NASA TECHNICAL NOTE

NASA TN D-5260

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NASA TN D-5260

AERODYNAMIC LOADS ON DEPLOYED CANARD SURFACES AND ROCKET NOSE SECTION OF THE APOLLO LAUNCH ESCAPE VEHICLE

by William C. Moseley, Jr., and Branch S. Phillips

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION • WASHINGTON, D. C. • JUNE 1969

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ABSTRACT

Wind-tunnel tests were conducted using a 0.150-scale model of the forward section of the Apollo launch escape rocket to obtain the data presented. Pressure data were obtained for the body section of the model. Aerodynamic and pressure data were obtained on the canard surfaces of the model. Three removable canards were used; two were instrumented for pressure data and one was instrumented for force and moment data. Tests were conducted at Mach numbers of 0.68, 1.06, 1.50, and 2.00 and at canard deployment angles of 30°, 60°, 90°, and 115°, with full deployment at the 115° angle. Results of these tests are presented in tabular and graphic forms.

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AERODYNAMIC LOADS ON DEPLOYED CANARD SURFACES AND ROCKET NOSE SECTION OF THE APOLLO LAUNCH ESCAPE VEHICLE

By William C. Moseley, Jr., and Branch S. Phillips*
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SUMMARY

To obtain aerodynamic characteristics and pressure data necessary for vehicle design, a series of wind-tunnel tests for the forward portion of the Apollo launch escape rocket was conducted by using a 0.150-scale model of that section of the vehicle. The test model included deployable canard surfaces that are necessary to provide the destabilization increment in pitching moment that is required to rotate the Apollo launch escape vehicle to the desired blunt-face-forward flight attitude after an abort. Aerodynamic characteristics and pressure data obtained during this series of wind-tunnel tests included total loading (determined by strain-gage balance measurements) and steady-state pressure distribution over the canard surfaces and over the surface of the escape rocket nose section. Three removable canard surfaces were used; one was mounted on a strain-gage balance and two were instrumented for pressure-measurement data. These test data were obtained for the four canard deployment angles of 30°, 60°, 90°, and 115°, and for the four Mach numbers of 0.68, 1.06, 1.50, and 2.00. The angle-of-attack range was approximately from -120° to +120°. The tests were conducted in the North American Aviation, Inc., trisonic wind tunnel.

INTRODUCTION

Responsibility was given to NASA to develop a manned vehicle that could travel to and land on the surface of the moon. In support of the development and design of such a vehicle, the Apollo wind-tunnel test program was established. A history of the development program and of the events that led to the establishment of the basic Apollo configurations can be found in reference 1. This extensive wind-tunnel program was conducted to acquire design data and aerodynamic characteristics of the flight vehicle. Aerodynamic static and dynamic stability characteristics as well as pressure and load data were necessary to plan the Apollo flight program. These data included aerodynamic characteristics of the entire launch escape vehicle and of its several modular parts. The stability characteristics of the Apollo command module (CM) are presented

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in reference 2. Aerodynamic characteristics of the Apollo launch escape vehicle (LEV) as determined by wind-tunnel tests are discussed in reference 3.

Of the modular parts of the LEV, the deployable canard surfaces are of primary importance. The launch escape system will quickly transport the CM away from a malfunctioning booster. However, while the necessary escape distance is being obtained, the LEV will be in a rocket-forward position. For proper deployment of the earth-landing system, the flight attitude of the CM must be heat-shield-forward or blunt-face-forward. The canard surfaces are designed to provide the necessary destabilization increment in pitching moment required to rotate the CM to the desired blunt-face-forward flight attitude. More detailed data for the basic function and aerodynamic stability characteristics of the Apollo LEV with canard surfaces deployed can be found in reference 4.

The purpose of this paper is to present detailed data obtained during wind-tunnel tests conducted to determine loading and steady-state pressure distribution over the canard surfaces and the surface of the escape rocket nose section. The loading and pressure distributions are presented as functions of Mach numbers, angles of attack, and angles of canard deployment.

Test data were obtained for a single canard at canard deployment angles of 30°, 60°, 90°, and 115°. The last angle, 115°, represents full canard deployment. The tests were made at Mach numbers of 0.68, 1.00, 1.50, and 2.00 and over an angle-of-attack range from -120° to +120°. Reynolds numbers for the tests varied from 15.8×10^6 to 17.5×10^6, based on the maximum command module diameter. The tests were conducted in the North American Aviation, Inc., trisonic wind tunnel.

SYMBOLS

C_A axial-force coefficient for the system of body axes with origin at balance center, $\frac{\text{axial force}}{q_\infty S}$

C_L center line

C_ℓ rolling-moment coefficient for the system of body axes with origin at balance center, $\frac{\text{rolling moment}}{q_\infty Sd}$

C_m pitching-moment coefficient for the system of body axes with origin at balance center, $\frac{\text{pitching moment}}{q_\infty Sd}$

C_N normal-force coefficient for the system of body axes with origin at balance center, $\frac{\text{normal force}}{q_\infty S}$

C_n yawing-moment coefficient for the system of body axes with origin at balance center, $\frac{\text{yawing moment}}{q_\infty Sd}$

C_P pressure coefficient, $\frac{P - P_0}{q_\infty}$

C_Y side-force coefficient for the system of body axes with origin at balance center, $\frac{\text{lateral force}}{q_\infty S}$

C'_A axial-force coefficient for the system of canard axes with canard surface center-line origin at X/L = 363.7 in., $\frac{\text{axial force}}{q_\infty S}$

C'_ℓ rolling-moment coefficient for the system of canard axes with canard surface center-line origin at X/L = 363.7 in., $\frac{\text{rolling moment}}{q_\infty Sd}$

C'_m pitching-moment coefficient for the system of canard axes with canard surface center-line origin at X/L = 363.7 in., $\frac{\text{pitching moment}}{q_\infty Sd}$

C'_N normal-force coefficient for the system of canard axes with canard surface center-line origin at X/L = 363.7 in., $\frac{\text{normal force}}{q_\infty S}$

C'_n yawing-moment coefficient for the system of canard axes with canard surface center-line origin at X/L = 363.7 in., $\frac{\text{yawing moment}}{q_\infty Sd}$

C'_Y side-force coefficient for the system of canard axes with canard surface center-line origin at X/L = 363.7 in., $\frac{\text{lateral force}}{q_\infty S}$

d maximum body diameter, 154 in. (full scale)

d' rocket body diameter, 26 in. (full scale)

M free-stream Mach number

P pressure at a given instrumentation point

P_0 free-stream static pressure

q_∞	free-stream dynamic pressure
S	maximum cross-sectional area of the command module perpendicular to X-axis of the body, 18 626.5 sq in.
S_c	single-canard maximum planform area, 791.57 sq in.
S/S_c	ratio of maximum cross-sectional area of the command module perpendicular to X-axis of the body compared to the single-canard maximum planform area, 23.531
X, Y, Z	body reference axes
X', Y', Z'	canard reference axes
X/D'	orifice location as function of rocket body diameter and distance from rocket nose
X/L	linear measurement from tower base, in.
α	angle of attack, referenced to rocket motor center line, deg
β	angle of sideslip, deg
δ	canard deployment angle, deg
ϕ	pressure instrumentation angle, measured clockwise from top of model looking upstream, deg

MODEL, TESTS, AND DATA ACCURACY

Model

A 0.150-scale model of the forward section of the launch escape rocket motor was used for this series of tests. This model represented that portion of the launch escape rocket motor which is forward of the full-scale station X/L = 205.9 inches (figs. 1 and 2). The model was designed to yield total load characteristics as well as load distribution. One rocket body and three movable and detachable canard surfaces, one left and two right, were constructed for this model. Left and right designations are from a forward-looking position. Of the three canard surfaces, the left canard was used to obtain force and moment data, and the two right canards were used to obtain pressure data. The two right canards, one with inner surface instrumentation and the other with outer surface instrumentation, contained 14 and 15 usable pressure taps, respectively (figs. 3 and 4). The left canard (for force and moment data) was attached to an internal balance, while the two right canards (for pressure data) were mounted rigidly to the model body. The left canard was totally isolated from the model body, which allowed force data for the left canard only to be transmitted directly into the balance. The two right canards were designed to be used alternately for positive and negative angle-of-attack ranges. The maximum planform area S_c of a single canard was 791.57 sq in.

For conversion to a more familiar aerodynamic-coefficient reduction area, the ratio S/S_c can be used, where S represents the maximum cross-sectional area of the command module perpendicular to the X-axis of the body (18 626.5 sq in.).

The nose section of the model rocket body contained 22 instrumented orifices or pressure taps that were located at selected longitudinal and radial positions (fig. 5).

Tests

The test program was designed to yield static aerodynamic stability characteristics and pressure distribution characteristics of the canards. Data for a single canard were obtained from tests conducted at Mach numbers of 0.7, 1.1, 1.5, and 2.0. The angle-of-attack range extended from -120° to +120°. The canard deployment angles used in the tests were 30°, 60°, 90°, and 115°. Canards deployed at 115° were considered fully extended. Front views of the left half of the loads test model are shown in figure 6 with canards at the various deployment angles.

To obtain the angle-of-attack range of -120° to +120°, three bent-sting adapters were used to mount the test model (fig. 7). In addition to the three bent-sting adapters, it was necessary to roll the model 180° to test negative angles of attack. Typical model installations in the wind tunnel are shown in figures 8, 9, and 10; and loads test models with various canard deployment angles are shown mounted on bent stings.

Data Accuracy

The balance and recording instruments were set to provide maximum sensitivity. The probable aerodynamic-coefficient errors shown in the following table are for the canard-axes system; the body-axes coefficient data should be within these limits.

Coefficients	Mach number			
	0.68	1.06	1.50	2.00
$\pm \Delta C'_N$	0.00045	0.00038	0.00033	0.00033
$\pm \Delta C'_A$	.00028	.00024	.00021	.00021
$\pm \Delta C'_Y$	.00042	.00035	.00031	.00030
$\pm \Delta C'_m$	.00036	.00030	.00027	.00027
$\pm \Delta C'_n$	.00033	.00027	.00024	.00024
$\pm \Delta C'_\ell$	.00071	.00059	.00052	.00052
$\pm \Delta C_P$	.01110	.00920	.00810	.00820

RESULTS AND DISCUSSION

Presentation of Results

The data obtained in this series of wind-tunnel tests consist of certain finite measurements of selected aerodynamic forces, moments, and pressures. These selected data are presented in graphic form. For pressure or load distribution testing, presentation of data is accomplished principally by tables. Selected aerodynamic characteristics of the loads test model obtained for Mach numbers of 0.7, 1.1, 1.5, and 2.0 and at canard deployment angles of 30°, 60°, 90°, and 115° are shown in figures 11 and 12. Data presented in figure 11 were measured about the body-axes system, while data presented in figure 12 were measured about the canard-axes system. The canard- and body-axes systems are not parallel and will differ for each deployment angle. Therefore, force data for the two systems are different. Selected aerodynamic characteristics of the loads test model obtained for Mach numbers of 0.7, 1.1, 1.5, and 2.0 and at only the full canard deployment angle of 115° are presented in figures 13 and 14. Data presented in figure 13 were measured about the body-axes system, while data presented in figure 14 were measured about the canard-axes system.

Selected aerodynamic characteristics of the loads test model are presented in figures 15 and 16 as measured about the body axes for canard deployment angles of 30°, 60°, 90°, and 115°. A Mach number of 0.70 was used in figure 15, while in figure 16 a Mach number of 2.0 was used. Selected aerodynamic characteristics of the loads test model are presented in figures 17 and 18 as measured about the canard axes for canard deployment angles of 30°, 60°, 90°, and 115°. The data presented in figure 17 were obtained for a Mach number of 0.70, while the data presented in figure 18 were obtained for a Mach number of 2.0.

Canard pressure data for selected angles of attack and for the full deployment angle of 115° are presented in figures 19, 20, and 21. Data presented in figure 19 were obtained for a Mach number of 0.70; data in figure 20, for a Mach number of 1.1; and data in figure 21, for a Mach number of 2.0. Pressure data are presented in figure 22 from the rocket nose section model for selected angles of attack, for the full canard deployment angle of 115°, and for selected Mach numbers. Pressure distribution data obtained for a single canard from the loads test model for Mach numbers of 0.7, 1.1, 1.5, and 2.0, for canard deployment angles of 30°, 60°, 90°, and 115°, and for selected angles of attack from approximately -120° to +120° are presented in tables I to XVI.

Discussion

The loads test model was designed to provide aerodynamic loads data necessary for the detailed design of the canard system, which includes both the canard surfaces and a deployment system. The maximum canard deployment angle is 115°, with the closed position designated as 0°. Designed to be pyrotechnically activated, the canard deployment system has a maximum allowable deployment time of 0.25 second. The system necessarily has a shock attenuation system and a positive locking mechanism. The positive locking mechanism was designed to hold the canard surfaces in an open

position even when they are not fully deployed. The subsequent design problem was one of definition of the aerodynamic loads during deployment of the canard surfaces and of assurance that the design was adequate with either an assistant or a resistant aerodynamic load.

Load characteristics. - The aerodynamic characteristics of the Apollo launch escape vehicle with postabort canard surfaces deployed are presented in reference 4. The aerodynamic characteristics presented in this paper (figs. 11 to 18) were determined for a single canard. Deployment angles of 30°, 60°, 90°, and 115° (full deployment) were investigated. For convenience of the designer, data are presented about both a body (rocket) system of axes and a canard system of axes (fig. 1). The canard-axes system has its origin at X/L = 363.7 inches on the midpoint of the canard surface. To remain in the plane of the canard surface at all times, the axes system rotates with the canard surface. These data were determined at a subsonic Mach number, at a near sonic Mach number, and at two supersonic Mach numbers. The gross loadings under symmetrical loading conditions were considered adequate to define the maximum design loads. The data indicate some scatter, primarily at extremes of the angle-of-attack ranges for each model-sting installation; but variations of the aerodynamic coefficient with the angle of attack generally are well defined.

Pressure-coefficient data. - The static pressure data are presented in tabulated coefficient form in tables I to XVI. Two right-hand canards were instrumented with 14 and 15 usable pressure orifices. One of these canards had pressure taps on the outer surface, while the other had pressure taps on the inner surface. These two canards were interchanged according to the angle-of-attack range under investigation. Canard-pressure coefficient data for full deployment (115°) are presented for selected angles of attack and Mach numbers in figures 19 to 21. Selected plots of nose-section pressure data are presented in figure 22.

CONCLUDING REMARKS

A series of wind-tunnel tests was conducted by using a 0.150-scale model of the forward section of the launch escape rocket to obtain aerodynamic characteristics and pressure data. The test model included deployable canard surfaces which were necessary to provide the destabilization increment in pitching moment needed to rotate the escape vehicle to the desired blunt-face-forward flight attitude after an abort. By using three removable canard surfaces (two instrumented for pressure data and one for force and moment data), tests were conducted for Mach numbers of 0.68, 1.06, 1.50, and 2.00 and for canard deployment angles of 30°, 60°, 90°, and 115° (115° equals full deployment). The angle-of-attack range was approximately from -120° to +120°.

Manned Spacecraft Center
National Aeronautics and Space Administration
Houston, Texas, February 26, 1969
914-50-17-08-72

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TABLE I. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 0.70 AND WITH THE CANARD DEPLOYMENT ANGLE = 30°

Orifice number	Pressure coefficient, C_P									
	α = -99.5°	α = -78.5°	α = -19.6°	α = -1.07°	α = 1.52°	α = 19.5°	α = 20.1°	α = 39.0°	α = 78.3°	α = 99.4°
1	-0.6487	-1.0581	0.8833	1.1353	1.1332	0.9045	0.8815	0.0932	-0.8585	-0.6455
2	.6188	.9508	.5920	.2824	.2073	.0267	.0494	-.2197	-.6571	-.8485
3	0	0	0	0	0	0	0	0	0	0
4	.8581	1.1065	-.7286	-.9768	-.7216	-.3547	-.3255	-.2547	-.5476	-.5135
5	1.0418	1.1084	.0665	-.1389	-.1421	-.0465	-.0560	-.0394	-.5322	-.5200
6	1.0659	1.1038	.0796	-.0497	-.0596	.0133	.0062	-.0409	-.5518	-.5009
7	1.0740	1.0764	.0986	-.0310	-.0297	.0755	.0736	-.1286	-.4902	-.5090
8	-1.0052	-1.2395	-.2153	.0112	.0146	-.1394	-.1435	-.2913	-1.4379	-1.3550
9	-.5878	-.7073	-.3469	-.0818	-.0439	.2955	.2939	.3501	.5222	.2284
10	-.6157	-.8706	-.4769	-.1660	-.1603	.0293	.0396	.4404	.9000	.4931
11	-.5016	-.6308	-.3139	.0062	-.0683	.1478	.1425	.4947	1.0694	1.0287
12	-.4118	-.5352	-.3427	-.2172	-.2125	-.1072	-.0843	.4488	.8775	.8962
13	-.7231	-.4961	-.2370	.0297	.0328	-.2259	-.2523	-.7829	-.9479	-.9795
14	-.9847	-1.1211	-.4484	-.0387	.0279	.3252	.3435	.5041	.3241	-.8302
15	-.5230	-.8131	-.1298	.1492	.1689	.2833	.3007	.3530	.5349	.3611
16	0	0	0	0	0	0	0	0	0	0
17	-.4707	-.5555	-.4239	-.3239	-.3003	-.0017	.0046	.3895	.8402	.8208
18	-.4521	-.6292	-.2153	-.0674	-.0971	.2071	.2179	.4573	.5533	.4918
19	-.5642	-.8356	-.3184	-.0583	.0020	.3837	.3968	.8415	1.0308	-.0648
20	-.4300	-.4829	-.0296	.1659	.2256	.5208	.5408	.9116	1.0562	.6997
21	-.4595	-.5616	-1.0191	-1.0816	-1.0781	-.4921	-.4594	.3510	1.1254	.8254
22	-.4273	-.5517	-.2680	-.1474	-.1267	.0933	.1033	.5063	1.1079	1.0468
23	-.4200	-.5776	.1064	.2865	.3658	.5845	.5751	.8045	1.1137	.9476
24	-.5286	-.4878	-.1998	-.0591	-.0675	-.1399	-.1467	-.3023	-.0256	-.0402
25-40	-1.5232	-1.2054	.0067	.2586	.0527	.2613	.2377	-.0208	.3295	.1779
26-41	-1.1548	-.9896	-.0755	.0263	.0860	.3104	.2879	-.2143	.4826	.4301
27-42	-.8599	-.9108	-.1552	-.0173	.1937	-.3067	-.2903	-.2849	.0440	.4541
28-43	-.2219	-.3029	-.1461	-.0383	.1550	-.2976	-.5392	-.9592	-.9037	-1.2344
29-44	-.7713	-.7794	-.0920	.1825	-.0275	.3062	.2773	.3906	.7905	.5648
30-45	-2.0426	-1.7746	-1.0718	-.1511	-.8961	-.1498	-.1702	-.1019	.0568	-.2436
31-46	-1.2638	-1.2710	-1.5243	.2737	-1.4778	.4376	.3863	.6668	.8926	.6718
32-47	-.5699	-.7174	-1.5839	0	-1.5754	0	0	0	0	0
33-48	-.6290	-.6941	-1.4357	.3804	-1.3848	.1556	.1774	.3452	.9521	.7402
34-49	-.6645	-.6962	-.8254	.1458	-.6192	.2712	.2579	.4426	.8114	.7248
35-50	-.6702	-.7172	-.2400	-.4380	-.2111	-.1248	-.1172	.3290	1.0473	1.0052
36-51	-.4316	-.4800	-.4016	-.1099	-.2896	-.6127	-.6235	-1.3656	-1.3290	-.9952
37-52	-1.2703	-1.3520	-.2452	-.0046	-.0943	-.1695	.0566	.3931	1.0225	.9311
38-53	-.6385	-.7206	-.2195	-.2197	-.1608	.0690	.0623	.4155	.9896	1.0480
39-54	-.4856	-.6197	-.2040	-.2181	-.1343	.0123	.0409	.3289	.7555	.7820

TABLE II. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.10 AND WITH THE CANARD DEPLOYMENT ANGLE = 30°

Orifice number	Pressure coefficient, C_p											
	α = -99.6°	α = -78.5°	α = -59.2°	α = -38.4°	α = -19.4°	α = -1.19°	α = 1.55°	α = 19.4°	α = 38.9°	α = 59.6°	α = 78.9°	α = 99.8°	α = 118.9°
1	-0.6999	-0.7783	-0.3174	0.6362	1.1767	1.3300	1.3300	1.1894	0.6037	-0.2324	-0.5456	-0.6905	-0.6057
2	.7981	1.1753	1.3066	1.1038	.8140	.4939	.4532	.3092	.0111	-.3410	-.6664	-.7711	-.6443
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	1.0311	1.2952	1.0619	.0741	-.4826	-.6513	-.7083	-.7798	-.7554	-.8812	-.6642	-.6586	-.5065
5	1.2185	1.2828	1.0650	.5169	.1248	-.2380	-.2744	-.2882	-.4583	-.7273	-.6570	-.6417	-.5156
6	1.2248	1.2601	1.0367	.4937	.0912	-.1804	-.2002	-.1411	-.4184	-.6347	-.6584	-.6262	-.5163
7	1.2457	1.2595	1.0092	.4677	.1098	-.1493	-.1363	-.0108	-.4267	-.5869	-.6455	-.6384	-.5105
8	-.7725	-.7825	-.6605	-.0652	.3273	.3641	.3748	.1981	.2133	.0062	-.6097	-.8053	-1.0127
9	-.5840	-.5274	-.7836	-.5763	-.2189	.2398	.1831	.5473	.6982	.8128	.8925	.5744	.2898
10	-.6054	-.6507	-.7372	-.7448	-.4872	-.1873	-.0848	.2316	.7244	1.0076	1.1578	.7555	.2899
11	-.5889	-.6411	-.7499	-.6590	-.3163	.0181	-.0543	.3034	.7597	1.0534	1.2812	1.2219	1.1544
12	-.5110	-.5338	-.6122	-.7324	-.4350	-.3767	-.3691	-.1491	.7099	1.0299	1.1278	1.1160	1.1216
13	-.8706	-.8750	-.8287	-.7779	-.4535	-.0956	-.0313	-.5398	-.7763	-.7864	-.7475	-.7887	-.6963
14	-.8221	-.7463	-.9830	-.6031	-.3111	.2008	.2938	.5968	.8374	.8721	.7058	-.2268	-.9716
15	-.6206	-.6772	-.7268	-.6342	-.0260	.3963	.4216	.5355	.6891	.8064	.8878	.6824	.3322
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.5280	-.5687	-.6894	-.6123	-.4841	-.3705	-.3474	.1323	.6695	.9650	1.0997	1.0494	.9880
18	-.4973	-.6638	-.6778	.3259	-.2990	-.0882	-.0034	.2983	.7710	.9240	.9007	.7846	.6710
19	-.6697	-.6741	-.4798	-.2687	.0237	.2168	.2627	.6180	1.0807	1.2857	1.2370	.1689	-.8372
20	-.4893	-.5837	-.5839	-.0985	.2101	.4456	.4712	.7544	1.1213	1.2876	1.2542	.8943	.4525
21	-.5900	-.5138	-.8387	-.7601	-.6182	-.5395	-.5187	-.4058	.5364	1.1267	1.3152	1.0011	.4911
22	-.5280	-.6307	-.6181	-.4249	-.3324	-.4233	-.3942	.2204	.7362	1.0925	1.3062	1.2204	.9900
23	-.5150	-.6081	-.4882	.0610	.0694	.2576	.3214	.7535	1.0280	1.1867	1.3206	1.0833	.6867
24	-.7074	-.5648	-.6538	-.5271	-.3011	-.2107	-.2161	-.2504	-.0626	.2550	.4739	.4073	.3026
25-40	-.5870	-.3894	-.0701	-.0091	.1389	.4779	.1711	.4704	.3412	.6085	.7201	.5268	.3830
26-41	-.6913	-.9456	-.6315	-.3444	.0621	.1958	.3072	.5595	.2608	.5206	.9102	.7634	.5652
27-42	-.6748	-.7442	-.9785	-.6062	-.2048	.1636	.3884	.4594	.2448	.2488	.5836	.7984	.6117
28-43	-.0355	.0341	.1095	.0661	.0297	.2717	.3706	.0594	-.2385	-.4519	-.6027	-.7948	-.7801
29-44	-.7539	-.8552	-.8160	-.4579	.1309	.3108	.2254	.5978	.7233	.9693	1.0956	.8295	.4146
30-45	-.9490	-.9444	-.7887	-.6570	-.4234	.1275	-.5389	.3540	.5011	.6114	.6137	.3235	.1115
31-46	-.4850	-.3683	.2319	-.7128	-.5164	.4308	-.5533	.7267	.9411	1.0415	1.1678	.9279	.6336
32-47	-.5581	-.7856	-.9808	-.8784	-.5595	0	-.5760	0	0	0	0	0	0
33-48	-.6051	-.7310	-.8669	-.7830	-.5278	.6175	-.4843	.4066	.6691	.9692	1.1784	.9619	.5961
34-49	-.6247	-.7489	-.9054	-.6422	-.4453	.4513	-.2654	.5416	.7632	.9117	1.0902	.9587	.6369
35-50	-.5306	-.6831	-.9570	-.7608	-.4214	-.4951	-.3076	.0163	.6302	1.0510	1.2481	1.1716	1.1569
36-51	-.5113	-.5498	-.6350	-.5991	-.4768	-.2444	-.3445	-.4633	-.5302	-.4898	-.4101	-.4329	-.4104
37-52	-.4659	-.5865	-.5988	-.5867	-.2304	-.3294	-.1615	.1259	.6960	1.0330	1.2696	1.1203	1.0080
38-53	-.5116	-.7641	-.7730	-.8821	-.1497	-.2576	-.3334	.1947	.7475	1.0116	1.2090	1.1908	1.1312
39-54	-.5314	-.7251	-.7187	-.8103	-.2315	-.2648	-.2609	.2099	.6459	.8726	1.0559	1.0250	.9373

TABLE III. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.50 AND WITH THE CANARD DEPLOYMENT ANGLE = 30°

Orifice number	Pressure coefficient, C_p															
	α = -118.9°	α = -92.8°	α = -78.4°	α = -53.1°	α = -38.5°	α = -28.0°	α = -12.8°	α = -1.64°	α = 1.62°	α = 13.9°	α = 29.9°	α = 38.9°	α = 78.4°	α = 93.8°	α = 109.8°	α = 118.9°
1	-0.4154	-0.4468	-0.4016	0.3784	0.9870	1.2124	1.4747	1.4936	1.5014	1.4599	1.1720	0.9164	-0.1962	-0.3136	-0.4377	-0.4601
2	.4787	1.1810	1.4267	1.4513	1.2103	1.0695	.7401	.5674	.5111	.4088	.3138	.2697	-.2839	-.4489	-.4868	-.5421
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	.7439	1.3728	1.5063	.8592	-.0017	-.0497	-.1402	-.2698	-.3204	-.3723	-.3188	-.4176	-.3177	-.4071	-.3977	-.3614
5	.6746	.6523	.6522	.7770	.6351	.3950	.0293	-.0818	-.1011	-.1460	-.1765	-.2870	-.3510	-.4344	-.4312	-.4186
6	1.1125	1.4879	1.4851	.9938	.5753	.3842	.0592	-.0737	-.0922	-.1111	-.2026	-.3560	-.3646	-.4265	-.4673	-.4218
7	1.1278	1.5000	1.4723	.9758	.5657	.3543	.0470	-.0635	-.0766	-.0505	-.1859	-.3508	-.3421	-.4220	-.4106	-.3809
8	-.3415	-.3176	-.2863	-.1157	.1751	.4257	.7329	.6913	.6501	.4705	.3254	.4026	-.1756	-.2280	-.4147	-.4329
9	-.4047	-.4840	-.3831	-.2104	-.2364	-.1195	.0724	.3189	.3267	.5431	.7336	.8500	1.1647	.9828	.7059	.5404
10	-.3955	-.4495	-.3312	-.2944	-.3465	-.3961	.0525	.2316	.0799	.1324	.6123	.8655	1.3708	1.1447	.7379	.5859
11	-.4164	-.4655	-.3270	-.4561	-.3796	-.3654	-.1174	-.2214	-.1741	.2521	.6136	.8618	1.4888	1.4657	1.4197	1.4058
12	-.4349	-.4178	-.2721	-.4272	-.4207	-.3899	-.2716	-.1851	-.2025	-.0660	.5040	.8253	1.2851	1.3226	1.3078	1.3971
13	-.3657	-.3305	-.3141	-.3772	-.4309	-.4047	-.2276	-.0499	-.0078	-.2034	-.4054	-.4113	-.2744	-.2262	-.2896	-.3375
14	-.4791	-.4800	-.4803	-.5083	-.4038	-.2982	.1241	.3507	.4240	.6721	.8295	.9580	.9972	.3134	-.1929	-.3745
15	-.3142	1.0556	-.1952	-.2181	-.3063	-.2770	.1001	.3526	.4562	.6369	.7728	.8826	1.1489	1.0505	.7606	.5403
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.3851	-.4233	-.3072	-.4478	-.3780	-.3548	-.2684	-.1822	-.1204	.0986	.5294	.7991	1.3142	1.3307	1.2658	1.2152
18	1.2595	1.2550	1.1577	-.4474	1.1486	-.2141	.9690	-.0063	.1132	.2334	.7360	.9341	1.1494	1.0803	.9684	.9665
19	-.4747	-.4952	-.4410	-.1696	.0320	.1992	.2351	.3853	.3849	.5649	.8990	1.1403	1.4520	.7001	-.0827	-.2558
20	-.2948	-.3229	-.3145	-.3453	-.1639	.0191	.1801	.3661	.4720	.7664	1.0853	1.2370	1.4714	1.2485	.8745	.6074
21	-.4198	-.3053	-.2162	-.4364	-.3380	-.3199	-.2546	-.1351	-.0992	-.0299	.0429	.4660	1.5127	1.3435	.9163	.7498
22	-.3656	-.3668	-.2969	-.2808	-.3473	-.3282	-.2695	-.1699	-.1264	.0891	.6019	.8577	1.4984	1.4842	1.3115	1.1851
23	-.3520	-.2856	-.2714	-.0889	.0334	.1509	.0649	.1543	.2117	.5763	1.0947	1.1949	1.5155	1.4220	1.0026	.9477
24	-.3707	-.3345	-.2778	-.4727	-.3357	-.2869	-.1597	-.1236	-.1169	-.1267	-.0712	.1126	.7537	.7718	.6537	.5492
25-40	-.3786	-.0398	.0872	.1627	.1797	.2511	.4136	.6038	.1291	.3524	.5641	.4351	1.0510	.9828	.8282	.6054
26-41	-.4753	-.4062	-.2668	-.1576	.0028	.0933	.2421	.1549	.2448	.2607	.3719	.4379	1.1294	1.1018	.9339	.7449
27-42	-.4598	-.4228	-.3892	-.4551	.4078	-.2596	.1205	.0150	.3706	.2455	.3422	.4060	.9072	1.1251	.9612	.8116
28-43	.0494	.2933	.3661	.4378	.3462	.1783	.3628	.2497	.3572	.2063	.1091	.0326	-.1491	-.2324	-.3097	-.3469
29-44	-.4363	-.4609	-.4004	-.2782	-.1260	-.0709	.1805	.2881	.2111	.6065	.6497	.8158	1.3310	1.1768	.8457	.5985
30-45	-.3189	-.3290	-.3282	-.1247	.0368	-.2324	-.0993	.2029	-.2340	.3417	.5802	.7072	.9205	.7451	.5371	.4409
31-46	-.1913	-.0101	-.0074	-.3009	-.2585	-.1973	-.1497	.4244	-.1978	.5722	.8426	1.0801	1.3764	1.2466	1.0040	.8422
32-47	-.4574	-.4435	-.3973	-.4793	-.4006	-.3093	-.2035	0	-.1899	0	0	0	0	0	0	0
33-48	-.4129	-.4198	-.3593	-.5049	-.3985	-.2993	-.1801	.6997	-.0938	.5805	.6556	.7917	1.3963	1.2856	1.0110	.7648
34-49	-.4022	-.4435	-.3793	-.5067	-.3956	-.2724	-.1156	.6294	.0355	.6053	.7778	.8860	1.3083	1.2641	1.0048	.8312
35-50	.5613	.5962	.6121	-.4391	-.3668	-.3182	-.1741	-.2259	-.1149	-.0812	.3947	.7217	1.4626	1.4453	1.3969	1.3843
36-51	-.3820	-.4021	-.3124	-.3668	-.2869	-.2438	-.2551	-.0874	-.1322	-.2194	-.1799	-.1674	-.0012	.0302	.0212	-.0007
37-52	.0360	-.0024	-.0955	-.2226	-.2275	-.1655	-.0626	-.0764	-.0723	.0671	.5281	.7946	1.4643	1.4153	1.3000	1.2772
38-53	-.4862	-.4548	-.4593	-.4885	-.4138	-.3423	-.0736	-.1212	-.1341	.1870	.5625	.8485	1.4177	1.4711	1.4117	1.3363
39-54	-.4337	-.4212	-.3255	-.4458	-.3396	-.2287	-.1070	-.1432	-.0902	.2186	.5624	.7715	1.2416	1.2416	1.2140	1.0990

TABLE IV. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 2.00 AND WITH THE CANARD DEPLOYMENT ANGLE = 30°

Orifice Number	Pressure coefficient, C_p													
	α = -118.9°	α = -93.2°	α = -78.4°	α = -52.5°	α = -38.3°	α = -28.1°	α = -1.64°	α = 1.57°	α = 13.7°	α = 38.8°	α = 78.3°	α = 94.0°	α = 109.9°	α = 118.9°
1	-0.2828	-0.2581	-0.1580	0.6037	1.1181	1.3205	1.6632	1.6457	1.5847	1.0618	-0.0209	-0.0982	-0.1824	-0.2228
2	.5882	1.3404	1.5857	1.5450	1.3018	.9899	.2327	.1720	.2953	.0383	-.0781	1.8979	-.2317	1.9566
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	.9742	1.5195	1.6513	.7425	.2343	.1986	-.1260	-.1504	-.1880	-.2293	-.1363	-.2409	-.2714	-.2553
5	.9260	.9209	.9292	.8437	.8323	.3780	-.0557	-.6000	-.0688	-.2598	-.1650	-.2418	-.2592	-.2788
6	1.2360	1.6310	1.6193	1.0545	.6212	.4028	-.0329	-.0549	-.1133	-.1703	-.1532	-.2480	-.2828	-.2853
7	1.2358	1.6394	1.6096	1.0448	.6028	.3955	-.0241	-.0486	-.0631	-.2328	-.1472	-.2503	-.2517	-.2210
8	-.1070	-.0723	-.0474	.1132	.4246	.6684	.8625	.8135	.5642	.5035	.0605	.0256	-.1917	-.0890
9	-.2528	-.2427	-.1544	.0136	-.0071	.0724	.1486	.1434	.4738	.9848	1.3304	1.1161	.8757	.6620
10	-.2329	-.2258	-.1591	-.0443	-.1588	-.0681	.3223	.2579	.3176	.9361	1.4884	1.3045	.8812	.7954
11	-.2458	-.2558	-.1227	-.2187	-.1450	-.0678	-.0981	-.0102	.3146	.9288	1.6271	1.6248	1.6396	1.6746
12	-.2245	-.1834	-.0961	-.2002	-.2270	-.2485	-.0899	-.0979	.0400	.8586	1.4419	1.4928	1.5549	1.6833
13	-.1449	-.1091	-.0969	-.1652	-.2152	-.2242	-.0377	-.0214	-.1327	-.2351	-.0602	-.0009	-.0867	-.1283
14	-.2873	-.2786	-.2638	-.2455	-.1890	-.1127	.3703	.4293	.4029	1.0209	1.1763	.4940	-.1372	.0342
15	-.1198	.0221	.0317	.0124	-.0218	-.0398	.3834	.4524	.6340	1.0486	1.3054	1.2223	.8897	.6405
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.2347	-.2153	-.1285	-.2098	-.2258	-.2091	-.0722	-.0277	.1753	.8495	1.4510	1.4889	1.4775	1.4868
18	-.2175	-.2075	-.1543	2.2314	-.1622	-.0905	.0568	.1188	.3362	1.0860	1.3022	1.2544	1.1800	1.1678
19	-.3236	-.2892	-.2568	.0210	-.0203	.1652	.1847	.2311	.5195	1.1480	1.6171	.8569	-.0227	.1516
20	-.1727	-.1703	-.1519	-.1646	-.1149	-.0007	.3078	.3585	.7154	1.3784	1.6189	1.3982	.9764	.6861
21	-.2380	-.2075	-.1564	-.0860	-.1800	-.1546	.0729	.0923	.1877	.3241	1.6602	1.4861	1.0515	.9931
22	-.2074	-.1603	-.1221	-.2428	-.2031	-.1376	-.0238	.0189	.1276	.9174	1.6330	1.6361	1.4790	1.4117
23	-.2098	-.1171	-.1434	-.0767	.0269	.1461	.1882	.2325	.5377	1.3937	1.6534	1.5649	1.1923	1.1437
24	-.1998	-.1549	-.0855	-.2226	-.1557	-.1768	.0008	-.0149	-.0551	.1867	.8836	.9296	.8077	.6793
25-40	-.1495	.1583	.2357	.2773	.3473	.4941	.3789	.2306	.3457	.6709	1.2266	1.1851	.9860	.6933
26-41	-.2485	-.1611	.0015	.0440	.2315	.2002	.0282	.2808	.3133	.5564	1.2820	1.2837	1.0986	.7881
27-42	-.2914	-.2313	-.1621	-.2298	-.1587	-.0878	-.0560	.3839	.1810	.5216	1.0536	1.3127	1.1287	.8921
28-43	.1243	.4562	.5518	.6240	.1929	.2265	.2083	.4594	.2183	.1748	.0337	-.0097	-.0896	-.1409
29-44	-.2493	-.2171	-.1620	-.0757	-.3570	.0618	.1931	.2012	.6304	.9202	1.4806	1.3458	.9693	.6518
30-45	-.0550	-.0888	-.1004	.0661	.2991	-.0589	.4230	-.0746	.4260	.8293	1.0953	.9435	.7404	.7036
31-46	.0100	.1530	.1415	-.0840	-.0379	-.0296	.4225	-.0404	.6311	1.1640	1.5060	1.4070	1.1670	1.0932
32-47	-.2545	-.2047	-.1567	-.2234	-.1526	-.1320	0	-.0403	0	0	0	0	0	0
33-48	-.2580	-.2156	-.1327	-.2346	-.1499	-.1540	.7015	.0431	.6326	.9592	1.5344	1.4464	1.1308	.7940
34-49	-.2658	-.2331	-.1686	-.2632	-.1956	-.0920	.6341	.1069	.7049	1.0548	1.4433	1.4251	1.1651	.7380
35-50	.3099	.4145	.5949	-.2295	-.1324	-.1614	-.0550	-.0445	.0457	.7493	1.5800	1.5917	1.6062	1.6702
36-51	-.2359	-.2038	-.1095	-.1365	-.2498	-.2527	-.0676	-.0263	-.0835	-.0184	.0943	.1915	.2319	.2163
37-52	.1798	.1947	.0504	-.0802	-.0600	-.0347	.0392	.0008	.1535	.8475	1.6024	1.5584	1.5157	1.5490
38-53	-.2464	-.2459	-.2040	-.2293	-.1786	-.1437	-.0108	-.0652	.2662	.9320	1.5660	1.6455	1.5596	1.5525
39-54	-.2874	-.2273	-.0996	-.1962	-.1136	-.1335	.0160	.3275	.2471	.8797	1.3480	1.4457	1.4095	1.3229

