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EFFECT OF TRAILING-EDGE FLAP DEFLECTION ON THE LATERAL AND LONGITUDINAL-STABILITY CHARACTERISTICS OF A SUPERSONIC TRANSPORT MODEL HAVING A HIGHLY-SWEPT ARROW WING

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March 19, 1974

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The results showed that deflection of the trailing-edge flaps decreased the roll due to sideslip by about 20 percent at a landing lift coefficient of 0.5. The directional-stability parameter, C_{n_β}, was increased by deflection of the flaps and the range of lift coefficients over which it was positive was also increased. The longitudinal stability characteristics of the model without leading-edge devices were improved by increased flap deflection, that is, the pitch-up tendency was delayed to higher lift coefficients. The lift coefficient increment resulting from the first 15° flap deflection compared favorably with that predicted using the method presented in NACA TN 3911.

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SUMMARY

A low-speed investigation has been made on a highly-swept wing model having a thickened leading edge to determine the effect of inboard trailing-edge flaps on the characteristics of the model in pitch and sideslip. The tests were made at a Mach number of 0.227 which corresponds to a Reynolds number of about 5.53×10^6 based on the reference chord.

The results showed that deflection of the trailing-edge flaps decreased the roll due to sideslip by about 20 percent at a landing lift coefficient of 0.5. The directional-stability parameter, C_{n_β}, was increased by deflection of the flaps and the range of lift coefficients over which it was positive was also increased. The longitudinal stability characteristics of the model without leading-edge devices were improved by increased flap deflection, that is, the pitch-up tendency was delayed to higher lift coefficients. The lift coefficient increment resulting from the first 15° flap deflection compared favorably with that predicted using the method presented in NACA TN 3911.

INTRODUCTION

The National Aeronautics and Space Administration is continuing its research effort toward improving the low-speed characteristics of wings designed for supersonic flight. Considerable research effort has been extended toward improving the longitudinal stability characteristics of highly swept wings as shown in references 1 through 5 but relatively little progress has been made towards reducing the dihedral effect. A recent investigation (reference 6) made on a highly swept wing model has indicated some reductions of dihedral effect are possible through the use of wing tip droop. With a low wing configuration it is difficult to take advantage of this characteristic because ground clearance at the wing tip becomes an important consideration.

Although a small amount of dihedral effect is desirable the amount developed on a highly swept wing such as proposed for a supersonic transport imposes large demands on the lateral control system. Federal air regulations require that an airplane be landed safely in a 30 knot cross wind. This requirement can place a lower limit on the touchdown velocity of the airplane, therefore, it is desirable to keep the dihedral effect as low as possible and to improve the lateral control where practical. Since the roll due to sideslip is a function of angle of attack as well as sideslip angle, any method which tends to increase the loading over the inboard section of the wing should reduce the rolling moments due to sideslip for a given lift coefficient.

The present investigation was made on a highly swept, fixed wing model which has been utilized in several previous investigations.

(See references 1 to 5.) The engine nacelles and two inboard flaps that formed an integral part of the model were removed and two large chord flaps which extended from the fuselage to 43 percent of the semispan were substituted. Lateral and longitudinal characteristics were obtained for several trailing-edge flap deflections over an angle-of-attack range from -2° to 23° at 0° and $\pm 5^{\circ}$ sideslip. The investigation was made at a Mach number of 0.227 which corresponds to a Reynolds number of 5.53×10^{6} based on the reference chord.

SYMBOLS

The data are presented in tabular as well as graphic form. The graphic data are referred to the stability axis system. All data contained herein are based on a different set of reference dimensions than the data of reference 1 through 5; however the moments are referenced to the same longitudinal station (Sta. 66.82). The letters S and B used in conjunction with CRM and CYM of the tabular data refer to the stability and body axis system, respectively. The symbols are defined as follows (with those in parenthesis being used with the tabular data):

C_A	(CAF)	axial force coefficient, $\frac{\text{Axial force}}{qS}$
C_D	(CD)	drag coefficient, $\frac{\text{Drag}}{qS}$
C_L	(CL)	lift coefficient, $\frac{\text{Lift}}{qS}$
C_ℓ	(CRM)	rolling-moment coefficient, Rolling moment/qSb
C_{ℓ_β}		effective dihedral parameter $\Delta C_\ell / \Delta\beta$, per deg

C_m	(CPM)	pitching-moment coefficient, $\frac{\text{Pitching moment}}{q\bar{S}\bar{c}}$
C_N	(CNF)	normal force coefficient, $\frac{\text{Normal force}}{qS}$
C_n	(CYM)	yawing-moment coefficient, $\frac{\text{Yawing moment}}{qSb}$
C_{n_β}		directional-stability parameter, $\frac{\Delta C_n}{\Delta\beta}$, per deg
C_y	(CSF)	side force coefficient, $\frac{\text{Side force}}{qS}$
C_{y_β}		side-force parameter, $\frac{\Delta Cy}{\Delta\beta}$, per deg
L/D		lift-drag ratio
R		Reynolds number per foot
MACH		Mach number
TTINF		Free-stream total temperature, deg F

Reference Dimensions:

A		aspect ratio, b^2/S, 1.617
b		span 3.975 ft
$\bar{c}$		chord 3.390 ft
S		area 9.769 sq ft
q	(QINF)	free-stream dynamic pressure

Model Component Designations:

B_{13}	116.5 inch body (See figs. 1 and 2)
c	local wing chord

f_2	forebody strake (See fig. 3)
H_4	horizontal tail (See fig. 4)
L_6	leading-edge flap on T_6 (See fig. 5)
T_6	extended wing tip (See figs. 1 and 5)
t_1	trailing-edge flap 1
t_2	trailing-edge flap 2
t_3	trailing-edge flap 3, $\delta = 0^0$
t_4	trailing-edge flap 4, $\delta = 5^\circ$
V_8	centerline vertical tail (See fig. 6)
W_3	wing leading edge with .010c radius (See ref. 5)

Angular designations:

α (Alpha)	angle of attack of wing reference line, deg
β (Beta)	angle of sideslip, deg
δ	trailing-edge flap deflection, deg
Δ	incremental value of angle (also coefficient) between $\pm 5^\circ$ sideslip

MODEL AND SUPPORT

A three-view drawing of the model used in the current investigation is shown in figure 1 and a photograph of model and support system is shown in figure 2. The nose section shown in figure 3 is identical to that described in reference 1. An 8.5-inch section was inserted in the body aft of the wing trailing edge giving an overall length to the body, B_{13}, of 116.5 in. The leading edge of the wing was equipped with a fairing, W_3, which wrapped around the leading edge as illustrated in references 4 and 5. In addition to the increase in radius the fairing effected an increase in camber and a small increase in sweep. The increase in sweep gave a leading-edge panel sweep of 74.24°. The outboard section of the wing, T_6, which is shown in figure 5 utilized a leading edge flap (L_6) deflected 60° and a trailing-edge flap (t_4) deflected 5°.

The original flaps and nacelles were removed from the wing trailing edge and two flaps t_1 and t_2 as shown in figure 1 were substituted to provide a deflected surface extending from the side of the fuselage to 43 percent of the wing semispan. Flap deflection was accomplished with the aid of separate flaps with deflections of 0°, 5°, 15°, and 30°. The horizontal and vertical tails, H_4 and V_8, tested with the model are shown in figure 4 and 6, respectively. The model reference dimensions and other geometric characteristics are listed in Table I.

TEST CONDITIONS

The tests were made in slotted test section of the Langley high-speed 7- by 10-foot tunnel at a dynamic pressure of about 74 pounds per square foot which corresponds to a Mach number of about 0.227 and Reynolds number of 5.53×10^6 based on the reference chord. Actual values are tabulated with the data presented in Table II. In order to insure turbulent flow in the model boundary layer, a one-tenth inch wide strip of number 80 carborundum was placed about one inch aft of the leading edge of all model components.

MEASUREMENTS AND CORRECTIONS

The aerodynamic forces and moments were measured by means of a six-component, electrical strain-gage balance housed within the model. The angles of attack were measured directly by means of an accelerometer attached to the model. The angles of sideslip which were preset were corrected for deflection of the balance and sting under load. No corrections were applied to the aerodynamic coefficients for wall constraints because theoretical and experimental studies have indicated that wall corrections to be negligible at the low Mach numbers of this investigation.

PRESENTATION OF DATA

A schedule of runs and a tabulation of the data obtained in the investigation are given in Table II and Table III, respectively. Plotted data showing the lateral stability parameters obtained from $\pm 5^\circ$ of

sideslip are presented in figures 7 to 10. Longitudinal coefficients obtained at zero sideslip are shown in figures 11 to 14 inclusive; data obtained with the outboard flap deflected at 5° sideslip angle are shown in figure 15. (It should be noted that the reference dimensions used herein differ from those used in references 1 through 5, therefore account should be taken of these factors before comparisons are attempted, however, the moment reference is identical to that used in references 1 through 5.)

DISCUSSION

Lateral Characteristics

Effective dihedral. The effect of inboard trailing-edge flap deflection on the lateral characteristics are shown in figures 7 and 8. The data show, as was expected, a lower effective dihedral, C_{ℓ_β}, with flap deflected than with the undeflected flaps. In the range of lift coefficients considered for landing $\left(C_L \approx 0.5\right) C_{\ell_\beta}$ was reduced about 20 percent with the vertical tail off. An additional reduction in C_{ℓ_β} was obtained when the centerline vertical tail, V_8, was attached to the model.

To provide more information relating to the effect of spanwise loading on the roll due to sideslip the outboard flap, t_4, was deflected. The results which are presented in figure 9 show as would be expected an increase in dihedral effect for the positively deflected outboard control. These results coupled with those shown in figures 7 and 8 indicate that substantial reductions in C_{ℓ_β} can

be obtained for the landing configuration by increasing the loading over the inboard section of the wing.

Directional stability. Deflection of the trailing-edge flaps generally had a favorable effect on the directional-stability parameter C_{n_β} as shown in figures 7 and 8. At low lift coefficients ($C_L < 0.5$) deflections of the flap gave positive increments of C_{n_β} with the vertical tail off. With the vertical tail on deflections of the flap increased the tail contribution of C_{n_β} resulting in larger values of C_{n_β} with the 30° flaps than with either the 15° or 0° settings. As with other centerline tail configurations increasing the angle of attack or lift coefficient resulted in losses of C_{n_β}; the model became unstable at C_L's of 0.75, 0.87, and 0.96 with 0°, 15°, and 30° of flap deflection, respectively. The loss of directional stability probably results from the movement of the vertical tail out of the favorable sidewash field as would be indicated by the variation of C_{y_β} with C_L. Figure 10 shows that the addition of the forebody strake, f_2, to the model with the flap deflected 30° tends to alleviate the loss in C_{n_β} at high-lift coefficients and also reduce the dihedral effect.

Longitudinal Characteristics

Lift. The effect of deflecting trailing-edge flaps, t_1 and t_2 on the characteristics in pitch is presented in figure 11. The 15° flap deflection gave a lift increment of $\Delta C_L = .137$ at 0° angle of attack which agrees favorably with the flap increments predicted using the methods published in reference 7. Considerable separation on

the wing or flap is indicated for 30° flap deflection as the increment in C_L resulting from a flap deflection of 15° to 30° is approximately 70 percent of the value obtained for the first 15° of deflection. Flow separation effects are also noted in the difference in the increments in C_m for the two flap deflections and in the lower values of L/D ratio shown in figure 11.

Longitudinal stability. Data are presented in figures 11 and 12 which show the effect of trailing-edge flap deflection on the pitching-moment coefficients at zero sideslip. It is noted that the curves of C_m against C_L tend to become more linear as the flaps are deflected to greater angles. For example, the pitch-up tendency that begins at a $C_L \approx 0.45$ with the flaps undeflected is delayed to a $C_L \approx 0.9$ with the flaps deflected 30°. (For the same lift conditions the angle of attack for pitchup was increased from 11° to 16°.) It should be noted that the only flow control device other than thickened leading edge was a small leading-edge flap on the tip section of the wing. Had the model been equipped with an inboard leading edge flap the pitch-up tendency would have been materially reduced as illustrated in reference 5.

The contribution of the horizontal tail, H_4, to the longitudinal stability of the model with the flaps up is shown in figure 13; the data indicate the tail becomes increasingly effective with angle of attack. The use of the strake, f_2, to improve the directional stability resulted in a small reduction in the longitudinal stability of the model as indicated in figure 14; there was no significant increase in the pitch-up tendency as might be expected. The effect of outboard flap

deflection, t_4 on the longitudinal characteristics ($\beta = 5^\circ$) are shown in figure 15.

Before the advantages of a large span inboard flap can be realized some method for trimming out the pitching moments must be provided. To do so on this configuration with a center of gravity that coincides with the model moment reference and provides static stability to a lift coefficient of about 0.9 would require about 30° of horizontal tail deflection at a lift coefficient of 0.5. This method of trimming would leave little longitudinal control power for maneuvering and would result in lower lift-drag ratios as indicated by the data of figure 12. A solution currently being considered makes use of a stability augmentation system that would require zero or small uploads on the horizontal tail for trim. Combined with a center-of-gravity location with the horizontal-tail loads kept to a minimum, relatively high lift-drag ratios and longitudinal control power can be maintained.

CONCLUDING REMARKS

The results of a low-speed investigation on a highly-swept wing model having thickened leading-edge and inboard trailing-edge flaps are summarized as follows: Deflection of the trailing-edge flaps decreased the dihedral effect, C_{ℓ_β}, about 20 percent at a lift coefficient of 0.5 (landing) with vertical tail off; there was an additional reduction in C_{ℓ_β} when a centerline vertical tail was added. The directional-stability parameter, C_{n_β}, was increased and the range of lift coefficients over which it was positive was also increased.

The longitudinal stability characteristics were improved, that is, the pitch-up tendency was delayed from a lift coefficient of 0.45 with undeflected flaps to about 0.9 with the flaps deflected 30°. The lift coefficient increment obtained from the first 15° flap deflection compared favorably in magnitude with that predicted using the method given in NACA TN 3911; lift increments from 15° to 30° deflection decreased to about 70 percent of the values obtained for the first 15° deflection. The pitching-moment coefficients generated by flap deflection are large; to trim this configuration and maintain static stability through lift coefficients required for approach would require large downloads on the horizontal tail. A stability augmentation system combined with a center-of-gravity location that requires zero or small uploads on the horizontal tail is suggested as method of trimming the configuration which would result in relatively high-lift drag ratios and longitudinal control power.

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TABLE I.- DIMENSIONAL CHARACTERISTICS OF MODEL

Reference Dimensions:	
Area, sq ft	9.769
Chord, ft	3.389
Span, ft	3.975
Aspect ratio	1.617
Sweep of leading edge	
Main wing, deg	74.24
Tip, deg	60.0
Fuselage	
Length, ft	9.708
Horizontal Tail, H_4	
Root chord, ft	0.853
Tip chord, ft	0.310
Panel span, ft	0.372
Panel area, sq ft	0.2029
Panel aspect ratio	0.6808
Overall span, ft	0.743
Sweep	
Leading edge	60.0
Trailing edge	-2.0
Dihedral angle , deg	-15.0
Airfoil section, circular arc	
Thickness ratio	
tip	0.075
root	0.040
Vertical Tail, V_8	
Root chord, ft	1.333
Tip chord, ft	0.167
Span, ft	0.667
Area, sq ft	0.500
Aspect ratio	0.890
Thickness, ft	0.021
Leading edge sweep, deg	63.4
Trailing edge sweep, deg	4.36

TABLE I.- Concluded

Flaps (trailing edge)	
t_1	
Chord, ft.	0.388
Span,	0.308
Area (panel) sq ft	0.1196
Sweep of trailing edge, deg	0.0
t_2	
Chord, ft	
inboard, ft	0.388
outboard, in.	0.564
Span, in.	0.417
Area (panel) sq ft	0.198
Sweep of trailing edge, deg	23°
t_3 (undeflected)	
t_4	
Chord,	0.130
Span,	0.568
Area, sq ft	0.0738
Sweep of trailing edge, deg	36.6

TABLE II.- 949 TEST PROGRAM

	Angular deflections, deg						Model Configuration	
RUN	t_1	t_2	t_3	t_4	i_t	β	V_8	f_2
3	0	0	0	5	Off	0	On	Off
5	0	0	↓	↓	0	↓	↓	↓
6	5	5	↓	↓	↓	↓	↓	↓
7	30	30	↓	↓	↓	↓	↓	↓
9	15	15	↓	↓	-10	↓	↓	↓
10	↓	↓	↓	↓	0	↓	↓	↓
15	↓	↓	↓	↓	-10	-5	↓	↓
16	30	30	↓	↓	↓	↓	↓	↓
17	0	0	↓	↓	↓	↓	↓	↓
18	↓	↓	↓	↓	↓	↓	Off	↓
19	↓	↓	↓	30	↓	↓	↓	↓
20	15	15	↓	5	↓	↓	↓	↓
21	30	30	↓	↓	↓	↓	↓	↓
23	15	15	↓	↓	↓	5	↓	↓
24	30	30	↓	↓	↓	↓	↓	↓
25	0	0	↓	↓	↓	↓	↓	↓
26	↓	↓	↓	30	↓	↓	↓	↓
27	↓	↓	↓	5	↓	↓	On	↓
28	15	15	↓	↓	↓	↓	↓	↓
29	30	30	↓	↓	↓	↓	↓	↓
30	↓	↓	↓	↓	↓	↓	↓	On
31	↓	↓	↓	↓	↓	0	↓	On
32	↓	↓	↓	↓	↓	0	↓	Off

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 3 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
64	.227	74.281	-.01	.00	.0797	.01126	.0001	.0007	.0007	-.0012	7.077	1.655
65	.229	75.340	-.01	-1.96	.0149	.01080	.0055	.0004	.0009	-.0013	1.378	1.664
66	.228	74.762	-.01	-.00	.0769	.01118	.0002	.0006	.0007	-.0010	6.883	1.658
67	.227	74.184	-.01	1.99	.1376	.01401	-.0044	.0002	.0004	-.0001	9.823	1.651
68	.227	74.473	-.00	3.02	.1698	.01636	-.0059	.0000	.0003	-.0004	10.380	1.653
69	.227	74.473	-.00	4.03	.1988	.01925	-.0075	-.0002	.0001	.0002	10.327	1.653
70	.227	74.184	.01	5.15	.2327	.02358	-.0099	.0001	-.0007	.0015	9.828	1.650
71	.228	74.859	.01	6.00	.2615	.02835	-.0118	.0002	-.0008	.0018	9.227	1.656
72	.227	74.281	.01	7.01	.2952	.03594	-.0137	.0002	-.0010	.0030	8.214	1.650
73	.227	74.088	.01	8.02	.3343	.04599	-.0156	-.0002	-.0008	.0022	7.271	1.647
74	.228	74.762	.01	9.01	.3784	.05901	-.0182	-.0001	-.0009	.0019	6.413	1.654
75	.227	74.281	.03	9.99	.4204	.07358	-.0203	-.0001	-.0019	.0020	5.714	1.648
76	.227	74.377	.05	12.32	.5166	.11199	-.0199	.0005	-.0034	.0018	4.613	1.649
77	.229	75.148	.08	14.08	.5872	.14666	-.0174	-.0002	-.0043	-.0002	4.004	1.656
78	.228	74.570	.15	16.08	.6751	.19548	-.0135	-.0010	-.0066	-.0059	3.453	1.648
79	.229	75.244	.20	17.96	.7527	.24591	-.0082	-.0041	-.0077	-.0081	3.061	1.654
80	.229	75.340	.08	19.93	.8437	.30915	-.0013	-.0052	-.0021	-.0004	2.720	1.654
81	.228	75.051	-.15	21.97	.9350	.38291	.0057	.0004	.0069	.0076	2.442	1.649
82	.228	74.859	-.07	22.98	.9769	.42066	.0106	-.0007	.0040	.0021	2.322	1.647

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
64	.227	74.281	-.01	.00	.0797	.01125	.0001	.0007	.0007	-.0012	43.4
65	.229	75.340	-.01	-1.96	.0145	.01130	.0055	.0004	.0009	-.0013	43.9
66	.228	74.762	-.01	-.00	.0769	.01119	.0002	.0006	.0007	-.0010	44.0
67	.227	74.184	-.01	1.99	.1380	.00922	-.0044	.0002	.0004	-.0001	44.1
68	.227	74.473	-.00	3.02	.1704	.00740	-.0059	-.0000	.0003	-.0004	44.2
69	.227	74.473	-.00	4.03	.1996	.00522	-.0075	-.0002	.0001	.0002	44.3
70	.227	74.184	.01	5.15	.2339	.00269	-.0099	.0001	-.0007	.0015	44.4
71	.228	74.859	.01	6.00	.2631	.00085	-.0118	.0003	-.0008	.0018	44.5
72	.227	74.281	.01	7.01	.2973	-.00036	-.0137	.0003	-.0010	.0030	44.7
73	.227	74.088	.01	8.02	.3375	-.00110	-.0156	-.0001	-.0008	.0022	44.8
74	.228	74.762	.01	9.01	.3830	-.00095	-.0182	.0001	-.0009	.0019	44.9
75	.227	74.281	.03	9.99	.4268	-.00046	-.0203	.0002	-.0019	.0020	45.0
76	.227	74.377	.05	12.32	.5286	-.00084	-.0199	.0012	-.0032	.0018	45.1
77	.229	75.148	.08	14.08	.6052	-.00059	-.0174	.0008	-.0042	-.0002	45.4
78	.228	74.570	.15	16.08	.7028	.00091	-.0135	.0009	-.0066	-.0059	45.8
79	.229	75.244	.20	17.96	.7918	.00190	-.0082	-.0015	-.0085	-.0081	46.1
80	.229	75.340	.08	19.93	.8958	.00398	-.0013	-.0042	-.0038	-.0004	46.5
81	.228	75.051	-.15	21.97	1.0104	.00535	.0057	-.0022	.0066	.0076	46.8
82	.228	74.859	-.07	22.98	1.0636	.00594	.0106	-.0022	.0034	.0021	47.0

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 5 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
104	.227	73.993	-.01	.01	.0683	.01183	.0090	.0008	.0007	-.0010	5.772	1.630
105	.227	74.475	-.01	-1.99	.0029	.01175	.0159	.0007	.0009	-.0011	.250	1.635
106	.227	74.089	-.01	-.01	.0679	.01177	.0092	.0007	.0007	-.0009	5.771	1.631
107	.226	73.415	-.01	1.98	.1309	.01444	.0038	.0004	.0005	-.0005	9.067	1.623
108	.225	73.126	-.01	2.99	.1603	.01655	.0012	.0004	.0005	-.0005	9.686	1.620
109	.224	72.644	-.01	4.03	.1919	.01950	-.0008	.0002	.0004	.0002	9.843	1.614
110	.228	74.859	.00	5.14	.2271	.02381	-.0049	.0003	-.0003	.0012	9.537	1.638
111	.227	73.993	.00	6.00	.2557	.02842	-.0067	.0005	-.0005	.0016	8.996	1.628
112	.226	73.608	-.00	7.00	.2895	.03585	-.0094	.0005	-.0006	.0025	8.075	1.624
114	.228	74.667	-.00	8.01	.3303	.04608	-.0124	.0001	-.0002	.0017	7.169	1.634
115	.227	74.089	.01	9.00	.3739	.05931	-.0158	.0001	-.0007	.0020	6.337	1.628
116	.225	73.319	.02	9.99	.4198	.07430	-.0188	.0001	-.0015	.0019	5.650	1.619
117	.229	74.764	.05	12.31	.5140	.11214	-.0204	.0008	-.0032	.0015	4.584	1.634
118	.225	73.126	.07	14.08	.5880	.14762	-.0196	.0001	-.0036	-.0004	3.983	1.616
119	.228	74.956	.13	16.06	.6822	.19784	-.0192	.0004	-.0055	-.0068	3.448	1.635
120	.227	74.379	.18	17.95	.7602	.24893	-.0152	.0030	-.0065	-.0096	3.054	1.628
121	.227	74.471	.02	19.94	.8481	.31236	-.0109	.0034	.0009	-.0014	2.715	1.629
122	.228	74.667	-.16	21.99	.9569	.39221	-.0085	.0018	.0081	.0015	2.440	1.629
123	.227	74.475	-.10	23.04	1.0012	.43250	-.0049	.0012	.0061	-.0032	2.314	1.626

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
104	.227	73.993	-.01	.01	.0683	.01182	.0090	.0008	.0007	-.0010	48.9
105	.227	74.475	-.01	-1.99	.0025	.01184	.0159	.0007	.0009	-.0011	49.0
106	.227	74.089	-.01	-.01	.0679	.01178	.0092	.0007	.0007	-.0009	49.0
107	.226	73.415	-.01	1.98	.1314	.00991	.0038	.0004	.0005	-.0005	49.1
108	.225	73.126	-.01	2.99	.1610	.00818	.0012	.0003	.0005	-.0005	49.1
109	.224	72.644	-.01	4.03	.1928	.00595	-.0008	.0002	.0004	.0002	49.2
110	.228	74.859	.00	5.14	.2283	.00337	-.0040	.0003	-.0003	.0012	49.3
111	.227	73.993	.00	6.00	.2572	.00154	-.0067	.0005	-.0004	.0016	49.4
112	.226	73.608	-.00	7.00	.2917	.00030	-.0094	.0006	-.0005	.0025	49.5
114	.228	74.667	-.00	8.01	.3335	-.00042	-.0124	.0001	-.0001	.0017	49.7
115	.227	74.089	.01	9.00	.3786	-.00020	-.0158	.0000	-.0007	.0020	49.8
116	.225	73.319	.02	9.99	.4263	.00033	-.0188	.0003	-.0014	.0019	49.8
117	.229	74.764	.05	12.31	.5261	-.00002	-.0204	.0015	-.0029	.0015	50.0
118	.225	73.126	.07	14.08	.6062	.00014	-.0196	.0010	-.0035	-.0004	50.0
119	.228	74.956	.13	16.06	.7103	.00137	-.0182	.0011	-.0054	-.0068	50.4
120	.227	74.379	.18	17.95	.7999	.00251	-.0152	-.0009	-.0071	-.0096	50.4
121	.227	74.571	.02	19.94	.9038	.00441	-.0109	-.0035	-.0003	-.0014	50.8
122	.228	74.667	-.16	21.99	1.0341	.00545	-.0085	-.0013	.0082	.0015	51.0
123	.227	74.475	-.10	23.04	1.0906	.00627	-.0049	-.0013	.0061	-.0032	51.1

