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AERODYNAMIC CHARACTERISTICS OF TWO 25-PERCENT-AREA TRAILING-EDGE FLAPS ON AN ASPECT RATIO 2 TRIANGULAR WING AT SUBSONIC AND SUPERSONIC SPEEDS

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NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS

WASHINGTON
July 22, 1952

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AERODYNAMIC CHARACTERISTICS OF TWO 25-PERCENT-AREA TRAILING-EDGE FLAPS ON AN ASPECT RATIO 2 TRIANGULAR WING AT SUBSONIC AND SUPERSONIC SPEEDS

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SUMMARY

The results of an experimental investigation of flap-type controls on a low-aspect-ratio triangular wing using NACA 0005-63 sections are presented for a constant-chord and a constant-percent-chord control surface. Two flap profiles were investigated, one having a true contour and the other a blunt trailing edge. The lift, drag, pitching moment, hinge moment, and rolling moments were obtained for Mach numbers of 0.6, 0.8, 0.9, 1.3, 1.53, and 1.7 at a constant Reynolds number of 3.0 million and for angles of attack from -4° to 16°. The flap deflections were varied in 5° increments from $+5^{\circ}$ to -25°.

The results showed that the flap plan form had little effect on the lift effectiveness. The effects of flap plan form were more pronounced on the pitching-moment effectiveness, the constant-chord flap exhibiting the higher pitching-moment effectiveness throughout the speed ranges investigated. Both flaps showed a considerable reduction in effectiveness as the Mach number was increased from 0.9 to 1.3. The constant-percent-chord flap showed considerably lower values of the hinge-moment parameters than did the constant-chord flap for the ranges of Mach numbers investigated. For the constant-chord flap, thickening the flap profile resulted in somewhat higher absolute values of the hinge-moment parameter C_{h_δ} throughout the Mach number range. For the constant-percent-chord flap, thickening the flap profile resulted in considerably higher absolute values of C_{h_δ} in the subsonic speed range with little effect being evident in the supersonic speed range. A comparison of the measured values of the effectiveness and hinge-moment parameters in the supersonic speed range with the theory showed that the linearized theory

predicted reasonably well the variation of the parameters with Mach number, but the experimental values were generally of smaller magnitude than those predicted by the theory.

Application of the data to an assumed triangular-wing aircraft with the center of gravity located at 35 percent of the mean aerodynamic chord showed the following results: In the subsonic speed range, the constant-chord flap was found to be the more effective longitudinal-control device but either flap was capable of providing longitudinal balance at lift coefficients up to approximately 0.8. In the supersonic speed range, the data showed that both flaps provided ample control for balancing the aircraft at lift coefficients up to approximately 0.65 for the assumed center-of-gravity location. Considerably higher flap deflections were required for balance at a given lift coefficient, however, than were necessary at subsonic speeds because of the large increase in stability and decrease in control effectiveness that occurred as the Mach number was increased from 0.9 to 1.3.

Deflecting the flap to provide balance resulted in a maximum reduction in the maximum lift-drag ratio of approximately 6 percent at subsonic speeds and as much as 28 percent in the supersonic speed range. Throughout the speed ranges investigated, thickening the flap profile resulted in an increase in drag with an accompanying decrease in the lift-drag ratio.

The airplane with the constant-percent-chord flap would have a considerably smaller difference in the stick-fixed and the stick-free stability than would the airplane with the constant-chord flap. The results showed that with either type of flap the airplane was unstable stick free throughout the subsonic speed range. The results showed also that while either flap could provide longitudinal control, the hinge moments were of such a nature as to require an irreversible-powered control actuator.

INTRODUCTION

As part of a continuing program of investigation of control surfaces suitable for supersonic aircraft, flap-type controls for low-aspect-ratio triangular wings composed of NACA 0005-63 sections are being investigated in the Ames 6- by 6-foot supersonic wind tunnel. A limited amount of information is available on the characteristics of flap-type controls on triangular wings at subsonic and low supersonic

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speeds (e.g., references 1 and 2). The present report presents a portion of the work concerned with the aerodynamic characteristics of both a constant-chord and a constant-percent-chord trailing-edge flap at subsonic and supersonic speeds. Two flap profiles were investigated, one of which was a true-contour profile and the other a blunt profile.

SYMBOLS

b wing span, feet

c local wing chord measured parallel to plane of symmetry, feet

$\bar{c}$ wing mean aerodynamic chord $\left(\dfrac{\int_0^{b/2} c^2 dy}{\int_0^{b/2} c\, dy}\right)$, feet

C_D drag coefficient $\left(\dfrac{\text{drag}}{qS}\right)$

C_h hinge-moment coefficient $\left(\dfrac{\text{hinge moment}}{2qM_A}\right)$

C_L lift coefficient $\left(\dfrac{\text{lift}}{qS}\right)$

C_m pitching-moment coefficient about the 35-percent point of the wing mean aerodynamic chord $\left(\dfrac{\text{pitching moment}}{qS\bar{c}}\right)$

C_l rolling-moment coefficient $\left(\dfrac{\text{rolling moment}}{qSb}\right)$

C_{L_δ} flap lift-effectiveness parameter for constant angle of attack, $\left(\dfrac{\partial C_L}{\partial \delta}\right)$, measured at $\delta=0$, per degree

C_{h_δ} rate of change of hinge-moment coefficient with change in flap deflection for constant angle of attack, $\left(\dfrac{\partial C_h}{\partial \delta}\right)$ measured at $\delta=0$, per degree

C_{h_α} rate of change of hinge-moment coefficient with change in angle of attack for constant angle of flap deflection, $\left(\frac{\partial C_h}{\partial \alpha}\right)$ measured at $\alpha=0$, per degree

C_{m_δ} flap pitching-moment-effectiveness parameter for constant angle of attack, $\left(\frac{\partial C_m}{\partial \delta}\right)$, measured at $\delta=0$, per degree

g acceleration due to gravity, feet per second per second

l length of body including portion removed to accommodate sting, inches

M Mach number

M_A first moment of area of exposed flap area aft of hinge line, feet cubed

n normal acceleration, feet per second per second

q free-stream dynamic pressure $\left(\frac{1}{2}\rho V^2\right)$, pounds per square foot

R Reynolds number, based on the mean aerodynamic chord

r_o maximum body radius, inches

S wing area, including area within body, square feet

x longitudinal distance from nose of body, inches

y distance perpendicular to plane of symmetry, feet

α angle of attack of wing chord line, degrees

δ angle between wing chord and flap chord measured in a plane perpendicular to the flap hinge line, positive for downward deflection with respect to the wing, degrees

ρ mass density of air, slugs per cubic feet

APPARATUS AND MODEL

The experimental investigation was conducted in the Ames 6- by 6-foot supersonic wind tunnel, which is a closed-return variable-pressure type of tunnel with a Mach number range from 0.6 to 0.9 and from 1.2 to 2.0. This wind tunnel is described fully in reference 3.

The model used in the present investigation consisted of a wing-fuselage combination, the wing of which had a triangular plan form, an aspect ratio of 2, 63° sweepback of the leading edge, and was symmetrically mounted on the fuselage. The wing had NACA 0005-63 sections in streamwise planes. A constant-chord trailing-edge flap was mounted on the left wing panel and a flap with its chord equal to a constant percent of the wing chord was mounted on the right wing panel. (See fig. 1.) The flap areas were 25 percent of the exposed wing area. The wing was constructed by covering a steel spar with a bismuth-tin alloy and the flaps were of solid steel construction. For each flap plan form two flap profiles were tested, one of which was a true-contour profile and the other a half-blunt trailing-edge profile. (The ratio of the trailing-edge to hinge-line thickness was 0.5.)

The body used in this investigation was identical to that tested in the investigation of reference 4 in combination with a plane triangular wing without flaps. The body shape was selected on the basis of minimum wave drag consideration and had a fineness ratio of 12.5, based on the length including that portion of the body shown dotted in figure 1. The complete model is shown mounted in the Ames 6- by 6-foot supersonic wind tunnel in figure 2.

The over-all forces and moments on the combination were measured on an internal strain-gage balance. Flap hinge moments were measured by an electrical strain gage mounted in the body at the wing-body juncture. Each flap-deflection angle was fixed by the position of a serrated bushing that was mounted within the strain gage beam.

TEST AND PROCEDURE

Range of Test Variables

The aerodynamic characteristics of the model as a function of angle of attack were investigated for a range of Mach numbers from 0.6 to 0.9 and from 1.3 to 1.7. Lift, drag, pitching-moment, rolling-moment,

and hinge-moment measurements were made at constant flap deflections at nominal angles of attack from -4° to 16°. The flap deflections were varied in 5° increments from $+5^{\circ}$ to -25°. Additional data were obtained for -1.0° and -2.5° flap deflections. For the present investigation, the flap angle on one wing panel was fixed at zero deflection while the other flap angle was varied. The data presented in this report were obtained at a Reynolds number of 3.0 million.

Reduction of Data

The test data have been reduced to standard NACA coefficient form. The pitching moments were calculated about an axis at the 35-percent mean aerodynamic chord. Factors which affect the accuracy of these results are discussed in the following paragraphs.

Tunnel-wall interference.- Corrections to the subsonic results for the induced effects of tunnel walls resulting from lift on the model were made according to the methods of reference 5. The numerical values of these corrections (which were added to the uncorrected data) are:

$$\Delta\alpha = 0.932 \quad C_L$$

$$C_D = 0.0162 \; C_L^2$$

The corrections to the pitching-moment coefficients were assumed to be negligible.

The effects at subsonic speeds of constriction of the flow by the tunnel walls were taken into account by the method of reference 6. At a Mach number of 0.9, this correction amounted to a 4 percent increase in the Mach number over that determined from a calibration of the wind tunnel without a model in place.

For the tests at supersonic speeds, the reflection from the tunnel wall of the Mach wave originating at the nose of the body crossed the model only at Mach numbers below 1.4. It is believed that this interference effect was insignificant insofar as the incremental effects of flap deflection were concerned and no corrections for tunnel-wall effects were made.

Stream variations.- Tests of the present model in both the normal and inverted position at subsonic speeds in the 6- by 6-foot supersonic wind tunnel have indicated no stream curvature or inclination in the pitch plane of the model. The longitudinal variation of static pressure

in the region of the model is not known accurately at subsonic speeds, but a preliminary survey has indicated that it is less than 2 percent of the dynamic pressure. No correction for this pressure variation was made.

A survey of the air stream at supersonic speeds (reference 3) has shown stream curvature or inclination only in the yaw plane of the model. The effects of this curvature on the measured characteristics of the present model are not known, but are believed to be small as in the case of the results of reference 7. The survey also indicated that there is a static-pressure variation of sufficient magnitude in the test section to affect the drag results. A correction was added to the measured drag coefficient, therefore, to account for the longitudinal buoyancy caused by this static-pressure variation. This correction varied from -0.0008 at a Mach number of 1.3 to +0.0009 at a Mach number of 1.7.

Support interference.- At subsonic speeds, the effects of support interference on the aerodynamic characteristics of the model are not known. For the present model, it is believed that such effects consist primarily of a change in the base pressure of the model. In an effort to correct at least partially for this support interference, the base pressure was measured and the drag data were adjusted to correspond to a base pressure equal to the static pressure of the free stream.

At supersonic speeds, the interference of the sting on the body for a body-sting configuration similar to that of the present model is shown by reference 8 to be confined to a change in base pressure. The above-mentioned adjustment of the drag for base pressure, therefore, was also applied to the data obtained at supersonic speeds.

Precision

The uncertainties involved in determining dynamic pressure and in measuring forces with the strain-gage balance are fully described in reference 9. The following table lists the uncertainty introduced into each corrected coefficient by the known uncertainties in the measurements:

Quantity	Uncertainty
Lift coefficient	±0.003
Drag coefficient	±.001
Pitching-moment coefficient	±.0013
Rolling-moment coefficient	±.0008
Hinge-moment coefficient	±.002
Mach number	±.01
Reynolds number	$\pm.03\times10^{6}$
Angle of attack	$\pm.10^{\circ}$
Flap-deflection angle	$\pm.25^{\circ}$

RESULTS

The basic experimental data obtained in this investigation are presented in tabular form for the complete range of test variables in tables I through IV. For the purpose of analysis in this report, only representative data are presented in graphical form. The basic aerodynamic characteristics are presented in figures 3 and 4 for Mach numbers of 0.6 and 1.3 for both the constant-chord and the constant-percent-chord flap having the true-contour profile. The pitching-moment characteristics were referred to an axis at 35-percent mean aerodynamic chord to illustrate the characteristics for a center-of-gravity location corresponding to a static margin of 5-percent mean aerodynamic chord at $C_L=0$ at a Mach number of 0.6. The flap angles noted in figures 3 and 4 are nominal settings of the control surface. The exact flap settings can be obtained from tables I through IV.

The effectiveness parameters (C_{L_δ} and C_{m_δ}) and the hinge-moment parameters (C_{h_δ} and C_{h_α}) are presented as a function of Mach number in figures 5, 6, and 7 for the flap plan forms and trailing-edge thicknesses investigated. The results presented (measured at $C_L=0$) are for δ equal to zero for the parameters C_{L_δ}, C_{m_δ}, and C_{h_δ} and for α equal to zero for the parameter C_{h_α}. The experimental values of the effectiveness parameter and the hinge-moment parameters in the supersonic speed range are compared with the theoretical values obtained from reference 10. No analysis of the roll characteristics was made for this investigation.

The foregoing results were applied to estimate certain characteristics of a low-aspect-ratio airplane configuration. Figures 8 through 14 were prepared to show the effects of flap plan form,

trailing-edge thickness, and Mach number on the longitudinal characteristics of this aircraft configuration which employs the trailing-edge flaps to provide longitudinal control.

DISCUSSION

The discussion of the results will be divided into two parts. The results will first be discussed from the standpoint of the basic characteristics of the flaps, that is, the lift, pitching moment, and hinge moments. The data as obtained will then be applied to a low-aspect-ratio airplane configuration.

Basic Characteristics

Lift.- The lift-effectiveness parameter C_{L_δ} as a function of Mach number is presented in figure 5. The results reveal that the principal effect of increasing the Mach number was to produce a gradual increase in C_{L_δ} at subsonic speeds and a substantial decrease in C_{L_δ} in the supersonic speed range. The values of C_{L_δ} in the supersonic speed range were roughly half the subsonic values. Examination of the experimental data in the supersonic speed range shows that the theory predicted reasonably well the variation of C_{L_δ} with Mach number but did not accurately predict the absolute values of C_{L_δ} for either flap plan form, the experimental values falling somewhat below those predicted by the linear theory. Throughout the Mach number range investigated, the data indicated that the flap plan form and trailing-edge thickness had little effect on the lift-effectiveness parameter C_{L_δ}.

Pitching moment.- The pitching-moment effectiveness parameter C_{m_δ} as a function of Mach number is presented in figure 6. The variation of C_{m_δ} with Mach number was similar to the variation of C_{L_δ} with Mach number discussed previously. However, the effects of flap plan form were more pronounced on the pitching-moment effectiveness than on the lift-effectiveness parameter. For both trailing-edge profiles, the results show that throughout the Mach number range investigated the constant-chord flap was more effective in producing an incremental pitching moment than was the constant-percent-chord flap. Since the experimental results reveal only a small effect of flap plan form on C_{L_δ}, the change in C_{m_δ} with flap plan form may be attributed primarily to a more rearward location of the center of pressure of the load due to flap deflection for the constant-chord flap than for the constant-percent-chord flap.

The effects of flap profile on the parameter C_{m_δ} were found to be significant only in the subsonic speed range. A comparison of the data of figure 6(b) with the results of figure 6(a) shows that the half-blunt profile flap exhibited somewhat higher values of C_{m_δ} in the subsonic speed range than were noted for the true-contour-profile flap. Since the effect of flap profile on the lift-effectiveness parameter has been shown to be small (fig. 5), the data indicate a rearward shift in the center of pressure of the load on the wing due to flap deflection as a result of thickening the trailing edge. At supersonic speeds, the effect of flap profile diminished, little effect being evident in the Mach number range between 1.3 and 1.7.

A comparison between the theoretical and experimental values of the pitching-moment effectiveness parameter C_{m_δ} at supersonic speeds is also presented in figure 6. The theoretical values predicted reasonably well the variation of C_{m_δ} with Mach number. Although in the case of C_{L_δ}, the data of both flaps showed lower values than those predicted by theory, only the constant-percent-chord flap showed a corresponding decrease in C_{m_δ} from that predicted by theory.

Hinge-moment coefficients.- The variations of the hinge-moment coefficients with angle of attack and with angle-of-flap deflection are both plotted as a function of Mach number in figure 7. The results show considerably lower values of the hinge-moment parameters for the constant-percent-chord flap than for the constant-chord flap for the ranges of Mach numbers investigated. The effects of flap profile on the hinge-moment characteristics are shown by a comparison of the results of figures 7(a) and 7(b). The data reveal that for the constant-chord-flap thickening the flap profile resulted in slightly higher absolute values of C_{h_δ} throughout the Mach number range. For the constant-percent-chord flap, the results show that thickening the flap profile resulted in considerably higher absolute values of C_{h_δ} in the subsonic speed range with practically no effect being evident in the supersonic speed range. Examination of the data in the supersonic speed range (fig.7) shows that while theory predicted reasonably well the variation of C_{h_δ} with Mach number, it did not accurately predict the absolute values of C_{h_δ} for either flap plan form. The experimental values of C_{h_δ} fell below those predicted by the linear theory by approximately 20 percent. The magnitude of the experimental values of C_{h_α} at supersonic speeds are generally in agreement with those predicted by the theory for the constant-chord flap. No calculations were made for the theoretical values of C_{h_α} for the constant-percent-chord flap.

Application of Data to a Low-Aspect-Ratio Airplane Configuration

The foregoing results have been applied to estimate some of the characteristics of a low-aspect-ratio airplane configuration geometrically similar to the model of the present investigation. A center-of-gravity location of 35 percent of the mean aerodynamic chord was chosen to insure maximum maneuverability without allowing the airplane to become unstable (stick fixed) at low speed. This center-of-gravity location corresponds to a stick-fixed static margin of 5-percent mean aerodynamic chord at a lift coefficient of zero at a Mach number of 0.6.

Lift and drag for balanced condition.- The relationship between the lift coefficient required for longitudinal balance in level flight and α, C_D, δ, and L/D is presented for Mach numbers of 0.6 and 0.9 in figures 8 and 9. The results are presented for both the constant-chord and the constant-percent-chord flaps for the true contour and blunt profile. For the true-contour-profile flaps at a Mach number of 0.6, the data show that either flap was capable of balancing the aircraft at lift coefficients of the order of 0.8 with very small flap settings ($\delta < 4^{\circ}$). In general, the effects of flap plan form on the characteristics were small. However, the greater pitching effectiveness of the constant-chord flap discussed previously was manifest in its ability to provide longitudinal balance at a given lift coefficient with generally a somewhat smaller flap setting than the constant-percent-chord flap. The effect of flap profile on the ability of the flap to provide longitudinal balance at a given lift coefficient was small. The data of the half-blunt trailing-edge flap show that the characteristics were quite similar to those noted for the configuration using the true-contour-profile flaps for balance. Examination of the data for a Mach number of 0.9 shows little change in the ability of the flaps to provide longitudinal balance from that noted at 0.6 Mach number.

The relationship between balance lift coefficient and α, C_D, δ, and L/D is presented in figures 10 and 11 for two supersonic Mach numbers (M=1.3 and 1.7). The results show that in this speed range the flap-type control was capable of balancing the aircraft at moderate lift coefficients (approximately 0.6) for the assumed center-of-gravity location. The data reveal, however, that a considerably higher flap setting was required for balance at a given lift coefficient than was necessary at subsonic speeds. The data indicated that control settings of the order of 20° would be necessary to provide balance at lift coefficients between 0.5 and 0.65. This change in control position

for balance from that noted at subsonic speeds resulted from both the variation of the static margin with Mach number (approximately 10-percent mean aerodynamic chord increase as the Mach number was increased from subsonic to supersonic speeds) and the change in the control pitching-moment effectiveness. The effect of plan form on the ability of the control surface to balance the configuration was similar to that noted at subsonic speeds, that is, the constant-chord flap was capable of providing longitudinal balance at a given lift coefficient with a somewhat smaller flap setting than the constant-percent-chord flap.

Examination of the data for the true-contour-profile flaps at a Mach number of 1.3 (fig.10(a)) shows that the ability of either flap to provide longitudinal balance began to fall off beyond a lift coefficient of about 0.4. This decrease in the ability of the flaps to provide longitudinal balance was due primarily to the increase in static stability of the configuration for lift coefficients above 0.4 (fig.4). Examination of the data of the blunt trailing-edge flap (fig.10(b)) shows that except for the nonlinear variation of the control deflection with lift coefficient for the constant-chord flap in the low lift-coefficient range, the blunt trailing-edge flap exhibited characteristics which were quite similar to those noted for the true-contour-profile flaps. This nonlinear character of the curve was a result of the nonlinear variation of the pitching moment with control deflection. The reason for its occurrence is not clear. The results for a Mach number of 1.7 show that, in general, the characteristics were similar to those noted at a Mach number of 1.3.

As shown in figures 8 through 11, the effect of flap plan form on the drag characteristics was generally small throughout the speed range investigated. The results show, however, that flap profile had a considerable effect on the drag of the configuration in the subsonic speed range and a somewhat smaller effect in the supersonic speed range. Deflecting the half-blunt trailing-edge flap resulted in values of lift-drag ratios that were somewhat less than those of the true-contour-profile flap, due primarily to the base drag resulting from the blunt trailing edge. To afford a measure of the efficiency of the flaps when deflected to provide balance, the variation of the maximum lift-drag ratio with Mach number is presented in figure 12. For the true-contour-profile flaps (fig. 12(a)), the data show that the loss in the lift-drag ratio accompanying the negative flap deflection required to provide balance was not serious in the subsonic speed range. The maximum lift-drag ratio decreased from about 11 with flap undeflected to approximately 10.4 for the balanced condition (maximum loss of approximately 6 percent). In the supersonic speed range (M=1.3 to 1.7), the results show that the configuration suffered a somewhat greater loss in the maximum lift-drag ratio when the flaps were deflected to provide balance. The maximum lift-drag ratios at supersonic speeds were low even with the flap

undeflected (approximately 7.2) and the values dropped to between 5.0 and 6.0 when the flaps were deflected to provide balance (maximum loss of approximately 28 percent). Throughout this speed range, the constant-chord flap reveals the higher maximum lift-drag ratios. As shown in figures 10(a) and 11(a), this trend was realized not only at the lift coefficient for maximum lift-drag ratio but throughout the lift-coefficient range investigated.

For the blunt trailing-edge flaps (fig.12(b)), the data reveal that deflecting the flaps to provide balance resulted in reductions in the lift-drag ratios similar to those noted for the true-contour-profile flaps. However, the magnitudes of the maximum lift-drag ratios were considerably less than those noted for the true-contour-profile flaps in the subsonic speed range and slightly less in the supersonic speed range. Blunting the trailing edge resulted in a reduction in the maximum lift-drag ratio with flaps undeflected from 11 to approximately 9.4 in the subsonic speed range and from about 7.2 to 6.6 in the supersonic speed range. As noted previously, this decrease in lift-drag ratio was due primarily to the increase in base drag that accompanied the blunt trailing edge.

Stick-free and stick-fixed neutral points.- The stick-fixed and stick-free neutral points for $C_L=0$ are given in figure 13 as a function of Mach number for the true-contour-profile flaps. It is noteworthy that the flap plan form had a larger effect on C_{h_α} than on C_{h_δ} (fig.7) so that the ratio of $C_{h_\alpha}/C_{h_\delta}$ for the constant-percent-chord flap, which is one of the parameters that define the stick-free stability, was such that this flap disclosed a considerably smaller difference in the stick-free and stick-fixed stability than did the constant-chord flap. The data show that for a Mach number of 0.6, the stick-free neutral point for the constant-percent-chord flap was about 11-percent mean aerodynamic chord forward of the center of gravity, whereas the stick-free neutral point for the constant-chord flap was approximately 15-percent mean aerodynamic chord ahead of the center of gravity. As the Mach number was increased above 0.6, the results show a rearward shift in the neutral point but both flaps remained unstable stick free throughout the subsonic speed range. The large rearward shift in the neutral point that occurred through the transonic speed range resulted in a wide margin of stick-free stability for both types of flaps in the supersonic speed range.

Control position and forces required for longitudinal balance in accelerated flight.- The control-surface angles and the stick force required to produce a change in the normal acceleration for a 27,000 pound airplane with a wing loading of 60 pounds per square foot in a constant speed maneuver at 30,000 feet altitude are presented in figure 14 for both true-contour-flap plan forms for several Mach numbers.

The stick forces are based on the full-scale triangular-wing aircraft with 2° of flap deflection for 1 inch of stick movement. The results showed that the flap angle required to increase the normal acceleration increased with Mach number for superonic Mach numbers. In the subsonic speed range, the data of the constant-chord flap showed increasing push forces as the normal acceleration was increased. As the Mach number was increased to supersonic speeds, a change in the hinge-moment characteristics occurred to the extent that large pull forces were needed for balance in a maneuver. The results of the constant-percent-chord flap also showed increasing push forces as the normal acceleration was increased at a Mach number of 0.6. However, as the Mach number was increased above 0.6 a reversal in the slope of the stick-force curve occurred. At Mach numbers of 0.9 and above, increasing pull forces were required to increase the normal acceleration. Thus with either flap plan form the use of an irreversible-powered control actuator would be necessary. While the magnitude of the control forces for both flap plan forms were large at supersonic speeds and indicated the need for further research to develop control surfaces with more tractable hinge moments, it should be noted that the stick-force characteristics of the constant-percent-chord flap appeared more favorable with regard to landing the aircraft in a boost-out control condition.

CONCLUSIONS

A wind-tunnel investigation has been made to evaluate the aerodynamic characteristics of flap-type controls on a low-aspect-ratio triangular wing for a constant-chord and a constant-percent-chord control surface. Two flap profiles were investigated, one of which had a true contour and the other a blunt trailing edge. The following general conclusions are indicated for the Mach number ranges from 0.6 to 0.9 and from 1.3 to 1.7:

1. The flap plan form had little effect on the lift-effectiveness parameter. The effects of flap plan form were more pronounced on the pitching-moment effectiveness, the constant-chord flap exhibiting somewhat higher values of the pitching-moment effectiveness than the constant-percent-chord flap throughout the speed ranges investigated. Both flap plan forms showed a considerable reduction in lift and pitching effectiveness as the Mach number was increased from 0.9 to 1.3. The constant-percent-chord flap showed considerably lower values of the hinge-moment parameters than did the constant-chord flap for the ranges of Mach numbers investigated.

2. For the constant-chord flap, thickening the flap profile resulted in slightly higher absolute values of C_{h_δ} throughout the Mach number ranges. For the constant-percent-chord flap, the results showed that thickening the flap profile resulted in considerably higher absolute values of C_{h_δ} in the subsonic speed range with practically no effect being evident in the supersonic speed range. The effect of flap profile was further evident in the drag results, the blunt trailing-edge flaps exhibiting higher drags and correspondingly lower lift-drag ratios than the true-contour-profile flaps.

3. A comparison of the linearized theory with the experimental values of the effectiveness and hinge-moment parameters in the supersonic speed range showed that the theory predicted reasonably well the variation of the parameters with Mach number, but that the experimental values generally were of smaller magnitude than those predicted by the theory.

The results obtained from the investigation have been applied to a triangular wing aircraft with an assumed center-of-gravity location of 35-percent mean aerodynamic chord. Analysis of the results revealed the following:

1. At subsonic speeds, either flap was adequate to provide longitudinal balance at lift coefficients of the order of 0.8 with very small flap settings. In the supersonic speed range, either flap was capable of providing longitudinal balance at reasonably high lift coefficients (approximately 0.65). However, due to the higher stability and the smaller flap effectiveness that occurred in the supersonic speed range, considerably higher flap deflections were required for balance at a given lift coefficient than were necessary at subsonic speeds.

2. In the subsonic speed range, the use of the flaps as a longitudinal control device to provide balance resulted in a loss in the maximum lift-drag ratio of approximately 6 percent. At supersonic speeds, the configuration suffered a somewhat greater loss in the maximum lift-drag ratio amounting to as much as 28 percent.

3. The airplane with the constant-percent-chord flap exhibited a considerably smaller difference in the stick-fixed and stick-free stability than did the airplane with the constant-chord flap. The data showed that with either type of flap, the airplane was unstable stick free throughout the subsonic speed range.

4. Calculations of some of the control characteristics of a full-scale triangular-wing aircraft with 60 pounds wing loading at 30,000 feet altitude showed that both flaps could provide longitudinal

control, but that the hinge moments would be of such a nature as to require an irreversible-powered control actuator.

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TABLE I.– AERODYNAMIC CHARACTERISTICS OF A TRIANGULAR WING FOR VARIOUS FLAP ANGLES FOR MACH NUMBERS FROM 0.60 TO 1.70. DATA FOR ONE FLAP. CONSTANT-CHORD FLAP, TRUE-CONTOUR PROFILE; R = 3.0×10^6

(a) Nominal δ, 5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	4.99	-4.26	-.136	.0145	-.021	-.0111	-0.036
	4.98	-2.09	-.043	.0096	-.022	-.0112	-.059
	4.97	-1.02	.003	.0082	-.022	-.0112	-.070
	4.97	-.47	.027	.0082	-.022	-.0114	-.076
	4.97	.49	.068	.0092	-.022	-.0112	-.084
	4.96	1.04	.094	.0101	-.022	-.0115	-.091
	4.96	2.11	.135	.0129	-.022	-.0112	-.099
	4.95	4.25	.231	.0228	-.023	-.0115	-.118
	4.94	6.38	.327	.0388	-.025	-.0126	-.141
	4.93	8.54	.441	.0660	-.025	-.0135	-.165
	4.93	10.66	.528	.0980	-.022	-.0143	-.181
	4.92	12.82	.636	.1426	-.013	-.0093	-.209
	4.91	14.92	.721	.1851	-.011	-.0083	-.232
	4.90	17.10	.826	.2503	-.008	-.0077	-.257
0.80	4.98	-4.31	-.145	.0151	-.020	-.0121	-.036
	4.97	-2.12	-.041	.0092	-.028	-.0115	-.058
	4.96	-1.02	.009	.0084	-.032	-.0118	-.069
	4.96	-.48	.034	.0086	-.034	-.0118	-.076
	4.96	.52	.081	.0096	-.036	-.0120	-.084
	4.95	1.05	.104	.0109	-.037	-.0119	-.089
	4.95	2.14	.152	.0144	-.040	-.0120	-.101
	4.94	4.32	.251	.0253	-.048	-.0118	-.124
	4.92	6.54	.367	.0468	-.059	-.0131	-.158
	4.90	8.76	.479	.0774	-.064	-.0158	-.190
	4.89	10.97	.588	.1171	-.070	-.0179	-.219
	4.88	13.17	.695	.1652	-.079	-.0188	-.246
	4.85	15.34	.769	.2149	-.073	-.0076	-.287
	4.84	17.54	.872	.2788	-.084	-.0064	-.310
0.90	4.96	-4.33	-.157	.0178	-.018	-.0136	-.068
	4.96	-2.12	-.038	.0098	-.026	-.0125	-.080
	4.95	-1.01	.015	.0091	-.031	-.0132	-.097
	4.94	-.46	.043	.0099	-.034	-.0132	-.117
	4.92	.54	.093	.0120	-.038	-.0134	-.138
	4.92	1.09	.117	.0134	-.038	-.0130	-.138
	4.92	2.17	.166	.0166	-.040	-.0122	-.138
	4.91	4.32	.271	.0288	-.048	-.0124	-.161
	4.89	6.50	.391	.0523	-.060	-.0140	-.209
	4.86	8.67	.509	.0860	-.072	-.0165	-.252
1.30	4.96	-4.07	-.162	.0232	.009	-.0081	-.061
	4.93	-2.11	-.071	.0163	-.006	-.0081	-.124
	4.91	-1.05	-.024	.0147	-.013	-.0080	-.135
	4.90	-.53	-.001	.0144	-.016	-.0080	-.147
	4.89	.38	.046	.0145	-.023	-.0079	-.172
	4.88	.97	.071	.0158	-.026	-.0080	-.186
	4.86	1.99	.119	.0190	-.033	-.0078	-.212
	4.83	4.05	.211	.0294	-.048	-.0076	-.262
	4.80	6.11	.306	.0465	-.062	-.0075	-.303
	4.77	8.17	.403	.0209	-.076	-.0075	-.341
	4.75	10.21	.495	.1019	-.090	-.0079	-.383
	4.71	12.27	.591	.4400	-.106	-.0096	-.437
1.53	4.98	-4.06	-.151	.0230	.013	-.0056	-.029
	4.95	-2.10	-.071	.0163	0	-.0054	-.072
	4.94	-1.04	-.028	.0145	-.007	-.0054	-.093
	4.93	-.52	-.006	.0139	-.010	-.0052	-.105
	4.92	.42	.037	.0143	-.015	-.0051	-.123
	4.91	.95	.060	.0152	-.020	-.0051	-.135
	4.89	2.00	.104	.0182	-.027	-.0049	-.158
	4.86	4.05	.188	.0283	-.039	-.0044	-.200
	4.83	6.10	.273	.0437	-.052	-.0040	-.241
	4.81	8.15	.355	.0648	-.063	-.0034	-.274
	4.79	10.21	.433	.0940	-.073	-.0083	-.310
	4.76	12.25	.509	.1248	-.084	-.0037	-.350
	4.73	14.31	.582	.1611	-.093	-.0029	-.386
	4.71	16.37	.651	.2034	-.101	-.0027	-.418
1.70	4.99	-4.05	-.144	.0239	.013	-.0048	-.017
	4.96	-2.10	-.067	.0168	.001	-.0044	-.057
	4.95	-1.04	-.028	.0148	-.005	-.0042	-.075
	4.94	-.52	-.008	.0142	-.008	-.0039	-.084
	4.93	.43	.032	.0141	-.014	-.0038	-.103
	4.92	.94	.054	.0151	-.017	-.0036	-.114
	4.91	1.99	.095	.0177	-.024	-.0035	-.136
	4.88	4.04	.174	.0269	-.035	-.0028	-.174
	4.85	6.09	.250	.0407	-.046	-.0022	-.212
	4.83	8.13	.324	.0602	-.056	-.0015	-.245
	4.81	10.19	.400	.0853	-.066	-.0010	-.276
	4.79	12.23	.467	.1142	-.075	-.0005	-.309
	4.76	14.28	.535	.1487	-.084	-.0002	-.344
	4.74	16.33	.597	.1862	-.090	0	-.374

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TABLE I.– CONTINUED
(b) Nominal δ, 0°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	.11	-4.22	-.198	.0162	.008	-.0006	.032
	.10	-2.08	-.103	.0087	.003	-.0006	.009
	.10	-1.11	-.060	.0071	.001	-.0006	-.002
	.10	-.56	-.037	.0066	0	-.0007	-.009
	.10	.41	.009	.0069	-.001	-.0007	-.006
	.09	.95	.030	.0074	-.002	-.0007	-.013
	.09	2.03	.076	.0088	-.004	-.0008	-.023
	.08	4.18	.167	.0150	-.009	-.0010	-.047
	.07	6.32	.267	.0295	-.014	-.0014	-.068
	.07	8.47	.371	.0541	-.019	-.0020	-.087
	.06	10.59	.463	.0846	-.017	-.0014	-.096
	.05	12.74	.564	.1237	-.017	-.0008	-.138
	.03	14.92	.684	.1764	-.020	-.0001	-.166
	.03	17.06	.778	.2304	-.022	.0001	-.187
0.80	.12	-4.26	-.209	.0177	.012	-.0004	.035
	.11	-2.10	-.106	.0090	.004	-.0003	.012
	.10	-1.01	-.059	.0074	.002	-.0003	0
	.10	-.56	-.036	.0069	0	-.0002	-.007
	.10	.42	.012	.0070	-.002	-.0002	-.008
	.09	.96	.035	.0073	-.002	-.0002	-.015
	.09	2.06	.083	.0092	-.005	-.0003	-.026
	.07	4.22	.184	.0174	-.013	-.0003	-.052
	.06	6.39	.297	.0345	-.021	-.0009	-.078
	.04	8.56	.408	.0606	-.026	-.0020	-.121
	.04	10.72	.510	.0951	-.027	-.0021	-.122
	.01	12.88	.609	.1379	-.029	0	-.181
	0	15.04	.716	.1899	-.038	-.0002	-.205
	-.02	17.22	.836	.2556	-.049	.0005	-.231
0.90	.12	-4.28	-.217	.0200	.015	-.0005	.034
	.11	-2.11	-.111	.0098	.006	-.0003	.012
	.10	-1.02	-.060	.0080	.002	-.0001	0
	.10	-.46	-.036	.0072	.001	-.0001	-.005
	.10	.43	.014	.0074	-.002	0	-.008
	.09	.98	.038	.0075	-.003	-.0001	-.015
	.08	2.07	.090	.0094	-.007	-.0001	-.028
	.07	4.25	.201	.0192	-.017	-.0004	-.055
	.06	6.42	.316	.0379	-.026	-.0013	-.081
	.03	8.61	.438	.0687	-.038	-.0048	-.120
	.01	10.81	.576	.1135	-.055	-.0075	-.171
	.04	12.98	.696	.1655	-.076	.0093	-.249
1.30	.16	-4.06	-.191	.0247	.028	-.0003	.085
	.13	-2.01	-.097	.0160	.013	-.0003	.040
	.11	-.96	-.051	.0135	.006	0	.017
	.10	-.43	-.029	.0127	.003	0	.003
	.09	.41	.016	.0124	-.003	.0003	-.019
	.08	.94	.039	.0129	-.006	.0002	-.031
	.06	1.99	.087	.0155	-.013	.0003	-.058
	.03	4.05	.181	.0245	-.028	.0003	-.110
	0	6.11	.277	.0397	-.042	.0005	-.151
	-.02	8.17	.372	.0626	-.055	.0006	-.190
	-.05	10.22	.466	.0921	-.069	.0004	-.231
	-.08	12.28	.556	.1279	-.083	-.0003	-.281
1.53	.15	-4.05	-.173	.0237	.026	-.0001	.079
	.13	-2.00	-.090	.0152	.013	.0002	.037
	.11	-.95	-.047	.0128	.006	.0003	.017
	.10	-.43	-.025	.0124	.003	.0005	.006
	.09	.42	.015	.0124	-.003	.0006	-.010
	.08	.94	.036	.0128	-.006	.0006	-.022
	.07	1.99	.079	.0150	-.013	.0007	-.043
	.04	4.05	.165	.0234	-.026	.0010	-.091
	.01	6.10	.248	.0371	-.038	.0014	-.133
	-.02	8.15	.326	.0563	-.049	.0017	-.168
	-.04	10.20	.410	.0826	-.060	.0018	-.202
	-.07	12.26	.489	.1139	-.070	.0020	-.242
	-.09	14.30	.560	.1492	-.080	.0024	-.276
	-.11	16.36	.631	.1901	-.088	.0028	-.308
1.70	.16	-4.05	-.158	.0232	.023	-.0002	.069
	.13	-1.99	-.082	.0151	.012	.0003	.033
	.11	-.94	-.042	.0128	.006	.0005	.016
	.10	-.43	-.022	.0121	.003	.0007	.005
	.09	.42	.015	.0121	-.003	.0010	-.010
	.08	.94	.035	.0126	-.006	.0010	-.021
	.07	1.98	.075	.0148	-.012	.0012	-.040
	.03	4.04	.153	.0223	-.024	.0018	-.083
	0	6.09	.231	.0352	-.035	.0022	-.122
	-.03	8.13	.306	.0531	-.045	.0028	-.157
	-.06	10.19	.384	.0775	-.055	.0033	-.188
	-.08	12.23	.454	.1059	-.064	.0038	-.221
	-.11	14.28	.520	.1385	-.072	.0042	-.254
	-.14	16.33	.582	.1752	-.078	.0046	-.282

