NASA LIBRARY
AMES RESEARCH CENTER
MOFFETT FIELD, CALIF.
JUN 2 4 1964

UNCLASSIFIED

[redacted]

NASA TECHNICAL MEMORANDUM

NASA TM X-973

NASA TM X-973

AMES LIBRARY
COPY No. 2

CLASSIFICATION CHANGED TO UNCLASSIFIED
BY AUTHORITY OF NASA CLASSIFICATION CHANGE
NOTICES, CHANGE NO. 209-33, EFF. 10/19/70

AERODYNAMIC CHARACTERISTICS OF A HYPERSONIC GLIDER CONFIGURATION AT MACH NUMBERS FROM 0.6 TO 3.2

by Ronald C. Smith

Ames Research Center
Moffett Field, Calif.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION • WASHINGTON, D. C. • JUNE 1964

[redacted]

UNCLASSIFIED

UNCLASSIFIED
[redacted]

AERODYNAMIC CHARACTERISTICS OF A HYPERSONIC GLIDER CONFIGURATION AT MACH NUMBERS FROM 0.6 TO 3.2

By Ronald C. Smith

Ames Research Center
Moffett Field, Calif.

GROUP 3
Downgraded at 12-year intervals; not automatically declassified

CLASSIFIED DOCUMENT—TITLE UNCLASSIFIED

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

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[redacted]
UNCLASSIFIED

[redacted]

AERODYNAMIC CHARACTERISTICS OF A HYPERSONIC GLIDER CONFIGURATION AT MACH NUMBERS FROM 0.6 TO 3.2*

By Ronald C. Smith

Ames Research Center
Moffett Field, Calif.

SUMMARY

An investigation has been made to determine the aerodynamic characteristics of a hypersonic glider configuration at Mach numbers from 0.6 to 3.2 at angles of attack up to 40°. Tests were made to determine the effects of rudder and elevon deflections and the addition of a twin dive brake arrangement on the static stability and control characteristics. Also included were measurements of rudder and elevon normal forces and hinge moments. The tests were made in the three test sections of the Ames Unitary Plan Wind Tunnel.

The results of the tests indicate that the model has very limited trimming capability at Mach numbers near 2.5. It was also found that the lateral and directional stability generally increase with increasing angle of attack. Furthermore, it was found that for angles of attack less than 10°, a negative dihedral effect is indicated. Finally, it was found that the dive brake caused a highly destabilizing shift in the longitudinal aerodynamic center at transonic speeds.

INTRODUCTION

A hypersonic glider which reenters the atmosphere from orbit must not only withstand reentry heating but should be stable and controllable over wide ranges of speed and attitude and have a relatively high subsonic lift-drag ratio. These requirements have led to investigations of the performance, stability, and control characteristics of hypersonic glider configurations at Mach numbers ranging from subsonic to about Mach 20 (e.g., refs. 1 and 2).

The present study is part of a program initiated to develop a suitable glider configuration capable of orbital reentry and conventional horizontal landing. Force measurements have been made to determine the aerodynamic characteristics of a hypersonic glider configuration at Mach numbers from 0.6 to 3.2 at angles of attack up to 40°. Measurements of control surface forces and moments were included. Wing and fuselage pressure distributions were also measured during the tests.

---

*Title, Unclassified

[redacted]

NOTATION

a.c.	longitudinal aerodynamic center location, percent $\bar{c}$
b	glider span, ft
C_A	axial-force coefficient, $\frac{\text{axial force}}{q_\infty S_w}$
C_D	drag coefficient, $\frac{\text{drag}}{q_\infty S_w}$
C_L	lift coefficient, $\frac{\text{lift}}{q_\infty S_w}$
C_N	normal-force coefficient, $\frac{\text{normal force}}{q_\infty S_w}$
C_{N_e}	elevon normal-force coefficient, $\frac{\text{elevon normal force}}{q_\infty S_e}$
C_{N_r}	rudder normal-force coefficient, $\frac{\text{rudder normal force}}{q_\infty S_r}$
C_Y	side-force coefficient, $\frac{\text{side force}}{q_\infty S_w}$
C_{h_e}	elevon hinge-moment coefficient, $\frac{\text{elevon hinge moment}}{q_\infty S_e \bar{c}_e}$
C_{h_r}	rudder hinge-moment coefficient, $\frac{\text{rudder hinge moment}}{q_\infty S_r \bar{c}_r}$
C_m	pitching-moment coefficient, $\frac{\text{pitching moment}}{q_\infty S_w \bar{c}}$
C_n	yawing-moment coefficient, $\frac{\text{yawing moment}}{q_\infty S_w b}$
C_{n_β}	directional stability parameter, per deg
C_l	rolling-moment coefficient, $\frac{\text{rolling moment}}{q_\infty S_w b}$
C_{l_β}	lateral stability parameter, per deg
$\bar{c}$	glider mean aerodynamic chord, ft
$\bar{c}_e$	elevon reference chord, ft
$\bar{c}_r$	rudder reference chord, ft

$(c.p.)_e$ elevon longitudinal center of pressure measured from elevon hinge line, $\frac{C_{h_e}}{C_{N_e}}$, percent $\bar{c}_e$

$(c.p.)_r$ rudder longitudinal center of pressure measured from rudder hinge line, $\frac{C_{h_r}}{C_{N_r}}$, percent $\bar{c}_r$

$\frac{L}{D}$ lift-drag ratio

M_∞ free-stream Mach number

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

R free-stream Reynolds number based on glider mean aerodynamic chord

S_e elevon area (one elevon), ft^2

S_r rudder area (one rudder), ft^2

S_w glider wing area, ft^2

α angle of attack, deg

β angle of sideslip, deg

δ_{db} dive-brake deflection, deg

δ_e elevon deflection angle, deg

δ_r rudder deflection angle, deg

TEST FACILITY AND MODEL

The data reported herein were obtained in the Ames Unitary Plan Wind Tunnel. This wind tunnel is of the closed-circuit, variable pressure type.

Details of the model are presented in figure 1 and in table I. Boundary-layer trips were used to fix transition on the nose, the upper and lower wing surfaces, and the inboard and outboard surfaces of the vertical tail. The trips were located as shown in figure 1.

TEST AND PROCEDURES

Range of Test Variables

Data were obtained for various angles of attack and sideslip with various combinations of control surface settings. The ranges of test variables for each configuration are given in table II. The test Reynolds number based on glider mean aerodynamic chord, for each Mach number tested, is tabulated below.

Mach number	Reynolds number, million
0.6	3.8
.9	2.2
1.0	2.3
1.2	2.3
1.35	2.3
1.7	2.8
2.5	2.8
3.2	2.5

Reduction of Data

The data presented herein have been reduced to coefficient form. (Numerical values of reference lengths and areas for the model geometry are listed in table I.) The pitching- and yawing-moment coefficients have been referred to the projection, on the body center line, of the 43-percent point of the wing mean aerodynamic chord. Lift and drag coefficients were referred to the wind axes while all other coefficients have been referred to body axes.

The base pressure was measured and the data were adjusted to correspond to conditions wherein the base pressure is equal to free-stream static pressure. Drag data reported herein have been corrected for the buoyancy effect of longitudinal static-pressure variations in the vicinity of the model. These corrections amounted to less than 0.6 percent of the zero-lift drag.

Model angles of attack and sideslip have been corrected for effects of deflection of the sting and balance under load and for the tunnel-empty stream angle existing in the wind tunnel at the model moment-center location. Free-stream Mach number values reported herein are similarly determined. Variations of local Mach number, stream angle of attack, and stream angle of sideslip are less than 0.01, 0.1°, and 0.1°, respectively, over the model length.

Accuracy

The test results are subject to the following maximum uncertainties resulting from inaccuracies in the data-measuring equipment.

M	± 0.01	C_m	± 0.0007
α and β	$\pm .2^{\circ}$	$\frac{L}{D}$	$\pm .03$
δ_e and δ_r	$\pm .5^{\circ}$	C_Y	$\pm .002$
C_N	$\pm .007$	C_h	$\pm .0002$
C_L	$\pm .006$	C_l	$\pm .0001$
C_X	$\pm .001$	C_{N_e}	$\pm .01$
C_D	$\pm .005$	C_{h_e}	$\pm .002$
C_{D_b}	$\pm .0002$	C_{N_r}	$\pm .01$
		C_{h_r}	$\pm .004$

In general, repeatability errors were very much smaller than the tolerances shown.

PRESENTATION OF RESULTS

Only selected portions of the force data have been included in the plots accompanying the following discussion. However, all the force test results are presented in tables III to XVII. A key to the tabulated data for the various configurations is given in table II.

The following aerodynamic characteristics are presented graphically in figures 2 to 15.

Figure	Aerodynamic characteristics
2	Basic lift, drag, and pitching-moment characteristics
3	Longitudinal aerodynamic center location versus Mach number
4	Variation of elevon control power with Mach number
5	Elevon deflection required for trim versus Mach number
6	Variation of maximum lift-drag ratio with Mach number
7	Basic side-force, yawing-moment, and rolling-moment characteristics versus sideslip angle
8	Effect of angle of attack on lateral and directional stability parameters

Figure	Aerodynamic characteristics
9	Effects of elevon and dive-brake deflections on lateral and directional stability parameters
10	Variation of rudder power with Mach number
11	Effect of angle of attack on elevon normal-force coefficient and center-of-pressure location
12	Effects of elevon and dive-brake deflections on the elevon normal-force coefficient and center-of-pressure location.
13	Effect of sideslip on rudder normal-force coefficient and center-of-pressure location
14	Effect of rudder deflection on rudder normal-force coefficient and center-of-pressure location
15	Variation of incremental dive-brake drag with Mach number

DISCUSSION

Longitudinal Characteristics

Basic data.- The lift and pitching-moment data for Mach numbers 0.9 and 1.0 (fig. 2) indicate a stall at angles of attack above 20° which was accompanied by a severe pitch-up tendency. The range of elevon settings at which the stall and pitch-up occurred was -16° to $+10^{\circ}$. Pressure measurements made simultaneously with the force measurements verified the existence of a separated region on the upper wing surface at angles of attack above 20°. The separated region extended rearward from about the 50-percent $\bar{c}$ location. Loss of lift from this region would cause a pitch-up tendency.

Longitudinal stability.- The variations of longitudinal aerodynamic center location with Mach number (fig. 3) show the effects of both elevon and dive-brake deflections. The dive-brake effects are discussed in a later section.

The basic configuration had an unstable static margin of about 2-1/2-percent $\bar{c}$ at subsonic speed for the moment center used (43-percent $\bar{c}$). On this basis, a moment center located at 40-percent $\bar{c}$ or less is required for static stability. Such a relocation of the moment center would increase the maximum static margin from 8-1/2- to 11-1/2-percent $\bar{c}$.

Elevon deflection caused the a.c. to move rearward at transonic Mach numbers above about 0.9 as indicated by the data for $\delta_e = 0^{\circ}$ and -48°. The

other elevon deflections tested produced the same effect. The resultant increase in the total a.c. travel with Mach number was about 3-percent $\bar{c}$.

Elevon control power.- The variation of elevon control power, $C_{m_{\delta_e}}$, with Mach number (fig. 4) is given at $C_L = 0.4$ for $\delta_e = 0$ and δ_e for trim. The C_L value of 0.4 is the highest which is trimmable throughout the test Mach number range.

The control power at $\delta_e = 0$ decreases markedly with increasing supersonic Mach number which is typical of most controls of this type.

The values of C_{m_δ} at δ_e for trim are much smaller than the corresponding values for $\delta_e = 0$ in the supersonic speed range. This loss in control power due to trimming reflects the rapid decay of control power at large negative elevon deflections which is evident in the basic data (fig. 2).

Elevon requirements for trim.- The elevon deflection required for trim (fig. 5) is plotted for lift coefficients of 0.40 and 0.41 and for $(L/D)_{max}$. A $(C_L)_{trim}$ limit of 0.40 is indicated at speeds near Mach number 2.5. If the moment center were relocated at 40-percent $\bar{c}$, as required for static stability, the maximum trim lift coefficient at this Mach number would be reduced from 0.40 to about 0.27.

Lift-drag ratio.- The variations of maximum lift-drag ratio with Mach number (fig. 6) are shown for basic and trimmed configurations. The lift-drag ratio for the basic configuration changes very little in the supersonic speed range tested. Lift-drag ratios of 3.0 and 2.65 at Mach numbers of 1.2 and 3.2, respectively, are indicated.

The maximum trimmed L/D increased slightly at Mach numbers above 2.0. This results primarily from the reduction in negative elevon deflection required for trim (see fig. 4).

The reduction in lift-drag ratio due to trimming which is indicated by the difference between the "trim" and "$\delta_e = 0$" curves is greatest at supersonic speeds and is very small at speeds below Mach number 1.0.

Lateral-Directional Characteristics

Basic data.- The side-force, yawing-moment, and rolling-moment data for $\alpha = 10^\circ$ (fig. 7) show the effects of outward deflection of the left rudder on the lateral-directional characteristics of the basic configuration. In general, rudder deflection had very little effect on side force and rolling moment, except at Mach number 0.9 where both rudder deflections (13° and 33°) substantially increased the positive dihedral effect.

The deflection of one rudder gives the model adequate rudder power. The rudder deflections used could produce trim at sideslip angles up to 8° at all test Mach numbers.

Lateral and directional stability.- The plots of C_{n_β} and C_{l_β} presented in figure 8 show the effects of angle of attack on the lateral and directional stability parameters of the basic configuration.

The directional stability generally increased with increasing angle of attack in the supersonic speed range tested. At Mach number 1.0 directional instability occurred at 20° angle of attack over the sideslip range $\pm 4^\circ$. It is not known whether or not this instability persists at higher angles of attack.

The lateral stability (dihedral effect), which is negative at angles of attack below 10° for the test Mach numbers above 1.7, increased with increasing angle of attack. This characteristic is typical of sweptback wings.

The plots of C_{n_β} and C_{l_β} presented in figure 9 illustrate the effects of elevon and dive-brake deflections on the lateral and directional stability parameters of the basic configuration. The dive-brake effects are discussed in a later section. At subsonic speeds, elevon deflection decreased both the lateral and the directional stability. The loss of directional stability, however, decreased with increasing Mach number, and above Mach number 2.0 the effect of elevon deflection was stabilizing. The effect of elevon deflection on C_{l_β} at supersonic speeds was small but destabilizing at Mach numbers above 2.0.

Rudder power.- The variation of rudder power with Mach number (fig. 10) does not decay markedly with increasing Mach number. This results in the capability of trim at large sideslip angles throughout the test Mach number range.

Control-Surface Characteristics

Elevons.- The effects of angle of attack and elevon and dive-brake deflections on the elevon normal-force coefficient and c.p. location for the basic configuration (figs. 11 and 12) are summarized as follows:

At subsonic speeds, the elevon normal-force coefficient remained constant at angles of attack between 15° and 25°. This could result from the flow separation postulated previously. At supersonic speeds where the normal force is dependent primarily on lower surface pressures, the elevon normal-force coefficient continues to increase at angles of attack above 15°. Furthermore, the normal-force coefficient typically decreases with increasing supersonic speed.

The center of pressure moves rearward with increasing angle of attack at subsonic and transonic speeds. However, this c.p. movement is much less than the total c.p. travel in the test Mach number range. At Mach numbers above 1.6, no c.p. movement with angle of attack is indicated. At Mach number 0.6 the c.p. is located at 26-percent $\bar{c}_e$ and undergoes the usual rearward movement in the transonic speed range.

The increments in elevon normal-force coefficient between the curves for 0° and -48° deflection (fig. 12) decreased markedly with increasing supersonic speed. The C_{N_e} increment decreases from a value of 1.5 at Mach number 1.2 to 0.45 at Mach number 3.2.

The elevon center of pressure moves rearward with elevon deflection. This c.p. movement increases with increasing supersonic speed and has a maximum value of 15-percent $\bar{c}_e$ at Mach number 3.2.

Rudder.- The effects of sideslip and rudder deflection on the rudder normal-force coefficient and center-of-pressure location (figs. 13 and 14) are summarized as follows:

The increment in rudder normal-force coefficient produced by 10° sideslip is nearly constant throughout the Mach number range except at Mach number 1.0

The rudder center of pressure moves very little with sideslip and has the usual rearward shift in the transonic speed range.

The rudder normal-force coefficient produced by rudder deflection is nearly constant throughout the test Mach number range. This results in the relatively small change in $C_{N_{\delta_r}}$ with Mach number already noted.

Some rearward c.p. movement with rudder deflection is indicated. The total c.p. movement with Mach number and rudder deflection is about 26-percent $\bar{c}_r$.

Dive-Brake Effects

Drag.- The dive-brake incremental drag coefficient is expressed as a fraction of the drag coefficient of the basic configuration. The drag increments are taken between $\delta_{db} = 70$ and $\delta_{db} = 0$ and are presented for lift coefficients of 0.2 and 0.4 (fig. 15). The dive-brake drag coefficient is quite large at Mach number 0.6 but decreases rapidly with increasing Mach number up to 1.0. At supersonic speeds, the decrease of dive-brake drag coefficient with Mach number is less pronounced. Also, the dive-brake drag coefficient generally is much lower at $C_L = 0.4$ than at 0.2. This result would be expected at Mach numbers above about 1.4 because of the reduction in local dynamic pressure above the wing resulting from expansion over the upper surface at increased angle of attack. At Mach number 3.2, $\Delta C_D/C_D$ has the values 0.22 and 0.05 for lift coefficients of 0.2 and 0.4, respectively.

Longitudinal stability.- At Mach numbers near 1.0, dive-brake deflection produced a very large forward a.c. shift (fig. 3). The largest shift occurred at $M = 1.0$ and amounted to about 11-percent $\bar{c}$.

Lateral-directional stability.- Dive-brake deflection caused large reductions in lateral and directional stability at subsonic speeds (see fig. 9). The reduction in lateral stability was enough to cause a negative dihedral

effect at Mach numbers between 0.6 and 0.9. At supersonic speeds the effects on lateral and directional stability were small.

Elevon characteristics.- Dive-brake deflection caused rearward movement of the elevon c.p. and large reduction in elevon normal force (fig. 12). The largest c.p. movement was about 20-percent $\bar{c}_e$ at Mach number 0.9. At supersonic speeds the c.p. shift was less than 10-percent $\bar{c}_e$.

Flow instability.- During the course of the tests, the flow became unstable over the model at Mach number 1.7 when the dive brakes were extended. The instability occurred at 5° angle of attack for sideslip angles between $\pm 2.5^\circ$ with elevon settings of -24° and -48°. The dynamic pressure was 620 psf.

Indications of the flow instability were oscillation of the shock wave from the dive brakes and a side-force oscillation measured on the rear side-force gage of the balance. The side-force oscillations produced fluctuations in C_Y between 0 and +0.08 and in C_n between 0 and -0.023. The remaining coefficients were essentially unaffected.

The flow fluctuations were aperiodic, of fairly low frequency, and appeared to be caused by alternate detachment and reattachment of the flow over the dive brakes.

CONCLUSIONS

The data from the tests reported herein indicate the following:

1. The test configuration has very limited trimming capability at Mach numbers near 2.5. Furthermore, if the moment center were relocated to make the configuration statically stable at subsonic speeds, the maximum trim lift coefficient would be reduced from 0.40 to about 0.27.

2. The maximum trim L/D remains almost constant at 2.3 in the Mach number range from 1.6 to 3.2.

3. The directional stability generally increases with increasing angle of attack at supersonic speeds.

4. The lateral stability increases with increasing angle of attack at supersonic speeds. For angles of attack less than 10° a negative dihedral effect is indicated.

5. The dive-brake arrangement produced a highly destabilizing shift in the longitudinal a.c. at transonic speeds.

Ames Research Center
National Aeronautics and Space Administration
Moffett Field, Calif., March 10, 1964

[redacted]

REFERENCES

1. Multhopp, Hans: Design of Hypersonic Aircraft. Aerospace Engineering, vol. 20, no. 2, Feb. 1961, pp. 8-9, 32-36.

2. Yoler, Yusuf A.: Dyna-Soar: A Review of the Technology. Aerospace Engineering, vol. 20, no. 8, Aug. 1961, pp. 8, 56-67.

[redacted]

TABLE I.- MODEL DIMENSIONS

Glider	
Plan-form area, S_w	1.204 ft^2
Span, b	1.153 ft
Base area	0.746 ft^2
Mean aerodynamic chord, $\bar{c}$	1.246 ft
Leading-edge sweep	$72^{\circ}48'$
Aspect ratio	1.10
Elevon	
Area, S_e (one elevon)	0.065 ft^2
Chord, $\bar{c}_e$	0.188 ft
Rudder	
Area, S_r (one rudder)	0.038 ft^2
Chord, $\bar{c}_r$	0.112 ft
Dive brake	
Area, S_{db} (one brake)	0.016 ft^2
Chord, $\bar{c}_{db}$	0.155 ft

Moment center is located at $0.43\bar{c}$ and 1.5 inches above lower wing surface.

[redacted]

TABLE II.- KEY TO DATA TABLES

Table	Mach number	α, deg	β, deg	δ_e, deg	δ_r, deg	Dive brake deflected
III	0.6, 0.9, 1.0, 1.2, 1.35, 1.7, 2.5, 3.2	5 to 40	0	-48 to +20	0	No
IV		5	-8 to +8			
V		10	-12 to +12			
VI		20	-8 to +8			
VII	1.7, 2.5 3.2	Varies as noted	-8 to +8			
VIII	0.6, 0.9, 1.0, 1.2, 1.35, 1.7, 2.5, 3.2	5 to 40	0			Yes
IX		5	-8 to +8			
X		10	-10 to +10			
XI		20	-8 to +8			
XII	1.7, 2.5, 3.2	Varies as noted	-8 to +8			
XIII	0.6, 0.9, 1.0, 1.2, 1.35, 1.7, 2.5, 3.2	5 to 40	0	0	13,33	No
XIV		5	-8 to +8			
XV		10	-12 to +12			
XVI		20	-8 to +8			
XVII	1.7, 2.5, 3.2	Varies as noted	-8 to +8			

[redacted]

[redacted]

TABLE III.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH RUDDER AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
05.0	00.0	-0.095	.0771	.0834	-0.088	.0851	-1.234	-0.002	.0005	.0014	-47.6	-00.1	-0.753	0.315	0.222	-0.066
10.3	00.0	0.065	.0890	.0891	0.080	.0758	0.731	0.000	.0006	.0024	-47.6	-00.1	-0.735	0.304	0.219	-0.070
15.7	00.0	0.240	.1324	.0944	0.267	.0623	1.814	0.000	.0006	.0032	-47.6	-00.1	-0.741	0.293	0.269	-0.090
21.1	00.0	0.429	.2068	.0995	0.475	.0380	2.077	-0.001	.0001	.0039	-47.6	00.0	-0.708	0.266	0.173	-0.051
25.9	00.0	0.534	.2990	.1092	0.611	.0352	1.786	0.000	-.0010	.0027	-47.6	-00.1	-0.769	0.266	0.201	-0.065
05.1	00.0	-0.011	.0544	.0578	-0.006	.0552	-0.200	0.001	.0008	.0009	-31.7	-00.1	-0.568	0.191	0.335	-0.090
10.4	00.0	0.137	.0715	.0696	0.148	.0454	1.921	0.000	.0017	.0028	-31.7	-00.1	-0.624	0.185	0.284	-0.080
15.8	00.0	0.312	.1161	.0773	0.332	.0266	2.689	0.003	.0014	.0023	-31.8	00.0	-0.572	0.158	0.216	-0.061
21.2	00.0	0.507	.2024	.0817	0.546	.0049	2.506	0.004	.0001	.0024	-31.8	00.0	-0.478	0.119	0.171	-0.050
26.1	00.0	0.671	.3051	.0854	0.737	-.0218	2.200	0.003	-.0009	.0023	-31.8	00.0	-0.402	0.091	0.114	-0.033
05.2	00.0	0.112	.0372	.0110	0.115	.0268	3.015	-0.002	-.0013	.0029	-16.0	-00.2	-0.090	-0.002	0.440	-0.127
10.5	00.0	0.281	.0653	.0144	0.288	.0127	4.299	0.000	-.0018	.0023	-16.0	-00.1	-0.023	-0.022	0.394	-0.113
15.9	00.0	0.456	.1238	.0228	0.472	-.0061	3.681	0.002	-.0023	.0011	-16.0	-00.1	0.032	-0.043	0.286	-0.080
21.3	00.0	0.639	.2218	.0327	0.676	-.0262	2.881	0.006	-.0021	.0006	-16.0	00.0	0.102	-0.070	0.203	-0.057
26.2	00.0	0.783	.3326	.0425	0.849	-.0478	2.353	0.006	-.0027	.0011	-16.1	00.0	0.144	-0.084	0.131	-0.037
05.3	00.0	0.250	.0555	-.0479	0.254	.0320	4.499	-0.002	-.0011	.0036	-00.1	-00.2	0.488	-0.136	0.421	-0.127
10.6	00.0	0.429	.1006	-.0520	0.440	.0193	4.263	-0.004	-.0038	.0055	-00.2	-00.2	0.632	-0.192	0.523	-0.160
16.0	00.0	0.592	.1720	-.0398	0.616	.0016	3.440	-0.001	-.0038	.0048	-00.2	-00.2	0.658	-0.211	0.424	-0.135
21.4	00.0	0.759	.2797	-.0232	0.809	-.0175	2.715	0.002	-.0036	.0037	-00.2	-00.1	0.662	-0.220	0.310	-0.107
26.3	00.0	0.886	.3970	-.0058	0.970	-.0374	2.231	0.003	-.0036	.0034	-00.2	-00.1	0.647	-0.219	0.197	-0.072
05.4	00.0	0.308	.0791	-.0723	0.314	.0498	3.891	-0.007	-.0019	.0066	08.7	-00.2	0.762	-0.217	0.424	-0.135
10.7	00.0	0.511	.1397	-.0872	0.528	.0418	3.656	-0.006	-.0037	.0056	08.6	-00.2	0.954	-0.282	0.564	-0.183
16.1	00.0	0.670	.2205	-.0759	0.705	.0255	3.039	0.000	-.0029	.0024	08.6	-00.3	0.970	-0.297	0.594	-0.209
21.5	00.0	0.828	.3334	-.0557	0.893	.0058	2.485	0.000	-.0031	.0041	08.6	-00.2	0.962	-0.309	0.442	-0.161
26.4	00.0	0.948	.4534	-.0349	1.051	-.0163	2.092	0.001	-.0043	.0044	08.6	-00.1	0.921	-0.303	0.290	-0.103
05.4	00.0	0.330	.0968	-.0847	0.338	.0652	3.413	-0.009	-.0041	.0081	15.1	-00.2	0.920	-0.283	0.435	-0.145
10.7	00.0	0.534	.1638	-.1005	0.555	.0610	3.258	-0.005	-.0019	.0055	15.1	-00.2	1.087	-0.331	0.534	-0.174
16.1	00.0	0.708	.2574	-.0981	0.752	.0498	2.752	0.002	-.0020	.0007	15.0	-00.3	1.171	-0.364	0.706	-0.250
21.5	00.0	0.855	.3686	-.0756	0.931	.0283	2.321	0.002	-.0023	.0026	15.0	-00.3	1.145	-0.378	0.540	-0.192
26.4	00.0	0.962	.4789	-.0481	1.075	.0003	2.010	0.001	-.0052	.0049	15.0	-00.1	1.062	-0.362	0.327	-0.105
(b) M = 0.90																
05.0	00.0	-0.073	.0964	.0873	-0.064	.1024	-0.755	0.001	.0004	.0009	-47.6	-00.1	-0.909	0.394	0.287	-0.102
10.3	00.0	0.113	.1099	.0857	0.131	.0878	1.029	0.001	.0004	.0021	-47.6	-00.1	-0.837	0.359	0.253	-0.090
15.6	00.0	0.316	.1602	.0850	0.348	.0688	1.975	0.001	.0003	.0032	-47.7	-00.1	-0.734	0.315	0.231	-0.080
20.9	00.0	0.511	.2439	.0816	0.564	.0448	2.094	0.003	-.0005	.0019	-47.7	00.0	-0.607	0.248	0.149	-0.053
24.1	00.0	0.616	.3058	.0610	0.687	.0272	2.014	0.005	-.0007	.0001	-47.8	00.0	-0.328	0.131	0.073	-0.028
05.1	00.0	0.023	.0699	.0562	0.029	.0676	0.326	0.001	.0006	.0015	-31.7	-00.1	-0.620	0.235	0.386	-0.123
10.4	00.0	0.209	.0923	.0573	0.222	.0530	2.261	0.002	.0007	.0013	-31.8	-00.1	-0.562	0.209	0.282	-0.087
15.7	00.0	0.416	.1542	.0571	0.442	.0355	2.696	0.003	.0003	.0014	-31.8	00.0	-0.492	0.180	0.196	-0.062
21.0	00.0	0.595	.2525	.0641	0.646	.0216	2.356	0.007	-.0006	.0010	-31.8	00.0	-0.461	0.185	0.154	-0.050
24.1	00.0	0.657	.3124	.0587	0.727	.0159	2.102	0.007	-.0017	.0002	-31.8	00.0	-0.339	0.125	0.066	-0.025
05.2	00.0	0.124	.0520	.0106	0.128	.0406	2.379	-0.002	-.0006	.0031	-16.0	-00.1	-0.057	-0.024	0.377	-0.121
10.4	00.0	0.302	.0852	.0144	0.312	.0289	3.541	0.001	-.0012	.0022	-16.0	-00.1	-0.036	-0.036	0.418	-0.141
15.8	00.0	0.503	.1551	.0184	0.526	.0123	3.241	0.004	-.0017	.0012	-16.0	-00.1	-0.021	-0.039	0.306	-0.104
21.1	00.0	0.723	.2761	.0124	0.774	-.0037	2.619	0.007	-.0023	.0013	-16.0	-00.1	0.053	-0.080	0.224	-0.085
24.2	00.0	0.731	.3226	.0346	0.799	-.0061	2.266	0.009	-.0020	.0000	-16.0	00.0	-0.024	-0.044	0.103	-0.038
05.2	00.0	0.198	.0645	-.0294	0.203	.0462	3.068	-0.001	.0000	.0018	-02.1	-00.1	0.500	-0.162	0.380	-0.130
10.1	00.0	0.377	.1065	-.0353	0.390	.0384	3.540	-0.004	-.0024	.0045	-02.2	-00.1	0.697	-0.251	0.431	-0.146
15.8	00.0	0.588	.1886	-.0324	0.617	.0210	3.117	0.000	-.0025	.0038	-02.2	-00.1	0.696	-0.248	0.393	-0.145
21.1	00.0	0.794	.3121	-.0360	0.853	.0041	2.543	0.004	-.0028	.0026	-02.2	-00.1	0.698	-0.252	0.326	-0.136
25.8	00.0	0.802	.3795	-.0053	0.887	-.0077	2.112	0.008	-.0034	.0006	-02.2	00.0	0.587	-0.218	0.089	-0.037
04.1	00.0	0.185	.0735	-.0474	0.190	.0598	2.520	-0.004	-.0017	.0051	09.7	-00.1	0.691	-0.251	0.364	-0.129
05.2	00.0	0.218	.0793	-.0483	0.224	.0592	2.744	-0.003	-.0016	.0042	09.7	-00.1	0.724	-0.263	0.385	-0.141
10.5	00.0	0.411	.1342	-.0594	0.429	.0569	3.066	-0.006	-.0033	.0069	09.6	-00.1	0.994	-0.345	0.385	-0.135
15.8	00.0	0.610	.2210	-.0604	0.647	.0463	2.759	-0.004	-.0033	.0070	09.6	-00.1	1.069	-0.384	0.387	-0.149
21.1	00.0	0.819	.3492	-.0645	0.890	.0295	2.346	0.002	-.0026	.0040	09.6	-00.1	1.041	-0.378	0.373	-0.161
25.9	00.0	0.844	.4243	-.0332	0.945	.0123	1.990	0.004	-.0031	.0019	09.6	00.0	0.906	-0.327	0.088	-0.038
-05.0	00.0	-0.049	.0687	-.0558	-0.055	.0641	-0.715	-0.006	-.0023	.0050	14.2	-00.1	0.693	-0.257	0.273	-0.106
00.0	00.0	0.105	.0708	-.0585	0.105	.0707	1.483	-0.008	-.0025	.0061	14.2	-00.1	0.761	-0.271	0.346	-0.130
05.2	00.0	0.261	.0953	-.0611	0.269	.0709	2.742	-0.006	-.0019	.0047	14.1	-00.1	0.864	-0.320	0.380	-0.151
10.5	00.0	0.446	.1508	-.0657	0.466	.0666	2.957	-0.004	-.0022	.0036	14.1	-00.1	1.039	-0.392	0.353	-0.132
15.8	00.0	0.647	.2440	-.0694	0.689	.0577	2.651	0.002	-.0015	.0004	14.0	-00.1	1.118	-0.429	0.346	-0.150
21.2	00.0	0.834	.3628	-.0672	0.909	.0364	2.299	0.004	-.0021	.0009	14.1	-00.1	1.077	-0.399	0.216	-0.104
25.8	00.0	0.864	.4508	-.0484	0.974	.0285	1.916	0.000	-.0023	.0023	14.1	00.0	1.087	-0.400	0.099	-0.050
(c) M = 1.00																
05.1	00.0	-0.061	.1351	.0931	-0.049	.1400	-0.453	-0.001	.0017	.0042	-47.4	-00.2	-1.139	0.505	0.497	-0.216
10.4	00.0	0.150	.1457	.0826	0.174	.1161	1.030	-0.002	.0016	.0044	-47.5	-00.2	-1.031	0.447	0.460	-0.184
15.8	00.0	0.406	.1944	.0557	0.444	.0762	2.090	0.000	.0014	.0034	-47.6	-00.1	-0.717	0.304	0.222	-0.093
21.1	00.0	0.604	.2923	.0385	0.669	.0544	2.067	0.006	.0002	.0010	-47.7	00.0	-0.547	0.222	0.109	-0.050
25.9	00.0	0.702	.3863	.0299	0.800	.0410	1.816	0.007	.0007	-.0023	-47.8	00.0	-0.269	0.102	0.014	-0.009
05.1	00.0	0.027	.0958	.0659	0.036	.0929	0.287	0.000	.0007	.0033	-31.6	-00.2	-0.803	0.326	0.526	-0.208
10.5	00.0	0.252	.1240	.0521	0.270	.0759	2.029	0.000	.0001	.0031	-31.6	-00.2	-0.732	0.298	0.435	-0.154
15.9	00.0	0.502	.1916	.0227	0.535	.0467	2.619	0.004	.0003	.0016	-31.8	-00.1	-0.460	0.181	0.183	-0.076
21.2	00.0	0.666	.3099	.0167	0.733	.0477	2.149	0.007	-.0006	.0008	-31.7	00.0	-0.515	0.208	0.075	-0.049
25.9	00.0	0.731	.3987	.0269	0.832	.0385	1.834	0.006	.0011	.0005	-31.8	00.0	-0.355	0.138	0.082	-0.032

[redacted]

[redacted]

TABLE III.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(c) M = 1.00 - Concluded																
05.2	00.0	0.112	.0769	.0264	0.119	.0663	1.462	-0.001	-.0003	.0028	-15.9	-00.2	-0.259	0.086	0.505	-0.203
10.5	00.0	0.331	.1155	.0142	0.347	.0526	2.870	0.001	-.0007	.0028	-15.9	-00.2	-0.205	0.067	0.534	-0.203
15.9	00.0	0.556	.1959	-.0063	0.588	.0358	2.836	0.003	-.0010	.0024	-15.9	-00.1	-0.073	0.011	0.323	-0.134
21.2	00.0	0.739	.3114	-.0209	0.802	.0220	2.374	0.006	-.0013	.0008	-16.0	00.0	0.085	-0.045	0.162	-0.059
25.9	00.0	0.762	.3855	.0093	0.854	.0131	1.977	0.007	-.0010	.0006	-16.0	00.0	0.019	-0.016	0.004	-0.004
05.2	00.0	0.223	.0902	-.0357	0.230	.0693	2.469	-0.003	-.0022	.0046	-00.3	-00.2	0.720	-0.298	0.519	-0.215
10.6	00.0	0.439	.1409	-.0464	0.457	.0575	3.113	-0.002	-.0027	.0048	-00.3	-00.3	0.754	-0.317	0.574	-0.225
15.9	00.0	0.650	.2292	-.0625	0.688	.0414	2.836	0.000	-.0028	.0043	-00.3	-00.1	0.816	-0.341	0.357	-0.145
21.3	00.0	0.823	.3480	-.0712	0.893	.0250	2.365	0.001	-.0030	.0039	-00.3	-00.1	0.884	-0.357	0.216	-0.094
26.0	00.0	0.851	.4339	-.0431	0.955	.0166	1.961	0.005	-.0026	.0015	-00.3	00.0	0.808	-0.318	0.060	-0.024
05.3	00.0	0.266	.1105	-.0588	0.275	.0854	2.407	-0.003	-.0005	.0046	08.6	-00.3	0.974	-0.384	0.556	-0.226
10.6	00.0	0.485	.1664	-.0715	0.508	.0757	2.880	-0.001	-.0017	.0045	08.5	-00.3	1.090	-0.434	0.591	-0.234
16.0	00.0	0.695	.2601	-.0872	0.740	.0583	2.673	-0.002	-.0025	.0041	08.5	-00.2	1.143	-0.453	0.381	-0.158
21.3	00.0	0.860	.3809	-.0943	0.940	.0419	2.259	0.001	-.0022	.0023	08.5	-00.1	1.158	-0.458	0.248	-0.112
26.0	00.0	0.880	.4629	-.0623	0.994	.0299	1.901	0.002	-.0018	.0022	08.5	00.0	1.056	-0.410	0.065	-0.027
(d) M = 1.20																
05.1	00.0	-0.002	.1317	.0700	0.010	.1313	-0.014	-0.002	.0004	.0043	-47.4	-00.3	-1.045	0.478	0.558	-0.248
10.5	00.0	0.207	.1477	.0455	0.230	.1075	1.398	-0.001	.0008	.0041	-47.5	-00.3	-0.862	0.375	0.492	-0.204
15.8	00.0	0.420	.2045	.0198	0.460	.0818	2.054	0.002	.0010	.0028	-47.6	-00.2	-0.681	0.302	0.306	-0.136
21.2	00.0	0.587	.3050	.0085	0.658	.0717	1.926	0.004	-.0003	.0023	-47.7	-00.1	-0.561	0.234	0.189	-0.085
26.0	00.0	0.695	.3994	.0157	0.800	.0537	1.740	0.005	-.0001	.0008	-47.8	00.0	-0.408	0.160	0.121	-0.051
05.2	00.0	0.052	.1067	.0527	0.061	.1016	0.483	0.000	.0004	.0030	-31.5	-00.4	-0.918	0.386	0.605	-0.269
10.5	00.0	0.254	.1323	.0307	0.274	.0835	1.920	0.001	.0004	.0026	-31.6	-00.3	-0.798	0.341	0.507	-0.208
15.9	00.0	0.450	.1965	.0083	0.487	.0656	2.292	0.004	.0001	.0019	-31.7	-00.2	-0.539	0.244	0.365	-0.153
21.2	00.0	0.620	.2939	-.0024	0.684	.0493	2.109	0.006	-.0001	.0002	-31.8	-00.1	-0.329	0.148	0.279	-0.129
26.0	00.0	0.747	.4026	-.0030	0.848	.0332	1.855	0.005	-.0009	.0007	-31.9	-00.1	-0.146	0.060	0.176	-0.089
05.2	00.0	0.135	.0832	.0110	0.142	.0705	1.621	0.002	-.0004	.0008	-15.8	-00.4	-0.232	0.090	0.707	-0.316
10.6	00.0	0.331	.1184	-.0080	0.347	.0555	2.793	0.003	-.0007	.0013	-15.9	-00.4	-0.134	0.052	0.616	-0.271
15.9	00.0	0.508	.1856	-.0318	0.539	.0394	2.735	0.005	-.0012	.0004	-16.0	-00.3	0.113	-0.058	0.473	-0.200
21.2	00.0	0.684	.2940	-.0353	0.744	.0257	2.327	0.008	-.0012	-.0002	-16.1	-00.1	0.231	-0.106	0.290	-0.125
26.1	00.0	0.784	.3971	-.0221	0.879	.0116	1.975	0.013	-.0036	-.0043	-16.1	00.0	0.238	-0.103	0.047	-0.014
05.3	00.0	0.226	.0947	-.0414	0.234	.0733	2.389	-0.004	-.0017	.0048	-00.3	-00.4	0.583	-0.271	0.680	-0.308
10.6	00.0	0.418	.1408	-.0580	0.437	.0611	2.970	-0.002	-.0019	.0035	-00.3	-00.4	0.656	-0.295	0.659	-0.297
15.9	00.0	0.599	.2217	-.0727	0.637	.0481	2.702	-0.001	-.0018	.0032	-00.4	-00.3	0.776	-0.337	0.502	-0.220
21.3	00.0	0.751	.3312	-.0766	0.820	.0355	2.267	0.002	-.0020	.0022	-00.4	-00.1	0.871	-0.369	0.293	-0.127
26.1	00.0	0.835	.4342	-.0585	0.941	.0222	1.923	0.003	-.0032	.0022	-00.4	00.0	0.861	-0.353	0.105	-0.041
05.3	00.0	0.266	.1136	-.0640	0.275	.0884	2.338	-0.006	-.0016	.0055	08.5	-00.4	0.952	-0.405	0.664	-0.305
10.6	00.0	0.456	.1627	-.0795	0.478	.0755	2.801	-0.003	-.0017	.0039	08.4	-00.4	1.012	-0.429	0.616	-0.273
16.0	00.0	0.633	.2476	-.0935	0.677	.0633	2.558	-0.003	-.0021	.0038	08.4	-00.3	1.101	-0.457	0.481	-0.212
21.3	00.0	0.781	.3600	-.0965	0.858	.0514	2.168	0.000	-.0021	.0024	08.4	-00.2	1.167	-0.480	0.307	-0.139
(e) M = 1.35																
10.4	00.0	0.197	.1368	.0322	0.219	.0986	1.443	-0.002	.0004	.0030	-47.6	-00.3	-0.700	0.320	0.476	-0.207
15.8	00.0	0.390	.1951	.0140	0.428	.0814	1.996	0.005	.0005	.0004	-47.6	-00.2	-0.628	0.296	0.320	-0.137
21.1	00.0	0.557	.2833	.0013	0.622	.0628	1.967	0.008	.0002	.0000	-47.7	-00.1	-0.428	0.186	0.201	-0.090
26.0	00.0	0.688	.3849	.0020	0.787	.0439	1.787	0.007	.0002	-.0006	-47.8	-00.1	-0.270	0.110	0.165	-0.082
05.2	00.0	0.052	.1015	.0422	0.061	.0964	0.512	0.000	.0008	.0028	-31.5	-00.4	-0.895	0.411	0.584	-0.269
10.5	00.0	0.245	.1234	.0189	0.263	.0766	1.982	0.005	.0007	.0010	-31.6	-00.3	-0.669	0.312	0.511	-0.218
15.8	00.0	0.431	.1807	-.0026	0.464	.0559	2.386	0.005	.0002	.0008	-31.7	-00.2	-0.356	0.180	0.394	-0.178
21.2	00.0	0.592	.2758	-.0092	0.652	.0428	2.148	0.006	.0001	.0009	-31.8	-00.2	-0.204	0.101	0.302	-0.145
26.0	00.0	0.718	.3832	-.0098	0.813	.0290	1.873	0.007	-.0002	.0004	-31.9	-00.1	-0.049	0.031	0.173	-0.091
05.2	00.0	0.135	.0764	.0012	0.141	.0637	1.762	0.000	-.0005	.0016	-15.9	-00.4	-0.189	0.081	0.650	-0.297
10.5	00.0	0.315	.1090	-.0180	0.330	.0493	2.893	0.002	-.0007	.0017	-15.9	-00.3	-0.045	0.021	0.557	-0.250
15.9	00.0	0.491	.1771	-.0335	0.521	.0357	2.775	0.004	-.0010	.0009	-16.0	-00.2	0.163	-0.070	0.415	-0.186
21.2	00.0	0.648	.2770	-.0387	0.704	.0236	2.338	0.007	-.0010	.0002	-16.1	-00.2	0.291	-0.130	0.298	-0.133
26.0	00.0	0.757	.3847	-.0300	0.849	.0128	1.967	0.009	-.0027	-.0021	-16.1	00.0	0.315	-0.136	0.086	-0.032
05.3	00.0	0.216	.0872	-.0458	0.223	.0669	2.475	-0.001	-.0014	.0034	-00.3	-00.4	0.537	-0.252	0.649	-0.292
10.6	00.0	0.394	.1310	-.0627	0.411	.0562	3.005	-0.001	-.0016	.0034	-00.3	-00.4	0.657	-0.296	0.570	-0.256
15.9	00.0	0.554	.2055	-.0726	0.589	.0456	2.695	0.000	-.0017	.0031	-00.4	-00.3	0.780	-0.340	0.421	-0.190
21.2	00.0	0.705	.3124	-.0747	0.770	.0355	2.256	0.003	-.0014	.0016	-00.4	-00.2	0.860	-0.369	0.301	-0.131
26.1	00.0	0.808	.4224	-.0649	0.911	.0239	1.912	0.010	-.0029	-.0014	-00.4	00.0	0.859	-0.365	0.112	-0.042
00.0	00.0	0.078	.0844	-.0507	0.078	.0844	0.924	-0.003	-.0013	.0034	09.5	-00.4	0.761	-0.341	0.611	-0.284
05.3	00.0	0.248	.1054	-.0655	0.257	.0820	2.355	-0.002	-.0012	.0036	09.5	-00.4	0.859	-0.378	0.666	-0.296
10.6	00.0	0.421	.1520	-.0810	0.442	.0717	2.771	-0.001	-.0015	.0038	09.4	-00.4	0.971	-0.419	0.566	-0.256
15.9	00.0	0.582	.2306	-.0910	0.623	.0618	2.524	0.000	-.0018	.0031	09.4	-00.3	1.093	-0.458	0.435	-0.193
(f) M = 1.70																
09.9	-00.2	0.178	.1196	.0210	0.196	.0871	1.489	0.003	.0010	.0016	-47.4	-00.8	-0.660	0.340	0.397	-0.173
15.1	-00.2	0.340	.1626	.0063	0.371	.0678	2.092	0.005	.0007	.0014	-47.6	-00.7	-0.447	0.221	0.365	-0.166
20.4	-00.2	0.497	.2355	-.0061	0.548	.0472	2.110	0.006	.0005	.0004	-47.8	-00.7	-0.206	0.097	0.260	-0.123
25.6	-00.3	0.625	.3384	-.0080	0.710	.0345	1.847	0.008	.0006	-.0001	-47.9	-00.6	-0.086	0.045	0.181	-0.087
29.6	-00.3	0.696	.4287	-.0038	0.817	.0288	1.624	0.008	.0004	.0001	-47.9	-00.5	-0.049	0.033	0.139	-0.063

[redacted]

[redacted]

TABLE III.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(f) M = 1.70 - Concluded																
04.7	-00.2	0.085	.0704	.0058	0.091	.0631	1.214	0.004	.0002	.0005	-23.7	-00.9	-0.352	0.178	0.493	-0.224
09.9	-00.2	0.235	.0933	-.0061	0.248	.0513	2.524	0.006	.0002	.0004	-23.8	-00.8	-0.184	0.099	0.457	-0.203
15.1	01.1	0.392	.1459	-.0166	0.417	.0381	2.690	-0.007	-.0009	.0033	-24.0	-00.7	0.019	-0.001	0.355	-0.162
20.4	-00.2	0.535	.2279	-.0229	0.581	.0267	2.348	0.008	.0001	-.0009	-24.0	-00.7	0.117	-0.044	0.279	-0.129
25.6	-00.3	0.658	.3361	-.0226	0.739	.0179	1.959	0.009	.0004	-.0009	-24.1	-00.5	0.187	-0.072	0.139	-0.063
29.6	-00.3	0.727	.4284	-.0190	0.844	.0131	1.698	0.009	.0004	-.0008	-24.1	-00.5	0.245	-0.102	0.098	-0.043
04.7	-00.2	0.164	.0703	-.0399	0.169	.0566	2.329	0.001	-.0013	.0028	-00.3	-00.9	0.400	-0.193	0.502	-0.225
09.9	-00.2	0.310	.1048	-.0491	0.323	.0496	2.954	0.003	-.0011	.0019	-00.4	-00.8	0.517	-0.242	0.471	-0.213
15.2	-00.2	0.454	.1671	-.0560	0.482	.0422	2.717	0.004	-.0011	.0014	-00.4	-00.8	0.639	-0.291	0.415	-0.188
20.4	-00.2	0.594	.2565	-.0621	0.646	.0334	2.315	0.006	-.0007	.0006	-00.5	-00.7	0.735	-0.332	0.280	-0.127
25.5	-00.3	0.719	.3759	-.0647	0.811	.0270	1.913	0.006	-.0010	.0010	-00.6	-00.5	0.848	-0.383	0.150	-0.066
29.5	-00.3	0.789	.4743	-.0619	0.920	.0237	1.663	0.007	-.0008	.0007	-00.6	-00.5	0.895	-0.401	0.106	-0.047
04.7	-00.2	0.217	.1090	-.0738	0.225	.0908	1.989	0.001	-.0015	.0033	19.2	-00.9	0.993	-0.452	0.553	-0.250
09.9	-00.2	0.357	.1498	-.0830	0.378	.0857	2.387	0.003	-.0011	.0022	18.1	-00.9	1.113	-0.499	0.489	-0.218
15.1	-00.2	0.499	.2172	-.0891	0.538	.0793	2.295	0.005	-.0011	.0016	18.1	-00.8	1.221	-0.538	0.417	-0.187
20.4	-00.2	0.632	.3118	-.0954	0.701	.0716	2.027	0.007	-.0009	.0009	17.0	-00.6	1.315	-0.565	0.262	-0.112
25.6	-00.3	0.750	.4345	-.0963	0.864	.0671	1.726	0.008	-.0006	.0007	17.0	-00.5	1.379	-0.590	0.133	-0.055
29.5	-00.3	0.819	.5356	-.0941	0.977	.0618	1.530	0.007	-.0007	.0013	16.5	-00.5	1.386	-0.592	0.086	-0.034
(g) M = 2.50																
04.6	00.0	0.004	.0851	.0290	0.011	.0845	0.049	0.002	.0010	.0004	-47.3	-00.6	-0.705	0.408	0.258	-0.124
09.8	00.0	0.135	.0913	.0159	0.149	.0669	1.484	0.003	.0007	.0001	-47.6	-00.6	-0.457	0.262	0.271	-0.127
14.9	00.0	0.268	.1196	.0031	0.290	.0463	2.242	0.005	.0004	-.0007	-47.8	-00.6	-0.177	0.104	0.229	-0.110
20.1	-00.1	0.388	.1790	-.0027	0.426	.0344	2.168	0.005	.0005	-.0007	-47.9	-00.6	-0.038	0.027	0.195	-0.090
25.3	-00.1	0.496	.2662	-.0026	0.562	.0281	1.862	0.006	.0009	-.0006	-47.9	-00.5	0.010	0.008	0.150	-0.070
29.2	-00.2	0.566	.3455	-.0015	0.663	.0246	1.639	0.007	.0011	-.0006	-48.0	-00.5	0.025	0.000	0.115	-0.054
04.6	00.0	0.054	.0519	.0036	0.058	.0474	1.039	0.002	.0001	-.0002	-23.8	-00.7	-0.153	0.091	0.290	-0.138
09.8	00.0	0.173	.0701	-.0027	0.182	.0396	2.461	0.003	.0002	-.0003	-23.9	-00.6	-0.043	0.038	0.286	-0.133
14.9	00.0	0.292	.1112	-.0086	0.311	.0319	2.529	0.005	.0002	-.0005	-24.0	-00.6	0.068	-0.017	0.243	-0.112
20.1	-00.1	0.407	.1770	-.0119	0.443	.0260	2.299	0.005	.0003	-.0006	-24.0	-00.6	0.152	-0.055	0.195	-0.091
25.3	-00.1	0.515	.2662	-.0119	0.579	.0204	1.933	0.006	.0006	-.0010	-24.1	-00.5	0.195	-0.074	0.135	-0.064
29.2	-00.2	0.587	.3479	-.0122	0.682	.0167	1.687	0.006	.0009	-.0006	-24.1	-00.5	0.242	-0.096	0.096	-0.047
04.6	00.0	0.099	.0535	-.0211	0.103	.0453	1.850	0.002	-.0003	-.0001	-00.1	-00.7	0.236	-0.114	0.304	-0.136
09.8	00.0	0.215	.0784	-.0270	0.225	.0405	2.741	0.003	-.0002	.0001	-00.2	-00.7	0.335	-0.157	0.297	-0.135
14.9	00.0	0.333	.1258	-.0327	0.354	.0355	2.645	0.004	-.0003	.0000	-00.3	-00.6	0.443	-0.205	0.251	-0.115
20.1	-00.1	0.447	.1983	-.0377	0.488	.0322	2.254	0.005	-.0002	-.0001	-00.3	-00.6	0.556	-0.256	0.198	-0.094
25.3	-00.1	0.558	.2962	-.0423	0.631	.0286	1.883	0.007	.0000	-.0001	-00.4	-00.5	0.678	-0.310	0.138	-0.067
29.2	-00.2	0.630	.3878	-.0479	0.744	.0277	1.639	0.006	.0002	.0005	-00.5	-00.5	0.810	-0.366	0.103	-0.050
04.6	00.0	0.133	.0748	-.0442	0.139	.0637	1.784	0.001	-.0005	.0006	17.0	-00.7	0.632	-0.297	0.312	-0.144
09.8	00.0	0.252	.1070	-.0524	0.267	.0624	2.360	0.002	-.0004	.0008	16.9	-00.7	0.776	-0.362	0.306	-0.140
14.9	01.2	0.372	.1638	-.0618	0.402	.0620	2.273	-0.007	-.0012	.0029	16.8	-00.6	0.965	-0.448	0.231	-0.106
20.1	-00.1	0.482	.2445	-.0698	0.538	.0629	1.976	0.004	-.0004	.0005	16.7	-00.6	1.125	-0.515	0.212	-0.095
25.3	-00.1	0.592	.3505	-.0773	0.685	.0635	1.689	0.005	-.0003	.0007	16.6	-00.5	1.298	-0.587	0.149	-0.069
29.2	-00.2	0.662	.4381	-.0783	0.792	.0585	1.512	0.005	-.0001	.0015	14.1	-00.5	1.356	-0.600	0.119	-0.050
(h) M = 3.20																
05.2	00.0	0.005	.0705	.0228	0.011	.0698	0.065	0.003	.0009	.0011	-47.6	-02.1	-0.583	0.336	0.148	-0.070
10.3	00.0	0.117	.0739	.0111	0.128	.0518	1.578	0.008	.0006	-.0003	-47.7	-02.1	-0.325	0.192	0.164	-0.075
15.0	00.0	0.217	.0984	.0044	0.235	.0386	2.205	0.006	.0003	-.0001	-47.9	-02.1	-0.144	0.087	0.148	-0.067
20.5	00.0	0.325	.1525	.0016	0.358	.0285	2.132	0.007	.0000	-.0005	-47.9	-00.7	-0.017	0.016	0.146	-0.062
25.7	00.0	0.423	.2320	.0022	0.482	.0252	1.825	0.008	.0000	-.0004	-48.0	-00.7	0.009	0.003	0.120	-0.049
30.8	00.0	0.512	.3329	.0027	0.610	.0233	1.537	0.009	.0000	-.0004	-48.0	-00.7	0.029	-0.003	0.096	-0.039
36.0	00.0	0.591	.4574	.0019	0.747	.0220	1.292	0.009	-.0003	-.0003	-48.0	-00.7	0.043	-0.011	0.082	-0.037
40.8	00.0	0.650	.5890	-.0007	0.877	.0202	1.104	0.009	-.0005	-.0003	-48.0	-00.7	0.061	-0.021	0.065	-0.031
05.2	00.0	0.043	.0439	.0024	0.047	.0398	0.984	0.002	.0000	.0004	-23.9	-02.1	-0.129	0.071	0.170	-0.078
10.3	00.0	0.144	.0598	-.0018	0.152	.0332	2.400	0.004	.0001	.0000	-23.9	-02.1	-0.038	0.029	0.171	-0.076
15.0	00.0	0.233	.0923	-.0033	0.249	.0285	2.526	0.004	-.0001	.0002	-24.0	-02.1	0.027	-0.002	0.152	-0.067
20.5	00.0	0.337	.1516	-.0040	0.369	.0236	2.224	0.006	-.0001	-.0005	-25.0	-00.7	0.096	-0.034	0.145	-0.062
25.7	00.0	0.436	.2326	-.0043	0.494	.0204	1.876	0.007	-.0002	-.0006	-24.0	-00.7	0.146	-0.055	0.110	-0.048
30.8	00.0	0.529	.3368	-.0055	0.627	.0177	1.571	0.008	-.0003	-.0003	-24.0	-00.7	0.203	-0.080	0.082	-0.038
36.0	00.0	0.611	.4634	-.0085	0.767	.0153	1.319	0.008	-.0007	-.0004	-24.1	-00.7	0.261	-0.109	0.075	-0.034
40.8	00.0	0.671	.5966	-.0128	0.898	.0125	1.125	0.008	-.0009	-.0003	-24.1	-00.7	0.319	-0.139	0.058	-0.027
05.2	00.0	0.074	.0444	-.0145	0.078	.0375	1.671	0.003	-.0001	.0006	00.0	-02.1	0.151	-0.076	0.173	-0.079
10.3	00.0	0.168	.0648	-.0183	0.177	.0337	2.594	0.000	-.0005	.0010	-00.1	-02.1	0.233	-0.110	0.173	-0.079
15.0	00.0	0.261	.1015	-.0206	0.278	.0303	2.566	0.001	-.0007	.0008	-00.1	-02.1	0.313	-0.145	0.153	-0.070
20.5	00.0	0.364	.1652	-.0226	0.399	.0269	2.204	0.004	-.0007	.0004	-00.2	-00.7	0.399	-0.187	0.142	-0.064
25.7	00.0	0.467	.2528	-.0272	0.530	.0252	1.845	0.004	-.0010	.0006	-00.2	-00.7	0.523	-0.244	0.106	-0.048
30.8	00.0	0.563	.3643	-.0325	0.670	.0237	1.545	0.005	-.0013	.0011	-00.3	-00.7	0.644	-0.300	0.082	-0.038
36.0	00.0	0.647	.4982	-.0398	0.816	.0227	1.298	0.006	-.0016	.0010	-00.4	-00.7	0.769	-0.358	0.069	-0.036
40.8	00.0	0.708	.6408	-.0469	0.955	.0217	1.105	0.005	-.0020	.0016	-05.4	-00.7	0.876	-0.408	0.057	-0.031
05.1	00.0	0.104	.0610	-.0347	0.109	.0514	1.703	0.010	-.0003	-.0005	16.7	-02.1	0.476	-0.238	0.183	-0.082
10.3	00.0	0.207	.0878	-.0422	0.219	.0493	2.354	0.012	-.0004	-.0007	16.6	-02.1	0.622	-0.307	0.183	-0.081
15.0	00.0	0.299	.1342	-.0485	0.324	.0517	2.232	0.009	-.0009	.0003	16.5	-02.1	0.778	-0.381	0.164	-0.071
20.5	00.0	0.407	.2116	-.0572	0.455	.0552	1.921	0.005	-.0013	.0012	16.4	-00.7	0.983	-0.476	0.155	-0.066
25.7	00.0	0.508	.3094	-.0658	0.592	.0585	1.642	0.005	-.0016	.0016	15.3	-00.7	1.185	-0.568	0.127	-0.050
30.8	00.0	0.602	.4315	-.0747	0.738	.0613	1.395	0.008	-.0019	.0016	15.2	-00.7	1.376	-0.646	0.106	-0.041
36.0	00.0	0.678	.5736	-.0836	0.886	.0650	1.183	0.009	-.0023	.0018	14.1	-00.7	1.543	-0.705	0.094	-0.035
40.8	00.0	0.732	.7220	-.0914	1.026	.0677	1.014	0.009	-.0025	.0020	13.1	-00.7	1.655	-0.739	0.079	-0.029