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 6 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
126	.227	74.186	-.00	.04	.1119	.01409	-.0021	.0008	.0001	-.0005	7.943	1.629
127	.228	74.764	-.00	-1.77	.0531	.01315	.0042	.0011	.0004	-.0008	4.036	1.635
128	.227	74.282	-.00	.01	.1104	.01441	-.0013	.0010	.0003	-.0005	7.666	1.629
129	.228	74.860	-.00	1.98	.1732	.01804	-.0064	.0007	.0001	-.0002	9.434	1.634
130	.227	74.089	-.00	3.00	.2023	.02081	-.0083	.0006	-.0001	.0003	9.722	1.626
131	.228	75.149	.00	4.03	.2343	.02452	-.0115	.0007	-.0005	.0008	9.556	1.637
132	.227	74.378	.01	5.16	.2688	.02970	-.0154	.0009	-.0008	.0017	9.050	1.629
133	.226	73.897	.01	6.01	.2971	.03493	-.0182	.0008	-.0009	.0021	8.507	1.623
134	.225	73.319	.00	7.01	.3314	.04342	-.0212	.0008	-.0010	.0030	7.634	1.617
135	.227	74.282	.01	8.02	.3730	.05503	-.0239	.0006	-.0009	.0022	6.777	1.627
136	.226	73.800	.01	9.00	.4142	.06796	-.0272	.0009	-.0013	.0024	6.095	1.621
137	.227	73.993	.03	10.00	.4604	.08412	-.0300	.0005	-.0021	.0025	5.473	1.623
138	.227	74.282	.05	12.32	.5621	.12603	-.0333	.0015	-.0035	.0011	4.460	1.625
139	.227	74.378	.07	14.09	.6405	.16499	-.0328	.0012	-.0036	-.0016	3.882	1.626
140	.227	74.571	.13	16.07	.7237	.21396	-.0323	.0002	-.0058	-.0067	3.382	1.627
141	.228	74.764	.18	17.96	.8079	.26881	-.0292	-.0024	-.0071	-.0091	3.006	1.628
142	.227	74.378	.02	19.93	.8887	.33136	-.0254	-.0026	.0002	-.0008	2.682	1.623
143	.227	74.571	-.15	21.97	1.0008	.41454	-.0247	.0024	.0074	.0020	2.414	1.624
144	.226	73.704	-.08	22.96	1.0369	.45111	-.0218	.0015	.0053	-.0032	2.299	1.614

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
126	.227	74.186	-.00	.04	.1120	.01402	-.0021	.0008	.0001	-.0005	49.8
127	.228	74.764	-.00	-1.77	.0526	.01478	.0042	.0011	.0004	-.0008	49.9
128	.227	74.282	-.00	.01	.1104	.01438	-.0013	.0010	.0003	-.0005	50.0
129	.228	74.860	-.00	1.98	.1707	.01216	-.0064	.0007	.0001	-.0002	50.2
130	.227	74.089	-.00	3.00	.2032	.01020	-.0083	.0006	-.0000	.0003	50.3
131	.228	75.149	.00	4.03	.2355	.00799	-.0115	.0007	-.0005	.0008	50.3
132	.227	74.378	.01	5.16	.2704	.00542	-.0154	.0010	-.0007	.0017	50.4
133	.226	73.897	.01	6.01	.2992	.00363	-.0182	.0009	-.0008	.0021	50.4
134	.225	73.319	.00	7.01	.3343	.00264	-.0212	.0010	-.0008	.0030	50.4
135	.227	74.282	.01	8.02	.3770	.00244	-.0239	.0007	-.0008	.0022	50.6
136	.226	73.800	.01	9.00	.4197	.00234	-.0272	.0011	-.0012	.0024	50.7
137	.227	73.993	.03	10.00	.4680	.00292	-.0300	.0009	-.0020	.0025	50.8
138	.227	74.282	.05	12.32	.5760	.00322	-.0333	.0022	-.0031	.0011	50.8
139	.227	74.378	.07	14.09	.6614	.00406	-.0328	.0020	-.0032	-.0016	51.0
140	.227	74.571	.13	16.07	.7546	.00533	-.0323	.0018	-.0055	-.0067	51.2
141	.228	74.764	.18	17.96	.8514	.00652	-.0292	-.0001	-.0075	-.0091	51.4
142	.227	74.378	.02	19.93	.9484	.00858	-.0254	-.0025	-.0007	-.0008	51.7
143	.227	74.571	-.15	21.97	1.0832	.00997	-.0247	-.0005	.0078	.0020	51.9
144	.226	73.704	-.08	22.96	1.1307	.01090	-.0218	-.0007	.0055	-.0032	52.1

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 7 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
147	.228	75.051	.02	-.01	.2834	.04786	-.0446	.0007	-.0012	.0015	5.923	1.632
148	.228	74.859	.01	-2.06	.2221	.04186	-.0382	.0008	-.0010	.0012	5.306	1.629
149	.227	74.377	.01	-.01	.2812	.04770	-.0444	.0007	-.0012	.0016	5.897	1.624
150	.226	73.607	.02	1.99	.3481	.05701	-.0523	.0010	-.0016	.0020	6.107	1.615
151	.226	73.317	.02	3.00	.3813	.06310	-.0567	.0011	-.0020	.0029	6.043	1.611
152	.226	73.317	.02	4.01	.4157	.06992	-.0610	.0010	-.0023	.0038	5.945	1.611
153	.226	73.414	.04	5.12	.4543	.07959	-.0662	.0009	-.0033	.0053	5.708	1.611
154	.226	73.606	.05	6.01	.4942	.09019	-.0715	.0008	-.0046	.0080	5.480	1.612
155	.184	49.218	.03	7.01	.5269	.10343	-.0746	.0006	-.0039	.0068	5.094	1.323
156	.183	48.732	.02	8.00	.5643	.11724	-.0772	.0010	-.0036	.0061	4.813	1.316
157	.183	48.732	.02	9.01	.6100	.13520	-.0800	.0019	-.0034	.0053	4.512	1.316
158	.182	48.343	.02	9.98	.6493	.15331	-.0824	.0016	-.0028	.0036	4.243	1.311
159	.183	48.830	.01	12.30	.7727	.20967	-.0941	.0013	-.0021	.0024	3.686	1.317
160	.182	48.149	.03	14.06	.8448	.25296	-.0979	.0005	-.0026	.0007	3.340	1.308

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
147	.228	75.051	.02	-.01	.2834	.04792	-.0446	.0007	-.0012	.0015	51.1
148	.228	74.859	.01	-2.06	.2204	.04983	-.0382	.0008	-.0010	.0012	51.3
149	.227	74.377	.01	-.01	.2812	.04774	-.0444	.0007	-.0012	.0016	51.2
150	.226	73.607	.02	1.99	.3499	.04491	-.0523	.0011	-.0016	.0020	51.5
151	.226	73.317	.02	3.00	.3841	.04307	-.0567	.0012	-.0019	.0029	51.7
152	.226	73.317	.02	4.01	.4196	.04069	-.0610	.0011	-.0022	.0038	51.7
153	.226	73.414	.04	5.12	.4596	.03873	-.0662	.0012	-.0033	.0053	51.9
154	.226	73.606	.05	6.01	.5009	.03799	-.0715	.0012	-.0045	.0080	52.1
155	.184	49.218	.03	7.01	.5356	.03839	-.0746	.0011	-.0038	.0068	51.5
156	.183	48.732	.02	8.00	.5752	.03760	-.0772	.0015	-.0034	.0061	51.5
157	.183	48.732	.02	9.01	.6236	.03804	-.0800	.0024	-.0031	.0053	51.5
158	.182	48.343	.02	9.98	.6660	.03823	-.0824	.0021	-.0025	.0036	51.5
159	.183	48.830	.01	12.30	.7997	.04018	-.0941	.0017	-.0017	.0024	51.5
160	.182	48.149	.03	14.06	.9810	.04018	-.0979	.0011	-.0024	.0007	51.7

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 9 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
184	.227	74.280	.01	.01	.1754	.02976	-.0044	.0007	-.0005	.3002	5.894	1.620
185	.227	74.280	.00	-1.92	.1158	.02707	.0015	.0009	-.0003	.0001	4.278	1.620
186	.227	74.473	.01	-.01	.1754	.02982	-.0043	.0006	-.0005	.0005	5.882	1.621
187	.227	74.473	.01	1.99	.2353	.03447	-.0097	.0004	-.0005	.0007	6.826	1.621
188	.227	74.281	.01	3.01	.2691	.03828	-.0132	.0007	-.0009	.0012	7.028	1.619
189	.227	74.281	.01	4.05	.3072	.04376	-.0173	.0008	-.0013	.0019	7.020	1.619
190	.228	75.051	.02	5.17	.3496	.05091	-.0224	.0008	-.0015	.0022	6.866	1.627
191	.228	74.762	.02	5.99	.3712	.05643	-.0252	.0001	-.0020	.0041	6.578	1.622
192	.228	74.570	.03	7.00	.4094	.06741	-.0292	.0007	-.0031	.0056	6.073	1.621
193	.227	73.992	.03	8.01	.4473	.07936	-.0317	.0008	-.0026	.0040	5.637	1.614
194	.227	74.377	.03	8.98	.4885	.09317	-.0343	.0009	-.0028	.0041	5.243	1.618
195	.227	74.473	.04	9.99	.5366	.11078	-.0387	.0005	-.0028	.0031	4.843	1.618
196	.228	74.666	.03	12.30	.6438	.15722	-.0465	.0023	-.0025	-.0001	4.095	1.620
197	.228	74.762	.05	14.07	.7280	.19966	-.0512	.0015	-.0028	-.0026	3.646	1.620
198	.228	74.570	.14	16.06	.8275	.25505	-.0555	-.0002	-.0062	-.0067	3.234	1.618
199	.229	75.147	.18	17.95	.9078	.31284	-.0519	-.0028	-.0075	-.0066	2.902	1.623
200	.228	75.051	.01	19.91	.9853	.37755	-.0480	-.0030	.0005	.0022	2.610	1.621
201	.228	74.858	-.12	21.94	1.0968	.46432	-.0465	.0015	.0057	.0023	2.362	1.618
202	.227	74.473	-.06	22.95	1.1373	.50519	-.0427	.0011	.0037	-.0018	2.251	1.613

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
184	.227	74.280	.01	.01	.1754	.02972	-.0044	.0007	-.0005	.0002	51.8
185	.227	74.280	.00	-1.92	.1148	.03094	.0015	.0009	-.0003	.0001	51.9
186	.227	74.473	.01	-.01	.1754	.02986	-.0043	.0006	-.0005	.0005	52.1
187	.227	74.473	.01	1.99	.2364	.02630	-.0097	.0004	-.0005	.0007	52.1
188	.227	74.281	.01	3.01	.2707	.02410	-.0132	.0008	-.0009	.0012	52.2
189	.227	74.281	.01	4.05	.3095	.02197	-.0173	.0009	-.0012	.0019	52.2
190	.228	75.051	.02	5.17	.3527	.01919	-.0224	.0010	-.0015	.0022	52.2
191	.228	74.762	.02	5.99	.3751	.01740	-.0252	.0004	-.0020	.0041	52.6
192	.228	74.570	.03	7.00	.4146	.01700	-.0292	.0010	-.0030	.0056	52.5
193	.227	73.992	.03	8.01	.4540	.01626	-.0317	.0011	-.0024	.0040	52.6
194	.227	74.377	.03	8.98	.4971	.01574	-.0343	.0013	-.0026	.0041	52.6
195	.227	74.473	.04	9.99	.5476	.01599	-.0387	.0010	-.0027	.0031	52.8
196	.228	74.666	.03	12.30	.6626	.01651	-.0465	.0028	-.0019	-.0001	52.9
197	.228	74.762	.05	14.07	.7347	.01669	-.0512	.0021	-.0023	-.0026	53.1
198	.228	74.570	.14	16.06	.8660	.01699	-.0555	.0015	-.0060	-.0067	53.2
199	.229	75.147	.18	17.95	.9600	.01783	-.0519	-.0003	-.0080	-.0066	53.5
200	.228	75.051	.01	19.91	1.0549	.01951	-.0480	-.0030	-.0005	.0022	53.8
201	.228	74.858	-.12	21.94	1.1908	.02081	-.0465	-.0007	.0058	.0023	54.0
202	.227	74.473	-.06	22.95	1.2442	.02166	-.0427	-.0004	.0038	-.0018	54.2

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 10 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
208	.228	74.666	.02	.01	.1969	.02355	-.0251	.0039	-.0010	.0006	8.361	1.621
209	.228	75.051	.01	-1.92	.1378	.02004	-.0191	.0010	-.0008	.0006	6.873	1.625
210	.228	74.666	.01	.00	.1976	.02352	-.0251	.0010	-.0010	.0006	8.401	1.621
211	.227	74.088	.01	1.99	.2568	.02932	-.0304	.0005	-.0011	.0011	8.757	1.614
212	.227	73.895	.02	3.03	.2919	.03381	-.0339	.0006	-.0015	.0019	8.633	1.612
213	.227	74.473	.02	4.06	.3264	.03913	-.0377	.0007	-.0018	.0026	8.341	1.618
214	.227	74.473	.02	5.16	.3639	.04640	-.0428	.0007	-.0021	.0031	7.842	1.618
215	.227	74.281	.03	6.01	.3927	.05351	-.0456	.0003	-.0026	.0044	7.339	1.616
216	.227	74.088	.04	7.03	.4333	.06552	-.0499	.0009	-.0038	.0059	6.613	1.614
217	.227	74.281	.04	8.02	.4676	.07749	-.0518	.0006	-.0033	.0046	6.035	1.616
218	.227	74.474	.04	9.03	.5153	.09339	-.0544	.0006	-.0035	.0046	5.518	1.618
219	.227	74.281	.05	10.01	.5538	.10966	-.0577	.0007	-.0035	.0033	5.050	1.616
220	.224	72.354	.05	12.35	.6762	.16164	-.0651	.0021	-.0035	.0009	4.183	1.595
221	.223	71.583	.07	14.09	.7472	.20188	-.0679	.0013	-.0039	-.0012	3.701	1.586
222	.231	58.632	.11	16.03	.8247	.25234	-.0685	.0001	-.0065	-.0060	3.268	1.437
223	.232	59.213	.14	17.97	.9196	.31650	-.0650	-.0026	-.0081	-.0049	2.910	1.444
224	.199	57.566	-.03	19.95	1.0080	.38570	-.0615	-.0018	.0023	.0037	2.614	1.424
225	.231	58.535	-.05	22.00	1.1154	.47330	-.0584	.0016	.0037	-.0018	2.357	1.436
226	.231	58.728	-.01	22.98	1.1638	.51791	-.0555	.0010	.0022	-.0066	2.247	1.438

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
208	.228	74.666	.02	.01	.1969	.02350	-.0251	.0009	-.0010	.0006	52.7
209	.228	75.051	.01	-1.92	.1370	.02465	-.0191	.0009	-.0008	.0006	52.6
210	.228	74.666	.01	.00	.1976	.02352	-.0251	.0010	-.0010	.0006	52.7
211	.227	74.088	.01	1.99	.2576	.02037	-.0304	.0005	-.0011	.0011	52.8
212	.227	73.895	.02	3.03	.2933	.01834	-.0339	.0006	-.0015	.0019	52.8
213	.227	74.473	.02	4.06	.3283	.01594	-.0377	.0008	-.0018	.0026	52.9
214	.227	74.473	.02	5.16	.3666	.01347	-.0428	.0009	-.0020	.0031	52.9
215	.227	74.281	.03	6.01	.3962	.01210	-.0456	.0006	-.0026	.0044	52.9
216	.227	74.088	.04	7.03	.4380	.01201	-.0499	.0014	-.0037	.0059	52.9
217	.227	74.281	.04	8.02	.4739	.01147	-.0518	.0011	-.0032	.0046	53.0
218	.227	74.474	.04	9.03	.5236	.01137	-.0544	.0011	-.0034	.0046	53.1
219	.227	74.281	.05	10.01	.5644	.01177	-.0577	.0013	-.0033	.0033	53.0
220	.224	72.354	.05	12.35	.6951	.01324	-.0651	.0028	-.0029	.0009	53.1
221	.223	71.583	.07	14.09	.7739	.01392	-.0679	.0022	-.0034	-.0012	53.2
222	.231	58.632	.11	16.03	.8623	.01487	-.0685	.0019	-.0062	-.0060	53.1
223	.232	59.213	.14	17.97	.9723	.01697	-.0650	.0000	-.0085	-.0049	53.1
224	.199	57.566	-.03	19.95	1.0791	.01856	-.0615	-.0025	.0015	.0037	53.0
225	.231	58.535	-.05	22.00	1.2114	.02102	-.0584	.0001	.0040	-.0018	53.1
226	.231	58.728	-.01	22.98	1.2737	.02250	-.0555	.0001	.0024	-.0066	53.1

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 15 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
322	.227	74.382	-4.90	.01	.1702	.02951	-.0018	.0059	-.0090	.0164	5.766	1.621
323	.227	74.671	-4.90	-1.89	.1113	.02759	.0042	.0038	-.0088	.0157	4.035	1.623
324	.227	74.478	-4.90	-.00	.1696	.02942	-.0018	.0058	-.0090	.0164	5.764	1.620
325	.226	74.189	-4.90	1.98	.2299	.03365	-.0073	.0078	-.0092	.0174	6.832	1.617
326	.226	74.189	-4.90	3.02	.2630	.03710	-.0107	.0085	-.0088	.0174	7.089	1.617
327	.227	74.478	-4.90	4.04	.2964	.04193	-.0142	.0088	-.0083	.0173	7.069	1.619
328	.226	73.804	-4.91	5.15	.3329	.04919	-.0182	.0101	-.0072	.0159	6.767	1.612
329	.226	74.093	-4.91	6.01	.3693	.05685	-.0210	.0107	-.0062	.0137	6.496	1.614
330	.226	73.997	-4.90	7.02	.4038	.06631	-.0239	.0115	-.0051	.0106	6.089	1.613
331	.227	74.382	-4.89	8.08	.4537	.08071	-.0273	.0116	-.0048	.0094	5.621	1.617
332	.227	74.575	-4.87	9.02	.4859	.09402	-.0296	.0116	-.0052	.0088	5.167	1.618
333	.226	73.804	-4.86	10.02	.5240	.10912	-.0320	.0123	-.0045	.0061	4.802	1.610
334	.227	74.478	-4.81	12.36	.6324	.15545	-.0358	.0126	-.0041	.0043	4.068	1.617
335	.226	73.997	-4.75	14.15	.7064	.19541	-.0386	.0136	-.0051	.0002	3.615	1.611
336	.227	74.382	-4.67	16.09	.7860	.24430	-.0355	.0132	-.0053	-.0041	3.217	1.614
337	.228	75.153	-4.66	18.01	.8651	.29950	-.0340	.0145	-.0033	-.0050	2.888	1.621
338	.226	73.900	-4.66	20.02	.9567	.36836	-.0284	.0158	-.0005	-.0058	2.597	1.607
339	.226	73.997	-4.55	22.03	1.0569	.45041	-.0209	.0171	-.0028	-.0093	2.346	1.607
340	.226	73.707	-4.48	23.09	1.1018	.49424	-.0179	.0175	-.0045	-.0116	2.229	1.603

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
322	.227	74.382	-4.90	.01	.1702	.02948	-.0018	.0059	-.0090	.0164	53.1
323	.227	74.671	-4.90	-1.89	.1104	.03124	.0042	.0035	-.0089	.0157	53.2
324	.227	74.478	-4.90	-.00	.1696	.02943	-.0018	.0058	-.0090	.0164	53.4
325	.226	74.189	-4.90	1.98	.2310	.02568	-.0073	.0081	-.0089	.0174	53.5
326	.226	74.189	-4.90	3.02	.2645	.02319	-.0107	.0089	-.0083	.0174	53.6
327	.227	74.478	-4.90	4.04	.2986	.02096	-.0142	.0094	-.0077	.0173	53.7
328	.226	73.804	-4.91	5.15	.3360	.01913	-.0182	.0107	-.0062	.0159	53.7
329	.226	74.093	-4.91	6.01	.3732	.01784	-.0210	.0112	-.0050	.0137	54.0
330	.226	73.997	-4.90	7.02	.4088	.01648	-.0239	.0121	-.0037	.0106	54.0
331	.227	74.382	-4.89	8.08	.4606	.01611	-.0273	.0122	-.0031	.0094	54.1
332	.227	74.575	-4.87	9.02	.4946	.01671	-.0296	.0122	-.0033	.0088	54.1
333	.226	73.804	-4.86	10.02	.5350	.01632	-.0320	.0128	-.0023	.0061	54.3
334	.227	74.478	-4.81	12.36	.6511	.01647	-.0358	.0132	-.0013	.0043	54.4
335	.226	73.997	-4.75	14.15	.7328	.01678	-.0386	.0144	-.0016	.0002	54.5
336	.227	74.382	-4.67	16.09	.8229	.01694	-.0355	.0142	-.0014	-.0041	54.7
337	.228	75.153	-4.66	18.01	.9153	.01731	-.0340	.0148	.0013	-.0050	55.0
338	.226	73.900	-4.66	20.02	1.0250	.01866	-.0284	.0150	.0049	-.0058	55.2
339	.226	73.997	-4.55	22.03	1.1486	.02112	-.0209	.0169	.0039	-.0093	55.5
340	.226	73.707	-4.48	23.09	1.2074	.02245	-.0179	.0179	.0027	-.0116	55.6

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 16 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
343	.201	58.634	-4.91	.03	.2557	.05462	-.0205	.0073	-.0100	.0183	4.682	1.437
344	.199	57.955	-4.91	-1.89	.1945	.04954	-.0148	.0053	-.0097	.0173	3.918	1.429
345	.201	59.118	-4.91	.01	.2550	.05465	-.0205	.0075	-.0099	.0180	4.665	1.443
346	.200	58.343	-4.90	2.01	.3186	.06191	-.0271	.0090	-.0101	.0190	5.146	1.433
347	.200	58.149	-4.90	3.02	.3521	.06741	-.0314	.0095	-.0102	.0198	5.223	1.431
348	.199	57.955	-4.90	4.08	.3899	.07517	-.0359	.0101	-.0101	.0200	5.187	1.428
349	.199	57.665	-4.89	5.18	.4304	.08463	-.0401	.0117	-.0091	.0176	5.086	1.424
350	.199	57.762	-4.89	6.05	.4641	.09412	-.0434	.0120	-.0086	.0166	4.930	1.425
351	.200	58.246	-4.87	7.04	.5018	.10700	-.0462	.0115	-.0085	.0148	4.689	1.431
352	.200	58.440	-4.86	8.06	.5394	.12112	-.0498	.0115	-.0079	.0129	4.454	1.433
353	.199	57.859	-4.85	9.05	.5796	.13646	-.0536	.0111	-.0070	.0114	4.247	1.426
354	.200	58.343	-4.84	10.06	.6239	.15381	-.0578	.0110	-.0063	.0096	4.056	1.431
355	.201	58.731	-4.80	12.35	.7144	.19998	-.0610	.0094	-.0049	.0087	3.572	1.436
356	.200	58.149	-4.75	14.15	.7942	.24405	-.0642	.0101	-.0052	.0057	3.254	1.428
357	.200	58.052	-4.65	16.10	.8701	.29629	-.0635	.0087	-.0052	-.0023	2.937	1.427
358	.199	57.956	-4.62	18.02	.9515	.35590	-.0640	.0099	-.0038	-.0074	2.674	1.425
359	.199	57.471	-4.58	20.03	1.0502	.43284	-.0592	.0108	-.0016	-.0097	2.426	1.418
360	.201	58.634	-4.49	22.11	1.1477	.51978	-.0500	.0115	-.0020	-.0155	2.208	1.432
361	.200	58.052	-4.42	23.07	1.1809	.55758	-.0471	.0130	-.0037	-.0166	2.118	1.424

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
343	.201	58.634	-4.91	.03	.2557	.05448	-.0205	.0073	-.0100	.0183	53.8
344	.199	57.955	-4.91	-1.89	.1927	.05601	-.0148	.0050	-.0098	.0173	53.8
345	.201	59.118	-4.91	.01	.2550	.05461	-.0205	.0075	-.0099	.0180	53.8
346	.200	58.343	-4.90	2.01	.3206	.05069	-.0271	.0093	-.0098	.0190	53.9
347	.200	58.149	-4.90	3.02	.3552	.04880	-.0314	.0100	-.0097	.0198	53.9
348	.199	57.955	-4.90	4.08	.3942	.04726	-.0359	.0108	-.0094	.0200	54.0
349	.199	57.665	-4.89	5.18	.4363	.04544	-.0401	.0125	-.0080	.0176	54.0
350	.199	57.762	-4.89	6.05	.4714	.04472	-.0434	.0128	-.0073	.0166	54.2
351	.200	58.246	-4.87	7.04	.5111	.04469	-.0462	.0125	-.0070	.0148	54.3
352	.200	58.440	-4.86	8.06	.5511	.04432	-.0498	.0125	-.0062	.0129	54.3
353	.199	57.859	-4.85	9.05	.5938	.04361	-.0536	.0121	-.0052	.0114	54.3
354	.200	58.343	-4.84	10.06	.6412	.04252	-.0578	.0119	-.0042	.0056	54.5
355	.201	58.731	-4.80	12.35	.7406	.04254	-.0610	.0102	-.0028	.0087	54.4
356	.200	58.149	-4.75	14.15	.8297	.04257	-.0642	.0110	-.0026	.0057	54.6
357	.200	58.052	-4.65	16.10	.9182	.04335	-.0635	.0098	-.0026	-.0023	54.8
358	.199	57.956	-4.62	18.02	1.0150	.04412	-.0640	.0106	-.0005	-.0074	54.9
359	.199	57.471	-4.58	20.03	1.1349	.04706	-.0592	.0107	.0022	-.0097	55.1
360	.201	58.634	-4.49	22.11	1.2590	.04949	-.0500	.0114	.0024	-.0155	55.3
361	.200	58.052	-4.42	23.07	1.3049	.05025	-.0471	.0107	.0005	-.0166	55.5

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 17 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
364	.225	73.032	-4.94	.03	.0443	.01642	.0292	.0034	-.0058	.0127	2.696	1.600
365	.225	73.224	-4.93	-1.75	-.0119	.01746	.0355	.0016	-.0063	.0129	-.684	1.602
366	.224	72.550	-4.94	.02	.0450	.01638	.0295	.0034	-.0057	.0125	2.749	1.594
367	.224	72.646	-4.94	2.02	.1092	.01796	.0245	.0059	-.0053	.0132	6.081	1.595
368	.224	72.743	-4.94	3.04	.1381	.01938	.0222	.0069	-.0054	.0137	7.123	1.595
369	.224	72.743	-4.94	4.06	.1686	.02160	.0201	.0077	-.0051	.0141	7.807	1.595
370	.224	72.357	-4.94	5.18	.2045	.02596	.0175	.0083	-.0040	.0129	7.875	1.590
371	.224	72.743	-4.94	6.05	.2362	.03134	.0149	.0086	-.0032	.0112	7.536	1.594
372	.224	72.453	-4.94	7.05	.2716	.03851	.0122	.0091	-.0025	.0091	7.052	1.590
373	.224	72.550	-4.93	8.07	.3116	.04785	.0100	.0100	-.0019	.0073	6.513	1.591
374	.224	72.357	-4.91	9.04	.3495	.05823	.0082	.0110	-.0018	.0064	6.001	1.589
375	.225	73.128	-4.90	10.04	.3860	.06986	.0065	.0121	-.0017	.0044	5.525	1.597
376	.225	73.321	-4.83	12.36	.4822	.10849	.0052	.0134	-.0034	.0041	4.444	1.599
377	.225	73.321	-4.75	14.19	.5671	.14757	.0046	.0149	-.0054	.0002	3.843	1.598
378	.224	72.839	-4.68	16.11	.6379	.18811	.0086	.0146	-.0058	-.0035	3.391	1.593
379	.225	73.032	-4.64	18.03	.7208	.23868	.0122	.0150	-.0050	-.0040	3.020	1.594
380	.225	73.321	-4.62	20.01	.8058	.29858	.0186	.0150	-.0029	-.0039	2.699	1.596
381	.225	73.128	-4.53	22.04	.8997	.37228	.0281	.0159	-.0038	-.0075	2.417	1.593
382	.224	72.646	-4.48	23.07	.9436	.41094	.0316	.0165	-.0043	-.0105	2.296	1.587

