NASA Technical Memorandum 78686

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JULY 1978

NASA

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National Aeronautics
and Space Administration

**Scientific and Technical
Information Office**

1978

SUMMARY

A generalized wind-tunnel model, with canard and wing planforms typical of highly maneuverable aircraft, was tested in the Langley high-speed 7- by 10-foot tunnel at a Mach number of 0.30 to determine the effect of changing wing camber on the lift coefficient at which the model is trimmed. Trimmed lift coefficients of near 2.0 were attained; however, the data indicated that the highest buffet-free trimmed lift coefficient attainable was approximately 1.30. The buffet data used in this investigation were qualitative in nature and gave no indication of buffet intensity. Thus, the trimmed lift coefficient of near 2.0 might be attainable if the buffet intensity was not too high. The data showed that there was approximately a 10-percent variation in drag coefficient, for different model configurations, at a given trimmed lift coefficient. Large increases in wing lift had only small effects on canard lift.

INTRODUCTION

Close-coupled canard-wing configurations can provide performance improvements for an aircraft maneuvering at high angles of attack. (See refs. 1 to 11.) The data in reference 11 indicated that a close-coupled canard-wing configuration could be trimmed efficiently at high angles of attack by changing the wing camber. Thus, the National Aeronautics and Space Administration is conducting a study to investigate the effect of changing wing camber on the trimmed lift capabilities and aerodynamic characteristics of such a configuration. The variable camber is simulated by a flap system which has three hinge lines at different chordwise stations. A generalized wind-tunnel model, incorporating two balances to allow separation of the canard contribution from the total forces and moments, is being used in this study. The present investigation was conducted in the Langley high-speed 7- by 10-foot tunnel at a Mach number of 0.30 for a Reynolds number of 1.56×10^6 based on a mean geometric chord of 23.32 cm (9.18 in.) at angles of attack from approximately -4° to 40° at 0° sideslip.

SYMBOLS

The International System of Units (SI), with the U.S. Customary Units in parentheses, is used for the physical quantities in this paper. Measurements and calculations were made in U.S. Customary Units. The longitudinal data presented in this report are referred to the stability axis system. The moment reference point was taken to be at fuselage station 59.14 cm (23.29 in.) for both balances.

b wing span, 50.8 cm (20.0 in.)

b' span of exposed wing, 21.59 cm (8.50 in.)

C_A axial-force coefficient, $\frac{\text{Axial force}}{q_\infty S_w}$

C_D drag coefficient, $\frac{\text{Drag}}{q_\infty S_w}$ (CD in table IV)

C_L lift coefficient of main balance, $\frac{\text{Lift}}{q_\infty S_w}$ (CL in table IV)

$C_{L,Buffet}$ lift coefficient at which indicated buffet onset occurs

$C_{L,c}$ lift coefficient of canard balance (CLC in table IV)

$\Delta C_{L,c}$ $C_{L,c}$ with wing flap deflection minus $C_{L,c}$ without wing flap deflection

$C_{L,w}$ $= C_L - C_{L,c}$ (CL2 in table IV)

$\Delta C_{L,w}$ $C_{L,w}$ wing with flap deflection minus $C_{L,w}$ without wing flap deflection

C_m pitching-moment coefficient, $\frac{\text{Pitching moment}}{q_\infty S_w \bar{c}}$ (CM in table IV)

$\frac{\partial C_m}{\partial C_L}$ partial derivative of C_m with respect to C_L evaluated at $C_L = 0$

c local chord, cm (in.)

$\bar{c}$ wing mean geometric chord, 23.32 cm (9.18 in.)

c_l rolling-moment coefficient of main balance (CR in table IV)

c_n yawing-moment coefficient of main balance (CY in table IV)

q_∞ free-stream dynamic pressure, Pa (lb/ft^2)

S_c exposed canard area 288.73 cm^2 (44.75 in^2)

S_w reference area of wing with leading and trailing edges extended to plane of symmetry, 1032.26 cm^2 (160.0 in^2)

x longitudinal distance measured from wing leading edge (positive aft), cm (in.)

y lateral distance measured from body center line (positive right side of model), cm (in.)

z vertical distance measured from body center line, cm (in.)

z_l vertical distance from wing chord plane to point on wing lower surface (positive down), cm (in.)

z_u vertical distance from wing chord plane to canard chord plane (positive up), cm (in.)

α angle of attack, deg (ALPHA DEG in table IV)

Λ leading-edge sweep angle, deg

Subscripts:

c canard

t trimmed

w wing

Abbreviations:

LE leading-edge flaps

MID forward part of trailing-edge flaps

TE aft part of trailing-edge flaps

MODEL DESCRIPTION

A three-view drawing of the general research model is presented in figure 1. The flap arrangement on the wing is shown in figure 2. Geometric characteristics of the model are given in table I.

The flap system was chosen to simulate a variable-camber wing. The leading-edge flap (LE) had four equal-length segments; the chord length varied from 5 percent of the root chord (wing-fuselage intersection) to 30 percent of the tip chord. The MID (forward part of trailing-edge flaps) hinge line was located at a distance of $0.60c_{root}$ from the leading edge at the wing root and $0.70c_{tip}$ from the leading edge at the wing tip. The flaps had three equal-length segments, but the MID hinge line could not be extended to the wing-body juncture because of structural interference. The aft part of trailing-edge flaps (TE) had the hinge line located a distance of $0.80c_{root}$ from the leading edge at the wing root and $0.80c_{tip}$ from the leading edge at the wing tip. The flaps had three equal-length segments and a fourth segment adjacent to the body which was not as long as the other three segments.

The wing had a leading-edge sweep angle of 44° and was designed to have an elliptic spanwise loading and rectangular chordwise loading at a design lift coefficient of 0.35. The airfoil section ordinates are shown in table II.

The canard had a leading-edge sweep angle of 51.7° and an exposed area S_c of 28.0 percent of the wing reference area S_w. The canard was located in a position of 18.5 percent of the wing mean geometric chord above the wing chord plane, $z/\bar{c} = 0.185$. The canard was untwisted and had uncambered circular-arc airfoil sections. The thickness varied linearly from 6 percent of the chord at the root (fuselage-wing intersection) to 4 percent at the tip. The canard mounting brackets were faired into the fuselage.

APPARATUS, TESTS, AND CORRECTIONS

The present investigation was conducted in the Langley high-speed 7- by 10-foot tunnel. The forces and moments were measured by means of two internally mounted six-component strain-gage balances. One balance was housed within the forward segment of the fuselage and was rigidly attached to the rearward fuselage segment, and a small unsealed gap was maintained between the fuselage segments to prevent fouling. This balance (canard balance) measured the loads on the canard and on the forward segment of the fuselage (shaded area in fig. 1). The second balance (main balance) was housed in the rearward segment of the fuselage and measured the total-model loads.

Tests were made at a Mach number of 0.30 for a free-stream Reynolds number of 1.56×10^6 based on the mean geometric chord of 23.32 cm (9.18 in.) at angles of attack from approximately -4° to 40° at a sideslip angle of 0°. All tests were made with the boundary-layer transition fixed on the model by means of narrow strips of carborundum grit (#90 grit) placed 1.65 cm (0.65 in.) aft of the leading edges of the canards and wings and 3.18 cm (1.25 in.) aft of the nose of the body as outlined in reference 12.

The blockage and jet-boundary corrections were negligible and, therefore, were not applied. Angles of attack have been corrected for the effects of sting deflection caused by the aerodynamic load. All drag measurements were corrected to a condition of free-stream static pressure on the base of the model.

RESULTS AND DISCUSSION

The data are presented in both tabular and plotted form. Table III gives the 40 test configurations and table IV presents the results for these configurations.

The center of moments was taken at station 59.14 cm (23.29 in.) so that the model is substantially unstable, $\partial C_m/\partial C_L \approx 0.16$. With this stability level, longitudinal trim can be achieved by an upload produced by deflecting the trailing-edge flaps of the wing which would result in a relatively high trimmed lift coefficient. A stability augmentation system would, of course, be required to take advantage of the high trimmed lift capability.

Lift, drag, and pitching-moment data and axial-force coefficient C_A plotted against $\sin^2 \alpha$ are presented for each configuration. (For convenience, fig. 3 gives $\sin^2 \alpha$ plotted against α.) The change of axial force with angle of attack is primarily determined by the variation of the leading-edge suction

force which, as indicated in reference 13, is a linear function of $\sin^2 \alpha$ for attached potential flow. For thin wings, characterized by leading-edge separation, deviation from this linear relationship is a strong indicator of separation, and as shown in reference 14, can be used as at least a qualitative indicator of buffet onset.

Thus, in the absence of other more reliable indicators the plots of C_A against $\sin^2 \alpha$ are used here as buffet-onset indicators. The axial-force coefficients are obtained from the main balance (fig. 1) and thus include the contribution of the fuselage and canard as well as the wing. The uncambered canards have sharp leading edges and the fuselage does not produce significant levels of lift (ref. 9); therefore, it is assumed that these two elements of this model do not contribute significantly to the axial force when compared to the wing. Therefore, the changes observed in the plots of C_A and $\sin^2 \alpha$ are primarily due to the wing. This method of predicting buffet onset provides no information concerning the buffet intensity.

Effect of Leading-Edge Flap Deflection

Figures 4 to 6 present the effects of deflecting the leading-edge flaps on the longitudinal aerodynamic characteristics. Some tests were made with MID and TE deflections also. (The flap arrangement is shown in fig. 2.) As should be expected, deflecting the leading-edge flaps has negligible effect on total lift and canard lift. Deflecting the leading-edge flaps from 0° to 15° only modulates the trimmed lift coefficient about 7.5 percent on the average. However, deflecting the leading-edge flaps does reduce the drag and extend the angle-of-attack range before there is a noticeable departure from the linear characteristic of the axial-force/$\sin^2 \alpha$ curves. As can be noted in figures 4(a), 5(a), and 6(a) this improvement in the axial-force curves results in higher lift coefficients at which buffet onset occurs. For the configurations which have no MID or TE deflection (fig. 4), $C_{L,Buffet}$ is higher than $C_{L,t}$. However, if there is a deflection of the other flaps, $C_{L,Buffet}$ is lower than $C_{L,t}$ for the configurations shown (figs. 5 and 6).

Effect of MID Deflections

The effects of changing only the forward part of the trailing-edge flaps (MID) from a 5° deflection to 15° on the longitudinal aerodynamic characteristics are presented in figure 7. These changes in flap setting modulate the trimmed lift coefficient from 1.08 ($\alpha = 12.81^\circ$) to 1.52 ($\alpha = 17.96^\circ$).

Effect of TE Deflections

The data in figures 8 to 11 present the effect of deflecting the aft part of the trailing-edge flaps (TE) on the longitudinal aerodynamic characteristics. Again, some tests were made with LE or MID deflections also. The data in figure 8 indicate that the flow has separated on the outboard flap, for the 15° deflection, since the increment in pitching moment and lift due to the outboard flap deflection is reduced over that for the other flap deflections shown in fig-

ure 8. The trimmed lift coefficient varies from 0.61 to 1.67 while the lift coefficient at indicated buffet onset varies from 0.70 for no flap deflections to 1.15 for a 15° TE deflection. In general, the wing-upwash variations due to wing TE deflections produce negligible changes in canard lift.

The effect of having TE deflections of 0°, 5°, 10°, and 15° on the longitudinal aerodynamic characteristics is presented in figure 9. These flap deflections modulate $C_{L,t}$ from 0.61 to 1.67, while $C_{L,Buffet}$ varies from 0.70 to 1.15. Figure 9(a) gives further evidence that the flow is separated on the flap for the 15° flap setting.

The effect of TE deflections of 0°, 5°, 10°, and 15° in the presence of a 15° leading-edge flap deflection on the longitudinal aerodynamic characteristics is shown in figure 10. The lift and pitching-moment curves give no indication of flow separation on the TE for the 15° flap setting in the presence of a 15° leading-edge flap deflection. Trimmed lift coefficients vary from 0.65 to 1.81 with values of $C_{L,Buffet}$ from 1.20 to 1.45.

The data in figure 11 show the effect of TE deflections in the presence of a 5° MID deflection on the longitudinal aerodynamic characteristics. Comparing the data in figure 8 with that in figure 11, it is seen that the 5° MID deflections increase both $C_{L,t}$ and $C_{L,Buffet}$ for each TE setting. The maximum $C_{L,t}$ shown in figure 11 is 1.95 which has associated with it $C_{L,Buffet} = 1.30$.

In general, the data presented in figures 8 to 11 show significant gains in $C_{L,t}$ and $C_{L,Buffet}$ for this wing-canard configuration attained by deflecting the wing flap systems, with the maximum $C_{L,t}$ equal to 1.95 and maximum $C_{L,Buffet}$ of 1.30. The buffet data indicate buffet onset occurring at lift coefficients less than $C_{L,t}$ for those configurations with both MID and TE deflections of more than 5°.

Discussion Summary

The data in figures 12 to 14 summarize some of the previous discussions. Figure 12 shows the effect of leading-edge flap deflection on attaining buffet-free trimmed lift coefficients. The data show that deflecting the leading-edge flaps 15° substantially increases the maximum value of buffet-free $C_{L,t}$ attained. For no leading-edge flap deflection, the trimmed lift coefficient equals the lift coefficient at which buffet onset occurs at a lift coefficient of 0.70, while for the 15° leading-edge flap deflection $C_{L,t}$ equals $C_{L,Buffet}$ at a lift coefficient of approximately 1.30. It should be pointed out that buffet intensity cannot be determined from these data; thus, the highest trimmed lift coefficients ($C_{L,t} \approx 2.0$) may be attainable if the buffet intensity is not too great. All the data attained in this investigation fell between the two data lines shown in figure 12.

The data in figure 13 show the drag envelope for the trimmed conditions obtained from the configurations tested. The variation of C_D for different model configurations at a given trimmed lift coefficient is of the order of 10 percent. The insensitivity of canard lift to changes in wing lift is shown in figure 14. The symbol $\Delta C_{L,c}$ is the lift on the canard in the presence of

deflected wing flaps minus the lift on the canard in the presence of the undeflected wing flaps. Similarly $\Delta C_{L,w}$ is the lift on the wing with the flaps deflected minus the lift on the wing without the flaps deflected.

Comparison of Wing Lift With Linear Theory

To help determine the type of flow that may be present on this wing in the presence of the canard, figure 15 presents a comparison of experimental wing lift with linear potential theory. The experimental and theoretical data in figure 15 are for the wing without flap deflections in the presence of the canard. The vortex-lattice lifting theory program of reference 15 was used. Since the average slope is greater for the experimental data than the theory, it can be assumed that there is vortex lift associated with the wing. The vortex-lift line is not presented in figure 15 since there are no existing methods for calculating vortex lift on wings with rounded leading edges. This hypothesis is further substantiated when it is considered that adding the trigonometric terms to the linear-potential-theory line would further decrease the theoretical potential lift (ref. 13); thus, the underprediction of lift by potential theory is increased.

CONCLUDING REMARKS

A close-coupled canard-wing configuration was tested in the Langley high-speed 7- by 10-foot tunnel at a Mach number of 0.30 to determine the effect of changing wing camber on the lift coefficient at which the model is trimmed, the major results may be summarized as follows:

Trimmed lift coefficients of near 2.0 were attained; however, the data indicated that the highest buffet-free trimmed lift coefficient attainable was approximately 1.30. The buffet data used in this investigation were qualitative in nature and gave no indication of buffet intensity. Thus, the trimmed lift coefficient of near 2.0 might be attainable if the buffet intensity was not too high. The data showed that there was approximately a 10-percent variation in drag coefficient, for different model configurations, at a given trimmed lift coefficient. Large increases in wing lift had only small effects on canard lift.

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June 1, 1978

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TABLE I.- GEOMETRIC CHARACTERISTICS OF MODEL

Body length, cm (in.)	96.52 (38.00)
Wing:	
Aspect ratio, b^2/S_w	2.5
b/2, cm (in.)	25.4 (10.00)
Λ_w, deg	44
$\bar{c}$, cm (in.)	23.32 (9.18)
Longitudinal model station of $\bar{c}/4$, cm (in.)	63.75 (25.10)
Airfoil section	See table II
S_w, cm^2 (in^2)	1032.26 (160.0)
Root chord (at fuselage center line), cm (in.)	33.86 (13.33)
Tip chord, cm (in.)	6.77 (2.67)
Maximum thickness, percent chord, at -	
Root	6.0
Tip	4.0
Canard:	
Λ_c, deg	51.7
Airfoil section	Circular arc
S_c (exposed area), cm^2 (in^2)	288.73 (44.75)
Half span, cm (in.)	17.25 (6.79)
Root chord (at fuselage), cm (in.)	17.90 (7.05)
Tip chord, cm (in.)	3.58 (1.41)
Maximum thickness, percent chord at -	
Root	6.0
Tip	4.0

TABLE II - ORDINATES OF CAMBERED WING

[Design lift coefficient = 0 35]

x/c	$\frac{y}{b/2}$ = 0 131		$\frac{y}{b/2}$ = 0.259		$\frac{y}{b/2}$ = 0 383		$\frac{y}{b/2}$ = 0 500		$\frac{y}{b/2}$ = 0 609		$\frac{y}{b/2}$ = 0 707		$\frac{y}{b/2}$ = 0 793		$\frac{y}{b/2}$ = 0 866		$\frac{y}{b/2}$ = 0 924		$\frac{y}{b/2}$ = 0.966		$\frac{y}{b/2}$ = 0 991	
	$\frac{c}{c}$ = 1 300		$\frac{c}{c}$ = 1 151		$\frac{c}{c}$ = 1 009		$\frac{c}{c}$ = 0 872		$\frac{c}{c}$ = 0.745		$\frac{c}{c}$ = 0 630		$\frac{c}{c}$ = 0 531		$\frac{c}{c}$ = 0 445		$\frac{c}{c}$ = 0 379		$\frac{c}{c}$ = 0 330		$\frac{c}{c}$ = 0 300	
	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c	z_u/c	z_l/c
0 00	0 0599	0 0599	0.0518	0 0518	0 0459	0 0459	0 0417	0 0417	0 0370	0 0370	0 0320	0 0320	0 0258	0 0258	0 0180	0 0182	0 0091	0 0091	0 0010	0 0010	-0 0096	-0 0096
03	0722	.0515	0640	.0445	.0581	0396	.0538	0363	0490	.0324	.0440	.0280	.0377	.0225	.0300	.0154	0208	.0066	0104	- 0035	0015	- 0120
05	0771	.0487	.0692	.0423	.0634	0380	0593	0351	.0546	0317	0497	0278	0437	0227	0362	0159	.0270	0074	.0167	- 0024	0079	- 0109
08	.0803	.0461	.0727	.0404	.0671	0365	0631	0340	0586	0310	0539	.0275	0480	0227	.0407	0164	0318	0082	.0217	- 0014	0131	- 0095
.10	0827	0437	0753	0385	.0700	0351	0661	.0330	.0618	0304	.0573	0272	0516	0228	0445	0168	0358	0089	0260	- 0002	0178	- 0079
.15	0860	0397	.0793	.0355	.0744	.0329	.0709	0315	0670	0296	0629	.0271	0577	.0234	.0510	0181	0428	0109	0337	0025	0261	- 0045
20	.0881	0363	0821	.0331	0778	0313	.0747	.0306	0712	0294	0676	0276	0628	0245	0567	.0199	.0490	.0134	0404	0056	0333	- 0008
25	.0891	0332	0838	.0309	.0800	0299	.0773	0298	0743	0292	0711	.0280	0669	0256	.0612	.0216	0541	0157	0461	0086	0395	0028
30	0889	.0302	0842	.0287	0809	0283	0785	0286	.0759	.0285	.0732	.0279	0694	0261	0643	.0227	0579	0175	0505	.0111	.0445	0059
.35	.0874	.0271	.0833	0262	.0804	0263	.0783	.0270	.0761	0274	0737	0270	0704	0258	.0659	.0231	.0601	0187	.0536	.0130	0482	.0085
.40	.0848	.0240	.0812	0237	0787	0242	.0769	0252	0750	.0259	0729	0260	0700	0251	.0660	0230	0610	.0192	0553	0145	0506	0106
45	0812	.0214	0781	0216	.0759	.0224	0744	0236	.0728	0245	.0710	0249	.0686	0244	0652	0228	0608	0197	.0558	0157	0517	0124
50	0768	0194	.0742	.0200	.0724	.0210	0712	0225	.0699	.0236	0685	0242	.0665	0241	.0636	0228	0598	.0203	0554	0168	0518	0140
55	0718	.0179	0698	.0189	.0684	0201	.0675	0217	.0665	0230	0655	0239	0639	0240	0614	0231	0581	0210	0542	0179	0509	0153
60	0664	0168	.0649	0180	.0639	0194	0633	0211	0626	.0226	.0619	0237	0607	0240	.0587	0234	0558	.0216	0522	.0188	0491	0164
65	.0603	0157	0592	.0171	0586	.0187	0583	0204	.0579	.0219	0575	0231	0566	.0236	0549	.0232	0525	0217	0492	.0192	0464	0170
70	.0534	0145	0527	.0160	.0524	0175	0523	0193	.0521	.0208	.0519	0220	0514	0225	.0500	0223	0479	0211	0451	0189	.0427	0169
75	.0457	0130	.0453	.0145	.0452	0159	0452	0175	0457	.0193	.0452	.0200	.0449	0206	.0438	.0205	.0422	0196	0398	.0178	0378	.0162
80	0375	.0112	0373	.0125	.0373	0138	0375	0152	0376	.0164	.0376	0174	.0375	0180	.0367	.0180	.0354	0173	.0336	.0159	.0319	0146
85	0291	.0094	.0292	.0105	.0293	0116	.0295	.0128	0297	0138	0299	.0147	.0299	0152	0293	0153	.0283	0146	0267	0134	0253	0123
90	0208	.0075	0210	.0085	0213	.0095	0217	0105	.0221	0114	0224	0122	.0224	0126	.0220	.0126	0210	0119	0195	0106	0180	.0092
95	0119	0052	0123	0059	.0127	.0066	0131	.0074	0136	.0081	0139	.0087	0141	0091	.0137	.0090	.0129	0082	0144	0069	0099	0055
1 00	0001	-.0001	0001	-.0001	.0001	-.0001	0001	-.0001	0001	-.0001	.0001	-.0001	.0001	-.0001	.0001	-.0001	0001	- 0001	0001	- 0001	0001	- 0001

TABLE III.- TEST CONFIGURATIONS

Configuration	Flap deflections, deg											Canard
	LE1	LE2	LE3	LE4	MID1	MID2	MID3	TE1	TE2	TE3	TE4	
1	0	0	0	0	0	0	0	0	0	0	0	On
2	0	0	0	10	0	0	0	0	0	0	0	On
3	0	0	10	0	0	0	0	0	0	0	0	On
4	0	10	0	0	0	0	0	0	0	0	0	On
5	10	10	10	10	0	0	0	0	0	0	0	On
6	10	10	10	10	0	0	0	15	15	15	15	On
7	0	0	0	0	0	0	0	15	15	15	15	On
8	0	0	0	0	0	0	0	15	15	15	0	On
9	0	0	0	0	0	0	0	15	15	0	0	On
10	0	0	0	0	5	5	5	15	15	15	15	On
11	0	0	0	0	5	5	5	10	10	10	10	On
12	0	0	0	0	5	5	5	5	5	5	5	On
13	5	5	5	5	5	5	5	5	5	5	5	On
14	15	15	15	15	5	5	5	5	5	5	5	On
15	0	5	10	15	5	5	5	5	5	5	5	On
16	0	5	10	15	10	10	10	10	10	10	10	On
17	0	5	10	15	15	15	15	15	15	15	15	On
18	15	15	15	15	15	15	15	15	15	15	15	On
19	15	15	15	15	0	0	0	15	15	15	15	On
20	15	15	15	15	0	0	0	10	10	10	10	On
21	15	15	15	15	0	0	0	0	0	0	0	On
22	15	15	15	15	0	0	0	5	5	5	5	On
23	0	0	0	0	0	0	0	5	5	5	5	On
24	0	0	0	0	0	0	0	10	10	10	10	On
25	0	0	0	0	5	5	5	0	0	0	0	On
26	0	0	0	0	10	10	10	0	0	0	0	On
27	0	0	0	0	15	15	15	0	0	0	0	On
28	0	0	0	0	15	15	15	0	0	0	0	Off
29	0	0	0	0	0	0	0	0	0	0	0	Off
30	15	15	15	15	0	0	0	0	0	0	0	Off
31	15	15	15	15	0	0	0	15	15	15	15	Off
32	15	15	15	15	15	15	15	15	15	15	15	Off
33	0	0	0	0	0	0	0	15	15	15	15	Off
34	0	0	0	0	0	0	0	15	15	0	0	Off
35	0	0	0	0	0	0	0	10	10	10	10	Off
36	0	0	0	0	0	0	0	5	5	5	5	Off
37	0	0	0	0	10	10	10	0	0	0	0	Off
38	0	0	0	0	5	5	5	15	15	15	15	Off
39	5	5	5	5	5	5	5	10	10	10	10	Off
40	5	5	5	5	5	5	5	5	5	5	5	Off

TABLE IV.- TEST RESULTS

Configuration 1

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.31	-.1531	-.0950	-.1254	.0443	-.0581	.0004	-.0002
-2.17	-.0215	-.0457	-.1061	.0307	.0242	.0016	.0000
-.11	.1221	.0015	-.0899	.0274	.1206	.0017	.0005
2.08	.2541	.0478	-.0701	.0325	.2063	.0010	.0006
4.14	.3890	.1018	-.0440	.0444	.2872	.0016	.0011
6.22	.5225	.1540	-.0176	.0640	.3686	.0017	.0016
8.37	.6633	.2075	.0089	.0930	.4558	.0028	.0019
10.34	.7976	.2492	.0252	.1292	.5484	.0023	.0019
12.49	.9503	.3008	.0442	.1828	.6494	.0031	.0017
14.63	1.0909	.3509	.0687	.2495	.7400	.0040	.0020
16.75	1.2278	.4011	.0935	.3278	.8267	.0027	.0024
18.88	1.3530	.4441	.1155	.4142	.9089	.0043	.0004
21.00	1.4826	.4872	.1363	.5150	.9954	.0059	-.0013
23.11	1.6009	.5219	.1482	.6208	1.0790	.0057	-.0021
25.21	1.7110	.5542	.1620	.7361	1.1568	.0054	-.0035
27.24	1.8013	.5851	.1811	.8545	1.2161	.0064	-.0013
29.49	1.8848	.6135	.2011	.9892	1.2713	.0101	.0036
31.49	1.9450	.6333	.2169	1.1103	1.3117	.0084	.0020
33.61	1.9841	.6494	.2330	1.2381	1.3347	.0092	.0009
35.65	1.9719	.6539	.2450	1.3395	1.3180	.0125	-.0006
37.60	1.8925	.6467	.2676	1.3899	1.2458	.0260	-.0055
39.68	1.8030	.6323	.2885	1.4346	1.1708	.0448	-.0133
-.10	.1305	.0015	-.0871	.0282	.1289	.0019	.0010

TABLE IV.- Continued

Configuration 2

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.25	-.1584	-.0941	-.1229	.0476	-.0643	.0015	.0000
-2.15	-.0082	-.0377	-.1020	.0346	.0295	.0008	-.0002
-.12	.1138	.0011	-.0888	.0309	.1127	.0009	.0006
2.09	.2528	.0492	-.0699	.0331	.2036	.0011	.0007
4.13	.3778	.1012	-.0445	.0439	.2766	.0016	.0019
6.28	.5203	.1550	-.0175	.0639	.3653	.0023	.0022
8.35	.6537	.2070	.0098	.0907	.4467	.0016	.0015
10.39	.7842	.2514	.0282	.1258	.5328	.0028	.0029
12.58	.9354	.3036	.0514	.1782	.6318	.0038	.0028
14.70	1.0780	.3511	.0715	.2418	.7269	.0037	.0015
16.71	1.2158	.3986	.0908	.3152	.8172	.0029	.0039
18.81	1.3511	.4447	.1116	.4029	.9064	.0036	.0028
21.05	1.4866	.4895	.1386	.5064	.9971	.0042	.0001
23.16	1.6008	.5231	.1509	.6148	1.0777	.0053	-.0037
25.20	1.7142	.5561	.1643	.7310	1.1581	.0061	-.0017
27.30	1.8049	.5860	.1821	.8515	1.2189	.0077	.0009
29.45	1.8841	.6139	.2010	.9802	1.2701	.0081	.0006
31.60	1.9444	.6343	.2191	1.1096	1.3101	.0095	.0052
33.68	1.9783	.6478	.2339	1.2320	1.3305	.0084	.0029
35.72	1.9762	.6548	.2463	1.3404	1.3214	.0096	.0056
37.53	1.9128	.6483	.2618	1.3954	1.2645	.0256	-.0021
-.09	.1172	.0011	-.0876	.0303	.1161	.0020	.0001

TABLE IV.- Continued

Configuration 3

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.21	-.1507	-.0950	-.1230	.0471	-.0557	-.0000	.0004
-2.17	-.0039	-.0400	-.1027	.0343	.0361	.0015	.0001
-.07	.1189	.0005	-.0901	.0295	.1184	.0012	.0005
2.02	.2514	.0471	-.0707	.0331	.2043	.0024	.0004
4.22	.3861	.1013	-.0434	.0451	.2848	.0023	.0007
6.23	.5159	.1510	-.0189	.0639	.3649	.0017	.0012
8.35	.6605	.2058	.0069	.0927	.4546	.0030	.0013
10.58	.8022	.2528	.0253	.1306	.5493	.0026	.0016
12.55	.9398	.3001	.0451	.1765	.6397	.0033	.0022
14.63	1.0825	.3476	.0668	.2373	.7348	.0022	.0024
16.75	1.2255	.3978	.0911	.3148	.8277	.0027	.0039
18.82	1.3475	.4409	.1150	.3987	.9066	.0033	.0020
21.11	1.4795	.4917	.1455	.5021	.9878	.0029	.0005
23.21	1.5660	.5178	.1660	.6012	1.0482	.0040	-.0019
25.23	1.6794	.5509	.1717	.7177	1.1285	.0053	.0027
27.32	1.7890	.5835	.1862	.8449	1.2055	.0068	.0012
29.50	1.8791	.6127	.2039	.9793	1.2664	.0095	.0011
31.54	1.9407	.6312	.2197	1.1034	1.3095	.0103	.0025
33.54	1.9753	.6459	.2350	1.2215	1.3293	.0112	-.0005
35.66	1.9730	.6533	.2491	1.3331	1.3197	.0144	.0016
37.67	1.8934	.6458	.2667	1.3880	1.2476	.0253	-.0112
-.03	.1198	.0006	-.0883	.0296	.1192	.0015	.0006

