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RESEARCH MEMORANDUM

A LOW-SPEED INVESTIGATION OF A THIN 60° DELTA WING EQUIPPED WITH A DOUBLE SLOTTED FLAP TO DETERMINE THE CHORDWISE PRESSURE DISTRIBUTION AND THE EFFECT OF VANE SIZE

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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

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A LOW-SPEED INVESTIGATION OF A THIN 60° DELTA WING EQUIPPED WITH A DOUBLE SLOTTED FLAP TO DETERMINE THE CHORDWISE PRESSURE DISTRIBUTION AND THE EFFECT OF VANE SIZE

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SUMMARY

An investigation was made in the Langley 300 MPH 7- by 10-foot tunnel to determine the effect of vane size and the section loads at the 43-percent-semispan station of a thin 60° delta wing-fuselage model equipped with double slotted flaps. The wing had an aspect ratio of 2.31, taper ratio of 0, sweep of 60° at the leading edge, and NACA 65A003 airfoil sections parallel to the free airstream direction.

Increasing the vane size from 8.75 to 25.8 percent flap chord resulted in an increase in available lift-coefficient increment at zero angle of attack from 0.65 to 0.80 and the maximum lift coefficient was increased from 1.33 to 1.47. The larger vane configuration had the larger diving moments and would therefore require more tail download for trim; however, this configuration would still give a larger net gain in lift coefficient provided a tail length of at least one mean aerodynamic chord is used. Maximum vane section normal-force coefficients of 5.9 and 6.6 and maximum flap section normal-force coefficients of 1.97 and 1.84 were obtained for the large- and small-vane configurations, respectively.

INTRODUCTION

Considerable interest is being shown in the use of delta wings for high-speed airplanes because this plan form has some desirable aerodynamic and structural characteristics. Results of previous investigations (refs. 1 and 2) indicate that, by employing double slotted flaps on a 60° delta wing, the angle of attack necessary to obtain a given lift coefficient is considerably reduced, thereby making the use of double slotted flaps desirable for the landing configuration.

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Previous investigations (for example, see refs. 3 and 4) have shown that for double slotted flaps on two-dimensional and swept wings the loads over the vane and flap are very large. Corresponding loads data on a delta-wing configuration are lacking; therefore, an investigation has been made in the Langley 300 MPH 7- by 10-foot tunnel to determine the loads at the 43-percent semispan station on a 60° delta-wing model equipped with double slotted flaps. In addition, the effect of vane size on the lift capabilities of double slotted flaps on delta wings has been investigated. Two sizes of vanes were used - one with a chord 8.75 percent of the flap chord and the other with a chord 25.8 percent of the flap chord. The present paper presents the results of the investigations in the form of longitudinal aerodynamic characteristics of the complete double-slotted-flap model, and in the form of section aerodynamic force and moment characteristics, sample pressure plots, and tabulated pressure coefficients of the wing, vane, and flap at the 43-percent-semispan station. A correlation of the effect of vane size on the present investigation with other double-slotted-flap delta-wing models has also been made.

SYMBOLS

b wing span (based on theoretical tip, fig. 1), ft

c chord, ft

$\bar{c}$ wing mean aerodynamic chord (based on theoretical tip, fig. 1), $\frac{2}{S}\int_0^{b/2} c_w^2 dy$, ft

c_v vane chord, ft

c_f flap chord, ft

c_w plain wing chord, ft

S wing area (based on theoretical tip, fig. 1), sq ft

C_L lift coefficient, $\frac{\text{Lift}}{q_o S}$

$C_{L_{max}}$ maximum lift coefficient

ΔC_L incremental lift coefficient

C_D — drag coefficient, $\frac{\text{Drag}}{q_o S}$

C_m — pitching-moment coefficient referred to quarter mean aerodynamic chord, $\frac{\text{Pitching moment}}{q_o S \bar{c}}$

C_p — pressure coefficient, $\frac{H_o - p}{q_o}$

l_v — distance from wing quarter chord to vane nose measured parallel to vane chord, ft

l_f — distance from wing quarter chord to flap nose measured parallel to flap chord

x — longitudinal distance

x_v — distance from vane nose to center of load on vane, ft

x_f — distance from flap nose to center of load on flap, ft

y — lateral distance

z — vertical distance

H_o — free-stream total pressure, lb/sq ft

p — local static pressure, lb/sq ft

q_o — free-stream dynamic pressure, $\frac{\rho V_o^2}{2}$, lb/ft^2

ρ — mass density of air, slugs/cu ft

V_o — free-stream velocity, ft/sec

δ_f — flap deflection, deg (positive direction trailing edge down)

δ_v — vane deflection, deg (angle between vane chord line and wing chord line, positive direction trailing edge down, see fig. 2)

α angle of attack, deg

c_{n_v} vane section normal-force coefficient based on vane chord

c_{n_f} flap section normal-force coefficient based on flap chord

$c_{n_{WF}}$ section normal-force coefficient of wing forward of slot lip based on plain wing chord

c_{n_w} wing section normal-force coefficient based on plain wing chord,

$$c_{n_{WF}} + c_{n_v}\left(\frac{c_v}{c_w}\right)\cos\delta_v + c_{n_f}\left(\frac{c_f}{c_w}\right)\cos\delta_f$$

c_{m_v} vane section pitching-moment coefficient based on vane chord (moments taken about vane nose)

c_{m_f} flap section pitching-moment coefficient based on flap chord (moments taken about flap nose)

$c_{m_{WF}}$ section pitching-moment coefficient of wing forward of slot lip based on plain wing chord

c_{m_w} wing section pitching-moment coefficient based on plain wing chord (moments taken about wing quarter chord),

$$c_{m_{WF}} - \frac{c_{n_v}\left(l_v + x_v\right)c_v}{{c_w}^2} - \frac{c_{n_f}\left(l_f + x_f\right)c_f}{{c_w}^2}$$

MODEL AND APPARATUS

The model was tested on the single support strut system in the Langley 300 MPH 7- by 10-foot tunnel. The geometric and physical characteristics of the wing-fuselage configuration are given in figure 1 and table I.

The wing of the model had a 60° apex angle, an aspect ratio of 2.31 (based on the theoretical tip), and an NACA 65A003 airfoil section parallel to the free-stream direction.

The double-slotted-flap configurations used for this investigation are shown in figure 2. The general arrangement, that is relation of flap to vane to wing, were obtained from preliminary explorative test based on the information of the systematic investigation of reference 2.

The flap which extended from the fuselage to 0.67b/2 had a constant chord of 6.86 inches and an exposed area equal to 12.78 percent of the total wing area. The flap leading edge was constructed to the ordinates given in table II. Two vanes were used in this investigation: one with a chord of 1.768 inches and one with a chord of 0.600 inch hereinafter referred to as the large vane and the small vane, respectively. The ordinates of the vanes are given in table III. The vane and flap were deflected as a unit about the pivot point shown in figure 2.

The wing, vane, and flap were constructed with flush surface pressure orifices located on the right semispan at the 43-percent-semispan station. The spacing of these orifices along the chord is given in tables IV and V.

TESTS

The tests were performed at a dynamic pressure of approximately 25 pounds per square foot which corresponds to a Mach number of approximately 0.13. Reynolds number based on the mean aerodynamic chord of the model was approximately 2.7×10^6. The tests were run through an angle-of-attack range of approximately -4° through the stall. Flap deflections ranged from 45° through the flap deflection for maximum lift increment at zero angle of attack.

CORRECTIONS

The jet-boundary corrections applied to the data of this paper were obtained by the method outlined in reference 5. Jet-boundary corrections applied are as follows:

$$\Delta\alpha = 1.028C_L$$

$$\Delta C_D = 0.0179{C_L}^2$$

The blockage correction as applied to the dynamic pressure was obtained by the method outlined in reference 6. The buoyancy correction due to the longitudinal static pressure gradient in the tunnel as applied to the data increased the drag coefficient by 0.001.

RESULTS AND DISCUSSION

Presentation of Results

Results of the investigation are presented in the following figures:

The pressure coefficients are presented in tables IV and V.

AERODYNAMIC CHARACTERISTICS

The aerodynamic characteristics in pitch of the two flap-vane configurations are given in figures 3 and 4. For a given flap deflection, the large-vane configuration gave more increment in lift coefficient at zero angle of attack and was capable of extending the flap deflection about 20° (from 50° to approximately 70°) farther than the small-vane configuration. These two effects resulted in increasing the lift-coefficient increment at zero angle of attack from 0.65 for the small-vane configuration to 0.80 for the large-vane configuration. An increase in vane size also resulted in a greater maximum lift coefficient (1.33 for the 8.75-percent-flap-chord vane and 1.47 for the 25.8-percent-flap-chord vane). It should be noted, however, that these maximum lift coefficients occurred at a flap deflection of 45° for both configurations.

Comparison of the results of the present investigation with the best configurations of other studies (for example, refs. 1 and 2) of similar chord double slotted flaps on delta wings (fig. 5) using the vane-flap chord ratio as the basis for correlation, shows very good agreement with regard to maximum useable flap deflection and available lift at zero angle of attack. The flap configurations of references 1 and 2 and of the unpublished data were corrected to the span of the present investigation by assuming that the spanwise variation of lift coefficient due to flap deflection of double slotted flaps was similar to the variation for plain flaps presented in reference 7. This method has been shown in reference 8 to agree well with experimental data on delta wings.

The instability at the higher angles of attack (see figs. 3 and 4) is quite similar to that reported for the delta wing with double slotted flaps in reference 9. However, when a delta tail was installed at low rearward positions on the model of reference 9, longitudinal stability as well as longitudinal control resulted. It is felt that the addition of a tail at similar positions to the present model would have similar effects.

It should be noted that the larger vane configuration had the larger diving moments and the download on a conventional tail required to trim these diving moments would be larger for the larger vane configuration; however, the larger vane configuration would still give the largest net lift increment for tail lengths greater than about $1.0\bar{c}$.

For both double-slotted-flap configurations, the ratio of lift to drag decreased as the flap deflection increased (see figs. 3 and 4); however, at the same flap-deflection angles and at lift coefficients greater than 0.9, the ratio of lift to drag was greater for the larger vane configuration than for the smaller vane configuration. In general, both configurations showed an improvement in drag over the plain-wing configuration at the higher lift coefficients.

SECTION CHARACTERISTICS AT THE 43-PERCENT-SEMISPAN STATION

Section Normal Force

Section normal-force coefficients of the plain wing and of the double-slotted-flap configurations based on the plain-wing chord and section normal-force coefficients of the vane and flap based on their chords were computed by using a step integration procedure of the pressure data obtained at the 43-percent-semispan station.

Wing.- For a given double-slotted-flap deflection greater than 45°, the delta wing with the larger vane configuration had the larger increment of section normal-force coefficient at zero angle of attack. (Compare fig. 6 with fig. 9.) Greater maximum section normal force was also obtained for the wing with the larger vane configuration than for the smaller vane configuration, the values of maximum normal-force coefficient being 2.28 and 2.13, respectively. The larger vane configuration at zero angle of attack reached its peak effectiveness at a flap deflection of approximately 60° $\left(\Delta c_{n_{W(\alpha=0^\circ)}} = 1.2\right)$. The smaller vane configuration had a maximum normal-force-coefficient increment of 1.0 for zero angle of attack at a flap deflection of 45°.

Vane.- The section normal-force coefficients for both vanes (figs. 7 and 10) are larger than those reported in the two-dimensional data of reference 4. (The maximum vane section normal-force coefficients for the large and small vanes were 5.9 and 6.6, respectively.) At the lower angles of attack the section normal-force coefficients of the larger vane increased with flap deflection up to a flap deflection of approximately 70°. At the higher angles of attack in the stall region, not much change in section load was noted due to flap deflection; however, the loadings decreased with angle of attack. Somewhat erratic behavior in load carrying ability for the small vane was noted at the lower angles of attack for flap deflections of 50° and 54°. (See fig. 10.)

Flaps.- Generally, the flap normal-force coefficient for both of the vane configurations increased with angle of attack (see figs. 8 and 11) and for the large-vane configuration increased with flap deflection up to a flap deflection of 70°. The maximum flap section normal-force coefficients were 1.97 and 1.84 for the large- and small-vane configurations, respectively. The variation of flap normal-force coefficient with flap deflection for the small-vane configuration was somewhat erratic.

Breakdown of the section normal-force coefficient of the double-slotted-flap configurations.- The load carrying ability of each part of the double-slotted-flap configuration is presented in figure 12. At $\alpha \approx 1^\circ$ the fraction of load carried by the larger vane remains constant up to $\delta_f = 70^\circ$ and at flap deflections greater than 51° the percentage of total load on the large vane is larger than that on the flap. The part of the total load contributed by the flap with the large-vane configuration decreases with an increase in flap deflection. At $\alpha \approx 25.6^\circ$ the flap carried a larger percentage of the load throughout the flap-deflection range than did the large vane; however the percentage for both was less than at $\alpha \approx 1^\circ$. The small-vane configuration was somewhat different in the breakdown of loads in that the flap carried a larger percentage of the load at $\alpha \approx 1^\circ$ and $\alpha \approx 25.6^\circ$ than did the small vane throughout the flap-deflection range.

Section Pitching Moment

Wing.- The center of load on the vane and flap does not vary appreciably with flap deflection or angle of attack. (See figs. 13, 14, and 15.) The effect of deflection of the double slotted flap on the wing forward of the slot lip is to increase its load, particularly over the rearward portion. (See fig. 16.) The large section diving-moment coefficients shown in figures 6 and 9 are attributed to this fact plus the large loads over the vane and flap. Since the large-vane—flap configuration produced more normal force and had its center more rearward of the wing section quarter chord than the small-vane configuration (see fig. 2), the large-vane configuration had the larger diving moments. (Compare fig. 6 with fig. 9.)

Vane.- In the low angle-of-attack range, the large-vane section pitching-moment coefficients (fig. 7) increased with flap deflection; however, not much change was noted with angle of attack. At the higher angles of attack, the large-vane section pitching-moment coefficient decreased. The same general trend in section pitching-moment coefficients was observed for the small-vane configuration when the flap was deflected 45°; however, because of the effects of airflow stall, erratic behavior was noted for flap deflections of 50° and 54°. (See fig. 10.)

Flap.- Generally, the flap section pitching-moment coefficients for both vane configurations increased with flap deflection and with angle of attack. (See figs. 8 and 11.) Since the center of load on the flap does not vary appreciably with flap deflection or angle of attack (see figs. 13, 14, and 15), the increase noted is caused by the increased load over the flap as the flap deflection or angle of attack was increased.

CONCLUDING REMARKS

An investigation has been made in the Langley 300 MPH 7- by 10-foot tunnel at a Reynolds number of approximately 2.7×10^6 to determine the aerodynamic characteristics and the section loads at the 43-percent-semispan station of a thin 60° delta wing-fuselage model equipped with double slotted flaps. The results of the investigation indicate the following:

1. An increase in vane size from 8.75 to 25.8 percent flap chord resulted in an increase in incremental lift coefficient at zero angle of attack from 0.65 to 0.80. The largest part of this lift increase is attributed to the extended effective flap-deflection range from 50° to approximately 70°.

2. An increase in vane size resulted in a greater maximum lift coefficient (1.33 for the 8.75-percent-flap-chord vane and 1.47 for the 25.8-percent-flap-chord vane).

3. The larger vane configuration had the larger diving moments and would therefore require more tail download for trim; however, this configuration would still give a larger net gain in lift coefficient provided a tail length of at least one mean aerodynamic chord is used.

4. The maximum vane section normal-force coefficients $\left(c_{n_v}\right)$ for the large and small vane were 5.9 and 6.6, respectively.

5. The maximum flap section normal-force coefficients $\left(c_{n_f}\right)$ were 1.97 and 1.84 for the large- and small-vane configurations, respectively.

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., December 1, 1954.

REFERENCES

1. MacLeod, Richard G.: A Preliminary Low-Speed Wind-Tunnel Investigation of a Thin Delta Wing Equipped With a Double and a Single Slotted Flap. NACA RM L51J26, 1952.

2. Riebe, John M., and MacLeod, Richard G.: Low-Speed Wind-Tunnel Investigation of a Thin 60° Delta Wing With Double Slotted, Single Slotted, Plain, and Split Flaps. NACA RM L52J29, 1953.

3. Visconti, Fioravante: Wind-Tunnel Investigation of Air Loads Over a Double Slotted Flap on the NACA 65(216)-215, a = 0.8 Airfoil Section. NACA RM L7A30, 1947.

4. Hunton, Lynn W., and James, Harry A.: Use of Two-Dimensional Data in Estimating Loads on a 45° Sweptback Wing With Slats and Partial-Span Flaps. NACA TN 3040, 1953.

5. Gillis, Clarence L., Polhamus, Edward C., and Gray, Joseph L., Jr.: Charts for Determining Jet-Boundary Corrections for Complete Models in 7- by 10-Foot Closed Rectangular Wind Tunnels. NACA WR L-123, 1945. (Formerly NACA ARR L5G31.)

6. Herriot, John G.: Blockage Corrections for Three-Dimensional-Flow Closed-Throat Wind Tunnels, With Consideration of the Effect of Compressibility. NACA Rep. 995, 1950. (Supersedes NACA RM A7B28.)

7. DeYoung, John: Theoretical Symmetric Span Loading Due to Flap Deflection for Wings of Arbitrary Plan Form at Subsonic Speeds. NACA Rep. 1071, 1952. (Supersedes NACA TN 2278.)

8. Riebe, John M.: The Effects of Fuselage Size on the Low-Speed Longitudinal Aerodynamic Characteristics of a Thin 60° Delta Wing With and Without a Double Slotted Flap. NACA RM L52L29a, 1953.

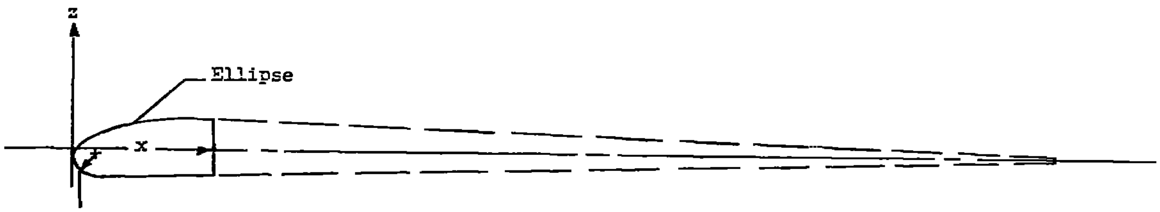
9. Riebe, John M., and Graven, Jean C.: Low-Speed Investigation of the Effects of Location of a Delta Horizontal Tail on the Longitudinal Stability and Control of a Fuselage and Thin Delta Wing With Double Slotted Flaps Including the Effects of Ground Board. NACA RM L53H19a, 1953.

TABLE I.- PHYSICAL CHARACTERISTICS OF THE TEST MODEL

Wing:	
Section parallel to free-stream direction	NACA 65A003
Span, ft	5.00
Aspect ratio (based on theoretical tip)	2.31
Leading-edge sweep, deg	60.00
Trailing-edge sweep, deg	0
Area (based on theoretical tip), sq ft	10.83
Mean aerodynamic chord, ft	2.89
Root chord, ft	4.33
Large vane:	
Span, ft	3.33
Chord, ft	0.15
Chord, percent wing root chord	3.40
Chord, percent flap chord	25.77
Small vane:	
Span, ft	3.33
Chord, ft	0.05
Chord, percent wing root chord	1.15
Chord, percent flap chord	8.75
Flap:	
Span, ft	3.33
Chord, ft	0.57
Chord, percent wing root chord	13.20
Exposed area, sq ft	1.38
Exposed area, percent wing area	12.78

TABLE II.- ORDINATES OF THE LEADING EDGE OF THE TRAILING-EDGE FLAP

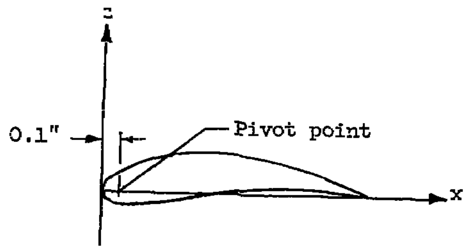
[All dimensions in inches]



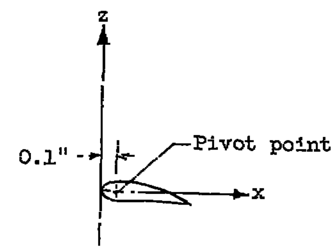
Station, in. x	Lower z	Upper z
0	-0.107	-0.107
.010	Radius	-.059
.030		-.030
.050		-.005
.075		.022
.100		.041
.143	-.245	------
.200	Straight taper	.096
.300		.133
.400		.161
.500		.182
.600		.198
.700		.208
.800		.215
.900		.217
1.000	-.216	.216

TABLE III.- ORDINATES OF THE VANES

[All dimensions in inches]



Large Vane
$c_v = 1.768$ in.



Small vane
$c_v = 0.600$ in.