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
364	.225	73.032	-4.94	.03	.0443	.01640	.0292	.0034	-.0058	.0127	54.2
365	.225	73.224	-4.93	-1.75	-.0125	.01709	.0355	.0014	-.0064	.0129	54.3
366	.224	72.550	-4.94	.02	.0450	.01636	.0295	.0034	-.0057	.0125	54.4
367	.224	72.646	-4.94	2.02	.1098	.01810	.0245	.0061	-.0051	.0132	54.6
368	.224	72.743	-4.94	3.04	.1389	.01204	.0222	.0072	-.0050	.0137	54.7
369	.224	72.743	-4.94	4.06	.1697	.00960	.0201	.0081	-.0046	.0141	54.8
370	.224	72.357	-4.94	5.18	.2060	.00740	.0175	.0086	-.0033	.0129	54.9
371	.224	72.743	-4.94	6.05	.2382	.00629	.0149	.0089	-.0023	.0112	55.0
372	.224	72.453	-4.94	7.05	.2743	.00487	.0122	.0094	-.0013	.0091	55.1
373	.224	72.550	-4.93	8.07	.3152	.00360	.0100	.0102	-.0004	.0073	55.1
374	.224	72.357	-4.91	9.04	.3543	.00260	.0082	.0112	-.0000	.0064	55.1
375	.225	73.128	-4.90	10.04	.3923	.00149	.0065	.0122	.0004	.0044	55.3
376	.225	73.321	-4.83	12.36	.4942	.00273	.0052	.0138	-.0004	.0041	55.5
377	.225	73.321	-4.75	14.19	.5860	.00409	.0046	.0157	-.0016	.0002	55.5
378	.224	72.839	-4.68	16.11	.6650	.00376	.0086	.0157	-.0016	-.0035	55.6
379	.225	73.032	-4.64	18.03	.7593	.00383	.0122	.0158	-.0001	-.0040	55.8
380	.225	73.321	-4.62	20.01	.8593	.00481	.0186	.0151	.0024	-.0039	56.0
381	.225	73.128	-4.53	22.04	.9736	.00741	.0281	.0162	.0024	-.0075	56.3
382	.224	72.646	-4.48	23.07	1.0292	.00841	.0316	.0169	.0025	-.0105	56.5

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 18 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
385	.225	73.320	-5.03	.18	.0472	.01647	.0299	.0035	.0014	.0048	2.869	1.604
386	.226	73.513	-5.03	-2.01	-.0220	.01789	.0372	.0005	.0011	.0048	-1.229	1.605
387	.225	73.031	-5.03	.01	.0418	.01658	.0307	.0031	.0013	.0049	2.521	1.599
388	.224	72.645	-5.03	2.02	.1050	.01789	.0257	.0059	.0013	.0058	5.867	1.595
389	.225	72.838	-5.03	3.02	.1340	.01930	.0239	.0069	.0012	.0068	6.939	1.597
390	.225	72.838	-5.03	4.08	.1673	.02173	.0220	.0081	.0013	.0071	7.701	1.597
391	.224	72.742	-5.03	5.17	.2034	.02594	.0192	.0086	.0024	.0063	7.840	1.595
392	.224	72.742	-5.03	6.03	.2325	.03094	.0168	.0091	.0030	.0045	7.514	1.595
393	.224	72.545	-5.02	7.05	.2724	.03857	.0137	.0100	.0037	.0021	7.063	1.594
394	.224	72.549	-5.01	8.06	.3066	.04703	.0115	.0107	.0039	.0011	6.518	1.593
395	.225	72.838	-4.99	9.04	.3449	.05745	.0100	.0117	.0035	.0008	6.004	1.595
396	.224	72.260	-4.96	10.04	.3829	.06923	.0080	.0128	.0033	-.0009	5.531	1.589
397	.226	73.513	-4.88	12.35	.4807	.10773	.0069	.0143	.0007	-.0009	4.463	1.602
398	.225	73.127	-4.81	14.16	.5654	.14641	.0055	.0159	-.0015	-.0024	3.862	1.597
399	.224	72.356	-4.71	16.13	.6381	.18777	.0101	.0134	-.0034	-.0061	3.399	1.587
400	.224	72.645	-4.65	18.03	.7226	.23836	.0133	.0152	-.0041	-.0050	3.031	1.590
401	.225	73.031	-4.60	20.04	.8047	.29764	.0202	.0144	-.0040	-.0026	2.704	1.593
402	.226	73.898	-4.50	22.04	.8931	.36821	.0286	.0149	-.0060	-.0045	2.426	1.601
403	.225	72.838	-4.44	23.06	.9374	.40672	.0320	.0152	-.0073	-.0071	2.305	1.589

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
385	.225	73.320	-5.03	.18	.0473	.01632	.0299	.0035	.0014	.0048	54.0
386	.226	73.513	-5.03	-2.01	-.0226	.01710	.0372	.0006	.0011	.0048	54.1
387	.225	73.031	-5.03	.01	.0419	.01657	.0307	.0031	.0013	.0049	54.3
388	.224	72.545	-5.03	2.02	.1055	.01418	.0257	.0059	.0015	.0058	54.4
389	.225	72.838	-5.03	3.02	.1348	.01223	.0239	.0068	.0015	.0068	54.4
390	.225	72.838	-5.03	4.08	.1684	.00977	.0220	.0080	.0019	.0071	54.4
391	.224	72.742	-5.03	5.17	.2049	.00750	.0192	.0084	.0031	.0063	54.5
392	.224	72.742	-5.03	6.03	.2345	.00634	.0168	.0087	.0039	.0045	54.6
393	.224	72.545	-5.02	7.05	.2751	.00486	.0137	.0095	.0050	.0021	54.7
394	.224	72.549	-5.01	8.06	.3101	.00361	.0115	.0100	.0054	.0011	54.7
395	.225	72.838	-4.99	9.04	.3497	.00255	.0101	.0110	.0053	.0008	54.8
396	.224	72.260	-4.96	10.04	.3891	.00140	.0080	.0120	.0055	-.0009	54.8
397	.226	73.513	-4.88	12.35	.4926	.00240	.0069	.0138	.0037	-.0009	55.0
398	.225	73.127	-4.81	14.16	.5840	.00361	.0055	.0157	.0024	-.0024	55.2
399	.224	72.356	-4.71	16.13	.6652	.00314	.0101	.0157	.0010	-.0061	55.4
400	.224	72.645	-4.65	18.03	.7608	.00296	.0133	.0157	.0007	-.0050	55.5
401	.225	73.031	-4.60	20.04	.8579	.00392	.0202	.0149	.0012	-.0026	55.7
402	.226	73.898	-4.50	22.04	.9660	.00613	.0286	.0160	-.0000	-.0045	56.1
403	.225	72.838	-4.44	23.06	1.0218	.00707	.0320	.0168	-.0007	-.0071	56.2

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 19 | BALANCE 731-B | 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
406	.225	73.416	-5.03	.01	.0689	.01935	.0149	.0042	.0010	.0052	3.559	1.605
407	.225	73.416	-5.03	-1.96	.0041	.01970	.0226	.0013	.0011	.0049	.207	1.604
408	.225	73.224	-5.03	.01	.0688	.01961	.0151	.0041	.0010	.0053	3.543	1.602
409	.225	72.838	-5.03	2.02	.1309	.02158	.0105	.0069	.0008	.0064	6.065	1.597
410	.225	72.934	-5.02	3.02	.1597	.02332	.0089	.0080	.0007	.0073	6.848	1.598
411	.225	73.224	-5.02	4.06	.1903	.02580	.0070	.0090	.0008	.0077	7.376	1.601
412	.224	72.645	-5.02	5.16	.2241	.03028	.0047	.0094	.0017	.0069	7.400	1.594
413	.225	72.838	-5.03	6.01	.2556	.03568	.0021	.0106	.0026	.0049	7.164	1.596
414	.224	72.356	-5.02	7.05	.2924	.04331	-.0003	.0116	.0035	.0024	6.752	1.591
415	.225	72.838	-5.01	8.06	.3320	.05302	-.0020	.0124	.0035	.0013	6.263	1.596
416	.226	73.898	-4.99	9.02	.3670	.06324	-.0035	.0133	.0031	.0011	5.804	1.607
417	.225	72.935	-4.97	10.05	.4098	.07643	-.0056	.0142	.0031	-.0006	5.362	1.596
418	.225	73.320	-4.89	12.31	.5015	.11470	-.0066	.0155	.0005	-.0003	4.373	1.600
419	.224	72.356	-4.81	14.14	.5815	.15353	-.0072	.0166	-.0017	-.0023	3.788	1.590
420	.224	72.645	-4.71	16.15	.6700	.20077	-.0022	.0162	-.0035	-.0063	3.337	1.592
421	.224	72.549	-4.66	18.10	.7389	.24825	.0005	.0155	-.0037	-.0047	2.977	1.590
422	.224	72.549	-4.61	20.00	.8327	.31190	.0073	.0151	-.0038	-.0030	2.677	1.590
423	.225	72.935	-4.50	22.14	.9181	.38458	.0163	.0149	-.0061	-.0048	2.387	1.593
424	.225	73.224	-4.45	23.08	.9667	.42409	.0192	.0159	-.0068	-.0067	2.279	1.596

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
406	.225	73.416	-5.03	.01	.0689	.01934	.0149	.0042	.0010	.0052	54.0
407	.225	73.416	-5.03	-1.96	.0034	.01983	.0226	.0013	.0010	.0049	54.1
408	.225	73.224	-5.03	.01	.0688	.01939	.0151	.0041	.0010	.0053	54.2
409	.225	72.838	-5.03	2.02	.1316	.01694	.0105	.0068	.0011	.0064	54.3
410	.225	72.934	-5.02	3.02	.1607	.01489	.0089	.0079	.0011	.0073	54.4
411	.225	73.224	-5.02	4.06	.1917	.01227	.0070	.0090	.0015	.0077	54.4
412	.224	72.645	-5.02	5.16	.2259	.01002	.0047	.0092	.0026	.0069	54.6
413	.225	72.838	-5.03	6.01	.2579	.00870	.0021	.0103	.0037	.0049	54.6
414	.224	72.356	-5.02	7.05	.2955	.00711	-.0003	.0111	.0049	.0024	54.6
415	.225	72.838	-5.01	8.06	.3362	.00596	-.0020	.0118	.0052	.0013	54.7
416	.226	73.898	-4.99	9.02	.3724	.00493	-.0035	.0127	.0052	.0011	54.7
417	.225	72.935	-4.97	10.05	.4169	.00374	-.0056	.0134	.0055	-.0006	54.8
418	.225	73.320	-4.89	12.31	.5145	.00517	-.0066	.0150	.0038	-.0003	54.8
419	.224	72.356	-4.81	14.14	.6014	.00685	-.0072	.0165	.0024	-.0023	54.9
420	.224	72.645	-4.71	16.15	.6994	.00651	-.0022	.0166	.0011	-.0063	55.1
421	.224	72.549	-4.66	18.10	.7795	.00641	.0005	.0159	.0013	-.0047	55.2
422	.224	72.549	-4.61	20.00	.8988	.00753	.0073	.0155	.0016	-.0030	55.3
423	.225	72.935	-4.50	22.14	.9954	.01021	.0160	.0161	-.0000	-.0048	55.5
424	.225	73.224	-4.45	23.08	1.0556	.01122	.0192	.0173	-.0000	-.0067	55.7

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 20 | BALANCE 731-B | 08/09/72

STABILITY AXES COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
436	.227	73.791	-5.02	-.02	.1694	.02986	-.0010	.0055	-.0003	.0067	5.674	1.635
437	.228	74.080	-5.02	-2.21	.1008	.02778	.0061	.0027	-.0001	.0062	3.630	1.638
438	.227	73.695	-5.02	-.02	.1698	.02989	-.0007	.0053	-.0004	.0070	5.682	1.633
439	.227	73.598	-5.01	1.99	.2326	.03428	-.0069	.0077	-.0004	.0080	6.783	1.631
440	.227	73.598	-5.02	3.00	.2645	.03761	-.0101	.0084	-.0000	.0084	7.032	1.630
441	.227	73.406	-5.02	4.03	.3011	.04294	-.0140	.0094	.0004	.0079	7.011	1.627
442	.226	73.117	-5.02	5.15	.3365	.05031	-.0176	.0105	.0014	.0067	6.688	1.623
443	.227	73.502	-5.03	6.00	.3737	.05806	-.0212	.0114	.0026	.0042	6.436	1.627
444	.227	73.502	-5.02	7.01	.4075	.06728	-.0236	.0123	.0034	.0012	6.056	1.626
445	.227	73.791	-5.02	7.33	.4220	.07129	-.0244	.0124	.0035	.0007	5.920	1.628
446	.228	74.273	-4.98	9.02	.4903	.09554	-.0287	.0125	.0026	.0007	5.132	1.632
447	.226	73.117	-4.96	10.02	.5354	.11226	-.0319	.0132	.0031	-.0017	4.778	1.619
448	.226	73.213	-4.88	12.34	.6297	.15508	-.0352	.0131	.0008	-.0018	4.060	1.620
449	.227	73.695	-4.79	14.11	.7092	.19628	-.0390	.0142	-.0018	-.0042	3.617	1.624
450	.227	73.695	-4.70	16.10	.7792	.24254	-.0362	.0134	-.0036	-.0062	3.213	1.623
451	.228	73.887	-4.63	17.99	.8351	.28803	-.0351	.0134	-.0045	-.0060	2.903	1.624
452	.228	74.369	-4.63	19.97	.9579	.36313	-.0305	.0151	-.0027	-.0026	2.602	1.628
453	.226	72.924	-4.53	21.98	1.0415	.44355	-.0234	.0164	-.0056	-.0032	2.348	1.612
454	.224	71.478	-4.48	23.01	1.0903	.48800	-.0202	.0175	-.0069	-.0053	2.234	1.595

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
436	.227	73.791	-5.02	-.02	.1694	.02992	-.0010	.0055	-.0003	.0067	45.1
437	.228	74.080	-5.02	-2.21	.0997	.03166	.0061	.0027	-.0002	.0062	45.3
438	.227	73.695	-5.02	-.02	.1698	.02994	-.0007	.0053	-.0004	.0070	45.6
439	.227	73.598	-5.01	1.99	.2336	.02619	-.0069	.0077	-.0001	.0080	45.8
440	.227	73.598	-5.02	3.00	.2661	.02373	-.0101	.0084	.0004	.0084	46.0
441	.227	73.406	-5.02	4.03	.3034	.02166	-.0140	.0094	.0011	.0079	46.1
442	.226	73.117	-5.02	5.15	.3396	.01989	-.0176	.0103	.0023	.0067	46.3
443	.227	73.502	-5.03	6.00	.3777	.01867	-.0212	.0111	.0038	.0042	46.5
444	.227	73.502	-5.02	7.01	.4126	.01705	-.0236	.0118	.0049	.0012	46.7
445	.227	73.791	-5.02	7.33	.4277	.01685	-.0244	.0118	.0051	.0007	46.8
446	.228	74.273	-4.98	9.02	.4992	.01747	-.0287	.0119	.0046	.0007	47.1
447	.226	73.117	-4.96	10.02	.5468	.01715	-.0319	.0125	.0054	-.0017	47.3
448	.226	73.213	-4.88	12.34	.6483	.01695	-.0352	.0127	.0036	-.0018	47.4
449	.227	73.695	-4.79	14.11	.7356	.01732	-.0390	.0142	.0017	-.0042	47.6
450	.227	73.695	-4.70	16.10	.8159	.01690	-.0362	.0139	.0003	-.0062	47.8
451	.228	73.887	-4.63	17.99	.8842	.01566	-.0351	.0142	-.0001	-.0060	48.3
452	.228	74.369	-4.63	19.97	1.0261	.01880	-.0305	.0151	.0027	-.0026	48.5
453	.226	72.924	-4.53	21.98	1.1318	.02149	-.0234	.0173	.0010	-.0032	48.6
454	.224	71.478	-4.48	23.01	1.1943	.02296	-.0202	.0188	.0005	-.0053	48.8

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 21 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
457	.228	73.984	-5.01	.03	.2489	.05498	-.0199	.0074	-.0008	.0076	4.527	1.629
458	.226	73.117	-5.02	-1.91	.1907	.05104	-.0143	.0051	-.0002	.0065	3.737	1.619
459	.228	73.887	-5.01	.01	.2481	.05532	-.0197	.0076	-.0007	.0073	4.485	1.627
460	.227	73.791	-5.01	1.99	.3057	.06148	-.0256	.0096	-.0008	.0082	4.972	1.625
461	.226	73.020	-5.01	3.02	.3399	.06681	-.0294	.0101	-.0008	.0093	5.088	1.617
462	.225	72.250	-5.01	4.06	.3772	.07381	-.0341	.0107	-.0007	.0094	5.111	1.608
463	.228	74.176	-5.02	5.22	.4318	.08614	-.0394	.0128	.0005	.0071	5.012	1.629
464	.228	74.273	-5.02	6.04	.4500	.09223	-.0412	.0131	.0016	.0043	4.879	1.629
465	.227	73.791	-5.01	7.08	.4869	.10465	-.0435	.0139	.0022	.0018	4.653	1.624
466	.226	73.213	-4.98	8.10	.5308	.12030	-.0474	.0138	.0019	.0014	4.412	1.618
467	.228	74.176	-4.96	9.07	.5723	.13553	-.0511	.0136	.0018	.0004	4.223	1.628
468	.227	73.598	-4.94	10.07	.6076	.15059	-.0532	.0137	.0016	-.0011	4.035	1.621
469	.227	73.887	-4.86	12.36	.6966	.19542	-.0547	.0125	-.0001	-.0008	3.565	1.624
470	.228	74.273	-4.79	14.16	.7795	.24010	-.0575	.0127	-.0018	-.0026	3.246	1.627
471	.227	73.309	-4.70	16.17	.8503	.29018	-.0569	.0126	-.0034	-.0054	2.930	1.616
472	.226	72.828	-4.64	18.06	.9398	.35142	-.0567	.0145	-.0042	-.0063	2.674	1.610
473	.229	74.562	-4.64	20.02	1.0140	.41646	-.0506	.0158	-.0021	-.0035	2.435	1.628
474	.227	73.309	-4.53	22.02	1.1019	.49714	-.0456	.0153	-.0045	-.0049	2.217	1.614
475	.228	73.887	-4.48	23.03	1.1591	.54676	-.0477	.0153	-.0053	-.0054	2.120	1.619

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
457	.228	73.984	-5.01	.03	.2489	.05484	-.0199	.0074	-.0008	.0076	47.3
458	.226	73.117	-5.02	-1.91	.1889	.05736	-.0143	.0051	-.0004	.0065	47.3
459	.228	73.887	-5.01	.01	.2481	.05527	-.0197	.0076	-.0007	.0073	47.5
460	.227	73.791	-5.01	1.99	.3076	.05083	-.0256	.0096	-.0004	.0082	47.6
461	.226	73.020	-5.01	3.02	.3430	.04881	-.0294	.0101	-.0003	.0093	47.6
462	.225	72.250	-5.01	4.06	.3815	.04690	-.0341	.0107	.0000	.0094	47.7
463	.228	74.176	-5.02	5.22	.4378	.04648	-.0394	.0127	.0016	.0071	47.8
464	.228	74.273	-5.02	6.04	.4572	.04439	-.0412	.0129	.0029	.0043	47.9
465	.227	73.791	-5.01	7.08	.4961	.04386	-.0435	.0135	.0039	.0018	47.9
466	.226	73.213	-4.98	8.10	.5424	.04435	-.0474	.0134	.0038	.0014	48.0
467	.228	74.176	-4.96	9.07	.5865	.04362	-.0511	.0131	.0040	.0004	48.0
468	.227	73.598	-4.94	10.07	.6246	.04199	-.0532	.0132	.0040	-.0011	48.1
469	.227	73.887	-4.86	12.36	.7223	.04183	-.0547	.0123	.0025	-.0008	48.2
470	.228	74.273	-4.79	14.16	.8145	.04214	-.0575	.0128	.0014	-.0026	48.4
471	.227	73.309	-4.70	16.17	.8975	.04187	-.0569	.0130	.0003	-.0054	48.5
472	.226	72.828	-4.64	18.06	1.0024	.04274	-.0567	.0151	.0005	-.0063	48.7
473	.229	74.562	-4.64	20.02	1.0953	.04411	-.0506	.0156	.0034	-.0035	49.0
474	.227	73.309	-4.53	22.02	1.2079	.04777	-.0456	.0159	.0016	-.0049	49.1
475	.228	73.887	-4.48	23.03	1.2806	.04972	-.0477	.0162	.0011	-.0054	49.3

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 23 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
508	.227	73.695	5.03	.00	.1653	.02891	-.0015	-.0049	-.0009	-.0058	5.719	1.621
509	.227	73.502	5.03	-2.25	.0961	.02747	.0059	-.0018	-.0005	-.0060	3.497	1.618
510	.227	73.598	5.03	-.00	.1668	.02924	-.0013	-.0049	-.0009	-.0059	5.705	1.618
511	.228	73.887	5.04	2.02	.2327	.03388	-.0081	-.0075	-.0016	-.0054	6.868	1.620
512	.227	73.695	5.04	3.01	.2626	.03709	-.0118	-.0086	-.0021	-.0047	7.079	1.617
513	.227	73.406	5.06	4.05	.2982	.04243	-.0149	-.0098	-.0038	-.0024	7.026	1.614
514	.227	73.791	5.06	5.17	.3368	.04951	-.0191	-.0103	-.0055	.0006	6.802	1.617
515	.228	73.984	5.07	6.04	.3761	.05754	-.0221	-.0116	-.0070	.0037	6.535	1.619
516	.227	73.695	5.07	7.05	.4049	.06563	-.0244	-.0122	-.0085	.0077	6.170	1.615
517	.227	73.887	5.06	8.05	.4496	.07808	-.0285	-.0133	-.0092	.0108	5.759	1.617
518	.227	73.406	5.03	9.03	.4838	.09072	-.0309	-.0138	-.0086	.0122	5.334	1.611
519	.227	73.598	4.99	10.06	.5335	.10896	-.0334	-.0137	-.0074	.0123	4.896	1.613
520	.228	74.465	4.92	12.35	.6209	.15027	-.0354	-.0143	-.0051	.0107	4.132	1.621
521	.227	73.791	4.88	14.14	.6942	.18892	-.0350	-.0152	-.0047	.0094	3.674	1.613
522	.227	73.791	4.96	16.11	.7796	.23950	-.0345	-.0160	-.0086	.0003	3.255	1.612
523	.225	72.346	4.94	18.01	.8543	.29382	-.0314	-.0203	-.0089	-.0015	2.908	1.596
524	.227	73.309	4.87	20.06	.9610	.37037	-.0275	-.0267	-.0063	.0027	2.595	1.606
525	.227	73.791	4.66	22.03	1.0136	.43238	-.0145	-.0301	.0025	.0108	2.344	1.609
526	.226	73.117	4.50	23.04	1.0518	.47142	-.0109	-.0285	.0076	.0190	2.231	1.601

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
508	.227	73.695	5.03	.00	.1653	.02890	-.0015	-.0049	-.0009	-.0058	48.4
509	.227	73.502	5.03	-2.25	.0949	.03122	.0059	-.0018	-.0004	-.0060	48.6
510	.227	73.598	5.03	-.00	.1668	.02925	-.0013	-.0049	-.0009	-.0059	48.9
511	.228	73.887	5.04	2.02	.2337	.02565	-.0081	-.0075	-.0018	-.0054	49.2
512	.227	73.695	5.04	3.01	.2642	.02325	-.0118	-.0085	-.0026	-.0047	49.3
513	.227	73.406	5.06	4.05	.3004	.02127	-.0149	-.0095	-.0045	-.0024	49.5
514	.227	73.791	5.06	5.17	.3399	.01899	-.0191	-.0097	-.0064	.0006	49.6
515	.228	73.984	5.07	6.04	.3800	.01764	-.0221	-.0108	-.0082	.0037	49.8
516	.227	73.695	5.07	7.05	.4099	.01543	-.0244	-.0111	-.0099	.0077	49.9
517	.227	73.887	5.06	8.05	.4562	.01432	-.0285	-.0118	-.0109	.0108	49.9
518	.227	73.406	5.03	9.03	.4921	.01364	-.0309	-.0123	-.0107	.0122	50.1
519	.227	73.598	4.99	10.06	.5443	.01413	-.0334	-.0122	-.0097	.0123	50.3
520	.228	74.465	4.92	12.35	.6387	.01395	-.0354	-.0128	-.0080	.0107	50.4
521	.227	73.791	4.88	14.14	.7193	.01364	-.0350	-.0136	-.0083	.0094	50.7
522	.227	73.791	4.96	16.11	.8154	.01374	-.0345	-.0137	-.0130	.0003	50.8
523	.225	72.346	4.94	18.01	.9033	.01526	-.0314	-.0166	-.0148	-.0015	51.0
524	.227	73.309	4.87	20.06	1.0298	.01819	-.0275	-.0230	-.0151	.0027	51.2
525	.227	73.791	4.66	22.03	1.1018	.02065	-.0145	-.0288	-.0090	.0108	51.6
526	.226	73.117	4.50	23.04	1.1524	.02225	-.0109	-.0292	-.0042	.0190	51.7

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 24 | BALANCE 731-B | 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
529	.227	73.792	5.03	.01	.2541	.05501	-.0203	-.0069	-.0006	-.0061	4.619	1.613
530	.228	74.177	5.03	-2.17	.1866	.05006	-.0134	-.0038	-.0004	-.0059	3.727	1.617
531	.228	74.177	5.03	-.00	.2517	.05459	-.0202	-.0068	-.0005	-.0061	4.611	1.617
532	.228	74.466	5.04	2.01	.3164	.06150	-.0273	-.0087	-.0015	-.0056	5.144	1.619
533	.227	73.599	5.05	3.02	.3515	.06727	-.0314	-.0099	-.0028	-.0037	5.226	1.609
534	.227	73.792	5.06	4.06	.3899	.07464	-.0370	-.0100	-.0045	-.0009	5.224	1.611
535	.227	73.792	5.07	5.16	.4310	.08387	-.0407	-.0118	-.0059	.0022	5.139	1.611
536	.228	74.369	5.07	6.02	.4605	.09142	-.0432	-.0126	-.0071	.0054	5.037	1.617
537	.227	73.406	5.06	7.05	.5032	.10378	-.0474	-.0141	-.0080	.0095	4.849	1.606
538	.228	73.984	5.05	8.06	.5414	.11677	-.0522	-.0141	-.0085	.0121	4.637	1.612
539	.226	73.213	5.01	9.02	.5802	.13237	-.0563	-.0139	-.0074	.0120	4.383	1.603
540	.227	73.310	4.98	10.04	.6214	.15005	-.0583	-.0131	-.0068	.0126	4.141	1.603
541	.227	73.791	4.90	12.34	.7154	.19808	-.0616	-.0119	-.0046	.0096	3.612	1.608
542	.227	73.406	4.86	14.14	.7807	.23794	-.0616	-.0110	-.0046	.0083	3.281	1.603
543	.225	72.057	4.92	16.11	.8557	.28889	-.0608	-.0102	-.0087	-.0019	2.962	1.588
544	.227	73.406	4.91	18.03	.9370	.34876	-.0590	-.0141	-.0094	-.0028	2.687	1.601
545	.227	73.502	4.85	20.01	1.0230	.41896	-.0534	-.0206	-.0075	.0015	2.442	1.601
546	.227	73.695	4.65	22.00	1.0728	.48325	-.0373	-.0245	.0004	.0113	2.220	1.602
547	.227	73.695	4.49	23.04	1.1113	.52530	-.0317	-.0236	.0052	.0193	2.116	1.601

