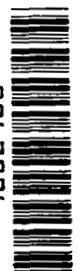


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Wing Planform Effects at Supersonic Speeds for an Advanced Fighter Configuration

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National Aeronautics
and Space Administration

Scientific and Technical
Information Branch

SUMMARY

An experimental investigation of four advanced fighter configurations, which differed in wing planform and airfoil shape, has been conducted in the Langley Unitary Plan Wind Tunnel at Mach numbers of 1.60, 1.80, 2.00, and 2.16. Supersonic data were obtained on the four uncambered wings, which were each attached to a single fighter fuselage. The fuselage geometry varied in cross-sectional shape and had two side-mounted, flow-through, half-axisymmetric inlets. Twin vertical tails were attached to the fuselage. The four planforms tested were a 65° delta wing, a combination of a 20° trapezoidal wing and a 45° horizontal tail, a 70°/30° cranked wing, and a 70°/66° cranked wing, where the angle values refer to the leading-edge sweep angle of the lifting-surface planform. The purpose of this investigation was to evaluate planform effects on a single fuselage representative of an advanced fighter aircraft. Results from the test showed that the highly swept cranked wings exceeded the aerodynamic performance levels, at low lift coefficients, of the 65° delta wing and the 20° trapezoidal wing at trimmed and untrimmed conditions.

INTRODUCTION

Historically, fighter aircraft have been designed for efficient transonic cruise and maneuvering with little emphasis on efficient supersonic cruise capability. These configurations characteristically require partial afterburning to dash at supersonic speeds. Forecasts of an increasingly hostile air combat environment suggest that sustained supersonic cruise and maneuvering capabilities are needed for survival (refs. 1 and 2). As a result, military aircraft designers are placing more emphasis on efficient supersonic performance, while retaining superior transonic cruise and maneuvering capability and mission versatility. The aerodynamic requirements within this expanded operational envelope are significant, and the combination of these capabilities into an efficient airframe poses a challenging problem.

Previous aircraft wing-design studies have had limited success because the approach emphasized aerodynamic efficiency in one speed regime without consideration of the performance in others. This has been especially true for supersonic wing designs (refs. 3 through 5). These designs, although supersonically attractive, had highly cambered wings and fuselages tailored to a very specific supersonic cruise flight condition. Off-design performance or evaluation criteria other than aerodynamics were not considered. In an attempt to incorporate more realism into the supersonic wing-design process, a more recent study (ref. 6) employed the fuselage of the wind-tunnel model of the F-16 fighter aircraft. The restrictions imposed on the supersonic wing-design process by the realistic fuselage geometry constituted a major improvement in obtaining realism compared with previous efforts; however, consideration of overall mission performance, airframe weight, propulsion, or airframe integration was not addressed.

The present supersonic experimental investigation is part of a cooperative fighter wing-design study of the National Aeronautics and Space Administration (NASA) and the McDonnell Aircraft Company. As discussed in reference 7, the four wings were sized to perform a preselected mission profile and were located on the fuselage for neutral longitudinal stability at $M = 0.60$. The supersonic wind-tunnel model

geometry consisted of a single fighter fuselage with two side-mounted, flow-through inlets, twin vertical tails, and four interchangeable uncambered wings of various planforms. The four planform shapes were a 65° delta wing, a combination of a 20° trapezoidal wing and a 45° horizontal tail, a 70°/30° cranked wing, and a 70°/66° cranked wing, where the angle values refer to the leading-edge sweep angle of the lifting-surface planforms. The purpose of this experimental investigation was to evaluate the planform effects on a single fighter fuselage at supersonic speeds. The models were tested at Mach numbers of 1.60, 1.80, 2.00, and 2.16 in the Langley Unitary Plan Wind Tunnel. This paper contains the results of the supersonic tests.

SYMBOLS

A	axial force, $A_{unc} - A_b - A_c - A_{int}$, lb
A_b	base axial force, $(p_\infty - p_b)S_b$, lb
A_c	chamber axial force, $(p_\infty - p_c)S_c$, lb
A_{int}	internal-duct axial force, $2 \frac{m}{m_\infty} q_\infty S_{cap} \cos(\alpha) - S_e \cos(\epsilon) [1.4 p_e M_e^2 + (p_e - p_\infty)]$, lb
A_{unc}	uncorrected axial force, lb
b	wing reference span, 1 ft
C_A	corrected axial-force coefficient, $C_{A,unc} - C_{A,b} - C_{A,c} - C_{A,int}$
C_D	corrected drag coefficient, $C_{D,unc} - C_{D,b} - C_{D,c} - C_{D,int}$
C_L	lift coefficient, $\frac{\text{Lift}}{qS}$
C_l	rolling-moment coefficient, $\frac{\text{Rolling moment}}{qSb}$
$C_{l\beta}$	effective dihedral parameter, $(C_{l \beta=0} - C_{l \beta=3}) / -3$, per deg
C_m	pitching-moment coefficient, $\frac{\text{Pitching moment}}{qSc}$
C_N	normal-force coefficient, $\frac{\text{Normal force}}{qS}$
C_n	yawing-moment coefficient, $\frac{\text{Yawing moment}}{qSb}$
$C_{n\beta}$	directional-stability parameter, $(C_{n \beta=0} - C_{n \beta=3}) / -3$, per deg
C_Y	side-force coefficient, $\frac{\text{Side force}}{qS}$
c	wing chord, in.
\bar{c}	wing reference chord, 1 ft

L/D lift-drag ratio

M Mach number

MFR duct mass-flow ratio (see eq. (B1))

m mass flow, lb/sec

p static pressure, psi

q dynamic pressure, psf

R Reynolds number

S wing reference area, 1 ft²

S_b base area, 1.118 in² (see fig. B2)

S_c chamber area, 2.667 in² (see fig. B2)

S_{cap} capture area, 2.401 in² (see fig. B2)

S_e exit area, 2.074 in² (see fig. B2)

x longitudinal distance from nose of model, in.

y spanwise distance from centerline, in.

z vertical distance from model reference line, in.

α angle of attack, deg

β angle of sideslip, deg

δ_h horizontal tail deflection, positive trailing edge down, deg

Λ sweep angle, deg

ε duct misalignment angle in pitch, deg

Subscripts:

b base

c chamber

cap inlet capture

e exit

i inlet

int internal

l_e leading edge

m	moment reference
max	maximum
min	minimum
r	theoretical root chord
te	trailing edge
unc	uncorrected
∞	free stream

Model components:

B	body
H	horizontal tail
V	vertical tail
W ₁	20° trapezoidal wing
W ₂	65° delta wing
W ₃	70°/30° cranked wing
W ₄	70°/66° cranked wing

DISCUSSION

Model Description

The four configurations tested were approximately 4-percent-scale representations of an advanced fighter aircraft. The models consisted of a single fighter fuselage with side-mounted, flow-through, half-axisymmetric inlets; twin vertical tails; and four uncambered wings. The wings varied in planform shape, wing area, control-surface size and location, and airfoil section. The four planform shapes tested were a 65° delta wing, a combination of a 20° trapezoidal wing and a 45° horizontal tail, a 70°/30° cranked wing, and a 70°/66° cranked wing. Selections of the four configurations were based upon an aircraft sizing procedure discussed in reference 7.

Photographs of the four advanced fighter configuration models installed in test section 1 of the Langley Unitary Plan Wind Tunnel are shown in figure 1, and figure 2 is a three-view sketch of the 65° delta-wing configuration. Details of the model vertical tail are shown in figure 3, and details of the four planforms are contained in figures 4 through 8. The geometric characteristics of the four models are given in table I. Tables II through V are listings of the wave-drag input geometry (ref. 8) of the four wind-tunnel models tested.

Tests and Conditions

The tests were conducted in the Unitary Plan Wind Tunnel. A detailed description of the test conditions and a tabulation of the force data are presented in appendix A. Appendix B contains details of the inlet and internal-duct geometry, a discussion of the internal-flow test procedure, and a presentation of the internal-flow measurements.

Experimental Results

The supersonic wind-tunnel testing was conducted in the Unitary Plan Wind Tunnel (ref. 9). The objectives of this test were to experimentally determine the supersonic aerodynamic characteristics of the four selected configurations and to compare their longitudinal and lateral-directional aerodynamic characteristics.

High-speed wind-tunnel tests were performed over a Mach number range from 1.60 to 2.16, at a Reynolds number of 2×10^6 per ft, at angles of attack from 0° to 20° , at various angles of sideslip, and at control-surface deflection. Test results for the four configurations are presented over the Mach number range with a special emphasis at $M = 1.80$, the design condition. All data presented are based on a wing reference area S of 1 ft^2 , a wing reference span b of 1 ft, and a wing reference chord \bar{c} of 1 ft.

Presented in figure 9 are the trimmed and untrimmed drag characteristics for the four selected configurations at $M = 1.80$. The trimmed drag characteristics for the four configurations were obtained with full-span, trailing-edge flap deflections for the delta and cranked wings and with horizontal-tail deflections for the trapezoidal wing. A look at the untrimmed drag characteristics at low lift coefficients ($C_L < 0.12$) reveals that both cranked-wing geometries exhibited better performance than either the delta or the trapezoidal configuration. At high lift coefficients ($C_L > 0.20$), the reverse is true; the delta and trapezoidal geometries outperform the cranked wings. Figure 10 shows that the degraded performance for the $70^\circ/66^\circ$ cranked wing is the result of a strong spanwise flow region along the wing trailing edge, which results in significant amounts of flow separation at moderate angles of attack. The trimmed drag characteristics also show that both the cranked-wing configurations outperform the conventional designs at low lift coefficients. At high lift coefficients, the delta-wing performance again exceeds that of the $70^\circ/30^\circ$ cranked wing, but not that of the $70^\circ/66^\circ$ cranked-wing geometry.

Lift and pitching-moment characteristics at $M = 1.80$ are presented in figure 11. These data lead to a better understanding of the effect trailing-edge separation has on the longitudinal-stability characteristics of the $70^\circ/66^\circ$ cranked-wing configuration. The separated flow conditions which were observed in the oil flows occurred at moderate values of lift coefficient and resulted in a loss of lift and a break in the pitching-moment curve. Despite these significant separation effects observed for the $70^\circ/66^\circ$ cranked-wing geometry, its performance level equals or exceeds those of the trapezoidal and delta planforms at low lift coefficients.

The lateral-directional stability characteristics of the four test geometries are shown in figure 12 at a Mach number of 1.80. The data indicate that all geometries are stable both laterally and directionally at low angles of attack; however, the trapezoidal and cranked-wing data show a significant reduction in directional stability with increasing angle of attack, and the delta-wing data had high levels of directional stability throughout the range of angle of attack tested.

Figure 13 shows the variation with Mach number of maximum lift-drag ratio $(L/D)_{\max}$ and the value of lift at which $(L/D)_{\max}$ occurs. Similar values for the $M = 1.80$ trim condition are also shown. Maximum untrimmed L/D is similar for all aircraft, with values ranging from 5.0 to 5.3 at $M = 1.80$. These values compare favorably with an untrimmed maximum L/D of 5.5 for the F-16 wing redesign study (ref. 6). The untrimmed data for the trapezoidal, delta, and $70^\circ/30^\circ$ cranked wings show an 8-percent reduction in $(L/D)_{\max}$ and a 20-percent reduction in the value of lift at which $(L/D)_{\max}$ occurs from $M = 1.60$ to $M = 2.16$. However, data for the $70^\circ/66^\circ$ cranked-wing configuration reflect a different situation; the variation in $(L/D)_{\max}$ from $M = 1.60$ to $M = 2.16$ is only 1.5 percent. This variation experienced by the $70^\circ/66^\circ$ cranked-wing configuration at untrimmed conditions is carried over to the trimmed conditions. Going from untrimmed to trimmed conditions at $M = 1.80$, the $70^\circ/66^\circ$ geometry experiences a negligible reduction in both $(L/D)_{\max}$ and the lift value at $(L/D)_{\max}$ compared with the other geometries. The tendency of the $70^\circ/66^\circ$ cranked-wing configuration to maintain a consistent performance level can be attributed to its low zero-lift drag characteristics.

Variations of lift-curve slope and longitudinal stability with Mach number are shown in figure 14. The data indicate that all geometries experience a reduction in lift-curve slope and a similar increase in longitudinal stability with increasing Mach number.

Figure 15 is a drag breakdown for each wing of the study. The fuselage-alone data show a minimum drag level that varies from 0.0177 at $M = 1.60$ to 0.0160 at $M = 2.16$. The effect of adding the individual model components results in a 0.002 drag penalty for the vertical tails and an additional 0.005 to 0.0125 drag penalty with the addition of the wings. The $70^\circ/66^\circ$ cranked-wing geometry produces the smallest drag penalty, and the trapezoidal wing produces the largest drag penalty. The severe minimum-drag penalty associated with both the trapezoidal and the delta wing is typical of these designs and is the major reason for their poor supersonic performance at low lift coefficients.

CONCLUDING REMARKS

An experimental investigation of four advanced fighter configurations, differing in wing planform and airfoil shape, has been conducted in the Langley Unitary Plan Wind Tunnel at Mach numbers of 1.60, 1.80, 2.00, and 2.16. Supersonic data were obtained on the four uncambered wings, which were each attached to a single fighter fuselage. The wing geometries consisted of a trapezoidal wing, a delta wing, and two cranked-wing designs ($70^\circ/66^\circ$ and $70^\circ/30^\circ$ leading-edge sweep). Supersonic performance levels of the cranked-wing configurations exceed those of the traditional designs at low lift coefficients for both the trimmed and untrimmed cases. These results can be directly attributed to the low minimum-drag levels associated with the highly swept configurations. The supersonic data indicate that all configurations are laterally, directionally, and longitudinally stable at low angles of attack; however, at high angles of attack, only the delta wing maintains high levels of directional stability.

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TABLE I.- GEOMETRY CHARACTERISTICS OF MODELS

Fuselage:	
Length, in.	32.200
Base area, in ²	1.118
Chamber area, in ²	2.667
Capture area, in ²	2.401
Exit area, in ²	2.074
Inlet area, in ²	1.997
Vertical tail (each):	
Area, in ²	12.211
Λ_{le} , deg	60
Λ_{te} , deg	30
Aspect ratio	1.1
Semispan, in.	3.664
Airfoil section	64A005
Horizontal tail (each):	
Area, in ²	24.336
Λ_{le} , deg	45
Λ_{te} , deg	21
Aspect ratio	3.00
Semispan, in.	4.30
Airfoil section (inboard)	5-percent biconvex
Airfoil section (outboard)	3-percent biconvex
Delta wing:	
Area (reference), in ²	200.747
Λ_{le} , deg	65
Λ_{te} , deg	-6
Aspect ratio	1.49
Span, in.	17.270
Wing reference chord, in.	14.327
Airfoil section	64A005
Moment reference center, in.	18.930
Theoretical root chord (leading edge), in.	6.946

TABLE I.- Concluded

Trapezoidal wing:

Area (reference), in ²	149.760
Λ_{le} , deg	20
Λ_{te} , deg	-9
Aspect ratio	3.50
Span, in.	22.894
Wing reference chord, in.	6.981
Airfoil section (inboard)	4-percent biconvex
Airfoil section (outboard)	3-percent biconvex
Moment reference center, in.	19.680
Theoretical root chord (leading edge), in.	16.373

70°/30° cranked wing:

Area (reference), in ²	165.600
Λ_{le} (inboard), deg	70
Λ_{le} (outboard), deg	30
Λ_{te} (inboard), deg	0
Λ_{te} (outboard), deg	-26
Aspect ratio	1.90
Span, in.	17.618
Wing reference chord, in.	12.340
Airfoil section (0.25 semispan)	65A005.7
Airfoil section (0.30 semispan)	65A004
Airfoil section (outboard)	4-percent biconvex
Moment reference center, in.	19.980
Theoretical root chord (leading edge), in.	6.868

70°/66° cranked wing:

Area (reference), in ²	165.600
Λ_{le} (inboard), deg	70
Λ_{le} (outboard), deg	66
Λ_{te} (inboard), deg	0
Λ_{te} (outboard), deg	50
Aspect ratio	1.90
Span, in.	17.618
Wing reference chord, in.	12.340
Airfoil section (0.25 semispan)	65A005.7
Airfoil section (0.30 semispan)	65A004
Airfoil section (outboard)	4-percent biconvex
Moment reference center, in.	20.510
Theoretical root chord (leading edge), in.	6.868

TABLE II.- WAVE-DRAG INPUT GEOMETRY OF 65° DELTA-WING MODEL

65 DEGREE LEADING-EDGE SWEEP DELTA WING DIMENSIONS IN INCHES											
1	-1	1	1	2 17	3 17	7 30	4 26 10		1	6	
200.75	14.327	18.93									REFAR
0.0	.50	.75	1.25	2.5	5.0	7.5	10.	20.	30.		XAF 10
40.	50.	60.	70.	80.	90.	100.					XAF 17
11.668	2.202	1.112	16.386								WORD 1
25.464	8.635	1.112	1.9200								WORD 2
0.0	.385	.467	.595	0.815	1.094	1.325	1.519	2.059	2.367		WORD1
2.496	2.440	2.173	1.746	1.203	.609	0.0					WORD1
0.0	.385	.467	.595	0.815	1.094	1.326	1.519	2.059	2.367		WORD1
2.496	2.440	2.173	1.746	1.203	.609	0.0					WORD1
0.000	2.400	4.920	7.360	9.202	10.632	10.960					XFUS
-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	Y
-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	Y
-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	Z
-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	-0.088	Z
.002	.159	.328	.453	.534	.598	.619	.619	.619	.619	.619	Y
.592	.540	.452	.380	.280	.140	-0.008					Y
-.367	-.350	-.270	-.156	-.046	.086	.262	.262	.262	.262	.262	Z
.435	.572	.684	.745	.814	.866	.887					Z
.003	.220	.453	.631	.736	.785	.793	.793	.793	.793	.793	Y
.738	.658	.538	.398	.286	.130	-0.007					Y
-.213	-.173	-.054	.122	.339	.587	.816	.816	.816	.816	.816	Z
1.025	1.202	1.343	1.447	1.496	1.545	1.577					Z
-0.000	.269	.515	.660	.750	.795	.796	.796	.796	.796	.796	Y
.777	.707	.616	.513	.341	.165	-0.007					Y
-.028	.011	.174	.398	.655	.907	1.152	1.152	1.152	1.152	1.152	Z
1.421	1.726	2.004	2.229	2.451	2.556	2.593					Z
-.004	.269	.451	.616	.706	.788	.813	.946	.946	.818	.818	Y
.803	.760	.689	.554	.411	.219	-0.014					Y
.000	.083	.198	.410	.638	.882	1.175	1.187	1.187	1.223	1.223	Z
1.436	1.673	1.927	2.204	2.378	2.495	2.529					Z
-.004	.201	.398	.555	.664	.721	.766	.955	.954	.798	.798	Y
.754	.695	.620	.492	.352	.176	-0.005					Y
.004	.019	.119	.258	.447	.651	.863	.863	1.597	1.602	1.602	Z
1.783	1.963	2.116	2.261	2.370	2.455	2.488					Z
-.008	.177	.350	.499	.612	.701	.758	.962	.950	.758	.758	Y
.698	.639	.563	.467	.323	.159	-0.010					Y
.009	.035	.119	.247	.391	.563	.747	.751	1.698	1.703	1.703	Z
1.883	2.028	2.149	2.246	2.367	2.444	2.464					Z
10.960	13.000	13.800	15.000								XFUS 4
-0.000	.184	.360	.508	.612	.704	.755	.964	.966	1.198	1.198	Y
1.411	1.575	1.739	1.898	2.006	2.077	2.080	1.951	1.781	1.556	1.556	Y
1.271	.970	.972	.780	.662	.585	.469	.340	.175	-.005	-.005	Y
.012	.037	.118	.255	.395	.572	.749	.749	.112	.133	.133	Z
.210	.287	.432	.641	.870	1.155	1.339	1.692	1.940	2.147	2.147	Z
2.258	2.313	1.700	1.699	2.011	2.136	2.263	2.363	2.443	2.466	2.466	Z
-.008	.104	.244	.348	.424	.488	.717	.894	.886	1.151	1.151	Y
1.387	1.611	1.791	1.899	2.200	2.200	2.200	2.200	1.929	1.602	1.602	Y
1.245	.872	.872	.644	.419	.371	.295	.198	.086	-.007	-.007	Y
-.008	.000	.037	.094	.162	.247	.284	.156	.008	.009	.009	Z
.062	.168	.285	.393	.830	1.041	1.202	1.540	1.845	2.173	2.173	Z
2.319	2.354	2.201	2.140	2.195	2.227	2.275	2.315	2.346	2.366	2.366	Z
.000	.088	.180	.297	.385	.449	.750	1.038	1.062	1.359	1.359	Y
1.615	1.831	1.967	2.200	2.200	2.200	2.200	2.200	1.881	1.555	1.555	Y
1.238	.969	.953	.680	.416	.364	.307	.223	.115	-.006	-.006	Y
-.012	-.012	-.007	.013	.034	.054	.055	.056	.052	.118	.118	Z
.231	.376	.513	.785	.915	1.112	1.265	1.545	1.864	2.124	2.124	Z

TABLE II.- Continued

2.251	2.282	2.282	2.292	2.295	2.316	2.316	2.316	2.316	2.316	Z
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.121	1.912	Y
1.676	1.374	1.105	.813	.640	.528	.419	.271	.130	-.010	Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.196	.369	.550	.805	.924	1.044	1.201	1.585	1.637	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243	2.243	2.243	2.243	2.243	Z
15.0	16.840	18.600	20.360	22.320	24.240	25.800	28.096	30.132	32.200	XFUS 10
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.200	1.912	Y
1.676	1.374	1.105	.813	.640	0.0					Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.196	.369	.550	.805	.924	1.044	1.201	1.529	1.585	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243					Z
-.008	.104	.221	.345	.481	.606	.738	.854	.954	1.183	Y
1.383	1.607	1.791	2.019	2.200	2.200	2.200	2.053	1.892	1.747	Y
1.563	1.386	1.205	1.029	.856	0.0					Y
-.016	-.008	-.003	-.003	-.007	.002	-.006	-.006	.011	.063	Z
.148	.265	.426	.611	.755	.828	1.595	1.662	1.729	1.801	Z
1.889	1.977	2.056	2.108	2.132	2.132					Z
-.008	.136	.277	.425	.589	.742	.878	1.007	1.143	1.311	Y
1.532	1.732	1.896	2.040	2.200	2.200	2.200	2.079	1.898	1.734	Y
1.597	1.421	1.268	1.072	.879	0.0					Y
.004	.000	-.004	-.007	-.011	-.011	-.011	-.019	.014	.078	Z
.199	.347	.468	.576	.685	.809	1.570	1.639	1.719	1.795	Z
1.875	1.971	2.015	2.071	2.082	2.082					Z
-.008	.168	.329	.481	.654	.798	.918	1.047	1.199	1.339	Y
1.527	1.735	1.891	2.067	2.200	2.200	2.200	2.200	2.051	1.874	Y
1.702	1.517	1.336	1.103	.879	0.0					Y
-.016	-.015	-.003	-.006	.002	-.001	-.005	-.000	.024	.077	Z
.178	.335	.448	.581	.685	.871	1.099	1.595	1.647	1.723	Z
1.799	1.870	1.950	2.025	2.064	2.064					Z
-.004	.128	.245	.365	.505	.650	.806	.942	1.119	1.279	Y
1.499	1.708	1.908	2.080	2.200	2.200	2.200	2.200	2.059	1.863	Y
1.698	1.506	1.273	1.056	.824	0.0					Y
-.012	-.012	-.012	-.012	-.011	-.011	-.011	-.003	.025	.086	Z
.214	.371	.520	.644	.735	.929	1.106	1.516	1.574	1.666	Z
1.750	1.842	1.942	2.014	2.030	2.030					Z
0.000	.120	.245	.369	.533	.666	.798	.914	1.139	1.303	Y
1.531	1.747	1.935	2.079	2.200	2.200	2.200	2.200	2.061	1.888	Y
1.708	1.527	1.338	1.077	.797	0.0					Y
0.000	.000	-.007	-.007	-.007	-.002	-.002	.002	.043	.092	Z
.225	.398	.579	.739	.870	1.053	1.189	1.450	1.525	1.609	Z
1.701	1.797	1.896	1.984	2.023	2.023					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z
1.613	1.728	1.836	1.946	1.977	1.977					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z
1.613	1.728	1.836	1.946	1.977	1.977					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y

TABLE II.- Concluded

1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
26.8355	2.093	1.126	5.494	33.225	1.443	4.814	1.201				
0.0	20.0	40.0	60.0	80.0	100.0						
0.0	1.28	1.92	1.92	1.28	0.0						

TABLE III.- WAVE-DRAG INPUT GEOMETRY OF 20° TRAPEZOIDAL-WING MODEL

20 DEGREE LEADING-EDGE SWEEP TRAPEZOIDAL WING										DIMENSIONS IN INCHES								
1	-1	1	1	1	2	10	3	17	7	30	4	26	10	1	6	1	6	
149.76	6.98	19.68																REFAR
0.0	10.	20.	30.	40.	50.	60.	70.	80.	100.									XAF 10
17.174	2.202	1.112	8.350															WORG 1
20.539	11.447	1.112	3.603															WORG 2
0.0	.727	1.28	1.68	1.920	2.000	1.920	1.680	1.280	0.000									TCCIRC
0.000	.5400	.9600	1.260	1.440	1.500	1.440	1.260	.960	0.000									TCCIRC
0.000	2.400	4.920	7.360	9.202	10.632	10.960												XFUS
-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000									Y
-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000									Y
-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088									Z
-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088									Z
.002	.159	.328	.453	.534	.598	.619	.619	.619	.619									Y
.592	.540	.452	.380	.280	.140	-.008												Y
-.369	-.350	-.270	-.158	-.046	.086	.262	.262	.262	.262									Z
.435	.572	.684	.745	.814	.866	.887												Z
.003	.220	.453	.631	.736	.785	.793	.793	.793	.793									Y
.738	.658	.538	.398	.286	.130	-.007												Y
-.213	-.173	-.054	.122	.339	.587	.816	.816	.816	.816									Z
1.025	1.202	1.343	1.447	1.496	1.545	1.577												Z
-.000	.269	.515	.660	.750	.795	.796	.796	.796	.796									Y
.777	.707	.616	.513	.341	.165	-.007												Y
-.028	.011	.174	.398	.655	.907	1.152	1.152	1.152	1.152									Z
1.421	1.726	2.004	2.229	2.451	2.556	2.593												Z
-.004	.269	.451	.616	.706	.788	.813	.946	.946	.818									Y
.803	.760	.689	.554	.411	.219	-.014												Y
.000	.083	.198	.410	.638	.882	1.175	1.187	1.187	1.223									Z
1.436	1.673	1.927	2.204	2.378	2.495	2.529												Z
-.004	.201	.398	.555	.664	.721	.766	.955	.954	.798									Y
.754	.695	.620	.492	.352	.176	-.005												Y
.004	.019	.119	.258	.447	.651	.863	.863	1.597	1.602									Z
1.783	1.963	2.116	2.261	2.370	2.455	2.488												Z
-.008	.177	.350	.499	.612	.701	.758	.962	.950	.758									Y
.698	.639	.563	.467	.323	.159	-.010												Y
.008	.035	.119	.247	.391	.563	.747	.751	1.698	1.703									Z
1.883	2.028	2.149	2.246	2.367	2.444	2.464												Z
10.960	13.000	13.800	15.000															XFUS 4
-.000	.184	.360	.508	.612	.704	.755	.964	.966	1.198									Y
1.411	1.575	1.739	1.898	2.006	2.077	2.080	1.951	1.781	1.556									Y
1.271	.970	.972	.780	.662	.585	.469	.340	.175	-.005									Y
.012	.037	.118	.255	.395	.572	.749	.749	.112	.133									Z
.210	.287	.432	.641	.870	1.155	1.339	1.692	1.940	2.147									Z
2.258	2.313	1.700	1.699	2.011	2.136	2.263	2.363	2.443	2.466									Z
-.008	.104	.244	.348	.424	.488	.717	.894	.886	1.151									Y
1.387	1.611	1.791	1.899	2.200	2.200	2.200	2.200	1.929	1.602									Y
1.245	.872	.872	.644	.419	.371	.295	.198	.086	-.007									Y
-.008	.000	.037	.094	.162	.247	.284	.156	.008	.009									Z
.062	.168	.285	.393	.830	1.041	1.202	1.540	1.845	2.173									Z
2.319	2.354	2.201	2.140	2.195	2.227	2.275	2.315	2.346	2.366									Z
.000	.088	.180	.297	.385	.449	.750	1.038	1.062	1.359									Y
1.615	1.831	1.967	2.200	2.200	2.200	2.200	2.200	1.881	1.555									Y
1.238	.969	.953	.680	.416	.364	.307	.223	.115	-.006									Y
-.012	-.012	-.007	.013	.034	.054	.055	.056	.052	.118									Z
.231	.376	.513	.785	.915	1.112	1.265	1.545	1.864	2.124									Z
2.251	2.282	2.282	2.292	2.295	2.316	2.316	2.316	2.316	2.316									Z
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215									Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.121	1.912									Y

TABLE III.- Continued

1.676	1.374	1.105	.813	.640	.528	.419	.271	.130	-.010	Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.196	.369	.550	.805	.924	1.044	1.201	1.585	1.637	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243	2.243	2.243	2.243	2.243	Z
15.0	16.840	18.600	20.360	22.320	24.240	25.800	28.096	30.132	32.200	XFUS 10
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.200	1.912	Y
1.676	1.374	1.105	.813	.640	0.0					Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.196	.369	.550	.805	.924	1.044	1.201	1.529	1.585	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243					Z
-.008	.104	.221	.345	.481	.606	.738	.854	.954	1.183	Y
1.383	1.607	1.791	2.019	2.200	2.200	2.200	2.053	1.892	1.747	Y
1.563	1.386	1.205	1.029	.856	0.0					Y
-.016	-.008	-.003	-.003	-.007	.002	-.006	-.006	.011	.063	Z
.148	.265	.426	.611	.755	.828	1.595	1.662	1.729	1.801	Z
1.889	1.977	2.056	2.108	2.132	2.132					Z
-.008	.136	.277	.425	.589	.742	.878	1.007	1.143	1.311	Y
1.532	1.732	1.896	2.040	2.200	2.200	2.200	2.079	1.898	1.734	Y
1.597	1.421	1.268	1.072	.879	0.0					Y
.004	.000	-.004	-.007	-.011	-.011	-.011	-.019	.014	.078	Z
.199	.347	.468	.576	.685	.809	1.570	1.639	1.719	1.795	Z
1.875	1.971	2.015	2.071	2.082	2.082					Z
-.008	.168	.329	.481	.654	.798	.918	1.047	1.199	1.339	Y
1.527	1.735	1.891	2.067	2.200	2.200	2.200	2.200	2.051	1.874	Y
1.702	1.517	1.336	1.103	.879	0.0					Y
-.016	-.015	-.003	-.006	.002	-.001	-.005	-.000	.024	.077	Z
.178	.335	.448	.581	.685	.871	1.099	1.595	1.647	1.723	Z
1.799	1.870	1.950	2.025	2.064	2.064					Z
-.004	.128	.245	.365	.505	.650	.806	.942	1.119	1.279	Y
1.499	1.708	1.908	2.080	2.200	2.200	2.200	2.200	2.059	1.863	Y
1.698	1.506	1.273	1.056	.824	0.0					Y
-.012	-.012	-.012	-.012	-.011	-.011	-.011	-.003	.025	.086	Z
.214	.371	.520	.644	.735	.929	1.106	1.516	1.574	1.666	Z
1.750	1.842	1.942	2.014	2.030	2.030					Z
0.000	.120	.245	.369	.533	.666	.798	.914	1.139	1.303	Y
1.531	1.747	1.935	2.079	2.200	2.200	2.200	2.200	2.061	1.888	Y
1.708	1.527	1.338	1.077	.797	0.0					Y
0.000	.000	-.007	-.007	-.007	-.002	-.002	.002	.043	.092	Z
.225	.398	.579	.739	.870	1.053	1.189	1.450	1.525	1.609	Z
1.701	1.797	1.896	1.984	2.023	2.023					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z
1.613	1.728	1.836	1.946	1.977	1.977					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z
1.613	1.728	1.836	1.946	1.977	1.977					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z
1.613	1.728	1.836	1.946	1.977	1.977					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z

TABLE III.- Concluded

1.613	1.728	1.836	1.946	1.977	1.977					Z
.004	.152	.305	.457	.597	.742	.876	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.003	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z
1.613	1.728	1.836	1.946	1.977	1.977					Z
26.8355	2.093	1.126	5.494	33.225	1.443	4.814	1.201			
0.0	20.0	40.0	60.0	80.0	100.0					
0.0	1.28	1.92	1.92	1.28	0.0					
17.174	2.202	1.112	8.350	20.539	11.447	1.112	3.603			
0.0	20.0	40.0	60.0	80.0	100.0					
0.0	1.28	1.92	1.92	1.28	0.0					

TABLE IV.- WAVE-DRAG INPUT GEOMETRY OF 70°/30° CRANKED-WING MODEL

70/30		DEGREE		LEADING-EDGE SWEEP CRANKED WING						DIMENSIONS IN INCHES					
1	-1	1	1	5	17	3	17	7	30	4	26	10	1	6	
165.6	12.34	19.98													REFAR
0.0	.50	.75	1.25	2.5	5.0	7.5	10.	20.	30.						XAF 10
40.	50.	60.	70.	80.	90.	100.									XAF 17
12.917	2.202	1.112	14.299												WORD 1
14.129	2.643	1.112	13.086												WORD 2
18.817	4.349	1.112	8.400												WORD 3
21.564	5.349	1.112	5.652												WORD 4
23.560	8.807	1.112	2.047												WORD 5
0.0	.556	.645	.827	1.190	1.581	1.815	1.980	2.271	2.425						WORD1
2.554	2.554	2.183	1.641	.728	.314	0.0									WORD1
0.0	.304	.368	.469	.647	.875	1.059	1.213	1.645	1.892						TC 65A
1.997	1.954	1.743	1.402	.967	.490	0.0									TC 65A
0.0	.304	.368	.469	.647	.875	1.059	1.213	1.645	1.892						TC 65A
1.997	1.954	1.743	1.402	.967	.490	0.0									TC 65A
0.0	.0398	.0596	.0988	.1950	.3800	.5550	.7200	1.28	1.68						TC CIR
1.920	2.0	1.920	1.680	1.280	.72	0.0									TC CIR
0.0	.0398	.0596	.0988	.1950	.3800	.5550	.7200	1.28	1.68						TC CIR
1.920	2.0	1.920	1.680	1.280	.72	0.0									TC CIR
0.000	2.400	4.920	7.360	9.202	10.632	10.960									XFUS
-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000	-.000						Y
-.000	-.000	-.000	-.000	-.000	-.000	-.000									Y
-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088	-.088						Z
-.088	-.088	-.088	-.088	-.088	-.088	-.088									Z
.002	.159	.328	.453	.534	.598	.519	.619	.619	.619						Y
.592	.540	.452	.380	.280	.140	-.008									Y
-.369	-.350	-.270	-.158	-.046	.086	.262	.262	.262	.262						Z
.435	.572	.684	.745	.814	.866	.887									Z
.003	.220	.453	.631	.736	.785	.793	.793	.793	.793						Y
.738	.658	.538	.398	.286	.130	-.007									Y
-.213	-.173	-.054	.122	.339	.587	.816	.816	.816	.816						Z
1.025	1.202	1.343	1.447	1.496	1.545	1.577									Z
-.000	.269	.515	.660	.750	.795	.796	.796	.796	.796						Y
.777	.707	.616	.513	.341	.165	-.007									Y
-.028	.011	.174	.398	.655	.907	1.152	1.152	1.152	1.152						Z
1.421	1.726	2.004	2.229	2.451	2.556	2.593									Z
-.004	.269	.451	.616	.706	.788	.813	.946	.946	.818						Y
.803	.760	.689	.554	.411	.219	-.014									Y
.000	.083	.198	.410	.638	.882	1.175	1.187	1.187	1.223						Z
1.435	1.673	1.927	2.204	2.378	2.495	2.529									Z
-.004	.201	.398	.555	.664	.721	.766	.955	.954	.798						Y
.754	.695	.620	.492	.352	.176	-.005									Y
.004	.019	.119	.258	.447	.651	.863	.863	1.597	1.602						Z
1.783	1.963	2.116	2.261	2.370	2.455	2.488									Z
-.008	.177	.350	.499	.612	.701	.758	.962	.950	.758						Y
.698	.639	.563	.467	.323	.159	-.010									Y
.008	.035	.119	.247	.391	.563	.747	.751	1.698	1.703						Z
1.883	2.028	2.149	2.246	2.367	2.444	2.464									Z
10.960	13.000	13.800	15.000												XFUS 4
-.000	.184	.360	.508	.612	.704	.755	.964	.966	1.198						Y
1.411	1.575	1.739	1.898	2.006	2.077	2.080	1.951	1.781	1.556						Y
1.271	.970	.972	.780	.662	.585	.469	.340	.175	-.005						Y
.012	.037	.118	.255	.395	.572	.749	.749	.112	.133						Z
.210	.287	.432	.641	.870	1.155	1.339	1.692	1.940	2.147						Z
2.258	2.313	1.700	1.699	2.011	2.136	2.263	2.363	2.443	2.466						Z
-.008	.104	.244	.346	.424	.488	.717	.894	.886	1.151						Y
1.387	1.611	1.791	1.899	2.200	2.200	2.200	2.200	1.929	1.602						Y

TABLE IV.- Continued

1.245	.872	.872	.644	.419	.371	.295	.198	.086	-.007	Y
-.008	.000	.037	.094	.162	.247	.284	.156	.008	.009	Z
.062	.168	.285	.393	.830	1.041	1.202	1.540	1.845	2.173	Z
2.319	2.354	2.201	2.140	2.195	2.227	2.275	2.315	2.346	2.366	Z
.000	.088	.180	.297	.385	.449	.750	1.038	1.062	1.359	Y
1.615	1.831	1.967	2.200	2.200	2.200	2.200	2.200	1.881	1.555	Y
1.238	.969	.953	.680	.416	.364	.307	.223	.115	-.006	Y
-.012	-.012	-.007	.013	.034	.054	.055	.056	.052	.118	Z
.231	.376	.513	.785	.915	1.112	1.265	1.545	1.864	2.124	Z
2.251	2.282	2.282	2.292	2.295	2.316	2.316	2.316	2.316	2.316	Z
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.121	1.912	Y
1.676	1.374	1.105	.813	.640	.528	.419	.271	.130	-.010	Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.196	.369	.550	.805	.924	1.044	1.201	1.585	1.637	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243	2.243	2.243	2.243	2.243	Z
15.0	15.840	18.600	20.360	22.320	24.240	25.800	28.096	30.132	32.200	XFUS 10
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.200	1.912	Y
1.676	1.374	1.105	.813	.640	0.0					Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.196	.369	.550	.805	.924	1.044	1.201	1.529	1.585	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243					Z
-.008	.104	.221	.345	.481	.606	.738	.854	.954	1.183	Y
1.383	1.607	1.791	2.019	2.200	2.200	2.200	2.053	1.897	1.747	Y
1.563	1.386	1.205	1.029	.856	0.0					Y
-.016	-.008	-.003	-.003	-.007	.002	-.006	-.006	.011	.063	Z
.148	.265	.426	.611	.755	.828	1.595	1.662	1.729	1.801	Z
1.889	1.977	2.056	2.108	2.132	2.132					Z
-.008	.136	.277	.425	.589	.742	.878	1.007	1.143	1.311	Y
1.532	1.737	1.896	2.040	2.200	2.200	2.200	2.079	1.898	1.734	Y
1.597	1.421	1.268	1.072	.879	0.0					Y
.004	.000	-.004	-.007	-.011	-.011	-.011	-.019	.014	.078	Z
.199	.347	.468	.576	.685	.809	1.570	1.639	1.719	1.795	Z
1.875	1.971	2.015	2.071	2.082	2.082					Z
-.009	.168	.329	.481	.654	.798	.918	1.047	1.199	1.339	Y
1.527	1.735	1.891	2.067	2.200	2.200	2.200	2.200	2.051	1.874	Y
1.702	1.517	1.336	1.103	.879	0.0					Y
-.016	-.015	-.003	-.006	.002	-.001	-.005	-.000	.024	.077	Z
.178	.335	.448	.581	.685	.871	1.099	1.595	1.647	1.723	Z
1.799	1.870	1.950	2.025	2.064	2.064					Z
-.004	.128	.245	.365	.505	.650	.806	.942	1.119	1.279	Y
1.499	1.708	1.908	2.080	2.200	2.200	2.200	2.200	2.059	1.863	Y
1.698	1.506	1.273	1.056	.824	0.0					Y
-.012	-.012	-.012	-.012	-.011	-.011	-.011	-.003	.025	.086	Z
.214	.371	.520	.644	.735	.929	1.106	1.516	1.574	1.666	Z
1.750	1.842	1.942	2.014	2.030	2.030					Z
0.000	.120	.245	.369	.533	.666	.798	.914	1.139	1.303	Y
1.531	1.747	1.935	2.079	2.200	2.200	2.200	2.200	2.061	1.888	Y
1.709	1.527	1.338	1.077	.797	0.0					Y
0.000	.000	-.007	-.007	-.007	-.002	-.002	.002	.043	.092	Z
.225	.398	.579	.739	.870	1.053	1.189	1.450	1.525	1.609	Z
1.701	1.797	1.896	1.984	2.023	2.023					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.215	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z

TABLE IV.- Concluded

1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.370	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.370	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.370	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
26.8355	2.093	1.126	5.494	33.225	1.443	4.814	1.201				
0.0	20.0	40.0	60.0	80.0	100.0						
0.0	1.28	1.92	1.92	1.28	0.0						

TABLE V.- Continued

1.245	.872	.872	.644	.419	.371	.295	.198	.086	-.007	Y
-.008	.000	.037	.094	.162	.247	.284	.156	.008	.009	Z
.062	.168	.285	.393	.830	1.041	1.202	1.540	1.845	2.173	Z
2.319	2.354	2.201	2.140	2.195	2.227	2.275	2.315	2.346	2.366	Z
.000	.088	.180	.297	.385	.449	.750	1.038	1.062	1.359	Y
1.615	1.831	1.967	2.200	2.200	2.200	2.200	2.200	1.881	1.555	Y
1.238	.969	.953	.680	.416	.364	.307	.223	.115	-.006	Y
-.012	-.017	-.007	.013	.034	.054	.055	.056	.052	.118	Z
.231	.376	.513	.785	.915	1.112	1.265	1.545	1.864	2.124	Z
2.251	2.282	2.282	2.292	2.295	2.316	2.316	2.316	2.316	2.316	Z
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.121	1.912	Y
1.676	1.374	1.105	.813	.640	.528	.419	.271	.130	-.010	Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.195	.369	.550	.805	.924	1.044	1.201	1.585	1.637	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243	2.243	2.243	2.243	2.243	Z
15.0	15.840	18.600	20.360	22.320	24.240	25.800	28.096	30.132	32.200	XFUS 10
-.004	.136	.277	.409	.549	.650	.758	.866	.994	1.215	Y
1.459	1.703	1.923	2.200	2.200	2.200	2.200	2.200	2.200	1.912	Y
1.676	1.374	1.105	.813	.640	0.0					Y
-.012	-.020	-.031	-.031	-.035	-.027	-.026	-.010	.010	.071	Z
.195	.369	.550	.805	.924	1.044	1.201	1.529	1.585	1.789	Z
1.937	2.109	2.184	2.211	2.243	2.243					Z
-.008	.104	.221	.345	.481	.606	.738	.854	.954	1.183	Y
1.383	1.607	1.791	2.019	2.200	2.200	2.200	2.053	1.892	1.747	Y
1.563	1.386	1.205	1.029	.856	0.0					Y
-.016	-.008	-.003	-.003	-.007	.002	-.006	-.006	.011	.063	Z
.148	.265	.426	.611	.755	.828	1.595	1.662	1.729	1.801	Z
1.889	1.977	2.056	2.108	2.132	2.132					Z
-.008	.136	.277	.425	.589	.742	.878	1.007	1.143	1.311	Y
1.532	1.732	1.896	2.040	2.200	2.200	2.200	2.079	1.898	1.734	Y
1.597	1.421	1.268	1.072	.879	0.0					Y
.004	.000	-.004	-.007	-.011	-.011	-.011	-.019	.014	.078	Z
.199	.347	.468	.576	.685	.809	1.570	1.639	1.719	1.795	Z
1.875	1.971	2.015	2.071	2.082	2.082					Z
-.008	.168	.329	.481	.654	.798	.918	1.047	1.199	1.339	Y
1.527	1.735	1.891	2.067	2.200	2.200	2.200	2.200	2.051	1.874	Y
1.702	1.517	1.336	1.103	.879	0.0					Y
-.016	-.015	-.003	-.006	.002	-.001	-.005	-.000	.024	.077	Z
.178	.335	.448	.581	.685	.871	1.099	1.595	1.647	1.723	Z
1.799	1.870	1.950	2.025	2.064	2.064					Z
-.004	.128	.245	.365	.505	.650	.806	.942	1.119	1.279	Y
1.499	1.708	1.908	2.080	2.200	2.200	2.200	2.200	2.059	1.863	Y
1.698	1.506	1.273	1.056	.824	0.0					Y
-.012	-.012	-.012	-.012	-.011	-.011	-.011	-.003	.025	.086	Z
.214	.371	.520	.644	.735	.929	1.106	1.516	1.574	1.666	Z
1.750	1.842	1.942	2.014	2.030	2.030					Z
0.000	.120	.245	.369	.533	.666	.798	.914	1.139	1.303	Y
1.531	1.747	1.935	2.079	2.200	2.200	2.200	2.200	2.061	1.888	Y
1.708	1.527	1.338	1.077	.797	0.0					Y
0.000	.000	-.007	-.007	-.007	-.002	-.002	.002	.043	.092	Z
.225	.398	.579	.739	.870	1.053	1.189	1.450	1.525	1.609	Z
1.701	1.797	1.896	1.984	2.023	2.023					Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391	Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889	Y
1.740	1.575	1.390	1.117	.820	0.0					Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115	Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513	Z

TABLE V.- Concluded

1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
.004	.152	.305	.457	.597	.742	.870	.974	1.199	1.391		Y
1.579	1.746	1.878	2.009	2.200	2.200	2.200	2.200	2.038	1.889		Y
1.740	1.575	1.390	1.117	.820	0.0						Y
.000	-.003	.002	-.002	-.001	-.000	.000	.005	.046	.115		Z
.216	.378	.551	.720	.980	1.098	1.190	1.260	1.426	1.513		Z
1.613	1.728	1.836	1.946	1.977	1.977						Z
26.8355	2.093	1.126	5.494	33.225	1.443	4.814	1.201				
0.0	20.0	40.0	60.0	80.0	100.0						
0.0	1.28	1.92	1.92	1.28	0.0						

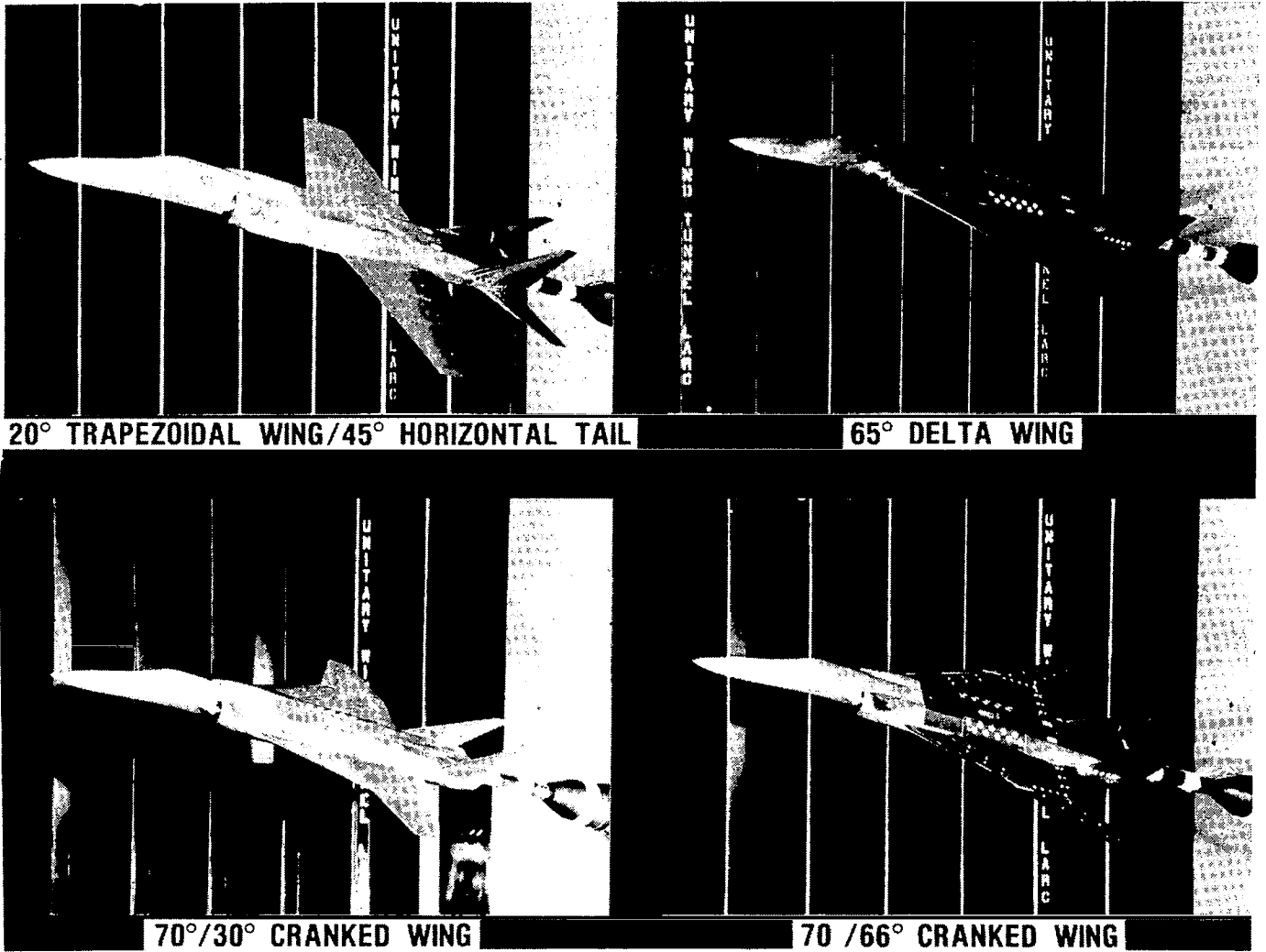


Figure 1.- Photographs of wind-tunnel models.