Station, in. x	Lower z	Upper z
0	0	0
.022	-.047	.067
.044	-.060	.092
.088	-.072	.131
.133	-.079	.160
.177	-.077	.185
.265	-.072	.224
.354	-.053	.255
.530	-.025	.288
.707	.002	.294
.884	.032	.283
1.061	.053	.255
1.238	.057	.207
1.414	.053	.147
1.591	.032	.080
1.680	.019	.046
1.768	0	0

Station, in. x	Lower z	Upper z
0	0	0
.010	-.029	.030
.020	-.042	.043
.030	-.049	.051
.040	-.054	.058
.050	-.059	.063
.060	-.063	.068
.070	-.066	.072
.080	-.068	.075
.090	-.069	.077
.100	-.070	.080
.150	-.063	.080
.200	-.054	.074
.250	-.047	.064
.300	-.040	.050
.350	-.040	.032
.400	-.043	.012
.450	-.052	-.011
.500	-.064	-.037
.550	-.080	-.066
.600	-.097	-.097

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE

(a) Large-vane configuration; $\delta_f = 45^\circ$

Upper-surface orifices

x/c	C_p for –									
	α = -3.3°	α = 0.9°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.7°	α = 21.8°	α = 23.8°	α = 25.8°	α = 27.8°
Wing										
0.0000	.814	1.858	2.108	2.526	3.053	3.088	3.085	2.966	3.044	2.905
.0125	1.014	1.782	2.081	2.500	2.850	3.082	3.202	3.133	3.182	2.992
.0250	1.051	1.619	2.122	2.558	3.039	3.128	3.324	3.175	3.194	2.994
.0500	1.077	1.517	2.180	2.654	3.124	3.184	3.222	3.150	3.250	3.026
.0750	1.092	1.439	2.459	2.709	3.115	3.099	3.196	3.192	3.303	3.052
.1000	1.112	1.360	2.802	3.017	3.086	3.034	3.205	3.263	3.358	3.092
.1500	1.129	1.302	2.445	3.890	4.106	3.377	3.438	3.396	3.414	3.118
.2500	1.172	1.323	1.273	1.904	3.162	3.598	3.426	3.221	3.218	2.977
.3500	1.229	1.358	1.340	1.358	1.906	2.830	3.003	2.898	2.948	2.772
.4500	1.298	1.424	1.436	1.390	1.613	2.300	2.645	2.633	2.716	2.591
.5000	1.335	1.445	1.454	1.416	1.552	2.077	2.449	2.480	2.581	2.481
.5500	1.390	1.497	1.512	1.468	1.563	1.969	2.344	2.387	2.490	2.395
.6000	1.467	1.579	1.596	1.549	1.622	1.912	2.250	2.311	2.417	2.334
.6985	1.682	1.756	1.773	1.756	1.777	1.839	2.117	2.189	2.285	2.205
.7499	1.963	2.020	2.035	2.023	2.033	2.006	2.199	2.246	2.320	2.210
.7700	2.132	2.206	2.215	2.212	2.226	2.147	2.287	2.314	2.387	2.259
.7750	2.154	2.230	2.241	2.247	2.258	2.170	2.298	2.311	2.379	2.239
.7800	2.192	2.270	2.279	2.291	2.302	2.210	2.321	2.325	2.390	2.251
Vane										
.0000	1.719	1.602	1.564	1.558	1.546	1.527	1.548	1.511	1.569	1.516
.0249	3.037	3.064	3.102	3.128	3.130	3.023	3.122	3.065	3.124	2.905
.0498	3.435	3.512	3.570	3.610	3.625	3.428	3.472	3.393	3.405	3.058
.0945	4.169	4.177	4.262	4.340	4.376	4.040	4.003	3.856	3.751	3.236
.1403	4.679	4.640	4.738	4.846	4.916	4.476	4.389	4.178	4.024	3.392
.1900	5.140	5.070	5.192	5.320	5.406	4.915	4.762	4.506	4.297	3.556
.2952	5.254	5.163	5.299	5.445	5.561	5.074	4.864	4.565	4.314	3.539
.3959	4.982	4.913	5.029	5.177	5.323	4.895	4.690	4.382	4.133	3.415
.5028	4.647	4.584	4.674	4.837	4.992	4.635	4.463	4.178	3.995	3.323
.6024	4.243	4.201	4.265	4.416	4.581	4.317	4.190	3.938	3.804	3.219
.7019	3.618	3.590	3.657	3.776	3.927	3.737	3.665	3.449	3.361	2.894
.8037	3.111	3.119	3.166	3.273	3.414	3.278	3.225	3.048	2.962	2.614
.9067	2.730	2.741	2.759	2.849	2.948	2.853	2.858	2.769	2.757	2.487
Flap										
.0000	2.192	2.299	2.384	2.401	2.393	2.221	2.216	2.122	2.106	1.885
.0125	2.862	2.907	2.951	2.991	3.056	2.904	2.901	2.777	2.772	2.510
.0250	3.438	3.456	3.500	3.605	3.716	3.572	3.585	3.466	3.458	3.138
.0500	3.452	3.465	3.491	3.608	3.760	3.649	3.671	3.526	3.514	3.179
.0750	3.441	3.448	3.462	3.605	3.745	3.657	3.705	3.574	3.543	3.190
.1000	3.283	3.279	3.297	3.419	3.581	3.499	3.551	3.441	3.423	3.072
.1500	2.613	2.608	2.613	2.721	2.860	2.819	2.886	2.831	2.836	2.591
.2000	2.189	2.206	2.218	2.305	2.431	2.402	2.483	2.418	2.426	2.242
.4000	1.693	1.718	1.709	1.782	1.871	1.875	2.014	2.020	2.071	2.140
.6000	1.467	1.494	1.480	1.555	1.640	1.646	1.787	1.805	1.904	1.891
.8000	1.269	1.299	1.282	1.352	1.443	1.425	1.551	1.585	1.675	1.709

Lower-surface orifices

x/c	C_p for –									
	α = -3.3°	α = 0.9°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.7°	α = 21.8°	α = 23.8°	α = 25.8°	α = 27.8°
Wing										
0.0125	1.114	.849	.820	.936	1.164	1.332	1.486	1.526	1.622	1.608
.0250	1.100	.878	.785	.794	.854	.909	.992	1.025	1.100	1.078
.0500	1.086	.924	.808	.759	.751	.714	.736	.754	.780	.767
.0750	1.072	.942	.820	.753	.713	.646	.645	.641	.657	.637
.1000	1.074	.959	.846	.765	.716	.629	.605	.585	.613	.585
.1500	1.066	.971	.860	.785	.722	.609	.574	.554	.566	.530
.2500	1.043	.974	.872	.805	.739	.632	.580	.554	.560	.516
.3500	1.003	.953	.866	.805	.748	.640	.597	.576	.566	.525
.4500	.920	.892	.817	.765	.716	.618	.585	.545	.560	.525
.5000	.862	.849	.776	.735	.692	.601	.574	.545	.548	.513
.5500	.817	.794	.738	.692	.657	.581	.551	.528	.534	.496
.6000	.745	.733	.680	.642	.607	.541	.514	.500	.504	.476
.6985	.576	.576	.529	.503	.478	.436	.420	.398	.416	.389
.7499	.499	.491	.465	.445	.422	.382	.375	.362	.364	.346
.7599	.499	.483	.459	.424	.419	.382	.372	.362	.370	.346
.7700	.496	.477	.453	.433	.425	.391	.386	.381	.399	.369
Vane										
.0249	.739	.718	.689	.648	.601	.524	.506	.472	.493	.470
.0532	.413	.451	.424	.378	.323	.238	.213	.189	.197	.176
.1018	.246	.288	.282	.241	.194	.108	.088	.071	.067	.049
.1538	.209	.235	.241	.201	.155	.082	.063	.057	.053	.043
.2115	.169	.212	.215	.183	.141	.082	.074	.068	.067	.055
.3032	.169	.198	.201	.177	.144	.108	.097	.088	.094	.084
.4084	.166	.201	.201	.186	.155	.127	.122	.119	.126	.112
.5023	.186	.203	.206	.195	.164	.150	.145	.136	.141	.133
.5995	.212	.224	.221	.215	.199	.190	.182	.172	.179	.164
.7014	.275	.282	.279	.291	.267	.252	.259	.246	.252	.222
.7936	.441	.445	.448	.459	.452	.445	.452	.429	.425	.383
.9250	1.178	1.177	1.186	1.227	1.249	1.213	1.213	1.167	1.173	1.075
Flap										
.0125	.083	.122	.145	.148	.126	.122	.131	.119	.138	.098
.0250	.000	.000	.000	.000	.000	.000	.000	.000	.006	.000
.0500	.037	.041	.026	.032	.026	.023	.020	.028	.023	.017
.0750	.063	.073	.061	.058	.047	.042	.054	.048	.062	.040
.1000	.103	.105	.087	.084	.079	.068	.063	.068	.067	.055
.1500	.158	.166	.134	.134	.111	.108	.114	.107	.111	.101
.2000	.206	.212	.189	.177	.167	.139	.136	.138	.155	.130
.4000	.364	.363	.331	.317	.299	.266	.261	.249	.249	.251
.6000	.478	.477	.451	.427	.402	.374	.372	.356	.378	.360
.8000	.602	.616	.576	.578	.566	.530	.528	.506	.546	.530
.9000	.693	.692	.672	.677	.692	.637	.653	.644	.678	.683

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(b) Large-vane configuration; $\delta_f = 50^\circ$

Upper-surface orifices

x/c	C_p for –									
	α = -3.2°	α = 1.0°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.6°	α = 21.8°	α = 23.8°	α = 25.8°	α = 27.7°
Wing										
0.0000	.820	1.839	2.134	2.535	2.994	3.177	3.066	2.989	2.937	2.850
.0125	1.049	1.765	2.105	2.495	2.986	3.166	3.206	3.153	3.052	2.932
.0250	1.087	1.647	2.151	2.564	3.006	3.215	3.306	3.193	3.069	2.938
.0500	1.102	1.581	2.218	2.633	3.119	3.287	3.212	3.182	3.110	2.957
.0750	1.113	1.481	2.502	2.699	3.082	3.180	3.186	3.230	3.156	2.989
.1000	1.131	1.381	2.864	3.000	3.040	3.114	3.206	3.311	3.202	3.023
.1500	1.154	1.286	2.473	3.891	4.014	3.461	3.441	3.432	3.228	3.065
.2500	1.201	1.309	1.276	1.914	3.222	3.679	3.389	3.225	3.052	2.915
.3500	1.262	1.352	1.345	1.354	1.932	2.911	2.965	2.906	2.796	2.713
.4500	1.349	1.421	1.452	1.388	1.631	2.380	2.619	2.647	2.607	2.523
.5000	1.378	1.450	1.490	1.405	1.571	2.154	2.444	2.506	2.477	2.403
.5500	1.499	1.507	1.557	1.474	1.574	2.058	2.346	2.420	2.406	2.330
.6000	1.523	1.581	1.647	1.578	1.619	2.000	2.255	2.334	2.328	2.253
.6985	1.776	1.814	1.867	1.802	1.798	1.960	2.177	2.242	2.222	2.168
.7499	2.119	2.120	2.192	2.124	2.085	2.171	2.269	2.322	2.262	2.196
.7700	2.346	2.358	2.429	2.388	2.344	2.374	2.427	2.437	2.360	2.261
.7750	2.404	2.404	2.487	2.434	2.392	2.403	2.435	2.440	2.351	2.256
.7800	2.459	2.478	2.548	2.506	2.463	2.461	2.481	2.477	2.385	2.273
Vane										
.0000	2.093	1.922	1.954	1.911	1.886	1.922	1.928	1.908	1.848	1.793
.0249	4.041	3.942	4.119	4.067	4.026	3.963	3.845	3.762	3.483	3.261
.0498	4.488	4.389	4.595	4.552	4.537	4.369	4.191	4.064	3.693	3.398
.0945	5.198	4.988	5.250	5.216	5.210	4.934	4.630	4.435	3.889	3.492
.1403	5.611	5.375	5.656	5.630	5.651	5.340	4.954	4.696	4.087	3.600
.1900	6.020	5.750	6.056	6.041	6.080	5.731	5.274	4.966	4.271	3.733
.2952	5.939	5.670	5.984	5.978	6.060	5.728	5.237	4.897	4.176	3.648
.3959	5.509	5.266	5.540	5.564	5.691	5.418	4.936	4.604	3.966	3.477
.5028	5.035	4.819	5.059	5.087	5.250	5.041	4.630	4.322	3.785	3.335
.6024	4.532	4.363	4.546	4.587	4.779	4.638	4.309	4.026	3.610	3.207
.7019	3.852	3.690	3.850	3.889	4.054	3.963	3.730	3.529	3.179	2.869
.8037	3.279	3.180	3.331	3.363	3.480	3.447	3.269	3.121	2.828	2.602
.9067	2.855	2.788	2.887	2.903	3.031	3.021	2.922	2.817	2.647	2.460
Flap										
.0000	2.468	2.536	2.676	2.621	2.582	2.493	2.424	2.342	2.170	2.023
.0125	3.064	3.023	3.140	3.115	3.145	3.114	3.000	2.908	2.719	2.537
.0250	3.637	3.547	3.676	3.687	3.807	3.783	3.673	3.558	3.331	3.119
.0500	3.602	3.504	3.632	3.653	3.810	3.824	3.722	3.613	3.371	3.151
.0750	3.573	3.452	3.566	3.610	3.784	3.806	3.727	3.610	3.388	3.151
.1000	3.398	3.278	3.380	3.423	3.602	3.598	3.581	3.486	3.256	3.034
.1500	2.683	2.564	2.644	2.681	2.835	2.890	2.902	2.857	2.710	2.554
.2000	2.259	2.189	2.255	2.285	2.378	2.461	2.470	2.443	2.322	2.219
.4000	1.721	1.682	1.708	1.736	1.832	1.937	2.048	2.066	2.043	1.997
.6000	1.506	1.478	1.481	1.515	1.599	1.705	1.831	1.871	1.880	1.872
.8000	1.305	1.298	1.273	1.319	1.415	1.505	1.599	1.635	1.670	1.702

Lower-surface orifices

x/c	C_p for –									
	α = -3.2°	α = 1.0°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.6°	α = 21.8°	α = 23.8°	α = 25.8°	α = 27.7°
Wing										
0.0125	1.099	.811	.809	.928	1.159	1.365	1.496	1.543	1.586	1.582
.0250	1.093	.845	.765	.776	.849	.936	1.008	1.029	1.058	1.077
.0500	1.084	.885	.791	.739	.722	.739	.756	.767	.773	.770
.0750	1.073	.900	.803	.736	.682	.670	.659	.644	.655	.639
.1000	1.078	.923	.820	.739	.668	.638	.610	.606	.598	.582
.1500	1.061	.931	.841	.756	.676	.629	.584	.569	.552	.520
.2500	1.026	.934	.847	.767	.679	.641	.596	.555	.537	.511
.3500	.991	.902	.826	.764	.690	.649	.605	.575	.546	.517
.4500	.895	.837	.777	.719	.659	.623	.582	.552	.535	.511
.5000	.846	.782	.739	.687	.628	.606	.559	.537	.509	.494
.5500	.782	.733	.693	.647	.591	.574	.536	.514	.489	.474
.6000	.712	.670	.626	.595	.537	.525	.501	.486	.460	.452
.6985	.526	.493	.461	.445	.412	.397	.378	.374	.354	.344
.7499	.451	.418	.397	.374	.358	.345	.335	.322	.316	.293
.7599	.445	.413	.391	.376	.352	.348	.338	.331	.313	.301
.7700	.442	.404	.391	.376	.352	.362	.355	.348	.333	.318
Vane										
.0249	.817	.779	.765	.719	.651	.626	.596	.560	.535	.511
.0532	.453	.470	.446	.402	.327	.281	.241	.213	.190	.176
.1018	.244	.281	.278	.233	.159	.110	.077	.075	.055	.043
.1538	.169	.215	.215	.175	.111	.064	.052	.034	.020	.028
.2115	.140	.178	.180	.141	.094	.055	.052	.046	.029	.034
.3032	.119	.143	.154	.129	.091	.070	.074	.066	.057	.054
.4084	.116	.138	.148	.132	.111	.093	.100	.098	.089	.085
.5023	.134	.143	.151	.144	.128	.130	.123	.132	.121	.111
.5995	.166	.169	.177	.178	.170	.162	.169	.167	.152	.142
.7014	.247	.232	.241	.241	.250	.249	.255	.239	.221	.219
.7936	.427	.407	.420	.440	.449	.444	.450	.425	.399	.378
.9250	1.224	1.189	1.238	1.242	1.284	1.284	1.246	1.201	1.124	1.042
Flap										
.0125	.157	.201	.246	.239	.219	.212	.226	.218	.190	.168
.0250	.000	.000	.000	.014	.006	.014	.029	.029	.023	.011
.0500	.000	.000	.009	.014	.011	.023	.023	.023	.011	.009
.0750	.035	.029	.023	.037	.031	.029	.046	.034	.052	.031
.1000	.061	.054	.052	.043	.043	.061	.072	.055	.049	.054
.1500	.108	.097	.096	.089	.077	.075	.083	.089	.075	.074
.2000	.148	.138	.133	.121	.116	.119	.126	.124	.109	.105
.4000	.299	.284	.264	.250	.233	.238	.229	.218	.201	.205
.6000	.416	.401	.377	.368	.355	.351	.350	.322	.316	.310
.8000	.570	.547	.516	.506	.500	.502	.504	.489	.483	.489
.9000	.640	.630	.620	.606	.622	.629	.633	.627	.624	.639

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(c) Large-vane configuration; $\delta_f = 55^{\circ}$

Upper-surface orifices

x/c	C_p for —									
	α = -3.2°	α = 1.0°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.6°	α = 21.7°	α = 23.7°	α = 25.7°	α = 27.7°
Wing										
0.0000	.815	1.081	2.188	2.588	3.030	3.108	3.023	2.917	2.887	2.796
.0125	1.068	1.836	2.165	2.539	3.006	3.114	3.177	3.074	2.998	2.854
.0250	1.100	1.737	2.217	2.623	3.044	3.174	3.276	3.108	3.018	2.845
.0500	1.100	1.720	2.273	2.686	3.122	3.217	3.192	3.103	3.061	2.865
.0750	1.120	1.598	2.584	2.767	3.096	3.123	3.189	3.157	3.096	2.897
.1000	1.137	1.433	2.951	3.107	3.061	3.054	3.224	3.222	3.137	2.922
.1500	1.157	1.300	2.531	3.957	4.024	3.387	3.419	3.313	3.160	2.945
.2500	1.202	1.334	1.305	1.905	3.224	3.556	3.314	3.103	2.989	2.828
.3500	1.274	1.374	1.376	1.375	1.989	2.860	2.922	2.815	2.754	2.636
.4500	1.359	1.456	1.493	1.421	1.673	2.370	2.602	2.575	2.537	2.464
.5000	1.393	1.476	1.519	1.453	1.600	2.165	2.445	2.436	2.435	2.361
.5500	1.462	1.541	1.584	1.519	1.612	2.063	2.346	2.350	2.360	2.309
.6000	1.538	1.640	1.684	1.631	1.673	2.000	2.262	2.279	2.296	2.226
.6985	1.826	1.898	1.956	1.896	1.829	1.963	2.189	2.182	2.200	2.137
.7499	2.217	2.258	2.323	2.280	2.177	2.179	2.302	2.268	2.267	2.175
.7700	2.493	2.558	2.643	2.582	2.484	2.410	2.468	2.405	2.389	2.243
.7750	2.578	2.629	2.707	2.666	2.557	2.462	2.494	2.430	2.392	2.240
.7800	2.672	2.728	2.810	2.778	2.655	2.544	2.564	2.479	2.441	2.269
Vane										
.0000	2.766	2.632	2.692	2.654	2.563	2.464	2.442	2.325	2.267	2.137
.0249	5.248	5.196	5.420	5.410	5.204	4.792	4.631	4.362	4.008	3.590
.0498	5.664	5.595	5.828	5.819	5.627	5.117	4.890	4.578	4.209	3.633
.0945	6.182	6.026	6.297	6.309	6.114	5.479	5.151	4.769	4.267	3.573
.1403	6.456	6.309	6.596	6.617	6.439	5.766	5.378	4.943	4.406	3.636
.1900	6.755	6.578	6.881	6.920	6.752	6.051	5.596	5.128	4.520	3.702
.2952	6.470	6.303	6.599	6.652	6.531	5.872	5.422	4.937	4.346	3.553
.3959	5.883	5.728	5.975	6.055	5.998	5.447	5.023	4.587	4.056	3.355
.5028	5.293	5.173	5.379	5.435	5.424	4.977	4.654	4.254	3.856	3.226
.6024	4.712	4.615	4.787	4.827	4.867	4.541	4.288	3.954	3.653	3.103
.7019	3.960	3.881	4.009	4.069	4.093	3.858	3.709	3.442	3.195	2.779
.8037	3.376	3.320	3.443	3.507	3.505	3.333	3.247	3.034	2.809	2.498
.9067	2.943	2.921	3.024	3.035	3.038	2.943	2.916	2.741	2.641	2.389
Flap										
.0000	2.658	2.813	2.910	2.868	2.748	2.581	2.535	2.396	2.290	2.080
.0125	3.162	3.187	3.303	3.280	3.221	3.083	3.035	2.875	2.748	2.498
.0250	3.712	3.717	3.845	3.853	3.838	3.698	3.648	3.462	3.325	3.031
.0500	3.661	3.615	3.737	3.773	3.789	3.707	3.692	3.501	3.357	3.066
.0750	3.595	3.521	3.652	3.680	3.722	3.675	3.680	3.501	3.369	3.066
.1000	3.422	3.346	3.446	3.490	3.531	3.501	3.535	3.370	3.247	2.954
.1500	2.678	2.601	2.669	2.700	2.757	2.795	2.881	2.772	2.705	2.490
.2000	2.256	2.207	2.253	2.320	2.342	2.396	2.474	2.379	2.305	2.163
.4000	1.715	1.697	1.745	1.770	1.800	1.915	2.064	2.026	2.035	1.988
.6000	1.519	1.507	1.531	1.571	1.615	1.724	1.875	1.843	1.887	1.874
.8000	1.328	1.326	1.358	1.395	1.467	1.527	1.631	1.615	1.681	1.742