TABLE IV.- Continued

Configuration 4

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.30	-.1412	-.0918	-.1260	.0467	-.0494	.0019	.0004
-2.09	-.0127	-.0434	-.1063	.0332	.0307	.0022	.0003
-.19	.1219	.0011	-.0933	.0299	.1208	.0007	.0009
2.02	.2530	.0503	-.0690	.0338	.2028	.0022	.0013
4.09	.3953	.1036	-.0426	.0461	.2917	.0029	.0019
6.21	.5253	.1561	-.0160	.0654	.3692	.0026	.0017
8.24	.6615	.2071	.0077	.0929	.4544	.0023	.0015
10.46	.8115	.2572	.0264	.1331	.5544	.0018	.0023
12.57	.9569	.3061	.0471	.1825	.6508	.0033	.0026
14.67	1.0993	.3534	.0668	.2442	.7459	.0027	.0035
16.87	1.2369	.4042	.0929	.3238	.8327	.0029	.0012
18.86	1.3633	.4480	.1100	.4126	.9154	.0032	.0011
20.86	1.4736	.4874	.1328	.5027	.9862	.0041	-.0018
23.03	1.5781	.5206	.1525	.6046	1.0576	.0059	-.0013
25.13	1.6559	.5487	.1683	.7099	1.1072	.0069	-.0064
27.36	1.7662	.5823	.1855	.8429	1.1840	.0048	.0015
29.34	1.8626	.6092	.1979	.9696	1.2534	.0081	.0020
31.49	1.9399	.6321	.2162	1.1051	1.3079	.0095	.0038
33.49	1.9733	.6467	.2341	1.2223	1.3266	.0120	.0070
35.55	1.9702	.6537	.2479	1.3287	1.3166	.0138	.0045
37.52	1.9072	.6494	.2722	1.3930	1.2578	.0315	.0051
-.14	.1242	.0001	-.0894	.0297	.1241	.0016	.0005

TABLE IV.- Continued

Configuration 5

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.29	-.1702	-.0959	-.1223	.0559	-.0743	.0016	.0008
-2.12	-.0270	-.0437	-.1034	.0405	.0167	.0010	.0007
.03	.1017	-.0019	-.0900	.0335	.1036	.0011	.0004
1.87	.2400	.0449	-.0725	.0350	.1950	.0014	.0011
4.06	.3841	.1015	-.0445	.0458	.2826	.0027	.0014
6.18	.5221	.1562	-.0171	.0649	.3660	.0023	.0015
8.37	.6740	.2145	.0109	.0944	.4596	.0022	.0022
10.49	.8065	.2598	.0318	.1291	.5467	.0031	.0014
12.54	.9473	.3075	.0514	.1737	.6398	.0033	.0016
14.55	1.0877	.3510	.0708	.2288	.7367	.0023	.0022
16.64	1.2374	.4041	.0905	.3025	.8333	.0050	.0034
18.73	1.3521	.4473	.1165	.3872	.9048	.0029	.0027
20.92	1.4726	.4901	.1368	.4910	.9825	.0023	.0010
22.96	1.5787	.5180	.1479	.5900	1.0608	.0031	-.0009
25.24	1.7060	.5544	.1620	.7171	1.1517	.0059	-.0001
27.29	1.8023	.5848	.1768	.8381	1.2175	.0096	-.0022
29.27	1.8873	.6095	.1918	.9604	1.2778	.0085	-.0011
31.31	1.9552	.6311	.2093	1.0890	1.3242	.0082	.0012
33.41	1.9927	.6478	.2283	1.2152	1.3449	.0056	.0027
35.47	1.9865	.6534	.2422	1.3205	1.3331	.0113	-.0038
37.62	1.9047	.6456	.2660	1.3833	1.2591	.0305	-.0024
-.10	.1131	-.0009	-.0850	.0342	.1140	.0006	.0008

TABLE IV.- Continued

Configuration 6

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.07	.1747	-.0795	-.2863	.0555	.2542	.0018	.0002
-1.94	.3300	-.0250	-.2700	.0537	.3550	.0017	.0001
-.14	.4526	.0150	-.2581	.0591	.4376	.0030	.0005
2.13	.5798	.0624	-.2355	.0736	.5174	.0022	.0009
4.31	.7156	.1188	-.2102	.0960	.5968	.0027	.0020
6.40	.8432	.1708	-.1806	.1246	.6724	.0017	.0015
8.44	.9725	.2213	-.1546	.1609	.7512	.0033	.0022
10.54	1.1060	.2691	-.1327	.2067	.8369	.0025	.0012
12.56	1.2394	.3162	-.1110	.2613	.9232	.0035	.0025
14.71	1.3857	.3663	-.0897	.3330	1.0194	.0036	.0047
16.90	1.5359	.4183	-.0672	.4244	1.1176	.0034	.0018
19.02	1.6170	.4633	-.0243	.5207	1.1536	.0037	.0010
21.14	1.7204	.5038	-.0022	.6293	1.2166	.0046	-.0036
23.18	1.8322	.5363	.0160	.7433	1.2959	.0051	-.0021
25.23	1.9214	.5696	.0356	.8588	1.3519	.0064	-.0038
27.28	1.9936	.5983	.0580	.9814	1.3953	.0083	-.0023
29.46	2.0670	.6272	.0812	1.1211	1.4398	.0121	-.0025
31.58	2.1180	.6474	.1015	1.2552	1.4706	.0096	.0028
33.72	2.1348	.6606	.1249	1.3815	1.4742	.0109	.0036
35.60	2.0108	.6527	.1692	1.4096	1.3581	.0344	-.0092
37.60	1.9116	.6435	.2042	1.4488	1.2681	.0489	-.0227
.03	.4550	.0142	-.2575	.0596	.4408	.0027	.0012

TABLE IV.- Continued

Configuration 7

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.14	.1914	-.0810	-.2940	.0467	.2723	.0024	-.0001
-1.92	.3242	-.0313	-.2747	.0482	.3555	.0022	.0007
.22	.4479	.0118	-.2593	.0587	.4361	.0025	.0009
2.15	.5863	.0637	-.2366	.0742	.5225	.0032	.0015
4.27	.7155	.1172	-.2082	.0960	.5982	.0028	.0019
6.40	.8467	.1705	-.1806	.1264	.6761	.0039	.0025
8.53	.9849	.2226	-.1559	.1676	.7622	.0033	.0023
10.47	1.1134	.2671	-.1364	.2139	.8463	.0030	.0020
12.65	1.2647	.3187	-.1143	.2810	.9460	.0023	.0039
14.71	1.3935	.3681	-.0878	.3548	1.0253	.0030	.0043
16.92	1.4950	.4163	-.0491	.4460	1.0787	.0036	-.0020
19.07	1.6076	.4633	-.0192	.5452	1.1443	.0041	.0052
21.11	1.7109	.5046	.0053	.6473	1.2063	.0047	-.0006
23.09	1.8278	.5381	.0165	.7602	1.2897	.0050	.0018
25.27	1.9106	.5703	.0410	.8801	1.3403	.0047	.0021
27.32	1.9887	.6020	.0637	1.0051	1.3866	.0069	-.0018
29.52	2.0555	.6302	.0880	1.1435	1.4253	.0092	.0011
31.53	2.0998	.6494	.1072	1.2669	1.4504	.0092	.0006
33.66	2.1099	.6621	.1284	1.3877	1.4478	.0073	.0068
35.65	1.9614	.6495	.1828	1.4009	1.3119	.0467	-.0121
37.54	1.9000	.6432	.2049	1.4545	1.2567	.0489	-.0143
.04	.4576	.0151	-.2566	.0586	.4425	.0029	.0020
-.09	-.1899	-.1510	.8690	-.0023	-.0389	1.1016	1.2842

TABLE IV.- Continued

Configuration 8

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.09	.1460	-.0813	-.2645	.0457	.2273	.0025	-.0003
-2.03	.2934	-.0250	-.2420	.0462	.3185	.0026	.0001
-.07	.4042	.0118	-.2274	.0531	.3924	.0037	.0011
2.17	.5335	.0601	-.2067	.0679	.4734	.0028	.0006
4.24	.6656	.1144	-.1784	.0879	.5512	.0030	.0010
6.36	.8000	.1683	-.1501	.1168	.6317	.0034	.0012
8.48	.9335	.2205	-.1255	.1548	.7129	.0024	.0013
10.57	1.0747	.2668	-.1082	.2037	.8079	.0023	.0015
12.74	1.2213	.3178	-.0863	.2692	.9035	.0020	.0019
14.82	1.3575	.3676	-.0617	.3439	.9899	.0030	.0025
16.94	1.4513	.4129	-.0311	.4287	1.0385	.0059	-.0033
19.06	1.5696	.4625	-.0020	.5274	1.1071	.0045	.0022
21.07	1.6868	.5024	.0189	.6314	1.1844	.0058	.0041
23.20	1.7979	.5362	.0326	.7476	1.2618	.0051	.0008
25.34	1.8813	.5684	.0542	.8669	1.3130	.0057	.0021
27.26	1.9575	.5994	.0785	.9828	1.3582	.0097	.0000
29.63	2.0323	.6296	.1043	1.1290	1.4026	.0126	-.0008
31.49	2.0774	.6458	.1201	1.2437	1.4316	.0102	-.0011
33.63	2.0940	.6594	.1400	1.3666	1.4345	.0078	.0103
35.62	1.9720	.6520	.1864	1.3985	1.3200	.0345	-.0132
-.04	.4082	.0134	-.2268	.0532	.3948	.0016	.0003

TABLE IV.- Continued

Configuration 9

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.00	.0480	-.0827	-.2108	.0438	.1308	.0014	.0006
-1.96	.1908	-.0289	-.1895	.0405	.2197	.0017	.0008
-.11	.2983	.0081	-.1754	.0444	.2901	.0019	.0015
2.09	.4383	.0586	-.1530	.0555	.3797	.0024	.0018
4.21	.5658	.1104	-.1268	.0727	.4553	.0025	.0024
6.33	.6958	.1623	-.0992	.0979	.5336	.0031	.0022
8.52	.8395	.2177	-.0744	.1342	.6218	.0031	.0027
10.73	.9939	.2683	-.0552	.1838	.7256	.0027	.0038
12.61	1.1221	.3103	-.0394	.2363	.8119	.0029	.0039
14.73	1.2620	.3608	-.0156	.3081	.9012	.0026	.0029
16.99	1.3853	.4123	.0144	.3998	.9730	.0029	-.0000
18.92	1.4926	.4550	.0398	.4862	1.0376	.0035	.0043
21.13	1.6020	.4981	.0612	.5917	1.1040	.0045	-.0020
23.12	1.7054	.5293	.0732	.6983	1.1761	.0051	-.0034
25.22	1.7924	.5603	.0904	.8119	1.2321	.0091	-.0045
27.43	1.8928	.5933	.1076	.9456	1.2994	.0090	-.0053
29.49	1.9735	.6212	.1271	1.0756	1.3523	.0149	-.0039
31.59	2.0402	.6419	.1429	1.2098	1.3983	.0095	-.0017
33.59	2.0682	.6563	.1611	1.3283	1.4120	.0131	.0037
35.68	1.9627	.6513	.2080	1.3734	1.3114	.0331	-.0198
.02	.3000	.0071	-.1744	.0443	.2929	.0012	.0011

TABLE IV.- Continued

Configuration 10

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.01	.3209	-.0713	-.3443	.0549	.3922	.0028	-.0003
-1.98	.4578	-.0208	-.3240	.0626	.4786	.0022	.0008
.08	.5714	.0204	-.3069	.0761	.5510	.0023	.0013
2.15	.6986	.0702	-.2825	.0948	.6284	.0025	.0011
4.38	.8298	.1255	-.2528	.1222	.7044	.0031	.0013
6.44	.9630	.1781	-.2279	.1570	.7849	.0035	.0018
8.54	1.0968	.2289	-.2031	.2014	.8679	.0032	.0039
10.58	1.2283	.2768	-.1800	.2543	.9515	.0033	.0043
12.78	1.3667	.3242	-.1587	.3253	1.0425	.0020	.0040
14.90	1.4850	.3760	-.1233	.4074	1.1090	.0046	-.0037
16.84	1.5646	.4208	-.0849	.4939	1.1438	.0039	-.0057
19.12	1.6806	.4720	-.0545	.6026	1.2086	.0039	-.0000
21.03	1.7683	.5088	-.0305	.6991	1.2595	.0056	-.0036
23.18	1.8952	.5465	-.0149	.8249	1.3487	.0053	.0017
25.33	1.9430	.5712	.0118	.9334	1.3718	.0065	.0009
27.37	2.0310	.6091	.0383	1.0670	1.4219	.0084	-.0019
29.63	2.0802	.6352	.0679	1.1991	1.4450	.0105	-.0016
31.63	2.1149	.6526	.0893	1.3205	1.4624	.0105	-.0014
33.60	2.1074	.6632	.1115	1.4265	1.4442	.0153	.0056
35.57	1.9359	.6488	.1728	1.4195	1.2872	.0398	-.0090
37.51	1.8811	.6443	.1946	1.4821	1.2368	.0522	-.0158
39.49	1.7981	.6287	.2136	1.5253	1.1695	.0490	-.0109
.10	.5742	.0195	-.3057	.0765	.5546	.0019	.0005

TABLE IV.- Continued

Configuration 11

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.06	.2157	-.0777	-.2933	.0462	.2934	.0017	.0005
-2.22	.3452	-.0292	-.2741	.0486	.3744	.0026	.0005
-.12	.4759	.0156	-.2571	.0592	.4603	.0019	.0012
2.18	.6063	.0651	-.2354	.0764	.5411	.0019	.0016
4.44	.7443	.1225	-.2043	.1011	.6218	.0034	.0019
6.35	.8624	.1706	-.1803	.1298	.6917	.0035	.0027
8.58	1.0117	.2250	-.1555	.1740	.7867	.0033	.0023
10.72	1.1504	.2751	-.1336	.2269	.8753	.0019	.0039
12.66	1.2807	.3202	-.1112	.2873	.9605	.0035	.0027
14.88	1.4189	.3717	-.0836	.3686	1.0472	.0020	.0020
16.93	1.5006	.4186	-.0431	.4553	1.0820	.0029	-.0012
19.06	1.6132	.4667	-.0129	.5531	1.1465	.0044	.0044
21.18	1.7136	.5065	.0116	.6593	1.2071	.0032	.0016
23.13	1.8276	.5393	.0212	.7712	1.2883	.0036	.0055
25.30	1.9141	.5727	.0458	.8934	1.3414	.0086	.0018
27.53	1.9967	.6068	.0707	1.0293	1.3899	.0104	-.0031
29.51	2.0560	.6320	.0951	1.1543	1.4240	.0113	-.0031
31.57	2.0877	.6488	.1166	1.2740	1.4389	.0091	.0031
33.75	2.0927	.6612	.1375	1.3956	1.4315	.0093	.0039
35.58	1.9772	.6530	.1756	1.4223	1.3243	.0291	-.0093
37.67	1.8647	.6363	.2093	1.4506	1.2284	.0495	-.0142
.08	.4791	.0153	-.2551	.0595	.4638	.0021	.0015

TABLE IV.- Continued

Configuration 12

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.08	.1105	-.0820	-.2418	.0411	.1925	.0021	.0006
-1.73	.2447	-.0310	-.2218	.0401	.2757	.0028	.0003
.00	.3696	.0106	-.2065	.0471	.3590	.0017	.0007
1.99	.4987	.0602	-.1852	.0600	.4385	.0028	.0014
4.29	.6404	.1151	-.1584	.0815	.5252	.0032	.0019
6.43	.7728	.1683	-.1311	.1103	.6045	.0034	.0026
8.50	.9110	.2186	-.1098	.1478	.6923	.0029	.0015
10.59	1.0452	.2654	-.0889	.1952	.7798	.0037	.0028
12.68	1.1745	.3140	-.0627	.2527	.8605	.0037	.0034
14.82	1.3225	.3641	-.0386	.3299	.9584	.0033	.0049
17.07	1.4230	.4150	.0018	.4209	1.0080	.0046	-.0007
19.06	1.5336	.4594	.0286	.5109	1.0743	.0035	-.0009
21.17	1.6345	.4999	.0523	.6136	1.1345	.0064	.0013
23.25	1.7575	.5335	.0616	.7301	1.2240	.0052	.0033
25.32	1.8487	.5661	.0824	.8466	1.2826	.0057	.0028
27.53	1.9409	.5996	.1036	.9826	1.3413	.0084	.0001
29.60	2.0019	.6257	.1263	1.1080	1.3763	.0077	.0010
31.62	2.0421	.6439	.1464	1.2292	1.3981	.0121	.0027
33.72	2.0609	.6561	.1660	1.3497	1.4048	.0128	.0073
35.73	1.9958	.6556	.1926	1.4202	1.3402	.0284	-.0043
37.52	1.8782	.6410	.2292	1.4319	1.2372	.0509	-.0086
.07	.3731	.0091	-.2046	.0468	.3639	.0036	.0013

TABLE IV.- Continued

Configuration 13

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.13	.0999	-.0831	-.2396	.0448	.1831	.0003	.0003
-2.03	.2474	-.0247	-.2208	.0419	.2721	.0026	.0002
-.10	.3656	.0101	-.2073	.0463	.3555	.0015	.0006
2.06	.5061	.0605	-.1863	.0596	.4456	.0024	.0013
4.36	.6440	.1164	-.1591	.0807	.5276	.0040	.0018
6.23	.7688	.1678	-.1332	.1060	.6009	.0040	.0022
8.42	.9020	.2187	-.1081	.1425	.6834	.0033	.0019
10.51	1.0375	.2657	-.0868	.1879	.7718	.0033	.0030
12.72	1.1808	.3149	-.0647	.2470	.8659	.0035	.0029
14.77	1.3180	.3645	-.0413	.3168	.9535	.0032	.0060
16.84	1.4372	.4116	-.0105	.3995	1.0256	.0037	.0004
19.07	1.5426	.4593	.0214	.5021	1.0833	.0057	-.0036
21.07	1.6286	.4966	.0477	.5960	1.1319	.0040	.0008
23.15	1.7448	.5303	.0575	.7113	1.2145	.0031	.0009
25.32	1.8584	.5653	.0746	.8381	1.2932	.0051	.0009
27.53	1.9443	.5984	.0970	.9715	1.3459	.0100	-.0017
29.54	2.0084	.6253	.1213	1.0969	1.3832	.0107	-.0028
31.57	2.0546	.6434	.1410	1.2202	1.4111	.0114	.0056
33.76	2.0662	.6555	.1621	1.3425	1.4106	.0100	.0046
35.77	1.9979	.6533	.1875	1.4124	1.3446	.0208	-.0046
-.11	.3683	.0100	-.2071	.0459	.3583	.0014	.0008

TABLE IV.- Continued

Configuration 14

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.08	.0812	-.0830	-.2300	.0556	.1642	.0013	.0000
-1.92	.2272	-.0332	-.2177	.0496	.2604	.0020	-.0003
.12	.3517	.0061	-.2079	.0515	.3457	.0020	.0004
1.96	.4986	.0573	-.1889	.0600	.4413	.0033	.0007
4.31	.6435	.1153	-.1612	.0797	.5281	.0038	.0016
6.36	.7726	.1659	-.1360	.1073	.6068	.0033	.0017
8.51	.9032	.2183	-.1082	.1419	.6849	.0036	.0021
10.45	1.0279	.2627	-.0872	.1813	.7652	.0043	.0025
12.67	1.1706	.3154	-.0614	.2359	.8552	.0050	.0035
14.76	1.3078	.3620	-.0387	.2985	.9458	.0042	.0042
17.00	1.4551	.4132	-.0143	.3841	1.0418	.0031	.0046
19.11	1.5551	.4580	.0173	.4811	1.0971	.0040	.0026
21.18	1.6503	.4971	.0408	.5843	1.1532	.0048	-.0042
23.27	1.7633	.5302	.0540	.6989	1.2331	.0063	-.0030
25.32	1.8623	.5620	.0714	.8165	1.3003	.0099	-.0056
27.36	1.9425	.5905	.0895	.9384	1.3520	.0111	-.0043
29.58	2.0200	.6201	.1127	1.0798	1.3999	.0119	-.0022
31.58	2.0719	.6386	.1326	1.2051	1.4333	.0133	-.0003
33.71	2.0870	.6513	.1566	1.3274	1.4356	.0137	.0051
35.66	2.0622	.6543	.1722	1.4209	1.4079	.0129	.0059
-.02	.3622	.0095	-.2064	.0515	.3527	.0023	.0004

TABLE IV.- Continued

Configuration 15

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.12	.0774	-.0848	-.2336	.0495	.1622	.0019	.0000
-2.18	.2316	-.0309	-.2180	.0454	.2625	.0023	-.0002
-.18	.3618	.0111	-.2059	.0483	.3507	.0024	.0009
2.09	.5098	.0643	-.1856	.0601	.4455	.0032	.0012
4.20	.6305	.1134	-.1606	.0788	.5172	.0024	.0011
6.44	.7710	.1696	-.1319	.1076	.6014	.0042	.0020
8.42	.8893	.2173	-.1066	.1394	.6720	.0034	.0021
10.56	1.0303	.2663	-.0828	.1844	.7640	.0041	.0027
12.61	1.1484	.3125	-.0598	.2344	.8359	.0040	.0034
14.74	1.3016	.3626	-.0350	.3054	.9390	.0042	.0022
16.82	1.4257	.4110	-.0047	.3825	1.0147	.0049	.0056
19.06	1.5575	.4600	.0252	.4844	1.0976	.0053	.0028
21.12	1.6377	.4989	.0604	.5814	1.1388	.0038	-.0027
23.34	1.7365	.5342	.0781	.7084	1.2023	.0065	.0021
25.22	1.8313	.5626	.0875	.8187	1.2687	.0073	-.0021
27.27	1.9398	.5987	.1060	.9520	1.3411	.0049	.0064
29.68	2.0129	.6282	.1294	1.0979	1.3847	.0082	-.0006
31.54	2.0585	.6453	.1487	1.2158	1.4133	.0086	.0029
33.68	2.0729	.6563	.1706	1.3366	1.4166	.0100	.0013
35.71	2.0479	.6609	.1882	1.4345	1.3869	.0152	.0000
.02	.3593	.0101	-.2039	.0489	.3491	.0026	.0005

TABLE IV.- Continued

Configuration 16

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.05	.1859	-.0786	-.2816	.0779	.2644	.0003	-.0145
-1.97	.3099	-.0314	-.2656	.0787	.3414	-.0002	-.0122
-.05	.4453	.0146	-.2479	.0863	.4306	.0003	-.0135
2.08	.5699	.0627	-.2245	.1005	.5072	.0011	-.0109
4.31	.7015	.1187	-.1957	.1241	.5828	.0023	-.0107
6.40	.8432	.1718	-.1746	.1550	.6714	.0024	-.0144
8.54	.9783	.2228	-.1511	.1946	.7555	.0044	-.0165
10.62	1.1288	.2702	-.1382	.2456	.8587	.0033	-.0127
12.82	1.2878	.3215	-.1206	.3111	.9663	.0037	-.0074
14.93	1.4404	.3726	-.0979	.3841	1.0679	.0054	.0008
17.02	1.5645	.4213	-.0662	.4719	1.1432	.0041	.0012
19.06	1.6591	.4664	-.0317	.5682	1.1927	.0049	-.0086
21.11	1.7168	.5034	.0022	.6722	1.2134	.0057	-.0032
23.34	1.7964	.5365	.0229	.7926	1.2599	.0096	-.0114
25.47	1.9314	.5746	.0368	.9292	1.3568	.0075	-.0020
27.56	2.0161	.6068	.0597	1.0578	1.4093	.0074	.0009
29.52	2.0752	.6322	.0834	1.1821	1.4430	.0064	-.0009
31.84	2.1028	.6512	.1131	1.3167	1.4516	.0112	.0031
33.75	2.0931	.6599	.1341	1.4159	1.4333	.0113	.0046
35.63	2.0297	.6578	.1615	1.4824	1.3720	.0123	-.0030
.11	.5074	.0171	-.2640	.0820	.4903	.0049	.0101

TABLE IV.- Continued

Configuration 17

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.07	.4393	-.0688	-.3946	.0902	.5081	.0029	.0003
-2.23	.5737	-.0220	-.3800	.0998	.5958	.0025	.0007
.02	.7089	.0258	-.3634	.1183	.6831	.0029	-.0003
2.30	.8403	.0794	-.3377	.1436	.7609	.0039	.0007
4.41	.9631	.1312	-.3097	.1749	.8318	.0039	.0016
6.57	1.0884	.1863	-.2792	.2141	.9021	.0042	.0019
8.63	1.2211	.2352	-.2572	.2613	.9859	.0042	.0019
10.72	1.3598	.2849	-.2358	.3209	1.0750	.0053	.0041
12.80	1.4838	.3330	-.2105	.3887	1.1509	.0034	.0016
14.91	1.6023	.3835	-.1755	.4727	1.2188	.0049	.0066
17.02	1.6713	.4302	-.1280	.5702	1.2411	.0048	.0001
18.96	1.7241	.4728	-.0820	.6563	1.2513	.0051	-.0025
21.09	1.8169	.5129	-.0546	.7697	1.3040	.0041	.0017
23.31	1.9341	.5497	-.0391	.8978	1.3844	.0065	-.0054
25.56	2.0350	.5864	-.0139	1.0366	1.4486	.0079	-.0014
27.58	2.0794	.6161	.0189	1.1509	1.4634	.0091	-.0046
29.68	2.1055	.6393	.0536	1.2707	1.4663	.0094	-.0015
31.76	2.1063	.6534	.0828	1.3823	1.4529	.0107	.0019
33.63	2.0727	.6584	.1062	1.4672	1.4143	.0102	.0018
35.67	1.8998	.6443	.1709	1.4599	1.2555	.0478	-.0177
-.01	.7025	.0239	-.3628	.1181	.6786	.0031	.0009

TABLE IV.- Continued

Configuration 18

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.96	.4268	-.0667	-.3946	.0928	.4935	.0024	-.0006
-1.92	.5565	-.0211	-.3812	.1010	.5776	.0017	-.0001
.19	.7009	.0277	-.3673	.1173	.6732	.0029	-.0001
2.25	.8347	.0784	-.3469	.1410	.7563	.0026	-.0001
4.43	.9629	.1324	-.3183	.1721	.8305	.0036	.0007
6.56	1.0914	.1877	-.2895	.2119	.9037	.0027	.0015
8.62	1.2115	.2346	-.2661	.2563	.9769	.0025	.0013
10.91	1.3530	.2889	-.2379	.3164	1.0641	.0058	.0009
12.90	1.4776	.3322	-.2193	.3793	1.1454	.0036	.0024
14.96	1.5833	.3810	-.1863	.4622	1.2024	.0021	-.0015
16.96	1.6284	.4247	-.1352	.5503	1.2038	.0063	.0017
19.19	1.6966	.4711	-.0948	.6552	1.2254	.0019	-.0016
21.19	1.7776	.5079	-.0667	.7529	1.2697	.0080	-.0052
23.29	1.9121	.5467	-.0557	.8772	1.3654	.0094	-.0135
25.55	2.0499	.5858	-.0385	1.0213	1.4641	.0098	-.0020
27.56	2.0961	.6139	-.0065	1.1379	1.4822	.0099	-.0029
29.59	2.1187	.6352	.0283	1.2525	1.4834	.0098	-.0001
31.75	2.1209	.6519	.0611	1.3696	1.4689	.0124	-.0002
33.84	2.0791	.6577	.0943	1.4637	1.4214	.0176	-.0003
35.66	1.9164	.6460	.1583	1.4532	1.2704	.0511	-.0178
.20	.7002	.0257	-.3677	.1173	.6745	.0017	-.0002

TABLE IV.- Continued

Configuration 19

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.13	.1464	-.0827	-.2836	.0640	.2291	.0029	.0051
-1.90	.2966	-.0299	-.2675	.0599	.3265	.0033	.0069
-.05	.4323	.0134	-.2554	.0646	.4189	.0041	.0054
2.14	.5697	.0628	-.2361	.0764	.5069	.0034	.0078
4.47	.7154	.1237	-.2054	.0998	.5917	.0040	.0077
6.55	.8376	.1733	-.1779	.1282	.6643	.0044	.0084
8.56	.9584	.2222	-.1506	.1621	.7361	.0052	.0073
10.61	1.0938	.2676	-.1307	.2070	.8261	.0041	.0082
12.89	1.2396	.3212	-.1056	.2657	.9184	.0058	.0076
14.99	1.3820	.3697	-.0829	.3332	1.0123	.0031	.0090
16.99	1.5246	.4185	-.0647	.4143	1.1061	.0045	.0092
19.41	1.6444	.4697	-.0331	.5329	1.1747	.0044	.0027
21.52	1.7538	.5108	-.0099	.6460	1.2430	.0073	-.0065
23.35	1.8397	.5400	.0065	.7452	1.2996	.0081	-.0051
25.62	1.9405	.5734	.0258	.8767	1.3671	.0104	-.0074
27.54	2.0090	.6003	.0489	.9928	1.4087	.0164	-.0046
29.74	2.0793	.6281	.0722	1.1320	1.4512	.0127	.0016
31.77	2.1255	.6468	.0944	1.2582	1.4786	.0149	-.0008
33.82	2.1319	.6579	.1201	1.3736	1.4740	.0090	.0074
35.80	2.0947	.6621	.1451	1.4649	1.4326	.0156	.0051
.09	.4630	.0154	-.2663	.0634	.4476	.0031	.0009

TABLE IV.- Continued

Configuration 20

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.17	.0468	-.0864	-.2322	.0611	.1332	.0021	-.0014
-2.09	.1836	-.0388	-.2198	.0537	.2223	.0016	-.0007
-.04	.3333	.0090	-.2069	.0545	.3243	.0022	-.0007
2.28	.4863	.0612	-.1887	.0641	.4251	.0026	-.0003
4.37	.6197	.1154	-.1615	.0821	.5043	.0032	.0006
6.47	.7497	.1683	-.1349	.1085	.5814	.0035	.0016
8.65	.8877	.2212	-.1085	.1437	.6666	.0047	.0017
10.66	1.0130	.2658	-.0873	.1841	.7472	.0035	.0010
12.83	1.1505	.3156	-.0629	.2360	.8349	.0048	.0019
14.95	1.2871	.3642	-.0395	.2974	.9229	.0049	.0049
16.91	1.4206	.4101	-.0167	.3719	1.0105	.0036	.0070
19.06	1.5408	.4547	.0086	.4704	1.0861	.0052	.0060
21.17	1.6381	.4960	.0355	.5746	1.1421	.0058	.0013
23.36	1.7472	.5289	.0513	.6905	1.2183	.0078	-.0000
25.52	1.8591	.5641	.0676	.8177	1.2950	.0064	.0001
27.62	1.9434	.5928	.0849	.9433	1.3506	.0093	-.0037
29.61	2.0198	.6191	.1037	1.0713	1.4007	.0115	.0001
31.69	2.0749	.6379	.1230	1.2014	1.4370	.0046	.0073
33.69	2.0980	.6517	.1476	1.3192	1.4462	.0095	.0078
35.74	2.0760	.6582	.1698	1.4211	1.4177	.0167	-.0001
.02	.3361	.0074	-.2064	.0520	.3287	.0026	.0045