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
529	.227	73.792	5.03	.01	.2541	.05498	-.0203	-.0069	-.0006	-.0061	50.7
530	.228	74.177	5.03	-2.17	.1845	.05709	-.0134	-.0038	-.0002	-.0059	50.8
531	.228	74.177	5.03	-.00	.2517	.05460	-.0202	-.0068	-.0005	-.0061	50.9
532	.228	74.466	5.04	2.01	.3183	.05036	-.0273	-.0087	-.0018	-.0056	51.1
533	.227	73.599	5.05	3.02	.3546	.04862	-.0314	-.0098	-.0034	-.0037	51.2
534	.227	73.792	5.06	4.06	.3942	.04685	-.0370	-.0097	-.0052	-.0009	51.3
535	.227	73.792	5.07	5.16	.4368	.04479	-.0407	-.0112	-.0069	.0022	51.3
536	.228	74.369	5.07	6.02	.4676	.04258	-.0432	-.0118	-.0084	.0054	51.4
537	.227	73.406	5.06	7.05	.5122	.04123	-.0474	-.0130	-.0097	.0095	51.5
538	.228	73.984	5.05	8.06	.5525	.03973	-.0522	-.0128	-.0104	.0121	51.6
539	.226	73.213	5.01	9.02	.5938	.03975	-.0563	-.0126	-.0095	.0120	51.7
540	.227	73.310	4.98	10.04	.6381	.03943	-.0583	-.0117	-.0090	.0126	51.8
541	.227	73.791	4.90	12.34	.7413	.04056	-.0616	-.0106	-.0070	.0096	52.1
542	.227	73.406	4.86	14.14	.8151	.04004	-.0616	-.0096	-.0072	.0083	52.2
543	.225	72.057	4.92	16.11	.9023	.04006	-.0608	-.0074	-.0112	-.0019	52.3
544	.227	73.406	4.91	18.03	.9989	.04171	-.0590	-.0105	-.0133	-.0028	52.7
545	.227	73.502	4.85	20.01	1.1046	.04355	-.0534	-.0168	-.0141	.0015	52.9
546	.227	73.695	4.65	22.00	1.1757	.04621	-.0373	-.0228	-.0088	.0113	53.1
547	.227	73.695	4.49	23.04	1.2283	.04835	-.0317	-.0238	-.0045	.0193	53.4

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 25 | BALANCE 731-B | 08/09/72

STABILITY AXES COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
550	.227	73.888	5.03	.01	.0428	.01620	.0301	-.0026	-.0013	-.0053	2.642	1.611
551	.228	74.177	5.03	-2.19	-.0298	.01791	.0374	.0003	-.0007	-.0058	-1.662	1.614
552	.228	73.984	5.03	.02	.0428	.01622	.0302	-.0027	-.0013	-.0053	2.639	1.611
553	.227	73.406	5.04	2.02	.1048	.01743	.0251	-.0059	-.0018	-.0051	6.012	1.605
554	.227	73.406	5.04	3.02	.1352	.01891	.0230	-.0073	-.0020	-.0053	7.148	1.605
555	.228	73.984	5.04	4.07	.1694	.02175	.0201	-.0083	-.0027	-.0048	7.788	1.611
556	.227	73.695	5.05	5.19	.2087	.02632	.0176	-.0093	-.0040	-.0029	7.928	1.607
557	.227	73.888	5.05	6.02	.2339	.03028	.0156	-.0100	-.0051	-.0003	7.727	1.609
558	.228	74.273	5.05	7.03	.2726	.03752	.0127	-.0105	-.0068	.0038	7.265	1.613
559	.227	73.792	5.04	8.05	.3108	.04634	.0100	-.0114	-.0077	.0067	6.707	1.607
560	.228	74.370	5.02	9.04	.3483	.05695	.0084	-.0126	-.0076	.0090	6.117	1.613
561	.227	73.695	4.99	10.03	.3870	.06968	.0064	-.0141	-.0069	.0101	5.554	1.606
562	.229	74.755	4.91	12.37	.4833	.10716	.0053	-.0158	-.0039	.0095	4.510	1.618
563	.228	74.273	4.88	14.15	.5614	.14230	.0055	-.0182	-.0033	.0081	3.945	1.611
564	.229	74.755	4.98	16.11	.6431	.18591	.0079	-.0203	-.0082	.0003	3.461	1.615
565	.228	74.466	4.98	18.02	.7114	.23159	.0123	-.0240	-.0097	.0001	3.072	1.612
566	.229	74.659	4.89	20.00	.7970	.29334	.0174	-.0265	-.0068	.0022	2.717	1.613
567	.229	74.851	4.65	22.05	.8726	.35950	.0282	-.0273	.0018	.0098	2.427	1.613
568	.228	74.370	4.52	23.09	.9244	.40191	.0302	-.0261	.0054	.0167	2.300	1.608

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
550	.227	73.888	5.03	.01	.0428	.01619	.0301	-.0026	-.0013	-.0053	51.4
551	.228	74.177	5.03	-2.19	-.0304	.01676	.0374	.0002	-.0007	-.0058	51.6
552	.228	73.984	5.03	.02	.0428	.01621	.0302	-.0027	-.0013	-.0053	51.7
553	.227	73.406	5.04	2.02	.1054	.01373	.0251	-.0058	-.0020	-.0051	51.8
554	.227	73.406	5.04	3.02	.1360	.01177	.0230	-.0072	-.0024	-.0053	51.8
555	.228	73.984	5.04	4.07	.1705	.00968	.0201	-.0081	-.0032	-.0048	51.8
556	.227	73.695	5.05	5.19	.2102	.00734	.0176	-.0089	-.0048	-.0029	51.9
557	.227	73.888	5.05	6.02	.2358	.00556	.0156	-.0094	-.0061	-.0003	52.0
558	.228	74.273	5.05	7.03	.2751	.00386	.0127	-.0096	-.0080	.0038	52.1
559	.227	73.792	5.04	8.05	.3142	.00234	.0100	-.0102	-.0092	.0067	52.2
560	.228	74.370	5.02	9.04	.3530	.00150	.0084	-.0113	-.0095	.0090	52.3
561	.227	73.695	4.99	10.03	.3932	.00118	.0064	-.0127	-.0092	.0101	52.4
562	.229	74.755	4.91	12.37	.4951	.00113	.0053	-.0146	-.0072	.0095	52.6
563	.228	74.273	4.88	14.15	.5791	.00073	.0055	-.0169	-.0077	.0081	52.7
564	.229	74.755	4.98	16.11	.6694	.00003	.0079	-.0172	-.0135	.0003	52.8
565	.228	74.466	4.98	18.02	.7481	.00022	.0123	-.0199	-.0167	.0001	53.0
566	.229	74.659	4.89	20.00	.8492	.00301	.0174	-.0226	-.0154	.0022	53.2
567	.229	74.851	4.65	22.05	.9438	.00567	.0282	-.0260	-.0086	.0098	53.7
568	.228	74.370	4.52	23.09	1.0079	.00724	.0302	-.0261	-.0053	.0167	53.6

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 26 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
571	.228	74.467	5.04	.01	.0676	.01893	.0146	-.0041	-.0015	-.0049	3.572	1.615
572	.228	74.178	5.04	-1.94	.0040	.01911	.0214	-.0009	-.0012	-.0052	.212	1.612
573	.227	73.986	5.04	.01	.0686	.01902	.0143	-.0042	-.0015	-.0048	3.606	1.610
574	.228	74.275	5.04	2.00	.1305	.02111	.0095	-.0077	-.0017	-.0053	6.183	1.612
575	.227	73.793	5.04	3.02	.1608	.02239	.0074	-.0089	-.0019	-.0057	7.024	1.607
576	.227	73.793	5.04	4.08	.1939	.02599	.0048	-.0098	-.0025	-.0049	7.462	1.607
577	.227	73.600	5.05	5.20	.2290	.03054	.0030	-.0107	-.0038	-.0029	7.498	1.605
578	.227	73.697	5.05	6.06	.2579	.03500	.0021	-.0117	-.0050	-.0001	7.368	1.606
579	.227	73.408	5.06	7.06	.2949	.04259	-.0014	-.0125	-.0069	.0041	6.924	1.602
580	.227	73.697	5.05	8.06	.3325	.05160	-.0040	-.0138	-.0077	.0072	6.444	1.604
581	.229	74.660	5.03	9.12	.3848	.06569	-.0054	-.0154	-.0078	.0099	5.857	1.615
582	.228	74.082	5.00	10.04	.4065	.07582	-.0072	-.0160	-.0068	.0103	5.361	1.608
583	.228	74.371	4.92	12.42	.5190	.11870	-.0084	-.0185	-.0038	.0094	4.373	1.611
584	.228	74.467	4.90	14.14	.5836	.15107	-.0076	-.0199	-.0035	.0082	3.863	1.612
585	.228	74.178	4.98	16.13	.6615	.19479	-.0059	-.0223	-.0080	.0003	3.396	1.608
586	.227	73.889	4.99	18.08	.7412	.24541	-.0007	-.0257	-.0100	.0003	3.020	1.605
587	.229	74.852	4.91	20.10	.8481	.31710	.0056	-.0284	-.0071	.0013	2.674	1.613
588	.228	74.275	4.65	22.04	.8850	.36775	.0158	-.0278	.0022	.0092	2.406	1.606
589	.228	74.082	4.53	23.12	.9561	.41972	.0196	-.0264	.0067	.0164	2.278	1.604

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
571	.228	74.467	5.04	.01	.0676	.01892	.0146	-.0041	-.0015	-.0049	52.3
572	.228	74.178	5.04	-1.94	.0034	.01923	.0214	-.0009	-.0012	-.0052	52.4
573	.227	73.986	5.04	.01	.0686	.01901	.0143	-.0042	-.0015	-.0048	52.4
574	.228	74.275	5.04	2.00	.1312	.01654	.0095	-.0076	-.0020	-.0053	52.5
575	.227	73.793	5.04	3.02	.1618	.01439	.0074	-.0087	-.0024	-.0057	52.5
576	.227	73.793	5.04	4.08	.1953	.01214	.0048	-.0096	-.0032	-.0049	52.6
577	.227	73.600	5.05	5.20	.2308	.00967	.0030	-.0103	-.0047	-.0029	52.6
578	.227	73.697	5.05	6.06	.2602	.00760	.0021	-.0111	-.0062	-.0001	52.7
579	.227	73.408	5.06	7.06	.2979	.00600	-.0014	-.0115	-.0083	.0041	52.8
580	.227	73.697	5.05	8.06	.3364	.00446	-.0040	-.0126	-.0096	.0072	52.9
581	.229	74.660	5.03	9.12	.3903	.00391	-.0054	-.0140	-.0101	.0099	52.9
582	.228	74.082	5.00	10.04	.4134	.00381	-.0072	-.0146	-.0095	.0103	53.0
583	.228	74.371	4.92	12.42	.5324	.00425	-.0084	-.0173	-.0077	.0094	53.1
584	.228	74.467	4.90	14.14	.6028	.00394	-.0076	-.0184	-.0082	.0082	53.2
585	.228	74.178	4.98	16.13	.6896	.00340	-.0059	-.0192	-.0139	.0003	53.4
586	.227	73.889	4.99	18.08	.7808	.00332	-.0007	-.0213	-.0175	.0003	53.4
587	.229	74.852	4.91	20.10	.9054	.00639	.0056	-.0242	-.0164	.0013	53.9
588	.228	74.275	4.65	22.04	.9583	.00884	.0158	-.0266	-.0084	.0092	54.0
589	.228	74.082	4.50	23.12	1.0441	.01052	.0196	-.0269	-.0042	.0164	54.2

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 27 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
601	.228	74.082	4.89	.03	.0438	.01706	.0306	-.0029	.0092	-.0167	2.568	1.632
602	.228	74.468	4.88	-2.18	-.0285	.01873	.0382	-.0004	.0103	-.0178	-1.520	1.635
603	.227	73.794	4.89	.04	.0435	.01704	.0306	-.0029	.0091	-.0164	2.555	1.627
604	.228	74.468	4.91	2.01	.1061	.01828	.0252	-.0055	.0081	-.0166	5.806	1.634
605	.228	74.371	4.91	3.03	.1373	.01979	.0230	-.0068	.0077	-.0162	6.939	1.632
606	.227	73.986	4.91	4.06	.1692	.02234	.0202	-.0076	.0070	-.0155	7.572	1.627
607	.228	74.275	4.91	5.18	.2068	.02675	.0177	-.0086	.0058	-.0129	7.734	1.630
608	.227	73.890	4.92	6.04	.2356	.03104	.0160	-.0089	.0044	-.0108	7.589	1.625
609	.226	73.312	4.92	7.04	.2716	.03804	.0127	-.0094	.0025	-.0064	7.140	1.618
610	.228	74.179	4.92	8.06	.3110	.04702	.0099	-.0103	.0013	-.0030	6.630	1.627
611	.227	73.794	4.90	9.06	.3516	.05798	.0084	-.0112	.0014	-.0007	6.047	1.622
612	.228	74.083	4.88	10.05	.3897	.07098	.0066	-.0126	.0016	.0011	5.490	1.625
613	.228	74.371	4.81	12.37	.4879	.10890	.0054	-.0145	.0031	.0023	4.480	1.627
614	.227	73.601	4.80	14.18	.5697	.14549	.0060	-.0189	.0025	.0022	3.916	1.618
615	.229	74.757	4.90	16.11	.6490	.18842	.0086	-.0190	-.0031	-.0043	3.444	1.630
616	.228	74.179	4.93	18.03	.7146	.23351	.0129	-.0226	-.0060	-.0051	3.060	1.623
617	.227	73.794	4.84	20.04	.8053	.29730	.0183	-.0252	-.0036	-.0024	2.704	1.618
618	.228	74.179	4.63	22.05	.8730	.36038	.0284	-.0263	.0036	.0063	2.422	1.621
619	.228	74.275	4.51	23.04	.9170	.39858	.0306	-.0255	.0059	.0156	2.301	1.621

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
601	.228	74.082	4.89	.03	.0438	.01704	.0306	-.0029	.0092	-.0167	47.4
602	.228	74.468	4.88	-2.18	-.0292	.01763	.0382	-.0001	.0103	-.0178	47.5
603	.227	73.794	4.89	.04	.0435	.01701	.0306	-.0029	.0091	-.0164	47.7
604	.228	74.468	4.91	2.01	.1067	.01455	.0252	-.0058	.0079	-.0166	47.8
605	.228	74.371	4.91	3.03	.1382	.01251	.0230	-.0072	.0073	-.0162	48.0
606	.227	73.986	4.91	4.06	.1703	.01029	.0202	-.0081	.0065	-.0155	48.1
607	.228	74.275	4.91	5.18	.2084	.00798	.0177	-.0091	.0050	-.0129	48.4
608	.227	73.890	4.92	6.04	.2375	.00607	.0160	-.0093	.0034	-.0108	48.4
609	.226	73.312	4.92	7.04	.2742	.00445	.0127	-.0096	.0014	-.0064	48.6
610	.228	74.179	4.92	8.06	.3153	.00282	.0099	-.0104	-.0002	-.0030	48.7
611	.227	73.794	4.90	9.06	.3553	.00202	.0084	-.0113	-.0004	-.0007	48.9
612	.228	74.083	4.88	10.05	.3961	.00192	.0066	-.0126	-.0006	.0011	49.0
613	.228	74.371	4.81	12.37	.4999	.00186	.0054	-.0149	-.0001	.0023	49.2
614	.227	73.601	4.80	14.18	.5880	.00152	.0060	-.0170	-.0017	.0022	49.4
615	.229	74.757	4.90	16.11	.6758	.00092	.0086	-.0174	-.0083	-.0043	49.5
616	.228	74.179	4.93	18.03	.7518	.00086	.0129	-.0196	-.0127	-.0051	49.7
617	.227	73.794	4.84	20.04	.8596	.00377	.0183	-.0224	-.0120	-.0024	49.9
618	.228	74.179	4.63	22.05	.9444	.00635	.0284	-.0257	-.0066	.0063	50.4
619	.228	74.275	4.51	23.04	.9999	.00794	.0306	-.0258	-.0046	.0156	50.5

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 28 | BALANCE 731-B | 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
622	.227	73.691	4.86	.01	.1670	.03013	-.0006	-.0055	.0117	-.0196	5.544	1.618
623	.227	73.890	4.87	-2.21	.0980	.02832	.0059	-.0030	.0116	-.0191	3.461	1.621
624	.227	73.504	4.86	.00	.1680	.03012	-.0006	-.0054	.0118	-.0196	5.579	1.616
625	.227	73.504	4.86	2.00	.2304	.03447	-.0073	-.0074	.0117	-.0198	6.682	1.615
626	.226	73.312	4.86	3.03	.2642	.03798	-.0107	-.0083	.0112	-.0190	6.956	1.612
627	.227	73.601	4.87	4.08	.3016	.04338	-.0141	-.0094	.0097	-.0169	6.952	1.615
628	.227	73.697	4.88	5.17	.3379	.05013	-.0182	-.0094	.0079	-.0141	6.740	1.616
629	.227	73.697	4.89	6.03	.3705	.05718	-.0211	-.0103	.0065	-.0105	6.480	1.615
630	.226	73.408	4.89	7.04	.4054	.06620	-.0239	-.0108	.0050	-.0067	6.124	1.612
631	.227	73.794	4.88	8.05	.4443	.07769	-.0276	-.0115	.0041	-.0033	5.719	1.616
632	.227	73.697	4.85	9.06	.4860	.09186	-.0305	-.0121	.0042	-.0002	4.883	1.615
633	.227	73.794	4.83	10.02	.5226	.10703	-.0321	-.0121	.0042	.0009	4.117	1.616
634	.227	73.986	4.79	12.33	.6185	.15023	-.0346	-.0124	.0040	.0009	3.653	1.612
635	.227	73.697	4.77	14.16	.6952	.19033	-.0337	-.0136	.0031	.0021	3.241	1.617
636	.228	74.179	4.89	16.12	.7754	.23927	-.0332	-.0156	-.0043	-.0037	2.898	1.612
637	.227	73.794	4.89	18.01	.8556	.29523	-.0306	-.0187	-.0054	-.0058	2.594	1.616
638	.228	74.275	4.82	20.02	.9481	.36543	-.0258	-.0248	-.0028	-.0020	2.338	1.610
639	.227	73.793	4.64	22.05	1.0165	.43479	-.0129	-.0294	.0040	.0092	2.227	1.608
640	.227	73.697	4.51	23.04	1.0597	.47592	-.0111	-.0282	.0071	.0180	2.227	1.608

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTEMF DEG F
622	.227	73.691	4.86	.01	.1670	.03010	-.0006	-.0055	.0117	-.0196	49.4
623	.227	73.890	4.87	-2.21	.0969	.03209	.0059	-.0026	.0117	-.0191	49.5
624	.227	73.504	4.86	.00	.1680	.03011	-.0006	-.0054	.0118	-.0196	49.6
625	.227	73.504	4.86	2.00	.2314	.02643	-.0073	-.0078	.0114	-.0198	49.9
626	.226	73.312	4.86	3.03	.2658	.02398	-.0107	-.0089	.0108	-.0190	50.1
627	.227	73.601	4.87	4.08	.3039	.02182	-.0141	-.0101	.0090	-.0169	50.2
628	.227	73.697	4.88	5.17	.3410	.01947	-.0182	-.0100	.0070	-.0141	50.2
629	.227	73.697	4.89	6.03	.3745	.01791	-.0211	-.0109	.0054	-.0105	50.3
630	.226	73.408	4.89	7.04	.4105	.01602	-.0239	-.0113	.0036	-.0067	50.4
631	.227	73.794	4.88	8.05	.4508	.01473	-.0276	-.0120	.0024	-.0033	50.5
632	.227	73.697	4.85	9.06	.4944	.01423	-.0305	-.0126	.0022	-.0013	50.6
633	.227	73.794	4.83	10.02	.5332	.01443	-.0321	-.0126	.0021	-.0002	50.7
634	.227	73.986	4.79	12.33	.6363	.01470	-.0346	-.0130	.0012	.0009	50.8
635	.227	73.697	4.77	14.16	.7207	.01441	-.0337	-.0140	-.0003	.0021	51.1
636	.228	74.179	4.89	16.12	.8114	.01461	-.0332	-.0138	-.0085	-.0037	51.2
637	.227	73.794	4.89	18.01	.9049	.01622	-.0306	-.0161	-.0110	-.0058	51.5
638	.228	74.275	4.82	20.02	1.0159	.01871	-.0258	-.0223	-.0111	-.0020	51.8
639	.227	73.793	4.64	22.05	1.1053	.02145	-.0129	-.0288	-.0074	.0092	52.0
640	.227	73.697	4.51	23.04	1.1615	.02328	-.0111	-.0288	-.0045	.0180	52.2

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 29 | BALANCE 731-B | 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
643	.227	73.600	4.86	.02	.2556	.05574	-.0211	-.0073	.0122	-.0199	4.586	1.610
644	.227	73.793	4.86	-2.07	.1906	.05116	-.0143	-.0048	.0120	-.0196	3.726	1.612
645	.227	73.793	4.86	-.01	.2547	.05559	-.0210	-.0070	.0123	-.0204	4.581	1.611
646	.226	72.925	4.85	2.00	.3258	.06289	-.0284	-.0088	.0124	-.0202	5.100	1.601
647	.226	73.022	4.86	3.02	.3593	.06934	-.0331	-.0096	.0116	-.0192	5.179	1.602
648	.226	73.022	4.86	4.06	.3943	.07617	-.0382	-.0096	.0103	-.0160	5.176	1.601
649	.226	73.118	4.86	5.17	.4327	.08508	-.0417	-.0107	.0094	-.0139	5.086	1.602
650	.226	72.925	4.86	6.03	.4605	.09251	-.0440	-.0111	.0084	-.0109	4.978	1.600
651	.226	72.829	4.85	7.05	.5056	.10507	-.0478	-.0117	.0076	-.0078	4.812	1.598
652	.226	73.118	4.83	8.05	.5419	.11773	-.0524	-.0120	.0069	-.0045	4.603	1.601
653	.226	73.118	4.82	9.04	.5814	.13348	-.0560	-.0117	.0068	-.0036	4.355	1.601
654	.227	73.407	4.79	10.04	.6210	.15081	-.0577	-.0106	.0068	-.0021	4.118	1.604
655	.225	72.347	4.75	12.34	.7149	.19868	-.0614	-.0091	.0059	-.0018	3.598	1.592
656	.226	73.118	4.74	14.15	.7842	.23969	-.0612	-.0085	.0039	-.0003	3.272	1.599
657	.224	72.058	4.86	16.12	.8622	.29222	-.0601	-.0090	-.0047	-.0054	2.950	1.587
658	.225	72.347	4.88	18.03	.9436	.35231	-.0578	-.0133	-.0079	-.0043	2.678	1.589
659	.225	72.443	4.83	20.02	1.0236	.42083	-.0520	-.0197	-.0068	.0001	2.432	1.590
660	.225	72.443	4.68	22.04	1.0829	.49034	-.0368	-.0256	-.0018	.0133	2.208	1.589
661	.225	72.443	4.52	23.06	1.1193	.53105	-.0309	-.0250	.0030	.0223	2.108	1.588

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTEMF DEG F
643	.227	73.600	4.86	.02	.2556	.05566	-.0211	-.0074	.0122	-.0199	51.2
644	.227	73.793	4.86	-2.07	.1886	.05803	-.0143	-.0044	.0122	-.0196	51.3
645	.227	73.793	4.86	-.01	.2547	.05564	-.0210	-.0070	.0123	-.0204	51.4
646	.226	72.925	4.85	2.00	.3228	.05166	-.0284	-.0092	.0121	-.0202	51.6
647	.226	73.022	4.86	3.02	.3625	.05035	-.0331	-.0102	.0111	-.0192	51.6
648	.226	73.022	4.86	4.06	.3987	.04807	-.0382	-.0104	.0095	-.0160	51.8
649	.226	73.118	4.86	5.17	.4386	.04573	-.0417	-.0115	.0084	-.0139	51.9
650	.226	72.925	4.85	6.03	.4677	.04366	-.0440	-.0119	.0072	-.0109	51.9
651	.226	72.829	4.85	7.05	.5146	.04220	-.0478	-.0125	.0061	-.0078	52.0
652	.226	73.118	4.83	8.05	.5530	.04071	-.0524	-.0129	.0051	-.0045	52.1
653	.226	73.118	4.82	9.04	.5951	.04049	-.0560	-.0126	.0049	-.0036	52.1
654	.227	73.407	4.79	10.04	.6378	.04022	-.0577	-.0116	.0048	-.0021	52.3
655	.225	72.347	4.75	12.34	.7408	.04128	-.0614	-.0102	.0038	-.0018	52.4
656	.226	73.118	4.74	14.15	.8190	.04076	-.0612	-.0092	.0017	-.0003	52.6
657	.224	72.058	4.86	16.12	.9094	.04133	-.0601	-.0073	-.0070	-.0054	52.7
658	.225	72.347	4.88	18.03	1.0063	.04302	-.0578	-.0102	-.0116	-.0043	53.0
659	.225	72.443	4.83	20.02	1.1059	.04498	-.0520	-.0162	-.0132	.0001	53.1
660	.225	72.443	4.68	22.04	1.1877	.04811	-.0368	-.0231	-.0112	.0133	53.3
661	.225	72.443	4.52	23.05	1.2378	.05020	-.0309	-.0241	-.0070	.0223	53.5

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 30 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
664	.228	73.887	4.85	.02	.2557	.05548	-.0207	-.0073	.0128	-.0203	4.608	1.611
665	.228	73.887	4.85	-2.19	.1860	.05050	-.0138	-.0047	.0125	-.0199	3.684	1.610
666	.228	73.887	4.85	.01	.2550	.05530	-.0205	-.0072	.0130	-.0204	4.612	1.609
667	.227	73.502	4.84	2.03	.3207	.06308	-.0277	-.0090	.0127	-.0190	5.085	1.605
668	.226	72.924	4.84	3.03	.3543	.06853	-.0312	-.0097	.0120	-.0173	5.170	1.598
669	.226	73.213	4.84	4.05	.3977	.07686	-.0369	-.0101	.0109	-.0136	5.174	1.600
670	.227	73.502	4.83	5.16	.4335	.08535	-.0397	-.0112	.0101	-.0101	5.079	1.603
671	.226	73.116	4.82	6.06	.4647	.09380	-.0422	-.0117	.0095	-.0065	4.955	1.599
672	.226	73.020	4.80	7.06	.5089	.10657	-.0465	-.0124	.0091	-.0028	4.776	1.597
673	.226	73.213	4.78	8.06	.5426	.11860	-.0495	-.0125	.0087	.0005	4.575	1.599
674	.226	73.020	4.76	9.04	.5817	.13457	-.0525	-.0122	.0091	.0012	4.323	1.596
675	.226	73.213	4.73	10.05	.6195	.15135	-.0540	-.0110	.0088	.0026	4.093	1.598
676	.228	73.887	4.69	12.40	.7253	.20299	-.0569	-.0098	.0084	.0025	3.573	1.605
677	.226	72.827	4.69	14.17	.7879	.24183	-.0557	-.0091	.0061	.0031	3.258	1.592
678	.225	72.442	4.68	16.12	.8613	.29223	-.0549	-.0082	.0031	.0030	2.947	1.588
679	.226	72.635	4.72	18.06	.9585	.35870	-.0537	-.0118	-.0017	.0064	2.672	1.589
680	.226	73.020	4.71	20.04	1.0316	.42544	-.0477	-.0162	-.0034	.0094	2.425	1.592
681	.225	72.153	4.70	22.04	1.1052	.49942	-.0394	-.0198	-.0047	.0086	2.213	1.583
682	.227	73.405	4.65	23.05	1.1436	.54021	-.0328	-.0199	-.0029	.0058	2.117	1.596