[redacted]

[redacted]

TABLE IV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
05.0	-08.0	-0.090	.0747	.0817	-0.083	.0823	-1.202	0.052	.0003	-.0062	-47.6	-00.1	-0.777	0.330	0.368	-0.121
05.0	-04.0	-0.091	.0761	.0827	-0.084	.0838	-1.196	0.024	.0011	-.0019	-47.6	-00.1	-0.768	0.322	0.295	-0.091
05.0	04.0	-0.100	.0764	.0839	-0.093	.0848	-1.310	-0.027	.0011	.0053	-47.6	00.0	-0.761	0.321	0.168	-0.049
04.9	08.1	-0.102	.0744	.0834	-0.095	.0830	-1.369	-0.053	.0021	.0092	-47.6	00.0	-0.771	0.322	0.119	-0.037
05.1	-08.0	-0.009	.0524	.0572	-0.004	.0530	-0.166	0.062	.0048	-.0122	-31.7	-00.2	-0.559	0.198	0.530	-0.162
05.1	-04.0	-0.011	.0536	.0584	-0.006	.0544	-0.202	0.031	.0030	-.0063	-31.7	-00.1	-0.562	0.193	0.431	-0.124
05.1	04.0	-0.018	.0534	.0583	-0.013	.0548	-0.334	-0.034	-.0017	.0101	-31.7	00.0	-0.582	0.192	0.243	-0.059
05.0	08.1	-0.016	.0519	.0569	-0.011	.0531	-0.302	-0.063	-.0029	.0156	-31.7	00.0	-0.583	0.190	0.200	-0.044
05.2	-08.1	0.107	.0350	.0137	0.110	.0251	3.066	0.059	.0045	-.0088	-15.9	-00.2	-0.135	0.015	0.534	-0.178
05.2	-04.0	0.107	.0356	.0122	0.110	.0257	3.011	0.030	.0029	-.0061	-15.9	-00.2	-0.118	0.008	0.503	-0.158
05.2	04.0	0.105	.0370	.0119	0.108	.0273	2.839	-0.040	-.0051	.0135	-16.0	-00.1	-0.076	-0.006	0.346	-0.094
05.1	08.1	0.097	.0354	.0146	0.100	.0265	2.743	-0.059	-.0043	.0126	-16.0	-00.1	-0.094	0.002	0.300	-0.070
05.3	-08.1	0.240	.0522	-.0447	0.244	.0297	4.602	0.049	.0061	-.0018	-00.1	-00.2	0.432	-0.114	0.503	-0.170
05.3	-04.0	0.249	.0539	-.0479	0.253	.0305	4.620	0.023	.0020	.0015	-00.1	-00.2	0.478	-0.126	0.452	-0.141
05.3	00.0	0.247	.0548	-.0477	0.251	.0316	4.505	-0.001	-.0010	.0035	-00.1	-00.2	0.481	-0.136	0.426	-0.129
05.3	04.0	0.236	.0535	-.0451	0.240	.0314	4.411	-0.027	-.0046	.0061	-00.1	-00.1	0.492	-0.149	0.399	-0.120
05.3	08.1	0.228	.0523	-.0430	0.232	.0310	4.362	-0.054	-.0085	.0068	-00.2	-00.1	0.532	-0.162	0.348	-0.107
05.3	-08.1	0.303	.0775	-.0723	0.309	.0487	3.913	0.045	.0044	.0023	08.7	-00.2	0.759	-0.213	0.476	-0.160
05.3	-04.0	0.303	.0778	-.0718	0.309	.0490	3.895	0.019	.0007	.0043	08.7	-00.2	0.764	-0.215	0.449	-0.147
05.3	04.0	0.294	.0787	-.0706	0.300	.0508	3.734	-0.033	-.0047	.0096	08.7	-00.1	0.767	-0.233	0.387	-0.118
05.3	08.1	0.287	.0770	-.0697	0.293	.0499	3.728	-0.058	-.0083	.0093	08.6	-00.1	0.796	-0.250	0.354	-0.110
05.3	-08.1	0.324	.0932	-.0827	0.331	.0624	3.472	0.045	.0029	.0036	15.1	-00.2	0.911	-0.275	0.476	-0.163
05.4	-04.0	0.325	.0941	-.0823	0.332	.0631	3.451	0.019	-.0005	.0055	14.1	-00.2	0.900	-0.273	0.445	-0.152
05.3	04.0	0.318	.0938	-.0815	0.325	.0636	3.384	-0.036	-.0075	.0121	14.1	-00.1	0.908	-0.283	0.383	-0.122
05.3	08.1	0.317	.0936	-.0822	0.324	.0633	3.383	-0.058	-.0094	.0101	14.1	-00.1	0.927	-0.296	0.342	-0.104
(b) M = 0.90																
05.0	-08.0	-0.072	.0935	.0854	-0.064	.0995	-0.775	0.069	.0010	-.0142	-47.6	-00.2	-0.910	0.404	0.478	-0.178
05.0	-04.0	-0.072	.0950	.0867	-0.063	.1010	-0.754	0.034	.0013	-.0062	-47.6	-00.1	-0.905	0.396	0.367	-0.132
05.0	04.0	-0.082	.0963	.0880	-0.073	.1031	-0.849	-0.033	.0003	.0091	-47.6	00.0	-0.924	0.400	0.186	-0.064
05.0	08.0	-0.086	.0942	.0874	-0.077	.1013	-0.909	-0.069	.0008	.0177	-47.6	00.0	-0.953	0.414	0.073	-0.026
05.1	-08.0	0.018	.0686	.0567	0.024	.0667	0.262	0.072	.0064	-.0127	-31.7	-00.2	-0.643	0.251	0.593	-0.216
05.1	-04.0	0.021	.0683	.0565	0.027	.0662	0.307	0.035	.0039	-.0060	-31.7	-00.1	-0.617	0.237	0.471	-0.162
05.1	04.0	0.014	.0690	.0568	0.020	.0675	0.201	-0.037	-.0024	.0104	-31.7	-00.1	-0.629	0.234	0.285	-0.087
05.1	08.0	0.009	.0686	.0578	0.015	.0675	0.130	-0.072	-.0045	.0164	-31.7	00.0	-0.652	0.239	0.222	-0.062
05.1	-08.0	0.115	.0519	.0141	0.119	.0413	2.214	0.071	.0046	-.0119	-15.9	-00.2	-0.144	0.031	0.551	-0.208
05.1	-04.0	0.121	.0522	.0123	0.125	.0411	2.312	0.034	.0033	-.0054	-15.9	-00.2	-0.106	0.008	0.473	-0.163
05.1	04.0	0.114	.0524	.0128	0.118	.0419	2.171	-0.036	-.0031	.0096	-16.0	-00.1	-0.054	-0.025	0.330	-0.102
05.1	08.0	0.106	.0505	.0149	0.110	.0408	2.096	-0.065	-.0040	.0142	-16.0	-00.1	-0.071	-0.011	0.278	-0.082
05.2	-08.0	0.194	.0626	-.0292	0.199	.0447	3.102	0.061	.0051	-.0062	-02.1	-00.2	0.477	-0.152	0.544	-0.208
05.2	-04.0	0.198	.0637	-.0295	0.203	.0454	3.108	0.030	.0034	-.0028	-02.1	-00.2	0.486	-0.154	0.470	-0.171
05.2	04.0	0.190	.0636	-.0292	0.195	.0461	2.985	-0.035	-.0038	.0083	-02.1	-00.1	0.542	-0.183	0.293	-0.098
05.2	08.0	0.188	.0625	-.0297	0.193	.0452	3.009	-0.063	-.0045	.0103	-02.2	-00.1	0.595	-0.210	0.254	-0.084
05.2	-08.0	0.247	.0849	-.0499	0.254	.0619	2.913	0.070	.0091	-.0081	08.7	-00.2	0.658	-0.219	0.559	-0.194
05.2	-04.0	0.248	.0845	-.0491	0.255	.0614	2.938	0.037	.0053	-.0026	08.7	-00.2	0.694	-0.234	0.477	-0.166
05.2	04.0	0.243	.0850	-.0501	0.250	.0623	2.863	-0.029	-.0057	.0112	08.7	-00.1	0.846	-0.298	0.349	-0.103
05.2	08.0	0.234	.0834	-.0497	0.241	.0617	2.810	-0.058	-.0085	.0152	08.7	00.0	0.876	-0.311	0.288	-0.077
05.2	-08.1	0.251	.0946	-.0606	0.259	.0712	2.659	0.065	.0071	-.0064	14.2	-00.2	0.766	-0.281	0.549	-0.209
05.2	-04.0	0.248	.0943	-.0600	0.256	.0712	2.635	0.032	.0041	-.0027	14.2	-00.2	0.783	-0.285	0.483	-0.188
05.2	04.0	0.239	.0940	-.0600	0.247	.0718	2.547	-0.040	-.0065	.0124	14.1	-00.1	0.917	-0.338	0.314	-0.113
05.2	08.0	0.241	.0944	-.0605	0.249	.0720	2.559	-0.071	-.0095	.0160	14.1	-00.1	0.961	-0.359	0.235	-0.081
(c) M = 1.00																
05.0	-08.1	-0.063	.1319	.0913	-0.051	.1370	-0.477	0.073	.0041	-.0141	-47.5	-00.4	-1.152	0.452	0.785	-0.335
05.1	-04.0	-0.061	.1336	.0927	-0.049	.1385	-0.457	0.035	.0036	-.0048	-47.4	-00.3	-1.141	0.507	0.647	-0.276
05.0	04.0	-0.074	.1343	.0939	-0.062	.1403	-0.553	-0.030	.0002	.0128	-47.4	-00.2	-1.176	0.514	0.394	-0.164
05.0	08.0	-0.077	.1328	.0933	-0.065	.1391	-0.580	-0.072	.0001	.0202	-47.4	-00.1	-1.210	0.529	0.269	-0.110
05.1	-08.1	0.023	.0988	.0679	0.032	.0963	0.235	0.079	.0078	-.0157	-31.6	-00.4	-0.889	0.366	0.856	-0.358
05.1	-04.0	0.025	.0972	.0671	0.034	.0945	0.261	0.038	.0050	-.0060	-31.6	-00.3	-0.838	0.344	0.687	-0.279
05.1	04.0	0.020	.0945	.0659	0.028	.0924	0.207	-0.038	-.0032	.0123	-31.6	-00.2	-0.823	0.328	0.392	-0.148
05.1	08.1	0.015	.0947	.0663	0.023	.0930	0.154	-0.077	-.0049	.0205	-31.6	-00.1	-0.880	0.350	0.300	-0.113
05.2	-08.1	0.112	.0706	.0249	0.118	.0601	1.588	0.078	.0069	-.0160	-15.9	-00.3	-0.279	0.075	0.688	-0.290
05.2	-04.0	0.113	.0754	.0267	0.119	.0648	1.494	0.039	.0043	-.0078	-15.9	-00.3	-0.276	0.087	0.636	-0.267
05.2	04.0	0.107	.0743	.0263	0.113	.0643	1.436	-0.041	-.0044	.0148	-15.9	-00.1	-0.247	0.081	0.310	-0.109
05.2	08.0	0.106	.0707	.0244	0.112	.0608	1.500	-0.075	-.0061	.0211	-15.9	00.0	-0.232	0.074	0.156	-0.046
05.2	-08.0	0.220	.0862	-.0350	0.227	.0657	2.551	0.066	.0092	-.0075	-00.2	-00.4	0.571	-0.214	0.741	-0.317
05.2	-04.0	0.222	.0889	-.0351	0.229	.0681	2.495	0.031	.0043	-.0028	-00.2	-00.3	0.655	-0.259	0.658	-0.274
05.2	04.0	0.217	.0898	-.0361	0.224	.0695	2.413	-0.038	-.0082	.0119	-00.3	-00.2	0.781	-0.325	0.382	-0.152
05.2	08.1	0.211	.0854	-.0354	0.219	.0657	2.472	-0.067	-.0119	.0146	-00.3	-00.1	0.804	-0.324	0.248	-0.092
05.3	-08.1	0.274	.1108	-.0616	0.283	.0850	2.473	0.069	.0119	-.0061	08.6	-00.4	0.891	-0.331	0.788	-0.314
05.3	-04.0	0.273	.1105	-.0587	0.282	.0848	2.469	0.037	.0078	-.0031	08.6	-00.3	0.889	-0.335	0.690	-0.268
05.3	04.0	0.270	.1134	-.0604	0.279	.0880	2.377	-0.030	-.0062	.0116	08.5	-00.2	1.083	-0.416	0.465	-0.167
05.2	08.0	0.259	.1092	-.0598	0.268	.0849	2.372	-0.058	-.0101	.0149	08.5	-00.1	1.099	-0.430	0.354	-0.120

[redacted]

TABLE IV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{n_e}	C_{N_r}	C_{l_r}
(d) M = 1.20																
05.2	-08.1	0.055	.1034	.0483	0.064	.0980	0.531	0.078	.0085	-.0117	-31.5	-00.5	-0.909	0.389	0.821	-0.378
05.2	-04.0	0.053	.1058	.0512	0.062	.1006	0.497	0.039	.0050	-.0053	-31.5	-00.4	-0.903	0.382	0.730	-0.331
05.2	04.0	0.044	.1064	.0536	0.053	.1020	0.409	-0.038	-.0042	.0107	-31.5	-00.3	-0.912	0.393	0.476	-0.204
05.1	08.1	0.042	.1045	.0515	0.051	.1003	0.399	-0.078	-.0074	.0173	-31.5	-00.2	-0.874	0.385	0.363	-0.151
05.2	-08.0	0.137	.0813	.0063	0.144	.0684	1.687	0.075	.0081	-.0093	-15.8	-00.5	-0.261	0.104	0.818	-0.372
05.2	-04.0	0.139	.0832	.0079	0.146	.0701	1.670	0.038	.0046	-.0051	-15.9	-00.5	-0.215	0.082	0.807	-0.366
05.2	04.0	0.132	.0823	.0086	0.139	.0699	1.603	-0.034	-.0050	.0081	-15.9	-00.3	-0.165	0.061	0.586	-0.257
05.2	08.1	0.127	.0805	.0075	0.134	.0686	1.579	-0.068	-.0080	.0147	-15.9	-00.3	-0.114	0.043	0.479	-0.206
05.2	-08.1	0.222	.0933	-.0427	0.230	.0724	2.383	0.068	.0083	-.0055	-00.2	-00.6	0.489	-0.222	0.870	-0.398
05.3	-04.0	0.224	.0946	-.0413	0.232	.0734	2.371	0.030	.0042	.0004	-00.2	-00.5	0.538	-0.247	0.767	-0.348
05.3	04.0	0.219	.0946	-.0414	0.227	.0739	2.318	-0.037	-.0077	.0098	-00.3	-00.4	0.630	-0.294	0.591	-0.265
05.2	08.1	0.214	.0934	-.0422	0.222	.0733	2.295	-0.069	-.0113	.0143	-00.3	-00.3	0.685	-0.319	0.490	-0.215
05.3	-08.1	0.265	.1116	-.0661	0.274	.0866	2.373	0.067	.0097	-.0069	08.5	-00.6	0.822	-0.347	0.888	-0.405
05.3	-04.0	0.269	.1132	-.0647	0.278	.0878	2.372	0.030	.0054	-.0004	08.5	-00.5	0.885	-0.375	0.786	-0.351
05.3	04.0	0.259	.1132	-.0642	0.268	.0887	2.285	-0.038	-.0080	.0122	08.4	-00.3	1.015	-0.431	0.583	-0.260
05.2	08.1	0.251	.1109	-.0646	0.260	.0873	2.262	-0.066	-.0115	.0158	08.4	-00.3	1.074	-0.453	0.488	-0.211
(e) M = 1.35																
05.1	-08.1	0.051	.0983	.0391	0.060	.0933	0.522	0.083	.0077	-.0118	-31.4	-00.5	-0.935	0.418	0.752	-0.347
05.2	-04.0	0.054	.1007	.0402	0.063	.0954	0.537	0.039	.0057	-.0032	-31.5	-00.4	-0.925	0.411	0.659	-0.307
05.1	04.0	0.049	.1007	.0416	0.058	.0958	0.488	-0.039	-.0040	.0088	-31.5	-00.3	-0.843	0.392	0.467	-0.213
05.1	08.1	0.045	.0991	.0418	0.054	.0946	0.457	-0.079	-.0061	.0152	-31.5	-00.2	-0.767	0.366	0.370	-0.165
05.2	-08.1	0.124	.0766	.0038	0.130	.0650	1.614	0.080	.0061	-.0110	-15.8	-00.5	-0.318	0.145	0.805	-0.364
05.2	-04.0	0.129	.0774	.0027	0.136	.0652	1.673	0.040	.0044	-.0049	-15.8	-00.5	-0.272	0.123	0.737	-0.333
05.2	04.0	0.126	.0766	.0033	0.132	.0648	1.639	-0.037	-.0041	.0081	-15.9	-00.3	-0.182	0.083	0.535	-0.244
05.2	08.1	0.119	.0762	.0046	0.125	.0651	1.556	-0.074	-.0056	.0142	-15.9	-00.3	-0.116	0.053	0.434	-0.197
05.2	-08.1	0.203	.0859	-.0430	0.210	.0669	2.364	0.069	.0048	-.0051	-00.2	-00.5	0.421	-0.194	0.797	-0.365
05.2	-04.0	0.211	.0867	-.0443	0.218	.0669	2.433	0.034	.0035	-.0011	-00.2	-00.5	0.464	-0.219	0.733	-0.329
05.2	04.0	0.211	.0875	-.0444	0.218	.0677	2.410	-0.036	-.0062	.0088	-00.3	-00.3	0.575	-0.270	0.562	-0.250
05.2	08.1	0.203	.0879	-.0427	0.210	.0689	2.308	-0.071	-.0075	.0116	-00.3	-00.3	0.628	-0.297	0.511	-0.229
05.2	-08.1	0.242	.1085	-.0673	0.251	.0858	2.230	0.071	.0060	-.0075	09.5	-00.5	0.795	-0.338	0.840	-0.383
05.3	-04.0	0.251	.1093	-.0689	0.260	.0857	2.295	0.034	.0042	-.0022	09.5	-00.5	0.851	-0.363	0.763	-0.344
05.3	04.0	0.247	.1097	-.0680	0.256	.0864	2.251	-0.037	-.0063	.0101	09.4	-00.3	0.988	-0.423	0.567	-0.252
05.2	08.0	0.241	.1093	-.0666	0.250	.0867	2.204	-0.074	-.0079	.0154	09.4	-00.3	1.045	-0.447	0.484	-0.214
(f) M = 1.70																
04.7	-08.3	0.008	.1069	.0384	0.017	.1059	0.077	0.066	-.0052	-.0073	-47.3	-01.0	-0.731	0.372	0.608	-0.278
04.7	-04.2	0.019	.1053	.0350	0.028	.1033	0.185	0.031	-.0023	-.0023	-47.4	-00.9	-0.703	0.355	0.520	-0.237
04.7	03.8	0.018	.1075	.0381	0.027	.1056	0.169	-0.031	.0023	.0058	-47.2	-00.7	-0.865	0.453	0.362	-0.164
04.7	07.9	0.014	.1067	.0396	0.023	.1052	0.133	-0.064	.0057	.0104	-47.1	-00.7	-0.923	0.487	0.273	-0.123
04.7	-08.3	0.069	.0704	.0127	0.075	.0644	0.986	0.080	-.0012	-.0118	-23.6	-01.0	-0.453	0.227	0.666	-0.302
04.7	-04.2	0.080	.0701	.0077	0.086	.0632	1.149	0.039	.0001	-.0050	-23.6	-01.0	-0.406	0.204	0.588	-0.269
04.7	03.8	0.086	.0692	.0062	0.091	.0619	1.236	-0.032	.0008	.0062	-23.7	-00.8	-0.281	0.142	0.391	-0.183
04.7	07.9	0.079	.0687	.0115	0.084	.0619	1.143	-0.072	.0017	.0120	-23.7	-00.7	-0.293	0.147	0.306	-0.142
04.7	-08.3	0.151	.0709	-.0331	0.156	.0582	2.124	0.070	-.0028	-.0064	-00.2	-01.0	0.307	-0.146	0.673	-0.304
04.7	-04.2	0.161	.0702	-.0371	0.166	.0567	2.289	0.033	-.0020	-.0018	-00.2	-01.0	0.349	-0.168	0.593	-0.267
04.7	03.8	0.164	.0708	-.0383	0.169	.0570	2.312	-0.031	-.0003	.0060	-00.3	-00.8	0.429	-0.210	0.423	-0.188
04.8	07.9	0.158	.0709	-.0337	0.163	.0575	2.222	-0.068	.0004	.0094	-00.3	-00.8	0.440	-0.218	0.373	-0.169
04.7	-08.3	0.200	.1051	-.0653	0.208	.0881	1.903	0.073	-.0022	-.0073	16.8	-01.1	0.832	-0.376	0.710	-0.321
04.7	-04.2	0.209	.1052	-.0687	0.217	.0875	1.987	0.035	-.0023	-.0013	16.8	-01.0	0.902	-0.406	0.631	-0.287
04.7	03.8	0.214	.1052	-.0696	0.222	.0870	2.034	-0.031	-.0005	.0075	16.7	-00.8	0.992	-0.448	0.463	-0.212
04.8	07.9	0.206	.1052	-.0654	0.214	.0875	1.958	-0.071	-.0003	.0120	16.7	-00.8	1.016	-0.462	0.400	-0.182
(g) M = 2.50																
04.6	-08.2	-0.007	.0862	.0309	0.000	.0865	-0.082	0.064	-.0072	-.0070	-47.4	-00.3	-0.601	0.356	0.383	-0.179
04.6	-04.1	0.000	.0864	.0300	0.007	.0861	0.000	0.030	-.0030	-.0028	-47.4	-00.2	-0.684	0.402	0.320	-0.149
04.6	04.0	0.002	.0865	.0302	0.009	.0861	0.023	-0.028	.0046	.0040	-47.3	-00.1	-0.742	0.422	0.181	-0.088
04.7	08.0	-0.004	.0884	.0329	0.003	.0885	-0.048	-0.065	.0078	.0092	-47.3	-00.1	-0.809	0.456	0.103	-0.054
04.6	-08.2	0.044	.0533	.0057	0.048	.0496	0.821	0.062	-.0068	-.0049	-23.8	-00.3	-0.170	0.102	0.420	-0.197
04.6	-04.1	0.050	.0522	.0045	0.054	.0480	0.956	0.028	-.0036	-.0018	-23.8	-00.3	-0.163	0.097	0.351	-0.165
04.6	04.0	0.053	.0524	.0045	0.057	.0479	1.010	-0.027	.0036	.0020	-23.8	-00.2	-0.186	0.107	0.230	-0.106
04.7	08.1	0.048	.0542	.0060	0.052	.0501	0.880	-0.062	.0065	.0059	-23.8	-00.1	-0.221	0.122	0.167	-0.081
04.6	-04.1	0.094	.0532	-.0210	0.098	.0454	1.766	0.028	-.0035	-.0010	-00.1	-00.7	0.234	-0.109	0.362	-0.168
04.6	04.0	0.100	.0535	-.0219	0.104	.0452	1.867	-0.026	.0024	.0019	-00.1	-00.6	0.253	-0.123	0.241	-0.111
04.7	08.1	0.098	.0541	-.0214	0.102	.0459	1.808	-0.061	.0045	.0050	-00.1	-00.6	0.257	-0.128	0.183	-0.084
04.6	-08.2	0.123	.0733	-.0414	0.129	.0630	1.684	0.062	-.0051	-.0042	14.6	-00.8	0.532	-0.246	0.442	-0.204
04.6	-04.1	0.128	.0724	-.0417	0.133	.0618	1.762	0.029	-.0030	-.0014	14.6	-00.7	0.557	-0.262	0.375	-0.172
04.6	04.0	0.132	.0718	-.0422	0.137	.0608	1.833	-0.027	.0017	.0030	14.5	-00.6	0.612	-0.289	0.247	-0.116
04.7	08.0	0.129	.0729	-.0418	0.135	.0620	1.776	-0.062	.0031	.0067	14.5	-00.6	0.635	-0.301	0.190	-0.087

[redacted]

TABLE IV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(h) M = 3.20																
05.1	-12.8	-0.019	.0700	.0242	-0.013	.0715	-0.276	0.094	-.0141	-.0120	-47.8	-02.2	-0.257	0.150	0.368	-0.172
05.1	-08.5	-0.007	.0695	.0231	-0.001	.0699	-0.105	0.062	-.0098	-.0071	-47.7	-02.1	-0.342	0.201	0.280	-0.133
05.2	-04.2	-0.002	.0718	.0238	0.005	.0716	-0.021	0.031	-.0040	-.0016	-47.6	-02.1	-0.530	0.308	0.201	-0.096
05.2	04.2	-0.002	.0716	.0237	0.004	.0715	-0.035	-0.026	.0054	.0035	-47.5	-02.0	-0.671	0.379	0.108	-0.051
05.1	08.5	-0.012	.0734	.0255	-0.005	.0742	-0.159	-0.056	.0102	.0076	-47.5	-02.0	-0.765	0.427	0.068	-0.033
05.1	12.8	-0.025	.0717	.0259	-0.018	.0736	-0.342	-0.082	.0151	.0127	-47.4	-02.0	-0.865	0.481	0.025	-0.016
05.1	-12.8	0.024	.0455	.0039	0.028	.0432	0.527	0.095	-.0093	-.0085	-23.9	-02.2	-0.093	0.052	0.401	-0.184
05.1	-08.5	0.037	.0446	.0022	0.041	.0411	0.831	0.062	-.0066	-.0044	-23.9	-02.2	-0.086	0.047	0.313	-0.143
05.2	-04.2	0.044	.0437	.0012	0.048	.0395	1.012	0.031	-.0032	-.0015	-23.9	-02.1	-0.093	0.051	0.232	-0.104
05.2	04.3	0.043	.0430	.0014	0.047	.0389	1.006	-0.026	.0034	.0021	-23.9	-02.0	-0.138	0.072	0.132	-0.058
05.1	08.6	0.036	.0444	.0024	0.040	.0409	0.815	-0.057	.0069	.0049	-23.9	-02.0	-0.176	0.089	0.097	-0.044
05.1	12.9	0.019	.0445	.0053	0.023	.0426	0.429	-0.087	.0097	.0083	-23.8	-02.0	-0.240	0.119	0.055	-0.026
05.1	-08.5	0.066	.0455	-.0145	0.070	.0393	1.455	0.062	-.0050	-.0038	00.0	-02.2	0.138	-0.069	0.321	-0.146
05.1	-12.8	0.053	.0459	-.0138	0.057	.0409	1.158	0.094	-.0074	-.0074	00.0	-02.2	0.128	-0.065	0.410	-0.187
05.2	-04.2	0.071	.0447	-.0151	0.075	.0380	1.595	0.029	-.0025	-.0009	00.0	-02.1	0.143	-0.074	0.236	-0.106
05.2	04.3	0.072	.0446	-.0152	0.076	.0379	1.618	-0.028	.0020	.0022	-00.1	-02.0	0.159	-0.084	0.135	-0.059
05.1	08.6	0.063	.0450	-.0147	0.067	.0391	1.404	-0.059	.0046	.0049	-00.1	-02.0	0.159	-0.086	0.102	-0.045
05.1	11.4	0.055	.0450	-.0141	0.059	.0398	1.227	-0.079	.0061	.0071	-00.1	-02.0	0.156	-0.086	0.078	-0.034
05.1	-12.8	0.083	.0629	-.0328	0.088	.0552	1.315	0.095	-.0056	-.0084	16.7	-02.2	0.376	-0.187	0.410	-0.187
05.1	-08.5	0.094	.0622	-.0334	0.099	.0535	1.506	0.062	-.0038	-.0043	16.7	-02.2	0.391	-0.194	0.322	-0.146
05.2	-04.2	0.101	.0619	-.0340	0.106	.0525	1.628	0.031	-.0019	-.0013	16.7	-02.1	0.425	-0.213	0.241	-0.109
05.2	04.2	0.102	.0616	-.0342	0.107	.0521	1.653	-0.025	.0009	.0029	16.7	-02.0	0.496	-0.249	0.140	-0.062
05.1	08.5	0.092	.0611	-.0335	0.097	.0525	1.504	-0.054	.0031	.0055	16.7	-02.0	0.518	-0.261	0.108	-0.047
05.1	12.8	0.081	.0589	-.0331	0.086	.0514	1.376	-0.077	.0051	.0073	16.6	-02.0	0.528	-0.267	0.074	-0.031

[redacted]

[redacted]

TABLE V.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{l_r}
(a) M = 0.60																
10.3	-12.1	0.069	.0803	.0878	0.082	.0666	0.856	0.077	.0149	-.0087	-47.5	-00.2	-0.824	0.356	0.376	-0.129
10.3	-08.1	0.072	.0822	.0849	0.086	.0678	0.881	0.050	.0070	-.0040	-47.5	-00.1	-0.781	0.334	0.325	-0.110
10.3	-04.0	0.067	.0872	.0877	0.082	.0737	0.773	0.024	.0047	.0006	-47.6	-00.1	-0.755	0.315	0.277	-0.090
10.3	04.0	0.056	.0864	.0883	0.071	.0749	0.653	-0.020	-.0028	.0024	-47.6	00.0	-0.722	0.292	0.179	-0.053
10.3	08.0	0.060	.0818	.0846	0.074	.0696	0.738	-0.045	-.0055	.0045	-47.6	00.0	-0.683	0.269	0.171	-0.056
10.3	12.0	0.051	.0798	.0874	0.064	.0695	0.633	-0.077	-.0113	.0126	-47.6	00.0	-0.717	0.276	0.090	-0.034
10.4	-12.1	0.156	.0629	.0632	0.165	.0335	2.483	0.082	.0200	-.0118	-31.7	-00.2	-0.620	0.226	0.454	-0.151
10.4	-08.1	0.150	.0673	.0634	0.160	.0389	2.234	0.053	.0127	-.0049	-31.7	-00.2	-0.549	0.194	0.409	-0.128
10.4	-04.0	0.146	.0692	.0654	0.156	.0416	2.109	0.029	.0072	-.0030	-31.7	-00.1	-0.542	0.181	0.348	-0.104
10.4	04.0	0.127	.0688	.0690	0.137	.0448	1.840	-0.029	-.0045	.0081	-31.7	00.0	-0.617	0.184	0.233	-0.059
10.4	08.0	0.130	.0659	.0663	0.140	.0413	1.975	-0.056	-.0099	.0109	-31.7	00.0	-0.586	0.174	0.209	-0.048
10.4	12.0	0.135	.0631	.0633	0.144	.0377	2.136	-0.088	-.0155	.0217	-31.7	00.0	-0.588	0.175	0.155	-0.036
10.5	-12.1	0.270	.0605	.0193	0.277	.0099	4.471	0.094	.0249	-.0166	-15.9	-00.3	-0.193	0.036	0.642	-0.217
10.5	-08.1	0.272	.0628	.0171	0.279	.0119	4.331	0.065	.0162	-.0103	-15.9	-00.2	-0.122	0.009	0.556	-0.180
10.5	-04.0	0.273	.0637	.0168	0.280	.0126	4.285	0.034	.0083	-.0043	-16.0	-00.2	-0.089	-0.006	0.473	-0.145
10.5	04.0	0.263	.0626	.0170	0.270	.0134	4.204	-0.030	-.0102	.0081	-16.0	-00.1	-0.018	-0.031	0.335	-0.095
10.5	08.0	0.261	.0623	.0168	0.268	.0135	4.190	-0.058	-.0167	.0136	-16.0	-00.1	0.020	-0.047	0.302	-0.077
10.5	12.1	0.254	.0595	.0167	0.261	.0120	4.279	-0.090	-.0258	.0237	-16.0	-00.1	0.044	-0.060	0.268	-0.065
10.6	-12.1	0.416	.0928	-.0436	0.426	.0140	4.484	0.089	.0340	-.0127	-00.1	-00.3	0.336	-0.087	0.594	-0.203
10.6	-08.1	0.419	.0965	-.0485	0.430	.0171	4.346	0.060	.0220	-.0069	-00.1	-00.2	0.457	-0.127	0.572	-0.184
10.6	-04.0	0.426	.0998	-.0511	0.437	.0191	4.266	0.028	.0098	.0002	-00.2	-00.2	0.561	-0.162	0.562	-0.173
10.4	00.0	0.420	.0990	-.0525	0.431	.0209	4.241	-0.001	-.0026	.0053	-00.2	-00.2	0.625	-0.187	0.531	-0.159
10.6	04.0	0.421	.1006	-.0519	0.432	.0209	4.181	-0.032	-.0147	.0104	-00.2	-00.2	0.689	-0.211	0.489	-0.150
10.6	08.0	0.416	.0989	-.0511	0.427	.0202	4.205	-0.058	-.0258	.0140	-00.2	-00.2	0.766	-0.232	0.434	-0.128
10.6	12.0	0.393	.0897	-.0424	0.403	.0156	4.381	-0.068	-.0324	.0088	-00.2	-00.1	0.705	-0.205	0.384	-0.106
10.7	-12.1	0.486	.1293	-.0741	0.502	.0362	3.762	0.076	.0333	-.0026	08.7	-00.2	0.661	-0.180	0.533	-0.183
10.7	-08.1	0.502	.1374	-.0831	0.519	.0412	3.656	0.044	.0202	.0061	08.7	-00.2	0.831	-0.232	0.522	-0.168
10.7	-04.0	0.511	.1405	-.0868	0.528	.0426	3.635	0.017	.0087	.0094	08.6	-00.2	0.920	-0.264	0.544	-0.170
10.7	04.0	0.492	.1367	-.0841	0.509	.0425	3.600	-0.020	-.0126	.0028	08.6	-00.2	0.977	-0.295	0.550	-0.186
10.7	08.0	0.482	.1350	-.0805	0.499	.0428	3.571	-0.046	-.0235	.0055	08.6	-00.2	1.036	-0.313	0.496	-0.163
10.6	12.1	0.448	.1216	-.0673	0.463	.0363	3.687	-0.062	-.0311	.0041	08.6	-00.1	0.958	-0.288	0.416	-0.119
10.7	-12.1	0.512	.1572	-.0864	0.532	.0587	3.255	0.066	.0270	.0058	14.1	-00.2	0.903	-0.266	0.536	-0.182
10.7	-08.1	0.521	.1640	-.0952	0.542	.0638	3.173	0.035	.0161	.0133	14.1	-00.2	1.024	-0.301	0.543	-0.173
10.7	-04.0	0.531	.1646	-.0983	0.552	.0624	3.223	0.011	.0066	.0129	14.1	-00.2	1.072	-0.318	0.531	-0.162
10.7	04.0	0.522	.1630	-.0981	0.543	.0626	3.202	-0.022	-.0095	.0017	14.0	-00.2	1.099	-0.343	0.539	-0.180
10.7	08.0	0.503	.1587	-.0925	0.524	.0620	3.172	-0.048	-.0194	.0040	14.0	-00.2	1.157	-0.374	0.492	-0.163
10.7	12.1	0.473	.1447	-.0800	0.492	.0541	3.272	-0.061	-.0276	.0004	14.0	-00.2	1.083	-0.340	0.448	-0.135
(b) M = 0.90																
10.3	-12.1	0.100	.1033	.0872	0.117	.0837	0.969	0.102	.0165	-.0140	-47.6	-00.2	-0.920	0.419	0.503	-0.187
10.3	-08.1	0.110	.1040	.0833	0.127	.0825	1.059	0.064	.0091	-.0092	-47.6	-00.1	-0.892	0.397	0.409	-0.153
10.3	-04.0	0.109	.1068	.0844	0.126	.0856	1.017	0.028	.0045	-.0022	-47.6	-00.1	-0.858	0.371	0.333	-0.121
10.3	04.0	0.097	.1072	.0862	0.115	.0880	0.908	-0.031	-.0044	.0058	-47.6	00.0	-0.830	0.347	0.201	-0.066
10.3	08.0	0.098	.1027	.0845	0.115	.0834	0.957	-0.065	-.0086	.0116	-47.6	00.0	-0.788	0.326	0.155	-0.059
10.3	12.1	0.086	.1021	.0872	0.103	.0850	0.844	-0.103	-.0142	.0173	-47.6	00.0	-0.800	0.337	0.095	-0.035
10.4	-12.1	0.196	.0864	.0593	0.208	.0496	2.265	0.104	.0224	-.0108	-31.7	-00.2	-0.686	0.276	0.520	-0.192
10.4	-08.0	0.201	.0898	.0573	0.214	.0520	2.238	0.065	.0148	-.0047	-31.7	-00.1	-0.620	0.246	0.440	-0.158
10.4	-04.0	0.204	.0909	.0572	0.217	.0525	2.244	0.036	.0088	-.0035	-31.7	-00.1	-0.567	0.216	0.363	-0.128
10.4	04.0	0.195	.0897	.0574	0.208	.0530	2.174	-0.030	-.0067	.0062	-31.8	00.0	-0.551	0.195	0.236	-0.061
10.4	08.0	0.192	.0875	.0567	0.205	.0513	2.199	-0.061	-.0131	.0069	-31.8	00.0	-0.508	0.179	0.258	-0.068
10.3	12.1	0.181	.0841	.0579	0.193	.0501	2.150	-0.100	-.0200	.0133	-31.8	00.0	-0.491	0.172	0.196	-0.052
10.4	-12.1	0.289	.0825	.0201	0.299	.0286	3.503	0.117	.0226	-.0198	-15.9	-00.3	-0.242	0.064	0.691	-0.256
10.4	-08.1	0.291	.0846	.0172	0.302	.0302	3.446	0.075	.0152	-.0137	-15.9	-00.2	-0.163	0.031	0.602	-0.219
10.2	-04.0	0.287	.0831	.0166	0.297	.0306	3.453	0.038	.0083	-.0067	-15.9	-00.2	-0.123	0.007	0.516	-0.183
10.4	04.0	0.287	.0842	.0156	0.298	.0306	3.415	-0.039	-.0102	.0118	-16.0	-00.1	-0.006	-0.056	0.338	-0.105
10.4	08.0	0.286	.0842	.0165	0.297	.0308	3.402	-0.074	-.0160	.0172	-16.0	-00.1	0.010	-0.061	0.328	-0.090
10.4	12.1	0.276	.0811	.0185	0.286	.0297	3.402	-0.109	-.0223	.0221	-16.0	00.0	0.018	-0.057	0.286	-0.076
10.5	-12.1	0.379	.1038	-.0285	0.392	.0328	3.657	0.102	.0240	-.0091	-02.1	-00.2	0.415	-0.121	0.611	-0.235
10.5	-08.0	0.383	.1079	-.0325	0.396	.0363	3.546	0.067	.0171	-.0065	-02.1	-00.2	0.515	-0.167	0.592	-0.218
10.5	-04.0	0.388	.1112	-.0346	0.402	.0385	3.490	0.033	.0090	-.0024	-02.2	-00.2	0.625	-0.218	0.523	-0.185
10.3	00.0	0.380	.1090	-.0351	0.393	.0392	3.484	-0.001	-.0018	.0039	-02.2	-00.1	0.695	-0.249	0.434	-0.149
10.1	04.0	0.368	.1065	-.0352	0.381	.0400	3.457	-0.034	-.0115	.0093	-02.2	-00.1	0.754	-0.278	0.362	-0.118
10.1	08.0	0.362	.1029	-.0338	0.374	.0377	3.514	-0.064	-.0180	.0103	-02.2	-00.1	0.786	-0.292	0.347	-0.111
10.1	12.0	0.348	.0956	-.0294	0.359	.0330	3.637	-0.087	-.0230	.0086	-02.2	-00.1	0.753	-0.266	0.314	-0.097
10.3	-12.1	0.413	.1273	-.0488	0.429	.0509	3.243	0.095	.0231	-.0049	08.7	-00.2	0.635	-0.216	0.574	-0.215
10.3	-08.0	0.418	.1323	-.0537	0.435	.0549	3.159	0.063	.0159	-.0037	08.7	-00.2	0.781	-0.267	0.521	-0.185
10.3	-04.0	0.427	.1386	-.0597	0.445	.0595	3.080	0.022	.0053	.0075	08.6	-00.1	0.998	-0.337	0.449	-0.154
10.3	04.0	0.417	.1363	-.0597	0.435	.0590	3.062	-0.027	-.0118	.0081	08.6	-00.1	1.067	-0.367	0.378	-0.120
10.3	08.0	0.402	.1296	-.0529	0.419	.0552	3.104	-0.047	-.0174	.0085	08.6	-00.1	1.035	-0.379	0.327	-0.095
10.3	12.0	0.391	.1236	-.0493	0.407	.0514	3.164	-0.068	-.0228	.0064	08.6	-00.1	1.016	-0.364	0.380	-0.113
10.3	-12.1	0.425	.1436	-.0609	0.444	.0650	2.960	0.079	.0206	-.0001	14.2	-00.2	0.794	-0.295	0.537	-0.213
10.3	-08.0	0.428	.1443	-.0628	0.447	.0651	2.967	0.058	.0156	-.0030	14.2	-00.2	0.841	-0.315	0.489	-0.191
10.3	-04.0	0.428	.1445	-.0627	0.447	.0653	2.963	0.027	.0080	.0001	14.1	-00.1	0.924	-0.346	0.407	-0.160
10.3	04.0	0.422	.1446	-.0634	0.441	.066	2.918	-0.029	-.0101	.0051	14.1	-00.1	1.050	-0.400	0.298	-0.114
10.3	08.0	0.414	.1421	-.0621	0.433	.0656	2.915	-0.056	-.0177	.0082	14.1	-00.1	1.099	-0.419	0.282	-0.114
10.3	12.1	0.409	.1406	-.0626	0.428	.0650	2.913	-0.072	-.0229	.0031	14.1	-00.1	1.117	-0.423	0.366	-0.145

[redacted]

[redacted]

TABLE V.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{n_e}	C_{N_r}	C_{n_r}
(c) M = 1.00																
10.2	-12.1	0.137	.1398	.0812	0.160	.1132	0.982	0.113	.0234	-.0173	-47.4	-00.4	-1.131	0.515	0.805	-0.326
10.2	-08.1	0.142	.1408	.0791	0.165	.1133	1.010	0.074	.0158	-.0118	-47.4	-00.3	-1.082	0.488	0.704	-0.282
10.2	-04.0	0.138	.1412	.0814	0.161	.1144	0.978	0.031	.0090	-.0010	-47.5	-00.3	-1.069	0.465	0.591	-0.229
10.2	00.0	0.135	.1449	.0822	0.159	.1185	0.935	0.001	.0011	.0038	-47.5	-00.2	-1.030	0.446	0.486	-0.184
10.2	04.0	0.133	.1425	.0811	0.156	.1166	0.932	-0.033	-.0064	.0090	-47.5	-00.2	-0.936	0.396	0.393	-0.154
10.2	08.0	0.131	.1408	.0817	0.154	.1153	0.931	-0.071	-.0123	.0182	-47.5	-00.1	-0.954	0.409	0.241	-0.095
10.2	12.1	0.124	.1383	.0818	0.147	.1141	0.900	-0.113	-.0202	.0242	-47.5	00.0	-0.918	0.402	0.118	-0.050
10.3	-12.1	0.233	.1149	.0538	0.250	.0711	2.029	0.114	.0273	-.0168	-31.6	-00.4	-0.840	0.353	0.785	-0.319
10.3	-08.1	0.233	.1167	.0546	0.250	.0729	1.996	0.071	.0174	-.0100	-31.6	-00.3	-0.771	0.321	0.686	-0.264
10.3	-04.0	0.233	.1192	.0557	0.251	.0753	1.958	0.037	.0098	-.0033	-31.6	-00.2	-0.754	0.306	0.550	-0.199
10.3	00.0	0.237	.1181	.0535	0.254	.0736	2.004	0.002	.0005	.0034	-31.7	-00.1	-0.698	0.285	0.427	-0.143
10.3	04.0	0.227	.1207	.0551	0.245	.0780	1.880	-0.033	-.0073	.0106	-31.6	-00.1	-0.736	0.290	0.392	-0.135
10.3	08.0	0.226	.1198	.0558	0.244	.0772	1.888	-0.068	-.0152	.0164	-31.6	-00.1	-0.730	0.291	0.303	-0.099
10.3	12.1	0.218	.1138	.0556	0.235	.0728	1.917	-0.102	-.0243	.0217	-31.7	00.0	-0.685	0.270	0.190	-0.057
10.5	-12.1	0.337	.1065	.0073	0.351	.0428	3.165	0.114	.0278	-.0165	-15.9	-00.4	-0.262	0.073	0.753	-0.309
10.5	-08.1	0.331	.1105	.0092	0.346	.0478	2.998	0.075	.0194	-.0127	-15.9	-00.3	-0.193	0.057	0.702	-0.284
10.5	-04.0	0.324	.1136	.0151	0.339	.0523	2.849	0.040	.0096	-.0078	-15.9	-00.3	-0.233	0.077	0.681	-0.278
10.3	00.0	0.313	.1110	.0158	0.328	.0528	2.822	0.000	-.0014	.0033	-15.9	-00.2	-0.199	0.062	0.514	-0.188
10.5	04.0	0.313	.1148	.0151	0.329	.0554	2.730	-0.038	-.0118	.0138	-15.9	-00.2	-0.154	0.041	0.444	-0.153
10.5	08.0	0.314	.1068	.0167	0.328	.0475	2.937	-0.071	-.0206	.0203	-15.9	-00.1	-0.130	0.026	0.232	-0.073
10.5	12.0	0.317	.1021	.0130	0.330	.0423	3.103	-0.100	-.0281	.0186	-15.9	00.0	-0.064	0.009	0.203	-0.060
10.6	-12.1	0.423	.1245	-.0400	0.439	.0444	3.399	0.097	.0276	-.0031	-00.1	-00.3	0.456	-0.153	0.639	-0.265
10.6	-08.1	0.418	.1286	-.0400	0.435	.0493	3.255	0.059	.0194	-.0006	-00.2	-00.3	0.557	-0.203	0.566	-0.229
10.6	-04.0	0.427	.1384	-.0450	0.445	.0574	3.083	0.032	.0099	-.0028	-00.2	-00.3	0.675	-0.270	0.664	-0.265
10.4	00.0	0.418	.1371	-.0454	0.436	.0592	3.050	-0.004	-.0033	.0053	-00.3	-00.3	0.772	-0.323	0.568	-0.225
10.6	04.0	0.416	.1352	-.0440	0.434	.0563	3.079	-0.027	-.0148	.0095	-00.3	-00.2	0.847	-0.356	0.432	-0.160
10.5	08.0	0.408	.1283	-.0388	0.425	.0510	3.183	-0.046	-.0217	.0050	-00.3	-00.1	0.810	-0.320	0.370	-0.139
10.5	12.0	0.406	.1229	-.0398	0.422	.0461	3.307	-0.080	-.0289	.0069	-00.3	-00.1	0.799	-0.311	0.286	-0.109
10.4	-12.1	0.469	.1544	-.0653	0.489	.0667	3.037	0.091	.0264	.0014	08.6	-00.3	0.853	-0.304	0.725	-0.285
10.4	-08.1	0.462	.1567	-.0639	0.483	.0702	2.949	0.063	.0204	-.0009	08.6	-00.3	0.872	-0.323	0.676	-0.258
10.4	-04.0	0.461	.1617	-.0656	0.483	.0753	2.854	0.035	.0109	-.0011	08.6	-00.3	0.996	-0.375	0.650	-0.245
10.4	03.9	0.448	.1587	-.0644	0.469	.0750	2.821	-0.023	-.0115	.0059	08.5	-00.2	1.123	-0.432	0.503	-0.177
10.4	08.0	0.437	.1511	-.0603	0.457	.0696	2.891	-0.043	-.0198	.0055	08.5	-00.2	1.142	-0.445	0.456	-0.159
10.4	12.1	0.435	.1474	-.0615	0.454	.0665	2.947	-0.067	-.0255	.0039	08.5	-00.2	1.114	-0.430	0.409	-0.152
(d) M = 1.20																
10.5	-08.1	0.196	.1492	.0465	0.220	.1110	1.314	0.065	.0130	-.0047	-47.4	-00.4	-1.039	0.484	0.667	-0.294
10.5	-04.0	0.195	.1472	.0476	0.219	.1091	1.328	0.032	.0079	-.0004	-47.5	-00.3	-0.927	0.425	0.592	-0.256
10.4	04.0	0.185	.1471	.0489	0.209	.1109	1.260	-0.039	-.0070	.0095	-47.5	-00.2	-0.822	0.363	0.390	-0.166
10.4	08.1	0.182	.1480	.0502	0.206	.1124	1.231	-0.073	-.0121	.0131	-47.5	-00.2	-0.854	0.386	0.303	-0.131
10.5	-12.2	0.243	.1279	.0301	0.262	.0813	1.898	0.127	.0209	-.0200	-31.5	-00.5	-0.944	0.413	0.801	-0.361
10.5	-08.1	0.252	.1293	.0268	0.271	.0811	1.945	0.079	.0162	-.0109	-31.5	-00.4	-0.880	0.384	0.668	-0.309
10.3	-04.0	0.245	.1297	.0297	0.264	.0836	1.886	0.035	.0095	-.0015	-31.5	-00.3	-0.855	0.368	0.604	-0.262
10.5	04.0	0.242	.1300	.0304	0.262	.0835	1.864	-0.037	-.0091	.0076	-31.6	-00.2	-0.713	0.311	0.432	-0.175
10.5	08.0	0.242	.1289	.0301	0.261	.0825	1.874	-0.079	-.0164	.0152	-31.6	-00.1	-0.624	0.277	0.335	-0.129
10.5	12.1	0.226	.1253	.0334	0.245	.0819	1.804	-0.122	-.0210	.0236	-31.7	-00.1	-0.574	0.250	0.242	-0.090
10.5	-12.2	0.314	.1151	-.0069	0.330	.0555	2.729	0.126	.0193	-.0212	-15.8	-00.6	-0.314	0.132	0.897	-0.411
10.5	-08.1	0.327	.1172	-.0120	0.343	.0551	2.790	0.078	.0143	-.0119	-15.8	-00.5	-0.217	0.092	0.772	-0.354
10.6	-04.0	0.330	.1180	-.0110	0.346	.0553	2.796	0.036	.0079	-.0037	-15.9	-00.4	-0.155	0.060	0.718	-0.322
10.4	00.0	0.318	.1156	-.0090	0.334	.0561	2.754	0.000	-.0012	.0026	-15.9	-00.4	-0.099	0.034	0.620	-0.271
10.5	04.0	0.323	.1162	-.0107	0.339	.0549	2.781	-0.034	-.0097	.0083	-16.0	-00.3	-0.016	-0.001	0.531	-0.233
10.5	08.0	0.321	.1141	-.0106	0.336	.0533	2.809	-0.065	-.0155	.0156	-16.0	-00.2	0.063	-0.036	0.447	-0.189
10.5	12.1	0.300	.1084	-.0056	0.315	.0516	2.770	-0.101	-.0196	.0197	-16.0	-00.2	0.111	-0.060	0.355	-0.149
10.6	-12.2	0.398	.1340	-.0543	0.416	.0583	2.972	0.113	.0182	-.0133	-00.2	-00.5	0.431	-0.185	0.854	-0.390
10.6	-08.1	0.410	.1378	-.0592	0.428	.0599	2.972	0.068	.0136	-.0058	-00.2	-00.5	0.515	-0.224	0.773	-0.353
10.6	-04.0	0.412	.1393	-.0581	0.431	.0608	2.960	0.032	.0069	-.0009	-00.3	-00.5	0.590	-0.264	0.745	-0.337
10.4	00.0	0.402	.1368	-.0563	0.420	.0617	2.938	-0.003	-.0023	.0039	-00.3	-00.4	0.653	-0.294	0.662	-0.296
10.6	04.0	0.404	.1381	-.0587	0.423	.0611	2.929	-0.037	-.0112	.0098	-00.4	-00.3	0.741	-0.337	0.571	-0.253
10.6	08.0	0.404	.1349	-.0582	0.422	.0581	2.996	-0.063	-.0168	.0114	-00.4	-00.3	0.817	-0.368	0.468	-0.202
10.6	12.1	0.385	.1291	-.0541	0.402	.0561	2.981	-0.096	-.0207	.0161	-00.4	-00.2	0.864	-0.386	0.354	-0.154
10.4	-12.2	0.434	.1549	-.0767	0.455	.0736	2.802	0.111	.0183	-.0128	08.6	-00.5	0.769	-0.316	0.841	-0.381
10.4	-08.1	0.444	.1577	-.0807	0.465	.0745	2.814	0.063	.0134	-.0032	08.5	-00.5	0.853	-0.351	0.735	-0.331
10.4	-04.0	0.444	.1585	-.0795	0.465	.0753	2.799	0.028	.0069	-.0001	08.5	-00.4	0.933	-0.390	0.692	-0.311
10.4	04.0	0.436	.1580	-.0796	0.457	.0764	2.756	-0.032	-.0097	.0086	08.4	-00.3	1.090	-0.460	0.561	-0.242
10.4	08.0	0.428	.1530	-.0788	0.449	.0729	2.800	-0.054	-.0156	.0104	08.4	-00.3	1.164	-0.484	0.487	-0.209
10.4	12.1	0.412	.1493	-.0750	0.432	.0724	2.759	-0.086	-.0201	.0144	08.4	-00.2	1.191	-0.491	0.381	-0.165
(e) M = 1.35																
10.4	-08.1	0.188	.1415	.0361	0.211	.1049	1.331	0.067	.0096	-.0061	-47.4	-00.4	-0.972	0.459	0.617	-0.285
10.4	-04.0	0.199	.1391	.0316	0.221	.1005	1.431	0.029	.0063	-.0005	-47.5	-00.3	-0.781	0.352	0.540	-0.243
10.4	04.0	0.194	.1398	.0336	0.216	.1022	1.386	-0.035	-.0051	.0088	-47.5	-00.2	-0.823	0.373	0.366	-0.162
10.4	08.0	0.189	.1405	.0362	0.211	.1039	1.342	-0.074	-.0089	.0127	-47.5	-00.1	-0.807	0.378	0.269	-0.120
10.4	12.1	0.170	.1431	.0430	0.193	.1099	1.187	-0.120	-.0098	.0228	-47.4	-00.1	-0.930	0.433	0.178	-0.077
10.5	-12.2	0.221	.1217	.0255	0.239	.0795	1.812	0.130	.0141	-.0205	-31.5	-00.5	-0.904	0.410	0.803	-0.360
10.5	-08.1	0.234	.1220	.0195	0.252	.0773	1.915	0.083	.0125	-.0122	-31.5	-00.4	-0.829	0.377	0.678	-0.301
10.5	-04.1	0.245	.1235	.0173	0.263	.0767	1.981	0.043	.0088	-.0041	-31.5	-00.3	-0.775	0.351	0.568	-0.247
10.5	04.0	0.241	.1218	.0178	0.259	.0758	1.977	-0.038	-.0068	.0075	-31.6	-00.2	-0.562	0.260	0.431	-0.179
10.5	08.0	0.238	.1220	.0196	0.256	.0765	1.949	-0.083	-.0109	.0163	-31.7	-00.2	-0.492	0.234	0.326	-0.141
10.5	12.1	0.219	.1208	.0261	0.237	.0789	1.811	-0.127	-.0131	.0246	-31.6	-00.1	-0.542	0.255	0.245	-0.103
10.5	-12.2	0.292	.1074	-.0115	0.307	.0521	2.722	0.126	.0116	-.0218	-15.8	-00.6	-0.207	0.097	0.856	-0.398
10.5	-08.1	0.306	.1095	-.0171	0.321	.0516	2.796	0.079	.0094	-.0127	-15.9	-00.5	-0.137	0.060	0.726	-0.339
10.5	-04.0	0.318	.1103	-.0199	0.333	.0501	2.884	0.039	.0057	-.0055	-15.9	-00.4	-0.076	0.035	0.611	-0.282
10.5	04.0	0.316	.1105	-.0196	0.331	.0506	2.862	-0.038	-.0067	.0091	-16.0	-00.3	0.077	-0.038	0.483	-0.217
10.5	08.1	0.306	.1101	-.0166	0.321	.0522	2.778	-0.074	-.0096	.0161	-16.0	-00.2	0.130	-0.065	0.390	-0.170
10.5	12.1	0.291	.1065	-.0119	0.306	.0514	2.736	-0.120	-.0121	.0245	-16.0	-00.2	0.118	-0.060	0.290	-0.130

