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RESEARCH MEMORANDUM

A PRESSURE-DISTRIBUTION INVESTIGATION OF A FINENESS-RATIO-12.2 PARABOLIC BODY OF REVOLUTION (NACA RM-10) AT M = 1.59 AND ANGLES OF ATTACK UP TO 36°

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A PRESSURE-DISTRIBUTION INVESTIGATION OF A FINENESS-RATIO-12.2 PARABOLIC BODY OF REVOLUTION (NACA RM-10) AT $M = 1.59$ AND ANGLES OF ATTACK UP TO 36°

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SUMMARY

A pressure-distribution investigation of a parabolic body of revolution with a fineness ratio of 12.2 has been undertaken in the Langley 4- by 4-foot supersonic tunnel at a Mach number of 1.59 and a Reynolds number of 3.6×10^{6}, based on the body length, for angles of attack from 0° to 36°. In the low-incidence range up to 9°, a comparison of these data with other experimental data on the same configuration indicates the absence of any significant Reynolds number effects on the pressures (except at the base) in the range from 3.6×10^{6} to 29×10^{6}. At an angle of attack of 0°, the pressures were well-predicted by potential (slender-body) theory. In the low-incidence range, similar agreement existed with the pressures on the windward side. On the leeward side, however, the pressures were affected by cross-flow separation, the discrepancies between experiment and theory appeared rearward first, perhaps at about 5°, and progressed forward as the angle of attack was increased. At the higher angles, the cross-flow separation became asymmetrical; the leeward pressures at corresponding radial locations were considerably different. These asymmetries were very pronounced over most of the body for angles of attack of about 16° and higher but were observed for much lower angles at rearward body locations.

With the exception of those stations near the base, the addition of artificial roughness along the sides of the body had no effect on the forebody pressures at angles of attack of 8° or less. At 12° and near the base at 8°, the addition of artificial roughness along the sides of the body appeared to cause "cross-flow transition" and hence delay separation of the flow over the body. This same trend was indicated ahead of the maximum thickness section at 16°, while no consistent effect of roughness was noted rearward of this point on the body.

In the low-incidence range, the normal-force coefficient of the body was underestimated and the axial force predicted reasonably well by potential (slender-body) theory. The center of pressure was rearward of either the potential value or the results obtained from the viscous-cross-flow theory. Although the viscous-cross-flow estimate did improve the agreement with the experimental data in the low-incidence range, perhaps up to 10°, discrepancies of considerable magnitude were found at higher angles.

INTRODUCTION

In recent years, the accurate prediction of the flow about slender bodies of revolution has become increasingly important in the design of high-speed missiles and aircraft. For the case of the supersonic missile where maneuverability is at a premium, the flow characteristics and the ability to predict these characteristics are required for angles of attack much larger than the customary low-speed low-incidence range. This problem of the flow over inclined slender bodies has been vigorously studied both theoretically and experimentally of late.

Theoretically, the problem of the inviscid flow about slender bodies of revolution at supersonic speeds has been investigated both by linear and nonlinear methods. Among the basic approaches are the linear solutions of references 1 to 3, the higher-order solutions of references 4 to 6, and the nonlinear solutions by the method of characteristics as presented in references 7 to 10. It has been accepted that any inviscid solution about a general body of revolution must inherently be limited to small incidences because of the importance of viscosity in determining the characteristics at large yaw. In order to allow for these viscous effects, Allen (ref. 11) and Van Dyke (ref. 5) introduce, on physical grounds, an approximate cross-flow concept which improves the experimental-theoretical agreement. A fundamental discussion of the viscous cross flow about an infinitely long yawed circular cylinder, presented in reference 12, might be taken somewhat as a justification for the viscous work of references 5 and 11.

Experimentally, detailed force and pressure-distribution measurements have been determined for a reasonably wide range of Mach numbers and body shapes (see refs. 13 to 16, for example). One of the basic bodies tested has been a fineness-ratio-12.2 parabolic body of revolution designated as the NACA RM-10. This body has been extensively tested both in flight (for example, refs. 17 and 18) and in supersonic tunnels (refs. 15, 16, 19, and 20) to study the detailed characteristics over a slender body at supersonic speeds. The present paper further considers the flow over this body by presenting an analysis of the pressures at a Mach number of 1.59 and a Reynolds number of 3.6×10^{6} for an angle-of-attack range from 0° to 36°. The data are presented in terms of pressures, local section coefficients, and over-all body coefficients, and are compared with slender-body theory (refs. 3 and 21) and the cross-flow theories (refs. 5 and 11). For the incidence range below 15°, the experimental data of the present investigation overlap the data of reference 15 (Reynolds number of approximately 30×10^6) and reference 20 (Reynolds numbers of 8.6×10^6 and 17.4×10^6) and hence, the investigations are supplementary with regards to Reynolds number effects.

SYMBOLS

Free-stream conditions:

ρ	mass density of air
V	airspeed
a	speed of sound in air
M	Mach number, V/a
q	dynamic pressure, $\frac{1}{2}\rho V^2$
p	static pressure

Body geometry:

S	cross-sectional area
L	length of body of revolution
R	radius of body of revolution
x	distance from apex of body of revolution measured along axis of symmetry
α	angle of attack of axis of symmetry
ϕ	body polar angle measured counterclockwise in plane perpendicular to axis of body when facing upstream ($\phi = 0^\circ$ on bottom of body in plane of angle of attack)

Pressure data:

p_l local static pressure

P pressure coefficient, $\frac{p_l - p}{q}$

c_n section normal-force coefficient

$$\frac{1}{2}\int_0^{2\pi} P \cos \phi \, d\phi = \frac{\text{Section normal force}}{2qR}$$

c_c section axial-force coefficient,

$$\frac{1}{2}\frac{dR}{dx}\int_0^{2\pi} P \, d\phi = \frac{\text{Section axial force}}{2qR}$$

c_y section side-force coefficient,

$$\frac{1}{2}\int_0^{2\pi} P \sin \phi \, d\phi = \frac{\text{Section side force}}{2qR}$$

C_N body normal-force coefficient,

$$\frac{2L}{\pi R_{max}}\int_0^{1} c_n\left(\frac{R}{R_{max}}\right) d\left(\frac{x}{L}\right) = \frac{\text{Body normal force}}{qS_{max}}$$

C_C body pressure axial-force coefficient,

$$\frac{2L}{\pi R_{max}}\int_0^{1} c_c\left(\frac{R}{R_{max}}\right) d\left(\frac{x}{L}\right) = \frac{\text{Body axial force}}{qS_{max}}$$

C_Y body side-force coefficient,

$$\frac{2L}{\pi R_{max}}\int_0^{1} c_y\left(\frac{R}{R_{max}}\right) d\left(\frac{x}{L}\right) = \frac{\text{Body side force}}{qS_{max}}$$

C_m body pitching-moment coefficient due to normal forces about apex of body,

$$-\frac{2L}{\pi R_{max}}\int_0^{1} c_n\left(\frac{R}{R_{max}}\right)\left(\frac{x}{L}\right) d\left(\frac{x}{L}\right) = \frac{\text{Body pitching moment}}{qS_{max}L}$$

C_n body yawing-moment coefficient due to side forces about apex of body,

$$-\frac{2L}{\pi R_{max}}\int_0^{1} c_y\left(\frac{R}{R_{max}}\right)\left(\frac{x}{L}\right) d\left(\frac{x}{L}\right) = \frac{\text{Body yawing moment}}{qS_{max}L}$$

C_L body lift coefficient, $C_N \cos\alpha - C_C \sin\alpha = \dfrac{\text{Body lift force}}{qS_{max}}$

C_D body pressure-drag coefficient,
$C_N \sin\alpha + C_C \cos\alpha = \dfrac{\text{Body drag forces}}{qS_{max}}$

Subscripts:

max maximum

APPARATUS

Tunnel

The Langley 4- by 4-foot supersonic tunnel is a rectangular, closed-throat, single-return wind tunnel designed for a nominal Mach number range from 1.2 to 2.2. The test-section Mach number is varied by deflecting horizontal flexible walls against a series of fixed interchangeable templets which have been designed to produce uniform flow in the test section. For the present investigation, the nozzle walls were set for a test-section Mach number of 1.59. For this Mach number, the test section has a width of 4.5 feet and a height of 4.4 feet. A detailed description of the tunnel, together with calibration data of the test section at this Mach number, is presented in reference 22.

MODEL

The test model (fig. 1(a)) was a parabolic body of revolution machined from steel to the coordinates given by the equation in figure 1(a). Measurements of the body diameters made at 1-inch intervals along the entire body length indicated that the maximum deviation from the specified diameter at any station was less than 0.009 inch. The base of the model was cut off bluntly 42.05 inches from the apex; the fineness ratio was thereby reduced from 15 to 12.2. The model contained four axial rows of 0.020-inch static-pressure orifices (approximately 32 orifices per row) spaced 90° apart radially, four base-pressure orifices, and one total-pressure orifice at the apex. In order to install the total-pressure orifice, the nose was cut off at a diameter of approximately 0.040 inch. This total-pressure orifice was used in conjunction with another investigation (ref. 23) employing this same model.

Installation

The model (fig. 1(a)) was sting-supported in the tunnel on a straight (fig. 1(b)) and a 38° bent (fig. 1(c)) sting. Both stings were the same for a distance of 18.5 inches from the base of the model, the bend taking place rearward of this point. The ratio of the sting diameter, at the model base, to the model base diameter was 0.6. The bent sting was used to increase the attainable incidence range of the model from 0° to 16° up to a range from 14° to 36°; in both cases, the incidence was varied in a horizontal plane. A schematic arrangement of the model mounted in the Langley 4- by 4-foot supersonic tunnel is shown in figure 2 for extreme angle positions of both stings; a photograph of the model mounted in the tunnel on each sting is shown in figure 3.

TESTS AND CORRECTIONS

Tests

The data were obtained for a range of incidence angles from 0° to 36° at a Mach number of 1.59 and a Reynolds number of 3.6×10^{6}. In order to define accurately the radial pressure distributions at a given axial station, the model was rotated in fixed increments about its own axis to provide a much more detailed orifice coverage. The tests, on both the straight and bent stings, were conducted by varying the angle of attack for a fixed radial index position. Then, after shutting down the tunnel to re-index the model radially, the tests were repeated through the angle-of-attack range. For the straight-sting configuration, six indexing positions were used. Since the high-angle bent-sting tests were not a part of the original program, there was unfortunately insufficient time for such detailed indexing. Hence, only four radial indexing positions were used for these latter tests.

The tests were conducted with the model in a smooth and polished condition over the entire incidence range and with artificial roughness for angles of attack up to 16.10°. For the artificial-roughness tests, $\frac{1}{4}$-inch-wide strips of No. 60 carborundum were located at each of the following positions during separate tests: a complete ring at maximum diameter $\left(\frac{x}{L} = 0.614\right)$, a complete ring 7 inches from the base $\left(\frac{x}{L} = 0.834\right)$, axial strips (located at radial positions of 90° and 270°) extending the full length of the body, and axial strips extending from the maximum thickness station to the model base.

The tunnel stagnation conditions were: pressure, 0.25 atmosphere; temperature, 110° F; and a dewpoint, approximately -35° F. For these test conditions, the calibration data of the test section (ref. 22) indicate that the effects of condensation on the flow are probably negligible.

Corrections

Since the gradients of the measured Mach number, flow angle, and pressure are small in the vicinity of the model, no corrections for these effects have, in general, been applied. In the low-incidence range, the effects of the tunnel static-pressure gradient on the individual static-orifice readings have been discussed in reference 24. Though the magnitude of the free-stream static-pressure gradient is small (see fig. 6, ref. 22), the superposition of the free-stream static pressures and the measured pressures on the test body of the present investigation did improve, somewhat, the agreement between experiment and theory (see fig. 8, ref. 24).

The influence of tunnel air-stream angularity on the angle of attack of the model is exceedingly small at low incidences; a specific illustration presented in reference 23 shows that the air-stream angularity changes the local angle at the nose by about 0.08°.

Angular corrections due to aerodynamic loads and model droop (caused by the weight of the model) have been applied to the angle of attack and radial position as discussed in reference 23. The maximum magnitude of the combined incidence-angle corrections was less than 0.28°. For these tests (unlike those reported in ref. 23), a special jacking rig (fig. 3(a)) eliminated the need for droop corrections at zero incidence.

A series of tests were made in an attempt to establish the effect of the sting on base pressures. These tests were made by using both the force model described in reference 24 and the pressure model of the present investigation. The results indicated that, at zero incidence, the base-pressure coefficient of the present configuration is too positive by an amount of the order of 0.03. Since this amount will undoubtedly change in some unknown manner with angle of attack and change the base pressures accordingly, there is no specific discussion of the magnitude of base pressures in the present paper. The effect of the sting on the pressures in the separated flow region near the base of the body is not known.

PRESENTATION OF RESULTS

Basic Pressures

The basic pressure data obtained on the parabolic body of revolution for angles of attack from 0° to 36° are presented in figure 4 as a function of radial angle for 12 representative stations along the body. Since the geometry of the body at incidence is symmetrical with respect to the 0°-180° axis, a folded horizontal scale has been used; the flagged symbols on this figure, as on all succeeding figures, designate data between 180° and 360°. The use of the folded scale provides a convenient manner to condense the data and, hence, better establish the experimental trends, as well as providing a simple means for considering flow symmetry conditions.

The basic data have also been presented as a function of body position (x/L) in figure 5 for the complete incidence range for three radial positions. Theoretical curves (refs. 3 and 21) have been added to these figures for the lower incidence angles. In addition, the experimental data for angles of attack of 20° and 36° have been presented for three model positions each (the model locations specify the distance of the model apex from the wall; see fig. 2) to illustrate the influence of tunnel conditions on the flow. In each case the experimental curve has been faired through the data used in succeeding figures.

The data presented in figures 4 and 5 together with other data obtained during these tests (most of which is not explicitly used in the present paper) are presented in tables I to VI. The test conditions for the pressure data presented in these six tables are:

Table	Angle-of-attack range, deg	Transition strips	Sting configuration
I	0 to 16.1	None	Straight
II	14 to 36	None	38° bent
III	4 to 16.1	Axial	Straight
IV	4 to 16.1	One-half axial	Straight
V	4 to 16.1	Radial, $\frac{x}{L} = 0.614$	Straight
VI	4 to 16.1	Radial, $\frac{x}{L} = 0.834$	Straight

The data of figures 4 and 5 have been compared with similar data from reference 15 and with theory (refs. 3 and 21) in figures 6 and 7 for angles of attack of 0° and 6°, respectively. The primary purpose of the comparison of the present data with that reported in reference 15 is to establish the importance of Reynolds number on this particular configuration and in addition evaluate, if possible, the magnitude of the effects of tunnel disturbances on the experimental results. A more comprehensive comparison of the basic pressures with theory is presented in figure 8 for angles of attack of 4.00°, 8.05°, and 12.05°; a comparison of the incremental pressure coefficients (defined as the pressure coefficient at incidence minus the zero-incidence value) with theory is shown in figure 9.

An attempt was made to evaluate differences in flow conditions associated with changing the sting configuration. Hence, the results of one overlap test condition for both stings at an angle of attack of about 16° have been compared in figure 10.

A series of additional tests were made to investigate the effects of artificial roughness added at various discrete locations on the body. The data for a representative phase of these tests are summarized in figure 11.

Aerodynamic Coefficients

The section normal-force, axial-force, and side-force (resulting from asymmetrical separation on the leeward side of the body) coefficients were obtained from integration of the pressure distributions and are presented in figure 12. The lift and drag coefficients have been obtained by resolving the normal- and axial-force coefficients along the appropriate axes. In all cases, the contribution of skin friction is neglected inasmuch as the coefficients have been obtained from pressure measurements. These experimental coefficients have been compared with inviscid theory (refs. 3, 21, 25, and 26) and with calculations based on the viscous-cross-flow concepts discussed in references 5 and 11. In calculating the cross-flow section coefficients, the ideas of reference 5 were followed in that it was assumed that a viscous-cross-force contribution to the lift existed when the theoretical radial pressure distributions indicated an unfavorable pressure gradient. The values of the section drag coefficient of a circular cylinder for cross-flow Mach numbers in excess of 0.4 were obtained from the results presented in reference 11. No effect of finite cylinder length was taken into consideration. Since the results of the cross-flow concept depend upon the cross-flow Reynolds numbers, the magnitudes of these values are presented in figure 13 for several representative incidence angles.

The data of figure 12 have been plotted in terms of normal-force, axial-force, and side-force loading distributions in figures 14 to 16. These data have been integrated to yield over-all body coefficients which are shown in figure 17 as a function of angle of attack. Two sets of pitching-moment coefficients have been presented; one set represents the pitching moment of the normal forces, as is customary in pressure investigations, and the second set presents the pitching moment of the normal and axial forces. Since the effect of the axial forces is small, only two points are shown. The centers of pressure of the normal forces have been specified in terms of fraction of the body length behind the apex. Centers of pressure are shown for these data only for angles of attack of 8° and higher. Below 8°, precision limitations on the reduction of the data introduced excessive scatter so that significant trends were masked. An indication of the center-of-pressure locations in the low angle range can be judged from the experimental data of reference 16 which are shown in figure 17 to supplement the present data.

DISCUSSION

Asymmetrical Pressures

The most striking feature indicated by the basic data (fig. 4) is the asymmetrical distribution of pressures (with respect to the plane of incidence) over the leeward side of the body for the higher angles of attack. The extent and magnitude of the asymmetrical flow regions corresponding to these pressures are functions of angle of attack and station along the body. Over the forward half of the body these regions occur initially at an angle of attack of about 16°, and with increasing incidence broaden rapidly to extend over the entire leeward side of the body by angles of attack of about 28°. Farther rearward, these asymmetries occur at progressively lower angles of attack and extend over larger regions of the body as the base is approached. Though the data of the last two stations (0.951 and 0.999) indicate, quite consistently, these regions extending around the body radially for angles of attack as low as 2° or 4°, it should be noted that the magnitude of the differences in pressures at corresponding radial position on opposing sides for these angles is small and approaches the experimental accuracy (a value of ± 0.01 in pressure coefficient). Furthermore these data may be affected by the presence of the sting.[1] Although the absence of experimental data at some critical radial locations together with the absence of visual flow studies precludes a more tangible discussion of the limits of these asymmetrical flow boundaries, it is clearly evident that the occurrence of this phenomenon is qualitatively significant, and for practical configurations may be of prime importance in the evaluation of the characteristics of lifting surfaces located in these flow regions.

[1]Though the influence of the sting on the results remains, in essence, unknown, it can be concluded from figure 10 that the change in sting configuration from straight to bent had no significant effect, at least for angles of attack of about 16°.

The nature of these asymmetrical flows is further evident in figures 5 and 9. For example, on the side of the body $\phi = 90^\circ, 270^\circ$, (figs. 5(b) and 9(b)) and leeward $90^\circ \leqq \phi \leqq 270^\circ$, (figs. 5(c), 9(c), and 9(d)), the axial distribution of pressures at corresponding radial positions is erratic, being considerably different at an angle of attack of 36° than at 12° or 20°. It is to be noted that the asymmetries of the flow are not, at least up to an angle of attack of 25.5°, associated with a detached shock at the nose of the model. The value, 25.5°, for shock detachment has been conservatively estimated on the basis of shock detachment for an unyawed cone whose semiapex angle is equal to the sum of the present semiapex angle and the angle of attack for shock detachment.

Since the flow over the leeward side of the body at these high incidences is not relatively stable, slight tunnel gradients appear to have a measurable effect on these data. This is evident in figures 5(b) and 5(c) where the leeward pressures change with model location in the tunnel; whereas on the windward side (fig. 5(a)), however, there are no measurable effects of model location. These results, showing the effects of model position, may be indicative of difficulties to be anticipated in correlating, quantitatively, high-angle investigations in various facilities.

Asymmetrical flow conditions have been previously noted in reference 13 from visual-flow studies at high angles and in reference 27 where erratic rolling oscillations were measured on a body-tail combination. These oscillations (reported in ref. 13 and in a paper of limited circulation) were traced to unsteady fluctuations of the leeward vortices which, under certain conditions, were discharged aperiodically from each side of the body. Although there was no regularity in the discharge of the vortices, (when such a discharge did occur), the time interval between reversals from side to side of the aperiodically discharged vortices was noted to be of the order of seconds. Thus a pressure measuring system such as the present (where lag is of the order of minutes) would be expected to indicate a mean value corresponding to symmetrical flow during such a discharge. The "one-sidedness" of the data for the discrete angles of attack presented indicates that switching or reversals of the vortices was not a prime occurrence at these angles. However, for those angles of attack where the side-force coefficients become zero, that is, the angles where the coefficients reverse sign (for example, fig. 12(e), station 0.714, $\alpha \approx 31^\circ$), it is indicated that a rapid switching of the vortex pattern is taking place locally.

Whether this one-sidedness is materially influenced by the tunnel gradients or model conditions is not definitely known. From the results of figure 5, however, it is evident that traversing the model in the tunnel and hence varying the gradients modifies rather than changes the character of the pressure distributions. Furthermore, it is to be noted that, for the present tests, two sets of data were recorded for each test condition with an elapsed time of from 3 to 5 minutes between points. Since no significant differences were indicated by the two sets of data, the present results are taken to represent a mean value for an unsymmetrical flow. It might also be of interest to note that, because of the test procedure, some question arises as to whether or not the vortex pattern at a specific angle of attack would be the same for each index position. The data shown in figure 4 indicate that the pattern repeated, that is, the vortex nearest the body, appeared on the same side for each index position. The reason for this is not known since it would seem that the disposition of the vortices would be unpredictable and that the vortex pattern might assume the reverse position during the course of the tests unless slight tunnel gradients were of significance in causing the repeatability of the flow.

A discussion of the mechanism of flow over bodies of revolution at high angles of attack has been presented in reference 13. The analogy to impulsive flow over a circular cylinder is pointed out and attention is directed to the results presented in reference 28. In reference 28, the development of flow over a circular cylinder is presented from the initial occurrence of the symmetrical vortex over the leeward side (as found in ref. 13) to the breakdown of the asymmetrical vortex formation.

Comparison of Experimental and Theoretical Pressures

Inasmuch as the present model has become practically a standard test vehicle, considerable work has already been reported comparing the experimental and theoretical characteristics of the body. Results are presented in reference 15 for a Mach number range from 1.49 to 1.98 (including a Mach number of 1.59 and a Reynolds number of 29×10^6) for Reynolds numbers from 28×10^6 to 31×10^6, and in reference 20 for Mach numbers of 1.52 and 1.98 at Reynolds numbers of 8.6×10^6 and 17.4×10^6. Hence, the results of the present comparisons at a Mach number of 1.59 and a Reynolds number of 3.6×10^6 serve primarily to supplement the previously published results insofar as Reynolds number is concerned.

The experimental-theoretical comparison of the pressure distributions at an angle of attack of 0° (fig. 6) clearly indicates the absence of any marked Reynolds number effects on the forebody pressure distribution in the Reynolds number range from 3.6×10^6 to 29×10^6. Those discrepancies which do exist are small and are probably not Reynolds number effects. The absence of such effects on the forebody pressures has been noted also in reference 20 for this body for a Reynolds number range of 8.6×10^6 to 30×10^6. In order to consider further the effects of boundary layer on the forebody pressures, the present model was tested with an extremely thick turbulent boundary layer (ref. 24) artificially induced at the nose. Even for this extreme case, no effects on the forebody pressures were evident, the indication, perhaps, being the absence of Reynolds numbers effects even far beyond the presently established 30×10^6 value. Though the forebody pressures are unaffected by a change in boundary layer from laminar (Reynolds number of 3.6×10^6) to primarily turbulent (Reynolds number of 29×10^6), there is a marked decrease (fig. 6) in base pressure accompanying this Reynolds number change. This effect of Reynolds number on the base pressure of this configuration has been studied in detail in reference 29 and the results presented therein substantiate the data of figure 6.

The same generalization concerning the absence of Reynolds number effects on the pressures for an angle of attack of 0° applies to the forebody pressures at an angle of attack of 6° (fig. 7) for the same Reynolds number range of 3.6×10^6 to 29×10^6. For this comparison, the data from the Langley 4- by 4-foot supersonic tunnel have been obtained either from the station nearest that specified (which is a Lewis 8- by 6-foot tunnel station) or an average value of data from two stations, one on each side of the indicated station. The agreement between the two sets of data is good; and though the slight discrepancies at the last station (0.951) might be attributed to differences in cross-flow separation and hence a Reynolds number effect, it is to be noted that discrepancies of the same magnitude occur at the foremost station (0.083) where separation effects are hardly the cause. As has been previously established, in general, in references 15 and 20, the agreement between the experimental and theoretical pressures (figs. 5 and 8) in the low-incidence range up to say an angle of attack of 4° or 5° is relatively good, with viscous effects confined to about the rear 10 percent of the body on the leeward side. Further increases in angle of attack progressively cause a deterioration in the agreement between experiment and theory, where, as has been shown many times before and is evident in figures 5 and 8, the leeward side is affected first and the most. At about 12° (figs. 5 and 8), most of the leeward side is affected by the cross-flow separation, the separation being so predominant as to render inviscid theory practically valueless in predicting the flow. On the windward side, the experimental pressures appear, in general, to be slightly more positive than predicted by theory in the range of angles of attack of 12° and higher. The incremental pressures due to angle of attack (fig. 9) reflect the previously mentioned flow characteristics.

It is quite evident from these data and considerable other similar data that the use of any inviscid theory whether linearized or not, is inherently limited in scope and that further attempts to improve the quality of the predictions, at least over the rear of an inclined body at high angles of attack, should be directed towards improved viscous considerations.

Artificial Roughness

Several simple and relatively crude exploratory tests were made to study the effect of various types and locations of transition strips on the pressures. The results are plotted in figure 11 for six axial body stations. With the exception of those stations near the base, which are probably affected by the sting, no effect of axial transition strips was noted at an angle of attack of 8°. At 12° and near the base at 8°, however, the addition of axial transition strips appeared to cause "cross-flow transition" and hence delay separation over the body. This same trend is indicated forward of the maximum thickness section for an angle of attack of 16°. Rearward of this section, no consistent effects were observed. The data showing the effects of a radial transition strip at the maximum thickness section were too limited in scope to indicate any definite trends. There was a marked increase in base pressure with the addition of axial transition strips, a change which is opposite to that previously shown (fig. 6) for 0°. This reversed effect is, however, qualitatively similar to results established in conjunction with the tests reported in references 24 and 29.

Section Coefficients

The integrated section coefficients presented in figure 12 reflect, in general, the pressure-distribution characteristics indicated in the preceding figures. At the foremost stations, the normal-force coefficients in the low-incidence range are accurately predicted by inviscid theory, thereby substantiating the results previously established in reference 19. The absence of any significant cross-flow separation is clearly implied by the comparison of the normal-force coefficients up to 12° for station 0.024. At stations closer towards the maximum thickness, the agreement between the data and slender-body theory becomes progressively worse, the discrepancy being the inability of the theory to predict the increase in slope with angle of attack. Aft of the maximum-thickness section, a hump in the normal-force curve occurs between 8° and 12° at station 0.618 and at lower angles rearward. This hump seems to be associated with the beginning of separation of the cross flow over the body. The addition of axial transition strips resulted in a decrease in normal-force coefficient at an angle of attack of 12°, an effect which would tend to smooth out the abruptness of the hump. The presence of the hump limits the agreement between experiment and inviscid theory to angles of about 4° or less at the rearmost stations. The prediction based on the cross-flow assumption of reference 5, while qualitatively improving the agreement over the mid and rear sections of the body, is hardly adequate locally for angles of attack in excess of about 8°.

A similar type of agreement between the axial-force coefficients and the inviscid theory is shown, as has been previously established in reference 19, the largest discrepancies being evidenced at the foremost stations. Such an effect is somewhat unusual in view of the previously established deficiencies of the theory for the rearward stations.

The side-force coefficients are presented for illustrative purposes only to establish the magnitudes. The primary influence of these asymmetrical flows will be manifested when a lifting surface is located in these regions.

Body Coefficients

A comparison of the experimental lift or normal-force coefficient with theory (fig. 17) shows the usual underestimation of lift predicted by inviscid theory with the general improvement of the estimate by the application of the cross-flow concept of reference 13. However, even this approximation appears entirely inadequate for angles of attack much in excess of 8°. The absence of any significant Reynolds number effects on the normal force, axial force (excluding base pressure), and pitching-moment coefficient in the Reynolds number range from 3.6×10^{6} to 29×10^{6} is indicated by the close agreement between the data of the Lewis 8- by 6-foot tunnel and the Langley 4- by 4-foot tunnel. The experimental center of pressure is considerably aft of the value predicted by the cross-flow separation; the slender-body theoretical location is -0.7. As was the case for the section coefficients, the axial-force prediction was relatively good in the low angle-of-attack range.

CONCLUDING REMARKS

A pressure-distribution investigation of a parabolic body of revolution with a fineness ratio of 12.2 has been undertaken in the Langley 4- by 4-foot supersonic tunnel at a Mach number of 1.59 and a Reynolds number of 3.6×10^{6}, based on the body length, for angles of attack from 0° to 36°. In the low-incidence range, up to 9°, a comparison of these data with other experimental data on the same configuration indicated the absence of any significant Reynolds number effects on the pressures (except at the base) in the range from 3.6×10^{6} to 29×10^{6}. At an angle of attack of 0°, the pressures were well-predicted by potential (slender-body) theory. In the low-incidence range, similar agreement existed with the pressures on the windward side. On the leeward side, however, the pressures were affected by cross-flow separation; the discrepancies between experiment and theory appeared rearward first, perhaps at about 5°, and progressed forward as the angle of attack was increased. At the higher angles, the cross-flow separation became asymmetrical; the leeward pressures at corresponding radial locations were considerably different. These asymmetries were very pronounced over most of the body for angles of attack about 16° and higher but were observed for much lower angles at rearward body locations. The data at the higher angles where the asymmetries occurred were affected by tunnel gradients in that differences, solely in the leeward pressures, existed when the model was tested in different tunnel locations. These differences are probably of secondary importance in that they appear to modify rather than cause the asymmetries.

With the exception of those stations near the base, the addition of artificial roughness along the sides of the body had no effect on the forebody pressures at angles of attack of 8° or less. At 12° and near the base at 8°, the addition of artificial roughness along the sides of the body appeared to cause "cross-flow transition" and hence delay separation of the flow over the body. This same trend was indicated ahead of the maximum thickness section at 16° while no consistent effect of roughness was noted rearward of this point on the body.

In the low-incidence range, the normal-force coefficient of the body was underestimated and the chord force predicted reasonably well by potential (slender-body) theory. The center of pressure was considerably rearward of either the potential theory or the results obtained from the viscous-cross-flow theory. Though the cross-flow estimate did improve the agreement with the experimental data in the low-incidence range, perhaps up to 10°, discrepancies of considerable magnitude were found at higher angles.

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National Advisory Committee for Aeronautics
Langley Field, Va.

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TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS

(a) $\alpha = 0$

Station, x/L	Radial angle, ϕ, deg			
	90	180	270	360
0.024	0.057	0.063	0.065	0.069
.048	.048	.063	.061	.057
.071	.042	.055	.048	.063
.095	.044	.052	.044	.055
.119	.042	.044	.042	.044
.143	.036	.038	.038	.040
.167	.032	.038	.036	.040
.190	.028	.036	.030	.036
.214	.026	.032	.030	-----
.238	.014	-----	.022	.016
.262	.012	.016	.010	.012
.285	.010	.012	.010	.008
.333	0	.008	.006	.004
.381	-.004	.002	.006	-.006
.428	-.008	0	0	-.008
.476	-.016	-.012	-.010	-.014
.523	-.016	-.016	-.012	-.014
.571	-.024	-.016	-.020	-.010
.618	-.036	-.032	-.026	-.032
.666	-----	-.036	-.032	-.032
.714	-.040	-.036	-.040	-.044
.761	-.044	-----	-.040	-.048
.785	-.044	-.040	-.032	-.044
.809	-.040	-.032	-.032	-.044
.832	-.048	-.040	-.036	-.044
.856	-.048	-.038	-.038	-.040
.880	-.040	-.036	-.032	-.040
.904	-.030	-.032	-.032	-.044
.928	-.022	-.016	-.030	-.030
.951	-.018	-.016	-.024	-.024
.975	-.016	-.016	-.018	-.020
.999	-.012	-.012	-----	-.020
1.000	-.012	-.012	-.008	-.018

NACA

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(b) α = 1.00

Station, x/L	Radial angle, ϕ, deg																			
	13.8	28.8	43.8	73.8	88.8	103.8	118.8	133.8	163.8	178.8	193.8	208.8	223.8	253.8	268.8	283.8	298.8	313.8	343.8	358.8
0.024	0.074	0.068	-----	0.062	0.058	0.056	0.054	0.054	0.056	0.056	0.058	0.054	0.076	0.064	0.066	0.070	0.068	0.098	0.072	0.070
.048	.068	.060	-----	.062	.058	.056	.062	.054	.044	.048	.048	.044	.052	.054	.048	.060	.060	.066	.066	.064
.071	.056	.050	0.054	.056	.052	.050	.048	.050	.040	.040	.042	.036	.042	.056	.048	.060	.058	.064	.056	.052
.095	.056	.052	.054	.052	.050	.046	.044	.044	.038	.034	.038	.036	.042	.044	.044	.050	.048	.054	-----	.052
.119	.056	.054	.054	.048	.044	.042	.040	.040	.034	.032	.034	.028	.038	.036	.036	.042	.038	.046	-----	.048
.143	.048	.046	.046	.040	.040	.038	.032	.034	.030	.028	.030	.024	.030	.036	.036	.042	.048	.044	-----	.042
.167	.048	.042	.044	.040	.036	.036	.030	.034	.028	.028	.026	.024	.030	.034	.036	.040	.038	.044	.046	.040
.190	.044	.038	.040	.038	.034	.032	.028	.030	.024	.024	.024	.020	.028	.032	.032	.036	.032	.038	.038	.038
.214	.042	.036	.040	.030	.030	.030	.024	.028	.020	.022	.024	.016	.022	-----	-----	-----	-----	-----	.038	.036
.238	.032	.024	.028	.022	.018	.018	.014	.018	.014	.012	.014	.008	.016	.018	.014	.022	.018	.024	.030	.026
.262	.026	.018	.024	.020	.016	.018	.010	.014	.008	.010	.010	.006	.014	.016	.012	.024	.016	.024	.020	.020
.285	.022	.016	.020	.014	.012	.014	.008	.010	.006	.008	.008	.006	.012	.016	.014	.020	.012	.020	.014	.014
.330	.016	.008	.008	.004	.004	.002	-.002	.004	.002	.004	.006	0	.008	.010	.006	.012	.008	.012	.012	.008
.381	.008	.002	.006	0	0	0	-.002	0	0	0	.002	0	.006	.004	0	.008	.004	.008	.006	.002
.428	.004	-.004	0	-.002	-.004	-.002	-.008	-.002	-.004	-.004	-.002	-.008	-.002	-.002	-.002	.002	-.004	.002	.002	0
.476	-.004	-.012	-.008	-.012	-.014	-.014	-.018	-.018	-.018	-.018	-.016	-.020	-.014	-.014	-.016	-.006	-.012	-.004	-.010	-.010
.523	-.004	-.012	-.006	-.016	-.016	-.016	-.020	-.018	-.016	-.016	-.014	-.018	-.014	-.006	-.008	-----	-.006	-.006	-.010	-.008
.571	-.012	-.020	-.016	-.022	-.024	-.024	-.028	-.022	-.022	-.024	-.022	-.028	-.024	-.016	-.016	-----	-.012	-----	-.018	-.018
.618	-.020	-.032	-.024	-.034	-.032	-.032	-.036	-.030	-.032	-.032	-.032	-.036	-.030	-.030	-.034	-.024	.030	-.024	-.028	-.028
.666	-----	-----	-----	-.036	-.034	-.034	-.036	-.034	-.036	-.036	-.034	-.034	-.032	-.032	-.034	-.028	-.036	-.032	-----	-----
.714	-.032	-.004	-.036	-.040	-.040	-.038	-.042	-.036	-.038	-.040	-.038	-.042	-.038	-----	-----	-----	-----	-.038	-.042	-.040
.761	-.038	-.046	-.038	-.042	-.040	-.038	-.044	-.036	-.040	-.038	-.038	-.040	-.038	-----	-----	-----	-----	-.040	-.046	-.044
.785	-.038	-.048	-.038	-.042	-.040	-.038	-.042	-.036	-.038	-.038	-.034	-.040	-.032	-.032	-.036	-.030	-.040	-.036	-.046	-.044
.809	-.040	-.042	-.040	-.036	-.040	-.034	-.034	-.032	-.038	-.036	-.034	-.036	-.030	-.034	-.038	-.032	-.040	-.036	-.038	-.040
.832	-.042	-.048	-.044	-.044	-.044	-.040	-.044	-.038	-.038	-.036	-.034	-.040	-.034	-.034	-.040	-.032	-.040	-.036	-.042	-.044
.856	-.044	-.048	-.046	-.048	-.046	-.042	-.044	-.038	-.038	-.036	-.036	-.040	-.034	-.034	-.040	-.034	-.042	-.036	-----	-.044
.880	-.040	-.046	-.044	-.042	-.044	-.040	-.042	-.036	-.036	-.036	-.034	-.038	-.034	-.034	-.040	-.032	-.040	-.036	-----	-.042
.904	-.038	-----	-.040	-.040	-.036	-.038	-.040	-.034	-.036	-.032	-.030	-.034	-.032	-.034	-.038	-.032	-.038	-.034	-----	-.040
.928	-.036	-.036	-.036	-.028	-.028	-.026	-.028	-.024	-.030	-.030	-.028	-.032	-.030	-.030	-.036	-.032	-.038	-.034	-.034	-.040
.951	-.036	-.036	-.036	-.034	-.030	-.030	-.034	-.026	-.030	-.028	-.028	-.032	-.030	-.034	-.038	-.034	-.040	-.036	-.030	-.040
.975	-.036	-.036	-.036	-.034	-.036	-.034	-.034	-.030	-.030	-.028	-.030	-.036	-.034	-.034	-.038	-.034	-.040	-.036	-.036	-.040
.999	-.042	-----	-.044	-.044	-.048	-.046	-.048	-.048	-----	-----	-----	-----	-----	-.042	-.048	-.040	-.044	-.040	-.042	-.048
1.000	-.042	-.046	-.046	-.046	-.050	-.046	-.050	-.048	-.042	-.024	-.042	-.048	-.046	-.042	-.044	-.016	-.042	-.040	-.042	-.048

