	-.100	.040	.040
8	-.116	-.056	-.216	-.071	-.317	-.172	-.261	-.216		
9	-.094	-.083	-.205	-.083	-.216	-.161	-.160	-.283		
10	-.127	.007	-.272	-.138	-.105	-.116	-.105	-.261		
11	-.149	-.038	-.306	-.239	-.027	-----	-.004	-.395		
12	-.216	-.127	-.294	-.250	.018	-.194	-.020	-.083		
13	-.261	-.127	-.183	-.127	.007	-.071	.062	-.016		
14	-.261	-.216	-.049	-.049	.074	.062	.074	.074		
15	-.227	-.194	.051	-----						
16	-.317	-.261	.018	-.022						
17	-.294	-.250	.062	.040						
18	-.283	-.183								
19	-.205	-.116								
20	-.049	-.027								
21	-.020	-.094								
22	.029	-.016								
23	.051	.022								

Integrated section aerodynamic characteristics					
c_n	0.080	0.091	0.094	0.078	0.118
$c_{m_c}/4$	-.0032	.0058	.0093	.0362	-.0013

Integrated panel aerodynamic characteristics	
$C_N' = 0.091$	x'_{cp} (percent c') = 14.2
$C_B' = .031$	y'_{cp} (percent $b'/2$) = 34.1
$C_m' = .0098$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(h) \quad M = 0.809$$

$$C_{NA} = 0.078$$

$$\alpha = 1.1^\circ$$

$$\delta_{eL} = 1.5^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.295	-----	0.159	-----	0.044	-----	-0.082	-----	-0.040	-----
2	-.155	0.134	-.217	-0.107	-.249	0.054	-.332	-----	-.322	-0.029
3	-.130	.086	-.155	.044	-.228	-.008	-.311	0.044	-.250	-.113
4	-.102	.075	-.165	.013	-.259	-.029	-.301	-.033	-.259	-.217
5	-.113	.038	-.144	-----	-.259	-.109	-.291	-.061	-.301	-.217
6	-.092	.002	-.165	.002	-.332	-.155	-.322	-.065	-.092	-.050
7	-.113	.002	-.155	.013	-.291	-.165	-.291	-.098	.044	.044
8	-.102	-.067	-.207	-.082	-.311	-.186	-.259	-.217		
9	-.082	-.092	-.196	-.092	-.217	-.176	-.176	-.270		
10	-.123	.002	-.270	-.155	-.102	-.123	-.102	-.259		
11	-.144	-.040	-.311	-.259	-.029	-----	.002	-.405		
12	-.207	-.134	-.301	-.259	.013	-.186	-.023	-.082		
13	-.249	-.134	-.176	-.123	.013	-.082	.065	-.019		
14	-.270	-.217	-.040	-.050	.075	.065	.075	.075		
15	-.217	-.196	.054	-----						
16	-.322	-.270	.023	-.015						
17	-.301	-.259	.065	.044						
18	-.291	-.196								
19	-.207	-.123								
20	-.050	-.040								
21	-.023	-.092								
22	.033	-.019								
23	.054	.027								

Integrated section aerodynamic characteristics					
c_n	0.068	0.075	0.088	0.067	0.112
$c_{m_c}/4$	-.0016	.0067	.0141	.0346	-.0029

Integrated panel aerodynamic characteristics	
$C_N' = 0.080$	x'_{cp} (percent c') = 14.2
$C_B' = .027$	y'_{cp} (percent $b'/2$) = 33.8
$C_m' = .0086$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

(1) $M = 0.818$

$C_{NA} = 0.084$

$\alpha = 1.1^\circ$

$\delta_{eL} = 1.6^\circ \text{ up}$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.290	-----	0.153	-----	0.035	-----	-0.092	-----	-0.053	-----
2	-.151	0.149	-.229	0.104	-.259	0.055	-.337	-----	-.327	-0.033
3	-.137	.094	-.171	.055	-.229	-.024	-.327	0.045	-.269	-.131
4	-.102	.084	-.180	.016	-.269	-.024	-.318	-.047	-.259	-.229
5	-.112	.049	-.151	-----	-.269	-.118	-.300	-.063	-.298	-.220
6	-.102	.016	-.171	.006	-.347	-.151	-.337	-.067	-.092	-.053
7	-.112	.006	-.161	.025	-.308	-.171	-.308	-.098	.045	.045
8	-.102	-.059	-.210	-.082	-.327	-.190	-.269	-.220		
9	-.082	-.082	-.200	-.082	-.229	-.180	-.170	-.298		
10	-.122	.016	-.278	-.161	-.102	-.131	-.112	-.269		
11	-.151	-.033	-.327	-.249	-.033	-----	.006	-.474		
12	-.210	-.131	-.308	-.269	.025	-.210	-.018	-.082		
13	-.259	-.122	-.190	-.112	.016	-.082	.065	-.024		
14	-.278	-.220	-.043	-.063	.074	.065	.084	.074		
15	-.220	-.210	.065	-----						
16	-.337	-.278	.025	-.020						
17	-.308	-.269	.065	.045						
18	-.308	-.200								
19	-.210	-.131								
20	-.053	-.043								
21	-.018	-.112								
22	.035	-.024								
23	.055	.020								

Integrated section aerodynamic characteristics					
c_n	0.073	0.083	0.093	0.074	0.109
$c_{mc}/4$	-.0006	.0010	.0150	.0368	-.0003

Integrated panel aerodynamic characteristics	
$C_N' = 0.090$	x'_{cp} (percent c') = 13.7
$C_B' = .034$	y'_{cp} (percent $b'/2$) = 37.8
$C_m' = .0102$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

(j) $M = 0.828$

$C_{NA} = 0.075$

$\alpha = 1.0^\circ$

$\delta_{eL} = 1.6^\circ \text{ up}$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.306	-----	0.159	-----	0.049	-----	-0.070	-----	-0.033	-----
2	-.143	0.146	-.207	0.113	-.253	0.040	-.317	-----	-.326	-0.051
3	-.139	.086	-.161	.049	-.225	.024	-.317	0.031	-.253	-.143
4	-.097	.086	-.161	.004	-.262	-.033	-.317	-.055	-.253	-.243
5	-.097	.053	-.134	-----	-.262	-.121	-.298	-.070	-.307	-.225
6	-.097	.013	-.161	.004	-.353	-.170	-.335	-.073	-.088	-.051
7	-.097	.004	-.161	.022	-.317	-.179	-.307	-.112	.049	.049
8	-.097	-.057	-.198	-.079	-.344	-.198	-.271	-.225		
9	-.079	-.079	-.198	-.088	-.234	-.179	-.179	-.289		
10	-.115	.013	-.289	-.161	-.097	-.134	-.106	-.262		
11	-.143	-.033	-.335	-.262	-.033	-----	.013	.536		
12	-.207	-.134	-.328	-.271	.013	-.216	-.009	-.079		
13	-.262	-.115	-.198	-.134	.004	-.079	.059	-.015		
14	-.280	-.234	-.042	-.051	.077	.068	.086	.086		
15	-.216	-.216	.059	-----						
16	-.353	-.280	.031	-.020						
17	-.317	-.280	.068	.040						
18	-.326	-.207								
19	-.216	-.134								
20	-.051	-.042								
21	-.018	-.106								
22	.031	-.024								
23	.059	.026								

Integrated section aerodynamic characteristics					
c_n	0.067	0.082	0.084	0.056	0.098
$c_{m_c/4}$	-.0006	.0042	.0134	.0403	-.0010

Integrated panel aerodynamic characteristics	
$C_N' = 0.074$	x'_{cp} (percent c') = 7.2
$C_B' = .023$	y'_{cp} (percent $b'/2$) = 31.1
$C_m' = .0132$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(k) \quad M = 0.840$$

$$C_{N_A} = 0.072$$

$$\alpha = 0.8^\circ$$

$$\delta_{e_L} = 1.5^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.317	-----	0.178	-----	0.066	-----	-0.038	-----	-0.029	-----
2	-.142	0.140	-.194	0.092	-.246	0.031	-.289	-----	-.324	-0.055
3	-.130	.074	-.151	.040	-.220	-.029	-.306	0.014	-.254	-.159
4	-.090	.074	-.168	-.003	-.254	-.038	-.298	-.076	-.254	-.246
5	-.090	.043	-.125	-----	-.263	-.138	-.298	-.081	-.298	-.228
6	-.090	.005	-.159	.003	-.375	-.185	-.341	-.076	-.090	-.047
7	-.099	-.003	-.151	.005	-.324	-.194	-.315	-.112	.048	.048
8	-.090	-.069	-.185	-.099	-.358	-.202	-.272	-.228		
9	-.073	-.090	-.194	-.099	-.246	-.185	-.176	-.298		
10	-.116	.005	-.296	-.176	-.107	-.142	-.116	-.263		
11	-.133	-.038	-.358	-.280	-.029	-----	.005	-.548		
12	-.202	-.142	-.341	-.289	.014	-.211	-.016	-.090		
13	-.263	-.125	-.202	-.133	.005	-.090	.048	-.021		
14	-.289	-.237	-.047	-.055	.083	.066	.092	.083		
15	-.220	-.220	.057	-----						
16	-.367	-.298	.022	-.026						
17	-.324	-.298	.066	.040						
18	-.341	-.211								
19	-.228	-.142								
20	-.055	-.038								
21	-.024	-.099								
22	.022	-.021								
23	.057	.026								

Integrated section aerodynamic characteristics					
c_n	0.069	0.075	0.082	0.050	0.097
$c_{m_c/4}$	-.0022	.0042	.0157	.0381	-.0003

Integrated panel aerodynamic characteristics	
$C_N' = 0.074$	x'_{cp} (percent c') = 8.4
$C_B' = .022$	y'_{cp} (percent $b'/2$) = 29.7
$C_m' = .0123$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

(2) $M = 0.849$

$C_{NA} = 0.081$

$\alpha = 1.9^\circ$

$\delta_{eL} = 2.2^\circ$ up

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.294	-----	0.151	-----	0.038	-----	-0.068	-----	-0.045	-----
2	-.159	0.148	-.219	0.113	-.310	0.045	-.310	-----	-.325	-0.068
3	-.140	.091	-.174	.053	-.234	-.015	-.362	0.038	-.257	-.181
4	-.098	.083	-.174	.008	-.257	-.030	-.310	-.063	-.249	-.257
5	-.091	.048	-.136	-----	-.272	-.125	-.332	-.068	-.294	-.234
6	-.098	.015	-.166	.000	-.393	-.151	-.362	-.079	-.091	-.060
7	-.106	.008	-.151	.030	-.325	-.196	-.325	-.110	.053	.045
8	-.106	-.057	-.196	-.091	-.415	-.204	-.279	-.219		
9	-.076	-.083	-.196	-.091	-.234	-.189	-.166	-.347		
10	-.113	.015	-.310	-.174	-.098	-.143	-.091	-.249		
11	-.136	-.023	-.362	-.279	-.015	-----	.038	-.574		
12	-.189	-.128	-.393	-.294	.045	-.272	-.011	-.098		
13	-.257	-.128	-.196	-.143	.015	-.098	.045	-.023		
14	-.294	-.227	-.030	-.076	.083	.068	.091	.083		
15	-.221	-.219	.091	-----						
16	-.370	-.287	.038	-.027						
17	-.322	-.302	.068	.038						
18	-.347	-.192								
19	-.219	-.143								
20	-.045	-.068								
21	-.005	-.128								
22	.038	-.038								
23	.060	.011								

Integrated section aerodynamic characteristics					
c_n	0.065	0.083	0.090	0.060	0.086
$c_{m_c}/4$	.0029	.0070	.0186	.0413	.0029