Lower-surface orifices

x/c	C_p for —									
	α = -3.2°	α = 1.0°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.6°	α = 21.7°	α = 23.7°	α = 25.7°	α = 27.7°
Wing										
0.0125	1.057	.802	.827	.957	1.160	1.339	1.485	1.501	1.554	1.561
.0250	1.054	.830	.783	.798	.855	.932	1.012	1.009	1.055	1.057
.0500	1.051	.875	.810	.755	.722	.732	.759	.746	.765	.771
.0750	1.034	.890	.812	.738	.678	.670	.663	.641	.646	.642
.1000	1.040	.907	.833	.749	.670	.644	.622	.595	.594	.584
.1500	1.028	.921	.851	.761	.675	.627	.590	.553	.554	.533
.2500	1.000	.915	.856	.775	.681	.635	.587	.544	.536	.504
.3500	.940	.887	.830	.755	.675	.632	.590	.550	.539	.513
.4500	.855	.810	.771	.715	.646	.601	.570	.527	.513	.499
.5000	.798	.759	.727	.672	.609	.584	.547	.510	.502	.487
.5500	.732	.700	.654	.620	.574	.550	.509	.484	.467	.458
.6000	.661	.618	.592	.556	.519	.501	.477	.447	.438	.424
.6985	.476	.453	.443	.412	.374	.373	.360	.333	.330	.312
.7499	.416	.397	.381	.352	.316	.319	.305	.285	.281	.269
.7599	.407	.397	.370	.346	.319	.319	.311	.282	.275	.261
.7700	.405	.385	.367	.340	.319	.322	.317	.299	.299	.284
Vane										
.0249	.957	.960	.933	.879	.794	.718	.689	.632	.626	.596
.0532	.493	.544	.522	.467	.383	.293	.265	.222	.229	.209
.1018	.228	.303	.296	.242	.159	.105	.076	.048	.052	.057
.1538	.137	.207	.202	.167	.101	.048	.038	.017	.020	.023
.2115	.088	.153	.153	.118	.058	.028	.035	.014	.020	.029
.3032	.071	.122	.114	.092	.064	.046	.055	.046	.055	.052
.4084	.074	.093	.106	.092	.067	.077	.087	.074	.070	.077
.5023	.097	.099	.109	.115	.093	.105	.119	.100	.090	.103
.5995	.134	.133	.141	.144	.136	.148	.157	.134	.133	.132
.7014	.214	.207	.229	.228	.226	.228	.247	.202	.212	.186
.7936	.407	.402	.416	.425	.438	.439	.442	.402	.377	.352
.9250	1.256	1.238	1.285	1.294	1.287	1.242	1.241	1.160	1.110	1.029
Flap										
.0125	.265	.334	.355	.349	.316	.299	.302	.276	.264	.226
.0250	.014	.031	.026	.032	.023	.037	.044	.028	.035	.037
.0500	.006	.003	.000	.009	.000	.017	.023	.003	.014	.014
.0750	.023	.017	.009	.014	.003	.031	.035	.011	.020	.029
.1000	.051	.037	.032	.026	.029	.040	.049	.031	.041	.037
.1500	.080	.068	.059	.061	.055	.077	.078	.060	.055	.060
.2000	.114	.108	.094	.101	.081	.103	.093	.077	.072	.077
.4000	.242	.235	.223	.205	.197	.194	.195	.185	.171	.175
.6000	.376	.354	.340	.326	.310	.311	.302	.262	.281	.272
.8000	.530	.507	.490	.487	.473	.470	.459	.422	.444	.453
.9000	.632	.618	.613	.597	.609	.590	.602	.564	.591	.605

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(d) Large-vane configuration; $\delta_f = 60^\circ$

Upper-surface orifices

x/c	C_p for —									
	α = -3.1°	α = 1.1°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.6°	α = 21.7°	α = 23.7°	α = 25.7°	α = 27.6°
Wing										
0.0000	.826	1.916	2.145	2.646	3.097	3.017	2.888	2.885	2.882	2.783
.0125	1.116	1.858	2.119	2.616	3.073	3.031	3.052	3.044	2.986	2.832
.0250	1.128	1.762	2.185	2.690	3.103	3.080	3.127	3.121	3.006	2.821
.0500	1.131	1.715	2.242	2.769	3.191	3.123	3.081	3.075	3.047	2.856
.0750	1.145	1.599	2.554	2.839	3.156	3.023	3.095	3.087	3.082	2.858
.1000	1.151	1.454	2.980	3.168	3.123	2.977	3.130	3.124	3.119	2.893
.1500	1.174	1.323	2.563	4.130	4.076	3.299	3.268	3.262	3.137	2.913
.2500	1.215	1.363	1.276	2.012	3.291	3.402	3.118	3.118	2.963	2.798
.3500	1.278	1.413	1.352	1.405	2.097	2.761	2.776	2.773	2.737	2.603
.4500	1.383	1.500	1.457	1.434	1.765	2.319	2.498	2.498	2.540	2.426
.5000	1.423	1.538	1.503	1.464	1.673	2.117	2.360	2.362	2.424	2.334
.5500	1.493	1.605	1.568	1.525	1.679	2.031	2.270	2.265	2.345	2.270
.6000	1.586	1.712	1.682	1.637	1.720	1.972	2.199	2.190	2.279	2.221
.6985	1.879	1.977	1.935	1.953	1.897	1.920	2.101	2.101	2.183	2.142
.7499	2.316	2.392	2.350	2.385	2.268	2.148	2.222	2.222	2.255	2.186
.7700	2.632	2.747	2.710	2.772	2.629	2.405	2.394	2.406	2.386	2.276
.7750	2.760	2.852	2.810	2.866	2.720	2.464	2.443	2.437	2.403	2.282
.7800	2.882	2.977	2.929	3.012	2.853	2.567	2.515	2.509	2.450	2.316
Vane										
.0000	3.780	3.721	3.619	3.684	3.503	3.145	2.975	2.960	2.800	2.606
.0249	6.801	6.750	6.699	6.916	6.538	5.607	5.182	5.176	4.624	4.024
.0498	7.033	6.968	6.941	7.195	6.832	5.855	5.346	5.334	4.691	4.024
.0945	7.300	7.183	7.142	7.412	7.053	5.974	5.369	5.357	4.560	3.795
.1403	7.352	7.297	7.250	7.547	7.211	6.131	5.449	5.440	4.618	3.844
.1900	7.535	7.442	7.395	7.711	7.397	6.296	5.570	5.555	4.633	3.835
.2952	7.045	6.939	6.904	7.189	6.953	5.943	5.265	5.254	4.375	3.601
.3959	6.247	6.163	6.114	6.409	6.258	5.410	4.820	4.800	4.033	3.386
.5028	5.441	5.465	5.404	5.669	5.550	4.903	4.414	4.403	3.780	3.241
.6024	4.722	4.802	4.742	4.995	4.750	4.422	4.052	4.041	3.545	3.114
.7019	4.009	4.017	3.955	4.156	4.097	3.726	3.483	3.486	3.119	2.780
.8037	3.476	3.439	3.389	3.552	3.494	3.174	3.058	3.046	2.777	2.487
.9067	2.896	3.003	2.963	3.100	3.062	2.846	2.765	2.748	2.571	2.409
Flap										
.0000	2.858	3.017	2.992	3.062	2.912	2.618	2.538	2.520	2.360	2.186
.0125	3.261	3.340	3.293	3.393	3.306	3.017	2.920	2.920	2.734	2.542
.0250	3.757	3.843	3.779	3.951	3.873	3.584	3.469	3.463	3.256	3.041
.0500	3.670	3.698	3.619	3.804	3.773	3.541	3.492	3.489	3.282	3.064
.0750	3.545	3.581	3.506	3.681	3.679	3.501	3.469	3.478	3.285	3.061
.1000	3.348	3.392	3.315	3.479	3.473	3.322	3.345	3.322	3.151	2.954
.1500	2.563	2.625	2.537	2.669	2.703	2.664	2.733	2.727	2.647	2.511
.2000	2.264	2.241	2.165	2.282	2.300	2.268	2.371	2.354	2.284	2.163
.4000	1.693	1.730	1.668	1.772	1.803	1.866	2.015	1.997	2.035	2.015
.6000	1.502	1.555	1.511	1.616	1.679	1.724	1.851	1.848	1.896	1.902
.8000	1.336	1.387	1.355	1.478	1.570	1.550	1.618	1.627	1.693	1.763

Lower-surface orifices

x/c	C_p for —									
	α = -3.1°	α = 1.1°	α = 5.2°	α = 9.3°	α = 13.5°	α = 17.6°	α = 21.7°	α = 23.7°	α = 25.7°	α = 27.6°
Wing										
0.0125	1.015	.814	.807	.977	1.194	1.305	1.431	1.426	1.560	1.565
.0250	1.026	.840	.753	.798	.873	.906	.980	.980	1.055	1.058
.0500	1.026	.887	.761	.748	.738	.709	.736	.739	.760	.768
.0750	1.018	.898	.770	.736	.697	.647	.644	.641	.644	.635
.1000	1.020	.910	.787	.754	.688	.624	.609	.606	.588	.597
.1500	1.000	.922	.798	.757	.685	.613	.581	.569	.551	.545
.2500	.965	.916	.804	.763	.694	.618	.572	.563	.525	.522
.3500	.922	.878	.778	.745	.682	.604	.569	.566	.531	.516
.4500	.809	.794	.713	.686	.641	.575	.549	.537	.516	.499
.5000	.751	.738	.665	.645	.603	.541	.509	.520	.487	.473
.5500	.678	.669	.614	.590	.550	.501	.483	.480	.452	.446
.6000	.603	.587	.537	.522	.494	.447	.428	.437	.415	.409
.6985	.423	.422	.389	.372	.350	.316	.310	.305	.281	.293
.7499	.362	.375	.338	.328	.306	.262	.264	.259	.238	.244
.7599	.365	.366	.327	.323	.306	.259	.270	.256	.241	.244
.7700	.357	.358	.327	.317	.303	.274	.273	.267	.249	.255
Vane										
.0249	1.139	1.180	1.111	1.088	1.006	.866	.779	.764	.713	.691
.0532	.545	.616	.563	.534	.447	.348	.293	.285	.244	.241
.1018	.209	.294	.270	.235	.168	.097	.069	.066	.055	.049
.1538	.096	.174	.153	.132	.085	.031	.014	.014	.012	.012
.2115	.032	.105	.094	.082	.047	.017	.020	.006	.012	.014
.3032	.009	.061	.054	.047	.041	.017	.023	.034	.029	.023
.4084	.026	.044	.054	.041	.059	.057	.063	.057	.061	.046
.5023	.052	.058	.060	.070	.082	.077	.080	.080	.072	.070
.5995	.096	.090	.097	.114	.118	.120	.121	.118	.116	.107
.7014	.180	.183	.185	.202	.215	.199	.207	.195	.188	.174
.7936	.394	.398	.401	.419	.429	.402	.388	.385	.359	.348
.9250	1.276	1.288	1.264	1.326	1.300	1.205	1.161	1.158	1.096	1.026
Flap										
.0125	.359	.430	.440	.452	.409	.353	.345	.354	.325	.293
.0250	.026	.044	.068	.056	.079	.063	.069	.055	.049	.032
.0500	.000	.000	.000	.006	.015	.003	.020	.011	.017	.014
.0750	.000	.000	.000	.000	.006	.009	.020	.014	.017	.014
.1000	.000	.009	.006	.015	.021	.017	.029	.023	.017	.023
.1500	.041	.052	.034	.038	.038	.040	.043	.046	.041	.046
.2000	.061	.058	.060	.059	.059	.057	.075	.063	.052	.052
.4000	.183	.186	.159	.167	.168	.134	.144	.147	.128	.139
.6000	.287	.291	.270	.282	.279	.248	.244	.241	.223	.229
.8000	.473	.465	.429	.443	.444	.407	.399	.402	.394	.406
.9000	.562	.584	.548	.584	.576	.550	.540	.543	.545	.574

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(e) Large-vane configuration; $\delta_f = 65^{\circ}$

Upper-surface orifices

x/c	C_p for —									
	α = -3.1°	α = 1.1°	α = 5.3°	α = 9.4°	α = 13.4°	α = 17.5°	α = 21.6°	α = 23.6°	α = 25.6°	α = 27.6°
Wing										
0.0000	.865	1.940	2.190	2.624	2.975	2.957	2.868	2.881	2.762	2.716
.0125	1.135	1.901	2.164	2.601	2.952	2.986	3.033	3.026	2.851	2.759
.0250	1.155	1.807	2.215	2.673	2.975	3.040	3.071	3.041	2.859	2.762
.0500	1.138	1.824	2.286	2.750	3.054	3.080	3.059	3.083	2.894	2.768
.0750	1.161	1.713	2.595	2.814	3.017	2.989	3.071	3.121	2.914	2.788
.1000	1.167	1.497	3.034	3.141	2.975	2.932	3.106	3.163	2.939	2.822
.1500	1.190	1.315	2.646	4.130	3.855	3.239	3.218	3.204	2.957	2.845
.2500	1.236	1.352	1.295	1.989	3.154	3.293	3.036	3.003	2.813	2.730
.3500	1.313	1.406	1.354	1.380	2.077	2.709	2.713	2.727	2.613	2.561
.4500	1.408	1.497	1.473	1.405	1.727	2.302	2.467	2.507	2.447	2.404
.5000	1.454	1.531	1.513	1.443	1.636	2.128	2.335	2.394	2.341	2.306
.5500	1.517	1.599	1.586	1.509	1.628	2.031	2.244	2.317	2.269	2.240
.6000	1.632	1.713	1.714	1.621	1.662	1.969	2.176	2.249	2.203	2.189
.6985	1.937	2.017	1.997	1.940	1.813	1.926	2.097	2.190	2.126	2.097
.7499	2.423	2.469	2.459	2.429	2.173	2.154	2.220	2.291	2.203	2.132
.7700	2.779	2.881	2.858	2.845	2.554	2.424	2.414	2.472	2.329	2.223
.7750	2.923	2.994	2.980	2.963	2.634	2.479	2.455	2.501	2.341	2.235
.7800	3.084	3.159	3.150	3.130	2.796	2.598	2.537	2.578	2.398	2.269
Vane										
.0000	5.035	4.923	4.884	4.848	4.344	3.912	3.681	3.664	3.312	3.071
.0249	8.461	8.259	8.321	8.369	7.418	6.444	5.840	5.744	4.913	4.332
.0498	8.481	8.284	8.352	8.418	7.497	6.536	5.907	5.783	4.905	4.260
.0945	8.406	8.219	8.255	8.329	7.421	6.379	5.658	5.501	4.564	3.902
.1403	8.260	8.100	8.168	8.251	7.497	6.510	5.708	5.504	4.547	3.842
.1900	8.266	8.068	8.136	8.234	7.409	6.422	5.655	5.456	4.495	3.816
.2952	7.610	7.381	7.434	7.547	6.807	5.912	5.218	5.038	4.157	3.561
.3959	6.550	6.372	6.386	6.507	5.983	5.291	4.713	4.557	3.813	3.306
.5028	5.647	5.594	5.595	5.708	5.256	4.741	4.297	4.183	3.573	3.129
.6024	4.837	4.878	4.864	4.963	4.622	4.251	3.936	3.851	3.352	2.977
.7019	4.078	4.031	4.034	4.104	3.807	3.561	3.379	3.332	2.962	2.679
.8037	3.555	3.449	3.451	3.489	3.233	3.054	2.968	2.952	2.647	2.441
.9067	3.015	3.063	3.060	3.098	2.875	2.772	2.716	2.715	2.481	2.306
Flap										
.0000	3.107	3.222	3.204	3.170	2.847	2.681	2.584	2.575	2.338	2.206
.0125	3.403	3.432	3.419	3.440	3.145	3.000	2.901	2.878	2.647	2.472
.0250	3.854	3.929	3.895	3.946	3.645	3.504	3.420	3.415	3.137	2.948
.0500	3.730	3.710	3.686	3.742	3.531	3.450	3.429	3.433	3.160	2.960
.0750	3.572	3.568	3.555	3.584	3.412	3.396	3.411	3.427	3.149	2.951
.1000	3.374	3.378	3.323	3.391	3.207	3.222	3.261	3.282	3.040	2.848
.1500	2.584	2.594	2.538	2.584	2.506	2.593	2.704	2.733	2.553	2.427
.2000	2.302	2.210	2.176	2.210	2.136	2.228	2.320	2.347	2.206	2.129
.4000	1.722	1.747	1.708	1.750	1.734	1.877	2.038	2.089	2.011	1.983
.6000	1.546	1.605	1.567	1.624	1.659	1.764	1.906	1.967	1.905	1.891
.8000	1.394	1.455	1.442	1.517	1.554	1.593	1.692	1.762	1.725	1.742

Lower-surface orifices

x/c	C_p for —									
	α = -3.1°	α = 1.1°	α = 5.3°	α = 9.4°	α = 13.4°	α = 17.5°	α = 21.6°	α = 23.6°	α = 25.6°	α = 27.6°
Wing										
0.0125	1.003	.804	.810	.960	1.159	1.279	1.425	1.495	1.496	1.527
.0250	1.015	.821	.751	.785	.830	.895	.965	1.021	1.014	1.040
.0500	1.020	.861	.762	.733	.699	.704	.736	.763	.745	.756
.0750	1.015	.878	.771	.713	.653	.638	.648	.653	.636	.642
.1000	1.009	.895	.785	.727	.651	.624	.610	.620	.590	.593
.1500	.989	.901	.793	.724	.645	.610	.584	.584	.541	.530
.2500	.960	.884	.790	.730	.645	.613	.578	.573	.519	.507
.3500	.908	.849	.759	.704	.636	.604	.575	.570	.521	.504
.4500	.808	.759	.691	.650	.585	.561	.537	.534	.493	.484
.5000	.733	.699	.640	.595	.554	.530	.496	.495	.470	.458
.5500	.667	.634	.578	.543	.506	.479	.460	.448	.427	.424
.6000	.581	.560	.504	.477	.438	.422	.411	.409	.384	.384
.6985	.408	.401	.365	.342	.301	.288	.273	.279	.258	.246
.7499	.356	.364	.320	.285	.261	.245	.238	.234	.206	.212
.7599	.348	.358	.317	.293	.259	.251	.235	.234	.203	.209
.7700	.345	.347	.309	.287	.256	.254	.246	.249	.223	.221
Vane										
.0249	1.391	1.452	1.377	1.290	1.131	1.003	.906	.899	.819	.768
.0532	.629	.705	.654	.583	.486	.385	.340	.329	.301	.269
.1018	.230	.318	.283	.218	.152	.100	.065	.074	.066	.054
.1538	.095	.162	.147	.101	.065	.026	.015	.021	.020	.011
.2115	.034	.080	.079	.040	.009	.006	.000	.012	.006	.000
.3032	.000	.031	.031	.011	.000	.000	.009	.021	.020	.014
.4084	.017	.020	.023	.014	.023	.026	.035	.047	.037	.046
.5023	.055	.037	.048	.043	.051	.051	.059	.074	.060	.046
.5995	.086	.080	.076	.080	.085	.091	.094	.113	.100	.086
.7014	.184	.170	.161	.181	.168	.177	.170	.175	.166	.155
.7936	.408	.398	.399	.402	.375	.376	.364	.368	.332	.318
.9250	1.311	1.295	1.300	1.308	1.219	1.162	1.135	1.139	1.037	.977
Flap										
.0125	.500	.588	.578	.555	.463	.436	.414	.412	.367	.347
.0250	.086	.119	.127	.103	.071	.074	.076	.083	.052	.060
.0500	.009	.020	.020	.009	.009	.017	.021	.021	.000	.020
.0750	.000	.009	.000	.000	.000	.003	.000	.012	.000	.006
.1000	.006	.014	.000	.000	.000	.009	.000	.015	.006	.009
.1500	.026	.037	.014	.011	.014	.026	.018	.030	.017	.026
.2000	.049	.060	.042	.032	.031	.040	.041	.042	.029	.040
.4000	.158	.145	.130	.124	.111	.105	.114	.110	.100	.100
.6000	.262	.267	.232	.213	.213	.219	.202	.199	.180	.178
.8000	.437	.432	.308	.388	.375	.359	.361	.356	.341	.347
.9000	.546	.565	.524	.535	.526	.519	.519	.525	.513	.516

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(f) Large-vane configuration; $\delta_f = 70^\circ$

Upper-surface orifices

x/c	C_p for –									
	α = -3.1°	α = 1.1°	α = 5.2°	α = 9.3°	α = 13.4°	α = 17.5°	α = 21.5°	α = 23.6°	α = 25.6°	α = 27.6°
Wing										
0.0000	.891	1.903	2.241	2.641	3.053	2.886	2.780	2.769	2.744	2.666
.0125	1.153	1.843	2.224	2.630	3.050	2.923	2.931	2.901	2.823	2.709
.0250	1.161	1.775	2.285	2.695	3.065	2.997	2.971	2.910	2.820	2.704
.0500	1.156	1.744	2.358	2.795	3.151	3.000	2.974	2.954	2.850	2.715
.0750	1.170	1.681	2.683	2.838	3.100	2.926	2.998	2.986	2.873	2.727
.1000	1.182	1.467	3.157	3.131	3.047	2.897	3.024	3.021	2.897	2.756
.1500	1.196	1.285	2.744	4.197	3.885	3.168	3.090	3.036	2.915	2.767
.2500	1.242	1.333	1.311	2.057	3.295	3.160	2.922	2.845	2.779	2.672
.3500	1.323	1.385	1.369	1.387	2.213	2.652	2.618	2.602	2.596	2.503
.4500	1.418	1.479	1.509	1.396	1.823	2.274	2.392	2.411	2.440	2.352
.5000	1.478	1.516	1.544	1.433	1.717	2.100	2.270	2.302	2.345	2.265
.5500	1.542	1.584	1.616	1.496	1.693	2.020	2.195	2.226	2.266	2.206
.6000	1.657	1.709	1.750	1.624	1.726	1.952	2.134	2.191	2.221	2.169
.6985	2.009	2.014	2.061	1.954	1.882	1.889	2.041	2.103	2.130	2.079
.7499	2.553	2.521	2.564	2.470	2.260	2.108	2.168	2.206	2.195	2.116
.7700	3.000	2.969	3.035	2.932	2.664	2.382	2.360	2.376	2.328	2.206
.7750	3.153	3.100	3.177	3.057	2.770	2.447	2.415	2.420	2.345	2.221
.7800	3.343	3.299	3.375	3.262	2.929	2.575	2.508	2.505	2.413	2.259
Vane										
.0000	6.974	6.718	6.866	6.587	5.915	4.960	4.662	4.549	4.171	3.715
.0249	10.646	10.137	10.439	10.145	9.012	7.242	6.546	6.274	5.401	4.558
.0498	10.320	9.829	10.111	9.863	8.841	7.199	6.488	6.192	5.319	4.494
.0945	9.744	9.242	9.529	9.299	8.340	6.670	5.934	5.620	4.732	3.913
.1403	9.335	8.886	9.163	8.989	8.124	6.544	5.755	5.414	4.540	3.791
.1900	9.096	8.647	8.904	8.715	7.912	6.387	5.650	5.332	4.484	3.744
.2952	8.237	7.735	7.954	7.798	7.118	5.735	5.108	4.816	4.077	3.436
.3959	6.784	6.422	6.584	6.473	5.986	5.006	4.531	4.309	3.711	3.174
.5028	5.914	5.607	5.692	5.601	5.213	4.442	4.090	3.916	3.460	3.020
.6024	5.032	4.809	4.849	4.766	4.490	3.952	3.711	3.584	3.239	2.878
.7019	4.153	3.952	3.994	3.906	3.732	3.319	3.215	3.150	2.876	2.616
.8037	3.591	3.387	3.468	3.399	3.195	2.917	2.873	2.822	2.611	2.392
.9067	3.199	3.100	3.186	3.137	2.935	2.687	2.638	2.610	2.466	2.302
Flap										
.0000	3.496	3.464	3.567	3.442	3.121	2.761	2.667	2.613	2.466	2.314
.0125	3.654	3.544	3.663	3.575	3.316	2.966	2.867	2.824	2.682	2.515
.0250	4.095	3.994	4.108	4.046	3.800	3.430	3.334	3.282	3.121	2.942
.0500	3.856	3.701	3.776	3.721	3.593	3.325	3.314	3.279	3.118	2.930
.0750	3.680	3.513	3.538	3.501	3.431	3.248	3.273	3.244	3.095	2.901
.1000	3.461	3.316	3.314	3.285	3.236	3.071	3.128	3.118	2.971	2.791
.1500	2.643	2.527	2.509	2.493	2.522	2.496	2.600	2.602	2.525	2.390
.2000	2.297	2.151	2.166	2.151	2.165	2.157	2.258	2.253	2.204	2.096
.4000	1.790	1.741	1.770	1.769	1.847	1.872	1.986	2.000	2.006	1.968
.6000	1.637	1.627	1.666	1.675	1.785	1.783	1.855	1.895	1.915	1.884
.8000	1.487	1.510	1.561	1.570	1.655	1.613	1.661	1.695	1.738	1.753

