

RESEARCH MEMORANDUM

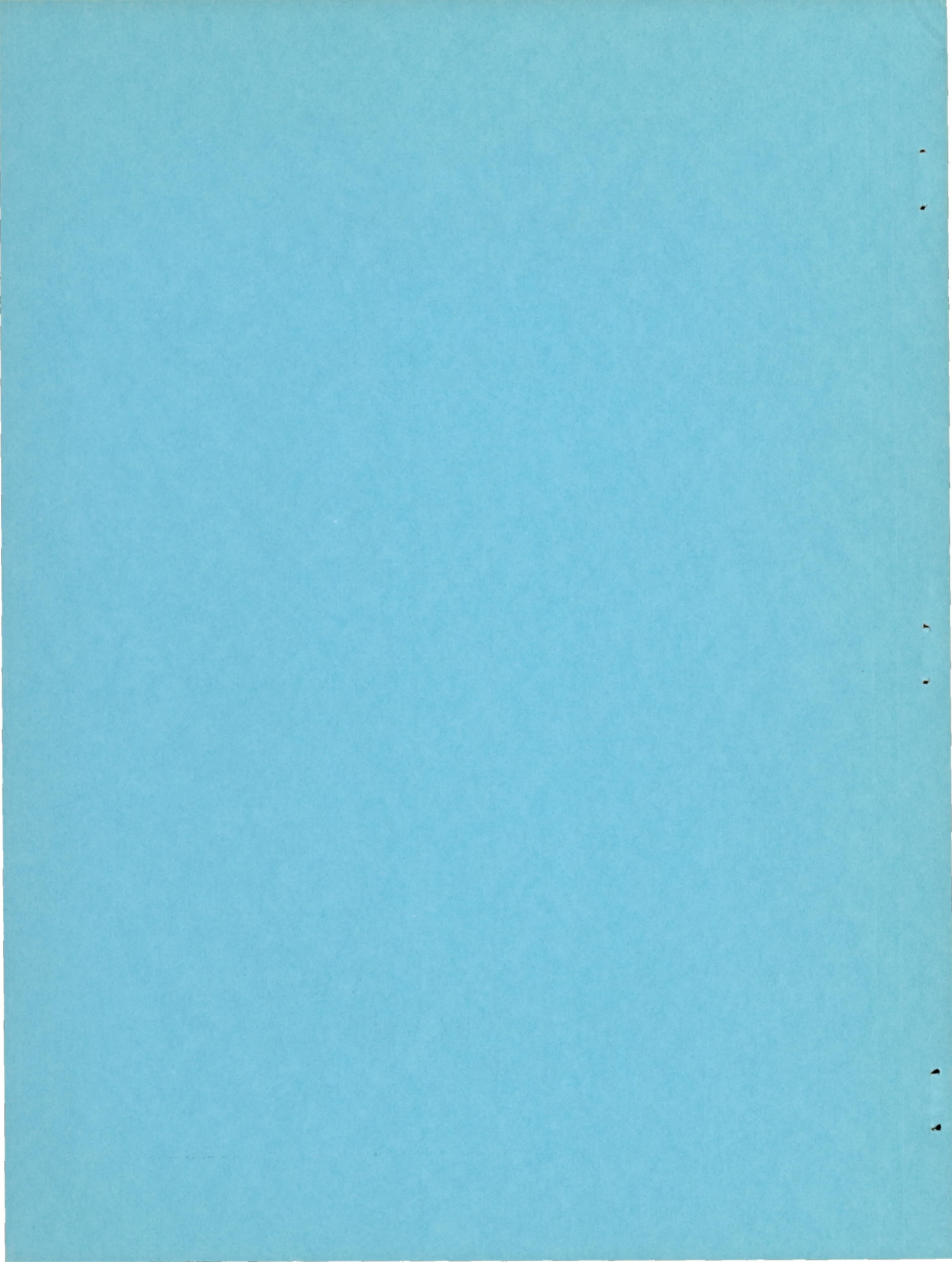
THE VARIATION WITH WING ASPECT RATIO
OF FLAP EFFECTIVENESS ON THIN RECTANGULAR
WINGS AT TRANSONIC SPEEDS

By John G. Lowry and Robert T. Taylor

Langley Aeronautical Laboratory
Langley Field, Va.

NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS
WASHINGTON

August 23, 1956
Declassified May 16, 1958



NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

RESEARCH MEMORANDUM

THE VARIATION WITH WING ASPECT RATIO
OF FLAP EFFECTIVENESS ON THIN RECTANGULAR
WINGS AT TRANSONIC SPEEDS

By John G. Lowry and Robert T. Taylor

SUMMARY

A wind-tunnel investigation has been made in the Langley high-speed 7- by 10-foot tunnel by use of the transonic-bump technique to study the effectiveness of full-span flap-type controls on 31 unswept rectangular wings. Plain flaps with flap-chord ratios of 0.1, 0.2, 0.3, and 0.4 were tested on wings of aspect ratios from 1 to 6 at Mach numbers from 0.4 to 1.1. The data for the most part are presented without analysis.

INTRODUCTION

The variation of control effectiveness with wing aspect ratio and flap-chord ratio is well known at low subsonic speeds (refs. 1 to 5) and at supersonic speeds (refs. 6 and 7). There is, however, very little known about these effects at transonic speeds. In addition there are only a few systematic data available for controls on the thinner (4- to 6-percent thick) airfoils at transonic speeds.

The present paper presents the results of a wind-tunnel investigation to determine flap-effectiveness parameters using 31 small-scale rectangular semispan wings equipped with full-span plain flaps. The transonic speeds were obtained by using the transonic-bump technique in the Langley high-speed 7- by 10-foot tunnel. The variables investigated were wing thickness (4 and 6 percent), wing aspect ratio (aspect ratios from 1 to 6), and flap-chord ratio (flap-chord to wing-chord ratios of 0.1 to 0.4).

In order to expedite the publication of the results, no detailed analysis or discussion of the data will be made. All of the data are presented in tabulated form and in addition some data showing significant trends are presented in graphic form.

SYMBOLS

C_L	lift coefficient, $\frac{\text{Twice semispan lift}}{qS}$
C_D	drag coefficient, $\frac{\text{Twice semispan drag}}{qS}$
C_m	pitching-moment coefficient about $0.25c$, $\frac{\text{Twice semispan pitching moment}}{qSc}$
C_l	rolling-moment coefficient, $\frac{\text{Semispan rolling moment}}{qSb}$
C_n	yawing-moment coefficient, $\frac{\text{Semispan yawing moment}}{qSb}$
b	wing span, ft
c	wing chord, ft
c_f	flap chord, ft
S	wing area, sq ft
t	wing thickness, ft
A	wing aspect ratio, $\frac{b^2}{S}$
q	free-stream dynamic pressure, $\frac{1}{2}\rho V^2$, lb/sq ft
V	free-stream velocity, ft/sec
ρ	free-stream density, slugs/cu ft
R	Reynolds number based on wing chord
M	free-stream Mach number
M_l	local Mach number
α	angle of attack, deg
δ	flap deflection, deg

- α_δ flap-effectiveness parameter, effective change in wing angle of attack caused by unit angular change in control-surface deflection
- $C_{L\alpha}$ lift-curve slope, $\frac{\partial C_L}{\partial \alpha}$

MODELS

The geometric characteristics of the models used in the investigation are given in figure 1. The models were machined from solid steel to either NACA 65A004 or NACA 65A006 airfoil sections. The basic models had no twist or camber and had a taper ratio of 1. The aspect ratio was varied by cutting the wings at the appropriate spanwise station and filing the tip normal to the chord plane.

The flaps were machined integrally with the wing at a deflection of approximately 10° . The flap chords and actual deflections are given on figure 1.

TESTS

The tests were made by using the transonic-bump technique in the Langley high-speed 7- by 10-foot tunnel. The models were attached to a five-component electrical-strain-gage balance beneath the bump surface. The tests were made over a Mach number range from 0.4 to 1.1 at Reynolds numbers varying from 0.5×10^6 to 1.5×10^6 (fig. 2). The variation of the local Mach number over the bump in the vicinity of the model is shown in figure 3.

The test angles of attack varied from -10° to 25° whenever the loads encountered did not exceed the design limit of the balance. The aspect ratio varied from 6 to 2 on the 6-percent-thick wings and from 4 to 1 on the 4-percent-thick wings. Flap chords varied from 0 to 0.4c.

The data have not been corrected for jet-boundary effects on blocking since the models were sufficiently small with respect to tunnel boundaries to make the corrections negligible. No corrections were applied to account for flap deflection under load since checks indicated these too were small. The roll and yaw data presented represent the rolling- and yawing-moment coefficients resulting from deflection of the control on one wing. Since no reflection-plane corrections have been applied to the data, they represent symmetrically deflected controls and

should be reduced if applied to antisymmetric deflection. The magnitude of the corrections (reflection plane) at $M = 0$ obtained from references 3 and 4 are given in figure 4. The variation of the correction with Mach number has not been established in the transonic-speed range but does decrease to 0 at supersonic speeds.

Because of the small physical size of the models and the resulting inaccuracies in the measurement of the forces and moments, care should be taken in analyzing the tabulated data especially at the lower Mach numbers.

RESULTS AND DISCUSSION

The force and moment data obtained in this investigation are presented in tables 1 to 6.

A comparison of the lift-curve slope $C_{L\alpha}$ with theory is given in figure 5 at $M = 0.4$. The variation of $C_{L\alpha}$ with Mach number is given in figure 6 for the various wings investigated. Figure 7 presents the flap-effectiveness parameter α_δ as a function of flap-chord ratio at all the test Mach numbers. A comparison of α_δ with theory is shown in figure 8.

The variation of the lift-curve slope with aspect ratio at $M = 0.4$ (fig. 5) shows exceptional agreement with the theory of reference 8. The variation of $C_{L\alpha}$ with M (fig. 6) is presented to give a more complete meaning to the values of α_δ presented.

The variation of the flap-effectiveness parameter α_δ with flap-chord ratio (fig. 7) is presented in order to eliminate the necessity of plotting all the lift data to see the trends with Mach number and aspect ratio. The values of α_δ plotted in figure 7 were obtained by dividing the change in angle of zero lift from the plain wing to the flapped wing by the flap deflection and therefore represent the value of α_δ at $C_L = 0$. This method is somewhat more accurate than using $C_{L\delta}/C_{L\alpha}$ and except where there are nonlinearities in the lift curve give the same value. A comparison of the variation of α_δ with aspect ratio with the subsonic (ref. 5) and supersonic (ref. 6) theories (fig. 8) show that at $M = 0.4$ and 1.1 the theories predict the variation quite satisfactorily but not the magnitude. At a Mach number of 0.9 neither theory gives either a satisfactory variation or the correct

magnitude. The disagreement between theory and experiment in magnitude is typical and results to some extent from the thickened boundary layer at the trailing edge. The magnitude at $M = 0.4$ agrees quite well with other published data, for example reference 9. These results indicate that both in the subsonic- and supersonic-speed ranges the available theories can be used to obtain the variation of α_δ with A , but in the transonic range the variation must be obtained from experimental studies.

It should be pointed out that these data are for only one value of δ , and, although they are useful in determining the effects of the several variables, they are not necessarily applicable to the design of a control surface that uses small deflections in the transonic-speed range (see ref. 10).

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., May 4, 1956.

REFERENCES

1. Swanson, Robert S., and Crandall, Stewart M.: Lifting-Surface-Theory Aspect-Ratio Corrections to the Lift and Hinge-Moment Parameters for Full-Span Elevators on Horizontal Tail Surfaces. NACA Rep. 911, 1948. (Supersedes NACA TN 1175.)
2. Sears, Richard I.: Wind-Tunnel Data on the Aerodynamic Characteristics of Airplane Control Surfaces. NACA WR L-663, 1943. (Formerly NACA ACR 3L08.)
3. DeYoung, John: Theoretical Symmetric Span Loading Due to Flap Deflection for Wings of Arbitrary Plan Form at Subsonic Speeds. NACA Rep. 1071, 1952. (Supersedes NACA TN 2278.)
4. DeYoung, John: Theoretical Antisymmetric Span Loading for Wings of Arbitrary Plan Form at Subsonic Speeds. NACA Rep. 1056, 1951. (Supersedes NACA TN 2140.)
5. Stone, H. N.: Aerodynamic Characteristics of Low-Aspect-Ratio Wings With Various Flaps at Subsonic Speeds. Rep. No. AF-743-A-2, (Contract No. AF 33(038)-17397), Cornell Aero. Lab., Inc., Jan. 1952.
6. Tucker, Warren A., and Nelson, Robert L.: Theoretical Characteristics in Supersonic Flow of Constant-Chord Partial-Span Control Surfaces on Rectangular Wings Having Finite Thickness. NACA TN 1708, 1948.
7. Goin, Kenneth L.: Equations and Charts for the Rapid Estimation of Hinge-Moment and Effectiveness Parameters for Trailing-Edge Controls Having Leading and Trailing Edges Swept Ahead of the Mach Lines. NACA Rep. 1041, 1951. (Supersedes NACA TN 2221.)
8. Polhamus, Edward C., and Sleeman, William C., Jr.: The Rolling Moment Due to Sideslip of Swept Wings at Subsonic and Transonic Speeds. NACA RM L54L01, 1955.
9. Langley Research Staff (Compiled by Thomas A. Toll): Summary of Lateral-Control Research. NACA Rep. 868, 1947. (Supersedes NACA TN 1245.)
10. Hemenover, Albert D., and Grahm, Donald J.: Influence of Airfoil Trailing-Edge Angle and Trailing-Edge-Thickness Variation on the Effectiveness of a Plain Flap at High Subsonic Mach Numbers. NACA TN 3174, 1954.

TABLE 1.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 1 MODEL

$c_t = 0.04$ $c_f = \text{NONE}$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.4253					-10	-.4323	.0825	.0001	-.0490	.0150
-7	-.2982					-7	-.2832	.0440	-.0081	-.0316	.0096
-5	-.2324					-5	-.2025	.0276	-.0139	-.0222	.0071
-3	-.1666					-3	-.1280	.0201	-.0138	-.0147	.0049
-2	-.1228					-2	-.0783	.0196	-.0084	-.0094	.0033
-1	-.0965					-1	-.0534	.0164	-.0065	-.0057	.0018
0	-.0702					0	-.0199	.0164	-.0009	-.0026	.0018
1	-.0351					1	.0087	.0159	.0023	.0015	.0024
2	-.0132					2	.0460	.0196	.0090	.0045	.0025
3	.0088					3	.0832	.0214	.0119	.0094	.0042
5	.0570					5	.1665	.0306	.0122	.0170	.0071
7	.1272					7	.2509	.0477	.0142	.0275	.0119
10	.2280					10	.3938	.0855	.0069	.0448	.0193
15	.4297					15	.6634	.1893	-.0357	.0765	.0354
20	.6884					20	.8870	.3421	-.1009	.1044	.0529
25	.8419					25	.9689	.4765	-.1365	.1123	.0672
M = 0.60						M = 1.00					
-10	-.4089	.0705	-.0178	-.0383	.0193	-10	-.4396	.0901	.0047	-.0505	.0121
-7	-.2915	.0461	-.0135	-.0310	.0120	-7	-.2887	.0468	-.0098	-.0332	.0074
-5	-.2132	.0374	-.0183	-.0225	.0082	-5	-.1937	.0292	-.0126	-.0223	.0050
-3	-.1414	.0331	-.0119	-.0152	.0063	-3	-.1164	.0216	-.0147	-.0137	.0042
-2	-.1044	.0322	-.0134	-.0112	.0054	-2	-.0748	.0204	-.0114	-.0090	.0031
-1	-.0740	.0322	-.0116	-.0072	.0044	-1	-.0392	.0192	-.0059	-.0047	.0023
0	-.0435	.0365	-.0048	-.0033	.0026	0	-.0154	.0188	-.0017	-.0025	.0012
1	-.0174	.0374	-.0002	.0000	.0035	1	.0143	.0188	.0013	.0011	.0014
2	.0044	.0374	-.0013	.0033	.0038	2	.0558	.0192	.0115	.0051	.0014
3	.0392	.0426	.0035	.0079	.0051	3	.0855	.0221	.0165	.0090	.0031
5	.1022	.0579	.0021	.0165	.0054	5	.1711	.0321	.0172	.0180	.0050
7	.1784	.0748	.0106	.0257	.0089	7	.2756	.0513	.0092	.0296	.0117
10	.3197	.1122	.0296	.0416	.0016	10	.4301	.0946	-.0071	.0490	.0173
15	.5068	.2162	-.0173	.0673	.0294	15	.7105	.2074	-.0575	.0829	.0337
20	.7830	.3689	-.0825	.0983	.0506	20	.9362	.3600	-.1068	.1103	.0571
25	.9027	.5029	-.1325	.1089	.0699	25	1.0740	.5201	-.1571	.1280	.0791
M = 0.80						M = 1.05					
-10	-.4059	.0717	-.0080	-.0457	.0150	-10	-.4471	.0894	.0143	-.0511	.0081
-7	-.2848	.0398	-.0130	-.0304	.0092	-7	-.2878	.0480	-.0064	-.0331	.0055
-5	-.2066	.0289	-.0136	-.0215	.0058	-5	-.1854	.0291	-.0168	-.0214	.0023
-3	-.1299	.0254	-.0097	-.0134	.0039	-3	-.1229	.0223	-.0169	-.0138	.0002
-2	-.0826	.0239	-.0045	-.0099	.0030	-2	-.0751	.0207	-.0103	-.0086	-.0020
-1	-.0517	.0233	-.0001	-.0067	.0030	-1	-.0466	.0212	-.0078	-.0052	-.0022
0	-.0236	.0239	.0010	-.0027	.0028	0	-.0148	.0191	-.0023	-.0010	-.0017
1	.0030	.0233	.0017	.0013	.0028	1	.0159	.0207	.0001	.0034	-.0053
2	.0280	.0254	.0084	.0045	.0032	2	.0592	.0218	.0077	.0066	-.0020
3	.0635	.0289	.0083	.0080	.0049	3	.0933	.0234	.0110	.0104	-.0007
5	.1417	.0398	.0120	.0166	.0049	5	.1752	.0346	.0125	.0193	.0020
7	.2022	.0543	.0147	.0255	.0082	7	.2730	.0526	.0039	.0304	.0061
10	.3335	.0921	.0172	.0403	.0172	10	.4380	.0951	-.0181	.0493	.0144
15	.5564	.1966	-.0176	.0694	.0311	15	.7167	.2155	-.0655	.0846	.0293
20	.8235	.3338	-.0962	.0954	.0493	20	.9488	.3770	-.1176	.1149	.0518
25	.8973	.4501	-.1333	.1052	.0607	25	1.1467	.5684	-.1673	.1381	.0744
M = 0.90						M = 1.10					
-10	-.4232	.0781	-.0047	-.0474	.0159	-10	-.4467	.0823	.0158	-.0515	.0053
-7	-.2839	.0417	-.0115	-.0316	.0104	-7	-.2934	.0442	-.0052	-.0339	.0008
-5	-.1901	.0268	-.0068	-.0217	.0078	-5	-.1960	.0274	-.0133	-.0219	-.0011
-3	-.1276	.0193	-.0118	-.0134	.0055	-3	-.1204	.0195	-.0132	-.0133	-.0025
-2	-.0755	.0185	-.0076	-.0091	.0047	-2	-.0766	.0173	-.0098	-.0083	-.0027
-1	-.0560	.0167	-.0065	-.0059	.0034	-1	-.0471	.0155	-.0054	-.0050	-.0027
0	-.0234	.0172	-.0010	-.0020	.0025	0	-.0120	.0151	-.0031	-.0017	-.0030
1	.0026	.0159	.0004	.0020	.0013	1	.0131	.0145	-.0003	.0027	-.0035
2	.0378	.0193	.0092	.0051	.0017	2	.0602	.0204	.0099	.0067	-.0022
3	.0677	.0198	.0062	.0091	.0034	3	.0876	.0232	.0121	.0100	-.0033
5	.1589	.0320	.0113	.0174	.0070	5	.1741	.0344	.0108	.0199	-.0014
7	.2370	.0461	.0165	.0269	.0125	7	.2628	.0539	.0028	.0299	.0014
10	.3737	.0833	.0096	.0435	.0201	10	.4204	.1023	-.0183	.0482	.0083
15	.6368	.1922	-.0250	.0755	.0337	15	.7051	.2277	-.0675	.0830	.0231
20	.8516	.3331	-.1014	.0976	.0494	20	.9416	.3931	-.1206	.1156	.0452
25	.9298	.4560	-.1371	.1086	.0632	25	1.1168	.5709	-.1656	.1375	.0657

TABLE 1.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 1 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.10$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2981					-10	-.3042	.0507	-.0513	-.0351	.0200
-7	-.2104					-7	-.1751	.0268	-.0705	-.0181	.0171
-5	-.1227					-5	-.0993	.0209	-.0713	-.0075	.0144
-3	-.0526					-3	.0000	.0176	-.0678	.0026	.0121
-2	-.0044					-2	.0335	-.0415	-.0691	.0072	.0126
-1	.0307					-1	.0807	.0226	-.0667	.0117	.0123
0	.0570					0	.1056	.0268	-.0662	.0158	.0119
1	.0745					1	.1465	.0318	-.0611	.0200	.0128
2	.1008					2	.1888	.0373	-.0580	.0233	.0137
3	.1096					3	.2173	.0390	-.0619	.0271	.0150
5	.1622					5	.3080	.0586	-.0598	.0377	.0202
7	.2411					7	.3850	.0849	-.0590	.0478	.0269
10	.3507					10	.5377	.1356	-.0692	.0667	.0350
15	.5567					15	.8072	.2620	-.1072	.1006	.0523
20	.8109					20	1.0059	.4262	-.1552	.1266	.0733
25	.9863					25	1.0853	.5764	-.1910	.1345	.0881
M = 0.60						M = 1.00					
-10	-.2610	.0344	-.0732	-.0271	.0202	-10	-.3302	.0637	-.0394	-.0371	.0190
-7	-.1631	.0278	-.0826	-.0152	.0148	-7	-.1782	.0373	-.0592	-.0191	.0155
-5	-.0696	.0309	-.0849	-.0059	.0127	-5	-.0772	.0228	-.0670	-.0065	.0131
-3	-.0152	.0331	-.0741	.0013	.0117	-3	-.0024	.0200	-.0767	.0025	.0119
-2	.0196	.0309	-.0922	.0066	.0098	-2	.0416	.0221	-.0712	.0072	.0112
-1	.0305	.0344	-.0813	.0099	.0117	-1	.0772	.0257	-.0674	.0112	.0107
0	.0631	.0183	-.0795	.0145	.0117	0	.1069	.0285	-.0675	.0151	.0105
1	.0979	.0492	-.0685	.0178	.0117	1	.1413	.0292	-.0620	.0187	.0110
2	.1196	.0522	-.0760	.0225	.0139	2	.1805	.0373	-.0730	.0220	.0124
3	.1588	.0631	-.0651	.0257	.0145	3	.2138	.0409	-.0558	.0263	.0138
5	.2284	.0792	-.0664	.0376	.0174	5	.2945	.0577	-.0566	.0360	.0188
7	.2958	.1057	-.0620	.0462	.0221	7	.3991	.0853	-.0625	.0486	.0255
10	.4350	.1649	-.0607	.0640	.0326	10	.5570	.1425	-.0845	.0681	.0333
15	.6634	.2801	-.0917	.0937	.0553	15	.8314	.2710	-.1285	.1024	.0506
20	.9179	.4750	-.1395	.1234	.0791	20	1.0452	.4404	-.1705	.1323	.0734
25	1.0636	.6290	-.1787	.1379	.1063	25	1.1924	.6285	-.2157	.1503	.0980
M = 0.80						M = 1.05					
-10	-.2775	.0413	-.0711	-.0304	.0204	-10	-.3470	.1297	-.0298	-.0400	.0132
-7	-.1594	.0283	-.0784	-.0152	.0156	-7	-.1843	.0425	-.0571	-.0207	.0075
-5	-.0841	.0248	-.0749	-.0058	.0120	-5	-.0853	.0314	-.0681	-.0083	.0078
-3	-.0074	.0248	-.0665	.0031	.0110	-3	-.0205	.0257	-.0705	.0010	.0058
-2	.0266	.0248	-.0692	.0076	.0110	-2	.0364	.0273	-.0689	.0062	.0058
-1	.0620	.0283	-.0676	.0112	.0110	-1	.0705	.0291	-.0666	.0104	.0058
0	.1107	.0354	-.0546	.0143	.0110	0	.0933	.0303	-.0645	.0138	.0059
1	.1210	.0354	-.0647	.0179	.0118	1	.1160	.0319	-.0655	.0179	.0046
2	.1505	.0413	-.0563	.0220	.0133	2	.1729	.0403	-.0555	.0214	.0061
3	.1845	.0463	-.0593	.0269	.0148	3	.2036	.0441	-.0571	.0255	.0102
5	.2686	.0646	-.0499	.0358	.0180	5	.2867	.0637	-.0577	.0349	.0122
7	.3321	.0865	-.0531	.0457	.0234	7	.3834	.0890	-.0676	.0466	.0189
10	.4649	.1393	-.0548	.0855	.0352	10	.5472	.1422	-.0877	.0663	.0256
15	.7010	.2642	-.0901	.0922	.0515	15	.8077	.2735	-.1344	.1008	.0431
20	.9475	.4327	-.1592	.1182	.0719	20	1.0330	.4575	-.1770	.1325	.0612
25	1.0331	.5576	-.1796	.1258	.0886	25	1.1922	.6534	-.2215	.1540	.0853
M = 0.90						M = 1.10					
-10	-.2851	.0443	-.0597	-.0328	.0218	-10	-.2766	.0749	-.0220	-.0294	.0021
-7	-.1627	.0250	-.0769	-.0158	.0172	-7	-.1470	.0760	-.0510	-.0126	.0035
-5	-.0885	.0172	-.0773	-.0055	.0140	-5	-.0545	.0440	-.0625	-.0010	.0055
-3	-.0130	.0206	-.0728	.0036	.0121	-3	.0033	.0407	-.0728	.0083	.0063
-2	.0417	.0185	-.0685	.0079	.0121	-2	.0534	.0418	-.0674	.0126	.0073
-1	.0755	.0219	-.0669	.0118	.0123	-1	.0926	.0440	-.0629	.0162	.0078
0	.1146	.0250	-.0661	.0158	.0123	0	.1056	.0451	-.0668	.0201	.0065
1	.1406	.0281	-.0643	.0198	.0125	1	.1394	.0481	-.0624	.0238	.0066
2	.1835	.0364	-.0562	.0233	.0142	2	.1906	.0547	-.0529	.0271	.0084
3	.2109	.0396	-.0581	.0272	.0146	3	.2330	.0599	-.0502	.0311	.0117
5	.2890	.0583	-.0563	.0364	.0193	5	.3071	.0815	-.0536	.0403	.0133
7	.3749	.0820	-.0545	.0470	.0257	7	.3920	.1093	-.0623	.0506	.0169
10	.5116	.1356	-.0584	.0648	.0350	10	.5336	.1703	-.0848	.0690	.0245
15	.7810	.2541	-.0937	.0956	.0520	15	.7950	.3043	-.1237	.1021	.0378
20	.9893	.4251	-.1635	.1201	.0706	20	1.0128	.4735	-.1652	.1335	.0560
25	1.0284	.5493	-.1851	.1272	.0849	25	1.1631	.6556	-.2090	.1559	.0769
						-10	-.2973	.0686	-.0283	-.0317	.0082
						-2	.0512	.0331	-.0685	.0122	.0087

TABLE 1.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 1 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2322					-10	-.2334	.0519	-.0758	-.0264	.0078
-7	-.1227					-7	-.0881	.0281	-.0888	-.0109	.0056
-5	.0570					-5	-.0062	.0214	-.0958	.0000	.0047
-3	.0000					-3	.0646	.0226	-.0947	.0083	.0045
-2	.0526					-2	.1179	.0276	-.0945	.0132	.0045
-1	.0853					-1	.1477	.0293	-.0934	.0169	.0051
0	.1183					0	.1825	.0348	-.0947	.0211	.0054
1	.1402					1	.2135	.0377	-.0964	.0252	.0056
2	.1709					2	.2570	.0469	-.0886	.0282	.0067
3	.1972					3	.2880	.0524	-.0880	.0320	.0092
5	.2410					5	.3687	.0745	-.0718	.0411	.0137
7	.3330					7	.4581	.1008	-.0886	.0508	.0191
10	.4250					10	.6108	.1587	-.0989	.0697	.0274
15	.6179					15	.8864	.2930	-.1318	.1017	.0457
20	.8238					20	1.0726	.4531	-.1654	.1250	.0644
25	1.0254					25	1.0949	.5837	-.1910	.1642	.0778
M = 0.60						M = 1.00					
-10	-.2195	.0265	-.0800	-.0264	.0110	-10	-.2576	.0641	-.0733	-.0299	.0081
-7	-.1022	.0170	-.0811	-.0132	.0070	-7	-.0962	.0321	-.0894	-.0119	.0047
-5	-.0326	.0161	-.0787	-.0040	.0057	-5	-.0024	.0264	-.1023	.0000	.0045
-3	.0413	.0248	-.0760	.0040	.0054	-3	.0712	.0264	-.1012	.0083	.0045
-2	.0696	.0265	-.0784	.0086	.0051	-2	.1175	.0285	-.1046	.0133	.0045
-1	.1025	.0322	-.0734	.0112	.0063	-1	.1579	.0321	-.1024	.0173	.0048
0	.1282	.0322	-.0801	.0165	.0044	0	.1864	.0351	-.0991	.0213	.0053
1	.1717	.0387	-.0731	.0191	.0066	1	.2220	.0408	-.0973	.0245	.0064
2	.1978	.0448	-.0798	.0231	.0089	2	.2612	.0480	-.0942	.0281	.0079
3	.2282	.0535	-.0709	.0271	.0101	3	.2873	.0525	-.0905	.0313	.0095
5	.2978	.0748	-.0757	.0362	.0127	5	.3740	.0748	-.0908	.0403	.0134
7	.3739	.1039	-.0707	.0462	.0177	7	.4713	.1021	-.0971	.0515	.0183
10	.4999	.1582	-.0668	.0620	.0272	10	.6387	.1593	-.1182	.0695	.0262
15	.7042	.2756	-.0868	.0877	.0449	15	.8833	.2978	-.1528	.1009	.0437
20	.9542	.4512	-.1383	.1134	.0711	20	1.0852	.4694	-.1899	.1272	.0659
25	1.0998	.6156	-.1638	.1247	.0954	25	1.2063	.6492	-.2145	.1423	.0918
M = 0.80						M = 1.05					
-10	-.2110	.0363	-.0750	-.0237	.0099	-10	-.2651	.0698	-.0701	-.0297	.0061
-7	-.0989	.0239	-.0817	-.0112	.0058	-7	-.1172	.0437	-.0914	-.0138	.0010
-5	-.0236	.0195	-.0815	-.0009	.0045	-5	-.0148	.0337	-.1017	-.0017	.0003
-3	.0546	.0218	-.0835	.0076	.0043	-3	.0592	.0307	-.1056	.0076	.0020
-2	.0959	.0254	-.0747	.0112	.0045	-2	.1081	.0307	-.1037	.0138	.0018
-1	.1181	.0275	-.0824	.0139	.0045	-1	.1411	.0337	-.1027	.0162	.0023
0	.1609	.0328	-.0728	.0179	.0052	0	.1729	.0364	-.1014	.0200	.0026
1	.1830	.0363	-.0785	.0224	.0064	1	.2036	.0411	-.1012	.0235	.0035
2	.2214	.0422	-.0712	.0260	.0077	2	.2469	.0476	-.0941	.0269	.0053
3	.2538	.0493	-.0762	.0300	.0077	3	.2810	.0514	-.0928	.0311	.0069
5	.3350	.0697	-.0734	.0385	.0120	5	.3640	.0739	-.0928	.0390	.0117
7	.4118	.0945	-.0773	.0479	.0172	7	.4539	.1019	-.0984	.0501	.0150
10	.5387	.1508	-.0738	.0636	.0251	10	.6075	.1568	-.1170	.0673	.0236
15	.7645	.2671	-.1019	.0896	.0421	15	.8578	.2933	-.1553	.0991	.0408
20	.9918	.4383	-.1603	.1142	.0624	20	1.0739	.4721	-.1952	.1267	.0628
25	1.0390	.5661	-.1818	.1191	.0753	25	1.2241	.6714	-.2262	.1453	.0880
M = 0.90						M = 1.10					
-10	-.2265	.0469	-.0790	-.0245	.0076	-10	-.2639	.0613	-.0656	-.0299	.0008
-7	-.0924	.0255	-.0878	-.0095	.0049	-7	-.1380	.0377	-.0858	-.0140	.0000
-5	-.0143	.0180	-.0897	.0000	.0042	-5	-.0252	.0269	-.0946	-.0017	-.0013
-3	.0677	.0206	-.0939	.0087	.0040	-3	.0515	.0258	-.1033	.0076	-.0006
-2	.1159	.0242	-.0881	.0130	.0042	-2	.1062	.0280	-.1035	.0120	.0000
-1	.1393	.0268	-.0869	.0158	.0047	-1	.1358	.0296	-.1019	.0156	.0010
0	.1718	.0320	-.0844	.0198	.0049	0	.1719	.0339	-.1011	.0199	.0011
1	.2070	.0364	-.0886	.0233	.0066	1	.1993	.0420	-.1014	.0236	.0024
2	.2473	.0448	-.0784	.0265	.0077	2	.2452	.0447	-.0935	.0266	.0035
3	.2695	.0500	-.0787	.0308	.0097	3	.2759	.0523	-.0914	.0309	.0053
5	.3567	.0755	-.0814	.0395	.0138	5	.3580	.0742	-.0923	.0399	.0091
7	.4517	.0992	-.0845	.0505	.0200	7	.4566	.1040	-.0959	.0502	.0139
10	.5884	.1523	-.0902	.0679	.0286	10	.6022	.1627	-.1184	.0668	.0217
15	.8305	.2786	-.1098	.0968	.0463	15	.8430	.3070	-.1574	.0973	.0382
20	1.0284	.4418	-.1678	.1177	.0638	20	1.0445	.4771	-.1929	.1232	.0582
25	1.0596	.5722	-.1846	.1224	.0740	25	1.2044	.6676	-.2289	.1432	.0802

TABLE 1.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 1MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1532					-10	-.1588	.0514	-.0805	-.0166	.0099
-7	-.0350					-7	-.0174	.0323	-.0908	-.0004	.0072
-5	.0569					-5	.0608	.0275	-.0907	.0087	.0060
-3	.1094					-3	.1241	.0288	-.0961	.0173	.0056
-2	.1313					-2	.1799	.0335	-.0968	.0222	.0060
-1	.1663					-1	.2209	.0377	-.0955	.0260	.0069
0	.2101					0	.2482	.0439	-.0981	.0309	.0072
1	.2320					1	.2829	.0506	-.0966	.0354	.0081
2	.2408					2	.3227	.0598	-.0914	.0392	.0097
3	.2714					3	.3636	.0683	-.0968	.0441	.0123
5	.3590					5	.4492	.0928	-.0950	.0535	.0171
7	.4071					7	.5460	.1251	-.1015	.0652	.0229
10	.5340					10	.7074	.1857	-.1136	.0843	.0321
15	.7004					15	.9481	.1648	-.1349	.1163	.0501
20	.9018					20	1.1343	.2514	-.1592	.1416	.0711
25	1.1162					25	1.1045	.3040	-.1574	.1371	.0785
M = 0.60						M = 1.00					
-10	-.1412	.0460	-.0725	-.0172	.0139	-10	-.1840	.0608	-.0841	-.0184	.0112
-7	-.0326	.0374	-.0713	-.0040	.0089	-7	-.0380	.0404	-.0994	-.0015	.0076
-5	.0326	.0365	-.0733	.0046	.0079	-5	.0629	.0321	-.1042	.0105	.0064
-3	.1086	.0426	-.0715	.0125	.0066	-3	.1365	.0328	-.1053	.0287	.0064
-2	.1412	.0482	-.0690	.0165	.0070	-2	.1959	.0368	-.1126	.0145	.0069
-1	.1716	.0513	-.0696	.0204	.0070	-1	.2280	.0420	-.1076	.0277	.0072
0	.2064	.0586	-.0648	.0250	.0070	0	.2576	.0480	-.1114	.0313	.0074
1	.2324	.0643	-.0673	.0290	.0073	1	.2873	.0537	-.1114	.0357	.0078
2	.2607	.0717	-.0692	.0323	.0098	2	.3384	.0632	-.1022	.0393	.0100
3	.3041	.0799	-.0649	.0376	.0120	3	.3681	.0712	-.1016	.0436	.0123
5	.3910	.1047	-.0647	.0488	.0152	5	.4630	.0976	-.1043	.0537	.0164
7	.4605	.1334	-.0643	.0587	.0205	7	.5580	.1285	-.1112	.0645	.0214
10	.5930	.1925	-.0630	.0778	.0329	10	.7124	.1897	-.1294	.0832	.0293
15	.7820	.3163	-.0856	.1015	.0493	15	.9617	.3410	-.1674	.1167	.0480
20	1.0122	.5022	-.1467	.1278	.0752	20	1.1516	.5162	-.2014	.1427	.0708
25	1.1515	.6729	-.1728	.1417	.1017	25	1.2205	.6703	-.2111	.1509	.0880
M = 0.80						M = 1.05					
-10	-.1327	.0428	-.0715	-.0174	.0122	-10	-.1933	.0643	-.0848	-.0186	.0083
-7	-.0221	.0304	-.0760	-.0036	.0079	-7	-.0398	.0418	-.1036	-.0021	.0033
-5	.0310	.0274	-.0813	.0049	.0069	-5	.0568	.0337	-.1115	.0093	.0040
-3	.1062	.0327	-.0795	.0130	.0062	-3	.1364	.0337	-.1163	.0186	.0049
-2	.1549	.0363	-.0759	.0174	.0069	-2	.1853	.0346	-.1183	.0228	.0046
-1	.1844	.0407	-.0764	.0210	.0069	-1	.2217	.0391	-.1158	.0265	.0049
0	.2271	.0472	-.0723	.0251	.0071	0	.2524	.0448	-.1149	.0307	.0040
1	.2478	.0522	-.0784	.0295	.0084	1	.2853	.0514	-.1130	.0341	.0046
2	.2832	.0587	-.0733	.0336	.0103	2	.3308	.0587	-.1067	.0376	.0073
3	.3171	.0675	-.0780	.0381	.0122	3	.3638	.0682	-.1080	.0428	.0099
5	.4071	.0920	-.0699	.0474	.0161	5	.4491	.0928	-.1085	.0521	.0142
7	.4867	.1212	-.0746	.0577	.0229	7	.5559	.1257	-.1137	.0649	.0182
10	.6150	.1799	-.0821	.0756	.0311	10	.6980	.1844	-.1320	.0821	.0248
15	.8407	.3047	-.1003	.1025	.0489	15	.9550	.3354	-.1705	.1152	.0390
20	1.0472	.4787	-.1621	.1240	.0680	20	1.1414	.5166	-.2061	.1418	.0611
25	1.0767	.6079	-.1797	.1293	.0815	25	1.2778	.7201	-.2376	.1618	.0843
M = 0.90						M = 1.10					
-10	-.1470	.0447	-.0828	-.0150	.0110	-10	-.1959	.0571	-.0869	-.0196	-.0029
-7	-.0325	.0302	-.0910	-.0016	.0079	-7	-.0438	.0365	-.1018	-.0027	-.0032
-5	.0624	.0268	-.0851	.0083	.0059	-5	.0580	.0306	-.1105	.0047	-.0024
-3	.1210	.0289	-.0866	.0170	.0053	-3	.1335	.0306	-.1161	.0179	-.0019
-2	.1756	.0320	-.0903	.0213	.0055	-2	.1783	.0344	-.1178	.0222	-.0016
-1	.1977	.0359	-.0870	.0253	.0057	-1	.2188	.0387	-.1150	.0262	-.0011
0	.2368	.0421	-.0872	.0292	.0057	0	.2440	.0442	-.1170	.0295	-.0003
1	.2563	.0468	-.0912	.0336	.0053	1	.2681	.0484	-.1180	.0329	.0008
2	.3125	.0575	-.0803	.0379	.0072	2	.3250	.0591	-.1074	.0365	.0027
3	.3486	.0653	-.0843	.0430	.0091	3	.3600	.0689	-.1083	.0412	.0045
5	.4384	.0908	-.0874	.0529	.0146	5	.4486	.0941	-.1108	.0505	.0094
7	.5268	.1197	-.0875	.0628	.0219	7	.5328	.1265	-.1149	.0611	.0131
10	.6764	.1811	-.0935	.0813	.0295	10	.6893	.1910	-.1341	.0794	.0173
15	.9184	.3166	-.1235	.1121	.0484	15	.9256	.3497	-.1686	.1112	.0289
20	1.0797	.4798	-.1716	.1318	.0671	20	1.1160	.5381	-.2144	.1408	.0490
25	1.0849	.5950	-.1843	.1322	.0775	25	1.2386	.7318	-.2378	.1590	.0735