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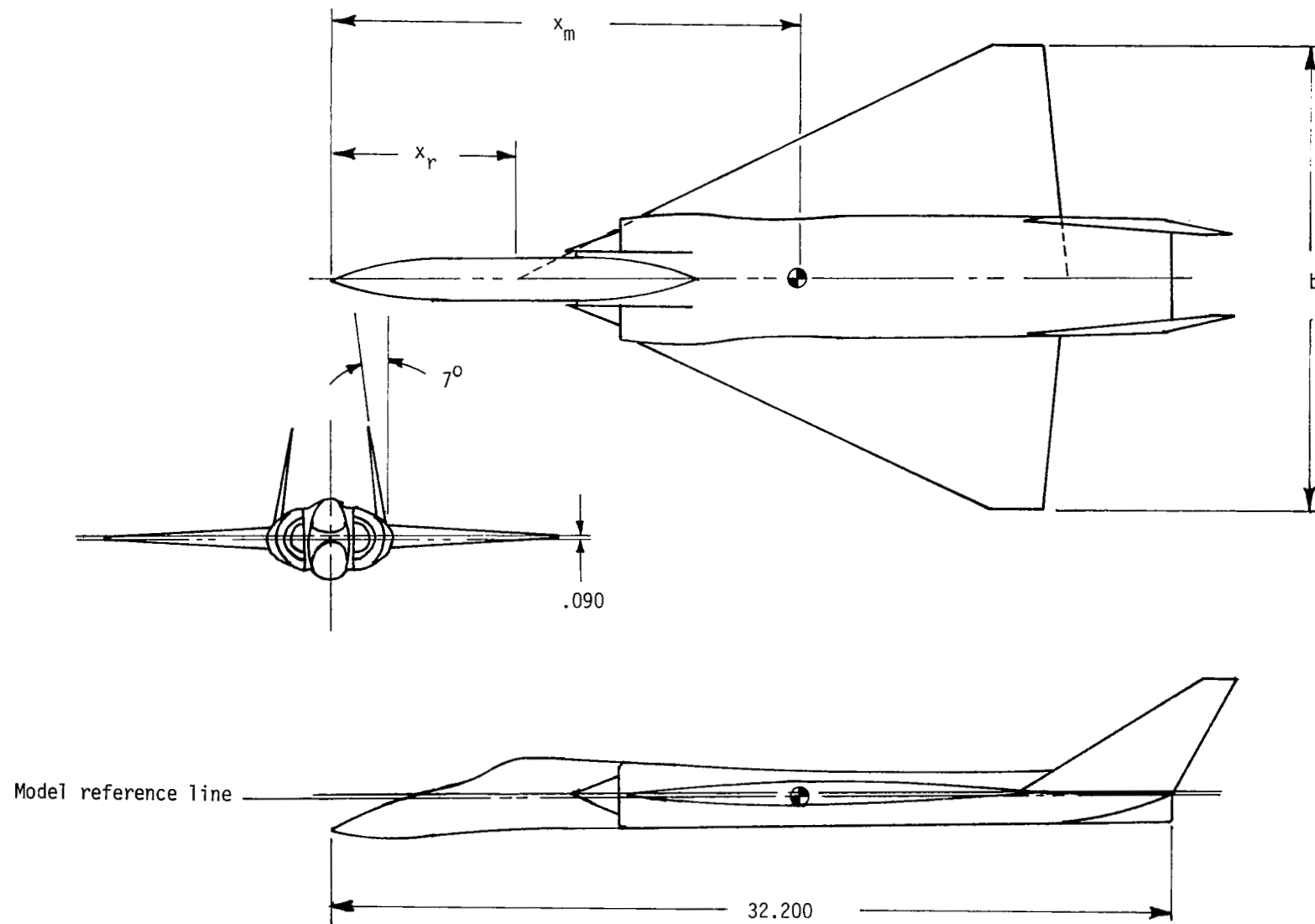


Figure 2.- Three-view sketch of delta-wing model. Linear dimensions are in inches.

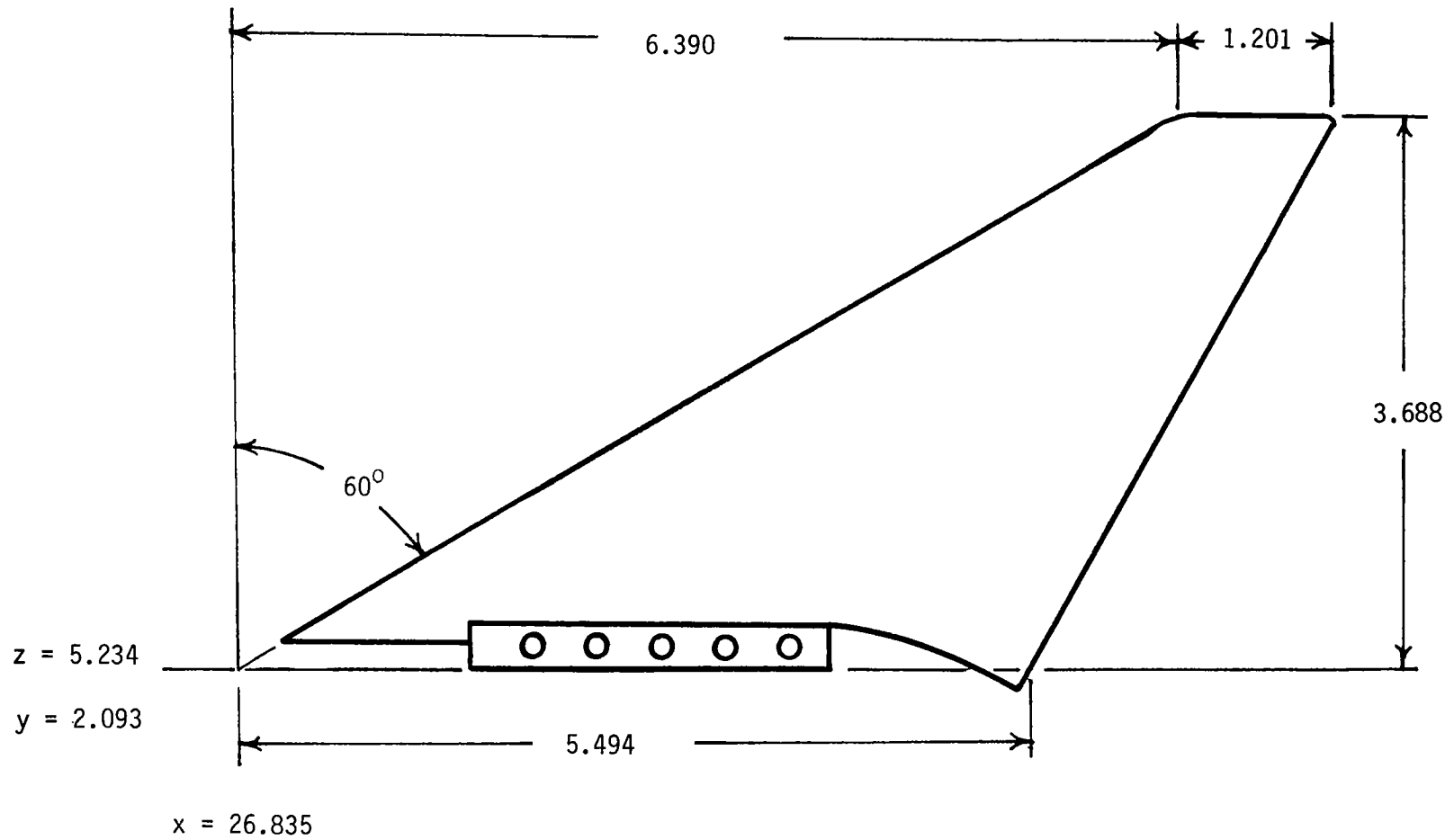


Figure 3.- Details of model vertical tail. Linear dimensions are in inches.

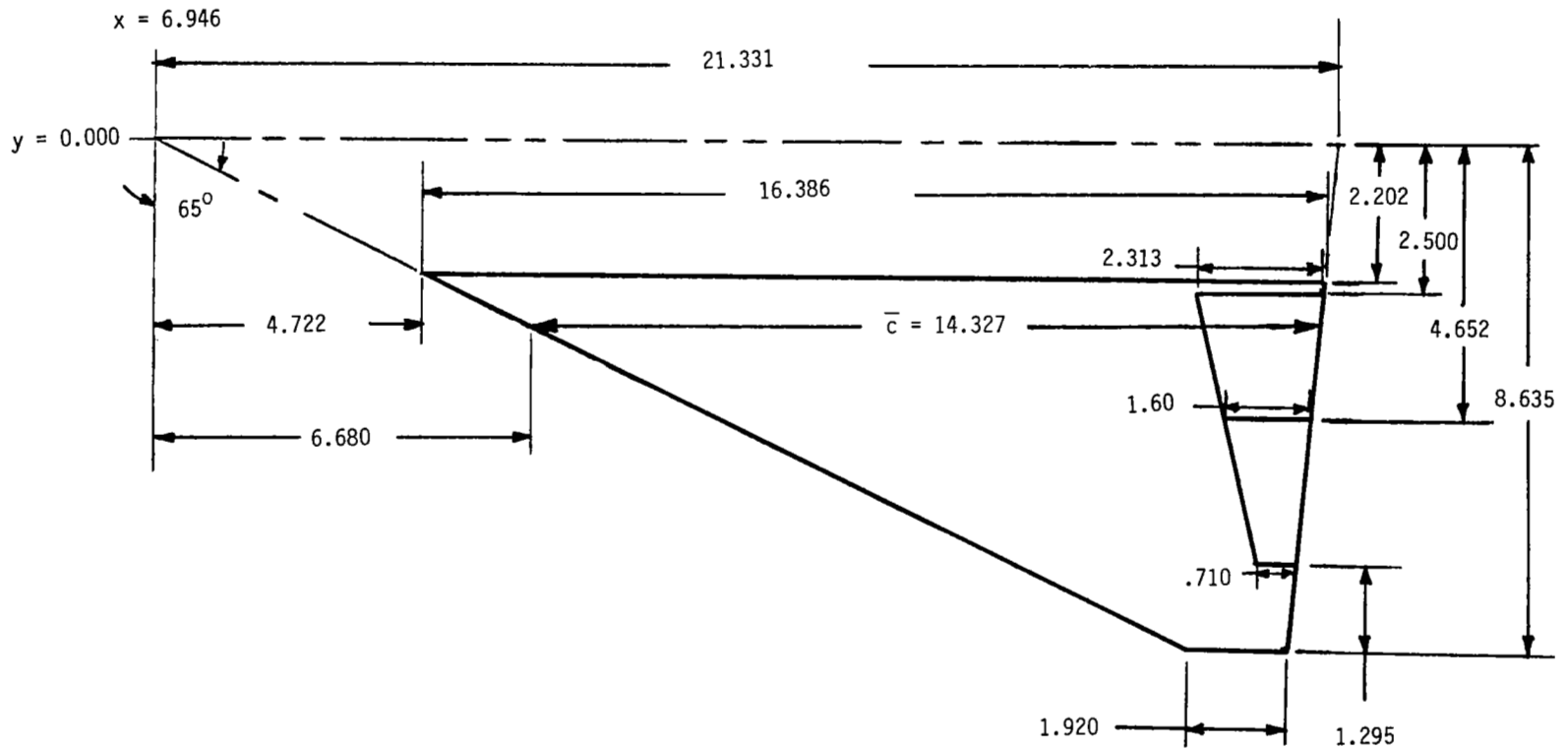


Figure 4.- Details of delta wing with 65° leading-edge sweep. Linear dimensions are in inches.

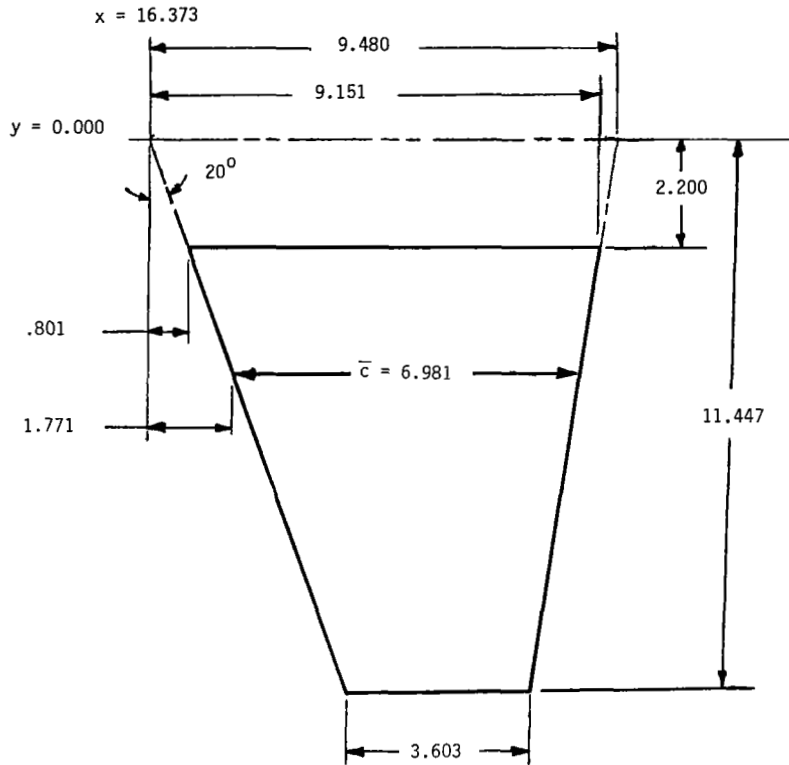


Figure 5.- Details of trapezoidal wing with 20° leading-edge sweep. Linear dimensions are in inches.

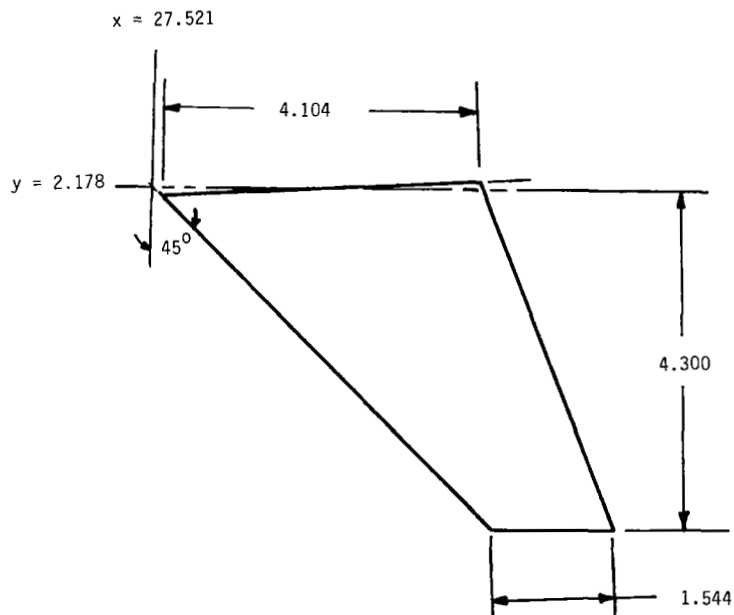


Figure 6.- Details of horizontal tail with 45° leading-edge sweep. Linear dimensions are in inches.

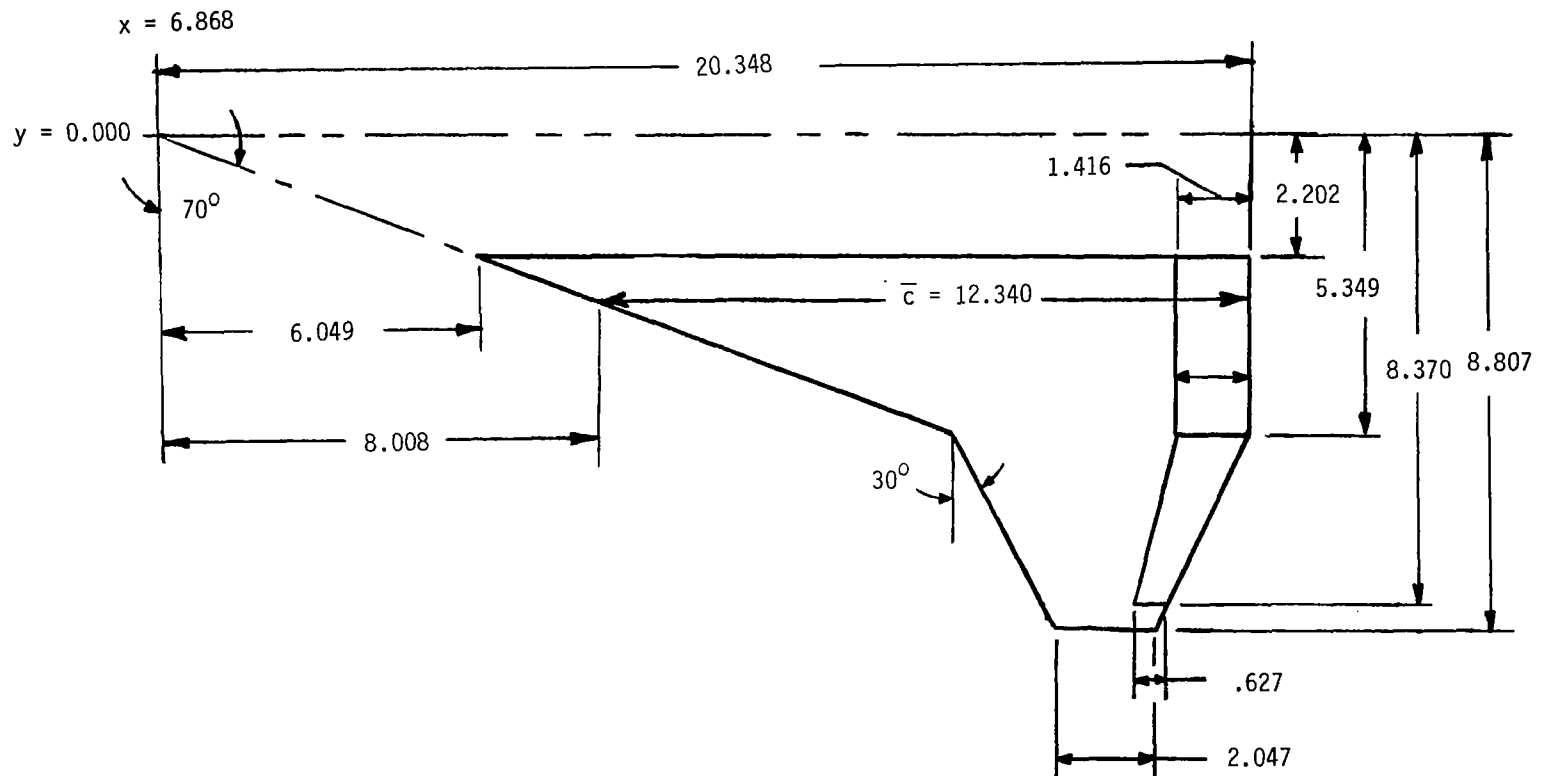


Figure 7.- Details of cranked wing with 70°/30° leading-edge sweep. Linear dimensions are in inches.

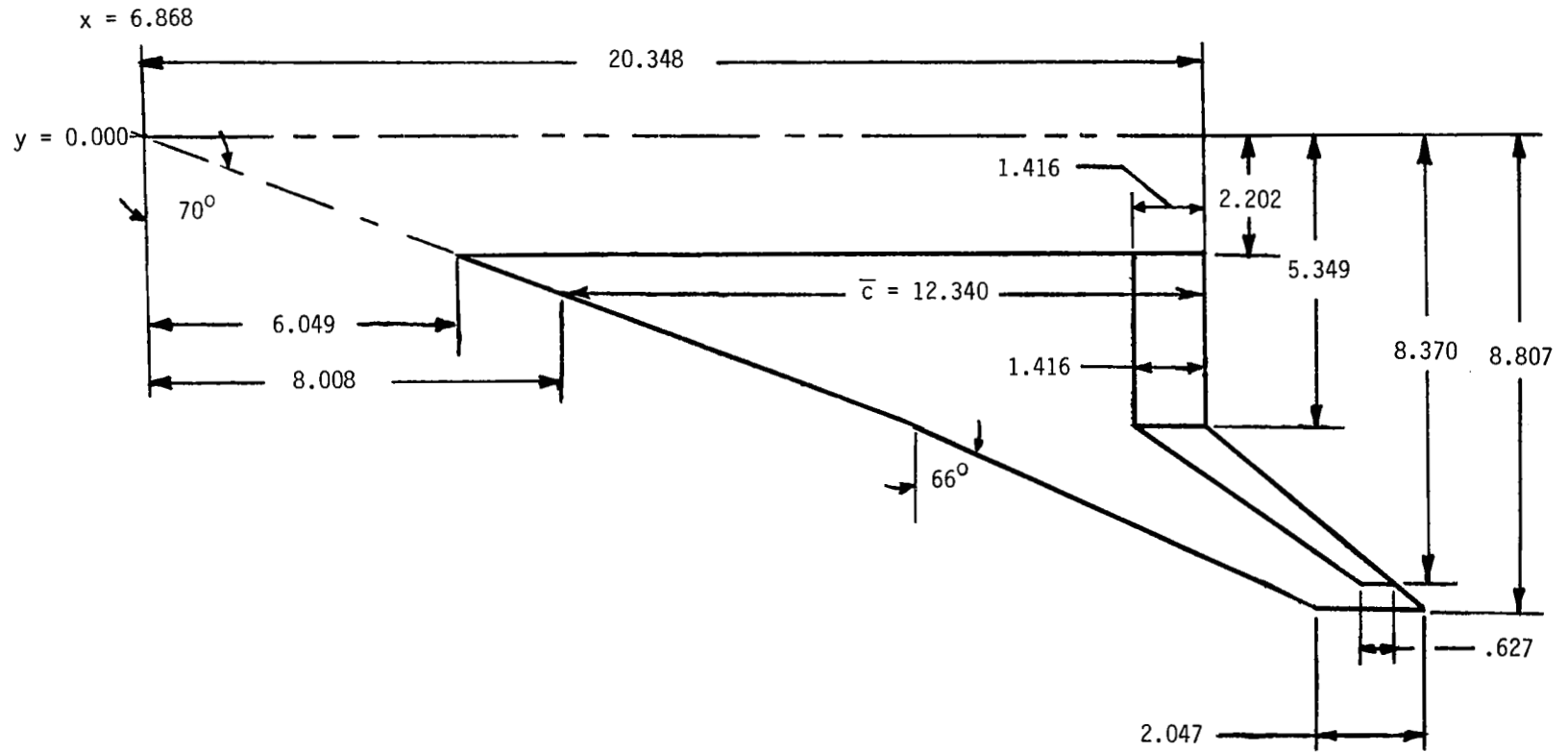


Figure 8.- Details of cranked wing with $70^\circ/66^\circ$ leading-edge sweep. Linear dimensions are in inches.

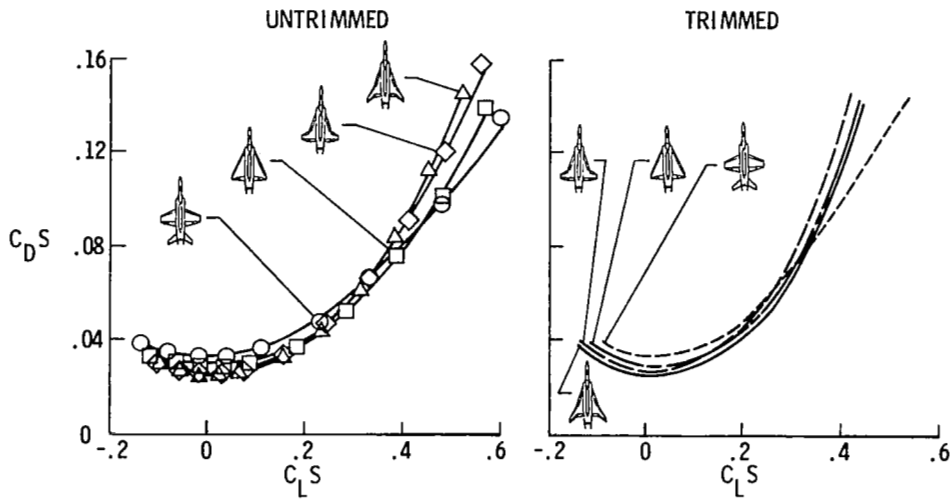
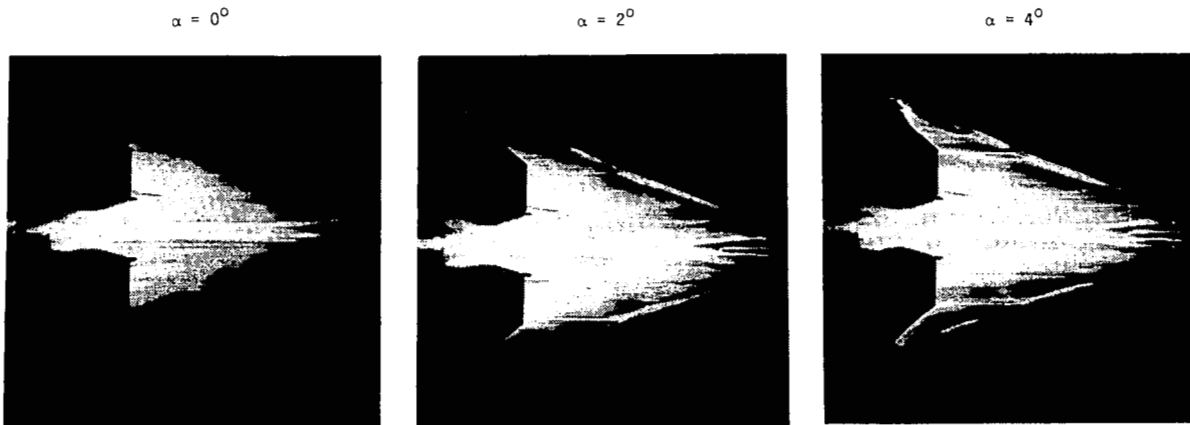


Figure 9.- Effect of planform shape on experimentally-measured drag characteristics at $M = 1.80$.



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Figure 10.- Oil-flow photographs of $70^\circ/66^\circ$ cranked-wing configuration at $M = 1.80$.

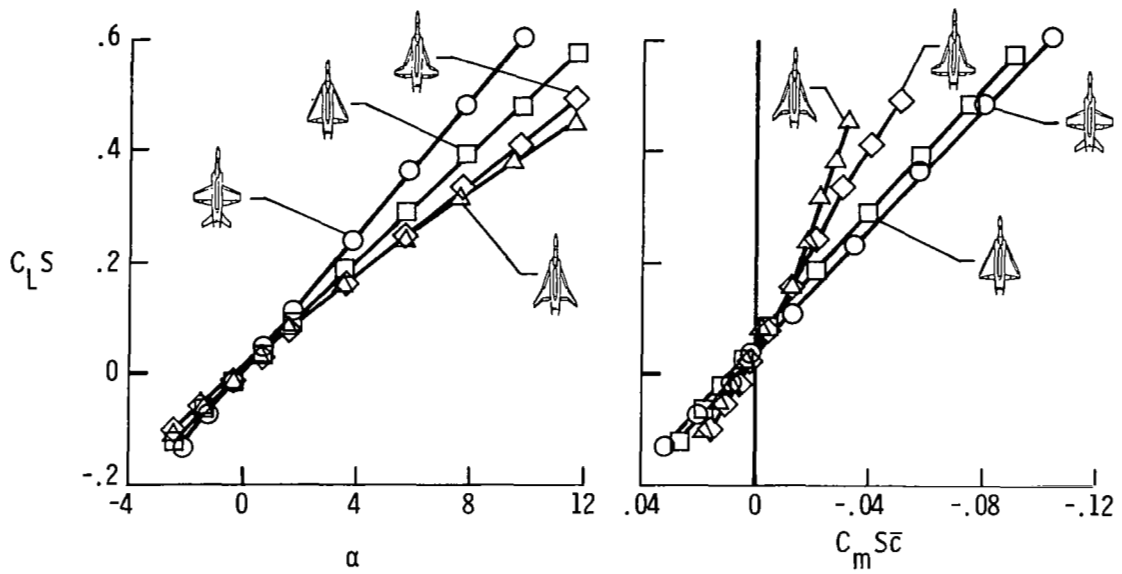


Figure 11.- Effect of planform shape on experimentally measured lift and pitching-moment characteristics at $M = 1.80$.

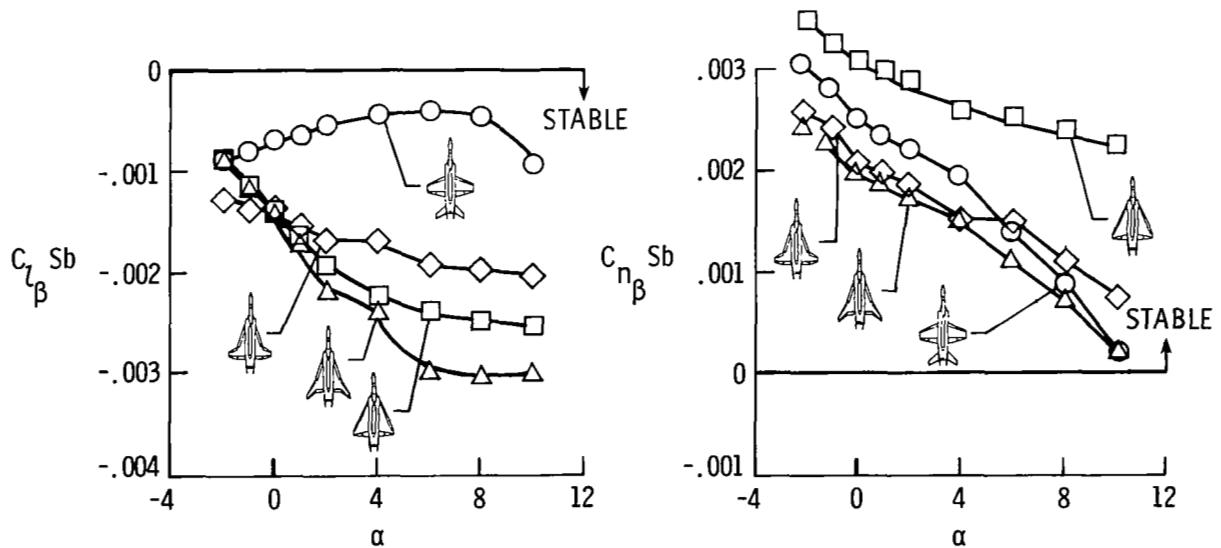


Figure 12.- Effect of planform shape on experimentally measured lateral-directional stability characteristics at $M = 1.80$.

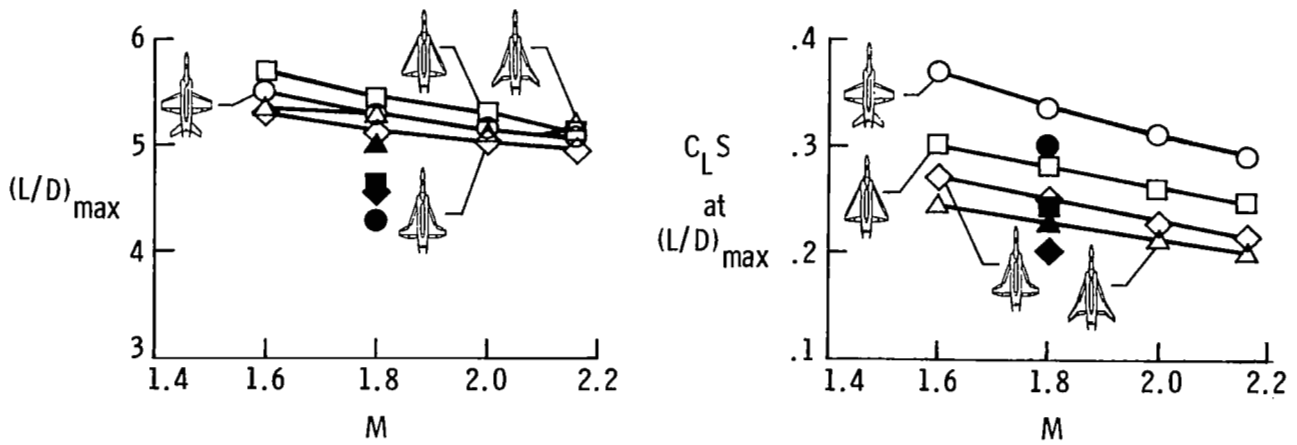


Figure 13.- Effect of planform shape and Mach number on maximum lift-drag ratio and value of lift at $(L/D)_{\max}$. Solid symbols represent trim points.

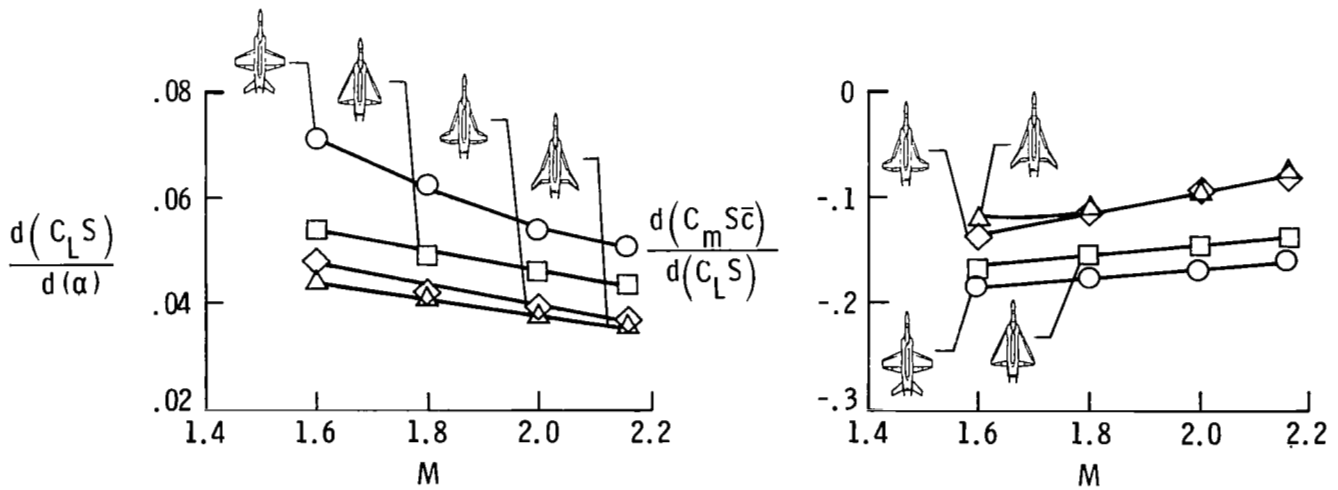


Figure 14.- Effect of planform shape and Mach number on lift-curve slope and longitudinal stability.

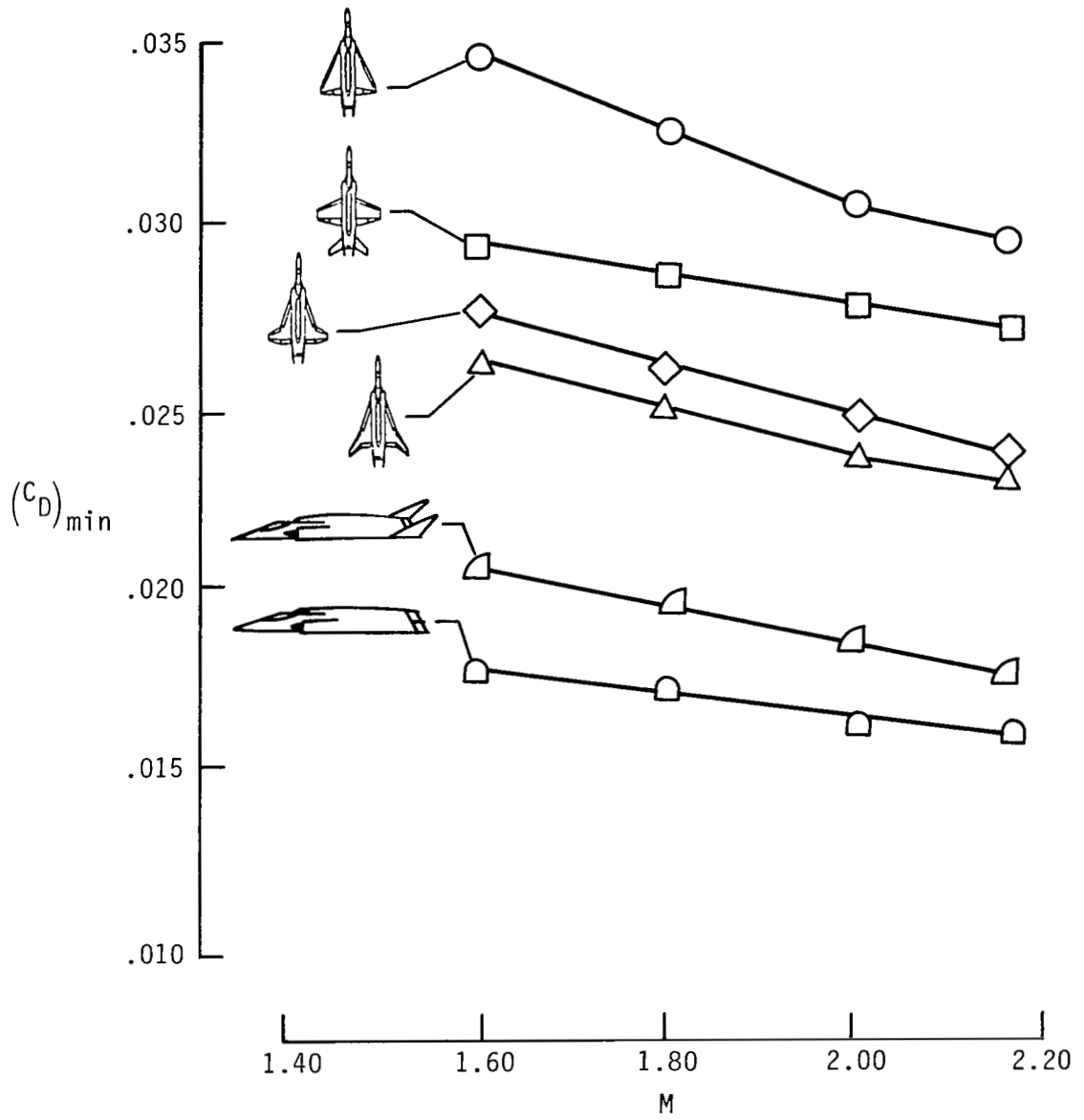


Figure 15.- Minimum-drag values for combinations of configuration components.

APPENDIX A

TEST DESCRIPTION

The wind-tunnel test program was conducted in test section 1 of the Langley Unitary Plan Wind Tunnel (ref. 9) at Mach numbers of 1.60, 1.80, 2.00, and 2.16. The tests were conducted under the following conditions:

Mach number	Stagnation pressure, lb/ft ²	Stagnation temperature, °F	Reynolds number, per foot
1.60	1079	125	2×10^6
1.80	1154	125	2×10^6
2.00	1253	125	2×10^6
2.16	1349	125	2×10^6

The dew point was maintained sufficiently low to prevent condensation effects in the tunnel. Strips of No. 60 sand grit to induce boundary-layer transition were applied at 0.2 in. (normal to leading edge) aft of the leading edge of all airfoil surfaces, 1.2 in. aft of the fuselage nose, 0.8 in. aft of the inlet compression spike, and 0.2 in. aft of the inlet-lip leading edge. The grit size was selected according to the method of reference 10 to ensure fully turbulent flow over the model and inside the inlet duct.

Wind-tunnel data were obtained with two separate entries. During the first tunnel entry, inlet internal-flow and base drag data were obtained for the isolated fuselage. External-flow force and moment data were collected during the second tunnel entry with the internal-flow measuring apparatus removed.

Internal-flow data were measured for the isolated fuselage with a pressure survey rake assembly which mounted to the left-side, aft-portion, upper surface of the wind-tunnel model. Base drag data were obtained with six pressure tubes that were an integral part of the duct-exit choke ring. Pressure tubing from the exit survey rake and the duct-exit choke ring was attached to an external pressure transducer scanning valve. Geometric details of the inlet and duct systems, a discussion of the internal-flow test, and a presentation of results are contained in appendix B.

The external-flow force and moment data were obtained at angles of attack from -4° to 20° and at angles of sideslip of 0° and 3°. The data were measured by means of a six-component, electrical, strain-gauge balance contained within the model and connected through a supporting sting to the permanent model-support system in the wind tunnel.

Balance chamber pressure was measured throughout the test with a pressure transducer mounted external to the model and connected to pressure tubing located in the balance cavity. Force and moment data were corrected to free-stream static pressure at the model base and balance chamber. Corrections were also made for internal-duct drag. All angles of attack were adjusted for tunnel flow misalignment and sting deflections.

APPENDIX A

Table AI contains a listing of the headings which appear in the tabulated data and their corresponding symbols. Table AII is an index to the data which are presented in table AIII.

APPENDIX A

TABLE AI.- TABULATED DATA SYMBOLS

Tabulated data heading	Definition
Both axes:	
ALPHA	α
BETA	β
CM	C_m
CY	C_Y
MACH	M
Body axis:	
CA	C_A
CAB	$C_{A,b}$
CAC	$C_{A,c}$
CAI	$C_{A,i}$
CA UNC	$C_{A,unc}$
CLB	C_l
CN	C_N
CNB	C_n
R/FT	R
Stability axis:	
CD	C_D
CDB	$C_{D,b}$
CDC	$C_{D,c}$
CDI	$C_{D,i}$
CD UNC	$C_{D,unc}$
CL	C_L
CLS	C_l
CNS	C_n
L/D	L/D

APPENDIX A

TABLE AII.- INDEX TO TABULATED DATA

Page	Run	Configuration	δ_{te} , deg		δ_h , deg	Mach number	β , deg
			In	Out			
37	45	BVHW ₁	0	0	0	1.60	0
38	48		0	0	0	1.80	0
39	49		0	0	0	1.80	3
40	50		0	0	0	2.00	0
41	53		0	0	0	2.16	0
42	54		0	0	-10	1.60	0
43	55		0	0	-10	1.80	0
44	56		0	0	-10	2.00	0
45	57		0	0	-10	2.16	0
46	58		0	0	-20	1.60	0
47	59		0	0	-20	1.80	0
48	60		0	0	-20	2.00	0
49	61		0	0	-20	2.16	0
50	62	BVW ₂	0	0		1.60	0
51	65		0	0		1.80	0
52	66		0	0		1.80	3
53	67		0	0		2.00	0
54	70		0	0		2.16	0
55	71		-5	-5		1.60	0
56	72		-5	-5		1.80	0
57	73		-5	-5		2.00	0
58	74		-5	-5		2.16	0
59	75		-10	-10		1.60	0
60	76		-10	-10		1.80	0
61	77		-10	-10		2.00	0
62	78		-10	-10		2.16	0
63	79	BVW ₃	0	0		1.60	0
64	82		0	0		1.80	0
65	83		0	0		1.80	3
66	84		0	0		2.00	0
67	87		0	0		2.16	0
68	88		-10	0		1.60	0
69	89		-10	0		1.80	0
70	90		-10	0		2.00	0
71	91		-10	0		2.16	0
72	92		10	10		1.80	0
73	93		10	10		1.80	0
74	94		10	10		2.00	0
75	95		10	10		2.16	0
76	96		20	20		1.60	0
77	97		20	20		1.80	0
78	98		20	20		2.00	0
79	99		20	20		2.16	0
80	112	BVW ₄	0	0		1.60	0
81	115		0	0		1.80	0
82	116		0	0		1.80	3
83	117		0	0		2.00	0
84	121		0	0		2.16	0
85	122		-10	0		1.60	0
86	123		-10	0		1.80	0
87	124		-10	0		2.00	0
88	125		-10	0		2.16	0
89	126		10	10		1.60	0
90	127		10	10		1.80	0
91	128		10	10		2.00	0
92	129		10	10		2.16	0
93	130		20	20		1.60	0
94	131		20	20		1.80	0
95	132		20	20		2.00	0
96	133		20	20		2.16	0
97	150	BV	0	0		1.60	0
98	153		0	0		1.80	0
99	154		0	0		2.00	0
100	157		0	0		2.16	0
101	158	B	0	0		1.60	0
102	159		0	0		1.80	0
103	160		0	0		2.00	0
104	161		0	0		2.16	0

TABLE AIII.- TABULATED FORCE DATA

UPWT PROJECT 1424

RUN 45

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.006	-.01	-4.27	-.3064	.0351	.0653	-.0006	-.0006	-.0002	.0028	.0011	.0017	.0411
2.005	-.02	-2.25	-.1551	.0345	.0372	-.0010	-.0005	-.0001	.0028	.0011	.0017	.0405
2.005	-.02	-1.33	-.0896	.0344	.0250	.0001	-.0003	.0002	.0029	.0011	.0017	.0405
2.003	-.02	-.38	-.0230	.0344	.0128	-.0015	-.0011	.0015	.0030	.0010	.0017	.0406
2.001	-.02	.73	.0579	.0345	-.0019	-.0017	-.0009	.0014	.0030	.0011	.0017	.0407
2.000	-.02	1.74	.1313	.0345	-.0150	-.0010	-.0009	.0015	.0031	.0010	.0017	.0407
2.000	-.02	3.66	.2718	.0343	-.0405	-.0009	-.0011	.0025	.0031	.0010	.0016	.0406
2.000	-.02	5.71	.4191	.0340	-.0667	-.0016	-.0011	.0026	.0031	.0010	.0017	.0403
2.000	-.03	7.70	.5592	.0336	-.0918	-.0011	-.0008	.0027	.0030	.0011	.0016	.0398
2.000	-.03	9.73	.7047	.0331	-.1172	-.0010	-.0007	.0030	.0029	.0012	.0016	.0391
2.002	-.03	11.74	.8425	.0326	-.1417	-.0012	-.0007	.0035	.0028	.0012	.0015	.0385
2.001	-.03	13.66	.9688	.0318	-.1631	-.0017	-.0009	.0044	.0028	.0012	.0015	.0377
2.001	-.03	15.81	1.1096	.0308	-.1876	-.0023	-.0008	.0047	.0027	.0012	.0015	.0367
2.001	-.04	17.73	1.2311	.0299	-.2094	-.0015	-.0008	.0057	.0026	.0006	.0015	.0357
1.996	-.02	-.30	-.0150	.0344	.0117	-.0011	-.0008	.0013	.0031	.0000	.0017	.0406

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CNB	CDI	CD UNC
-5.2474	-.01	-4.27	-.3027	.0577	.0653	-.0006	-.0006	-.0002	.0028	.0011	.0018	.0638
-3.7935	-.02	-2.25	-.1535	.0405	.0372	-.0010	-.0005	-.0001	.0028	.0011	.0017	.0465
-2.4334	-.02	-1.33	-.0887	.0365	.0250	.0002	-.0003	.0002	.0029	.0011	.0017	.0425
-.6567	-.02	-.38	-.0227	.0346	.0128	-.0014	-.0011	.0015	.0030	.0010	.0017	.0408
1.6277	-.02	.73	.0574	.0352	-.0019	-.0017	-.0009	.0014	.0030	.0011	.0017	.0415
3.3850	-.02	1.74	.1301	.0384	-.0150	-.0010	-.0009	.0015	.0031	.0010	.0017	.0447
5.2245	-.02	3.66	.2688	.0515	-.0405	-.0010	-.0010	.0025	.0031	.0010	.0018	.0578
5.4896	-.02	5.71	.4133	.0753	-.0667	-.0017	-.0009	.0026	.0031	.0010	.0019	.0818
5.0996	-.03	7.70	.5493	.1077	-.0918	-.0012	-.0006	.0027	.0030	.0011	.0021	.1143
4.5621	-.03	9.73	.6884	.1509	-.1172	-.0011	-.0006	.0030	.0028	.0011	.0023	.1576
4.0428	-.03	11.74	.8176	.2022	-.1417	-.0013	-.0004	.0035	.0027	.0012	.0027	.2092
3.6132	-.03	13.66	.9332	.2583	-.1631	-.0019	-.0005	.0044	.0027	.0012	.0030	.2655
3.2075	-.03	15.81	1.0585	.3300	-.1876	-.0024	-.0001	.0047	.0026	.0012	.0034	.3375
2.8990	-.04	17.73	1.1627	.4010	-.2094	-.0017	-.0003	.0057	.0025	.0005	.0037	.4089
-.4308	-.02	-.30	-.0148	.0345	.0117	-.0011	-.0006	.0013	.0031	.0000	.0017	.0407

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TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 48

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	-.02	-4.25	-.2670	.0333	.0539	.0002	-.0004	.0001	.0027	.0001	.0022	.0392
2.003	-.02	-2.22	-.1380	.0326	.0309	-.0000	-.0005	.0006	.0027	.0001	.0022	.0384
2.003	-.02	-1.29	-.0800	.0324	.0203	-.0003	-.0005	.0009	.0028	.0001	.0022	.0383
2.003	-.02	-.26	-.0154	.0324	.0093	-.0002	-.0005	.0005	.0028	.0001	.0022	.0384
2.003	-.02	.69	.0432	.0325	-.0009	-.0003	-.0005	.0008	.0028	.0001	.0022	.0384
2.003	-.02	1.74	.1114	.0325	-.0127	-.0005	-.0007	.0012	.0029	.0001	.0022	.0385
2.003	-.02	3.70	.2334	.0322	-.0339	-.0007	-.0008	.0014	.0029	.0001	.0022	.0382
2.003	-.02	5.69	.3611	.0320	-.0566	-.0010	-.0009	.0016	.0028	.0002	.0022	.0379
2.003	-.02	7.68	.4896	.0320	-.0797	-.0016	-.0009	.0019	.0027	.0002	.0021	.0378
2.003	-.02	9.67	.6160	.0322	-.1033	-.0013	-.0004	.0017	.0027	.0003	.0020	.0378
2.003	-.03	11.71	.7420	.0322	-.1271	-.0015	-.0002	.0020	.0026	.0004	.0019	.0376
2.002	-.02	13.69	.8611	.0320	-.1500	-.0013	.0001	.0012	.0025	.0004	.0018	.0373
2.002	-.03	15.70	.9808	.0319	-.1730	-.0020	-.0005	.0022	.0024	.0004	.0017	.0370
2.001	-.03	17.70	1.0956	.0315	-.1934	-.0018	-.0007	.0029	.0022	.0004	.0016	.0363
2.003	-.03	19.66	1.2105	.0302	-.2133	-.0017	-.0011	.0038	.0021	.0003	.0016	.0348
2.004	-.02	-.28	-.0154	.0325	.0094	-.0005	-.0005	.0006	.0029	-.0003	.0022	.0385