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(c) α = 2.00

Station, x/L	Radial angle, ϕ, deg																							
	7	22	37	52	67	82	97	112	127	142	157	172	187	202	217	232	247	262	277	292	307	322	337	352
0.024	0.078	0.080	0.072	-----	0.060	0.060	0.052	0.052	0.048	0.048	0.046	0.048	0.048	0.048	0.048	0.066	0.058	0.064	0.066	0.072	0.074	0.100	0.084	0.082
.048	.070	.076	.068	-----	.058	.058	.052	.052	.048	.046	.046	.038	.040	.044	.040	.044	.048	.052	.054	.064	.064	.070	.076	.076
.071	.060	.064	.056	0.056	.048	.052	.048	.048	.044	.040	.040	.032	.032	.032	.030	.034	.040	.050	.054	.064	.064	.070	.076	.064
.095	.056	.062	.058	.054	.048	.050	.042	.044	.036	.034	.034	.032	.030	.032	.030	.034	.036	.044	.042	.052	.052	.056	.064	-----
.119	.054	.062	.060	.052	.048	.046	.040	.038	.032	.032	.032	.026	.026	.028	.024	.028	.034	.032	.034	.044	.044	.052	.058	-----
.143	.048	.056	.052	.048	.042	.040	.034	.034	.028	.018	.024	.022	.020	.024	.020	.024	.028	.042	.032	.044	.052	.050	.054	-----
.167	.044	.052	.048	.044	.040	.038	.032	.032	.024	.018	.026	.020	.018	.022	.020	.024	.028	.032	.032	.042	.044	.050	.056	.056
.190	.042	.050	.044	.040	.036	.034	.028	.028	.024	.020	.024	.018	.016	.020	.016	.020	.024	.026	.028	.038	.036	.046	.048	.048
.214	.040	.046	.040	.036	.034	.028	.024	.024	.016	.016	.020	.014	.012	.018	.012	.020	.024	-----	-----	-----	-----	-----	-----	.046
.238	.030	.036	.030	.024	.020	.016	.012	.012	.008	.010	.010	.006	.008	.008	.008	.010	.012	.014	.010	.024	.024	.028	.028	.036
.262	.024	.030	.026	.022	.018	.014	.012	.012	.006	.008	.008	.002	.004	.004	.002	.008	.012	.012	.008	.022	.020	.024	.024	.030
.285	.016	.026	.020	.020	.012	.012	.008	.008	.004	.004	.004	.002	.002	.006	.004	.006	.010	.012	.010	.020	.018	.020	.020	.020
.333	.012	.020	.010	.006	.002	0	-.004	0	-.006	-.004	-.006	-.002	-.002	.002	0	.002	.006	.006	.002	.012	.010	.014	.016	.018
.381	.004	.012	.004	.004	0	.002	-.006	-.002	-.006	-.006	-.004	-.002	-.004	0	-.002	0	.002	0	-.002	.008	.008	.008	.010	.012
.428	0	.008	0	-.004	-.006	-.006	-.012	-.006	-.012	-.008	-.006	-.010	-.010	-.008	-.012	-.008	-.004	-.006	-.008	0	-.002	0	0	.008
.476	-.010	-.002	-.012	-.010	-.012	-.016	-.020	-.018	-.022	-.022	-.018	-.020	-.022	-.018	-.022	-.020	-.018	-.018	-.018	-.008	-.008	-.004	-.006	-.006
.523	-.008	0	-.012	-.012	-.014	-.020	-.020	-.018	-.024	-.020	-.016	-.020	-.020	-.016	-.022	-.018	-.014	-.004	-.010	-----	.004	-.008	-.008	-.006
.571	-.018	-.010	-.020	-.020	-.022	-.026	-.028	-.028	-.028	-.028	-.024	-.026	-.028	-.024	-.028	-.028	-.026	-.020	-.020	-----	-.012	-----	-----	-.014
.618	-.028	-.020	-.032	-.030	-.034	-.038	-.038	-.032	-.036	-.034	-.030	-.032	-.036	-.032	-.036	-.036	-.032	-.036	-.038	-.028	-.030	-.028	-.030	-.026
.666	-.036	-.028	-----	-.034	-.036	-.038	-.040	-.034	-.038	-.036	-.034	-.034	-.038	-.034	-.036	-.036	-.034	-.036	-.040	-.032	-.038	-.036	-.036	-----
.714	-.040	-.036	-.046	-.042	-.042	-.044	-.042	-.040	-.042	-.040	-.036	-.038	-.040	-.040	-.042	-.040	-.040	-----	-----	-----	-----	-.044	-.044	-.042
.761	-.050	-.040	-.048	-.044	-.042	-.046	-.044	-.040	-.042	-.040	-.036	-.040	-.040	-.040	-.040	-.040	-.038	-----	-----	-----	-----	-.044	-.046	-.048
.785	-.050	-.042	-.052	-.044	-.042	-.046	-.044	-.040	-.042	-.040	-.036	-.038	-.038	-.032	-.040	-.036	-.034	-.036	-.040	-.034	-.040	-.044	-.044	-.048
.809	-.046	-.044	-.044	-.044	-.044	-.042	-.044	-.032	-.036	-.034	-.032	-.034	-.036	-.032	-.036	-.036	-.034	-.040	-.042	-.034	-.038	-.040	-.046	-.038
.832	-.048	-.046	-.052	-.048	-.048	-.050	-.048	-.042	-.044	-.040	-.034	-.038	-.036	-.032	-.040	-.038	-.036	-.040	-.042	-.034	-.042	-.040	-.044	-.044
.856	-.050	-.048	-.052	-.050	-.052	-.050	-.048	-.042	-.044	-.040	-.036	-.036	-.036	-.034	-.040	-.038	-.036	-.040	-.042	-.036	-.044	-.044	-.046	-----
.880	-.048	-.046	-.048	-.046	-.048	-.046	-.046	-.042	-.042	-.040	-.034	-.032	-.034	-.032	-.040	-.036	-.036	-.038	-.042	-.036	-.044	-.040	-.044	-----
.904	-.048	-.040	-----	-.044	-----	-.042	-.044	-.040	-.042	-.038	-.030	-.030	-.028	-.028	-.036	-.036	-.034	-.038	-.042	-.036	-.040	-.040	-.044	-----
.928	-.044	-.040	-.040	-.040	-.040	-.032	-.032	-.032	-.032	-.028	-.018	-.024	-.028	-.024	-.032	-.036	-.034	-.036	-.042	-.036	-.040	-.040	-.042	-.040
.951	-.046	-.040	-.040	-.040	-.040	-.034	-.034	-.034	-.036	-.028	-.022	-.026	-.028	-.026	-.034	-.036	-.034	-.036	-.042	-.040	-.044	-.044	-.046	-.040
.975	-.048	-.044	-.044	-.044	-.044	-.040	-.044	-.042	-.034	-.028	-.020	-.024	-.026	-.026	-.036	-.044	-.042	-.042	-.042	-.040	-.044	-.044	-.046	-.038
.999	-.088	-.082	-----	-.084	-.084	-.082	-.088	-.084	-.082	-.076	-.070	-----	-----	-----	-----	-----	-----	-.076	-.080	-.070	-.070	-.070	-.072	-.076
1.000	-.090	-.090	-.088	-.086	-.092	-.090	-.092	-.088	-.092	-.086	-.088	-.088	-.092	-.084	-.088	-.086	-.086	-.084	-.086	-----	-.076	-.074	-.076	-.074

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(d) $\alpha = 3.00$

Station, x/L	Radial angle, ϕ, deg																			
	9.7	24.7	39.7	54.7	84.7	99.7	114.7	129.7	144.7	174.7	189.7	204.7	219.7	234.7	264.7	279.7	294.7	309.7	324.7	354.7
0.024	0.086	0.088	0.074	-----	0.054	0.050	0.044	0.044	0.040	0.040	0.042	0.042	0.044	0.056	0.056	0.066	0.074	0.080	0.100	0.088
.048	.078	.084	.072	-----	.054	.050	.044	.042	.040	.032	.032	.034	.032	.036	.048	.054	.064	.070	.076	.082
.071	.068	.072	.060	0.050	.050	.046	.040	.040	.034	.024	.024	.024	.026	.028	.048	.054	.064	.068	.076	.072
.095	.066	.068	.060	.048	.042	.040	.034	.030	.028	.022	.024	.026	.026	.028	.038	.042	.052	.058	.064	-----
.119	.060	.068	-----	.048	.042	.036	.032	.028	.020	.020	.020	.020	.020	.022	.026	.032	.044	.048	.056	-----
.143	.056	.062	-----	.044	.034	.030	.026	.022	.016	.014	.016	.016	.016	.016	.026	.034	.044	.048	.052	-----
.167	.052	.060	.050	.040	.032	.026	.024	.020	.016	.014	.014	.014	.012	.016	.026	.034	.042	.048	.052	.066
.190	.052	.056	.044	.034	.026	.022	.016	.016	.012	.010	.010	.012	.012	.012	.022	.028	.036	.040	.046	.052
.214	.046	.052	.042	.032	.022	.018	.016	.008	.012	.010	.010	.010	.008	.012	-----	-----	-----	-----	-----	.050
.238	.042	.042	.030	.020	.012	.008	.060	.004	.004	.002	.002	.004	.004	.002	.008	.012	.024	.020	.026	.040
.262	.034	.036	.024	.016	.010	.006	.004	0	.002	-.002	0	.002	0	.002	.006	.006	.020	.020	.024	.032
.285	.026	.028	.016	.012	.008	.002	.002	-.002	0	-.002	0	.002	.002	0	.008	.010	.020	.018	.016	.020
.333	.020	.022	.008	0	-.002	-.006	-.008	-.008	-.008	-.006	-.006	-.004	-.004	-.004	0	.002	.016	.008	.012	.020
.381	.012	.020	.004	-.002	-.008	-.008	-.010	-.010	-.008	-.006	-.006	-.004	-.004	-.006	-.006	-.004	.008	.004	.008	.012
.428	.010	.012	0	-.008	-.012	-.012	-.012	-.014	-.012	-.014	-.012	-.012	-.014	-.012	-.012	-.008	0	-.004	-.004	.008
.476	-.004	-.002	-.014	-.018	-.024	-.022	-.024	-.024	-.024	-.024	-.022	-.022	-.024	-.026	-.024	-.020	-.010	-.014	-.008	-.004
.523	-.004	0	-.014	-.018	-.024	-.024	-.024	-.024	-.024	-.020	-.015	-.020	-.020	-.024	-.014	-.012	-----	-.008	-.014	-.006
.571	-.014	-.012	-.024	-.028	-.030	-.034	-.032	-.032	-.028	-.030	-.026	-.028	-.032	-.030	-.024	-.022	-----	-.018	-----	-.012
.618	-.026	-.022	-.036	-.040	-.042	-.040	-.038	-.036	-.036	-.034	-.034	-.036	-.036	-.034	-.042	-.042	-.032	-.036	-.036	-.024
.666	-.032	-.030	-----	-.044	-.042	-.040	-.038	-.038	-.040	-.036	-.038	-.036	-.036	-.034	-.042	-.042	-.036	-.032	-.042	-----
.714	-.040	-.036	-.050	-.050	-.046	-.046	-.044	-.044	-.044	-.040	-.038	-.038	-.042	-.044	-----	-----	-----	-----	-.050	-.044
.761	-.046	-.044	-.054	-.056	-.048	-.046	-.046	-.046	-.042	-.040	-.038	-.038	-.040	-.044	-----	-----	-----	-----	-.052	-.050
.785	-.046	-.044	-.056	-.056	-.048	-.046	-.046	-.044	-.040	-.036	-.036	-.032	-.036	-.040	-.040	-.044	-.040	-.050	-.052	-.050
.809	-.046	-.044	-.050	-.048	-.042	-.046	-.038	-.036	-.034	-.032	-.030	-.028	-.032	-.038	-.044	-.046	-.040	-.048	-.048	-.044
.832	-.046	-.048	-.056	-.056	-.054	-.048	-.048	-.046	-.038	-.032	-.030	-.032	-.036	-.040	-.044	-.046	-.040	-.048	-.048	-.046
.856	-.050	-.052	-.060	-.058	-.054	-.050	-.048	-.046	-.038	-.032	-.030	-.032	-.036	-.040	-.044	-.046	-.044	-.052	-.052	-----
.880	-.048	-.052	-.056	-.056	-.050	-.050	-.046	-.044	-.038	-.030	-.028	-.026	-.032	-.038	-.044	-.046	-.042	-.052	-.052	-----
.904	-.046	-.048	-----	-.050	-.048	-.048	-.040	-.038	-.026	-.026	-.026	-.026	-.028	-.036	-.042	-.046	-.042	-.050	-.052	-----
.928	-.044	-.046	-.050	-.048	-.036	-.038	-.028	-.026	-.018	-.018	-.018	-.020	-.024	-.032	-.044	-.046	-.040	-.050	-.052	-.044
.951	-.048	-.046	-.048	-.048	-.040	-.038	-.028	-.026	-.020	-.022	-.020	-.022	-.028	-.032	-.046	-.048	-.044	-.054	-.052	-.044
.975	-.048	-.046	-.048	-.044	-.044	-.042	-.028	-.024	-.020	-.018	-.020	-.022	-.028	-.032	-.050	-.050	-.044	-.052	-.056	-.048
.999	-.099	-.100	-----	-.104	-.105	-.107	-.088	-.080	-.080	-----	-----	-----	-----	-----	-.107	-.105	-.096	-.099	-.100	-.088
1.000	-.109	-.116	-.119	-.120	-.125	-.129	-.124	-.127	-.126	-.117	-.117	-.118	-.119	-.124	-.123	-.117	-----	-.117	-.122	-.092

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(e) α = 4.00

Station, x/L	Radial angle, ϕ, deg																							
	11	26	41	56	71	86	101	116	131	146	161	176	191	206	221	236	251	266	281	296	311	326	341	356
0.024	0.096	0.092	0.080	-----	0.060	0.054	0.046	0.040	0.038	0.032	0.034	0.038	0.036	0.034	0.040	0.046	0.046	0.054	0.068	0.074	0.090	0.099	0.102	0.104
.048	.090	.090	.076	-----	.056	.052	.044	.036	.034	.032	.030	.024	.028	.026	.028	.030	.034	.044	.052	.064	.078	.086	.092	.097
.071	.078	.080	.068	0.064	.050	.048	.040	.034	.034	.028	.028	.020	.020	.018	.018	.022	.026	.044	.052	.062	.074	.084	.090	.084
.095	.074	.076	.064	.060	.046	.042	.036	.026	.026	.020	.022	.020	.020	.018	.022	.022	.026	.036	.044	.052	.066	.072	.078	-----
.119	.070	.076	-----	.060	.046	.038	.030	.022	.022	.018	.016	.016	.016	.012	.014	.016	.020	.024	.032	.042	.054	.064	.070	-----
.143	.066	.070	-----	.056	.040	.032	.024	.016	.014	.012	.012	.012	.010	.008	.010	.012	.014	.024	.032	.042	.052	.060	.070	-----
.167	.062	.066	.054	.052	.036	.030	.022	.012	.014	.012	.012	.012	.010	.008	.012	.010	.014	.022	.032	.042	.054	.062	.070	.072
.190	.062	.060	.048	.044	.028	.022	.014	.008	.010	.008	.010	.008	.008	.004	.010	.008	.010	.018	.028	.034	.046	.052	.058	.064
.214	.056	.056	.046	.044	.028	.020	.012	.006	.006	.008	.008	.006	.008	.004	.006	.008	.010	-----	-----	-----	-----	-----	-----	.060
.238	.048	.048	.034	.030	.016	.008	.006	0	0	0	-.004	-.002	0	-.004	0	0	0	.004	.008	.020	.024	.040	.044	.052
.262	.042	.042	.028	.028	.012	.006	.002	-.004	-.002	-.002	-.002	-.004	-.002	-.006	-.002	-.002	0	.004	.002	.018	.022	.038	.040	.044
.285	.032	.032	.020	.022	.008	.004	0	-.006	-.006	-.004	-.004	-.004	-.002	-.006	-.002	-.002	-.002	.004	.006	.018	.020	.034	.034	.030
.333	.026	.024	.012	.012	-.002	-.008	-.012	-.014	-.014	-.010	-.006	-.008	-.004	-.008	-.006	-.008	-.006	-.004	0	.012	.012	.026	.028	.030
.381	.018	.018	.006	.006	-.006	-.010	-.012	-.016	-.010	-.012	-.010	-.004	-.006	-.010	-.008	-.010	-.010	-.010	-.006	.004	.006	.020	.020	.022
.428	.016	.012	0	0	-.014	-.012	-.016	-.020	-.016	-.016	-.014	-.014	-.012	-.016	-.018	-.018	-.018	-.016	-.010	-.004	-.004	.010	.012	.016
.476	0	0	-.012	-.008	-.020	-.028	-.028	-.030	-.026	-.026	-.024	-.022	-.020	-.028	-.026	-.028	-.030	-.028	-.024	-.014	-.012	.004	.002	.004
.523	.002	0	-.012	-.010	-.022	-.028	-.028	-.032	-.026	-.026	-.024	-.020	-.020	-.024	-.026	-.026	-.026	-.016	-.016	-----	-.008	-.004	-.002	0
.571	-.010	-.012	-.022	-.020	-.030	-.036	-.036	-.038	-.034	-.032	-.028	-.026	-.024	-.034	-.032	-.034	-.036	-.028	-.026	-----	-.018	-----	-----	-.008
.618	-.022	-.022	-.036	-.032	-.044	-.048	-.044	-.046	-.040	-.038	-.032	-.032	-.032	-.040	-.038	-.042	-.042	-.044	-.046	-.038	-.036	-.024	-.024	-.020
.666	-.030	-.030	-----	-.038	-.044	-.048	-.044	-.048	-.040	-.040	-.032	-.032	-.032	-.038	-.034	-.042	-.046	-.044	-.046	-.040	-.046	-.034	-.034	-----
.714	-.038	-.038	-.052	-.046	-.054	-.052	-.052	-.052	-.040	-.040	-.032	-.034	-.032	-.038	-.038	-.042	-.050	-----	-----	-----	-----	-.042	-.040	-.040
.761	-.046	-.046	-.056	-.048	-.054	-.054	-.054	-.050	-.038	-.036	-.034	-.034	-.034	-.036	-.034	-.042	-.050	-----	-.038	-----	-----	-.044	-.046	-.048
.785	-.046	-.048	-.058	-.050	-.054	-.054	-.054	-.048	-.034	-.032	-.030	-.036	-.030	-.030	-.030	-.032	-.046	-.044	-.046	-.044	-.052	-.044	-.046	-.048
.809	-.046	-.048	-.052	-.052	-.054	-.050	-.052	-.040	-.030	-.028	-.024	-.028	-.024	-.026	-.030	-.032	-.046	-.046	-.050	-.042	-.050	-.040	-.046	-.044
.832	-.048	-.054	-.060	-.060	-.060	-.058	-.056	-.050	-.038	-.032	-.028	-.028	-.024	-.028	-.030	-.036	-.048	-.052	-.050	-.044	-.052	-.040	-.044	-.046
.856	-.050	-.056	-.060	-.064	-.062	-.058	-.056	-.050	-.038	-.032	-.028	-.028	-.024	-.028	-.030	-.036	-.048	-.048	-.050	-.048	-.054	-.044	-.048	-----
.880	-.050	-.056	-.060	-.060	-.060	-.056	-.054	-.046	-.034	-.032	-.026	-.024	-.020	-.026	-.028	-.032	-.052	-.048	-.050	-.048	-.054	-.044	-.048	-----
.904	-.048	-.056	-----	-.054	-----	-.052	-.048	-.038	-.030	-.028	-.022	-.016	-.018	-.024	-.026	-.032	-.042	-.048	-.050	-.048	-.054	-.044	-.048	-----
.928	-.048	-.052	-.052	-.050	-.048	-.040	-.030	-.024	-.014	-.016	-.008	-.008	-.012	-.020	-.022	-.028	-.036	-.048	-.050	-.046	-.052	-.044	-.048	-.046
.951	-.050	-.052	-.052	-.048	-----	-.042	-.028	-.022	-.018	-.016	-.010	-.016	-.016	-.022	-.026	-.028	-.036	-.048	-.052	-.048	-.056	-.048	-.054	-.048
.975	-.050	-.052	-.052	-.046	-----	-.042	-.028	-.022	-.018	-.016	-.012	-.012	-.016	-.022	-.024	-.028	-.036	-.050	-.054	-.048	-.054	-.048	-.052	-.052
.999	-.096	-.102	-----	-.108	-----	-.105	-.082	-.082	-.082	-.080	-.062	-----	-----	-----	-----	-----	-----	-.109	-.118	-.104	-.104	-.092	-.094	-.094
1.000	-.106	-.092	-.120	-.124	-----	-.141	-.135	-.132	-.126	-.125	-.130	-.129	-.125	-.122	-.122	-.123	-.134	-.137	-.134	-----	-.120	-.111	-.112	-.103

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(f) $\alpha = 6.05$

Station, x/L	Radial angle, ϕ, deg																			
	12.3	27.3	42.3	57.3	87.3	102.3	117.3	132.3	147.3	177.3	192.3	207.3	222.3	237.3	267.3	282.3	297.3	312.3	327.3	357.3
0.024	0.117	0.109	0.088	-----	0.042	0.026	0.024	0.022	0.020	0.024	0.020	0.024	0.026	0.028	0.042	0.058	0.078	0.097	0.115	0.127
.048	.109	.105	.088	-----	.040	.026	.022	.020	.018	.012	.010	.016	.008	.012	.026	.042	.062	.080	.096	.121
.071	.099	.093	.078	0.060	.034	.022	.020	.016	.014	.008	.006	.010	.006	.008	.028	.042	.064	.082	.096	.109
.095	.094	.089	.076	.056	.026	.014	.012	.008	.010	.008	.008	.008	.006	.008	.020	.030	.054	.074	.088	-----
.119	.088	.087	-----	.054	.024	.006	.006	.002	.004	.004	.002	.004	0	0	.008	.020	.042	.060	.076	-----
.143	.084	.081	-----	.048	.014	.004	.002	0	.002	.002	-.002	0	-.004	-.002	.008	.020	.040	.058	.074	-----
.167	.080	.077	.064	.044	.010	-.002	0	-.004	0	0	-.002	0	-.004	-.004	.004	.018	.040	.058	.074	.097
.190	.078	.069	.056	.036	.006	-.004	-.004	-.004	-.004	-.002	-.004	-.002	-.004	-.004	.004	.012	.032	.046	.064	.086
.214	.074	.069	.054	.034	.002	-.008	-.006	-.008	-.004	-.004	-.006	-.002	-.008	-.008	-----	-----	-----	-----	-----	.082
.238	.064	.057	.042	.024	-.006	-.014	-.012	-.014	-.012	-.006	-.008	-.008	-.012	-.016	-.012	-.004	.012	.028	.044	.070
.262	.056	.051	.036	.018	-.012	-.018	-.016	-.018	-.016	-.008	-.010	-.012	-.016	-.016	-.012	-.010	.010	.026	.040	.064
.285	.048	.041	.028	.012	-.014	-.020	-.018	-.020	-.016	-.010	-.010	-.010	-.014	-.016	-.010	-.004	.010	.024	.036	.050
.333	.042	.034	.024	.002	-.024	-.030	-.024	-.026	-.022	-.012	-.010	-.014	-.018	-.020	-.016	-.012	.002	.016	.028	.050
.381	.032	.024	.012	-.004	-.030	-.034	-.028	-.028	-.024	-.008	-.010	-.020	-.024	-.028	-.026	-.020	-.010	.008	.020	.040
.428	.024	.018	.004	-.012	-.032	-.034	-.030	-.032	-.030	-.012	-.018	-.026	-.034	-.032	-.032	-.026	-.016	-.004	.012	.032
.476	.010	.002	-.012	-.024	-.044	-.044	-.038	-.042	-.040	-.024	-.026	-.034	-.038	-.046	-.046	-.042	-.028	-.012	0	.016
.523	.010	.004	-.012	-.024	-.046	-.052	-.042	-.042	-.042	-.016	-.018	-.022	-.038	-.040	-.034	-.030	-.022	-.010	-.006	.010
.571	-.006	-.012	-.024	-.038	-.056	-.058	-.050	-.042	-.040	-.028	-.028	-.026	-.042	-.046	-.046	-.042	-.030	-.022	-----	.002
.618	-.016	-.024	-.040	-.052	-.068	-.066	-.050	-.044	-.044	-.032	-.034	-.032	-.044	-.052	-.062	-.062	-.053	-.040	-.030	-.014
.666	-.026	-.036	-----	-.056	-.068	-.066	-.046	-.044	-.040	-.034	-.034	-.030	-.040	-.050	-.064	-.064	-.057	-.050	-.040	-----
.714	-.038	-.045	-.056	-.064	-.076	-.070	-.049	-.046	-.040	-.034	-.034	-.032	-.042	-.052	-----	-----	-----	-----	-.050	-.034
.761	-.046	-.053	-.062	-.070	-.072	-.070	-.051	-.044	-.038	-.034	-.034	-.032	-.042	-.046	-----	-.054	-.045	-----	-.054	-.046
.785	-.048	-.057	-.066	-.070	-.072	-.070	-.049	-.042	-.036	-.028	-.030	-.024	-.034	-.040	-.058	-.064	-.063	-.058	-.054	-.048
.809	-.046	-.053	-.060	-.068	-.066	-.068	-.045	-.034	-.032	-.024	-.028	-.024	-.034	-.040	-.062	-.066	-.065	-.056	-.052	-.044
.832	-.048	-.057	-.068	-.076	-.076	-.072	-.051	-.044	-.036	-.028	-.030	-.028	-.036	-.044	-.062	-----	-.065	-.058	-.052	-.046
.856	-.052	-.063	-.070	-.080	-.076	-.074	-.051	-.044	-.038	-.030	-.032	-.030	-.034	-.044	-.062	-.066	-.067	-.064	-.056	-----
.880	-.052	-.063	-.068	-.076	-.072	-.070	-.045	-.038	-.038	-.030	-.030	-.028	-.034	-.040	-.060	-.066	-.067	-.062	-.056	-----
.904	-.054	-.063	-----	-.068	-.064	-.064	-.038	-.034	-.032	-.026	-.028	-.028	-.034	-.040	-.056	-.062	-.065	-.064	-.058	-----
.928	-.054	-.061	-.060	-.064	-.050	-.050	-.026	-.022	-.022	-.016	-.022	-.024	-.032	-.036	-.054	-.062	-.063	-.060	-.058	-.048
.951	-.056	-.061	-.058	-.060	-.052	-.050	-.026	-.026	-.022	-.024	-.026	-.028	-.034	-.036	-.054	-.062	-.063	-.064	-.064	-.050
.975	-.056	-.061	-.056	-.060	-.052	-.050	-.028	-.026	-.028	-.024	-.028	-.028	-.034	-.038	-.058	-.062	-.061	-.060	-.064	-.054
.999	-.103	-.111	-----	-.124	-.115	-.107	-.090	-.084	-.078	-----	-----	-----	-----	-----	-.117	-.122	-.122	-.111	-.108	-.096
1.000	-.121	-.134	-.139	-.144	-.145	-.147	-.140	-.141	-.139	-.131	-.127	-.130	-.137	-.139	-.139	-.141	-.126	-.139	-.140	-.117

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(g) $\alpha = 8.05$

Station, x/L	Radial angle, ϕ, deg																			
	13	28	43	58	88	103	118	133	148	178	193	208	223	238	268	283	298	313	328	358
0.024	0.146	0.122	0.097	-----	0.024	0.010	0.004	0.008	0.012	0.022	0.012	0.008	0.008	0.012	0.024	0.048	0.072	0.103	0.136	0.154
.048	.138	.122	.097	-----	.026	.010	.004	.006	.010	.010	.004	0	-.002	-.002	.006	.028	.056	.082	.116	.144
.071	.128	.109	.086	0.060	.018	.006	0	.002	.004	.006	-.002	-.002	-.006	-.006	.014	.038	.062	.088	.118	.132
.095	.120	.103	.082	.052	.006	-.006	-.012	-.008	-.004	.008	.006	-.004	-.006	-.006	.002	.022	.050	.078	.104	.126
.119	.112	.099	-----	.052	.006	-.008	-.012	-.010	-.004	.002	-.004	-.010	-.012	-.012	-.010	.010	.036	.062	.092	.114
.143	.112	.096	-----	.048	-.002	-.018	-.020	-.016	-.010	0	-.004	-.012	-.014	-.018	-.010	.008	.032	.060	.092	.114
.167	.104	.092	.068	.040	-.010	-.022	-.024	-.018	-.014	-.010	-.004	-.016	-.016	-.018	-.014	.006	.030	.058	.092	.108
.190	.100	.084	.060	.038	-.012	-.026	-.026	-.018	-.018	-.010	.002	-.018	-.018	-.020	-.016	.002	.024	.052	.080	.102
.214	.098	.080	.058	.036	-.014	-.026	-.026	-.022	-.018	-.004	0	-.020	-.022	-.024	-----	-----	-----	-----	-----	.100
.238	.088	.070	.048	.024	-.024	-.034	-.036	-.022	-.024	-.008	-.004	-.026	-.030	-.028	-.034	-.016	.004	.028	.058	.086
.262	.080	.064	.042	.018	-.030	-.036	-.036	-.032	-.028	-.008	-.006	-.026	-.030	-.028	-.036	-.020	0	.028	.056	.082
.285	.072	.054	.032	.012	-.034	-.038	-.038	-.034	-.030	-.008	-.006	-.020	-.030	-.030	-.028	-.014	.002	.026	.050	.072
.333	.064	.044	.020	0	-.042	-.046	-.040	-.038	-.034	-.012	-.010	-.016	-.034	-.032	-.038	-.024	-.008	.016	.044	.068
.381	.052	.036	.012	-.006	-.050	-.054	-.048	-.044	-.032	-.010	-.014	-.020	-.038	-.044	-.050	-.038	-.020	.006	.032	.056
.428	.042	.026	.002	-.016	-.054	-.054	-.052	-.046	-.028	-.018	-.020	-.024	-.042	-.052	-.052	-.040	-.028	-.006	.012	.044
.476	.028	.010	-.012	-.028	-.066	-.062	-.060	-.056	-.032	-.024	-.030	-.032	-.048	-.056	-.068	-.058	-.044	-.018	.008	.032
.523	.026	.008	-.016	-.032	-.070	-.066	-.062	-.050	-.030	-.018	-.020	-.024	-.042	-.052	-.054	-.046	-.034	-.016	0	.028
.571	.010	-.008	-.028	-.044	-.078	-.074	-.064	-.046	-.032	-.024	-.032	-.036	-.050	-.060	-.066	-.060	-.044	-.028	-----	.012
.618	-.004	-.022	-.044	-.060	-.088	-.078	-.068	-.056	-.044	-.032	-.036	-.040	-.054	-.064	-.080	-.080	-.072	-.050	-.024	-.002
.666	-.016	-.032	-----	-.064	-.086	-.078	-.066	-.054	-.044	-.036	-.036	-.040	-.058	-.064	-.080	-.082	-.074	-.058	-.038	-.012
.714	-.024	-.044	-.064	-.076	-.090	-.082	-.068	-.060	-.048	-.042	-.038	-.044	-.062	-.062	-----	-----	-----	-----	-.048	-.022
.761	-.040	-.054	-.072	-.080	-.086	-.082	-.064	-.062	-.046	-.038	-.038	-.044	-.064	-.060	-.060	-.060	-.052	-----	-.056	-.038
.785	-.040	-.060	-.076	-.080	-.086	-.082	-.064	-.062	-.046	-.038	-.034	-.040	-.062	-.056	-.068	-.070	-.076	-.068	-.056	-.038
.809	-.042	-.056	-.068	-.078	-.078	-.076	-.060	-.058	-.046	-.038	-.034	-.042	-.064	-.056	-.068	-.070	-.076	-.064	-.052	-.038
.832	-.044	-.060	-.076	-.084	-.084	-.082	-.068	-.070	-.054	-.038	-.036	-.048	-.070	-.060	-.066	-.060	-.076	-.066	-.052	-.038
.856	-.046	-.064	-----	-.084	-.082	-.078	-.068	-.074	-.056	-.038	-.042	-.052	-.072	-.064	-.066	-.068	-.076	-.070	-.060	-.046
.880	-.046	-.068	-.076	-.078	-.076	-.074	-.068	-.074	-.058	-.034	-.040	-.056	-.074	-.064	-.066	-.064	-.074	-.068	-.060	-.046
.904	-.048	-.068	-----	-.068	-.068	-.066	-.064	-.070	-.054	-.032	-.040	-.058	-.074	-.066	-.062	-.058	-.070	-.068	-.062	-.038
.928	-.048	-.062	-.062	-.062	-.052	-.052	-.056	-.058	-.048	-.022	-.034	-.058	-.072	-.064	-.058	-.062	-.064	-.064	-.060	-.046
.951	-.052	-.064	-.060	-.054	-.054	-.050	-.060	-.064	-.052	-.032	-.044	-.064	-.074	-.066	-.058	-.060	-.062	-.068	-.064	-.050
.975	-.052	-.062	-.058	-.054	-.054	-.048	-.064	-.066	-.060	-.038	-.052	-.068	-.074	-.068	-.058	-.060	-.060	-.064	-.064	-.054
.999	-.102	-.116	-----	-.132	-.130	-.113	-.120	-.111	-.102	-----	-----	-----	-----	-----	-.132	-.134	-.132	-.119	-.108	-.094
1.000	-.132	-.152	-.159	-.160	-.162	-.166	-.160	-.163	-.159	-.142	-.139	-.154	-.159	-.158	-.164	-.160	-.143	-.159	-.158	-.128

NACA

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(h) α = 10.05

Station, x/L	Radial angle, ϕ, deg																							
	13.4	28.4	43.4	58.4	73.4	88.4	103.4	118.4	133.4	148.4	163.4	178.4	193.4	208.4	223.4	238.4	253.4	268.4	283.4	298.4	313.4	328.4	343.4	358.4
0.024	0.172	0.144	0.107	-----	0.026	0.006	-0.010	-0.014	-0.006	-0.004	0.002	0.016	0.002	-0.006	-0.008	-0.006	-0.008	0.002	0.030	0.066	0.111	0.152	0.183	0.188
.048	.166	.144	.107	-----	.028	.004	-.014	-.018	-.012	-.010	-.006	0	-.012	-.016	-.016	-.024	-.020	-.012	.012	.046	.088	.132	.167	.174
.071	.152	.132	.094	0.056	.012	-.008	-.022	-.024	-.016	-.016	-.012	-.002	-.014	-.018	-.022	-.028	-.024	-.004	.020	.058	.097	.136	.169	.162
.095	.144	.124	.090	.052	.010	-.014	-.030	-.030	-.024	-.022	-.018	.002	-.006	-.022	-.024	-.028	-.028	-.022	.004	.042	.084	.120	.155	.154
.119	.138	.124	-----	.056	.012	-.018	-.034	-.034	-.028	-.024	-.020	-.002	-.012	-.028	-.032	-.032	-.032	-.032	-.006	.030	.068	.108	.145	.146
.143	.136	.116	-----	.042	-.002	-.032	-.044	-.042	-.036	-.032	-.028	-.008	-.014	-.035	-.034	-.038	-.030	-.036	-.010	.024	.066	.106	.141	.142
.167	.124	.112	.078	.038	-.004	-.034	-.046	-.042	-.036	-.036	-.024	-.008	-.010	-.035	-.036	-.038	-.038	-.038	-.010	.022	.064	.104	.139	.132
.190	.124	.102	.068	.028	-.012	-.036	-.046	-.042	-.036	-.038	-.022	-.012	-.008	-.035	-.038	-.038	-.040	-.040	-.018	.014	.054	.092	.125	.128
.214	.120	.102	.068	.030	-.012	-.040	-.050	-.046	-.040	-.038	-.016	-.008	-.010	-.035	-.040	-.042	-.042	-----	-----	-----	-----	-----	-----	.124
.238	.108	.088	.052	.016	-.024	-.050	-.058	-.050	-.046	-.044	-.018	-.012	-.014	-.042	-.046	-.048	-.050	-.054	-.036	-.004	.034	.078	.101	.112
.262	.102	.080	.046	.008	-.030	-.052	-.058	-.054	-.048	-.044	-.020	-.014	-.018	-.042	-.048	-.048	-.046	-.054	-.038	-.004	.032	.072	.093	.106
.285	.092	.072	.038	.002	-.038	-.060	-.062	-.058	-.052	-.052	-.024	-.012	-.016	-.040	-.048	-.048	-.048	-.054	-.036	-.006	.032	.070	.088	.098
.333	.084	.062	.028	-.006	-.044	-.064	-.062	-.058	-.056	-.054	-.020	-.016	-.020	-.040	-.052	-.052	-.052	-.058	-.040	-.012	.020	.060	.078	.090
.381	.072	.052	.016	-.016	-.056	-.074	-.070	-.064	-.062	-.060	-.028	-.018	-.028	-.048	-.060	-.064	-.062	-.076	-.060	-.032	.006	.044	.066	.078
.428	.060	.038	.004	-.026	-.062	-.074	-.068	-.070	-.064	-.060	-.024	-.024	-.034	-.050	-.068	-.068	-.064	-.074	-.060	-.038	-.004	.034	.056	.066
.476	.048	.022	-.012	-.040	-.072	-.084	-.078	-.074	-.072	-.068	-.042	-.028	-.038	-.054	-.076	-.072	-.074	-.082	-.076	-.052	-.018	.020	.040	.052
.523	.038	.016	-.016	-.044	-.078	-.090	-.078	-.074	-.076	-.070	-.040	-.024	-.034	-.054	-.076	-.072	-.076	-.070	-.068	-.046	-.016	.012	.032	.044
.571	.024	0	-.030	-.060	-.088	-.098	-.082	-.074	-.074	-.070	-.046	-.030	-.048	-.070	-.084	-.078	-.082	-.074	-.076	-.056	-.030	-----	-----	.030
.618	.008	-.016	-.050	-.074	-.095	-.098	-.090	-.082	-.088	-.088	-.058	-.036	-.056	-.082	-.092	-.082	-.088	-.086	-.094	-.082	-.052	-.016	0	.014
.666	-.006	-.028	-----	-.076	-.095	-.096	-.090	-.082	-.088	-.094	-.068	-.040	-.058	-.090	-.092	-.084	-.090	-.084	-.092	-.084	-.058	-.032	-.014	0
.714	-.016	-.040	-.068	-.088	-.097	-.096	-.090	-.086	-.092	-.099	-.072	-.056	-.066	-.102	-.094	-.088	-.088	-----	-----	-----	-----	-.044	-.028	-.010
.761	-.030	-.050	-.076	-.088	-.088	-.090	-.086	-.086	-.085	-.103	-.074	-.050	-.072	-.106	-.088	-.084	-.080	-.060	-.058	-.058	-----	-.050	-.036	-.026
.785	-.032	-.056	-.080	-.084	-.084	-.088	-.086	-.090	-.086	-.105	-.074	-.050	-.068	-.102	-.086	-.084	-.076	-.068	-.072	-.076	-.066	-.048	-.038	-.026
.809	-.032	-.052	-.070	-.084	-.080	-.080	-.082	-.090	-.076	-.103	-.072	-.052	-.072	-.106	-.084	-.080	-.076	-.070	-.072	-.080	-.066	-.044	-.038	-.026
.832	-.034	-.058	-.076	-.088	-.080	-.082	-.086	-.099	-.088	-.111	-.080	-.056	-.076	-.110	-.084	-.080	-.072	-.066	-.068	-.076	-.066	-.044	-.038	-.026
.856	-.042	-.060	-----	-.088	-.080	-.080	-.080	-.099	-.088	-.115	-.088	-.058	-.082	-.114	-.084	-.078	-.070	-.068	-.068	-.076	-.072	-.052	-.044	-.034
.880	-.042	-.064	-.074	-.080	-.070	-.074	-.074	-.094	-.086	-.111	-.084	-.056	-.078	-.110	-.084	-.076	-.070	-.068	-.064	-.072	-.070	-.052	-.044	-.034
.904	-.042	-.060	-----	-.068	-----	-.064	-.068	-.082	-.076	-.103	-.082	-.056	-.078	-.102	-.076	-.072	-.068	-.066	-.064	-.068	-.068	-.052	-.044	-.030
.928	-.042	-.056	-.062	-.062	-.060	-.048	-.054	-.066	-.064	-.090	-.066	-.048	-.072	-.094	-.070	-.068	-.064	-.060	-.064	-.064	-.064	-.050	-.044	-.036
.951	-.048	-.060	-.060	-.058	-.054	-.050	-.050	-.064	-.064	-.086	-.070	-.058	-.072	-.088	-.068	-.066	-.062	-.060	-.064	-.064	-.068	-.058	-.054	-.042
.975	-.048	-.060	-.058	-.056	-.054	-.052	-.050	-.062	-.060	-.084	-.074	-.064	-.078	-.086	-.064	-.064	-.062	-.060	-.064	-.060	-.064	-.056	-.052	-.046
.999	-.098	-.112	-----	-.140	-.141	-.126	-.103	-.122	-.117	-.111	-.101	-----	-----	------	------	------	------	-.132	-.140	-.136	-.119	-.104	-.095	-.094
1.000	-.154	-.168	-.175	-.180	-.177	-.172	-.174	-.172	-.169	-.174	-.167	-.146	-.162	-.170	-.167	-.164	-.161	-.170	-.168	-.156	-.173	-.172	-.165	-.146