TABLE IV.- Continued

Configuration 21

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.16	-.1659	-.0932	-.1220	.0598	-.0727	.0009	-.0006
-2.10	-.0361	-.0453	-.1044	.0445	.0092	.0012	-.0005
-.19	.1102	.0010	-.0924	.0376	.1092	.0007	-.0008
2.04	.2517	.0487	-.0751	.0377	.2030	.0011	.0001
4.19	.3973	.1056	-.0482	.0466	.2917	.0024	.0007
6.28	.5322	.1578	-.0229	.0657	.3744	.0027	.0011
8.40	.6666	.2065	.0023	.0926	.4600	.0027	.0016
10.38	.7915	.2514	.0225	.1247	.5402	.0021	.0017
12.49	.9252	.3007	.0452	.1668	.6245	.0027	.0022
14.75	1.0670	.3518	.0697	.2218	.7151	.0023	.0015
16.90	1.2273	.4027	.0903	.2943	.8246	.0050	.0029
18.92	1.3532	.4449	.1124	.3734	.9083	.0036	.0035
20.96	1.4682	.4871	.1342	.4718	.9811	.0040	-.0010
22.89	1.5759	.5158	.1420	.5751	1.0601	.0066	-.0015
25.24	1.7007	.5519	.1539	.7037	1.1488	.0056	-.0010
27.44	1.8067	.5832	.1693	.8330	1.2235	.0032	-.0026
29.32	1.8818	.6059	.1839	.9478	1.2759	.0085	-.0008
31.42	1.9615	.6292	.2000	1.0830	1.3323	.0067	.0004
33.66	1.9965	.6455	.2226	1.2139	1.3510	.0053	.0082
35.51	1.9961	.6523	.2387	1.3129	1.3437	.0100	.0055
-.08	.1071	.0000	-.0916	.0370	.1071	.0009	.0002

TABLE IV.- Continued

Configuration 22

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.13	-.0510	-.0889	-.1797	.0563	.0379	.0005	-.0007
-1.99	.0844	-.0405	-.1646	.0448	.1249	.0017	-.0002
-.29	.2292	.0047	-.1533	.0425	.2245	.0019	-.0006
2.30	.3887	.0637	-.1331	.0474	.3250	.0019	-.0001
4.43	.5305	.1165	-.1057	.0625	.4140	.0031	.0009
6.52	.6410	.1599	-.0829	.0838	.4811	.0035	.0009
8.35	.7742	.2115	-.0579	.1122	.5627	.0029	.0011
10.43	.8888	.2520	-.0379	.1468	.6368	.0041	.0024
12.89	1.0776	.3177	-.0083	.2074	.7599	.0046	.0025
14.85	1.1814	.3586	.0122	.2567	.8228	.0046	.0021
16.91	1.3399	.4087	.0341	.3329	.9312	.0041	.0045
19.15	1.4750	.4574	.0604	.4327	1.0176	.0046	.0031
21.57	1.5990	.5026	.0850	.5540	1.0963	.0043	-.0031
23.33	1.6964	.5315	.0963	.6496	1.1649	.0066	-.0029
25.16	1.7881	.5571	.1064	.7517	1.2310	.0068	-.0013
27.48	1.9029	.5933	.1250	.8960	1.3096	.0091	-.0016
29.53	1.9716	.6167	.1426	1.0198	1.3548	.0091	-.0027
32.05	2.0476	.6419	.1668	1.1803	1.4057	.0101	-.0016
33.67	2.0580	.6504	.1833	1.2699	1.4075	.0071	.0040
35.48	2.0503	.6583	.2039	1.3668	1.3920	.0107	.0006
-.06	.2256	.0041	-.1513	.0425	.2216	.0015	.0001

TABLE IV.- Continued

Configuration 23

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.17	-.0417	-.0875	-.1837	.0456	.0459	.0038	.0045
-2.03	.0977	-.0332	-.1551	.0379	.1309	.0040	.0070
-.15	.2124	.0057	-.1408	.0385	.2067	.0040	.0072
2.17	.3435	.0535	-.1194	.0469	.2899	.0040	.0084
4.18	.4760	.1083	-.0909	.0615	.3677	.0041	.0089
6.27	.6098	.1609	-.0666	.0841	.4489	.0033	.0093
8.34	.7521	.2120	-.0461	.1165	.5401	.0036	.0084
10.66	.9085	.2646	-.0308	.1633	.6439	.0041	.0052
12.58	1.0629	.3105	-.0175	.2155	.7524	.0029	.0025
14.67	1.2072	.3598	.0079	.2812	.8474	.0011	.0036
16.97	1.3348	.4124	.0411	.3694	.9224	.0031	.0001
18.99	1.4550	.4556	.0613	.4589	.9994	.0019	.0027
21.10	1.5517	.4981	.0900	.5555	1.0536	.0065	.0004
23.16	1.6634	.5296	.0987	.6644	1.1338	.0063	-.0000
25.22	1.7846	.5634	.1129	.7863	1.2212	.0040	.0019
27.44	1.8950	.5982	.1312	.9261	1.2969	.0097	.0015
29.61	1.9627	.6253	.1524	1.0540	1.3373	.0102	-.0015
31.50	2.0107	.6426	.1716	1.1685	1.3681	.0112	.0030
33.55	2.0314	.6549	.1900	1.2851	1.3766	.0083	.0056
35.53	2.0122	.6598	.2068	1.3808	1.3525	.0120	.0019
-.02	.2405	.0061	-.1528	.0340	.2344	.0014	-.0007

TABLE IV.- Continued

Configuration 24

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.09	.1211	-.0825	-.2597	.0422	.2037	.0026	-.0008
-2.02	.2464	-.0353	-.2415	.0406	.2817	.0031	-.0005
-.13	.3800	.0101	-.2254	.0476	.3700	.0032	-.0001
2.16	.5176	.0605	-.2043	.0619	.4571	.0035	.0005
4.28	.6526	.1150	-.1773	.0827	.5376	.0044	.0022
6.42	.7921	.1701	-.1503	.1121	.6220	.0037	.0025
8.44	.9251	.2194	-.1283	.1490	.7057	.0035	.0021
10.60	1.0719	.2698	-.1070	.1990	.8020	.0040	.0031
12.67	1.2121	.3190	-.0841	.2597	.8931	.0035	.0036
14.89	1.3548	.3699	-.0579	.3373	.9849	.0045	.0054
17.00	1.4486	.4164	-.0211	.4212	1.0322	.0057	-.0032
18.97	1.5586	.4615	.0029	.5103	1.0972	.0038	.0026
21.11	1.6552	.5030	.0301	.6130	1.1521	.0052	.0016
23.25	1.7883	.5382	.0394	.7369	1.2501	.0055	-.0005
25.21	1.8848	.5693	.0554	.8513	1.3155	.0079	-.0000
27.47	1.9596	.6014	.0792	.9873	1.3582	.0157	-.0092
29.45	2.0234	.6267	.0993	1.1091	1.3967	.0099	-.0063
31.61	2.0803	.6485	.1211	1.2450	1.4318	.0131	.0023
33.59	2.1037	.6625	.1405	1.3623	1.4412	.0107	.0051
35.76	2.0317	.6588	.1692	1.4349	1.3729	.0186	-.0004
.04	.3814	.0096	-.2236	.0472	.3718	.0034	.0007

TABLE IV.- Continued

Configuration 25

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.11	-.0160	-.0868	-.1764	.0394	.0708	.0008	-.0007
-2.00	.1112	-.0387	-.1586	.0329	.1499	.0011	.0001
-.18	.2433	.0061	-.1418	.0351	.2372	.0023	-.0001
2.18	.3766	.0546	-.1212	.0446	.3221	.0013	.0004
4.27	.5131	.1109	-.0938	.0612	.4023	.0022	.0005
6.34	.6504	.1635	-.0669	.0853	.4868	.0024	.0012
8.41	.7854	.2140	-.0444	.1180	.5714	.0022	.0005
10.48	.9239	.2644	-.0239	.1609	.6596	.0020	.0018
12.60	1.0651	.3106	-.0024	.2161	.7546	.0022	.0015
14.77	1.2046	.3615	.0257	.2868	.8431	.0026	.0028
16.94	1.3170	.4108	.0606	.3693	.9062	.0021	-.0043
18.93	1.4351	.4532	.0800	.4571	.9819	.0035	-.0020
21.05	1.5359	.4957	.1080	.5561	1.0401	.0034	-.0006
23.00	1.6432	.5260	.1167	.6599	1.1172	.0051	-.0016
25.42	1.7705	.5639	.1346	.7975	1.2066	.0052	.0036
27.45	1.8598	.5949	.1507	.9182	1.2649	.0068	-.0034
29.55	1.9342	.6224	.1727	1.0469	1.3118	.0084	-.0024
31.53	1.9808	.6402	.1922	1.1647	1.3405	.0112	.0033
33.54	2.0035	.6524	.2073	1.2807	1.3510	.0071	.0008
35.68	1.9730	.6560	.2242	1.3778	1.3170	.0126	-.0016
-.03	.2426	.0061	-.1407	.0346	.2365	.0022	.0005

TABLE IV.- Continued

Configuration 26

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.05	.1094	-.0816	-.2309	.0416	.1909	.0023	-.0004
-2.10	.2454	-.0295	-.2097	.0424	.2749	.0020	-.0003
-.12	.3621	.0107	-.1949	.0468	.3514	.0016	.0000
2.15	.4965	.0603	-.1728	.0603	.4362	.0024	.0007
4.30	.6300	.1161	-.1447	.0807	.5139	.0023	.0009
6.34	.7608	.1699	-.1178	.1080	.5909	.0021	.0006
8.61	.9141	.2240	-.0941	.1497	.6900	.0023	.0010
10.44	1.0320	.2665	-.0740	.1910	.7656	.0034	.0017
12.60	1.1622	.3140	-.0485	.2506	.8482	.0025	.0021
14.74	1.2986	.3645	-.0207	.3250	.9341	.0034	.0025
16.92	1.3956	.4145	.0203	.4122	.9811	.0023	-.0042
19.07	1.5049	.4601	.0491	.5061	1.0448	.0045	.0011
20.94	1.6001	.4981	.0710	.5986	1.1020	.0045	.0007
23.02	1.7200	.5328	.0826	.7149	1.1872	.0056	-.0040
25.21	1.8248	.5666	.1009	.8377	1.2582	.0060	-.0002
27.40	1.9168	.6012	.1243	.9712	1.3157	.0079	-.0007
29.41	1.9727	.6253	.1465	1.0901	1.3475	.0090	-.0033
31.76	2.0160	.6458	.1724	1.2280	1.3701	.0095	.0018
33.69	2.0254	.6574	.1893	1.3356	1.3680	.0067	.0081
35.45	1.9863	.6570	.2044	1.4071	1.3293	.0160	-.0009
-.01	.3614	.0107	-.1935	.0466	.3507	.0011	.0002

TABLE IV.- Continued

Configuration 27

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.03	.2319	-.0762	-.2845	.0506	.3082	.0026	.0005
-1.93	.3536	-.0301	-.2655	.0545	.3837	.0023	.0011
-.01	.4901	.0182	-.2462	.0658	.4718	.0017	.0010
2.34	.6236	.0690	-.2231	.0842	.5546	.0023	.0017
4.38	.7464	.1214	-.1937	.1071	.6250	.0028	.0021
6.47	.8840	.1754	-.1689	.1404	.7086	.0028	.0022
8.63	1.0233	.2275	-.1439	.1840	.7958	.0020	.0021
10.56	1.1475	.2746	-.1196	.2319	.8729	.0023	.0033
12.82	1.2791	.3247	-.0888	.3002	.9544	.0027	.0028
14.88	1.3932	.3723	-.0561	.3759	1.0209	.0028	-.0001
17.01	1.4713	.4196	-.0148	.4653	1.0517	.0044	-.0038
19.06	1.5738	.4642	.0152	.5574	1.1096	.0013	.0055
21.09	1.6719	.5038	.0394	.6574	1.1680	.0037	.0001
23.16	1.7813	.5372	.0531	.7736	1.2440	.0058	.0002
25.32	1.8859	.5726	.0740	.9017	1.3133	.0022	.0030
27.48	1.9572	.6043	.0999	1.0284	1.3529	.0047	-.0014
29.67	2.0077	.6318	.1319	1.1583	1.3759	.0093	-.0006
31.47	2.0264	.6441	.1511	1.2574	1.3823	.0103	.0008
33.60	2.0315	.6553	.1720	1.3742	1.3762	.0095	.0033
35.74	1.9254	.6488	.2065	1.4207	1.2766	.0266	-.0053
.06	.4899	.0171	-.2449	.0657	.4727	.0017	.0006

TABLE IV.- Continued

Configuration 28

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.93	.2472	-.0080	-.2143	.0483	.2552	.0012	.0007
-1.99	.3733	-.0022	-.2396	.0520	.3755	.0012	.0008
-.14	.4757	.0024	-.2584	.0620	.4733	.0016	.0006
2.15	.5842	.0080	-.2770	.0773	.5762	.0020	.0013
4.17	.6875	.0129	-.2934	.0948	.6746	.0025	.0017
6.22	.7939	.0186	-.3108	.1181	.7753	.0020	.0022
8.40	.9059	.0261	-.3285	.1509	.8798	.0024	.0016
10.36	.9972	.0315	-.3398	.1874	.9658	.0008	.0019
12.37	1.0753	.0386	-.3427	.2366	1.0368	-.0006	-.0032
14.43	1.0909	.0456	-.3280	.2957	1.0453	.0036	-.0053
16.39	1.0972	.0513	-.3168	.3484	1.0458	.0034	.0001
18.33	1.1018	.0578	-.3157	.4036	1.0440	.0036	.0039
20.23	1.1448	.0635	-.3270	.4680	1.0813	-.0011	.0079
20.36	1.1419	.0645	-.3260	.4698	1.0774	-.0004	.0041
22.53	1.1605	.0711	-.3434	.5386	1.0893	.0061	.0017
24.43	1.1848	.0767	-.3473	.5980	1.1081	.0061	.0019
26.44	1.1817	.0820	-.3410	.6495	1.0996	.0038	.0038
28.51	1.1595	.0867	-.3295	.6937	1.0728	-.0017	.0031
30.38	1.1427	.0909	-.3210	.7343	1.0517	.0039	.0079
32.31	1.1210	.0957	-.3104	.7749	1.0253	.0026	.0081
34.29	1.1031	.1001	-.2995	.8210	1.0030	.0023	.0086
-.08	.4791	.0025	-.2584	.0621	.4766	.0010	.0011

TABLE IV.- Continued

Configuration 29

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.08	-.1006	-.0085	-.0489	.0380	-.0921	.0013	.0009
-2.07	.0064	-.0037	-.0720	.0274	.0102	.0011	.0011
-.21	.1295	.0075	-.0945	.0249	.1221	.0008	.0011
2.04	.2380	.0070	-.1126	.0289	.2310	.0024	.0014
4.10	.3511	.0128	-.1320	.0377	.3383	.0020	.0015
6.09	.4525	.0160	-.1488	.0489	.4365	.0025	.0022
8.22	.5652	.0241	-.1677	.0683	.5412	.0004	.0020
10.25	.6805	.0309	-.1872	.0948	.6495	.0007	.0018
12.35	.7847	.0369	-.2042	.1312	.7477	.0008	.0028
14.31	.8984	.0451	-.2209	.1808	.8533	-.0002	.0025
16.41	.9679	.0518	-.2274	.2416	.9161	.0016	-.0009
18.40	1.0068	.0589	-.2460	.3071	.9479	.0023	.0015
20.41	1.0631	.0648	-.2591	.3721	.9983	.0044	.0008
22.26	1.0870	.0705	-.2824	.4333	1.0165	.0044	.0032
24.53	1.1324	.0770	-.2955	.5040	1.0554	.0033	.0056
26.46	1.1635	.0824	-.2956	.5622	1.0811	.0072	.0031
28.59	1.1733	.0872	-.2916	.6213	1.0861	.0005	.0052
30.50	1.1686	.0924	-.2874	.6696	1.0762	-.0016	.0098
32.42	1.1323	.0964	-.2807	.7041	1.0358	-.0097	.0102
34.53	1.1072	.1004	-.2728	.7488	1.0068	-.0121	.0055
-.07	.1291	.0015	-.0932	.0247	.1277	.0015	.0011

TABLE IV.- Continued

Configuration 30

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.06	-.1382	-.0099	-.0392	.0575	-.1283	.0005	.0004
-1.97	-.0134	-.0047	-.0662	.0425	-.0087	.0004	.0001
-.30	.1088	.0005	-.0923	.0358	.1083	.0009	.0011
2.10	.2334	.0064	-.1152	.0335	.2270	.0003	.0010
3.93	.3386	.0112	-.1332	.0381	.3274	.0015	.0014
6.09	.4505	.0164	-.1523	.0502	.4341	.0015	.0020
8.13	.5582	.0230	-.1707	.0650	.5352	.0017	.0019
10.21	.6703	.0294	-.1890	.0850	.6408	.0011	.0025
12.25	.7801	.0366	-.2056	.1100	.7435	.0018	.0032
14.21	.8862	.0430	-.2220	.1442	.8432	.0008	.0024
16.34	.9960	.0512	-.2407	.1966	.9448	.0012	.0036
18.35	1.0829	.0579	-.2622	.2701	1.0250	.0015	.0019
20.34	1.0944	.0640	-.2668	.3444	1.0304	.0024	.0099
22.44	1.1426	.0703	-.2832	.4181	1.0723	.0045	.0019
24.40	1.1640	.0764	-.2963	.4859	1.0877	.0031	.0030
26.38	1.1842	.0816	-.3021	.5475	1.1026	.0016	.0059
28.58	1.2043	.0867	-.2985	.6124	1.1175	.0026	.0013
30.48	1.1943	.0914	-.2918	.6593	1.1029	-.0047	.0056
32.44	1.1819	.0960	-.2876	.7092	1.0859	-.0048	.0036
34.44	1.1647	.1002	-.2818	.7599	1.0644	-.0007	.0096
-.08	.1090	.0010	-.0926	.0349	.1080	.0006	.0009

TABLE IV.- Continued

Configuration 31

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.96	.1975	-.0114	-.2158	.0620	.2090	.0028	.0029
-1.97	.3138	-.0067	-.2468	.0596	.3204	.0023	.0030
-.09	.4433	-.0015	-.2742	.0626	.4448	.0040	.0040
2.21	.5664	.0044	-.2969	.0728	.5619	.0035	.0031
4.26	.6604	.0093	-.3128	.0871	.6511	.0025	.0020
6.31	.7742	.0159	-.3295	.1071	.7584	.0026	.0035
8.40	.8756	.0215	-.3450	.1330	.8541	.0013	.0028
10.34	.9673	.0277	-.3592	.1594	.9396	.0017	.0019
12.43	1.0753	.0349	-.3768	.1965	1.0404	.0015	.0031
14.55	1.1872	.0432	-.3937	.2470	1.1440	-.0006	.0040
16.55	1.2494	.0494	-.3946	.3167	1.2000	.0012	.0107
18.47	1.2440	.0557	-.3843	.3822	1.1883	.0013	.0039
20.44	1.2574	.0616	-.3840	.4495	1.1958	.0024	.0047
22.62	1.2832	.0681	-.3936	.5276	1.2151	.0072	.0034
24.53	1.2711	.0738	-.3949	.5861	1.1974	.0101	.0014
26.57	1.2863	.0798	-.3940	.6484	1.2065	.0121	.0037
28.58	1.2766	.0839	-.3805	.6991	1.1926	.0080	.0087
30.45	1.2484	.0886	-.3668	.7384	1.1597	.0027	.0089
32.51	1.2143	.0926	-.3525	.7816	1.1217	.0048	.0092
34.39	1.1829	.0957	-.3427	.8196	1.0873	-.0060	.0048
.08	.4516	-.0005	-.2745	.0591	.4521	.0020	.0001

TABLE IV.- Continued

Configuration 32

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.84	.4612	-.0080	-.3321	.0927	.4692	.0026	-.0006
-1.69	.6054	-.0012	-.3670	.1021	.6065	.0027	-.0009
.10	.7046	.0034	-.3896	.1155	.7012	.0029	-.0003
2.21	.8132	.0090	-.4096	.1368	.8042	.0030	.0006
4.19	.9082	.0138	-.4249	.1594	.8944	.0028	-.0001
6.24	.9953	.0189	-.4340	.1849	.9764	.0028	.0007
8.29	1.0965	.0253	-.4523	.2171	1.0712	.0030	-.0008
10.29	1.2096	.0325	-.4741	.2576	1.1771	.0028	.0006
12.35	1.3034	.0391	-.4856	.3048	1.2643	.0009	.0014
14.52	1.2848	.0458	-.4522	.3693	1.2390	-.0007	.0129
16.48	1.2509	.0518	-.4281	.4260	1.1992	.0019	-.0006
18.43	1.2771	.0584	-.4267	.4906	1.2187	.0018	.0049
20.29	1.2763	.0638	-.4215	.5449	1.2125	.0050	.0018
22.44	1.2904	.0710	-.4226	.6152	1.2194	.0095	.0002
24.49	1.2477	.0762	-.4084	.6612	1.1715	.0078	.0027
26.51	1.2381	.0815	-.3984	.7143	1.1566	.0141	.0044
28.51	1.2069	.0856	-.3826	.7551	1.1213	.0029	.0060
30.40	1.1797	.0907	-.3666	.7938	1.0891	.0083	.0066
32.42	1.1523	.0949	-.3526	.8357	1.0575	-.0013	.0068
34.57	1.1348	.0996	-.3403	.8891	1.0352	.0025	.0064
.15	.7056	.0024	-.3888	.1157	.7031	.0031	.0006

TABLE IV.- Continued

Configuration 33

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.94	.2433	-.0084	-.2352	.0449	.2517	.0017	.0011
-1.87	.3608	-.0032	-.2594	.0474	.3640	.0024	.0015
.00	.4668	.0024	-.2791	.0566	.4643	.0015	.0019
2.24	.5763	.0079	-.2963	.0704	.5684	.0019	.0021
4.18	.6711	.0128	-.3094	.0868	.6584	.0026	.0025
6.17	.7731	.0185	-.3264	.1080	.7546	.0013	.0018
8.28	.8913	.0249	-.3472	.1392	.8665	.0027	.0021
10.38	1.0072	.0316	-.3672	.1803	.9756	.0022	.0014
12.45	1.1046	.0383	-.3773	.2293	1.0663	-.0005	.0020
14.48	1.1785	.0446	-.3749	.2946	1.1339	-.0004	-.0074
16.45	1.1691	.0518	-.3638	.3461	1.1173	.0020	-.0007
18.43	1.1746	.0580	-.3622	.4053	1.1166	.0054	.0018
20.47	1.2125	.0652	-.3733	.4740	1.1473	.0027	.0044
22.39	1.2102	.0702	-.3868	.5321	1.1400	.0070	.0016
24.39	1.2204	.0743	-.3892	.5861	1.1461	.0060	.0010
26.49	1.2429	.0826	-.3848	.6509	1.1603	.0063	.0071
28.38	1.2312	.0867	-.3728	.6964	1.1445	.0025	.0061
30.56	1.2016	.0901	-.3582	.7404	1.1115	.0069	.0134
32.55	1.1734	.0961	-.3471	.7844	1.0773	-.0104	.0046
34.53	1.1481	.1002	-.3319	.8263	1.0480	-.0017	.0107
.04	.4660	-.0010	-.2785	.0561	.4670	.0029	.0013

TABLE IV.- Continued

Configuration 34

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.02	.0839	-.0095	-.1445	.0416	.0934	.0019	.0009
-1.92	.2003	-.0042	-.1671	.0377	.2045	.0013	.0012
-.09	.3078	.0009	-.1854	.0414	.3069	.0017	.0013
2.21	.4212	.0069	-.2045	.0519	.4142	.0028	.0021
4.10	.5224	.0119	-.2213	.0642	.5106	.0020	.0018
6.25	.6301	.0175	-.2387	.0818	.6126	.0015	.0022
8.22	.7423	.0235	-.2585	.1060	.7188	-.0004	.0015
10.29	.8553	.0304	-.2777	.1404	.8249	.0012	.0015
12.28	.9658	.0373	-.2961	.1849	.9286	.0002	.0030
14.30	1.0483	.0445	-.3071	.2416	1.0038	.0005	-.0024
16.48	1.1026	.0519	-.3136	.3096	1.0507	.0018	.0004
18.46	1.1312	.0581	-.3198	.3748	1.0731	.0027	.0029
20.53	1.1665	.0632	-.3307	.4368	1.1033	.0040	.0022
22.58	1.1940	.0706	-.3573	.5112	1.1234	.0073	.0049
24.49	1.2126	.0764	-.3605	.5671	1.1361	.0052	.0032
26.46	1.2194	.0817	-.3523	.6185	1.1377	.0122	.0046
28.48	1.2285	.0873	-.3439	.6746	1.1412	.0021	.0076
30.36	1.2135	.0911	-.3331	.7194	1.1224	-.0033	.0045
32.54	1.1717	.0960	-.3187	.7596	1.0757	-.0003	.0063
34.54	1.1453	.1004	-.3080	.8032	1.0449	-.0062	.0024
-.01	.3082	.0009	-.1847	.0415	.3073	.0016	.0014

TABLE IV.- Continued

Configuration 35

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.93	.1485	-.0079	-.1827	.0377	.1564	.0018	.0013
-2.28	.2555	-.0037	-.2030	.0366	.2592	.0007	.0015
-.17	.3641	.0019	-.2222	.0420	.3621	.0019	.0015
1.85	.4740	.0070	-.2415	.0530	.4670	.0012	.0019
4.07	.5839	.0129	-.2589	.0685	.5710	.0017	.0023
6.27	.6939	.0185	-.2761	.0889	.6754	.0018	.0022
8.15	.7971	.0246	-.2941	.1129	.7725	.0015	.0025
10.21	.9159	.0313	-.3140	.1499	.8846	.0020	.0018
12.46	1.0255	.0384	-.3283	.1991	.9871	.0015	.0040
14.35	1.0869	.0449	-.3263	.2508	1.0420	-.0004	-.0043
16.46	1.1206	.0523	-.3254	.3157	1.0683	.0012	.0034
18.38	1.1365	.0581	-.3296	.3752	1.0784	.0029	.0042
20.34	1.1779	.0648	-.3408	.4409	1.1131	.0033	.0061
22.64	1.1906	.0716	-.3612	.5134	1.1190	.0078	.0032
24.36	1.2085	.0759	-.3653	.5635	1.1326	.0057	.0063
26.42	1.2345	.0821	-.3626	.6263	1.1523	.0063	.0026
28.28	1.2226	.0862	-.3500	.6705	1.1364	.0085	.0106
30.18	1.2083	.0910	-.3432	.7162	1.1173	.0036	.0057
32.49	1.1741	.0968	-.3308	.7655	1.0773	-.0022	.0071
34.45	1.1489	.1005	-.3201	.8068	1.0483	-.0051	.0054
-.13	.3697	.0019	-.2235	.0418	.3678	.0013	.0014

TABLE IV.- Continued

Configuration 36

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-4.01	.0173	-.0034	-.1153	.0354	.0207	.0020	-.0001
-1.98	.1354	.0023	-.1405	.0295	.1331	.0009	.0002
-.19	.2456	.0074	-.1609	.0313	.2382	.0020	.0005
1.99	.3523	.0129	-.1791	.0389	.3394	.0014	.0002
4.06	.4649	.0177	-.1974	.0508	.4472	.0026	.0009
6.08	.5684	.0233	-.2140	.0661	.5451	.0015	.0011
8.24	.6850	.0297	-.2350	.0893	.6554	.0020	.0010
10.21	.7990	.0365	-.2561	.1198	.7626	.0019	.0009
12.23	.9034	.0427	-.2689	.1602	.8607	.0014	.0006
14.43	.9990	.0514	-.2771	.2163	.9476	.0003	-.0007
16.47	1.0430	.0574	-.2804	.2786	.9856	.0000	.0015
18.46	1.0772	.0642	-.2921	.3427	1.0130	.0030	.0020
20.37	1.1186	.0700	-.3033	.4044	1.0485	.0041	.0016
22.36	1.1416	.0755	-.3270	.4695	1.0662	.0067	.0014
24.39	1.1737	.0816	-.3352	.5320	1.0921	.0064	-.0003
26.50	1.1961	.0870	-.3336	.5929	1.1091	.0034	-.0030
28.38	1.2018	.0920	-.3269	.6445	1.1097	.0031	.0052
30.30	1.1908	.0962	-.3213	.6913	1.0946	.0006	.0030
32.46	1.1600	.1006	-.3131	.7367	1.0594	.0001	.0097
34.47	1.1383	.1050	-.3040	.7829	1.0332	-.0055	.0035
-.01	.2520	.0064	-.1612	.0309	.2456	.0025	.0002

TABLE IV.- Continued

Configuration 37

ALPHA DEG.	CL	CLC	CM	CO	CL2	CY	CR
-4.03	.1380	-.0084	-.1606	.0387	.1463	.0006	-.0004
-1.99	.2642	-.0026	-.1864	.0385	.2669	.0020	.0002
-.06	.3638	.0029	-.2050	.0450	.3608	.0019	.0000
2.21	.4804	.0079	-.2261	.0574	.4725	.0010	.0003
4.23	.3482	.0078	-.1441	.0429	.3403	.0010	.0002
6.21	.6896	.0184	-.2596	.0913	.6712	.0017	.0001
8.32	.8026	.0247	-.2791	.1189	.7778	.0021	.0009
10.27	.9048	.0315	-.2943	.1532	.8732	.0009	.0011
12.32	1.0055	.0386	-.3044	.1985	.9669	.0018	.0008
14.30	1.0446	.0458	-.2982	.2565	.9988	.0028	-.0075
16.41	1.0608	.0510	-.2943	.3096	1.0098	.0020	-.0009
18.29	1.0715	.0582	-.2952	.3674	1.0133	.0038	.0007
20.40	1.1202	.0644	-.3070	.4364	1.0558	.0018	.0031
22.40	1.1337	.0705	-.3253	.4988	1.0632	.0080	-.0002
24.51	1.1717	.0765	-.3354	.5673	1.0953	.0068	.0041
26.47	1.1874	.0824	-.3345	.6243	1.1050	.0074	.0011
28.37	1.1730	.0899	-.3253	.6675	1.0831	.0027	.0049
30.44	1.1515	.0912	-.3132	.7126	1.0602	.0058	.0055
32.44	1.1320	.0955	-.3088	.7573	1.0365	-.0027	.0051
34.54	1.1131	.0998	-.2972	.8054	1.0132	.0057	.0042
-.03	.3693	.0024	-.2058	.0443	.3669	.0018	.0001

TABLE IV.- Continued

Configuration 38

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.95	.3515	-.0069	-.2828	.0533	.3583	.0009	.0005
-2.25	.4627	-.0017	-.3040	.0591	.4644	.0017	.0008
-.23	.5680	.0034	-.3231	.0719	.5646	.0008	.0009
1.96	.6682	.0084	-.3359	.0876	.6599	.0019	.0019
4.23	.7719	.0145	-.3523	.1090	.7573	.0019	.0017
6.26	.8855	.0202	-.3718	.1356	.8653	.0014	.0016
8.25	.9969	.0262	-.3922	.1690	.9708	.0009	.0024
10.38	1.1039	.0330	-.4092	.2138	1.0709	.0008	.0013
12.28	1.1892	.0386	-.4157	.2646	1.1506	-.0003	-.0019
14.41	1.1869	.0462	-.3948	.3213	1.1407	.0002	-.0065
16.51	1.1881	.0532	-.3786	.3793	1.1349	.0014	-.0021
18.41	1.1906	.0596	-.3773	.4365	1.1310	.0029	.0024
20.37	1.2190	.0654	-.3867	.5015	1.1536	.0030	.0031
22.31	1.2128	.0714	-.3963	.5568	1.1413	.0046	.0012
24.36	1.2259	.0764	-.3970	.6160	1.1495	.0041	.0004
26.48	1.2441	.0829	-.3934	.6811	1.1612	.0117	.0071
28.39	1.2204	.0882	-.3794	.7205	1.1323	.0034	.0045
30.18	1.1966	.0917	-.3684	.7593	1.1049	.0003	-.0008
32.29	1.1569	.0977	-.3495	.7962	1.0592	-.0024	.0044
34.49	1.1393	.1012	-.3372	.8500	1.0381	-.0037	.0058
.05	.5704	.0039	-.3243	.0724	.5665	.0008	.0013

