

NASA Technical Memorandum 78787

EFFECTS OF WING LEADING-EDGE DEFLECTION  
ON THE LOW-SPEED AERODYNAMIC CHARACTERISTICS  
OF A LOW-ASPECT-RATIO HIGHLY SWEPT  
ARROW-WING CONFIGURATION

Paul L. Coe, Jr. and Robert P. Weston

(NASA-TM-78787) EFFECTS OF WING  
LEADING-EDGE DEFLECTION ON THE LOW-SPEED  
AERODYNAMIC CHARACTERISTICS OF A  
LOW-ASPECT-RATIO HIGHLY SWEPT ARROW-WING  
CONFIGURATION (NASA) 70 p HC A04/MF A01

N78-33047

63/02      Unclass  
33843

September 1978



**NASA**

National Aeronautics and  
Space Administration

Langley Research Center  
Hampton, Virginia 23665

## SUMMARY

Tests have been conducted in the Langley V/STOL tunnel to determine the effects of wing leading-edge deflection on the low-speed aerodynamic characteristics of a low-aspect-ratio highly swept arrow-wing configuration.

The results of the investigation showed that leading-edge deflection is effective in suppressing the formation of wing apex vortices and promoting attached flow conditions. For the particular model tested, a continuous deflection on the entire leading edge was required to prevent the occurrence of local regions of vortex separation which otherwise originated at points where the leading edge was discontinuous.

Based on observations of the leading-edge upwash, the entire leading edge was deflected through  $30^\circ$ . The resulting improvements in low-speed performance and longitudinal stability were found to be accompanied by marked improvements in the wing flow field.

## INTRODUCTION

The National Aeronautics and Space Administration is currently investigating the aerodynamic characteristics of advanced aircraft concepts capable of cruising efficiently at supersonic speeds. In order to achieve the desired high levels of supersonic cruise efficiency, these conceptual designs typically incorporate a low aspect ratio highly swept arrow wing (see, for example, ref. 1). Unfortunately, such configurations have traditionally exhibited significant deficiencies in the areas of low-speed performance, stability, and control.

The present investigation is part of a broad research program intended to yield fundamental information necessary to provide such supersonic cruise concepts with acceptable low-speed characteristics. Previous low-speed studies with a model geometrically similar to the present model have been reported in references 2, 3, and 4, and a previous study with the same model as used in the present study was reported in reference 5. The specific intent of the present study was to provide a preliminary assessment of the leading-edge upwash characteristics and to explore possible beneficial effects provided by a suitably revised leading edge.

The tests were conducted in the Langley V/STOL tunnel over an angle-of-attack range from about  $-10^\circ$  to  $17^\circ$  for sideslip angles of  $0^\circ$  and  $+5^\circ$ . The tests were conducted at a Reynolds number (based on the mean aerodynamic chord) of about  $2.5 \times 10^6$ .

## SYMBOLS

The longitudinal data are referred to the stability system of axes, and the lateral-directional data are referred to the body system of axes as illustrated in figure 1. The moment reference center for the tests was located at 59.16 percent of the wing-reference mean aerodynamic chord.

The dimensional quantities herein are given in both the International System of Units (SI) and the U.S. Customary Units.

AR	aspect ratio
b	wing span, m (ft)
$C_D$	drag coefficient, Drag/ $qS_{ref}$
$C_{Di}$	induced drag coefficient
$C_{Dsym}$	drag coefficient of symmetric configuration at zero lift
$C_L$	lift coefficient, Lift/ $qS_{ref}$
$C_l$	rolling-moment coefficient, Rolling moment/ $qS_{ref}b$
$C_m$	pitching-moment coefficient, Pitching moment/ $qS_{ref}\bar{c}$
$C_n$	yawing-moment coefficient, Yawing moment/ $qS_{ref}b$
$C_Y$	side-force coefficient, Side force/ $qS_{ref}$
$\bar{c}$	reference mean aerodynamic chord, m (ft)
$i_t$	horizontal-tail incidence, positive when leading edge is up, deg
q	free-stream dynamic pressure, Pa (lbf/ft <sup>2</sup> )
S	leading-edge suction parameter
$S_{ref}$	reference wing area, m <sup>2</sup> (ft <sup>2</sup> )
X,Y,Z	body axis coordinates
$\alpha$	angle of attack, deg
$\alpha_0$	angle of attack at zero lift, deg
$\beta$	angle of sideslip, deg
$\delta_f$	trailing-edge flap deflection, positive when trailing edge is down, deg

$\delta_{L.E.}$  leading-edge deflection, positive when leading edge is down, deg

$\epsilon$  downwash angle at horizontal tail, deg

$\sigma$  sidewash angle at vertical tail, deg

Derivatives:

$$C_{l\beta} = \partial C_l / \partial \beta$$

$$C_{n\beta} = \partial C_n / \partial \beta$$

$$C_{Y\beta} = \partial C_Y / \partial \beta$$

Model Component Designations:

H horizontal tail

$L_1, L_2, L_3, L_4$  wing leading-edge flap segments (see fig. 2(a))

N flow-through engine nacelles

$t_1, t_3, t_5, t_6$  wing trailing-edge flap segments (see fig. 2(a))

$V_{1,2}$  outboard vertical fins

$V_3$  centerline vertical tail

WB wing-body combination

Superscripts:

k indicates Krueger flap

MODEL

The dimensional characteristics of the 0.045-scale model used in the present study are listed in table 1 and shown in figure 2. The model was constructed to conform with the cruise shape geometry as defined in reference 6. A photograph of the model mounted for tests in the Langley V/STOL tunnel is presented in figure 3.

Previous tests with this model have been reported in reference 5. For the present tests, however, the model was configured with flow-through nacelles and incorporated the revised full-span leading-edge flap system shown in figure 2.

The model is also intended for dynamic testing; consequently, it was fabricated using light-weight construction techniques. Because of the relatively

low-strength associated with the model construction, the tests were restricted to dynamic pressures of about 335 Pa (7 lbf/ft<sup>2</sup>).

### TESTS AND CORRECTIONS

Static force tests were conducted at a Reynolds number (based on the mean aerodynamic chord) of about  $2.5 \times 10^6$ . The angle of attack ranged from  $-10^\circ$  to  $17^\circ$  and the angle of sideslip ranged from  $-5^\circ$  to  $5^\circ$ . The principle configuration variables were wing leading- and trailing-edge flap deflections. Tests were also conducted to determine the effect of wing leading-edge deflection on the horizontal and vertical tail effectiveness.

In addition to the foregoing tests, flow visualization studies were conducted to provide a qualitative assessment of the leading-edge upwash characteristics using the tuft mast arrangement shown in figure 4. Limited smoke flow visualization tests were also conducted to aid in determining the effects of wing leading-edge deflection on the flow field over the wing surface.

The data presented have been corrected for jet-boundary effects using the theory outlined in reference 7. The data have also been corrected for flow angularity using the technique of reference 8. Blockage and buoyancy effects have been determined to be negligible using the methods of reference 8. Transition strips were placed on the wing and the horizontal and vertical tails in accordance with the theory of reference 9.

### PRESENTATION OF RESULTS

A run schedule and a tabular listing of data are presented in the appendix. The results and discussion are presented in accordance with the following outline:

	<u>Page</u>	<u>Figure</u>
Longitudinal aerodynamic characteristics		
Leading-edge configuration studies.....	5	5-12,14
Trailing-edge flap effectiveness.....	7	13
Horizontal tail effectiveness.....	8	15
Lateral-directional characteristics		
Effects of leading-edge deflection.....	9	16,17
Aileron effectiveness.....	9	18

## RESULTS AND DISCUSSION

### Longitudinal Aerodynamic Characteristics

Leading-edge configuration studies.— Previous low-speed experimental studies (see, for example, refs. 3, 4, and 5) have shown that the basic wing-body-outboard vertical fin combination exhibits a marked longitudinal instability (referred to as pitchup) and a degradation of performance at relatively low angles of attack. These previous investigations have indicated that this marked longitudinal instability and degradation of performance are both attributable to the separated flow associated with the formation of vortices at the wing apex and to the stall of the outboard wing panel. In an attempt to provide attached flow and thereby alleviate the above mentioned deficiencies, previous investigators have deflected the leading edge of the wing apex and the leading edge of the outboard wing panel (designated herein as segments  $L_1$  and  $L_4$  respectively).

Figure 5 presents the static longitudinal aerodynamic characteristics, obtained during the present study, for the wing-body-outboard vertical fin combination configured with: (1) undeflected leading edges and (2) deflected leading edges with  $L_1 = 30^\circ$  and  $L_4$  replaced with a  $45^\circ$  Krueger flap. (See fig. 2 and ref. 5.) As can be seen, the particular combination of segment deflections results in a reduction in vortex lift. Concurrent with the reduction in vortex lift is a beneficial reduction in pitchup and a slight reduction in induced drag for  $C_L > 0.3$ .

In order to quantify the performance improvements achieved by the various leading-edge treatments studied, the drag polar corresponding to the theoretical minimum induced drag condition defined by

$$C_D = C_{D_{\text{sym}}} + C_L^2 / \pi AR \quad (1)$$

and the drag polar for the worst condition of full leading-edge separation defined by

$$C_D = C_{D_{\text{sym}}} + C_L \tan(\alpha - \alpha_0) \quad (2)$$

are also presented. The conventional leading-edge suction parameter,  $S$ , is defined as

$$S = \frac{C_D - [C_{D_{\text{sym}}} + C_L \tan(\alpha - \alpha_0)]}{C_L^2 / \pi AR - C_L \tan(\alpha - \alpha_0)} \quad (3)$$

where  $C_{D_{\text{sym}}}$  has been estimated for the present model tests to be 0.0158. Using this value for  $C_{D_{\text{sym}}}$  and the above definition for  $S$ , it can be seen that the configuration achieves values of leading-edge suction of 0.5 to 0.6. These relatively low values of  $S$  indicate that the flow is only partially attached along the leading edge.

Figure 6 presents results of tests conducted to determine the relative effect of increasing the deflection of leading-edge segment  $L_1$ . As can be seen, increasing the deflection from  $30^\circ$  to  $45^\circ$  had no beneficial effect on pitchup and exhibited an adverse effect on induced drag.

In order to provide some insight into the flow characteristics along the wing leading edge, the tuft mast arrangement illustrated in figure 4 was used. Figure 7 presents photographs of the tufts, taken with the mast located at various leading-edge stations. Although the experimental accuracy of this technique for measuring upwash has not yet been determined, it is believed that the tufts are generally aligned with the local flow and hence should yield results which are at least qualitatively indicative of flow angularity. Figure 8 shows a comparison of the upwash observed using the tuft mast arrangement and the upwash calculated using the linear vortex-lattice program described in reference 10. Both the observed and the computed results are presented for a location of  $0.019 \bar{c}$  forward of the wing leading edge with the model at  $\alpha = 10^\circ$ . As can be seen, the agreement between the observed and computed results is quite poor. Although the general trend of increasing upwash with increasing spanwise location is consistent, the computed values of upwash are generally about twice the observed values.

Based on these data, it would appear that increasing the spanwise extent of the leading-edge deflection, beyond segment  $L_1$ , would be an appropriate means for improving the flow attachment along the wing leading edge and subsequently improve the performance of the configuration. Accordingly, the wing was modified to permit the deflection of the leading-edge segments subsequently designated as  $L_2$  and  $L_3$  (see fig. 2). In the interest of brevity, the leading-edge deflections will be denoted as  $\delta_{LE} = L_1/L_2/L_3/L_4$ . For example, a leading-edge deflection  $\delta_{LE} = 10^\circ/20^\circ/30^\circ/45^\circ k$  would correspond to a condition for which the segment deflections were as follows:  $L_1 = 10^\circ$ ,  $L_2 = 20^\circ$ ,  $L_3 = 30^\circ$ , and  $L_4$  is deflected  $45^\circ$ . (The superscript  $k$  indicates a Krueger flap as shown in figure 2(b).)

During this phase of the investigation, smoke flow visualization tests were conducted to evaluate the effect of deflecting various combinations of  $L_1$ ,  $L_2$ , and  $L_3$ . In all cases observed, when a discontinuity existed along the leading edge due to nonuniform deflections of segments  $L_1$ ,  $L_2$ , and  $L_3$ , a distinct vortex core formed at the point of the discontinuity. Since the intent of the study was to determine means for eliminating the vortex separation, a uniform deflection (i.e.  $L_1 = L_2 = L_3$ ) was considered necessary. Furthermore, based on the observed levels of upwash and the previously discussed adverse effects encountered when segment  $L_1$  was over deflected, a leading-edge deflection of  $30^\circ$  was selected. Figure 9 presents the results obtained for the wing-body outboard vertical fin combination with  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/0^\circ$ . Also shown for purposes of comparison are previously discussed data for the configuration with  $\delta_{LE} = 0^\circ$  (undeflected leading edges) and  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/0^\circ$ . Comparison of the drag polars shows that substantial reductions in induced drag are achieved by deflecting the entire leading edge of the main wing structure. The measured reduction in induced drag was also observed to be accompanied by fairly well attached flow along the leading edge of the main wing panel. This observed result would, of course, be expected due to the reduced local angle of attack of the wing leading edge.

It should be recalled that the above 30° deflection of the leading edge evolved in order to preserve leading-edge surface continuity and to avoid over deflecting the wing apex. Thus, the above results may not represent the optimum leading-edge configuration. In particular, the upwash measurements indicate that the inboard portion of the leading edge may be over deflected. An alternate approach, which could reduce the adverse effects of overdeflecting the wing apex, may be to simply increase the sweep of leading-edge hinge line while moving the point of intersection of the hinge line and the side of the body forward. This modification would reduce the deflected area along the span of segment L<sub>1</sub>, while increasing the deflected area outboard of segment L<sub>1</sub>.

In addition to deflecting the leading edge of the main wing panel, it would of course be expected that appropriate deflection of the leading edge of the outboard wing panel (segment L<sub>4</sub>) could provide further improvements in the low-speed performance and longitudinal stability. Figures 10 and 11 show the results obtained for simple deflections of segment L<sub>4</sub> and also shows the results obtained with a 45° Krueger flap. Examination of the data presented in figure 10 indicates that the performance benefit provided by simply deflecting segment L<sub>4</sub> through either 20° or 30° is about equal and that both these deflections resulted in slightly better performance than did the other deflections considered. The corresponding longitudinal stability characteristics are presented in figure 11. As can be seen, for the range of leading-edge deflections considered, the 30° deflection resulted in the most linear variation of C<sub>m</sub> versus C<sub>L</sub>; however, some nonlinearity is still apparent at higher angles of attack.

Figure 12 provides a direct comparison of the longitudinal aerodynamic characteristics of the model configured with: (1)  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$ ; (2)  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$ ; and (3)  $\delta_{LE} = 0^\circ$  (undeflected leading edges). Analysis of the data shows that whereas the wing-body outboard vertical fin combination with  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$  experienced a gradual pitchup for  $\alpha > 6^\circ$ , the corresponding configuration with  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  postponed the occurrence of pitchup to  $\alpha = 11^\circ$ . (It should be noted, however, that the pitchup, although delayed, is more abrupt.) Furthermore, the leading-edge deflection  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  is seen to result in substantial reductions in induced drag, or equivalently improved performance, for  $C_L > 0.2$ . It should, of course, be noted that the reductions in vortex induced pitchup and vortex induced drag are accompanied by reductions in vortex lift.

Trailing-edge flap effectiveness.— The segmented trailing-edge flap system is shown in figure 2. The angular deflection of the individual segments is described normal to the respective flap hinge lines. A trailing-edge flap setting indicated as  $\delta_{LE} = 40^\circ/30^\circ/20^\circ$  corresponds to a condition wherein the inboard trailing-edge flap segments (t<sub>1</sub>) are deflected 40°, the midspan segments (t<sub>2</sub>) are deflected to 30°, and the outer flap segments (t<sub>4</sub>) are deflected to 20°.

Figure 13 presents the trailing-edge flap effectiveness for the wing-body body outboard vertical fin combination configured with different leading edges. Comparison of the data of figure 13(c) with the data of figures 13(a) and 13(b) shows that deflecting the entire leading edge 30° results in a slight increase in the incremental lift coefficient obtained by deflecting the trailing-edge flap system. The slight increase in trailing-edge effectiveness



is, of course, associated with the improved flow achieved with leading-edge deflection. By similar comparison, these data also show that deflecting the entire leading edge  $30^\circ$  resulted in substantial reductions in induced drag, or equivalently increases in leading-edge suction, over the low-speed operational range, that is,  $0.3 < C_L < 0.7$ . This result is summarized in figure 14 which shows the previously discussed leading-edge suction parameter  $S$ , plotted as a function of  $C_L$ . The results presented were obtained by constructing the envelope of the drag polars for the various trailing-edge flap deflections. As can be seen, the leading edge deflection  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  results in substantial increases in leading-edge suction relative to both the undeflected condition,  $\delta_{LE} = 0^\circ$ , and to the condition with  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$ . For example, relative to  $\delta_{LE} = 0^\circ$ ,  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  provides approximately a 35-percent increase in leading-edge suction at an assumed second segment climb lift coefficient of 0.35 and about a 24-percent increase at an assumed approach lift coefficient of 0.6. By contrast, the leading-edge deflection with  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$  provided only 5.7- and 11.2-percent increase at these respective lift coefficients.

It should be noted that while the performance of the configuration was greatly improved by the present leading-edge treatment, the data of figure 13(c) show that progressively increasing the trailing-edge deflection leads to a progressive reduction in the angle of attack at which the onset of pitchup occurs. This result is of course thought to be due to the increased lift and circulation accompanying the trailing-edge deflection and resulting in leading-edge separation. Further consideration of the data indicates that a vortex-lift increment does not accompany the pitchup; thus suggesting that the separation may be limited to the outboard wing panel.

The above results illustrate the necessity of additional research to providing quantitative information regarding the leading-edge flow field. Based on the results obtained with the trailing-edge undeflected, it would appear that a suitable deflection schedule for the leading- and trailing-edge systems may alleviate the pitchup characteristics for the high-lift configuration.

Horizontal tail effectiveness.- Figure 15 presents the horizontal tail effectiveness for the model configured with the leading-edge geometries previously compared. Data are presented for a range of incidences of the all moveable horizontal tail from  $10^\circ$  to  $-20^\circ$ .

As has been illustrated previously in references 4 and 5, the present study shows that while the horizontal tail provides only a small contribution to longitudinal stability it is effective in providing longitudinal control. The relatively small stabilizing effect provided by the horizontal tail is, of course, directly related to relatively high values of the downwash factor (i.e.,  $\partial \epsilon / \partial \alpha$ ) as measured in reference 2. Therefore, owing to the observed changes in the wing flow field when the entire leading edge is deflected, the present phase of the study was intended to determine if the modified leading-edge geometry would impact the horizontal tail effectiveness by altering the downwash at the horizontal tail location. As can be seen by comparison of figures 15(a) and 15(b), the horizontal tail contribution to longitudinal stability and longitudinal control is virtually the same for both deflected leading-edge geometries studied.

## Lateral-Directional Characteristics

Effect of leading-edge deflection.— Previous studies of similar configurations have shown that deflecting of all or part of the wing leading edge may have a significant effect on lateral-directional stability. Figure 16 presents the values of the stability derivatives  $C_{n\beta}$ ,  $C_{l\beta}$ , and  $C_{y\beta}$  as a function of angle of attack for the wing-body outboard vertical fin combination configured with the different leading-edge geometries. As can be seen, the configuration with undeflected leading edges exhibits stable values of the directional stability derivatives,  $C_{n\beta}$ , and that the level of stability increases with increasing angle of attack. This result has been observed for other highly swept arrow-wing concepts (see, for example, ref. 11) and has been associated with the interaction of the wing apex vortices on the forward portion of the configuration. The data of figure 16 also show that employing either of the deflected leading-edge geometries (i.e., either  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$  or  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  in an attempt to eliminate the wing apex vortices, results in reduced values of  $C_{n\beta}$ . It is interesting to note that while the leading-edge deflection  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  provided improvements in performance and longitudinal stability, relative to the configuration with  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$ , it did so without any significant additional compromise of the lateral-directional characteristics.

The lateral-directional stability characteristics of the complete configuration are presented in figure 17. Analysis of the tail-on and tail-off data shows that the particular vertical tail arrangement provides an incremental contribution to  $C_{n\beta}$  of about 0.001. This value of the vertical tail contribution to directional stability is in excellent agreement with previously published results for the model configured with  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$  (see ref. 5), indicating that deflecting the entire leading edge does not significantly effect the sidewash characteristics (i.e.,  $\partial\sigma/\partial\beta$ ) at the vertical tail location. This result might be anticipated, based on the results of the previous section which indicated that the revised leading-edge treatment did not significantly effect the downwash characteristics at the horizontal tail location.

Aileron effectiveness.— The data of the preceding section show that the configuration exhibits relatively high levels of the effective dihedral derivative  $C_{l\beta}$ . (See figs. 16 and 17.) Previous analyses (see ref. 12) of this configuration have shown that such levels of effective dihedral, when coupled with relatively low levels of available lateral control, result in deficiencies in the lateral-directional handling qualities and also in the inability to meet current standard crosswind landing criteria.

The analysis of reference 5 has shown that one potential solution to the lateral control deficiency is to augment the roll control produced by the outboard aileron with that obtained from differential deflection of the trailing-edge flaps; however, such a scheme also results in an undesirable reduction in the low-speed operational lift coefficient. The more desirable approach would, of course, be to provide the configuration with an increase in aileron effectiveness.

Inasmuch as the relative ineffectiveness of the outboard ailerons is considered to be directly related to the previously discussed separated flow over the outboard panels, leading-edge treatments which provide improved longitudinal stability would also be expected to yield improved aileron effectiveness. Figure 18 summarizes the rolling-moment data obtained by deflecting the outboard aileron (segment  $t_6$ ) of the model. Results are presented for the model configured with the leading-edge deflection of  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$  at an assumed approach angle of attack of  $8^\circ$ . Also shown, for purposes of comparison, are comparable results obtained from the data of reference 5 for which the leading-edge deflection was  $\delta_{LE} = 30^\circ/0^\circ/0^\circ/45^\circ$ . As can be inferred from the initial slope of the curve of  $C_l$  versus  $\delta_{t_6}$ , the well-attached flow over the outboard panels of the configuration with  $\delta_{LE} = 30^\circ/30^\circ/30^\circ/30^\circ$ , offers the potential for a substantial increase in available lateral control. It is noted, however, that for higher deflections of segment  $t_6$ , the aileron effectiveness with either of the leading-edge geometries is somewhat similar. In particular, for large upward deflections of  $t_6$ , the curves coalesce as would be expected, and for large downward deflections of  $t_6$ , the curves are about parallel. The data of figure 18 suggest partial flow separation as  $t_6$  increases above  $10^\circ$  deflection. This result is in agreement with the previously discussed results for the trailing-edge flap system for which it was concluded that the increased lift and circulation accompanying trailing-edge deflection results in an increase in upwash and consequently leading-edge separation. Therefore to prevent flow separation on the outboard wing panels, it may be possible to schedule the deflection of the leading-edge flaps with both ailerons as well as trailing-edge flaps.

#### SUMMARY OF RESULTS

The results of low-speed wind-tunnel tests to determine the effects of wing leading-edge deflection on a low aspect ratio highly swept arrow-wing configuration may be summarized as follows:

1. Flow visualization studies indicate that the leading-edge upwash is only about one half the value predicted by a planar vortex-lattice program. However, the planar vortex lattice did predict the correct general trend of increasing upwash with increasing span.
2. Wing leading-edge deflection is effective in suppressing the formation of vortices at the wing apex and promoting attached flow conditions. However, for the particular model tested, a continuous deflection of the entire leading edge was required to prevent the occurrence of local regions of vortex separation which otherwise originated at points of leading-edge discontinuity.
3. Deflecting the entire wing leading edge  $30^\circ$  effectively postpones the pitchup of the basic wing-body outboard vertical fin configuration to  $11^\circ$ . However, trailing-edge flap deflection reduces the angle of attack at which pitchup occurs. This result is apparently due to the increased circulation, and hence increased upwash, associated with trailing-edge deflection.

4. The improvements in the wing flow field, achieved by deflecting the entire wing leading edge  $30^\circ$ , are accompanied by marked improvements in leading-edge suction and low-speed performance.

5. Comparison of data for the configuration with: (1) the wing apex deflected through  $30^\circ$  and a  $45^\circ$  Krueger flap on the outboard wing panel; and (2) the entire wing leading edge deflected through  $30^\circ$ , shows that the latter leading-edge treatment results in significant improvements in longitudinal stability and performance while having no significant effect on either the horizontal and vertical tail effectiveness or the static lateral-directional stability characteristics.

6. The improvements in flow over the outboard wing panel, achieved by deflecting the entire wing leading edge through  $30^\circ$ , resulted in increased aileron effectiveness.

ORIGINAL PAGE IS  
OF POOR QUALITY

## REFERENCES

1. Robins, A. Warner; Morris, Odell A.; and Harris, Roy V., Jr.: Recent Research Results in the Aerodynamics of Supersonic Vehicles. J. Aircraft, vol. 3, Nov-Dec, 1966, pp. 573-577. (Also available as AIAA Paper 65-717, 1965)
2. Shivers, James P.; McLemore, H. Clyde; and Coe, Paul L., Jr.: Low-Speed Wind-Tunnel Investigation of a Large-Scale Advanced Arrow-Wing Supersonic Transport Configuration With Engines Mounted Above the Wing for Upper-Surface Blowing. NASA TN D-8350, 1976
3. Coe, Paul L., Jr.; McLemore, H. Clyde; and Shivers, James P.: Effects of Upper Surface Blowing and Thrust Vectoring on Low-Speed Aerodynamic Characteristics of a Large-Scale Supersonic Transport Model. NASA TN D-8296, 1976
4. Smith, Paul M.: Low-Speed Aerodynamic Characteristics From Wind-Tunnel Tests of a Large-Scale Advanced Arrow-Wing Supersonic-Cruise Transport Concept. NASA CR 145280, 1978
5. Coe, Paul L., Jr.; Smith, Paul M.; and Parlett, Lysle P.: Low-Speed Wind-Tunnel Investigation of an Advanced Supersonic Cruise Arrow-Wing Configuration. NASA TM 74043, 1977
6. Staff, Hampton Technical Center, LTV Aerospace Corp.: Advanced Supersonic Technology Concept Study Reference Characteristics. NASA CR 132374, 1973
7. Gillis, Clarence L.; Polhamus, Edward C.; and Gray, Joseph L., Jr.: Charts for Determining Jet Boundary Corrections for Complete Models in 7 X 10 Foot Closed Rectangular Wing Tunnels. NACA ARR L5G31, 1945
8. Pope, A.; and Harper, J. J.: Low-Speed Wind-Tunnel Testing. John Wiley & Sons, Inc., New York, N. Y., 1966
9. Braslow, Albert L.; and Knox, Eugene C.: Simplified Method for Determination of Critical Height of Distribution Roughness Particles for Boundary-Layer Transition at Mach Number From 0 to 5. NACA TN 4363, 1958
10. Tulinius, J.: Unified Subsonic, Transonic, and Supersonic NAR Vortex Lattice. Rockwell International Rep. TFD-72-523, 1972
11. McLemore, H. Clyde; and Parlett, Lysle P.: Low-Speed Wind-Tunnel Tests of a 1/10-Scale Model of a Blended Arrow Advanced Supersonic Transport. NASA TM X-72671, 1975
12. Grantham, William D.; and Nguyen, Luat T.: Recent Ground-Based and In-Flight Simulator Studies of Low-Speed Handling Characteristics of Supersonic Cruise Transport Aircraft. AIAA Paper 77-1144, 1977

ORIGINAL PAGE IS  
OF POOR QUALITY

TABLE - DIMENSIONAL CHARACTERISTICS OF MODEL

Wing:

Reference area, m (ft)	1.875	(20.187)
Gross area, m (ft)	2.067	(22.25)
Span, m (ft)	1.89	(6.20)
Root chord, m (ft)	2.515	(8.252)
Tip chord, m (ft)	9.242	(0.794)
Reference mean aerodynamic chord, m (ft)	1.320	(4.331)
Gross mean aerodynamic chord, m (ft)	1.557	(5.109)
Leading-edge sweep, deg		
At body station 1.275 m (4.184 ft)		74.0
At body station 4.758 m (15.609 ft)		70.5
At body station 6.238 m (20.615 ft)		60.0

Vertical tail:

Area, m (ft)	0.0327	(0.352)
Span, m (ft)	0.171	(0.562)
Root chord, m (ft)	0.0732	(0.240)
Leading-edge sweep, deg		59.0

Vertical fin (two):

Area, m (ft)	0.084	(0.906)
Span, m (ft)	0.147	(0.484)
Root chord, m (ft)	0.499	(1.637)
Tip chord, m (ft)	0.071	(0.233)
Leading-edge sweep, deg		73.4

Horizontal tail (aspect ratio of 1.39):

Area, m (ft)	0.140	(1.613)
Span, m (ft)	0.457	(1.499)
Root chord, m (ft)	0.540	(1.772)
Tip chord, m (ft)	0.116	(0.380)
Leading-edge sweep, deg		43.0
Dihedral, deg		-15.0

## APPENDIX - PRESENTATION OF TABULATED DATA

The symbols used in the data tabulation are defined as follows:

ALPHA	Angle of attack, deg
BETA	Angle of sideslip, deg
CD	Drag force coefficient; stability axis
CL	Lift force coefficient; stability axis
CPM	Pitching moment coefficient; stability axis
CRM	Rolling moment coefficient; body axis
CSF	Side force coefficient; body axis
CYM	Yawing moment coefficient; body axis
Q	Free stream dynamic pressure, (lbf/ft <sup>2</sup> )





Table A-2. - Tabulated Data

RUN 51

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
1310	7.009	0.00	-9.88	-.3166	.0572	-.0035	.0015	.0003	-.0043
1311	7.034	0.00	-8.91	-.2695	.0461	.0029	.0012	.0002	-.0044
1312	7.042	0.00	-7.91	-.2248	.0391	.0054	.0023	.0005	-.0075
1313	7.058	0.00	-6.87	-.1814	.0318	.0083	.0027	.0001	-.0038
1314	7.058	0.00	-5.85	-.1446	.0254	.0103	.0021	-.0000	-.0006
1315	7.058	0.00	-4.79	-.0974	.0233	.0103	.0018	.0004	-.0024
1316	7.058	0.00	-3.67	-.0497	.0196	.0138	.0018	.0004	-.0034
1317	7.075	0.00	-2.68	-.0106	.0174	.0150	.0022	.0002	-.0016
1318	7.075	0.00	-1.68	.0261	.0174	.0170	.0012	.0004	-.0016
1319	7.083	0.00	-.69	.0507	.0159	.0201	.0009	.0002	-.0031
1320	7.091	0.00	.38	.1073	.0193	.0216	.0016	.0005	-.0018
1321	7.091	0.00	1.36	.1362	.0213	.0227	.0009	.0002	-.0056
1322	7.091	0.00	2.43	.1917	.0246	.0245	.0013	.0002	-.0011
1323	7.091	0.00	3.42	.2192	.0301	.0244	.0015	-.0001	-.0017
1324	7.091	0.00	4.40	.2540	.0359	.0248	.0008	.0002	-.0016
1325	7.141	0.00	5.46	.3199	.0467	.0286	.0010	.0000	-.0027
1326	7.141	0.00	6.49	.3544	.0557	.0318	.0011	-.0000	-.0018
1327	7.141	0.00	7.43	.4122	.0697	.0375	.0011	.0004	-.0026
1328	7.141	0.00	8.45	.4504	.0846	.0414	.0011	.0008	-.0022
1329	7.141	0.00	9.48	.5046	.1034	.0493	.0011	.0009	-.0026
1330	7.141	0.00	10.52	.5470	.1212	.0536	-.0000	.0007	.0045
1331	7.141	0.00	12.53	.6486	.1640	.0680	.0003	.0016	.0002
1332	7.141	0.00	14.53	.7524	.2181	.0867	-.0005	.0019	.0004
1333	7.141	0.00	16.80	.8671	.2901	.1156	-.0023	.0016	.0033
							-.0014	.0013	.0016