TABLE V. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 0.70 AND WITH THE CANARD DEPLOYMENT ANGLE = 60°

Orifice number	Pressure coefficient, C_p								
	α = -99.5°	α = -78.4°	α = -19.5°	α = -1.07°	α = 1.52°	α = 20.1°	α = 38.7°	α = 78.4°	α = 99.5°
1	-0.5606	-0.8188	0.8517	1.1510	1.1412	0.8670	0.1020	-0.6719	-0.4602
2	.5073	.9974	.6026	.2753	.2703	.2800	.1000	-.3593	-.5909
3	0	0	0	0	0	0	0	0	0
4	.9072	1.1300	-.6685	-.4119	-.3551	-.2555	-.2459	-.3457	-.4021
5	1.0663	1.1152	.0709	-.1245	-.1375	.0017	-.1809	-.4964	-.5446
6	1.0859	1.1047	.0988	-.0710	-.0677	.2011	-.1304	-.5073	-.4993
7	1.0788	1.0806	.1007	-.0468	-.0399	.1256	-.1917	-.4837	-.4799
8	-.7208	-.7967	-.3835	.0605	.1179	.2020	.1466	-1.0646	-1.7085
9	-.8762	-.9299	-.4047	.3034	.3382	.6492	.6648	.5524	.2301
10	-1.0791	-1.1660	-.2905	-.1669	-.2199	.0107	.5170	.8670	.4722
11	-.8227	-.9139	-.5315	-.0637	-.0514	.2234	.5991	1.0286	.9770
12	-.2303	-.2639	-.4316	-.2090	-.2172	-.1285	.4379	.8417	.8110
13	-1.0009	-1.7050	-.2273	.0688	.1052	-.2509	-.7137	-.8558	-1.2467
14	-.7379	-.6772	-.2967	.0788	.1264	.3189	.3691	.2464	-.6966
15	-.8620	-.7406	-.1022	.2512	.2877	.5110	.5932	.5083	.2120
16	0	0	0	0	0	0	0	0	0
17	-.4566	-.4648	-.6293	-.3922	-.3375	.0564	.4556	.8352	.7790
18	-.4617	-.5021	-.1539	-.0154	.0336	.2324	.5689	.6117	.4880
19	-.8113	-.6834	-.2481	.0556	.1044	.4326	.8435	1.0381	.0391
20	-.6051	-.7363	.0339	.2146	.2800	.6013	.9554	1.0511	.7144
21	-.5307	-.5135	-1.1154	-.8280	-.7933	-.3150	.4473	1.1053	.8589
22	-.4565	-.4733	-.3608	-.1669	-.1325	.1401	.5593	1.1029	1.0676
23	-.4153	-.4922	.0926	.1926	.2745	.6000	.8256	1.1364	.9652
24	-.6964	-.4435	-.1848	-.0532	-.0484	-.1543	-.2159	.0936	.0479
25-40	-.2160	.1081	.2500	.4265	-.0072	.7818	.8659	.3875	.1255
26-41	-1.6190	-1.0522	.1960	.1929	-.1510	.6925	.5286	.5621	.2885
27-42	-.9944	-1.8291	.1294	.0908	.1386	.1140	.2302	.5453	.2754
28-43	-.7022	-.2147	-.0413	-.0817	.2765	-.9455	-1.9684	-.6334	-.7749
29-44	-1.5806	-1.2644	.0715	.2886	-.2812	.5996	.9471	.8592	.5898
30-45	.8205	.7478	-.6723	.1045	-1.0508	.1695	.1926	.1918	.0084
31-46	-.1496	-.1359	-1.3076	.4119	-1.2846	.6254	.8729	.8664	.5931
32-47	-1.5103	-1.4011	-1.3552	0	-1.5559	0	0	0	0
33-48	-.7443	-.6291	-1.3486	.6565	-1.2974	.6292	1.0191	1.0013	.7283
34-49	-.6901	-.5995	-.5774	.4338	-.8137	.6021	.8721	1.0470	.8210
35-50	-1.1459	-1.2580	-.1199	-.3780	-.3898	.0759	.4917	1.0329	.9720
36-51	-.5033	-.5679	-.3824	-.2783	-.2166	-.8183	-.9650	-.6562	-.6699
37-52	-.3631	-.4843	-.1489	-.0335	-.1396	.3142	.7611	.9951	.8112
38-53	-1.4481	-.9528	-.1658	-.1802	-.3241	.0578	.4878	1.0419	1.0924
39-54	-.6524	-.6267	-.2238	-.1520	-.2959	.1538	.4908	1.0482	1.0339

TABLE VI. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.10 AND WITH THE CANARD DEPLOYMENT ANGLE = 60°

Orifice number	Pressure coefficient, C_p											
	α = -99.4°	α = -78.4°	α = -59.4°	α = -38.4°	α = -19.6°	α = -1.30°	α = 1.50°	α = 19.9°	α = 38.7°	α = 59.7°	α = 78.9°	α = 99.4°
1	-0.5097	-0.6384	-0.3613	0.6125	1.1475	1.3440	1.3395	1.1595	0.5776	-0.1525	-0.3434	-0.4243
2	.7347	1.1643	1.3178	1.0972	.8184	.5551	.5432	.5964	.3733	-.0613	-.2155	-.3332
3	0	0	0	0	0	0	0	0	0	0	0	0
4	1.0802	1.3019	1.0639	.1193	-.4677	-.3011	-.3301	-.7558	-.8435	-.9193	-.8037	-.5096
5	1.2304	1.2796	1.0600	.5310	.1299	-.2720	-.2901	-.2496	-.5690	-.6978	-.6755	-.5062
6	1.2601	1.2672	1.0223	.4974	.0591	-.2387	-.2433	-.2381	-.5505	-.6205	-.6765	-.5299
7	1.2504	1.2587	1.0010	.4670	.1270	-.2023	-.1821	-.0867	-.4908	-.5515	-.6498	-.5276
8	-.7014	-.7178	-.7623	-.5231	-.0473	.3338	.3784	.5329	.5665	.1566	-.4157	-.7728
9	-.6438	-.7557	-.9606	-.7354	.0391	.4927	.6279	.8980	.9773	.9165	.8250	.5143
10	-.7731	-.7419	-.8764	-.7786	-.0143	.2139	.1808	.2018	.7819	1.0203	1.1112	.6852
11	-.6631	-.7748	-.8700	-.6969	-.3273	.1012	.0142	.4432	.8642	1.1489	1.2546	1.1449
12	-.1700	-.2701	-.4030	-.3274	-.5089	-.4414	-.3972	-.0399	.7857	1.1099	1.0935	1.0210
13	-.8387	-.7650	-.7104	-.7669	-.5295	-.0960	-.0246	-.6059	-.6381	-.7674	-.6250	-.6284
14	-.6913	-.7042	-.9465	-.6480	-.0991	.3188	.3793	.6016	.7098	.7156	.6061	-.1949
15	-.6262	-.6811	-.9797	-.5100	.0546	.5147	.5656	.7862	.8797	.8867	.7986	.5104
16	0	0	0	0	0	0	0	0	0	0	0	0
17	-.4899	-.5945	-.7712	-.6359	-.6005	-.4657	-.3913	.2650	.7364	1.0068	1.0766	.9972
18	-.4812	-.6339	-.6205	-.6177	-.2736	-.0226	.0916	.4509	.8433	.9629	.9003	.7331
19	-.7181	-.6744	-.6489	-.2909	.0270	.2954	.3578	.6965	1.0657	1.2884	1.2255	.2678
20	-.5891	-.7022	-.7115	-.2784	.2871	.5046	.5401	.8366	1.1512	1.3051	1.2398	.8953
21	-.5173	-.6429	-.9265	-.6943	-.5884	-.5314	-.5164	-.3836	.6492	1.1576	1.2986	1.0159
22	-.4709	-.5819	-.7155	-.7132	-.5191	-.3286	-.2710	.3506	.7732	1.1182	1.2991	1.2118
23	-.4517	-.5876	-.4547	.2277	-.0198	.2142	.2977	.7928	1.0278	1.1883	1.3152	1.0797
24	-.7921	-.5648	-.7526	-.4780	-.3002	-.2102	-.2176	-.4207	.0021	.3177	.5291	.4586
25-40	.2808	.5585	.6617	.5710	.4492	.6564	.2314	1.0555	1.1325	.8951	.6586	.2379
26-41	-.6370	-.3178	.0828	.2854	.4097	.3436	.1655	.9555	.8143	1.0250	.8114	.5160
27-42	-.9130	-.8210	-.4424	.0931	.3477	.2316	.3784	.4278	.7079	.7484	.8040	.5181
28-43	-.2274	.0436	.0980	-.1228	.2079	.1727	.5018	-.4200	-.7160	-.9535	-.7898	-.9990
29-44	-.6069	-.4207	-.1230	.1456	.3104	.5105	.0183	.8522	1.1847	1.1908	1.0768	.7833
30-45	1.0643	1.0095	.6199	-.2168	-.4245	.4373	-.5860	.5801	.6941	.7288	.6438	.3915
31-46	.3732	.3664	.0660	.2385	-.4557	.6639	-.6003	.9099	1.1200	1.1785	1.1131	.8125
32-47	-.5639	-.4936	-.6147	-.6684	-.5203	0	-.7007	0	0	0	0	0
33-48	-.7129	-.9183	-.9678	-.7133	-.4821	.8223	-.5524	.8474	1.2518	1.2609	1.2125	.8855
34-49	-.7564	-.8228	-.9583	-.6836	-.3571	.6616	-.2705	.8433	1.1160	1.2263	1.2414	.9732
35-50	-.6845	-.6336	-.4602	-.3089	-.3381	-.1459	-.4540	.3029	.8244	1.1345	1.2930	1.1244
36-51	-.5067	-.5171	-.6732	-.6021	-.2231	-.4275	-.1739	-.8466	-.9653	-.9591	-.8914	-.8282
37-52	.2169	.1057	-.0360	-.1726	.0587	-.1310	-.2683	.5005	1.0455	1.1055	1.2198	.9959
38-53	-.7763	-.7600	-.5756	-.4209	-.0067	-.3328	-.5372	.2952	.8035	1.0658	1.2328	1.2262
39-54	-.5493	-.7841	-.9883	-.4500	-.1522	-.3149	-.3784	.4109	.7948	1.0457	1.2236	1.1976

TABLE VII. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.50 AND WITH THE CANARD DEPLOYMENT ANGLE = 60°

Orifice number	Pressure coefficient, C_p															
	α = -118.9°	α = -92.7°	α = -78.4°	α = -60.9°	α = -38.5°	α = -28.1°	α = -12.7°	α = -1.69°	α = 1.62°	α = 13.8°	α = 29.9°	α = 38.9°	α = 53.3°	α = 78.9°	α = 94.6°	α = 118.9°
1	-0.3669	0.1586	-0.1010	0.0776	0.9696	-1.1969	1.4664	1.4977	1.5049	1.4540	1.1740	0.9106	0.4498	0.0809	0.0021	-0.2272
2	.2651	1.1382	1.4131	1.5072	1.2461	1.1070	.8193	.3906	.4495	.3794	.3998	.3977	.3898	.2133	.1921	-.1529
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	.8371	1.4085	1.5125	1.2072	-.0066	-.0431	-.2055	-.2952	-.2634	-.2767	-.3457	-.4402	-.5383	-.5676	-.4592	-.3639
5	.6820	.6700	.6577	.7938	.6234	.4364	.0832	-.0302	-.0826	-.0394	-.2446	-.3662	-.5023	-.5216	-.4355	-.4367
6	1.1637	1.5059	1.4828	1.1891	.5625	.3500	.0494	-.0939	-.1254	-.0482	-.2072	-.2457	-.3047	-.4515	-.4212	-.4561
7	1.1547	1.5087	1.4702	1.1730	.5556	.3535	.0361	-.1177	-.1002	-.1171	-.2181	-.3333	-.3675	-.4829	-.4286	-.3262
8	-.4234	-.0984	-.2855	-.2455	-.0449	.0794	.3786	.4479	.2878	.2421	.6310	.6273	.6271	.0719	-.2139	-.5245
9	-.4398	.0985	-.1950	-.4575	-.3878	-.2811	.3114	.3592	.4595	.9882	1.1397	1.1608	1.1373	1.1023	.9076	.5054
10	-.4533	.0037	-.1811	-.4880	-.4144	-.1951	.2808	.5264	.4910	.1706	.7436	.9737	1.1840	1.3364	1.0755	.6068
11	-.4609	.0059	-.1888	-.5011	-.3877	-.2712	-.3639	-.0547	.1788	.4653	.8466	1.0348	1.2379	1.4544	1.4218	1.3464
12	.2732	.4474	.2914	-.1088	-.2199	-.3555	-.2440	-.2995	-.3255	-.2175	.6645	.9307	1.0992	1.2945	1.2885	1.3244
13	-.3566	-.2924	-.2094	-.2001	-.3387	-.3637	-.1977	-.0697	-.0170	-.3179	-.4087	-.5010	-.4723	-.1451	-.0960	-.3325
14	-.4254	-.1089	-.1950	-.4817	-.2880	-.1805	.1908	.2163	.2651	.3921	.5880	.7739	.9222	.9099	.3209	-.4206
15	-.4215	.7528	-.1398	-.4929	-.3816	-.2008	.1320	.4939	.6376	.7879	1.0092	1.0625	1.1104	1.0724	.8905	.4261
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.4556	.1978	-.0298	-.4979	-.4238	-.4088	-.3110	-.1607	-.0972	.1966	.7316	.9333	1.1286	1.3064	1.2749	1.1313
18	1.3516	.6677	-.0569	-.5110	1.2033	1.1168	.8414	.1660	.6060	.4721	.8770	1.0487	1.1770	1.1612	1.0633	.9244
19	-.4395	-.1247	-.2096	-.3620	.0263	.2075	.1225	.2032	.2687	.5157	.8420	1.1269	1.3847	1.4537	.7490	-.2728
20	-.4355	.0588	-.1524	-.3509	-.0344	.0234	.2912	.3806	.4589	.7480	1.1513	1.3076	1.4487	1.4548	1.2250	.6185
21	-.4011	.1934	-.0781	-.4526	-.3019	-.2878	-.2493	-.1219	-.0855	-.0186	.0855	.7746	1.1627	1.5094	1.3391	.7777
22	-.4202	.2153	-.0323	-.5147	-.3880	-.3226	-.2289	-.0874	-.0272	.2090	.7645	.9619	1.1738	1.5010	1.4757	1.2106
23	-.4326	.2170	-.0153	-.3017	-.1451	-.0455	.0413	.2792	.3448	.7748	1.1510	1.2315	1.3294	1.5100	1.4054	.8958
24	-.3739	-.0824	-.0483	-.4606	-.3454	-.2786	-.1694	-.1361	-.1063	.2320	-.0220	.2115	.4201	.8128	.8192	.5561
25-40	.1813	.6997	.8517	.9049	.6711	.5903	.2586	.7931	.2708	.9724	.9027	1.2916	1.2861	1.0488	.9024	.4921
26-41	-.2626	-.0660	.1146	.3862	.4483	.4492	.3433	.1697	.1618	.6708	.8472	.8261	1.2408	1.0750	.9025	.5065
27-42	-.4594	-.0620	-.2667	-.0053	.2883	.3214	.3672	.1841	.4059	.3984	.8858	.6964	.7830	1.0809	.9147	.5352
28-43	-.0955	.2649	.4315	.4092	.1553	.1646	.2787	.1925	.6963	-.0501	-.2573	-.3586	-.4421	-.5584	-.5363	-.5680
29-44	-.1956	-.0538	.0457	.2013	.3393	.2951	.2555	.2424	.1538	.9085	1.0858	1.2562	1.3769	1.3193	1.1415	.5075
30-45	1.0979	1.3175	1.2177	.3450	.1571	.0089	-.1316	.6810	-.2508	.7931	.9629	.9858	1.0108	.9634	.8165	.4958
31-46	.4725	.7285	.6833	.0974	-.0639	-.0732	-.1733	.8968	-.2263	1.0945	1.2837	1.3227	1.3605	1.3600	1.1578	.7774
32-47	-.2013	-.0647	-.0037	.6228	.6401	-.1489	-.1996	0	-.2718	0	0	0	0	0	0	0
33-48	-.4332	.0395	-.2434	-.3957	-.2619	-.2153	-.1435	.8645	-.1351	.8976	1.1858	1.3545	1.4350	1.4353	1.2441	.5868
34-49	-.4851	.0188	-.2151	-.4276	-.3519	-.2666	.0053	.7468	.0098	.9124	1.1584	1.2589	1.3613	1.4592	1.2995	.5814
35-50	.5073	.5603	.6152	-.1017	-.0976	-.1382	-.1520	.1384	-.2308	.3763	.6760	.9065	1.2259	1.4553	1.4081	1.3137
36-51	-.3462	.1889	.0268	-.4669	-.3864	-.2494	-.1731	-.2123	.0422	-.4272	-.4671	-.4701	-.4872	-.4164	-.3752	-.3411
37-52	.6567	.5642	.4603	.1664	.1209	.0713	.0292	.0829	-.1331	.4615	.9719	1.1606	1.3035	1.4423	1.3030	1.1434
38-53	-.2140	-.1682	-.1994	-.2064	-.1303	-.1023	-.0221	-.0545	-.3127	.2218	.7723	.9488	1.1623	1.4515	1.4949	1.4084
39-54	-.4832	.1003	-.1695	-.4236	-.3252	-.1119	-.0865	-.0767	-.1087	.3780	.8509	1.0009	1.1588	1.4407	1.4686	1.3154

TABLE VIII. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 2.00 AND WITH THE CANARD DEPLOYMENT ANGLE = 60°

Orifice number	Pressure coefficient, C_P															
	α = -118.9°	α = -93.1°	α = -78.9°	α = -52.6°	α = -38.9°	α = -27.8°	α = -12.8°	α = -1.64°	α = 1.59°	α = 13.8°	α = 30.0°	α = 38.9°	α = 54.0°	α = 78.9°	α = 93.9°	α = 118.9°
1	-0.2967	-0.2686	-0.1594	0.6123	1.0111	1.3104	1.5842	1.6497	1.6469	1.5919	1.2985	1.0534	0.6360	0.3730	0.2378	-0.0220
2	1.3494	1.2679	1.5862	1.5540	1.3960	1.2249	.4757	.2215	.1770	.3646	.2481	.2159	.4897	1.2239	1.2977	.0932
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	1.0176	1.5619	1.6395	.7936	.2519	.1987	-.0264	-.1646	-.1798	-.1326	-.1740	-.2555	-.2824	-.3016	-.2691	-.2632
5	.9258	.9265	1.1794	.8691	.7508	.4012	.0861	.0296	.0146	-.0426	-.2180	-.2795	-.2879	-.3124	-.2606	-.2670
6	1.2476	1.6495	1.6049	1.0349	.7039	.4152	.0995	-.0179	-.0272	-.0497	-.1301	-.2447	-.2473	-.2803	-.2656	-.2911
7	1.2420	1.6460	1.5959	1.0293	.6923	.3800	.0688	-.0473	-.0620	-.1068	-.1663	-.1850	-.2324	-.2676	-.2625	-.2324
8	-.2671	-.2543	-.1657	.0582	.1862	.3872	.1191	.1986	.1932	.2393	.4903	.3855	.6633	.2845	.0343	-.1768
9	-.2716	-.2589	-.2144	-.1696	-.1146	-.0221	.2288	.1127	.3174	1.1637	1.1404	1.3514	1.3217	1.2832	1.1011	.5934
10	-.2647	-.2470	-.2424	-.1902	-.1766	-.0650	.3672	.2857	.2774	.2882	.8299	1.1322	1.3471	1.4824	1.2454	.8741
11	-.2831	-.2490	-.2752	-.1935	-.1133	-.0486	.0230	.0080	.1743	.4828	.9979	1.2423	1.3939	1.6067	1.5813	1.6137
12	.0548	.3478	.2581	.0067	-.0989	-.2144	-.2300	-.1942	-.2245	-.0792	.6137	1.1059	1.2426	1.4464	1.4627	1.4899
13	-.1418	-.0768	-.0396	-.1310	-.1634	-.2006	-.1789	-.0411	.0024	-.1872	-.2733	-.2860	-.2162	.0707	.1358	-.1282
14	-.3119	-.2772	-.2725	-.2477	-.2044	-.1842	.0378	.1903	.2262	.3910	.6222	.6601	.9734	1.0778	.5192	-.0096
15	-.2681	-.2766	-.2114	-.2123	-.2689	-.1532	.0931	.2929	.2977	.6254	1.0715	1.1799	1.2424	1.2330	1.0637	.5775
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.2546	-.2137	-.2611	-.2617	-.2932	-.2349	-.1734	-.0290	.0204	.2934	.7902	1.0762	1.2917	1.4578	1.4399	1.3839
18	1.9528	1.9137	2.2747	-.2584	1.9747	-.1202	-.0011	.3230	.3471	.6341	1.0496	1.2423	1.3304	1.3274	1.2323	1.0875
19	-.3023	-.2738	-.2552	-.1164	-.0977	-.0180	.0553	.1768	.2393	.5274	.9560	1.0666	1.4586	1.6221	.9322	.1530
20	-.2688	-.2662	-.2651	-.1936	-.0790	.0631	.1371	.2097	.2735	.5707	1.1593	1.4508	1.5798	1.6147	1.3947	.6370
21	-.2357	-.2081	-.2869	-.2392	-.2259	-.1408	-.0580	.0060	.0227	.2002	.3446	.4712	1.2668	1.6591	1.5046	1.0328
22	-.2391	-.2066	-.2702	-.2896	-.2444	-.1568	-.0249	.1043	.1602	.3315	.8083	1.0963	1.3113	1.6445	1.6364	1.4295
23	-.2549	-.2279	-.2614	-.1595	-.1041	-.0140	.1622	.3985	.4737	.8070	1.3656	1.4775	1.4771	1.6581	1.5652	1.0850
24	-.2111	-.1672	-.2481	-.2288	-.2373	-.1768	-.1063	-.0124	-.0474	-.0485	.0937	.3222	.5592	.9669	.9706	.6624
25-40	.3583	.8642	1.0018	.9244	.7847	.6803	.2663	.6079	.0955	.8334	.9375	1.0191	1.5199	1.2340	1.0963	.5798
26-41	-.0549	.1545	.3057	.4928	.4932	.4296	.2718	.1519	.2200	.5360	.8931	.9706	1.3735	1.2540	1.1000	.6319
27-42	-.2553	-.1820	-.0513	.1906	.3086	.3821	.3547	.1902	.3958	.5248	.8996	.9259	.9051	1.2543	1.1053	.6721
28-43	.2322	.3236	.6806	.4621	.3903	.4173	.5428	.1541	.6750	-.0095	-.1258	-.1664	-.2108	-.2859	-.3136	-.3291
29-44	.0222	.1265	.1999	.3496	.3334	.3706	.2393	.5261	.0917	.7621	1.1342	1.4178	1.5610	1.4910	1.3229	.5886
30-45	1.2606	1.4553	1.1182	.4095	.2638	.1525	-.0081	.6468	-.1173	.9314	1.2946	1.2997	1.2083	1.1529	1.0125	.7349
31-46	.5791	.8796	.7775	.1455	.1420	.1034	-.0416	1.0821	-.0378	1.0653	1.5647	1.6537	1.5440	1.5249	1.3355	.9809
32-47	-.0213	.1405	.0907	-.0540	.0136	-.0081	-.0730	0	-.0901	0	0	0	0	0	0	0
33-48	-.2490	-.2014	-.2320	-.1433	-.0847	-.0492	-.0242	.6672	.0294	.8879	1.4008	1.6213	1.6212	1.5953	1.4178	.5109
34-49	-.2830	-.2381	-.2523	-.1858	-.1514	-.0863	.0162	.6164	.1413	.8617	1.3249	1.5445	1.5172	1.6182	1.4654	.3996
35-50	.1451	.2713	.0586	.0128	-.0036	-.0452	-.0803	.3691	-.0680	.7255	.7701	1.0835	1.3388	1.6367	1.5566	1.6341
36-51	-.1643	-.0672	-.1512	-.1926	-.1546	.0506	.0154	-.1407	.2082	-.2288	-.2479	-.2346	-.2625	-.1898	-.1690	-.0796
37-52	.8989	.7274	.5928	.2824	.1970	.1213	.0144	.2921	-.0467	.7092	1.1516	1.4199	1.4748	1.6025	1.4756	1.4615
38-53	.0151	-.0153	-.0206	-.0116	-.0118	.0090	.0006	.1031	-.1283	.4023	.8616	1.0573	1.3173	1.5870	1.6684	1.6354
39-54	-.2864	-.2516	-.2450	-.2012	-.1474	-.0673	-.0304	.0384	.0216	.4390	.9960	1.1543	1.3099	1.5935	1.6480	1.5770

TABLE IX. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 0.70 AND WITH THE CANARD DEPLOYMENT ANGLE = 90°

Orifice number	Pressure coefficient, C_P									
	α = -99.1°	α = -78.5°	α = -19.4°	α = -1.12°	α = 1.57°	α = 19.1	α = 19.9°	α = 38.9°	α = 90.0°	α = 111.2°
1	-0.5459	-0.9881	0.8788	1.1330	1.1051	0.8888	0.8727	0.1340	-0.3143	-0.3204
2	.4451	.9981	.5769	.3828	.3878	.4612	.4700	.3140	-.2000	-.4213
3	0	0	0	0	0	0	0	0	0	0
4	.9548	1.1333	-.5063	-.3477	-.3940	-.1865	-.1644	-.2325	-.3616	-.2966
5	1.0721	1.0998	.0651	-.1581	-.0953	-.1981	-.1938	-.7025	-.3721	-.3903
6	1.1056	1.0758	.0912	-.1114	-.0143	-.0361	-.0685	-.8051	-.3771	-.4762
7	1.1119	1.0771	.0895	-.0208	.0341	.0446	.0305	-.6924	-.5180	-.5887
8	-.7942	-.7758	-.2971	.1053	.1712	.2807	.2699	.2731	-.5829	-1.6057
9	-.7284	-.8704	-.2137	.3554	.4384	.6557	.6908	.7039	.3377	.0204
10	-.7090	-1.2165	-.1611	-.0509	-.0224	.1424	.1489	.5763	.5117	.1702
11	-.6228	-.6760	-.3864	-.0984	-.0608	.1818	.1998	.5771	.7385	.6501
12	-.1658	-.1891	-.4368	-.3371	-.3284	-.3261	-.3021	.4193	.5845	.2891
13	-1.5947	-1.4714	-.2631	-.0439	-.0263	-.2128	-.2268	-.7162	-.9704	-1.4068
14	-.7996	-.6858	-.2447	.1188	.1805	.3611	.3634	.4530	.1341	-.7176
15	-.6698	-.7864	-.0378	.2893	.3347	.5294	.5387	.5977	.2757	-.0621
16	0	0	0	0	0	0	0	0	0	0
17	-.4496	-.4661	-.6256	-.3873	-.3658	.0676	.0842	.5109	.5411	.4242
18	-.4816	-.5582	-.3798	-.0239	.0186	.2040	.2202	.6212	.3706	.1467
19	-.9050	-.7402	-.1850	.1164	.1636	.4634	.4697	.8857	.8841	-.0189
20	-.4967	-.6880	.0743	.2411	.2896	.5945	.6023	.9491	1.0453	.7320
21	-.5514	-.5174	-.9884	-.6386	-.6498	-.2530	-.2368	.4820	.9293	.6682
22	-.4262	-.4861	-.4555	-.1700	-.1417	.1638	.1712	.5871	.9052	.8523
23	-.3572	-.4808	.0417	.1622	.2410	.5789	.6061	.8432	.9514	.7467
24	-.4967	-.4392	-.1821	-.0635	-.0415	-.1398	-.1380	-.1676	.1188	.0199
25-40	.7175	.9948	.1981	.6287	-.2567	.9626	.9573	1.0182	.9301	.6465
26-41	-.3154	.1707	.2328	.4546	-.4579	.9132	.9554	1.0662	.6352	.3211
27-42	-1.4997	-.7731	.2939	.4386	-.2149	.7588	.7637	1.0424	.6569	.3379
28-43	-.6796	-.6126	.0670	-.3349	.4081	-1.3024	-1.4787	-.8430	-.5702	-.6260
29-44	-.3298	.0668	.0792	.4097	-.5740	.8261	.8496	1.0447	.8715	.5433
30-45	1.1423	1.0285	-.4456	.2724	-.8544	.4088	.4081	.4781	.3615	.1526
31-46	.8043	.6991	-.0803	.5835	-1.2171	.8205	.7934	1.0173	.9120	.6450
32-47	-.2689	-.2039	-1.2121	0	-1.5776	0	0	0	0	0
33-48	-1.4625	-1.1897	-1.2161	.7312	-1.6573	.9359	.9532	1.1195	.9906	.6240
34-49	-.5212	-.5946	-.5036	.5398	-1.7409	.9431	.9434	1.1058	.9358	.5896
35-50	-.5133	-.3157	-.1221	-.2780	-.5167	.3575	.3411	.7647	1.0810	.9342
36-51	-.4980	-.5684	-.2713	-.4157	-.0352	-.9329	-.9369	-.8547	-.5272	.5773
37-52	.4695	.2374	-.1323	.0651	-.1897	.4990	.5060	.9300	.9880	.7388
38-53	-.6171	-.5158	-.1626	-.1462	-.4773	.0391	.0748	.5637	.9902	1.0085
39-54	-1.0858	-.9574	-.1610	-.0819	-.8281	.2258	.2284	.6537	1.0077	1.0034

TABLE X. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.10 AND WITH THE CANARD DEPLOYMENT ANGLE = 90°

Orifice number	Pressure coefficient, C_p											
	α = -99.3°	α = -78.4°	α = -59.4°	α = -38.4°	α = -19.5°	α = -1.12°	α = 1.59°	α = 19.7°	α = 38.9°	α = 59.9°	α = 78.8°	α = 99.6°
1	-0.4160	-0.5848	-0.3631	0.6269	1.1541	1.3463	1.3356	1.1605	0.6620	0.0618	0.2245	-0.0119
2	.6261	1.1835	1.3105	1.0748	.8172	.6381	.6379	.7517	.4536	.3588	.1984	-.1434
3	0	0	0	0	0	0	0	0	0	0	0	0
4	1.1221	1.2921	1.1119	.2638	-.3531	-.3513	-.4607	-.6675	-.8342	-.6911	-.8773	-.5263
5	1.2580	1.2726	1.0580	.5599	.0550	-.2808	-.2808	-.4319	-.7133	-.6926	-.6527	-.4441
6	1.2732	1.2539	1.0046	.5058	.0477	-.2882	-.3621	-.3462	-.7163	-.6078	-.6416	-.5121
7	1.2755	1.2425	.9818	.4709	.1419	-.2385	-.2016	-.1456	-.7371	-.5373	-.6000	-.5084
8	-.5176	-.6408	-.8810	-.6005	-.0282	.3852	.4181	.6117	.5762	.2935	-.1968	-.6726
9	-.5872	-.7109	-.9984	-.4837	.1160	.4783	.6705	.8722	.9699	.8666	.7210	.4019
10	-.6652	-.7857	-.8793	-.3622	.4112	.2669	.3500	.4856	.8645	.9955	.9153	.5219
11	-.4739	-.6942	-.8807	-.8050	-.4116	.1385	.1045	.4898	.8480	1.0641	1.0079	1.0532
12	-.0622	-.1255	-.5324	-.4634	-.4153	-.5343	-.5443	-.1937	.7118	1.1324	.9874	.8489
13	-.7067	-.7334	-.7538	-.8138	-.5916	-.1555	-.1867	-.5460	-.7977	-.5282	-.4925	-.5791
14	-.5649	-.6292	-1.0458	-.5635	-.0367	.3819	.4355	.6620	.7293	.7388	.5791	-.1603
15	-.5421	-.6401	-.9523	-.2751	.1675	.5612	.6036	.8063	.8811	.8441	.6716	.3829
16	0	0	0	0	0	0	0	0	0	0	0	0
17	-.4440	-.5601	-.7804	-.7347	-.6358	-.3199	-.2843	.3499	.8108	1.0472	.9438	.8189
18	-.4835	-.6002	-.6409	-.5433	-.3426	-.0359	-.0156	.4884	.9062	.9998	.7699	.5550
19	-.6460	-.6080	-.8789	-.2165	.0599	.3647	.4195	.7388	1.0807	1.3072	1.2189	.3383
20	-.4819	-.6558	-.6058	-.1506	.3595	.5156	.5669	.8445	1.1628	1.3209	1.2257	.8888
21	-.4703	-.6098	-.9088	-.6815	-.5783	-.5310	-.5249	-.2866	.7240	1.2006	1.2785	1.0165
22	-.4498	-.5698	-.6906	-.6793	-.5029	-.2190	-.1656	.4125	.8334	1.1527	1.2732	1.2044
23	-.4368	-.5410	-.5306	.0258	-.0634	.2842	.3543	.8044	1.0584	1.2290	1.2846	1.0335
24	-.8544	-.5810	-.6569	-.4518	-.3062	-.2216	-.2332	-.3009	.1116	.4211	.5408	.4446
25-40	.9286	1.1889	1.1465	.7397	.3730	.8756	-.0945	1.1906	1.2467	1.0920	.6149	.4534
26-41	.1525	.5334	.8095	.6728	.4158	.7219	-.1463	1.1312	1.2575	1.1366	.8677	.5266
27-42	-.6404	-.2661	.3017	.5033	.4731	.6789	.1508	1.0583	1.2162	1.1582	.8821	.5256
28-43	-.5126	-.5479	-.1299	.0722	.3445	.0465	.6202	-.7559	-.9451	-.5843	-.6636	-.4612
29-44	.2095	.4593	.6295	.5130	.3435	.6699	-.2148	1.0525	1.2651	1.2639	1.0841	.7355
30-45	1.2848	1.1872	.7595	-.2715	-.2962	.5975	-.6872	.7556	.8789	.8740	.7181	.4756
31-46	1.0173	.9472	.4780	-.4379	-.4870	.8180	-.7063	1.0482	1.2232	1.2681	1.1020	.8269
32-47	.2286	.2419	-.0362	-.5235	-.5136	0	-.8445	0	0	0	0	0
33-48	-.6253	-.5274	-.6142	-.5375	-.4356	.9341	-.6903	1.1464	1.2968	1.3224	1.1990	.7776
34-49	-.5272	-.5839	-.4538	-.6340	-.2486	.7981	-.7083	1.1465	1.3003	1.3490	1.1719	.7822
35-50	.1074	.1609	.2096	.1808	-.1938	-.1479	-.7751	.5526	1.0080	1.2550	1.1378	1.1265
36-51	-.4624	-.5769	-.7474	-.6005	-.2668	-.7503	.1264	-.9203	-.8916	-.5977	-.6970	-.5141
37-52	.7561	.5910	.3548	.1782	.0205	.0189	-.5298	.7226	1.1123	1.2062	1.1903	.9696
38-53	-.0983	-.0968	.0281	.0803	.0084	-.0702	-.8588	.3899	.8181	1.1587	1.2528	1.2668
39-54	-.6105	-.7705	-.4514	-.1153	-.0614	-.0531	-.7519	.5186	.9143	1.1609	1.2711	1.2350

TABLE XI. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.50 AND WITH THE CANARD DEPLOYMENT ANGLE = 90°

Orifice number	Pressure coefficient, C_p															
	α = -118.9°	α = -92.9°	α = -78.4°	α = -59.9°	α = -38.5°	α = -27.9°	α = -12.8°	α = -1.67°	α = 1.62°	α = 13.9°	α = 29.8°	α = 53.3°	α = 69.4°	α = 78.9°	α = 94.7°	α = 118.9°
1	-0.3716	0.2596	0.1324	0.0654	0.9782	1.2183	1.4687	1.5157	1.5131	1.4614	1.1725	0.5124	0.6268	0.5414	0.3333	0.0212
2	.6888	1.0578	1.4297	1.5036	1.2253	1.0948	.8385	.3619	.5801	.4624	.4572	.5751	.5724	.5046	.5811	.0182
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	.9553	1.4407	1.5165	1.2254	.0413	-.0021	.0206	-.2353	-.2257	-.2837	-.3640	-.4488	-.4762	-.5061	-.5327	-.5070
5	.6734	.6782	.6606	.9263	.6119	.4136	.0591	.0162	.0345	-.1943	-.3370	-.5377	-.5162	-.4841	-.4806	-.4439
6	1.2765	1.4971	1.4673	1.1641	.5631	.3587	-.0378	-.1886	-.1942	-.2616	-.2965	-.3895	-.4316	-.4313	-.4164	-.4045
7	1.2279	1.5145	1.4640	1.1340	.5704	.3461	-.0255	-.1391	-.1659	-.1287	.3513	-.3747	-.4230	-.4442	-.4094	-.3202
8	-.4150	.1662	.1156	-.3516	-.1615	-.0553	.2705	.2217	.2179	.4890	.6396	.6410	.4120	.1854	-.2124	-.5113
9	-.3896	.0917	.0602	-.5330	-.3245	-.2193	.3823	.5101	.5410	.8339	1.1834	1.0870	1.0703	1.0348	.7817	.3635
10	-.4106	-.0054	.0153	-.5086	-.1648	.1381	.6683	.7272	.7054	.7586	.8961	1.1942	1.2269	1.1565	.9210	.4465
11	-.4081	.1263	.0195	-.5106	-.4052	-.3465	-.3412	.1492	.2944	.6180	.8695	1.2336	1.2733	1.2740	1.3389	1.1840
12	.2864	.5629	.2501	-.0314	-.2736	-.2867	-.2431	-.3314	-.3396	-.2097	.5959	1.1520	1.1683	1.2396	1.1288	1.0665
13	-.3058	-.1440	-.1630	-.2513	-.3419	-.3807	-.2760	-.1487	-.1479	-.2312	-.4374	-.3134	-.0818	-.0052	-.0448	-.3557
14	-.3959	.1428	.1075	-.5231	-.3125	-.2195	.0743	.2174	.2556	.4526	.6186	.9181	.9479	.8936	.3159	-.4310
15	-.4072	.7305	.7656	-.5164	-.2852	-.0950	.2004	.5136	.5202	.7566	1.0153	1.0492	1.0150	.9654	.7640	.3644
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.4210	.2235	.0648	-.5135	-.4775	-.4218	-.3032	-.1315	-.0281	.3317	.0845	1.1749	1.2346	1.2035	1.1176	.9235
18	1.2981	.7119	.0691	-.4614	-.3216	1.0595	-.0072	.1390	.2245	.4917	.9241	1.2142	1.1594	1.0672	.9016	.6974
19	-.3781	.0995	.1173	-.4250	-.0768	.0917	.0756	.2055	.2644	.5325	.8646	1.3888	1.5196	1.4680	.8071	-.2521
20	-.3862	.1932	.1123	-.3893	.0248	.0593	.3130	.4376	.4867	.7334	1.1758	1.4608	1.5166	1.4665	1.2323	.6333
21	-.4057	.2169	.0932	-.5053	-.3216	-.2704	-.2317	.0359	.1286	-.0197	.2643	1.1840	1.4876	1.5170	1.3388	.7994
22	-.3972	.2236	.0843	-.4761	-.4020	-.2975	-.1683	-.0129	.0413	.4012	.8402	1.2018	1.4353	1.5072	1.4777	1.1902
23	-.4041	.2416	.0849	-.2868	-.2432	-.0739	.1342	.3578	.4385	.7840	1.1864	1.3455	1.4786	1.5177	1.3721	.7370
24	-.3232	.0785	.0262	-.4133	-.2606	-.2663	-.1756	-.1405	-.1208	-.0737	.1721	.5469	.7837	.8537	.8090	.5237
25-40	.8359	1.2873	1.4315	1.3126	.8274	.6844	.2100	1.0953	.1404	1.2371	1.4633	1.3730	1.2105	1.1187	.8976	.4019
26-41	.2517	.6332	.8708	.9975	.7583	.6270	.3164	.8786	.0053	1.1329	1.3997	1.3983	1.2451	1.1480	.9003	.4493
27-42	-.2828	-.0728	.1607	.5648	.6366	.5900	.4291	.5435	.2789	1.0642	1.2318	1.3895	1.2635	1.1591	.8946	.5117
28-43	-.3681	.1358	.0523	.2643	.3430	.3502	.4836	.1283	.6879	-.2959	-.4776	-.4894	-.5086	-.4881	-.5239	-.5494
29-44	.3526	.6525	.7751	.8196	.6333	.4844	.2030	.6300	.0080	1.1560	1.4574	1.4672	1.4169	1.3494	1.0907	.4350
30-45	1.3104	1.5304	1.4112	.5314	.0638	-.1021	-.1931	.8763	-.3289	1.0215	1.1425	1.1268	1.0487	1.0333	.8507	.5351
31-46	1.0574	1.2958	1.1806	.5531	-.0047	-.0684	-.2186	1.0644	-.2912	1.2458	1.4173	1.4391	1.3910	1.3605	1.1588	.7807
32-47	.3419	.6236	.5855	.0839	-.0693	-.0685	-.2411	0	-.3224	0	0	0	0	0	0	0
33-48	-.2108	.0634	-.0336	-.2093	-.0945	-.0911	-.1400	1.0236	-.2426	1.3057	1.5252	1.5039	1.4980	1.4425	1.1462	.4563
34-49	-.3381	.1523	.1928	-.2452	-.1807	-.1367	.0586	.9138	-.2729	1.2514	1.5130	1.5104	1.5121	1.4314	1.1546	.3564
35-50	.6246	.6281	.6595	.4222	.0873	-.0412	-.1719	.3807	-.3213	.4059	1.0159	1.2918	1.4452	1.4740	1.4077	1.3342
36-51	-.4004	.1945	.0212	-.4313	-.2938	-.2345	-.0311	-.3791	.4865	-.5412	-.5424	-.4841	-.5147	-.4784	-.5693	-.5118
37-52	1.1963	1.0315	.8752	.5727	.3245	.1738	-.0058	.2908	-.2867	.6404	1.1738	1.3890	1.4405	1.4396	1.2847	1.1184
38-53	.3431	.3478	.3620	.2724	.2002	.1127	-.1614	.2797	-.4254	.5029	.8126	1.2574	1.4670	1.4875	1.5238	1.4192
39-54	-.2780	.1756	-.1949	-.1017	.1032	.0420	-.1470	.1568	-.3975	.5631	.9683	1.2723	1.4293	1.5140	1.4497	1.3430