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
664	.228	73.887	4.85	.02	.2557	.05539	-.0207	-.0073	.0128	-.0203	51.4
665	.228	73.887	4.85	-2.19	.1840	.05758	-.0138	-.0043	.0127	-.0199	51.6
666	.228	73.887	4.85	.01	.2551	.05524	-.0205	-.0072	.0130	-.0204	51.8
667	.227	73.502	4.84	2.03	.3228	.05170	-.0277	-.0095	.0123	-.0190	51.9
668	.226	72.924	4.84	3.03	.3574	.04974	-.0312	-.0104	.0114	-.0173	52.0
669	.226	73.213	4.84	4.05	.4021	.04860	-.0369	-.0109	.0102	-.0136	52.2
670	.227	73.502	4.83	5.16	.4394	.04603	-.0397	-.0121	.0090	-.0101	52.3
671	.226	73.116	4.82	6.06	.4721	.04420	-.0422	-.0127	.0082	-.0065	52.3
672	.226	73.020	4.80	7.06	.5182	.04319	-.0465	-.0134	.0075	-.0028	52.5
673	.226	73.213	4.78	8.06	.5538	.04132	-.0495	-.0136	.0069	.0005	52.6
674	.226	73.020	4.76	9.04	.5956	.04152	-.0525	-.0135	.0070	.0012	52.7
675	.226	73.213	4.73	10.05	.6364	.04098	-.0540	-.0124	.0067	.0026	52.7
676	.228	73.887	4.69	12.40	.7519	.04256	-.0569	-.0114	.0061	.0025	52.9
677	.226	72.827	4.69	14.17	.8232	.04160	-.0557	-.0104	.0037	.0031	53.1
678	.225	72.442	4.68	16.12	.9085	.04167	-.0549	-.0087	.0007	.0030	53.3
679	.226	72.635	4.72	18.06	1.0225	.04392	-.0537	-.0107	-.0052	.0064	53.4
680	.226	73.020	4.71	20.04	1.1150	.04622	-.0477	-.0141	-.0087	.0094	53.7
681	.225	72.153	4.70	22.04	1.2118	.04824	-.0394	-.0166	-.0117	.0086	53.8
682	.227	73.405	4.65	23.05	1.2638	.04931	-.0328	-.0172	-.0105	.0058	53.9

HIGH SPEED TUNNEL STANDARD STING TEST 949 RUN 31 BALANCE 731-B 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
694	.227	73.790	-.02	-.02	.2547	.05497	-.0221	-.0001	.0012	-.0009	4.634	1.607
695	.226	73.116	-.02	-2.20	.1888	.04977	-.0163	.0003	.0016	-.0018	3.792	1.599
696	.227	73.597	-.02	-.00	.2564	.05518	-.0223	-.0001	.0011	-.0008	4.645	1.604
697	.227	73.212	-.01	1.98	.3201	.06259	-.0286	-.0002	.0004	.0006	5.114	1.599
698	.226	72.730	-.01	2.99	.3519	.06742	-.0327	-.0000	-.0000	.0015	5.219	1.593
699	.227	73.501	-.00	4.03	.3913	.07454	-.0373	-.0002	-.0005	.0026	5.250	1.601
700	.226	72.826	.01	5.14	.4281	.08307	-.0420	-.0006	-.0016	.0053	5.153	1.594
701	.226	73.019	.02	5.99	.4673	.09257	-.0469	-.0001	-.0027	.0069	5.043	1.595
702	.226	72.634	.01	7.00	.4985	.10338	-.0498	-.0004	-.0023	.0066	4.822	1.591
703	.226	72.923	.00	8.00	.5366	.11652	-.0517	.0001	-.0015	.0047	4.605	1.593
704	.226	72.634	-.01	8.99	.5752	.13194	-.0523	.0008	-.0009	.0039	4.360	1.590
705	.226	72.537	-.01	9.98	.6207	.15043	-.0553	.0009	-.0002	.0019	4.126	1.588
706	.224	71.381	-.02	12.31	.7500	.20572	-.0688	.0011	.0005	.0005	3.646	1.575
707	.225	72.344	-.02	14.09	.8294	.24969	-.0750	.0008	.0009	-.0011	3.322	1.586
708	.226	73.115	.03	16.04	.9213	.30658	-.0790	.0006	-.0008	-.0043	3.005	1.592
709	.226	72.537	.11	17.96	1.0082	.36997	-.0759	-.0002	-.0046	-.0080	2.725	1.585
710	.226	73.019	.14	19.98	1.0747	.43446	-.0729	-.0030	-.0069	-.0088	2.474	1.589
711	.225	72.248	.12	22.01	1.1402	.50554	-.0656	-.0054	-.0049	.0015	2.255	1.580
712	.225	72.055	.15	22.93	1.2084	.56172	-.0566	-.0078	-.0050	-.0018	2.151	1.577

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
694	.227	73.790	-.02	-.02	.2547	.05504	-.0221	-.0001	.0012	-.0009	51.8
695	.226	73.116	-.02	-2.20	.1867	.05698	-.0163	.0004	.0016	-.0018	52.0
696	.227	73.597	-.02	-.00	.2563	.05520	-.0223	-.0001	.0011	-.0008	52.2
697	.227	73.212	-.01	1.98	.3220	.05151	-.0286	-.0002	.0004	.0006	52.4
698	.226	72.730	-.01	2.99	.3549	.04899	-.0327	-.0000	-.0000	.0015	52.4
699	.227	73.501	-.00	4.03	.3956	.04687	-.0373	-.0002	-.0005	.0026	52.6
700	.226	72.826	.01	5.14	.4338	.04440	-.0420	-.0004	-.0017	.0053	52.6
701	.226	73.019	.02	5.99	.4744	.04339	-.0469	.0002	-.0027	.0069	52.7
702	.226	72.634	.01	7.00	.5074	.04182	-.0498	-.0002	-.0023	.0066	52.9
703	.226	72.923	.00	8.00	.5476	.04076	-.0517	.0003	-.0014	.0047	53.0
704	.226	72.634	-.01	8.99	.5888	.04045	-.0523	.0010	-.0008	.0039	53.0
705	.226	72.537	-.01	9.98	.6374	.04054	-.0553	.0009	-.0001	.0019	53.1
706	.224	71.381	-.02	12.31	.7767	.04110	-.0688	.0009	.0007	.0005	53.2
707	.225	72.344	-.02	14.09	.8652	.04034	-.0750	.0005	.0010	-.0011	53.3
708	.226	73.115	.03	16.04	.9701	.04004	-.0790	.0008	-.0006	-.0043	53.7
709	.226	72.537	.11	17.96	1.0732	.04113	-.0759	.0012	-.0044	-.0080	53.9
710	.226	73.019	.14	19.98	1.1584	.04116	-.0729	-.0004	-.0075	-.0088	54.3
711	.225	72.248	.12	22.01	1.2465	.04139	-.0656	-.0032	-.0065	.0015	54.5
712	.225	72.055	.15	22.93	1.3317	.04151	-.0566	-.0053	-.0077	-.0018	54.7

HIGH SPEED TUNNEL | STANDARD STING | TEST 949 | RUN 32 | BALANCE 731-8 | 08/09/72

STABILITY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CL	CD	CPM	CRM,S	CYM,S	CSF	L/D	R MILLION PER FOOT
715	.227	73.692	-.02	.01	.2541	.05485	-.0217	-.0001	.0013	-.0013	4.633	1.601
716	.229	74.655	-.02	-2.26	.1869	.04981	-.0152	.0003	.0018	-.0021	3.751	1.610
717	.230	75.329	-.02	-.00	.2549	.05531	-.0216	-.0001	.0013	-.0014	4.610	1.616
718	.229	74.366	-.01	1.97	.3075	.06057	-.0274	.0001	.0006	-.0006	5.076	1.606
719	.227	73.307	-.00	2.99	.3510	.06746	-.0323	.0001	-.0001	.0006	5.203	1.594
720	.226	72.922	.00	4.04	.3864	.07363	-.0367	-.0001	-.0006	.0021	5.248	1.589
721	.227	73.692	.01	5.15	.4284	.08335	-.0422	-.0003	-.0018	.0040	5.139	1.597
722	.227	73.596	.02	6.00	.4612	.09175	-.0466	-.0001	-.0028	.0062	5.027	1.595
723	.226	73.018	.02	7.00	.4956	.10266	-.0504	-.0002	-.0027	.0058	4.828	1.589
724	.227	73.403	.02	8.03	.5356	.11638	-.0530	.0000	-.0021	.0044	4.602	1.593
725	.227	73.403	.01	8.99	.5708	.13091	-.0538	.0007	-.0017	.0034	4.360	1.592
726	.226	72.921	.01	9.99	.6173	.14950	-.0567	.0011	-.0010	.0012	4.129	1.587
727	.226	72.825	.01	12.30	.7407	.20287	-.0703	.0008	-.0008	.0001	3.651	1.585
728	.226	72.536	.04	14.08	.8268	.24839	-.0789	.0009	-.0018	-.0025	3.329	1.582
729	.227	73.403	.13	16.04	.9228	.30694	-.0850	-.0001	-.0054	-.0077	3.007	1.590
730	.226	72.729	.14	18.00	1.0079	.37065	-.0810	-.0019	-.0063	-.0057	2.719	1.582
731	.225	72.343	-.05	19.96	1.0843	.43873	-.0771	-.0027	.0034	.0035	2.471	1.577
732	.226	72.632	-.09	22.02	1.1912	.53001	-.0726	-.0010	.0067	-.0018	2.248	1.579
733	.226	72.439	-.02	22.95	1.2103	.56231	-.0664	-.0021	.0042	-.0064	2.152	1.576

BODY AXIS COEFFICIENTS

POINT	MACH	QINF LBS/ SQ FT	BETA DEG	ALPHA DEG	CNF	CAF	CPM	CRM,B	CYM,B	CSF	TTINF DEG F
715	.227	73.692	-.02	.01	.2541	.05481	-.0217	-.0001	.0013	-.0013	53.0
716	.229	74.655	-.02	-2.26	.1848	.05716	-.0152	.0004	.0017	-.0021	53.3
717	.230	75.329	-.02	-.00	.2549	.05533	-.0216	-.0001	.0013	-.0014	53.5
718	.229	74.366	-.01	1.97	.3094	.04997	-.0274	.0001	.0006	-.0006	53.6
719	.227	73.307	-.00	2.99	.3540	.04906	-.0323	.0001	-.0001	.0006	53.7
720	.226	72.922	.00	4.04	.3906	.04622	-.0367	-.0001	-.0006	.0021	53.8
721	.227	73.692	.01	5.15	.4341	.04455	-.0422	-.0001	-.0018	.0040	53.9
722	.227	73.596	.02	6.00	.4683	.04302	-.0466	.0002	-.0028	.0062	54.0
723	.226	73.018	.02	7.00	.5044	.04154	-.0504	.0002	-.0027	.0058	54.1
724	.227	73.403	.02	8.03	.5466	.04046	-.0533	.0003	-.0020	.0044	54.2
725	.227	73.403	.01	8.99	.5842	.04013	-.0538	.0010	-.0016	.0034	54.3
726	.226	72.921	.01	9.99	.6338	.04013	-.0567	.0013	-.0008	.0012	54.4
727	.226	72.825	.01	12.30	.7669	.04041	-.0703	.0010	-.0006	.0001	54.4
728	.226	72.536	.04	14.08	.8624	.03976	-.0789	.0013	-.0015	-.0025	54.6
729	.227	73.403	.13	16.04	.9717	.03995	-.0850	.0014	-.0052	-.0077	54.9
730	.226	72.729	.14	18.00	1.0731	.04103	-.0810	.0002	-.0066	-.0057	55.1
731	.225	72.343	-.05	19.96	1.1689	.04218	-.0771	-.0037	.0022	.0035	55.2
732	.226	72.632	-.09	22.02	1.3030	.04463	-.0726	-.0034	.0058	-.0018	55.5
733	.226	72.439	-.02	22.95	1.3337	.04598	-.0664	-.0036	.0030	-.0064	55.6

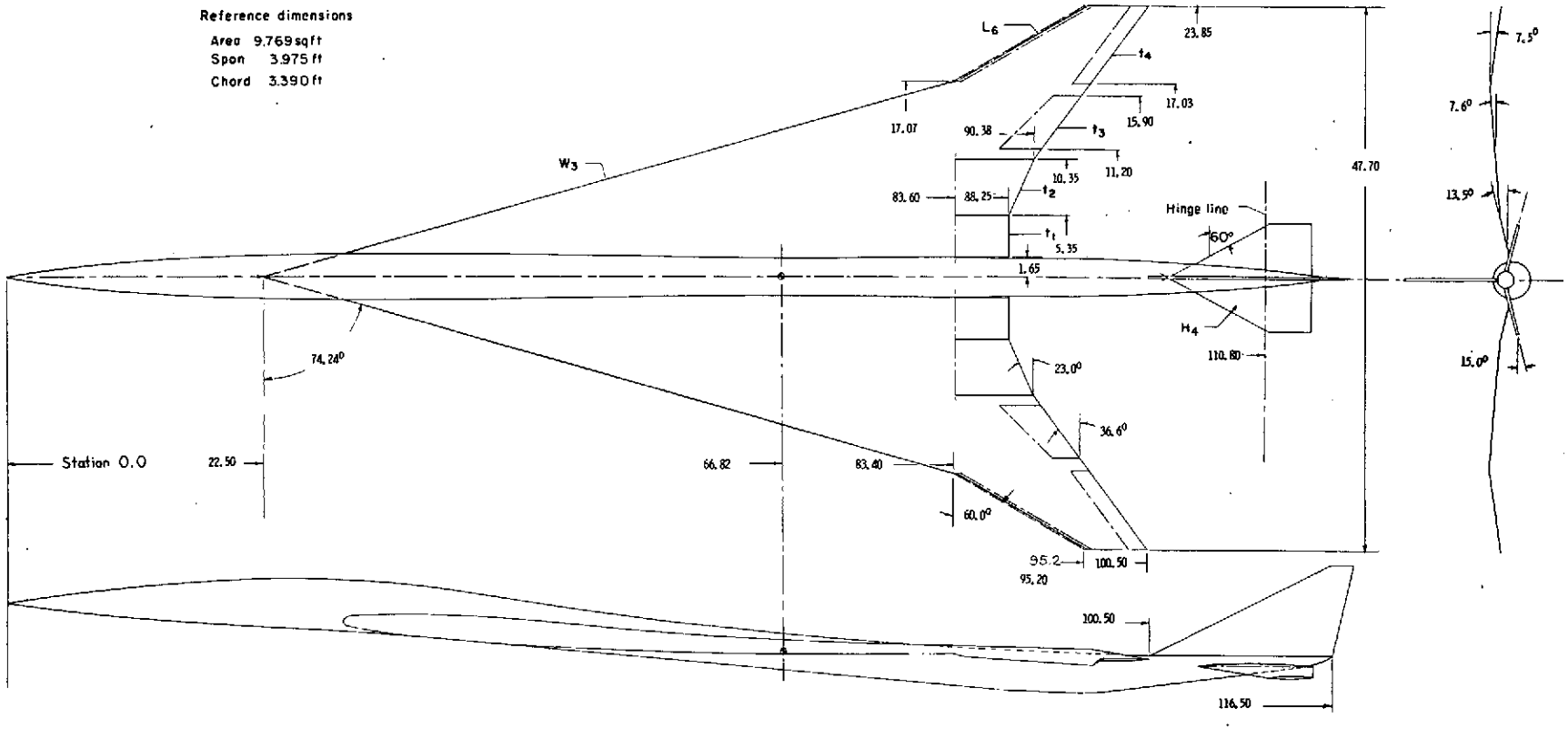


Figure 1.- Three-view drawing of model.

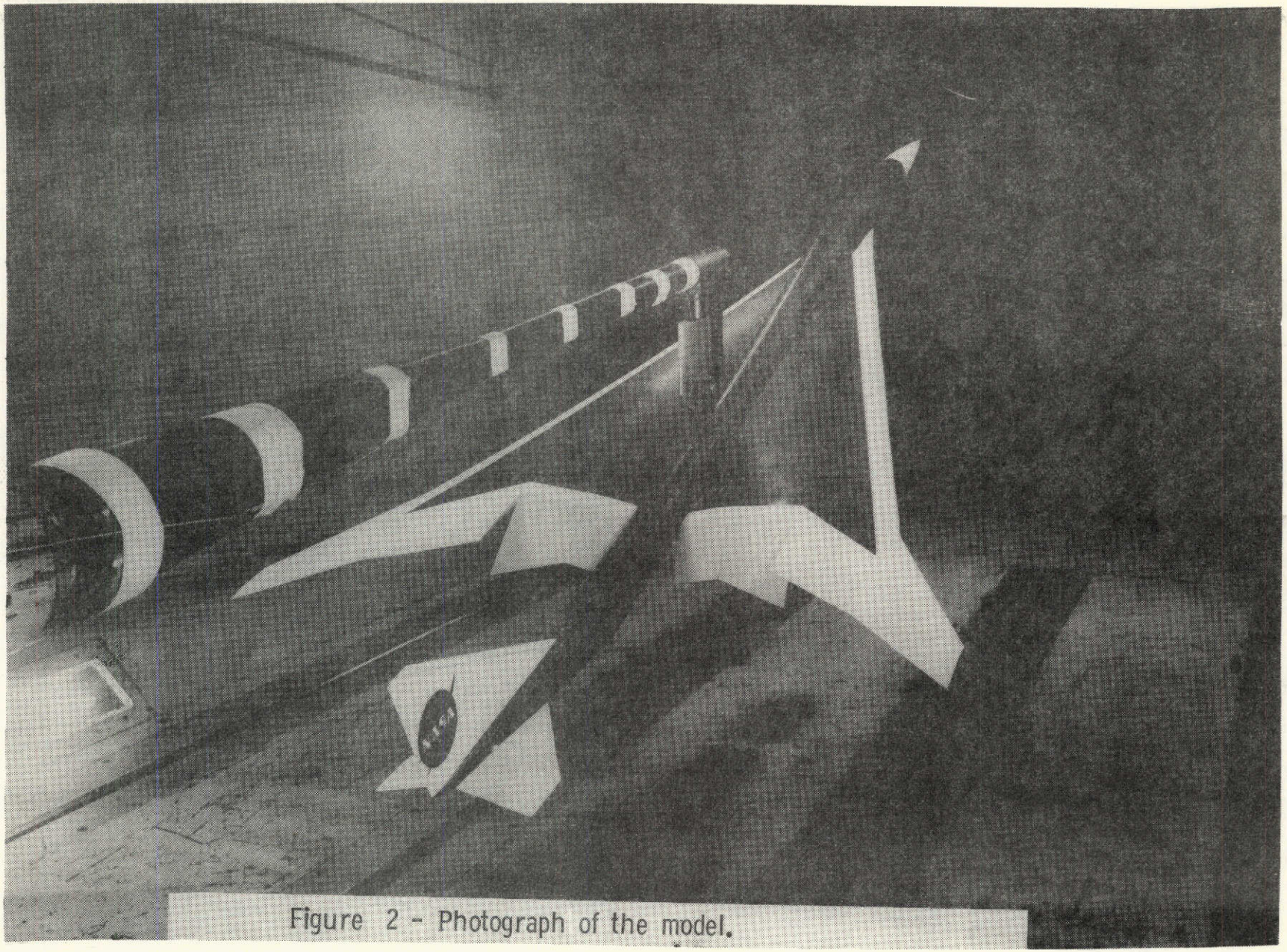


Figure 2 - Photograph of the model.

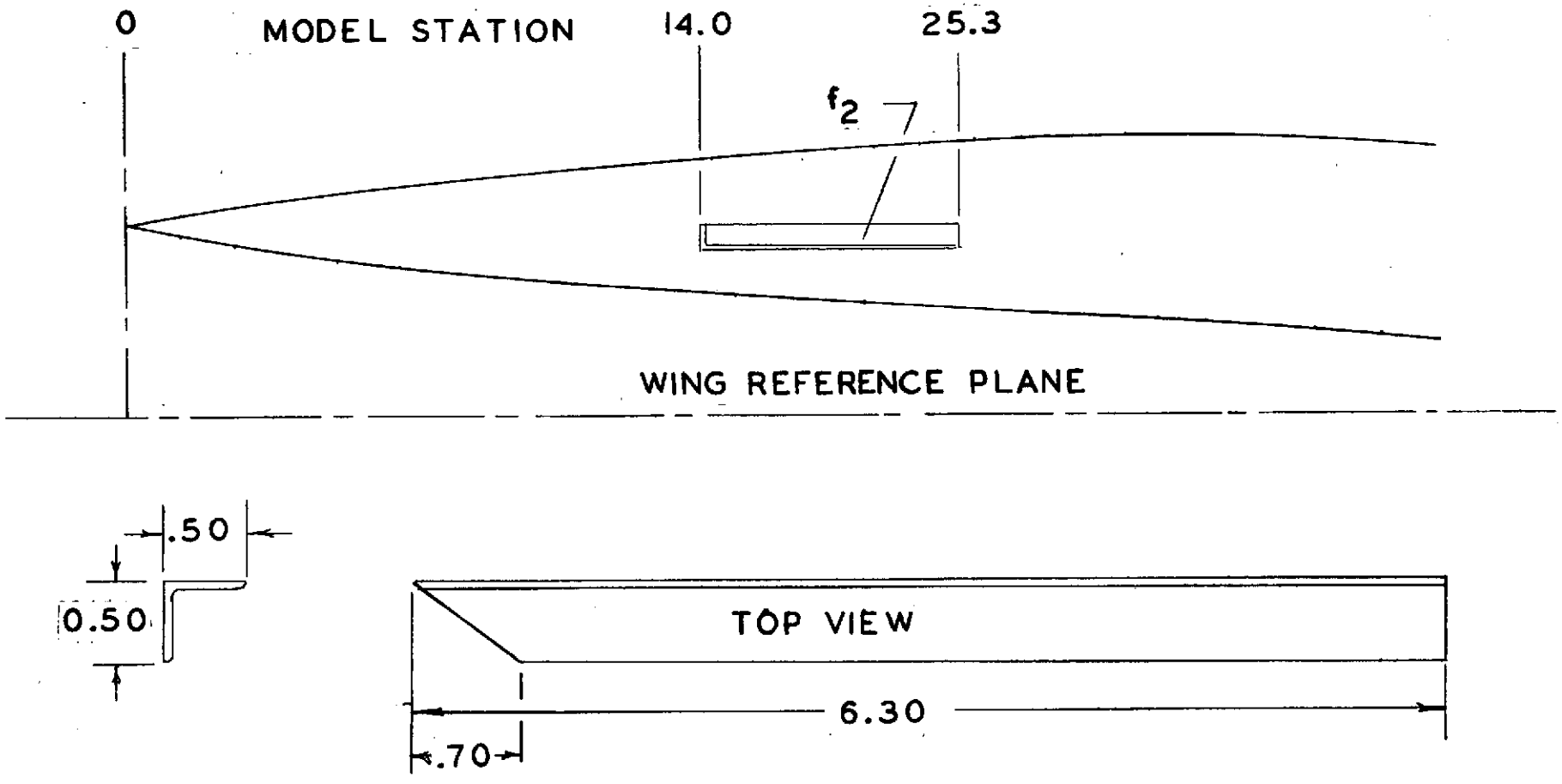


Figure 3 .- Drawing of fuselage nose with strake, f_2 , attached.

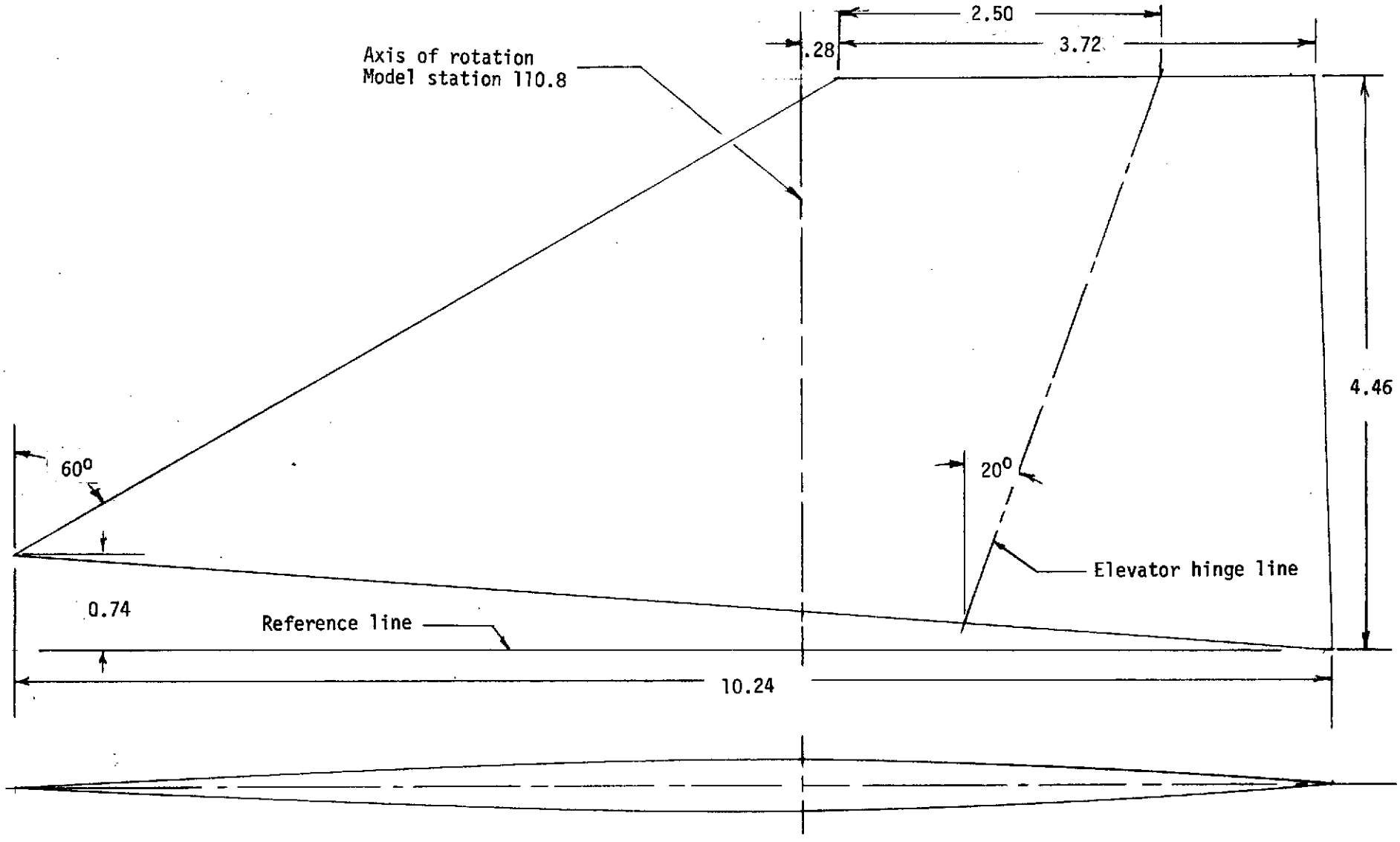


Figure 4.- Drawing of the horizontal tail, H_4.