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(i) $\alpha = 12.05$

Station, x/L	Radial angle, ϕ, deg																			
	13.7	28.7	43.7	58.7	88.7	103.7	118.7	133.7	148.7	178.7	193.7	208.7	223.7	238.7	268.7	283.7	298.7	313.7	328.7	358.7
0.024	0.197	0.164	0.115	-----	-0.022	-0.008	-0.036	-0.028	-0.026	0.004	-0.014	-0.024	-0.028	-0.034	-0.028	-0.008	0.058	0.117	0.164	0.219
.048	.191	.164	.119	-----	-.026	-.046	-.038	-.032	-.028	-.008	-.034	-.038	-.036	-.042	-.040	-.008	.042	.097	.150	.209
.071	.181	.150	.103	0.048	-.036	-.052	-.040	-.034	-.036	-.010	-.040	-.042	-.042	-.048	-.034	-.002	.054	.109	.158	.193
.095	.173	.146	.103	.048	-.038	-.056	-.042	-.040	-.040	-.004	-.022	-.048	-.044	-.050	-.050	-.016	.034	.090	.140	.185
.119	.165	.142	-----	.046	-.050	-.064	-.050	-.046	-.044	-.006	-.028	-.050	-.050	-.052	-.062	-.032	.022	.078	.128	.177
.143	.157	.132	-----	.036	-.058	-.072	-.058	-.054	-.050	-.016	-.036	-.056	-.052	-.056	-.062	-.034	.018	.072	.122	.169
.167	.151	.126	.084	.032	-.064	-.074	-.058	-.058	-.054	-.016	-.032	-.058	-.054	-.058	-.062	-.036	.014	.070	.120	.161
.190	.149	.120	.082	.026	-.064	-.072	-.058	-.058	-.054	-.016	-.030	-.062	-.058	-.060	-.068	-.040	.006	.060	.110	.157
.214	.145	.118	.076	.020	-.068	-.074	-.062	-.058	-.054	-.012	-.032	-.062	-.058	-.060	------	------	-----	-----	-----	.153
.238	.133	.102	.064	.008	-.078	-.078	-.066	-.064	-.066	-.018	-.032	-.066	-.064	-.066	-.078	-.056	-.012	.040	.092	.141
.262	.127	.098	.056	.004	-.078	-.080	-.070	-.066	-.068	-.022	-.040	-.066	-.064	-.066	-.076	-.058	-.010	.040	.090	.135
.285	.117	.086	.044	-.008	-.084	-.080	-.072	-.070	-.076	-.022	-.036	-.070	-.062	-.064	-.074	-.058	-.018	.036	.084	.129
.333	.109	.078	.036	-.012	-.088	-.080	-.074	-.070	-.080	-.022	-.044	-.078	-.072	-.076	-.084	-.066	-.024	.028	.076	.117
.381	.096	.062	.020	-.028	-.096	-.084	-.078	-.082	-.090	-.032	-.052	-.086	-.074	-.080	-.096	-.086	-.046	.004	.058	.105
.428	.078	.050	.010	-.038	-.094	-.084	-.078	-.082	-.090	-.032	-.058	-.090	-.080	-.082	-.090	-.086	-.052	-.002	.048	.088
.476	.064	.034	-.008	-.050	-.101	-.090	-.086	-.084	-.104	-.040	-.064	-.098	-.086	-.084	-.090	-.097	-.068	-.020	.028	.074
.523	.058	.028	-.016	-.056	-.101	-.094	-.090	-.084	-.108	-.034	-.064	-.105	-.090	-.088	-.080	-.090	-.062	-.012	.024	.066
.571	.042	.010	-.028	-.070	-.097	-.096	-.090	-.082	-.110	-.046	-.080	-.118	-.099	-.092	-.080	-.094	-.070	-.032	-----	.050
.618	.022	-.010	-.048	-.084	-.101	-.101	-.102	-.099	-.120	-.058	-.092	-.122	-.113	-.092	-.092	-.105	-.098	-.056	-.010	.034
.666	.006	-.020	-----	-.086	-.101	-.101	-.102	-.105	-.120	-.060	-.094	-.122	-.121	-.098	-.092	-.105	-.100	-.060	-.022	.018
.714	-.006	-.034	-.070	-.096	-.101	-.101	-.098	-.105	-.118	-.078	-.101	-.118	-.119	-.098	------	------	-----	-----	-.036	.006
.761	-.018	-.046	-.078	-.100	-.096	-.099	-.094	-.109	-.112	-.074	-.099	-.110	-.109	-.086	-.070	-.070	-.068	-----	-.044	-.008
.785	-.022	-.050	-.080	-.096	-.094	-.099	-.094	-.105	-.108	-.070	-.094	-.102	-.105	-.082	-.080	-.082	-.090	-.068	-.038	-.010
.809	-.022	-.046	-.074	-.096	-.088	-.094	-.090	-.094	-.100	-.074	-.096	-.102	-.099	-.082	-.080	-.082	-.092	-.072	-.036	-.008
.832	-.022	-.050	-.080	-.099	-.092	-.096	-.098	-.101	-.104	-.078	-.099	-.102	-.097	-.082	-.078	-.078	-.090	-.072	-.032	-.012
.856	-.034	-.058	-----	-.099	-.086	-.092	-.090	-.099	-.102	-.082	-.099	-.098	-.094	-.082	-.080	-.080	-.090	-.076	-.046	-.022
.880	-.034	-.060	-.084	-.092	-.080	-.084	-.086	-.092	-.096	-.078	-.094	-.094	-.090	-.084	-.078	-.078	-.090	-.076	-.048	-.024
.904	-.038	-.058	-----	-.080	-.074	-.076	-.074	-.082	-.086	-.076	-.086	-.086	-.082	-.076	-.076	-.078	-.084	-.076	-.048	-.018
.927	-.038	-.058	-.072	-.072	-.056	-.060	-.060	-.062	-.068	-.062	-.076	-.076	-.072	-.068	-.070	-.074	-.078	-.072	-.052	-.026
.951	-.046	-.058	-.068	-.068	-.058	-.060	-.060	-.066	-.068	-.068	-.076	-.072	-.070	-.070	-.070	-.074	-.074	-.076	-.062	-.036
.975	-.046	-.062	-.068	-.064	-.060	-.060	-.062	-.060	-.068	-.070	-.076	-.072	-.066	-.070	-.070	-.074	-.074	-.074	-.060	-.042
.999	-.096	-.112	-----	-.146	-.129	-.109	-.105	-.109	-.118	-----	------	------	------	------	-.141	-.149	-.146	-.125	-.106	-.088
1.000	-.167	-.182	-.187	-.230	-.185	-.187	-.084	-.173	-.178	-.173	-.167	-.174	-.175	-.172	-.181	-.177	-.164	-.183	-.084	-.161

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Continued

(j) α = 14.05

Station, x/L	Radial angle, ϕ, deg																			
	13.9	28.9	43.9	58.9	88.9	103.9	118.9	133.9	148.9	178.9	193.9	208.9	223.9	238.9	268.9	283.9	298.9	313.9	328.9	358.9
0.024	0.230	0.188	0.122	-----	-0.046	-0.070	-0.058	-0.050	-0.050	-0.004	-0.036	-0.050	-0.050	-0.056	-0.054	-0.012	0.050	0.126	0.188	0.254
.048	.224	.194	.130	-----	-.050	-.070	-.058	-.052	-.048	-.014	-.054	-.060	-.054	-.060	-.066	-.030	.038	.110	.174	.246
.071	.214	.182	.114	0.048	-.054	-.070	-.058	-.050	-.056	-.008	-.060	-.068	-.058	-.064	-.056	-.014	.050	.122	.184	.234
.095	.210	.178	.118	.048	-.064	-.076	-.062	-.058	-.056	0	-.032	-.062	-.060	-.062	-.070	-.034	.036	.110	.168	.228
.119	.196	.170	-----	.042	-.072	-.086	-.068	-.064	-.068	-.010	-.048	-.072	-.066	-.068	-.082	-.048	.020	.090	.152	.212
.143	.186	.158	-----	.028	-.082	-.090	-.076	-.074	-.076	-.016	-.060	-.078	-.070	-.074	-.084	-.050	.014	.084	.146	.202
.167	.176	.150	.092	.028	-.086	-.088	-.076	-.074	-.076	-.020	-.052	-.084	-.074	-.076	-.086	-.056	.006	.076	.140	.190
.190	.176	.146	.084	.018	-.090	-.088	-.078	-.076	-.084	-.018	-.060	-.086	-.078	-.080	-.092	-.064	.002	.066	.128	.188
.214	.171	.140	.078	.012	-.094	-.092	-.082	-.080	-.088	-.022	-.062	-.092	-.082	-.084	------	------	-----	-----	-----	.182
.238	.161	.126	.064	-.004	-.103	-.099	-.090	-.084	-.096	-.030	-.064	-.098	-.086	-.088	-.108	-.080	-.018	.046	.116	.174
.262	.155	.122	.058	-.004	-.102	-.096	-.090	-.086	-.100	-.030	-.072	-.098	-.082	-.084	-.100	-.080	-.018	.042	.108	.166
.285	.145	.110	.052	-.014	-.108	-.097	-.090	-.090	-.100	-.030	-.064	-.094	-.084	-.086	-.102	-.076	-.016	.046	.108	.158
.333	.135	.100	.040	-.024	-.110	-.096	-.094	-.090	-.104	-.030	-.076	-.102	-.088	-.096	-.108	-.094	-.036	.026	.090	.146
.381	.119	.086	.022	-.040	-.114	-.101	-.100	-.100	-.116	-.038	-.078	-.106	-.088	-.096	-.106	-.096	-.046	.014	.076	.132
.428	.103	.068	.006	-.056	-.106	-.099	-.098	-.086	-.112	-.038	-.088	-.114	-.098	-.100	-.110	-.107	-.062	-.002	.064	.118
.476	.084	.050	-.010	-.064	-.106	-.103	-.110	-.100	-.124	-.050	-.101	-.126	-.106	-.112	-.114	-.120	-.078	-.022	.040	.096
.523	.080	.042	-.016	-.068	-.102	-.103	-.102	-.102	-.132	-.056	-.109	-.130	-.108	-.108	-.102	-.113	-----	-.016	.038	.092
.571	.062	.030	-.028	-.080	-.108	-.111	-.110	-.106	-.134	-.060	-.115	-.132	-.116	-.108	-.102	-.113	-----	-.038	-----	.070
.618	.040	.004	-.052	-.100	-.114	-.117	-.114	-.118	-.136	-.072	-.123	-.134	-.130	-.116	-.116	-.127	-.114	-.066	-.008	.050
.666	.026	-.004	-----	-.108	-.118	-.123	-.122	-.118	-.132	-.080	-.121	-.130	-.130	-.116	-.110	-.117	-.114	-.070	-.014	.038
.714	.014	-.020	-.078	-.116	-.110	-.115	-.114	-.108	-.116	-.086	-.121	-.126	-.130	-.114	------	------	-----	-----	-.028	.026
.761	0	-.026	-.080	-.112	-.106	-.111	-.114	-.110	-.112	-.078	-.111	-.114	-.114	-.100	-.086	-.084	-----	-----	-.036	.010
.785	-.004	-.030	-.082	-.112	-.104	-.107	-.110	-.108	-.110	-.078	-.105	-.108	-.108	-.096	-.094	-.094	-.102	-.078	-.036	.006
.809	-.002	-.038	-.080	-.116	-.096	-.099	-.098	-.096	-.102	-.074	-.103	-.106	-.102	-.094	-.094	-.094	-.102	-.080	-.036	.010
.832	-----	-.044	-.090	-.116	-.098	-.103	-.100	-.104	-.108	-.074	-.101	-.104	-.098	-.094	-.090	-----	-.098	-.082	-----	.002
.856	-.022	-.054	-.094	-.112	-.094	-.096	-.094	-.100	-.112	-.082	-.105	-.102	-.094	-.090	-.090	-.086	-.098	-.088	-.048	-.010
.880	-.028	-.060	-.094	-.098	-.086	-.092	-.090	-.092	-.106	-.078	-.096	-.098	-.090	-.084	-.086	-.084	-.086	-.086	-.048	-.014
.904	-.028	-.058	-----	-.084	-.078	-.084	-.084	-.084	-.100	-.078	-.096	-.096	-.086	-.084	-.082	-.078	-.082	-.082	-.048	-.014
.928	-.028	-.052	-.074	-.076	-.058	-.070	-.072	-.074	-.088	-.070	-.088	-.086	-.082	-.076	-.078	-.076	-.076	-.078	-.050	-.018
.951	-.030	-.052	-.072	-.072	-.058	-.064	-.074	-.082	-.094	-.080	-.092	-.090	-.084	-.084	-.078	-.080	-.076	-.082	-.058	-.024
.975	-.032	-.054	-.070	-.068	-.056	-.064	-.074	-.078	-.088	-.080	-.092	-.090	-.082	-.084	-.082	-.080	-.076	-.082	-.060	-.026
.999	-.084	-.102	-----	-.148	-.131	-.115	-.114	-.126	-.136	------	------	------	------	------	-.148	-.155	-.146	-.130	-.100	-.078
1.000	-.174	-.186	-.190	-.194	-.189	-.194	-.186	-.178	-.180	-.175	-.171	-.172	-.176	-.176	-.186	-.184	-----	-.186	-.186	-.177

TABLE I.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

NO TRANSITION STRIPS - Concluded

(k) α = 16.10

Station, x/L	Radial angle, ϕ, deg																							
	14	29	44	59	74	89	104	119	134	149	164	179	194	209	224	239	254	269	284	299	314	329	344	359
0.024	0.267	0.214	0.135	-----	-0.036	-0.070	-0.088	-0.074	-0.069	-0.068	-0.074	-0.014	-0.048	-0.070	-0.067	-0.072	-0.082	-0.082	-0.028	0.050	0.137	0.216	0.273	0.292
.048	.267	.226	.145	-----	-.028	-.076	-.088	-.074	-.071	-.072	-.084	-.022	-.072	-.084	-.077	-.078	-.084	-.094	-.048	.034	.117	.202	.261	.287
.071	.253	.210	.131	0.048	-.040	-.082	-.092	-.078	-.073	-.076	-.078	-.018	-.072	-.084	-.083	-.084	-.086	-.084	-.028	.054	.139	.214	.265	.273
.095	.243	.198	.121	.036	-.052	-.097	-.099	-.086	-.089	-.084	-.094	-.018	-.060	-.088	-.085	-.086	-.096	-.105	-.052	.030	.117	.194	.247	.263
.119	.227	.190	-----	.028	-.058	-.109	-.103	-.092	-.093	-.099	-.103	-.026	-.080	-.088	-.093	-.092	-.097	-.117	-.068	.014	.101	.178	.233	.245
.143	.221	.182	-----	.024	-.064	-.117	-.107	-.098	-.101	-.110	-.113	-.030	-.096	-.110	-.099	-.100	-.103	-.121	-.074	.006	.087	.168	.223	.239
.167	.203	.172	.097	.040	-.076	-.121	-.107	-.102	-.105	-.110	-.115	-.030	-.084	-.114	-.101	-.100	-.099	-.119	-.080	.002	.085	.164	.219	.221
.190	.205	.164	.089	.006	-.076	-.121	-.107	-.100	-.103	-.112	-.111	-.030	-.088	-.116	-.105	-.102	-.103	-.121	-.084	-.006	.071	.148	.201	.217
.214	.195	.158	.081	0	-.080	-.121	-.105	-.100	-.105	-.116	-.113	-.030	-.088	-.116	-.105	-.102	-.103	------	------	-----	-----	-----	-----	.213
.238	.189	.148	.073	-.008	-.092	-.127	-.111	-.110	-.111	-.124	-.115	-.036	-.084	-.118	-.101	-.102	-.101	-.123	-.099	-.026	.052	.130	.179	.203
.262	.185	.140	.065	-.016	-.096	-.133	-.111	-.110	-.109	-.124	-.119	-.036	-.096	-.116	-.101	-.102	-.099	-.123	-.099	-.018	.057	.130	.177	.199
.285	.173	.126	.056	-.028	-.107	-.133	-.111	-.112	-.113	-.124	-.125	-.040	-.096	-.116	-.105	-.102	-.103	-.121	-.099	-.026	.052	.124	.171	.189
.333	.161	.118	.040	-.040	-.115	-.129	-.111	-.114	-.115	-.132	-.127	-.046	-.103	-.126	-.109	-.110	-.109	-.127	-.111	-.038	.038	.108	.159	.181
.381	.147	.104	.026	-.048	-.121	-.125	-.111	-.114	-.117	-.136	-.129	-.050	-.113	-.130	-.113	-.116	-.117	-.135	-.125	-.098	.024	.092	.141	.161
.428	.131	.086	.012	-.064	-.131	-.125	-.113	-.118	-.113	-.136	-.135	-.062	-.121	-.132	-.117	-.124	-.121	-.135	-.135	-.072	.004	.078	.127	.147
.476	.109	.070	-.004	-.078	-.143	-.131	-.127	-.130	-.127	-.148	-.147	-.072	-.129	-.142	-.131	-.132	-.133	-.143	-.155	-.054	-.020	.054	.103	.125
.523	.097	.054	-.020	-.092	-.151	-.133	-.129	-.132	-.127	-.148	-.143	-.072	-.129	-.146	-.133	-.130	-.127	-.123	-.139	-----	-.028	.036	.088	.109
.571	.076	.038	-.032	-.108	-.157	-.133	-.131	-.134	-.123	-.142	-.141	-.078	-.143	-.154	-.145	-.132	-.123	-.117	-.127	-----	-.038	-----	-----	.092
.618	.060	.020	-.056	-.124	-.157	-.135	-.135	-.138	-.137	-.152	-.153	-.090	-.149	-.154	-.153	-.126	-.119	-.127	-.139	-.126	-.063	.004	.052	.076
.666	.044	.002	-----	-.134	-.155	-.135	-.135	-.142	-.149	-.154	-.151	-.094	-.147	-.154	-.157	-.124	-.129	-.129	-.139	-.134	-.077	-.012	.034	.056
.714	.026	-.014	-.083	-.136	-.139	-.125	-.125	-.124	-.133	-.142	-.139	-.086	-.129	-.134	-.139	-.116	-.117	------	------	-----	-----	-.022	.020	.040
.761	.020	-.016	-.083	-.132	-.123	-.109	-.111	-.120	-.133	-.134	-.131	-.070	-.107	-.110	-.117	-.100	-.099	-.096	-.090	-----	-----	-.030	.012	.036
.785	.018	-.020	-.087	-.124	-.115	-.105	-.105	-.112	-.127	-.134	-.137	-.074	-.107	-.110	-.113	-.100	-.096	-.103	-.099	-.106	-.077	-.024	.016	.030
.809	.016	-.026	-.081	-.120	-.107	-.096	-.099	-.102	-.117	-.128	-.133	-.082	-.111	-.110	-.111	-.100	-.096	-.084	-.099	-.106	-.077	-.024	.012	.032
.832	.012	-.030	-.085	-.120	-.109	-.101	-.103	-.110	-.133	-.132	-.133	-.086	-.111	-.112	-.109	-.100	-.092	-.096	------	-.106	-.075	-----	.008	.024
.856	-.004	-.042	-.091	-.124	-.107	-.096	-.099	-.108	-.131	-.132	-.135	-.090	-.111	-.108	-.105	-.094	-.088	-.084	-.094	-.102	-.087	-.038	-.004	.012
.880	-.008	-.046	-.091	-.116	-.103	-.094	-.096	-.106	-.125	-.124	-.127	-.086	-.103	-.102	-.099	-.090	-.086	-.096	-.092	-.098	-.083	-.038	-.006	.006
.904	-.008	-.044	-----	-.112	------	-.090	-.096	-.100	-.113	-.112	-.113	-.080	-.096	-.098	-.091	-.084	-.084	-.094	-.092	-.094	-.085	-.038	-.008	.006
.928	-.012	-.050	-.091	-.110	-.099	-.078	-.082	-.086	-.093	-.092	-.096	-.074	-.088	-.084	-.081	-.076	-.078	-.090	-.088	-.088	-.083	-.044	-.012	0
.951	-.024	-.058	-.095	-.108	-.096	-.078	-.080	-.082	-.091	-.092	-.097	-.080	-.088	-.084	-.081	-.076	-.076	-.088	-.088	-.084	-.089	-.052	-.024	-.012
.975	-.034	-.066	-.093	-.096	-.092	-.078	-.080	-.082	-.083	-.088	-.092	-.080	-.088	-.084	-.077	-.076	-.072	-.088	-.084	-.080	-.087	-.062	-.032	-.020
.999	-.084	-.110	-----	-.164	-.165	-.149	-.129	-.114	-.125	-.136	-.135	------	------	------	------	------	------	-.153	-.159	-.152	-.133	-.104	-.078	-.074
1.000	-.185	-.194	-.198	-.204	-.199	-.201	-.199	-.190	-.186	-.194	-.191	-.189	-.183	-.190	-.192	-.188	-.184	-.195	-.195	-----	-.200	-.204	-.203	-.187

NACA

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS

(a) α = 14.00

Station, x/L	Radial angle, ϕ, deg															
	42.7	57.7	72.7	87.7	132.7	147.7	162.7	177.7	222.7	237.7	252.7	267.7	312.7	327.7	342.7	357.7
0.024	0.125	0.054	-0.014	-0.056	-0.046	-0.048	-0.050	-0.016	-0.046	-0.054	-0.066	-0.062	0.123	0.189	0.238	0.260
.048	.137	.064	-.006	-.054	-.038	-.040	-.048	-.004	-.054	-.060	-.070	-.070	.111	.175	.226	.250
.071	.123	.048	-.020	-.066	-.052	-.054	-.062	-.008	-.060	-.066	-.074	-.076	.123	.187	.230	-----
.095	.113	.040	-.030	-.074	-.062	-.058	-.066	-.008	-.062	-.066	-.074	-.078	.105	.167	.214	-----
.119	.109	.032	-.034	-.080	-.066	-.068	-.078	-.014	-.070	-.074	-.078	-.086	.088	.155	.200	.218
.143	.101	.028	-.038	-.086	-.074	-.078	-.086	-.020	-.074	-.078	-.082	-.088	.082	.147	.190	.208
.167	.093	.022	-.046	-.090	-.074	-.078	-.086	-.016	-.074	-.078	-.082	-.092	.082	.143	.190	.204
.190	.088	.020	-.046	-.088	-.074	-.082	-.086	-.016	-.076	-.078	-.082	-.096	.072	.133	.178	.196
.214	.084	.012	-.054	-.096	-.078	-.084	-.086	-.016	-.076	-.078	-.082	-.096	-----	-----	-----	-----
.238	.068	0	-.066	-.102	-.082	-.093	-.090	-.024	-.078	-.082	-.082	-.096	.052	.113	.152	.174
.262	.060	-.010	-.072	-.104	-----	-----	-----	-----	-.078	-.084	-.086	-.099	.048	.110	.152	.174
.285	.052	-.018	-.078	-.106	-.082	-.099	-.090	-.024	-.082	-.086	-.088	-.102	.036	.097	.138	.160
.333	.034	-.032	-.090	-.112	-.088	-.107	-.102	-.030	-.086	-.093	-.094	-.108	.026	.084	.126	.148
.381	.024	-.040	-.096	-.110	-.092	-.115	-.108	-.038	-.090	-.095	-.097	-.110	.010	.072	.112	.134
.428	.012	-.056	-.110	-.112	-.095	-.115	-.108	-.040	-.090	-.099	-.100	-.108	0	.058	.102	.122
.476	-.008	-.074	-.122	-.118	-.099	-.121	-.118	-.052	-.102	-.167	-.106	-.112	-.020	.040	.082	.102
.523	-----	-----	-----	-----	-.099	-.121	-.114	-.052	-.105	-.109	-.106	-.108	-.032	.028	.070	.090
.571	-.036	-.099	-.134	-.112	-.099	-.121	-.118	-.060	-----	-----	-----	-----	-.040	.014	.054	.074
.618	-.054	-.113	-.134	-.114	-.115	-.131	-.130	-.076	-.123	-.115	-.118	-.114	-.068	-.016	.022	.042
.666	-.068	-.121	-.128	-.110	-.119	-.131	-.126	-.076	-.127	-.107	-.110	-.108	-.070	-.018	.018	.034
.714	-.076	-.117	-.116	-.104	-.115	-.107	-.118	-.044	-.127	-.107	-.108	-.102	-.076	-.032	-.002	.016
.761	-.078	-.115	-.106	-.096	-----	-----	-----	-----	-.121	-.107	-.102	-.102	-.076	-.032	-.006	.012
.785	-.080	-.113	-.102	-.096	-.115	-.119	-.114	-.076	-.119	-.105	-----	-.102	-.080	-.034	-.004	.012
.809	-.076	-.105	-.094	-.088	-.103	-.107	-.104	-.072	-.119	-.103	-.102	-.108	-.084	-.040	-.010	.010
.832	-.078	-.105	-.094	-.088	-.111	-.115	-.112	-.084	-.102	-.103	-.108	-.108	-.093	-.048	-.014	.002
.856	-.088	-.101	-.090	-.086	-.103	-.107	-.106	-.084	-.111	-.103	-.108	-.108	-.099	-.060	-.028	-.012
.880	-.088	-.097	-.088	-.086	-.097	-.101	-.102	-.080	-.103	-.103	-.104	-.108	-.105	-.068	-.038	-.022
.904	-.084	-.086	-.080	-.078	-.086	-.090	-.088	-.076	-.099	-.099	-.098	-.102	-.103	-.072	-.044	-.026
.928	-.078	-.080	-.074	-.070	-.064	-.070	-.070	-.062	-.090	-.095	-.095	-.096	-.097	-.064	-.038	-.022
.951	-.076	-.072	-.070	-.066	-.074	-.080	-.080	-.074	-.086	-.090	-.089	-.086	-.105	-.076	-.046	-.030
.975	-.072	-.072	-.070	-.066	-.070	-.076	-.078	-.076	-.088	-.090	-.089	-.092	-.097	-.076	-.048	-.034
.999	-.135	-.153	-.154	-.142	-.115	-.123	-.118	-.114	-----	-----	-----	-----	-.143	-.117	-.092	-.078
1.000	-.199	-.201	-.200	-.198	-.184	-.189	-.190	-.190	-----	-----	-----	-----	-.197	-.201	-.198	-.182

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS - Continued

(b) $\alpha = 16.00$

Station, x/L	Radial angle, ϕ, deg															
	43	58	73	88	133	148	163	178	223	238	253	268	313	328	343	358
0.024	0.130	0.044	-0.038	-0.096	-0.074	-0.074	-0.078	-0.036	-0.074	-0.078	-0.090	-0.103	0.130	0.213	0.270	0.294
.048	.148	.062	-.022	-.092	-.064	-.066	-.074	-.016	-.082	-.082	-.092	-.109	.112	.197	.256	.287
.071	.128	.040	-.042	-.109	-.080	-.082	-.088	-.024	-.090	-.090	-.100	-.115	.130	.207	.260	-----
.095	.122	.036	-.048	-.111	-.090	-.084	-.096	-.024	-.088	-.086	-.096	-.115	.110	.191	.244	-----
.119	.116	.030	-.054	-.117	-.094	-.095	-.104	-.028	-.092	-.090	-.098	-.119	.102	.181	.232	.257
.143	.116	.032	-.052	-.117	-.098	-.103	-.112	-.028	-.098	-.095	-.100	-.125	.090	.171	.224	.247
.167	.106	.020	-.064	-.121	-.102	-.107	-.114	-.028	-.102	-.101	-.104	-.131	.086	.167	.220	.243
.190	.100	.020	-.062	-.125	-.098	-.115	-.116	-.034	-.102	-.099	-.100	-.123	.078	.155	.206	.231
.214	.092	.006	-.074	-.129	-.102	-.115	-.116	-.030	-.098	-.095	-.096	-.123	-----	-----	-----	-----
.238	.082	0	-.080	-.131	-.102	-.121	-.120	-.036	-.098	-.101	-.100	-.125	.056	.137	.186	.209
.262	.072	-.010	-.086	-.131	-----	-----	-----	-----	-.102	-.107	-.108	-.133	.052	.131	.182	.205
.285	.064	-.020	-.096	-.135	-.110	-.123	-.122	-.040	-.108	-.111	-.112	-.139	.044	.121	.170	.193
.333	.044	-.036	-.112	-.141	-.116	-.127	-.128	-.052	-.114	-.119	-.120	-.141	.022	.101	.150	.175
.381	.028	-.052	-.118	-.135	-.118	-.135	-.132	-.052	-.114	-.117	-.120	-.133	.008	.088	.138	.161
.428	.018	-.064	-.128	-.133	-.114	-.135	-.136	-.060	-.114	-.119	-.120	-.131	-.008	.068	.122	.145
.476	-.006	-.082	-.142	-.135	-.118	-.139	-.148	-.070	-.130	-.127	-.124	-.135	-.024	.052	.104	.125
.523	-----	-----	-----	-----	-.118	-.139	-.140	-.066	-.136	-.125	-.124	-.131	-.028	.046	.096	.117
.571	-.036	-.107	-.146	-.127	-.122	-.143	-.146	-.076	-----	-----	-----	-----	-.036	.038	.082	.103
.618	-.052	-.121	-.150	-.129	-.136	-.147	-.148	-.088	-.150	-.135	-.132	-.139	-.068	0	.050	.072
.666	-.068	-.131	-.148	-.127	-.138	-.147	-.146	-.094	-.146	-.131	-.132	-.135	-.076	-.010	.034	.050
.714	-.084	-.137	-.134	-.125	-.133	-.119	-.132	-.066	-.136	-.127	-.124	-.131	-.082	-.020	.020	.038
.761	-.088	-.137	-.126	-.117	-----	-----	-----	-----	-.128	-.119	-.116	-.125	-.088	-.028	.014	.032
.785	-.088	-.131	-.118	-.113	-.130	-.133	-.130	-.092	-.126	-.115	-.114	-.125	-.088	-.030	.010	.026
.809	-.086	-.125	-.110	-.103	-.118	-.121	-.118	-.084	-.124	-.115	-.116	-.123	-.092	-.032	.008	.026
.832	-.092	-.123	-.106	-.101	-.122	-.123	-.124	-.094	-.112	-.115	-.116	-.125	-.094	-.036	.002	.018
.856	-.100	-.117	-.102	-.097	-.114	-.117	-.116	-.092	-.118	-.115	-.116	-.119	-.102	-.050	-.010	.008
.880	-.100	-.107	-.094	-.094	-.106	-.109	-.110	-.092	-.112	-.109	-.112	-.117	-.108	-.058	-.020	-.006
.904	-.094	-.097	-.086	-.084	-.094	-.095	-.098	-.084	-.106	-.103	-.106	-.111	-.108	-.064	-.026	-.010
.928	-.088	-.088	-.078	-.078	-.074	-.078	-.080	-.072	-.102	-.101	-.104	-.109	-.104	-.064	-.026	-.010
.951	-.088	-.082	-.076	-.072	-.088	-.090	-.088	-.086	-.098	-.093	-.090	-.107	-.114	-.074	-.042	-.026
.975	-.084	-.080	-.072	-.070	-.086	-.090	-.092	-.094	-.098	-.099	-.096	-.103	-.104	-.074	-.044	-.026
.999	-.140	-.157	-.158	-.147	-.130	-.139	-.132	-.131	-----	-----	-----	-----	-.148	-.115	-.084	-.070
1.000	-.204	-.205	-.202	-.203	-.190	-.193	-.194	-.195	-----	-----	-----	-----	-.208	-.205	-.200	-.193

NACA

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS - Continued

(c) $\alpha = 20.00$

Station, x/L	Radial angle, ϕ, deg															
	43.4	58.4	73.4	88.4	133.4	148.4	163.4	178.4	223.4	238.4	253.4	268.4	313.4	328.4	343.4	358.4
0.024	0.161	0.036	-0.078	-0.152	-0.121	-0.138	-0.139	-0.062	-0.119	-0.134	-0.141	-0.158	0.163	0.274	0.352	0.381
.048	.179	.056	-.062	-.148	-.113	-.122	-.131	-.034	-.129	-.136	-.145	-.166	.139	.254	.336	.373
.071	.159	.036	-.078	-.168	-.131	-.142	-.153	-.042	-.135	-.146	-.151	-.170	.165	.270	.342	-----
.095	.155	.032	-.086	-.168	-.139	-.158	-.161	-.040	-.131	-.142	-.147	-.172	.143	.250	.326	-----
.119	.151	.028	-.090	-.170	-.143	-.162	-.169	-.042	-.139	-.146	-.149	-.174	.131	.238	.312	.337
.143	.151	.028	-.088	-.170	-.145	-.164	-.171	-.044	-.147	-.154	-.153	-.178	.119	.230	.302	.327
.167	.137	.016	-.099	-.176	-.151	-.170	-.177	-.046	-.147	-.158	-.155	-.178	.115	.222	.298	.325
.190	.133	.012	-.099	-.172	-.147	-.174	-.177	-.054	-.145	-.152	-.153	-.176	.103	.210	.282	.311
.214	.123	.002	-.115	-.176	-.151	-.174	-.177	-.046	-.139	-.150	-.149	-.170	-----	-----	-----	-----
.238	.113	-.006	-.121	-.172	-.151	-.180	-.181	-.056	-.143	-.154	-.153	-.174	.084	.188	.259	.290
.262	.103	-.014	-.129	-.168	-----	-----	-----	-----	-.147	-.158	-.161	-.182	.076	.180	.255	.284
.285	.090	-.028	-.139	-.168	-.151	-.182	-.181	-.064	-.151	-.162	-.163	-.182	.068	.172	.243	.272
.333	.072	-.046	-.155	-.168	-.153	-.184	-.185	-.070	-.155	-.170	-.169	-.182	.048	.148	.219	.248
.381	.052	-.062	-.169	-.160	-.155	-.186	-.185	-.074	-.159	-.166	-.167	-.176	.036	.136	.207	.236
.428	.040	-.076	-.179	-.160	-.153	-.186	-.183	-.074	-.163	-.166	-.167	-.170	.016	.116	.187	.216
.476	.016	-.096	-.191	-.162	-.163	-.194	-.187	-.082	-.185	-.170	-.171	-.176	-.004	.096	.167	.192
.523	-----	-----	-----	-----	-.161	-.186	-.179	-.088	-.187	-.170	-.171	-.176	-.012	.088	.159	.184
.571	-.016	-.128	-.191	-.152	-.171	-.186	-.185	-.090	-----	-----	-----	-----	-.020	.076	.143	.166
.618	-.080	-.148	-.185	-.152	-.179	-.190	-.185	-.112	-.185	-.174	-.181	-.194	-.056	.036	.105	.132
.666	-.060	-.164	-.175	-.144	-.185	-.188	-.179	-.114	-.177	-.170	-.179	-.190	-.068	.026	.088	.112
.714	-.078	-.174	-.167	-.138	-.175	-.162	-.165	-.066	-.169	-.162	-.169	-.182	-.080	.008	.070	.094
.761	-.084	-.172	-.151	-.124	-----	-----	-----	-----	-.161	-.154	-.157	-.174	-.092	-.004	.058	.080
.785	-.088	-.172	-.143	-.118	-.153	-.168	-.155	-.122	-.159	-.148	-.153	-.170	-.092	-.006	.054	.076
.809	-.086	-.164	-.135	-.108	-.141	-.154	-.141	-.122	-.155	-.144	-.153	-.170	-.094	-.012	.048	.072
.832	-.096	-.160	-.129	-.104	-.145	-.154	-.145	-.138	-.149	-.144	-.153	-.174	-.099	-.018	.040	.064
.856	-.103	-.156	-.121	-.098	-.137	-.150	-.139	-.142	-.153	-.142	-.155	-.170	-.109	-.028	.026	.052
.880	-.107	-.144	-.115	-.092	-.129	-.142	-.133	-.142	-.147	-.136	-.153	-.174	-.119	-.044	.014	.036
.904	-.107	-.132	-.105	-.082	-.117	-.128	-.121	-.138	-.137	-.130	-.147	-.170	-.123	-.050	.004	.030
.928	-.107	-.124	-.099	-.076	-.097	-.110	-.101	-.126	-.127	-.126	-.139	-.162	-.119	-.052	0	.024
.951	-.103	-.116	-.095	-.072	-.107	-.118	-.107	-.134	-.121	-.118	-.131	-.146	-.125	-.064	-.016	.008
.975	-.099	-.100	-.086	-.066	-.101	-.116	-.113	-.148	-.121	-.118	-.129	-.150	-.119	-.062	-.014	.008
.999	-.139	-.172	-.171	-.152	-.147	-.154	-.147	-.176	-----	-----	-----	-----	-.159	-.104	-.062	-.040
1.000	-.219	-.222	-.225	-.226	-.211	-.210	-.213	-.218	-----	-----	-----	-----	-.221	-.222	-.221	-.218

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS - Continued

(d) $\alpha = 24.00$

Station, x/L	Radial angle, ϕ, deg															
	43.7	58.7	73.7	88.7	133.7	148.7	163.7	178.7	223.7	238.7	253.7	268.7	313.7	328.7	343.7	358.7
0.024	0.208	0.052	-0.095	-0.211	-0.178	-0.198	-0.202	-0.084	-0.164	-0.174	-0.186	-0.215	0.210	0.349	0.452	0.487
.048	.222	.068	-.079	-.209	-.178	-.180	-.188	-.056	-.187	-.186	-.196	-.231	.178	.321	.426	.470
.071	.202	.048	-.097	-.225	-.194	-.206	-.214	-.062	-.184	-.192	-.198	-.231	.214	.345	.440	-----
.095	.200	.044	-.099	-.223	-.198	-.218	-.222	-.060	-.184	-.194	-.198	-.235	.186	.321	.418	-----
.119	.192	.042	-.105	-.227	-.202	-.224	-.230	-.062	-.188	-.194	-.198	-.235	.178	.313	.408	.436
.143	.192	.044	-.103	-.227	-.206	-.230	-.234	-.074	-.198	-.198	-.202	-.239	.162	.302	.394	.424
.167	.182	.030	-.111	-.229	-.206	-.234	-.236	-.074	-.198	-.198	-.202	-.239	.162	.296	.392	.422
.190	.180	.028	-.113	-.227	-.201	-.238	-.240	-.076	-.194	-.196	-.202	-.237	.146	.282	.377	.406
.214	.164	.012	-.127	-.223	-.201	-.234	-.238	-.072	-.194	-.194	-.198	-.235	-----	-----	-----	-----
.238	.158	.010	-.135	-.219	-.201	-.238	-.242	-.078	-.198	-.198	-.202	-.237	.128	.258	.353	.386
.262	.148	-.004	-.143	-.215	-----	-----	-----	-----	-.198	-.200	-.206	-.243	.118	.250	.345	.376
.285	.128	-.020	-.159	-.211	-.210	-.240	-.240	-.088	-.200	-.202	-.206	-.235	.108	.236	.329	.360
.333	.112	-.036	-.172	-.209	-.210	-.242	-.238	-.092	-.210	-.202	-.210	-.235	.088	.214	.307	.338
.381	.088	-.052	-.186	-.199	-.216	-.244	-.240	-.099	-.214	-.198	-.204	-.231	.072	.196	.291	.322
.428	.076	-.068	-.200	-.195	-.214	-.244	-.240	-.103	-.214	-.194	-.202	-.231	.056	.180	.268	.298
.476	.052	-.088	-.216	-.195	-.224	-.254	-.240	-.117	-.224	-.194	-.212	-.239	.032	.156	.244	.275
.523	-----	-----	-----	-----	-.224	-.248	-.238	-.127	-.218	-.194	-.210	-.237	.024	.148	.236	.267
.571	.014	-.122	-.240	-.187	-.234	-.254	-.240	-.131	-----	-----	-----	-----	.014	.132	.218	.243
.618	-.008	-.142	-.250	-.181	-.238	-.258	-.236	-.151	-.214	-.182	-.204	-.239	-.024	.090	.176	.205
.666	-.032	-.162	-.238	-.171	-.238	-.258	-.238	-.159	-.206	-.174	-.198	-.237	-.036	.076	.159	.185
.714	-.050	-.180	-.224	-.161	-.230	-.234	-.220	-.137	-.194	-.158	-.182	-.231	-.050	.060	.139	.167
.761	-.064	-.190	-.202	-.143	-----	-----	-----	-----	-.178	-.150	-.172	-.227	-.066	.044	.123	.151
.785	-.072	-.198	-.194	-.135	-.210	-.242	-.220	-.177	-.174	-.144	-.170	-.223	-.068	.042	.119	.145
.809	-.072	-.198	-.184	-.125	-.198	-.226	-.202	-.171	-.170	-.142	-.163	-.221	-.072	.036	.113	.139
.832	-.082	-.206	-.180	-.123	-.202	-.234	-.206	-.187	-.162	-.138	-.165	-.221	-.082	.028	.099	.129
.856	-.098	-.216	-.176	-.119	-.196	-.226	-.202	-.187	-.166	-.142	-.165	-.219	-.092	.012	.083	.111
.880	-.108	-.214	-.168	-.117	-.184	-.214	-.194	-.187	-.160	-.142	-.161	-.211	-.108	-.002	.071	.097
.904	-.116	-.206	-.155	-.111	-.182	-.198	-.180	-.181	-.158	-.138	-.157	-.197	-.114	-.012	.059	.084
.928	-.122	-.188	-.147	-.111	-.148	-.168	-.153	-.165	-.154	-.138	-.149	-.183	-.112	-.014	.050	.076
.951	-.124	-.168	-.135	-.111	-.146	-.174	-.161	-.175	-.150	-.138	-.139	-.159	-.122	-.028	.034	.060
.975	-.124	-.148	-.127	-.111	-.142	-.164	-.161	-.187	-.154	-.150	-.139	-.155	-.124	-.030	.032	.058
.999	-.168	-.212	-.200	-.191	-.178	-.194	-.182	-.207	-----	-----	-----	-----	-.164	-.080	-.022	.002
1.000	-.244	-.254	-.250	-.253	-.238	-.242	-.238	-.237	-----	-----	-----	-----	-.250	-.260	-.244	-.247