TABLE XII. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 2.00 AND WITH THE CANARD DEPLOYMENT ANGLE = 90°

Orifice number	Pressure coefficient, C_p															
	α = -118.9°	α = -92.5°	α = -78.3°	α = -52.5°	α = -38.3°	α = -28.2°	α = -12.9°	α = -1.64°	α = 1.62°	α = 13.9°	α = 29.9°	α = 53.3°	α = 69.5°	α = 78.9°	α = 94.0°	α = 118.9°
1	-0.2459	-0.2124	-0.1667	0.6086	1.1176	1.3098	1.6024	1.6632	1.6467	1.5821	1.2987	0.7241	0.7017	0.6737	0.5317	0.2156
2	.0146	1.1067	1.5968	1.5402	1.3725	1.2696	.4860	.3023	.3928	.3406	.4430	1.2999	.6712	.6827	1.2543	1.4942
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	1.0944	1.5914	1.6447	.9226	.2326	.2188	-.0370	-.1082	-.0705	-.0693	-.1568	-.1648	-.2082	-.2456	-.2706	-.3043
5	.9183	.9237	.9341	.8827	.8653	.4525	.1499	.0872	.0319	-.1761	-.2763	-.2917	-.2928	-.3026	-.2858	-.2878
6	1.4157	1.6564	1.5901	1.0184	.6018	.4055	.0551	-.0447	-.0551	-.1687	-.1688	-.2639	-.2824	-.3116	-.2613	-.2474
7	1.3120	1.6504	1.5849	1.0117	.5954	.3862	.0433	-.1427	-.1453	-.1281	-.1916	-.2330	-.2631	-.2615	-.2067	-.2178
8	-.2628	-.2270	-.1502	-.0627	.0884	.1786	.1252	.2079	.1985	.4983	.6709	.5913	.3528	.2164	.0328	-.1465
9	-.2583	-.2361	-.2123	-.2281	-.1180	-.0631	.3541	.3246	.4964	.5899	.8691	1.2293	1.1939	1.1794	.9611	.4870
10	-.2691	-.2396	-.1954	-.1058	.0135	.4759	.4821	1.0029	.9453	1.3514	1.2293	1.3375	1.3697	1.3112	1.0884	.6458
11	-.2816	-.2291	-.1779	-.2216	-.0991	-.1934	.0450	.2107	.3312	.8832	1.0721	1.3912	1.4368	1.4583	1.5031	1.1956
12	.5324	.4653	.2782	-.0509	-.0982	-.1743	-.2136	-.1777	-.1133	-.0565	.7596	1.2555	1.3292	1.4130	1.3116	1.2207
13	-.1269	.0620	.0492	-.0561	-.1327	-.1797	-.1614	-.0953	-.0635	-.1689	-.1624	-.0630	.1047	.2118	.1719	-.1065
14	-.2573	-.2291	-.1474	-.2698	-.2019	-.1627	.0455	.1930	.2360	.4052	.6468	.9027	1.0633	1.0419	.5039	.0091
15	-.2622	-.2326	-.1771	-.2438	-.1716	-.0664	.0378	.3116	.3913	.6012	.9102	1.1249	1.1314	1.1061	.9210	1.4227
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.2758	-.2284	-.1643	-.3085	-.2754	-.2767	-.1628	.0252	.1346	.4586	.8902	1.3203	1.3791	1.3390	1.2654	1.0987
18	-.2548	-.2352	-.1512	-.2550	-.1979	-.1994	.0777	.3391	.3548	.6104	1.1310	1.3686	1.3519	1.2268	1.0494	.8658
19	-.2528	-.2281	-.1489	-.1739	-.0785	-.0183	.0614	.1874	.2461	.5333	.9677	1.4075	1.6623	1.6304	.9924	.2380
20	-.2555	-.2206	-.1598	-.1641	-.0460	.1033	.1695	.2726	.3509	.5843	1.0809	1.5533	1.6574	1.6125	1.3832	.7256
21	-.2693	-.2250	-.1766	-.2443	-.2210	-.1645	.0433	.2888	.3041	.1075	.3444	1.2685	1.6087	1.6568	1.4919	1.0532
22	-.2704	-.2108	-.1578	-.2874	-.2334	-.1541	.0075	.1130	.1619	.4759	.9750	1.3293	1.5581	1.6409	1.6264	1.3751
23	-.2822	-.2293	-.1413	-.1670	-.0661	.0091	.2305	.4108	.3782	.6159	1.4043	1.4919	1.6168	1.6544	1.5186	.8836
24	-.2123	-.1976	-.0936	-.2050	-.1043	-.1729	-.1003	.0063	.0364	.1059	.3075	.6914	.9141	.9990	.9517	.6468
25-40	.9686	1.4568	1.5829	1.1789	.5965	.5684	.1058	.9658	.1245	1.4392	1.6856	1.6743	1.3606	1.2823	1.0836	.6056
26-41	.4333	.8135	1.0086	.9312	.6745	.4696	.2179	.3328	.1120	1.3653	1.6136	1.7148	1.3988	1.3070	1.0815	.6084
27-42	-.0869	.1200	.3094	.6114	.5569	.4837	.3565	.2436	.2310	.7122	1.3877	1.6902	1.4133	1.3084	1.0705	.6546
28-43	-.1416	-.0903	.2586	.5175	.5502	.5809	.6333	.0179	.9827	-.1693	-.2001	-.2730	-.3050	-.3161	-.2968	-.3204
29-44	.4987	.8064	.9216	.8494	.6182	.4690	.1751	.6625	-.0193	1.0713	1.4384	1.7114	1.5626	1.4906	1.2542	.5142
30-45	1.5073	1.6610	1.5075	.3710	.4491	.0895	-.1147	1.0568	-.1324	1.3799	1.4671	1.3506	1.2352	1.2024	1.0329	.7943
31-46	1.1835	1.4359	1.2585	.3240	.2570	.0625	-.0684	1.2571	-.0587	1.6172	1.6935	1.6467	1.5419	1.5125	1.3059	.9772
32-47	.4756	.7551	.6685	.2080	.1362	.0514	-.1128	0	-.1108	0	0	0	0	0	0	0
33-48	-.0341	.0969	.0876	.0657	.1103	.0611	-.0137	.8853	-.0089	1.4378	1.8036	1.7185	1.6409	1.5917	1.2954	.4579
34-49	-.2065	-.1095	.0762	-.0182	.0125	.0518	.1011	.8107	-.0276	1.4345	1.7863	1.7384	1.6654	1.5989	1.3204	.1243
35-50	.5692	.6383	.6318	.4089	.1783	.0130	-.1221	.7711	-.0747	.6393	1.0483	1.4535	1.5702	1.6316	1.5506	1.6337
36-51	-.2577	-.2340	-.2034	-.1332	-.0655	-.0522	.1570	-.2348	.4551	-.2952	-.2910	-.2843	-.3179	-.3248	-.3096	-.3135
37-52	1.5058	1.1641	.9922	.6079	.3333	.1767	-.0290	.6098	-.0784	.7622	1.3650	1.5521	1.5846	1.5809	1.4326	1.4523
38-53	.5758	.4937	.4801	.3563	.2212	.1236	-.0889	.4960	-.1663	.6952	1.1026	1.3935	1.5930	1.6486	1.6833	1.6478
39-54	-.0962	-.0585	-.0026	.0944	.1331	.0865	-.0421	.3719	-.1107	.7985	1.2151	1.4452	1.5924	1.6819	1.6770	1.6345

TABLE XIII. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 0.70 AND WITH THE CANARD DEPLOYMENT ANGLE = 115°

Orifice number	Pressure coefficient, C_p									
	α = -99.2°	α = -78.4°	α = -19.4°	α = -1.16°	α = 1.59°	α = 19.7°	α = 20.3°	α = 38.9°	α = 78.4°	α = 99.5°
1	-0.5252	-0.7777	0.8881	1.1550	1.1178	0.8737	0.8868	0.1635	-0.1055	-0.0237
2	-.2433	1.0377	.6205	.4632	.4640	.5261	.5456	.4798	-.0032	-.2395
3	0	0	0	0	0	0	0	0	0	0
4	.9681	1.1301	-.1817	-.5353	-.4367	-.3579	-.3303	.1080	-.2773	-.0920
5	1.1051	1.0835	.0052	-.1579	-.1981	-.5528	-.5616	-.5356	-.3624	-.4235
6	1.1183	1.0826	.0502	-.0140	-.0185	-.6424	-.6417	-.5762	-.4149	-.4229
7	1.1218	1.0427	.0906	.0471	.0553	-.4970	-.5074	-.6028	-.4101	-.4058
8	-.4509	-.8360	-.2473	.1409	.1914	.3367	.3477	.3493	-.4327	-1.5309
9	-.4893	-.6681	-.1841	.3476	.4741	.6115	.6494	.6748	.4390	.0619
10	-.4590	-.7240	.2811	.1623	.2221	.2992	.3119	.5879	.4933	.1987
11	-.3715	-.4405	-.3137	-.1803	-.1639	.1590	.1619	.4998	.6420	.6590
12	-.3383	-.3933	-.4887	-.3763	-.3719	-.3843	-.3796	.2471	.5806	.4218
13	-1.4550	-1.2539	-.2742	-.1553	-.1177	-.5739	-.5699	-.4973	-1.0082	-1.3752
14	-.4545	-.6912	-.2098	.1723	.2178	.4060	.4161	.4708	.2632	-.5475
15	-.4571	-.6264	-.0177	.3252	.3572	.5333	.5396	.5874	.3287	.0045
16	0	0	0	0	0	0	0	0	0	0
17	-.3852	-.4430	-.5951	-.3402	-.3230	.0604	.0666	.4686	.5725	.4077
18	-.3784	-.4770	-.3685	-.0827	-.0970	.1912	.2065	.6345	.3678	.0903
19	-.4714	-.8070	-.1386	.1435	.2016	.4791	.4990	.8626	1.0684	.2671
20	-.4466	-.5177	.0970	.2630	.3018	.5947	.6126	.9136	1.0742	.7624
21	-.4370	-.4585	-.8998	-.6127	-.5929	-.2520	-.2231	.4616	1.1150	.8875
22	-.3739	-.4303	-.4275	-.1458	-.1045	.1554	.1754	.5784	1.1142	1.0666
23	-.3611	-.4733	.0727	.1572	.2494	.5740	.5989	.8408	1.1219	.9140
24	-.4627	-.4430	-.1733	-.0758	-.0588	-.2182	-.2181	-.0351	.1286	.0180
25-40	1.0073	1.1396	.1824	.7444	-.8791	1.0452	1.0587	.9835	.5996	.2240
26-41	.5206	.9141	.0987	.6311	-.9122	.9822	1.0181	1.0476	.6785	.3188
27-42	-.4522	.1397	.2607	.5806	-.6119	.9462	.9726	1.0600	.7186	.3835
28-43	-.4459	-.4272	.2179	-.5730	.5333	-.7722	-.7933	-.6457	-.4699	-.4928
29-44	.5706	.8514	-.0085	.5570	.7599	.8369	.8721	1.0392	.9093	.5367
30-45	1.0082	.9099	-.5932	.5308	-.8405	.6342	.6277	.7017	.5502	.3369
31-46	1.0847	.9160	-.8696	.6851	-1.3162	.8575	.8838	1.0222	.9212	.6983
32-47	.5734	.5494	-1.1700	0	-2.0154	0	0	0	0	0
33-48	-.4025	-.3258	-1.0961	.8069	-1.5820	.9707	.9841	1.1071	.9941	.3997
34-49	-.5415	-.5492	-.3925	.6560	-1.1867	.8867	.9050	1.0281	.8975	.5113
35-50	.4143	.5033	-.1520	-.2321	-.8055	.3471	.3642	.8050	1.0773	1.0227
36-51	-.3742	-.4326	-.2949	-.4897	.1516	-.7140	-.7106	-.6976	-.4147	-.4349
37-52	.7519	.4623	-.1728	-.0017	-.3775	.4479	.4848	.8269	.9730	.8132
38-53	.1929	.2043	-.2039	-.0545	-.7704	.2116	.2059	.6258	1.1205	1.1472
39-54	-.6506	-.4218	-.1752	-.0626	-.9532	.3104	.3350	.7319	1.1381	1.1277

TABLE XIV.- PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.10 AND WITH THE CANARD DEPLOYMENT ANGLE = 115°

Orifice number	Pressure coefficient, C_p								
	α = -99.0°	α = -79.1°	α = -19.5°	α = -1.16°	α = 1.62°	α = 19.7°	α = 38.9°	α = 78.4°	α = 99.4°
1	-0.4694	-0.5753	1.1559	1.3283	1.3118	1.1530	0.6858	0.2611	0.1094
2	-.3151	1.2664	.8485	.7056	.7252	.7969	.5977	.1229	-.1297
3	0	0	0	0	0	0	0	0	0
4	1.1252	1.2619	.1606	-.6053	-.5818	-.6909	-.6223	-.6533	-.2291
5	1.2834	1.2494	-.1119	-.3543	-.3527	-.4743	-.7818	-.5020	-.3966
6	1.2776	1.2121	.0685	-.3107	-.3129	-.4390	-.7658	-.4773	-.4531
7	1.2783	1.2239	.1031	-.1400	-.1119	-.3733	-.6923	-.5082	-.4804
8	-.4555	-.6034	.0015	.4122	.4437	.6191	.6228	-.1617	-.6476
9	-.5478	-.7366	.1475	.4575	.6718	.8658	.9438	.5955	.3072
10	-.5039	-.6524	.6813	.5571	.5130	.6479	.8666	.6163	.3530
11	-.4331	-.6466	-.3455	-.0061	.0540	.4455	.7864	.7975	.8240
12	-.4269	-.5995	-.6146	-.5276	-.4806	-.2156	.5551	.7751	.6180
13	-.6731	-.7786	-.5700	-.3585	-.1893	-.7756	-.5689	-.5207	-.7463
14	-.4673	-.6057	.0321	.4172	.4537	.6608	.7425	.4962	-.1547
15	-.4635	-.7294	.2341	.5860	.6072	.8055	.8300	.5095	.2919
16	0	0	0	0	0	0	0	0	0
17	-.4249	-.6281	-.6020	-.2618	-.1796	.3497	.7549	.7192	.6322
18	-.4289	-.6049	-.3751	-.0600	.0174	.4757	.9114	.5526	.3342
19	-.4924	-.5911	.1004	.3948	.4425	.7401	1.0776	1.1835	.4225
20	-.4447	-.6807	.3847	.5183	.5712	.8511	1.1476	1.0538	.9063
21	-.4388	-.6288	-.5636	-.5303	-.5226	-.2106	.7154	1.2272	1.0261
22	-.4267	-.5949	-.4871	-.1292	-.0326	.4303	.8327	1.2283	1.2116
23	-.4248	-.5676	-.0029	.2868	.3409	.8177	1.0726	1.2366	.9945
24	-.8430	-.5468	-.2933	-.2532	-.2281	-.1727	.1979	.4560	.4097
25-40	1.1530	0	.4070	.9714	-.3562	1.2288	1.2438	.1204	.3380
26-41	.7536	0	.3398	.8600	-.4047	1.1908	1.2777	.7852	.4863
27-42	-.0411	0	.4825	.8010	-.1053	1.1736	1.2861	.8478	.5218
28-43	-.4681	0	.4404	-.2604	.7298	-.9145	-.8381	-.5432	-.4358
29-44	.8309	0	.2604	.7917	-.3379	1.0760	1.2758	.9945	.6551
30-45	1.1823	0	-.3900	.8101	-.7765	.9211	1.0216	.7175	.5403
31-46	1.2588	0	-.5215	.9299	.5753	1.0899	1.2534	1.0316	.8157
32-47	.8286	0	-.5646	0	-.8883	0	0	0	0
33-48	.0305	0	-.4771	1.0339	-.7970	1.1829	1.3082	1.0939	.5314
34-49	-.4690	0	-.1042	.9087	-.9737	1.1187	1.2497	1.0185	.6327
35-50	.7097	0	-.2839	-.1768	-.8531	.5474	1.0445	.5794	1.1010
36-51	-.4259	0	-.0021	-.9074	.2168	-.9031	-.8435	-.5140	-.4324
37-52	.9970	0	-.0550	.0305	-.7643	.6894	1.0735	1.1057	.9568
38-53	.5315	0	-.1430	.0673	-.9618	.5093	.8838	1.2177	1.2760
39-54	-.2455	0	-.1646	.0842	-.9981	.5786	.9810	1.2706	1.2943

TABLE XV. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 1.50 AND WITH THE CANARD DEPLOYMENT ANGLE = 115°

Orifice number	Pressure coefficient, C_p															
	α = -118.9°	α = -92.9°	α = -78.4°	α = -38.9°	α = -27.9°	α = -12.9°	α = -1.69°	α = 1.62°	α = 13.8°	α = 29.9°	α = 38.9°	α = 53.4°	α = 69.4°	α = 78.9°	α = 94.9°	α = 118.9°
1	-0.3524	0.2149	0.1209	0.8816	1.2025	1.4653	1.4938	1.5054	1.4377	1.1820	0.9105	0.6424	0.7254	0.6827	0.4338	-0.0049
2	1.2634	.4731	1.4517	1.2554	1.0924	.8704	.5300	.6176	.4895	.3525	.5713	.5680	.5924	.5339	.2465	.0263
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	1.0211	1.4337	1.5007	.6330	.5119	-.2415	-.1120	-.1405	-.2138	-.2138	-.2128	-.2145	-.2310	-.4315	-.4774	-.4556
5	.6898	.6628	.6613	.6700	.3891	-.0942	.1286	.0506	-.2570	-.4993	-.5579	-.4945	-.4591	-.4272	-.4379	-.4627
6	1.3831	1.5102	1.4292	.6990	.3102	-.1233	-.3151	-.2959	-.3239	-.4752	-.5008	-.4052	-.4270	-.4249	-.4313	-.4407
7	1.3146	1.5037	1.4289	.6750	.3812	-.0283	-.0918	-.1461	-.1906	-.3674	-.4582	-.3824	-.4105	-.4296	-.3727	-.3511
8	-.3800	.2043	.0763	-.1821	-.0503	.2229	.2193	.2148	.4887	.4731	.7619	.6887	.3311	.0239	-.1714	-.4682
9	-.3759	.1553	.0774	-.3388	-.2279	.3272	.5557	.6139	.7920	1.0442	1.0594	1.0399	.9187	.9294	.6313	.2199
10	-.3703	.2113	.0514	.6313	1.0785	1.0336	.9657	.9542	.7922	.9607	1.0544	1.0840	1.1497	.9332	.7007	.3519
11	-.4107	.2077	.0869	.4058	-.3494	-.2449	.0079	.1582	.4716	.8270	.9654	.9823	1.1102	1.1250	1.1719	.8916
12	.1824	.2203	.0915	-.3867	-.3810	-.3520	-.3256	-.3301	-.0344	.5249	.7528	.8824	1.0905	1.1065	.9530	.7750
13	-.1167	-.1153	-.1914	-.3790	-.4282	-.4110	-.1980	-.1204	-.3149	.2789	-.1819	-.1265	.0224	.0490	-.2091	-.3652
14	-.3781	.2006	.0651	-.3527	-.2200	.0662	.2257	.2546	.4914	.5708	.7752	.9005	.9193	.8621	.3014	-.4472
15	-.3837	.1963	.0731	-.3718	-.0526	.2329	.4941	.5229	.7409	.9013	.9525	.9806	.9314	.8652	.6652	.1486
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.4107	.2332	.0973	-.5113	-.4632	-.2927	-.1057	-.0012	.3510	.7771	.9372	1.1093	1.1025	1.0357	.9242	.6850
18	1.2877	.6061	.0993	-.3132	1.0455	-.0038	.1453	.1686	.5027	.9336	1.1098	1.1764	.9984	.9016	.7092	.3512
19	-.3596	.1996	.0515	-.1310	.0705	.0786	.2097	.2688	.5542	.8120	1.1031	1.3729	1.5169	1.4853	.8600	-.2344
20	-.3613	.2342	.0765	-.1101	.1085	.3249	.4447	.4972	.7392	1.1238	1.2826	1.4473	1.5205	1.4745	1.2371	.6056
21	-.3957	.2363	.1063	-.3147	-.2433	-.0469	.1517	.2189	-.0106	.2284	.8007	1.1804	1.4777	1.5200	1.3316	.7893
22	-.3943	.2370	.1107	-.4249	-.2967	-.1586	.0127	.0569	.4500	.8303	.9693	1.2078	1.4340	1.5115	1.4693	1.1428
23	-.4259	.2441	.1018	-.3452	-.0392	.2135	.3970	.4627	.7981	1.1810	1.2589	1.3659	1.4800	1.5178	1.3214	.5722
24	-.3190	.1389	.0654	-.3884	-.2667	-.1981	-.1243	-.0782	.0141	.3161	.4431	.6059	.7881	.8323	.7614	.5052
25-40	1.0929	1.4403	1.5192	.7794	.5728	.1781	1.1857	-.1194	1.1927	1.1928	1.3545	1.3401	1.1721	1.0482	.8004	.3932
26-41	.6822	1.1545	1.3346	.8509	.5473	.1913	1.0206	-.0970	1.1520	1.2024	1.3899	1.3953	1.2484	1.1114	.8279	.3932
27-42	.0463	.4828	.7833	.8773	.6741	.3989	.9569	.1196	1.1201	1.1385	1.3853	1.4278	1.2958	1.1533	.8446	.4198
28-43	-.3875	.1986	.0460	.4648	.5724	.5296	-.0109	.8175	-.3805	-.4949	-.5626	-.4275	-.4505	-.4841	-.4389	-.4700
29-44	.8234	1.1705	1.2695	.7711	.4258	.1309	.9544	-.0875	1.1007	1.4985	1.4730	1.4697	1.3522	1.2932	1.0099	.2922
30-45	1.2609	1.4218	1.3437	.1212	.0668	-.3283	.9005	-.3856	1.1308	1.2898	1.2676	1.2250	1.0707	1.0609	.8669	.5008
31-46	1.3176	1.4838	1.3320	.0039	-.0998	-.2911	1.1521	1.1996	1.2401	1.4762	1.4671	1.4401	1.2878	1.3321	1.1205	.7169
32-47	.8726	1.1172	1.0510	-.0080	-.1125	-.3226	0	-.3547	0	0	0	0	0	0	0	0
33-48	.1993	.4652	.4999	.0105	-.0507	-.2043	1.2356	-.2945	1.3777	1.5434	1.5278	1.5199	1.4170	1.3956	.9076	.2066
34-49	-.1493	.1993	.1429	-.0555	.0336	-.1659	1.1033	-.4280	1.3612	1.4962	1.4877	1.4786	1.4762	1.3344	.9753	.1952
35-50	.7506	.6641	.6832	.3099	-.0154	-.3137	.2035	-.3790	.4425	1.1005	1.2215	1.3500	1.2802	1.4689	1.4062	1.3320
36-51	-.4255	.2364	.1180	-.3637	-.2536	.1978	-.4698	.4958	-.5672	-.5499	-.5535	-.4459	-.4676	-.4531	-.4544	-.5098
37-52	1.4490	1.2042	1.0275	.4729	.1813	-.1005	.3074	-.3430	.6372	1.1972	1.2608	1.3044	1.2724	1.3883	1.2637	1.1196
38-53	.8785	.8463	.7704	.4424	.1934	-.4069	.3709	-.4616	.6763	.9219	1.0709	1.2323	1.4755	1.4995	1.5040	1.4137
39-54	.1089	.2401	.3115	.3476	.0494	-.2806	.3208	-.4267	.7153	1.0454	1.1753	1.3092	1.5143	1.5544	1.4764	1.4016

TABLE XVI. - PRESSURE DISTRIBUTION ON THE LOADS TEST MODEL FOR A SINGLE CANARD AT M = 2.00 AND WITH THE CANARD DEPLOYMENT ANGLE = 115°

Orifice number	Pressure coefficient, C_P													
	α = -38.9°	α = -28.1°	α = -13.0°	α = -1.64°	α = 1.64°	α = 13.9°	α = 29.9°	α = 38.9°	α = 53.3°	α = 69.5°	α = 78.8°	α = 94.0°	α = 110.0°	α = 118.9°
1	1.0246	1.3396	1.6087	1.6531	1.6517	1.5825	1.2895	1.0670	0.7540	0.8092	0.7476	0.5691	0.3284	0.2494
2	1.4232	1.2819	1.2324	.2321	.3498	.3743	.4253	.5090	.3269	.5443	.6074	.4215	.2981	.1975
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	.6681	.4184	.0714	.1461	.0837	-.0633	-.1010	-.1005	-.0608	-.0112	-.1880	-.2483	-.2791	-.2677
5	.7576	.4341	.0846	-.1056	-.0797	-.2559	-.3026	-.3198	-.3078	-.3200	-.2664	-.2792	-.3005	-.2779
6	.6839	.3805	-.0777	-.1375	-.0882	-.1973	-.2554	-.3047	-.2199	-.2728	-.2778	-.2684	-.2701	-.2670
7	.6737	.3628	-.0209	-.1382	-.1542	-.1408	-.2219	-.2706	-.2422	-.2510	-.2559	-.2108	-.2259	-.2466
8	.0440	.1157	.1295	.2047	.1994	.3955	.4787	.6290	.5889	.2781	.1667	.0238	-.1314	-.1928
9	-.1092	-.0152	.3281	.3504	.4787	.6168	.6609	.9671	.9141	.9231	1.0009	.7911	.5181	.3207
10	.7595	1.1907	1.6387	1.4663	1.5470	.8245	1.1118	1.2295	1.2086	1.2554	1.0427	.8368	.5911	.4231
11	-.1526	-.1198	-.1558	.0702	.1530	.4653	.9261	1.0253	1.0866	1.2120	1.3200	1.2996	1.0868	.9156
12	-.2114	-.2394	-.2206	-.1911	-.1334	.1614	.7639	1.0431	.9776	1.2070	1.2633	1.0825	1.0597	.7138
13	-.1418	-.2146	-.2331	-.1107	-.0817	-.1381	.0116	.0532	.0903	.2077	.2564	-.0637	-.1280	-.1416
14	-.2104	-.1889	.0461	.1980	.2397	.4679	.6703	.6721	.8513	1.0137	1.0020	.4935	-.1256	-.0676
15	-.2401	-.0884	.1575	.3402	.4214	.5661	.7791	.9082	.9608	1.0099	.9784	.8205	.4515	.2910
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	-.2979	-.2630	-.1454	.0225	.1097	.4124	.8094	1.0700	1.2820	1.2239	1.1344	1.0493	.8896	.7518
18	1.9615	-.1305	1.6521	.2639	.3191	.5587	1.0491	1.2951	1.3455	1.1434	1.0137	.8064	.6593	.5838
19	-.1025	-.0151	.0632	.1856	.2457	.5609	.9726	1.0734	1.3491	1.6405	1.6439	1.0697	.0897	.2180
20	-.0825	.0607	.2112	.3407	.4155	.5973	1.0363	1.3478	1.5223	1.6605	1.6194	1.4129	.9359	.7128
21	-.2038	-.1482	.1263	.2341	.2452	.1801	.3359	.3819	1.1985	1.5940	1.6544	1.5001	1.1043	1.0192
22	-.2641	-.1573	-.0343	.1048	.1728	.5106	.8885	1.1265	1.3177	1.5463	1.6385	1.6354	1.4352	1.2624
23	-.1677	.0414	.3049	.3567	.3654	.7989	1.3830	1.5393	1.5088	1.6215	1.6521	1.4665	.8520	.5654
24	-.2312	-.1627	-.0875	.0212	.0675	.1247	.4003	.6081	.7413	.9052	.9566	.9050	.7563	.6418
25-40	.4692	.4679	.2899	1.3451	.1561	.8204	.8610	1.2961	1.3736	1.2929	1.1475	.9620	.6651	.5090
26-41	.7117	.3827	.1022	.7119	.0927	.9596	.9317	1.4029	1.4708	1.3578	1.2165	.9911	.6729	.5294
27-42	.8107	.5846	.2923	.4130	.0822	1.1083	.9286	1.4492	1.4766	1.4001	1.2641	1.0207	.7225	.5472
28-43	.3419	.5772	.7678	.0322	1.0090	-.1530	-.2641	-.3088	-.3077	-.2837	-.2890	-.2818	-.2849	-.2986
29-44	.6135	.3979	.1247	.8613	-.0231	.9612	1.3658	1.4937	1.7486	1.4901	1.3773	1.1578	.7312	.4115
30-45	.3568	.1909	-.1668	1.3123	-.1668	1.3228	1.5361	1.4458	1.4696	1.2456	1.2008	1.0508	.8043	.7641
31-46	.2116	.0147	-.1409	1.4498	-.1264	1.3635	1.6357	1.6026	1.6884	1.4040	1.4641	1.2866	1.0338	.8781
32-47	.1611	.0040	-.1479	0	-.1326	0	0	0	0	0	0	0	0	0
33-48	.2047	.1018	-.0598	1.1762	-.0748	1.6298	1.9056	1.9372	1.7793	1.5408	1.5477	1.0889	.5871	.3182
34-49	.1344	.1834	.0111	1.0397	-.1677	1.5194	1.9328	2.0166	1.8026	1.6376	1.5263	1.1547	.5986	.0471
35-50	.1766	-.0400	-.1679	.8018	-.1238	.4899	1.1106	1.3518	1.5052	1.4107	1.6078	1.5691	1.5949	1.5900
36-51	-.1282	-.0471	.3333	-.2771	.6442	-.3107	-.3288	-.3302	-.2994	-.2964	-.2919	-.2748	-.3004	-.3157
37-52	.4116	.1733	-.0365	.6788	-.1264	.7276	1.3045	1.2213	1.4697	1.4342	1.5200	1.4251	1.3578	1.3272
38-53	.4411	.1244	-.2067	.7006	-.2009	.8533	1.2862	1.3783	1.4338	1.5598	1.6887	1.6884	1.7038	1.5490
39-54	.2730	.1367	-.1413	.4232	-.1919	.9151	1.3762	1.4570	1.5107	1.6396	1.7164	1.7232	1.6946	1.6249

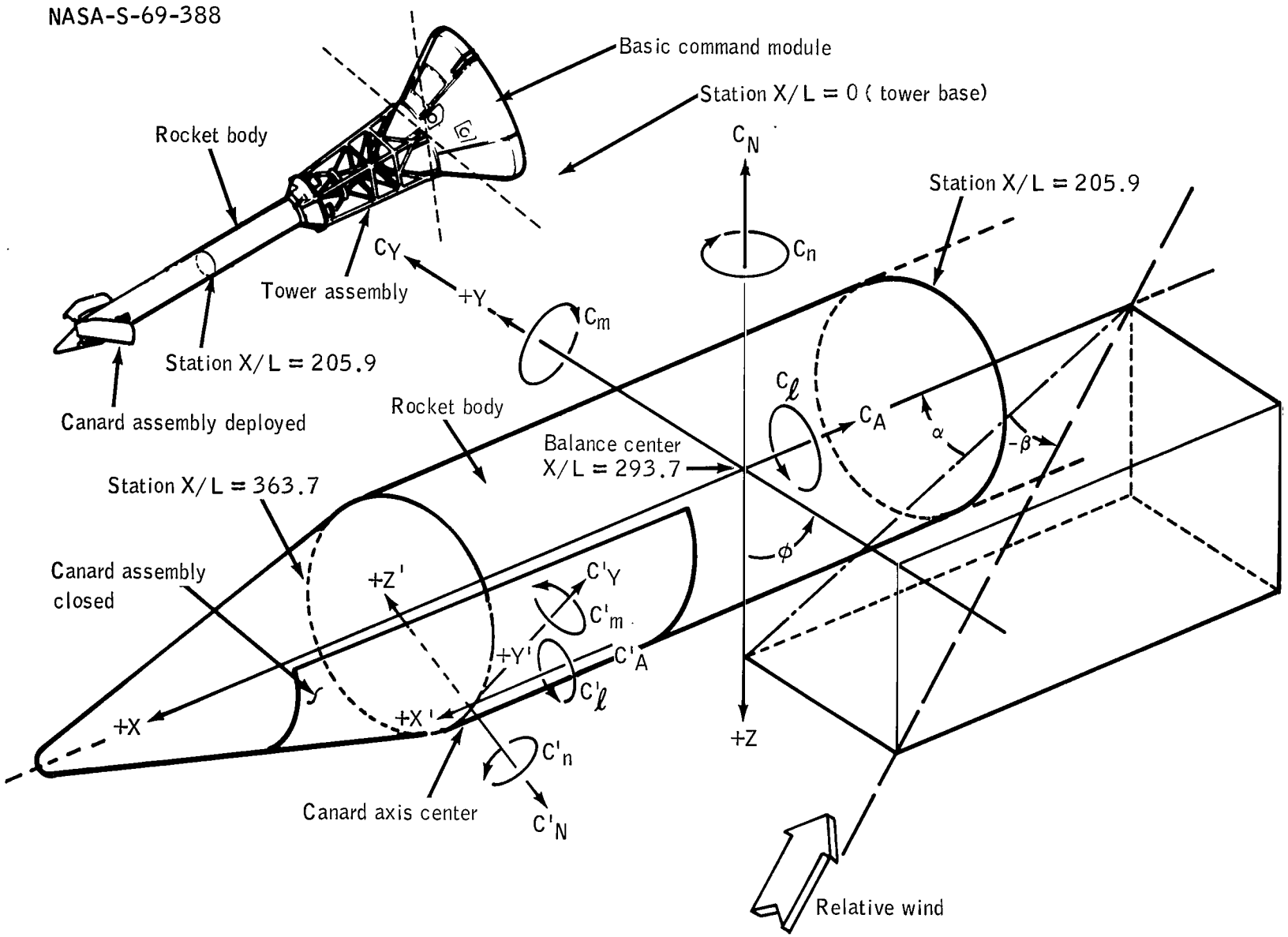


Figure 1. - Axes systems of canard and nose sections for loads test model; sketch not drawn to scale.

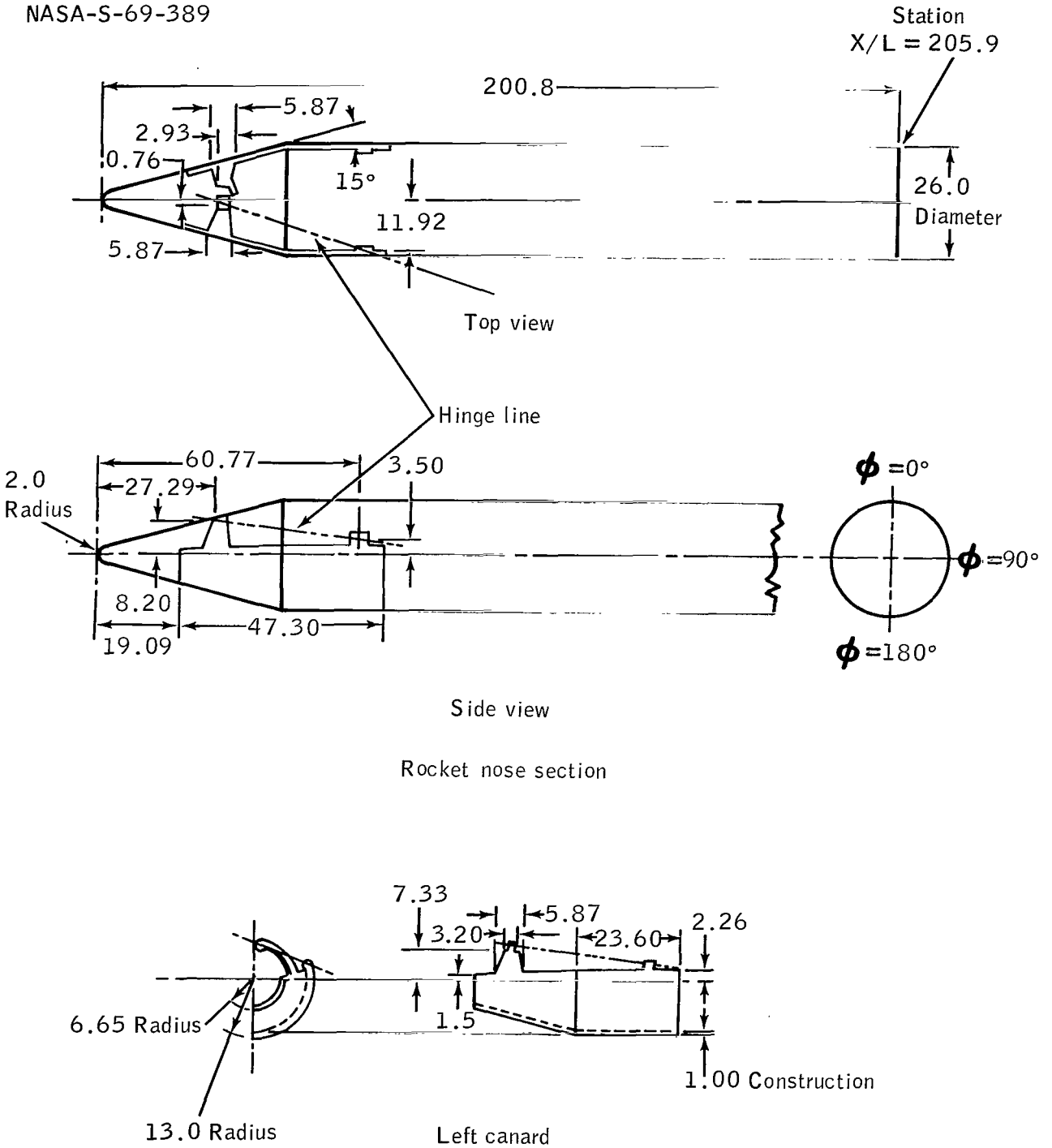


Figure 2. - Loads test-model diagram with full-scale dimensions in inches; sketch not drawn to scale.