Integrated panel aerodynamic characteristics	
$C_N' = 0.081$	x'_{cp} (percent c') = 6.5
$C_B' = .027$	y'_{cp} (percent $b'/2$) = 33.3
$C_m' = .0150$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(m) \quad M = 0.865 \quad \alpha = 2.0^\circ$$

$$C_{N_A} = 0.089 \quad \delta_{e_L} = 2.2^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.286	-----	0.138	-----	0.007	-----	-0.124	-----	-0.112	-----
2	-.160	0.162	-.231	0.162	-.279	0.067	-.362	-----	-.369	-0.041
3	-.136	.114	-.172	.067	-.231	.007	-.434	0.043	-.279	-.136
4	-.076	.091	-.172	.019	-.243	-.005	-.303	-.052	-.255	-.231
5	-.093	.067	-.136	-----	-.243	-.100	-.338	-.060	-.267	-.184
6	-.088	.019	-.148	.019	-.410	-.160	-.386	-.072	-.052	-.017
7	-.041	-.017	-.148	.019	-.350	-.184	-.398	-.069	.067	.055
8	-.112	-.017	-.184	-.076	-.458	-.184	-.279	-.184		
9	-.076	-.064	-.184	-.088	-.207	-.172	-.160	-.422		
10	-.100	.031	-.291	-.148	-.088	-.124	-.088	-.195		
11	-.136	-.017	-.362	-.291	.007	-----	-.017	-.541		
12	-.207	-.124	-.458	-.315	.067	-.231	.007	-.088		
13	-.255	-.112	-.172	-.124	.043	-.064	.031	.007		
14	-.279	-.203	-.017	-.064	.114	.103	.114	.103		
15	-.195	-.179	.091	-----						
16	-.386	-.279	.067	-.005						
17	-.374	-.279	.091	.079						
18	-.386	-.219								
19	-.148	-.124								
20	-.076	-.029								
21	-.010	-.124								
22	.043	.007								
23	.074	.067								

Integrated section aerodynamic characteristics					
c_n	0.082	0.086	0.106	0.077	0.101
$c_{m_c}/4$	-.0026	.0083	.0176	.0426	.0048

Integrated panel aerodynamic characteristics	
$C_N' = 0.087$	$x'_{cp} \text{ (percent } c') = 6.8$
$C_B' = .031$	$y'_{cp} \text{ (percent } b'/2) = 36.1$
$C_m' = .0158$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(n) \quad M = 0.900$$

$$C_{N_A} = 0.086$$

$$\alpha = 1.9^\circ$$

$$\delta_{e_L} = 2.1^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.313	-----	0.179	-----	0.045	-----	-0.089	-----	-0.089	-----
2	-.179	0.179	-.201	0.201	-.313	0.112	-.380	-----	-.536	-0.089
3	-.134	.112	-.179	.089	-.201	.000	-.358	0.022	-.201	-.156
4	-.067	.112	-.179	.022	-.201	-.045	-.380	-.067	-.224	-.402
5	-.112	.089	-.156	-----	-.268	-.067	-.313	-.112	-.268	-.179
6	-.089	.067	-.156	.022	-.358	-.156	-.402	-.134	-.045	.000
7	-.089	-----	-.156	.000	-.335	-.246	-.402	-.067	.089	.067
8	-.089	-.022	-.179	-.089	-.447	-.268	-.536	-.224		
9	-.089	-.045	-.179	-.067	-.469	-.156	-.492	-.536		
10	-.089	.000	-.291	-.112	-.201	-.201	.067	-.447		
11	-.089	.000	-.358	-.380	.045	-----	.089	-.469		
12	-.179	-.089	-.425	-.380	.112	-.447	.045	-.045		
13	-.224	-.067	-.402	-.156	.089	-.045	.045	.022		
14	-.335	-.201	.000	-.089	.134	.134	.134	.134		
15	-.179	-.224	.112	-----						
16	-.358	-.402	.134	-.022						
17	-.492	-.447	.134	.067						
18	-.425	-.179								
19	-.536	-.156								
20	-.022	-.022								
21	-.022	-.134								
22	.089	-.045								
23	.067	.045								

Integrated section aerodynamic characteristics					
c_n	0.082	0.090	0.098	0.099	0.088
$c_{m_c/4}$	-.0026	.0093	.0211	.0330	.0035

Integrated panel aerodynamic characteristics	
$C_{N'} = 0.093$	x'_{cp} (percent c') = 12.1
$C_{B'} = .034$	y'_{cp} (percent $b'/2$) = 36.6
$C_{m'} = .0120$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(o) \quad M = 0.911$$

$$C_{NA} = 0.070$$

$$\alpha = 1.5^\circ$$

$$\delta_{eL} = 2.0^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.302	-----	0.172	-----	0.086	-----	0.000	-----	-0.043	-----
2	-.151	0.151	-.172	0.172	-.259	0.108	-.323	-----	-.496	-0.172
3	-.129	.108	-.172	.065	-.172	-.022	-.323	0.022	-.453	-.237
4	-.065	.129	-.172	.022	-.172	-.043	-.366	-.086	-.108	-.453
5	-.086	.086	-.129	-----	-.259	-.065	-.280	-.129	-.259	-.194
6	-.065	.043	-.108	.022	-.366	-.172	-.366	-.194	-.022	.000
7	-.086	-----	-.129	.000	-.345	-.259	-.388	-.129	.086	.065
8	-.086	-.022	-.172	-.108	-.431	-.388	-.539	-.259		
9	-.065	-.043	-.172	-.065	-.453	-.151	-.539	-.517		
10	-.086	.000	-.280	-.129	-.431	-.194	-.216	-.474		
11	-.108	.000	-.323	-.366	.000	-----	.065	-.496		
12	-.172	-.130	-.431	-.474	.108	-.496	.043	-.065		
13	-.194	-.086	-.388	-.151	.086	-.043	.065	.022		
14	-.323	-.237	-.043	-.086	.151	.129	.129	.129		
15	-.172	-.216	.086	-----						
16	-.323	-.409	.108	-.022						
17	-.474	-.496	.129	.086						
18	-.431	-.280								
19	-.517	-.151								
20	-.086	-.043								
21	-.043	-.108								
22	.086	-.022								
23	.065	.043								

Integrated section aerodynamic characteristics					
c_n	0.074	0.082	0.087	0.079	0.083
$c_{m_{c/4}}$	-.0035	.0029	.0170	.0320	.0106

Integrated panel aerodynamic characteristics	
$C_N' = 0.080$	x'_{cp} (percent c') = 13.2
$C_B' = .030$	y'_{cp} (percent $b'/2$) = 37.5
$C_m' = .0094$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(p) \quad M = 0.917$$

$$C_{N_A} = 0.065$$

$$\alpha = 1.4^\circ$$

$$\delta_{e_L} = 2.0^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.318	-----	0.191	-----	0.085	-----	0.021	-----	0.000	-----
2	-.085	0.148	-.170	0.170	-.254	0.106	-.318	-----	-.445	-0.233
3	-.106	.106	-.148	.042	-.170	-.021	-.318	0.000	-.466	-.254
4	-.064	.106	-.170	.021	-.170	-.042	-.339	-.085	-.551	-.530
5	-.085	.085	-.106	-----	-.254	-.064	-.339	-.127	-.170	-.106
6	-.064	.042	-.106	.000	-.360	-.170	-.360	-.212	.000	.021
7	-.085	-----	-.127	.000	-.339	-.276	-.382	-.191	.085	.085
8	-.085	-.021	-.170	-.106	-.424	-.382	-.530	-.254		
9	-.042	-.042	-.170	-.064	-.445	-.339	-.530	-.551		
10	-.085	.000	-.276	-.106	-.445	-.170	-.509	-.488		
11	-.085	.021	-.318	-.360	-.127	-----	.021	-.509		
12	-.170	-.106	-.403	-.466	.064	-.509	.042	-.064		
13	-.191	-.064	-.382	-.297	.085	-.021	.085	.000		
14	-.297	-.233	-.127	-.085	.170	.127	.170	.148		
15	-.170	-.212	.064	-----						
16	-.318	-.403	.106	.000						
17	-.466	-.530	.127	.085						
18	-.424	-.339								
19	-.509	-.276								
20	-.106	-.064								
21	-.064	-.127								
22	.042	.000								
23	.064	.042								

Integrated section aerodynamic characteristics					
c_n	0.051	0.061	0.080	0.082	0.090
$c_{m_{c/4}}$	.0029	.0090	.0160	.0285	.0013

Integrated panel aerodynamic characteristics	
$C_N' = 0.074$	x'_{cp} (percent c') = 12.4
$C_B' = .029$	y'_{cp} (percent $b'/2$) = 39.2
$C_m' = .0093$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(q) \quad M = 0.931$$

$$C_{NA} = 0.075$$

$$\alpha = 1.5^\circ$$

$$\delta_{eL} = 2.2^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.304	-----	0.183	-----	0.061	-----	0.000	-----	-0.081	-----
2	-.142	0.183	-.183	0.183	-.284	0.102	-.324	-----	-.487	-0.203
3	-.102	.162	-.142	.102	-.183	.000	-.365	0.020	-.487	-.244
4	-.061	.162	-.162	.020	-.162	-.020	-.345	-.061	-.609	-.528
5	-.081	.081	-.102	-----	-.244	-.041	-.365	-.122	-.731	-.670
6	-.081	.081	-.102	.020	-.325	-.162	-.365	-.203	.081	.081
7	-.061	-----	-.122	.020	-.304	-.264	-.365	-.203	.142	.081
8	-.081	.000	-.162	-.081	-.426	-.365	-.528	-.284		
9	-.041	-.041	-.183	-.061	-.487	-.426	-.528	-.589		
10	-.061	.020	-.244	-.081	-.426	-.203	-.528	-.568		
11	-.081	.020	-.304	-.345	-.406	-----	-.264	-.568		
12	-.162	-.081	-.406	-.467	-.102	-.548	-.020	-.142		
13	-.183	-.061	-.406	-.325	.041	-.081	.061	-.020		
14	-.284	-.203	-.447	-.081	.162	.142	.162	.142		
15	-.162	-.203	-.020	-----						
16	-.325	-.386	.081	-.020						
17	-.467	-.487	.122	.081						
18	-.406	-.325								
19	-.487	-.508								
20	-.244	-.061								
21	-.122	-.142								
22	.041	-.020								
23	.041	.061								

Integrated section aerodynamic characteristics					
c_n	0.063	0.092	0.094	0.098	0.090
$c_{mC/4}$	.0026	-.0029	.0080	.0266	.0112

Integrated panel aerodynamic characteristics	
$C_N' = 0.093$	x'_{cp} (percent c') = 21.5
$C_B' = .034$	y'_{cp} (percent $b'/2$) = 36.6
$C_m' = .0033$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(r) \quad M = 0.937$$

$$C_{NA} = 0.070$$

$$\alpha = 1.5^\circ$$

$$\delta_{eL} = 2.1^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.346	-----	0.231	-----	0.116	-----	0.000	-----	0.000	-----
2	-.135	0.173	-.173	0.173	-.289	0.115	-.289	-----	-.462	-0.173
3	-.077	.154	-.154	.116	-.173	.019	-.346	0.038	-.462	-.250
4	-.038	.173	-.154	.039	-.154	-.019	-.327	-.058	-.578	-.520
5	-.077	.096	-.096	-----	-.231	-.019	-.346	-.116	-.732	-.635
6	-.038	.096	-.096	.019	-.308	-.173	-.346	-.192	-.116	.000
7	-.038	-----	-.116	.038	-.289	-.231	-.346	-.212	.116	.038
8	-.077	.019	-.154	-.077	-.404	-.327	-.500	-.289		
9	-.019	-.019	-.154	-.038	-.443	-.404	-.500	-.578		
10	-.058	.019	-.231	-.077	-.443	-.212	-.539	-.616		
11	-.077	.038	-.289	-.327	-.404	-----	-.327	-.597		
12	-.135	-.077	-.366	-.424	-.250	-.597	-.250	-.346		
13	-.154	-.058	-.385	-.308	-.077	-.308	-.019	-.116		
14	-.270	-.212	-.462	-.212	.154	.135	.135	.096		
15	-.154	-.192	-.192	-----						
16	-.289	-.366	.038	-.038						
17	-.424	-.558	.116	.096						
18	-.385	-.308								
19	-.462	-.481								
20	-.462	-.096								
21	-.173	-.192								
22	-.019	-.077								
23	.019	.058								

Integrated section aerodynamic characteristics					
c_n	0.066	0.086	0.092	0.086	0.139
$c_{mC/4}$	-.0042	-.0003	.0160	.0250	-.0099

Integrated panel aerodynamic characteristics		
$C_N' = 0.088$	x'_{cp} (percent c')	= 21.9
$C_B' = .033$	y'_{cp} (percent $b'/2$)	= 37.5
$C_m' = .0028$		