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.9850	-.02	-4.25	-.2635	.0529	.0539	.0002	-.0004	.0001	.0027	.0001	.0024	.0589
-3.5977	-.02	-2.22	-.1364	.0379	.0309	-.0000	-.0005	.0006	.0027	.0001	.0023	.0438
-2.3185	-.02	-1.29	-.0792	.0342	.0203	-.0003	-.0005	.0009	.0028	.0001	.0022	.0401
-.4686	-.02	-.26	-.0152	.0325	.0093	-.0002	-.0005	.0005	.0028	.0001	.0022	.0385
1.2967	-.02	.69	.0427	.0330	-.0009	-.0003	-.0005	.0008	.0028	.0001	.0022	.0389
3.0807	-.02	1.74	.1103	.0358	-.0127	-.0005	-.0007	.0012	.0029	.0001	.0023	.0419
4.9043	-.02	3.70	.2306	.0470	-.0339	-.0008	-.0008	.0014	.0029	.0001	.0023	.0532
5.2818	-.02	5.69	.3557	.0673	-.0566	-.0011	-.0008	.0016	.0028	.0002	.0025	.0736
4.9714	-.02	7.68	.4804	.0966	-.0797	-.0017	-.0007	.0019	.0027	.0002	.0027	.1029
4.4748	-.02	9.67	.6012	.1344	-.1033	-.0013	-.0002	.0017	.0026	.0003	.0029	.1408
3.9769	-.03	11.71	.7193	.1809	-.1271	-.0015	.0001	.0020	.0025	.0004	.0031	.1874
3.5516	-.02	13.69	.8282	.2332	-.1500	-.0012	.0004	.0012	.0024	.0004	.0034	.2399
3.1780	-.03	15.70	.9347	.2941	-.1730	-.0021	.0001	.0022	.0023	.0004	.0037	.3011
2.8652	-.03	17.70	1.0332	.3606	-.1934	-.0020	-.0001	.0029	.0021	.0004	.0040	.3677
2.6086	-.03	19.66	1.1288	.4327	-.2133	-.0020	-.0005	.0038	.0020	.0003	.0043	.4400
-.4669	-.02	-.28	-.0152	.0325	.0094	-.0005	-.0005	.0006	.0029	-.0003	.0022	.0386

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 49

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	5.02	-4.34	-.2712	.0332	.0543	-.0048	.0163	-.0434	.0026	-.0002	.0022	.0390
2.003	5.02	-2.29	-.1421	.0327	.0316	-.0046	.0145	-.0408	.0027	-.0002	.0022	.0385
2.003	5.02	-1.29	-.0806	.0325	.0205	-.0045	.0136	-.0400	.0027	-.0001	.0022	.0384
2.003	5.02	-.27	-.0172	.0324	.0097	-.0040	.0128	-.0395	.0028	-.0001	.0022	.0384
2.003	5.03	.66	.0393	.0324	-.0001	-.0038	.0117	-.0384	.0028	-.0002	.0022	.0383
2.003	5.03	1.73	.1059	.0324	-.0119	-.0035	.0107	-.0373	.0029	-.0001	.0022	.0385
2.003	5.04	3.73	.2342	.0324	-.0347	-.0030	.0091	-.0372	.0030	-.0001	.0022	.0386
2.002	5.05	5.80	.3620	.0321	-.0579	-.0030	.0066	-.0360	.0030	.0000	.0022	.0383
2.003	5.06	7.76	.4879	.0323	-.0808	-.0038	.0041	-.0348	.0029	.0000	.0021	.0383
2.003	5.07	9.73	.6125	.0321	-.1035	-.0061	.0011	-.0329	.0028	.0001	.0020	.0379
2.003	5.09	11.72	.7349	.0320	-.1263	-.0084	-.0034	-.0288	.0028	.0002	.0019	.0377
2.004	5.10	13.71	.8545	.0316	-.1490	-.0107	-.0084	-.0245	.0027	.0003	.0018	.0373
2.002	5.13	15.74	.9766	.0313	-.1724	-.0108	-.0153	-.0203	.0025	.0003	.0017	.0366
2.003	5.16	17.72	1.0921	.0303	-.1959	-.0114	-.0201	-.0175	.0025	.0004	.0016	.0354
2.003	5.17	19.69	1.2056	.0292	-.2169	-.0129	-.0220	-.0181	.0025	.0003	.0016	.0343
2.002	5.02	-.29	-.0196	.0324	.0102	-.0039	.0127	-.0392	.0028	-.0002	.0022	.0384

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-5.0086	5.02	-4.34	-.2676	.0534	.0543	-.0060	.0159	-.0434	.0025	-.0002	.0024	.0594
-3.6666	5.02	-2.29	-.1405	.0363	.0316	-.0052	.0143	-.0408	.0027	-.0002	.0023	.0441
-2.3259	5.02	-1.29	-.0797	.0343	.0205	-.0048	.0135	-.0400	.0027	-.0001	.0022	.0402
-.5247	5.02	-.27	-.0170	.0325	.0097	-.0041	.0128	-.0395	.0028	-.0001	.0022	.0384
1.1864	5.03	.66	.0389	.0328	-.0001	-.0037	.0118	-.0384	.0028	-.0002	.0022	.0388
2.9436	5.03	1.73	.1048	.0356	-.0119	-.0032	.0108	-.0373	.0029	-.0001	.0023	.0417
4.8770	5.04	3.73	.2313	.0474	-.0347	-.0025	.0092	-.0372	.0030	-.0001	.0023	.0537
5.2245	5.05	5.80	.3564	.0682	-.0579	-.0023	.0068	-.0360	.0029	.0000	.0025	.0746
4.9152	5.06	7.76	.4785	.0974	-.0808	-.0032	.0046	-.0348	.0029	.0000	.0027	.1038
4.4486	5.07	9.73	.5975	.1343	-.1035	-.0058	.0021	-.0329	.0028	.0001	.0029	.1409
3.9699	5.09	11.72	.7123	.1794	-.1263	-.0089	-.0016	-.0288	.0027	.0002	.0031	.1862
3.5454	5.10	13.71	.8217	.2318	-.1490	-.0124	-.0057	-.0245	.0026	.0003	.0034	.2388
3.1750	5.13	15.74	.9305	.2931	-.1724	-.0146	-.0118	-.0203	.0024	.0003	.0037	.3002
2.8703	5.16	17.72	1.0300	.3589	-.1959	-.0169	-.0157	-.0175	.0024	.0003	.0040	.3662
2.6093	5.17	19.69	1.1242	.4308	-.2169	-.0196	-.0164	-.0181	.0024	.0003	.0043	.4385
-.5983	5.02	-.29	-.0194	.0325	.0102	-.0039	.0127	-.0392	.0028	-.0002	.0022	.0385

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 50			MACH 2.00						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.005	-.02	-4.48	-.2488	.0315	.0471	-.0004	-.0001	-.0006	.0022	-.0003	.0029	.0373
2.010	-.02	-2.48	-.1341	.0308	.0276	.0003	-.0001	-.0002	.0021	-.0002	.0029	.0365
2.010	-.02	-1.42	-.0746	.0306	.0173	-.0004	-.0004	.0004	.0021	-.0001	.0029	.0363
2.009	-.02	-.50	-.0247	.0306	.0089	-.0002	-.0002	.0004	.0022	-.0001	.0029	.0363
2.008	-.02	.58	.0372	.0304	-.0011	-.0005	-.0003	.0008	.0022	-.0001	.0029	.0362
1.992	-.02	1.55	.0852	.0303	-.0091	-.0005	-.0001	.0007	.0022	-.0001	.0029	.0360
2.002	-.02	3.58	.2008	.0302	-.0292	-.0009	-.0003	.0012	.0021	-.0001	.0029	.0359
2.010	-.02	5.57	.3150	.0299	-.0493	-.0007	-.0004	.0014	.0021	-.0001	.0029	.0355
2.005	-.02	7.53	.4284	.0300	-.0698	-.0004	-.0006	.0015	.0021	-.0000	.0028	.0354
2.004	-.02	9.57	.5483	.0301	-.0923	-.0005	-.0002	.0016	.0021	.0001	.0027	.0354
2.004	-.02	11.55	.6618	.0305	-.1141	-.0008	-.0001	.0014	.0020	.0002	.0025	.0357
2.004	-.03	13.60	.7793	.0311	-.1366	-.0011	-.0002	.0018	.0019	.0002	.0024	.0360
2.004	-.03	15.57	.8866	.0314	-.1561	-.0007	-.0013	.0036	.0017	.0002	.0022	.0360
2.004	-.03	17.56	.9961	.0310	-.1773	-.0013	-.0013	.0043	.0016	.0001	.0021	.0352
2.004	-.03	19.56	1.1079	.0297	-.1995	-.0016	-.0016	.0043	.0014	.0000	.0019	.0336
2.004	-.02	-.46	-.0259	.0307	.0082	-.0005	-.0001	.0002	.0021	-.0001	.0029	.0364
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.8391	-.02	-4.48	-.2451	.0507	.0471	-.0004	-.0001	-.0006	.0022	-.0003	.0031	.0566
-3.6259	-.02	-2.48	-.1324	.0365	.0276	.0003	-.0001	-.0002	.0021	-.0002	.0029	.0423
-2.2765	-.02	-1.42	-.0737	.0324	.0173	-.0004	-.0004	.0004	.0021	-.0001	.0029	.0381
-.7936	-.02	-.50	-.0244	.0308	.0089	-.0002	-.0002	.0004	.0022	-.0001	.0029	.0365
1.1977	-.02	.58	.0368	.0308	-.0011	-.0005	-.0003	.0008	.0022	-.0001	.0029	.0365
2.5876	-.02	1.55	.0842	.0325	-.0091	-.0005	-.0001	.0007	.0022	-.0001	.0029	.0383
4.6555	-.02	3.58	.1982	.0426	-.0292	-.0009	-.0003	.0012	.0021	-.0001	.0030	.0484
5.1648	-.02	5.57	.3101	.0600	-.0493	-.0007	-.0003	.0014	.0021	-.0001	.0032	.0659
4.9246	-.02	7.53	.4201	.0853	-.0698	-.0005	-.0005	.0015	.0021	-.0000	.0033	.0913
4.4586	-.02	9.57	.5348	.1199	-.0923	-.0005	-.0001	.0016	.0021	.0001	.0035	.1261
3.9813	-.02	11.55	.6413	.1611	-.1141	-.0008	.0001	.0014	.0020	.0002	.0038	.1674
3.5369	-.03	13.60	.7490	.2118	-.1366	-.0011	.0001	.0018	.0018	.0002	.0040	.2182
3.1736	-.03	15.57	.8444	.2661	-.1561	-.0010	-.0010	.0036	.0017	.0002	.0043	.2726
2.8668	-.03	17.56	.9390	.3276	-.1773	-.0016	-.0009	.0043	.0015	.0001	.0045	.3342
2.6079	-.03	19.56	1.0327	.3960	-.1995	-.0021	-.0010	.0043	.0013	.0000	.0048	.4027
-.8302	-.02	-.46	-.0256	.0309	.0082	-.0005	-.0001	.0002	.0021	-.0001	.0029	.0366

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 53

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	-.01	-4.33	-.2255	.0305	.0403	.0001	-.0001	-.0012	.0018	-.0000	.0035	.0363
2.001	-.01	-2.37	-.1219	.0297	.0239	-.0002	-.0003	-.0008	.0017	.0000	.0035	.0355
2.001	-.02	-1.35	-.0689	.0295	.0154	-.0003	-.0003	-.0003	.0017	-.0000	.0036	.0353
2.002	-.02	-.34	-.0171	.0295	.0073	-.0002	-.0002	-.0004	.0017	-.0000	.0036	.0353
2.001	-.02	.70	.0361	.0294	-.0007	-.0003	-.0001	-.0003	.0017	-.0001	.0036	.0352
2.001	-.02	1.66	.0852	.0292	-.0086	-.0005	-.0001	-.0001	.0017	-.0001	.0036	.0350
2.001	-.02	3.68	.1923	.0288	-.0264	-.0003	-.0002	-.0000	.0017	-.0000	.0035	.0344
2.001	-.02	5.68	.2969	.0287	-.0442	-.0005	-.0002	.0002	.0016	.0001	.0034	.0341
2.001	-.02	7.70	.4051	.0284	-.0633	-.0004	-.0002	.0002	.0016	.0001	.0034	.0338
2.002	-.02	9.67	.5112	.0284	-.0835	-.0003	-.0003	.0000	.0016	.0001	.0033	.0337
2.001	-.02	11.65	.6188	.0288	-.1041	-.0004	-.0001	.0002	.0015	.0002	.0031	.0338
2.002	-.02	13.72	.7300	.0296	-.1240	-.0006	-.0011	.0016	.0014	.0002	.0029	.0344
2.001	-.02	15.69	.8360	.0299	-.1439	-.0006	-.0010	.0019	.0013	.0001	.0027	.0344
2.002	-.02	17.68	.9438	.0293	-.1661	-.0011	-.0008	.0019	.0011	.0000	.0025	.0335
2.001	-.02	19.61	1.0503	.0283	-.1885	-.0012	-.0002	.0015	.0010	-.0001	.0023	.0321
2.001	-.02	-.41	-.0190	.0296	.0076	-.0005	-.0004	.0001	.0017	-.0001	.0036	.0354

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.7003	-.01	-4.33	-.2221	.0472	.0403	.0002	-.0001	-.0012	.0018	-.0000	.0037	.0533
-3.4682	-.01	-2.37	-.1203	.0347	.0239	-.0002	-.0003	-.0008	.0017	.0000	.0036	.0405
-2.1857	-.02	-1.35	-.0680	.0311	.0154	-.0003	-.0003	-.0003	.0017	-.0000	.0036	.0369
-.5699	-.02	-.34	-.0169	.0296	.0073	-.0002	-.0002	-.0004	.0017	-.0000	.0036	.0354
1.1944	-.02	.70	.0356	.0298	-.0007	-.0003	-.0001	-.0003	.0017	-.0001	.0036	.0356
2.6570	-.02	1.66	.0841	.0316	-.0086	-.0005	-.0001	-.0001	.0017	-.0001	.0036	.0374
4.6315	-.02	3.68	.1896	.0409	-.0264	-.0004	-.0002	-.0000	.0017	-.0000	.0037	.0467
5.0698	-.02	5.68	.2919	.0576	-.0442	-.0005	-.0001	.0002	.0016	.0001	.0037	.0633
4.8492	-.02	7.70	.3968	.0818	-.0633	-.0004	-.0002	.0002	.0016	.0001	.0040	.0878
4.4122	-.02	9.67	.4981	.1129	-.0835	-.0003	-.0003	.0000	.0016	.0001	.0042	.1191
3.9468	-.02	11.65	.5990	.1518	-.1041	-.0004	.0000	.0002	.0015	.0002	.0044	.1581
3.5002	-.02	13.72	.7007	.2002	-.1240	-.0008	-.0009	.0016	.0013	.0002	.0046	.2066
3.1486	-.02	15.69	.7954	.2526	-.1439	-.0008	-.0008	.0019	.0013	.0001	.0048	.2591
2.8491	-.02	17.68	.8887	.3119	-.1661	-.0012	-.0004	.0019	.0011	.0000	.0050	.3185
2.6011	-.02	19.61	.9783	.3761	-.1885	-.0012	.0002	.0015	.0010	-.0001	.0052	.3828
-.6297	-.02	-.41	-.0187	.0297	.0076	-.0005	-.0004	.0001	.0017	-.0001	.0036	.0355

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 54

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	-.02	-4.27	-.3759	.0511	.1325	-.0005	-.0002	.0002	.0036	.0016	.0017	.0579
2.002	-.02	-2.27	-.2313	.0487	.1068	-.0005	-.0003	.0006	.0036	.0016	.0017	.0555
2.003	-.02	-1.21	-.1525	.0476	.0933	.0000	-.0004	.0010	.0037	.0016	.0017	.0544
2.002	-.02	-.34	-.0953	.0467	.0826	-.0008	-.0006	.0009	.0038	.0016	.0017	.0537
2.002	-.02	.69	-.0209	.0458	.0690	-.0011	-.0009	.0017	.0038	.0016	.0017	.0527
2.003	-.02	1.74	.0554	.0448	.0557	-.0007	-.0007	.0018	.0038	.0016	.0017	.0517
2.002	-.02	3.71	.1993	.0428	.0304	-.0006	-.0004	.0018	.0038	.0017	.0016	.0498
2.002	-.03	5.69	.3420	.0407	.0054	-.0006	-.0005	.0027	.0038	.0017	.0017	.0476
2.002	-.03	7.70	.4862	.0362	-.0203	-.0008	-.0001	.0025	.0037	.0017	.0016	.0450
2.003	-.03	9.71	.6252	.0356	-.0449	-.0005	.0002	.0026	.0036	.0017	.0016	.0423
2.002	-.03	11.75	.7668	.0328	-.0707	-.0010	-.0001	.0036	.0035	.0016	.0015	.0394
2.003	-.03	13.76	.9019	.0296	-.0952	-.0010	.0000	.0022	.0034	.0016	.0015	.0361
2.003	-.03	15.74	1.0352	.0258	-.1221	-.0007	.0002	.0028	.0034	.0017	.0015	.0323
2.004	-.04	17.68	1.1652	.0218	-.1489	-.0015	.0005	.0030	.0033	.0018	.0015	.0283
2.003	-.04	19.66	1.2968	.0186	-.1734	-.0019	.0004	.0039	.0034	.0018	.0015	.0252
2.002	-.02	-.33	-.0920	.0466	.0821	-.0001	-.0002	-.0003	.0037	.0016	.0017	.0535

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.7035	-.02	-4.27	-.3708	.0786	.1325	-.0005	-.0002	.0002	.0036	.0016	.0018	.0857
-3.9650	-.02	-2.27	-.2291	.0578	.1068	-.0005	-.0003	.0006	.0036	.0016	.0017	.0646
-2.9829	-.02	-1.21	-.1514	.0508	.0933	.0000	-.0004	.0010	.0037	.0016	.0017	.0576
-2.0100	-.02	-.34	-.0950	.0473	.0826	-.0008	-.0006	.0009	.0038	.0016	.0017	.0542
-.4728	-.02	.69	-.0215	.0455	.0690	-.0011	-.0008	.0017	.0038	.0016	.0017	.0524
1.1628	-.02	1.74	.0539	.0464	.0557	-.0007	-.0006	.0018	.0038	.0016	.0017	.0534
3.5278	-.02	3.71	.1959	.0555	.0304	-.0006	-.0004	.0018	.0038	.0017	.0018	.0626
4.5334	-.03	5.69	.3359	.0741	.0054	-.0007	-.0004	.0027	.0037	.0017	.0019	.0813
4.6483	-.03	7.70	.4763	.1025	-.0203	-.0008	.0000	.0025	.0037	.0016	.0021	.1098
4.3636	-.03	9.71	.6097	.1397	-.0449	-.0005	.0002	.0026	.0036	.0016	.0023	.1472
3.9721	-.03	11.75	.7434	.1872	-.0707	-.0010	.0001	.0036	.0034	.0016	.0027	.1947
3.5930	-.03	13.76	.8683	.2417	-.0952	-.0009	.0003	.0022	.0033	.0016	.0030	.2495
3.2549	-.03	15.74	.9886	.3037	-.1221	-.0007	.0004	.0028	.0033	.0016	.0033	.3119
2.9613	-.04	17.68	1.1026	.3723	-.1489	-.0012	.0009	.0030	.0031	.0017	.0037	.3808
2.6915	-.04	19.66	1.2140	.4510	-.1734	-.0017	.0010	.0039	.0032	.0017	.0041	.4599
-1.9459	-.02	-.33	-.0917	.0471	.0821	-.0001	-.0002	-.0003	.0037	.0016	.0017	.0541

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 55

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.003	.02	-4.28	-.3259	.0482	.1121	.0001	-.0003	.0008	.0026	.0010	.0022	.0540
2.002	.02	-2.26	-.1993	.0461	.0909	-.0001	-.0005	.0009	.0026	.0010	.0022	.0518
2.002	.02	-1.27	-.1387	.0451	.0809	.0002	-.0005	.0011	.0027	.0010	.0022	.0509
2.001	.02	-.23	-.0737	.0440	.0695	-.0003	-.0005	.0014	.0027	.0010	.0022	.0499
2.003	.02	.67	-.0186	.0433	.0599	-.0002	-.0005	.0013	.0027	.0010	.0022	.0492
2.002	.02	1.70	.0452	.0423	.0490	-.0004	-.0007	.0016	.0027	.0010	.0022	.0482
2.003	.02	3.73	.1735	.0404	.0276	-.0005	-.0005	.0017	.0027	.0010	.0022	.0463
2.002	.01	5.72	.2995	.0383	.0058	-.0004	-.0005	.0020	.0027	.0009	.0022	.0442
2.002	.01	7.74	.4284	.0364	-.0172	-.0007	-.0006	.0028	.0026	.0010	.0021	.0420
2.003	.01	9.74	.5557	.0346	-.0411	-.0009	-.0002	.0028	.0026	.0010	.0020	.0401
2.003	.01	11.82	.6870	.0322	-.0672	-.0011	.0002	.0024	.0025	.0010	.0019	.0376
2.003	.01	13.72	.8046	.0296	-.0919	-.0017	.0003	.0026	.0023	.0010	.0018	.0347
2.002	.01	15.71	.9287	.0266	-.1187	-.0016	-.0002	.0028	.0023	.0011	.0017	.0318
2.002	.01	17.74	1.0501	.0244	-.1424	-.0018	-.0004	.0039	.0023	.0011	.0016	.0293
2.003	.01	19.75	1.1679	.0215	-.1642	-.0010	-.0008	.0044	.0022	.0012	.0016	.0263
2.004	.02	-.29	-.0757	.0441	.0702	-.0003	-.0003	.0003	.0027	.0010	.0022	.0500

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.4469	.02	-4.28	-.3210	.0722	.1121	.0002	-.0003	.0008	.0026	.0010	.0024	.0782
-3.6599	.02	-2.26	-.1971	.0539	.0909	-.0000	-.0005	.0009	.0026	.0010	.0023	.0596
-2.8571	.02	-1.27	-.1376	.0461	.0809	.0002	-.0005	.0011	.0027	.0010	.0022	.0540
-1.6585	.02	-.23	-.0735	.0443	.0695	-.0003	-.0005	.0014	.0027	.0010	.0022	.0502
-.4451	.02	.67	-.0192	.0431	.0599	-.0002	-.0005	.0013	.0027	.0010	.0022	.0489
1.0043	.02	1.70	.0438	.0436	.0490	-.0004	-.0006	.0016	.0027	.0010	.0022	.0495
3.3085	.02	3.73	.1702	.0515	.0276	-.0005	-.0005	.0017	.0027	.0010	.0023	.0575
4.3383	.01	5.72	.2937	.0677	.0058	-.0005	-.0005	.0020	.0026	.0009	.0025	.0738
4.4995	.01	7.74	.4190	.0931	-.0172	-.0008	-.0005	.0028	.0026	.0010	.0027	.0993
4.2526	.01	9.74	.5411	.1272	-.0411	-.0009	-.0001	.0028	.0025	.0010	.0029	.1336
3.8888	.01	11.82	.6651	.1710	-.0672	-.0010	.0004	.0024	.0024	.0010	.0031	.1775
3.5508	.01	13.72	.7738	.2179	-.0919	-.0015	.0007	.0026	.0023	.0010	.0034	.2246
3.2183	.01	15.71	.8858	.2753	-.1187	-.0016	.0003	.0028	.0022	.0010	.0037	.2821
2.9109	.01	17.74	.9917	.3407	-.1424	-.0019	.0001	.0039	.0022	.0011	.0040	.3479
2.6472	.01	19.75	1.0908	.4121	-.1642	-.0012	-.0005	.0044	.0021	.0011	.0044	.4195
-1.6960	.02	-.29	-.0755	.0445	.0702	-.0003	-.0003	.0003	.0027	.0010	.0022	.0504

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 56			MACH 2.00						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.002	.02	-4.51	-.3094	.0453	.0981	.0004	.0003	-.0003	.0020	.0007	.0029	.0508
2.002	.02	-2.42	-.1909	.0434	.0793	.0007	.0006	-.0006	.0019	.0007	.0029	.0488
2.002	.02	-1.44	-.1366	.0426	.0709	.0003	.0005	-.0006	.0019	.0007	.0029	.0481
2.002	.02	-.39	-.0801	.0416	.0617	.0001	.0003	-.0000	.0019	.0007	.0029	.0472
2.002	.02	.53	-.0271	.0407	.0527	.0000	.0004	-.0001	.0019	.0007	.0029	.0462
2.002	.02	1.57	.0307	.0399	.0434	-.0003	.0002	.0005	.0019	.0007	.0029	.0454
2.002	.01	3.56	.1421	.0379	.0257	-.0001	.0005	.0007	.0019	.0007	.0029	.0434
2.002	.01	5.57	.2572	.0361	.0068	-.0003	.0002	.0015	.0018	.0006	.0029	.0414
2.002	.01	7.61	.3761	.0342	-.0145	.0004	-.0000	.0015	.0018	.0007	.0028	.0394
2.001	.01	9.53	.4895	.0324	-.0360	-.0003	.0001	.0018	.0018	.0007	.0027	.0374
2.001	.01	11.52	.6053	.0306	-.0593	-.0004	.0004	.0016	.0017	.0007	.0025	.0355
2.002	.01	13.57	.7243	.0287	-.0841	-.0013	.0002	.0023	.0016	.0007	.0024	.0332
2.002	.01	15.59	.8383	.0266	-.1075	-.0015	-.0006	.0035	.0015	.0008	.0022	.0311
2.002	.01	17.62	.9515	.0246	-.1300	-.0010	-.0008	.0044	.0014	.0008	.0021	.0288
2.001	.01	19.51	1.0574	.0217	-.1523	-.0013	-.0011	.0042	.0013	.0007	.0019	.0256
2.001	.02	-.43	-.0803	.0416	.0619	.0007	.0004	-.0004	.0019	.0007	.0029	.0472
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.3971	.02	-4.51	-.3044	.0692	.0981	.0004	.0003	-.0003	.0020	.0007	.0031	.0750
-3.6746	.02	-2.42	-.1887	.0513	.0793	.0007	.0006	-.0006	.0019	.0007	.0029	.0569
-2.9436	.02	-1.44	-.1353	.0460	.0709	.0003	.0005	-.0006	.0019	.0007	.0029	.0515
-1.8910	.02	-.39	-.0798	.0422	.0617	.0001	.0003	-.0000	.0019	.0007	.0029	.0477
-.6806	.02	.53	-.0276	.0405	.0527	.0000	.0004	-.0001	.0019	.0007	.0029	.0460
.7240	.02	1.57	.0295	.0407	.0434	-.0003	.0002	.0005	.0019	.0007	.0029	.0462
2.9866	.01	3.56	.1391	.0466	.0257	-.0000	.0005	.0007	.0019	.0007	.0030	.0522
4.1631	.01	5.57	.2520	.0605	.0068	-.0003	.0002	.0015	.0018	.0006	.0032	.0662
4.4189	.01	7.61	.3675	.0832	-.0145	.0004	-.0001	.0015	.0018	.0007	.0034	.0889
4.2526	.01	9.53	.4765	.1120	-.0360	-.0003	.0001	.0018	.0018	.0007	.0035	.1179
3.9160	.01	11.52	.5860	.1496	-.0593	-.0003	.0005	.0016	.0017	.0007	.0038	.1557
3.5509	.01	13.57	.6963	.1961	-.0841	-.0013	.0005	.0023	.0015	.0007	.0040	.2022
3.2095	.01	15.59	.7991	.2490	-.1075	-.0016	-.0002	.0035	.0014	.0007	.0043	.2552
2.9059	.01	17.62	.8981	.3091	-.1300	-.0012	-.0004	.0044	.0013	.0007	.0045	.3155
2.6666	.01	19.51	.9882	.3706	-.1523	-.0016	-.0006	.0042	.0012	.0007	.0048	.3772
-1.8928	.02	-.43	-.0800	.0422	.0619	.0007	.0004	-.0004	.0019	.0007	.0029	.0478

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 57

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	.02	-4.36	-.2737	.0428	.0877	.0001	-.0002	-.0000	.0015	.0006	.0035	.0483
1.999	.02	-2.35	-.1696	.0410	.0724	.0003	-.0001	-.0004	.0014	.0005	.0035	.0464
1.999	.02	-1.36	-.1195	.0401	.0652	.0000	-.0001	.0001	.0014	.0005	.0036	.0456
2.001	.02	-.38	-.0689	.0393	.0572	.0000	-.0001	-.0001	.0014	.0005	.0036	.0448
2.000	.02	.68	-.0163	.0385	.0490	.0001	-.0001	.0003	.0014	.0005	.0036	.0439
2.000	.02	1.63	.0321	.0376	.0417	.0001	-.0000	.0004	.0014	.0005	.0036	.0430
2.000	.02	3.66	.1377	.0357	.0252	-.0000	.0002	.0007	.0013	.0004	.0035	.0410
2.000	.01	5.71	.2460	.0338	.0074	-.0002	.0000	.0012	.0013	.0004	.0034	.0389
2.001	.01	7.73	.3537	.0317	-.0119	-.0001	.0001	.0013	.0012	.0005	.0034	.0368
2.000	.02	9.65	.4579	.0298	-.0324	-.0002	-.0003	.0014	.0012	.0005	.0033	.0347
2.001	.01	11.62	.5676	.0279	-.0549	-.0000	.0001	.0014	.0012	.0005	.0031	.0326
2.001	.01	13.62	.6776	.0266	-.0775	-.0001	-.0008	.0026	.0010	.0005	.0029	.0310
2.000	.01	15.60	.7865	.0253	-.0986	-.0004	-.0008	.0032	.0009	.0005	.0027	.0295
2.000	.01	17.65	.8981	.0231	-.1219	-.0006	-.0009	.0034	.0008	.0005	.0025	.0270
2.002	.01	19.67	1.0092	.0201	-.1461	-.0009	-.0004	.0033	.0008	.0005	.0023	.0237
1.999	.02	-.34	-.0655	.0393	.0567	.0004	-.0001	-.0000	.0014	.0005	.0036	.0448

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.2553	.02	-4.36	-.2691	.0632	.0877	.0001	-.0002	-.0000	.0015	.0005	.0037	.0689
-3.5033	.02	-2.35	-.1675	.0478	.0724	.0003	-.0001	-.0004	.0014	.0005	.0036	.0533
-2.7556	.02	-1.36	-.1183	.0429	.0652	.0000	-.0001	.0001	.0014	.0005	.0036	.0484
-1.7257	.02	-.38	-.0686	.0397	.0572	.0000	-.0001	-.0001	.0014	.0005	.0036	.0452
-.4392	.02	.68	-.0168	.0383	.0490	.0001	-.0001	.0003	.0014	.0005	.0036	.0437
.8019	.02	1.63	.0308	.0384	.0417	.0001	-.0000	.0004	.0014	.0005	.0036	.0439
3.0420	.02	3.66	.1347	.0443	.0252	.0000	.0002	.0007	.0013	.0004	.0037	.0497
4.1664	.01	5.71	.2407	.0578	.0074	-.0002	.0001	.0012	.0013	.0004	.0037	.0632
4.4051	.01	7.73	.3453	.0784	-.0119	-.0001	.0001	.0013	.0012	.0005	.0040	.0840
4.2353	.02	9.65	.4453	.1052	-.0324	-.0003	-.0003	.0014	.0012	.0005	.0042	.1109
3.9130	.01	11.62	.5491	.1403	-.0549	-.0000	.0001	.0014	.0011	.0005	.0044	.1463
3.5458	.01	13.62	.6510	.1836	-.0775	-.0003	-.0008	.0026	.0010	.0005	.0046	.1896
3.2065	.01	15.60	.7493	.2337	-.0986	-.0006	-.0006	.0032	.0009	.0005	.0048	.2398
2.9044	.01	17.65	.8473	.2917	-.1219	-.0009	-.0007	.0034	.0008	.0005	.0050	.2980
2.6490	.01	19.67	.9419	.3556	-.1461	-.0010	-.0001	.0033	.0007	.0004	.0052	.3620
-1.6435	.02	-.34	-.0652	.0397	.0567	.0004	-.0001	-.0000	.0014	.0005	.0036	.0452

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 58			MACH 1.60						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAT	CA UNC
2.000	.02	-4.24	-.4282	.0863	.1853	-.0003	.0003	-.0009	.0037	.0016	.0017	.0932
2.004	.02	-2.27	-.2920	.0834	.1655	-.0001	.0006	-.0008	.0037	.0015	.0017	.0903
2.004	.02	-1.25	-.2208	.0820	.1547	-.0000	.0009	-.0008	.0038	.0016	.0017	.0890
2.003	.02	-.30	-.1536	.0803	.1437	-.0003	.0004	.0002	.0039	.0016	.0017	.0875
2.003	.02	.77	-.0771	.0785	.1307	-.0002	.0004	.0003	.0039	.0016	.0017	.0857
2.004	.02	1.72	-.0119	.0769	.1197	-.0012	-.0000	.0009	.0040	.0016	.0017	.0842
2.004	.01	3.75	.1337	.0733	.0951	-.0002	.0001	.0014	.0041	.0016	.0016	.0806
2.004	.01	5.76	.2789	.0695	.0712	-.0000	.0000	.0020	.0041	.0017	.0017	.0770
2.004	.01	7.72	.4155	.0655	.0487	-.0004	.0001	.0020	.0041	.0017	.0016	.0729
2.004	.01	9.75	.5578	.0608	.0245	-.0003	.0001	.0030	.0041	.0017	.0016	.0682
2.004	.00	11.75	.6947	.0555	-.0006	-.0009	.0003	.0031	.0039	.0018	.0015	.0627
2.003	.00	13.72	.8277	.0495	-.0263	-.0006	.0004	.0038	.0039	.0018	.0015	.0567
2.004	-.00	15.70	.9624	.0425	-.0546	-.0011	.0000	.0048	.0038	.0018	.0015	.0496
2.005	-.00	17.72	1.1000	.0351	-.0840	-.0008	.0001	.0054	.0036	.0019	.0015	.0421
2.005	.02	-.27	-.1483	.0803	.1429	-.0005	.0006	-.0000	.0039	.0016	.0017	.0874

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.5749	.02	-4.24	-.4204	.1176	.1853	-.0003	.0003	-.0009	.0036	.0016	.0018	.1246
-3.0389	.02	-2.27	-.2883	.0949	.1655	-.0001	.0006	-.0008	.0037	.0015	.0017	.1018
-2.5216	.02	-1.25	-.2188	.0868	.1547	-.0001	.0009	-.0008	.0038	.0016	.0017	.0938
-1.8873	.02	-.30	-.1532	.0811	.1437	-.0003	.0004	.0002	.0039	.0016	.0017	.0883
-1.0099	.02	.77	-.0782	.0775	.1307	-.0002	.0004	.0003	.0039	.0016	.0017	.0847
-.1874	.02	1.72	-.0143	.0765	.1197	-.0012	.0000	.0008	.0040	.0016	.0017	.0838
1.5708	.01	3.75	.1284	.0817	.0951	-.0002	.0001	.0014	.0041	.0016	.0018	.0892
2.7895	.01	5.76	.2702	.0968	.0712	-.0000	.0000	.0020	.0041	.0017	.0019	.1046
3.3499	.01	7.72	.4025	.1202	.0487	-.0004	.0002	.0020	.0041	.0017	.0021	.1281
3.5098	.01	9.75	.5390	.1536	.0245	-.0003	.0001	.0030	.0040	.0017	.0023	.1616
3.4334	.00	11.75	.6682	.1946	-.0006	-.0008	.0004	.0031	.0039	.0017	.0027	.2029
3.2586	.00	13.72	.7916	.2429	-.0263	-.0005	.0006	.0038	.0038	.0017	.0030	.2514
3.0529	-.00	15.70	.9142	.2994	-.0546	-.0011	.0003	.0048	.0037	.0018	.0033	.3082
2.8319	-.00	17.72	1.0363	.3659	-.0840	-.0008	.0003	.0054	.0035	.0018	.0037	.3749
-1.8270	.02	-.27	-.1479	.0810	.1429	-.0005	.0006	-.0000	.0039	.0016	.0017	.0881

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 59

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.005	.02	-4.23	-.3774	.0803	.1639	-.0002	.0003	-.0010	.0032	.0012	.0022	.0869
2.001	.02	-2.27	-.2571	.0769	.1456	.0005	.0009	-.0006	.0033	.0012	.0022	.0836
2.001	.02	-1.35	-.2014	.0755	.1370	-.0005	.0006	-.0001	.0033	.0012	.0022	.0823
2.002	.01	-.26	-.1332	.0738	.1262	.0000	.0005	.0004	.0033	.0012	.0022	.0806
2.002	.01	.71	-.0752	.0723	.1167	-.0002	.0004	.0007	.0033	.0012	.0022	.0791
2.001	.01	1.79	-.0092	.0705	.1058	.0002	.0004	.0007	.0033	.0012	.0022	.0773
2.001	.01	3.72	.1142	.0670	.0853	-.0005	.0000	.0015	.0033	.0013	.0022	.0739
2.001	.01	5.71	.2378	.0635	.0641	.0002	.0000	.0018	.0033	.0013	.0022	.0703
2.001	.01	7.71	.3626	.0600	.0431	-.0004	-.0001	.0028	.0033	.0013	.0021	.0667
2.001	.00	9.70	.4889	.0559	.0203	.0001	.0008	.0022	.0033	.0013	.0020	.0625
2.001	.00	11.74	.6176	.0510	-.0056	-.0009	.0006	.0030	.0032	.0013	.0019	.0575
2.002	-.00	13.80	.7432	.0458	-.0312	-.0018	.0011	.0030	.0031	.0013	.0018	.0521
2.001	.00	15.73	.8620	.0402	-.0572	-.0016	-.0001	.0041	.0029	.0014	.0017	.0463
2.001	.00	17.76	.9872	.0341	-.0848	-.0013	-.0011	.0060	.0030	.0015	.0016	.0402
2.001	-.00	19.70	1.1008	.0290	-.1078	-.0006	-.0015	.0071	.0029	.0016	.0016	.0350
2.002	.02	-.27	-.1365	.0739	.1268	.0006	.0010	-.0006	.0033	.0012	.0022	.0806

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.4366	.02	-4.23	-.3701	.1077	.1639	-.0003	.0003	-.0010	.0032	.0012	.0024	.1145
-2.9177	.02	-2.27	-.2537	.0870	.1456	.0004	.0010	-.0006	.0033	.0012	.0023	.0937
-2.4868	.02	-1.35	-.1995	.0602	.1370	-.0005	.0005	-.0001	.0033	.0012	.0022	.0870
-1.7855	.01	-.26	-.1329	.0744	.1262	.0000	.0005	.0004	.0033	.0012	.0022	.0812
-1.0668	.01	.71	-.0762	.0714	.1167	-.0002	.0004	.0007	.0033	.0012	.0022	.0782
-.1647	.01	1.79	-.0116	.0702	.1058	.0002	.0004	.0007	.0033	.0012	.0023	.0770
1.4733	.01	3.72	.1093	.0742	.0853	-.0005	.0001	.0015	.0033	.0012	.0023	.0811
2.6559	.01	5.71	.2299	.0865	.0641	.0002	-.0000	.0018	.0033	.0013	.0025	.0937
3.2610	.01	7.71	.3507	.1075	.0431	-.0004	-.0000	.0028	.0033	.0013	.0027	.1148
3.4535	.00	9.70	.4718	.1366	.0203	.0002	.0008	.0022	.0032	.0013	.0029	.1440
3.4032	.00	11.74	.5935	.1744	-.0056	-.0008	.0008	.0030	.0031	.0013	.0031	.1819
3.2248	-.00	13.80	.7100	.2202	-.0312	-.0015	.0015	.0030	.0030	.0013	.0034	.2279
3.0257	.00	15.73	.8179	.2703	-.0572	-.0016	.0004	.0041	.0028	.0013	.0037	.2782
2.8049	.00	17.76	.9288	.3311	-.0848	-.0016	-.0006	.0060	.0028	.0015	.0040	.3395
2.5934	-.00	19.70	1.0256	.3955	-.1078	-.0011	-.0012	.0071	.0028	.0015	.0043	.4040
-1.8269	.02	-.27	-.1361	.0745	.1268	.0006	.0010	-.0006	.0033	.0012	.0022	.0813

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424		RUN 60				MACH 2.00						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	.02	-4.44	-.3539	.0747	.1483	.0005	.0014	-.0022	.0025	.0009	.0029	.0810
2.001	.02	-2.40	-.2397	.0716	.1308	.0002	.0011	-.0014	.0024	.0009	.0029	.0778
2.000	.02	-1.49	-.1698	.0703	.1236	.0003	.0012	-.0010	.0025	.0009	.0029	.0766
2.000	.02	-.46	-.1332	.0689	.1148	-.0001	.0010	-.0005	.0025	.0009	.0029	.0752
2.000	.01	.58	-.0761	.0673	.1059	.0002	.0011	-.0005	.0025	.0009	.0029	.0736
2.001	.01	1.54	-.0235	.0659	.0977	-.0001	.0008	.0003	.0024	.0010	.0029	.0722
2.001	.01	2.59	.0354	.0639	.0878	.0004	.0009	.0004	.0024	.0010	.0029	.0702
2.000	.01	3.57	.0898	.0622	.0788	-.0003	.0006	.0009	.0024	.0010	.0029	.0684
2.000	.01	5.59	.2055	.0569	.0596	-.0004	.0005	.0015	.0024	.0009	.0029	.0651
2.000	.01	7.54	.3158	.0552	.0403	-.0001	.0003	.0020	.0024	.0010	.0028	.0613
2.001	.01	9.60	.4351	.0508	.0176	-.0004	.0008	.0018	.0024	.0010	.0027	.0569
2.000	.00	11.54	.5482	.0469	-.0047	-.0008	.0012	.0017	.0023	.0010	.0025	.0527
2.000	.01	13.49	.6617	.0428	-.0278	-.0006	.0003	.0028	.0022	.0010	.0024	.0484
2.001	.01	15.51	.7757	.0381	-.0527	-.0009	-.0010	.0045	.0020	.0011	.0022	.0434
2.000	.01	17.50	.8881	.0340	-.0764	-.0015	-.0012	.0051	.0019	.0011	.0021	.0391
2.000	.01	19.50	1.0013	.0290	-.0995	-.0016	-.0017	.0056	.0019	.0011	.0019	.0339
2.000	.01	-.43	-.1291	.0667	.1142	.0004	.0011	-.0007	.0025	.0009	.0029	.0750
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.4089	.02	-4.44	-.3466	.1017	.1483	.0004	.0014	-.0022	.0025	.0009	.0031	.1082
-2.8994	.02	-2.40	-.2363	.0815	.1308	.0001	.0011	-.0014	.0024	.0009	.0029	.0877
-2.4972	.02	-1.49	-.1878	.0752	.1236	.0003	.0012	-.0010	.0025	.0009	.0029	.0815
-1.8954	.02	-.46	-.1326	.0700	.1148	-.0001	.0010	-.0005	.0025	.0009	.0029	.0763
-1.1550	.01	.58	-.0764	.0665	.1059	.0002	.0011	-.0005	.0025	.0009	.0029	.0728
-.3902	.01	1.54	-.0254	.0652	.0977	-.0000	.0008	.0003	.0024	.0010	.0029	.0715
.4932	.01	2.59	.0322	.0654	.0878	.0004	.0009	.0004	.0024	.0010	.0030	.0717
1.2641	.01	3.57	.0853	.0675	.0788	-.0003	.0006	.0009	.0024	.0009	.0030	.0739
2.5314	.01	5.59	.1982	.0783	.0596	-.0003	.0005	.0015	.0024	.0009	.0032	.0848
3.1930	.01	7.54	.3051	.0955	.0403	-.0001	.0003	.0020	.0024	.0010	.0033	.1022
3.4457	.01	9.60	.4196	.1218	.0176	-.0003	.0008	.0018	.0024	.0010	.0035	.1286
3.4131	.00	11.54	.5268	.1543	-.0047	-.0006	.0013	.0017	.0023	.0010	.0038	.1613
3.2534	.01	13.49	.6323	.1944	-.0278	-.0005	.0004	.0028	.0021	.0010	.0040	.2014
3.0405	.01	15.51	.7360	.2421	-.0527	-.0011	-.0007	.0045	.0019	.0010	.0043	.2493
2.8144	.01	17.50	.8356	.2969	-.0764	-.0018	-.0006	.0051	.0018	.0011	.0045	.3043
2.6012	.01	19.50	.9329	.3566	-.0995	-.0021	-.0010	.0056	.0018	.0010	.0048	.3662
-1.8451	.01	-.43	-.1286	.0697	.1142	.0004	.0011	-.0007	.0025	.0009	.0029	.0760

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 61

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	.02	-4.34	-.3224	.0706	.1344	.0002	.0008	-.0017	.0021	.0008	.0035	.0769
2.002	.02	-2.35	-.2194	.0675	.1195	.0002	.0009	-.0012	.0020	.0008	.0035	.0738
2.003	.02	-1.35	-.1689	.0661	.1124	.0000	.0009	-.0010	.0020	.0008	.0036	.0724
2.004	.02	-.40	-.1202	.0648	.1053	.0002	.0009	-.0006	.0020	.0008	.0036	.0711
2.003	.02	.64	-.0677	.0632	.0976	-.0003	.0007	-.0004	.0020	.0008	.0036	.0696
2.003	.01	1.69	-.0137	.0615	.0894	.0001	.0008	-.0002	.0020	.0008	.0035	.0679
2.003	.01	3.64	.0870	.0581	.0728	-.0002	.0006	.0004	.0019	.0008	.0035	.0644
2.003	.01	5.62	.1921	.0548	.0559	.0001	.0007	.0007	.0019	.0008	.0034	.0608
2.002	.01	7.65	.2997	.0506	.0367	-.0001	.0006	.0013	.0018	.0008	.0034	.0566
2.003	.01	9.66	.4091	.0464	.0155	.0000	.0003	.0013	.0018	.0008	.0033	.0523
2.003	.01	11.63	.5168	.0425	-.0056	.0001	.0005	.0013	.0017	.0008	.0031	.0481
2.003	.01	13.67	.6288	.0384	-.0288	-.0000	-.0011	.0033	.0015	.0008	.0029	.0437
2.002	.01	15.66	.7381	.0349	-.0511	-.0003	-.0010	.0037	.0015	.0009	.0027	.0400
2.004	.01	17.63	.8461	.0308	-.0734	-.0008	-.0013	.0044	.0014	.0008	.0025	.0355
2.002	.01	19.68	.9583	.0257	-.0979	-.0008	-.0008	.0042	.0013	.0008	.0023	.0301
2.003	.02	-.34	-.1162	.0648	.1049	.0003	.0009	-.0008	.0020	.0008	.0036	.0712

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.3383	.02	-4.34	-.3156	.0946	.1344	.0002	.0008	-.0017	.0021	.0008	.0037	.1011
-2.8316	.02	-2.35	-.2162	.0763	.1195	.0002	.0009	-.0012	.0020	.0008	.0036	.0827
-2.3852	.02	-1.35	-.1672	.0701	.1124	-.0000	.0009	-.0010	.0020	.0008	.0036	.0764
-1.8237	.02	-.40	-.1197	.0656	.1053	.0002	.0009	-.0006	.0020	.0008	.0036	.0720
-1.0961	.02	.64	-.0685	.0625	.0976	-.0003	.0007	-.0004	.0020	.0008	.0036	.0688
-.2567	.01	1.69	-.0157	.0611	.0894	.0001	.0008	-.0002	.0020	.0008	.0036	.0674
1.3039	.01	3.64	.0827	.0634	.0728	-.0002	.0006	.0004	.0019	.0008	.0037	.0697
2.5373	.01	5.62	.1851	.0730	.0559	.0002	.0007	.0007	.0019	.0008	.0037	.0793
3.2373	.01	7.65	.2894	.0894	.0367	-.0000	.0006	.0013	.0018	.0008	.0040	.0959
3.4755	.01	9.66	.3944	.1135	.0155	.0001	.0002	.0013	.0018	.0008	.0042	.1202
3.4353	.01	11.63	.4964	.1445	-.0056	.0002	.0005	.0013	.0017	.0008	.0044	.1513
3.2604	.01	13.67	.6005	.1842	-.0288	-.0003	-.0011	.0033	.0015	.0008	.0046	.1911
3.0331	.01	15.66	.6998	.2307	-.0511	-.0006	-.0009	.0037	.0014	.0008	.0048	.2378
2.8109	.01	17.63	.7955	.2830	-.0734	-.0011	-.0010	.0044	.0013	.0008	.0050	.2901
2.5953	.01	19.68	.8921	.3437	-.0979	-.0010	-.0005	.0042	.0012	.0007	.0052	.3510
-1.7675	.02	-.34	-.1158	.0655	.1049	.0003	.0009	-.0008	.0020	.0008	.0036	.0719

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 62

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.004	.02	-4.36	-.2385	.0284	.0485	.0008	.0002	-.0009	.0025	.0010	.0017	.0335
2.006	.02	-2.60	-.1397	.0291	.0320	.0007	.0003	-.0006	.0025	.0010	.0017	.0343
2.003	.02	-1.46	-.0766	.0295	.0216	.0004	-.0001	.0002	.0026	.0010	.0017	.0348
2.004	.02	-.35	-.0174	.0295	.0118	.0003	.0001	.0002	.0028	.0010	.0017	.0350
2.005	.02	.66	.0362	.0290	.0027	.0007	.0003	-.0002	.0028	.0010	.0017	.0345
2.005	.02	1.60	.0892	.0282	-.0056	.0006	-.0001	.0008	.0028	.0010	.0017	.0337
2.005	.02	3.61	.2038	.0263	-.0246	.0004	-.0000	.0008	.0028	.0010	.0016	.0318
2.004	.01	5.63	.3223	.0247	-.0452	.0002	.0000	.0013	.0028	.0010	.0017	.0301
2.005	.01	7.65	.4368	.0235	-.0648	.0000	-.0001	.0021	.0027	.0010	.0016	.0288
2.006	.01	9.62	.5457	.0227	-.0837	.0002	-.0004	.0025	.0026	.0010	.0016	.0278
2.005	.01	11.65	.6552	.0220	-.1034	.0001	-.0006	.0035	.0025	.0010	.0016	.0271
2.005	.01	13.64	.7646	.0213	-.1232	-.0000	-.0011	.0041	.0026	.0011	.0015	.0264
2.005	.01	15.58	.8639	.0207	-.1405	.0002	-.0013	.0043	.0025	.0011	.0015	.0259
2.005	.00	17.60	.9632	.0201	-.1563	.0001	-.0016	.0056	.0026	.0013	.0015	.0255
2.006	.00	19.69	1.0657	.0197	-.1740	-.0003	-.0020	.0063	.0027	.0014	.0015	.0253
2.004	.02	-.44	-.0198	.0295	.0124	.0007	.0002	.0003	.0028	.0010	.0017	.0350