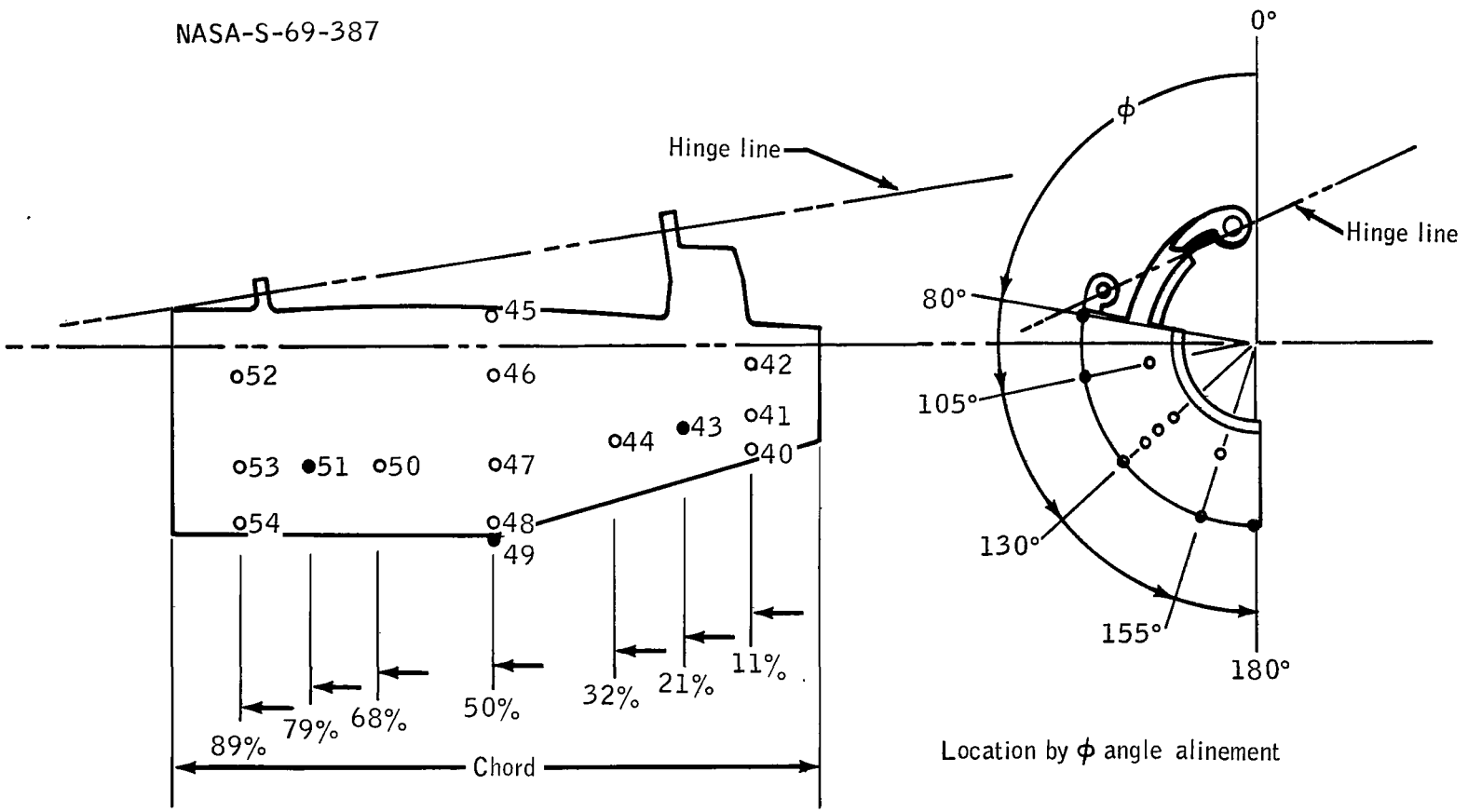
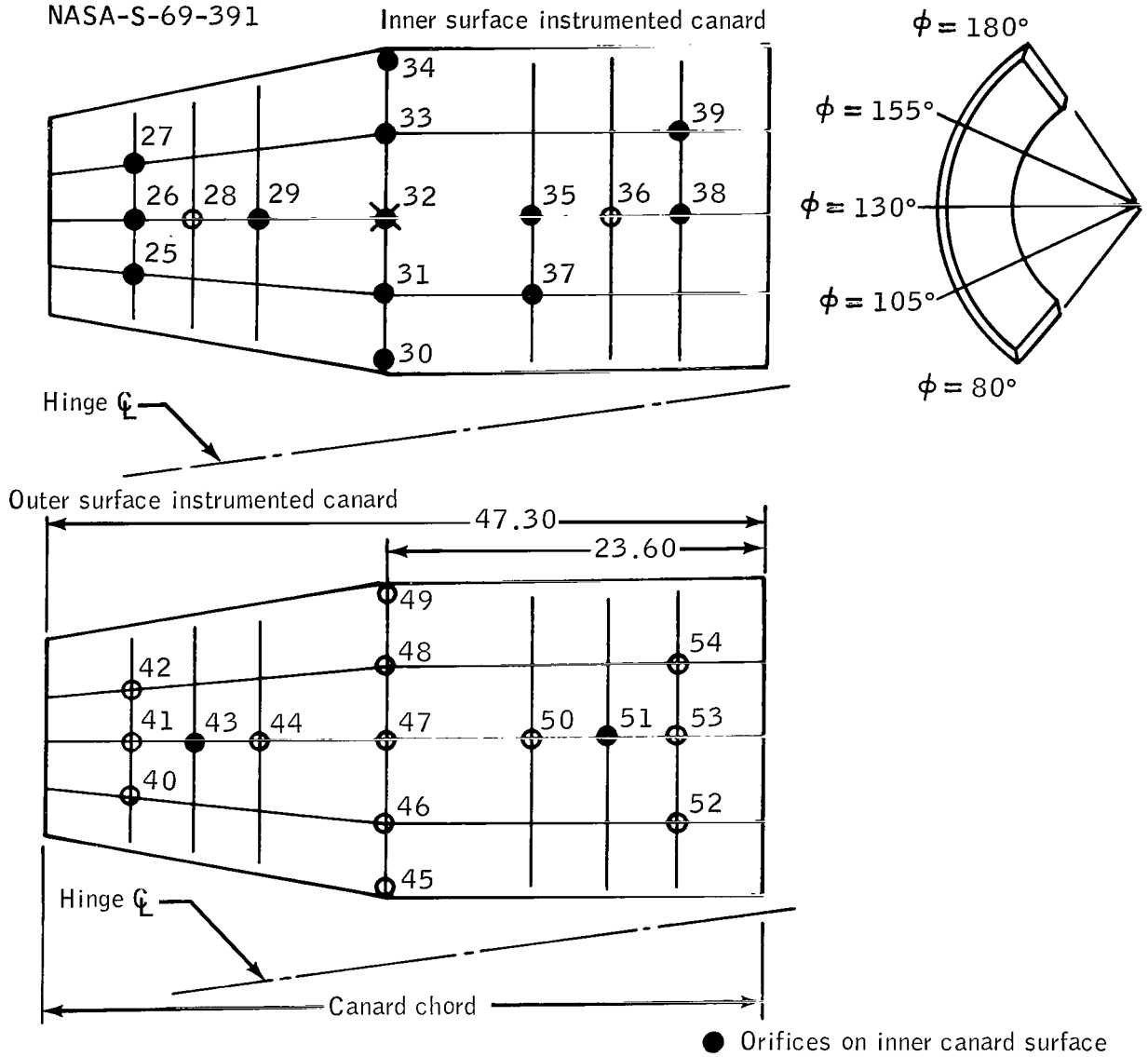
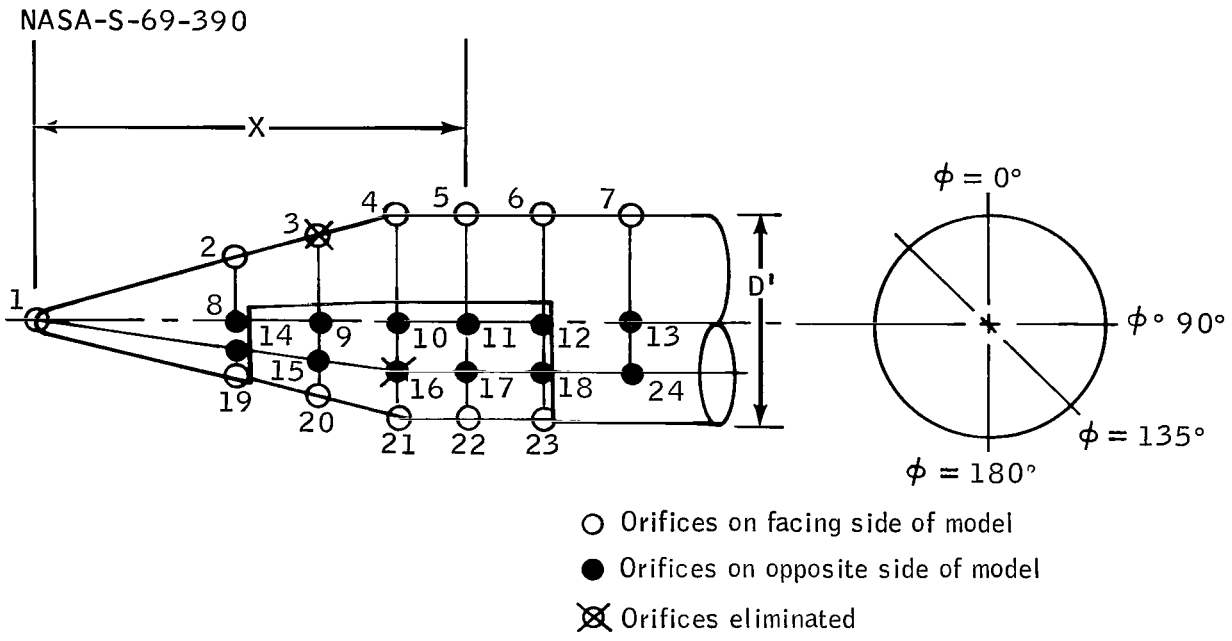


Figure 3. - Location of instrumentation points on outer surface of right-hand canard; numbers 43 and 51 are located on inner surface.



Chord aft of leading edge, percent	Pressure instrumentation angle, ϕ, deg				
	80	105	130	155	180
	Canard orifice number				
11	30-45	25-40	26-41	27-42	34-49
21			28-43		
32			29-44		
50		31-46	32-47	33-48	
68		37	35-50		
79			36-51		
89		52	38-53	39-54	

Figure 4. - Location and designation of right-hand canard pressure orifices.



X/D'	Pressure instrumentation angle, ϕ, deg			
	0	90	135	180
	Model orifice number			
0	1			
0.761	2	8	14	19
1.180	3	9	15	20
1.646	4	10	16	21
2.092	5	11	17	22
2.539	6	12	18	23
2.986	7	13	24	

Figure 5. - Location and designation of pressure orifices on escape rocket nose section.

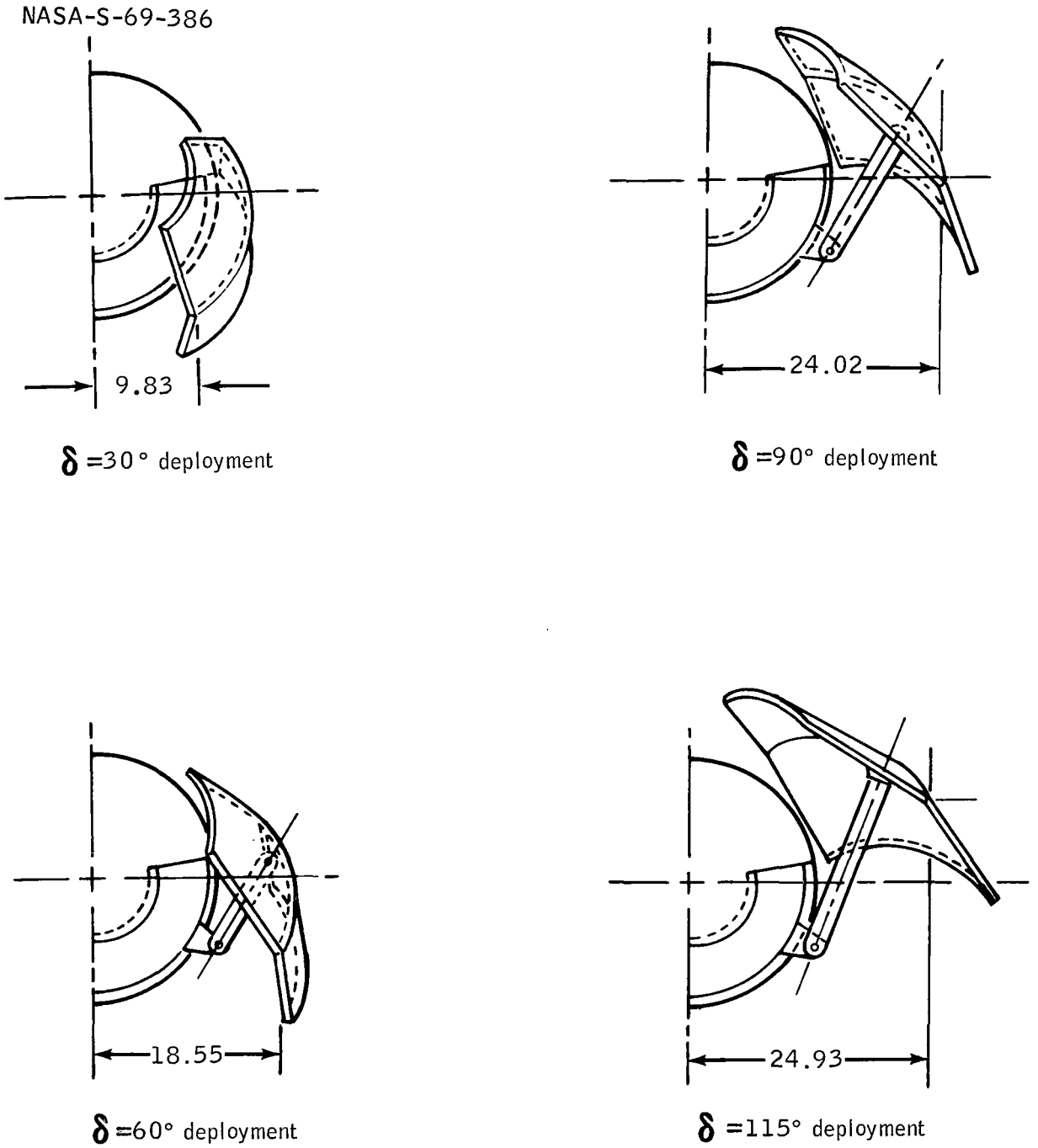


Figure 6. - Front view of model (left half) shown at canard deployment angles tested; sketch not drawn to scale; full-scale dimensions given in inches.

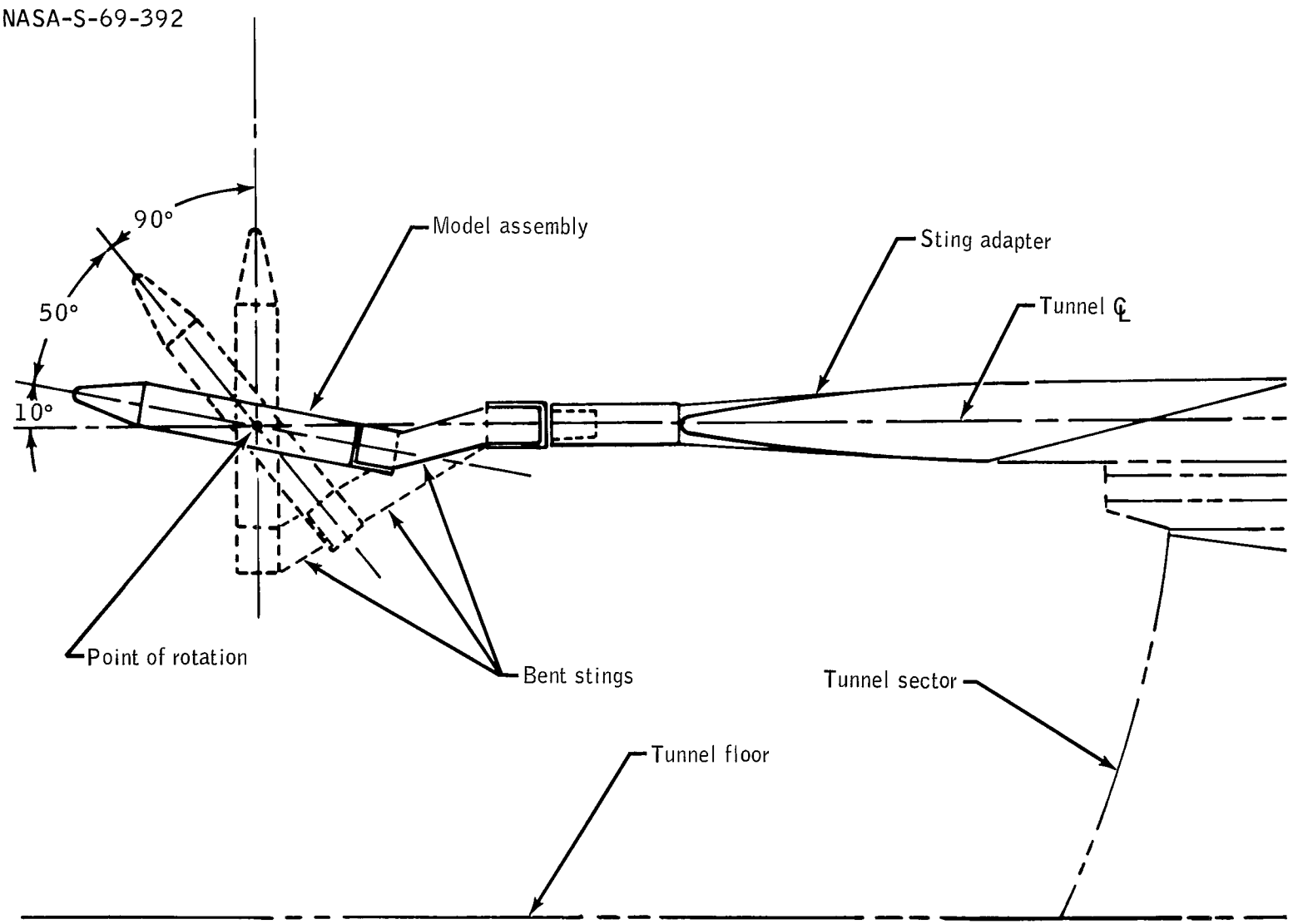
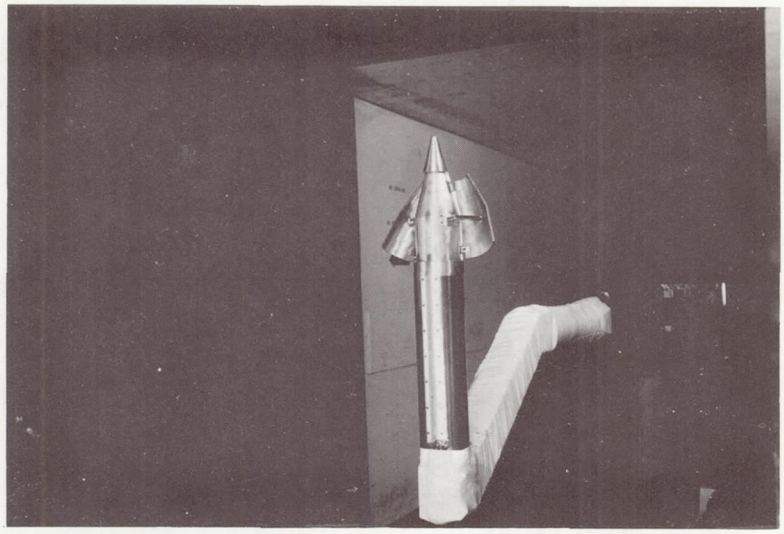


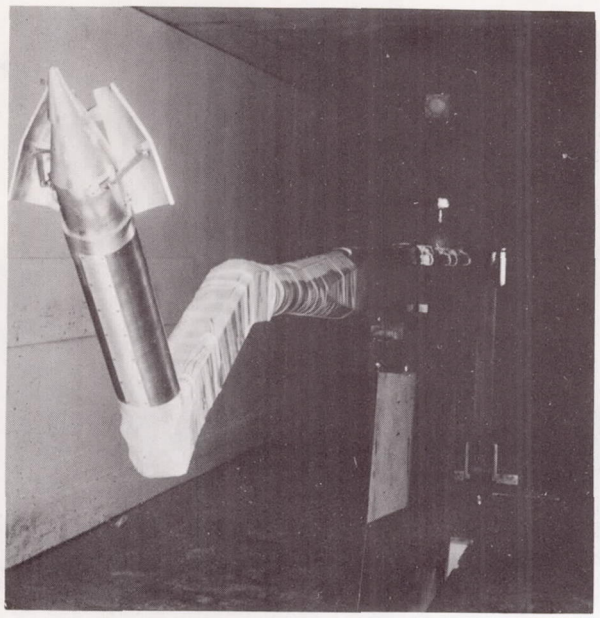
Figure 7. - Typical installation in trisonic wind tunnel; sketch not drawn to scale.

(a) Model mounted on 10° bent sting.

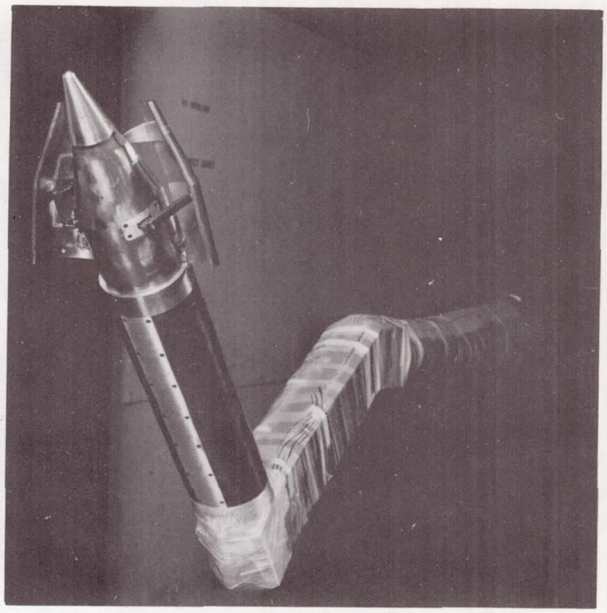


(b) Model mounted on 90° bent sting.

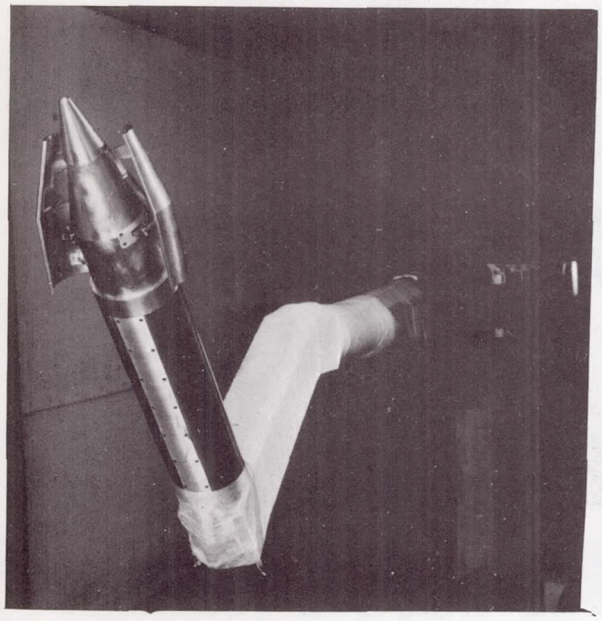
Figure 8. - Loads test model with canards fully deployed at $\delta = 115°$, shown mounted in the trisonic wind tunnel.



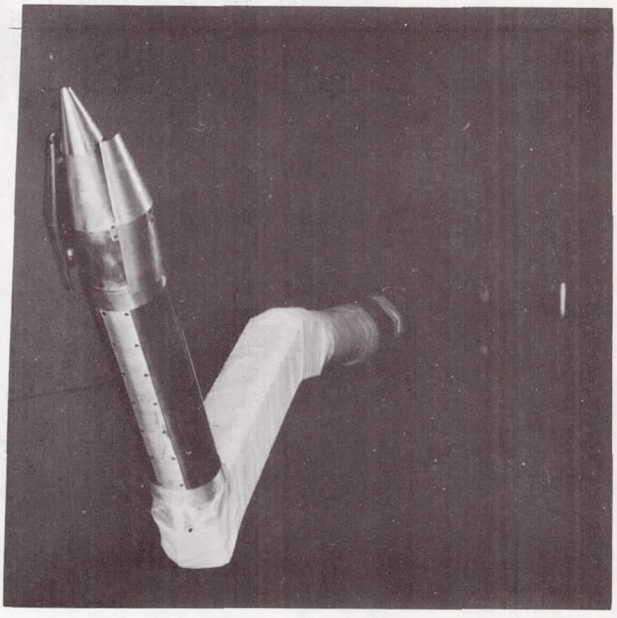
(a) $\delta = 115°$.



(b) $\delta = 90°$.

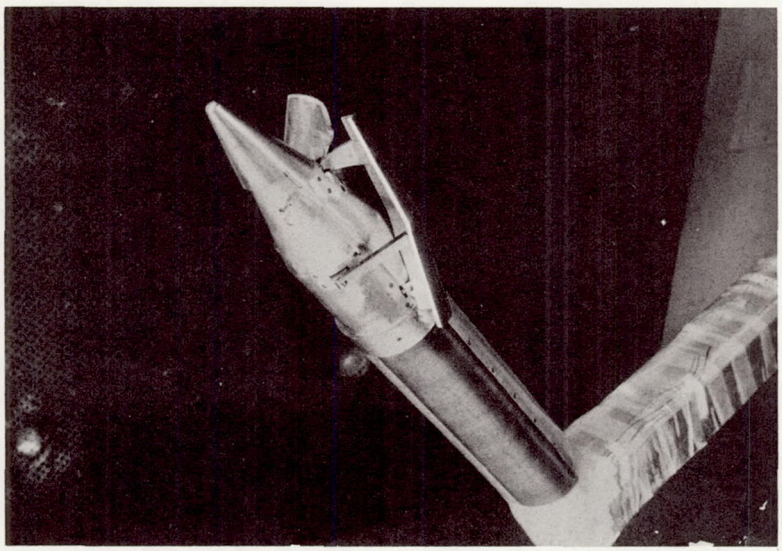


(c) $\delta = 60°$.

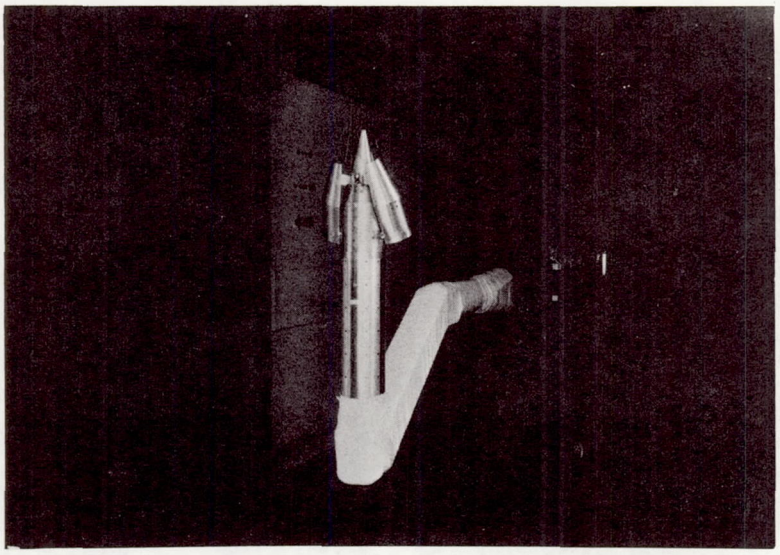


(d) $\delta = 30°$.

Figure 9. - Loads test model on the 50° bent sting in the trisonic wind tunnel, shown at canard deployment angles tested.

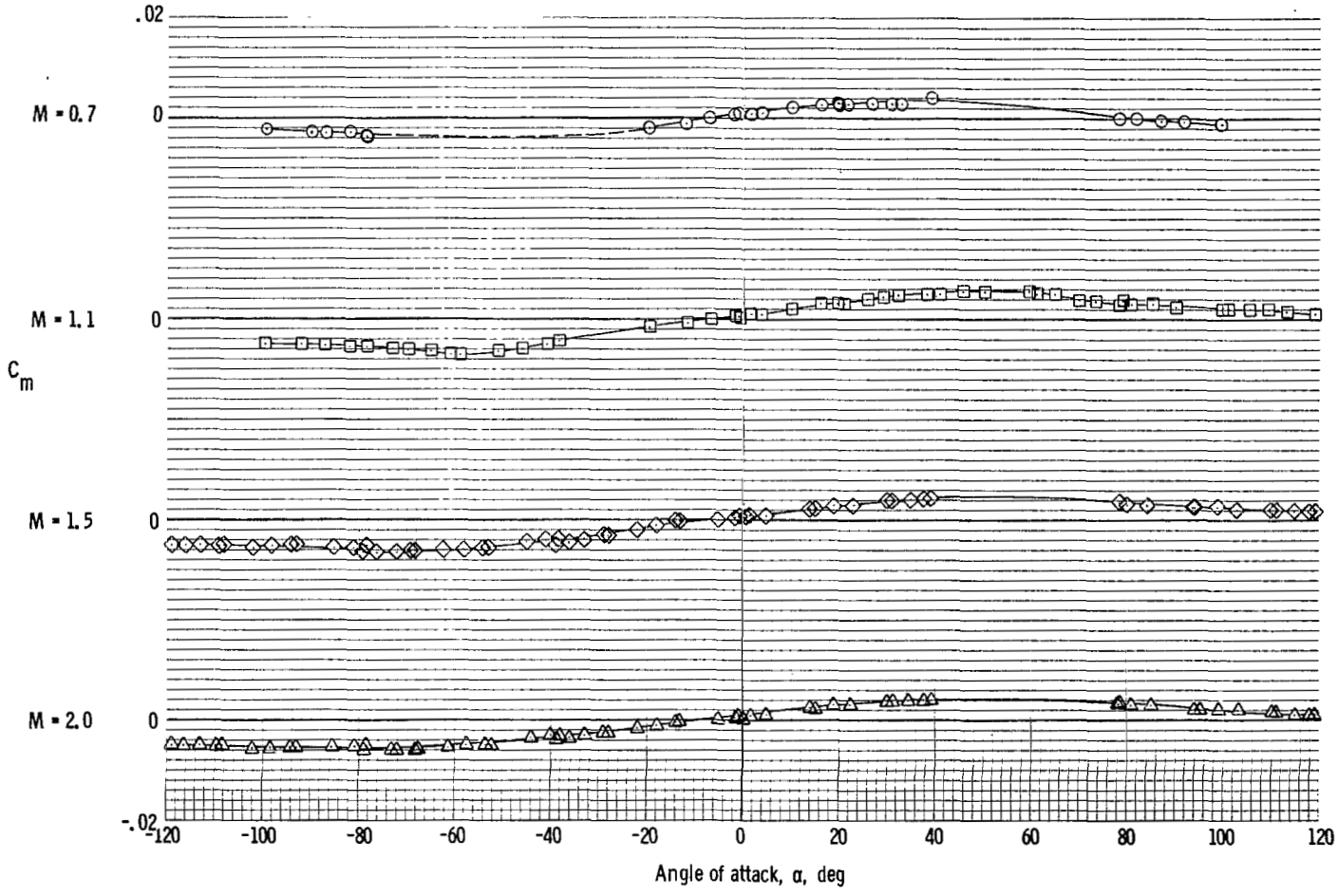


(a) Closeup of model with canards fully deployed; $\delta = 115°$.



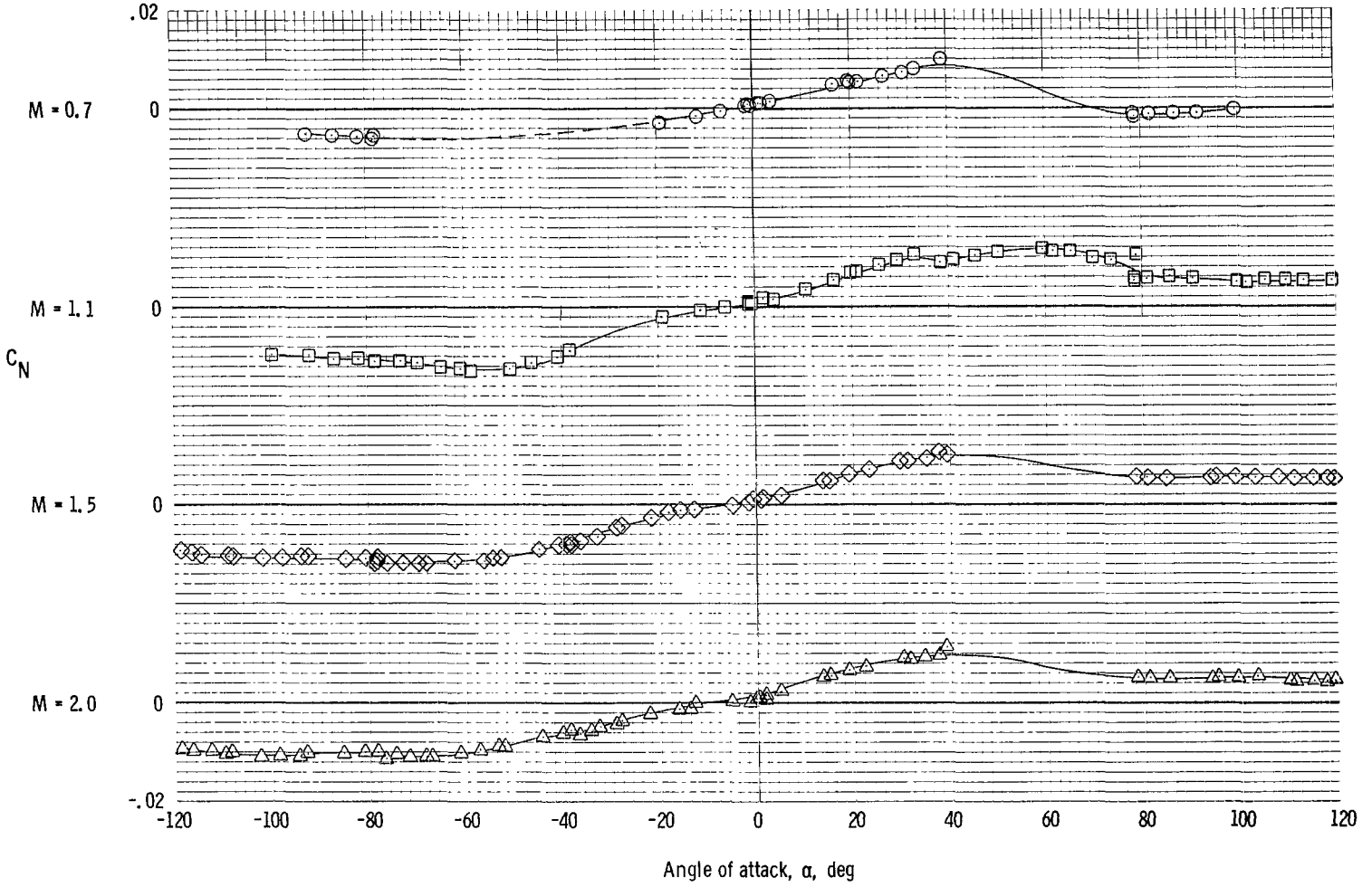
(b) Model rolled 180° to obtain negative angles of attack; $\delta = 90°$.

Figure 10. - Loads test model mounted in the trisonic wind tunnel.



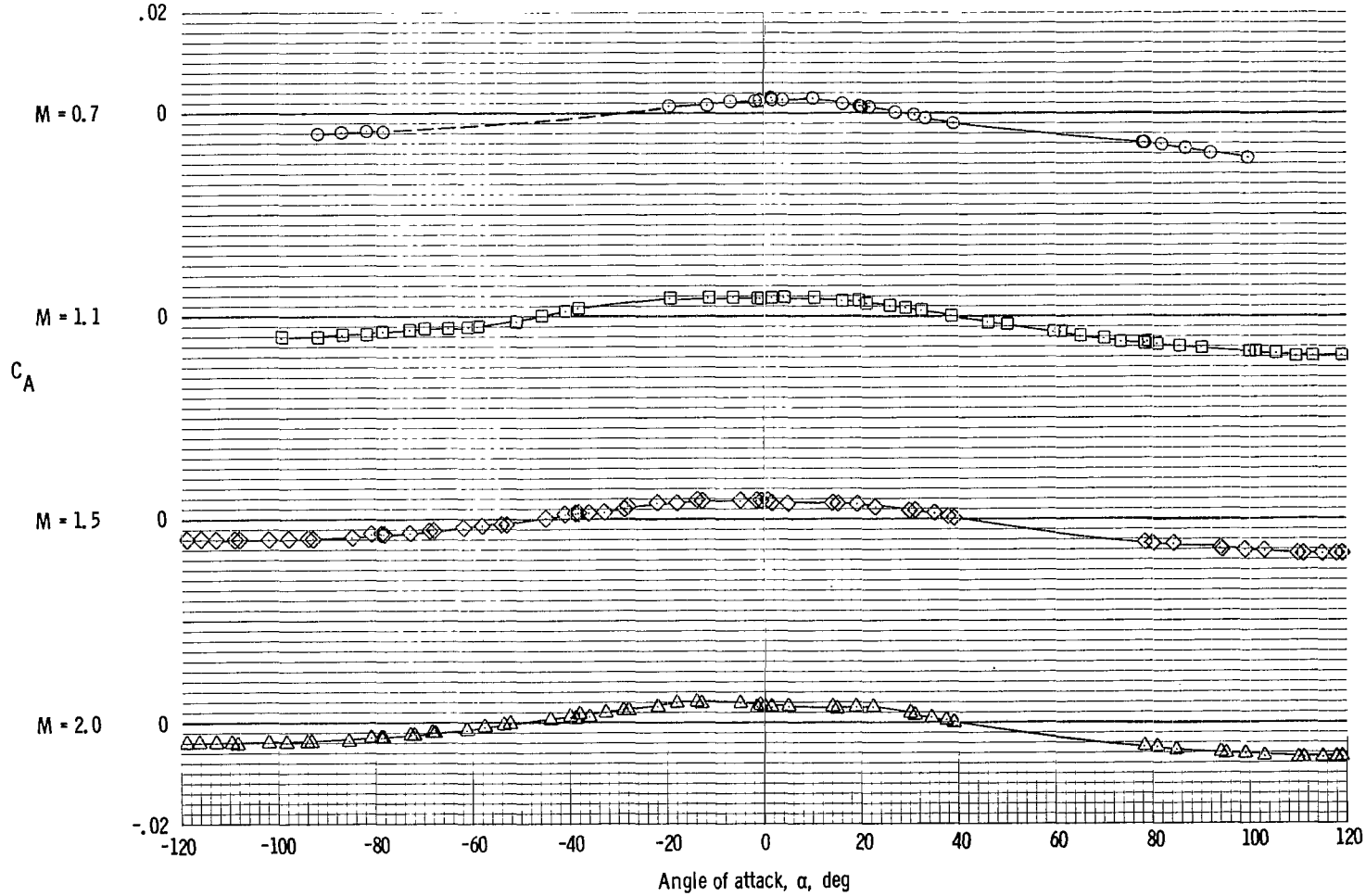
(a) Pitching-moment coefficient at $\delta = 30°$.

Figure 11. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the body axes at M = 0.7, 1.1, 1.5, and 2.0 at selected canard deployment angles.



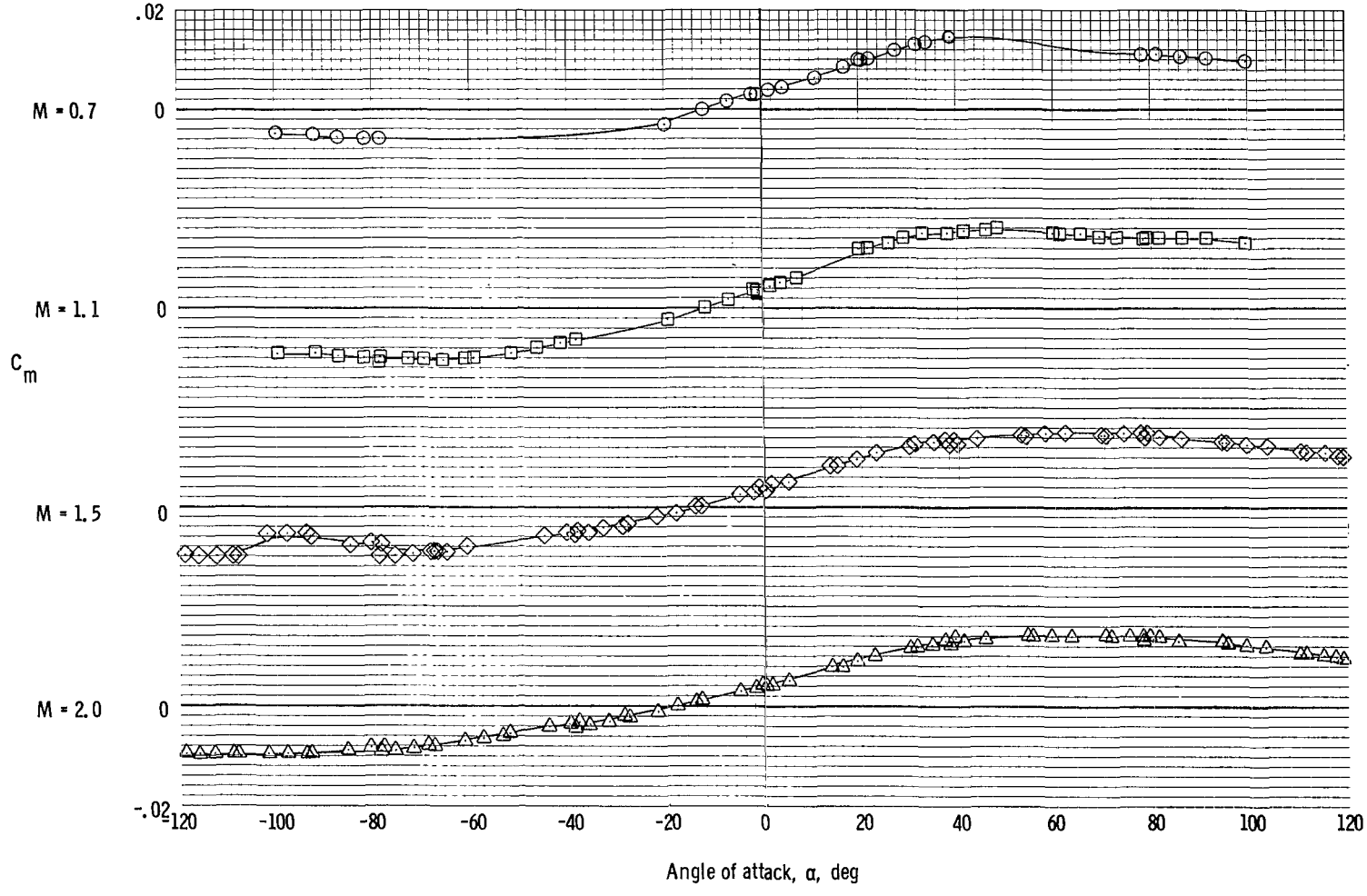
(b) Normal-force coefficient at $\delta = 30°$.

Figure 11. - Continued.