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TABLE I.– CONTINUED

(c) Nominal δ, –1.0°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	–.38	–4.23	–.199	–.0184	–.010	–.0006	–.048
	–.39	–2.08	–.103	.0105	.005	.0007	.025
	–.39	–1.00	–.057	.0085	.003	.0007	.013
	–.40	–.46	–.034	.0082	.002	.0006	.008
	–.40	.51	.009	.0079	.001	.0006	–.002
	–.40	1.05	.031	.0083	0	.0006	–.004
	–.41	2.03	.074	.0102	–.002	.0003	–.017
	–.42	4.18	.165	.0164	–.007	.0003	–.042
	–.43	6.32	.267	.0300	–.012	–.0003	–.063
	–.43	8.46	.366	.0546	–.016	–.0007	–.080
	–.44	10.60	.465	.0862	–.015	0	–.092
	–.45	12.76	.568	.1251	–.015	.0003	–.132
	–.46	14.90	.665	.1719	–.018	.0007	–.155
	–.47	17.07	.778	.2310	–.020	.0011	–.182
0.80	–.37	–4.27	–.210	.0196	.014	.0008	.050
	–.39	–2.09	–.106	.0105	.007	.0009	.025
	–.39	–1.01	–.059	.0086	.004	.0010	.013
	–.40	–.46	–.036	.0079	.003	.0010	.008
	–.40	.52	.012	.0082	.001	.0010	–.002
	–.40	1.06	.035	.0086	0	.0009	–.007
	–.41	2.06	.081	.0102	–.003	.0009	–.018
	–.42	4.22	.185	.0181	–.011	.0007	–.045
	–.43	6.38	.292	.0347	–.018	.0004	–.068
	–.45	8.56	.405	.0608	–.024	–.0009	–.095
	–.46	10.69	.486	.0911	–.018	.0009	–.114
	–.49	12.86	.597	.1353	–.027	.0008	–.171
	–.50	15.05	.726	.1932	–.039	.0007	–.207
	–.51	17.20	.826	.2525	–.048	.0014	–.226
0.90	–.37	–4.28	–.220	.0209	.018	.0008	.048
	–.39	–2.10	–.108	.0102	.008	.0010	.026
	–.39	–1.01	–.059	.0084	.004	.0012	.014
	–.39	–.46	–.035	.0078	.003	.0012	.009
	–.40	.53	.015	.0082	0	.0012	–.003
	–.40	.99	.039	.0084	–.001	.0012	–.008
	–.41	2.09	.092	.0102	–.005	.0011	–.021
	–.43	4.25	.202	.0199	–.015	.0009	–.049
	–.44	6.43	.318	.0388	–.019	.0004	–.069
	–.46	8.60	.428	.0666	–.033	–.0031	–.106
	–.49	10.81	.576	.1135	–.055	–.0055	–.168
1.30	–.33	–4.06	–.194	–.0245	–.030	–.0008	–.105
	–.36	–2.01	–.100	.0154	.016	.0009	.062
	–.37	–.96	–.053	.0138	.009	.0011	.038
	–.38	–.43	–.030	.0127	.006	.0010	.027
	–.40	.42	.013	.0125	–.001	.0013	.003
	–.41	.94	.035	.0130	–.004	.0014	–.009
	–.42	1.99	.082	.0151	–.010	.0014	–.036
	–.46	4.05	.176	.0237	–.025	.0014	–.089
	–.49	6.11	.271	.0387	–.039	.0014	–.133
	–.51	8.16	.365	.0611	–.052	.0016	–.173
	–.54	10.22	.458	.0902	–.066	.0014	–.214
	–.57	12.28	.546	.1246	–.079	.0010	–.261
	–.64	14.33	.645	.1661	–.100	–.0036	–.366
	–.67	16.41	.811	.2381	–.142	.0012	–.400
1.53	–.34	–4.05	–.174	.0240	.027	.0005	.090
	–.36	–2.00	–.089	.0154	.014	.0008	.051
	–.38	–.95	–.047	.0129	.008	.0010	.029
	–.39	–.42	–.025	.0124	.004	.0011	.020
	–.40	.42	.014	.0127	–.001	.0011	–.001
	–.41	.94	.035	.0131	–.005	.0012	–.012
	–.42	1.98	.079	.0154	–.011	.0014	–.033
	–.46	4.05	.164	.0241	–.024	.0016	–.081
	–.48	6.10	.248	.0380	–.037	.0020	–.122
	–.51	8.16	.331	.0580	–.048	.0023	–.158
	–.53	10.20	.409	.0836	–.059	.0024	–.192
	–.55	12.26	.483	.1137	–.068	.0026	–.226
	–.58	14.30	.552	.1486	–.078	.0029	–.259
	–.60	16.35	.626	.1903	–.086	.0034	–.293
1.70	–.35	–4.04	–.160	.0248	.024	.0003	.079
	–.37	–1.99	–.083	.0165	.013	.0009	.045
	–.38	–.95	–.043	.0141	.007	.0011	.026
	–.39	–.42	–.022	.0131	.004	.0011	.016
	–.40	.42	.015	.0129	–.002	.0013	.002
	–.41	.94	.034	.0132	–.005	.0015	–.013
	–.42	1.98	.075	.0157	–.011	.0017	–.033
	–.45	4.05	.153	.0235	–.022	.0021	–.075
	–.48	6.09	.231	.0363	–.034	.0026	–.112
	–.50	8.14	.305	.0547	–.044	.0030	–.147
	–.52	10.19	.375	.0777	–.052	.0033	–.175
	–.54	12.24	.445	.1056	–.061	.0040	–.206
	–.56	14.28	.510	.1380	–.069	.0043	–.236
	–.58	16.33	.572	.1742	–.076	.0048	–.265

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TABLE I.– CONTINUED

(d) Nominal δ, -2.5°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-2.47	-4.26	-.225	.0198	.021	.0051	.079	1.30	-2.38	-4.06	-.210	.0270	.039	.0043	.176
	-2.48	-2.11	-.131	.0112	.016	.0053	.056		-2.41	-2.00	-.115	.0172	.025	.0045	.134
	-2.48	-1.04	-.087	.0091	.014	.0054	.046		-2.43	-.96	-.069	.0143	.018	.0046	.110
	-2.48	-.50	-.064	.0081	.013	.0053	.040		-2.44	-.44	-.045	.0137	.014	.0047	.096
	-2.49	.47	-.019	.0080	.011	.0052	.030		-2.45	.51	0	.0131	.008	.0049	.074
	-2.49	1.01	.003	.0078	.011	.0050	.023		-2.46	1.04	.024	.0136	.005	.0049	.064
	-2.50	2.09	.049	.0089	.009	.0049	.012		-2.47	1.99	.068	.0154	-.002	.0050	.038
	-2.50	4.25	.141	.0146	.004	.0049	-.009		-2.51	4.06	.163	.0232	-.017	.0048	-.015
	-2.51	6.39	.241	.0267	-.002	.0045	-.030		-2.54	6.12	.260	.0377	-.031	.0049	-.061
	-2.52	8.53	.340	.0499	-.006	.0040	-.046		-2.57	8.18	.351	.0588	-.044	.0049	-.105
	-2.53	10.68	.445	.0828	-.004	.0044	-.063		-2.60	10.23	.443	.0873	-.057	.0046	-.151
	-2.54	12.83	.547	.1214	-.006	.0040	-.102		-2.63	12.28	.530	.1194	-.070	.0043	-.196
	-2.55	15.00	.666	.1729	-.009	.0046	-.128		-2.69	14.34	.624	.1611	-.088	.0016	.279
	-2.56	17.12	.751	.2224	-.010	.0047	-.148								
0.80	-2.46	-4.29	-.241	.0221	.027	.0057	.085	1.53	-2.40	-4.05	-.184	.0255	.033	.0027	.139
	-2.47	-2.15	-.138	.0115	.020	.0060	.062		-2.43	-2.00	-.099	.0166	.020	.0031	.102
	-2.47	-1.07	-.092	.0092	.017	.0062	.052		-2.44	-.96	-.057	.0140	.014	.0034	.081
	-2.48	-.51	-.069	.0084	.016	.0062	.044		-2.45	-.43	-.035	.0132	.010	.0034	.069
	-2.48	.38	-.020	.0084	.013	.0059	.033		-2.46	.52	.007	.0130	.004	.0034	.051
	-2.49	1.02	.005	.0082	.012	.0060	.028		-2.47	1.04	.029	.0138	.001	.0035	.039
	-2.49	2.11	.052	.0089	.010	.0059	.015		-2.49	1.99	.069	.0156	-.005	.0036	.018
	-2.50	4.30	.155	.0162	.002	.0060	-.008		-2.52	4.05	.154	.0233	-.018	.0040	-.026
	-2.52	6.36	.265	.0311	-.005	.0057	-.029		-2.55	6.10	.238	.0363	-.031	.0042	-.072
	-2.53	8.53	.376	.0557	-.011	.0056	-.052		-2.58	8.16	.320	.0557	-.042	.0043	-.109
	-2.54	10.75	.452	.0843	-.006	.0047	-.085		-2.60	10.21	.400	.0811	-.053	.0046	-.147
	-2.57	12.83	.573	.1281	-.016	.0044	-.134		-2.63	12.26	.472	.1100	-.063	.0047	-.184
	-2.58	15.01	.689	.1815	-.027	.0043	-.162		-2.65	14.31	.547	.1455	-.072	.0051	-.218
	-2.60	17.19	.807	.2460	-.038	.0051	-.188		-2.67	16.36	.672	.1842	-.080	.0055	-.247
0.90	-2.44	-4.33	-.263	.0261	.035	.0064	.101	1.70	-2.42	-4.04	-.167	.0259	.029	.0024	.117
	-2.46	-2.16	-.148	.0132	.024	.0065	.071		-2.44	-2.00	-.091	.0171	.018	.0029	.085
	-2.46	-1.07	-.100	.0104	.021	.0068	.064		-2.45	-.95	-.051	.0146	.012	.0031	.066
	-2.47	-.52	-.075	.0093	.020	.0072	.059		-2.46	-.44	-.030	.0136	.009	.0031	.056
	-2.48	.47	-.023	.0083	.016	.0065	.041		-2.47	.53	.010	.0130	.003	.0033	.036
	-2.48	1.02	.002	.0081	.015	.0063	.034		-2.48	1.04	.029	.0135	0	.0035	.028
	-2.49	2.13	.055	.0094	.011	.0064	.020		-2.49	1.99	.067	.0152	-.006	.0038	.010
	-2.50	4.32	.165	.0136	.002	.0065	-.001		-2.52	4.04	.145	.0229	-.018	.0041	-.030
	-2.51	6.39	.278	.0343	-.007	.0063	-.023		-2.55	6.10	.223	.0350	-.029	.0044	-.070
	-2.53	8.55	.379	.0595	-.011	.0062	-.053		-2.57	8.14	.297	.0526	-.039	.0048	-.106
	-2.55	10.76	.519	.1013	-.027	.0061	-.087		-2.59	10.19	.370	.0758	-.048	.0052	-.137
	-2.58	12.97	.675	.1584	-.063	.0162	-.146		-2.62	12.24	.440	.1034	-.057	.0056	-.171
									-2.64	14.29	.507	.1359	-.065	.0061	-.203
									-2.66	16.34	.568	.1714	-.071	.0066	-.231

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TABLE I.– CONTINUED

(e) Nominal δ, –5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-4.96	-4.28	-.253	.0225	.033	.0111	.104
	-4.97	-2.15	-.156	.0131	.027	.0111	.082
	-4.97	-1.07	-.113	.0105	.026	.0112	.076
	-4.97	-.53	-.089	.0098	.025	.0110	.068
	-4.98	.35	-.047	.0094	.023	.0107	.057
	-4.98	.88	-.025	.0091	.022	.0106	.053
	-4.98	1.92	.021	.0081	.021	.0105	.043
	-4.99	4.21	.113	.0139	.016	.0105	.021
	-5.00	6.36	.213	.0251	.011	.0102	0
	-5.01	8.50	.313	.0458	.006	.0100	-.015
	-5.01	10.66	.413	.0762	.007	.0100	-.036
	-5.03	12.80	.511	.1141	.005	.0092	-.068
	-5.04	14.97	.630	.1644	.002	.0097	-.089
	-5.04	17.10	.724	.2160	.001	.0100	-.112
0.80	-4.94	-4.32	-.271	.0264	.040	.0115	.115
	-4.95	-2.17	-.170	.0143	.034	.0118	.095
	-4.96	-1.09	-.122	.0113	.031	.0119	.085
	-4.96	-.55	-.099	.0106	.030	.0120	.078
	-4.96	.33	-.052	.0095	.028	.0119	.070
	-4.97	.87	-.027	.0092	.026	.0116	.063
	-4.97	2.07	.021	.0095	.023	.0115	.053
	-4.99	4.26	.123	.0150	.016	.0113	.028
	-5.00	6.43	.231	.0294	.009	.0114	.005
	-5.01	8.59	.345	.0529	.004	.0121	.012
	-5.03	10.74	.434	.0810	.006	.0098	-.055
	-5.05	12.43	.559	.1268	-.005	.0092	-.096
	-5.06	15.08	.660	.1745	-.013	.0094	-.114
	-5.07	17.16	.782	.2372	-.022	.0105	-.136
0.90	-4.92	-4.35	-.288	.0306	.050	.0119	.156
	-4.93	-2.19	-.180	.0172	.041	.0124	.136
	-4.93	-1.11	-.133	.0141	.039	.0134	.133
	-4.94	-.56	-.107	.0126	.037	.0136	.123
	-4.94	.33	-.060	.0110	.034	.0134	.110
	-4.95	.88	-.034	.0102	.032	.0128	.096
	-4.95	2.08	.017	.0110	.029	.0130	.087
	-4.97	4.29	.131	.0174	.019	.0130	.053
	-4.99	6.46	.245	.0324	.010	.0127	.019
	-5.01	8.62	.347	.0567	.007	.0119	-.022
	-5.04	10.78	.454	.0900	-.003	.0111	-.065
1.30	-4.83	-4.07	-.223	.0294	.050	.0089	.252
	-4.86	-2.02	-.129	.0192	.036	.0092	.217
	-4.87	-.99	-.083	.0164	.029	.0092	.195
	-4.88	-.47	-.059	.0155	.025	.0091	.180
	-4.90	.58	-.012	.0146	.018	.0093	.155
	-4.90	1.06	.012	.0148	.015	.0094	.144
	-4.92	2.10	.058	.0164	.008	.0094	.118
	-4.96	4.11	.149	.0234	-.006	.0093	.063
	-4.99	6.16	.246	.0373	-.021	.0091	.013
	-5.02	8.20	.341	.0581	-.035	.0090	-.036
	-5.06	10.25	.433	.0857	-.049	.0084	-.085
	-5.09	12.29	.520	.1180	-.061	.0080	-.134
	-5.14	14.34	.614	.1583	-.078	.0059	-.208
	-5.17	16.46	.761	.2251	-.116	.0099	-.260
1.53	-4.86	-4.05	-.192	.0279	.040	.0061	.196
	-4.89	-2.00	-.107	.0184	.027	.0066	.161
	-4.90	-.95	-.065	.0158	.021	.0068	.142
	-4.91	-.43	-.043	.0148	.017	.0068	.130
	-4.93	.42	.001	.0144	.011	.0069	.107
	-4.93	1.04	.022	.0146	.008	.0070	.097
	-4.95	2.08	.066	.0163	.001	.0072	.076
	-4.98	4.05	.148	.0234	-.012	.0073	.030
	-5.01	6.11	.234	.0363	-.025	.0075	-.017
	-5.04	8.17	.314	.0551	-.036	.0077	-.058
	-5.07	10.22	.395	.0801	-.047	.0076	-.100
	-5.10	12.27	.468	.1090	-.056	.0078	-.138
	-5.12	14.31	.540	.1429	-.066	.0081	-.172
	-5.14	16.37	.608	.1825	-.074	.0085	-.202
1.70	-4.88	-4.04	-.174	.0275	.035	.0051	.174
	-4.90	-1.99	-.096	.0189	.024	.0058	.144
	-4.91	-.95	-.057	.0158	.018	.0059	.124
	-4.92	-.42	-.037	.0151	.015	.0060	.114
	-4.93	.52	.005	.0142	.009	.0062	.093
	-4.94	1.04	.024	.0143	.006	.0064	.085
	-4.95	2.09	.064	.0161	0	.0066	.063
	-4.98	4.05	.139	.0226	-.012	.0069	.021
	-5.01	6.10	.217	.0347	-.023	.0072	-.020
	-5.04	8.15	.292	.0520	-.034	.0076	-.058
	-5.07	10.20	.365	.0747	-.043	.0079	-.094
	-5.09	12.25	.437	.1021	-.052	.0084	-.130
	-5.12	14.30	.504	.1342	-.060	.0089	-.162
	-5.14	16.35	.565	.1693	-.066	.0094	-.192

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TABLE I.– CONTINUED

(f) Nominal δ, –10°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-9.83	-4.34	-.306	.0331	.052	.0200	.162	1.30	-9.66	-4.05	-.253	.0404	.068	.0171	.306
	-9.84	-2.20	-.214	.0214	.049	.0216	.156		-9.68	-2.00	-.162	.0286	.055	.0181	.345
	-9.84	-1.14	-.173	.0181	.048	.0224	.148		-9.69	-.97	-.115	.0243	.047	.0183	.326
	-9.84	-.61	-.151	.0160	.047	.0222	.143		-9.69	-.45	-.094	.0219	.044	.0181	.317
	-9.85	.20	-.108	.0143	.046	.0222	.131		-9.71	.40	-.047	.0215	.037	.0182	.297
	-9.85	.79	-.084	.0134	.045	.0219	.125		-9.71	.93	-.023	.0211	.034	.0182	.286
	-9.85	1.87	-.039	.0126	.043	.0217	.112		-9.73	2.08	.025	.0215	.027	.0182	.264
	-9.85	4.14	.055	.0139	.038	.0212	.097		-9.76	4.17	.123	.0273	.011	.0175	.212
	-9.85	6.32	.156	.0232	.033	.0212	.077		-9.79	6.22	.219	.0394	-.004	.0167	.162
	-9.85	8.43	.250	.0382	.027	.0202	.056		-9.83	8.18	.310	.0574	-.018	.0161	.111
	-9.89	10.59	.357	.0653	.027	.0205	.031		-9.86	10.23	.402	.0830	-.032	.0152	.056
	-9.90	12.72	.452	.1003	.025	.0188	.004		-9.90	12.29	.492	.1144	-.046	.0145	.001
	-9.90	14.90	.566	.1474	.023	.0193	-.010		-9.95	14.34	.583	.1521	-.062	.0125	-.074
	-9.91	17.04	.664	.1968	.021	.0198	-.031		-9.98	16.40	.726	.2126	-.098	.0168	-.123
0.80	-9.79	-4.38	-.321	.0383	.061	.0191	.216	1.53	-9.69	-4.04	-.216	.0365	.054	.0116	.306
	-9.80	-2.21	-.219	.0245	.056	.0207	.205		-9.71	-2.02	-.167	.0266	.041	.0121	.276
	-9.80	-1.16	-.179	.0209	.055	.0220	.201		-9.73	-.96	-.089	.0217	.034	.0122	.254
	-9.80	-.61	-.153	.0187	.053	.0219	.191		-9.73	-.44	-.067	.0205	.031	.0122	.242
	-9.80	.25	-.114	.0171	.054	.0228	.191		-9.75	.41	-.026	.0197	.024	.0123	.219
	-9.81	.80	-.089	.0159	.052	.0225	.177		-9.75	.94	-.005	.0191	.021	.0123	.211
	-9.82	1.87	-.043	.0149	.049	.0225	.163		-9.77	2.08	.039	.0202	.015	.0126	.191
	-9.83	4.17	.059	.0166	.043	.0231	.133		-9.80	4.17	.126	.0264	.001	.0125	.142
	-9.85	6.35	.166	.0263	.034	.0222	.100		-9.83	6.11	.208	.0374	-.012	.0125	.097
	-9.86	8.52	.277	.0467	.029	.0229	.074		-9.86	8.16	.292	.0549	-.024	.0125	.052
	-9.88	10.69	.384	.0751	.026	.0207	.030		-9.89	10.21	.368	.0772	-.035	.0123	.007
	-9.90	12.86	.491	.1133	.020	.0192	0		-9.92	12.27	.447	.1060	-.045	.0123	-.034
	-9.91	15.02	.597	.1598	.013	.0198	-.016		-9.95	14.32	.519	.1393	-.055	.0126	-.075
	-9.92	17.18	.700	.2145	.009	.0213	-.036		-9.98	16.37	.589	.1774	-.063	.0129	-.111
0.90	-9.76	-4.39	-.326	.0413	.067	.0179	.251	1.70	-9.72	-4.04	-.193	.0335	.046	.0093	.264
	-9.77	-2.23	-.222	.0269	.059	.0194	.240		-9.74	-1.99	-.116	.0236	.034	.0100	.233
	-9.77	-1.15	-.173	.0228	.057	.0202	.233		-9.75	-.95	-.076	.0198	.028	.0101	.213
	-9.77	-.61	-.153	.0212	.057	.0215	.242		-9.76	-.44	-.057	.0187	.025	.0102	.204
	-9.77	.25	-.109	.0194	.056	.0219	.233		-9.78	.41	-.018	.0175	.019	.0104	.182
	-9.78	.79	-.085	.0181	.054	.0219	.224		-9.78	1.03	.003	.0173	.016	.0106	.176
	-9.78	1.91	-.034	.0172	.051	.0224	.212		-9.79	2.05	.040	.0184	.010	.0109	.158
	-9.80	4.21	.072	.0200	.043	.0230	.182		-9.82	4.15	.125	.0247	-.002	.0111	.114
	-9.82	6.62	.188	.0338	.033	.0228	.149		-9.85	6.10	.199	.0350	-.013	.0115	.072
	-9.83	8.92	.294	.0569	.027	.0217	.126		-9.88	8.15	.275	.0515	-.024	.0118	.030
	-9.83	11.25	.404	.0922	.016	.0224	.134		-9.91	10.20	.351	.0734	-.034	.0119	-.010
	-9.84	- - -	- - -	- - -	- - -	- - -	.117		-9.93	12.25	.418	.0992	-.043	.0122	-.048
									-9.96	14.30	.487	.1308	-.051	.0126	-.085
									-9.98	16.34	.549	.1650	-.057	.0128	-.115

NACA

TABLE I.– CONTINUED

(g) Nominal δ, –15°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-15.00	-4.49	-.358	.0468	.071	.0266	0.244	1.30	-14.81	-4.05	-.285	.0530	.086	.0242	.444
	-15.00	-2.27	-.267	.0338	.069	.0286	.241		-14.82	-1.99	-.194	.0400	.072	.0253	.429
	-15.01	-1.21	-.225	.0292	.068	.0295	.236		-14.83	-.97	-.149	.0357	.065	.0256	.416
	-15.01	-.68	-.205	.0273	.068	.0300	.233		-14.83	-.45	-.128	.0339	.062	.0258	.410
	-15.01	.17	-.167	.0249	.068	.0311	.229		-14.84	.37	-.084	.0322	.056	.0261	.397
	-15.01	.72	-.148	.0240	.068	.0314	.227		-14.84	.89	-.060	.0314	.053	.0261	.391
	-15.02	1.78	-.104	.0222	.067	.0315	.214		-14.85	1.92	-.014	.0305	.046	.0262	.375
	-15.02	3.95	-.009	.0205	.062	.0314	.191		-14.88	4.07	.087	.0337	.029	.0250	.327
	-15.03	6.22	.092	.0253	.056	.0309	.165		-14.91	6.23	.184	.0440	.014	.0238	.282
	-15.04	8.37	.193	.0387	.050	.0303	.144		-14.94	8.28	.277	.0612	-.001	.0232	.243
	-15.05	10.51	.293	.0603	.046	.0295	.114		-14.97	10.24	.370	.0840	-.016	.0218	.193
	-15.07	12.66	.399	.0925	.046	.0280	.087		-15.01	12.29	.457	.1135	-.029	.0210	.142
	-15.08	14.84	.511	.1345	.045	.0283	.062		-15.05	14.34	.552	.1504	-.044	.0193	.076
	-15.08	16.98	.609	.1831	.043	.0288	.038		-15.08	16.42	.692	.2058	-.081	.0231	.025
0.80	-14.96	-4.38	-.349	.0496	.074	.0230	.288	1.53	-14.84	-4.03	-.237	.0470	.067	.0176	.390
	-14.96	-2.26	-.253	.0361	.070	.0249	.284		-14.85	-1.99	-.154	.0347	.055	.0182	.370
	-14.96	-1.19	-.209	.0320	.069	.0257	.286		-14.86	-.96	-.113	.0305	.048	.0183	.354
	-14.96	-.66	-.189	.0298	.068	.0263	.283		-14.86	-.45	-.092	.0292	.045	.0183	.345
	-14.96	.20	-.148	.0270	.067	.0272	.280		-14.88	.39	-.050	.0274	.038	.0182	.328
	-14.96	.93	-.126	.0256	.067	.0276	.276		-14.88	.93	-.028	.0269	.035	.0183	.321
	-14.96	1.83	-.080	.0247	.065	.0283	.268		-14.89	2.07	.016	.0272	.029	.0184	.300
	-14.98	4.11	.013	.0242	.059	.0290	.240		-14.92	4.17	.104	.0316	.014	.0180	.257
	-15.00	6.31	.122	.0316	.051	.0289	.209		-14.95	6.22	.189	.0413	0	.0176	.211
	-15.00	8.48	.234	.0503	.047	.0297	.191		-14.99	8.16	.267	.0561	-.011	.0172	.166
	-15.02	10.65	.348	.0777	.040	.0303	.160		-15.02	10.21	.348	.0779	-.023	.0167	.120
	-15.03	12.79	.438	.1098	.041	.0870	.132		-15.05	12.27	.425	.1049	-.034	.0166	.077
	-15.05	14.95	.541	.1541	.036	.0886	.108		-15.08	14.31	.500	.1370	-.044	.0168	.032
	-15.05	17.10	.637	.2057	.036	.0313	.093		-15.10	16.37	.567	.1733	-.052	.0169	-.006
0.90	-14.92	-4.42	-.368	.0560	.085	.0224	.333	1.70	-14.85	-4.03	-.213	.0439	.057	.0144	.364
	-14.92	-2.26	-.261	.0406	.079	.0246	.327		-14.87	-1.99	-.134	.0321	.045	.0148	.337
	-14.93	-1.19	-.214	.0332	.075	.0258	.318		-14.88	-.96	-.095	.0280	.039	.0147	.322
	-14.93	-.65	-.189	.0326	.073	.0261	.312		-14.89	-.44	-.075	.0264	.036	.0149	.314
	-14.93	-.21	-.149	.0314	.075	.0275	.320		-14.90	.40	-.036	.0248	.030	.0151	.296
	-14.93	.75	-.124	.0288	.072	.0274	.311		-14.90	.95	-.015	.0234	.027	.0152	.289
	-14.94	1.84	-.075	.0267	.069	.0279	.296		-14.92	2.07	.024	.0246	.021	.0154	.268
	-14.95	4.15	.035	.0267	.059	.0284	.268		-14.95	4.16	.104	.0292	.009	.0156	.227
	-14.97	6.36	.147	.0358	.050	.0285	.232		-14.98	6.10	.185	.0385	-.004	.0157	.180
	-14.99	8.52	.250	.0550	.046	.0264	.206		-15.01	8.15	.258	.0534	-.014	.0158	.134
	-14.99	10.70	.365	.0894	.040	.0270	.206		-15.04	10.20	.333	.0739	-.025	.0159	.090
	-14.97	12.89	.496	.1367	.029	.0300	.241		-15.07	12.24	.405	.0989	-.034	.0159	.048
	-14.98	15.08	.611	.1863	.016	.0309	.214		-15.09	14.29	.467	.1277	-.042	.0161	.010
									-15.12	16.35	.531	.1620	-.048	.0165	-.023

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TABLE I.– CONTINUED

(h) Nominal δ, -20°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-19.76	-4.42	-.386	.0599	.084	.0299	.333
	-19.77	-2.28	-.293	.0442	.081	.0314	.320
	-19.77	-1.22	-.248	.0392	.079	.0321	.314
	-19.77	-.70	-.232	.0377	.080	.0326	.320
	-19.77	.16	-.190	.0341	.079	.0330	.314
	-19.77	.69	-.172	.0330	.079	.0337	.310
	-19.77	1.76	-.131	.0304	.078	.0342	.312
	-19.78	3.91	-.045	.0289	.077	.0360	.292
	-19.79	6.18	.051	.0313	.072	.0368	.259
	-19.80	8.34	.152	.0427	.068	.0364	.238
	-19.82	10.48	.250	.0620	.064	.0362	.203
	-19.82	12.62	.352	.0909	.065	.0352	.185
	-19.84	14.75	.442	.1245	.063	.0342	.152
	-19.85	16.94	.560	.1754	.063	.0360	.131
0.80	-19.71	-4.43	-.379	.0619	.087	.0259	.372
	-19.71	-2.29	-.284	.0472	.083	.0280	.367
	-19.71	-1.22	-.235	.0408	.080	.0285	.357
	-19.71	-.68	-.214	.0384	.079	.0289	.359
	-19.72	.18	-.170	.0346	.077	.0292	.346
	-19.72	.72	-.148	.0340	.077	.0296	.343
	-19.73	1.79	-.103	.0309	.074	.0303	.333
	-19.73	4.00	-.007	.0308	.070	.0325	.323
	-19.75	6.27	.100	.0371	.062	.0323	.291
	-19.76	8.47	.216	.0543	.062	.0325	.267
	-19.78	10.63	.327	.0808	.048	.0332	.239
	-19.79	12.81	.433	.1162	.049	.0299	.221
	-19.79	14.97	.533	.1589	.044	.0316	.206
	-19.80	17.13	.638	.2119	.040	.0338	.186
0.90	-19.66	-4.47	-.404	.0714	.102	.0257	.435
	-19.67	-2.29	-.288	.0511	.089	.0274	.406
	-19.67	-1.23	-.246	.0469	.089	.0294	.415
	-19.67	-.69	-.221	.0436	.087	.0296	.409
	-19.67	.18	-.179	.0407	.087	.0309	.411
	-19.67	.71	-.157	.0393	.086	.0316	.411
	-19.67	1.80	-.107	.0359	.082	.0316	.402
	-19.69	4.10	.004	.0339	.072	.0323	.366
	-19.72	6.35	.124	.0424	.061	.0324	.317
	-19.75	8.53	.247	.0619	.052	.0277	.278
	-19.75	10.72	.362	.0931	.046	.0276	.263
	-19.72	12.88	.464	.1382	.044	.0329	.315
1.30	-19.62	4.16	.065	.0408	.042	.0300	.407
	-19.65	6.24	.162	.0505	.026	.0293	.363
	-19.68	8.29	.256	.0686	.012	.0284	.319
	-19.70	10.36	.352	.0911	-.002	.0274	.219
	-19.75	12.31	.431	.1159	-.014	.0274	.221
	-19.79	14.36	.518	.1489	-.028	.0265	.157
	-19.82	16.43	.669	.2066	-.067	.0279	.123
1.53	-19.60	.39	-.070	.0354	.050	.0228	.426
	-19.60	.91	-.049	.0351	.048	.0231	.423
	-19.61	1.97	-.006	.0350	.041	.0224	.408
	-19.66	4.87	.084	.0373	.025	.0223	.345
	-19.69	6.23	.170	.0461	.011	.0219	.292
	-19.72	8.28	.253	.0614	-.001	.0212	.248
	-19.75	10.23	.330	.0810	-.012	.0207	.207
	-19.79	12.28	.407	.1065	-.023	.0203	.160
	-19.82	14.34	.481	.1374	-.034	.0201	.112
	-19.85	16.38	.549	.1725	-.042	.0201	.075
1.70	-19.60	-1.98	-.153	.0426	.057	.0189	.426
	-19.61	-.96	-.113	.0376	.051	.0188	.410
	-19.62	-.45	-.094	.0358	.047	.0188	.401
	-19.63	.39	-.053	.0333	.041	.0190	.382
	-19.64	.92	-.034	.0325	.038	.0190	.373
	-19.65	1.96	.005	.0331	.032	.0195	.361
	-19.69	4.17	.086	.0360	.019	.0193	.304
	-19.72	6.22	.170	.0443	.006	.0192	.250
	-19.75	8.16	.245	.0576	-.005	.0191	.206
	-19.78	10.20	.314	.0761	-.015	.0187	.169
	-19.81	12.26	.385	.0999	-.025	.0188	.124
	-19.84	14.31	.452	.1283	-.035	.0189	.083
	-19.87	16.36	.519	.1625	-.041	.0193	.047

NACA

TABLE I.– CONCLUDED

(i) Nominal δ, –25°

M	δ	α	C_L	C_D	C_M	C_l	C_h
0.60	-24.85	-4.41	-.393	.0699	.087	.0300	.371
	-24.86	-2.30	-.301	.0548	.083	.0322	.358
	-24.86	-1.24	-.261	.0496	.083	.0332	.356
	-24.86	-.62	-.242	.0475	.083	.0333	.354
	-24.86	.15	-.197	.0427	.080	.0328	.344
	-24.86	.68	-.176	.0413	.079	.0335	.342
	-24.86	1.74	-.136	.0393	.079	.0346	.338
	-24.87	3.87	-.059	.0388	.079	.0373	.327
	-24.88	6.15	.040	.0401	.073	.0380	.307
	-24.89	8.32	.138	.0514	.071	.0384	.284
	-24.89	10.57	.237	.0711	.068	.0391	.265
	-24.90	12.71	.336	.0994	.070	.0384	.249
	-24.91	14.85	.432	.1351	.071	.0388	.228
	-24.92	16.99	.529	.1778	.070	.0399	.205
0.80	-24.80	-4.44	-.391	.0720	.090	.0272	.388
	-24.81	-2.30	-.381	.0553	.084	.0294	.375
	-24.81	-1.23	-.246	.0492	.083	.0303	.367
	-24.81	-.70	-.225	.0476	.082	.0304	.362
	-24.82	.17	-.185	.0435	.081	.0309	.356
	-24.82	.70	-.164	.0416	.080	.0310	.349
	-24.82	1.77	-.120	.0397	.079	.0317	.344
	-24.84	3.95	-.019	.0370	.071	.0329	.321
	-24.85	6.26	.086	.0432	.065	.0346	.302
	-24.86	8.45	.202	.0599	.057	.0345	.276
	-24.88	10.62	.323	.0858	.048	.0347	.243
	-24.88	12.78	.413	.1169	.050	.0309	.225
	-24.89	14.93	.520	.1604	.045	.0326	.212
	-24.90	17.10	.618	.2109	.043	.0346	.199
0.90	-24.74	-4.55	-.424	.0870	.110	.0281	.466
	-24.75	-2.40	-.319	.0660	.102	.0311	.453
	-24.76	-1.32	-.276	.0618	.102	.0333	.462
	-24.75	-.79	-.248	.0571	.097	.0329	.442
	-24.77	.10	-.196	.0499	.091	.0324	.418
	-24.77	.74	-.172	.0473	.088	.0323	.408
	-24.77	1.71	-.129	.0479	.089	.0345	.420
	-24.78	3.91	-.023	.0448	.080	.0361	.391
	-24.81	6.25	.096	.0519	.070	.0365	.353
	-24.84	8.47	.232	.0671	.053	.0325	.288
	-24.86	10.67	.363	.1005	.043	.0300	.261
	-24.85	12.90	.504	.1512	.028	.0389	.270
	-24.87	15.02	.575	.1876	.028	.0325	.236
1.30	-24.67	4.11	.043	.0500	.049	.0340	.503
	-24.70	6.21	.144	.0584	.034	.0335	.456
	-24.72	8.28	.234	.0735	.021	.0331	.420
	-24.74	10.26	.327	.0966	.008	.0321	.386
	-24.77	12.43	.419	.1244	-.006	.0317	.336
	-24.81	14.34	.498	.1533	-.020	.0307	.280
	-24.83	16.46	.627	.2057	-.044	.0291	.258
1.53	-24.65	2.05	-.025	.0454	.048	.0271	.503
	-24.70	4.16	.069	.0450	.031	.0259	.430
	-24.74	6.21	.154	.0530	.017	.0257	.381
	-24.76	8.29	.236	.0675	.006	.0254	.347
	-24.78	10.35	.317	.0888	-.005	.0248	.328
	-24.80	12.26	.390	.1120	-.015	.0244	.286
	-24.84	14.32	.467	.1420	-.026	.0235	.234
	-24.86	16.39	.529	.1755	-.033	.0242	.196
1.70	-24.68	-4.03	-.247	.0636	.077	.0221	.453
	-24.70	-1.98	-.171	.0518	.066	.0232	.434
	-24.71	-.96	-.134	.0470	.060	.0233	.422
	-24.72	-.45	-.112	.0445	.056	.0233	.407
	-24.73	.39	-.073	.0416	.049	.0234	.387
	-24.73	.91	-.052	.0408	.046	.0235	.379
	-24.74	1.95	-.013	.0409	.041	.0240	.371
	-24.78	4.15	.073	.0423	.026	.0237	.311
	-24.82	6.21	.155	.0497	.013	.0235	.256
	-24.84	8.28	.231	.0642	.003	.0236	.225
	-24.87	10.21	.302	.0822	-.007	.0228	.193
	-24.89	12.26	.376	.1064	-.017	.0227	.157
	-24.92	14.31	.444	.1344	-.026	.0223	.114
	-24.95	16.36	.509	.1671	-.033	.0222	.072

NACA

TABLE II.– AERODYNAMIC CHARACTERISTICS OF A TRIANGULAR WING FOR VARIOUS FLAP ANGLES FOR MACH NUMBERS FROM 0.60 TO 1.70. DATA FOR ONE FLAP. CONSTANT-CHORD FLAP, BLUNT PROFILE; $R = 3.0 \times 10^6$

(a) Nominal δ, 5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	3.80	-4.25	-.140	.0149	-.012	-.0099	-.021
	3.79	-2.09	-.046	.0104	-.017	-.0097	-.043
	3.79	-.96	.002	.0100	-.020	-.0096	-.055
	3.79	-.42	.026	.0100	-.021	-.0095	-.059
	3.78	.53	.069	.0111	-.024	-.0101	-.072
	3.78	1.09	.093	.0117	-.024	-.0098	-.077
	3.77	2.16	.138	.0140	-.027	-.0098	-.088
	3.76	4.30	.235	.0234	-.033	-.0101	-.112
	3.75	6.44	.331	.0389	-.038	-.0106	-.133
	3.74	8.59	.439	.0652	-.042	-.0115	-.156
	3.74	10.71	.525	.0981	-.037	-.0087	-.163
	3.72	12.89	.644	.1442	-.039	-.0079	-.209
	3.71	15.03	.744	.1937	-.042	-.0071	-.235
	3.70	17.21	.864	.2586	-.045	-.0065	-.267
0.80	3.79	-4.31	-.152	.0165	-.011	-.0107	-.042
	3.78	-2.12	-.049	.0107	-.019	-.0103	-.060
	3.77	-.41	.029	.0104	-.025	-.0103	-.079
	3.76	.56	.077	.0116	-.028	-.0104	-.089
	3.76	1.10	.100	.0124	-.029	-.0102	-.097
	3.75	2.19	.152	.0154	-.033	-.0105	-.108
	3.74	4.35	.254	.0262	-.040	-.0101	-.130
	3.73	6.51	.365	.0464	-.049	-.0106	-.155
	3.71	8.68	.475	.0766	-.053	-.0137	-.186
	3.69	10.87	.600	.1164	-.058	-.0161	-.222
	3.67	12.99	.666	.1569	-.053	-.0065	-.253
	3.65	15.18	.788	.2166	-.064	-.0060	-.290
	3.63	17.36	.907	.2850	-.076	-.0057	-.326
0.90	3.77	-4.33	-.161	.0180	-.011	-.0118	-.050
	3.76	-2.13	-.050	.0109	-.021	-.0115	-.073
	3.75	-1.02	.008	.0098	-.026	-.0114	-.089
	3.74	-.48	.035	.0100	-.028	-.0115	-.098
	3.73	.57	.084	.0117	-.030	-.0115	-.114
	3.72	1.12	.111	.0128	-.031	-.0117	-.124
	3.71	2.20	.167	.0165	-.035	-.0114	-.144
	3.69	4.36	.278	.0294	-.040	-.0116	-.170
	3.66	6.56	.398	.0533	-.048	-.0121	-.205
	3.61	8.75	.540	.0931	-.060	-.0143	-.280
1.30	3.78	-4.12	-.164	.0248	.012	-.0078	-.032
	3.74	-2.11	-.071	.0176	-.004	-.0076	-.078
	3.72	-1.05	-.022	.0155	-.011	-.0075	-.107
	3.71	-.52	.002	.0155	-.015	-.0076	-.120
	3.68	.47	.045	.0161	-.021	-.0076	-.147
	3.67	1.08	.071	.0172	-.025	-.0076	-.159
	3.65	2.04	.118	.0200	-.032	-.0074	-.184
	3.60	4.10	.214	.0314	-.047	-.0072	-.238
	3.57	6.16	.310	.0488	-.062	-.0070	-.278
	3.53	8.22	.407	.0730	-.077	-.0067	-.318
	3.50	10.28	.503	.1046	-.042	-.0069	-.359
	3.45	12.34	.603	.1407	-.111	-.0088	-.417
	3.42	13.52	.694	.1698	-.138	-.0075	-.442
1.53	3.81	-4.10	-.153	.0256	.015	-.0057	-.007
	3.78	-2.10	-.070	.0182	.001	-.0055	-.045
	3.76	-1.04	-.027	.0161	-.006	-.0053	-.067
	3.75	-.52	-.005	.0169	-.009	-.0052	-.078
	3.74	.47	.037	.0162	-.016	-.0051	-.101
	3.73	.99	.059	.0169	-.019	-.0050	-.111
	3.72	2.04	.102	.0196	-.026	-.0048	-.131
	3.68	4.09	.187	.0296	-.039	-.0043	-.175
	3.65	6.15	.274	.0451	-.053	-.0037	-.217
	3.63	8.20	.355	.0662	-.064	-.0032	-.253
	3.60	10.26	.439	.0942	-.076	-.0030	-.293
	3.57	12.31	.516	.1268	-.087	-.0028	-.334
	3.54	14.37	.594	.1655	-.097	-.0024	-.373
	3.52	16.42	.666	.2091	-.107	-.0020	-.408
1.70	3.81	-4.10	-.147	.0230	.015	-.0054	-.005
	3.78	-2.04	-.068	.0150	.002	-.0049	-.040
	3.77	-1.04	-.028	.0131	-.004	-.0047	-.059
	3.76	-.52	-.009	.0125	-.007	-.0046	-.068
	3.75	.47	.032	.0129	-.013	-.0043	-.089
	3.74	.98	.052	.0137	-.016	-.0041	-.099
	3.72	2.03	.094	.0164	-.028	-.0038	-.119
	3.70	4.09	.172	.0253	-.035	-.0030	-.154
	3.67	6.14	.253	.0398	-.047	-.0023	-.195
	3.64	8.19	.332	.0599	-.058	-.0015	-.233
	3.62	10.25	.410	.0860	-.068	-.0011	-.267
	3.59	12.29	.483	.1164	-.079	-.0006	-.309
	3.56	14.34	.550	.1513	-.088	-.0003	-.342
	3.54	16.40	.621	.1925	-.095	0	-.375