RUN 52

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
1334	7.141	-5.00	-9.88	-.3191	.0535	-.0055	-.0085	-.0010	.0197
1335	7.141	-5.00	-8.90	-.2635	.0451	-.0005	-.0068	-.0010	.0202
1336	7.141	-5.00	-7.93	-.2255	.0351	.0040	-.0054	-.0015	.0261
1337	7.141	-5.00	-6.90	-.1927	.0296	.0056	-.0041	-.0010	.0208
1338	7.141	-5.00	-5.80	-.1319	.0241	.0089	-.0020	-.0004	.0168
1339	7.141	-5.00	-4.80	-.1014	.0203	.0090	-.0008	-.0007	.0186
1340	7.124	-5.00	-3.79	-.0482	.0184	.0105	.0005	-.0006	.0126
1341	7.075	-5.00	-2.79	-.0167	.0154	.0125	.0014	-.0009	.0139
1342	7.058	-5.00	-1.79	.0193	.0156	.0146	.0028	-.0009	.0142
1343	7.050	-5.00	-.64	.0567	.0168	.0165	.0044	-.0006	.0127
1344	7.042	-5.00	.39	.0968	.0170	.0196	.0060	-.0008	.0156
1345	7.042	-5.00	1.38	.1244	.0210	.0198	.0039	-.0005	.0110
1346	7.042	-5.00	2.39	.1550	.0232	.0213	.0062	-.0007	.0146
1347	7.042	-5.00	3.40	.2039	.0272	.0227	.0082	-.0007	.0162
1348	7.025	-5.00	4.43	.2469	.0345	.0249	.0092	-.0009	.0131
1349	7.017	-5.00	5.46	.2884	.0444	.0265	.0105	-.0017	.0096
1350	7.017	-5.00	6.45	.3336	.0526	.0295	.0108	-.0029	.0138
1351	6.984	-5.00	7.44	.3736	.0632	.0330	.0115	-.0036	.0116
1352	6.976	-5.00	8.53	.4331	.0805	.0399	.0125	-.0048	.0150
1353	6.976	-5.00	9.46	.4760	.0978	.0455	.0134	-.0051	.0106
1354	6.968	-5.00	10.46	.5200	.1152	.0532	.0130	-.0056	.0121
1355	6.960	-5.00	12.67	.6257	.1613	.0698	.0171	-.0062	.0106
1356	6.951	-5.00	14.58	.7338	.2169	.0869	.0186	-.0060	.0112
1357	6.943	-5.00	16.74	.8259	.2767	.1132	.0198	-.0054	.0085

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
1358	6.927	5.00		-9.86	-.2916	.0512	-.0009	.0109	.0010	-.0252
1359	6.984	5.00		-8.93	-.2589	.0436	.0039	.0088	.0011	-.0276
1360	6.993	5.00		-7.90	-.2296	.0358	.0091	.0069	.0006	-.0170
1361	6.993	5.00		-6.91	-.1905	.0292	.0083	.0055	.0002	-.0151
1362	6.993	5.00		-5.90	-.1506	.0260	.0095	.0050	.0005	-.0203
1363	7.001	5.00		-4.82	-.0969	.0205	.0121	.0026	.0009	-.0200
1364	7.001	5.00		-3.83	-.0562	.0174	.0139	.0022	.0012	-.0165
1365	7.001	5.00		-2.75	-.0137	.0171	.0158	.0009	.0013	-.0194
1366	7.001	5.00		-1.76	.0240	.0165	.0174	-.0008	.0011	-.0143
1367	7.001	5.00		-.75	.0551	.0167	.0196	-.0018	.0010	-.0176
1368	7.001	5.00		.30	.0877	.0173	.0214	-.0034	.0006	-.0147
1369	7.001	5.00		1.31	.1291	.0180	.0240	-.0046	.0007	-.0148
1370	7.009	5.00		2.35	.1701	.0227	.0239	-.0061	.0007	-.0165
1371	7.009	5.00		3.31	.2069	.0287	.0248	-.0065	.0011	-.0196
1372	7.017	5.00		4.37	.2584	.0364	.0279	-.0079	.0015	-.0205
1373	7.017	5.00		5.42	.2931	.0439	.0287	-.0081	.0019	-.0193
1374	7.017	5.00		6.43	.3478	.0537	.0322	-.0104	.0032	-.0147
1375	7.017	5.00		7.48	.3882	.0665	.0399	-.0114	.0044	-.0158
1376	7.017	5.00		8.50	.4368	.0823	.0443	-.0126	.0058	-.0167
1377	7.017	5.00		9.53	.4775	.0983	.0477	-.0138	.0061	-.0160
1378	7.017	5.00		10.46	.5295	.1160	.0573	-.0142	.0074	-.0135
1379	7.017	5.00		12.70	.6408	.1646	.0762	-.0170	.0087	-.0094
1380	7.017	5.00		14.62	.7313	.2144	.0960	-.0185	.0107	-.0115
1381	7.009	5.00		.64	.8270	.2726	.1175	-.0203	.0122	-.0076

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
1447	7.083	0.00		-9.71	-.1255	.0445	-.0467	.0008	.0003	-.0029
1448	7.083	0.00		-8.59	-.0762	.0376	-.0426	.0012	.0002	-.0026
1449	7.083	0.00		-7.81	-.0451	.0338	-.0411	.0004	.0002	-.0021
1450	7.083	0.00		-6.71	-.0002	.0300	-.0396	.0014	.0002	-.0011
1451	7.083	0.00		-5.79	.0495	.0280	-.0379	.0009	.0002	-.0011
1452	7.083	0.00		-4.70	.0772	.0274	-.0362	.0006	.0003	-.0010
1453	7.083	0.00		-3.63	.1239	.0271	-.0328	.0005	.0005	-.0025
1454	7.083	0.00		-2.69	.1509	.0289	-.0319	.0007	.0006	-.0020
1455	7.083	0.00		-1.50	.2005	.0315	-.0289	.0012	.0006	-.0025
1456	7.083	0.00		-.63	.2211	.0343	-.0280	.0004	.0005	-.0013
1457	7.083	0.00		.51	.2650	.0391	-.0264	.0004	.0004	-.0013
1458	7.083	0.00		1.52	.3021	.0444	-.0263	.0014	.0006	-.0018
1459	7.083	0.00		2.61	.3406	.0513	-.0250	.0010	.0007	-.0025
1460	7.083	0.00		3.55	.3777	.0588	-.0230	.0009	.0005	-.0019
1461	7.083	0.00		4.43	.4142	.0669	-.0218	.0003	.0005	-.0025
1462	7.083	0.00		5.46	.4581	.0784	-.0176	-.0006	.0006	-.0034
1463	7.083	0.00		6.52	.5061	.0928	-.0131	.0003	.0010	-.0023
1464	7.083	0.00		7.50	.5468	.1082	-.0078	.0007	.0010	-.0010
1465	7.083	0.00		8.55	.5950	.1258	-.0013	-.0004	.0009	-.0002
1466	7.075	0.00		9.53	.6412	.1441	.0053	-.0002	.0014	.0001
1467	7.075	0.00		10.62	.7010	.1687	.0113	-.0007	.0016	.0004
1468	7.075	0.00		12.60	.7918	.2147	.0245	-.0009	.0020	.0022
1469	7.067	0.00		14.70	.9057	.2790	.0513	-.0008	.0013	.0018
1470	7.058	0.00		16.67	.9819	.3369	.0778	.0003	.0026	-.0001

Table A-2.- Continued.

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRH	CYM	CSF
1473	7.050	0.00	-9.75	-.0597	.0499	-.0670	.0019	.0002	-.0038	
1474	7.050	0.00	-8.79	-.0194	.0450	-.0643	.0026	.0000	-.0018	
1475	7.050	0.00	-7.82	.0228	.0413	-.0625	.0011	-.0000	-.0016	
1476	7.050	0.00	-6.77	.0658	.0390	-.0605	.0015	-.0000	-.0014	
1477	7.050	0.00	-5.76	.1081	.0379	-.0569	.0008	.0001	-.0018	
1478	7.050	0.00	-4.71	.1531	.0380	-.0534	.0007	-.0000	-.0013	
1479	7.050	0.00	-3.70	.1787	.0393	-.0506	.0009	.0001	-.0010	
1480	7.050	0.00	-2.67	.2206	.0420	-.0485	.0009	.0002	-.0014	
1481	7.050	0.00	-1.65	.2351	.0435	-.0478	.0002	.0003	-.0021	
1482	7.050	0.00	-.76	.2932	.0492	-.0461	.0007	.0004	-.0031	
1483	7.050	0.00	.50	.3336	.0563	-.0460	.0004	.0003	-.0022	
1484	7.050	0.00	1.52	.3669	.0623	-.0444	-.0001	.0003	-.0024	
1485	7.050	0.00	2.56	.4164	.0705	-.0425	.0002	.0003	-.0025	
1486	7.050	0.00	3.47	.4469	.0783	-.0415	.0006	.0004	-.0027	
1487	7.050	0.00	4.50	.4828	.0883	-.0387	-.0002	-.0000	-.0014	
1488	7.050	0.00	5.46	.5202	.0998	-.0350	-.0006	.0001	-.0030	
1489	7.050	0.00	6.39	.5704	.1167	-.0295	.0001	.0006	-.0019	
1490	7.050	0.00	7.33	.6119	.1323	-.0234	-.0005	.0004	.0001	
1491	7.050	0.00	8.63	.6701	.1525	-.0149	-.0000	.0008	-.0025	
1492	7.050	0.00	9.63	.7200	.1739	-.0076	-.0001	.0009	-.0002	
1493	7.050	0.00	10.62	.7583	.1938	-.0032	-.0003	.0013	-.0005	
1494	7.050	0.00	11.93	.8213	.2257	.0060	-.0010	.0015	.0016	
1495	7.050	0.00	12.75	.8669	.2488	.0161	-.0011	.0018	.0018	
1496	7.050	0.00	14.74	.9515	.3051	.0394	-.0006	.0014	-.0002	
1497	7.042	0.00	16.73	1.0325	.3681	.0704	.0021	.0030	-.0026	
RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRH	CYM	CSF
1500	7.058	.01	-9.67	-.0177	.0636	-.0782	.0024	-.0003	-.0025	
1501	7.058	.01	-8.81	.0219	.0595	-.0740	.0025	-.0002	-.0026	
1502	7.058	.01	-7.72	.0705	.0554	-.0700	.0026	-.0001	-.0031	
1503	7.058	.01	-6.33	.1125	.0538	-.0665	.0022	-.0000	-.0025	
1504	7.058	.01	-5.65	.1484	.0537	-.0641	.0021	.0001	-.0023	
1505	7.058	.01	-4.69	.1884	.0556	-.0608	.0022	.0003	-.0035	
1506	7.058	.01	-3.72	.2058	.0562	-.0584	.0016	.0005	-.0023	
1507	7.058	.01	-2.68	.2560	.0596	-.0548	.0011	.0001	-.0023	
1508	7.058	0.00	-1.57	.2836	.0637	-.0549	.0017	.0003	-.0029	
1509	7.058	0.00	-.59	.3292	.0679	-.0530	.0023	.0005	-.0043	
1510	7.058	0.00	.40	.3566	.0739	-.0535	.0016	.0004	-.0039	
1511	7.058	0.00	1.50	.4051	.0815	-.0517	.0017	.0005	-.0040	
1512	7.058	0.00	2.45	.4338	.0887	-.0507	.0009	.0003	-.0030	
1513	7.058	0.00	3.48	.4704	.0984	-.0495	.0008	.0003	-.0037	
1514	7.058	0.00	4.50	.5138	.1092	-.0460	.0010	.0003	-.0029	
1515	7.058	0.00	5.53	.5523	.1214	-.0411	.0006	-.0000	-.0047	
1516	7.058	0.00	6.76	.6143	.1433	-.0393	.0018	.0005	-.0034	
1517	7.058	0.00	7.63	.6508	.1571	-.0293	.0019	.0005	-.0031	
1518	7.058	0.00	8.56	.6959	.1752	-.0227	.0018	.0007	-.0026	
1519	7.058	0.00	9.63	.7451	.1977	-.0155	.0012	.0009	-.0012	
1520	7.058	0.00	10.64	.7903	.2191	-.0079	.0012	.0013	-.0009	
1521	7.058	0.00	12.74	.8931	.2717	.0142	.0020	.0025	-.0022	
1522	7.050	0.00	14.89	.9766	.3312	.0403	.0024	.0028	-.0057	
1523	7.050	0.00	16.73	1.0368	.3852	.0678	.0037	.0033	-.0046	

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 59

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYN	CSF
1526	7.058	.01	-9.74	-.0612	.0813	-.0901	.0021	.0007	-.0017
1527	7.058	.01	-8.63	.0019	.0742	-.0852	.0018	.0002	-.0009
1528	7.058	.01	-7.74	.0399	.0702	-.0821	.0021	.0003	-.0018
1529	7.058	.01	-6.69	.0871	.0668	-.0783	.0011	.0006	-.0011
1530	7.058	.01	-5.76	.1174	.0655	-.0764	.0013	.0006	-.0010
1531	7.058	.01	-4.71	.1780	.0635	-.0707	.0019	.0008	-.0032
1532	7.058	.01	-3.71	.2098	.0649	-.0678	.0012	.0004	-.0038
1533	7.058	.01	-2.71	.2377	.0669	-.0671	.0012	.0006	-.0029
1534	7.058	.01	-1.61	.2879	.0691	-.0627	.0012	.0005	-.0027
1535	7.058	.01	-.43	.3276	.0737	-.0598	.0014	.0005	-.0035
1536	7.058	.01	.43	.3626	.0767	-.0583	.0017	.0007	-.0036
1537	7.058	.01	1.49	.4003	.0824	-.0538	.0020	.0010	-.0043
1538	7.058	.01	2.54	.4331	.0896	-.0513	.0004	.0005	-.0019
1539	7.058	.01	3.58	.4826	.0977	-.0487	.0010	.0006	-.0045
1540	7.058	.01	4.57	.5049	.1067	-.0465	.0014	.0005	-.0036
1541	7.058	.01	5.54	.5433	.1172	-.0436	.0007	.0006	-.0028
1542	7.058	0.00	6.55	.5915	.1297	-.0380	.0012	.0006	-.0029
1543	7.058	0.00	7.55	.6186	.1420	-.0352	.0008	.0005	-.0020
1544	7.058	0.00	8.61	.6566	.1566	-.0307	.0013	.0005	-.0024
1545	7.058	0.00	9.62	.6971	.1719	-.0266	.0012	.0003	-.0019
1546	7.058	0.00	10.64	.7331	.1866	-.0214	.0015	-.0001	.0003
1547	7.058	0.00	12.72	.8080	.2324	-.0110	.0003	.0015	-.0015
1548	7.058	0.00	14.67	.8788	.2807	.0027	-.0016	.0003	-.0005
1549	7.058	0.00	16.72	.9354	.3281	.0190	-.0009	.0005	-.0019

RUN 60

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYN	CSF
1552	7.050	0.00	-9.73	-.1088	.0666	-.0780	.0007	.0013	-.0013
1553	7.050	0.00	-8.86	-.0677	.0607	-.0737	.0008	.0011	-.0017
1554	7.050	0.00	-7.81	-.0085	.0539	-.0694	.0007	.0007	-.0004
1555	7.050	0.00	-6.78	.0356	.0300	-.0668	.0005	.0009	-.0015
1556	7.050	0.00	-5.78	.0732	.0482	-.0646	.0003	.0010	-.0013
1557	7.050	0.00	-4.71	.1309	.0453	-.0597	.0005	.0011	-.0029
1558	7.050	0.00	-3.64	.1572	.0464	-.0582	.0014	.0011	-.0011
1559	7.050	0.00	-2.74	.2017	.0470	-.0537	.0012	.0012	-.0031
1560	7.050	0.00	-1.74	.2368	.0492	-.0536	.0006	.0010	-.0021
1561	7.050	0.00	-.66	.2746	.0529	-.0515	.0000	.0012	-.0019
1562	7.050	0.00	.33	.3173	.0566	-.0480	.0016	.0010	-.0026
1563	7.050	0.00	1.44	.3530	.0613	-.0450	.0019	.0009	-.0032
1564	7.050	0.00	2.48	.3898	.0669	-.0418	.0009	.0006	-.0025
1565	7.050	0.00	3.50	.4274	.0746	-.0393	.0011	.0005	-.0020
1566	7.050	0.00	4.55	.4795	.0846	-.0367	.0019	.0007	-.0040
1567	7.050	0.00	5.58	.5162	.0952	-.0338	.0001	.0002	-.0021
1568	7.050	0.00	6.54	.5451	.1054	-.0305	.0006	.0008	-.0030
1569	7.050	-.01	7.50	.5882	.1195	-.0262	.0009	.0004	-.0017
1570	7.050	-.01	8.57	.6219	.1320	-.0231	-.0003	.0003	-.0018
1571	7.050	-.01	9.59	.6510	.1465	-.0206	.0006	.0006	-.0009
1572	7.050	-.01	10.89	.7088	.1693	-.0127	.0019	.0005	-.0025
1573	7.050	-.01	12.86	.7795	.2102	-.0033	-.0001	.0008	-.0017
1574	7.050	-.01	14.78	.8392	.2521	.0075	-.0002	.0005	-.0007
1575	7.050	-.01	16.67	.9172	.3030	.0235	.0005	.0011	-.0003

Table A-2.- Continued.

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
61	1578	7.058	0.00	-9.81	-.1945	.0660	-.0629	.0014	.0012	-.0020
1579	7.067	0.00	-8.43	-.1205	.0539	-.0540	.0017	.0009	-.0012	
1580	7.067	0.00	-7.85	-.0845	.0492	-.0522	.0007	.0009	-.0010	
1581	7.067	0.00	-6.70	-.0286	.0431	-.0495	.0006	.0009	-.0010	
1582	7.067	0.00	-5.72	.0061	.0400	-.0475	-.0001	.0012	-.0010	
1583	7.067	0.00	-4.74	.0485	.0378	-.0442	-.0004	.0010	-.0009	
1584	7.067	0.00	-3.76	.1028	.0352	-.0406	.0005	.0011	-.0015	
1585	7.067	0.00	-2.72	.1289	.0361	-.0401	.0000	.0009	-.0020	
1586	7.067	0.00	-1.58	.1815	.0372	-.0369	.0003	.0013	-.0028	
1587	7.075	0.00	-.51	.2275	.0394	-.0343	.0002	.0010	-.0025	
1588	7.075	0.00	.37	.2646	.0425	-.0321	-.0005	.0010	-.0032	
1589	7.075	0.00	1.36	.3032	.0464	-.0287	.0003	.0010	-.0014	
1590	7.075	0.00	2.48	.3508	.0523	-.0263	-.0001	.0007	-.0030	
1591	7.075	0.00	3.47	.3789	.0584	-.0249	.0009	.0014	-.0038	
1592	7.075	0.00	4.53	.4235	.0665	-.0218	.0004	.0008	-.0030	
1593	7.075	0.00	5.51	.4633	.0758	-.0192	.0009	.0009	-.0038	
1594	7.075	0.00	6.51	.5021	.0865	-.0159	.0001	.0011	-.0033	
1595	7.075	0.00	7.54	.5425	.0991	-.0122	.0002	.0010	-.0030	
1596	7.075	-.01	8.56	.5920	.1137	-.0080	.0001	.0010	-.0050	
1597	7.075	-.01	9.55	.6197	.1271	-.0058	-.0006	.0006	-.0035	
1598	7.075	-.01	10.77	.6594	.1462	-.0012	.0002	.0008	-.0033	
1599	7.075	-.01	12.67	.7477	.1864	.0078	-.0012	.0011	-.0017	
1600	7.075	-.01	14.70	.8243	.2328	.0181	-.0011	.0011	-.0012	
1601	7.075	-.01	16.68	.9031	.2849	.0320	-.0012	.0009	-.0020	

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
62	1604	7.075	0.00	-9.78	-.2005	.0637	-.0353	.0009	.0008	-.0014
1605	7.075	0.00	-8.84	-.1474	.0551	-.0312	.0014	.0006	-.0025	
1606	7.075	0.00	-7.59	-.0997	.0479	-.0301	.0011	.0008	-.0004	
1607	7.075	0.00	-6.83	-.0568	.0431	-.0289	.0007	.0005	-.0016	
1608	7.075	0.00	-5.72	-.0021	.0385	-.0267	.0005	.0007	-.0021	
1609	7.075	0.00	-4.70	.0410	.0358	-.0251	.0006	.0008	-.0018	
1610	7.075	0.00	-3.79	.0856	.0341	-.0234	.0017	.0006	-.0026	
1611	7.075	0.00	-2.62	.1198	.0350	-.0233	.0009	.0009	-.0012	
1612	7.075	0.00	-1.59	.1562	.0363	-.0208	.0002	.0007	-.0009	
1613	7.075	0.00	-.67	.2017	.0379	-.0201	.0002	.0007	-.0024	
1614	7.075	0.00	.39	.2579	.0413	-.0172	.0015	.0005	-.0022	
1615	7.075	0.00	1.48	.2912	.0454	-.0153	.0007	.0010	-.0040	
1616	7.075	0.00	2.47	.3305	.0509	-.0141	.0007	.0011	-.0051	
1617	7.075	0.00	3.57	.3659	.0582	-.0125	.0001	.0006	-.0028	
1618	7.075	0.00	4.46	.3961	.0645	-.0103	-.0005	.0001	-.0012	
1619	7.075	0.00	5.48	.4446	.0746	-.0083	-.0003	.0005	-.0041	
1620	7.075	0.00	6.44	.4749	.0838	-.0062	-.0003	.0004	-.0024	
1621	7.075	0.00	7.46	.5207	.0963	-.0019	-.0009	.0004	-.0026	
1622	7.075	0.00	8.52	.5556	.1101	.0002	-.0004	.0005	-.0014	
1623	7.075	0.00	9.52	.5951	.1244	.0039	-.0010	.0005	-.0031	
1624	7.075	-.01	10.60	.6380	.1420	.0059	-.0003	.0005	-.0019	
1625	7.075	-.01	12.61	.7366	.1857	.0122	-.0002	.0007	-.0018	
1626	7.075	-.01	14.71	.8075	.2319	.0164	-.0007	.0010	-.0035	
1627	7.075	-.01	16.63	.8868	.2834	.0256	-.0016	.0012	-.0017	

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2. - Continued.

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRH	CYH	CSF
1630	7.075	0.00	-9.83	-.1662	.0606	-.0580	.0008	.0008	.0007
1631	7.075	0.00	-8.80	-.1466	.0555	-.0590	.0007	.0014	-.0020
1632	7.075	0.00	-7.59	-.0686	.0462	-.0537	.0007	.0007	-.0007
1633	7.075	0.00	-6.70	-.0332	.0426	-.0520	.0005	.0012	-.0007
1634	7.075	0.00	-5.80	.0032	.0399	-.0510	.0002	.0011	-.0006
1635	7.075	0.00	-4.60	.0693	.0364	-.0461	.0002	.0010	-.0010
1636	7.075	0.00	-3.72	.1042	.0361	-.0465	.0004	.0010	-.0013
1637	7.075	0.00	-2.76	.1385	.0361	-.0450	.0005	.0009	-.0010
1638	7.075	0.00	-1.68	.1881	.0377	-.0425	.0006	.0013	-.0037
1639	7.083	0.00	-.68	.2241	.0401	-.0410	.0000	.0010	-.0019
1640	7.083	0.00	.35	.2594	.0442	-.0401	-.0001	.0009	-.0016
1641	7.083	0.00	1.35	.3068	.0484	-.0367	-.0000	.0012	-.0041
1642	7.083	0.00	2.39	.3458	.0530	-.0352	.0007	.0012	-.0039
1643	7.083	0.00	3.47	.3775	.0613	-.0340	-.0011	.0005	-.0020
1644	7.083	0.00	4.46	.4259	.0690	-.0307	.0010	.0007	-.0040
1645	7.083	0.00	5.44	.4518	.0776	-.0290	-.0005	.0008	-.0022
1646	7.083	0.00	6.46	.4983	.0897	-.0265	-.0000	.0013	-.0054
1647	7.083	0.00	7.49	.5355	.1013	-.0229	-.0006	.0006	-.0027
1648	7.083	0.00	8.49	.5733	.1150	-.0199	-.0007	.0009	-.0042
1649	7.083	0.00	9.63	.6248	.1330	-.0177	-.0002	.0015	-.0041
1650	7.083	0.00	10.75	.6702	.1525	-.0154	-.0003	.0006	-.0024
1651	7.083	-.01	12.65	.7552	.1936	-.0107	-.0007	.0012	-.0022
1652	7.083	-.01	14.69	.8242	.2401	-.0043	-.0017	.0008	-.0011
1653	7.083	-.01	16.69	.9082	.2951	.0033	-.0018	.0013	-.0019

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRH	CYH	CSF
1667	7.090	.01	-9.85	-.2236	.0787	-.0012	.0005	-.0000	.0029
1668	7.034	.01	-8.80	-.1724	.0694	.0018	.0007	-.0003	.0037
1669	7.017	.01	-7.85	-.1358	.0625	.0032	.0001	.0001	.0031
1670	7.009	.01	-6.82	-.0887	.0560	.0055	.0008	.0000	.0041
1671	7.009	.01	-5.79	-.0417	.0508	.0056	.0004	.0021	.0041
1672	7.009	.01	-4.70	.0026	.0465	.0069	-.0001	.0000	.0041
1673	7.009	.01	-3.72	.0467	.0446	.0087	-.0001	-.0001	.0050
1674	7.009	.01	-2.75	.0841	.0435	.0099	.0001	.0003	.0036
1675	7.009	.01	-1.70	.1200	.0436	.0103	-.0002	-.0002	.0051
1676	7.009	.01	-.32	.1700	.0431	.0121	-.0001	.0001	.0042
1677	7.009	.01	.37	.2038	.0463	.0132	-.0001	-.0000	.0047
1678	7.009	.01	1.44	.2488	.0494	.0149	-.0002	-.0000	.0044
1679	7.009	.01	2.49	.2827	.0537	.0162	-.0012	-.0003	.0060
1680	7.009	.01	3.68	.3230	.0599	.0178	-.0002	-.0001	.0046
1681	7.009	0.00	4.44	.3597	.0653	.0201	-.0008	-.0005	.0057
1682	7.009	0.00	5.45	.3941	.0726	.0211	-.0004	-.0002	.0049
1683	7.001	0.00	6.60	.4420	.0840	.0243	-.0006	-.0001	.0051
1684	7.001	0.00	7.50	.4733	.0935	.0265	-.0007	-.0002	.0055
1685	7.001	0.00	8.55	.5104	.1056	.0292	-.0009	-.0000	.0057
1686	7.001	0.00	9.51	.5418	.1174	.0326	-.0007	-.0001	.0057
1687	7.001	0.00	10.49	.5811	.1319	.0361	-.0015	.0000	.0056
1688	7.001	0.00	12.55	.6791	.1721	.0419	.0001	.0006	.0035
1689	7.001	0.00	14.61	.7488	.2142	.0461	-.0018	.0002	.0055
1690	6.992	0.00	16.71	.8293	.2653	.0535	-.0023	.0007	.0065

Table A-2. - Continued.

RUN 65

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
1693	6.992	.01	-9.84	-.2685	.0980	.0238	.0010	-.0002	.0006
1694	6.992	.01	-8.91	-.2243	.0887	.0275	.0008	-.0004	.0023
1695	7.001	.01	-7.91	-.1715	.0792	.0308	.0003	-.0008	.0027
1696	7.001	.01	-6.92	-.1167	.0719	.0320	.0009	-.0005	.0022
1697	7.001	.01	-5.47	-.0561	.0644	.0345	.0002	-.0004	.0013
1698	7.009	.01	-4.80	-.0311	.0615	.0350	.0005	-.0002	.0019
1699	7.009	.01	-3.45	.0309	.0579	.0378	.0004	-.0002	.0007
1700	7.009	.01	-2.73	.0560	.0567	.0388	.0003	-.0001	.0009
1701	7.009	.01	-1.72	.0968	.0559	.0403	.0001	-.0003	.0014
1702	7.009	.01	-.64	.1391	.0563	.0415	.0002	-.0002	.0007
1703	7.009	.01	.39	.1834	.0576	.0426	-.0005	-.0000	.0017
1704	7.017	.01	1.45	.2289	.0599	.0447	.0004	-.0003	.0014
1705	7.017	.01	2.37	.2594	.0631	.0448	-.0002	-.0002	.0005
1706	7.017	.01	3.40	.2975	.0685	.0468	-.0004	-.0003	.0012
1707	7.017	.01	4.38	.3269	.0744	.0491	-.0003	-.0001	.0006
1708	7.017	0.00	5.53	.3866	.0832	.0522	-.0005	-.0005	.0003
1709	7.017	0.00	6.41	.4160	.0909	.0540	-.0002	-.0002	.0003
1710	7.017	0.00	7.30	.4610	.1025	.0573	-.0007	-.0001	-.0007
1711	7.017	0.00	8.50	.4947	.1136	.0600	-.0008	-.0001	.0008
1712	7.017	0.00	9.50	.5306	.1239	.0632	-.0008	.0001	.0005
1713	7.017	0.00	10.56	.5777	.1422	.0666	-.0008	.0005	-.0005
1714	7.017	0.00	12.72	.6679	.1817	.0721	-.0013	.0011	.0001
1715	7.017	0.00	14.61	.7528	.2247	.0791	-.0014	.0010	-.0004
1716	7.017	0.00	16.65	.8368	.2751	.0871	-.0022	.0034	.0004

RUN 66

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
1704	6.992	0.00	-9.93	-.3332	.0815	-.0022	.0023	.0010	-.0008
1700	6.992	0.00	-8.80	-.3242	.0680	.0027	.0015	.0010	-.0012
1701	7.001	0.00	-7.97	-.2829	.0595	.0032	.0010	.0008	-.0010
1702	7.001	0.00	-6.68	-.2242	.0489	.0089	.0007	.0003	.0014
1703	7.001	0.00	-5.85	-.1861	.0429	.0116	.0010	.0005	.0017
1704	7.001	0.00	-4.72	-.1347	.0367	.0131	.0006	.0003	.0016
1705	7.001	0.00	-3.82	-.0938	.0327	.0137	.0011	.0003	.0014
1706	7.001	0.00	-2.87	-.0556	.0295	.0151	.0003	.0005	.0019
1707	7.001	0.00	-1.80	-.0058	.0265	.0167	.0007	.0003	.0016
1708	7.001	0.00	-.73	.0340	.0256	.0180	.0009	.0004	.0012
1709	7.001	0.00	.25	.0718	.0257	.0194	.0009	.0004	.0025
1800	7.001	0.00	1.26	.1149	.0265	.0211	.0008	.0004	.0016
1801	7.001	0.00	2.32	.1669	.0283	.0241	.0014	.0004	.0014
1802	7.001	0.00	3.32	.1926	.0317	.0252	.0000	.0001	.0028
1803	7.001	0.00	4.32	.2403	.0356	.0268	.0002	.0003	.0025
1804	7.001	0.00	5.35	.2802	.0421	.0295	.0006	-.0001	.0020
1805	7.042	0.00	6.38	.3147	.0487	.0315	.0005	.0004	.0019
1806	7.058	0.00	7.43	.3570	.0576	.0345	-.0005	-.0001	.0019
1807	7.058	0.00	8.36	.4007	.0676	.0366	.0001	.0005	.0012
1808	7.058	0.00	9.48	.4462	.0802	.0392	-.0007	-.0001	.0010
1809	7.050	0.00	10.42	.4665	.0904	.0490	-.0014	.0003	.0036
1810	7.025	0.00	12.49	.5589	.1249	.0441	-.0015	.0005	.0027
1811	7.017	0.00	14.52	.6458	.1654	.0504	-.0008	.0008	.0025
1812	7.009	-.01	16.72	.7393	.2159	.0574	-.0017	.0020	.0032

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2. - Continued.