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-5.0881	.02	-4.36	-.2354	.0463	.0485	.0008	.0003	-.0009	.0025	.0010	.0018	.0515
-3.9031	.02	-2.60	-.1380	.0354	.0320	.0007	.0004	-.0006	.0025	.0010	.0017	.0406
-2.4074	.02	-1.46	-.0757	.0314	.0216	.0004	-.0000	.0002	.0026	.0010	.0017	.0367
-.5794	.02	-.35	-.0172	.0297	.0118	.0003	.0001	.0002	.0028	.0010	.0017	.0351
1.2162	.02	.66	.0358	.0294	.0027	.0007	.0003	-.0002	.0028	.0010	.0017	.0349
2.8815	.02	1.60	.0883	.0306	-.0056	.0006	-.0001	.0008	.0028	.0010	.0017	.0362
5.1740	.02	3.61	.2015	.0369	-.0246	.0004	-.0001	.0008	.0028	.0010	.0017	.0445
5.6860	.01	5.63	.3180	.0559	-.0452	.0002	.0000	.0013	.0028	.0010	.0019	.0616
5.3066	.01	7.65	.4294	.0809	-.0648	.0000	-.0001	.0021	.0027	.0010	.0021	.0867
4.7339	.01	9.62	.5337	.1127	-.0837	.0002	-.0004	.0025	.0026	.0010	.0023	.1186
4.1677	.01	11.65	.6367	.1528	-.1034	-.0000	-.0006	.0035	.0025	.0010	.0026	.1589
3.6944	.01	13.64	.7373	.1996	-.1232	-.0003	-.0011	.0041	.0025	.0010	.0030	.2061
3.3018	.01	15.58	.8258	.2501	-.1405	-.0001	-.0013	.0043	.0024	.0011	.0033	.2569
2.9561	.00	17.60	.9111	.3062	-.1563	-.0004	-.0015	.0056	.0025	.0012	.0037	.3156
2.6563	.00	19.69	.9957	.3749	-.1740	-.0010	-.0018	.0063	.0025	.0013	.0041	.3828
-.6585	.02	-.44	-.0195	.0297	.0124	.0007	.0002	.0003	.0028	.0010	.0017	.0352

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 65

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	.02	-4.40	-.2161	.0281	.0411	.0003	-.0001	-.0005	.0026	.0007	.0022	.0337
2.001	.02	-2.46	-.1190	.0285	.0260	.0003	.0001	-.0001	.0026	.0007	.0022	.0340
2.001	.02	-1.45	-.0663	.0267	.0180	.0002	.0004	-.0004	.0027	.0007	.0022	.0343
2.001	.02	-.40	-.0159	.0287	.0107	.0001	-.0001	.0008	.0027	.0007	.0022	.0344
2.002	.02	.59	.0323	.0282	.0034	.0002	.0000	.0006	.0027	.0008	.0022	.0339
2.000	.02	1.62	.0841	.0274	-.0045	.0002	.0001	.0005	.0028	.0008	.0022	.0332
2.000	.02	3.54	.1857	.0261	-.0210	-.0000	.0002	.0002	.0028	.0008	.0022	.0318
2.001	.02	5.59	.2896	.0246	-.0388	.0000	-.0003	.0011	.0028	.0008	.0022	.0303
2.001	.02	7.65	.3951	.0237	-.0569	.0001	-.0003	.0012	.0027	.0008	.0021	.0294
2.003	.01	9.59	.4895	.0229	-.0735	-.0002	-.0003	.0015	.0027	.0009	.0020	.0285
2.001	.01	11.58	.5860	.0225	-.0904	-.0001	-.0006	.0019	.0026	.0009	.0020	.0280
2.001	.01	13.62	.6806	.0221	-.1083	.0000	-.0010	.0026	.0025	.0010	.0019	.0274
2.002	.01	15.55	.7702	.0218	-.1241	.0002	-.0014	.0029	.0025	.0010	.0017	.0270
2.000	.01	17.51	.8587	.0217	-.1399	-.0001	-.0009	.0031	.0025	.0010	.0016	.0269
2.000	.01	19.60	.9550	.0212	-.1577	-.0000	-.0008	.0034	.0025	.0012	.0016	.0265
2.001	.02	-.41	-.0150	.0287	.0108	.0001	.0001	.0001	.0027	.0007	.0022	.0344

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CNR	CDI	CD UNC
-4.7952	.02	-4.40	-.2130	.0444	.0411	.0003	-.0001	-.0005	.0026	.0007	.0024	.0502
-3.5049	.02	-2.46	-.1175	.0335	.0260	.0003	.0001	-.0001	.0026	.0007	.0023	.0391
-2.1579	.02	-1.45	-.0655	.0303	.0180	.0002	.0004	-.0004	.0027	.0007	.0023	.0360
-.5434	.02	-.40	-.0156	.0288	.0107	.0001	-.0001	.0008	.0027	.0007	.0022	.0345
1.1225	.02	.59	.0320	.0285	.0034	.0002	.0000	.0006	.0027	.0008	.0022	.0342
2.7934	.02	1.62	.0832	.0258	-.0045	.0002	.0001	.0005	.0027	.0008	.0022	.0355
4.9114	.02	3.54	.1835	.0374	-.0210	-.0000	.0002	.0002	.0028	.0008	.0023	.0432
5.4497	.02	5.59	.2854	.0524	-.0388	-.0000	-.0003	.0011	.0027	.0008	.0025	.0584
5.1339	.02	7.65	.3879	.0755	-.0569	.0001	-.0003	.0012	.0027	.0008	.0026	.0817
4.6301	.01	9.59	.4782	.1033	-.0735	-.0003	-.0002	.0015	.0026	.0009	.0029	.1096
4.1085	.01	11.58	.5688	.1385	-.0904	-.0002	-.0005	.0019	.0026	.0009	.0031	.1450
3.6370	.01	13.62	.6554	.1802	-.1083	-.0002	-.0009	.0026	.0024	.0009	.0034	.1870
3.2606	.01	15.55	.7352	.2255	-.1241	-.0002	-.0014	.0029	.0024	.0010	.0037	.2326
2.9322	.01	17.51	.8114	.2767	-.1399	-.0003	-.0008	.0031	.0024	.0010	.0040	.2841
2.6420	.01	19.60	.8915	.3374	-.1577	-.0003	-.0007	.0034	.0024	.0011	.0043	.3452
-.5121	.02	-.41	-.0147	.0288	.0108	.0001	.0001	.0001	.0027	.0007	.0022	.0345

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424		RUN 66				MACH 1.80						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.001	5.00	-4.39	-.2135	.0276	.0403	-.0027	.0184	-.0439	.0023	.0008	.0022	.0330
2.000	5.00	-2.46	-.1184	.0263	.0247	-.0040	.0174	-.0413	.0025	.0009	.0022	.0339
2.000	5.00	-1.44	-.0664	.0285	.0165	-.0056	.0165	-.0404	.0026	.0009	.0022	.0342
2.001	5.00	-.44	-.0179	.0284	.0090	-.0071	.0155	-.0395	.0026	.0009	.0022	.0341
2.001	5.01	.53	.0315	.0281	.0016	-.0083	.0151	-.0394	.0027	.0009	.0022	.0339
2.001	5.01	1.55	.0816	.0277	-.0061	-.0098	.0145	-.0394	.0028	.0009	.0022	.0336
2.001	5.02	3.65	.1870	.0264	-.0228	-.0111	.0134	-.0397	.0029	.0009	.0022	.0324
2.001	5.03	5.57	.2852	.0253	-.0394	-.0118	.0125	-.0407	.0029	.0009	.0022	.0313
2.001	5.04	7.58	.3843	.0243	-.0565	-.0125	.0117	-.0411	.0029	.0010	.0021	.0304
2.001	5.04	9.60	.4846	.0236	-.0742	-.0131	.0110	-.0418	.0029	.0011	.0020	.0296
2.001	5.05	11.55	.5766	.0231	-.0908	-.0140	.0101	-.0424	.0028	.0011	.0020	.0290
2.001	5.07	13.55	.6718	.0226	-.1082	-.0139	.0078	-.0428	.0027	.0012	.0019	.0283
2.002	5.09	15.61	.7695	.0218	-.1263	-.0149	.0046	-.0409	.0027	.0012	.0017	.0274
2.001	5.10	17.63	.8620	.0212	-.1447	-.0154	.0007	-.0385	.0029	.0013	.0016	.0270
2.000	5.12	19.57	.9504	.0207	-.1613	-.0164	-.0033	-.0368	.0030	.0013	.0016	.0266
2.001	5.01	-.40	-.0142	.0285	.0088	-.0072	.0157	-.0403	.0027	.0009	.0022	.0342
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY.	CDC	CDB	CDI	CD UNC
-4.8116	5.00	-4.39	-.2104	.0437	.0403	-.0041	.0181	-.0439	.0023	.0008	.0024	.0493
-3.5138	5.00	-2.46	-.1169	.0333	.0247	-.0047	.0172	-.0413	.0025	.0009	.0023	.0389
-2.1769	5.00	-1.44	-.0656	.0301	.0165	-.0060	.0163	-.0404	.0026	.0009	.0023	.0358
-.6188	5.00	-.44	-.0176	.0285	.0090	-.0072	.0154	-.0395	.0026	.0009	.0022	.0343
1.0960	5.01	.53	.0312	.0284	.0016	-.0082	.0152	-.0394	.0027	.0009	.0022	.0342
2.6989	5.01	1.55	.0807	.0299	-.0061	-.0094	.0148	-.0394	.0028	.0009	.0022	.0358
4.8453	5.02	3.65	.1846	.0381	-.0228	-.0102	.0141	-.0397	.0029	.0009	.0023	.0442
5.3469	5.03	5.57	.2809	.0525	-.0394	-.0105	.0136	-.0407	.0029	.0009	.0025	.0589
5.0783	5.04	7.58	.3772	.0743	-.0565	-.0108	.0133	-.0411	.0029	.0010	.0026	.0808
4.5841	5.04	9.60	.4732	.1032	-.0742	-.0111	.0130	-.0418	.0028	.0011	.0029	.1100
4.0877	5.05	11.55	.5595	.1369	-.0908	-.0117	.0127	-.0424	.0028	.0011	.0031	.1438
3.6401	5.07	13.55	.6469	.1777	-.1082	-.0117	.0108	-.0428	.0026	.0011	.0034	.1849
3.2494	5.09	15.61	.7344	.2260	-.1263	-.0131	.0084	-.0409	.0026	.0011	.0037	.2334
2.9196	5.10	17.63	.8141	.2768	-.1447	-.0145	.0053	-.0385	.0027	.0012	.0040	.2868
2.6497	5.12	19.57	.8875	.3349	-.1613	-.0166	.0024	-.0368	.0028	.0013	.0043	.3433
-.4895	5.01	-.40	-.0140	.0286	.0088	-.0073	.0157	-.0403	.0027	.0009	.0022	.0343

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 67

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAT	CA UNC
2.000	-.02	-4.70	-.2079	.0274	.0355	.0007	.0007	-.0003	.0022	.0005	.0029	.0330
1.999	-.02	-2.60	-.1099	.0277	.0215	.0008	.0004	.0006	.0021	.0005	.0029	.0332
1.999	-.03	-1.57	-.0611	.0278	.0144	.0007	.0004	.0007	.0022	.0005	.0029	.0334
2.000	-.03	-.55	-.0144	.0278	.0077	.0006	.0004	.0009	.0022	.0005	.0029	.0334
2.001	-.03	.47	.0329	.0274	.0009	.0006	.0005	.0011	.0022	.0005	.0029	.0330
1.999	-.03	1.40	.0747	.0268	-.0054	.0004	.0006	.0010	.0022	.0005	.0029	.0324
2.001	-.03	3.46	.1745	.0255	-.0208	.0003	.0003	.0017	.0022	.0005	.0029	.0310
2.000	-.03	5.47	.2672	.0245	-.0354	.0006	.0003	.0019	.0021	.0006	.0029	.0301
2.000	-.03	7.46	.3575	.0239	-.0502	.0006	-.0001	.0021	.0021	.0007	.0028	.0295
2.001	-.03	9.44	.4452	.0233	-.0648	.0003	-.0002	.0026	.0022	.0007	.0027	.0289
2.000	-.03	11.39	.5260	.0232	-.0789	.0005	-.0002	.0032	.0021	.0008	.0026	.0286
2.000	-.03	13.51	.6176	.0227	-.0951	.0004	-.0006	.0033	.0020	.0008	.0024	.0280
2.000	-.03	15.39	.6941	.0225	-.1086	.0003	-.0010	.0038	.0019	.0008	.0022	.0275
2.000	-.03	17.45	.7815	.0226	-.1255	.0000	-.0006	.0038	.0019	.0008	.0021	.0274
2.000	-.03	19.48	.8692	.0222	-.1425	.0001	-.0011	.0045	.0019	.0009	.0019	.0269
2.001	-.03	-.58	-.0153	.0277	.0084	.0006	.0003	.0013	.0022	.0005	.0029	.0333

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.6349	-.02	-4.70	-.2045	.0441	.0355	.0007	.0007	-.0003	.0022	.0005	.0031	.0499
-3.3199	-.02	-2.60	-.1083	.0326	.0215	.0008	.0004	.0006	.0021	.0005	.0029	.0382
-2.0437	-.03	-1.57	-.0602	.0295	.0144	.0007	.0005	.0007	.0022	.0005	.0029	.0350
-.5046	-.03	-.55	-.0141	.0279	.0077	.0006	.0004	.0009	.0022	.0005	.0029	.0335
1.1786	-.03	.47	.0326	.0277	.0009	.0006	.0005	.0011	.0022	.0005	.0029	.0333
2.5875	-.03	1.40	.0739	.0286	-.0054	.0004	.0006	.0010	.0022	.0005	.0029	.0342
4.8070	-.03	3.46	.1723	.0358	-.0208	.0003	.0003	.0017	.0022	.0005	.0030	.0415
5.3058	-.03	5.47	.2631	.0496	-.0354	.0006	.0002	.0019	.0021	.0006	.0032	.0555
5.0436	-.03	7.46	.3507	.0695	-.0502	.0005	-.0002	.0021	.0021	.0007	.0033	.0757
4.5651	-.03	9.44	.4344	.0952	-.0648	.0003	-.0002	.0026	.0021	.0007	.0035	.1015
4.0694	-.03	11.39	.5101	.1253	-.0789	.0004	-.0003	.0032	.0021	.0007	.0037	.1319
3.6076	-.03	13.51	.5941	.1647	-.0951	.0003	-.0006	.0033	.0020	.0008	.0040	.1714
3.2482	-.03	15.39	.6621	.2038	-.1086	.0000	-.0010	.0038	.0018	.0008	.0042	.2107
2.9112	-.03	17.45	.7375	.2533	-.1255	-.0001	-.0006	.0038	.0018	.0008	.0045	.2605
2.6338	-.03	19.48	.8107	.3078	-.1425	-.0003	-.0011	.0045	.0018	.0008	.0048	.3153
-.5380	-.03	-.58	-.0150	.0279	.0084	.0006	.0003	.0013	.0022	.0005	.0029	.0334

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 70			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
1.999	-.02	-4.50	-.1900	.0271	.0290	.0005	.0002	-.0001	.0019	.0004	.0035	.0329
2.000	-.02	-2.49	-.1023	.0272	.0177	.0005	.0001	.0001	.0018	.0004	.0035	.0328
1.999	-.02	-1.48	-.0573	.0272	.0117	.0004	-.0001	.0005	.0018	.0004	.0036	.0329
1.999	-.02	-.42	-.0107	.0270	.0053	.0005	.0002	.0004	.0018	.0004	.0036	.0327
2.000	-.02	.52	.0298	.0268	-.0002	.0002	.0003	.0005	.0018	.0004	.0036	.0325
1.999	-.02	1.55	.0759	.0263	-.0065	.0002	.0002	.0007	.0018	.0004	.0036	.0320
2.000	-.02	3.52	.1627	.0251	-.0195	.0004	.0002	.0007	.0017	.0004	.0035	.0308
2.000	-.02	5.55	.2500	.0243	-.0325	.0004	-.0001	.0012	.0017	.0005	.0034	.0299
2.000	-.02	7.54	.3352	.0237	-.0460	.0003	-.0002	.0013	.0017	.0005	.0034	.0292
1.998	-.02	9.51	.4167	.0233	-.0597	.0006	-.0004	.0014	.0017	.0006	.0033	.0288
1.999	-.03	11.57	.5008	.0229	-.0739	.0007	-.0001	.0017	.0017	.0006	.0031	.0282
1.999	-.02	13.48	.5753	.0228	-.0871	.0004	-.0001	.0013	.0016	.0006	.0029	.0279
1.999	-.03	15.51	.6563	.0225	-.1016	.0003	-.0001	.0015	.0015	.0007	.0027	.0273
1.999	-.03	17.51	.7377	.0222	-.1171	.0000	-.0007	.0022	.0015	.0007	.0025	.0269
2.001	-.03	19.59	.8237	.0218	-.1337	.0004	-.0001	.0016	.0015	.0007	.0023	.0264
1.999	-.02	-.48	-.0116	.0271	.0057	.0003	.0002	.0003	.0018	.0004	.0036	.0328

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.4743	-.02	-4.50	-.1867	.0417	.0290	.0005	.0002	-.0001	.0019	.0004	.0037	.0477
-3.1977	-.02	-2.49	-.1008	.0315	.0177	.0005	.0001	.0001	.0018	.0004	.0036	.0372
-1.9656	-.02	-1.48	-.0564	.0287	.0117	.0004	-.0001	.0005	.0018	.0004	.0036	.0344
-.3841	-.02	-.42	-.0104	.0271	.0053	.0005	.0002	.0004	.0018	.0004	.0036	.0328
1.0882	-.02	.52	.0295	.0271	-.0002	.0002	.0003	.0005	.0018	.0004	.0036	.0328
2.6457	-.02	1.55	.0749	.0283	-.0065	.0002	.0002	.0007	.0018	.0004	.0036	.0340
4.5961	-.02	3.52	.1604	.0349	-.0195	.0004	.0001	.0007	.0017	.0004	.0037	.0407
5.1146	-.02	5.55	.2458	.0481	-.0325	.0003	-.0001	.0012	.0017	.0005	.0037	.0540
4.9119	-.02	7.54	.3284	.0668	-.0460	.0003	-.0002	.0013	.0016	.0005	.0039	.0730
4.4675	-.02	9.51	.4060	.0909	-.0597	.0005	-.0005	.0014	.0017	.0006	.0041	.0973
3.9895	-.03	11.57	.4848	.1215	-.0739	.0007	-.0002	.0017	.0016	.0006	.0044	.1281
3.5769	-.02	13.48	.5528	.1546	-.0871	.0004	-.0002	.0013	.0015	.0006	.0046	.1613
3.2061	-.03	15.51	.6249	.1949	-.1016	.0003	-.0001	.0015	.0014	.0006	.0048	.2018
2.8913	-.03	17.51	.6953	.2405	-.1171	-.0002	-.0006	.0022	.0014	.0007	.0050	.2476
2.6116	-.03	19.59	.7671	.2937	-.1337	.0003	-.0003	.0016	.0015	.0007	.0052	.3011
-.4166	-.02	-.48	-.0113	.0272	.0057	.0003	.0002	.0003	.0018	.0004	.0036	.0329

UPWT PROJECT 1424

RUN 71

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	-.02	-4.39	-.2707	.0313	.0699	.0003	.0001	-.0011	.0026	.0010	.0017	.0366
2.002	-.02	-2.38	-.1569	.0319	.0507	.0002	-.0000	-.0002	.0026	.0010	.0017	.0372
2.002	-.02	-1.46	-.1066	.0319	.0426	.0001	-.0000	-.0002	.0027	.0010	.0017	.0374
2.002	-.02	-.30	-.0429	.0316	.0324	.0002	.0001	-.0002	.0030	.0011	.0017	.0373
2.001	-.02	.58	.0019	.0310	.0248	-.0001	-.0001	.0003	.0030	.0011	.0017	.0368
2.002	-.02	1.56	.0581	.0301	.0158	-.0000	-.0002	.0009	.0030	.0011	.0017	.0358
2.003	-.02	3.59	.1734	.0277	-.0031	-.0001	-.0005	.0016	.0031	.0011	.0016	.0335
2.001	-.03	5.64	.2901	.0257	-.0232	-.0004	-.0004	.0020	.0030	.0011	.0017	.0315
2.000	-.03	7.57	.4019	.0239	-.0421	-.0006	-.0004	.0027	.0030	.0011	.0016	.0296
2.002	-.03	9.62	.5153	.0223	-.0617	-.0002	-.0004	.0028	.0029	.0011	.0016	.0279
2.002	-.03	11.56	.6207	.0210	-.0804	-.0005	-.0006	.0037	.0027	.0011	.0016	.0264
2.001	-.03	13.58	.7298	.0197	-.0998	-.0008	-.0008	.0042	.0027	.0011	.0015	.0250
2.001	-.03	15.60	.8334	.0186	-.1180	-.0005	-.0015	.0050	.0027	.0012	.0015	.0240
2.003	-.04	17.57	.9287	.0176	-.1325	-.0007	-.0019	.0064	.0027	.0014	.0015	.0232
2.002	-.02	-.37	-.0473	.0316	.0328	.0003	-.0001	.0005	.0029	.0011	.0017	.0373

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-5.1580	-.02	-4.39	-.2673	.0518	.0699	.0003	.0001	-.0011	.0026	.0010	.0018	.0573
-4.0569	-.02	-2.38	-.1553	.0383	.0507	.0003	-.0000	-.0002	.0026	.0010	.0017	.0437
-3.0515	-.02	-1.46	-.1056	.0346	.0426	.0001	-.0000	-.0002	.0027	.0010	.0017	.0401
-1.3426	-.02	-.30	-.0427	.0318	.0324	.0002	.0001	-.0002	.0030	.0011	.0017	.0375
.0494	-.02	.58	.0015	.0311	.0248	-.0001	-.0001	.0003	.0030	.0011	.0017	.0368
1.8083	-.02	1.56	.0572	.0316	.0158	-.0000	-.0002	.0009	.0030	.0011	.0017	.0374
4.4508	-.02	3.59	.1711	.0384	-.0031	-.0001	-.0005	.0016	.0031	.0011	.0017	.0443
5.3100	-.03	5.64	.2859	.0538	-.0232	-.0005	-.0004	.0020	.0030	.0011	.0019	.0599
5.1849	-.03	7.57	.3949	.0762	-.0421	-.0006	-.0003	.0027	.0030	.0011	.0021	.0823
4.6922	-.03	9.62	.5038	.1074	-.0617	-.0003	-.0003	.0028	.0028	.0011	.0023	.1136
4.1911	-.03	11.56	.6033	.1439	-.0804	-.0006	-.0004	.0037	.0027	.0011	.0026	.1503
3.7257	-.03	13.58	.7040	.1890	-.0998	-.0010	-.0006	.0042	.0026	.0011	.0030	.1957
3.3177	-.03	15.60	.7969	.2402	-.1180	-.0009	-.0013	.0050	.0026	.0012	.0033	.2473
2.9826	-.04	17.57	.8792	.2948	-.1325	-.0012	-.0016	.0064	.0026	.0013	.0037	.3024
-1.4740	-.02	-.37	-.0471	.0319	.0328	.0003	-.0001	.0005	.0029	.0011	.0017	.0376

TABLE AIII.- Continued

UPWT PROJECT 1424				RUN 72				MACH 1.80				
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.002	-.02	-4.45	-.2416	.0306	.0574	.0001	-.0003	-.0001	.0028	.0007	.0022	.0364
2.003	-.02	-2.41	-.1383	.0307	.0414	-.0000	-.0005	.0008	.0027	.0007	.0022	.0364
2.001	-.02	-1.43	-.0906	.0306	.0345	-.0002	-.0003	.0007	.0028	.0007	.0022	.0364
2.002	-.02	-.37	-.0368	.0303	.0265	-.0002	-.0004	.0010	.0029	.0008	.0022	.0361
2.001	-.02	.64	.0123	.0296	.0191	-.0005	-.0005	.0010	.0029	.0008	.0022	.0355
2.002	-.02	1.52	.0559	.0288	.0127	-.0005	-.0002	.0008	.0029	.0008	.0022	.0348
2.002	-.02	3.53	.1623	.0270	-.0045	-.0002	-.0001	.0011	.0029	.0008	.0022	.0329
2.003	-.02	5.60	.2676	.0252	-.0219	-.0004	-.0007	.0022	.0029	.0008	.0022	.0311
2.001	-.03	7.58	.3665	.0239	-.0386	-.0004	-.0008	.0029	.0029	.0009	.0021	.0298
2.002	-.03	9.66	.4686	.0225	-.0563	-.0007	-.0008	.0030	.0029	.0009	.0020	.0283
2.001	-.03	11.56	.5589	.0215	-.0723	-.0005	-.0011	.0041	.0028	.0010	.0020	.0273
2.001	-.03	13.62	.6572	.0205	-.0905	-.0003	-.0015	.0042	.0027	.0010	.0019	.0261
2.002	-.03	15.60	.7471	.0198	-.1061	-.0005	-.0020	.0049	.0027	.0011	.0017	.0253
2.001	-.03	17.55	.8345	.0191	-.1215	-.0004	-.0015	.0051	.0027	.0011	.0016	.0245
2.001	-.03	19.56	.9276	.0182	-.1387	-.0007	-.0016	.0056	.0026	.0013	.0016	.0237
2.003	-.02	-.44	-.0390	.0304	.0270	-.0002	-.0001	.0002	.0029	.0008	.0022	.0363
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.8474	-.02	-4.45	-.2381	.0491	.0574	.0002	-.0003	-.0001	.0027	.0007	.0024	.0550
-3.7496	-.02	-2.41	-.1367	.0365	.0414	-.0000	-.0005	.0008	.0027	.0007	.0023	.0422
-2.7289	-.02	-1.43	-.0896	.0328	.0345	-.0002	-.0003	.0007	.0028	.0007	.0023	.0386
-1.1987	-.02	-.37	-.0365	.0305	.0265	-.0002	-.0004	.0010	.0029	.0008	.0022	.0364
.4023	-.02	.64	.0120	.0298	.0191	-.0005	-.0005	.0010	.0029	.0008	.0022	.0357
1.8150	-.02	1.52	.0550	.0303	.0127	-.0005	-.0002	.0008	.0029	.0008	.0022	.0362
4.3468	-.02	3.53	.1600	.0368	-.0045	-.0002	-.0001	.0011	.0029	.0008	.0023	.0429
5.1735	-.02	5.60	.2634	.0509	-.0219	-.0005	-.0007	.0022	.0029	.0008	.0025	.0571
5.0312	-.03	7.58	.3596	.0715	-.0386	-.0005	-.0008	.0029	.0029	.0009	.0026	.0778
4.5769	-.03	9.66	.4575	.0999	-.0563	-.0008	-.0006	.0030	.0028	.0009	.0029	.1066
4.1114	-.03	11.56	.5425	.1319	-.0723	-.0007	-.0010	.0041	.0028	.0010	.0031	.1388
3.6560	-.03	13.62	.6330	.1731	-.0905	-.0007	-.0013	.0042	.0027	.0010	.0034	.1802
3.2725	-.03	15.60	.7133	.2180	-.1061	-.0010	-.0018	.0049	.0026	.0010	.0037	.2253
2.9493	-.03	17.55	.7889	.2675	-.1215	-.0008	-.0013	.0051	.0025	.0011	.0040	.2751
2.6691	-.03	19.56	.8669	.3248	-.1387	-.0012	-.0013	.0056	.0025	.0012	.0043	.3328
-1.2627	-.02	-.44	-.0387	.0307	.0270	-.0002	-.0001	.0002	.0029	.0008	.0022	.0366

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 73

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	-.02	-4.60	-.2311	.0295	.0507	.0005	.0007	-.0019	.0023	.0005	.0029	.0352
2.002	-.02	-2.54	-.1345	.0294	.0363	.0004	.0005	-.0012	.0023	.0005	.0029	.0351
2.005	-.02	-1.58	-.0880	.0293	.0294	.0002	.0005	-.0008	.0023	.0005	.0029	.0350
2.004	-.02	-.56	-.0413	.0291	.0229	.0002	.0005	-.0007	.0023	.0005	.0029	.0349
2.003	-.02	.42	.0039	.0286	.0163	.0000	.0006	-.0003	.0024	.0005	.0029	.0344
2.005	-.02	1.44	.0512	.0278	.0094	-.0001	.0007	-.0004	.0023	.0006	.0029	.0336
2.002	-.02	3.39	.1427	.0262	-.0047	-.0002	.0005	.0001	.0023	.0005	.0029	.0319
2.005	-.03	5.44	.2393	.0247	-.0199	.0001	.0005	.0005	.0023	.0006	.0029	.0305
2.003	-.02	7.48	.3315	.0235	-.0350	.0000	-.0001	.0011	.0023	.0007	.0028	.0293
2.004	-.03	9.35	.4143	.0226	-.0486	-.0002	-.0002	.0019	.0023	.0008	.0027	.0283
2.005	-.03	11.44	.5054	.0219	-.0642	.0003	-.0000	.0025	.0023	.0008	.0025	.0276
2.004	-.03	13.42	.5893	.0211	-.0792	-.0000	-.0003	.0029	.0022	.0008	.0024	.0265
2.004	-.03	15.43	.6726	.0203	-.0940	-.0002	-.0008	.0033	.0020	.0009	.0022	.0255
2.004	-.03	17.43	.7571	.0200	-.1099	-.0004	-.0005	.0034	.0021	.0009	.0021	.0250
2.003	-.03	19.37	.8411	.0191	-.1255	-.0004	-.0013	.0040	.0020	.0009	.0019	.0240
2.004	-.02	-.62	-.0439	.0291	.0232	.0002	.0006	-.0009	.0023	.0005	.0029	.0349

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.7653	-.02	-4.60	-.2275	.0477	.0507	.0005	.0008	-.0019	.0023	.0005	.0031	.0537
-3.7627	-.02	-2.54	-.1328	.0353	.0363	.0004	.0005	-.0012	.0023	.0005	.0029	.0410
-2.7472	-.02	-1.58	-.0870	.0317	.0294	.0002	.0005	-.0008	.0023	.0005	.0029	.0374
-1.3853	-.02	-.56	-.0409	.0295	.0229	.0002	.0005	-.0007	.0023	.0005	.0029	.0353
.1266	-.02	.42	.0036	.0286	.0163	.0000	.0006	-.0003	.0024	.0005	.0029	.0344
1.7354	-.02	1.44	.0504	.0290	.0094	-.0001	.0007	-.0004	.0023	.0006	.0029	.0348
4.0829	-.02	3.39	.1406	.0344	-.0047	-.0002	.0005	.0001	.0023	.0005	.0030	.0403
5.0123	-.03	5.44	.2354	.0470	-.0199	.0001	.0005	.0005	.0023	.0006	.0032	.0530
4.9268	-.02	7.48	.3248	.0659	-.0350	.0000	-.0001	.0011	.0023	.0007	.0033	.0723
4.5559	-.03	9.35	.4043	.0687	-.0486	-.0002	-.0002	.0019	.0023	.0008	.0035	.0953
4.0692	-.03	11.44	.4901	.1204	-.0642	.0003	-.0001	.0025	.0023	.0008	.0037	.1272
3.6462	-.03	13.42	.5672	.1556	-.0792	-.0001	-.0003	.0029	.0021	.0008	.0040	.1625
3.2665	-.03	15.43	.6418	.1965	-.0940	-.0004	-.0007	.0033	.0020	.0009	.0043	.2036
2.9386	-.03	17.43	.7151	.2433	-.1099	-.0005	-.0004	.0034	.0020	.0009	.0045	.2507
2.6734	-.03	19.37	.7859	.2940	-.1255	-.0008	-.0011	.0040	.0019	.0009	.0048	.3016
-1.4703	-.02	-.62	-.0435	.0296	.0232	.0002	.0006	-.0009	.0023	.0005	.0029	.0354

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TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 74			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.997	-.01	-4.47	-.2069	.0289	.0408	-.0001	.0002	-.0019	.0020	.0005	.0035	.0349
2.001	-.01	-2.55	-.1225	.0286	.0298	.0001	.0000	-.0012	.0019	.0004	.0035	.0345
2.002	-.02	-1.46	-.0747	.0285	.0236	.0001	.0001	-.0011	.0020	.0004	.0036	.0344
2.001	-.02	-.46	-.0306	.0281	.0175	.0000	.0003	-.0011	.0020	.0004	.0036	.0341
2.001	-.02	.52	.0127	.0277	.0118	-.0002	.0002	-.0005	.0020	.0004	.0036	.0337
2.003	-.02	1.53	.0567	.0270	.0056	-.0003	.0001	-.0003	.0019	.0004	.0036	.0330
2.002	-.02	3.57	.1458	.0253	-.0074	-.0002	.0001	-.0003	.0019	.0005	.0035	.0312
2.002	-.02	5.52	.2303	.0243	-.0199	-.0001	.0000	.0000	.0018	.0006	.0034	.0301
2.001	-.02	7.53	.3146	.0231	-.0331	-.0002	-.0001	.0003	.0018	.0006	.0034	.0289
2.001	-.02	9.52	.3971	.0223	-.0463	.0000	-.0002	.0002	.0018	.0006	.0033	.0280
2.001	-.02	11.52	.4777	.0214	-.0601	.0003	-.0002	.0006	.0018	.0006	.0031	.0270
2.002	-.02	13.59	.5592	.0208	-.0740	.0001	.0000	.0004	.0018	.0007	.0029	.0261
2.001	-.02	15.55	.6377	.0202	-.0884	-.0001	.0002	.0005	.0017	.0007	.0027	.0253
2.002	-.02	17.49	.7170	.0196	-.1034	-.0002	.0003	.0004	.0017	.0007	.0025	.0246
2.002	-.02	19.51	.7995	.0187	-.1191	-.0005	-.0004	.0012	.0017	.0008	.0023	.0236
2.002	-.02	-.49	-.0314	.0282	.0178	-.0002	.0002	-.0008	.0020	.0004	.0036	.0341
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.5497	-.01	-4.47	-.2035	.0447	.0408	-.0001	.0002	-.0019	.0020	.0005	.0037	.0509
-3.5516	-.01	-2.55	-.1207	.0340	.0298	.0001	.0000	-.0012	.0019	.0004	.0036	.0399
-2.4316	-.02	-1.46	-.0738	.0303	.0236	.0001	.0001	-.0011	.0020	.0004	.0036	.0363
-1.0699	-.02	-.46	-.0304	.0284	.0175	.0000	.0003	-.0011	.0020	.0004	.0036	.0343
.4445	-.02	.52	.0124	.0278	.0118	-.0002	.0002	-.0005	.0020	.0004	.0036	.0338
1.9562	-.02	1.53	.0558	.0285	.0056	-.0003	.0001	-.0003	.0019	.0004	.0036	.0345
4.1991	-.02	3.57	.1435	.0342	-.0074	-.0002	.0001	-.0003	.0019	.0005	.0037	.0402
4.9211	-.02	5.52	.2263	.0460	-.0199	-.0001	.0000	.0000	.0018	.0005	.0037	.0521
4.8456	-.02	7.53	.3080	.0636	-.0331	-.0002	-.0001	.0003	.0018	.0006	.0039	.0699
4.4583	-.02	9.52	.3868	.0868	-.0463	.0000	-.0002	.0002	.0018	.0006	.0042	.0934
4.0182	-.02	11.52	.4626	.1151	-.0601	.0002	-.0002	.0006	.0018	.0006	.0043	.1219
3.5866	-.02	13.59	.5373	.1498	-.0740	.0001	.0000	.0004	.0017	.0007	.0046	.1568
3.2282	-.02	15.55	.6075	.1882	-.0884	-.0001	.0002	.0005	.0016	.0007	.0048	.1953
2.9203	-.02	17.49	.6764	.2316	-.1034	-.0001	.0003	.0004	.0016	.0007	.0050	.2390
2.6474	-.02	19.51	.7458	.2817	-.1191	-.0006	-.0003	.0012	.0016	.0008	.0052	.2893
-1.0925	-.02	-.49	-.0311	.0284	.0178	-.0002	.0002	-.0008	.0020	.0004	.0036	.0344

TABLE AIII.- Continued

UPWT PROJECT 1424		RUN 75		MACH 1.60								
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	-.01	-4.48	-.3021	.0370	.0891	.0003	.0000	-.0015	.0026	.0010	.0017	.0423
2.000	-.02	-2.36	-.1805	.0371	.0689	.0001	.0001	-.0008	.0027	.0010	.0017	.0425
1.999	-.02	-1.34	-.1257	.0371	.0596	.0002	.0001	-.0004	.0027	.0010	.0017	.0425
2.000	-.02	-.40	-.0762	.0366	.0516	-.0000	.0000	-.0004	.0029	.0010	.0017	.0422
2.005	-.02	.62	-.0193	.0358	.0425	.0001	-.0000	-.0003	.0030	.0011	.0017	.0415
2.000	-.02	1.67	.0344	.0347	.0336	-.0002	-.0002	.0002	.0030	.0011	.0017	.0405
1.998	-.02	3.58	.1427	.0323	.0156	.0000	-.0003	.0007	.0031	.0011	.0016	.0381
1.999	-.02	5.61	.2639	.0297	-.0047	.0001	-.0002	.0009	.0031	.0011	.0017	.0355
2.000	-.02	7.62	.3755	.0273	-.0241	-.0003	-.0001	.0010	.0031	.0011	.0016	.0331
2.001	-.03	9.59	.4870	.0252	-.0436	-.0000	-.0002	.0017	.0030	.0011	.0016	.0308
2.000	-.03	11.57	.5958	.0230	-.0628	-.0002	-.0001	.0015	.0028	.0011	.0016	.0285
2.000	-.03	13.59	.7031	.0209	-.0821	-.0005	-.0004	.0022	.0027	.0012	.0015	.0263
2.001	-.03	15.57	.8080	.0190	-.1009	-.0001	-.0008	.0026	.0027	.0012	.0015	.0244
2.000	-.03	17.67	.9066	.0174	-.1159	-.0005	-.0014	.0037	.0027	.0014	.0015	.0229
2.003	-.02	-.43	-.0766	.0367	.0518	.0003	-.0003	.0006	.0029	.0010	.0017	.0423
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.9447	-.01	-4.48	-.2980	.0603	.0891	.0003	.0001	-.0015	.0026	.0010	.0018	.0657
-4.0154	-.02	-2.36	-.1787	.0445	.0689	.0001	.0001	-.0008	.0027	.0010	.0017	.0499
-3.1196	-.02	-1.34	-.1247	.0400	.0596	.0002	.0001	-.0004	.0027	.0010	.0017	.0454
-2.0436	-.02	-.40	-.0759	.0372	.0516	-.0000	.0000	-.0004	.0029	.0010	.0017	.0427
-.5539	-.02	.62	-.0197	.0356	.0425	.0001	-.0000	-.0003	.0030	.0011	.0017	.0413
.9330	-.02	1.67	.0333	.0357	.0336	-.0002	-.0002	.0002	.0030	.0011	.0017	.0415
3.4148	-.02	3.58	.1402	.0410	.0156	-.0000	-.0003	.0007	.0031	.0011	.0017	.0469
4.7093	-.02	5.61	.2594	.0551	-.0047	.0001	-.0002	.0009	.0031	.0011	.0019	.0612
4.8201	-.02	7.62	.3681	.0764	-.0241	-.0003	-.0001	.0010	.0030	.0011	.0021	.0826
4.5191	-.03	9.59	.4755	.1052	-.0436	-.0001	-.0002	.0017	.0029	.0011	.0023	.1116
4.1049	-.03	11.57	.5784	.1409	-.0628	-.0003	-.0001	.0015	.0028	.0011	.0026	.1474
3.6831	-.03	13.59	.6778	.1840	-.0821	-.0006	-.0003	.0022	.0026	.0011	.0030	.1908
3.3099	-.03	15.57	.7724	.2334	-.1009	-.0004	-.0008	.0026	.0026	.0012	.0033	.2404
2.9632	-.03	17.67	.8577	.2894	-.1159	-.0009	-.0012	.0037	.0026	.0013	.0037	.2970
-2.0479	-.02	-.43	-.0763	.0373	.0518	.0003	-.0003	.0006	.0029	.0010	.0017	.0429

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TABLE AIII.- Continued

UPWT PROJECT 1424		RUN 76		MACH 1.80								
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	-.02	-4.44	-.2616	.0356	.0717	.0001	-.0001	-.0007	.0028	.0007	.0022	.0413
2.005	-.02	-2.45	-.1597	.0353	.0560	-.0001	-.0003	.0002	.0028	.0007	.0022	.0411
2.003	-.02	-1.40	-.1084	.0352	.0483	.0002	-.0000	.0000	.0028	.0007	.0022	.0409
2.003	-.02	-.41	-.0594	.0347	.0412	-.0001	-.0000	.0001	.0029	.0008	.0022	.0406
2.003	-.02	.55	-.0132	.0338	.0343	-.0003	-.0002	.0003	.0029	.0008	.0022	.0398
2.006	-.02	1.55	.0384	.0328	.0266	-.0002	-.0003	.0007	.0030	.0008	.0022	.0387
2.004	-.02	3.54	.1416	.0307	.0101	-.0001	-.0000	.0003	.0030	.0008	.0022	.0367
2.003	-.02	5.58	.2464	.0286	-.0072	-.0002	-.0000	.0004	.0030	.0008	.0022	.0345
2.004	-.02	7.62	.3499	.0266	-.0248	-.0001	-.0006	.0015	.0030	.0008	.0021	.0326
2.004	-.02	9.64	.4482	.0246	-.0419	-.0004	-.0005	.0019	.0029	.0009	.0020	.0305
2.003	-.02	11.58	.5413	.0230	-.0586	-.0005	-.0006	.0020	.0029	.0010	.0020	.0288
2.005	-.02	13.61	.6375	.0213	-.0767	-.0003	-.0010	.0024	.0028	.0010	.0019	.0270
2.004	-.02	15.58	.7277	.0200	-.0927	-.0002	-.0014	.0028	.0028	.0011	.0017	.0256
2.005	-.02	17.63	.8201	.0186	-.1081	-.0002	-.0011	.0026	.0027	.0011	.0016	.0243
2.004	-.03	19.64	.9104	.0174	-.1250	-.0003	-.0013	.0040	.0027	.0012	.0016	.0228
2.004	-.02	-.42	-.0597	.0347	.0414	.0000	-.0002	.0003	.0029	.0008	.0022	.0406
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.6382	-.02	-4.44	-.2577	.0556	.0717	.0001	-.0001	-.0007	.0028	.0007	.0024	.0615
-3.7561	-.02	-2.45	-.1579	.0420	.0560	-.0001	-.0003	.0002	.0028	.0007	.0023	.0478
-2.8433	-.02	-1.40	-.1074	.0378	.0483	.0002	-.0000	.0000	.0028	.0007	.0023	.0436
-1.6830	-.02	-.41	-.0591	.0351	.0412	-.0001	-.0000	.0001	.0029	.0008	.0022	.0410
-.4034	-.02	.55	-.0136	.0337	.0343	-.0003	-.0002	.0003	.0029	.0008	.0022	.0396
1.1066	-.02	1.55	.0374	.0338	.0266	-.0002	-.0003	.0007	.0030	.0008	.0022	.0398
3.5452	-.02	3.54	.1391	.0392	.0101	-.0001	-.0000	.0003	.0030	.0008	.0023	.0453
4.6437	-.02	5.58	.2420	.0521	-.0072	-.0002	.0000	.0004	.0030	.0008	.0025	.0584
4.7427	-.02	7.62	.3427	.0723	-.0248	-.0002	-.0006	.0015	.0029	.0008	.0026	.0787
4.4396	-.02	9.64	.4371	.0985	-.0419	-.0005	-.0004	.0019	.0029	.0009	.0029	.1051
4.0387	-.02	11.58	.5249	.1300	-.0586	-.0006	-.0005	.0020	.0028	.0010	.0031	.1369
3.6285	-.02	13.61	.6137	.1691	-.0767	-.0005	-.0009	.0024	.0027	.0010	.0034	.1763
3.2666	-.02	15.58	.6947	.2127	-.0927	-.0006	-.0013	.0028	.0027	.0011	.0037	.2201
2.9368	-.02	17.63	.7749	.2639	-.1081	-.0005	-.0010	.0026	.0026	.0011	.0040	.2715
2.6614	-.03	19.64	.8505	.3196	-.1250	-.0007	-.0011	.0040	.0025	.0012	.0043	.3276
-1.6922	-.02	-.42	-.0594	.0351	.0414	.0000	-.0002	.0003	.0029	.0008	.0022	.0410

TABLE AIII.- Continued

UPWT PROJECT 1424		RUN 77		MACH 2.00								
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAT	CA UNC
2.003	-.02	-4.60	-.2500	.0343	.0616	.0004	.0009	-.0019	.0024	.0006	.0029	.0401
2.001	-.02	-2.51	-.1499	.0337	.0466	.0004	.0007	-.0012	.0023	.0005	.0029	.0394
2.000	-.02	-1.58	-.1068	.0335	.0402	.0004	.0005	-.0007	.0023	.0005	.0029	.0392
2.001	-.02	-.58	-.0595	.0331	.0339	.0004	.0008	-.0010	.0024	.0005	.0029	.0389
2.001	-.02	.43	-.0121	.0325	.0270	.0004	.0007	-.0006	.0024	.0005	.0029	.0383
2.000	-.02	1.41	.0320	.0314	.0210	.0000	.0006	-.0002	.0024	.0006	.0029	.0372
2.001	-.02	3.41	.1270	.0295	.0064	.0003	.0008	-.0004	.0024	.0005	.0029	.0353
2.002	-.02	5.47	.2240	.0277	-.0087	.0000	.0005	.0002	.0023	.0006	.0029	.0335
2.002	-.02	7.44	.3129	.0260	-.0232	.0001	.0000	.0008	.0023	.0007	.0028	.0319
2.001	-.02	9.45	.4030	.0244	-.0380	-.0001	-.0001	.0010	.0023	.0008	.0027	.0303
2.001	-.03	11.45	.4895	.0232	-.0531	.0002	.0000	.0013	.0024	.0008	.0025	.0289
2.001	-.04	13.43	.5751	.0217	-.0685	-.0001	-.0020	.0066	.0022	.0008	.0024	.0272
2.001	-.02	15.41	.6593	.0205	-.0831	.0000	-.0006	.0020	.0021	.0009	.0022	.0257
2.000	-.03	17.42	.7427	.0197	-.0987	-.0002	-.0003	.0021	.0021	.0009	.0021	.0247
2.001	-.03	19.41	.8263	.0183	-.1138	-.0003	-.0006	.0023	.0021	.0009	.0019	.0233
2.001	-.02	-.54	-.0580	.0332	.0339	.0005	.0007	-.0010	.0024	.0005	.0029	.0390
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.5536	-.02	-4.60	-.2460	.0540	.0616	.0003	.0009	-.0019	.0023	.0006	.0031	.0600
-3.6798	-.02	-2.51	-.1480	.0402	.0466	.0003	.0007	-.0012	.0023	.0005	.0029	.0460
-2.9010	-.02	-1.58	-.1057	.0364	.0402	.0004	.0005	-.0007	.0023	.0005	.0029	.0422
-1.7533	-.02	-.58	-.0591	.0337	.0339	.0004	.0008	-.0010	.0024	.0005	.0029	.0395
-.3817	-.02	.43	-.0124	.0324	.0270	.0004	.0007	-.0006	.0024	.0005	.0029	.0382
.9667	-.02	1.41	.0311	.0322	.0210	.0000	.0006	-.0002	.0024	.0006	.0029	.0380
3.3785	-.02	3.41	.1247	.0369	.0064	.0003	.0007	-.0004	.0024	.0005	.0030	.0428
4.5253	-.02	5.47	.2198	.0486	-.0087	.0001	.0005	.0002	.0023	.0006	.0032	.0547
4.6578	-.02	7.44	.3062	.0657	-.0232	.0001	.0000	.0008	.0023	.0007	.0033	.0721
4.3906	-.02	9.45	.3926	.0894	-.0380	-.0001	-.0001	.0010	.0023	.0008	.0035	.0960
3.9989	-.03	11.45	.4742	.1186	-.0531	.0002	.0000	.0013	.0023	.0008	.0037	.1254
3.6149	-.04	13.43	.5532	.1530	-.0685	-.0005	-.0019	.0066	.0022	.0008	.0040	.1600
3.2608	-.02	15.41	.6290	.1929	-.0831	-.0001	-.0006	.0020	.0020	.0009	.0042	.2000
2.9402	-.03	17.42	.7015	.2386	-.0987	-.0003	-.0003	.0021	.0020	.0009	.0045	.2460
2.6717	-.03	19.41	.7720	.2889	-.1138	-.0005	-.0005	.0023	.0019	.0009	.0048	.2966
-1.7101	-.02	-.54	-.0577	.0337	.0339	.0005	.0007	-.0010	.0024	.0005	.0029	.0395

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 78			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.001	-.01	-4.47	-.2219	.0330	.0514	.0002	.0003	-.0017	.0020	.0005	.0035	.0390
2.001	-.02	-2.51	-.1343	.0323	.0401	.0001	-.0000	-.0008	.0019	.0004	.0035	.0382
2.001	-.02	-1.51	-.0898	.0320	.0340	.0002	.0001	-.0009	.0019	.0004	.0036	.0380
2.000	-.02	-.44	-.0435	.0316	.0278	-.0000	.0002	-.0006	.0020	.0004	.0036	.0375
2.001	-.02	.56	.0007	.0309	.0218	-.0001	.0001	.0000	.0020	.0004	.0036	.0368
2.001	-.02	1.52	.0413	.0301	.0159	-.0002	.0000	.0002	.0019	.0004	.0036	.0360
2.001	-.02	3.51	.1310	.0280	.0027	-.0000	.0001	.0001	.0019	.0005	.0035	.0339
2.001	-.02	5.52	.2168	.0264	-.0102	.0002	.0001	.0003	.0018	.0006	.0034	.0323
2.001	-.02	7.51	.3007	.0249	-.0234	.0002	-.0000	.0004	.0018	.0006	.0034	.0307
2.002	-.02	9.57	.3860	.0236	-.0369	.0004	-.0002	.0008	.0019	.0006	.0033	.0293
2.001	-.02	11.51	.4651	.0223	-.0506	.0004	-.0003	.0012	.0018	.0006	.0031	.0279
2.002	-.02	13.57	.5468	.0211	-.0651	.0002	.0001	.0008	.0018	.0007	.0029	.0265
2.001	-.03	15.50	.6235	.0201	-.0789	.0002	-.0001	.0014	.0016	.0007	.0027	.0252
2.001	-.03	17.50	.7044	.0191	-.0942	-.0002	.0004	.0011	.0017	.0007	.0025	.0241
2.000	-.02	19.50	.7866	.0180	-.1098	-.0002	-.0001	.0011	.0017	.0008	.0023	.0229
2.002	-.02	-.49	-.0459	.0316	.0281	.0001	.0002	-.0005	.0020	.0004	.0036	.0375
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.3613	-.01	-4.47	-.2181	.0500	.0514	.0002	.0003	-.0017	.0020	.0005	.0037	.0562
-3.4744	-.02	-2.51	-.1324	.0381	.0401	.0001	-.0000	-.0008	.0019	.0004	.0036	.0441
-2.5826	-.02	-1.51	-.0888	.0344	.0340	.0002	.0001	-.0009	.0019	.0004	.0036	.0403
-1.3533	-.02	-.44	-.0432	.0319	.0278	-.0000	.0002	-.0006	.0020	.0004	.0036	.0378
.0093	-.02	.56	.0003	.0309	.0218	-.0001	.0001	.0000	.0020	.0004	.0036	.0368
1.2934	-.02	1.52	.0403	.0311	.0159	-.0002	.0000	.0002	.0019	.0004	.0036	.0371
3.5877	-.02	3.51	.1286	.0358	.0027	-.0000	.0001	.0001	.0019	.0005	.0037	.0419
4.5375	-.02	5.52	.2126	.0469	-.0102	.0002	.0001	.0003	.0018	.0006	.0037	.0530
4.6371	-.02	7.51	.2940	.0634	-.0234	.0002	-.0000	.0004	.0018	.0006	.0039	.0697
4.3421	-.02	9.57	.3756	.0865	-.0369	.0003	-.0002	.0008	.0018	.0006	.0042	.0931
3.9715	-.02	11.51	.4500	.1133	-.0506	.0004	-.0004	.0012	.0018	.0006	.0043	.1201
3.5713	-.02	13.57	.5253	.1471	-.0651	.0002	.0000	.0008	.0017	.0007	.0046	.1540
3.2324	-.03	15.50	.5940	.1838	-.0789	.0002	-.0001	.0014	.0016	.0007	.0048	.1908
2.9206	-.03	17.50	.6645	.2275	-.0942	-.0001	.0004	.0011	.0016	.0007	.0050	.2348
2.6534	-.02	19.50	.7339	.2766	-.1098	-.0002	-.0001	.0011	.0016	.0008	.0052	.2842
-1.4263	-.02	-.49	-.0456	.0320	.0281	.0001	.0002	-.0005	.0020	.0004	.0036	.0379