Lower-surface orifices

x/c	C_p for –									
	α = -3.1°	α = 1.1°	α = 5.2°	α = 9.3°	α = 13.4°	α = 17.5°	α = 21.5°	α = 23.6°	α = 25.6°	α = 27.6°
Wing										
0.0125	.983	.775	.820	.969	1.177	1.276	1.394	1.455	1.496	1.509
.0250	1.006	.801	.765	.778	.858	.889	.960	.983	1.030	1.020
.0500	1.009	.832	.765	.721	.723	.687	.722	.739	.761	.747
.0750	1.000	.846	.776	.704	.681	.632	.641	.636	.646	.622
.1000	.997	.860	.791	.715	.676	.610	.600	.592	.605	.581
.1500	.986	.866	.788	.707	.667	.598	.565	.551	.555	.520
.2500	.940	.843	.788	.704	.667	.604	.562	.537	.531	.494
.3500	.876	.798	.756	.681	.652	.581	.554	.537	.522	.488
.4500	.761	.701	.674	.607	.593	.541	.510	.496	.490	.456
.5000	.703	.638	.619	.567	.546	.496	.473	.463	.460	.419
.5500	.617	.564	.555	.507	.487	.447	.432	.422	.419	.384
.6000	.530	.479	.471	.436	.431	.396	.380	.364	.381	.340
.6985	.369	.350	.349	.305	.283	.256	.255	.238	.251	.221
.7499	.320	.319	.305	.268	.251	.217	.206	.194	.207	.177
.7599	.311	.308	.294	.265	.239	.211	.206	.199	.207	.177
.7700	.305	.299	.291	.259	.245	.225	.215	.208	.218	.189
Vane										
.0249	1.726	1.729	1.730	1.610	1.434	1.208	1.107	1.085	1.024	.919
.0532	.718	.755	.750	.675	.569	.456	.412	.411	.389	.331
.1018	.222	.285	.270	.222	.168	.120	.110	.106	.094	.081
.1538	.072	.120	.119	.085	.062	.034	.029	.035	.035	.020
.2115	.000	.040	.044	.028	.009	.000	.006	.009	.018	.003
.3032	.000	.000	.009	.006	.000	.000	.006	.012	.024	.003
.4084	.000	.000	.003	.014	.012	.020	.020	.035	.035	.017
.5023	.026	.023	.038	.046	.032	.048	.046	.065	.062	.032
.5995	.069	.054	.076	.074	.077	.068	.075	.079	.091	.064
.7014	.156	.157	.180	.168	.162	.148	.154	.155	.156	.128
.7936	.401	.379	.413	.402	.372	.333	.322	.326	.322	.297
.9250	1.375	1.322	1.381	1.353	1.266	1.134	1.107	1.094	1.041	.974
Flap										
.0125	.680	.707	.759	.689	.608	.519	.510	.493	.484	.436
.0250	.147	.157	.198	.171	.139	.117	.130	.106	.121	.087
.0500	.020	.006	.029	.028	.018	.023	.032	.021	.041	.015
.0750	.000	.000	.012	.000	.000	.000	.020	.003	.021	.012
.1000	.000	.000	.017	.000	.000	.000	.009	.000	.018	.000
.1500	.000	.000	.009	.006	.003	.006	.023	.015	.027	.003
.2000	.026	.009	.017	.011	.018	.023	.026	.018	.030	.009
.4000	.110	.091	.090	.083	.083	.077	.070	.065	.083	.052
.6000	.213	.188	.183	.179	.174	.165	.159	.138	.162	.134
.8000	.392	.359	.358	.348	.339	.319	.296	.290	.313	.299
.9000	.522	.504	.500	.484	.490	.464	.461	.449	.466	.436

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(g) Large-vane configuration; $\delta_f = 75^{\circ}$

Upper-surface orifices

x/c	C_p for —									
	α = -3.1°	α = 1.1°	α = 5.2°	α = 9.3°	α = 13.4°	α = 17.5°	α = 21.5°	α = 23.6°	α = 25.6°	α = 27.6°
Wing										
0.0000	.769	1.802	2.079	2.483	2.919	2.858	2.730	2.643	2.627	2.704
.0125	1.006	1.736	2.054	2.445	2.894	2.875	2.872	2.742	2.692	2.745
.0250	1.040	1.659	2.108	2.532	2.922	2.934	2.919	2.762	2.689	2.739
.0500	1.057	1.584	2.170	2.590	2.977	2.960	2.907	2.796	2.709	2.745
.0750	1.071	1.487	2.442	2.686	2.954	2.875	2.922	2.822	2.724	2.754
.1000	1.083	1.347	2.822	3.035	2.919	2.826	2.959	2.847	2.746	2.783
.1500	1.105	1.249	2.442	3.808	3.798	3.123	3.044	2.856	2.761	2.810
.2500	1.134	1.261	1.215	1.808	3.015	3.148	2.866	2.683	2.632	2.692
.3500	1.185	1.292	1.258	1.311	2.017	2.590	2.570	2.462	2.464	2.511
.4500	1.236	1.335	1.334	1.314	1.677	2.185	2.343	2.292	2.316	2.352
.5000	1.248	1.335	1.329	1.308	1.559	2.006	2.201	2.187	2.219	2.279
.5500	1.268	1.358	1.351	1.340	1.519	1.900	2.128	2.130	2.157	2.217
.6000	1.311	1.401	1.388	1.381	1.499	1.821	2.061	2.074	2.103	2.167
.6985	1.342	1.418	1.383	1.407	1.429	1.621	1.872	1.977	1.994	2.077
.7499	1.390	1.473	1.397	1.436	1.432	1.558	1.767	1.977	1.989	2.082
.7700	1.379	1.487	1.397	1.433	1.421	1.501	1.698	2.017	2.026	2.118
.7750	1.387	1.481	1.377	1.422	1.398	1.473	1.657	2.024	2.028	2.126
.7800	1.390	1.481	1.366	1.404	1.386	1.439	1.625	2.051	2.046	2.144
Vane										
.0000	2.305	2.452	2.094	2.215	2.138	2.014	2.160	3.632	3.470	3.590
.0249	2.282	2.533	2.074	2.212	2.110	1.917	2.067	4.224	3.869	3.957
.0498	2.234	2.504	2.079	2.192	2.113	1.934	2.058	4.085	3.840	3.916
.0945	2.091	2.263	1.924	2.032	1.986	1.897	2.047	3.771	3.407	3.432
.1403	1.966	2.106	1.858	1.924	1.902	1.875	2.015	3.570	3.288	3.308
.1900	1.897	2.011	1.802	1.878	1.862	1.855	2.015	3.527	3.242	3.264
.2952	1.812	1.865	1.731	1.805	1.807	1.838	2.003	3.264	3.009	3.039
.3959	1.778	1.822	1.711	1.791	1.790	1.832	1.991	3.006	2.821	2.857
.5028	1.738	1.799	1.705	1.770	1.767	1.815	1.968	2.762	2.667	2.722
.6024	1.709	1.782	1.697	1.762	1.758	1.809	1.962	2.598	2.553	2.616
.7019	1.715	1.779	1.691	1.753	1.755	1.812	1.962	2.451	2.413	2.475
.8037	1.749	1.771	1.677	1.744	1.758	1.821	1.980	2.360	2.296	2.346
.9067	1.687	1.756	1.683	1.730	1.735	1.792	1.933	2.227	2.208	2.273
Flap										
.0000	2.285	2.495	2.400	2.381	2.213	2.097	2.172	2.431	2.396	2.446
.0125	2.157	2.249	2.145	2.192	2.144	2.157	2.305	2.561	2.524	2.593
.0250	2.330	2.412	2.306	2.375	2.378	2.450	2.640	2.941	2.900	2.989
.0500	2.256	2.321	2.210	2.285	2.291	2.365	2.552	2.864	2.840	2.921
.0750	2.140	2.215	2.122	2.198	2.199	2.268	2.442	2.771	2.755	2.830
.1000	2.051	2.123	2.037	2.110	2.113	2.185	2.334	2.649	2.632	2.707
.1500	1.783	1.854	1.785	1.863	1.876	1.929	2.067	2.255	2.251	2.323
.2000	1.729	1.736	1.669	1.744	1.761	1.821	1.956	2.074	2.040	2.112
.4000	1.709	1.748	1.705	1.765	1.767	1.826	1.954	1.969	1.952	2.012
.6000	1.684	1.725	1.677	1.747	1.749	1.806	1.919	1.875	1.886	1.948
.8000	1.658	1.690	1.643	1.701	1.715	1.766	1.855	1.751	1.772	1.836

Lower-surface orifices

x/c	C_p for —									
	α = -3.1°	α = 1.1°	α = 5.2°	α = 9.3°	α = 13.4°	α = 17.5°	α = 21.5°	α = 23.6°	α = 25.6°	α = 27.6°
Wing										
0.0125	1.048	.782	.779	.924	1.136	1.248	1.349	1.383	1.425	1.528
.0250	1.031	.808	.734	.767	.827	.875	.927	.946	.969	1.044
.0500	1.020	.839	.742	.733	.718	.701	.706	.705	.712	.763
.0750	1.003	.862	.751	.718	.669	.632	.625	.623	.618	.639
.1000	1.003	.871	.765	.727	.660	.613	.593	.581	.567	.587
.1500	.977	.885	.773	.741	.660	.604	.564	.552	.524	.540
.2500	.920	.851	.765	.735	.654	.598	.561	.530	.501	.510
.3500	.843	.785	.722	.703	.637	.587	.549	.524	.496	.499
.4500	.726	.673	.629	.613	.565	.533	.500	.482	.456	.466
.5000	.652	.596	.558	.552	.516	.484	.456	.442	.422	.428
.5500	.556	.504	.473	.477	.447	.422	.419	.397	.382	.387
.6000	.459	.421	.385	.387	.369	.362	.352	.337	.320	.334
.6985	.362	.367	.331	.311	.268	.225	.218	.218	.205	.214
.7499	.373	.367	.331	.314	.265	.205	.180	.178	.165	.173
.7599	.353	.364	.329	.291	.251	.199	.180	.178	.165	.173
.7700	.387	.398	.371	.328	.248	.191	.166	.184	.168	.179
Vane										
.0249	.897	.954	.875	.890	.021	.726	.698	.904	.880	.900
.0532	.524	.576	.538	.541	.487	.387	.326	.368	.350	.346
.1018	.302	.352	.331	.331	.277	.188	.122	.110	.100	.088
.1538	.197	.244	.229	.235	.173	.105	.041	.042	.037	.029
.2115	.131	.172	.176	.166	.112	.051	.020	.014	.011	.006
.3032	.063	.097	.096	.090	.049	.011	.000	.014	.011	.003
.4084	.011	.043	.034	.026	.017	.000	.012	.020	.023	.015
.5023	.006	.009	.008	.015	.009	.017	.032	.057	.040	.035
.5995	.006	.000	.006	.012	.020	.031	.055	.074	.068	.056
.7014	.048	.032	.037	.049	.063	.088	.116	.139	.128	.132
.7936	.165	.158	.144	.172	.199	.228	.262	.300	.291	.290
.9250	.764	.771	.725	.762	.787	.815	.892	.989	.974	.997
Flap										
.0125	.655	.831	.822	.759	.605	.490	.453	.521	.499	.525
.0250	.194	.266	.266	.235	.173	.123	.116	.139	.125	.129
.0500	.037	.060	.065	.067	.043	.034	.029	.042	.034	.035
.0750	.006	.017	.023	.023	.012	.006	.000	.017	.009	.009
.1000	.006	.011	.008	.003	.000	.003	.000	.011	.000	.003
.1500	.000	.006	.000	.012	.009	.011	.003	.017	.000	.000
.2000	.003	.009	.020	.017	.006	.026	.012	.014	.009	.006
.4000	.071	.077	.071	.076	.072	.066	.070	.054	.051	.035
.6000	.199	.198	.184	.180	.173	.154	.160	.133	.123	.114
.8000	.427	.404	.374	.375	.352	.328	.323	.280	.271	.255
.9000	.610	.616	.575	.573	.548	.524	.520	.453	.442	.434

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(h) Small-vane configuration: $\delta_f = 45^{\circ}$

Upper-surface orifices

x/c	C_p for —										
	α = -3.3°	α = 0.7°	α = 5.1°	α = 9.2°	α = 13.4°	α = 17.5°	α = 21.6°	α = 25.6°	α = 27.6°	α = 29.6°	α = 31.6°
Wing											
0.0000	.904	1.900	2.181	2.528	2.971	3.148	3.048	2.985	2.914	2.871	2.912
.0125	1.039	1.784	2.136	2.499	2.917	3.142	3.193	3.110	2.989	2.915	2.942
.0250	1.085	1.624	2.172	2.558	2.971	3.198	3.292	3.137	2.909	2.904	2.930
.0500	1.129	1.479	2.214	2.638	3.033	3.257	3.205	3.178	3.018	2.913	2.924
.0750	1.150	1.408	2.427	2.727	3.033	3.163	3.199	3.232	3.059	2.933	2.957
.1000	1.164	1.367	2.656	3.134	3.021	3.095	3.220	3.292	3.091	2.968	2.999
.1500	1.188	1.343	2.332	3.783	4.050	3.468	3.401	3.306	3.126	3.015	2.996
.2000	1.220	1.346	1.561	2.783	3.985	3.846	3.455	3.241	3.065	2.939	2.924
.2500	1.229	1.355	1.709	1.863	2.976	3.610	3.347	3.131	2.984	2.869	2.831
.3500	1.293	1.391	1.404	1.392	1.849	2.843	2.942	2.884	2.775	2.660	2.654
.4000	1.325	1.444	1.463	1.407	1.678	2.553	2.767	2.768	2.676	2.590	2.585
.4500	1.375	1.471	1.501	1.436	1.595	2.308	2.591	2.646	2.560	2.511	2.522
.5000	1.413	1.497	1.525	1.472	1.547	2.107	2.440	2.509	2.459	2.411	2.444
.5500	1.474	1.562	1.596	1.534	1.568	2.018	2.347	2.440	2.389	2.355	2.396
.6000	1.568	1.663	1.685	1.626	1.627	1.971	2.259	2.366	2.317	2.305	2.351
.6985	1.816	1.897	1.908	1.863	1.826	1.950	2.162	2.262	2.221	2.232	2.270
.7499	2.258	2.302	2.315	2.291	2.210	2.263	2.356	2.357	2.305	2.282	2.309
.7700	2.629	2.698	2.733	2.706	2.627	2.627	2.649	2.574	2.453	2.396	2.387
.7750	2.787	2.829	2.846	2.837	2.731	2.737	2.754	2.646	2.494	2.414	2.399
.7800	2.986	3.024	3.065	3.021	2.971	2.923	2.912	2.753	2.584	2.484	2.453
Vane											
.0000	5.910	5.740	5.763	5.653	5.417	4.997	4.489	3.768	3.381	3.086	3.035
.1000	9.205	9.015	9.131	9.095	8.879	8.337	7.637	6.405	5.676	5.106	4.963
.1660	8.419	8.222	8.362	8.344	8.169	7.876	7.404	6.265	5.540	4.907	4.762
.2500	7.828	7.639	7.777	7.745	7.601	7.219	6.703	5.658	4.998	4.449	4.327
.3166	7.483	7.311	7.436	7.389	7.178	6.787	6.277	5.277	4.653	4.127	4.042
.4000	6.746	6.633	6.739	6.804	6.687	6.370	5.915	4.952	4.340	3.801	3.717
.4660	6.235	6.056	6.217	6.273	6.246	6.033	5.631	4.708	4.146	3.625	3.543
.5330	5.878	5.740	5.869	5.899	5.849	5.692	5.344	4.503	3.981	3.487	3.408
.6000	5.530	5.400	5.519	5.537	5.485	5.340	5.029	4.271	3.784	3.335	3.261
.6660	5.182	5.089	5.196	5.205	5.145	5.036	4.739	4.042	3.601	3.200	3.153
Flap											
.0000	1.077	1.036	1.074	1.107	1.074	1.021	.951	.827	.746	.713	.678
.0125	2.036	2.033	2.047	2.068	2.047	2.003	1.881	1.664	1.508	1.411	1.396
.0250	3.901	3.837	3.890	3.914	3.873	3.775	3.564	3.146	2.885	2.681	2.603
.0500	4.144	4.116	4.134	4.181	4.172	4.133	3.948	3.500	3.207	2.995	2.900
.0750	4.185	4.148	4.160	4.202	4.204	4.210	4.054	3.601	3.320	3.083	2.981
.1000	3.910	3.870	3.890	3.929	3.935	3.947	3.839	3.440	3.192	2.998	2.903
.1500	2.901	2.891	2.872	2.926	2.935	3.012	3.011	2.800	2.668	2.555	2.516
.2000	2.466	2.453	2.466	2.490	2.527	2.616	2.606	2.503	2.410	2.303	2.327
.4000	1.790	1.793	1.786	1.795	1.837	1.976	2.078	2.122	2.123	2.153	2.177
.6000	1.518	1.521	1.522	1.528	1.595	1.725	1.845	1.908	1.937	1.983	2.038
.8000	1.334	1.343	1.341	1.374	1.435	1.559	1.658	1.741	1.749	1.851	1.906

Lower-surface orifices

x/c	C_p for —										
	α = -3.3°	α = 0.7°	α = 5.1°	α = 9.2°	α = 13.4°	α = 17.5°	α = 21.6°	α = 25.6°	α = 27.6°	α = 29.6°	α = 31.6°
Wing											
0.0125	1.217	.911	.872	.994	1.169	1.379	1.510	1.646	1.653	1.690	1.765
.0250	1.197	.944	.840	.837	.911	.973	1.041	1.113	1.143	1.194	1.198
.0500	1.179	.994	.878	.819	.781	.784	.809	.821	.845	.860	.870
.0750	1.161	1.003	.887	.813	.740	.746	.709	.720	.731	.728	.738
.1000	1.164	1.027	.917	.834	.755	.722	.697	.661	.659	.654	.651
.1500	1.150	1.042	.926	.849	.760	.710	.652	.625	.598	.608	.591
.2000	1.129	1.036	.950	.858	.760	.710	.657	.598	.592	.578	.570
.2500	1.118	1.039	.955	.858	.775	.701	.670	.619	.592	.581	.570
.3500	1.074	.994	.938	.863	.790	.725	.667	.628	.604	.596	.582
.4000	1.033	.959	.932	.866	.781	.731	.670	.628	.604	.602	.576
.4500	.986	.941	.887	.813	.778	.698	.661	.622	.604	.590	.570
.5000	.925	.873	.837	.789	.725	.687	.649	.595	.592	.578	.573
.5500	.869	.834	.804	.772	.689	.669	.637	.586	.575	.569	.561
.6000	.793	.763	.718	.688	.639	.604	.585	.556	.537	.537	.525
.6985	.606	.562	.570	.540	.497	.473	.452	.449	.433	.423	.426
.7499	.533	.479	.507	.484	.429	.429	.410	.390	.369	.382	.363
.7599	.536	.506	.507	.472	.447	.420	.419	.387	.378	.379	.378
.7700	.580	.568	.549	.540	.503	.485	.470	.414	.424	.414	.420
Vane											
.1000	.512	.423	.510	.513	.438	.373	.335	.292	.291	.267	.243
.1660	.103	.077	.098	.113	.077	.083	.081	.068	.082	.041	.078
.2500	.019	.025	.022	.043	.019	.034	.030	.047	.047	.053	.027
.3166	.034	.031	.040	.040	.043	.045	.057	.050	.068	.077	.060
.4000	.091	.092	.074	.092	.080	.098	.105	.080	.102	.109	.108
.4660	.173	.189	.178	.178	.184	.198	.183	.170	.166	.174	.147
Flap											
.0125	.261	.225	.282	.297	.260	.243	.196	.190	.166	.165	.162
.0250	.040	.045	.050	.074	.053	.071	.054	.047	.047	.050	.051
.0500	.019	.037	.028	.043	.040	.050	.042	.056	.073	.071	.060
.0750	.050	.056	.053	.071	.050	.065	.066	.080	.079	.094	.087
.1000	.071	.092	.071	.086	.074	.098	.093	.104	.100	.112	.102
.1500	.141	.133	.139	.131	.124	.145	.141	.134	.146	.144	.144
.2000	.202	.192	.181	.184	.169	.187	.171	.187	.192	.174	.180
.4000	.384	.367	.353	.350	.320	.384	.313	.309	.305	.317	.312
.6000	.545	.536	.531	.499	.476	.494	.467	.452	.456	.467	.468
.8000	.711	.689	.677	.662	.639	.660	.640	.637	.633	.663	.657
.9000	.863	.855	.846	.828	.823	.855	.839	.857	.859	.904	.912