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
69	1815	6.976	0.00	-9.99	-.3603	.0798	-.0250	.0026	.0008	-.0014
	1816	6.976	0.00	-8.97	-.3072	.0678	-.0208	.0022	.0004	-.0008
	1817	6.976	0.00	-7.79	-.2427	.0560	-.0171	.0013	.0003	-.0008
	1818	7.009	0.00	-6.83	-.2112	.0498	-.0133	.0011	.0005	-.0003
	1819	7.132	0.00	-5.90	-.1711	.0432	-.0103	.0012	.0003	.0007
	1820	7.091	0.00	-4.61	-.1088	.0355	-.0087	.0009	.0005	.0007
	1821	7.075	0.00	-3.84	-.0663	.0313	-.0073	.0014	.0004	.0006
	1822	7.042	0.00	-2.83	-.0314	.0289	-.0074	.0008	.0005	.0011
	1823	7.033	0.00	-1.73	.0150	.0269	-.0051	.0013	.0004	.0009
	1824	6.976	0.00	-.78	.0516	.0267	-.0038	.0013	.0007	-.0003
	1825	6.976	0.00	.29	.0958	.0269	-.0019	.0009	.0005	.0010
	1826	6.976	0.00	1.34	.1371	.0292	-.0002	.0011	.0007	-.0011
	1827	7.001	0.00	2.34	.1760	.0318	.0018	.0008	.0008	-.0013
	1828	7.009	0.00	3.33	.2104	.0349	.0043	.0007	.0005	-.0012
	1829	7.009	0.00	4.49	.2577	.0406	.0054	.0005	.0003	-.0001
	1830	7.009	0.00	5.32	.2888	.0454	.0075	.0004	.0001	-.0011
	1831	7.009	0.00	6.38	.3403	.0539	.0086	.0007	.0005	-.0024
	1832	7.009	0.00	7.44	.3774	.0637	.0112	-.0004	.0003	-.0003
	1833	7.025	0.00	8.44	.4172	.0746	.0128	-.0007	.0003	-.0001
	1834	7.025	0.00	9.54	.4629	.0864	.0144	-.0011	.0003	.0026
	1835	7.025	0.00	10.46	.5126	.1026	.0163	-.0003	.0009	.0009
	1836	7.025	0.00	12.61	.6077	.1409	.0196	-.0007	.0014	-.0014
	1837	7.025	0.00	14.57	.6893	.1825	.0245	-.0011	.0007	.0012
	1838	7.025	-.01	16.76	.7891	.2380	.0320	-.0023	.0023	.0019
70	1841	6.976	0.00	-9.91	-.3879	.0870	.0347	.0028	.0006	-.0008
	1842	7.009	0.00	-8.95	-.3522	.0760	.0350	.0020	.0002	-.0005
	1843	7.025	0.00	-7.83	-.2922	.0635	.0376	.0013	-.0000	-.0016
	1844	7.042	0.00	-6.86	-.2541	.0553	.0407	.0012	-.0003	-.0004
	1845	7.050	0.00	-5.75	-.2089	.0472	.0434	.0015	-.0001	.0005
	1846	7.058	0.00	-4.09	-.1553	.0408	.0443	.0012	-.0003	.0002
	1847	7.025	0.00	-3.88	-.1206	.0356	.0444	.0015	.0001	-.0001
	1848	7.009	0.00	-2.82	-.0792	.0313	.0455	.0011	.0000	.0006
	1849	7.009	0.00	-1.82	-.0349	.0262	.0456	.0008	-.0000	.0006
	1850	7.009	0.00	-.78	.0062	.0275	.0472	.0010	.0001	.0003
	1851	7.009	0.00	.20	.0395	.0265	.0477	.0009	.0002	.0008
	1852	7.001	0.00	1.29	.0826	.0270	.0500	.0004	.0001	.0018
	1853	7.001	0.00	2.27	.1242	.0285	.0504	.0011	.0001	-.0001
	1854	6.992	0.00	3.40	.1715	.0313	.0528	.0018	.0002	-.0002
	1855	6.992	0.00	4.61	.2122	.0359	.0549	.0007	-.0001	.0009
	1856	6.992	0.00	5.44	.2525	.0411	.0565	.0005	-.0002	-.0003
	1857	6.992	0.00	6.40	.2885	.0474	.0581	.0006	.0002	-.0011
	1858	6.992	0.00	7.40	.3257	.0550	.0609	-.0002	-.0001	.0003
	1859	6.976	0.00	8.39	.3700	.0654	.0630	.0000	.0004	-.0004
	1860	6.976	0.00	9.41	.4049	.0762	.0647	-.0001	.0002	.0010
	1861	6.976	0.00	10.49	.4520	.0901	.0666	-.0002	.0006	.0011
	1862	6.976	0.00	12.54	.5337	.1215	.0703	-.0012	.0004	.0016
	1863	6.968	0.00	14.56	.6444	.1665	.0758	-.0006	.0014	-.0007
	1864	6.968	0.00	16.53	.7140	.2088	.0820	-.0022	.0025	.0014



Table A-2.- Continued.

RUN	BO	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRN	CYM	CSF
2104		7.075	0.00		-9.82	-.3613	.0778	-.0149	.0030	.0009	-.0018
2105		7.017	0.00		-8.93	-.3108	.0665	-.0101	.0017	.0007	-.0023
2106		7.025	0.00		-7.90	-.2673	.0569	-.0064	.0009	.0008	-.0018
2107		7.025	0.00		-6.80	-.2136	.0473	.0004	.0012	.0005	-.0007
2108		7.025	0.00		-5.87	-.1745	.0414	.0041	.0010	.0006	-.0007
2109		7.025	0.00		-4.75	-.1258	.0351	.0050	.0022	.0005	-.0013
2110		7.025	0.00		-3.66	-.0797	.0308	.0076	.0015	.0005	-.0001
2111		7.025	0.00		-2.73	-.0371	.0276	.0093	.0013	.0006	.0000
2112		7.025	0.00		-1.67	.0060	.0223	.0121	.0011	.0005	-.0014
2113		7.025	0.00		-.80	.0345	.0249	.0129	.0012	.0009	-.0006
2114		7.025	0.00		.34	.0988	.0245	.0179	.0019	.0007	-.0017
2115		7.025	0.00		1.37	.1255	.0257	.0105	.0010	.0007	-.0004
2116		7.025	0.00		2.33	.1738	.0283	.0200	.0011	.0009	-.0024
2117		7.025	0.00		3.32	.2006	.0313	.0221	.0005	.0005	.0003
2118		7.025	0.00		4.50	.2449	.0360	.0235	.0007	.0006	-.0012
2119		7.025	0.00		5.59	.2990	.0432	.0267	.0015	.0008	-.0026
2120		7.025	0.00		6.42	.3283	.0495	.0283	.0010	.0008	-.0024
2121		7.025	0.00		7.48	.3812	.0597	.0335	.0004	.0005	-.0005
2122		7.025	0.00		8.44	.4176	.0697	.0350	.0005	.0009	-.0013
2123		7.025	0.00		9.47	.4514	.0809	.0374	.0003	.0006	-.0005
2124		7.017	0.00		10.59	.4980	.0967	.0417	-.0008	.0004	.0002
2125		7.017	0.00		12.52	.5927	.1313	.0503	-.0008	.0008	-.0005
2126		7.017	0.00		14.58	.6740	.1724	.0586	-.0005	.0010	-.0008
2127		7.000	0.00		16.65	.7713	.2240	.0705	-.0021	.0027	.0018

RUN	B1	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRN	CYM	CSF
2128		7.017	-5.00		-9.89	-.3383	.0742	-.0178	-.0064	.0032	.0233
2129		7.017	-5.00		-8.97	-.3079	.0652	-.0121	-.0070	.0033	.0214
2130		7.017	-5.00		-7.91	-.2560	.0552	-.0099	-.0066	.0026	.0219
2131		7.017	-5.00		-6.77	-.2073	.0458	-.0030	-.0046	.0031	.0210
2132		7.017	-5.00		-5.73	-.1680	.0395	.0017	-.0038	.0029	.0197
2133		7.025	-5.00		-4.88	-.1195	.0345	.0023	-.0016	.0028	.0177
2134		7.025	-5.00		-3.66	-.0716	.0292	.0054	-.0008	.0026	.0166
2135		7.025	-5.00		-2.63	-.0316	.0267	.0083	-.0001	.0023	.0176
2136		7.025	-5.00		-1.72	.0059	.0241	.0108	.0010	.0022	.0176
2137		7.025	-5.00		-.72	.0357	.0232	.0122	.0019	.0019	.0167
2138		7.025	-5.00		.26	.0816	.0234	.0141	.0035	.0015	.0181
2139		7.025	-5.00		1.32	.1149	.0249	.0159	.0046	.0010	.0180
2140		7.025	-5.00		2.39	.1599	.0272	.0192	.0058	.0005	.0194
2141		7.025	-5.00		3.45	.2020	.0306	.0217	.0071	.0003	.0189
2142		7.025	-5.00		4.37	.2324	.0346	.0227	.0091	.0006	.0179
2143		7.025	-5.00		5.43	.2779	.0411	.0251	.0100	.0002	.0176
2144		7.025	-5.00		6.52	.3198	.0488	.0266	.0107	-.0002	.0169
2145		7.025	-5.00		7.58	.3646	.0582	.0310	.0124	-.0000	.0179
2146		7.025	-5.00		8.41	.4036	.0678	.0341	.0128	-.0002	.0179
2147		7.025	-5.00		9.46	.4476	.0807	.0372	.0132	-.0006	.0191
2148		7.025	-5.00		10.52	.4930	.0956	.0412	.0142	-.0001	.0179
2149		7.017	-5.00		12.58	.5839	.1316	.0499	.0163	.0005	.0178
2150		7.017	-5.00		14.57	.6707	.1730	.0596	.0170	.0002	.0193
2151		7.000	-5.01		16.66	.7716	.2252	.0739	.0173	-.0006	.0196

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN	82	POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
		2152	7.017	5.00	-9.90	-.3343	.0733	-.0146	.0109	-.0021	-.0229
		2153	7.017	5.00	-8.99	-.3029	.0639	-.0084	.0108	-.0022	-.0217
		2154	7.017	5.00	-7.90	-.2577	.0542	-.0035	.0094	-.0020	-.0215
		2155	7.017	5.00	-6.88	-.2168	.0464	-.0003	.0087	-.0020	-.0212
		2156	7.017	5.00	-5.83	-.1644	.0392	.0029	.0067	-.0018	-.0183
		2157	7.017	5.00	-4.88	-.1283	.0346	.0053	.0039	-.0019	-.0182
		2158	7.025	5.00	-3.82	-.0812	.0297	.0077	.0037	-.0016	-.0157
		2159	7.025	5.00	-2.92	-.0400	.0268	.0099	.0020	-.0015	-.0175
		2160	7.025	5.00	-1.81	-.0035	.0242	.0120	.0012	-.0010	-.0178
		2161	7.025	5.00	-.72	.0410	.0230	.0149	-.0003	-.0006	-.0185
		2162	7.025	5.00	.32	.0825	.0232	.0170	-.0021	-.0005	-.0178
		2163	7.025	5.00	1.34	.1260	.0241	.0190	-.0034	.0000	-.0199
		2164	7.025	5.00	2.44	.1897	.0267	.0211	-.0047	.0005	-.0201
		2165	7.025	5.00	3.38	.2040	.0296	.0226	-.0066	.0003	-.0193
		2166	7.025	5.00	4.39	.2431	.0341	.0260	-.0080	.0006	-.0195
		2167	7.025	5.00	5.40	.2852	.0399	.0267	-.0087	.0012	-.0197
		2168	7.025	5.00	6.39	.3277	.0475	.0321	-.0103	.0010	-.0204
		2169	7.025	5.00	7.46	.3702	.0570	.0339	-.0117	.0008	-.0202
		2170	7.025	5.00	8.52	.4004	.0666	.0355	-.0128	.0009	-.0193
		2171	7.017	5.00	9.51	.4378	.0807	.0422	-.0130	.0015	-.0219
		2172	7.017	5.00	10.56	.4870	.0936	.0428	-.0142	.0011	-.0214
		2173	7.009	5.00	12.54	.5710	.1269	.0495	-.0154	.0011	-.0206
		2174	7.009	5.00	14.54	.6595	.1674	.0592	-.0178	.0011	-.0203
		2175	7.009	5.00	16.65	.7592	.2210	.0753	-.0204	.0055	-.0175

RUN	83	POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
		2189	7.042	0.00	-9.91	-.4212	.1048	.0630	.0018	.0006	-.0002
		2190	7.042	0.00	-8.94	-.3707	.0920	.0661	.0020	.0002	-.0008
		2191	7.050	0.00	-7.87	-.3230	.0803	.0678	.0012	-.0001	.0005
		2192	7.050	0.00	-6.84	-.2764	.0706	.0736	.0015	-.0001	.0002
		2193	7.050	0.00	-5.90	-.2387	.0628	.0752	.0016	-.0001	.0009
		2194	7.050	0.00	-4.91	-.1903	.0557	.0755	.0018	-.0001	.0001
		2195	7.050	0.00	-3.71	-.1491	.0496	.0757	.0011	.0001	.0013
		2196	7.050	0.00	-2.79	-.0931	.0446	.0779	.0023	.0000	.0007
		2197	7.050	0.00	-1.60	-.0469	.0407	.0781	.0013	-.0002	.0015
		2198	7.050	0.00	-.60	-.0020	.0392	.0799	.0012	-.0003	.0016
		2199	7.050	0.00	.28	.0348	.0380	.0804	.0012	.0000	.0012
		2200	7.058	0.00	1.31	.0725	.0376	.0811	.0011	.0001	.0000
		2201	7.058	0.00	2.31	.1114	.0368	.0822	.0010	.0000	.0004
		2202	7.058	0.00	3.41	.1528	.0412	.0826	.0013	-.0000	-.0002
		2203	7.058	0.00	4.42	.1914	.0445	.0849	.0018	-.0001	.0002
		2204	7.058	0.00	5.46	.2363	.0503	.0866	.0011	-.0002	-.0000
		2205	7.058	0.00	6.59	.2874	.0582	.0883	.0010	.0002	-.0008
		2206	7.058	0.00	7.47	.3229	.0655	.0902	.0014	.0004	-.0004
		2207	7.058	0.00	8.43	.3466	.0731	.0915	.0002	-.0002	.0010
		2208	7.058	0.00	9.46	.3977	.0853	.0949	.0002	.0001	.0014
		2209	7.058	0.00	10.45	.4435	.0982	.0959	.0007	.0004	.0016
		2210	7.058	-.01	12.49	.5402	.1314	.1004	.0003	.0006	.0018
		2211	7.058	-.01	14.63	.6324	.1732	.1063	-.0008	.0010	.0018
		2212	7.050	01	16.75	.7326	.2244	.1128	-.0009	.0013	.0008

RUN 87

Table A-2, - Continued.

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
2325	7.058	0.00	-9.92	-.3524	.0694	-.0186	.0023	.0006	-.0011
2326	7.108	0.00	-8.81	-.2892	.0555	-.0129	.0019	.0005	-.0016
2327	7.066	0.00	-7.87	-.2442	.0468	-.0100	.0014	.0007	-.0010
2328	7.066	0.00	-6.83	-.1965	.0393	-.0065	.0008	.0004	-.0004
2329	6.992	0.00	-5.82	-.1400	.0324	-.0028	.0022	.0005	.0003
2330	6.992	0.00	-4.77	-.1111	.0284	-.0020	.0011	.0006	.0004
2331	6.992	0.00	-3.77	-.0586	.0248	.0014	.0003	.0004	.0008
2332	6.984	0.00	-2.75	-.0215	.0228	.0038	.0009	.0006	.0011
2333	6.976	0.00	-1.73	.0051	.0213	.0068	.0008	.0006	.0018
2334	6.976	0.00	-.69	.0335	.0219	.0114	.0008	.0004	.0016
2335	6.976	0.00	.37	.0874	.0224	.0130	.0009	.0006	.0022
2336	6.976	0.00	1.25	.1191	.0241	.0161	.0002	.0004	.0020
2337	6.976	0.00	2.40	.1596	.0273	.0177	.0001	.0004	.0016
2338	6.968	0.00	3.41	.2074	.0321	.0180	.0006	.0004	.0007
2339	6.968	0.00	4.39	.2418	.0374	.0188	.0006	.0003	.0023
2340	6.968	0.00	5.45	.2830	.0447	.0204	.0028	-.0000	-.0011
2341	6.959	0.00	6.48	.3215	.0533	.0212	-.0011	-.0000	.0027
2342	6.959	0.00	7.48	.3697	.0638	.0239	-.0003	.0001	.0018
2343	6.951	0.00	8.48	.4088	.0757	.0264	-.0003	.0003	.0018
2344	6.951	0.00	9.50	.4592	.0905	.0293	-.0006	.0003	.0012
2345	6.951	0.00	10.54	.4945	.1046	.0329	-.0004	.0001	.0021
2346	6.951	0.00	12.59	.5396	.1424	.0415	-.0008	.0005	.0031
2347	6.943	0.00	14.65	.6694	.1851	.0524	-.0018	.0002	.0031
2348	6.943	0.00	16.70	.7477	.2336	.0669	-.0015	.0011	.0031

RUN 88

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
2350	7.083	-5.00	-9.90	-.3315	.0663	-.0199	-.0053	.0044	.0187
2351	7.083	-5.00	-8.92	-.2832	.0557	-.0174	-.0054	.0044	.0172
2352	7.083	-5.00	-7.87	-.2308	.0459	-.0120	-.0047	.0039	.0183
2353	7.083	-5.00	-6.82	-.1840	.0381	-.0081	-.0036	.0038	.0185
2354	7.083	-5.00	-5.79	-.1524	.0327	-.0058	-.0029	.0038	.0161
2355	7.083	-5.00	-4.77	-.1029	.0270	-.0032	-.0011	.0038	.0154
2356	7.083	-5.00	-3.74	-.0614	.0243	-.0001	-.0005	.0034	.0144
2357	7.083	-5.00	-2.76	-.0248	.0222	.0028	.0003	.0030	.0149
2358	7.083	-5.00	-1.72	.0053	.0208	.0057	.0014	.0029	.0154
2359	7.083	-5.00	-.69	.0491	.0211	.0075	.0036	.0026	.0154
2360	7.083	-5.00	.35	.0849	.0218	.0119	.0040	.0021	.0160
2361	7.083	-5.00	1.38	.1177	.0233	.0132	.0049	.0016	.0160
2362	7.058	-5.00	2.35	.1549	.0258	.0139	.0065	.0011	.0152
2363	7.034	-5.00	3.37	.1955	.0299	.0159	.0068	.0006	.0165
2364	7.025	-5.00	4.43	.2309	.0357	.0175	.0081	.0006	.0160
2365	7.017	-5.00	5.42	.2695	.0421	.0192	.0091	.0001	.0159
2366	7.009	-5.00	6.41	.3109	.0506	.0212	.0095	-.0004	.0169
2367	6.992	-5.00	7.44	.3483	.0602	.0230	.0112	-.0002	.0157
2368	6.984	-5.00	8.46	.3863	.0712	.0260	.0115	-.0004	.0169
2369	6.976	-5.00	9.49	.4348	.0857	.0304	.0119	-.0001	.0179
2370	6.976	-5.00	10.51	.4714	.1000	.0335	.0124	-.0004	.0170
2371	6.968	-5.00	12.59	.5549	.1361	.0428	.0135	-.0003	.0176
2372	6.927	-5.00	14.60	.6333	.1767	.0519	.0149	-.0001	.0174
2373	6.885	-5.00	16.70	.7439	.2337	.0703	.0159	.0000	.0196

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 89

POINT	O	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2374	6.918	5.00	-9.89	-.3132	.0623	-.0178	.0102	-.0032	-.0195
2375	7.108	5.00	-8.87	-.2753	.0528	-.0146	.0085	-.0036	-.0196
2376	7.108	5.00	-7.86	-.2296	.0433	-.0107	.0070	-.0030	-.0195
2377	7.042	5.00	-6.81	-.1872	.0361	-.0062	.0060	-.0028	-.0183
2378	7.042	5.00	-5.82	-.1440	.0305	-.0033	.0046	-.0027	-.0175
2379	7.042	5.00	-4.79	-.1040	.0252	-.0009	.0031	-.0028	-.0161
2380	7.042	5.00	-3.75	-.0635	.0225	.0019	.0018	-.0025	-.0155
2381	7.042	5.00	-2.73	-.0244	.0204	.0044	.0011	-.0022	-.0161
2382	7.042	5.00	-1.71	.0112	.0189	.0074	-.0008	-.0017	-.0138
2383	7.042	5.00	-.71	.0435	.0189	.0101	-.0014	-.0015	-.0161
2384	6.877	5.00	.31	.0769	.0203	.0130	-.0030	-.0011	-.0157
2385	6.992	5.00	1.33	.1217	.0224	.0153	-.0032	-.0006	-.0173
2386	7.165	5.00	2.34	.1559	.0252	.0174	-.0052	-.0005	-.0175
2387	7.108	5.00	3.34	.1894	.0289	.0181	-.0051	-.0004	-.0186
2388	7.099	5.00	4.35	.2319	.0343	.0191	-.0067	-.0002	-.0191
2389	7.099	5.00	5.37	.2676	.0406	.0205	-.0080	.0001	-.0186
2390	7.091	5.00	6.42	.3141	.0495	.0238	-.0089	.0001	-.0173
2391	7.091	5.00	7.45	.3527	.0591	.0248	-.0110	.0001	-.0185
2392	7.083	5.00	8.47	.3947	.0705	.0281	-.0122	.0006	-.0194
2393	7.083	5.00	9.50	.4230	.0823	.0300	-.0128	.0003	-.0183
2394	7.066	5.00	10.52	.4678	.0973	.0344	-.0132	.0006	-.0195
2395	7.058	5.00	12.54	.5521	.1322	.0422	-.0147	.0007	-.0191
2396	7.058	5.00	14.61	.6317	.1731	.0509	-.0169	.0007	-.0189
2397	7.058	5.00	16.64	.7037	.2191	.0678	-.0172	.0048	-.0187

RUN 90

POINT	O	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2411	7.083	0.00	-9.91	-.3278	.0666	-.0185	.0009	-.0007	.0001
2412	7.083	0.00	-8.89	-.2834	.0582	-.0155	.0013	-.0006	.0005
2413	7.083	0.00	-7.87	-.2377	.0457	-.0122	.0006	-.0003	.0001
2414	7.083	0.00	-6.81	-.1920	.0377	-.0083	.0008	-.0004	-.0006
2415	7.083	0.00	-5.76	-.1466	.0315	-.0061	.0009	-.0004	-.0005
2416	7.083	0.00	-4.81	-.1151	.0275	-.0054	.0012	-.0002	.0001
2417	7.083	0.00	-3.77	-.0643	.0239	-.0026	.0007	-.0003	-.0004
2418	7.083	0.00	-2.75	-.0310	.0217	-.0005	.0005	-.0003	.0002
2419	7.083	0.00	-1.72	.0052	.0199	.0031	.0003	-.0002	-.0002
2420	7.083	0.00	-.70	.0426	.0201	.0065	.0007	-.0001	-.0003
2421	7.083	0.00	.33	.0795	.0217	.0095	.0005	.0001	-.0004
2422	7.083	0.00	1.36	.1200	.0235	.0116	.0007	.0002	-.0002
2423	7.083	0.00	2.34	.1527	.0259	.0130	.0001	.0003	.0002
2424	7.083	0.00	3.37	.1938	.0301	.0146	.0002	.0002	.0000
2425	7.083	0.00	4.40	.2363	.0360	.0151	.0007	.0002	-.0011
2426	7.083	0.00	5.44	.2800	.0432	.0167	-.0000	.0003	.0004
2427	7.083	0.00	6.45	.3237	.0518	.0185	.0005	.0005	-.0011
2428	7.075	0.00	7.47	.3611	.0619	.0209	-.0002	.0005	-.0008
2429	7.075	0.00	8.45	.3935	.0723	.0221	-.0005	.0005	-.0008
2430	7.058	0.00	9.48	.4406	.0859	.0257	.0000	.0008	.0000
2431	7.058	0.00	10.51	.4742	.0989	.0288	-.0007	.0009	-.0000
2432	7.058	0.00	12.55	.5593	.1340	.0361	.0001	.0009	-.0003
2433	7.058	0.00	14.61	.6394	.1751	.0448	-.0016	.0013	.0010
2434	7.050	0.00	16.64	.7198	.2222	.0592	-.0002	.0027	.0018

Table A-2.- Continued.

RUN	91									
POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF	
2435	7.042	-5.00	-9.87	-.3303	.0658	-.0202	-.0071	.0050	.0204	
2436	7.042	-5.00	-8.84	-.2770	.0541	-.0163	-.0058	.0051	.0178	
2437	7.042	-5.00	-7.87	-.2425	.0466	-.0135	-.0046	.0049	.0176	
2438	7.050	-5.00	-6.83	-.1936	.0385	-.0107	-.0033	.0050	.0187	
2439	7.050	-5.00	-5.81	-.1529	.0324	-.0078	-.0026	.0049	.0166	
2440	7.050	-5.00	-4.79	-.1102	.0274	-.0057	-.0013	.0046	.0144	
2441	7.050	-5.00	-3.77	-.0783	.0242	-.0043	-.0008	.0047	.0147	
2442	7.050	-5.00	-2.75	-.0294	.0216	-.0007	.0003	.0042	.0148	
2443	7.050	-5.00	-1.74	.0072	.0197	.0029	.0013	.0038	.0139	
2444	7.050	-5.00	-.72	.0440	.0179	.0062	.0024	.0035	.0147	
2445	7.050	-5.00	.29	.0751	.0165	.0084	.0038	.0032	.0152	
2446	7.050	-5.00	1.32	.1101	.0230	.0109	.0049	.0026	.0154	
2447	7.050	-5.00	2.36	.1527	.0253	.0126	.0057	.0026	.0160	
2448	7.050	-5.00	3.38	.1960	.0301	.0136	.0071	.0023	.0159	
2449	7.050	-5.00	4.39	.2343	.0359	.0147	.0073	.0018	.0156	
2450	7.050	-5.00	5.42	.2748	.0424	.0167	.0085	.0013	.0154	
2451	7.050	-5.00	6.44	.3170	.0514	.0183	.0102	.0010	.0146	
2452	7.050	-5.00	7.45	.3551	.0613	.0202	.0109	.0007	.0153	
2453	7.050	-5.00	8.46	.3874	.0717	.0223	.0114	.0005	.0165	
2454	7.050	-5.00	9.50	.4326	.0851	.0266	.0116	.0001	.0163	
2455	7.050	-5.00	10.52	.4650	.0978	.0298	.0121	.0000	.0173	
2456	7.042	-5.00	12.54	.5483	.1322	.0351	.0138	.0004	.0188	
2457	7.042	-5.00	14.62	.6360	.1751	.0463	.0151	.0016	.0199	
2458	7.042	-5.00	16.67	.7113	.2210	.0586	.0149	.0030	.0239	

RUN	92									
POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF	
2459	7.042	5.02	-9.88	-.3285	.0650	-.0202	.0095	-.0063	-.0250	
2460	7.042	5.02	-8.89	-.2804	.0537	-.0168	.0074	-.0062	-.0236	
2461	7.042	5.02	-7.83	-.2330	.0445	-.0125	.0065	-.0059	-.0234	
2462	7.042	5.02	-6.80	-.1923	.0370	-.0104	.0056	-.0058	-.0223	
2463	7.042	5.02	-5.77	-.1484	.0310	-.0078	.0040	-.0053	-.0205	
2464	7.042	5.02	-4.78	-.1117	.0266	-.0054	.0032	-.0054	-.0198	
2465	7.042	5.02	-3.78	-.0741	.0226	-.0036	.0021	-.0052	-.0190	
2466	7.042	5.02	-2.73	-.0275	.0205	.0006	.0014	-.0049	-.0180	
2467	7.042	5.02	-1.71	.0103	.0192	.0029	-.0005	-.0043	-.0178	
2468	7.042	5.02	-.71	.0338	.0190	.0046	-.0010	-.0039	-.0172	
2469	7.042	5.02	.30	.0791	.0199	.0091	-.0027	-.0035	-.0184	
2470	7.042	5.02	1.31	.1109	.0216	.0109	-.0034	-.0029	-.0185	
2471	7.042	5.02	2.36	.1510	.0243	.0128	-.0043	-.0025	-.0186	
2472	7.042	5.02	3.36	.1885	.0287	.0138	-.0054	-.0024	-.0188	
2473	7.042	5.02	4.41	.2325	.0346	.0156	-.0067	-.0018	-.0195	
2474	7.042	5.02	5.42	.2690	.0416	.0170	-.0074	-.0011	-.0193	
2475	7.042	5.02	6.49	.3158	.0503	.0203	-.0090	-.0008	-.0194	
2476	7.042	5.02	7.46	.3474	.0590	.0214	-.0105	-.0006	-.0196	
2477	7.042	5.02	8.49	.3939	.0709	.0242	-.0111	.0000	-.0215	
2478	7.042	5.02	9.51	.4289	.0829	.0275	-.0116	.0002	-.0206	
2479	7.042	5.02	10.51	.4548	.0948	.0293	-.0125	-.0001	-.0212	
2480	7.042	5.02	12.57	.5449	.1305	.0380	-.0140	-.0000	-.0217	
2481	7.042	5.02	14.60	.6183	.1696	.0461	-.0154	.0005	-.0214	
2482	7.042	5.02	16.65	.7001	.2162	.0583	-.0179	.0034	-.0189	

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2. - Continued.