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 79

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.006	-.02	-4.40	-.2172	.0278	.0349	.0003	-.0008	.0013	.0027	.0007	.0017	.0329
2.000	-.02	-2.35	-.1164	.0277	.0217	.0001	-.0008	.0018	.0028	.0007	.0017	.0329
2.001	-.02	-1.34	-.0671	.0277	.0151	.0005	-.0006	.0017	.0030	.0007	.0017	.0330
2.001	-.02	-.40	-.0207	.0276	.0088	.0005	-.0005	.0017	.0031	.0007	.0017	.0330
2.002	-.02	.60	.0267	.0272	.0024	.0002	-.0008	.0021	.0032	.0007	.0017	.0328
1.997	-.02	1.67	.0808	.0266	-.0050	.0005	-.0005	.0017	.0032	.0007	.0017	.0322
2.001	-.02	3.62	.1771	.0256	-.0170	.0002	-.0005	.0020	.0033	.0007	.0016	.0312
2.001	-.02	5.63	.2749	.0243	-.0284	.0002	-.0004	.0022	.0034	.0007	.0017	.0301
1.997	-.03	7.66	.3742	.0234	-.0398	.0005	-.0004	.0023	.0034	.0007	.0016	.0291
2.000	-.03	9.67	.4697	.0226	-.0512	.0003	-.0006	.0029	.0035	.0007	.0016	.0285
1.999	-.03	11.61	.5621	.0222	-.0619	.0004	-.0007	.0031	.0035	.0007	.0016	.0279
2.001	-.03	13.59	.6497	.0215	-.0719	.0003	-.0012	.0036	.0034	.0007	.0015	.0273
1.999	-.03	15.62	.7412	.0211	-.0813	.0002	-.0013	.0038	.0034	.0008	.0015	.0269
2.002	-.03	17.62	.8270	.0209	-.0895	.0002	-.0022	.0055	.0034	.0009	.0015	.0267
1.999	-.03	19.66	.9187	.0208	-.1008	.0004	-.0023	.0057	.0034	.0009	.0015	.0266
2.001	-.02	-.39	-.0196	.0276	.0069	.0002	-.0006	.0013	.0031	.0007	.0017	.0331

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.8473	-.02	-4.40	-.2142	.0442	.0349	.0004	-.0007	.0013	.0027	.0007	.0018	.0494
-3.5499	-.02	-2.35	-.1151	.0324	.0217	.0002	-.0008	.0018	.0028	.0007	.0017	.0376
-2.2702	-.02	-1.34	-.0664	.0292	.0151	.0005	-.0006	.0017	.0030	.0007	.0017	.0346
-.7389	-.02	-.40	-.0205	.0277	.0088	.0005	-.0005	.0017	.0031	.0007	.0017	.0332
.9605	-.02	.60	.0264	.0275	.0024	.0002	-.0008	.0021	.0032	.0007	.0017	.0330
2.7600	-.02	1.67	.0799	.0289	-.0050	.0005	-.0005	.0017	.0032	.0007	.0017	.0345
4.7755	-.02	3.62	.1749	.0366	-.0170	.0001	-.0005	.0020	.0033	.0007	.0017	.0424
5.3228	-.02	5.63	.2709	.0509	-.0284	.0002	-.0004	.0022	.0034	.0007	.0019	.0569
5.0634	-.03	7.66	.3673	.0725	-.0398	.0005	-.0005	.0023	.0034	.0007	.0021	.0787
4.5594	-.03	9.67	.4586	.1006	-.0512	.0002	-.0007	.0029	.0034	.0007	.0023	.1070
4.0779	-.03	11.61	.5455	.1338	-.0619	.0002	-.0008	.0031	.0034	.0007	.0026	.1405
3.6352	-.03	13.59	.6257	.1721	-.0719	.0000	-.0013	.0036	.0033	.0007	.0030	.1792
3.2437	-.03	15.62	.7074	.2161	-.0813	-.0002	-.0013	.0038	.0033	.0008	.0033	.2255
2.9149	-.03	17.62	.7810	.2679	-.0895	-.0004	-.0021	.0055	.0033	.0009	.0037	.2757
2.6298	-.03	19.66	.8571	.3259	-.1008	-.0004	-.0023	.0057	.0032	.0008	.0041	.3341
-.6987	-.02	-.39	-.0194	.0277	.0089	.0002	-.0006	.0013	.0031	.0007	.0017	.0332

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 82			MACH 1.80						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.006	-.02	-4.47	-.1944	.0268	.0266	.0004	-.0006	.0006	.0028	.0005	.0022	.0323
2.000	-.02	-2.42	-.1050	.0265	.0173	.0004	-.0005	.0007	.0028	.0005	.0022	.0320
2.002	-.02	-1.32	-.0579	.0264	.0120	-.0001	-.0006	.0009	.0029	.0005	.0022	.0320
2.002	-.02	-.37	-.0162	.0262	.0074	.0001	-.0004	.0010	.0029	.0005	.0022	.0319
2.001	-.02	.71	.0294	.0257	.0022	.0000	-.0005	.0009	.0029	.0005	.0022	.0314
2.002	-.02	1.68	.0724	.0253	-.0025	.0000	-.0006	.0012	.0030	.0005	.0022	.0310
2.001	-.02	3.62	.1576	.0245	-.0120	-.0002	-.0006	.0013	.0030	.0005	.0022	.0302
2.002	-.02	5.62	.2451	.0236	-.0210	-.0001	-.0007	.0013	.0030	.0005	.0022	.0293
2.000	-.02	7.64	.3328	.0227	-.0302	.0000	-.0010	.0016	.0030	.0006	.0021	.0284
2.002	-.02	9.67	.4186	.0222	-.0399	-.0000	-.0007	.0015	.0030	.0006	.0020	.0278
2.000	-.02	11.61	.5008	.0221	-.0494	.0001	-.0008	.0020	.0029	.0006	.0019	.0276
2.003	-.02	13.68	.5835	.0218	-.0589	.0003	-.0011	.0019	.0029	.0007	.0018	.0272
2.004	-.02	15.64	.6593	.0219	-.0662	.0003	-.0013	.0025	.0029	.0007	.0017	.0272
2.000	-.02	17.64	.7376	.0220	-.0754	.0004	-.0015	.0028	.0028	.0007	.0016	.0272
2.002	-.02	19.65	.8213	.0214	-.0873	.0003	-.0021	.0029	.0028	.0007	.0016	.0264
2.000	-.02	-.31	-.0138	.0262	.0072	-.0001	-.0006	.0011	.0029	.0005	.0022	.0319
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.5924	-.02	-4.47	-.1913	.0417	.0266	.0004	-.0005	.0006	.0027	.0005	.0024	.0473
-3.3551	-.02	-2.42	-.1036	.0309	.0173	.0004	-.0005	.0007	.0028	.0005	.0023	.0364
-2.0650	-.02	-1.32	-.0572	.0277	.0120	-.0001	-.0006	.0009	.0029	.0005	.0022	.0333
-.6089	-.02	-.37	-.0160	.0263	.0074	.0001	-.0004	.0010	.0029	.0005	.0022	.0320
1.1143	-.02	.71	.0291	.0261	.0022	.0000	-.0005	.0009	.0029	.0005	.0022	.0318
2.6086	-.02	1.68	.0715	.0274	-.0025	-.0000	-.0006	.0012	.0030	.0005	.0022	.0331
4.5375	-.02	3.62	.1555	.0343	-.0120	-.0002	-.0006	.0013	.0030	.0005	.0023	.0401
5.1124	-.02	5.62	.2412	.0472	-.0210	-.0001	-.0006	.0013	.0030	.0005	.0025	.0532
4.9285	-.02	7.64	.3262	.0662	-.0302	-.0001	-.0010	.0016	.0030	.0005	.0026	.0723
4.4674	-.02	9.67	.4083	.0914	-.0399	-.0002	-.0007	.0015	.0029	.0006	.0029	.0978
4.0026	-.02	11.61	.4353	.1213	-.0494	-.0001	-.0009	.0020	.0029	.0006	.0031	.1279
3.5586	-.02	13.68	.5609	.1576	-.0589	.0000	-.0011	.0019	.0028	.0006	.0034	.1645
3.1897	-.02	15.64	.6281	.1969	-.0662	-.0000	-.0014	.0025	.0028	.0007	.0037	.2040
2.8719	-.02	17.64	.6952	.2421	-.0754	-.0001	-.0015	.0028	.0027	.0007	.0040	.2494
2.6076	-.02	19.65	.7653	.2935	-.0873	-.0004	-.0021	.0029	.0026	.0007	.0043	.3011
-.5191	-.02	-.31	-.0136	.0263	.0072	-.0001	-.0006	.0011	.0029	.0005	.0022	.0319

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 83

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.002	5.01	-4.32	-.1883	.0261	.0255	-.0054	.0133	-.0416	.0026	.0005	.0022	.0314
2.000	5.00	-2.33	-.1017	.0262	.0157	-.0061	.0123	-.0396	.0028	.0005	.0022	.0317
2.005	5.00	-1.33	-.0573	.0261	.0106	-.0064	.0113	-.0382	.0028	.0005	.0022	.0317
2.003	5.01	-.33	-.0137	.0259	.0058	-.0070	.0099	-.0365	.0029	.0005	.0022	.0315
2.001	5.01	.67	.0289	.0256	.0010	-.0076	.0095	-.0373	.0029	.0005	.0022	.0312
2.002	5.02	1.64	.0701	.0253	-.0035	-.0080	.0085	-.0365	.0030	.0005	.0022	.0310
2.000	5.03	3.70	.1606	.0246	-.0129	-.0088	.0075	-.0374	.0031	.0005	.0022	.0304
2.003	5.03	5.68	.2452	.0238	-.0224	-.0096	.0067	-.0382	.0031	.0005	.0022	.0297
2.003	5.05	7.71	.3321	.0233	-.0315	-.0100	.0049	-.0387	.0032	.0006	.0021	.0291
2.002	5.06	9.68	.4133	.0227	-.0407	-.0105	.0032	-.0387	.0032	.0006	.0020	.0285
2.003	5.08	11.66	.4972	.0225	-.0504	-.0105	.0001	-.0382	.0031	.0006	.0019	.0282
2.003	5.10	13.70	.5799	.0221	-.0600	-.0103	-.0054	-.0348	.0031	.0007	.0018	.0277
2.002	5.13	15.77	.6649	.0218	-.0715	-.0099	-.0108	-.0330	.0032	.0007	.0017	.0274
2.001	5.16	17.68	.7373	.0212	-.0797	-.0116	-.0161	-.0293	.0033	.0007	.0016	.0268
2.001	5.18	19.71	.8191	.0209	-.0904	-.0114	-.0218	-.0255	.0033	.0007	.0016	.0265
2.003	5.01	-.31	-.0112	.0258	.0059	-.0071	.0101	-.0374	.0029	.0005	.0022	.0314

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.6275	5.01	-4.32	-.1854	.0401	.0255	-.0064	.0129	-.0416	.0026	.0005	.0024	.0455
-3.3127	5.00	-2.33	-.1003	.0303	.0157	-.0066	.0120	-.0396	.0028	.0005	.0023	.0358
-2.0650	5.00	-1.33	-.0566	.0274	.0106	-.0066	.0112	-.0382	.0028	.0005	.0022	.0330
-.5223	5.01	-.33	-.0135	.0259	.0058	-.0071	.0099	-.0365	.0029	.0005	.0022	.0316
1.1021	5.01	.67	.0286	.0259	.0010	-.0075	.0096	-.0373	.0029	.0005	.0022	.0316
2.5438	5.02	1.64	.0692	.0272	-.0035	-.0078	.0087	-.0365	.0030	.0005	.0022	.0330
4.5544	5.03	3.70	.1584	.0348	-.0129	-.0083	.0080	-.0374	.0031	.0005	.0023	.0407
5.0588	5.03	5.68	.2412	.0477	-.0224	-.0089	.0076	-.0382	.0031	.0005	.0025	.0538
4.8524	5.05	7.71	.3254	.0671	-.0315	-.0093	.0062	-.0387	.0031	.0005	.0027	.0734
4.4258	5.06	9.68	.4029	.0910	-.0407	-.0098	.0049	-.0387	.0031	.0006	.0029	.0976
3.9687	5.08	11.66	.4816	.1214	-.0504	-.0103	.0022	-.0382	.0031	.0006	.0031	.1282
3.5450	5.10	13.70	.5573	.1572	-.0600	-.0113	-.0028	-.0348	.0030	.0006	.0034	.1643
3.1716	5.13	15.77	.6330	.1996	-.0715	-.0125	-.0077	-.0330	.0031	.0007	.0037	.2070
2.8751	5.16	17.68	.6950	.2417	-.0797	-.0160	-.0118	-.0293	.0031	.0007	.0040	.2495
2.6034	5.18	19.71	.7630	.2931	-.0904	-.0181	-.0167	-.0255	.0031	.0007	.0043	.3012
-.4256	5.01	-.31	-.0110	.0259	.0059	-.0072	.0101	-.0374	.0029	.0005	.0022	.0315

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 84

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.005	-.02	-4.58	-.1816	.0257	.0207	.0003	.0001	-.0002	.0022	.0004	.0029	.0311
2.003	-.02	-2.55	-.0998	.0254	.0133	.0005	.0002	-.0002	.0021	.0004	.0029	.0308
2.004	-.02	-1.55	-.0597	.0253	.0099	.0004	.0001	-.0000	.0022	.0004	.0029	.0307
2.002	-.02	-.62	-.0229	.0251	.0064	.0003	.0003	-.0001	.0022	.0004	.0029	.0306
2.006	-.02	.44	.0193	.0246	.0025	.0003	.0003	-.0002	.0022	.0004	.0029	.0302
2.002	-.02	1.42	.0585	.0242	-.0011	.0001	.0004	.0001	.0022	.0004	.0029	.0297
2.006	-.02	3.45	.1401	.0234	-.0088	.0001	.0003	.0001	.0022	.0004	.0029	.0289
2.005	-.02	5.42	.2212	.0228	-.0165	.0002	.0001	.0003	.0022	.0004	.0029	.0282
2.001	-.02	7.44	.3000	.0222	-.0238	.0003	-.0003	.0005	.0022	.0004	.0028	.0276
2.006	-.02	9.47	.3773	.0218	-.0315	-.0000	-.0004	.0004	.0022	.0005	.0027	.0272
2.002	-.02	11.41	.4495	.0217	-.0390	.0002	-.0004	.0005	.0022	.0005	.0025	.0270
2.002	-.02	13.39	.5201	.0221	-.0457	.0001	-.0006	.0009	.0022	.0005	.0024	.0272
1.998	-.02	15.51	.5962	.0224	-.0542	-.0002	-.0009	.0014	.0021	.0005	.0022	.0272
2.000	-.02	17.43	.6674	.0224	-.0638	-.0002	-.0013	.0017	.0021	.0005	.0021	.0270
1.997	-.01	19.44	.7467	.0217	-.0758	-.0000	-.0019	.0020	.0020	.0005	.0019	.0262
2.002	-.02	-.57	-.0202	.0252	.0060	.0004	.0003	-.0001	.0022	.0004	.0029	.0307

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.4795	-.02	-4.58	-.1786	.0399	.0207	.0003	.0001	-.0002	.0022	.0004	.0031	.0455
-3.3021	-.02	-2.55	-.0983	.0298	.0133	.0005	.0002	-.0002	.0021	.0004	.0029	.0353
-2.1899	-.02	-1.55	-.0588	.0269	.0099	.0004	.0002	-.0000	.0022	.0004	.0029	.0323
-.8871	-.02	-.62	-.0225	.0254	.0064	.0003	.0003	-.0001	.0022	.0004	.0029	.0309
.7678	-.02	.44	.0190	.0248	.0025	.0003	.0003	-.0002	.0022	.0004	.0029	.0303
2.2521	-.02	1.42	.0577	.0256	-.0011	.0001	.0004	.0001	.0022	.0004	.0029	.0312
4.3679	-.02	3.45	.1381	.0316	-.0088	.0001	.0003	.0001	.0022	.0004	.0030	.0373
5.0305	-.02	5.42	.2175	.0432	-.0165	.0003	.0001	.0003	.0022	.0004	.0032	.0490
4.8756	-.02	7.44	.2939	.0603	-.0238	.0002	-.0003	.0005	.0022	.0004	.0033	.0662
4.4428	-.02	9.47	.3677	.0828	-.0315	-.0001	-.0004	.0004	.0022	.0005	.0035	.0889
3.9935	-.02	11.41	.4353	.1090	-.0390	.0001	-.0004	.0005	.0022	.0005	.0037	.1154
3.5627	-.02	13.39	.4997	.1403	-.0457	-.0001	-.0006	.0009	.0022	.0005	.0040	.1469
3.1720	-.02	15.51	.5673	.1789	-.0542	-.0004	-.0008	.0014	.0020	.0005	.0043	.1857
2.8747	-.02	17.43	.6289	.2188	-.0638	-.0006	-.0011	.0017	.0020	.0005	.0045	.2257
2.6148	-.01	19.44	.6956	.2660	-.0758	-.0007	-.0017	.0020	.0019	.0005	.0048	.2732
-.7851	-.02	-.57	-.0199	.0254	.0060	.0004	.0003	-.0001	.0022	.0004	.0029	.0309

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 87

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.001	-.02	-4.53	-.1656	.0250	.0152	-.0001	-.0004	.0000	.0019	.0003	.0035	.0306
1.997	-.02	-2.44	-.0884	.0244	.0102	-.0001	-.0005	.0002	.0017	.0003	.0035	.0300
1.997	-.02	-1.42	-.0498	.0243	.0073	.0002	-.0003	.0002	.0017	.0003	.0036	.0299
1.999	-.02	-.45	-.0137	.0239	.0045	.0000	-.0003	.0005	.0018	.0003	.0036	.0296
2.000	-.02	.52	.0223	.0235	.0017	.0000	-.0001	.0001	.0018	.0003	.0036	.0291
2.000	-.02	1.58	.0624	.0231	-.0014	-.0001	-.0003	.0008	.0018	.0003	.0036	.0287
1.999	-.02	3.51	.1347	.0225	-.0073	-.0001	-.0004	.0009	.0017	.0003	.0035	.0281
1.999	-.02	5.58	.2123	.0219	-.0140	.0000	-.0003	.0009	.0017	.0003	.0034	.0274
1.999	-.02	7.63	.2864	.0215	-.0205	.0001	-.0005	.0013	.0017	.0003	.0034	.0269
2.002	-.02	9.56	.3560	.0212	-.0276	.0002	-.0009	.0011	.0017	.0004	.0033	.0266
2.001	-.02	11.64	.4279	.0213	-.0345	.0003	-.0009	.0009	.0017	.0004	.0031	.0264
1.998	-.02	13.60	.4951	.0216	-.0416	.0001	-.0010	.0013	.0016	.0004	.0029	.0265
2.002	-.02	15.62	.5640	.0217	-.0499	.0001	-.0010	.0016	.0015	.0004	.0027	.0264
1.997	-.02	17.60	.6353	.0216	-.0595	-.0001	-.0008	.0014	.0016	.0004	.0025	.0261
2.000	-.02	19.60	.7106	.0208	-.0711	-.0002	-.0011	.0014	.0016	.0004	.0023	.0250
1.998	-.02	-.46	-.0135	.0240	.0048	.0000	-.0003	.0002	.0018	.0003	.0036	.0296

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.3057	-.02	-4.53	-.1626	.0378	.0152	-.0000	-.0004	.0000	.0019	.0003	.0037	.0436
-3.0913	-.02	-2.44	-.0869	.0281	.0102	-.0000	-.0005	.0002	.0017	.0003	.0036	.0338
-1.9254	-.02	-1.42	-.0490	.0255	.0073	.0002	-.0003	.0002	.0017	.0003	.0036	.0311
-.5603	-.02	-.45	-.0135	.0240	.0045	.0000	-.0003	.0005	.0018	.0003	.0036	.0297
.9298	-.02	.52	.0220	.0237	.0017	.0000	-.0001	.0001	.0018	.0003	.0036	.0293
2.4798	-.02	1.58	.0615	.0248	-.0014	-.0001	-.0003	.0008	.0018	.0003	.0036	.0304
4.3404	-.02	3.51	.1327	.0306	-.0073	-.0001	-.0003	.0009	.0017	.0003	.0037	.0363
4.9466	-.02	5.58	.2085	.0421	-.0140	-.0000	-.0003	.0009	.0017	.0003	.0037	.0479
4.7728	-.02	7.63	.2801	.0587	-.0205	-.0000	-.0005	.0013	.0017	.0003	.0040	.0647
4.3775	-.02	9.56	.3464	.0791	-.0276	.0001	-.0009	.0011	.0017	.0004	.0042	.0853
3.9089	-.02	11.64	.4135	.1058	-.0345	.0001	-.0010	.0009	.0017	.0004	.0044	.1122
3.4998	-.02	13.60	.4748	.1357	-.0416	-.0001	-.0010	.0013	.0016	.0004	.0046	.1422
3.1420	-.02	15.62	.5358	.1705	-.0499	-.0002	-.0010	.0016	.0015	.0004	.0048	.1772
2.8444	-.02	17.60	.5975	.2101	-.0595	-.0004	-.0008	.0014	.0015	.0004	.0050	.2170
2.5924	-.02	19.60	.6609	.2549	-.0711	-.0006	-.0009	.0014	.0015	.0004	.0052	.2620
-.5510	-.02	-.46	-.0133	.0241	.0048	.0000	-.0003	.0002	.0018	.0003	.0036	.0298

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 88

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
2.006	-.02	-4.34	-.2560	.0341	.0600	.0004	-.0009	.0012	.0028	.0007	.0017	.0393
2.003	-.02	-2.37	-.1590	.0333	.0476	.0002	-.0006	.0010	.0028	.0007	.0017	.0385
2.003	-.02	-1.41	-.1140	.0331	.0414	.0004	-.0004	.0012	.0029	.0007	.0017	.0384
2.004	-.02	-.31	-.0614	.0325	.0342	.0006	-.0002	.0006	.0031	.0007	.0017	.0380
2.002	-.02	.65	-.0135	.0319	.0277	.0005	-.0003	.0013	.0031	.0007	.0017	.0374
2.000	-.02	1.68	.0373	.0311	.0209	.0003	-.0006	.0019	.0032	.0007	.0017	.0367
2.003	-.02	3.68	.1354	.0294	.0084	.0005	-.0004	.0019	.0033	.0007	.0016	.0351
2.006	-.03	5.61	.2309	.0277	-.0027	.0004	-.0007	.0026	.0034	.0007	.0017	.0334
2.003	-.02	7.65	.3294	.0259	-.0141	.0002	-.0008	.0028	.0034	.0007	.0016	.0317
2.003	-.03	9.68	.4288	.0243	-.0265	.0003	-.0008	.0038	.0036	.0007	.0016	.0301
2.003	-.03	11.65	.5239	.0227	-.0379	.0005	-.0009	.0040	.0036	.0007	.0016	.0285
2.002	-.03	13.63	.6134	.0213	-.0482	.0005	-.0011	.0045	.0035	.0008	.0015	.0270
2.004	-.03	15.69	.7046	.0201	-.0580	.0003	-.0017	.0052	.0034	.0008	.0015	.0258
2.003	-.03	17.66	.7899	.0193	-.0665	.0003	-.0025	.0065	.0033	.0009	.0015	.0250
2.002	-.03	19.67	.8713	.0187	-.0738	-.0019	-.0010	.0048	.0033	.0009	.0015	.0243
2.001	-.02	-.39	-.0637	.0325	.0344	.0003	-.0005	.0014	.0031	.0007	.0017	.0380

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.7423	-.02	-4.34	-.2524	.0532	.0600	.0005	-.0009	.0012	.0028	.0007	.0018	.0586
-3.9535	-.02	-2.37	-.1573	.0398	.0476	.0002	-.0006	.0010	.0028	.0007	.0017	.0450
-3.1515	-.02	-1.41	-.1131	.0359	.0414	.0005	-.0004	.0012	.0029	.0007	.0017	.0412
-1.8640	-.02	-.31	-.0612	.0328	.0342	.0006	-.0002	.0006	.0031	.0007	.0017	.0383
-.4389	-.02	.65	-.0139	.0317	.0277	.0005	-.0004	.0013	.0031	.0007	.0017	.0373
1.1264	-.02	1.68	.0362	.0322	.0209	.0002	-.0006	.0019	.0032	.0007	.0017	.0378
3.5043	-.02	3.68	.1330	.0380	.0084	.0004	-.0004	.0019	.0033	.0007	.0018	.0437
4.5498	-.03	5.61	.2268	.0498	-.0027	.0003	-.0007	.0026	.0034	.0007	.0019	.0559
4.6729	-.02	7.65	.3226	.0690	-.0141	.0000	-.0008	.0028	.0034	.0007	.0021	.0752
4.3917	-.03	9.68	.4181	.0952	-.0265	.0002	-.0009	.0038	.0035	.0007	.0023	.1018
4.0004	-.03	11.65	.5079	.1270	-.0379	.0003	-.0009	.0040	.0035	.0007	.0026	.1338
3.6050	-.03	13.63	.5903	.1638	-.0482	.0002	-.0012	.0045	.0034	.0007	.0030	.1708
3.2311	-.03	15.69	.6721	.2080	-.0580	-.0002	-.0018	.0052	.0033	.0008	.0033	.2154
2.9176	-.03	17.66	.7459	.2557	-.0665	-.0004	-.0025	.0065	.0032	.0009	.0037	.2634
2.6390	-.03	19.67	.8132	.3082	-.0738	-.0022	-.0003	.0048	.0031	.0008	.0041	.3162
-1.9249	-.02	-.39	-.0635	.0330	.0344	.0003	-.0005	.0014	.0031	.0007	.0017	.0385

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 89

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.000	-.02	-4.41	-.2251	.0323	.0464	.0001	-.0011	.0018	.0028	.0005	.0022	.0379
2.000	-.02	-2.35	-.1352	.0314	.0368	.0003	-.0008	.0015	.0029	.0005	.0022	.0370
2.000	-.02	-1.38	-.0929	.0310	.0320	.0004	-.0007	.0017	.0029	.0005	.0022	.0367
2.001	-.02	-.31	-.0468	.0306	.0268	.0000	-.0007	.0016	.0030	.0005	.0022	.0363
2.001	-.02	.72	-.0023	.0299	.0219	.0002	-.0008	.0017	.0030	.0005	.0022	.0357
2.001	-.02	1.64	.0380	.0293	.0174	.0001	-.0008	.0018	.0031	.0005	.0022	.0351
2.002	-.02	3.57	.1247	.0279	.0081	.0003	-.0007	.0016	.0031	.0005	.0022	.0337
2.001	-.02	5.64	.2148	.0264	-.0013	.0000	-.0007	.0021	.0032	.0005	.0022	.0323
2.002	-.02	7.68	.3049	.0247	-.0111	.0002	-.0010	.0025	.0032	.0006	.0021	.0305
2.003	-.02	9.70	.3903	.0233	-.0208	.0000	-.0008	.0019	.0031	.0006	.0020	.0291
2.003	-.02	11.64	.4718	.0224	-.0307	.0004	-.0009	.0027	.0031	.0006	.0019	.0281
2.000	-.02	13.67	.5548	.0214	-.0404	.0004	-.0016	.0029	.0030	.0007	.0018	.0269
2.000	-.02	15.67	.6314	.0207	-.0482	.0003	-.0014	.0036	.0029	.0007	.0017	.0260
2.000	-.02	17.65	.7088	.0203	-.0573	.0006	-.0019	.0040	.0028	.0007	.0016	.0254
2.002	-.02	19.66	.7919	.0190	-.0689	.0007	-.0025	.0045	.0028	.0007	.0016	.0241
2.001	-.02	-.33	-.0476	.0305	.0268	.0004	-.0004	.0012	.0030	.0005	.0022	.0363

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.4881	-.02	-4.41	-.2216	.0494	.0464	.0002	-.0011	.0018	.0028	.0005	.0024	.0550
-3.6279	-.02	-2.35	-.1336	.0368	.0368	.0004	-.0008	.0015	.0029	.0005	.0023	.0425
-2.7682	-.02	-1.38	-.0920	.0332	.0320	.0004	-.0007	.0017	.0029	.0005	.0023	.0389
-1.5133	-.02	-.31	-.0467	.0308	.0268	.0000	-.0007	.0016	.0030	.0005	.0022	.0366
-.0917	-.02	.72	-.0027	.0299	.0219	.0002	-.0008	.0017	.0030	.0005	.0022	.0357
1.2193	-.02	1.64	.0370	.0303	.0174	.0001	-.0009	.0018	.0031	.0005	.0022	.0362
3.4540	-.02	3.57	.1224	.0354	.0081	.0003	-.0007	.0016	.0031	.0005	.0023	.0414
4.4771	-.02	5.64	.2107	.0471	-.0013	-.0000	-.0007	.0021	.0032	.0005	.0025	.0532
4.6138	-.02	7.68	.2983	.0646	-.0111	.0001	-.0010	.0025	.0031	.0005	.0027	.0710
4.3236	-.02	9.70	.3801	.0879	-.0208	-.0001	-.0008	.0019	.0031	.0006	.0029	.0945
3.9400	-.02	11.64	.4568	.1159	-.0307	.0002	-.0010	.0027	.0031	.0006	.0031	.1227
3.5479	-.02	13.67	.5332	.1503	-.0404	.0000	-.0017	.0029	.0029	.0006	.0034	.1572
3.1910	-.02	15.67	.6014	.1885	-.0482	-.0000	-.0014	.0036	.0028	.0007	.0037	.1956
2.8829	-.02	17.65	.6682	.2318	-.0573	.0000	-.0020	.0040	.0027	.0007	.0040	.2391
2.6224	-.02	19.66	.7383	.2815	-.0689	-.0002	-.0026	.0045	.0026	.0007	.0043	.2891
-1.5397	-.02	-.33	-.0474	.0308	.0268	.0004	-.0004	.0012	.0030	.0005	.0022	.0366

APPENDIX A

TABLE AIII.- Continued

IJPWT PROJECT 1424			RUN 90			MACH 2.00						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	-.02	-4.57	-.2097	.0304	.0371	.0005	-.0000	.0001	.0024	.0004	.0029	.0361
2.001	-.02	-2.56	-.1287	.0295	.0300	.0006	-.0001	.0006	.0023	.0004	.0029	.0352
2.000	-.02	-1.51	-.0858	.0292	.0259	.0007	.0001	.0002	.0024	.0004	.0029	.0349
1.999	-.02	-.58	-.0502	.0288	.0225	.0005	-.0000	.0003	.0024	.0004	.0029	.0345
2.000	-.02	.39	-.0106	.0282	.0190	.0005	.0001	.0003	.0024	.0004	.0029	.0340
2.003	-.02	1.39	.0289	.0275	.0153	.0006	.0002	.0004	.0024	.0004	.0029	.0332
2.000	-.02	3.41	.1107	.0263	.0078	.0003	.0001	.0003	.0024	.0004	.0029	.0320
1.999	-.02	5.47	.1938	.0249	.0002	.0002	-.0000	.0006	.0024	.0004	.0029	.0306
2.003	-.02	7.39	.2696	.0239	-.0071	.0005	-.0005	.0007	.0024	.0004	.0028	.0296
1.993	-.02	9.46	.3503	.0228	-.0154	.0004	-.0007	.0010	.0024	.0005	.0027	.0284
2.002	-.02	11.45	.4239	.0219	-.0233	.0005	-.0008	.0011	.0024	.0005	.0025	.0274
2.003	-.02	13.48	.4978	.0215	-.0311	.0004	-.0009	.0011	.0023	.0005	.0024	.0268
1.999	-.02	15.40	.5675	.0211	-.0397	.0001	-.0011	.0015	.0022	.0005	.0022	.0261
2.002	-.02	17.51	.6447	.0205	-.0495	.0003	-.0011	.0016	.0022	.0005	.0021	.0252
2.001	-.02	19.39	.7164	.0194	-.0598	.0003	-.0017	.0021	.0021	.0005	.0019	.0240
1.999	-.02	-.63	-.0510	.0288	.0231	.0004	-.0001	.0002	.0024	.0004	.0029	.0345
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.4052	-.02	-4.57	-.2061	.0468	.0371	.0005	.0000	.0001	.0024	.0004	.0031	.0526
-3.6094	-.02	-2.56	-.1270	.0352	.0300	.0006	-.0000	.0006	.0023	.0004	.0029	.0409
-2.7000	-.02	-1.51	-.0849	.0314	.0259	.0007	.0001	.0002	.0024	.0004	.0029	.0371
-1.7008	-.02	-.58	-.0499	.0293	.0225	.0005	-.0000	.0003	.0024	.0004	.0029	.0351
-.3854	-.02	.39	-.0109	.0282	.0190	.0005	.0001	.0003	.0024	.0004	.0029	.0339
.9975	-.02	1.39	.0281	.0282	.0153	.0006	.0002	.0004	.0024	.0004	.0029	.0339
3.3224	-.02	3.41	.1086	.0327	.0078	.0003	.0001	.0003	.0024	.0004	.0030	.0385
4.4214	-.02	5.47	.1900	.0430	.0002	.0002	-.0000	.0006	.0024	.0004	.0032	.0489
4.5559	-.02	7.39	.2636	.0578	-.0071	.0005	-.0006	.0007	.0024	.0004	.0033	.0640
4.3036	-.02	9.46	.3409	.0792	-.0154	.0003	-.0008	.0010	.0024	.0005	.0035	.0856
3.9283	-.02	11.45	.4101	.1044	-.0233	.0003	-.0009	.0011	.0023	.0005	.0037	.1110
3.5327	-.02	13.48	.4779	.1353	-.0311	.0002	-.0009	.0011	.0023	.0005	.0040	.1420
3.1973	-.02	15.40	.5404	.1690	-.0397	-.0002	-.0010	.0015	.0021	.0005	.0042	.1759
2.8796	-.02	17.51	.6074	.2109	-.0495	-.0000	-.0011	.0016	.0021	.0005	.0045	.2180
2.6390	-.02	19.39	.6680	.2531	-.0598	-.0003	-.0018	.0021	.0020	.0005	.0048	.2604
-1.7261	-.02	-.63	-.0506	.0293	.0231	.0004	-.0001	.0002	.0024	.0004	.0029	.0351

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 91

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.999	-.02	-4.41	-.1860	.0292	.0291	.0001	-.0008	.0004	.0021	.0003	.0035	.0351
2.002	-.02	-2.47	-.1138	.0283	.0241	-.0000	-.0008	.0006	.0019	.0003	.0035	.0341
1.997	-.02	-1.36	-.0723	.0276	.0213	.0002	-.0006	.0005	.0020	.0003	.0036	.0336
2.000	-.02	-.40	-.0366	.0273	.0187	.0001	-.0005	.0009	.0020	.0003	.0036	.0331
2.000	-.02	.53	-.0021	.0266	.0158	.0002	-.0005	.0007	.0020	.0003	.0036	.0324
2.000	-.02	1.61	.0383	.0260	.0127	.0003	-.0005	.0009	.0020	.0003	.0036	.0319
2.000	-.02	3.56	.1115	.0250	.0068	.0001	-.0005	.0009	.0019	.0003	.0035	.0308
2.002	-.02	5.63	.1892	.0239	.0002	.0002	-.0006	.0012	.0019	.0003	.0034	.0295
2.001	-.02	7.53	.2596	.0228	-.0062	.0004	-.0007	.0012	.0019	.0003	.0034	.0284
1.998	-.02	9.59	.3330	.0219	-.0138	.0004	-.0012	.0010	.0019	.0004	.0033	.0275
2.002	-.02	11.61	.4033	.0210	-.0209	.0005	-.0013	.0012	.0019	.0004	.0031	.0264
2.002	-.02	13.63	.4712	.0207	-.0283	.0003	-.0008	.0006	.0018	.0004	.0029	.0258
2.000	-.02	15.55	.5396	.0204	-.0368	.0002	-.0009	.0013	.0017	.0004	.0027	.0252
2.000	-.02	17.59	.6110	.0198	-.0458	.0001	-.0010	.0014	.0017	.0004	.0025	.0244
2.000	-.02	19.56	.6824	.0186	-.0561	.0002	-.0011	.0012	.0017	.0004	.0023	.0231
2.001	-.02	-.41	-.0362	.0274	.0187	.0001	-.0005	.0005	.0020	.0003	.0036	.0332

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.2286	-.02	-4.41	-.1826	.0432	.0291	.0002	-.0008	.0004	.0021	.0003	.0037	.0492
-3.3865	-.02	-2.47	-.1121	.0331	.0241	.0000	-.0008	.0006	.0019	.0003	.0036	.0390
-2.4264	-.02	-1.36	-.0715	.0295	.0213	.0002	-.0006	.0005	.0020	.0003	.0036	.0353
-1.3205	-.02	-.40	-.0364	.0275	.0187	.0001	-.0005	.0009	.0020	.0003	.0036	.0334
-.0919	-.02	.53	-.0024	.0265	.0158	.0002	-.0005	.0007	.0020	.0003	.0036	.0324
1.3799	-.02	1.61	.0374	.0271	.0127	.0003	-.0005	.0009	.0020	.0003	.0036	.0329
3.4460	-.02	3.56	.1093	.0317	.0068	.0001	-.0005	.0009	.0019	.0003	.0037	.0376
4.4130	-.02	5.63	.1853	.0420	.0002	.0001	-.0007	.0012	.0019	.0003	.0037	.0480
4.5236	-.02	7.53	.2535	.0560	-.0062	.0004	-.0007	.0012	.0019	.0003	.0039	.0622
4.2494	-.02	9.59	.3236	.0762	-.0138	.0002	-.0013	.0010	.0019	.0004	.0042	.0826
3.8792	-.02	11.61	.3895	.1004	-.0209	.0002	-.0014	.0012	.0018	.0004	.0044	.1070
3.4886	-.02	13.63	.4516	.1295	-.0283	.0001	-.0009	.0006	.0017	.0004	.0046	.1362
3.1626	-.02	15.55	.5129	.1622	-.0368	-.0000	-.0010	.0013	.0016	.0004	.0048	.1690
2.8606	-.02	17.59	.5749	.2010	-.0458	-.0003	-.0010	.0014	.0016	.0004	.0050	.2080
2.6152	-.02	19.56	.6352	.2429	-.0561	-.0002	-.0011	.0012	.0016	.0004	.0052	.2501
-1.3022	-.02	-.41	-.0360	.0276	.0187	.0001	-.0005	.0005	.0020	.0003	.0036	.0335

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 92

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAI	CA UNC
2.001	-.02	-4.35	-.1553	.0314	.0005	-.0003	-.0001	-.0005	.0028	.0007	.0017	.0366
1.998	-.02	-2.40	-.0591	.0324	-.0119	-.0003	-.0001	.0001	.0029	.0007	.0017	.0377
1.998	-.02	-1.37	-.0094	.0330	-.0187	-.0005	-.0001	-.0004	.0030	.0007	.0017	.0383
1.997	-.02	-.40	.0379	.0332	-.0254	-.0003	.0001	-.0000	.0031	.0007	.0017	.0387
2.001	-.02	.69	.0921	.0335	-.0328	-.0006	-.0002	.0007	.0031	.0007	.0017	.0390
2.000	-.02	1.60	.1376	.0335	-.0391	-.0004	-.0001	.0008	.0032	.0007	.0017	.0391
1.999	-.02	3.60	.2352	.0335	-.0516	-.0005	.0000	.0008	.0033	.0007	.0016	.0391
1.997	-.02	5.62	.3353	.0334	-.0634	-.0006	-.0001	.0012	.0034	.0007	.0017	.0391
1.998	-.02	7.66	.4355	.0336	-.0747	-.0007	-.0003	.0014	.0034	.0007	.0016	.0393
2.002	-.02	9.63	.5322	.0342	-.0861	-.0003	-.0006	.0024	.0035	.0007	.0016	.0400
1.999	-.02	11.59	.6248	.0347	-.0971	-.0002	-.0005	.0021	.0035	.0007	.0016	.0405
2.001	-.03	13.57	.7169	.0350	-.1077	-.0001	-.0007	.0027	.0036	.0007	.0015	.0409
1.998	-.02	15.61	.8106	.0357	-.1171	-.0006	-.0011	.0033	.0038	.0008	.0015	.0418
1.998	-.03	17.62	.9000	.0363	-.1267	-.0008	-.0015	.0045	.0039	.0009	.0015	.0425
2.002	-.02	19.64	.9926	.0372	-.1383	-.0005	-.0025	.0052	.0038	.0009	.0015	.0434
1.997	-.02	-.37	.0409	.0333	-.0256	-.0002	.0000	.0002	.0031	.0007	.0017	.0388

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.5457	-.02	-4.35	-.1522	.0429	.0005	-.0003	-.0001	-.0005	.0028	.0007	.0018	.0482
-1.6554	-.02	-2.40	-.0575	.0348	-.0119	-.0003	-.0001	.0001	.0029	.0007	.0017	.0401
-.2576	-.02	-1.37	-.0085	.0332	-.0187	-.0005	-.0001	-.0004	.0030	.0007	.0017	.0386
1.1591	-.02	-.40	.0382	.0329	-.0254	-.0003	.0001	-.0000	.0031	.0007	.0017	.0384
2.6508	-.02	.69	.0917	.0346	-.0328	-.0006	-.0002	.0007	.0031	.0007	.0017	.0401
3.6535	-.02	1.60	.1365	.0374	-.0391	-.0004	-.0001	.0008	.0032	.0007	.0017	.0429
4.8338	-.02	3.60	.2324	.0481	-.0516	-.0005	.0001	.0008	.0033	.0007	.0017	.0538
5.0160	-.02	5.62	.3301	.0658	-.0634	-.0006	-.0000	.0012	.0033	.0007	.0019	.0718
4.6977	-.02	7.66	.4267	.0908	-.0747	-.0008	-.0002	.0014	.0034	.0007	.0021	.0970
4.2497	-.02	9.63	.5184	.1220	-.0861	-.0004	-.0005	.0024	.0035	.0007	.0023	.1285
3.8141	-.02	11.59	.6045	.1585	-.0971	-.0003	-.0005	.0021	.0034	.0007	.0026	.1652
3.4266	-.03	13.57	.6880	.2008	-.1077	-.0003	-.0006	.0027	.0035	.0007	.0030	.2080
3.0730	-.02	15.61	.7703	.2507	-.1171	-.0009	-.0009	.0033	.0037	.0008	.0033	.2584
2.7758	-.03	17.62	.8459	.3047	-.1267	-.0012	-.0012	.0045	.0037	.0009	.0037	.3130
2.5172	-.02	19.64	.9214	.3660	-.1383	-.0013	-.0022	.0052	.0036	.0008	.0041	.3745
1.2449	-.02	-.37	.0411	.0330	-.0256	-.0002	.0000	.0002	.0031	.0007	.0017	.0385

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 93

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.002	-.02	-4.30	-.1412	.0297	-.0008	-.0003	-.0006	.0010	.0028	.0005	.0022	.0352
1.999	-.02	-2.31	-.0536	.0305	-.0102	-.0003	-.0005	.0012	.0028	.0005	.0022	.0360
2.003	-.02	-1.37	-.0138	.0306	-.0146	-.0003	-.0004	.0011	.0028	.0005	.0022	.0364
2.005	-.02	-.38	.0295	.0310	-.0194	-.0005	-.0003	.0009	.0029	.0005	.0022	.0367
2.003	-.02	.59	.0714	.0313	-.0244	-.0005	-.0003	.0007	.0029	.0005	.0022	.0369
2.003	-.02	1.69	.1196	.0313	-.0299	-.0007	-.0005	.0009	.0029	.0005	.0022	.0369
2.002	-.02	3.61	.2068	.0314	-.0392	-.0003	-.0001	.0007	.0029	.0005	.0022	.0371
2.001	-.02	5.77	.3004	.0315	-.0494	-.0005	-.0003	.0011	.0029	.0005	.0022	.0372
1.999	-.02	7.75	.3859	.0317	-.0587	-.0004	-.0006	.0022	.0029	.0006	.0021	.0373
2.005	-.02	9.66	.4662	.0323	-.0676	-.0004	-.0005	.0019	.0029	.0006	.0020	.0379
2.004	-.02	11.65	.5509	.0331	-.0775	-.0004	-.0001	.0017	.0029	.0006	.0019	.0386
2.001	-.02	13.68	.6319	.0341	-.0872	-.0003	-.0004	.0020	.0030	.0007	.0018	.0395
2.000	-.03	15.68	.7122	.0353	-.0958	-.0006	-.0009	.0034	.0031	.0007	.0017	.0408
2.004	-.02	17.66	.7942	.0363	-.1066	-.0005	-.0016	.0039	.0030	.0007	.0016	.0417
2.005	-.03	19.71	.8841	.0368	-.1203	-.0004	-.0013	.0045	.0029	.0007	.0016	.0419
2.002	-.02	-.34	.0312	.0311	-.0198	-.0004	-.0002	.0007	.0029	.0005	.0022	.0367

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.4523	-.02	-4.30	-.1383	.0400	-.0008	-.0003	-.0007	.0010	.0027	.0005	.0024	.0457
-1.6017	-.02	-2.31	-.0522	.0326	-.0102	-.0003	-.0005	.0012	.0028	.0005	.0023	.0381
-.4176	-.02	-1.37	-.0130	.0311	-.0146	-.0003	-.0004	.0011	.0028	.0005	.0022	.0367
.9643	-.02	-.38	.0297	.0308	-.0194	-.0005	-.0003	.0009	.0029	.0005	.0022	.0365
2.2208	-.02	.59	.0710	.0320	-.0244	-.0005	-.0003	.0007	.0029	.0005	.0022	.0376
3.4088	-.02	1.69	.1185	.0348	-.0299	-.0007	-.0004	.0009	.0029	.0005	.0022	.0404
4.6109	-.02	3.61	.2042	.0443	-.0392	-.0003	-.0001	.0007	.0029	.0005	.0023	.0501
4.8233	-.02	5.77	.2953	.0612	-.0494	-.0006	-.0002	.0011	.0029	.0005	.0025	.0672
4.5519	-.02	7.75	.3775	.0829	-.0587	-.0005	-.0006	.0022	.0029	.0005	.0027	.0890
4.1528	-.02	9.66	.4534	.1092	-.0676	-.0005	-.0004	.0019	.0029	.0006	.0029	.1155
3.7335	-.02	11.65	.5320	.1425	-.0775	-.0004	-.0000	.0017	.0029	.0006	.0031	.1491
3.3443	-.02	13.68	.6050	.1809	-.0872	-.0004	-.0003	.0020	.0029	.0006	.0034	.1878
3.0091	-.03	15.68	.6752	.2244	-.0958	-.0008	-.0007	.0034	.0030	.0007	.0037	.2317
2.7276	-.02	17.66	.7448	.2731	-.1066	-.0009	-.0014	.0039	.0029	.0007	.0040	.2806
2.4816	-.03	19.71	.8188	.3299	-.1203	-.0008	-.0011	.0045	.0027	.0007	.0043	.3377
1.0162	-.02	-.34	.0314	.0309	-.0198	-.0004	-.0002	.0007	.0029	.0005	.0022	.0366

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUIN 94			MACH 2.00			BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW				
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC	
2.008	-.02	-4.56	-.1455	.0277	-.0000	.0001	-.0001	-.0002	.0021	.0004	.0029	.0332	
2.004	-.02	-2.52	-.0613	.0285	-.0079	-.0002	-.0000	.0002	.0021	.0004	.0029	.0339	
2.002	-.02	-1.60	-.0245	.0289	-.0114	.0001	.0000	.0001	.0021	.0004	.0029	.0343	
2.004	-.02	-.51	.0194	.0292	-.0154	-.0001	.0002	.0000	.0021	.0004	.0029	.0346	
2.001	-.02	.44	.0560	.0294	-.0194	-.0000	.0003	-.0001	.0021	.0004	.0029	.0348	
2.003	-.02	1.52	.1003	.0294	-.0237	-.0000	.0003	.0001	.0022	.0004	.0029	.0348	
2.004	-.02	3.41	.1791	.0296	-.0312	-.0001	.0005	-.0001	.0022	.0004	.0029	.0350	
2.004	-.02	5.50	.2629	.0299	-.0393	-.0002	.0001	.0006	.0022	.0004	.0029	.0354	
2.004	-.02	7.43	.3387	.0303	-.0466	-.0002	-.0001	.0009	.0022	.0004	.0028	.0357	
2.002	-.02	9.50	.4198	.0310	-.0549	-.0001	.0001	.0006	.0022	.0005	.0027	.0364	
2.005	-.02	11.46	.4922	.0320	-.0620	-.0002	.0003	.0009	.0023	.0005	.0025	.0373	
2.002	-.02	13.43	.5645	.0332	-.0697	-.0006	-.0000	.0012	.0023	.0005	.0024	.0384	
2.006	-.02	15.50	.6397	.0344	-.0788	-.0007	-.0006	.0017	.0022	.0005	.0022	.0394	
2.003	-.02	17.45	.7150	.0353	-.0893	-.0006	-.0008	.0023	.0022	.0005	.0021	.0400	
2.003	-.02	19.39	.7938	.0359	-.1025	-.0005	-.0017	.0029	.0022	.0005	.0019	.0405	
2.002	-.02	-.56	.0169	.0293	-.0153	.0001	.0002	-.0002	.0022	.0004	.0029	.0347	