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Continued

(i) Small-vane configuration; $\delta_f = 50^\circ$

Upper-surface orifices

x/c	C_p for —										
	α = -3.3°	α = 0.9°	α = 5.1°	α = 9.2°	α = 13.3°	α = 17.5°	α = 21.5°	α = 25.6°	α = 27.6°	α = 29.6°	α = 31.6°
Wing											
0.0000	.908	1.866	2.105	2.477	2.942	3.251	2.907	2.944	2.946	2.833	2.817
.0125	1.007	1.742	2.079	2.457	2.910	3.245	3.027	3.056	3.018	2.869	2.849
.0250	1.042	1.540	2.099	2.506	2.936	3.302	3.130	3.062	3.024	2.880	2.846
.0500	1.091	1.393	2.160	2.609	3.018	3.367	3.053	3.131	3.050	2.886	2.852
.0750	1.114	1.373	2.365	2.685	2.998	3.255	3.039	3.169	3.077	2.915	2.870
.1000	1.132	1.329	2.597	3.112	2.971	3.204	3.067	3.223	3.128	2.957	2.902
.1500	1.155	1.320	2.313	3.784	3.954	3.540	3.279	3.231	3.158	2.971	2.905
.2000	1.181	1.323	1.495	2.708	3.998	3.916	3.311	3.160	3.086	2.915	2.846
.2500	1.190	1.341	1.258	1.811	3.027	3.700	3.185	3.056	3.012	2.836	2.755
.3500	1.265	1.370	1.362	1.372	1.884	2.947	2.787	2.810	2.789	2.646	2.580
.4000	1.300	1.411	1.426	1.378	1.699	2.640	2.635	2.712	2.714	2.552	2.509
.4500	1.344	1.432	1.455	1.410	1.591	2.386	2.471	2.596	2.598	2.470	2.444
.5000	1.385	1.467	1.492	1.436	1.530	2.208	2.320	2.472	2.488	2.391	2.376
.5500	1.449	1.531	1.542	1.480	1.542	2.104	2.228	2.401	2.420	2.335	2.334
.6000	1.524	1.599	1.617	1.553	1.580	2.051	2.148	2.326	2.345	2.291	2.293
.6985	1.800	1.813	1.808	1.714	1.699	2.035	2.096	2.240	2.271	2.200	2.228
.7499	2.231	2.206	2.154	2.027	1.974	2.302	2.302	2.368	2.333	2.264	2.249
.7700	2.626	2.549	2.524	2.360	2.331	2.634	2.620	2.582	2.515	2.364	2.329
.7750	2.765	2.666	2.643	2.468	2.416	2.766	2.718	2.650	2.562	2.388	2.365
.7800	2.975	2.866	2.834	2.638	2.606	2.947	2.904	2.774	2.634	2.452	2.397
Vane											
.0000	6.515	5.974	5.877	5.565	5.278	5.881	5.113	4.220	3.726	3.332	3.175
.1000	10.135	9.130	9.027	8.381	8.302	9.452	8.867	7.315	6.393	5.566	5.240
.1660	9.164	8.253	8.198	7.702	7.571	8.994	8.463	7.033	6.122	5.308	4.968
.2500	8.765	7.936	7.868	7.381	7.237	8.242	7.566	6.288	5.497	4.804	4.521
.3166	7.925	7.276	7.016	6.504	6.509	7.405	6.990	5.757	5.027	4.308	4.130
.4000	6.475	5.748	5.724	5.337	5.281	6.386	6.119	5.068	4.402	3.833	3.553
.4660	6.196	5.511	5.475	5.091	5.036	6.048	5.758	4.816	4.220	3.669	3.420
.5330	5.864	5.223	5.183	4.816	4.767	5.756	5.480	4.590	4.042	3.520	3.314
.6000	5.457	4.895	4.819	4.474	4.436	5.411	5.128	4.320	3.839	3.382	3.198
.6660	5.091	4.561	4.481	4.167	4.150	5.095	4.838	4.116	3.667	3.255	3.092
Flap											
.0000	1.170	1.021	1.039	.983	.942	1.019	1.007	.884	.809	.710	.707
.0125	2.056	1.927	1.874	1.714	1.699	1.929	1.944	1.712	1.565	1.391	1.340
.0250	3.946	3.602	3.513	3.232	3.229	3.690	3.698	3.270	2.991	2.684	2.562
.0500	3.957	3.575	3.452	3.106	3.144	3.762	3.901	3.522	3.241	2.921	2.802
.0750	3.917	3.525	3.357	2.989	3.036	3.756	3.967	3.579	3.318	2.998	2.864
.1000	3.617	3.238	3.056	2.708	2.750	3.505	3.718	3.415	3.181	2.898	2.799
.1500	2.696	2.411	2.299	2.047	2.085	2.718	2.887	2.789	2.655	2.487	2.429
.2000	2.315	2.062	1.984	1.825	1.831	2.524	2.514	2.484	2.414	2.285	2.263
.4000	1.841	1.795	1.735	1.691	1.737	2.095	2.004	2.122	2.161	2.115	2.130
.6000	1.672	1.728	1.686	1.691	1.761	2.063	1.798	1.920	1.970	1.968	2.027
.8000	1.562	1.698	1.686	1.743	1.796	1.982	1.638	1.733	1.795	1.857	1.923

Lower-surface orifices

x/c	C_p for —										
	α = -3.3°	α = 0.9°	α = 5.1°	α = 9.2°	α = 13.3°	α = 17.5°	α = 21.5°	α = 25.6°	α = 27.6°	α = 29.6°	α = 31.6°
Wing											
0.0125	1.239	.915	.862	.966	1.153	1.446	1.454	1.620	1.672	1.672	1.716
.0250	1.207	.948	.831	.831	.881	1.019	1.013	1.128	1.152	1.147	1.184
.0500	1.187	.995	.854	.816	.778	.816	.764	.825	.830	.830	.846
.0750	1.178	1.006	.880	.808	.737	.772	.666	.697	.717	.716	.725
.1000	1.167	1.024	.909	.819	.752	.747	.649	.647	.661	.634	.642
.1500	1.146	1.027	.923	.837	.737	.744	.603	.608	.592	.566	.583
.2000	1.132	1.030	.932	.843	.746	.731	.609	.580	.568	.569	.553
.2500	1.114	1.027	.943	.849	.761	.744	.638	.605	.583	.566	.559
.3500	1.065	.995	.914	.843	.767	.753	.629	.611	.598	.572	.559
.4000	1.033	.962	.894	.831	.764	.756	.620	.599	.589	.572	.565
.4500	.969	.913	.868	.808	.743	.712	.618	.599	.574	.572	.559
.5000	.905	.848	.816	.755	.697	.687	.598	.573	.568	.549	.545
.5500	.853	.801	.779	.743	.664	.665	.583	.546	.550	.523	.536
.6000	.765	.734	.683	.635	.603	.615	.543	.510	.500	.493	.512
.6985	.571	.531	.513	.474	.457	.455	.397	.383	.378	.385	.388
.7499	.495	.446	.449	.419	.381	.386	.340	.332	.318	.306	.326
.7599	.504	.455	.452	.425	.381	.414	.357	.347	.327	.311	.326
.7700	.521	.505	.490	.445	.410	.443	.408	.395	.378	.352	.349
Vane											
.1000	.664	.520	.640	.629	.512	.502	.408	.362	.330	.300	.299
.1660	.155	.103	.177	.159	.123	.098	.079	.080	.080	.062	.080
.2500	.040	.022	.056	.043	.022	.027	.023	.031	.043	.037	.043
.3166	.034	.028	.050	.028	.028	.036	.043	.047	.062	.050	.059
.4000	.065	.074	.076	.065	.056	.079	.102	.083	.086	.091	.086
.4660	.161	.156	.169	.147	.141	.173	.168	.172	.158	.150	.154
Flap											
.0125	.437	.300	.412	.390	.322	.314	.300	.261	.229	.212	.216
.0250	.129	.088	.137	.109	.071	.076	.085	.083	.077	.077	.080
.0500	.031	.034	.053	.031	.028	.036	.037	.047	.043	.053	.053
.0750	.040	.047	.068	.047	.034	.066	.047	.062	.059	.053	.074
.1000	.053	.065	.076	.068	.045	.079	.062	.068	.077	.086	.083
.1500	.108	.109	.120	.097	.094	.120	.093	.101	.104	.112	.116
.2000	.167	.162	.143	.144	.132	.157	.128	.134	.137	.144	.154
.4000	.318	.335	.313	.296	.281	.286	.254	.255	.265	.244	.269
.6000	.515	.511	.501	.460	.457	.455	.385	.392	.405	.385	.405
.8000	.707	.707	.695	.699	.676	.706	.575	.579	.598	.575	.607
.9000	.920	.951	.940	.951	.954	.985	.769	.798	.815	.825	.858

TABLE IV.- PRESSURE COEFFICIENT C_p ON THE WING, VANE, AND FLAP THROUGH THE ANGLE-OF-ATTACK RANGE - Concluded

(j) Small-vane configuration; δ_f = [illegible]

Upper-surface orifices

x/c	C_p for —										
	α = -3.4°	α = 0.8°	α = 5.0°	α = 9.2°	α = 13.6°	α = 17.3°	α = 21.4°	α = 25.6°	α = 27.6°	α = 29.6°	α = 31.6°
Wing											
0.0000	.972	1.736	2.092	2.477	2.938	2.991	2.900	2.926	2.855	2.831	2.809
.0125	.998	1.633	2.077	2.448	2.902	3.021	3.045	3.015	2.920	2.865	2.827
.0250	1.042	1.453	2.089	2.515	2.935	3.050	3.121	3.045	2.908	2.860	2.815
.0500	1.079	1.307	2.127	2.603	3.009	3.116	3.065	3.086	2.935	2.848	2.824
.0750	1.106	1.293	2.300	2.673	3.000	3.018	3.062	3.139	2.959	2.871	2.848
.1000	1.114	1.290	2.471	3.047	2.973	2.964	3.104	3.175	3.003	2.929	2.893
.1500	1.143	1.265	2.280	3.761	3.926	3.258	3.260	3.184	3.033	2.932	2.893
.2000	1.164	1.287	1.495	2.743	3.959	3.552	3.260	3.118	2.905	2.888	2.815
.2500	1.181	1.270	1.253	1.831	2.991	3.383	3.133	3.024	2.908	2.808	2.738
.3500	1.242	1.293	1.315	1.352	1.879	2.715	2.763	2.781	2.701	2.605	2.559
.4000	1.274	1.319	1.363	1.366	1.692	2.457	2.624	2.687	2.618	2.545	2.494
.4500	1.309	1.345	1.395	1.381	1.592	2.255	2.468	2.574	2.503	2.446	2.425
.5000	1.344	1.342	1.415	1.390	1.515	2.071	2.329	2.453	2.397	2.362	2.363
.5500	1.373	1.379	1.436	1.436	1.515	1.970	2.228	2.376	2.331	2.310	2.321
.6000	1.422	1.416	1.492	1.495	1.542	1.908	2.157	2.308	2.266	2.258	2.286
.6985	1.542	1.462	1.553	1.547	1.568	1.866	2.059	2.213	2.201	2.186	2.211
.7499	1.742	1.539	1.659	1.644	1.660	2.003	2.228	2.340	2.284	2.229	2.253
.7700	1.873	1.616	1.742	1.726	1.743	2.202	2.500	2.568	2.447	2.351	2.336
.7750	1.931	1.605	1.756	1.740	1.769	2.273	2.604	2.627	2.488	2.374	2.339
.7800	2.001	1.630	1.783	1.767	1.781	2.383	2.755	2.763	2.586	2.458	2.405
Vane											
.0000	2.995	1.942	2.318	2.170	2.142	3.973	4.432	3.962	3.456	3.183	2.988
.1000	3.553	2.007	2.618	2.457	2.476	6.199	7.891	7.293	6.275	5.672	5.202
.1660	3.530	2.005	2.597	2.428	2.456	6.175	7.565	7.033	5.991	5.412	4.896
.2500	3.402	2.005	2.568	2.422	2.468	5.688	6.790	6.255	5.349	4.857	4.449
.3166	3.201	1.982	2.495	2.381	2.441	5.160	6.260	5.746	4.902	4.414	4.009
.4000	3.033	1.959	2.412	2.322	2.408	4.585	5.577	5.133	4.355	3.949	3.556
.4660	2.949	1.942	2.377	2.284	2.385	4.323	5.198	4.843	4.157	3.779	3.428
.5330	2.885	1.933	2.345	2.273	2.370	4.113	4.920	4.595	3.971	3.614	3.300
.6000	2.858	1.939	2.347	2.270	2.370	3.902	4.616	4.317	3.746	3.440	3.178
.6660	2.841	1.942	2.347	2.267	2.388	3.715	4.358	4.086	3.577	3.299	3.059
Flap											
.0000	1.015	.759	.871	.852	.831	.866	.938	.902	.829	.755	.726
.0125	1.553	1.179	1.324	1.311	1.352	1.582	1.766	1.713	1.556	1.420	1.369
.0250	2.963	2.245	2.524	2.492	2.577	3.006	3.358	3.237	2.965	2.718	2.592
.0500	2.579	2.050	2.271	2.261	2.317	2.772	3.343	3.414	3.163	2.909	2.797
.0750	2.338	1.950	2.092	2.091	2.151	2.650	3.305	3.459	3.216	2.964	2.842
.1000	2.172	1.847	1.950	1.960	2.012	2.484	3.092	3.284	3.080	2.854	2.753
.1500	1.983	1.742	1.792	1.796	1.894	2.128	2.473	2.666	2.565	2.438	2.393
.2000	1.928	1.682	1.745	1.755	1.882	2.036	2.252	2.408	2.323	2.258	2.244
.4000	1.911	1.639	1.700	1.705	1.808	1.947	1.976	2.071	2.092	2.065	2.125
.6000	1.928	1.662	1.759	1.746	1.858	1.947	1.926	1.902	1.935	1.949	2.024
.8000	1.864	1.685	1.765	1.755	1.870	1.938	1.882	1.760	1.793	1.825	1.911

Lower-surface orifices

x/c	C_p for —										
	α = -3.4°	α = 0.8°	α = 5.0°	α = 9.2°	α = 13.6°	α = 17.3°	α = 21.4°	α = 25.6°	α = 27.6°	α = 29.6°	α = 31.6°
Wing											
0.0125	1.271	.902	.859	.954	1.178	1.335	1.450	1.574	1.630	1.666	1.708
.0250	1.716	.939	.839	.837	.888	.964	1.003	1.083	1.124	1.128	1.175
.0500	1.190	.976	.874	.790	.781	.786	.775	.805	.820	.839	.845
.0750	1.175	.999	.889	.799	.755	.724	.681	.689	.609	.709	.705
.1000	1.161	1.027	.900	.814	.758	.715	.660	.642	.636	.640	.634
.1500	1.138	1.022	.921	.822	.755	.697	.621	.595	.589	.579	.580
.2000	1.120	1.019	.921	.828	.775	.703	.618	.595	.571	.547	.556
.2500	1.103	1.013	.927	.837	.778	.703	.633	.577	.574	.547	.547
.3500	1.042	.973	.900	.834	.784	.736	.639	.583	.577	.565	.550
.4000	1.001	.930	.883	.808	.760	.712	.648	.583	.580	.562	.556
.4500	.937	.867	.853	.793	.737	.697	.616	.568	.562	.556	.547
.5000	.867	.813	.795	.767	.704	.659	.592	.545	.542	.530	.527
.5500	.803	.762	.733	.688	.648	.632	.562	.512	.533	.510	.512
.6000	.713	.685	.645	.618	.571	.549	.512	.480	.468	.464	.470
.6985	.524	.450	.453	.442	.397	.392	.379	.343	.349	.331	.351
.7499	.454	.387	.412	.390	.346	.329	.308	.284	.272	.270	.289
.7599	.463	.379	.403	.384	.346	.326	.293	.278	.275	.270	.289
.7700	.466	.365	.412	.387	.340	.341	.320	.314	.302	.313	.292
Vane											
.1000	.675	.502	.571	.512	.453	.433	.388	.337	.323	.296	.297
.1660	.292	.225	.271	.229	.195	.110	.083	.071	.077	.079	.083
.2500	.138	.119	.147	.126	.098	.056	.022	.022	.040	.034	.034
.3166	.094	.085	.103	.088	.071	.040	.031	.028	.034	.043	.050
.4000	.091	.079	.095	.106	.083	.071	.074	.071	.080	.088	.083
.4660	.123	.099	.136	.138	.127	.145	.142	.148	.148	.146	.137
Flap											
.0125	.728	.462	.597	.568	.482	.320	.311	.305	.269	.267	.253
.0250	.329	.182	.280	.267	.187	.101	.101	.092	.080	.085	.092
.0500	.082	.047	.074	.071	.056	.043	.025	.043	.043	.045	.053
.0750	.034	.043	.043	.050	.034	.056	.034	.034	.056	.056	.050
.1000	.031	.053	.031	.045	.040	.062	.047	.043	.047	.062	.062
.1500	.065	.085	.059	.074	.068	.095	.071	.077	.080	.071	.089
.2000	.103	.136	.115	.106	.107	.122	.098	.101	.101	.111	.116
.4000	.292	.307	.289	.278	.258	.261	.231	.207	.210	.221	.217
.6000	.495	.510	.486	.466	.432	.418	.379	.349	.361	.345	.366
.8000	.710	.730	.715	.679	.681	.644	.586	.539	.542	.536	.542
.9000	1.007	.987	.977	.933	.941	.923	.849	.769	.772	.779	.809

TABLE V.- PRESSURE COEFFICIENT C_p ON THE PLAIN WING THROUGH THE ANGLE-OF-ATTACK RANGE

Upper-surface orifices

x/c	C_p for —									
	α = -4.0°	α = 0.2°	α = 4.4°	α = 8.6°	α = 12.8°	α = 17.0°	α = 21.2°	α = 23.3°	α = 25.4°	α = 27.5°
Wing										
0.0000	1.500	.865	1.720	1.966	2.452	2.716	2.719	2.684	2.767	2.772
.0125	.779	1.043	1.609	1.912	2.398	2.699	2.785	2.795	2.894	2.863
.0250	.831	1.072	1.569	1.949	2.421	2.713	2.891	2.875	2.917	2.872
.0500	.865	1.057	1.584	2.014	2.492	2.793	2.825	2.818	2.943	2.912
.0750	.897	1.069	1.663	2.088	2.500	2.716	2.788	2.838	3.006	2.966
.1000	.917	1.072	1.527	2.350	2.466	2.647	2.776	2.877	3.055	2.994
.1500	.937	1.074	1.227	2.648	3.193	2.859	2.960	3.034	3.147	3.028
.2000	.954	1.074	1.153	2.014	3.239	3.289	3.077	3.054	3.101	2.977
.2500	.963	1.072	1.145	1.435	2.483	3.126	3.005	2.943	2.994	2.880
.3000	.974	1.077	1.162	1.207	1.921	2.842	2.891	2.849	2.905	2.823
.3500	.986	1.077	1.153	1.114	1.514	2.384	2.627	2.630	2.721	2.664
.4000	.989	1.077	1.159	1.125	1.341	2.112	2.444	2.484	2.600	2.564
.4500	1.006	1.080	1.156	1.125	1.250	1.871	2.272	2.342	2.464	2.447
.5000	1.006	1.080	1.139	1.119	1.193	1.693	2.100	2.197	2.329	2.328
.5500	1.015	1.074	1.133	1.134	1.185	1.584	1.997	2.105	2.242	2.248
.6000	1.015	1.080	1.139	1.136	1.182	1.496	1.899	2.009	2.193	2.154
.7000	.994	1.054	1.105	1.102	1.131	1.361	1.716	1.821	1.948	1.997
.7500	.994	1.040	1.082	1.080	1.114	1.321	1.645	1.741	1.876	1.934
.8000	.989	1.034	1.062	1.057	1.088	1.269	1.564	1.650	1.793	1.860
.8500	.989	1.017	1.040	1.045	1.060	1.223	1.481	1.567	1.718	1.786
.9000	.980	.997	1.020	1.017	1.037	1.172	1.404	1.501	1.634	1.712
.9500	.940	.954	.975	.972	.986	1.094	1.284	1.379	1.496	1.570

Lower-surface orifices

x/c	C_p for —									
	α = -4.0°	α = 0.2°	α = 4.4°	α = 8.6°	α = 12.8°	α = 17.0°	α = 21.2°	α = 23.3°	α = 25.4°	α = 27.5°
Wing										
0.0125	1.604	1.132	.870	.810	.946	1.132	1.266	1.311	1.406	1.467
.0250	1.569	1.120	.890	.776	.778	.834	.902	.915	.971	1.003
.0500	1.584	1.123	.938	.795	.742	.725	.725	.724	.729	.749
.0750	1.405	1.106	.949	.813	.733	.688	.659	.647	.651	.644
.1000	1.325	1.112	.975	.847	.784	.774	.785	.778	.787	.786
.1500	1.270	1.120	.994	.875	.781	.696	.642	.610	.582	.570
.2000	1.250	1.140	1.026	.903	.804	.722	.665	.621	.594	.581
.2500	1.236	1.146	1.045	.932	.832	.753	.682	.652	.620	.593
.3000	1.227	1.143	1.060	.952	.852	.776	.711	.678	.637	.618
.3500	1.233	1.163	1.085	.986	.889	.811	.745	.712	.683	.652
.4000	1.239	1.163	1.094	1.000	.918	.837	.776	.735	.706	.675
.4500	1.204	1.149	1.077	.989	.915	.842	.788	.749	.715	.689
.5000	1.193	1.137	1.085	.997	.926	.865	.817	.769	.741	.721
.5500	1.178	1.123	1.074	1.003	.940	.882	.837	.795	.772	.746
.6000	1.164	1.109	1.071	1.003	.955	.897	.860	.821	.795	.783
.7000	1.144	1.103	1.077	1.023	.980	.940	.914	.877	.862	.843
.7500	1.109	1.086	1.062	1.014	.983	.951	.928	.897	.891	.872
.8000	1.086	1.069	1.045	1.009	.977	.963	.943	.923	.916	.900
.8500	1.058	1.051	1.034	.994	.977	.968	.960	.949	.942	.946
.9000	1.017	1.034	1.020	1.000	.980	.980	.997	.991	.997	1.000
.9500	1.012	1.023	1.026	1.003	1.000	1.023	1.066	1.066	1.087	1.105