TABLE IV.- Continued

Configuration 39

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.96	.2355	-.0079	-.2249	.0488	.2434	.0026	.0013
-2.00	.3618	-.0027	-.2522	.0495	.3645	.0021	.0011
-.02	.4677	.0029	-.2730	.0572	.4647	.0024	.0017
2.07	.5838	.0079	-.2924	.0714	.5759	.0024	.0023
4.23	.6852	.0133	-.3078	.0886	.6719	.0023	.0025
6.30	.7870	.0186	-.3237	.1100	.7684	.0017	.0026
8.31	.8920	.0250	-.3421	.1373	.8671	.0017	.0023
10.32	1.0019	.0314	-.3604	.1727	.9705	.0021	.0021
12.36	1.0991	.0386	-.3725	.2170	1.0606	.0012	.0025
14.48	1.1808	.0463	-.3773	.2805	1.1344	.0003	.0030
16.49	1.1657	.0524	-.3582	.3402	1.1133	.0017	-.0004
18.43	1.1715	.0615	-.3560	.3982	1.1100	.0031	.0032
20.42	1.2011	.0651	-.3621	.4635	1.1359	.0015	.0070
22.49	1.2001	.0707	-.3706	.5258	1.1294	.0070	-.0007
24.54	1.2202	.0769	-.3793	.5902	1.1433	.0067	-.0003
26.43	1.2438	.0823	-.3788	.6498	1.1615	.0111	.0012
28.36	1.2281	.0871	-.3660	.6945	1.1410	.0079	.0029
30.59	1.2030	.0937	-.3527	.7446	1.1093	.0044	.0078
32.51	1.1692	.0963	-.3398	.7814	1.0728	-.0032	.0033
34.53	1.1454	.0998	-.3271	.8261	1.0456	-.0018	.0049
.07	.4744	.0059	-.2747	.0568	.4685	.0013	.0008

TABLE IV.- Concluded

Configuration 40

ALPHA DEG.	CL	CLC	CM	CD	CL2	CY	CR
-3.99	.1341	-.0084	-.1685	.0429	.1425	.0009	.0013
-1.92	.2688	-.0026	-.1966	.0399	.2714	.0023	.0017
-.16	.3664	.0019	-.2160	.0435	.3645	.0013	.0014
2.03	.4837	.0074	-.2358	.0548	.4763	.0016	.0015
4.01	.5800	.0128	-.2524	.0687	.5673	.0012	.0018
6.20	.7045	.0179	-.2703	.0897	.6866	.0016	.0021
8.22	.7962	.0243	-.2876	.1122	.7718	.0016	.0018
10.30	.9096	.0311	-.3054	.1445	.8785	.0014	.0014
12.27	1.0093	.0376	-.3189	.1848	.9718	.0029	.0036
14.24	1.0993	.0450	-.3293	.2381	1.0543	-.0000	-.0019
16.47	1.1097	.0518	-.3187	.3081	1.0579	-.0014	.0007
18.37	1.1274	.0581	-.3215	.3674	1.0693	.0041	.0016
20.38	1.1553	.0640	-.3273	.4294	1.0913	.0043	.0025
22.50	1.1700	.0712	-.3415	.4997	1.0987	.0087	.0008
24.54	1.1972	.0760	-.3526	.5645	1.1212	.0055	.0001
26.46	1.2320	.0823	-.3530	.6288	1.1497	.0124	.0029
28.33	1.2153	.0867	-.3437	.6704	1.1286	.0059	.0039
30.50	1.1930	.0919	-.3307	.7189	1.1011	.0093	.0100
32.49	1.1622	.0962	-.3204	.7595	1.0661	.0013	.0086
34.30	1.1388	.0995	-.3109	.7985	1.0393	-.0062	.0102
-.05	.3663	.0019	-.2149	.0431	.3644	.0018	.0011

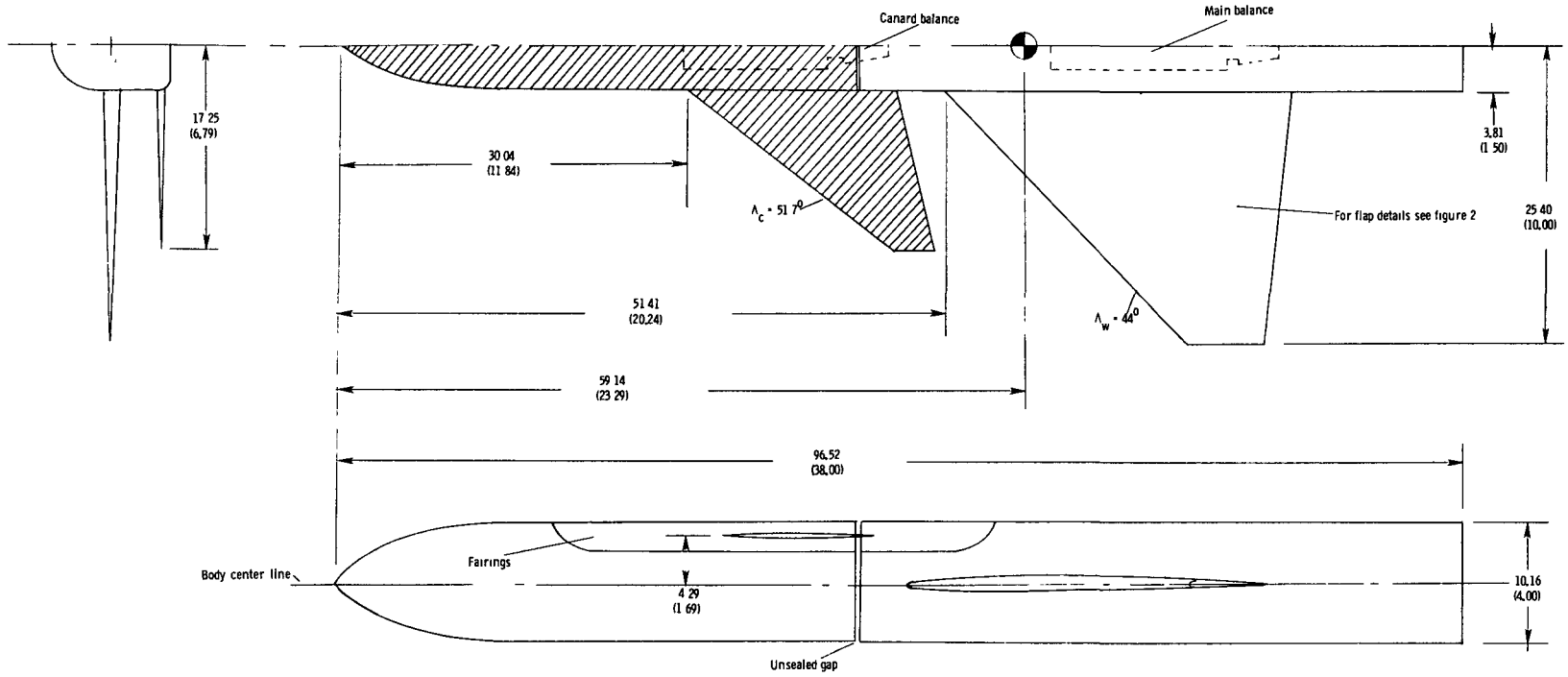


Figure 1.- Sketch of model. (Dimensions are in cm (in.).)

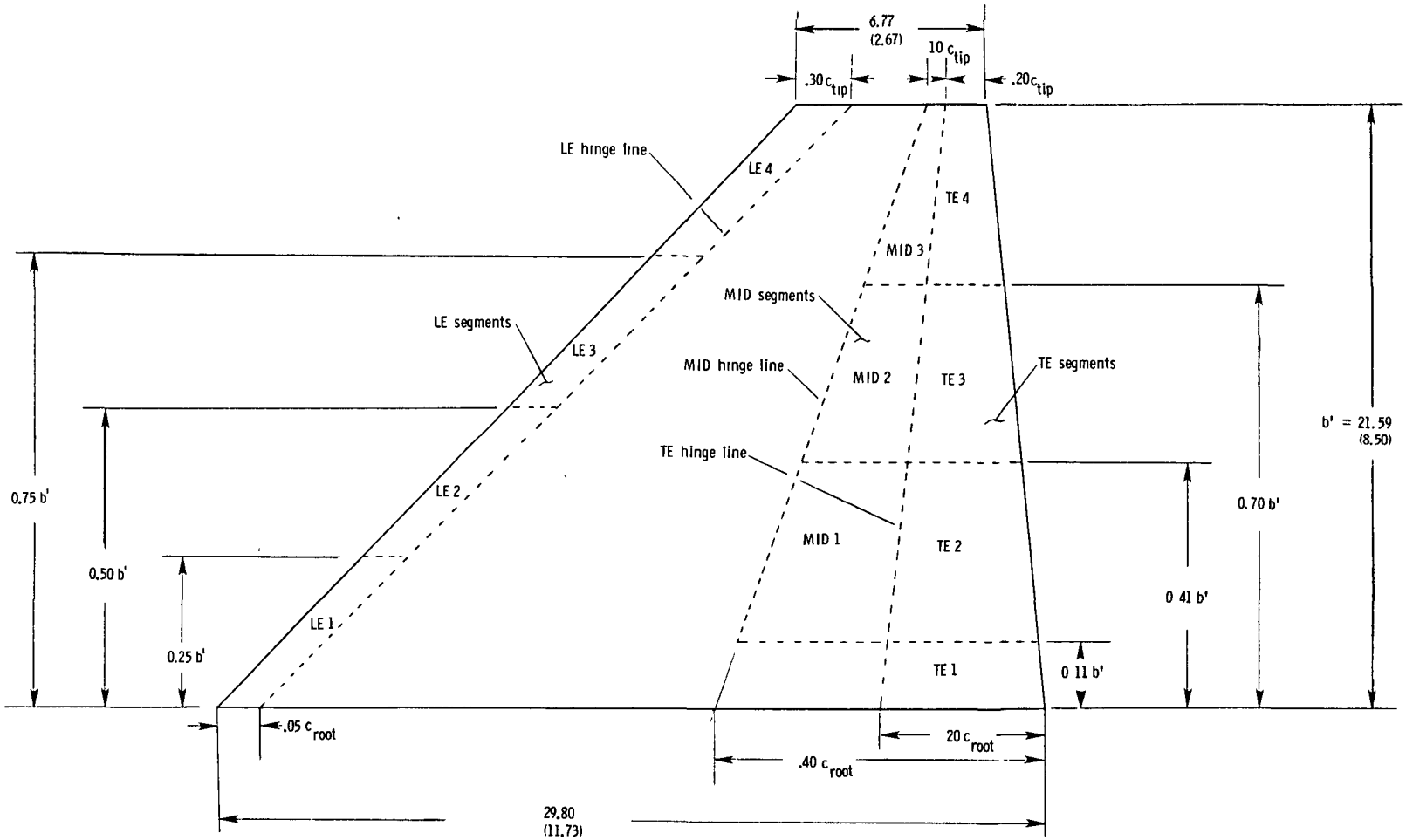


Figure 2.- Flap arrangement. (Dimensions are in cm (in.).)

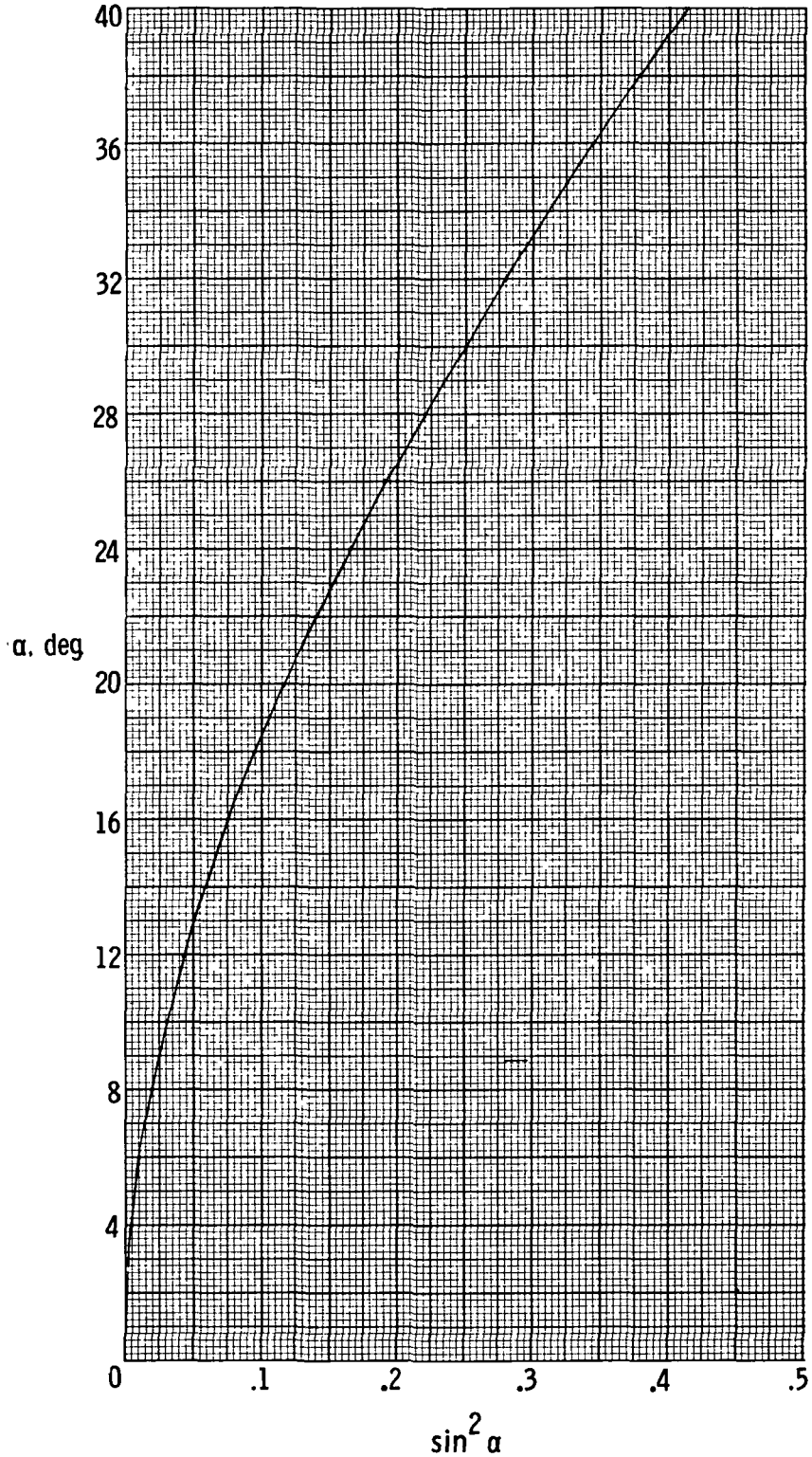
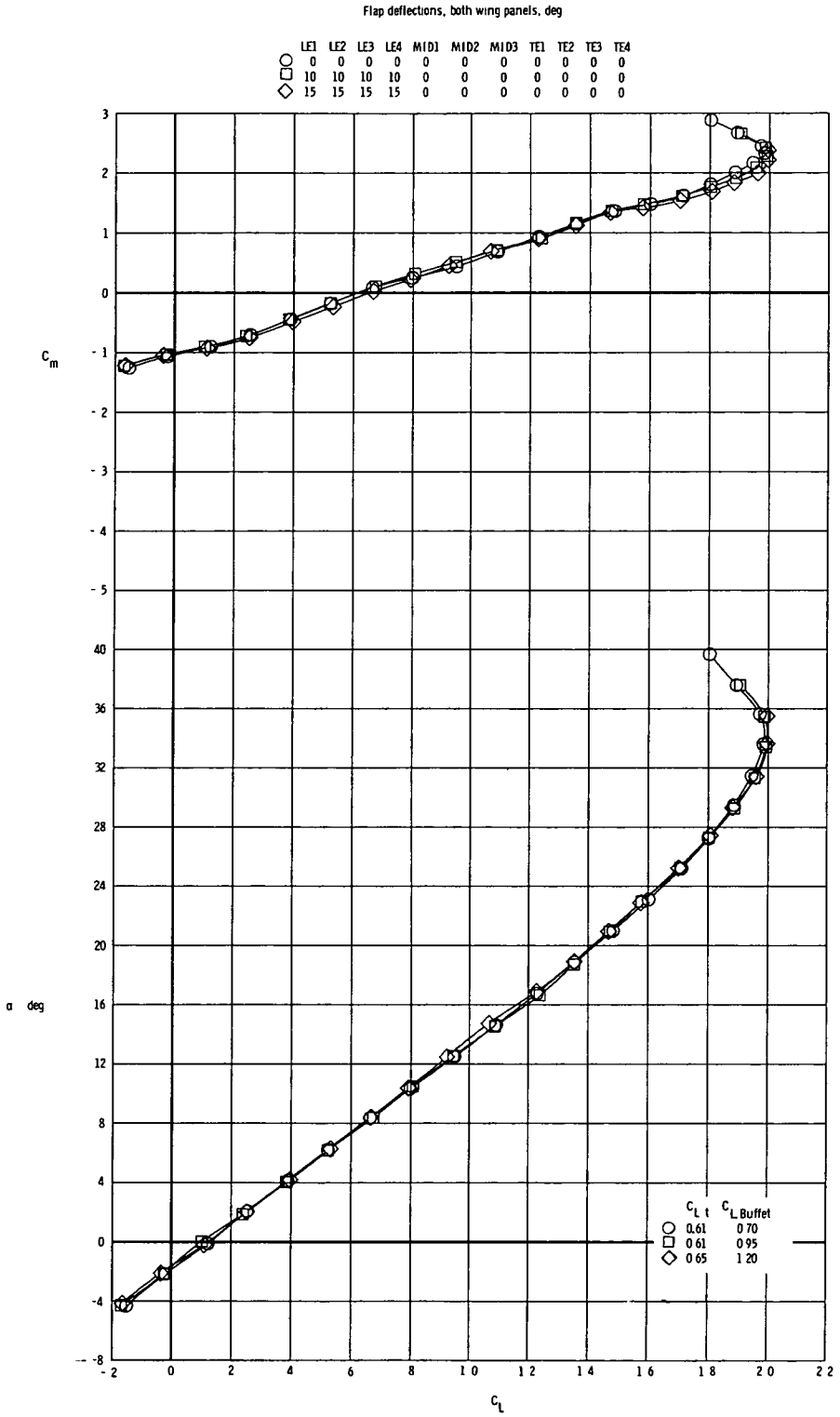
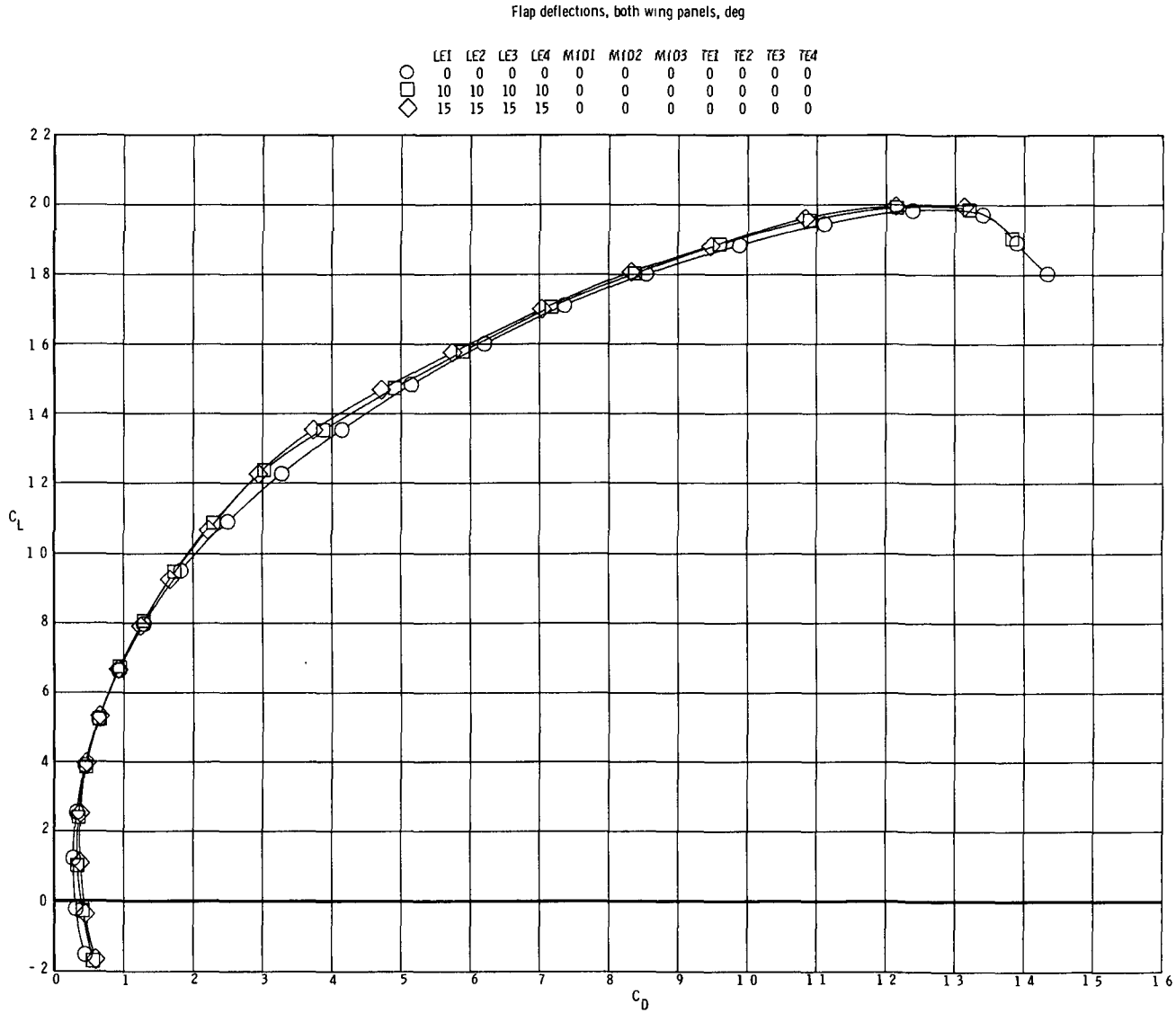


Figure 3.- The variation of α with $\sin^2 \alpha$.



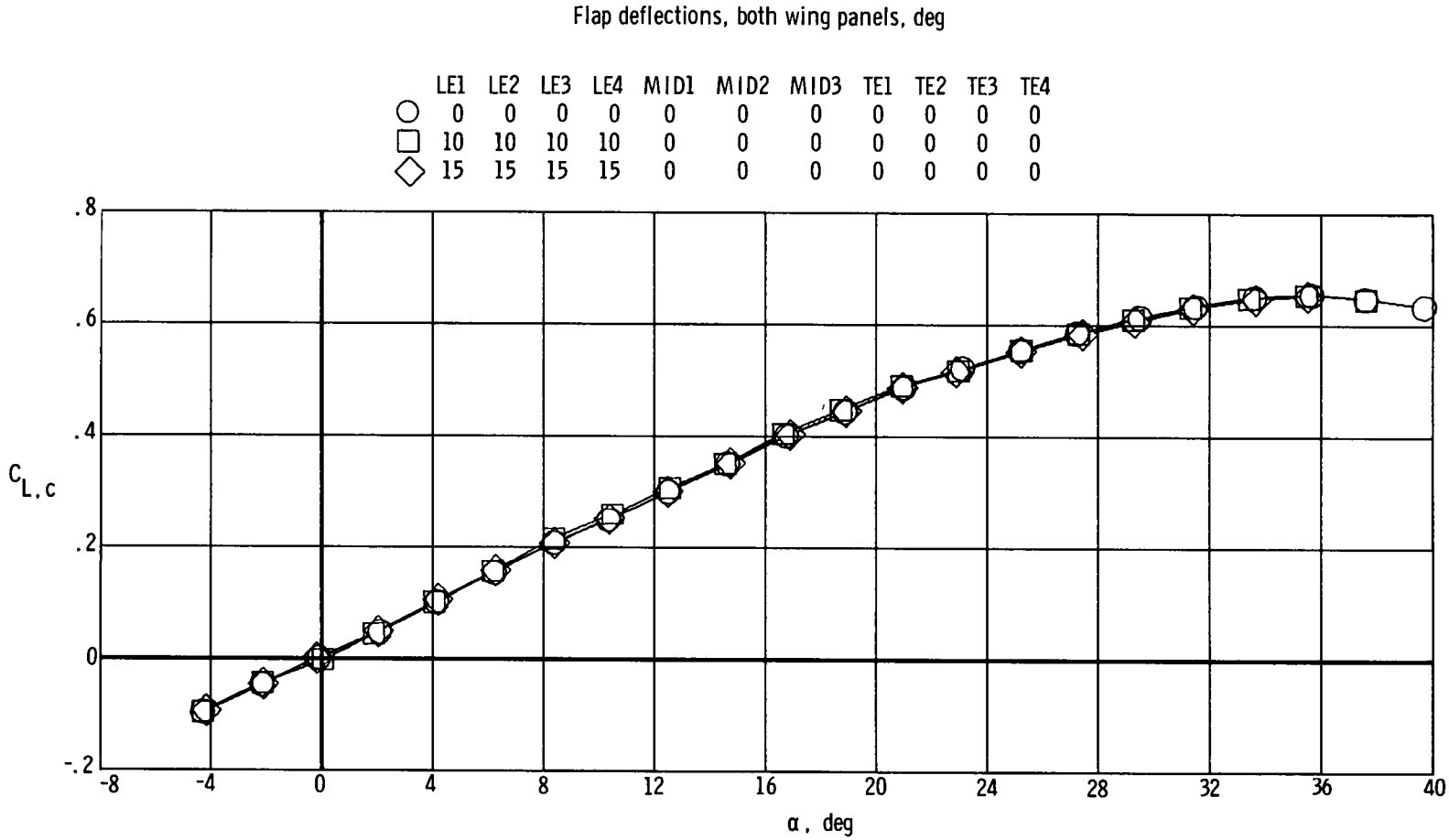
(a) Lift and pitching-moment characteristics.

Figure 4.- Effect of deflecting LE segments on the longitudinal aerodynamic characteristics.



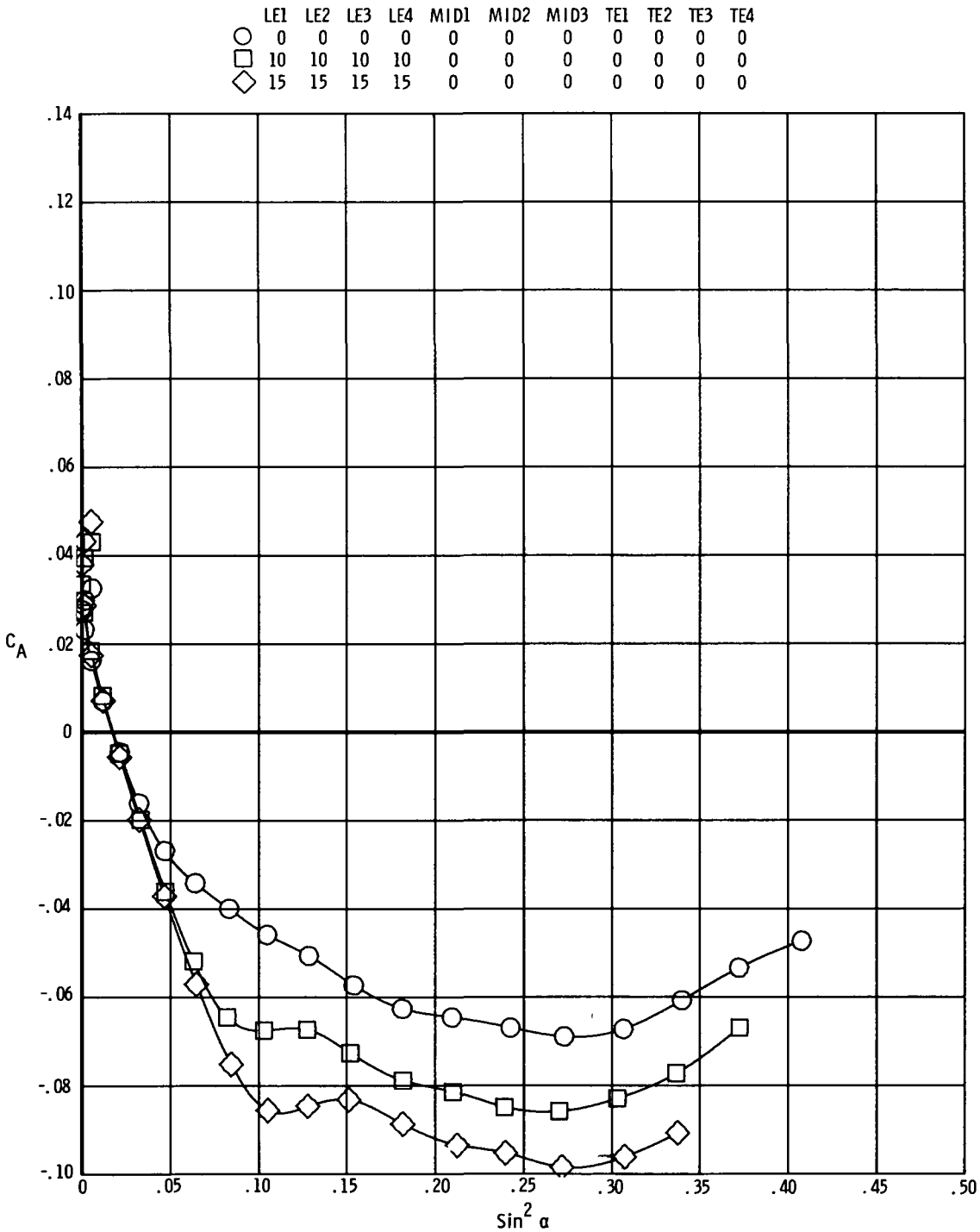
(b) Drag characteristics.

Figure 4.- Continued.