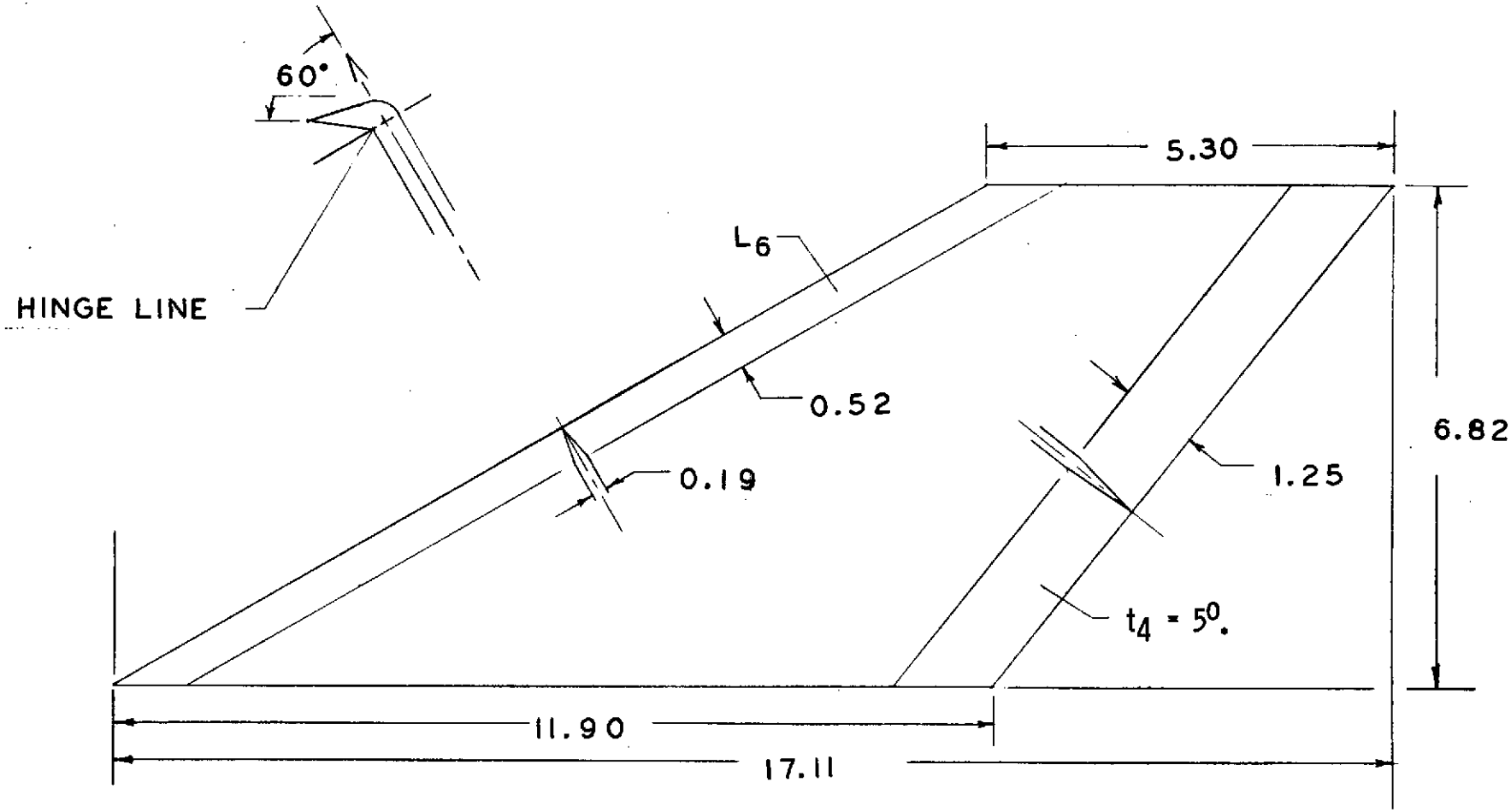


Figure 5.- Details of the extended wing tip, T_6.

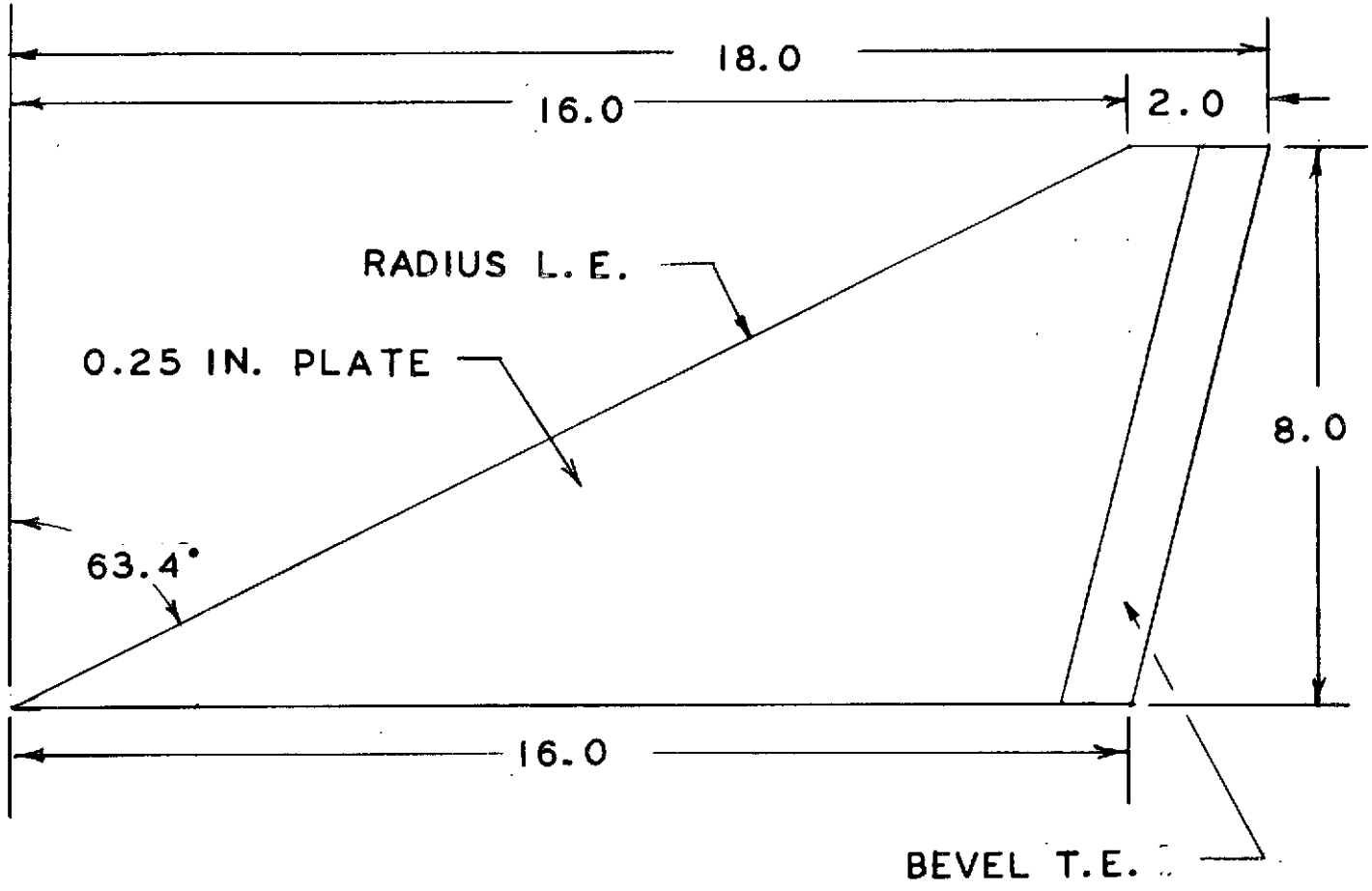
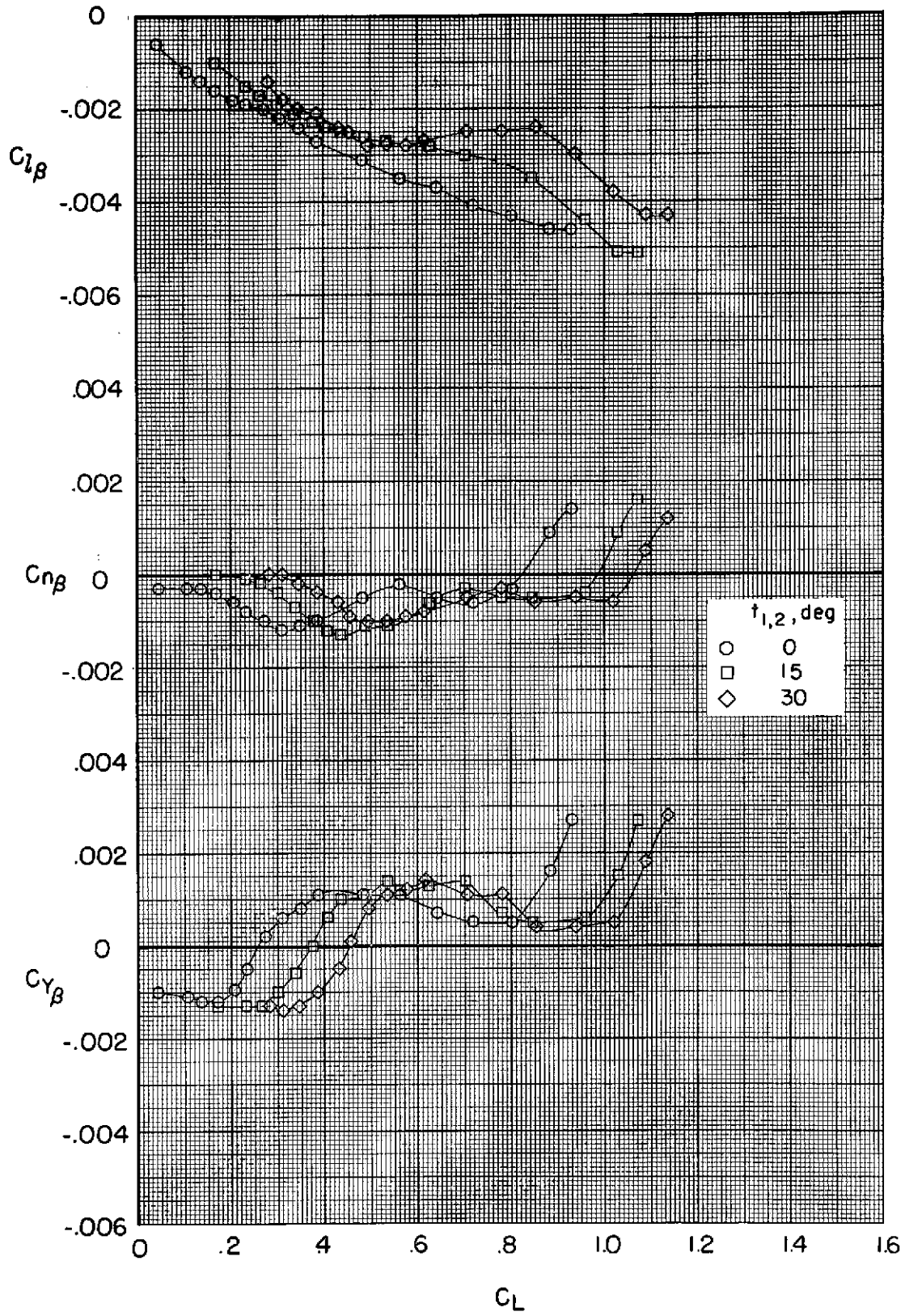
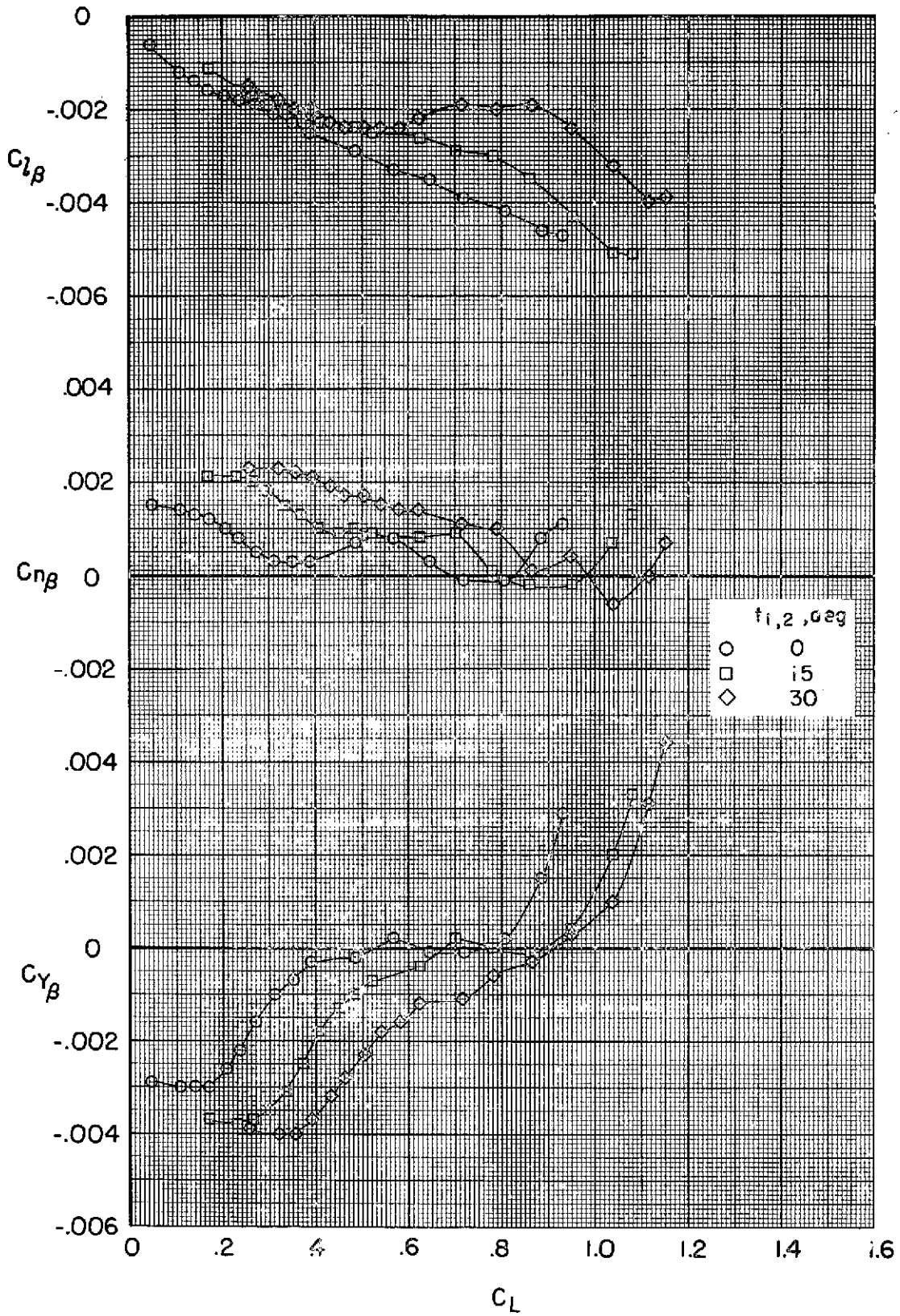


Figure 6.- Details of the vertical tail, V_8.



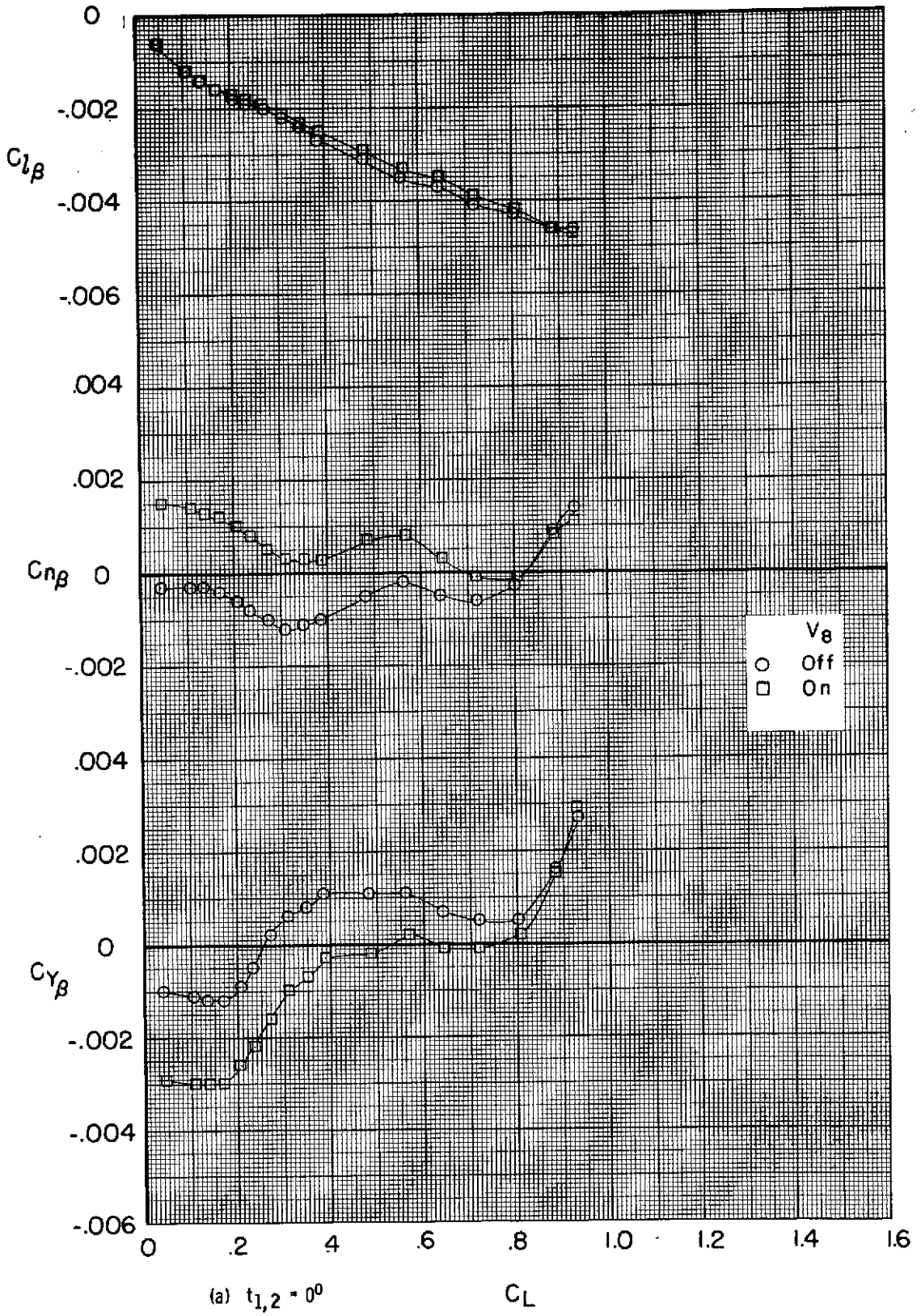
(a) Vertical tail off

Figure 7.- Effect of trailing-edge flap deflection on the lateral-directional stability parameters. $i_t = -10^0$, $t_3 = 0^0$, $t_4 = 5^0$.



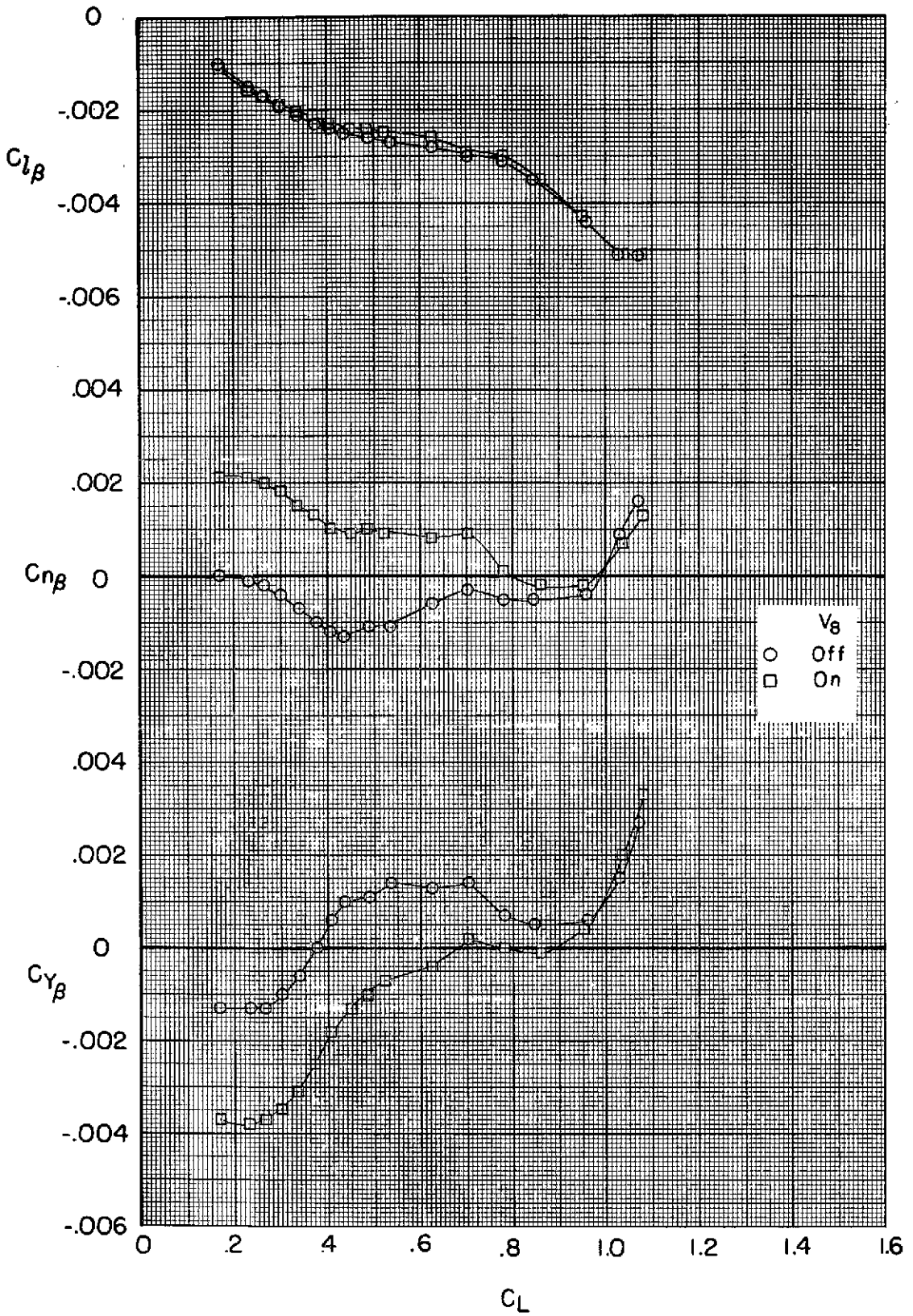
(b) Vertical tail on

Figure 7.- Concluded.



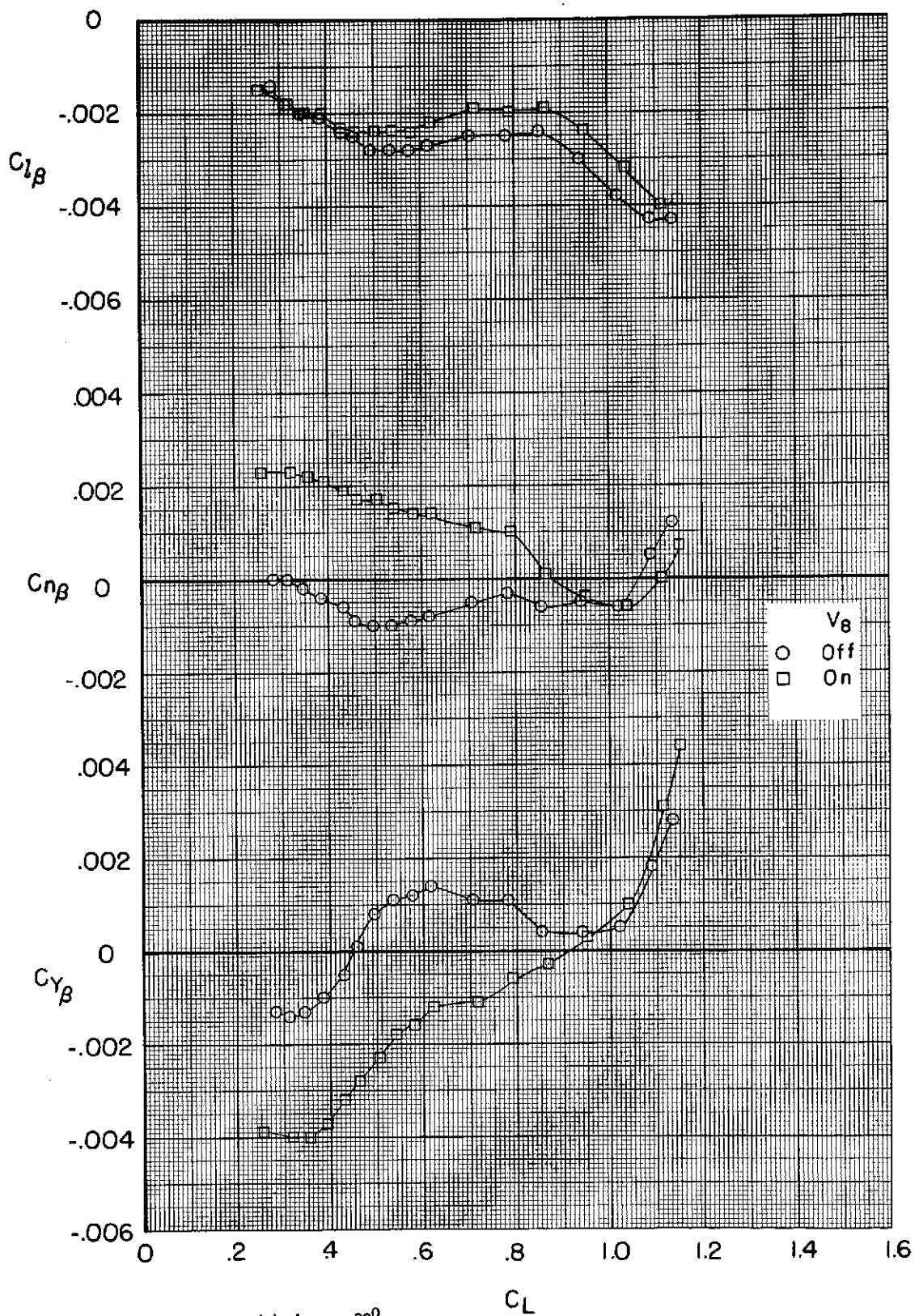
(a) $t_{1,2} = 0^0$

Figure 8.- Effect of the vertical tail on the lateral-directional stability parameters. $i_t = -10^0$, $t_3 = 0^0$, $t_4 = 5^0$.