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS - Continued

(e) $\alpha = 28.00$

Station, x/L	Radial angle, ϕ, deg															
	43.9	58.9	73.9	88.9	133.9	148.9	163.9	178.9	223.9	238.9	253.9	268.9	313.9	328.9	343.9	358.9
0.024	0.265	0.078	-0.092	-0.245	-0.234	-0.258	-0.256	-0.111	-0.212	-0.216	-0.269	-0.235	0.273	0.441	0.555	0.603
.048	.277	.096	-.074	.233	-.226	-.240	-.240	-.092	-.230	-.226	-.240	-.247	.240	.405	.525	.581
.071	.261	.078	-.088	.247	-.240	-.265	-.263	-.096	-.232	-.232	-.240	-.249	.281	.437	.537	.573
.095	.252	.070	-.096	.251	-.248	-.281	-.285	-.099	-.232	-.228	-.236	-.261	.248	.405	.513	-----
.119	.244	.066	-.100	-.253	-.252	-.291	-.287	-.107	-.236	-.228	-.236	-.263	.236	.391	.497	.541
.143	.250	.066	-.096	-.253	-.256	-.297	-.293	-.159	-.240	-.228	-.236	-.263	.224	.381	.483	.525
.167	.236	.058	-.106	-.259	-.256	-.301	-.297	-.111	-.240	-.224	-.230	-.269	.228	.385	.491	.531
.190	.232	.058	-.100	-.259	-.252	-.299	-.295	-.111	-.236	-.224	-.230	-.271	.204	.365	.473	.513
.214	.220	.042	-.120	-.271	-.250	-.299	-.293	-.115	-.240	-.220	-.228	-.271	-----	-----	-----	-----
.238	.216	.040	-.128	-.275	-.256	-.307	-.297	-.119	-.244	-.218	-.228	-.275	.178	.339	.445	.485
.262	.196	.024	-.136	-.283	-----	-----	-----	-----	-.244	-.212	-.224	-.271	.168	.327	.437	.474
.285	.176	.006	-.152	-.291	-.265	-.309	-.299	-.129	-.250	-.208	-.220	-.263	.160	.317	.421	.458
.333	.164	-.010	-.164	-.291	-.263	-.315	-.301	-.135	-.256	-.210	-.222	-.267	.140	.291	.393	.430
.381	.144	-.024	-.176	-.283	-.273	-.323	-.309	-.149	-.248	-.200	-.214	-.257	.124	.275	.377	.416
.428	.124	-.040	-.192	-.283	-.269	-.323	-.311	-.155	-.248	-.192	-.212	-.249	.104	.256	.359	.396
.476	.100	-.062	-.208	-.279	-.277	-.331	-.315	-.163	-.250	-.192	-.214	-.247	.082	.226	.329	.362
.523	-----	-----	-----	-----	-.277	-.337	-.317	-.169	-.244	-.180	-.204	-.239	.072	.216	.321	.356
.571	.060	-.094	-.232	-.267	-.279	-.337	-.317	-.167	-----	-----	-----	-----	.064	.202	.299	.330
.618	.032	-.114	-.250	-.265	-.281	-.339	-.325	-.183	-.236	-.176	-.200	-.241	.024	.162	.261	.294
.666	.014	-.134	-.265	-.255	-.281	-.329	-.319	-.185	-.228	-.176	-.190	-.231	.010	.144	.238	.271
.714	-.006	-.150	-.277	-.245	-.267	-.285	-.309	-.153	-.216	-.176	-.182	-.219	-.004	.130	.222	.251
.761	-.016	-.166	-.281	-.233	-----	-----	-----	-----	-.210	-.182	-.180	-.207	-.020	.110	.200	.233
.785	-.028	-.174	-.277	-.223	-.248	-.287	-.289	-.193	-.210	-.188	-.180	-.203	-.024	.106	.196	.225
.809	-.028	-.174	-.256	-.211	-.228	-.258	-.265	-.189	-.212	-.200	-.184	-.201	-.032	.098	.184	.219
.832	-.040	-.184	-.234	-.203	-.232	-.258	-.269	-.201	-.208	-.212	-.192	-.201	-.044	.088	.176	.207
.856	-.056	-.198	-.214	-.193	-.218	-.244	-.256	-.199	-.218	-.228	-.200	-.201	-.056	.072	.158	.187
.880	-.070	-.206	-.194	-.183	-.204	-.228	-.240	-.199	-.218	-.240	-.216	-.197	-.076	.054	.144	.169
.904	-.078	-.202	-.176	-.171	-.192	-.212	-.224	-.195	-.218	-.261	-.228	-.191	-.086	.042	.130	.159
.928	-.088	-.186	-.156	-.163	-.164	-.186	-.192	-.177	-.218	-.281	-.236	-.187	-.086	.038	.124	.151
.951	-.092	-.162	-.140	-.155	-.168	-.198	-.198	-.191	-.216	-.285	-.240	-.181	-.104	.014	.096	.123
.975	-.108	-.146	-.128	-.141	-.160	-.202	-.196	-.195	-.220	-.305	-.261	-.181	-.112	.010	.092	.119
.999	-.160	-.218	-.212	-.207	-.200	-.246	-.230	-.215	-----	-----	-----	-----	-.164	-.046	.036	.060
1.000	-.263	-.295	-.281	-.261	-.265	-.305	-.279	-.247	-----	-----	-----	-----	-.263	-.293	-.273	-.263

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS - Continued

(f) $\alpha = 32.00$

Station, x/L	Radial angle, ϕ, deg															
	44.1	59.1	74.1	89.1	134.1	149.1	164.1	179.1	224.1	239.1	254.1	269.1	314.1	329.1	344.1	359.1
0.024	0.321	0.109	-0.087	-0.251	-0.277	-0.302	-0.307	-0.173	-0.240	-0.237	-0.258	-0.237	0.337	0.531	0.666	0.710
.048	.341	.133	-.063	-.231	-.269	-.275	-.283	-.159	-.254	-.251	-.270	-.245	.301	.499	.642	.690
.071	.317	.107	-.083	-.249	-.289	-.302	-.313	-.157	-.261	-.257	-.274	-.249	.341	.523	.646	.677
.095	.309	.105	-.087	-.255	-.301	-.316	-.323	-.167	-.265	-.253	-.266	-.261	.307	.493	.622	-----
.119	.305	.097	-.091	-.255	-.303	-.322	-.325	-.173	-.263	-.249	-.258	-.257	.303	.483	.605	.643
.143	.313	.109	-.079	-.249	-.303	-.322	-.313	-.173	-.267	-.249	-.258	-.253	.299	.481	.601	.637
.167	.297	.095	-.091	-.257	-.301	-.322	-.313	-.173	-.273	-.253	-.262	-.271	.291	.481	.605	.643
.190	.299	.097	-.089	-.255	-.297	-.322	-.325	-.173	-.273	-.253	-.262	-.271	.271	.450	.577	.617
.214	.283	.080	-.105	-.271	-.297	-.318	-.319	-.173	-.273	-.249	-.254	-.271	-----	-----	-----	-----
.238	.269	.070	-.115	-.275	-.301	-.326	-.327	-.175	-.277	-.249	-.254	-.277	.236	.418	.547	.589
.262	.252	.056	-.125	-.281	-----	-----	-----	-----	-.277	-.249	-.258	-.277	.228	.414	.541	.579
.285	.234	.040	-.139	-.291	-.297	-.322	-.313	-.175	-.281	-.253	-.260	-.281	.218	.402	.523	.559
.333	.220	.024	-.153	-.302	-.297	-.324	-.313	-.175	-.281	-.257	-.266	-.289	.200	.370	.494	.533
.381	.200	.006	-.168	-.310	-.299	-.326	-.327	-.183	-.281	-.257	-.266	-.281	.180	.354	.478	.515
.428	.178	-.008	-.178	-.318	-.297	-.322	-.313	-.191	-.289	-.257	-.266	-.281	.160	.330	.454	.493
.476	.154	-.028	-.192	-.314	-.297	-.318	-.319	-.195	-.291	-.265	-.274	-.279	.138	.306	.422	.462
.523	-----	-----	-----	-----	-.293	-.318	-.315	-.207	-.285	-.259	-.266	-.273	.130	.294	.414	.454
.571	.116	-.058	-.218	-.287	-.283	-.306	-.303	-.207	-----	-----	-----	-----	.114	.273	.390	.428
.618	.086	-.082	-.236	-.273	-.283	-.302	-.303	-.229	-.283	-.273	-.274	-.273	.080	.237	.349	.386
.666	.066	-.100	-.250	-.257	-.273	-.282	-.287	-.225	-.281	-.273	-.270	-.267	.068	.221	.329	.362
.714	.050	-.117	-.260	-.247	-.256	-.241	-.268	-.197	-.277	-.278	-.268	-.263	.052	.203	.311	.342
.761	.032	-.133	-.256	-.231	-----	-----	-----	-----	-.273	-.278	-.262	-.257	.032	.183	.289	.322
.785	.022	-.141	-.244	-.225	-.240	-.245	-.260	-.241	-.267	-.278	-.258	-.253	.026	.175	.283	.310
.809	.024	-.141	-.232	-.209	-.226	-.225	-.240	-.231	-.265	-.278	-.254	-.249	.020	.169	.270	.306
.832	.010	-.153	-.224	-.209	-.236	-.233	-.246	-.241	-.256	-.278	-.252	-.249	.008	.157	.258	.292
.856	-.012	-.169	-.216	-.207	-.228	-.229	-.246	-.241	-.256	-.278	-.254	-.245	-.008	.141	.236	.271
.880	-.022	-.175	-.212	-.201	-.224	-.221	-.242	-.241	-.248	-.265	-.242	-.237	-.024	.123	.224	.255
.904	-.028	-.179	-.204	-.193	-.220	-.215	-.238	-.239	-.240	-.265	-.234	-.229	-.032	.107	.210	.239
.928	-.036	-.185	-.202	-.193	-.200	-.197	-.214	-.221	-.228	-.253	-.220	-.215	-.034	.103	.202	.231
.951	-.044	-.185	-.196	-.191	-.212	-.213	-.230	-.231	-.216	-.237	-.206	-.197	-.056	.078	.180	.209
.975	-.062	-.193	-.196	-.191	-.212	-.217	-.234	-.237	-.212	-.231	-.202	-.197	-.064	.070	.170	.199
.999	-.128	-.247	-.242	-.233	-.236	-.241	-.242	-.239	-----	-----	-----	-----	-.120	.008	.107	.135
1.000	-.263	-.267	-.264	-.257	-.252	-.257	-.246	-.241	-----	-----	-----	-----	-.263	-.269	-.268	-.265

TABLE II.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON BENT STING

NO TRANSITION STRIPS - Concluded

(g) $\alpha = 36.00$

Station, x/L	Radial angle, ϕ, deg															
	44.2	59.2	74.2	89.2	134.2	149.2	164.2	179.2	224.2	239.2	254.2	269.2	314.2	329.2	344.2	359.2
0.024	0.381	0.138	-0.079	-0.256	-0.321	-0.333	-0.339	-0.248	-0.264	-0.240	-0.268	-0.238	0.409	0.633	0.783	0.834
.048	.405	.168	-.048	-.232	-.288	-.291	-.295	-.194	-.294	-.277	-.317	-.244	.361	.589	.751	.810
.071	.381	.146	-.065	-.248	-.288	-.291	-.287	-.186	-.309	-.313	-.349	-.240	.415	.623	.759	.800
.095	.373	.150	-.071	-.250	-.280	-.291	-.279	-.196	-.323	-.331	-.359	-.256	.381	.593	.735	-----
.119	.367	.136	-.075	-.252	-.276	-.277	-.238	-.228	-.337	-.339	-.363	-.252	.369	.581	.727	.769
.143	.377	.146	-.063	-.248	-.274	-.277	-.226	-.252	-.345	-.349	-.365	-.250	.361	.571	.714	.757
.167	.363	.134	-.075	-.256	-.274	-.277	-.210	-.267	-.351	-.361	-.379	-.273	.359	.571	.716	.761
.190	.359	.134	-.073	-.256	-.270	-.273	-.218	-.285	-.353	-.361	-.371	-.269	.333	.541	.686	.741
.214	.339	.114	-.095	-.269	-.270	-.275	-.220	-.283	-.349	-.349	-.371	-.273	-----	-----	-----	-----
.238	.331	.106	-.099	-.273	-.274	-.289	-.238	-.289	-.349	-.353	-.367	-.281	.304	.507	.654	.707
.262	.319	.096	-.107	-.281	-----	-----	-----	-----	-.345	-.345	-.355	-.287	.296	.499	.646	.697
.285	.296	.074	-.121	-.291	-.282	-.301	-.260	-.293	-.337	-.325	-.331	-.293	.286	.483	.624	.673
.333	.280	.062	-.135	-.299	-.300	-.325	-.289	-.299	-.325	-.307	-.311	-.305	.264	.463	.603	.653
.381	.260	.042	-.147	-.309	-.321	-.361	-.333	-.307	-.304	-.279	-.283	-.309	.240	.435	.575	.633
.428	.240	.028	-.161	-.321	-.341	-.371	-.363	-.313	-.290	-.252	-.256	-.289	.220	.415	.553	.605
.476	.214	.006	-.178	-.331	-.365	-.389	-.398	-.339	-.276	-.242	-.242	-.250	.198	.387	.525	.577
.523	-----	-----	-----	-----	-.377	-.393	-.404	-.361	-.258	-.242	-.238	-.240	.190	.379	.517	.569
.571	.176	-.024	-.202	-.347	-.377	-.379	-.400	-.373	-----	-----	-----	-----	.176	.355	.486	.535
.618	.152	-.046	-.216	-.355	-.365	-.363	-.387	-.385	-.282	-.309	-.287	-.305	.144	.321	.448	.495
.666	.132	-.058	-.228	-.323	-.337	-.329	-.355	-.379	-.319	-.357	-.333	-.339	.132	.307	.430	.475
.714	.108	-.080	-.244	-.269	-.304	-.275	-.327	-.317	-.357	-.397	-.387	-.357	.114	.287	.406	.449
.761	.092	-.096	-.256	-.240	-----	-----	-----	-----	-.391	-.415	-.422	-.371	.092	.263	.385	.425
.785	.078	-.106	-.260	-.236	-.278	-.305	-.335	-.381	-.391	-.397	-.412	-.371	.086	.254	.373	.415
.809	.080	-.104	-.260	-.240	-.262	-.301	-.323	-.367	-.395	-.389	-.400	-.379	.080	.248	.363	.405
.832	.064	-.114	-.268	-.267	-.286	-.337	-.355	-.397	-.381	-.365	-.373	-.385	.070	.234	.349	.391
.856	.046	-.130	-.285	-.291	-.298	-.361	-.373	-.403	-.377	-.345	-.349	-.371	.054	.216	.329	.367
.880	.034	-.138	-.291	-.323	-.319	-.385	-.390	-.401	-.327	-.313	-.319	-.321	.036	.194	.311	.351
.904	.028	-.144	-.297	-.359	-.345	-.401	-.396	-.389	-.343	-.297	-.301	-.307	.024	.182	.299	.337
.928	.022	-.152	-.301	-.389	-.341	-.363	-.355	-.347	-.321	-.281	-.283	-.285	.024	.180	.293	.335
.951	.014	-.154	-.305	-.401	-.383	-.387	-.375	-.365	-.296	-.267	-.258	-.265	-.002	.152	.268	.311
.975	-.008	-.176	-.321	-.409	-.383	-.393	-.387	-.373	-.302	-.283	-.274	-.267	-.010	.144	.254	.295
.999	-.082	-.232	-.353	-.365	-.369	-.357	-.361	-.363	-----	-----	-----	-----	-.072	.072	.180	.216
1.000	-.369	-.359	-.363	-.365	-.365	-.345	-.349	-.361	-----	-----	-----	-----	-.373	-.369	-.371	-.373

TABLE III.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING WITH AXIAL TRANSITION STRIPS

(a) $\alpha = 4.00$

Station, x/L	Radial angle, ϕ, deg													
	56	81	131	146	161	171	221	236	251	261	311	326	341	351
0.024	0.062	0.050	0.032	0.032	0.030	0.030	0.034	0.040	0.042	0.046	0.084	0.094	0.098	0.102
.048	.062	.046	.032	.032	.032	.030	.026	.030	.036	.033	.074	.084	.090	.096
.071	.054	.040	.028	.026	.024	.026	.018	.020	.014	.026	.074	.082	.090	-----
.095	.054	.042	.026	.022	.018	.018	.018	.022	.024	.026	.060	.070	-----	-----
.119	.050	.038	.020	.016	.014	.014	.014	.018	.018	.022	.052	.064	-----	-----
.143	.046	.030	.016	.010	.008	.010	.010	.008	.008	.020	.050	.064	.066	.076
.167	.038	.026	.012	.010	.010	.010	.008	.010	.014	.010	.050	.062	.066	.072
.190	.038	.024	.008	.006	.008	.008	.008	.008	.012	.012	.042	.054	.058	.066
.214	.036	.024	.008	.006	.008	.006	.008	.008	.006	.014	-----	-----	-----	-----
.238	.026	.014	.002	.002	.002	.002	0	0	.006	.008	-----	.034	-----	.050
.262	.022	.010	-.002	.002	0	0	-.004	0	.008	.008	-----	.032	-----	.040
.285	.014	.006	-.006	-.002	-.002	-.002	-.004	0	-.008	.004	-----	.032	-----	.034
.333	.006	-.008	-.012	-.008	-.008	-.002	-.008	-.006	-.002	-.002	-----	.022	-----	.030
.381	.002	-.008	-.012	-.010	-.010	-.004	-.008	-.008	-.010	-.006	-----	.014	-----	.018
.428	-.006	-.016	-.016	-.014	-.014	-.010	-.016	-.016	-.014	-.014	-----	.006	-----	.014
.476	-.014	-.024	-.028	-.026	-.026	-.022	-.028	-.028	-.034	-.030	-----	-.002	-----	.002
.523	-.014	-.024	-.026	-.022	-.022	-.018	-.020	-.022	-.026	-.022	-----	-.010	-----	0
.571	-.026	-.034	-.032	-.030	-.028	-.024	-.032	-.034	-.038	-.038	-----	-.002	-----	.002
.618	-.042	-.046	-.038	-.034	-.034	-.032	-.038	-.038	-.042	-.042	-----	-.028	-----	-.022
.666	-.044	-.046	-.038	-.038	-.036	-.032	-.036	-.040	-.042	-.044	-----	-.018	-----	-.022
.714	-.050	-.048	-.044	-.038	-.038	-.034	-.044	-.046	-.050	-.054	-----	-.046	-----	-.040
.761	-.054	-.054	-.044	-----	-----	-----	-.040	-.042	-.048	-.052	-----	-.050	-----	-.046
.785	-.056	-.054	-.042	-.036	-.036	-.032	-.036	-.034	-.040	-.042	-----	-.050	-----	-.046
.809	-.052	-.054	-.032	-.030	-.026	-.022	-.034	-.034	-.040	-.036	-----	-.046	-----	-.046
.832	-.058	-.062	-.040	-.036	-.034	-.030	-.036	-----	-----	-.054	-----	-.046	-----	-.046
.856	-.062	-.062	-.040	-.038	-.034	-.030	-.036	-.038	-.042	-.046	-----	-.048	-----	-.046
.880	-.060	-.064	-.038	-.036	-.034	-.030	-.034	-.034	-.042	-.046	-----	-.050	-----	-.048
.904	-.054	-.050	-.032	-.030	-.030	-.028	-.032	-.034	-.042	-.044	-----	-.050	-----	-.048
.928	-.050	-.046	-.020	-.018	-.018	-.018	-.028	-.030	-.038	-.040	-----	-.054	-----	-.050
.951	-.050	-.044	-.020	-.018	-.020	-.018	-.028	-.030	-.036	-.038	-----	-.062	-----	-.056
.975	-.042	-.032	-.020	-.018	-.022	-.020	-.026	-.030	-.034	-.034	-----	-.052	-----	-.050
.999	-.016	-.026	-.020	-.018	-.014	-.020	-----	-----	-----	-----	-----	-.010	-----	-.002
1.000	-.018	-.018	-.020	-.018	-.010	-.016	-.010	-.012	-.014	-.012	-----	-.010	-----	-.002

TABLE III.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING WITH AXIAL TRANSITION STRIPS - Continued

(b) $\alpha = 8.05$

Station, x/L	Radial angle, ϕ, deg													
	58	83	133	148	163	173	223	238	253	263	313	328	343	353
0.024	0.060	0.024	0.006	0.008	0.010	0.012	0.006	0.006	0.008	0.014	0.103	0.129	0.152	0.160
.048	.064	.024	.004	.008	.008	.014	-.002	-.004	-.008	.004	.084	.115	.138	.148
.071	.052	.014	-.002	0	.004	.008	.006	-.008	-.024	-.004	.088	.115	.140	-----
.095	.052	.012	-.008	-.006	-.008	.006	-.008	-.010	-.044	.010	.076	.103	-----	-----
.119	.048	.016	-.012	-.008	-.002	.004	-.016	-.020	-.030	.016	.064	.092	-----	-----
.143	.040	.004	-.020	-.016	-.006	-.002	-.022	-.024	-.030	-.026	.062	.088	.110	.120
.167	.034	-.004	-.020	-.016	-.006	-.002	-.020	-.024	-.020	-.032	.060	.088	.110	.120
.190	.034	-.004	-.020	-.020	-.008	0	-.016	-.022	-.026	-.028	.050	.078	.098	.108
.214	.028	-.004	-.020	-.020	-.004	.004	-.014	-.022	-.026	-.028	-----	-----	-----	-----
.238	.016	-.016	-.024	-.020	-.010	0	-.022	-.032	-.036	-.032	-----	.058	-----	.088
.262	.014	-.020	-.028	-.016	-.012	-.004	-.020	-.032	-.028	-.032	-----	.056	-----	.084
.285	.006	-.024	-.032	-.020	-.016	-.008	-.020	-.028	-.046	-.032	-----	.050	-----	.076
.333	-.004	-.036	-.032	-.024	-.020	-.010	-.024	-.032	-.040	-.044	-----	.044	-----	.068
.381	-.012	-.040	-.034	-.026	-.020	-.012	-.032	-.042	-.046	-.052	-----	.032	-----	.056
.428	-.022	-.048	-.034	-.028	-.026	-.020	-.034	-.044	-.048	-.064	-----	.020	-----	.048
.476	-.036	-.056	-.042	-.034	-.032	-.028	-.040	-.052	-.062	-.072	-----	.008	-----	.034
.523	-.038	-.060	-.040	-.032	-.030	-.022	-.036	-.048	-.060	-.072	-----	0	-----	.028
.571	-.052	-.076	-.040	-.034	-.032	-.028	-.040	-.056	-.072	-.082	-----	.002	-----	.028
.618	-.068	-.084	-.048	-.044	-.042	-.034	-.046	-.058	-.076	-.090	-----	-.024	-----	-.004
.666	-.072	-.084	-.048	-.044	-.042	-.032	-.046	-.058	-.076	-.088	-----	-.020	-----	-.004
.714	-.084	-.084	-.048	-.048	-.044	-.036	-.048	-.058	-.084	-.095	-----	-.048	-----	-.024
.761	-.088	-.094	-.044	-----	-----	-----	-.044	-.050	-.076	-.090	-----	-.056	-----	-.038
.785	-.092	-.092	-.044	-.040	-.040	-.030	-.036	-.044	-.064	-.082	-----	-.056	-----	-.038
.809	-.088	-.088	-.036	-.032	-.032	-.026	-.036	-.042	-.064	-.068	-----	-.052	-----	-.040
.832	-.094	-.092	-.044	-.040	-.044	-.034	-.040	-----	-----	-.084	-----	-.052	-----	-.040
.856	-.097	-.092	-.044	-.042	-.044	-.034	-.040	-.028	-.068	-.076	-----	-.060	-----	-.044
.880	-.094	-.092	-.040	-.038	-.040	-.034	-.038	-.042	-.062	-.080	-----	-.062	-----	-.048
.904	-.084	-.078	-.032	-.032	-.036	-.028	-.038	-.040	-.064	-.076	-----	-.064	-----	-.048
.928	-.072	-.068	-.022	-.024	-.024	-.016	-.036	-.036	-.064	-.072	-----	-.068	-----	-.048
.951	-.064	-.060	-.024	-.026	-.024	-.016	-.040	-.034	-.062	-.066	-----	-.078	-----	-.060
.975	-.048	-.052	-.028	-.028	-.028	-.024	-.046	-.034	-.060	-.056	-----	-.072	-----	-.060
.999	-.036	-.044	-.038	-.042	-.038	-.028	-----	-----	-----	-----	-----	-.038	-----	-.004
1.000	-.036	-.040	-.036	-.036	-.014	-.040	-.028	-.036	-.020	-.050	-----	-.034	-----	-.016

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TABLE III.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

WITH AXIAL TRANSITION STRIPS - Continued

(c) α = 12.05

Station, x/L	Radial angle, ϕ, deg													
	58.7	83.7	133.7	148.7	163.7	173.7	223.7	238.7	253.7	263.7	313.7	328.7	343.7	353.7
0.024	0.050	-0.022	-0.030	-0.028	-0.030	-0.016	-0.028	-0.034	-0.042	-0.040	0.114	0.168	0.206	0.219
.048	.054	-.022	-.034	-.030	-.036	-.008	-.038	-.042	-.064	-.048	.098	.152	.192	.205
.071	.038	-.038	-.038	-.038	-.040	-.008	-.042	-.046	-.086	-.058	.110	.158	.194	.199
.095	.042	-.032	-.040	-.038	-.040	-.008	-.040	-.048	-.114	-.058	.096	.142	-----	-----
.119	.036	-.028	-.042	-.046	-.032	-.010	-.054	-.054	-.098	-.082	.082	.132	-----	-----
.143	.026	-.036	-.058	-.050	-.038	-.018	-.062	-.060	-.112	-.084	.074	.124	.160	.171
.167	.018	-.044	-.058	-.048	-.036	-.016	-.046	-.070	-.094	-.084	.072	.122	.160	.171
.190	.022	-.044	-.046	-.038	-.034	-.020	-.054	-.072	-.094	-.090	.062	.112	.148	.159
.214	.014	-.054	-.054	-.034	-.032	-.012	-.050	-.078	-.094	-.088	-----	-----	-----	-----
.238	.002	-.064	-.070	-.040	-.038	-.028	-.058	-.082	-.110	-.096	-----	.090	-----	.139
.262	-.002	-.070	-.074	-.040	-.042	-.028	-.060	-.086	-.102	-.099	-----	.086	-----	.133
.285	-.014	-.076	-.080	-.042	-.050	-.028	-.048	-.086	-.114	-.099	-----	.082	-----	.127
.333	-.022	-.080	-.074	-.038	-.046	-.024	-.064	-.090	-.114	-.111	-----	.070	-----	.111
.381	-.038	-.088	-.062	-.048	-.048	-.036	-.054	-.090	-.134	-.121	-----	.054	-----	.099
.428	-.050	-.103	-.062	-.038	-.042	-.032	-.052	-.086	-.120	-.129	-----	.042	-----	.084
.476	-.060	-.107	-.054	-.046	-.054	-.042	-.048	-.086	-.130	-.131	-----	.022	-----	.070
.523	-.070	-.107	-.062	-.046	-.054	-.040	-.058	-.090	-.134	-.139	-----	.020	-----	.062
.571	-.088	-.123	-.074	-.048	-.058	-.044	-.082	-.096	-.136	-.143	-----	.014	-----	.056
.618	-.102	-.131	-.106	-.062	-.066	-.056	-.094	-.102	-.138	-.147	-----	-.018	-----	.024
.666	-.110	-.125	-.122	-.062	-.062	-.052	-.106	-.106	-.128	-.155	-----	-.014	-----	.018
.714	-.122	-.123	-.126	-.068	-.058	-.058	-.118	-.106	-.138	-.145	-----	-.046	-----	-.004
.761	-.122	-.115	-.126	-----	-----	-----	-.120	-.090	-.118	-.129	-----	-.058	-----	-.016
.785	-.114	-.109	-.120	-.094	-.054	-.048	-.118	-.080	-.114	-.127	-----	-.054	-----	-.020
.809	-.106	-.101	-.110	-.102	-.052	-.044	-.118	-.074	-.102	-.105	-----	-.054	-----	-.020
.832	-.106	-.099	-.118	-.122	-.068	-.058	-.118	-----	-----	-.111	-----	-.058	-----	-.020
.856	-.100	-.092	-.120	-.138	-.078	-.062	-.120	-.088	-.098	-.105	-----	-.062	-----	-.030
.880	-.090	-.080	-.120	-.138	-.084	-.064	-.120	-.098	-.092	-.098	-----	-.066	-----	-.036
.904	-.076	-.070	-.116	-.130	-.086	-.060	-.118	-.102	-.082	-.092	-----	-.066	-----	-.036
.928	-.068	-.064	-.100	-.112	-.086	-.052	-.108	-.094	-.074	-.082	-----	-.066	-----	-.036
.951	-.062	-.056	-.094	-.110	-.100	-.056	-.102	-.088	-.070	-.076	-----	-.074	-----	-.044
.975	-.058	-.052	-.082	-.100	-.118	-.072	-.090	-.084	-.062	-.072	-----	-.064	-----	-.044
.999	-.062	-.070	-.058	-.070	-.058	-.080	-----	-----	-----	-----	-----	-.066	-----	-.052
1.000	-.066	-.070	-.050	-.066	-.046	-.068	-.048	-.056	-.040	-.060	-----	-.054	-----	-.038

TABLE III.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

WITH AXIAL TRANSITION STRIPS - Concluded

(d) $\alpha = 16.10$

Station, x/L	Radial angle, ϕ, deg													
	59	84	134	149	164	174	224	239	254	264	314	329	344	354
0.024	0.042	-0.074	-0.070	-0.070	-0.078	-0.050	-0.070	-0.070	-0.088	-0.094	0.136	0.218	0.274	0.294
.048	.052	-.070	-.076	-.074	-.086	-.034	-.078	-.078	-.136	-.103	.122	.204	.262	.286
.071	.038	-.084	-.076	-.074	-.078	-.026	-.084	-.082	-.156	-.109	.162	.216	.270	-----
.095	.034	-.088	-.106	-.086	-.070	-.038	-.064	-.086	-.176	-.133	.122	.196	-----	-----
.119	.026	-.068	-.110	-.100	-.068	-.040	-.134	-.084	-.150	-.161	.103	.182	-----	-----
.143	.020	-.074	-.106	-.102	-.086	-.046	-.086	-.132	-.180	-.161	.092	.172	.224	.242
.167	.006	-.086	-.090	-.090	-.094	-.046	-.082	-.152	-.150	-.169	.086	.166	.218	.240
.190	.008	-.090	-.090	-.070	-.088	-.046	-.094	-.140	-.138	-.165	.074	.154	.200	.222
.214	.002	-.107	-.102	-.060	-.088	-.044	-.134	-.142	-.134	-.173	-----	-----	-----	-----
.238	-.010	-.117	-.118	-.066	-.102	-.050	-.120	-.144	-.134	-.175	-----	.132	-----	.201
.262	-.020	-.125	-.126	-.074	-.097	-.042	-.112	-.138	-.134	-.177	-----	.132	-----	.197
.285	-.032	-.129	-.148	-.076	-.090	-.046	-.118	-.132	-.126	-.169	-----	.124	-----	.187
.333	-.044	-.129	-.150	-.084	-.074	-.050	-.118	-.132	-.146	-.167	-----	.112	-----	.177
.381	-.060	-.121	-.138	-.064	-.064	-.050	-.040	-.130	-.170	-.185	-----	.096	-----	.157
.428	-.072	-.131	-.128	-.062	-.078	-.056	-.088	-.140	-.186	-.185	-----	.078	-----	.145
.476	-.088	-.131	-.134	-.098	-.114	-.070	-.116	-.138	-.192	-.181	-----	.058	-----	.117
.523	-.100	-.129	-.136	-.156	-.122	-.066	-.150	-.132	-.164	-.153	-----	.040	-----	.107
.571	-.112	-.129	-.142	-.190	-.122	-.072	-.176	-.126	-.148	-.141	-----	.040	-----	.099
.618	-.124	-.125	-.152	-.202	-.146	-.090	-.166	-.114	-.136	-.135	-----	.008	-----	.070
.666	-.132	-.123	-.150	-.188	-.162	-.086	-.154	-.118	-.134	-.135	-----	.004	-----	.058
.714	-.132	-.113	-.126	-.152	-.182	-.086	-.136	-.102	-.114	-.127	-----	-.020	-----	.036
.761	-.132	-.099	-.118	-----	-----	-----	-.122	-.078	-.088	-.117	-----	-.028	-----	.030
.785	-.132	-.092	-.112	-.130	-.194	-.082	-.122	-.084	-.078	-.113	-----	-.022	-----	.028
.809	-.124	-.082	-.104	-.114	-.174	-.088	-.122	-.100	-.078	-.103	-----	-.024	-----	.028
.832	-.124	-.082	-.116	-.126	-.176	-.101	-.120	-----	-----	-.119	-----	-.024	-----	.026
.856	-.124	-.078	-.116	-.126	-.168	-.105	-.118	-.100	-.070	-.119	-----	-.036	-----	.014
.880	-.118	-.074	-.112	-.122	-.158	-.101	-.114	-.094	-.070	-.119	-----	-.038	-----	.004
.904	-.112	-.070	-.104	-.110	-.136	-.094	-.104	-.086	-.070	-.117	-----	-.040	-----	.002
.928	-.106	-.066	-.088	-.098	-.118	-.080	-.094	-.082	-.066	-.113	-----	-.048	-----	.002
.951	-.094	-.062	-.086	-.098	-.114	-.082	-.088	-.082	-.064	-.109	-----	-.060	-----	-.018
.975	-.076	-.056	-.078	-.092	-.112	-.088	-.086	-.078	-.062	-.097	-----	-.054	-----	-.024
.999	-.048	-.078	-.054	-.050	-.060	-.090	-----	-----	-----	-----	-----	-.064	-----	-.058
1.000	-.052	-.078	-.046	-.038	-.034	-.072	-.038	-.042	-.026	-.054	-----	-.056	-----	-.068

TABLE IV.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

HALF AXIAL TRANSITION STRIPS

(a) $\alpha = 4.00$

Station, x/L	Radial angle, ϕ, deg		
	131	221	311
0.024	0.036	0.040	0.086
.048	.038	.034	.078
.071	.032	.022	.076
.095	.026	.022	.064
.119	.022	.016	.056
.143	.016	.014	.056
.167	.016	.012	.052
.190	.008	.008	.046
.214	.008	.008	.046
.238	0	0	-----
.262	0	-.002	-----
.285	-.004	-.002	-----
.333	-.010	-.008	-----
.381	-.012	-.010	-----
.428	-.016	-.016	-----
.476	-.024	-.024	-----
.523	-.026	-.020	-----
.571	-.034	-.032	-----
.618	-.040	-.040	-----
.666	-.040	-.036	-----
.714	-.040	-.040	-----
.761	-.036	-.036	-----
.785	-.036	-.028	-----
.809	-.030	-.028	-----
.832	-.036	-.036	-----
.856	-.038	-.028	-----
.880	-.036	-.030	-----
.904	-.028	-.030	-----
.928	-.016	-.024	-----
.951	-.016	-.024	-----
.975	-.016	-.022	-----
.999	-.020	-----	-----
1.000	-.018	-.010	-----

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TABLE IV.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

HALF AXIAL TRANSITION STRIPS - Continued

(b) $\alpha = 8.05$

Station, x/L	Radial angle, ϕ, deg		
	133	223	313
0.024	0.006	0.006	0.104
.048	.006	0	.086
.071	0	-.006	.090
.095	-.008	-.006	.078
.119	-.010	-.012	.064
.143	-.016	-.014	.064
.167	-.018	-.018	.062
.190	-.020	-.020	.054
.214	-.022	-.022	.054
.238	-.030	-.030	-----
.262	-.030	-.030	-----
.285	-.034	-.030	-----
.333	-.038	-.034	-----
.381	-.046	-.042	-----
.428	-.050	-.042	-----
.476	-.054	-.048	-----
.523	-.048	-.044	-----
.571	-.048	-.050	-----
.618	-.056	-.058	-----
.666	-.056	-.056	-----
.714	-.060	-.062	-----
.761	-.054	-.050	-----
.785	-.054	-.040	-----
.809	-.046	-.040	-----
.832	-.054	-.042	-----
.856	-.058	-.042	-----
.880	-.056	-.042	-----
.904	-.048	-.044	-----
.928	-.038	-.042	-----
.951	-.038	-.048	-----
.975	-.042	-.052	-----
.999	-.046	-----	-----
1.000	-.034	-.024	-----

TABLE IV.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

HALF AXIAL TRANSITION STRIPS - Continued

(c) $\alpha = 12.05$

Station, x/L	Radial angle, ϕ, deg		
	133.7	223.7	313.7
0.024	-0.030	-0.032	0.116
.048	-.032	-.038	.098
.071	-.040	-.044	.108
.095	-.040	-.044	.092
.119	-.048	-.052	.080
.143	-.056	-.054	.074
.167	-.060	-.056	.072
.190	-.060	-.060	.064
.214	-.060	-.060	.060
.238	-.068	-.064	-----
.262	-.068	-.064	-----
.285	-.072	-.064	-----
.333	-.072	-.076	-----
.381	-.080	-.078	-----
.428	-.084	-.082	-----
.476	-.086	-.088	-----
.523	-.086	-.092	-----
.571	-.086	-.100	-----
.618	-.103	-.116	-----
.666	-.107	-.124	-----
.714	-.111	-.124	-----
.761	-.107	-.112	-----
.785	-.107	-.104	-----
.809	-.098	-.100	-----
.832	-.100	-.096	-----
.856	-.100	-.092	-----
.880	-.092	-.086	-----
.904	-.082	-.084	-----
.928	-.064	-.072	-----
.951	-.064	-.068	-----
.975	-.060	-.068	-----
.999	-.044	-----	-----
1.000	-.040	-.038	-----