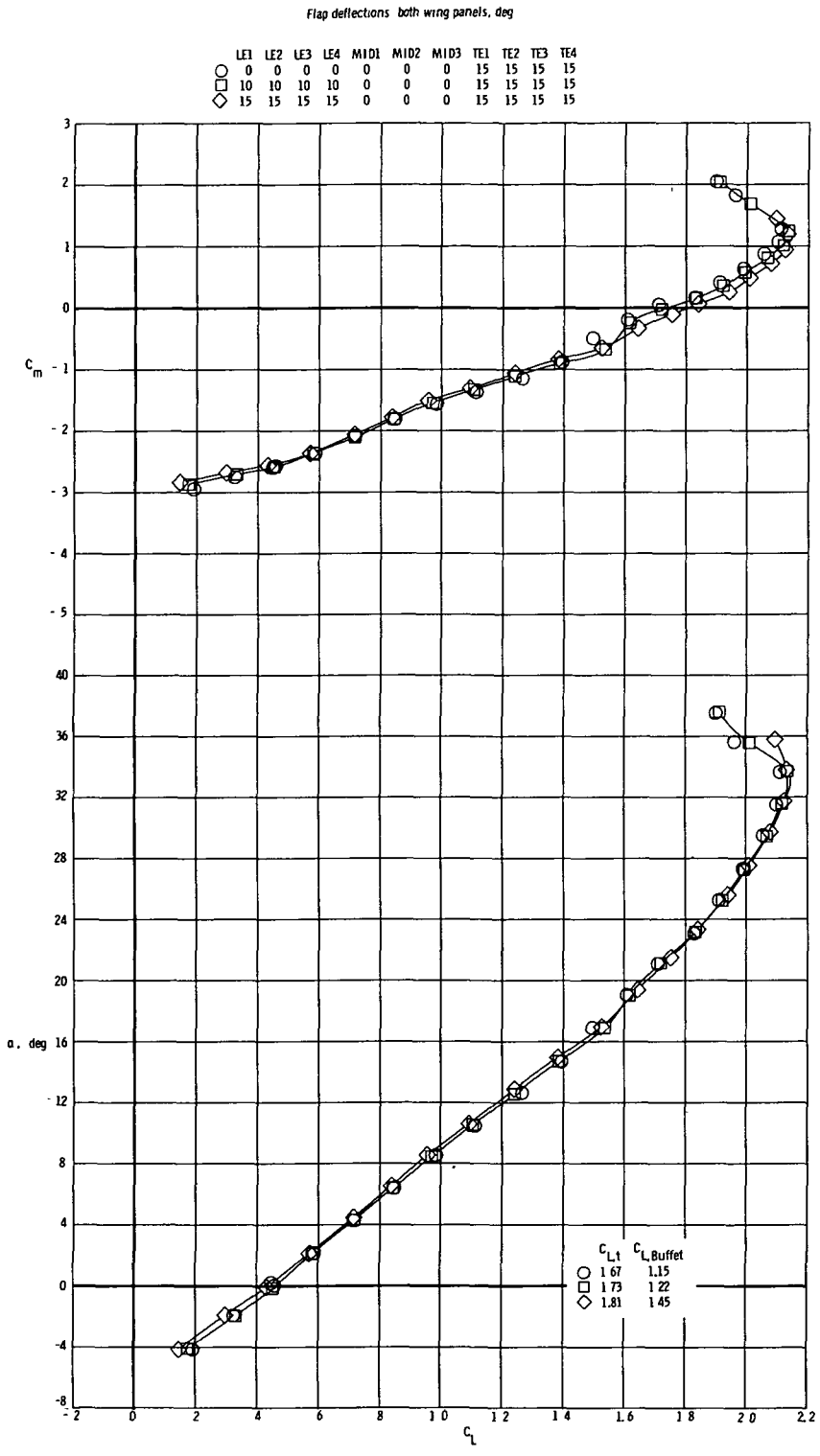
(c) Canard lift characteristics.

Figure 4.- Continued.



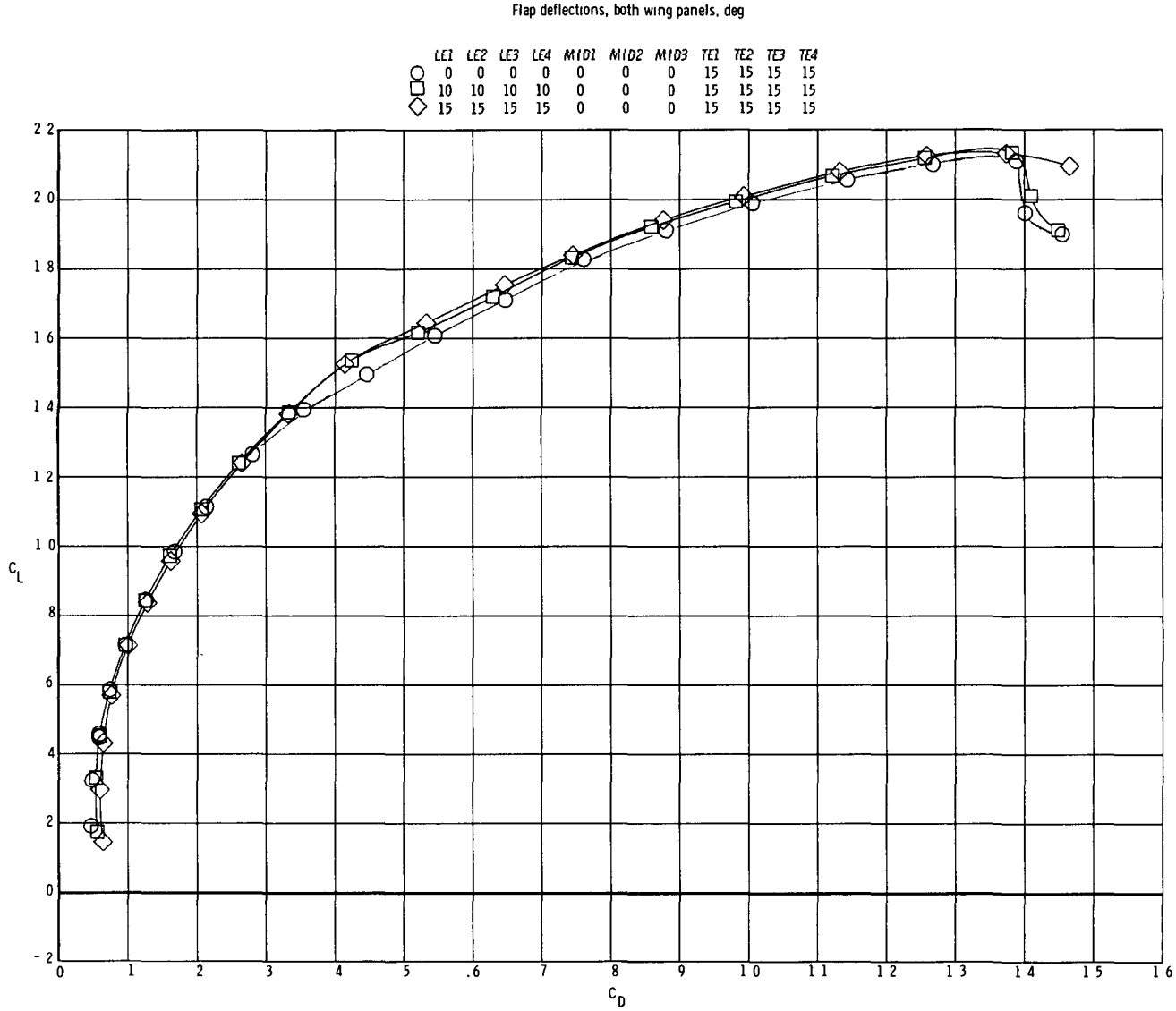
(d) Axial-force characteristics.

Figure 4.- Concluded.



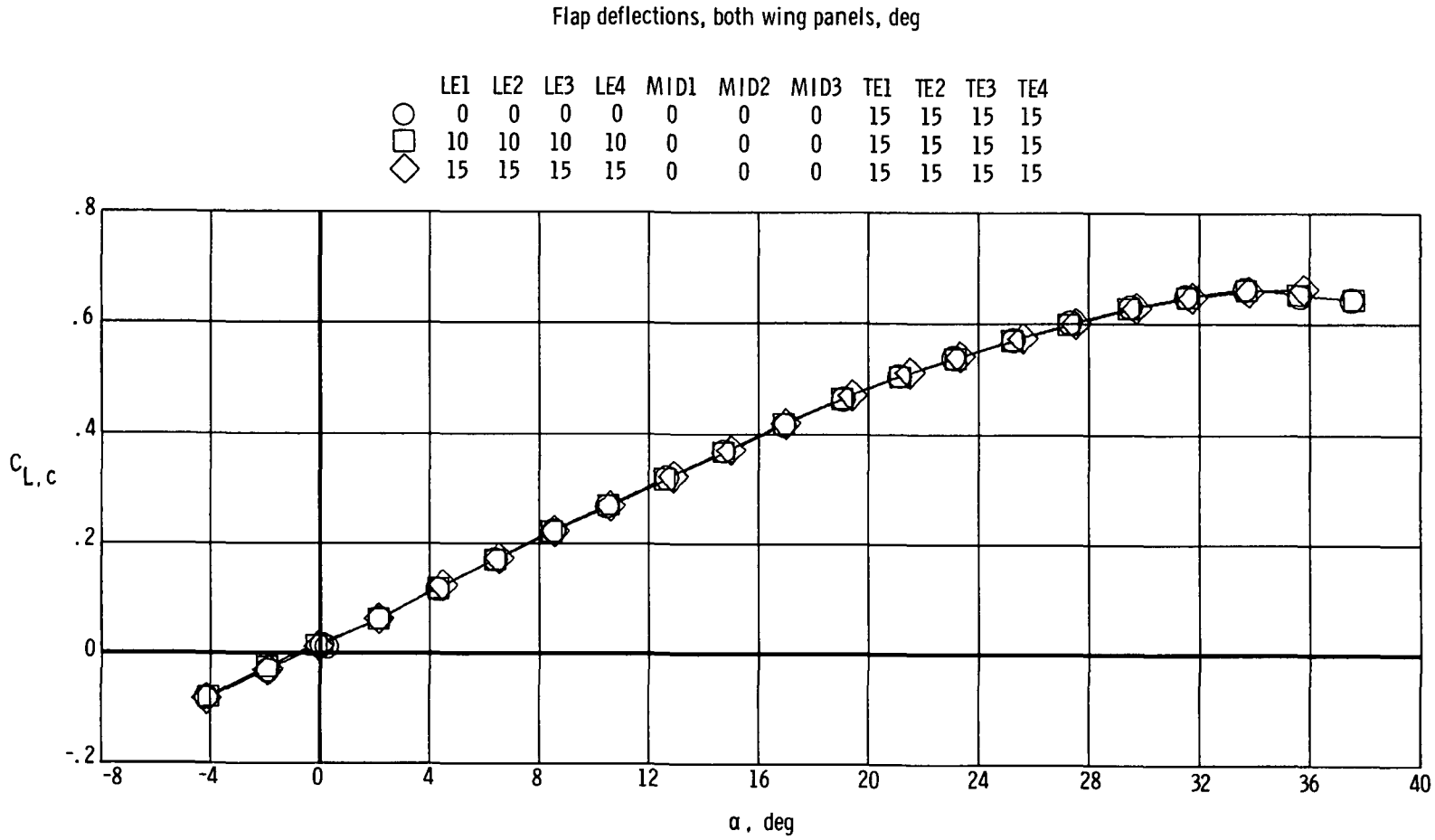
(a) Lift and pitching-moment characteristics.

Figure 5.- Effect of deflecting LE segments on the longitudinal aerodynamic characteristics, TE segments deflected 15°.



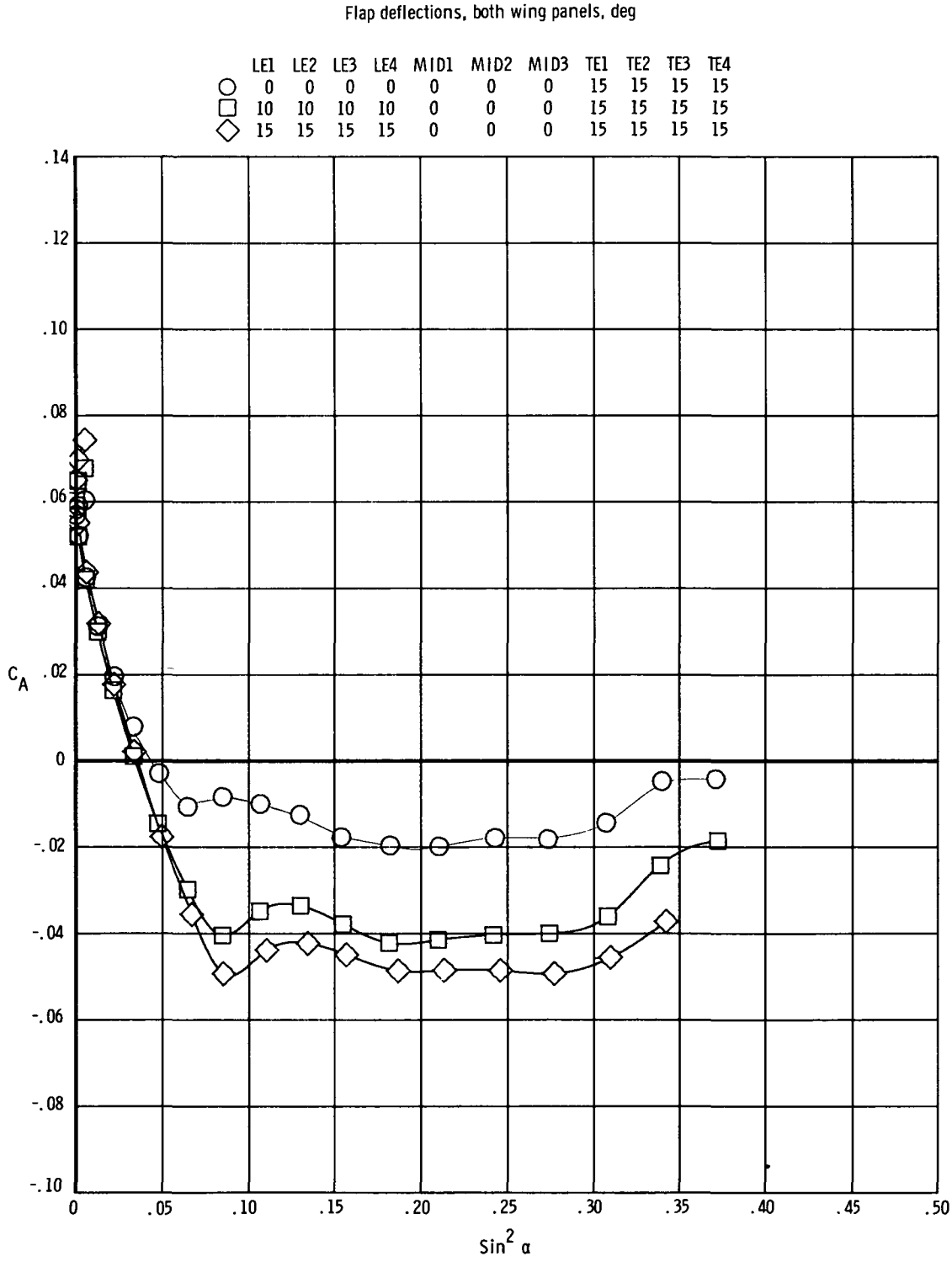
(b) Drag characteristics.

Figure 5.- Continued.



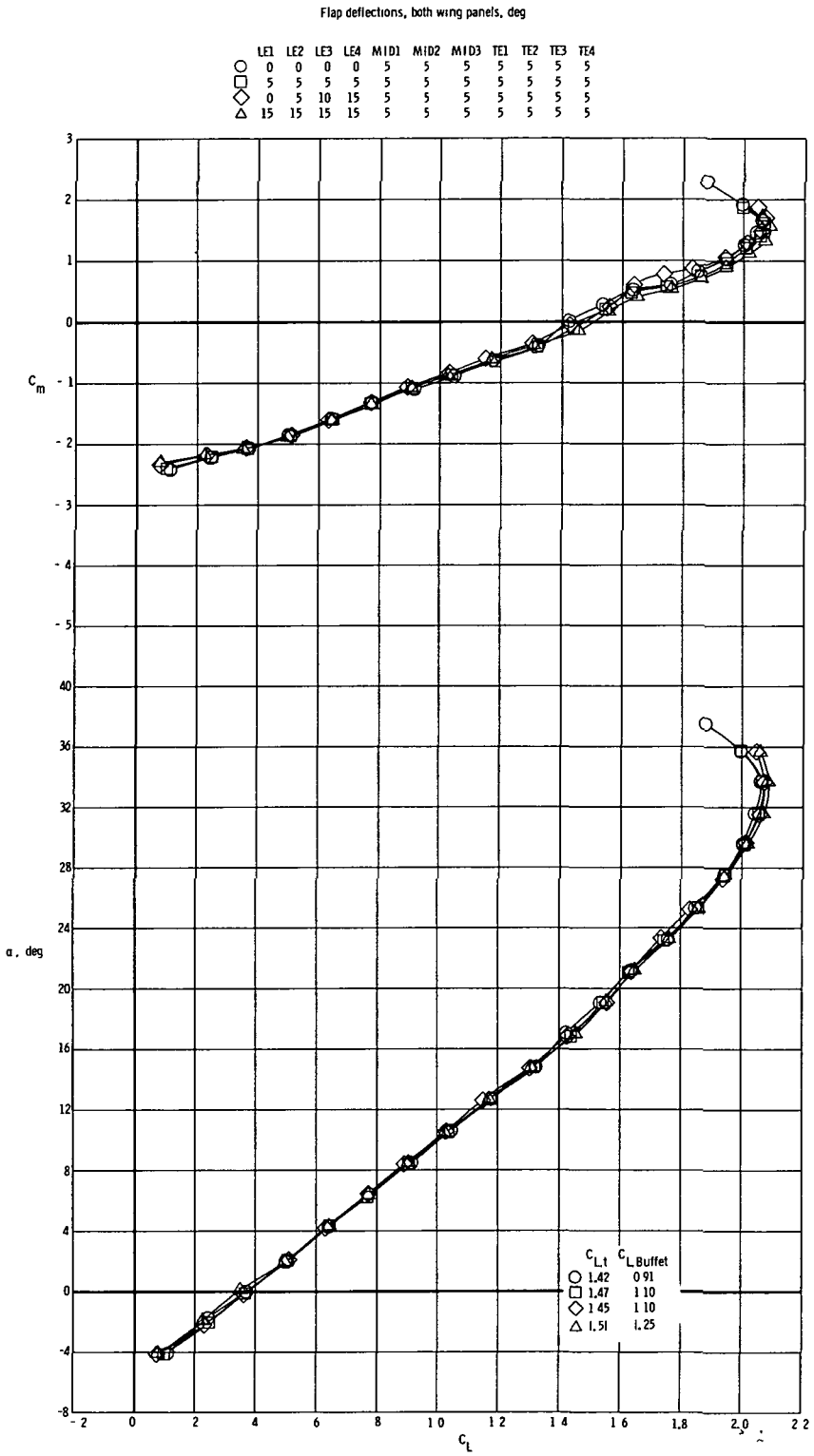
(c) Canard lift characteristics.

Figure 5.- Continued.



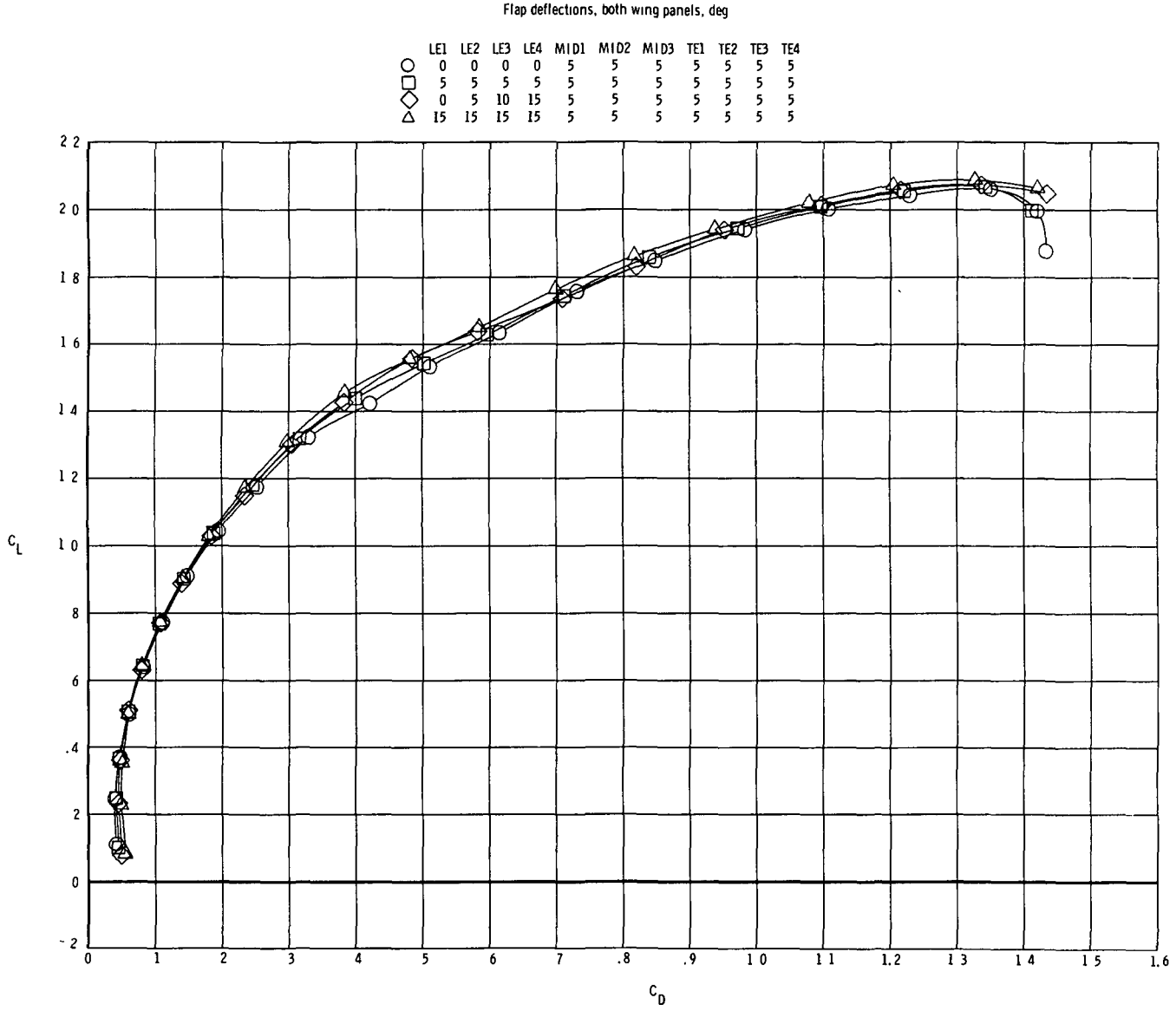
(d) Axial-force characteristics.

Figure 5.- Concluded.



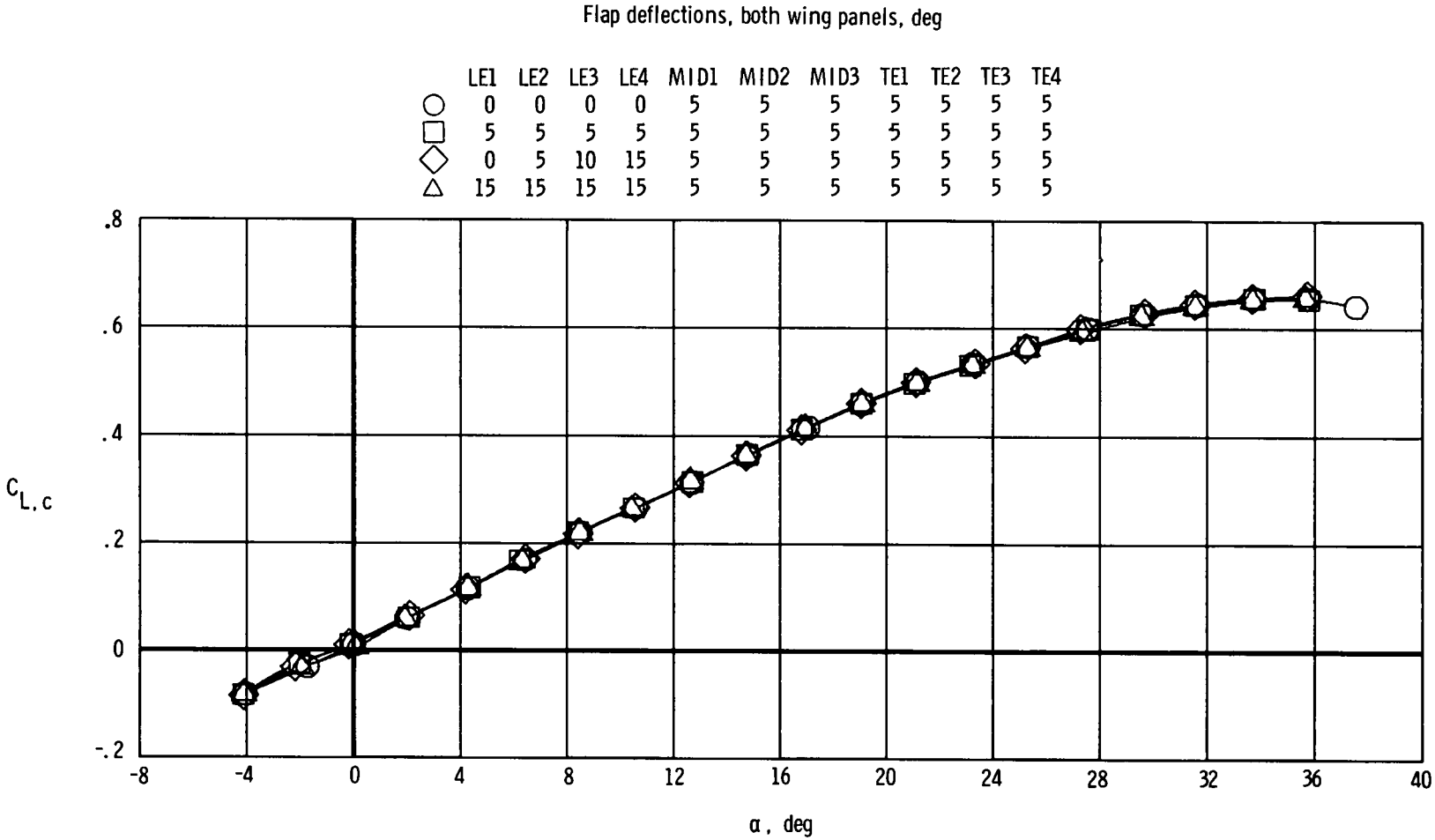
(a) Lift and pitching-moment characteristics.

Figure 6.- Effect of deflecting LE segments on the longitudinal aerodynamic characteristics, MID and TE segments deflected 5°.



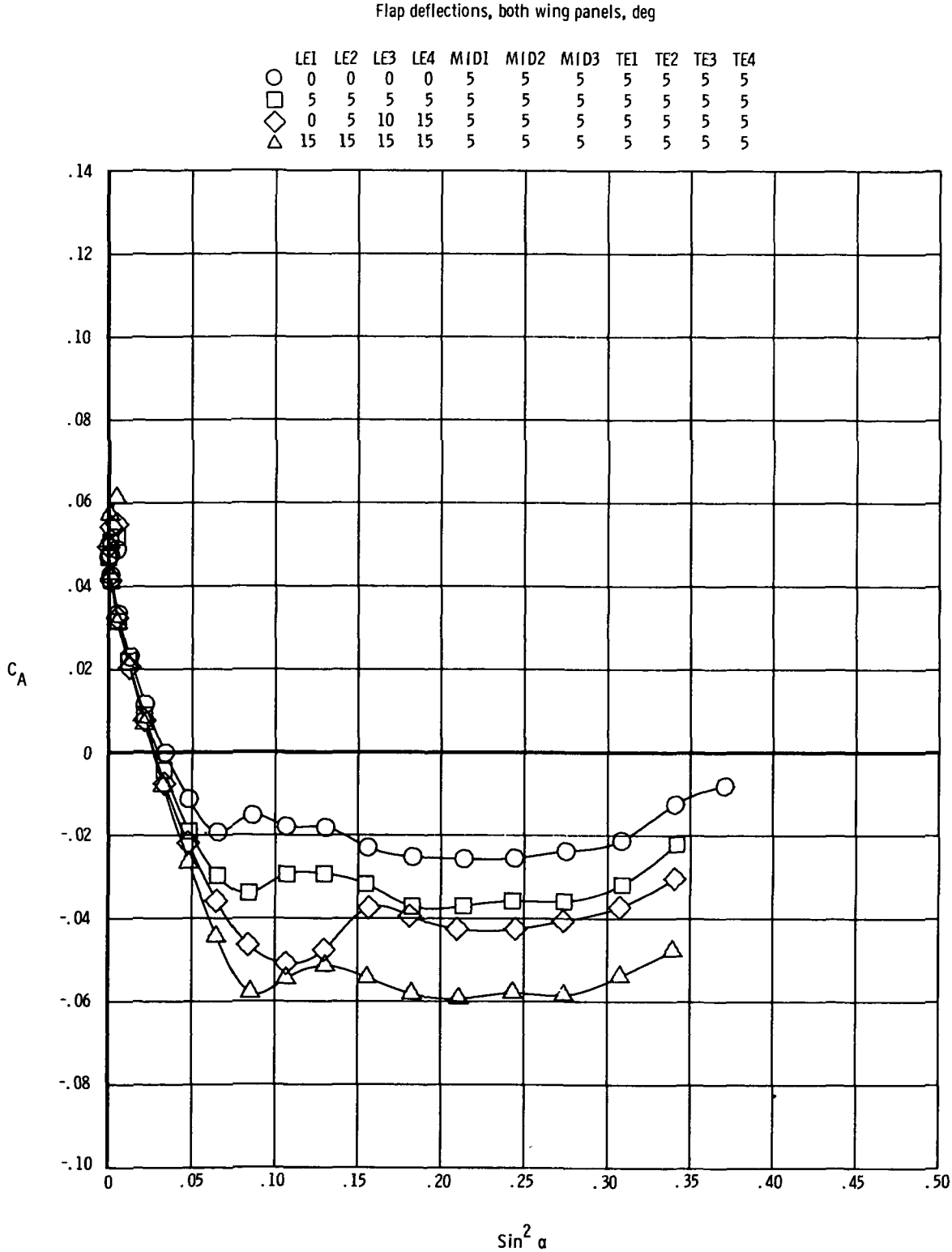
(b) Drag characteristics.

Figure 6.- Continued.