TABLE 1.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 1 MODEL - Concluded

$\alpha = 0.04$ $\frac{c_x}{c_l} = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.0306					-10	-.1291	.0569	-.0972	-.0124	.0124
-7	-.0569					-7	.0000	.0415	-.1003	.0030	.0097
-5	.0263					-5	.0906	.0397	-.1033	.0124	.0090
-3	.1007					-3	.1564	.0439	-.1047	.0203	.0092
-2	.1226					-2	.2023	.0482	-.1009	.0249	.0097
-1	.1488					-1	.2334	.0531	-.1003	.0290	.0103
0	.1882					0	.2706	.0611	-.1030	.0335	.0106
1	.2320					1	.3017	.0690	-.1076	.0384	.0112
2	.2320					2	.3563	.0787	-.1017	.0430	.0142
3	.2670					3	.3898	.0886	-.1029	.0478	.0162
5	.3327					5	.4779	.1159	-.1036	.0588	.0222
7	.4640					7	.5710	.0886	-.1093	.0708	.0276
10	.5384					10	.7275	.2105	-.1240	.0896	.0359
15	.6916					15	.9857	.3640	-.1562	.1231	.0558
20	.9061					20	1.1545	.5373	-.1870	.1473	.0742
25	1.0637					25	1.1123	.6349	-.1863	.1393	.0821
M = 0.60						M = 1.00					
-10	-.0978	.0074	-.0592	-.0112	.0117	-10	-.1484	.0672	-.1011	-.0144	.0114
-7	-.0261	.0235	-.0836	.0000	.0092	-7	-.0024	.0449	-.1122	.0029	.0093
-5	.0304	.0448	-.0720	.0086	.0114	-5	.0926	.0415	-.1133	.0137	.0083
-3	.0869	.0535	-.0738	.0158	.0114	-3	.1733	.0479	-.1191	.0223	.0076
-2	.1217	.0578	-.0695	.0204	.0114	-2	.2172	.0536	-.1187	.0270	.0074
-1	.1521	.0643	-.0713	.0250	.0114	-1	.2587	.0596	-.1211	.0317	.0071
0	.2086	.0491	-.0581	.0284	.0114	0	.2848	.0660	-.1214	.0360	.0074
1	.2390	.0761	-.0768	.0336	.0120	1	.3169	.0729	-.1231	.0407	.0081
2	.2781	.0695	-.0719	.0382	.0133	2	.3691	.0828	-.1169	.0414	.0105
3	.3151	.0813	-.0767	.0435	.0148	3	.4071	.0933	-.1179	.0497	.0131
5	.4085	.0960	-.0737	.0547	.0193	5	.4937	.1184	-.1174	.0609	.0171
7	.4780	.1369	-.0800	.0646	.0256	7	.6006	.1548	-.1261	.0731	.0226
10	.6041	.2064	-.0826	.0818	.0366	10	.7525	.2217	-.1453	.0918	.0318
15	.7779	.3346	-.1002	.1075	.0534	15	.9875	.3760	-.1784	.0918	.0502
20	1.0321	.5267	-.1648	.1371	.0802	20	1.1774	.5604	-.2138	.1512	.0756
25	1.0995	.6627	-.1742	.1411	.0960	25	1.1869	.7005	-.2110	.1523	.0877
M = 0.80						M = 1.05					
-10	-.1210	.0472	-.0797	-.0107	.0129	-10	-.1466	.0686	-.1048	-.0145	.0071
-7	-.0738	.0398	-.0653	.0013	.0097	-7	-.0102	.0502	-.1210	.0010	.0056
-5	.0708	.0363	-.0752	.0103	.0094	-5	.0863	.0436	-.1219	.0131	.0056
-3	.1372	.0437	-.0797	.0179	.0099	-3	.1647	.0475	-.1263	.0214	.0049
-2	.1697	.0472	-.0742	.0224	.0101	-2	.2113	.0532	-.1286	.0258	.0045
-1	.1995	.0531	-.0785	.0269	.0105	-1	.2511	.0570	-.1253	.0303	.0040
0	.2375	.0596	-.0737	.0304	.0107	0	.2795	.0625	-.1258	.0348	.0051
1	.2641	.0676	-.0850	.0358	.0116	1	.3113	.0704	-.1292	.0393	.0059
2	.3231	.0770	-.0024	.0398	.0135	2	.3704	.0811	-.1218	.0434	.0079
3	.3394	.0856	-.0829	.0439	.0148	3	.4033	.0911	-.1232	.0489	.0111
5	.4308	.1148	-.0783	.0546	.0204	5	.4919	.1172	-.1235	.0589	.0152
7	.5061	.1487	-.0815	.0649	.0255	7	.5862	.1520	-.1337	.0700	.0197
10	.6477	.2068	-.0823	.0842	.0354	10	.7226	.2168	-.1489	.0889	.0266
15	.8498	.3266	-.1092	.1088	.0534	15	.9634	.3776	-.1825	.1234	.0431
20	1.0298	.4904	-.1614	.1276	.0716	20	1.1497	.5699	-.2160	.1493	.0651
25	1.0298	.5949	-.1710	.1294	.0804	25	1.2724	.7621	-.2488	.1679	.0888
M = 0.90						M = 1.10					
-10	-.1249	.0544	-.0950	-.0107	.0125	-10	-.1706	.0645	-.1013	-.0166	.0003
-7	.0078	.0396	-.0935	.0032	.0093	-7	-.0219	.0516	-.1128	.0017	.0010
-5	.0820	.0385	-.0926	.0115	.0091	-5	.0700	.0473	-.1177	.0120	.0006
-3	.1444	.0435	-.0945	.0194	.0091	-3	.1531	.0324	-.1225	.0202	.0010
-2	.1887	.0461	-.0892	.0233	.0089	-2	.1881	.0538	-.1163	.0242	.0006
-1	.2212	.0333	-.0937	.0280	.0091	-1	.2188	.0602	-.1203	.0279	.0006
0	.2577	.0609	-.0914	.0324	.0093	0	.2538	.0689	-.1203	.0319	.0014
1	.2876	.0697	-.0973	.0367	.0095	1	.3063	.0753	-.1170	.0375	.0030
2	.3357	.0768	-.0874	.0411	.0112	2	.3500	.0860	-.1179	.0408	.0046
3	.3725	.0882	-.0920	.0466	.0140	3	.3806	.0969	-.1196	.0458	.0062
5	.4581	.1153	-.0928	.0564	.0187	5	.4594	.1247	-.1186	.0558	.0102
7	.5504	.1460	-.0946	.0691	.0240	7	.5600	.1614	-.1296	.0674	.0151
10	.6975	.2079	-.1052	.0873	.0329	10	.7000	.2367	-.1512	.0859	.0200
15	.9525	.3495	-.1296	.1196	.0537	15	.9450	.3981	-.1823	.1181	.0348
20	1.0775	.5093	-.1779	.1354	.0702	20	1.1288	.5917	-.2199	.1454	.0564
25	1.0671	.6145	-.1810	.1354	.0789	25	1.2513	.7790	-.2506	.1653	.0792

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL

 $t/c = 0.04$ $c_f = \text{NONE}$

α , deg	C_L	C_D	C_M	C_i	C_n	α , deg	C_L	C_D	C_M	C_i	C_n
M = 0.40						M = 0.95					
-10	-.4955					-10	-.5973	.1097	.0248	-.0725	.0139
-7	-.3859					-7	-.4396	.0571	.0026	-.0524	.0074
-5	-.2675					-5	-.3278	.0281	-.0105	-.0364	.0043
-3	-.1710					-3	-.2012	.0115	-.0148	-.0226	.0024
-2	-.1184					-2	-.1428	.0076	-.0089	-.0154	.0018
-1	-.0833					-1	-.0820	.0040	-.0063	-.0085	.0014
0	-.0329					0	-.0286	.0031	.0030	-.0026	.0009
1	.0153					1	.0224	.0019	.0078	.0038	.0007
2	.0417					2	.0944	.0052	.0176	.0109	.0012
3	.0921					3	.1503	.0076	.0208	.0177	.0023
5	.1776					5	.2869	.0232	.0191	.0330	.0045
7	.2654					7	.4023	.0473	.0087	.0480	.0078
10	.4078					10	.5787	.0992	-.0115	.0712	.0155
15	.6095					15	.4148	.2210	.0548	.1055	.0655
20	.7366					20	.4731	.3604	-.0204	.1168	.0496
25	.6731					25	.4731	.4581	-.0337	.1187	.0596
M = 0.60						M = 1.00					
-10	-.5744	.0909	.0009	-.0701	.0136	-10	-.6342	.1227	.0504	-.0766	.0155
-7	-.4069	.0481	-.0284	-.0464	.0075	-7	-.4608	.0672	.0211	-.0537	.0081
-5	-.2872	.0294	-.0227	-.0327	.0043	-5	-.3302	.0380	.0009	-.0378	.0041
-3	-.1893	.0231	-.0178	-.0211	.0028	-3	-.2043	.0190	-.0145	-.0225	.0019
-2	-.1327	.0198	-.0154	-.0149	.0021	-2	-.1354	.0126	-.0120	-.0150	.0012
-1	-.0849	.0187	-.0136	-.0111	.0019	-1	-.0784	.0102	-.0100	-.0081	.0009
0	-.0261	.0187	-.0046	-.0036	.0016	0	-.0214	.0072	-.0029	-.0014	.0007
1	.0131	.0187	-.0063	.0023	.0016	1	.0499	.0094	-.0010	.0067	.0009
2	.0609	.0220	.0024	.0078	.0017	2	.1116	.0116	.0082	.0135	.0016
3	.1131	.0242	.0015	.0140	.0022	3	.1686	.0160	.0103	.0207	.0026
5	.2089	.0374	.0101	.0264	.0047	5	.3183	.0350	-.0029	.0373	.0055
7	.3177	.0616	.0146	.0396	.0076	7	.4276	.0584	-.0133	.0514	.0086
10	.4874	.1123	.0141	.0611	.0146	10	.6247	.1125	-.0438	.0757	.0173
15	.6984	.2230	-.0507	.0891	.0265	15	.8979	.2394	-.0812	.1117	.0354
20	.7746	.3198	-.0980	.0974	.0337	20	1.0713	.4007	-.1218	.1369	.0556
25	.7485	.3884	-.0971	.0941	.0498	25	1.1497	.5549	-.1864	.1449	.0725
M = 0.80						M = 1.05					
-10	-.5891	.0918	.0020	-.0692	.0131	-10	-.6553	.1306	.0689	-.0752	.0141
-7	-.4340	.0433	-.0196	-.0488	.0072	-7	-.4641	.0713	.0324	-.0526	.0070
-5	-.3015	.0199	-.0165	-.0336	.0041	-5	-.3390	.0433	.0161	-.0375	.0047
-3	-.2037	.0097	-.0091	-.0213	.0022	-3	-.2207	.0251	.0050	-.0233	.0014
-2	-.1388	.0062	-.0085	-.0146	.0015	-2	-.1502	.0188	.0025	-.0155	.0006
-1	-.0827	.0044	-.0063	-.0081	.0012	-1	-.0887	.0146	-.0017	-.0088	.0003
0	-.0251	.0037	.0018	-.0027	.0010	0	-.0205	.0117	-.0028	-.0017	.0003
1	.0165	.0025	.0041	.0029	.0009	1	.0387	.0126	-.0019	.0057	.0000
2	.0723	.0090	.0104	.0092	.0011	2	.1160	.0159	.0008	.0138	.0014
3	.1270	.0090	.0119	.0159	.0017	3	.1797	.0196	-.0033	.0212	.0027
5	.2480	.0229	.0226	.0298	.0043	5	.3185	.0370	-.0116	.0368	.0050
7	.3635	.0446	.0261	.0441	.0072	7	.4368	.0613	-.0244	.0509	.0081
10	.5433	.0948	.0152	.0665	.0142	10	.6302	.1183	-.0549	.0751	.0159
15	.6998	.1961	-.0535	.0878	.0284	15	.9328	.2590	-.1090	.1142	.0348
20	.7707	.2941	-.0890	.0952	.0393	20	1.1558	.4308	-.1492	.1432	.0577
25	.7825	.1924	-.0751	.0974	.0488	25	1.2468	.5930	-.1942	.1553	.0774
M = 0.90						M = 1.10					
-10	-.5975	.1002	.0135	-.0717	.0137	-10	-.6438	.1225	.0709	-.0070	.0113
-7	-.4543	.0512	-.0038	-.0519	.0079	-7	-.4796	.0670	.0332	-.0520	.0052
-5	-.3176	.0240	-.0115	-.0361	.0049	-5	-.3460	.0391	.0171	-.0365	.0018
-3	-.2083	.0096	-.0120	-.0223	.0027	-3	-.2277	.0229	.0069	-.0228	.0000
-2	-.1419	.0044	-.0103	-.0148	.0020	-2	-.1533	.0177	.0031	-.0158	-.0008
-1	-.0833	.0016	-.0062	-.0089	.0017	-1	-.0920	.0142	.0003	-.0091	-.0012
0	-.0247	.0009	.0019	-.0024	.0013	0	-.0263	.0122	-.0010	-.0017	-.0014
1	.0208	.0000	.0074	.0034	.0012	1	.0416	.0113	-.0028	.0061	-.0009
2	.0794	.0033	.0144	.0099	.0013	2	.1117	.0162	-.0008	.0133	.0000
3	.1445	.0070	.0178	.0174	.0025	3	.1774	.0216	-.0028	.0204	.0010
5	.2747	.0228	.0233	.0326	.0050	5	.3066	.0382	-.0136	.0350	.0036
7	.4061	.0448	.0141	.0480	.0086	7	.4292	.0646	-.0282	.0507	.0061
10	.5702	.0937	.0013	.0693	.0156	10	.6131	.1198	-.0593	.0728	.0127
15	.8097	.2145	-.0349	.1027	.0326	15	.9000	.2569	-.1113	.1103	.0314
20	.8696	.3291	-.1143	.1066	.0445	20	1.1430	.4362	-.1620	.1412	.0535
25	.8722	.4225	-.1238	.1086	.0558	25	-1.8613	.6246	.5222	.1601	.0786

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.10$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2775					-10	-.4587	.0884	-.0492	-.0551	.0132
-7	-.2032					-7	-.2851	.0436	-.0767	-.0320	.0080
-5	-.1093					-5	-.1674	.0234	-.0881	-.0164	.0064
-3	-.0109					-3	-.0322	.0140	-.0987	-.0009	.0051
-2	.0262					-2	.0434	.0131	-.0999	.0073	.0047
-1	.0699					-1	.1091	.0152	-.1005	.0151	.0051
0	.1093					0	.1736	.0192	-.1030	.0226	.0058
1	.1639					1	.2393	.0247	-.0955	.0301	.0073
2	.1945					2	.3075	.0324	-.0936	.0367	.0086
3	.2447					3	.3744	-.1116	-.0940	.0451	.0099
5	.3496					5	.5232	.0689	-.0988	.0630	.0135
7	.4370					7	.6447	.1015	-.1610	.0784	.0181
10	.5856					10	.8033	.1665	-.1186	.1004	.0272
15	.7539					15	1.0166	.3024	-.1376	.1316	.0467
20	.8303					20	1.0414	.4280	-.1955	.1316	.0589
25	.7473					25	1.0191	.5316	-.2014	.1298	.0674
M = 0.60						M = 1.00					
-10	-.3578	.0256	-.0698	-.0433	.0126	-10	-.5336	.1059	-.0122	-.0624	.0155
-7	-.2169	.0124	-.1011	-.0304	.0079	-7	-.3415	.0618	-.0485	-.0387	.0094
-5	-.1063	-.1546	-.1029	-.0089	.0055	-5	-.2075	.0373	-.0669	-.0210	.0069
-3	-.0054	.0059	-.0885	.0026	.0041	-3	-.0771	.0250	-.0801	-.0063	.0054
-2	.0520	.0085	-.0890	.0094	.0039	-2	.0036	.0210	-.0905	.0036	.0049
-1	.0954	.0113	-.0879	.0150	.0039	-1	.0711	.0213	-.0944	.0108	.0050
0	.1453	.0150	-.0825	.0206	.0043	0	.1328	.0242	-.0948	.0180	.0053
1	.1973	.0182	-.0806	.0268	.0050	1	.2170	.0286	-.0963	.0273	.0069
2	.2429	.0245	-.0783	.0331	.0069	2	.2846	.0373	-.0970	.0342	.0080
3	.3014	.0362	-.0752	.0398	.0087	3	.3557	.0461	-.1025	.0432	.0095
5	.4023	.0618	-.0679	.0530	.0128	5	.5039	.0709	-.1152	.0603	.0136
7	.5226	.0939	-.0546	.0674	.0159	7	.6450	.1079	-.1319	.0764	.0181
10	.6874	.1572	-.0663	.0888	.0248	10	.8252	.1767	-.1564	.1007	.0272
15	.8240	.2752	-.1178	.1089	.0206	15	1.0908	.3335	-.1847	.1381	.0479
20	.8479	.3732	-.1483	.1102	.0262	20	1.2473	.4934	-.2087	.1565	.0670
25	.8067	.4458	-.1459	.1063	.0307	25	1.2046	.6135	-.2374	.1511	.0774
M = 0.80						M = 1.05					
-10	-.4020	.0558	-.0643	-.0475	.0119	-10	-.5561	.1125	.0081	-.0654	.0135
-7	-.2356	.0218	-.0992	-.0257	.0081	-7	-.3609	.0650	-.0302	-.0405	.0071
-5	-.1178	.0105	-.0959	-.0109	.0062	-5	-.2179	.0419	-.0541	-.0236	.0045
-3	-.0147	.0090	-.0883	.0016	.0045	-3	-.0942	.0291	-.0684	-.0086	.0040
-2	.0589	.0102	-.0867	.0088	.0039	-2	-.0193	.0260	-.0741	-.0004	.0032
-1	.1104	.0102	-.0854	.0151	.0047	-1	.0454	.0254	-.0752	.0069	.0034
0	.1723	.0144	-.0818	.0220	.0053	0	.1101	.0268	-.0809	.0148	.0045
1	.2253	.0211	-.0857	.0290	.0066	1	.1736	.0302	-.0855	.0224	.0049
2	.2915	.0290	-.0821	.0353	.0082	2	.2508	.0379	-.0837	.0293	.0059
3	.3534	.0373	-.0753	.0430	.0094	3	.3178	.0457	-.0906	.0374	.0078
5	.4667	.0618	-.0654	.0578	.0120	5	.4653	.0725	-.1081	.0549	.0120
7	.5816	.0908	-.0604	.0726	.0163	7	.6061	.1091	-.1267	.0713	.0139
10	.7539	.1543	-.0738	.0949	.0255	10	.7945	.1775	-.1587	.0961	.0226
15	.8393	.2628	-.1350	.1072	.0390	15	1.0714	.3349	-.1969	.1333	.0437
20	.8775	.3722	-.1593	.1112	.0512						
25	.8628	.4561	-.1598	.1108	.0619						
M = 0.90						M = 1.10					
-10	-.4313	.0747	-.0659	-.0516	.0122	-10	-.5409	.1037	.0138	-.0635	.0092
-7	-.2754	.0364	-.0814	-.0305	.0080	-7	-.3693	.0591	-.0305	-.0403	.0039
-5	-.1507	.0169	-.0943	-.0148	.0062	-5	-.2240	.0392	-.0485	-.0232	.0018
-3	-.0260	.0105	-.0940	-.0006	.0048	-3	-.1093	.0258	-.0679	-.0091	.0007
-2	.0468	.0103	-.0935	.0073	.0046	-2	-.0240	.0241	-.0675	-.0010	.0006
-1	.1013	.0121	-.0985	.0144	.0050	-1	.0295	.0228	-.0737	.0058	.0009
0	.1689	.0169	-.0932	.0219	.0056	0	.1005	.0263	-.0759	.0136	.0010
1	.2338	.0249	-.0923	.0296	.0073	1	.1508	.0291	-.0819	.0239	.0018
2	.2988	.0307	-.0871	.0363	.0085	2	.2382	.0403	-.0792	.0280	.0035
3	.3638	.0387	-.0877	.0443	.0097	3	.3005	.0484	-.0859	.0356	.0051
5	.5067	.0648	-.0838	.0617	.0139	5	.4349	.0747	-.1020	.0519	.0075
7	.6301	.0972	-.0889	.0773	.0186	7	.5704	.1075	-.1219	.0678	.0106
10	.7873	.1616	-.0995	.0985	.0266	10	.7539	.1790	-.1553	.0928	.0182
15	.9042	.2766	-.1443	.1143	.0415	15	1.0315	.3698	-.1839	.1293	.0368
20	.9665	.4000	-.1765	.1202	.0574						
25	.9613	.4983	-.1820	.1210	.0640						

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

$$\frac{t}{c} = 0.04 \qquad \frac{c_f}{c} = 0.20$$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2164					-10	-.3739	.0935	-.0914	-.0418	.0102
-7	-.1027					-7	-.1981	.0524	-.1149	-.0188	.0055
-5	-.0109					-5	-.0520	.0340	-.1281	-.0019	.0038
-3	.0830					-3	.0718	.0290	-.1373	.0124	.0038
-2	.1333					-2	.1498	.0311	-.1412	.0201	.0038
-1	.1704					-1	.2229	.0357	-.1459	.0279	.0047
0	.2141					0	.2860	.0402	-.1413	.0352	.0054
1	.2797					1	.3442	.0453	-.1369	.0418	.0064
2	.3015					2	.4160	.0560	-.1332	.0498	.0085
3	.3518					3	.4804	.0655	-.1290	.0573	.0102
5	.4392					5	.6265	.0935	-.1388	.0751	.0148
7	.5375					7	.7379	.1285	-.1404	.0892	.0204
10	.6730					10	.8865	.1961	-.1494	.1108	.0299
15	.8194					15	1.0474	.3251	-.1555	.1349	.0475
20	.8806					20	1.0771	.4591	-.2013	.1341	.0610
25	.7888					25	1.0474	.5565	-.2050	.1672	.0711
M = 0.60						M = 1.00					
-10	-.2656	.0475	-.0836	-.0304	.0067	-10	-.4346	.1098	-.0630	-.0490	.0121
-7	-.1051	.0208	-.1136	-.0099	.0039	-7	-.2534	.0690	-.0948	-.0252	.0068
-5	.0044	.0171	-.1109	.0033	.0024	-5	-.1089	.0487	-.1172	-.0075	.0050
-3	.1065	.0197	-.1077	.0148	.0023	-3	.0403	.0385	-.1418	.0088	.0041
-2	.1604	.0223	-.1052	.0210	.0020	-2	.1220	.0375	-.1461	.0180	.0039
-1	.2070	.0267	-.1037	.0266	.0028	-1	.2013	.0391	-.1529	.0264	.0041
0	.2634	.0330	-.0910	.0326	.0035	0	.2759	.0443	-.1534	.0343	.0050
1	.3067	.0384	-.0960	.0380	.0047	1	.3386	.0501	-.1516	.0413	.0062
2	.3501	.0479	-.0951	.0436	.0056	2	.4121	.0588	-.1492	.0492	.0082
3	.4075	.0596	-.0888	.0501	.0067	3	.4772	.0696	-.1515	.0566	.0099
5	.5105	.0837	-.0774	.0633	.0103	5	.6134	.0996	-.1582	.0727	.0144
7	.6244	.1168	-.0733	.0776	.0158	7	.7341	.1359	-.1679	.0871	.0197
10	.7609	.1786	-.0752	.0970	.0253	10	.9070	.2079	-.1825	.1103	.0300
15	.8931	.2942	-.1291	.1135	.0410	15	1.1201	.3517	-.1898	.1419	.0511
20	.8953	.3891	-.1549	.1118	.0512	20	1.2930	.5253	-.2223	.1599	.0723
25	.8411	.4574	-.1489	.1085	.0585						
M = 0.80						M = 1.05					
-10	-.2935	.0597	-.0948	-.0325	.0064	-10	-.44637	.1135	-.0415	-.0516	.0113
-7	-.1155	.0285	-.1238	-.0104	.0039	-7	-.2676	.0703	-.0832	-.0275	.0062
-5	.0096	.0196	-.1199	.0039	.0024	-5	-.1213	.0499	-.1048	-.0098	.0041
-3	.1089	.0203	-.1192	.0156	.0024	-3	.0091	.0396	-.1240	.0052	.0035
-2	.1714	.0228	-.1207	.0227	.0027	-2	.0873	.0396	-.1306	.0134	.0034
-1	.2244	.0278	-.1186	.0285	.0034	-1	.1565	.0405	-.1354	.0208	.0038
0	.2855	.0352	-.1108	.0352	.0040	0	.2506	.0430	-.1454	.0310	.0047
1	.3406	.0391	-.1065	.0415	.0053	1	.3016	.0493	-.1439	.0370	.0054
2	.3870	.0466	-.1060	.0469	.0061	2	.3810	.0583	-.1439	.0447	.0071
3	.4532	.0578	-.0985	.0541	.0078	3	.4410	.0678	-.1505	.0525	.0092
5	.5694	.0818	-.0907	.0681	.0123	5	.5782	.0967	-.1568	.0679	.0130
7	.6930	.1154	-.0867	.0848	.0178	7	.7098	.1338	-.1689	.0834	.0182
10	.8446	.1788	-.0924	.1047	.0274	10	.8798	.2058	-.1829	.1063	.0276
15	.8917	.2837	-.1430	.1116	.0401	15	1.1565	.3646	-.2195	.1393	.0494
20	.9152	.3936	-.1628	.1138	.0514						
25	.8887	.4761	-.1605	.1116	.0622						
M = 0.90						M = 1.10					
-10	-.3335	.0798	-.1024	-.0374	.0083	-10	-.4572	.1052	-.0391	-.0505	.0091
-7	-.1778	.0437	-.1211	-.0162	.0051	-7	-.2641	.0649	-.0773	-.0267	.0046
-5	-.0286	.0293	-.1265	.0000	.0037	-5	-.1255	.0469	-.0987	-.0099	.0032
-3	.0795	.0256	-.1271	.0128	.0034	-3	.0055	.0381	-.1167	.0043	.0027
-2	.1531	.0287	-.1277	.0201	.0034	-2	.0775	.0381	-.1210	.0121	.0027
-1	.2245	.0326	-.1292	.0278	.0042	-1	.1495	.0399	-.1259	.0199	.0029
0	.2790	.0374	-.1286	.0348	.0047	0	.2106	.0421	-.1323	.0265	.0038
1	.3439	.0437	-.1285	.0422	.0059	1	.2815	.0475	-.1363	.0343	.0048
2	.4065	.0549	-.1192	.0487	.0077	2	.3568	.0577	-.1361	.0419	.0064
3	.4685	.0628	-.1178	.0561	.0094	3	.4288	.0690	-.1393	.0505	.0082
5	.6152	.0899	-.1135	.0738	.0143	5	.5565	.0971	-.1527	.0654	.0120
7	.7346	.1236	-.1157	.0886	.0397	7	.6787	.1328	-.1645	.0806	.0166
10	.8591	.1864	-.1256	.1083	.0287	10	.8446	.2018	-.1787	.1010	.0253
15	.9811	.3076	-.1506	.1240	.0442	15	1.1043	.3509	-.2182	.1328	.0457
20	1.0071	.4239	-.1874	.1240	.0566						
25	.9734	.5170	-.1840	.1221	.0670						

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1093					-10	-.2984	.0755	-.0992	-.0330	.0111
-7	-.0437					-7	-.1065	.0396	-.1230	-.0090	.0069
-5	.0656					-5	.0452	.0284	-.1359	.0081	.0059
-3	.1486					-3	.1647	.0284	-.1448	.0220	.0060
-2	.1988					-2	.2495	.0334	-.1524	.0304	.0070
-1	.2557					-1	.3194	.0390	-.1481	.0379	.0076
0	.3125					0	.3776	.0478	-.1505	.0455	.0082
1	.3474					1	.4395	.0557	-.1443	.0524	.0097
2	.3715					2	.5076	.0657	-.1370	.0603	.0118
3	.4261					3	.5782	.0780	-.1419	.0693	.0139
5	.5048					5	.7131	.1117	-.1458	.0853	.0190
7	.5943					7	.8147	.1486	-.1498	.0999	.0238
10	.7276					10	.9360	.2149	-.1514	.1187	.0285
15	.8347					15	1.1068	.3507	-.1544	.1424	.0493
20	.9003					20	1.0895	.4701	-.1914	.1360	.0603
25	.7976					25	1.0524	.5760	-.1911	.1337	.0669
M = 0.60						M = 1.00					
-10	-.1734	.0171	-.0636	-.0219	.0085	-10	-.3611	.0926	-.0741	-.0396	.0137
-7	-.0336	.0043	-.0917	-.0026	.0052	-7	-.1776	.0583	-.1080	-.0158	.0030
-5	.0813	.0022	-.0837	.0105	.0044	-5	-.0059	.0401	-.1358	.0040	.0070
-3	.1843	.0069	-.0818	.0217	.0050	-3	.1385	.0367	-.1546	.0194	.0066
-2	.2428	.0113	-.0779	.0281	.0057	-2	.2368	.0367	-.1584	.0291	.0070
-1	.2851	.0165	-.0762	.0340	.0065	-1	.3043	.0439	-.1610	.0366	.0076
0	.3338	.0241	-.0721	.0400	.0078	0	.3659	.0495	-.1602	.0439	.0082
1	.3775	.0330	-.0755	.0464	.0093	1	.4381	.0583	-.1556	.0519	.0099
2	.4346	.0431	-.0691	.0526	.0098	2	.5032	.0693	-.1551	.0591	.0117
3	.4823	.0544	-.0692	.0592	.0113	3	.5684	.0810	-.1574	.0675	.0139
5	.5961	.0843	-.0579	.0725	.0141	5	.7033	.1159	-.1659	.0833	.0189
7	.6937	.1194	-.0549	.0858	.0199	7	.8170	.1590	-.1741	.0984	.0238
10	.8281	.1827	-.0613	.1049	.0298	10	.9709	.2335	-.1869	.1200	.0337
15	.8931	.3018	-.1075	.1154	.0429	15	1.2172	.3937	-.2048	.1523	.0530
20	.8910	.4030	-.1293	.1131	.0528	20	1.2646	.5392	-.2135	.1595	.0726
25	.8498	.4724	-.1178	.1075	.0600	25	1.2078	.6428	-.2250	.1505	.0747
M = 0.80						M = 1.05					
-10	-.2081	.0372	-.0863	-.0280	.0077	-10	-.3776	.0929	-.0579	-.0418	.0115
-7	-.0338	.0156	-.1107	-.0029	.0047	-7	-.1871	.0579	-.1017	-.0177	.0076
-5	.0816	.0109	-.1063	.0105	.0039	-5	-.0397	.0432	-.1190	-.0005	.0063
-3	.1853	.0137	-.1046	.0228	.0044	-3	.0964	.0388	-.1377	.0145	.0059
-2	.2464	.0181	-.1048	.0306	.0052	-2	.1871	.0390	-.1480	.0240	.0061
-1	.3052	.0238	-.1002	.0358	.0065	-1	.2687	.0435	-.1528	.0323	.0064
0	.3530	.0329	-.1005	.0425	.0075	0	.3356	.0497	-.1604	.0409	.0066
1	.4045	.0391	-.1029	.0488	.0083	1	.4014	.0577	-.1633	.0488	.0073
2	.4633	.0506	-.0877	.0551	.0095	2	.4739	.0692	-.1560	.0557	.0094
3	.5281	.0625	-.0903	.0629	.0113	3	.5408	.0825	-.1606	.0643	.0112
5	.6413	.0915	-.0828	.0783	.0161	5	.6689	.1154	-.1678	.0793	.0153
7	.7561	.1269	-.0805	.0928	.0220	7	.7823	.1578	-.1763	.0874	.0194
10	.8914	.1902	-.0862	.1102	.0313	10	.9501	.2375	-.1940	.1156	.0290
15	.9120	.3010	-.1315	.1156	.0421	15	1.2109	.4048	-.2258	.1493	.0491
20	.9267	.4066	-.1447	.1160	.0507						
25	.8973	.4933	-.1468	.1142	.0603						
M = 0.90						M = 1.10					
-10	-.2530	.0599	-.1073	-.0281	.0093	-10	-.3819	.0894	-.0566	-.0424	.0076
-7	-.0714	.0293	-.1256	-.0055	.0062	-7	-.1964	.0558	-.0986	-.0184	.0042
-5	.0616	.0217	-.1286	.0093	.0050	-5	-.0360	.0410	-.1181	-.0012	.0034
-3	.1719	.0239	-.1330	.0220	.0056	-3	.0873	.0384	-.1341	.0131	.0035
-2	.2530	.0278	-.1354	.0301	.0067	-2	.1746	.0410	-.1422	.0224	.0040
-1	.3049	.0322	-.1324	.0368	.0072	-1	.2401	.0445	-.1461	.0290	.0044
0	.3633	.0402	-.1292	.0440	.0081	0	.3023	.0483	-.1504	.0371	.0049
1	.4320	.0498	-.1286	.0516	.0098	1	.3721	.0574	-.1548	.0445	.0059
2	.4865	.0599	-.1174	.0579	.0114	2	.4441	.0692	-.1520	.0520	.0074
3	.5553	.0717	-.1180	.0667	.0138	3	.5074	.0821	-.1591	.0603	.0088
5	.6928	.1030	-.1198	.0834	.0187	5	.6460	.1159	-.1646	.0770	.0120
7	.7940	.1382	-.1166	.0980	.0229	7	.7573	.1600	-.1777	.0907	.0154
10	.9159	.2042	-.1246	.1157	.0318	10	.9188	.2420	-.1896	.1112	.0236
15	1.0145	.3267	-.1448	.1283	.0455	15	1.1654	.4057	-.2275	.1424	.0422
20	1.0171	.4402	-.1714	.1256	.0558						
25	.9730	.5270	-.1675	.1236	.0637						

TABLE 2. -- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

 $c_{dt} = 0.04$ $\frac{c_f}{c_l} = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.0329					-10	-.2217	.0856	-.1403	-.0287	.0055
-7	.0394					-7	-.0286	.0550	-.1685	-.0055	.0015
-5	.1468					-5	.1280	.0443	-.1779	.0119	.0007
-3	.2279					-3	.2559	.0467	-.1815	.0261	.0006
-2	.2761					-2	.3329	.0534	-.1837	.0346	.0012
-1	.3133					-1	.3950	.0596	-.1788	.0414	.0023
0	.3506					0	.4509	.0681	-.1794	.0482	.0034
1	.4009					1	.5068	.0776	-.1778	.0560	.0048
2	.4338					2	.5839	.0861	-.1707	.0635	.0077
3	.4776					3	.6410	.0963	-.1675	.0714	.0103
5	.5631					5	.7528	.1267	-.1621	.0861	.0154
7	.6748					7	.8522	.0825	-.1638	.0999	.0213
10	.7887					10	.9590	.1137	-.1565	.1157	.0308
15	.9158					15	1.1081	.0911	-.1478	.1376	.0251
20	.9290					20	1.1130	.1237	-.1772	.1327	.0312
25	.8457					25	1.0708	.1482	-.1635	.1285	.0352
M = 0.60						M = 1.00					
-10	-.1250	.0267	-.1009	-.0244	-.0016	-10	-.2924	.0979	-.1143	-.0368	.0073
-7	.0250	.0161	-.1220	-.0058	-.0043	-7	-.0874	.0657	-.1538	-.0115	.0033
-5	.1337	.0176	-.1219	.0089	-.0032	-5	.0850	.0526	-.1791	.0071	.0019
-3	.2261	.0252	-.1133	.0213	-.0008	-3	.2217	.0517	-.1894	.0227	.0015
-2	.2816	.0294	-.1097	.0277	.0006	-2	.3161	.0549	-.1915	.0317	.0016
-1	.3272	.0391	-.1047	.0345	.0017	-1	.3732	.0613	-.1909	.0389	.0019
0	.3783	.0498	-.1036	.0424	.0056	0	.4409	.0693	-.1891	.0448	.0031
1	.4273	.0615	-.0953	.0503	.0111	1	.5003	.0777	-.1885	.0270	.0046
2	.4675	.0722	-.0993	.0564	.0146	2	.5681	.0906	-.1835	.0309	.0067
3	.5197	.0883	-.0894	.0640	.0183	3	.6370	.1029	-.1879	.0349	.0089
5	.6349	.1202	-.0840	.0787	.0273	5	.7678	.1388	-.1922	.0427	.0143
7	.7480	.1524	-.0811	.0924	.0371	7	.8771	.1835	-.2009	.0999	.0201
10	.8654	.2140	-.0997	.1069	.0461	10	1.0292	.2630	-.2109	.1204	.0320
15	.9197	.3251	-.1490	.1089	.0466	15	1.2027	.3940	-.2042	.1450	.0522
20	.9263	.4203	-.1669	.1065	.0477	20	1.3454	.5845	-.2359	.1630	.0743
25	.8871	.4973	-.1633	.1023	.0561	25	1.1932	.6546	-.2423	.1432	.0769
M = 0.80						M = 1.05					
-10	-.1564	.0443	-.1045	-.0240	.0004	-10	-.3003	.0970	-.1031	-.0382	.0052
-7	.0148	.0244	-.1360	-.0034	-.0019	-7	-.1059	.0658	-.1439	-.0102	.0019
-5	.1299	.0236	-.1338	.0105	-.0022	-5	.0410	.0546	-.1644	.0022	.0007
-3	.2457	.0298	-.1295	.0238	-.0008	-3	.1866	.0529	-.1792	.0187	.0003
-2	.3011	.0370	-.1280	.0310	.0003	-2	.2708	.0554	-.1829	.0268	.0008
-1	.3490	.0453	-.1254	.0376	.0016	-1	.3447	.0602	-.1883	.0356	.0010
0	.4177	.0527	-.1195	.0340	.0044	0	.4164	.0685	-.1871	.0429	.0016
1	.4664	.0599	-.1222	.0517	.0057	1	.4755	.0778	-.1883	.0513	.0031
2	.5106	.0733	-.1167	.0587	.0166	2	.5495	.0887	-.1865	.0587	.0050
3	.5682	.0965	-.1121	.0654	.0213	3	.6166	.1035	-.1893	.0666	.0069
5	.6833	.1161	-.1053	.0799	.0325	5	.7372	.1384	-.1929	.0815	.0120
7	.8088	.1532	-.1025	.0949	.0433	7	.8509	.1818	-.2022	.0956	.0175
10	.9150	.2127	-.1108	.1084	.0499	10	1.0011	.2629	-.2182	.1174	.0289
15	.9475	.3208	-.1606	.1093	.0383	15	1.2650	.4364	-.2468	.1481	.0516
20	.9534	.4283	-.1724	.1106	.0488						
25	.9239	.5109	-.1707	.1088	.0498						
M = 0.90						M = 1.10					
-10	-.1810	.0689	-.1426	-.0250	.0035	-10	-.3033	.0902	-.0976	-.0389	.0028
-7	.0020	.0417	-.1633	-.0028	.0005	-7	-.1117	.0616	-.1387	-.0150	-.0003
-5	.1455	.0371	-.1628	.0125	-.0001	-5	.0372	.0511	-.1559	.0014	-.0010
-3	.2617	.0426	-.1670	.0269	-.0001	-3	.1620	.0511	-.1717	.0163	-.0010
-2	.3386	.0481	-.1619	.0343	.0007	-2	.2507	.0546	-.1753	.0247	-.0003
-1	.3946	.0557	-.1632	.0415	.0015	-1	.3186	.0592	-.1804	.0321	.0002
0	.4506	.0647	-.1623	.0481	.0028	0	.3920	.0684	-.1846	.0409	.0006
1	.4987	.0724	-.1602	.0547	.0050	1	.4522	.0773	-.1902	.0485	.0013
2	.5508	.0794	-.1434	.0607	.0074	2	.5288	.0888	-.1826	.0561	.0034
3	.6094	.0928	-.1440	.0685	.0092	3	.5934	.1042	-.1871	.0640	.0049
5	.7425	.1233	-.1386	.0844	.0137	5	.7117	.1421	-.1918	.0784	.0087
7	.8285	.1569	-.1368	.0972	.0185	7	.8277	.1869	-.2044	.0930	.0140
10	.9454	.2216	-.1372	.1138	.0568	10	.9722	.2692	-.2190	.1133	.0242
15	1.0652	.3522	-.1554	.1300	.0890	15	1.2175	.4351	-.2544	.1432	.0470
20	1.0443	.4675	-.1967	.1225	.0564						
25	.9975	.5572	-.1927	.1193	.0651						