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TABLE IV.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

HALF AXIAL TRANSITION STRIPS - Concluded

(d) $\alpha = 16.10$

Station, x/L	Radial angle, ϕ, deg		
	134	224	314
0.024	-0.064	-0.064	0.141
.048	-.066	-.076	.125
.071	-.072	-.080	.143
.095	-.080	-.082	.121
.119	-.090	-.090	.105
.143	-.099	-.097	.095
.167	-.101	-.101	.088
.190	-.101	-.101	.078
.214	-.101	-.101	.078
.238	-.107	-.099	-----
.262	-.105	-.099	-----
.285	-.113	-.101	-----
.333	-.113	-.105	-----
.381	-.113	-.109	-----
.428	-.113	-.113	-----
.476	-.123	-.125	-----
.523	-.125	-.129	-----
.571	-.121	-.141	-----
.618	-.137	-.149	-----
.666	-.145	-.157	-----
.714	-.131	-.137	-----
.761	-.129	-.113	-----
.785	-.123	-.109	-----
.809	-.117	-.107	-----
.832	-.129	-.105	-----
.856	-.129	-.099	-----
.880	-.121	-.093	-----
.904	-.109	-.088	-----
.928	-.090	-.076	-----
.951	-.084	-.076	-----
.975	-.080	-.072	-----
.999	-.058	-----	-----
1.000	-.044	-.040	-----

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TABLE V.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED AT MAXIMUM THICKNESS $x/L = 0.614$

(a) $\alpha = 4.00$

Station, x/L	Radial angle, ϕ, deg							
	56	86	146	176	236	266	326	356
0.024	0.062	0.042	0.030	0.032	0.038	0.048	0.103	0.105
.048	.060	.042	.032	.030	.028	.042	.084	.094
.071	.050	.034	.026	.024	.020	.028	-----	-----
.095	.048	.032	.016	.016	.020	.030	-----	-----
.119	.050	.030	.016	.012	.016	.024	.060	-----
.143	.042	.026	.010	.008	.008	.020	.060	.074
.167	.040	.022	.012	.010	.008	.014	.060	.072
.190	.038	.018	.008	.008	.008	.012	.052	.066
.214	.034	.016	.004	.004	.004	.010	.052	.064
.238	.026	.008	0	0	-.002	.002	-----	-----
.262	.024	.006	-.004	-.002	-.004	.004	-----	-----
.285	.016	0	-.006	-.004	-.006	0	.034	.050
.333	.002	-.008	-.012	-.008	-.010	-.008	.034	.046
.381	0	-.014	-.014	-.010	-.012	-.010	.022	.034
.428	-.006	-.018	-.016	-.014	-.020	-.018	.018	.032
.476	-.016	-.026	-.028	-.024	-.032	-.034	.014	.022
.523	-.016	-.026	-.028	-.022	-.026	-.028	.006	.018
.571	-.026	-.038	-.032	-.026	-.036	-.040	-.002	.002
.618	-.056	-.064	-.046	-.052	-.048	-.056	-.010	.002
.666	-----	-.040	-.042	-.032	-.044	-.052	-.006	.004
.714	-.050	-.054	-.036	-.030	-.040	-.054	-.038	-.026
.761	-.054	-.050	-----	-----	-.040	-.052	-.022	-.014
.785	-.054	-.054	-.034	-.026	-.032	-.040	-.044	-.038
.809	-.050	-.048	-.028	-.016	-.028	-.038	-.048	-.046
.832	-.054	-.054	-.034	-.024	-.036	-.052	-.048	-.046
.856	-.062	-.060	-.036	-.026	-.036	-.048	-----	-----
.880	-.062	-.056	-.036	-.028	-.034	-.048	-----	-----
.904	-.054	-.046	-.030	-.022	-.020	-.044	-----	-----
.928	-.048	-.038	-.016	-.012	-.032	-.040	-.048	-.046
.951	-.046	-.036	-.016	-.016	-.032	-.040	-.050	-.046
.975	-.046	-.030	-.020	-.020	-.032	-.040	-.054	-.052
.999	-.014	-.014	-.008	-.014	-----	-----	-.062	-.058
1.000	.002	-.008	.002	-.002	-.004	0	-.058	-.058

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TABLE V.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED AT MAXIMUM THICKNESS x/L = 0.614 - Continued

(b) $\alpha = 8.05$

Station, x/L	Radial angle, ϕ, deg							
	58	88	148	178	238	268	328	358
0.024	0.062	0.010	0.006	0.014	0.002	0.018	0.130	0.158
.048	.062	.012	.006	.014	-.008	.006	.114	.146
.071	.050	-.002	0	.010	-.012	0	-----	-----
.095	.046	-.006	-.008	.004	-.012	0	-----	-----
.119	.046	-.006	-.008	.002	-.018	-.010	-----	-----
.143	.040	-.012	-.016	-.002	-.022	-.012	.090	.120
.167	.034	-.020	-.018	-.004	-.024	-.018	.086	.118
.190	.034	-.018	-.018	-.002	-.026	-.020	.078	.106
.214	.032	-.020	-.022	-.002	-.028	-.022	.080	.106
.238	.018	-.020	-.030	-.006	-.034	-.034	-----	-----
.262	.016	-.032	-.032	-.006	-.034	-.034	-----	-----
.285	.010	-.038	-.036	-.010	-.034	-.034	.058	.084
.333	-.006	-.048	-.036	-.010	-.038	-.038	.058	.080
.381	-.010	-.054	-.034	-.014	-.048	-.050	.054	.076
.428	-.022	-.056	-.034	-.018	-.054	-.056	.044	.064
.476	-.034	-.060	-.038	-.024	-.062	-.066	.034	.052
.523	-.038	-.070	-.036	-.020	-.058	-.064	.022	.044
.571	-.048	-.078	-.038	-.026	-.062	-.078	.008	.028
.618	-.082	-.102	-.054	-.040	-.066	-.088	0	.024
.666	-----	-.046	-.050	-.036	-.062	-.094	.002	.026
.714	-.082	-.096	-.048	-.034	-.056	-.090	-.030	-.012
.761	-.086	-.092	-----	-----	-.050	-.082	-.024	-.006
.785	-.086	-.092	-.054	-.030	-.044	-.074	-.046	-.024
.809	-.082	-.086	-.046	-.022	-.038	-.070	-.054	-.042
.832	-.086	-.086	-.056	-.032	-.046	-.074	-.054	-.042
.856	-.094	-.088	-.056	-.036	-.048	-.074	-----	-----
.880	-.094	-.076	-.054	-.036	-.046	-.070	-----	-----
.904	-.086	-.060	-.044	-.034	-.030	-.062	-----	-----
.928	-.078	-.052	-.034	-.022	-.042	-.056	-.058	-.050
.951	-.072	-.048	-.034	-.024	-.040	-.052	-.062	-.050
.975	-.070	-.040	-.038	-.032	-.040	-.050	-.066	-.056
.999	-.040	-.044	-.028	-.040	-----	-----	-.074	-.064
1.000	-.016	-.044	-.022	-.022	-.014	-.024	-.074	-.068

TABLE V.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED AT MAXIMUM

THICKNESS $x/L = 0.614$ - Continued

(c) $\alpha = 12.05$

Station, x/L	Radial angle, ϕ, deg			
	58.7	148.7	238.7	328.7
0.024	0.048	-0.028	-0.036	0.170
.048	.052	-.032	-.044	.156
.071	.034	-.036	-.048	-----
.095	.034	-.040	-.050	-----
.119	.032	-.044	-.056	-----
.143	.024	-.056	-.058	.128
.167	.016	-.058	-.060	.124
.190	.020	-.058	-.058	.116
.214	.016	-.058	-.064	.112
.238	.004	-.068	-.068	-----
.262	0	-.072	-.066	-----
.285	-.014	-.076	-.066	.092
.333	-.020	-.080	-.078	.084
.381	-.036	-.092	-.082	.084
.428	-.044	-.092	-.084	.072
.476	-.058	-.108	-.084	.052
.523	-.064	-.108	-.088	.040
.571	-.080	-.112	-.092	.024
.618	-.108	-.136	-.090	.020
.666	-----	-.116	-.090	.016
.714	-.112	-.106	-.076	-.016
.761	-.124	-----	-.058	-.014
.785	-.120	-.072	-.056	-.038
.809	-.120	-.056	-.052	-.052
.832	-.126	-.056	-.064	-.048
.856	-.134	-.052	-.068	-----
.880	-.140	-.052	-.064	-----
.904	-.136	-.042	-.036	-----
.928	-.128	-.032	-.054	-.064
.951	-.118	-.044	-.050	-.068
.975	-.104	-.048	-.052	-.076
.999	-.060	-.032	-----	-.088
1.000	-.040	-.028	-.032	-.088

TABLE V.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING RADIAL TRANSITION STRIPS LOCATED AT MAXIMUM THICKNESS x/L = 0.614 - Concluded

(d) α = 16.10

Station, x/L	Radial angle, ϕ, deg							
	59	89	149	179	239	269	329	359
0.024	0.040	-0.090	-0.072	-0.030	-0.076	-0.080	0.220	0.296
.048	.062	-.082	-.076	-.016	-.080	-.092	.204	.286
.071	.036	-.098	-.078	-.012	-.084	-.100	-----	-----
.095	.024	-.110	-.088	-.024	-.088	-.102	-----	-----
.119	.018	-.112	-.102	-.026	-.092	-.108	-----	-----
.143	.012	-.118	-.112	-.032	-.100	-.116	.170	.244
.167	0	-.126	-.112	-.028	-.104	-.120	.168	.240
.190	.004	-.122	-.112	-.032	-.104	-.120	.146	.220
.214	-.008	-.122	-.116	-.032	-.104	-.120	.156	.220
.238	-.012	-.130	-.126	-.038	-.102	-.120	-----	-----
.262	-.020	-.134	-.124	-.036	-.102	-.116	-----	-----
.285	-.030	-.138	-.128	-.040	-.104	-.118	.132	.206
.333	-.044	-.136	-.134	-.044	-.112	-.124	.132	.198
.381	-.054	-.130	-.140	-.050	-.116	-.128	.124	.194
.428	-.068	-.130	-.142	-.060	-.124	-.128	.112	.182
.476	-.080	-.136	-.152	-.072	-.134	-.136	.096	.162
.523	-.094	-.136	-.150	-.072	-.132	-.126	.080	.150
.571	-.108	-.136	-.144	-.076	-.132	-.124	.052	.122
.618	-.134	-.158	-.156	-.101	-.142	-.126	.040	.114
.666	-----	-.106	-.148	-.099	-.116	-.128	.036	.104
.714	-.148	-.142	-.124	-.070	-.084	-.104	0	.106
.761	-.162	-.134	-----	-----	-.068	-.088	0	.106
.785	-.168	-.130	-.076	-.068	-.068	-.084	-.016	.042
.809	-.166	-.126	-.064	-.068	-.076	-.082	-.028	.034
.832	-.174	-.130	-.076	-.072	-.084	-.092	-.026	.032
.856	-.184	-.126	-.082	-.076	-.076	-.092	-----	-----
.880	-.188	-.114	-.086	-.072	-.068	-.088	-----	-----
.904	-.188	-.102	-.084	-.064	-.040	-.078	-----	-----
.928	-.188	-.094	-.076	-.060	-.060	-.072	-.052	-.002
.951	-.184	-.082	-.080	-.062	-.060	-.064	-.058	-.006
.975	-.144	-.072	-.080	-.076	-.060	-.060	-.068	-.014
.999	-.064	-.074	-.040	-.074	-----	-----	-.084	-.030
1.000	-.040	-.074	-.036	-.044	-.040	-.072	-.092	-.040

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TABLE VI.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED AT x/L = 0.834

(a) $\alpha = 4.0°$

Station, x/L	Radial angle, ϕ, deg							
	56	86	146	176	236	266	326	356
0.024	0.074	0.044	0.032	0.032	0.040	0.048	0.096	0.106
.048	.072	.042	.032	.032	.030	.042	.086	.098
.071	.060	.034	.028	.024	.022	.030	-----	-----
.095	.058	.032	.022	.020	.022	.032	-----	-----
.119	.058	.032	.016	.016	.016	.024	-----	-----
.143	.052	.026	.012	.008	.012	.020	.064	.074
.167	.048	.022	.012	.012	.008	.016	.064	.074
.190	.048	.018	.008	.008	.008	.016	.056	.066
.214	.044	.018	.006	.008	.006	.012	.056	.066
.238	.024	.008	0	0	0	.004	-----	-----
.262	.024	.006	0	0	-.002	.004	-----	-----
.285	.016	0	-.004	-.004	-.002	0	.044	.050
.333	.004	-.008	-.008	-.008	-.008	-.004	.042	.046
.381	0	-.010	-.012	-.008	-.012	-.008	.026	.036
.428	-.006	-.018	-.016	-.012	-.018	-.016	.024	.034
.476	-.016	-.026	-.024	-.024	-.028	-.032	.016	.022
.523	-.016	-.024	-.028	-.020	-.024	-.028	.006	.018
.571	-.028	-.038	-.036	-.024	-.036	-.038	-.004	.002
.618	-.038	-.046	-.040	-.032	-.042	-.046	-.008	.002
.666	-----	-----	-.040	-.032	-.042	-.048	-.004	.004
.714	-.052	-.050	-.040	-.032	-.042	-.054	-.028	-.020
.761	-.056	-.052	-----	-----	-.040	-.054	-.028	-.024
.785	-.056	-.052	-.034	-.032	-.030	-.048	-.048	-.038
.809	-.054	-.048	-.028	-.020	-.034	-.046	-.052	-.046
.832	-.028	-.046	.036	0	.086	0	-.052	-.046
.856	-.068	-.062	-.036	-.028	-.040	-.056	-----	-----
.880	-.064	-.062	-.034	-.024	-.034	-.056	-----	-----
.904	-.060	-.058	-.028	-.016	.010	.022	-----	-----
.928	-.054	-.046	-.016	-.008	-.024	-.036	-.044	-.038
.951	-.050	-.034	-.012	-.008	-.028	-.036	-.048	-.046
.975	-.044	-.026	-.016	-.008	-.028	-.036	-.052	-.050
.999	-.022	-.026	-.012	-.026	-----	-----	-.060	-.058
1.000	.002	-.022	-.008	-.012	.002	-.012	-.056	-.060

NACA

TABLE VI.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED AT x/L = 0.834 - Continued

(b) $\alpha = 8.05$

Station, x/L	Radial angle, ϕ, deg							
	58	88	148	178	238	268	328	358
0.024	0.064	0.014	0.010	0.012	0.006	0.016	0.132	0.159
.048	.068	.014	.006	.014	-.002	.004	.114	.145
.071	.054	0	.002	.010	-.006	0	-----	-----
.095	.048	-.006	-.006	.004	-.008	0	-----	-----
.119	.048	-.002	-.006	.002	-.014	-.008	-----	-----
.143	.044	-.010	-.014	0	-.018	-.012	.094	.119
.167	.032	-.016	-.014	-.004	-.022	-.020	.088	.115
.190	.036	-.016	-.016	0	-.022	-.020	.078	.105
.214	.032	-.016	-.018	-.004	-.022	-.024	.082	.105
.238	.020	-.026	-.026	-.006	-.030	-.032	-----	-----
.262	.016	-.030	-.030	-.006	-.030	-.032	-----	-----
.285	.008	-.038	-.032	-.008	-.030	-.032	.060	.090
.333	-.004	-.046	-.032	-.012	-.036	-.038	.056	.086
.381	-.010	-.050	-.030	-.012	-.044	-.048	.054	.078
.428	-.020	-.056	-.032	-.020	-.050	-.056	.046	.066
.476	-.032	-.066	-.034	-.026	-.058	-.068	.032	.056
.523	-.034	-.066	-.034	-.020	-.054	-.064	.022	.046
.571	-.048	-.076	-.040	-.024	-.060	-.076	.008	.034
.618	-.064	-.082	-.046	-.036	-.062	-.080	0	.026
.666	-----	-----	-.046	-.036	-.062	-.080	.004	.026
.714	-.080	-.086	-.048	-.036	-.058	-.080	-.024	-.002
.761	-.082	-.082	-----	-----	-.056	-.076	-.028	-.006
.785	-.082	-.078	-.050	-.030	-.052	-.068	-.048	-.024
.809	-.076	-.074	-.050	-.024	-.056	-.064	-.056	-.038
.832	-.044	-.070	-.012	.048	.042	-.068	-.056	-.038
.856	-.084	-.082	-.070	-.036	-.062	-.072	-----	-----
.880	-.076	-.078	-.070	-.044	-.062	-.072	-----	-----
.904	-.072	-.062	-.062	-.034	-.052	.010	-----	-----
.928	-.066	-.046	-.054	-.026	-.054	-.048	-.052	-.038
.951	-.068	-.040	-.056	-.024	-.050	-.052	-.060	-.042
.975	-.058	-.034	-.062	-.032	-.046	-.052	-.064	-.048
.999	-.046	-.056	-.040	-.048	-----	-----	-.074	-.058
1.000	-.032	-.054	-.024	-.036	-.028	-.036	-.072	-.062

TABLE VI.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY

OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED

AT x/L = 0.834 - Continued

(c) α = 12.05

Station, x/L	Radial angle, φ, deg							
	58.7	88.7	148.7	178.7	238.7	268.7	328.7	358.7
0.024	0.054	-0.036	-0.028	-0.006	-0.034	-.036	0.167	0.219
.048	.056	-.036	-.030	-.004	-.040	-.044	.151	.207
.071	.038	-.052	-.036	-.006	-.046	-.048	-----	-----
.095	.038	-.048	-.040	-.008	-.048	-.054	-----	-----
.119	.034	-.054	-.044	-.010	-.052	-.060	-----	-----
.143	.026	-.062	-.052	-.016	-.056	-.064	.123	.171
.167	.018	-.070	-.056	-.014	-.056	-.068	.123	.171
.190	.022	-.064	-.056	-.014	-.060	-.072	.111	.159
.214	.016	-.068	-.058	-.012	-.060	-.072	.111	.163
.238	.002	-.076	-.068	-.020	-.064	-.080	-----	-----
.262	0	-.080	-.068	-.020	-.064	-.076	-----	-----
.285	.014	-.088	-.076	-.020	-.062	-.078	.090	.143
.333	-.018	-.092	-.076	-.020	-.076	-.088	.088	.139
.381	-.034	-.094	-.092	-.032	-.080	-.096	.086	.135
.428	-.042	-.094	-.090	-.030	-.084	-.092	.074	.115
.476	-.056	-.096	-.103	-.038	-.086	-.094	.054	.105
.523	-.062	-.094	-.107	-.036	-.086	-.092	.042	.092
.571	-.076	-.094	-.109	-.044	-.092	-.094	.024	.076
.618	-.088	-.096	-.119	-.060	-.092	-.094	.022	.068
.666	-----	-----	-.115	-.062	-.096	-.096	.018	.064
.714	-.101	-.096	-.115	-.074	-.096	-.096	-.014	.032
.761	-.103	-.092	-----	-----	-.086	-.086	-.016	.024
.785	-.101	-.092	-.107	-.068	-.080	-.084	-.038	.004
.809	-.096	-.084	-.096	-.062	-.084	-.078	-.046	-.008
.832	-.062	-.076	-.076	-.012	.042	-.024	-.042	-.012
.856	-.097	-.090	-.107	-.080	-.076	-.086	-----	-----
.880	-.094	-.084	-.088	-.080	-.076	-.076	-----	-----
.904	-.086	-.062	-.078	-.080	-.014	.018	-----	-----
.928	-.088	-.050	-.068	-.076	-.056	-.052	-.050	-.018
.951	-.082	-.066	-.056	-.054	-.060	-.054	-.056	-.024
.975	-.074	-.060	-.058	-.060	-.056	-.056	-.064	-.032
.999	-.050	-.056	-.048	-.060	-----	-----	-.074	-.046
1.000	-.046	-.054	-.040	-.030	-.040	-.048	-.074	-.050

NACA

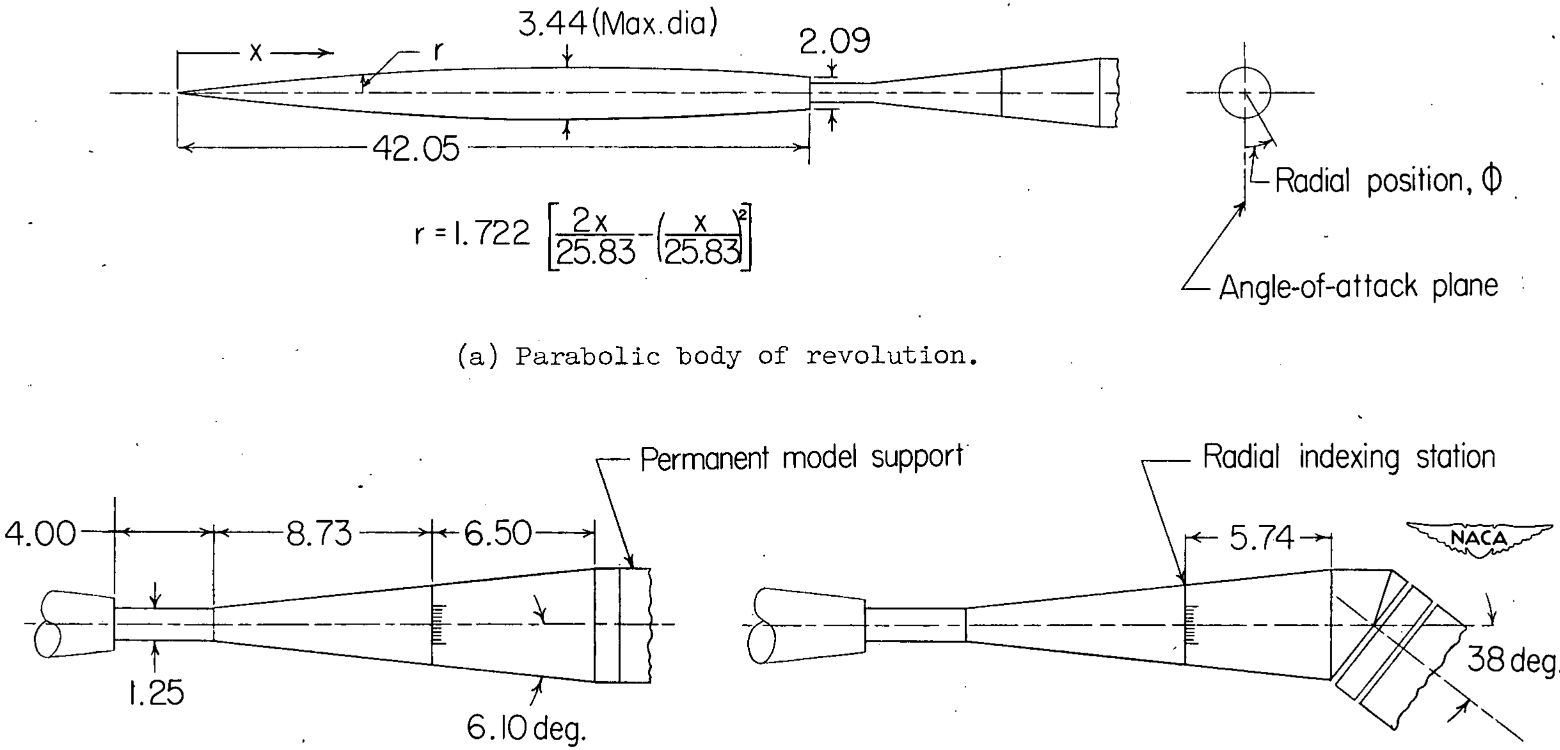
TABLE VI.- PRESSURE COEFFICIENT DATA FOR PARABOLIC BODY OF REVOLUTION (RM-10) MOUNTED ON STRAIGHT STING

RADIAL TRANSITION STRIPS LOCATED AT x/L = 0.834 - Concluded

(d) $\alpha = 16.10$

Station, x/L	Radial angle, ϕ, deg							
	59	89	149	179	239	269	329	359
0.024	0.044	-0.090	-0.068	-0.030	-0.068	-0.086	0.218	0.294
.048	.054	-.088	-.072	-.016	-.076	-.096	.204	.287
.071	.036	-.101	-.076	-.014	-.080	-.097	-----	-----
.095	.026	-.109	-.084	-.022	-.084	-.107	-----	-----
.119	.020	-.111	-.100	-.026	-.088	-.111	-----	-----
.143	.016	-.119	-.108	-.032	-.096	-.119	.170	.243
.167	.002	-.127	-.108	-.028	-.100	-.119	.164	.235
.190	.004	-.123	-.108	-.032	-.100	-.119	.152	.223
.214	-.002	-.123	-.112	-.032	-.100	-.123	.154	.223
.238	-.010	-.131	-.120	-.036	-.100	-.119	-----	-----
.262	-.016	-.133	-.120	-.036	-.100	-.117	-----	-----
.285	-.032	-.137	-.124	-.038	-.100	-.119	.130	.207
.333	-.042	-.135	-.128	-.044	-.108	-.127	.130	.199
.381	-.054	-.127	-.134	-.048	-.116	-.127	.122	.193
.428	-.066	-.131	-.136	-.060	-.120	-.131	.112	.183
.476	-.080	-.135	-.148	-.072	-.128	-.135	.094	.163
.523	-.094	-.135	-.146	-.072	-.124	-.127	.078	.151
.571	-.106	-.135	-.142	-.076	-.128	-.123	.052	.123
.618	-.126	-.139	-.152	-.094	-.124	-.123	.038	.115
.666	-----	-----	-.152	-.092	-.124	-.125	.038	.105
.714	-.138	-.129	-.140	-.082	-.116	-.117	.006	.076
.761	-.132	-.119	-----	-----	-.100	-.099	-.006	.060
.785	-.128	-.111	-.136	-.076	-.094	-.094	-.020	.040
.809	-.118	-.107	-.124	-.076	-.100	-.088	-.028	.036
.832	-.078	-.092	-.110	-.020	.022	-.026	-.022	.034
.856	-.122	-.107	-.136	-.092	-.096	-.094	-----	-----
.880	-.122	-.107	-.116	-.096	-.084	-.084	-----	-----
.904	-.126	-.094	-.100	-.088	-.014	-.016	-----	-----
.928	-.130	-.107	-.086	-.084	-.062	-.056	-.038	.012
.951	-.138	-.096	-.080	-.056	-.060	-.060	-.044	.006
.975	-.134	-.076	-.068	-.076	-.052	-.060	-.054	0
.999	-.064	-.068	-.040	-.078	-----	-----	-.070	-.020
1.000	-.038	-.068	-.036	-.040	-.044	-.070	-.074	-.028

NACA

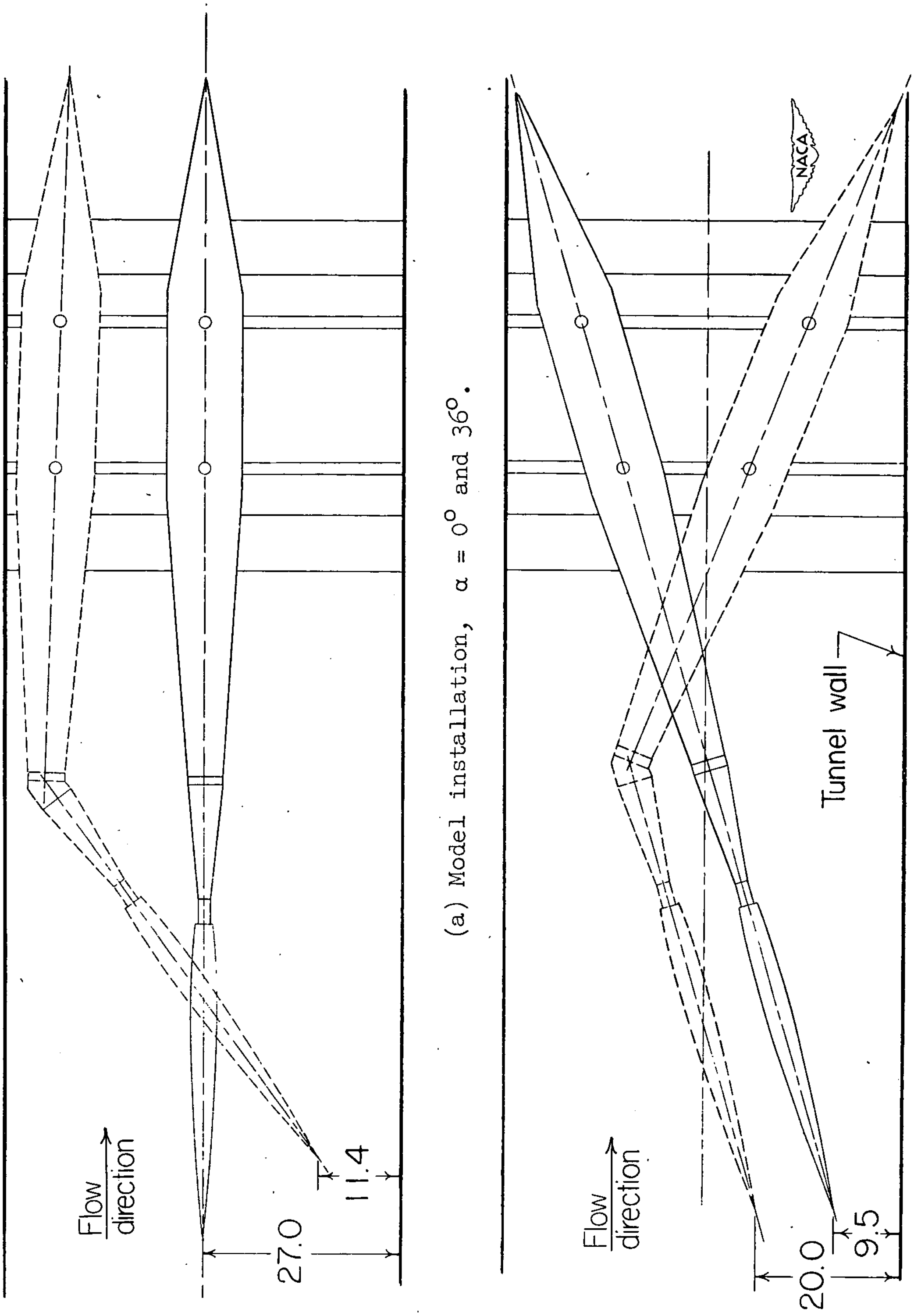


(a) Parabolic body of revolution.

(b) Straight-sting detail.

(c) Bent-sting detail.

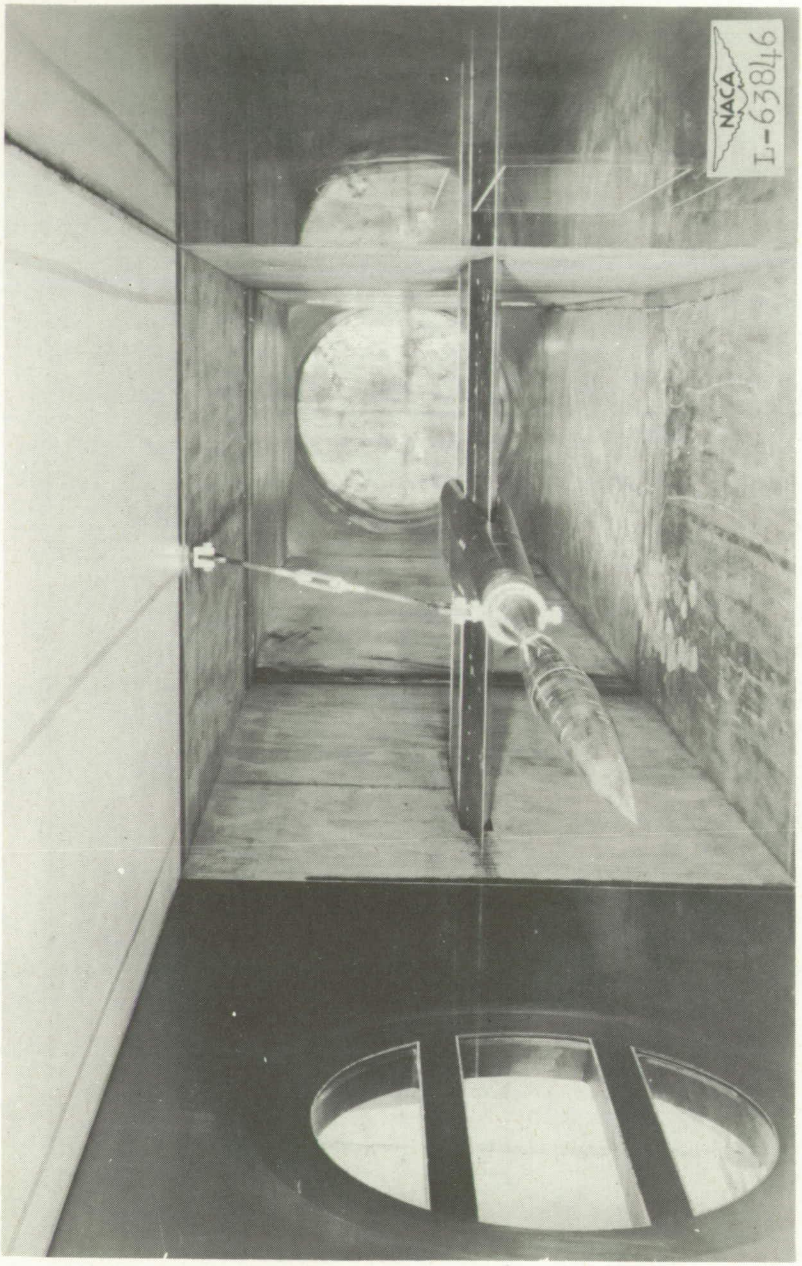
Figure 1.- Schematic layout of a parabolic body of revolution and sting mounting details. All dimensions in inches unless otherwise specified.



(a) Model installation, $\alpha = 0^{\circ}$ and 36°.

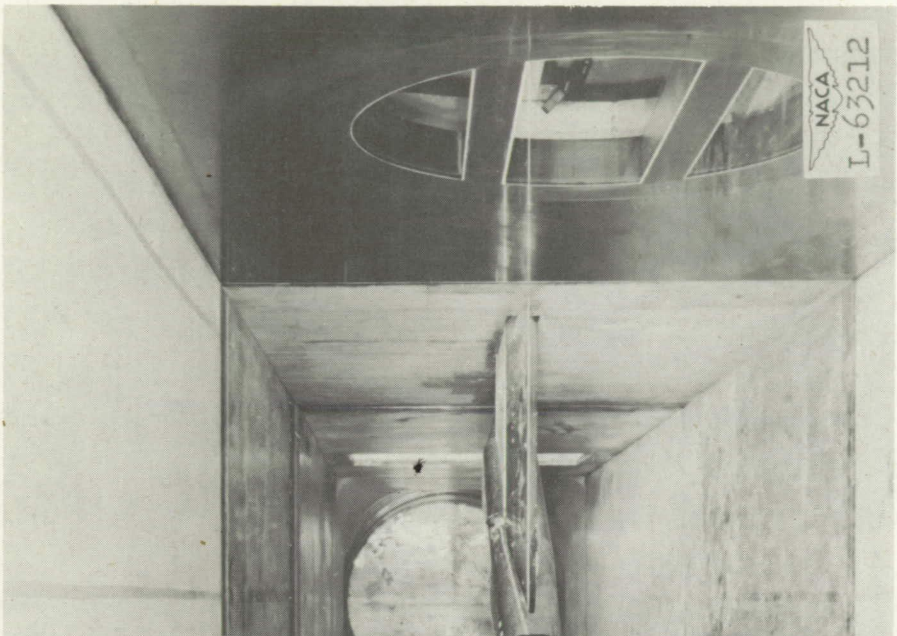
(b) Model installation, $\alpha = 16^{\circ}$.

Figure 2.- Schematic arrangement of model mounted on straight and bent stings in the Langley 4- by 4-foot supersonic tunnel for extreme angular positions. All dimensions in inches unless otherwise specified.



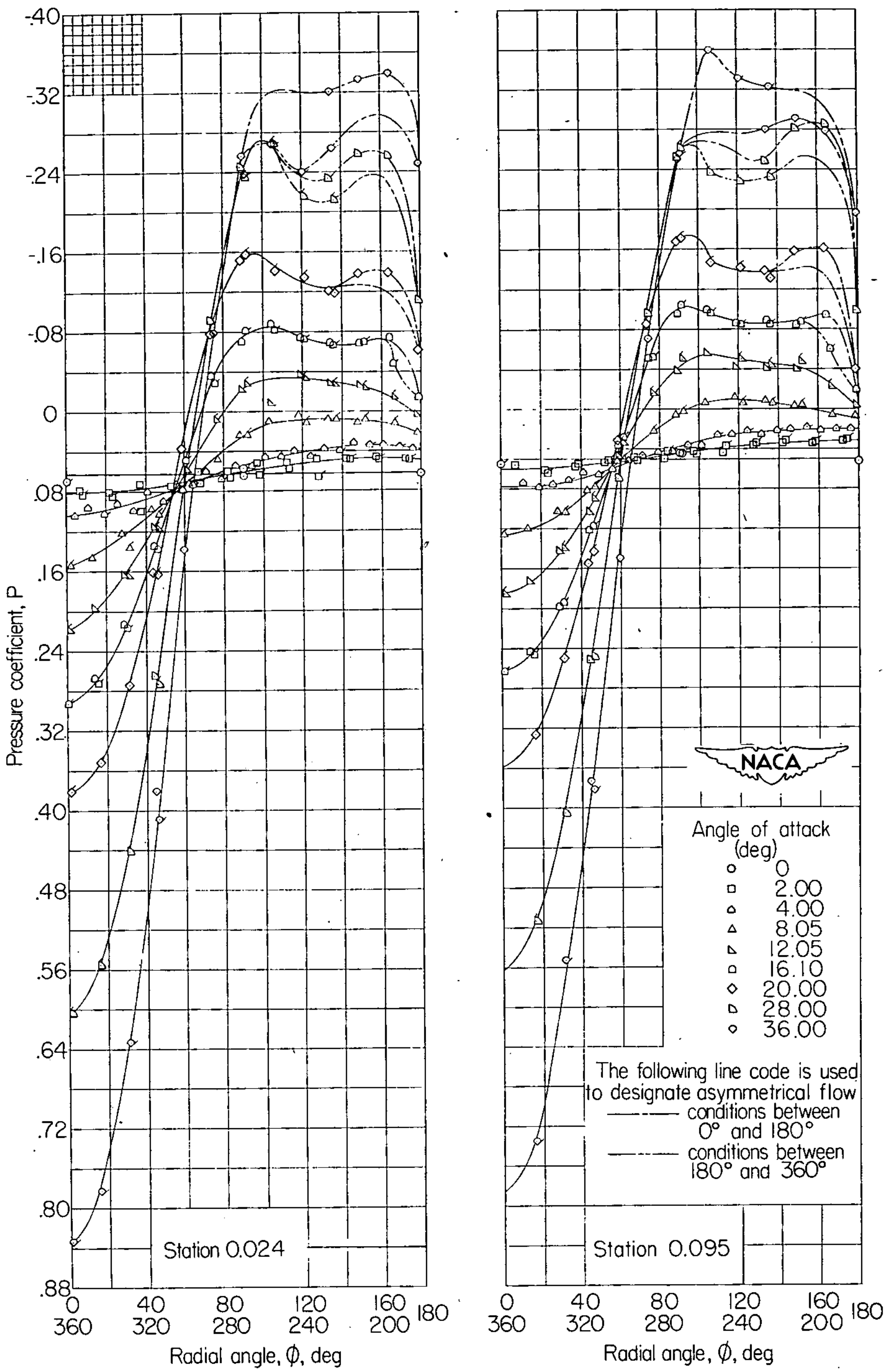
(a) Straight sting.