NACA

TABLE II.– CONTINUED

(b) Nominal δ, 0°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-1.47	-4.27	-.207	.0201	.015	.0020	.062
	-1.48	-2.13	-.115	.0122	.010	.0022	.043
	-1.48	-1.04	-.065	.0103	.007	.0022	.032
	-1.49	-.50	-.042	.0101	.006	.0022	.025
	-1.49	.50	.004	.0101	.004	.0022	.015
	-1.49	1.05	.027	.0107	.003	.0022	.009
	-1.50	2.13	.074	.0117	0	.0021	-.004
	-1.51	4.22	.165	.0175	-.005	.0022	-.028
	-1.52	6.36	.261	.0291	-.010	.0023	-.044
	-1.53	8.50	.368	.0540	-.014	.0019	-.066
	-1.54	16.65	.464	.0844	-.012	.0025	-.083
	-1.56	12.81	.567	.1219	-.014	.0020	-.121
	-1.58	14.99	.693	.1736	-.019	.0027	-.148
	-1.59	17.15	.806	.2317	-.021	.0032	-.178
0.80	-1.46	-4.32	-.225	.0218	.021	.0021	.062
	-1.47	-2.17	-.122	.0125	.014	.0027	.042
	-1.48	-1.07	-.072	.0107	.010	.0028	.030
	-1.48	-.52	-.046	.0100	.008	.0027	.023
	-1.49	.51	.001	.0101	.005	.0027	.012
	-1.50	1.05	.025	.0102	.003	.0027	.005
	-1.51	2.15	.075	.0114	-.001	.0028	-.008
	-1.52	4.26	.176	.0187	-.008	.0031	-.030
	-1.53	6.42	.278	.0327	-.015	.0033	-.047
	-1.54	8.58	.392	.0586	-.021	.0039	-.060
	-1.57	10.74	.484	.0911	-.017	.0026	-.110
	-1.61	12.92	.604	.1362	-.028	.0023	-.158
	-1.63	15.11	.728	.1934	-.040	.0028	-.198
	-1.65	17.28	.840	.2562	-.050	.0028	-.227
0.90	-1.45	-4.37	-.257	.0269	.031	.0024	.075
	-1.47	-2.19	-.140	.0139	.019	.0033	.050
	-1.48	-1.09	-.082	.0118	.013	.0034	.036
	-1.48	-.54	-.054	.0101	.011	.0032	.030
	-1.49	.57	-.002	.0111	.007	.0033	.016
	-1.49	1.06	.026	.0112	.004	.0025	.008
	-1.51	2.17	.083	.0127	-.001	.0035	-.008
	-1.52	4.27	.186	.0206	-.010	.0040	-.025
	-1.53	6.45	.298	.0384	-.019	.0044	-.044
	-1.55	8.64	.415	.0691	-.024	.0044	-.064
	-1.58	10.81	.525	.1053	-.033	.0039	-.117
1.30	-1.38	-4.10	-.199	.0278	.035	.0017	.141
	-1.41	-2.05	-.106	.0185	.020	.0019	.101
	-1.43	-1.00	-.058	.0159	.013	.0022	.080
	-1.44	-.48	-.034	.0155	.009	.0023	.069
	-1.46	.52	.013	.0153	.002	.0023	.042
	-1.47	.99	.033	.0158	-.001	.0023	.031
	-1.48	2.04	.081	.0181	-.008	.0024	.003
	-1.55	4.10	.173	.0262	-.023	.0025	-.055
	-1.60	6.16	.271	.0411	-.039	.0026	-.110
	-1.63	8.22	.365	.0630	-.052	.0028	-.155
	-1.68	10.28	.465	.0933	-.067	.0025	-.213
	-1.72	12.34	.557	.1282	-.082	.0022	-.261
1.53	-1.40	-4.10	-.180	.0275	.031	.0006	.118
	-1.43	-2.04	-.093	.0183	.017	.0010	.083
	-1.44	-.99	-.050	.0155	.010	.0013	.062
	-1.45	-.46	-.028	.0146	.007	.0013	.052
	-1.47	.46	.016	.0146	0	.0015	.031
	-1.48	1.05	.035	.0151	-.003	.0015	.020
	-1.51	2.04	.078	.0170	-.010	.0017	-.008
	-1.55	4.10	.164	.0255	-.023	.0020	-.055
	-1.59	6.15	.249	.0393	-.036	.0024	-.103
	-1.63	8.21	.334	.0591	-.048	.0027	-.145
	-1.66	10.26	.417	.0853	-.060	.0029	-.184
	-1.70	12.32	.495	.1164	-.071	.0032	-.226
	-1.74	14.37	.572	.1533	-.081	.0038	-.266
	-1.76	16.42	.639	.1931	-.089	.0044	-.295
1.70	-1.41	-4.09	-.168	.0256	.028	.0001	.097
	-1.44	-2.05	-.088	.0171	.016	.0006	.064
	-1.46	-.99	-.047	.0146	.010	.0010	.048
	-1.47	-.46	-.025	.0139	.006	.0010	.038
	-1.48	.42	.015	.0137	0	.0012	.017
	-1.49	.99	.033	.0144	-.003	.0015	.007
	-1.51	2.03	.074	.0165	-.009	.0020	-.011
	-1.53	4.09	.155	.0242	-.022	.0026	-.031
	-1.57	6.20	.235	.0374	-.034	.0032	-.076
	-1.60	8.20	.312	.0558	-.045	.0034	-.114
	-1.64	10.25	.382	.0794	-.054	.0032	-.150
	-1.67	12.30	.462	.1089	-.064	.0036	-.189
	-1.70	14.36	.532	.1426	-.073	.0042	-.233
	-1.73	16.42	.602	.1821	-.080	.0048	-.253

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TABLE II.– CONTINUED

(c) Nominal δ, -1.0°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-2.02	-4.30	-.231	.0219	.022	.0013	.060
	-2.03	-2.15	-.131	.0134	.016	.0015	.037
	-2.04	-1.08	-.086	.0119	.014	.0017	.024
	-2.04	-.54	-.061	.0115	.013	.0017	.015
	-2.05	.41	-.019	.0107	.010	.0017	.004
	-2.05	1.01	.005	.0107	.009	.0015	-.002
	-2.05	2.09	.050	.0114	.007	.0015	0
	-2.06	4.25	.145	.0174	.002	.0015	-.020
	-2.07	6.40	.243	.0292	-.004	.0015	-.037
	-2.08	8.49	.349	.0511	-.007	.0013	-.054
	-2.09	10.68	.445	.0824	-.006	.0019	-.069
	-2.11	12.85	.562	.1262	-.009	.0015	-.112
	-2.12	15.00	.666	.1758	-.013	.0020	-.136
	-2.13	17.17	.779	.2346	-.015	.0025	-.164
0.80	-2.00	-4.32	-.238	.0235	.027	.0020	.072
	-2.02	-2.19	-.141	.0140	.021	.0024	.051
	-2.03	-1.07	-.088	.0120	.017	.0025	.038
	-2.03	-.54	-.064	.0118	.015	.0026	.031
	-2.04	.47	-.016	.0111	.012	.0025	.015
	-2.04	1.03	.008	.0114	.010	.0025	.010
	-2.05	2.13	.059	.0118	.007	.0025	-.003
	-2.06	4.30	.165	.0185	-.002	.0028	-.022
	-2.08	6.39	.263	.0325	-.008	.0028	-.039
	-2.09	8.57	.382	.0588	-.013	.0029	-.055
	-2.11	10.72	.469	.0897	-.010	.0024	-.096
	-2.15	12.93	.607	.1390	-.023	.0024	-.156
	-2.16	15.07	.707	.1872	-.031	.0025	-.176
	-2.19	17.28	.842	.2574	-.044	.0029	-.214
0.90	-1.99	-4.36	-.256	.0268	.034	.0013	.080
	-2.01	-2.20	-.149	.0153	.026	.0025	.064
	-2.02	-1.10	-.090	.0123	.019	.0025	.045
	-2.02	-.55	-.066	.0119	.017	.0024	.037
	-2.04	.49	-.014	.0113	.013	.0025	.021
	-2.04	1.03	.012	.0118	.010	.0024	.013
	-2.05	2.14	.068	.0123	.005	.0024	-.003
	-2.06	4.28	.178	.0205	-.005	.0032	-.014
	-2.07	6.42	.281	.0369	-.012	.0030	-.035
	-2.09	8.63	.408	.0688	-.019	.0043	-.051
	-2.11	10.80	.523	.1072	-.031	.0037	-.089
1.30	-1.92	-4.10	-.210	.0268	.041	.0014	.154
	-1.96	-2.04	-.112	.0182	.025	.0016	.107
	-1.98	-.99	-.065	.0157	.018	.0019	.085
	-1.99	-.47	-.041	.0152	.014	.0019	.073
	-2.01	.51	.002	.0149	.007	.0020	.049
	-2.02	1.04	.027	.0154	.004	.0019	.034
	-2.04	2.04	.071	.0172	-.003	.0021	.008
	-2.08	4.10	.163	.0253	-.018	.0020	-.040
	-2.12	6.16	.257	.0395	-.032	.0024	-.085
	-2.16	8.22	.354	.0606	-.047	.0027	-.129
	-2.20	10.28	.448	.0890	-.061	.0025	-.177
	-2.25	12.34	.537	.1232	-.075	.0023	-.227
1.53	-1.94	-4.16	-.183	.0268	.034	.0005	.120
	-1.98	-2.64	-.099	.0178	.021	.0009	.080
	-2.00	-1.00	-.054	.0155	.014	.0012	.058
	-2.01	-.47	-.032	.0150	.010	.0012	.048
	-2.03	.53	.010	.0148	.004	.0014	.027
	-2.03	1.05	.031	.0152	0	.0014	.017
	-2.05	2.03	.071	.0169	-.006	.0015	-.004
	-2.09	4.09	.155	.0248	-.019	.0018	-.041
	-2.12	6.15	.241	.0382	-.032	.0022	-.084
	-2.16	8.21	.325	.0577	-.044	.0027	-.122
	-2.20	10.27	.413	.0846	-.056	.0029	-.162
	-2.23	12.33	.491	.1153	-.067	.0032	-.202
	-2.26	14.37	.561	.1501	-.076	.0037	-.236
	-2.29	16.43	.635	.1918	-.085	.0043	-.271
1.70	-1.96	-4.09	-.168	.0276	.030	0	.103
	-1.99	-2.04	-.089	.0186	.018	.0006	.065
	-2.04	-.99	-.049	.0158	.012	.0008	.048
	-2.02	-.46	-.027	.0149	.009	.0009	.038
	-2.03	.52	.011	.0146	.003	.0012	.019
	-2.04	1.05	.031	.0145	-.001	.0013	.009
	-2.05	2.03	.068	.0168	-.006	.0015	-.003
	-2.09	4.08	.146	.0240	-.018	.0019	-.042
	-2.12	6.14	.223	.0361	-.030	.0025	-.079
	-2.15	8.19	.300	.0546	-.041	.0030	-.115
	-2.18	10.25	.381	.0785	-.050	.0035	-.150
	-2.22	12.30	.449	.1062	-.060	.0041	-.185
	-2.25	14.35	.523	.1406	-.069	.0047	-.219
	-2.27	16.41	.587	.1778	-.075	.0052	-.249

NACA

[redacted]

[redacted]

TABLE II.– CONTINUED

(d) Nominal δ, –2.5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-3.95	-4.33	-.254	.0240	.032	.0062	.091
	-3.96	-2.19	-.156	.0146	.026	.0063	.069
	-3.97	-1.10	-.108	.0127	.023	.0062	.058
	-3.97	-.56	-.084	.0116	.022	.0062	.049
	-3.98	.45	-.040	.0114	.020	.0063	.039
	-3.98	.99	-.016	.0116	.019	.0062	.034
	-3.99	2.07	.029	.0118	.016	.0061	.019
	-4.00	4.22	.121	.0172	.011	.0060	.002
	-4.01	6.38	.226	.0282	.006	.0064	-.017
	-4.02	8.53	.331	.0491	.001	.0061	-.035
	-4.03	10.67	.427	.0793	.002	.0061	-.050
	-4.04	12.82	.536	.1205	0	.0055	-.086
	-4.06	14.99	.651	.1699	-.004	.0060	-.112
	-4.07	17.15	.760	.2268	-.007	.0064	-.142
0.80	-3.93	-4.37	-.268	.0275	.039	.0065	.109
	-3.94	-2.21	-.167	.0161	.033	.0072	.090
	-3.95	-1.13	-.114	.0130	.028	.0070	.074
	-3.95	-.58	-.089	.0121	.026	.0072	.068
	-3.96	.38	-.042	.0112	.023	.0070	.055
	-3.97	.93	-.019	.0119	.022	.0071	.049
	-3.98	2.08	.031	.0122	.018	.0072	.036
	-3.99	4.27	.134	.0174	.011	.0073	.012
	-4.00	6.43	.241	.0316	.003	.0075	-.007
	-4.01	8.61	.350	.0546	-.002	.0082	-.020
	-4.04	10.75	.461	.0846	0	.0062	-.065
	-4.07	12.93	.559	.1267	-.010	.0058	-.113
	-4.09	15.03	.667	.1773	-.020	.0060	-.139
	-4.11	17.24	.805	.2464	-.031	.0065	-.174
0.90	-3.89	-4.41	-.300	.0330	.053	.0076	-.163
	-3.90	-2.23	-.184	.0185	.042	.0083	.138
	-3.92	-1.15	-.129	.0146	.037	.0086	.119
	-3.93	-.61	-.103	.0134	.034	.0087	.104
	-3.94	.38	-.051	.0119	.029	.0083	.084
	-3.95	.92	-.023	.0115	.026	.0080	.069
	-3.96	2.09	.029	.0131	.024	.0085	.062
	-3.98	4.31	.147	.0199	.012	.0091	.035
	-3.99	6.48	.263	.0358	.003	.0090	.010
	-4.03	8.64	.365	.0607	.007	.0082	-.036
	-4.05	10.79	.509	.1057	-.020	.0086	-.068
1.30	-3.80	-4.09	-.223	.0334	.050	.0053	.235
	-3.84	-2.04	-.127	.0219	.034	.0055	.191
	-3.86	-1.00	-.180	.0187	.027	.0058	.168
	-3.87	-.47	-.056	.0174	.023	.0058	.155
	-3.89	.45	-.012	.0167	.017	.0057	.129
	-3.90	1.04	.011	.0165	.013	.0057	.116
	-3.93	2.09	.058	.0182	.006	.0057	.087
	-3.97	4.10	.148	.0252	-.009	.0056	.030
	-4.02	6.16	.243	.0390	-.025	.0055	-.022
	-4.06	8.20	.340	.0594	-.039	.0056	-.069
	-4.10	10.27	.441	.0884	-.054	.0052	-.122
	-4.15	12.33	.535	.1225	-.068	.0050	-.176
	-4.24	14.39	.639	.1652	-.089	.0051	-.280
	-4.30	16.49	.810	.2376	-.133	.0060	-.352
1.53	-3.84	-4.08	-.193	.0326	.040	.0028	.177
	-3.88	-2.04	-.109	.0223	.027	.0034	.137
	-3.90	-.99	-.065	.0191	.020	.0035	.117
	-3.91	-.47	-.043	.0178	.017	.0038	.106
	-3.93	.46	-.001	.0164	.010	.0039	.084
	-3.94	1.04	.020	.0166	.007	.0039	.073
	-3.96	2.08	.063	.0183	0	.0040	.050
	-3.99	4.09	.144	.0250	-.013	.0042	.006
	-4.03	6.14	.228	.0374	-.026	.0043	-.038
	-4.07	8.19	.310	.0560	-.038	.0046	-.080
	-4.11	10.25	.397	.0820	-.050	.0047	-.122
	-4.15	12.31	.478	.1127	-.061	.0050	-.166
	-4.18	14.36	.554	.1485	-.071	.0057	-.207
	-4.21	16.42	.627	.1889	-.080	.0060	-.242
1.70	-3.86	-4.09	-.181	.0292	.036	.0018	.155
	-3.90	-2.04	-.101	.0199	.024	.0025	.116
	-3.91	-.99	-.059	.0168	.018	.0029	.099
	-3.92	-.47	-.039	.0157	.015	.0030	.089
	-3.94	.51	0	.0150	.008	.0033	.068
	-3.95	1.04	.022	.0152	.005	.0034	.058
	-3.97	2.02	.062	.0170	-.001	.0036	.037
	-4.00	4.09	.139	.0239	-.013	.0039	-.003
	-4.04	6.15	.218	.0359	-.029	.0043	-.044
	-4.07	8.19	.294	.0534	-.036	.0047	-.084
	-4.11	10.25	.371	.0768	-.046	.0050	-.121
	-4.14	12.30	.447	.1059	-.056	.0054	-.161
	-4.18	14.35	.516	.1388	-.064	.0057	-.196
	-4.20	16.40	.581	.1758	-.071	.0062	-.228

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TABLE II.– CONTINUED

(e) Nominal δ, –5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-6.23	-4.34	-.268	.0281	.038	.0121	.106
	-6.24	-2.20	-.173	.0180	.033	.0123	.085
	-6.24	-1.13	-.126	.0155	.030	.0122	.075
	-6.25	-.58	-.101	.0143	.029	.0120	.067
	-6.25	.49	-.059	.0139	.027	.0123	.059
	-6.25	.97	-.035	.0132	.026	.0121	.054
	-6.26	2.04	.012	.0134	.023	.0120	.043
	-6.27	4.20	.106	.0170	.018	.0119	.023
	-6.28	6.36	.204	.0271	.013	.0121	.007
	-6.28	8.51	.309	.0469	.008	.0117	-.008
	-6.29	10.65	.406	.0746	.009	.0113	-.028
	-6.31	12.82	.529	.1183	.006	.0106	-.053
	-6.32	14.99	.639	.1674	.003	.0110	-.071
	-6.33	17.16	.759	.2272	0	.0114	-.092
0.80	-6.20	-4.37	-.283	.0315	.047	.0124	.124
	-6.21	-2.22	-.183	.0189	.040	.0134	.108
	-6.22	-1.15	-.134	.0162	.037	.0134	.095
	-6.22	-.61	-.111	.0153	.035	.0136	.087
	-6.23	.42	-.065	.0138	.032	.0134	.076
	-6.23	.97	-.040	.0132	.030	.0133	.069
	-6.24	2.06	.011	.0133	.027	.0133	.057
	-6.26	4.24	.112	.0179	.018	.0133	.034
	-6.27	6.41	.219	.0310	.012	.0136	.017
	-6.28	8.59	.337	.0554	.007	.0152	.004
	-6.31	10.74	.428	.0831	.007	.0150	-.039
	-6.32	12.93	.554	.1283	.004	.0143	-.068
	-6.34	15.07	.690	.1845	-.016	.0113	-.091
	-6.35	17.26	.813	.2501	-.026	.0118	-.109
0.90	-6.14	-4.47	-.314	.0375	.062	.0134	.193
	-6.17	-2.24	-.196	.0222	.049	.0141	.156
	-6.17	-1.17	-.150	.0189	.047	.0153	.155
	-6.17	-.63	-.126	.0179	.046	.0159	.156
	-6.19	.46	-.076	.0155	.041	.0155	.130
	-6.19	.88	-.054	.0152	.041	.0162	.135
	-6.22	2.04	.005	.0141	.032	.0150	.089
	-6.22	4.28	.119	.0204	.025	.0168	.084
	-6.26	6.43	.229	.0335	.013	.0150	.035
	-6.28	8.62	.341	.0604	.009	.0143	.005
	-6.29	10.82	.474	.1011	-.002	.0142	-.021
1.30	-6.07	-4.10	-.235	.0358	.056	.0102	.251
	-6.10	-2.04	-.140	.0251	.041	.0106	.217
	-6.11	-1.01	-.093	.0212	.034	.0107	.195
	-6.12	-.48	-.068	.0202	.030	.0107	.184
	-6.14	.57	-.024	.0189	.023	.0107	.162
	-6.15	1.03	.001	.0191	.020	.0107	.151
	-6.17	2.08	.048	.0203	.012	.0107	.126
	-6.27	4.11	.143	.0272	-.004	.0105	.074
	-6.26	6.16	.238	.0406	-.019	.0101	.026
	-6.30	8.22	.337	.0613	-.034	.0101	-.018
	-6.33	10.29	.439	.0902	-.050	.0097	-.062
	-6.37	12.35	.534	.1250	-.064	.0093	-.104
1.53	-6.12	-4.10	-.201	.0328	.044	.0062	.187
	-6.15	-2.04	-.115	.0226	.031	.0066	.151
	-6.16	-1.00	-.072	.0192	.024	.0069	.132
	-6.17	-.48	-.050	.0182	.020	.0070	.122
	-6.19	.45	-.008	.0174	.014	.0071	.103
	-6.20	1.04	.014	.0174	.010	.0071	.094
	-6.21	2.09	.059	.0192	.004	.0073	.075
	-6.25	4.10	.142	.0261	-.010	.0075	.035
	-6.28	6.15	.227	.0384	-.024	.0076	-.004
	-6.32	8.20	.311	.0574	-.036	.0076	-.040
	-6.35	10.27	.401	.0837	-.048	.0078	-.075
	-6.37	12.32	.480	.1142	-.059	.0079	-.106
	-6.40	14.38	.556	.1503	-.069	.0084	-.135
	-6.42	16.43	.629	.1914	-.078	.0090	-.162
1.70	-6.14	-4.09	-.183	.0318	.037	.0047	.158
	-6.17	-2.04	-.104	.0214	.026	.0052	.122
	-6.19	-.99	-.064	.0184	.020	.0055	.107
	-6.19	-.47	-.044	.0170	.017	.0057	.098
	-6.21	.46	-.004	.0160	.010	.0059	.079
	-6.22	1.03	.017	.0163	.007	.0061	.071
	-6.23	2.08	.056	.0179	.001	.0063	.054
	-6.26	4.09	.134	.0246	-.011	.0068	.020
	-6.29	6.14	.215	.0363	-.023	.0073	-.014
	-6.32	8.19	.292	.0536	-.033	.0077	-.047
	-6.35	10.24	.369	.0768	-.043	.0079	-.078
	-6.37	12.30	.441	.1043	-.053	.0083	-.106
	-6.40	14.35	.506	.1360	-.061	.0088	-.132
	-6.42	16.40	.576	.1740	-.067	.0093	-.160

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TABLE II.– CONTINUED

(f) Nominal δ, –10°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-11.35	-4.40	-.317	.0376	.058	.0206	.188
	-11.35	-2.27	-.233	.0265	.056	.0234	.190
	-11.36	-1.21	-.190	.0226	.054	.0236	.178
	-11.36	-.68	-.170	.0213	.055	.0243	.178
	-11.36	.27	-.125	.0190	.052	.0240	.165
	-11.37	.81	-.104	.0181	.051	.0240	.161
	-11.37	1.89	-.057	.0167	.048	.0238	.148
	-11.39	4.11	.038	.0180	.043	.0237	.123
	-11.40	6.28	.138	.0256	.038	.0237	.104
	-11.41	8.43	.241	.0415	.032	.0232	.080
	-11.42	10.60	.352	.0680	.031	.0231	.055
	-11.44	12.76	.469	.1055	.030	.0217	.025
	-11.45	14.91	.573	.1499	.026	.0215	.002
	-11.46	17.05	.677	.2044	.023	.0218	-.028
0.80	-11.29	-4.44	-.340	.0448	.070	.0195	.243
	-11.29	-2.30	-.247	.0319	.066	.0218	.241
	-11.30	-1.22	-.197	.0268	.063	.0230	.233
	-11.29	-.70	-.180	.0260	.064	.0243	.241
	-11.30	.25	-.136	.0231	.061	.0251	.228
	-11.30	.79	-.115	.0231	.062	.0258	.228
	-11.32	1.89	-.065	.0199	.056	.0253	.198
	-11.34	4.13	.038	.0215	.050	.0262	.171
	-11.36	6.32	.144	.0292	.040	.0249	.133
	-11.38	8.52	.265	.0512	.035	.0265	.112
	-11.40	10.69	.372	.0781	.032	.0232	.070
	-11.42	12.86	.491	.1188	.024	.0218	.039
	-11.44	15.04	.612	.1691	.014	.0231	.008
	-11.46	17.23	.724	.2279	.008	.0246	-.020
0.90	-11.24	-4.47	-.351	.0499	.079	.0185	.303
	-11.23	-2.30	-.248	.0348	.077	.0207	.308
	-11.24	-1.22	-.197	.0300	.068	.0223	.303
	-11.23	-.69	-.175	.0284	.068	.0234	.308
	-11.24	.32	-.130	.0261	.065	.0242	.297
	-11.24	.87	-.107	.0249	.064	.0248	.292
	-11.26	1.97	-.056	.0226	.059	.0252	.270
	-11.28	4.18	.054	.0233	.050	.0261	.242
	-11.31	6.39	.172	.0366	.041	.0260	.263
	-11.30	8.56	.283	.0616	.038	.0251	.215
	41.35	10.75	.408	.0970	.026	.0247	.204
1.30	-11.09	-4.10	-.267	.0470	.075	.0184	.422
	-11.10	-2.04	-.173	.0340	.060	.0192	.400
	-11.12	-1.01	-.127	.0302	.054	.0195	.385
	-11.13	-.50	-.105	.0285	.050	.0197	.376
	-11.14	.43	-.060	.0268	.044	.0198	.355
	-11.15	.95	-.038	.0266	.041	.0197	.346
	-11.18	2.07	.012	.0267	.033	.0197	.317
	-11.23	4.17	.111	.0318	.017	.0193	.255
	-11.28	6.23	.207	.0432	0	.0182	.194
	-11.33	8.23	.302	.0615	-.015	.0178	.140
	-11.38	10.29	.407	.0890	-.031	.0170	.081
	-11.43	12.35	.501	.1218	-.045	.0165	.026
1.53	-11.15	-4.09	-.223	.0440	.059	.0126	.342
	-11.18	-2.04	-.138	.0311	.045	.0131	.312
	-11.19	-1.01	-.094	.0271	.039	.0133	.295
	-11.20	-.49	-.072	.0247	.035	.0132	.284
	-11.22	.48	-.031	.0232	.029	.0133	.266
	-11.22	.97	-.009	.0230	.025	.0134	.258
	-11.24	2.08	.036	.0236	.019	.0135	.236
	-11.29	4.16	.123	.0295	.004	.0134	.180
	-11.34	6.16	.207	.0402	-.010	.0132	.126
	-11.39	8.20	.290	.0574	-.022	.0129	.073
	-11.43	10.27	.379	.0823	-.035	.0130	.025
	-11.46	12.32	.459	.1113	-.046	.0130	-.013
	-11.50	14.38	.534	.1458	-.056	.0133	-.059
	-11.54	16.44	.608	.1856	-.064	.0137	-.097
1.70	-11.18	-4.08	-.203	.0398	.051	.0098	.304
	-11.20	-2.04	-.123	.0286	.038	.0104	.276
	-11.22	-1.00	-.083	.0241	.032	.0105	.255
	-11.23	-.47	-.064	.0226	.029	.0108	.244
	-11.25	.51	-.024	.0213	.023	.0111	.226
	-11.26	1.03	-.004	.0209	.020	.0112	.213
	-11.28	2.07	.037	.0217	.014	.0113	.191
	-11.32	4.16	.117	.0276	.001	.0117	.142
	-11.36	6.15	.194	.0378	-.011	.0120	.096
	-11.41	8.19	.271	.0543	-.023	.0120	.047
	-11.45	10.25	.347	.0760	-.033	.0121	.003
	-11.48	12.30	.428	.1052	-.044	.0126	-.033
	-11.51	14.36	.497	.1362	-.052	.0131	-.071
	-11.54	16.40	.560	.1717	-.058	.0134	-.102

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TABLE II.– CONTINUED

(g) Nominal δ, -15°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-15.99	-4.10	-.369	.0522	.076	.0270	.270
	-15.99	-2.06	-.282	.0385	.074	.0291	.265
	-15.99	-1.04	-.238	.0332	.072	.0298	.258
	-16.00	-.53	-.216	.0313	.072	.0305	.256
	-16.00	.37	-.179	.0293	.072	.0322	.255
	-16.00	.88	-.159	.0280	.072	.0327	.254
	-16.00	1.90	-.115	.0257	.070	.0334	.241
	-16.01	3.98	-.022	.0237	.066	.0336	.220
	-16.03	6.12	.079	.0273	.059	.0332	.194
	-16.04	8.20	.187	.0414	.054	.0329	.163
	-16.06	10.25	.295	.0642	.049	.0326	.131
	-16.08	12.31	.402	.0956	.049	.0303	.103
	-16.09	14.36	.510	.1361	.045	.0303	.078
	-16.11	16.42	.628	.1892	.042	.0309	.047
0.80	-15.91	-4.13	-.371	.0576	.082	.0236	.331
	-15.92	-2.07	-.270	.0414	.076	.0255	.317
	-15.92	-1.05	-.223	.0366	.073	.0263	.312
	-15.92	-.54	-.201	.0347	.073	.0272	.313
	-15.93	.49	-.158	.0312	.071	.0279	.306
	-15.93	1.00	-.138	.0301	.070	.0287	.304
	-15.93	2.03	-.093	.0285	.068	.0299	.299
	-15.95	4.08	.006	.0278	.067	.0306	.271
	-15.91	6.18	.113	.0345	.055	.0314	.236
	-15.99	8.27	.232	.0535	.049	.0321	.212
	-16.01	10.33	.343	.0807	.042	.0326	.179
	-16.02	12.40	.442	.1162	.043	.0298	.161
	-16.04	14.47	.552	.1618	.039	.0326	.142
	-16.03	16.54	.660	.2186	.037	.0358	.148
0.90	-15.85	-4.50	-.388	.0643	.094	.0228	.386
	-15.87	-2.34	-.275	.0457	.084	.0248	.365
	-15.87	-1.25	-.225	.0403	.080	.0264	.360
	-15.87	-.72	-.204	.0382	.080	.0272	.364
	-15.88	.24	-.156	.0349	.075	.0281	.349
	-15.88	.77	-.136	.0344	.076	.0290	.353
	-15.89	1.86	-.085	.0313	.071	.0296	.338
	-15.92	4.13	.023	.0313	.067	.0308	.298
	-15.93	6.36	.141	.0414	.054	.0314	.276
	-15.96	8.52	.249	.0604	.048	.0289	.245
	-15.95	10.71	.363	.0932	.043	.0295	.254
	-15.92	12.94	.513	.1472	.029	.0322	.294
1.30	-15.76	.42	-.091	.0367	.060	.0276	.435
	-15.76	.95	-.068	.0361	.057	.0277	.433
	-15.77	2.00	-.020	.0354	.049	.0277	.420
	-15.82	4.16	.087	.0379	.032	.0268	.357
	-15.87	6.23	.182	.0482	.015	.0258	.295
	-15.92	8.30	.282	.0663	0	.0251	.246
	-15.96	10.30	.378	.0905	-.015	.0241	.197
	-16.01	12.36	.374	.1215	-.030	.0234	.141
	-16.08	14.41	.566	.1576	-.046	.0251	.061
	-16.12	16.51	.737	.2237	-.086	.0260	.012
1.53	-15.83	-2.04	-.164	.0397	.059	.0193	.420
	-15.84	-2.01	-.122	.0354	.052	.0196	.409
	-15.84	-.50	-.099	.0339	.049	.0197	.403
	-15.85	.43	-.058	.0311	.043	.0198	.388
	-15.86	.95	-.037	.0315	.039	.0199	.381
	-15.88	2.07	.007	.0315	.033	.0200	.355
	-15.92	4.17	.098	.0350	.017	.0194	.286
	-15.97	6.22	.189	.0454	.003	.0191	.228
	-16.00	8.21	.270	.0604	-.010	.0186	.176
	-16.04	10.27	.359	.0835	-.023	.0181	.124
	-16.08	12.34	.440	.1120	-.035	.0181	.077
	-16.11	14.39	.517	.1454	-.046	.0182	.025
	-16.14	16.45	.595	.1855	-.055	.0185	-.018
1.70	-15.84	-4.08	-.222	.0501	.063	.0147	.398
	-15.86	-2.03	-.144	.0370	.051	.0153	.379
	-15.87	-1.01	-.105	.0326	.044	.0154	.363
	-15.88	-.48	-.083	.0307	.041	.0156	.351
	-15.90	.44	-.046	.0284	.035	.0158	.327
	-15.90	.96	-.025	.0279	.032	.0161	.319
	-15.92	2.06	.016	.0283	.025	.0163	.299
	-15.96	4.16	.099	.0323	.012	.0165	.243
	-15.99	6.21	.181	.0421	-.001	.0167	.191
	-16.13	8.20	.257	.0568	-.013	.0167	.140
	-16.06	10.25	.334	.0775	-.024	.0163	.093
	-16.10	12.31	.413	.1041	-.034	.0165	.047
	-16.13	14.36	.486	.1360	-.043	.0168	.003
	-16.16	16.42	.557	.1730	-.050	.0171	-.038

NACA

TABLE II.– CONTINUED

(h) Nominal δ, –20°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-21.38	-4.48	-.393	.0664	.085	.0292	.348
	-21.38	-2.36	-.307	.0519	.083	.0316	.346
	-21.38	-1.30	-.263	.0466	.082	.0325	.341
	-21.38	-.77	-.246	.0449	.082	.0335	.344
	-21.38	.17	-.204	.0415	.080	.0340	.340
	-21.39	.70	-.182	.0397	.079	.0343	.336
	-21.39	1.77	-.142	.0377	.080	.0354	.338
	-21.39	3.92	-.054	.0346	.077	.0374	.325
	-21.41	6.14	.044	.0369	.071	.0380	.293
	-21.42	8.34	.155	.0494	.066	.0379	.268
	-21.44	10.49	.260	.0707	.077	.0389	.244
	-21.45	12.63	.353	.0978	.066	.0328	.220
	-21.46	14.77	.454	.1340	.066	.0387	.191
	-21.48	16.94	.568	.1836	.065	.0403	.159
0.80	-21.31	-4.50	-.393	.0205	090	.0254	.383
	-21.32	-2.36	-.291	.0533	.083	.0277	.367
	-21.33	-1.28	-.242	.0463	.079	.0283	.354
	-21.33	-.75	-.223	.0461	.080	.0295	.361
	-21.33	.20	-.182	.0422	.079	.0306	.358
	-21.33	.73	-.158	.0395	.077	.0310	.352
	-21.34	1.83	-.112	.0376	.075	.0316	.345
	-21.35	3.98	-.019	.0371	.070	.0346	.338
	-21.37	6.26	.099	.0428	.063	.0352	.300
	-21.39	8.47	.221	.0606	.059	.0348	.267
	-21.40	10.63	.328	.0851	.046	.0350	.239
	-21.42	12.79	.431	.1203	.047	.0311	.220
	-21.43	14.98	.556	.1689	.040	.0335	.208
0.90	-21.23	-4.52	-.415	.0797	.108	.0258	.456
	-21.24	-2.38	-.319	.0647	.102	.0302	.467
	-21.25	-1.29	-.263	.0564	.096	.0311	.453
	-21.26	-.75	-.236	.0518	.092	.0311	.438
	-21.25	.19	-.194	.0495	.091	.0327	.443
	-21.26	.73	-.175	.0497	.091	.0338	.443
	-21.26	1.81	-.123	.0453	.087	.0351	.437
	-21.28	4.03	-.011	.0441	.077	.0369	.405
	-21.32	6.32	.114	.0499	.063	.0362	.342
	-21.36	8.51	.243	.0669	.049	.0331	.283
	-21.37	10.69	.356	.0995	.045	.0300	.267
1.30	-21.19	4.15	.054	.0470	.044	.0326	.439
	-21.23	6.23	.153	.0557	.028	.0319	.385
	-21.27	8.29	.251	.0721	.013	.0310	.337
	-21.31	10.35	.342	.0946	-.002	.0297	.289
	-21.36	12.35	.440	.1233	-.016	.0301	.234
	-21.43	14.40	.538	.1580	-.034	.0297	.153
	-21.45	16.50	.700	.2220	-.070	.0338	.125
1.53	-21.17	1.99	-.013	.0417	.044	.0256	.437
	-21.23	4.16	.078	.0423	.027	.0242	.360
	-21.29	6.22	.161	.0506	.013	.0236	.302
	-21.33	8.28	.248	.0660	0	.0233	.252
	-21.36	10.27	.330	.0870	-.011	.0229	.220
	-21.40	12.33	.408	.1128	-.023	.0225	.173
	-21.46	14.37	.480	.1425	-.034	.0218	.117
	-21.49	16.45	.574	.1861	-.045	.0226	.077
1.70	-21.21	.95	-.041	.0382	.040	.0208	.396
	-21.20	2.00	-.004	.0392	.036	.0214	.394
	-21.27	4.15	.080	.0397	.021	.0209	.319
	-21.32	6.21	.159	.0475	.008	.0208	.268
	-21.37	8.26	.237	.0616	-.004	.0206	.217
	-21.40	10.25	.310	.0805	-.014	.0205	.179
	-21.44	12.30	.388	.1058	-.025	.0206	.139
	-21.48	14.36	.461	.1358	.034	.0207	.088
	-21.52	16.41	.531	.1709	.042	.0208	.845

NACA

TABLE II.– CONCLUDED

(i) Nominal δ, –25°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	–25.92	–4.48	–.402	.0756	.088	.0301	.383	1.70	–25.71	–1.00	–.135	.0515	.061	.0238	.468
	–25.93	–2.36	–.309	.0565	.084	.0319	.373		–25.72	–.50	–.114	.0485	.057	.0237	.451
	–25.93	–1.29	–.260	.0529	.081	.0322	.361		–25.74	.42	–.076	.0449	.050	.0239	.427
	–25.93	–.77	–.249	.0524	.083	.0338	.371		–25.74	.94	–.057	.0441	.047	.0241	.420
	–25.94	.17	–.204	.0476	.073	.0338	.358		–25.75	1.99	–.018	.0439	.042	.0243	.414
	–25.94	.70	–.185	.0463	.080	.0341	.355		–25.81	4.15	.067	.0444	.027	.0244	.351
	–25.94	1.77	–.145	.0436	.080	.0352	.352		–25.86	6.21	.148	.0512	.014	.0242	.297
	–25.95	3.91	–.058	.0405	.076	.0364	.337		–25.90	8.25	.228	.0649	.002	.0244	.254
	–25.95	6.13	.029	.0446	.076	.0409	.340		–25.93	10.25	.303	.0833	–.008	.0240	.216
	–25.96	8.31	.138	.0545	.069	.0405	.312		–25.95	12.30	.380	.1092	–.018	.0242	.190
	–25.97	10.47	.244	.0755	.067	.0415	.295		–25.98	14.36	.454	.1388	–.028	.0241	.152
	–25.98	12.61	.343	.1038	.069	.0400	.274		–26.02	16.41	.522	.1729	–.035	.0241	.109
	–25.99	14.76	.441	.1395	.070	.0411	.257								
	–26.00	16.92	.548	.1859	.070	.0429	.239								

NOTE: No data obtained for Mach numbers of 0.80, 0.90, 1.30, and 1.53.