STABILITY AXIS			DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW									
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.6493	-.02	-4.56	-.1424	.0390	-.0000	.0001	-.0001	-.0002	.0021	.0004	.0031	.0446
-1.9203	-.02	-2.52	-.0597	.0311	-.0079	-.0002	-.0000	.0002	.0021	.0004	.0029	.0365
-.7948	-.02	-1.60	-.0235	.0296	-.0114	.0001	.0000	.0001	.0021	.0004	.0029	.0350
.6776	-.02	-.51	.0197	.0290	-.0154	-.0001	.0002	.0000	.0021	.0004	.0029	.0345
1.8692	-.02	.44	.0557	.0298	-.0194	-.0000	.0003	-.0001	.0021	.0004	.0029	.0352
3.1038	-.02	1.52	.0993	.0320	-.0237	.0000	.0003	.0001	.0022	.0004	.0029	.0375
4.4091	-.02	3.41	.1766	.0401	-.0312	-.0001	.0005	-.0001	.0022	.0004	.0030	.0456
4.7241	-.02	5.50	.2583	.0547	-.0393	-.0002	.0001	.0006	.0022	.0004	.0032	.0604
4.5220	-.02	7.43	.3312	.0732	-.0466	-.0002	-.0001	.0009	.0022	.0004	.0033	.0792
4.1226	-.02	9.50	.4080	.0990	-.0549	-.0001	.0001	.0006	.0022	.0005	.0035	.1051
3.7151	-.02	11.46	.4750	.1279	-.0620	-.0001	.0003	.0009	.0022	.0005	.0037	.1343
3.3391	-.02	13.43	.5402	.1618	-.0697	-.0006	.0001	.0012	.0022	.0005	.0040	.1685
3.0004	-.02	15.50	.6060	.2020	-.0788	-.0008	-.0004	.0017	.0021	.0005	.0043	.2088
2.7293	-.02	17.45	.6703	.2456	-.0893	-.0008	-.0006	.0023	.0021	.0005	.0045	.2526
2.4988	-.02	19.39	.7356	.2944	-.1025	-.0010	-.0014	.0029	.0021	.0005	.0048	.3017
.5936	-.02	-.56	.0173	.0291	-.0153	.0001	.0002	-.0002	.0022	.0004	.0029	.0346

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 95

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAT	CA UNC
2.002	-.02	-4.41	-.1287	.0269	-.0032	-.0002	-.0005	-.0001	.0018	.0003	.0035	.0325
2.000	-.02	-2.40	-.0532	.0273	-.0090	-.0003	-.0006	.0004	.0017	.0003	.0035	.0328
1.999	-.02	-1.42	-.0162	.0276	-.0117	-.0001	-.0005	.0007	.0017	.0003	.0036	.0332
1.998	-.02	-.41	.0216	.0278	-.0147	-.0002	-.0004	.0004	.0017	.0003	.0036	.0334
1.997	-.02	.64	.0608	.0278	-.0181	-.0001	-.0003	.0008	.0017	.0003	.0036	.0334
1.999	-.02	1.60	.0977	.0279	-.0210	-.0002	-.0001	.0004	.0017	.0003	.0036	.0335
1.999	-.02	3.63	.1754	.0282	-.0278	-.0002	-.0002	.0010	.0017	.0003	.0035	.0337
1.996	-.02	5.55	.2464	.0285	-.0338	-.0002	-.0002	.0009	.0017	.0003	.0034	.0340
1.998	-.02	7.63	.3229	.0291	-.0409	-.0001	-.0002	.0009	.0017	.0003	.0034	.0345
1.999	-.02	9.55	.3915	.0297	-.0479	-.0000	-.0003	.0006	.0017	.0004	.0033	.0351
1.998	-.02	11.60	.4633	.0306	-.0553	-.0001	-.0002	.0011	.0017	.0004	.0031	.0358
2.001	-.02	13.64	.5335	.0320	-.0632	-.0005	-.0002	.0011	.0017	.0004	.0029	.0371
1.996	-.02	15.56	.6015	.0330	-.0716	-.0004	-.0003	.0012	.0016	.0004	.0027	.0378
1.998	-.02	17.58	.6760	.0340	-.0827	-.0005	-.0005	.0013	.0017	.0004	.0025	.0386
1.999	-.02	19.56	.7523	.0344	-.0956	-.0006	-.0008	.0018	.0017	.0004	.0023	.0388
2.001	-.02	-.39	.0239	.0279	-.0150	-.0001	-.0003	.0002	.0017	.0003	.0036	.0335

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-3.4435	-.02	-4.41	-.1257	.0365	-.0032	-.0002	-.0005	-.0001	.0018	.0003	.0037	.0423
-1.7544	-.02	-2.40	-.0517	.0295	-.0090	-.0003	-.0006	.0004	.0017	.0003	.0036	.0350
-.5465	-.02	-1.42	-.0153	.0280	-.0117	-.0001	-.0005	.0007	.0017	.0003	.0036	.0336
.7896	-.02	-.41	.0218	.0277	-.0147	-.0002	-.0004	.0004	.0017	.0003	.0036	.0333
2.1204	-.02	.64	.0604	.0285	-.0181	-.0001	-.0003	.0008	.0017	.0003	.0036	.0340
3.1608	-.02	1.60	.0967	.0306	-.0210	-.0002	-.0001	.0004	.0017	.0003	.0036	.0362
4.4198	-.02	3.63	.1728	.0391	-.0278	-.0002	-.0002	.0010	.0017	.0003	.0037	.0447
4.6592	-.02	5.55	.2418	.0519	-.0338	-.0002	-.0001	.0009	.0017	.0003	.0037	.0576
4.4367	-.02	7.63	.3153	.0711	-.0409	-.0002	-.0002	.0009	.0017	.0003	.0040	.0770
4.0709	-.02	9.55	.3800	.0933	-.0479	-.0001	-.0003	.0006	.0017	.0004	.0042	.0996
3.6642	-.02	11.60	.4465	.1218	-.0553	-.0002	-.0002	.0011	.0017	.0004	.0044	.1283
3.2843	-.02	13.64	.5096	.1552	-.0632	-.0006	-.0000	.0011	.0017	.0004	.0046	.1618
2.9807	-.02	15.56	.5692	.1909	-.0716	-.0005	-.0002	.0012	.0016	.0004	.0048	.1977
2.7039	-.02	17.58	.6326	.2340	-.0827	-.0007	-.0003	.0013	.0016	.0004	.0050	.2410
2.4747	-.02	19.56	.6958	.2812	-.0956	-.0009	-.0006	.0018	.0016	.0004	.0052	.2884
.8694	-.02	-.39	.0241	.0277	-.0150	-.0001	-.0003	.0002	.0017	.0003	.0036	.0333

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 96

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.997	-.02	-4.31	-.0994	.0459	-.0281	-.0000	-.0008	.0004	.0029	.0007	.0017	.0512
2.002	-.02	-2.42	-.0080	.0469	-.0395	-.0001	-.0007	.0005	.0030	.0007	.0017	.0523
2.003	-.02	-1.31	.0476	.0480	-.0472	-.0001	-.0009	.0008	.0030	.0007	.0017	.0534
2.006	-.02	-.34	.0948	.0466	-.0536	.0002	-.0008	.0011	.0031	.0007	.0017	.0541
2.003	-.02	.61	.1419	.0492	-.0601	-.0001	-.0009	.0013	.0031	.0007	.0017	.0547
2.003	-.02	1.62	.1920	.0497	-.0669	.0000	-.0008	.0012	.0032	.0007	.0017	.0552
2.002	-.02	3.66	.2942	.0509	-.0804	-.0001	-.0007	.0017	.0033	.0007	.0016	.0565
2.004	-.02	5.61	.3911	.0516	-.0923	-.0003	-.0007	.0018	.0034	.0007	.0017	.0574
2.004	-.02	7.68	.4951	.0531	-.1045	-.0002	-.0004	.0018	.0035	.0007	.0016	.0589
2.001	-.03	9.57	.5878	.0544	-.1151	-.0001	-.0004	.0025	.0036	.0007	.0016	.0603
2.002	-.03	11.60	.6862	.0559	-.1261	-.0001	-.0009	.0035	.0037	.0007	.0016	.0619
2.005	-.02	13.59	.7833	.0570	-.1370	.0000	-.0009	.0026	.0038	.0007	.0015	.0632
2.002	-.03	15.63	.8764	.0585	-.1472	-.0003	-.0004	.0024	.0040	.0008	.0015	.0649
1.999	-.03	17.63	.9724	.0602	-.1574	-.0003	-.0015	.0042	.0042	.0009	.0015	.0667
2.000	-.03	19.62	1.0667	.0616	-.1693	-.0002	-.0019	.0047	.0041	.0009	.0015	.0681
2.001	-.02	-.36	.0949	.0485	-.0536	-.0003	-.0011	.0017	.0031	.0007	.0017	.0540

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.7979	-.02	-4.31	-.0954	.0531	-.0281	.0001	-.0006	.0004	.0029	.0007	.0018	.0585
-.1240	-.02	-2.42	-.0058	.0471	-.0395	-.0001	-.0007	.0005	.0030	.0007	.0017	.0526
1.0384	-.02	-1.31	.0487	.0469	-.0472	-.0000	-.0009	.0008	.0030	.0007	.0017	.0523
1.9790	-.02	-.34	.0951	.0480	-.0536	.0002	-.0008	.0011	.0031	.0007	.0017	.0535
2.7878	-.02	.61	.1413	.0507	-.0601	-.0001	-.0009	.0013	.0031	.0007	.0017	.0562
3.4572	-.02	1.62	.1904	.0551	-.0669	-.0000	-.0008	.0012	.0032	.0007	.0017	.0607
4.1787	-.02	3.66	.2902	.0694	-.0804	-.0001	-.0007	.0017	.0033	.0007	.0018	.0752
4.2999	-.02	5.61	.3839	.0893	-.0923	-.0003	-.0007	.0018	.0034	.0007	.0019	.0953
4.0861	-.02	7.68	.4832	.1183	-.1045	-.0002	-.0004	.0018	.0035	.0007	.0021	.1245
3.7859	-.03	9.57	.5701	.1506	-.1151	-.0002	-.0004	.0025	.0036	.0007	.0023	.1571
3.4451	-.03	11.60	.6603	.1917	-.1261	-.0003	-.0009	.0035	.0036	.0007	.0026	.1986
3.1386	-.02	13.59	.7473	.2381	-.1370	-.0002	-.0009	.0026	.0037	.0007	.0030	.2455
2.8480	-.03	15.63	.8274	.2905	-.1472	-.0004	-.0003	.0024	.0039	.0008	.0033	.2985
2.5963	-.03	17.63	.9076	.3496	-.1574	-.0008	-.0014	.0042	.0040	.0009	.0037	.3581
2.3778	-.03	19.62	.9832	.4135	-.1693	-.0008	-.0017	.0047	.0038	.0009	.0041	.4222
1.9847	-.02	-.36	.0952	.0480	-.0536	-.0002	-.0011	.0017	.0031	.0007	.0017	.0534

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 97

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	-.02	-4.34	-.1025	.0425	-.0235	-.0003	-.0010	.0012	.0027	.0005	.0022	.0479
1.999	-.02	-2.35	-.0133	.0436	-.0326	.0001	-.0005	.0007	.0027	.0005	.0022	.0491
1.998	-.02	-1.33	.0317	.0444	-.0380	-.0001	-.0007	.0012	.0028	.0005	.0022	.0498
1.996	-.02	-.32	.0754	.0450	-.0430	-.0001	-.0007	.0013	.0028	.0005	.0022	.0505
1.995	-.02	.66	.1207	.0458	-.0486	-.0000	-.0008	.0013	.0028	.0005	.0022	.0513
2.000	-.02	1.68	.1648	.0462	-.0537	-.0002	-.0011	.0017	.0028	.0005	.0022	.0518
2.000	-.02	3.69	.2563	.0474	-.0643	.0000	-.0011	.0018	.0029	.0005	.0022	.0530
1.996	-.02	5.64	.3424	.0484	-.0742	-.0003	-.0010	.0021	.0029	.0005	.0022	.0540
2.000	-.02	7.70	.4340	.0498	-.0848	-.0001	-.0011	.0016	.0029	.0006	.0021	.0553
1.999	-.02	9.74	.5231	.0512	-.0948	.0001	-.0010	.0021	.0029	.0006	.0020	.0568
1.995	-.02	11.65	.6060	.0530	-.1052	-.0001	-.0008	.0020	.0030	.0006	.0019	.0586
1.998	-.02	13.85	.6977	.0549	-.1154	.0001	-.0008	.0021	.0031	.0007	.0018	.0606
2.001	-.02	15.68	.7731	.0567	-.1241	-.0000	-.0011	.0025	.0032	.0007	.0017	.0623
1.998	-.02	17.74	.8593	.0586	-.1354	-.0002	-.0013	.0036	.0031	.0007	.0016	.0641
1.996	-.03	19.61	.9470	.0600	-.1491	-.0002	-.0013	.0035	.0030	.0007	.0016	.0652
1.998	-.02	-.32	.0772	.0451	-.0432	.0000	-.0007	.0011	.0028	.0005	.0022	.0506

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.9748	-.02	-4.34	-.0986	.0499	-.0235	-.0002	-.0010	.0012	.0027	.0005	.0024	.0556
-.2559	-.02	-2.35	-.0113	.0441	-.0326	.0001	-.0005	.0007	.0027	.0005	.0023	.0496
.7538	-.02	-1.33	.0329	.0436	-.0380	-.0001	-.0007	.0012	.0028	.0005	.0022	.0491
1.6987	-.02	-.32	.0757	.0446	-.0430	-.0000	-.0007	.0013	.0028	.0005	.0022	.0501
2.5477	-.02	.66	.1201	.0471	-.0486	-.0000	-.0008	.0013	.0028	.0005	.0022	.0527
3.2008	-.02	1.68	.1633	.0510	-.0537	-.0003	-.0011	.0017	.0028	.0005	.0022	.0566
3.9631	-.02	3.69	.2524	.0637	-.0643	-.0001	-.0011	.0018	.0028	.0005	.0023	.0694
4.1158	-.02	5.64	.3356	.0815	-.0742	-.0004	-.0010	.0021	.0029	.0005	.0025	.0874
3.9554	-.02	7.70	.4229	.1069	-.0848	-.0003	-.0010	.0016	.0028	.0005	.0027	.1130
3.6647	-.02	9.74	.5062	.1381	-.0948	-.0001	-.0010	.0021	.0029	.0006	.0029	.1445
3.3611	-.02	11.65	.5820	.1731	-.1052	-.0002	-.0007	.0020	.0029	.0006	.0031	.1798
3.0337	-.02	13.85	.6634	.2187	-.1154	-.0001	-.0008	.0021	.0030	.0006	.0034	.2258
2.7837	-.02	15.68	.7281	.2616	-.1241	-.0003	-.0010	.0025	.0031	.0007	.0037	.2690
2.5375	-.02	17.74	.7996	.3151	-.1354	-.0005	-.0012	.0036	.0030	.0007	.0040	.3228
2.3445	-.03	19.61	.8709	.3715	-.1491	-.0006	-.0011	.0035	.0029	.0007	.0043	.3793
1.7350	-.02	-.32	.0775	.0447	-.0432	.0000	-.0007	.0011	.0028	.0005	.0022	.0502

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 98

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	-.02	-4.60	-.1110	.0390	-.0196	-.0000	-.0004	.0008	.0021	.0004	.0029	.0443
2.003	-.02	-2.54	-.0257	.0406	-.0280	.0001	-.0003	.0005	.0020	.0004	.0029	.0459
2.007	-.02	-1.60	.0128	.0414	-.0316	.0002	-.0001	.0005	.0020	.0004	.0029	.0467
2.005	-.02	-.56	.0548	.0422	-.0357	.0002	-.0002	.0007	.0020	.0004	.0029	.0475
2.002	-.02	.47	.0961	.0427	-.0400	.0002	-.0002	.0009	.0020	.0004	.0029	.0480
2.002	-.02	1.47	.1383	.0433	-.0444	-.0000	-.0003	.0010	.0020	.0004	.0029	.0486
2.006	-.02	3.43	.2209	.0446	-.0530	-.0001	-.0003	.0012	.0020	.0004	.0029	.0499
2.003	-.02	5.44	.3036	.0460	-.0616	.0000	-.0003	.0011	.0020	.0004	.0029	.0513
2.004	-.02	7.43	.3837	.0472	-.0699	.0002	-.0007	.0014	.0021	.0004	.0028	.0526
2.000	-.02	9.54	.4646	.0490	-.0783	.0000	-.0007	.0014	.0021	.0005	.0027	.0543
2.003	-.02	11.44	.5386	.0508	-.0865	.0000	-.0002	.0011	.0022	.0005	.0025	.0561
2.003	-.02	13.43	.6135	.0529	-.0948	-.0003	-.0005	.0015	.0022	.0005	.0024	.0580
2.002	-.02	15.46	.6897	.0548	-.1040	-.0005	-.0007	.0021	.0021	.0005	.0022	.0597
2.000	-.02	17.42	.7671	.0566	-.1158	-.0004	-.0010	.0024	.0022	.0005	.0021	.0613
2.004	-.02	19.43	.8517	.0581	-.1298	-.0004	-.0018	.0034	.0022	.0005	.0019	.0628
2.003	-.02	-.53	.0575	.0423	-.0360	.0002	-.0002	.0005	.0020	.0004	.0029	.0476

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	COR	CDI	CD UNC
-2.2521	-.02	-4.60	-.1071	.0476	-.0196	.0000	-.0004	.0008	.0021	.0004	.0031	.0531
-.5680	-.02	-2.54	-.0236	.0416	-.0280	.0001	-.0003	.0005	.0020	.0004	.0029	.0470
.3447	-.02	-1.60	.0141	.0410	-.0316	.0002	-.0001	.0005	.0020	.0004	.0029	.0463
1.3271	-.02	-.56	.0552	.0416	-.0357	.0002	-.0002	.0007	.0020	.0004	.0029	.0469
2.2010	-.02	.47	.0957	.0435	-.0400	.0002	-.0002	.0009	.0020	.0004	.0029	.0488
2.9239	-.02	1.47	.1370	.0468	-.0444	-.0000	-.0003	.0010	.0020	.0004	.0029	.0522
3.7772	-.02	3.43	.2175	.0576	-.0530	-.0002	-.0003	.0012	.0020	.0004	.0030	.0630
4.0038	-.02	5.44	.2974	.0743	-.0616	-.0000	-.0003	.0011	.0020	.0004	.0032	.0799
3.8961	-.02	7.43	.3736	.0959	-.0699	.0001	-.0007	.0014	.0021	.0004	.0033	.1017
3.6107	-.02	9.54	.4492	.1244	-.0783	-.0001	-.0006	.0014	.0021	.0005	.0035	.1305
3.3262	-.02	11.44	.5168	.1554	-.0865	-.0000	-.0002	.0011	.0022	.0005	.0037	.1618
3.0332	-.02	13.43	.5834	.1923	-.0948	-.0004	-.0004	.0015	.0022	.0005	.0040	.1990
2.7661	-.02	15.46	.6489	.2346	-.1040	-.0006	-.0006	.0021	.0021	.0005	.0043	.2414
2.5395	-.02	17.42	.7137	.2810	-.1158	-.0006	-.0008	.0024	.0021	.0005	.0045	.2881
2.3349	-.02	19.43	.7826	.3352	-.1298	-.0009	-.0016	.0034	.0021	.0005	.0048	.3425
1.3861	-.02	-.53	.0579	.0418	-.0360	.0002	-.0002	.0005	.0020	.0004	.0029	.0471

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 99

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	-.02	-4.43	-.0986	.0371	-.0204	-.0001	-.0007	.0004	.0017	.0003	.0035	.0426
2.004	-.02	-2.38	-.0203	.0385	-.0267	-.0000	-.0007	.0006	.0016	.0003	.0035	.0440
1.999	-.02	-1.66	.0070	.0390	-.0287	-.0001	-.0005	.0007	.0016	.0003	.0036	.0445
1.998	-.02	-1.39	.0178	.0393	-.0296	.0001	-.0004	.0004	.0016	.0003	.0036	.0447
1.998	-.02	-.48	.0527	.0396	-.0326	-.0002	-.0006	.0008	.0016	.0003	.0036	.0453
2.003	-.02	.54	.0916	.0404	-.0360	-.0002	-.0005	.0009	.0016	.0003	.0036	.0458
1.998	-.02	1.59	.1323	.0409	-.0398	-.0002	-.0005	.0012	.0016	.0003	.0036	.0464
2.003	-.02	3.58	.2086	.0424	-.0469	-.0001	-.0005	.0011	.0016	.0003	.0035	.0478
2.001	-.02	5.60	.2861	.0438	-.0546	-.0000	-.0006	.0012	.0016	.0003	.0034	.0491
2.002	-.02	7.64	.3621	.0454	-.0622	.0001	-.0008	.0014	.0015	.0003	.0034	.0506
2.001	-.02	9.54	.4323	.0471	-.0697	.0001	-.0009	.0013	.0016	.0004	.0033	.0523
1.999	-.02	11.58	.5061	.0490	-.0780	.0000	-.0006	.0010	.0016	.0004	.0031	.0541
2.003	-.02	13.57	.5770	.0513	-.0860	-.0004	-.0004	.0012	.0016	.0004	.0029	.0562
2.001	-.02	15.65	.6522	.0533	-.0960	-.0004	-.0004	.0015	.0016	.0004	.0027	.0580
1.998	-.02	17.64	.7295	.0553	-.1085	-.0003	-.0004	.0016	.0016	.0004	.0025	.0598
2.004	-.02	19.64	.8090	.0569	-.1227	-.0004	-.0010	.0020	.0017	.0004	.0023	.0613
1.998	-.02	-.48	.0536	.0399	-.0324	-.0001	-.0005	.0010	.0016	.0003	.0036	.0454

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-2.1374	-.02	-4.43	-.0949	.0444	-.0204	-.0001	-.0007	.0004	.0017	.0003	.0037	.0501
-.4696	-.02	-2.38	-.0184	.0393	-.0267	.0000	-.0007	.0006	.0016	.0003	.0036	.0448
.2142	-.02	-1.66	.0083	.0388	-.0287	-.0001	-.0005	.0007	.0016	.0003	.0036	.0442
.4863	-.02	-1.39	.0189	.0388	-.0296	.0001	-.0004	.0004	.0016	.0003	.0036	.0443
1.3472	-.02	-.48	.0531	.0394	-.0326	-.0002	-.0006	.0008	.0016	.0003	.0036	.0449
2.2094	-.02	.54	.0911	.0412	-.0360	-.0002	-.0005	.0009	.0016	.0003	.0036	.0467
2.9371	-.02	1.59	.1309	.0446	-.0398	-.0002	-.0005	.0012	.0016	.0003	.0036	.0500
3.7177	-.02	3.58	.2051	.0552	-.0469	-.0002	-.0005	.0011	.0016	.0003	.0037	.0607
3.9318	-.02	5.60	.2798	.0712	-.0546	-.0001	-.0006	.0012	.0016	.0003	.0037	.0768
3.8051	-.02	7.64	.3520	.0925	-.0622	-.0000	-.0008	.0014	.0015	.0003	.0040	.0983
3.5646	-.02	9.54	.4175	.1171	-.0697	-.0001	-.0009	.0013	.0016	.0004	.0042	.1232
3.2687	-.02	11.58	.4847	.1483	-.0780	-.0001	-.0006	.0010	.0016	.0004	.0044	.1546
2.9839	-.02	13.57	.5475	.1835	-.0860	-.0005	-.0003	.0012	.0016	.0004	.0046	.1900
2.7199	-.02	15.65	.6122	.2251	-.0960	-.0004	-.0003	.0015	.0015	.0004	.0048	.2318
2.4965	-.02	17.64	.6769	.2711	-.1085	-.0004	-.0003	.0016	.0015	.0004	.0050	.2781
2.2993	-.02	19.64	.7413	.3224	-.1227	-.0007	-.0008	.0020	.0016	.0004	.0052	.3296
1.3683	-.02	-.48	.0540	.0395	-.0324	-.0001	-.0005	.0010	.0016	.0003	.0036	.0449

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 112			MACH 1.60						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAI	CA UNC
2.002	-.02	-4.35	-.2005	.0254	.0302	.0009	-.0002	-.0004	.0028	.0007	.0017	.0306
1.997	-.02	-2.42	-.1105	.0260	.0195	.0010	.0002	-.0010	.0029	.0007	.0017	.0313
1.995	-.02	-1.45	-.0671	.0264	.0142	.0007	.0001	-.0003	.0030	.0007	.0017	.0317
1.998	-.02	-.36	-.0187	.0263	.0086	.0008	.0001	-.0000	.0031	.0007	.0017	.0318
1.992	-.02	.62	.0241	.0258	.0037	.0008	.0001	-.0001	.0032	.0007	.0017	.0314
1.991	-.02	1.58	.0679	.0252	-.0014	.0003	-.0002	.0004	.0032	.0007	.0017	.0307
1.996	-.02	3.63	.1666	.0235	-.0131	.0008	-.0001	.0006	.0033	.0007	.0016	.0291
2.000	-.02	5.55	.2525	.0226	-.0210	.0021	-.0001	.0006	.0034	.0007	.0017	.0283
2.003	-.02	7.64	.3425	.0219	-.0262	.0003	-.0002	.0011	.0034	.0007	.0016	.0276
1.994	-.02	9.57	.4278	.0215	-.0320	.0004	-.0001	.0014	.0034	.0007	.0016	.0272
1.995	-.02	11.59	.5137	.0211	-.0373	.0002	-.0003	.0017	.0033	.0007	.0016	.0267
1.991	-.02	13.63	.5990	.0205	-.0428	.0003	-.0007	.0021	.0033	.0008	.0015	.0261
1.992	-.02	15.68	.6802	.0203	-.0467	.0001	-.0011	.0028	.0034	.0008	.0015	.0260
1.997	-.02	17.64	.7595	.0203	-.0505	.0001	-.0020	.0037	.0034	.0009	.0015	.0261
2.000	-.02	19.64	.8408	.0202	-.0562	-.0001	-.0022	.0052	.0034	.0009	.0015	.0260
1.989	-.02	-.41	-.0212	.0264	.0086	.0005	-.0003	.0012	.0031	.0007	.0017	.0319

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.8955	-.02	-4.35	-.1977	.0404	.0302	.0009	-.0001	-.0004	.0028	.0007	.0018	.0457
-3.5673	-.02	-2.42	-.1091	.0306	.0195	.0010	.0003	-.0010	.0029	.0007	.0017	.0359
-2.3642	-.02	-1.45	-.0663	.0281	.0142	.0007	.0001	-.0003	.0030	.0007	.0017	.0334
-.7016	-.02	-.36	-.0186	.0265	.0086	.0008	.0001	-.0000	.0031	.0007	.0017	.0320
.9142	-.02	.62	.0238	.0261	.0037	.0008	.0001	-.0001	.0032	.0007	.0017	.0316
2.4849	-.02	1.58	.0671	.0270	-.0014	.0003	-.0002	.0004	.0032	.0007	.0017	.0326
4.8524	-.02	3.63	.1645	.0339	-.0131	.0008	-.0002	.0006	.0033	.0007	.0017	.0396
5.3390	-.02	5.55	.2488	.0466	-.0210	.0021	-.0003	.0006	.0033	.0007	.0019	.0526
5.0341	-.02	7.64	.3361	.0668	-.0262	.0003	-.0003	.0011	.0034	.0007	.0021	.0729
4.5631	-.02	9.57	.4178	.0916	-.0320	.0004	-.0001	.0014	.0034	.0007	.0023	.0979
4.0594	-.02	11.59	.4984	.1228	-.0373	.0002	-.0004	.0017	.0033	.0007	.0026	.1294
3.6121	-.02	13.63	.5765	.1596	-.0428	.0001	-.0007	.0021	.0032	.0007	.0030	.1666
3.2203	-.02	15.68	.6486	.2014	-.0467	-.0002	-.0011	.0028	.0033	.0008	.0033	.2088
2.8995	-.02	17.64	.7168	.2472	-.0505	-.0005	-.0019	.0037	.0033	.0009	.0037	.2550
2.6221	-.02	19.64	.7841	.2990	-.0562	-.0008	-.0020	.0052	.0032	.0008	.0041	.3071
-.7906	-.02	-.41	-.0210	.0266	.0086	.0005	-.0002	.0012	.0031	.0007	.0017	.0321

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 115

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.994	-.02	-4.52	-.1860	.0248	.0251	.0005	-.0003	.0009	.0029	.0005	.0022	.0304
1.988	-.02	-2.52	-.1010	.0250	.0158	.0003	-.0004	.0006	.0029	.0005	.0022	.0307
1.980	-.02	-1.51	-.0595	.0253	.0112	.0005	-.0004	.0011	.0029	.0005	.0022	.0310
1.989	-.02	-.51	-.0182	.0252	.0068	.0000	-.0004	.0010	.0030	.0005	.0022	.0310
1.991	-.02	.54	.0251	.0246	.0023	.0003	-.0003	.0009	.0030	.0005	.0022	.0304
1.980	-.02	1.51	.0665	.0240	-.0023	.0002	-.0004	.0009	.0031	.0005	.0022	.0298
1.982	-.02	3.52	.1541	.0226	-.0120	.0002	-.0002	.0007	.0031	.0005	.0022	.0284
1.987	-.02	5.55	.2360	.0217	-.0177	.0016	-.0006	.0016	.0032	.0005	.0022	.0275
1.990	-.02	7.53	.3145	.0210	-.0224	.0008	-.0007	.0014	.0032	.0005	.0021	.0268
1.985	-.02	9.52	.3907	.0206	-.0267	.0002	-.0006	.0018	.0031	.0006	.0020	.0264
1.987	-.02	11.53	.4674	.0205	-.0318	.0004	-.0006	.0020	.0031	.0006	.0020	.0262
1.997	-.02	13.52	.5413	.0203	-.0367	.0005	-.0007	.0025	.0031	.0006	.0019	.0259
2.001	-.02	15.50	.6110	.0208	-.0401	.0003	-.0012	.0025	.0031	.0007	.0017	.0263
2.004	-.02	17.51	.6820	.0209	-.0452	.0006	-.0014	.0033	.0031	.0007	.0016	.0263
1.990	-.02	19.48	.7589	.0204	-.0528	.0004	-.0020	.0037	.0030	.0007	.0016	.0256
2.005	-.02	-.51	-.0170	.0252	.0071	.0004	-.0001	.0004	.0030	.0005	.0022	.0310

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.6670	-.02	-4.52	-.1831	.0392	.0251	.0005	-.0003	.0009	.0029	.0005	.0024	.0450
-3.3872	-.02	-2.52	-.0996	.0294	.0158	.0004	-.0004	.0006	.0029	.0005	.0023	.0351
-2.1870	-.02	-1.51	-.0587	.0269	.0112	.0005	-.0004	.0011	.0029	.0005	.0023	.0326
-.7060	-.02	-.51	-.0179	.0254	.0068	.0000	-.0004	.0010	.0030	.0005	.0022	.0311
1.0007	-.02	.54	.0248	.0248	.0023	.0003	-.0003	.0009	.0030	.0005	.0022	.0306
2.5520	-.02	1.51	.0657	.0258	-.0023	.0002	-.0004	.0009	.0031	.0005	.0022	.0316
4.7721	-.02	3.52	.1522	.0319	-.0120	.0002	-.0002	.0007	.0031	.0005	.0023	.0378
5.2718	-.02	5.55	.2324	.0441	-.0177	.0016	-.0007	.0016	.0032	.0005	.0025	.0502
5.0190	-.02	7.53	.3085	.0615	-.0224	.0007	-.0008	.0014	.0031	.0005	.0026	.0678
4.5303	-.02	9.52	.3812	.0842	-.0267	.0001	-.0006	.0018	.0031	.0006	.0028	.0907
4.0334	-.02	11.53	.4531	.1123	-.0318	.0002	-.0007	.0020	.0031	.0006	.0031	.1191
3.5971	-.02	13.52	.5207	.1448	-.0367	.0003	-.0008	.0025	.0030	.0006	.0034	.1517
3.2118	-.02	15.50	.5823	.1813	-.0401	-.0000	-.0012	.0025	.0030	.0007	.0037	.1886
2.8874	-.02	17.51	.6431	.2227	-.0452	.0001	-.0015	.0033	.0029	.0007	.0040	.2303
2.6254	-.02	19.48	.7076	.2695	-.0528	-.0003	-.0020	.0037	.0028	.0007	.0043	.2773
-.6584	-.02	-.51	-.0167	.0254	.0071	.0004	-.0001	.0004	.0030	.0005	.0022	.0311

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424				RUN 116				MACH 1.80				
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.002	5.10	-4.49	-.1818	.0245	.0234	-.0024	.0123	-.0427	.0027	.0005	.0022	.0299
2.006	5.10	-2.53	-.0972	.0250	.0136	-.0042	.0117	-.0411	.0029	.0005	.0022	.0306
2.008	5.10	-1.45	-.0532	.0252	.0088	-.0056	.0110	-.0401	.0030	.0005	.0022	.0309
2.009	5.10	-.52	-.0156	.0250	.0051	-.0073	.0101	-.0394	.0030	.0005	.0022	.0307
2.007	5.10	.53	.0246	.0245	.0010	-.0087	.0090	-.0383	.0030	.0005	.0022	.0303
2.001	5.11	1.58	.0710	.0240	-.0040	-.0108	.0083	-.0385	.0031	.0005	.0022	.0299
2.005	5.12	3.49	.1511	.0231	-.0117	-.0116	.0071	-.0391	.0032	.0005	.0022	.0290
2.009	5.13	5.53	.2348	.0222	-.0189	-.0135	.0053	-.0392	.0033	.0005	.0022	.0282
2.003	5.15	7.46	.3099	.0217	-.0245	-.0146	.0033	-.0392	.0033	.0005	.0021	.0276
1.997	5.16	9.47	.3862	.0213	-.0299	-.0148	.0011	-.0391	.0033	.0006	.0020	.0272
1.999	5.18	11.58	.4646	.0210	-.0343	-.0139	-.0013	-.0394	.0033	.0006	.0020	.0269
2.003	5.20	13.48	.5351	.0207	-.0392	-.0132	-.0056	-.0368	.0033	.0006	.0019	.0264
2.007	5.22	15.53	.6132	.0202	-.0461	-.0128	-.0100	-.0344	.0034	.0007	.0017	.0259
2.009	5.25	17.52	.6875	.0200	-.0520	-.0122	-.0150	-.0319	.0035	.0007	.0016	.0259
2.011	5.27	19.46	.7587	.0196	-.0586	-.0124	-.0204	-.0276	.0035	.0007	.0016	.0254
1.999	5.10	-.49	-.0163	.0251	.0052	-.0072	.0101	-.0397	.0030	.0005	.0022	.0308
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDA	CDI	CD UNC
-4.6536	5.10	-4.49	-.1790	.0385	.0234	-.0033	.0120	-.0427	.0027	.0005	.0024	.0441
-3.2834	5.10	-2.53	-.0958	.0292	.0136	-.0047	.0115	-.0411	.0029	.0005	.0023	.0349
-1.9797	5.10	-1.45	-.0525	.0265	.0088	-.0059	.0109	-.0401	.0030	.0005	.0023	.0322
-.6103	5.10	-.52	-.0153	.0251	.0051	-.0073	.0100	-.0394	.0030	.0005	.0022	.0309
.9857	5.10	.53	.0244	.0247	.0010	-.0086	.0091	-.0383	.0030	.0005	.0022	.0305
2.7033	5.11	1.58	.0702	.0260	-.0040	-.0106	.0086	-.0385	.0031	.0005	.0022	.0318
4.6434	5.12	3.49	.1491	.0321	-.0117	-.0112	.0078	-.0391	.0032	.0005	.0023	.0381
5.1978	5.13	5.53	.2311	.0445	-.0189	-.0129	.0066	-.0392	.0033	.0005	.0025	.0507
4.9663	5.15	7.46	.3039	.0612	-.0245	-.0140	.0052	-.0392	.0033	.0005	.0026	.0677
4.5016	5.16	9.47	.3767	.0837	-.0299	-.0145	.0035	-.0391	.0033	.0006	.0028	.0904
3.9961	5.18	11.58	.4501	.1126	-.0343	-.0139	.0015	-.0394	.0033	.0006	.0031	.1196
3.5932	5.20	13.48	.5147	.1432	-.0392	-.0142	-.0024	-.0368	.0032	.0006	.0034	.1504
3.2194	5.22	15.53	.5845	.1815	-.0461	-.0150	-.0062	-.0344	.0032	.0007	.0037	.1891
2.9006	5.25	17.52	.6486	.2236	-.0520	-.0162	-.0106	-.0319	.0034	.0007	.0040	.2316
2.6364	5.27	19.46	.7078	.2685	-.0586	-.0185	-.0151	-.0276	.0033	.0007	.0043	.2767
-.6359	5.10	-.49	-.0160	.0252	.0052	-.0073	.0100	-.0397	.0030	.0005	.0022	.0309

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 117			MACH 2.00						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.997	5.10	-4.51	-.1673	.0232	.0187	-.0029	.0103	-.0405	.0022	.0004	.0029	.0287
2.001	5.10	-2.51	-.0897	.0235	.0112	-.0039	.0087	-.0381	.0023	.0004	.0029	.0291
2.006	5.11	-1.59	-.0527	.0237	.0073	-.0048	.0080	-.0375	.0023	.0004	.0029	.0294
2.008	5.11	-.61	-.0146	.0237	.0033	-.0060	.0073	-.0368	.0024	.0004	.0029	.0294
1.999	5.11	.44	.0250	.0235	-.0003	-.0073	.0064	-.0365	.0024	.0004	.0029	.0292
1.998	5.12	1.39	.0597	.0231	-.0034	-.0079	.0060	-.0367	.0024	.0004	.0029	.0288
2.002	5.13	3.37	.1366	.0221	-.0095	-.0088	.0053	-.0381	.0025	.0004	.0029	.0278
2.006	5.14	5.47	.2155	.0214	-.0152	-.0101	.0040	-.0389	.0025	.0004	.0029	.0272
2.007	5.15	7.43	.2849	.0209	-.0193	-.0114	.0023	-.0393	.0026	.0004	.0028	.0267
1.995	5.16	9.40	.3547	.0206	-.0242	-.0120	.0001	-.0394	.0026	.0005	.0027	.0264
2.001	5.18	11.48	.4258	.0204	-.0286	-.0124	-.0029	-.0383	.0026	.0005	.0025	.0260
2.005	5.21	15.41	.5576	.0200	-.0382	-.0120	-.0092	-.0351	.0026	.0005	.0022	.0254
2.007	5.23	17.50	.6292	.0197	-.0448	-.0124	-.0126	-.0339	.0027	.0005	.0021	.0250
1.995	5.26	19.41	.6964	.0193	-.0517	-.0121	-.0176	-.0310	.0027	.0005	.0019	.0245
2.002	5.11	-.60	-.0155	.0238	.0036	-.0062	.0071	-.0369	.0024	.0004	.0029	.0295
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.5600	5.10	-4.51	-.1645	.0361	.0187	-.0037	.0100	-.0405	.0022	.0004	.0031	.0418
-3.2265	5.10	-2.51	-.0883	.0274	.0112	-.0043	.0085	-.0381	.0023	.0004	.0029	.0330
-2.0624	5.11	-1.59	-.0519	.0252	.0073	-.0050	.0079	-.0375	.0023	.0004	.0029	.0308
-.6006	5.11	-.61	-.0143	.0239	.0033	-.0061	.0072	-.0368	.0024	.0004	.0029	.0295
1.0449	5.11	.44	.0247	.0237	-.0003	-.0073	.0064	-.0365	.0024	.0004	.0029	.0294
2.4079	5.12	1.39	.0590	.0245	-.0034	-.0077	.0062	-.0367	.0024	.0004	.0029	.0303
4.4941	5.13	3.37	.1347	.0300	-.0095	-.0085	.0058	-.0381	.0025	.0004	.0030	.0358
5.1088	5.14	5.47	.2120	.0415	-.0152	-.0097	.0050	-.0389	.0025	.0004	.0032	.0476
4.8945	5.15	7.43	.2790	.0570	-.0193	-.0111	.0038	-.0393	.0026	.0004	.0033	.0633
4.4650	5.16	9.40	.3457	.0774	-.0242	-.0119	.0021	-.0394	.0025	.0005	.0035	.0839
3.9846	5.18	11.48	.4123	.1035	-.0286	-.0127	-.0004	-.0383	.0025	.0005	.0037	.1102
3.2106	5.21	15.41	.5310	.1654	-.0382	-.0140	-.0057	-.0351	.0026	.0005	.0042	.1727
2.8865	5.23	17.50	.5929	.2054	-.0448	-.0157	-.0083	-.0339	.0026	.0005	.0045	.2130
2.6309	5.26	19.41	.6491	.2467	-.0517	-.0172	-.0126	-.0310	.0025	.0005	.0048	.2545
-.6336	5.11	-.60	-.0152	.0239	.0036	-.0062	.0071	-.0369	.0024	.0004	.0029	.0296

TABLE AIII.- Continued

UJWPT PROJECT 1424			RUN 121			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.003	.00	-4.57	-.1661	.0235	.0143	.0001	-.0005	.0006	.0020	.0003	.0035	.0293
2.005	.00	-2.55	-.0910	.0234	.0090	.0005	-.0003	.0001	.0019	.0003	.0035	.0291
2.000	.00	-.45	-.0139	.0233	.0028	.0002	-.0002	.0005	.0019	.0003	.0036	.0290
1.999	-.00	1.54	.0613	.0222	-.0031	.0000	-.0002	.0006	.0019	.0003	.0036	.0279
2.002	-.00	3.47	.1325	.0213	-.0088	.0001	-.0002	.0008	.0019	.0003	.0035	.0270
2.005	-.00	7.50	.2749	.0198	-.0177	.0006	-.0002	.0012	.0019	.0003	.0034	.0254
2.000	-.00	9.35	.3347	.0194	-.0208	.0013	-.0003	.0012	.0019	.0004	.0033	.0249
1.995	-.00	11.39	.3979	.0193	-.0231	.0007	-.0003	.0015	.0019	.0004	.0031	.0247
1.996	-.00	15.52	.5271	.0200	-.0311	.0004	-.0006	.0022	.0017	.0004	.0027	.0248
1.999	-.00	19.52	.6624	.0190	-.0454	-.0002	-.0012	.0026	.0017	.0004	.0023	.0235
2.005	.00	-.54	-.0154	.0234	.0032	.0003	-.0002	.0002	.0019	.0003	.0036	.0292

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.4735	.00	-4.57	-.1631	.0365	.0143	.0002	-.0005	.0006	.0020	.0003	.0037	.0424
-3.2736	.00	-2.55	-.0895	.0274	.0090	.0006	-.0003	.0001	.0019	.0003	.0036	.0331
-.5849	.00	-.45	-.0137	.0234	.0028	.0002	-.0002	.0005	.0019	.0003	.0036	.0291
2.5446	-.00	1.54	.0605	.0238	-.0031	.0000	-.0002	.0006	.0019	.0003	.0036	.0296
4.4813	-.00	3.47	.1305	.0291	-.0088	.0001	-.0002	.0008	.0019	.0003	.0037	.0350
4.9005	-.00	7.50	.2691	.0549	-.0177	.0005	-.0003	.0012	.0019	.0003	.0039	.0610
4.4887	-.00	9.35	.3260	.0726	-.0208	.0012	-.0005	.0012	.0019	.0004	.0041	.0790
4.0008	-.00	11.39	.3851	.0962	-.0231	.0006	-.0004	.0015	.0018	.0004	.0043	.1028
3.1698	-.00	15.52	.5011	.1581	-.0311	.0002	-.0007	.0022	.0017	.0004	.0048	.1649
2.6093	-.00	19.52	.6164	.2362	-.0454	-.0006	-.0011	.0026	.0016	.0004	.0052	.2435
-.6421	.00	-.54	-.0151	.0236	.0032	.0003	-.0002	.0002	.0019	.0003	.0036	.0294

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 122

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAI	CA UNC
2.001	-.00	-4.40	-.2492	.0310	.0569	.0010	-.0008	.0020	.0025	.0007	.0017	.0359
1.997	-.00	-2.38	-.1537	.0313	.0452	.0010	-.0006	.0019	.0025	.0007	.0017	.0361
1.994	-.00	-1.39	-.1086	.0314	.0393	.0008	-.0005	.0017	.0026	.0007	.0017	.0363
1.998	-.00	-.38	-.0642	.0310	.0339	.0007	-.0005	.0019	.0027	.0007	.0017	.0361
1.993	-.00	.65	-.0186	.0304	.0285	.0006	-.0007	.0021	.0028	.0007	.0017	.0356
1.992	-.00	1.60	.0254	.0295	.0232	.0006	-.0007	.0022	.0028	.0007	.0017	.0346
1.996	-.00	3.64	.1203	.0276	.0126	.0006	-.0006	.0022	.0029	.0007	.0016	.0328
1.999	-.00	5.56	.2078	.0262	.0055	.0020	-.0007	.0027	.0030	.0007	.0017	.0316
1.999	-.00	7.67	.2985	.0247	.0003	.0001	-.0010	.0029	.0031	.0007	.0016	.0301
1.992	-.00	9.55	.3828	.0235	-.0058	-.0002	-.0010	.0032	.0031	.0007	.0016	.0288
1.994	-.00	11.65	.4731	.0219	-.0124	.0000	-.0009	.0029	.0031	.0007	.0016	.0272
1.997	-.01	13.61	.5575	.0205	-.0184	.0000	-.0011	.0035	.0030	.0007	.0015	.0258
1.999	-.00	15.61	.6389	.0195	-.0240	-.0004	-.0009	.0030	.0029	.0008	.0015	.0247
1.995	-.01	17.56	.7173	.0187	-.0282	-.0001	-.0016	.0049	.0029	.0009	.0015	.0239
1.996	-.01	19.66	.8000	.0179	-.0345	-.0006	-.0018	.0048	.0028	.0009	.0015	.0231
1.996	-.00	-.37	-.0628	.0310	.0340	.0005	-.0005	.0017	.0027	.0007	.0017	.0361

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-4.9265	-.00	-4.40	-.2458	.0499	.0569	.0011	-.0008	.0020	.0025	.0007	.0018	.0549
-4.0515	-.00	-2.38	-.1522	.0376	.0452	.0010	-.0005	.0019	.0025	.0007	.0017	.0425
-3.1708	-.00	-1.39	-.1077	.0340	.0393	.0008	-.0005	.0017	.0026	.0007	.0017	.0389
-2.0350	-.00	-.38	-.0640	.0314	.0339	.0007	-.0005	.0019	.0027	.0007	.0017	.0365
-.6288	-.00	.65	-.0190	.0302	.0285	.0006	-.0007	.0021	.0028	.0007	.0017	.0354
.8132	-.00	1.60	.0245	.0301	.0232	.0006	-.0007	.0022	.0028	.0007	.0017	.0353
3.3699	-.00	3.64	.1181	.0350	.0126	.0006	-.0007	.0022	.0029	.0007	.0017	.0404
4.4398	-.00	5.56	.2040	.0459	.0055	.0019	-.0009	.0027	.0030	.0007	.0019	.0515
4.5760	-.00	7.67	.2921	.0638	.0003	-.0000	-.0010	.0029	.0030	.0007	.0021	.0697
4.3459	-.00	9.55	.3730	.0858	-.0058	-.0003	-.0010	.0032	.0031	.0007	.0023	.0919
3.9564	-.00	11.65	.4583	.1158	-.0124	-.0002	-.0009	.0029	.0030	.0007	.0026	.1222
3.5838	-.01	13.61	.5363	.1496	-.0184	-.0002	-.0010	.0035	.0029	.0007	.0030	.1562
3.2262	-.00	15.61	.6092	.1888	-.0240	-.0006	-.0008	.0030	.0028	.0008	.0033	.1958
2.9195	-.01	17.56	.6774	.2320	-.0282	-.0006	-.0015	.0049	.0027	.0009	.0037	.2393
2.6349	-.01	19.66	.7464	.2833	-.0345	-.0011	-.0015	.0048	.0027	.0008	.0041	.2909
-1.9915	-.00	-.37	-.0626	.0314	.0340	.0005	-.0005	.0017	.0027	.0007	.0017	.0365

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 123

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.005	.00	-4.51	-.2213	.0298	.0448	.0004	-.0009	.0019	.0026	.0005	.0022	.0352
2.004	-.00	-2.52	-.1352	.0297	.0347	.0003	-.0008	.0018	.0026	.0005	.0022	.0350
1.999	-.00	-1.50	-.0928	.0297	.0297	.0002	-.0008	.0022	.0027	.0005	.0022	.0351
1.999	-.00	-.52	-.0515	.0294	.0255	.0003	-.0006	.0017	.0028	.0005	.0022	.0349
2.004	-.00	.52	-.0084	.0287	.0208	.0001	-.0007	.0017	.0028	.0005	.0022	.0343
2.005	-.00	1.52	.0346	.0278	.0161	.0002	-.0008	.0019	.0029	.0005	.0022	.0334
1.998	-.00	3.55	.1230	.0260	.0067	.0004	-.0008	.0022	.0030	.0005	.0022	.0317
1.999	-.00	5.48	.2002	.0245	.0018	.0017	-.0003	.0016	.0030	.0005	.0022	.0303
2.002	-.00	7.60	.2839	.0231	-.0031	.0008	-.0007	.0025	.0030	.0006	.0021	.0288
2.000	-.00	9.48	.3562	.0220	-.0070	.0001	-.0007	.0027	.0030	.0006	.0020	.0276
1.999	-.01	11.48	.4307	.0211	-.0123	.0001	-.0008	.0032	.0030	.0006	.0020	.0266
2.001	-.00	13.48	.5072	.0202	-.0176	.0000	-.0013	.0033	.0029	.0006	.0019	.0256
2.002	-.01	15.48	.5783	.0197	-.0228	.0001	-.0009	.0035	.0028	.0007	.0017	.0250
1.999	-.01	17.51	.6522	.0194	-.0261	.0003	-.0015	.0046	.0028	.0007	.0016	.0245
1.999	-.00	19.43	.7265	.0184	-.0350	.0001	-.0022	.0048	.0027	.0007	.0016	.0234
1.999	-.00	-.51	-.0514	.0294	.0255	.0003	-.0007	.0017	.0028	.0005	.0022	.0349

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UJC
-4.6395	.00	-4.51	-.2179	.0470	.0448	.0005	-.0009	.0019	.0026	.0005	.0024	.0525
-3.7583	-.00	-2.52	-.1336	.0355	.0347	.0003	-.0008	.0018	.0026	.0005	.0023	.0410
-2.8627	-.00	-1.50	-.0918	.0321	.0297	.0003	-.0008	.0022	.0027	.0005	.0023	.0375
-1.7152	-.00	-.52	-.0512	.0299	.0255	.0003	-.0006	.0017	.0028	.0005	.0022	.0354
-.3041	-.00	.52	-.0087	.0266	.0208	.0001	-.0007	.0017	.0028	.0005	.0022	.0342
1.1762	-.00	1.52	.0337	.0287	.0161	.0001	-.0008	.0019	.0029	.0005	.0022	.0343
3.6151	-.00	3.55	.1209	.0334	.0067	.0004	-.0009	.0022	.0030	.0005	.0023	.0392
4.5407	-.00	5.48	.1965	.0433	.0018	.0016	-.0004	.0016	.0030	.0005	.0025	.0493
4.6368	-.00	7.60	.2778	.0599	-.0031	.0007	-.0008	.0025	.0030	.0005	.0026	.0661
4.3648	-.00	9.48	.3470	.0795	-.0070	-.0000	-.0007	.0027	.0030	.0006	.0028	.0859
3.9668	-.01	11.48	.4171	.1052	-.0123	-.0001	-.0006	.0032	.0029	.0006	.0031	.1118
3.5774	-.00	13.48	.4876	.1363	-.0176	-.0003	-.0013	.0033	.0028	.0006	.0034	.1431
3.2154	-.01	15.48	.5512	.1714	-.0228	-.0001	-.0009	.0035	.0027	.0006	.0037	.1784
2.8978	-.01	17.51	.6151	.2123	-.0281	-.0002	-.0015	.0046	.0026	.0007	.0040	.2196
2.6469	-.00	19.43	.6780	.2561	-.0350	-.0007	-.0021	.0048	.0025	.0007	.0043	.2636
-1.7091	-.00	-.51	-.0510	.0299	.0255	.0003	-.0007	.0017	.0028	.0005	.0022	.0354