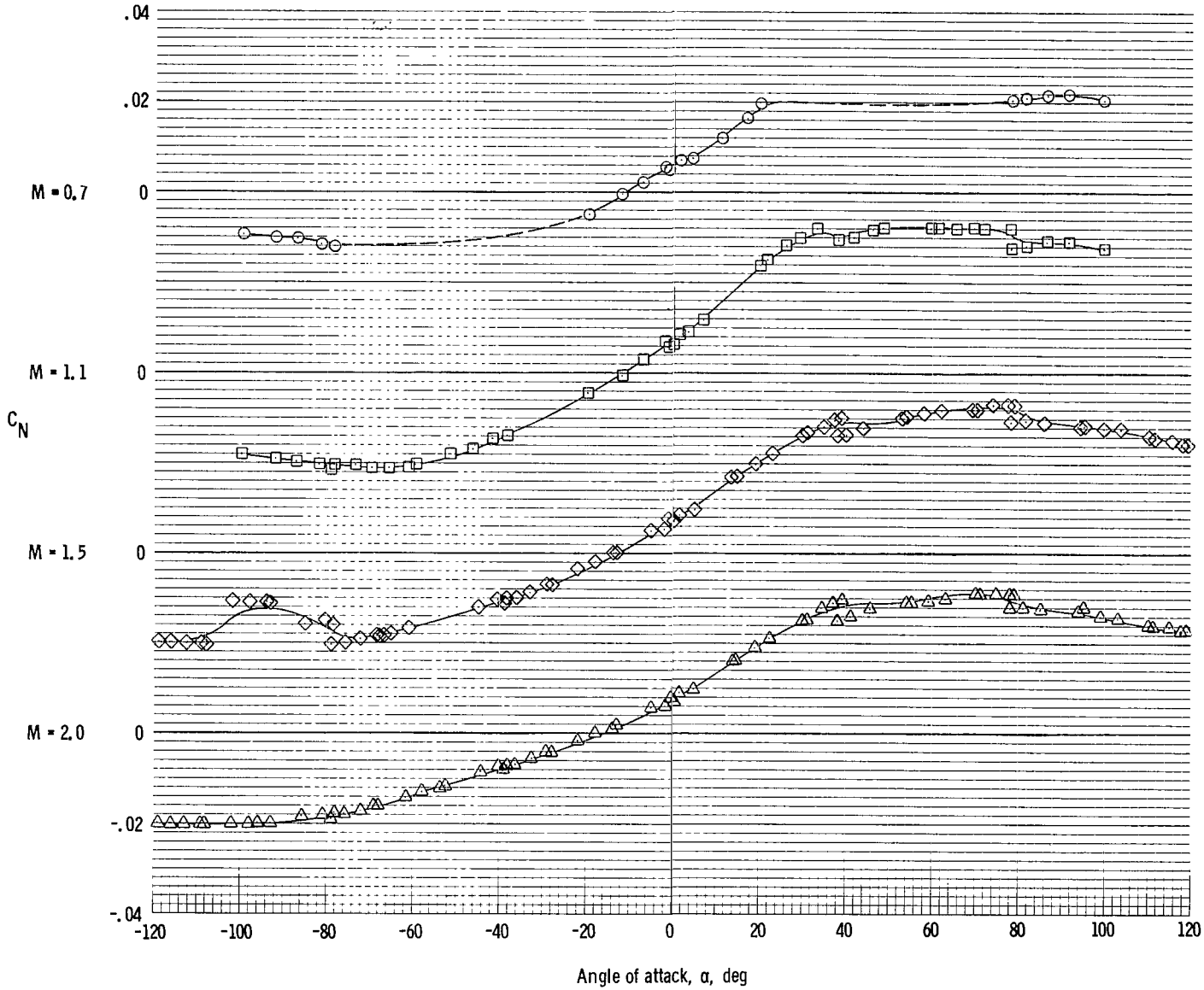
(c) Axial-force coefficient at $\delta = 30°$.

Figure 11. - Continued.



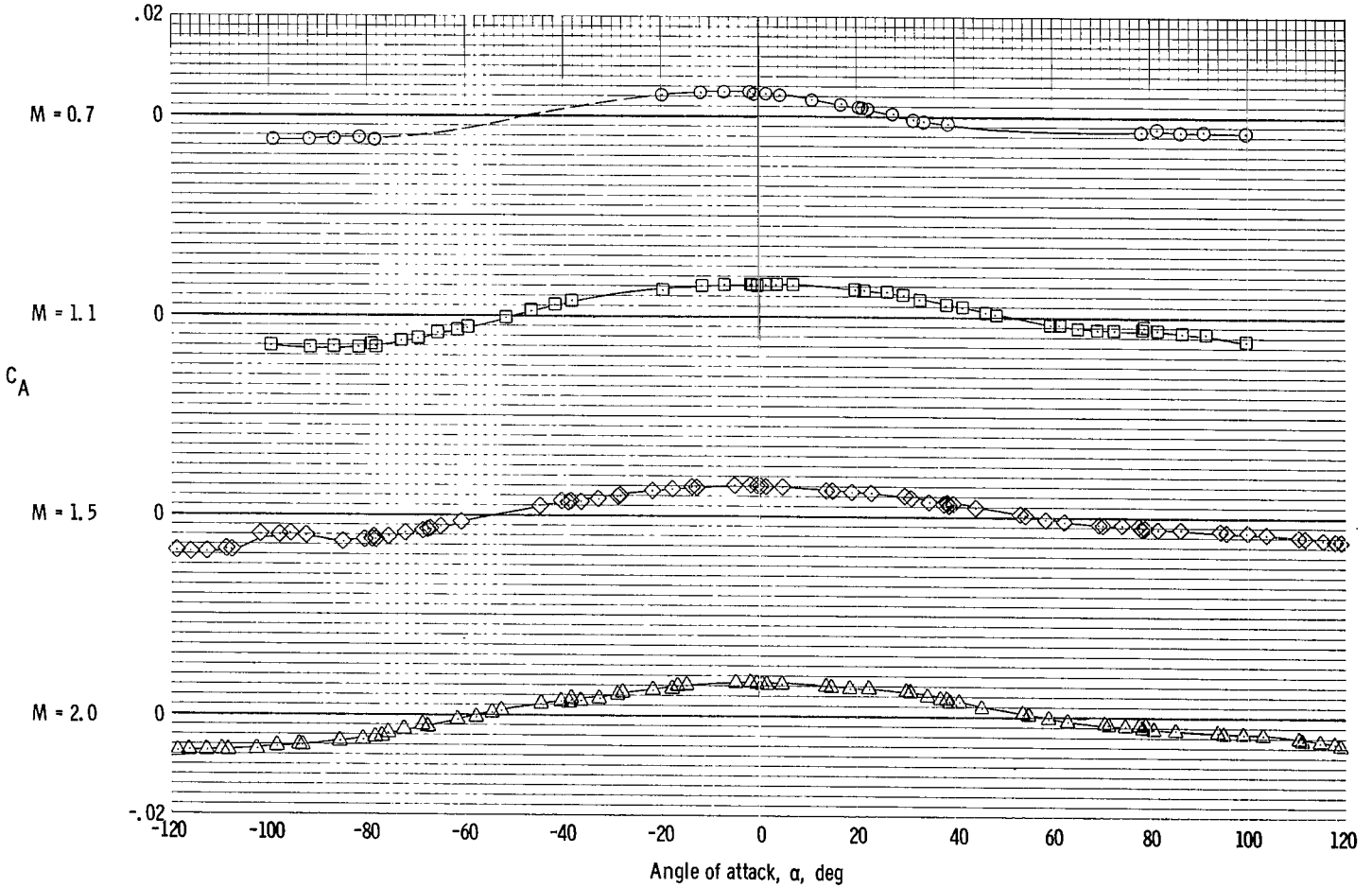
(d) Pitching-moment coefficient at $\delta = 60°$.

Figure 11. - Continued.



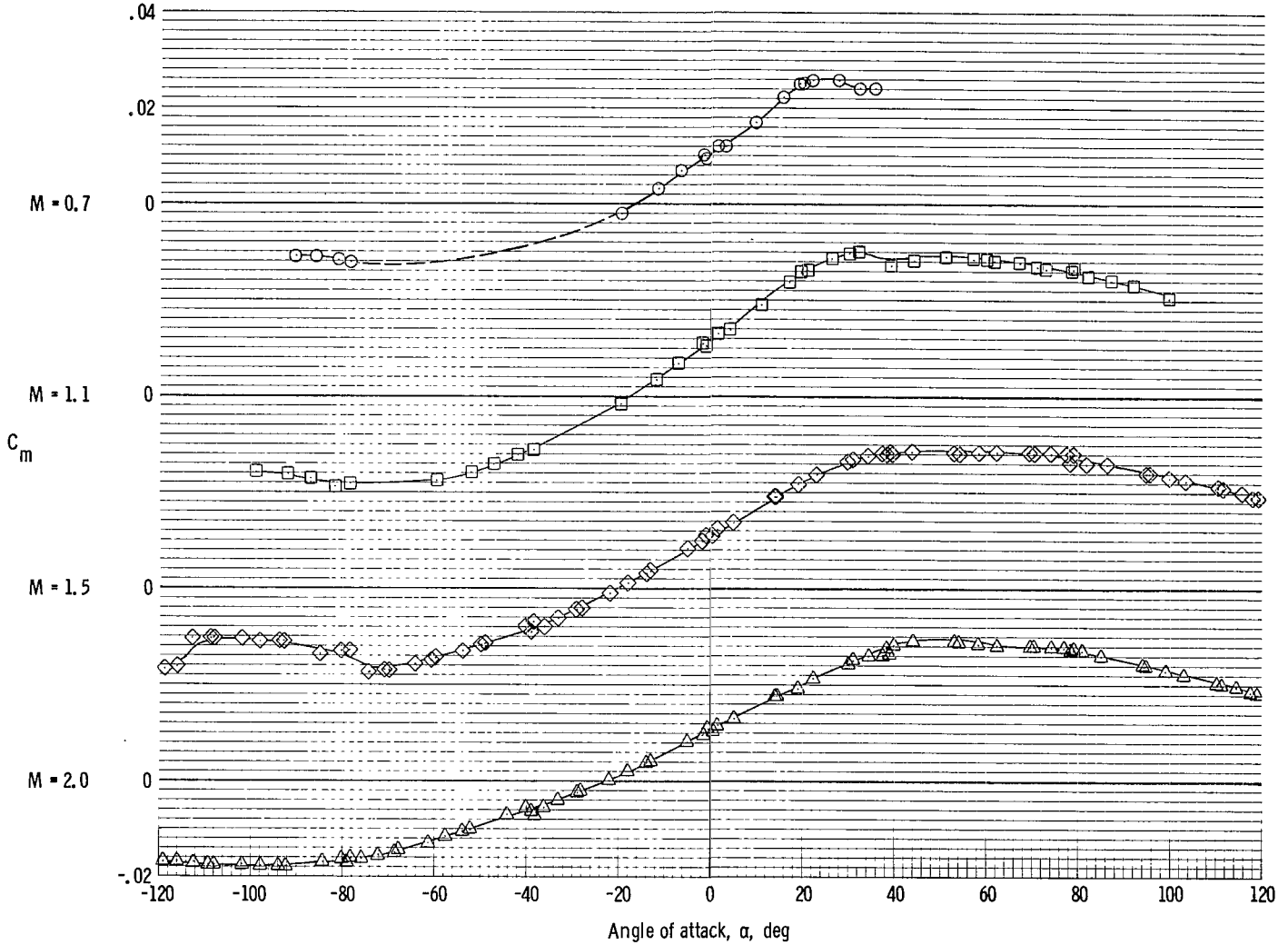
(e) Normal-force coefficient at $\delta = 60°$.

Figure 11. - Continued.



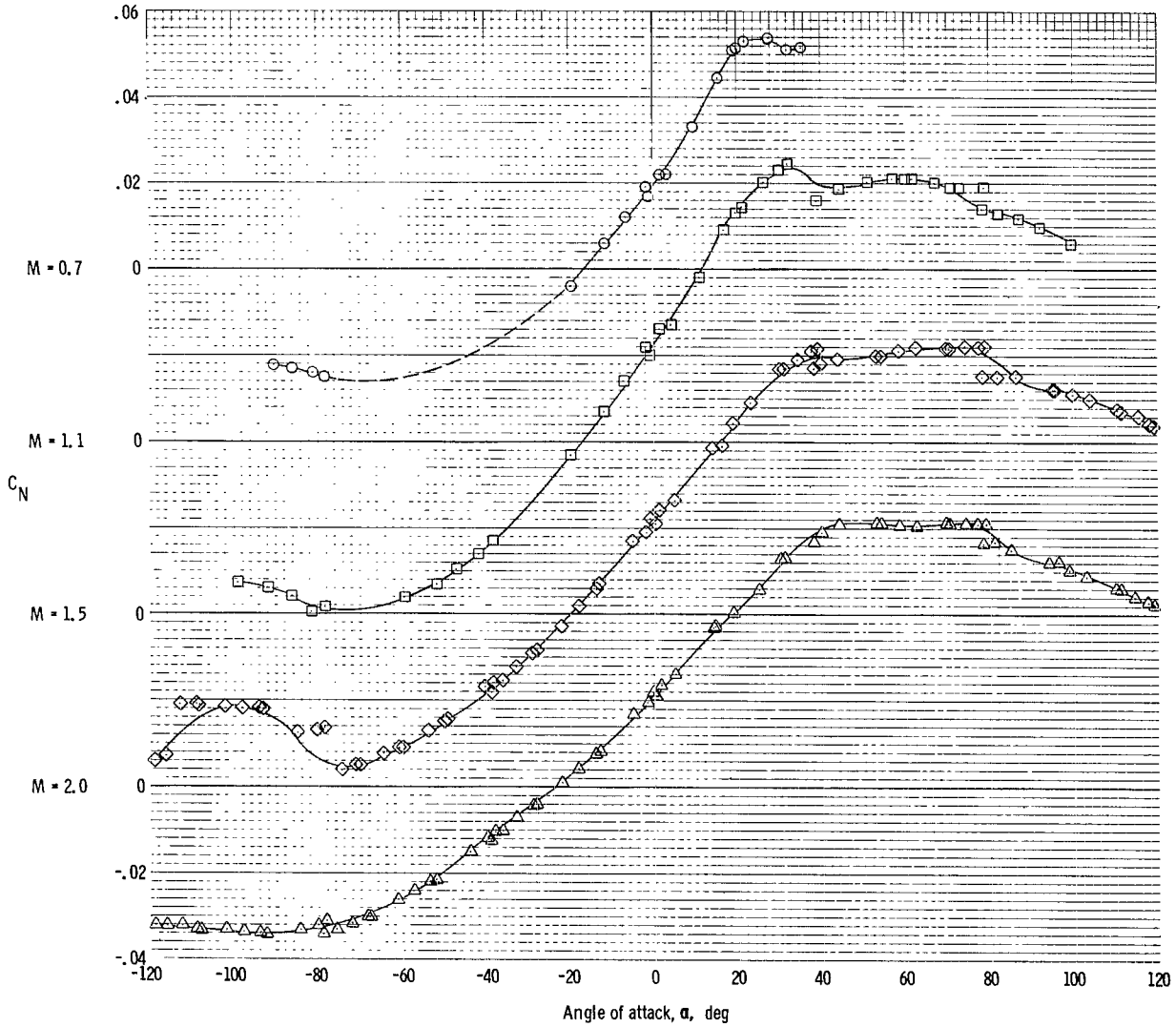
(f) Axial-force coefficient at $\delta = 60°$.

Figure 11. - Continued.



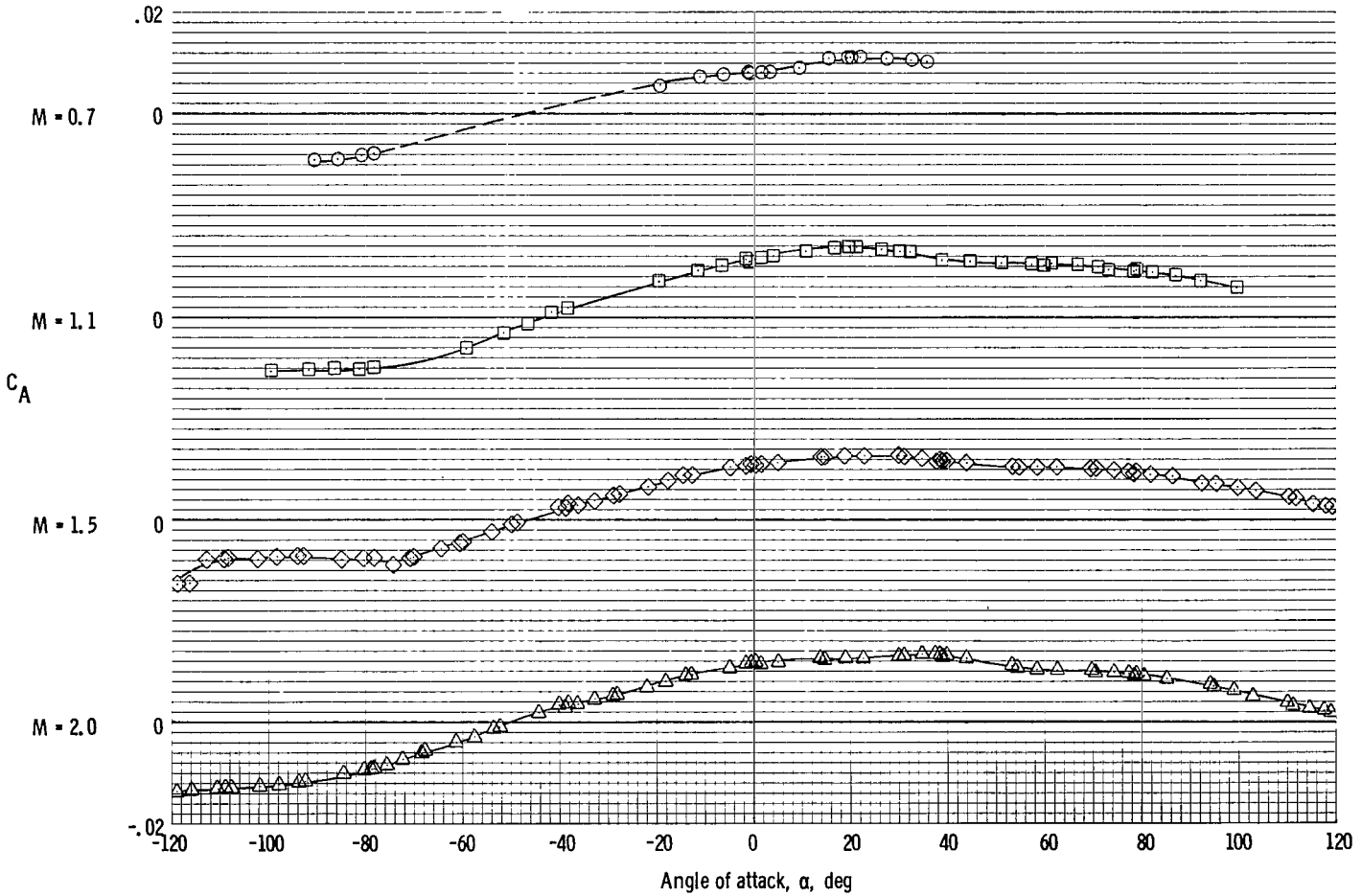
(g) Pitching-moment coefficient at $\delta = 90°$.

Figure 11. - Continued.



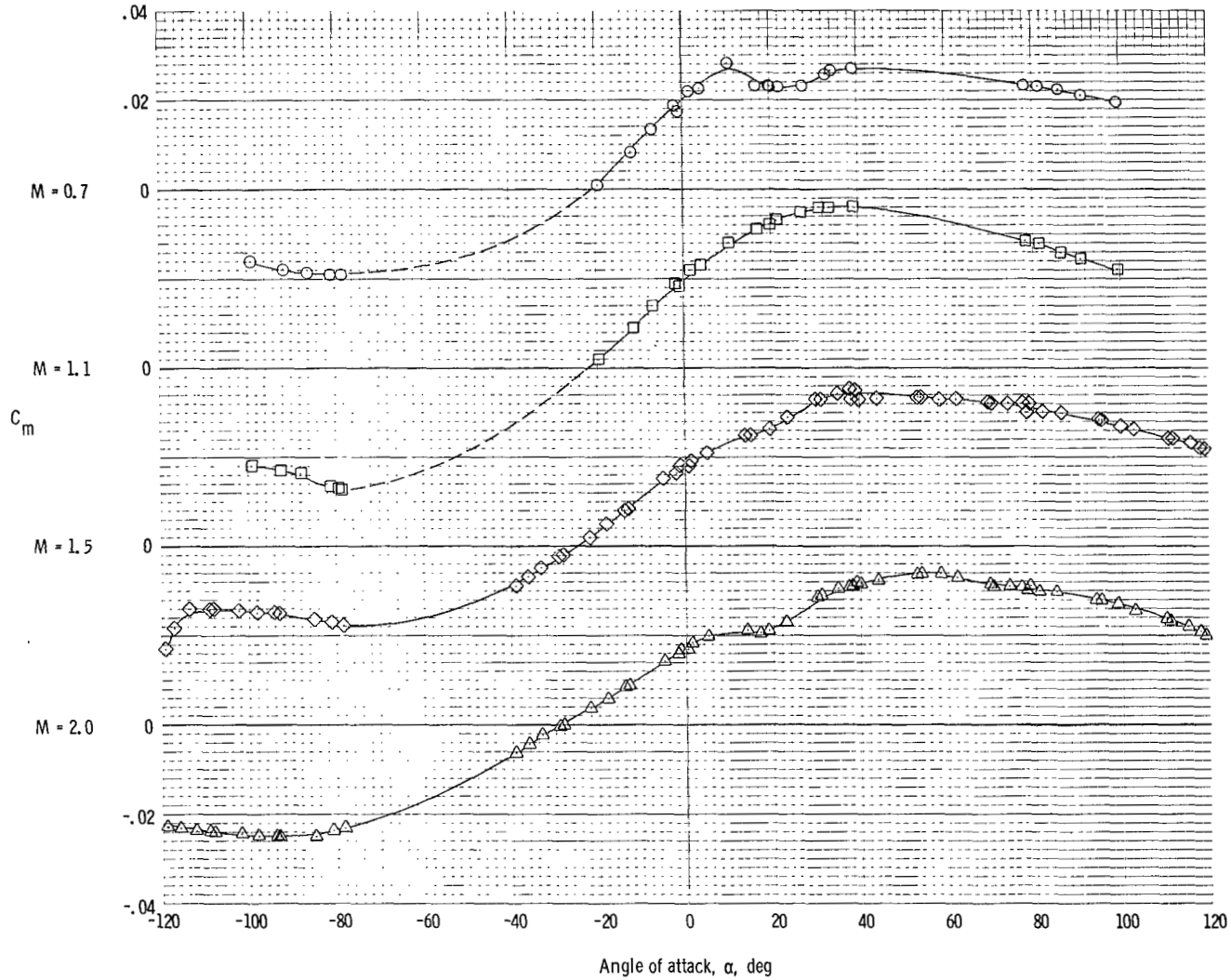
(h) Normal-force coefficient at $\delta = 90°$.

Figure 11. - Continued.



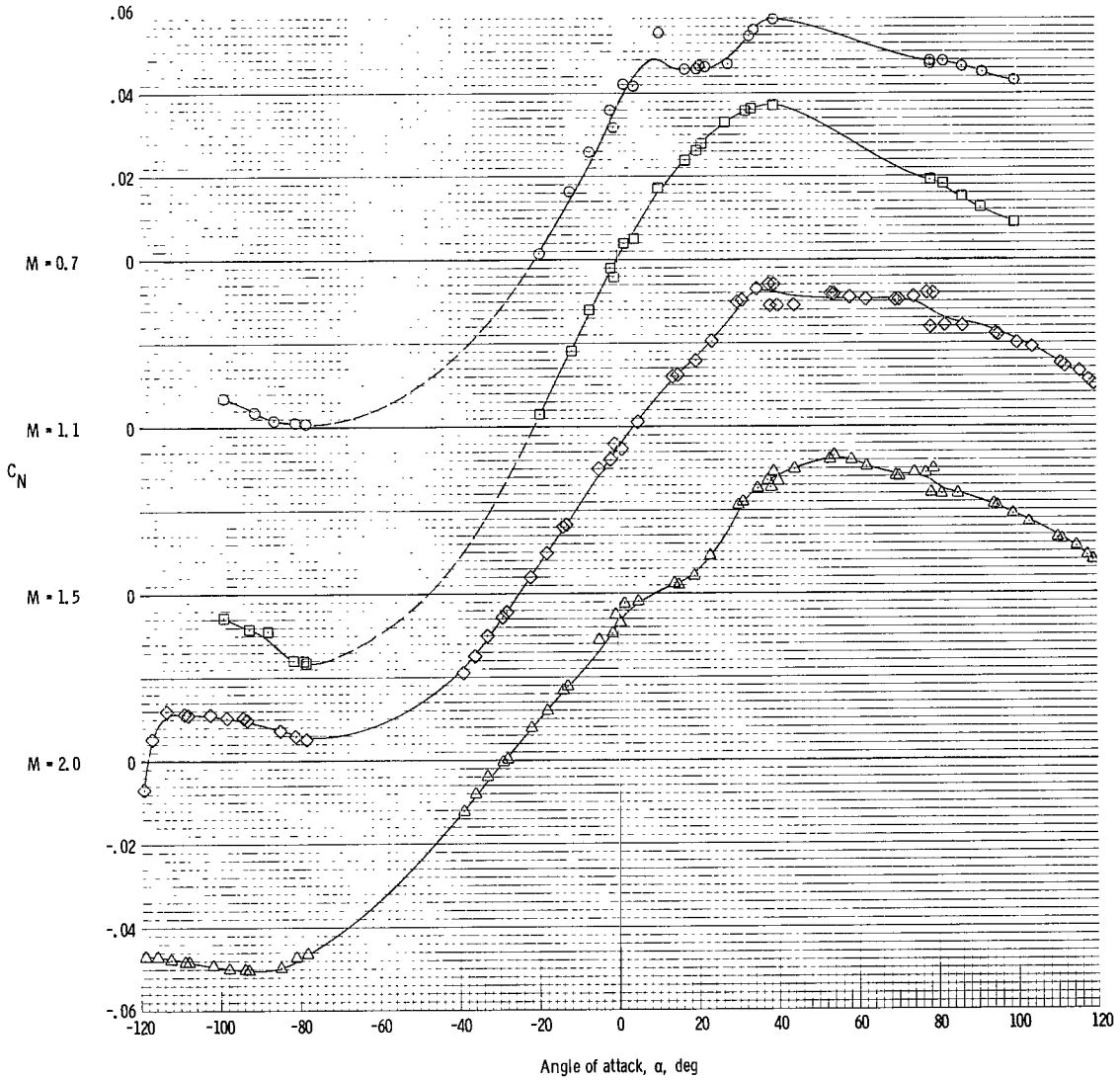
(i) Axial-force coefficient at $\delta = 90°$.

Figure 11. - Continued.



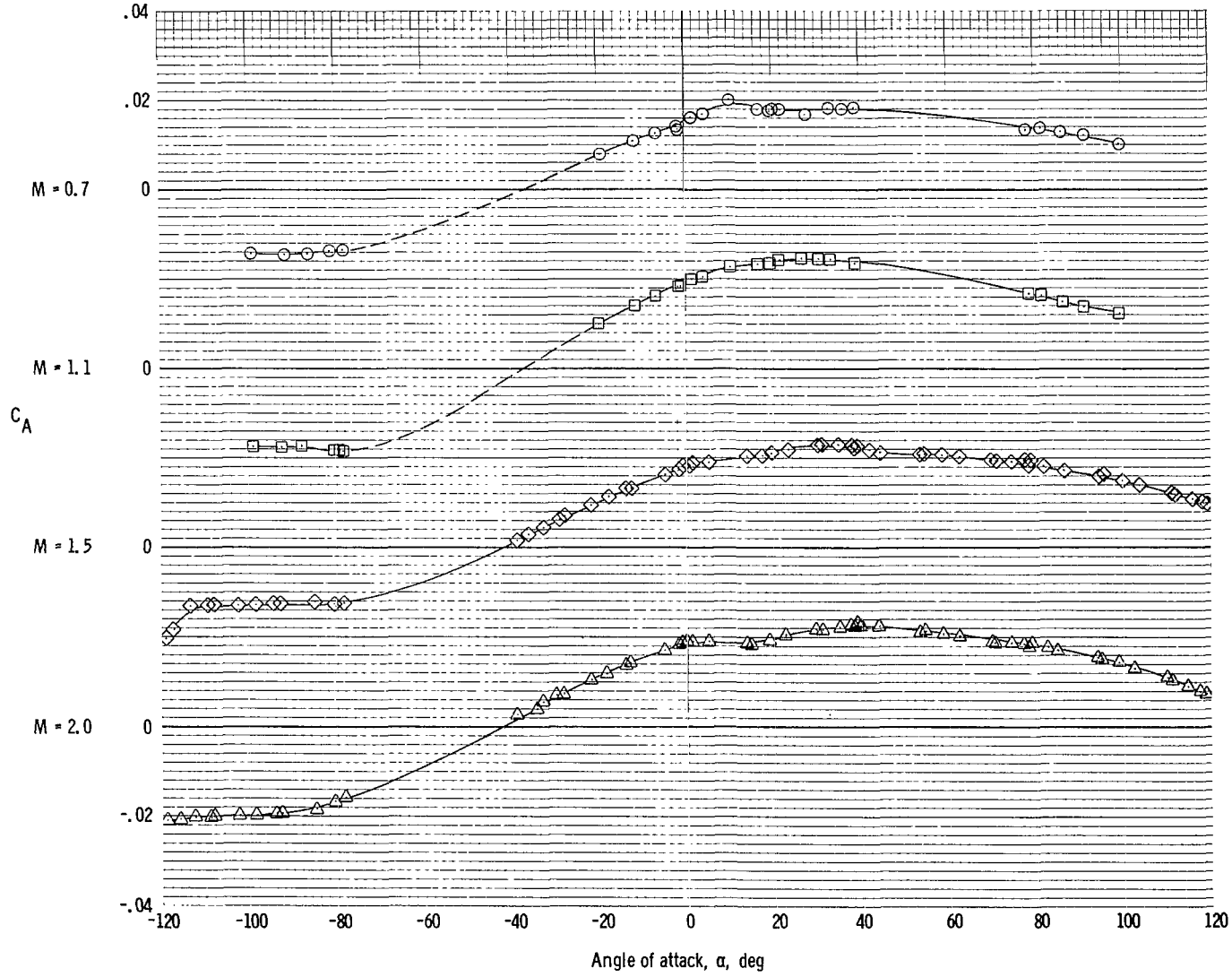
(j) Pitching-moment coefficient at $\delta = 115°$.

Figure 11. - Continued.



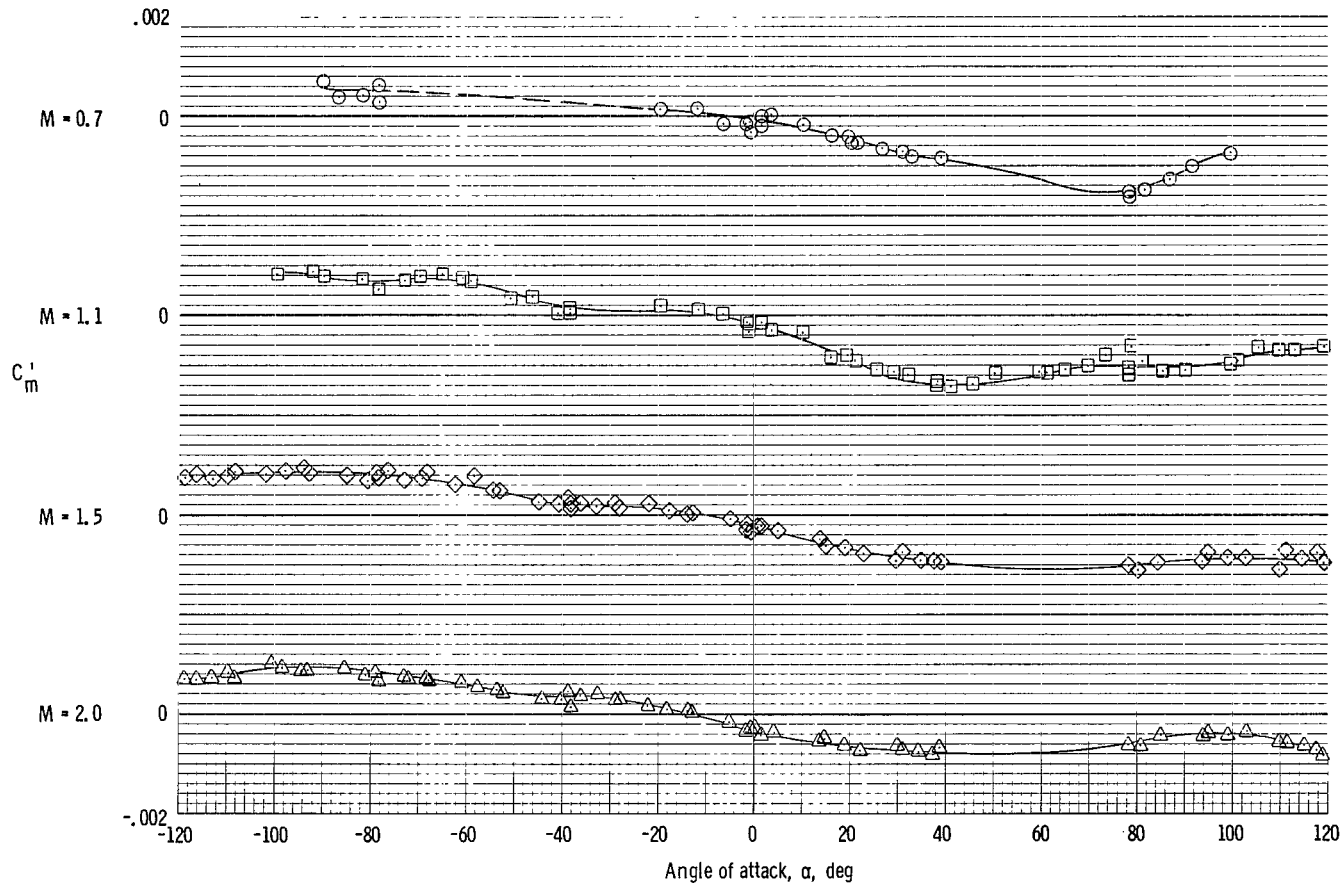
(k) Normal-force coefficient at $\delta = 115°$.

Figure 11. - Continued.



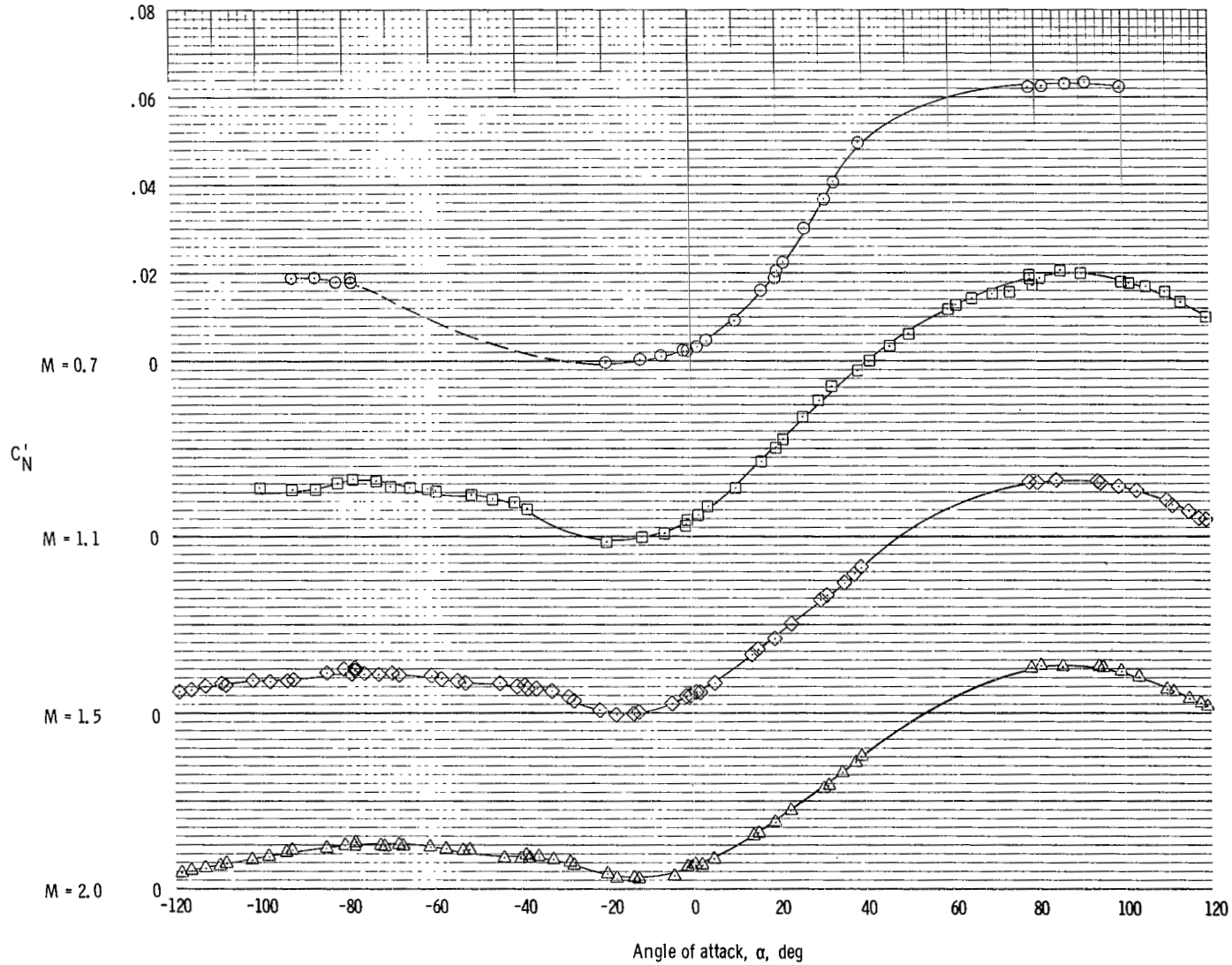
(l) Axial-force coefficient at $\delta = 115°$.

Figure 11. - Concluded.



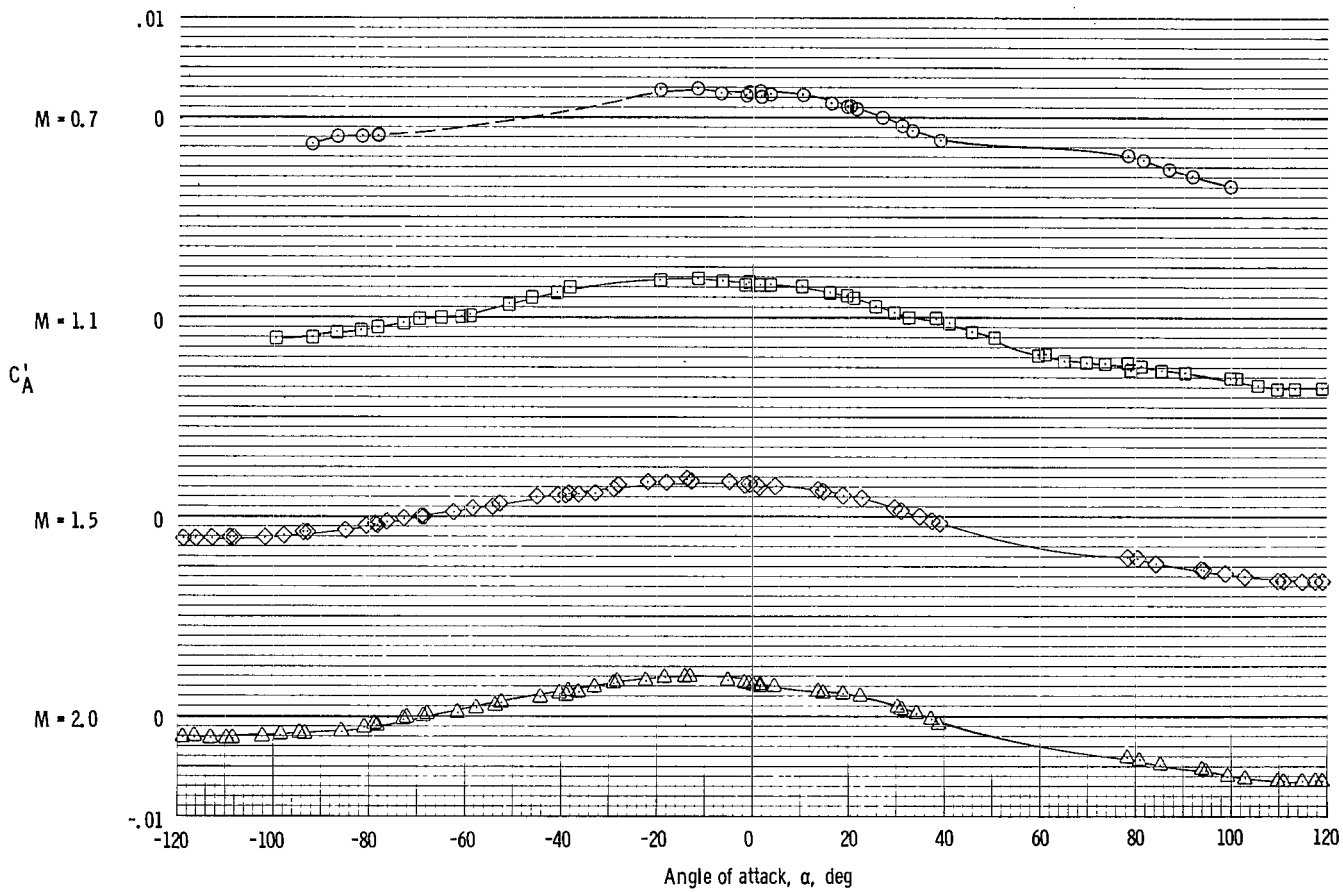
(a) Pitching-moment coefficient at $\delta = 30°$.