[redacted]

[redacted]

TABLE V.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_c}	C_{h_e}	C_{N_r}	C_{h_r}
(e) M = 1.35 - Concluded																
10.5	-12.1	0.371	.1294	-.0551	0.388	.0591	2.863	0.116	.0113	-.0162	-00.2	-00.6	0.445	-0.190	0.856	-0.400
10.6	-08.1	0.381	.1310	-.0590	0.399	.0586	2.912	0.072	.0088	-.0075	-00.2	-00.5	0.515	-0.225	0.727	-0.335
10.6	-04.0	0.390	.1319	-.0611	0.408	.0578	2.959	0.035	.0050	-.0027	-00.3	-00.4	0.577	-0.254	0.641	-0.294
10.6	00.0	0.394	.1321	-.0621	0.412	.0571	2.987	-0.003	-.0017	.0037	-00.3	-00.3	0.655	-0.295	0.555	-0.254
10.6	04.0	0.386	.1319	-.0610	0.404	.0586	2.929	-0.039	-.0078	.0097	-00.4	-00.3	0.723	-0.331	0.512	-0.232
10.5	08.1	0.378	.1315	-.0586	0.396	.0597	2.878	-0.075	-.0109	.0153	-00.4	-00.2	0.786	-0.360	0.418	-0.186
10.5	12.1	0.364	.1293	-.0557	0.382	.0602	2.820	-0.120	-.0139	.0223	-00.4	-00.2	0.821	-0.380	0.371	-0.164
(f) M = 1.70																
09.9	-12.3	0.156	.1215	.0306	0.175	.0927	1.288	0.118	.0015	-.0189	-47.4	-01.1	-0.697	0.359	0.704	-0.321
09.9	-08.3	0.167	.1194	.0261	0.185	.0889	1.397	0.074	.0025	-.0114	-47.4	-01.0	-0.636	0.323	0.605	-0.276
09.9	-04.2	0.175	.1191	.0229	0.193	.0872	1.470	0.038	.0028	-.0046	-47.4	-00.9	-0.648	0.316	0.498	-0.222
09.9	-00.2	0.178	.1202	.0213	0.196	.0877	1.481	0.004	.0010	.0011	-47.4	-00.8	-0.655	0.334	0.396	-0.175
09.9	03.8	0.176	.1211	.0231	0.194	.0889	1.451	-0.030	-.0010	.0066	-47.4	-00.7	-0.656	0.346	0.326	-0.145
10.0	07.9	0.168	.1208	.0272	0.186	.0899	1.387	-0.069	-.0016	.0136	-47.3	-00.6	-0.707	0.372	0.247	-0.110
10.0	11.9	0.157	.1205	.0314	0.176	.0912	1.306	-0.111	-.0014	.0197	-47.3	-00.5	-0.765	0.398	0.154	-0.062
09.9	-12.3	0.210	.0919	.0067	0.223	.0542	2.289	0.129	.0034	-.0238	-23.6	-01.1	-0.359	0.186	0.741	-0.330
09.9	-08.3	0.222	.0924	.0007	0.235	.0526	2.407	0.084	.0022	-.0162	-23.7	-01.0	-0.281	0.151	0.648	-0.291
09.9	-04.2	0.234	.0923	-.0045	0.246	.0506	2.530	0.043	.0013	-.0075	-23.8	-00.9	-0.212	0.115	0.562	-0.249
09.9	-00.2	0.238	.0926	-.0070	0.250	.0502	2.567	0.005	.0002	.0004	-23.8	-00.8	-0.163	0.089	0.456	-0.201
09.9	03.8	0.238	.0928	-.0055	0.250	.0503	2.559	-0.032	-.0009	.0082	-23.8	-00.7	-0.118	0.068	0.343	-0.156
10.0	07.9	0.229	.0931	-.0004	0.242	.0518	2.464	-0.074	-.0020	.0161	-23.8	-00.7	-0.144	0.079	0.261	-0.123
10.0	11.9	0.219	.0924	.0052	0.232	.0527	2.372	-0.117	-.0034	.0212	-23.8	-00.6	-0.180	0.094	0.194	-0.086
09.9	-12.3	0.290	.1026	-.0387	0.303	.0511	2.822	0.120	.0026	-.0181	-00.2	-01.1	0.361	-0.165	0.738	-0.334
09.9	-08.3	0.299	.1032	-.0429	0.312	.0501	2.894	0.075	.0012	-.0115	-00.3	-01.0	0.415	-0.190	0.651	-0.294
09.9	-04.2	0.302	.1024	-.0466	0.315	.0488	2.948	0.035	-.0002	-.0045	-00.3	-00.9	0.477	-0.217	0.582	-0.256
09.9	-00.2	0.309	.1040	-.0485	0.322	.0492	2.967	0.002	-.0012	.0024	-00.4	-00.8	0.512	-0.241	0.461	-0.211
09.9	03.8	0.309	.1045	-.0471	0.322	.0495	2.953	-0.033	-.0022	.0094	-00.4	-00.7	0.544	-0.259	0.355	-0.160
10.0	07.9	0.301	.1042	-.0437	0.315	.0502	2.894	-0.071	-.0035	.0148	-00.4	-00.7	0.559	-0.269	0.314	-0.140
10.0	12.0	0.294	.1031	-.0404	0.307	.0502	2.848	-0.113	-.0050	.0185	-00.4	-00.6	0.566	-0.276	0.266	-0.118
09.9	-12.3	0.337	.1445	-.0728	0.357	.0842	2.333	0.123	.0037	-.0195	16.8	-01.1	0.889	-0.397	0.797	-0.356
09.9	-08.3	0.344	.1439	-.0760	0.364	.0824	2.392	0.079	.0019	-.0124	16.8	-01.0	0.950	-0.423	0.693	-0.308
09.9	-04.2	0.350	.1441	-.0780	0.370	.0815	2.432	0.038	.0002	-.0050	16.7	-01.0	1.009	-0.449	0.608	-0.274
09.9	-00.2	0.354	.1451	-.0800	0.374	.0818	2.442	0.003	-.0014	.0029	16.7	-00.8	1.078	-0.481	0.480	-0.214
09.9	03.8	0.355	.1461	-.0789	0.375	.0824	2.431	-0.035	-.0027	.0114	16.6	-00.8	1.128	-0.503	0.381	-0.170
10.0	07.9	0.353	.1475	-.0762	0.373	.0839	2.391	-0.073	-.0045	.0181	16.6	-00.7	1.168	-0.524	0.342	-0.151
10.0	11.9	0.347	.1471	-.0740	0.367	.0843	2.356	-0.116	-.0065	.0227	16.6	-00.7	1.196	-0.538	0.311	-0.135
(g) M = 2.50																
09.8	-08.1	0.126	.0902	.0175	0.140	.0674	1.402	0.063	-.0032	-.0100	-47.7	-00.3	-0.306	0.169	0.409	-0.188
09.8	-04.1	0.134	.0890	.0162	0.147	.0649	1.504	0.030	-.0017	-.0048	-47.7	-00.2	-0.341	0.196	0.338	-0.156
09.8	00.0	0.134	.0912	.0165	0.148	.0670	1.474	0.003	.0008	-.0001	-47.6	-00.2	-0.467	0.264	0.270	-0.126
09.8	03.9	0.134	.0933	.0176	0.148	.0690	1.437	-0.027	.0023	.0056	-47.5	-00.1	-0.535	0.298	0.195	-0.091
09.8	08.0	0.132	.0920	.0180	0.146	.0680	1.436	-0.061	.0035	.0114	-47.5	-00.1	-0.600	0.331	0.122	-0.056
09.9	12.1	0.120	.0927	.0208	0.134	.0707	1.292	-0.098	.0048	.0174	-47.4	00.0	-0.689	0.372	0.053	-0.026
09.8	-12.2	0.156	.0712	.0018	0.166	.0436	2.193	0.102	-.0031	-.0140	-23.9	-00.4	-0.084	0.062	0.510	-0.233
09.8	-08.1	0.165	.0713	-.0007	0.175	.0421	2.318	0.063	-.0022	-.0084	-23.9	-00.3	-0.060	0.049	0.428	-0.195
09.8	-04.1	0.169	.0706	-.0016	0.179	.0407	2.400	0.031	-.0011	-.0041	-23.9	-00.3	-0.051	0.044	0.355	-0.163
09.8	00.0	0.172	.0700	-.0022	0.181	.0397	2.453	0.003	.0002	-.0004	-23.9	-00.2	-0.051	0.044	0.284	-0.131
09.8	02.6	0.175	.0699	-.0023	0.184	.0391	2.497	-0.016	.0009	.0024	-23.9	-00.2	-0.060	0.049	0.237	-0.109
09.8	03.9	0.175	.0703	-.0021	0.184	.0394	2.484	-0.026	.0011	.0040	-23.9	-00.1	-0.071	0.053	0.213	-0.098
09.8	08.0	0.172	.0717	-.0008	0.182	.0410	2.404	-0.061	.0015	.0089	-23.9	-00.1	-0.100	0.068	0.143	-0.066
09.9	12.1	0.161	.0713	.0014	0.171	.0424	2.261	-0.099	.0022	.0148	-23.8	00.0	-0.135	0.085	0.075	-0.038
09.8	-12.2	0.204	.0782	-.0255	0.214	.0424	2.603	0.100	-.0013	-.0120	-00.2	-00.8	0.283	-0.131	0.520	-0.241
09.8	-08.1	0.212	.0786	-.0266	0.222	.0414	2.693	0.063	-.0009	-.0073	-00.2	-00.8	0.304	-0.141	0.439	-0.201
09.8	-04.1	0.215	.0779	-.0268	0.225	.0402	2.756	0.031	-.0006	-.0034	-00.2	-00.7	0.319	-0.149	0.366	-0.167
09.8	00.0	0.216	.0781	-.0269	0.226	.0402	2.763	0.003	-.0003	.0002	-00.2	-00.7	0.337	-0.157	0.294	-0.137
09.8	03.9	0.220	.0794	-.0275	0.230	.0407	2.765	-0.026	-.0003	.0043	-00.2	-00.6	0.353	-0.167	0.223	-0.102
09.8	08.0	0.219	.0805	-.0275	0.230	.0416	2.726	-0.060	-.0008	.0086	-00.2	-00.5	0.366	-0.174	0.161	-0.074
09.9	12.1	0.213	.0799	-.0271	0.224	.0419	2.670	-0.097	-.0007	.0137	-00.2	-00.5	0.379	-0.182	0.107	-0.048
09.8	-12.2	0.237	.1030	-.0477	0.251	.0611	2.301	0.100	.0000	-.0127	14.5	-00.9	0.608	-0.278	0.534	-0.243
09.8	-08.1	0.243	.1025	-.0484	0.257	.0596	2.371	0.063	-.0003	-.0075	14.5	-00.8	0.646	-0.297	0.453	-0.206
09.8	-04.1	0.246	.1021	-.0485	0.260	.0587	2.410	0.030	-.0004	-.0032	14.5	-00.7	0.679	-0.314	0.378	-0.173
09.8	00.0	0.247	.1018	-.0487	0.261	.0582	2.429	0.001	-.0006	.0009	14.5	-00.7	0.709	-0.334	0.303	-0.142
09.8	03.9	0.251	.1034	-.0494	0.265	.0590	2.427	-0.028	-.0012	.0059	14.4	-00.6	0.752	-0.354	0.232	-0.107
09.8	08.0	0.252	.1053	-.0497	0.266	.0605	2.390	-0.063	-.0022	.0109	14.4	-00.5	0.788	-0.379	0.173	-0.079
09.9	12.1	0.246	.1050	-.0496	0.260	.0611	2.338	-0.099	-.0026	.0161	14.4	-00.5	0.819	-0.386	0.123	-0.056
(h) M = 3.50																
10.2	-11.3	0.103	.0720	.0114	0.114	.0526	1.428	0.082	-.0052	-.0124	-47.9	-02.2	-0.133	0.068	0.369	-0.167
10.2	-08.4	0.111	.0718	.0105	0.122	.0509	1.545	0.064	-.0039	-.0095	-47.9	-02.2	-0.159	0.083	0.312	-0.141
10.2	-04.2	0.116	.0731	.0107	0.127	.0512	1.585	0.033	-.0020	-.0051	-47.8	-02.1	-0.202	0.114	0.232	-0.104
10.2	04.3	0.117	.0719	.0103	0.128	.0498	1.629	-0.018	.0028	.0042	-47.7	-02.0	-0.393	0.219	0.113	-0.053
10.2	08.6	0.107	.0720	.0120	0.118	.0518	1.485	-0.046	.0051	.0088	-47.6	-02.0	-0.496	0.269	0.073	-0.033
10.2	11.5	0.096	.0708	.0134	0.107	.0527	1.354	-0.064	.0066	.0114	-47.6	-02.0	-0.567	0.303	0.047	-0.020
10.2	-11.3	0.130	.0602	-.0010	0.139	.0361	2.165	0.083	-.0027	-.0099	-23.9	-02.2	-0.023	0.019	0.381	-0.172
10.2	-08.4	0.137	.0598	-.0018	0.145	.0345	2.284	0.063	-.0019	-.0075	-23.9	-02.2	-0.016	0.016	0.324	-0.145
10.2	-04.2	0.145	.0597	-.0023	0.153	.0329	2.423	0.035	-.0007	-.0040	-23.9	-02.1	-0.017	0.018	0.236	-0.106
10.3	00.0	0.145	.0591	-.0022	0.153	.0323	2.448	0.010	.0002	-.0010	-23.9	-02.1	-0.031	0.024	0.170	-0.077
10.2	04.3	0.142	.0587	-.0023	0.150	.0324	2.417	-0.019	.0011	.0026	-23.9	-02.0	-0.058	0.037	0.120	-0.053
10.2	08.6	0.135	.0582	-.0016	0.143	.0333	2.314	-0.046	.0024	.0061	-23.9	-02.0	-0.092	0.053	0.082	-0.035
10.2	11.5	0.125	.0579	-.0005	0.133	.0349	2.152	-0.070	.0033	.0093	-23.9	-02.0	-0.120	0.066	0.054	-0.024

[redacted]

[redacted]

TABLE V.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(h) M = 3.50 - Concluded																
10.2	-11.3	0.162	.0660	-.0202	0.171	.0361	2.453	0.079	-.0008	-.0086	-00.1	-02.2	0.219	-0.103	0.382	-0.173
10.2	-08.4	0.166	.0655	-.0194	0.175	.0348	2.534	0.059	-.0004	-.0061	-00.1	-02.2	0.216	-0.103	0.321	-0.146
10.3	-04.2	0.172	.0656	-.0193	0.181	.0337	2.623	0.029	-.0001	-.0024	-00.1	-02.1	0.227	-0.108	0.239	-0.108
10.3	04.3	0.170	.0652	-.0193	0.179	.0337	2.608	-0.026	-.0006	.0041	-00.1	-02.0	0.251	-0.122	0.125	-0.055
10.2	08.6	0.164	.0641	-.0195	0.173	.0337	2.563	-0.052	-.0002	.0070	-00.1	-02.0	0.258	-0.129	0.086	-0.037
10.2	11.5	0.157	.0629	-.0195	0.166	.0339	2.500	-0.070	.0003	.0089	-00.1	-02.0	0.262	-0.132	0.064	-0.026
10.2	-11.3	0.196	.0903	-.0427	0.209	.0539	2.172	0.082	.0009	-.0097	16.7	-02.2	0.522	-0.256	0.395	-0.177
10.2	-08.4	0.199	.0895	-.0423	0.212	.0525	2.225	0.061	.0009	-.0068	16.7	-02.2	0.538	-0.263	0.337	-0.150
10.2	-04.2	0.206	.0897	-.0418	0.219	.0514	2.300	0.033	.0005	-.0032	16.6	-02.1	0.571	-0.281	0.250	-0.111
10.3	00.0	0.206	.0879	-.0418	0.218	.0497	2.340	0.011	-.0006	-.0003	16.6	-02.1	0.621	-0.307	0.183	-0.081
10.2	04.3	0.203	.0866	-.0419	0.215	.0490	2.341	-0.011	-.0014	.0026	16.6	-02.0	0.657	-0.326	0.129	-0.057
10.2	06.6	0.198	.0848	-.0424	0.210	.0482	2.335	-0.035	-.0017	.0054	16.6	-02.0	0.693	-0.345	0.094	-0.040
10.2	11.5	0.189	.0848	-.0423	0.201	.0499	2.229	-0.056	-.0016	.0085	16.5	-02.0	0.710	-0.353	0.073	-0.030

[redacted]

[redacted]

TABLE VI.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 20^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{l_r}
(a) M = 0.60																
21.1	-08.0	0.425	.2034	.1026	0.470	.0366	2.091	0.072	.0209	-.0212	-47.5	-00.2	-0.751	0.338	0.375	-0.129
21.1	-04.0	0.435	.2095	.1008	0.481	.0386	2.074	0.035	.0075	-.0094	-47.6	-00.1	-0.713	0.301	0.308	-0.106
21.1	04.0	0.432	.2074	.0989	0.478	.0376	2.085	-0.038	-.0070	.0179	-47.6	00.0	-0.738	0.259	0.122	-0.040
21.1	08.1	0.415	.2005	.1038	0.459	.0378	2.068	-0.070	-.0211	.0258	-47.7	00.0	-0.723	0.241	0.072	-0.024
21.2	-08.0	0.510	.1971	.0821	0.547	-.0008	2.589	0.069	.0259	-.0180	-31.7	-00.1	-0.641	0.210	0.367	-0.118
21.2	-04.0	0.516	.2027	.0813	0.554	.0022	2.544	0.036	.0126	-.0080	-31.8	-00.1	-0.549	0.155	0.279	-0.091
21.2	04.0	0.508	.1999	.0801	0.546	.0025	2.542	-0.032	-.0121	.0125	-31.8	00.0	-0.436	0.089	0.110	-0.027
21.1	08.1	0.500	.1931	.0825	0.536	-.0007	2.590	-0.066	-.0256	.0215	-31.9	00.0	-0.421	0.080	0.074	-0.020
21.3	-08.0	0.630	.2126	.0350	0.664	-.0309	2.962	0.066	.0296	-.0118	-15.9	-00.1	-0.159	0.027	0.331	-0.102
21.3	-04.0	0.637	.2197	.0337	0.673	-.0273	2.898	0.033	.0138	-.0042	-16.0	-00.1	-0.004	-0.029	0.245	-0.074
21.3	04.0	0.637	.2198	.0319	0.673	-.0270	2.897	-0.027	-.0173	.0053	-16.1	00.0	0.169	-0.099	0.197	-0.061
21.3	08.1	0.626	.2109	.0342	0.660	-.0311	2.969	-0.050	-.0322	.0113	-16.1	00.0	0.222	-0.119	0.173	-0.050
21.4	-08.0	0.748	.2671	-.0177	0.794	-.0247	2.801	0.063	.0344	-.0086	-00.1	-00.1	0.338	-0.095	0.370	-0.120
21.4	-04.0	0.754	.2756	-.0190	0.803	-.0197	2.738	0.034	.0171	-.0019	-00.1	-00.1	0.494	-0.153	0.332	-0.113
21.4	04.0	0.747	.2693	-.0203	0.794	-.0222	2.775	-0.015	-.0228	.0069	-00.3	-00.1	0.754	-0.257	0.296	-0.093
21.4	08.1	0.737	.2619	-.0175	0.782	-.0253	2.815	-0.024	-.0379	.0080	-00.3	-00.1	0.814	-0.276	0.295	-0.084
21.5	-08.0	0.822	.3216	-.0503	0.883	-.0023	2.557	0.061	.0359	-.0069	08.7	-00.2	0.657	-0.201	0.479	-0.167
21.5	-04.0	0.831	.3318	-.0529	0.895	.0031	2.505	0.033	.0186	-.0036	09.6	-00.2	0.798	-0.250	0.485	-0.172
21.5	04.0	0.823	.3300	-.0535	0.887	.0047	2.495	-0.027	-.0235	.0086	09.5	-00.2	1.057	-0.344	0.409	-0.133
21.4	08.1	0.804	.3119	-.0481	0.862	-.0040	2.576	-0.019	-.0395	.0065	09.5	-00.1	1.109	-0.366	0.411	-0.121
21.5	-08.0	0.853	.3576	-.0707	0.925	.0195	2.386	0.060	.0349	-.0055	14.1	-00.3	0.881	-0.277	0.523	-0.195
21.5	-04.0	0.863	.3693	-.0739	0.938	.0261	2.336	0.036	.0186	-.0042	14.1	-00.3	1.008	-0.327	0.573	-0.208
21.5	04.0	0.850	.3616	-.0717	0.923	.0243	2.349	-0.010	-.0220	.0061	14.0	-00.2	1.232	-0.406	0.496	-0.155
21.4	08.1	0.828	.3434	-.0647	0.896	.0163	2.410	-0.016	-.0379	.0053	13.9	-00.2	1.255	-0.420	0.484	-0.141
(b) M = 0.90																
20.9	-08.0	0.528	.2492	.0729	0.582	.0438	2.118	0.069	.0254	-.0123	-47.7	-00.1	-0.633	0.286	0.337	-0.122
20.9	-04.0	0.520	.2454	.0754	0.573	.0430	2.117	0.037	.0104	-.0070	-47.7	00.0	-0.542	0.241	0.222	-0.077
20.9	04.0	0.515	.2449	.0764	0.569	.0441	2.105	-0.031	-.0114	.0118	-47.7	00.0	-0.583	0.237	0.053	-0.022
20.9	08.1	0.520	.2470	.0748	0.574	.0446	2.106	-0.063	-.0257	.0170	-47.8	00.0	-0.529	0.204	0.044	-0.021
21.0	-08.0	0.604	.2526	.0517	0.654	.0191	2.389	0.071	.0303	-.0129	-31.8	-00.1	-0.461	0.181	0.299	-0.106
21.0	-04.0	0.607	.2517	.0526	0.657	.0166	2.412	0.034	.0164	-.0042	-31.8	00.0	-0.408	0.155	0.169	-0.057
21.0	04.0	0.602	.2501	.0527	0.652	.0169	2.409	-0.023	-.0175	.0067	-31.8	00.0	-0.322	0.119	0.057	-0.015
21.0	08.1	0.599	.2485	.0525	0.648	.0171	2.409	-0.050	-.0301	.0121	-31.9	00.0	-0.287	0.096	0.042	-0.008
21.0	-08.0	0.679	.2608	.0241	0.727	-.0009	2.602	0.074	.0349	-.0142	-15.9	-00.1	-0.181	0.024	0.386	-0.144
21.1	-04.0	0.709	.2683	.0191	0.758	-.0056	2.643	0.041	.0138	-.0071	-16.0	-00.1	-0.087	-0.008	0.292	-0.107
21.1	04.0	0.675	.2595	.0253	0.723	-.0010	2.601	-0.028	-.0231	.0101	-16.0	00.0	0.071	-0.086	0.098	-0.036
21.0	08.1	0.675	.2594	.0224	0.723	-.0007	2.602	-0.053	-.0379	.0123	-16.1	00.0	0.204	-0.134	0.032	-0.013
21.1	-08.0	0.780	.2973	-.0206	0.835	-.0044	2.625	0.072	.0294	-.0068	-02.1	-00.1	0.371	-0.107	0.284	-0.109
21.2	-04.0	0.797	.3085	-.0288	0.855	-.0007	2.584	0.036	.0125	-.0010	-02.1	-00.1	0.545	-0.189	0.278	-0.110
21.1	04.0	0.792	.3086	-.0309	0.850	.0016	2.566	-0.033	-.0188	.0095	-02.2	-00.1	0.785	-0.296	0.252	-0.096
21.1	08.1	0.767	.2895	-.0193	0.820	-.0067	2.650	-0.044	-.0329	.0059	-02.2	00.0	0.779	-0.281	0.170	-0.047
21.1	-08.0	0.807	.3351	-.0502	0.874	.0209	2.409	0.059	.0251	.0007	08.7	-00.1	0.757	-0.258	0.338	-0.134
21.1	-04.0	0.811	.3373	-.0523	0.878	.0214	2.404	0.025	.0087	.0065	08.7	-00.1	0.864	-0.313	0.247	-0.107
21.1	04.0	0.802	.3330	-.0531	0.868	.0210	2.408	-0.019	-.0140	.0007	08.6	-00.1	0.976	-0.356	0.317	-0.121
21.1	08.1	0.789	.3250	-.0482	0.853	.0186	2.427	-0.032	-.0291	.0021	08.6	-00.1	1.077	-0.394	0.336	-0.108
21.1	-08.0	0.831	.3629	-.0647	0.906	.0380	2.290	0.051	.0238	.0066	14.1	-00.1	0.980	-0.360	0.291	-0.124
21.2	-04.0	0.835	.3637	-.0636	0.910	.0370	2.296	0.017	.0062	.0112	14.1	-00.1	1.049	-0.398	0.242	-0.112
21.2	04.0	0.825	.3572	-.0618	0.898	.0348	2.309	-0.016	-.0115	-.0061	14.1	-00.1	1.024	-0.381	0.355	-0.143
21.1	08.1	0.813	.3490	-.0593	0.884	.0321	2.329	-0.034	-.0277	-.0032	14.0	-00.1	1.146	-0.435	0.357	-0.128
(c) M = 1.00																
21.1	-08.0	0.616	.2975	.0278	0.682	.0551	2.071	0.077	.0277	-.0119	-47.7	-00.2	-0.623	0.282	0.455	-0.189
21.1	-04.0	0.617	.2945	.0292	0.682	.0517	2.096	0.040	.0149	-.0052	-47.7	-00.1	-0.485	0.215	0.275	-0.109
21.1	04.0	0.610	.2923	.0309	0.674	.0526	2.085	-0.024	-.0129	.0078	-47.8	00.0	-0.469	0.189	0.005	-0.006
21.1	08.1	0.607	.2912	.0281	0.671	.0530	2.084	-0.052	-.0249	.0125	-47.8	00.0	-0.344	0.129	-0.008	0.008
21.1	-08.0	0.654	.2959	.0151	0.717	.0396	2.212	0.082	.0274	-.0152	-31.7	-00.2	-0.485	0.201	0.384	-0.170
21.1	-04.0	0.647	.2981	.0210	0.711	.0441	2.170	0.045	.0171	-.0084	-31.7	-00.1	-0.523	0.200	0.250	-0.117
21.1	04.0	0.641	.2997	.0215	0.706	.0477	2.139	-0.032	-.0166	.0096	-31.8	00.0	-0.389	0.150	0.051	-0.015
21.1	08.1	0.643	.2920	.0173	0.705	.0402	2.202	-0.059	-.0263	.0149	-31.9	00.0	-0.261	0.092	-0.006	0.011
21.2	-08.0	0.726	.3050	-.0192	0.787	.0218	2.379	0.090	.0293	-.0175	-15.9	-00.3	-0.140	0.036	0.537	-0.229
21.2	-04.0	0.745	.3119	-.0272	0.807	.0208	2.387	0.045	.0118	-.0066	-16.0	-00.1	0.062	-0.028	0.325	-0.129
21.2	04.0	0.742	.3082	-.0262	0.803	.0185	2.407	-0.029	-.0155	.0060	-16.1	-00.1	0.317	-0.152	0.144	-0.073
21.2	08.1	0.714	.2984	-.0195	0.774	.0198	2.395	-0.058	-.0313	.0179	-16.2	00.0	0.399	-0.194	0.023	0.000
21.2	-08.0	0.809	.3361	-.0653	0.876	.0198	2.408	0.067	.0188	.0011	-00.2	-00.1	0.660	-0.252	0.243	-0.098
21.2	-04.0	0.812	.3422	-.0664	0.881	.0239	2.374	0.025	.0069	.0100	-00.3	-00.1	0.776	-0.305	0.188	-0.089
21.2	04.0	0.810	.3405	-.0690	0.878	.0235	2.377	-0.022	-.0129	-.0019	-00.4	-00.1	0.936	-0.381	0.222	-0.100
21.2	08.1	0.799	.3325	-.0677	0.865	.0204	2.402	-0.054	-.0249	.0076	-00.4	00.0	1.039	-0.428	0.084	-0.038
21.2	-08.0	0.842	.3677	-.0867	0.918	.0369	2.290	0.060	.0163	.0050	08.6	-00.1	0.985	-0.376	0.291	-0.124
21.3	-04.0	0.849	.3751	-.0898	0.927	.0410	2.263	0.023	.0060	.0121	08.5	-00.1	1.099	-0.425	0.239	-0.103
21.2	04.0	0.838	.3700	-.0888	0.915	.0405	2.265	-0.020	-.0109	-.0028	08.5	-00.1	1.144	-0.456	0.251	-0.110
21.2	08.1	0.829	.3601	-.0846	0.903	.0351	2.301	-0.047	-.0210	.0014	08.5	-00.1	1.173	-0.464	0.189	-0.081

[redacted]

[redacted]

TABLE VI.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 20^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(d) M = 1.20																
21.1	-08.0	0.588	.2952	.0087	0.655	.0627	1.992	0.093	.0202	-.0210	-47.6	-00.3	-0.585	0.265	0.575	-0.264
21.2	-04.0	0.595	.2958	.0069	0.662	.0603	2.012	0.050	.0095	-.0119	-47.7	-00.2	-0.512	0.227	0.295	-0.136
21.2	04.0	0.592	.2925	.0067	0.658	.0584	2.025	-0.042	-.0129	.0131	-47.8	00.0	-0.314	0.121	0.038	-0.016
21.1	08.1	0.575	.2898	.0106	0.641	.0625	1.985	-0.073	-.0202	.0213	-47.8	00.0	-0.386	0.153	-0.023	0.013
21.2	-08.0	0.627	.2923	-.0051	0.690	.0456	2.144	0.101	.0209	-.0242	-31.7	-00.4	-0.496	0.229	0.664	-0.306
21.2	-04.0	0.634	.2939	-.0068	0.697	.0442	2.155	0.047	.0105	-.0076	-31.8	-00.2	-0.365	0.167	0.434	-0.194
21.2	04.0	0.630	.2917	-.0061	0.693	.0435	2.160	-0.036	-.0115	.0094	-31.9	00.0	-0.149	0.061	0.113	-0.056
21.2	08.1	0.619	.2857	-.0042	0.680	.0427	2.165	-0.083	-.0206	.0265	-31.9	00.0	-0.047	0.015	-0.004	0.015
21.2	-08.0	0.679	.2924	-.0359	0.739	.0265	2.323	0.098	.0179	-.0234	-16.0	-00.4	0.078	-0.035	0.646	-0.288
21.2	-04.0	0.685	.2940	-.0385	0.745	.0255	2.330	0.050	.0088	-.0115	-16.1	-00.3	0.197	-0.087	0.462	-0.212
21.2	04.0	0.681	.2926	-.0387	0.741	.0257	2.328	-0.042	-.0122	.0144	-16.2	00.0	0.355	-0.167	0.116	-0.046
21.2	08.1	0.668	.2837	-.0331	0.725	.0228	2.353	-0.071	-.0199	.0230	-16.2	00.0	0.391	-0.184	0.005	0.000
21.2	-08.0	0.741	.3270	-.0748	0.809	.0358	2.266	0.092	.0179	-.0198	-00.3	-00.4	0.676	-0.279	0.608	-0.270
21.3	-04.0	0.747	.3288	-.0763	0.815	.0352	2.270	0.045	.0086	-.0075	-00.3	-00.2	0.774	-0.324	0.442	-0.194
21.2	04.0	0.740	.3265	-.0772	0.808	.0356	2.266	-0.041	-.0124	.0140	-00.4	-00.1	0.962	-0.416	0.154	-0.067
21.2	08.1	0.732	.3210	-.0745	0.799	.0336	2.282	-0.076	-.0209	.0236	-00.5	00.0	1.051	-0.457	0.054	-0.029
(e) M = 1.35																
21.1	-08.0	0.553	.2774	.0034	0.616	.0592	1.994	0.091	.0144	-.0204	-47.7	-00.4	-0.457	0.208	0.581	-0.273
21.1	-04.0	0.562	.2803	.0019	0.625	.0584	2.004	0.049	.0092	-.0116	-47.7	-00.2	-0.468	0.204	0.370	-0.175
21.1	04.0	0.559	.2792	.0012	0.622	.0585	2.002	-0.046	-.0094	.0153	-47.8	00.0	-0.330	0.140	0.037	-0.016
21.1	08.1	0.550	.2761	.0046	0.613	.0590	1.994	-0.080	-.0151	.0218	-47.8	00.0	-0.309	0.138	-0.019	0.010
21.1	-08.0	0.593	.2725	-.0101	0.651	.0400	2.175	0.095	.0143	-.0215	-31.8	-00.4	-0.326	0.156	0.609	-0.286
21.2	-04.0	0.601	.2741	-.0129	0.659	.0383	2.191	0.049	.0075	-.0097	-31.8	-00.3	-0.219	0.104	0.440	-0.207
21.2	04.0	0.597	.2731	-.0136	0.655	.0389	2.184	-0.046	-.0098	.0133	-31.9	-00.1	-0.049	0.021	0.139	-0.070
21.1	08.1	0.589	.2701	-.0096	0.647	.0391	2.181	-0.086	-.0163	.0235	-32.0	00.0	-0.005	0.002	-0.006	-0.002
21.2	-08.0	0.639	.2756	-.0344	0.695	.0260	2.317	0.096	.0134	-.0223	-16.0	-00.4	0.126	-0.051	0.606	-0.278
21.2	-04.0	0.645	.2777	-.0373	0.702	.0252	2.324	0.053	.0073	-.0115	-16.1	-00.3	0.218	-0.093	0.463	-0.207
21.2	04.0	0.646	.2787	-.0382	0.703	.0259	2.318	-0.044	-.0088	.0141	-16.1	-00.1	0.344	-0.154	0.168	-0.066
21.2	08.1	0.638	.2763	-.0347	0.695	.0268	2.310	-0.092	-.0154	.0254	-16.2	00.0	0.384	-0.175	0.005	-0.002
21.2	-08.0	0.697	.3106	-.0723	0.762	.0372	2.243	0.091	.0131	-.0194	-00.3	-00.4	0.712	-0.300	0.588	-0.270
21.2	-04.0	0.699	.3110	-.0744	0.764	.0366	2.247	0.046	.0067	-.0088	-00.4	-00.3	0.782	-0.334	0.436	-0.200
21.2	04.0	0.697	.3112	-.0754	0.762	.0376	2.238	-0.045	-.0096	.0142	-00.5	-00.1	0.940	-0.410	0.178	-0.077
21.2	08.1	0.693	.3103	-.0732	0.758	.0384	2.232	-0.087	-.0162	.0241	-00.5	00.0	1.006	-0.440	0.051	-0.025
(f) M = 1.70																
20.3	-08.3	0.482	.2323	.0004	0.533	.0501	2.076	0.084	.0101	-.0160	-47.7	-00.9	-0.287	0.132	0.515	-0.234
20.3	-04.3	0.494	.2341	-.0036	0.545	.0473	2.112	0.047	.0060	-.0085	-47.8	-00.8	-0.247	0.111	0.397	-0.182
20.4	03.7	0.502	.2365	-.0055	0.553	.0462	2.123	-0.033	-.0041	.0079	-47.8	-00.5	-0.159	0.077	0.138	-0.069
20.4	07.8	0.493	.2355	-.0014	0.544	.0481	2.093	-0.071	-.0095	.0157	-47.8	-00.4	-0.181	0.089	0.037	-0.023
20.3	-08.3	0.529	.2266	-.0181	0.575	.0282	2.336	0.091	.0083	-.0189	-24.0	-00.9	0.034	-0.002	0.526	-0.239
20.3	-04.3	0.536	.2276	-.0220	0.582	.0265	2.356	0.050	.0045	-.0112	-24.0	-00.8	0.100	-0.037	0.409	-0.186
20.4	03.7	0.541	.2293	-.0232	0.587	.0258	2.360	-0.035	-.0044	.0096	-24.1	-00.5	0.174	-0.071	0.147	-0.069
20.5	07.8	0.539	.2303	-.0198	0.586	.0267	2.342	-0.077	-.0087	.0177	-24.1	-00.4	0.180	-0.075	0.048	-0.021
20.3	-08.3	0.587	.2567	-.0580	0.640	.0362	2.288	0.087	.0080	-.0161	-00.4	-00.9	0.649	-0.287	0.534	-0.244
20.3	-04.3	0.591	.2571	-.0603	0.644	.0349	2.301	0.047	.0039	-.0088	-00.5	-00.8	0.700	-0.312	0.406	-0.183
20.4	03.7	0.598	.2593	-.0614	0.651	.0340	2.306	-0.036	-.0056	.0103	-00.6	-00.6	0.796	-0.361	0.167	-0.075
20.5	07.8	0.598	.2613	-.0597	0.652	.0351	2.290	-0.077	-.0104	.0183	-00.6	-00.5	0.833	-0.381	0.090	-0.040
20.4	-08.3	0.628	.3099	-.0900	0.697	.0714	2.028	0.089	.0090	-.0166	16.6	-00.9	1.168	-0.509	0.521	-0.237
20.4	-04.3	0.632	.3091	-.0918	0.700	.0692	2.044	0.048	.0042	-.0082	16.6	-00.8	1.228	-0.533	0.383	-0.170
20.4	03.7	0.635	.3110	-.0924	0.704	.0690	2.043	-0.035	-.0060	.0104	16.5	-00.6	1.328	-0.578	0.168	-0.074
20.5	07.8	0.632	.3115	-.0905	0.701	.0701	2.029	-0.077	-.0110	.0193	16.5	-00.5	1.369	-0.598	0.091	-0.038
(g) M = 2.50																
20.1	-08.1	0.378	.1781	.0016	0.416	.0374	2.122	0.068	.0041	-.0117	-47.9	-00.7	-0.038	0.023	0.369	-0.172
20.1	-04.1	0.385	.1787	-.0008	0.423	.0351	2.154	0.037	.0019	-.0065	-47.9	-00.6	-0.031	0.022	0.284	-0.135
20.2	03.9	0.394	.1820	-.0016	0.433	.0344	2.167	-0.026	-.0014	.0059	-47.9	-00.5	-0.073	0.046	0.105	-0.050
20.2	07.9	0.390	.1830	.0014	0.429	.0366	2.129	-0.059	-.0045	.0114	-47.8	-00.4	-0.128	0.074	0.032	-0.019
20.1	-08.2	0.401	.1757	-.0094	0.437	.0271	2.283	0.069	.0046	-.0116	-24.0	-00.7	0.123	-0.044	0.376	-0.175
20.1	-04.1	0.404	.1759	-.0105	0.440	.0261	2.297	0.037	.0022	-.0064	-24.0	-00.6	0.138	-0.050	0.286	-0.135
20.2	03.9	0.414	.1792	-.0111	0.450	.0254	2.307	-0.026	-.0022	.0056	-24.0	-00.5	0.144	-0.053	0.105	-0.050
20.2	07.9	0.414	.1805	-.0100	0.451	.0260	2.294	-0.060	-.0054	.0111	-24.0	-00.4	0.134	-0.048	0.040	-0.022
20.1	-08.2	0.444	.1978	-.0366	0.485	.0331	2.245	0.069	.0056	-.0108	-00.3	-00.7	0.510	-0.234	0.383	-0.179
20.1	-04.1	0.446	.1979	-.0373	0.487	.0323	2.254	0.037	.0027	-.0059	-00.3	-00.7	0.539	-0.246	0.294	-0.139
20.2	03.9	0.455	.2018	-.0385	0.497	.0322	2.256	-0.027	-.0038	.0064	-00.4	-00.5	0.601	-0.277	0.111	-0.050
20.2	07.9	0.458	.2036	-.0382	0.500	.0326	2.248	-0.061	-.0078	.0119	-00.4	-00.4	0.625	-0.288	0.047	-0.023
20.1	-08.2	0.476	.2358	-.0635	0.528	.0579	2.018	0.069	.0064	-.0112	14.3	-00.7	0.950	-0.432	0.396	-0.184
20.1	-04.1	0.478	.2361	-.0641	0.530	.0573	2.024	0.037	.0030	-.0060	14.3	-00.7	0.992	-0.453	0.303	-0.142
20.1	03.9	0.487	.2406	-.0658	0.540	.0578	2.023	-0.028	-.0049	.0084	14.2	-00.5	1.109	-0.511	0.114	-0.051
20.2	07.9	0.490	.2436	-.0655	0.544	.0590	2.011	-0.063	-.0096	.0145	14.2	-00.4	1.162	-0.537	0.059	-0.026

[redacted]

[redacted]

TABLE VI.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 20^{\circ}$ WITH RUDDER AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_c}	C_{h_c}	C_{N_r}	C_{h_r}
(h) M = 3.20																
20.5	-08.5	0.319	.1541	.0020	0.353	.0322	2.071	0.063	.0044	-.0095	-48.0	-00.8	-0.005	0.004	0.308	-0.138
20.5	-04.2	0.323	.1529	.0016	0.356	.0297	2.112	0.035	.0026	-.0050	-48.0	-00.8	-0.002	0.004	0.220	-0.098
20.5	04.3	0.322	.1525	.0015	0.355	.0297	2.111	-0.022	-.0022	.0042	-47.9	-00.7	-0.077	0.045	0.088	-0.036
20.5	08.6	0.317	.1535	.0025	0.351	.0323	2.068	-0.047	-.0038	.0083	-47.9	-00.6	-0.137	0.076	0.049	-0.017
20.5	-08.5	0.337	.1531	-.0055	0.369	.0251	2.199	0.063	.0056	-.0091	-24.0	-00.8	0.097	-0.036	0.311	-0.139
20.5	-04.2	0.339	.1527	-.0050	0.371	.0238	2.220	0.035	.0031	-.0049	-24.0	-00.8	0.103	-0.038	0.220	-0.097
20.5	04.3	0.335	.1509	-.0045	0.367	.0235	2.222	-0.022	-.0031	.0036	-24.0	-00.7	0.079	-0.028	0.089	-0.036
20.5	08.6	0.334	.1514	-.0046	0.366	.0244	2.207	-0.047	-.0053	.0076	-24.0	-00.6	0.068	-0.022	0.046	-0.017
20.5	-08.5	0.369	.1693	-.0274	0.405	.0291	2.180	0.062	.0067	-.0082	-00.2	-00.8	0.401	-0.190	0.315	-0.142
20.5	-04.2	0.368	.1681	-.0262	0.404	.0281	2.192	0.033	.0035	-.0041	-00.2	-00.8	0.417	-0.197	0.222	-0.100
20.5	00.0	0.368	.1682	-.0255	0.404	.0282	2.190	0.004	-.0008	.0004	-00.2	-00.7	0.439	-0.208	0.147	-0.064
20.5	04.2	0.368	.1673	-.0265	0.403	.0277	2.197	-0.024	-.0048	.0047	-00.2	-00.7	0.464	-0.221	0.080	-0.034
20.5	08.6	0.367	.1683	-.0278	0.403	.0289	2.182	-0.050	-.0078	.0084	-00.2	-00.6	0.487	-0.232	0.046	-0.018
20.5	-08.5	0.405	.2096	-.0568	0.453	.0539	1.934	0.062	.0076	-.0083	14.5	-00.8	0.849	-0.407	0.328	-0.145
20.5	-04.2	0.405	.2082	-.0553	0.452	.0528	1.943	0.033	.0037	-.0038	14.5	-00.8	0.884	-0.426	0.235	-0.102
20.5	00.0	0.404	.2077	-.0546	0.451	.0525	1.944	0.003	-.0015	.0014	14.4	-00.7	0.936	-0.453	0.154	-0.066
20.5	04.3	0.403	.2074	-.0556	0.450	.0526	1.943	-0.024	-.0063	.0065	14.4	-00.7	0.995	-0.484	0.096	-0.036
20.5	08.5	0.403	.2078	-.0569	0.450	.0532	1.938	-0.047	-.0100	.0102	14.4	-00.6	1.047	-0.508	0.062	-0.019

[redacted]

[redacted]

TABLE VII.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP WITH RUDDER AND DIVE BRAKES UNDEFLECTED. ANGLE OF ATTACK AS NOTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 1.70																
25.5	-08.5	0.608	.3348	-.0017	0.693	.0392	1.816	0.083	.0130	-.0129	-47.8	-00.8	-0.200	0.087	0.436	-0.195
25.6	-04.4	0.615	.3363	-.0047	0.700	.0371	1.829	0.045	.0082	-.0066	-47.8	-00.7	-0.149	0.070	0.295	-0.140
25.6	-01.7	0.623	.3382	-.0063	0.708	.0349	1.842	0.020	.0039	-.0025	-47.9	-00.6	-0.112	0.053	0.231	-0.113
25.7	03.7	0.619	.3371	-.0058	0.704	.0351	1.836	-0.031	-.0069	.0067	-47.9	-00.5	-0.080	0.043	0.072	-0.041
25.7	07.9	0.615	.3384	-.0031	0.701	.0373	1.818	-0.068	-.0120	.0115	-47.9	-00.4	-0.083	0.045	0.014	-0.015
25.5	-08.5	0.651	.3329	-.0187	0.731	.0190	1.956	0.090	.0124	-.0167	-24.0	-00.8	0.119	-0.044	0.415	-0.191
25.6	-04.4	0.652	.3336	-.0206	0.732	.0189	1.954	0.049	.0082	-.0091	-24.1	-00.6	0.157	-0.060	0.261	-0.114
25.6	03.7	0.652	.3333	-.0212	0.732	.0177	1.956	-0.032	-.0084	.0071	-24.1	-00.4	0.232	-0.094	0.027	-0.010
25.7	07.9	0.655	.3357	-.0200	0.736	.0177	1.952	-0.073	-.0127	.0140	-24.1	-00.3	0.257	-0.107	-0.055	0.025
25.5	-08.5	0.710	.3727	-.0601	0.801	.0296	1.904	0.087	.0129	-.0147	-00.5	-00.8	0.734	-0.324	0.421	-0.190
25.6	-04.4	0.712	.3729	-.0624	0.803	.0285	1.909	0.047	.0078	-.0076	-00.5	-00.7	0.788	-0.353	0.272	-0.122
25.7	03.7	0.714	.3758	-.0630	0.806	.0291	1.899	-0.033	-.0093	.0088	-00.6	-00.4	0.892	-0.403	0.053	-0.019
25.7	07.9	0.712	.3768	-.0617	0.805	.0301	1.889	-0.073	-.0150	.0154	-00.7	-00.4	0.935	-0.425	-0.024	0.013
25.5	-08.5	0.741	.4277	-.0918	0.853	.0658	1.733	0.087	.0126	-.0140	16.6	-00.8	1.241	-0.535	0.401	-0.176
25.6	-04.4	0.747	.4310	-.0940	0.860	.0656	1.733	0.047	.0062	-.0062	16.5	-00.6	1.302	-0.562	0.257	-0.113
25.6	-01.7	0.750	.4323	-.0953	0.863	.0653	1.734	0.021	.0017	-.0014	16.5	-00.6	1.343	-0.581	0.181	-0.078
25.6	03.7	0.744	.4301	-.0931	0.857	.0650	1.730	-0.031	-.0098	.0081	16.4	-00.5	1.397	-0.603	0.071	-0.028
25.7	07.9	0.742	.4303	-.0920	0.855	.0655	1.724	-0.071	-.0158	.0149	16.4	-00.4	1.431	-0.621	0.006	0.001
(b) M = 2.50																
09.8	-12.2	0.114	.0919	.0207	0.128	.0712	1.240	0.100	-.0050	-.0155	-47.7	-00.4	-0.299	0.169	0.489	-0.227
25.2	-08.3	0.485	.2636	.0013	0.551	.0315	1.839	0.065	.0080	-.0100	-47.9	-00.3	0.009	0.009	0.331	-0.160
25.3	-04.2	0.489	.2638	-.0002	0.555	.0294	1.855	0.036	.0047	-.0059	-47.9	-00.2	0.012	0.008	0.244	-0.112
25.3	03.9	0.498	.2682	-.0011	0.565	.0287	1.857	-0.026	-.0038	.0051	-47.9	00.0	-0.013	0.020	0.070	-0.031
25.4	08.0	0.494	.2690	.0007	0.562	.0306	1.837	-0.057	-.0083	.0096	-47.9	00.0	-0.048	0.038	0.017	-0.008
25.2	-08.3	0.501	.2624	-.0079	0.555	.0235	1.909	0.066	.0094	-.0103	-24.0	-00.2	0.159	-0.056	0.331	-0.155
25.3	-04.2	0.508	.2642	-.0100	0.572	.0219	1.922	0.037	.0055	-.0060	-24.1	-00.2	0.188	-0.068	0.242	-0.111
25.3	03.9	0.515	.2678	-.0098	0.580	.0212	1.922	-0.027	-.0049	.0054	-24.1	00.0	0.195	-0.073	0.058	-0.027
25.4	08.0	0.512	.2682	-.0086	0.578	.0221	1.910	-0.058	-.0102	.0098	-24.1	00.0	0.189	-0.070	-0.007	0.001
25.3	-08.3	0.552	.2953	-.0421	0.625	.0312	1.868	0.067	.0101	-.0097	-00.4	-00.7	0.648	-0.291	0.343	-0.160
25.3	-04.2	0.554	.2957	-.0423	0.627	.0304	1.872	0.037	.0057	-.0053	-00.4	-00.6	0.674	-0.305	0.243	-0.111
25.4	03.9	0.561	.2992	-.0419	0.635	.0295	1.874	-0.025	-.0065	.0059	-00.5	-00.4	0.733	-0.336	0.062	-0.027
25.4	08.0	0.560	.3002	-.0416	0.635	.0300	1.867	-0.057	-.0125	.0107	-00.5	-00.4	0.760	-0.349	0.006	-0.007
25.2	-08.3	0.581	.3392	-.0695	0.670	.0589	1.712	0.067	.0105	-.0097	14.2	-00.7	1.111	-0.498	0.354	-0.162
25.3	-04.2	0.583	.3396	-.0699	0.672	.0580	1.716	0.036	.0054	-.0046	14.2	-00.6	1.151	-0.520	0.244	-0.116
25.3	03.9	0.592	.3453	-.0717	0.683	.0582	1.715	-0.027	-.0074	.0076	14.1	-00.4	1.293	-0.583	0.073	-0.028
25.4	08.0	0.591	.3469	-.0714	0.683	.0594	1.704	-0.058	-.0143	.0127	14.0	-00.4	1.349	-0.610	0.027	-0.010
(c) M = 3.20																
30.8	-08.5	0.507	.3332	.0009	0.606	.0260	1.521	0.057	.0108	-.0060	-48.0	-00.8	0.028	-0.007	0.247	-0.112
30.8	-04.2	0.511	.3338	.0019	0.610	.0242	1.531	0.033	.0061	-.0029	-48.0	-00.7	0.030	-0.007	0.161	-0.070
30.8	04.3	0.509	.3321	.0019	0.607	.0240	1.531	-0.014	-.0060	.0018	-48.0	-00.6	0.011	0.002	0.049	-0.020
30.8	08.5	0.503	.3297	.0014	0.601	.0250	1.526	-0.034	-.0102	.0042	-47.9	-00.6	-0.009	0.013	0.019	-0.006
30.8	-08.5	0.526	.3364	-.0087	0.624	.0193	1.564	0.057	.0110	-.0061	-24.1	-00.8	0.200	-0.084	0.247	-0.109
30.8	-04.2	0.529	.3371	-.0073	0.627	.0181	1.569	0.033	.0061	-.0030	-24.1	-00.7	0.204	-0.085	0.151	-0.068
30.8	00.0	0.531	.3378	-.0061	0.629	.0177	1.571	0.008	-.0004	-.0005	-24.1	-00.7	0.204	-0.085	0.084	-0.038
30.8	04.3	0.527	.3359	-.0075	0.625	.0179	1.570	-0.017	-.0067	.0018	-24.1	-00.6	0.218	-0.089	0.044	-0.018
30.8	08.5	0.523	.3338	-.0087	0.620	.0187	1.566	-0.037	-.0112	.0044	-24.1	-00.6	0.215	-0.088	0.012	-0.005
30.8	-08.5	0.565	.3698	-.0397	0.675	.0278	1.529	0.054	.0117	-.0044	-01.3	-00.8	0.661	-0.309	0.245	-0.113
30.8	-04.2	0.568	.3701	-.0378	0.677	.0267	1.533	0.030	.0060	-.0017	-01.3	-00.7	0.680	-0.319	0.151	-0.071
30.8	04.3	0.566	.3690	-.0385	0.675	.0266	1.534	-0.019	-.0086	.0035	-01.4	-00.6	0.745	-0.351	0.043	-0.020
30.8	08.5	0.562	.3673	-.0397	0.671	.0273	1.531	-0.039	-.0138	.0056	-01.4	-00.6	0.766	-0.361	0.015	-0.007
30.8	-08.5	0.598	.4294	-.0754	0.734	.0616	1.394	0.055	.0127	-.0047	13.3	-00.8	1.227	-0.571	0.262	-0.116
30.8	-04.2	0.600	.4295	-.0739	0.735	.0609	1.396	0.031	.0062	-.0011	13.3	-00.7	1.282	-0.599	0.173	-0.072
30.8	04.3	0.596	.4272	-.0740	0.731	.0606	1.396	-0.014	-.0100	.0040	13.2	-00.6	1.416	-0.666	0.066	-0.022
30.8	08.5	0.591	.4238	-.0749	0.725	.0606	1.395	-0.028	-.0157	.0056	13.2	-00.6	1.460	-0.686	0.035	-0.011

[redacted]

[redacted]