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2359	7.067	-9.98	-9.94	-3766	.0816	-.0207	.0021	.0004	-.0016	
2360	7.067	-9.98	-8.93	-.3253	.0690	-.0130	.0014	.0003	-.0001	
2361	7.009	-9.98	-7.95	-.2759	.0579	-.0099	.0010	.0005	.0006	
2362	6.984	-9.98	-6.87	-.2265	.0496	-.0062	.0012	.0006	-.0018	
2363	6.984	-9.98	-5.85	-.1906	.0435	-.0035	.0003	.0006	-.0014	
2364	6.984	-9.98	-4.77	-.1448	.0370	.0004	.0001	.0007	-.0008	
2365	6.984	-9.98	-3.76	-.0992	.0324	.0035	.0010	.0005	.0011	
2366	6.984	-9.98	-2.74	-.0529	.0287	.0065	.0004	.0004	.0005	
2367	6.984	-9.98	-1.68	-.0056	.0256	.0091	.0007	.0004	.0000	
2368	6.984	-9.98	-.63	.0347	.0244	.0105	.0011	.0006	.0000	
2369	6.984	-9.98	.31	.0694	.0248	.0128	.0005	.0007	.0010	
2370	6.984	-9.98	1.36	.1045	.0254	.0145	.0002	.0005	.0021	
2371	6.984	-9.98	2.32	.1480	.0264	.0174	.0010	.0005	.0011	
2372	6.984	-9.98	3.37	.1877	.0269	.0192	.0010	.0009	.0009	
2373	6.984	-9.98	4.40	.2253	.0317	.0209	.0000	.0004	.0022	
2374	6.984	-9.98	5.43	.2615	.0351	.0222	.0005	.0007	.0015	
2375	6.984	-9.98	6.45	.2923	.0399	.0237	.0005	.0006	.0023	
2376	6.984	-9.98	7.46	.3331	.0456	.0260	.0004	.0005	.0006	
2377	6.984	-9.98	8.47	.3689	.0533	.0288	.0005	.0004	.0006	
2378	6.984	-9.98	9.51	.4052	.0623	.0325	.0004	.0006	-.0005	
2379	6.984	-9.98	10.54	.4504	.0734	.0357	.0006	.0005	-.0004	
2380	6.984	-9.98	12.60	.5456	.1064	.0430	.0009	.0015	-.0054	
2381	6.984	-9.98	14.65	.6216	.1436	.0517	.0011	.0000	-.0013	

RUN	POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2382	6.984	-5.00	-9.92	-.3655	.0799	-.0108	-.0122	.0014	.0314	
2383	6.976	-5.00	-8.93	-.3210	.0685	-.0119	-.0104	.0011	.0298	
2384	6.976	-5.00	-7.90	-.2805	.0584	-.0073	-.0086	.0008	.0308	
2385	6.976	-5.00	-6.89	-.2324	.0494	-.0039	-.0076	.0013	.0290	
2386	6.976	-5.00	-5.83	-.1854	.0422	-.0015	-.0065	.0013	.0284	
2387	6.976	-5.00	-4.79	-.1345	.0354	.0024	-.0038	.0018	.0237	
2388	6.976	-5.00	-3.79	-.0993	.0310	.0041	-.0028	.0014	.0239	
2389	6.976	-5.00	-2.77	-.0597	.0277	.0059	-.0024	.0016	.0232	
2390	6.976	-5.00	-1.73	-.0194	.0252	.0087	-.0019	.0016	.0225	
2391	6.976	-5.00	-.65	.0326	.0230	.0106	.0003	.0009	.0264	
2392	6.976	-5.00	.34	.0688	.0235	.0111	.0030	.0012	.0203	
2393	6.976	-5.00	1.39	.1090	.0240	.0146	.0049	.0007	.0203	
2394	6.976	-5.00	2.39	.1426	.0257	.0163	.0053	.0003	.0206	
2396	6.976	-5.00	4.41	.2172	.0306	.0204	.0077	.0000	.0198	
2397	6.976	-5.00	5.42	.2542	.0345	.0225	.0090	-.0001	.0207	
2398	6.976	-5.00	6.46	.2929	.0396	.0250	.0104	-.0005	.0199	
2399	6.976	-5.00	7.46	.3272	.0451	.0277	.0116	-.0006	.0187	
2400	6.976	-5.00	8.47	.3702	.0532	.0302	.0133	-.0004	.0189	
2401	6.976	-5.00	9.54	.4158	.0638	.0332	.0132	-.0002	.0185	
2402	6.976	-5.00	10.53	.4551	.0745	.0363	.0145	.0005	.0154	
2403	6.968	-5.00	12.56	.5330	.1024	.0430	.0157	.0020	.0123	
2404	6.943	-5.00	14.65	.6280	.1431	.0519	.0172	.0027	.0092	

Table A-2.- Continued.

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYH	CSF
2405	6.970	5.00	-9.94	-.3712	.0814	-.0180	.0137	-.0023	-.0303
2406	6.992	5.00	-8.94	-.3321	.0704	-.0132	.0110	-.0018	-.0273
2407	6.992	5.00	-7.99	-.2806	.0590	-.0080	.0092	-.0012	-.0277
2408	6.992	5.00	-6.87	-.2350	.0499	-.0044	.0074	-.0014	-.0259
2409	6.992	5.00	-5.86	-.1969	.0427	-.0033	.0068	-.0018	-.0233
2410	6.992	5.00	-4.83	-.1480	.0369	.0005	.0053	-.0019	-.0211
2411	6.992	5.00	-3.77	-.1040	.0318	.0024	.0053	-.0021	-.0203
2412	6.992	5.00	-2.74	-.0547	.0279	.0069	.0030	-.0016	-.0186
2413	6.992	5.00	-1.70	-.0132	.0257	.0081	.0023	-.0014	-.0173
2414	6.992	5.00	-.64	.0380	.0237	.0112	-.0002	-.0013	-.0167
2415	7.009	5.00	.31	.0676	.0237	.0125	-.0015	-.0008	-.0158
2416	7.017	5.00	1.31	.1061	.0238	.0131	-.0030	-.0004	-.0162
2417	7.017	5.00	2.36	.1476	.0251	.0175	-.0043	-.0000	-.0168
2418	7.025	5.00	3.39	.1828	.0273	.0190	-.0049	.0004	-.0178
2420	7.025	5.00	5.44	.2621	.0340	.0236	-.0081	.0007	-.0188
2421	7.025	5.00	6.44	.2930	.0385	.0256	-.0090	.0007	-.0184
2422	7.025	5.00	7.46	.3429	.0449	.0287	-.0115	.0005	-.0198
2423	7.025	5.00	8.46	.3717	.0520	.0305	-.0119	.0005	-.0208
2424	7.025	5.00	9.50	.4098	.0607	.0333	-.0129	-.0003	-.0186
2425	7.025	5.00	10.52	.4521	.0729	.0371	-.0134	-.0007	-.0179
2426	7.025	5.00	12.56	.5273	.1014	.0460	-.0137	-.0017	-.0165
2427	7.025	5.00	14.69	.6266	.1473	.0583	-.0159	-.0010	-.0109

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYH	CSF
2441	6.968	0.00	-10.00	-.3407	.0705	-.0268	.0024	-.0006	-.0029
2442	6.976	0.00	-8.63	-.2821	.0574	-.0190	.0025	-.0003	-.0006
2443	6.976	0.00	-7.88	-.2435	.0485	-.0140	.0020	-.0004	-.0006
2444	6.984	0.00	-6.79	-.1944	.0399	-.0093	.0020	-.0003	-.0013
2445	6.984	0.00	-5.75	-.1509	.0336	-.0070	.0012	.0000	-.0006
2446	6.984	0.00	-4.88	-.1259	.0300	-.0058	.0016	.0000	.0010
2447	6.984	0.00	-3.76	-.0697	.0256	-.0011	.0013	-.0005	.0058
2448	6.984	0.00	-2.79	-.0230	.0232	.0019	.0020	-.0004	.0023
2449	6.984	0.00	-1.78	.0301	.0209	.0078	.0014	-.0001	.0032
2450	6.984	0.00	-.66	.0662	.0234	.0084	.0017	-.0004	.0023
2451	6.984	0.00	.29	.0935	.0209	.0124	.0011	-.0003	.0025
2452	6.984	0.00	1.31	.1328	.0228	.0140	.0014	-.0001	.0026
2453	6.984	0.00	2.32	.1640	.0255	.0161	.0003	-.0004	.0031
2454	6.984	0.00	3.37	.2081	.0290	.0169	.0011	-.0003	.0021
2455	6.984	0.00	4.35	.2482	.0338	.0167	.0006	-.0002	.0021
2456	6.984	0.00	5.42	.2876	.0392	.0179	.0008	-.0007	.0031
2457	6.984	0.00	6.43	.3337	.0462	.0187	.0004	-.0005	.0014
2458	7.001	0.00	7.43	.3650	.0536	.0202	.0006	-.0002	.0033
2459	7.001	0.00	8.51	.4117	.0641	.0221	.0003	-.0003	.0022
2460	7.001	0.00	9.44	.4378	.0730	.0249	.0001	-.0006	.0038
2461	7.001	0.00	10.51	.4787	.0864	.0274	-.0005	-.0005	.0036
2462	7.001	0.00	12.68	.6999	.1613	.0242	-.0018	.0007	.0006
2463	7.001	0.00	12.61	.5611	.1189	.0402	-.0001	.0004	.0027
2464	7.001	0.00	14.64	.6426	.1588	.0524	.0006	-.0008	.0071
2464	7.001	0.00	16.65	.7184	.2038	.0691	-.0010	.0004	.0154

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 103

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
2467	7.001	0.00	-9.90	-.3484	.0722	-.0168	.0031	.0001	-.0012
2468	7.001	0.00	-8.92	-.2991	.0604	-.0110	.0036	-.0004	-.0028
2469	7.001	0.00	-7.93	-.2508	.0500	-.0064	.0036	-.0001	-.0027
2470	7.001	0.00	-6.90	-.2082	.0416	-.0027	.0031	-.0001	-.0028
2471	7.001	0.00	-5.90	-.1731	.0350	-.0006	.0028	-.0000	-.0013
2472	7.001	0.00	-4.83	-.1202	.0283	.0038	.0025	-.0002	-.0018
2473	7.001	0.00	-3.84	-.0823	.0252	.0028	.0025	-.0003	-.0004
2474	7.001	0.00	-2.82	-.0290	.0219	.0028	.0031	-.0004	-.0010
2475	7.001	0.00	-1.76	.0023	.0196	.0065	.0020	-.0002	-.0017
2476	7.001	0.00	-.77	.0422	.0180	.0101	.0014	-.0002	-.0006
2477	7.001	0.00	.30	.0966	.0191	.0138	.0017	.0000	-.0023
2478	7.001	0.00	1.42	.1328	.0203	.0190	.0019	.0005	-.0012
2479	7.001	0.00	2.30	.1661	.0222	.0181	.0014	.0002	-.0022
2480	7.001	0.00	3.34	.1953	.0248	.0198	.0006	.0001	-.0016
2481	7.001	0.00	4.44	.2394	.0286	.0223	.0003	-.0003	-.0020
2482	7.001	0.00	5.37	.2635	.0324	.0229	.0004	.0002	-.0005
2483	7.001	0.00	6.41	.3069	.0382	.0247	.0008	-.0000	-.0022
2484	7.001	0.00	7.39	.3572	.0455	.0258	-.0006	-.0001	-.0020
2485	7.001	0.00	8.48	.3901	.0551	.0256	.0003	-.0000	-.0020
2486	7.001	0.00	9.50	.4351	.0662	.0276	.0012	.0001	-.0028
2487	7.001	0.00	10.48	.4678	.0776	.0309	.0005	.0003	-.0011
2488	7.001	0.00	12.51	.5517	.1092	.0402	-.0012	.0002	-.0019
2489	7.001	0.00	14.62	.6322	.1487	.0505	.0002	.0005	.0012
2490	7.001	0.00	16.69	.7256	.2009	.0675	-.0007	.0013	.0120

RUN 104

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
2493	6.968	0.00	-9.85	-.3339	.0688	-.0182	.0044	.0003	-.0032
2494	6.968	0.00	-8.87	-.2864	.0574	-.0135	.0038	.0003	-.0040
2495	6.968	0.00	-7.82	-.2395	.0495	-.0103	.0037	.0004	-.0017
2496	6.968	0.00	-6.85	-.2044	.0400	-.0066	.0033	.0005	-.0040
2497	6.968	0.00	-5.85	-.1452	.0322	-.0028	.0036	.0004	-.0032
2498	6.968	0.00	-4.87	-.1126	.0276	.0004	.0041	.0002	-.0029
2499	7.009	0.00	-3.82	-.0768	.0239	.0013	.0034	.0003	-.0026
2500	7.009	0.00	-2.81	-.0334	.0212	.0037	.0025	-.0001	-.0026
2501	7.009	0.00	-1.80	.0072	.0190	.0070	.0020	-.0001	-.0019
2502	7.009	0.00	-.73	.0553	.0185	.0098	.0019	-.0002	-.0019
2503	7.009	0.00	.32	.0824	.0196	.0123	.0015	-.0001	-.0021
2504	7.009	0.00	1.29	.1284	.0290	.0157	.0006	-.0003	-.0014
2505	7.009	0.00	2.31	.1637	.0229	.0168	.0012	.0000	-.0018
2506	7.009	0.00	3.32	.2040	.0257	.0182	.0017	-.0004	-.0028
2507	7.009	0.00	4.35	.2408	.0303	.0175	.0019	-.0001	-.0027
2508	7.009	0.00	5.38	.2818	.0352	.0191	.0013	-.0005	-.0026
2509	7.009	0.00	6.53	.3275	.0427	.0202	.0018	-.0003	-.0029
2510	7.009	0.00	7.51	.3707	.0509	.0219	.0007	-.0009	-.0027
2511	7.009	0.00	8.46	.4002	.0592	.0232	.0009	-.0009	-.0028
2512	7.009	0.00	9.45	.4318	.0692	.0250	.0009	-.0009	-.0025
2513	7.009	0.00	10.48	.4807	.0827	.0286	.0007	-.0011	-.0014
2514	7.009	0.00	12.55	.5469	.1130	.0388	.0001	-.0006	-.0015
2515	7.009	0.00	14.68	.6381	.1551	.0515	-.0004	-.0008	.0024
2516	7.009	0.00	16.60	.7144	.1996	.0664	-.0009	-.0003	.0115



Table A-2.- Continued.

RUN 105

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2519	6.976	0.00	-9.85	-.3532	.0750	-.0134	.0023	-.0005	.0004
2520	6.976	0.00	-8.98	-.3175	.0652	-.0086	.0020	-.0005	-.0016
2521	6.976	0.00	-7.89	-.2731	.0549	-.0046	.0013	-.0003	-.0001
2522	6.976	0.00	-6.85	-.2141	.0447	.0010	.0011	-.0005	-.0003
2523	6.976	0.00	-5.89	-.1693	.0380	.0028	.0020	-.0004	-.0011
2524	6.984	0.00	-4.85	-.1298	.0324	.0047	.0025	-.0004	-.0011
2525	6.984	0.00	-3.88	-.0995	.0286	.0065	.0020	-.0003	.0010
2526	7.009	0.00	-2.82	-.0610	.0249	.0088	.0016	-.0004	.0007
2527	7.017	0.00	-1.80	-.0062	.0223	.0102	.0017	-.0001	.0017
2529	7.017	0.00	-.69	.0447	.0213	.0116	.0011	-.0001	.0004
2530	7.017	0.00	.31	.0802	.0217	.0139	.0014	-.0003	-.0003
2531	7.017	0.00	1.31	.1339	.0219	.0155	.0009	-.0003	-.0016
2532	7.017	0.00	2.31	.1819	.0236	.0173	.0012	.0002	.0006
2533	7.017	0.00	3.31	.1972	.0263	.0197	.0007	-.0002	-.0003
2534	7.017	0.00	4.34	.2360	.0296	.0230	.0007	-.0000	-.0010
2535	7.017	0.00	5.41	.2728	.0334	.0244	.0008	.0004	-.0018
2536	7.017	0.00	6.43	.3072	.0387	.0269	-.0002	-.0003	-.0003
2537	7.017	0.00	7.40	.3380	.0450	.0283	.0007	.0002	-.0010
2538	7.025	0.00	8.42	.3766	.0523	.0305	.0006	.0000	-.0004
2539	7.025	0.00	9.44	.4299	.0632	.0328	.0001	-.0002	.0007
2540	7.025	0.00	10.47	.4823	.0752	.0338	.0008	.0002	-.0022
2541	7.025	0.00	12.59	.5466	.1072	.0422	-.0012	.0002	-.0006
2542	7.025	0.00	14.63	.6251	.1445	.0521	-.0004	.0002	.0049
			16.70	.7238	.1951	.0671	-.0009	.0007	.0125

RUN 106

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2556	6.992	0.00	-9.90	-.3344	.0736	-.0121	.0037	-.0003	-.0008
2557	6.976	0.00	-8.93	-.2986	.0632	-.0058	.0011	-.0003	.0012
2558	6.976	0.00	-7.88	-.2567	.0535	-.0014	.0020	-.0007	.0021
2559	6.976	0.00	-6.83	-.2046	.0441	.0042	.0013	-.0008	.0021
2560	6.976	0.00	-5.88	-.1839	.0392	.0044	.0011	-.0006	.0026
2561	6.976	0.00	-4.87	-.1336	.0326	.0070	.0007	-.0006	.0037
2562	6.976	0.00	-3.83	-.0892	.0281	.0083	.0010	-.0006	.0034
2563	6.976	0.00	-2.82	-.0369	.0245	.0113	.0021	-.0008	.0032
2564	6.976	0.00	-1.79	-.0108	.0223	.0120	.0007	-.0003	.0048
2565	6.976	0.00	-.76	.0412	.0216	.0137	.0010	-.0005	.0037
2566	6.976	0.00	.25	.0783	.0215	.0146	.0008	-.0004	.0037
2567	6.976	0.00	1.32	.1177	.0221	.0155	.0005	-.0003	.0040
2568	6.976	0.00	2.33	.1551	.0236	.0168	.0007	-.0003	.0033
2569	6.976	0.00	3.34	.1962	.0262	.0182	.0012	-.0004	.0036
2570	6.976	0.00	4.36	.2323	.0294	.0197	.0014	.0001	.0022
2571	6.976	0.00	5.38	.2588	.0332	.0206	.0011	.0001	.0030
2572	6.976	0.00	6.40	.2997	.0383	.0229	.0009	-.0003	.0027
2573	6.976	0.00	7.41	.3390	.0447	.0245	.0008	-.0001	.0023
2574	6.976	0.00	8.46	.3740	.0521	.0260	.0007	-.0000	.0030
2575	6.976	0.00	9.48	.4044	.0605	.0311	.0005	.0000	.0033
2576	6.968	0.00	10.45	.4423	.0700	.0357	.0001	.0002	.0028
2577	6.960	0.00	12.50	.5176	.0981	.0433	-.0012	.0002	.0024
2578	6.960	0.00	14.59	.6114	.1364	.0558	-.0001	.0005	.0056
2579	6.960	0.00	16.66	.7005	.1851	.0670	-.0006	.0004	.0132

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 108

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2606	6.992	5.00	-9.89	-.3432	.0725	-.0129	.0159	-.0014	-.0309
2607	6.992	5.00	-8.90	-.3059	.0619	-.0072	.0139	-.0014	-.0302
2608	6.992	5.00	-7.88	-.2583	.0515	-.0016	.0111	-.0012	-.0287
2609	6.992	5.00	-6.87	-.2123	.0427	.0022	.0091	-.0015	-.0275
2610	6.992	5.00	-5.63	-.1696	.0363	.0037	.0080	-.0018	-.0248
2611	6.992	5.00	-4.85	-.1293	.0307	.0062	.0058	-.0017	-.0230
2612	6.992	5.00	-3.83	-.0881	.0269	.0082	.0048	-.0016	-.0208
2613	6.992	5.00	-2.70	-.0425	.0229	.0096	.0032	-.0014	-.0196
2614	6.992	5.00	-1.71	-.0004	.0204	.0107	.0019	-.0010	-.0183
2615	6.992	5.00	-.77	.0344	.0196	.0122	.0009	-.0012	-.0180
2616	6.992	5.00	.29	.0787	.0194	.0136	-.0013	-.0009	-.0176
2617	6.992	5.00	1.35	.1155	.0200	.0158	-.0025	-.0004	-.0179
2618	6.992	5.00	2.45	.1599	.0216	.0181	-.0041	.0000	-.0192
2619	6.992	5.00	3.30	.2033	.0241	.0197	-.0049	.0001	-.0196
2620	6.992	5.00	4.37	.2220	.0272	.0219	-.0078	-.0002	-.0187
2621	6.992	5.00	5.42	.2607	.0316	.0232	-.0079	.0009	-.0198
2622	6.992	5.00	6.49	.2967	.0368	.0260	-.0096	.0012	-.0213
2623	6.992	5.00	7.42	.3331	.0427	.0279	-.0108	.0011	-.0220
2624	6.992	5.00	8.45	.3772	.0510	.0309	-.0118	.0006	-.0206
2625	6.992	5.00	9.55	.4181	.0618	.0338	-.0117	.0001	-.0198
2626	6.992	5.00	10.44	.4503	.0713	.0370	-.0125	-.0007	-.0168
2627	6.992	5.00	12.54	.5231	.0999	.0446	-.0136	-.0019	-.0126
2628	6.992	5.00	14.61	.6186	.1420	.0597	-.0147	.0004	-.0065
2629	6.992	5.00	16.54	.7140	.1892	.0742	-.0180	.0026	.0016

RUN 109

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2555	6.968	-5.00	-9.94	-.3759	.0832	-.0173	-.0135	.0014	.0290
2556	6.976	-5.00	-8.93	-.3282	.0711	-.0111	-.0112	.0014	.0298
2557	7.001	-5.00	-7.89	-.2820	.0600	-.0046	-.0086	.0010	.0285
2558	7.001	-5.00	-6.83	-.2403	.0505	-.0025	-.0065	.0011	.0283
2559	7.001	-5.00	-5.85	-.1950	.0432	.0007	-.0051	.0014	.0270
2560	7.009	-5.00	-4.68	-.1443	.0361	.0036	-.0036	.0022	.0224
2561	7.009	-5.00	-3.81	-.1053	.0314	.0052	-.0019	.0019	.0236
2562	7.009	-5.00	-2.73	-.0560	.0278	.0077	-.0010	.0017	.0223
2563	7.009	-5.00	-1.66	-.0126	.0250	.0093	.0004	.0016	.0206
2564	7.009	-5.00	-.79	.0243	.0238	.0104	.0015	.0015	.0217
2565	7.009	-5.00	.29	.0642	.0240	.0121	.0022	.0011	.0211
2566	7.009	-5.00	1.29	.1110	.0244	.0130	.0036	.0008	.0206
2567	7.009	-5.00	2.31	.1435	.0258	.0164	.0051	.0006	.0204
2568	7.009	-5.00	3.33	.1867	.0276	.0187	.0066	.0003	.0218
2569	7.017	-5.00	4.41	.2255	.0314	.0209	.0087	.0001	.0217
2570	7.025	-5.00	5.34	.2558	.0346	.0228	.0096	-.0003	.0229
2571	7.025	-5.00	6.40	.2977	.0405	.0254	.0110	-.0008	.0228
2572	7.025	-5.00	7.45	.3320	.0467	.0278	.0121	-.0006	.0228
2573	7.025	-5.00	8.43	.3698	.0542	.0313	.0136	-.0004	.0224
2574	7.025	-5.00	9.41	.4081	.0633	.0341	.0136	-.0008	.0224
2575	7.025	-5.00	10.45	.4485	.0751	.0368	.0158	-.0006	.0206
2576	7.025	-5.00	12.79	.5329	.1079	.0455	.0156	-.0011	.0201
2577	7.025	-5.00	14.59	.6144	.1441	.0570	.0159	-.0009	.0191
2578	7.025	-5.00	16.67	.7092	.1949	.0708	.0186	-.0027	.0239

Table A-2.- Continued.

RUN 110

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRH	CYM	CSF
2581	6.992	0.00	-9.92	-.3626	.0786	-.0117	.0045	.0008	-.0024
2582	6.992	0.00	-8.83	-.3216	.0668	-.0101	.0043	.0008	-.0019
2583	6.992	0.00	-7.94	-.2881	.0584	-.0079	.0040	.0008	-.0010
2584	6.992	0.00	-6.88	-.2373	.0484	-.0026	.0036	.0010	-.0014
2585	6.992	0.00	-5.87	-.1862	.0408	.0007	.0033	.0011	-.0018
2586	6.992	0.00	-4.80	-.1421	.0347	.0027	.0046	.0009	-.0018
2587	7.001	0.00	-3.86	-.1036	.0302	.0043	.0031	.0009	.0003
2588	7.009	0.00	-2.70	-.0742	.0260	.0072	.0032	.0009	.0005
2589	7.009	0.00	-1.68	-.0416	.0236	.0084	.0034	.0009	.0004
2590	7.009	0.00	-.71	.0331	.0226	.0093	.0035	.0008	.0003
2591	7.009	0.00	.30	.0743	.0227	.0098	.0035	.0008	.0002
2592	7.009	0.00	1.33	.1148	.0234	.0128	.0032	.0008	-.0012
2593	7.017	0.00	2.34	.1505	.0249	.0138	.0035	.0011	-.0005
2594	7.017	0.00	3.28	.1922	.0276	.0158	.0040	.0011	-.0002
2595	7.017	0.00	4.36	.2310	.0312	.0179	.0034	.0011	-.0016
2596	7.017	0.00	5.32	.2672	.0352	.0192	.0041	.0008	-.0016
2597	7.017	0.00	6.38	.3013	.0404	.0214	.0031	.0007	-.0019
2598	7.017	0.00	7.39	.3389	.0463	.0244	.0027	.0008	-.0002
2599	7.017	0.00	8.45	.3719	.0542	.0293	.0033	.0007	-.0002
2600	7.017	0.00	9.51	.4235	.0649	.0292	.0036	-.0001	-.0006
2601	7.017	0.00	10.53	.4512	.0758	.0318	.0041	-.0004	.0020
2602	7.017	0.00	12.49	.5323	.1054	.0418	.0032	-.0008	.0017
2603	7.017	0.00	14.63	.6209	.1467	.0504	.0024	-.0008	.0077
2604	7.017	0.00	16.92	.7288	.2041	.0709	.0024	.0004	.0173

RUN 111

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRH	CYM	CSF
2607	7.083	0.00	-9.90	-.3629	.0776	-.0230	.0060	.0002	-.0030
2608	7.058	0.00	-8.91	-.3171	.0665	-.0160	.0060	.0001	-.0015
2609	7.058	0.00	-7.95	-.2716	.0568	-.0102	.0062	.0001	-.0021
2610	7.058	0.00	-6.86	-.2245	.0472	-.0063	.0057	.0001	-.0022
2611	7.058	0.00	-5.84	-.1805	.0400	-.0026	.0053	.0002	-.0015
2612	7.058	0.00	-4.83	-.1460	.0348	-.0002	.0050	.0001	-.0012
2613	7.058	0.00	-3.72	-.0935	.0294	.0035	.0031	.0001	-.0001
2614	7.058	0.00	-2.74	-.0395	.0262	.0056	.0030	-.0000	.0008
2615	7.050	0.00	-1.76	-.0110	.0234	.0070	.0037	-.0001	.0002
2616	7.050	0.00	-.77	.0222	.0229	.0089	.0035	-.0001	-.0006
2617	6.992	0.00	-.82	.0280	.0234	.0060	.0065	.0011	-.0036
2618	7.009	0.00	.20	.0689	.0235	.0076	.0059	.0013	-.0032
2619	7.025	0.00	1.32	.1155	.0243	.0097	.0053	.0010	-.0035
2620	7.034	0.00	2.34	.1624	.0258	.0112	.0055	.0014	-.0039
2621	7.042	0.00	3.49	.1964	.0291	.0128	.0051	.0013	-.0027
2622	7.050	0.00	4.35	.2344	.0320	.0145	.0048	.0012	-.0035
2623	7.050	0.00	5.41	.2709	.0364	.0167	.0057	.0012	-.0039
2624	7.058	0.00	6.43	.3062	.0417	.0191	.0053	.0014	-.0041
2625	7.058	0.00	7.39	.3417	.0466	.0215	.0050	.0012	-.0047
2626	7.058	0.00	8.45	.3876	.0544	.0238	.0052	.0002	-.0020
2627	7.058	0.00	9.52	.4194	.0658	.0262	.0057	-.0001	-.0021
2628	7.058	0.00	10.45	.4562	.0768	.0306	.0049	-.0007	-.0002
2629	7.058	0.00	12.55	.5354	.1069	.0412	.0042	-.0007	-.0002
2630	7.058	0.00	14.66	.6310	.1505	.0506	.0046	-.0006	.0057
2631	7.058	0.00	16.63	.7217	.1985	.0697	.0032	-.0001	.0143

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 112

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2634	7.001	0.00	-9.96	-.3554	.0778	-.0238	.0076	.0011	-.0035
2635	7.001	0.00	-8.75	-.3096	.0654	-.0158	.0076	.0010	-.0040
2636	7.001	0.00	-7.90	-.2732	.0571	-.0123	.0070	.0011	-.0020
2637	7.001	0.00	-6.93	-.2270	.0479	-.0075	.0062	.0011	-.0040
2638	7.001	0.00	-5.91	-.1881	.0410	-.0044	.0065	.0012	-.0027
2639	7.001	0.00	-4.76	-.1408	.0349	-.0013	.0056	.0011	-.0021
2640	7.001	0.00	-3.80	-.0864	.0303	.0003	.0064	.0007	-.0022
2641	7.001	0.00	-2.73	-.0453	.0270	.0024	.0070	.0007	-.0013
2642	7.001	0.00	-1.82	-.0126	.0251	.0032	.0060	.0004	.0001
2643	7.001	0.00	-.75	.0394	.0230	.0039	.0060	.0003	.0004
2644	7.001	0.00	.33	.0797	.0219	.0038	.0073	.0005	-.0008
2645	7.001	0.00	1.31	.1214	.0253	.0060	.0068	.0004	.0001
2646	7.001	0.00	2.42	.1657	.0275	.0081	.0066	.0002	-.0011
2647	7.001	0.00	3.33	.1958	.0298	.0101	.0070	.0005	-.0017
2648	7.001	0.00	4.38	.2331	.0330	.0125	.0067	.0004	-.0018
2649	7.001	0.00	5.39	.2769	.0375	.0145	.0069	.0002	-.0030
2650	7.001	0.00	6.44	.3060	.0432	.0160	.0062	.0002	-.0003
2651	7.001	0.00	7.42	.3437	.0489	.0184	.0058	.0001	-.0009
2652	7.001	0.00	8.47	.3819	.0574	.0210	.0065	-.0005	-.0006
2653	7.001	0.00	9.54	.4161	.0667	.0229	.0068	-.0009	.0005
2654	7.001	0.00	10.48	.4610	.0788	.0283	.0073	-.0013	.0007
2655	7.001	0.00	12.53	.5429	.1099	.0379	.0056	-.0015	.0029
2656	6.992	0.00	14.53	.6300	.1509	.0488	.0057	-.0019	.0074
2657	6.992	0.00	16.62	.7160	.1976	.0668	.0051	-.0007	.0148

RUN 113

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2660	7.017	0.00	-9.91	-.3746	.0799	-.0129	.0046	.0012	-.0033
2661	7.017	0.00	-8.85	-.3241	.0670	-.0043	.0044	.0009	-.0021
2662	7.009	0.00	-7.91	-.2852	.0579	-.0004	.0031	.0011	-.0021
2663	7.009	0.00	-6.97	-.2371	.0488	.0040	.0043	.0010	-.0029
2664	7.009	0.00	-5.93	-.2008	.0429	.0046	.0033	.0015	-.0017
2665	7.009	0.00	-4.84	-.1495	.0353	.0097	.0040	.0011	-.0027
2666	7.009	0.00	-3.93	-.1178	.0314	.0109	.0030	.0012	-.0022
2667	7.009	0.00	-2.77	-.0703	.0270	.0128	.0029	.0015	-.0030
2668	7.009	0.00	-1.84	-.0281	.0238	.0154	.0029	.0012	-.0015
2669	7.009	0.00	-.79	.0143	.0225	.0167	.0036	.0013	-.0018
2670	7.009	0.00	.26	.0608	.0227	.0190	.0032	.0015	-.0008
2671	7.009	0.00	1.29	.1020	.0229	.0200	.0036	.0015	-.0019
2672	7.009	0.00	2.30	.1418	.0241	.0222	.0033	.0013	-.0021
2673	7.009	0.00	3.34	.1869	.0289	.0242	.0035	.0014	-.0032
2674	7.009	0.00	4.37	.2105	.0299	.0252	.0026	.0011	-.0022
2675	7.009	0.00	5.43	.2526	.0339	.0272	.0033	.0015	-.0021
2676	7.009	0.00	6.37	.2830	.0364	.0288	.0040	.0015	-.0044
2677	7.009	0.00	7.33	.3162	.0447	.0311	.0027	.0010	-.0017
2678	7.009	0.00	8.28	.3581	.0513	.0329	.0028	.0007	-.0019
2679	7.009	0.00	9.51	.3995	.0623	.0356	.0031	.0004	-.0002
2680	7.009	0.00	10.37	.4230	.0707	.0381	.0035	.0000	.0007
2681	7.009	0.00	12.47	.5082	.1008	.0471	.0037	-.0000	-.0003
2682	7.009	0.00	14.55	.6136	.1449	.0597	.0038	-.0003	.0067
2683	7.009	0.00	16.63	.6930	.1901	.0747	.0037	.0012	.0134

Table A-2.- Continued.