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = \text{NONE}$

α , deg	C_L	C_D	C_M	C_L	C_n	α , deg	C_L	C_D	C_M	C_L	C_n
M = 0.40						M = 0.95					
-10	-.4485					-10	-.5376	.1123	.0288	-.0643	-.0133
-7	-.3405					-7	-.3822	.0600	-.0008	-.0443	-.0068
-5	-.2484					-5	-.2871	.0390	-.0098	-.0308	-.0031
-3	-.1620					-3	-.1840	.0251	-.0063	-.0193	-.0002
-2	-.1296					-2	-.1301	.0219	-.0049	-.0123	.0007
-1	-.0864					-1	-.0666	.0193	-.0028	-.0054	.0022
0	-.0378					0	-.0143	.0155	.0028	.0011	.0022
1	.0165					1	.0523	.0181	.0042	.0089	.0026
2	.0540					2	.1078	.0219	.0098	.0146	.0026
3	.1080					3	.1649	.0257	.0112	.0212	.0024
5	.2214					5	.2680	.0406	.0112	.0346	.0033
7	.3078					7	.3822	.0647	.0008	.0292	.0009
10	.4590					10	.5376	.1132	-.0260	.0693	-.0044
15	.6426					15	.7962	.2309	-.0962	.1039	-.0201
20	.7452					20	1.0023	.3860	-.1958	.1251	-.0421
25	.7452					25	1.0309	.5132	-.2379	.1282	-.0594
M = 0.60						M = 1.00					
-10	-.5027	.1094	.0024	-.0587	-.0074	-10	-.6184	.1346	.0760	-.0723	-.0163
-7	-.3555	.0533	-.0062	-.0391	-.0039	-7	-.4467	.0808	.0410	-.0513	-.0090
-5	-.2610	.0383	-.0073	-.0269	-.0007	-5	-.3252	.0553	.0242	-.0369	-.0044
-3	-.1638	.0244	-.0087	-.0162	.0023	-3	-.2097	.0395	.0141	-.0221	-.0012
-2	-.1111	.0217	-.0038	-.0101	.0029	-2	-.1459	.0343	.0107	-.0151	-.0004
-1	-.0667	.0139	-.0024	-.0047	.0036	-1	-.0820	.0298	.0074	-.0081	.0014
0	-.0111	.0139	.0013	.0020	.0036	0	-.0122	.0277	.0053	.0000	.0018
1	.0417	.0139	.0000	.0094	.0029	1	.0547	.0298	.0013	.0085	.0021
2	.0861	.0139	.0013	.0155	.0036	2	.1170	.0322	.0007	.0147	.0019
3	.1361	.0139	.0038	.0202	.0042	3	.1914	.0395	-.0047	.0240	.0014
5	.2444	.0289	.0024	.0303	.0048	5	.3054	.0559	-.0162	.0387	.0014
7	.3527	.0422	.0013	.0438	.0042	7	.4300	.0820	-.0329	.0539	-.0009
10	.5110	.0822	-.0147	.0647	.0007	10	.6169	.1367	-.0699	.0763	-.0074
15	.7109	.2005	-.1069	.0903	-.0097	15	.9086	.2683	-.1506	.1147	-.0242
20	.7665	.3144	-.1782	.0964	-.0236	20	1.1456	.4409	-.2178	.1457	-.0484
25	.7637	.3905	-.1806	.0944	-.0333	25	1.2034	.5977	-.2763	.1505	-.0684
M = 0.80						M = 1.05					
-10	-.5343	.1016	.0125	-.0616	-.0127	-10	-.6217	.1363	.0942	-.0705	-.0171
-7	-.3875	.0500	-.0116	-.0438	-.0059	-7	-.4539	.0826	.0569	-.0514	-.0100
-5	-.2765	.0297	-.0099	-.0297	-.0026	-5	-.3371	.0575	.0342	-.0365	-.0054
-3	-.1750	.0184	-.0092	-.0402	-.0005	-3	-.2101	.0423	.0207	-.0223	-.0012
-2	-.1204	.0158	-.0066	-.0110	.0005	-2	-.1445	.0359	.0142	-.0149	-.0004
-1	-.0677	.0120	-.0033	-.0046	.0011	-1	-.0744	.0339	.0103	-.0071	.0007
0	-.0075	.0128	-.0026	.0023	.0020	0	-.0058	.0324	.0051	.0011	.0014
1	.0489	.0128	.0009	.0082	.0029	1	.0628	.0330	.0007	.0088	.0014
2	.0978	.0214	.0026	.0137	.0029	2	.1255	.0359	-.0046	.0163	.0010
3	.1524	.0184	.0059	.0201	.0033	3	.1897	.0432	-.0103	.0234	.0005
5	.2558	.0278	.0092	.0320	.0029	5	.3123	.0674	-.0239	.0379	.0005
7	.3819	.0482	.0066	.0479	.0018	7	.4320	.0846	-.0426	.0531	-.0012
10	.5362	.0952	-.0132	.0676	-.0022	10	.6144	.1392	-.0781	.0744	-.0077
15	.7224	.2111	-.0924	.0913	-.0164	15	.9135	.2726	-.1608	.1116	-.0248
20	.7713	.3145	-.1615	.0959	-.0304	20	1.1587	.4477	-.2299	.1438	-.0496
25	.7976	.4116	-.1806	.1009	-.0438	25	1.2725	.6272	-.2853	.1594	-.0725
M = 0.90						M = 1.10					
-10	-.5448	.1050	.0259	-.0631	-.0138	-10	-.6119	.1401	.0937	-.0681	-.0207
-7	-.3999	.0550	.0008	-.0445	-.0062	-7	-.4491	.0848	.0552	-.0494	-.0113
-5	-.2966	.0320	-.0096	-.0320	-.0037	-5	-.3284	.0573	.0354	-.0358	-.0060
-3	-.1816	.0190	-.0088	-.0182	-.0004	-3	-.2021	.0415	.0223	-.0221	-.0012
-2	-.1233	.0163	-.0073	-.0121	.0006	-2	-.1417	.0351	.0162	-.0150	-.0015
-1	-.0616	.0147	-.0029	-.0049	.0023	-1	-.0758	.0312	.0112	-.0068	.0005
0	-.0133	.0130	.0000	.0012	.0025	0	-.0126	.0298	.0068	.0000	.0012
1	.0500	.0180	.0029	.0081	.0025	1	.0589	.0312	.0007	.0072	.0008
2	.1066	.0180	.0067	.0150	.0033	2	.1263	.0345	-.0044	.0153	.0008
3	.1649	.0230	.0096	.0214	.0033	3	.1881	.0393	-.0106	.0221	.0005
5	.2732	.0353	.0103	.0340	.0031	5	.3073	.0567	-.0243	.0361	.0005
7	.3899	.0556	.0023	.0485	.0016	7	.4322	.0822	-.0429	.0511	-.0010
10	.5431	.1899	-.0199	.0691	-.0033	10	.6035	.1353	-.0800	.0715	-.0067
15	.7631	.2173	-.0766	.0983	-.0171	15	.8897	.2610	-.1590	.1063	-.0224
20	.8697	.3522	-.1798	.1072	-.0349	20	1.1367	.4348	-.2291	.1373	-.0455
25	.9230	.4702	-.2094	.1132	-.0510	25	1.2658	.6169	-.2800	.1550	-.0689

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

$$\frac{t}{c} = 0.06 \quad \frac{c_f}{c} = 0.20$$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1252					-10	-.3692	.0965	-.0474	-.0407	-.0095
-7	-.0653					-7	-.2254	.0559	-.0721	-.0233	-.0039
-5	.0109					-5	-.0959	.0377	-.0969	-.0070	-.0004
-3	.1034					-3	.0479	.0284	-.1132	.0097	.0007
-2	.1469					-2	.1247	.0297	-.1160	.0175	.0007
-1	.1905					-1	.1838	.0323	-.1181	.0240	.0007
0	.2394					0	.2397	.0355	-.1181	.0307	.0005
1	.2830					1	.3037	.0432	-.1216	.0372	-.0002
2	.3156					2	.3644	.0495	-.1195	.0446	-.0004
3	.3646					3	.4267	.0588	-.1286	.0520	-.0015
5	.4408					5	.5354	.0809	-.1358	.0648	-.0032
7	.5387					7	.6457	.1170	-.1464	.0788	-.0071
10	.6584					10	.7895	.1768	-.1640	.0962	-.0143
15	.7945					15	.9653	.2979	-.1903	.1203	-.0301
20	.8217					20	1.0708	.4481	-.2552	.1280	-.0487
25	.8108					25	1.0772	.5706	-.2821	.1268	-.0643
M = 0.60						M = 1.00					
-10	-.2016	.0633	-.0719	-.0204	-.0007	-10	-.4180	.1093	-.0190	-.0468	-.0119
-7	-.0784	.0246	-.0954	-.0048	.0000	-7	-.2603	.0723	-.0508	.0260	-.0057
-5	.0196	.0123	-.0867	.0068	.0013	-5	-.1347	.0527	-.0793	-.0111	-.0027
-3	.1176	.0140	-.0965	.0177	.0023	-3	-.0046	.0438	-.0996	.0026	-.0005
-2	.1792	.0151	-.0891	.0245	.0029	-2	.0674	.0413	-.1077	.0115	-.0002
-1	.2240	.0179	-.0856	.0306	.0026	-1	.1501	.0429	-.1151	.0204	-.0002
0	.2632	.0246	-.1003	.0340	.0023	0	.2174	.0453	-.1219	.0279	-.0004
1	.3135	.0291	-.0990	.0414	.0020	1	.2787	.0511	-.1280	.0353	-.0005
2	.3611	.0342	-.0979	.0449	.0010	2	.3353	.0579	-.1320	.0409	-.0016
3	.4059	.0414	-.0954	.0476	.0010	3	.4042	.0677	-.1389	.0491	-.0029
5	.4871	.0565	-.0941	.0585	-.0003	5	.5206	.0903	-.1531	.0621	-.0039
7	.5991	.0868	-.0954	.0713	-.0020	7	.6461	.1286	-.1721	.0766	-.0084
10	.7335	.1501	-.1028	.0877	-.0052	10	.8146	.1905	-.1930	.0985	-.0183
15	.8342	.2587	-.1635	.1012	-.0183	15	1.0626	.3375	-.2418	.1293	-.0360
20	.8566	.3651	-.1969	.1026	-.0332	20	1.2464	.5136	-.2790	.1524	-.0598
25	.8314	.4418	-.2280	.0979	-.0413	25	1.2617	.6673	-.3306	.1524	-.0785
M = 0.80						M = 1.05					
-10	-.2465	.0664	-.0856	-.0276	-.0049	-10	-.4293	.1120	-.0085	-.0464	-.0115
-7	-.1043	.0326	-.1065	-.0083	-.0018	-7	-.2587	.0729	-.0481	-.0268	-.0063
-5	-.0057	.0243	-.1082	.0032	.0010	-5	-.1411	.0541	-.0715	-.0125	-.0032
-3	.1062	.0607	-.1098	.0152	.0011	-3	-.0088	.0456	-.0904	.0018	-.0012
-2	.1612	.0243	-.1098	.0216	.0018	-2	.0529	.0435	-.0989	.0104	-.0005
-1	.2276	.0281	-.1082	.0322	.0013	-1	.1235	.0447	-.1054	.0175	-.0010
0	.2788	.0300	-.1082	.0391	.0009	0	.1823	.0470	-.1118	.0239	-.0015
1	.3167	.0372	-.1057	.0451	.0013	1	.2499	.0529	-.1203	.0314	-.0021
2	.3679	.0448	-.1057	.0451	.0006	2	.3146	.0600	-.1236	.0382	-.0022
3	.4210	.0523	-.1048	.0506	-.0005	3	.3822	.0694	-.1327	.0457	-.0034
5	.5158	.0709	-.1007	.0612	-.0009	5	.4998	.0926	-.1509	.0589	-.0048
7	.6296	.1009	-.1024	.0750	-.0031	7	.6292	.1273	-.1697	.0735	-.0091
10	.7567	.1642	-.1167	.0916	-.0093	10	.7880	.1902	-.2029	.0928	-.0174
15	.8382	.2666	-.1695	.1026	-.0229	15	1.0350	.3311	-.2504	.1245	-.0354
20	.8704	.3759	-.2115	.1036	-.0379	20	1.2261	.5178	-.2972	.1456	-.0603
25	.8761	.4646	-.2189	.1036	-.0498	25	1.3231	.7013	-.3330	.1609	-.0834
M = 0.90						M = 1.10					
-10	-.3107	.0769	-.0661	-.0342	-.0057	-10	-.4183	.1133	-.0062	-.0446	-.0128
-7	-.1646	.0403	-.0966	-.0155	-.0024	-7	-.2572	.0715	-.0419	-.0268	-.0079
-5	-.0470	.0272	-.1107	-.0021	.0006	-5	-.1357	.0520	-.0712	-.0120	-.0044
-3	.0806	.0238	-.1166	.0122	.0014	-3	-.0113	.0438	-.0888	.0010	-.0020
-2	.1461	.0249	-.1166	.0187	.0014	-2	.0509	.0418	-.0963	.0082	-.0018
-1	.1999	.0289	-.1130	.0253	.0014	-1	.1159	.0430	-.1013	.0154	-.0013
0	.2570	.0329	-.1137	.0326	.0008	0	.1724	.0367	-.1088	.0240	-.0018
1	.3141	.0396	-.1166	.0391	.0006	1	.2459	.0458	-.1157	.0299	-.0028
2	.3678	.0464	-.1166	.0452	-.0002	2	.3166	.0557	-.1231	.0357	-.0033
3	.4316	.0561	-.1130	.0522	-.0006	3	.3731	.0667	-.1313	.0429	-.0044
5	.5341	.0769	-.1166	.0636	-.0022	5	.4918	.0890	-.1456	.0563	-.0056
7	.6382	.1115	-.1241	.0775	-.0053	7	.6190	.1244	-.1682	.0710	-.0102
10	.7541	.1676	-.1389	.0925	-.0121	10	.7830	.1843	-.1945	.0892	-.0182
15	.9304	.2832	-.1612	.1199	-.0283	15	1.0232	.3219	-.2451	.1184	-.0363
20	.9741	.4155	-.2393	.1158	-.0443	20	1.2154	.5045	-.2951	.1423	-.0595
25	.9674	.5253	-.2526	.1158	-.0580	25	1.3257	.6894	-.3326	.1564	-.0861

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Continued

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1089					-10	-.2939	.0936	-.0834	-.0349	-.0076
-7	-.0109					-7	-.1342	.0549	-.1131	-.0140	-.0024
-5	.0708					-5	-.0096	.0425	-.1301	.0000	.0002
-3	.1634					-3	.1326	.0383	-.1427	.0155	.0015
-2	.2015					-2	.2012	.0425	-.1497	.0233	.0009
-1	.2559					-1	.2699	.0441	-.1441	.0314	.0005
0	.2995					0	.3306	.0502	-.1469	.0384	.0000
1	.3321					1	.3929	.0588	-.1541	.0450	-.0005
2	.3866					2	.4536	.0674	-.1541	.0523	-.0013
3	.4247					3	.5175	.0776	-.1526	.0593	-.0022
5	.5009					5	.6213	.1038	-.1541	.0717	-.0048
7	.6044					7	.7267	.1437	-.1681	.0853	-.0096
10	.7405					10	.8752	.2035	-.1823	.1027	-.0180
15	.8494					15	1.0541	.3348	-.2035	.1279	-.0357
20	.8715					20	1.1627	.4932	-.2636	.1384	-.0561
25	.8385					25	1.1468	.6191	-.2918	.1318	-.0719
M = 0.60						M = 1.00					
-10	-.1540	.0661	-.0793	-.0204	-.0026	-10	-.3549	.1046	-.0582	-.0408	-.0098
-7	-.0224	.0302	-.1015	-.0027	-.0010	-7	-.1897	.0691	-.0680	-.0212	-.0041
-5	.0812	.0218	-.0966	.0102	-.0003	-5	-.0642	.0557	-.1137	-.0074	-.0013
-3	.1708	.0190	-.1028	.0204	.0007	-3	.0918	.0480	-.1340	.0111	.0000
-2	.2240	.0207	-.1004	.0265	.0007	-2	.1683	.0480	-.1442	.0197	.0004
-1	.2744	.0235	-.0916	.0319	.0003	-1	.2432	.0541	-.1516	.0271	.0004
0	.3332	.0274	-.0930	.0374	.0003	0	.3090	.0578	-.1591	.0345	-.0004
1	.3724	.0342	-.1028	.0428	-.0003	1	.3793	.0661	-.1624	.0423	-.0005
2	.4173	.0370	-.0916	.0476	-.0007	2	.4436	.0743	-.1651	.0497	-.0014
3	.4649	.0498	-.0966	.0537	-.0007	3	.5124	.0872	-.1746	.0575	-.0023
5	.5489	.0672	-.0966	.0632	-.0010	5	.6134	.1120	-.1848	.0705	-.0048
7	.6581	.0952	-.0842	.0748	-.0039	7	.7403	.1557	-.1996	.0854	-.0101
10	.7925	.1557	-.1004	.0917	-.0108	10	.8994	.2233	-.2220	.1040	-.0190
15	.8709	.2711	-.1709	.1019	-.0248	15	1.1380	.3723	-.2626	.1337	-.0397
20	.8989	.3842	-.2229	.1054	-.0381	20	1.3124	.5552	-.2964	.1578	-.0658
25	.8625	.4598	-.2267	.0972	-.0476	25	1.3277	.7058	-.3357	.1578	-.1039
M = 0.80						M = 1.05					
-10	-.1821	.0577	-.1007	-.0230	-.0024	-10	-.3776	.1070	-.0442	-.0410	-.0099
-7	-.0436	.0288	-.1141	-.0046	-.0005	-7	-.1925	.0702	-.0795	-.0217	-.0051
-5	.0645	.0243	-.1107	.0078	.0011	-5	-.0749	.0570	-.1059	-.0089	-.0019
-3	.1707	.0250	-.1174	.0203	.0016	-3	.0690	.0491	-.1254	.0075	-.0005
-2	.2295	.0269	-.1158	.0272	.0006	-2	.1454	.0500	-.1339	.0160	.0004
-1	.2864	.0300	-.1074	.0336	.0006	-1	.1998	.0447	-.1417	.0232	.0002
0	.3357	.0364	-.1115	.0387	.0000	0	.2733	.0549	-.1403	.0125	-.0004
1	.3982	.0440	-.1200	.0460	-.0005	1	.3438	.0643	-.1547	.0374	-.0021
2	.4438	.0504	-.1167	.0511	-.0006	2	.4084	.0729	-.1611	.0453	-.0021
3	.4874	.0588	-.1141	.0562	-.0016	3	.4745	.0861	-.1716	.0531	-.0031
5	.5860	.0793	-.1115	.0677	-.0029	5	.5891	.1134	-.1859	.0663	-.0063
7	.7055	.1130	-.1098	.0819	-.0071	7	.7067	.1516	-.2002	.0810	-.0106
10	.8287	.1726	-.1200	.0985	-.0146	10	.8785	.2210	-.2230	.1009	-.0197
15	.9254	.2852	-.1602	.1105	-.0293	15	1.1077	.3743	-.2639	.1302	-.0400
20	.9368	.4020	-.2206	.1086	-.0437	20	1.2870	.5577	-.3106	.1533	-.0642
25	.9254	.4980	-.2241	.1082	-.0558	25	1.3927	.7631	-.3509	.1676	-.0912
M = 0.90						M = 1.10					
-10	-.2493	.0773	-.1007	-.0305	-.0041	-10	-.3589	.1085	-.0413	-.0405	-.0120
-7	-.0920	.0418	-.1206	-.0106	-.0010	-7	-.1808	.0687	-.0818	-.0209	-.0064
-5	.0234	.0298	-.1281	.0041	.0014	-5	-.0650	.0543	-.1031	-.0075	-.0036
-3	.1474	.0298	-.1288	.0175	.0016	-3	.0692	.0480	-.1206	.0075	-.0012
-2	.2109	.0338	-.1281	.0240	.0014	-2	.1356	.0480	-.1300	.0148	-.0020
-1	.2661	.0378	-.1296	.0305	.0006	-1	.2006	.0494	-.1312	.0223	-.0026
0	.3247	.0445	-.1340	.0370	.0000	0	.2600	.0548	-.1456	.0288	-.0033
1	.3835	.0519	-.1317	.0443	-.0004	1	.3292	.0633	-.1531	.0363	-.0033
2	.4505	.0609	-.1347	.0516	-.0014	2	.3843	.0709	-.1569	.0429	-.0051
3	.5087	.0733	-.1355	.0589	-.0019	3	.4479	.0814	-.1643	.0504	-.0061
5	.6091	.0954	-.1317	.0707	-.0043	5	.5651	.1085	-.1788	.0634	-.0077
7	.7146	.1332	-.1428	.0841	-.0084	7	.6909	.1486	-.1894	.0778	-.0137
10	.8434	.1901	-.1466	.0999	-.0160	10	.8449	.2139	-.2175	.0957	-.0222
15	1.0041	.3119	-.1762	.1219	-.0323	15	1.0709	.3628	-.2581	.1238	-.0414
20	1.0242	.4428	-.2443	.1198	-.0487	20	1.2546	.5462	-.3038	.1464	-.0660
25	1.0242	.5529	-.2613	.1190	-.0636	25	1.3676	.7533	-.3476	.1612	-.0936

TABLE 2.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 2 MODEL - Concluded

 $\frac{t}{c} = 0.06$ $\frac{c_f}{c} = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1077					-10	-.2504	.0785	-.0974	-.0290	-.0052
-7	.0000					-7	-.0829	.0456	-.1256	-.0085	-.0026
-5	.0916					-5	.0447	.0345	-.1411	.0070	-.0032
-3	.1886					-3	.1643	.0345	-.1447	.0197	-.0034
-2	.2370					-2	.2265	.0376	-.1481	.0271	-.0037
-1	.2694					-1	.2823	.0440	-.1503	.0333	-.0043
0	.3235					0	.3429	.0501	-.1481	.0399	-.0050
1	.3609					1	.4099	.0581	-.1517	.0472	-.0057
2	.4040					2	.4626	.0689	-.1539	.0538	-.0067
3	.4418					3	.5343	.0817	-.1573	.0616	-.0080
5	.5387					5	.6300	.1097	-.1659	.0743	-.0113
7	.6411					7	.7369	.1474	-.1743	.0879	-.0152
10	.7650					10	.8773	.2166	-.1905	.1045	-.0232
15	.8515					15	1.0591	.3452	-.2047	.1289	-.0397
20	.8727					20	1.1261	.4941	-.2660	.1347	-.0579
25	.8189					25	1.1229	.6214	-.2964	.1312	-.0734
M = 0.60						M = 1.00					
-10	-.1448	.0479	-.0838	-.0176	-.0039	-10	-.3102	.0947	-.0730	-.0360	-.0076
-7	-.0139	.0206	-.0876	-.0027	-.0039	-7	-.1329	.0617	-.1109	-.0148	-.0041
-5	.0919	.0011	-.0900	.0095	-.0036	-5	.0000	.0480	-.1339	.0011	-.0048
-3	.1866	.0167	-.0911	.0196	-.0032	-3	.1406	.0452	-.1521	.0178	-.0050
-2	.2423	.0189	-.0925	.0284	-.0023	-2	.2185	.0452	-.1575	.0260	-.0059
-1	.2785	.0189	-.0862	.0338	-.0023	-1	.2781	.0526	-.1649	.0323	-.0068
0	.3342	.0273	-.0925	.0379	-.0029	0	.3515	.0571	-.1656	.0397	-.0076
1	.3844	.0340	-.0925	.0426	-.0032	1	.4233	.0660	-.1676	.0471	-.0083
2	.4317	.0412	-.0887	.0500	-.0036	2	.4691	.0752	-.1691	.0542	-.0098
3	.4735	.0479	-.0900	.0534	-.0045	3	.5348	.0902	-.1744	.0620	-.0114
5	.5905	.0668	-.0925	.0656	-.0065	5	.6448	.1201	-.1825	.0742	-.0151
7	.6824	.1003	-.0925	.0784	-.0094	7	.7488	.1608	-.1961	.0875	-.0197
10	.8025	.1616	-.1110	.0940	-.0104	10	.8924	.2329	-.2197	.1057	-.0291
15	.8468	.2808	-.1861	.1001	-.0233	15	1.1094	.3802	-.2568	.1339	-.0316
20	.8746	.3972	-.2280	.1014	-.0376	20	1.2652	.5486	-.2955	.1539	-.0725
25	.8301	.4657	-.2317	.0919	-.0457	25	1.2469	.6913	-.3380	.1498	-.0888
M = 0.80						M = 1.05					
-10	-.1717	.0483	-.1002	-.0197	-.0033	-10	-.3155	.0925	-.0701	-.0360	-.0132
-7	-.0245	.0249	-.1109	-.0019	-.0026	-7	-.1468	.0608	-.1026	-.0160	-.0087
-5	.0830	.0215	-.1127	.0096	-.0024	-5	-.0220	.0505	-.1266	-.0021	-.0065
-3	.1886	.0249	-.1127	.0220	-.0024	-3	.1248	.0476	-.1448	.0142	-.0056
-2	.2414	.0298	-.1127	.0302	-.0026	-2	.1981	.0505	-.1532	.0221	-.0060
-1	.3018	.0351	-.1102	.0357	-.0033	-1	.2495	.1993	-.1571	.0278	-.0072
0	.3508	.0419	-.1127	.0417	-.0035	0	.3185	.0619	-.1624	.0353	-.0092
1	.4055	.0483	-.1109	.0476	-.0044	1	.3875	.0722	-.1694	.0435	-.0101
2	.4489	.0573	-.1102	.0540	-.0057	2	.4506	.0793	-.1720	.0502	-.0118
3	.5036	.0668	-.1059	.0586	-.0059	3	.5019	.0910	-.1766	.0570	-.0118
5	.6017	.0909	-.1043	.0705	-.0072	5	.6238	.1227	-.1870	.0712	-.0152
7	.7168	.1279	-.1068	.0851	-.0103	7	.7456	.1632	-.2012	.0848	-.0203
10	.8394	.1894	-.1160	.0998	-.0178	10	.9011	.2339	-.2259	.1019	-.0297
15	.8696	.2950	-.1820	.1057	-.0303	15	1.1242	.3883	-.2695	.1322	-.0505
20	.9092	.4082	-.2187	.1062	-.0456	20	1.2651	.5630	-.3052	.1528	-.0737
25	.8884	.4991	-.2270	.1044	-.0572	25	1.3649	.6666	-.3506	.1642	-.0986
M = 0.90						M = 1.10					
-10	-.2204	.0738	-.1049	-.0239	-.0045	-10	-.3105	.0957	-.0656	-.0353	-.0143
-7	-.0584	.0417	-.1256	-.0057	-.0037	-7	-.1440	.0675	-.1012	-.0168	-.0095
-5	.0635	.0344	-.1329	.0085	-.0033	-5	-.0183	.0556	-.1249	-.0027	-.0074
-3	.1753	.0354	-.1329	.0215	-.0033	-3	.1059	.0556	-.1387	.0117	-.0074
-2	.2371	.0401	-.1323	.0288	-.0041	-2	.1821	.0590	-.1468	.0192	-.0075
-1	.2906	.0451	-.1315	.0361	-.0050	-1	.2399	.0624	-.1498	.0260	-.0085
0	.3473	.0534	-.1293	.0422	-.0058	0	.3063	.0680	-.1580	.0339	-.0093
1	.4091	.0615	-.1323	.0478	-.0060	1	.3613	.0762	-.1617	.0408	-.0103
2	.4592	.0691	-.1293	.0551	-.0074	2	.4319	.0867	-.1680	.0480	-.0115
3	.5160	.0805	-.1270	.0624	-.0089	3	.4898	.0985	-.1735	.0552	-.0131
5	.6265	.1052	-.1293	.0746	-.0101	5	.6041	.1270	-.1842	.0682	-.0164
7	.7214	.1429	-.1352	.0875	-.0136	7	.7198	.1694	-.1999	.0819	-.0217
10	.8617	.2054	-.1478	.1046	-.0217	10	.8609	.2340	-.2186	.0980	-.0299
15	1.0153	.3327	-.1832	.1265	-.0388	15	1.0727	.3706	-.2591	.1254	-.0489
20	1.0020	.4502	-.2453	.1200	-.0532	20	1.2279	.5428	-.3122	.1459	-.0724
25	.9886	.5568	-.2586	.1180	-.0664	25	1.3267	.7218	-.3435	.1579	-.0955

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL

$t/c = 0.04$ $C_f/c = \text{NONE}$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.5838					-10	-.7947	.1667	.0846	-.0958	.0197
-7	-.4338					-7	-.6088	.0971	.0540	-.0726	.0114
-5	-.3191					-5	-.4410	.0546	.0200	-.0509	.0065
-3	-.2104					-3	-.2879	.0304	.0049	-.0326	.0035
-2	-.1544					-2	-.2057	.0211	.0006	-.0226	.0026
-1	-.0956					-1	-.1218	.0158	-.0036	-.0133	.0021
0	-.0279					0	-.0296	.0129	.0038	-.0030	.0019
1	.0176					1	.0609	.0129	.0097	.0073	.0025
2	.0691					2	.1431	.0162	.0119	.0163	.0030
3	.1250					3	.2287	.0239	.0108	.0270	.0043
5	.2323					5	.4048	.0453	-.0085	.0479	.0079
7	.3426					7	.5709	.0810	-.0418	.0689	.0132
10	.5382					10	.7848	.1505	-.0769	.0955	.0238
15	.6661					15	1.0530	.2930	-.1140	.1305	.0458
20	.6941										
25	.6764										
M = 0.60						M = 1.00					
-10	-.6694	.1170	.0142	-.0804	.0156	-10	-.7981	.1663	.1063	-.0918	.0190
-7	-.5137	.0601	-.0208	-.0580	.0082	-7	-.5884	.0962	.0623	-.0658	.0109
-5	-.3711	.0322	-.0196	-.0408	.0047	-5	-.4382	.0604	.0377	-.0491	.0071
-3	-.2474	.0204	-.0084	-.0263	.0031	-3	-.2911	.0393	.0234	-.0317	.0043
-2	-.1746	.0162	-.0066	-.0183	.0024	-2	-.2034	.0297	.0122	-.0218	.0033
-1	-.1019	.0140	-.0006	-.0115	.0018	-1	-.1189	.0231	.0025	-.0120	.0027
0	-.0335	.0122	.0035	-.0028	.0017	0	-.0219	.0200	-.0019	-.0022	.0025
1	.0291	.0122	.0007	.0053	.0019	1	.0782	.0208	-.0058	.0085	.0029
2	.0975	.0162	.0078	.0128	.0026	2	.1721	.0239	-.0095	.0193	.0039
3	.1673	.0218	.0123	.0208	.0037	3	.2504	.0315	-.0170	.0291	.0050
5	.2983	.0373	.0235	.0364	.0055	5	.4163	.0523	-.0368	.0481	.0084
7	.4264	.0633	.0223	.0518	.0096	7	.5571	.0816	-.0555	.0639	.0127
10	.6039	.1224	-.0071	.0762	.0181	10	.7668	.1451	-.0956	.0889	.0222
15	.7334	.2269	-.0691	.0963	.0327	15	1.0485	.2901	-.1314	.1272	.0452
20	.7421	.3070	-.0860	.0971	.0441						
25	.7480	.3922	-.0869	.0971	.0539						
M = 0.80						M = 1.05					
-10	-.7036	.1297	.0039	-.0835	.0162	-10	-.7557	.1550	.0966	-.0865	.0174
-7	-.5534	.0695	-.0125	-.0626	.0186	-7	-.5592	.0911	.0601	-.0630	.0100
-5	-.4131	.0384	-.0165	-.0456	.0055	-5	-.4232	.0583	.0390	-.0468	.0060
-3	-.2727	.0223	-.0098	-.0294	.0034	-3	-.2811	.0376	.0226	-.0303	.0035
-2	-.1878	.0160	-.0066	-.0200	.0026	-2	-.1965	.0286	.0125	-.0208	.0025
-1	-.1087	.0131	-.0028	-.0113	.0020	-1	-.1058	.0230	.0023	-.0110	.0018
0	-.0395	.0107	.0033	-.0038	.0018	0	-.0212	.0212	-.0018	-.0040	.0016
1	.0296	.0102	.0063	.0047	.0021	1	.0725	.0215	-.0057	.0089	.0023
2	.1127	.0141	.0127	.0142	.0030	2	.1602	.0260	-.0172	.0180	.0032
3	.1917	.0190	.0137	.0227	.0036	3	.2418	.0335	-.0190	.0275	.0043
5	.3498	.0340	.0269	.0407	.0067	5	.4020	.0535	-.0386	.0456	.0072
7	.4961	.0613	.0226	.0584	.0111	7	.5350	.0825	-.0554	.0618	.0118
10	.6818	.1186	.0068	.0823	.0192	10	.7254	.1420	-.0912	.0853	.0210
15	.7609	.2221	-.0697	.0987	.0341						
20	.7767	.3091	-.0925	.0991	.0438						
25	.7905	.4004	-.0985	.1007	.0576						
M = 0.90						M = 1.10					
-10	-.7338	.1444	.0318	-.0903	.0177	-10	-.7320	.1512	.0978	-.0838	.0162
-7	-.5755	.0823	.0112	-.0680	.0099	-7	-.5417	.0897	.0561	-.0616	.0093
-5	-.4358	.0458	-.0037	-.0494	.0057	-5	-.4246	.0583	.0423	-.0456	.0056
-3	-.2963	.0244	-.0101	-.0324	.0033	-3	-.2782	.0385	.0254	-.0296	.0034
-2	-.2004	.0159	-.0106	-.0215	.0026	-2	-.1903	.0295	.0146	-.0201	.0026
-1	-.1220	.0116	-.0056	-.0130	.0020	-1	-.1083	.0242	.0069	-.0107	.0019
0	-.0366	.0094	.0019	-.0039	.0018	0	-.0234	.0220	.0010	.0278	.0017
1	.0488	.0085	.0095	.0064	.0021	1	.0673	.0216	-.0080	.0083	.0023
2	.1290	.0116	.0159	.0148	.0028	2	.1464	.0266	-.0125	.0169	.0029
3	.2266	.0172	.0179	.0254	.0038	3	.2284	.0342	-.0194	.0267	.0038
5	.4009	.0385	.0078	.0469	.0071	5	.3806	.0558	-.0373	.0438	.0063
7	.5438	.0707	-.0094	.0659	.0117	7	.5124	.0853	-.0548	.0598	.0101
10	.7146	.1294	-.0273	.0896	.0206	10	.6881	.1465	-.0868	.0832	.0176
15	.8245	.2418	-.0846	.1054	.0354						
20	.8715	.3403	-.1196	.1082	.0481						
25	.8820	.4406	-.1259	.1089	.0590						

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.10$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.3945					-10	-.6736	.1520	.0242	-.0797	.0193
-7	-.2221					-7	-.4643	.0864	-.0214	-.0532	.0113
-5	-.1125					-5	-.2894	.0515	-.0593	-.0317	.0071
-3	-.0132					-3	-.1341	.0342	-.0850	-.0127	.0051
-2	.0409					-2	-.0523	.0285	-.0934	-.0020	.0048
-1	.0906					-1	.0589	.0253	-.1109	.0101	.0044
0	.1476					0	.1602	.0314	-.1137	.0212	.0052
1	.1973					1	.2420	.0369	-.1185	.0306	.0063
2	.2440					2	.3564	.0406	-.1179	.0435	.0075
3	.2878					3	.4381	.0522	-.1250	.0534	.0094
5	.3945					5	.5984	.0836	-.1377	.0716	.0138
7	.5085					7	.7291	.1206	-.1475	.0886	.0191
10	.6765										
15	.7978										
20	.7978										
25	.7598										
M = 0.60						M = 1.00					
-10	-.4583	.0828	-.0647	-.0544	.0126	-10	-.6488	.1484	-.0366	-.0134	.0179
-7	-.2776	.0437	-.0958	-.0310	.0073	-7	-.4621	.0899	-.0078	-.0515	.0114
-5	-.1403	.0288	-.0976	-.0135	.0048	-5	-.3112	.0604	-.0365	-.0334	.0082
-3	-.0174	.0253	-.0845	.0004	.0040	-3	-.1774	.0443	-.0532	-.0176	.0063
-2	.0549	.0253	-.0867	.0089	.0040	-2	-.0918	.0379	-.0654	-.0074	.0057
-1	.1128	.0278	-.0832	.0158	.0042	-1	-.0109	.0356	-.0694	.0020	.0052
0	.1807	.0348	-.0764	.0234	.0048	0	.0794	.0363	-.0792	.0115	.0054
1	.2400	.0431	-.0742	.0314	.0059	1	.1774	.0387	-.0888	.0233	.0063
2	.3181	.0483	-.0719	.0399	.0074	2	.2738	.0443	-.0981	.0338	.0072
3	.3803	.0562	-.0668	.0472	.0087	3	.3672	.0528	-.1109	.0449	.0087
5	.5176	.0814	-.0527	.0633	.0114	5	.5493	.0815	-.1356	.0658	.0125
7	.6405	.1160	-.0497	.0798	.0163	7	.6893	.1167	-.1518	.0828	.0173
10	.7895	.1835	-.0756	.1012	.0255						
15	.8502	.2880	-.1271	.1129	.0391						
20	.8473	.3741	-.1383	.1106	.0496						
25	.8328	.4594	-.1413	.1100	.0601						
M = 0.80						M = 1.05					
-10	-.5045	.0939	-.0769	-.0619	.0128	-10	-.6371	.1434	-.0351	-.0760	.0156
-7	-.3278	.0488	-.0946	-.0381	.0071	-7	-.4478	.0890	-.0071	-.0508	.0089
-5	-.1845	.0273	-.1016	-.0203	.0049	-5	-.3186	.0609	-.0320	-.0347	.0058
-3	-.0394	.0200	-.0947	-.0038	.0038	-3	-.1863	.0462	-.0456	-.0182	.0040
-2	.0354	.0188	-.0944	.0056	.0036	-2	-.1037	.0403	-.0580	-.0082	.0040
-1	.1139	.0205	-.0962	.0145	.0040	-1	-.0120	.0373	-.0645	.0009	.0027
0	.2022	.0278	-.0864	.0244	.0047	0	.0796	.0388	-.0731	.0116	.0036
1	.2670	.0296	-.0912	.0332	.0056	1	.1548	.0406	-.0808	.0207	.0040
2	.3494	.0382	-.0849	.0427	.0068	2	.2449	.0466	-.0878	.0307	.0053
3	.4378	.0478	-.0789	.0522	.0080	3	.3351	.0565	-.0981	.0410	.0068
5	.5791	.0715	-.0715	.0695	.0121	5	.5049	.0842	-.1246	.0617	.0105
7	.7185	.1062	-.0718	.0870	.0174	7	.6446	.1186	-.1473	.0805	.0149
10	.8598	.1704	-.0769	.1096	.0261						
15	.8520	.2733	-.1409	.1112	.0375						
M = 0.90						M = 1.10					
-10	-.5787	.1206	-.0358	-.0708	.0156	-10	-.6145	.1389	.0979	-.0736	.0136
-7	-.3846	.0651	-.0707	-.0449	.0086	-7	-.4470	.0870	.0542	-.0507	.0075
-5	-.2426	.0375	-.0863	-.0259	.0057	-5	-.3174	.0594	.0244	-.0336	.0044
-3	-.0866	.0243	-.0993	-.0082	.0043	-3	-.1849	.0459	.0019	-.0183	.0027
-2	.0055	.0204	-.1031	.0028	.0039	-2	-.0946	.0412	-.0132	-.0085	.0020
-1	.0918	.0204	-.1057	.0128	.0042	-1	-.0291	.0369	-.0264	.0000	.0020
0	.1836	.0260	-.1001	.0233	.0048	0	.0612	.0394	-.0415	.0097	.0021
1	.2824	.0302	-.1066	.0347	.0059	1	.1427	.0419	-.0570	.0200	.0039
2	.3794	.0388	-.1013	.0456	.0074	2	.2359	.0465	-.0708	.0292	.0042
3	.4608	.0464	-.1027	.0548	.0090	3	.3203	.0566	-.0881	.0395	.0054
5	.6205	.0771	-.1087	.0741	.0135	5	.4732	.0852	-.1184	.0583	.0082
7	.7467	.1163	-.1232	.0922	.0191	7	.6116	.1193	-.1463	.0751	.0120
10	.9390	.1866	-.1353	.1156	.0291						