TABLE VIII.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH DIVE BRAKES EXTENDED AND RUDDER UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
05.0	00.0	0.002	.0952	.0309	0.010	.0947	0.017	-0.001	.0010	.0019	-47.7	-00.1	-0.544	0.244	0.238	-0.071
10.3	00.0	0.135	.1137	.0422	0.153	.0876	1.194	0.000	.0007	.0021	-47.7	-00.1	-0.546	0.227	0.251	-0.077
15.7	00.0	0.321	.1488	.0392	0.349	.0564	2.155	0.002	.0002	.0011	-47.8	00.0	-0.312	0.152	0.175	-0.058
21.0	00.0	0.440	.2179	.0599	0.489	.0452	2.020	0.005	-.0003	.0008	-47.8	00.0	-0.334	0.121	0.122	-0.046
25.8	00.0	0.527	.2949	.0777	0.603	.0354	1.788	0.004	-.0010	.0008	-47.8	00.0	-0.372	0.114	0.120	-0.043
05.1	00.0	0.052	.0739	.0089	0.058	.0690	0.698	-0.002	-.0009	.0027	-23.9	-00.1	-0.256	0.068	0.388	-0.110
10.4	00.0	0.196	.0946	.0179	0.210	.0575	2.074	0.000	-.0004	.0019	-23.9	-00.1	-0.201	0.043	0.369	-0.101
15.6	00.0	0.302	.1321	.0278	0.326	.0458	2.282	0.003	.0002	.0009	-23.9	-00.1	-0.271	0.073	0.215	-0.063
21.0	00.0	0.469	.2129	.0529	0.514	.0299	2.203	0.005	.0000	.0009	-23.9	00.0	-0.214	0.019	0.136	-0.044
25.8	00.0	0.569	.2879	.0643	0.638	.0104	1.978	0.005	-.0002	.0009	-24.0	00.0	-0.162	-0.012	0.119	-0.037
05.2	00.0	0.163	.0821	-.0432	0.170	.0670	1.987	0.003	-.0045	.0009	-00.1	-00.2	0.367	-0.138	0.418	-0.128
10.5	00.0	0.323	.1164	-.0355	0.339	.0553	2.777	0.004	-.0025	.0007	-00.1	-00.1	0.373	-0.135	0.347	-0.104
15.9	00.0	0.533	.1953	-.0379	0.566	.0413	2.728	0.004	-.0020	.0010	-00.1	-00.1	0.397	-0.142	0.265	-0.086
21.2	00.0	0.629	.2731	-.0103	0.685	.0265	2.303	0.009	-.0028	.0001	-00.2	00.0	0.459	-0.182	0.128	-0.050
26.0	00.0	0.706	.3554	.0061	0.792	.0087	1.992	0.009	-.0033	.0005	-00.2	00.0	0.549	-0.209	0.083	-0.036
05.2	00.0	0.237	.1020	-.0689	0.245	.0798	2.320	-0.004	-.0032	.0041	11.7	-00.2	0.547	-0.187	0.402	-0.130
10.6	00.0	0.427	.1566	-.0760	0.449	.0750	2.729	0.002	-.0040	.0023	11.7	-00.1	0.703	-0.246	0.387	-0.123
16.0	00.0	0.618	.2420	-.0749	0.661	.0617	2.554	0.003	-.0016	.0014	11.7	-00.1	0.705	-0.245	0.344	-0.112
21.3	00.0	0.699	.3235	-.0402	0.769	.0469	2.161	0.011	-.0046	-.0002	11.6	00.0	0.746	-0.275	0.168	-0.061
26.0	00.0	0.758	.4035	-.0186	0.858	.0291	1.878	0.006	-.0023	.0009	11.6	00.0	0.799	-0.300	0.111	-0.046
(b) M = 0.90																
05.0	00.0	0.021	.1077	.0274	0.030	.1055	0.191	-0.001	.0007	.0020	-47.7	-00.1	-0.557	0.266	0.275	-0.095
10.3	00.0	0.182	.1255	.0204	0.202	.0907	1.453	-0.001	.0005	.0018	-47.7	-00.1	-0.461	0.216	0.261	-0.087
15.6	00.0	0.388	.1709	.0242	0.420	.0597	2.273	0.002	-.0002	.0010	-47.8	00.0	-0.184	0.117	0.143	-0.050
20.9	00.0	0.513	.2463	.0433	0.567	.0469	2.083	0.007	-.0005	.0006	-47.9	00.0	-0.172	0.079	0.058	-0.028
25.6	00.0	0.606	.3186	.0494	0.684	.0251	1.901	0.008	-.0005	.0003	-47.9	00.0	-0.132	0.044	0.031	-0.012
05.1	00.0	0.093	.0889	-.0049	0.101	.0802	1.051	-0.001	-.0008	.0023	-24.9	-00.1	-0.180	0.058	0.405	-0.131
10.3	00.0	0.252	.1164	.0030	0.269	.0690	2.167	0.001	.0000	.0012	-24.9	-00.1	-0.190	0.048	0.377	-0.118
15.6	00.0	0.398	.1705	.0217	0.429	.0567	2.333	0.002	-.0007	.0006	-24.9	00.0	-0.192	0.080	0.170	-0.059
20.9	00.0	0.496	.2449	.0541	0.551	.0516	2.026	0.005	-.0007	.0005	-24.9	00.0	-0.329	0.105	0.086	-0.037
25.6	00.0	0.584	.3150	.0623	0.663	.0313	1.855	0.006	-.0005	.0006	-24.9	00.0	-0.343	0.099	0.050	-0.031
05.1	00.0	0.169	.0944	-.0449	0.177	.0788	1.792	0.001	-.0023	.0014	00.8	-00.1	0.405	-0.149	0.395	-0.139
10.4	00.0	0.351	.1315	-.0437	0.369	.0657	2.668	0.002	-.0020	.0015	00.8	-00.1	0.427	-0.154	0.340	-0.116
15.7	00.0	0.504	.1980	-.0287	0.539	.0539	2.546	0.006	-.0016	.0007	00.8	00.0	0.457	-0.164	0.215	-0.077
20.9	00.0	0.624	.2822	-.0059	0.684	.0398	2.213	0.011	-.0026	.0000	00.8	00.0	0.528	-0.202	0.084	-0.042
25.7	00.0	0.723	.3687	-.0032	0.811	.0186	1.960	0.009	-.0037	.0017	00.7	00.0	0.632	-0.251	0.026	-0.025
(c) M = 1.00																
05.1	00.0	0.036	.1384	.0310	0.048	.1346	0.259	-0.002	.0009	.0036	-47.6	-00.2	-0.761	0.362	0.458	-0.188
10.4	00.0	0.215	.1538	.0303	0.239	.1124	1.395	0.001	.0006	.0022	-47.7	-00.2	-0.6[illegible]4	0.280	0.409	-0.160
15.7	00.0	0.435	.2075	.0127	0.475	.0813	2.096	0.004	.0001	.0011	-47.8	-00.1	-0.279	0.146	0.192	-0.082
21.1	00.0	0.580	.2943	.0250	0.647	.0658	1.971	0.008	.0000	-.0003	-47.8	00.0	-0.277	0.108	0.075	-0.036
25.8	00.0	0.690	.3863	.0283	0.789	.0464	1.785	0.009	-.0005	-.0010	-47.9	00.0	-0.195	0.073	0.023	-0.014
05.1	00.0	0.119	.1199	-.0050	0.129	.1087	0.990	-0.001	-.0008	.0025	-24.8	-00.2	-0.379	0.153	0.524	-0.196
10.5	00.0	0.292	.1480	-.0019	0.314	.0923	1.973	0.002	-.0002	.0021	-24.8	-00.2	-0.325	0.120	0.482	-0.174
15.8	00.0	0.448	.2119	.0121	0.489	.0817	2.115	0.005	.0003	.0012	-24.8	-00.1	-0.379	0.161	0.247	-0.104
21.1	00.0	0.578	.2905	.0283	0.644	.0628	1.990	0.008	.0006	.0003	-24.8	00.0	-0.338	0.135	0.132	-0.060
25.8	00.0	0.688	.3779	.0301	0.784	.0397	1.821	0.008	-.0001	.0002	-24.9	00.0	-0.220	0.088	0.055	-0.026
05.2	00.0	0.235	.1225	-.0668	0.245	.1005	1.917	-0.003	-.0029	.0036	-00.2	-00.3	0.573	-0.225	0.552	-0.225
10.5	00.0	0.421	.1662	-.0695	0.444	.0863	2.531	-0.001	-.0019	.0029	-00.2	-00.2	0.696	-0.270	0.478	-0.184
15.8	00.0	0.564	.2311	-.0475	0.606	.0679	2.442	0.001	-.0029	.0022	-00.2	-00.1	0.531	-0.203	0.273	-0.111
21.1	00.0	0.690	.3206	-.0330	0.759	.0499	2.151	0.006	-.0029	.0011	-00.2	00.0	0.634	-0.262	0.109	-0.052
25.9	00.0	0.801	.4241	-.0318	0.906	.0309	1.889	0.006	-.0022	.0018	-00.3	00.0	0.756	-0.313	0.059	-0.030
(d) M = 1.20																
05.1	00.0	0.023	.1394	.0357	0.035	.1368	0.162	0.000	.0008	.0021	-47.5	-00.3	-0.820	0.379	0.521	-0.226
10.4	00.0	0.207	.1618	.0223	0.233	.1215	1.279	0.002	.0004	.0018	-47.6	-00.3	-0.671	0.313	0.474	-0.198
15.8	00.0	0.420	.2071	-.0022	0.461	.0846	2.030	0.004	.0001	.0006	-47.8	-00.1	-0.262	0.135	0.273	-0.122
21.1	00.0	0.570	.2976	.0077	0.639	.0716	1.915	0.006	.0003	.0006	-47.8	00.0	-0.349	0.140	0.127	-0.058
26.0	00.0	0.677	.3997	.0175	0.784	.0621	1.694	0.008	.0003	-.0005	-47.8	00.0	-0.348	0.139	0.123	-0.053
05.1	00.0	0.105	.1166	-.0002	0.115	.1066	0.900	0.000	.0002	.0022	-24.8	-00.4	-0.371	0.169	0.640	-0.267
10.5	00.0	0.273	.1466	-.0087	0.295	.0944	1.861	0.001	-.0001	.0022	-24.8	-00.4	-0.227	0.101	0.616	-0.266
15.8	00.0	0.445	.2056	-.0089	0.484	.0762	2.163	0.004	.0001	.0007	-24.8	-00.2	-0.209	0.110	0.321	-0.138
21.2	00.0	0.603	.2923	-.0055	0.668	.0543	2.063	0.006	-.0001	.0005	-24.9	-00.1	-0.138	0.066	0.188	-0.076
26.0	00.0	0.709	.3880	.0067	0.807	.0377	1.826	0.008	-.0001	.0001	-24.9	00.0	-0.073	0.042	0.092	-0.040
05.2	00.0	0.220	.1215	-.0640	0.230	.1009	1.809	-0.003	-.0017	.0034	-00.3	-00.4	0.625	-0.266	0.602	-0.266
10.5	00.0	0.386	.1666	-.0690	0.410	.0930	2.316	-0.002	-.0016	.0029	-00.3	-00.3	0.688	-0.294	0.624	-0.263
15.9	00.0	0.560	.2359	-.0726	0.603	.0733	2.373	0.001	-.0015	.0018	-00.3	-00.2	0.706	-0.297	0.343	-0.147
21.2	00.0	0.699	.3260	-.0617	0.770	.0502	2.145	0.002	-.0022	.0021	-00.3	-00.1	0.739	-0.305	0.165	-0.066
26.0	00.0	0.809	.4355	-.0527	0.918	.0354	1.857	0.004	-.0025	.0017	-00.4	00.0	0.847	-0.356	0.102	-0.039
(e) M = 1.35																
05.1	00.0	0.021	.1340	.0312	0.033	.1316	0.158	0.000	.0005	.0019	-47.5	-00.3	-0.762	0.360	0.484	-0.218
10.0	00.0	0.188	.1502	.0180	0.211	.1150	1.249	0.001	.0002	.0012	-47.6	-00.3	-0.598	0.285	0.458	-0.195
15.8	00.0	0.398	.1943	-.0039	0.436	.0785	2.049	0.003	.0003	.0011	-47.8	-00.2	-0.237	0.115	0.290	-0.129
21.1	00.0	0.547	.2673	.0041	0.607	.0517	2.048	0.005	.0004	.0000	-47.8	-00.1	-0.336	0.136	0.198	-0.091
26.0	00.0	0.669	.3868	.0081	0.771	.0541	1.730	0.004	.0002	.0013	-47.8	-00.1	-0.280	0.119	0.135	-0.065

[redacted]

[redacted]

TABLE VIII.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH DIVE BRAKES EXTENDED AND RUDDER UNDEFLECTED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(e) M = 1.35 - Concluded																
05.1	00.0	0.094	.1100	-.0028	0.104	.1010	0.859	-0.002	-.0001	.0024	-23.8	-00.3	-0.267	0.128	0.572	-0.254
10.4	00.0	0.251	.1351	-.0089	0.271	.0873	1.854	0.000	-.0004	.0020	-23.9	-00.4	-0.137	0.072	0.579	-0.259
15.8	00.0	0.423	.1902	-.0145	0.459	.0676	2.225	0.004	-.0001	.0010	-23.9	-00.2	-0.094	0.059	0.331	-0.142
21.1	00.0	0.574	.2733	-.0110	0.634	.0475	2.101	0.005	.0000	.0001	-23.9	-00.1	-0.052	0.026	0.220	-0.101
26.0	00.0	0.695	.3735	-.0037	0.785	.0309	1.860	0.005	-.0003	.0001	-24.0	00.0	0.012	0.002	0.101	-0.047
05.2	00.0	0.194	.1157	-.0564	0.204	.0975	1.679	-0.003	-.0017	.0033	-00.3	-00.3	0.570	-0.250	0.571	-0.254
10.5	00.0	0.354	.1548	-.0625	0.376	.0875	2.285	-0.003	-.0014	.0034	-00.3	-00.3	0.644	-0.281	0.578	-0.255
15.8	00.0	0.520	.2197	-.0688	0.560	.0691	2.366	-0.001	-.0016	.0025	-00.3	-00.2	0.735	-0.316	0.353	-0.154
21.2	00.0	0.671	.3127	-.0657	0.739	.0483	2.147	0.003	-.0013	.0012	-00.4	-00.1	0.778	-0.332	0.186	-0.077
26.0	00.0	0.789	.4234	-.0597	0.895	.0333	1.864	0.003	-.0022	.0016	-00.4	00.0	0.845	-0.366	0.119	-0.050
05.2	00.0	0.235	.1457	-.0847	0.247	.1237	1.610	-0.005	-.0016	.0043	12.4	-00.4	1.041	-0.429	0.615	-0.274
10.5	00.0	0.392	.1892	-.0914	0.420	.1142	2.071	-0.001	-.0010	.0032	12.4	-00.4	1.118	-0.464	0.579	-0.257
15.9	00.0	0.561	.2614	-.0979	0.611	.0977	2.145	0.003	-.0011	.0014	12.3	-00.2	1.202	-0.495	0.377	-0.160
21.2	00.0	0.708	.3558	-.0923	0.789	.0747	1.990	0.006	-.0011	.0005	12.3	-00.1	1.201	-0.495	0.203	-0.074
26.1	00.0	0.831	.4766	-.0891	0.956	.0619	1.744	0.005	-.0017	.0009	12.3	00.0	1.270	-0.524	0.158	-0.056
(f) M = 1.70																
04.6	-00.2	0.011	.1152	.0238	0.020	.1140	0.093	0.003	.0005	.0015	-47.4	-00.3	-0.594	0.310	0.389	-0.175
09.8	-00.2	0.161	.1269	.0128	0.180	.0975	1.266	0.004	.0004	.0014	-47.6	-00.3	-0.401	0.216	0.386	-0.169
15.1	-00.2	0.331	.1625	-.0007	0.362	.0705	2.038	0.007	.0005	-.0003	-47.8	-00.3	-0.176	0.091	0.320	-0.142
20.3	-00.2	0.474	.2350	-.0020	0.526	.0554	2.016	0.008	.0008	-.0007	-47.8	-00.2	-0.155	0.079	0.253	-0.114
25.6	-00.3	0.607	.3339	-.0022	0.692	.0383	1.819	0.009	.0006	.0000	-47.9	-00.1	-0.101	0.055	0.158	-0.070
29.5	-00.3	0.684	.4250	-.0029	0.805	.0325	1.610	0.009	.0009	-.0005	-47.9	-00.1	-0.063	0.045	0.140	-0.064
04.6	-00.2	0.061	.0946	-.0009	0.068	.0694	0.639	0.003	.0000	.0012	-23.8	-00.4	-0.166	0.080	0.480	-0.222
09.8	-00.2	0.198	.1148	-.0055	0.215	.0791	1.727	0.005	-.0002	.0008	-23.9	-00.4	-0.076	0.043	0.462	-0.212
15.1	-00.2	0.359	.1578	-.0138	0.368	.0586	2.276	0.007	.0000	-.0004	-24.0	-00.3	0.049	-0.012	0.373	-0.169
20.4	-00.2	0.501	.2298	-.0138	0.550	.0405	2.182	0.009	.0003	-.0009	-24.0	-00.2	0.071	-0.018	0.243	-0.111
25.6	-00.3	0.637	.3320	-.0153	0.718	.0236	1.919	0.010	.0006	-.0015	-24.0	-00.1	0.159	-0.057	0.144	-0.063
29.5	-00.3	0.718	.4261	-.0172	0.835	.0166	1.686	0.009	.0006	-.0008	-24.1	-00.1	0.234	-0.093	0.105	-0.048
04.6	-00.2	0.128	.0976	-.0392	0.136	.0868	1.317	0.000	-.0008	.0026	-00.3	-00.4	0.433	-0.194	0.467	-0.214
09.8	-00.2	0.263	.1265	-.0431	0.281	.0795	2.080	0.003	-.0011	.0020	-00.3	-00.4	0.510	-0.229	0.444	-0.203
15.1	-00.2	0.417	.1770	-.0489	0.449	.0620	2.357	0.006	-.0010	.0008	-00.4	-00.3	0.605	-0.272	0.348	-0.160
20.3	-00.2	0.564	.2575	-.0530	0.618	.0450	2.189	0.007	-.0007	.0007	-00.5	-00.2	0.681	-0.301	0.221	-0.100
25.6	-00.3	0.693	.3664	-.0542	0.783	.0306	1.890	0.008	-.0004	.0005	-00.5	-00.1	0.782	-0.347	0.138	-0.062
29.5	-00.3	0.776	.4695	-.0575	0.907	.0256	1.654	0.008	.0004	.0002	-00.6	-00.1	0.860	-0.380	0.117	-0.054
04.6	-00.2	0.182	.1355	-.0731	0.192	.1203	1.340	0.002	-.0013	.0035	18.2	-00.4	1.001	-0.453	0.513	-0.232
09.8	-00.2	0.317	.1727	-.0788	0.342	.1157	1.836	0.003	-.0013	.0030	18.1	-00.4	1.100	-0.494	0.480	-0.217
15.1	-00.2	0.467	.2307	-.0855	0.511	.1008	2.024	0.007	-.0012	.0010	18.1	-00.3	1.212	-0.540	0.366	-0.165
20.3	-00.2	0.609	.3182	-.0906	0.682	.0861	1.915	0.009	-.0005	-.0002	18.0	-00.2	1.286	-0.561	0.228	-0.096
25.6	-00.3	0.733	.4331	-.0917	0.848	.0734	1.692	0.009	-.0005	.0008	18.0	-00.1	1.363	-0.588	0.122	-0.048
29.5	-00.3	0.807	.5389	-.0939	0.958	.0708	1.498	0.008	-.0003	.0013	17.9	00.0	1.409	-0.605	0.095	-0.038
(g) M = 2.50																
04.6	00.0	-0.004	.0907	.0222	0.003	.0908	-0.047	0.002	.0004	.0000	-47.6	-00.2	-0.440	0.236	0.234	-0.113
09.7	00.0	0.120	.0972	.0112	0.135	.0754	1.237	0.003	.0004	-.0001	-47.8	-00.2	-0.212	0.123	0.244	-0.113
14.9	00.0	0.254	.1221	.0030	0.277	.0523	2.080	0.005	.0003	-.0005	-47.9	-00.1	-0.064	0.041	0.215	-0.100
20.1	-00.1	0.377	.1804	-.0002	0.416	.0396	2.089	0.006	.0004	-.0007	-47.9	-00.1	-0.024	0.021	0.190	-0.089
25.3	-00.1	0.489	.2658	-.0006	0.556	.0306	1.841	0.006	.0006	-.0006	-47.9	-00.1	0.004	0.008	0.150	-0.071
29.1	-00.2	0.563	.3442	-.0005	0.659	.0261	1.635	0.006	.0010	-.0007	-47.9	-00.1	0.014	0.005	0.116	-0.056
04.6	00.0	0.028	.0703	.0051	0.034	.0678	0.404	0.002	.0001	-.0002	-23.9	-00.2	-0.103	0.061	0.254	-0.123
09.7	00.0	0.140	.0883	.0014	0.153	.0636	1.586	0.003	.0002	-.0003	-23.9	-00.2	-0.029	0.023	0.260	-0.122
14.9	00.0	0.267	.1192	-.0035	0.289	.0462	2.243	0.004	.0001	-.0005	-24.0	-00.2	0.057	-0.013	0.229	-0.105
20.1	-00.1	0.391	.1783	-.0067	0.428	.0329	2.191	0.006	.0003	-.0010	-24.0	-00.1	0.109	-0.035	0.178	-0.083
25.3	-00.1	0.506	.2659	-.0088	0.571	.0236	1.903	0.007	.0005	-.0010	-24.1	-00.1	0.177	-0.066	0.127	-0.060
29.2	-00.2	0.582	.3463	-.0105	0.677	.0184	1.680	0.007	.0006	-.0009	-24.1	-00.1	0.222	-0.088	0.108	-0.052
04.6	00.0	0.067	.0723	-.0163	0.073	.0656	0.932	0.002	-.0002	.0002	-00.1	-00.2	0.233	-0.111	0.269	-0.127
09.7	00.0	0.178	.0955	-.0204	0.192	.0636	1.868	0.003	-.0001	.0001	-00.2	-00.2	0.301	-0.140	0.271	-0.126
14.9	00.0	0.307	.1328	-.0272	0.331	.0490	2.313	0.004	-.0002	-.0002	-00.2	-00.2	0.420	-0.197	0.226	-0.108
20.1	-00.1	0.433	.1987	-.0335	0.475	.0374	2.180	0.005	-.0002	-.0004	-00.3	-00.1	0.531	-0.244	0.164	-0.076
25.3	-00.1	0.550	.2940	-.0392	0.623	.0304	1.871	0.005	-.0001	.0001	-00.4	-00.1	0.660	-0.301	0.124	-0.058
29.2	-00.2	0.629	.3829	-.0443	0.736	.0273	1.643	0.006	-.0001	.0002	-00.5	-00.1	0.764	-0.349	0.107	-0.051
04.6	00.0	0.111	.1032	-.0455	0.119	.0939	1.075	0.000	-.0004	.0010	19.4	-00.2	0.733	-0.350	0.276	-0.132
09.7	00.0	0.225	.1360	-.0537	0.245	.0958	1.656	0.001	-.0005	.0012	19.3	-00.2	0.884	-0.418	0.281	-0.131
14.9	00.0	0.351	.1814	-.0626	0.386	.0847	1.935	0.003	-.0007	.0011	19.2	-00.2	1.058	-0.495	0.233	-0.108
20.1	-00.1	0.477	.2586	-.0733	0.537	.0786	1.845	0.005	-.0007	.0010	19.1	-00.1	1.246	-0.575	0.181	-0.081
25.3	-00.1	0.591	.3638	-.0815	0.690	.0759	1.625	0.005	-.0006	.0012	19.0	-00.1	1.427	-0.644	0.142	-0.061
29.1	-00.2	0.664	.4575	-.0874	0.803	.0754	1.452	0.006	-.0005	.0013	17.9	-00.1	1.527	-0.683	0.118	-0.051
(h) M = 3.20																
05.1	00.0	-0.007	.0760	.0157	0.000	.0753	-0.091	0.002	.0004	.0002	-47.8	-00.7	-0.287	0.157	0.182	-0.072
10.3	00.0	0.105	.0760	.0074	0.117	.0560	1.382	0.005	.0004	-.0003	-47.9	-00.7	-0.136	0.084	0.194	-0.074
15.0	00.0	0.205	.0993	.0046	0.224	.0425	2.066	0.003	.0002	.0000	-47.9	-00.7	-0.060	0.041	0.195	-0.073
20.5	00.0	0.315	.1538	.0036	0.349	.0335	2.048	0.006	-.0001	-.0002	-47.9	00.0	-0.015	0.012	0.132	-0.062
25.7	00.0	0.415	.2308	.0036	0.474	.0279	1.797	0.007	-.0002	-.0003	-48.0	00.0	0.014	-0.001	0.108	-0.051
30.8	00.0	0.507	.3310	.0037	0.605	.0242	1.532	0.010	-.0001	-.0006	-48.0	00.0	0.027	-0.005	0.087	-0.041
36.0	00.0	0.590	.4570	.0021	0.746	.0222	1.291	0.009	-.0002	-.0002	-48.0	00.0	0.048	-0.014	0.070	-0.036
40.8	00.0	0.649	.5874	-.0002	0.875	.0203	1.104	0.009	-.0005	-.0003	-48.0	00.0	0.067	-0.024	0.050	-0.031

[redacted]

[redacted]

TABLE VIII.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH DIVE BRAKES EXTENDED AND RUDDER UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{l_e}	C_{N_r}	C_{l_r}
(h) M = 3.20 - Concluded																
05.1	00.0	0.015	.0632	.0042	0.021	.0616	0.243	0.002	.0000	-.0001	-23.9	-00.7	-0.062	0.035	0.190	-0.075
10.2	00.0	0.119	.0715	.0005	0.130	.0491	1.666	0.005	.0001	-.0006	-23.9	-00.7	-0.003	0.009	0.208	-0.076
15.0	00.0	0.215	.0969	-.0005	0.233	.0377	2.220	0.003	.0000	-.0002	-24.0	-00.7	0.040	-0.010	0.203	-0.074
20.5	00.0	0.324	.1531	-.0013	0.357	.0296	2.115	0.005	-.0003	-.0001	-24.0	00.0	0.093	-0.033	0.130	-0.061
25.7	00.0	0.427	.2318	-.0021	0.485	.0237	1.840	0.007	-.0003	-.0003	-24.0	00.0	0.140	-0.052	0.098	-0.048
30.8	00.0	0.522	.3348	-.0042	0.620	.0197	1.559	0.008	-.0003	-.0003	-24.0	00.0	0.196	-0.078	0.081	-0.039
36.0	00.0	0.609	.4619	-.0080	0.764	.0156	1.318	0.009	-.0006	-.0003	-24.1	00.0	0.262	-0.109	0.062	-0.033
40.8	00.0	0.672	.5977	-.0133	0.899	.0131	1.124	0.009	-.0009	-.0001	-24.1	00.0	0.339	-0.147	0.045	-0.027
05.1	00.0	0.036	.0645	-.0084	0.042	.0610	0.563	0.003	-.0002	-.0002	00.0	-00.7	0.148	-0.070	0.184	-0.076
10.2	00.0	0.140	.0762	-.0127	0.151	.0501	1.831	0.005	-.0002	-.0001	-00.1	-00.7	0.216	-0.101	0.199	-0.078
15.0	00.0	0.237	.1049	-.0149	0.256	.0396	2.258	0.002	-.0006	.0005	-00.1	-00.7	0.287	-0.134	0.198	-0.075
20.5	00.0	0.354	.1685	-.0225	0.391	.0332	2.104	0.006	-.0007	.0000	-00.2	00.0	0.449	-0.206	0.123	-0.061
25.7	00.0	0.462	.2554	-.0278	0.527	.0296	1.809	0.006	-.0009	.0005	-00.3	00.0	0.572	-0.262	0.093	-0.048
30.8	00.0	0.562	.3670	-.0357	0.671	.0267	1.532	0.011	-.0011	.0000	-00.3	00.0	0.725	-0.331	0.077	-0.040
36.0	00.0	0.650	.5053	-.0447	0.823	.0259	1.287	0.012	-.0014	.0003	-00.4	00.0	0.875	-0.398	0.064	-0.036
40.8	00.0	0.711	.6489	-.0532	0.962	.0263	1.095	0.010	-.0018	.0008	-00.5	00.0	1.003	-0.454	0.050	-0.031
05.1	00.0	0.069	.0825	-.0288	0.076	.0759	0.835	0.003	-.0005	.0003	16.7	-00.7	0.468	-0.236	0.204	-0.079
10.2	00.0	0.177	.1014	-.0375	0.192	.0682	1.744	0.004	-.0006	.0006	16.6	-00.7	0.613	-0.306	0.220	-0.081
15.0	00.0	0.280	.1399	-.0446	0.307	.0621	2.003	0.002	-.0011	.0014	16.5	-00.7	0.766	-0.380	0.213	-0.077
20.5	00.0	0.398	.2188	-.0581	0.449	.0654	1.817	0.004	-.0015	.0017	17.4	00.0	1.063	-0.510	0.138	-0.064
25.7	00.0	0.503	.3156	-.0671	0.590	.0661	1.593	0.004	-.0018	.0019	16.3	00.0	1.259	-0.595	0.110	-0.051
30.8	00.0	0.599	.4361	-.0762	0.738	.0672	1.374	0.008	-.0020	.0018	16.2	00.0	1.449	-0.669	0.093	-0.042
36.0	00.0	0.677	.5778	-.0856	0.887	.0696	1.171	0.009	-.0022	.0018	15.1	00.0	1.623	-0.728	0.081	-0.035
40.8	00.0	0.730	.7246	-.0927	1.026	.0711	1.007	0.010	-.0025	.0017	15.1	00.0	1.720	-0.758	0.066	-0.030

[redacted]

[redacted]

TABLE IX.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
05.0	-08.0	-0.003	.0950	.0335	0.005	.0949	-0.036	0.044	.0007	-.0049	-47.7	-00.2	-0.570	0.241	0.404	-0.134
05.0	-04.0	0.000	.0951	.0311	0.008	.0948	-0.004	0.023	.0010	-.0029	-47.7	-00.1	-0.525	0.236	0.332	-0.106
05.0	04.0	-0.008	.0952	.0330	0.000	.0956	-0.089	-0.026	.0008	.0059	-47.6	00.0	-0.563	0.252	0.144	-0.037
05.0	08.0	-0.010	.0951	.0358	-0.002	.0956	-0.109	-0.049	.0012	.0086	-47.6	00.0	-0.580	0.252	0.106	-0.025
05.0	-08.1	0.035	.0728	.0168	0.041	.0694	0.477	0.069	-.0059	-.0147	-23.8	-00.2	-0.286	0.104	0.569	-0.176
05.1	-04.0	0.047	.0736	.0114	0.053	.0692	0.633	0.033	-.0029	-.0065	-23.9	-00.2	-0.245	0.078	0.476	-0.141
05.1	04.0	0.047	.0743	.0111	0.053	.0699	0.626	-0.037	.0016	.0117	-23.9	-00.1	-0.288	0.074	0.296	-0.077
05.0	08.1	0.033	.0735	.0177	0.039	.0703	0.444	-0.073	.0057	.0208	-23.8	00.0	-0.349	0.099	0.231	-0.051
05.2	-08.1	0.193	.0852	-.0511	0.200	.0673	2.265	0.066	-.0028	-.0090	-00.1	-00.2	0.319	-0.115	0.523	-0.175
05.2	-04.0	0.168	.0820	-.0452	0.175	.0664	2.052	0.033	-.0027	-.0043	-00.1	-00.2	0.347	-0.130	0.452	-0.145
05.1	04.0	0.163	.0812	-.0444	0.170	.0661	2.011	-0.036	-.0021	.0073	-00.1	-00.1	0.391	-0.139	0.341	-0.100
05.2	08.0	0.187	.0842	-.0498	0.194	.0669	2.221	-0.064	-.0002	.0117	-00.1	-00.1	0.473	-0.154	0.327	-0.094
05.3	-08.1	0.283	.1145	-.0864	0.292	.0879	2.467	0.065	-.0019	-.0064	11.7	-00.2	0.609	-0.200	0.538	-0.176
05.2	-04.0	0.241	.1031	-.0703	0.249	.0805	2.334	0.031	-.0019	-.0024	11.7	-00.2	0.547	-0.189	0.475	-0.151
05.2	04.0	0.234	.1023	-.0691	0.242	.0804	2.284	-0.036	-.0028	.0096	11.7	-00.1	0.552	-0.191	0.334	-0.105
05.3	08.0	0.278	.1151	-.0849	0.287	.0890	2.411	-0.071	-.0010	.0138	11.6	-00.1	0.769	-0.250	0.366	-0.111
(b) M = 0.90																
05.0	-08.0	0.012	.1078	.0316	0.021	.1064	0.107	0.055	-.0003	-.0082	-47.7	-00.2	-0.594	0.273	0.452	-0.177
05.0	-04.0	0.020	.1071	.0284	0.029	.1049	0.183	0.028	.0003	-.0048	-47.7	-00.1	-0.524	0.246	0.388	-0.147
05.0	04.0	0.013	.1068	.0291	0.022	.1053	0.118	-0.029	.0007	.0078	-47.7	00.0	-0.595	0.280	0.167	-0.054
05.0	08.0	0.008	.1089	.0337	0.018	.1077	0.077	-0.060	.0017	.0128	-47.7	00.0	-0.690	0.318	0.098	-0.034
05.1	-08.0	0.093	.0849	-.0030	0.100	.0763	1.093	0.069	-.0008	-.0127	-24.9	-00.2	-0.207	0.076	0.563	-0.209
05.1	-04.0	0.090	.0876	-.0038	0.097	.0793	1.022	0.033	-.0005	-.0062	-24.9	-00.2	-0.152	0.050	0.497	-0.173
05.1	04.0	0.082	.0880	-.0027	0.090	.0803	0.937	-0.038	.0005	.0107	-24.9	-00.1	-0.219	0.066	0.305	-0.093
05.1	08.1	0.091	.0866	-.0013	0.098	.0782	1.046	-0.075	.0012	.0170	-24.9	00.0	-0.259	0.087	0.239	-0.066
05.1	-08.0	0.192	.0960	-.0527	0.200	.0783	2.002	0.064	-.0005	-.0076	00.8	-00.2	0.331	-0.123	0.537	-0.211
05.1	-04.0	0.174	.0944	-.0458	0.182	.0783	1.847	0.035	.0016	-.0065	00.8	-00.2	0.345	-0.127	0.479	-0.172
05.1	04.0	0.172	.0957	-.0472	0.180	.0798	1.799	-0.044	-.0042	.0126	00.8	-00.1	0.529	-0.188	0.319	-0.105
05.1	08.1	0.193	.0969	-.0526	0.201	.0791	1.993	-0.073	-.0034	.0143	00.7	-00.1	0.605	-0.218	0.286	-0.091
(c) M = 1.00																
05.1	-08.1	0.027	.1362	.0360	0.039	.1333	0.198	0.067	.0026	-.0114	-47.6	-00.3	-0.838	0.381	0.720	-0.296
05.1	-04.0	0.031	.1385	.0335	0.043	.1352	0.222	0.032	.0017	-.0061	-47.6	-00.3	-0.783	0.356	0.611	-0.254
05.1	04.0	0.024	.1390	.0348	0.036	.1363	0.171	-0.035	-.0006	.0101	-47.6	-00.1	-0.829	0.384	0.332	-0.134
05.1	08.0	0.020	.1388	.0387	0.032	.1365	0.142	-0.068	-.0003	.0160	-47.5	-00.1	-0.901	0.411	0.236	-0.089
05.1	-08.1	0.125	.1114	-.0055	0.135	.0996	1.126	0.085	.0014	-.0239	-24.8	-00.4	-0.372	0.142	0.803	-0.332
05.1	-04.0	0.124	.1156	-.0057	0.134	.1039	1.073	0.044	.0005	-.0135	-24.8	-00.3	-0.375	0.136	0.665	-0.272
05.1	04.0	0.120	.1164	-.0052	0.130	.1051	1.031	-0.045	-.0015	.0168	-24.8	-00.1	-0.383	0.150	0.336	-0.114
05.1	08.1	0.119	.1113	-.0034	0.129	.1001	1.073	-0.083	-.0021	.0266	-24.8	00.0	-0.360	0.140	0.211	-0.064
05.2	-08.1	0.241	.1151	-.0667	0.250	.0927	2.090	0.064	.0029	-.0088	-00.1	-00.4	0.411	-0.145	0.716	-0.306
05.2	-04.0	0.247	.1204	-.0693	0.257	.0973	2.052	0.031	.0012	-.0040	-00.1	-00.3	0.484	-0.182	0.633	-0.265
05.2	04.0	0.244	.1198	-.0693	0.254	.0970	2.037	-0.040	-.0049	.0120	-00.2	-00.2	0.673	-0.265	0.393	-0.149
05.2	08.1	0.244	.1162	-.0686	0.254	.0934	2.103	-0.070	-.0057	.0141	-00.3	-00.1	0.733	-0.291	0.303	-0.112
(d) M = 1.20																
05.1	-08.1	0.026	.1405	.0325	0.038	.1377	0.182	0.064	.0041	-.0059	-47.5	-00.4	-0.861	0.397	0.701	-0.310
05.1	-04.0	0.022	.1423	.0352	0.035	.1397	0.157	0.032	.0019	-.0035	-47.5	-00.4	-0.810	0.379	0.624	-0.275
05.1	04.0	0.018	.1419	.0356	0.031	.1397	0.130	-0.033	-.0001	.0082	-47.5	-00.2	-0.827	0.388	0.416	-0.171
05.1	08.1	0.022	.1397	.0346	0.034	.1372	0.155	-0.066	-.0015	.0115	-47.5	-00.1	-0.793	0.369	0.317	-0.127
05.1	08.1	0.018	.1393	.0356	0.030	.1372	0.127	-0.068	-.0013	.0121	-47.5	-00.1	-0.817	0.381	0.311	-0.127
05.0	12.1	0.009	.1370	.0372	0.021	.1357	0.065	-0.109	.0005	.0182	-47.5	-00.1	-0.879	0.410	0.215	-0.091
05.1	-08.1	0.094	.1168	.0021	0.104	.1079	0.804	0.075	.0041	-.0133	-24.7	-00.5	-0.473	0.208	0.849	-0.385
05.1	-04.0	0.101	.1162	-.0008	0.111	.1066	0.869	0.034	.0016	-.0058	-24.8	-00.4	-0.362	0.156	0.716	-0.318
05.1	04.0	0.098	.1164	-.0005	0.108	.1071	0.841	-0.040	-.0018	.0108	-24.8	-00.3	-0.312	0.147	0.511	-0.219
05.1	08.0	0.093	.1151	.0022	0.103	.1063	0.808	-0.075	-.0032	.0177	-24.8	-00.2	-0.258	0.125	0.431	-0.176
05.2	-08.0	0.207	.1218	-.0602	0.217	.1025	1.697	0.062	.0012	-.0044	-00.2	-00.5	0.492	-0.200	0.812	-0.372
05.2	-04.0	0.215	.1214	-.0629	0.225	.1013	1.769	0.026	.0010	-.0031	-00.2	-00.4	0.541	-0.229	0.698	-0.318
05.2	04.0	0.214	.1226	-.0636	0.224	.1026	1.743	-0.034	-.0036	.0070	-00.3	-00.3	0.688	-0.293	0.526	-0.223
05.2	08.1	0.211	.1219	-.0618	0.221	.1022	1.729	-0.070	-.0046	.0119	-00.3	-00.2	0.743	-0.323	0.459	-0.196
(e) M = 1.35																
05.1	-08.0	0.015	.1329	.0328	0.027	.1310	0.115	0.066	.0006	-.0075	-47.5	-00.4	-0.810	0.384	0.666	-0.304
05.1	-04.0	0.019	.1347	.0318	0.031	.1325	0.141	0.033	.0011	-.0040	-47.5	-00.4	-0.768	0.362	0.594	-0.269
05.1	04.0	0.013	.1347	.0332	0.025	.1330	0.097	-0.034	.0003	.0075	-47.5	-00.2	-0.802	0.383	0.400	-0.174
05.0	08.1	0.011	.1319	.0339	0.023	.1304	0.086	-0.072	.0006	.0118	-47.5	-00.2	-0.796	0.380	0.295	-0.131
05.1	-08.0	0.089	.1071	.0006	0.098	.0987	0.829	0.071	.0017	-.0102	-24.7	-00.5	-0.381	0.174	0.782	-0.359
05.1	-04.0	0.095	.1088	-.0020	0.104	.0998	0.870	0.031	.0009	-.0038	-24.8	-00.4	-0.285	0.132	0.681	-0.303
05.1	04.0	0.090	.1086	-.0011	0.099	.1001	0.825	-0.033	-.0007	.0077	-24.8	-00.3	-0.244	0.117	0.497	-0.216
05.1	08.1	0.084	.1065	.0012	0.093	.0985	0.787	-0.069	-.0012	.0124	-24.8	-00.3	-0.190	0.095	0.421	-0.194
05.2	-08.1	0.188	.1126	-.0541	0.197	.0951	1.666	0.060	-.0002	-.0036	-00.2	-00.5	0.442	-0.188	0.764	-0.349
05.2	-04.0	0.191	.1139	-.0557	0.201	.0960	1.681	0.026	.0005	-.0012	-00.2	-00.4	0.502	-0.218	0.676	-0.306
05.2	04.0	0.187	.1141	-.0553	0.197	.0966	1.642	-0.036	-.0031	.0084	-00.3	-00.3	0.623	-0.279	0.476	-0.210
05.2	08.1	0.185	.1133	-.0540	0.195	.0960	1.638	-0.069	-.0019	.0110	-00.3	-00.3	0.667	-0.301	0.446	-0.197
05.2	-08.1	0.232	.1427	-.0836	0.244	.1210	1.626	0.066	.0009	-.0084	12.5	-00.6	0.893	-0.367	0.861	-0.394
05.2	-04.0	0.239	.1452	-.0853	0.251	.1228	1.644	0.031	.0011	-.0045	12.5	-00.5	0.966	-0.397	0.758	-0.338
05.2	04.0	0.234	.1452	-.0848	0.246	.1233	1.610	-0.040	-.0037	.0130	12.4	-00.3	1.129	-0.471	0.504	-0.220
05.2	08.1	0.232	.1443	-.0834	0.244	.1226	1.607	-0.073	-.0032	.0161	12.3	-00.3	1.176	-0.495	0.461	-0.192

[redacted]

[redacted]

TABLE IX.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{n_e}	C_{N_r}	C_{n_r}
(f) M = 1.70																
04.6	-08.3	0.000	.1155	.0289	0.009	.1151	-0.004	0.074	-.0038	-.0091	-47.4	-00.5	-0.682	0.349	0.568	-0.260
04.6	-04.2	0.008	.1150	.0253	0.017	.1140	0.067	0.034	-.0006	-.0021	-47.4	-00.4	-0.640	0.326	0.469	-0.212
04.6	03.8	0.011	.1157	.0247	0.020	.1144	0.092	-0.028	.0020	.0043	-47.4	-00.3	-0.592	0.308	0.321	-0.144
04.7	07.9	0.009	.1154	.0284	0.019	.1143	0.074	-0.067	.0042	.0109	-47.4	-00.2	-0.642	0.335	0.224	-0.103
04.6	-08.3	0.057	.0906	.0026	0.064	.0857	0.626	0.071	-.0049	-.0074	-23.7	-00.6	-0.265	0.129	0.633	-0.290
04.6	-04.2	0.061	.0919	-.0003	0.068	.0866	0.661	0.033	-.0022	-.0015	-23.8	-00.5	-0.191	0.094	0.554	-0.255
04.6	03.8	0.064	.0930	-.0008	0.071	.0875	0.684	-0.027	.0017	.0040	-23.8	-00.3	-0.141	0.076	0.401	-0.186
04.7	07.9	0.064	.0914	.0028	0.071	.0856	0.697	-0.064	.0043	.0086	-23.8	-00.3	-0.144	0.077	0.311	-0.145
04.7	-08.3	0.125	.0933	-.0370	0.132	.0828	1.337	0.066	-.0057	-.0053	-00.2	-00.6	0.345	-0.153	0.631	-0.286
04.6	-04.2	0.130	.0958	-.0382	0.137	.0849	1.353	0.031	-.0029	-.0007	-00.2	-00.5	0.386	-0.174	0.546	-0.248
04.7	07.9	0.132	.0946	-.0362	0.139	.0834	1.391	-0.064	.0031	.0087	-00.3	-00.3	0.472	-0.228	0.326	-0.146
04.6	-08.3	0.175	.1297	-.0697	0.185	.1150	1.349	0.070	-.0045	-.0069	18.3	-00.6	0.858	-0.383	0.675	-0.308
04.6	-04.2	0.180	.1322	-.0713	0.190	.1171	1.360	0.033	-.0024	-.0016	18.3	-00.5	0.923	-0.413	0.601	-0.274
04.6	03.8	0.182	.1339	-.0715	0.192	.1186	1.357	-0.031	-.0006	.0086	18.2	-00.3	1.040	-0.472	0.412	-0.184
04.7	07.9	0.184	.1318	-.0694	0.194	.1161	1.394	-0.067	.0015	.0131	18.1	-00.3	1.075	-0.491	0.331	-0.147
(g) M = 2.50																
04.6	-08.2	-0.016	.0926	.0243	-0.008	.0936	-0.168	0.065	-.0078	-.0072	-47.6	-00.3	-0.448	0.242	0.368	-0.176
04.6	-04.1	-0.009	.0930	.0229	-0.001	.0934	-0.092	0.030	-.0033	-.0027	-47.6	-00.2	-0.451	0.239	0.297	-0.144
04.6	04.0	-0.008	.0929	.0230	0.000	.0932	-0.081	-0.027	.0043	.0036	-47.6	-00.1	-0.502	0.264	0.165	-0.081
04.6	08.0	-0.011	.0919	.0245	-0.003	.0925	-0.115	-0.064	.0085	.0089	-47.5	-00.1	-0.561	0.293	0.102	-0.053
04.6	-08.2	0.024	.0714	.0053	0.030	.0692	0.340	0.063	-.0079	-.0051	-23.9	-00.3	-0.110	0.062	0.387	-0.183
04.6	-04.1	0.029	.0716	.0047	0.035	.0690	0.409	0.029	-.0038	-.0021	-23.9	-00.2	-0.095	0.053	0.319	-0.152
04.6	04.0	0.030	.0720	.0049	0.036	.0693	0.420	-0.025	.0037	.0023	-23.9	-00.1	-0.108	0.064	0.198	-0.095
04.6	08.0	0.028	.0711	.0057	0.034	.0685	0.398	-0.061	.0075	.0057	-23.8	-00.1	-0.128	0.073	0.149	-0.075
04.6	-08.2	0.061	.0721	-.0163	0.067	.0669	0.851	0.062	-.0073	-.0043	-00.1	-00.3	0.209	-0.098	0.395	-0.185
04.6	-04.1	0.064	.0726	-.0163	0.070	.0672	0.886	0.028	-.0035	-.0016	-00.1	-00.2	0.218	-0.101	0.327	-0.154
04.6	04.0	0.067	.0733	-.0166	0.073	.0676	0.918	-0.026	.0027	.0026	-00.1	-00.1	0.251	-0.120	0.208	-0.097
04.6	08.0	0.068	.0719	-.0169	0.074	.0661	0.950	-0.061	.0061	.0059	-00.1	-00.1	0.260	-0.126	0.162	-0.078
04.6	-08.2	0.102	.1000	-.0438	0.110	.0914	1.022	0.062	-.0060	-.0050	19.5	-00.3	0.626	-0.292	0.405	-0.189
04.6	-04.1	0.107	.1012	-.0442	0.115	.0922	1.059	0.026	-.0031	-.0016	19.5	-00.3	0.675	-0.317	0.340	-0.160
04.6	04.0	0.110	.1022	-.0447	0.118	.0930	1.077	-0.027	.0016	.0045	19.4	-00.1	0.757	-0.361	0.215	-0.103
04.6	08.0	0.110	.1009	-.0443	0.118	.0916	1.091	-0.063	.0041	.0087	19.4	-00.1	0.785	-0.375	0.169	-0.082
(h) M = 3.20																
05.1	-12.8	-0.036	.0804	.0228	-0.029	.0833	-0.452	0.098	-.0137	-.0114	-47.7	-00.9	-0.319	0.181	0.431	-0.179
05.1	-08.5	-0.017	.0752	.0188	-0.010	.0764	-0.224	0.065	-.0103	-.0068	-47.8	-00.8	-0.269	0.146	0.343	-0.139
05.1	-04.2	-0.010	.0746	.0180	-0.003	.0752	-0.131	0.033	-.0045	-.0030	-47.7	-00.8	-0.341	0.184	0.249	-0.100
05.1	04.2	-0.013	.0763	.0181	-0.006	.0772	-0.170	-0.029	.0049	.0033	-47.7	-00.7	-0.363	0.195	0.127	-0.051
05.1	08.6	-0.024	.0769	.0208	-0.017	.0787	-0.312	-0.060	.0108	.0073	-47.7	-00.7	-0.474	0.254	0.078	-0.035
05.1	12.8	-0.040	.0792	.0226	-0.033	.0825	-0.508	-0.080	.0159	.0090	-47.6	-00.6	-0.560	0.298	0.046	-0.019
05.1	-12.8	-0.006	.0631	.0067	0.000	.0634	-0.090	0.097	-.0125	-.0097	-23.9	-00.9	-0.063	0.038	0.444	-0.182
05.1	-08.5	0.009	.0612	.0054	0.014	.0602	0.139	0.065	-.0088	-.0061	-23.9	-00.8	-0.068	0.036	0.354	-0.142
05.1	-04.3	0.015	.0605	.0049	0.020	.0589	0.241	0.032	-.0044	-.0032	-23.9	-00.8	-0.070	0.036	0.251	-0.102
05.1	04.3	0.015	.0610	.0049	0.020	.0594	0.239	-0.028	.0044	.0026	-23.9	-00.7	-0.078	0.043	0.140	-0.057
05.1	08.6	0.007	.0600	.0054	0.012	.0592	0.110	-0.057	.0092	.0051	-23.9	-00.7	-0.106	0.056	0.101	-0.043
05.1	12.8	-0.008	.0604	.0067	-0.003	.0609	-0.140	-0.082	.0129	.0067	-23.9	-00.7	-0.137	0.072	0.070	-0.028
05.1	-12.8	0.016	.0634	-.0067	0.022	.0617	0.259	0.096	-.0113	-.0090	00.0	-00.9	0.112	-0.054	0.451	-0.184
05.1	-08.5	0.030	.0617	-.0076	0.035	.0588	0.479	0.063	-.0082	-.0056	00.0	-00.8	0.114	-0.057	0.359	-0.143
05.1	-04.2	0.034	.0623	-.0076	0.039	.0590	0.538	0.030	-.0041	-.0027	00.0	-00.8	0.120	-0.059	0.260	-0.104
05.1	04.3	0.035	.0613	-.0078	0.040	.0579	0.565	-0.030	.0035	.0033	00.0	-00.7	0.138	-0.071	0.141	-0.058
05.1	08.6	0.029	.0606	-.0077	0.034	.0578	0.473	-0.060	.0077	.0054	00.0	-00.7	0.140	-0.073	0.104	-0.045
05.1	12.9	0.010	.0626	-.0063	0.016	.0614	0.167	-0.088	.0103	.0078	00.0	-00.7	0.137	-0.073	0.076	-0.030
05.1	-12.8	0.048	.0807	-.0269	0.055	.0761	0.594	0.097	-.0097	-.0099	16.7	-00.9	0.372	-0.186	0.452	-0.185
05.1	-08.5	0.062	.0781	-.0279	0.069	.0722	0.797	0.065	-.0074	-.0058	16.7	-00.8	0.389	-0.194	0.366	-0.145
05.1	-04.2	0.069	.0777	-.0283	0.076	.0711	0.892	0.032	-.0041	-.0029	16.7	-00.8	0.422	-0.213	0.273	-0.106
05.1	04.3	0.065	.0793	-.0281	0.072	.0731	0.821	-0.029	.0025	.0039	16.7	-00.7	0.494	-0.250	0.157	-0.061
05.1	08.5	0.059	.0772	-.0277	0.066	.0716	0.768	-0.058	.0061	.0065	16.7	-00.7	0.514	-0.261	0.115	-0.048
05.1	12.8	0.043	.0771	-.0267	0.050	.0729	0.562	-0.080	.0085	.0075	16.6	-00.7	0.527	-0.268	0.093	-0.034

[redacted]

[redacted]