(b) $t_{1,2} = 15^0$

Figure 8.- Continued.



(c) $t_{1,2} = 30^0$

Figure 8.- Concluded.

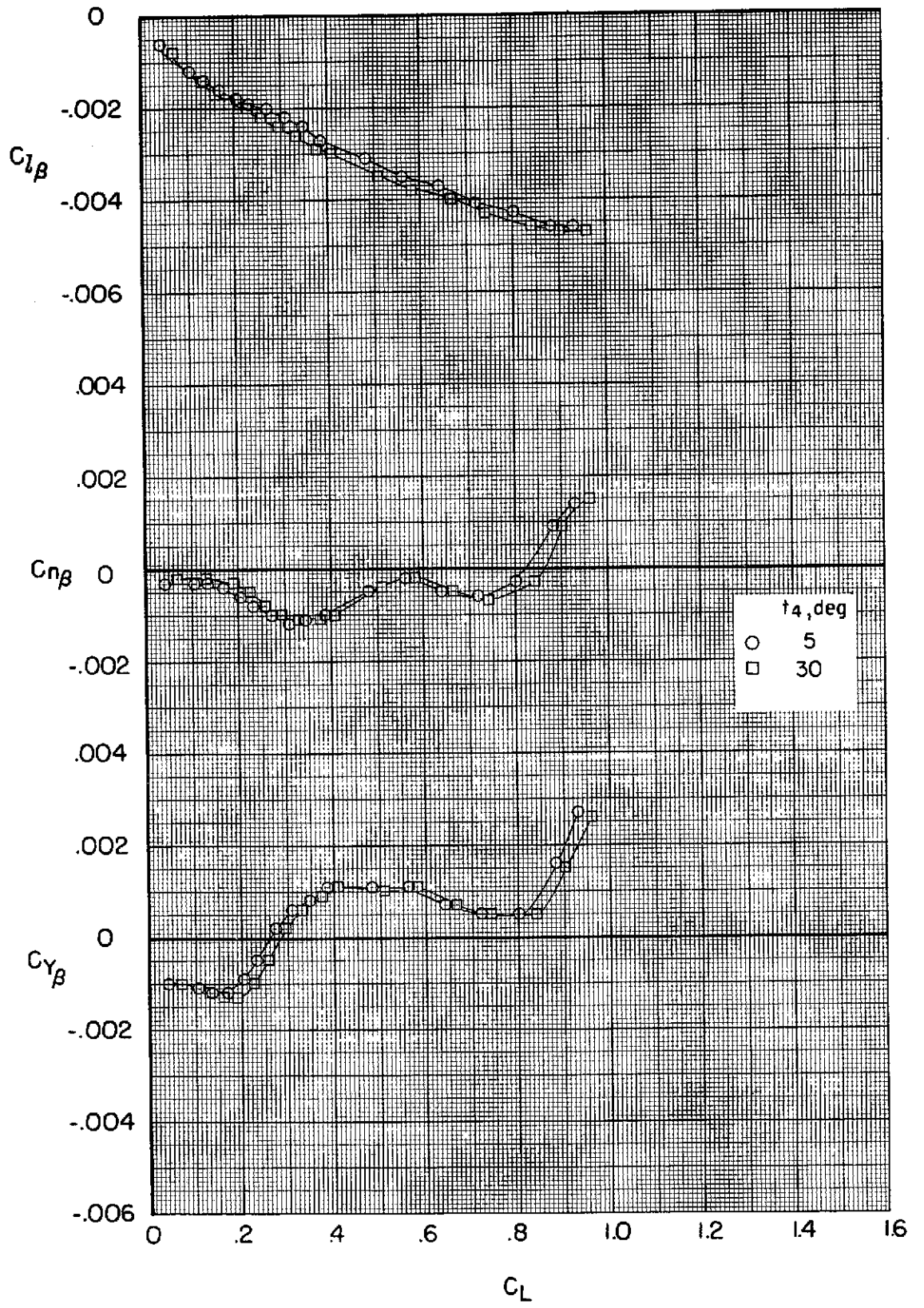


Figure 9 .- Effect of trailing-edge flap deflection, t_4 , on the lateral-directional stability parameters. $i_t = -10^0$, $t_{1,2} = 0^0$, $t_3 = 0^0$, V_{off}.

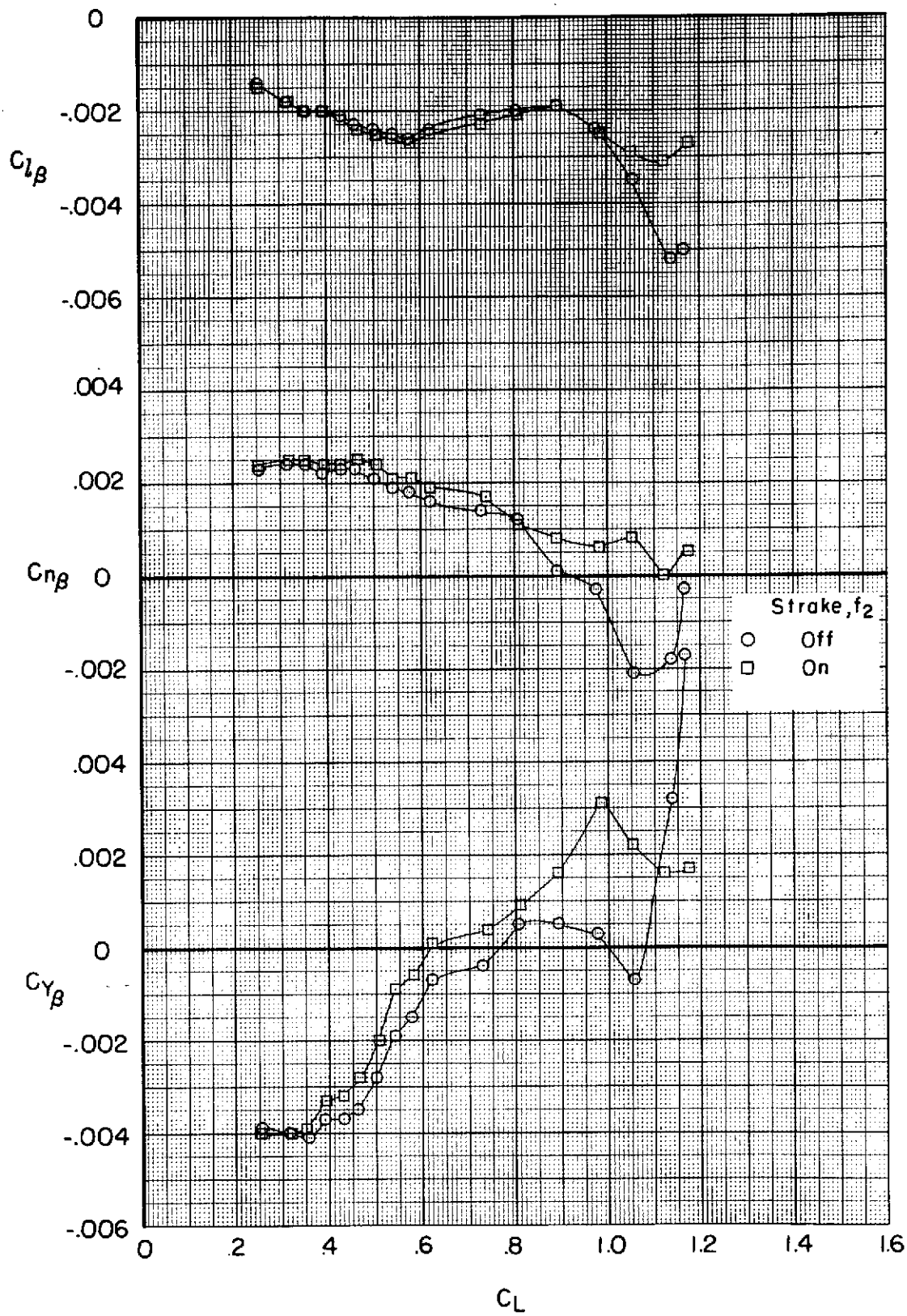


Figure 10 .- Effect of the strake, f_2, on the lateral-directional stability parameters. $i_t = -10^0$, $t_{1,2} = 30^0$, $t_3 = 0^0$, $t_4 = 5^0$, V_{on}.

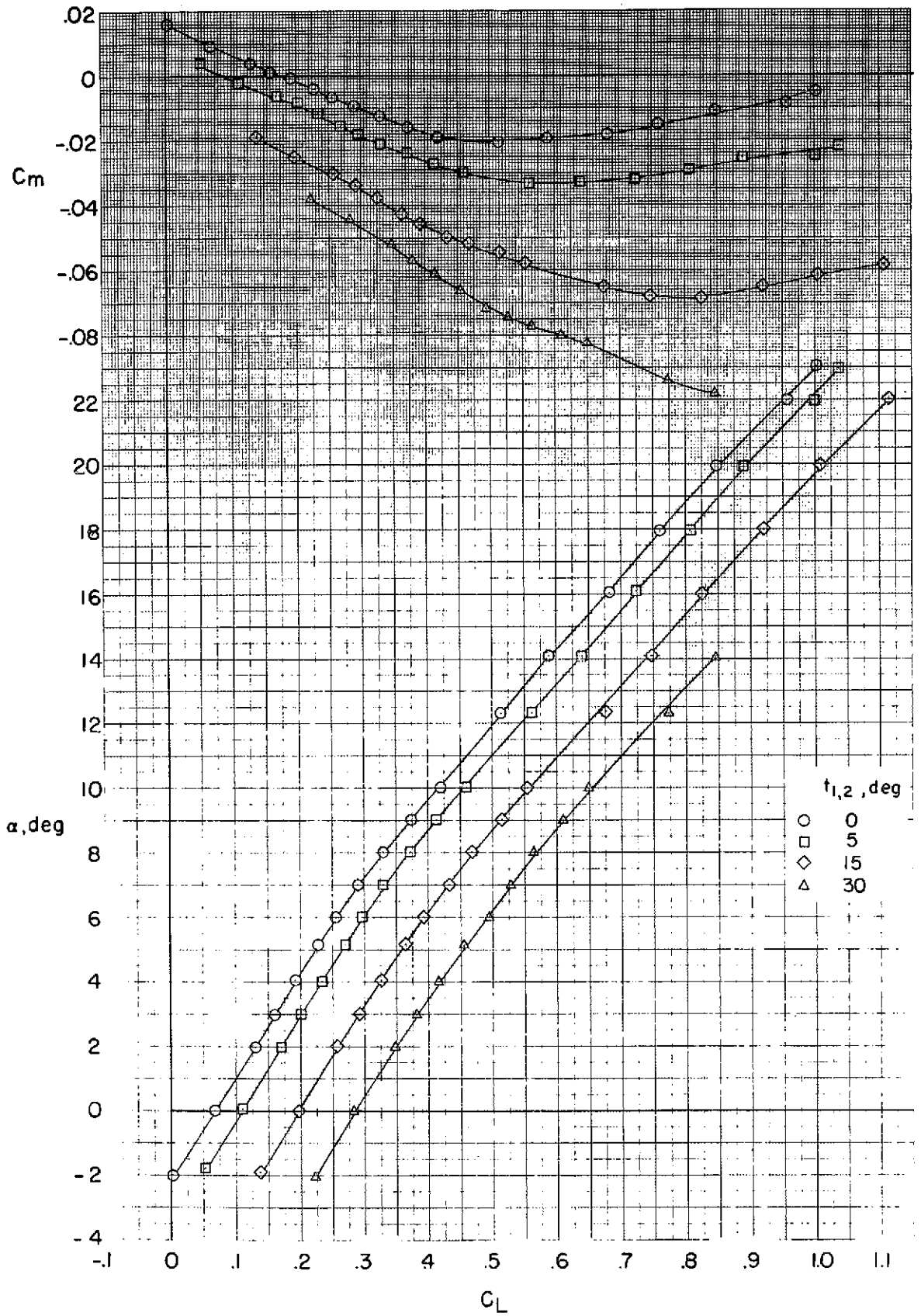


Figure 11.- Effect of trailing-edge flap deflection on the longitudinal characteristics. $t_3 = 0^0$, $t_4 = 5^0$, $i_t = 0^0$, V_{on}.

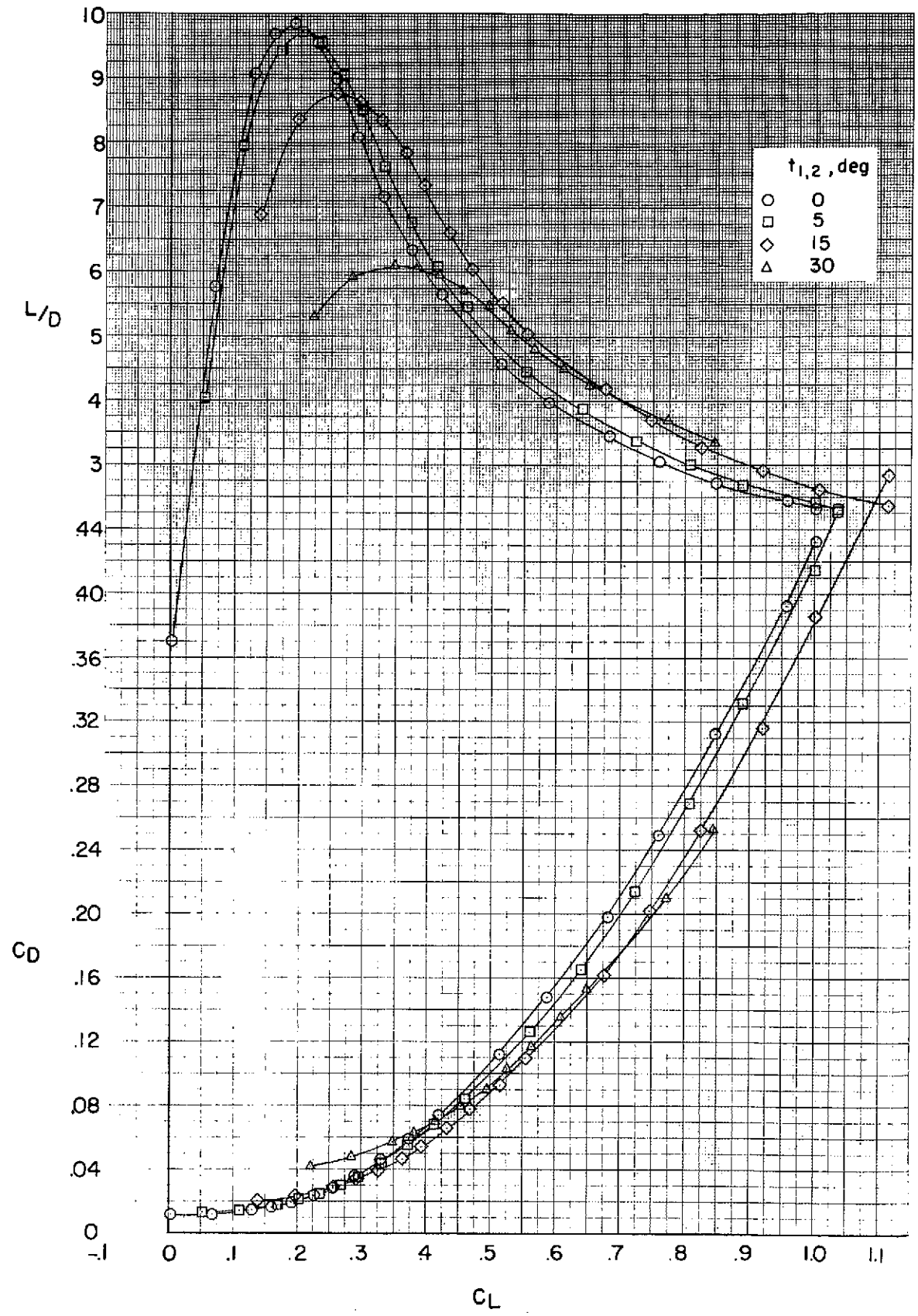
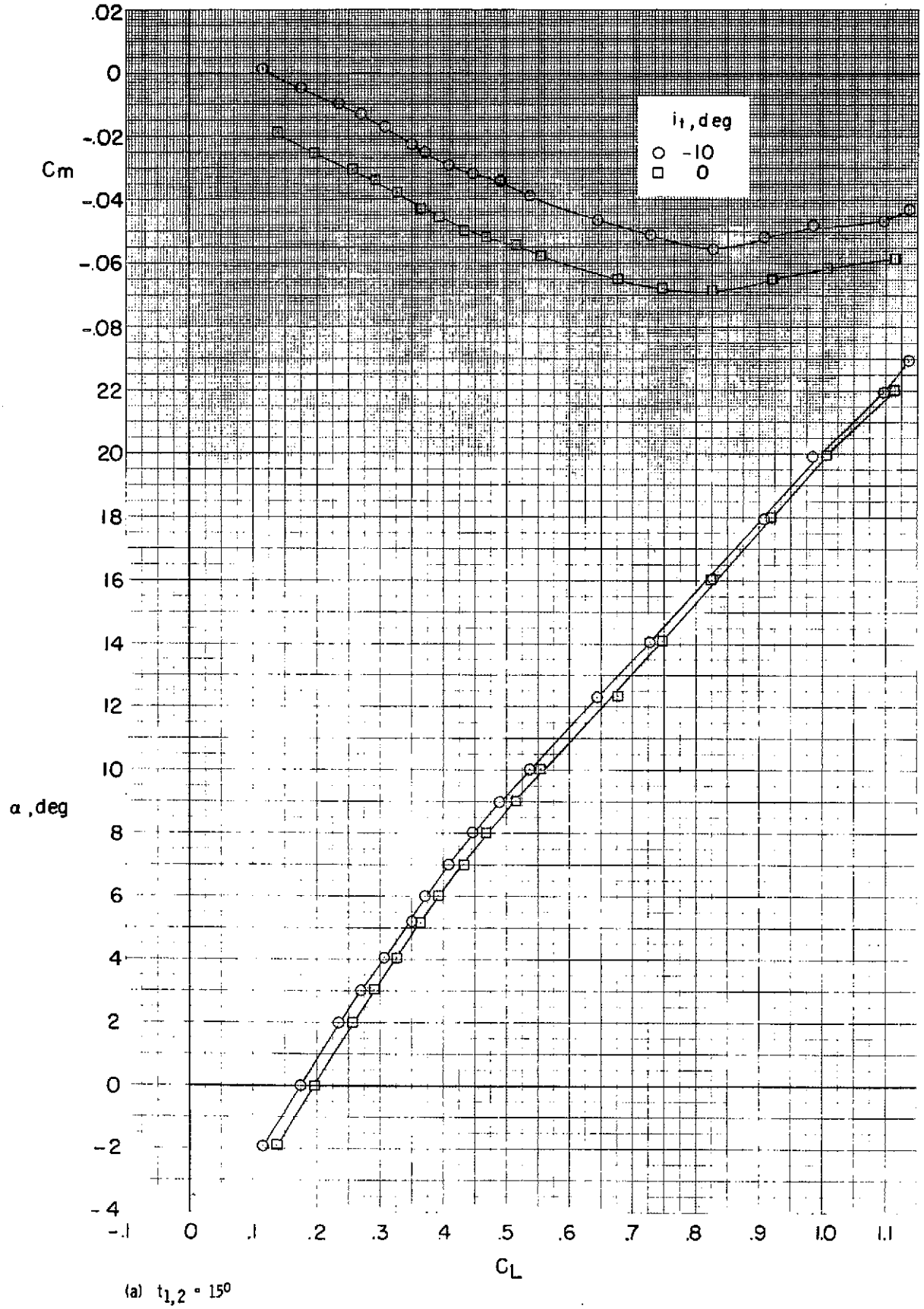
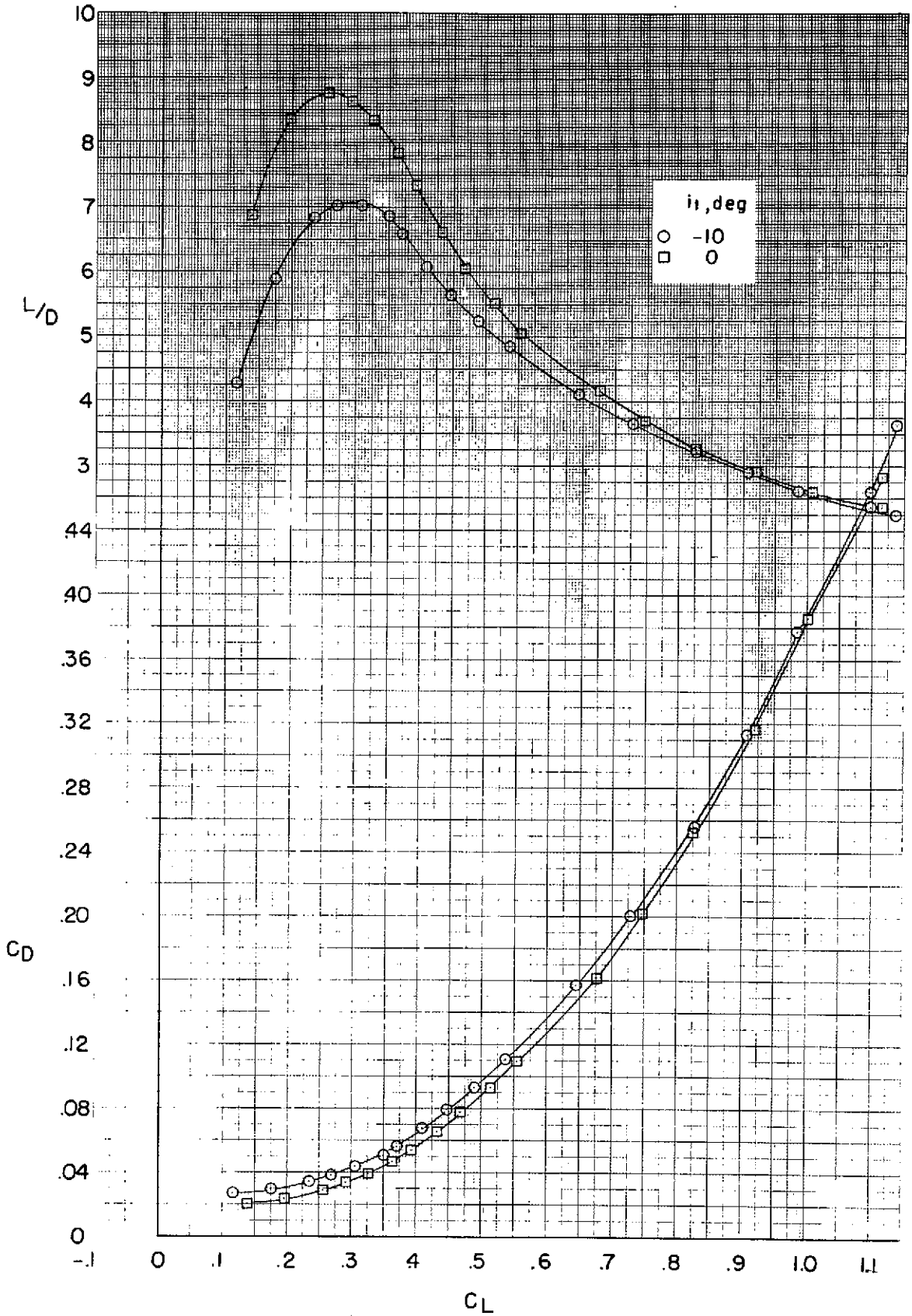


Figure11 .- Concluded.

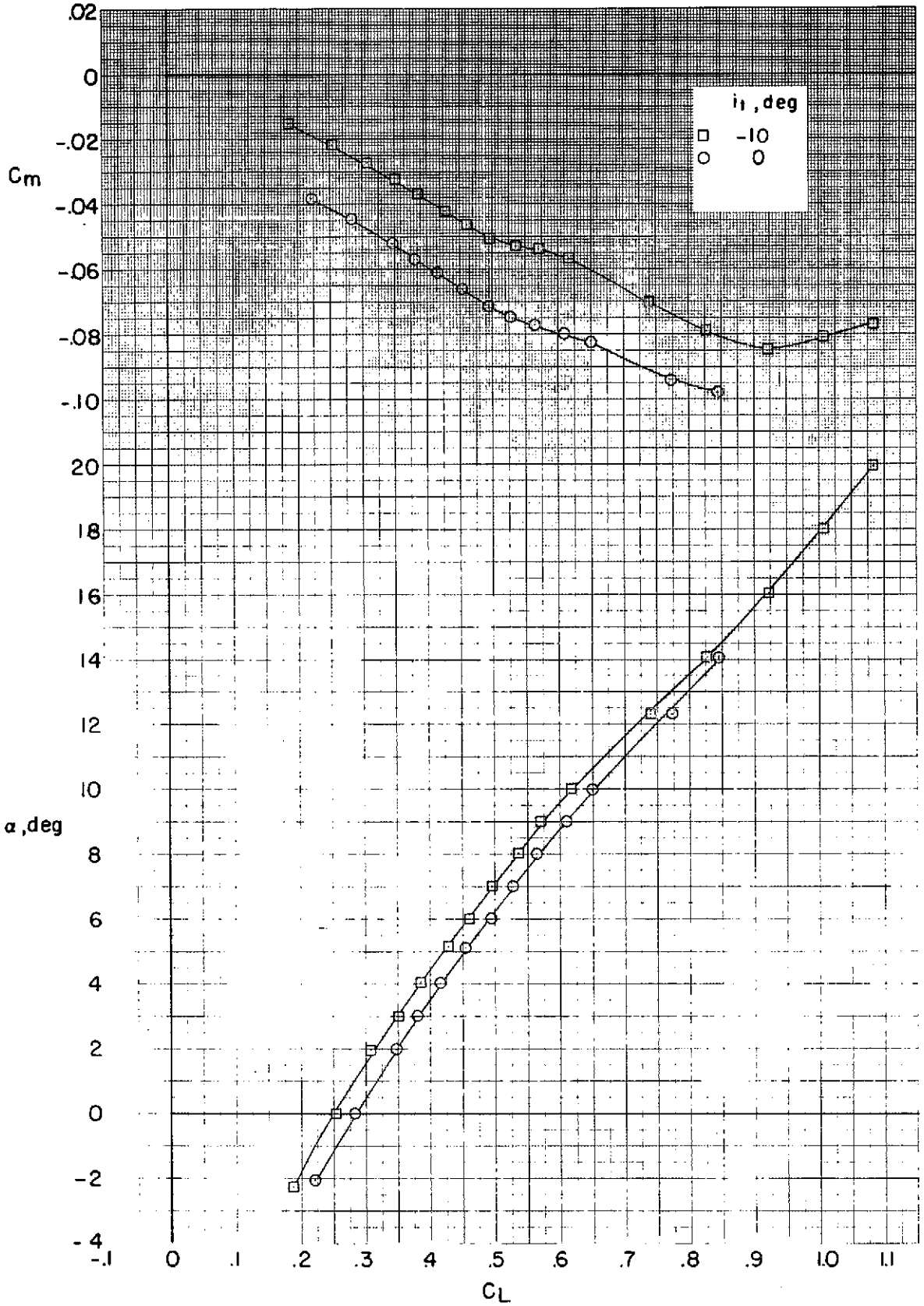


(a) $t_{1,2} = 15^0$

Figure 12.- Effect of horizontal-tail deflection on the longitudinal characteristics. $t_3 = 0^0$, $t_4 = 5^0$, V_{on}.