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{C_f}{c} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.55					
-10	-.3057					-10	-.5765	.1362	-.0406	-.0702	.0144
-7	-.1254					-7	-.3423	.0770	.2230	-.0399	.0069
-5	-.0029					-5	-.1809	.0501	-.1155	-.0180	.0038
-3	.1081					-3	.0129	.0362	-.1487	.0049	.0028
-2	.1629					-2	.1179	.0342	-.1631	.0163	.0030
-1	.2206					-1	.2228	.0354	-.1689	.0284	.0038
0	.2783					0	.3246	.0409	-.1713	.0399	.0048
1	.3258					1	.4231	.0480	-.1716	.0506	.0063
2	.4023					2	.5167	.0580	-.1707	.0611	.0083
3	.4369					3	.6071	.0706	-.1712	.0725	.0106
5	.5911					5	.7638	.1056	-.1845	.0905	.0159
7	.6762										
10	.8074										
15	.8708										
20	.8449										
25	.8160										
M = 0.60						M = 1.00					
-10	-.3554	.0688	-.0808	-.0426	.0056	-10	-.5945	.1420	.2813	-.0699	.0146
-7	-.1513	.0267	-.1203	-.0165	.0009	-7	-.3871	.0873	.0571	-.0435	.0079
-5	.0014	.0137	-.1212	.0014	-.0002	-5	-.2289	.0608	-.0848	-.0239	.0050
-3	.1327	.0154	-.1174	.0169	.0001	-3	-.0615	.0446	-.1145	-.0037	.0037
-2	.2027	.0197	-.1144	.0258	.0015	-2	.0307	.0408	-.1271	.0078	.0034
-1	.2683	.0243	-.1072	.0346	.0043	-1	.1352	.0400	-.1419	.0180	.0034
0	.3325	.0320	-.0977	.0433	.0067	0	.2842	.0400	-.1645	.0357	.0045
1	.3982	.0414	-.0946	.0504	.0089	1	.3656	.0465	-.1668	.0451	.0058
2	.4538	.0477	-.0830	.0577	.0112	2	.4701	.0571	-.1698	.0566	.0077
3	.5323	.0561	-.0830	.0665	.0137	3	.5531	.0691	-.1747	.0665	.0098
5	.6494	.0846	-.0577	.0837	.0195	5	.7082	.1024	-.1858	.0848	.0147
7	.7792	.1200	-.0609	.0996	.0263						
10	.8934	.1845	-.0965	.1155	.0335						
15	.9220	.2850	-.1443	.1175	.0405						
20	.9077	.3706	-.1471	.1140	.0498						
25	.8906	.4577	-.1484	.1126	.0607						
M = 0.80						M = 1.05					
-10	-.3741	.0817	-.0904	-.0902	.0019	-10	-.5814	.1360	-.0138	-.0684	.0134
-7	-.1861	.0372	-.1360	-.0392	.0026	-7	-.3767	.0839	-.0536	-.0420	.0073
-5	-.0233	.0212	-.1379	-.0010	.0009	-5	-.2254	.0598	-.0808	-.0240	.0044
-3	.1153	.0188	-.1342	.0314	.0008	-3	-.0727	.0460	-.1039	-.0054	.0031
-2	.2045	.0198	-.1350	.0506	.0015	-2	.0193	.0423	-.1160	.0051	.0029
-1	.2791	.0234	-.1297	.0676	.0030	-1	.1009	.0412	-.1275	.0150	.0031
0	.3547	.0284	-.1246	.0849	.0046	0	.2121	.0423	-.1400	.0276	.0040
1	.4293	.0346	-.1230	.0519	.0063	1	.3159	.0467	-.1517	.0390	.0052
2	.5040	.0431	-.1156	.0602	.0072	2	.4272	.0561	-.1626	.0516	.0071
3	.5854	.0539	-.1104	.0696	.0105	3	.5132	.0679	-.1688	.0615	.0088
5	.7520	.0820	-.0964	.0896	.0079	5	.6748	.0996	-.1826	.0810	.0137
7	.8684	.1210	-.0970	.1070	.0100						
10	1.0079	.1878	-.1047	.1255	.0293						
15	.9536	.1434	-.1511	.1176	.0401						
20	.9575	.1921	-.1486	.1200	.0520						
25	.9420	.2393	-.1407	.1184	.0631						
M = 0.90						M = 1.10					
-10	-.4911	.0570	-.0867	-.0606	.0092	-10	-.5634	.1301	-.0095	-.0657	.0121
-7	-.2895	.0307	-.1176	-.0329	.0051	-7	-.3665	.0809	-.0504	-.0407	.0065
-5	-.1164	.0175	-.1325	-.0107	.0024	-5	-.2185	.0576	-.0762	-.0227	.0039
-3	.0565	.0128	-.1473	.0093	.0019	-3	-.0819	.0446	-.0958	-.0052	.0027
-2	.1591	.0128	-.1485	.0201	.0022	-2	.0144	.0417	-.1093	.0052	.0026
-1	.2533	.0143	-.1517	.0305	.0029	-1	.0934	.0403	-.1205	.0140	.0031
0	.3422	.0169	-.1480	.0415	.0040	0	.1983	.0435	-.1330	.0256	.0037
1	.4261	.0202	-.1454	.0519	.0055	1	.2989	.0474	-.1465	.0369	.0050
2	.5442	.0261	-.1466	.0640	.0080	2	.3967	.0562	-.1528	.0480	.0064
3	.6331	.0329	-.1452	.0758	.0104	3	.4858	.0682	-.1627	.0590	.0082
5	.7803	.0480	-.1490	.0941	.0155	5	.6467	.1018	-.1752	.0779	.0128
7	.9241	.0690	-.1566	.1101	.0219						

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2534					-10	-.4754	.1149	-.0709	-.0536	.0155
-7	-.0576					-7	-.2659	.0682	-.1084	-.0259	.0097
-5	.0504					-5	-.0725	.0444	-.1440	-.0031	.0070
-3	.1656					-3	.1128	.0376	-.1702	.0176	.0064
-2	.2232					-2	.2176	.0388	-.1802	.0287	.0068
-1	.2750					-1	.3223	.0428	-.1806	.0403	.0074
0	.3441					0	.4077	.0508	-.1826	.0499	.0086
1	.3888					1	.4899	.0587	-.1820	.0593	.0102
2	.4391					2	.5882	.0713	-.1823	.0694	.0124
3	.4895					3	.6607	.0864	-.1830	.0792	.0150
5	.6119					5	.8154	.1240	-.1937	.0981	.0205
7	.7343										
10	.8207										
15	.8639										
20	.8236										
25	.7861										
M = 0.60						M = 1.00					
-10	-.2827	.0444	-.0774	-.0323	.0084	-10	-.5014	.1203	-.0443	-.0557	.0152
-7	-.0705	.0098	-.1075	-.0057	.0046	-7	-.2959	.0743	-.0854	-.0296	.0098
-5	.0677	.0036	-.1046	.0107	.0034	-5	-.1288	.0531	-.1164	-.0099	.0076
-3	.1901	.0063	-.1049	.0249	.0039	-3	.0414	.0434	-.1454	.0095	.0066
-2	.2635	.0115	-.0984	.0330	.0048	-2	.1457	.0422	-.1602	.0211	.0067
-1	.3255	.0168	-.0962	.0408	.0056	-1	.2683	.0441	-.1741	.0346	.0070
0	.4059	.0245	-.0948	.0485	.0061	0	.3649	.0498	-.1815	.0454	.0076
1	.4515	.0315	-.0956	.0556	.0072	1	.4492	.0584	-.1817	.0552	.0089
2	.5156	.0403	-.0871	.0628	.0089	2	.5412	.0705	-.1816	.0642	.0110
3	.5726	.0508	-.0822	.0707	.0108	3	.6164	.0863	-.1830	.0738	.0135
5	.7264	.0833	-.0716	.0896	.0320	5	.7819	.1237	-.1987	.0927	.0180
7	.8261	.1208	-.0693	.1040	.0216						
10	.9059	.1926	-.1007	.1173	.0311						
15	.9201	.2998	-.1384	.1196	.0436						
20	.8745	.3894	-.1375	.1141	.0527						
25	.8631	.4736	-.1404	.0838	.0631						
M = 0.80						M = 1.05					
-10	-.3048	.0618	-.0951	-.0342	.0091	-10	-.4888	.1158	-.0397	-.0550	.0134
-7	-.0968	.0238	-.1348	-.0080	.0049	-7	-.2948	.0729	-.0815	-.0301	.0085
-5	.0629	.0143	-.1347	.0099	.0041	-5	-.1407	.0535	-.1083	-.0111	.0135
-3	.1935	.0155	-.1342	.0255	.0043	-3	.0222	.0437	-.1331	.0072	.0058
-2	.2854	.0202	-.1316	.0349	.0049	-2	.1155	.0437	-.1464	.0174	.0057
-1	.3454	.0254	-.1306	.0427	.0056	-1	.2118	.0455	-.1625	.0286	.0061
0	.4189	.0321	-.1251	.0513	.0070	0	.3333	.0503	-.1751	.0422	.0069
1	.5015	.0411	-.1223	.0609	.0088	1	.4177	.0583	-.1809	.0518	.0078
2	.5689	.0497	-.1131	.0685	.0104	2	.5110	.0710	-.1795	.0616	.0094
3	.6386	.0613	-.1083	.0775	.0063	3	.5895	.0856	-.1843	.0713	.0117
5	.7856	.0935	-.1003	.0951	.0092	5	.7406	.1221	-.1945	.0887	.0164
7	.8804	.1342	-.0990	.1119	.0058	7	.8591	.1654	-.2104	.1031	.0221
10	1.0178	.2022	-.1032	.1296	.0082						
M = 0.90						M = 1.10					
-10	-.3457	.0840	-.1157	-.0383	.0115	-10	-.4810	.1137	-.0355	-.0542	.0119
-7	-.1494	.0440	-.1424	-.0133	.0067	-7	-.2900	.0706	-.0779	-.0298	.0072
-5	.0171	.0279	-.1538	.0057	.0051	-5	-.1393	.0519	-.1044	-.0115	.0052
-3	.1750	.0273	-.1627	.0234	.0051	-3	.0144	.0441	-.1272	.0060	.0048
-2	.2604	.0283	-.1522	.0320	.0055	-2	.1034	.0445	-.1398	.0160	.0048
-1	.3560	.0367	-.1634	.0428	.0070	-1	.2010	.0466	-.1525	.0263	.0052
0	.4097	.0410	-.1510	.0506	.0077	0	.2972	.0508	-.1660	.0376	.0062
1	.5019	.0493	-.1507	.0610	.0097	1	.3977	.0572	-.1762	.0495	.0075
2	.5822	.0588	-.1379	.0701	.0120	2	.4810	.0688	-.1755	.0582	.0085
3	.7529	.0709	-.1610	.0805	.0142	3	.5657	.0858	-.1773	.0680	.0102
5	.7853	.1018	-.1388	.0970	.0193	5	.7093	.1235	-.1916	.0860	.0140
7	.9151	.1444	-.0969	.1115	.0255	7	.8327	.1684	-.1990	.0999	.0193

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued

$\frac{x}{c} = 0.04$ $\frac{c_f}{c} = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1961					-10	-.3709	.1138	-.1084	-.0396	.0130
-7	-.0087					-7	-.1516	.0761	-.1425	-.0119	.0084
-5	.1096					-5	.0468	.0603	-.1726	.0101	.0063
-3	.2076					-3	.2242	.0575	-.1894	.0297	.0065
-2	.2711					-2	.3322	.0603	-.1913	.0411	.0072
-1	.3157					-1	.4177	.0670	-.1875	.0509	.0084
0	.3806					0	.4935	.0761	-.1876	.0524	.0098
1	.4239					1	.5822	.0860	-.1856	.0693	.0118
2	.4844					2	.6563	.0992	-.1845	.0789	.0140
3	.5306					3	.7321	.1158	-.1838	.0897	.0166
5	.6546					5	.8708	.1526	-.1898	.1060	.0227
7	.7584										
10	.8276										
15	.8333										
20	.8045										
25	.7757										
M = 0.60						M = 1.00					
-10	-.2161	.0534	-.0830	-.0239	.0061	-10	-.4235	.1188	-.0725	-.0447	.0129
-7	-.0078	.0263	-.1053	.0021	.0027	-7	-.1995	.0800	-.1153	-.0175	.0086
-5	.1405	.0263	-.0983	.0190	.0022	-5	-.0230	.0630	-.1452	.0026	.0068
-3	.2739	.0312	-.0972	.0341	.0034	-3	.1596	.0592	-.1735	.0228	.0062
-2	.3417	.0368	-.0906	.0429	.0040	-2	.2854	.0596	-.1849	.0360	.0067
-1	.4052	.0452	-.0900	.0501	.0045	-1	.3744	.0653	-.1862	.0461	.0075
0	.4651	.0544	-.0902	.0573	.0055	0	.4587	.0743	-.1864	.0562	.0090
1	.5265	.0639	-.0869	.0651	.0071	1	.5401	.0856	-.1859	.0652	.0103
2	.5864	.0750	-.0766	.1440	.0109	2	.6198	.0985	-.1859	.0743	.0126
3	.6506	.0885	-.0772	.0814	.0109	3	.6981	.0970	-.1904	.0857	.0151
5	.7676	.1176	-.0651	.0961	.0158	5	.8469	.1554	-.2046	.1015	.0103
7	.8646	.1621	-.0711	.1111	.0220						
10	.9017	.2280	-.1021	.1189	.0310						
15	.8960	.3241	-.1344	.1160	.0209						
20	.8674	.4126	-.1369	.1134	.0260						
25	.8674	.5081	-.1413	.1131	.0314						
M = 0.80						M = 1.05					
-10	-.2363	.0671	-.0926	-.0257	.0077	-10	-.4119	.1148	-.0693	-.0439	.0106
-7	-.0107	.0350	-.1323	.0018	.0038	-7	-.2015	.0783	-.1090	-.0183	.0087
-5	.1491	.0326	-.1323	.0200	.0034	-5	-.0385	.0638	-.1353	.0003	.0078
-3	.2915	.0390	-.1279	.0362	.0042	-3	.1171	.0601	-.1591	.0183	.0073
-2	.3622	.0450	-.1244	.0447	.0051	-2	.2504	.0601	-.1763	.0325	.0074
-1	.4300	.0514	-.1228	.0523	.0064	-1	.3467	.0648	-.1822	.0450	.0078
0	.4920	.0596	-.1225	.0605	.0074	0	.4282	.0739	-.1857	.0527	.0086
1	.5559	.0695	-.1146	.0690	.0093	1	.5097	.0856	-.1839	.0619	.0093
2	.6315	.0793	-.1070	.0768	.0111	2	.5912	.0988	-.1851	.0715	.0108
3	.6993	.0922	-.1029	.0856	.0135	3	.6579	.1136	-.1891	.0812	.0128
5	.8252	.1272	-.0953	.1046	.0191	5	.8179	.1184	-.2018	.0980	.0187
7	.9123	.1653	-.0900	.1171	.0238						
10	1.0034	.2344	-.0907	.1301	.0334						
M = 0.90						M = 1.10					
-10	-.2701	.0921	-.1347	-.0285	.0104	-10	-.3963	.1101	-.0668	-.0433	.0100
-7	-.0436	.0576	-.1665	-.0009	.0063	-7	-.2024	.0773	-.1042	-.0193	.0058
-5	.1333	.0491	-.1805	.0192	.0053	-5	-.0488	.0643	-.1290	-.0016	.0047
-3	.2855	.0513	-.1812	.0360	.0061	-3	.1091	.0607	-.1531	.0173	.0047
-2	.3752	.0585	-.1802	.0462	.0073	-2	.2039	.0625	-.1632	.0279	.0050
-1	.4513	.0651	-.1725	.0550	.0085	-1	.3144	.0678	-.1740	.0399	.0056
0	.5334	.0765	-.1801	.0652	.0102	0	.4078	.0759	-.1809	.0504	.0064
1	.5932	.0849	-.1695	.0730	.0118	1	.4867	.0865	-.1812	.0598	.0079
2	.6650	.0933	-.1523	.0811	.0139	2	.5657	.1006	-.1815	.0681	.0095
3	.7282	.1047	-.1459	.0906	.0162	3	.6231	.1172	-.1853	.0816	.0115
5	.8513	.1396	-.1484	.1062	.0214	5	.7868	.1246	-.1963	.0950	.0166

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued

$\frac{c_t}{c} = 0.06$ $\frac{c_f}{c} = \text{NONE}$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.5310					-10	-.7168	.1453	.0848	-.0887	-.0220
-7	-.3947					-7	-.5165	.0850	.0382	-.0631	-.0121
-5	-.2942					-5	-.3900	.0569	.0173	-.0461	-.0077
-3	-.1973					-3	-.2382	.0363	.0000	-.0273	-.0037
-2	-.1471					-2	-.1644	.0270	-.0037	-.0188	-.0023
-1	-.0969					-1	-.0949	.0249	-.0028	-.0102	-.0015
0	-.0466					0	-.0148	.0238	.0009	-.0007	-.0012
1	.0179					1	.0632	.0259	.0033	.0085	-.0012
2	.0789					2	.1328	.0280	.0019	.0171	-.0015
3	.1327					3	.2087	.0342	-.0014	.0256	-.0020
5	.2404					5	.3373	.0519	-.0107	.0416	-.0039
7	.3588					7	.4891	.0829	-.0411	.0604	-.0076
10	.5238					10	.6852	.1453	-.0877	.0863	-.0156
15	.6925					15	.9593	.2800	-.1483	.1218	-.0341
20	.7140					20	.9804	.3940	-.2043	.1218	-.0482
25	.6996					25	1.0225	.5226	-.2453	.1262	-.0644
M = 0.60						M = 1.00					
-10	-.6001	.1219	.0261	-.0741	-.0163	-10	-.7372	.1620	.1193	-.0866	-.0229
-7	-.4376	.0598	.0016	-.0520	-.0077	-7	-.5493	.0994	.0733	-.0631	-.0137
-5	-.3250	.0329	-.0123	-.0371	-.0036	-5	-.4141	.0705	.0496	-.0467	-.0097
-3	-.2068	.0218	-.0090	-.0227	-.0019	-3	-.2626	.0487	.0286	-.0301	-.0061
-2	-.1293	.0218	.0025	-.0149	-.0009	-2	-.1777	.0426	.0187	-.0203	-.0042
-1	-.0776	.0144	.0041	-.0081	-.0004	-1	-.1030	.0347	.0099	-.0114	-.0027
0	-.0203	.0126	-.0097	-.0036	-.0003	0	-.0141	.0347	.0053	-.0016	-.0023
1	.0480	.0144	-.0130	.0066	.0004	1	.0707	.0378	-.0036	.0082	-.0024
2	.1052	.0162	-.0130	.0131	.0012	2	.1495	.0418	-.0103	.0180	-.0030
3	.1699	.0218	-.0148	.0203	.0009	3	.2323	.0477	-.0214	.0265	-.0035
5	.2880	.0329	-.0171	.0341	-.0002	5	.3737	.0667	-.0402	.0435	-.0055
7	.4210	.0510	-.0194	.0505	-.0021	7	.5191	.0974	-.0697	.0611	-.0090
10	.5964	.1034	-.0359	.0729	-.0079	10	.7231	.1620	-.1220	.0856	-.0168
15	.7349	.2197	-.1152	.0944	-.0220	15	1.0180	.3050	-.1934	.1245	-.0359
20	.7515	.3143	-.1527	.0962	-.0351	20	1.2119	.4688	-.2350	.1497	-.0584
25	.7478	.3996	-.1634	.0938	-.0454	25	1.2200	.6158	-.2931	.1497	-.0384
M = 0.80						M = 1.05					
-10	-.6504	.1156	.0160	-.0795	-.0171	-10	-.7197	.1573	.1189	-.0851	-.0228
-7	-.5053	.0640	-.0061	-.0593	-.0096	-7	-.5374	.0964	.0760	-.0618	-.0142
-5	-.3627	.0345	-.0144	-.0417	-.0066	-5	-.4016	.0677	.0545	-.0461	-.0101
-3	-.2201	.0185	-.0127	-.0245	-.0021	-3	-.2503	.0477	.0322	-.0289	-.0056
-2	-.1551	.0160	-.0088	-.0168	-.0014	-2	-.1707	.0429	.0223	-.0195	-.0045
-1	-.0926	.0148	-.0055	-.0099	-.0009	-1	-.0970	.0382	.0129	-.0116	-.0034
0	-.0150	.0135	.0000	-.0008	-.0009	0	-.0136	.0372	.0047	-.0025	-.0026
1	.0575	.0160	.0005	.0079	-.0006	1	.0640	.0382	-.0034	.0072	-.0026
2	.1201	.0173	.0022	.0152	-.0006	2	.1416	.0429	-.0129	.0157	-.0029
3	.1926	.0223	.0066	.0233	-.0010	3	.2231	.0497	-.0227	.0248	-.0037
5	.3252	.0345	.0061	.0395	-.0020	5	.3589	.0677	-.0434	.0408	-.0056
7	.4778	.0615	-.0044	.0577	-.0048	7	.5083	.1001	-.0721	.0587	-.0091
10	.6429	.1143	-.0265	.0789	-.0110	10	.6887	.1573	-.1184	.0807	-.0165
15	.7505	.2251	-.1113	.0963	-.0257	15	1.0243	.3053	-.2017	.1218	-.0360
20	.7830	.3200	-.1555	.0988	-.0387	20	1.2649	.4980	-.2686	.1532	-.0611
25	.8055	.4158	-.1704	.1012	-.0514	25	1.3308	.6679	-.3004	.1664	-.0839
M = 0.90						M = 1.10					
-10	-.6870	.1330	.0500	-.0864	-.0202	-10	-.7087	.1537	.1172	-.0833	-.0225
-7	-.5186	.0740	.0172	-.0628	-.0109	-7	-.5259	.0949	.0750	-.0616	-.0147
-5	-.3989	.0437	.0010	-.0461	-.0066	-5	-.3916	.0651	.0545	-.0459	-.0097
-3	-.2549	.0239	-.0064	-.0287	-.0031	-3	-.2424	.0459	.0322	-.0287	-.0062
-2	-.1773	.0197	-.0064	-.0038	-.0021	-2	-.1623	.0390	.0215	-.0196	-.0050
-1	-.1045	.0175	-.0039	-.0113	-.0014	-1	-.0877	.0352	.0136	-.0115	-.0036
0	-.0222	.0164	-.0015	-.0018	-.0009	0	-.0093	.0343	.0046	-.0027	-.0028
1	.0621	.0164	-.0015	.0081	-.0008	1	.0746	.0358	-.0054	.0069	-.0029
2	.1374	.0197	.0035	.0170	-.0009	2	.1492	.0399	-.0148	.0151	-.0033
3	.2172	.0262	.0035	.0256	-.0012	3	.2294	.0459	-.0231	.0235	-.0038
5	.3435	.0414	-.0029	.0414	-.0029	5	.3637	.0651	-.0454	.0395	-.0060
7	.4876	.0709	-.0225	.0595	-.0062	7	.5073	.0953	-.0672	.0570	-.0098
10	.6649	.1308	-.0554	.0843	-.0137	10	.6900	.1537	-.1147	.0791	-.0169
15	.8865	.2529	-.1010	.1140	-.0302	15	.9996	.2980	-.2005	.1177	-.0356
20	.8754	.3542	-.1804	.1079	-.0215	20	1.2421	.4897	-.2624	.1479	-.0606
25	.9175	.4665	-.2025	.1130	-.0291	25	1.3801	.6953	-.3160	.1690	-.0870

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2415					-10	-.5179	.1279	-.0211	-.0634	-.0148
-7	-.0972					-7	-.3615	.0801	-.0444	-.0412	-.0082
-5	.0252					-5	-.2114	.0552	-.0748	-.0224	-.0037
-3	.1512					-3	-.0317	.0395	-.1099	-.0019	-.0008
-2	.1908					-2	.0740	.0395	-.1239	.0101	-.0003
-1	.2520					-1	.1797	.0395	-.1426	.0226	-.0002
0	.3060					0	.2790	.0446	-.1519	.0334	-.0010
1	.3600					1	.3699	.0552	-.1637	.0436	-.0020
2	.4104					2	.4545	.0634	-.1637	.0534	-.0032
3	.4680					3	.5390	.0738	-.1730	.0640	-.0046
5	.5508					5	.6743	.0520	-.1824	.0636	-.0082
7	.6696					7	.8223	.1518	-.2105	.0947	-.0144
10	.8208					10	.9978	.2266	-.2450	.1201	-.0243
15	.9071					15	1.2134	.3670	-.2665	.1485	-.0425
20	.8783					20	1.0908	.4501	-.2684	.1279	-.0518
25	.8424					25	1.0781	.5676	-.2759	.1259	-.0659
M = 0.60						M = 1.00					
-10	-.2777	.0800	-.0983	-.0324	-.0036	-10	-.5509	.1385	.0067	-.0672	-.0160
-7	-.1055	.0337	-.1229	-.0093	.0010	-7	-.3605	.0907	-.0381	-.0429	-.0087
-5	.0167	.0237	-.1246	.0042	.0024	-5	-.2086	.0676	-.0694	-.0251	-.0053
-3	.1444	.0211	-.1253	.0186	.0032	-3	-.0608	.0557	-.0919	-.0084	-.0031
-2	.2037	.0211	-.1246	.0252	.0035	-2	.0223	.0529	-.1066	.0015	-.0024
-1	.2610	.0255	-.1229	.0312	.0030	-1	.1154	.0518	-.1223	.0116	-.0021
0	.3240	.0300	-.1212	.0387	.0023	0	.2309	.0557	-.1388	.0233	-.0022
1	.4036	.0344	-.1212	.0473	.0020	1	.3220	.0628	-.1532	.0342	-.0028
2	.4666	.0437	-.1212	.0545	.0017	2	.4253	.0717	-.1702	.0457	-.0039
3	.5091	.0481	-.1146	.0602	.0014	3	.5124	.0857	-.1859	.0567	-.0055
5	.6258	.0674	-.1106	.0740	-.0007	5	.6622	.1146	-.2074	.0744	-.0091
7	.7461	.1011	-.1130	.0896	-.0046	7	.8162	.1584	-.2311	.0924	-.0148
10	.8757	.1692	-.1351	.1073	-.0122	10	.9924	.2351	-.2598	.1137	-.0243
15	.9201	.2822	-.1965	.1153	-.0267	15	1.2637	.2939	-.3046	.1455	-.0444
20	.8961	.3744	-.2137	.1105	-.0389	20	1.3974	.2839	-.3180	.1665	-.0350
25	.8720	.4562	-.2154	.1061	-.0492	25	1.3447	.3516	-.3566	.1566	-.0813
M = 0.80						M = 1.05					
-10	-.3361	.0758	-.1009	-.0398	-.0068	-10	-.5464	.1377	.0121	-.0719	-.0162
-7	-.1768	.0381	-.1248	-.0187	-.0017	-7	-.3578	.0908	-.0323	-.0497	-.0091
-5	-.0439	.0233	-.1292	-.0030	.0009	-5	-.2178	.0698	-.0624	-.0332	-.0057
-3	.1041	.0216	-.1315	.0134	.0015	-3	-.0603	.0554	-.0838	-.0154	-.0029
-2	.1819	.0173	-.1304	.0221	.0015	-2	.0117	.0535	-.0968	-.0071	-.0026
-1	.2546	.0266	-.1304	.0302	.0014	-1	.1105	.0535	-.1110	.0032	-.0023
0	.3198	.0314	-.1298	.0386	.0010	0	.2003	.0554	-.1239	.0135	-.0023
1	.4013	.0389	-.1331	.0481	.0005	1	.2820	.0622	-.1368	.0230	-.0032
2	.4803	.0469	-.1359	.0578	-.0002	2	.3733	.0698	-.1514	.0332	-.0042
3	.5456	.0554	-.1292	.0656	-.0012	3	.4628	.0813	-.1669	.0431	-.0057
5	.6823	.0790	-.1248	.0808	-.0043	5	.6320	.1118	-.1987	.0628	-.0246
7	.8027	.1179	-.1304	.0962	-.0087	7	.7778	.1540	-.2237	.0806	-.0149
10	.9256	.1776	-.1399	.1136	-.0168	10	.9606	.2295	-.2564	.1019	-.0245
15	.9230	.2824	-.2009	.1132	-.0310	15	1.2328	.3903	-.3071	.1337	-.0445
20	.9406	.3873	-.2219	.1132	-.0476	20	1.4273	.5890	-.3484	.1598	-.0678
25	.9356	.4811	-.2275	.1120	-.0552	25	1.4195	.7364	-.3613	.1586	-.0889
M = 0.90						M = 1.10					
-10	-.4663	.1055	-.0565	-.0559	-.0120	-10	-.5311	.1361	.0116	-.0737	-.0167
-7	-.2920	.0606	-.0835	-.0325	-.0049	-7	-.3459	.0883	-.0310	-.0523	-.0104
-5	-.1144	.0344	-.1228	-.0106	-.0004	-5	-.2113	.0671	-.0571	-.0365	-.0076
-3	.0477	.0278	-.1375	.0077	.0008	-3	-.0636	.0542	-.0815	-.0198	-.0044
-2	.1443	.0284	-.1425	.0190	.0009	-2	.0224	.0524	-.0951	-.0103	-.0036
-1	.2243	.0318	-.1425	.0279	.0005	-1	.1108	.0524	-.1138	-.0015	-.0032
0	.2976	.0389	-.1449	.0455	.0001	0	.1870	.0542	-.1195	.0079	-.0033
1	.3775	.0449	-.1449	.0451	-.0005	1	.2767	.0598	-.1332	.0180	-.0040
2	.4563	.0535	-.1483	.0555	-.0016	2	.3590	.0681	-.1460	.0274	-.0046
3	.5529	.0644	-.1522	.0672	-.0034	3	.4469	.0791	-.1605	.0369	-.0062
5	.6884	.0917	-.1596	.0825	-.0065	5	.5946	.1075	-.1882	.0543	-.0096
7	.8061	.1310	-.1695	.0985	-.0116	7	.7517	.1481	-.2151	.0728	-.0149
10	.9438	.1972	-.1866	.1182	-.0208	10	.9256	.2216	-.2482	.0941	-.0241
15	1.1414	.3309	-.2137	.1416	-.0396	15	1.1967	.3779	-.2978	.1253	-.0431
20	1.0437	.4248	-.2555	.1236	-.0491	20	1.3837	.5720	-.3408	.1492	-.0664
25	1.0437	.5330	-.2604	.1232	-.0630	25	1.4885	.7781	-.3830	.1646	-.0936

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Continued
 $c_t = 0.06$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1905					-10	-.4415	.1185	-.0739	-.0537	-.0160
-7	-.0395					-7	-.2884	.0744	-.0911	-.0313	-.0095
-5	.0898					-5	-.1447	.0534	-.1191	-.0115	-.0056
-3	.1977					-3	.0866	.0456	-.1542	.0125	-.0034
-2	.2444					-2	.1996	.0484	-.1705	.0253	-.0038
-1	.3055					-1	.2873	.0613	-.1916	.0355	-.0050
0	.3738					0	.3876	.0872	-.1869	.0467	-.0053
1	.4169					1	.4774	.0744	-.1986	.0578	-.0071
2	.4852					2	.5598	.0847	-.1963	.0667	-.0084
3	.5391					3	.6232	.0925	-.1893	.0747	-.0093
5	.6325					5	.7647	.1314	-.2103	.0923	-.0139
7	.7475					7	.8978	.1756	-.2173	.1094	-.0197
10	.8769					10	1.0605	.2535	-.2477	.1299	-.0304
15	.9128					15	1.2126	.3927	-.2477	.1521	-.0246
20	.8697					20	1.1492	.5017	-.2757	.1378	-.0308
25	.8194					25	1.1070	.6088	-.2757	.1309	-.0375
M = 0.60						M = 1.00					
-10	-.2312	.0629	-.0966	-.0287	-.0082	-10	-.5058	.1333	-.0403	-.0575	-.0167
-7	-.0518	.0237	-.1228	-.0045	-.0023	-7	-.2934	.0886	-.0805	-.0319	-.0100
-5	.0869	.0163	-.1228	.0114	-.0014	-5	-.1315	.0696	-.1119	-.0124	-.0063
-3	.2201	.0181	-.1219	.0269	-.0014	-3	.0445	.0587	-.1410	.0074	-.0048
-2	.2885	.0211	-.1235	.0344	-.0016	-2	.1558	.0587	-.1589	.0188	-.0047
-1	.3496	.0255	-.1210	.0419	-.0017	-1	.2610	.0627	-.1767	.0316	-.0049
0	.4235	.0329	-.1228	.0494	-.0023	0	.3682	.0702	-.1924	.0434	-.0056
1	.4846	.0392	-.1228	.0569	-.0026	1	.4593	.0836	-.2050	.0540	-.0071
2	.5308	.0462	-.1187	.0625	-.0032	2	.5442	.0945	-.2126	.0635	-.0084
3	.5863	.0555	-.1129	.0688	-.0044	3	.6252	.1095	-.2282	.0732	-.0102
5	.7010	.0773	-.1105	.0829	-.0069	5	.7627	.1408	-.2372	.0900	-.0143
7	.8249	.1165	-.1088	.0988	-.0116	7	.9145	.1890	-.2506	.1080	-.0209
10	.9248	.1838	-.1309	.1134	-.0204	10	1.0804	.2717	-.2730	.1287	-.0314
15	.9507	.2985	-.1801	.1179	-.0360	15	1.3151	.4338	-.3043	.1568	-.0529
20	.9137	.3928	-.1972	.1101	-.0483	20	1.4243	.6070	-.3150	.1748	-.0765
25	.8767	.4783	-.2005	.1048	-.0585	25	1.3313	.7283	-.3357	.1617	-.0925
M = 0.80						M = 1.05					
-10	-.2795	.0672	-.1247	-.0325	-.0084	-10	-.5013	.1257	-.0215	-.0549	-.0166
-7	-.0940	.0308	-.1442	-.0091	-.0035	-7	-.3031	.0812	-.0623	-.0303	-.0105
-5	.0514	.0223	-.1442	.0077	-.0017	-5	-.1516	.0641	-.0894	-.0135	-.0069
-3	.1968	.0233	-.1414	.0243	-.0017	-3	.0136	.0550	-.1182	.0052	-.0049
-2	.2657	.0266	-.1414	.0325	-.0019	-2	.1108	.0554	-.1324	.0159	-.0046
-1	.3346	.0547	-.1420	.0404	-.0025	-1	.1982	.0583	-.1461	.0258	-.0054
0	.4098	.0634	-.1425	.0489	-.0036	0	.2934	.0645	-.1612	.0362	-.0062
1	.4850	.0481	-.1414	.0578	-.0046	1	.3984	.0731	-.1762	.0465	-.0072
2	.5577	.0574	-.1414	.0665	-.0055	2	.4761	.0841	-.1891	.0571	-.0084
3	.6204	.0667	-.1319	.0740	-.0064	3	.5674	.0985	-.2012	.0674	-.0103
5	.7570	.0942	-.1286	.0898	-.0099	5	.7209	.1329	-.2218	.0858	-.0147
7	.8723	.1374	-.1319	.1067	-.0152	7	.8589	.1792	-.2390	.1022	-.0204
10	.9876	.2010	-.1375	.1233	-.0235	10	1.0377	.2590	-.2622	.1226	-.0236
15	.9400	.3083	-.1957	.1160	-.0377	15	1.2709	.4234	-.3034	.1522	-.0529
20	.9575	.4141	-.2135	.1148	-.0513	20	1.4185	.6117	-.3352	.1755	-.0798
25	.9350	.5141	-.2190	.1123	-.0643	25	1.3874	.7608	-.3525	.1736	-.0997
M = 0.90						M = 1.10					
-10	-.3863	.0961	-.0933	-.0453	-.0139	-10	-.4823	.1279	-.0198	-.0537	-.0173
-7	-.2087	.0562	-.1203	-.0225	-.0063	-7	-.3010	.0819	-.0559	-.0310	-.0113
-5	-.0533	.0371	-.1448	-.0031	-.0032	-5	-.1552	.0624	-.0889	-.0135	-.0077
-3	.1299	.0333	-.1547	.0171	-.0024	-3	.0150	.0538	-.1157	.0047	-.0065
-2	.2164	.0360	-.1547	.0271	-.0028	-2	.1028	.0542	-.1282	.0145	-.0062
-1	.2908	.0415	-.1547	.0356	-.0033	-1	.1851	.0565	-.1406	.0225	-.0067
0	.3718	.0480	-.1562	.0447	-.0037	0	.2710	.0611	-.1546	.0337	-.0074
1	.4540	.0590	-.1596	.0544	-.0048	1	.3720	.0703	-.1675	.0439	-.0080
2	.5375	.0682	-.1596	.0643	-.0061	2	.4486	.0809	-.1790	.0535	-.0098
3	.6285	.0830	-.1611	.0751	-.0078	3	.5328	.0948	-.1910	.0634	-.0114
5	.7595	.1134	-.1669	.0916	-.0116	5	.6767	.1279	-.2133	.0805	-.0155
7	.8705	.1534	-.1719	.1074	-.0170	7	.8262	.1738	-.2299	.0974	-.0212
10	.9967	.2200	-.1792	.1257	-.0264	10	.9982	.2537	-.2547	.1177	-.0315
15	1.0966	.3472	-.2087	.1365	-.0427	15	1.2225	.4137	-.2936	.1455	-.0519
20	1.0522	.4564	-.2430	.1246	-.0556	20	1.4020	.6086	-.3324	.1694	-.0783
25	1.0744	.5634	-.2475	.1218	-.0692	25	1.4880	.8128	-.3672	.1815	-.1049

TABLE 3.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 3 MODEL - Concluded