Figure 12. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the system of canard axes at M = 0.7, 1.1, 1.5, and 2.0 at selected canard deployment angles.



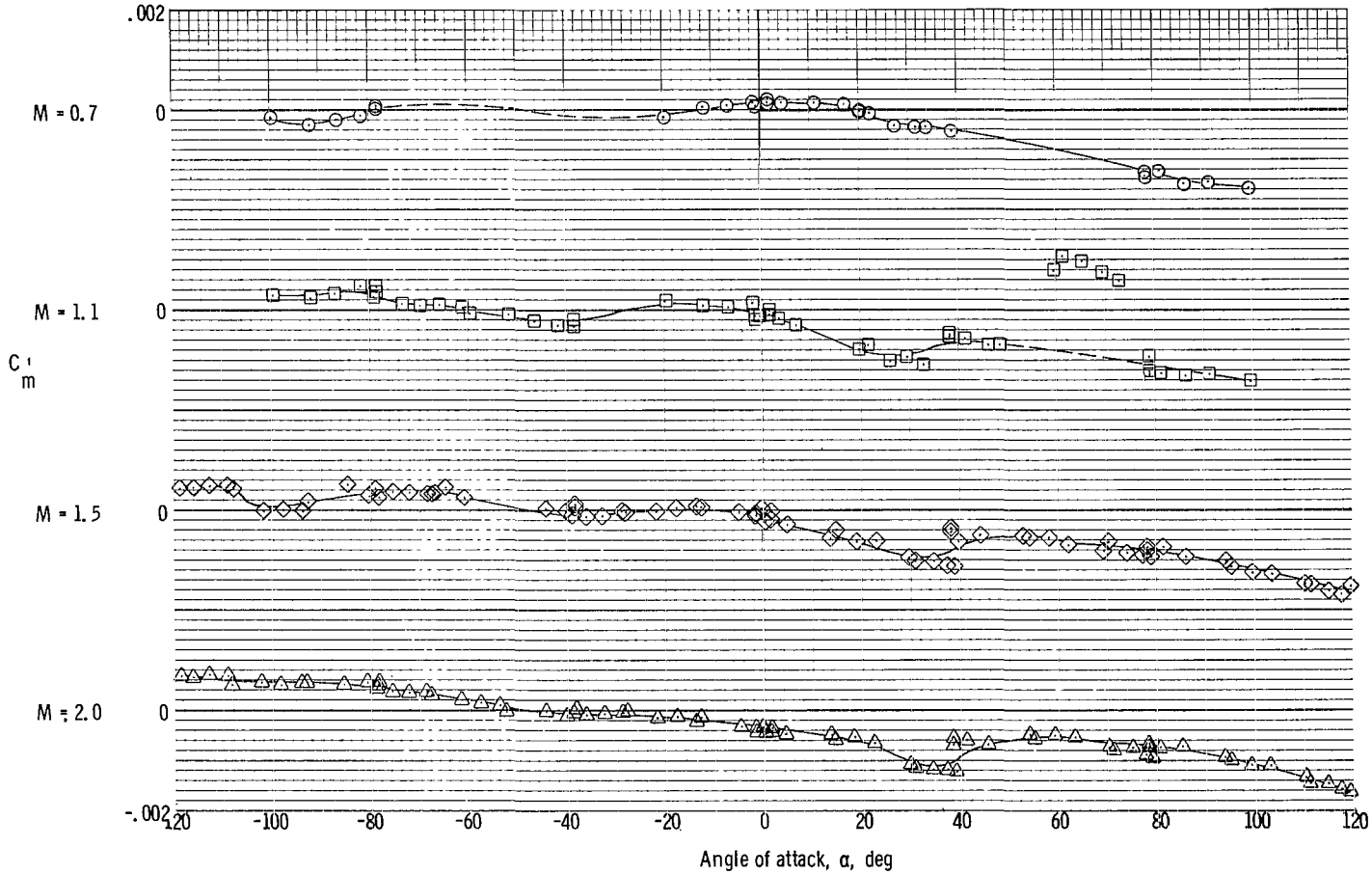
(b) Normal-force coefficient at $\delta = 30°$.

Figure 12. - Continued.



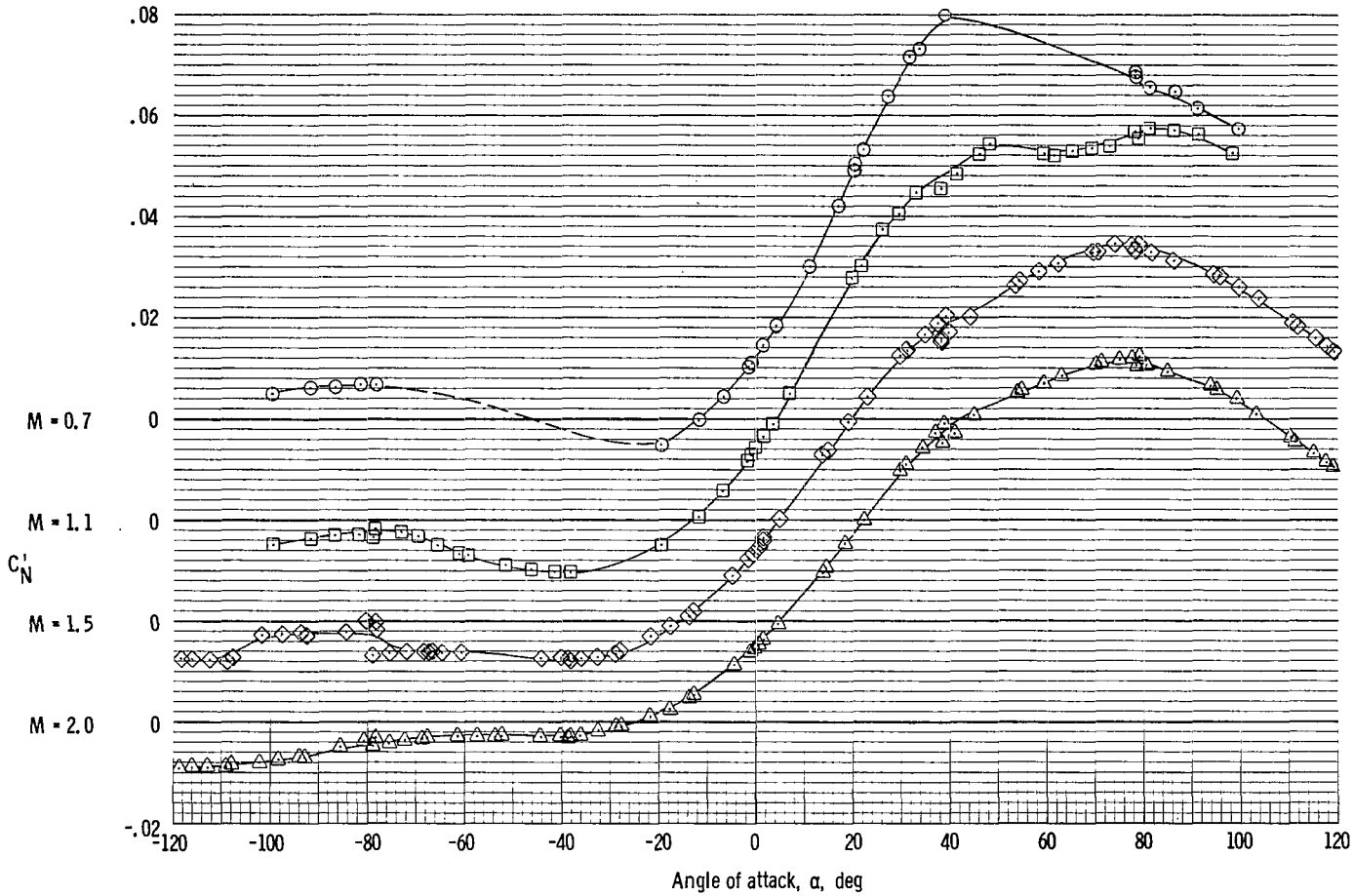
(c) Axial-force coefficient at $\delta = 30°$.

Figure 12. - Continued.



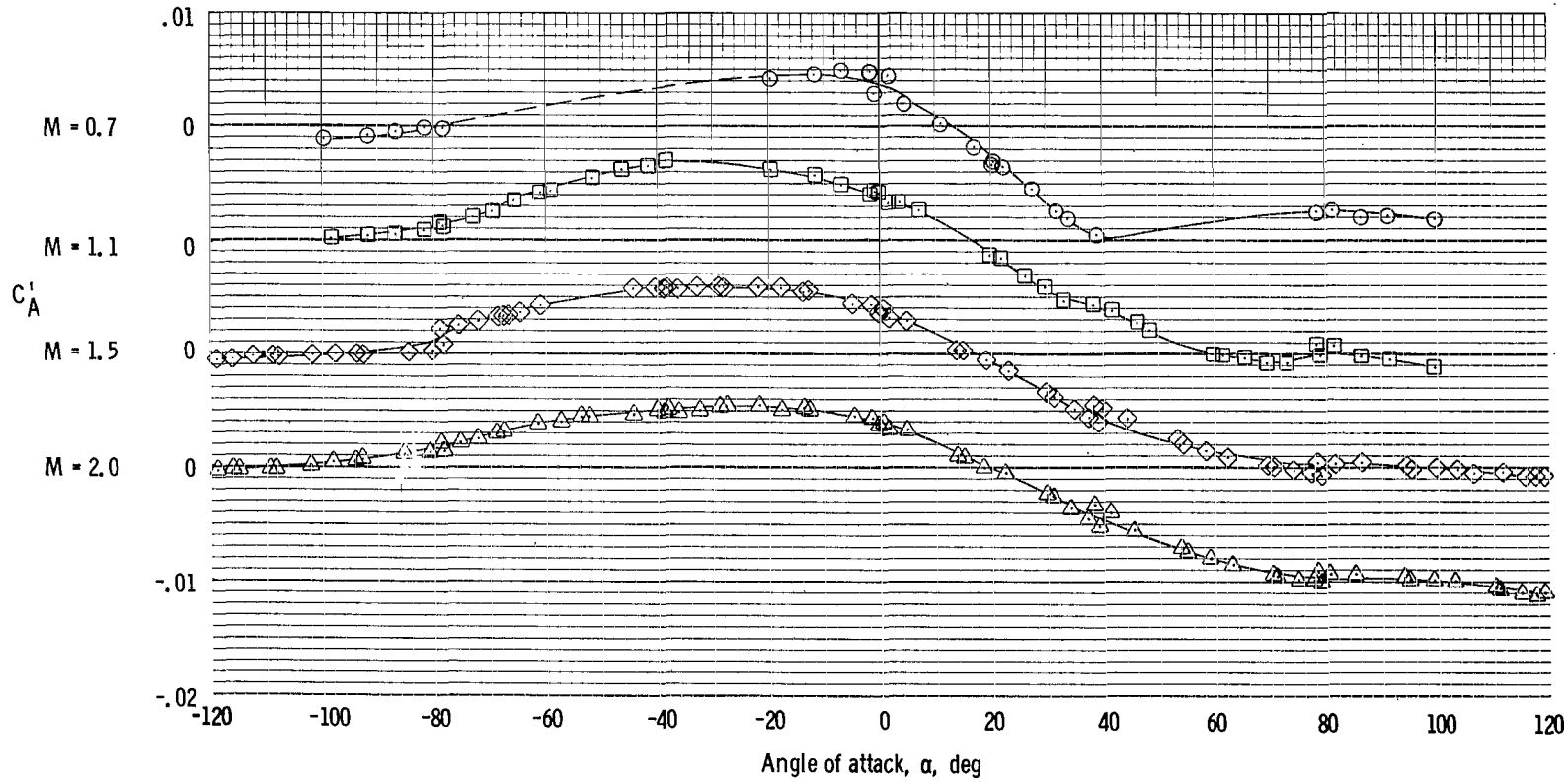
(d) Pitching-moment coefficient at $\delta = 60°$.

Figure 12. - Continued.



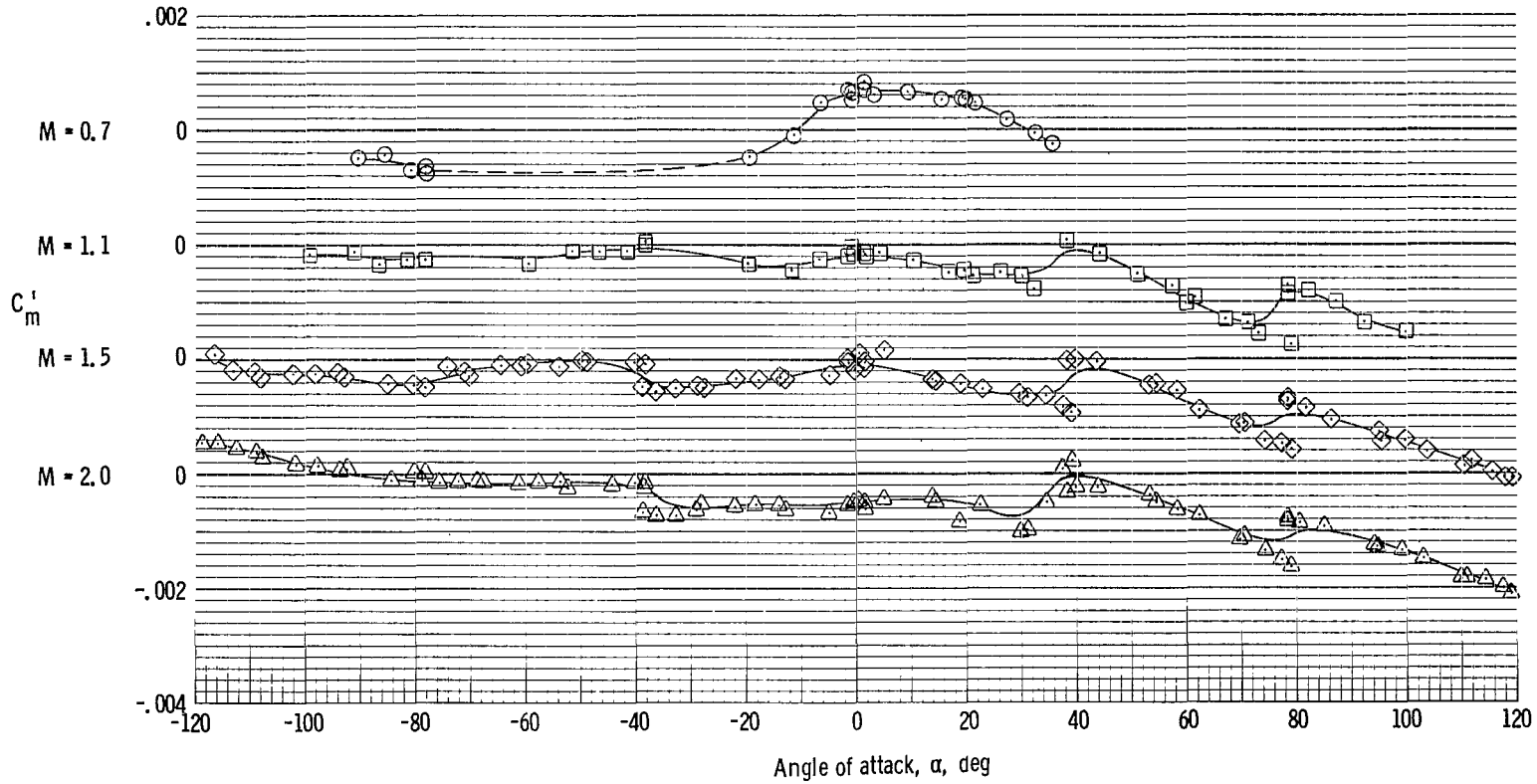
(e) Normal-force coefficient at $\delta = 60°$.

Figure 12. - Continued.



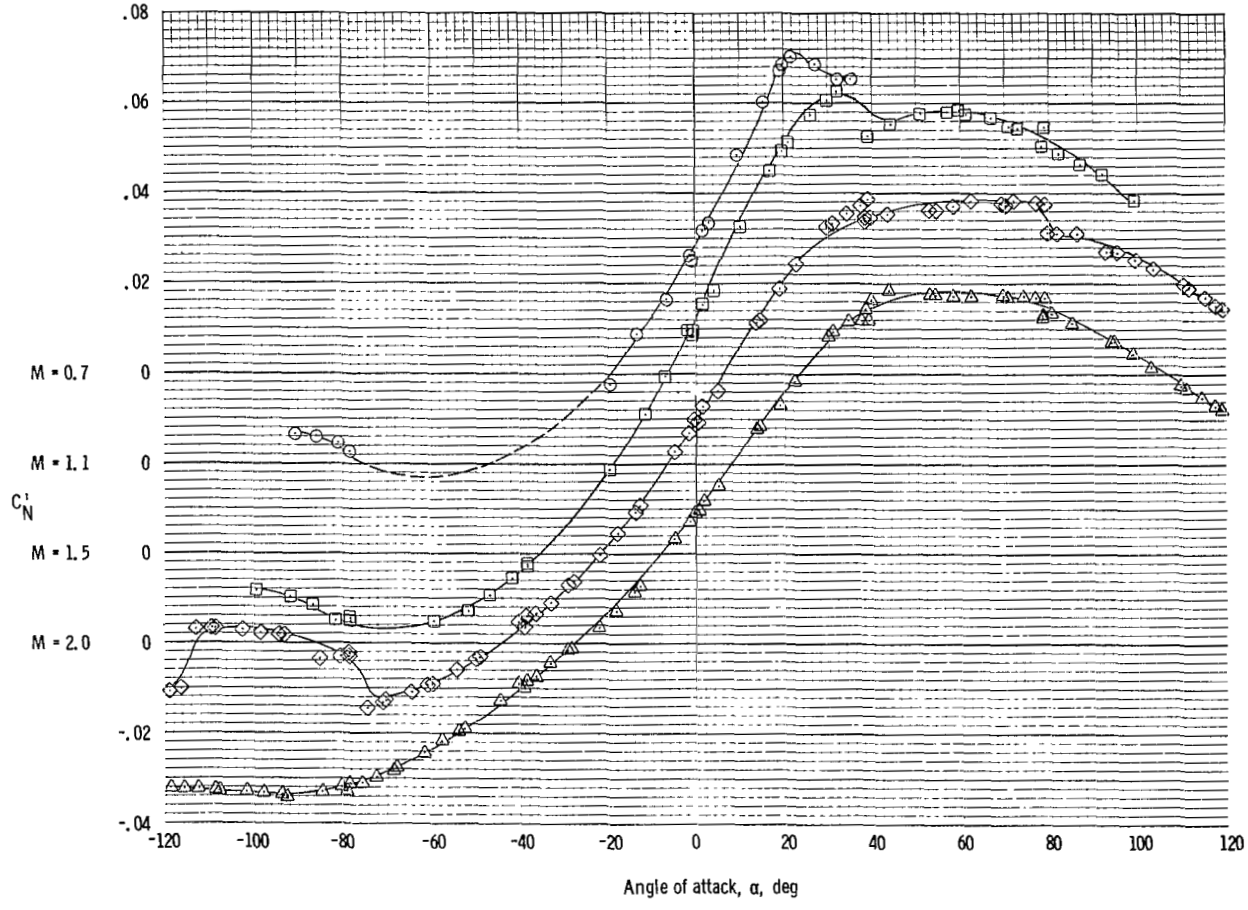
(f) Axial-force coefficient at $\delta = 60°$.

Figure 12. - Continued.



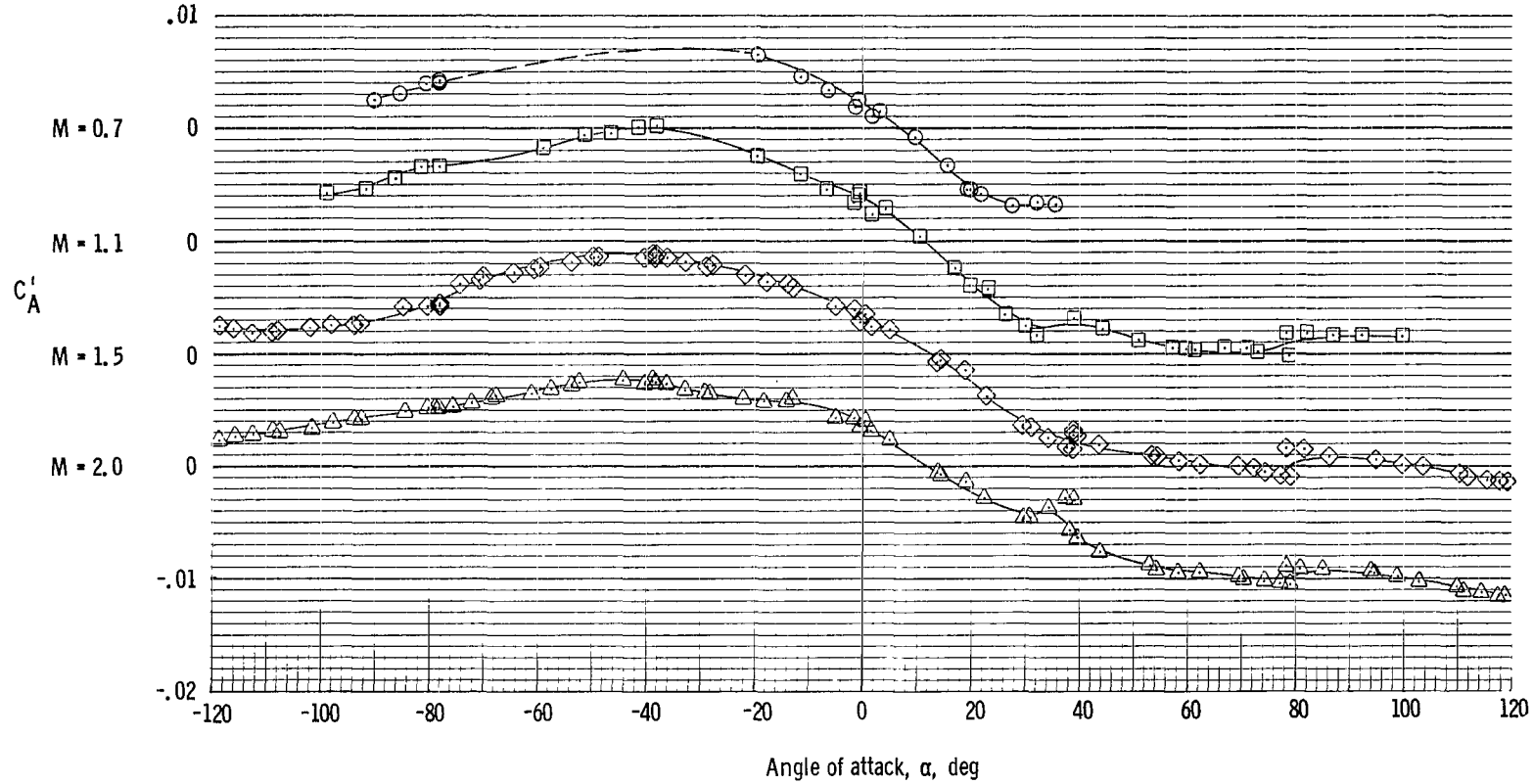
(g) Pitching-moment coefficient at $\delta = 90°$.

Figure 12. - Continued.



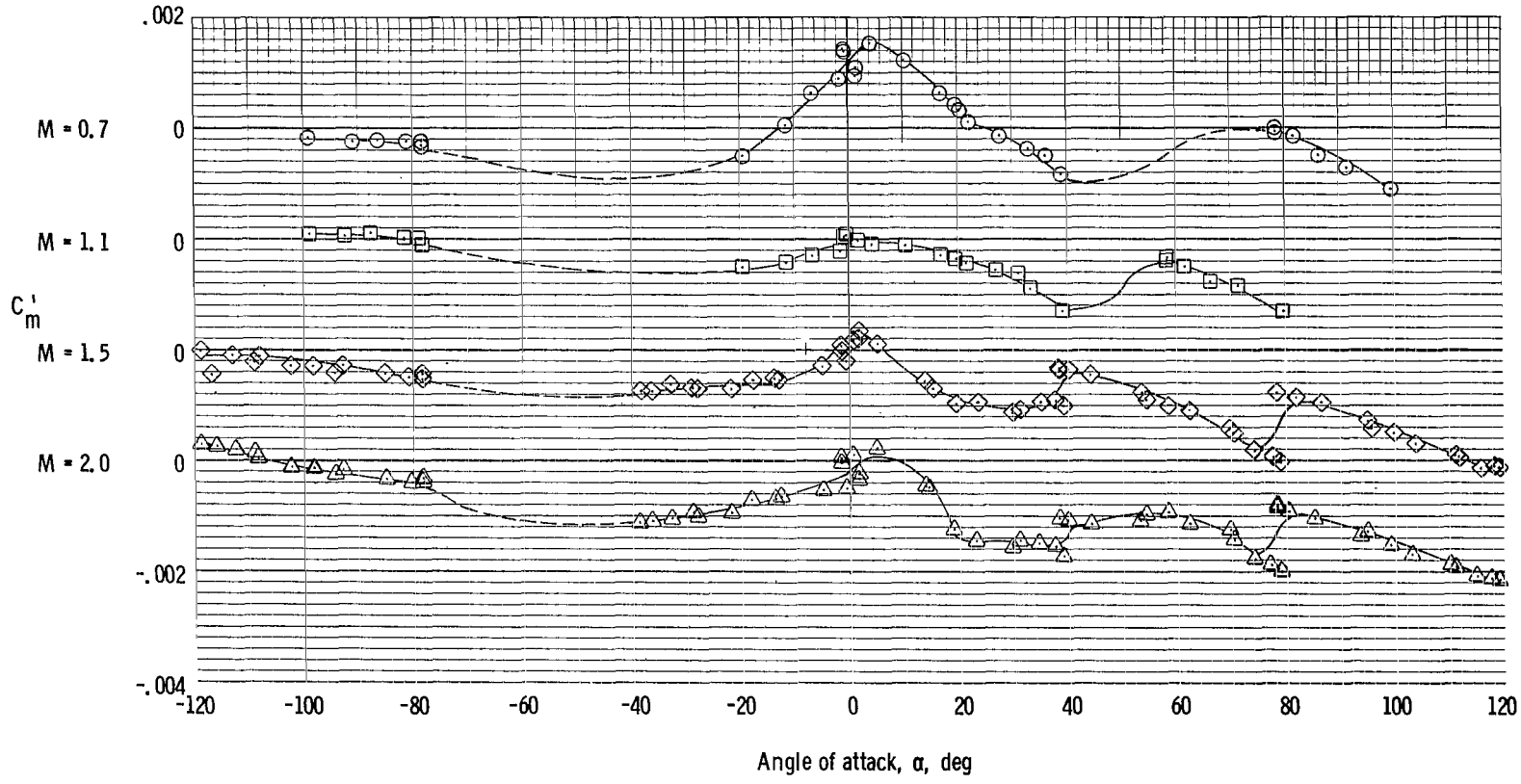
(h) Normal-force coefficient at $\delta = 90°$.

Figure 12. - Continued.



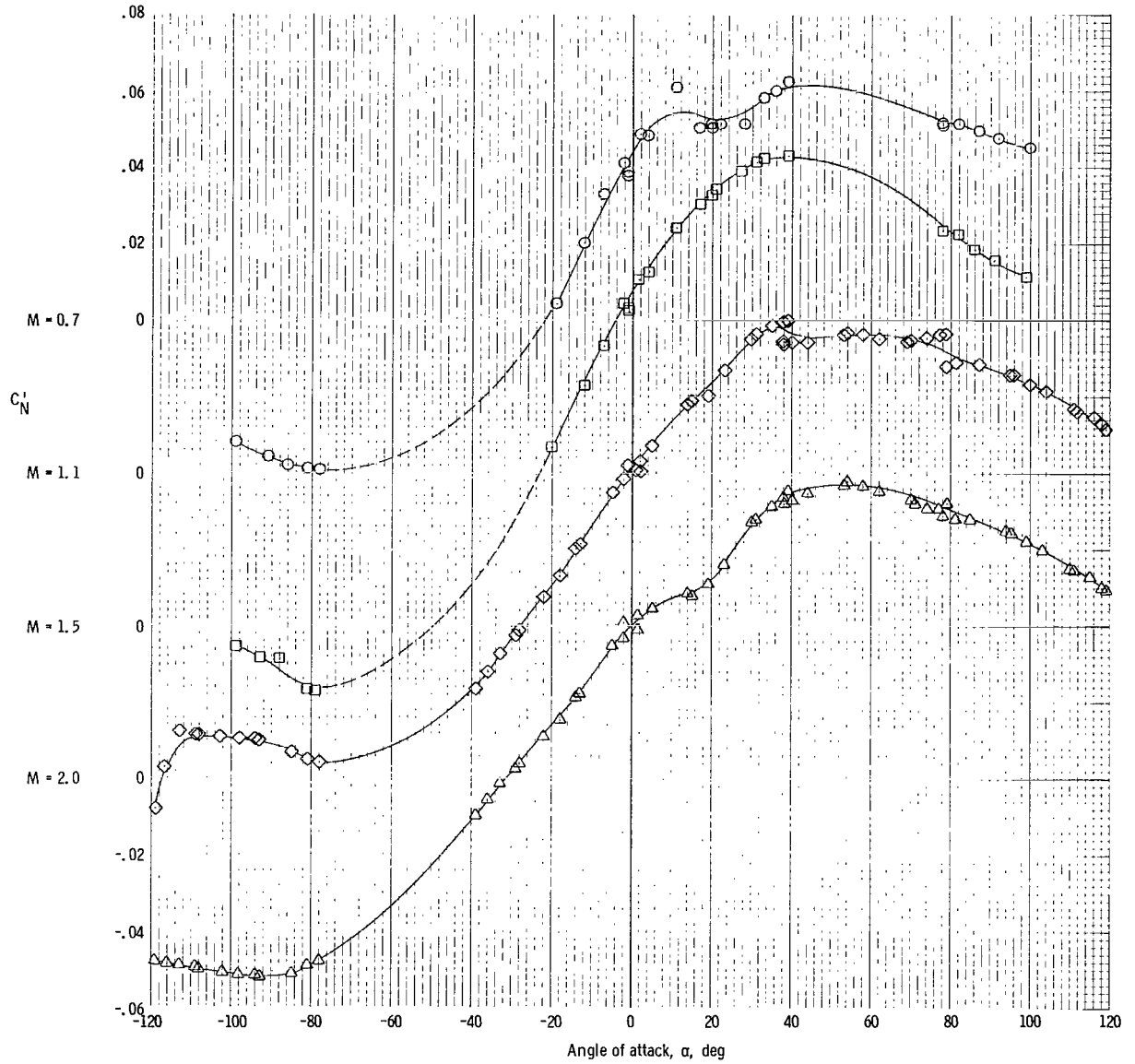
(i) Axial-force coefficient at $\delta = 90°$.

Figure 12. - Continued.



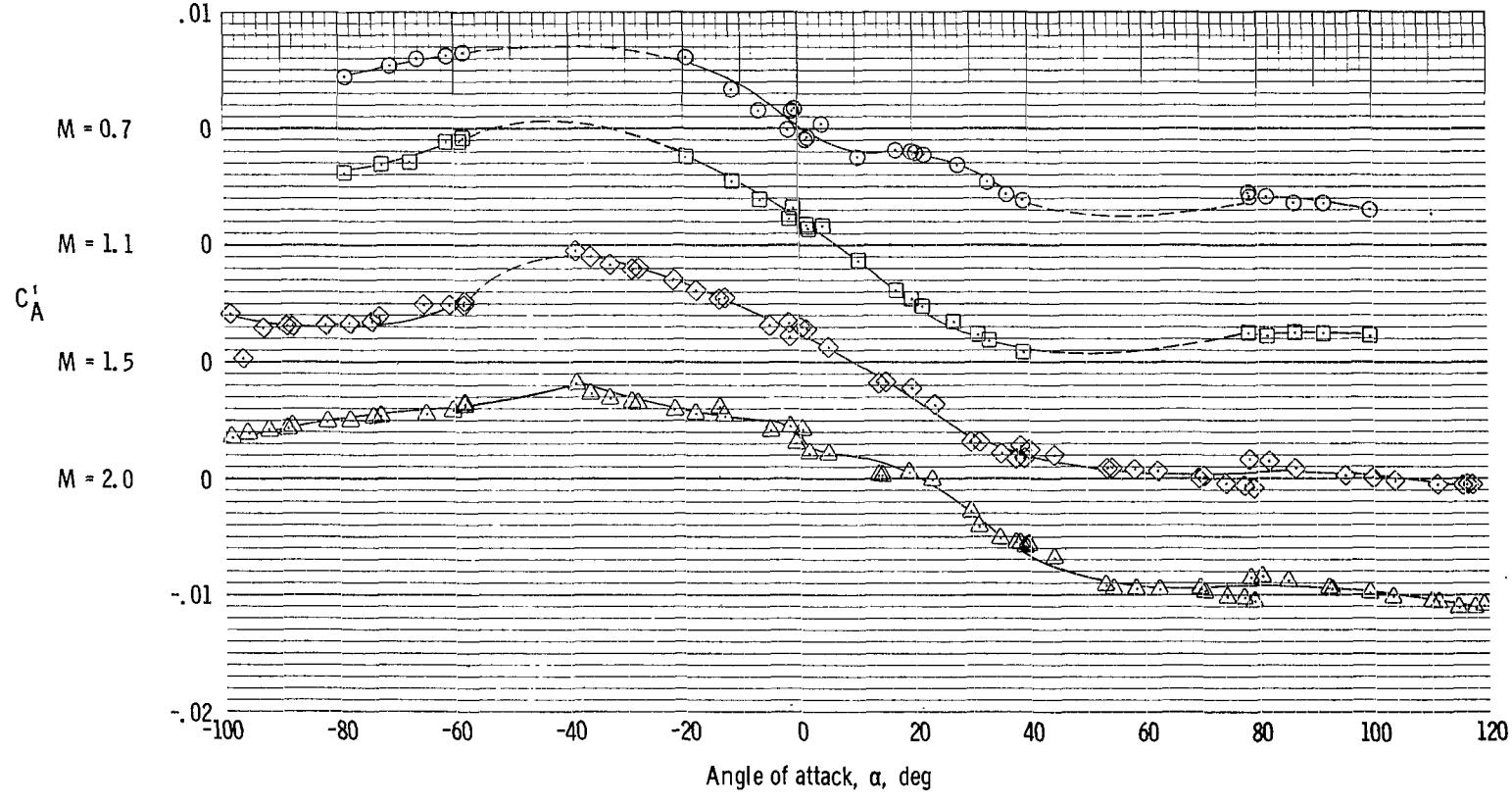
(j) Pitching-moment coefficient at $\delta = 115°$.

Figure 12. - Continued.



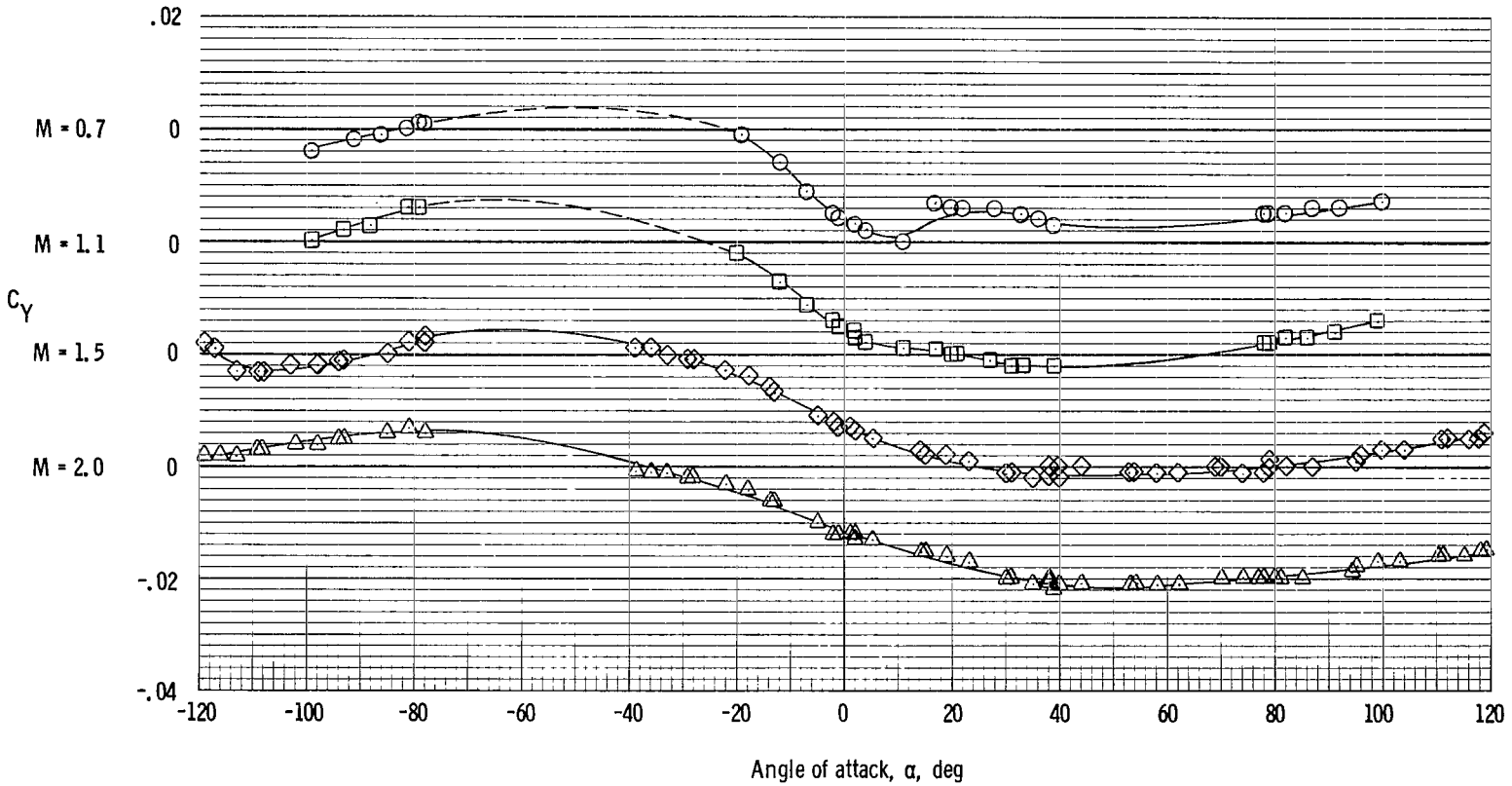
(k) Normal-force coefficient at $\delta = 115°$.

Figure 12. - Continued.