TABLE X.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
10.4	-12.1	0.151	.1060	.0408	0.168	.0769	1.428	0.070	.0136	-.0088	-47.6	-00.2	-0.581	0.258	0.439	-0.148
10.3	-08.1	0.147	.1077	.0401	0.164	.0794	1.365	0.045	.0087	-.0048	-47.7	-00.2	-0.530	0.229	0.390	-0.129
10.3	-04.0	0.142	.1123	.0419	0.160	.0848	1.266	0.022	.0059	-.0035	-47.7	-00.1	-0.543	0.227	0.326	-0.103
10.3	04.0	0.136	.1129	.0428	0.154	.0866	1.203	-0.022	-.0042	.0045	-47.7	00.0	-0.535	0.224	0.172	-0.048
10.3	08.0	0.142	.1084	.0417	0.159	.0811	1.307	-0.045	-.0071	.0072	-47.7	00.0	-0.530	0.220	0.115	-0.029
10.3	12.1	0.144	.1057	.0412	0.161	.0779	1.366	-0.071	-.0110	.0112	-47.7	00.0	-0.537	0.213	0.091	-0.027
10.4	-12.1	0.185	.0877	.0264	0.198	.0527	2.112	0.099	.0087	-.0212	-24.8	-00.3	-0.342	0.128	0.674	-0.210
10.4	-08.0	0.182	.0884	.0242	0.195	.0540	2.060	0.068	.0036	-.0138	-24.8	-00.2	-0.291	0.092	0.569	-0.174
10.2	-04.0	0.176	.0894	.0231	0.189	.0568	1.968	0.035	-.0015	-.0056	-24.9	-00.2	-0.257	0.075	0.449	-0.133
10.4	04.0	0.179	.0909	.0227	0.192	.0571	1.965	-0.036	.0006	.0092	-24.9	-00.1	-0.213	0.043	0.285	-0.074
10.4	08.0	0.176	.0890	.0261	0.189	.0558	1.975	-0.068	-.0021	.0172	-24.9	00.0	-0.259	0.055	0.237	-0.056
10.4	12.0	0.177	.0881	.0282	0.190	.0547	2.008	-0.099	-.0069	.0251	-24.9	00.0	-0.286	0.068	0.187	-0.040
10.5	-12.1	0.339	.1137	-.0377	0.354	.0497	2.980	0.083	.0134	-.0075	-00.1	-00.2	0.240	-0.078	0.547	-0.182
10.5	-08.1	0.334	.1157	-.0374	0.350	.0525	2.891	0.056	.0028	-.0029	-00.1	-00.2	0.309	-0.105	0.481	-0.152
10.5	-04.0	0.327	.1173	-.0357	0.343	.0555	2.788	0.031	-.0070	.0008	-00.1	-00.1	0.375	-0.134	0.409	-0.126
10.3	04.0	0.317	.1127	-.0360	0.332	.0540	2.812	-0.027	.0014	.0020	-00.1	-00.1	0.356	-0.131	0.318	-0.098
10.3	08.0	0.324	.1116	-.0377	0.339	.0516	2.905	-0.051	-.0068	.0061	-00.1	-00.1	0.425	-0.154	0.309	-0.098
10.3	12.1	0.328	.1105	-.0394	0.343	.0497	2.972	-0.064	-.0156	.0073	-00.2	-00.1	0.497	-0.176	0.332	-0.097
10.6	-12.1	0.427	.1533	-.0721	0.448	.0717	2.785	0.069	.0127	.0038	11.7	-00.2	0.541	-0.182	0.489	-0.163
10.6	-08.1	0.421	.1530	-.0726	0.442	.0726	2.752	0.046	.0011	.0052	11.7	-00.2	0.618	-0.205	0.466	-0.149
10.6	-04.1	0.421	.1561	-.0728	0.443	.0756	2.700	0.027	-.0087	.0053	11.7	-00.2	0.707	-0.238	0.433	-0.134
10.4	04.0	0.412	.1504	-.0729	0.432	.0734	2.737	-0.025	.0039	-.0011	11.7	-00.1	0.627	-0.220	0.400	-0.125
10.4	08.0	0.418	.1506	-.0736	0.438	.0724	2.774	-0.047	-.0045	.0006	11.7	-00.2	0.701	-0.240	0.405	-0.127
10.4	12.0	0.407	.1474	-.0710	0.427	.0713	2.761	-0.060	-.0160	.0017	11.6	-00.1	0.768	-0.265	0.387	-0.124
(b) M = 0.90																
10.1	-12.1	0.165	.1222	.0356	0.184	.0911	1.351	0.097	.0113	-.0129	-47.7	-00.2	-0.574	0.278	0.523	-0.201
10.1	-08.0	0.177	.1216	.0294	0.196	.0884	1.457	0.062	.0083	-.0086	-47.7	-00.2	-0.479	0.222	0.444	-0.167
10.1	-04.0	0.180	.1241	.0294	0.199	.0904	1.449	0.030	.0060	-.0031	-47.7	-00.1	-0.475	0.220	0.375	-0.129
10.1	04.0	0.173	.1241	.0304	0.192	.0916	1.392	-0.030	-.0044	.0070	-47.8	00.0	-0.462	0.212	0.177	-0.056
10.1	08.0	0.174	.1228	.0308	0.193	.0901	1.417	-0.062	-.0068	.0119	-47.7	00.0	-0.489	0.222	0.100	-0.034
10.1	12.1	0.158	.1219	.0362	0.177	.0921	1.296	-0.099	-.0100	.0157	-47.7	00.0	-0.570	0.248	0.071	-0.034
10.1	-12.1	0.221	.1080	.0112	0.237	.0672	2.050	0.122	.0089	-.0234	-24.9	-00.3	-0.270	0.109	0.714	-0.263
10.1	-08.0	0.226	.1113	.0085	0.242	.0697	2.029	0.081	.0035	-.0161	-24.9	-00.2	-0.196	0.074	0.617	-0.209
10.1	-04.0	0.227	.1117	.0088	0.243	.0699	2.030	0.044	-.0014	-.0071	-24.9	-00.1	-0.183	0.059	0.485	-0.157
10.1	04.0	0.223	.1130	.0086	0.239	.0719	1.970	-0.041	.0012	.0106	-24.9	-00.1	-0.211	0.050	0.319	-0.095
10.1	08.0	0.219	.1130	.0115	0.236	.0725	1.942	-0.082	-.0026	.0209	-24.9	00.0	-0.230	0.061	0.248	-0.072
10.1	12.1	0.208	.1096	.0159	0.224	.0712	1.897	-0.119	-.0067	.0294	-24.9	00.0	-0.265	0.072	0.220	-0.064
10.4	-12.1	0.340	.1299	-.0421	0.358	.0662	2.618	0.105	.0130	-.0124	00.9	-00.2	0.275	-0.097	0.596	-0.224
10.4	-08.0	0.338	.1306	-.0409	0.356	.0673	2.587	0.074	.0064	-.0085	00.8	-00.2	0.333	-0.115	0.509	-0.185
10.4	-04.0	0.344	.1321	-.0420	0.362	.0676	2.603	0.038	-.0021	-.0022	00.8	-00.1	0.418	-0.145	0.437	-0.1[illegible]
10.2	00.0	0.344	.1302	-.0442	0.362	.0669	2.644	0.005	-.0021	.0011	00.8	-00.1	0.433	-0.152	0.345	-0.115
10.4	04.0	0.341	.1309	-.0427	0.359	.0670	2.605	-0.030	-.0026	.0049	00.8	-00.1	0.459	-0.168	0.305	-0.104
10.4	08.0	0.336	.1303	-.0409	0.354	.0673	2.579	-0.068	-.0095	.0114	00.8	-00.1	0.533	-0.195	0.272	-0.090
10.4	12.1	0.338	.1301	-.0438	0.356	.0668	2.599	-0.101	-.0152	.0146	00.7	-00.1	0.678	-0.247	0.308	-0.102
(c) M = 1.00																
10.4	-12.1	0.215	.1551	.0302	0.240	.1135	1.389	0.111	.0140	-.0211	-47.6	-00.4	-0.656	0.312	0.762	-0.313
10.4	-08.1	0.218	.1529	.0300	0.242	.1109	1.425	0.073	.0096	-.0176	-47.7	-00.3	-0.595	0.269	0.699	-0.288
10.4	-04.0	0.219	.1550	.0291	0.243	.1128	1.410	0.035	.0065	-.0077	-47.7	-00.3	-0.611	0.269	0.566	-0.229
10.4	04.0	0.214	.1553	.0295	0.239	.1139	1.380	-0.036	-.0055	.0120	-47.7	-00.1	-0.638	0.287	0.268	-0.100
10.4	08.0	0.211	.1554	.0325	0.236	.1145	1.360	-0.073	-.0079	.0218	-47.6	00.0	-0.743	0.334	0.152	-0.053
10.4	12.1	0.210	.1576	.0315	0.235	.1170	1.332	-0.109	-.0131	.0234	-47.6	00.0	-0.713	0.318	0.076	-0.033
10.2	-12.1	0.272	.1410	.0040	0.293	.0901	1.931	0.135	.0152	-.0349	-24.8	-00.5	-0.455	0.171	0.916	-0.392
10.2	-08.1	0.280	.1432	.0012	0.301	.0909	1.955	0.093	.0131	-.0278	-24.8	-00.4	-0.443	0.158	0.806	-0.340
10.3	-04.0	0.285	.1473	-.0013	0.307	.0939	1.937	0.047	.0082	-.0129	-24.8	-00.3	-0.403	0.149	0.654	-0.256
10.2	04.0	0.279	.1460	-.0011	0.301	.0937	1.914	-0.047	-.0088	.0184	-24.9	-00.1	-0.257	0.093	0.340	-0.108
10.2	08.0	0.274	.1420	.0033	0.295	.0908	1.929	-0.080	-.0134	.0292	-24.9	00.0	-0.245	0.099	0.186	-0.049
10.2	12.1	0.262	.1357	.0060	0.282	.0868	1.931	-0.109	-.0153	.0344	-24.9	00.0	-0.226	0.088	0.120	-0.034
10.5	-12.1	0.401	.1612	-.0599	0.424	.0850	2.489	0.110	.0150	-.0158	-00.1	-00.4	0.384	-0.131	0.792	-0.342
10.5	-08.1	0.407	.1608	-.0626	0.430	.0835	2.534	0.068	.0111	-.0096	-00.1	-00.3	0.479	-0.171	0.676	-0.279
10.5	-04.0	0.418	.1652	-.0674	0.441	.0858	2.530	0.033	.0054	-.0032	-00.2	-00.2	0.594	-0.225	0.557	-0.222
10.3	00.0	0.416	.1646	-.0698	0.439	.0870	2.528	-0.002	-.0018	.0029	-00.2	-00.2	0.693	-0.268	0.472	-0.186
10.5	04.0	0.414	.1644	-.0680	0.437	.0858	2.517	-0.037	-.0088	.0085	-00.3	-00.1	0.751	-0.293	0.372	-0.144
10.5	08.0	0.409	.1617	-.0634	0.432	.0840	2.530	-0.075	-.0148	.0168	-00.3	-00.1	0.817	-0.328	0.304	-0.120
10.5	12.1	0.399	.1613	-.0621	0.422	.0856	2.474	-0.108	-.0184	.0210	-00.3	-00.1	0.908	-0.367	0.262	-0.106
(d) M = 1.20																
10.4	-12.1	0.196	.1594	.0244	0.222	.1211	1.232	0.117	.0101	-.0207	-47.6	-00.5	-0.716	0.330	0.814	-0.358
10.4	-08.1	0.207	.1586	.0208	0.232	.1184	1.303	0.073	.0084	-.0123	-47.6	-00.4	-0.654	0.300	0.695	-0.299
10.4	-04.0	0.205	.1598	.0231	0.231	.1199	1.285	0.035	.0058	-.0041	-47.6	-00.3	-0.680	0.306	0.583	-0.252
10.4	04.0	0.200	.1609	.0232	0.226	.1219	1.244	-0.033	-.0052	.0075	-47.6	-00.2	-0.655	0.305	0.384	-0.157
10.4	08.0	0.202	.1571	.0235	0.227	.1178	1.285	-0.071	-.0069	.0167	-47.6	-00.1	-0.698	0.324	0.254	-0.099
10.4	12.1	0.193	.1583	.0248	0.219	.1206	1.222	-0.111	-.0086	.0229	-47.6	00.0	-0.709	0.322	0.156	-0.058
10.3	-12.2	0.241	.1409	.0029	0.262	.0955	1.708	0.134	.0129	-.0294	-24.7	-00.6	-0.529	0.226	0.980	-0.446
10.3	-08.1	0.253	.1430	-.0011	0.275	.0952	1.773	0.089	.0108	-.0196	-24.7	-00.5	-0.451	0.199	0.877	-0.391
10.3	-04.0	0.267	.1459	-.0059	0.289	.0955	1.831	0.043	.0065	-.0079	-24.8	-00.4	-0.334	0.153	0.747	-0.326
10.3	04.0	0.259	.1457	-.0060	0.281	.0969	1.778	-0.040	-.0063	.0122	-24.9	-00.3	-0.163	0.075	0.542	-0.224
10.3	08.0	0.251	.1403	-.0012	0.272	.0930	1.789	-0.075	-.0103	.0208	-24.9	-00.2	-0.142	0.064	0.430	-0.167
10.3	12.1	0.236	.1354	.0025	0.256	.0911	1.739	-0.106	-.0124	.0272	-24.9	-00.1	-0.128	0.061	0.284	-0.096

[redacted]

TABLE X.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED - Continued

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(d) M = 1.20 - Concluded																
10.5	-12.1	0.369	.1616	-.0630	0.392	.0914	2.281	0.116	.0111	-.0191	-00.2	-00.6	0.439	-0.171	0.911	-0.412
10.5	-08.1	0.372	.1631	-.0645	0.396	.0921	2.283	0.071	.0076	-.0100	-00.2	-00.5	0.520	-0.209	0.790	-0.356
10.5	-04.0	0.383	.1648	-.0667	0.407	.0917	2.326	0.031	.0042	-.0018	-00.3	-00.4	0.605	-0.251	0.676	-0.299
10.4	00.0	0.380	.1656	-.0684	0.404	.0942	2.296	-0.001	-.0013	.0032	-00.3	-00.4	0.684	-0.290	0.622	-0.266
10.5	04.0	0.380	.1660	-.0674	0.404	.0935	2.290	-0.036	-.0068	.0088	-00.3	-00.3	0.750	-0.324	0.539	-0.227
10.5	08.0	0.376	.1621	-.0646	0.399	.0905	2.318	-0.073	-.0107	.0161	-00.4	-00.2	0.798	-0.348	0.434	-0.187
10.5	12.1	0.370	.1623	-.0654	0.393	.0919	2.277	-0.117	-.0146	.0247	-00.4	-00.2	0.915	-0.400	0.314	-0.132
(e) M = 1.35																
10.2	-12.2	0.176	.1497	.0224	0.200	.1160	1.177	0.120	.0049	-.0215	-47.6	-00.5	-0.626	0.290	0.803	-0.364
10.2	-08.1	0.188	.1465	.0178	0.211	.1108	1.282	0.075	.0042	-.0136	-47.6	-00.4	-0.550	0.256	0.672	-0.297
10.2	-04.0	0.192	.1473	.0176	0.215	.1108	1.303	0.037	.0038	-.0057	-47.6	-00.3	-0.585	0.276	0.556	-0.245
10.2	04.0	0.184	.1488	.0192	0.208	.1136	1.240	-0.036	-.0035	.0079	-47.6	-00.2	-0.585	0.280	0.352	-0.152
10.2	08.1	0.181	.1489	.0198	0.205	.1143	1.218	-0.074	-.0035	.0169	-47.6	-00.1	-0.634	0.298	0.242	-0.102
10.2	12.1	0.171	.1509	.0234	0.195	.1181	1.133	-0.117	-.0037	.0255	-47.5	00.0	-0.725	0.346	0.157	-0.060
10.2	-12.2	0.225	.1317	.0006	0.245	.0895	1.709	0.129	.0081	-.0254	-24.7	-00.6	-0.418	0.187	0.915	-0.423
10.2	-08.1	0.235	.1316	-.0038	0.255	.0875	1.789	0.082	.0062	-.0166	-24.8	-00.5	-0.323	0.148	0.807	-0.373
10.2	-04.0	0.249	.1335	-.0084	0.269	.0868	1.867	0.041	.0043	-.0073	-24.8	-00.4	-0.242	0.114	0.704	-0.319
10.2	04.0	0.242	.1345	-.0075	0.262	.0892	1.798	-0.039	-.0039	.0109	-24.9	-00.3	-0.109	0.054	0.509	-0.227
10.2	08.0	0.233	.1341	-.0033	0.253	.0904	1.737	-0.078	-.0054	.0187	-24.9	-00.2	-0.098	0.053	0.410	-0.174
10.2	12.1	0.222	.1288	.0004	0.241	.0873	1.720	-0.113	-.0077	.0246	-24.9	-00.2	-0.103	0.055	0.308	-0.130
10.5	-12.2	0.338	.1512	-.0572	0.360	.0869	2.235	0.115	.0069	-.0179	-00.2	-00.6	0.447	-0.184	0.893	-0.411
10.5	-08.1	0.341	.1501	-.0581	0.363	.0852	2.274	0.071	.0049	-.0103	-00.2	-00.5	0.502	-0.210	0.770	-0.350
10.5	-04.0	0.352	.1517	-.0608	0.374	.0847	2.322	0.034	.0031	-.0035	-00.3	-00.4	0.568	-0.245	0.659	-0.292
10.3	00.0	0.346	.1524	-.0618	0.368	.0878	2.272	0.000	-.0009	.0031	-00.3	-00.4	0.635	-0.279	0.590	-0.260
10.5	04.0	0.346	.1534	-.0606	0.368	.0876	2.255	-0.040	-.0049	.0111	-00.3	-00.3	0.693	-0.309	0.491	-0.220
10.5	08.1	0.340	.1548	-.0593	0.363	.0900	2.199	-0.079	-.0073	.0179	-00.4	-00.2	0.760	-0.346	0.394	-0.174
10.5	12.1	0.334	.1523	-.0588	0.356	.0888	2.192	-0.121	-.0096	.0252	-00.4	-00.2	0.801	-0.367	0.320	-0.141
10.5	-12.1	0.391	.1905	-.0898	0.419	.1157	2.051	0.121	.0083	-.0212	12.5	-00.6	0.916	-0.371	0.920	-0.420
10.5	-08.1	0.392	.1881	-.0898	0.420	.1130	2.085	0.074	.0056	-.0127	12.5	-00.5	0.975	-0.400	0.791	-0.357
10.5	-04.0	0.400	.1892	-.0918	0.428	.1126	2.115	0.035	.0033	-.0049	12.4	-00.4	1.049	-0.433	0.680	-0.304
10.5	04.0	0.395	.1911	-.0909	0.423	.1155	2.066	-0.043	-.0055	.0136	12.4	-00.3	1.195	-0.495	0.499	-0.210
10.5	08.0	0.389	.1904	-.0894	0.417	.1160	2.042	-0.072	-.0078	.0193	12.3	-00.2	1.259	-0.525	0.415	-0.174
10.5	12.1	0.386	.1881	-.0901	0.414	.1142	2.053	-0.092	-.0102	.0225	12.3	-00.2	1.322	-0.554	0.366	-0.160
(f) M = 1.70																
09.8	-12.3	0.142	.1262	.0205	0.162	.0999	1.129	0.121	-.0018	-.0215	-47.6	-00.6	-0.451	0.237	0.669	-0.304
09.8	-08.3	0.153	.1277	.0165	0.173	.0995	1.201	0.075	-.0017	-.0131	-47.6	-00.5	-0.389	0.211	0.582	-0.262
09.8	-04.2	0.159	.1266	.0147	0.176	.0975	1.253	0.037	.0002	-.0050	-47.6	-00.4	-0.412	0.223	0.485	-0.217
09.8	-00.2	0.163	.1267	.0126	0.182	.0969	1.284	0.004	.0004	.0011	-47.6	-00.3	-0.397	0.213	0.385	-0.169
09.9	03.8	0.165	.1264	.0137	0.184	.0962	1.303	-0.029	.0010	.0070	-47.6	-00.2	-0.417	0.220	0.295	-0.129
09.9	07.9	0.161	.1274	.0164	0.181	.0976	1.266	-0.066	.0019	.0140	-47.5	-00.1	-0.473	0.247	0.200	-0.086
10.0	11.9	0.152	.1271	.0198	0.172	.0987	1.198	-0.109	.0018	.0200	-47.5	-00.1	-0.531	0.272	0.123	-0.049
09.8	-12.3	0.185	.1118	.0018	0.201	.0784	1.651	0.126	.0005	-.0227	-23.8	-00.7	-0.232	0.118	0.735	-0.335
09.8	-08.3	0.188	.1143	-.0005	0.205	.0803	1.647	0.080	-.0003	-.0140	-23.8	-00.6	-0.170	0.087	0.641	-0.293
09.8	-04.2	0.195	.1133	-.0032	0.212	.0781	1.725	0.040	-.0004	-.0060	-23.9	-00.5	-0.122	0.061	0.550	-0.252
09.8	-00.2	0.200	.1142	-.0063	0.217	.0781	1.755	0.005	-.0002	.0008	-23.9	-00.4	-0.066	0.037	0.463	-0.211
09.9	03.8	0.200	.1133	-.0043	0.217	.0771	1.769	-0.031	.0004	.0073	-23.9	-00.3	-0.060	0.037	0.379	-0.175
09.9	07.9	0.198	.1139	-.0011	0.215	.0779	1.740	-0.070	.0000	.0145	-23.9	-00.2	-0.065	0.041	0.285	-0.130
10.0	11.9	0.188	.1133	.0029	0.205	.0789	1.660	-0.114	-.0011	.0206	-23.9	-00.2	-0.076	0.047	0.209	-0.096
09.9	-12.3	0.257	.1254	-.0395	0.275	.0792	2.052	0.118	.0000	-.0182	-00.2	-00.7	0.374	-0.165	0.729	-0.332
09.9	-08.3	0.259	.1266	-.0403	0.277	.0801	2.046	0.076	-.0004	-.0115	-00.3	-00.6	0.411	-0.183	0.642	-0.293
09.9	-04.2	0.262	.1253	-.0410	0.280	.0782	2.094	0.038	-.0008	-.0051	-00.3	-00.5	0.448	-0.201	0.549	-0.250
09.9	03.8	0.267	.1257	-.0420	0.285	.0776	2.126	-0.032	-.0008	.0083	-00.4	-00.3	0.523	-0.243	0.362	-0.163
10.0	07.9	0.267	.1261	-.0404	0.285	.0777	2.119	-0.070	-.0016	.0146	-00.4	-00.2	0.560	-0.265	0.284	-0.129
10.0	11.9	0.264	.1275	-.0395	0.282	.0795	2.069	-0.111	-.0030	.0190	-00.4	-00.2	0.594	-0.283	0.244	-0.108
09.8	-12.3	0.311	.1690	-.0745	0.335	.1131	1.838	0.123	.0014	-.0213	18.3	-00.7	0.919	-0.405	0.789	-0.357
09.8	-08.3	0.312	.1721	-.0758	0.337	.1159	1.814	0.078	.0004	-.0132	18.2	-00.6	0.974	-0.431	0.695	-0.315
09.8	-04.2	0.315	.1709	-.0765	0.340	.1142	1.845	0.040	-.0002	-.0059	18.2	-00.5	1.025	-0.456	0.597	-0.270
09.8	-00.2	0.318	.1726	-.0784	0.343	.1154	1.843	0.003	-.0013	.0030	18.1	-00.4	1.096	-0.491	0.480	-0.217
09.9	03.8	0.318	.1712	-.0773	0.343	.1138	1.859	-0.033	-.0020	.0110	18.1	-00.3	1.143	-0.517	0.381	-0.169
09.9	07.9	0.318	.1721	-.0754	0.343	.1144	1.848	-0.071	-.0030	.0184	18.1	-00.2	1.186	-0.540	0.306	-0.136
10.0	11.9	0.313	.1725	-.0742	0.338	.1155	1.813	-0.114	-.0045	.0241	18.0	-00.2	1.224	-0.557	0.273	-0.119
(g) M = 2.50																
09.9	12.1	0.111	.0967	.0149	0.126	.0762	1.148	-0.100	.0075	.0169	-47.6	00.0	-0.393	0.217	0.056	-0.031
09.8	08.0	0.119	.0994	.0135	0.134	.0776	1.195	-0.061	.0046	.0107	-47.7	-00.1	-0.323	0.182	0.113	-0.054
09.8	03.9	0.121	.0980	.0122	0.136	.0759	1.236	-0.026	.0025	.0051	-47.7	-00.1	-0.259	0.149	0.175	-0.081
09.7	00.0	0.119	.0969	.0113	0.134	.0753	1.230	0.003	.0004	.0000	-47.8	-00.2	-0.216	0.125	0.244	-0.113
09.7	-04.1	0.118	.0986	.0126	0.133	.0771	1.197	0.032	-.0020	-.0045	-47.8	-00.2	-0.212	0.120	0.312	-0.144
09.7	-08.1	0.112	.0999	.0141	0.127	.0795	1.118	0.067	-.0044	-.0102	-47.8	-00.3	-0.218	0.123	0.383	-0.177
09.7	-12.2	0.105	.0967	.0153	0.120	.0775	1.087	0.104	-.0076	-.0159	-47.8	-00.4	-0.211	0.123	0.465	-0.215
09.7	-12.2	0.136	.0871	.0020	0.149	.0627	1.564	0.106	-.0055	-.0152	-23.9	-00.4	-0.060	0.039	0.483	-0.224
09.7	-08.1	0.137	.0895	.0023	0.150	.0650	1.528	0.067	-.0034	-.0098	-23.9	-00.3	-0.051	0.031	0.397	-0.186
09.7	-04.1	0.142	.0883	.0015	0.155	.0629	1.609	0.032	-.0017	-.0043	-23.9	-00.2	-0.034	0.024	0.325	-0.153
09.7	00.0	0.142	.0878	.0009	0.155	.0624	1.619	0.004	.0001	-.0004	-23.9	-00.2	-0.020	0.018	0.260	-0.122
09.8	03.9	0.144	.0882	.0013	0.157	.0624	1.633	-0.026	.0018	.0044	-23.9	-00.1	-0.029	0.024	0.190	-0.092
09.8	08.0	0.139	.0887	.0024	0.152	.0636	1.566	-0.062	.0028	.0102	-23.9	-00.1	-0.048	0.034	0.127	-0.063
09.9	12.1	0.137	.0855	.0022	0.150	.0606	1.607	-0.101	.0048	.0160	-23.9	00.0	-0.057	0.039	0.071	-0.039

TABLE X.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(g) M = 2.50 - Concluded																
09.8	-12.2	0.174	.0937	-.0212	0.187	.0628	1.852	0.103	-.0045	-.0130	-00.1	-00.4	0.261	-0.121	0.487	-0.224
09.8	-08.1	0.174	.0965	-.0200	0.188	.0654	1.805	0.066	-.0026	-.0086	-00.1	-00.3	0.277	-0.125	0.404	-0.188
09.8	-04.1	0.177	.0950	-.0203	0.191	.0634	1.867	0.032	-.0015	-.0037	-00.2	-00.2	0.287	-0.133	0.334	-0.156
09.8	00.0	0.178	.0951	-.0206	0.192	.0633	1.876	0.003	-.0002	.0001	-00.2	-00.2	0.306	-0.143	0.268	-0.125
09.8	03.8	0.183	.0954	-.0211	0.197	.0627	1.921	-0.025	.0005	.0046	-00.2	-00.1	0.330	-0.156	0.199	-0.093
09.8	08.0	0.183	.0965	-.0213	0.197	.0636	1.898	-0.062	.0009	.0099	-00.2	-00.1	0.352	-0.168	0.138	-0.064
09.9	12.1	0.182	.0935	-.0226	0.195	.0608	1.941	-0.099	.0026	.0149	-00.2	00.0	0.376	-0.181	0.093	-0.045
09.7	-12.2	0.220	.1308	-.0526	0.239	.0915	1.682	0.104	-.0027	-.0148	19.5	-00.4	0.731	-0.338	0.507	-0.233
09.7	-08.1	0.221	.1333	-.0515	0.240	.0939	1.655	0.066	-.0014	-.0097	19.4	-00.3	0.766	-0.354	0.419	-0.195
09.7	-04.1	0.224	.1333	-.0519	0.243	.0934	1.677	0.032	-.0009	-.0039	19.4	-00.3	0.809	-0.378	0.348	-0.162
09.7	00.0	0.226	.1341	-.0530	0.245	.0939	1.682	0.003	-.0006	.0009	19.3	-00.2	0.869	-0.410	0.281	-0.130
09.8	03.9	0.227	.1342	-.0530	0.247	.0935	1.695	-0.028	-.0006	.0067	19.3	-00.1	0.919	-0.434	0.206	-0.097
09.8	08.0	0.226	.1353	-.0528	0.246	.0946	1.672	-0.063	-.0008	.0125	19.3	-00.1	0.959	-0.455	0.150	-0.070
09.9	12.1	0.224	.1329	-.0543	0.244	.0923	1.690	-0.102	.0002	.0184	19.2	00.0	1.003	-0.477	0.107	-0.050
(h) M = 3.20																
10.2	-11.3	0.082	.0824	.0118	0.095	.0666	0.992	0.087	-.0075	-.0129	-47.9	-00.9	-0.134	0.076	0.408	-0.164
10.2	-08.4	0.091	.0801	.0089	0.104	.0626	1.139	0.064	-.0057	-.0087	-47.9	-00.8	-0.084	0.051	0.357	-0.141
10.2	-04.2	0.104	.0760	.0074	0.116	.0562	1.370	0.033	-.0024	-.0046	-47.9	-00.8	-0.100	0.060	0.272	-0.105
10.2	04.3	0.101	.0758	.0075	0.113	.0566	1.334	-0.025	.0032	.0040	-47.8	-00.7	-0.178	0.104	0.142	-0.051
10.2	08.6	0.087	.0786	.0104	0.100	.0618	1.113	-0.052	.0061	.0082	-47.8	-00.7	-0.246	0.140	0.095	-0.034
10.1	11.5	0.075	.0785	.0126	0.088	.0639	0.960	-0.068	.0087	.0103	-47.8	-00.6	-0.300	0.168	0.056	-0.021
10.2	-11.3	0.100	.0747	.0027	0.112	.0557	1.342	0.087	-.0061	-.0120	-23.9	-00.9	-0.026	0.017	0.422	-0.168
10.2	-08.5	0.107	.0738	.0019	0.118	.0536	1.444	0.065	-.0041	-.0089	-23.9	-00.8	-0.013	0.012	0.369	-0.145
10.3	-04.2	0.119	.0717	.0004	0.130	.0492	1.662	0.033	-.0020	-.0041	-23.9	-00.8	-0.001	0.006	0.287	-0.107
10.3	00.0	0.120	.0713	.0004	0.131	.0486	1.687	0.006	.0001	-.0006	-23.9	-00.7	-0.001	0.009	0.211	-0.077
10.3	04.3	0.116	.0700	.0004	0.127	.0481	1.661	-0.023	.0023	.0030	-23.9	-00.7	-0.011	0.013	0.155	-0.054
10.2	08.6	0.104	.0712	.0015	0.115	.0515	1.461	-0.048	.0046	.0063	-23.9	-00.7	-0.033	0.022	0.105	-0.036
10.2	11.5	0.095	.0700	.0030	0.106	.0520	1.358	-0.064	.0068	.0084	-23.9	-00.6	-0.048	0.029	0.067	-0.023
10.2	-11.3	0.124	.0793	-.0117	0.136	.0560	1.562	0.085	-.0050	-.0108	00.0	-00.9	0.174	-0.082	0.420	-0.169
10.2	-08.4	0.129	.0777	-.0119	0.141	.0534	1.663	0.063	-.0034	-.0078	-00.1	-00.8	0.179	-0.084	0.371	-0.146
10.3	-04.2	0.140	.0754	-.0125	0.151	.0492	1.854	0.033	-.0016	-.0037	-00.1	-00.8	0.191	-0.089	0.285	-0.109
10.3	04.3	0.137	.0754	-.0127	0.148	.0497	1.814	-0.027	.0011	.0040	-00.1	-00.7	0.221	-0.106	0.153	-0.055
10.2	08.6	0.127	.0764	-.0125	0.139	.0525	1.667	-0.052	.0027	.0070	-00.1	-00.7	0.232	-0.113	0.102	-0.035
10.2	11.5	0.119	.0769	-.0118	0.131	.0545	1.551	-0.075	.0046	0102	-00.1	-00.7	0.234	-0.116	0.069	-0.026
10.2	-11.3	0.162	.1046	-.0369	0.178	.0741	1.549	0.086	-.0034	-.0118	16.7	-00.9	0.510	-0.253	0.434	-0.173
10.2	-08.5	0.166	.1037	-.0369	0.182	.0725	1.603	0.063	-.0021	-.0082	16.7	-00.8	0.525	-0.260	0.382	-0.150
10.2	-04.2	0.177	.1013	-.0371	0.192	.0682	1.744	0.031	-.0012	-.0036	16.6	-00.8	0.558	-0.278	0.298	-0.113
10.2	00.0	0.178	.1014	-.0372	0.193	.0681	1.752	0.005	-.0007	.0006	16.6	-00.7	0.613	-0.306	0.222	-0.081
10.2	04.3	0.175	.0992	-.0376	0.190	.0664	1.765	-0.023	-.0001	.0043	16.6	-00.7	0.652	-0.326	0.162	-0.057
10.2	08.6	0.164	.0985	-.0370	0.179	.0678	1.666	-0.046	.0010	.0077	16.6	-00.7	0.688	-0.345	0.121	-0.040
10.2	11.5	0.157	.0984	-.0372	0.172	.0690	1.597	-0.065	.0025	.0101	16.5	-00.7	0.704	-0.354	0.085	-0.029

[redacted]

TABLE XI.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 20^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_c	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
21.0	-08.0	0.445	.2189	.0595	0.494	.0444	2.034	0.059	.0155	-.0090	-47.7	-00.1	-0.451	0.215	0.299	-0.099
21.0	-04.0	0.446	.2192	.0589	0.495	.0442	2.035	0.033	.0083	-.0037	-47.8	-00.1	-0.386	0.165	0.212	-0.069
21.0	04.0	0.441	.2190	.0593	0.490	.0460	2.012	-0.027	-.0086	.0066	-47.8	00.0	-0.283	0.093	0.052	-0.017
21.0	08.1	0.446	.2177	.0587	0.494	.0432	2.047	-0.054	-.0156	.0110	-47.9	00.0	-0.265	0.077	-0.012	0.006
21.0	-08.0	0.471	.2108	.0554	0.515	.0274	2.233	0.071	.0117	-.0135	-24.9	-00.1	-0.318	0.082	0.307	-0.098
21.0	-04.0	0.468	.2114	.0549	0.513	.0287	2.216	0.039	.0053	-.0062	-24.9	-00.1	-0.261	0.046	0.199	-0.064
21.0	04.0	0.468	.2124	.0541	0.513	.0299	2.203	-0.032	-.0057	.0090	-24.9	00.0	-0.215	0.014	0.069	-0.020
21.0	08.1	0.467	.2097	.0553	0.511	.0279	2.227	-0.062	-.0107	.0157	-24.9	00.0	-0.237	0.024	0.002	0.002
21.2	-08.0	0.624	.2671	-.0054	0.678	.0232	2.334	0.078	.0088	-.0107	-00.1	-00.1	0.302	-0.118	0.254	-0.087
21.2	-04.0	0.616	.2677	-.0044	0.671	.0263	2.300	0.051	.0001	-.0053	-00.1	00.0	0.387	-0.155	0.164	-0.057
21.2	04.0	0.624	.2710	-.0048	0.680	.0265	2.303	-0.036	-.0046	.0060	-00.2	00.0	0.487	-0.182	0.111	-0.042
21.2	08.1	0.622	.2631	-.0057	0.675	.0201	2.364	-0.059	-.0112	.0099	-00.2	00.0	0.490	-0.185	0.064	-0.031
21.3	-08.0	0.701	.3203	-.0388	0.769	.0438	2.187	0.077	.0009	-.0042	11.7	-00.1	0.619	-0.211	0.272	-0.095
21.3	-04.0	0.696	.3227	-.0389	0.766	.0473	2.158	0.051	-.0084	.0002	11.6	-00.1	0.724	-0.261	0.180	-0.065
21.3	04.1	0.692	.3195	-.0367	0.761	.0458	2.167	-0.041	.0011	.0048	11.6	-00.1	0.723	-0.266	0.211	-0.075
21.3	08.1	0.702	.3182	-.0373	0.770	.0411	2.207	-0.066	-.0047	.0076	11.6	-00.1	0.736	-0.268	0.208	-0.069
(b) M = 0.90																
20.9	-08.0	0.526	.2540	.0401	0.582	.0496	2.070	0.068	.0187	-.0054	-47.8	-00.1	-0.345	0.170	0.292	-0.110
20.9	-04.0	0.516	.2487	.0441	0.571	.0480	2.076	0.039	.0094	-.0040	-47.8	00.0	-0.253	0.120	0.178	-0.067
20.9	04.0	0.513	.2480	.0432	0.568	.0485	2.069	-0.027	-.0104	.0056	-47.9	00.0	-0.148	0.078	-0.014	0.002
20.9	08.1	0.529	.2548	.0391	0.585	.0493	2.075	-0.057	-.0195	.0058	-47.9	00.0	-0.042	0.038	-0.037	0.019
20.9	-08.0	0.524	.2512	.0437	0.579	.0477	2.085	0.078	.0118	-.0119	-24.9	-00.1	-0.246	0.098	0.307	-0.112
20.9	-04.0	0.505	.2457	.0514	0.559	.0494	2.053	0.042	.0076	-.0058	-24.9	00.0	-0.314	0.104	0.209	-0.075
20.9	04.0	0.501	.2450	.0520	0.555	.0502	2.043	-0.029	-.0083	.0076	-24.8	00.0	-0.333	0.112	0.020	-0.011
20.9	08.1	0.516	.2503	.0464	0.571	.0499	2.060	-0.069	-.0121	.0138	-24.9	00.0	-0.305	0.104	-0.048	0.016
20.9	-08.0	0.634	.2848	-.0109	0.694	.0390	2.227	0.083	.0126	-.0108	00.8	-00.1	0.431	-0.158	0.244	-0.092
20.9	-04.0	0.628	.2828	-.0070	0.688	.0389	2.222	0.042	.0071	-.0038	00.8	00.0	0.473	-0.183	0.165	-0.064
20.9	04.0	0.627	.2829	-.0081	0.687	.0395	2.218	-0.030	-.0099	.0059	00.8	00.0	0.555	-0.209	0.024	-0.018
20.9	08.1	0.636	.2859	-.0126	0.696	.0394	2.224	-0.068	-.0156	.0111	00.7	00.0	0.606	-0.233	-0.019	0.004
(c) M = 1.00																
21.0	-08.0	0.593	.3037	.0210	0.663	.0698	1.954	0.071	.0220	-.0072	-47.7	-00.2	-0.447	0.205	0.386	-0.163
21.1	-04.0	0.586	.2996	.0257	0.655	.0683	1.957	0.040	.0112	-.0038	-47.8	-00.1	-0.359	0.154	0.246	-0.108
21.0	04.0	0.571	.2879	.0294	0.636	.0635	1.982	-0.023	-.0112	.0039	-47.9	00.0	-0.232	0.089	-0.018	0.007
21.0	08.1	0.585	.2942	.0244	0.652	.0641	1.990	-0.057	-.0215	.0066	-47.9	00.0	-0.132	0.052	-0.073	0.027
21.0	-08.0	0.592	.2967	.0229	0.659	.0638	1.995	0.071	.0217	-.0072	-24.8	-00.2	-0.479	0.188	0.409	-0.177
21.1	-04.0	0.589	.2951	.0256	0.656	.0630	1.996	0.039	.0121	-.0028	-24.8	-00.1	-0.393	0.161	0.285	-0.121
21.1	04.0	0.583	.2928	.0266	0.649	.0633	1.990	-0.023	-.0120	.0044	-24.8	00.0	-0.286	0.118	0.014	-0.007
21.1	08.1	0.597	.2994	.0211	0.665	.0643	1.995	-0.056	-.0218	.0078	-24.9	00.0	-0.187	0.083	-0.042	0.019
21.1	-08.0	0.699	.3239	-.0348	0.769	.0498	2.159	0.079	.0149	-.0090	-00.2	-00.1	0.520	-0.202	0.344	-0.144
21.1	-04.0	0.691	.3191	-.0309	0.760	.0480	2.167	0.041	.0067	-.0030	-00.2	-00.1	0.583	-0.233	0.227	-0.098
21.1	00.0	0.692	.3213	-.0327	0.761	.0498	2.153	0.007	-.0027	.0010	-00.2	00.0	0.648	-0.267	0.111	-0.053
21.1	04.0	0.690	.3190	-.0324	0.759	.0483	2.164	-0.030	-.0118	.0062	-00.3	00.0	0.678	-0.285	0.000	-0.007
21.1	08.1	0.698	.3221	-.0355	0.767	.0488	2.166	-0.060	-.0183	.0093	-00.3	00.0	0.751	-0.310	-0.021	0.004
(d) M = 1.20																
21.1	-08.0	0.566	.3031	.0077	0.637	.0786	1.866	0.087	.0177	-.0181	-47.7	-00.3	-0.459	0.205	0.505	-0.227
21.1	-04.0	0.574	.2992	.0068	0.643	.0717	1.917	0.046	.0093	-.0095	-47.8	-00.2	-0.331	0.146	0.298	-0.132
21.1	04.0	0.571	.2972	.0061	0.640	.0707	1.922	-0.033	-.0090	.0098	-47.8	00.0	-0.286	0.116	0.021	-0.007
21.1	08.1	0.563	.2998	.0085	0.633	.0766	1.877	-0.067	-.0167	.0182	-47.8	00.0	-0.243	0.109	-0.049	0.028
21.1	-08.0	0.588	.2918	-.0039	0.654	.0598	2.016	0.089	.0195	-.0191	-24.8	-00.3	-0.323	0.136	0.533	-0.237
21.2	-04.0	0.597	.2911	-.0054	0.662	.0555	2.051	0.048	.0116	-.0106	-24.8	-00.2	-0.221	0.095	0.386	-0.169
21.1	04.0	0.595	.2912	-.0052	0.660	.0564	2.044	-0.037	-.0118	.0112	-24.9	00.0	-0.050	0.025	0.046	-0.022
21.1	08.1	0.585	.2897	-.0045	0.650	.0592	2.019	-0.079	-.0190	.0209	-25.0	00.0	0.027	-0.002	-0.046	0.024
21.2	-08.0	0.687	.3266	-.0592	0.759	.0558	2.105	0.082	.0162	-.0135	-00.3	-00.2	0.597	-0.251	0.427	-0.184
21.2	-04.0	0.694	.3250	-.0612	0.765	.0512	2.137	0.043	.0089	-.0075	-00.3	-00.1	0.651	-0.277	0.290	-0.125
21.2	04.0	0.693	.3254	-.0617	0.764	.0520	2.131	-0.039	-.0124	.0103	-00.4	00.0	0.822	-0.343	0.087	-0.036
21.2	08.1	0.686	.3264	-.0595	0.758	.0560	2.103	-0.074	-.0192	.0160	-00.4	00.0	0.875	-0.364	-0.002	0.002
(e) M = 1.35																
21.1	-08.0	0.539	.2839	.0022	0.605	.0705	1.899	0.096	.0141	-.0241	-47.8	-00.4	-0.329	0.151	0.594	-0.276
21.1	-04.0	0.546	.2836	.0015	0.612	.0672	1.927	0.052	.0079	-.0133	-47.8	-00.2	-0.283	0.128	0.379	-0.172
21.1	04.0	0.538	.2809	.0027	0.603	.0680	1.915	-0.042	-.0078	.0149	-47.8	00.0	-0.261	0.113	0.024	-0.015
21.1	08.1	0.527	.2769	.0047	0.591	.0688	1.901	-0.075	-.0135	.0227	-47.8	00.0	-0.223	0.104	-0.042	0.018
21.1	-08.0	0.568	.2779	-.0083	0.630	.0543	2.044	0.098	.0159	-.0238	-24.8	-00.4	-0.204	0.098	0.597	-0.274
21.1	-04.0	0.575	.2757	-.0105	0.636	.0493	2.087	0.054	.0091	-.0140	-24.9	-00.3	-0.124	0.056	0.422	-0.195
21.1	04.0	0.571	.2745	-.0103	0.632	.0497	2.082	-0.043	-.0091	.0146	-25.0	00.0	0.028	-0.003	0.069	-0.030
21.1	08.1	0.557	.2700	-.0066	0.617	.0511	2.064	-0.071	-.0152	.0208	-25.0	00.0	0.068	-0.018	-0.048	0.020
21.1	-08.0	0.657	.3120	-.0601	0.725	.0536	2.104	0.088	.0121	-.0172	-00.3	-00.3	0.612	-0.258	0.522	-0.234
21.2	-04.0	0.664	.3112	-.0618	0.732	.0496	2.135	0.046	.0061	-.0086	-00.3	-00.2	0.687	-0.295	0.331	-0.147
21.2	04.0	0.663	.3117	-.0630	0.731	.0505	2.128	-0.041	-.0088	.0120	-00.4	00.0	0.819	-0.349	0.096	-0.036
21.1	08.1	0.655	.3108	-.0603	0.723	.0531	2.107	-0.079	-.0152	.0195	-00.4	00.0	0.875	-0.372	0.010	0.001

[redacted]

[redacted]

TABLE XI.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 20^{\circ}$ WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(f) M = 3.20																
20.5	-08.5	0.307	.1550	.0037	0.342	.0376	1.981	0.064	.0024	-.0104	-47.9	-00.2	-0.001	0.005	0.294	-0.137
20.5	-04.2	0.313	.1540	.0033	0.347	.0345	2.032	0.036	.0013	-.0054	-48.0	-00.1	0.004	0.002	0.208	-0.097
20.5	00.0	0.315	.1538	.0036	0.349	.0335	2.048	0.006	-.0001	-.0003	-47.9	00.0	-0.015	0.012	0.132	-0.062
20.5	04.3	0.312	.1534	.0033	0.346	.0342	2.035	-0.023	-.0012	.0048	-47.9	00.0	-0.042	0.026	0.079	-0.035
20.5	08.5	0.305	.1522	.0040	0.339	.0357	2.004	-0.048	-.0021	.0091	-47.9	00.0	-0.074	0.042	0.036	-0.015
20.5	-08.5	0.319	.1543	-.0021	0.353	.0326	2.069	0.066	.0032	-.0104	-24.0	-00.2	0.084	-0.030	0.292	-0.137
20.5	-04.2	0.323	.1533	-.0019	0.356	.0304	2.105	0.036	.0017	-.0054	-24.0	-00.1	0.093	-0.035	0.208	-0.097
20.5	00.0	0.325	.1533	-.0015	0.358	.0296	2.119	0.006	-.0003	-.0003	-24.0	00.0	0.090	-0.034	0.130	-0.061
20.5	04.3	0.322	.1524	-.0021	0.355	.0298	2.113	-0.023	-.0019	.0047	-24.0	00.0	0.084	-0.031	0.069	-0.034
20.5	08.5	0.318	.1524	-.0021	0.351	.0314	2.085	-0.047	-.0032	.0089	-24.0	00.0	0.076	-0.027	0.027	-0.015
20.5	-08.5	0.355	.1732	-.0255	0.393	.0376	2.049	0.063	.0043	-.0096	-00.2	-00.2	0.418	-0.192	0.299	-0.141
20.5	-04.2	0.356	.1716	-.0244	0.394	.0355	2.077	0.034	.0021	-.0048	-00.2	-00.1	0.436	-0.200	0.207	-0.099
20.5	04.2	0.356	.1701	-.0249	0.393	.0343	2.092	-0.024	-.0036	.0054	-00.2	00.0	0.487	-0.226	0.069	-0.033
20.5	08.5	0.351	.1706	-.0253	0.389	.0364	2.060	-0.046	-.0055	.0094	-00.2	00.0	0.511	-0.237	0.028	-0.014
20.5	-08.5	0.392	.2145	-.0558	0.442	.0634	1.826	0.062	.0053	-.0097	15.5	-00.2	0.887	-0.420	0.311	-0.144
20.5	-04.2	0.395	.2140	-.0548	0.445	.0616	1.846	0.033	.0022	-.0042	15.4	-00.1	0.931	-0.444	0.215	-0.100
30.5	00.0	0.395	.2134	-.0542	0.445	.0609	1.852	0.002	-.0016	.0020	15.4	00.0	0.990	-0.473	0.139	-0.063
20.5	04.3	0.394	.2136	-.0552	0.444	.0616	1.845	-0.026	-.0052	.0076	15.4	00.0	1.052	-0.505	0.079	-0.035
20.5	08.5	0.390	.2128	-.0559	0.440	.0624	1.833	-0.046	-.0078	.0114	15.3	00.0	1.101	-0.528	0.045	-0.017

[redacted]

[redacted]

TABLE XII.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP WITH RUDDER UNDEFLECTED AND DIVE BRAKES EXTENDED. ANGLE OF ATTACK AS NOTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{n_e}	C_{l_e}	C_{N_i}	C_{h_i}
(a) M = 1.70																
25.5	-08.5	0.593	.3339	-.0011	0.679	.0451	1.776	0.085	.0113	-.0151	-47.8	-00.4	-0.146	0.084	0.455	-0.211
25.6	-04.4	0.600	.3337	-.0027	0.685	.0416	1.797	0.049	.0072	-.0094	-47.8	-00.3	-0.121	0.070	0.316	-0.144
25.7	03.7	0.604	.3352	-.0033	0.690	.0399	1.803	-0.031	-.0057	.0079	-47.9	00.0	-0.083	0.049	0.071	-0.034
25.7	07.9	0.601	.3377	-.0019	0.688	.0431	1.779	-0.070	-.0104	.0140	-47.9	00.0	-0.079	0.048	0.009	-0.005
25.5	-08.5	0.628	.3327	-.0148	0.710	.0291	1.887	0.089	.0110	-.0164	-24.0	-00.4	0.115	-0.042	0.415	-0.192
25.6	-04.4	0.634	.3322	-.0163	0.715	.0256	1.907	0.050	.0070	-.0099	-24.0	-00.2	0.150	-0.051	0.266	-0.120
25.6	03.7	0.637	.3329	-.0159	0.718	.0241	1.913	-0.031	-.0067	.0072	-24.1	00.0	0.209	-0.081	0.031	-0.012
25.7	07.9	0.637	.3366	-.0161	0.720	.0265	1.893	-0.071	-.0109	.0133	-24.1	00.0	0.232	-0.092	-0.035	0.017
25.5	-08.5	0.686	.3682	-.0532	0.778	.0359	1.864	0.085	.0110	-.0132	-00.5	-00.3	0.684	-0.302	0.393	-0.180
25.6	-04.4	0.692	.3685	-.0549	0.783	.0335	1.877	0.048	.0058	-.0071	-00.5	-00.2	0.740	-0.328	0.253	-0.114
25.6	03.7	0.695	.3692	-.0548	0.786	.0317	1.882	-0.032	-.0074	.0078	-00.6	00.0	0.816	-0.363	0.048	-0.020
25.7	07.9	0.694	.3721	-.0547	0.787	.0336	1.866	-0.070	-.0128	.0135	-00.6	00.0	0.866	-0.387	-0.012	0.003
25.5	-08.5	0.722	.4347	-.0909	0.839	.0802	1.661	0.086	.0124	-.0132	18.1	-00.3	1.259	-0.542	0.372	-0.167
25.6	-04.4	0.728	.4345	-.0923	0.844	.0770	1.675	0.048	.0067	-.0067	18.0	-00.2	1.313	-0.566	0.238	-0.100
25.7	03.7	0.731	.4355	-.0924	0.848	.0751	1.679	-0.028	-.0087	.0077	17.9	00.0	1.404	-0.605	0.063	-0.024
25.7	07.8	0.729	.4380	-.0922	0.847	.0776	1.665	-0.067	-.0144	.0138	17.9	00.0	1.445	-0.624	0.007	0.000
(b) M = 2.50																
25.2	-08.3	0.479	.2653	.0022	0.546	.0354	1.804	0.069	.0064	-.0113	-47.9	-00.2	0.000	0.010	0.326	-0.156
25.3	-04.2	0.483	.2635	.0015	0.549	.0318	1.831	0.037	.0040	-.0065	-47.9	-00.2	0.002	0.009	0.237	-0.111
25.4	03.9	0.490	.2670	.0008	0.557	.0310	1.834	-0.026	-.0030	.0055	-47.9	00.0	-0.009	0.015	0.069	-0.033
25.4	08.0	0.486	.2693	.0018	0.555	.0340	1.807	-0.057	-.0067	.0106	-47.9	00.0	-0.038	0.030	0.017	-0.011
25.2	-08.3	0.496	.2640	-.0068	0.561	.0272	1.878	0.069	.0075	-.0118	-24.0	-00.2	0.156	-0.059	0.324	-0.154
25.3	-04.2	0.500	.2649	-.0070	0.565	.0248	1.896	0.039	.0044	-.0069	-24.0	-00.2	0.165	-0.061	0.223	-0.105
25.3	03.9	0.509	.2681	-.0082	0.575	.0240	1.899	-0.026	-.0036	.0048	-24.1	00.0	0.184	-0.070	0.061	-0.029
25.4	08.0	0.506	.2689	-.0074	0.572	.0258	1.880	-0.058	-.0083	.0106	-24.1	00.0	0.184	-0.070	0.000	-0.003
25.2	-08.0	0.542	.2935	-.0379	0.615	.0344	1.845	0.066	.0079	-.0100	-00.4	-00.2	0.606	-0.277	0.309	-0.148
25.3	-04.2	0.547	.2940	-.0381	0.620	.0321	1.860	0.037	.0044	-.0054	-00.4	-00.1	0.629	-0.287	0.215	-0.102
25.3	03.9	0.554	.2975	-.0391	0.628	.0315	1.861	-0.026	-.0031	.0051	-00.4	00.0	0.701	-0.320	0.064	-0.031
25.4	08.0	0.552	.2993	-.0394	0.627	.0339	1.840	-0.059	-.0103	.0105	-00.5	00.0	0.737	-0.338	0.014	-0.010
25.2	-08.3	0.581	.3603	-.0783	0.679	.0781	1.612	0.070	.0091	-.0110	18.1	-00.2	1.273	-0.574	0.330	-0.154
25.2	-04.2	0.585	.3605	-.0785	0.683	.0760	1.623	0.039	.0046	-.0052	18.1	-00.2	1.336	-0.603	0.231	-0.106
25.3	03.9	0.593	.3650	-.0799	0.692	.0758	1.624	-0.026	-.0068	.0076	18.0	00.0	1.488	-0.667	0.075	-0.032
25.4	08.0	0.590	.3678	-.0799	0.691	.0788	1.605	-0.059	-.0131	.0142	17.9	00.0	1.555	-0.698	0.029	-0.013
(c) M = 3.20																
30.8	-08.5	0.502	.3322	.0017	0.601	.0282	1.510	0.058	.0097	-.0065	-48.0	-00.1	0.028	-0.008	0.237	-0.112
30.8	-04.2	0.506	.3330	.0030	0.605	.0262	1.521	0.032	.0054	-.0030	-48.0	-00.1	0.030	-0.008	0.152	-0.072
30.8	04.3	0.505	.3309	.0025	0.603	.0254	1.525	-0.015	-.0054	.0023	-48.0	00.0	0.021	-0.001	0.037	-0.020
30.8	08.5	0.499	.3285	.0021	0.597	.0263	1.520	-0.032	-.0091	.0043	-47.9	00.0	0.008	0.005	0.006	-0.007
30.8	-08.5	0.516	.3360	-.0069	0.617	.0227	1.542	0.057	.0098	-.0063	-24.0	-00.1	0.192	-0.080	0.238	-0.108
30.8	-04.2	0.522	.3359	-.0053	0.620	.0206	1.553	0.032	.0054	-.0029	-24.0	-00.1	0.193	-0.079	0.140	-0.068
30.8	04.3	0.520	.3341	-.0057	0.618	.0198	1.557	-0.013	-.0059	.0014	-24.0	00.0	0.202	-0.079	0.034	-0.019
30.8	08.5	0.515	.3311	-.0062	0.613	.0201	1.556	-0.033	-.0098	.0042	-24.0	00.0	0.202	-0.080	0.001	-0.005
30.8	-08.5	0.559	.3703	-.0385	0.670	.0314	1.510	0.054	.0104	-.0043	-00.3	-00.1	0.674	-0.308	0.225	-0.109
30.8	-04.2	0.563	.3702	-.0369	0.673	.0292	1.520	0.030	.0052	-.0014	-00.3	-00.1	0.698	-0.319	0.139	-0.069
30.8	04.3	0.561	.3678	-.0371	0.670	.0283	1.525	-0.013	-.0075	.0022	-00.4	00.0	0.756	-0.345	0.035	-0.021
30.8	08.5	0.555	.3657	-.0382	0.664	.0297	1.518	-0.028	-.0120	.0037	-00.4	00.0	0.781	-0.358	0.007	-0.008
30.8	-08.5	0.593	.4332	-.0764	0.731	.0679	1.366	0.054	.0116	-.0049	15.3	-00.1	1.285	-0.589	0.247	-0.113
30.8	-04.2	0.596	.4332	-.0751	0.734	.0663	1.376	0.030	.0055	-.0010	15.2	-00.1	1.344	-0.620	0.160	-0.072
30.8	04.2	0.594	.4291	-.0754	0.730	.0639	1.384	-0.008	-.0093	.0033	15.2	00.0	1.485	-0.688	0.053	-0.022
30.8	08.5	0.587	.4269	-.0758	0.723	.0658	1.375	-0.026	-.0147	.0059	15.1	00.0	1.530	-0.709	0.027	-0.011

[redacted]

[redacted]