$t/c = 0.06$ $C_f = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1438					-10	-.3745	.1162	-.0723	-.0408	-.0144
-7	.0108					-7	-.1899	.0757	-.1073	-.0179	-.0088
-5	.1258					-5	-.0179	.0643	-.1446	.0026	-.0065
-3	.2372					-3	.1941	.0622	-.1773	.0261	-.0062
-2	.3127					-2	.2848	.0675	-.1867	.0364	-.0067
-1	.3522					-1	.3692	.0726	-.1890	.0461	-.0074
0	.4133					0	.4557	.0829	-.1937	.0563	-.0089
1	.4528					1	.5338	.0954	-.1960	.0649	-.0106
2	.5103					2	.6118	.1089	-.1983	.0743	-.0124
3	.5571					3	.6899	.1245	-.2030	.0836	-.0144
5	.6613					5	.7954	.1525	-.2030	.0980	-.0183
7	.7799					7	.9135	.1970	-.2170	.1127	-.0237
10	.8913					10	1.0549	.2749	-.2333	.1314	-.0680
15	.8985					15	1.0127	.4150	-.2567	.1536	-.0538
20	.8733					20	1.1181	.5084	-.2754	.1348	-.0640
25	.8158					25	1.0759	.6184	-.2846	.1297	-.0775
M = 0.60						M = 1.00					
-10	-.1755	.0591	-.0678	-.0209	-.0062	-10	-.4142	.1263	-.0482	-.0451	-.0161
-7	.0095	.0255	-.0981	.0030	-.0029	-7	-.2101	.0885	-.0992	-.0203	-.0101
-5	.1478	.0255	-.1021	.0182	-.0019	-5	-.0505	.0249	-.1318	-.0013	-.0072
-3	.2772	.0299	-.1047	.0335	-.0020	-3	.1364	.0695	-.1654	.0191	-.0068
-2	.3381	.0344	-.1021	.0404	-.0024	-2	.2526	.0715	-.1832	.0322	-.0073
-1	.4046	.0410	-.1021	.0478	-.0032	-1	.3485	.0786	-.1945	.0433	-.0086
0	.4601	.0473	-.1021	.0550	-.0036	0	.4223	.0875	-.2007	.0515	-.0089
1	.5229	.0547	-.1021	.0613	-.0042	1	.5092	.0994	-.2056	.0613	-.0103
2	.5691	.0654	-.0998	.0682	-.0047	2	.5859	.1123	-.2109	.0701	-.0117
3	.6356	.0765	-.0981	.0756	-.0057	3	.6668	.1291	-.2154	.0793	-.0141
5	.7484	.1016	-.0956	.0894	-.0087	5	.8082	.1669	-.2324	.0968	-.0188
7	.8595	.1438	-.0981	.1034	-.0139	7	.9193	.2136	-.2369	.1128	-.0249
10	.9608	.2162	-.1348	.1154	-.0232	10	1.0911	.3011	-.2726	.1318	-.0360
15	.9275	.3215	-.1913	.1136	-.0380	15	1.2850	.4570	-.3039	.1576	-.0572
20	.9054	.4161	-.2165	.1085	-.0500	20	1.3861	.6259	-.3263	.1700	-.0790
25	.8795	.5033	-.2281	.1043	-.0602	25	1.2810	.7454	-.3504	.1569	-.0937
M = 0.80						M = 1.05					
-10	-.2191	.0646	-.0986	-.0237	-.0084	-10	-.4075	.1250	-.0438	-.0444	-.0156
-7	-.0275	.0363	-.1296	-.0010	-.0040	-7	-.2135	.0887	-.0901	-.0212	-.0099
-5	.1152	.0326	-.1318	.0152	-.0033	-5	-.0640	.0745	-.1223	-.0039	-.0083
-3	.2504	.0326	-.1329	.0312	-.0036	-3	.1106	.0697	-.1524	.0157	-.0071
-2	.3180	.0431	-.1329	.0391	-.0040	-2	.2135	.0716	-.1695	.0272	-.0075
-1	.3881	.0506	-.1340	.0472	-.0048	-1	.3066	.0782	-.1803	.0377	-.0085
0	.4520	.0586	-.1318	.0547	-.0053	0	.3881	.0860	-.1910	.0471	-.0090
1	.5221	.0676	-.1302	.0636	-.0058	1	.4716	.0974	-.1996	.0565	-.0102
2	.5659	.0739	-.1230	.0689	-.0075	2	.5492	.1098	-.2060	.0659	-.0117
3	.6511	.0861	-.1185	.0778	-.0092	3	.6307	.1259	-.2125	.0751	-.0138
5	.7738	.1152	-.1163	.0934	-.0131	5	.7821	.1622	-.2275	.0911	-.0180
7	.8739	.1570	-.1230	.1094	-.0181	7	.8927	.2119	-.2447	.1071	-.0243
10	.9991	.2216	-.1302	.1256	-.0274	10	1.0596	.2940	-.2704	.1266	-.0346
15	.9115	.3203	-.1961	.1114	-.0398	15	1.2730	.4628	-.3176	.1532	-.0564
20	.9365	.4285	-.2216	.1135	-.0534	20	1.4089	.6453	-.3537	.1727	-.0803
25	.9090	.5173	-.2282	.1102	-.0658	25	1.3972	.7922	-.3777	.1715	-.1005
M = 0.90						M = 1.10					
-10	-.3216	.0976	-.0907	-.0354	-.0123	-10	-.3974	.1211	-.0425	-.0433	-.0163
-7	-.1297	.0599	-.1227	-.0120	-.0068	-7	-.2183	.0871	-.0866	-.0219	-.0112
-5	.0255	.0490	-.1433	.0063	-.0048	-5	-.0653	.0716	-.1205	-.0041	-.0083
-3	.1940	.0479	-.1497	.0251	-.0047	-3	.1063	.0670	-.1465	.0148	-.0074
-2	.2783	.0534	-.1530	.0350	-.0053	-2	.1959	.0688	-.1630	.0249	-.0076
-1	.3471	.0599	-.1545	.0431	-.0060	-1	.2798	.0670	-.1733	.0340	-.0083
0	.4158	.0654	-.1520	.0513	-.0069	0	.3638	.0826	-.1836	.0438	-.0091
1	.5045	.1353	-.1619	.0619	-.0083	1	.4608	.0918	-.1939	.0543	-.0103
2	.5877	.0883	-.1545	.0709	-.0095	2	.5410	.1056	-.2022	.0635	-.0122
3	.6697	.1020	-.1594	.0816	-.0113	3	.6156	.1201	-.2063	.0720	-.0139
5	.7829	.1326	-.1619	.0969	-.0151	5	.7369	.1541	-.2228	.0872	-.0181
7	.8982	.1772	-.1741	.1127	-.0214	7	.8731	.2047	-.2419	.1035	-.0242
10	1.0201	.2482	-.1864	.1292	-.0310	10	1.0335	.2845	-.2657	.1217	-.0347
15	1.0335	.3524	-.2208	.1256	-.0438	15	1.2499	.4405	-.3054	.1464	-.0548
20	1.0423	.4744	-.2551	.1249	-.0585	20	1.3805	.6423	-.3549	.1672	-.0836
25	1.0113	.5782	-.2620	.1220	-.0715	25	1.4551	.8348	-.3879	.1739	-.1082

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL

 $\frac{t}{c} = 0.04$ $\frac{c_f}{c} = \text{NONE}$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.6610					-7	-.7197	.1094	.0930	-.0803	.0115
-7	-.5073					-5	-.5466	.0623	.0606	-.0615	.0068
-5	-.3667					-3	-.3685	.0325	.0326	-.0413	.0035
-3	-.2438					-2	-.2597	.0192	.0189	-.0291	.0020
-2	-.1801					-1	-.1509	.0137	.0122	-.0169	.0013
-1	-.1186					0	-.0346	.0116	.0104	-.0038	.0011
0	-.0395					1	.0866	.0106	.0074	.0105	.0015
1	.0285					2	.2003	.0152	.0011	.0229	.0024
2	.0878					3	.2943	.0228	-.0088	.0347	.0041
3	.1537					5	.5095	.0480	-.0441	.0591	.0085
5	.2833					7	.6826	.0845	-.0779	.0782	.0142
7	.4282										
10	.5907										
15	.6830										
20	.6896										
25	.6852										
M = 0.60						M = 1.00					
-10	-.7326	.1257	-.0284	-.0844	.0156	-7	-.6049	.0915	.0729	-.0642	.0097
-7	-.5826	.0615	-.0158	-.0660	.0083	-5	-.4112	.0552	.0360	-.0479	.0057
-5	-.4152	.0293	-.0144	-.0462	.0040	-3	-.2836	.0343	.0173	-.0315	.0034
-3	-.2717	.0145	-.0053	-.0297	.0021	-2	-.1985	.0265	.0116	-.0219	.0025
-2	-.1935	.0107	-.0027	-.0204	.0016	-1	-.1111	.0215	.0037	-.0118	.0020
-1	-.1174	.0086	.0041	-.0115	.0010	0	-.0095	.0195	-.0009	-.0004	.0020
0	-.0217	.0064	.0024	-.0010	.0008	1	.0922	.0180	-.0003	.0115	.0021
1	.0543	.0080	.0057	.0089	.0012	2	.2056	.0244	-.0114	.0233	.0034
2	.1283	.0117	.0129	.0181	.0018	3	.2883	.0297	-.0195	.0341	.0047
3	.2043	.0171	.0179	.0270	.0028	5	.4348	.0503	-.0342	.0505	.0079
5	.3587	.0348	.0307	.0452	.0059	7	.5931	.0805	-.0624	.0674	.0120
7	.5130	.0647	.0258	.0643	.0109						
10	.6761	.1283	-.0158	.0864	.0205						
15	.7370	.2191	-.0677	.1006	.0333						
20	.7370	.3015	-.0757	.0996	.0442						
25	.7630	.3902	-.0819	.1016	.0545						
M = 0.80						M = 1.05					
-10	-.8224	.1436	-.0233	-.0927	.0166	-7	-.5612	.0888	.0681	-.0615	.0088
-7	-.6585	.0799	-.0072	-.0730	.0092	-5	-.4226	.0564	.0411	-.0464	.0055
-5	-.4946	.0399	-.0139	-.0531	.0050	-3	-.2817	.0352	.0253	-.0300	.0031
-3	-.3248	.0194	-.0072	-.0332	.0025	-2	-.1954	.0277	.0176	-.0217	.0022
-2	-.2264	.0139	-.0010	-.0222	.0017	-1	-.1045	.0226	.0080	-.0097	.0017
-1	-.1281	.0092	-.0001	-.0113	.0011	0	-.0068	.0204	.0001	.0014	.0013
0	-.0387	.0066	.0076	-.0014	.0008	1	.1045	.0210	-.0058	.0138	.0024
1	.0685	.0073	.0109	.0109	.0011	2	.1908	.0252	-.0124	.0234	.0029
2	.1669	.0107	.0159	.0215	.0019	3	.2817	.0321	-.0230	.0336	.0043
3	.2562	.0150	.0244	.0323	.0029	5	.4294	.0511	-.0399	.0508	.0073
5	.4559	.0337	.0300	.0531	.0065	7	.5680	.0804	-.0607	.0664	.0115
7	.6227	.0648	.0206	.0728	.0113						
10	.7419	.1253	-.0192	.0904	.0200						
15	.7866	.2242	-.0768	.0999	.0335						
20	.8164	.3165	-.0957	.1013	.0436						
M = 0.90						M = 1.10					
-7	-.7107	.0993	.0416	-.0806	.0114	-7	-.5597	.0887	.0690	-.0597	.0086
-5	-.5404	.0529	.0143	-.0607	.0059	-5	-.4242	.0556	.0449	-.0451	.0052
-3	-.3619	.0239	-.0018	-.0394	.0028	-3	-.2842	.0352	.0276	-.0290	.0028
-2	-.2518	.0142	-.0059	-.0265	.0017	-2	-.1946	.0285	.0192	-.0196	.0020
-1	-.1521	.0097	.0018	-.0159	.0010	-1	-.1115	.0237	.0092	-.0096	.0015
0	-.0420	.0064	.0087	-.0040	.0008	0	-.0131	.0207	.0003	.0005	.0014
1	.0787	.0064	.0148	.0097	.0011	1	.0853	.0223	-.0078	.0124	.0019
2	.1862	.0097	.0205	.0213	.0019	2	.1749	.0274	-.0128	.0224	.0026
3	.3121	.0148	.0144	.0352	.0038	3	.2602	.0342	-.0236	.0323	.0037
5	.5245	.0413	-.0126	.0607	.0089	5	.4067	.0546	-.0414	.0498	.0070
7	.6871	.0767	-.0404	.0806	.0143	7	.5357	.0828	-.0601	.0647	.0108

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.10$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.3849					-10	-.7523	.1640	.0159	-.0873	.0178
-7	-.2357					-7	-.5745	.0994	.0028	-.0632	.0112
-5	-.0930					-5	-.3798	.0610	-.0334	-.0416	.0067
-3	.0035					-3	-.1972	.0365	-.0728	-.0185	.0042
-2	.0695					-2	-.0755	.0299	-.0885	-.0043	.0034
-1	.1179					-1	.0463	.0293	-.1091	.0006	.0034
0	.1881					0	.1753	.0335	-.1206	.0332	.0042
1	.2314					1	.2946	.0383	-.1331	.0369	.0055
2	.2920					2	.4114	.0467	-.1395	-.0236	.0073
3	.3503					3	.5283	.0575	-.1475	.0628	.0096
5	.4747										
7	.6012										
10	.7764										
15	.8088										
20	.7875										
25	.7526										
M = 0.60						M = 1.00					
-10	-.4740	.0826	-.0525	-.0567	.0116	-10	-.7444	.1619	.0460	-.0850	.0178
-7	-.2953	.0411	-.0994	-.0325	.0059	-7	-.5264	.0969	.0054	-.0581	.0106
-5	-.1327	.0231	-.0890	-.0130	.0032	-5	-.3734	.0650	-.0230	-.0396	.0075
-3	-.0064	.0216	-.0863	.0026	.0026	-3	-.2110	.0450	-.0474	-.0206	.0054
-2	.0696	.0221	-.0894	.0120	.0025	-2	-.1113	.0394	-.0598	-.0088	.0045
-1	.1434	.0274	-.0795	.0203	.0030	-1	-.0139	.0365	-.0714	.0026	.0043
0	.2161	.0321	-.0789	.0289	.0036	0	.0974	.0376	-.0865	.0144	.0045
1	.2878	.0353	-.0792	.0381	.0046	1	.2226	.0410	-.1033	.0294	.0056
2	.3767	.0426	-.0673	.0471	.0058	2	.3293	.0468	-.1192	.0413	.0066
3	.4430	.0532	-.0651	.0552	.0065	3	.4569	.0582	-.1399	.0545	.0085
5	.5821	.0853	-.0510	.0726	.0104						
7	.7041	.1142	-.0563	.0906	.0158						
10	.8068	.1784	-.0951	.1058	.0245						
15	.8325	.1400	-.1196	.1133	.0371						
20	.8218	.1858	-.1184	.1120	.0493						
25	.8218	.2231	-.1133	.1104	.0583						
M = 0.80						M = 1.05					
-10	-.5954	.1096	-.0757	-.0712	.0131	-7	-.5034	.0953	.0065	-.0558	.0090
-7	-.4048	.0570	-.0982	-.0456	.0067	-5	-.3586	.0652	-.0214	-.0385	.0055
-5	-.2305	.0307	-.0993	-.0165	.0040	-3	-.2161	.0487	-.0422	-.0211	.0035
-3	-.0660	.0205	-.0943	-.0045	.0027	-2	-.1181	.0422	-.0514	-.0101	.0025
-2	.0352	.0205	-.0921	.0073	.0025	-1	-.0245	.0405	-.0614	.0005	.0023
-1	.1305	.0224	-.0925	.0182	.0029	0	.0757	.0417	-.0756	.0127	.0031
0	.2258	.0267	-.0865	.0296	.0036	1	.1827	.0433	-.0840	.0245	.0031
1	.3461	.0310	-.0939	.0438	.0046	2	.2762	.0498	-.1002	.0355	.0045
2	.4356	.0375	-.0880	.0534	.0060	3	.3920	.0597	-.1153	.0476	.0065
3	.5309	.0465	-.0820	.0641	.0079	5	.5769	.0893	-.1480	.0693	.0099
5	.7025	.0795	-.0727	.0845	.0128						
M = 0.90						M = 1.10					
-10	-.7771	.1466	-.0107	-.0842	.0172	-7	-.4845	.0891	.0079	-.0538	.0078
-7	-.5318	.0822	-.0454	-.0574	.0093	-5	-.3451	.0617	-.0177	-.0374	.0048
-5	-.4286	.0441	-.0579	-.0317	.0049	-3	-.2101	.0448	-.0370	-.0207	.0030
-3	-.1239	.0267	-.1023	-.0108	.0031	-2	-.1158	.0401	-.0442	-.0106	.0027
-2	-.0026	.0225	-.1062	.0033	.0028	-1	-.0236	.0379	-.0562	.0000	.0021
-1	.1110	.0241	-.1112	-.0163	.0030	0	.0579	.0432	-.0631	.0109	.0024
0	.2349	.0283	-.1123	.0294	.0038	1	.1543	.0437	-.0755	.0216	.0033
1	.3434	.0321	-.1109	.0423	.0049	2	.2487	.0511	-.0904	.0330	.0044
2	.4647	.0403	-.1172	.0558	.0068	3	.3516	.0611	-.1046	.0442	.0058
3	.5783	.0523	-.1215	.0683	.0091	5	.5230	.0880	-.1333	.0642	.0094

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.3288					-10	-.6673	.1482	-.0273	-.0769	.0169
-7	-.1270					-7	-.4277	.0835	-.0657	-.0486	.0094
-5	.0109					-5	-.2273	.0505	-.1031	-.0247	.0056
-3	.1302					-3	-.0367	.0354	-.1377	-.0019	.0040
-2	.1954					-2	.1027	.0324	-.1625	.0134	.0042
-1	.2529					-1	.2273	.0337	-.1736	.0271	.0051
0	.3169					0	.3422	.0571	-.1754	.0399	.0064
1	.3722					1	.4522	.0460	-.1740	.0519	.0080
2	.4287					2	.5622	.0559	-.1768	.0630	.0102
3	.4938					3	.6599	.0688	-.1846	.0732	.0126
5	.6186										
7	.7271										
10	.8139										
15	.8356										
20	.7987										
25	.6728										
M = 0.60						M = 1.00					
-10	-.3898	.0769	-.0747	-.0448	.0086	-10	-.6566	.1477	-.0032	-.0744	.0163
-7	-.1611	.0280	-.1154	-.0163	.0028	-7	-.4354	.0876	-.0438	-.0495	.0099
-5	.0021	.0125	-.1148	.0034	.0014	-5	-.2678	.0590	-.0756	-.0288	.0068
-3	.1536	.0137	-.1141	.0207	.0016	-3	-.0931	.0430	-.1069	-.0080	.0050
-2	.2395	.0169	-.1108	.0301	.0024	-2	.0116	.0384	-.1268	.0044	.0047
-1	.3136	.0193	-.1068	.0383	.0032	-1	.1281	.0367	-.1457	.0177	.0049
0	.3823	.0241	-.1033	.0468	.0041	0	.2678	.0389	-.1674	.0327	.0058
1	.4511	.0299	-.0944	.0541	.0053	1	.3958	.0446	-.1738	.0463	.0073
2	.5262	.0369	-.0872	.0624	.0068	2	.5053	.0550	-.1769	.0579	.0092
3	.6014	.0467	-.0818	.0709	.0087	3	.5984	.0676	-.1812	.0680	.0113
5	.7346	.0747	-.0675	.0886	.0135						
7	.8420	.1125	-.0727	.1039	.0195						
10	.8914	.1759	-.1100	.1140	.0285						
15	.8634	.1363	-.1223	.1147	.0417						
20	.8656	.1785	-.1194	.1082	.0514						
25	.8570	.2208	-.1153	.1066	.0617						
M = 0.80						M = 1.05					
-10	-.3974	.0874	-.0868	-.0486	.0098	-10	-.6307	.1408	-.0044	-.0712	.0154
-7	-.2178	.0394	-.1360	-.0249	.0041	-7	-.4249	.0841	-.0404	-.0475	.0091
-5	-.0324	.0197	-.1421	-.0034	.0023	-5	-.2684	.0594	-.0679	-.0288	.0062
-3	.1281	.0169	-.1368	.0153	.0023	-3	-.1118	.0440	-.0921	-.0105	.0047
-2	.2311	.0177	-.1361	.0262	.0031	-2	-.0067	.0401	-.1092	.0014	.0045
-1	.3165	.0206	-.1352	.0355	.0040	-1	.0917	.0390	-.1229	.0131	.0046
0	.4062	.0249	-.1292	.0456	.0051	0	.2125	.0401	-.1446	.0266	.0055
1	.4931	.0313	-.1205	.0547	.0065	1	.3511	.0440	-.1640	.0424	.0067
2	.5785	.0376	-.1094	.0652	.0083	2	.4652	.0539	-.1717	.0538	.0085
3	.6727	.0481	-.1006	.0759	.0106	3	.5591	.0660	-.1776	.0641	.0105
5	.8596	.0798	-.1002	.0965	.0164						
M = 0.90						M = 1.10					
-10	-.5506	.0854	-.0814	-.0678	.0137	-10	-.6091	.1371	.0024	-.0686	.0143
-7	-.3433	.0656	-.1084	-.0403	.0070	-7	-.4089	.0836	-.0389	-.0462	.0086
-5	-.1684	.0376	-.1278	-.0177	.0040	-5	-.2626	.0588	-.0630	-.0291	.0060
-3	.0324	.0249	-.1461	.0059	.0031	-3	-.1141	.0439	-.0858	-.0111	.0045
-2	.1581	.0236	-.1525	.0187	.0034	-2	-.0215	.0386	-.1003	.0000	.0043
-1	.2695	.0264	-.1554	.0309	.0044	-1	.2949	.0402	-.1687	.0111	.0045
0	.3692	.0306	-.1482	.0423	.0057	0	.1786	.0429	-.1280	.0225	.0052
1	.4677	.0376	-.1479	.0535	.0073	1	.2992	.0466	-.1464	.0359	.0064
2	.5830	.0472	-.1482	.0668	.0097	2	.3982	.0545	-.1553	.0473	.0082
3	.6996	.0605	-.1525	.0786	.0122	3	.5187	.0667	-.1697	.0607	.0100

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

$\frac{t}{c} = 0.04$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.55					
-10	-.2995					-7	-.3324	.0423	.0597	-.0346	.0100
-7	-.0803					-5	-.1247	.0290	.0097	-.0097	.0068
-5	.0499					-3	.0733	.0233	-.0381	.0134	.0058
-3	.1693					-2	.2114	.0236	-.0701	.0278	.0061
-2	.2344					-1	.3178	.0255	-.0941	.0392	.0071
-1	.2952					0	.4253	.0293	-.1177	.0519	.0084
0	.3646					1	.5231	.0332	-.1386	.0630	.0104
1	.4232					2	.6355	.0394	-.1637	.0736	.0127
2	.4797										
3	.5426										
5	.6685										
7	.7640										
10	.8400										
15	.8378										
20	.7944										
25	.7683										
M = 0.60						M = 1.00					
-10	-.3351	.0708	-.0700	-.0379	.0085	-7	-.3459	.0873	-.0828	-.0376	.0101
-7	-.1010	.0293	-.1178	-.0089	.0032	-5	-.1735	.0636	-.1164	-.0159	.0075
-5	.0677	.0190	-.1162	.0108	.0022	-3	-.0047	.0524	-.1463	.0041	.0063
-3	.2073	.0224	-.1168	.0273	.0026	-2	.1165	.0501	-.1672	.0182	.0062
-2	.3007	.0259	-.1117	.0370	.0032	-1	.2492	.0510	-.1877	.0323	.0066
-1	.3737	.0317	-.1111	.0456	.0040	0	.3913	.0558	-.1912	.0477	.0080
0	.4489	.0383	-.1051	.0546	.0050	1	.4868	.0653	-.1947	.0580	.0091
1	.5133	.0449	-.1047	.0622	.0063	2	.5893	.0773	-.1962	.0684	.0113
2	.5928	.0528	-.0951	.0701	.0080						
3	.6551	.0639	-.0931	.0782	.0099						
5	.7883	.0948	-.0767	.0961	.0148						
7	.8871	.1321	-.0845	.1095	.0209						
10	.9128	.2018	-.1207	.1173	.0262						
15	.8871	.2936	-.1441	.1180	.0451						
20	.8720	.3834	-.1456	.1140	.0539						
25	.8828	.4711	-.1518	.1124	.0621						
M = 0.80						M = 1.05					
-10	-.3378	.0807	-.0843	-.0391	.0097	-7	-.3377	.0841	-.0787	-.0366	.0090
-7	-.1317	.0369	-.1433	-.0123	.0041	-5	-.1789	.0632	-.1086	-.0174	.0065
-5	.0611	.0232	-.1449	.0095	.0028	-3	-.0268	.0522	-.1330	.0013	.0059
-3	.2156	.0246	-.1423	.0156	.0035	-2	.0816	.0517	-.1497	.0133	.0057
-2	.3076	.0283	-.1397	.0374	.0043	-1	.1990	.0522	-.1695	.0267	.0059
-1	.3915	.0315	-.1364	.0463	.0052	0	.3388	.0564	-.1867	.0416	.0067
0	.4607	.0380	-.1050	.0550	.0066	1	.4450	.0652	-.1907	.0543	.0079
1	.5446	.0453	-.1152	.0650	.0083	2	.5323	.0756	-.1893	.0551	.0096
2	.6285	.0550	-.1148	.0748	.0100	3	.6284	.1045	-.1694	.0729	.0119
3	.7448	.0687	-.1185	.0860	.0130						
5	.9067	.1032	-.1181	.1061	.0186						
M = 0.90						M = 1.10					
-7	-.2359	.0663	-.1473	-.0246	.0076	-7	-.3337	.0807	-.0725	-.0363	.0081
-5	-.0415	.0446	-.1693	-.0010	.0051	-5	-.1873	.0614	-.0997	-.0188	.0058
-3	.1594	.0389	-.1826	.0226	.0049	-3	-.0312	.0519	-.1237	-.0004	.0049
-2	.2761	.0427	-.1847	.0344	.0057	-2	.0624	.0511	-.1384	.0110	.0049
-1	.3797	.0462	-.1843	.0462	.0069	-1	.1593	.0524	-.1527	.0216	.0055
0	.4705	.0542	-.1835	.0570	.0084	0	.2799	.0569	-.1712	.0351	.0063
1	.5651	.0631	-.1809	.0678	.0104	1	.4015	.0640	-.1840	.0498	.0074
2	.6714	.0711	-.1719	.0777	.0122	2	.4930	.0741	-.1863	.0596	.0090
3	.7465	.0844	-.1731	.0865	.0146	3	.5877	.0900	-.1944	.0694	.0106

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

$$\frac{t}{c} = 0.04 \quad \frac{c_f}{c} = 0.40$$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1875					-10	-.4715	.1297	-.0965	-.0521	.0155
-7	-.0066					-7	-.2544	.0854	-.1422	-.0243	.0099
-5	.1300					-5	-.0310	.0635	-.1748	.0011	.0073
-3	.2423					-3	.1799	.0565	-.2027	.0250	.0068
-2	.3084					-2	.3102	.0579	-.2060	.0392	.0075
-1	.3657					-1	.4343	.0641	-.2064	.0520	.0088
0	.4317					0	.5211	.0735	-.2010	.0623	.0104
1	.4846					1	.6179	.0839	-.2049	.0727	.0123
2	.5595					2	.7320	.0976	-.2099	.0823	.0147
3	.6080										
5	.7379										
7	.8018										
10	.8415										
15	.8150										
20	.7930										
25	.7820										
M = 0.60						M = 1.00					
-10	-.2618	.0577	-.0727	-.0301	.0075	-10	-.4880	.1307	-.0669	-.0545	.0145
-7	-.0145	.0223	-.1128	.0005	.0026	-7	-.2706	.0868	-.1152	-.0276	.0098
-5	.1527	.0201	-.1079	.0204	.0024	-5	-.0969	.0677	-.1462	-.0061	.0076
-3	.3000	.0241	-.1072	.0373	.0034	-3	.0945	.0601	-.1763	.0163	.0067
-2	.3928	.0300	-.0987	.0473	.0044	-2	.2481	.0590	-.1954	.0330	.0070
-1	.4430	.0357	-.0963	.0543	.0052	-1	.3722	.0639	-.2005	.0462	.0077
0	.5150	.0443	-.0910	.0627	.0065	0	.4667	.0727	-.2003	.0572	.0090
1	.5804	.0524	-.0913	.0708	.0082	1	.5636	.0828	-.1994	.0679	.0110
2	.6481	.0625	-.0819	.0798	.0101	2	.6617	.0965	-.2020	.0769	.0132
3	.7266	.0759	-.0756	.0887	.0125						
5	.8510	.1094	-.0683	.1053	.0180						
7	.9099	.1556	-.0814	.1155	.0245						
10	.9055	.2227	-.1228	.1195	.0333						
15	.8750	.3187	-.1402	.1155	.0452						
20	.8641	.4078	-.1414	.1142	.0547						
25	.8641	.5011	-.1449	.1139	.0658						
M = 0.80						M = 1.05					
-10	-.2728	.0717	-.0839	-.0314	.0087	-10	-.4732	.1264	-.0638	-.0532	.0132
-7	-.0314	.0344	-.1475	-.0016	.0039	-7	-.2780	.0862	-.1123	-.0288	.0086
-5	.1532	.0300	-.1482	.0200	.0033	-5	-.1123	.0684	-.1356	-.0088	.0066
-3	.3139	.0342	-.1453	.0381	.0048	-3	.0624	.0611	-.1616	.0119	.0060
-2	.3961	.0377	-.1379	.0477	.0057	-2	.1872	.0608	-.1800	.0260	.0062
-1	.4634	.0448	-.1375	.0569	.0070	-1	.3155	.0636	-.1946	.0406	.0066
0	.5486	.0493	-.1335	.0664	.0084	0	.4256	.0726	-.1993	.0532	.0078
1	.6203	.0616	-.1235	.0762	.0105	1	.5163	.0832	-.1953	.0634	.0093
2	.7175	.0726	-.1158	.0864	.0128	2	.6128	.0957	-.1997	.0725	.0112
3	.4081	.0854	.0715	.0959	.0154						
M = 0.90						M = 1.10					
-10	-.3355	.1045	-.1479	-.0368	.0122	-10	-.4479	.1168	-.0677	-.0512	.0125
-7	-.1066	.0663	-.1797	-.0089	.0075	-7	-.2655	.0806	-.1014	-.0283	.0079
-5	.0921	.0518	-.2023	.0141	.0057	-5	-.1092	.0664	-.1303	-.0090	.0060
-3	.2829	.0501	-.2067	.0352	.0065	-3	.0546	.0591	-.1536	.0101	.0056
-2	.3842	.0557	-.1981	.0465	.0077	-2	.1584	.0599	-.1666	.0224	.0061
-1	.4684	.0631	-.1976	.0573	.0092	-1	.2677	.0645	-.1802	.0350	.0066
0	.5592	.0712	-.1929	.0681	.0108	0	.3824	.0714	-.1880	.0486	.0075
1	.6579	.0799	-.1873	.0780	.0129	1	.4807	.0819	-.1906	.0598	.0091
2	.7553	.0899	-.1808	.0870	.0148	2	.5856	.0959	-.1912	.0698	.0107

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

$c_{lr} = 0.06$ $c_{tr} = NONE$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.5810					-10	-.8571	.1739	.1523	-.1044	-.0258
-7	-.4900					-7	-.6015	.0958	.0765	-.0726	-.0151
-5	-.3240					-5	-.4426	.0628	.0438	-.0537	-.0088
-3	-.2008					-3	-.2805	.0421	.0266	-.0340	-.0052
-2	-.1339					-2	-.1714	.0299	.0041	-.0208	-.0034
-1	-.0803					-1	-.0841	.0284	.0041	-.0102	-.0018
0	-.0134					0	.0000	.0284	.0024	.0000	.0015
1	.0536					1	.0873	.0284	-.0027	.0106	-.0015
2	.1125					2	.1714	.0337	-.0079	.0204	-.0019
3	.1767					3	.2649	.0452	-.0183	.0318	-.0027
5	.2972					5	.4207	.0667	-.0338	.0507	-.0046
7	.4338					7	.5922	.1088	-.0717	.0711	-.0088
10	.6159					10	.8633	.1917	-.1475	.1029	-.0187
15	.7230					15	1.1376	.3425	-.1985	.1392	-.0379
20	.7256					20	1.1064	.4399	-.2054	.1324	-.0509
25	.7149					25	1.1064	.5702	-.2399	.1343	-.0663
M = 0.60						M = 1.00					
-10	-.6492	.1276	.0447	-.0823	-.0172	-10	-.7676	.1660	.1316	-.0921	-.0238
-7	-.5002	.0585	-.0079	-.0602	-.0083	-7	-.5397	.1003	.0769	-.0648	-.0142
-5	-.3635	.0282	-.0048	-.0428	-.0041	-5	-.3988	.0685	.0477	-.0473	-.0099
-3	-.2214	.0161	-.0048	-.0254	-.0021	-3	-.2519	.0487	.0249	-.0306	-.0064
-2	-.1449	.0115	-.0060	-.0166	-.0012	-2	-.1709	.0435	.0146	-.0211	-.0047
-1	-.0724	.0101	-.0012	-.0083	.0000	-1	-.0930	.0391	.0080	-.0120	-.0030
0	.0000	.0074	.0003	.0003	.0000	0	-.0030	.0384	.0040	-.0015	-.0025
1	.0752	.0082	.0012	.0095	.0002	1	.0840	.0399	-.0023	.0084	-.0030
2	.1435	.0107	.0000	.0168	.0003	2	.1649	.0442	.0100	.0186	-.0030
3	.2187	.0148	-.0012	.0257	.0003	3	.2519	.0523	-.0215	.0288	-.0035
5	.3567	.0262	.0024	.0423	-.0006	5	.3958	.0723	-.0421	.0448	-.0051
7	.5057	.0552	.0012	.0599	-.0018	7	.5487	.1069	-.0766	.0630	-.0086
10	.6970	.1225	-.0290	.0839	-.0088	10	.7886	.1748	-.1307	.0913	-.0164
15	.7790	.2318	-.1004	.1002	-.0230	15	1.1124	.3310	-.2142	.1332	-.0356
20	.7653	.2520	-.1288	.0979	-.0347	20	1.3014	.5087	-.2374	.1587	-.0589
25	.7817	.4141	-.1305	.0975	-.0464	25	1.2234	.6105	-.2739	.1514	-.0729
M = 0.80						M = 1.05					
-10	-.7464	.1249	.0253	-.0931	-.0186	-10	-.7513	.1634	.1275	-.0905	-.0241
-7	-.5820	.0623	.0029	-.0702	-.0108	-7	-.5519	.0995	.0812	-.0663	-.0151
-5	-.4379	.0327	-.0135	-.0511	-.0054	-5	-.4403	.0696	.0543	-.0491	-.0108
-3	-.2568	.0155	-.0163	-.0296	-.0026	-3	-.2572	.0497	.0336	-.0316	-.0066
-2	-.1755	.0122	-.0094	-.0200	-.0014	-2	-.1734	.0455	.0236	-.0214	-.0052
-1	-.0794	.0105	-.0041	-.0090	-.0004	-1	-.0809	.0426	.0144	-.0130	-.0039
0	.0000	.0091	-.0033	.0005	-.0003	0	-.0058	.0412	.0038	-.0021	-.0034
1	.0868	.0109	-.0024	.0101	-.0001	1	.0867	.0419	-.0083	.0084	-.0037
2	.1718	.0140	.0021	.0197	-.0001	2	.1734	.0470	-.0186	.0182	-.0038
3	.2531	.0190	.0090	.0291	-.0002	3	.2572	.0548	-.0291	.0281	-.0041
5	.4249	.0373	.0123	.0489	-.0015	5	.4103	.0746	-.0495	.0456	-.0060
7	.5820	.0722	-.0024	.0695	-.0042	7	.5548	.1086	-.0754	.0635	-.0096
10	.7484	.1339	-.0257	.0919	-.0116	10	.7542	.1719	-.1247	.0880	-.0171
15	.7945	.2444	-.1075	.1005	-.0518	15	1.0836	.3304	-.2116	.1287	-.0364
20	.8129	.3379	-.1414	.1009	-.0385	20	1.3206	.5343	-.2749	.1589	-.0612
25	.8406	.4397	-.1504	.1031	-.0511	25	1.2425	.6295	-.2845	.1620	-.0791
M = 0.90						M = 1.10					
-10	-.7844	.1461	.0824	-.0996	-.0225	-10	-.7282	.1566	.1277	-.0897	-.0245
-7	-.6072	.0827	.0515	-.0757	-.0135	-7	-.5399	.0940	.0818	-.0662	-.0156
-5	-.4595	.0504	.0261	-.0558	-.0072	-5	-.4070	.0647	.0588	-.0507	-.0114
-3	-.2855	.0263	.0116	-.0351	-.0032	-3	-.2492	.0476	.0368	-.0319	-.0073
-2	-.1969	.0190	.0043	-.0231	-.0022	-2	-.1661	.0422	.0258	-.0225	-.0060
-1	-.0985	.0169	.0026	-.0120	-.0012	-1	-.0831	.0408	.0144	-.0131	-.0044
0	.0098	.0138	-.0011	.0008	-.0006	0	.0000	.0401	.0022	-.0034	-.0041
1	.0985	.0158	-.0047	.0120	-.0008	1	.0914	.0408	-.0086	.0067	-.0044
2	.1969	.0210	-.0083	.0231	-.0007	2	.1661	.0450	-.0193	.0161	-.0043
3	.2954	.0290	-.0145	.0351	-.0010	3	.2575	.0525	-.0300	.0252	-.0047
5	.4529	.0525	-.0283	.0546	-.0031	5	.4070	.0728	-.0530	.0427	-.0064
7	.6138	.0916	-.0519	.0749	-.0073	7	.5538	.1055	-.0799	.0605	-.0105
10	.7976	.1574	-.0845	.0992	-.0156	10	.7421	.1668	-.1203	.0837	-.0174
15	.9682	.2801	-.1245	.1215	-.0312	15	1.0522	.3180	-.2058	.1216	-.0355
20	.9288	.3786	-.1735	.1139	-.0431	20	1.2820	.5161	-.2714	.1512	-.0589
25	.9846	.4956	-.1910	.1155	-.0569						