RUN 114

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2686	7.017	0.00	-9.98	-.3755	.0807	-.0108	.0046	.0013	-.0015
2687	7.017	0.00	-8.99	-.3346	.0689	-.0046	.0051	.0010	-.0020
2688	7.017	0.00	-7.97	-.2912	.0585	.0005	.0042	.0011	-.0024
2689	7.017	0.00	-6.85	-.2378	.0477	.0056	.0039	.0011	-.0028
2690	7.017	0.00	-5.76	-.1943	.0405	.0081	.0038	.0014	-.0022
2691	7.017	0.00	-4.92	-.1596	.0357	.0109	.0042	.0010	-.0023
2692	7.017	0.00	-3.75	-.1048	.0255	.0131	.0039	.0013	-.0023
2693	7.017	0.00	-2.69	-.0594	.0261	.0154	.0035	.0011	-.0014
2694	7.017	0.00	-1.73	-.0286	.0237	.0165	.0040	.0015	-.0013
2695	7.017	0.00	-.73	.0225	.0218	.0184	.0047	.0014	-.0019
2696	7.017	0.00	.39	.0663	.0219	.0193	.0044	.0015	-.0018
2697	7.017	0.00	1.23	.0941	.0223	.0212	.0039	.0018	-.0017
2698	7.017	0.00	2.39	.1427	.0240	.0227	.0044	.0017	-.0026
2699	7.017	0.00	3.34	.1760	.0264	.0255	.0040	.0015	-.0026
2700	7.017	0.00	4.29	.2061	.0290	.0259	.0037	.0017	-.0028
2701	7.017	0.00	5.31	.2425	.0333	.0278	.0040	.0015	-.0023
2702	7.017	0.00	6.44	.2871	.0385	.0304	.0038	.0013	-.0015
2703	7.017	0.00	7.24	.3178	.0434	.0323	.0033	.0014	-.0026
2704	7.017	0.00	8.48	.3608	.0528	.0333	.0039	.0013	-.0010
2705	7.017	0.00	9.65	.4085	.0636	.0370	.0047	.0005	-.0004
2706	7.017	0.00	10.42	.4382	.0726	.0403	.0039	-.0003	.0005
2707	7.017	0.00	12.43	.5166	.1024	.0493	.0044	-.0003	.0005
2708	7.017	0.00	14.50	.6096	.1435	.0506	.0045	.0001	.0074
2709	7.017	0.00	16.62	.7047	.1932	.0770	.0044	.0016	.0136
2710	6.927	0.00	16.55	.7095	.1925	.0782	.0043	.0021	.0144

RUN 115

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2713	7.001	0.00	-9.92	-.3831	.0817	-.0084	.0076	.0026	-.0051
2714	7.001	0.00	-8.97	-.3357	.0698	-.0006	.0079	.0024	-.0051
2715	7.001	0.00	-7.90	-.2994	.0594	.0045	.0068	.0024	-.0045
2716	7.001	0.00	-6.84	-.2508	.0499	.0081	.0067	.0025	-.0050
2717	7.001	0.00	-5.86	-.2031	.0423	.0116	.0069	.0025	-.0052
2718	7.001	0.00	-4.75	-.1586	.0353	.0145	.0065	.0025	-.0030
2719	7.001	0.00	-3.76	-.1168	.0308	.0167	.0065	.0026	-.0047
2720	7.001	0.00	-2.71	-.0724	.0272	.0187	.0066	.0027	-.0039
2721	7.001	0.00	-1.80	-.0317	.0248	.0209	.0071	.0027	-.0043
2722	7.001	0.00	-.83	.0071	.0231	.0223	.0074	.0026	-.0052
2723	7.001	0.00	.29	.0460	.0227	.0225	.0072	.0030	-.0042
2724	7.001	0.00	1.35	.0853	.0232	.0245	.0066	.0032	-.0038
2725	7.001	0.00	2.34	.1298	.0244	.0275	.0069	.0032	-.0052
2726	7.001	0.00	3.36	.1649	.0271	.0280	.0064	.0031	-.0047
2727	7.001	0.00	4.31	.2149	.0296	.0314	.0063	.0025	-.0052
2728	7.001	0.00	5.35	.2506	.0334	.0317	.0061	.0027	-.0055
2729	7.001	0.00	6.36	.2765	.0381	.0333	.0067	.0028	-.0059
2730	7.001	0.00	7.35	.3198	.0440	.0372	.0074	.0025	-.0066
2731	7.001	0.00	8.41	.3511	.0516	.0371	.0058	.0022	-.0047
2732	7.001	0.00	9.43	.3955	.0610	.0402	.0068	.0015	-.0040
2733	7.001	0.00	10.38	.4241	.0710	.0431	.0064	.0008	-.0017
2734	6.992	0.00	12.49	.5098	.1014	.0524	.0058	.0005	.0000
2735	6.992	0.00	14.45	.6036	.1419	.0645	.0070	.0008	.0059
2736	6.992	0.00	16.60	.6954	.1910	.0820	.0064	.0023	.0123

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 116

POINT	Q	BETA	ALPHA	CL	CO	CPH	CRM	CYM	CSF
2749	7.001	0.00	-10.00	-.3758	.0808	-.0019	.0027	.0001	-.0005
2750	7.001	0.00	-8.92	-.3216	.0676	.0054	.0025	.0003	-.0014
2751	7.001	0.00	-7.81	-.2662	.0574	.0076	.0018	.0001	-.0016
2752	7.001	0.00	-6.93	-.2456	.0495	.0102	.0017	.0001	-.0013
2753	7.001	0.00	-5.74	-.1903	.0407	.0125	.0024	.0003	-.0018
2754	7.001	0.00	-4.75	-.1428	.0342	.0149	.0016	.0003	-.0008
2755	7.001	0.00	-3.79	-.1027	.0301	.0169	.0012	.0002	-.0000
2756	7.001	0.00	-2.88	-.0711	.0272	.0168	.0018	.0001	-.0001
2757	7.001	0.00	-1.79	-.0212	.0236	.0180	.0013	.0003	-.0011
2758	7.001	0.00	-.81	.0296	.0223	.0186	.0007	-.0000	-.0010
2760	7.001	0.00	.29	.0779	.0219	.0199	.0014	.0004	-.0010
2761	7.001	0.00	1.29	.1031	.0228	.0202	.0008	.0005	-.0001
2762	7.001	0.00	2.26	.1400	.0242	.0222	.0012	.0005	-.0009
2763	7.001	0.00	3.28	.1850	.0267	.0238	.0009	.0005	-.0017
2764	7.001	0.00	4.34	.2300	.0300	.0255	.0007	.0001	-.0006
2769	6.992	0.00	5.39	.2603	.0343	.0281	.0012	-.0001	-.0001
2766	6.992	0.00	6.30	.2907	.0388	.0293	.0012	-.0002	-.0004
2767	6.992	0.00	7.37	.3287	.0454	.0304	.0014	.0003	.0005
2768	6.992	0.00	8.37	.3662	.0533	.0322	.0015	.0000	-.0006
2769	6.992	0.00	9.55	.4151	.0647	.0344	.0030	-.0007	.0008
2770	6.992	0.00	10.45	.4404	.0744	.0365	.0011	-.0015	.0026
2771	6.992	0.00	12.46	.5392	.1083	.0440	.0024	-.0015	.0013
2772	6.992	0.00	14.61	.6303	.1508	.0528	.0015	-.0009	.0096
2773	6.992	0.00	16.77	.7189	.1983	.0649	.0006	.0002	.0162

RUN 117

POINT	Q	BETA	ALPHA	CL	CO	CPH	CRM	CYM	CSF
2774	6.992	5.02	-9.90	-.3561	.0772	-.0020	.0148	.0032	-.0393
2775	6.992	5.02	-8.92	-.3163	.0665	.0026	.0126	.0033	-.0348
2776	6.992	5.02	-7.90	-.2768	.0562	.0053	.0111	.0032	-.0335
2777	6.992	5.02	-6.84	-.2309	.0471	.0084	.0089	.0032	-.0318
2778	6.992	5.02	-5.82	-.1743	.0395	.0096	.0069	.0031	-.0300
2779	6.992	5.02	-4.86	-.1435	.0346	.0107	.0059	.0028	-.0262
2780	6.992	5.02	-3.78	-.0942	.0292	.0116	.0036	.0029	-.0262
2781	6.992	5.02	-2.80	-.0570	.0260	.0131	.0032	.0031	-.0246
2782	6.992	5.02	-1.61	-.0220	.0234	.0132	.0024	.0034	-.0248
2783	6.992	5.02	-.75	.0322	.0216	.0160	.0001	.0037	-.0229
2784	6.992	5.02	.23	.0630	.0213	.0165	-.0004	.0038	-.0233
2785	6.992	5.02	1.40	.1160	.0223	.0175	-.0027	.0042	-.0231
2786	6.992	5.02	2.29	.1421	.0236	.0187	-.0046	.0043	-.0230
2787	6.992	5.02	3.42	.1885	.0261	.0214	-.0061	.0047	-.0246
2788	6.992	5.02	4.43	.2222	.0294	.0220	-.0070	.0045	-.0245
2789	6.992	5.01	5.33	.2525	.0334	.0234	-.0077	.0042	-.0240
2790	6.992	5.01	6.29	.2836	.0378	.0271	-.0084	.0045	-.0252
2791	6.992	5.01	7.44	.3321	.0457	.0289	-.0096	.0044	-.0262
2792	6.992	5.01	8.37	.3611	.0529	.0294	-.0109	.0035	-.0225
2793	6.992	5.00	9.42	.4147	.0646	.0341	-.0120	.0031	-.0209
2794	6.992	5.00	10.36	.4493	.0765	.0381	-.0126	.0028	-.0193
2795	6.992	5.00	12.44	.5303	.1070	.0474	-.0126	.0020	-.0163
2796	6.992	5.00	14.49	.6301	.1504	.0576	-.0138	.0039	-.0050
2797	6.992	5.00	16.59	.7247	.2021	.0687	-.0172	.0078	.0056

Table A-2.- Continued.

RUN 118

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2798	6.992	-5.10	-10.00	-13771	.0806	-.0092	-.0124	-.0031	.0161
2799	6.992	-5.10	-8.99	-13152	.0472	.0013	-.0093	-.0031	.0349
2800	6.992	-5.10	-7.80	-12802	.0365	.0038	-.0079	-.0038	.0390
2801	6.992	-5.10	-6.80	-12260	.0482	.0044	-.0049	-.0034	.0338
2802	6.992	-5.10	-5.77	-11924	.0400	.0072	-.0050	-.0028	.0312
2803	6.992	-5.10	-4.75	-11394	.0380	.0090	-.0025	-.0027	.0278
2804	6.992	-5.10	-3.68	-10941	.0283	.0102	-.0020	-.0024	.0277
2805	6.992	-5.10	-2.68	-10342	.0232	.0114	-.0004	-.0028	.0253
2806	6.992	-5.10	-1.71	-.0239	.0217	.0132	.0013	-.0032	.0241
2807	6.992	-5.10	.19	.0499	.0214	.0149	.0025	-.0035	.0244
2810	6.992	-5.10	1.37	.1107	.0214	.0149	.0025	-.0035	.0213
2811	6.992	-5.10	2.30	.1405	.0220	.0161	.0050	-.0034	.0244
2812	6.992	-5.10	3.30	.1730	.0234	.0188	.0054	-.0038	.0233
2813	6.992	-5.10	4.39	.2222	.0239	.0193	.0071	-.0040	.0259
2814	6.992	-5.10	5.48	.2562	.0238	.0218	.0089	-.0046	.0248
2815	6.992	-5.10	6.46	.2809	.0338	.0239	.0108	-.0044	.0221
2816	6.992	-5.10	7.37	.3009	.0391	.0268	.0121	-.0046	.0230
2817	6.992	-5.10	8.40	.3271	.0438	.0287	.0128	-.0046	.0225
2818	6.992	-5.10	10.33	.4039	.0618	.0332	.0148	-.0046	.0211
2819	6.992	-5.10	12.51	.4901	.0754	.0373	.0160	-.0042	.0188
2820	6.992	-5.10	14.47	.5308	.1053	.0419	.0162	-.0038	.0187
			16.33	.6131	.1442	.0508	.0176	-.0032	.0230
				.7069	.1940	.0616	.0179		

RUN 119

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2831	7.009	0.00	-9.87	-.2817	.0691	-.0362	.0023	.0005	-.0021
2832	7.009	0.00	-8.93	-.2389	.0605	-.0309	.0017	.0002	-.0003
2833	7.009	0.00	-7.90	-.1912	.0514	-.0256	.0012	-.0001	-.0016
2834	7.009	0.00	-6.89	-.1440	.0436	-.0209	.0017	.0761	-.0007
2835	7.001	0.00	-5.72	-.1010	.0375	-.0178	.0006	.0004	-.0009
2836	7.001	0.00	-4.73	-.0569	.0333	-.0161	.0013	.0003	-.0015
2837	7.001	0.00	-3.78	-.0071	.0298	-.0137	.0013	.0003	-.0013
2838	7.001	0.00	-2.71	.0424	.0273	-.0122	.0020	.0003	-.0009
2839	7.001	0.00	-1.68	.0811	.0268	-.0113	.0015	.0002	-.0012
2840	6.992	0.00	-.63	.1070	.0272	-.0095	.0017	.0003	.0002
2841	6.992	0.00	.33	.1312	.0283	-.0074	.0011	.0000	.0004
2842	6.992	0.00	1.42	.1495	.0303	-.0054	.0010	.0008	.0004
2843	6.992	0.00	2.38	.2294	.0326	-.0038	.0005	.0004	.0002
2844	6.984	0.00	3.38	.2712	.0385	-.0006	.0008	.0001	.0007
2845	6.984	0.00	4.40	.3001	.0464	.0002	.0008	.0006	.0007
2846	6.984	0.00	5.33	.3234	.0499	.0021	.0008	.0004	.0006
2847	6.984	0.00	6.42	.3733	.0524	.0044	.0005	.0004	.0000
2848	6.984	0.00	7.37	.4098	.0563	.0068	.0004	.0007	.0004
2849	6.984	0.00	8.46	.4437	.0686	.0079	.0013	-.0001	.0009
2850	6.984	0.00	9.53	.4911	.0800	.0119	.0011	-.0013	.0008
2851	6.984	0.00	10.52	.5196	.0918	.0151	.0007	-.0011	.0039
2852	6.984	0.00	12.61	.6017	.1258	.0259	-.0001	-.0011	.0035
2853	6.984	0.00	14.87	.6941	.1587	.0369	.0004	-.0014	.0083
2854	6.984	0.00	16.69	.7764	.2195	.0548	.0003	.0001	.0185

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 120

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2857	6.984	0.00	-9.86	-.1184	.0686	-.0776	.0012	.0003	-.0028
2858	6.992	0.00	-8.79	-.0691	.0612	-.0736	.0013	.0002	-.0029
2859	6.992	0.00	-7.69	-.0116	.0545	-.0688	.0007	.0003	-.0016
2860	6.992	0.00	-6.74	.0232	.0509	-.0662	.0009	.0005	-.0030
2861	6.992	0.00	-5.77	.0632	.0481	-.0639	.0000	.0004	-.0017
2862	6.992	0.00	-4.69	.1186	.0459	-.0605	.0006	.0006	-.0022
2863	6.992	0.00	-3.62	.1599	.0453	-.0587	.0016	.0002	-.0020
2865	6.992	0.00	-2.61	.1964	.0462	-.0581	.0013	.0005	-.0012
2866	6.992	0.00	-1.53	.2486	.0480	-.0551	-.0002	.0002	-.0024
2867	6.992	0.00	-.59	.2786	.0507	-.0540	-.0004	.0005	-.0025
2868	6.992	0.00	.49	.3136	.0544	-.0507	.0004	.0009	-.0030
2869	6.984	0.00	1.46	.3547	.0580	-.0473	.0001	.0009	-.0039
2870	6.984	0.00	2.36	.3801	.0629	-.0462	-.0004	.0006	-.0024
2871	6.984	0.00	3.34	.4113	.0682	-.0442	-.0004	.0007	-.0025
2872	6.984	0.00	4.47	.4480	.0756	-.0422	.0001	.0006	-.0016
2873	6.984	0.00	5.61	.4957	.0844	-.0408	-.0004	.0003	-.0016
2874	6.984	0.00	6.80	.5270	.0926	-.0394	-.0004	-.0000	.0002
2875	6.984	0.00	7.47	.5621	.1020	-.0381	.0010	-.0004	-.0026
2876	6.976	0.00	8.46	.5966	.1132	-.0338	.0004	-.0009	-.0004
2877	6.976	0.00	9.67	.6426	.1295	-.0272	-.0004	-.0012	-.0014
2878	6.976	0.00	10.96	.6634	.1424	-.0214	-.0012	-.0023	.0034
2879	6.968	0.00	12.59	.7331	.1800	-.0083	-.0007	-.0014	.0028
2880	6.959	0.00	14.70	.8084	.2249	.0044	-.0007	-.0014	.0070
			16.69	.8961	.2828	.0252	-.0008	-.0011	.0195

RUN 121

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
2883	7.001	0.00	-9.80	-.0463	.0811	-.0958	.0011	.0004	-.0028
2884	7.009	0.00	-8.74	-.0010	.0760	-.0916	.0010	.0004	-.0016
2885	7.009	0.00	-7.69	.0584	.0761	-.0868	.0006	.0004	-.0037
2886	7.017	0.00	-6.62	.0968	.0674	-.0841	.0006	.0005	-.0018
2887	7.017	0.00	-5.67	.1422	.0549	-.0804	.0009	.0005	-.0025
2888	7.017	0.00	-4.63	.1792	.0653	-.0783	.0011	.0004	-.0031
2889	7.025	0.00	-3.57	.2284	.0657	-.0762	.0003	.0004	-.0028
2890	7.025	0.00	-2.50	.2694	.0675	-.0738	.0003	.0005	-.0027
2891	7.025	0.00	-1.60	.2948	.0704	-.0720	.0004	.0009	-.0021
2892	7.025	0.00	-.57	.3342	.0734	-.0690	-.0002	.0009	-.0024
2893	7.025	0.00	.44	.3692	.0776	-.0652	-.0002	.0009	-.0025
2894	7.025	0.00	1.46	.4038	.0826	-.0619	-.0001	.0007	-.0023
2895	7.034	0.00	2.42	.4348	.0879	-.0595	-.0001	.0004	-.0013
2896	7.034	0.00	3.55	.4731	.0942	-.0578	.0005	.0006	-.0024
2897	7.034	0.00	4.59	.5165	.1016	-.0592	.0006	.0003	-.0041
2898	7.034	0.00	5.57	.5605	.1103	-.0532	.0008	-.0003	-.0037
2899	7.034	0.00	6.64	.5933	.1214	-.0533	.0008	-.0003	-.0029
2900	7.034	0.00	7.59	.6231	.1315	-.0510	.0006	-.0011	-.0017
2902	7.034	0.00	8.42	.6525	.1425	-.0493	.0003	-.0011	-.0008
2903	7.034	0.00	9.61	.6876	.1576	-.0415	-.0005	-.0013	-.0020
2904	7.034	0.00	10.63	.7067	.1713	-.0343	.0010	-.0020	.0012
2905	7.025	0.00	12.62	.7774	.2115	-.0173	-.0001	-.0013	.0021
2906	7.025	0.00	14.79	.8656	.2649	-.0000	-.0004	-.0029	.0135
			16.63	.9210	.3098	.0192	-.0001	-.0021	.0210



Table A-2.- Continued.

RUN 122									
POINT	Q	BETA	ALPHA	CL	CD	GPM	GRH	CYM	CSF
2909	6.992	0.00	-9.84	-.1982	.0671	-.0607	.0017	.0005	-.0029
2910	6.992	0.00	-8.83	-.1422	.0969	-.0547	.0017	-.0000	-.0028
2911	7.001	0.00	-7.74	-.1069	.0910	-.0516	.0015	.0001	-.0019
2912	7.001	0.00	-6.77	-.0860	.0443	-.0473	.0010	-.0000	-.0023
2913	7.001	0.00	-5.81	-.0762	.0408	-.0455	.0007	.0003	-.0026
2914	7.001	0.00	-4.89	-.0692	.0370	-.0423	.0009	.0004	-.0019
2915	7.001	0.00	-3.77	-.0752	.0354	-.0407	.0011	.0003	-.0012
2916	7.001	0.00	-2.82	.1273	.0346	-.0387	.0006	.0002	-.0007
2917	7.001	0.00	-1.61	.1734	.0352	-.0381	.0004	.0002	-.0002
2918	7.001	0.00	-.03	.2126	.0368	-.0354	.0007	.0004	-.0018
2919	7.001	0.00	.33	.2511	.0391	-.0329	.0002	.0003	-.0017
2920	7.001	0.00	1.29	.2824	.0425	-.0310	.0002	.0007	-.0006
2921	7.001	0.00	2.41	.2242	.0468	-.0289	.0005	.0005	-.0020
2922	7.001	0.00	3.45	.2589	.0517	-.0267	.0007	.0007	-.0019
2923	7.001	0.00	4.36	.3004	.0576	-.0254	.0005	.0008	-.0029
2924	7.001	0.00	5.23	.3395	.0651	-.0229	.0011	.0007	-.0024
2925	7.001	0.00	6.20	.3708	.0726	-.0215	.0008	.0004	-.0024
2926	7.001	0.00	7.44	.3109	.0822	-.0201	.0002	-.0003	-.0018
2927	7.001	0.00	8.55	.3452	.0932	-.0172	.0005	-.0009	.0014
2928	7.001	0.00	9.53	.3776	.1051	-.0140	-.0005	-.0012	.0002
2929	7.001	0.00	10.59	.4231	.1214	-.0036	.0008	-.0017	.0023
2930	7.001	0.00	12.58	.6909	.1970	.0044	.0000	-.0014	.0023
2931	7.001	0.00	14.56	.7664	.2001	.0187	.0010	-.0017	.0029
2932	7.001	0.00	16.68	.8582	.2569	.0377	.0014	-.0007	.0177

RUN 123									
POINT	Q	BETA	ALPHA	CL	CD	GPM	GRH	CYM	CSF
2943	6.992	0.00	-9.77	-.2156	.0704	-.0377	.0009	-.0004	-.0027
2944	7.001	0.00	-8.83	-.1640	.0607	-.0324	.0015	-.0002	-.0009
2945	7.001	0.00	-7.76	-.1160	.0528	-.0311	.0011	-.0001	-.0011
2946	7.001	0.00	-6.71	-.0790	.0469	-.0282	.0008	.0000	-.0011
2947	7.001	0.00	-5.85	-.0303	.0425	-.0279	.0010	-.0003	.0003
2948	7.001	0.00	-4.73	.0248	.0384	-.0247	.0014	-.0004	-.0000
2949	7.001	0.00	-3.67	.0680	.0361	-.0240	.0012	-.0001	-.0002
2950	7.001	0.00	-2.67	.1180	.0354	-.0232	.0009	-.0003	-.0004
2951	7.001	0.00	-1.76	.1521	.0355	-.0226	.0008	-.0003	.0008
2952	7.001	0.00	-.72	.1975	.0370	-.0224	.0005	.0000	-.0008
2953	7.001	0.00	.42	.2452	.0394	-.0202	.0002	.0003	-.0019
2954	7.001	0.00	1.45	.2745	.0432	-.0189	.0004	.0006	-.0019
2955	7.001	0.00	2.43	.3113	.0466	-.0168	.0004	.0002	-.0014
2956	7.001	0.00	3.37	.3382	.0511	-.0154	.0005	.0002	-.0004
2957	7.001	0.00	4.35	.3789	.0566	-.0146	.0000	.0001	-.0007
2958	7.001	0.00	5.42	.4193	.0634	-.0126	.0002	.0002	-.0016
2959	7.001	0.00	6.47	.4563	.0722	-.0115	-.0001	-.0003	.0001
2960	7.001	0.00	7.51	.4984	.0815	-.0101	.0004	-.0009	.0004
2961	7.001	0.00	8.62	.5356	.0929	-.0087	.0007	-.0014	.0010
2962	7.001	0.00	9.51	.5703	.1042	-.0039	-.0000	-.0017	.0009
2963	7.001	0.00	10.50	.5964	.1172	-.0006	-.0010	-.0024	.0026
2964	7.001	0.00	12.60	.6809	.1580	.0108	-.0009	-.0015	.0039
2965	7.001	0.00	14.62	.7641	.2019	.0223	.0004	-.0015	.0114
2966	7.001	0.00	16.64	.8579	.2575	.0368	.0004	.0001	.0193

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 124

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
2969	7.001	0.00	-9.67	-.1738	.0638	-.0576	.0014	.0001	-.0014
2970	7.001	0.00	-8.34	-.1357	.0567	-.0553	.0019	.0001	-.0021
2971	7.001	0.00	-7.87	-.0910	.0498	-.0527	.0020	.0001	-.0011
2972	7.001	0.00	-6.86	-.0571	.0451	-.0510	.0012	.0000	-.0006
2973	6.992	0.00	-5.81	.0009	.0400	-.0491	.0014	-.0000	-.0000
2974	6.992	0.00	-4.68	.0563	.0364	-.0475	.0024	.0004	-.0013
2975	6.992	0.00	-3.63	.0852	.0357	-.0464	.0009	.0002	-.0003
2976	6.992	0.00	-2.70	.1300	.0349	-.0460	.0011	.0000	-.0012
2977	6.992	0.00	-1.56	.1773	.0363	-.0446	.0007	-.0002	.0001
2978	6.992	0.00	-.58	.2223	.0383	-.0436	.0006	.0003	-.0019
2979	6.992	0.00	.42	.2565	.0408	-.0419	.0003	.0002	.0001
2980	6.992	0.00	1.45	.2950	.0439	-.0394	.0003	.0004	-.0017
2981	6.992	0.00	2.32	.3297	.0481	-.0378	-.0002	.0002	-.0023
2982	6.992	0.00	3.44	.3606	.0541	-.0363	.0005	.0004	-.0022
2983	6.992	0.00	4.49	.3960	.0598	-.0352	.0001	.0004	-.0012
2984	6.992	0.00	5.49	.4384	.0671	-.0336	.0025	.0003	-.0040
2985	6.992	0.00	6.52	.4727	.0757	-.0331	.0003	.0002	-.0024
2986	6.992	0.00	7.47	.5098	.0850	-.0311	.0004	-.0009	.0004
2987	6.992	0.00	8.59	.5480	.0969	-.0285	.0009	-.0013	.0002
2988	6.992	0.00	9.46	.5806	.1081	-.0250	-.0002	-.0015	.0009
2989	6.992	0.00	10.48	.6185	.1232	-.0199	.0002	-.0016	-.0011
2990	6.992	0.00	12.55	.7002	.1620	-.0112	-.0005	-.0017	.0024
2991	6.992	0.00	14.61	.7853	.2100	.0003	.0012	-.0013	.0092
2992	6.992	0.00	16.73	.8612	.2691	.0147	.0005	.0009	.0180

RUN 125

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
2995	6.992	0.00	-9.91	-.2446	.0806	-.0019	.0014	-.0006	-.0017
2996	6.992	0.00	-8.91	-.2009	.0713	.0005	.0012	-.0005	-.0009
2997	6.992	0.00	-7.88	-.1478	.0617	.0032	.0015	-.0001	-.0019
2998	6.992	0.00	-6.86	-.0989	.0545	.0047	.0016	-.0004	-.0010
2999	7.017	0.00	-5.75	-.0619	.0497	.0054	.0004	-.0003	-.0007
3000	7.017	0.00	-4.77	-.0099	.0451	.0071	.0007	-.0004	-.0008
3001	7.017	0.00	-3.63	.0373	.0415	.0078	.0011	-.0005	.0001
3002	7.017	0.00	-2.71	.0828	.0404	.0085	.0013	-.0005	-.0004
3003	7.017	0.00	-1.70	.1237	.0405	.0090	.0008	-.0010	-.0001
3004	7.017	0.00	-.72	.1661	.0410	.0095	.0009	-.0002	-.0024
3005	7.017	0.00	.40	.2119	.0433	.0120	.0002	-.0001	-.0017
3006	7.017	0.00	1.39	.2395	.0460	.0122	.0002	-.0002	-.0021
3007	7.017	0.00	2.37	.2812	.0489	.0133	.0006	-.0001	-.0019
3008	7.017	0.00	3.75	.3251	.0554	.0154	-.0000	-.0003	-.0011
3009	7.017	0.00	4.48	.3574	.0592	.0161	.0002	-.0004	-.0022
3010	7.017	0.00	5.48	.3976	.0654	.0167	-.0004	-.0003	-.0006
3011	7.017	0.00	6.42	.4314	.0721	.0184	-.0007	-.0009	.0001
3012	7.017	0.00	7.41	.4701	.0810	.0190	.0008	-.0010	-.0013
3013	7.017	0.00	8.53	.5062	.0916	.0222	.0009	-.0015	-.0002
3014	7.017	0.00	9.52	.5427	.1032	.0262	.0002	-.0019	.0004
3015	7.017	0.00	10.51	.5853	.1182	.0335	.0001	-.0027	.0018
3016	7.017	0.00	12.47	.6408	.1497	.0391	-.0003	-.0020	.0031
3017	7.017	0.00	14.61	.7372	.1978	.0533	.0007	-.0019	.0116
3018	7.017	0.00	16.58	.8272	.2500	.0657	.0005	.0014	.0167

Table A-2.- Continued.