TABLE III.- AERODYNAMIC CHARACTERISTICS OF A TRIANGULAR WING FOR VARIOUS FLAP ANGLES FOR MACH NUMBERS FROM 0.60 TO 1.70. DATA FOR ONE FLAP. CONSTANT-PERCENT-CHORD FLAP, TRUE-CONTOUR PROFILE; $R = 3.0 \times 10^6$

(a) Nominal δ, 5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	4.69	-4.25	-.137	.0140	-.011	.0077	-.027
	4.68	-2.09	-.041	.0085	-.016	.0079	-.037
	4.68	-.91	.004	.0083	-.018	.0079	-.041
	4.68	-.38	.024	.0081	-.019	.0080	-.042
	4.68	.49	.070	.0094	-.020	.0080	-.046
	4.67	1.04	.094	.0102	-.021	.0079	-.051
	4.67	2.12	.138	.0126	-.023	.0077	-.053
	4.67	4.26	.233	.0219	-.028	.0076	-.063
	4.66	6.39	.333	.0380	-.033	.0065	-.073
	4.66	8.54	.438	.0655	-.037	.0059	-.084
	4.65	10.69	.539	.0991	-.033	.0062	-.099
	4.64	12.81	.621	.1389	-.033	.0056	-.121
	4.62	14.97	.727	.1899	-.036	.0054	-.153
	4.61	17.11	.830	.2481	-.038	.0065	-.181
0.80	4.68	-4.30	-.147	.0159	-.010	.0083	-.033
	4.67	-2.11	-.042	.0087	-.018	.0086	-.046
	4.67	-1.02	.006	.0083	-.020	.0084	-.048
	4.67	-.47	.030	.0089	-.022	.0088	-.051
	4.66	.52	.078	.0095	-.024	.0088	-.055
	4.66	1.07	.103	.0104	-.025	.0089	-.057
	4.66	2.15	.150	.0137	-.028	.0084	-.060
	4.65	4.30	.252	.0246	-.035	.0083	-.070
	4.65	6.46	.366	.0444	-.043	.0080	-.081
	4.64	8.66	.492	.0757	-.053	.0083	-.098
	4.63	10.81	.588	.1124	-.052	.0154	-.114
	4.61	12.97	.696	.1597	-.060	.0165	-.138
	4.56	15.06	.751	.2010	-.054	.0046	-.221
	4.52	17.26	.882	.2746	-.008	.0051	-.274
0.90	4.67	-4.32	-.156	.0172	-.011	.0089	-.041
	4.66	-2.12	-.042	.0094	-.020	.0092	-.051
	4.66	-.91	.010	.0089	-.024	.0092	-.056
	4.66	-.37	.034	.0092	-.026	.0095	-.058
	4.65	.54	.086	.0106	-.030	.0098	-.065
	4.65	1.07	.110	.0120	-.031	.0097	-.066
	4.65	2.17	.163	.0151	-.035	.0093	-.072
	4.64	4.35	.272	.0778	-.044	.0084	-.079
	4.63	6.51	.393	.0506	-.055	.0065	-.093
	4.61	8.70	.528	.0867	-.076	.0083	-.131
	4.55	10.90	.673	.1384	-.106	.0072	-.211
1.30	4.65	-4.06	-.162	.0232	.013	.0053	-.053
	4.63	-2.10	-.072	.0160	-.002	.0055	-.084
	4.61	-1.05	-.025	.0144	-.009	.0057	-.101
	4.61	-.52	-.001	.0140	-.012	.0056	-.105
	4.60	.42	.043	.0146	-.018	.0059	-.117
	4.59	.95	.069	.0156	-.022	.0060	-.124
	4.57	2.00	.116	.0188	-.029	.0061	-.138
	4.56	4.05	.210	.0290	-.044	.0064	-.163
	4.54	6.10	.303	.0451	-.057	.0065	-.191
	4.51	8.16	.398	.0690	-.071	.0067	-.223
	4.48	10.21	.487	.0986	-.084	.0065	-.259
	4.45	12.28	.577	.1389	-.096	.0060	-.294
1.53	4.67	-4.06	-.153	.0229	.014	.0039	-.032
	4.64	-2.10	-.071	.0156	.001	.0043	-.063
	4.63	-1.04	-.027	.0137	-.006	.0044	-.079
	4.62	-.42	-.005	.0135	-.009	.0044	-.086
	4.61	.42	.039	.0143	-.015	.0046	-.100
	4.60	.95	.063	.0150	-.019	.0047	-.108
	4.59	2.00	.105	.0177	-.025	.0050	-.124
	4.56	4.05	.191	.0280	-.039	.0053	-.152
	4.54	6.10	.275	.0431	-.051	.0058	-.181
	4.51	8.15	.357	.0644	-.063	.0060	-.211
	4.48	10.21	.435	.0908	-.073	.0062	-.243
	4.45	12.25	.509	.1222	-.084	.0065	-.275
	4.42	14.31	.583	.1594	-.093	.0068	-.309
	4.39	16.36	.651	.2011	-.101	.0078	-.343
1.70	4.68	-4.05	-.143	.0225	.014	.0031	-.025
	4.65	-1.98	-.063	.0153	.001	.0038	-.056
	4.64	-1.04	-.026	.0137	-.004	.0040	-.070
	4.63	-.51	-.006	.0134	-.007	.0040	-.077
	4.62	.43	.035	.0135	-.013	.0044	-.091
	4.61	.95	.056	.0144	-.017	.0043	-.099
	4.60	1.99	.097	.0174	-.023	.0048	-.113
	4.58	4.05	.177	.0265	-.035	.0054	-.141
	4.55	6.09	.256	.0410	-.047	.0059	-.168
	4.53	8.14	.331	.0605	-.057	.0062	-.195
	4.50	10.19	.403	.0851	-.066	.0066	-.226
	4.47	12.24	.471	.1142	-.075	.0069	-.225
	4.44	14.28	.538	.1482	-.083	.0073	-.287
	4.42	16.34	.601	.1861	-.088	.0076	-.317

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TABLE III.– CONTINUED

(b) Nominal δ, 0°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	.16	-4.22	-.198	.0162	.008	-.0006	.020	1.30	.20	-4.06	-.191	.0247	.028	-.0003	.058
	.16	-2.08	-.103	.0087	.003	-.0006	.010		.17	-2.01	-.097	.0160	.013	-.0003	.027
	.15	-1.11	-.060	.0071	.001	-.0006	.003		.16	-.96	-.051	.0135	.006	0	.014
	.15	-.56	-.037	.0066	0	-.0007	.003		.16	-.43	-.029	.0127	.003	0	.008
	.15	.41	.009	.0069	-.001	-.0007	-.001		.15	.41	.016	.0124	-.003	.0003	-.005
	.15	.95	.030	.0074	-.002	-.0007	-.006		.14	.94	.039	.0129	-.006	.0002	-.010
	.14	2.03	.076	.0088	-.004	-.0008	-.010		.13	1.99	.087	.0155	-.013	.0003	-.025
	.14	4.18	.167	.0150	-.009	-.0010	-.018		.10	4.05	.181	.0245	-.028	.0003	-.055
	.14	6.32	.267	.0295	-.014	-.0014	-.028		.07	6.11	.277	.0397	-.043	.0005	-.088
	.13	8.47	.371	.0541	-.019	-.0020	-.039		.04	8.17	.372	.0626	-.055	.0006	-.124
	.12	10.59	.463	.0846	-.017	-.0014	-.049		.01	10.22	.466	.0921	-.069	.0004	-.163
	.11	12.74	.564	.1237	-.017	-.0008	-.073		-.02	12.28	.556	.1279	-.083	-.0003	-.202
	.10	14.92	.684	.1764	-.020	-.0001	-.103								
	.09	17.06	.778	.2304	-.022	.0001	-.125	1.53	.20	-4.05	-.173	.0237	.026	-.0001	.062
									.18	-2.00	-.090	.0152	.013	.0002	.031
0.80	.16	-4.26	-.209	.0177	.012	-.0004	.019		.16	-.95	-.047	.0128	.006	.0003	.016
	.15	-2.10	-.106	.0090	.004	-.0003	.007		.16	-.43	-.085	.0124	.003	.0005	.007
	.15	-1.01	-.059	.0074	.002	-.0003	.002		.14	.42	.015	.0124	-.003	.0006	-.007
	.15	-.56	-.036	.0069	0	-.0002	0		.14	.94	.036	.0128	-.006	.0006	-.014
	.15	.42	.012	.0070	-.002	-.0002	-.004		.12	1.99	.079	.0150	-.013	.0007	-.028
	.14	.96	.035	.0073	-.002	-.0002	-.008		.10	4.05	.165	.0234	-.026	.0010	-.059
	.14	2.06	.083	.0092	-.005	-.0003	-.011		.07	6.10	.248	.0371	-.038	.0014	-.088
	.14	4.22	.184	.0174	-.013	-.0003	-.019		.04	8.15	.326	.0563	-.049	.0017	-.120
	.13	6.39	.297	.0345	-.021	-.0009	-.030		.01	10.20	.410	.0826	-.060	.0018	-.054
	.12	8.56	.408	.0606	-.026	-.0020	-.039		-.02	12.26	.489	.1139	-.070	.0020	-.190
	.10	10.72	.510	.0951	-.027	-.0021	-.069		-.05	14.30	.560	.1492	-.080	.0024	-.229
	.07	12.88	.609	.1379	-.029	0	-.121		-.09	16.36	.631	.1901	-.088	.0028	-.267
	.04	15.04	.716	.1899	-.038	-.0002	-.160								
	.02	17.22	.836	.2556	-.049	.0005	-.194	1.70	.20	-4.05	-.158	.0232	.023	-.0002	.051
									.17	-1.99	-.082	.0151	.012	.0003	.028
0.90	.16	-4.28	-.217	.0200	.015	-.0005	.015		.16	-.94	-.042	.0128	.006	.0005	.015
	.15	-2.11	-.111	.0098	.006	-.0003	.005		.16	-.43	-.022	.0121	.003	.0007	.006
	.15	-1.02	-.060	.0080	.002	-.0001	0		.14	.42	.015	.0121	-.003	.0010	-.007
	.15	-.46	-.036	.0072	.001	-.0001	-.003		.14	.94	.035	.0126	-.006	.0010	-.014
	.15	.43	.014	.0074	-.002	0	-.005		.12	1.98	.075	.0148	-.012	.0012	-.029
	.15	.98	.038	.0075	-.003	-.0001	-.006		.10	4.04	.153	.0223	-.024	.0018	-.057
	.14	2.07	.090	.0094	-.007	-.0001	-.008		.07	6.09	.231	.0332	-.035	.0022	-.087
	.14	4.25	.201	.0192	-.017	-.0004	-.017		.05	8.13	.306	.0531	-.045	.0028	-.117
	.13	6.42	.316	.0329	-.026	-.0013	-.029		.02	10.19	.384	.0775	-.055	.0033	-.149
	.12	8.61	.438	.0687	-.038	-.0048	-.049		-.01	12.23	.454	.1051	-.064	.0038	-.183
	.10	10.81	.576	.1135	-.055	-.0075	-.071		-.04	14.28	.520	.1385	-.072	.0042	-.216
	.08	12.98	.696	.1655	-.076	-.0093	-.103		-.07	16.33	.582	.1752	-.078	.0046	-.250

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TABLE III.– CONTINUED

(c) Nominal δ, -1.0°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-.99	-4.23	-.204	.0169	.012	-.0033	.019
	-1.00	-2.08	-.107	.0092	.006	-.0029	.007
	-1.00	-1.01	-.064	.0076	.004	-.0032	.006
	-1.00	-.47	-.042	.0075	.004	-.0033	.006
	-1.00	.50	0	.0074	.003	-.0034	.001
	-1.00	1.04	.025	.0079	.002	-.0033	-.003
	-1.00	2.12	.072	.0096	0	-.0036	-.007
	-1.01	4.18	.156	.0151	-.005	-.0036	-.015
	-1.01	6.31	.261	.0286	-.011	-.0042	-.025
	-1.02	8.46	.364	.0534	-.015	-.0046	-.036
	-1.03	10.60	.458	.0838	-.013	-.0038	-.051
	-1.04	12.76	.567	.1245	-.014	-.0033	-.076
	-1.05	14.90	.665	.1708	-.017	-.0026	-.102
	-1.07	17.07	.778	.2298	-.018	-.0019	-.131
0.80	-.99	-4.26	-.217	.0193	.016	-.0033	.022
	-.99	-2.11	-.116	.0104	.009	-.0032	.011
	-.99	-1.02	-.066	.0078	.006	-.0032	.008
	-1.00	-.46	-.044	.0075	.005	-.0032	.006
	-1.00	.50	.004	.0074	.003	-.0032	.001
	-1.00	1.06	.027	.0080	.002	-.0030	.001
	-1.00	2.15	.077	.0095	-.001	-.0034	-.004
	-1.01	4.21	.175	.0169	-.008	-.0032	-.015
	-1.02	6.38	.285	.0332	-.016	-.0035	-.028
	-1.02	8.53	.390	.0578	-.021	-.0048	-.036
	-1.04	10.68	.487	.0906	-.024	-.0030	-.068
	-1.07	12.83	.584	.1317	-.024	-.0021	-.113
	-1.11	15.02	.705	.1868	-.035	-.0024	-.163
	-1.13	17.17	.808	.2463	-.045	-.0015	-.193
0.90	-.99	-4.29	-.228	.0213	.021	-.0034	.019
	-.99	-2.13	-.120	.0107	.011	-.0032	.008
	-1.00	-1.04	-.072	.0083	.008	-.0033	.005
	-1.00	-.48	-.045	.0081	.006	-.0032	.004
	-1.00	.51	.004	.0079	.004	-.0032	.003
	-1.00	1.06	.028	.0080	.002	-.0033	.001
	-1.00	2.15	.080	.0100	-.001	-.0033	-.002
	-1.01	4.24	.190	.0186	-.012	-.0034	-.014
	-1.02	6.42	.309	.0371	-.022	-.0040	-.024
	-1.03	8.61	.435	.0681	-.035	-.0071	-.046
	-1.05	10.81	.576	.1135	-.057	-.0105	-.072
1.30	-.93	-4.06	-.198	.0250	.032	-.0022	.080
	-.96	-2.00	-.104	.0161	.017	-.0019	.050
	-.97	-.96	-.057	.0136	.010	-.0018	.034
	-.98	-.44	-.034	.0129	.007	-.0017	.028
	-.99	.52	.011	.0130	0	-.0015	.015
	-.99	.95	.032	.0133	-.003	-.0014	.010
	-1.00	1.99	.078	.0153	-.009	-.0014	-.002
	-1.03	4.06	.171	.0236	-.024	-.0013	-.037
	-1.06	6.11	.266	.0384	-.038	-.0012	-.069
	-1.09	8.17	.357	.0598	-.051	-.0010	-.105
	-1.13	10.23	.451	.0888	-.064	-.0013	-.147
	-1.16	12.28	.539	.1231	-.078	-.0018	-.188
1.53	-.93	-4.16	-.176	.0247	.029	-.0018	.081
	-.96	-2.01	.093	.0158	.015	-.0015	.050
	-.97	-.96	.050	.0133	.009	-.0012	.034
	-.98	-.42	.027	.0129	.005	-.0011	.024
	-.99	.42	.012	.0133	-.001	-.0009	.006
	-1.00	.94	.032	.0138	-.004	-.0009	0
	-1.01	1.99	.075	.0154	-.010	-.0008	-.015
	-1.04	4.04	.160	.0239	-.023	-.0005	-.046
	-1.07	6.06	.246	.0375	-.036	-.0001	-.077
	-1.10	8.15	.324	.0565	-.047	-.0002	-.109
	-1.13	10.20	.407	.0824	-.058	.0002	-.144
	-1.16	12.26	.484	.1130	-.068	.0003	-.180
	-1.19	14.30	.551	.1167	-.027	.0004	-.217
	-1.23	16.35	.622	.1873	-.085	.0013	-.258
1.70	-.93	-4.04	-.163	.0241	.026	-.0019	.076
	-.96	-1.99	-.086	.0155	.014	-.0014	.044
	-.97	-.95	-.046	.0132	.008	-.0011	.031
	-.98	-.42	-.025	.0124	.005	-.0009	.023
	-.99	.42	.013	.0122	-.001	-.0006	.008
	-1.00	.94	.032	.0126	-.004	-.0006	.001
	-1.01	1.99	.072	.0146	-.016	-.0003	-.011
	-1.04	4.04	.150	.0224	-.021	.0002	-.041
	-1.06	6.09	.228	.0350	-.033	.0006	-.072
	-1.09	8.13	.304	.0531	-.043	.0012	-.103
	-1.12	10.09	.377	.0764	-.052	.0017	-.136
	-1.15	12.24	.446	.1042	-.062	.0021	-.170
	-1.18	14.29	.515	.1374	-.070	.0021	-.207
	-1.22	16.34	.576	.1733	-.076	.0030	-.244

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TABLE III.– CONTINUED

(d) Nominal δ, -2.5°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-2.08	-4.24	-.216	.0188	.015	-.0038	.044	1.30	-2.00	-4.06	-.204	.0258	.035	-.0025	.113
	-2.08	-2.10	-.121	.0106	.010	-.0038	.032		-2.03	-2.01	-.110	.0165	.021	-.0023	.084
	-2.08	-1.02	-.076	.0084	.009	-.0038	.030		-2.04	-.96	-.064	.0138	.014	-.0020	.069
	-2.09	-.49	-.053	.0076	.008	-.0039	.027		-2.05	-.43	-.039	.0129	.010	-.0016	.062
	-2.09	.40	-.009	.0074	.007	-.0039	.023		-2.06	.52	.007	.0129	.004	-.0016	.049
	-2.09	1.03	.013	.0077	.006	-.0039	.021		-2.06	1.04	.031	.0133	0	-.0016	.043
	-2.09	2.10	.059	.0087	.004	-.0041	.016		-2.07	1.99	.074	.0149	-.006	-.0016	.030
	-2.10	4.26	.155	.0149	-.001	-.0044	.008		-2.11	4.05	.167	.0228	-.020	-.0016	-.008
	-2.10	6.30	.248	.0268	-.006	-.0044	-.001		-2.13	6.11	.263	.0371	-.034	-.0014	-.036
	-2.11	8.45	.357	.0524	-.011	-.0049	-.016		-2.16	8.16	.356	.0584	-.048	-.0014	-.073
	-2.11	10.60	.458	.0835	-.010	-.0045	-.025		-2.20	10.22	.445	.0856	-.061	-.0015	-.114
	-2.13	12.84	.559	.1231	-.010	-.0035	-.049		-2.23	12.27	.537	.1186	-.074	-.0021	-.156
	-2.14	15.00	.670	.1721	-.013	-.0030	-.077								
	-2.15	17.13	.760	.2233	-.014	-.0025	-.101	1.53	-2.00	-4.05	-.182	.0246	.031	-.0018	.107
									-2.03	-2.00	-.098	.0158	.018	-.0015	.077
0.80	-2.07	-4.29	-.236	.0206	.021	-.0042	.044		-2.04	-.96	-.054	.0134	.012	-.0013	.067
	-2.08	-2.14	-.127	.0106	.014	-.0041	.032		-2.05	-.44	-.032	.0138	.008	-.0011	.053
	-2.08	-1.04	-.078	.0084	.010	-.0040	.027		-2.07	.52	.011	.0128	.002	-.0009	.034
	-2.08	-.49	-.056	.0082	.010	-.0041	.026		-2.07	.94	.030	.0130	-.001	-.0009	.030
	-2.09	.39	-.009	.0078	.008	-.0040	.022		-2.09	1.99	.073	.0150	-.008	-.0007	.015
	-2.09	1.04	.015	.0079	.007	-.0040	.021		-2.11	4.05	.156	.0228	-.020	-.0004	-.016
	-2.09	2.13	.064	.0089	.004	-.0041	.017		-2.14	6.10	.242	.0361	-.033	0	-.048
	-2.09	4.21	.167	.0161	-.003	-.0042	.008		-2.17	8.15	.325	.0553	-.044	.0003	-.081
	-2.10	6.37	.275	.0315	-.011	-.0045	-.004		-2.20	10.21	.404	.0802	-.055	.0004	-.117
	-2.11	8.54	.391	.0579	-.016	-.0061	-.012		-2.24	12.26	.480	.1099	-.065	.0005	-.153
	-2.13	10.70	.495	.0919	-.020	-.0078	-.044		-2.27	14.32	.554	.1448	-.075	.0009	-.193
	-2.16	12.85	.587	.1317	-.021	-.0025	-.090		-2.31	16.37	.620	.1834	-.082	.0011	-.234
	-2.19	15.00	.702	.1856	-.031	-.0029	-.135								
	-2.21	17.21	.824	.2506	-.043	-.0021	-.173	1.70	-2.01	-4.05	-.167	.0249	.028	-.0015	.099
									-2.04	-2.00	-.089	.0165	.016	-.0010	.068
0.90	-2.07	-4.31	-.248	.0229	.027	-.0045	.041		-2.05	-.95	-.050	.0140	.011	-.0008	.054
	-2.08	-2.14	-.134	.0110	.016	-.0043	.030		-2.06	-.43	-.029	.0133	.007	-.0006	.047
	-2.08	-1.04	-.082	.0086	.013	-.0043	.027		-2.07	.52	.012	.0131	.001	-.0003	.031
	-2.08	-.50	-.060	.0086	.012	-.0044	.025		-2.08	.95	.030	.0134	-.001	-.0003	.024
	-2.08	.49	-.009	.0076	.009	-.0042	.023		-2.09	2.00	.069	.0141	-.007	.0001	.010
	-2.08	1.04	.015	.0078	.008	-.0041	.022		-2.12	4.04	.147	.0224	-.019	.0002	-.018
	-2.09	2.14	.068	.0092	.004	-.0044	.017		-2.14	6.09	.224	.0346	-.030	.0007	-.049
	-2.09	4.23	.176	.0176	-.006	-.0043	.009		-2.17	8.14	.300	.0523	-.040	.0011	-.080
	-2.10	6.42	.298	.0356	-.0116	-.0048	-.001		-2.20	10.20	.372	.0750	-.049	.0014	-.111
	-2.12	8.60	.427	.0656	-.028	-.0079	-.024		-2.23	12.20	.442	.1022	-.058	.0019	-.148
	-2.14	10.79	.555	.1068	-.046	-.0109	-.057		-2.27	14.29	.511	.1346	-.066	.0024	-.186
									-2.30	16.34	.573	.1701	-.072	.0029	-.220

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TABLE III.– CONTINUED

(e) Nominal δ, -5°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-4.77	-4.28	-.244	.0212	.025	-.0083	.051	1.30	-4.66	-4.06	-.219	.0279	.043	-.0056	.160
	-4.78	-2.13	-.146	.0120	.020	-.0082	.040		-4.68	-2.00	-.125	.0179	.029	-.0055	.136
	-4.78	-1.06	-.104	.0099	.018	-.0083	.038		-4.69	-.97	-.079	.0151	.022	-.0051	.123
	-4.78	-.53	-.083	.0090	.017	-.0085	.034		-4.70	-.44	-.055	.0141	.018	-.0051	.116
	-4.78	.44	-.038	.0081	.016	-.0086	.030		-4.71	.51	-.007	.0138	.012	-.0047	.101
	-4.79	1.00	-.016	.0082	.015	-.0085	.028		-4.72	1.03	.015	.0141	.008	-.0047	.095
	-4.79	2.07	.032	.0090	.013	-.0086	.025		-4.73	2.08	.062	.0156	.002	-.0047	.080
	-4.79	4.23	.128	.0143	.008	-.0089	.015		-4.76	4.05	.154	.0235	-.013	-.0045	.051
	-4.80	6.38	.228	.0264	.002	-.0090	.004		-4.79	6.11	.249	.0368	-.027	-.0043	.017
	-4.80	8.52	.336	.0494	-.002	-.0094	-.007		-4.82	8.17	.342	.0575	-.040	-.0042	-.023
	-4.81	10.66	.423	.0788	-.002	-.0088	-.017		-4.86	10.22	.432	.0848	-.053	-.0045	-.069
	-4.82	12.81	.529	.1192	-.001	-.0073	-.034		-4.90	12.29	.518	.1180	-.066	-.0050	-.112
	-4.83	14.98	.647	.1693	-.004	-.0069	-.062								
	-4.85	17.14	.750	.2242	-.006	-.0064	-.087	1.53	-4.67	-4.05	-.195	.0266	.037	-.0043	.145
									-4.69	-2.00	-.109	.0171	.024	-.0039	.118
0.80	-4.76	-4.32	-.258	.0237	.032	-.0087	.058		-4.71	-.96	-.066	.0147	.018	-.0037	.102
	-4.77	-2.17	-.157	.0130	.025	-.0088	.046		-4.71	-.44	-.043	.0140	.014	-.0035	.094
	-4.77	-1.08	-.110	.0101	.022	-.0087	.041		-4.73	.41	0	.0136	.008	-.0034	.078
	-4.77	-.53	-.088	.0093	.021	-.0089	.041		-4.74	1.04	.021	.0140	.004	-.0033	.022
	-4.77	.34	-.040	.0084	.020	-.0089	.038		-4.75	.98	.062	.0153	-.002	-.0031	.057
	-4.78	.89	-.016	.0082	.018	-.0088	.035		-4.78	4.05	.146	.0231	-.015	-.0029	.025
	-4.78	2.08	.034	.0090	.015	-.0090	.031		-4.81	6.11	.231	.0358	-.027	-.0023	-.006
	-4.78	4.27	.137	.0156	.008	-.0089	.023		-4.84	8.15	.310	.0544	-.038	-.0021	-.041
	-4.79	6.45	.251	.0312	-.001	-.0091	.010		-4.87	10.21	.388	.0783	-.048	-.0018	-.080
	-4.80	8.60	.359	.0551	-.006	-.0103	0		-4.91	12.28	.466	.1080	-.059	-.0017	-.119
	-4.82	10.69	.475	.0893	-.011	-.0117	-.028		-4.94	14.31	.536	.1414	-.068	-.0013	-.158
	-4.84	12.82	.563	.1266	-.011	-.0061	-.067		-4.98	16.37	.605	.1806	-.076	-.0008	-.196
	-4.87	15.00	.675	.1779	-.020	-.0063	-.105								
	-4.89	17.16	.780	.2369	-.029	-.0055	-.132	1.70	-4.68	-4.05	-.177	.0265	.033	-.0038	.134
									-4.70	-1.99	-.100	.0176	.022	-.0033	.107
0.90	-4.75	-4.35	-.279	.0276	.041	-.0092	.067		-4.72	-.95	-.060	.0147	.016	-.0031	.092
	-4.76	-2.18	-.169	.0142	.031	-.0093	.051		-4.72	-.43	-.038	.0139	.013	-.0029	.084
	-4.77	-1.11	-.118	.0106	.027	-.0093	.047		-4.74	.51	.002	.0131	.007	-.0026	.070
	-4.77	-.56	-.093	.0099	.025	-.0094	.046		-4.74	1.04	.021	.0135	.004	-.0025	.062
	-4.77	.34	-.045	.0092	.023	-.0095	.044		-4.75	1.98	.059	.0152	-.002	-.0024	.050
	-4.77	.89	-.020	.0092	.022	-.0094	.042		-4.78	4.05	.138	.0222	-.014	-.0018	.020
	-4.77	2.09	.033	.0111	.018	-.0095	.039		-4.81	6.09	.213	.0338	-.025	-.0015	-.010
	-4.78	4.30	.149	.0172	.007	-.0096	.028		-4.84	8.15	.290	.0513	-.035	-.0009	-.045
	-4.79	6.47	.269	.0345	-.004	-.0096	.017		-4.87	10.19	.364	.0737	-.045	-.0003	-.083
	-4.80	8.56	.390	.0620	-.016	-.0117	-.006		-4.91	12.24	.433	.1008	-.053	.0001	-.117
	-4.83	10.76	.527	.1043	-.034	-.0147	-.044		-4.94	14.30	.500	.1322	-.061	.0006	-.153
	-4.85	12.94	.654	.1550	-.054	-.0173	-.074		-4.97	16.34	.561	.1672	-.067	.0011	-.189

NACA

TABLE III.– CONTINUED

(f) Nominal δ, –10°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-9.85	-4.33	-.300	.0285	.044	-.0167	.103	1.30	-9.68	-4.06	-.252	.0350	.059	-.0123	.259
	-9.85	-2.21	-.211	.0178	.040	-.0170	.095		-9.70	-2.00	-.156	.0233	.044	-.0119	.241
	-9.85	-1.16	-.167	.0145	.038	-.0171	.092		-9.71	-.98	-.111	.0202	.038	-.0116	.231
	-9.85	-.62	-.146	.0129	.038	-.0176	.091		-9.71	-.46	-.086	.0187	.034	-.0115	.225
	-9.86	.25	-.103	.0113	.037	-.0176	.088		-9.72	.39	-.040	.0180	.028	-.0112	.213
	-9.86	.80	-.080	.0106	.036	-.0176	.087		-9.73	.92	-.018	.0179	.024	-.0112	.207
	-9.86	1.87	-.034	.0099	.034	-.0177	.083		-9.74	2.06	.029	.0188	.017	-.0109	.193
	-9.86	4.14	.061	.0123	.029	-.0179	.074		-9.77	4.16	.126	.0253	.002	-.0105	.160
	-9.87	6.31	.162	.0219	.023	-.0179	.064		-9.79	6.11	.221	.0374	-.010	-.0102	.129
	-9.87	8.44	.264	.0400	.017	-.0177	.052		-9.82	8.17	.314	.0571	-.024	-.0097	.095
	-9.88	10.60	.374	.0685	.016	-.0174	.042		-9.85	10.22	.407	.0831	-.037	-.0097	.054
	-9.89	12.73	.466	.1032	.017	-.0151	.019		-9.89	12.28	.496	.1147	-.050	-.0103	.012
	-9.90	14.90	.576	.1482	.014	-.0145	-.001		-9.92	14.34	.591	.1544	-.069	-.0138	-.028
	-9.91	17.05	.681	.2006	.013	-.0139	-.019		-10.02	16.39	.689	.2022	-.087	-.0200	-.038
0.80	-9.82	-4.40	-.328	.0330	.055	-.0175	.122	1.53	-9.70	-4.05	-.217	.0331	.050	-.0090	.226
	-9.83	-2.24	-.223	.0193	.048	-.0174	.113		-9.72	-2.00	-.133	.0224	.037	-.0087	.206
	-9.83	-1.16	-.176	.0152	.047	-.0178	.108		-9.73	-.97	-.090	.0193	.030	-.0083	.193
	-9.83	-.63	-.156	.0136	.045	-.0180	.105		-9.74	-.44	-.068	.0179	.027	-.0082	.185
	-9.84	.25	-.109	.0118	.043	-.0182	.100		-9.75	.40	-.024	.0174	.020	-.0080	.171
	-9.84	.79	-.084	.0110	.042	-.0182	.098		-9.76	.93	0	.0168	.017	-.0028	.163
	-9.84	1.89	-.034	.0101	.037	-.0181	.091		-9.77	2.07	.040	.0184	.011	-.0027	.165
	-9.85	4.18	.070	.0139	.031	-.0185	.082		-9.79	4.05	.125	.0248	-.003	-.0024	.121
	-9.86	6.36	.182	.0255	.023	-.0183	.068		-9.82	6.10	.210	.0368	-.015	-.0069	.094
	-9.86	8.54	.293	.0475	.017	-.0187	.058		-9.85	8.15	.290	.0546	-.026	-.0064	.061
	-9.88	10.20	.409	.0779	.011	-.0190	.031		-9.88	10.21	.372	.0783	-.037	-.0061	.026
	-9.90	12.86	.507	.1156	.010	-.0138	.002		-9.91	12.25	.446	.1062	-.047	-.0057	-.011
	-9.92	15.04	.621	.1637	.001	-.0139	-.024		-9.94	14.31	.520	.1399	-.056	-.0053	-.046
	-9.93	17.15	.700	.2128	-.004	-.0132	-.043		-9.97	16.36	.587	.1774	-.063	-.0048	-.080
0.90	-9.78	-4.41	-.343	.0391	.066	-.0159	.169	1.70	-9.72	-4.04	-.196	.0326	.044	-.0078	.212
	-9.79	-2.25	-.231	.0230	.056	-.0166	.154		-9.73	-2.00	-.119	.0224	.033	-.0074	.190
	-9.80	-1.17	-.179	.0181	.051	-.0169	.144		-9.75	-.96	-.079	.0190	.027	-.0069	.175
	-9.80	-.63	-.158	.0167	.051	-.0176	.145		-9.75	-.44	-.058	.0177	.023	-.0068	.169
	-9.80	.35	-.110	.0141	.049	-.0178	.141		-9.76	.50	-.019	.0168	.018	-.0065	.156
	-9.80	.88	-.087	.0138	.049	-.0179	.140		-9.77	1.03	0	.0165	.015	-.0065	.149
	-9.81	2.00	-.035	.0128	.044	-.0181	.130		-9.78	2.07	.042	.0180	.009	-.0062	.136
	-9.82	4.00	.075	.0167	.034	-.0185	.111		-9.81	4.05	.120	.0242	-.003	-.0058	.108
	-9.83	6.40	.197	.0308	.025	-.0190	.095		-9.83	6.09	.197	.0341	-.014	-.0053	.081
	-9.85	8.59	.318	.0558	.014	-.0203	.074		-9.86	8.14	.271	.0513	-.024	-.0048	.049
	-9.86	10.79	.459	.0960	-.002	-.0242	.056		-9.88	10.18	.342	.0727	-.033	-.0040	.017
									-9.91	12.23	.410	.0978	-.042	-.0034	.015
									-9.94	14.28	.480	.1293	-.050	-.0029	-.046
									-9.97	16.33	.542	.1640	-.056	-.0024	-.080

NACA

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TABLE III.– CONTINUED

(g) Nominal δ, –15°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-14.72	-4.40	-.350	.0377	.062	-.0241	.152
	-14.73	-2.26	-.256	.0247	.056	-.0240	.142
	-14.73	-1.20	-.212	.0206	.055	-.0241	.141
	-14.73	-.67	-.192	.0192	.054	-.0241	.138
	-14.73	.20	-.149	.0164	.053	-.0245	.134
	-14.73	.73	-.127	.0156	.053	-.0247	.134
	-14.73	1.80	-.088	.0143	.051	-.0251	.139
	-14.74	4.06	.010	.0149	.047	-.0254	.122
	-14.74	6.22	.111	.0219	.040	-.0255	.109
	-14.75	8.41	.222	.0389	.035	-.0256	.101
	-14.75	10.55	.327	.0633	.033	-.0248	.091
	-14.76	12.70	.428	.0969	.035	-.0226	.071
	-14.77	14.85	.533	.1389	.031	-.0216	.051
	-14.78	17.01	.642	.1935	.030	-.0212	.032
0.80	-14.67	-4.22	-.358	.0428	.070	-.0220	.200
	-14.68	-2.27	-.255	.0278	.062	-.0217	.188
	-14.68	-1.21	-.211	.0240	.061	-.0225	.188
	-14.68	-.68	-.191	.0218	.061	-.0229	.183
	-14.68	.29	-.145	.0190	.058	-.0230	.183
	-14.68	.84	-.123	.0177	.057	-.0233	.178
	-14.69	1.92	-.077	.0167	.055	-.0238	.170
	-14.70	4.10	.019	.0174	.049	-.0248	.152
	-14.71	6.31	.131	.0270	.041	-.0248	.135
	-14.72	8.48	.244	.0467	.035	-.0253	.126
	-14.73	10.65	.389	.0753	.030	-.0259	.103
	-14.75	12.81	.458	.1098	.029	-.0212	.074
	-14.77	14.98	.572	.1557	.022	-.0216	.049
	-14.78	17.15	.675	.2091	.015	-.0221	.031
0.90	-14.62	-4.44	-.371	.0479	.081	-.0201	.254
	-14.63	-2.27	-.261	.0314	.020	-.0305	.236
	-14.63	-1.20	-.214	.0267	.068	-.0214	.234
	-14.63	-.67	-.197	.0258	.070	-.0225	.242
	-14.64	.31	-.145	.0223	.066	-.0222	.231
	-14.64	.85	-.121	.0208	.064	-.0223	.225
	-14.65	1.93	-.071	.0196	.060	-.0225	.217
	-14.66	4.08	.038	.0215	.050	-.0229	.196
	-14.68	6.17	.160	.0329	.039	-.0224	.169
	-14.68	8.57	.297	.0603	.032	-.0246	.172
1.30	-14.50	-4.06	-.274	.0443	.074	-.0178	.356
	-14.51	-2.00	-.182	.0319	.060	-.0177	.339
	-14.52	-.98	-.136	.0278	.053	-.0174	.330
	-14.52	-.46	-.112	.0263	.049	-.0174	.327
	-14.53	.39	-.068	.0249	.043	-.0170	.316
	-14.53	.91	-.045	.0245	.040	-.0170	.311
	-14.55	2.06	.001	.0247	.033	-.0167	.297
	-14.58	4.16	.101	.0298	.017	-.0158	.263
	-14.60	6.22	.198	.0416	.002	-.0149	.231
	-14.63	8.17	.290	.0590	-.011	-.0145	.195
	-14.67	10.23	.381	.0836	-.025	-.0143	.154
	-14.71	12.29	.472	.1143	-.039	-.0145	.110
1.53	-14.52	-4.04	-.234	.0400	.060	-.0132	.311
	-14.54	-1.99	-.151	.0289	.048	-.0130	.294
	-14.55	-.97	-.108	.0251	.041	-.0127	.282
	-14.55	-.45	-.086	.0237	.038	-.0125	.276
	-14.57	.37	-.045	.0224	.031	-.0123	.260
	-14.57	.92	-.023	.0221	.028	-.0122	.253
	-14.58	2.07	.019	.0230	.022	-.0120	.242
	-14.61	4.16	.007	.0286	.008	-.0114	.210
	-14.64	6.11	.190	.0391	-.004	-.0109	.182
	-14.67	8.16	.270	.0555	-.016	-.0102	.165
	-14.70	10.22	.352	.0779	-.027	-.0096	.126
	-14.74	12.26	.425	.1043	-.038	-.0090	.072
	-14.77	14.32	.499	.1368	-.047	-.0084	.031
	-14.81	16.37	.565	.1231	-.053	-.0079	-.006
1.70	-14.53	-4.04	-.213	.0391	.054	-.0116	.304
	-14.55	-1.99	-.136	.0284	.042	-.0112	.283
	-14.56	-.97	-.096	.0245	.036	-.0109	.269
	-14.57	-.44	-.076	.0232	.033	-.0107	.261
	-14.58	.40	-.037	.0216	.027	-.0104	.248
	-14.59	.92	-.016	.0214	.024	-.0103	.241
	-14.60	2.06	.023	.0222	.018	-.0100	.229
	-14.62	4.15	.105	.0275	.006	-.0095	.197
	-14.65	6.10	.181	.0371	-.005	-.0088	.168
	-14.68	8.14	.256	.0523	-.016	-.0082	.133
	-14.73	10.20	.329	.0726	-.025	-.0070	.096
	-14.75	12.24	.396	.0969	-.035	-.0063	.058
	-14.78	14.28	.460	.1256	-.042	-.0054	.023
	-14.81	16.34	.525	.1600	-.048	-.0056	-.012