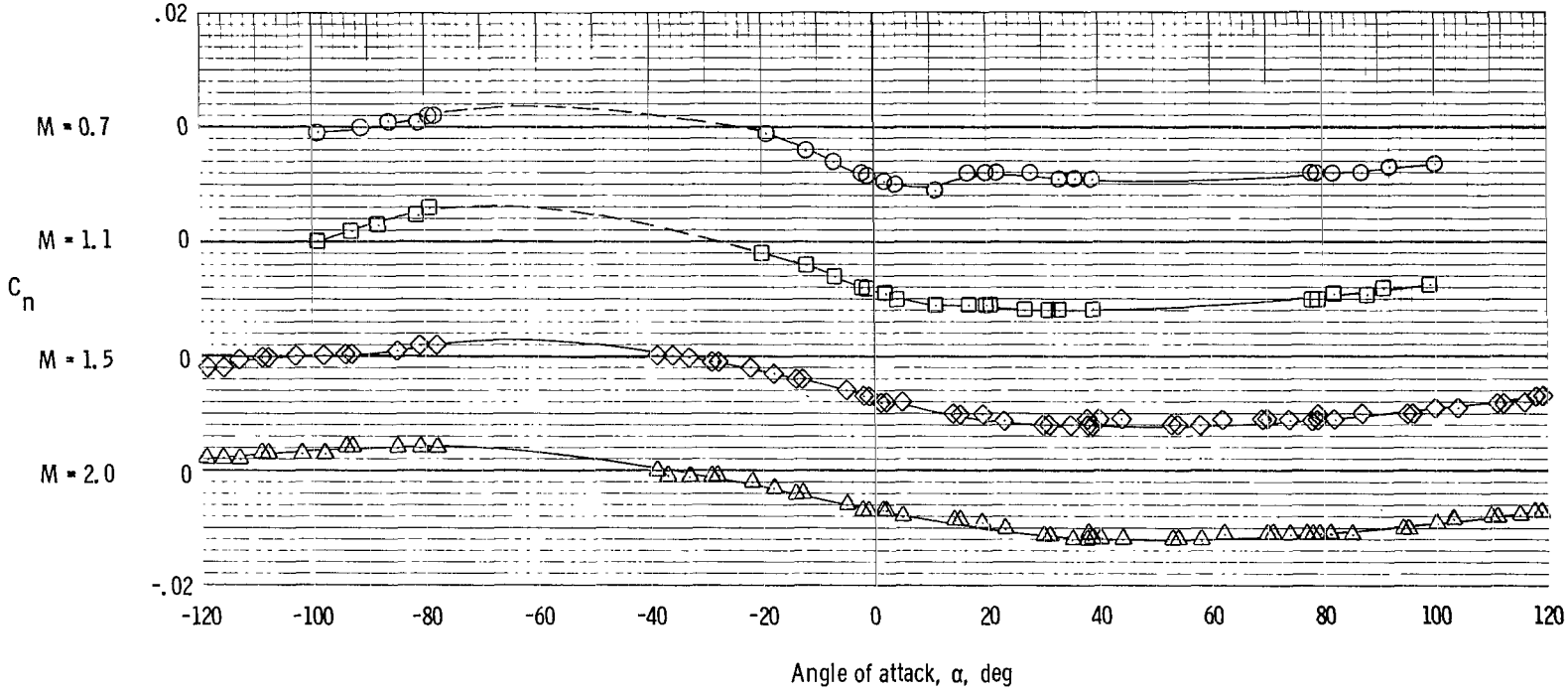
(l) Axial-force coefficient at $\delta = 115°$.

Figure 12. - Concluded.



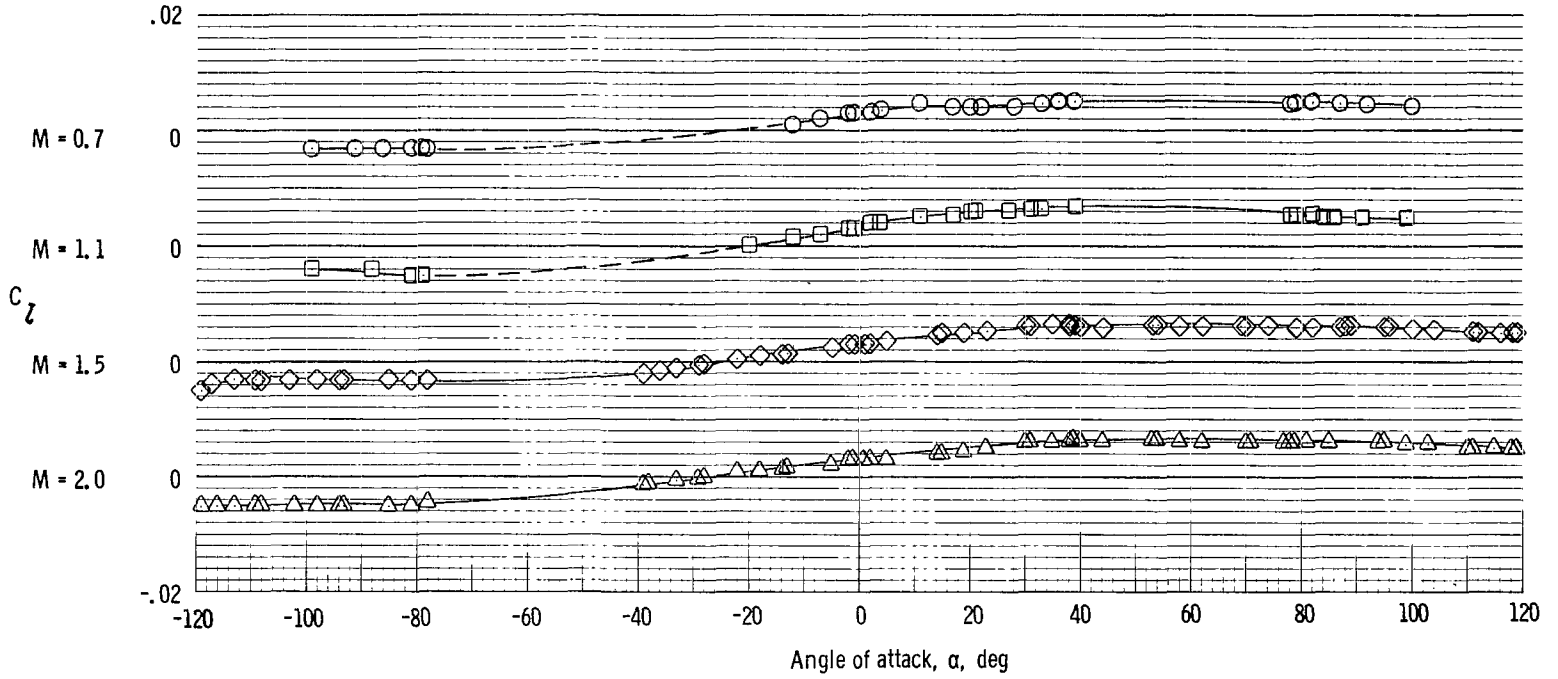
(a) Side-force coefficient.

Figure 13. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the body axes at M = 0.7, 1.1, 1.5, and 2.0 at $\delta = 115°$.



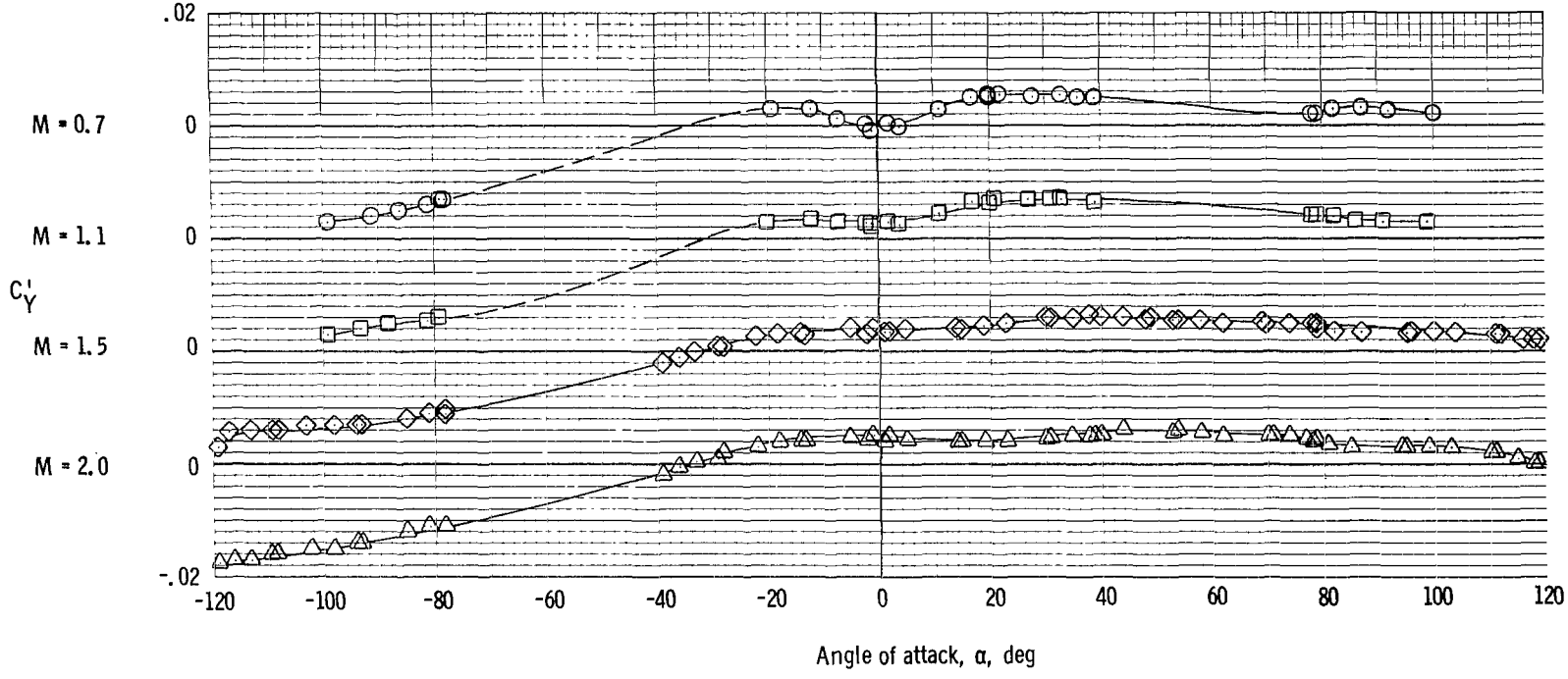
(b) Yawing-moment coefficient.

Figure 13. - Continued.



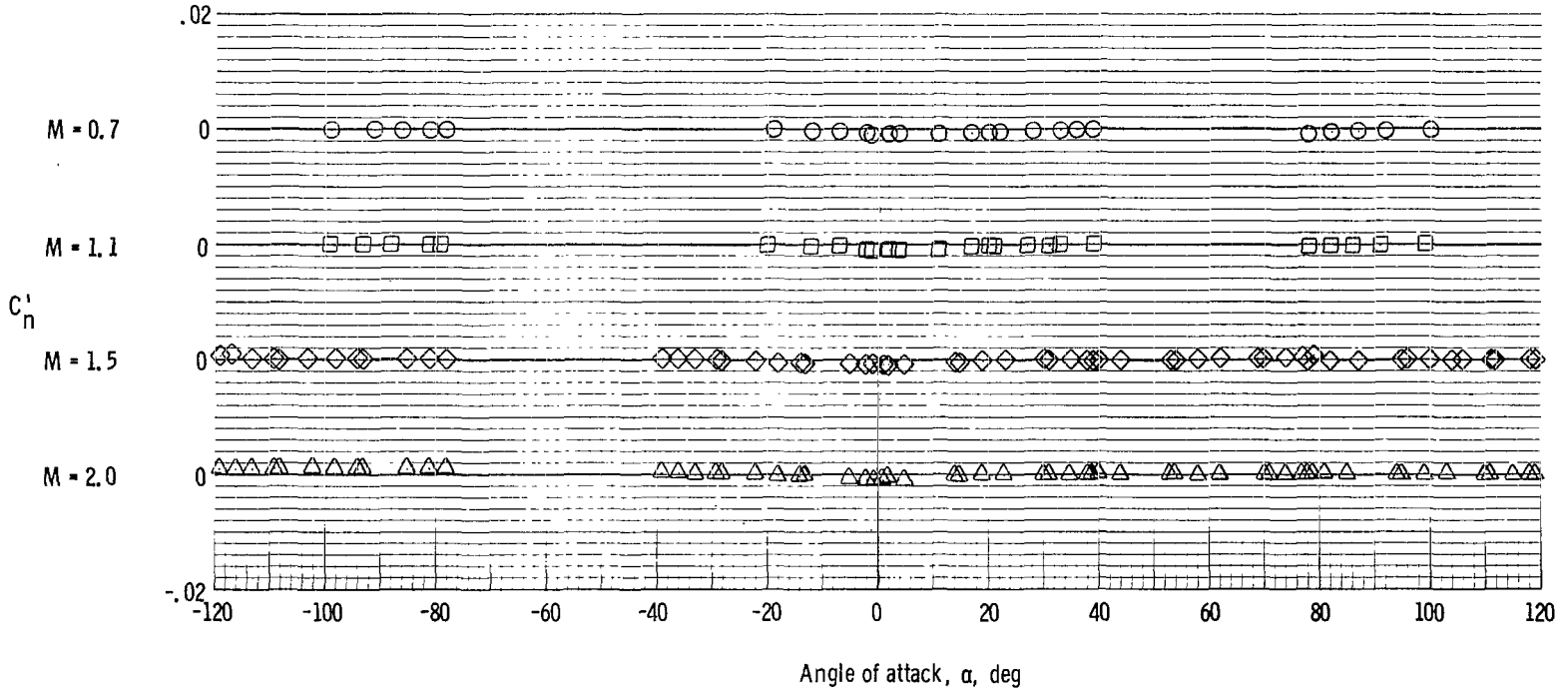
(c) Rolling-moment coefficient.

Figure 13. - Concluded.



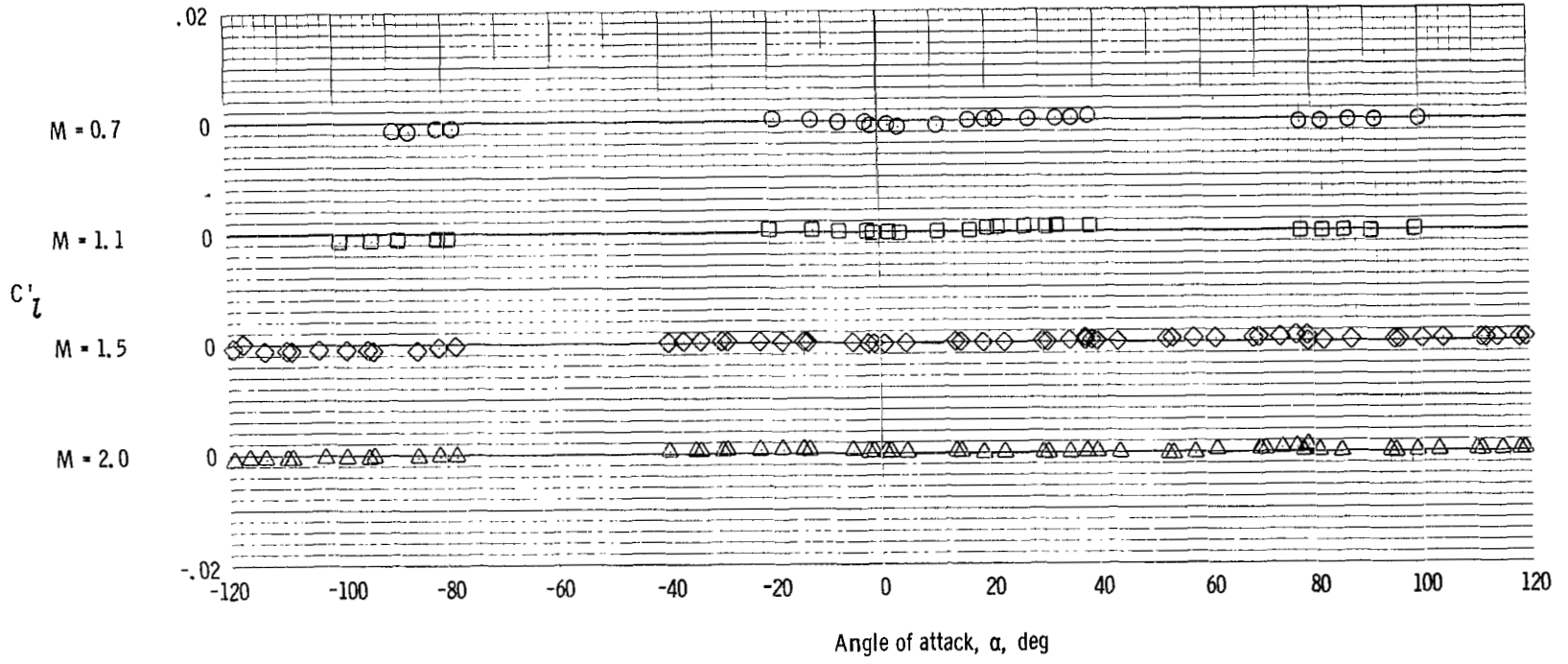
(a) Side-force coefficient.

Figure 14. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the canard axes at M = 0.7, 1.1, 1.5, and 2.0 at $\delta = 115°$.



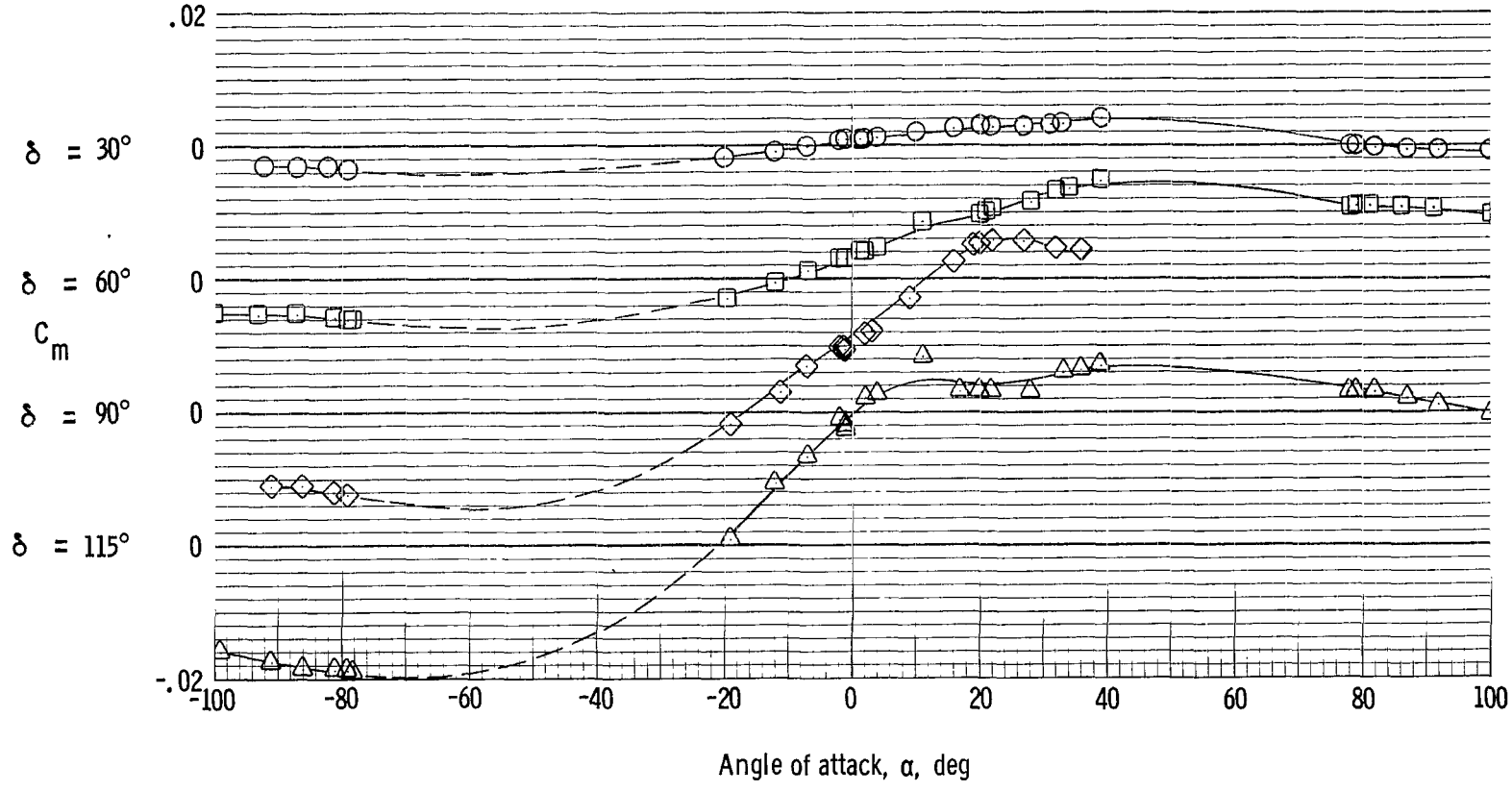
(b) Yawing-moment coefficient.

Figure 14. - Continued.



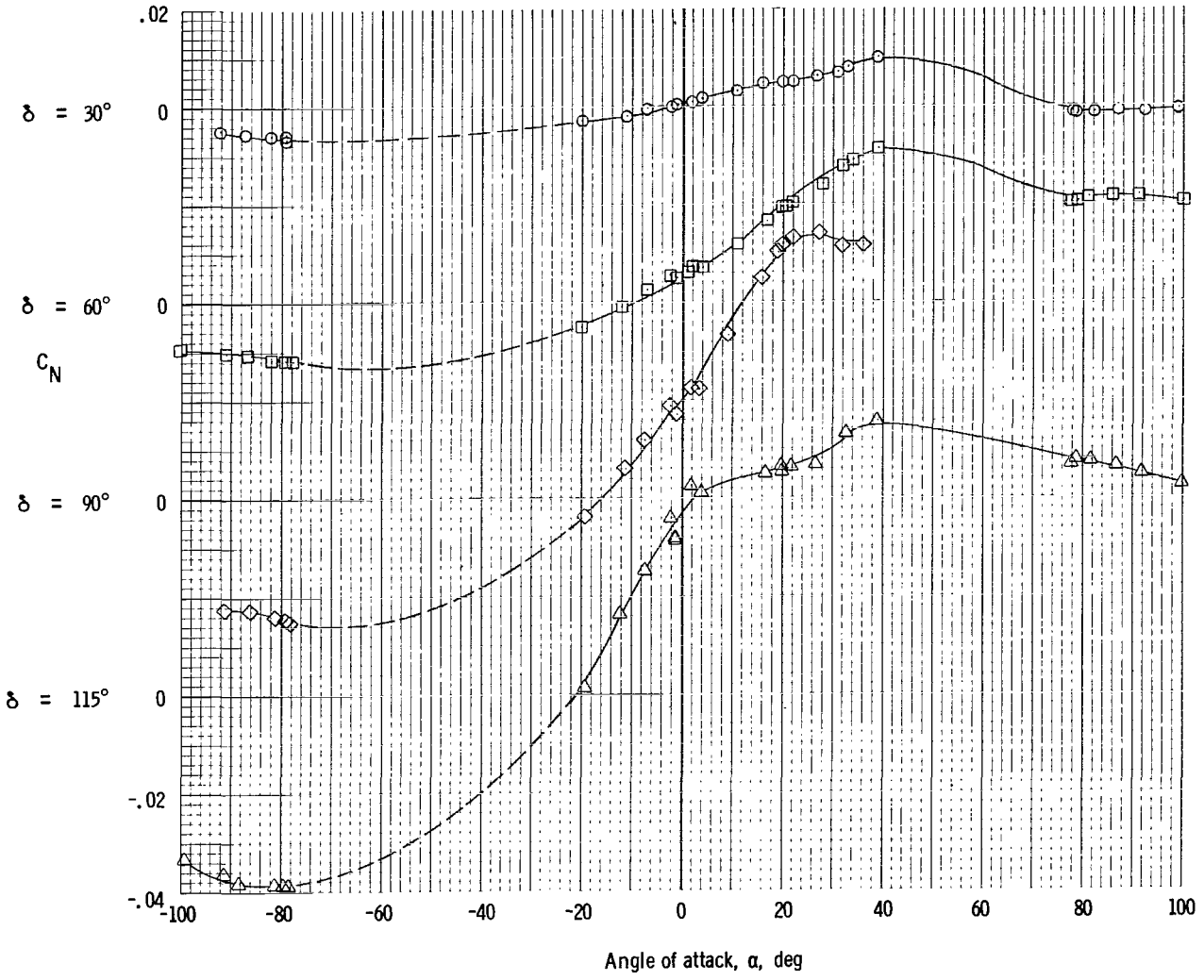
(c) Rolling-moment coefficient.

Figure 14. - Concluded.



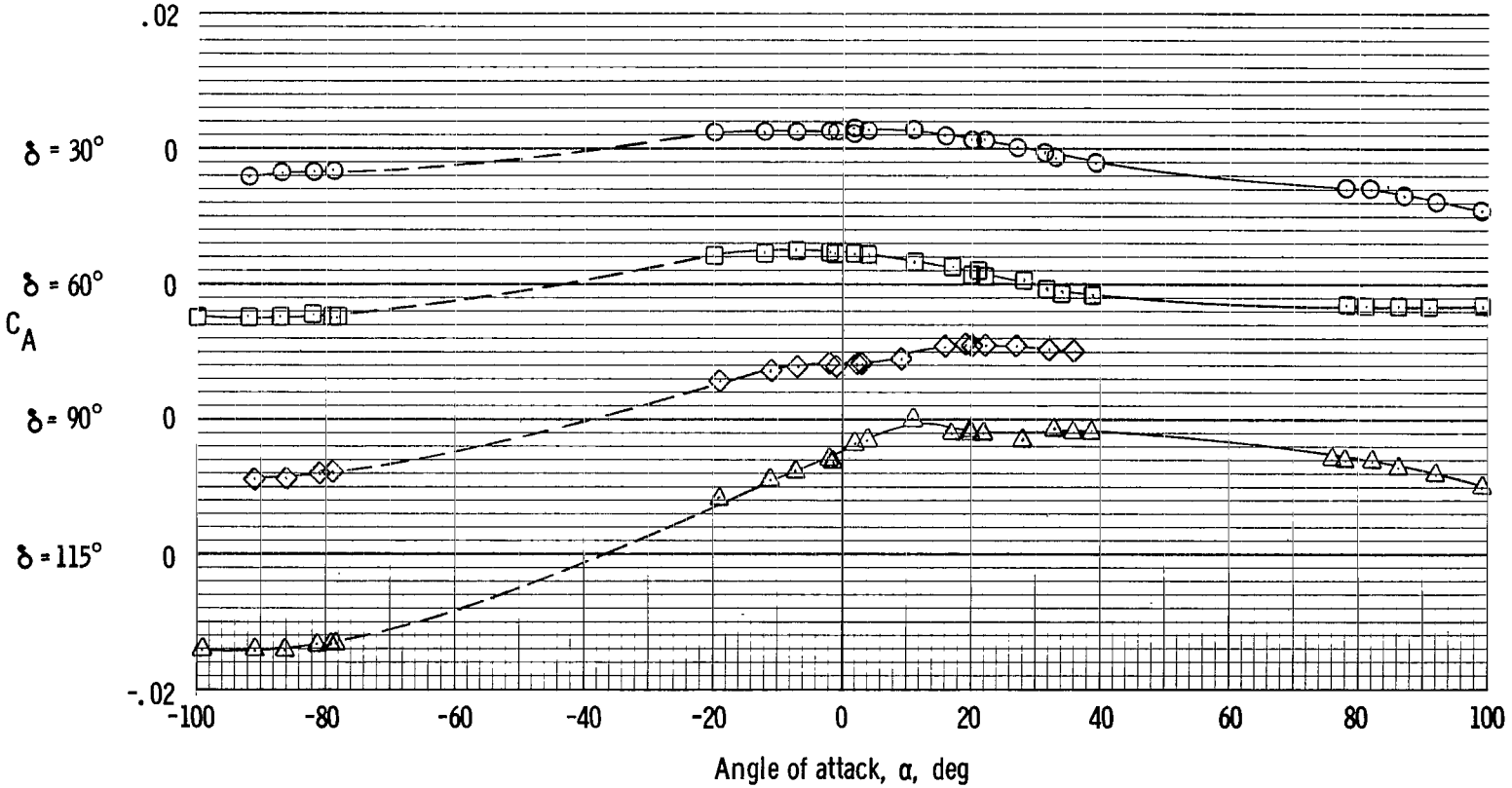
(a) Pitching-moment coefficient.

Figure 15. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the body axes, at deployment angles of 30°, 60°, 90°, and 115° at M = 0.70.



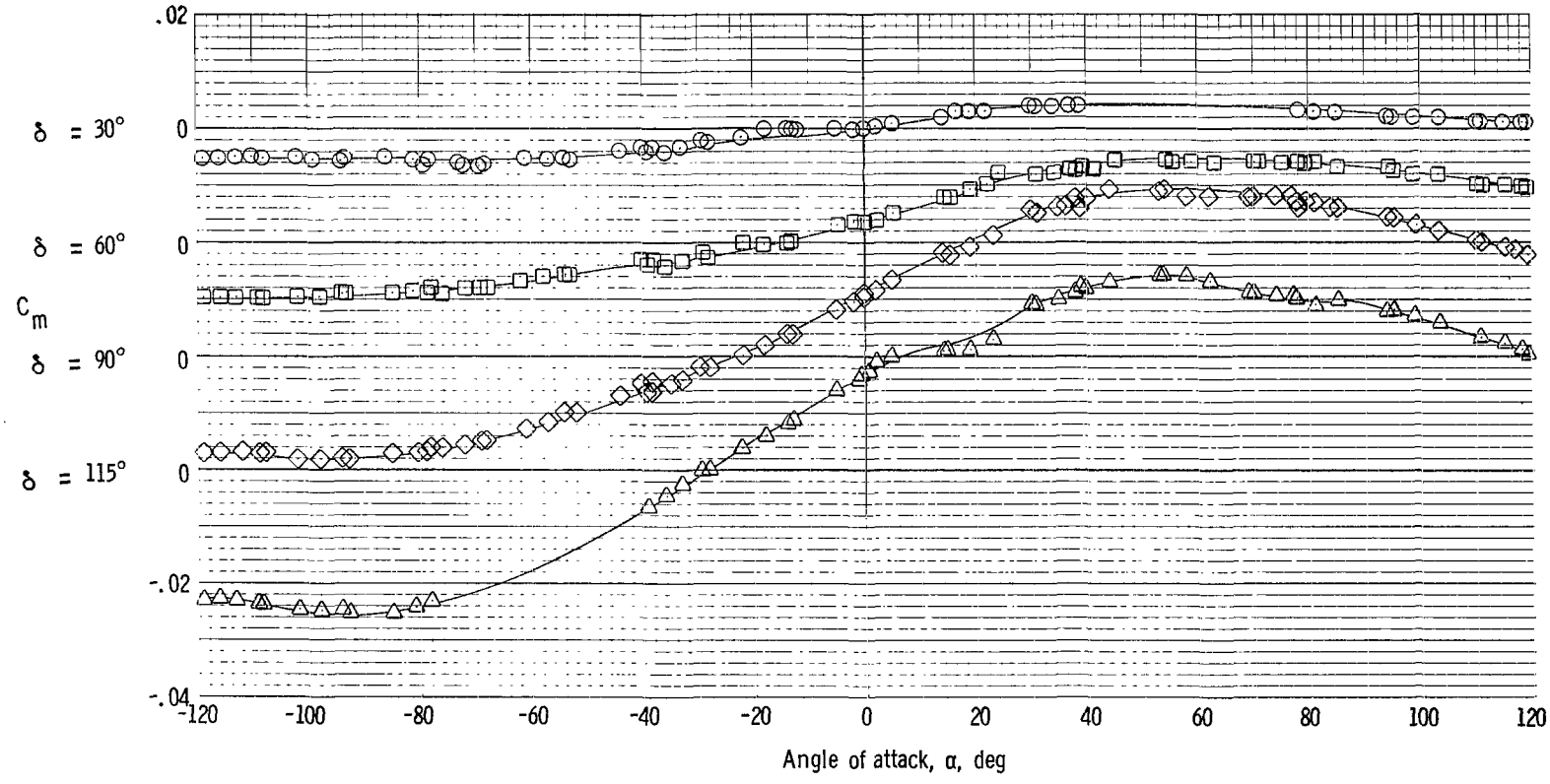
(b) Normal-force coefficient.

Figure 15. - Continued.



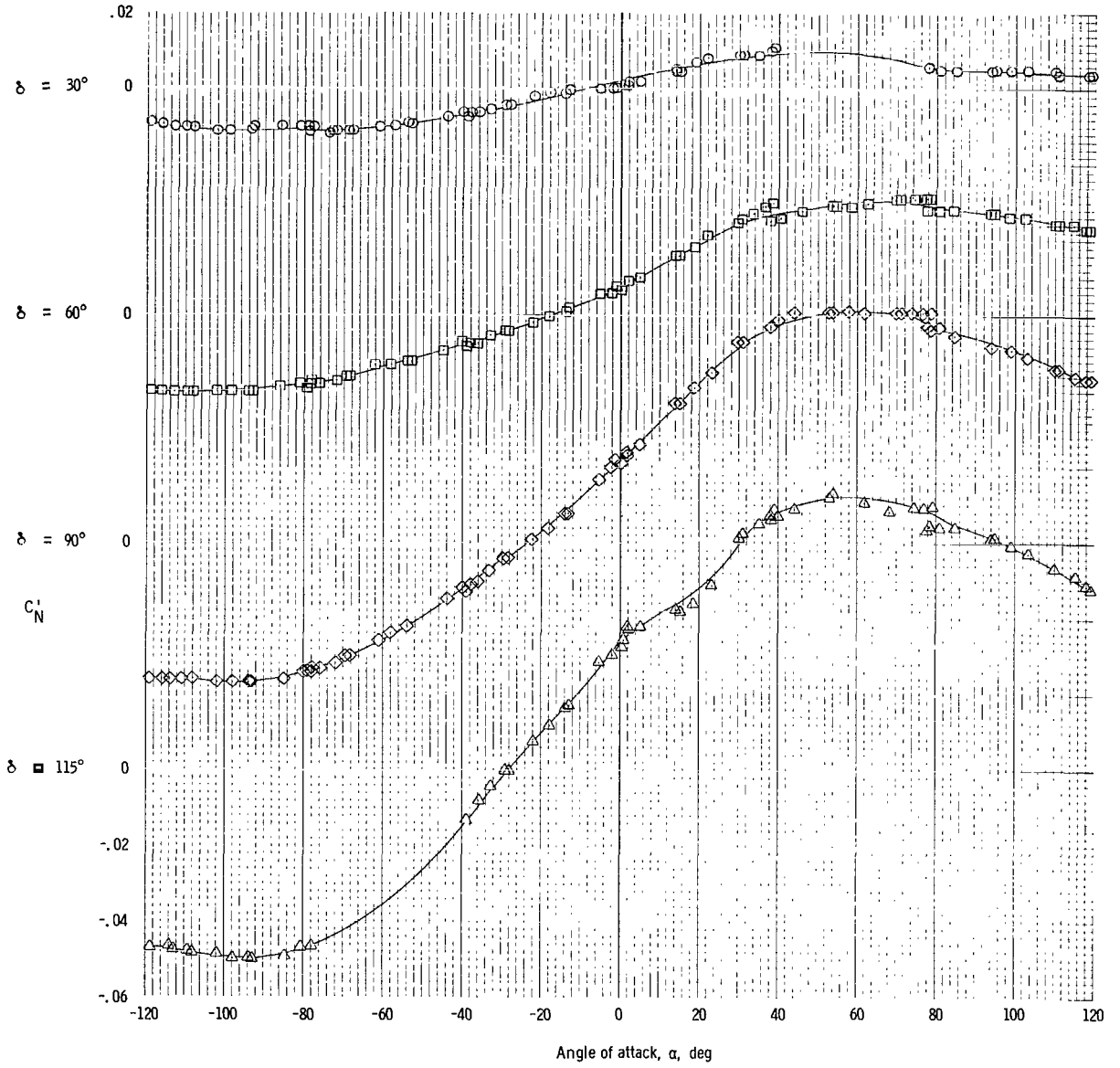
(c) Axial-force coefficient.

Figure 15. - Concluded.



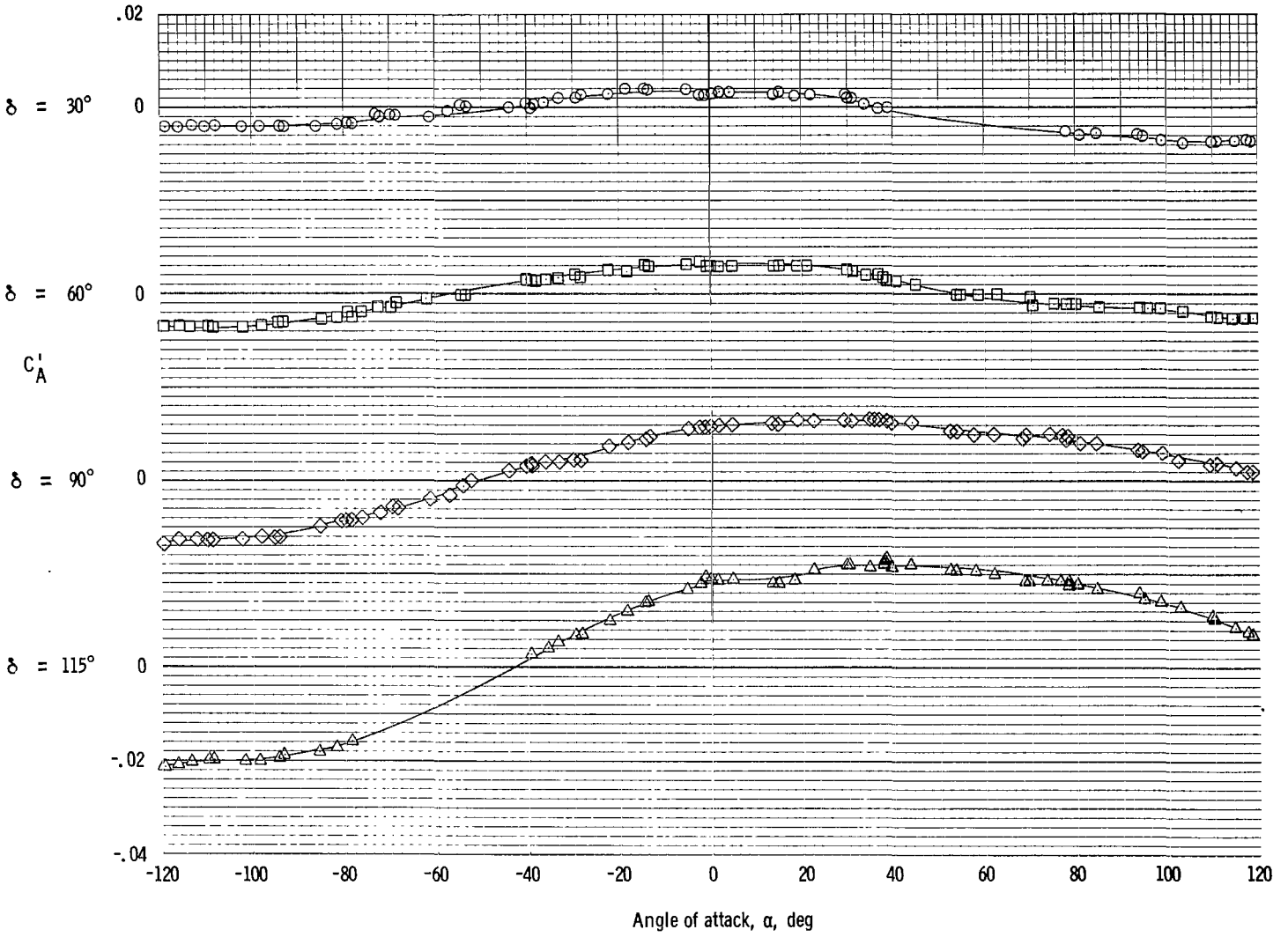
(a) Pitching-moment coefficient.

Figure 16. - Selected aerodynamic characteristics of the loads test model measured about the body axes, at deployment angles of 30°, 60°, 90°, and 115° at M = 2.0.