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

 $c_t = 0.06$ $\frac{c_f}{c_t} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2633					-10	-.6336	.1469	.0135	-.0763	-.0205
-7	-.0967					-7	-.4396	.0900	-.0235	-.0516	-.0126
-5	.0242					-5	-.2941	.0662	-.0460	-.0336	-.0076
-3	.1666					-3	-.1189	.0462	-.0737	-.0122	-.0045
-2	.2257					-2	.0110	.0438	-.1014	.0025	-.0036
-1	.2982					-1	.1549	.0454	-.1377	.0186	-.0035
0	.3519					0	.2879	.0538	-.1654	.0338	-.0045
1	.4137					1	.4177	.0630	-.1876	.0490	-.0060
2	.4594					2	.5225	.0385	-.1751	.0613	-.0077
3	.5215					3	.6242	.0939	-.2167	.0737	-.0098
5	.6340					5	.7776	.1284	-.2339	.0923	-.0145
7	.7415					7	.9356	.2570	-.2561	.1097	-.0208
10	.8650					10	1.1171	.2671	-.2893	.1321	-.0319
15	.8919					15	1.3486	.4309	-.3101	.1606	-.0544
20	.8465					20	1.2015	.5110	-.2963	.1416	-.0644
25	.8194					25	1.1390	.6109	-.2893	.1341	-.0771
M = 0.60						M = 1.00					
-10	-.3235	.0790	-.0806	-.0389	-.0096	-10	-.6129	.1441	.0213	-.0727	-.0200
-7	-.1110	.0236	-.1280	-.0115	-.0020	-7	-.4146	.0939	-.0259	-.0469	-.0130
-5	.0234	.0167	-.1292	-.0003	-.0032	-5	-.2569	.0709	-.0541	-.0288	-.0085
-3	.1520	.0181	-.1261	.0196	-.0007	-3	-.0916	.0584	-.0834	-.0089	-.0059
-2	.2207	.0203	-.1231	.0263	-.0006	-2	.0000	.0539	-.0990	.0015	-.0052
-1	.2933	.0236	-.1219	.0346	-.0009	-1	.1067	.0547	-.1173	.0135	-.0052
0	.3646	.0296	-.1213	.0432	-.0012	0	.2238	.0569	-.1389	.0261	-.0052
1	.4674	.0370	-.1280	.0562	-.0018	1	.3545	.0643	-.1648	.0407	-.0060
2	.5236	.0430	-.1189	.0625	-.0027	2	.4567	.0754	-.1868	.0534	-.0076
3	.5880	.0518	-.1170	.0700	-.0035	3	.5618	.0916	-.2047	.0662	-.0092
5	.7320	.0768	-.1098	.0818	-.0067	5	.7301	.1256	-.2313	.0853	-.0135
7	.8526	.1179	-.1122	.1011	-.0115	7	.8893	.1752	-.2519	.1032	-.0197
10	.9239	.1900	-.1503	.1131	-.0210	10	1.0636	.2564	-.2811	.1243	-.0301
15	.9431	.3013	-.1898	.1201	-.0359	15	1.3040	.4241	-.3210	.1542	-.0261
20	.9019	.1955	-.2007	.1115	-.0488	20	1.4241	.5940	-.3363	.1725	-.0375
25	.8965	.2434	-.2086	.1091	-.0604						
M = 0.80						M = 1.05					
-10	-.4393	.0875	-.0906	-.0528	-.0116	-10	-.5851	.1389	.0176	-.0691	-.0193
-7	-.2465	.0415	-.1209	-.0283	-.0054	-7	-.3953	.0905	-.0250	-.0455	-.0129
-5	-.0760	.0247	-.1316	-.0087	-.0022	-5	-.2491	.0691	-.0506	-.0283	-.0085
-3	.1094	.0206	-.1332	.0131	-.0010	-3	-.0912	.0584	-.0779	-.0097	-.0062
-2	.1983	.0228	-.1304	.0232	-.0010	-2	.0058	.0549	-.0938	.0012	-.0055
-1	.2855	.0282	-.1341	.0335	-.0013	-1	.1028	.0556	-.1099	.0128	-.0052
0	.3785	.0337	-.1353	.0439	-.0021	0	.2013	.0591	-.1275	.0239	-.0054
1	.4671	.0419	-.1398	.0547	-.0027	1	.3027	.0669	-.1467	.0357	-.0062
2	.5728	.0510	-.1407	.0677	-.0040	2	.4011	.0762	-.1653	.0471	-.0075
3	.6655	.0625	-.1365	.0783	-.0053	3	.5127	.0898	-.1845	.0596	-.0093
5	.8008	.0921	-.1365	.0952	-.0089	5	.6821	.1240	-.2210	.0801	-.0136
7	.9157	.1368	-.1427	.1116	-.0146	7	.8428	.1689	-.2441	.0988	-.0194
10	1.0529	.1172	-.1530	.1291	-.0239	10	1.0195	.2472	-.2678	.1195	-.0300
15	.9750	.3146	-.2115	.1192	-.0387	15	1.2657	.4188	-.3216	.1497	-.0512
20	.9605	.4139	-.2190	.1152	-.0457	20	1.4308	.6124	-.3601	.1722	-.0766
25	.9602	.5196	-.2305	.1138	-.0645						
M = 0.90						M = 1.10					
-10	-.5699	.1244	-.0248	-.0722	-.0244	-10	-.5632	.1351	.0206	-.0658	-.0191
-7	-.3936	.0697	-.0557	-.0464	-.0091	-7	-.3870	.0886	-.0199	-.0436	-.0124
-5	-.2273	.0445	-.0867	-.0254	-.0052	-5	-.2469	.0683	-.0454	-.0274	-.0090
-3	.0000	.0308	-.1286	.0006	-.0024	-3	-.0916	.0559	-.0746	-.0088	-.0065
-2	.1301	.0311	-.1469	.0156	-.0023	-2	.0042	.0526	-.0899	.0013	-.0058
-1	.2372	.0352	-.1523	.0278	-.0024	-1	.0943	.0540	-.1053	.0114	-.0056
0	.3278	.0413	-.1534	.0390	-.0031	0	.1859	.0259	-.1218	.0219	-.0056
1	.4348	.0511	-.1577	.0514	-.0043	1	.2816	.0627	-.1374	.0327	-.0063
2	.5287	.0616	-.1650	.0622	-.0054	2	.3787	.0730	-.1553	.0439	-.0076
3	.6325	.0777	-.1741	.0746	-.0074	3	.4689	.0853	-.1731	.0547	-.0090
5	.7791	.1110	-.1945	.0932	-.0120	5	.6381	.1160	-.2056	.0744	-.0131
7	.9289	.1608	-.2098	.1111	-.0187	7	.8018	.1618	-.2320	.0929	-.0190
10	1.0805	.2365	-.2244	.1307	-.0291	10	.9683	.2354	-.2596	.1121	-.0285
15	1.1002	.3500	-.2426	.1331	-.0440	15	1.2041	.3984	-.3081	.1421	-.0490
20	1.0574	.4488	-.2500	.1251	-.0565						
25	1.0343	.5574	-.2594	.1231	-.0699						

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Continued

$t/c = 0.06$ $C_{cf} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.55					
-10	-.2280					-10	-.5561	.1403	-.0377	-.0654	-.0192
-7	-.0510					-7	-.3530	.0911	-.0757	-.0389	-.0116
-5	.1019					-5	-.1968	.0692	-.0982	-.0203	-.0076
-3	.2360					-3	.0359	.0550	-.1448	.0047	-.0050
-2	.2816					-2	.1718	.0576	-.1741	.0224	-.0050
-1	.3406					-1	.3046	.0669	-.2066	.0379	-.0055
0	.4103					0	.4280	.0750	-.2163	.0521	-.0070
1	.4613					1	.5264	.0884	-.2260	.0711	-.0085
2	.5176					2	.6217	.1018	-.2308	.0745	-.0103
3	.5686					3	.7107	.1190	-.2412	.0853	-.0128
5	.6839					5	.8497	.1567	-.2550	.1024	-.0171
7	.8046					7	.9934	.2127	-.2723	.1202	-.0238
10	.8958					10	1.1558	.2957	-.2826	.1395	-.0348
15	.8931					15	1.3433	.4533	-.2965	.1649	-.0554
20	.8556					20	1.0215	.5223	-.2792	.1422	-.0641
25	.8234					25	1.0777	.5946	-.2619	.1346	-.0763
M = 0.60						M = 1.00					
-10	-.2669	.0775	-.0973	-.0332	-.0074	-10	-.5474	.1390	-.0252	-.0641	-.0183
-7	-.0520	.0268	-.1266	-.0050	-.0014	-7	-.3449	.0940	-.0683	-.0382	-.0115
-5	.0986	.0222	-.1296	.0131	-.0006	-5	-.1920	.0741	-.0975	-.0191	-.0081
-3	.2532	.0249	-.1338	.0309	-.0006	-3	-.0075	.0645	-.1290	.0027	-.0065
-2	.3409	.0277	-.1278	.0399	-.0006	-2	.0975	.0645	-.1483	.0151	-.0059
-1	.4011	.0337	-.1326	.0478	-.0009	-1	.2235	.0678	-.1719	.0273	-.0059
0	.4750	.0397	-.1326	.0565	-.0014	0	.3599	.0748	-.2017	.0437	-.0067
1	.5311	.0452	-.1254	.0638	-.0024	1	.4724	.0859	-.2176	.0573	-.0085
2	.5914	.0517	-.1193	.0706	-.0033	2	.5624	.0991	-.2249	.0683	-.0102
3	.6571	.0641	-.1144	.0791	-.0047	3	.6524	.1162	-.2342	.0790	-.0122
5	.8022	.0909	-.1115	.0944	-.0077	5	.8069	.1530	-.2481	.0965	-.0171
7	.9117	.1339	-.1115	.1090	-.0091	7	.9568	.2080	-.2674	.1147	-.0235
10	.9500	.2086	-.1508	.1173	-.0233	10	1.1218	.2942	-.2926	.1351	-.0344
15	.9309	.3118	-.1872	.1180	-.0366	15	1.3498	.4646	-.3244	.1638	-.0570
20	.9035	.4079	-.1932	.1123	-.0490						
25	.8980	.5021	-.1992	.1100	-.0606						
M = 0.80						M = 1.05					
-10	-.3339	.0820	-.1223	-.0387	-.0097	-10	-.5349	.1365	-.0230	-.0614	-.0187
-7	-.1471	.0409	-.1493	-.0146	-.0043	-7	-.3383	.0921	-.0669	-.0368	-.0117
-5	.0296	.0259	-.1530	.0056	-.0017	-5	-.1879	.0729	-.0892	-.0193	-.0087
-3	.2007	.0305	-.1490	.0261	-.0017	-3	-.0101	.0622	-.1218	.0018	-.0065
-2	.2821	.0340	-.1465	.0344	-.0020	-2	.0896	.0619	-.1388	.0132	-.0061
-1	.3691	.0409	-.1498	.0449	-.0026	-1	.1981	.0653	-.1548	.0254	-.0065
0	.4468	.0477	-.1477	.0544	-.0035	0	.3036	.0711	-.1778	.0377	-.0071
1	.5421	.0577	-.1477	.0646	-.0045	1	.4236	.0818	-.1989	.0514	-.0088
2	.6364	.0668	-.1436	.0761	-.0058	2	.5104	.0935	-.2104	.0619	-.0103
3	.7160	.0786	-.1346	.0853	-.0072	3	.6130	.1099	-.2264	.0746	-.0120
5	.8529	.1123	-.1334	.1033	-.0115	5	.7634	.1450	-.2424	.0912	-.0166
7	.9805	.1560	-.1407	.1203	-.0168	7	.9166	.1976	-.2584	.1095	-.0227
10	1.0915	.2298	-.1518	.1370	-.0267	10	1.0843	.2787	-.2820	.1291	-.0340
15	.9324	.3230	-.1981	.1167	-.0387	15	1.3012	.4508	-.3288	.1579	-.0279
20	.9620	.4285	-.2177	.1172	-.0414						
25	.9435	.5332	-.2251	.1150	-.0324						
M = 0.90						M = 1.10					
-10	-.4884	.1172	-.0706	-.0599	-.0157	-10	-.5055	.1294	-.0248	-.0585	-.0175
-7	-.3206	.0715	-.0979	-.0359	-.0087	-7	-.3158	.1032	-.0640	-.0348	-.0114
-5	-.1233	.0477	-.1306	-.0120	-.0045	-5	-.1731	.0698	-.0901	-.0177	-.0083
-3	.1019	.0416	-.1626	.0140	-.0029	-3	.0028	.0607	-.1207	.0029	-.0066
-2	.2138	.0424	-.1688	.0269	-.0032	-2	.0900	.0596	-.1330	.0135	-.0064
-1	.3174	.0485	-.1688	.0385	-.0043	-1	.1842	.0633	-.1474	.0237	-.0067
0	.4061	.0554	-.1706	.0493	-.0050	0	.2839	.0698	-.1679	.0361	-.0073
1	.4982	.0668	-.1713	.0603	-.0062	1	.3809	.0789	-.1832	.0471	-.0085
2	.6002	.0809	-.1778	.0716	-.0080	2	.4778	.0913	-.1992	.0583	-.0097
3	.6824	.0950	-.1876	.0828	-.0102	3	.5678	.1046	-.2126	.0689	-.0115
5	.8386	.1314	-.1971	.1014	-.0151	5	.7257	.1403	-.2322	.0874	-.0159
7	.9669	.1835	-.2139	.1185	-.0226	7	.8670	.1907	-.2487	.1042	-.0218
10	1.1017	.2619	-.2248	.1377	-.0325	10	1.0304	.2670	-.2708	.1230	-.0325
15	1.0162	.3453	-.2284	.1253	-.0435	15	1.2548	.4386	-.3223	.1513	-.0541
20	1.0491	.4690	-.2473	.1277	-.0587						
25	1.0326	.5726	-.2539	.1253	-.0723						

TABLE 4.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 4 MODEL - Concluded

$\frac{t}{c} = 0.06$ $\frac{c_r}{c} = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.1719					-10	-.4769	.1280	-.0602	-.0543	-.0180
-7	.0081					-7	-.2533	.0857	-.1121	-.0254	-.0117
-5	.1478					-5	-.0547	.0696	-.1557	-.0025	-.0080
-3	.2767					-3	.1845	.0685	-.1971	.0245	-.0070
-2	.3439					-2	.3064	.0727	-.2109	.0381	-.0073
-1	.4057					-1	.4096	.0804	-.2213	.0495	-.0083
0	.4513					0	.5253	.0915	-.2241	.0607	-.0095
1	.5131					1	.5957	.1049	-.2331	.0713	-.0109
2	.5668					2	.6895	.1199	-.2331	.0818	-.0126
3	.6260					3	.7755	.1391	-.2414	.0922	-.0148
5	.7415					5	.9256	.1810	-.2608	.1097	-.0199
7	.8462					7	1.0725	.2384	-.2712	.1249	-.0265
10	.9053					10	1.1882	.3175	-.2850	.1408	-.0364
15	.8624					15	1.3665	.4783	-.2988	.1643	-.0573
20	.8465					20	1.1976	.5505	-.2884	.1408	-.0658
25	.8113					25	1.1194	.6351	-.2760	.1302	-.0767
M = 0.60						M = 1.00					
-10	-.2045	.0513	-.0861	-.0248	-.0054	-10	-.4834	.1237	-.0525	-.0521	-.0172
-7	.0206	.0189	-.1182	.0035	-.0018	-7	-.2417	.0868	-.1036	-.0253	-.0112
-5	.1659	.0189	-.1206	.0203	-.0010	-5	-.0826	.0739	-.1388	-.0062	-.0087
-3	.3166	.0255	-.1225	.0376	-.0008	-3	.1066	.0706	-.1707	.0153	-.0076
-2	.3989	.0291	-.1213	.0459	-.0010	-2	.2417	.0739	-.1940	.0299	-.0076
-1	.4510	.0365	-.1201	.0539	-.0016	-1	.3678	.0805	-.2125	.0445	-.0081
0	.5085	.0430	-.1177	.0607	-.0019	0	.4624	.0898	-.2205	.0554	-.0093
1	.5730	.0526	-.1170	.0689	-.0022	1	.5600	.1027	-.2251	.0663	-.0107
2	.6456	.0628	-.1140	.0769	-.0028	2	.6425	.1174	-.2305	.0763	-.0123
3	.7210	.0762	-.1110	.0852	-.0042	3	.7296	.1351	-.2371	.0864	-.0143
5	.8307	.1031	-.1074	.0985	-.0073	5	.8797	.1776	-.2544	.1035	-.0196
7	.9294	.1516	-.1153	.1118	-.0128	7	1.0058	.2348	-.2756	.1188	-.0259
10	.9540	.2245	-.1529	.1184	-.0223	10	1.1650	.3226	-.3002	.1381	-.0365
15	.9074	.3208	-.1826	.1138	-.0362	15	1.3601	.4917	-.3175	.1625	-.0581
20	.8937	.4153	-.1886	.1095	-.0478	20	1.4202	.6541	-.3281	.1680	-.0777
25	.8855	.5151	-.2001	.1075	-.0598	25	1.3151	.7707	-.3387	.1552	-.0943
M = 0.80						M = 1.05					
-10	-.2529	.0697	-.1176	-.0283	-.0084	-10	-.4456	.1199	-.0480	-.0507	-.0175
-7	-.0491	.0374	-.1505	.0030	-.0039	-7	-.2488	.0839	-.0954	-.0507	-.0113
-5	.1204	.0324	-.1537	.0159	-.0024	-5	-.0926	.0722	-.1293	-.0077	-.0087
-3	.2761	.0400	-.1525	.0341	-.0024	-3	.0810	.0680	-.1581	.0121	-.0080
-2	.3484	.0456	-.1525	.0430	-.0032	-2	.1924	.0705	-.1773	.0248	-.0081
-1	.4290	.0524	-.1508	.0524	-.0040	-1	.3110	.0765	-.1965	.0379	-.0086
0	.5152	.0619	-.1517	.0616	-.0051	0	.4297	.0858	-.2125	.0520	-.0097
1	.5874	.0702	-.1463	.0699	-.0058	1	.5281	.0982	-.2208	.0630	-.0109
2	.6504	.0775	-.1345	.0778	-.0066	2	.6149	.1128	-.2278	.0727	-.0125
3	.7468	.0930	-.1340	.0891	-.0082	3	.7017	.1309	-.2349	.0827	-.0146
5	.8858	.1268	-.1369	.1077	-.0115	5	.8478	.1707	-.2528	.0997	-.0194
7	1.0118	.1768	-.1463	.1241	-.0174	7	.9722	.2248	-.2707	.1148	-.0130
10	1.1007	.2533	-.1565	.1376	-.0269	10	1.1313	.3138	-.2957	.1338	-.0184
15	.9599	.3417	-.1975	.1174	-.0393	15	1.3541	.4923	-.3380	.1608	-.0589
20	.9673	.4466	-.2107	.1196	-.0539	20	1.4988	.6759	-.3546	.1784	-.0824
25	.9488	.5504	-.2205	.1138	-.0651	25	1.3946	.7912	-.3584	.1643	-.0993
M = 0.90						M = 1.10					
-10	-.3905	.1065	-.0991	-.0454	-.0151	-10	-.4324	.1193	-.0460	-.0488	-.0168
-7	-.2009	.0713	-.1319	-.0194	-.0078	-7	-.2453	.0818	-.0901	-.0259	-.0115
-5	.0165	.0547	-.1683	.0054	-.0053	-5	-.0970	.0703	-.1202	-.0086	-.0089
-3	.2371	.0583	-.1909	.0305	-.0055	-3	.0804	.0668	-.1533	.0113	-.0081
-2	.3342	.0644	-.1930	.0416	-.0060	-2	.1885	.0771	-.1711	.0230	-.0084
-1	.4083	.0685	-.1872	.0502	-.0071	-1	.2827	.0750	-.1870	.0346	-.0090
0	.5071	.0822	-.1945	.0611	-.0082	0	.3950	.0825	-.2023	.0476	-.0101
1	.5894	.0924	-.1909	.0711	-.0095	1	.4989	.0941	-.2128	.0585	-.0114
2	.6767	.1044	-.1887	.0811	-.0109	2	.5834	.1091	-.2201	.0691	-.0130
3	.7525	.1207	-.1981	.0973	-.0127	3	.6652	.1247	-.2262	.0784	-.0151
5	.8759	.1551	-.1981	.1063	-.0168	5	.8038	.1621	-.2404	.0949	-.0201
7	1.0044	.2114	-.2164	.1223	-.0232	7	.9313	.2133	-.2606	.1097	-.0263
10	1.1394	.2939	-.2382	.1403	-.0337	10	1.0810	.2985	-.2881	.1278	-.0367
15	1.0439	.2923	-.2309	.1251	-.0440	15	1.2916	.4676	-.3274	.1544	-.0588
20	1.0636	.4987	-.2491	.1275	-.0594	20	1.4579	.6652	-.3630	.1742	-.0864
25	1.0241	.5992	-.2513	.1227	-.0722	25	1.4025	.6925	-.4745	.1722	-.1054

TABLE 5.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 5 MODEL

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = \text{NONE}$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.5664					-10	-.9107	.1824	.1735	-.1116	-.0280
-7	-.4377					-7	-.6750	.1086	.1092	-.0824	-.0169
-5	-.3175					-5	-.5062	.0690	.0746	-.0619	-.0115
-3	-.2060					-3	-.3251	.0458	.0472	-.0405	-.0069
-2	-.1459					-2	-.2333	.0378	.0335	-.0294	-.0054
-1	-.0858					-1	-.1290	.0299	.0159	-.0161	-.0039
0	-.0172					0	-.0223	.0354	.0088	-.0043	-.0027
1	.0472					1	.0819	.0335	.0005	.0080	-.0024
2	.1159					2	.1762	.0385	-.0082	.0186	-.0025
3	.1802					3	.2730	.0458	-.0214	.0304	-.0032
5	.3004					5	.4467	.0720	-.0488	.0508	-.0057
7	.4334					7	.6328	.1117	-.0884	.0730	-.0098
10	.6179					10	.8958	.1941	-.1641	.1031	-.0192
15	.6995					15	1.1812	.3576	-.2135	.1407	-.0386
20	.7381										
25	.6995										
M = 0.60						M = 1.00					
-10	-.6817	.1286	.0574	-.0860	-.0199	-10	-.8492	.1732	.1605	-.1044	-.0261
-7	-.5629	.0649	.0019	-.0673	-.0112	-7	-.6351	.1047	.1016	-.0776	-.0161
-5	-.4200	.0334	-.0010	-.0493	-.0066	-5	-.4805	.0708	.0742	-.0587	-.0116
-3	-.2617	.0163	.0005	-.0303	-.0034	-3	-.3069	.0485	.0505	-.0386	-.0074
-2	-.1781	.0152	.0005	-.0207	-.0026	-2	-.2141	.0403	.0358	-.0270	-.0058
-1	-.1012	.0141	-.0015	-.0113	-.0016	-1	-.1189	.0381	.0216	-.0155	-.0047
0	-.0220	.0141	.0005	-.0024	-.0008	0	-.0071	.0387	.0084	-.0035	-.0034
1	.0638	.0141	.0010	.0073	-.0005	1	.0880	.0409	-.0058	.0079	-.0034
2	.1451	.0163	.0025	.0164	-.0006	2	.1879	.0467	-.0195	.0187	-.0038
3	.2221	.0205	.0019	.0254	-.0010	3	.2759	.0544	-.0321	.0298	-.0043
5	.3760	.0334	.0039	.0438	-.0019	5	.4377	.0778	-.0600	.0494	-.0066
7	.5431	.0638	.0054	.0626	-.0031	7	.6137	.1158	-.0931	.0702	-.0107
10	.7147	.1308	-.0326	.0850	-.0105	10	.8302	.1842	-.1426	.0958	-.0193
15	.7806	.2335	-.0988	.0997	-.0248	15	1.1798	.3544	-.2205	.1372	-.0394
20	.7564	.3094	-.1221	.0965	-.0359						
25	.7655	.4013	-.1392	.0965	-.0466						
M = 0.80						M = 1.05					
-10	-.7929	.1341	.0427	-.0999	-.0213	-10	-.8231	.1687	.1483	-.0992	-.0251
-7	-.6514	.0718	.0134	-.0804	-.0123	-7	-.6019	.1015	.0974	-.0737	-.0158
-5	-.5129	.0385	-.0019	-.0607	-.0074	-5	-.4537	.0878	.0721	-.0558	-.0114
-3	-.3066	.0167	-.0085	-.0358	-.0037	-3	-.2896	.0465	.0469	-.0361	-.0073
-2	-.2181	.0116	-.0045	-.0249	-.0025	-2	-.1984	.0398	.0333	-.0255	-.0060
-1	-.1267	.0116	-.0017	-.0146	-.0016	-1	-.1094	.0381	.0217	-.0151	-.0047
0	-.0354	.0116	.0013	-.0034	-.0009	0	-.0091	.0381	.0081	-.0038	-.0036
1	.0796	.0131	.0006	.0092	-.0006	1	.0889	.0409	-.0071	.0080	-.0036
2	.1680	.0167	.0032	.0195	-.0006	2	.1756	.0454	-.0187	.0179	-.0037
3	.2594	.0218	.0085	.0295	-.0010	3	.2645	.0532	-.0313	.0283	-.0044
5	.4480	.0427	.0098	.0521	-.0020	5	.4195	.0746	-.0570	.0467	-.0065
7	.6219	.0797	-.0045	.0736	-.0049	7	.5837	.1110	-.0867	.0666	-.0106
10	.7841	.1435	-.0313	.0953	-.0119	10	.7912	.1783	-.1367	.0910	-.0179
15	.8135	.2464	-.1056	.1022	-.0257	15	1.1218	.3397	-.2224	.1306	-.0370
20	.8047	.3319	-.1392	.1002	-.0370						
25	.8430	.4364	-.1591	.1033	-.0499						
M = 0.90						M = 1.10					
-10	-.8785	.1655	.1186	-.1086	-.0258	-10	-.7783	.1622	.1436	-.0956	-.0247
-7	-.6859	.0975	.0811	-.0846	-.0155	-7	-.5854	.0959	.0975	-.0717	-.0158
-5	-.5190	.0565	.0467	-.0633	-.0096	-5	-.4407	.0636	.0708	-.0543	-.0117
-3	-.3469	.0308	.0285	-.0415	-.0053	-3	-.2784	.0426	.0451	-.0347	-.0074
-2	-.2452	.0211	.0199	-.0299	-.0033	-2	-.1885	.0366	.0320	-.0245	-.0059
-1	-.1405	.0173	.0118	-.0172	-.0024	-1	-.1009	.0356	.0209	-.0138	-.0048
0	-.0314	.0180	.0026	-.0043	-.0014	0	-.0088	.0362	.0078	-.0040	-.0038
1	.1043	.0186	-.0061	.0109	-.0012	1	.0833	.0366	-.0053	.0070	-.0040
2	.2008	.0237	-.0127	.0230	-.0013	2	.1732	.0410	-.0179	.0172	-.0044
3	.3156	.0340	-.0205	.0362	-.0019	3	.2543	.0486	-.0296	.0273	-.0050
5	.4773	.0596	-.0372	.0557	-.0042	5	.4056	.0700	-.0543	.0451	-.0071
7	.6546	.1020	-.0660	.0775	-.0085	7	.5656	.1046	-.0854	.0643	-.0112
10	.8554	.1751	-.1007	.1010	-.0163	10	.7673	.1714	-.1329	.0881	-.0183
15	1.0458	.3053	-.1353	.1302	-.0332	15	1.0655	.3246	-.2071	.1256	-.0366
20	.9206	.3758	-.1725	.1104	-.0420						

TABLE 5.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 5 MODEL - Continued

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.3101					-10	-.7009	.1559	.0342	-.0825	-.0225
-7	-.1240					-7	-.4904	.0962	-.0115	-.0558	-.0134
-5	.0043					-5	-.3220	.0718	-.0430	-.0361	-.0096
-3	.1433					-3	-.1684	.0476	-.0567	-.0168	-.0052
-2	.2181					-2	-.0545	.0445	-.0813	-.0031	-.0040
-1	.2823					-1	.0842	.0445	-.1169	.0127	-.0040
0	.3425					0	.2452	.0530	-.1572	.0313	-.0047
1	.4045					1	.3888	.0670	-.1874	.0474	-.0058
2	.4534					2	.5077	.0780	-.2038	.0618	-.0071
3	.5132					3	.6241	.0962	-.2202	.0757	-.0090
5	.6351					5	.7851	.1327	-.2416	.0945	-.0132
7	.7635					7	.9461	.1851	-.2662	.1130	-.0190
10	.8447					10	1.1318	.2759	-.2969	.1371	-.0295
15	.8640										
20	.8383										
25	.7934										
M = 0.60						M = 1.00					
-10	-.3585	.0798	-.0665	-.0431	-.0104	-10	-.6785	.1476	.0362	-.0790	-.0215
-7	-.1535	.0248	-.1271	-.0160	-.0028	-7	-.4697	.0951	-.0129	-.0528	-.0138
-5	.0022	.0125	-.1285	.0024	-.0014	-5	-.3060	.0718	-.0451	-.0334	-.0098
-3	.1513	.0145	-.1271	.0195	-.0011	-3	-.1423	.0590	-.0714	-.0138	-.0067
-2	.2214	.0162	-.1223	.0271	-.0008	-2	-.0427	.0554	-.0890	-.0016	-.0059
-1	.2850	.0204	-.1173	.0341	-.0010	-1	.0641	.0250	-.1081	.0104	-.0052
0	.3639	.0259	-.1183	.0433	-.0012	0	.1756	.0590	-.1270	.0230	-.0052
1	.4758	.0340	-.1271	.0577	-.0013	1	.3013	.0648	-.1516	.0362	-.0057
2	.5393	.0421	-.1173	.0654	-.0015	2	.4318	.0764	-.1821	.0537	-.0070
3	.6227	.0528	-.1150	.0741	-.0023	3	.5623	.0922	-.2083	.0684	-.0088
5	.7586	.0787	-.1081	.0900	-.0048	5	.7354	.1278	-.2330	.0887	-.0129
7	.8814	.1201	-.1077	.1054	-.0101	7	.8944	.1797	-.2550	.1071	-.0187
10	.9365	.1903	-.1562	.1171	-.0191	10	1.0771	.2655	-.2855	.1313	-.0285
15	.9230	.2944	-.1867	.1213	-.0338						
20	.8901	.3806	-.1886	.1141	-.0454						
M = 0.80						M = 1.05					
-10	-.4898	.0944	-.0738	-.0593	-.0137	-10	-.6440	.1427	.0335	-.0751	-.0212
-7	-.3383	.0459	-.1080	-.0386	-.0066	-7	-.4460	.0912	-.0106	-.0508	-.0138
-5	-.1515	.0238	-.1253	-.0164	-.0026	-5	-.2981	.0700	-.0400	-.0331	-.0097
-3	.0677	.0181	-.1314	.0090	-.0011	-3	-.1320	.0577	-.0684	-.0133	-.0069
-2	.1721	.0210	-.1340	.0207	-.0010	-2	-.0410	.0537	-.0848	-.0022	-.0059
-1	.2751	.0257	-.1340	.0329	-.0012	-1	.0614	.0520	-.1012	.0095	-.0058
0	.3765	.0310	-.1350	.0447	-.0019	0	.1661	.0560	-.1206	.0219	-.0058
1	.4810	.0402	-.1422	.0571	-.0025	1	.2731	.0633	-.1404	.0345	-.0065
2	.6089	.0499	-.1454	.0731	-.0038	2	.3800	.0717	-.1621	.0471	-.0075
3	.7060	.0632	-.1416	.0848	-.0048	3	.5097	.1432	-.1888	.0619	-.0091
5	.8649	.0980	-.1497	.1057	-.0085	5	.6895	.1220	-.2235	.0833	-.0130
7	.9737	.1440	-.1568	.1214	-.0142	7	.8510	.1707	-.2436	.1016	-.0185
10	1.0737	.2177	-.1584	.1354	-.0236	10	1.0285	.2535	-.2748	.1250	-.0281
15	.9237	.3009	-.2017	.1171	-.0356						
M = 0.90						M = 1.10					
-10	-.6772	.1397	-.0051	-.0835	-.0206	-10	-.6194	.1389	.0358	-.0727	-.0213
-7	-.5051	.0812	-.0233	-.0596	-.0119	-7	-.4334	.0899	-.0102	-.0510	-.0135
-5	-.3495	.0524	-.0519	-.0384	-.0075	-5	-.2911	.0673	-.0361	-.0321	-.0100
-3	-.0983	.0343	-.1093	-.0072	-.0032	-3	-.1226	.0555	-.0658	-.0121	-.0071
-2	.0464	.0336	-.1335	.0353	-.0025	-2	-.0350	.0517	-.0811	-.0021	-.0063
-1	.1966	.0375	-.1613	.0260	-.0025	-1	.0613	.0511	-.0981	.0091	-.0059
0	.3195	.0456	-.1673	.0398	-.0029	0	.1576	.0544	-.1155	.0202	-.0060
1	.4369	.0557	-.1764	.0533	-.0041	1	.2670	.0608	-.1365	.0329	-.0065
2	.5516	.0692	-.1824	.0668	-.0057	2	.3655	.0705	-.1544	.0446	-.0074
3	.6608	.0860	-.1915	.0795	-.0074	3	.4772	.0850	-.1767	.0574	-.0088
5	.8328	.1256	-.2096	.1007	-.0121	5	.6610	.1173	-.2140	.0786	-.0127
7	.9966	.1834	-.2398	.1206	-.0187	7	.8164	.1642	-.2363	.0971	-.0178
10	1.1796	.2759	-.2670	.1447	-.0295	10	.9937	.2449	-.2634	.1199	-.0272
15	1.3762	.2135	-.2730	.1670	-.0493						
20	1.1195	.2384	-.2609	.1352	-.0554						

TABLE 5.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 5 MODEL - Continued

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2299					-10	-.6020	.1420	-.0151	-.0722	-.0206
-7	-.0434					-7	-.3815	.0927	-.0636	-.0440	-.0128
-5	.0954					-5	-.2180	.0701	-.0951	-.0233	-.0087
-3	.2342					-3	-.0198	.0555	-.1293	.0000	-.0061
-2	.3036					-2	.1338	.0578	-.1655	.0176	-.0062
-1	.3774					-1	.2899	.0639	-.1929	.0349	-.0062
0	.4294					0	.4385	.0725	-.2093	.0493	-.0074
1	.4858					1	.5351	.0853	-.2176	.0637	-.0088
2	.5422					2	.6243	.1005	-.2247	.0741	-.0103
3	.6029					3	.7259	.1207	-.2340	.0854	-.0125
5	.7243					5	.8721	.1614	-.2493	.1027	-.0168
7	.8458					7	1.0133	.2163	-.2669	.1188	-.0232
10	.9152					10	1.1817	.3065	-.2871	.1419	-.0338
15	.9065										
20	.8111										
25	.8284										
M = 0.60						M = 1.00					
-10	-.2850	.0702	-.0776	-.0349	-.0085	-10	-.5723	.1373	-.0123	-.0692	-.0198
-7	-.0614	.0259	-.1256	-.0060	-.0014	-7	-.3633	.0893	-.0583	-.0420	-.0128
-5	.1030	.0162	-.1256	.0134	-.0010	-5	-.2019	.0706	-.0903	-.0224	-.0089
-3	.2784	.0195	-.1280	.0332	-.0010	-3	-.0309	.0625	-.1195	-.0012	-.0071
-2	.3596	.0237	-.1295	.0426	-.0012	-2	.0760	.0613	-.1376	.0106	-.0066
-1	.4429	.0303	-.1295	.0515	-.0017	-1	.1995	.0642	-.1586	.0242	-.0065
0	.5152	.0344	-.1271	.0607	-.0025	0	.3420	.0718	-.1875	.0415	-.0072
1	.5635	.0410	-.1183	.0668	-.0029	1	.4916	.0835	-.2085	.0572	-.0087
2	.6405	.0506	-.1150	.0754	-.0038	2	.5747	.0963	-.2190	.0685	-.0102
3	.7104	.0625	-.1101	.0834	-.0049	3	.6744	.1168	-.2269	.0795	-.0123
5	.8551	.0895	-.1028	.1007	-.0082	5	.8240	.1547	-.2400	.0968	-.0165
7	.9406	.1348	-.1077	.1145	-.0136	7	.9546	.2073	-.2553	.1130	-.0224
10	.9757	.2081	-.1450	.1222	-.0234	10	1.1280	.2960	-.2826	.1360	-.0328
15	.9825	.3223	-.1794	.1286	-.0394						
20	.9077	.3925	-.1804	.1179	-.0489						
25	.8989	.4907	-.1984	.1137	-.0610						
M = 0.80						M = 1.05					
-10	-.3824	.0833	-.1103	-.0446	-.0116	-10	-.5465	.1343	-.0126	-.0652	-.0192
-7	-.1956	.0327	-.1406	-.0210	-.0056	-7	-.3529	.0879	-.0539	-.0409	-.0126
-5	-.0059	.0275	-.1506	.0009	-.0025	-5	-.2004	.0689	-.0816	-.0223	-.0095
-3	.1839	.0290	-.1461	.0223	-.0023	-3	-.0296	.0616	-.1118	-.0022	-.0071
-2	.2780	.0318	-.1451	.0331	-.0025	-2	.0706	.0587	-.1254	.0097	-.0070
-1	.3663	.0377	-.1419	.0436	-.0032	-1	.1708	.0633	-.1435	.0210	-.0067
0	.4619	.0449	-.1412	.0546	-.0040	0	.2892	.0689	-.1647	.0347	-.0073
1	.5545	.0543	-.1431	.0657	-.0049	1	.4190	.0789	-.1899	.0497	-.0086
2	.6725	.0672	-.1454	.0805	-.0062	2	.5283	.0923	-.2050	.0630	-.0098
3	.7707	.0796	-.1357	.0923	-.0075	3	.6239	.1092	-.2176	.0741	-.0115
5	.9149	.1172	-.1448	.1105	-.0112	5	.7788	.1462	-.2317	.0913	-.0155
7	1.0179	.1664	-.1503	.1254	-.0169	7	.9154	.1959	-.2463	.1072	-.0213
10	1.1179	.2481	-.1568	.1385	-.0265	10	1.0770	.2822	-.2730	.1296	-.0311
15	.9414	.3183	-.1900	.1171	-.0374						
20	.9649	.4296	-.2063	.1185	-.0504						
M = 0.90						M = 1.10					
-10	-.5639	.1330	-.0595	-.0703	-.0189	-10	-.5279	.1281	-.0106	-.0629	-.0185
-7	-.4345	.0826	-.0640	-.0504	-.0117	-7	-.3417	.0845	-.0494	-.0396	-.0124
-5	-.2225	.0537	-.1048	-.0239	-.0069	-5	-.2037	.0657	-.0760	-.0223	-.0093
-3	.0642	.0437	-.1613	.0093	-.0041	-3	-.0350	.0592	-.1051	-.0021	-.0074
-2	.2075	.0470	-.1782	.0260	-.0043	-2	.0591	.0582	-.1202	.0085	-.0068
-1	.3372	.0571	-.1945	.0403	-.0053	-1	.1533	.0609	-.1366	.0202	-.0067
0	.4533	.0605	-.1885	.0517	-.0057	0	.2628	.0663	-.1526	.0315	-.0076
1	.5488	.0759	-.2005	.0650	-.0072	1	.3811	.1034	-.1754	.0453	-.0084
2	.6444	.0886	-.1975	.0769	-.0088	2	.4928	.0888	-.1948	.0585	-.0098
3	.7485	.1095	-.2066	.0901	-.0116	3	.5957	.1050	-.2093	.0708	-.0119
5	.9205	.1859	-.2277	.1100	-.0170	5	.7425	.1416	-.2234	.0872	-.0153
7	1.0567	.2082	-.2398	.1267	-.0232	7	.8805	.1901	-.2384	.1029	-.0207
10	1.2260	.2989	-.2609	.1511	-.0170	10	1.0338	.2730	-.2636	.1238	-.0300

TABLE 5.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 5 MODEL - Concluded

$c_t = 0.06$ $c_f = 0.40$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2035					-10	-.5252	.1371	-.0405	-.0592	-.0201
-7	-.0086					-7	-.3208	.0935	-.0872	-.0334	-.0135
-5	.1264					-5	-.1387	.0768	-.1268	-.0104	-.0093
-3	.2699					-3	.1189	.0706	-.1825	.0195	-.0078
-2	.3556					-2	.2676	.0746	-.2072	.0363	-.0084
-1	.4006					-1	.3828	.0819	-.2208	.0500	-.0092
0	.4627					0	.4905	.0935	-.2263	.0623	-.0104
1	.5377					1	.5834	.1073	-.2307	.0496	-.0118
2	.5869					2	.6788	.1242	-.2389	.0852	-.0135
3	.6341					3	.7754	.1453	-.2455	.0953	-.0154
5	.7476					5	.9315	.1919	-.2631	.1121	-.0202
7	.8483					7	1.0628	.2541	-.2828	.1337	-.0271
10	.8804					10	1.2338	.3497	-.3047	.1520	-.0383
15	.8547					15	1.4022	.4837	-.2992	.1664	-.0565
20	.8054										
25	.7840										
M = 0.60						M = 1.00					
-10	-.2458	.0632	-.0718	-.0290	-.0082	-10	-.4975	.1319	-.0383	-.0563	-.0191
-7	.0025	.0226	-.1165	-.0019	-.0017	-7	-.3016	.0911	-.0830	-.0314	-.0130
-5	.1679	.0189	-.1175	.0213	-.0017	-5	-.1354	.0765	-.1190	-.0108	-.0095
-3	.3358	.0248	-.1204	.0403	-.0015	-3	.0724	.0712	-.1618	.0141	-.0082
-2	.4159	.0292	-.1146	.0507	-.0018	-2	.1971	.0730	-.1828	.0279	-.0080
-1	.4872	.0362	-.1204	.0595	-.0021	-1	.3218	.0791	-.2038	.0424	-.0085
0	.5509	.0432	-.1155	.0663	-.0025	0	.4465	.0885	-.2170	.0556	-.0094
1	.6211	.0525	-.1146	.0748	-.0033	1	.5474	.1016	-.2238	.0685	-.0108
2	.6935	.0621	-.1068	.0831	-.0047	2	.6317	.1174	-.2301	.0786	-.0127
3	.7571	.0751	-.1082	.0912	-.0059	3	.7148	.1357	-.2353	.0885	-.0146
5	.8779	.1058	-.1038	.1059	-.0095	5	.8573	.1793	-.2501	.1040	-.0191
7	.9503	.1473	-.1082	.1189	-.0168	7	1.0045	.2365	-.2711	.1250	-.0257
10	.8804	.2278	-.1520	.1240	-.0129	10	1.1613	.3352	-.3005	.1448	-.0368
15	.9020	.3226	-.1762	.1198	-.0196						
20	.9020	.4198	-.1913	.1176	-.0130						
25	.8800	.5094	-.1937	.1134	-.0158						
M = 0.80						M = 1.05					
-10	-.2935	.0774	-.0970	-.0331	-.0106	-10	-.4827	.1271	-.0342	-.0550	-.0183
-7	-.0964	.0431	-.1451	-.0085	-.0043	-7	-.2892	.0882	-.0776	-.0303	-.0125
-5	.0875	.0333	-.1523	.0126	-.0033	-5	-.1298	.0733	-.1116	-.0108	-.0094
-3	.2656	.0387	-.1504	.0329	-.0036	-3	.0524	.0695	-.1501	.0113	-.0082
-2	.3465	.0449	-.1513	.0430	-.0039	-2	.1548	.0706	-.1662	.0234	-.0085
-1	.4355	.0531	-.1530	.0531	-.0048	-1	.2687	.0767	-.1854	.0367	-.0090
0	.5164	.0615	-.1507	.0629	-.0055	0	.3939	.0846	-.2030	.0504	-.0093
1	.6047	.0702	-.1491	.0751	-.0068	1	.4964	.0965	-.2130	.0632	-.0107
2	.6754	.0778	-.1328	.0826	-.0077	2	.5829	.1111	-.2181	.0732	-.0125
3	.8122	.0959	-.1393	.0989	-.0095	3	.6740	.1299	-.2267	.0836	-.0143
5	.9211	.1299	-.1425	.1151	-.0137	5	.8106	.1719	-.2433	.0995	-.0186
7	1.0182	.1791	-.1497	.1289	-.0198	7	.9541	.2279	-.2599	.1198	-.0252
10	1.0917	.1274	-.1572	.1423	-.0292	10	1.1066	.3214	-.2901	.1388	-.0354
15	.9593	.1689	-.1940	.1234	-.0411						
20	.9446	.4444	-.2038	.1211	-.0534						
25	.9299	.5456	-.2168	.1194	-.0653						
M = 0.90						M = 1.10					
-10	-.4934	.1200	-.0642	-.0589	-.0176	-10	-.4700	.1209	-.0310	-.0534	-.0178
-7	-.3216	.0775	-.0901	-.0346	-.0108	-7	-.2859	.0854	-.0727	-.0296	-.0120
-5	-.0924	.0592	-.1376	-.0071	-.0066	-5	-.1391	.0722	-.1049	-.0119	-.0092
-3	.1810	.0599	-.1860	.0241	-.0058	-3	.0449	.0670	-.1405	.0109	-.0082
-2	.3033	.0647	-.1918	.0380	-.0067	-2	.1490	.0692	-.1599	.0221	-.0083
-1	.4075	.0742	-.2004	.0498	-.0079	-1	.2585	.0746	-.1759	.0343	-.0084
0	.4960	.0838	-.2033	.0622	-.0087	0	.3571	.0824	-.1919	.0460	-.0094
1	.5637	.0871	-.1889	.0698	-.0093	1	.4776	.0940	-.2065	.0604	-.0110
2	.6666	.1047	-.1918	.0824	-.0112	2	.5587	.1075	-.2137	.0700	-.0124
3	.7577	.1239	-.2033	.0933	-.0130	3	.6485	.1258	-.2210	.0800	-.0143
5	.8931	.1623	-.2033	.1097	-.0176	5	.7866	.1665	-.2341	.0955	-.0183
7	1.0181	.2222	-.2292	.1294	-.0239	7	.9246	.2219	-.2451	.1153	-.0249
10	1.1639	.3067	-.2379	.1471	-.0348	10	1.0648	.3124	-.2743	.1323	-.0351
15	1.0311	.3803	-.2223	.1299	-.0442						