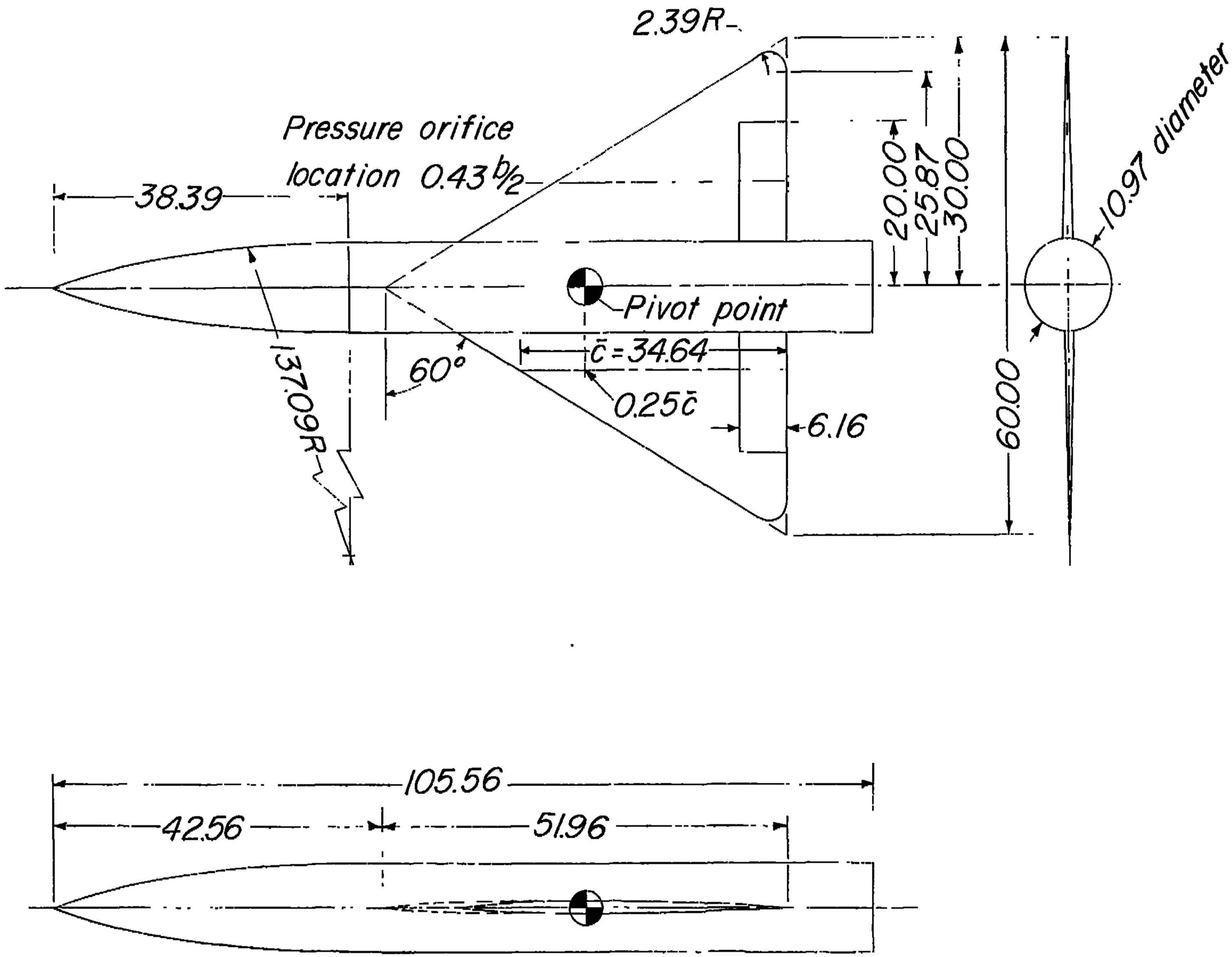


Figure 1.- General arrangement of 60° delta wing model. (All dimensions are in inches.)

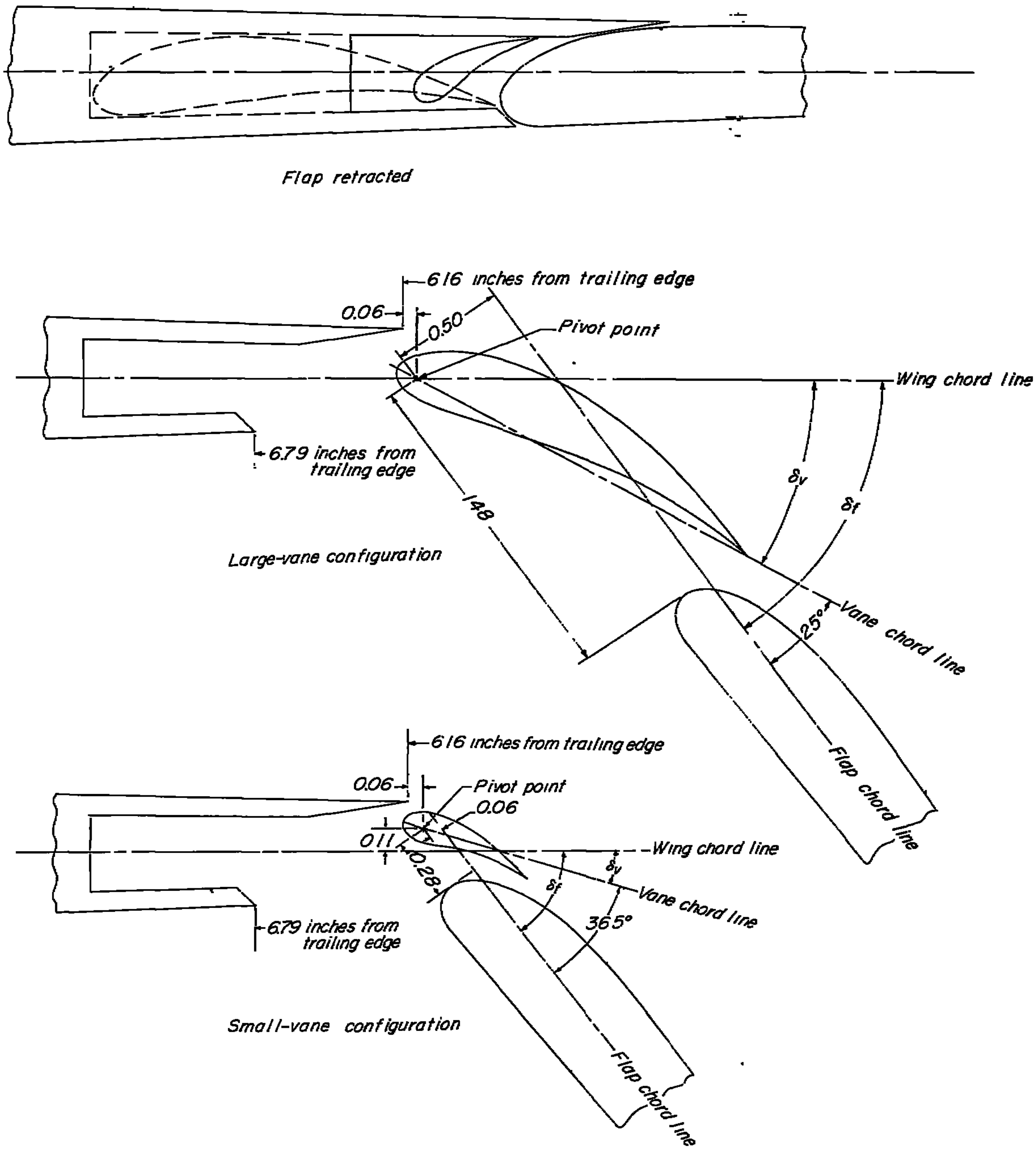


Figure 2.- Details of the double slotted flaps. (All dimensions are in inches.)

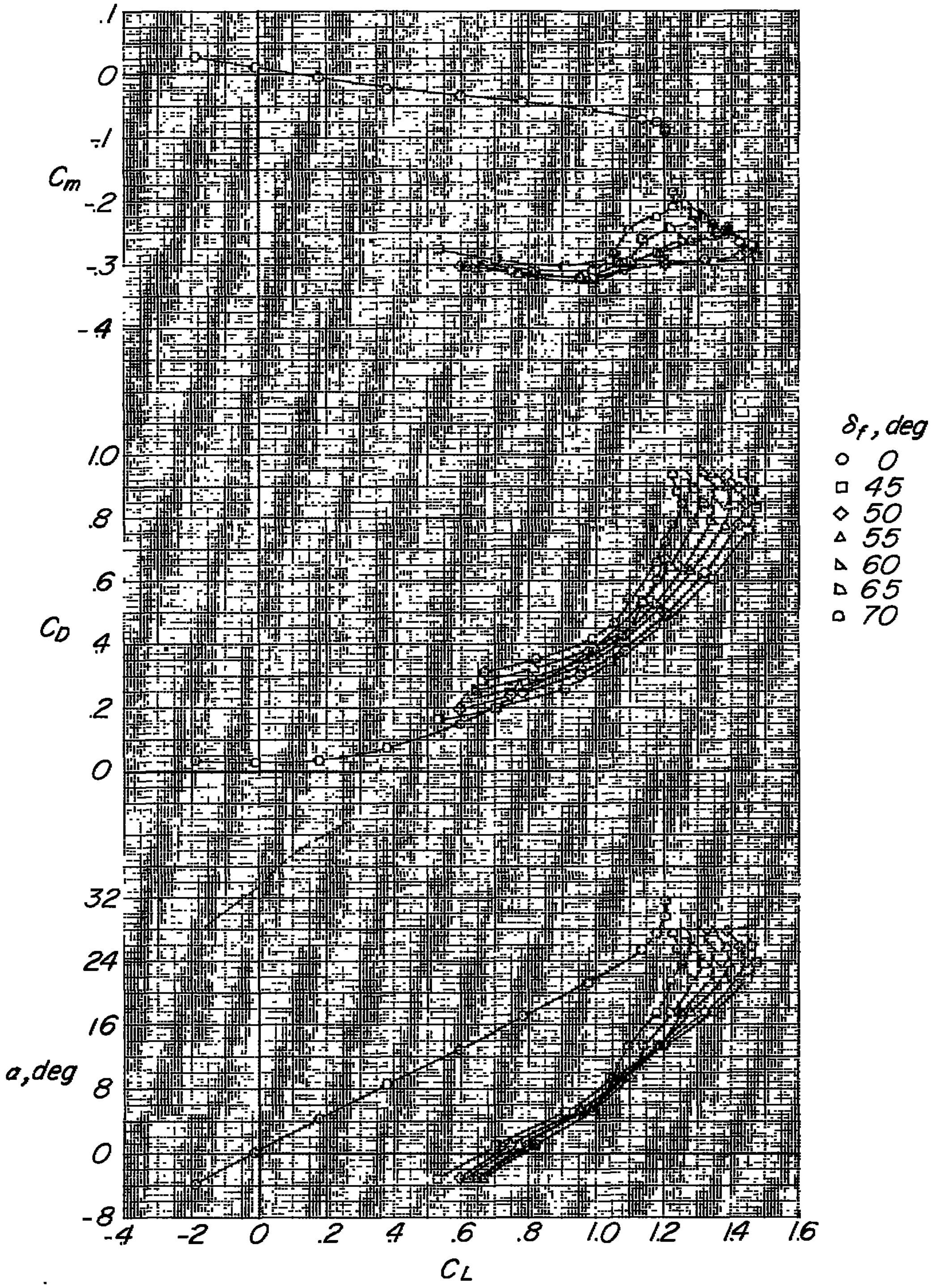


Figure 3.- The aerodynamic characteristics of the plain-wing configuration and the double-slotted-flap configuration with the large vane.

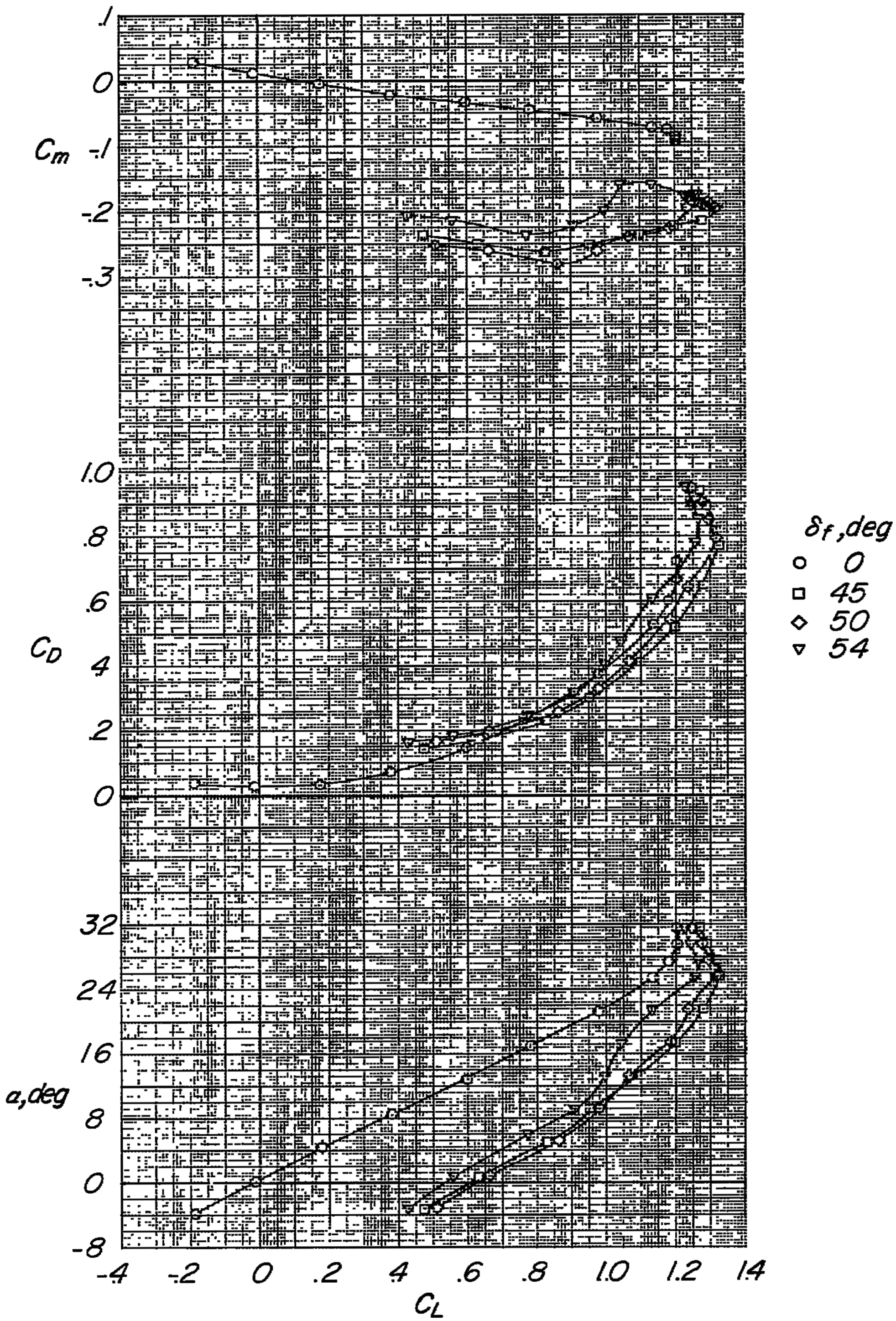


Figure 4.- The aerodynamic characteristics of the plain-wing configuration and the double-slotted-flap configuration with the small vane.

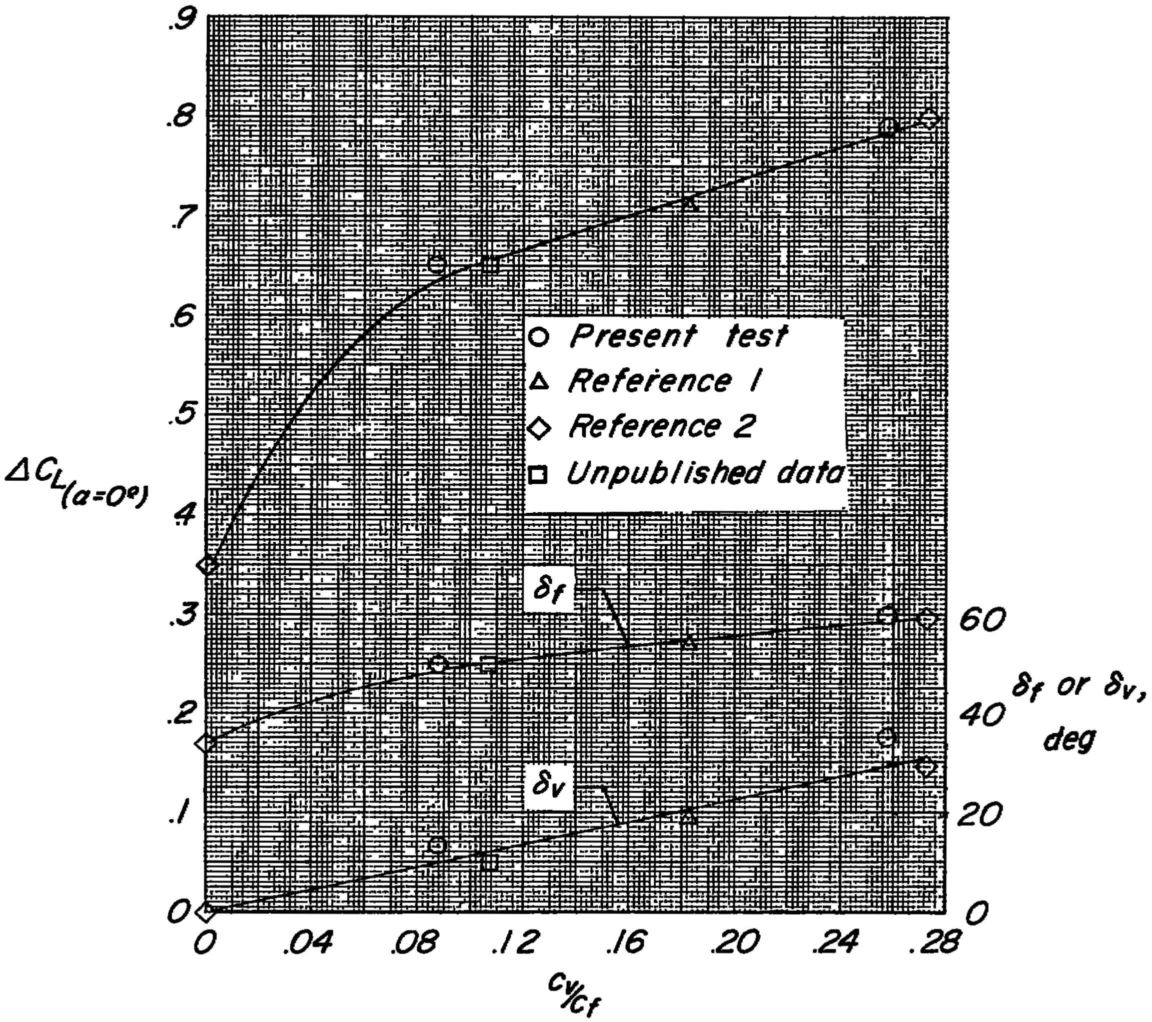


Figure 5.- Effect of vane size on the incremental lift coefficient at zero angle of attack for several delta wings.

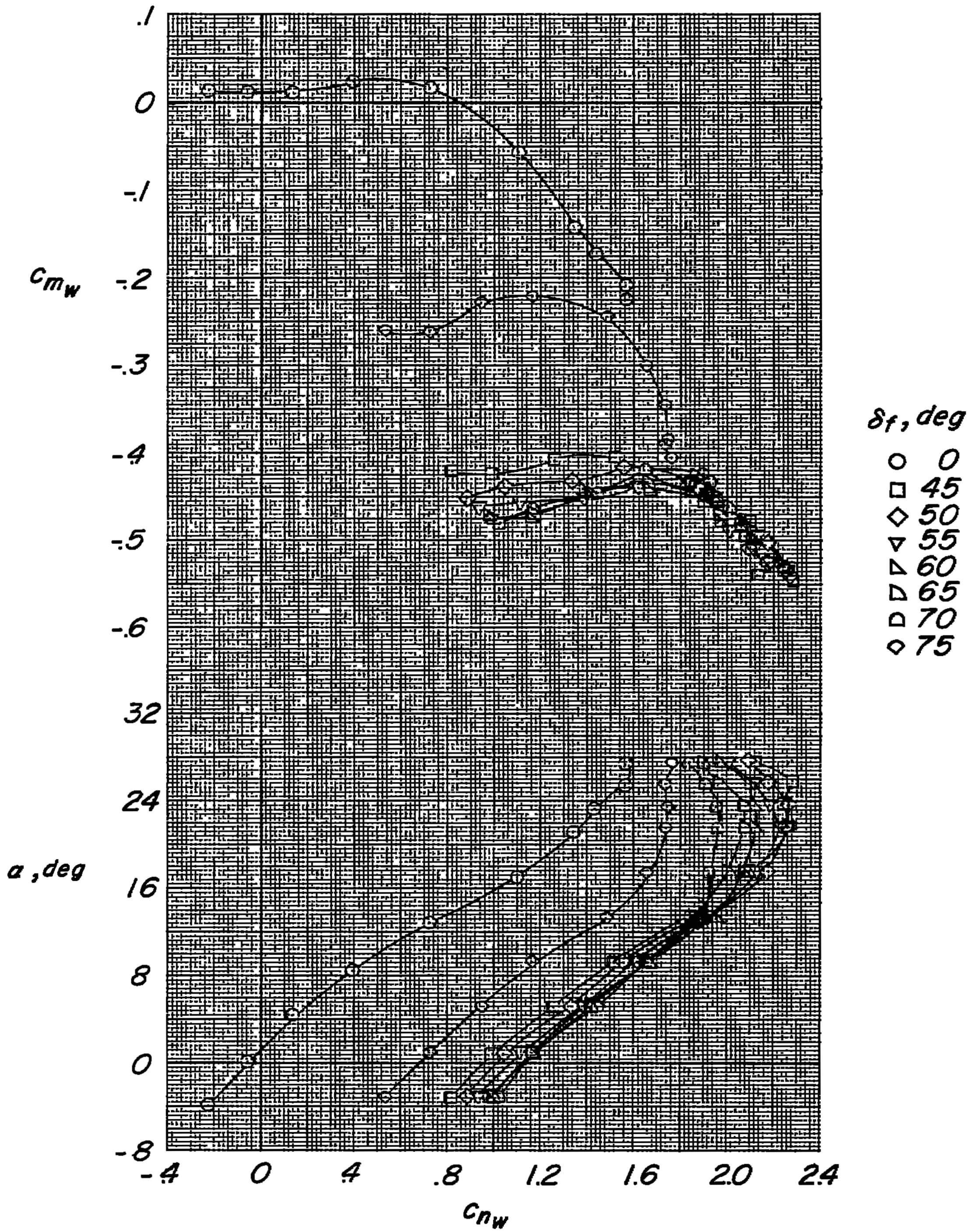


Figure 6.- Section characteristics of the plain-wing and the double-slotted-flap configuration with the large vane at several flap deflections.