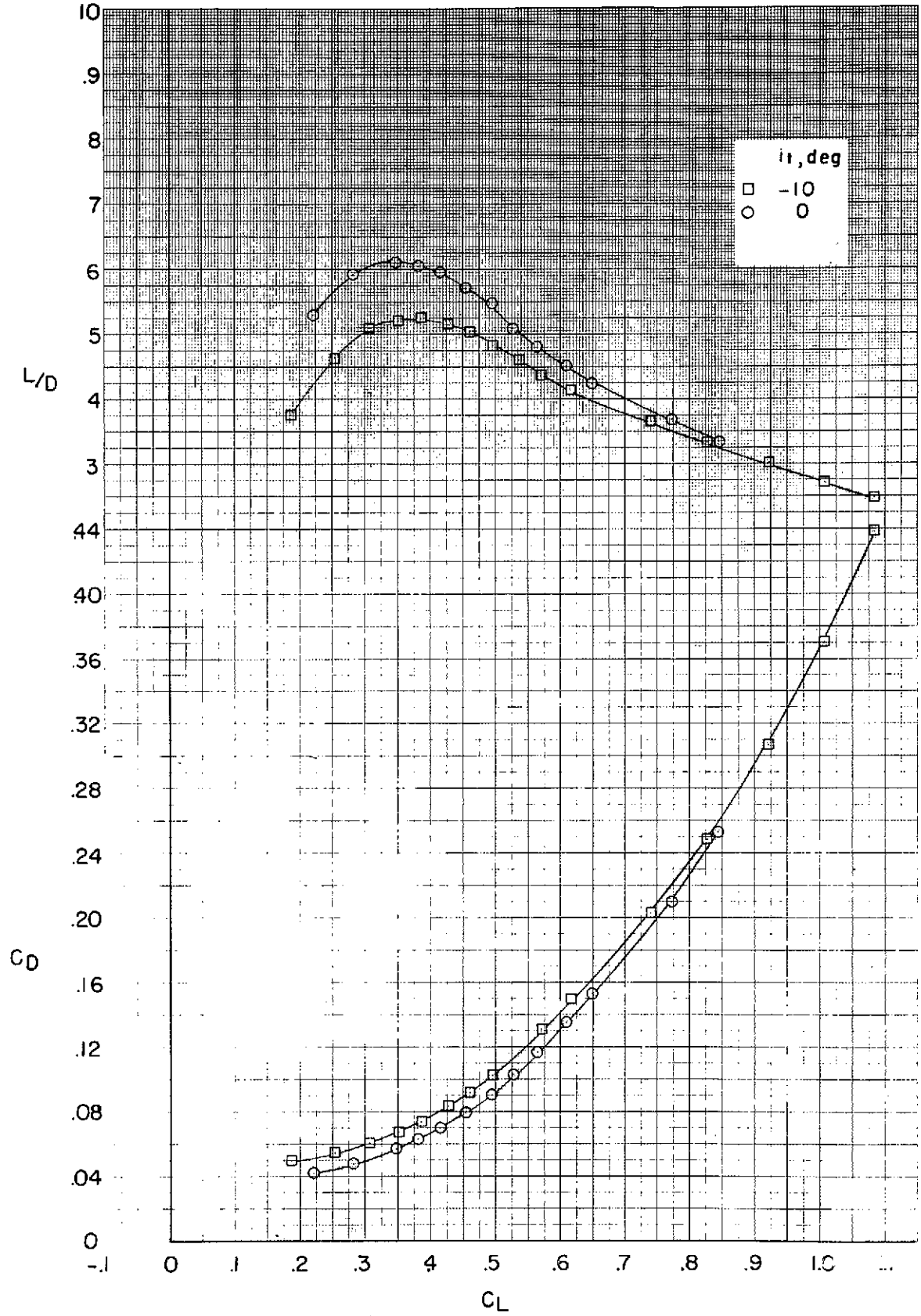


(a) Concluded
Figure 12.- Continued.



(b) $t_{1,2} = 30^0$

Figure 12.- Continued.



(b) Concluded

Figure 12.- Concluded.

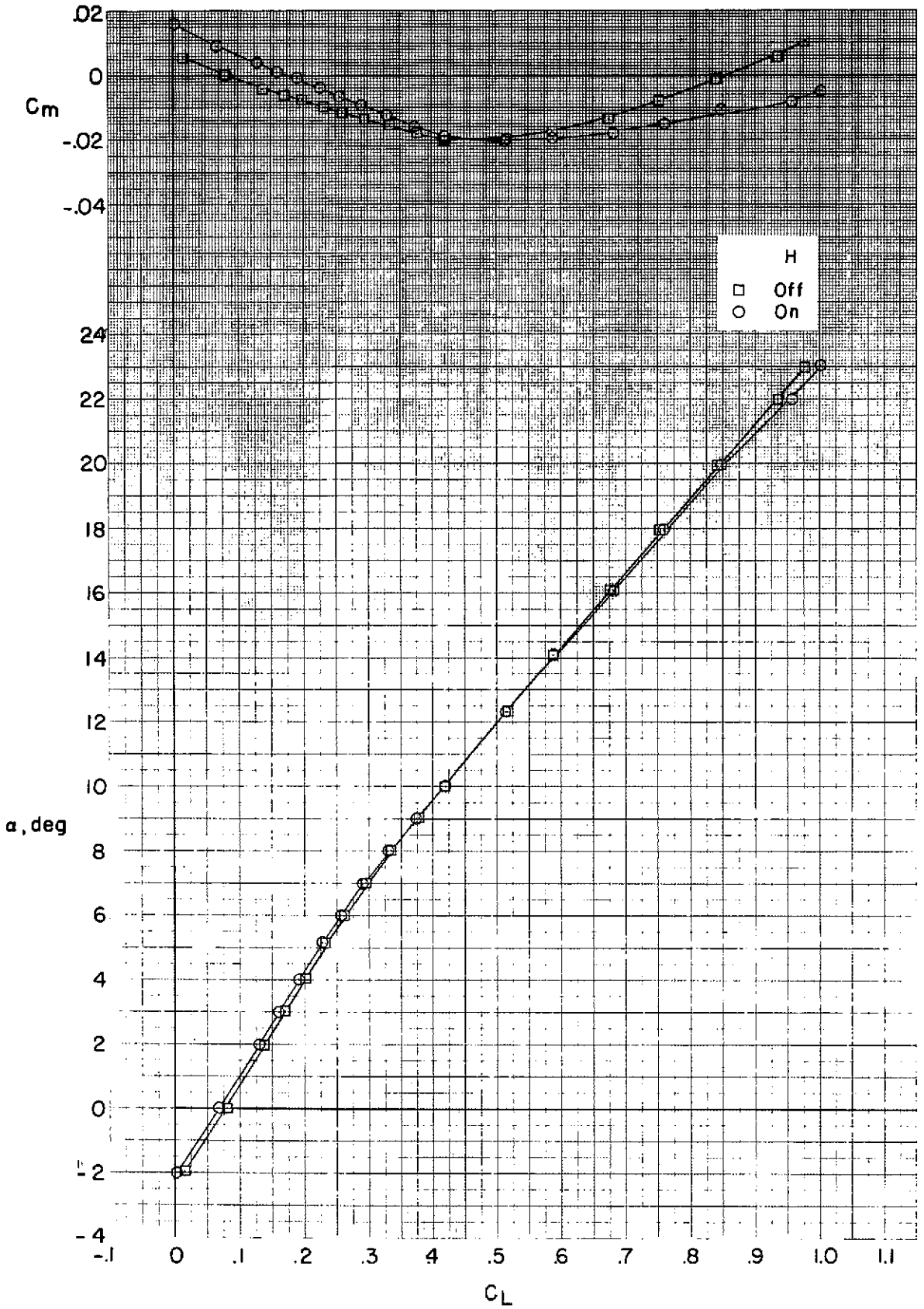


Figure 13.- Effect of the horizontal tail on the longitudinal characteristics. $t_{1,2,3} = 0^0$, $t_4 = 5^0$, V_{on}.

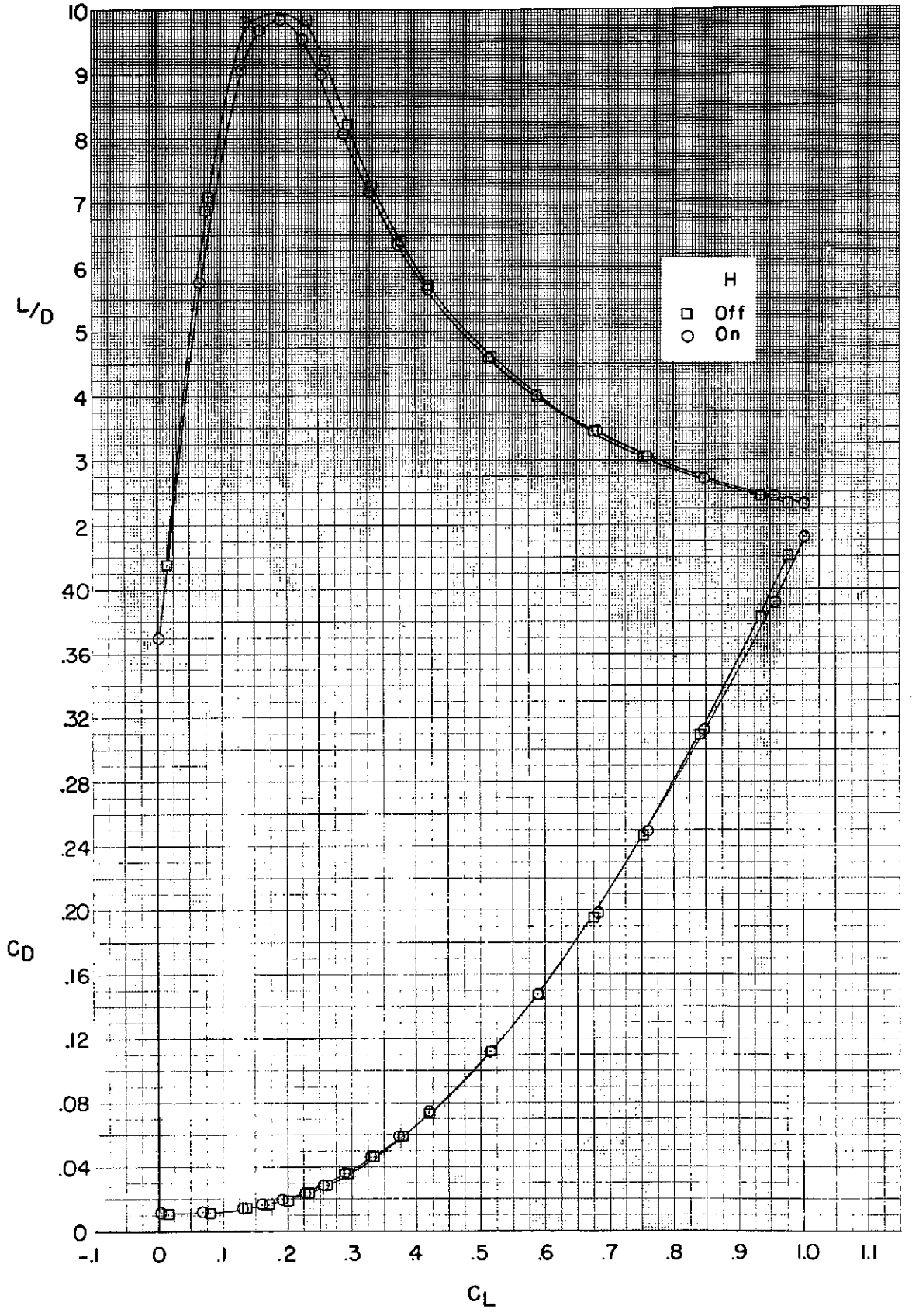


Figure 13.- Concluded.

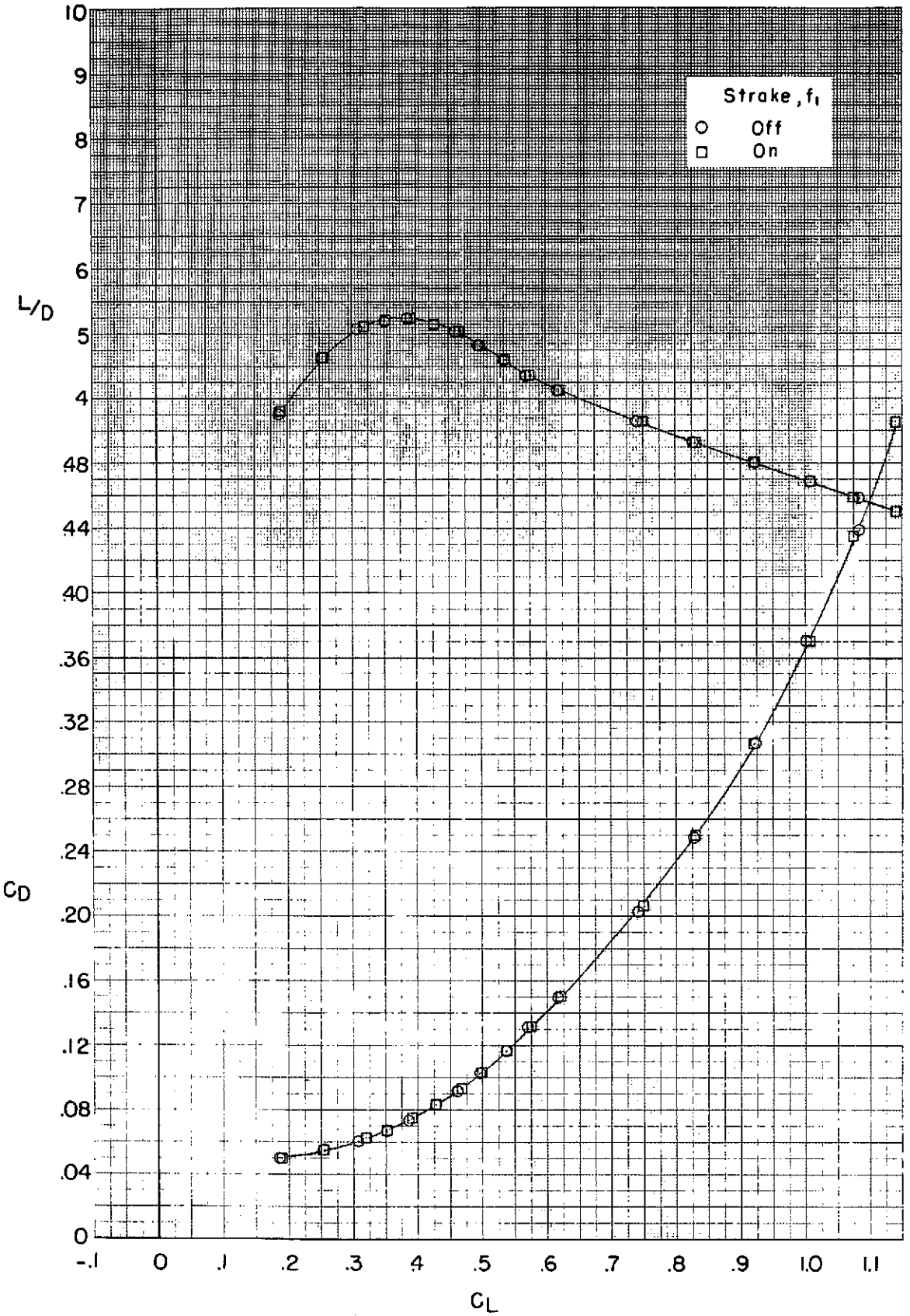


Figure 14.- Effect of the strake on the longitudinal characteristics.
$t_{1,2} = 30^0$, $t_3 = 0^0$, $t_4 = 5^0$, $i_t = -10^0$, V_{on}.

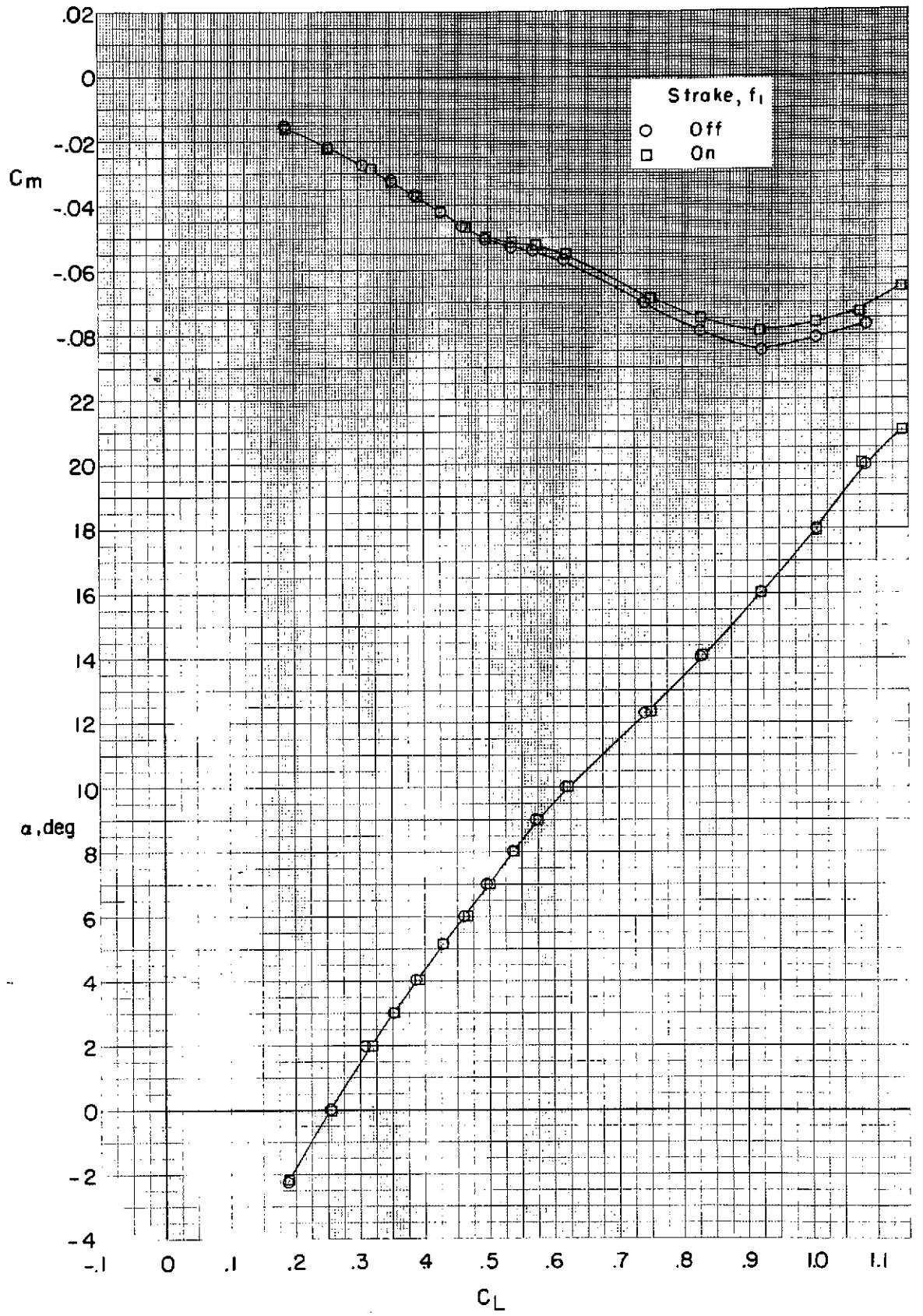


Figure 14.- Concluded.

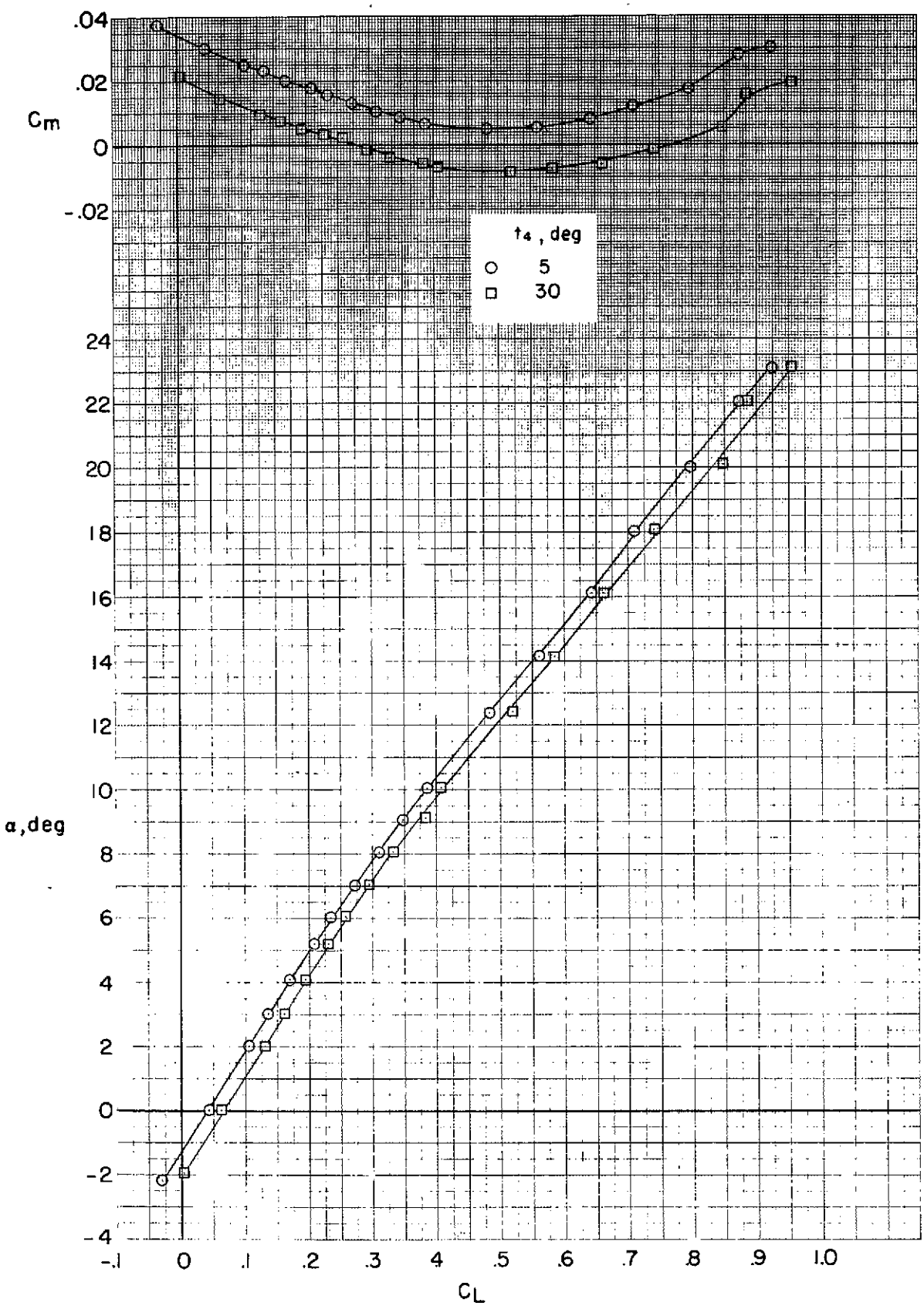


Figure 15.- Effect of trailing-edge flap deflection, t_4, on the longitudinal characteristics. $t_{1,2} = 0^0$, $t_3 = 0^0$, V_{off}, $\beta = 5$.

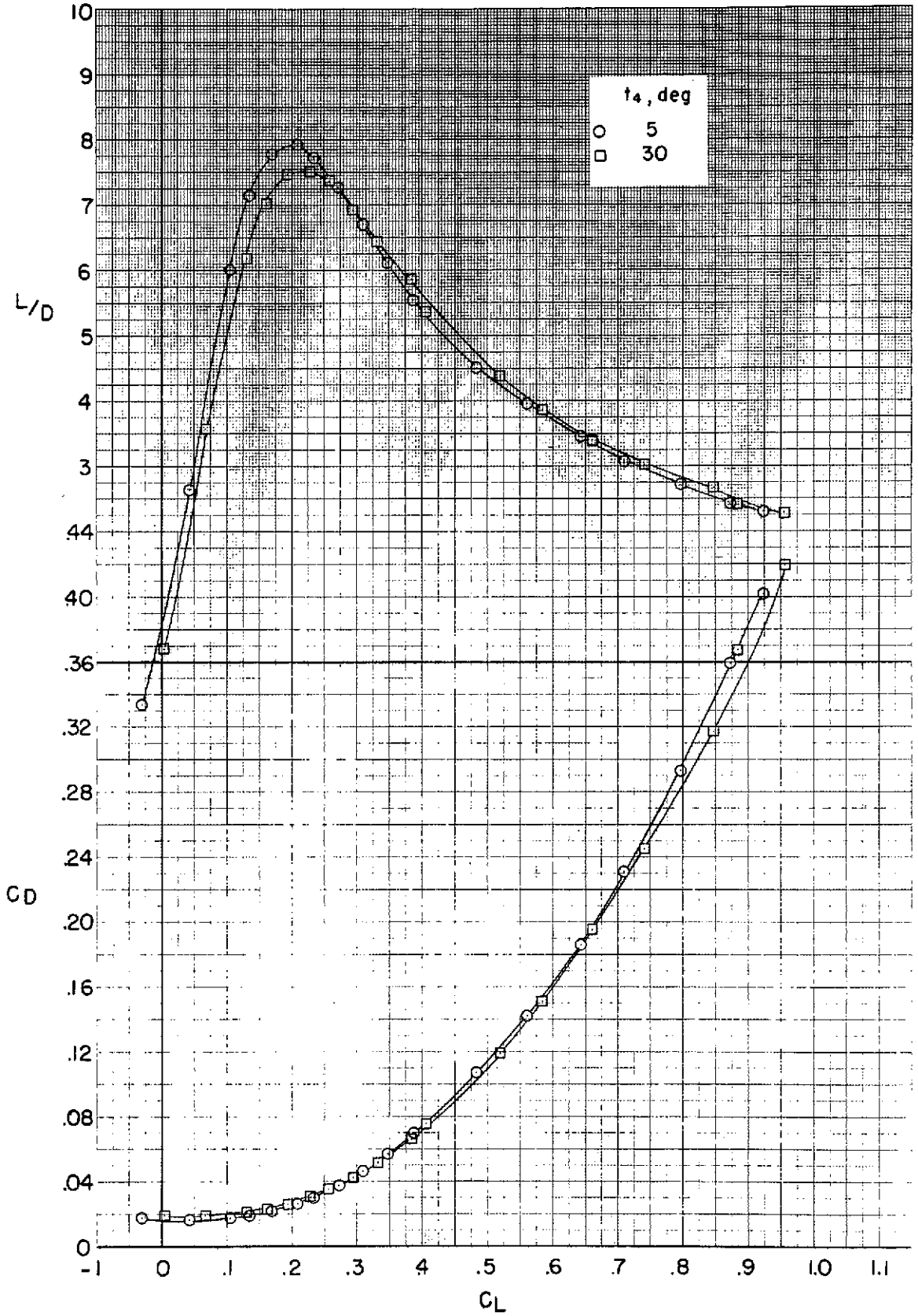


Figure 15.- Concluded.