TABLE 6.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 6 MODEL

$t/c = 0.06$ $C_f = \text{NONE}$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.6162					-10	-.8915	.1751	.1455	-.1119	-.0264
-7	-.4843					-7	-.6596	.1005	.1016	-.0829	-.0149
-5	-.3542					-5	-.4932	.0643	.0676	-.0617	-.0096
-3	-.2169					-3	-.3056	.0419	.0373	-.0385	-.0056
-2	-.1500					-2	-.1897	.0332	.0233	-.0239	-.0035
-1	-.0813					-1	-.0822	.0280	.0093	-.0119	-.0023
0	-.0108					0	.0211	.0290	.0000	.0014	-.0020
1	.0813					1	.1286	.0332	-.0131	.0136	-.0015
2	.1536					2	.2297	.0399	-.0233	.0252	-.0016
3	.2440					3	.3309	.0513	-.0396	.0375	-.0024
5	.3650					5	.4995	.0798	-.0699	.0580	-.0050
7	.5096					7	.7060	.1280	-.1165	.0818	-.0100
10	.6813					10	.9463	.2145	-.1818	.1108	-.0199
15	.8187										
20	1.0012										
25	.7301										
M = 0.60						M = 1.00					
-10	-.7031	.1239	.0610	-.0901	-.0177	-10	-.8383	.1659	.1564	-.1046	-.0251
-7	-.5906	.0585	.0108	-.0722	-.0086	-7	-.6181	.0989	.0929	-.0771	-.0146
-5	-.4312	.0272	-.0008	-.0522	-.0039	-5	-.4585	.0640	.0648	-.0579	-.0096
-3	-.2681	.0111	-.0208	-.0322	-.0015	-3	-.2787	.0427	.0402	-.0360	-.0056
-2	-.1744	.0073	-.0112	-.0218	-.0004	-2	-.1838	.0368	.0268	-.0239	-.0045
-1	-.0937	.0051	-.0033	-.0115	-.0001	-1	-.0869	.0342	.0121	-.0124	-.0031
0	-.0056	.0032	.0000	-.0006	.0003	0	.0182	.0333	.0000	.0007	-.0027
1	.0787	.0064	.0008	.0091	.0005	1	.1192	.0378	-.0134	.0118	-.0027
2	.1669	.0101	.0021	.0188	.0006	2	.2161	.0442	-.0290	.0235	-.0027
3	.2587	.0171	.0021	.0291	.0001	3	.3131	.0551	-.0425	.0346	-.0035
5	.4219	.0088	.0021	.0479	-.0002	5	.4787	.0815	-.0715	.0546	-.0059
7	.5981	.0673	.0041	.0677	-.0028	7	.6403	.1222	-.1028	.0742	-.0098
10	.7537	.1378	-.0436	.0880	-.0102	10	.8726	.1992	-.1622	.1013	-.0185
15	.7856	.2417	-.1000	.0995	-.0238						
20	.7725	.3217	-.1120	.0983	-.0349						
25	.8044	.4177	-.1203	.0998	-.0470						
M = 0.80						M = 1.05					
-10	-.8201	.1350	.0567	-.1060	-.0201	-10	-.7909	.1583	.1449	-.0988	-.0239
-7	-.6026	.0765	.0346	-.0882	-.0114	-7	-.5874	.0934	.0901	-.0737	-.0144
-5	-.4576	.0381	.0139	-.0684	-.0059	-5	-.4459	.0619	.0652	-.0558	-.0098
-3	-.3326	.0120	-.0083	-.0405	-.0019	-3	-.2695	.0405	.0395	-.0345	-.0056
-2	-.2075	.0068	-.0061	-.0255	-.0010	-2	-.1745	.0353	.0249	-.0229	-.0044
-1	-.1100	.0049	-.0025	-.0142	-.0004	-1	-.0756	.0333	.0107	-.0113	-.0029
0	-.0075	.0059	.0000	-.0020	-.0001	0	.0174	.0338	-.0004	.0000	-.0028
1	.1100	.0089	.0011	.0121	.0001	1	.1144	.0386	-.0163	.0110	-.0026
2	.2150	.0129	.0061	.0235	.0001	2	.2074	.0448	-.0292	.0220	-.0028
3	.3101	.0196	.0144	.0344	-.0002	3	.2947	.0539	-.0407	.0323	-.0034
5	.5101	.0451	.0028	.0587	-.0018	5	.4536	.0791	-.0665	.0511	-.0056
7	.6926	.0889	-.0199	.0817	-.0062	7	.6145	.1196	-.0986	.0706	-.0095
10	.8251	.1534	-.0429	.1003	-.0140	10	.8200	.1916	-.1509	.0941	-.0171
15	.8301	.2484	-.1126	.0991	-.0265						
20	.8677	.3554	-.1372	.1072	-.0397						
25	.8602	.4415	-.1493	.1068	-.0504						
M = 0.90						M = 1.10					
-10	-.8895	.1661	.1416	-.1107	-.0246	-10	-.7660	.1544	.1402	-.0959	-.0233
-7	-.6908	.0971	.0976	-.0850	-.0139	-7	-.5741	.0912	.0928	-.0709	-.0142
-5	-.5143	.0564	.0512	-.0625	-.0078	-5	-.4249	.0614	.0639	-.0534	-.0127
-3	-.3046	.0283	.0147	-.0368	-.0031	-3	-.2572	.0399	.0371	-.0326	-.0058
-2	-.2008	.0212	.0073	-.0239	-.0020	-2	-.1640	.0349	.0235	-.0217	-.0042
-1	-.1170	.0158	.0098	-.0136	-.0010	-1	-.0708	.0339	.0124	-.0112	-.0030
0	-.0066	.0141	.0039	.0000	-.0002	0	.0168	.0339	-.0008	.0000	-.0026
1	.0993	.0184	-.0024	.0125	-.0001	1	.1118	.0376	-.0157	.0109	-.0024
2	.1920	.0238	-.0024	.0243	-.0003	2	.2032	.0440	-.0280	.0217	-.0026
3	.2980	.0348	-.0147	.0393	-.0009	3	.2870	.0531	-.0412	.0317	-.0033
5	.4679	.0608	-.0391	.0596	-.0032	5	.4455	.0788	-.0680	.0498	-.0054
7	.6555	.1064	-.0781	.0821	-.0080	7	.6001	.1178	-.0989	.0688	-.0091
10	.8586	.1786	-.1099	.1057	-.0172	10	.8052	.1866	-.1402	.0920	-.0173
15	1.1345	.3289	-.1587	.1336	-.0349						
20	.9800	.3897	-.1782	.1196	-.0212						

TABLE 6.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 6 MODEL - Continued

$\frac{c_t}{c_l} = 0.06$ $\frac{c_f}{c_l} = 0.20$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.55					
-10	.3355					-10	-.7749	.1613	.0551	-.0924	-.0246
-7	.1435					-7	-.5520	.0973	.0125	-.0651	-.0149
-5	.0072					-5	-.3791	.0692	-.0221	-.0425	-.0105
-3	.1507					-3	-.1979	.0461	-.0544	-.0199	-.0057
-2	.2260					-2	-.0771	.0435	-.0739	-.0064	-.0043
-1	.2960					-1	.0583	.0205	-.1074	.0098	-.0038
0	.3570					0	.2354	.0553	-.1525	.0290	-.0043
1	.4180					1	.3979	.0676	-.1908	.0482	-.0055
2	.4790					2	.5270	.0820	-.2087	.0634	-.0065
3	.5436					3	.6436	.0999	-.2216	.0772	-.0085
5	.6605					5	.8353	.1434	-.2433	.0981	-.0134
7	.7858					7	.9998	.2038	-.2728	.1190	-.0197
10	.8575										
15	1.0513										
20	1.2127										
25	1.2917										
M = 0.60						M = 1.00					
-10	-.3858	.0800	-.0592	-.0462	-.0114	-10	-.7322	.1560	.0561	-.0885	-.0236
-7	-.1692	.0257	-.1258	-.0179	-.0028	-7	-.5127	.0967	.0064	-.0600	-.0147
-5	-.0130	.0132	-.1312	.0012	-.0012	-5	-.3431	.0711	-.0304	-.0391	-.0104
-3	.1376	.0141	-.1258	.0182	-.0008	-3	-.1536	.0565	-.0664	-.0158	-.0074
-2	.2203	.0169	-.1185	.0269	-.0007	-2	-.0479	.0555	-.0856	-.0036	-.0059
-1	.2956	.0206	-.1180	.0360	-.0009	-1	.0559	.0540	-.1061	.0087	-.0053
0	.3849	.0260	-.1177	.0463	-.0011	0	.1855	.0589	-.1293	.0236	-.0051
1	.5132	.0335	-.1168	.0608	-.0015	1	.3152	.0662	-.1571	.0391	-.0058
2	.5783	.0420	-.1168	.0686	-.0018	2	.4648	.0805	-.1924	.0568	-.0070
3	.6582	.0536	-.1135	.0779	-.0018	3	.6005	.0982	-.2127	.0713	-.0084
5	.7977	.0824	-.1065	.0945	-.0039	5	.7601	.1374	-.2365	.0907	-.0122
7	.9130	.1303	-.1135	.1092	-.0089	7	.9437	.1938	-.2613	.1114	-.0186
10	.9818	.2103	-.1567	.1207	-.0192						
15	.9037	.3046	-.1855	.1176	-.0324						
M = 0.80						M = 1.05					
-10	-.4676	.0955	-.0620	-.0544	-.0147	-10	-.7116	.1496	.0548	-.0839	-.0224
-7	-.4056	.0482	-.0922	-.0460	-.0082	-7	-.4858	.0941	.0072	-.0570	-.0143
-5	-.1947	.0234	-.1237	-.0209	-.0034	-5	-.3233	.0682	-.0277	-.0368	-.0105
-3	.0459	.0171	-.1278	.0072	-.0015	-3	-.1473	.0550	-.0626	-.0152	-.0078
-2	.1625	.0198	-.1284	.0203	-.0013	-2	-.0516	.0541	-.0806	-.0043	-.0056
-1	.2704	.0257	-.1306	.0323	-.0012	-1	.0497	.0532	-.0997	.0080	-.0054
0	.3907	.0341	-.1377	.0460	-.0012	0	.1626	.0564	-.1189	.0204	-.0055
1	.5122	.0448	-.1432	.0604	-.0016	1	.2831	.0645	-.1430	.0350	-.0059
2	.6697	.0579	-.1526	.0775	-.0024	2	.3940	.0753	-.1654	.0483	-.0065
3	.8012	.0747	-.1542	.0925	-.0036	3	.5318	.0696	-.1993	.0638	-.0079
5	.9376	.1108	-.1542	.1128	-.0075	5	.7230	.1307	-.2251	.0860	-.0119
7	1.0294	.1616	-.1596	.1268	-.0127	7	.8837	.1834	-.2505	.1049	-.0176
10	1.1286	.2379	-.1652	.1393	-.0224						
15	.9376	.3171	-.1997	.1168	-.0346						
M = 0.90						M = 1.10					
-10	-.6788	.1362	-.0003	-.0822	-.0211	-10	-.6749	.1452	.0547	-.0815	-.0218
-7	-.5364	.0819	-.0075	-.0636	-.0130	-7	-.4726	.0905	.0069	-.0548	-.0139
-5	-.3810	.0485	-.0305	-.0423	-.0077	-5	-.3163	.0217	-.0242	-.0363	-.0102
-3	-.1686	.0328	-.0668	-.0167	-.0042	-3	-.1361	.0543	-.0582	-.0146	-.0074
-2	.0175	.0312	-.1216	.0046	-.0023	-2	-.0405	.0533	-.0795	-.0033	-.0054
-1	.1883	.0350	-.1506	.0241	-.0022	-1	.0570	.0520	-.0958	.0077	-.0057
0	.3131	.0430	-.1589	.0383	-.0026	0	.1582	.0543	-.1143	.0196	-.0056
1	.4270	.0539	-.1651	.0516	-.0038	1	.2722	.0615	-.1347	.0330	-.0062
2	.5386	.0668	-.1676	.0636	-.0050	2	.3788	.0941	-.1562	.0455	-.0073
3	.6525	.0862	-.1869	.0764	-.0066	3	.4984	.0868	-.1814	.0592	-.0082
5	.8167	.1238	-.2039	.0985	-.0106	5	.6860	.1221	-.2148	.0812	-.0120
7	.9765	.1777	-.2184	.1180	-.0166	7	.8515	.1741	-.2408	.1003	-.0176
10	1.1911	.2746	-.2625	.1396	-.0277						

TABLE 6.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 6 MODEL - Continued

$\frac{t}{c} = 0.06$ $\frac{c_f}{c} = 0.30$

α , deg	C_L	C_D	C_M	C_i	C_n	α , deg	C_L	C_D	C_M	C_i	C_n
M = 0.40						M = 0.95					
-10	-.2418					-10	-.6551	.1554	-.0069	-.0712	-.0218
-7	-.0412					-7	-.4409	.1028	-.0515	-.0443	-.0135
-5	.1021					-5	-.2599	.0782	-.0837	-.0215	-.0096
-3	.2507					-3	-.0374	.0645	-.1251	.0062	-.0056
-2	.3349					-2	.1248	.0685	-.1573	.0239	-.0054
-1	.4083					-1	.2911	.0773	-.1950	.0432	-.0056
0	.4567					0	.4471	.0890	-.2171	.0592	-.0062
1	.5176					1	.5677	.1043	-.2203	.0727	-.0072
2	.5821					2	.6696	.1248	-.2291	.0427	-.0088
3	.6358					3	.7694	.1463	-.2410	.0488	-.0109
5	.7522					5	.9358	.1923	-.2548	.0584	-.0159
7	.8686					7	1.1146	.2562	-.2778	.0676	-.0227
10	.9134										
15	1.0925										
20	1.2358										
25	1.2967										
M = 0.60						M = 1.00					
-10	-.3063	.0835	-.0673	-.0401	-.0105	-10	-.6374	.1519	-.0066	-.0682	-.0215
-7	-.0696	.0319	-.0665	.0149	-.0032	-7	-.4123	.1009	-.0494	-.0408	-.0140
-5	.1095	.0206	-.1302	.0364	-.0027	-5	-.2390	.0813	-.0837	-.0190	-.0100
-3	.2952	.0251	-.1302	.0362	-.0022	-3	-.0319	.0740	-.1229	.0060	-.0068
-2	.3898	.0301	-.1322	.0469	-.0022	-2	.0837	.0725	-.1419	.0197	-.0065
-1	.4734	.0369	-.1219	.0559	-.0025	-1	.2151	.0764	-.1661	.0350	-.0067
0	.5532	.0438	-.1199	.0656	-.0028	0	.3884	.0862	-.2057	.0548	-.0069
1	.6126	.0507	-.1138	.0721	-.0029	1	.5218	.1029	-.2177	.0672	-.0076
2	.6869	.1077	-.1035	.0817	-.0030	2	.6174	.1195	-.2238	.0785	-.0086
3	.7704	.0780	-.1035	.0901	-.0033	3	.7230	.1401	-.2291	.0919	-.0108
5	.9096	.1123	-.0945	.1069	-.0064	5	.8803	.1841	-.2485	.1096	-.0150
7	.9653	.1639	-.1138	.1163	-.0122	7	1.0476	.2439	-.2688	.1270	-.0216
10	1.0581	.2519	-.1454	.1292	-.0230						
15	1.0136	.3616	-.1753	.1295	-.0383						
20	.9245	.4327	-.1733	.1163	-.0484						
M = 0.80						M = 1.05					
-10	-.3654	.0931	-.0992	-.0449	-.0115	-10	-.6111	.1474	-.0021	-.0657	-.0208
-7	-.2291	.0476	-.1408	-.0259	-.0049	-7	-.4010	.0967	-.0452	-.0391	-.0134
-5	-.0248	.0292	-.1518	-.0020	-.0024	-5	-.2349	.0766	-.0790	-.0182	-.0101
-3	.1858	.0338	-.1436	.0222	-.0022	-3	-.0382	.0714	-.1149	.0046	-.0067
-2	.2948	.0393	-.1397	.0338	-.0022	-2	.0726	.0700	-.1347	.0181	-.0068
-1	.3864	.0469	-.1381	.0441	-.0023	-1	.1814	-.0198	-.1517	.0181	-.0068
0	.4954	.0566	-.1343	.0565	-.0025	0	.3132	.0835	-.1761	.0451	-.0071
1	.6131	.0704	-.1397	.0696	-.0028	1	.4583	.0982	-.2015	.0606	-.0078
2	.7679	.0871	-.1408	.0866	-.0038	2	.5767	.1146	-.2154	.0732	-.0087
3	.8769	.1063	-.1436	.1022	-.0052	3	.6722	.1352	-.2230	.0856	-.0104
5	1.0058	.1480	-.1452	.1191	-.0093	5	.8250	.1756	-.2357	.1026	-.0144
7	1.0949	.1985	-.1381	.1311	-.0156	7	.9930	.2353	-.2577	.1211	-.0208
10	1.1147	.2687	-.1518	.1431	-.0255						
15	.9686	.3545	-.1874	.1291	-.0369						
M = 0.90						M = 1.10					
-10	-.5904	.1349	-.0517	-.0651	-.0195	-10	-.5838	.1427	-.0032	-.0324	-.0203
-7	-.4548	.0812	-.0517	-.0448	-.0117	-7	-.3874	.0944	-.0422	-.0193	-.0135
-5	-.2690	.0559	-.0856	-.0209	-.0070	-5	-.2240	.0749	-.0739	-.0089	-.0096
-3	.0437	.0462	-.1509	.0154	-.0040	-3	-.0367	.0690	-.1105	.0025	-.0073
-2	.2034	.0516	-.1678	.0329	-.0032	-2	.0734	.0682	-.1287	.0085	-.0065
-1	.3324	.0623	-.1799	.0472	-.0039	-1	.1652	.0722	-.1430	.0144	-.0068
0	.4461	.0715	-.1727	.0596	-.0044	0	.2846	.0803	-.1633	.0208	-.0070
1	.5467	.0892	-.1872	.0720	-.0053	1	.4223	.0948	-.1876	.0285	-.0076
2	.6451	.1027	-.1799	.0823	-.0064	2	.5471	.1111	-.2071	.0357	-.0087
3	.7544	.1253	-.1920	.0962	-.0083	3	.6463	.1300	-.2153	.0412	-.0105
5	.9118	.1726	-.2114	.1157	-.0131	5	.7987	.1697	-.2291	.0496	-.0143
7	1.0715	.2291	-.2235	.1334	-.0154						

TABLE 6.- THE AERODYNAMIC CHARACTERISTICS OF THE ASPECT RATIO 6 MODEL - Concluded

$$\frac{t}{c} = 0.06 \quad \frac{c_f}{c} = 0.40$$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.40						M = 0.95					
-10	-.2076					-10	-.5620	.1454	-.0497	-.0694	-.0408
-7	.0055					-7	-.3487	.3880	-.0939	-.0413	-.0131
-5	.1694					-5	-.1603	.3245	-.1345	-.0177	-.0093
-3	.3151					-3	.1072	.2959	-.1929	.0147	-.0074
-2	.3879					-2	.2758	.3194	-.2192	.0337	-.0073
-1	.4571					-1	.4038	.3583	-.2431	.0480	-.0077
0	.5154					0	.5131	.4115	-.2431	.0606	-.0086
1	.5973					1	.6266	.4761	-.2477	.0733	-.0098
2	.6520					2	.7306	.5393	-.2569	.0859	-.0115
3	.7066					3	.8285	.5977	-.2615	.0943	-.0137
5	.8341					5	.9784	.2084	-.2836	.1159	-.0190
7	.9324					7	1.1574	.2784	-.3030	.1331	-.0264
10	.9215										
15	1.1145										
20	1.2311										
25	1.2639										
M = 0.60						M = 1.00					
-10	-.2495	.0659	-.0748	-.0318	-.0071	-10	-.5263	.1383	-.0459	-.0645	-.0197
-7	.0170	.0185	-.1207	.0028	-.0022	-7	-.3170	.0990	-.0944	-.0379	-.0132
-5	.2002	.0194	-.1240	.0238	-.0014	-5	-.1535	.0843	-.1297	-.0177	-.0098
-3	.3824	.0255	-.1270	.0443	-.0010	-3	.0558	.0785	-.1729	.0086	-.0087
-2	.4683	.0321	-.1258	.0550	-.0012	-2	.2014	.0818	-.2002	.0255	-.0080
-1	.5534	.0391	-.1136	.0636	-.0017	-1	.3609	.0892	-.2329	.0431	-.0082
0	.6193	.0474	-.1165	.0718	-.0019	0	.4885	.1025	-.2355	.0573	-.0088
1	.6987	.0604	-.1165	.0810	-.0020	1	.5941	.1186	-.2417	.0690	-.0098
2	.7799	.0729	-.1082	.0895	-.0024	2	.6978	.1358	-.2461	.0816	-.0117
3	.8554	.0906	-.1090	.0978	-.0032	3	.7835	.1569	-.2567	.0919	-.0135
5	.9744	.1254	-.1061	.1121	-.0064	5	.9291	.2010	-.2708	.1090	-.0185
7	1.0046	.1792	-.1278	.1173	-.0130	7	1.1005	.2667	-.2946	.1252	-.0253
10	1.1216	.2880	-.1666	.1338	-.0264						
15	.9366	.3437	-.1750	.1176	-.0370						
20	.9177	.4383	-.1834	.1137	-.0480						
M = 0.80						M = 1.05					
-10	-.3272	.0804	-.1069	-.0387	-.0094	-10	-.5107	.1373	-.0410	-.0638	-.0191
-7	-.1334	.0443	-.1436	-.0143	-.0042	-7	-.3156	.0974	-.0855	-.0387	-.0130
-5	.0692	.0295	-.1525	.0092	-.0024	-5	-.1530	.0819	-.1202	-.0189	-.0096
-3	.2618	.0399	-.1487	.0312	-.0022	-3	.0593	.0762	-.1633	.0059	-.0085
-2	.3524	.0477	-.1470	.0413	-.0023	-2	.1683	.0800	-.1815	.0193	-.0082
-1	.4430	.0558	-.1442	.0517	-.0026	-1	.3060	.0880	-.2149	.0341	-.0082
0	.5702	.0717	-.1576	.0662	-.0033	0	.4457	.0988	-.2259	.0500	-.0087
1	.6825	.0842	-.1525	.0784	-.0041	1	.5585	.1148	-.2344	.0619	-.0097
2	.8131	.0982	-.1459	.0917	-.0049	2	.6523	.1327	-.2403	.0724	-.0112
3	.9138	.1188	-.1525	.1055	-.0066	3	.7422	.1524	-.2479	.0842	-.0132
5	1.0271	.1653	-.1626	.1210	-.0111	5	.8856	.1962	-.2657	.1006	-.0179
7	1.1152	.2198	-.1682	.1344	-.0177	7	1.0482	.2606	-.2869	.1161	-.0245
10	1.0145	.2643	-.1693	.1251	-.0262						
15	.8534	.3144	-.1525	.1222	-.0388						
20	.7124	.3367	-.1108	.1214	-.0529						
M = 0.90						M = 1.10					
-10	-.4876	.1167	-.0784	-.0623	-.0173	-10	-.4905	.1319	-.0211	-.0632	-.0184
-7	-.3258	.0737	-.0972	-.0389	-.0101	-7	-.2976	.0912	-.0410	-.0394	-.0129
-5	-.1028	.0581	-.1432	-.0117	-.0059	-5	-.1470	.0777	-.0585	-.0208	-.0095
-3	.1662	.0559	-.1756	.0198	-.0043	-3	.0514	.0741	-.0789	.0033	-.0085
-2	.2886	.0623	-.1794	.0340	-.0044	-2	.1617	.0777	-.0878	.0156	-.0083
-1	.3958	.0721	-.1809	.0460	-.0051	-1	.2811	.0845	-.0984	.0294	-.0083
0	.4986	.0844	-.1857	.0577	-.0059	0	.4097	.0949	-.1073	.0439	-.0087
1	.6254	.1054	-.2051	.0718	-.0075	1	.5236	.1093	-.1134	.0572	-.0097
2	.6800	.1086	-.1881	.0796	-.0076	2	.6118	.1260	-.1162	.0669	-.0111
3	.7828	.1312	-.2003	.0924	-.0099	3	.7036	.1455	-.1195	.0782	-.0132
5	.9206	.1742	-.2099	.1097	-.0145	5	.8414	.1870	-.1268	.0936	-.0176
7	1.0496	.2301	-.2268	.1253	-.0214	7	.9921	.2457	-.1561	.1100	-.0240
10	1.2376	.3302	-.2651	.1444	-.0321						

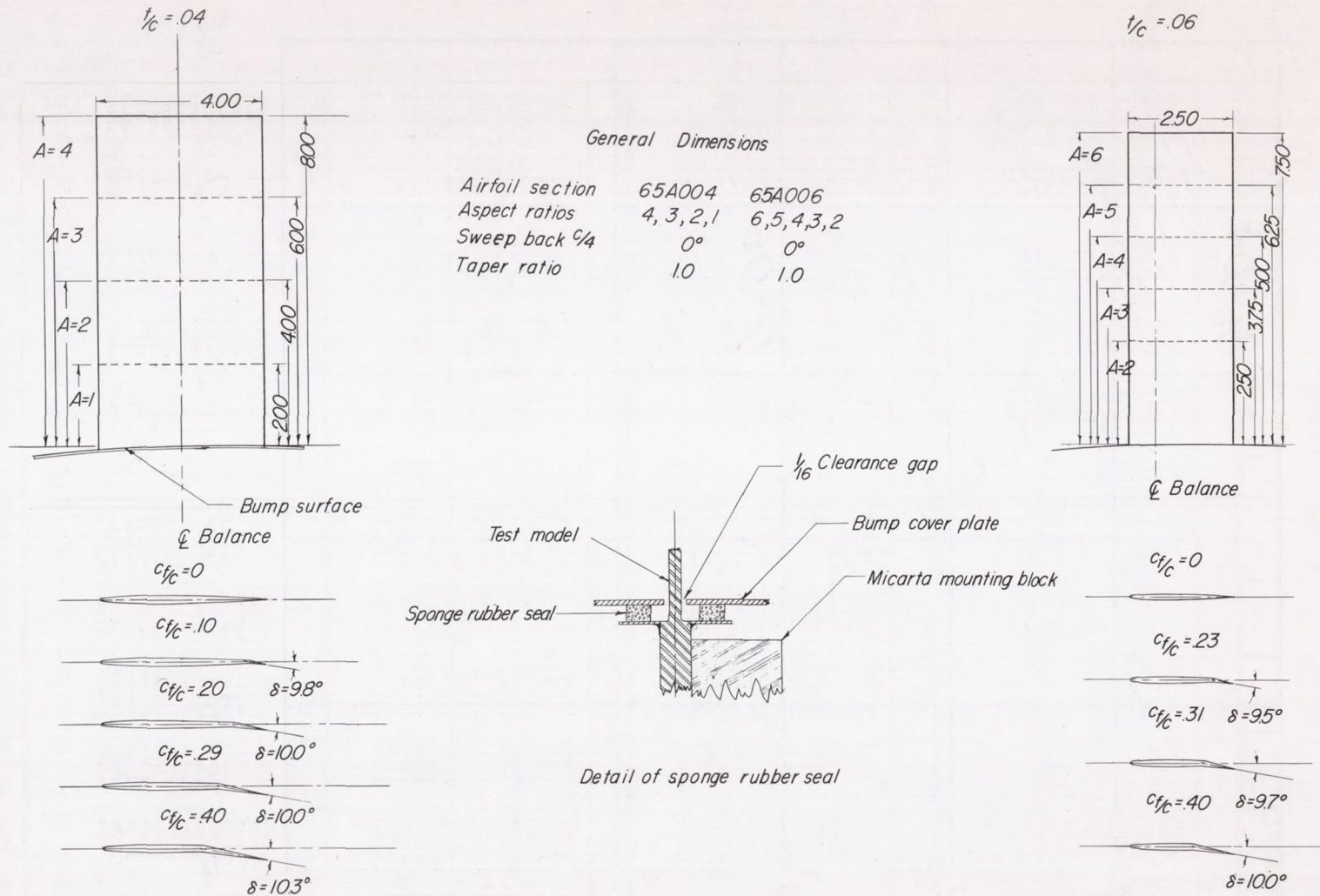


Figure 1.- General dimensions and model geometry. (All dimensions in inches unless otherwise noted.)

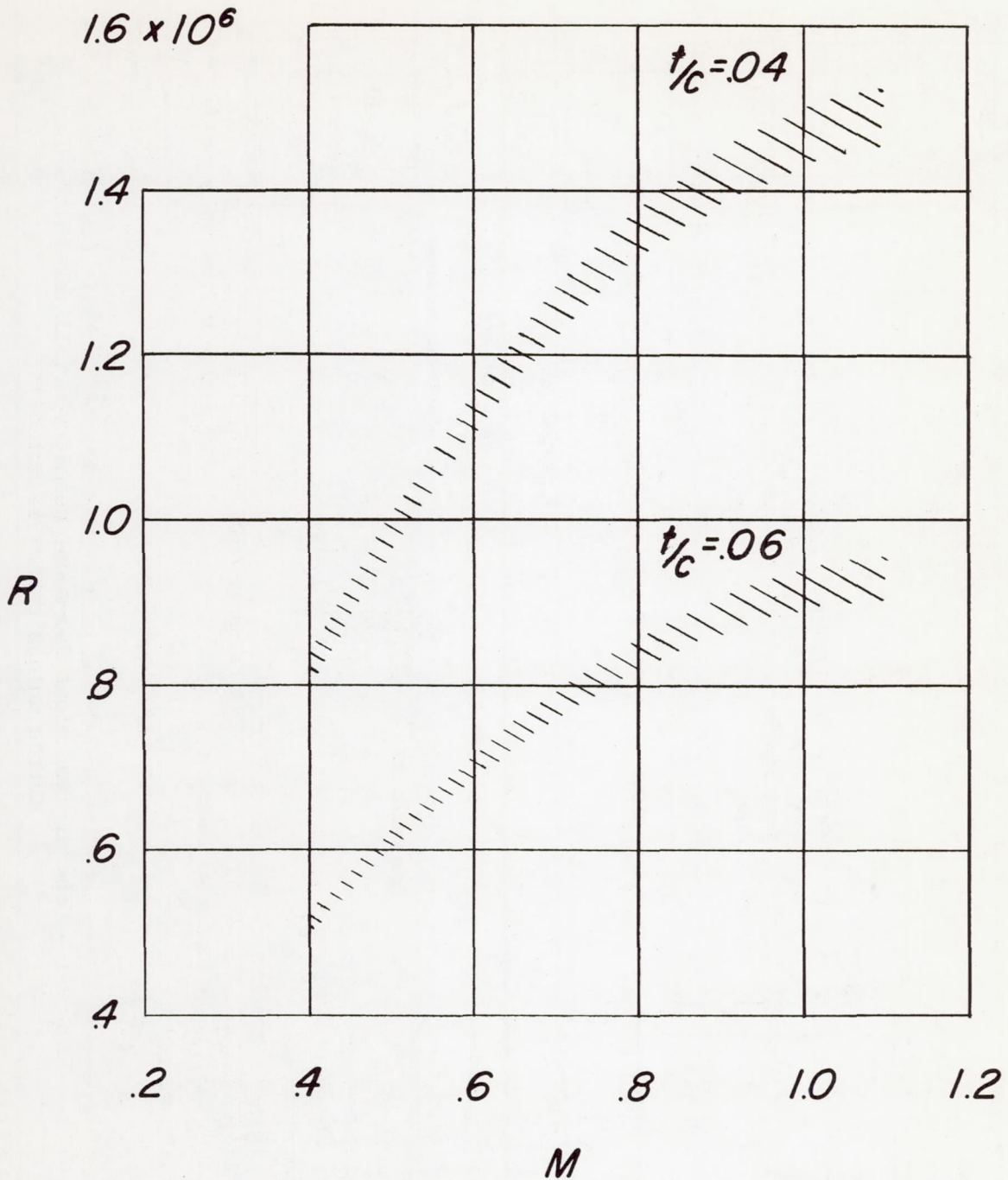
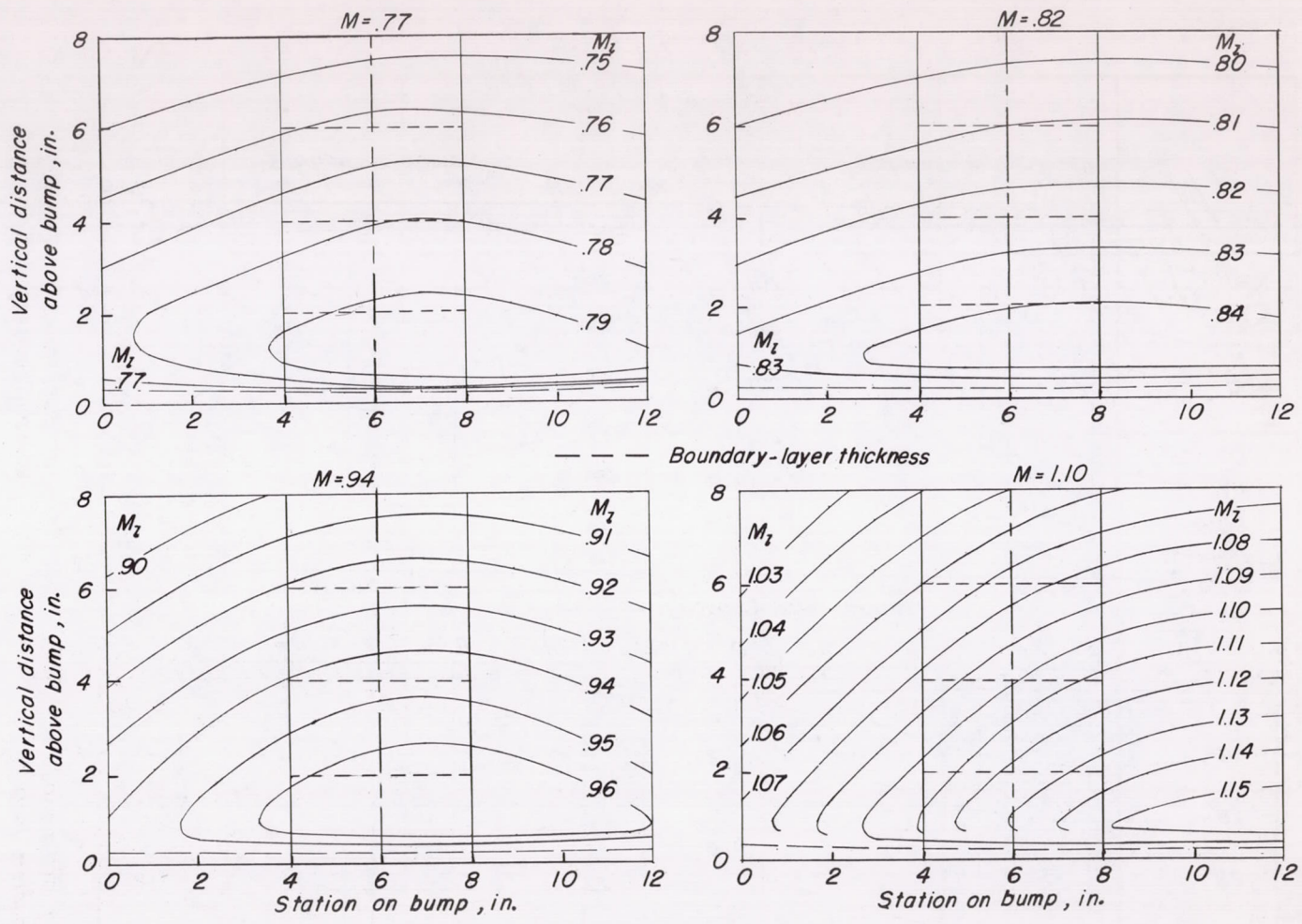
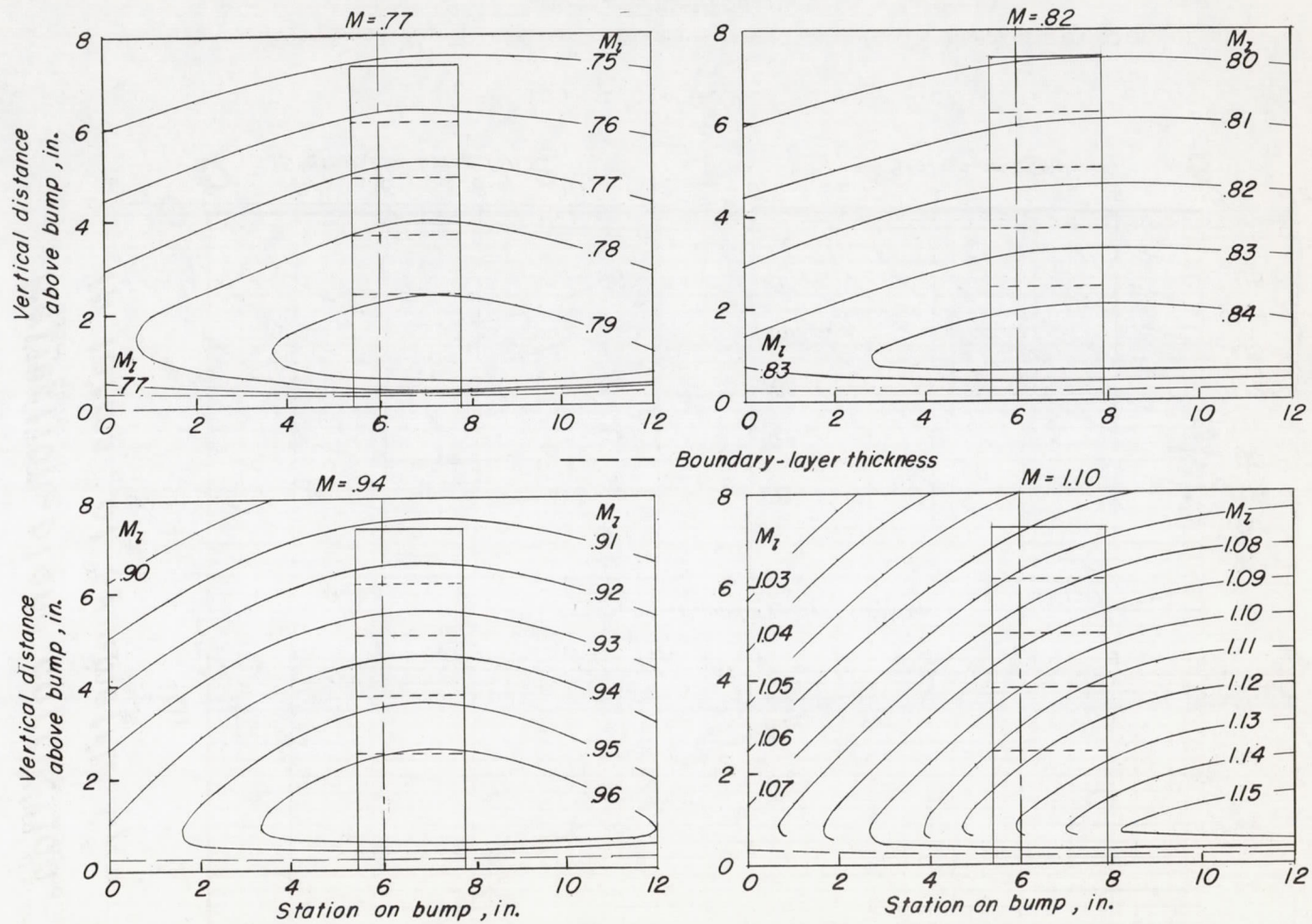


Figure 2.- Variation of test Reynolds number with Mach number.