Figure 3.- Downstream view of test model mounted on the straight and the 38° bent stings in the Langley 4- by 4-foot supersonic tunnel.



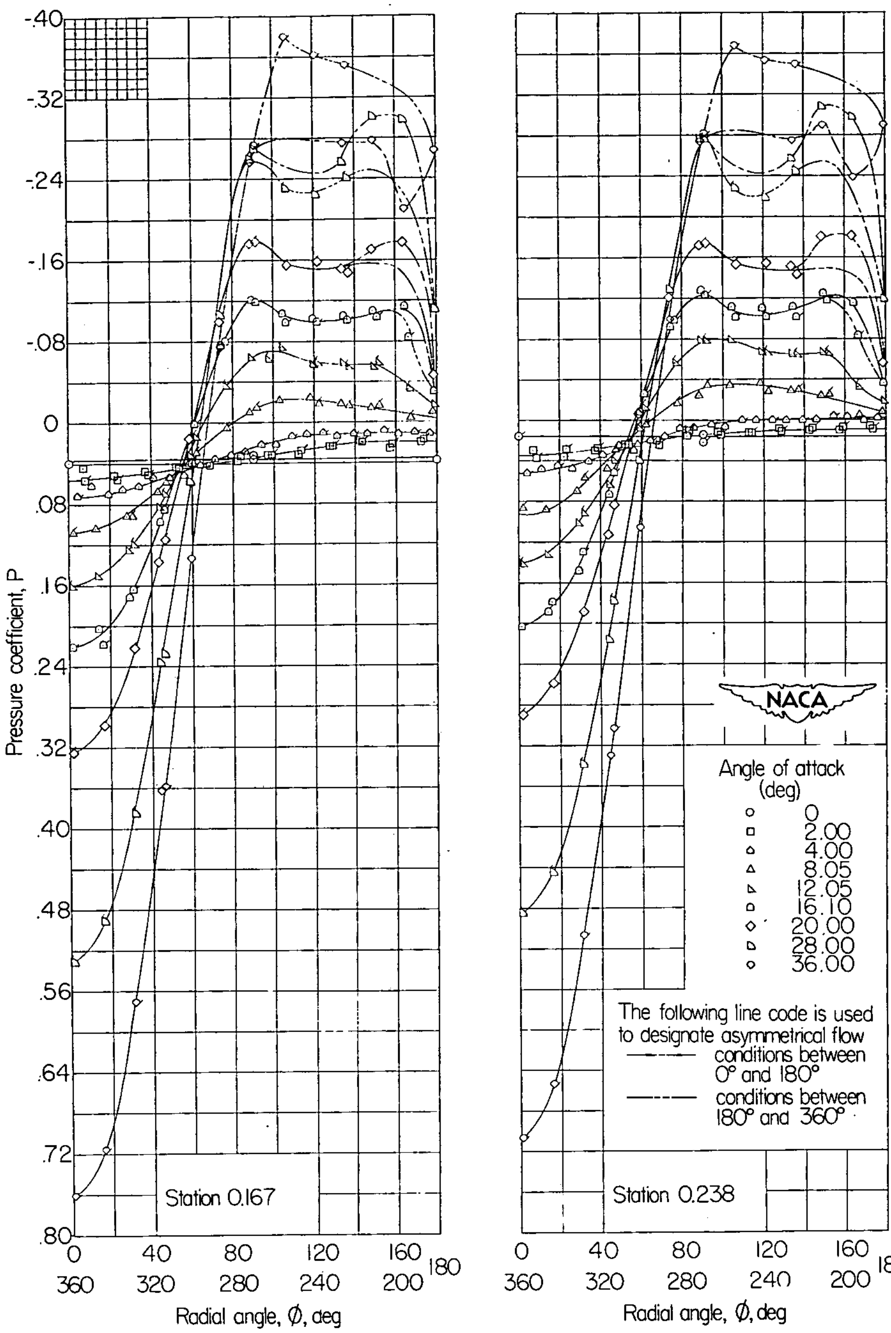
(b) 38° bent sting.

Figure 3.- Concluded.



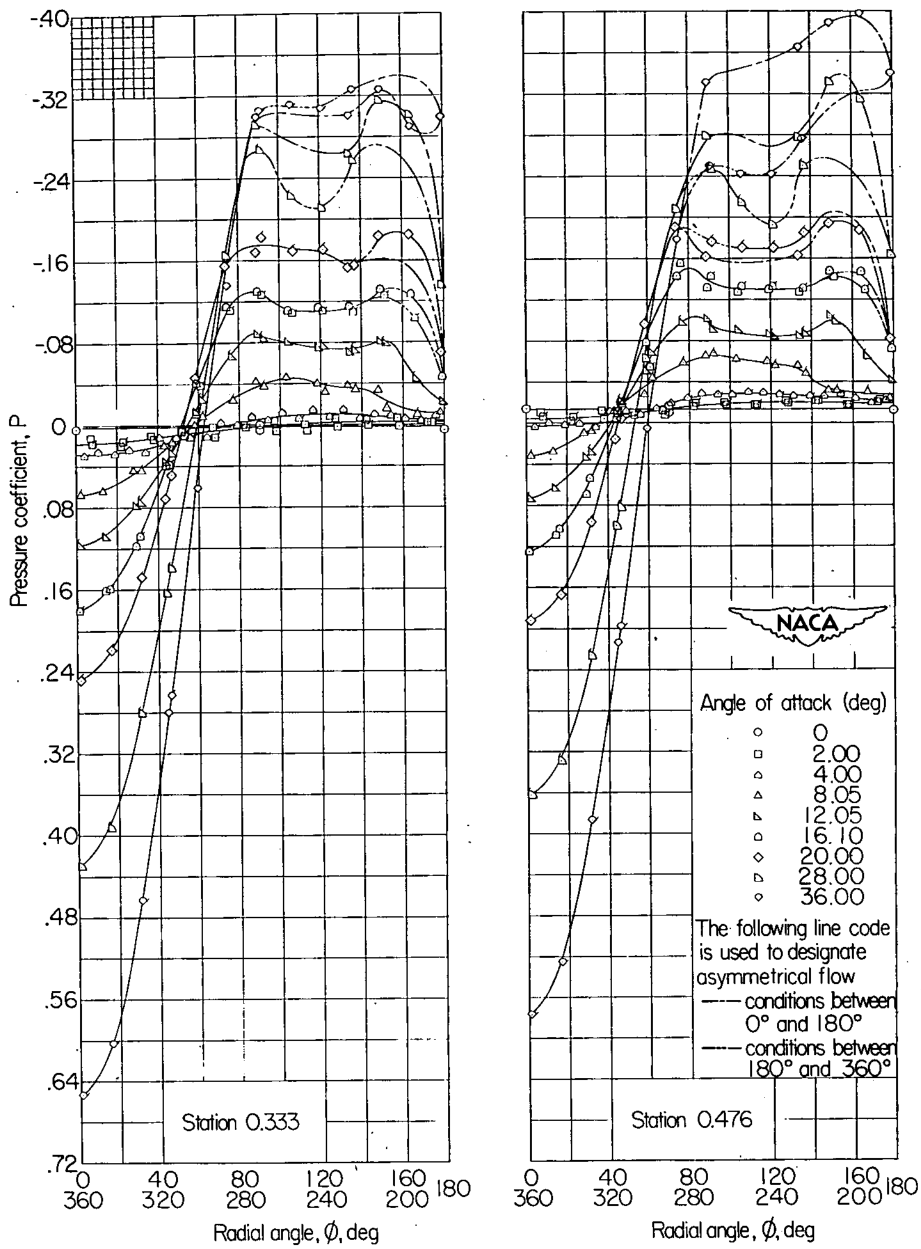
(a) Stations 0.024 and 0.095.

Figure 4.- Pressure-coefficient variation with radial position for 12 representative stations along the body. (Flagged symbols indicate test points between 180° and 360°.)



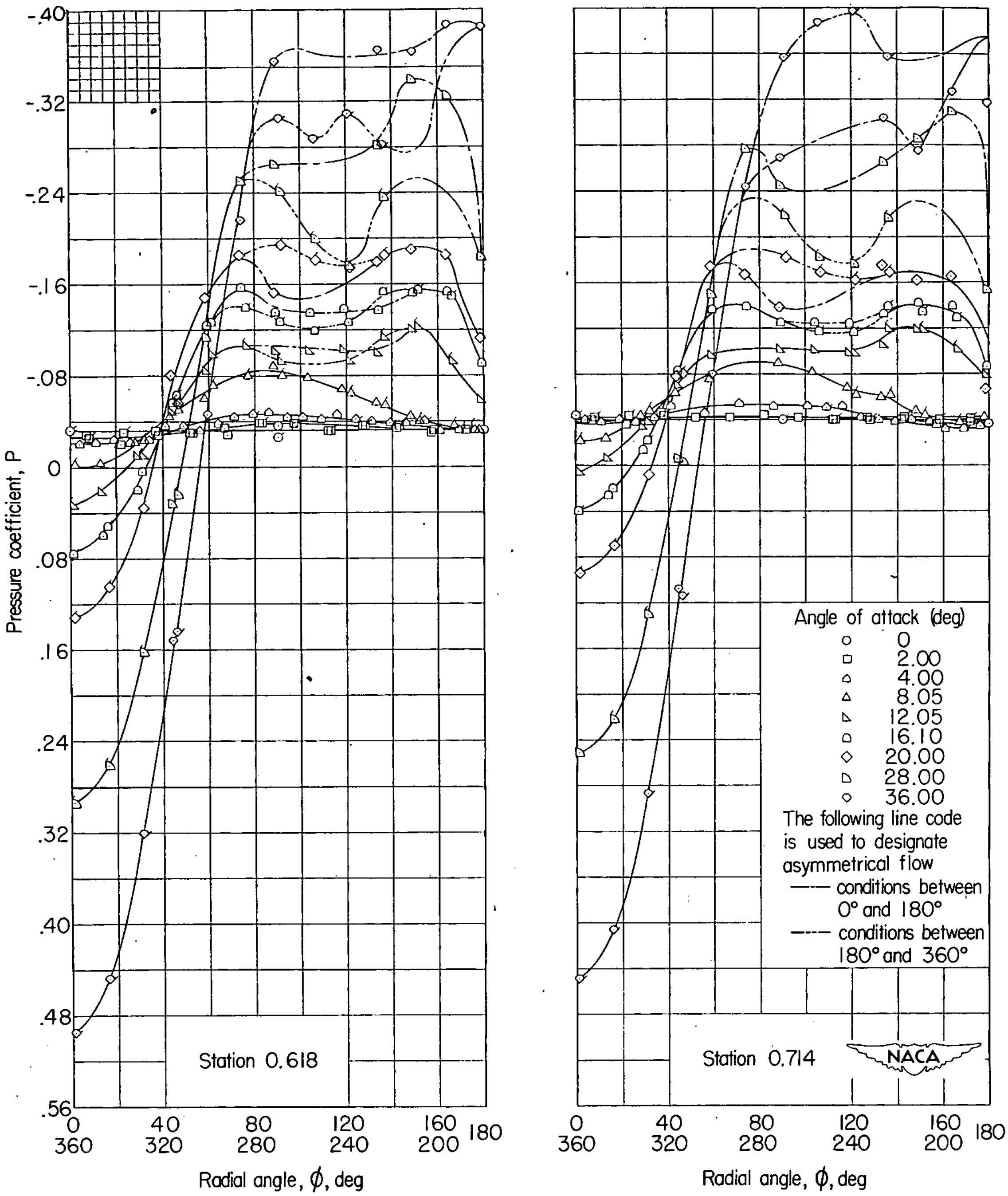
(b) Stations 0.167 and 0.238.

Figure 4.- Continued.



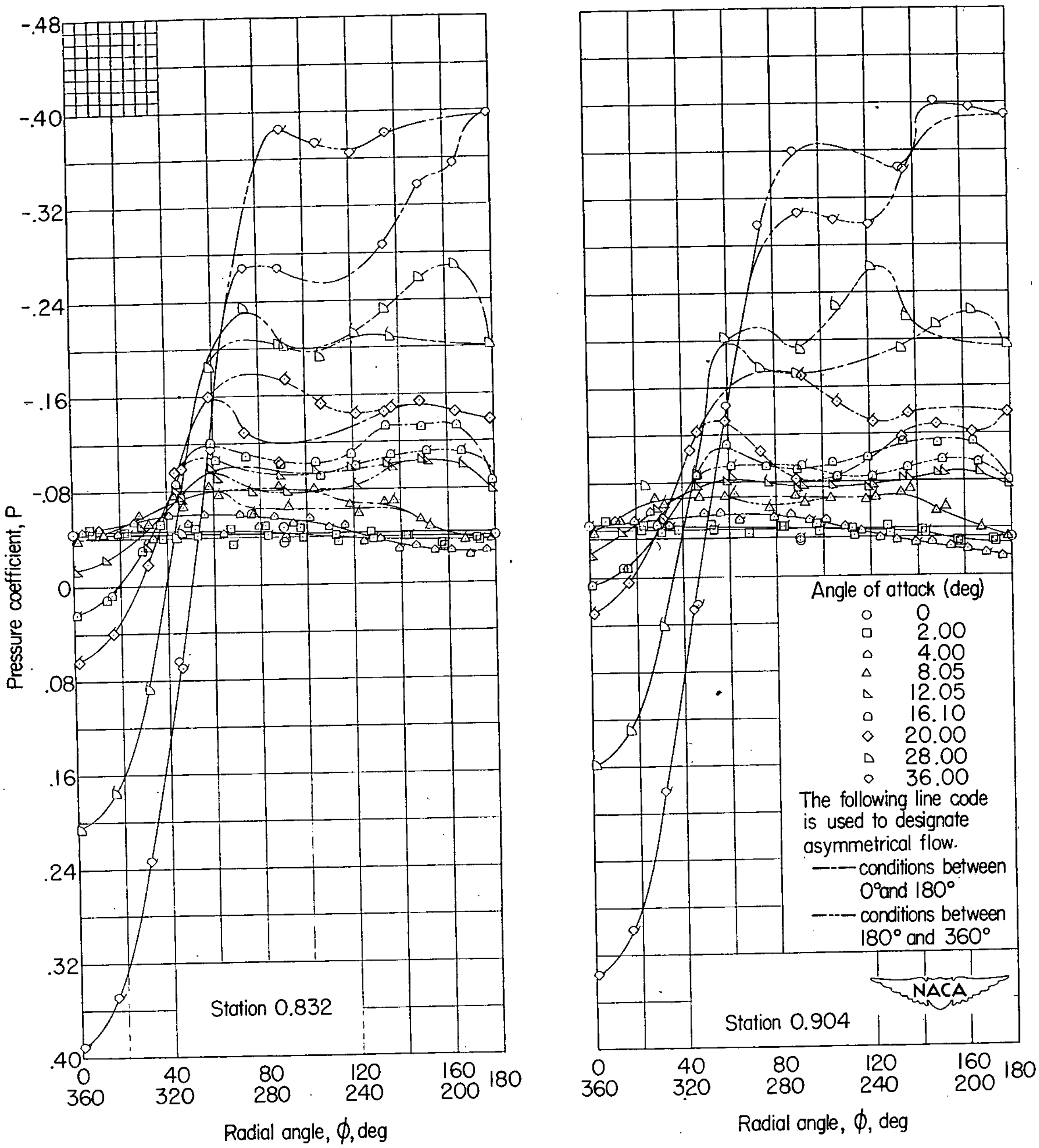
(c) Stations 0.333 and 0.476.

Figure 4.- Continued.



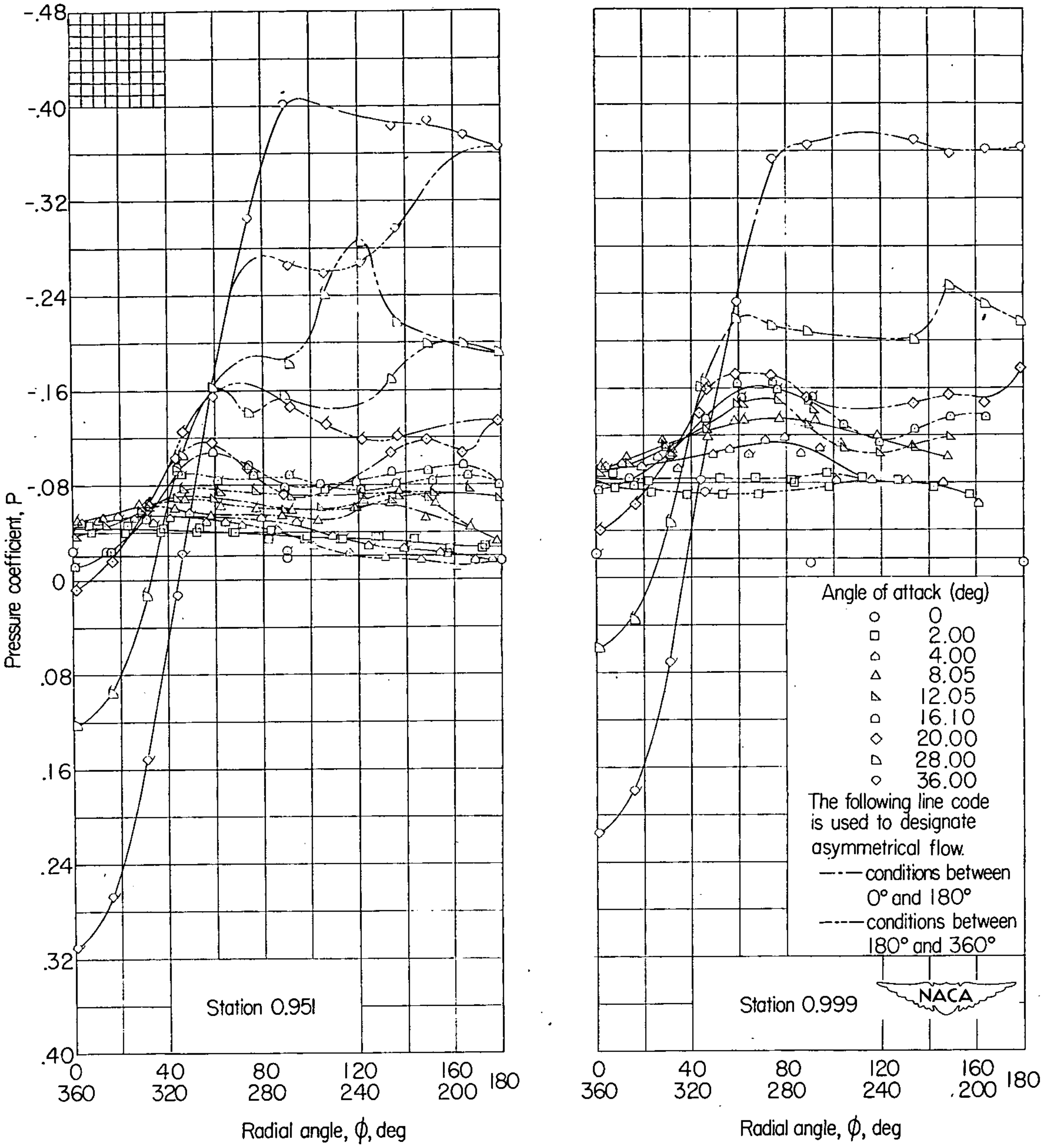
(d) Stations 0.618 and 0.714.

Figure 4.- Continued.



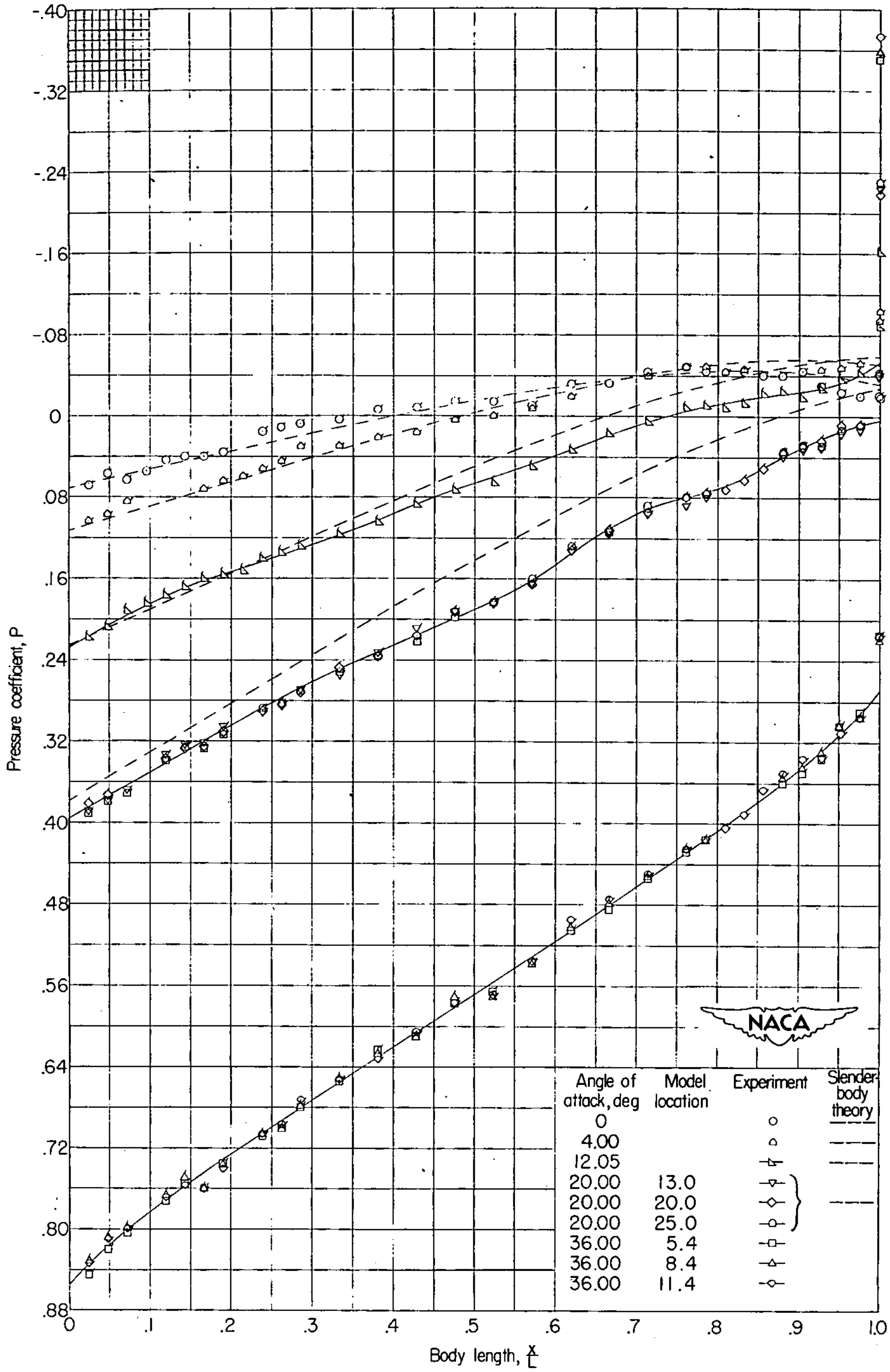
(e) Stations 0.832 and 0.904.

Figure 4.- Continued.



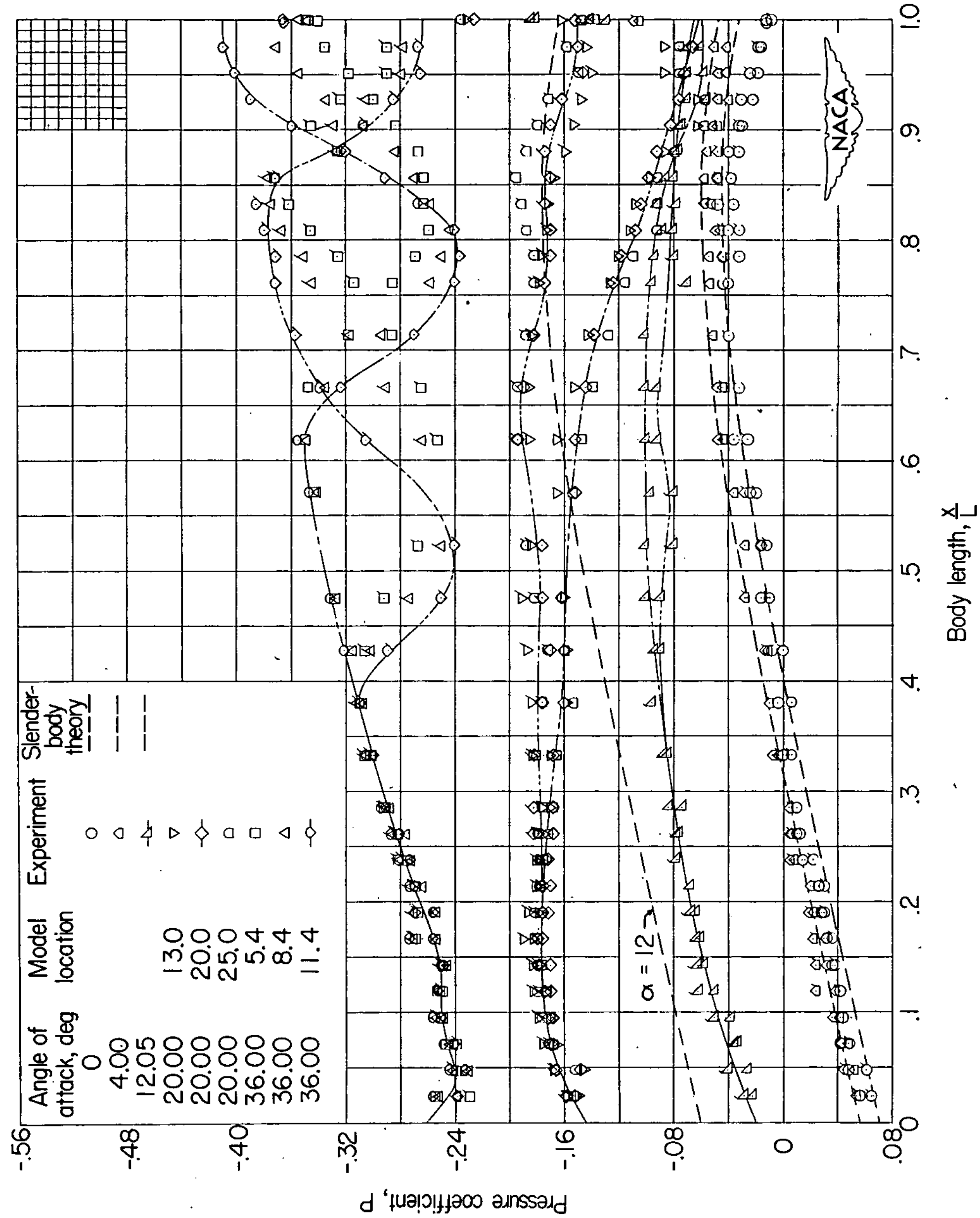
(f) Stations 0.951 and 0.999.

Figure 4.- Concluded.



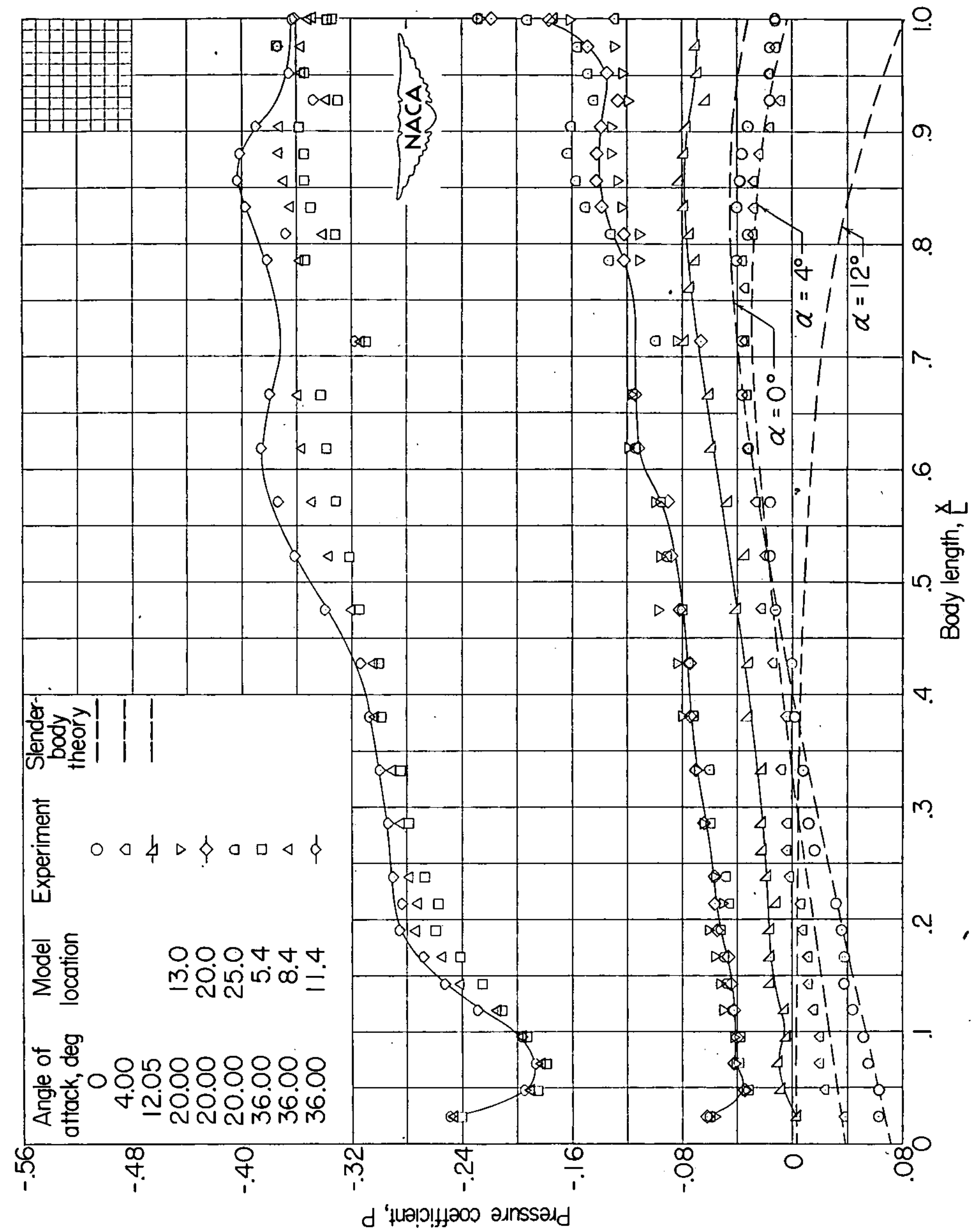
(a) $\phi = 0^\circ, 360^\circ$.

Figure 5.- Axial pressure distributions on a parabolic body of revolution for several radial locations. (Flagged symbols indicate test points between 180° and 360°.) Model location refers to distance of model nose from tunnel wall.



(b) $\phi = 90^{\circ}, 270^{\circ}$.

Figure 5.- Continued.



(c) $\phi = 180°$.

Figure 5.- Concluded.

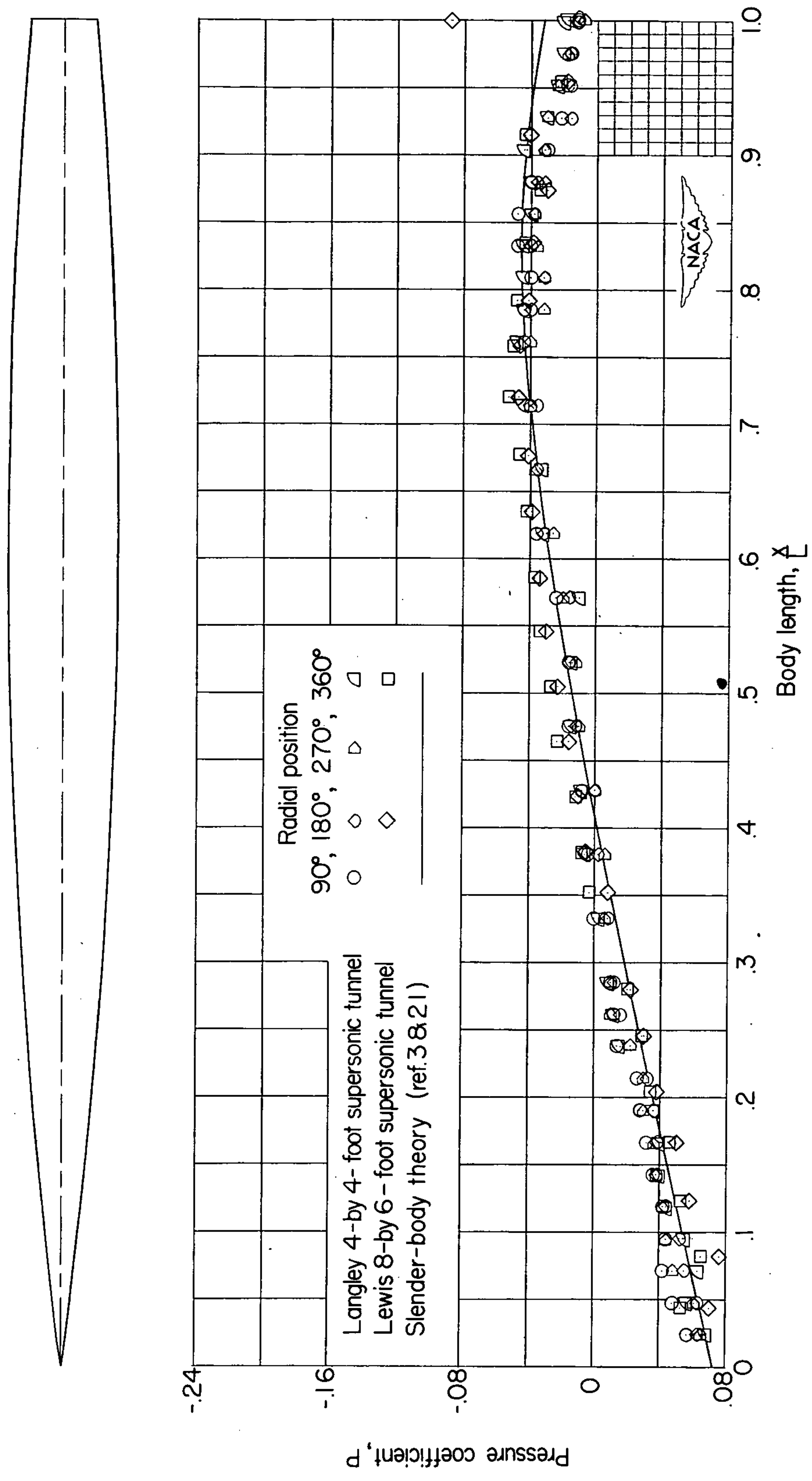


Figure 6.- Comparison of experimental and theoretical pressures on a parabolic body of revolution for an angle of attack of 0° and a Mach number of 1.59.

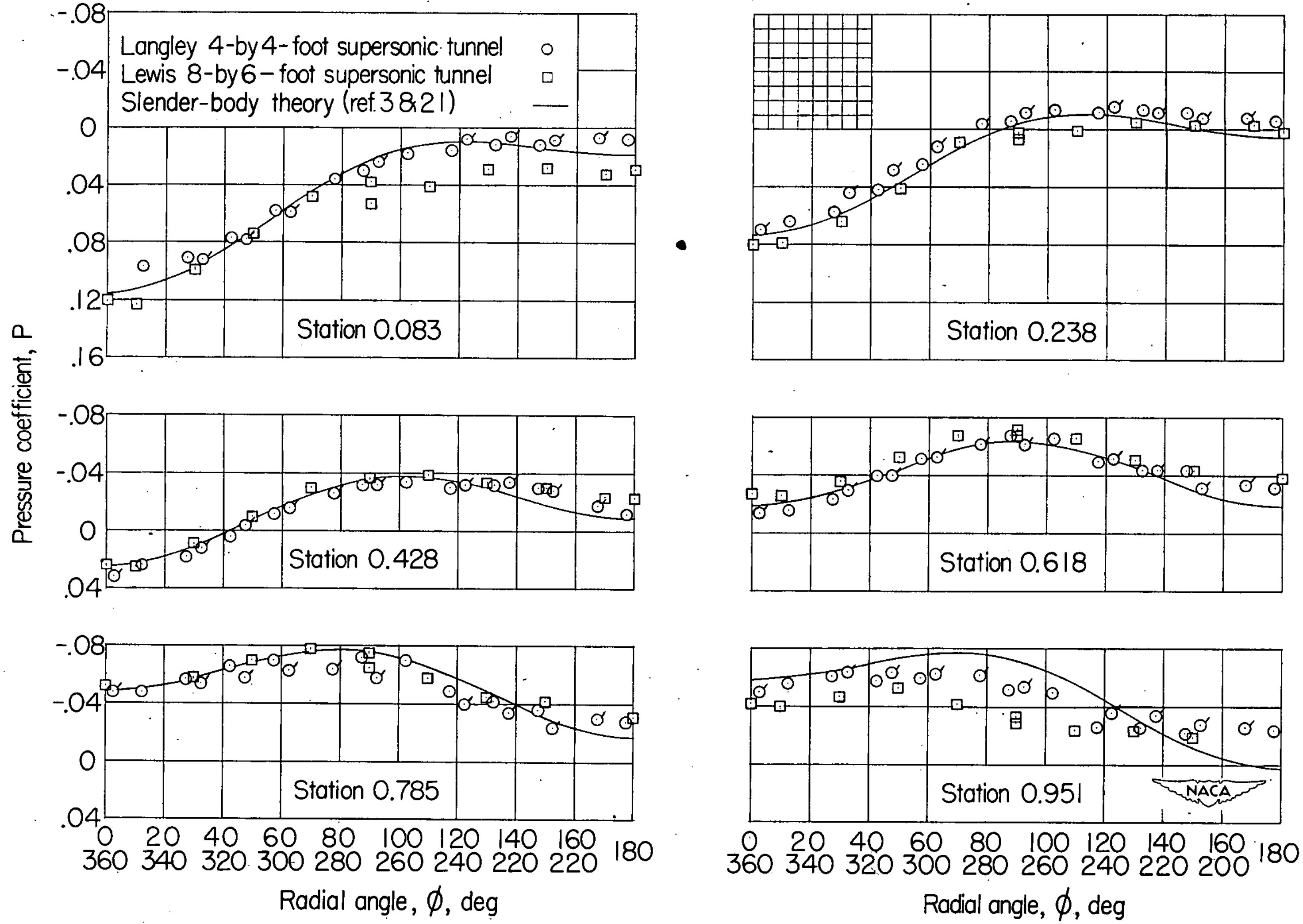


Figure 7.- Comparison of experimental and theoretical pressures on a parabolic body of revolution for an angle of attack of 6° and a Mach number of 1.59. (Flagged symbols indicate test points between 180° and 360°.)