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(s) \quad M = 0.951$$

$$C_{N_A} = 0.069$$

$$\alpha = 1.4^\circ$$

$$\delta_{e_L} = 2.0^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.321	-----	0.214	-----	0.089	-----	0.000	-----	-0.071	-----
2	-.089	0.232	-.161	0.196	-.268	0.107	-.268	-----	-.464	-0.196
3	-.054	.178	-.107	.107	-.178	.000	-.321	0.036	-.464	-.250
4	.000	.161	-.143	.054	-.161	.000	-.303	-.054	-.553	-.500
5	-.071	.143	-.071	-----	-.196	-.018	-.339	-.107	-.714	-.625
6	-.018	.089	-.071	.036	-.321	-.161	-.339	-.178	-.643	-.214
7	-.036	-----	-.071	.054	-.303	-.232	-.357	-.214	.107	-.036
8	-.071	.036	-.143	-.054	-.393	-.339	-.500	-.268		
9	.000	-.018	-.161	-.036	-.428	-.393	-.500	-.553		
10	-.036	.036	-.232	-.071	-.464	-.214	-.518	-.589		
11	-.071	.036	-.286	-.321	-.411	-----	-.375	-.589		
12	-.143	-.071	-.357	-.411	-.303	-.589	-.306	-.571		
13	-.143	-.054	-.428	-.286	-.321	-.446	-.357	-.268		
14	-.250	-.196	-.464	-.268	.089	.071	.071	.054		
15	-.161	-.178	-.357	-----						
16	-.304	-.339	-.107	-.143						
17	-.428	-.536	.054	.036						
18	-.411	-.286								
19	-.482	-.482								
20	-.571	-.196								
21	-.304	-.286								
22	-.125	-.178								
23	-.054	.036								

Integrated section aerodynamic characteristics					
c_n	0.081	0.093	0.102	0.086	0.190
$c_{m_c/4}$	-.0122	-.0077	.0074	.0230	-.0349

Integrated panel aerodynamic characteristics	
$C_N' = 0.102$	x'_{cp} (percent c') = 28.8
$C_B' = .038$	y'_{cp} (percent $b'/2$) = 37.2
$C_m' = -.0039$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

(t) $M = 0.961$
 $C_{NA} = 0.084$

$\alpha = 1.8^\circ$
 $\delta_{eL} = 2.3^\circ$ up

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.260	-----	0.198	-----	0.059	-----	-0.034	-----	-0.111	-----
2	-.158	0.213	-.173	0.229	-.235	0.136	-.328	-----	-.482	-0.173
3	-.080	.167	-.111	.136	-.173	.028	-.297	0.074	-.467	-.235
4	-.018	.182	-.173	.090	-.173	.028	-.312	-.034	-.575	-.498
5	-.049	.136	-.096	-----	-.173	-.018	-.328	-.080	-.729	-.590
6	-.018	.120	-.080	.059	-.297	-.142	-.368	-.142	-.667	-.544
7	-.018	-----	-.080	.074	-.297	-.204	-.343	-.204	-.636	-.652
8	-.049	.059	-.127	-.034	-.374	-.297	-.498	-.235		
9	.012	.012	-.142	-.018	-.420	-.374	-.482	-.528		
10	-.034	.074	-.204	-.049	-.451	-.204	-.498	-.590		
11	-.049	.059	-.297	-.235	-.436	-----	-.374	-.606		
12	-.127	-.049	-.297	-.374	-.281	-.559	-.281	-.621		
13	-.080	-.034	-.389	-.266	-.312	-.482	-.343	-.606		
14	-.235	-.173	-.451	-.266	-.250	-.235	-.417	-.142		
15	-.142	-.142	-.343	-----						
16	-.281	-.297	-.297	-.328						
17	-.436	-.451	-.142	-.250						
18	-.389	-.250								
19	-.467	-.467								
20	-.544	-.235								
21	-.358	-.297								
22	-.235	-.235								
23	-.188	-.204								

Integrated section aerodynamic characteristics					
c_n	0.086	0.106	0.105	0.108	0.166
$c_{m_c/4}$	-.0077	-.0032	.0077	.0195	-.0150

Integrated panel aerodynamic characteristics	
$C_N' = 0.106$	x'_{cp} (percent c') = 23.6
$C_B' = .041$	y'_{cp} (percent $b'/2$) = 38.7
$C_m' = .0015$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(u) \quad M = 0.971$$

$$C_{N_A} = 0.094$$

$$\alpha = 1.9^\circ$$

$$\delta_{eL} = 2.4^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.192	-----	0.164	-----	0.020	-----	-0.095	-----	-0.152	-----
2	-.238	0.149	-.167	0.264	-.210	0.111	-.353	-----	-.511	-0.152
3	-.109	.149	-.138	.164	-.167	.063	-.324	0.092	-.468	-.238
4	-.037	.178	-.181	.092	-.167	.049	-.324	-.023	-.583	-.468
5	-.066	.149	-.066	-----	-.181	.006	-.324	-.066	-.726	-.583
6	-.023	.149	-.080	.078	-.296	-.124	-.368	-.124	-.655	-.540
7	-.023	-----	-.066	.106	-.296	-.181	-.339	-.195	-.640	-.612
8	-.037	.063	-.123	-.023	-.382	-.267	-.482	-.195		
9	.020	.034	-.152	-.009	-.425	-.353	-.468	-.497		
10	-.023	.078	-.195	.006	-.439	-.167	-.497	-.583		
11	-.037	.063	-.267	-.195	-.439	-----	-.339	-.569		
12	-.124	-.037	-.353	-.339	-.281	-.540	-.281	-.597		
13	-.095	-.023	-.382	-.253	-.296	-.468	-.324	-.612		
14	-.238	-.152	-.468	-.267	-.324	-.439	-.382	-.497		
15	-.152	-.138	-.339	-----						
16	-.281	-.296	-.324	-.324						
17	-.411	-.411	-.339	-.310						
18	-.382	-.253								
19	-.454	-.439								
20	-.554	-.224								
21	-.382	-.324								
22	-.296	-.224								
23	-.310	-.238								

Integrated section aerodynamic characteristics					
c_n	0.112	0.134	0.106	0.090	0.162
$c_{m_c/4}$	-.0192	-.0122	.0115	.0438	-.0150

Integrated panel aerodynamic characteristics	
$C_N' = 0.115$	x'_{cp} (percent c') = 21.3
$C_B' = .039$	y'_{cp} (percent $b'/2$) = 33.9
$C_m' = .0043$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(v) \quad M = 0.979$$

$$C_{NA} = 0.089$$

$$\alpha = 2.5^\circ$$

$$\delta_{eL} = 2.0^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.209	-----	0.158	-----	0.021	-----	-0.130	-----	-0.221	-----
2	-.085	0.203	-.206	0.264	-.161	0.127	-.297	-----	-.534	-0.161
3	-.070	.188	-.130	.173	-.146	.085	-.297	0.097	-.479	-.221
4	-.009	.176	-.130	.097	-.161	.069	-.282	-.024	-.570	-.479
5	-.015	.158	-.070	-----	-.176	-.009	-.312	-.033	-.677	-.570
6	.006	.112	-.070	.097	-.282	-.115	-.343	-.109	-.646	-.540
7	.006	.143	-.039	.112	-.282	-.176	-.312	-.182	-.601	-.586
8	.006	.082	-.100	-.009	-.358	-.260	-.479	-.146		
9	.021	.021	-.115	.021	-.404	-.343	-.449	-.449		
10	.006	.127	-.191	-.024	-.418	-.115	-.495	-.510		
11	-.039	.082	-.252	-.252	-.449	-----	-.419	-.525		
12	-.115	-.024	-.343	-.343	-.282	-.495	-.267	-.570		
13	-.146	-.024	-.388	-.221	-.282	-.510	-.312	-.555		
14	-.221	-.094	-.358	-.229	-.312	-.388	-.312	-.373		
15	-.130	-.109	-.297	-----						
16	-.267	-.282	-.358	-.291						
17	-.343	-.388	-.312	-.276						
18	-.343	-.206								
19	-.434	-.388								
20	-.586	-.221								
21	-.364	-.267								
22	-.282	-.176								
23	-.228	-.161								

Integrated section aerodynamic characteristics					
c_n	0.106	0.122	0.104	0.104	0.168
$c_{m_{c/4}}$	-.0208	-.0118	.0058	.0307	-.0154

Integrated panel aerodynamic characteristics	
$C_N' = 0.118$	x'_{cp} (percent c') = 28.2
$C_B' = .041$	y'_{cp} (percent $b'/2$) = 35.0
$C_m' = -.0038$	

TABLE IV.- Continued

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(w) \quad M = 0.994$$

$$C_{NA} = 0.095$$

$$\alpha = 2.6^\circ$$

$$\delta_{eL} = 1.7^\circ \text{ up}$$

Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.186	-----	0.139	-----	0.042	-----	-0.111	-----	-0.195	-----
2	-.264	0.083	-.175	0.236	-.181	0.139	-.250	-----	-.495	-0.139
3	-.361	.083	-.139	.139	-.125	.083	-.278	0.070	-.459	-.209
4	.014	.097	-.125	.111	-.153	.083	-.264	-.014	-.556	-.459
5	-.047	.111	-.042	-----	-.167	-.014	-.292	-.022	-.653	-.542
6	-.028	.070	-.056	.097	-.250	-.111	-.320	-.120	-.626	-.514
7	-.028	.097	-.028	.111	-.264	-.167	-.292	-.172	-.584	-.570
8	-.014	.070	-.083	.000	-.334	-.236	-.459	-.153		
9	.014	.014	-.111	.014	-.375	-.320	-.431	-.431		
10	.014	.125	-.181	.000	-.389	-.097	-.487	-.500		
11	-.042	.083	-.236	-.236	-.417	-----	-.403	-.487		
12	-.097	-.028	-.314	-.334	-.264	-.473	-.264	-.556		
13	-.125	-.028	-.375	-.209	-.278	-.487	-.320	-.570		
14	-.195	-.078	-.375	-.222	-.320	-.361	-.334	-.417		
15	-.125	-.106	-.292	-----						
16	-.250	-.264	-.375	-.264						
17	-.320	-.361	-.389	-.250						
18	-.334	-.195								
19	-.417	-.361								
20	-.570	-.236								
21	-.381	-.250								
22	-.348	-.181								
23	-.325	-.153								

Integrated section aerodynamic characteristics					
c_n	0.118	0.133	0.105	0.091	0.172
$c_{m_{c/4}}$	-.0307	-.0202	.0058	.0325	-.0173

Integrated panel aerodynamic characteristics	
$C_N' = 0.114$	x'_{cp} (percent c') = 28.7
$C_B' = .035$	y'_{cp} (percent $b'/2$) = 30.6
$C_m' = -.0042$	

TABLE IV.- Concluded

PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE CONVAIR XF-92A WING

$$(x) \quad M = 1.010$$

$$C_{NA} = 0.078$$

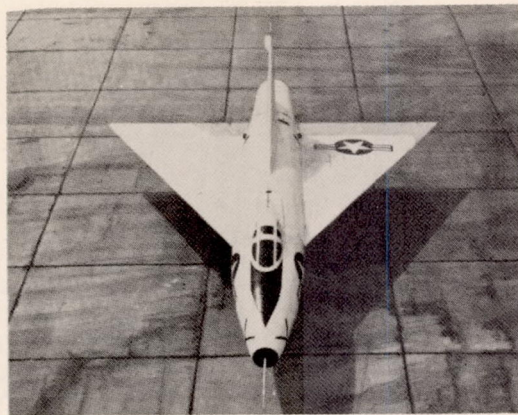
$$\alpha = 1.9^\circ$$

$$\delta_{eL} = 2.0^\circ \text{ up}$$

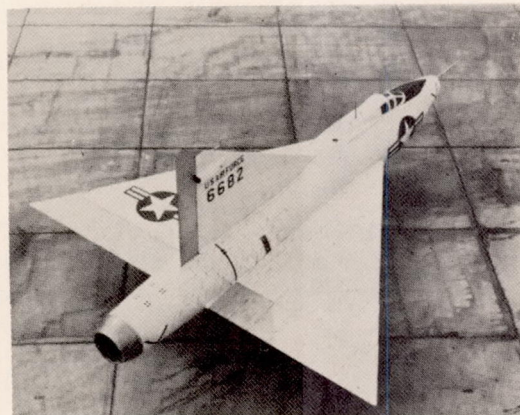
Orifice	Pressure coefficients									
	Row A		Row B		Row C		Row D		Row E	
	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface	Upper surface	Lower surface
1	0.228	-----	0.164	-----	0.104	-----	-0.014	-----	-0.145	-----
2	-.204	0.081	-.145	0.223	-.169	0.140	-.287	-----	-.461	-0.109
3	-.335	.033	-.133	.140	-.097	.093	-.204	0.069	-.418	-.169
4	-.299	.033	-.109	.093	-.145	.045	-.228	.021	-.513	-.418
5	-.019	.057	-.085	-----	-.169	.009	-.252	.002	-.620	-.513
6	-.014	.033	-.038	.093	-.240	-.062	-.287	-.081	-.584	-.489
7	-.038	.093	-.050	.116	-.228	-.133	-.275	-.138	-.572	-.537
8	-.026	.045	-.062	-.002	-.311	-.216	-.418	-.145		
9	.021	-.002	-.085	.033	-.347	-.323	-.418	-.430		
10	-.002	.128	-.145	-.014	-.370	-.097	-.442	-.489		
11	-.014	.093	-.228	-.204	-.382	-----	-.347	-.537		
12	-.074	-.002	-.287	-.299	-.228	-.430	-.240	-.525		
13	-.109	-.050	-.335	-.204	-.252	-.525	-.275	-.501		
14	-.180	-.164	-.359	-.228	-.275	-.394	-.287	-.442		
15	-.097	-.069	-.240	-----						
16	-.228	-.228	-.359	-.264						
17	-.299	-.299	-.335	-.252						
18	-.299	-.192								
19	-.382	-.370								
20	-.525	-.240								
21	-.328	-.264								
22	-.311	-.180								
23	-.316	-.145								