NACA

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TABLE III.– CONTINUED

(h) Nominal δ, –20°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-19.55	-4.44	-.397	-.0506	-.077	-.0301	.481	1.30	-19.45	-4.05	-.295	.0562	.087	-.0226	.411
	-19.70	-2.30	-.298	.0355	.071	-.0294	.191		-19.46	-2.00	-.204	.0421	.072	-.0227	.398
	-19.70	-1.24	-.253	.0305	.070	-.0298	.181		-19.47	-.97	-.158	.0376	.065	-.0226	.394
	-19.70	-.71	-.232	.0280	.069	-.0300	.185		-19.47	-.46	-.136	.0359	.062	-.0228	.392
	-19.71	.15	-.190	.0253	.068	-.0301	.179		-19.47	.37	-.092	.0339	.056	-.0225	.385
	-19.71	.68	-.163	.0237	.066	-.0294	.177		-19.48	.91	-.069	.0331	.053	-.0223	.379
	-19.71	1.75	-.122	.0221	.064	-.0299	.168		-19.49	1.95	-.023	.0328	.046	-.0223	.368
	-19.72	3.90	-.035	.0212	.063	-.0318	.158		-19.52	4.15	.078	.0360	.030	-.0212	.334
	-19.72	6.17	.065	.0256	.057	-.0324	.147		-19.54	6.22	.178	.0470	.015	-.0201	.305
	-19.73	8.35	.173	.0389	.051	-.0325	.133		-19.57	8.28	.274	.0648	0	-.0194	.273
	-19.74	10.50	.283	.0623	.049	-.0321	.120		-19.60	10.23	.364	.0870	-.013	-.0188	.237
	-19.75	12.64	.374	.0912	.048	-.0240	.096		-19.64	12.29	.456	.1166	-.028	-.0187	.193
	-19.76	14.80	.485	.1310	.046	-.0280	.079		-19.68	14.34	.555	.1547	-.049	-.0218	.144
	-19.77	16.97	.601	.1822	.045	-.0279	.060		-19.78	16.40	.655	.1985	-.065	-.0273	.026
0.80	-19.63	-4.55	-.388	.0546	.081	-.0256	.255	1.53	-19.46	-4.05	-.256	.0495	.070	-.0177	.378
	-19.64	-2.30	-.286	.0379	.074	-.0256	.248		-19.47	-1.99	-.171	.0374	.058	-.0176	.366
	-19.64	-1.22	-.239	.0327	.072	-.0261	.244		-19.48	-.97	-.128	.0331	.051	-.0173	.356
	-19.64	-.69	-.219	.0306	.071	-.0264	.242		-19.49	-.46	-.107	.0316	.047	-.0170	.349
	-19.64	.17	-.172	.0273	.069	-.0262	.239		-19.50	.39	-.066	.0297	.041	-.0167	.334
	-19.65	.70	-.148	.0260	.067	-.0262	.232		-19.51	.90	-.046	.0293	.038	-.0164	.328
	-19.65	1.78	-.102	.0246	.065	-.0263	.224		-19.52	1.96	-.001	.0293	.032	-.0164	.318
	-19.66	3.99	-.010	.0248	.060	-.0278	.213		-19.55	4.15	.087	.0336	.018	-.0155	.286
	-19.67	6.28	.106	.0332	.053	-.0284	.199		-19.57	6.22	.173	.0438	.005	-.0149	.258
	-19.68	8.46	.222	.0512	.046	-.0286	.186		-19.60	8.16	.253	.0585	-.006	-.0141	.228
	-19.68	10.63	.337	.0793	.044	-.0295	.177		-19.63	10.21	.334	.0798	-.018	-.0131	.193
	-19.71	12.79	.430	.1102	.043	-.0243	.142		-19.66	12.26	.411	.1057	-.029	-.0125	.152
	-19.72	14.93	.522	.1498	.037	-.0260	.114		-19.70	14.32	.492	.1387	-.039	-.0117	.110
	-19.73	17.12	.643	.2106	.030	-.0282	.104		-19.74	16.37	.556	.1731	-.047	-.0112	.068
0.90	-19.59	-4.47	-.393	.0601	.091	-.0234	.298	1.70	-19.48	-4.04	-.229	.0478	.062	-.0154	.362
	-19.58	-2.30	-.295	.0454	.087	-.0258	.316		-19.49	-1.99	-.151	.0361	.052	-.0154	.348
	-19.59	-1.23	-.244	.0378	.082	-.0264	.308		-19.49	-.97	-.116	.0319	.046	-.0152	.341
	-19.59	-.70	-.224	.0349	.081	-.0259	.301		-19.50	-.46	-.095	.0301	.043	-.0149	.333
	-19.59	.40	-.173	.0321	.078	-.0257	.292		-19.51	.38	-.056	.0281	.037	-.0144	.318
	-19.61	.91	-.144	.0283	.072	-.0251	.274		-19.52	.91	-.037	.0273	.034	-.0143	.310
	-19.61	1.93	-.100	.0281	.072	-.0263	.275		-19.53	2.05	.003	.0279	.028	-.0142	.301
	-19.62	4.09	.005	.0281	.062	-.0268	.251		-19.56	4.15	.086	.0321	.015	-.0132	.270
	-19.64	6.33	.130	.0383	.051	-.0264	.229		-19.58	6.20	.165	.0413	.003	-.0123	.241
	-19.65	8.52	.255	.0601	.040	-.0261	.212		-19.61	8.15	.239	.0547	-.007	-.0116	.210
	-19.65	10.68	.351	.0887	.043	-.0216	.218		-19.64	10.20	.316	.0747	-.018	-.0103	.174
	-19.65	12.90	.507	.1412	.017	-.0331	.211		-19.68	12.24	.386	.0985	-.028	-.0092	.133
									-19.72	14.29	.458	.1284	-.037	-.0083	.094
									-19.75	16.34	.504	.1622	-.043	-.0079	.054

NACA

[redacted]

TABLE III.– CONCLUDED

(i) Nominal δ, –25°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-24.66	-4.47	-.415	.0607	.083	-.0318	.284
	-24.66	-2.33	-.319	.0445	.078	-.0318	.273
	-24.66	-1.26	-.273	.0396	.076	-.0315	.269
	-24.66	-.74	-.253	.0370	.076	-.0318	.266
	-24.66	.12	-.217	.0345	.076	-.0326	.266
	-24.67	.65	-.192	.0321	.075	-.0323	.262
	-24.67	1.72	-.147	.0289	.072	-.0316	.252
	-24.68	3.86	-.063	.0271	.070	-.0333	.242
	-24.68	6.13	.038	.0301	.064	-.0343	.230
	-24.69	8.31	.147	.0426	.060	-.0351	.219
	-24.69	10.46	.251	.0635	.057	-.0349	.210
	-24.70	12.61	.341	.0904	.062	-.0340	.192
	-24.71	14.76	.449	.1279	.061	-.0343	.168
	-24.73	16.92	.560	.1747	.061	-.0345	.144
0.80	-24.59	-4.49	-.409	.0632	.087	-.0286	.322
	-24.60	-2.32	-.305	.0463	.080	-.0287	.314
	-24.60	-1.25	-.256	.0403	.077	-.0287	.310
	-24.60	-.72	-.237	.0384	.078	-.0292	.314
	-24.60	.14	-.195	.0350	.076	-.0292	.307
	-24.60	1.00	-.173	.0328	.076	-.0292	.308
	-24.61	1.74	-.126	.0307	.073	-.0296	.300
	-24.61	3.93	-.029	.0292	.068	-.0310	.295
	-24.62	6.23	.079	.0359	.060	-.0313	.271
	-24.63	8.42	.196	.0522	.053	-.0310	.254
	-24.63	10.59	.303	.0778	.050	-.0317	.255
	-24.65	12.76	.413	.1104	.049	-.0261	.228
	-24.66	14.92	.516	.1516	.043	-.0268	.210
	-24.67	17.08	.625	.2074	.038	-.0291	.200
0.90	-24.53	-4.50	-.424	.0714	.100	-.0253	.383
	-24.54	-2.33	-.312	.0515	.089	-.0273	.364
	-24.54	-1.26	-.264	.0452	.087	-.0280	.365
	-24.55	-.71	-.237	.0420	.084	-.0280	.359
	-24.55	.17	-.193	.0386	.082	-.0283	.357
	-24.55	.69	-.169	.0367	.080	-.0283	.350
	-24.55	1.77	-.124	.0343	.079	-.0291	.349
	-24.57	3.95	-.018	.0326	.069	-.0300	.324
	-24.59	6.29	.105	.0417	.059	-.0302	.304
	-24.60	8.50	.238	.0629	.046	-.0293	.284
	-24.59	10.69	.362	.0969	.039	-.0319	.303
1.30	-24.39	-4.05	-.318	.0653	.095	-.0268	.481
	-24.40	-2.00	-.226	.0513	.081	-.0270	.470
	-24.40	-.97	-.181	.0461	.075	-.0270	.468
	-24.40	-.47	-.158	.0441	.071	-.0269	.464
	-24.41	.47	-.116	.0418	.065	-.0267	.459
	-24.41	.98	-.096	.0411	.063	-.0268	.458
	-24.41	2.03	-.050	.0408	.057	-.0274	.454
	-24.44	4.14	-.053	.0422	.040	-.0258	.417
	-24.47	6.22	.153	.0517	.025	-.0246	.385
	-24.50	8.28	.248	.0679	.010	-.0236	.350
	-24.53	10.34	.342	.0913	-.004	-.0231	.321
	-24.56	12.28	.432	.1180	-.018	-.0228	.278
	-24.60	14.34	.533	.1544	-.039	-.0257	.234
	-24.70	16.40	.629	.1958	-.056	-.0301	.118
1.53	-24.41	-4.04	-.269	.0595	.079	-.0215	.445
	-24.42	-1.99	-.189	.0470	.067	-.0215	.435
	-24.43	-.97	-.145	.0422	.060	-.0213	.422
	-24.43	-.46	-.124	.0403	.057	-.0211	.414
	-24.45	.47	-.084	.0381	.050	-.0207	.400
	-24.45	1.00	-.063	.0378	.047	-.0206	.396
	-24.45	1.96	-.020	.0377	.042	-.0206	.391
	-24.49	4.15	.069	.0403	.027	-.0194	.353
	-24.51	6.21	.156	.0494	.014	-.0185	.326
	-24.54	8.26	.239	.0645	.002	-.0176	.295
	-24.57	10.22	.317	.0837	-.009	-.0166	.265
	-24.60	12.27	.397	.1090	-.021	-.0156	.222
	-24.64	14.31	.471	.1386	-.031	-.0144	.175
	-24.69	16.37	.540	.1733	-.039	-.0136	.128
1.70	-24.43	-4.04	-.244	.0577	.070	-.0191	.423
	-24.44	-1.99	-.170	.0455	.060	-.0190	.410
	-24.45	-.97	-.129	.0408	.054	-.0187	.399
	-24.45	-.46	-.109	.0390	.051	-.0185	.392
	-24.47	.37	-.072	.0364	.045	-.0180	.373
	-24.47	.90	-.052	.0355	.041	-.0179	.369
	-24.48	1.94	-.013	.0361	.036	-.0179	.365
	-24.51	4.12	.070	.0388	.024	-.0168	.333
	-24.53	6.21	.151	.0472	.012	-.0158	.305
	-24.56	8.25	.227	.0605	.001	-.0148	.270
	-24.59	10.19	.299	.0779	-.010	-.0133	.236
	-24.63	12.24	.371	.1007	-.020	-.0123	.192
	-24.67	14.28	.441	.1286	-.029	-.0111	.151
	-24.71	16.34	.503	.1603	-.036	-.0102	.105

NACA

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF A TRIANGULAR WING FOR VARIOUS FLAP ANGLES FOR MACH NUMBERS FROM 0.60 TO 1.70. DATA FOR ONE FLAP. CONSTANT-PERCENT-CHORD FLAP, BLUNT PROFILE; $R = 3.0 \times 10^6$

(a) Nominal δ, 5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	5.19	-4.29	-.156	.0187	-.003	.0106	-.028
	5.18	-2.12	-.059	.0121	-.008	.0108	-.037
	5.18	-1.03	-.012	.0116	-.011	.0108	-.043
	5.18	-.45	.012	.0117	-.012	.0108	-.045
	5.18	.43	.056	.0124	-.015	.0107	-.049
	5.17	1.06	.078	.0130	-.016	.0108	-.053
	5.17	2.14	.127	.0147	-.018	.0109	-.059
	5.17	4.27	.216	.0228	-.023	.0108	-.070
	5.16	6.41	.312	.0375	-.027	.0100	-.080
	5.15	8.56	.415	.0612	-.030	.0093	-.091
	5.15	10.70	.510	.0945	-.027	.0093	-.108
	5.13	12.85	.618	.1377	-.030	.0083	-.139
	5.12	14.99	.724	.1861	-.033	.0087	-.170
	5.10	17.17	.841	.2474	-.036	.0092	-.202
0.80	5.18	-4.32	-.163	.0188	-.002	.0119	-.034
	5.17	-2.13	-.060	.0117	-.009	.0122	-.045
	5.17	-1.04	-.009	.0114	-.013	.0121	-.049
	5.16	-.42	.017	.0115	-.015	.0123	-.055
	5.16	.54	.064	.0126	-.018	.0122	-.061
	5.16	1.08	.088	.0133	-.020	.0122	-.066
	5.15	2.18	.136	.0157	-.023	.0121	-.073
	5.14	4.33	.239	.0258	-.031	.0125	-.087
	5.14	6.48	.345	.0437	-.037	.0123	-.096
	5.13	8.66	.458	.0725	-.043	.0142	-.112
	5.11	10.79	.538	.1042	-.034	.0091	-.136
	5.07	12.95	.645	.1493	-.042	.0079	-.196
	5.04	15.15	.775	.2099	-.056	.0073	-.254
	5.02	17.31	.880	.2719	-.065	.0069	-.286
0.90	5.17	-4.32	-.172	.0213	0	.0129	-.044
	5.16	-2.14	-.063	.0131	-.010	.0140	-.057
	5.16	-1.03	-.007	.0125	-.015	.0137	-.063
	5.15	-.48	.020	.0124	-.018	.0140	-.068
	5.15	.56	.071	.0134	-.022	.0138	-.075
	5.14	1.11	.099	.0147	-.025	.0142	-.084
	5.14	2.20	.149	.0171	-.028	.0136	-.088
	5.12	4.37	.263	.0293	-.040	.0146	-.113
	5.11	6.54	.375	.0575	-.047	.0127	-.123
	5.12	8.73	.490	.0835	-.051	.0111	-.120
1.30	5.15	-4.10	-.170	.0270	.019	.0077	-.061
	5.12	-2.04	-.076	.0189	.004	.0081	-.096
	5.10	-1.05	-.031	.0173	-.003	.0083	-.114
	5.10	-.51	-.006	.0168	-.007	.0084	-.121
	5.09	.47	.037	.0173	-.014	.0085	-.133
	5.08	.99	.063	.0181	-.017	.0086	-.139
	5.07	2.04	.109	.0209	-.025	.0087	-.152
	5.05	4.09	.202	.0307	-.040	.0089	-.181
	5.02	6.15	.298	.0468	-.055	.0091	-.211
	4.97	8.21	.397	.0702	-.069	.0092	-.270
	4.96	10.27	.491	.1007	-.084	.0089	-.282
	4.93	12.33	.584	.1375	-.098	.0084	-.323
1.53	5.17	-4.10	-.155	.0256	.018	.0023	-.039
	5.14	-2.02	-.070	.0179	.005	.0060	-.073
	5.12	-1.03	-.029	.0159	-.002	.0060	-.089
	5.12	-.52	-.007	.0163	-.005	.0060	-.096
	5.10	.47	.033	.0164	-.011	.0062	-.111
	5.10	1.00	.056	.0171	-.015	.0062	-.118
	5.08	2.04	.100	.0173	-.022	.0065	-.133
	5.06	4.09	.184	.0291	-.035	.0067	-.164
	5.03	6.15	.270	.0440	-.049	.0071	-.195
	5.00	8.20	.351	.0645	-.060	.0074	-.226
	4.97	10.26	.437	.0923	-.072	.0076	-.260
	4.94	12.31	.511	.1237	-.083	.0080	-.296
	4.91	14.37	.587	.1612	-.093	.0085	-.334
	4.87	16.42	.662	.2043	-.102	.0091	-.376
1.70	5.17	-4.09	-.145	.0271	.016	.0044	-.032
	5.14	-2.02	-.065	.0183	.004	.0048	-.064
	5.13	-1.03	-.028	.0163	-.002	.0051	-.079
	5.13	-.52	-.007	.0157	-.005	.0052	-.086
	5.12	.47	.032	.0157	-.011	.0055	-.097
	5.11	.99	.053	.0166	-.014	.0057	-.109
	5.09	2.04	.094	.0191	-.021	.0059	-.122
	5.07	4.08	.171	.0275	-.033	.0063	-.149
	5.05	6.14	.248	.0413	-.044	.0068	-.177
	5.02	8.18	.326	.0603	-.055	.0073	-.207
	4.99	10.24	.402	.0851	-.065	.0078	-.242
	4.96	12.28	.425	.1153	-.075	.0084	-.276
	4.93	14.34	.542	.1495	-.084	.0090	-.314
	4.90	16.39	.608	.1946	-.090	-.0096	-.350

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TABLE IV.– CONTINUED

(b) Nominal δ, 0°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	.31	-4.27	-.207	.0201	.015	.0020	.024	1.30	.35	-4.10	-.199	.0278	.035	.0017	.058
	.31	-2.13	-.115	.0122	.010	.0022	.015		.32	-2.05	-.106	.0185	.020	.0019	.025
	.31	-1.04	-.065	.0103	.007	.0022	.010		.31	-1.06	-.058	.0159	.013	.0022	.009
	.30	-.50	-.047	.0101	.006	.0022	.006		.30	-.48	-.034	.0155	.009	.0023	.003
	.30	.50	.004	.0101	.004	.0022	.001		.29	.52	.013	.0153	.002	.0023	-.008
	.30	1.05	.027	.0107	.003	.0022	-.003		.29	.99	.033	.0158	-.001	.0023	-.015
	.29	2.13	.074	.0117	0	.0021	-.010		.27	2.04	.081	.0181	-.008	.0024	-.031
	.29	4.22	.165	.0175	-.005	.0022	-.022		.24	4.10	.173	.0262	-.028	.0025	-.065
	.28	6.36	.261	.0291	-.010	.0023	-.034		.21	6.16	.271	.0411	-.039	.0026	-.104
	.28	8.50	.368	.0540	-.014	.0019	-.045		.18	8.22	.365	.0630	-.052	.0028	-.145
	.27	10.65	.464	.0844	-.012	.0025	-.056		.14	10.28	.465	.0933	-.067	.0025	-.191
	.26	12.81	.567	.1219	-.014	.0020	-.085		.10	12.34	.557	.1282	-.082	.0022	-.232
	.24	14.99	.693	.1736	-.019	.0027	-.118								
	.22	17.15	.806	.2317	-.021	.0032	-.151	1.53	.35	-4.10	-.180	.0275	.031	.0006	.058
									.32	-2.04	-.093	.0183	.017	.0010	.027
0.80	.32	-4.32	-.225	.0218	.021	.0021	.029		.31	-.99	-.050	.0155	.010	.0013	.011
	.31	-2.17	-.122	.0125	.014	.0027	.018		.30	-.46	-.028	.0146	.007	.0013	.003
	.31	-1.07	-.072	.0107	.010	.0028	.012		.29	.46	.016	.0146	0	.0015	-.012
	.31	-.52	-.046	.0100	.008	.0027	.008		.28	1.05	.035	.0151	-.003	.0015	-.020
	.30	.51	.001	.0101	.005	.0027	.001		.27	2.04	.078	.0170	-.010	.0017	-.037
	.30	1.05	.025	.0102	.003	.0027	-.003		.24	4.10	.164	.0255	-.023	.0020	-.071
	.29	2.15	.075	.0114	-.001	.0028	-.011		.21	6.15	.249	.0393	-.038	.0024	-.106
	.28	4.26	.176	.0187	-.008	.0031	-.025		.17	8.21	.334	.0591	-.048	.0027	-.142
	.28	6.42	.278	.0327	-.015	.0033	-.037		.14	10.26	.417	.0853	-.060	.0029	-.178
	.27	8.58	.392	.0586	-.021	.0039	-.049		.11	12.32	.495	.1164	-.071	.0032	-.218
	.25	10.74	.484	.0911	-.017	.0026	-.076		.07	14.37	.572	.1533	-.081	.0038	-.264
	.21	12.92	.604	.1362	-.028	.0023	-.139		.03	16.42	.639	.1931	-.089	.0044	-.305
	.17	15.11	.728	.1934	-.040	.0028	-.196								
	.15	17.28	.840	.2562	-.050	.0028	-.228	1.70	.35	-4.09	-.168	.0256	.028	.0001	.056
									.33	-2.05	-.088	.0171	.016	.0006	.029
0.90	.32	-4.37	-.257	.0269	.031	.0024	.035		.31	-.99	-.047	.0146	.010	.0010	.015
	.32	-2.19	-.140	.0139	.019	.0033	.024		.31	-.46	-.025	.0139	.006	.0010	.007
	.31	-1.09	-.082	.0118	.013	.0034	.016		.29	.42	.015	.0137	0	.0012	-.011
	.31	-.54	-.054	.0101	.011	.0032	.011		.29	.99	.033	.0144	-.003	.0015	-.016
	.30	.57	-.002	.0111	.007	.0033	.002		.27	2.03	.074	.0165	-.009	.0020	-.031
	.31	1.06	.026	.0112	.004	.0025	-.003		.24	4.09	.155	.0242	-.022	.0026	-.065
	.29	2.17	.083	.0127	-.001	.0035	-.011		.21	6.20	.235	.0374	-.034	.0032	-.098
	.28	4.27	.186	.0206	-.010	.0040	-.027		.18	8.20	.312	.0558	-.045	.0034	-.132
	.27	6.45	.298	.0384	-.019	.0044	-.044		.15	10.25	.387	.0794	-.054	.0032	-.166
	.26	8.64	.415	.0691	-.024	.0044	-.054		.12	12.30	.462	.1089	-.064	.0036	-.204
	.25	10.81	.525	.1053	-.033	.0039	-.077		.08	14.36	.532	.1426	-.073	.0042	-.243
									.04	16.42	.602	.1821	-.080	.0048	-.287

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TABLE IV.– CONTINUED

(c) Nominal δ, -1.0°

M	δ	α	C_L	C_D	C_m	C_l	C_b
0.60	-.58	-4.30	-.227	.0218	.020	.0002	.036
	-.59	-2.15	-.127	.0123	.015	.0005	.014
	-.59	-1.06	-.080	.0112	.012	.0004	.019
	-.59	-.53	-.055	.0107	.011	.0005	.016
	-.60	.43	-.012	.0105	.009	.0004	.008
	-.60	1.03	.011	.0106	.008	.0005	.006
	-.60	2.11	.056	.0109	.005	.0002	-.001
	-.61	4.25	.152	.0167	0	.0004	-.012
	-.61	6.34	.247	.0216	-.006	.0004	-.025
	-.62	8.49	.349	.0509	-.010	0	-.035
	-.62	10.63	.449	.0812	-.010	.0008	-.046
	-.64	12.85	.559	.1206	-.010	.0005	-.075
	-.65	14.96	.680	.1693	-.015	.0011	-.106
	-.67	17.13	.794	.2279	-.017	.0016	-.137
0.80	-.57	-4.33	-.239	.0229	.027	.0003	.042
	-.58	-2.17	-.134	.0128	.019	.0008	.030
	-.58	-1.02	-.084	.0108	.015	.0008	.024
	-.59	-.55	-.060	.0103	.014	.0009	.019
	-.59	.43	-.011	.0099	.010	.0009	.011
	-.60	1.03	.013	.0099	.009	.0007	.007
	-.60	2.13	.062	.0104	.005	.0008	-.001
	-.61	4.30	.165	.0177	-.003	.0011	-.014
	-.62	6.40	.270	.0318	-.010	.0013	-.028
	-.62	8.58	.384	.0572	-.016	.0011	-.037
	-.64	10.73	.476	.0889	-.012	.0012	-.063
	-.68	12.92	.603	.1361	-.024	.0011	-.123
	-.71	15.10	.723	.1914	-.035	.0013	-.176
	-.74	17.29	.846	.255	-.046	.0017	-.214
0.90	-.57	-4.36	-.261	.0268	.035	.0001	.048
	-.58	-2.20	-.147	.0142	.025	.0011	.037
	-.58	-1.10	-.091	.0119	.019	.0012	.028
	-.58	-.55	-.064	.0112	.017	.0012	.023
	-.59	.43	-.013	.0103	.012	.0012	.013
	-.59	1.03	.012	.0103	.010	.0012	.008
	-.60	2.14	.068	.0113	.005	.0012	0
	-.61	4.26	.174	.0185	-.004	.0018	-.015
	-.62	6.44	.286	.0354	-.013	.0018	-.027
	-.63	8.61	.396	.0641	-.016	.0027	-.046
	-.66	10.81	.522	.1048	-.027	.0023	-.081
1.30	-.53	-4.09	-.204	.0287	.039	.0006	.081
	-.56	-2.05	-.110	.0188	.023	.0009	.048
	-.57	-1.00	-.063	.0162	.016	.0011	.032
	-.58	-.47	-.038	.0150	.013	.0012	.026
	-.59	.46	.008	.0147	.006	.0012	.016
	-.59	.49	.031	.0150	.002	.0012	.010
	-.60	2.04	.076	.0168	-.004	.0013	-.005
	-.63	4.12	.109	.0247	-.020	.0013	-.040
	-.67	6.16	.267	.0396	-.035	.0015	-.078
	-.70	8.22	.363	.0609	-.049	.0016	-.119
	-.74	10.29	.464	.0908	-.064	.0015	-.164
	-.78	12.34	.556	.1243	-.078	.0011	-.211
	-.89	14.41	.685	.1765	-.116	-.0010	-.335
	-.93	16.49	.842	.2453	-.156	.0024	-.388
1.53	-.53	-4.10	-.181	.0276	.033	0	.081
	-.56	-2.04	-.096	.0182	.020	.0003	.046
	-.57	-.99	-.052	.0159	.013	.0006	.031
	-.58	-.48	-.029	.0151	.009	.0006	.022
	-.59	.52	.013	.0145	.003	.0008	.006
	-.60	1.05	.034	.0150	-.001	.0009	.001
	-.61	2.03	.075	.0165	-.007	.0009	-.015
	-.64	4.10	.159	.0243	-.020	.0012	-.050
	-.67	6.15	.247	.0378	-.034	.0016	-.084
	-.71	8.20	.329	.0572	-.046	.0026	-.119
	-.74	10.27	.414	.0833	-.057	.0022	-.158
	-.78	12.32	.495	.1144	-.068	.0026	-.200
	-.82	14.38	.570	.1506	-.078	.0030	-.246
	-.86	16.44	.644	.1918	-.087	.0036	-.291
1.70	-.53	-4.09	-.174	.0271	.031	-.0008	.079
	-.56	-2.04	-.091	.0176	.018	-.0001	.044
	-.57	-.99	-.050	.0151	.012	.0001	.030
	-.58	-.46	-.028	.0142	.008	.0002	.021
	-.60	.52	.011	.0139	.002	.0005	.005
	-.60	1.03	.029	.0143	-.001	.0007	-.002
	-.61	2.03	.069	.0160	-.007	.0008	-.016
	-.64	4.08	.149	.0237	-.020	.0014	-.049
	-.67	6.14	.227	.0362	-.031	.0019	-.082
	-.70	8.19	.301	.0543	-.042	.0024	-.116
	-.73	10.44	.383	.0802	-.052	.0028	-.154
	-.77	12.29	.456	.1075	-.062	.0034	-.193
	-.80	14.34	.523	.1406	-.071	.0037	-.232
	-.84	16.39	.587	.1788	-.077	.0041	-.272

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TABLE IV.– CONTINUED

(d) Nominal δ, −2.5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-2.82	-4.34	-.256	.0251	.030	-.0041	.059
	-2.82	-2.20	-.162	.0159	.025	-.0040	.051
	-2.83	-1.12	-.115	.0133	.022	-.0040	.043
	-2.83	-.59	-.093	.0130	.021	-.0040	.041
	-2.83	.38	-.049	.0116	.019	-.0038	.035
	-2.83	.92	-.024	.0114	.018	-.0040	.031
	-2.84	2.06	.023	.0118	.065	-.0039	.024
	-2.84	4.22	.119	.0159	.010	-.0039	.014
	-2.85	6.37	.215	.0263	.005	-.0038	.004
	-2.85	8.52	.320	.0478	0	-.0038	-.005
	-2.86	10.67	.428	.0797	.001	-.0026	-.017
	-2.87	12.81	.530	.1166	-.001	-.0027	-.043
	-2.89	14.98	.647	.1642	-.005	-.0021	-.072
	-2.90	17.17	.774	.2252	-.008	-.0013	-.103
0.80	-2.80	-4.38	-.275	.0274	.039	-.0046	.072
	-2.81	-2.23	-.175	.0161	.032	-.0041	.063
	-2.82	-1.14	-.121	.0131	.028	-.0041	.054
	-2.82	-.60	-.097	.0125	.026	-.0039	-.050
	-2.82	.37	-.051	.0113	.023	-.0041	.043
	-2.82	.91	-.026	.0110	.021	-.0040	.039
	-2.83	2.07	.026	.0114	.018	-.0039	.033
	-2.84	4.26	.129	.0165	.010	-.0037	.020
	-2.85	6.43	.237	.0295	.002	-.0033	.007
	-2.85	8.60	.352	.0328	-.003	-.0036	0
	-2.87	10.76	.454	.0851	-.002	-.0020	-.029
	-2.90	12.89	.575	.1293	-.013	-.0018	-.083
	-2.94	15.08	.701	.1856	-.026	-.0017	-.137
	-2.96	17.26	.823	.2500	-.038	-.0008	-.174
0.90	-2.79	-4.40	-.291	.0304	.047	-.0059	.082
	-2.80	-2.25	-.190	.0177	.041	-.0043	.074
	-2.80	-1.17	-.135	.0145	.036	-.0041	.066
	-2.81	-.61	-.107	.0133	.032	-.0040	.060
	-2.81	.37	-.058	.0116	.028	-.0041	.052
	-2.82	.91	-.031	.0111	.026	-.0041	.049
	-2.82	2.09	.026	.0112	.021	-.0039	.038
	-2.83	4.29	.137	.0177	.011	-.0034	.026
	-2.84	6.46	.251	.0329	.001	-.0027	.013
	-2.84	8.63	.366	.0606	-.005	-.0011	.008
1.30	-2.73	-4.10	-.226	.0318	.048	-.0026	.143
	-2.76	-2.05	-.130	.0208	.032	-.0022	.112
	-2.77	-1.01	-.083	.0177	.025	-.0020	.097
	-2.77	-.49	-.060	.0164	.022	-.0019	.092
	-2.78	.56	-.016	.0156	.015	-.0018	.080
	-2.79	1.03	.008	.0158	.012	-.0018	.023
	-2.80	2.09	.056	.0176	-.004	-.0017	.058
	-2.83	4.10	.146	.0243	-.010	-.0016	.022
	-2.86	6.16	.242	.0380	-.025	-.0015	.017
	-2.90	8.22	.338	.0589	-.040	-.0014	-.058
	-2.94	10.28	.437	.0871	-.054	-.0016	-.104
	-2.98	12.34	.529	.1209	-.068	-.0019	-.152
1.53	-2.74	-4.10	-.199	.0296	.040	-.0024	.129
	-2.77	-2.04	-.113	.0197	.026	-.0020	.097
	-2.78	-1.01	-.069	.0169	.019	-.0017	.082
	-2.79	-.48	-.047	.0160	.016	-.0016	.073
	-2.80	.52	-.005	.0152	.009	-.0014	.059
	-2.81	1.03	.016	.0154	.006	-.0013	.051
	-2.82	2.08	.059	.0168	-.001	-.0013	.036
	-2.85	4.09	.141	.0241	-.013	-.0010	.001
	-2.88	6.14	.224	.0359	-.026	-.0006	-.033
	-2.91	8.20	.310	.0550	-.038	-.0002	-.069
	-2.95	10.26	.399	.0803	-.050	0	-.111
	-2.99	12.31	.481	.1117	-.062	.0002	-.155
	-3.03	14.37	.555	.1478	-.072	.0007	-.200
	-3.07	16.43	.629	.1865	-.081	.0012	-.247
1.70	-2.74	-4.10	-.184	.0287	.036	-.0029	.123
	-2.77	-2.04	-.105	.0190	.024	-.0022	.091
	-2.78	-.99	-.064	.0161	.018	-.0019	.077
	-2.79	-.48	-.043	.0151	.014	-.0018	.069
	-2.80	.45	-.005	.0143	.008	-.0015	.054
	-2.81	1.03	.016	.0145	.005	-.0013	.047
	-2.82	2.08	.057	.0162	-.001	-.0011	.032
	-2.85	4.08	.134	.0227	-.013	-.0006	-.001
	-2.88	6.14	.213	.0349	-.025	-.0001	-.035
	-2.91	8.19	.292	.0521	-.036	.0006	-.070
	-2.95	10.25	.369	.0754	-.046	.0010	-.108
	-2.98	12.29	.444	.1035	-.056	.0015	-.146
	-3.02	14.35	.515	.1367	-.065	.0019	-.188
	-3.05	16.40	.582	.1743	-.071	.0024	-.230

NACA

TABLE IV.– CONTINUED

(e) Nominal δ, –5°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-4.76	-4.35	-.275	.0260	.037	-.0074	.080
	-4.77	-2.27	-.179	.0155	.032	-.0071	.069
	-4.77	-1.14	-.131	.0130	.029	-.0022	.063
	-4.77	-.60	-.106	.0122	.027	-.0020	.060
	-4.77	.34	-.065	.0118	.026	-.0023	.054
	-4.77	.89	-.042	.0106	.025	-.0072	.050
	-4.78	1.95	-.006	.0108	.022	-.0072	.045
	-4.78	4.19	.102	.0146	.017	-.0072	.032
	-4.79	6.33	.194	.0239	.011	-.0067	.021
	-4.79	8.50	.310	.0459	.006	-.0069	.010
	-4.80	10.64	.406	.0744	.007	-.0055	.001
	-4.81	12.78	.507	.1099	.006	-.0055	-.024
	-4.83	14.96	.634	.1590	.001	-.0047	-.056
	-4.84	17.13	.749	.2150	-.002	-.0040	-.086
0.80	-4.74	-4.40	-.290	.0294	.047	-.0081	.095
	-4.75	-2.25	-.195	.0168	.040	-.0077	.084
	-4.75	-1.17	-.143	.0133	.036	-.0076	.076
	-4.75	-.62	-.118	.0125	.035	-.0076	.072
	-4.76	.34	-.071	.0111	.031	-.0076	.064
	-4.76	.88	-.045	.0106	.029	-.0075	.060
	-4.77	2.03	.004	.0106	.026	-.0075	.054
	-4.77	4.23	.108	.0149	.018	-.0071	.039
	-4.78	6.41	.219	.0282	.011	-.0067	.028
	-4.79	8.57	.329	.0500	.005	-.0067	.019
	-4.81	10.75	.435	.0818	.005	-.0050	-.009
0.90	-4.71	-4.43	-.323	.0338	.062	-.0091	.131
	-4.72	-2.27	-.214	.0189	.052	-.0084	.112
	-4.73	-1.19	-.161	.0152	.048	-.0084	.106
	-4.74	-.64	-.129	.0131	.042	-.0082	.088
	-4.74	.33	-.082	.0118	.039	-.0083	.084
	-4.75	.87	-.054	.0110	.036	-.0081	.078
	-4.75	2.04	0	.0106	.031	-.0081	.069
	-4.76	4.27	.114	.0156	.021	-.0076	.054
	-4.77	6.43	.229	.0303	.011	-.0062	.040
	-4.79	8.62	.341	.0554	.005	-.0045	.017
	-4.82	10.29	.461	.0918	-.007	-.0040	.023
1.30	-4.64	-4.10	-.238	.0328	.054	-.0053	-.464
	-4.67	-2.04	-.141	.0213	.039	-.0049	-.467
	-4.68	-1.01	-.094	.0180	.031	-.0045	-.468
	-4.68	-.49	-.069	.0167	.028	-.0045	-.468
	-4.70	.56	-.025	.0156	.021	-.0044	-.470
	-4.70	1.03	-.001	.0156	.017	-.0044	-.470
	-4.71	2.08	.047	.0171	.010	-.0042	-.471
	-4.74	4.10	.141	.0240	-.006	-.0040	-.474
	-4.78	6.16	.235	.0374	-.020	-.0039	-.478
	-4.81	8.22	.330	.0611	-.035	-.0037	-.481
	-4.85	10.28	.431	.0862	-.049	-.0039	-.485
	-4.89	12.34	.521	.1190	-.063	-.0042	-.489
	-4.93	14.39	.621	.1604	-.085	-.0028	-.493
	-5.06	16.47	.774	.2245	-.121	-.0072	-.506
1.53	-4.66	-4.09	-.204	.0314	.044	-.0044	.167
	-4.68	-2.05	-.118	.0215	.030	-.0040	.135
	-4.70	-1.00	-.074	.0174	.023	-.0037	.120
	-4.70	-.48	-.051	.0163	.020	-.0036	.111
	-4.72	.56	-.012	.0151	.014	-.0034	.097
	-4.72	1.04	.011	.0152	.010	-.0033	.090
	-4.74	2.09	.055	.0168	.004	-.0032	.074
	-4.77	4.09	.138	.0236	-.010	-.0028	.040
	-4.80	6.15	.224	.0363	-.023	-.0025	.005
	-4.83	8.20	.305	.0544	-.035	-.0020	-.031
	-4.86	10.26	.390	.0796	-.046	-.0017	-.072
	-4.90	12.31	.473	.1102	-.058	-.0013	-.117
	-4.94	14.37	.550	.1460	-.068	-.0008	-.163
	-4.98	16.42	.623	.1865	-.077	-.0003	-.211
1.70	-4.66	-4.09	-.181	.0303	.038	-.0074	.154
	-4.69	-2.04	-.105	.0204	.027	-.0039	.124
	-4.70	-.94	-.064	.0171	.021	-.0030	.110
	-4.71	-.43	-.043	.0161	.017	-.0029	.102
	-4.72	.46	-.005	.0155	.011	-.0027	.087
	-4.73	1.03	.017	.0159	.008	-.0026	.079
	-4.74	2.09	.056	.0172	.002	-.0023	.064
	-4.77	4.08	.132	.0235	-.010	-.0019	.032
	-4.80	6.14	.209	.0349	-.021	-.0013	-.001
	-4.83	8.20	.285	.0517	-.032	-.0008	-.036
	-4.87	10.25	.363	.0743	-.042	-.0003	-.075
	-4.90	12.30	.433	.1015	-.051	.0002	-.116
	-4.94	14.36	.504	.1340	-.060	-.0007	-.158
	-4.98	16.42	.575	.1717	-.067	-.0013	-.202

NACA

TABLE IV.– CONTINUED

(f) Nominal δ, –10°

M	δ	α	C_L	C_D	C_m	C_l	C_h	M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-9.53	-4.41	-.334	.0350	.056	-.0168	.166	1.30	-9.39	-4.11	-.267	.0408	.071	-.0121	.267
	-9.54	-2.29	-.235	.0219	.050	-.0165	.156		-9.41	-2.05	-.172	.0281	.053	-.0116	.242
	-9.54	-1.22	-.190	.0178	.048	-.0167	.152		-9.42	-1.02	-.125	.0244	.048	-.0113	.230
	-9.54	-.69	-.168	.0169	.047	-.0166	.150		-9.43	-.50	-.102	.0229	.044	-.0113	.226
	-9.54	.32	-.125	.0142	.044	-.0166	.145		-9.43	.48	-.058	.0212	.038	-.0116	.216
	-9.54	.86	-.102	.0133	.044	-.0167	.140		-9.44	1.00	-.034	.0210	.034	-.0110	.210
	-9.55	1.94	-.055	.0126	.041	-.0165	.134		-9.45	2.06	.013	.0216	.027	-.0106	.196
	-9.55	4.11	.038	.0141	.036	-.0166	.124		-9.48	4.16	.113	.0272	.010	-.0101	.164
	-9.56	6.27	.137	.0213	.031	-.0163	.113		-9.50	6.16	.207	.0388	-.005	-.0098	.130
	-9.57	8.43	.246	.0382	.025	-.0154	.097		-9.54	8.27	.301	.0568	-.019	-.0098	.092
	-9.57	10.59	.354	.0652	.025	-.0144	.085		-9.57	10.28	.404	.0843	-.034	-.0093	.049
	-9.58	12.74	.458	.1017	.023	-.0137	.061		-9.61	12.34	.497	.1155	-.048	-.0096	.003
	-9.60	14.91	.577	.1489	.019	-.0129	.033		-9.66	14.40	.595	.1555	-.068	-.0129	-.049
	-9.61	17.07	.690	.2029	.016	-.0121	.007		-9.79	16.47	.712	.2068	-.082	-.0171	-.207
0.80	-9.49	-4.46	-.358	.0390	.069	-.0179	.195	1.53	-9.42	-4.09	-.238	.0386	.059	-.0097	.233
	-9.50	-2.32	-.256	.0246	.062	-.0175	.184		-9.44	-2.04	-.148	.0268	.044	-.0091	.212
	-9.50	-1.24	-.206	.0199	.059	-.0173	.177		-9.45	-1.01	-.104	.0230	.038	-.0089	.201
	-9.50	-.71	-.180	.0181	.057	-.0174	.173		-9.46	-.50	-.081	.0215	.034	-.0087	.195
	-9.51	.31	-.134	.0155	.054	-.0176	.166		-9.47	.43	-.038	.0202	.027	-.0084	.182
	-9.51	.85	-.112	.0144	.052	-.0177	.162		-9.47	.96	-.015	.0200	.024	-.0083	.176
	-9.52	1.94	-.061	.0129	.048	-.0177	.154		-9.48	2.08	.031	.0211	.017	-.0081	.162
	-9.52	4.14	.040	.0145	.042	-.0177	.142		-9.51	4.16	.123	.0233	.002	-.0075	.129
	-9.54	6.32	.149	.0242	.033	-.0167	.124		-9.54	6.15	.211	.0390	-.012	-.0072	.099
	-9.54	8.51	.273	.0459	.027	-.0168	.111		-9.57	8.20	.296	.0569	-.024	-.0067	.062
	-9.56	10.67	.373	.0728	.025	-.0137	.087		-9.60	10.26	.386	.0815	-.036	-.0061	.022
	-9.59	12.85	.494	.1117	.015	-.0124	.040		-9.64	12.32	.471	.1118	-.048	-.0051	-.023
	-9.62	15.05	.628	.1658	.004	-.0127	-.006		-9.68	14.38	.549	.1472	-.058	-.0052	-.023
	-9.64	17.24	.742	.2264	-.006	-.0128	-.034		-9.72	16.43	.628	.1888	-.067	-.0045	-.124
0.90	-9.45	-4.50	-.381	.0462	.086	-.0175	.246	1.70	-9.44	-4.09	-.209	.0367	.051	-.0088	.211
	-9.46	-2.33	-.266	.0260	.074	-.0172	.221		-9.45	-2.04	-.132	.0251	.039	-.0081	.191
	-9.47	-1.25	-.214	.0222	.068	-.0174	.211		-9.46	-1.01	-.090	.0213	.032	-.0078	.180
	-9.46	-.71	-.198	.0216	.072	-.0179	.230		-9.47	-.49	-.069	.0194	.029	-.0074	.171
	-9.47	.29	-.146	.0185	.065	-.0182	.212		-9.48	.47	-.031	.0127	.023	-.0072	.159
	-9.47	.84	-.122	.0169	.063	-.0186	.210		-9.48	.94	-.009	.0179	.019	-.0071	.155
	-9.48	1.92	-.070	.0155	.059	-.0187	.197		-9.50	2.07	.030	.0188	.013	-.0068	.138
	-9.50	4.13	.039	.0166	.048	-.0185	.166		-9.52	4.15	.114	.0249	0	-.0061	.113
	-9.50	6.37	.164	.0305	.042	-.0187	.168		-9.55	6.14	.191	.0354	-.012	-.0055	.083
	-9.52	8.55	.280	.0536	.033	-.0155	.145		-9.58	8.19	.268	.0511	-.023	-.0044	.048
	-9.55	10.73	.396	.0849	.020	-.0145	.102		-9.61	10.25	.345	.0731	-.033	-.0041	.011
									-9.65	12.29	.421	.1000	-.043	-.0036	-.029
									-9.68	14.35	.493	.1320	-.051	-.0031	-.069
									-9.72	16.40	.561	.1685	-.058	-.0026	-.116