TABLE XIII.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH ELEVONS AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 1.60																
05.3	00.0	0.241	.0648	-.0485	0.246	.0421	3.721	0.012	-.0005	-.0117	-00.1	13.6	0.494	-0.142	0.748	-0.248
10.6	00.0	0.431	.1129	-.0556	0.444	.0311	3.513	0.013	-.0027	-.0124	-00.2	13.5	0.655	-0.195	0.909	-0.290
16.0	00.0	0.590	.1837	-.0438	0.618	.0134	3.212	0.017	-.0016	-.0140	-00.2	13.5	0.676	-0.217	0.862	-0.290
21.4	00.0	0.761	.2899	-.0273	0.814	-.0095	2.624	0.018	-.0008	-.0115	-00.2	13.6	0.674	-0.223	0.679	-0.223
26.3	00.0	0.894	.4090	-.0092	0.983	-.0308	2.187	0.017	-.0010	-.0097	-00.2	13.7	0.645	-0.217	0.508	-0.163
05.3	00.0	0.221	.0713	-.0391	0.227	.0505	3.105	0.019	-.0027	-.0244	-03.1	32.3	0.413	-0.120	1.011	-0.411
10.6	00.0	0.398	.1229	-.0437	0.414	.0471	3.240	0.023	-.0042	-.0301	-03.2	32.1	0.545	-0.170	1.316	-0.529
16.0	00.0	0.562	.1977	-.0349	0.595	.0349	2.843	0.036	-.0014	-.0413	-03.2	32.1	0.579	-0.189	1.535	-0.578
21.4	00.0	0.733	.2999	-.0203	0.792	.0113	2.445	0.037	.0005	-.0388	-03.2	32.2	0.581	-0.195	1.340	-0.489
26.3	00.0	0.863	.4103	-.0036	0.955	-.0147	2.102	0.034	-.0002	-.0326	-03.2	32.4	0.560	-0.191	1.069	-0.375
(b) M = 1.30																
05.2	00.0	0.198	.0765	-.0336	0.204	.0582	2.586	0.017	.0009	-.0164	-02.1	13.6	0.529	-0.171	0.800	-0.298
10.5	00.0	0.388	.1254	-.0398	0.404	.0526	3.091	0.016	-.0015	-.0148	-02.2	13.6	0.751	-0.270	0.870	-0.323
15.8	00.0	0.588	.2040	-.0371	0.621	.0359	2.880	0.019	-.0011	-.0158	-02.2	13.6	0.750	-0.268	0.853	-0.314
21.2	00.0	0.805	.3284	-.0418	0.869	.0150	2.451	0.018	-.0013	-.0102	-02.2	13.7	0.745	-0.269	0.632	-0.235
25.8	00.0	0.824	.3963	-.0095	0.914	-.0026	2.078	0.019	-.0021	-.0069	-02.2	13.8	0.629	-0.231	0.289	-0.108
05.2	00.0	0.187	.0851	-.0274	0.194	.0677	2.199	0.028	.0010	-.0313	-03.1	32.4	0.445	-0.148	1.080	-0.469
10.5	00.0	0.370	.1304	-.0322	0.388	.0607	2.841	0.025	-.0014	-.0288	-03.2	32.3	0.628	-0.236	1.148	-0.509
15.8	00.0	0.562	.2091	-.0289	0.598	.0479	2.689	0.031	-.0011	-.0346	-03.2	32.3	0.631	-0.229	1.280	-0.558
21.1	00.0	0.771	.3277	-.0314	0.837	.0271	2.352	0.031	-.0011	-.0305	-03.2	32.4	0.632	-0.233	1.080	-0.444
25.8	00.0	0.798	.3882	-.0053	0.887	.0019	2.055	0.030	-.0045	-.0206	-03.1	32.7	0.539	-0.204	0.570	-0.248
(c) M = 1.10																
05.2	00.0	0.205	.0943	-.0310	0.213	.0751	2.175	0.015	-.0013	-.0152	-02.2	13.4	0.640	-0.271	0.973	-0.397
10.6	00.0	0.415	.1419	-.0392	0.434	.0631	2.924	0.015	-.0021	-.0139	-02.3	13.4	0.665	-0.284	0.993	-0.415
15.9	00.0	0.635	.2298	-.0578	0.674	.0461	2.765	0.018	-.0015	-.0138	-02.3	13.5	0.738	-0.314	0.821	-0.329
21.3	00.0	0.816	.3455	-.0667	0.886	.0254	2.362	0.011	-.0023	-.0048	-02.3	13.7	0.815	-0.333	0.479	-0.191
26.0	00.0	0.847	.4306	-.0377	0.950	.0156	1.967	0.015	-.0023	-.0096	-02.3	13.8	0.746	-0.297	0.280	-0.109
05.2	00.0	0.197	.1029	-.0246	0.206	.0843	1.919	0.026	-.0003	-.0298	-04.2	32.2	0.520	-0.227	1.232	-0.547
10.6	00.0	0.407	.1496	-.0320	0.428	.0720	2.722	0.025	-.0017	-.0279	-04.2	32.2	0.537	-0.236	1.241	-0.563
15.9	00.0	0.631	.2350	-.0507	0.671	.0523	2.684	0.024	-.0014	-.0255	-04.2	32.4	0.612	-0.266	1.016	-0.454
21.3	00.0	0.826	.3454	-.0585	0.876	.0282	2.332	0.018	-.0029	-.0168	-04.3	32.6	0.697	-0.293	0.663	-0.295
25.9	00.0	0.821	.4215	-.0293	0.923	.0191	1.949	0.027	-.0062	-.0162	-04.2	32.6	0.648	-0.266	0.466	-0.232
(d) M = 1.20																
05.3	00.0	0.208	.1006	-.0360	0.216	.0810	2.063	0.011	-.0015	-.0126	-02.2	13.2	0.525	-0.248	1.168	-0.505
10.6	00.0	0.400	.1444	-.0535	0.420	.0681	2.772	0.012	-.0011	-.0125	-02.3	13.2	0.594	-0.271	1.103	-0.484
15.9	00.0	0.586	.2228	-.0698	0.625	.0529	2.631	0.011	-.0014	-.0091	-02.3	13.4	0.727	-0.317	0.886	-0.389
21.3	00.0	0.744	.3316	-.0736	0.814	.0384	2.245	0.013	-.0012	-.0081	-02.4	13.6	0.822	-0.351	0.618	-0.263
26.1	00.0	0.836	.4357	-.0563	0.942	.0232	1.918	0.013	-.0025	-.0058	-02.4	13.7	0.816	-0.339	0.354	-0.154
05.3	00.0	0.203	.1126	-.0304	0.213	.0933	1.807	0.021	-.0008	-.0284	-04.2	32.0	0.422	-0.206	1.422	-0.641
10.6	00.0	0.396	.1542	-.0487	0.418	.0784	2.570	0.016	-.0006	-.0225	-04.2	32.1	0.497	-0.233	1.269	-0.585
15.9	00.0	0.582	.2299	-.0652	0.623	.0607	2.533	0.014	-.0012	-.0177	-04.3	32.2	0.632	-0.289	1.018	-0.502
21.3	00.0	0.735	.3359	-.0689	0.807	.0456	2.189	0.017	-.0016	-.0176	-04.3	32.3	0.734	-0.322	0.841	-0.422
26.1	00.0	0.823	.4343	-.0503	0.930	.0277	1.895	0.018	-.0046	-.0145	-04.3	32.5	0.710	-0.304	0.562	-0.294
(e) M = 1.35																
05.2	00.0	0.195	.0909	-.0350	0.203	.0725	2.151	0.011	-.0010	-.0128	-03.7	13.2	0.391	-0.186	1.118	-0.499
10.6	00.0	0.375	.1316	-.0525	0.394	.0603	2.850	0.011	-.0006	-.0110	-03.7	13.3	0.515	-0.234	1.001	-0.449
15.9	00.0	0.540	.2029	-.0635	0.575	.0469	2.661	0.010	-.0011	-.0078	-03.8	13.4	0.645	-0.285	0.783	-0.351
21.2	00.0	0.687	.3034	-.0649	0.750	.0337	2.264	0.012	-.0010	-.0066	-03.8	13.6	0.717	-0.311	0.559	-0.246
26.0	00.0	0.793	.4115	-.0542	0.893	.0209	1.927	0.016	-.0020	-.0086	-03.8	13.7	0.701	-0.303	0.331	-0.153
05.2	00.0	0.194	.1061	-.0344	0.203	.0878	1.828	0.019	-.0007	-.0275	-04.2	31.9	0.374	-0.186	1.409	-0.667
10.6	00.0	0.375	.1438	-.0527	0.395	.0723	2.607	0.014	-.0004	-.0218	-04.2	32.1	0.499	-0.235	1.210	-0.569
15.9	00.0	0.543	.2147	-.0652	0.581	.0574	2.529	0.012	-.0010	-.0168	-04.3	32.2	0.641	-0.288	0.954	-0.476
21.2	00.0	0.692	.3165	-.0668	0.760	.0437	2.187	0.014	-.0014	-.0150	-04.3	32.3	0.720	-0.316	0.792	-0.406
26.1	00.0	0.792	.4202	-.0542	0.896	.0240	1.884	0.019	-.0031	-.0165	-04.3	32.5	0.693	-0.305	0.586	-0.314
(f) M = 1.7																
04.7	-00.1	0.155	.0763	-.0352	0.161	.0633	2.034	0.009	-.0010	-.0094	-01.2	12.1	0.336	-0.160	0.919	-0.424
09.9	-00.1	0.298	.1076	-.0432	0.312	.0546	2.769	0.010	-.0006	-.0087	-01.8	12.2	0.435	-0.201	0.833	-0.381
15.1	-00.2	0.442	.1669	-.0488	0.470	.0455	2.646	0.012	-.0006	-.0080	-03.1	12.2	0.541	-0.246	0.732	-0.336
20.4	-00.2	0.587	.2538	-.0545	0.634	.0349	2.293	0.012	-.0003	-.0069	-03.1	12.4	0.634	-0.286	0.533	-0.245
25.6	-00.3	0.706	.3687	-.0557	0.796	.0262	1.915	0.013	.0000	-.0055	-03.6	12.6	0.727	-0.327	0.357	-0.162
28.1	-00.3	0.752	.4273	-.0535	0.865	.0219	1.761	0.011	.0016	-.0042	-03.6	12.7	0.748	-0.333	0.304	-0.139
04.7	-00.1	0.156	.0908	-.0348	0.163	.0777	1.718	0.017	-.0005	-.0238	01.2	31.7	0.346	-0.167	1.246	-0.606
09.9	-00.1	0.297	.1214	-.0435	0.313	.0684	2.443	0.017	-.0002	-.0223	01.1	31.8	0.448	-0.209	1.177	-0.568
09.9	-00.1	0.297	.1214	-.0435	0.313	.0684	2.443	0.017	-.0001	-.0223	01.6	31.8	0.447	-0.209	1.176	-0.569
15.1	-00.1	0.443	.1760	-.0499	0.472	.0544	2.507	0.014	-.0005	-.0150	-03.9	32.1	0.552	-0.251	0.878	-0.419
20.4	-00.2	0.581	.2623	-.0554	0.636	.0432	2.215	0.016	-.0006	-.0145	-03.9	32.2	0.644	-0.290	0.745	-0.367
25.6	-00.2	0.7[illegible]	.3744	-.0565	0.796	.0331	1.878	0.016	-.0005	-.0125	-04.7	32.4	0.732	-0.329	0.579	-0.282
27.[illegible]	-00.3	0.735	.4[illegible]	-.0562	0.840	.0298	1.792	0.01[illegible]	-.0004	-.0120	-05.0	32.4	0.751	-0.336	0.546	-0.267
(g) M = [illegible]																
04.6	00.0	0.095	.0574	-.0191	0.099	.0495	1.650	0.008	.0000	-.0088	-01.3	12.4	0.211	-0.101	0.613	-0.297
09.8	00.0	0.211	.0811	-.0241	0.222	.0439	2.606	0.009	.0002	-.0082	-01.4	12.4	0.295	-0.137	0.595	-0.282
14.9	00.0	0.327	.1261	-.0288	0.348	.0374	2.590	0.009	.0001	-.0070	-02.0	12.5	0.386	-0.177	0.506	-0.242
20.1	-00.1	0.440	.1964	-.0334	0.481	.0327	2.242	0.009	.0001	-.0056	-03.0	12.6	0.490	-0.223	0.414	-0.199
25.4	-0[illegible].1	0.552	.2919	-.0376	0.623	.0279	1.888	0.008	.0002	-.0048	-03.1	12.7	0.601	-0.275	0.319	-0.156
29.1	-00.2	0.626	.3766	-.0395	0.730	.0238	1.662	0.008	.0006	-.0036	-03.5	12.7	0.671	-0.306	0.258	-0.126

[redacted]

TABLE XIII.- AERODYNAMIC CHARACTERISTICS AT ZERO SIDESLIP WITH ELEVONS AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{l_r}
(g) M = 2.50 - Concluded																
04.5	00.0	0.092	.0726	-.0178	0.098	.0648	1.272	0.019	.0006	-.0258	-02.0	31.9	0.203	-0.098	1.166	-0.585
09.8	00.0	0.209	.0949	-.0232	0.222	.0578	2.200	0.018	.0007	-.0234	-02.1	31.9	0.290	-0.135	1.077	-0.534
14.9	00.0	0.327	.1367	-.0288	0.351	.0476	2.390	0.015	.0007	-.0176	-04.0	32.2	0.387	-0.177	0.826	-0.399
20.1	00.0	0.440	.2043	-.0334	0.483	.0404	2.151	0.013	.0002	-.0133	-04.3	32.4	0.491	-0.223	0.632	-0.307
25.3	-00.1	0.549	.2984	-.0376	0.624	.0347	1.840	0.012	.0002	-.0115	-04.4	32.5	0.601	-0.275	0.534	-0.261
29.0	-00.2	0.621	.3793	-.0396	0.727	.0302	1.637	0.012	.0008	-.0101	-04.9	32.5	0.669	-0.305	0.476	-0.231
(h) M = 3.20																
05.2	00.0	0.068	.0490	-.0139	0.072	.0426	1.386	0.008	.0001	-.0069	00.0	12.7	0.170	-0.080	0.416	-0.213
10.2	00.0	0.165	.0691	-.0179	0.175	.0385	2.391	0.008	.0000	-.0064	-00.1	12.7	0.246	-0.115	0.406	-0.206
15.0	00.0	0.255	.1044	-.0202	0.273	.0349	2.439	0.007	-.0002	-.0056	-00.1	12.7	0.325	-0.152	0.362	-0.184
20.4	00.0	0.362	.1691	-.0246	0.398	.0318	2.139	0.009	-.0004	-.0045	-00.1	12.8	0.458	-0.207	0.308	-0.152
25.5	00.0	0.466	.2573	-.0308	0.531	.0311	1.809	0.009	-.0007	-.0035	-00.2	12.8	0.611	-0.278	0.240	-0.120
30.7	00.0	0.562	.3683	-.0367	0.671	.0296	1.525	0.009	-.0011	-.0025	-00.3	12.8	0.745	-0.339	0.194	-0.097
35.8	00.0	0.643	.5003	-.0440	0.814	.0289	1.285	0.009	-.0014	-.0014	-00.3	12.9	0.877	-0.397	0.161	-0.084
40.6	00.0	0.703	.6426	-.0527	0.952	.0297	1.094	0.009	-.0016	-.0007	-00.4	12.9	1.011	-0.453	0.127	-0.069
05.2	00.0	0.067	.0636	-.0125	0.072	.0573	1.046	0.020	.0007	-.0257	00.0	33.3	0.152	-0.072	1.013	-0.555
10.2	00.0	0.162	.0826	-.0161	0.174	.0524	1.958	0.019	.0006	-.0242	00.0	33.3	0.221	-0.102	0.977	-0.536
15.0	00.0	0.255	.1157	-.0207	0.276	.0458	2.201	0.017	.0004	-.0185	-00.1	33.5	0.338	-0.156	0.751	-0.405
20.4	00.0	0.362	.1779	-.0253	0.401	.0403	2.032	0.014	-.0001	-.0141	-00.1	33.0	0.464	-0.209	0.566	-0.314
25.6	00.0	0.463	.2633	-.0301	0.531	.0375	1.757	0.013	-.0003	-.0115	-00.2	33.0	0.593	-0.269	0.474	-0.269
30.7	00.0	0.561	.3738	-.0366	0.673	.0350	1.500	0.015	-.0006	-.0103	-00.3	33.1	0.726	-0.326	0.417	-0.245
35.8	00.0	0.641	.5063	-.0451	0.816	.0353	1.266	0.011	-.0009	-.0075	-00.3	33.1	0.885	-0.399	0.376	-0.211
40.6	00.0	0.701	.6464	-.0532	0.953	.0343	1.085	0.011	-.0013	-.0059	-00.4	33.1	1.011	-0.455	0.335	-0.178

[redacted]

TABLE XIV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH ELEVONS AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
05.3	-08.0	0.233	.0616	-.0445	0.238	.0397	3.790	0.064	.0052	-.0161	-00.1	13.5	0.441	-0.114	0.820	-0.296
05.3	-04.0	0.245	.0643	-.0490	0.250	.0413	3.809	0.038	.0018	-.0138	-00.1	13.5	0.488	-0.129	0.779	-0.268
05.3	04.0	0.234	.0628	-.0462	0.239	.0408	3.730	-0.012	-.0040	-.0127	-00.1	13.6	0.512	-0.156	0.733	-0.238
05.3	08.1	0.233	.0620	-.0441	0.238	.0401	3.765	-0.040	-.0080	-.0086	-00.2	13.6	0.547	-0.161	0.682	-0.220
05.2	-08.0	0.206	.0670	-.0329	0.211	.0478	3.068	0.069	.0034	-.0253	-03.1	32.3	0.355	-0.098	0.997	-0.418
05.3	-04.0	0.216	.0697	-.0377	0.222	.0494	3.104	0.044	.0002	-.0247	-03.1	32.3	0.398	-0.111	1.012	-0.412
05.3	04.0	0.211	.0718	-.0371	0.217	.0520	2.942	-0.002	-.0048	-.0257	-03.1	32.3	0.430	-0.131	1.005	-0.409
05.2	08.1	0.208	.0704	-.0345	0.214	.0509	2.960	-0.031	-.0078	-.0219	-03.1	32.4	0.447	-0.137	0.954	-0.387
(b) M = 0.90																
05.2	-08.0	0.195	.0743	-.0335	0.201	.0563	2.626	0.081	.0058	-.0224	-02.1	13.5	0.511	-0.161	0.889	-0.349
05.2	-04.0	0.198	.0763	-.0334	0.204	.0580	2.593	0.050	.0043	-.0201	-02.1	13.6	0.522	-0.164	0.857	-0.330
05.2	04.0	0.390	.1535	-.0686	0.402	.1175	2.538	-0.034	-.0059	-.0208	-02.1	13.6	1.179	-0.395	1.458	-0.528
05.2	08.1	0.199	.0764	-.0347	0.205	.0580	2.604	-0.047	-.0058	-.0077	-02.2	13.7	0.653	-0.229	0.672	-0.235
05.2	-08.0	0.182	.0804	-.0269	0.189	.0635	2.270	0.085	.0050	-.0328	-03.1	32.4	0.434	-0.143	1.073	-0.475
05.2	-04.0	0.186	.0824	-.0269	0.193	.0651	2.262	0.056	.0038	-.0325	-03.1	32.4	0.436	-0.143	1.076	-0.471
05.2	04.0	0.185	.0857	-.0278	0.192	.0685	2.160	-0.002	-.0023	-.0287	-03.1	32.4	0.483	-0.168	1.062	-0.459
05.2	08.0	0.186	.0855	-.0284	0.193	.0683	2.175	-0.033	-.0048	-.0259	-03.1	32.4	0.546	-0.198	1.033	-0.441
(c) M = 1.00																
05.2	-08.1	0.206	.0933	-.0320	0.214	.0740	2.212	0.085	.0095	-.0245	-02.2	13.3	0.515	-0.201	1.116	-0.467
05.2	-04.0	0.205	.0937	-.0312	0.213	.0745	2.190	0.050	.0050	-.0210	-02.2	13.4	0.587	-0.236	1.041	-0.439
05.2	04.0	0.206	.0957	-.0321	0.214	.0764	2.154	-0.020	-.0073	-.0092	-02.3	13.5	0.714	-0.306	0.884	-0.355
05.2	08.1	0.208	.0922	-.0313	0.216	.0727	2.262	-0.052	-.0113	-.0059	-02.3	13.6	0.741	-0.309	0.778	-0.298
05.2	-08.0	0.196	.0983	-.0248	0.204	.0800	1.991	0.090	.0094	-.0351	-04.1	32.2	0.405	-0.158	1.263	-0.567
05.2	-04.0	0.196	.1007	-.0246	0.204	.0823	1.943	0.057	.0054	-.0329	-04.2	32.2	0.468	-0.195	1.256	-0.561
05.2	04.0	0.194	.1035	-.0250	0.203	.0852	1.879	-0.005	-.0058	-.0267	-04.2	32.2	0.570	-0.253	1.212	-0.536
05.2	08.1	0.194	.1025	-.0242	0.203	.0843	1.897	-0.038	-.0098	-.0243	-04.2	32.3	0.601	-0.269	1.163	-0.517
(d) M = 1.20																
05.2	-08.1	0.209	.0994	-.0380	0.217	.0798	2.100	0.084	.0083	-.0219	-02.2	13.1	0.437	-0.202	1.276	-0.553
05.2	-04.0	0.211	.1008	-.0367	0.219	.0810	2.088	0.048	.0048	-.0178	-02.2	13.1	0.482	-0.226	1.248	-0.538
05.2	04.0	0.207	.0997	-.0367	0.215	.0802	2.074	-0.024	-.0070	-.0066	-02.3	13.3	0.570	-0.271	1.058	-0.453
05.2	08.1	0.210	.0986	-.0383	0.218	.0789	2.127	-0.061	-.0110	-.0008	-02.3	13.4	0.629	-0.297	0.945	-0.398
05.2	-08.1	0.202	.1088	-.0327	0.211	.0898	1.855	0.094	.0092	-.0356	-04.1	32.0	0.336	-0.162	1.435	-0.646
05.2	-04.0	0.202	.1105	-.0312	0.211	.0914	1.826	0.057	.0057	-.0324	-04.2	32.0	0.381	-0.187	1.432	-0.644
05.2	04.0	0.197	.1123	-.0308	0.206	.0937	1.750	-0.015	-.0063	-.0233	-04.2	32.0	0.462	-0.228	1.373	-0.621
05.2	08.1	0.199	.1103	-.0318	0.208	.0916	1.801	-0.051	-.0099	-.0181	-04.3	32.1	0.517	-0.253	1.261	-0.570
(e) M = 1.35																
05.2	-08.1	0.192	.0931	-.0380	0.200	.0751	2.066	0.082	.0052	-.0219	-02.7	13.1	0.360	-0.171	1.266	-0.558
05.2	-06.0	0.195	.0933	-.0388	0.203	.0750	2.093	0.064	.0049	-.0202	-02.7	13.1	0.384	-0.183	1.249	-0.550
05.2	-03.0	0.201	.0934	-.0394	0.209	.0745	2.154	0.036	.0026	-.0162	-02.7	13.1	0.416	-0.198	1.192	-0.534
05.2	04.0	0.196	.0925	-.0390	0.204	.0741	2.122	-0.025	-.0055	-.0071	-02.8	13.2	0.509	-0.244	1.038	-0.464
05.2	08.1	0.193	.0928	-.0376	0.201	.0747	2.084	-0.062	-.0067	-.0022	-02.8	13.3	0.570	-0.271	0.953	-0.420
05.2	-08.1	0.185	.1060	-.0331	0.194	.0886	1.746	0.090	.0053	-.0342	-04.1	31.9	0.281	-0.136	1.476	-0.683
05.2	-04.0	0.194	.1066	-.0345	0.203	.0883	1.820	0.055	.0040	-.0319	-04.1	31.9	0.323	-0.158	1.459	-0.682
05.2	04.1	0.189	.1060	-.0338	0.198	.0882	1.783	-0.017	-.0051	-.0226	-04.2	32.0	0.425	-0.208	1.354	-0.639
05.2	08.1	0.184	.1043	-.0323	0.193	.0870	1.766	-0.054	-.0062	-.0168	-04.2	32.1	0.486	-0.237	1.230	-0.572
(f) M = 1.70																
04.7	-08.3	0.137	.0767	-.0256	0.143	.0651	1.787	0.084	-.0026	-.0207	-03.2	11.9	0.210	-0.101	1.151	-0.524
04.7	-04.2	0.148	.0760	-.0299	0.154	.0635	1.950	0.045	-.0016	-.0152	-03.3	11.9	0.248	-0.120	1.046	-0.482
04.7	03.9	0.153	.0741	-.0315	0.159	.0611	2.071	-0.021	.0005	-.0059	-03.3	12.2	0.332	-0.162	0.810	-0.375
04.8	07.9	0.147	.0736	-.0265	0.153	.0610	2.002	-0.058	.0011	-.0017	-03.3	12.2	0.337	-0.167	0.738	-0.339
04.7	-08.2	0.136	.0920	-.0249	0.143	.0804	1.476	0.092	-.0023	-.0354	-04.6	31.5	0.210	-0.101	1.473	-0.694
04.7	-04.2	0.147	.0902	-.0292	0.154	.0777	1.629	0.052	-.0014	-.0293	-04.7	31.6	0.252	-0.121	1.370	-0.650
04.7	03.9	0.152	.0884	-.0306	0.159	.0754	1.722	-0.014	.0008	-.0194	-04.7	31.8	0.335	-0.163	1.168	-0.551
04.8	02.0	0.146	.0880	-.0262	0.153	.0754	1.660	-0.052	.0016	-.0147	-04.7	31.9	0.342	-0.169	1.090	-0.508
(g) M = 2.50																
04.6	-08.1	0.085	.0600	-.0176	0.090	.0528	1.425	0.070	-.0057	-.0152	-01.9	12.2	0.182	-0.085	0.832	-0.399
04.6	-04.1	0.091	.0582	-.0182	0.095	.0506	1.557	0.036	-.0030	-.0113	-01.9	12.3	0.193	-0.091	0.720	-0.347
04.6	04.0	0.096	.0559	-.0187	0.100	.0479	1.713	-0.021	.0029	-.0057	-01.9	12.5	0.206	-0.100	0.512	-0.247
04.7	08.1	0.093	.0566	-.0181	0.097	.0488	1.636	-0.055	.0050	-.0016	-01.9	12.6	0.205	-0.100	0.419	-0.205
04.6	-08.1	0.085	.0786	-.0168	0.091	.0714	1.080	0.083	-.0050	-.0353	-03.2	31.6	0.182	-0.086	1.444	-0.734
04.6	-04.0	0.089	.0749	-.0173	0.095	.0674	1.191	0.047	-.0025	-.0298	-03.2	31.7	0.193	-0.091	1.298	-0.658
04.6	04.0	0.094	.0692	-.0180	0.099	.0613	1.354	-0.012	.0033	-.0204	-03.2	32.0	0.206	-0.100	0.999	-0.504
04.7	08.1	0.093	.0680	-.0175	0.098	.0601	1.364	-0.048	.0055	-.0142	-03.2	32.2	0.208	-0.101	0.833	-0.421

[redacted]L

TABLE XIV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 5^{\circ}$ WITH ELEVONS AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(h) M = [illegible]																
05.1	-12.7	0.046	.0541	-.0125	0.053	.0496	0.893	0.103	-.0068	-.0200	00.0	12.5	0.146	-0.066	0.848	-0.422
05.1	-08.5	0.059	.0523	-.0134	0.063	.0468	1.120	0.068	-.0047	-.0142	00.0	12.6	0.153	-0.071	0.692	-0.346
05.1	-04.2	0.065	.0503	-.0138	0.069	.0443	1.286	0.035	-.0022	-.0095	00.0	12.6	0.159	-0.074	0.535	-0.270
05.1	00.0	0.067	.0488	-.0136	0.071	.0426	1.370	0.006	.0000	-.0062	00.0	12.7	0.169	-0.081	0.419	-0.213
05.1	04.3	0.065	.0477	-.0141	0.069	.0417	1.361	-0.023	.0023	-.0037	00.0	12.8	0.171	-0.083	0.331	-0.169
05.1	08.6	0.057	.0478	-.0137	0.061	.0425	1.192	-0.053	.0050	-.0005	00.0	12.8	0.174	-0.087	0.263	-0.137
05.1	12.9	0.046	.0458	-.0132	0.050	.0415	1.007	-0.081	.0072	.0030	00.0	12.8	0.166	-0.085	0.188	-0.099
05.1	-12.7	0.046	.0782	-.0113	0.053	.0737	0.591	0.123	-.0060	-.0491	00.0	32.9	0.140	-0.064	1.721	-0.924
05.1	-08.4	0.059	.0739	-.0124	0.065	.0683	0.793	0.086	-.0041	-.0401	00.0	33.0	0.146	-0.068	1.502	-0.805
05.2	-04.2	0.065	.0683	-.0131	0.071	.0621	0.953	0.050	-.0016	-.0315	00.0	33.2	0.154	-0.073	1.227	-0.666
05.2	00.0	0.067	.0640	-.0126	0.073	.0576	1.055	0.018	.0005	-.0252	00.0	33.3	0.154	-0.074	1.023	-0.556
05.0	04.3	0.067	.0612	-.0140	0.072	.0549	1.090	-0.012	.0028	-.0200	00.0	33.4	0.172	-0.085	0.860	-0.466
05.1	08.6	0.059	.0589	-.0137	0.064	.0533	1.001	-0.045	.0056	-.0138	00.0	33.5	0.176	-0.088	0.696	-0.376
05.1	12.9	0.048	.0553	-.0130	0.053	.0507	0.873	-0.075	.0076	-.0073	00.0	33.6	0.167	-0.087	0.527	-0.280

TABLE XV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH ELEVONS AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{n_e}	C_{N_r}	C_{n_r}
(a) M = 0.60																
10.6	-12.1	0.402	.1014	-.0425	0.414	.0252	3.966	0.100	.0315	-.0256	-00.1	13.4	0.348	-0.090	0.948	-0.339
10.6	-08.0	0.412	.1067	-.0492	0.425	.0285	3.865	0.073	.0206	-.0228	-00.1	13.4	0.467	-0.130	0.964	-0.332
10.6	-04.0	0.422	.1094	-.0532	0.435	.0293	3.857	0.042	.0097	-.0174	-00.2	13.5	0.567	-0.166	0.938	-0.308
10.6	04.0	0.421	.1100	-.0540	0.434	.0301	3.826	-0.019	-.0148	-.0055	-00.2	13.5	0.699	-0.216	0.824	-0.267
10.6	08.0	0.422	.1088	-.0524	0.435	.0287	3.879	-0.046	-.0261	-.0003	-00.2	13.6	0.778	-0.239	0.738	-0.242
10.6	12.0	0.401	.1003	-.0443	0.413	.0243	4.003	-0.056	-.0331	-.0048	-00.2	13.6	0.724	-0.214	0.704	-0.220
10.6	-12.1	0.377	.1069	-.0315	0.390	.0354	3.525	0.106	.0287	-.0349	-03.0	32.2	0.280	-0.075	1.127	-0.475
10.6	-08.0	0.386	.1141	-.0380	0.400	.0409	3.378	0.081	.0182	-.0347	-03.1	32.2	0.393	-0.113	1.206	-0.503
10.6	-04.0	0.394	.1201	-.0418	0.409	.0452	3.278	0.051	.0075	-.0329	-03.1	32.1	0.480	-0.145	1.289	-0.526
10.6	04.0	0.395	.1198	-.0438	0.410	.0448	3.294	-0.011	-.0157	-.0215	-03.2	32.2	0.600	-0.193	1.184	-0.484
10.6	08.1	0.396	.1157	-.0432	0.411	.0404	3.426	-0.042	-.0261	-.0120	-03.2	32.3	0.673	-0.213	1.013	-0.411
10.6	12.1	0.388	.1104	-.0398	0.402	.0367	3.518	-0.055	-.0351	-.0137	-03.2	32.4	0.701	-0.223	0.956	-0.378
(b) M = 0.90																
10.5	-12.1	0.375	.1145	-.0319	0.390	.0442	3.278	0.117	.0233	-.0232	-02.1	13.5	0.459	-0.139	0.934	-0.371
10.5	-08.1	0.382	.1194	-.0370	0.397	.0479	3.195	0.081	.0164	-.0208	-02.1	13.5	0.569	-0.185	0.925	-0.360
10.5	-04.0	0.389	.1238	-.0388	0.405	.0508	3.141	0.052	.0090	-.0198	-02.2	13.5	0.674	-0.236	0.926	-0.348
10.5	04.0	0.387	.1238	-.0390	0.403	.0511	3.127	-0.017	-.0121	-.0074	-02.2	13.6	0.810	-0.304	0.783	-0.283
10.5	08.0	0.387	.1207	-.0375	0.403	.0480	3.210	-0.049	-.0196	-.0046	-02.3	13.7	0.850	-0.316	0.701	-0.246
10.4	-12.1	0.355	.1178	-.0232	0.371	.0511	3.018	0.121	.0220	-.0331	-03.1	32.4	0.359	-0.104	1.138	-0.496
10.4	-08.1	0.362	.1238	-.0280	0.378	.0559	2.920	0.087	.0157	-.0324	-03.1	32.4	0.460	-0.152	1.154	-0.501
10.5	-04.0	0.370	.1279	-.0306	0.387	.0584	2.891	0.057	.0085	-.0312	-03.1	32.4	0.558	-0.198	1.154	-0.502
10.5	04.0	0.369	.1301	-.0326	0.387	.0606	2.840	-0.006	-.0110	-.0228	-03.2	32.4	0.689	-0.266	1.093	-0.486
10.5	08.0	0.368	.1267	-.0313	0.385	.0575	2.905	-0.037	-.0181	-.0188	-03.2	32.4	0.729	-0.280	1.009	-0.438
10.4	12.1	0.357	.1200	-.0274	0.373	.0530	2.975	-0.067	-.0240	-.0187	-03.2	32.5	0.716	-0.270	0.961	-0.408
(c) M = 1.00																
10.6	-12.1	0.410	.1318	-.0360	0.427	.0541	3.109	0.122	.0293	-.0241	-02.1	13.3	0.390	-0.130	1.104	-0.461
10.6	-08.1	0.410	.1359	-.0365	0.428	.0581	3.017	0.083	.0206	-.0208	-02.1	13.4	0.489	-0.181	1.019	-0.421
10.6	-04.0	0.416	.1409	-.0378	0.435	.0618	2.953	0.051	.0109	-.0199	-02.2	13.4	0.583	-0.236	1.031	-0.429
10.6	04.0	0.419	.1436	-.0402	0.438	.0640	2.915	-0.017	-.0140	-.0075	-02.3	13.5	0.771	-0.336	0.903	-0.361
10.6	08.0	0.417	.1363	-.0368	0.435	.0571	3.060	-0.044	-.0224	-.0085	-02.3	13.6	0.781	-0.321	0.782	-0.299
10.6	12.1	0.413	.1303	-.0353	0.430	.0519	3.171	-0.074	-.0294	-.0063	-02.3	13.6	0.735	-0.287	0.661	-0.257
10.5	-12.1	0.386	.1349	-.0260	0.404	.0617	2.860	0.128	.0292	-.0367	-03.1	32.2	0.283	-0.096	1.227	-0.545
10.5	-08.0	0.386	.1399	-.0269	0.405	.0666	2.758	0.090	.0205	-.0348	-03.1	32.2	0.370	-0.137	1.261	-0.559
10.6	-04.0	0.395	.1440	-.0286	0.415	.0688	2.746	0.060	.0111	-.0334	-03.1	32.2	0.451	-0.186	1.254	-0.558
10.6	04.0	0.402	.1502	-.0330	0.423	.0736	2.677	-0.009	-.0138	-.0218	-03.3	32.2	0.632	-0.288	1.193	-0.536
10.6	08.0	0.399	.1420	-.0294	0.418	.0662	2.807	-0.036	-.0222	-.0231	-03.3	32.3	0.651	-0.283	1.075	-0.480
10.6	12.1	0.396	.1353	-.0299	0.414	.0602	2.925	-0.071	-.0307	-.0184	-03.2	32.4	0.673	-0.271	0.948	-0.423
(d) M = 1.20																
10.6	-12.1	0.387	.1394	-.0506	0.406	.0658	2.775	0.130	.0190	-.0302	-02.1	13.2	0.376	-0.162	1.224	-0.534
10.6	-08.1	0.399	.1430	-.0552	0.419	.0669	2.794	0.084	.0142	-.0226	-02.2	13.2	0.458	-0.201	1.172	-0.514
10.6	-04.0	0.406	.1449	-.0553	0.426	.0674	2.804	0.046	.0079	-.0173	-02.2	13.2	0.531	-0.240	1.154	-0.508
10.6	04.0	0.405	.1439	-.0558	0.425	.0666	2.818	-0.026	-.0105	-.0042	-02.3	13.3	0.685	-0.316	0.945	-0.422
10.6	08.0	0.405	.1406	-.0555	0.424	.0635	2.880	-0.062	-.0164	.0014	-02.4	13.4	0.763	-0.348	0.795	-0.350
10.6	12.1	0.388	.1361	-.0511	0.406	.0624	2.848	-0.101	-.0206	.0068	-02.4	13.5	0.807	-0.366	0.714	-0.306
10.6	-12.1	0.381	.1491	-.0452	0.402	.0764	2.556	0.138	.0198	-.0428	-04.1	32.0	0.273	-0.124	1.433	-0.641
10.6	-08.1	0.391	.1525	-.0495	0.412	.0779	2.561	0.093	.0146	-.0358	-04.1	32.0	0.356	-0.163	1.408	-0.634
10.6	-04.0	0.397	.1546	-.0498	0.419	.0786	2.570	0.054	.0086	-.0302	-04.2	32.0	0.427	-0.201	1.381	-0.633
10.6	04.0	0.397	.1521	-.0505	0.418	.0763	2.609	-0.021	-.0097	-.0146	-04.3	32.1	0.578	-0.275	1.155	-0.539
10.6	08.1	0.393	.1479	-.0499	0.414	.0728	2.660	-0.056	-.0159	-.0097	-04.3	32.2	0.654	-0.308	1.030	-0.482
10.6	12.1	0.378	.1442	-.0459	0.398	.0722	2.620	-0.095	-.0201	-.0054	-04.3	32.3	0.703	-0.329	0.946	-0.432
(e) M = 1.35																
10.3	-12.2	0.351	.1316	-.0489	0.369	.0662	2.667	0.135	.0116	-.0324	-02.1	13.1	0.369	-0.159	1.282	-0.561
10.3	-08.1	0.362	.1321	-.0530	0.380	.0646	2.742	0.087	.0091	-.0236	-02.2	13.1	0.435	-0.195	1.176	-0.523
10.4	-04.0	0.371	.1323	-.0551	0.389	.0631	2.806	0.048	.0055	-.0175	-02.2	13.2	0.493	-0.224	1.088	-0.488
10.4	04.0	0.370	.1318	-.0552	0.388	.0628	2.809	-0.026	-.0075	-.0041	-02.3	13.3	0.648	-0.300	0.936	-0.415
10.4	08.1	0.366	.1315	-.0531	0.384	.0632	2.786	-0.062	-.0105	.0020	-02.4	13.4	0.712	-0.332	0.813	-0.360
10.3	12.1	0.357	.1280	-.0503	0.374	.0616	2.788	-0.108	-.0136	.0124	-02.4	13.5	0.742	-0.349	0.659	-0.285
10.5	-12.1	0.350	.1449	-.0447	0.371	.0781	2.418	0.140	.0120	-.0442	-04.1	31.9	0.290	-0.127	1.474	-0.672
10.5	-08.1	0.362	.1460	-.0491	0.383	.0769	2.482	0.094	.0095	-.0365	-04.2	31.9	0.357	-0.164	1.401	-0.657
10.6	-04.0	0.373	.1471	-.0515	0.394	.0759	2.537	0.057	.0060	-.0317	-04.2	32.0	0.417	-0.193	1.362	-0.645
10.6	04.0	0.371	.1413	-.0518	0.391	.0706	2.628	-0.025	-.0068	-.0114	-04.3	32.2	0.564	-0.268	1.031	-0.483
10.5	08.1	0.365	.1403	-.0495	0.385	.0707	2.606	-0.060	-.0104	-.0069	-04.3	32.3	0.626	-0.299	0.950	-0.448
10.5	12.1	0.352	.1357	-.0456	0.371	.0687	2.595	-0.104	-.0140	.0050	-04.3	32.4	0.654	-0.316	0.802	-0.377
(f) M = 1.70																
09.9	-12.3	0.277	.1073	-.0311	0.291	.0579	2.579	0.134	.0028	-.0334	-03.3	11.8	0.260	-0.117	1.213	-0.547
09.9	-08.3	0.285	.1067	-.0353	0.299	.0559	2.670	0.089	.0015	-.0251	-03.3	11.9	0.307	-0.141	1.109	-0.498
09.9	-04.2	0.293	.1062	-.0387	0.307	.0540	2.760	0.047	.0006	-.0170	-03.3	12.0	0.361	-0.167	0.985	-0.448
09.9	-00.1	0.297	.1060	-.0412	0.311	.0531	2.804	0.011	-.0005	-.0088	-03.4	12.1	0.407	-0.191	0.836	-0.382
09.9	03.8	0.297	.1050	-.0403	0.311	.0519	2.833	-0.025	-.0015	-.0013	-03.4	12.3	0.444	-0.211	0.694	-0.324
10.0	07.9	0.292	.1049	-.0367	0.306	.0525	2.784	-0.065	-.0029	.0059	-03.4	12.4	0.457	-0.219	0.609	-0.279
10.0	12.0	0.284	.1035	-.0331	0.298	.0522	2.748	-0.106	-.0044	.0106	-03.4	12.4	0.460	-0.223	0.536	-0.240
09.9	-12.3	0.275	.1229	-.0310	0.292	.0736	2.237	0.142	.0030	-.0471	-04.7	31.4	0.262	-0.118	1.514	-0.714
09.9	-08.2	0.284	.1232	-.0353	0.301	.0723	2.306	0.095	.0018	-.0388	-04.7	31.5	0.312	-0.143	1.407	-0.676
09.9	-04.2	0.293	.1219	-.0387	0.310	.0694	2.407	0.054	.0010	-.0306	-04.7	31.6	0.362	-0.167	1.291	-0.624
09.9	-00.1	0.297	.1205	-.0409	0.313	.0675	2.462	0.019	-.0001	-.0226	-04.8	31.8	0.407	-0.191	1.181	-0.569
09.9	03.9	0.297	.1165	-.0401	0.313	.0633	2.551	-0.020	-.0008	-.0104	-04.8	32.1	0.440	-0.209	0.915	-0.428
10.0	07.9	0.293	.1146	-.0363	0.308	.0620	2.552	-0.059	-.0024	-.0021	-04.8	32.2	0.451	-0.217	0.781	-0.358
10.0	12.0	0.283	.1122	-.0326	0.298	.0610	2.521	-0.101	-.0041	.0021	-04.8	32.3	0.453	-0.221	0.728	-0.323

[redacted]

TABLE XV.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 10^{\circ}$ WITH ELEVONS AND DIVE BRAKES UNDEFLECTED - Concluded

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(g) M = 2.50																
09.8	-12.2	0.197	.0839	-.0215	0.208	.0491	2.342	0.111	-.0011	-.0245	-02.2	12.1	0.237	-0.108	0.957	-0.454
09.8	-08.1	0.204	.0830	-.0227	0.215	.0469	2.457	0.072	-.0007	-.0182	-01.9	12.2	0.257	-0.118	0.827	-0.392
09.8	-04.1	0.208	.0815	-.0231	0.219	.0447	2.554	0.038	-.0004	-.0129	-01.9	12.3	0.272	-0.125	0.711	-0.337
09.8	00.0	0.208	.0800	-.0234	0.219	.0432	2.605	0.009	.0002	-.0082	-02.0	12.4	0.285	-0.132	0.594	-0.283
09.8	04.0	0.213	.0805	-.0239	0.224	.0427	2.650	-0.021	.0002	-.0028	-02.0	12.5	0.298	-0.140	0.475	-0.227
09.9	08.0	0.213	.0810	-.0237	0.224	.0430	2.633	-0.056	-.0001	.0029	-02.0	12.6	0.307	-0.145	0.362	-0.173
09.9	12.1	0.206	.0795	-.0231	0.217	.0426	2.595	-0.093	.0000	.0090	-02.0	12.7	0.316	-0.150	0.265	-0.127
09.8	-12.1	0.193	.1024	-.0207	0.208	.0680	1.888	0.123	-.0006	-.0445	-04.6	31.5	0.236	-0.107	1.541	-0.776
09.8	-08.1	0.201	.0995	-.0219	0.215	.0638	2.020	0.083	-.0002	-.0364	-03.2	31.7	0.255	-0.118	1.374	-0.684
09.8	-04.0	0.207	.0968	-.0224	0.220	.0602	2.132	0.048	.0002	-.0295	-03.2	31.8	0.271	-0.124	1.225	-0.605
09.8	00.0	0.208	.0940	-.0230	0.221	.0571	2.212	0.017	.0006	-.0232	-03.3	31.9	0.290	-0.135	1.079	-0.533
09.8	04.0	0.214	.0914	-.0234	0.226	.0535	2.337	-0.014	.0009	-.0143	-03.3	32.2	0.297	-0.139	0.845	-0.401
09.9	08.0	0.213	.0890	-.0234	0.225	.0511	2.391	-0.050	.0003	-.0058	-03.3	32.4	0.305	-0.145	0.645	-0.292
09.9	12.1	0.205	.0859	-.0227	0.217	.0492	2.389	-0.089	.0003	.0021	-03.3	32.5	0.314	-0.150	0.499	-0.224
(h) M = 3.20																
10.1	-11.3	0.155	.0723	-.0182	0.165	.0438	2.139	0.090	-.0004	-.0204	00.0	12.5	0.219	-0.099	0.788	-0.391
10.2	-08.4	0.159	.0713	-.0181	0.169	.0420	2.228	0.068	-.0001	-.0165	00.0	12.6	0.223	-0.102	0.687	-0.341
10.2	-04.2	0.166	.0704	-.0180	0.176	.0397	2.360	0.036	.0003	-.0108	-00.1	12.6	0.234	-0.106	0.535	-0.265
10.2	04.3	0.164	.0675	-.0180	0.173	.0373	2.424	-0.019	-.0001	-.0021	-00.1	12.8	0.256	-0.121	0.306	-0.155
10.2	08.6	0.160	.0647	-.0187	0.169	.0353	2.473	-0.046	.0002	.0024	-00.1	12.8	0.266	-0.128	0.210	-0.111
10.1	11.5	0.152	.0637	-.0185	0.161	.0358	2.387	-0.066	.0006	.0053	-00.1	12.9	0.272	-0.131	0.166	-0.083
10.2	-11.2	0.151	.0960	-.0176	0.166	.0676	1.577	0.109	.0006	-.0486	00.0	32.9	0.224	-0.101	1.656	-0.896
10.2	-08.4	0.157	.0927	-.0177	0.171	.0633	1.693	0.086	.0007	-.0421	-00.1	33.0	0.223	-0.103	1.504	-0.799
10.2	-04.1	0.164	.0865	-.0178	0.177	.0578	1.851	0.050	.0009	-.0328	-00.1	33.2	0.231	-0.107	1.247	-0.669
10.2	04.3	0.164	.0788	-.0181	0.175	.0483	2.077	-0.011	.0005	-.0145	-00.1	33.5	0.260	-0.123	0.706	-0.375
10.2	08.6	0.160	.0739	-.0186	0.171	.0441	2.172	-0.041	.0007	-.0069	-00.1	33.6	0.271	-0.131	0.516	-0.263
10.2	11.5	0.153	.0710	-.0185	0.163	.0428	2.151	-0.063	.0010	-.0025	-00.1	33.7	0.267	-0.132	0.431	-0.218

[redacted]

[redacted]

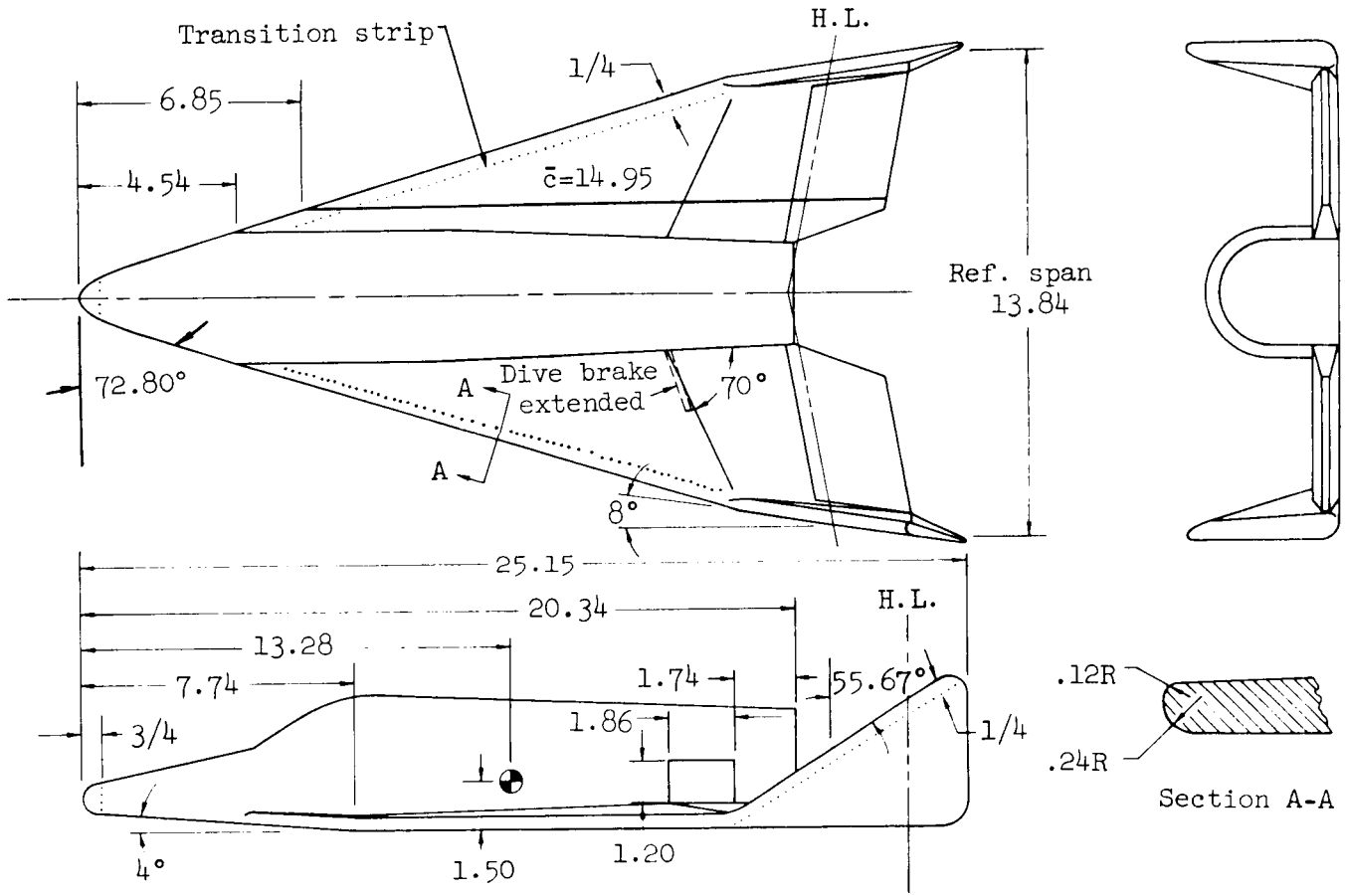
TABLE XVI.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP AT $\alpha = 20^{\circ}$ WITH ELEVONS AND DIVE BRAKES UNDEFLECTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{h_e}	C_{N_r}	C_{h_r}
(a) M = 0.60																
21.4	-08.0	0.749	.2778	-.0223	0.799	-.0150	2.697	0.083	.0370	-.0257	08.8	13.6	0.351	-0.096	0.750	-0.255
21.4	-04.0	0.751	.2838	-.0230	0.803	-.0106	2.647	0.052	.0196	-.0185	08.8	13.6	0.502	-0.153	0.711	-0.235
21.4	04.0	0.751	.2815	-.0245	0.802	-.0122	2.668	-0.004	-.0204	-.0068	08.6	13.7	0.761	-0.258	0.648	-0.196
21.4	08.1	0.739	.2749	-.0210	0.788	-.0136	2.687	-0.011	-.0356	-.0088	08.6	13.6	0.815	-0.281	0.729	-0.209
21.3	-08.0	0.721	.2838	-.0154	0.775	.0014	2.541	0.097	.0369	-.0459	-03.1	32.2	0.279	-0.080	1.211	-0.472
21.4	-04.0	0.726	.2937	-.0164	0.783	.0083	2.472	0.070	.0202	-.0434	-03.1	32.2	0.426	-0.133	1.287	-0.487
21.4	04.1	0.722	.2925	-.0183	0.779	.0089	2.468	0.006	-.0195	-.0308	-03.2	32.3	0.672	-0.235	1.259	-0.446
21.4	08.1	0.720	.2901	-.0156	0.776	.0075	2.481	-0.004	-.0357	-.0314	-03.3	32.2	0.741	-0.263	1.338	-0.473
(b) M = 0.90																
21.1	-08.0	0.777	.3068	-.0292	0.835	.0061	2.531	0.087	.0311	-.0213	-00.1	13.7	0.415	-0.126	0.620	-0.240
21.1	-04.0	0.789	.3173	-.0359	0.850	.0109	2.486	0.056	.0151	-.0186	-00.1	13.7	0.576	-0.202	0.646	-0.251
21.1	04.0	0.796	.3210	-.0364	0.858	.0117	2.479	-0.017	-.0166	-.0043	-00.2	13.7	0.826	-0.309	0.579	-0.223
21.1	08.1	0.778	.3088	-.0261	0.837	.0071	2.520	-0.042	-.0320	-.0072	-00.2	13.7	0.842	-0.306	0.571	-0.217
21.1	-07.9	0.754	.3096	-.0222	0.815	.0171	2.436	0.106	.0330	-.0424	-03.0	32.4	0.309	-0.089	1.015	-0.423
21.1	-03.9	0.766	.3182	-.0265	0.829	.0203	2.407	0.068	.0152	-.0349	-03.1	32.5	0.470	-0.165	0.988	-0.410
21.1	04.0	0.760	.3158	-.0252	0.823	.0202	2.408	-0.010	-.0183	-.0172	-03.2	32.5	0.701	-0.271	0.888	-0.372
21.1	08.1	0.749	.3001	-.0192	0.807	.0100	2.496	-0.044	-.0363	-.0081	-03.2	32.6	0.792	-0.308	0.633	-0.286
(c) M = 1.00																
21.2	-08.0	0.815	.3439	-.0656	0.884	.0249	2.369	0.093	.0234	-.0189	-02.2	13.6	0.583	-0.221	0.642	-0.255
21.3	-04.0	0.822	.3482	-.0640	0.892	.0258	2.360	0.042	.0088	-.0042	-02.2	13.7	0.714	-0.280	0.559	-0.225
21.3	04.0	0.819	.3464	-.0658	0.889	.0252	2.365	-0.012	-.0118	-.0113	-02.3	13.7	0.888	-0.365	0.486	-0.191
21.2	08.1	0.814	.3370	-.0620	0.881	.0187	2.416	-0.048	-.0238	-.0050	-02.4	13.8	0.940	-0.386	0.356	-0.139
21.2	-08.0	0.799	.3436	-.0573	0.869	.0306	2.325	0.104	.0243	-.0351	-03.1	32.4	0.443	-0.173	0.956	-0.429
21.2	-04.0	0.802	.3460	-.0552	0.873	.0311	2.319	0.052	.0092	-.0195	-03.2	32.4	0.563	-0.227	0.880	-0.401
21.2	04.1	0.804	.3347	-.0514	0.871	.0198	2.403	-0.005	-.0128	-.0219	-03.3	32.7	0.697	-0.286	0.550	-0.226
21.2	08.1	0.775	.3198	-.0422	0.838	.0174	2.423	-0.033	-.0301	-.0161	-03.3	32.7	0.779	-0.322	0.397	-0.184
(d) M = 1.20																
21.2	-08.0	0.735	.3305	-.0715	0.805	.0414	2.225	0.107	.0188	-.0351	-03.3	13.3	0.623	-0.258	1.010	-0.445
21.3	-04.0	0.742	.3319	-.0734	0.812	.0397	2.236	0.060	.0098	-.0212	-03.3	13.4	0.725	-0.306	0.827	-0.360
21.3	04.0	0.741	.3285	-.0740	0.810	.0368	2.256	-0.032	-.0114	.0048	-03.4	13.7	0.913	-0.400	0.475	-0.197
21.2	08.1	0.735	.3226	-.0715	0.802	.0340	2.278	-0.066	-.0201	.0155	-03.5	13.7	1.006	-0.439	0.344	-0.143
21.2	-08.0	0.728	.3359	-.0665	0.800	.0490	2.167	0.110	.0185	-.0430	-04.2	32.2	0.538	-0.229	1.159	-0.527
21.3	-04.0	0.736	.3387	-.0691	0.809	.0481	2.174	0.064	.0094	-.0312	-04.3	32.2	0.639	-0.275	1.058	-0.506
21.3	04.1	0.741	.3326	-.0703	0.811	.0408	2.227	-0.027	-.0124	-.0027	-04.4	32.6	0.833	-0.371	0.556	-0.267
21.2	08.1	0.728	.3250	-.0678	0.796	.0389	2.239	-0.065	-.0203	.0079	-04.4	32.6	0.904	-0.408	0.473	-0.219
(e) M = 1.35																
21.2	-08.0	0.685	.3100	-.0674	0.751	.0410	2.210	0.105	.0138	-.0332	-02.3	13.3	0.635	-0.269	0.978	-0.440
21.2	-04.0	0.692	.3109	-.0696	0.758	.0388	2.227	0.059	.0075	-.0207	-02.3	13.4	0.713	-0.306	0.781	-0.356
21.2	04.0	0.697	.3106	-.0707	0.762	.0368	2.243	-0.039	-.0094	.0068	-02.4	13.7	0.867	-0.381	0.416	-0.187
21.2	08.1	0.693	.3074	-.0682	0.757	.0357	2.253	-0.078	-.0159	.0174	-02.5	13.8	0.932	-0.411	0.261	-0.119
21.2	-08.0	0.680	.3202	-.0640	0.750	.0522	2.124	0.109	.0139	-.0440	-04.3	32.1	0.564	-0.244	1.215	-0.570
21.2	-04.0	0.688	.3192	-.0660	0.757	.0480	2.155	0.063	.0074	-.0306	-04.3	32.2	0.640	-0.279	1.022	-0.502
21.2	04.1	0.691	.3120	-.0673	0.757	.0403	2.214	-0.034	-.0096	.0005	-04.4	32.6	0.786	-0.353	0.501	-0.256
21.2	08.2	0.687	.3092	-.0646	0.752	.0394	2.221	-0.079	-.0161	.0116	-04.4	32.7	0.846	-0.383	0.383	-0.181
(f) M = 1.70																
20.3	-08.3	0.576	.2536	-.0491	0.628	.0373	2.271	0.097	.0084	-.0275	-03.4	12.1	0.524	-0.232	0.893	-0.412
20.3	-04.2	0.580	.2525	-.0514	0.632	.0345	2.298	0.055	.0044	-.0185	-03.5	12.3	0.570	-0.256	0.717	-0.331
20.4	03.8	0.589	.2528	-.0529	0.640	.0310	2.329	-0.030	-.0049	.0041	-03.6	12.6	0.665	-0.302	0.349	-0.165
20.5	07.8	0.589	.2529	-.0508	0.640	.0306	2.328	-0.074	-.0097	.0146	-03.6	12.7	0.697	-0.318	0.205	-0.101
20.3	-08.3	0.572	.2668	-.0494	0.629	.0510	2.144	0.102	.0086	-.0385	-04.8	31.8	0.526	-0.234	1.153	-0.541
20.3	-04.2	0.577	.2628	-.0520	0.632	.0455	2.194	0.060	.0042	-.0276	-04.9	32.0	0.575	-0.257	0.929	-0.453
20.4	03.8	0.586	.2586	-.0531	0.639	.0376	2.264	-0.027	-.0053	-.0018	-05.0	32.4	0.669	-0.303	0.512	-0.262
20.5	07.8	0.586	.2568	-.0509	0.639	.0351	2.283	-0.072	-.0100	.0103	-05.0	32.6	0.701	-0.320	0.331	-0.165
(g) M = 2.50																
20.1	-08.1	0.437	.1976	-.0309	0.478	.0352	2.209	0.076	.0058	-.0202	-03.3	12.3	0.428	-0.195	0.715	-0.344
20.1	-04.1	0.439	.1967	-.0314	0.480	.0333	2.233	0.043	.0030	-.0135	-03.4	12.4	0.453	-0.205	0.568	-0.276
20.2	03.9	0.448	.1976	-.0327	0.489	.0304	2.269	-0.025	-.0034	.0022	-03.4	12.7	0.505	-0.230	0.255	-0.128
20.2	07.9	0.447	.1974	-.0322	0.488	.0301	2.266	-0.060	-.0072	.0090	-03.4	12.8	0.522	-0.239	0.137	-0.072
20.1	-08.1	0.433	.2116	-.0304	0.479	.0500	2.044	0.085	.0065	-.0351	-04.7	31.9	0.430	-0.196	1.186	-0.584
20.1	-04.1	0.436	.2074	-.0313	0.481	.0445	2.104	0.049	.0034	-.0248	-04.8	32.1	0.451	-0.205	0.896	-0.449
20.2	03.9	0.447	.2025	-.0329	0.489	.0359	2.205	-0.021	-.0033	-.0034	-04.8	32.6	0.505	-0.230	0.420	-0.209
20.2	07.9	0.447	.2011	-.0324	0.489	.0340	2.222	-0.056	-.0071	.0048	-04.8	32.7	0.521	-0.239	0.286	-0.131
(h) M = 3.20																
20.4	-08.5	0.363	.1747	-.0274	0.401	.0370	2.077	0.067	.0070	-.0164	-00.1	12.6	0.439	-0.199	0.602	-0.294
20.4	-04.2	0.363	.1722	-.0260	0.400	.0346	2.107	0.038	.0038	-.0105	-00.1	12.7	0.452	-0.206	0.449	-0.221
20.4	00.0	0.362	.1705	-.0256	0.399	.0331	2.125	0.008	-.0006	-.0041	-00.2	12.8	0.477	-0.218	0.301	-0.151
20.4	04.3	0.362	.1692	-.0267	0.398	.0322	2.137	-0.023	-.0046	.0020	-00.2	12.9	0.505	-0.230	0.181	-0.090
20.4	08.5	0.363	.1693	-.0280	0.399	.0320	2.142	-0.047	-.0075	.0067	-00.2	12.9	0.530	-0.243	0.099	-0.048
20.4	-08.4	0.357	.1908	-.0259	0.401	.0540	1.870	0.080	.0078	-.0374	-00.1	32.5	0.415	-0.186	1.272	-0.694
20.4	-04.2	0.358	.1830	-.0248	0.399	.0463	1.954	0.047	.0045	-.0256	-00.1	32.8	0.430	-0.193	0.903	-0.493
20.4	00.0	0.360	.1773	-.0243	0.399	.0402	2.028	0.013	-.0001	-.0136	-00.1	33.0	0.452	-0.204	0.560	-0.310
20.4	04.3	0.361	.1734	-.0256	0.399	.0361	2.083	-0.019	-.0043	-.0046	-00.2	33.1	0.476	-0.216	0.347	-0.196
20.4	08.6	0.362	.1722	-.0268	0.399	.0349	2.049	-0.047	-.0074	.0026	-00.2	33.2	0.499	-0.227	0.232	-0.133