TABLE AIII.- Continued

UPWT PROJECT 1424		RUN 124				MACH 2.00						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
2.002	.00	-4.54	-.1986	.0282	.0354	.0006	-.0004	.0011	.0022	.0004	.0029	.0337
2.005	.00	-2.61	-.1218	.0280	.0280	.0008	-.0003	.0007	.0022	.0004	.0029	.0334
2.006	-.00	-1.58	-.0807	.0279	.0239	.0007	-.0002	.0007	.0022	.0004	.0029	.0335
2.008	-.00	-.59	-.0423	.0276	.0203	.0008	-.0001	.0009	.0023	.0004	.0029	.0333
2.005	-.00	.46	-.0027	.0269	.0167	.0005	-.0001	.0010	.0023	.0004	.0029	.0325
2.002	-.00	1.47	.0371	.0261	.0132	.0002	-.0001	.0009	.0023	.0004	.0029	.0317
2.000	-.00	3.45	.1165	.0244	.0059	.0004	-.0001	.0013	.0023	.0004	.0029	.0301
2.001	-.00	5.43	.1920	.0231	.0003	.0006	-.0001	.0017	.0023	.0004	.0029	.0287
2.003	-.00	7.44	.2633	.0219	-.0034	.0017	-.0004	.0013	.0023	.0004	.0028	.0275
2.004	-.00	9.53	.3341	.0208	-.0066	.0004	-.0005	.0022	.0024	.0005	.0027	.0263
2.006	-.00	11.42	.3989	.0202	-.0099	.0006	-.0006	.0025	.0023	.0005	.0025	.0256
2.008	-.01	13.49	.4668	.0199	-.0137	.0002	-.0004	.0025	.0022	.0005	.0024	.0251
2.006	-.00	15.44	.5310	.0195	-.0188	.0001	-.0008	.0025	.0021	.0005	.0022	.0243
2.000	-.01	17.37	.5974	.0190	-.0252	.0001	-.0009	.0031	.0020	.0005	.0021	.0237
2.002	-.00	19.52	.6729	.0180	-.0330	-.0000	-.0015	.0036	.0020	.0005	.0019	.0224
2.003	-.00	-.57	-.0415	.0276	.0202	.0004	-.0002	.0008	.0023	.0004	.0029	.0332
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CI	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.4747	.00	-4.54	-.1953	.0436	.0354	.0006	-.0004	.0011	.0022	.0004	.0031	.0493
-3.5961	.00	-2.61	-.1201	.0334	.0280	.0008	-.0003	.0007	.0022	.0004	.0029	.0389
-2.6479	-.00	-1.58	-.0798	.0301	.0239	.0007	-.0002	.0007	.0022	.0004	.0029	.0357
-1.4950	-.00	-.59	-.0420	.0281	.0203	.0008	-.0001	.0009	.0023	.0004	.0029	.0337
-.1093	-.00	.46	-.0029	.0269	.0167	.0005	-.0001	.0010	.0023	.0004	.0029	.0325
1.3422	-.00	1.47	.0362	.0270	.0132	.0002	-.0001	.0009	.0023	.0004	.0029	.0326
3.6596	-.00	3.45	.1145	.0313	.0059	.0004	-.0001	.0013	.0023	.0004	.0030	.0370
4.6091	-.00	5.43	.1884	.0409	.0003	.0006	-.0001	.0017	.0023	.0004	.0032	.0467
4.6551	-.00	7.44	.2575	.0553	-.0034	.0016	-.0006	.0013	.0023	.0004	.0033	.0614
4.3400	-.00	9.53	.3251	.0749	-.0066	.0003	-.0006	.0022	.0023	.0005	.0035	.0812
3.9578	-.00	11.42	.3860	.0975	-.0099	.0005	-.0007	.0025	.0023	.0005	.0037	.1040
3.5406	-.01	13.49	.4482	.1266	-.0137	.0001	-.0005	.0025	.0022	.0005	.0040	.1333
3.1975	-.00	15.44	.5055	.1581	-.0188	-.0001	-.0008	.0025	.0020	.0005	.0043	.1649
2.9028	-.01	17.37	.5632	.1940	-.0252	-.0002	-.0008	.0031	.0019	.0005	.0045	.2010
2.6247	-.00	19.52	.6269	.2389	-.0330	-.0005	-.0014	.0036	.0019	.0005	.0048	.2460
-1.4688	-.00	-.57	-.0411	.0280	.0202	.0004	-.0002	.0008	.0023	.0004	.0029	.0336

APPENDIX A

TABLE AIII.- Continued

HIPWT PROJECT 1424			RUN 125			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	.00	-4.52	-.1862	.0275	.0268	.0000	-.0007	.0012	.0019	.0003	.0035	.0333
2.000	.00	-2.59	-.1147	.0271	.0215	.0002	-.0007	.0009	.0018	.0003	.0035	.0328
2.005	.00	-1.52	-.0746	.0270	.0183	.0004	-.0005	.0008	.0019	.0003	.0036	.0327
2.000	.00	-.57	-.0387	.0267	.0157	.0002	-.0003	.0005	.0019	.0003	.0036	.0324
1.998	-.00	.52	.0002	.0259	.0126	.0001	-.0005	.0011	.0019	.0003	.0036	.0317
1.998	.00	1.49	.0365	.0252	.0097	.0000	-.0005	.0010	.0019	.0003	.0036	.0309
2.000	-.00	3.53	.1134	.0240	.0040	.0001	-.0004	.0011	.0019	.0003	.0035	.0296
2.002	-.00	5.50	.1844	.0226	-.0008	.0002	-.0005	.0014	.0018	.0003	.0034	.0282
2.003	-.00	7.44	.2514	.0213	-.0050	.0004	-.0006	.0018	.0018	.0003	.0034	.0269
1.998	-.00	9.47	.3171	.0203	-.0082	.0013	-.0009	.0017	.0019	.0004	.0033	.0258
1.998	-.00	11.57	.3832	.0195	-.0109	.0007	-.0009	.0022	.0018	.0004	.0031	.0248
2.001	-.00	13.43	.4405	.0193	-.0141	.0001	-.0003	.0016	.0017	.0004	.0029	.0243
2.003	-.00	15.41	.5035	.0189	-.0189	.0002	-.0006	.0024	.0016	.0004	.0027	.0237
2.005	-.00	17.56	.5730	.0182	-.0256	-.0001	-.0009	.0023	.0016	.0004	.0025	.0227
1.997	-.00	19.48	.6385	.0172	-.0326	-.0003	-.0009	.0026	.0016	.0004	.0023	.0215
2.001	-.00	-.51	-.0368	.0267	.0157	.0003	-.0003	.0009	.0019	.0003	.0036	.0325
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-4.3604	.00	-4.52	-.1829	.0419	.0268	.0001	-.0007	.0012	.0019	.0003	.0037	.0479
-3.5128	.00	-2.59	-.1130	.0322	.0215	.0003	-.0007	.0009	.0018	.0003	.0036	.0379
-2.5457	.00	-1.52	-.0736	.0289	.0183	.0004	-.0005	.0008	.0019	.0003	.0036	.0347
-1.4200	.00	-.57	-.0384	.0270	.0157	.0002	-.0003	.0005	.0019	.0003	.0036	.0328
-.0029	-.00	.52	-.0001	.0259	.0126	.0001	-.0005	.0011	.0019	.0003	.0036	.0317
1.3674	.00	1.49	.0356	.0261	.0097	.0000	-.0005	.0010	.0019	.0003	.0036	.0318
3.6176	-.00	3.53	.1112	.0307	.0040	.0001	-.0005	.0011	.0019	.0003	.0037	.0366
4.5312	-.00	5.50	.1807	.0399	-.0008	.0001	-.0005	.0014	.0018	.0003	.0037	.0458
4.6265	-.00	7.44	.2457	.0531	-.0050	.0003	-.0007	.0018	.0018	.0003	.0039	.0592
4.3287	-.00	9.47	.3084	.0712	-.0082	.0011	-.0011	.0017	.0018	.0004	.0041	.0776
3.9147	-.00	11.57	.3703	.0946	-.0109	.0006	-.0010	.0022	.0018	.0004	.0044	.1011
3.5408	-.00	13.43	.4226	.1194	-.0141	.0000	-.0003	.0016	.0017	.0004	.0046	.1260
3.1958	-.00	15.41	.4789	.1498	-.0189	-.0000	-.0008	.0024	.0016	.0004	.0048	.1566
2.8743	-.00	17.56	.5393	.1876	-.0256	-.0003	-.0008	.0023	.0015	.0004	.0050	.1945
2.6298	-.00	19.48	.5947	.2261	-.0326	-.0006	-.0007	.0026	.0015	.0004	.0052	.2332
-1.3501	-.00	-.51	-.0365	.0270	.0157	.0003	-.0003	.0009	.0019	.0003	.0036	.0328

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 126

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.002	.01	-4.40	-.1471	.0282	-.0015	-.0000	-.0009	.0005	.0026	.0007	.0017	.0332
2.002	.00	-2.41	-.0546	.0292	-.0124	.0001	-.0003	.0001	.0027	.0007	.0017	.0343
2.003	.00	-1.40	-.0092	.0297	-.0180	-.0002	-.0003	.0003	.0029	.0007	.0017	.0349
1.999	.00	-.36	.0369	.0300	-.0235	.0001	-.0003	.0003	.0029	.0007	.0017	.0353
2.001	.00	.67	.0829	.0298	-.0288	-.0000	-.0003	.0006	.0030	.0007	.0017	.0352
2.004	.00	1.68	.1293	.0293	-.0344	-.0001	-.0001	.0002	.0030	.0007	.0017	.0347
2.007	.00	3.64	.2237	.0282	-.0460	.0005	-.0006	.0012	.0031	.0007	.0016	.0336
2.004	.00	5.63	.3141	.0279	-.0536	.0015	-.0005	.0009	.0032	.0007	.0017	.0335
1.998	-.00	7.60	.3977	.0283	-.0580	.0000	-.0000	.0005	.0032	.0007	.0016	.0338
2.006	-.00	9.63	.4850	.0286	-.0625	-.0000	.0000	.0008	.0033	.0007	.0016	.0341
2.001	-.00	11.62	.5651	.0290	-.0659	.0003	-.0001	.0013	.0032	.0007	.0016	.0345
2.001	-.00	13.57	.6463	.0294	-.0696	.0002	-.0001	.0010	.0033	.0007	.0015	.0350
2.006	-.00	15.63	.7271	.0300	-.0724	-.0000	-.0001	.0008	.0036	.0008	.0015	.0359
1.998	-.00	17.60	.8049	.0309	-.0748	-.0000	-.0006	.0022	.0037	.0009	.0015	.0369
2.005	-.01	19.63	.8864	.0316	-.0798	-.0001	-.0006	.0027	.0036	.0009	.0015	.0376
2.001	.00	-.39	.0365	.0300	-.0233	.0004	.0000	.0000	.0030	.0007	.0017	.0354

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-3.6793	.01	-4.40	-.1443	.0392	-.0015	.0000	-.0009	.0005	.0026	.0007	.0018	.0444
-1.6914	.00	-2.41	-.0532	.0314	-.0124	.0001	-.0003	.0001	.0027	.0007	.0017	.0366
-.2809	.00	-1.40	-.0084	.0299	-.0180	-.0001	-.0003	.0003	.0029	.0007	.0017	.0351
1.2485	.00	-.36	.0371	.0298	-.0235	.0001	-.0003	.0003	.0029	.0007	.0017	.0351
2.6772	.00	.67	.0825	.0308	-.0288	-.0000	-.0003	.0006	.0030	.0007	.0017	.0362
3.8781	.00	1.68	.1283	.0331	-.0344	-.0001	-.0001	.0002	.0030	.0007	.0017	.0385
5.2435	.00	3.64	.2213	.0422	-.0460	.0005	-.0006	.0012	.0031	.0007	.0017	.0478
5.3057	.00	5.63	.3095	.0583	-.0536	.0014	-.0007	.0009	.0032	.0007	.0019	.0641
4.8665	-.00	7.60	.3900	.0801	-.0580	.0000	-.0000	.0005	.0032	.0007	.0021	.0861
4.3548	-.00	9.63	.4729	.1086	-.0625	-.0000	.0000	.0008	.0032	.0007	.0023	.1148
3.8771	-.00	11.62	.5470	.1411	-.0659	.0003	-.0001	.0013	.0032	.0007	.0026	.1476
3.4737	-.00	13.57	.6207	.1787	-.0696	.0002	-.0002	.0010	.0033	.0007	.0030	.1856
3.1013	-.00	15.63	.6913	.2229	-.0724	-.0001	-.0001	.0008	.0035	.0008	.0033	.2304
2.7976	-.00	17.60	.7569	.2706	-.0748	-.0002	-.0006	.0022	.0035	.0009	.0037	.2786
2.5346	-.01	19.63	.8233	.3248	-.0798	-.0003	-.0006	.0027	.0034	.0009	.0041	.3332
1.2345	.00	-.39	.0367	.0298	-.0233	.0004	.0000	.0000	.0030	.0007	.0017	.0351

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 127

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
1.996	.00	-4.46	-.1420	.0272	.0008	-.0001	-.0009	.0005	.0027	.0005	.0022	.0326
2.003	.00	-2.52	-.0586	.0280	-.0088	-.0001	-.0005	.0005	.0027	.0005	.0022	.0333
2.000	.00	-1.48	-.0143	.0284	-.0136	-.0000	-.0004	.0005	.0028	.0005	.0022	.0339
1.999	.00	-.48	.0275	.0284	-.0180	-.0001	-.0003	.0004	.0028	.0005	.0022	.0340
1.998	.00	.52	.0680	.0282	-.0225	-.0000	-.0004	.0003	.0029	.0005	.0022	.0338
2.003	.00	1.47	.1087	.0278	-.0273	-.0002	-.0004	.0006	.0029	.0005	.0022	.0334
1.999	.00	3.49	.1950	.0269	-.0371	-.0001	-.0005	.0009	.0029	.0005	.0022	.0326
1.996	.00	5.52	.2814	.0266	-.0435	.0010	-.0006	.0007	.0030	.0005	.0022	.0323
2.003	.00	7.51	.3586	.0267	-.0481	.0010	-.0007	.0013	.0030	.0005	.0021	.0324
2.003	-.00	9.49	.4332	.0271	-.0516	.0000	-.0004	.0010	.0031	.0006	.0020	.0328
2.000	-.00	11.48	.5077	.0278	-.0558	.0002	-.0003	.0010	.0031	.0006	.0020	.0335
2.004	-.00	13.49	.5805	.0285	-.0591	.0001	.0001	.0010	.0031	.0006	.0019	.0341
2.000	-.00	15.46	.6497	.0297	-.0622	.0001	-.0001	.0010	.0031	.0007	.0017	.0353
2.003	-.00	17.49	.7241	.0307	-.0670	.0003	-.0006	.0013	.0030	.0007	.0016	.0360
2.001	-.00	19.53	.8028	.0308	-.0749	.0001	-.0005	.0016	.0029	.0007	.0016	.0360
2.003	.00	-.51	.0252	.0263	-.0177	-.0001	-.0003	.0003	.0029	.0005	.0022	.0339

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-3.6648	.00	-4.46	-.1391	.0379	.0008	-.0001	-.0009	.0005	.0026	.0005	.0024	.0435
-1.8765	.00	-2.52	-.0571	.0304	-.0088	-.0001	-.0005	.0005	.0027	.0005	.0023	.0359
-.4680	.00	-1.48	-.0134	.0287	-.0136	-.0000	-.0004	.0005	.0028	.0005	.0023	.0342
.9860	.00	-.46	.0273	.0282	-.0180	-.0001	-.0003	.0004	.0028	.0005	.0022	.0338
2.3534	.00	.52	.0677	.0288	-.0225	-.0000	-.0004	.0003	.0029	.0005	.0022	.0344
3.5293	.00	1.47	.1079	.0306	-.0273	-.0002	-.0004	.0006	.0029	.0005	.0022	.0362
4.9904	.00	3.49	.1927	.0386	-.0371	-.0001	-.0005	.0009	.0029	.0005	.0023	.0444
5.2030	.00	5.52	.2771	.0533	-.0435	.0009	-.0006	.0007	.0030	.0005	.0025	.0592
4.8275	.00	7.51	.3514	.0728	-.0481	.0009	-.0006	.0013	.0030	.0005	.0026	.0790
4.3401	-.00	9.49	.4222	.0973	-.0516	-.0001	-.0004	.0010	.0030	.0006	.0028	.1037
3.8634	-.00	11.48	.4912	.1271	-.0558	.0001	-.0004	.0010	.0030	.0006	.0031	.1338
3.4488	-.00	13.48	.5570	.1615	-.0591	.0001	.0000	.0010	.0030	.0006	.0034	.1685
3.0884	-.00	15.46	.6173	.1999	-.0622	.0001	-.0001	.0010	.0030	.0006	.0037	.2072
2.7835	-.00	17.49	.6804	.2445	-.0670	.0001	-.0007	.0013	.0028	.0007	.0040	.2520
2.5298	-.00	19.53	.7453	.2946	-.0749	-.0001	-.0005	.0016	.0028	.0007	.0043	.3023
.9078	.00	-.51	.0255	.0261	-.0177	-.0001	-.0003	.0003	.0029	.0005	.0022	.0337

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 128

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.996	.00	-4.62	-.1446	.0256	.0022	.0003	-.0004	.0005	.0021	.0004	.0029	.0310
2.000	.00	-2.48	-.0589	.0264	-.0066	.0002	-.0002	-.0000	.0021	.0004	.0029	.0318
2.003	.00	-1.58	-.0230	.0268	-.0103	.0003	.0001	-.0002	.0022	.0004	.0029	.0322
1.998	-.00	-.59	.0149	.0269	-.0137	.0003	.0001	-.0000	.0022	.0004	.0029	.0324
1.995	.00	.36	.0518	.0268	-.0172	-.0000	.0001	-.0002	.0022	.0004	.0029	.0323
1.998	-.00	1.47	.0947	.0264	-.0215	-.0001	.0001	.0002	.0022	.0004	.0029	.0319
2.001	-.00	3.47	.1766	.0256	-.0298	-.0000	.0003	.0000	.0022	.0004	.0029	.0311
2.004	-.00	5.38	.2498	.0254	-.0355	.0003	.0002	.0003	.0023	.0004	.0029	.0309
1.995	.00	7.49	.3245	.0254	-.0398	.0012	-.0001	.0003	.0023	.0004	.0028	.0309
1.998	-.00	9.47	.3921	.0258	-.0427	.0004	.0001	.0004	.0023	.0005	.0027	.0313
2.001	-.00	11.44	.4578	.0265	-.0454	.0003	.0004	.0008	.0024	.0005	.0025	.0319
2.002	-.00	13.47	.5247	.0274	-.0484	.0001	.0001	.0009	.0023	.0005	.0024	.0327
2.003	-.00	15.47	.5905	.0286	-.0525	-.0000	-.0003	.0009	.0022	.0005	.0022	.0336
1.997	-.00	17.42	.6561	.0293	-.0587	.0000	-.0002	.0015	.0022	.0005	.0021	.0341
1.999	-.00	19.45	.7325	.0246	-.0675	-.0000	-.0009	.0021	.0022	.0005	.0019	.0343
1.997	-.00	-.54	.0177	.0270	-.0141	.0002	.0001	-.0000	.0022	.0004	.0029	.0325

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-3.8355	.00	-4.62	-.1416	.0369	.0022	.0003	-.0003	.0005	.0021	.0004	.0031	.0425
-1.9897	.00	-2.48	-.0574	.0289	-.0066	.0002	-.0001	-.0000	.0021	.0004	.0029	.0343
-.8076	.00	-1.58	-.0221	.0274	-.0103	.0003	.0001	-.0002	.0022	.0004	.0029	.0329
.5693	-.00	-.59	.0152	.0267	-.0137	.0003	.0001	-.0000	.0022	.0004	.0029	.0322
1.8986	.00	.36	.0515	.0271	-.0172	-.0000	.0001	-.0002	.0022	.0004	.0029	.0326
3.2566	-.00	1.47	.0939	.0288	-.0215	-.0001	.0001	.0002	.0022	.0004	.0029	.0343
4.8231	-.00	3.47	.1744	.0362	-.0298	.0000	.0003	.0000	.0022	.0004	.0030	.0418
5.0812	-.00	5.38	.2457	.0484	-.0355	.0003	.0002	.0003	.0023	.0004	.0031	.0542
4.7495	.00	7.49	.3177	.0669	-.0398	.0012	-.0003	.0003	.0023	.0004	.0033	.0729
4.2848	-.00	9.47	.3816	.0891	-.0427	.0004	.0000	.0004	.0023	.0005	.0035	.0954
3.8320	-.00	11.44	.4424	.1155	-.0454	.0004	.0003	.0008	.0023	.0005	.0037	.1220
3.4137	-.00	13.47	.5028	.1473	-.0484	.0002	.0001	.0009	.0023	.0005	.0040	.1540
3.0623	-.00	15.47	.5603	.1830	-.0525	-.0001	-.0003	.0009	.0022	.0005	.0043	.1899
2.7779	-.00	17.42	.6161	.2218	-.0587	-.0000	-.0002	.0015	.0021	.0005	.0045	.2289
2.5272	-.00	19.45	.6795	.2689	-.0675	-.0003	-.0008	.0021	.0021	.0005	.0048	.2763
.6721	-.00	-.54	.0130	.0268	-.0141	.0002	.0001	-.0000	.0022	.0004	.0029	.0323

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 129

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	.00	-4.50	-.1326	.0250	-.0018	.0000	-.0006	.0005	.0018	.0003	.0035	.0307
2.002	.00	-2.54	-.0584	.0256	-.0078	.0002	-.0005	.0004	.0017	.0003	.0035	.0312
1.996	.00	-1.56	-.0216	.0258	-.0109	-.0000	-.0003	.0003	.0018	.0003	.0036	.0315
1.997	.00	-.50	.0173	.0260	-.0142	-.0001	-.0003	.0001	.0018	.0003	.0036	.0317
2.001	.00	.53	.0553	.0257	-.0169	-.0002	-.0003	.0001	.0018	.0003	.0036	.0313
1.995	.00	1.47	.0906	.0253	-.0199	-.0001	-.0001	.0003	.0018	.0003	.0036	.0310
1.998	-.00	3.51	.1675	.0249	-.0265	-.0002	-.0002	.0006	.0018	.0003	.0035	.0305
2.001	-.00	5.48	.2393	.0247	-.0316	.0001	-.0002	.0009	.0018	.0003	.0034	.0303
2.002	-.00	7.52	.3068	.0246	-.0354	.0003	-.0001	.0007	.0018	.0003	.0034	.0301
2.000	.00	9.44	.3684	.0246	-.0383	.0007	-.0003	.0004	.0018	.0004	.0033	.0303
1.993	-.00	11.47	.4324	.0253	-.0408	.0005	-.0000	.0006	.0018	.0004	.0031	.0307
1.995	-.00	13.45	.4941	.0265	-.0439	.0002	.0000	.0004	.0018	.0004	.0029	.0316
1.999	-.00	15.50	.5589	.0274	-.0487	.0002	-.0002	.0012	.0017	.0004	.0027	.0322
2.001	-.00	17.47	.6241	.0279	-.0556	.0001	-.0002	.0012	.0017	.0004	.0025	.0325
2.002	-.00	19.50	.6955	.0280	-.0642	-.0002	-.0004	.0014	.0018	.0004	.0023	.0325
1.996	.00	-.57	.0158	.0261	-.0138	-.0002	-.0004	.0002	.0018	.0003	.0036	.0317

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-3.6871	.00	-4.50	-.1297	.0352	-.0018	.0001	-.0006	.0005	.0018	.0003	.0037	.0410
-2.0251	.00	-2.54	-.0569	.0281	-.0078	.0002	-.0005	.0004	.0017	.0003	.0036	.0337
-.7856	.00	-1.56	-.0207	.0264	-.0109	-.0000	-.0003	.0003	.0018	.0003	.0036	.0320
.6816	.00	-.50	.0176	.0259	-.0142	-.0001	-.0003	.0001	.0018	.0003	.0036	.0315
2.0993	.00	.53	.0550	.0262	-.0169	-.0002	-.0003	.0001	.0018	.0003	.0036	.0318
3.2494	.00	1.47	.0897	.0276	-.0199	-.0001	-.0001	.0003	.0018	.0003	.0036	.0333
4.7248	-.00	3.51	.1652	.0350	-.0265	-.0002	-.0002	.0006	.0018	.0003	.0037	.0407
4.9875	-.00	5.48	.2352	.0472	-.0316	.0001	-.0002	.0008	.0018	.0003	.0037	.0530
4.6951	-.00	7.52	.3001	.0639	-.0354	.0003	-.0002	.0007	.0018	.0003	.0039	.0700
4.2646	.00	9.44	.3583	.0840	-.0383	.0007	-.0004	.0004	.0018	.0004	.0041	.0903
3.8117	-.00	11.47	.4175	.1095	-.0408	.0005	-.0001	.0006	.0018	.0004	.0043	.1160
3.4039	-.00	13.45	.4730	.1390	-.0439	.0002	-.0000	.0004	.0018	.0004	.0046	.1457
3.0521	-.00	15.50	.5298	.1736	-.0487	.0002	-.0003	.0012	.0016	.0004	.0048	.1804
2.7704	-.00	17.47	.5854	.2113	-.0556	-.0000	-.0002	.0012	.0016	.0004	.0050	.2183
2.5233	-.00	19.50	.6447	.2555	-.0642	-.0003	-.0003	.0014	.0017	.0004	.0052	.2628
.6236	.00	-.57	.0161	.0259	-.0138	-.0002	-.0004	.0002	.0018	.0003	.0036	.0316

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 130

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	.00	-4.36	-.1026	.0381	-.0219	.0008	-.0007	.0008	.0018	.0007	.0017	.0423
1.997	.00	-2.37	-.0120	.0392	-.0337	.0003	-.0007	.0010	.0019	.0007	.0017	.0435
1.995	-.00	-1.34	.0339	.0399	-.0397	.0006	-.0006	.0016	.0020	.0007	.0017	.0442
1.997	-.00	-.41	.0753	.0402	-.0447	.0007	-.0004	.0016	.0020	.0007	.0017	.0446
2.004	-.00	.63	.1193	.0403	-.0496	.0006	-.0002	.0012	.0021	.0007	.0017	.0447
2.008	-.00	1.59	.1629	.0399	-.0547	.0002	-.0006	.0018	.0021	.0007	.0017	.0444
2.007	-.00	3.59	.2568	.0395	-.0672	.0005	-.0006	.0015	.0022	.0007	.0016	.0441
1.996	-.00	5.63	.3470	.0398	-.0744	.0018	-.0009	.0022	.0023	.0007	.0017	.0444
1.995	-.00	7.61	.4294	.0404	-.0773	.0005	-.0002	.0018	.0024	.0007	.0016	.0450
1.999	-.01	9.61	.5114	.0415	-.0798	.0004	-.0001	.0019	.0025	.0007	.0016	.0462
2.001	-.01	11.63	.5909	.0424	-.0820	.0003	-.0002	.0022	.0025	.0007	.0016	.0471
2.003	-.00	13.65	.6700	.0435	-.0837	.0003	-.0004	.0015	.0026	.0008	.0015	.0483
1.999	-.00	15.58	.7440	.0446	-.0855	.0004	-.0007	.0024	.0028	.0008	.0015	.0497
1.993	-.00	17.63	.8207	.0464	-.0874	.0004	-.0015	.0032	.0030	.0009	.0015	.0517
2.000	.00	19.64	.9015	.0476	-.0916	.0002	-.0023	.0037	.0030	.0009	.0015	.0530
2.002	-.00	-.42	.0747	.0401	-.0443	.0003	-.0006	.0018	.0020	.0007	.0017	.0445

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	COR	CDI	CD UNC
-2.1708	.00	-4.36	-.0991	.0457	-.0219	.0008	-.0006	.0008	.0018	.0007	.0018	.0500
-.2579	.00	-2.37	-.0102	.0396	-.0337	.0003	-.0007	.0010	.0019	.0007	.0017	.0439
.8933	-.00	-1.34	.0349	.0391	-.0397	.0006	-.0006	.0016	.0020	.0007	.0017	.0434
1.9046	-.00	-.41	.0756	.0397	-.0447	.0007	-.0004	.0016	.0020	.0007	.0017	.0441
2.8592	-.00	.63	.1189	.0416	-.0496	.0006	-.0002	.0012	.0021	.0007	.0017	.0460
3.6404	-.00	1.59	.1616	.0444	-.0547	.0002	-.0006	.0018	.0021	.0007	.0017	.0489
4.5772	-.00	3.59	.2536	.0554	-.0672	.0004	-.0006	.0015	.0022	.0007	.0017	.0601
4.6517	-.00	5.63	.3411	.0733	-.0744	.0017	-.0011	.0022	.0023	.0007	.0019	.0782
4.3561	-.00	7.61	.4198	.0964	-.0773	.0005	-.0003	.0018	.0023	.0007	.0021	.1015
3.9588	-.01	9.61	.4968	.1255	-.0798	.0004	-.0001	.0019	.0024	.0007	.0023	.1310
3.5714	-.01	11.63	.5696	.1595	-.0820	.0002	-.0003	.0022	.0025	.0007	.0026	.1653
3.2190	-.00	13.65	.6401	.1988	-.0837	.0002	-.0004	.0015	.0025	.0007	.0030	.2051
2.9215	-.00	15.58	.7039	.2409	-.0855	.0001	-.0008	.0024	.0027	.0008	.0033	.2477
2.6409	-.00	17.63	.7672	.2905	-.0874	-.0001	-.0015	.0032	.0029	.0009	.0037	.2979
2.4103	.00	19.64	.8320	.3452	-.0916	-.0006	-.0023	.0037	.0028	.0008	.0041	.3529
1.8991	-.00	-.42	.0750	.0395	-.0443	.0003	-.0006	.0018	.0020	.0007	.0017	.0439

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 131			MACH 1.80							
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW													
R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAR	CAI	CA UNC	
1.995	.00	-4.53	-.1087	.0359	-.0168	.0004	-.0010	.0017	.0018	.0005	.0022	.0404	
1.999	.00	-2.52	-.0263	.0368	-.0265	.0004	-.0008	.0013	.0018	.0005	.0022	.0414	
2.003	.00	-1.49	.0169	.0373	-.0313	.0003	-.0007	.0012	.0018	.0005	.0022	.0418	
2.004	-.00	-.52	.0573	.0376	-.0356	.0003	-.0006	.0012	.0019	.0005	.0022	.0422	
2.006	-.00	.54	.1000	.0377	-.0405	.0002	-.0008	.0016	.0019	.0005	.0022	.0423	
1.998	.00	1.48	.1400	.0376	-.0452	.0000	-.0006	.0010	.0019	.0005	.0022	.0422	
1.999	.00	3.44	.2257	.0375	-.0555	.0005	-.0007	.0014	.0020	.0005	.0022	.0422	
2.002	.00	5.49	.3078	.0375	-.0620	.0012	-.0010	.0014	.0020	.0005	.0022	.0423	
2.004	-.00	7.47	.3833	.0381	-.0661	.0012	-.0008	.0018	.0021	.0005	.0021	.0429	
2.004	-.00	9.55	.4594	.0391	-.0686	.0001	-.0003	.0012	.0022	.0006	.0020	.0439	
2.006	-.00	11.58	.5326	.0403	-.0715	.0001	.0004	.0006	.0023	.0006	.0020	.0452	
2.005	-.00	13.52	.5993	.0415	-.0736	.0003	-.0001	.0014	.0023	.0006	.0019	.0463	
1.999	-.00	15.46	.6650	.0432	-.0754	.0006	-.0006	.0018	.0024	.0007	.0017	.0480	
2.000	.00	17.54	.7398	.0449	-.0806	.0007	-.0015	.0027	.0023	.0007	.0016	.0496	
2.003	-.00	19.48	.8114	.0457	-.0874	.0007	-.0014	.0032	.0023	.0007	.0016	.0503	
2.003	.00	-.54	.0564	.0376	-.0358	.0002	-.0004	.0005	.0019	.0005	.0022	.0422	
STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW													
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC	
-2.3781	.00	-4.53	-.1052	.0442	-.0168	.0005	-.0010	.0017	.0018	.0005	.0024	.0489	
-.6464	.00	-2.52	-.0245	.0379	-.0265	.0004	-.0008	.0013	.0018	.0005	.0023	.0425	
.4889	.00	-1.49	.0180	.0368	-.0313	.0003	-.0007	.0012	.0018	.0005	.0023	.0414	
1.5551	-.00	-.52	.0577	.0371	-.0356	.0003	-.0006	.0012	.0019	.0005	.0022	.0417	
2.5786	-.00	.54	.0996	.0386	-.0405	.0002	-.0008	.0016	.0019	.0005	.0022	.0433	
3.3759	.00	1.48	.1389	.0411	-.0452	-.0000	-.0006	.0010	.0019	.0005	.0022	.0458	
4.3791	.00	3.44	.2228	.0509	-.0555	.0004	-.0007	.0014	.0020	.0005	.0023	.0557	
4.5452	.00	5.49	.3023	.0665	-.0620	.0012	-.0011	.0014	.0020	.0005	.0025	.0715	
4.3015	-.00	7.47	.3745	.0871	-.0661	.0011	-.0009	.0018	.0021	.0005	.0026	.0923	
3.9142	-.00	9.55	.4459	.1139	-.0686	.0001	-.0003	.0012	.0022	.0006	.0029	.1195	
3.5307	-.00	11.58	.5129	.1453	-.0715	.0002	.0004	.0006	.0022	.0006	.0031	.1512	
3.1986	-.00	13.52	.5721	.1789	-.0736	.0002	-.0001	.0014	.0022	.0006	.0034	.1851	
2.8966	-.00	15.46	.6285	.2170	-.0754	.0004	-.0007	.0018	.0023	.0006	.0037	.2236	
2.6239	.00	17.54	.6909	.2633	-.0806	.0002	-.0016	.0027	.0022	.0007	.0040	.2702	
2.4088	-.00	19.48	.7487	.3108	-.0874	.0001	-.0016	.0032	.0021	.0007	.0043	.3179	
1.5343	.00	-.54	.0568	.0370	-.0358	.0002	-.0004	.0005	.0019	.0005	.0022	.0416	

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 132

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAI	CA UNC
2.000	.01	-4.55	-.1106	.0334	-.0132	.0003	-.0007	.0002	.0012	.0004	.0029	.0379
1.994	.00	-2.60	-.0324	.0347	-.0219	.0005	-.0004	.0004	.0011	.0004	.0029	.0391
1.999	.00	-1.56	.0082	.0351	-.0256	.0005	-.0002	-.0001	.0011	.0004	.0029	.0395
2.001	.00	-.61	.0433	.0355	-.0291	.0006	-.0004	.0002	.0012	.0004	.0029	.0400
2.002	.00	.33	.0792	.0356	-.0325	.0006	-.0001	-.0001	.0012	.0004	.0029	.0400
1.992	.00	1.43	.1223	.0354	-.0371	.0003	-.0002	.0004	.0012	.0004	.0029	.0399
1.990	-.00	3.50	.2059	.0353	-.0459	.0004	.0001	-.0000	.0012	.0004	.0029	.0398
1.995	.00	5.45	.2792	.0356	-.0519	.0005	.0000	-.0001	.0013	.0004	.0029	.0401
1.997	.00	7.39	.3466	.0361	-.0556	.0016	-.0004	.0005	.0013	.0004	.0028	.0406
1.998	-.00	9.42	.4146	.0370	-.0580	.0009	-.0001	.0005	.0014	.0005	.0027	.0416
2.000	-.00	11.43	.4789	.0383	-.0603	.0005	.0003	-.0002	.0015	.0005	.0025	.0428
2.001	-.00	13.46	.5428	.0398	-.0622	.0005	-.0003	.0008	.0014	.0005	.0024	.0441
2.003	.00	15.43	.6060	.0411	-.0657	.0004	-.0006	.0006	.0013	.0005	.0022	.0452
1.998	-.00	17.43	.6725	.0426	-.0720	.0004	-.0006	.0015	.0013	.0005	.0021	.0465
1.994	.00	19.41	.7459	.0438	-.0806	.0004	-.0010	.0017	.0014	.0005	.0019	.0476
1.999	.00	-.56	.0475	.0356	-.0293	.0005	-.0002	-.0001	.0012	.0004	.0029	.0401

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-2.5583	.01	-4.55	-.1071	.0419	-.0132	.0004	-.0006	.0002	.0012	.0004	.0031	.0465
-.8462	.00	-2.60	-.0305	.0361	-.0219	.0005	-.0004	.0004	.0011	.0004	.0029	.0405
.2683	.00	-1.56	.0093	.0348	-.0256	.0005	-.0002	-.0001	.0011	.0004	.0029	.0393
1.2490	.00	-.61	.0437	.0350	-.0291	.0006	-.0003	.0002	.0012	.0004	.0029	.0395
2.1941	.00	.33	.0790	.0360	-.0325	.0006	-.0002	-.0001	.0012	.0004	.0029	.0405
3.1518	.00	1.43	.1212	.0385	-.0371	.0003	-.0003	.0004	.0012	.0004	.0029	.0430
4.2603	-.00	3.50	.2030	.0477	-.0459	.0004	.0001	-.0000	.0012	.0004	.0030	.0523
4.4449	.00	5.45	.2740	.0616	-.0519	.0005	-.0000	-.0001	.0013	.0004	.0032	.0665
4.2389	.00	7.39	.3333	.0798	-.0556	.0016	-.0006	.0005	.0013	.0004	.0033	.0849
3.8845	-.00	9.42	.4020	.1035	-.0580	.0008	-.0002	.0005	.0014	.0005	.0035	.1088
3.5124	-.00	11.43	.4608	.1312	-.0603	.0006	.0002	-.0002	.0014	.0005	.0037	.1369
3.1672	-.00	13.46	.5175	.1634	-.0622	.0004	-.0004	.0008	.0014	.0005	.0040	.1692
2.8765	.00	15.43	.5720	.1989	-.0657	.0002	-.0007	.0006	.0013	.0005	.0043	.2049
2.6196	-.00	17.43	.6276	.2396	-.0720	.0002	-.0007	.0015	.0013	.0005	.0045	.2458
2.4024	.00	19.41	.6876	.2862	-.0806	.0001	-.0011	.0017	.0013	.0005	.0048	.2928
1.3641	.00	-.56	.0479	.0351	-.0293	.0005	-.0002	-.0001	.0012	.0004	.0029	.0396

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 133

MACH 2.16

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLR	CNB	CY	CAC	CAB	CAI	CA UNC
1.999	.00	-4.55	-.1106	.0324	-.0148	.0003	-.0007	.0004	.0008	.0003	.0035	.0370
2.004	.00	-2.52	-.0324	.0336	-.0214	.0004	-.0006	-.0001	.0007	.0003	.0035	.0382
2.005	.00	-1.55	.0032	.0341	-.0247	.0004	-.0005	-.0003	.0007	.0003	.0036	.0386
2.006	.00	-.48	.0412	.0343	-.0277	.0004	-.0005	-.0000	.0007	.0003	.0036	.0389
2.000	.00	.46	.0761	.0342	-.0306	.0003	-.0005	-.0000	.0007	.0003	.0036	.0388
1.996	.00	1.47	.1137	.0341	-.0342	.0004	-.0003	-.0002	.0007	.0003	.0036	.0387
2.002	.00	3.44	.1873	.0342	-.0407	.0004	-.0001	-.0002	.0007	.0003	.0035	.0387
2.004	.00	5.48	.2599	.0346	-.0464	.0004	-.0000	-.0002	.0008	.0003	.0034	.0391
2.004	.00	7.48	.3279	.0350	-.0503	.0005	-.0002	.0002	.0008	.0003	.0034	.0394
2.004	.00	9.50	.3905	.0358	-.0530	.0009	-.0005	-.0001	.0008	.0004	.0033	.0403
2.006	.00	11.47	.4514	.0369	-.0557	.0007	.0000	-.0004	.0008	.0004	.0031	.0412
2.008	.00	13.45	.5124	.0384	-.0584	.0006	-.0001	-.0003	.0008	.0004	.0029	.0425
2.001	.00	15.44	.5743	.0398	-.0623	.0007	-.0006	.0007	.0007	.0004	.0027	.0436
2.002	.00	17.45	.6411	.0411	-.0694	.0005	-.0005	.0007	.0007	.0004	.0025	.0448
2.004	.00	19.51	.7141	.0423	-.0785	.0001	-.0007	.0001	.0008	.0004	.0023	.0458
2.006	.00	-.50	.0422	.0344	-.0277	.0003	-.0006	.0001	.0007	.0003	.0036	.0389

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-2.6181	.00	-4.55	-.1071	.0409	-.0148	.0004	-.0007	.0004	.0008	.0003	.0037	.0457
-.8756	.00	-2.52	-.0306	.0349	-.0214	.0004	-.0006	-.0001	.0007	.0003	.0036	.0395
.1266	.00	-1.55	.0043	.0339	-.0247	.0004	-.0005	-.0003	.0007	.0003	.0036	.0385
1.2248	.00	-.48	.0416	.0340	-.0277	.0004	-.0005	-.0000	.0007	.0003	.0036	.0385
2.1735	.00	.46	.0757	.0348	-.0306	.0003	-.0005	-.0000	.0007	.0003	.0036	.0394
3.0418	.00	1.47	.1126	.0370	-.0342	.0004	-.0003	-.0002	.0007	.0003	.0036	.0416
4.0798	.00	3.44	.1845	.0452	-.0407	.0004	-.0002	-.0002	.0007	.0003	.0037	.0499
4.3236	.00	5.48	.2547	.0589	-.0464	.0004	-.0001	-.0002	.0007	.0003	.0037	.0637
4.1651	.00	7.48	.3197	.0768	-.0503	.0005	-.0003	.0002	.0008	.0003	.0039	.0818
3.8256	.00	9.50	.3782	.0989	-.0530	.0008	-.0006	-.0001	.0008	.0004	.0041	.1042
3.4828	.00	11.47	.4338	.1246	-.0557	.0007	-.0001	-.0004	.0008	.0004	.0043	.1301
3.1531	.00	13.45	.4881	.1548	-.0584	.0006	-.0003	-.0003	.0008	.0004	.0046	.1605
2.8637	.00	15.44	.5416	.1891	-.0623	.0005	-.0008	.0007	.0007	.0004	.0048	.1950
2.6115	.00	17.45	.5978	.2289	-.0694	.0003	-.0006	.0007	.0007	.0004	.0050	.2350
2.3878	.00	19.51	.6574	.2753	-.0785	-.0001	-.0007	.0001	.0008	.0004	.0052	.2817
1.2522	.00	-.50	.0426	.0340	-.0277	.0003	-.0006	.0001	.0007	.0003	.0036	.0386

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 150

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.001	.01	-4.60	-.0358	.0218	-.0131	.0000	-.0008	.0003	.0027	.0007	.0017	.0268
2.002	.00	-2.67	-.0216	.0211	-.0061	.0001	-.0008	.0010	.0027	.0007	.0017	.0262
2.003	.00	-1.60	-.0142	.0209	-.0020	.0001	-.0007	.0012	.0028	.0007	.0017	.0261
1.997	.00	-.67	-.0084	.0207	.0016	.0001	-.0007	.0009	.0029	.0007	.0017	.0260
1.992	.00	.39	-.0016	.0206	.0058	.0000	-.0007	.0011	.0030	.0007	.0017	.0260
1.994	.00	1.40	.0044	.0205	.0100	-.0001	-.0005	.0006	.0031	.0007	.0017	.0259
1.996	.00	3.33	.0169	.0203	.0187	.0000	-.0006	.0011	.0032	.0007	.0016	.0258
1.999	.00	-.68	-.0080	.0207	.0017	.0000	-.0006	.0012	.0029	.0007	.0017	.0260

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.3809	.01	-4.60	-.0337	.0244	-.0131	.0001	-.0008	.0003	.0027	.0007	.0018	.0296
-.9280	.00	-2.67	-.0204	.0220	-.0061	.0001	-.0008	.0010	.0027	.0007	.0017	.0272
-.6377	.00	-1.60	-.0136	.0213	-.0020	.0001	-.0007	.0012	.0028	.0007	.0017	.0265
-.3912	.00	-.67	-.0081	.0208	.0016	.0001	-.0006	.0009	.0029	.0007	.0017	.0261
-.0868	.00	.39	-.0018	.0206	.0058	-.0000	-.0007	.0011	.0030	.0007	.0017	.0260
.1868	.00	1.40	.0038	.0205	.0100	-.0001	-.0005	.0006	.0031	.0007	.0017	.0260
.7348	.00	3.33	.0155	.0211	.0187	-.0000	-.0006	.0011	.0032	.0007	.0017	.0267
-.3716	.00	-.68	-.0077	.0208	.0017	.0000	-.0006	.0012	.0029	.0007	.0017	.0261

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 153

MACH 1.80

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.997	.00	-4.80	-.0371	.0211	-.0137	.0000	-.0010	.0015	.0027	.0005	.0022	.0265
1.994	.00	-2.81	-.0229	.0203	-.0062	.0000	-.0009	.0014	.0027	.0005	.0022	.0257
1.996	-.00	-1.82	-.0163	.0199	-.0022	.0001	-.0008	.0017	.0028	.0005	.0022	.0254
1.999	-.00	-.84	-.0104	.0197	.0018	.0001	-.0007	.0014	.0029	.0005	.0022	.0253
1.999	.00	.24	-.0040	.0196	.0063	.0000	-.0007	.0013	.0029	.0005	.0022	.0252
2.001	.00	1.19	.0024	.0194	.0106	.0001	-.0008	.0017	.0030	.0005	.0022	.0251
2.001	.00	3.21	.0155	.0192	.0197	.0001	-.0009	.0017	.0031	.0005	.0022	.0251
2.002	-.00	-.82	-.0098	.0198	.0021	.0001	-.0008	.0017	.0029	.0005	.0022	.0253

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.4577	.00	-4.80	-.0348	.0239	-.0137	.0001	-.0010	.0015	.0027	.0005	.0024	.0295
-1.0201	.00	-2.81	-.0217	.0213	-.0062	.0001	-.0009	.0014	.0027	.0005	.0023	.0268
-.7620	-.00	-1.82	-.0155	.0204	-.0022	.0001	-.0008	.0017	.0028	.0005	.0023	.0259
-.5083	-.00	-.84	-.0101	.0198	.0018	.0001	-.0007	.0014	.0029	.0005	.0022	.0254
-.2112	.00	.24	-.0041	.0195	.0063	.0000	-.0007	.0013	.0029	.0005	.0022	.0252
.0972	.00	1.19	.0019	.0194	.0106	.0001	-.0008	.0017	.0030	.0005	.0022	.0252
.7110	.00	3.21	.0142	.0200	.0197	.0001	-.0009	.0017	.0031	.0005	.0023	.0259
-.4774	-.00	-.82	-.0095	.0199	.0021	.0001	-.0008	.0017	.0028	.0005	.0022	.0255

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 154

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.005	.00	-5.33	-.0387	.0199	-.0142	.0001	-.0007	.0011	.0022	.0004	.0029	.0254
2.003	.00	-3.34	-.0239	.0192	-.0067	.0000	-.0005	.0009	.0021	.0004	.0029	.0246
2.004	.00	-2.36	-.0180	.0189	-.0026	.0000	-.0004	.0007	.0022	.0004	.0029	.0244
2.004	.00	-1.36	-.0115	.0187	.0016	.0000	-.0003	.0006	.0023	.0004	.0029	.0243
1.993	-.00	-.37	-.0052	.0185	.0061	.0000	-.0002	.0009	.0023	.0004	.0029	.0241
1.995	-.00	.65	.0015	.0184	.0106	.0000	-.0003	.0012	.0023	.0004	.0029	.0240
1.996	-.00	2.66	.0143	.0180	.0204	-.0000	.0001	.0006	.0024	.0004	.0029	.0237
1.998	.00	-1.41	-.0117	.0187	.0015	.0000	-.0004	.0009	.0023	.0004	.0029	.0243

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.5613	.00	-5.33	-.0361	.0231	-.0142	.0001	-.0007	.0011	.0022	.0004	.0031	.0288
-1.0992	.00	-3.34	-.0224	.0204	-.0067	.0000	-.0005	.0009	.0021	.0004	.0030	.0259
-.8650	.00	-2.36	-.0169	.0196	-.0026	.0001	-.0004	.0007	.0022	.0004	.0029	.0251
-.5751	.00	-1.36	-.0109	.0190	.0016	.0000	-.0003	.0006	.0023	.0004	.0029	.0246
-.2730	-.00	-.37	-.0051	.0185	.0061	.0000	-.0002	.0009	.0023	.0004	.0029	.0241
.0663	-.00	.65	.0012	.0184	.0106	.0000	-.0003	.0012	.0023	.0004	.0029	.0240
.7100	-.00	2.66	.0132	.0186	.0204	-.0000	.0001	.0006	.0024	.0004	.0030	.0244
-.5841	.00	-1.41	-.0111	.0190	.0015	.0000	-.0004	.0009	.0023	.0004	.0029	.0246

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 157			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.996	.00	-5.66	-.0407	.0196	-.0164	.0000	-.0007	.0003	.0018	.0003	.0035	.0252
1.997	.00	-3.64	-.0255	.0188	-.0082	.0001	-.0008	.0006	.0017	.0003	.0035	.0244
1.998	.00	-2.66	-.0184	.0185	-.0042	.0000	-.0006	.0003	.0017	.0003	.0035	.0241
2.000	.00	-1.67	-.0121	.0183	.0002	.0000	-.0005	.0004	.0018	.0003	.0036	.0240
2.000	.00	-.63	-.0059	.0180	.0050	-.0000	-.0004	.0002	.0019	.0003	.0036	.0237
2.001	.00	.39	.0006	.0178	.0099	-.0000	-.0004	.0003	.0019	.0003	.0036	.0236
2.002	.00	2.38	.0138	.0174	.0197	-.0000	-.0004	.0005	.0020	.0003	.0035	.0232
2.003	.00	-1.65	-.0123	.0183	.0004	-.0000	-.0005	.0002	.0018	.0003	.0036	.0240

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.6316	.00	-5.66	-.0379	.0232	-.0164	.0001	-.0006	.0003	.0018	.0003	.0038	.0291
-1.1765	.00	-3.64	-.0238	.0202	-.0082	.0001	-.0008	.0006	.0017	.0003	.0037	.0259
-.8927	.00	-2.66	-.0172	.0193	-.0042	.0000	-.0006	.0003	.0017	.0003	.0036	.0249
-.6123	.00	-1.67	-.0114	.0186	.0002	.0000	-.0005	.0004	.0018	.0003	.0036	.0243
-.3106	.00	-.63	-.0056	.0181	.0050	-.0000	-.0004	.0002	.0019	.0003	.0036	.0238
.0215	.00	.39	.0004	.0178	.0099	-.0000	-.0004	.0003	.0019	.0003	.0036	.0236
.7144	.00	2.38	.0128	.0179	.0197	-.0001	-.0004	.0005	.0020	.0003	.0036	.0238
-.6231	.00	-1.65	-.0116	.0186	.0004	.0000	-.0005	.0002	.0018	.0003	.0036	.0243