Integrated section aerodynamic characteristics					
c_n	0.105	0.103	0.090	0.069	0.162
$c_{m_c}/4$	-.0237	-.0115	.0115	.0403	-.0086

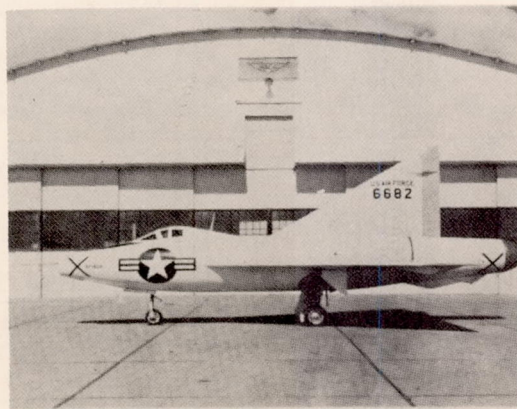
Integrated panel aerodynamic characteristics	
$C_N' = 0.101$	x'_{cp} (percent c') = 22.2
$C_B' = .032$	y'_{cp} (percent $b'/2$) = 32.0
$C_m' = .0028$	



(a) Overhead front view.



(b) Three-quarter rear view.



(c) Left side view.

Figure 1.- Photograph of the Convair XF-92A airplane. L-81260

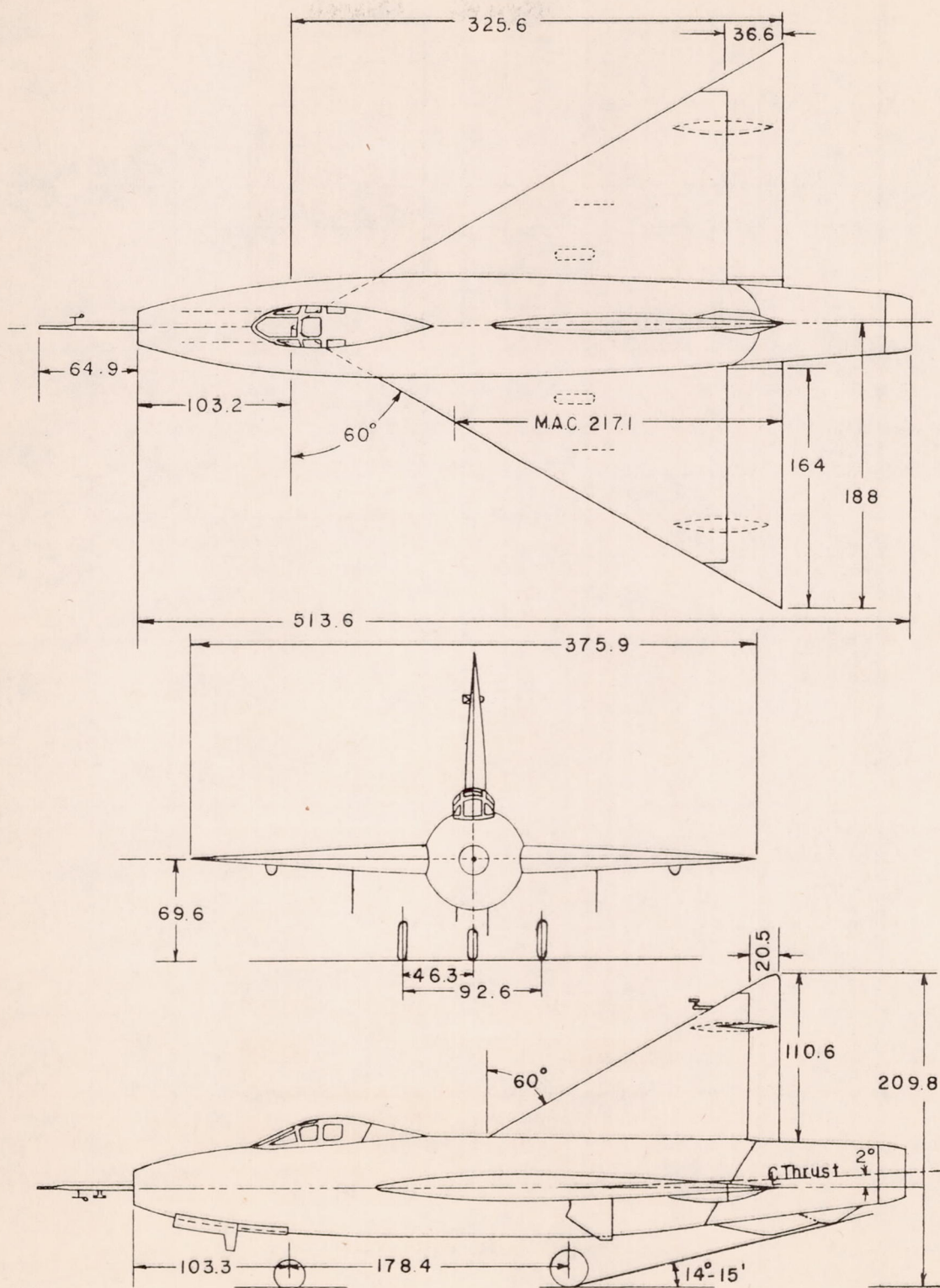


Figure 2.- Three-view drawing of the XF-92A airplane. (All dimensions are in inches.)