[redacted]

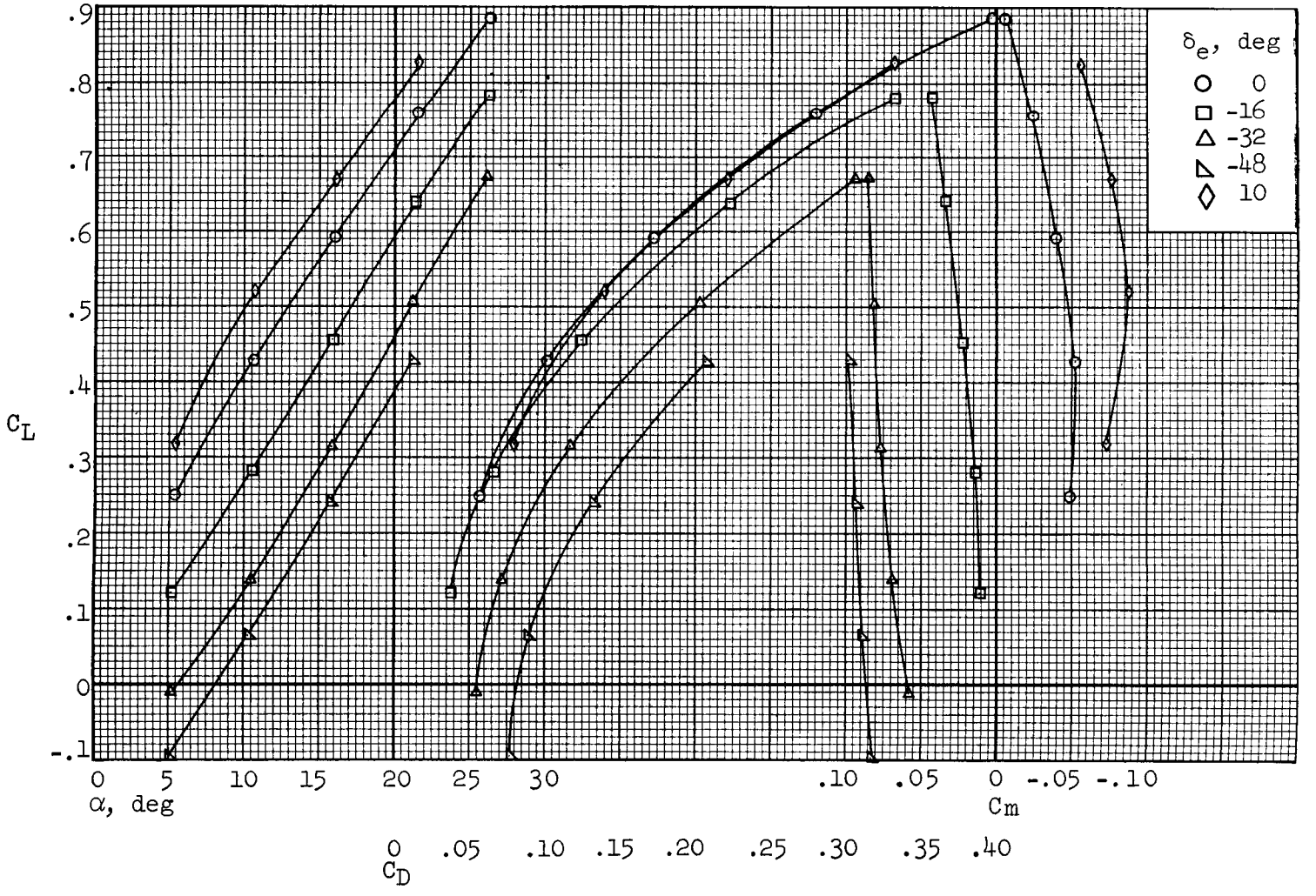
TABLE XVII.- AERODYNAMIC CHARACTERISTICS IN SIDESLIP WITH ELEVONS AND DIVE BRAKES UNDEFLECTED. ANGLE OF ATTACK AS NOTED

α, deg	β, deg	C_L	C_D	C_m	C_N	C_A	L/D	C_Y	C_l	C_n	δ_e	δ_r	C_{N_e}	C_{l_e}	C_{n_r}	C_{l_r}
(a) M = 1.70																
25.5	-08.5	0.697	.3653	-.0505	0.786	.0286	1.907	0.096	.0125	-.0242	-03.5	12.2	0.596	-0.260	0.744	-0.338
25.6	-04.4	0.696	.3639	-.0524	0.785	.0271	1.913	0.055	.0081	-.0153	-03.5	12.4	0.654	-0.292	0.539	-0.250
25.7	03.8	0.701	.3628	-.0530	0.789	.0229	1.932	-0.030	-.0088	.0047	-03.6	12.8	0.749	-0.337	0.187	-0.088
25.7	07.9	0.702	.3639	-.0518	0.790	.0230	1.928	-0.070	-.0143	.0121	-03.7	12.9	0.789	-0.358	0.072	-0.035
25.5	-08.4	0.691	.3761	-.0508	0.786	.0406	1.838	0.101	.0124	-.0345	-04.9	32.0	0.596	-0.263	0.990	-0.474
25.6	-04.3	0.693	.3733	-.0526	0.786	.0371	1.855	0.059	.0079	-.0242	-04.9	32.2	0.658	-0.293	0.787	-0.379
25.7	03.8	0.699	.3692	-.0535	0.790	.0295	1.894	-0.026	-.0090	-.0009	-05.0	32.6	0.753	-0.340	0.372	-0.184
25.7	07.9	0.699	.3673	-.0518	0.789	.0272	1.903	-0.068	-.0148	.0084	-05.1	32.7	0.791	-0.360	0.224	-0.104
(b) M = 2.50																
25.2	-08.3	0.541	.2896	-.0338	0.613	.0309	1.868	0.072	.0101	-.0176	-03.4	12.4	0.528	-0.239	0.637	-0.308
25.3	-04.2	0.544	.2890	-.0339	0.615	.0289	1.881	0.041	.0058	-.0117	-03.4	12.5	0.548	-0.248	0.484	-0.233
25.3	03.9	0.556	.2933	-.0367	0.628	.0266	1.895	-0.024	-.0053	.0027	-03.5	12.8	0.627	-0.284	0.179	-0.088
25.4	08.0	0.553	.2922	-.0353	0.625	.0263	1.893	-0.056	-.0120	.0088	-03.5	12.9	0.645	-0.294	0.071	-0.042
25.2	-08.3	0.536	.3007	-.0334	0.613	.0432	1.782	0.081	.0106	-.0301	-04.8	32.0	0.526	-0.238	0.998	-0.497
25.3	-04.2	0.542	.2979	-.0338	0.617	.0378	1.818	0.046	.0060	-.0207	-04.8	32.3	0.549	-0.249	0.743	-0.365
25.3	03.9	0.554	.2973	-.0360	0.628	.0310	1.864	-0.021	-.0058	-.0020	-04.9	32.7	0.626	-0.285	0.349	-0.161
25.4	08.0	0.553	.2955	-.0354	0.626	.0295	1.870	-0.053	-.0119	.0051	-04.9	32.8	0.646	-0.294	0.217	-0.089
(c) M = 3.90																
30.6	-08.5	0.557	.3707	-.0399	0.668	.0347	1.502	0.059	.0120	-.0111	-00.2	12.7	0.702	-0.314	0.467	-0.230
30.7	-04.2	0.559	.3702	-.0381	0.670	.0324	1.511	0.034	.0064	-.0064	-00.3	12.8	0.722	-0.325	0.318	-0.158
30.7	04.3	0.558	.3667	-.0386	0.667	.0302	1.522	-0.016	-.0081	.0013	-00.3	12.9	0.790	-0.357	0.096	-0.054
30.7	08.5	0.556	.3648	-.0402	0.664	.0299	1.523	-0.033	-.0133	.0039	-00.3	12.9	0.814	-0.368	0.038	-0.024
30.7	-08.4	0.552	.3810	-.0396	0.669	.0458	1.448	0.068	.0127	-.0245	-00.2	32.8	0.690	-0.309	0.871	-0.471
30.7	-04.2	0.555	.3774	-.0377	0.670	.0407	1.471	0.039	.0067	-.0165	-00.3	32.9	0.711	-0.321	0.623	-0.349
30.7	04.3	0.556	.3708	-.0365	0.669	.0337	1.504	-0.012	-.0078	-.0040	-00.3	33.2	0.777	-0.353	0.280	-0.157
30.7	08.5	0.556	.3675	-.0401	0.666	.0318	1.514	-0.032	-.0130	.0009	-00.3	33.2	0.804	-0.364	0.166	-0.091



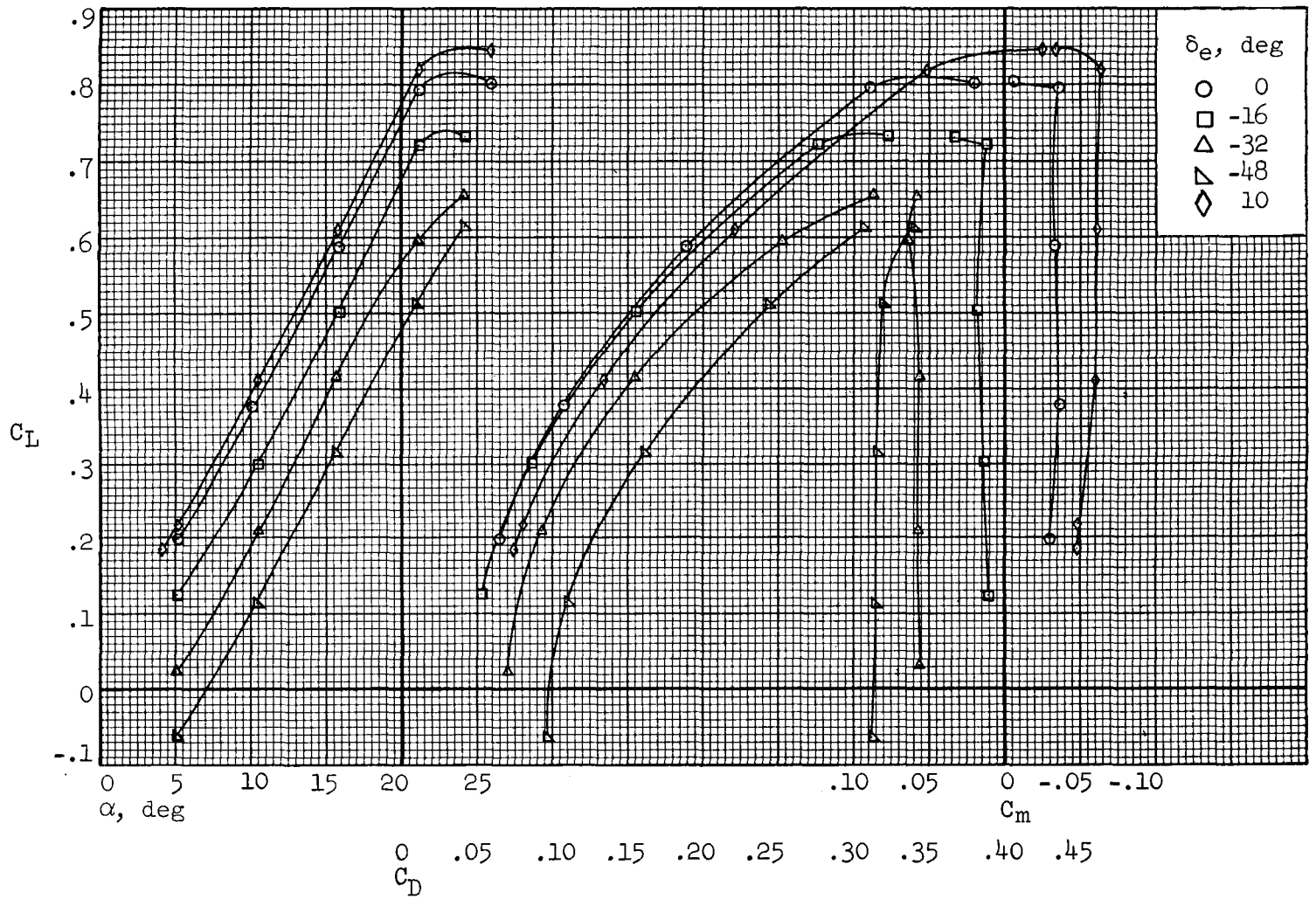
Note: All dimensions in inches
unless otherwise noted

Figure 1.- Model details.



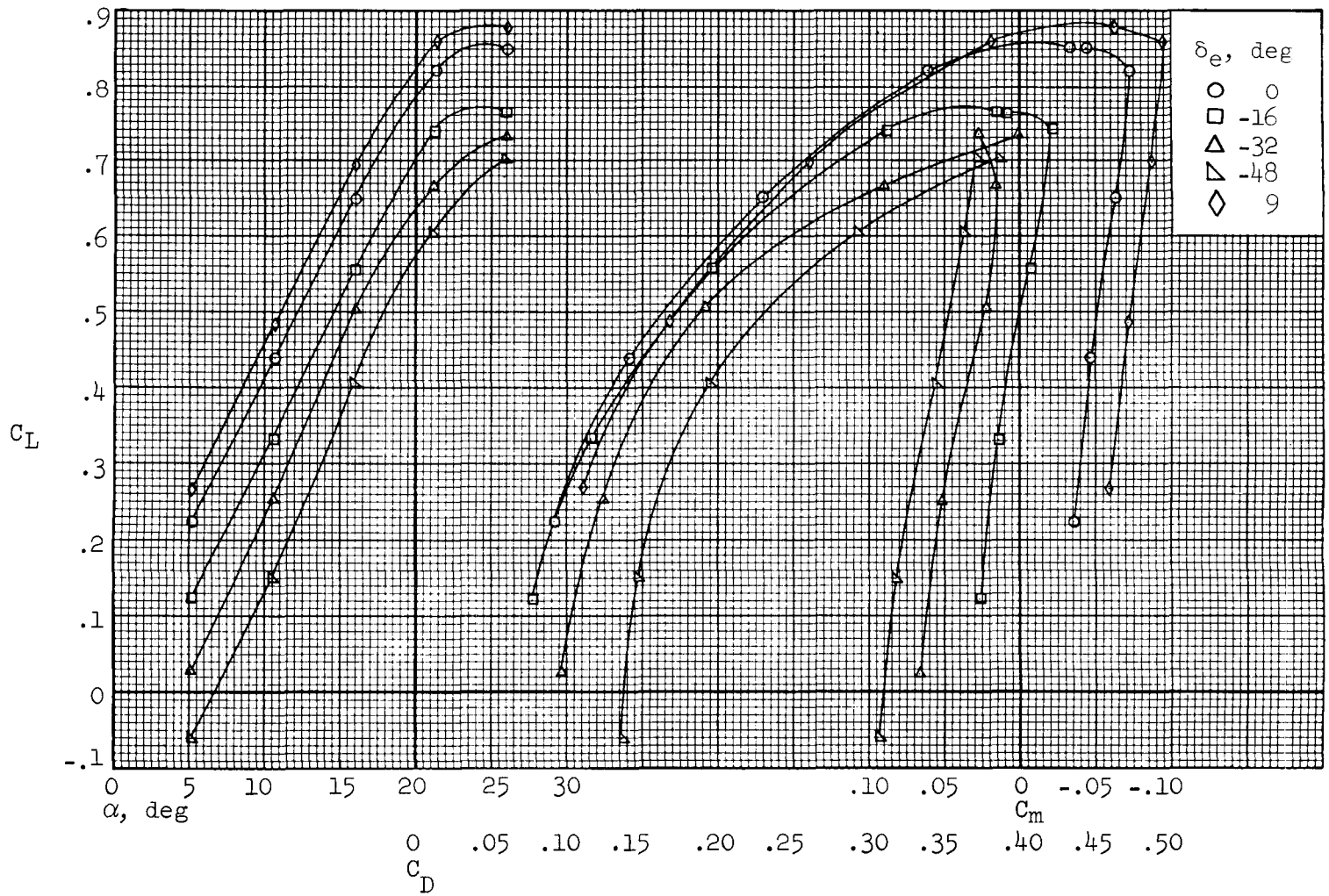
(a) M = 0.60

Figure 2.- Lift, drag, and pitching-moment characteristics for various elevon deflections at zero sideslip with rudder and dive brakes undeflected.



(b) M = 0.90

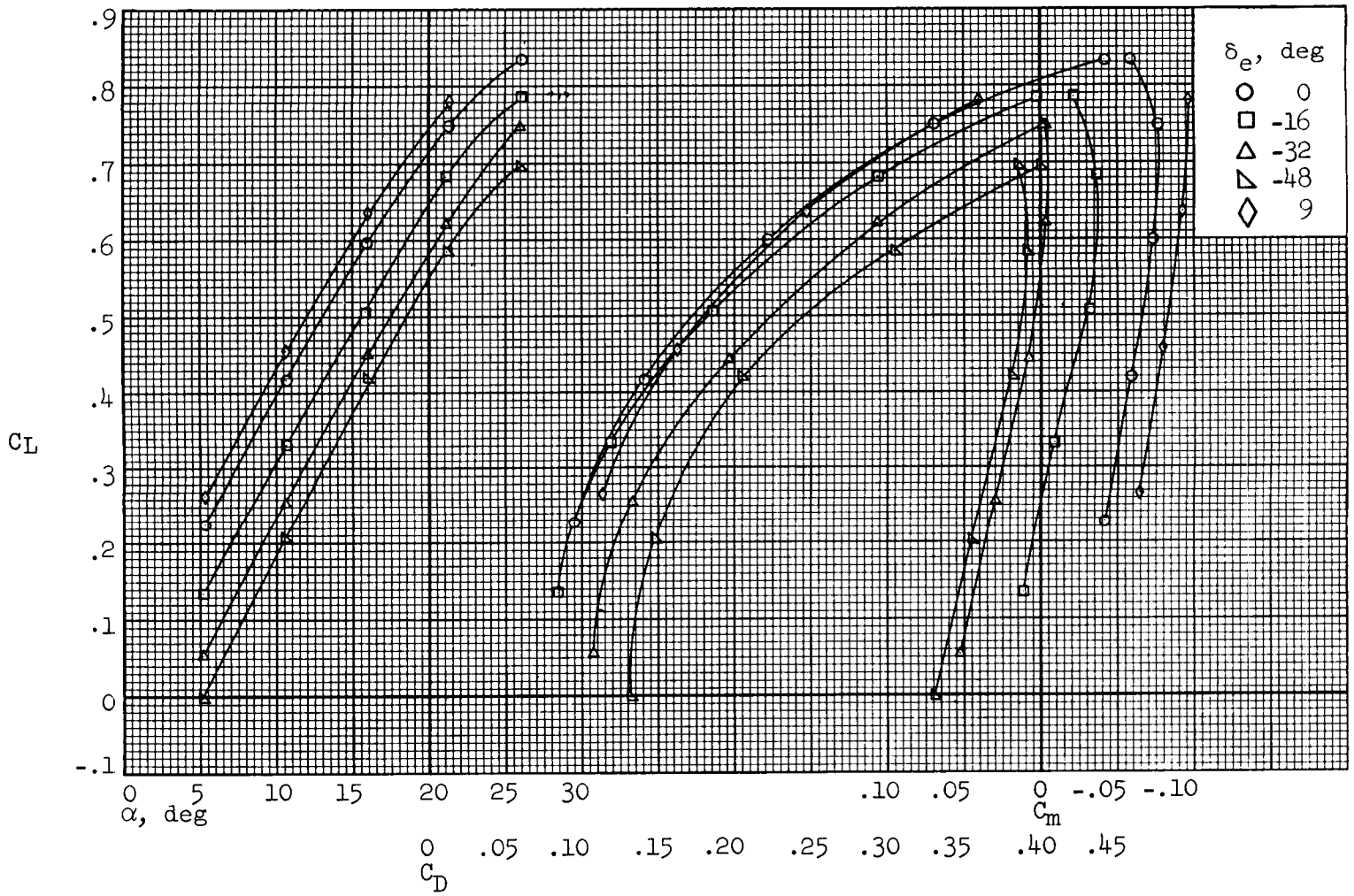
Figure 2.- Continued.



(c) M = 1.00

Figure 2.- Continued.

[redacted]

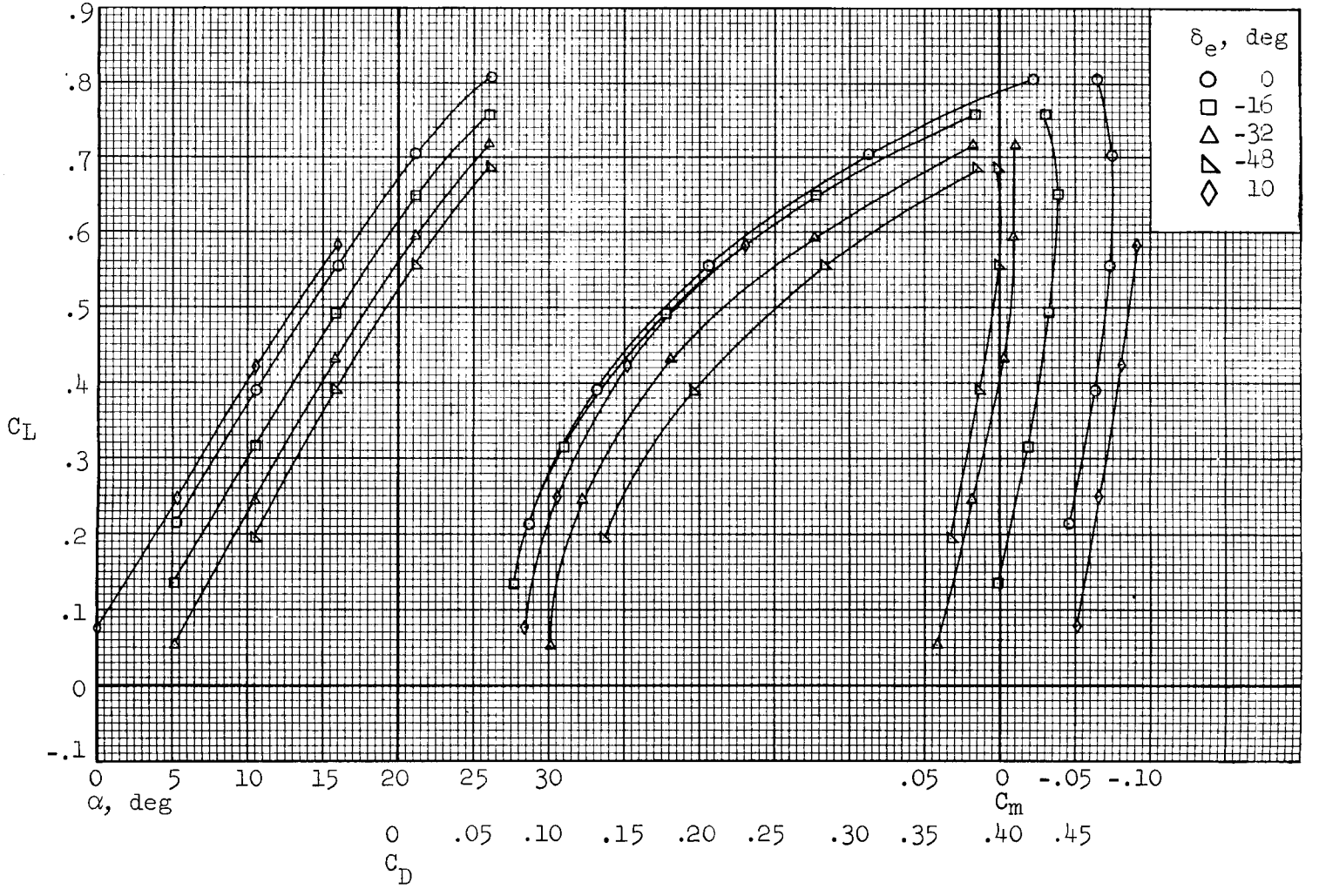


[redacted]

(d) M = 1.20

Figure 2.- Continued.

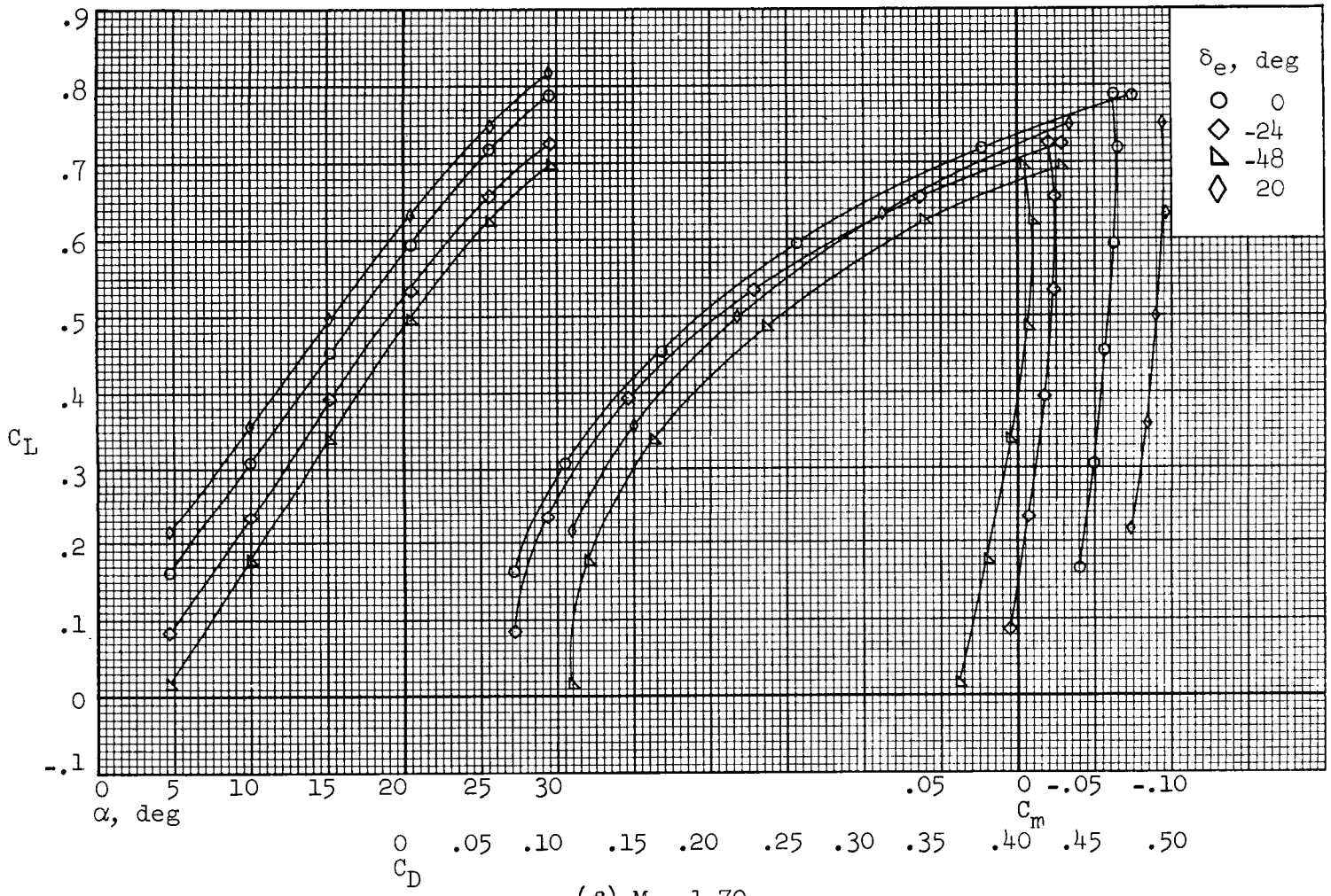
[redacted]



(e) M = 1.35

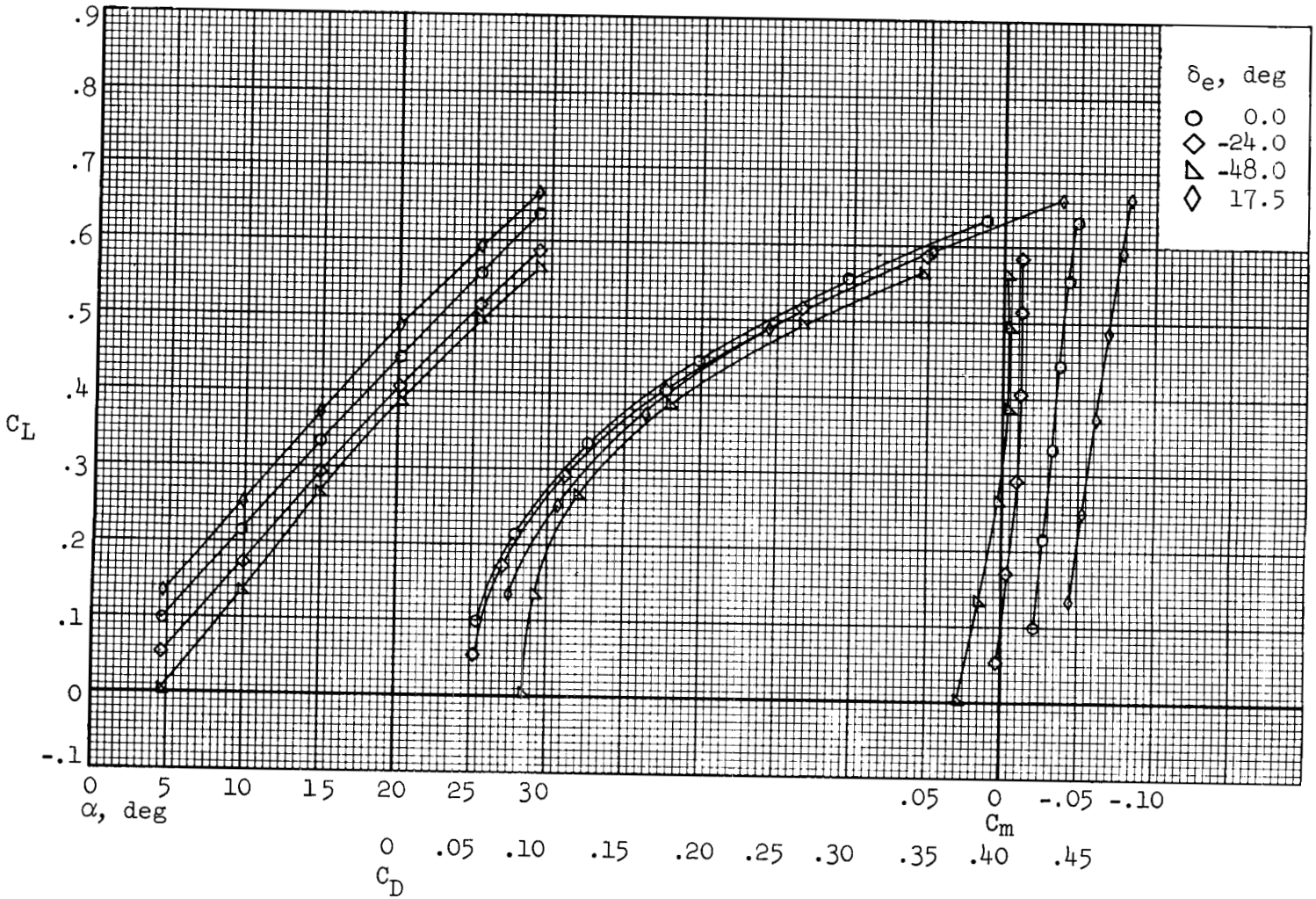
Figure 2.- Continued.

[redacted]



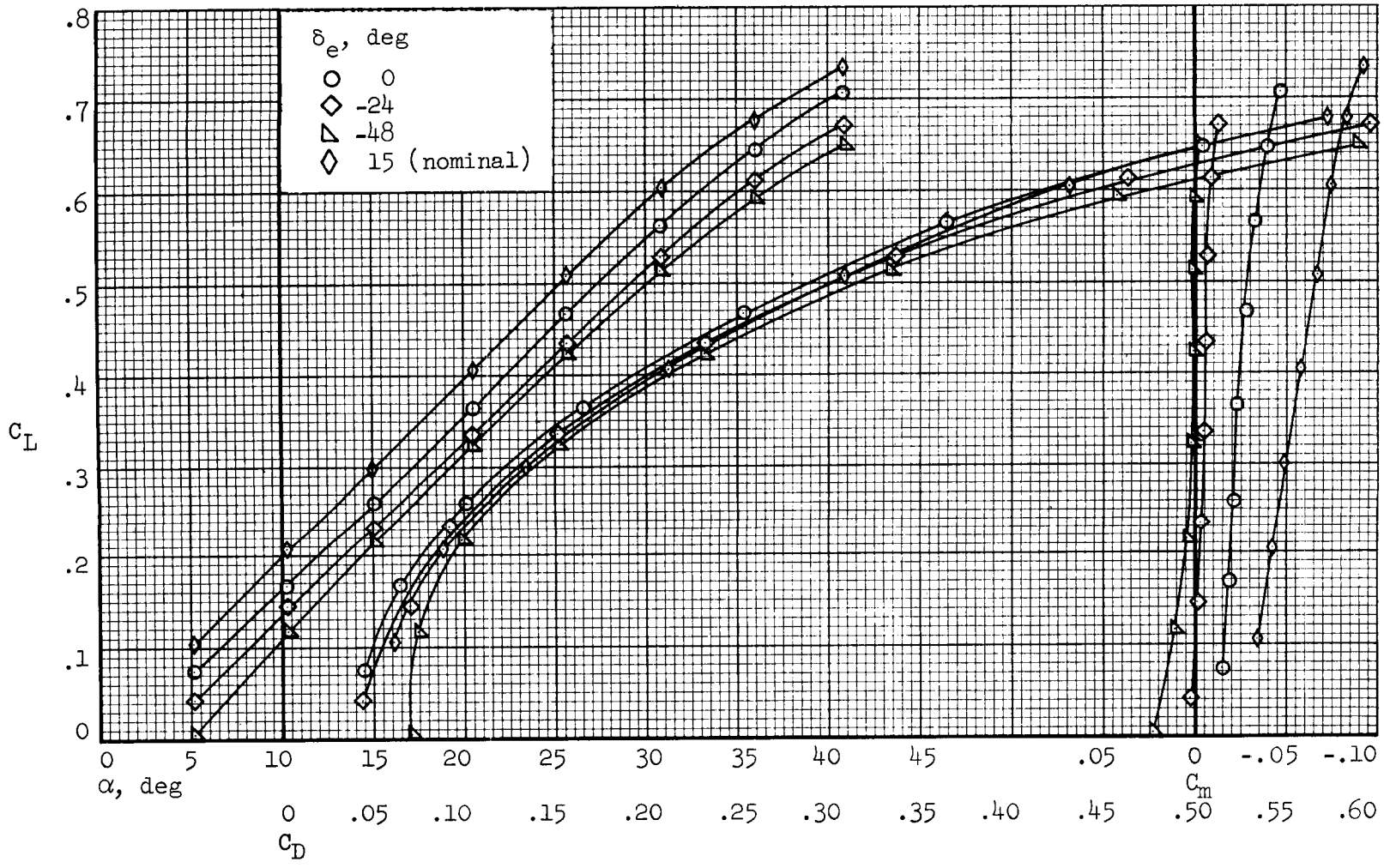
(f) M = 1.70

Figure 2.- Continued.



(g) M = 2.50

Figure 2.- Continued.



(h) M = 3.20

Figure 2.- Concluded.

[redacted]

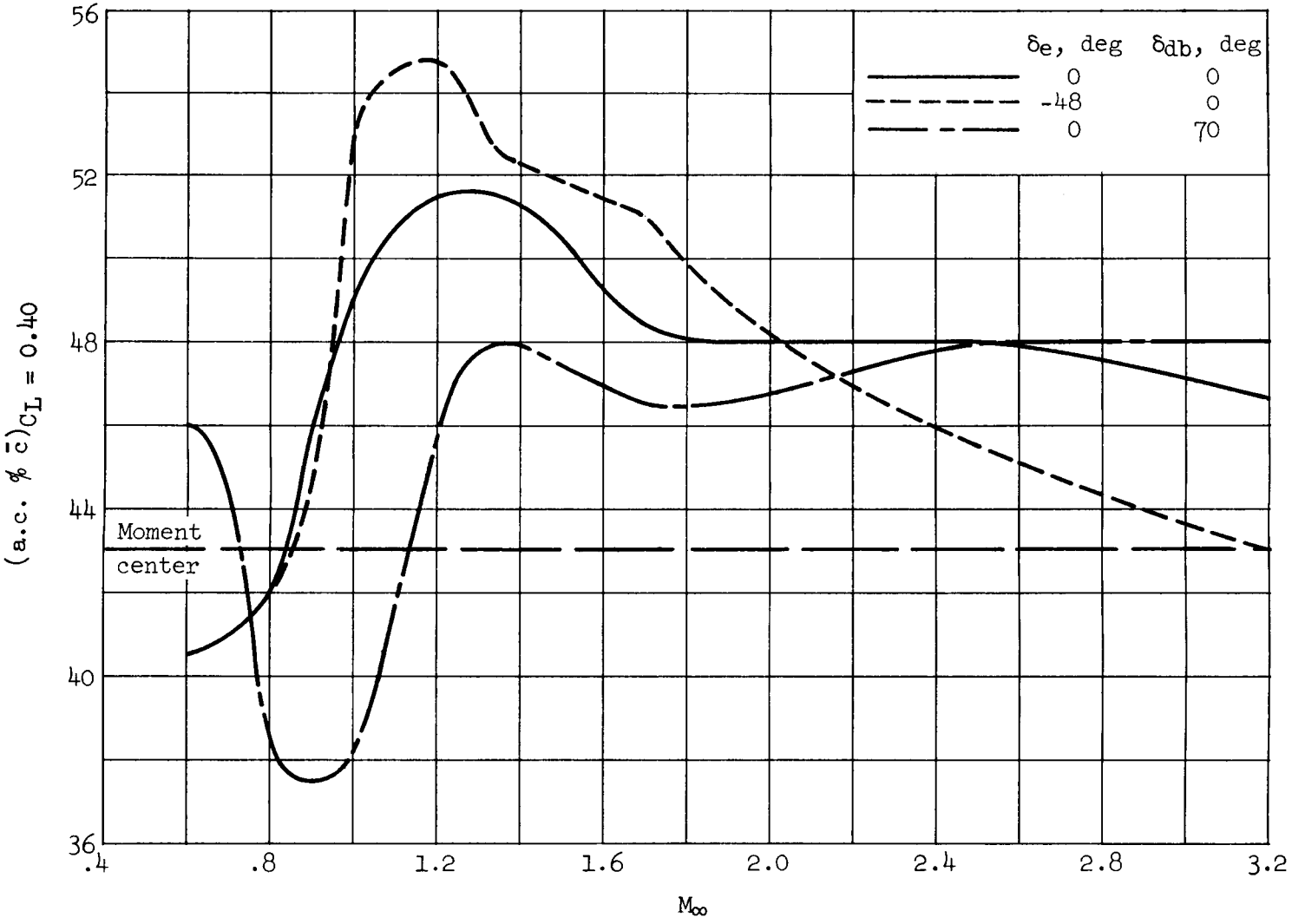


Figure 3.- Variation of longitudinal-aerodynamic-center location with Mach number.

[redacted]

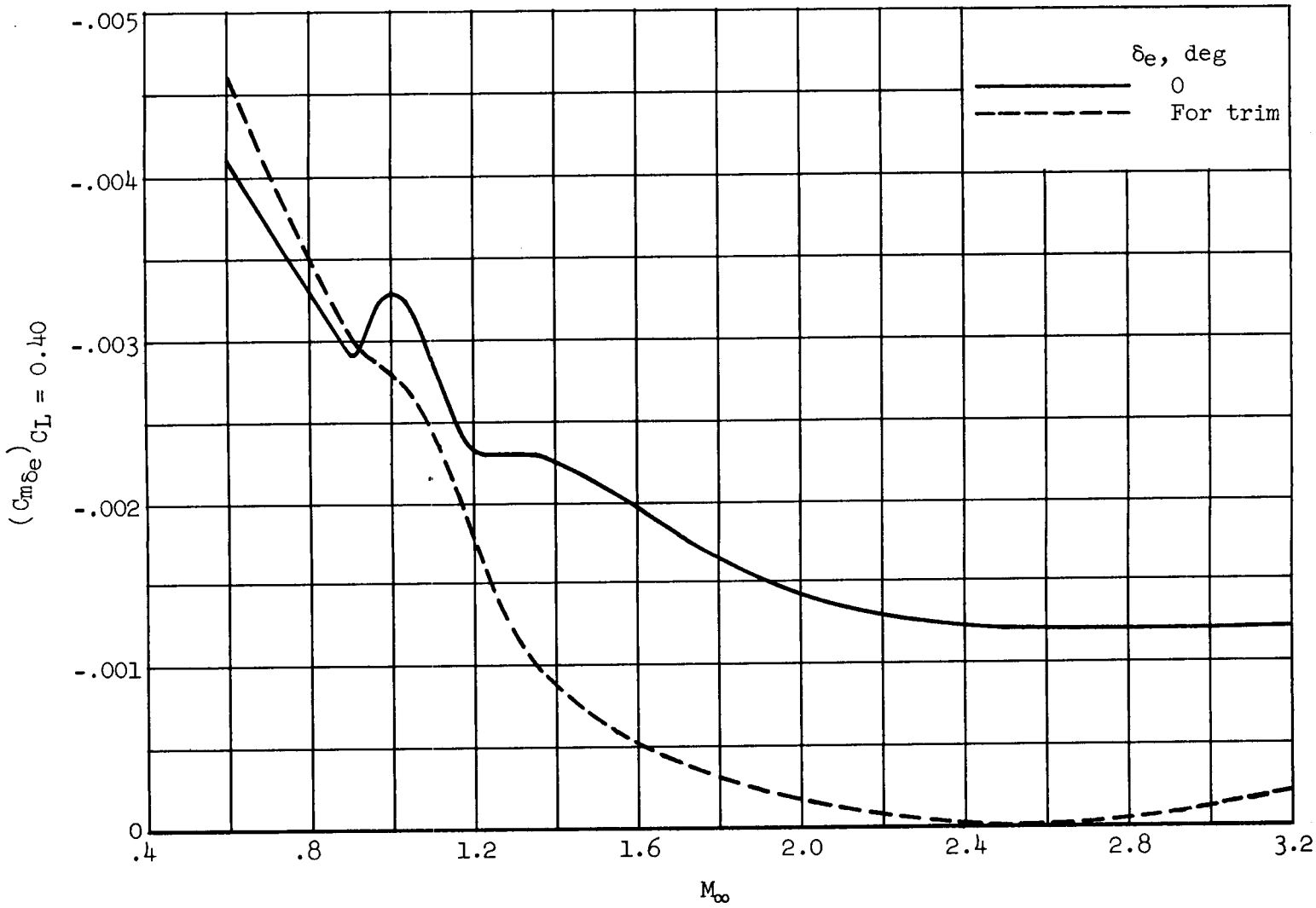


Figure 4.- Variation of elevon control power with Mach number.

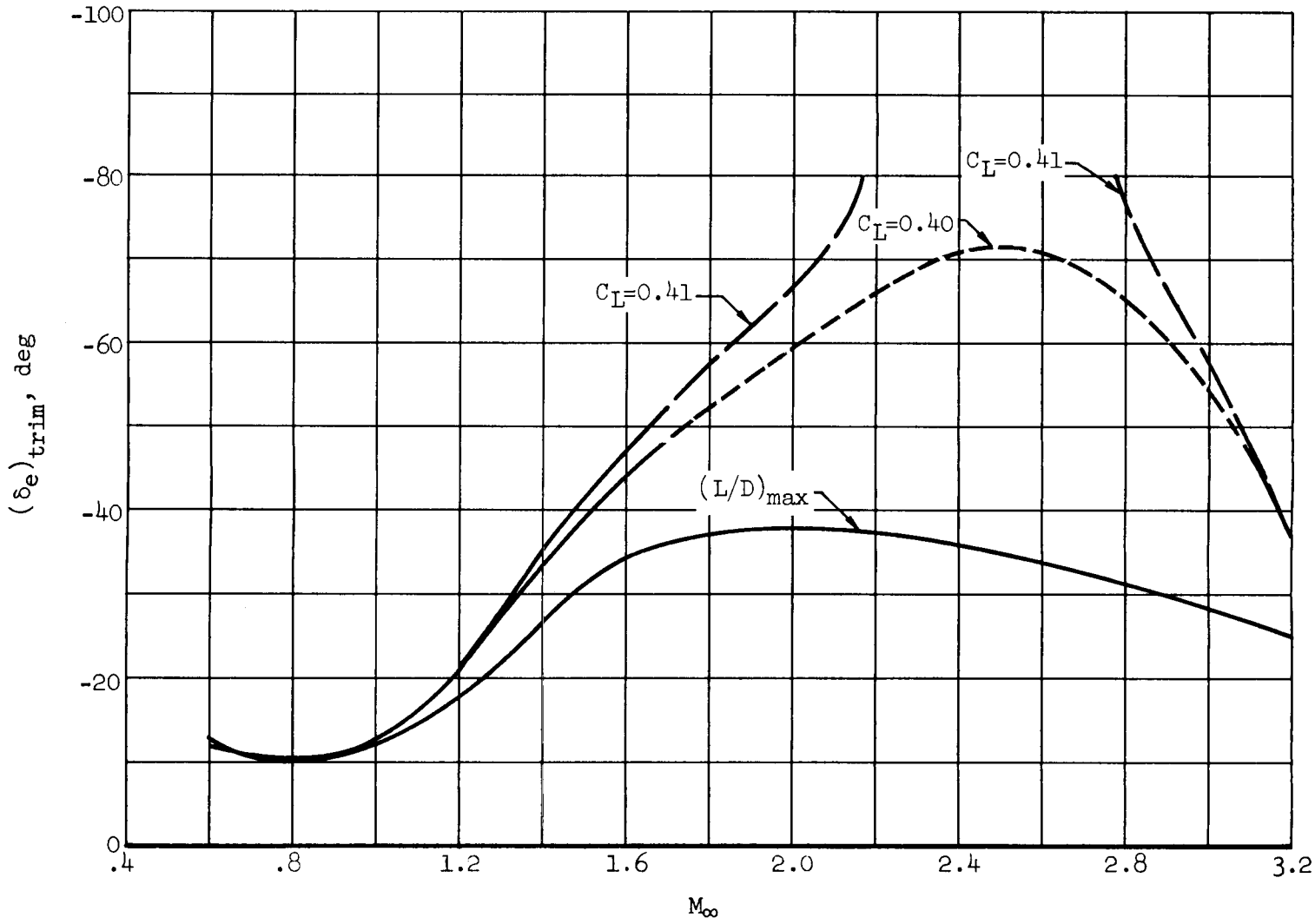


Figure 5.- Variation with Mach number of elevon deflection required for trim.

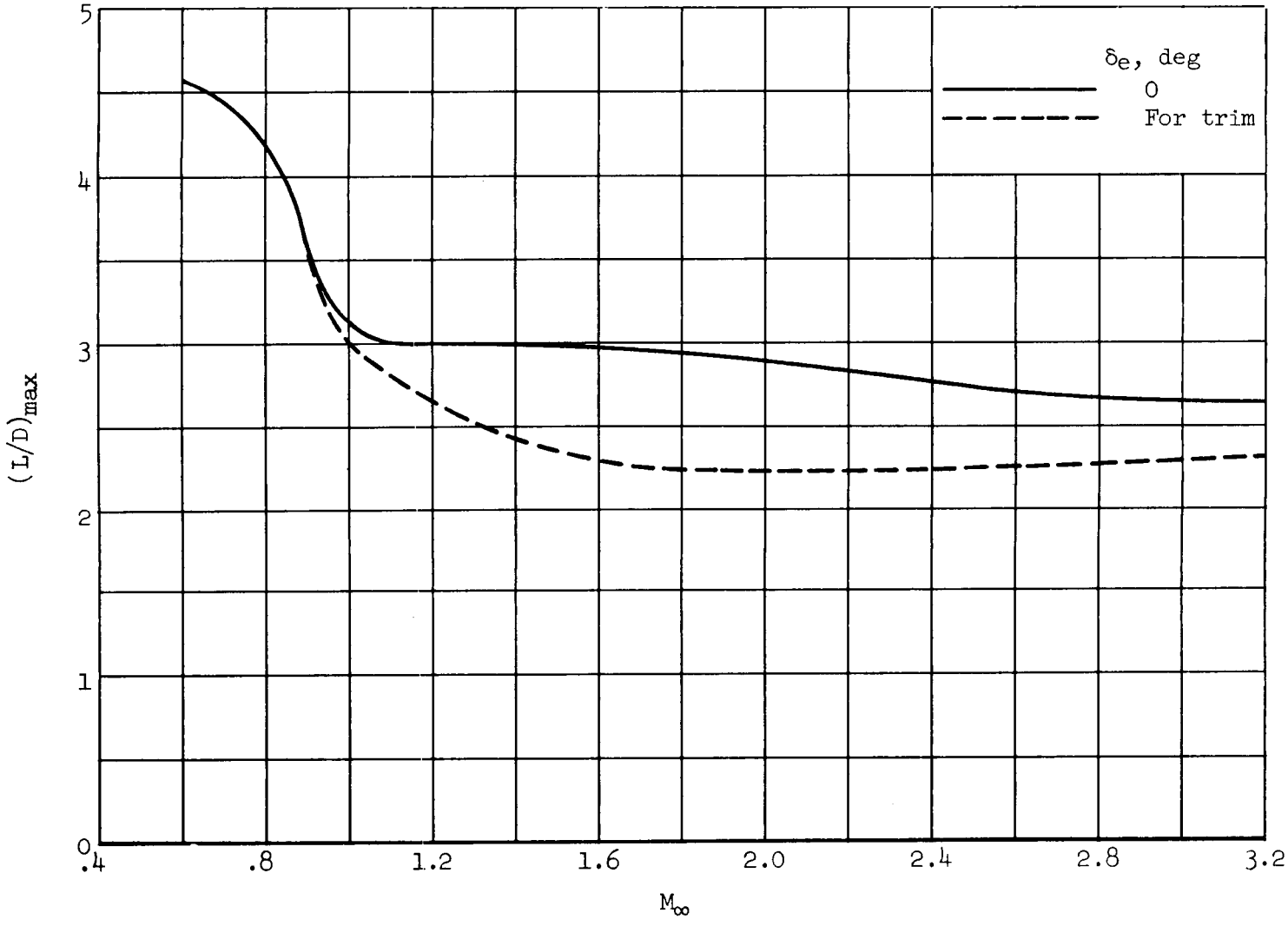
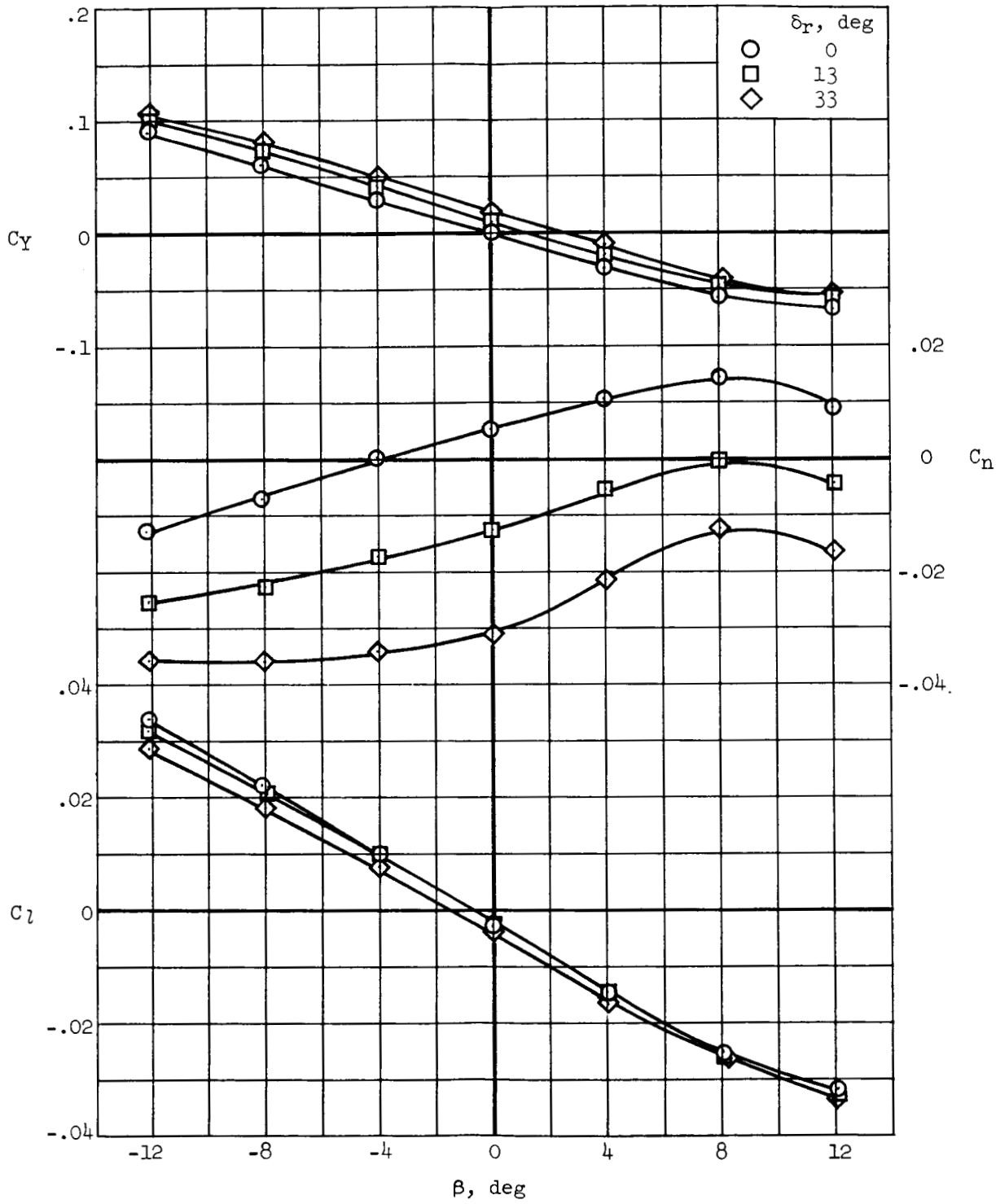


Figure 6.- Variation of maximum lift-drag ratio with Mach number.

[redacted]

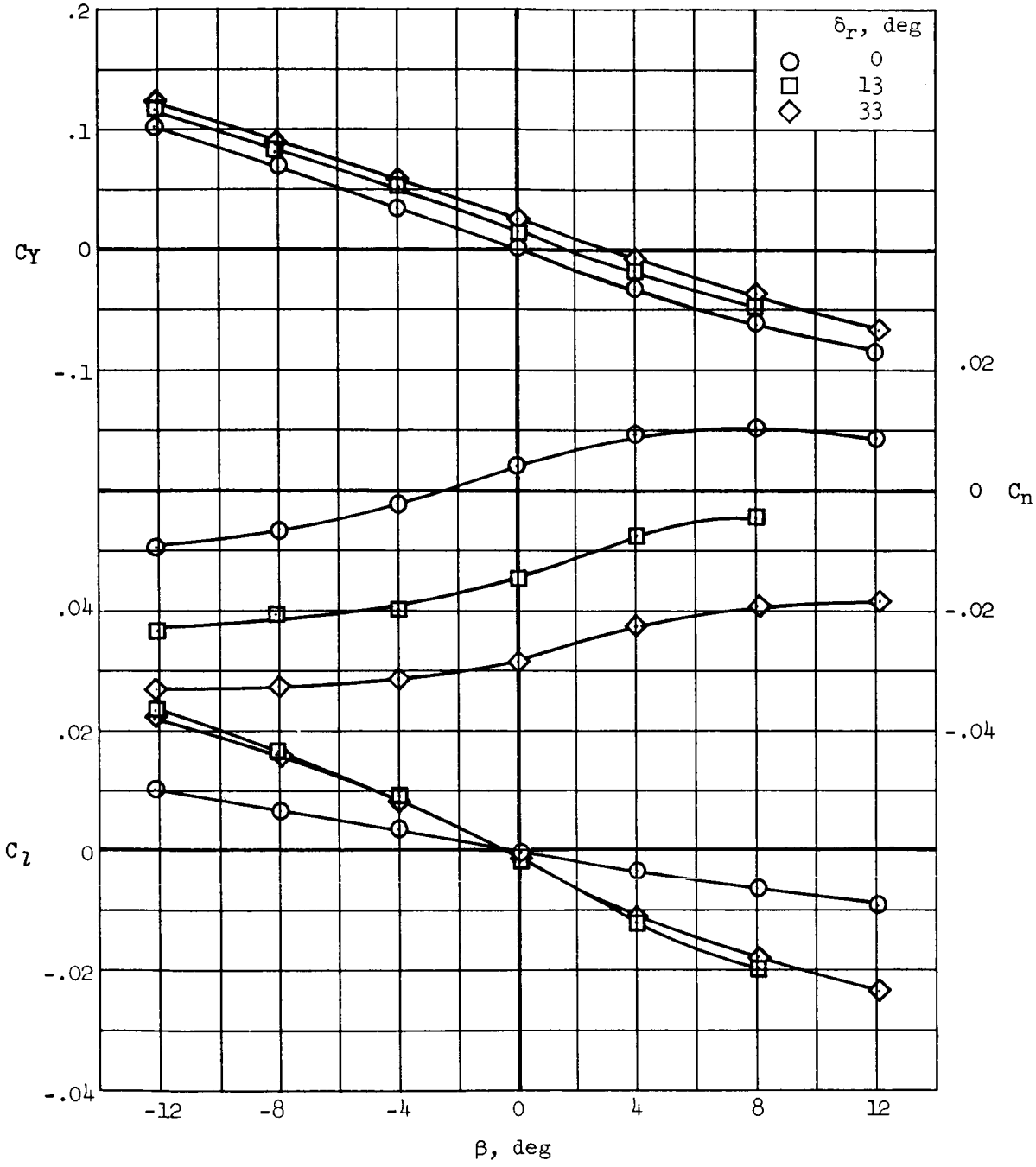


(a) $M_\infty = 0.60$

Figure 7.- Effect of rudder deflection on the lateral and directional characteristics at $\alpha = 10°$ with elevons and dive brakes undeflected.