(a) $t/c = 0.04$.

Figure 3.- Typical Mach number contours over transonic bump in region of model location.



(b) $t/c = 0.06$.

Figure 3.- Concluded.

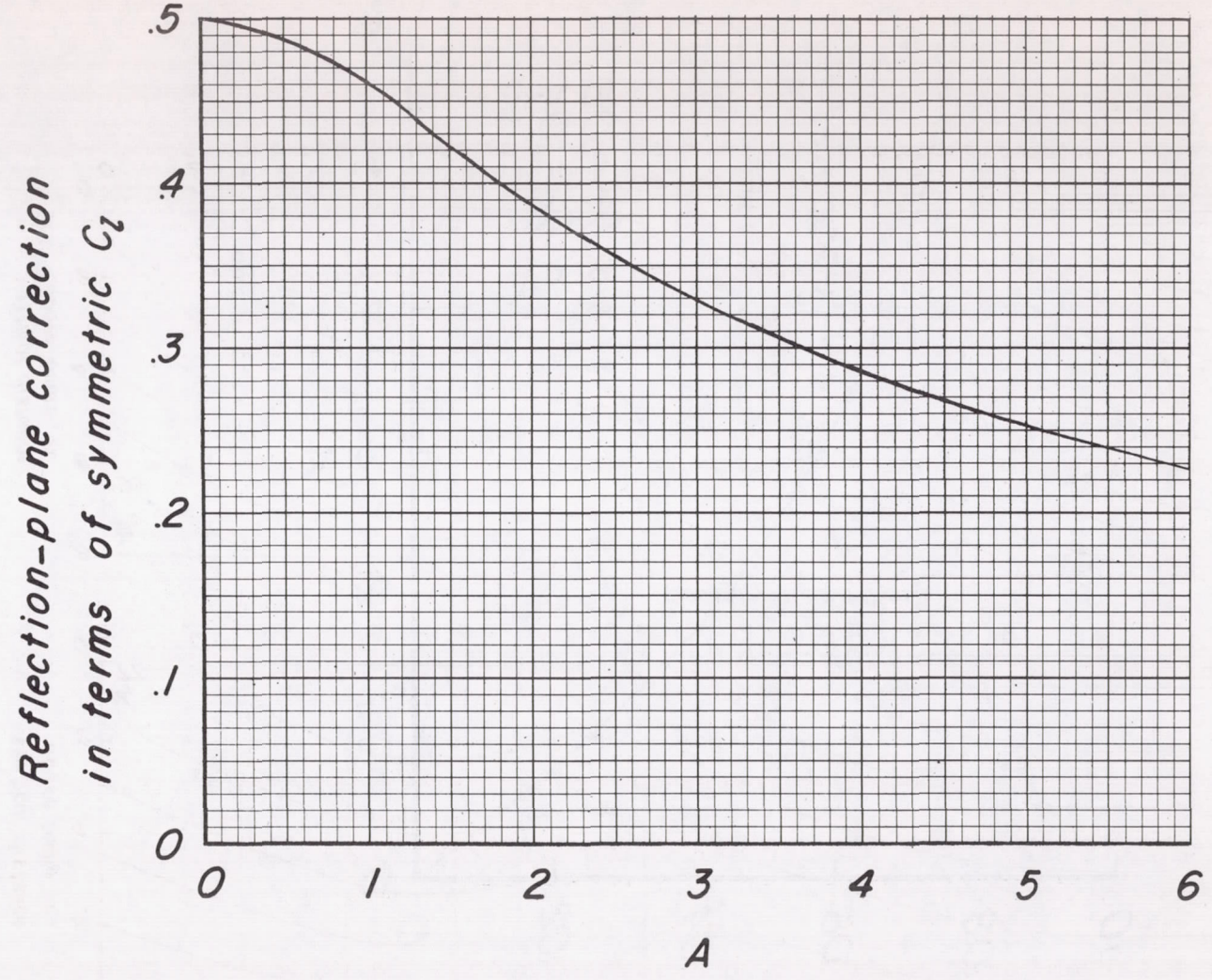


Figure 4.- Variation of reflection-plane correction with aspect ratio for full-span controls on untapered, unswept wings.

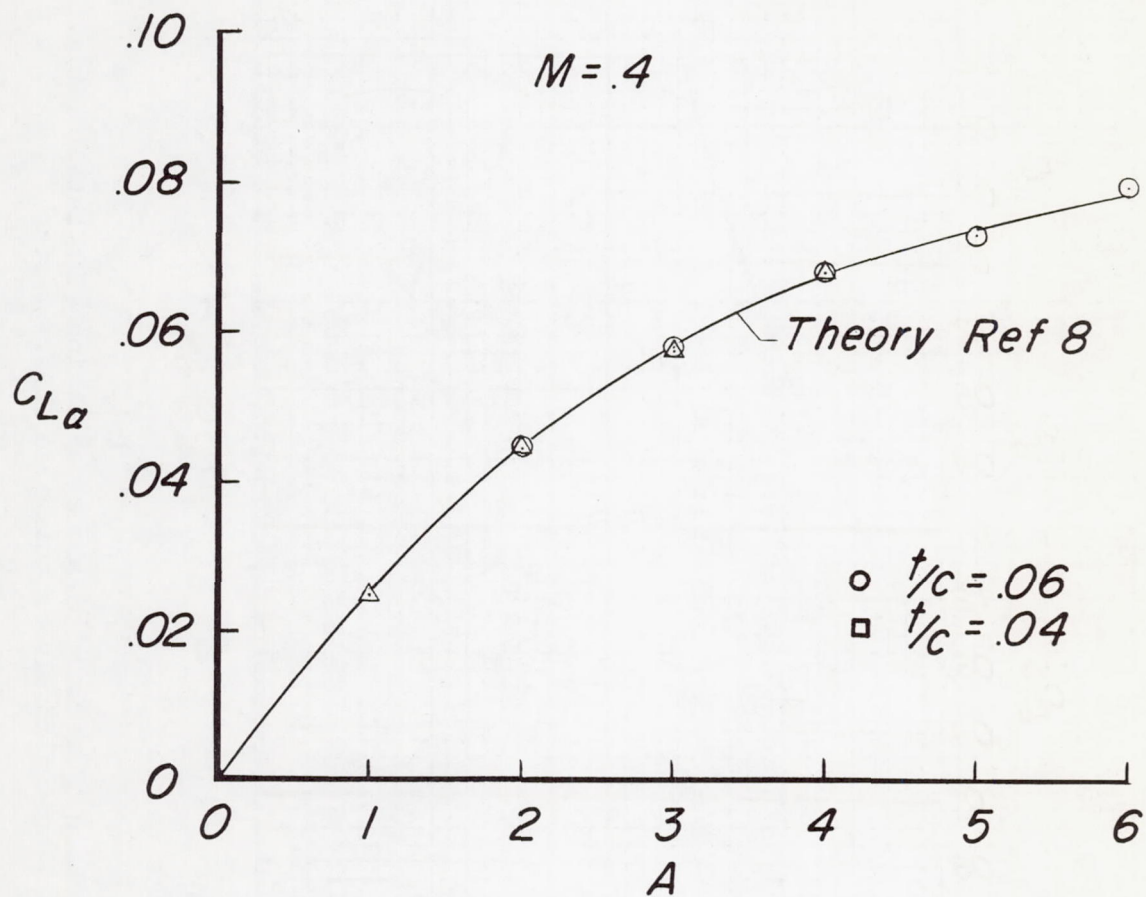


Figure 5.- Variation of the lift-curve slope with aspect ratio at a Mach number of 0.4.

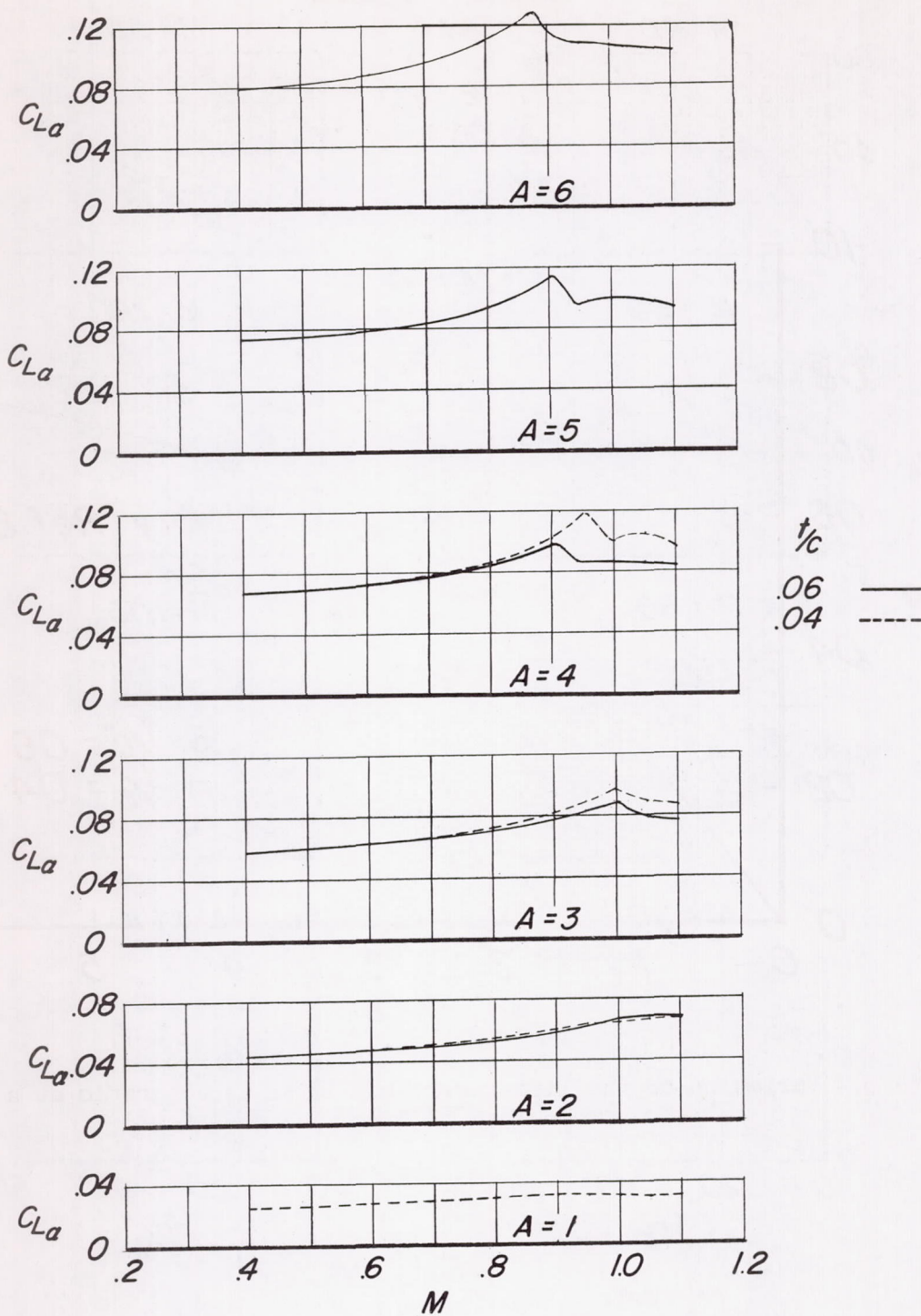
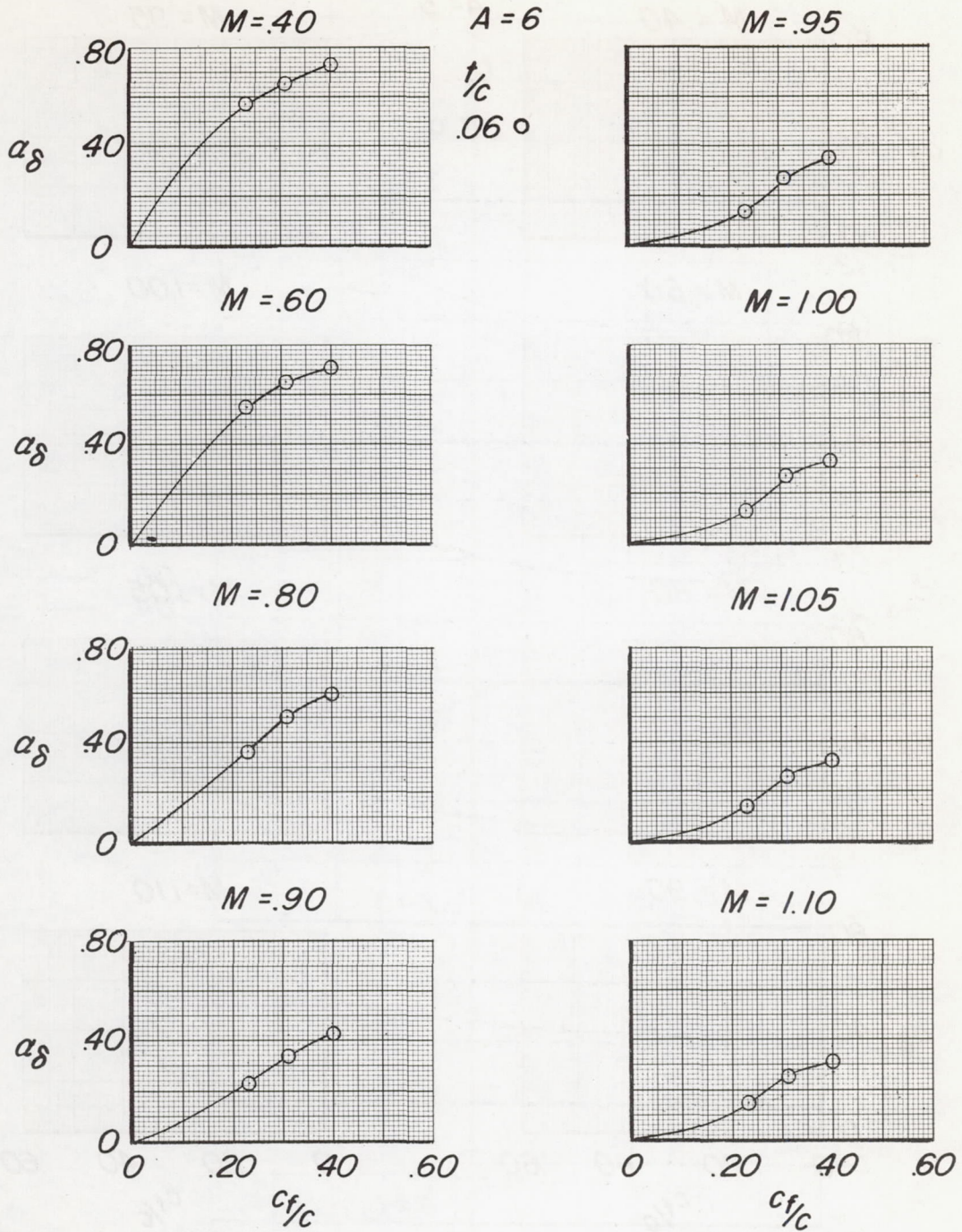
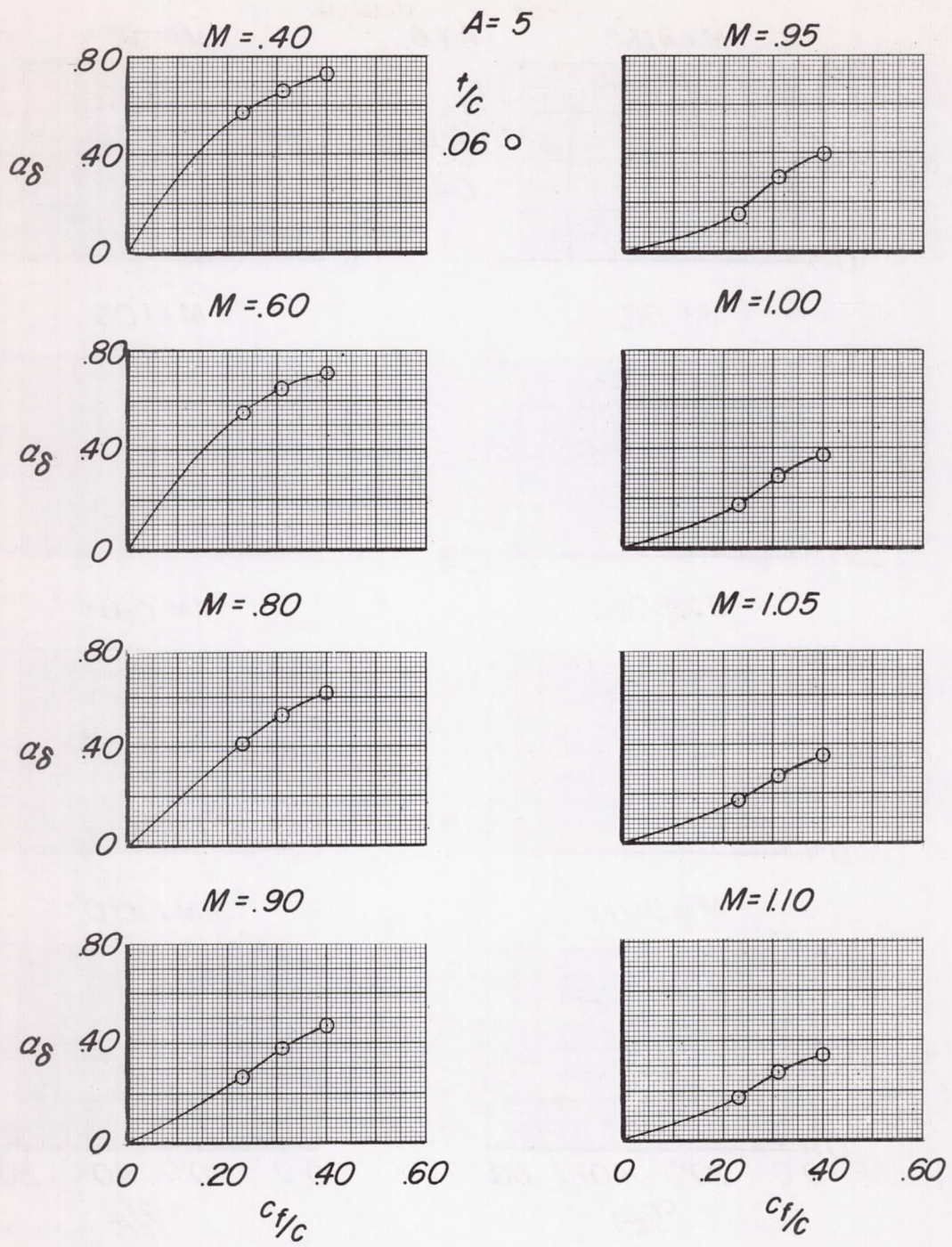


Figure 6.- The variation of lift-curve slope with Mach number.



(a) $A = 6$.

Figure 7.- Flap-effectiveness parameter α_δ as a function of c_f/c .



(b) $A = 5$.

Figure 7.- Continued.

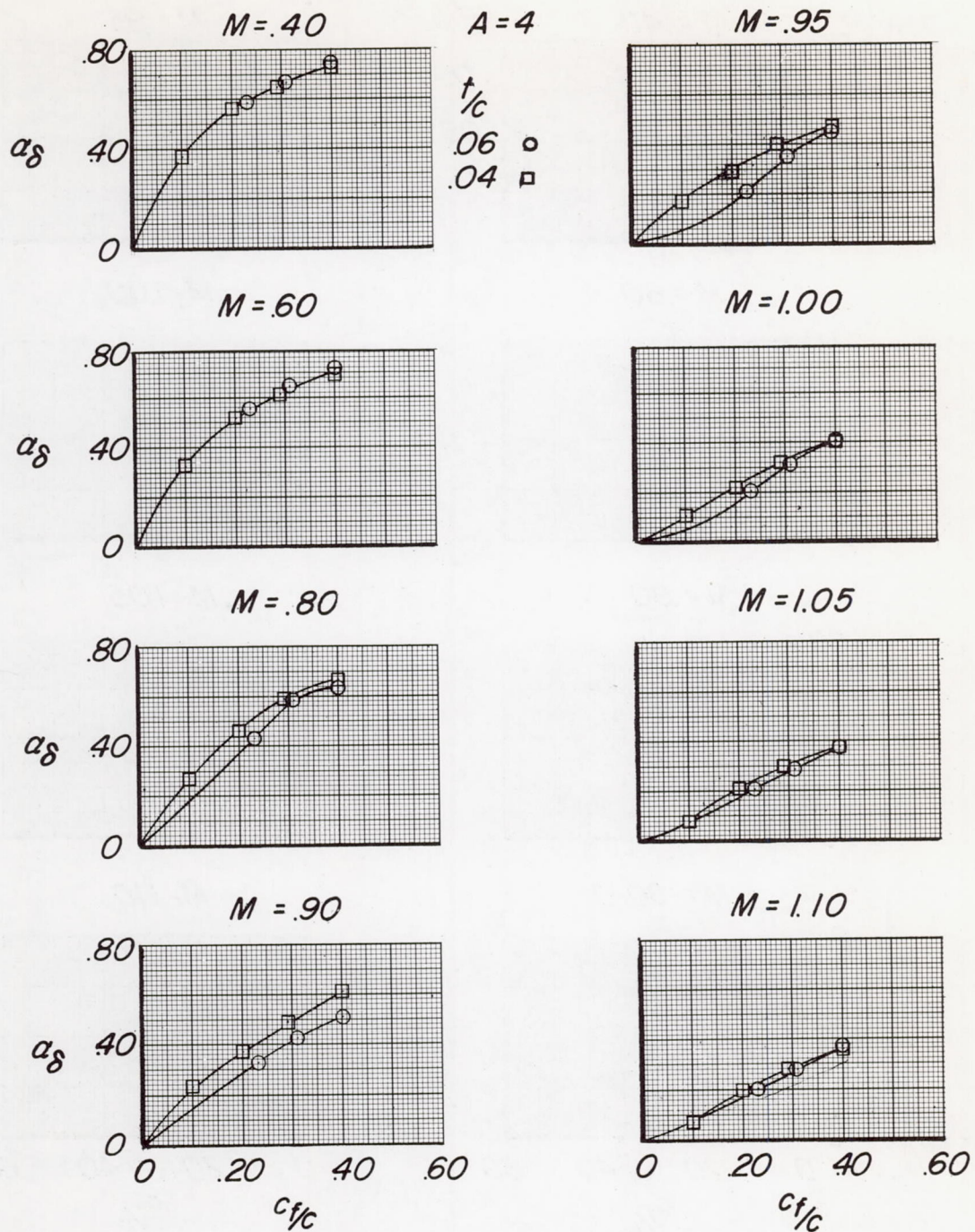
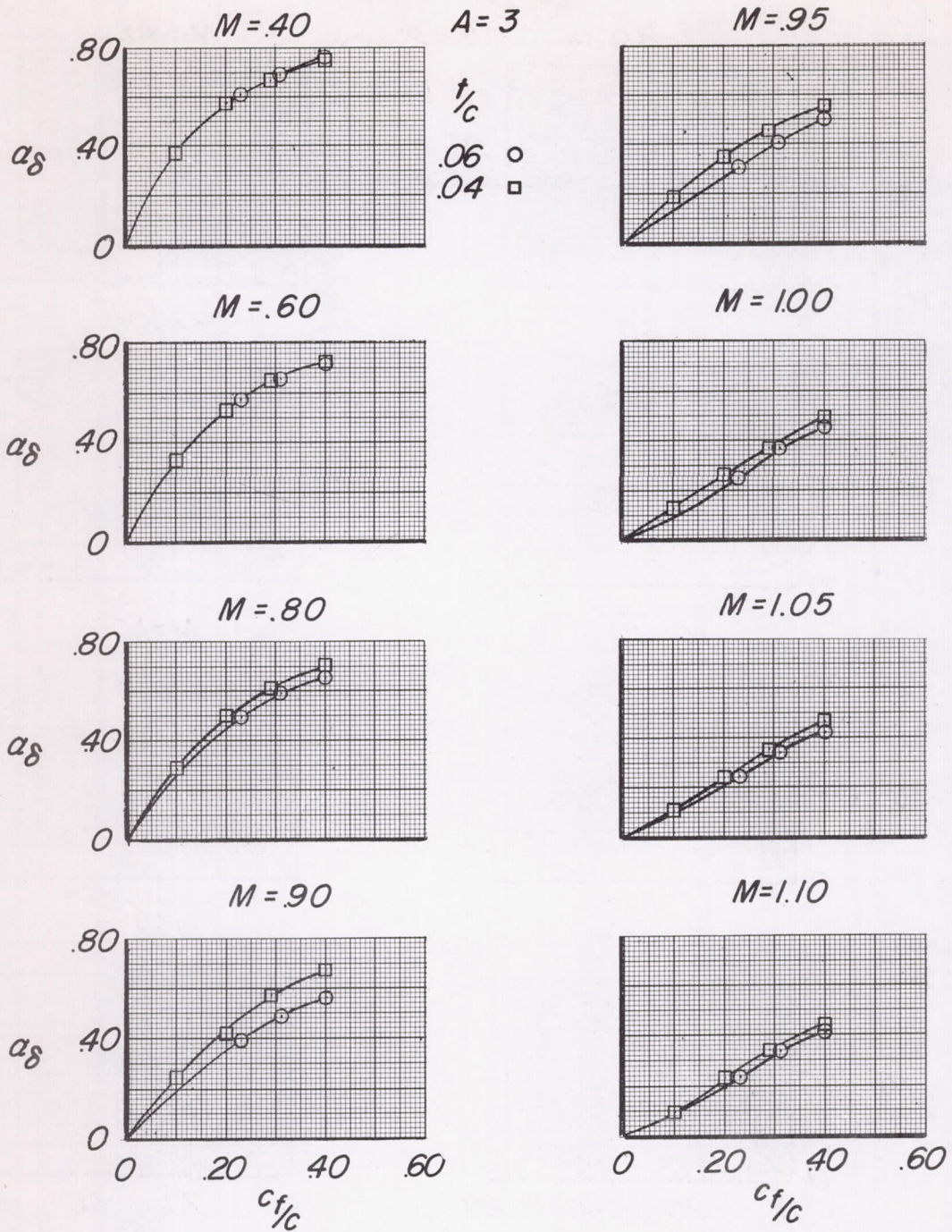
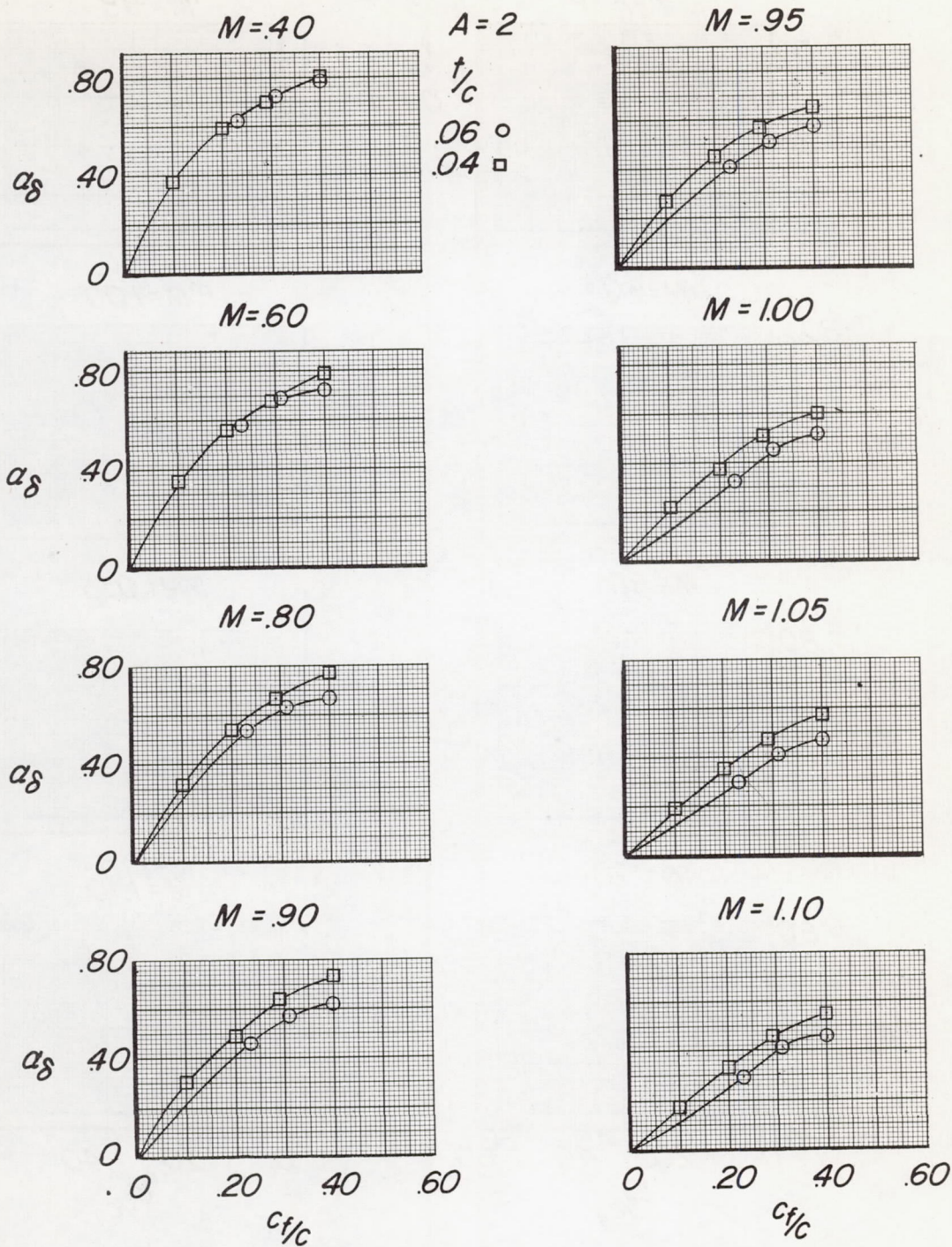
(c) $A = 4$.

Figure 7.- Continued.



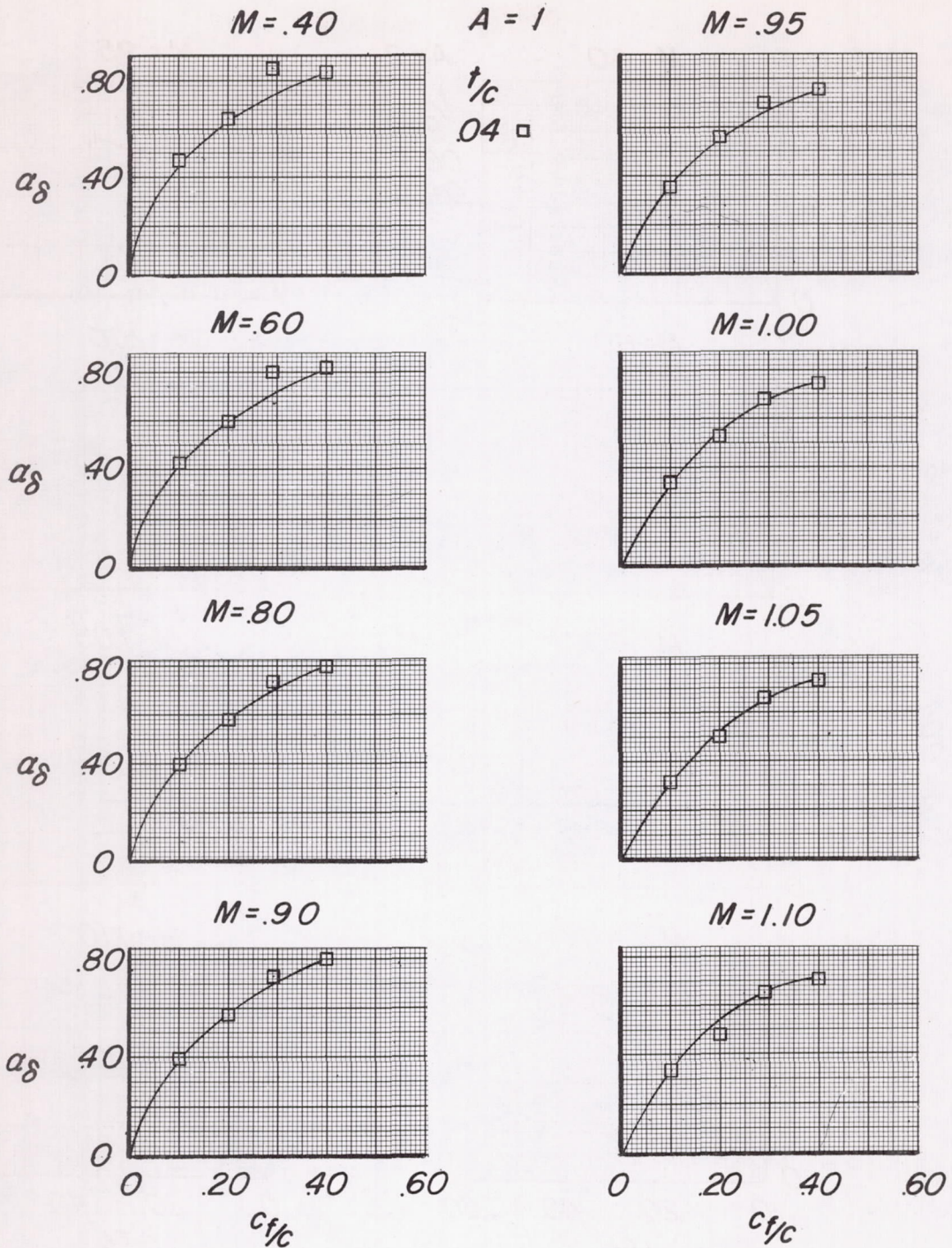
(d) $A = 3$.

Figure 7.- Continued.



(e) $A = 2$.

Figure 7.- Continued.



(f) $A = 1.$

Figure 7.- Concluded.

$t/c = 0.04$		$t/c = 0.06$	
c_f/c		c_f/c	
0.40	○	0.40	○
.31	□	.31	□
.23	◇	.23	◇
.10	△		
		$M = 0.95$	

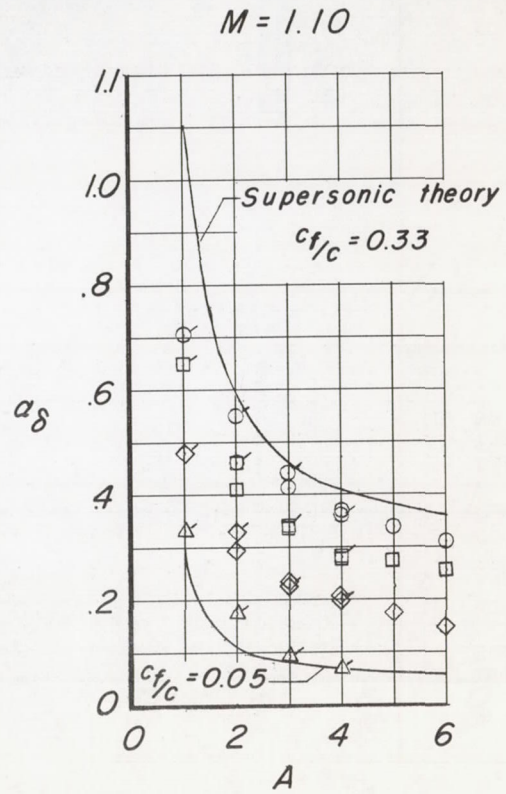
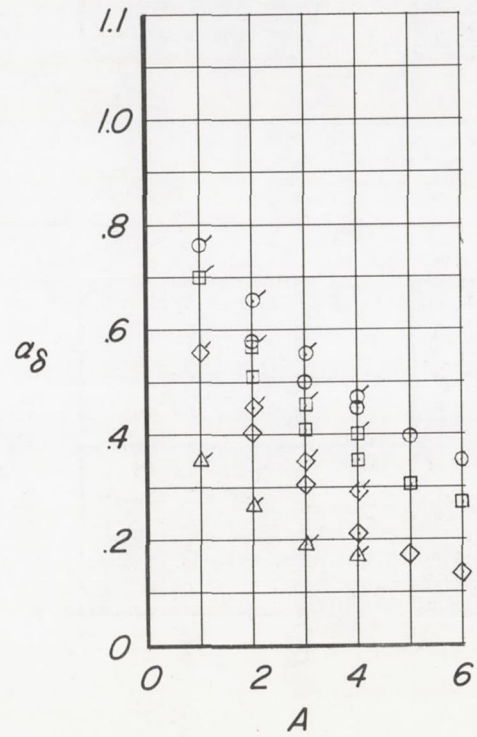
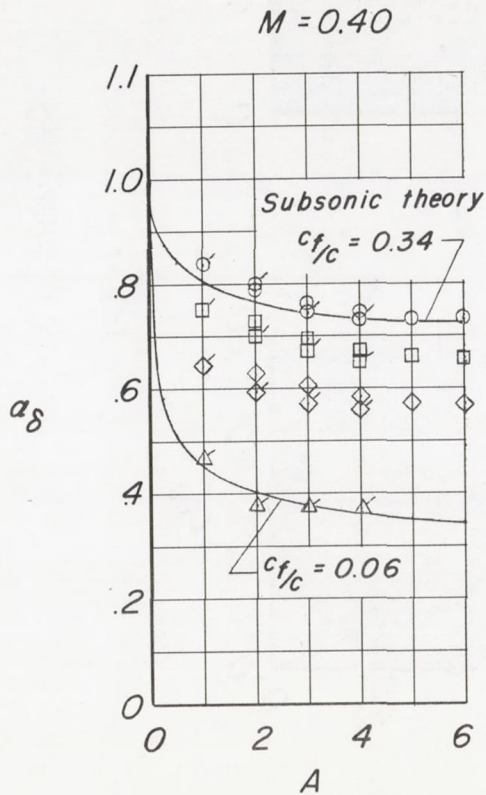


Figure 8.- Variation of α_δ with aspect ratio at various Mach numbers.