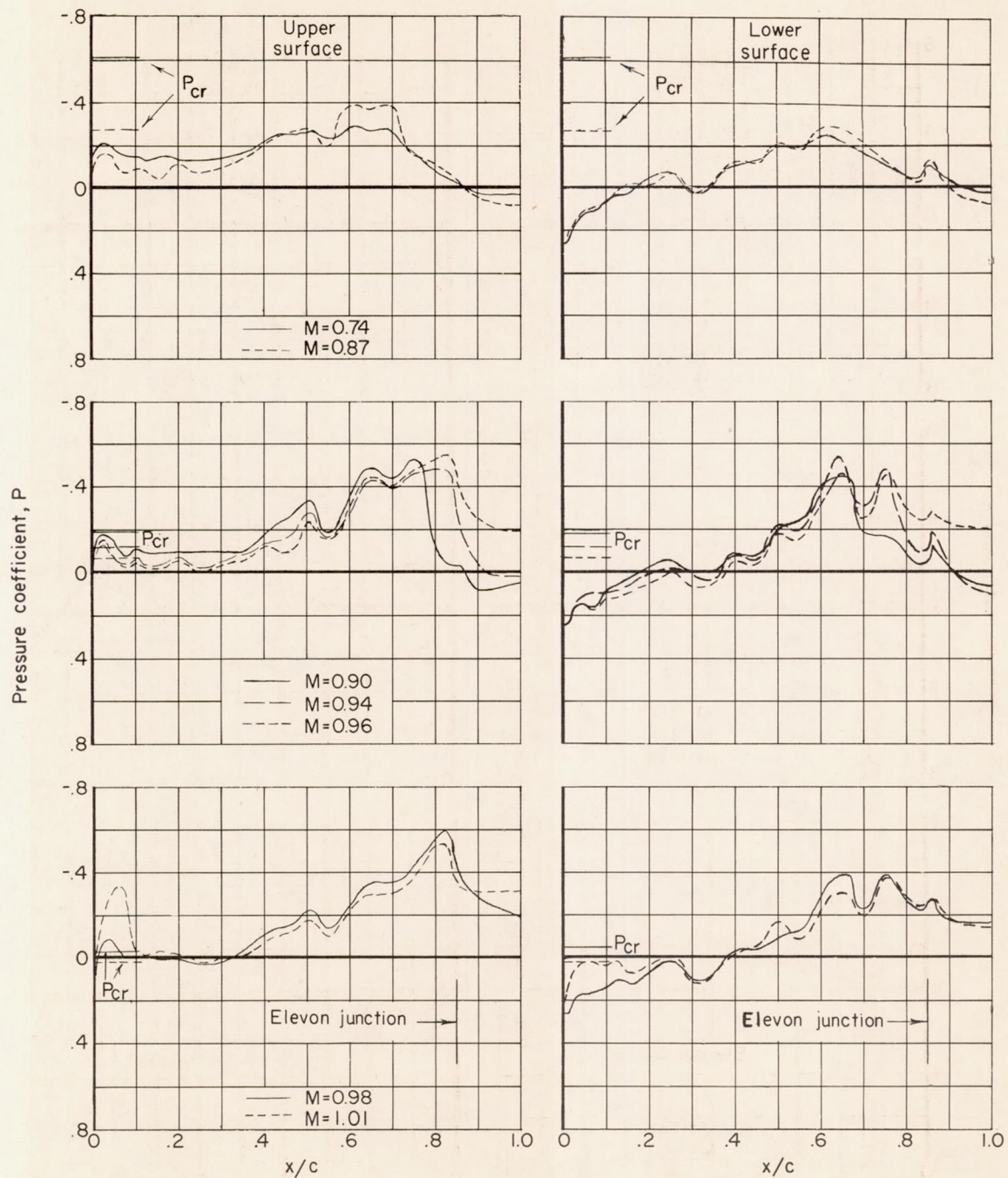
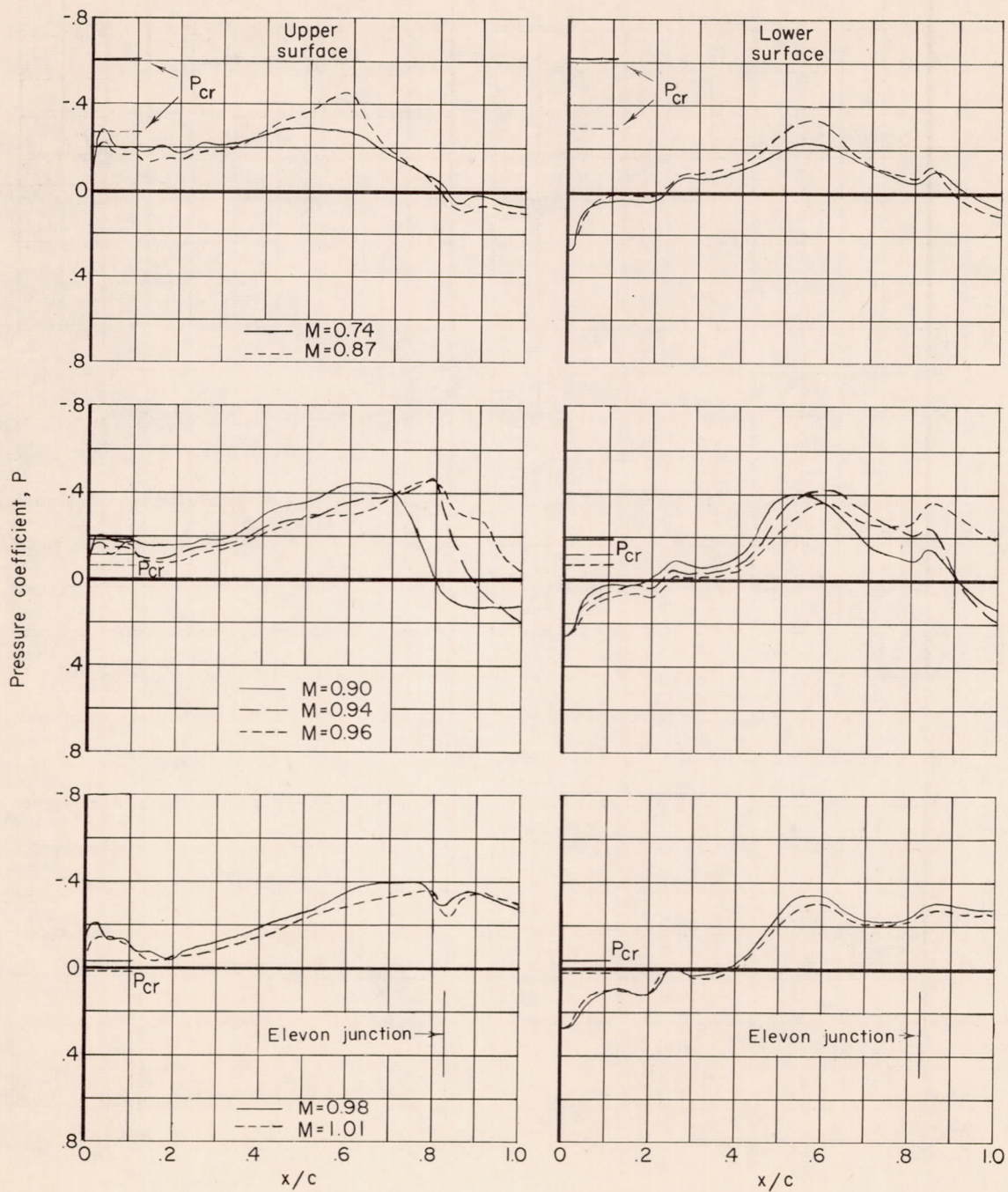
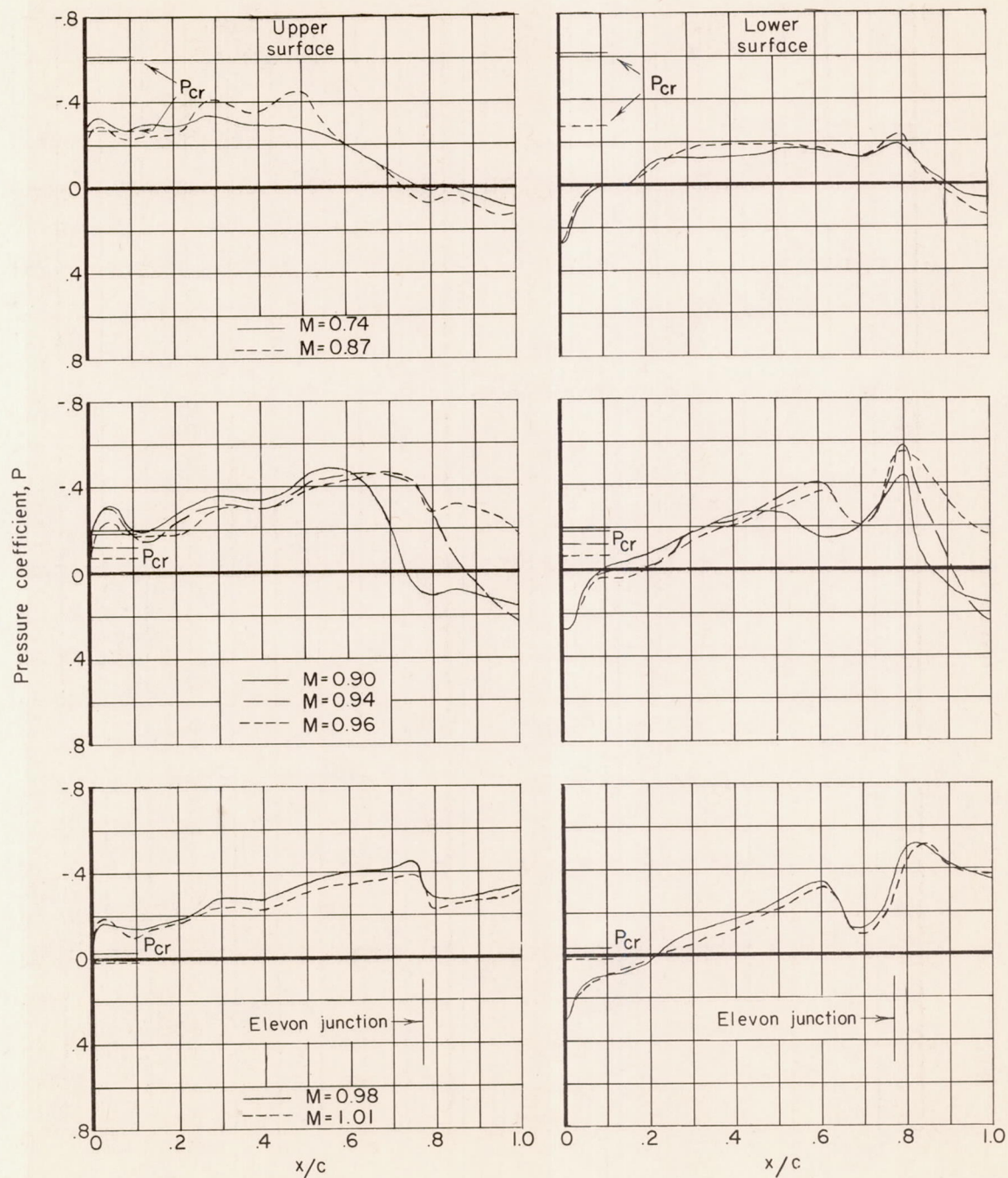
(a) Row A, $0.197b/2$.

Figure 3.- The effect of Mach number on the chordwise distribution of pressure coefficient over the left wing at five semispan stations. $C_{NA} \approx 0.09$; $\delta_{eL} \approx 2.0^\circ$ up.



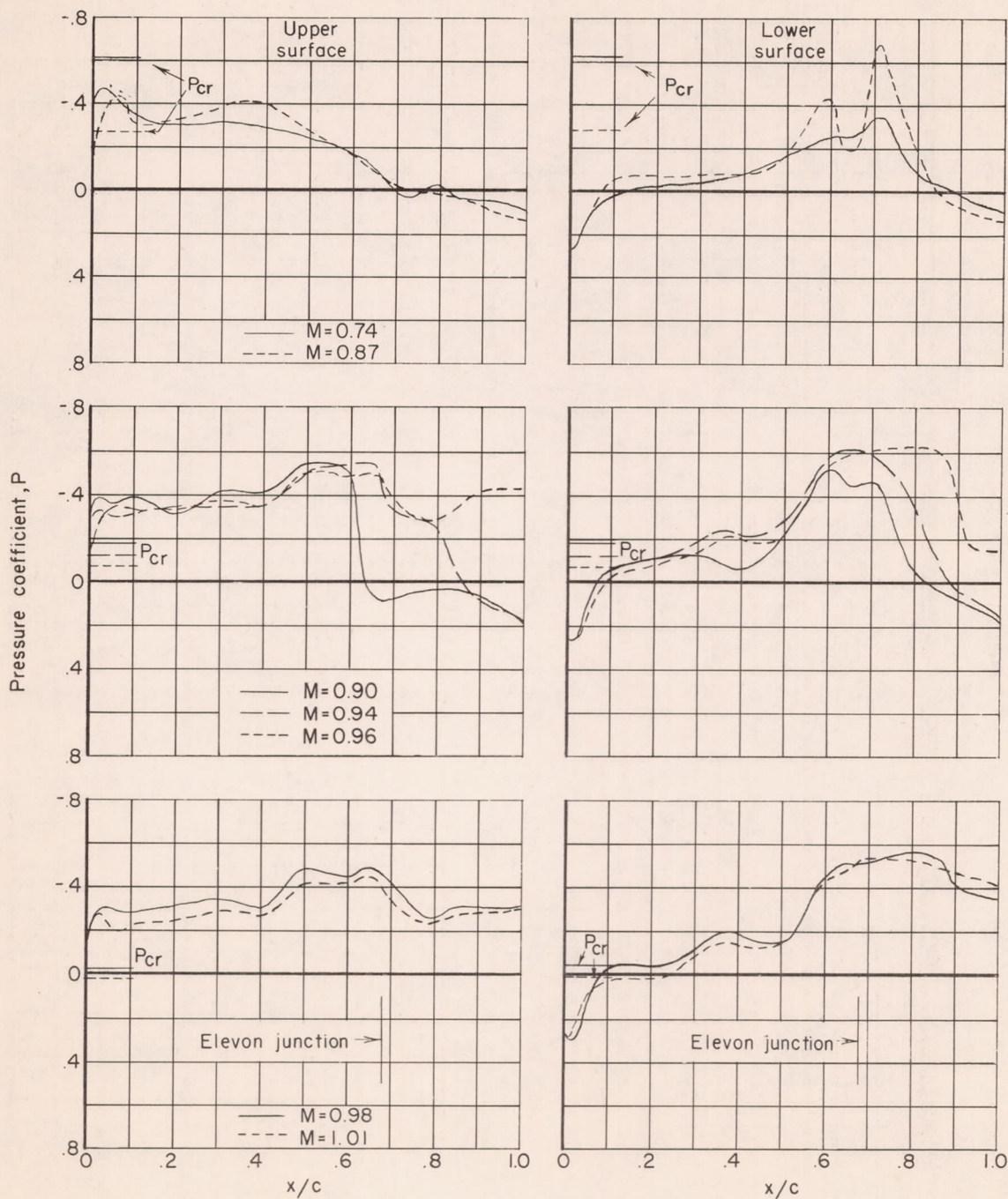
(b) Row B, $0.325b/2$.

Figure 3.- Continued.



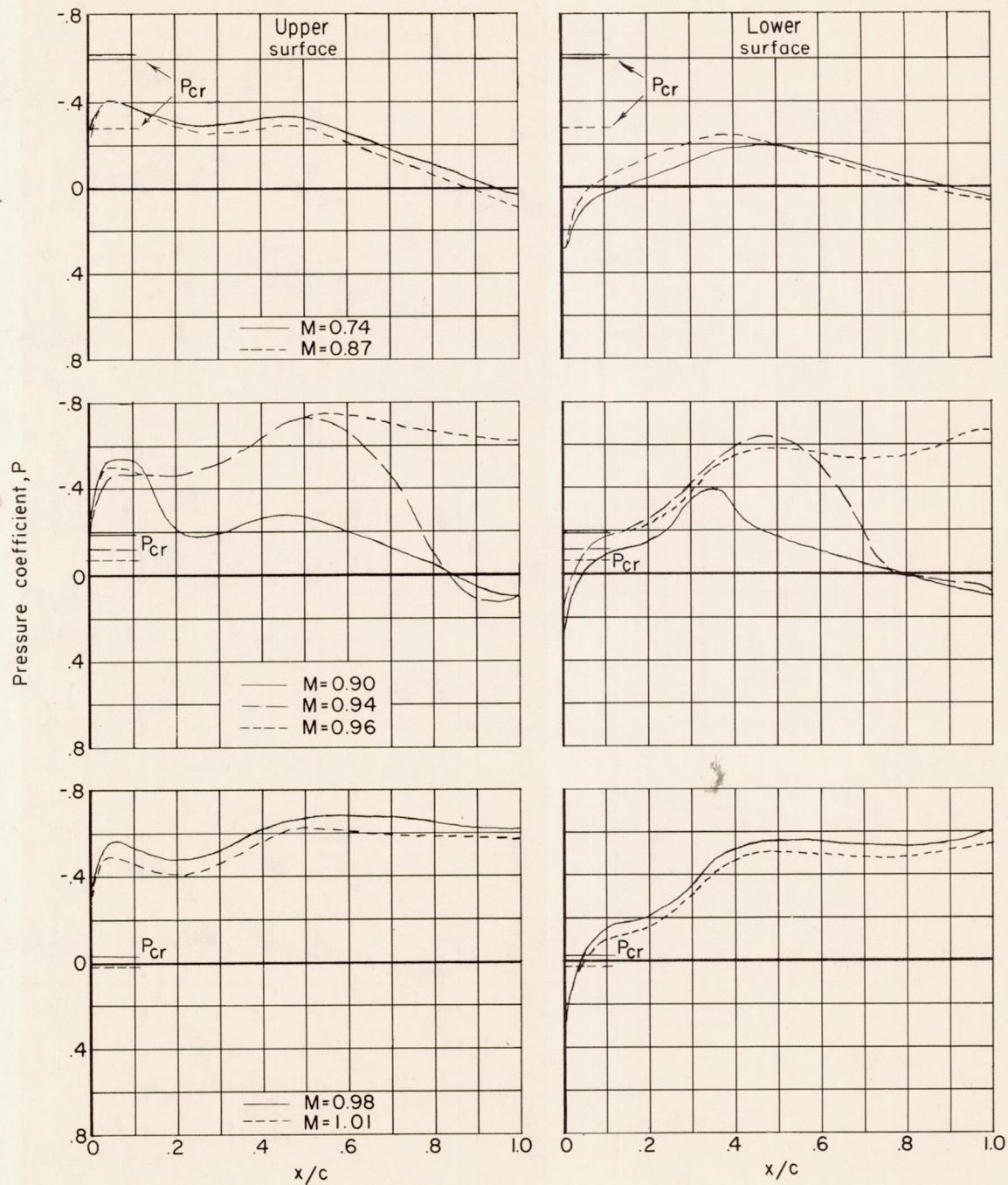
(c) Row C, 0.494b/2.