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TABLE IV.– CONTINUED

(g) Nominal δ, –15°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-14.75	-4.45	-.390	.0445	.074	-.0255	.192
	-14.76	-2.34	-.291	.0300	.069	-.0253	.181
	-14.76	-1.28	-.248	.0252	.067	-.0254	.177
	-14.76	-.25	-.226	.0231	.066	-.0254	.174
	-14.77	.25	-.183	.0197	.064	-.0254	.167
	-14.77	.78	-.159	.0183	.063	-.0252	.163
	-14.77	1.86	-.114	.0162	.060	-.0251	.154
	-14.78	4.01	-.024	.0158	.057	-.0261	.148
	-14.78	6.18	.078	.0204	.051	-.0256	.136
	-14.79	8.36	.186	.0348	.044	-.0250	.122
	-14.79	10.33	.296	.0586	.042	-.0233	.111
	-14.80	12.67	.401	.0900	.041	-.0217	.092
	-14.82	14.83	.517	.1342	.036	-.0208	.067
	-14.83	17.00	.630	.1900	.034	-.0198	.045
0.80	-14.69	-4.52	-0.401	.0509	.087	-.0243	.245
	-14.70	-2.36	-.302	.0344	.080	-.0236	.233
	-14.71	-1.08	-.251	.0285	.077	-.0234	.225
	-14.71	-.76	-.226	.0264	.074	-.0232	.213
	-14.72	.19	-.185	.0239	.073	-.0236	.211
	-14.72	.72	-.163	.0224	.072	-.0243	.210
	-14.72	1.80	-.116	.0196	.069	-.0243	.203
	-14.73	3.97	-.017	.0186	.062	-.0249	.186
	-14.74	6.24	.091	.0256	.055	.0252	.170
	-14.75	8.44	.210	.0431	.048	.0250	.156
	-14.76	10.60	.313	.0687	.049	.0219	.139
	-14.78	12.79	.439	.1050	.038	.0207	.094
	-14.81	14.99	.566	.1539	.028	.0208	.070
	-14.82	17.17	.684	.2115	.017	.0221	.040
0.90	- - -	- - -	- - -	- - -	- - -	- - -	- - -
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M	δ	α	C_L	C_D	C_m	C_l	C_h
1.30	-14.52	-4.10	-.296	.0513	.087	-.0185	.394
	-14.54	-2.04	-.202	.0373	.077	-.0182	.369
	-14.55	-1.02	-.156	.0327	.067	-.0177	.356
	-14.55	-.51	-.132	.0305	.061	-.0177	.350
	-14.56	.41	-.090	.0286	.054	-.0176	.340
	-14.57	.94	-.067	.0279	.051	-.0176	.336
	-14.58	1.99	-.019	.0277	.044	-.0175	.323
	-14.61	4.15	.081	.0311	.026	-.0162	.282
	-14.64	6.22	.179	.0418	.010	-.0155	.246
	-14.67	8.28	.276	.0597	-.005	-.0150	.208
	-14.71	10.67	.368	.0828	-.019	-.0146	.163
	-14.75	12.34	.408	.1156	-.034	-.0147	.113
1.53	-14.54	-4.09	-.251	.0463	.070	-.0147	.352
	-14.57	-2.04	-.165	.0333	.056	-.0140	.323
	-14.58	-1.01	-.122	.0292	.049	-.0137	.308
	-14.59	-.50	-.101	.0275	.045	-.0135	.299
	-14.60	.42	-.061	.0256	.039	-.0133	.286
	-14.61	.95	-.040	.0253	.035	-.0132	.279
	-14.62	2.05	.002	.0254	.029	-.0130	.267
	-14.65	4.16	.090	.0315	.015	-.0123	.229
	-14.68	6.21	.175	.0398	.001	-.0117	.196
	-14.71	8.20	.256	.0550	-.011	-.0109	.160
	-14.75	10.25	.339	.0767	-.023	-.0102	.116
	-14.79	12.32	.429	.1059	-.035	-.0095	.069
	-14.83	14.37	.505	.1388	-.045	-.0087	.019
	-14.87	16.42	.571	.1745	-.052	-.0080	-.028
1.70	-14.57	-4.09	-.223	.0442	.060	-.0130	.324
	-14.59	-2.04	-.148	.0328	.049	-.0126	.300
	-14.60	-1.01	-.109	.0280	.043	-.0122	.286
	-14.61	-.49	-.088	.0263	.040	-.0120	.281
	-14.62	.54	-.052	.0240	.034	-.0117	.267
	-14.62	1.10	-.031	.0236	.030	-.0117	.261
	-14.64	2.05	.008	.0241	.025	-.0113	.247
	-14.67	4.15	.089	.1283	.012	-.0105	.212
	-14.69	6.19	.169	.0377	-.001	-.0097	.178
	-14.73	8.18	.242	.0518	-.011	-.0080	.141
	-14.77	10.23	.319	.0718	-.022	-.0078	.096
	-14.81	12.30	.400	.0986	-.033	-.0069	.051
	-14.84	14.35	.474	.1299	-.042	-.0061	.007
	-14.88	16.40	.535	.1633	-.047	-.0055	-.036

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TABLE IV.– CONTINUED

(h) Nominal δ, –20°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-19.35	-4.53	-.435	.0570	.090	-.0322	.204
	-19.35	-2.41	-.341	.0402	.086	-.0320	.197
	-19.35	-1.33	-.292	.0344	.082	-.0312	.193
	-19.35	-.80	-.267	.0308	.080	-.0307	.189
	-19.36	.26	-.226	.0268	.078	-.0309	.183
	-19.36	.79	-.202	.0258	.077	-.0309	.182
	-19.36	1.85	-.158	.0226	.074	-.0309	.176
	-19.37	4.01	-.066	.0206	.069	-.0310	.167
	-19.37	6.10	.027	.0222	.066	-.0321	.156
	-19.38	8.30	.136	.0345	.061	-.0326	.143
	-19.39	10.46	.249	.0563	.058	-.0312	.127
	-19.40	12.61	.352	.0844	.056	-.0290	.104
	-19.41	14.79	.470	.1249	.051	-.0229	.080
	-19.42	16.96	.592	.1771	.049	-.0273	.057
0.80	-19.27	-4.53	-.415	.0605	.096	-.0270	.271
	-19.28	-2.39	-.327	.0434	.090	-.0263	.264
	-19.28	-1.32	-.281	.0373	.087	-.0264	.259
	-19.29	-.79	-.253	.0341	.084	-.0263	.253
	-19.29	.15	-.210	.0308	.082	-.0265	.249
	-19.29	.73	-.191	.0294	.082	-.0270	.251
	-19.29	1.75	-.147	.0259	.079	-.0276	.245
	-19.30	3.93	-.053	.0232	.071	-.0283	.226
	-19.31	6.19	.037	.0286	.066	-.0283	.211
	-19.33	8.41	.177	.0451	.059	-.0282	.191
	-19.34	10.55	.272	.0669	.059	-.0255	.174
	-19.36	12.76	.405	.1050	.051	-.0248	.142
	-19.38	14.93	.514	.1467	.045	-.0263	.109
	-19.40	17.13	.648	.2079	.034	-.0288	.084
0.90	-19.22	-4.57	-.455	.0231	.099	-.0243	.337
	-19.24	-2.39	-.327	.0475	.098	-.0238	.297
	-19.24	-1.33	-.286	.0438	.100	-.0239	.307
	-19.24	-.80	-.263	.0405	.093	-.0248	.305
	-19.24	.17	-.215	.0357	.093	-.0248	.305
	-19.25	.69	-.190	.0337	.091	-.0251	.297
	-19.25	1.78	-.142	.0305	.087	-.0260	.297
	-19.27	3.97	-.038	.0223	.077	-.0268	.293
	-19.28	6.27	.083	.0345	.067	-.0258	.264
	-19.29	8.47	.211	.0568	.060	-.0221	.240
	-19.29	10.64	.314	.0844	.054	-.0228	.224
	-19.27	12.83	.437	.1277	.046	-.0259	.256
1.30	-19.13	-4.10	-.323	.0597	.099	-.0229	.381
	-19.14	-2.06	-.228	.0452	.082	-.0229	.367
	-19.15	-1.02	-.178	.0399	.074	-.0225	.358
	-19.15	-.51	-.156	.0380	.070	-.0224	.354
	-19.16	.40	-.113	.0356	.063	-.0223	.348
	-19.16	.92	-.092	.0351	.061	-.0226	.347
	-19.16	1.97	-.045	.0395	.055	-.0227	.340
	-19.19	4.14	.056	.0368	.037	-.0213	.310
	-19.21	6.22	.157	.0468	.021	-.0204	.280
	-19.24	8.28	.253	.0632	.006	-.0196	.247
	-19.27	10.27	.344	.0849	-.008	-.0190	.213
	-19.31	12.34	.445	.1148	-.024	-.0188	.168
	-19.35	14.40	.554	.1529	-.045	-.0218	.116
	-19.46	16.46	.659	.1971	-.064	-.0268	-.013
1.53		-4.09	-.270	.0541	.079	-.0187	.344
	-19.16	-2.04	-.186	.0407	.065	-.0184	.327
	-19.17	-1.02	-.141	.0360	.058	-.0179	.316
	-19.18	-.51	-.120	.0344	.054	-.0177	.312
	-19.18	.41	-.080	.0320	.048	-.0173	.299
	-19.19	.93	-.059	.0314	.044	-.0172	.296
	-19.20	1.98	-.016	.0316	.038	-.0171	.289
	-19.22	4.14	.074	.0348	.024	-.0161	.260
	-19.25	6.21	.162	.0444	.010	-.0156	.232
	-19.27	8.26	.245	.0596	-.022	-.0147	.200
	-19.31	10.26	.325	.0792	-.015	-.0136	.163
	-19.35	12.51	.410	.1058	-.026	-.0127	.118
	-19.39	14.37	.487	.1371	-.037	-.0119	.020
	-19.43	16.42	.561	.1737	-.045	-.0111	.022
1.70	-19.17	-4.09	-.243	.0550	.069	-.0168	.320
	-19.18	-2.04	-.166	.0421	.057	-.0163	.304
	-19.19	-1.02	-.125	.0370	.051	-.0159	.293
	-19.19	-.50	-.105	.0347	.048	-.0158	.288
	-19.20	.41	-.068	.0321	.042	-.0155	.278
	-19.21	.94	-.048	.0309	.039	-.0152	.272
	-19.22	1.98	-.007	.0305	.032	-.0149	.264
	-19.24	4.13	.074	.0337	.020	-.0140	.236
	-19.27	6.20	.155	.0425	.008	-.0133	.210
	-19.30	8.25	.232	.0559	-.004	-.0123	.177
	-19.33	10.24	.307	.0741	-.015	-.0109	.139
	-19.37	12.29	.384	.0989	-.025	-.0098	.097
	-19.40	14.35	.457	.1286	-.034	-.0088	.055
	-19.44	16.40	.523	.1617	-.041	-.0879	.007

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TABLE IV.– CONCLUDED

(i) Nominal δ, –25°

M	δ	α	C_L	C_D	C_m	C_l	C_h
0.60	-24.54	-4.84	-.442	.0665	.094	-.0328	.310
	-24.54	-2.40	-.348	.0498	.089	-.0327	.311
	-24.54	-1.34	-.301	.0441	.087	-.0325	.309
	-24.54	-.81	-.280	.0415	.086	-.0328	.310
	-24.54	.12	-.245	.0383	.087	-.0339	.310
	-24.54	.65	-.224	.0371	.081	-.0340	.311
	-24.55	1.71	-.178	.0327	.083	-.0334	.293
	-24.55	3.84	-.096	.0289	.080	-.0343	.290
	-24.56	6.07	-.002	.0296	.076	-.0352	.281
	-24.57	8.24	.107	.0387	.070	-.0358	.257
	-24.58	10.41	.207	.0567	.068	-.0357	.244
	-24.58	12.56	.308	.0826	.069	-.0341	.230
	-24.60	14.72	.418	.1173	.067	-.0342	.198
	-24.61	16.89	.538	.1647	.066	-.0342	.169
0.80	-24.46	-4.57	-.440	.0705	.100	-.0291	.368
	-24.47	-2.40	-.337	.0523	.093	-.0285	.360
	-24.47	-1.34	-.286	.0456	.090	-.0282	.352
	-24.47	-.81	-.266	.0437	.090	-.0288	.354
	-24.47	.14	-.225	.0405	.088	-.0292	.351
	-24.47	.68	-.201	.0379	.086	-.0292	.347
	-24.48	1.74	-.157	.0347	.084	-.0298	.343
	-24.48	3.92	-.067	.0312	.080	-.0310	.333
	-24.50	6.17	.037	.0339	.071	-.0307	.309
	-24.51	8.38	.157	.0483	.064	-.0302	.291
	-24.51	10.55	.264	.0719	.063	-.0296	.290
	-24.53	12.72	.370	.1014	.058	-.0266	.258
	-24.54	14.91	.501	.1480	.050	-.0278	.244
	-24.55	17.09	.615	.2014	.045	-.0313	.224
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M	δ	α	C_L	C_D	C_m	C_l	C_h
1.30	-24.38	8.28	.231	.0661	.017	-.0242	.379
	-24.41	10.33	.328	.0887	.002	-.0238	.345
	-24.44	12.34	.425	.1159	-.013	-.0235	.304
	-24.49	14.39	.529	.1516	-.034	-.0260	.244
	-24.60	16.46	.640	.1950	-.055	-.0299	.115
1.53	-24.37	4.14	.055	.0416	.034	-.0207	.383
	-24.38	6.21	.142	.0494	.020	-.0197	.362
	-24.42	8.26	.226	.0631	-.008	-.0186	.322
	-24.45	10.32	.308	.0825	-.005	-.0175	.288
	-24.49	12.32	.392	.1067	-.018	-.0165	.238
	-24.54	14.37	.458	.1361	-.028	-.0152	.183
	-24.59	16.43	.546	.1716	-.037	-.0141	.123
1.70	-24.38	4.13	.058	.0405	.029	-.0181	.365
	-24.41	6.20	.138	.0423	.017	-.0171	.333
	-24.44	8.26	.215	.0597	.005	-.0161	.296
	-24.48	10.24	.291	.0769	-.006	-.0145	.251
	-24.52	12.29	.363	.0986	-.017	-.0132	.205
	-24.57	14.34	.439	.1269	-.026	-.0120	.153
	-24.62	16.40	.511	.1602	-.034	-.0107	.097

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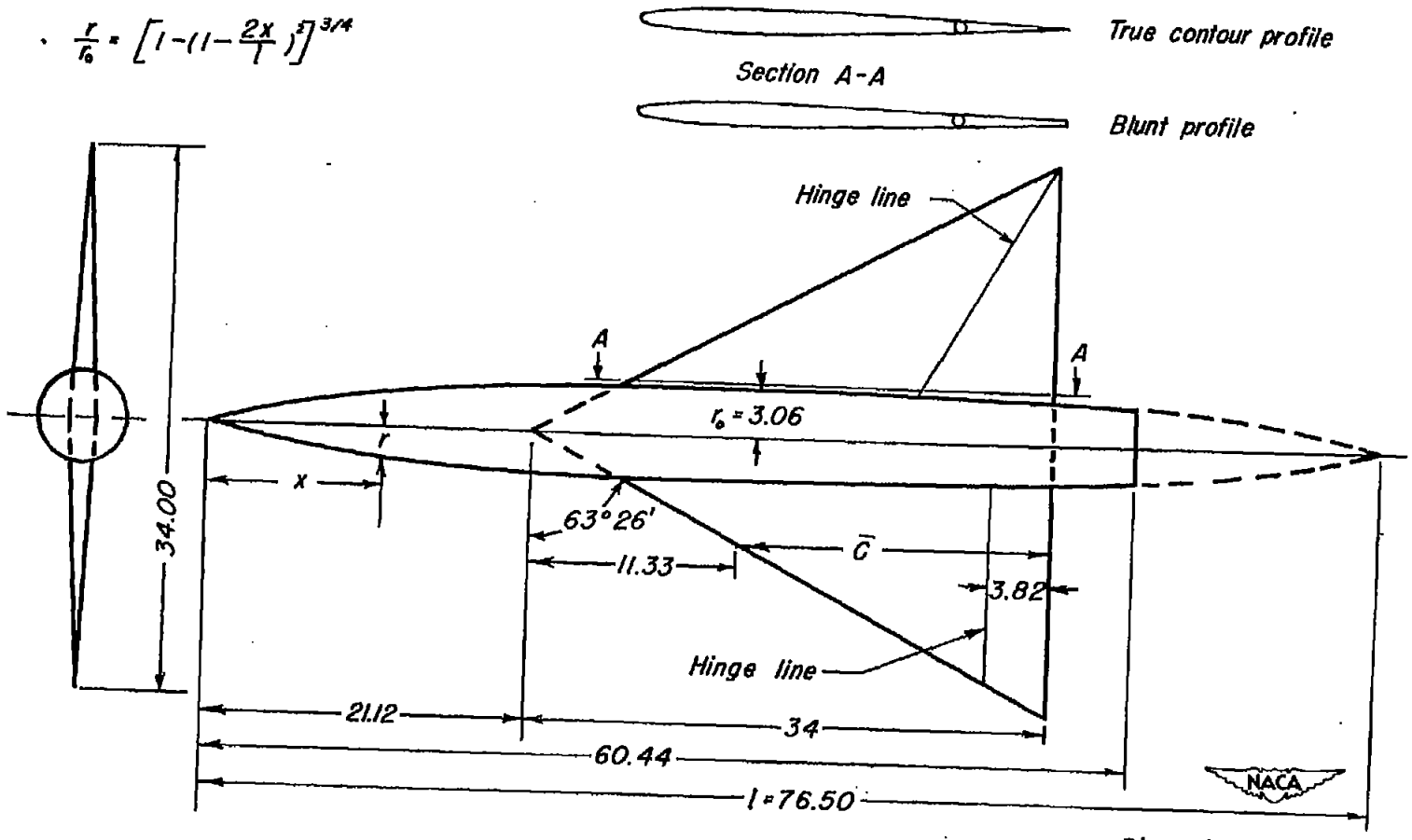
Equation of fuselage ordinates

$$\frac{r}{r_0} = \left[1-\left(1-\frac{2x}{l}\right)^2\right]^{3/4}$$



Dimensions in inches

Figure 1.– Dimensional sketch of wing-body combination.

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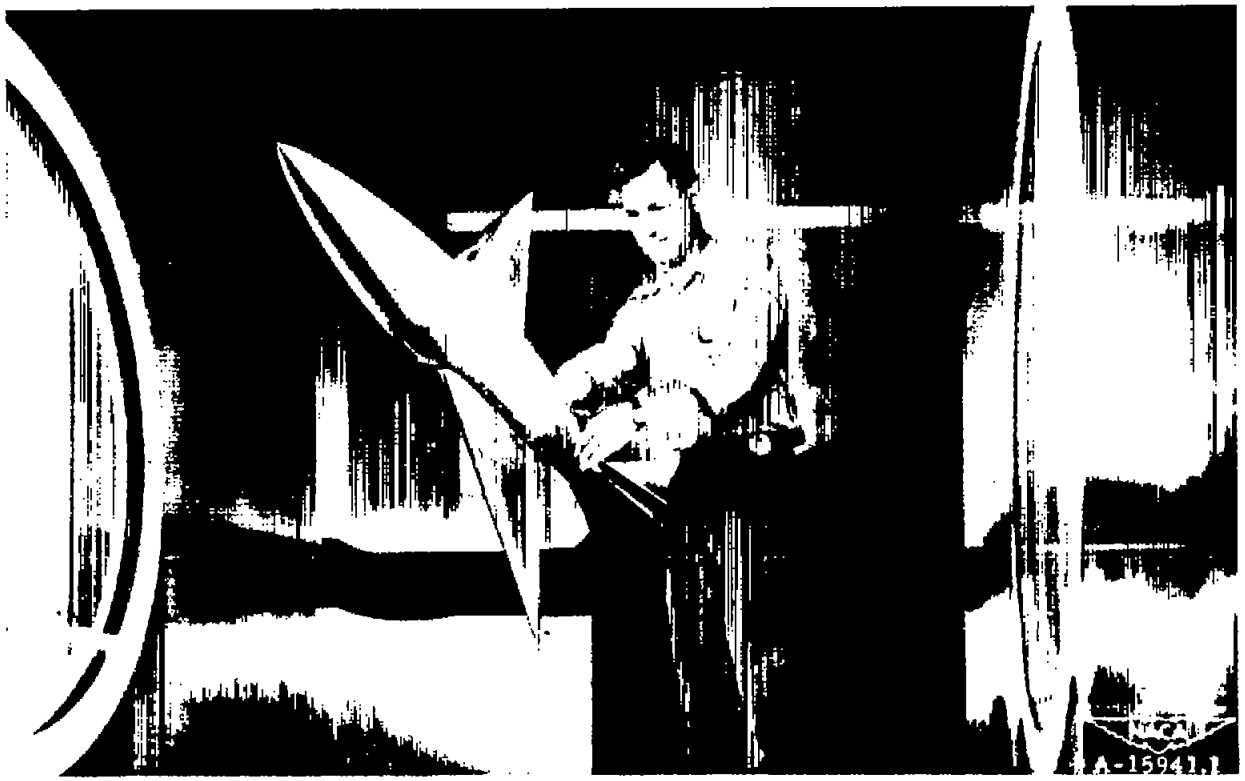

Figure 2.- The control-surface model mounted in the Ames 6- by 6-foot supersonic wind tunnel.

[redacted]

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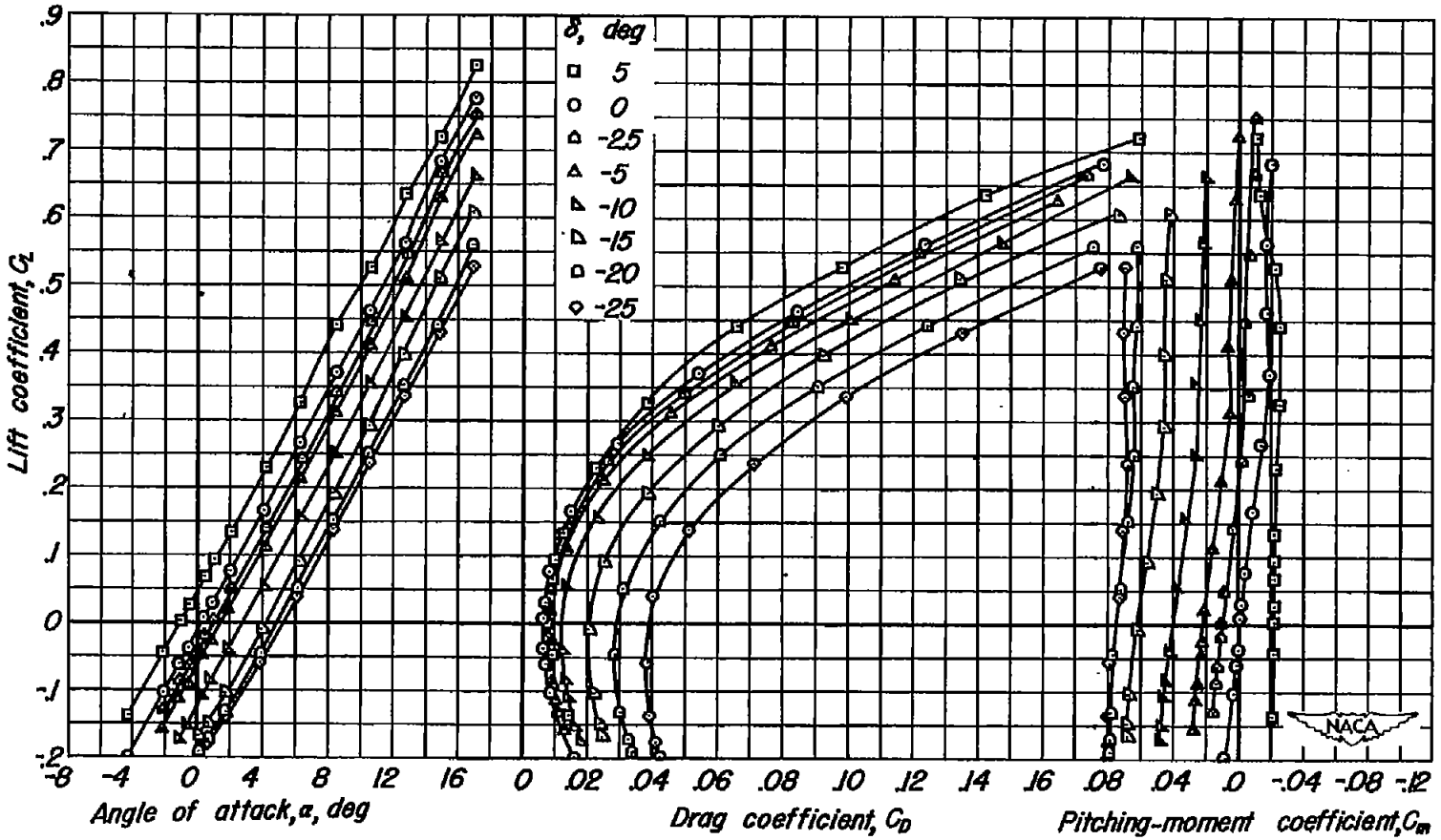
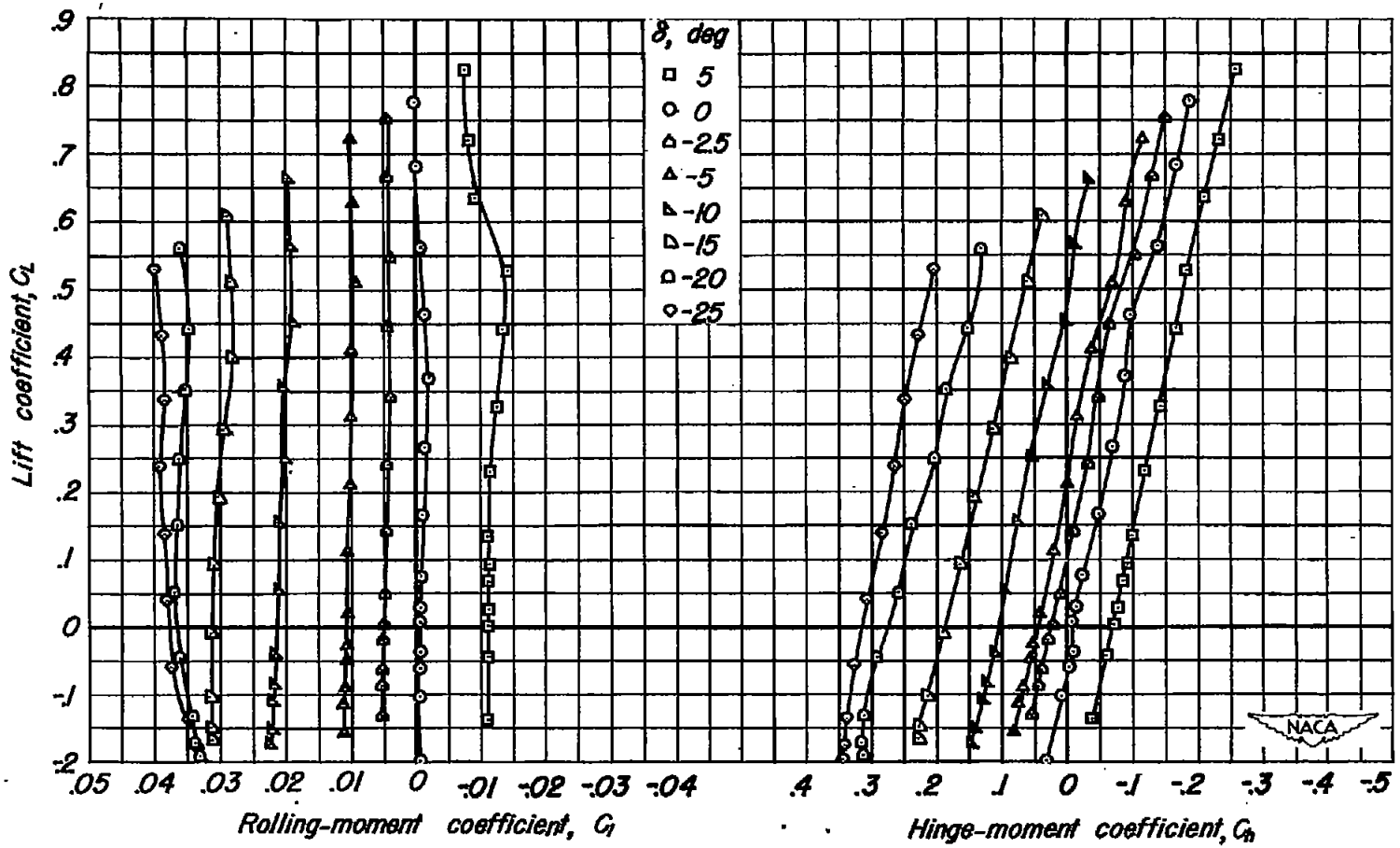


(a) C_L vs. α, C_D, and C_m for constant-chord flap (true contour profile).

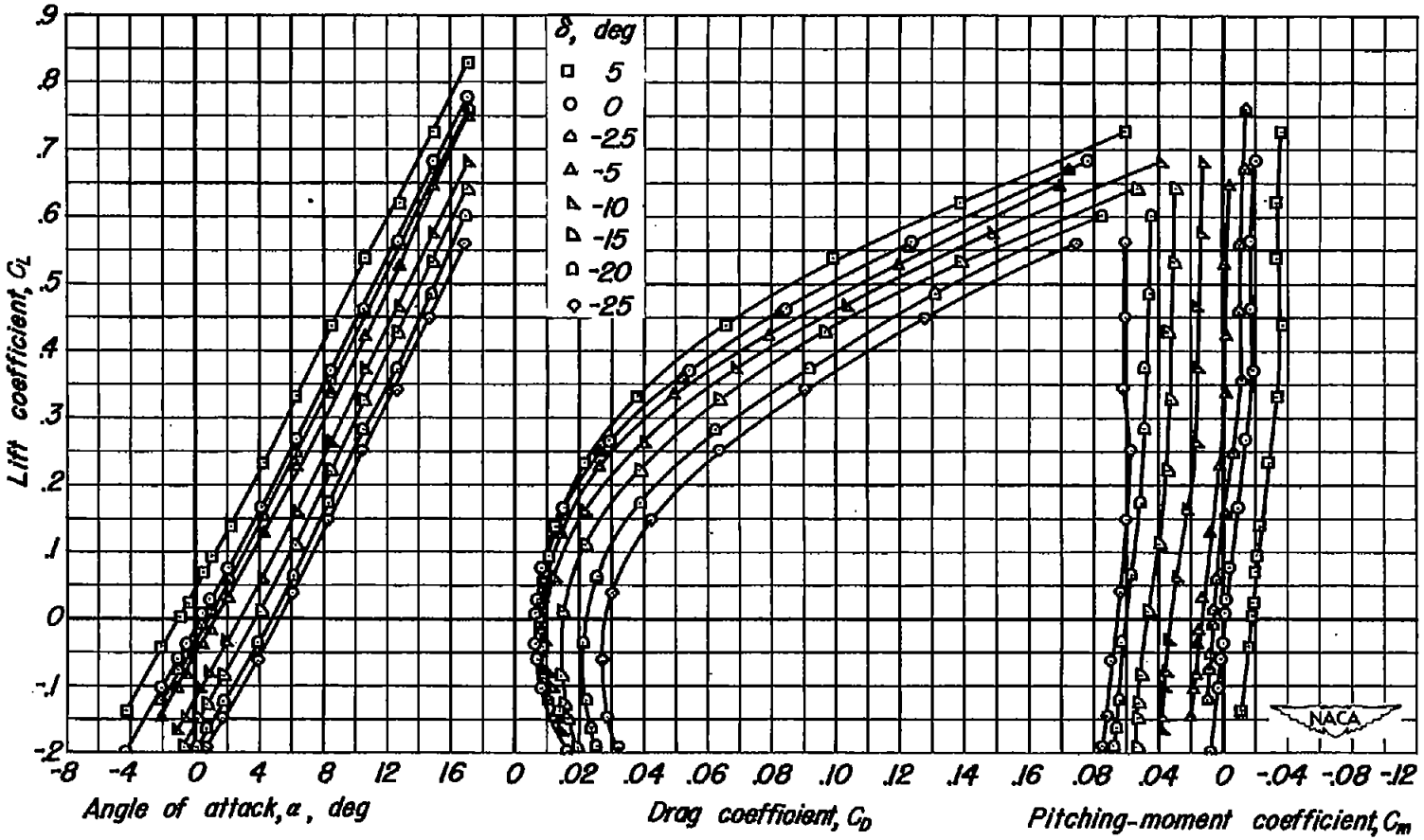
Figure 3.-Effect of flap deflection on the aerodynamic characteristics of a 63° swept-back triangular wing-fuselage combination at Mach number 0.60. Data for one flap. $R = 3.0 \times 10^6$

[redacted]



(b) C_L vs. C_l and C_h for constant chord flap (true contour profile).

Figure 3. -Continued.



(c) C_L, vs. α, C_D, and C_m for constant-percent-chord flap (true contour profile)

Figure 3. -Continued.

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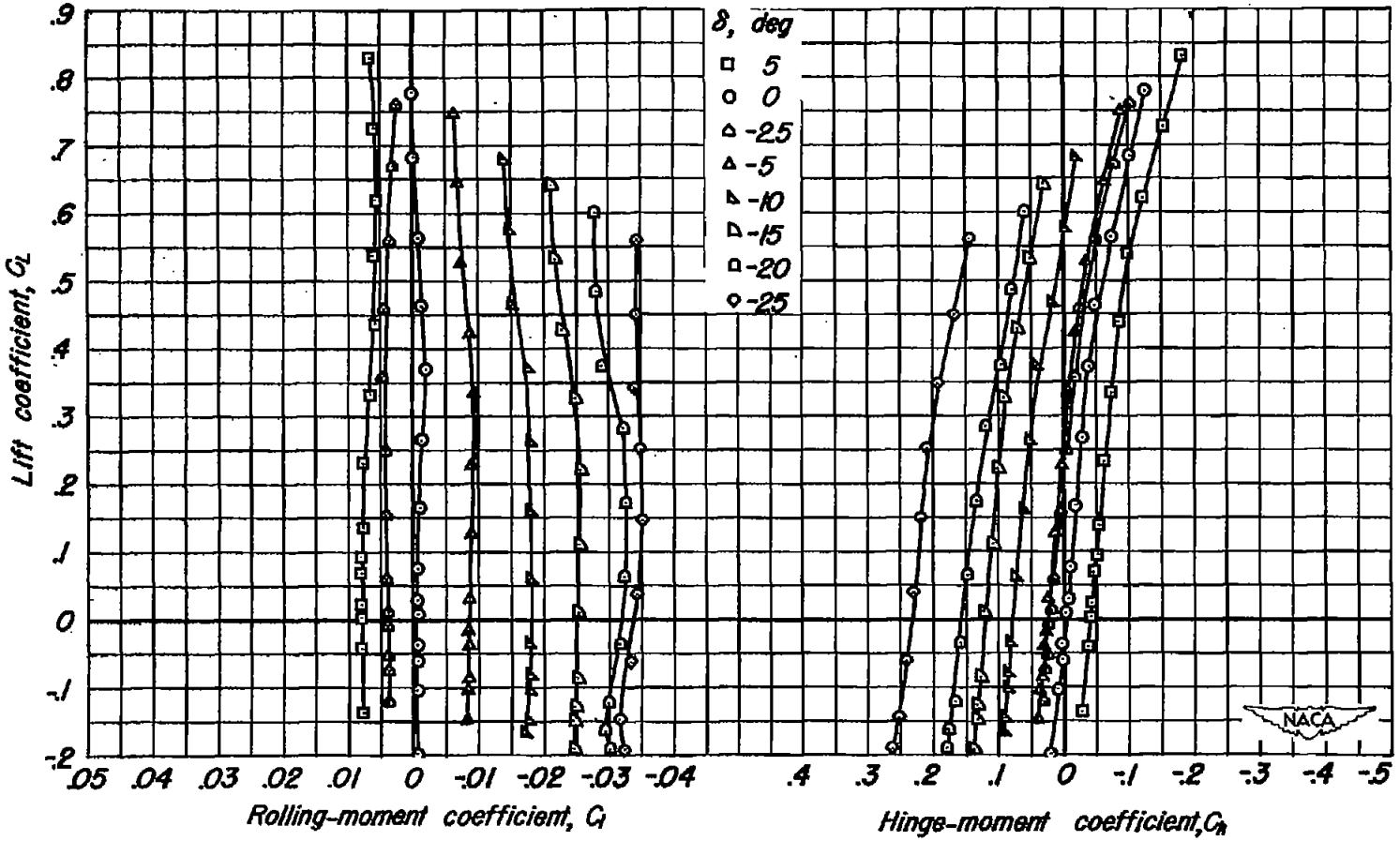

(d) C_L vs. C_l and C_h for constant-percent-chord flap (true contour profile).

Figure 3. -Concluded.