RUN 126

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
3021	7.058	0.00	-9.86	-.2643	.0960	.0231	.0013	-.0003	-.0010
3022	7.009	0.00	-9.84	-.2120	.0852	.0263	.0014	-.0006	-.0007
3023	7.009	0.00	-7.78	-.1601	.0761	.0298	.0010	-.0007	-.0007
3024	7.009	0.00	-6.79	-.1225	.0695	.0328	.0009	-.0003	-.0000
3025	7.009	0.00	-5.89	-.0821	.0645	.0337	.0006	-.0006	-.0009
3026	7.009	0.00	-4.69	-.0244	.0582	.0358	.0011	-.0004	-.0006
3027	7.009	0.00	-3.77	.0085	.0559	.0355	.0008	-.0003	.0005
3028	7.009	0.00	-2.70	.0537	.0540	.0362	.0006	-.0006	.0014
3029	7.009	0.00	-1.64	.1066	.0528	.0373	.0011	-.0006	-.0005
3030	7.009	0.00	-.67	.1408	.0541	.0381	-.0003	-.0004	.0010
3031	7.009	0.00	.34	.1911	.0545	.0402	.0011	-.0003	-.0027
3032	7.009	0.00	1.27	.2059	.0569	.0407	-.0003	-.0003	-.0008
3033	7.009	0.00	2.39	.2632	.0595	.0423	.0004	.0001	-.0029
3034	7.009	0.00	3.28	.2821	.0631	.0432	.0000	-.0002	-.0002
3035	7.009	0.00	4.54	.3341	.0686	.0442	-.0006	-.0002	.0003
3036	7.009	0.00	5.39	.3625	.0734	.0438	-.0001	-.0001	-.0005
3037	7.009	0.00	6.41	.4015	.0799	.0457	-.0009	.0000	-.0019
3038	7.009	0.00	7.45	.4367	.0875	.0471	.0001	-.0001	-.0010
3039	7.009	0.00	8.51	.4811	.0960	.0491	.0011	-.0005	-.0001
3040	7.009	0.00	9.46	.5099	.1030	.0519	.0004	-.0012	.0026
3041	7.009	0.00	10.58	.5487	.1220	.0577	.0008	-.0009	.0001
3042	7.009	0.00	12.52	.6154	.1536	.0680	-.0009	-.0013	.0013
3043	7.009	0.00	14.64	.7092	.1981	.0810	-.0009	-.0008	.0048
3044	7.009	0.00	16.68	.7853	.2472	.0887	.0001	-.0005	.0153

RUN 127

POINT	Q	BETA	ALPHA	CL	CD	CPM	CRM	CYM	CSF
3047	7.001	0.00	-9.72	-.1253	.1120	-.0100	.0011	-.0002	-.0022
3048	7.001	0.00	-8.79	-.0753	.1047	-.0064	.0010	-.0006	-.0021
3049	7.001	0.00	-7.72	-.0229	.0981	-.0036	.0002	-.0006	-.0011
3050	7.001	0.00	-6.84	.0207	.0931	-.0003	.0003	-.0006	-.0022
3051	7.001	0.00	-5.70	.0643	.0891	.0012	.0006	-.0005	-.0020
3052	7.001	0.00	-4.62	.1150	.0878	.0036	.0009	-.0009	-.0001
3053	7.001	0.00	-3.66	.1470	.0874	.0039	.0009	-.0004	-.0002
3054	7.001	0.00	-2.65	.1803	.0877	.0061	.0002	-.0004	.0004
3055	7.001	0.00	-1.67	.2277	.0885	.0089	-.0001	-.0003	-.0018
3056	7.001	0.00	-.69	.2554	.0906	.0101	-.0004	.0001	-.0018
3057	7.001	0.00	.42	.3007	.0940	.0130	-.0009	-.0001	-.0020
3058	7.001	0.00	1.48	.3384	.0969	.0155	-.0005	.0005	-.0033
3059	7.001	0.00	2.44	.3751	.1015	.0175	-.0006	-.0001	-.0028
3060	7.001	0.00	3.37	.4046	.1060	.0180	.0001	-.0002	-.0024
3062	7.001	0.00	5.52	.4778	.1207	.0189	-.0001	-.0005	-.0007
3063	7.001	0.00	6.72	.5223	.1306	.0192	-.0003	-.0010	-.0012
3064	7.001	0.00	7.61	.5560	.1385	.0206	.0006	-.0016	.0000
3065	7.001	0.00	8.50	.5909	.1494	.0230	-.0009	-.0023	.0016
3066	7.001	0.00	9.66	.6156	.1633	.0287	-.0004	-.0022	.0008
3067	6.992	0.00	10.58	.6446	.1757	.0392	.0005	-.0024	.0028
3068	6.992	0.00	12.67	.7060	.2119	.0544	-.0002	-.0021	.0030
3069	6.992	0.00	14.56	.7630	.2477	.0670	-.0020	-.0012	.0036
3070	6.992	0.00	16.60	.8419	.2987	.0826	-.0008	-.0004	.0162

ORIGINAL PAGE IS  
OF POOR QUALITY

Table A-2.- Continued.

RUN 128

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
3083	7.050	0.00	-9.77	-.1102	.0975	-.0297	.0009	-.0002	-.0017
3084	7.050	0.00	-8.74	-.0561	.0895	-.0264	.0005	-.0007	-.0012
3085	7.050	0.00	-7.75	.0008	.0835	-.0238	.0006	-.0004	-.0023
3086	7.050	0.00	-6.67	.0302	.0800	-.0228	-.0007	.0002	-.0003
3087	7.050	0.00	-5.70	.0874	.0763	-.0187	-.0002	-.0003	-.0022
3088	7.050	0.00	-4.70	.1259	.0754	-.0174	-.0002	-.0003	-.0005
3089	7.050	0.00	-3.73	.1729	.0742	-.0171	-.0004	-.0004	-.0020
3090	7.050	0.00	-2.65	.2045	.0758	-.0169	.0000	.0000	-.0010
3091	7.050	0.00	-1.62	.2425	.0772	-.0158	-.0006	.0002	-.0016
3092	7.050	0.00	-.58	.2797	.0798	-.0146	-.0016	.0004	-.0013
3093	7.050	0.00	.46	.3305	.0828	-.0113	-.0010	.0003	-.0024
3094	7.050	0.00	1.50	.3583	.0868	-.0099	-.0021	-.0002	-.0001
3095	7.050	0.00	2.53	.4029	.0913	-.0076	-.0013	.0000	-.0013
3096	7.050	0.00	3.47	.4250	.0967	-.0076	-.0009	.0001	-.0014
3097	7.050	0.00	4.4	.4640	.1031	-.0070	-.0004	.0001	-.0026
3098	7.050	0.00	5.55	.5038	.1113	-.0068	-.0014	.0000	-.0016
3099	7.050	0.00	6.54	.5371	.1193	-.0061	-.0007	-.0006	.0002
3100	7.050	0.00	7.56	.5805	.1294	-.0051	-.0004	-.0006	-.0015
3101	7.050	0.00	8.58	.6153	.1418	-.0031	-.0004	-.0010	.0001
3102	7.050	0.00	9.63	.6416	.1535	.0021	-.0003	-.0021	.0025
3103	7.050	0.00	10.65	.6662	.1671	.0110	.0012	-.0017	.0018
3104	7.050	0.00	12.67	.7316	.2042	.0245	-.0001	-.0009	.0008
3105	7.050	0.00	14.76	.7925	.2443	.0377	-.0020	-.0002	.0035
3106	7.050	0.00	16.74	.8745	.2948	.0487	-.0010	-.0002	.0095

RUN 129

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
3109	7.009	0.00	-9.79	-.0566	.0850	-.0956	.0003	.0007	-.0043
3110	7.025	0.00	-8.84	-.0043	.0782	-.0905	.0005	.0003	-.0035
3111	7.025	0.00	-7.80	.0452	.0733	-.0883	.0003	.0001	-.0026
3112	7.042	0.00	-6.72	.0902	.0703	-.0845	-.0002	-.0000	-.0032
3113	7.050	0.00	-5.63	.1371	.0680	-.0816	.0000	.0001	-.0035
3114	7.058	0.00	-4.64	.1872	.0677	-.0797	.0000	.0003	-.0029
3115	7.058	0.00	-3.61	.2243	.0688	-.0786	.0001	.0004	-.0027
3116	7.058	0.00	-2.61	.2640	.0704	-.0764	.0000	.0002	-.0026
3117	7.067	0.00	-1.60	.3069	.0725	-.0750	-.0003	.0006	-.0025
3118	7.067	0.00	-.52	.3534	.0760	-.0722	-.0009	.0006	-.0031
3119	7.067	0.00	.42	.3792	.0805	-.0707	-.0013	.0005	-.0016
3120	7.075	0.00	1.64	.4268	.0869	-.0674	-.0006	.0006	-.0019
3121	7.075	0.00	2.61	.4508	.0919	-.0654	-.0004	.0004	-.0012
3122	7.075	0.00	3.51	.4881	.0972	-.0633	-.0003	.0006	-.0036
3123	7.075	0.00	4.43	.5248	.1041	-.0631	-.0006	.0001	-.0028
3124	7.075	0.00	5.48	.5598	.1141	-.0621	-.0011	.0002	-.0022
3125	7.083	0.00	6.54	.6008	.1231	-.0601	.0002	-.0004	-.0028
3126	7.058	0.00	7.69	.6236	.1328	-.0573	-.0003	-.0010	-.0005
3127	7.050	0.00	8.56	.6516	.1438	-.0556	-.0002	-.0013	-.0012
3128	7.042	0.00	9.55	.6781	.1565	-.0517	-.0002	-.0014	.0005
3129	7.034	0.00	10.68	.7065	.1724	-.0421	.0007	-.0016	-.0007
3130	7.025	0.00	12.77	.7764	.2138	-.0301	-.0004	-.0005	-.0023
3131	7.025	0.00	14.61	.8298	.2507	-.0190	-.0026	-.0004	.0015
3132	7.009	0.00	16.97	.9210	.3135	-.0022	-.0016	.0007	.0121

Table A-2.- Concluded.

RUN 130

POINT	Q	BETA	ALPHA	CL	CD	CPH	CRM	CYM	CSF
3135	7.149	0.00	-9.78	-.0793	.0882	-.0643	-.0009	-.0002	.0003
3136	7.157	0.00	-8.77	-.0299	.0786	-.0592	.0008	.0003	-.0022
3137	7.083	0.00	-7.78	.0169	.0737	-.0564	-.0001	-.0002	-.0005
3138	7.083	0.00	-6.66	.0811	.0700	-.0551	-.0000	-.0001	-.0024
3139	7.083	0.00	-5.65	.1101	.0671	-.0521	-.0004	.0002	-.0014
3140	7.083	0.00	-4.65	.1594	.0665	-.0503	.0007	.0001	-.0022
3141	7.083	0.00	-3.64	.1947	.0666	-.0502	-.0000	.0001	-.0011
3142	7.083	0.00	-2.57	.2346	.0679	-.0484	-.0010	.0002	-.0003
3143	7.083	0.00	-1.59	.2793	.0696	-.0465	-.0006	.0003	-.0019
3144	7.083	0.00	-.50	.3185	.0735	-.0451	-.0013	.0007	-.0024
3145	7.083	0.00	.44	.3498	.0766	-.0430	-.0011	.0004	-.0017
3146	7.083	0.00	1.41	.3794	.0812	-.0413	-.0008	.0005	-.0012
3147	7.083	0.00	2.42	.4212	.0858	-.0391	.0001	.0005	-.0038
3148	7.083	0.00	3.47	.4498	.0932	-.0379	-.0011	.0002	-.0020
3149	7.083	0.00	4.49	.4946	.1001	-.0379	-.0008	.0001	-.0022
3150	7.083	0.00	5.55	.5372	.1092	-.0367	-.0008	-.0002	-.0027
3151	7.083	0.00	6.69	.5720	.1166	-.0366	.0005	-.0001	-.0040
3152	7.083	0.00	7.54	.6009	.1274	-.0349	.0004	-.0008	-.0021
3153	7.083	0.00	8.56	.6350	.1401	-.0326	-.0000	-.0015	.0019
3154	7.083	0.00	9.57	.6659	.1539	-.0290	-.0007	-.0012	-.0004
3155	7.083	0.00	10.58	.6981	.1684	-.0197	.0005	-.0017	.0004
3156	7.083	0.00	12.64	.7658	.2079	-.0066	-.0005	-.0004	-.0010
3157	7.075	0.00	14.61	.8213	.2462	.0063	-.0024	-.0007	.0035
3158	7.067	0.00	16.68	.9002	.2992	.0186	-.0014	.0001	.0107

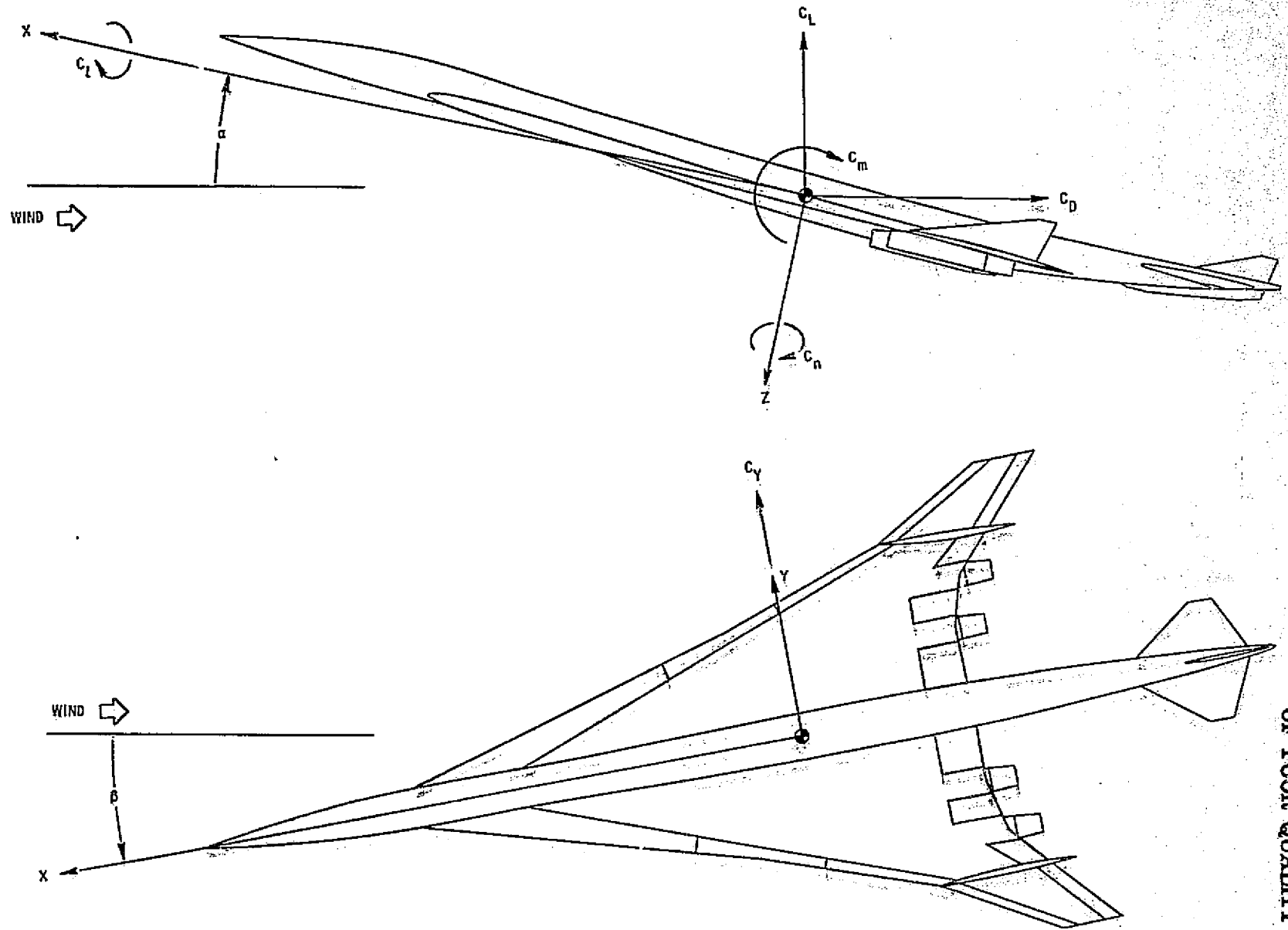
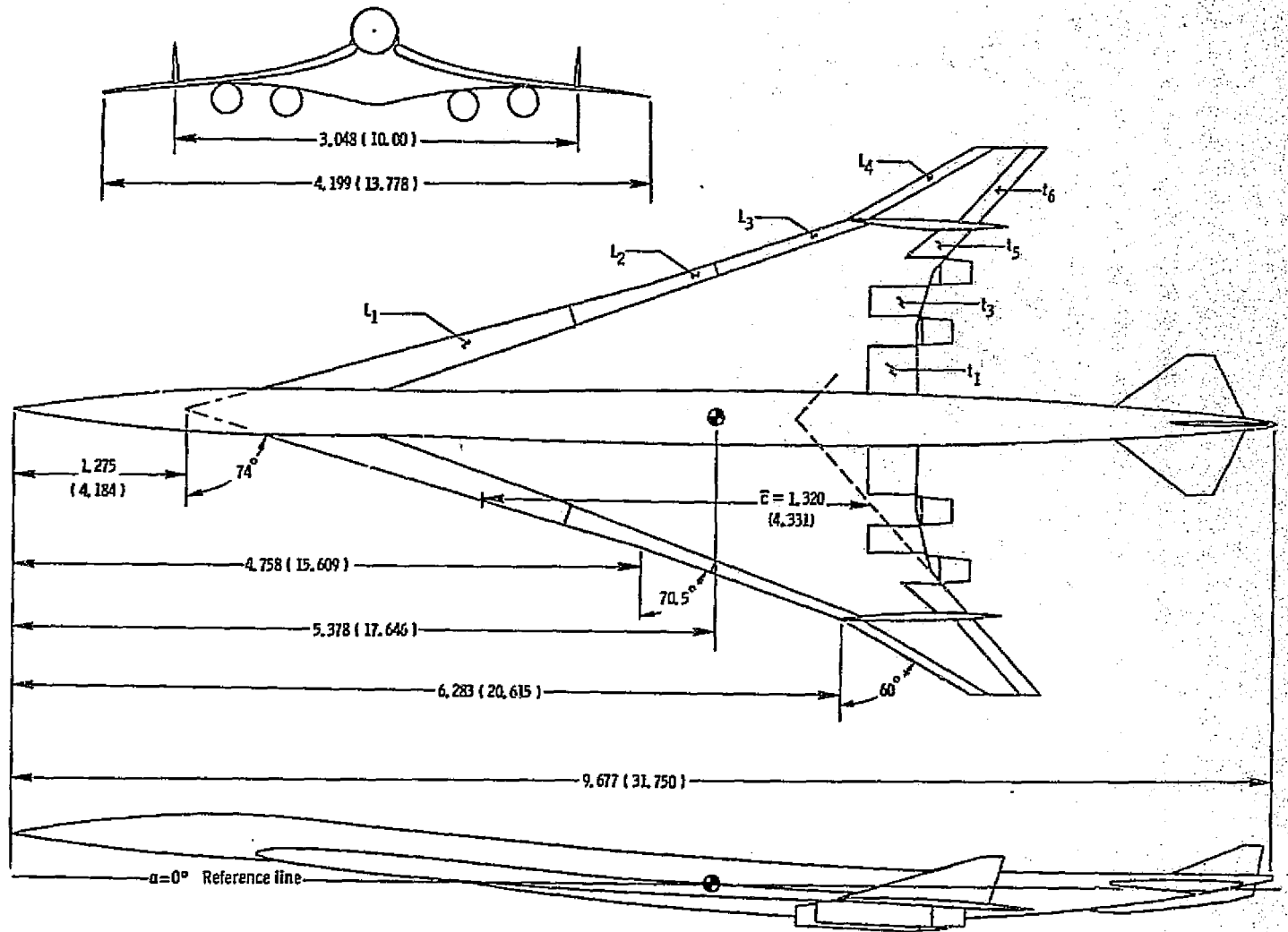


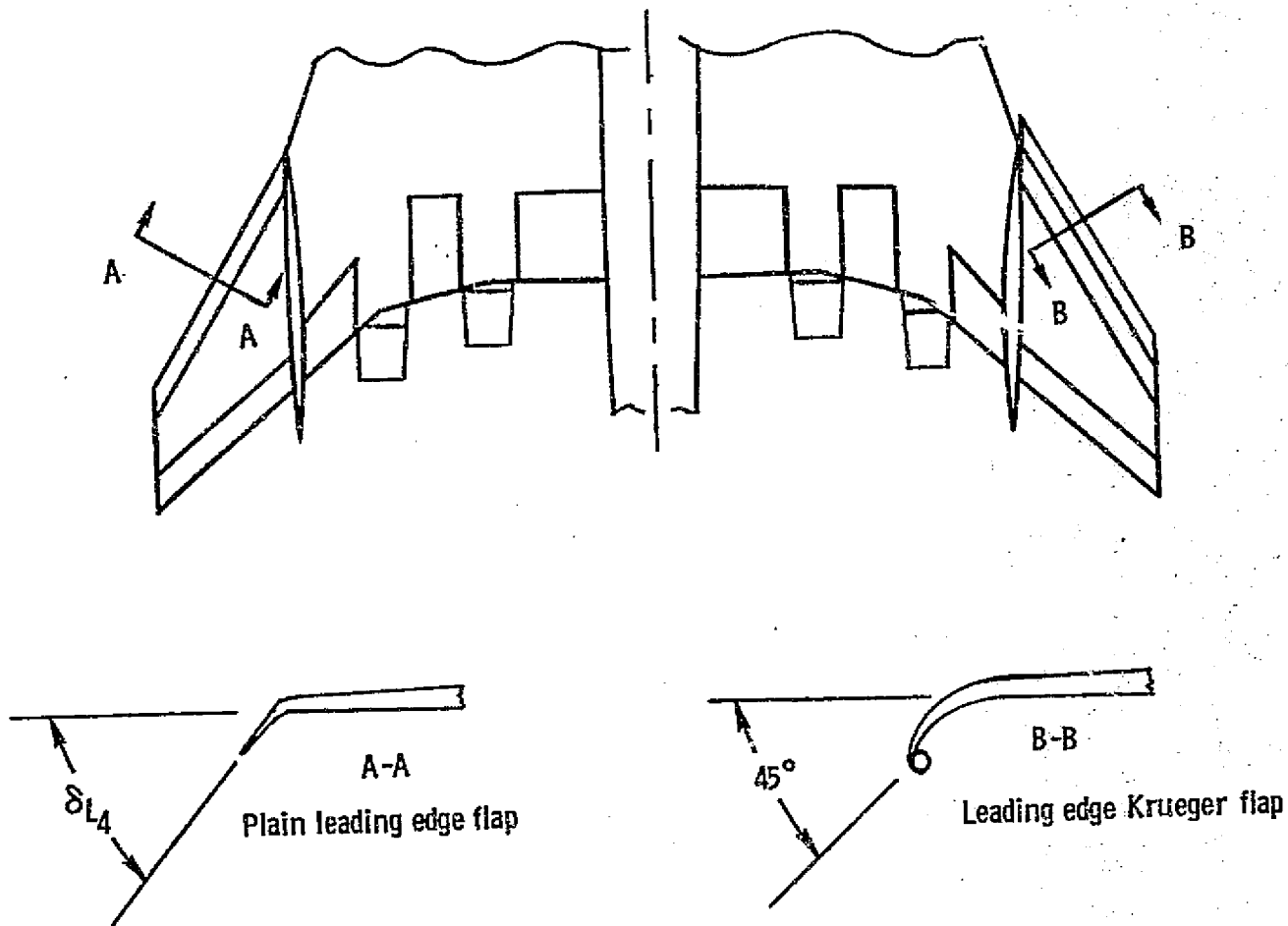
Figure 1- The system of axes.

ORIGINAL PAGE IS  
OF POOR QUALITY



(a) Three-view sketch of model. Dimensions are given in meters and parenthetically in feet.

Figure 2. - Dimensional characteristics.



(b) Sketch of outboard wing-panel leading edge flaps.

Figure 2.- Concluded.

ORIGINAL PAGE IS  
OF POOR QUALITY



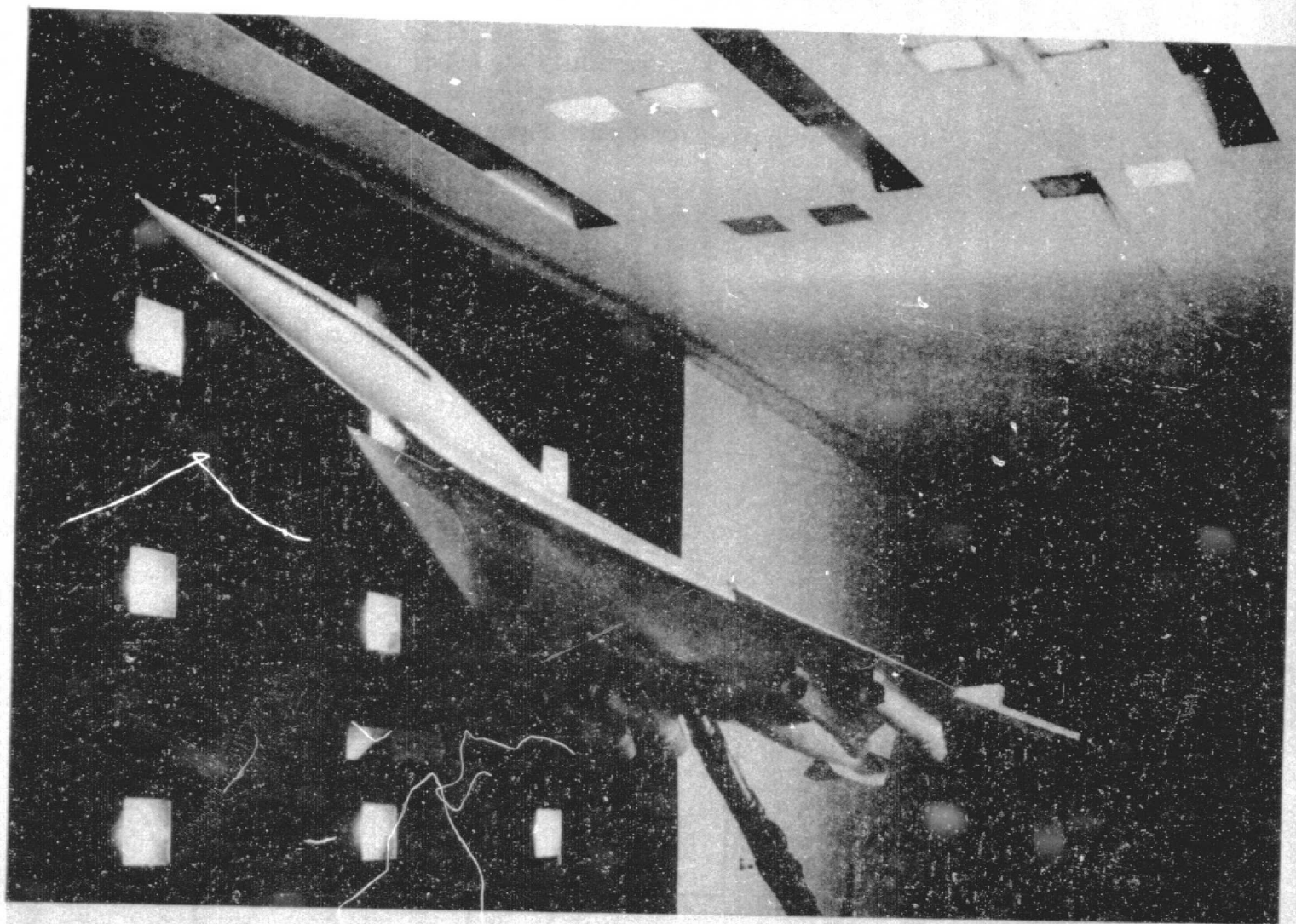


Figure 3.- Photograph of the model mounted for tests in the Langley V/STOL tunnel.

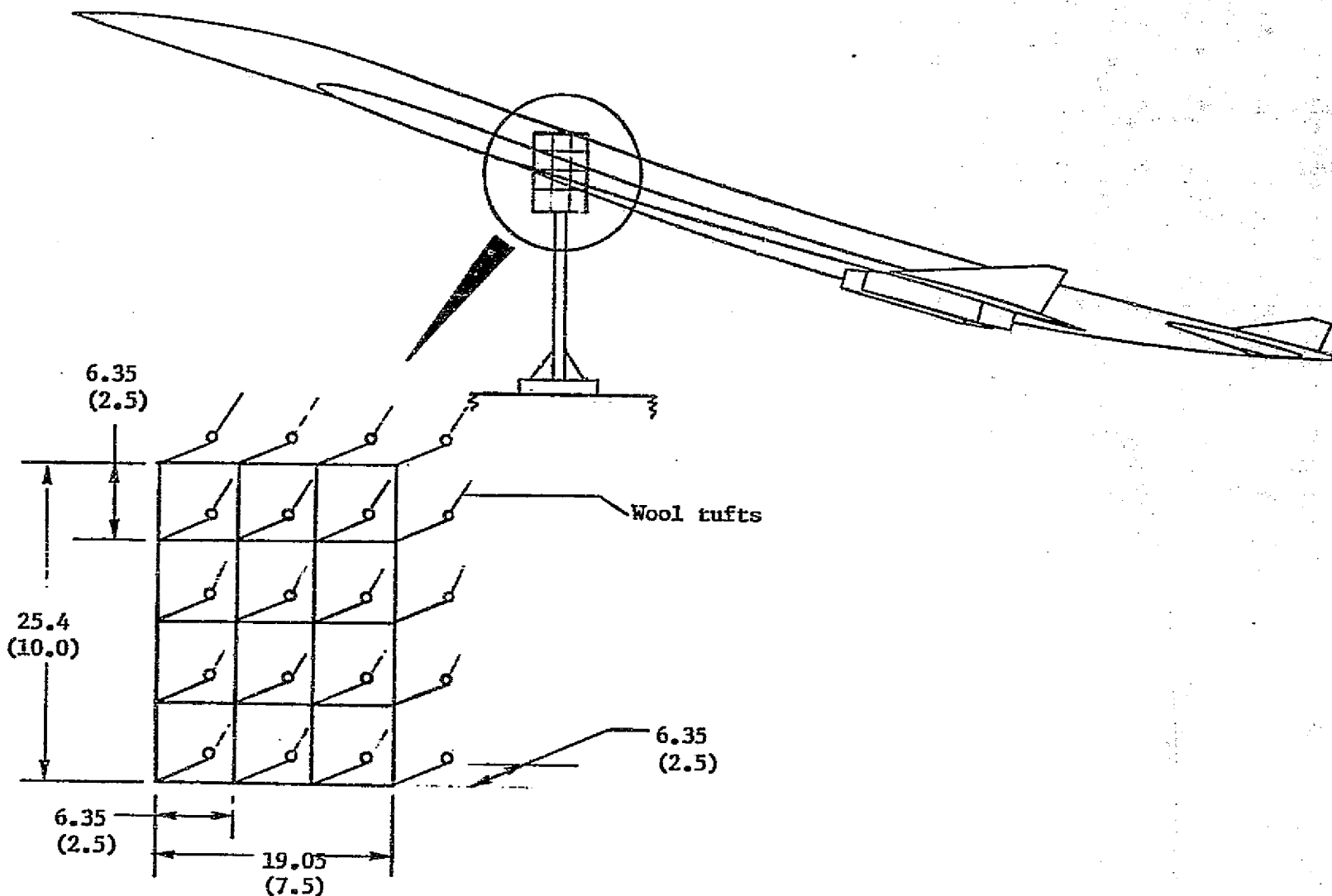


Figure 4.- Sketch of tuft mast and general arrangement for leading-edge upwash study. Dimensions are in centimeters and parenthetically in inches.