Figure 3.- Continued.



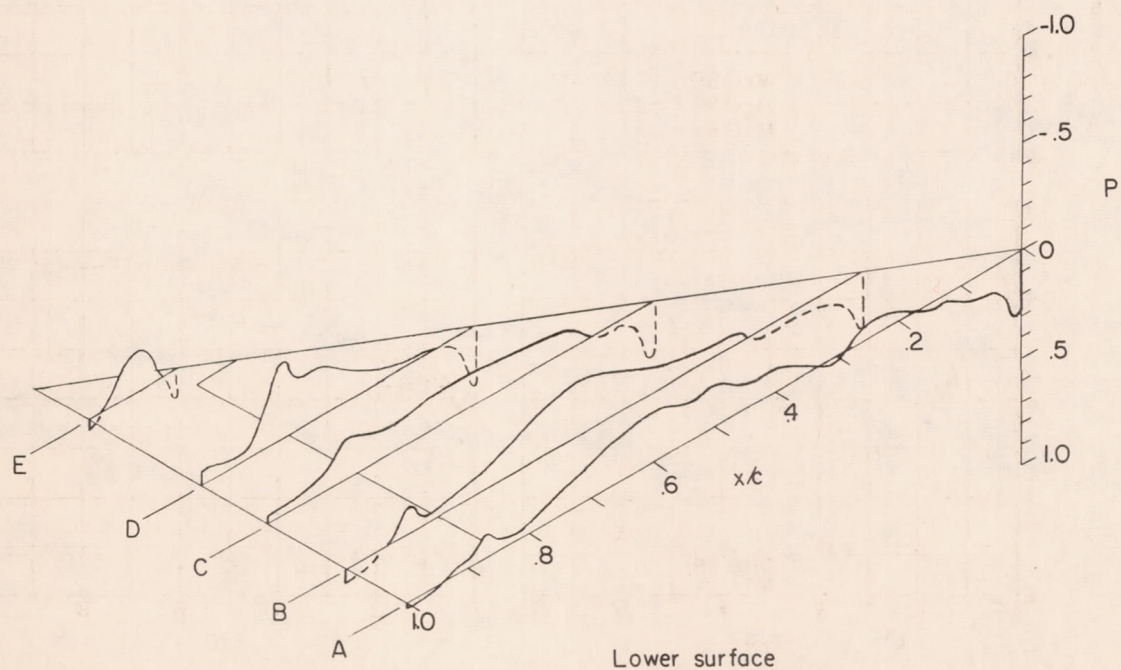
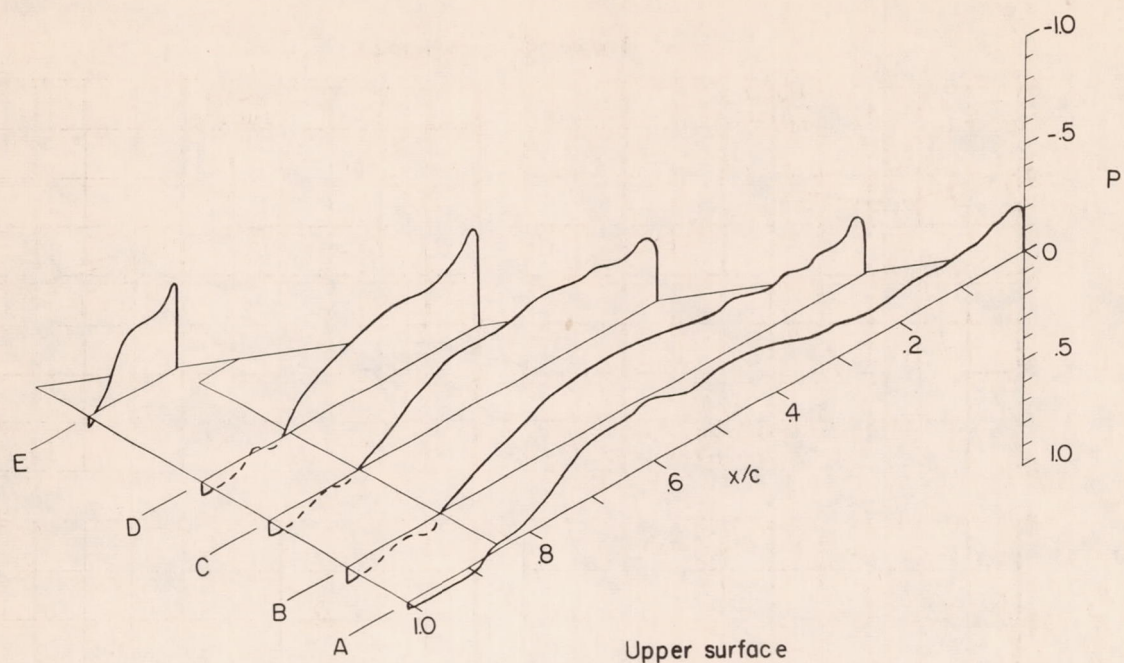
(d) Row D, $0.639b/2$.

Figure 3.- Continued.



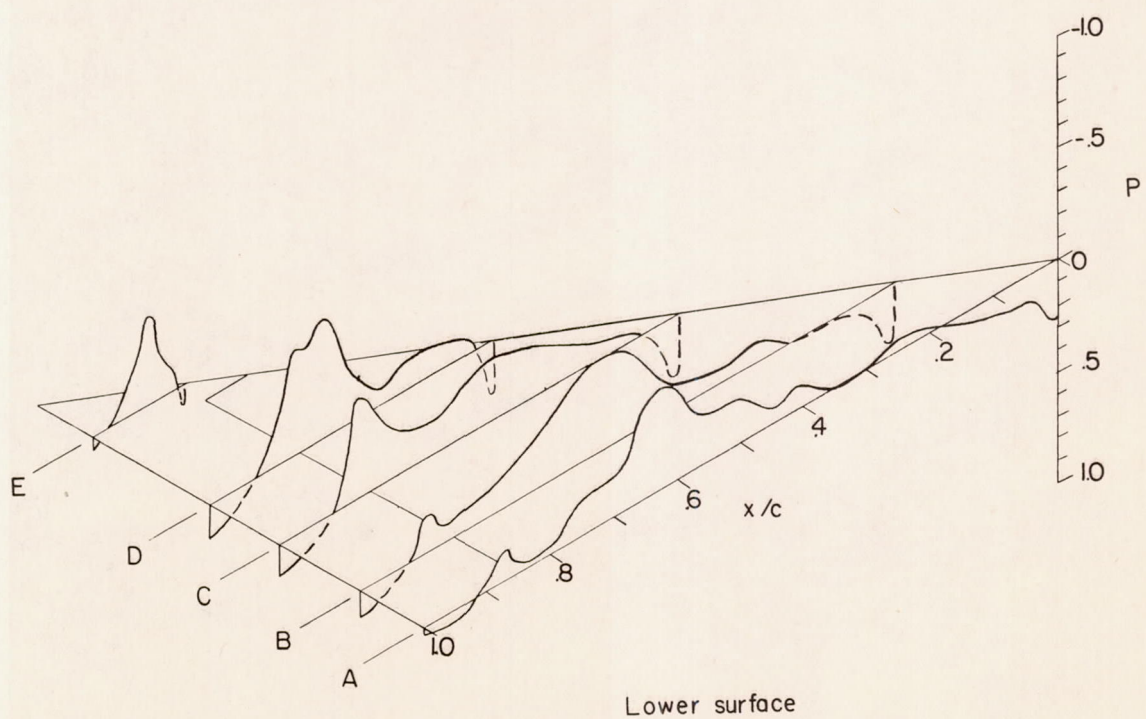
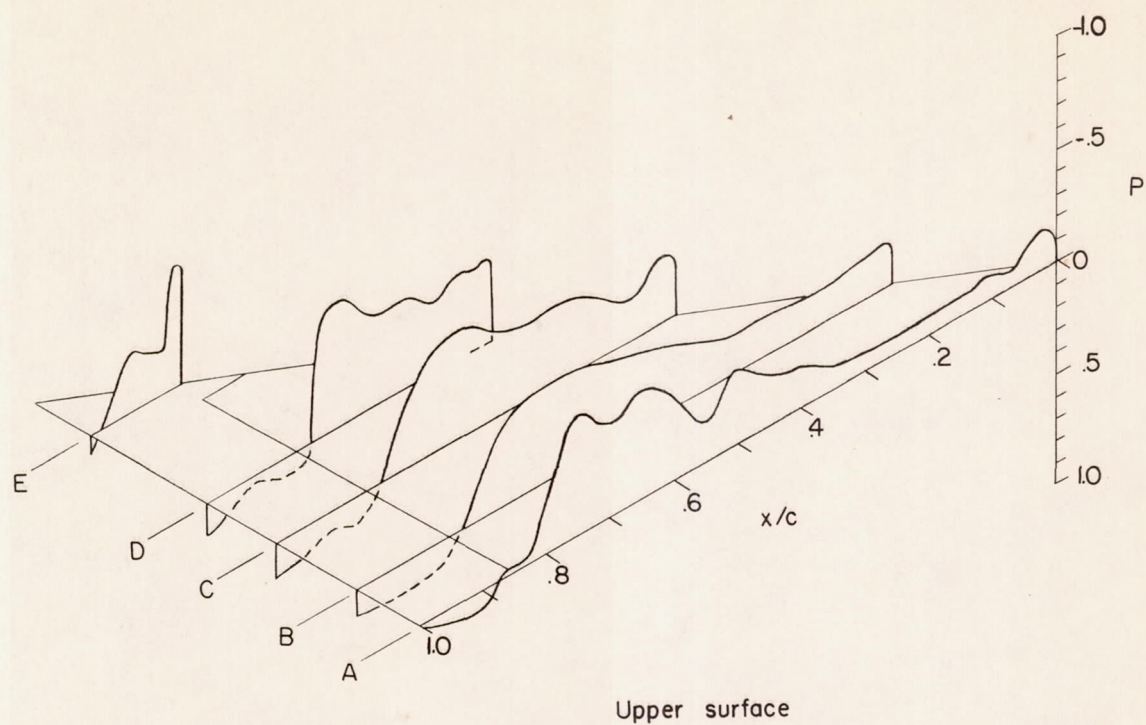
(e) Row E, $0.878b/2$.

Figure 3.- Concluded.