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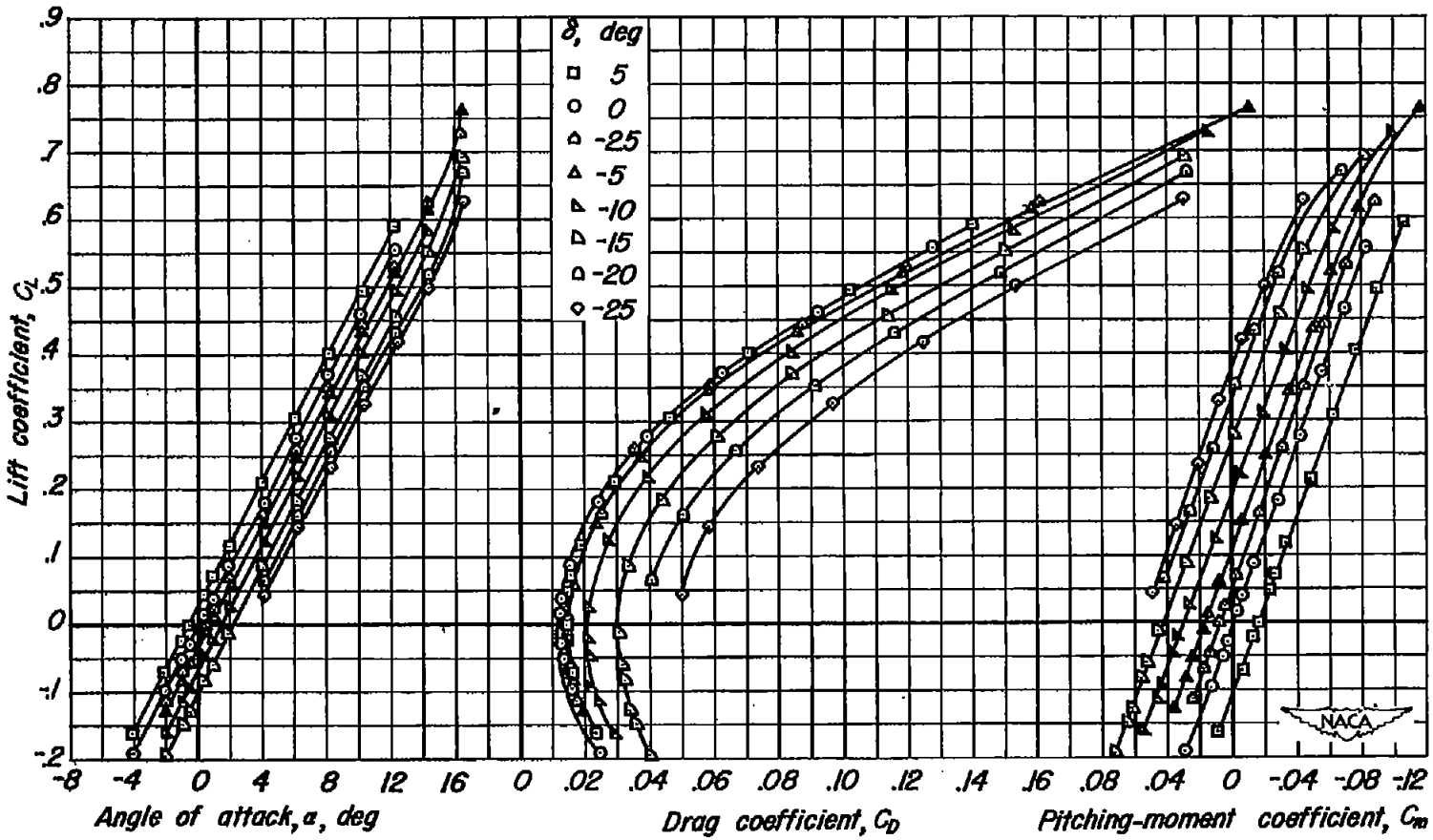
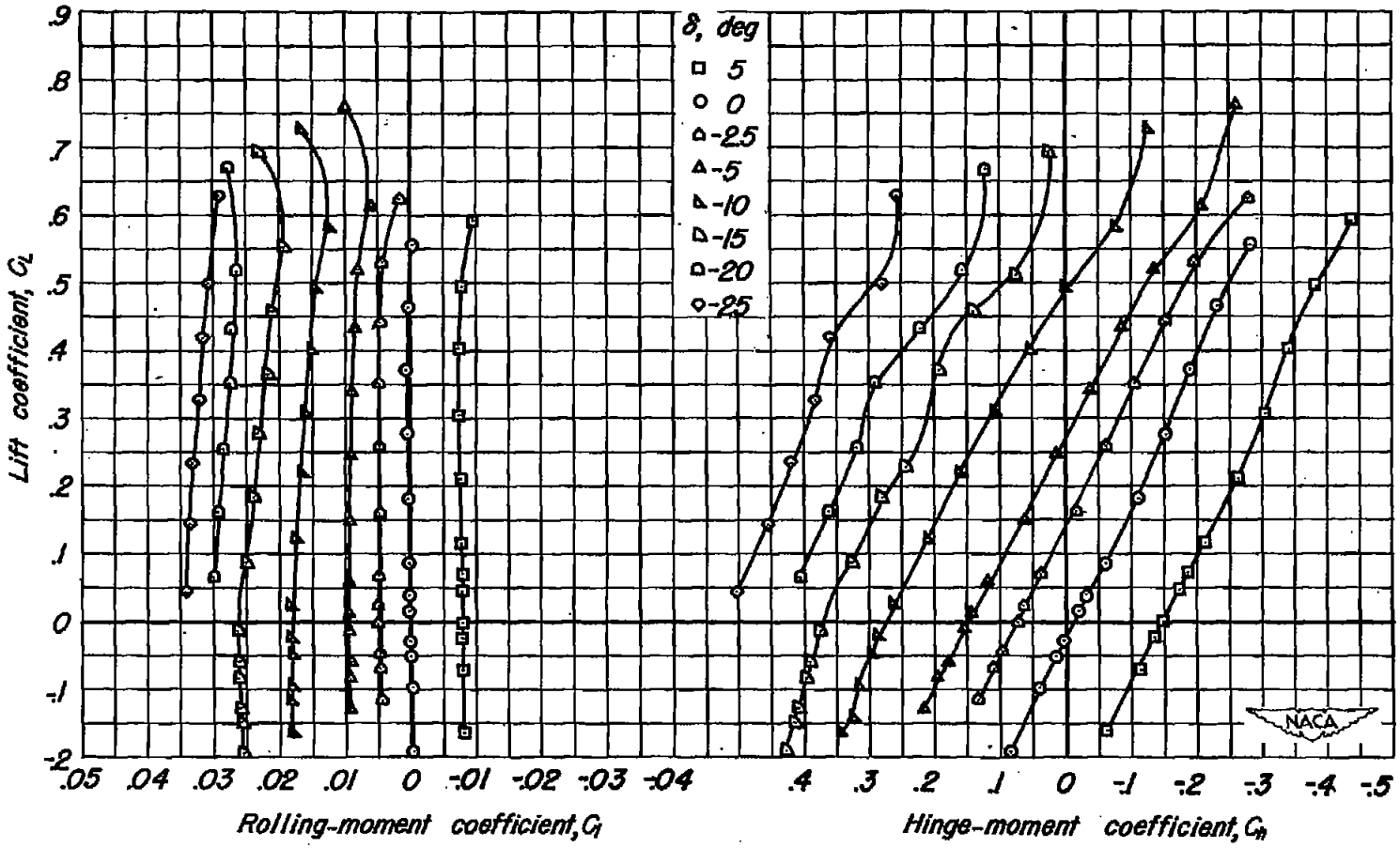


(a) C_L vs. α, C_D and C_m for constant-chord flap (true contour profile).

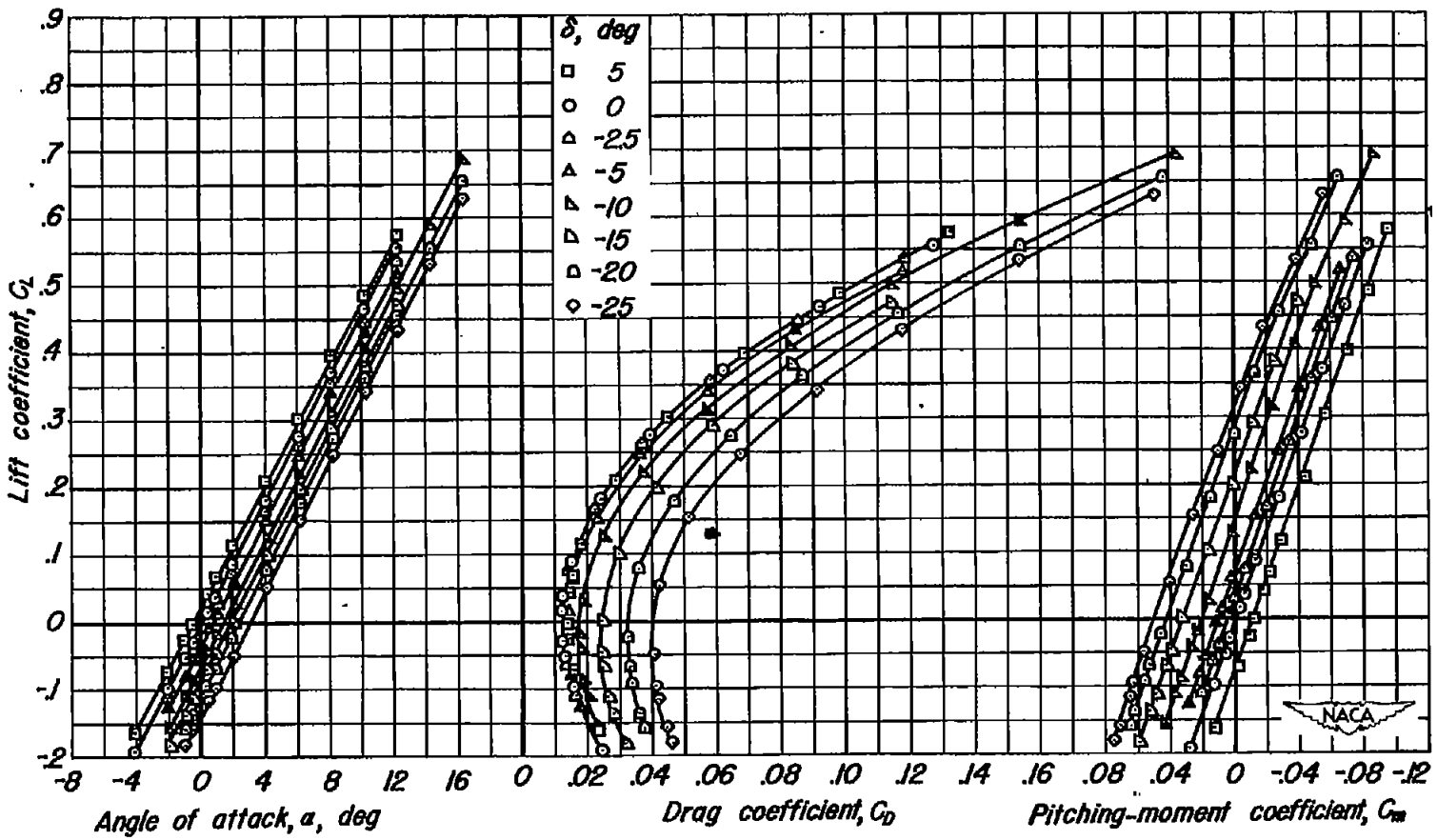
Figure 4.-Effect of flap deflection on the aerodynamic characteristics of a 63° swept-back triangular wing-fuselage combination at Mach number 1.30. Data for one flap. $R = 3.0 \times 10^6$



(b) C_L vs. C_l and C_h for constant-chord flap (true contour profile).

Figure 4.-Continued.

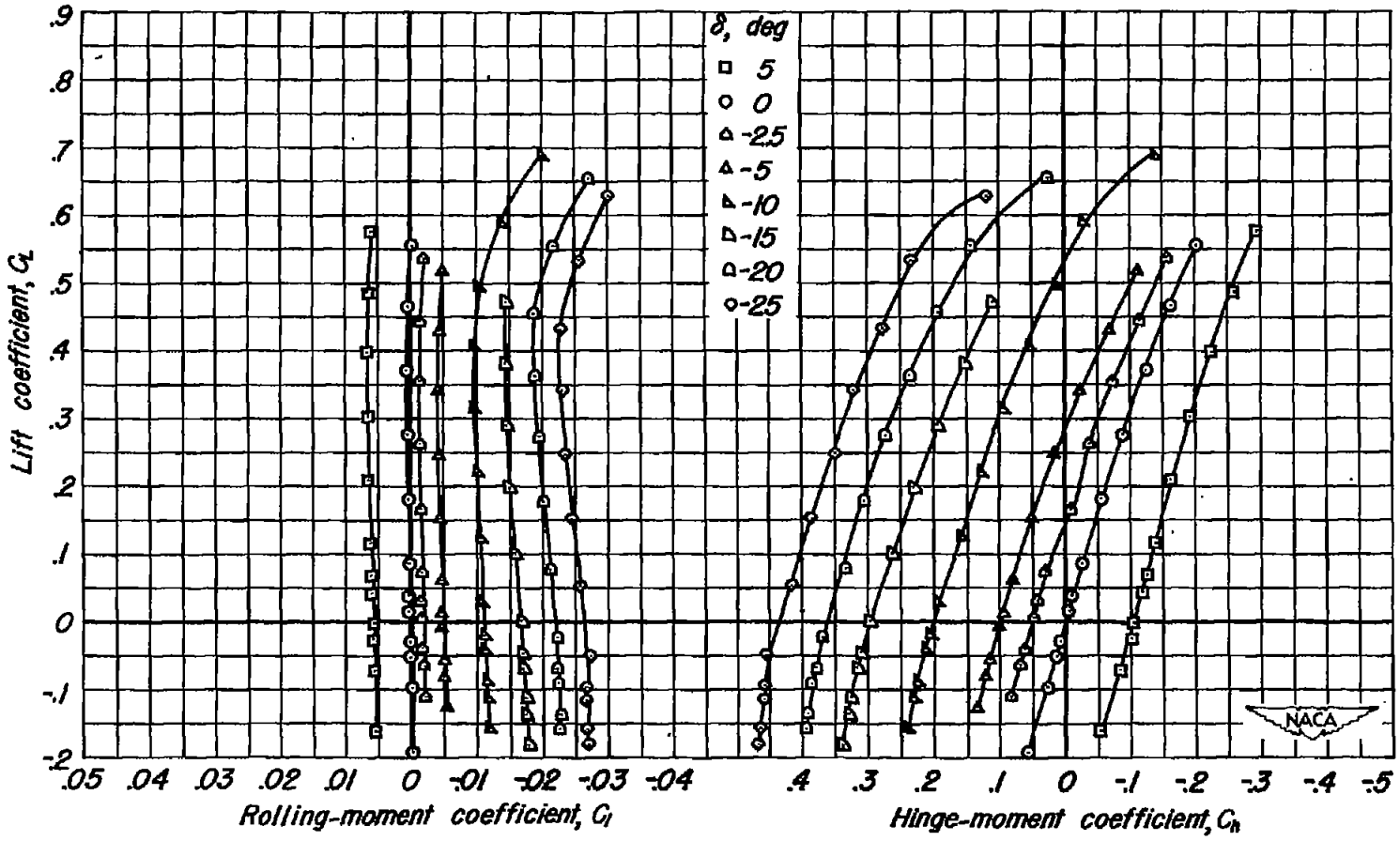
[redacted]



(c) C_L vs. α, C_D and C_m for constant-percent-chord flap (true contour profile).

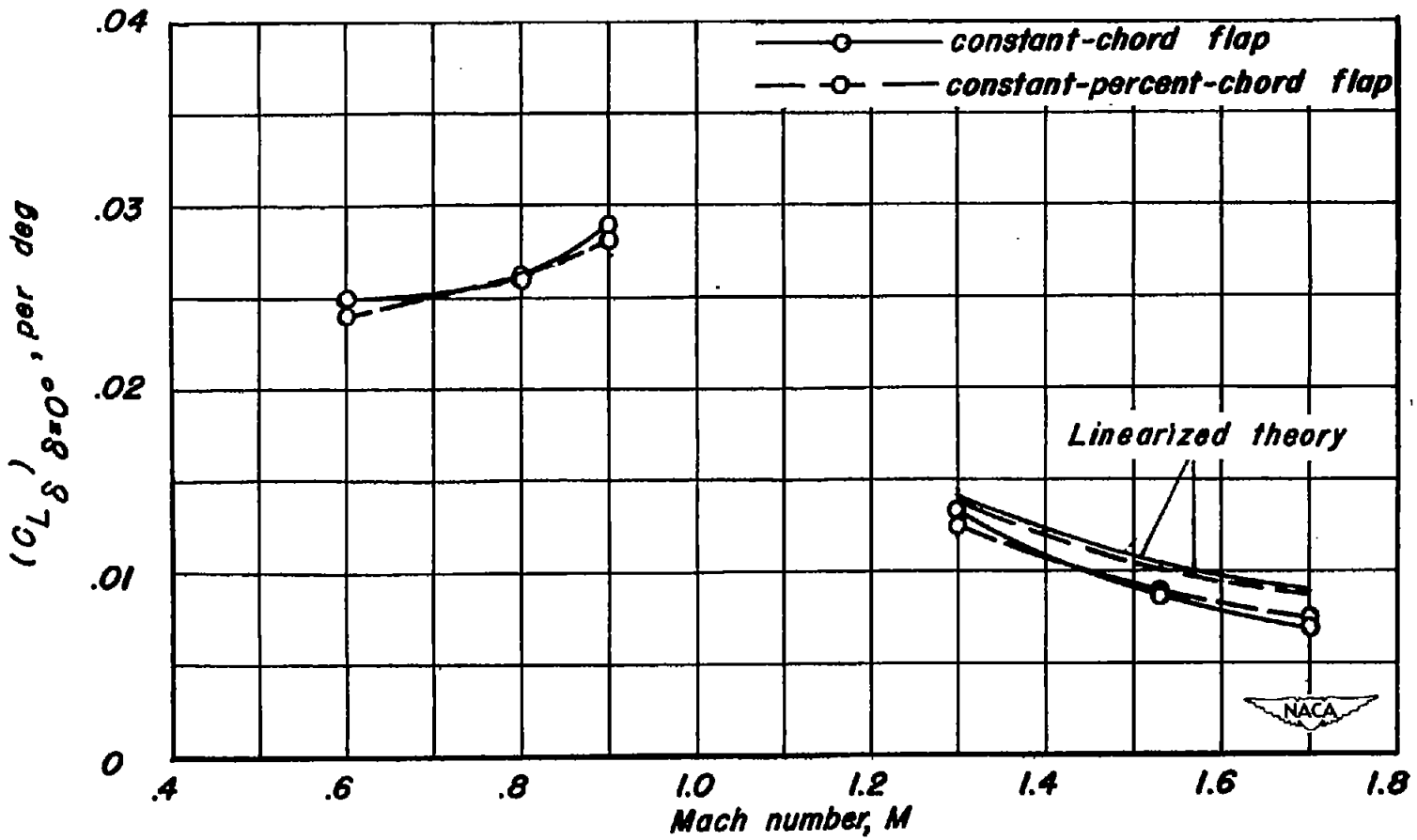
Figure 4. -Continued.

[redacted]



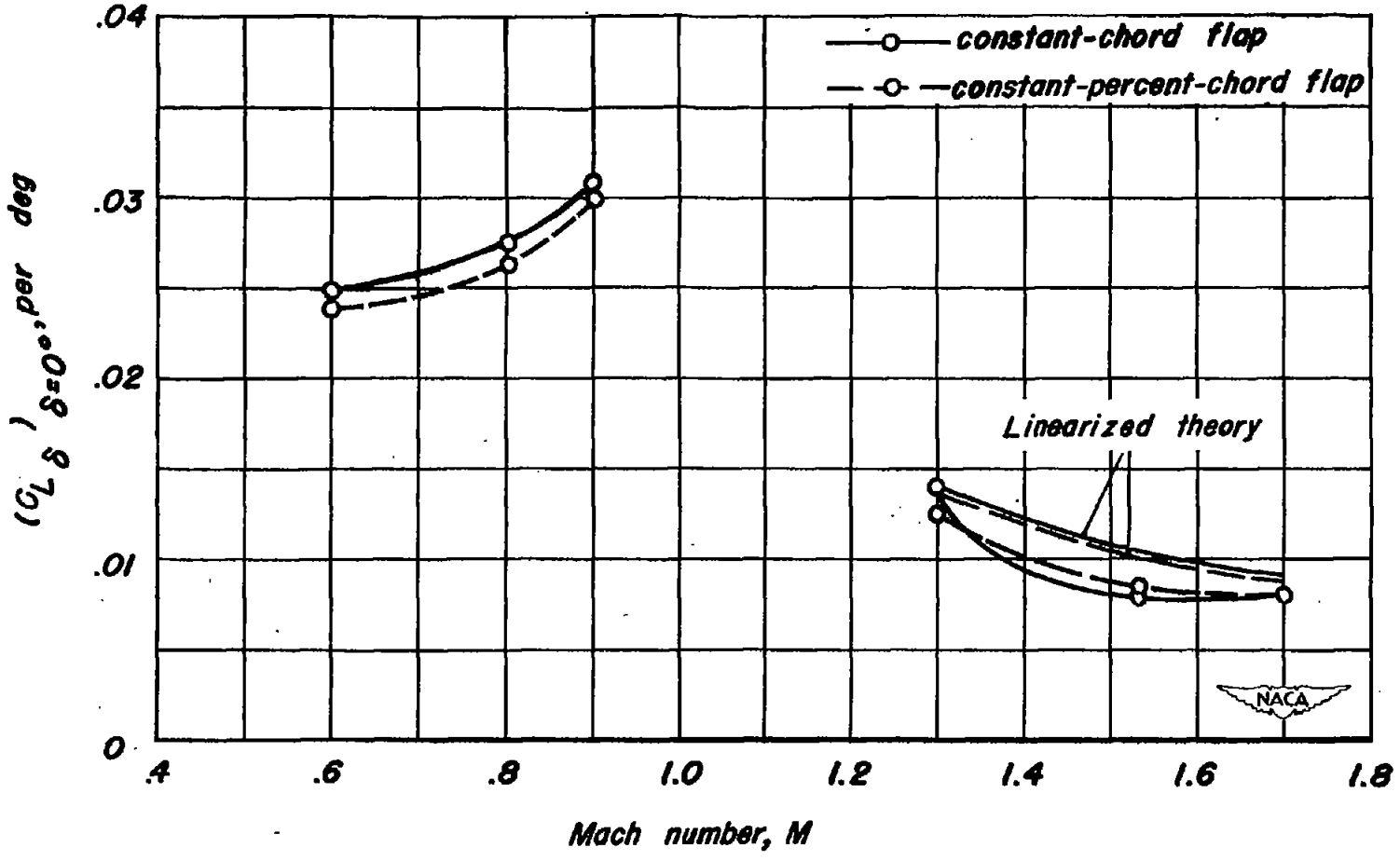
(d) C_L vs. C_l and C_h for constant-percent-chord flap (true contour profile).

Figure 4. -Concluded.



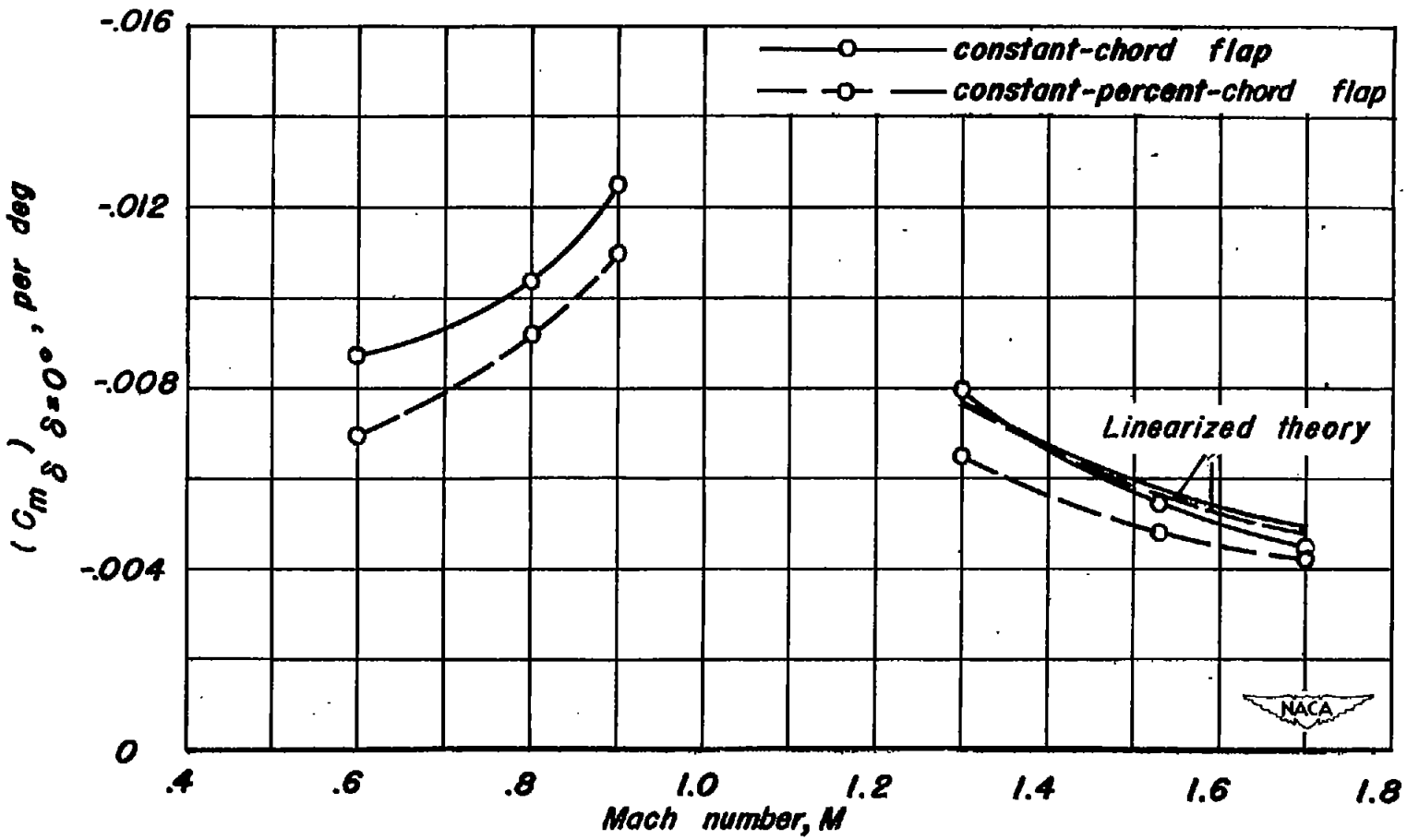
(a) True contour profile.

Figure 5. - Variation with Mach number of the lift-effectiveness parameter, C_{L_δ}, for the constant-chord flap and the constant-percent-chord flap. Data for two flaps. $R = 3.0 \times 10^6$.



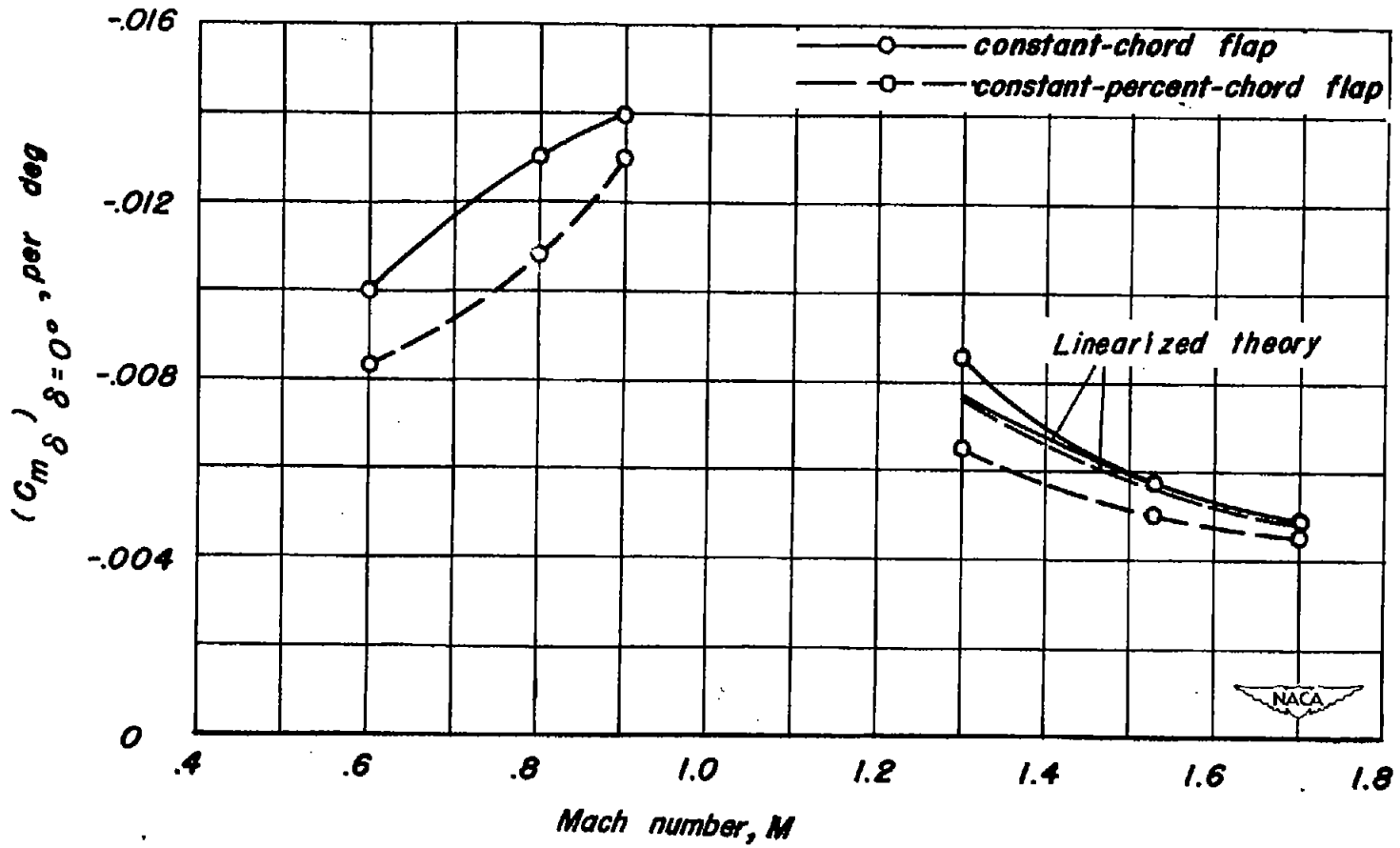
(b) Blunt profile.

Figure 5.- Concluded.



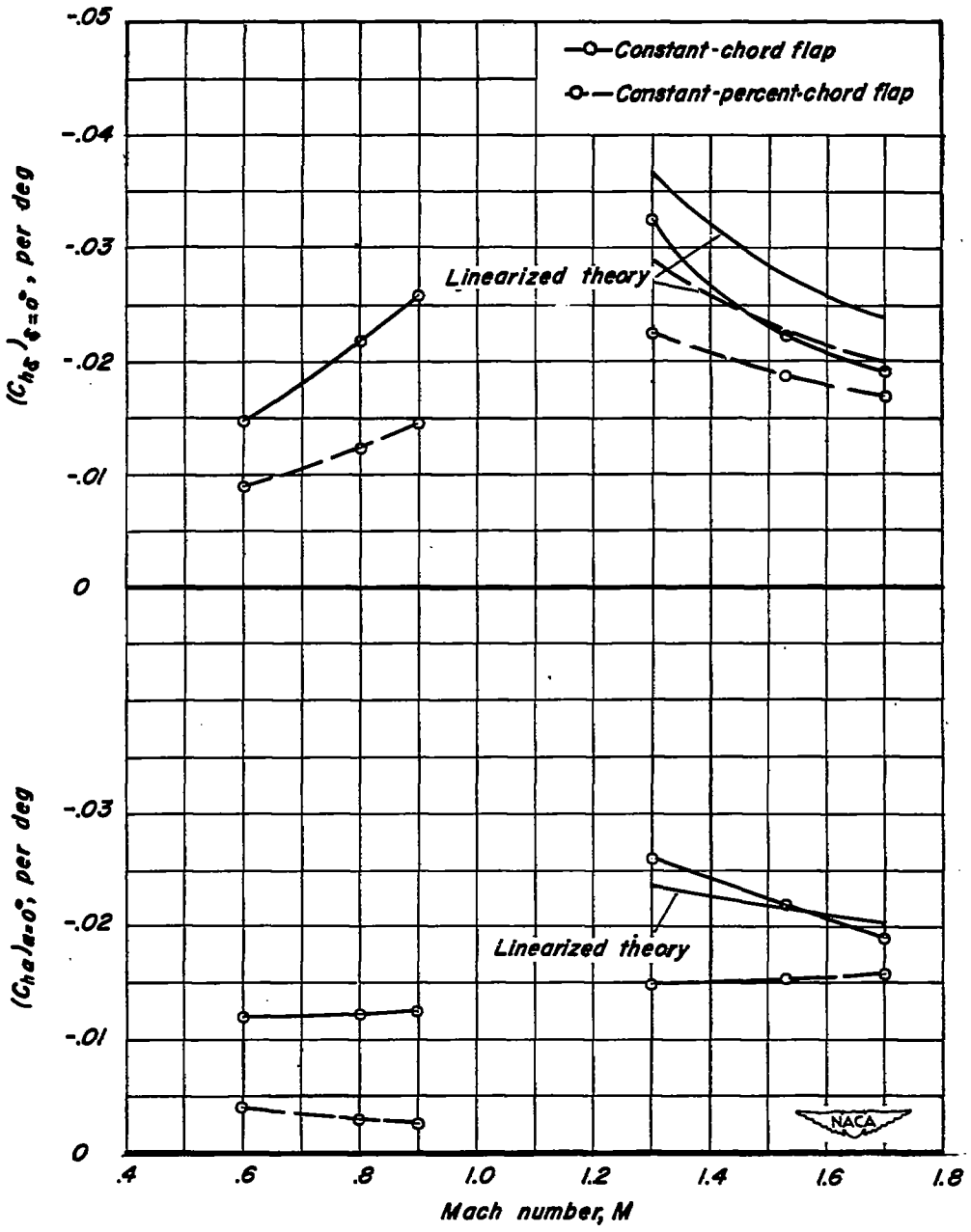
(a) True contour profile.

Figure 6. - Variation with Mach number of the pitching-moment effectiveness parameter, C_{m_δ}, for the constant-chord flap and the constant-percent-chord flap. Data for two flaps. $R = 3.0 \times 10^6$



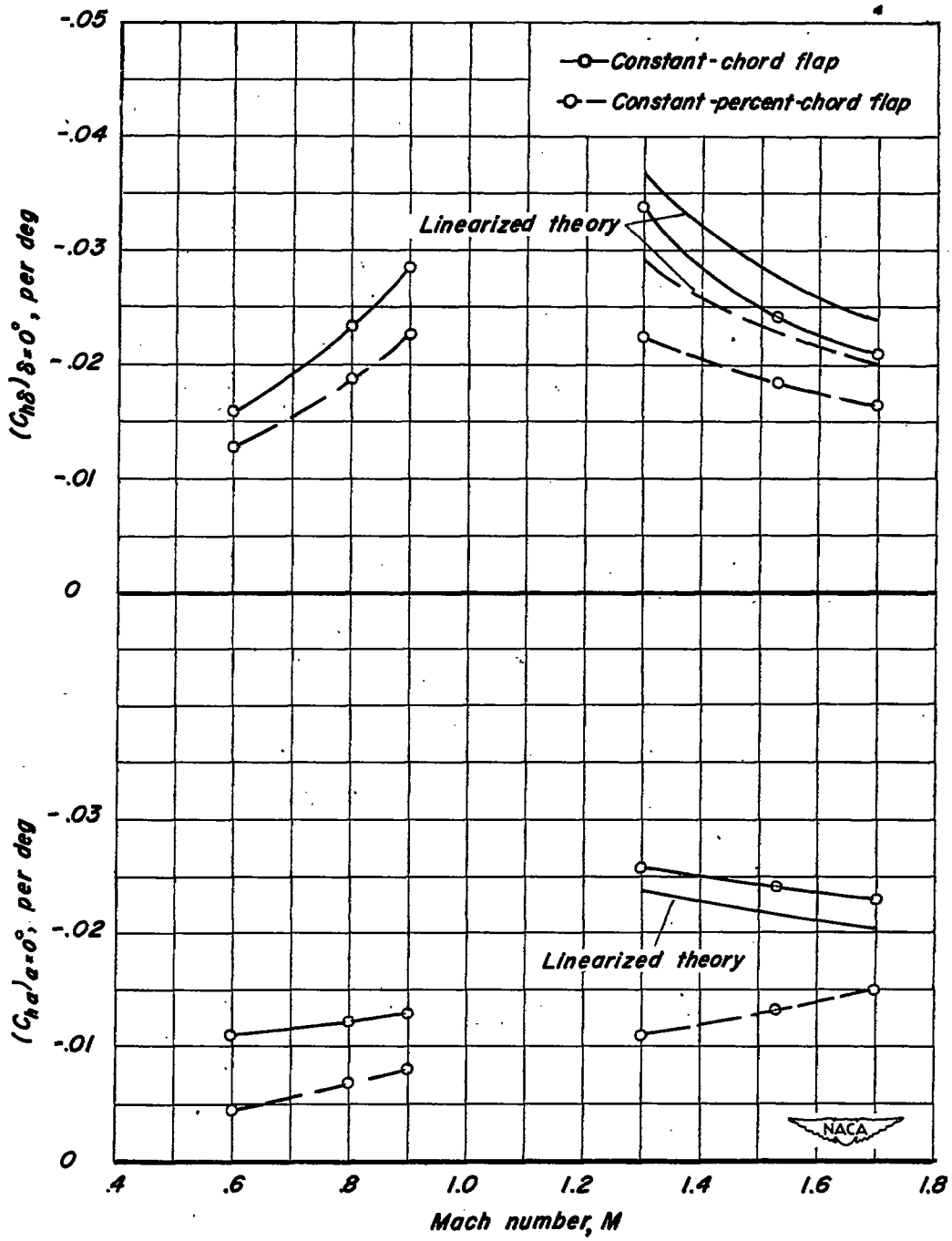
(b) Blunt profile.

Figure 6.- Concluded.



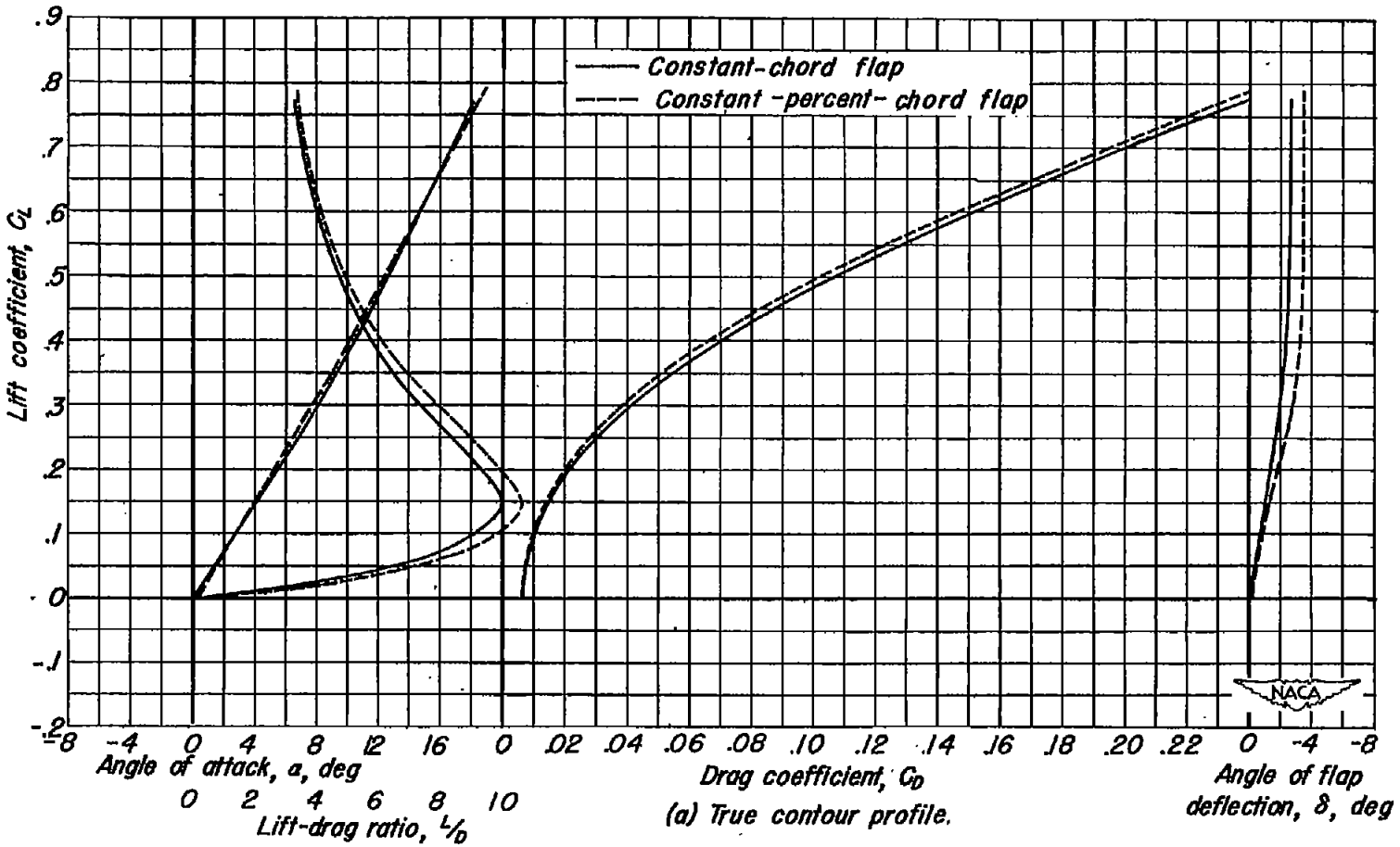
(a) True contour profile.

Figure 7. — Variation with Mach number of the hinge-moment parameters, C_{h_δ} and C_{h_α}, for the constant-chord and the constant-percent-chord flaps. $R = 3.0 \times 10^6$.