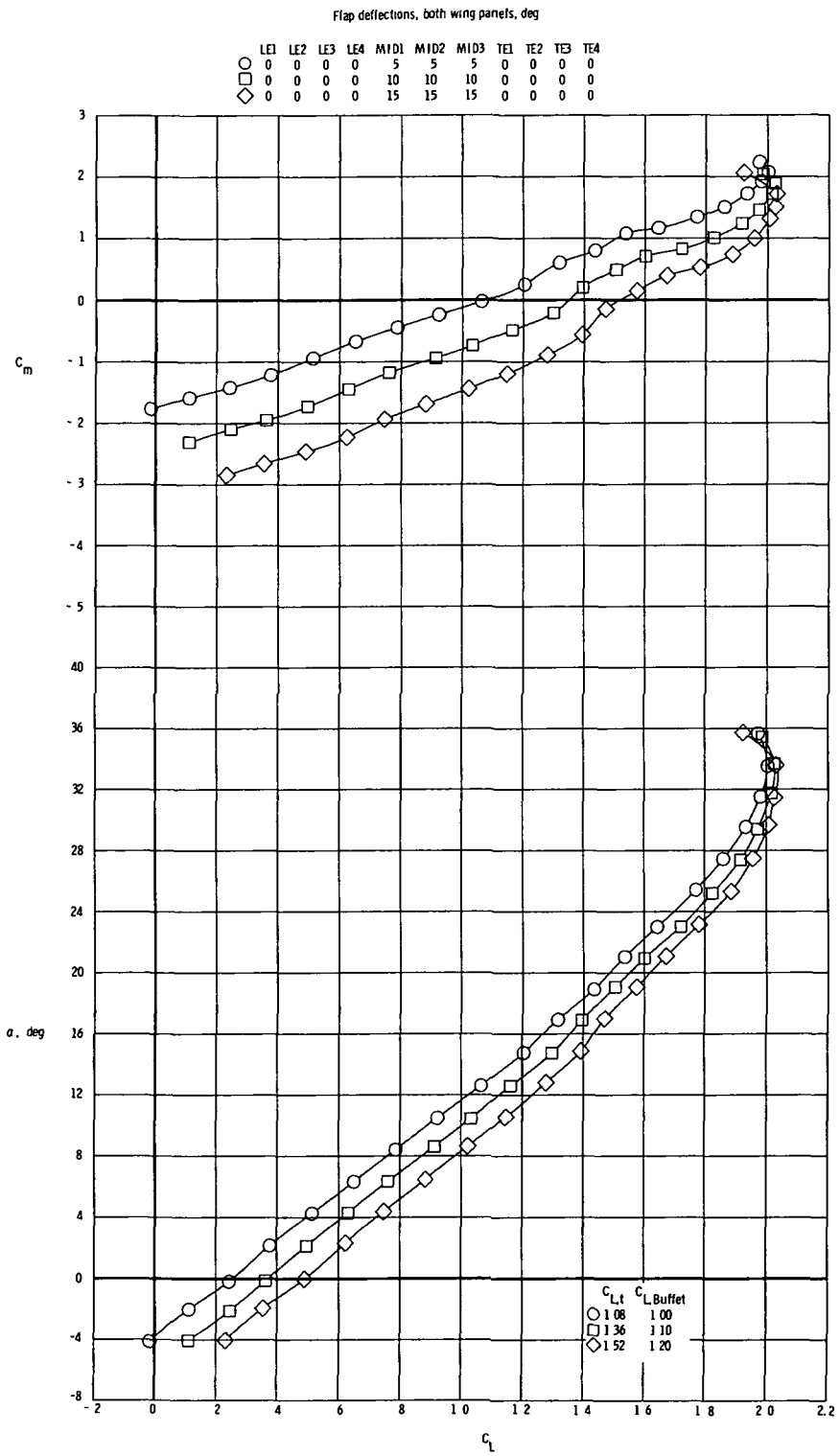
(c) Canard lift characteristics.

Figure 6.- Continued.



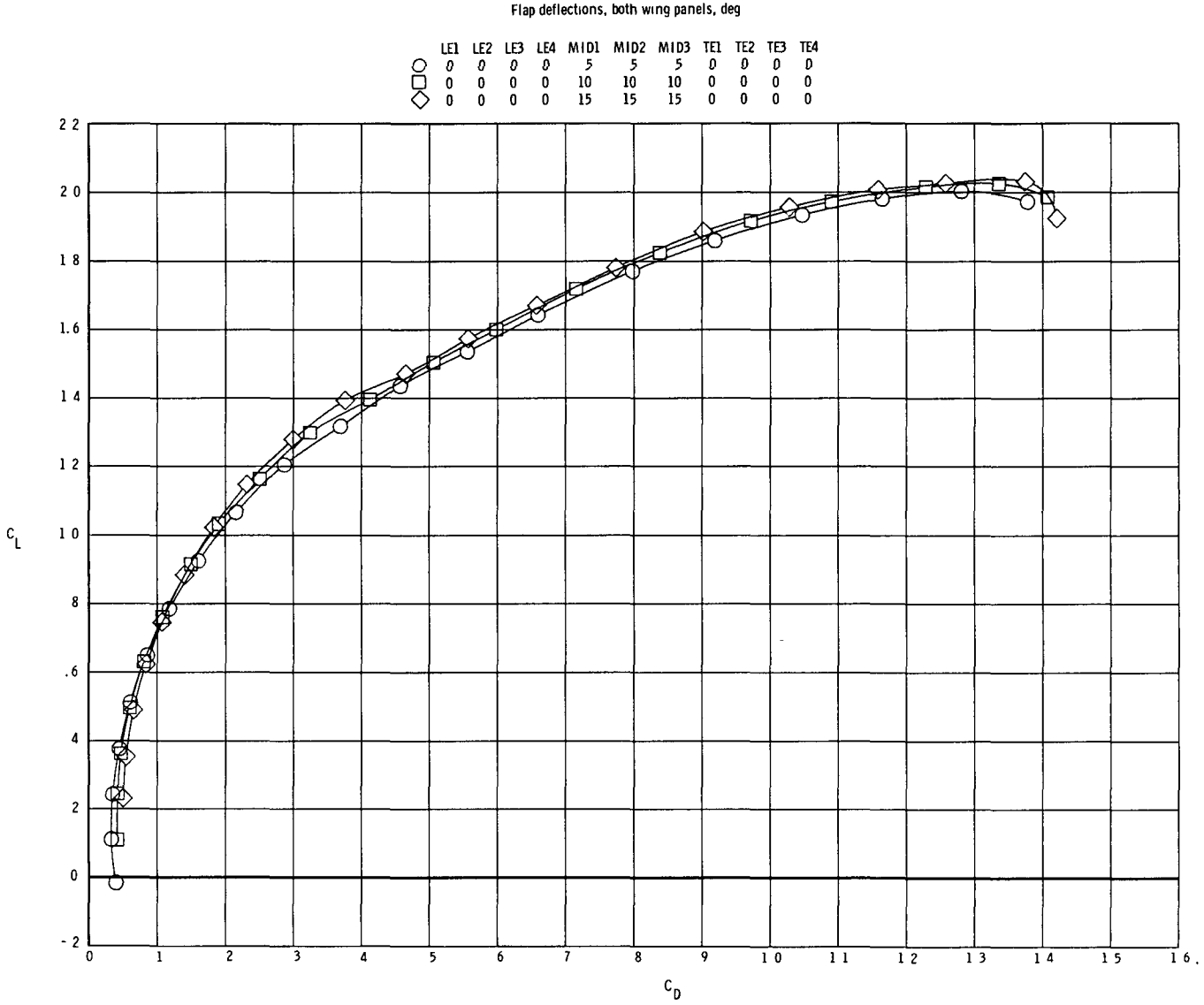
(d) Axial-force characteristics.

Figure 6.- Concluded.



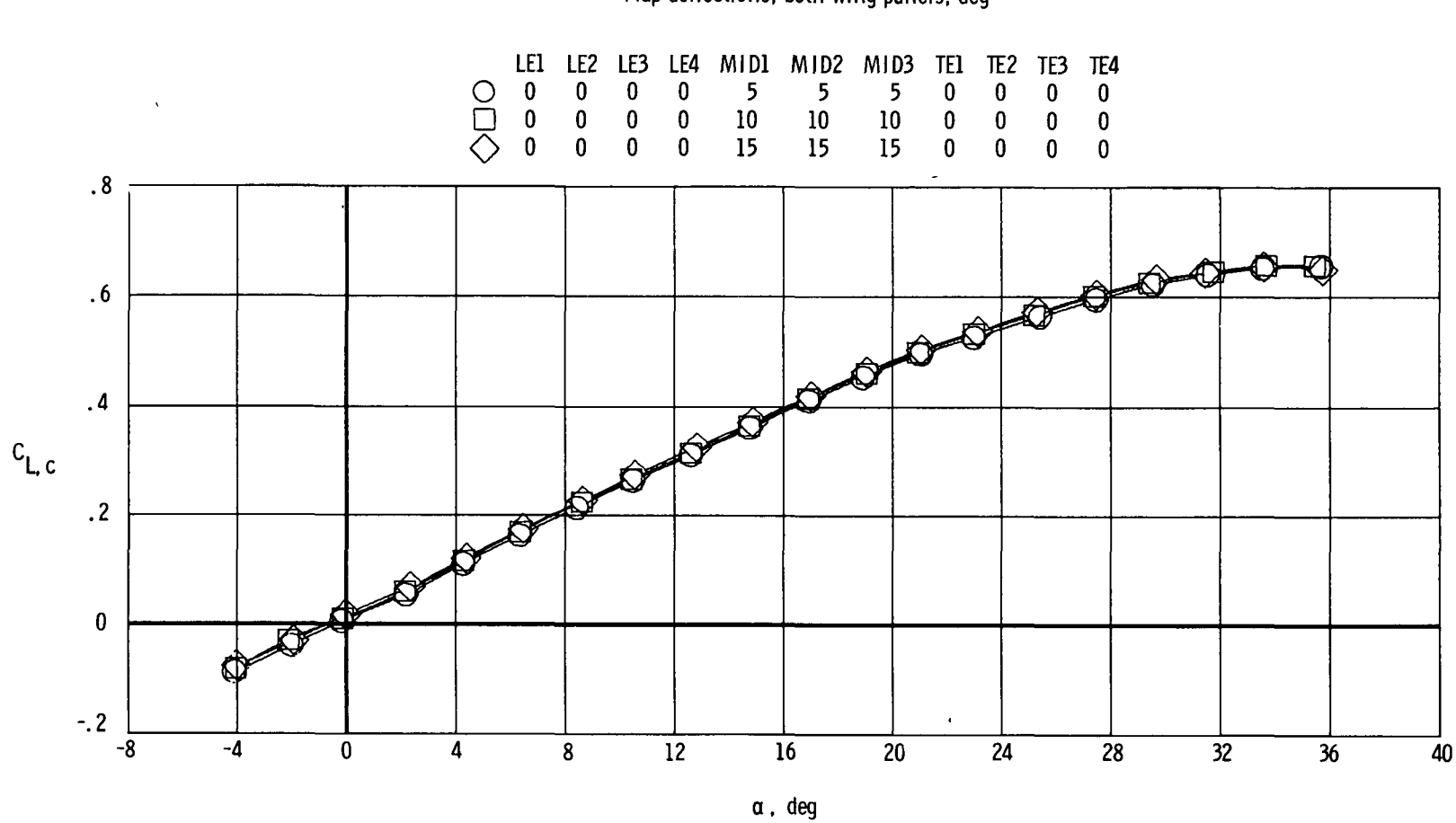
(a) Lift and pitching-moment characteristics.

Figure 7.- Effect of deflecting MID segments on the longitudinal aerodynamic characteristics.



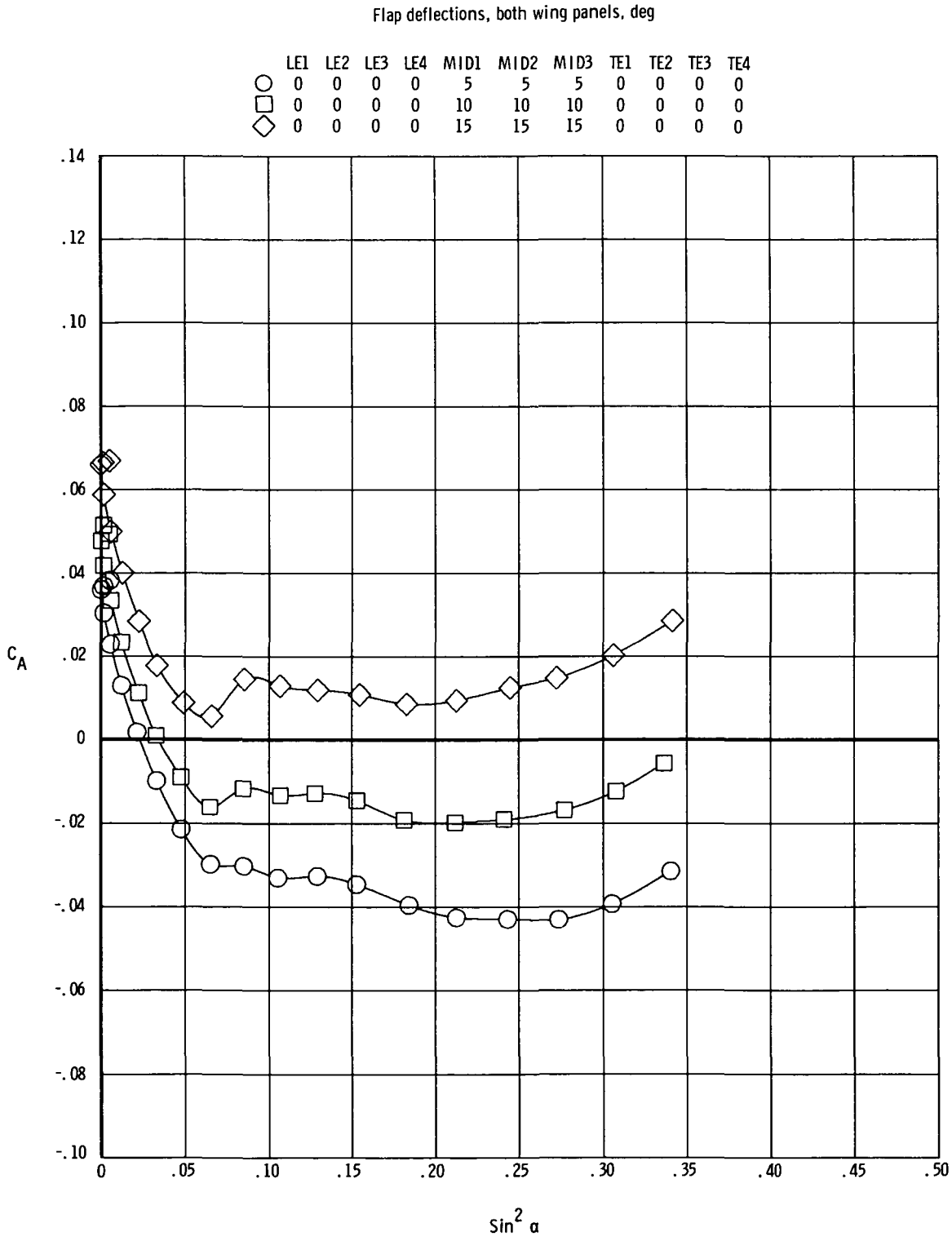
(b) Drag characteristics.

Figure 7.- Continued.



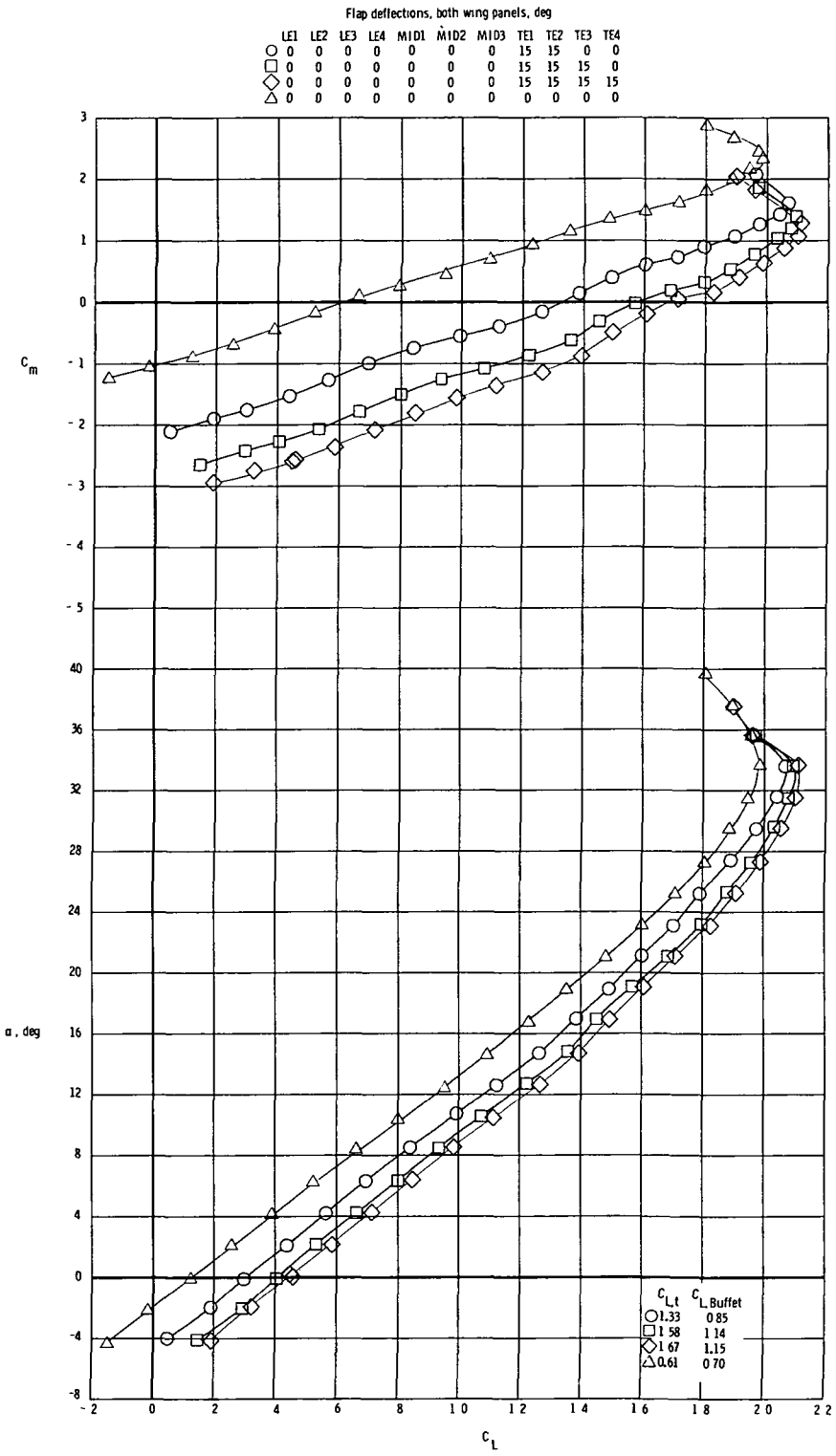
(c) Canard lift characteristics.

Figure 7.- Continued.



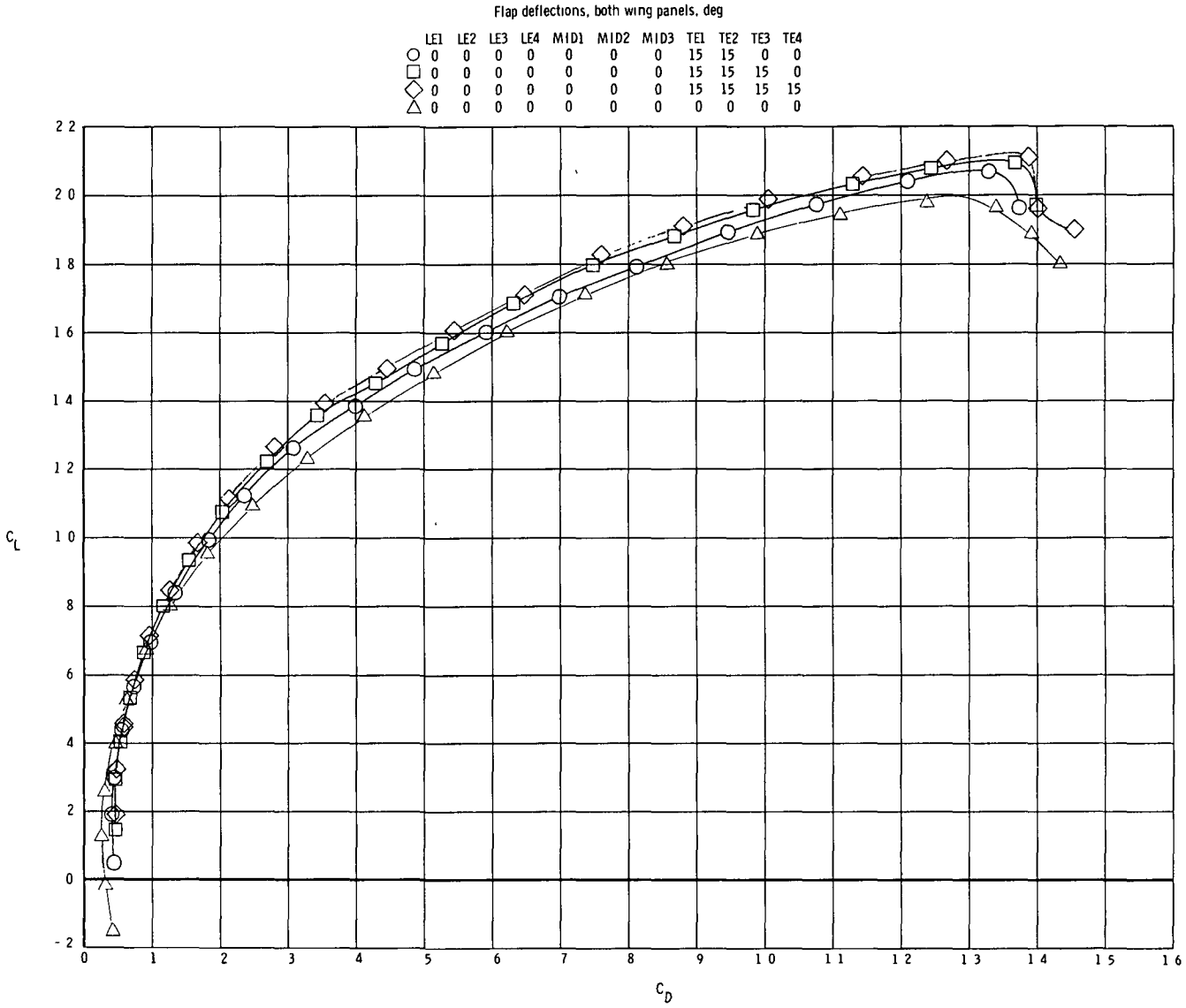
(d) Axial-force characteristics.

Figure 7.- Concluded.



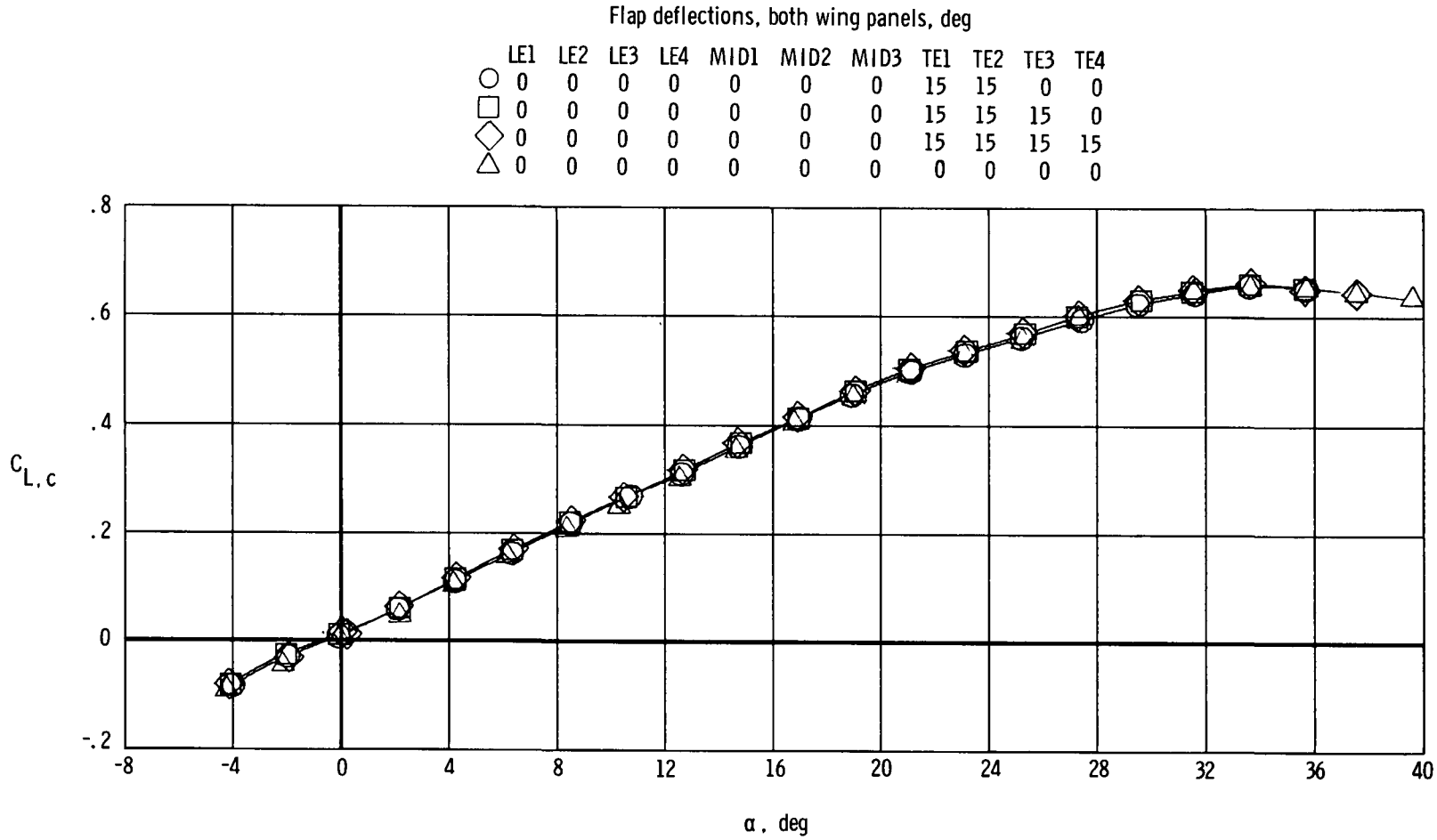
(a) Lift and pitching-moment characteristics.

Figure 8.- Effect of deflecting two or more TE segments on the longitudinal aerodynamic characteristics.



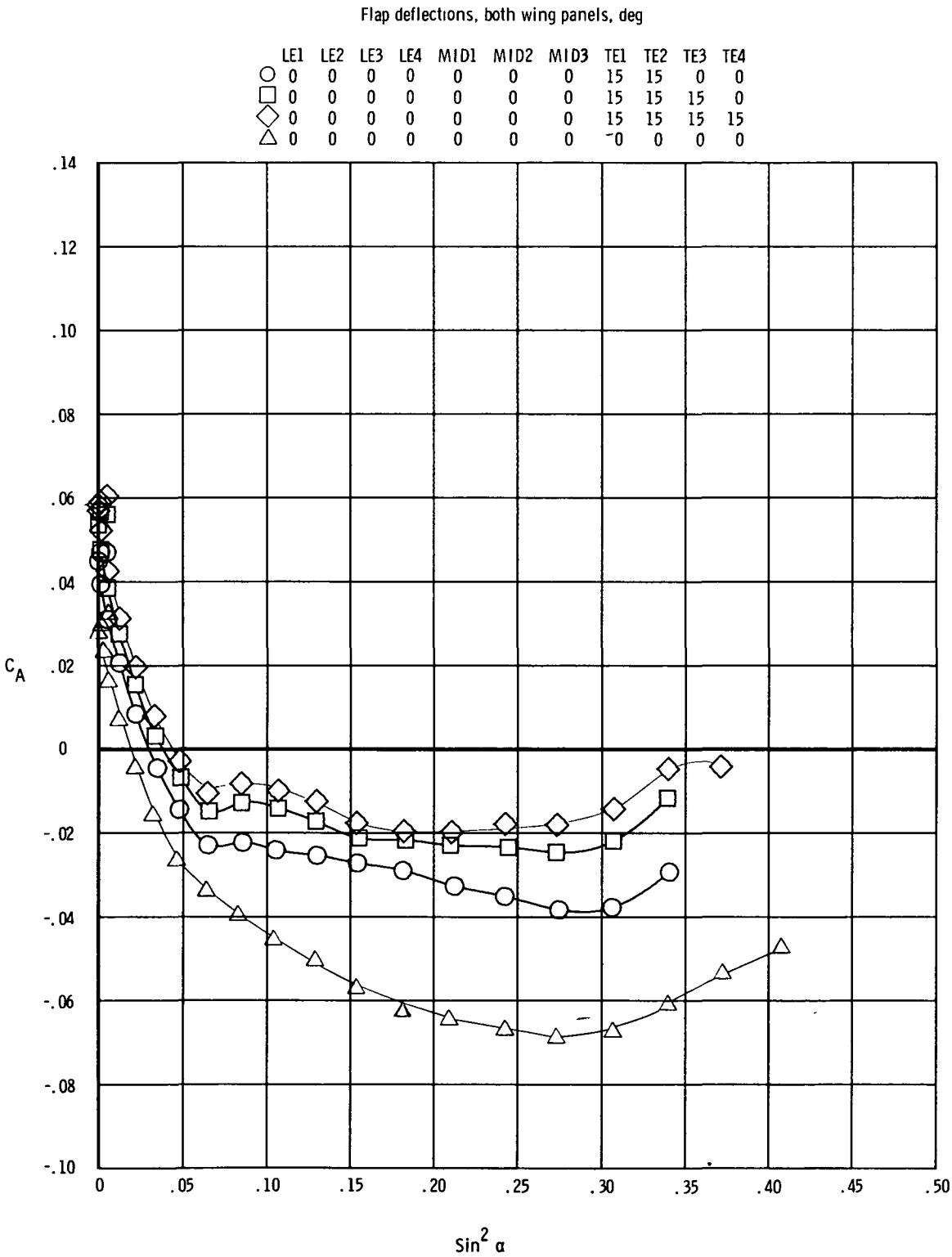
(b) Drag characteristics.

Figure 8.- Continued.