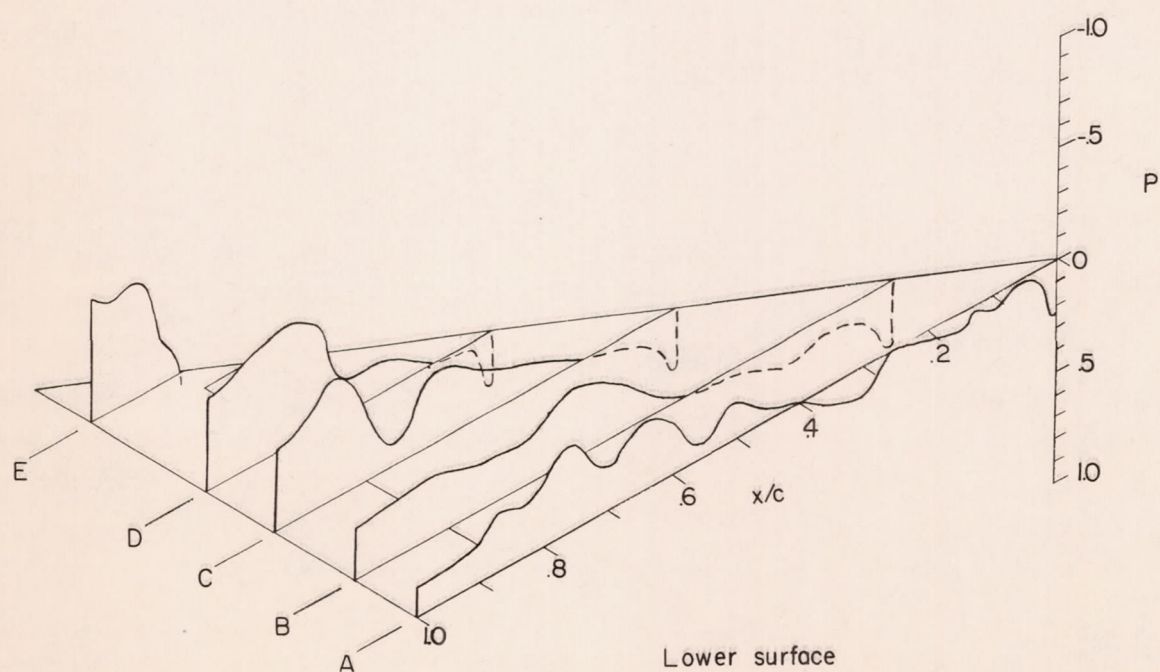
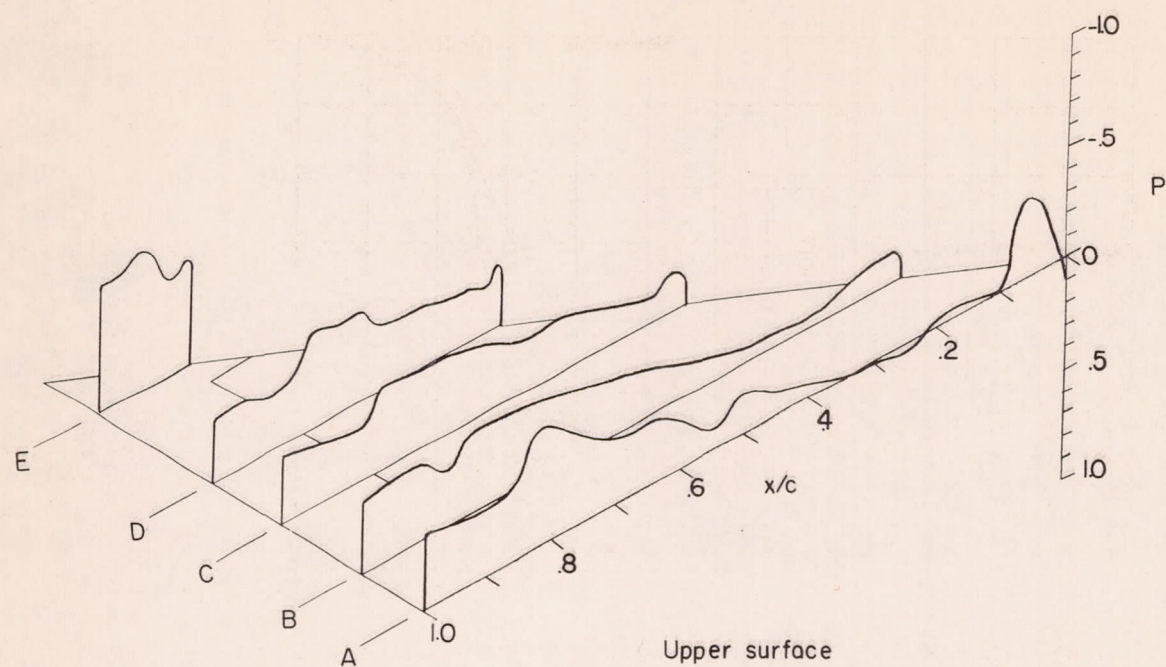
(a) $M = 0.74$.

Figure 4.- Isometric views of the chordwise distribution of pressure coefficient over the left wing at various Mach numbers. $C_{N_A} \approx 0.09$; $\delta_{e_L} \approx 2.0^\circ$ up.



(b) $M = 0.90$.

Figure 4.- Continued.



(c) $M = 1.01$.

Figure 4.- Concluded.

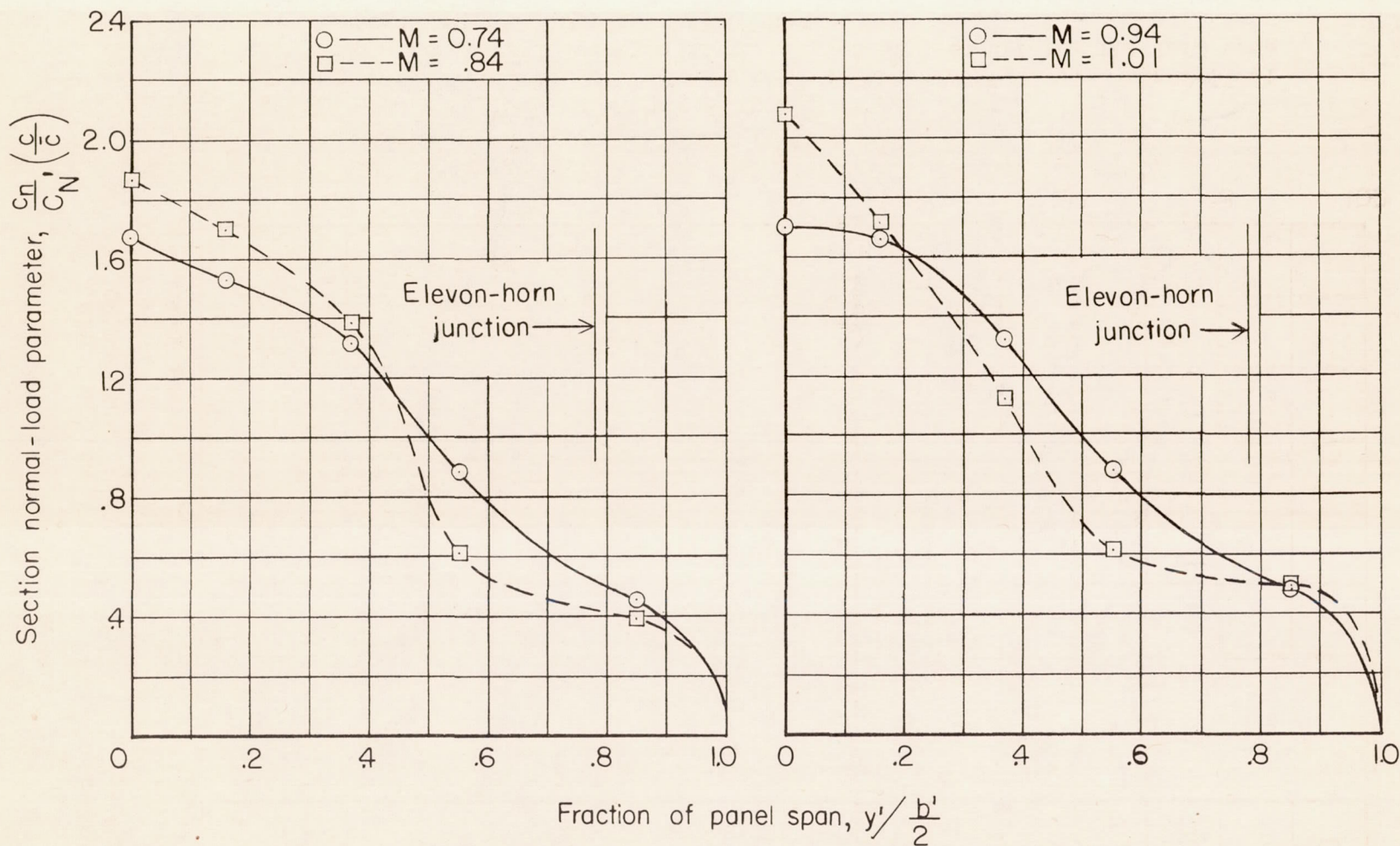


Figure 5.- Effect of Mach number on the spanwise load distribution of the left wing panel. $C_{N_A} \approx 0.09$; $\delta_{e_L} \approx 2.0^\circ$ up.

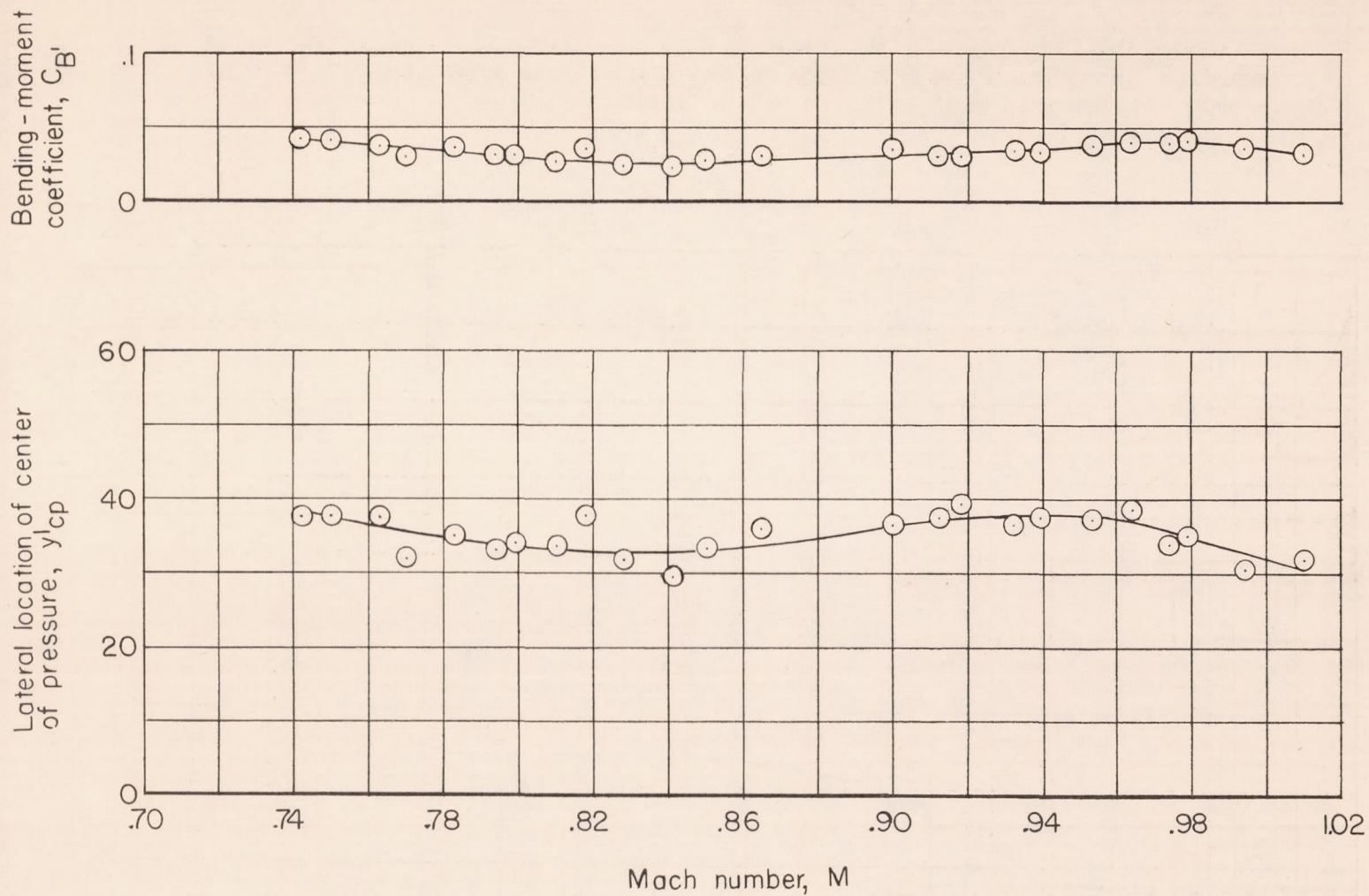


Figure 6.- Variation with Mach number of the bending-moment coefficient and the lateral location of the center of pressure for the left wing panel. $C_{N_A} \approx 0.09$; $\delta_{eL} \approx 2.0^\circ$ up.