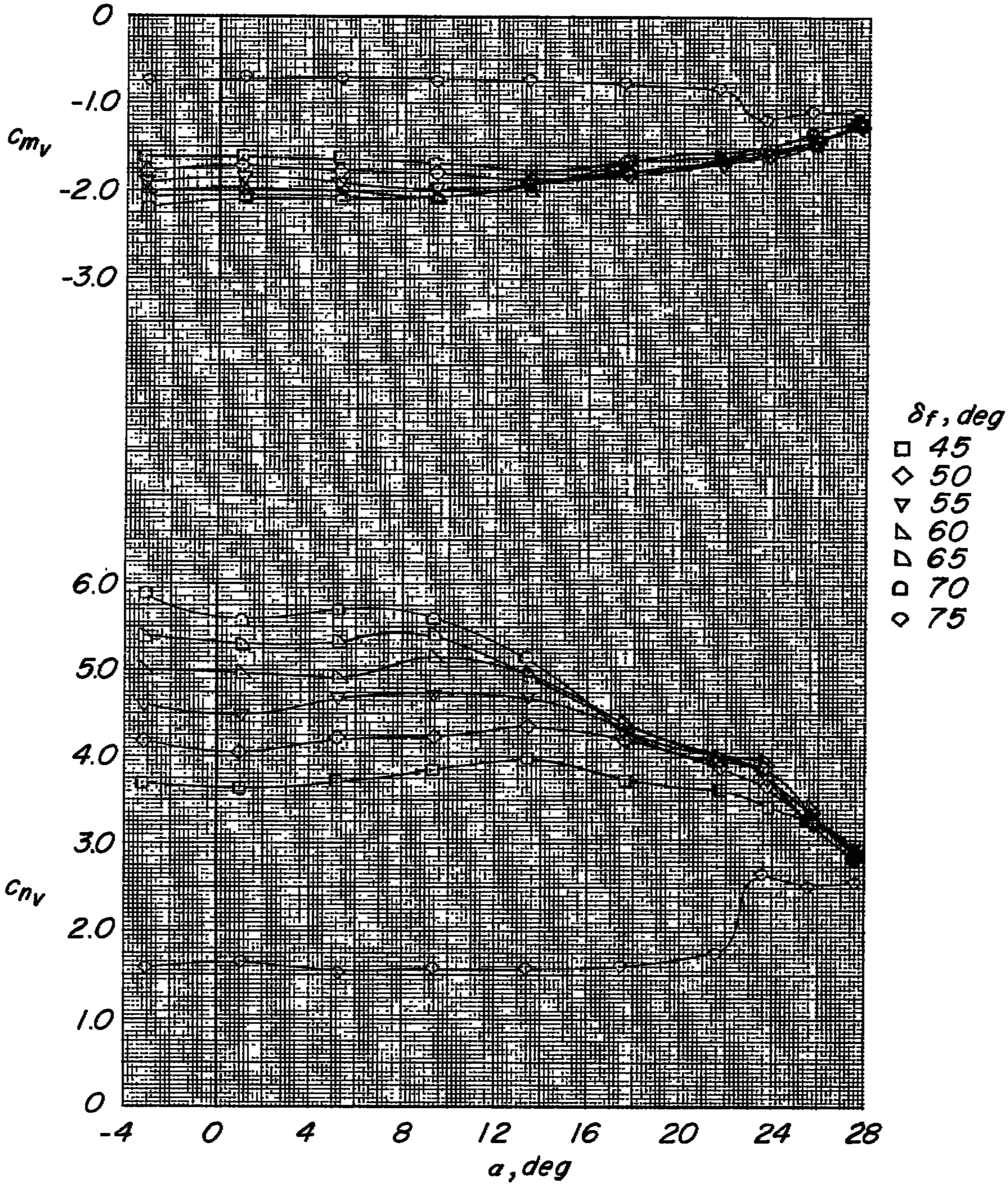


Figure 7.- Variation of the large-vane section characteristics with angle of attack at several flap deflections.

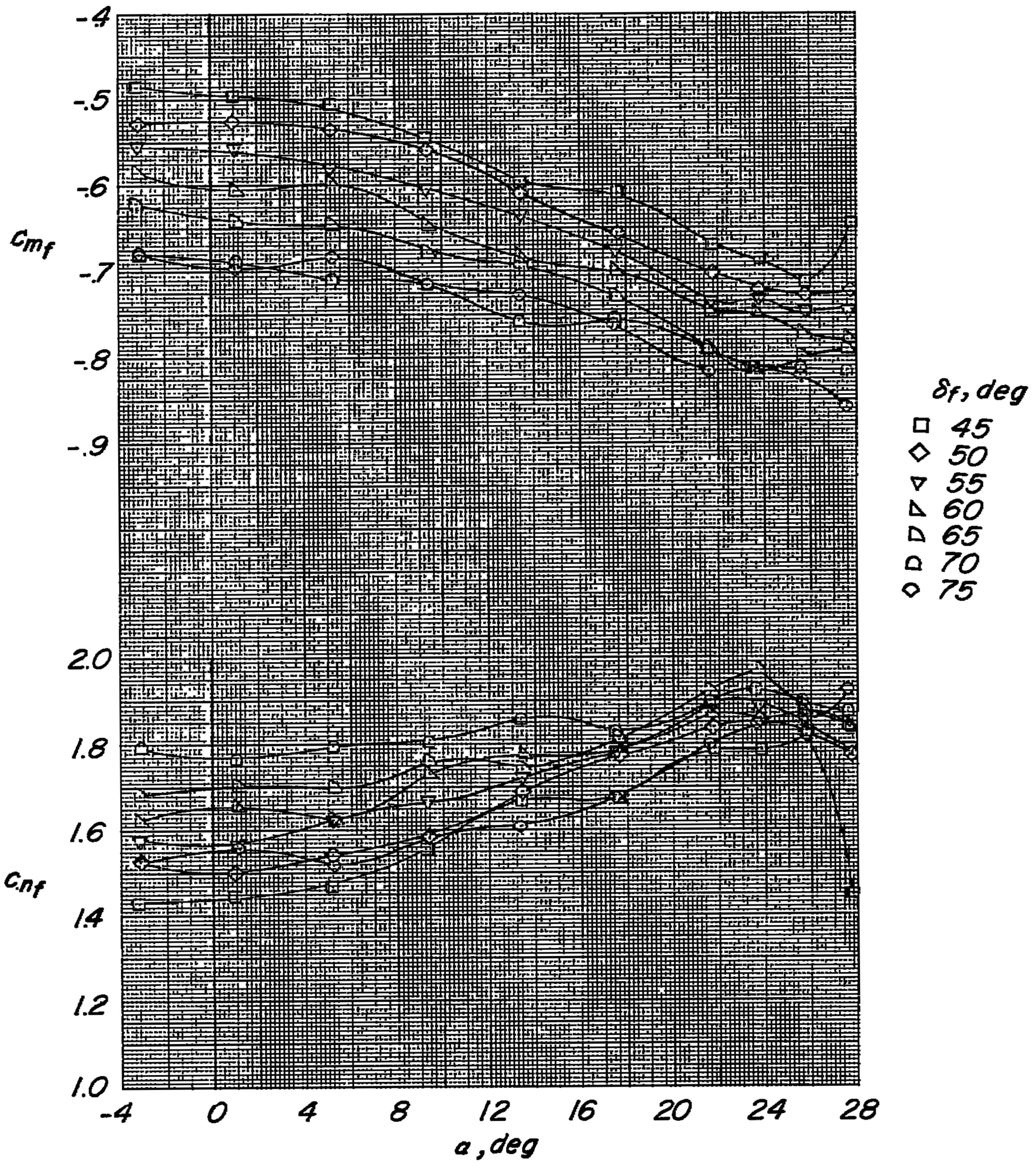


Figure 8.- Variation of flap section characteristics with angle of attack of the large-vane configuration at several flap deflections.

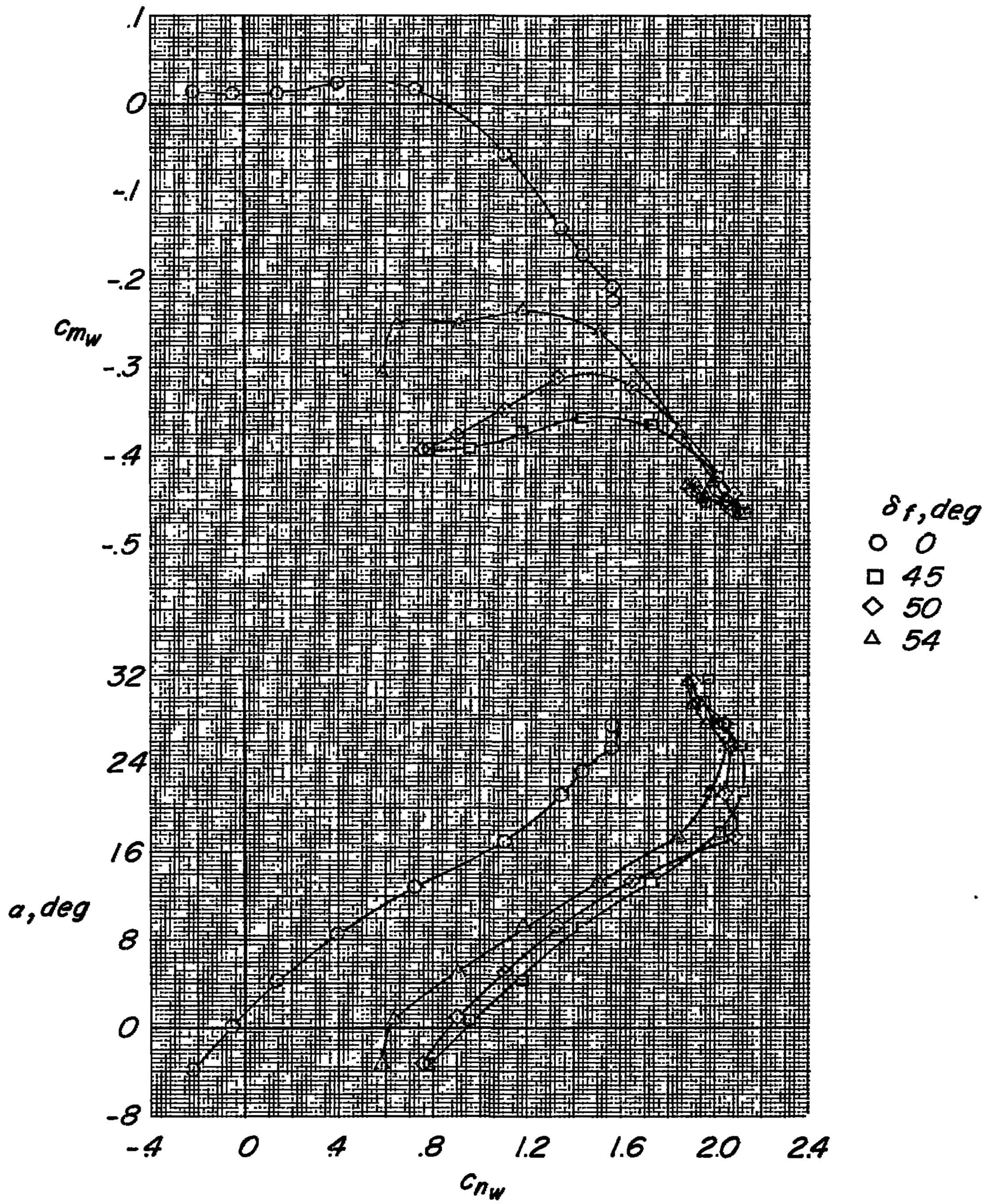


Figure 9.- Section characteristics of the plain-wing and the double-slotted-flap configuration with the small vane at several flap deflections.

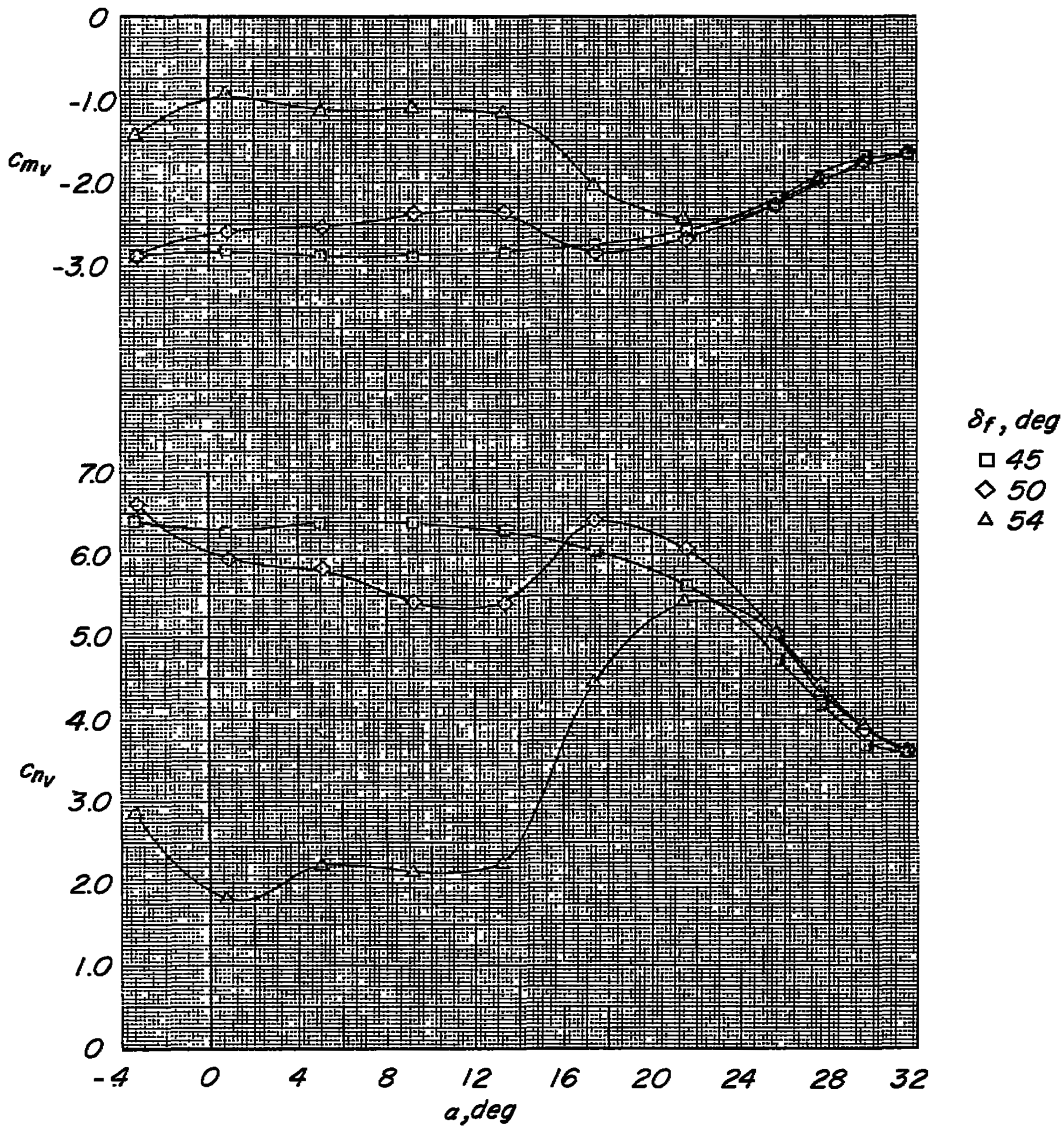


Figure 10.- Variation of the small-vane section characteristics with angle of attack at three flap deflections.

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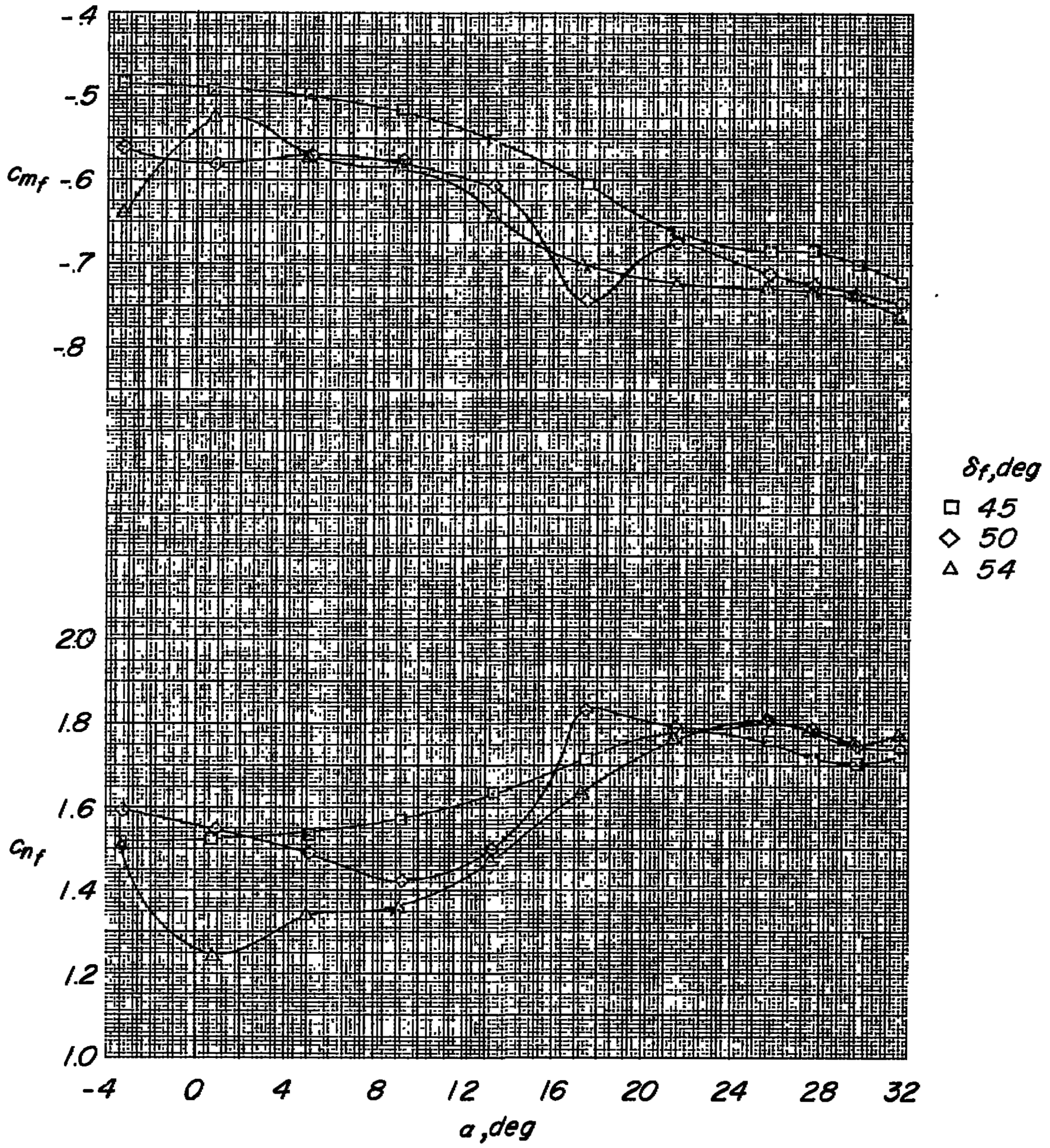
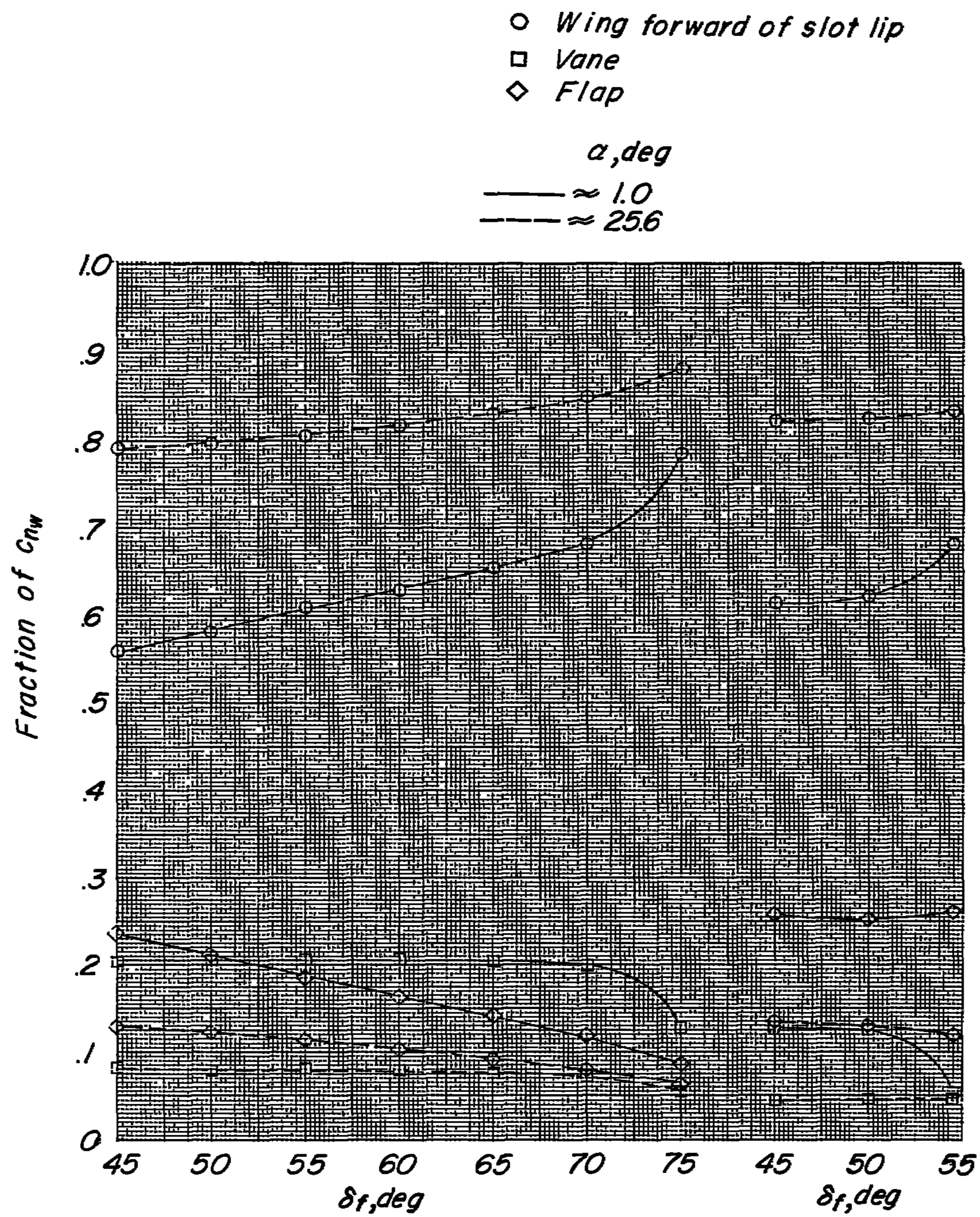