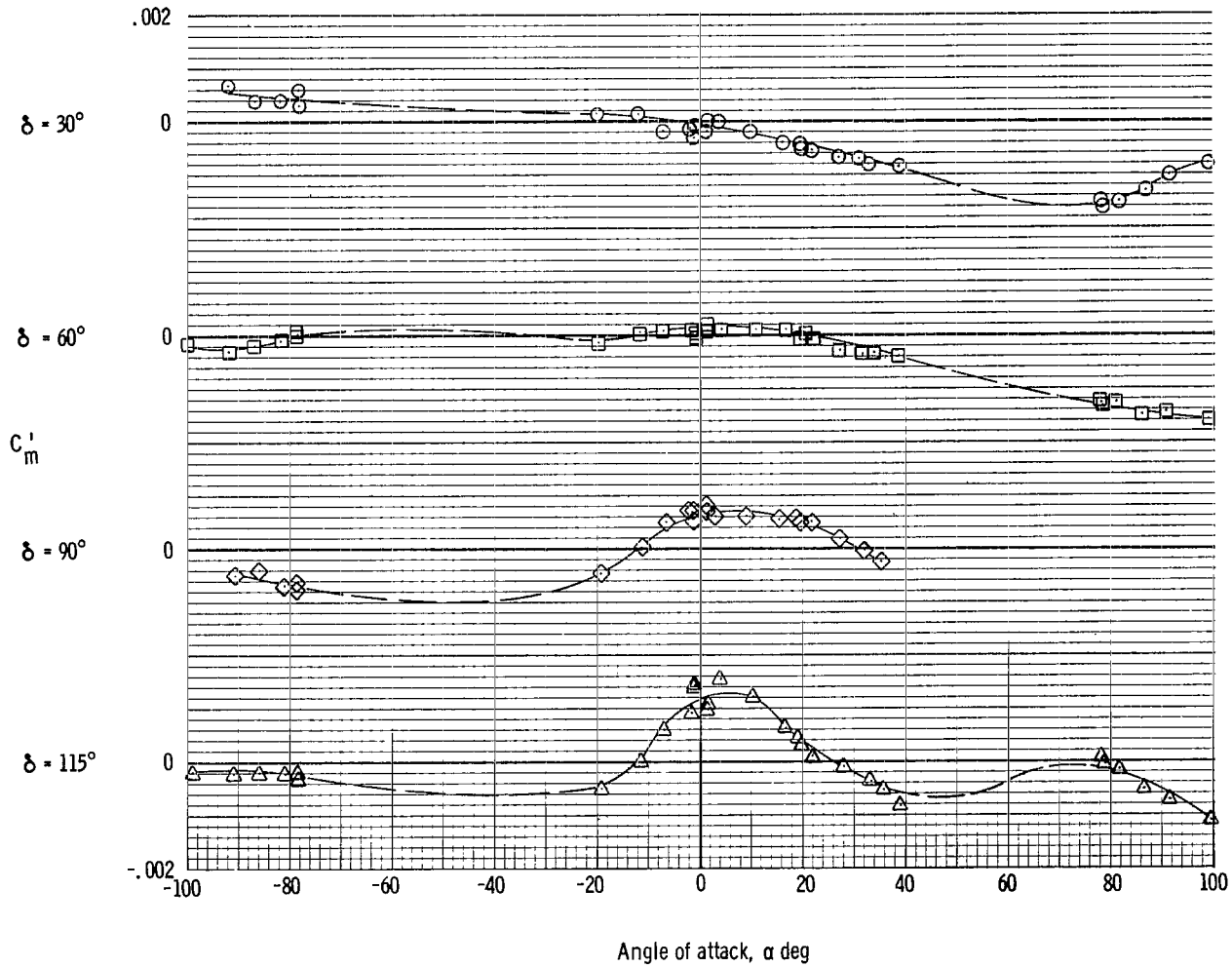
(b) Normal-force coefficient.

Figure 16. - Continued.



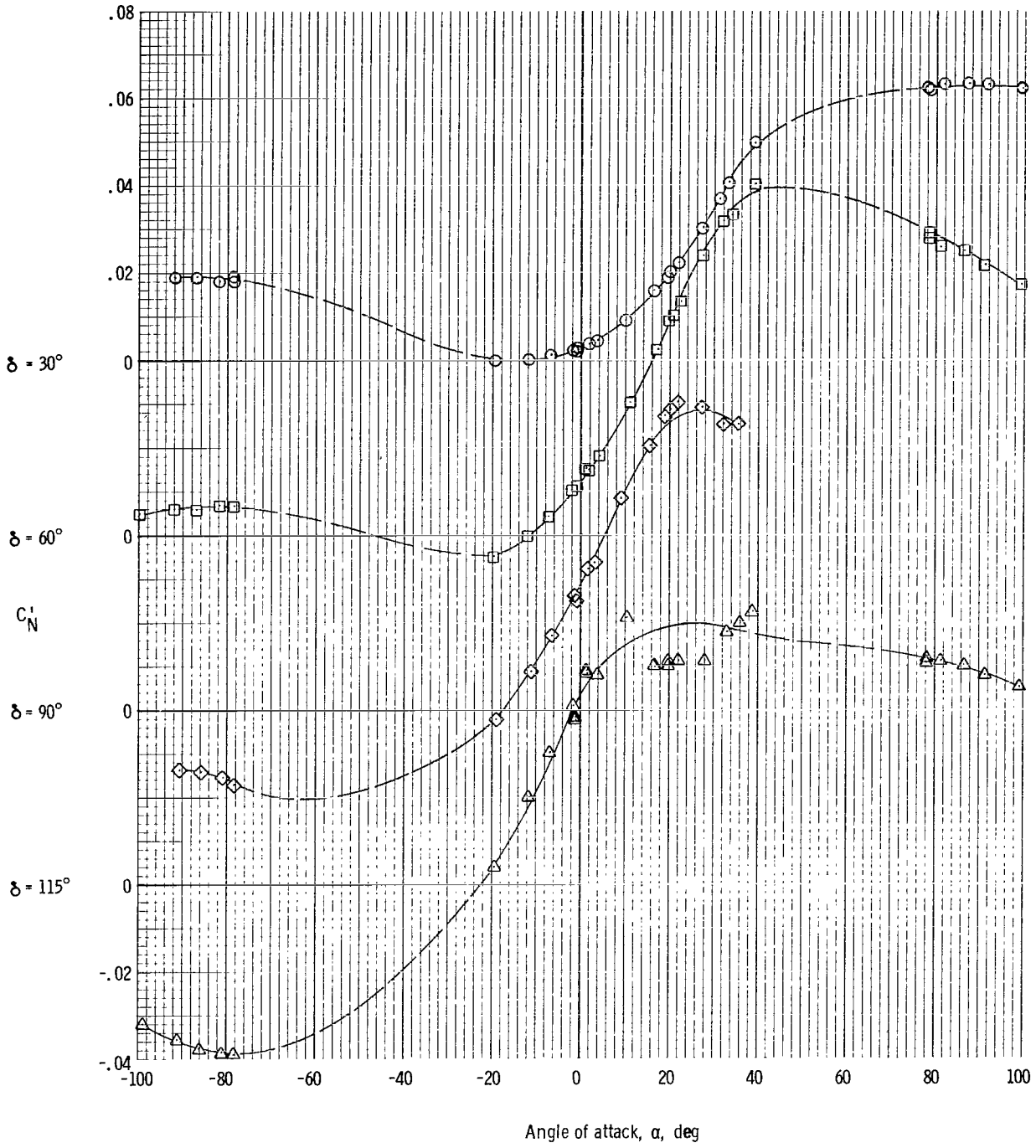
(c) Axial-force coefficient.

Figure 16. - Concluded.



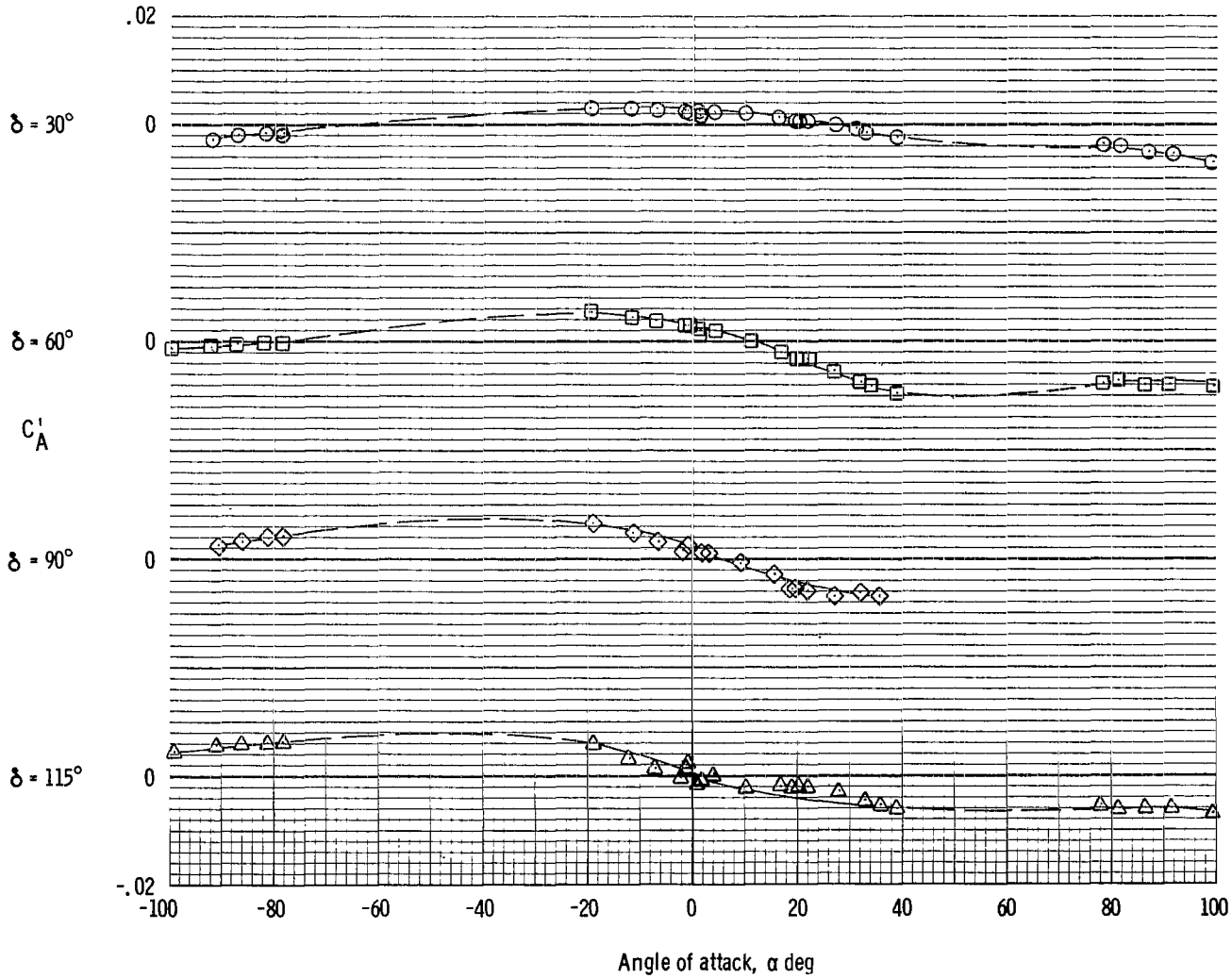
(a) Pitching-force coefficient.

Figure 17. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the canard axes, at deployment angles of 30°, 60°, 90°, and 115° at M = 0.70.



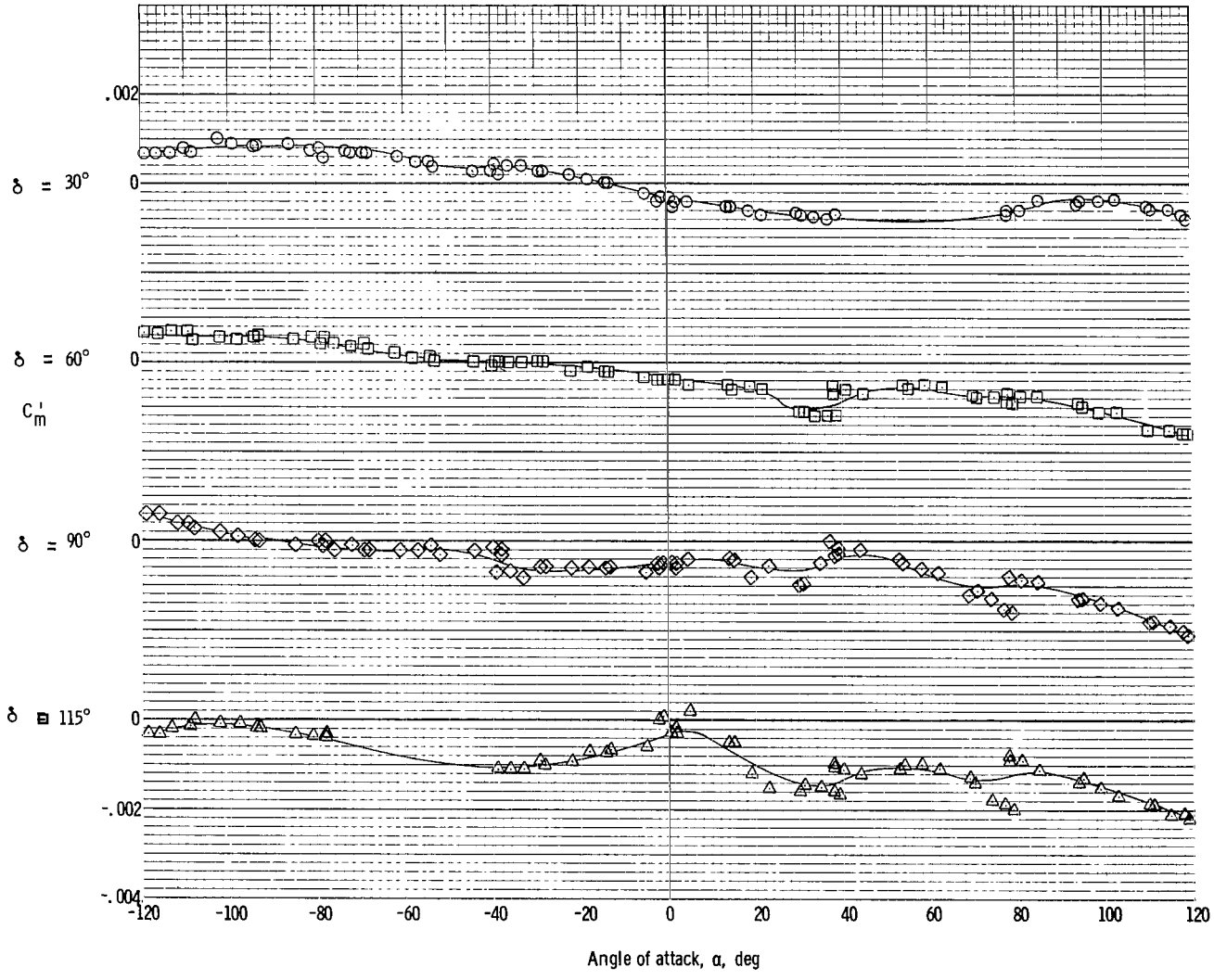
(b) Normal-force coefficient.

Figure 17. - Continued.



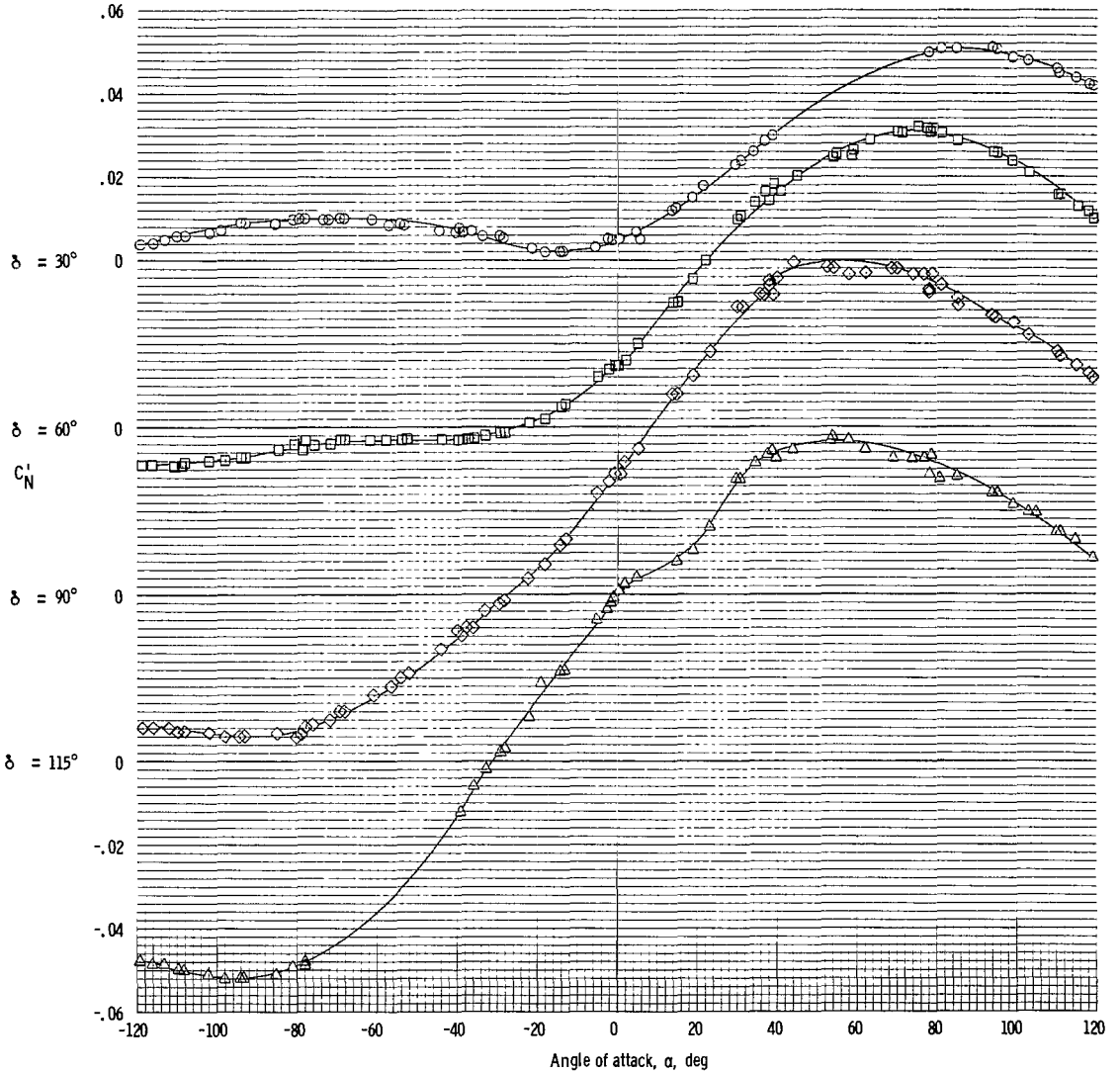
(c) Axial-force coefficient.

Figure 17. - Concluded.



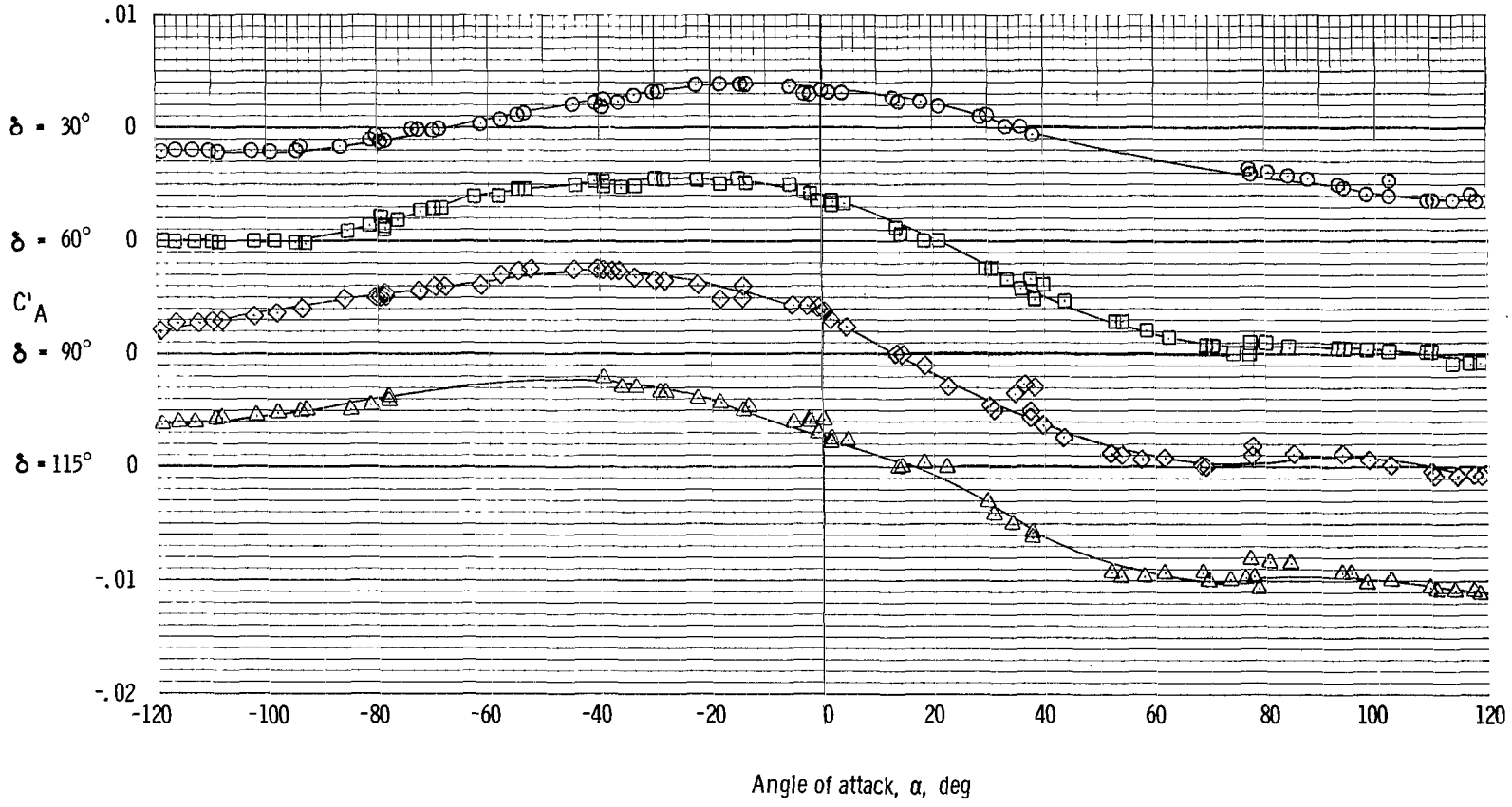
(a) Pitching-moment coefficient.

Figure 18. - Selected aerodynamic characteristics of the loads test model measured for a single canard about the canard axes, at deployment angles of 30°, 60°, 90°, and 115° at M = 2.0.



(b) Normal-force coefficient.

Figure 18. - Continued.



(c) Axial-force coefficient.

Figure 18. - Concluded.

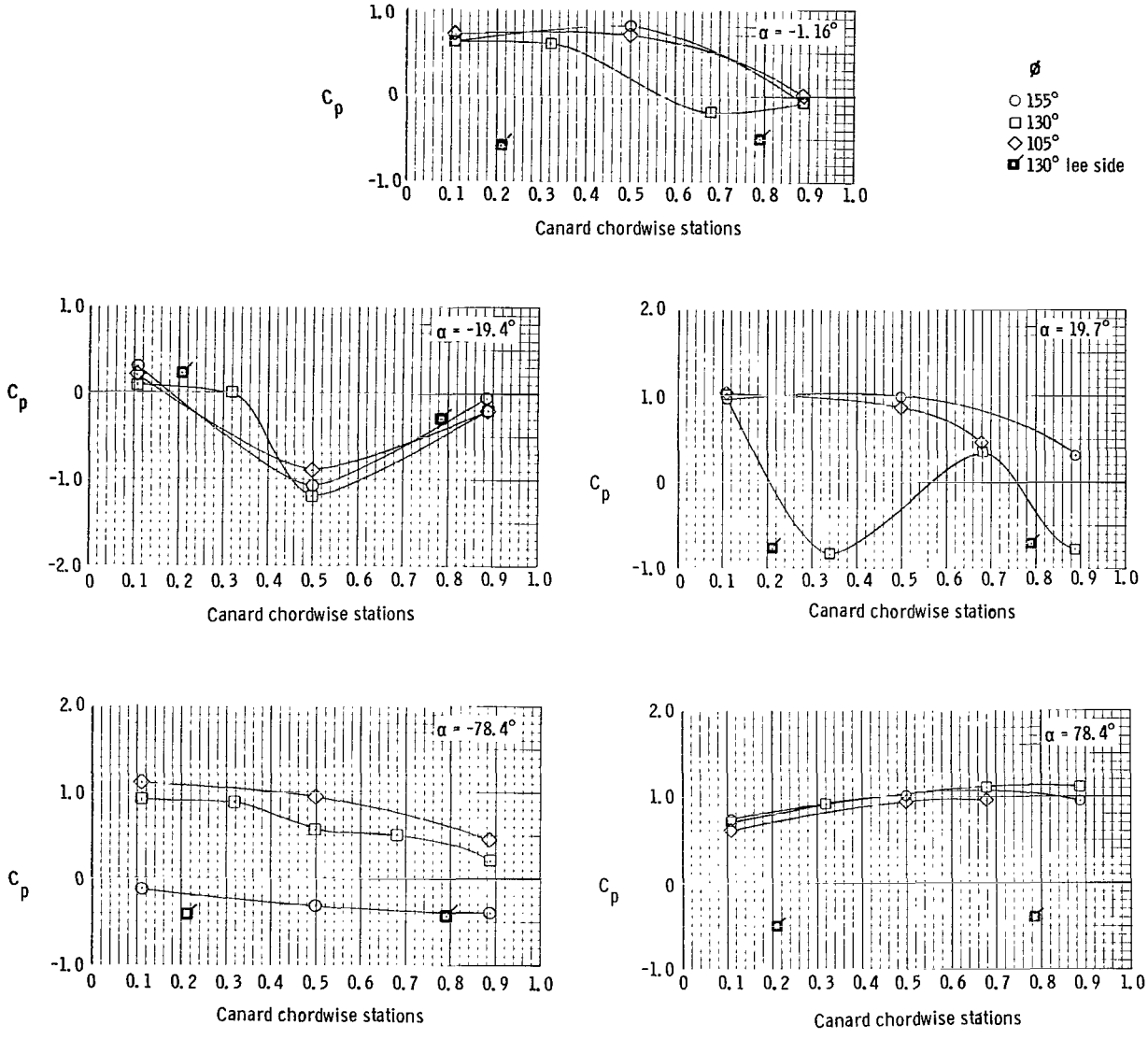


Figure 19. - Canard pressure coefficients computed for selected angles of attack, canard deployment angle of 115°, and M = 0.70.

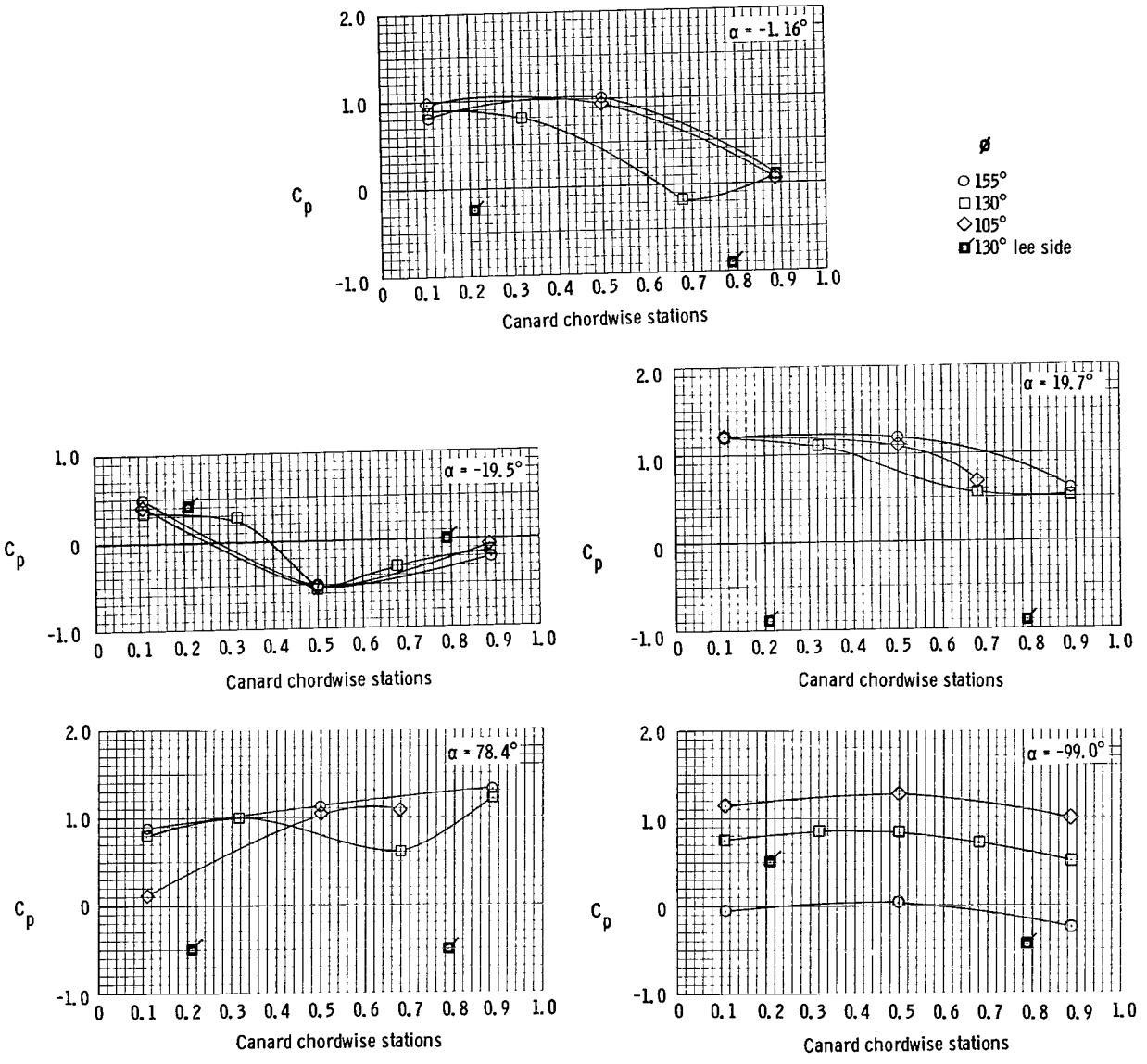


Figure 20. - Canard pressure coefficients computed for selected angles of attack, canard deployment angle of 115°, and M = 1.1.

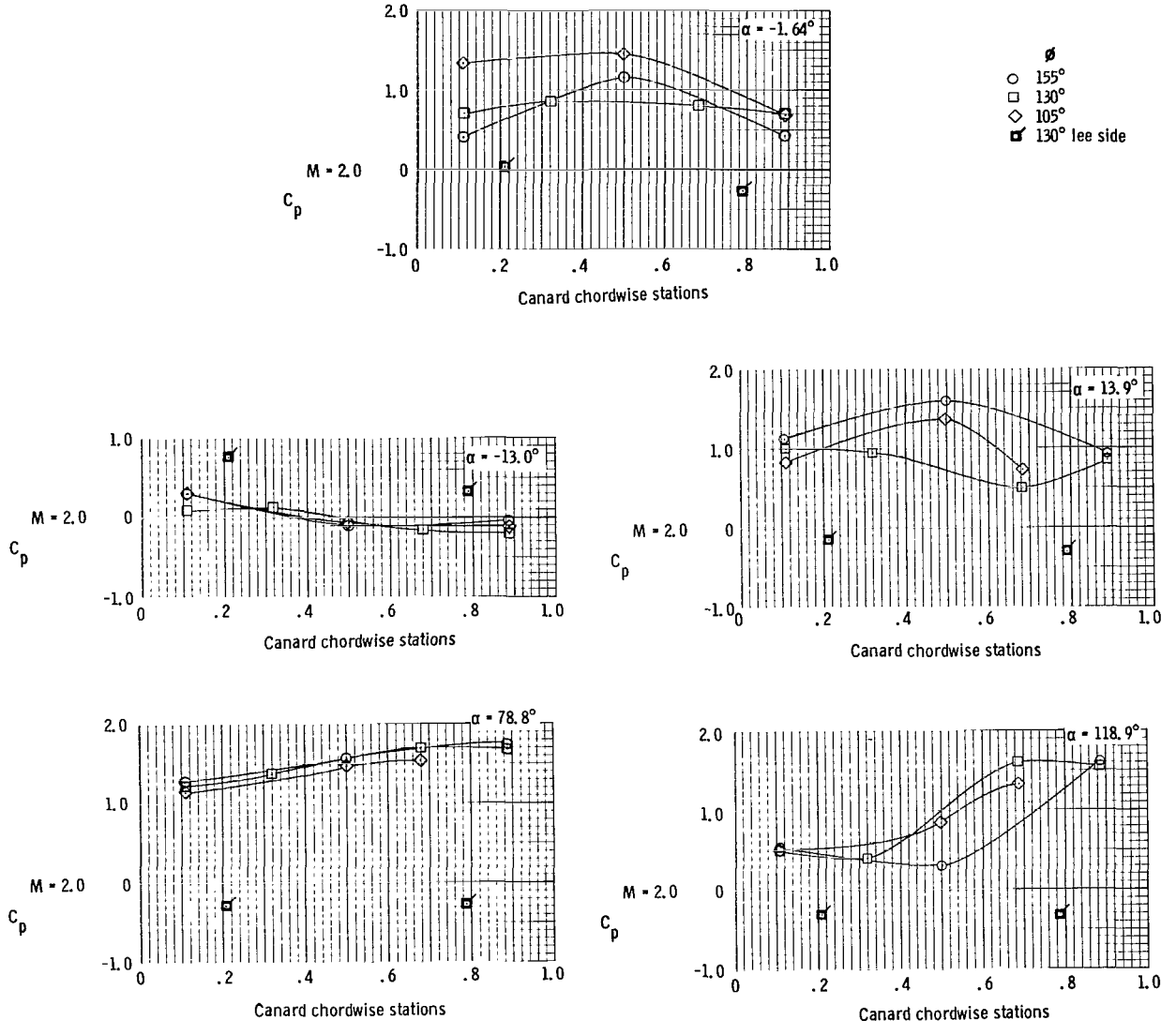


Figure 21. - Canard pressure coefficients computed for selected angles of attack, canard deployment angle of 115°, and M = 2.0.

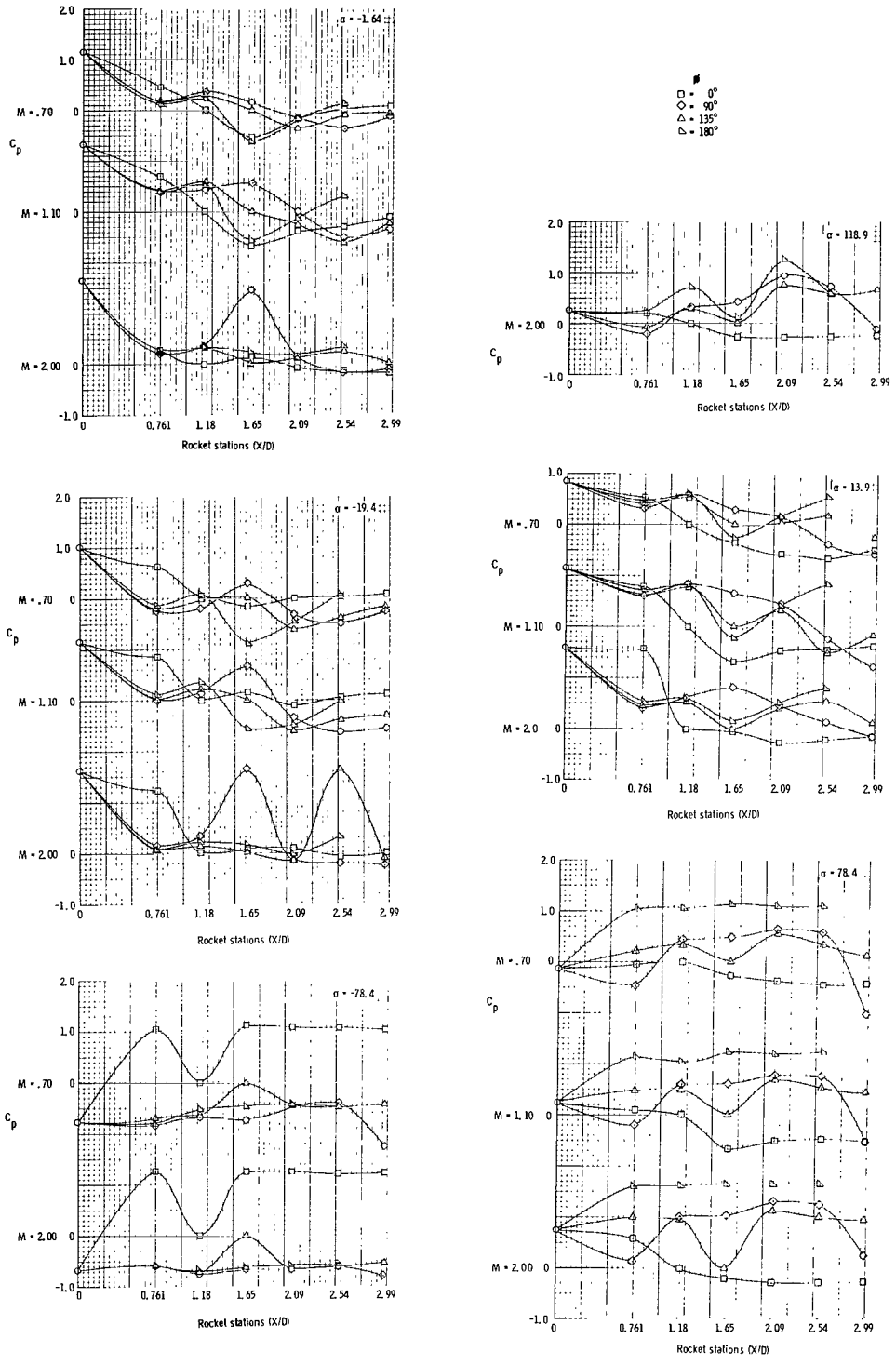


Figure 22. - Nose section pressure coefficients computed for selected angles of attack, canard deployment angle of 115°, and selected Mach numbers.

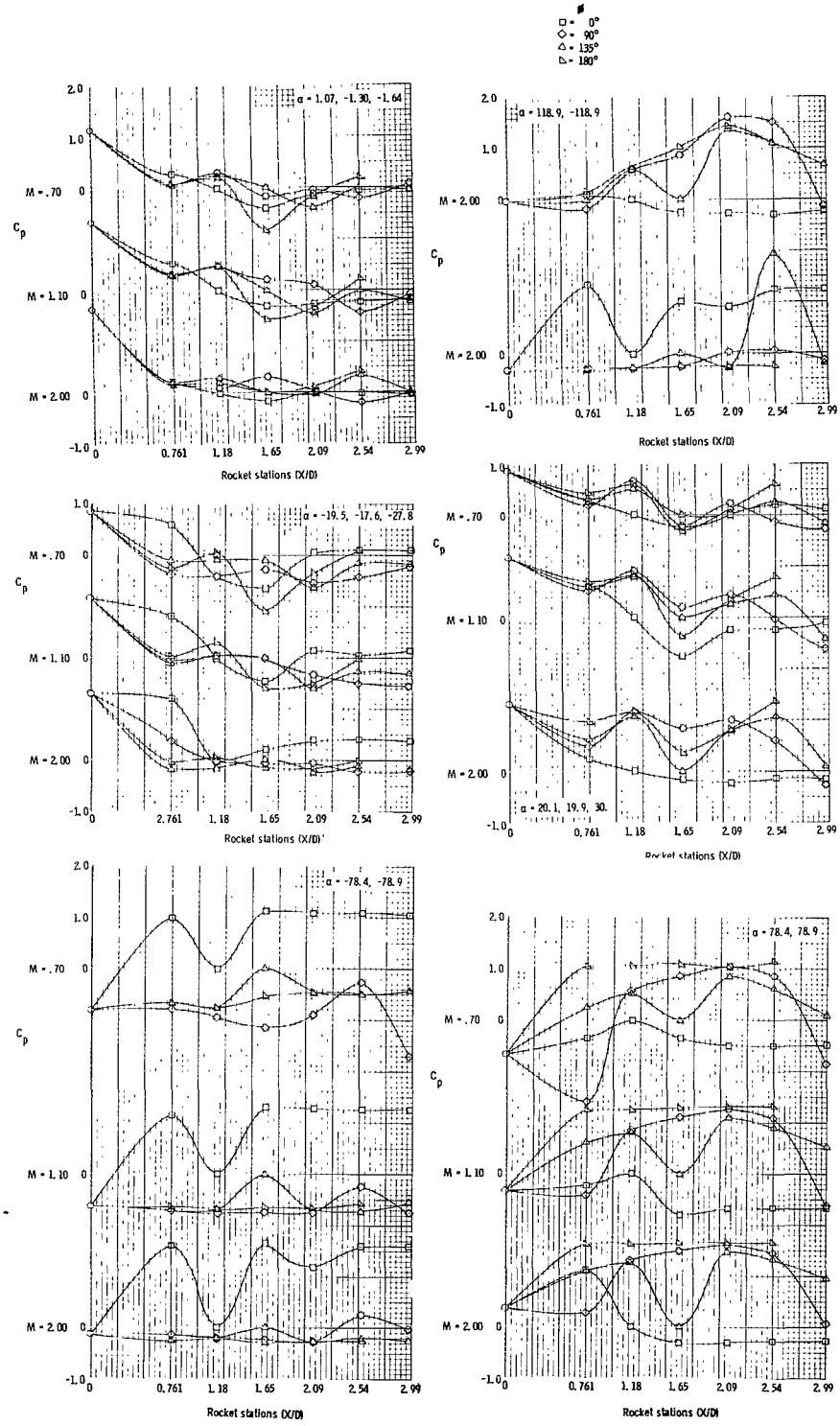


Figure 22. - Concluded.

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