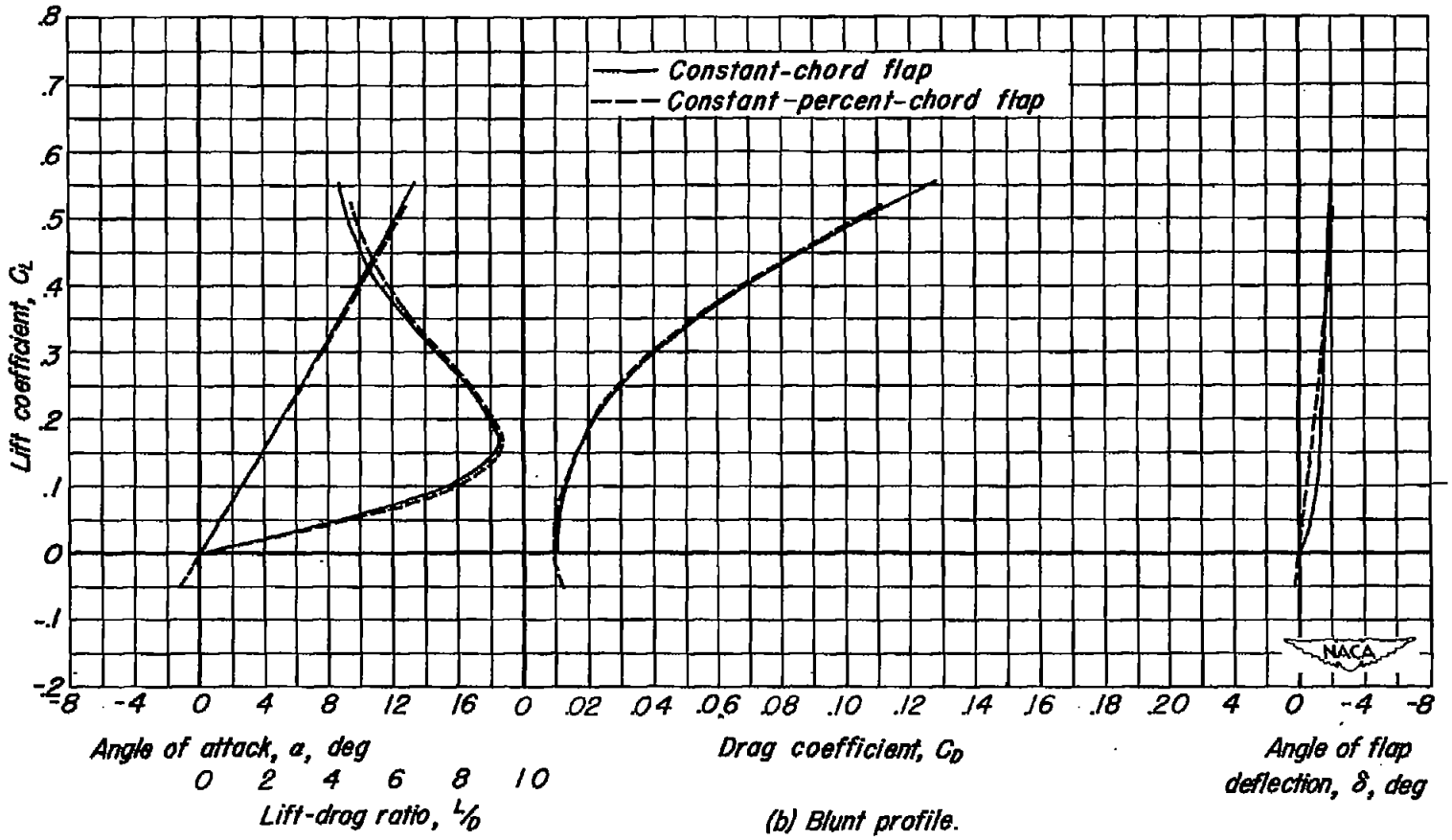
(b) Blunt profile.

Figure 7.- Concluded.



(a) True contour profile.

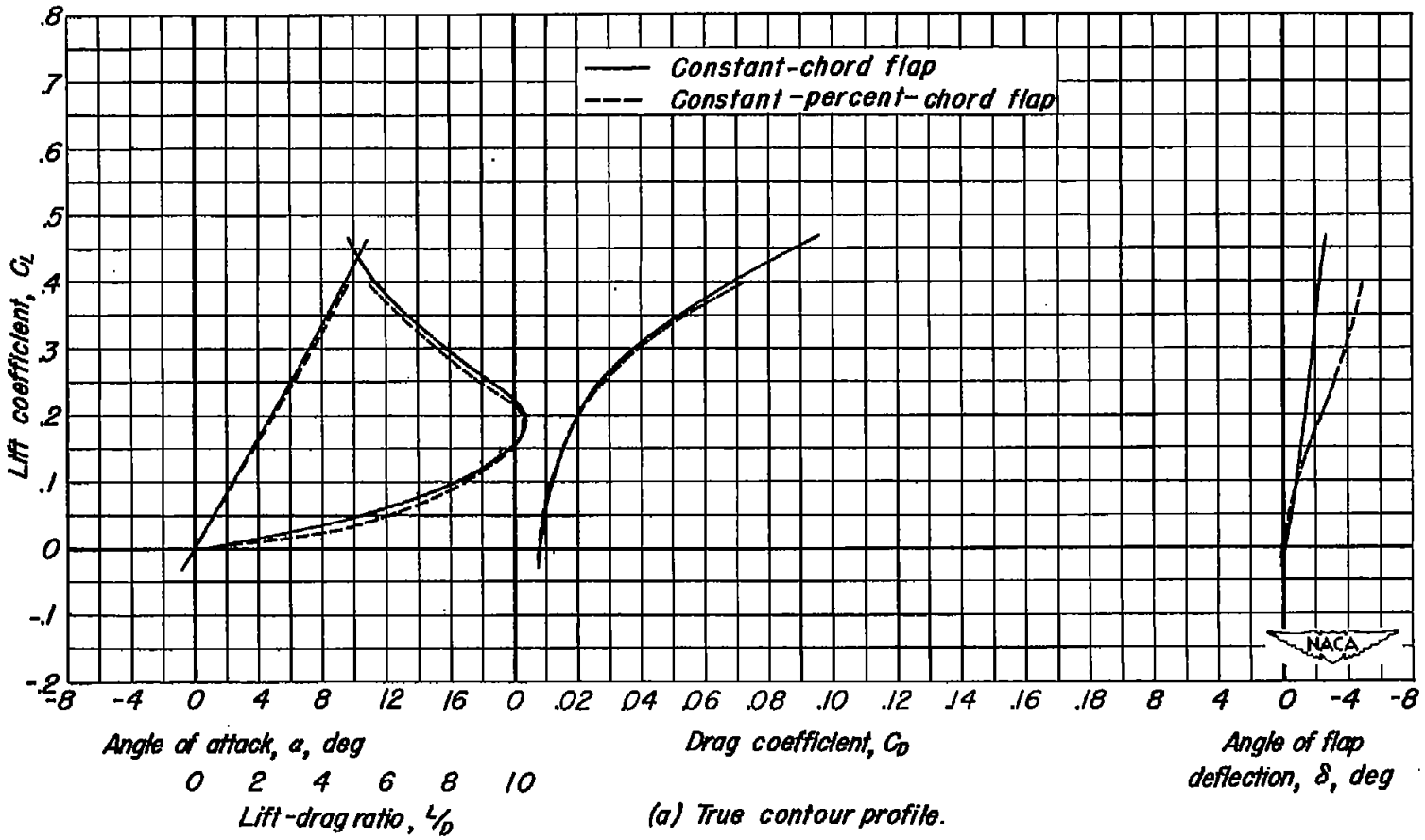
Figure 8.- The relationship between the balance lift coefficient and α, C_D, δ, and L/D for the assumed aircraft configuration. M=0.60.



(b) Blunt profile.

Figure 8.—Concluded.

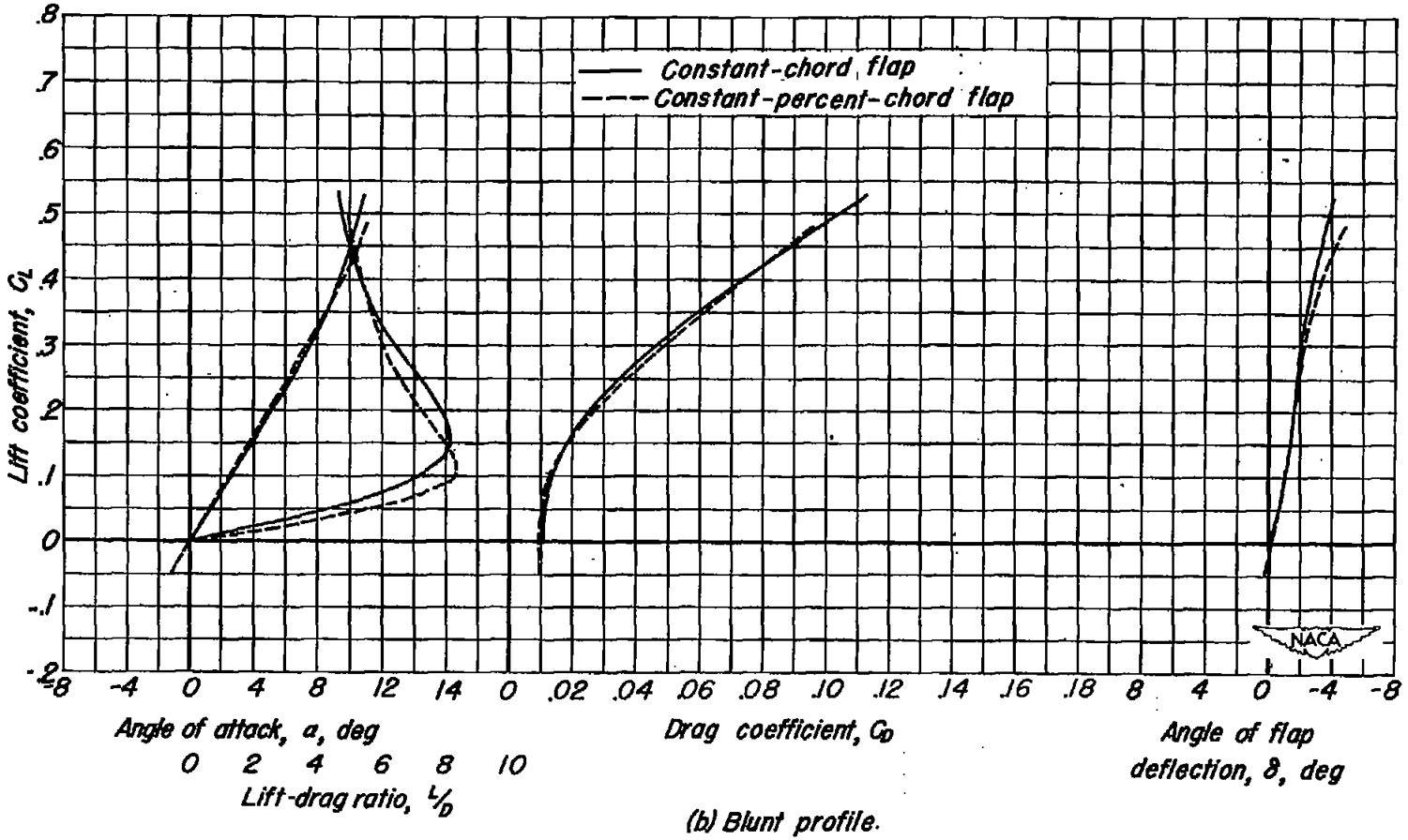
[redacted]



(a) True contour profile.

Figure 9.- The relationship between the balance lift coefficient and α, C_D, δ, and L/D for the assumed aircraft configuration. M=0.90

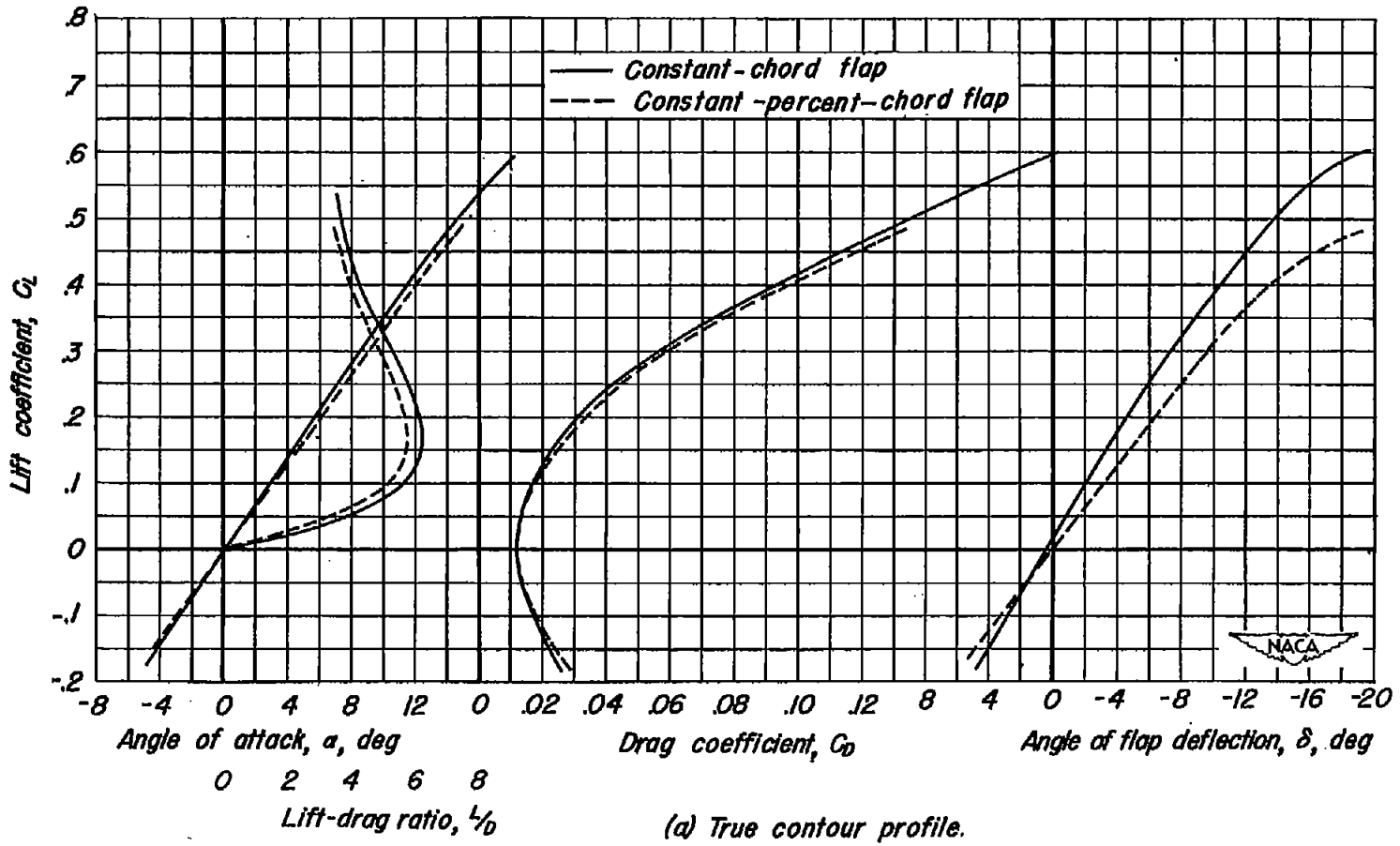
[redacted]



(b) Blunt profile.

Figure 9.-Concluded.

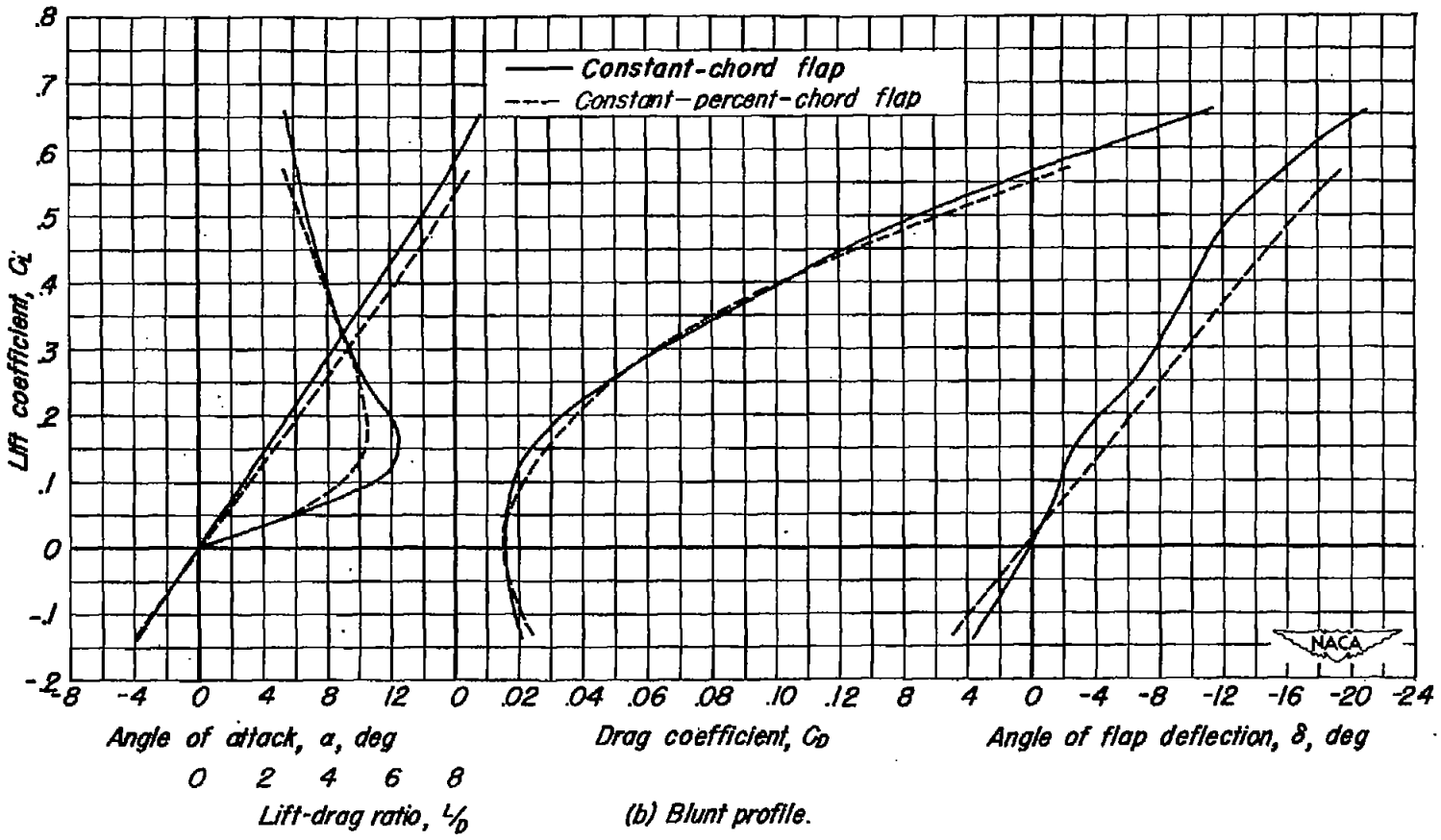
[redacted]



(a) True contour profile.

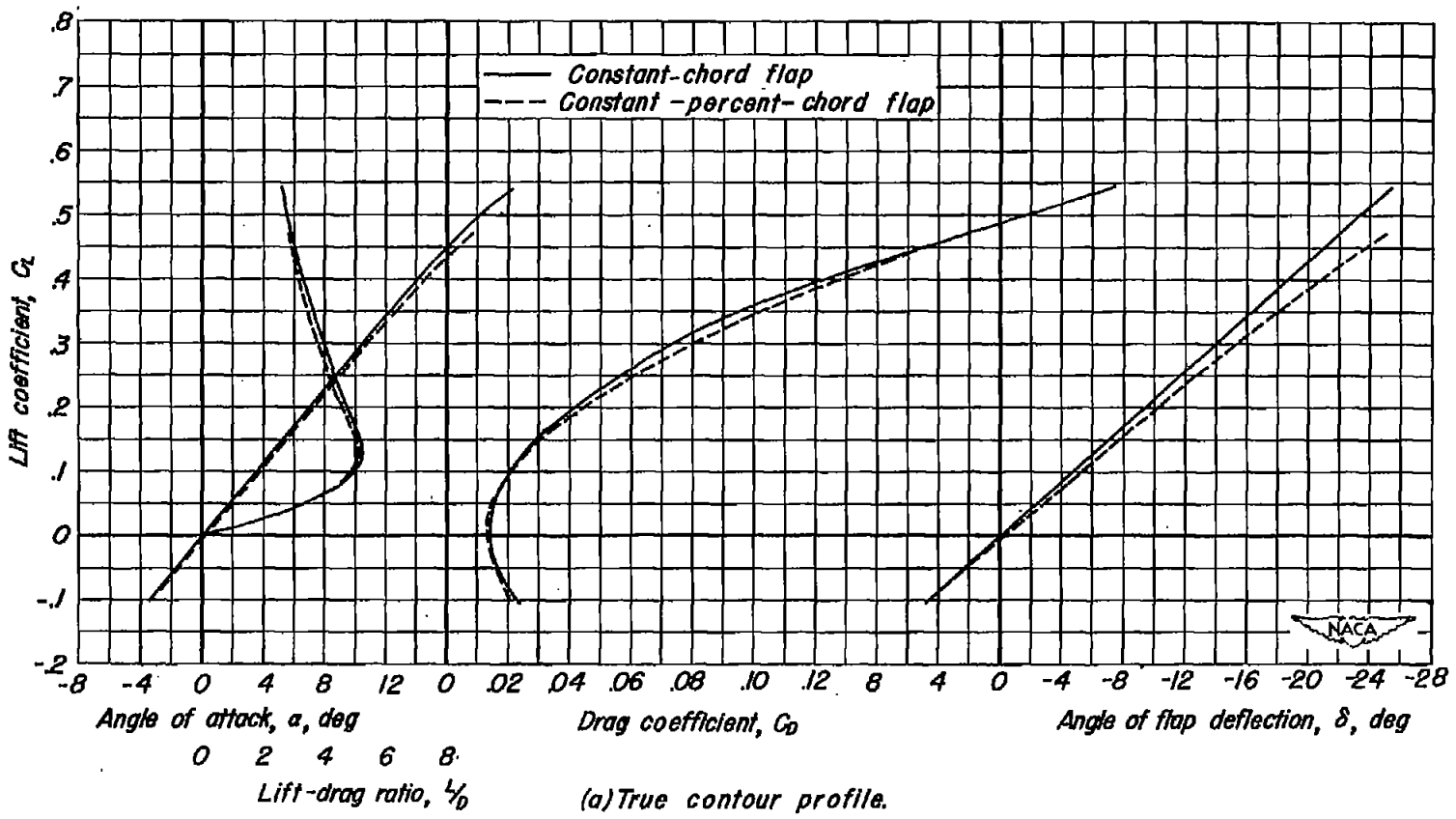
Figure 10.- The relationship between the balance lift coefficient and α, C_D, δ, and L/D for the assumed aircraft configuration. M=1.30

[redacted]



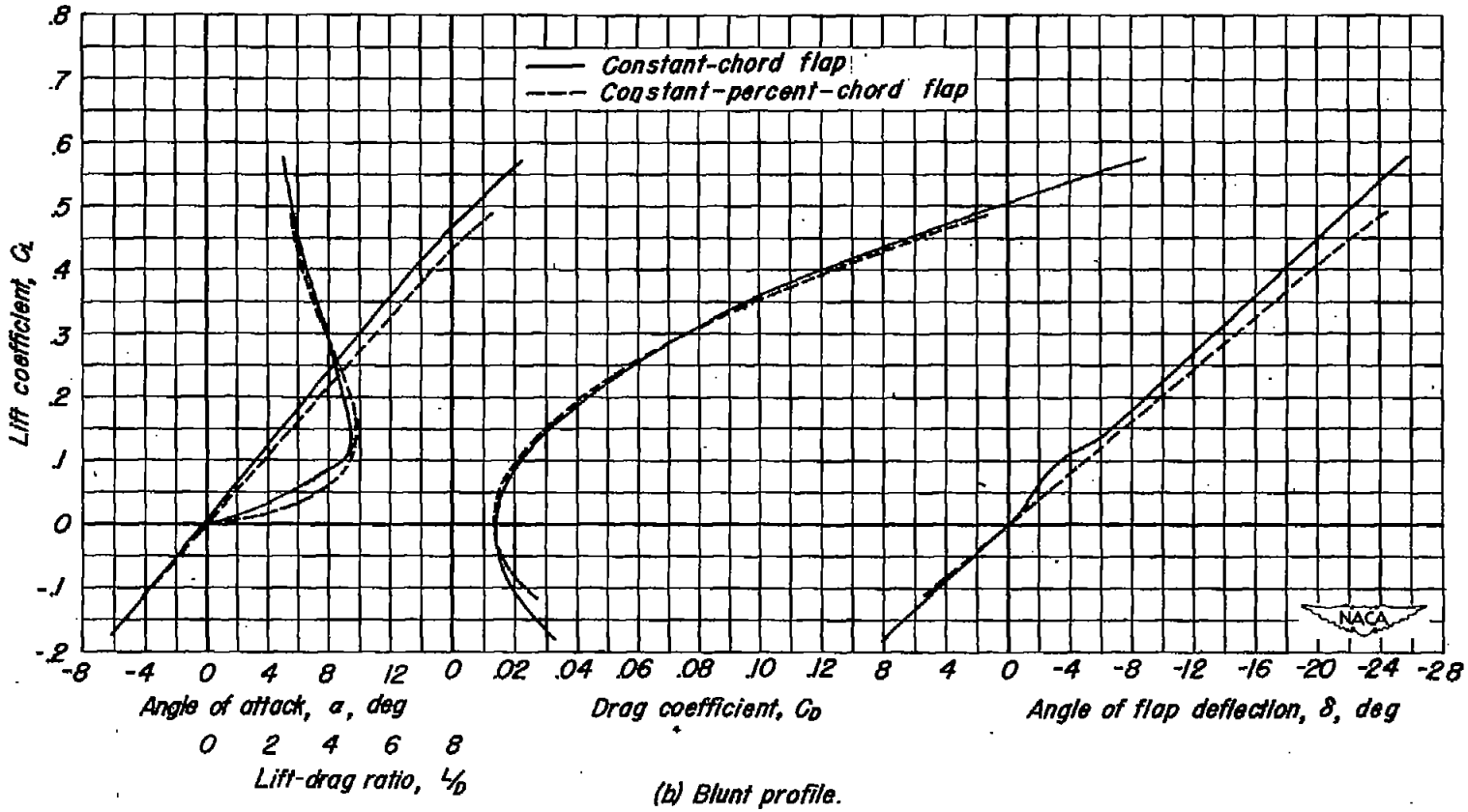
(b) Blunt profile.

Figure 10.-Concluded.



(a) True contour profile.

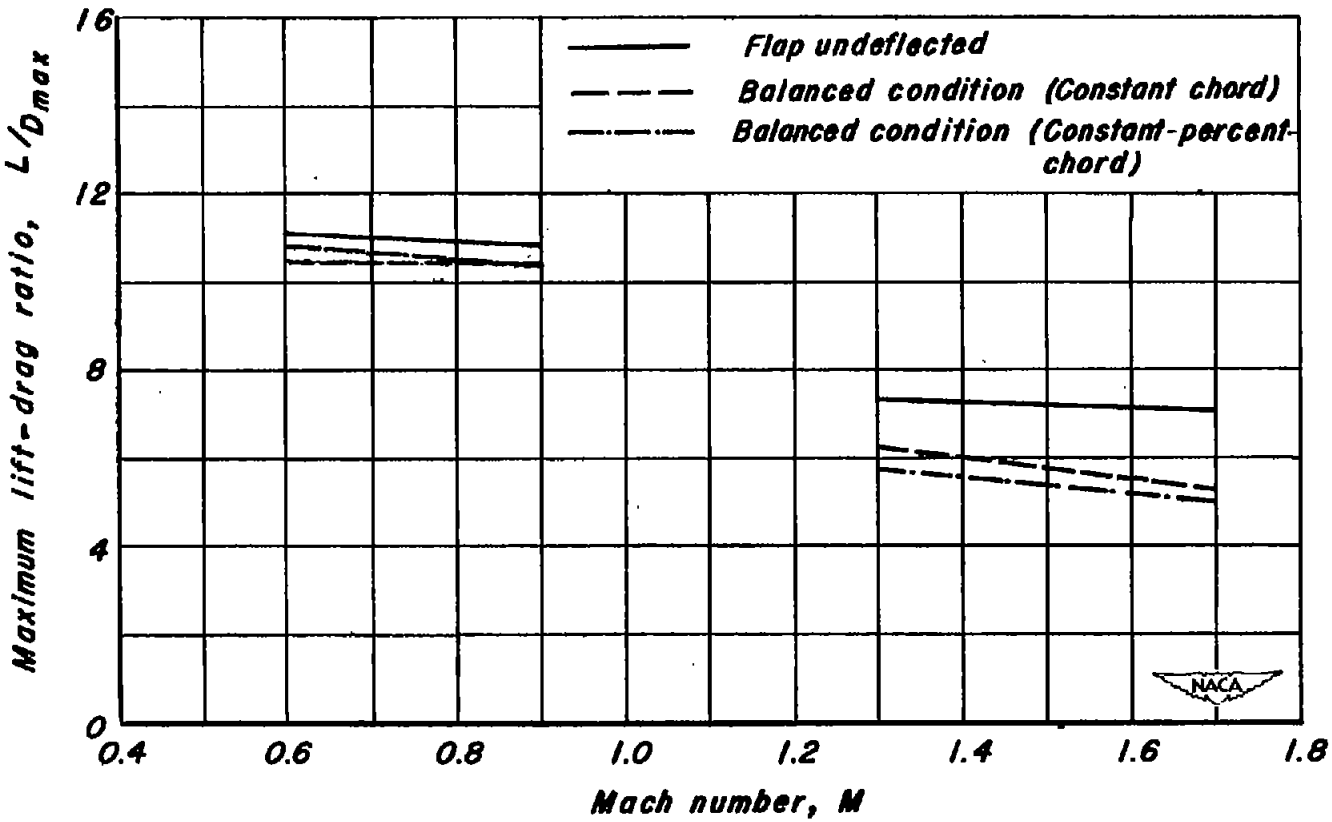
Figure 11.-The relationship between the balance lift coefficient and α, C_D, δ, and L/D for the assumed aircraft configuation. M=1.70



(b) Blunt profile.

Figure 11.-Concluded.

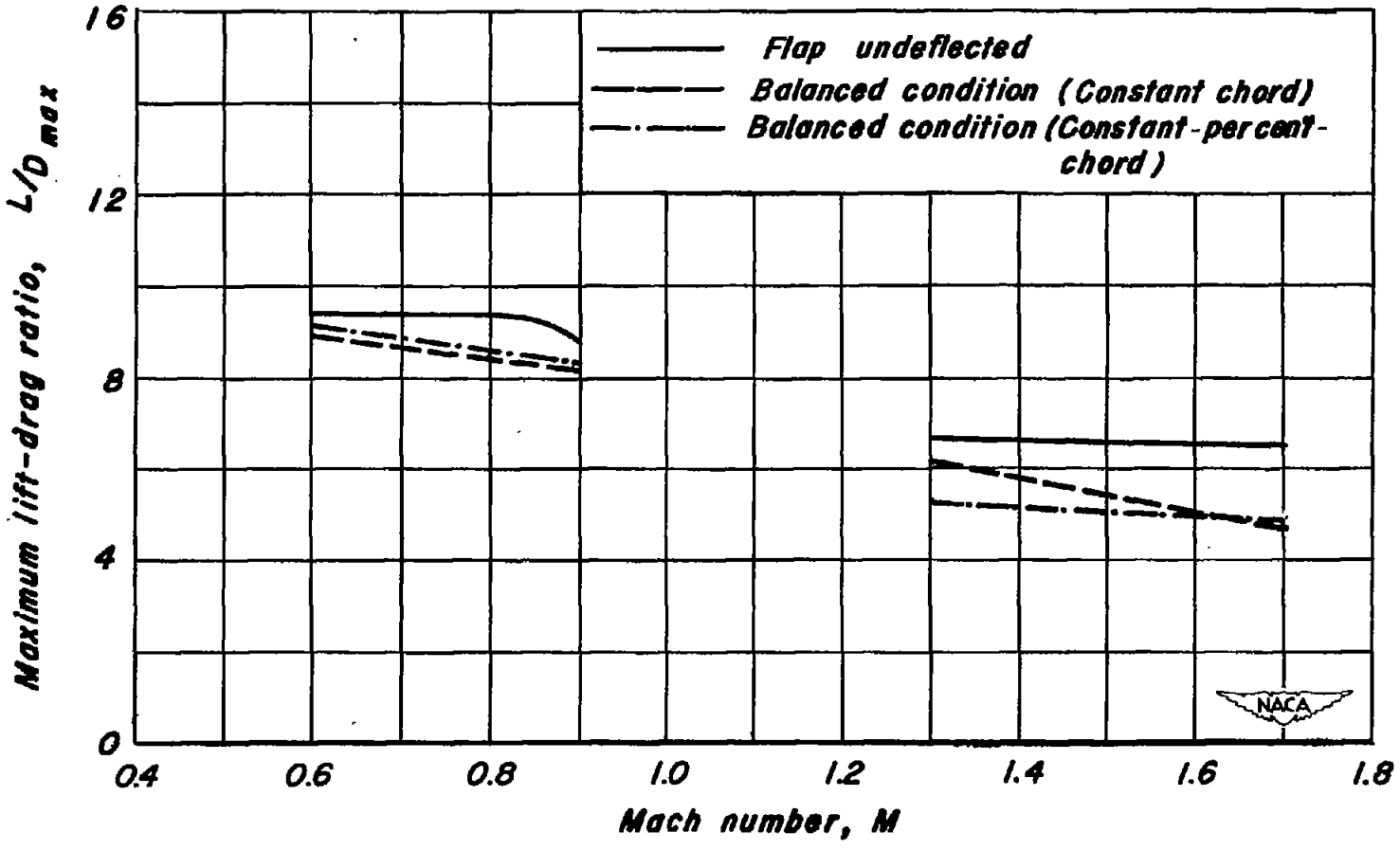
[redacted]



(a) True contour profile.

Figure 12. — Variation with Mach number of the maximum lift-drag ratio for the constant-chord and constant-percent-chord flap for the assumed airplane configuration. $R = 3.0 \times 10^6$.

[redacted]



(b) Blunt profile.

Figure 12. — Concluded.

[redacted]

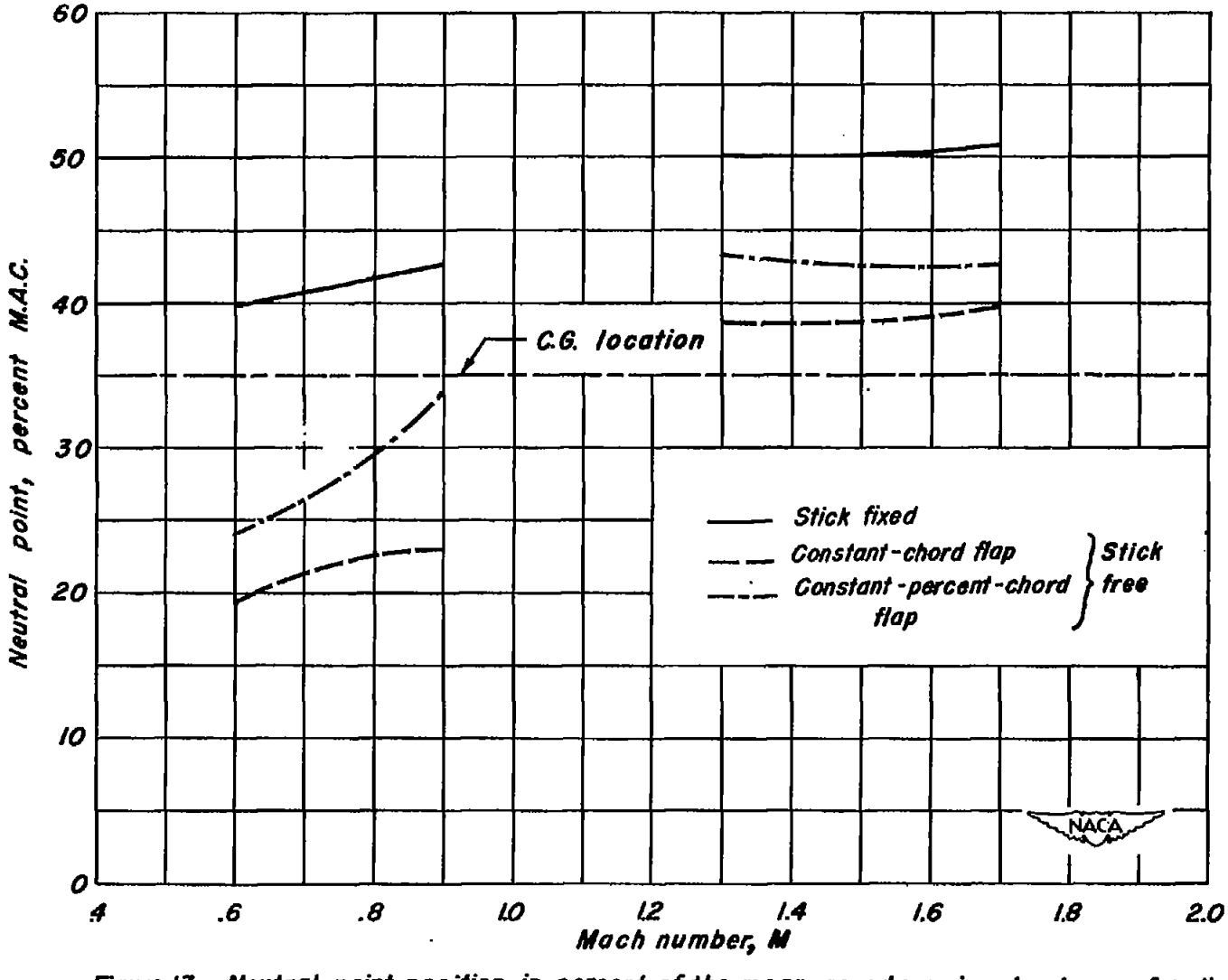


Figure 13.—Neutral point position in percent of the mean aerodynamic chord as a function of Mach number for the assumed airplane configuration for $C_L = 0$.

[redacted]

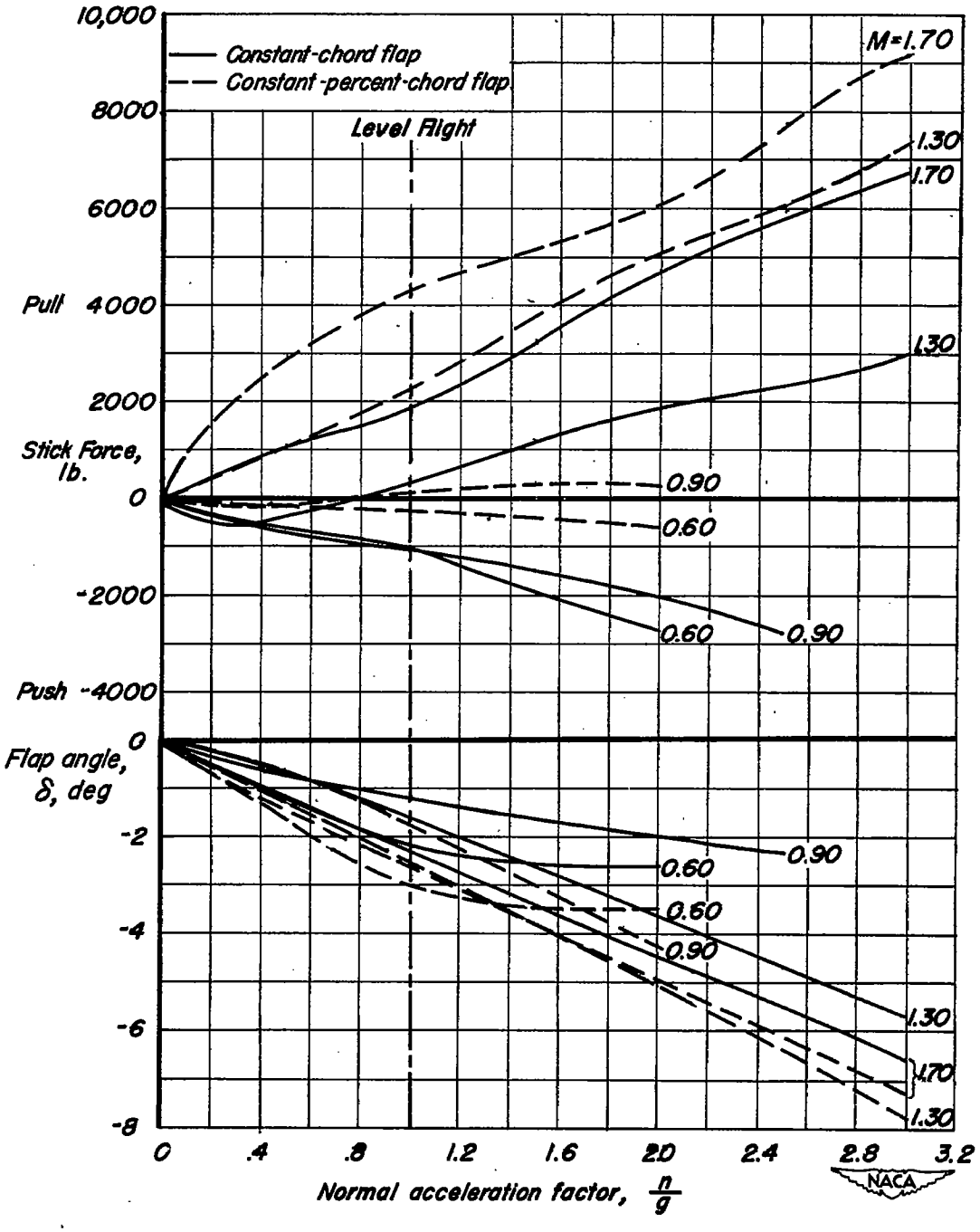


Figure 14.– Variation of flap angle and stick force with normal acceleration factor for the assumed aircraft configuration at 30,000 feet altitude for several Mach numbers. Wing loading, 60 pounds per square foot; c.g. at 0.35 mean aerodynamic chord.