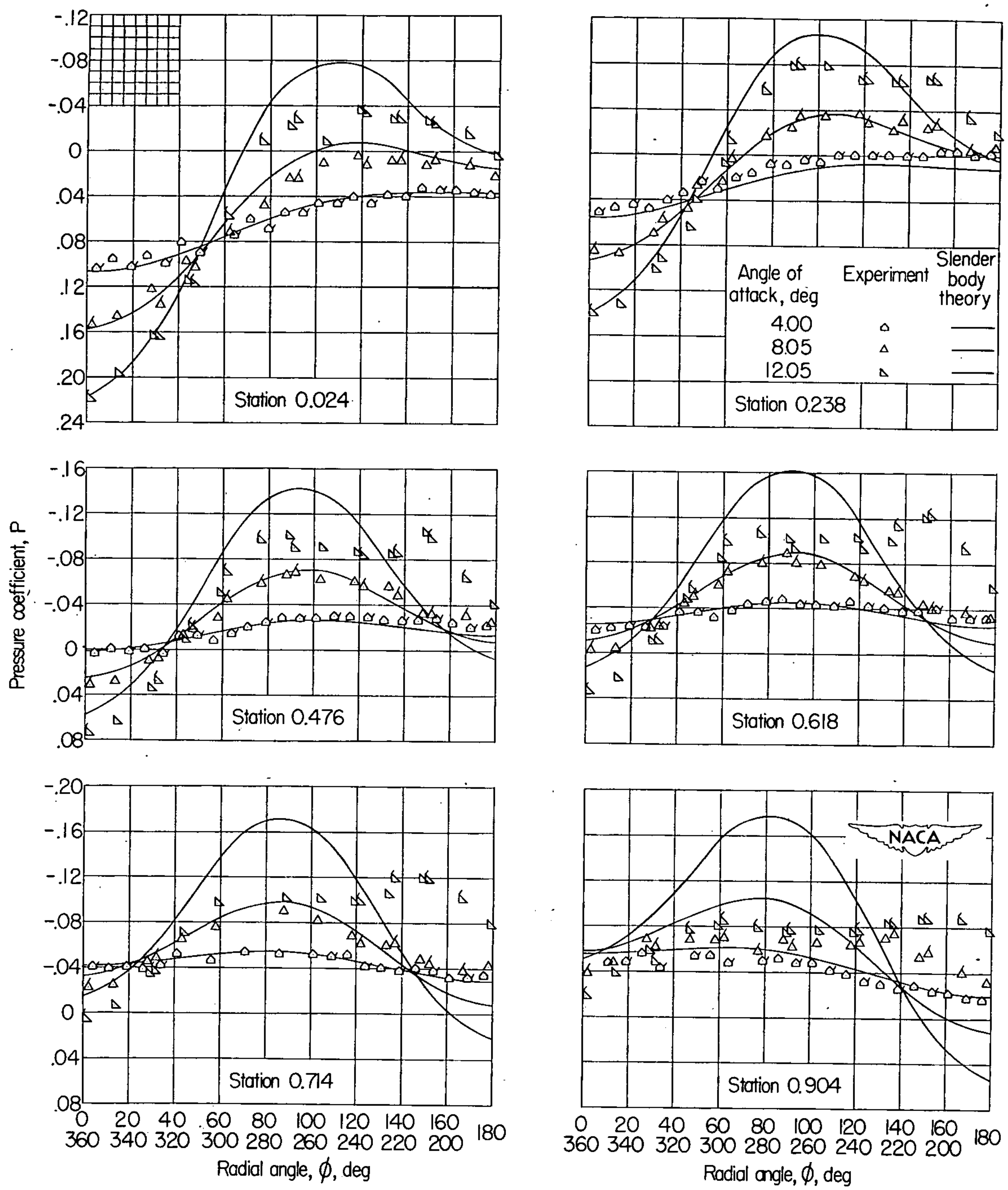
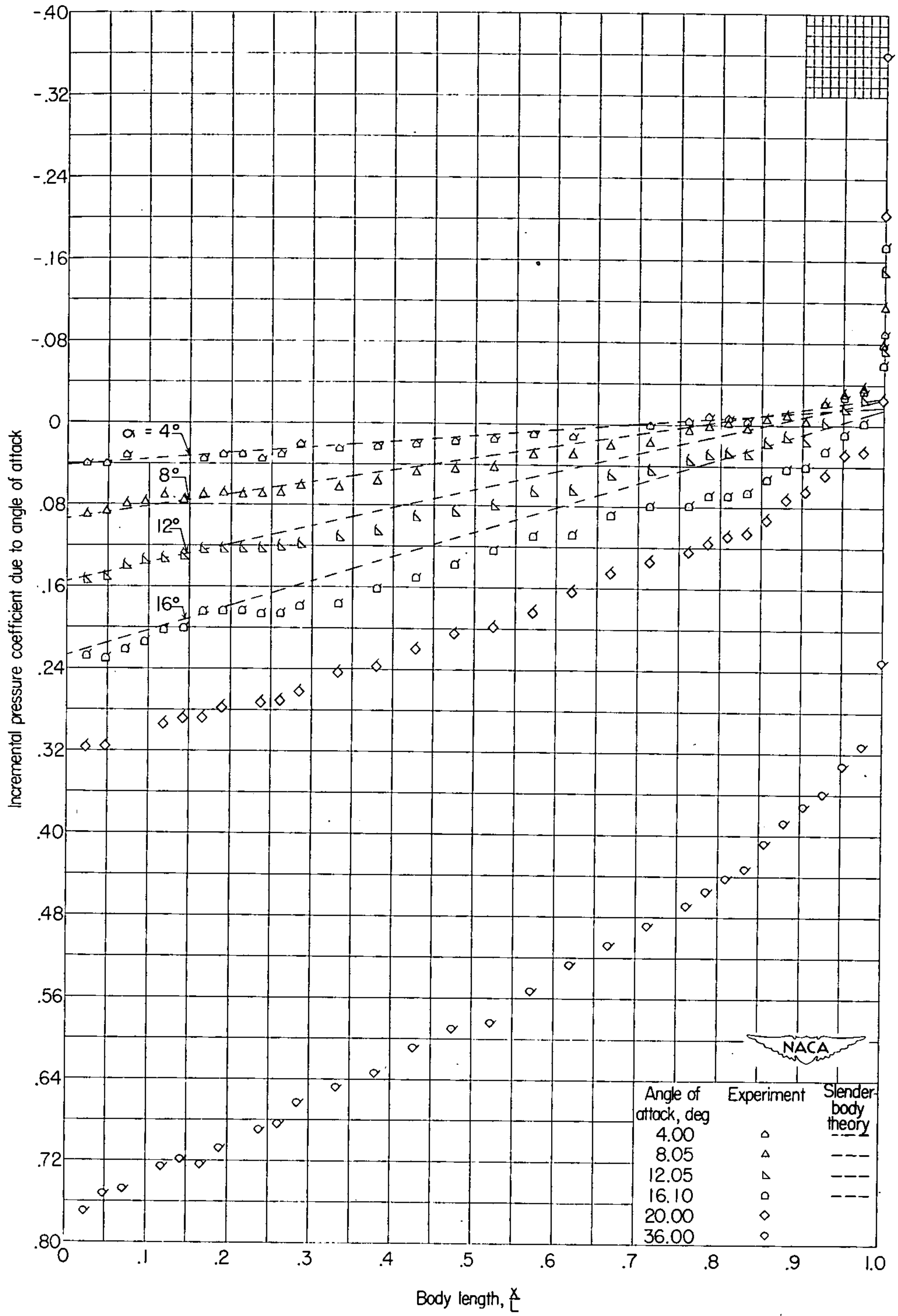
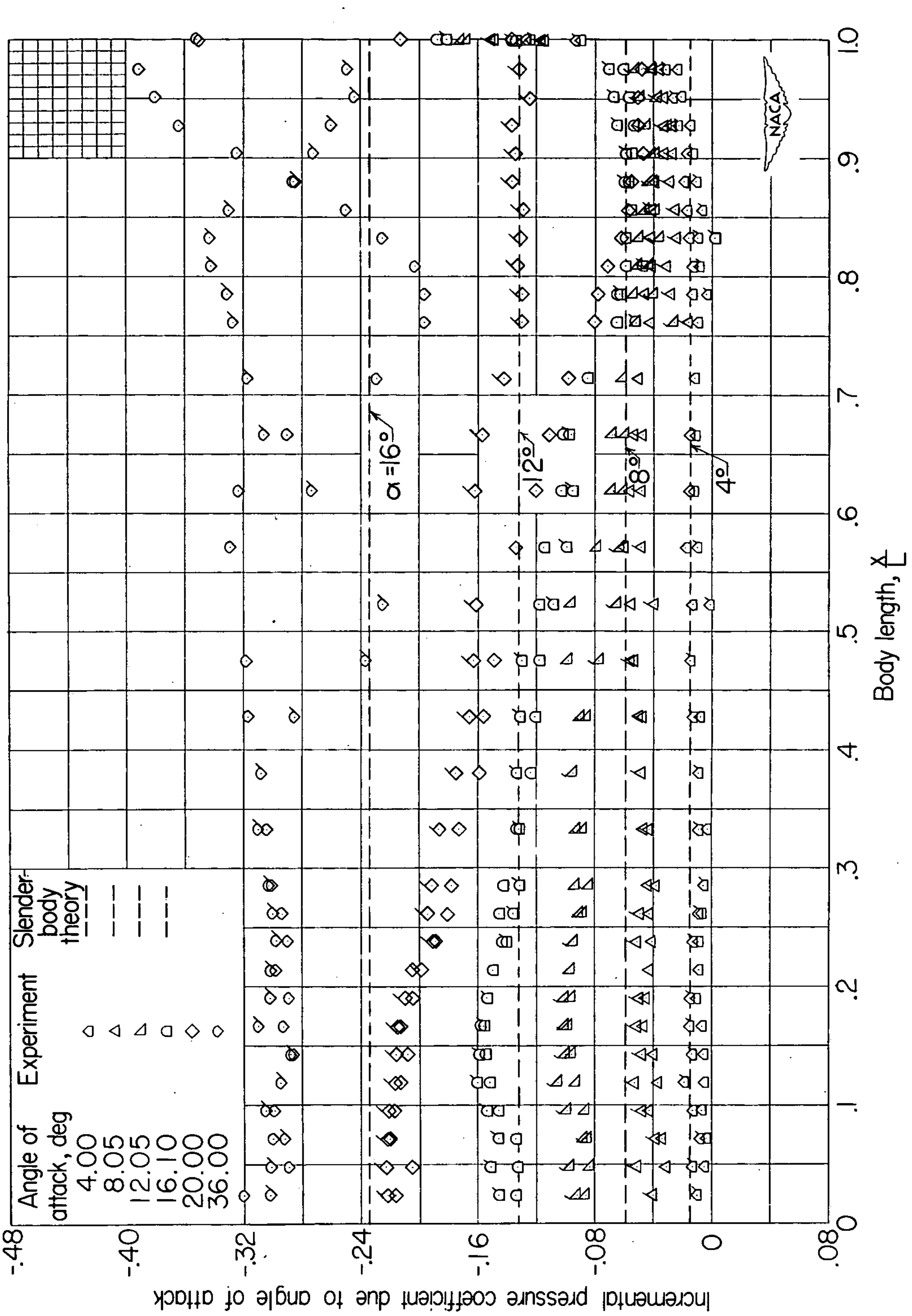


Figure 8.- Comparison of experimental and theoretical pressures on a parabolic body of revolution for six axial stations. (Flagged symbols indicate test points between 180° and 360°.)



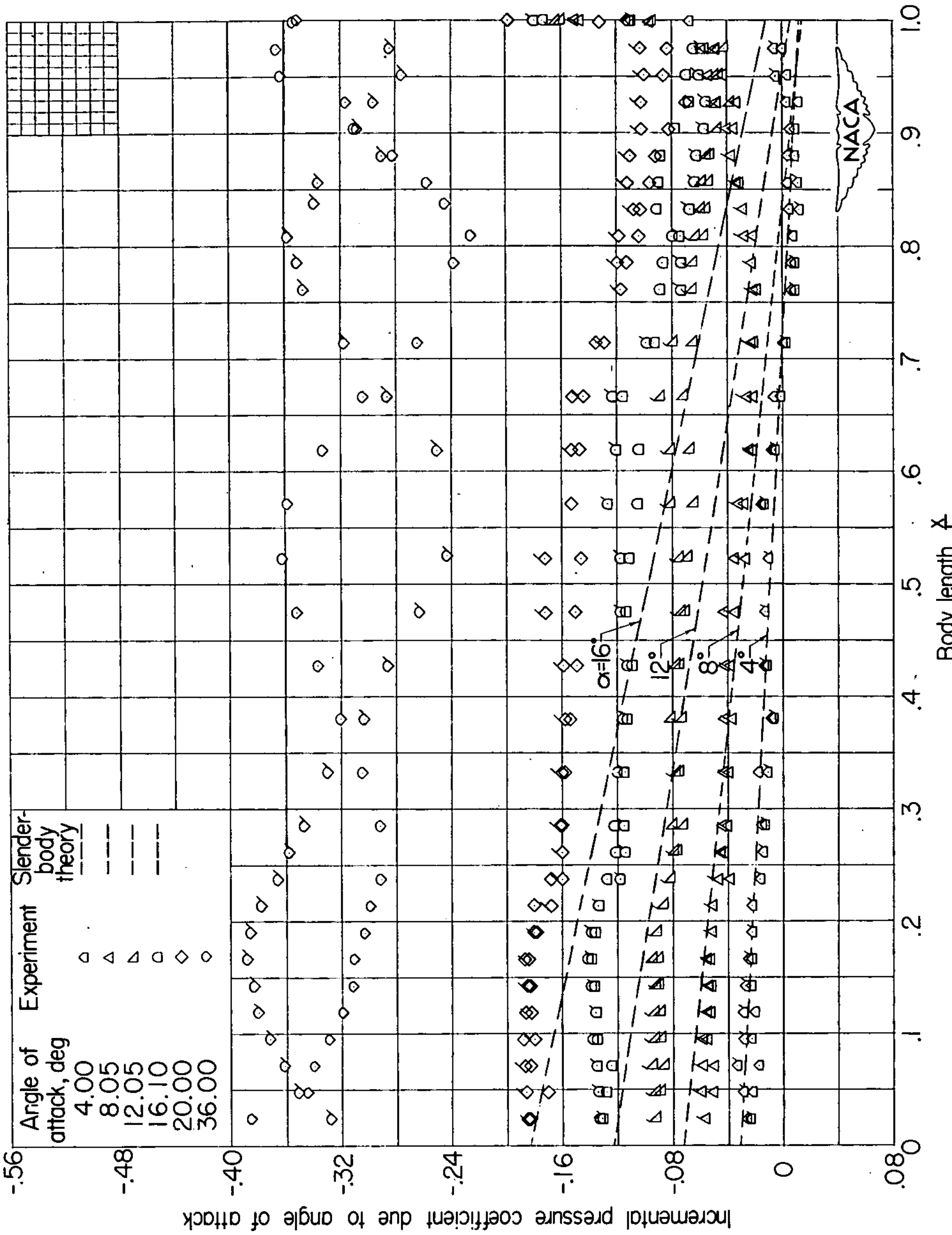
(a) $\phi = 0^{\circ}, 360^{\circ}$.

Figure 9.- Incremental pressure coefficient due to angle of attack as a function of axial position. (Flagged symbols indicate test points between 180° and 360°.)



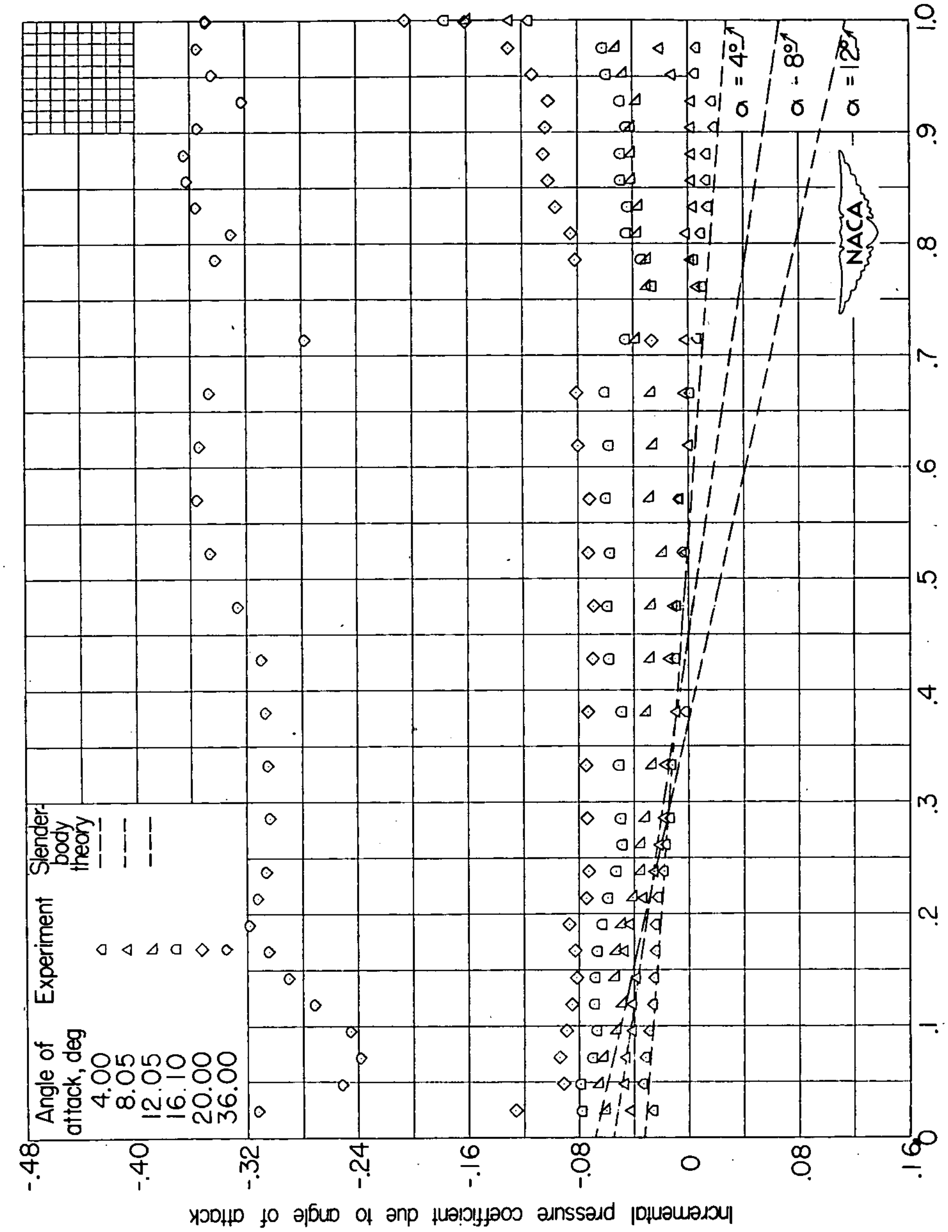
(b) $\phi = 90^{\circ}, 270^{\circ}$.

Figure 9.- Continued.



(c) $\phi = 135^{\circ}, 225^{\circ}$.

Figure 9.- Continued.



(d) $\phi = 180^{\circ}$.

Figure 9.- Concluded.

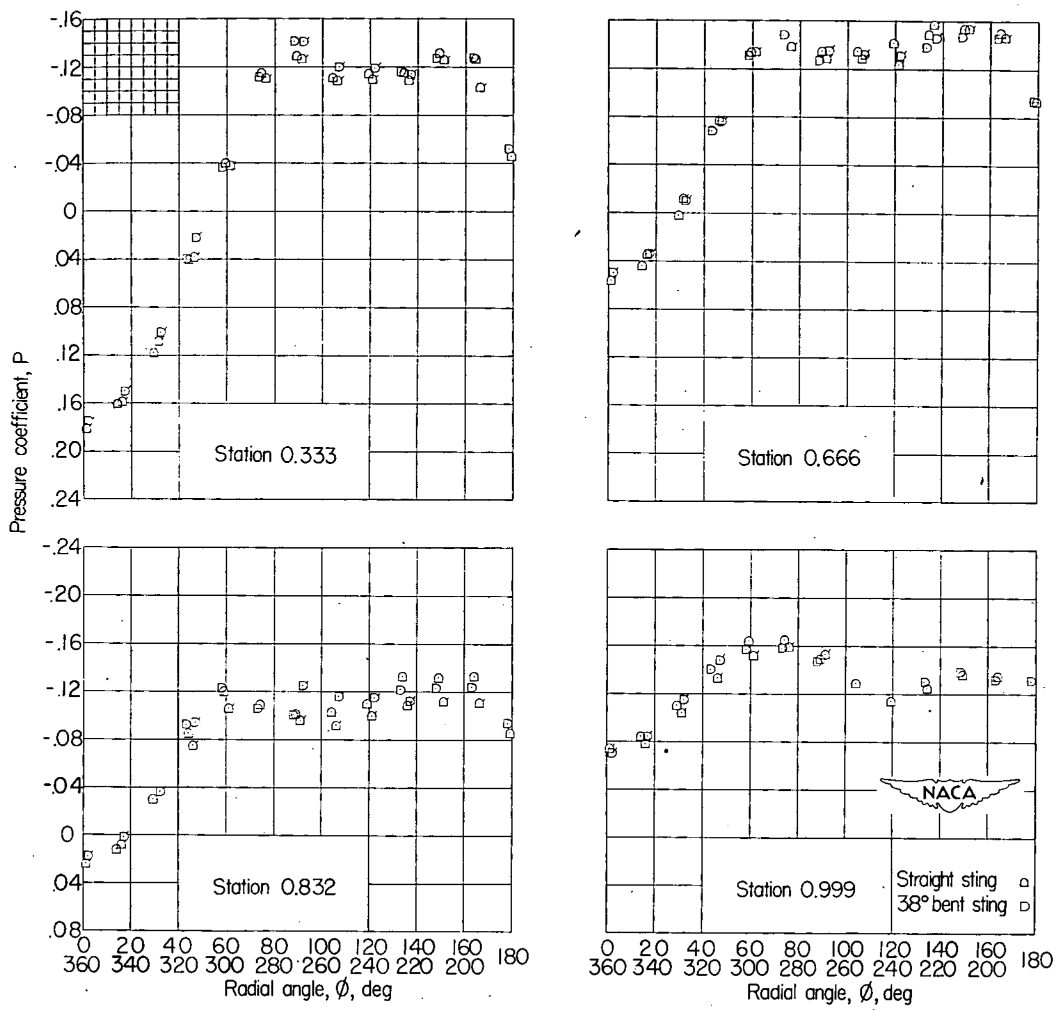
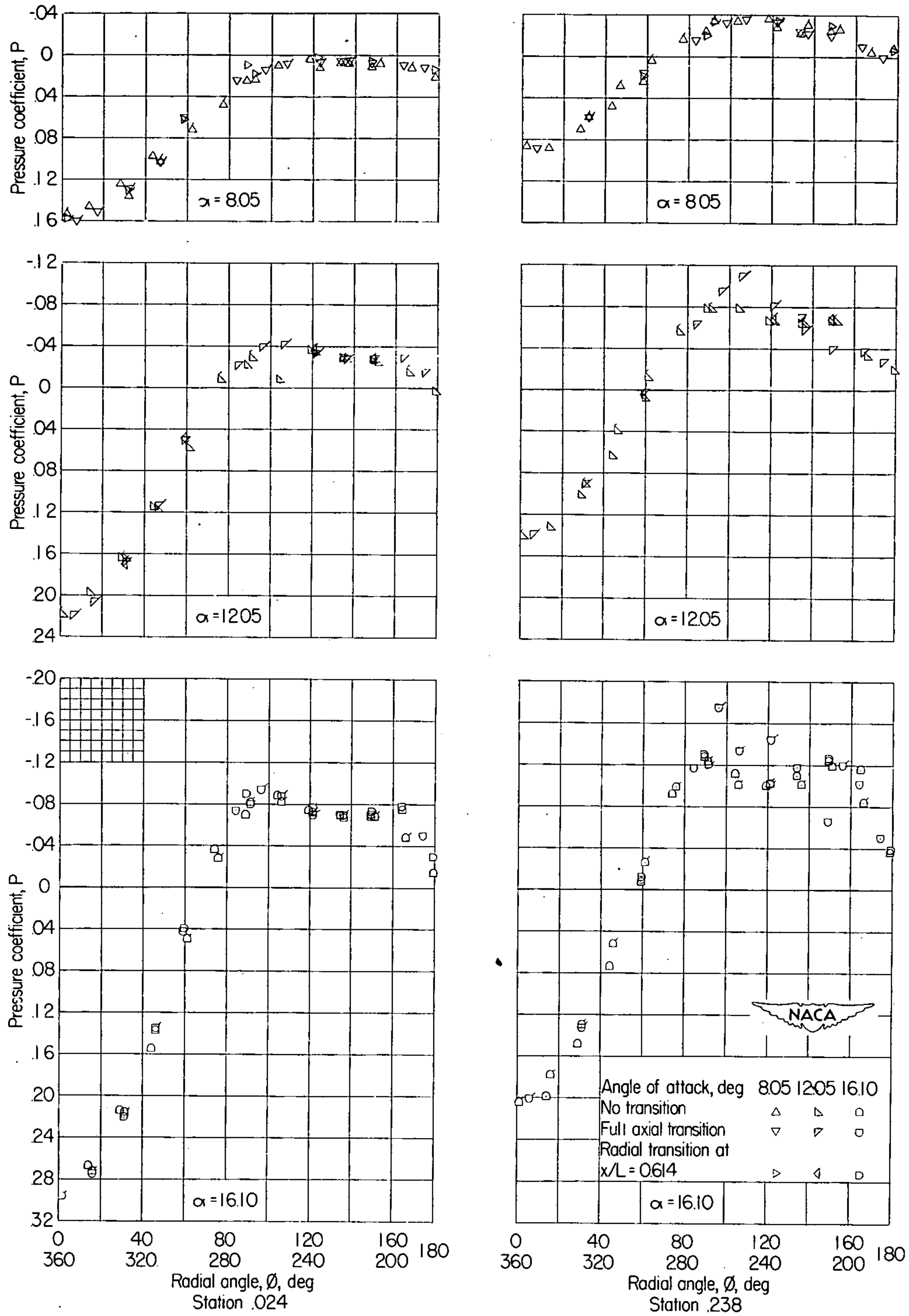
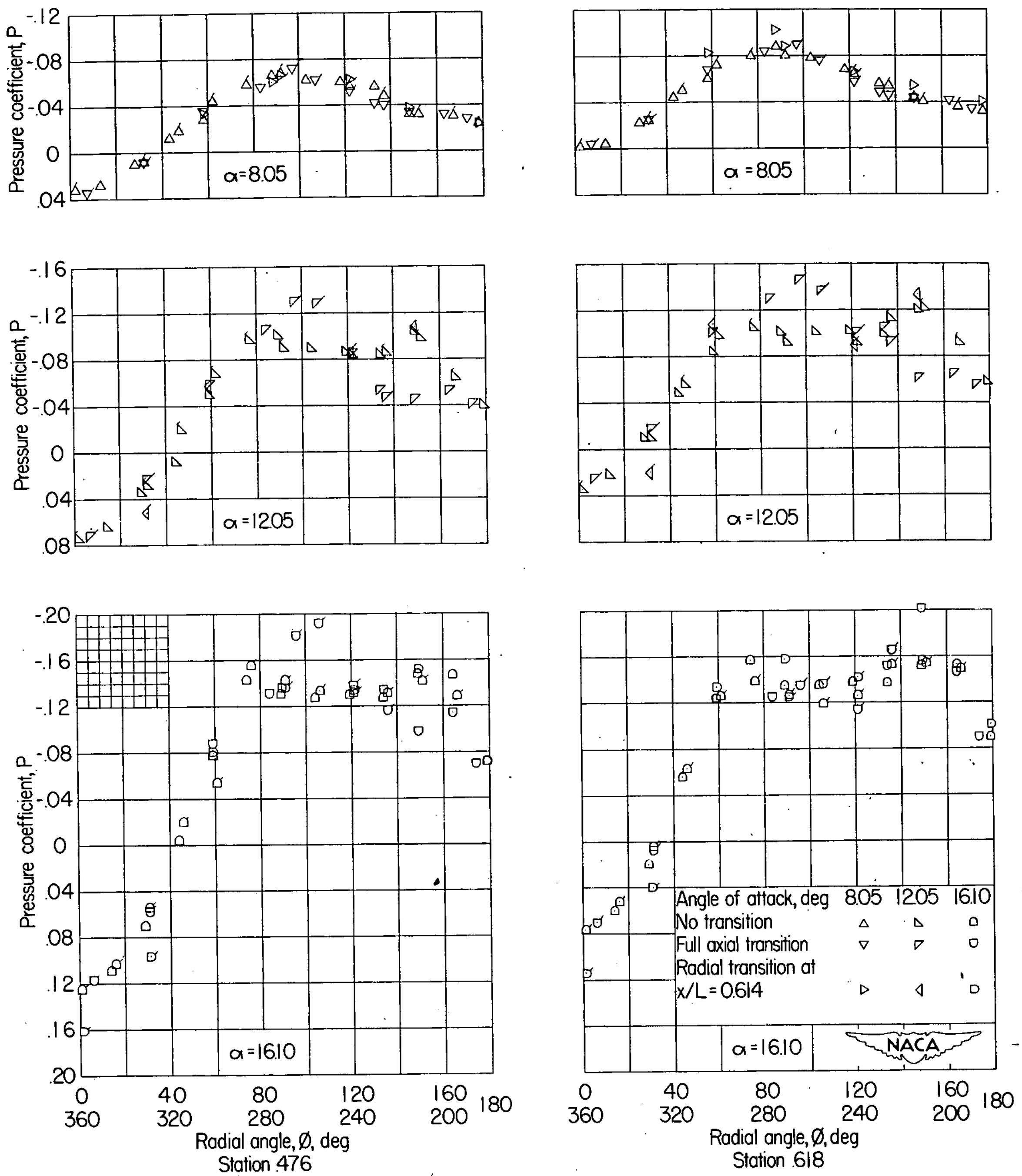


Figure 10.- Pressure-coefficient variation with radial position for the parabolic body of revolution mounted on the straight and the 38° bent stings. $\alpha = 16.10^{\circ}$. (Flagged symbols indicate test points between 180° and 360°.)



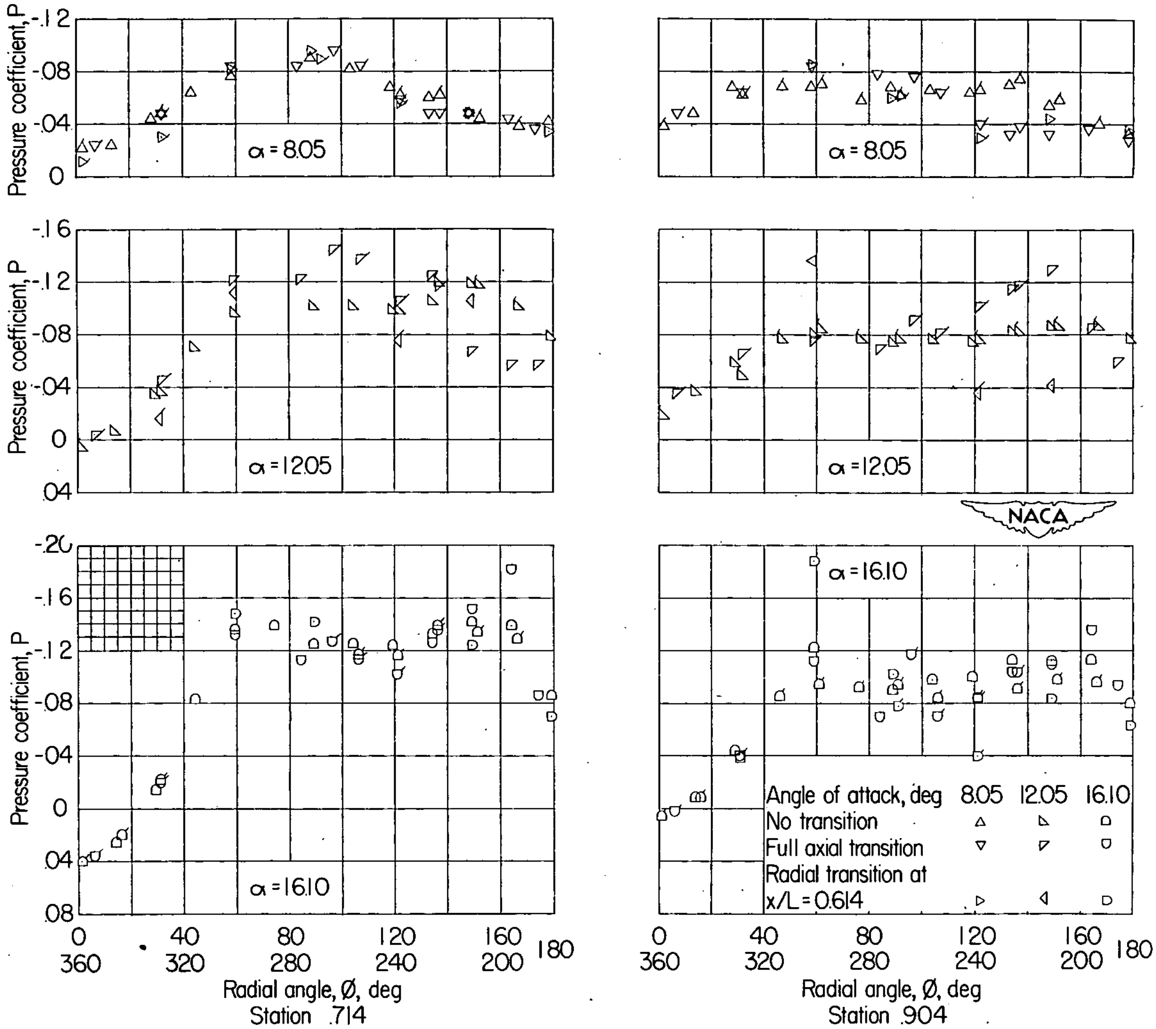
(a) Stations 0.024 and 0.238.

Figure 11.- Comparison of radial pressure distributions at six axial stations with and without transition strips. (Flagged symbols indicate test points between 180° and 360°.)



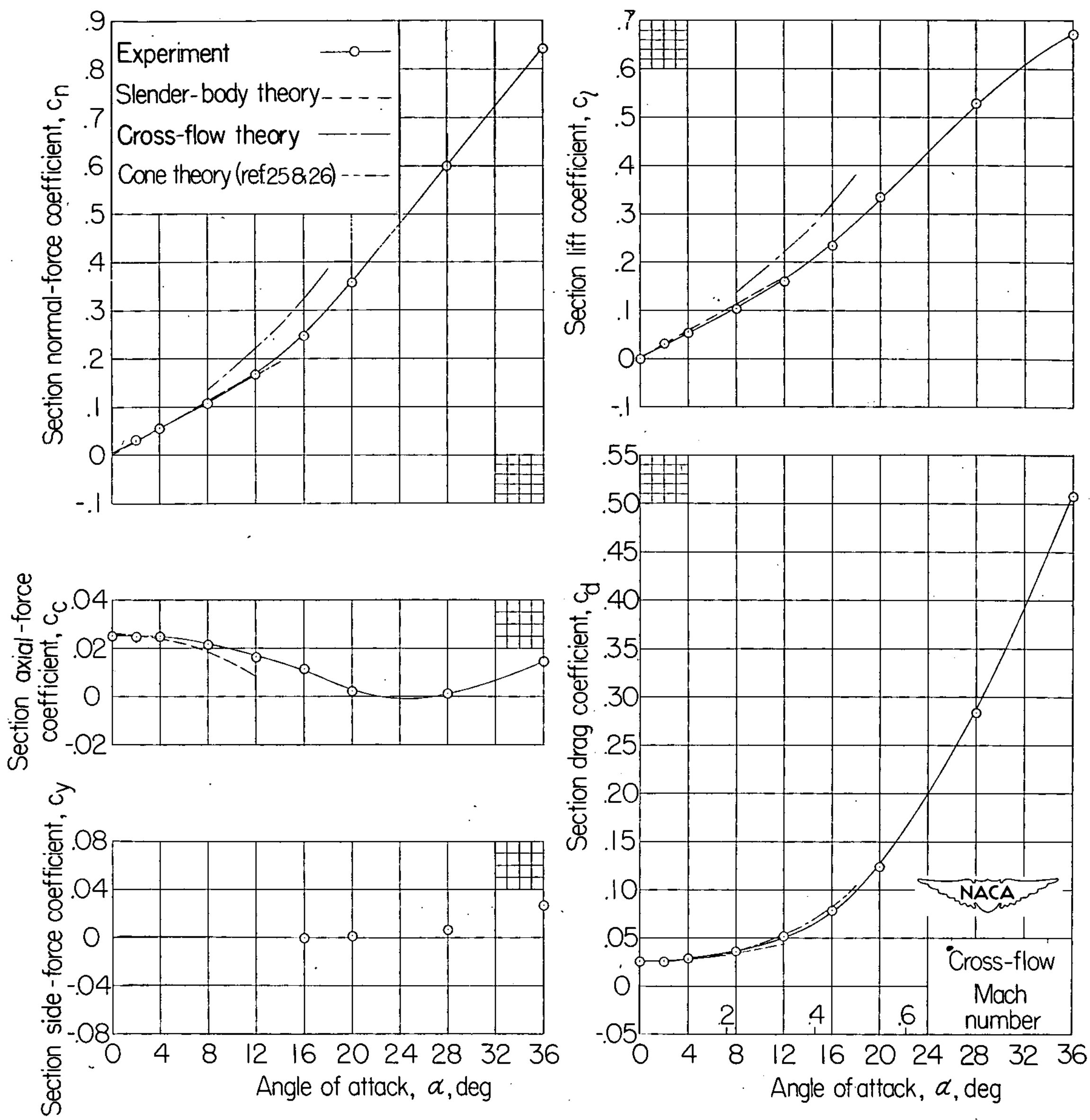
(b) Stations 0.476 and 0.618.

Figure 11.- Continued.



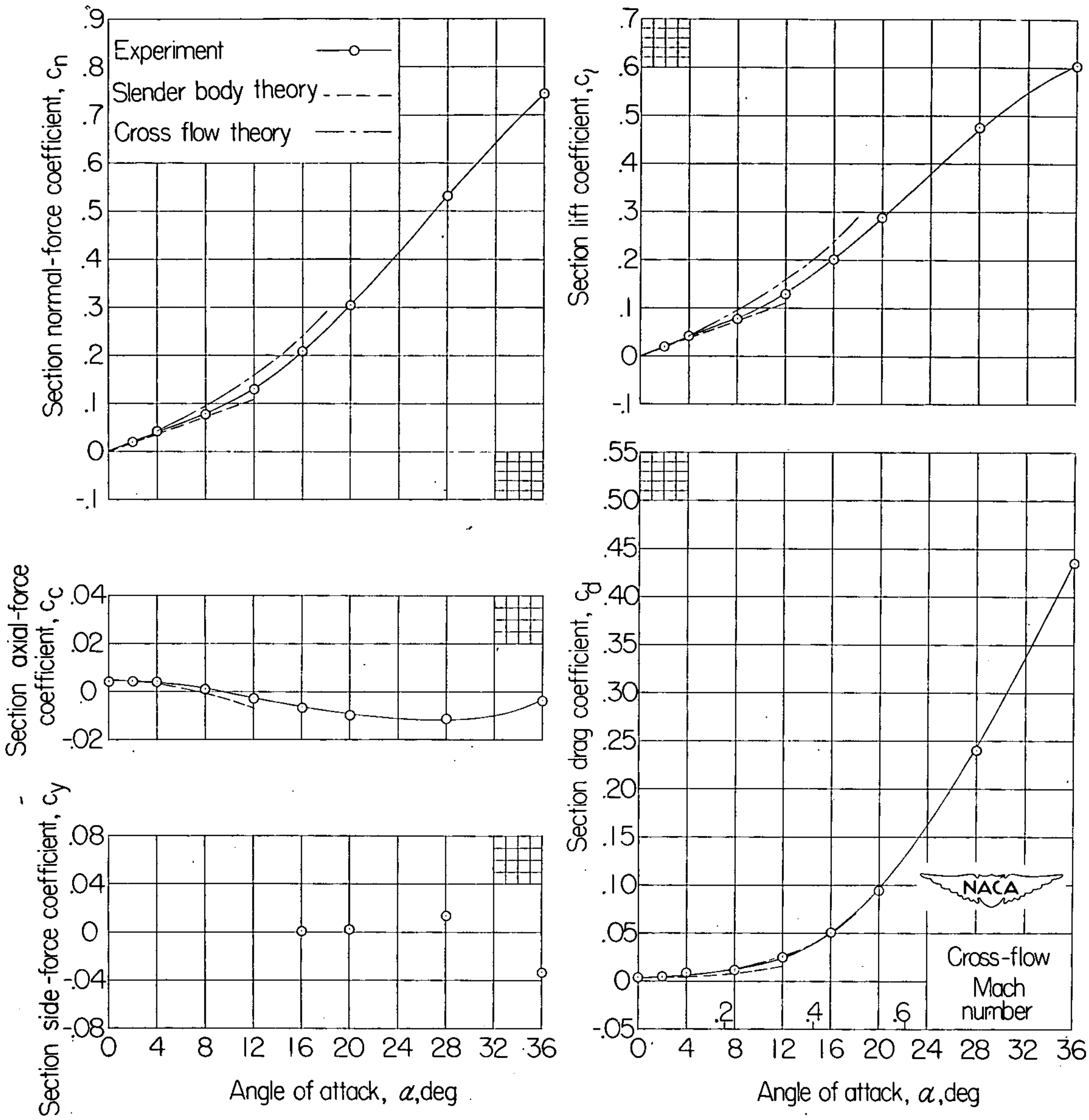
(c) Stations 0.714 and 0.904.