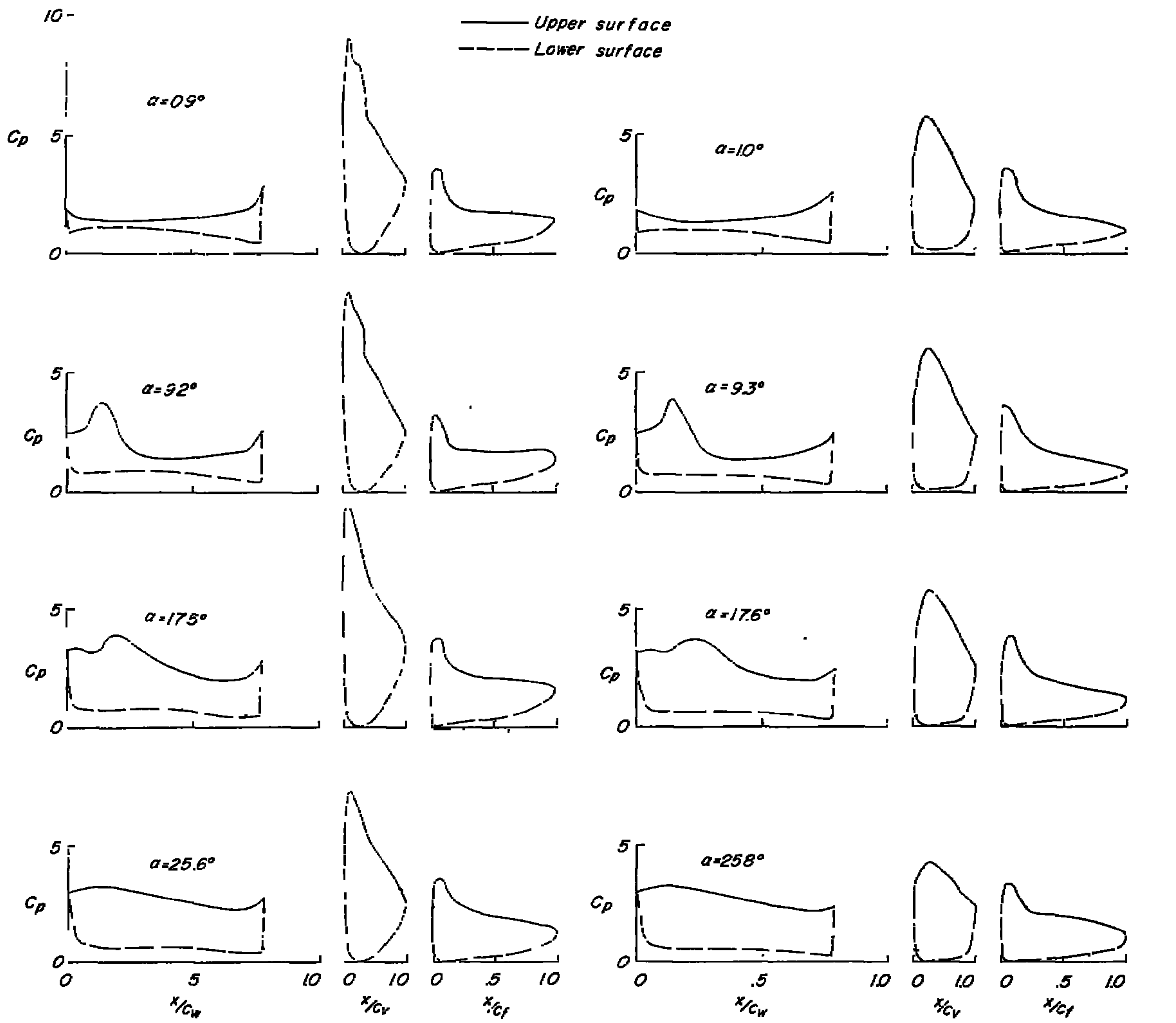
Figure 11.- Variation of flap section characteristics with angle of attack of the small-vane configuration at three flap deflections.



(a) Large-vane configurations.

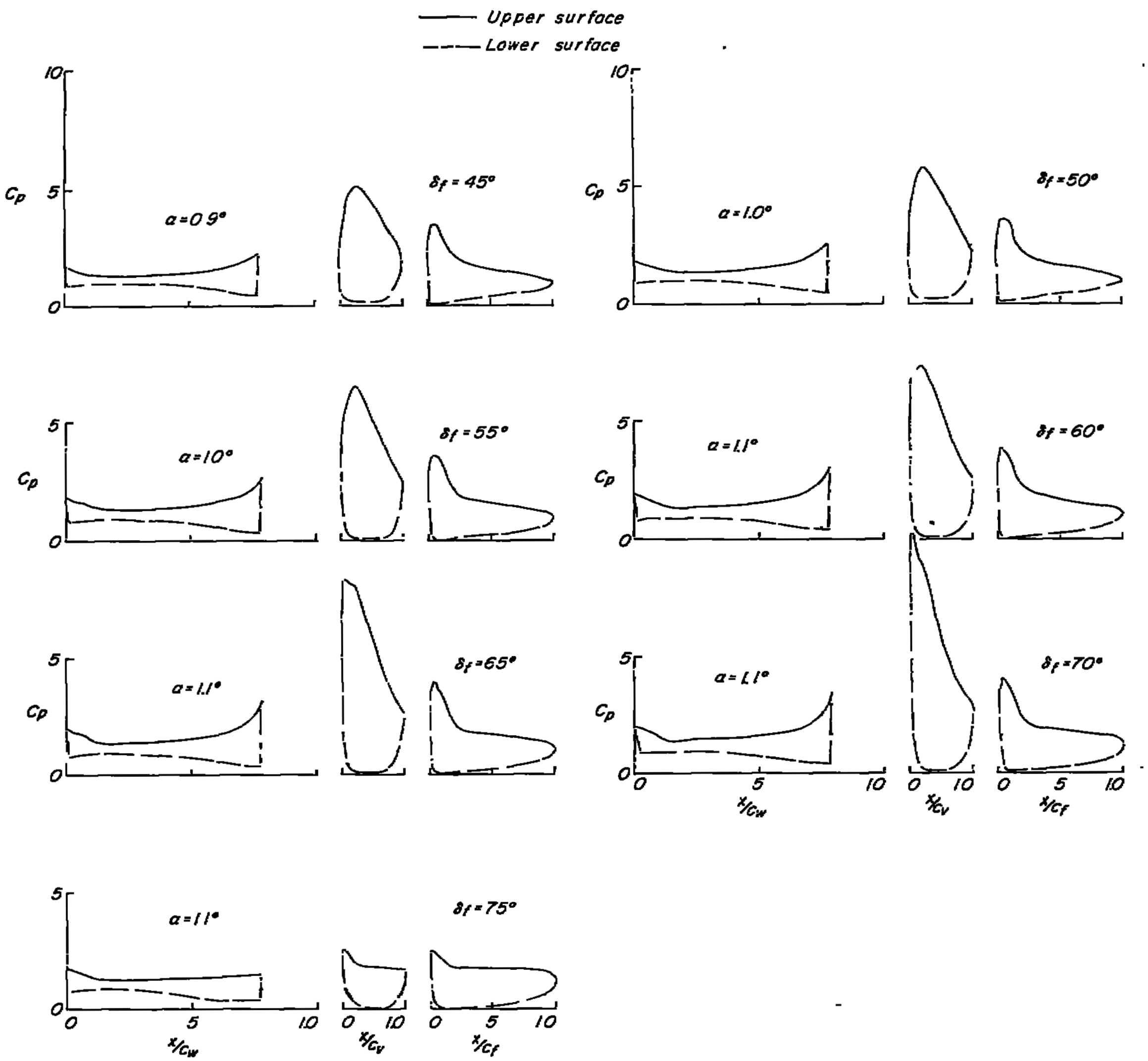
(b) Small-vane configurations.

Figure 12.- Variation of fraction of total section normal force coefficient produced by the wing, vane, and flap with flap deflection for the double-slotted flap configurations.



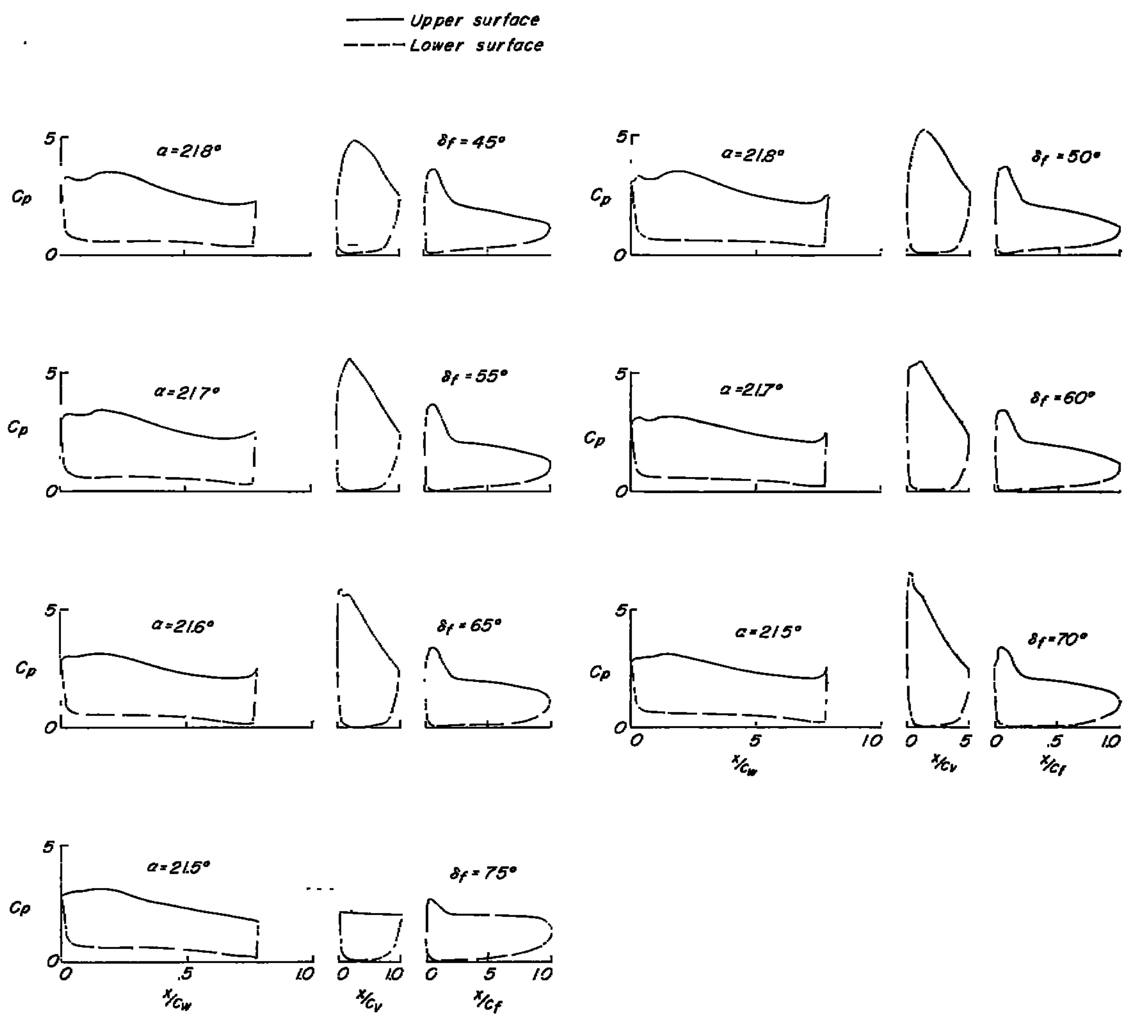
(a) Small-vane configurations. (b) Large-vane configurations.

Figure 13.- Variation of load distribution with angle of attack at a flap deflection of 50° for double-slotted-flaps configuration with the large vane and the small vane. (Note x/c_w, x/c_v, and x/c_f are not to the same scale.)



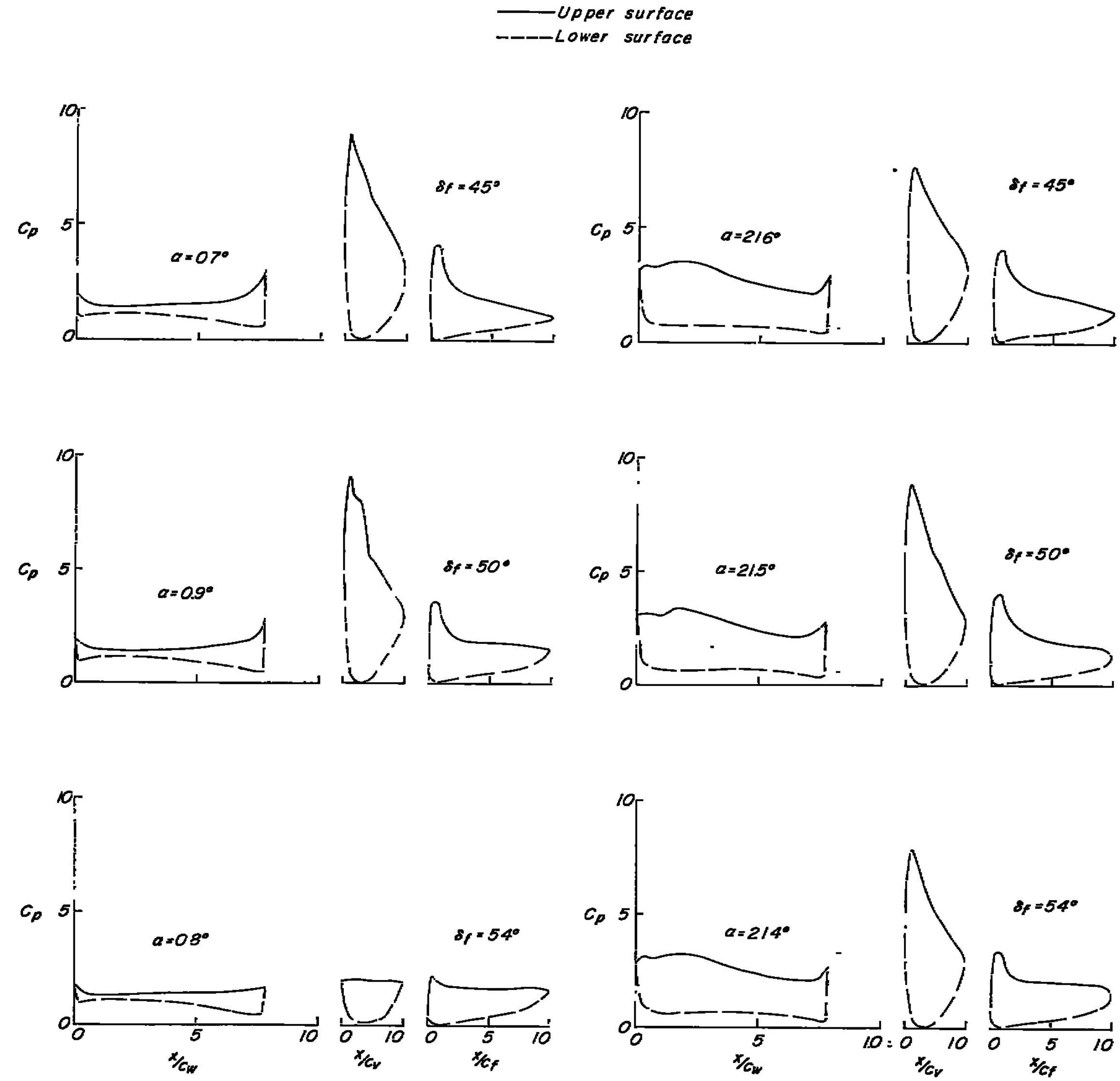
(a) For $\alpha \approx 1^\circ$.

Figure 14.- Variation of load distribution with flap deflection at approximately 1° and 22° angle of attack for the double-slotted-flap configuration with the large vane. (Note x/c_w, x/c_v, and x/c_f are not to the same scale.)



(b) For $\alpha \approx 22^{\circ}$.

Figure 14.- Concluded.



(a) For $\alpha \approx 1^{\circ}$.

(b) For $\alpha \approx 22^{\circ}$.

Figure 15.- Variation of load distribution with flap deflection at approximately 1° and 22° angle of attack for the double-slotted-flap configuration with the small vane. (Note x/c_w, x/c_v, and x/c_f are not to the same scale.)

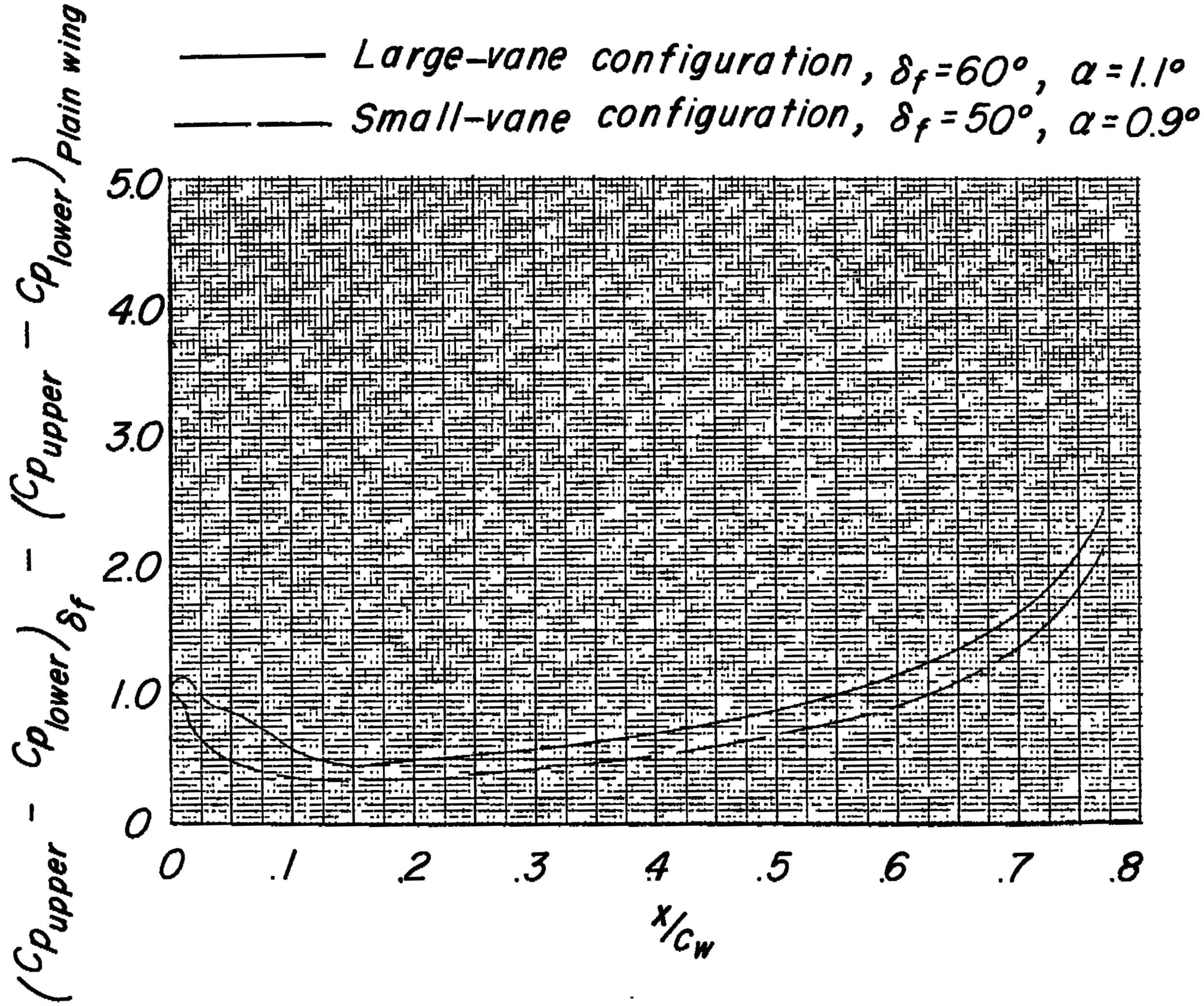


Figure 16.- Incremental pressure coefficient due to flap deflection for the two vane configurations.

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