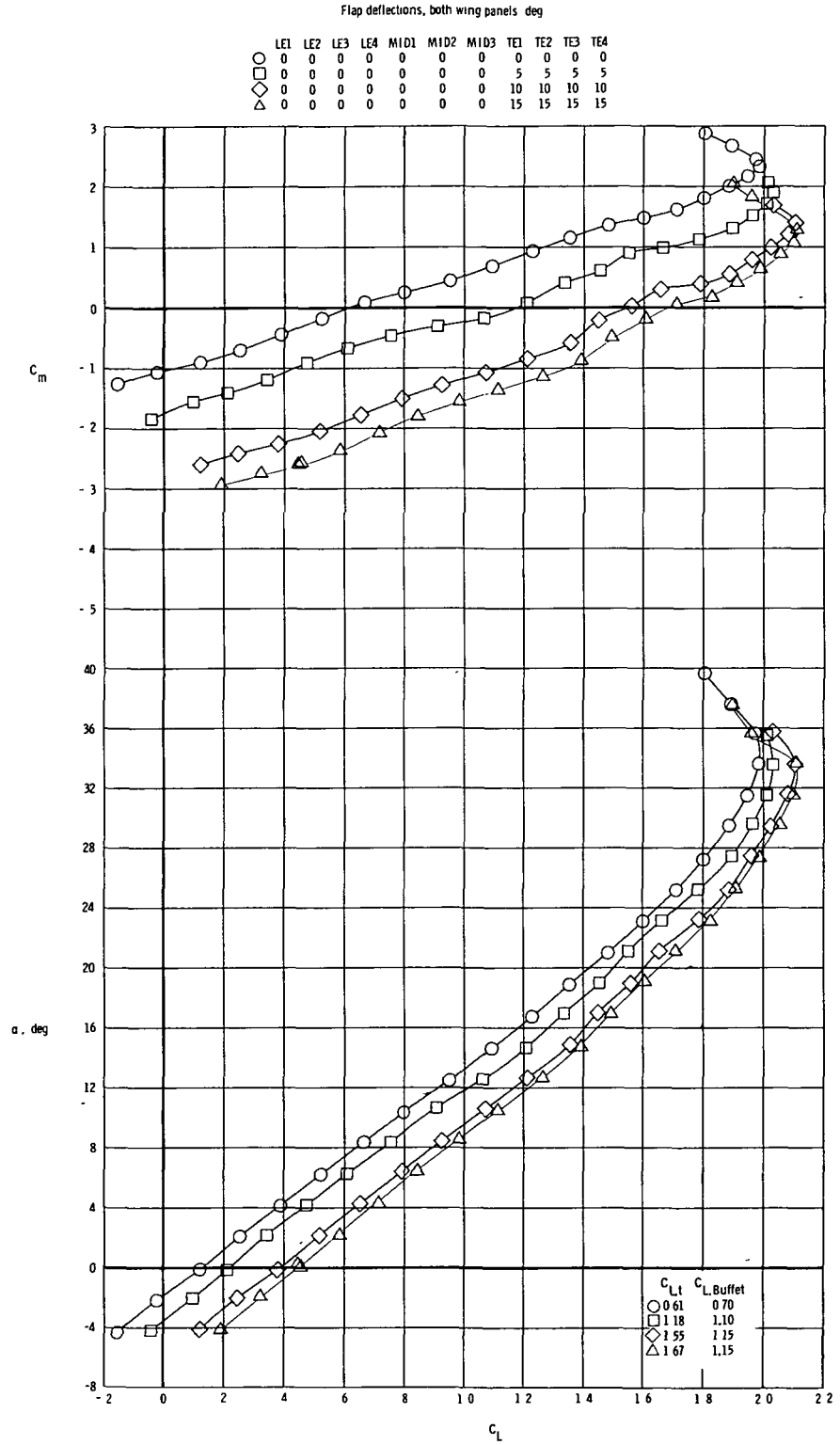
(c) Canard lift characteristics.

Figure 8.- Continued.



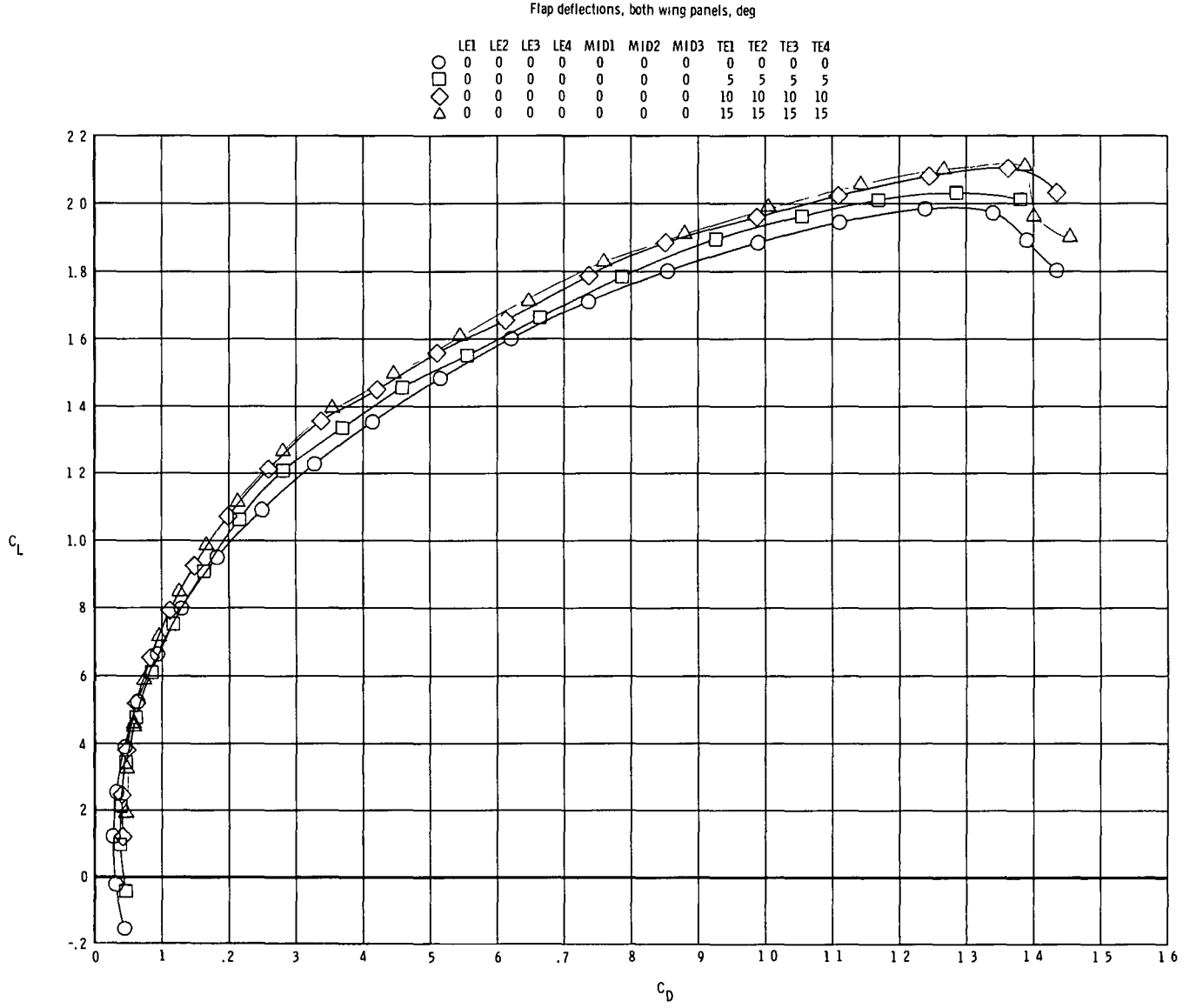
(d) Axial-force characteristics.

Figure 8.- Concluded.



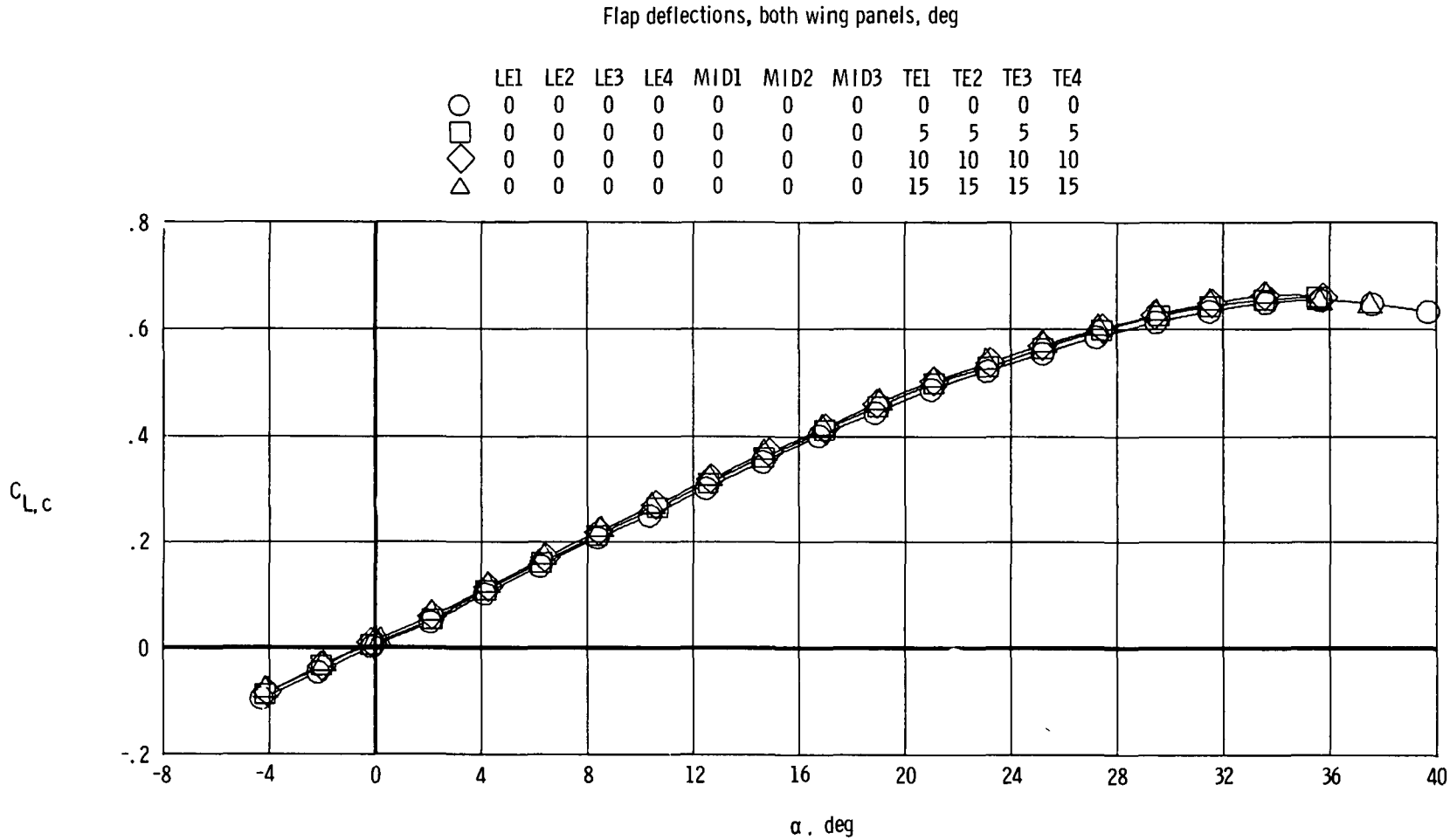
(a) Lift and pitching-moment characteristics.

Figure 9.- Effect of deflecting all TE segments on the longitudinal aerodynamic characteristics.



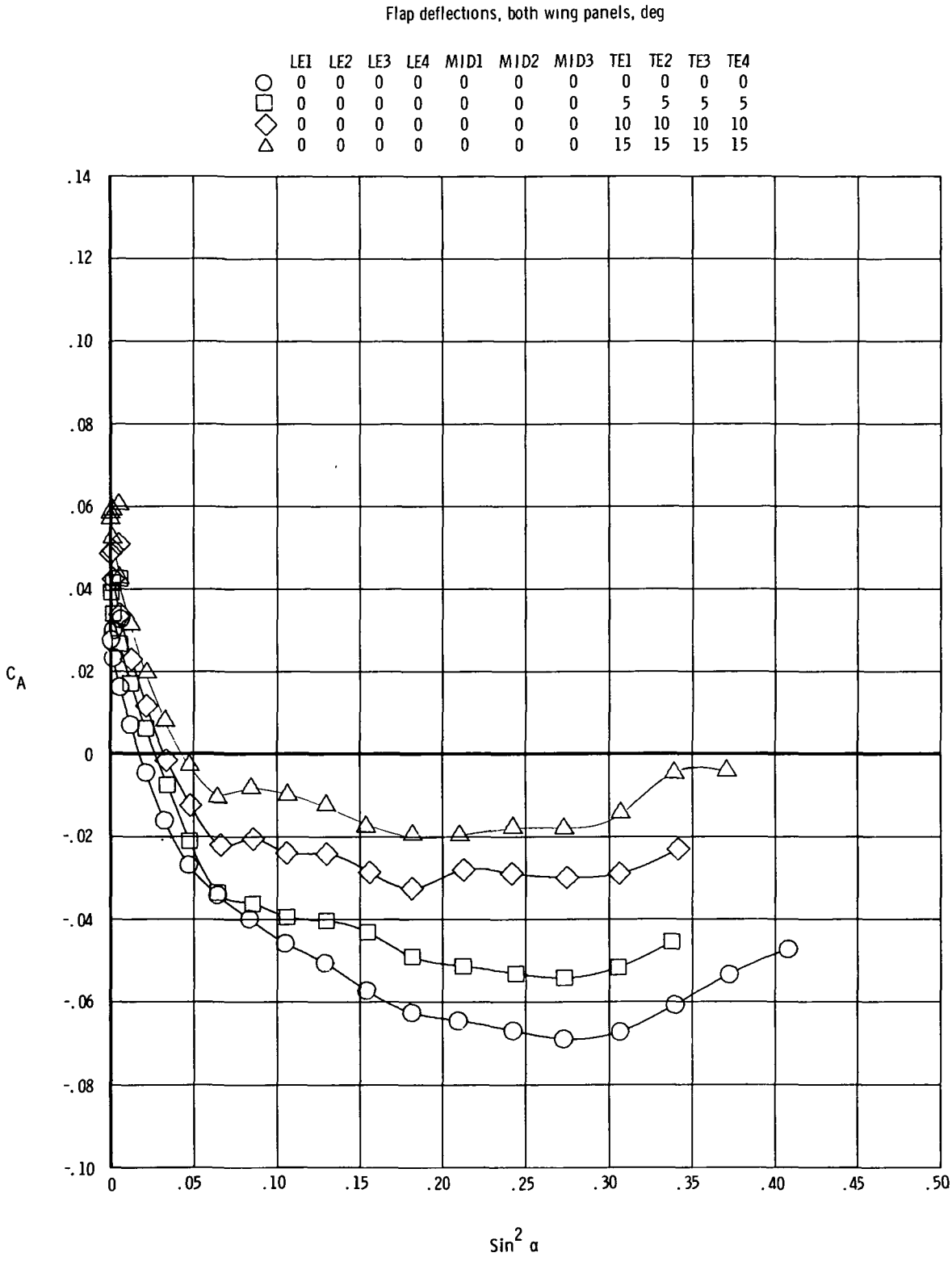
(b) Drag characteristics.

Figure 9.- Continued.



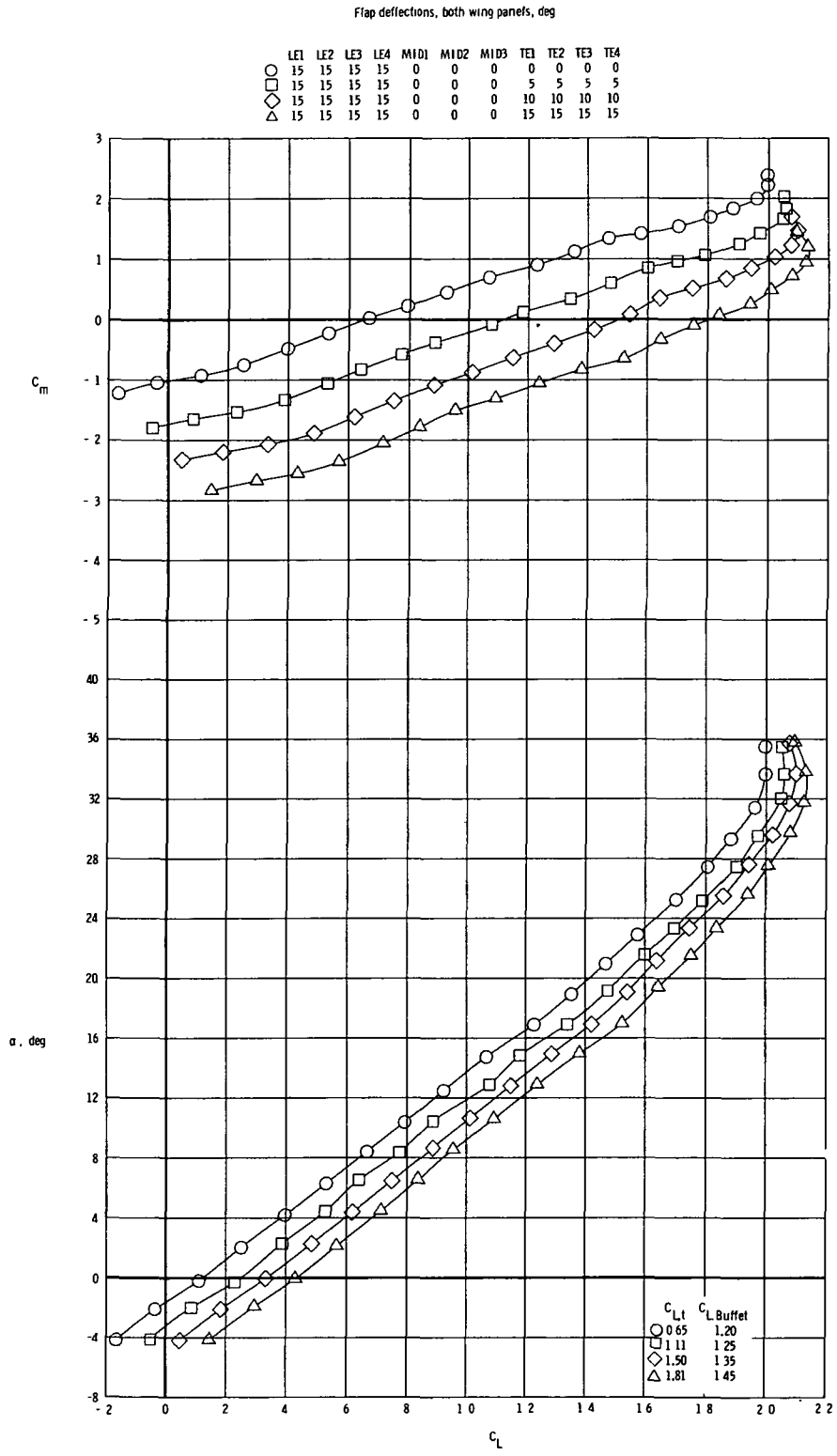
(c) Canard lift characteristics.

Figure 9.- Continued.



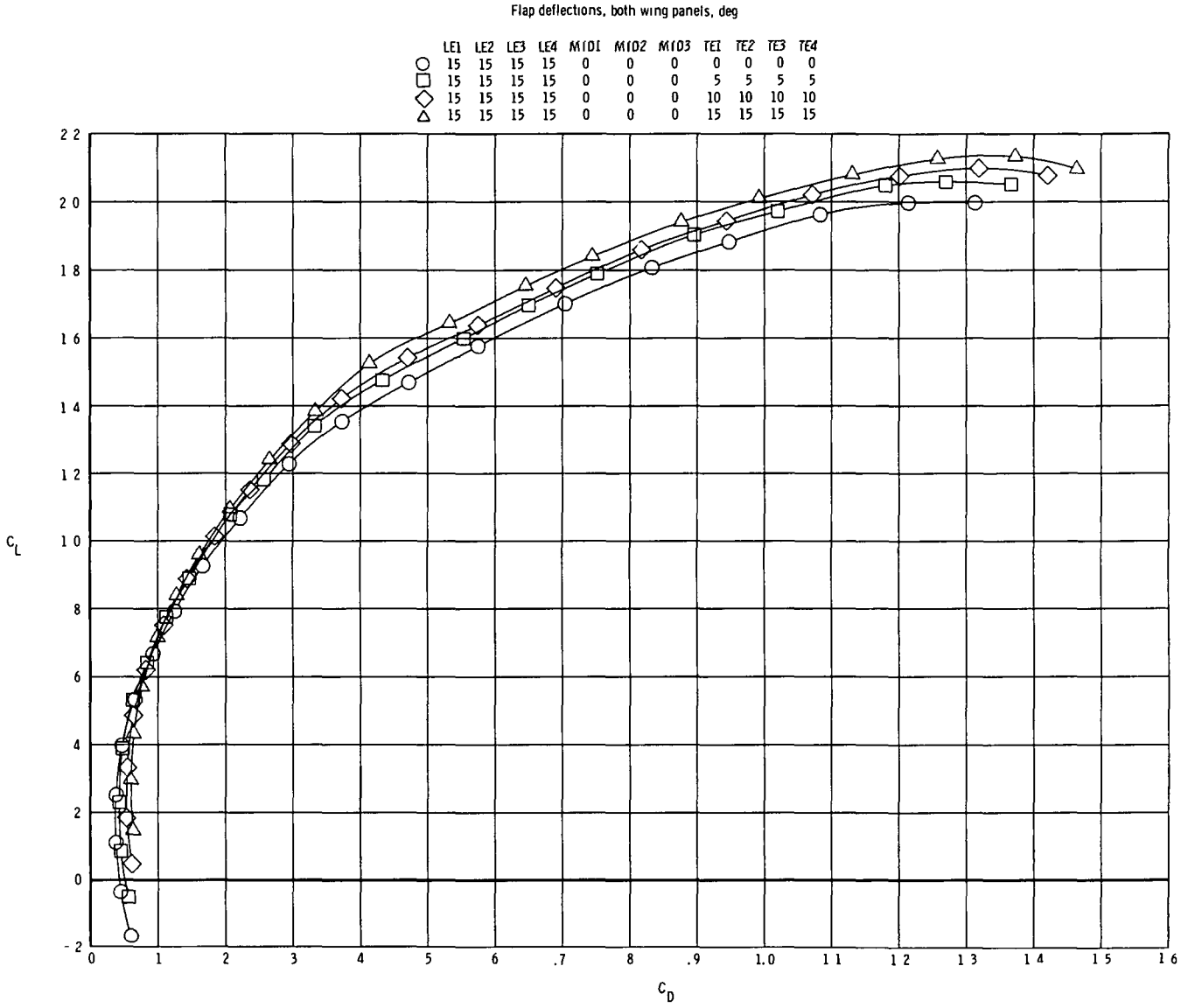
(d) Axial-force characteristics.

Figure 9.- Concluded.



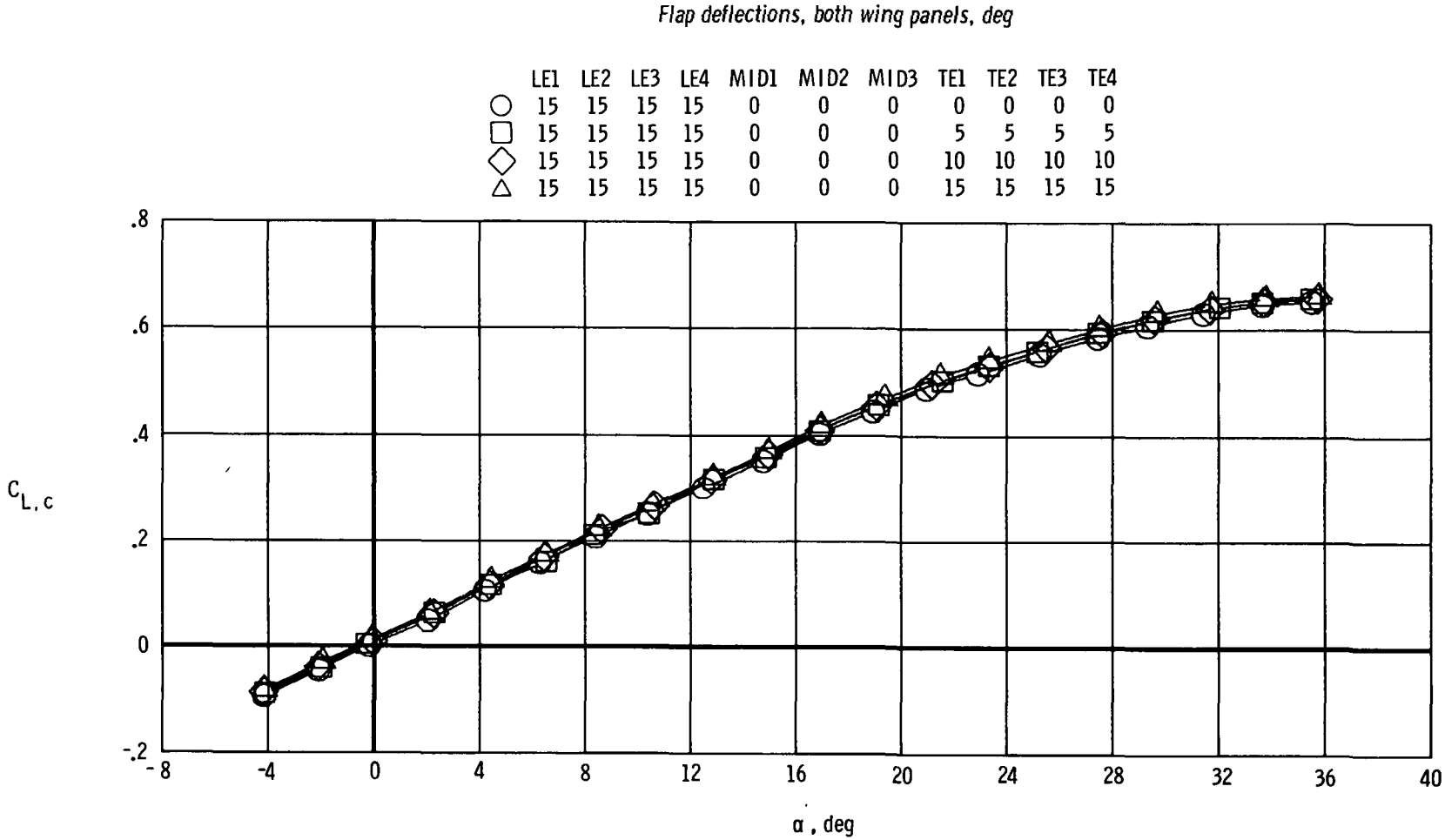
(a) Lift and pitching-moment characteristics.

Figure 10.- Effect of deflecting TE segments on the longitudinal aerodynamic characteristics, LE segments deflected 15°.



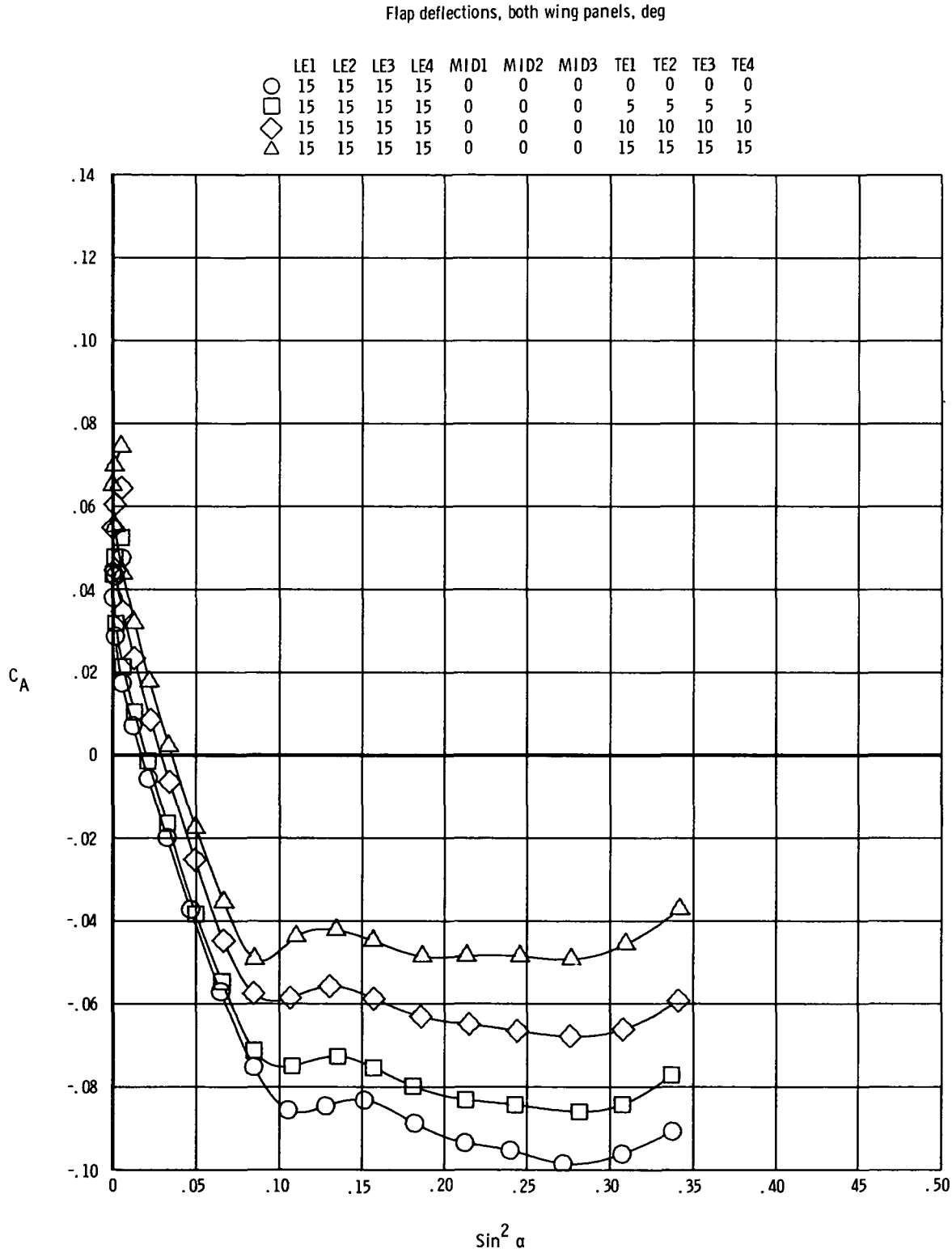
(b) Drag characteristics.

Figure 10.- Continued.