Figure 11.- Concluded.



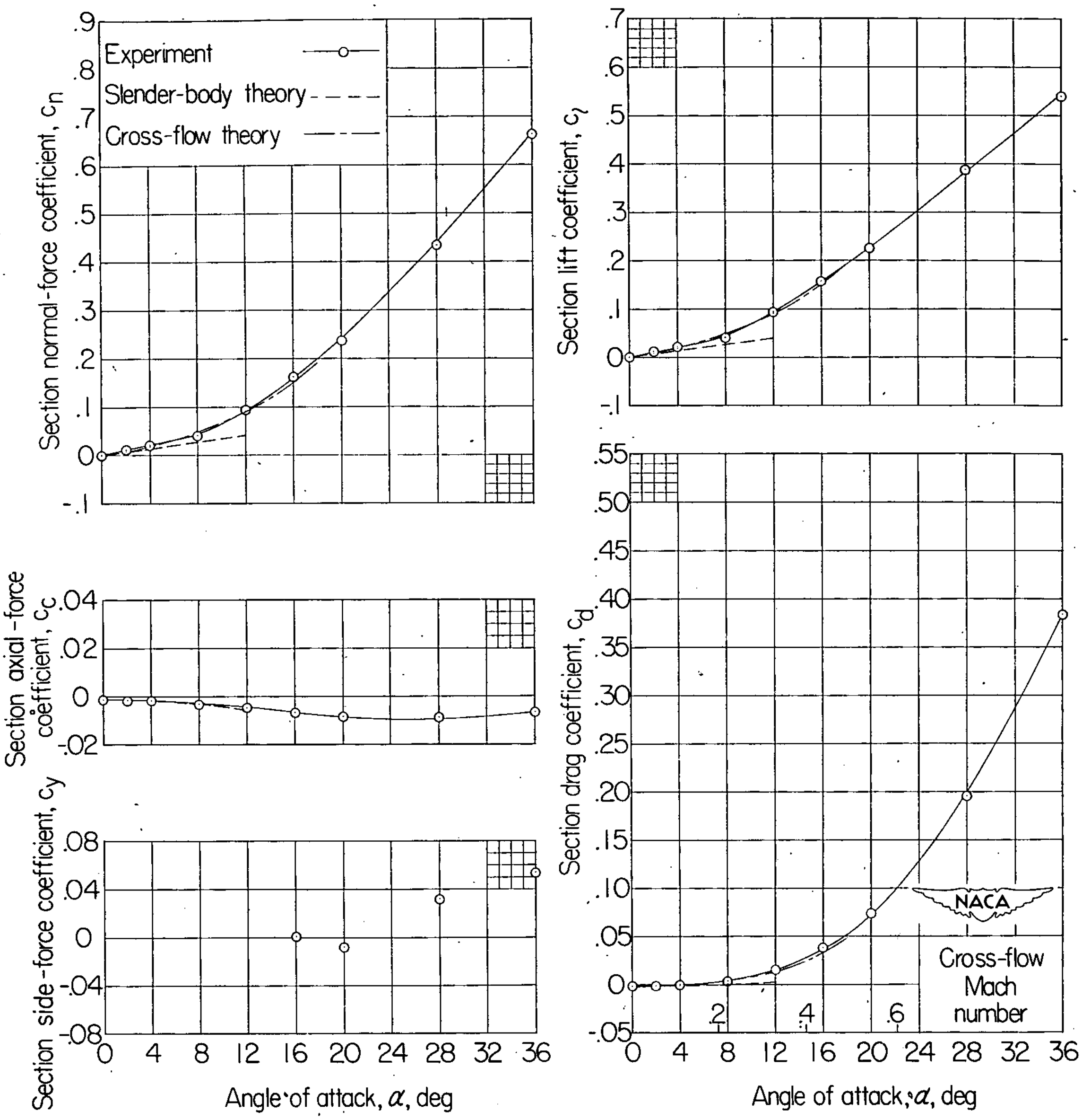
(a) Station 0.024.

Figure 12.- Section aerodynamic characteristics on a parabolic body of revolution at six axial stations. M = 1.59.



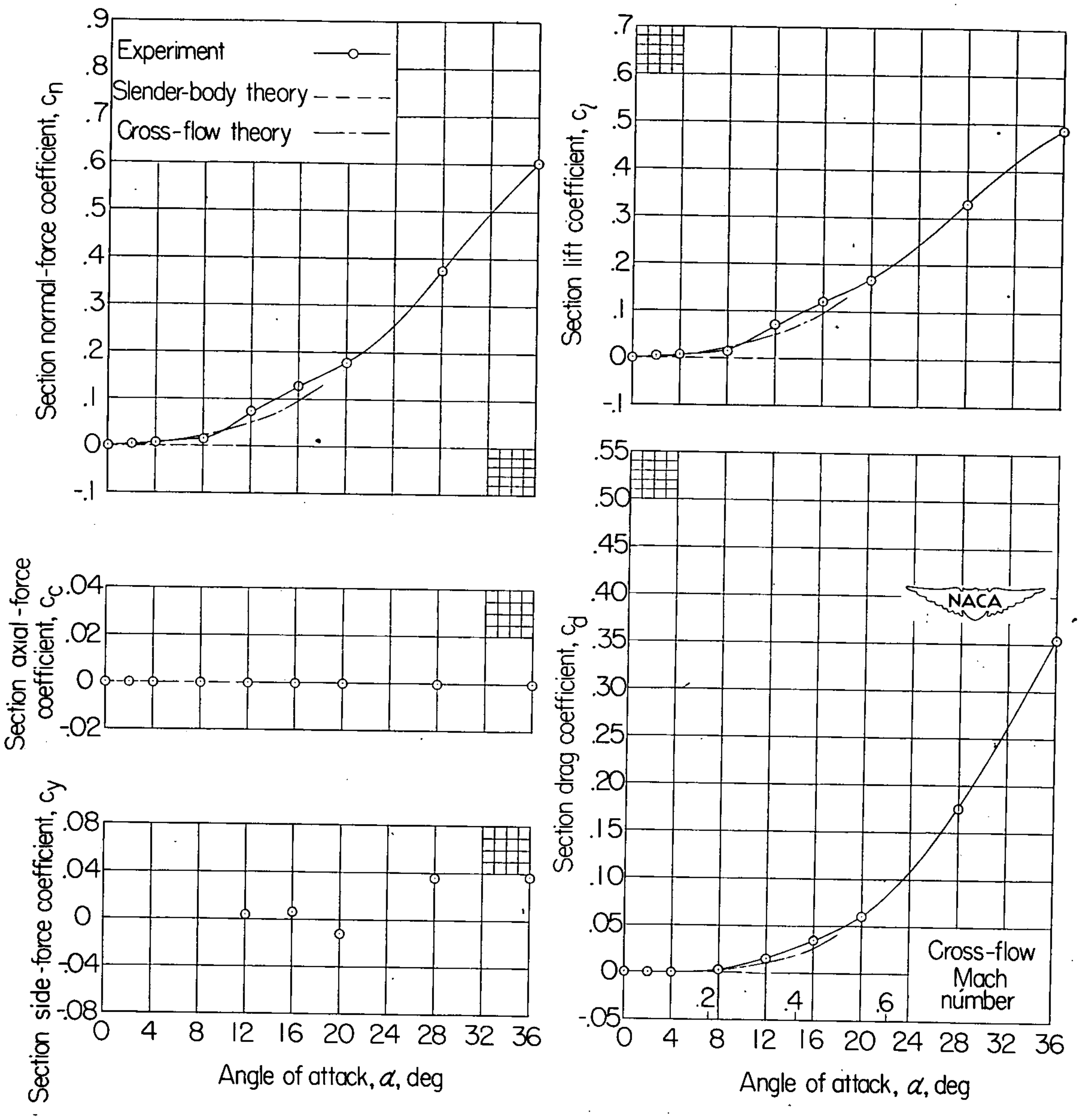
(b) Station 0.238.

Figure 12.- Continued.



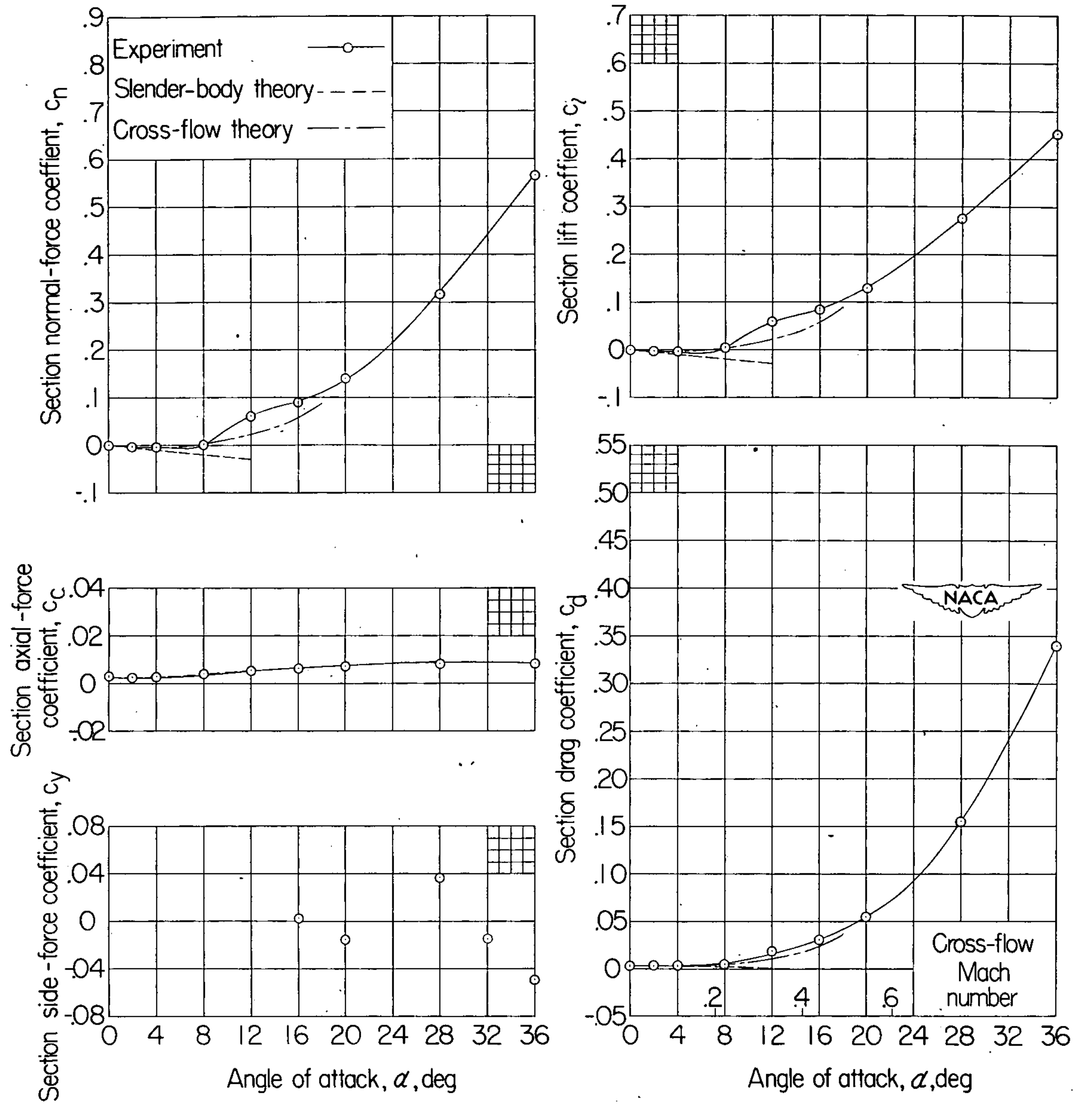
(c) Station 0.476.

Figure 12.- Continued.



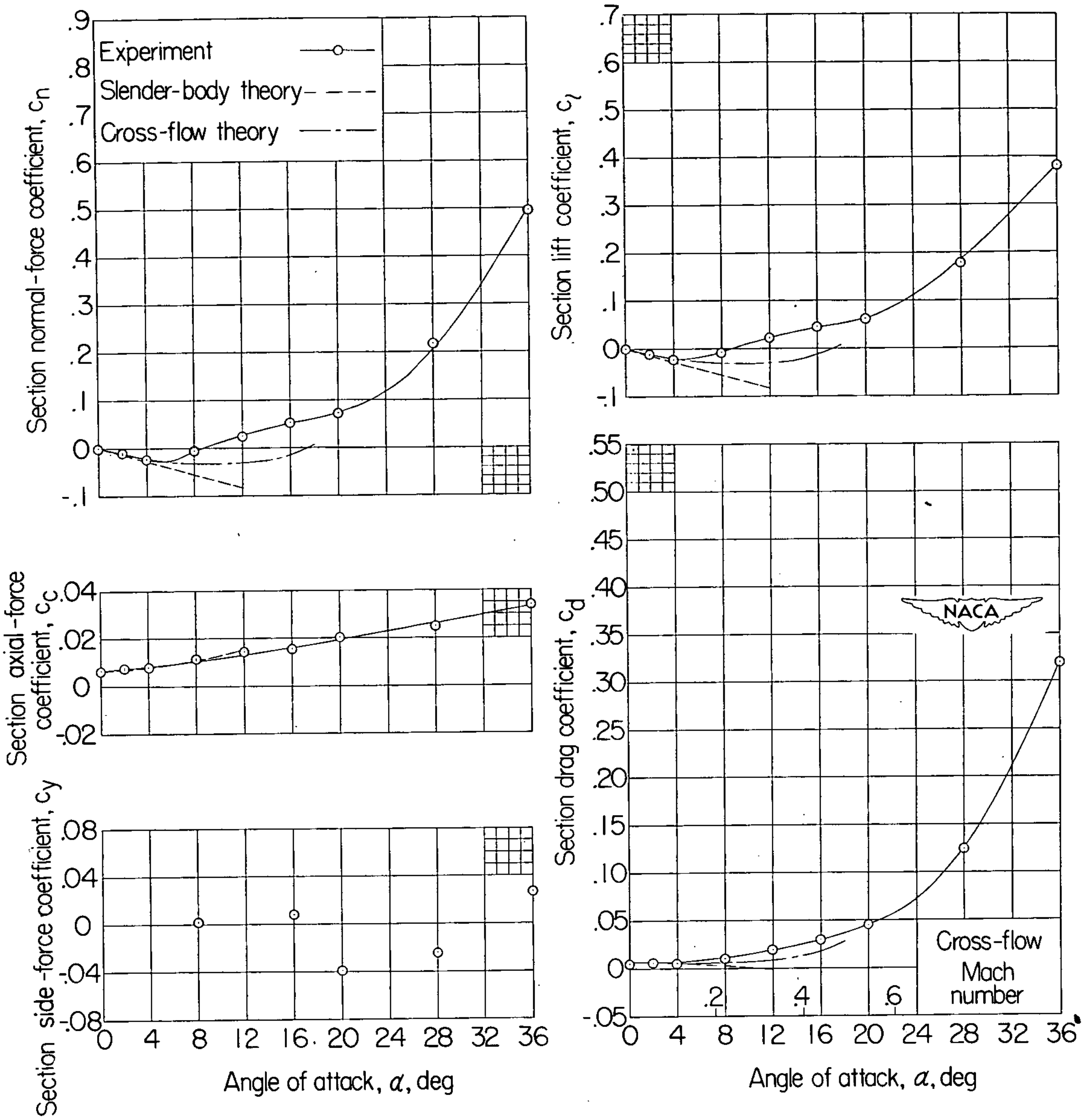
(d) Station 0.618.

Figure 12.- Continued.



(e) Station 0.714.

Figure 12.- Continued.



(f) Station 0.904.

Figure 12.- Concluded.

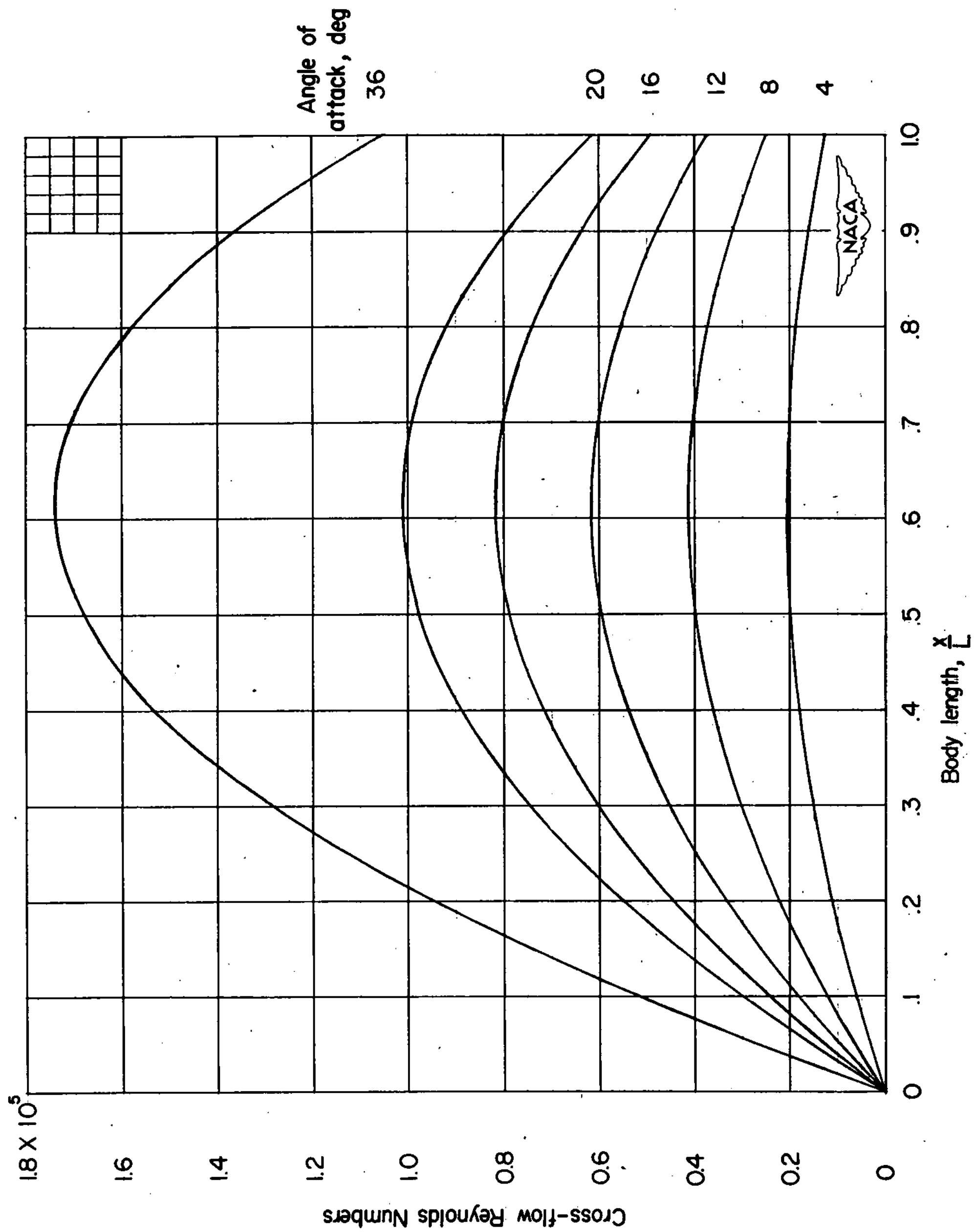


Figure 13.- Cross-flow Reynolds numbers for a series of representative angles of attack M = 1.59.

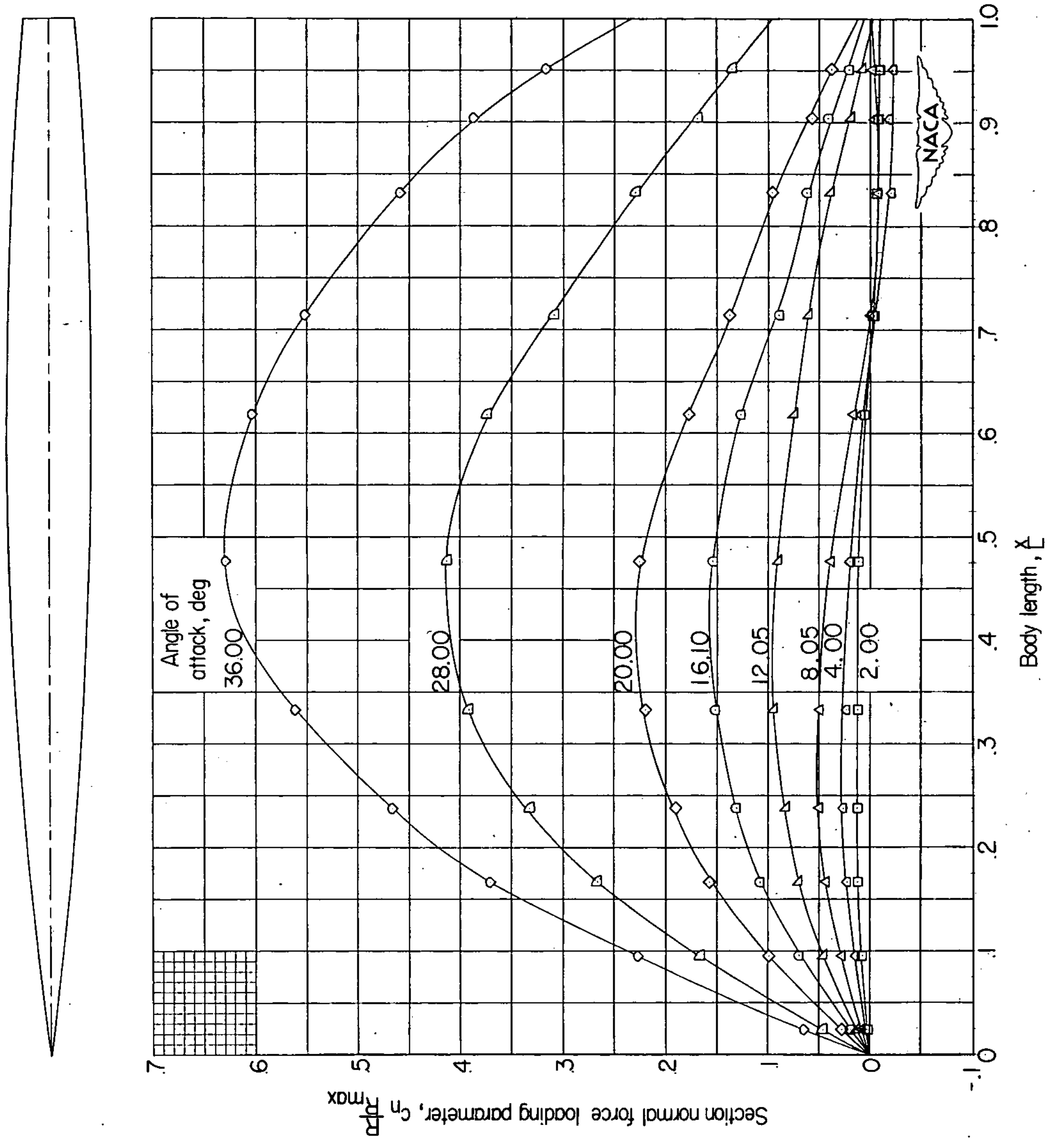


Figure 14.- Normal-force loading distribution on parabolic body of revolution. M = 1.59.

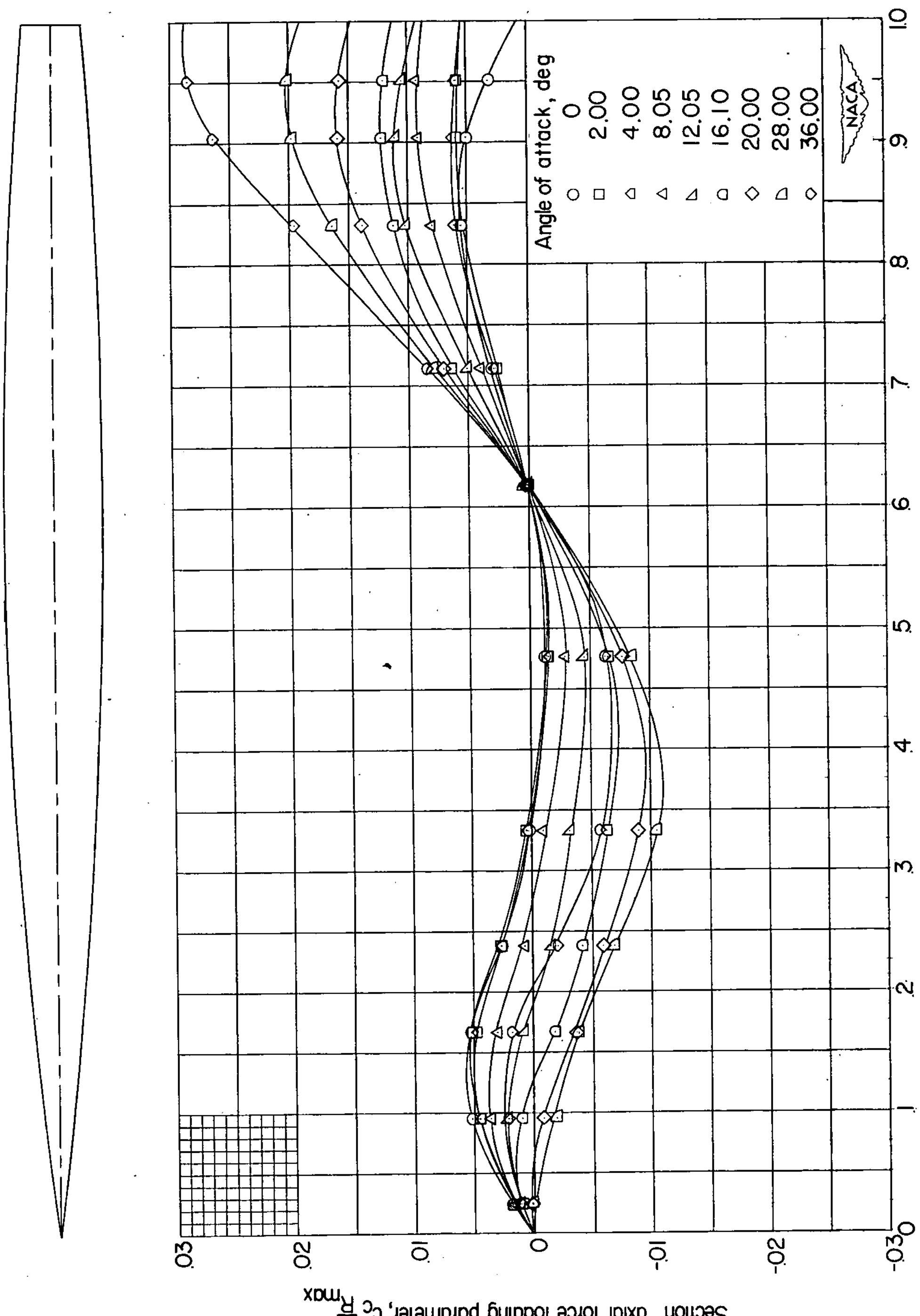


Figure 15.- Axial-force loading distribution on parabolic body of revolution. M = 1.59.

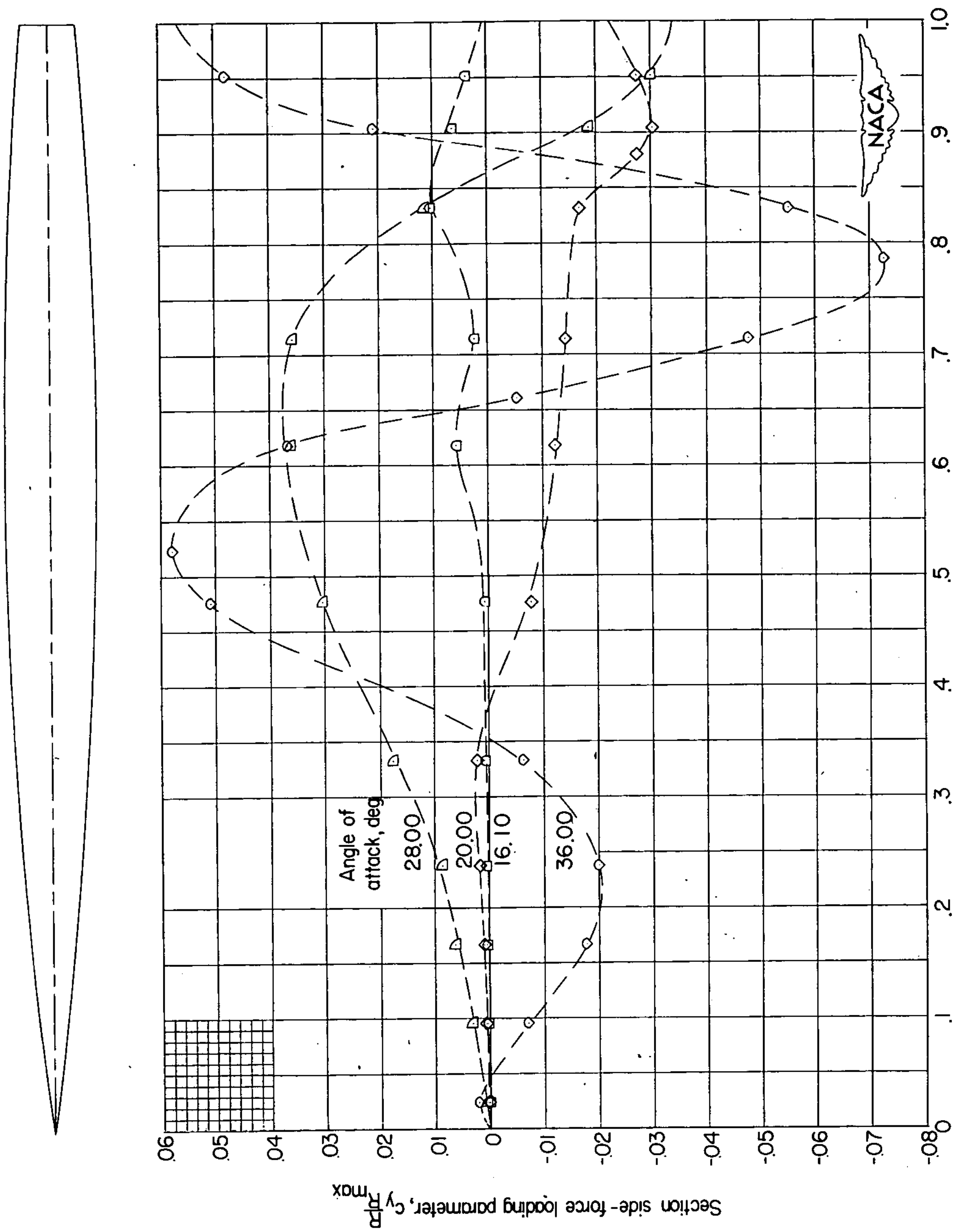


Figure 16.- Side-force loading distribution on parabolic body of revolution. M = 1.59.

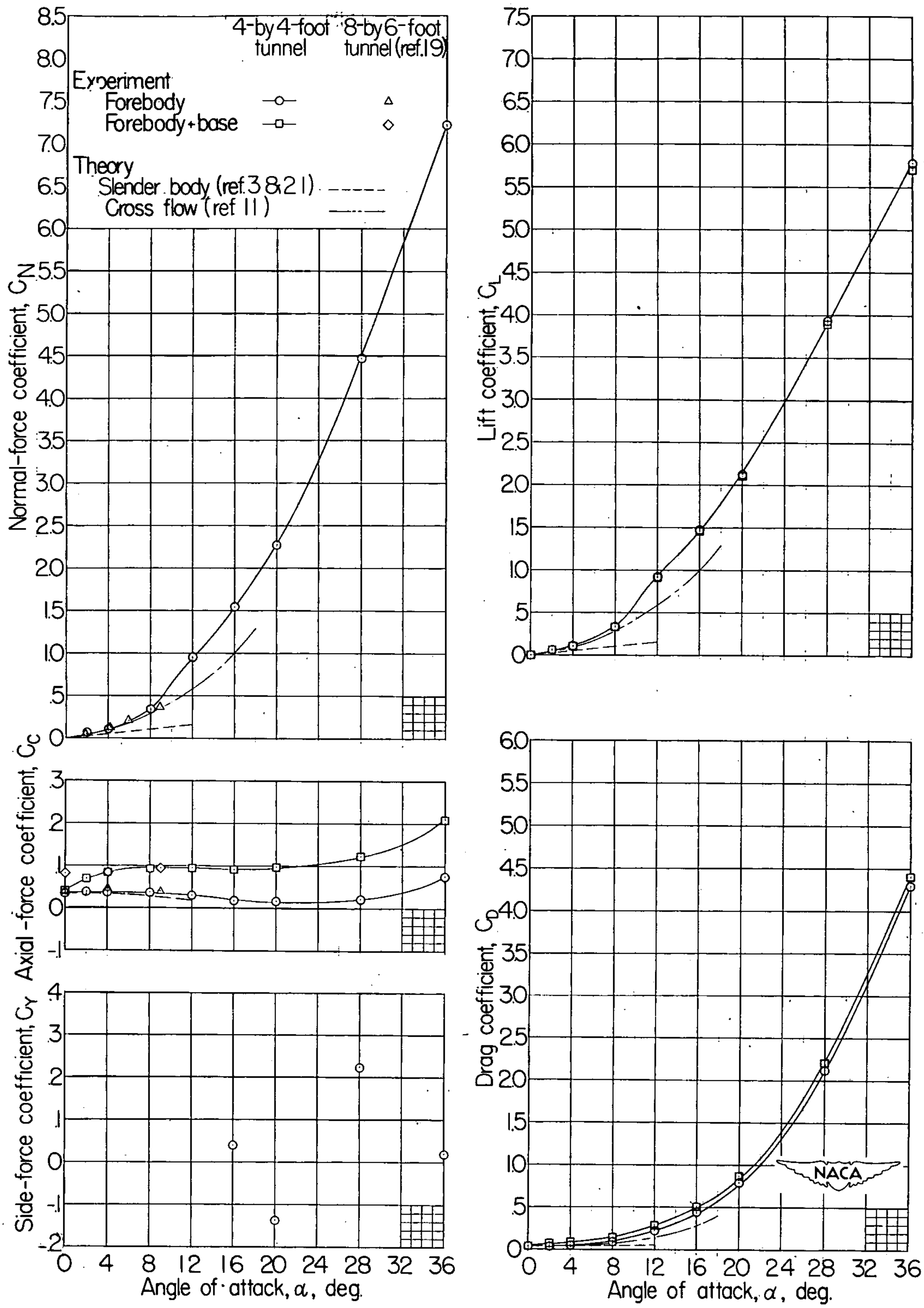


Figure 17.- Aerodynamic characteristics of parabolic body of revolution. M = 1.59.

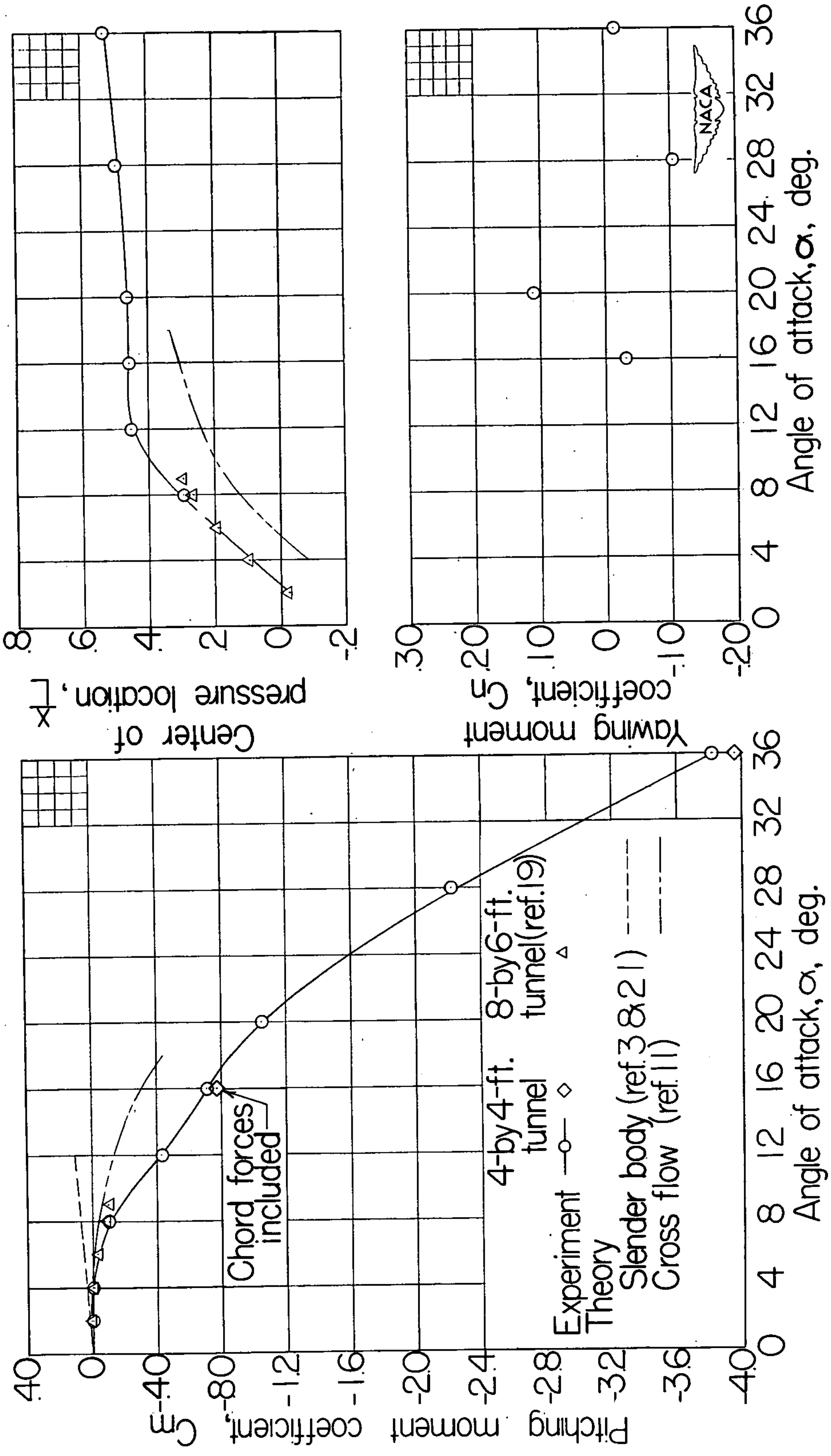


Figure 17.- Concluded.

SECURITY INFORMATION

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