[redacted]

[redacted]

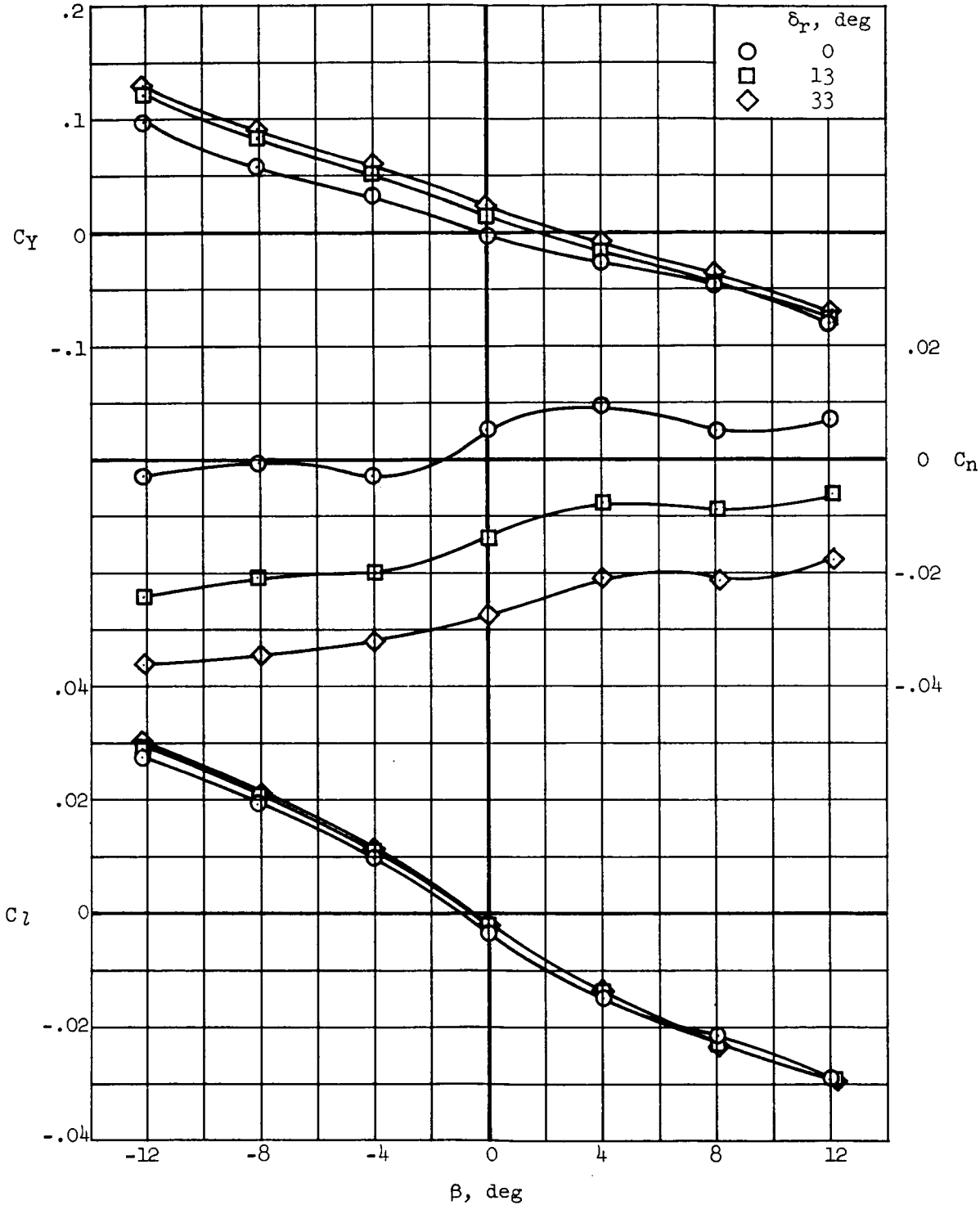


(b) $M_\infty = 0.90$

Figure 7.- Continued.

[redacted]

[redacted]

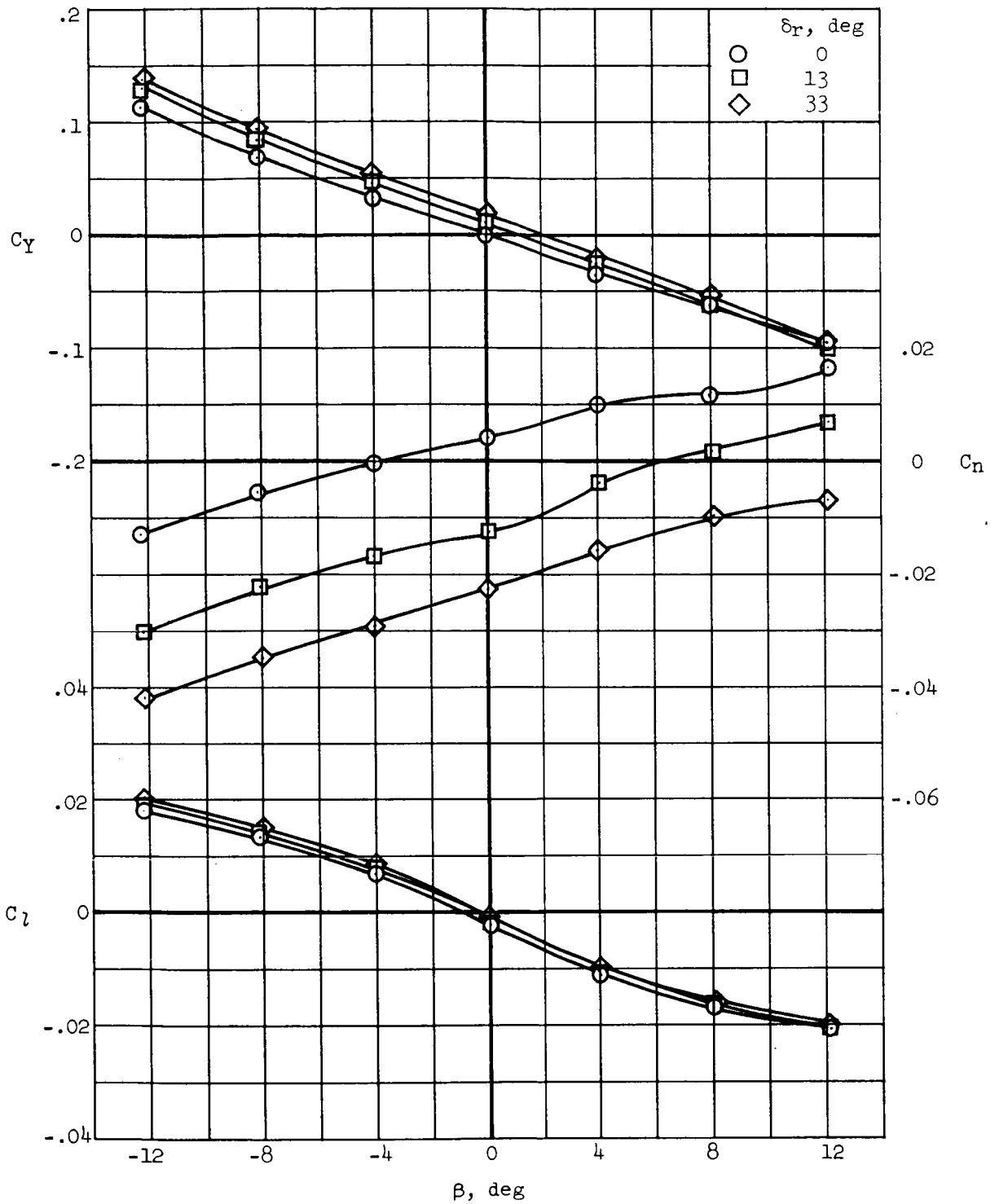


(c) $M_\infty = 1.00$

Figure 7.- Continued.

[redacted]

[redacted]

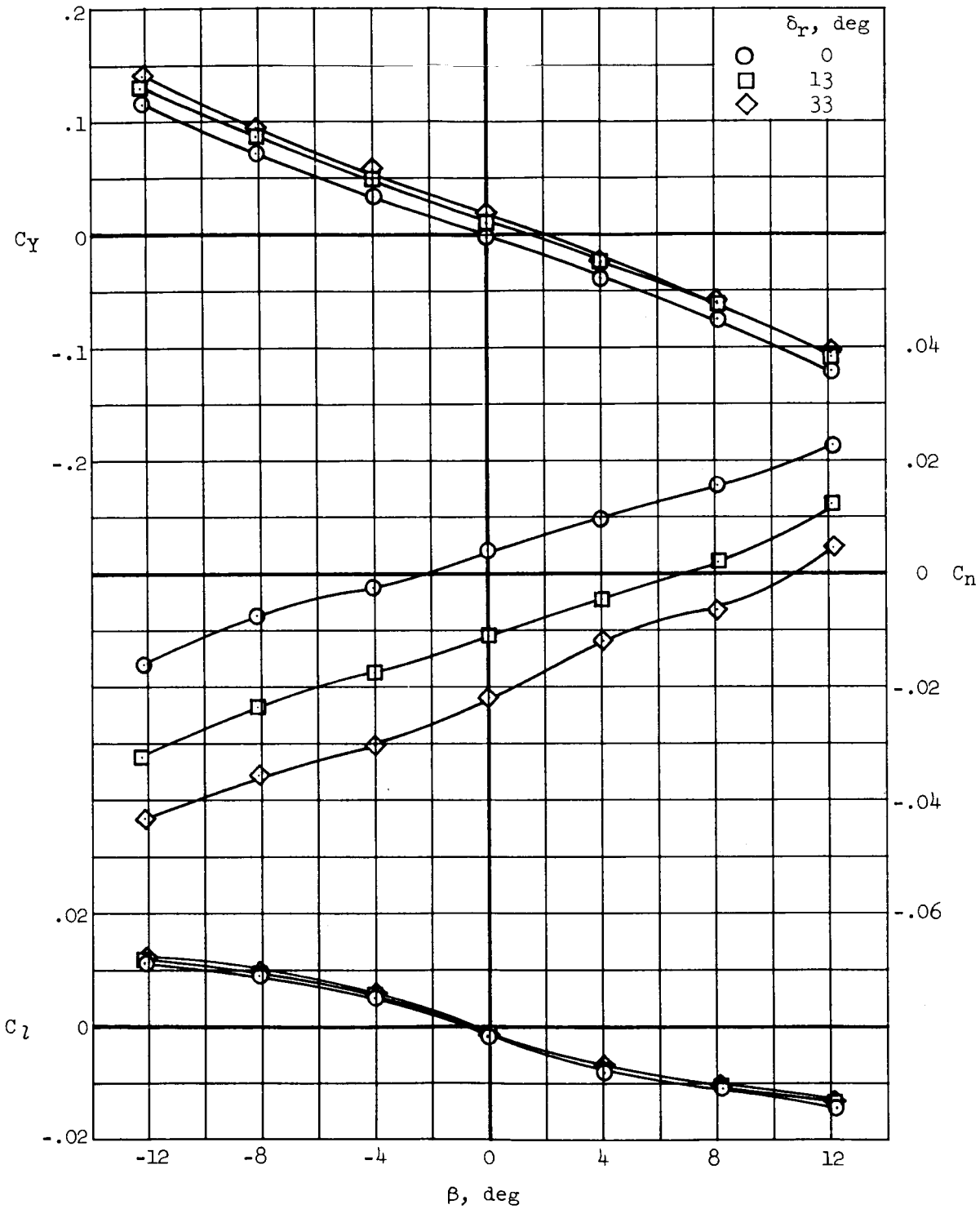


(d) $M_\infty = 1.20$

Figure 7.- Continued.

[redacted]

[redacted]

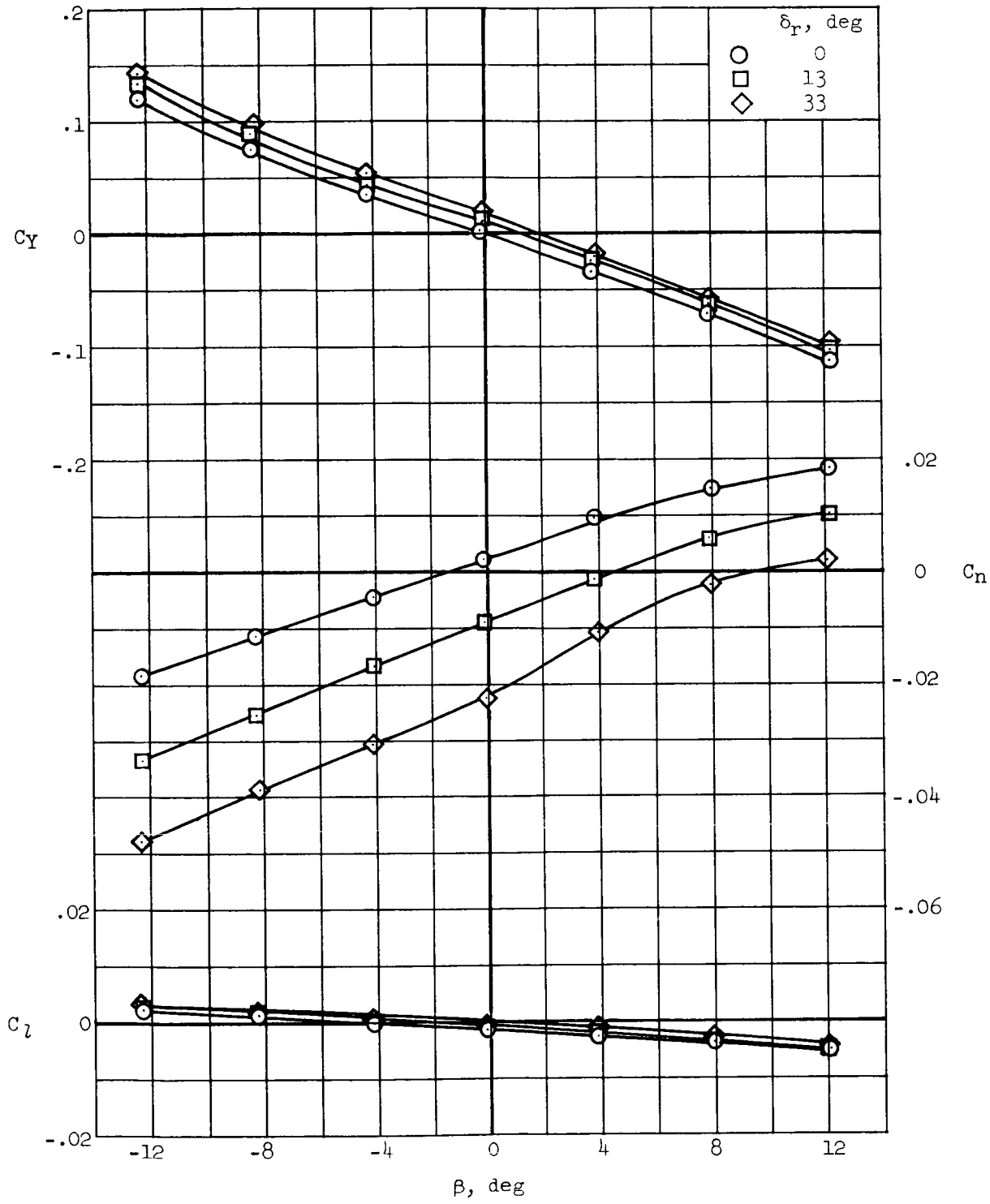


(e) $M_\infty = 1.35$

Figure 7.- Continued.

[redacted]

[redacted]

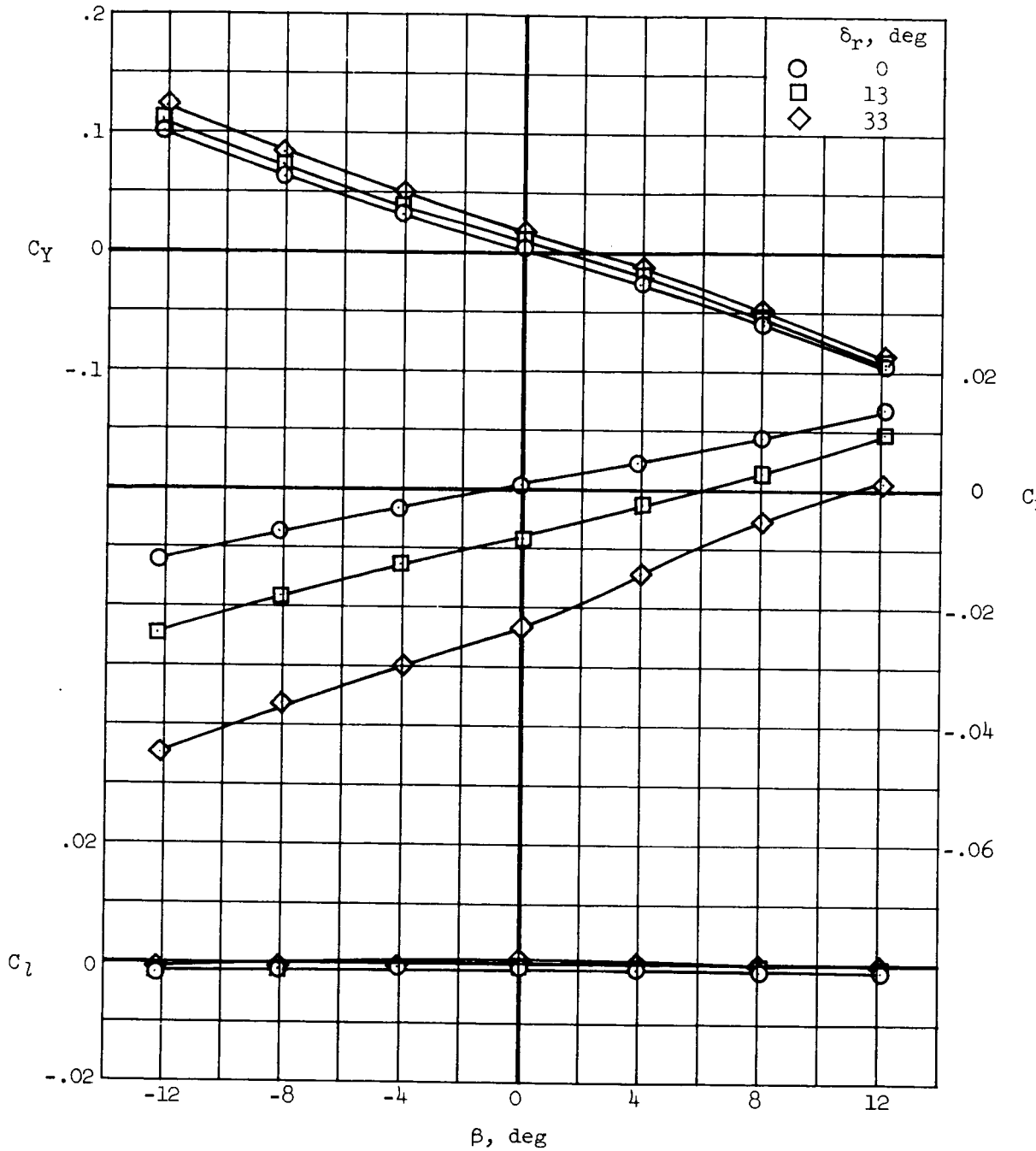


(f) $M_\infty = 1.70$

Figure 7.- Continued.

[redacted]

[redacted]

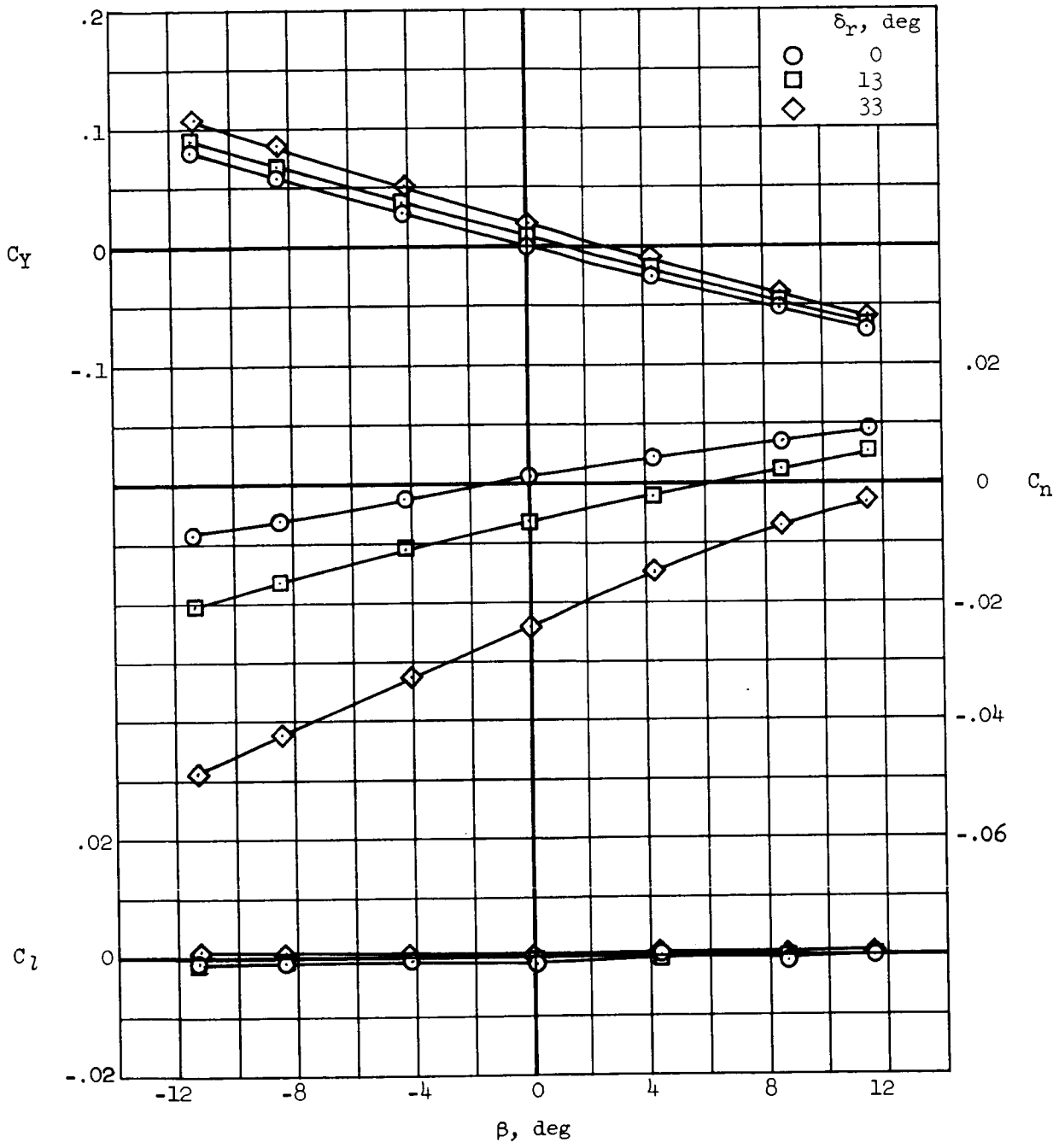


(g) $M_\infty = 2.50$

Figure 7.- Continued.

[redacted]

[redacted]



(h) $M_\infty = 3.20$

Figure 7.- Concluded.

[redacted]

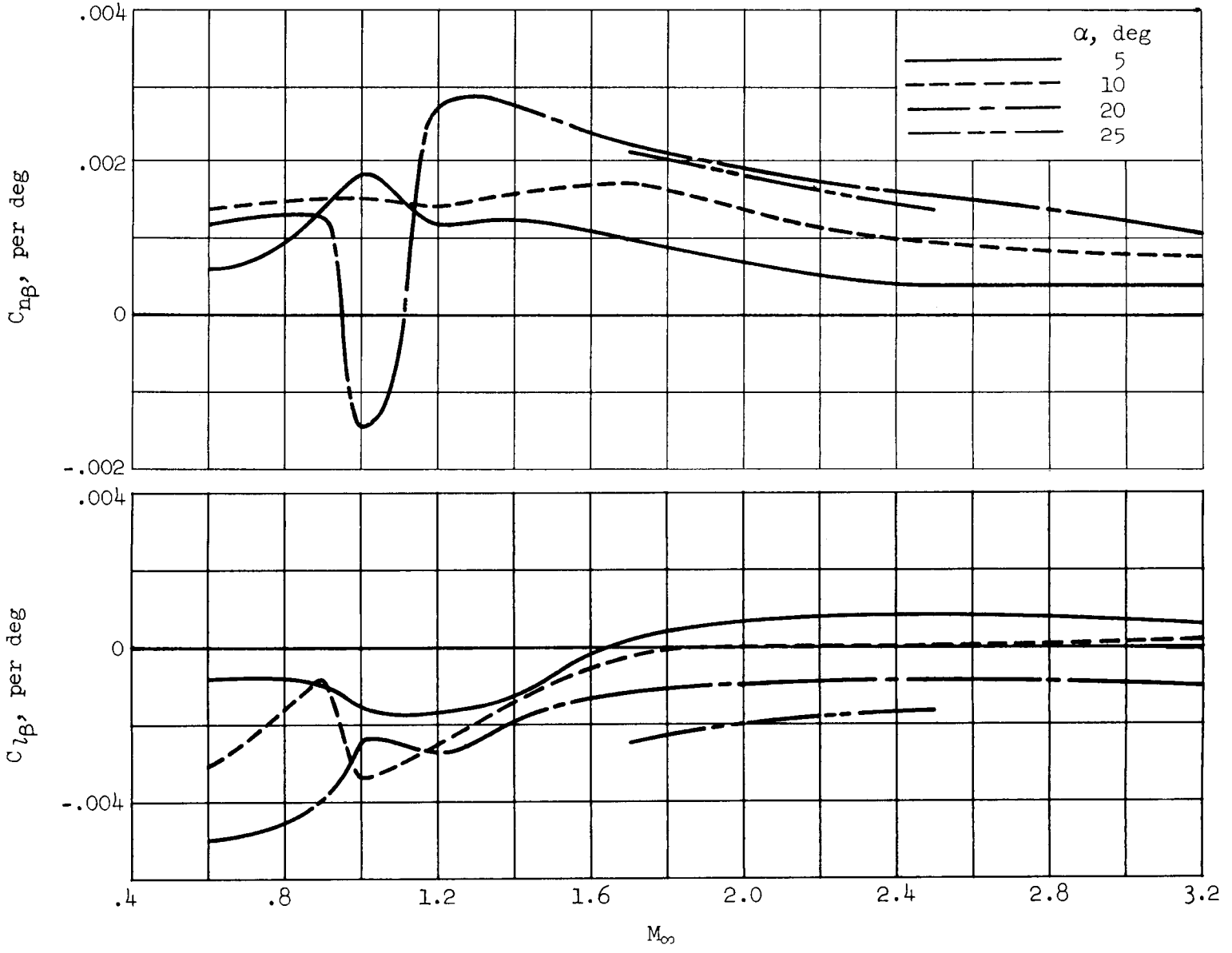


Figure 8.- Effect of angle of attack on lateral and directional stability parameters with control surfaces undeflected.

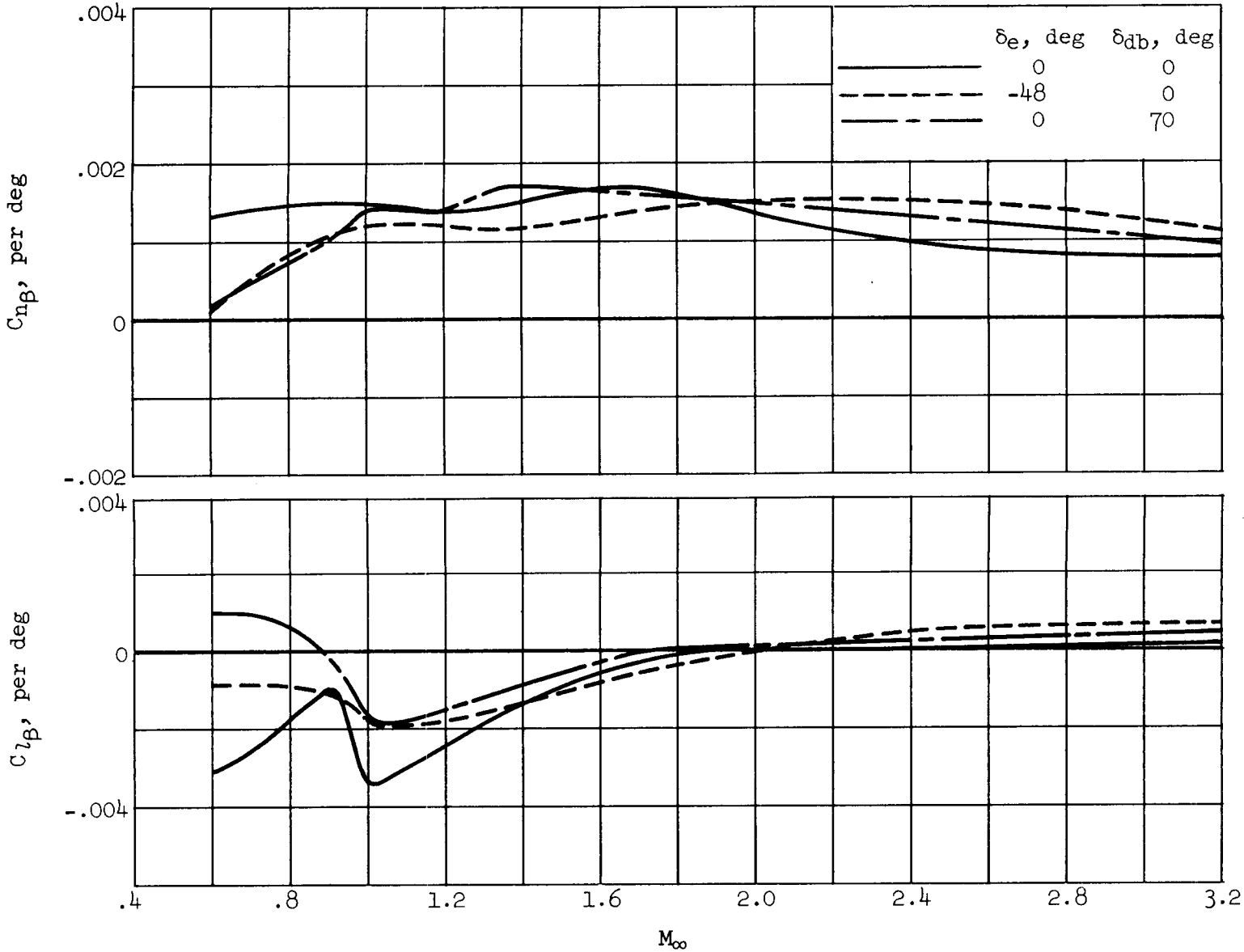


Figure 9.- Effects of elevon and dive brakes deflections on lateral and directional stability parameters, $\alpha = 10^{\circ}$.

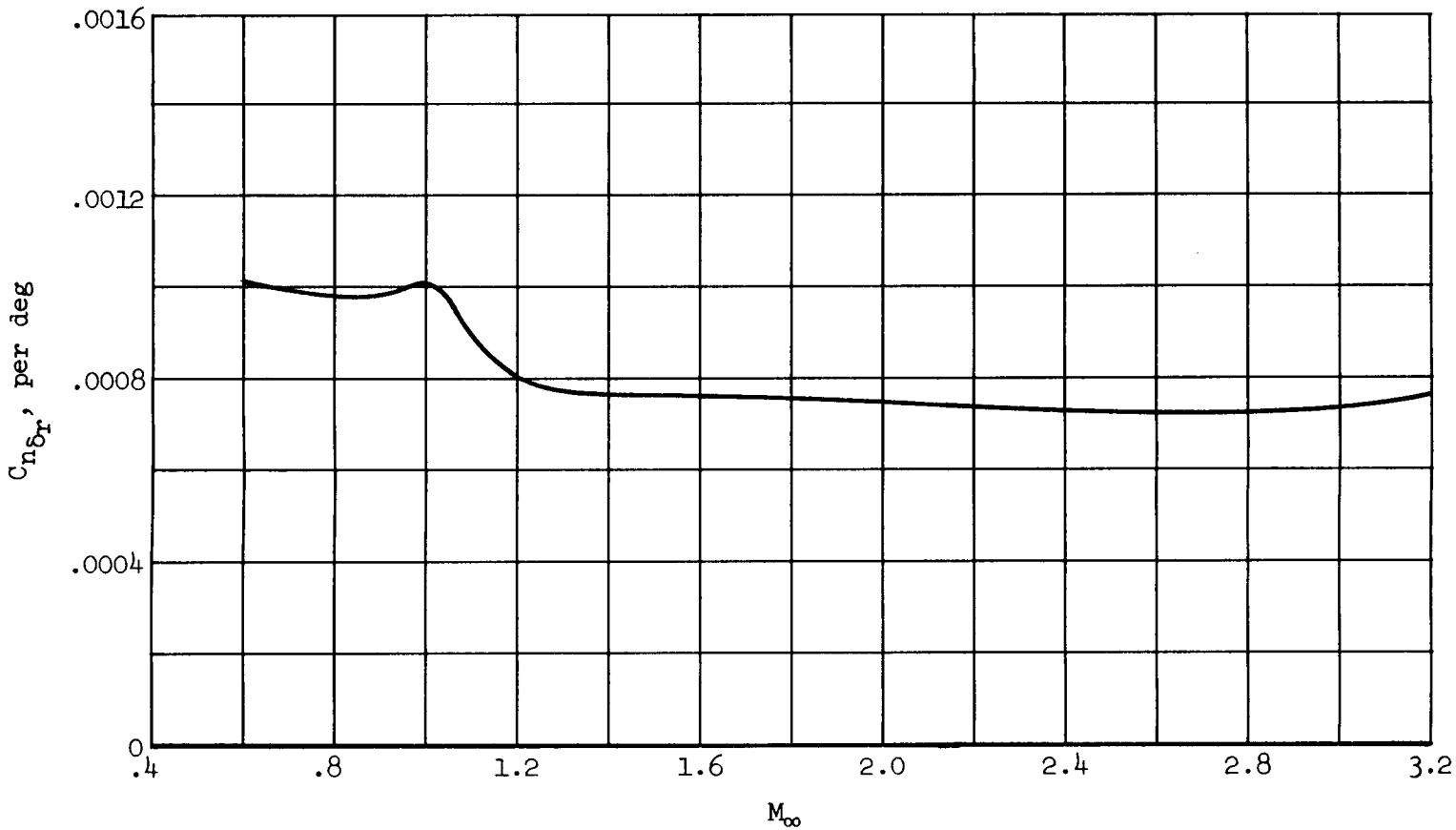


Figure 10.- Variation of rudder power with Mach number at zero sideslip.

[redacted]

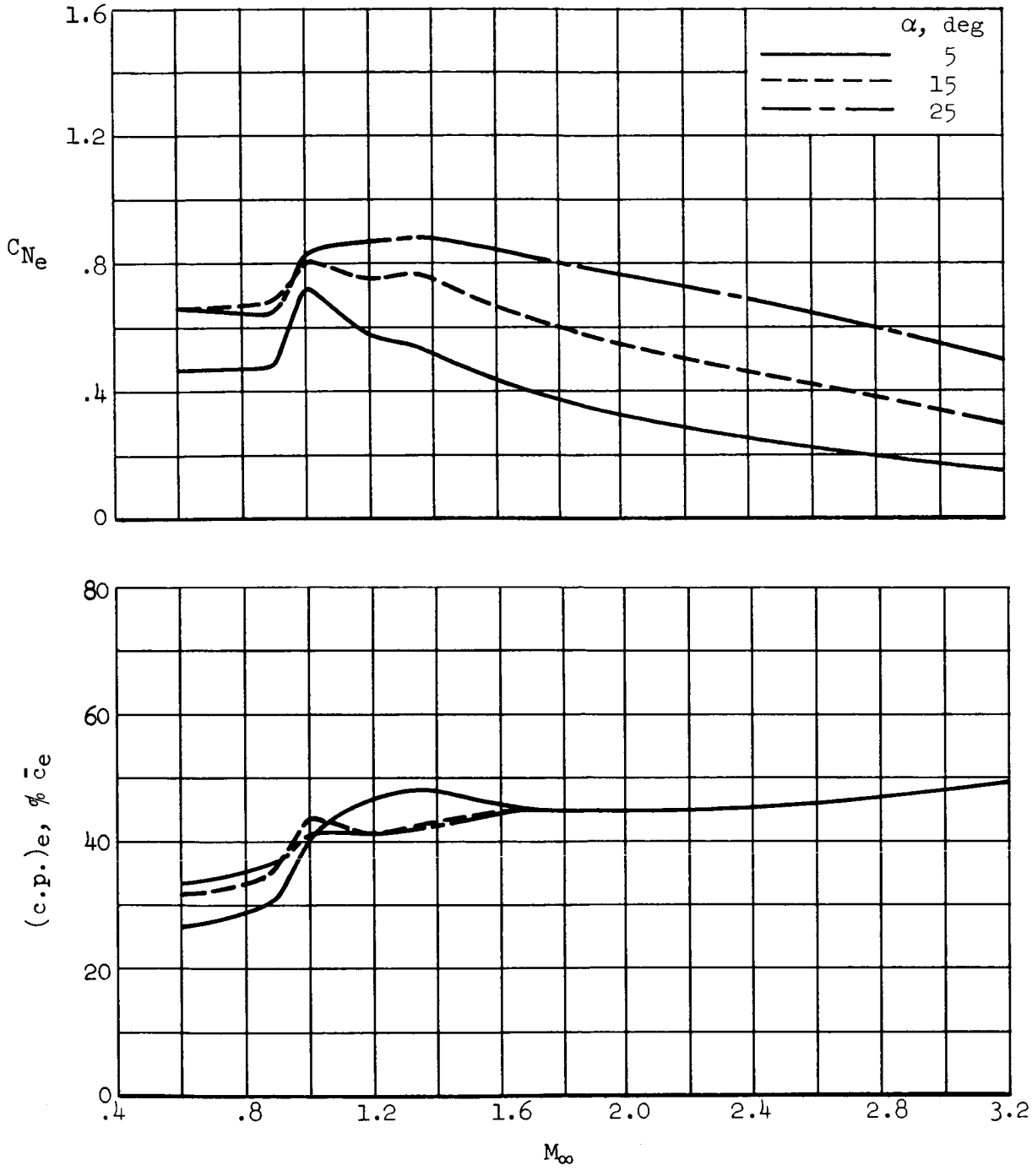


Figure 11.- Effect of angle of attack on elevon normal-force coefficient and center-of-pressure location, $\delta_e = 0°$.

[redacted]

[redacted]

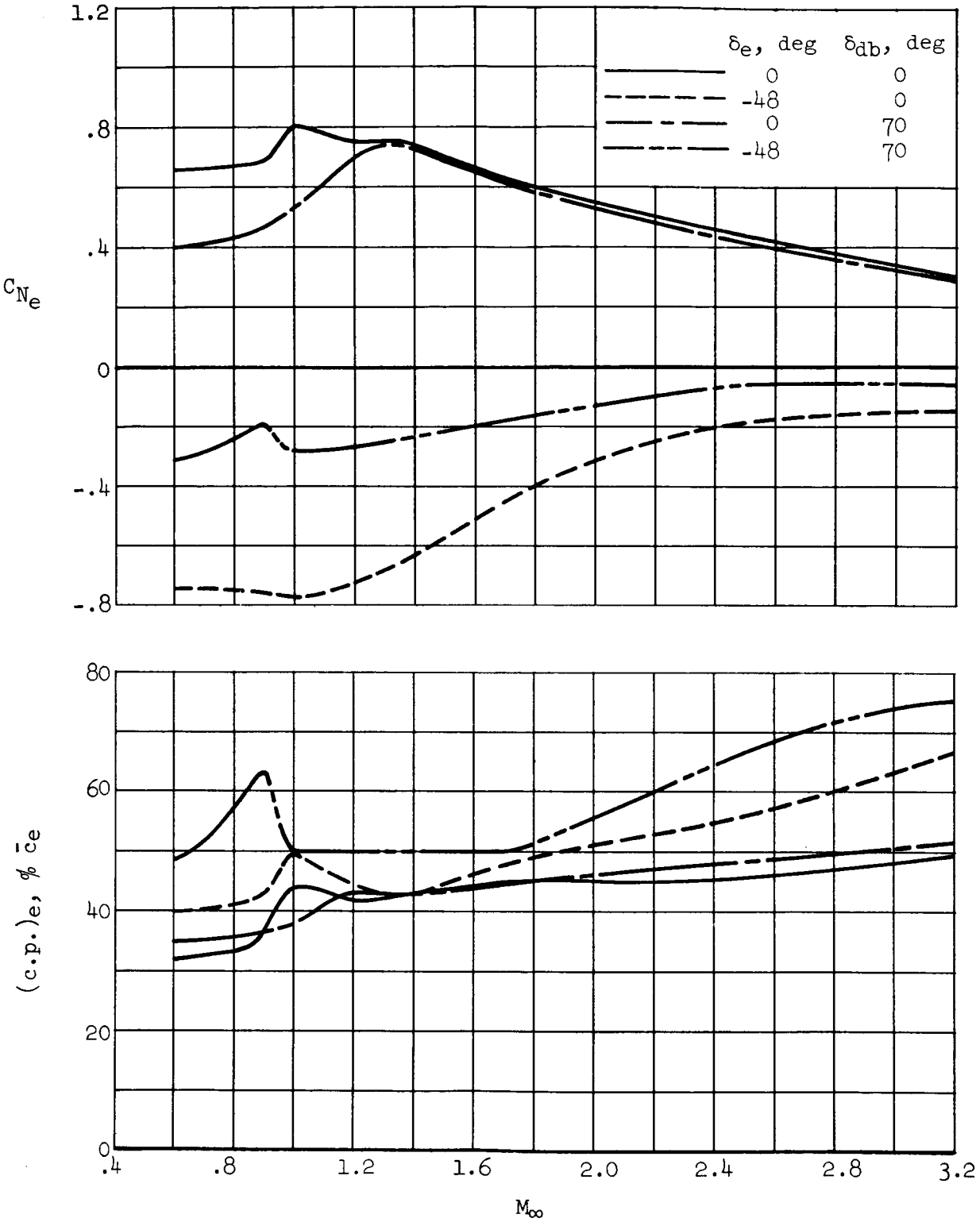


Figure 12.- Effects of elevon and dive brake deflections on the elevon normal-force coefficient and center-of-pressure location, $\alpha = 15°$.

[redacted]

[redacted]

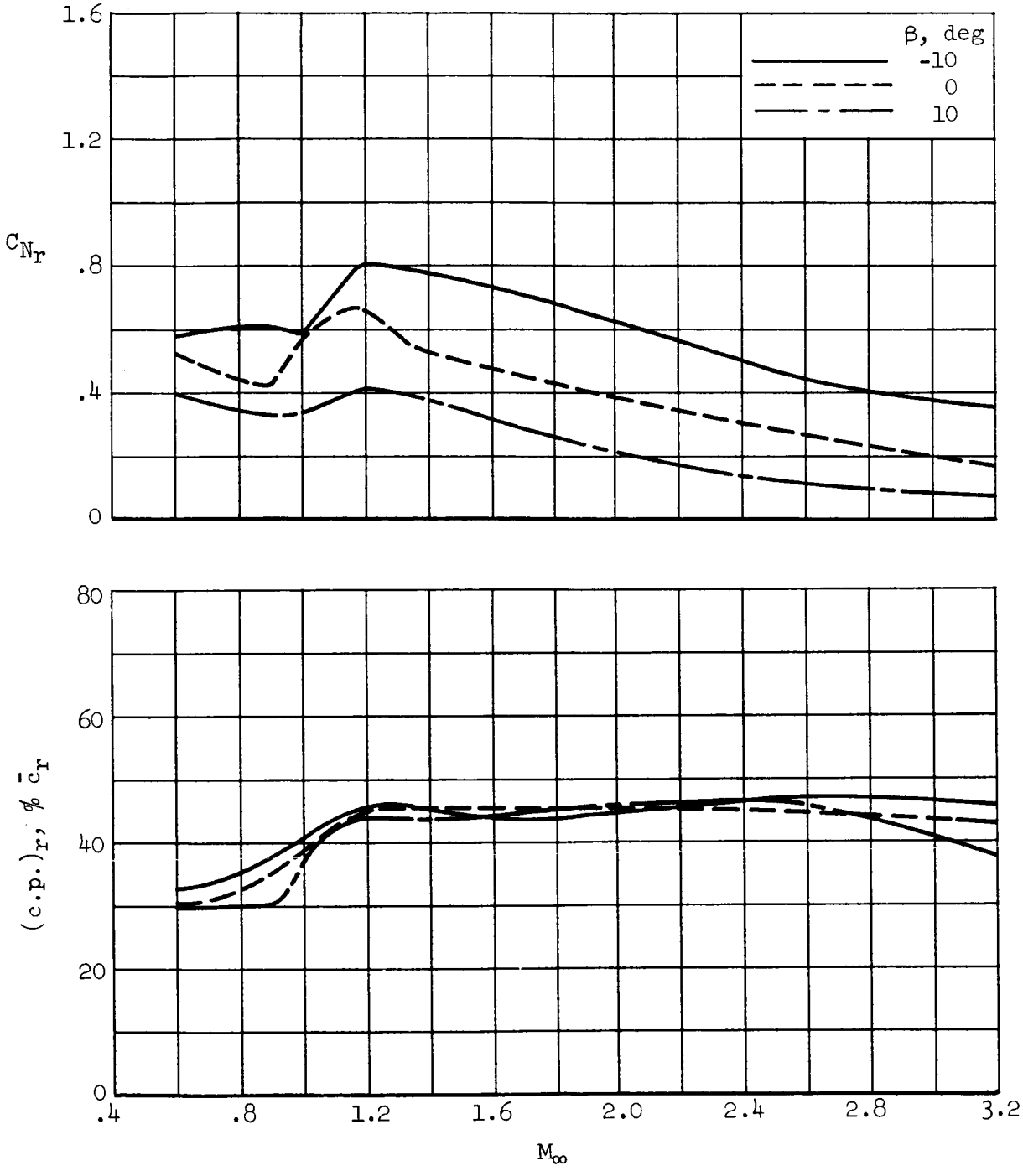


Figure 13.- Effect of sideslip on rudder normal force coefficient and center-of-pressure location for $\alpha = 10°$, $\delta_r = 0°$.

[redacted]

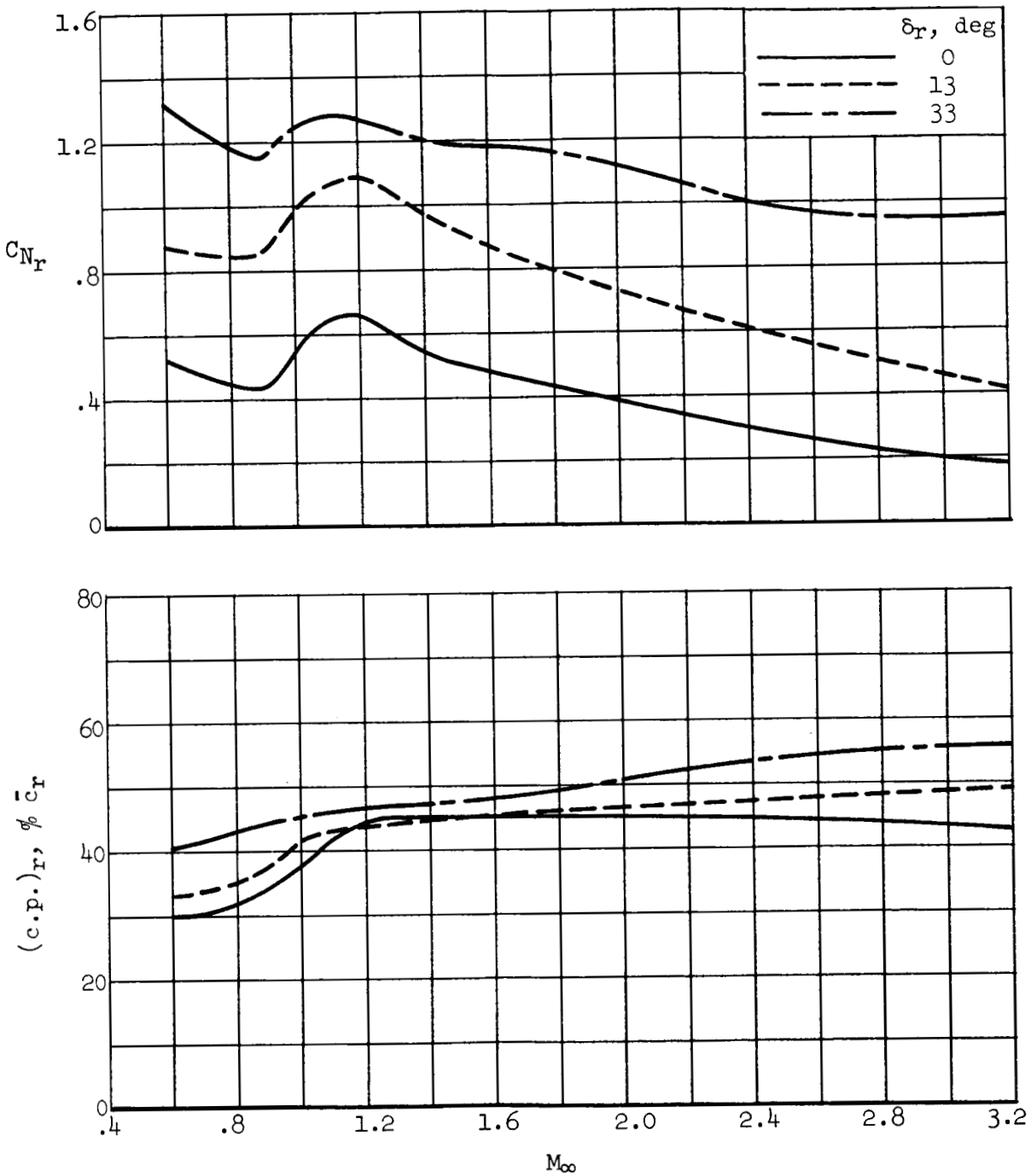


Figure 14.- Effect of rudder deflection on rudder normal-force coefficient and center-of-pressure location for $\alpha = 10°$, $\beta = 0°$.

NASA-Langley, 1964 A-643

[redacted]

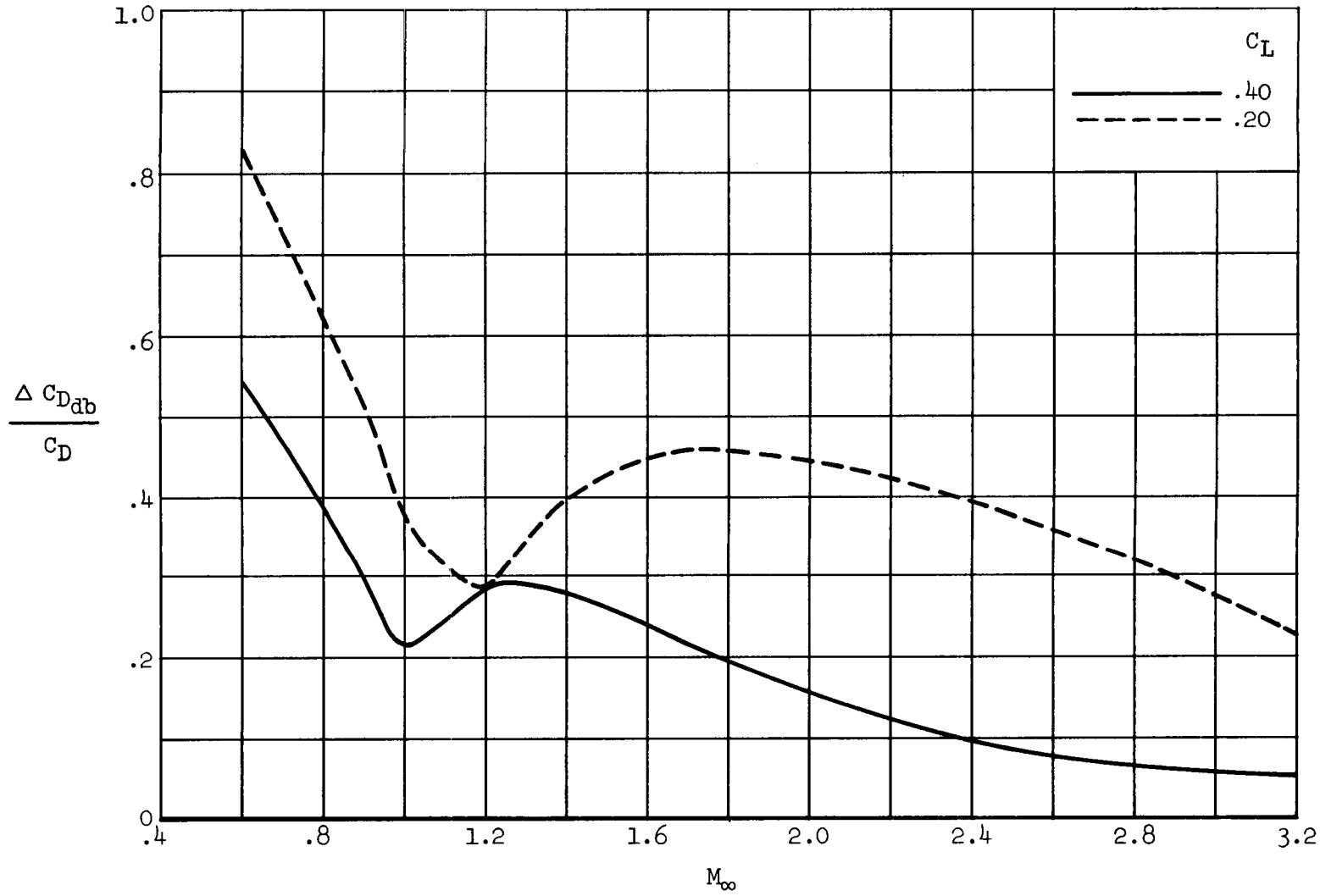


Figure 15.- Vaiation of incremental dive brake drag coefficient with Mach number for dive brakes extended 70°.

[redacted]

UNCLASSIFIED
[redacted]

"The aeronautical and space activities of the United States shall be conducted so as to contribute . . . to the expansion of human knowledge of phenomena in the atmosphere and space. The Administration shall provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof."

—NATIONAL AERONAUTICS AND SPACE ACT OF 1958

NASA SCIENTIFIC AND TECHNICAL PUBLICATIONS

TECHNICAL REPORTS: Scientific and technical information considered important, complete, and a lasting contribution to existing knowledge.

TECHNICAL NOTES: Information less broad in scope but nevertheless of importance as a contribution to existing knowledge.

TECHNICAL MEMORANDUMS: Information receiving limited distribution because of preliminary data, security classification, or other reasons.

CONTRACTOR REPORTS: Technical information generated in connection with a NASA contract or grant and released under NASA auspices.

TECHNICAL TRANSLATIONS: Information published in a foreign language considered to merit NASA distribution in English.

TECHNICAL REPRINTS: Information derived from NASA activities and initially published in the form of journal articles.

SPECIAL PUBLICATIONS: Information derived from or of value to NASA activities but not necessarily reporting the results of individual NASA-programmed scientific efforts. Publications include conference proceedings, monographs, data compilations, handbooks, sourcebooks, and special bibliographies.

Details on the availability of these publications may be obtained from:

SCIENTIFIC AND TECHNICAL INFORMATION DIVISION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Washington, D.C. 20546

[redacted]