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 15R

MACH 1.60

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAR	CAI	CA UNC
2.001	.00	-4.57	-.0289	.0191	-.0188	.0001	-.0006	.0002	.0026	.0007	.0017	.0240
2.005	.00	-2.64	-.0167	.0183	-.0100	.0000	-.0007	.0003	.0024	.0007	.0017	.0231
2.004	.00	-1.57	-.0110	.0181	-.0053	.0000	-.0006	.0008	.0024	.0007	.0017	.0228
2.004	-.00	-.57	-.0049	.0179	-.0003	.0000	-.0005	.0010	.0024	.0007	.0017	.0226
2.004	.00	.41	.0002	.0178	.0039	.0000	-.0006	.0011	.0024	.0007	.0017	.0225
2.005	-.00	1.45	.0060	.0177	.0086	.0000	-.0005	.0010	.0024	.0007	.0017	.0225
2.006	.00	3.46	.0196	.0176	.0180	-.0000	-.0006	.0011	.0025	.0007	.0016	.0225
2.008	.00	-.60	-.0056	.0179	-.0007	.0000	-.0006	.0011	.0024	.0007	.0017	.0226

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDR	CDI	CD UNC
-1.2771	.00	-4.57	-.0270	.0211	-.0188	.0001	-.0006	.0002	.0026	.0007	.0018	.0262
-.8272	.00	-2.64	-.0157	.0190	-.0100	.0001	-.0007	.0003	.0024	.0007	.0017	.0238
-.5684	.00	-1.57	-.0104	.0183	-.0053	.0001	-.0006	.0008	.0024	.0007	.0017	.0231
-.2626	-.00	-.57	-.0047	.0179	-.0003	.0000	-.0005	.0010	.0024	.0007	.0017	.0227
.0053	.00	.41	.0001	.0177	.0039	.0000	-.0006	.0011	.0024	.0007	.0017	.0225
.3046	-.00	1.45	.0054	.0178	.0086	.0000	-.0005	.0010	.0024	.0007	.0017	.0226
.9798	.00	3.46	.0183	.0167	.0180	-.0001	-.0006	.0011	.0025	.0007	.0017	.0236
-.3020	.00	-.60	-.0054	.0179	-.0007	.0000	-.0006	.0011	.0024	.0007	.0017	.0227

APPENDIX A

TABLE AIII.- Continued

UPWT PROJECT 1424			RUN 159			MACH 1.80							
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW													
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC	
2.004	-.00	-4.72	-.0300	.0184	-.0197	.0000	-.0006	.0012	.0026	.0005	.0022	.0238	
2.000	-.00	-2.66	-.0167	.0176	-.0100	.0001	-.0008	.0013	.0024	.0005	.0022	.0228	
2.003	-.00	-1.70	-.0115	.0173	-.0052	.0000	-.0007	.0014	.0025	.0005	.0022	.0225	
2.004	-.00	-.79	-.0067	.0171	-.0008	.0000	-.0006	.0016	.0025	.0005	.0022	.0224	
2.005	-.00	.25	-.0009	.0171	.0040	.0000	-.0007	.0013	.0025	.0005	.0022	.0223	
2.005	-.00	1.29	.0054	.0170	.0089	.0000	-.0006	.0016	.0025	.0005	.0022	.0222	
2.004	.00	3.25	.0185	.0170	.0177	-.0000	-.0008	.0013	.0025	.0005	.0022	.0222	
1.996	-.00	-.74	-.0066	.0172	-.0008	.0000	-.0006	.0016	.0025	.0005	.0022	.0224	

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.3584	-.00	-4.72	-.0280	.0206	-.0197	.0001	-.0006	.0012	.0026	.0005	.0024	.0262
-.8562	-.00	-2.66	-.0157	.0183	-.0100	.0001	-.0008	.0013	.0024	.0005	.0023	.0235
-.6167	-.00	-1.70	-.0109	.0176	-.0052	.0001	-.0007	.0014	.0025	.0005	.0023	.0229
-.3741	-.00	-.79	-.0064	.0172	-.0008	.0000	-.0006	.0016	.0025	.0005	.0022	.0225
-.0558	-.00	.25	-.0010	.0171	.0040	.0000	-.0007	.0013	.0025	.0005	.0022	.0223
.2875	-.00	1.29	.0049	.0171	.0089	.0000	-.0006	.0016	.0025	.0005	.0022	.0223
.9637	.00	3.25	.0172	.0179	.0177	-.0000	-.0008	.0013	.0025	.0005	.0023	.0232
-.3653	-.00	-.74	-.0063	.0172	-.0008	.0001	-.0006	.0016	.0025	.0005	.0022	.0225

TABLE AIII.- Continued

UPWT PROJECT 1424

RUN 160

MACH 2.00

BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
2.005	-.00	-5.25	-.0316	.0173	-.0202	.0000	-.0005	.0011	.0022	.0004	.0029	.0228
2.003	-.00	-3.33	-.0190	.0167	-.0113	.0000	-.0006	.0012	.0020	.0004	.0029	.0220
2.003	-.00	-2.26	-.0132	.0165	-.0061	.0000	-.0005	.0011	.0020	.0004	.0029	.0218
2.003	-.00	-1.29	-.0076	.0164	-.0012	.0000	-.0003	.0014	.0020	.0004	.0029	.0217
2.003	-.00	-.31	-.0022	.0162	.0036	.0000	-.0005	.0012	.0021	.0004	.0029	.0215
1.997	-.00	.68	.0036	.0161	.0081	.0000	-.0004	.0013	.0020	.0004	.0029	.0215
2.000	-.00	2.69	.0179	.0160	.0173	-.0000	-.0004	.0014	.0020	.0004	.0029	.0213
2.001	-.00	-1.29	-.0078	.0163	-.0013	.0000	-.0005	.0014	.0021	.0004	.0029	.0216

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW

L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CNR	CDI	CD UNC
-1.4798	-.00	-5.25	-.0294	.0198	-.0202	.0001	-.0005	.0011	.0022	.0004	.0031	.0256
-1.0026	-.00	-3.33	-.0176	.0176	-.0113	.0001	-.0006	.0012	.0020	.0004	.0030	.0230
-.7281	-.00	-2.26	-.0123	.0169	-.0061	.0000	-.0005	.0011	.0020	.0004	.0029	.0223
-.4304	-.00	-1.29	-.0071	.0165	-.0012	.0000	-.0003	.0014	.0020	.0004	.0029	.0219
-.1293	-.00	-.31	-.0021	.0162	.0036	.0000	-.0005	.0012	.0021	.0004	.0029	.0215
.2070	-.00	.68	.0033	.0162	.0081	.0000	-.0004	.0013	.0020	.0004	.0029	.0215
1.0065	-.00	2.69	.0168	.0167	.0173	-.0000	-.0004	.0014	.0020	.0004	.0030	.0221
-.4443	-.00	-1.29	-.0073	.0165	-.0013	.0000	-.0005	.0014	.0021	.0004	.0029	.0218

APPENDIX A

TABLE AIII.- Concluded

UPWT PROJECT 1424			RUN 161			MACH 2.16						
BODY AXIS AXIAL FORCE CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
R/FT	BETA	ALPHA	CN	CA	CM	CLB	CNB	CY	CAC	CAB	CAI	CA UNC
1.997	.00	-5.56	-.0319	.0171	-.0226	.0000	-.0007	.0009	.0019	.0003	.0035	.0228
1.999	.00	-3.61	-.0189	.0165	-.0134	.0000	-.0006	.0010	.0017	.0003	.0035	.0221
2.000	-.00	-2.64	-.0131	.0163	-.0084	.0000	-.0005	.0010	.0017	.0003	.0035	.0219
2.000	-.00	-1.64	-.0074	.0162	-.0035	.0000	-.0005	.0011	.0017	.0003	.0036	.0218
2.001	-.00	-.61	-.0011	.0160	.0018	-.0000	-.0005	.0013	.0017	.0003	.0036	.0216
2.001	-.00	.40	.0048	.0159	.0067	-.0000	-.0006	.0014	.0017	.0003	.0036	.0215
2.002	-.00	2.45	.0200	.0157	.0160	-.0000	-.0005	.0012	.0017	.0003	.0035	.0212
2.003	-.00	-1.61	-.0076	.0162	-.0030	.0000	-.0005	.0009	.0017	.0003	.0036	.0218

STABILITY AXIS DRAG CORRECTED FOR BASE, CHAMBER, AND INTERNAL FLOW												
L/D	BETA	ALPHA	CL	CD	CM	CLS	CNS	CY	CDC	CDB	CDI	CD UNC
-1.4776	.00	-5.56	-.0294	.0199	-.0226	.0001	-.0007	.0009	.0019	.0003	.0038	.0258
-.9898	.00	-3.61	-.0173	.0175	-.0134	.0001	-.0006	.0010	.0017	.0003	.0037	.0232
-.7146	-.00	-2.64	-.0120	.0169	-.0084	.0001	-.0005	.0010	.0017	.0003	.0036	.0225
-.4115	-.00	-1.64	-.0067	.0164	-.0035	.0000	-.0005	.0011	.0017	.0003	.0036	.0220
-.0522	-.00	-.61	-.0008	.0161	.0018	.0000	-.0005	.0013	.0017	.0003	.0036	.0216
.2936	-.00	.40	.0047	.0160	.0067	-.0000	-.0006	.0014	.0017	.0003	.0036	.0215
1.1560	-.00	2.45	.0190	.0164	.0160	-.0000	-.0005	.0012	.0017	.0003	.0036	.0220
-.4245	-.00	-1.61	-.0069	.0164	-.0030	.0000	-.0005	.0009	.0017	.0003	.0036	.0220

APPENDIX B

INTERNAL-FLOW CHARACTERISTICS

Experimental internal-flow data were obtained for the fuselage-alone geometry at all test conditions. The aircraft propulsion system was simulated on the model by an external-internal compression inlet and flow-through ducts. The boundary-layer diverter for the flow-through model was of sufficient size to avoid interference from forebody boundary-layer ingestion. Inlet geometry consisted of two side-mounted, half-axisymmetric inlets, each with a 20° conical compression spike. The inlet geometric arrangement is shown in figure B1. Airflow was ducted through the model to the exit at the base. Figure B2 is a streamwise sectional drawing of the inlet and duct system, and figure B3 is a sketch of the inlet, duct, and exit-area distribution, with selected cross-sectional views of the duct shape. Details of the exit choke ring used for all testing are shown in figure B4, and figure B5 is a sketch of the exit survey rake used for making internal-flow measurements. Figure B6 is a sketch of the positions of the static- and total-pressure tubes at the duct exit plane.

The ability to obtain good-quality force data at supersonic speeds on a wind-tunnel model, which represents the aircraft propulsion system as flow-through ducts, is strongly influenced by the inlet and internal-duct operating characteristics. Improper inlet and duct design can result in large spillage effects, which affect the external flow field of the model. To minimize the effect of the inlet and duct system on external aerodynamics, the internal-flow system was designed for the following critical operating conditions at $M = 1.80$: the conical compression shock impinges on the cowl lip, the terminal shock is ingested, no spillage effects occur, the mass-flow ratio (MFR) is 1.00, and the exit Mach number is 1.00. At higher Mach numbers for a given geometry, supercritical operating conditions occur in which the conical shock falls inside the cowl lip, and the shock waves from the supersonic external compression are not allowed to propagate to the external flow field. At these supercritical operating conditions, the MFR values can exceed values of 1.00. However, at lower Mach numbers for the conditions of subcritical flow, the conical shock angle becomes greater and allows the compression waves to influence the external flow and the external aerodynamics of the aircraft. For the subcritical condition, a terminal shock is located forward of the inlet face, the dimensions of the free-stream tube entering the inlet are decreased, mass-flow ratio values are reduced below 1.0, and there are increased inlet spillage effects.

Subcritical, critical, and supercritical inlet operating conditions were determined throughout the internal-flow test with schlieren and shadowgraph flow-visualization techniques. Shadowgraph photographs of the baseline configuration at Mach numbers of 1.60, 1.80, 2.00, and 2.16 and 0° angle of attack are shown in figure B7. Also shown in figure B7 is the effect of reducing duct exit area on inlet performance at Mach 1.80. The photographs reveal that the duct system is operating at subcritical conditions (extended terminal shock) at $M = 1.60$ and 1.80, critical conditions (terminal shock at inlet face, conical shock tangent to cowl lip) at $M = 2.00$, and supercritical conditions (ingested terminal shock, conical shock inside cowl lip) at $M = 2.16$ for the baseline geometry. A gradual reduction in duct exit area at $M = 1.80$ produces a steady forward progression of normal shock.

Exit-plane pressure data were obtained with a single exit-survey rake located in the duct on the left-hand side. The rake consisted of 13 total-head-pressure tubes and 4 static-pressure tubes distributed so that each tube was centered in a proportional segment of the total duct exit area. The rake was positioned

longitudinally with the static probes at the exit plane. Approximately 3 percent of the duct exit area was occupied by the rake tubes.

If the pressure measurements are taken at the duct exit plane and if free-stream conditions at the inlet face are assumed, equation (B1) can be solved for the mass-flow ratio as follows:

$$\text{MFR} = \frac{m_e}{m_\infty} = \frac{p_e M_e S_e (1 + 0.2M_e^2)^{1/2}}{p_\infty M_\infty S_{\text{cap}} (1 + 0.2M_\infty^2)^{1/2}} \quad (\text{B1})$$

There was an MFR value of 1.00 for critical operating conditions, a value less than 1.00 for subcritical conditions, and a value greater than 1.00 for supercritical conditions. The variation in MFR for the baseline configuration caused by changes in angle of attack and Mach number is presented in figure B8. At $M = 1.80$, an MFR value of 0.98 was realized at zero incidence (design condition) and, in general, the MFR increased with increasing Mach number and decreased with changes in angle of attack from 0° .

Internal drag is simply a result of pressure and skin-friction forces acting on the internal-inlet and duct surfaces. These pressure and skin-friction forces are the results of changes in the internal flow, such as decelerating from supersonic (free-stream) to subsonic conditions through a system of shocks, boundary-layer separation, and many other types of flow phenomena. Because it is not practical to directly measure internal pressures and surface skin friction, the internal drag is computed by applying a force-and-momentum balance to the flow entering and exiting the model. The internal drag of a configuration is computed as follows from equation (B2) and by knowing the exit-plane and free-stream flow conditions:

$$D_{\text{int}} = 2 \frac{m_e}{m_\infty} q_\infty S_{\text{cap}} - S_e \cos(\alpha + \epsilon) [1.4 p_e M_e^2 + (p_e - p_\infty)] \quad (\text{B2})$$

Internal drag coefficients are shown in figure B9 for the baseline configuration. Results indicate that increasing Mach number and angle of attack produced an increase in the internal drag.

Based upon the qualitative and quantitative results from this internal-flow experimental investigation, it can be concluded that the inlet and duct system was performing adequately for all test conditions. However, at the design condition of $M = 1.80$, the expected inlet performance was not achieved, and this can be attributed to the assumption that free-stream flow conditions exist at the inlet face.

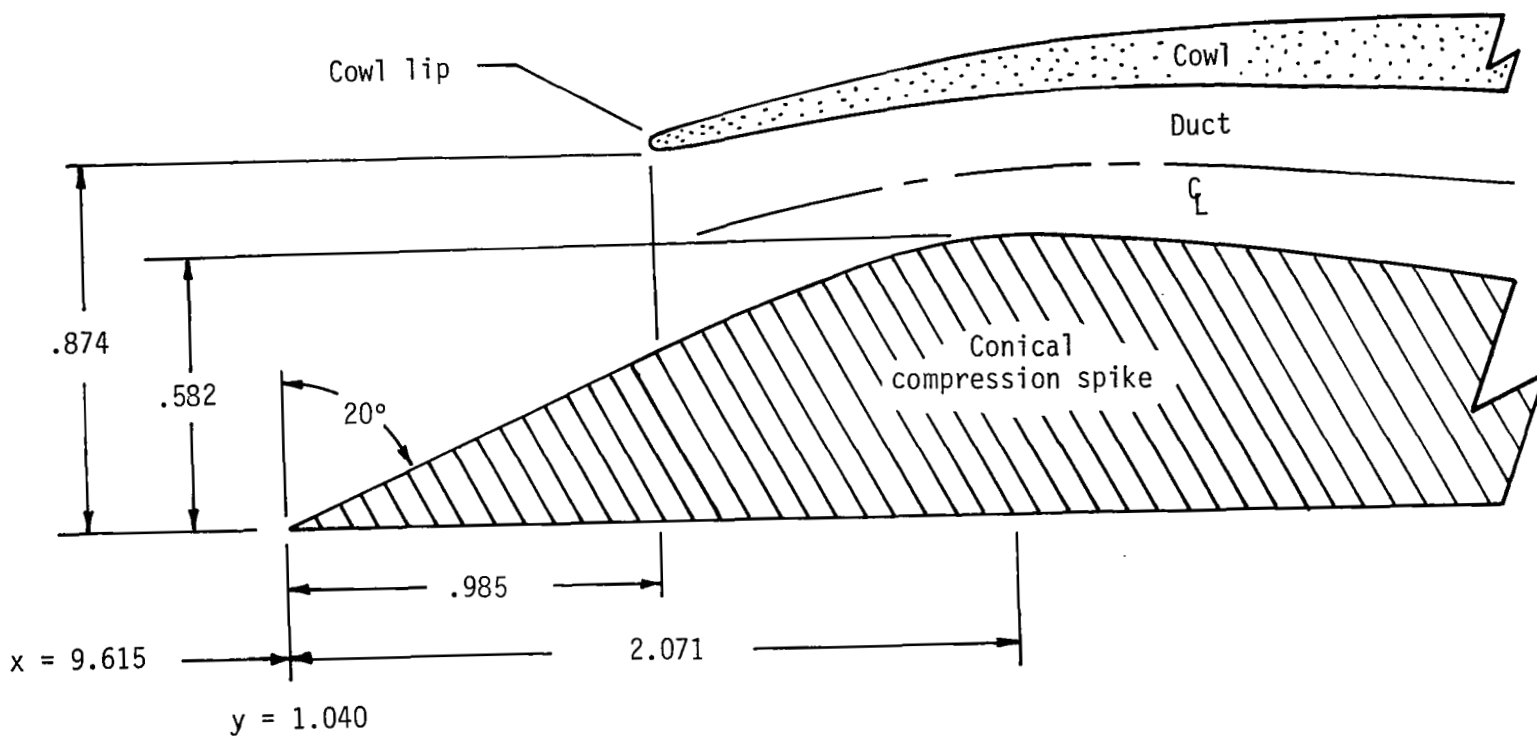
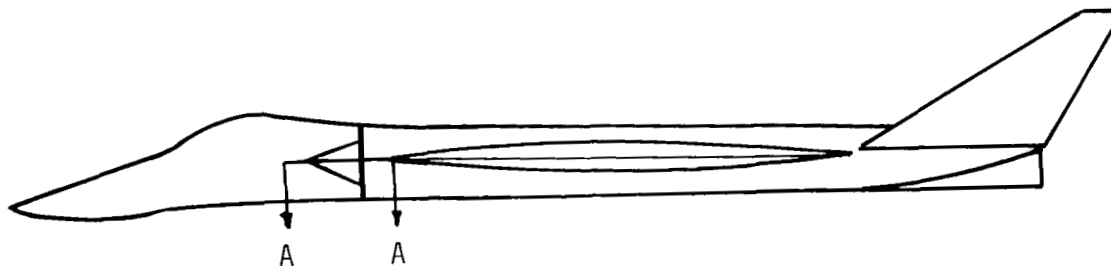


Figure B1.- Geometric details of model inlet.

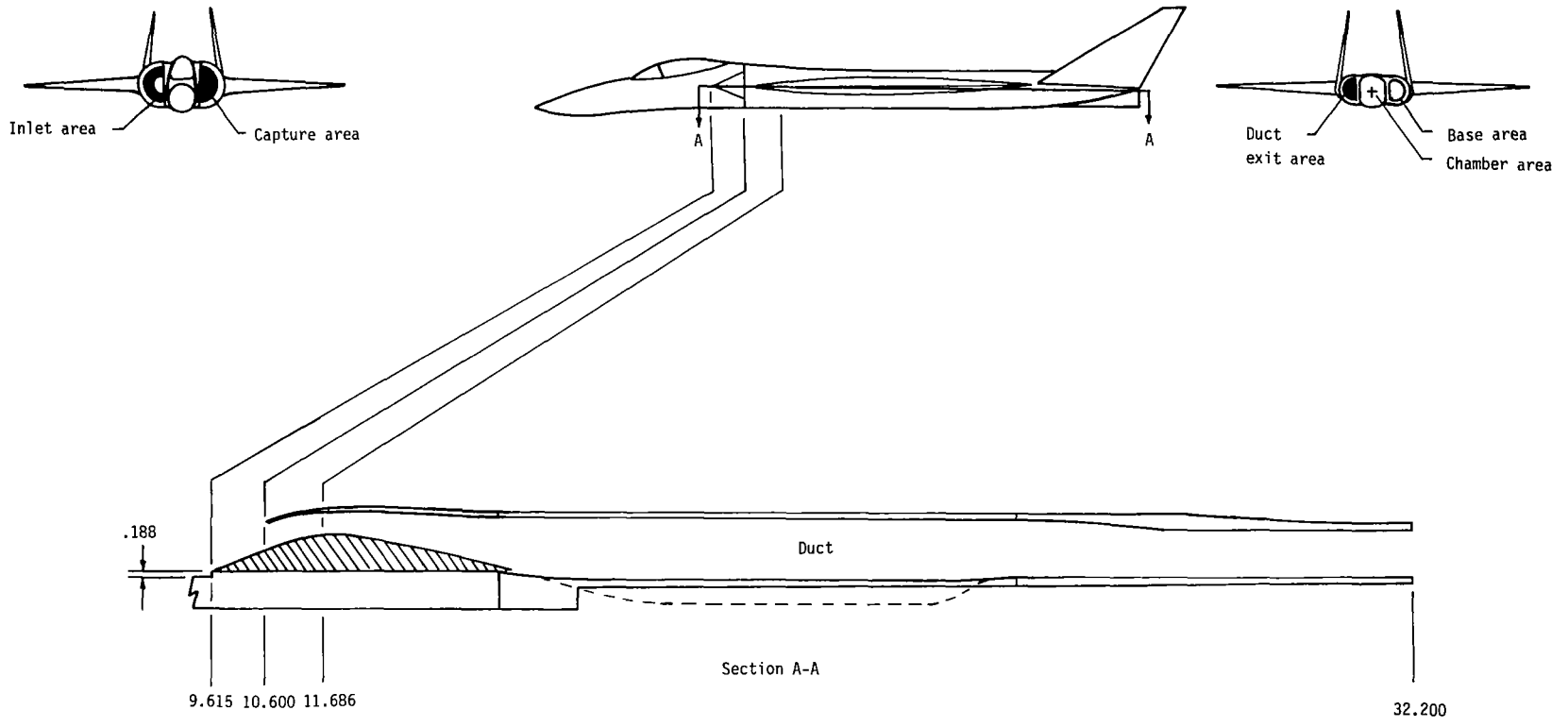
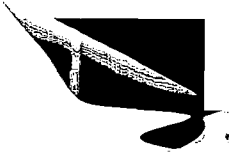


Figure B2.- Cross-sectional view of inlet and duct details. Linear dimensions are in inches.

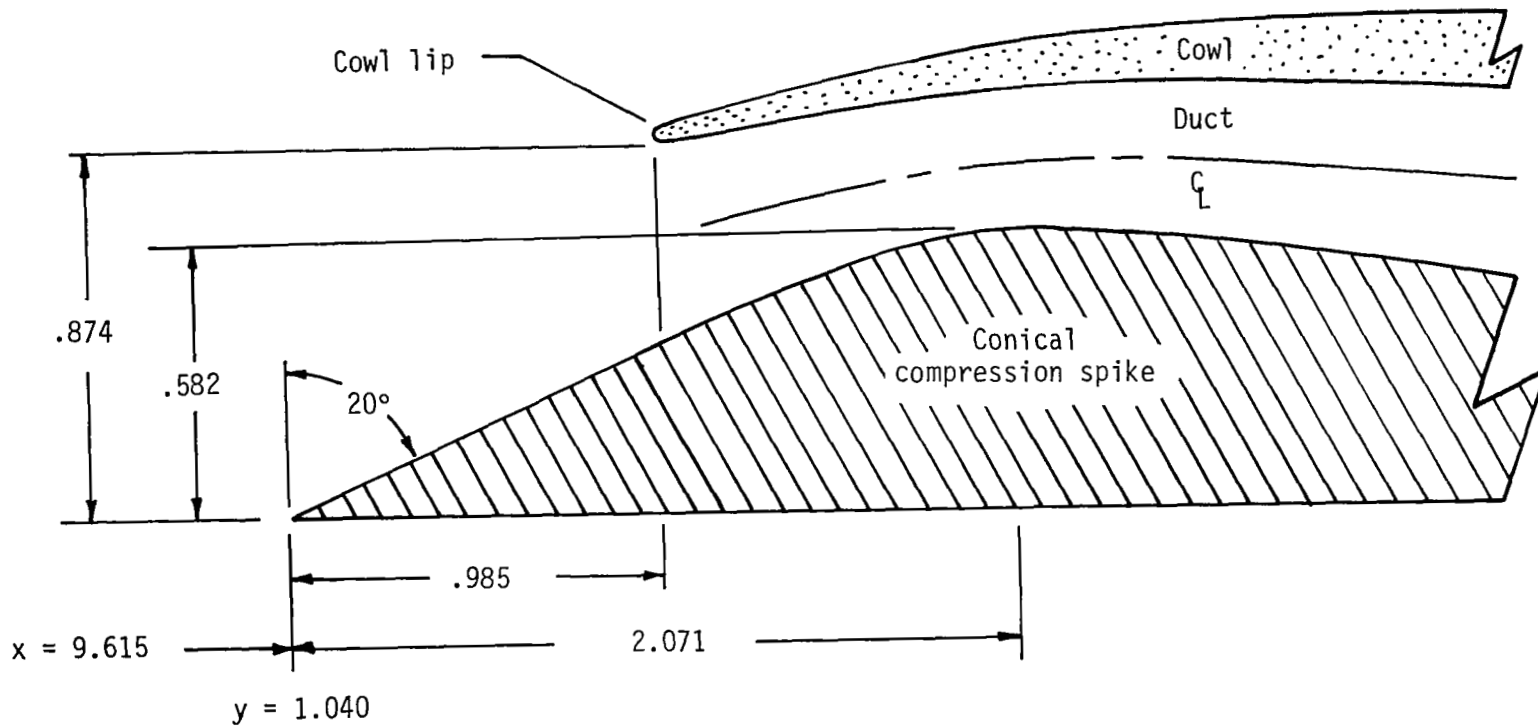
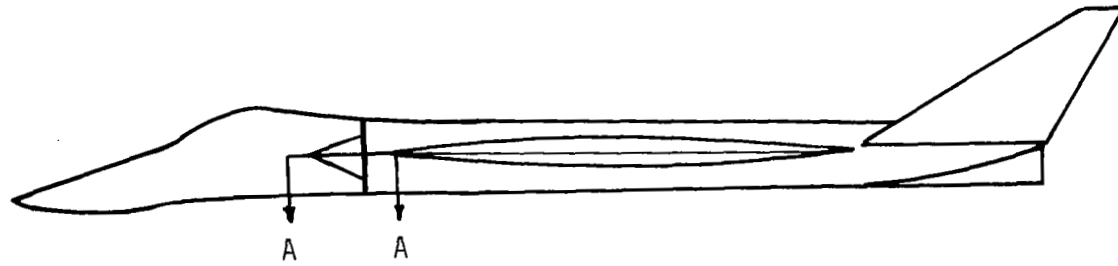


Figure B1.- Geometric details of model inlet.

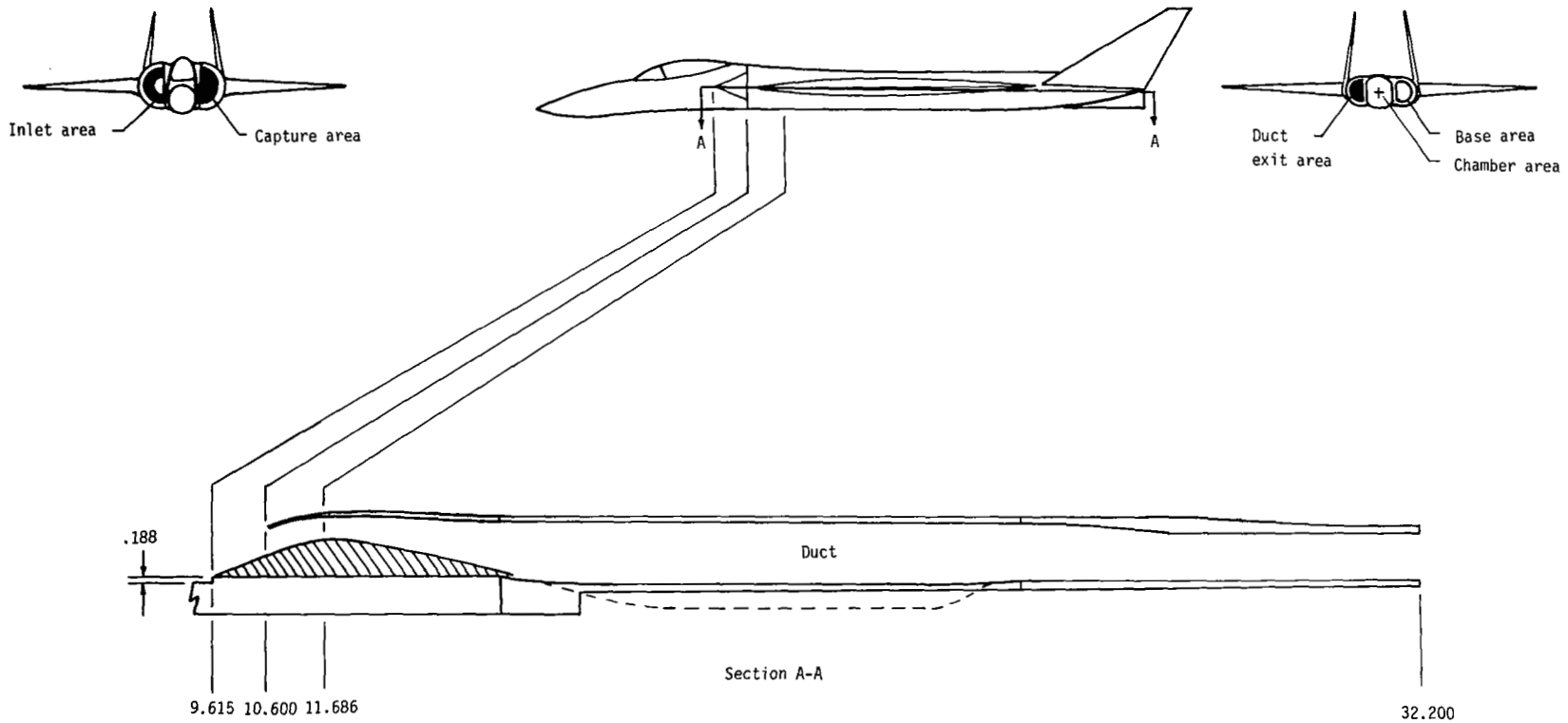


Figure B2.- Cross-sectional view of inlet and duct details. Linear dimensions are in inches.

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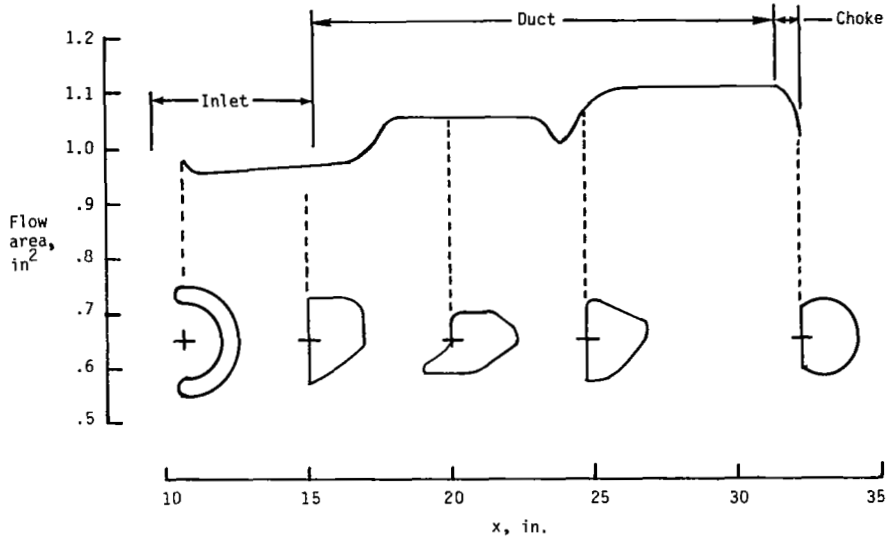


Figure B3.- Cross-sectional duct area distribution and duct shape.

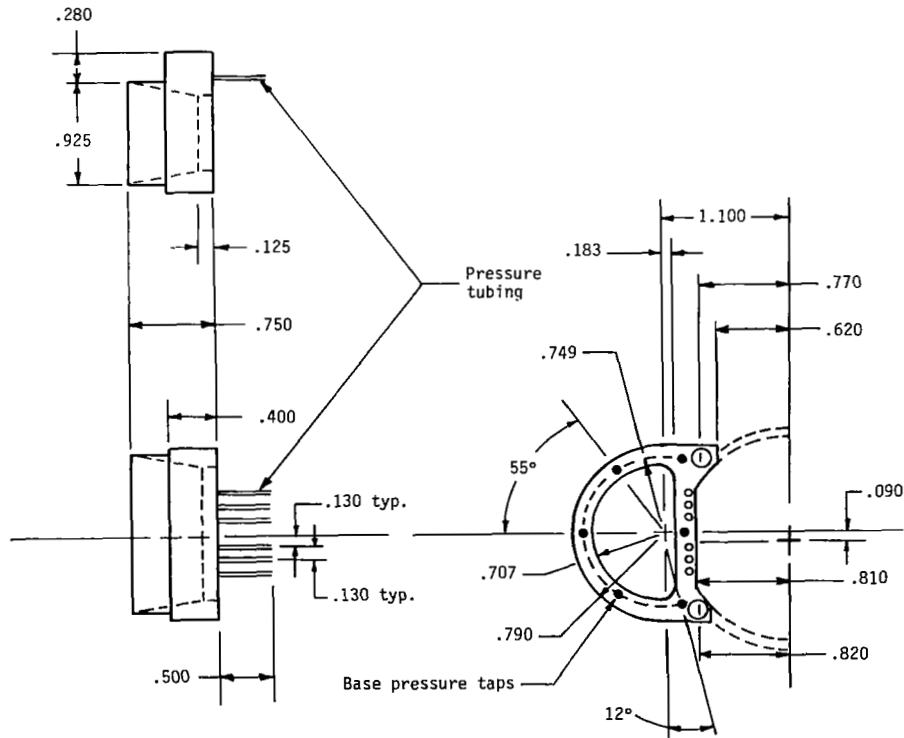


Figure B4.- Details of exit choke ring. Linear dimensions are inches.

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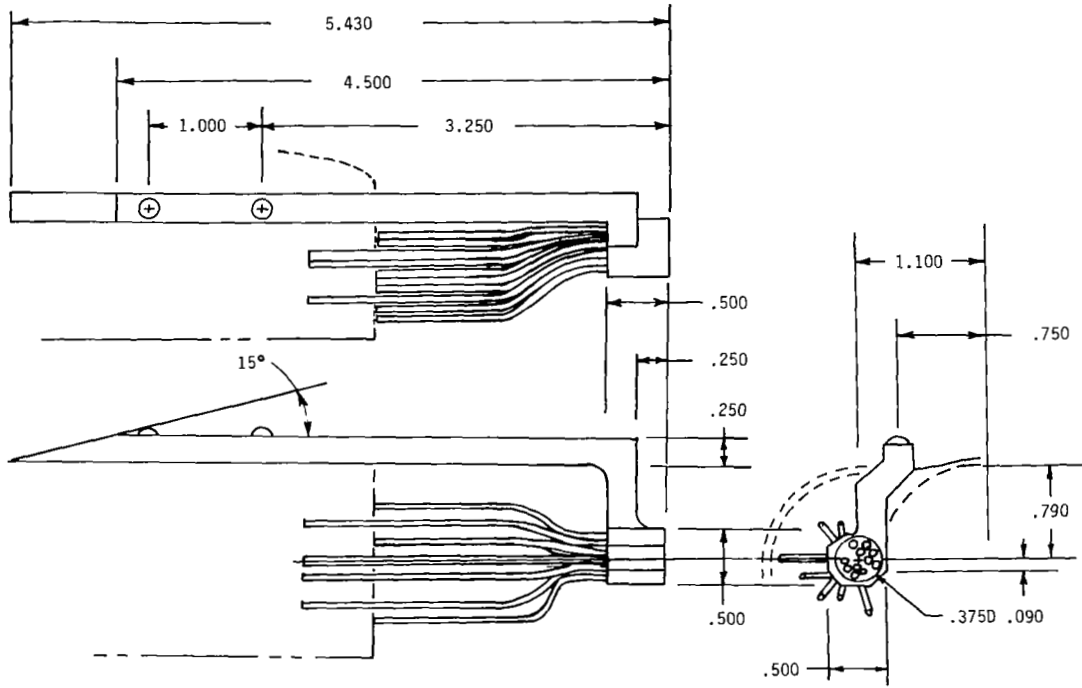


Figure B5.- Details of exit survey rake. Linear dimensions are in inches.

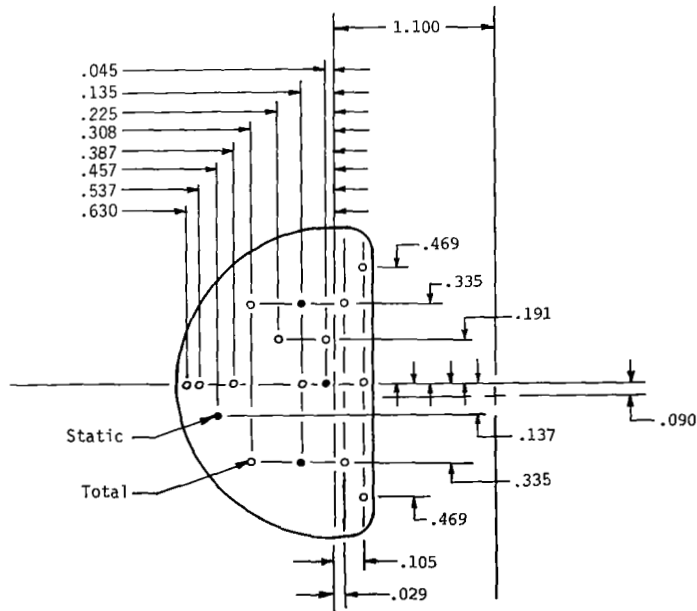
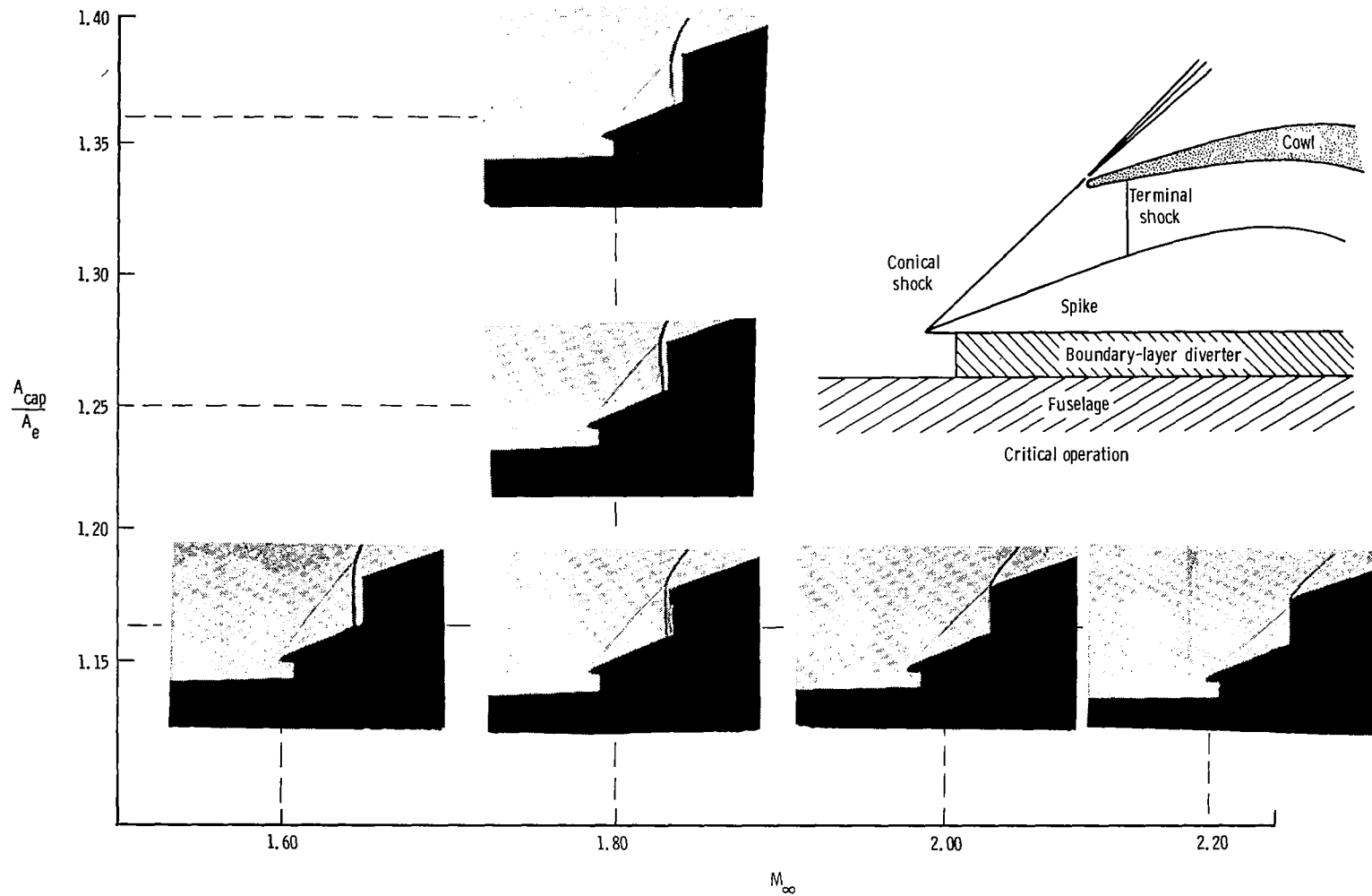


Figure B6.- Sketch showing survey-vane orifice locations. Linear dimensions are in inches.



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Figure B7.- Shadowgraph photos showing variation in inlet shock structure with Mach number and duct exit area. $\alpha = 0$.

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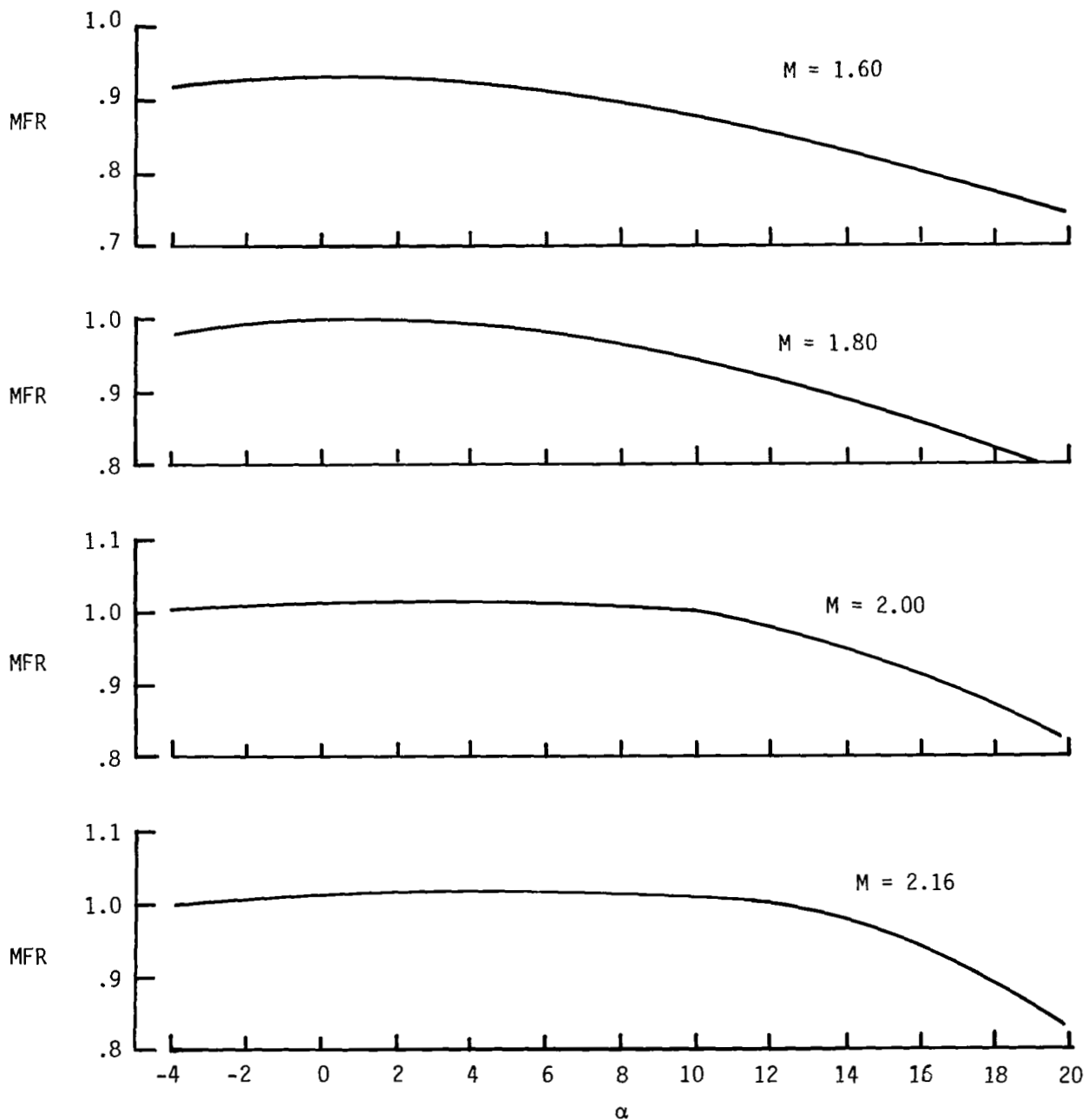


Figure B8.- Variation of mass-flow ratio with angle of attack and Mach number.

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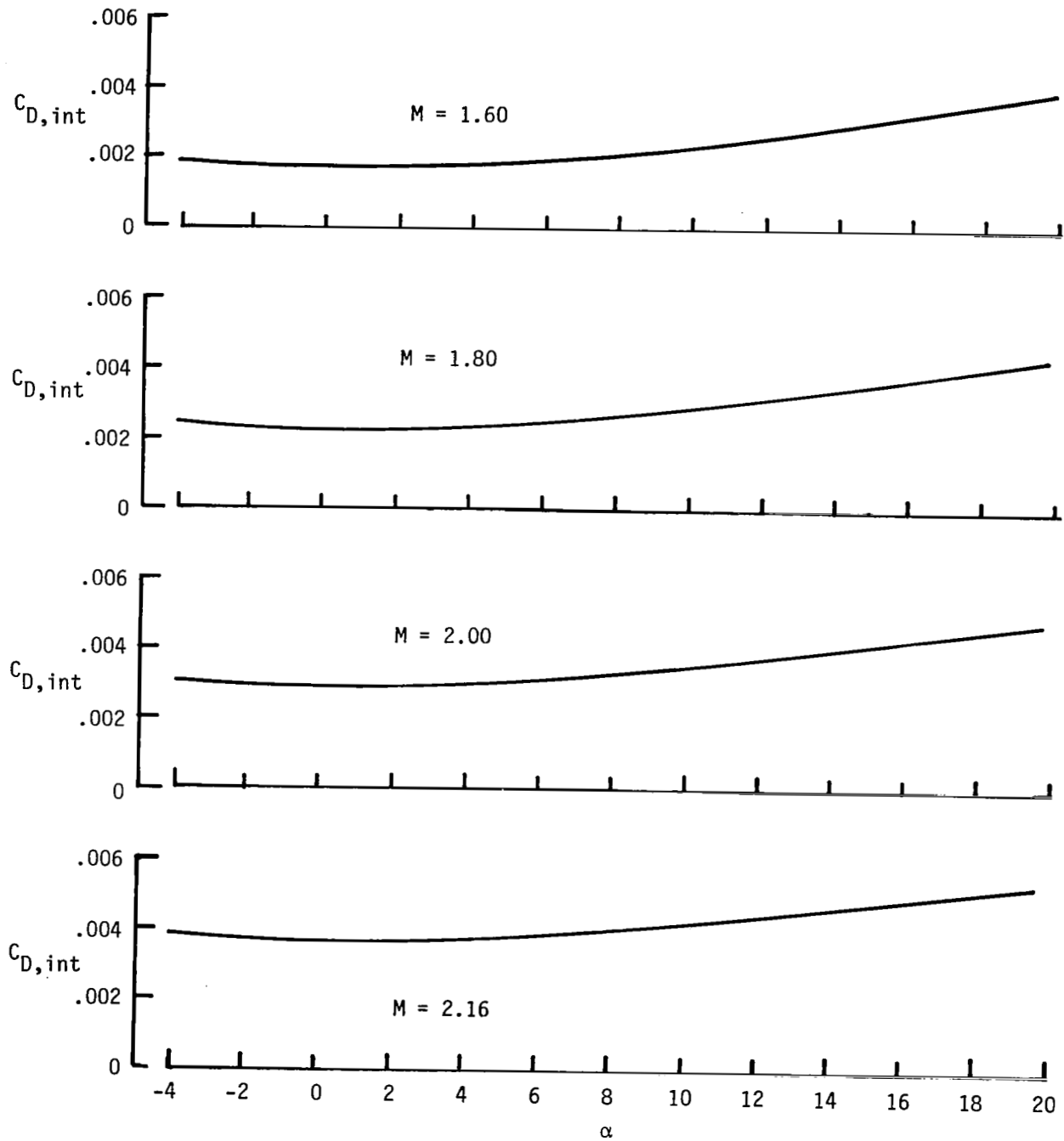


Figure B9.- Variation of internal drag coefficient with angle of attack and Mach number.

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