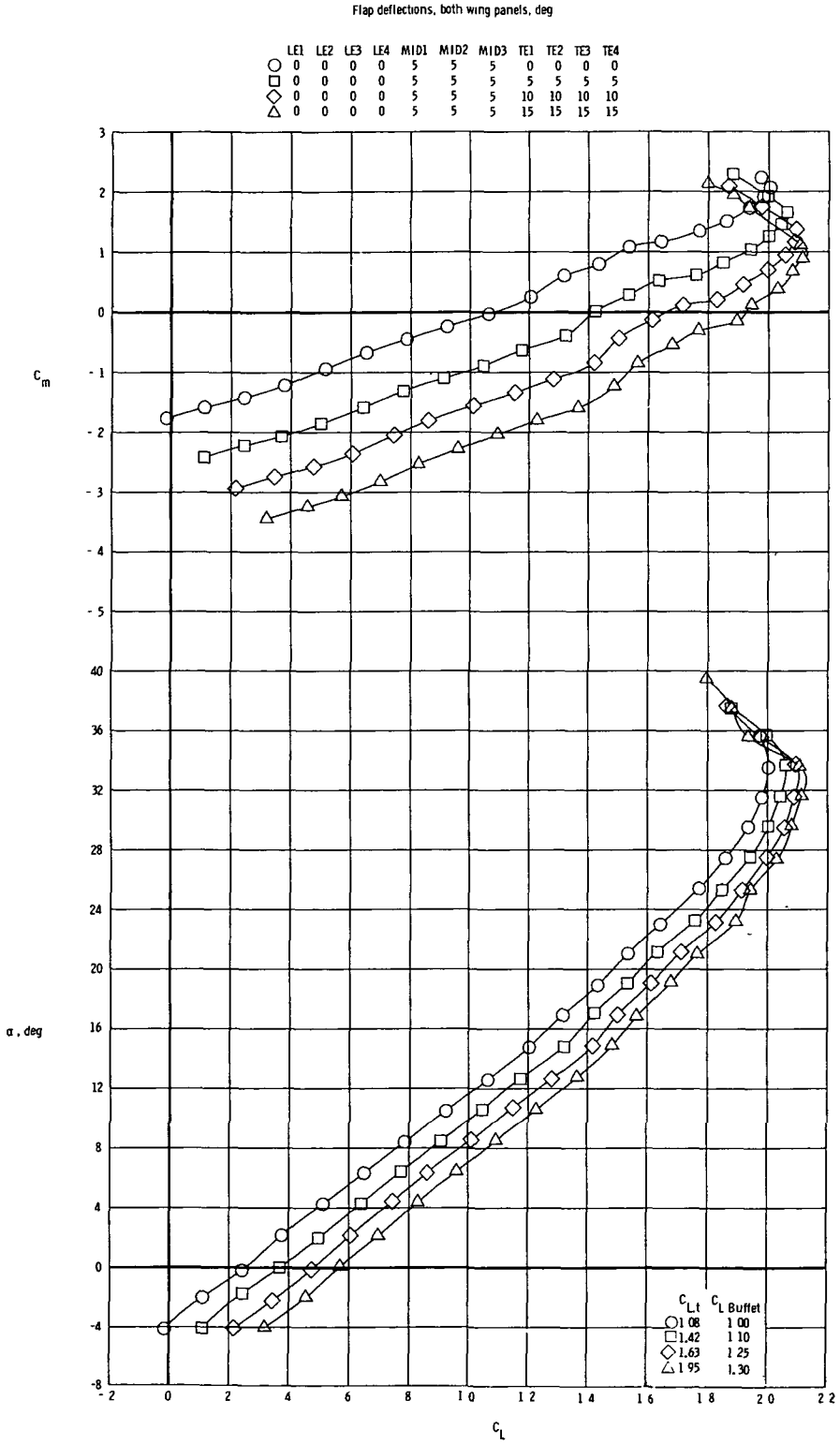
(c) Canard lift characteristics.

Figure 10.- Continued.



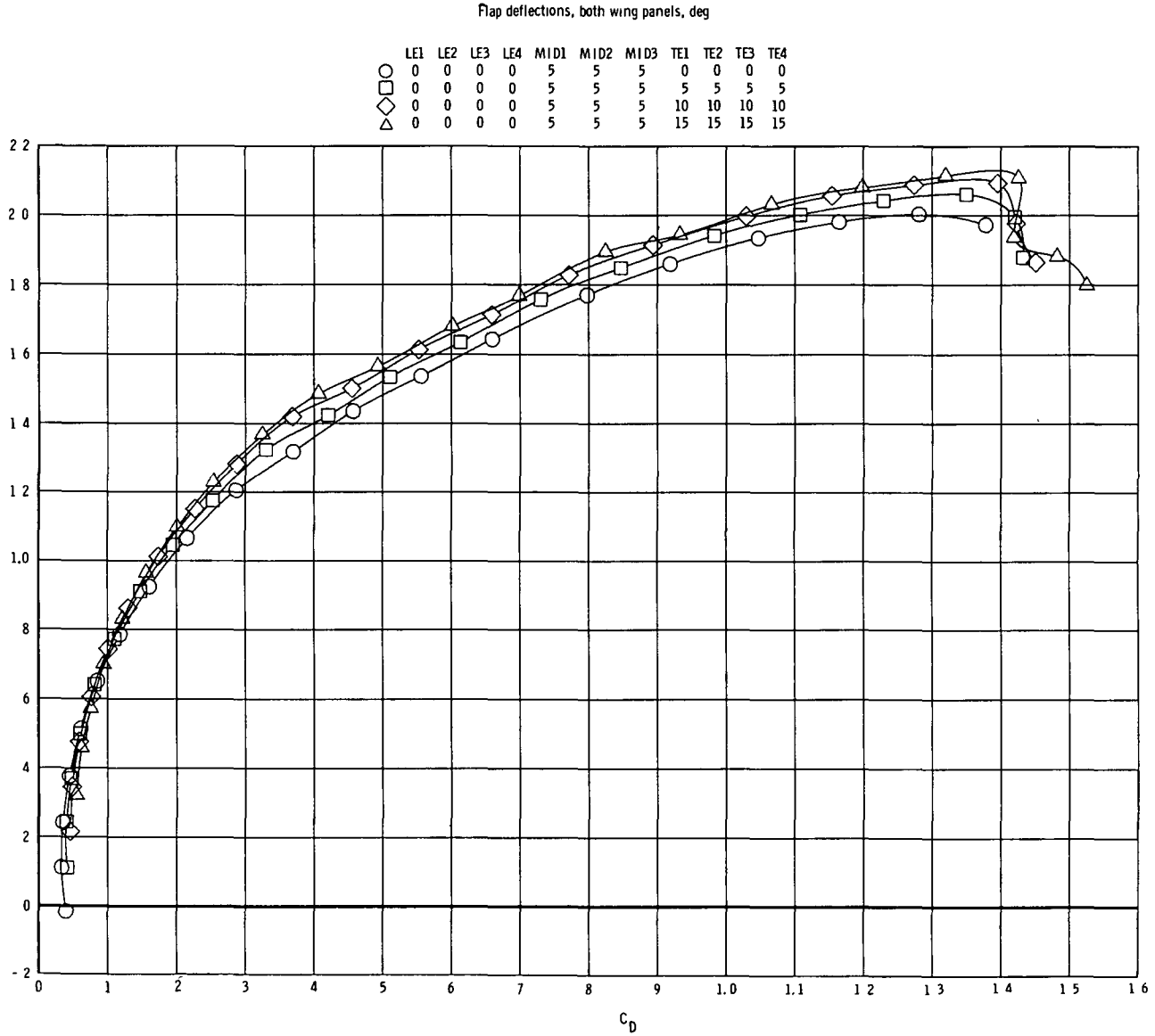
(d) Axial-force characteristics.

Figure 10.- Concluded.



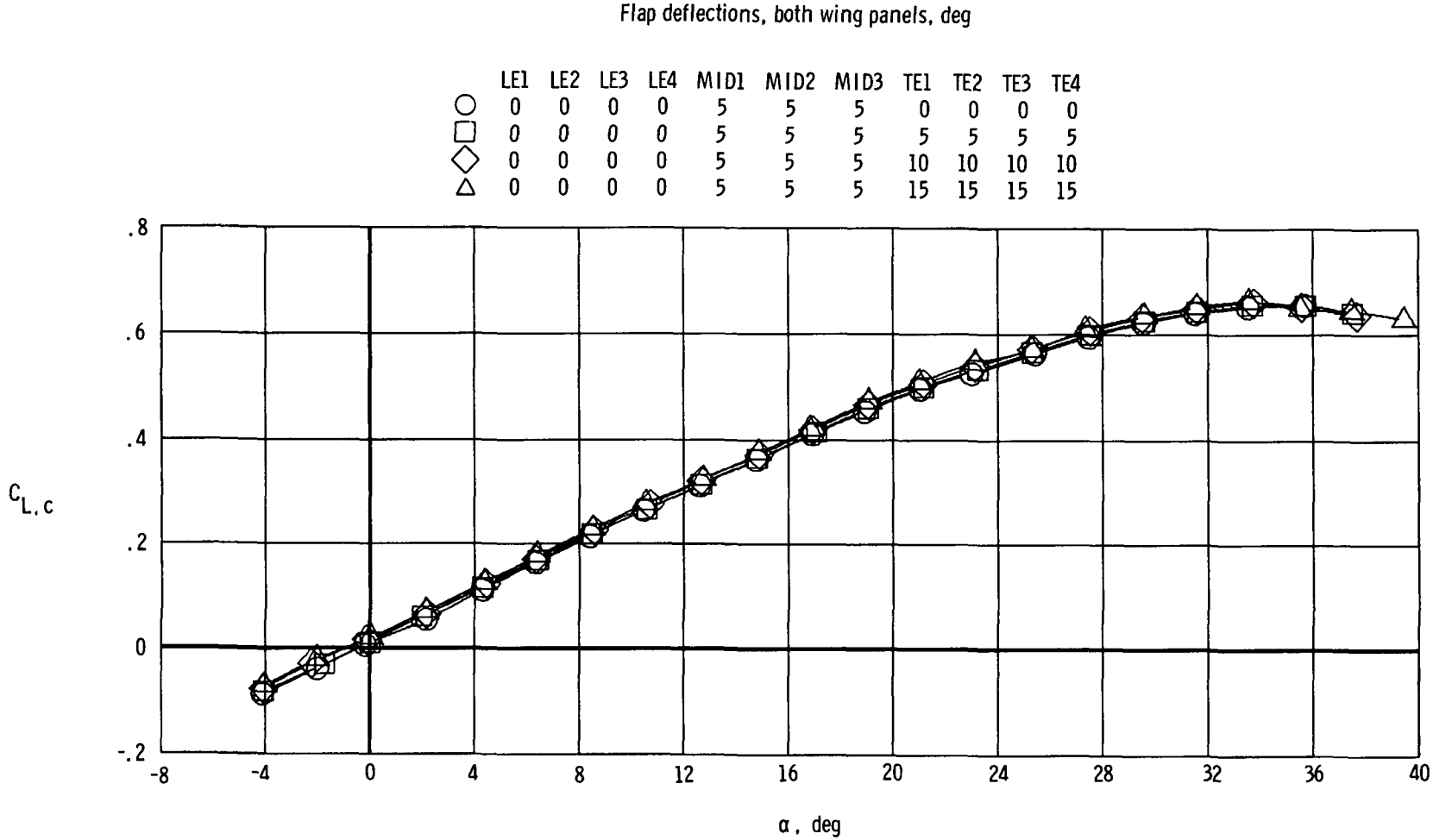
(a) Lift and pitching-moment characteristics.

Figure 11.- Effect of deflecting TE segments on the longitudinal aerodynamic characteristics, MID segments deflected 5°.



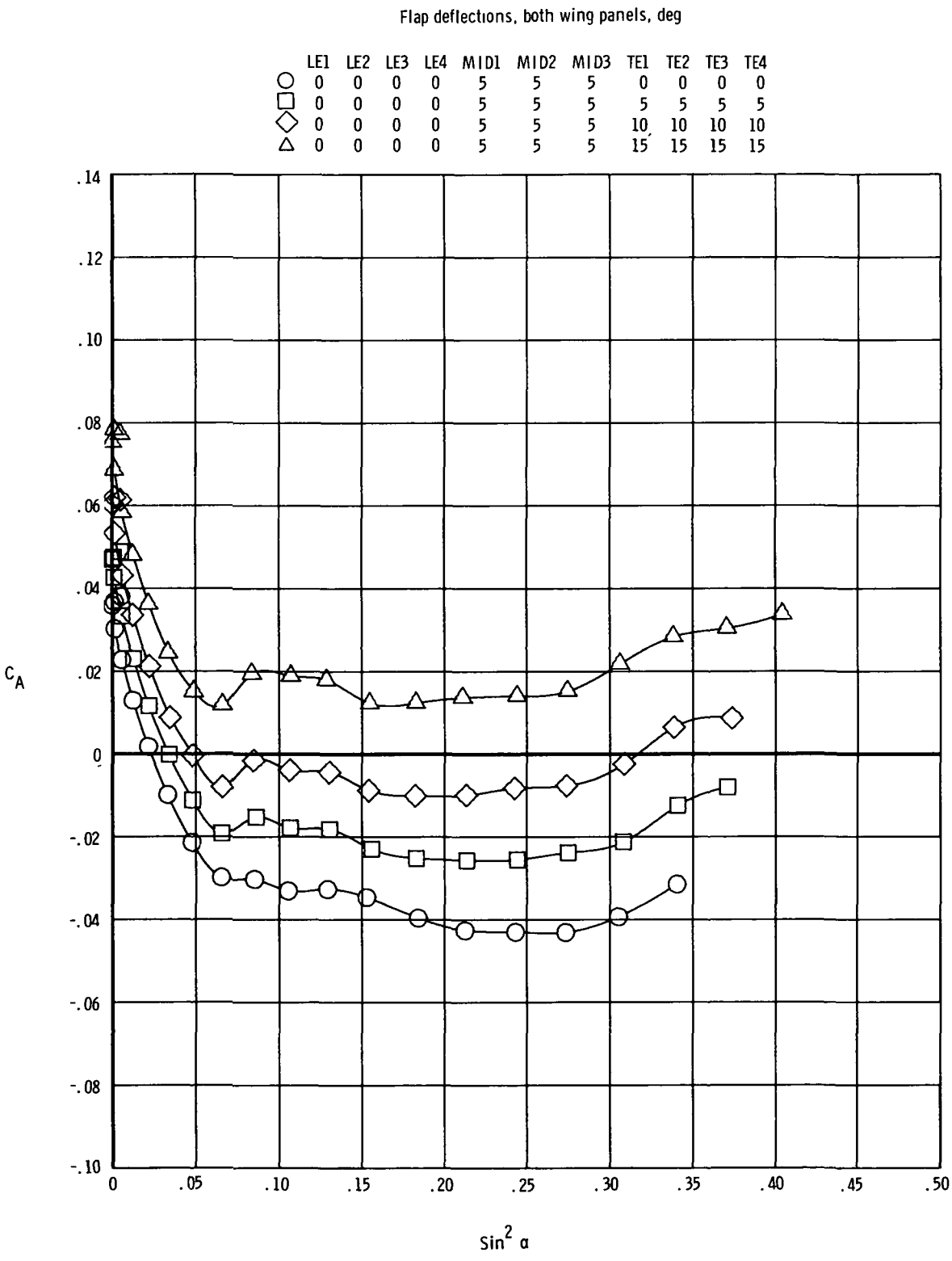
(b) Drag characteristics.

Figure 11.- Continued.



(c) Canard lift characteristics.

Figure 11.- Continued.



(d) Axial-force characteristics.

Figure 11.- Concluded.

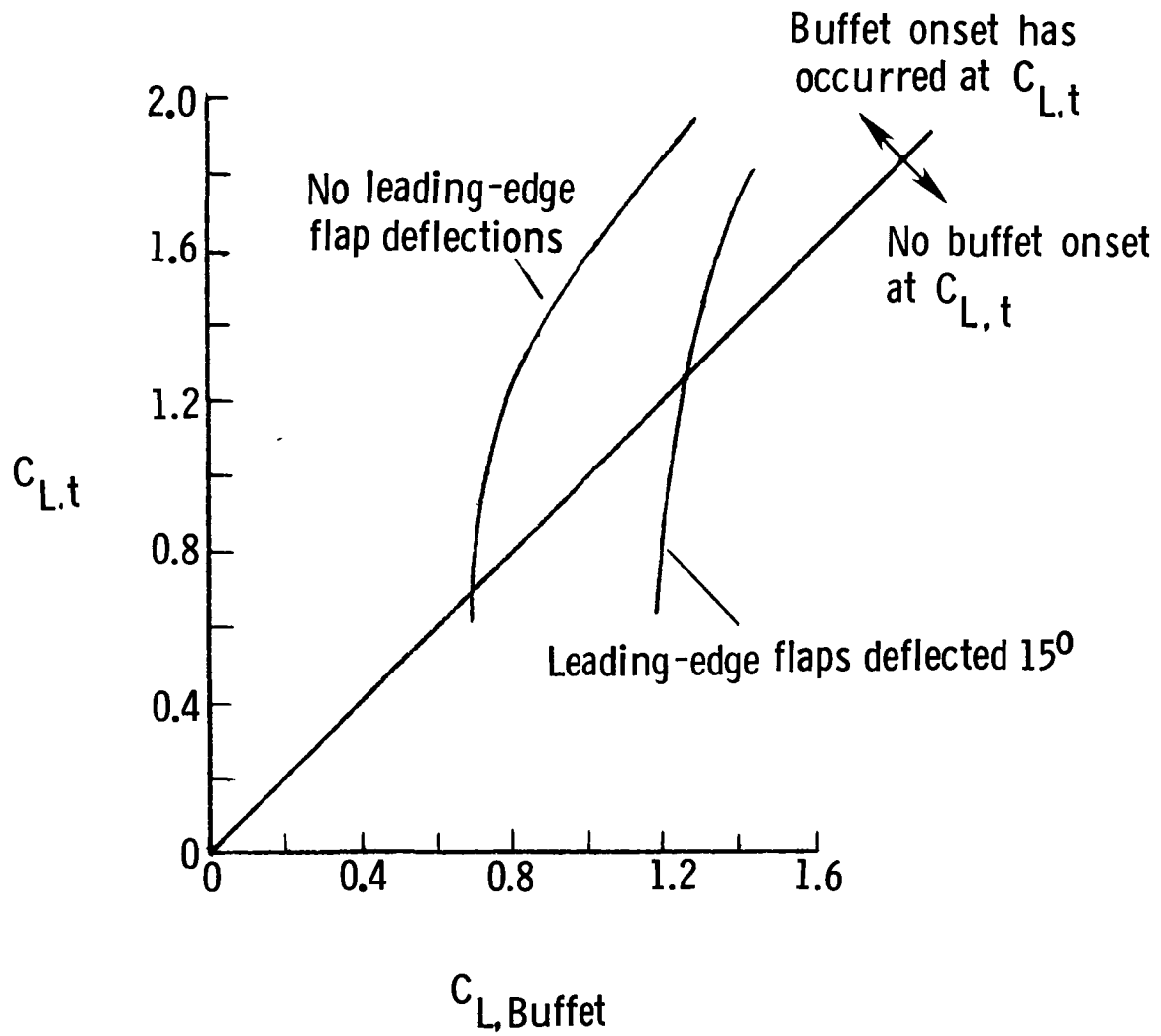


Figure 12.- Effect of leading-edge flap deflection on attaining buffet-free trimmed lift coefficients.

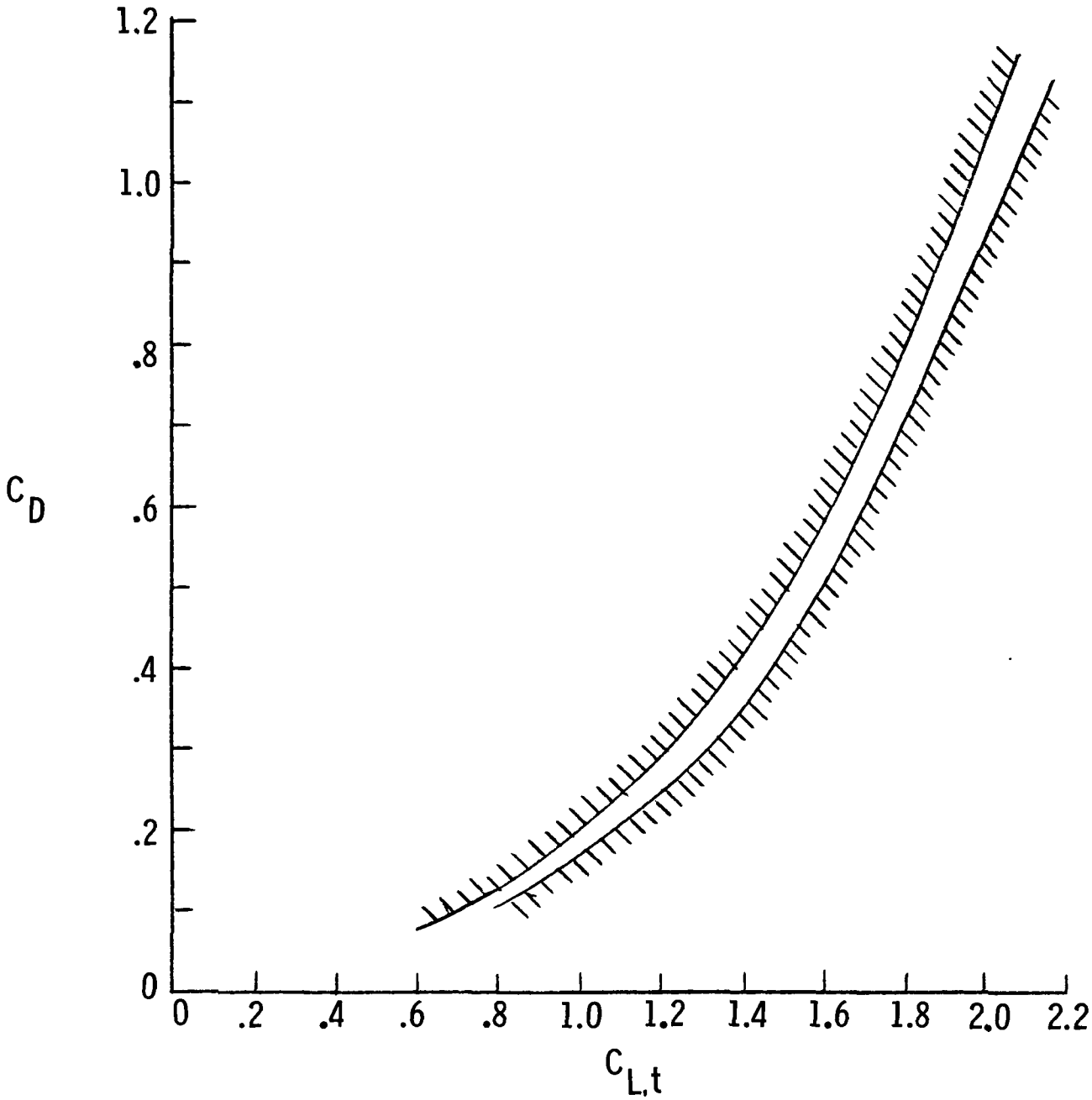


Figure 13.- Envelope of drag at trimmed conditions for configurations tested.

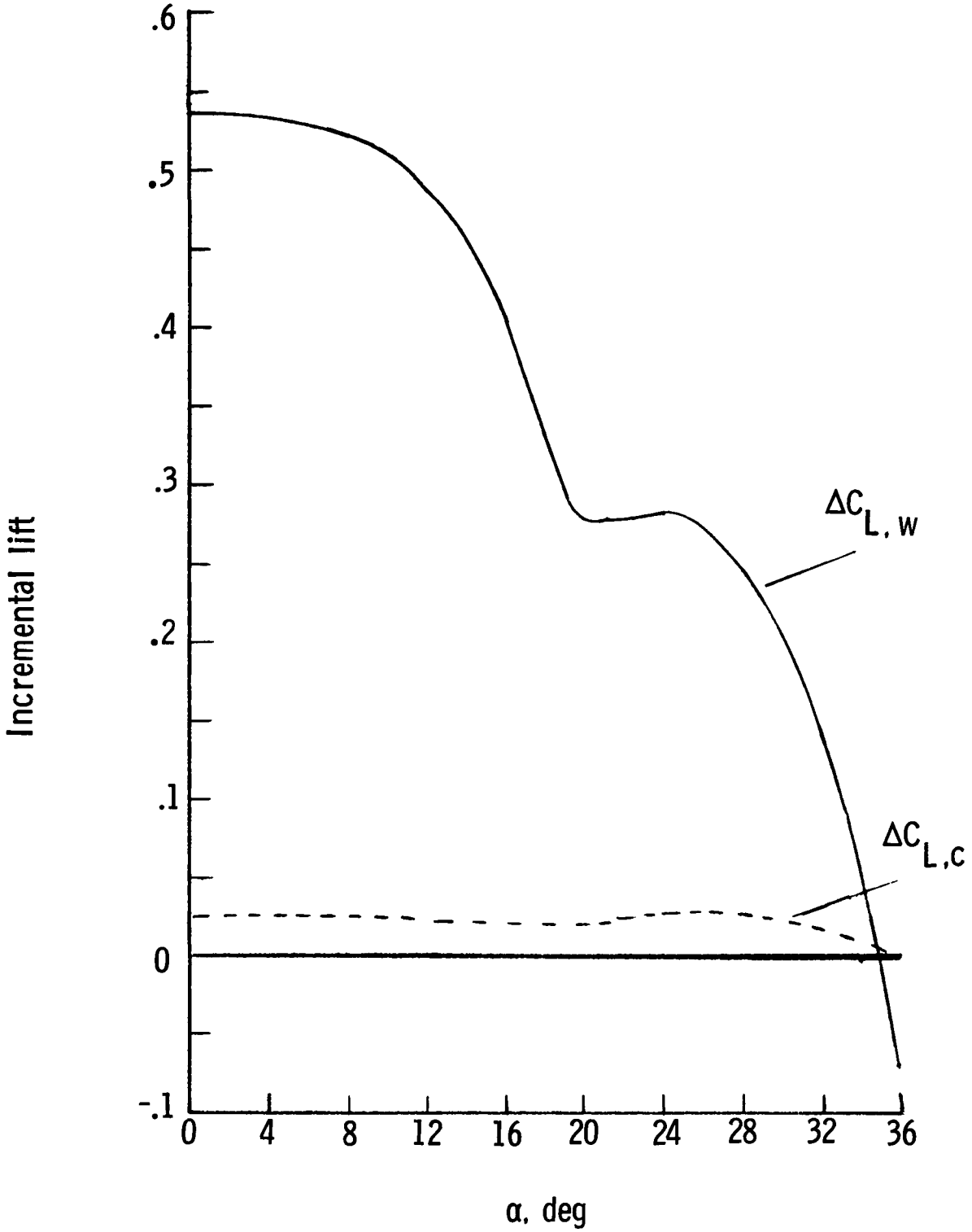


Figure 14.- Incremental lift ΔC_L on the canard and wing due to deflecting all flaps about their respective hinge lines 15°.

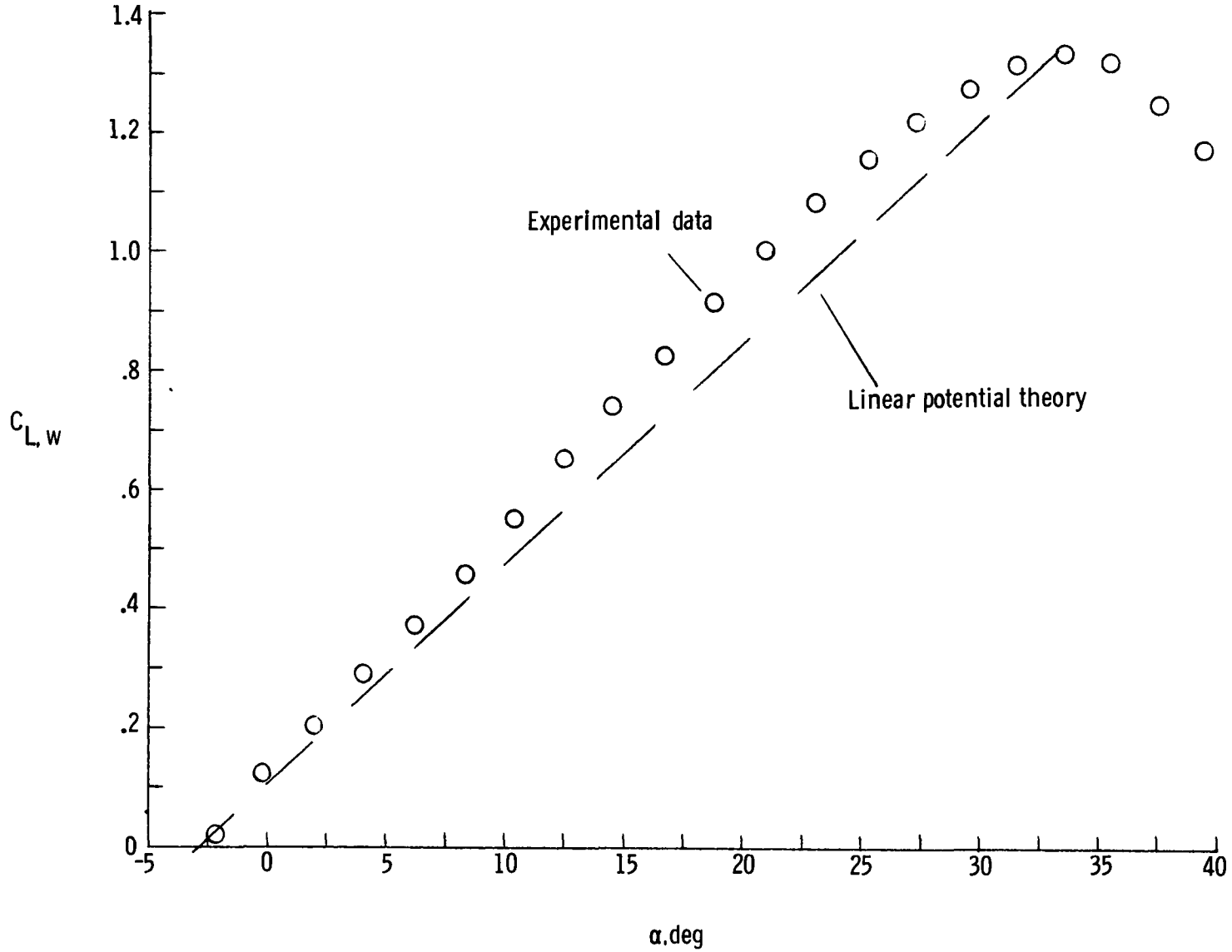


Figure 15.- Comparison of wing lift with linear potential theory without flap deflections.

1 Report No.	2 Government Accession No	3. Recipient's Catalog No.
NASA TM-78686		

4 Title and Subtitle	5. Report Date
EFFECT OF CAMBER ON THE TRIMMED LIFT CAPABILITY OF A CLOSE-COUPLED CANARD-WING CONFIGURATION	July 1978
	6. Performing Organization Code
7 Author(s)	8 Performing Organization Report No
Blair B. Gloss	L-12102
	10 Work Unit No.
9 Performing Organization Name and Address	505-11-23-13
NASA Langley Research Center Hampton, VA 23665	11 Contract or Grant No.
	13. Type of Report and Period Covered
12 Sponsoring Agency Name and Address	Technical Memorandum
National Aeronautics and Space Administration Washington, DC 20546	14 Sponsoring Agency Code

15 Supplementary Notes

16 Abstract

A close-coupled canard-wing configuration was tested in the Langley high-speed 7- by 10-foot tunnel at a Mach number of 0.30 to determine the effect of changing wing camber on the trimmed lift capability. Trimmed lift coefficients of near 2.0 were attained; however, the data indicated that the highest buffet-free trimmed lift coefficient attainable was approximately 1.30. The buffet data used in this investigation were qualitative in nature and gave no indication of buffet intensity. Thus, the trimmed lift coefficient of near 2.0 might be attainable if the buffet intensity was not too high. The data showed that there was approximately a 10-percent variation in drag coefficient, for different model configurations, at a given trimmed lift coefficient. Large increases in wing lift had only small effects on canard lift.

17 Key Words (Suggested by Author(s))	18 Distribution Statement
Canard wing Variable camber Trimmed lift	Unclassified - Unlimited Subject Category 02

19 Security Classif. (of this report)	20 Security Classif (of this page)	21 No. of Pages	22 Price*
Unclassified	Unclassified	91	$6.00

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