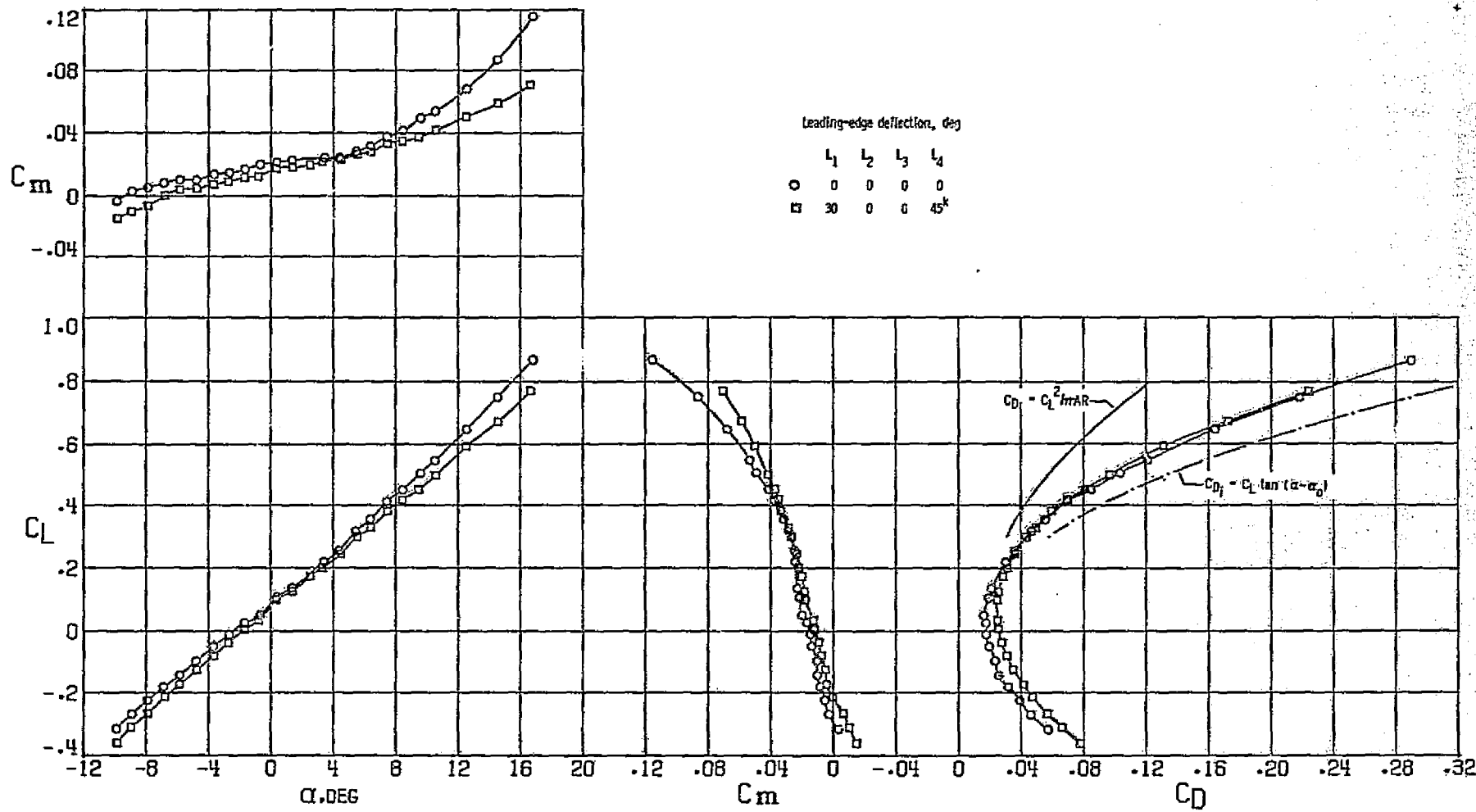


Figure 5.- Effect of deflecting the wing apex and outboard wing panel leading edge. WB - V<sub>1,2</sub> - N,  $\delta_1 = 0^\circ$ .

ORIGINAL PAGE IS  
OF POOR QUALITY

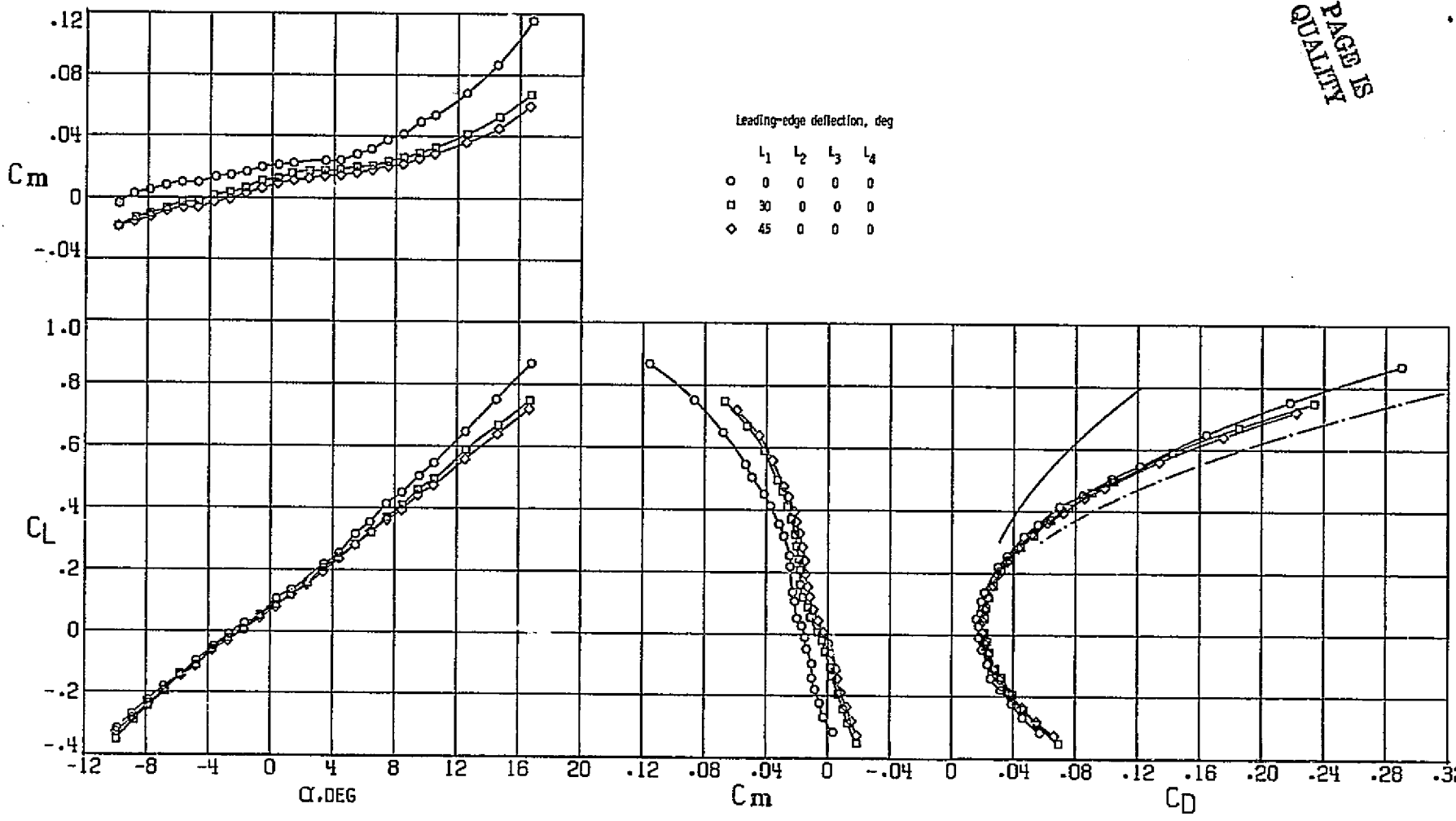


Figure 6.- Effect of increasing deflection of segment  $L_1$ .  $WB - V_{1,2} - N, \delta_1 = 0^\circ$ .

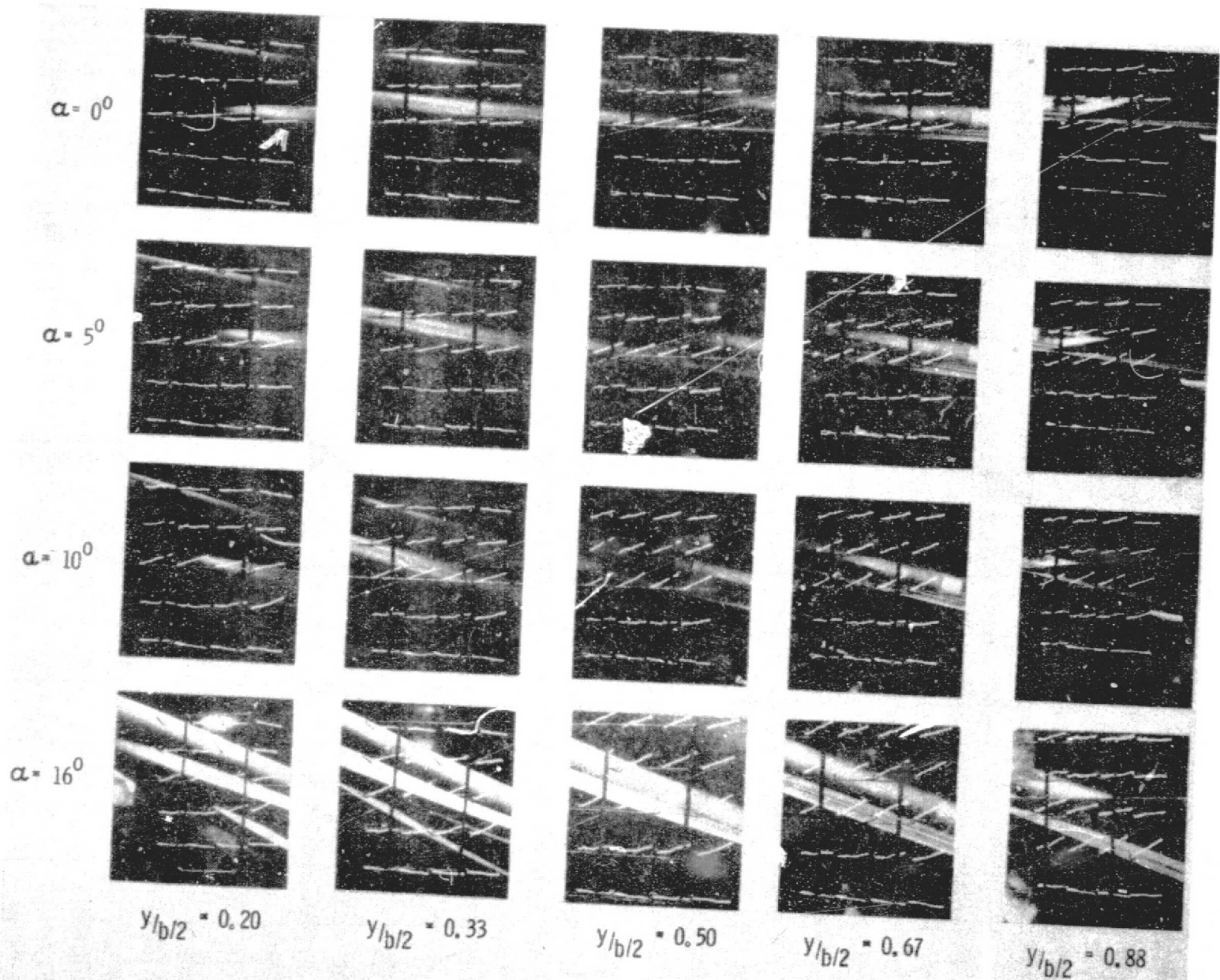


Figure 7.- Photographs of tufts at various spanwise stations along the wing leading edge.

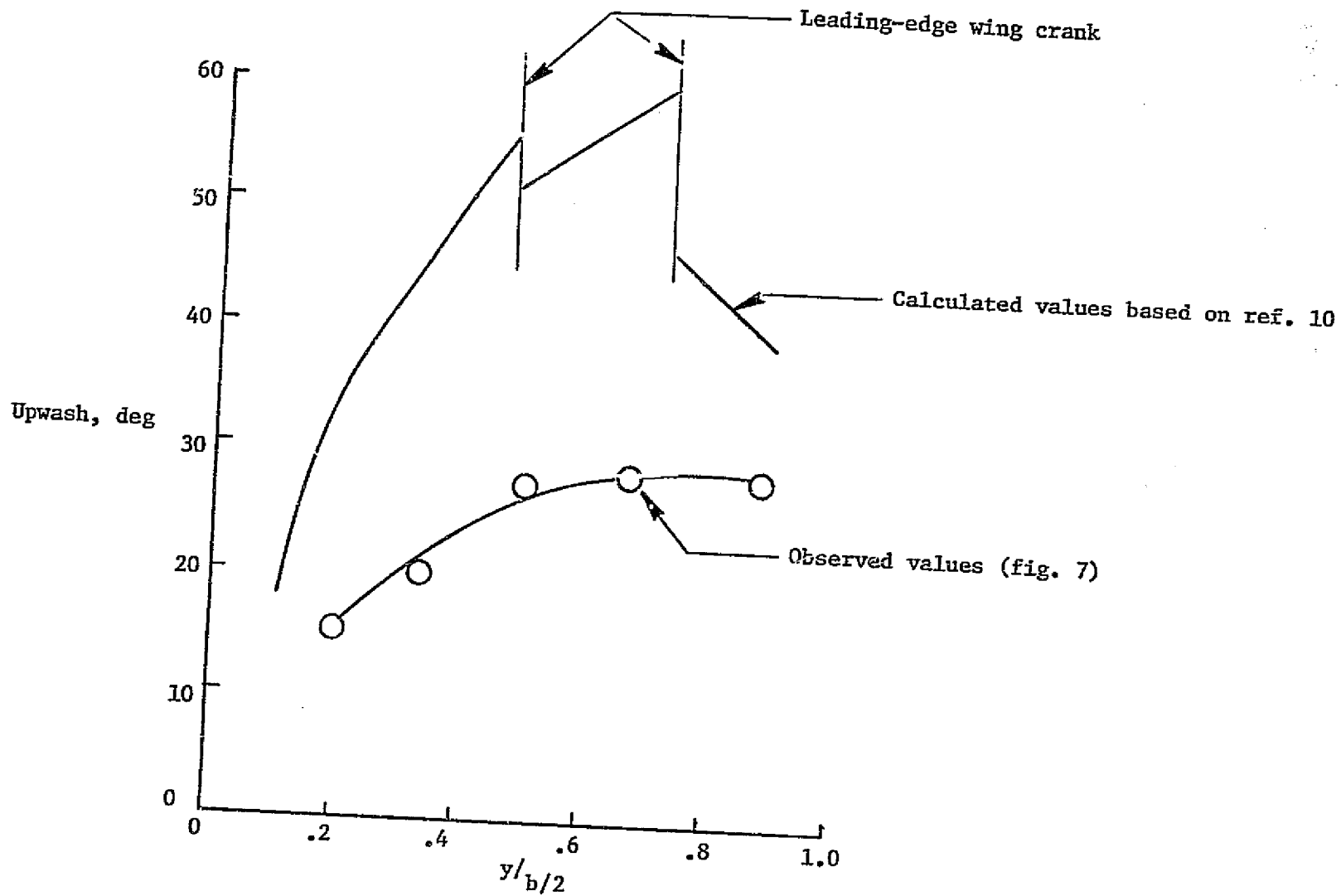


Figure 8.- Comparison of observed and calculated upwash at  $x/\bar{c} = 0.019$  forward of the wing leading edge.  $\delta_f = 0^\circ$ ,  $\alpha = 10^\circ$

ORIGINAL PAGE IS  
OF POOR QUALITY

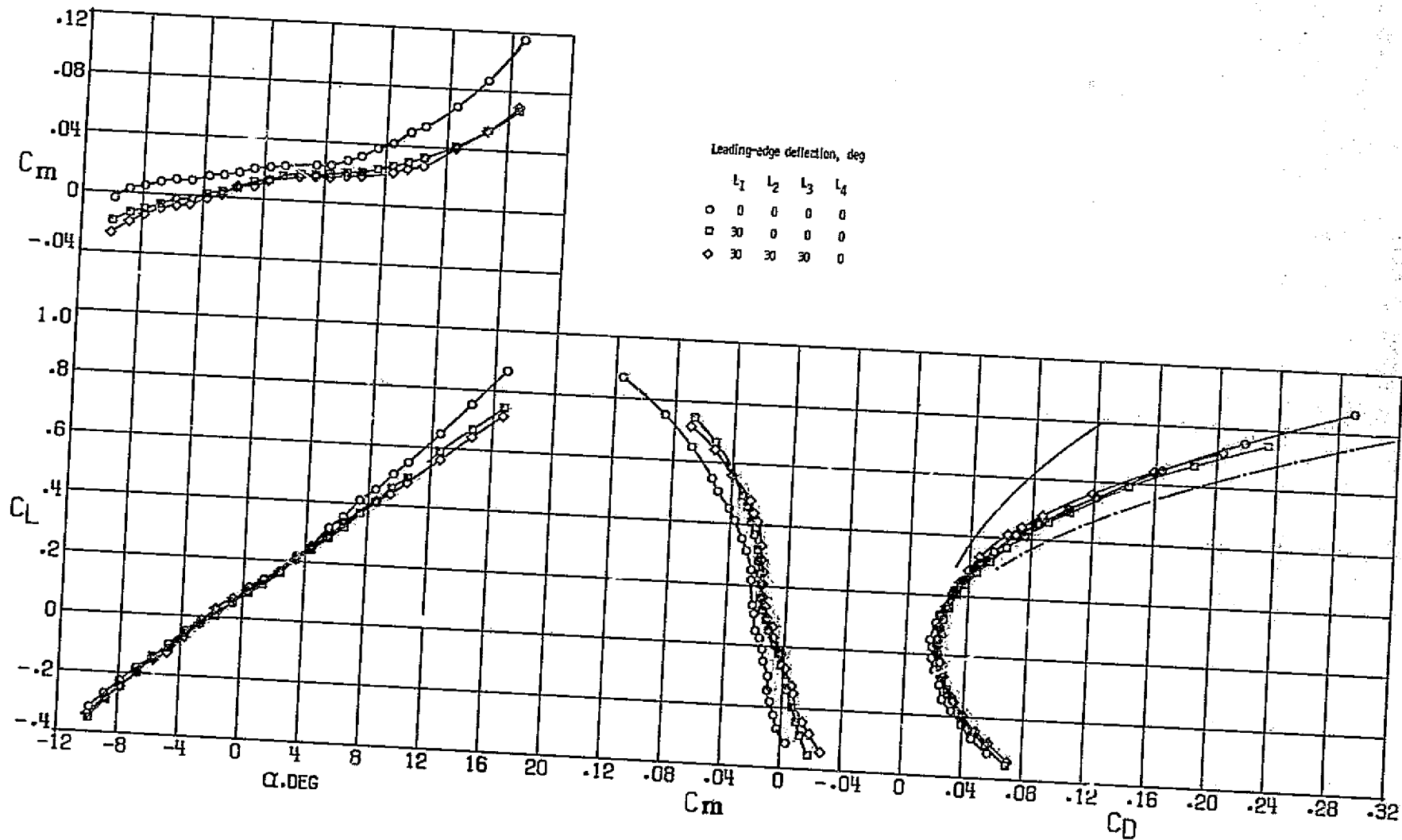
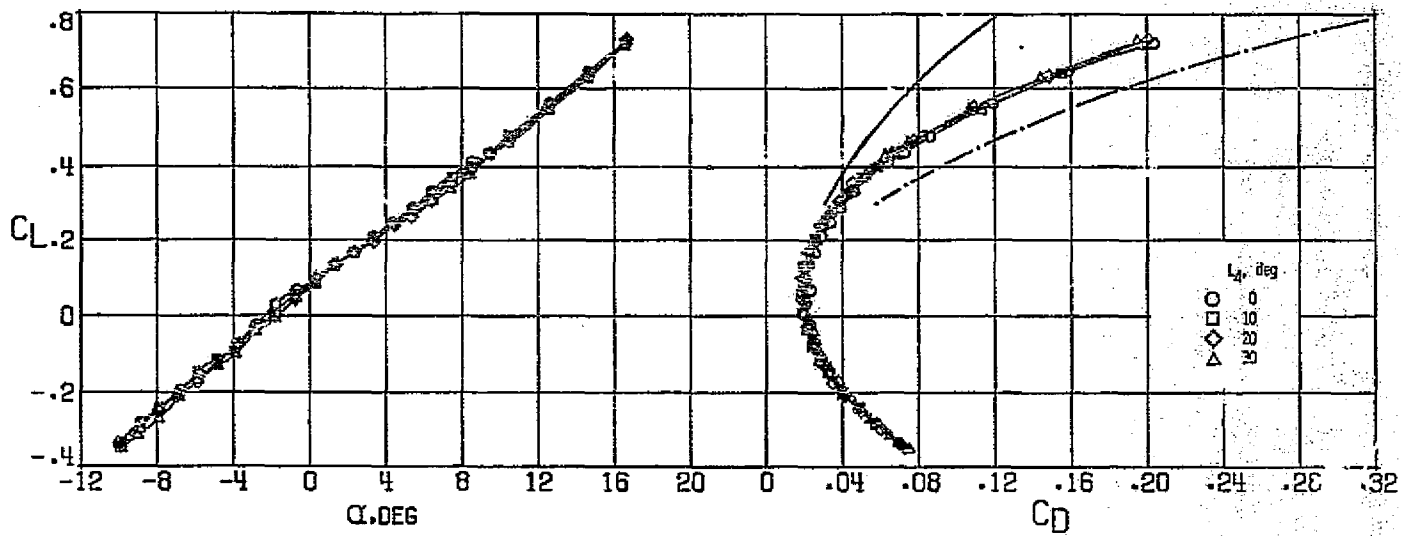
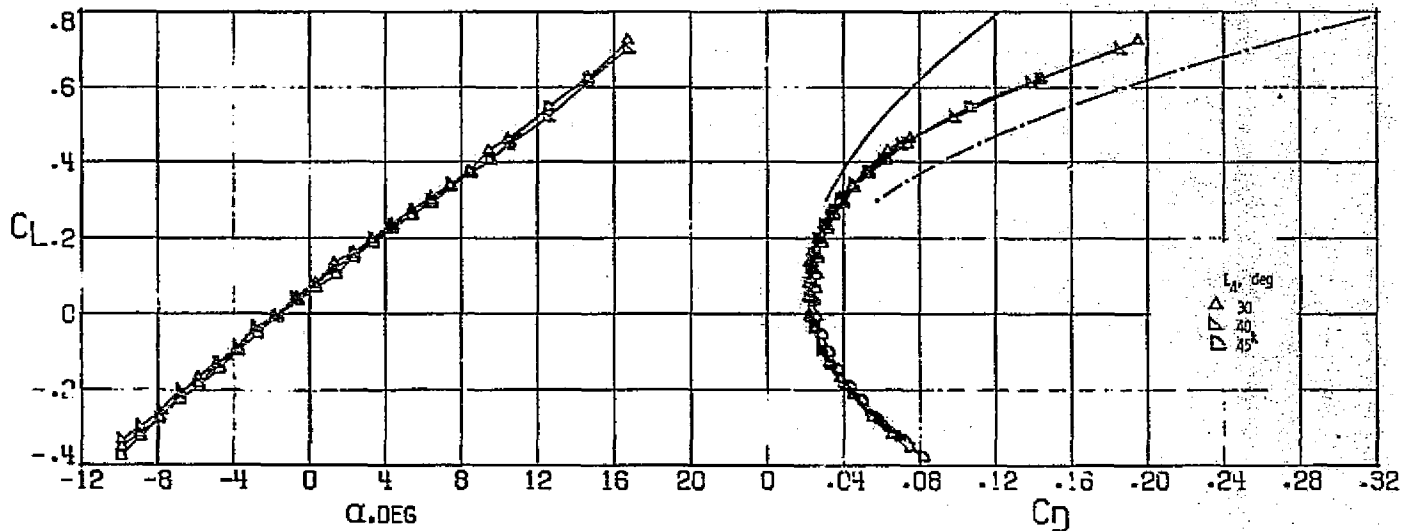


Figure 9.- Effect of deflecting the main wing panel leading edge (segments  $L_1$ ,  $L_2$ , and  $L_3$ ).  $W_B = V_{1,2} = N$ ,  $\delta_f = 0$ .



(a)  $L_4 = 0^\circ, 10^\circ, 20^\circ, 30^\circ$



(b)  $L_4 = 30^\circ, 40^\circ, 45^\circ$

Figure 10.- Effect on longitudinal performance of deflecting the outboard wing panel leading edge (segment  $L_4$ ).  $WB = V_{1,2} = N$ ,  $\delta_f = 0^\circ$ ,  $L_1 = L_2 = L_3 = 30^\circ$ .

ORIGINAL PAGE IS  
OF POOR QUALITY



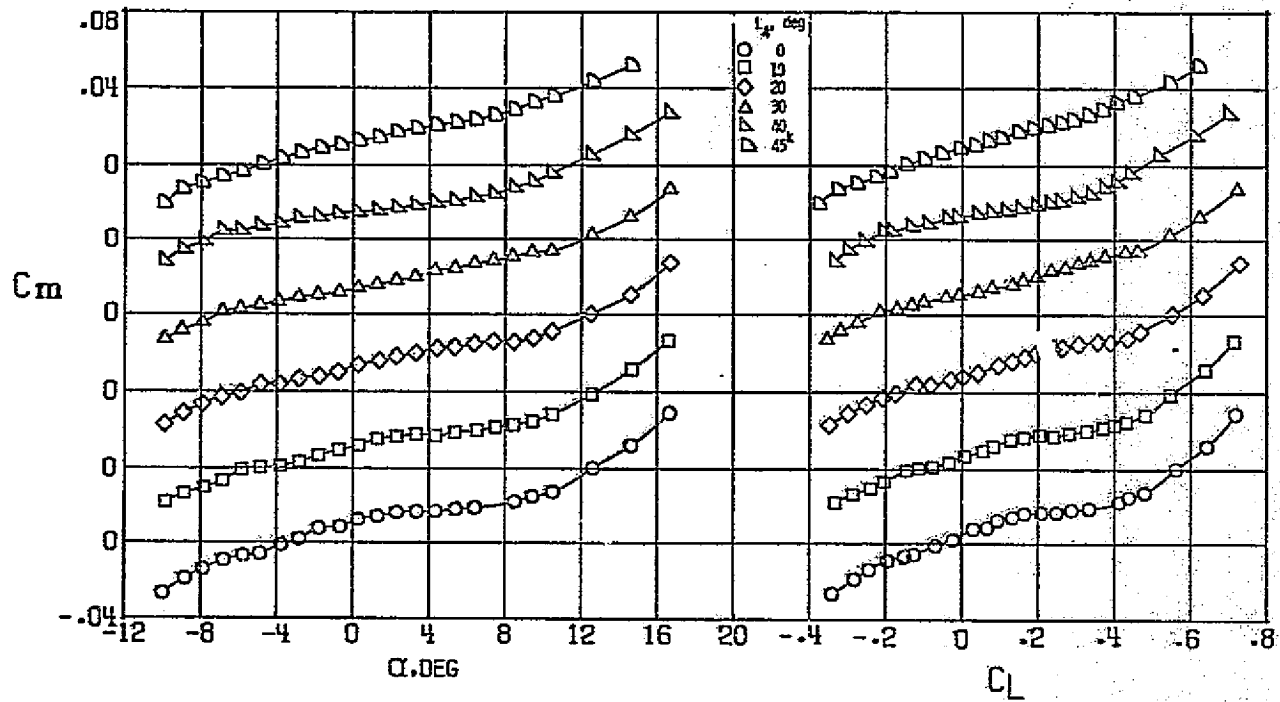


Figure 11.- Effect on longitudinal stability of deflecting the outboard wing panel/leading edge (segment  $L_4$ ).  $WB = V_{1,2} = N$ ,  $\delta_1 = 0^\circ$ ,  $L_1 + L_2 + L_3 = 30^\circ$ .

ORIGINAL PAGE IS  
OF POOR QUALITY

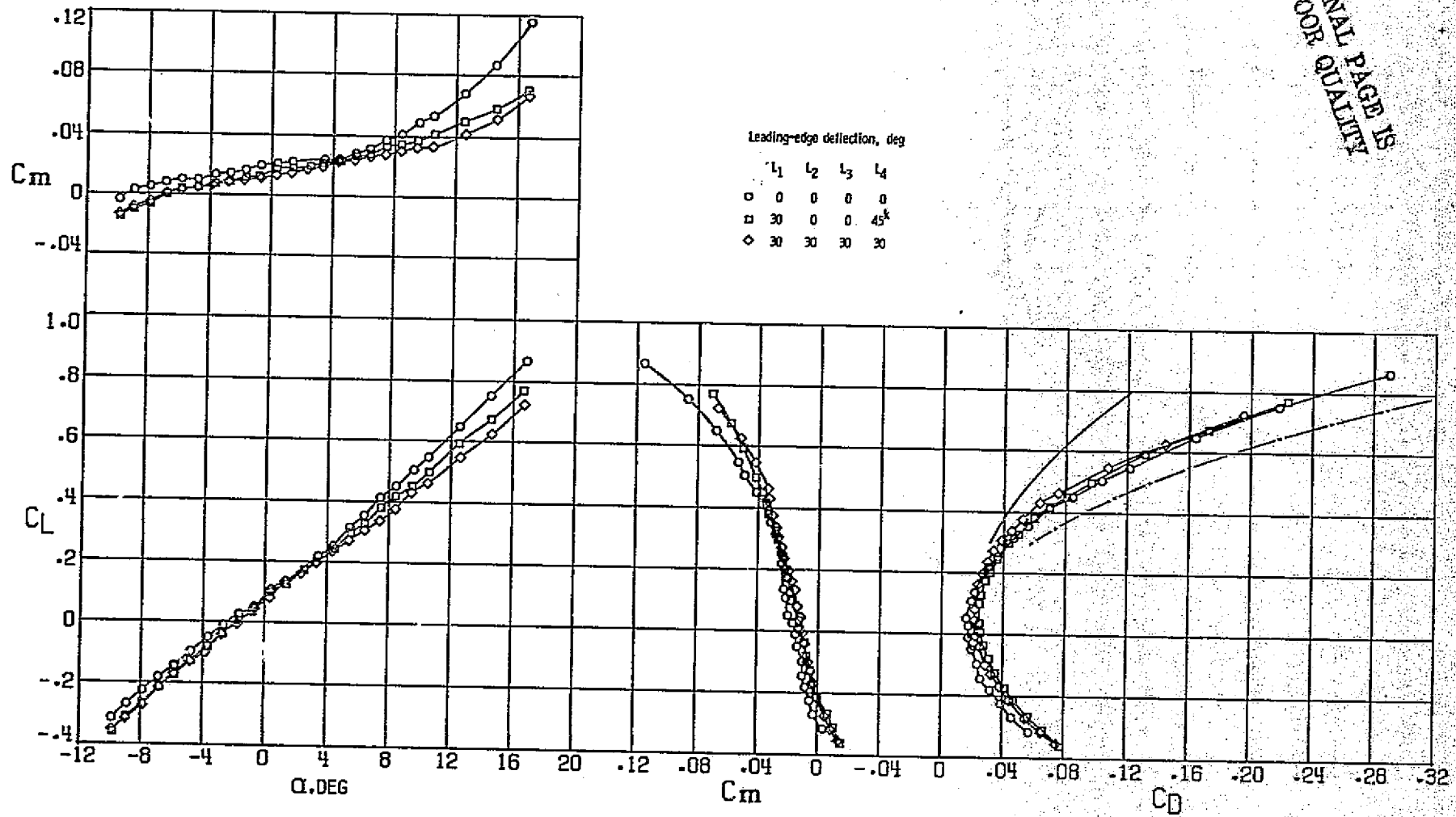
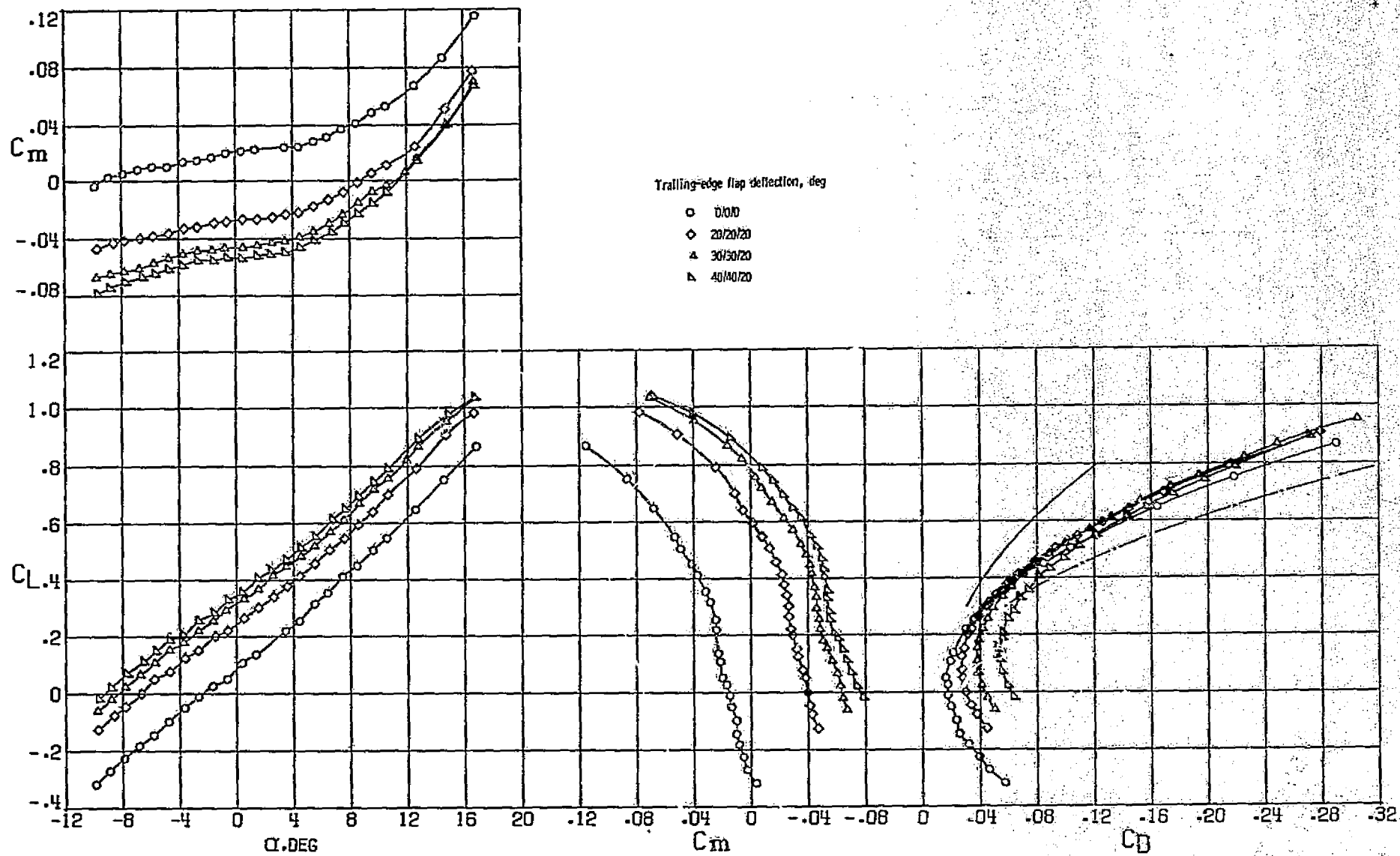