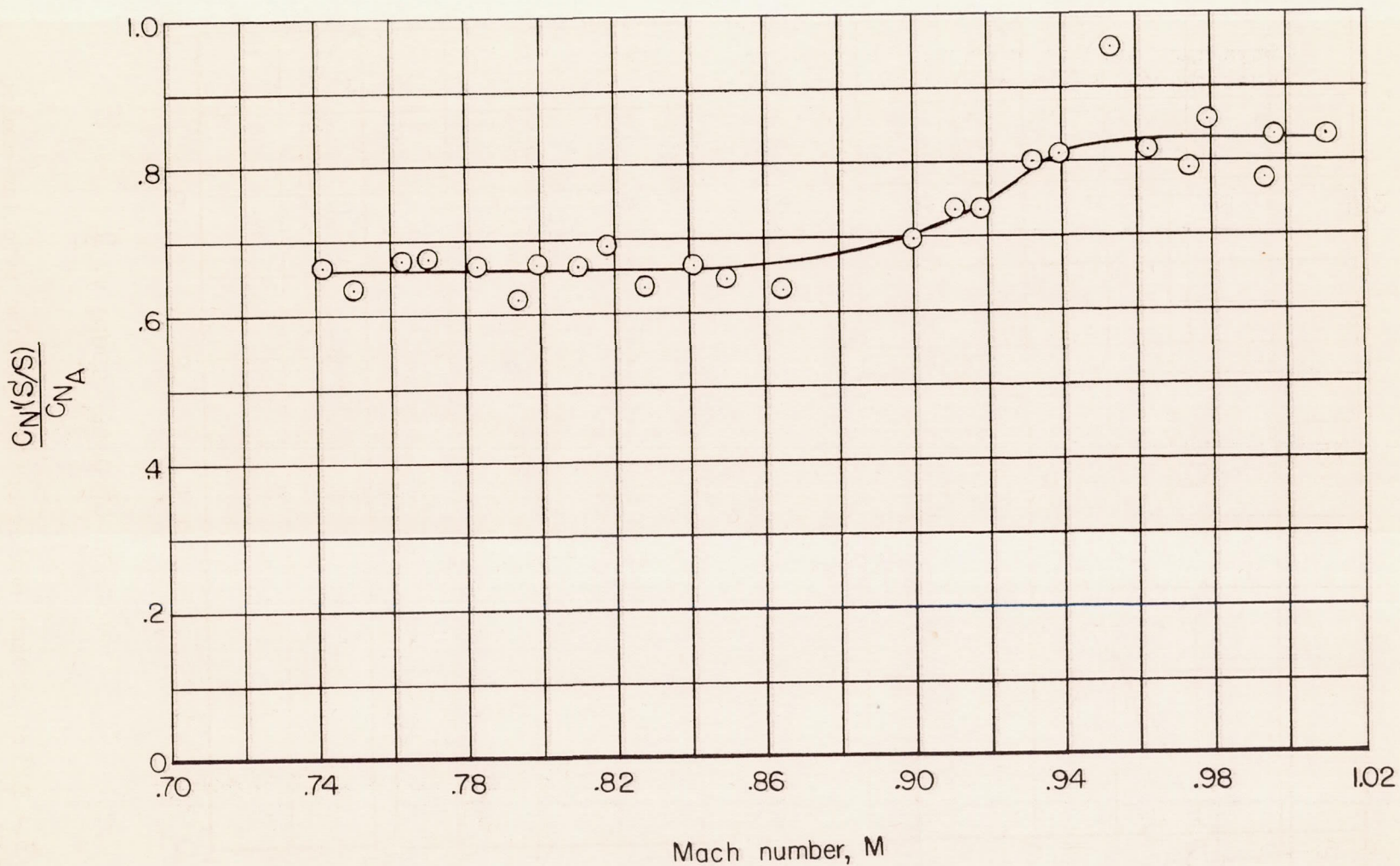


Figure 7.- Variation with Mach number of the portion of the total airplane normal force carried by the wing panels. $C_{N_A} \approx 0.09$; $\delta_{eL} \approx 2.0^\circ$ up.

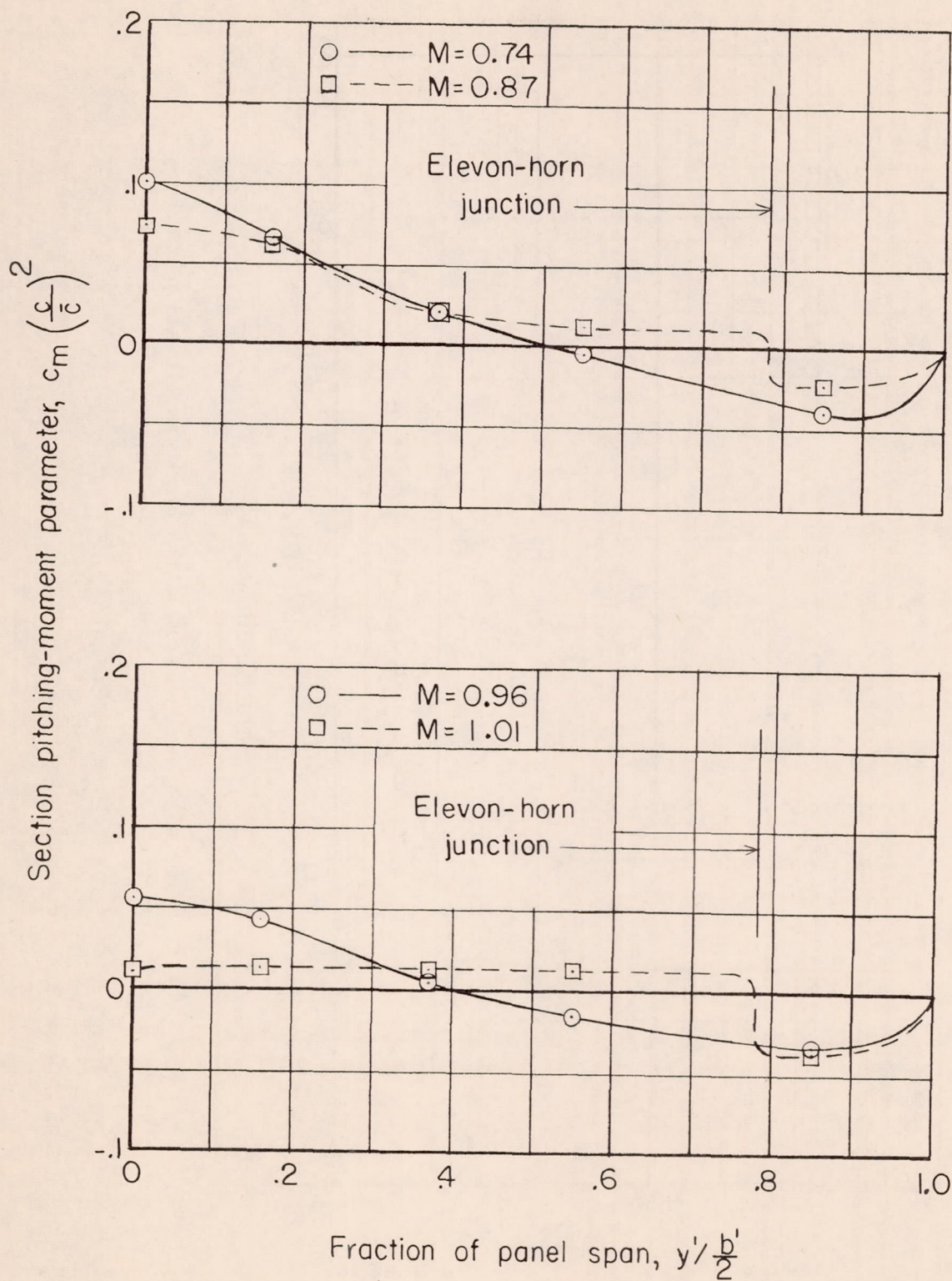


Figure 8.- Effect of Mach number on the spanwise pitching-moment distribution of the left wing panel. $C_{N_A} \approx 0.09$; $\delta_{e_L} \approx 2.0^\circ$ up.

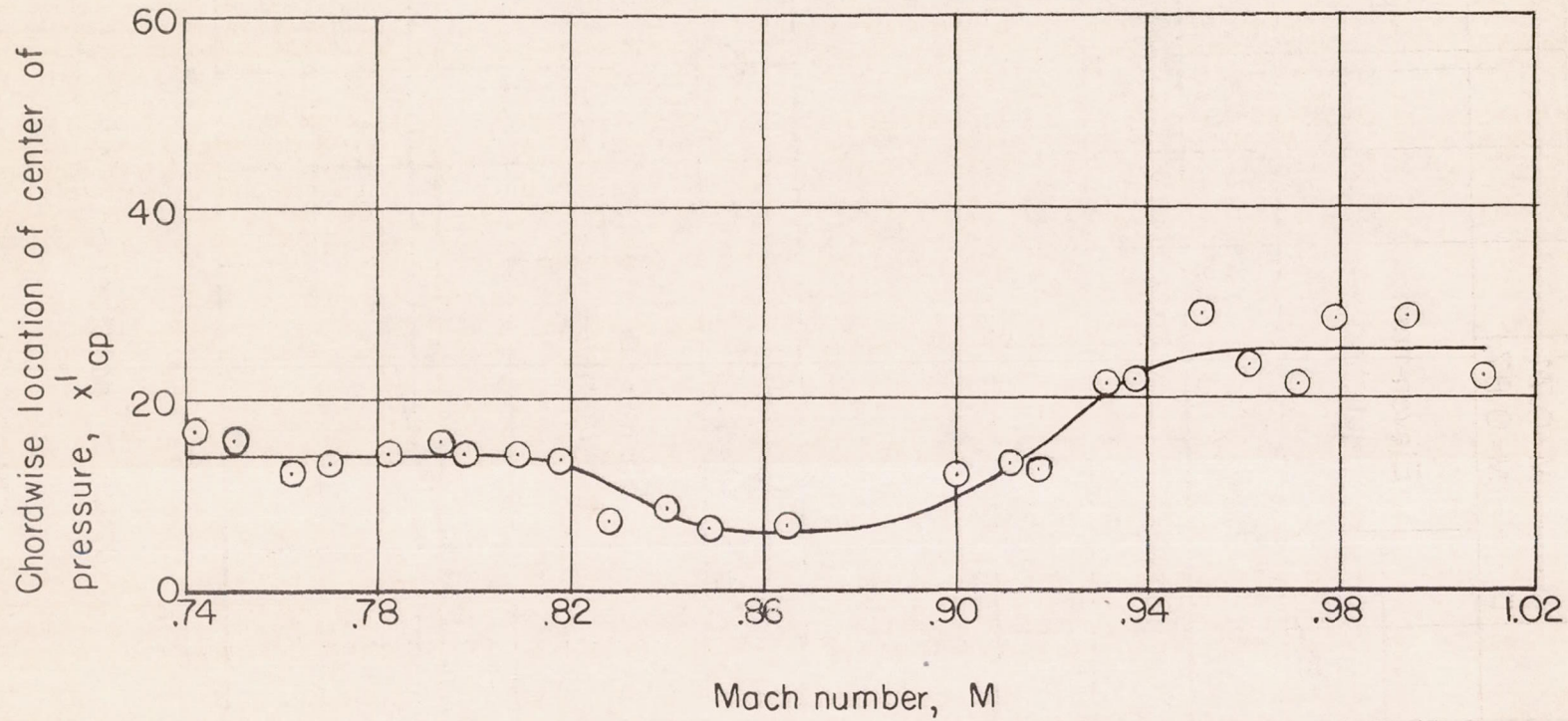


Figure 9.- Variation with Mach number of the chordwise location of the center of pressure for the left wing panel. $C_{NA} \approx 0.09$; $\delta_{eL} \approx 2.0^\circ$ up.

CONFIDENTIAL

CONFIDENTIAL