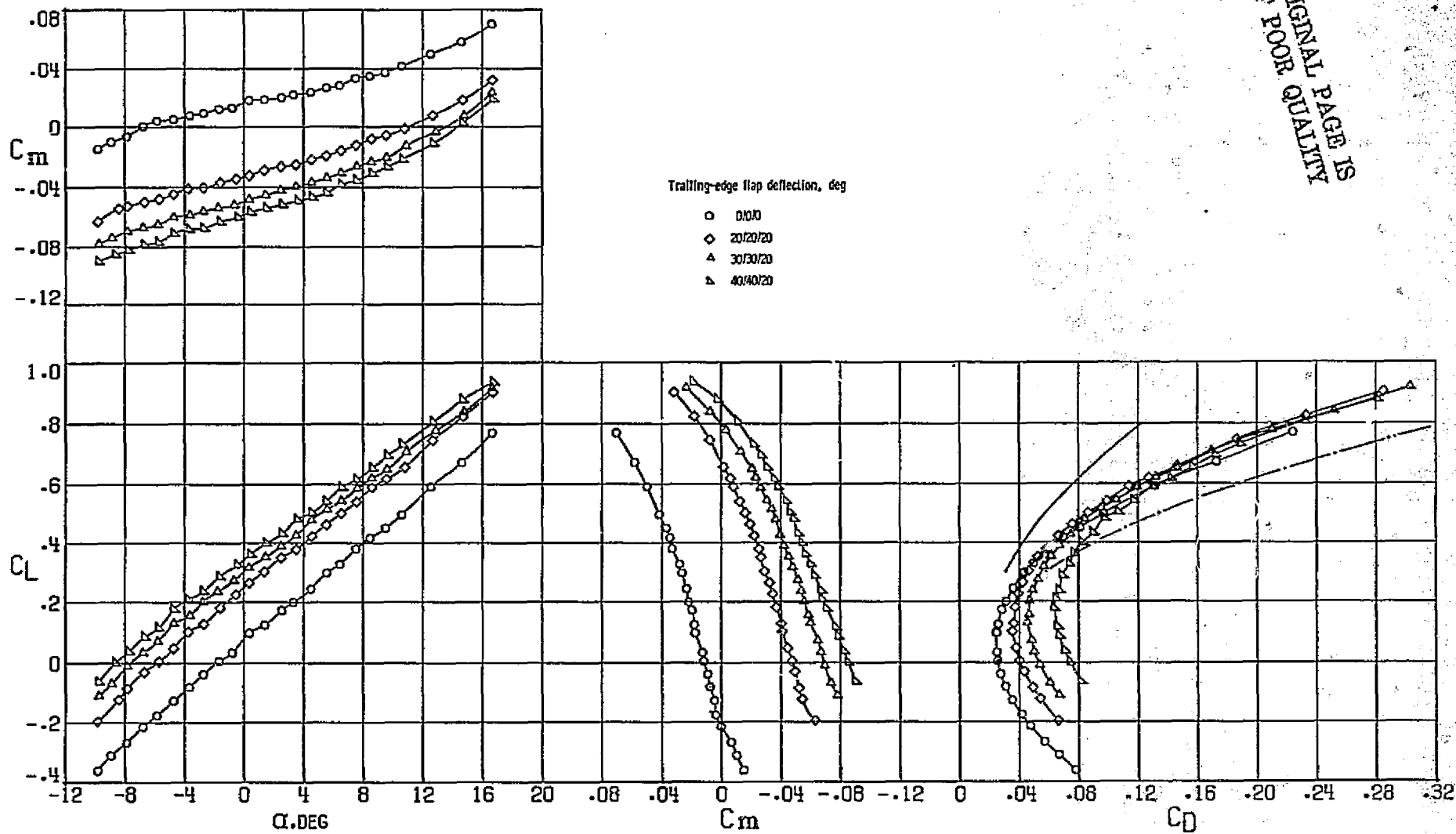
Figure 12.- Comparison of the effectiveness of the leading-edge geometries studied. WB - V<sub>1,2</sub> = N,  $\delta_1 = 0^\circ$ .



(a) Leading-edge undeflected ( $L_1=L_2=L_3=L_4 = 0^\circ$ )

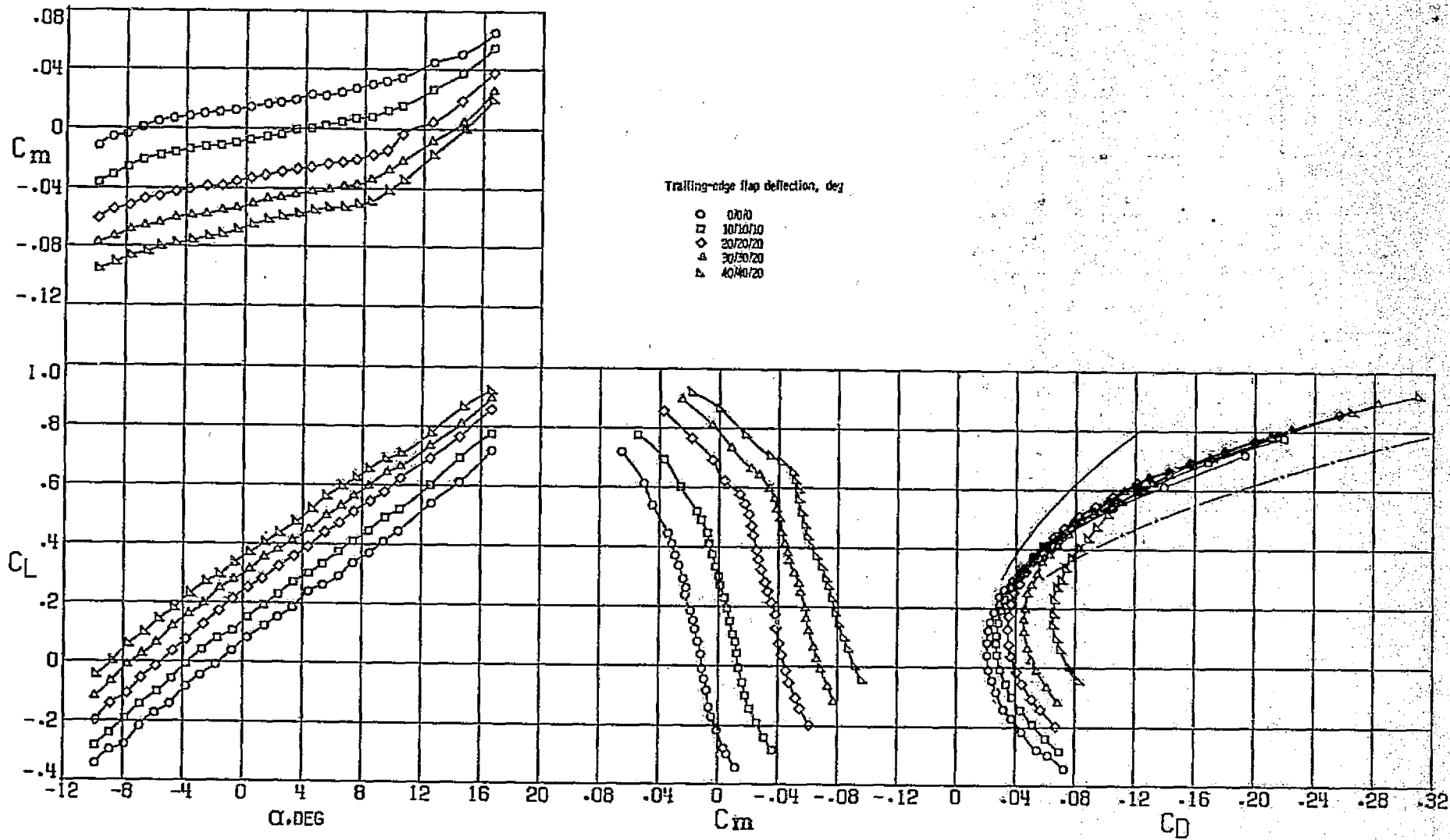
Figure 13.- Trailing-edge flap effectiveness for the model configured with different leading edges.  $W/B = V_{1,2} = 7L$ .

ORIGINAL PAGE IS  
OF POOR QUALITY



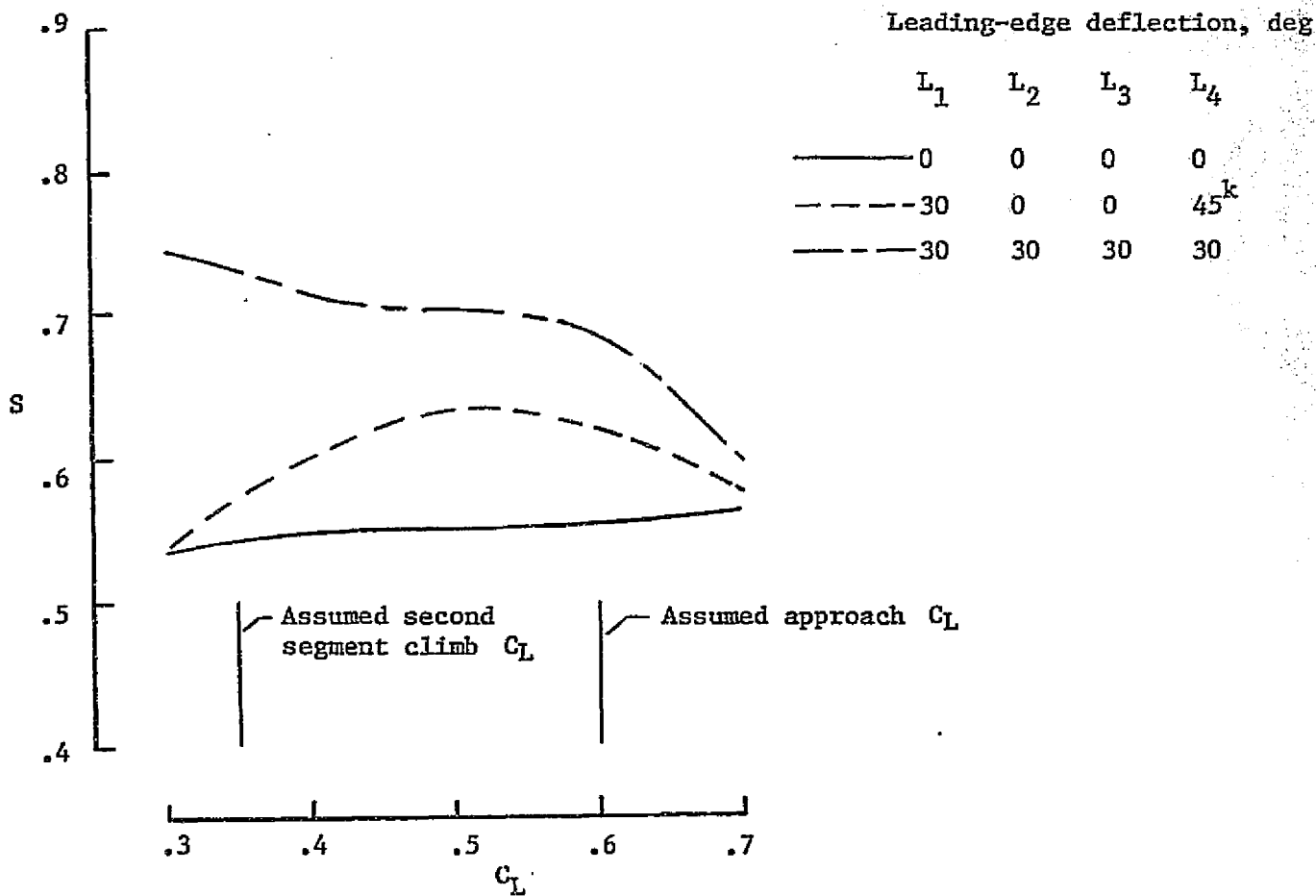
(b) Deflected leading edge ( $L_1 = 30^\circ$ ,  $L_2 = L_3 = 0^\circ$ ,  $L_4 = 45^\circ$ )

Figure 13. - Continued.



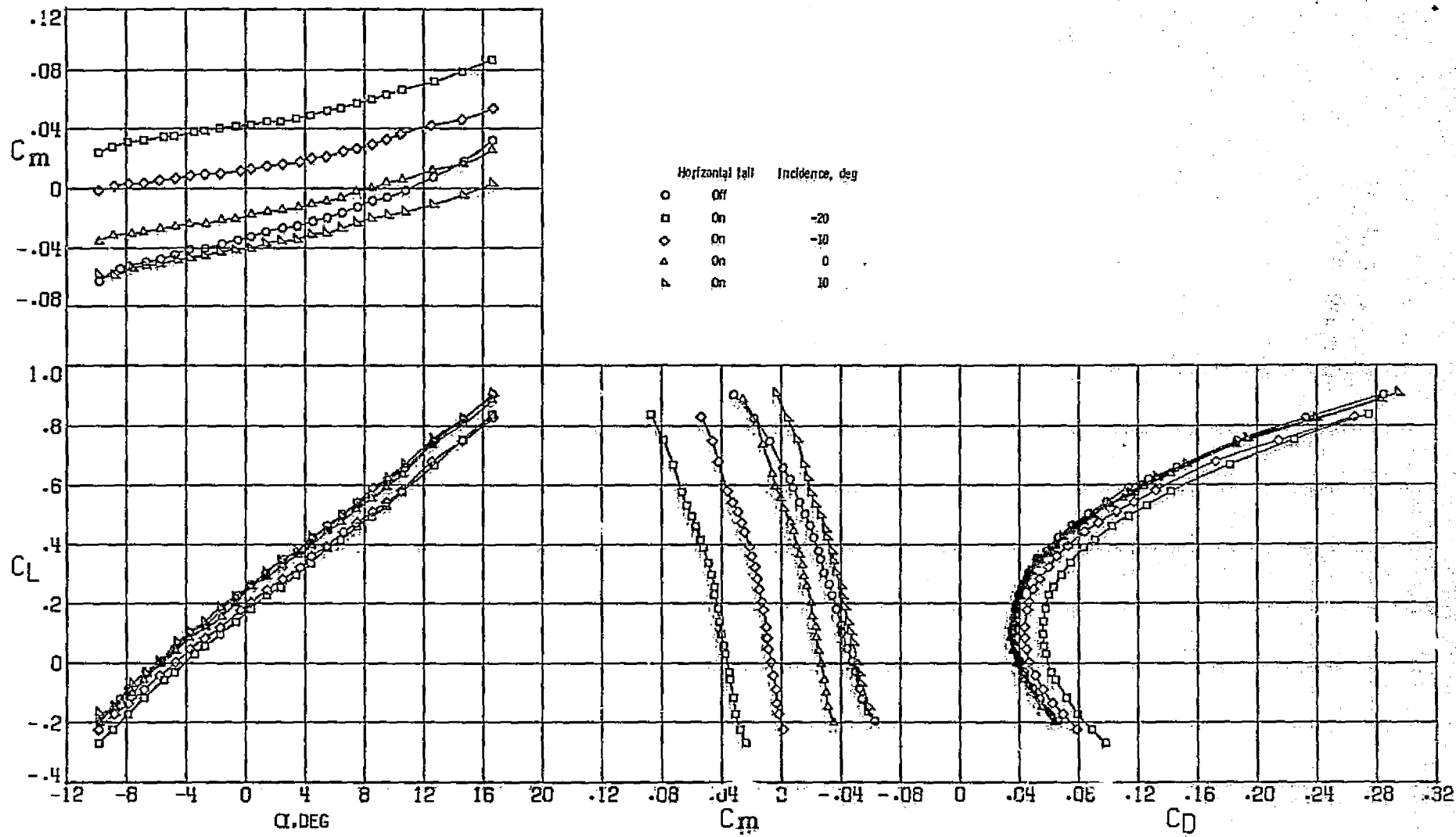
(c) Deflected leading edge ( $L_1=L_2=L_3=L_4 = 30^\circ$ )

Figure 13. - Concluded.



ORIGINAL PAGE IS  
 OF POOR QUALITY

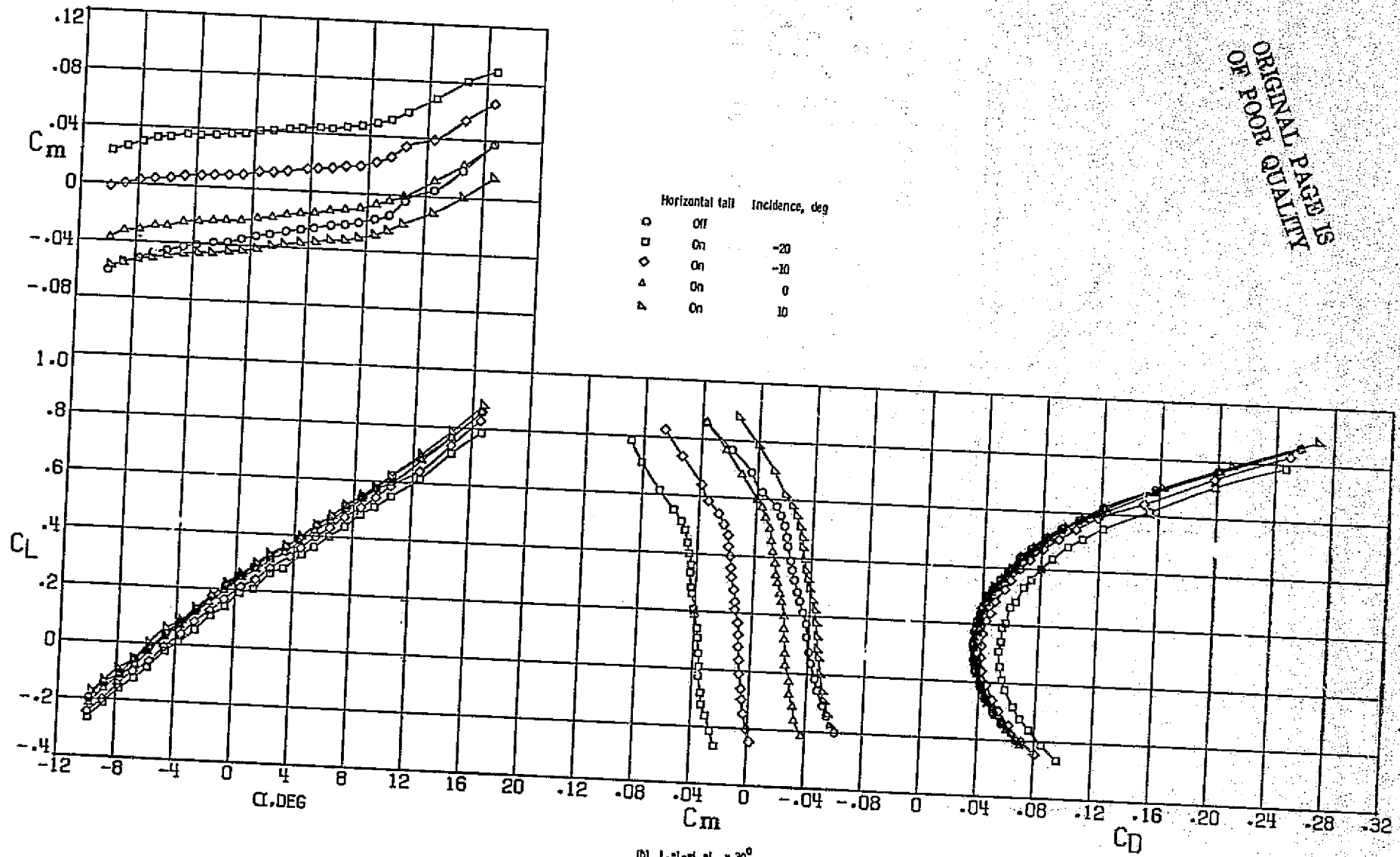
Figure 14.- Variation of leading-edge suction parameter with  $C_L$  based on the drag polar envelope obtained by varying trailing-edge deflection.



(a)  $L_1 = 30^\circ, L_2 = L_3 = 0^\circ, L_4 = 45^\circ$

Figure 15.- Horizontal tail effectiveness for the model configured with differing leading edges.  $\delta_1 = 20^\circ/20^\circ/20^\circ$

ORIGINAL PAGE IS  
OF POOR QUALITY



(b)  $L_1=L_2=L_3=L_4 = 30^\circ$

Figure 15. - Concluded.



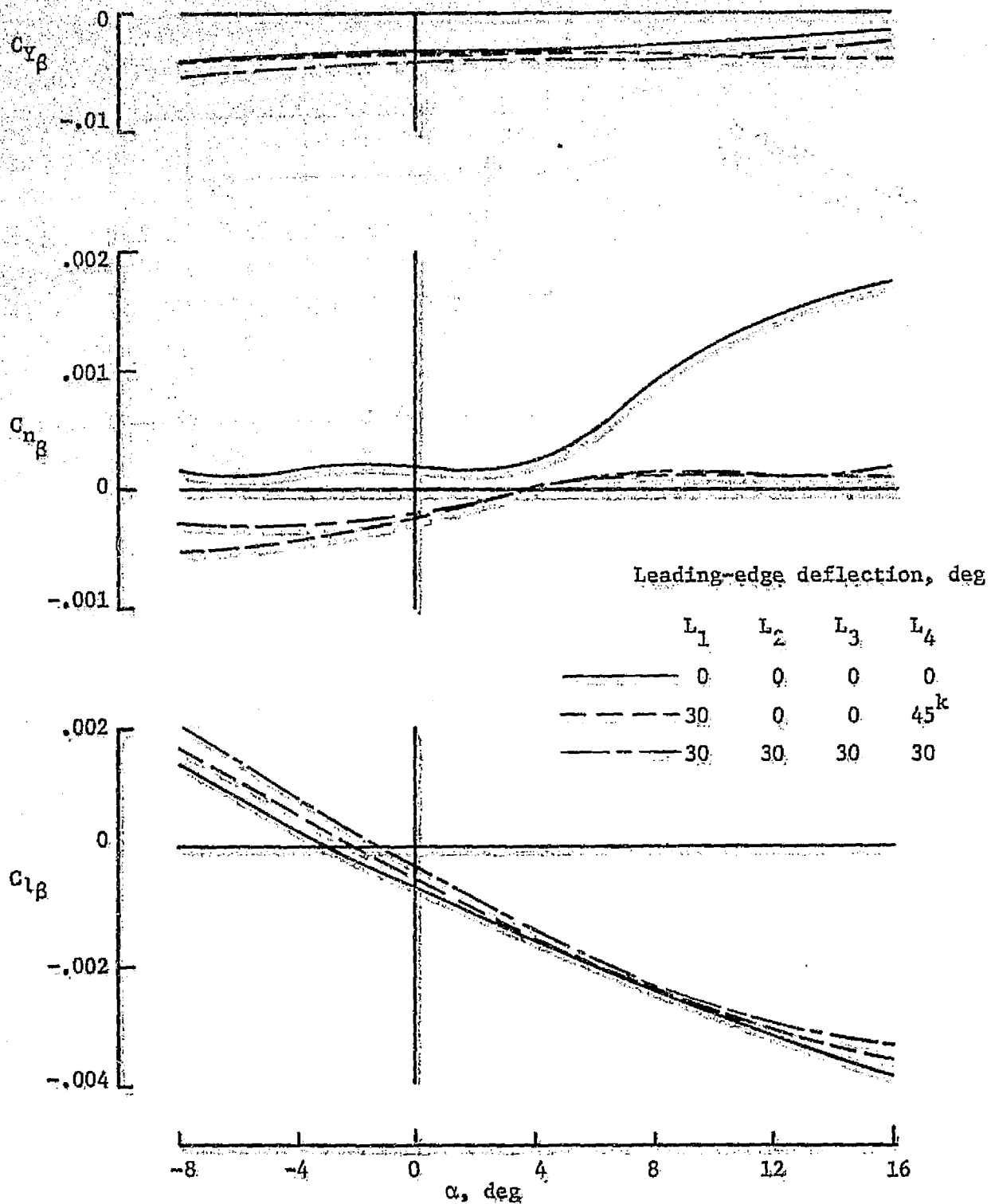
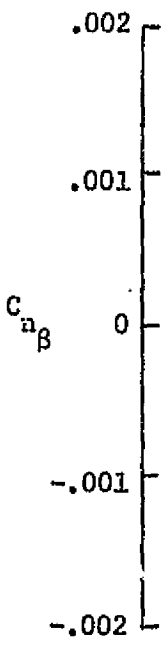
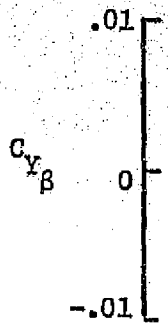
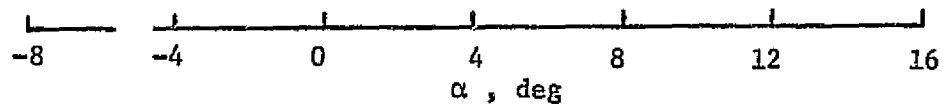
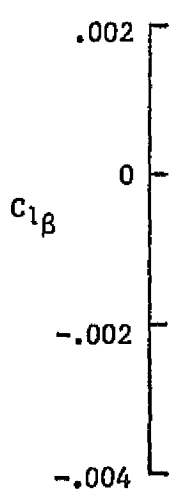


Figure 16.- Effect of wing leading-edge deflection on the lateral-directional characteristics. WB-V<sub>1,2</sub>-N,  $\delta_f = 0^\circ$

ORIGINAL PAGE IS  
OF POOR QUALITY



Vertical tail  
— off  
- - - on



ORIGINAL PAGE IS  
OF POOR QUALITY

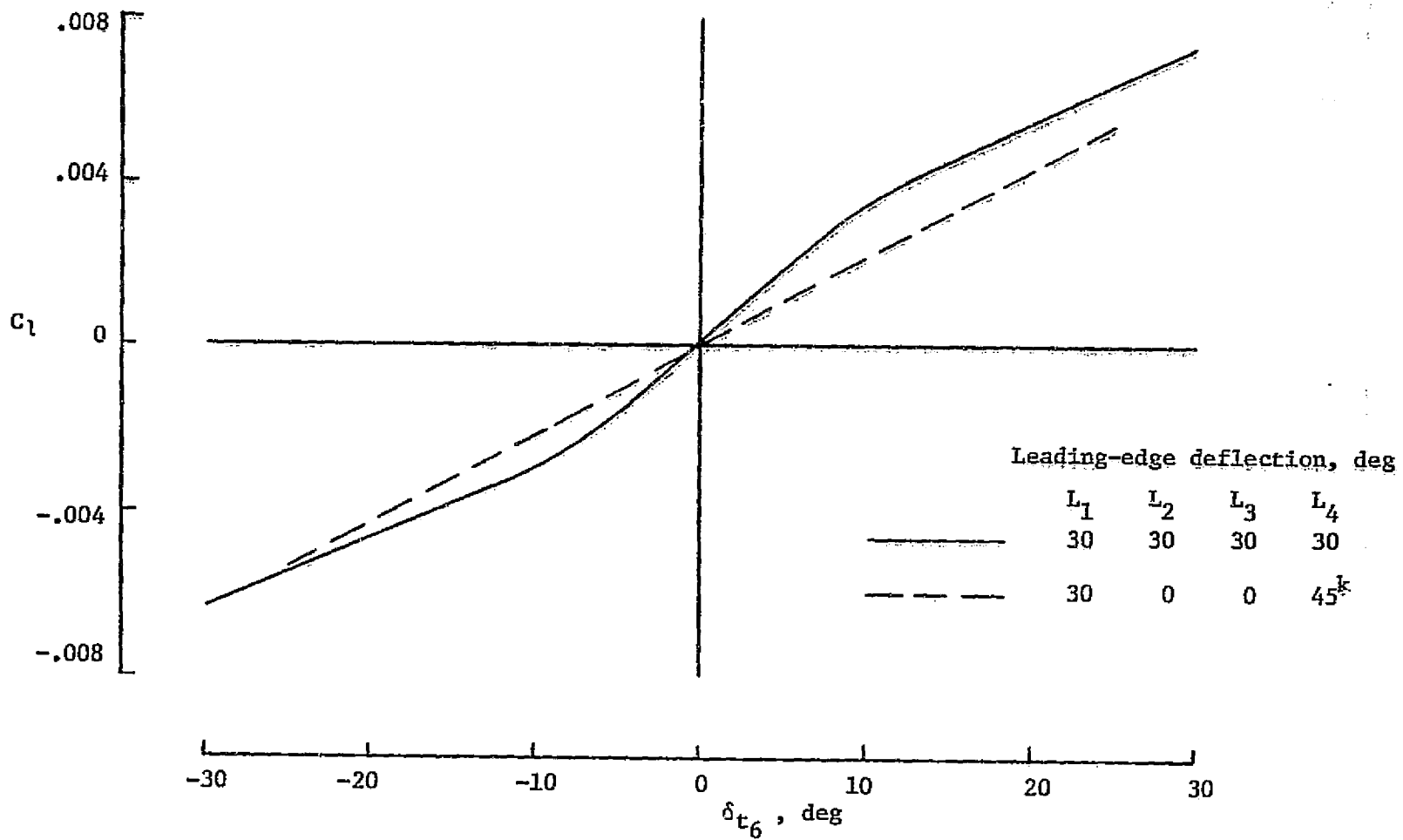


Figure 18.- Roll control provided by outboard aileron (segment  $t_6$ ).