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by

P.H. Cook
M.A. McDonald
M.C.P. Firmin

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Procurement Executive, Ministry of Defence
Farnborough, Hants

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SUMMARY

Measurements have been made of the distributions of local Mach number, flow direction and static pressure coefficient through the wake and boundary layers of a wing of constant chord (0.61 m normal to the leading edge) and RAE 101 section at sweep angles of 20 and 28 degrees. The model spanned the 1.8 m (6 ft) dimension of the wind tunnel working section and was set at incidences in the range of ±1.88 degrees. Tests were made at free stream Mach numbers in the range 0.43 to 0.76 and Reynolds numbers of 7 to 11×10^6.

The technique of measurement, using calibrated miniature three-hole yawmeters, is described and the experimental results are compared with an integral boundary-layer calculation method. Some comparisons are also made with previous tests at zero sweepback.

Departmental Reference: Aero 3457

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1 INTRODUCTION

Experimental information is required to assist in the development of methods for calculating flow over wings taking into account the effects of the boundary layer and wake. The experiment described in this Report is part of a programme with this aim and extends previous work on the measurement of boundary layers and wakes on aerofoils to a case where a swept wing of constant chord spans the test section of the wind tunnel. The wing was mounted vertically across the smaller dimension of the RAE 8ft × 6ft (2.4m × 1.8m) transonic wind tunnel. Tests were made at 20 and 2C degrees of sweepback and Mach numbers from 0.426 to 0.764 with incidences in the range ±1.88 degrees at Reynolds numbers of 7.45×10^6 to 1.13×10^7 based on streamwise chord.

The major difficulty in measuring boundary layers and wakes on swept wings is the determination of flow direction; an important part of the work was therefore the development of a technique to obtain not only the local Mach number and static pressure but also the flow direction in the boundary layers and wakes. A compact yawmeter design was required which could be manufactured in a size which was reasonably small compared with the boundary layer thickness. A Conrad type 3-hole yawmeter was chosen which had a central pitot tube and two outer tubes with 45 degree swept-back faces. It has been common practice to use yawmeters to measure the mean flow in boundary layers, but usually the probe is set in line with the local flow when a measurement is made. In this test it was not feasible, because of the bulk of the mechanism which would have been required, to use this mode of operation without significantly altering the flow over the wing. The yawmeters were therefore used as 'fixed-direction' probes employing a calibration of the measured probe pressures to evaluate the flow direction relative to the probe head, the local Mach number and the local static pressure. This use of the yawmeter enabled a compact traverse mechanism to be designed which could be almost entirely contained within the model. A preliminary report on this work was given at the EUROMECH Colloquium 33 [1] in 1972.

The contents of the present Report can be divided into four areas of interest: (1) the description of the experimental set-up in sections 2 to 4; (2) the calibration of the yawmeter probes in section 5; (3) the analysis of the measurements in sections 6 and 7; and (4) the results and comparison with a calculation method and two-dimensional tests in sections 8, 9 and 10.

2 THE MODEL

The steel model shown in Figs 1 and 2 was of RAE 101 section [2] and 10% thick. The chord normal to the leading edge was 0.61 m (24 in) and the maximum thickness

0.061 m (2.4 in). The model spanned the 1.8 m (6 ft) dimension of the wind tunnel test section and could be set at any sweep angle up to 28 degrees. The angle of incidence was changed by rotating the model about an axis lying along the quarter-chord line of the wing. Values of angle of incidence are quoted both in a plane normal to the leading edge and in a streamwise plane. Where the model passed through the roof and floor of the working section an air seal was maintained by plates carrying flexible rubber seals which prevented leakage to and from the working section. The slots in the roof and floor of the tunnel were blocked by wooden battens, and the slots in the side walls were reduced in width to obtain an open area ratio on the walls of 1.6%.

The leading and trailing edges of the wing could be removed. Behind these edges two spanwise ducts were formed to carry the pressure tubes and the wiring for the instrumentation through the tunnel walls to the outside of the working section. The model was supported above the working section in a double trunnion bearing which permitted changes in both incidence and sweep. The bottom of the wing was held in a sliding mechanism beneath the tunnel floor.

The manufacturing accuracies achieved in forming the profile of the model were ±0.05 mm on the ordinates and ±0.002 on surface slope.

A detailed chordwise pressure distribution could be measured in an area near the centre of the working section, with 42 pressure measuring stations on each surface. A spanwise distribution of pressure stations on the upper surface was provided at $x/c = 0.2$ and 0.7 as shown in Fig 2 (the model is drawn at 20 degrees sweep).

The positions of the traverses relative to the model and the working section are also shown in Fig 2. The traverse mechanism used for probes located near the trailing edge was originally designed for use at zero sweep, which accounts for the proximity of some of the traverses to the roof of the tunnel.

Probe traverse mechanisms designed with adequate rigidity for wind tunnel use tend to be of a size that, when placed sufficiently close to a model to enable the boundary layer or near wake to be investigated, may significantly modify the flow about the model. To minimise this defect for these tests an attempt was made to design traverse mechanisms which were completely contained within the model. The resulting restriction in volume available for the mechanism limited the traverse to a single linear or rotary motion. It was therefore impossible to align the yawmeter head with the local flow direction and consequently for these tests yawmeters were used as 'fixed-direction' probes and a calibration of the measured probe pressures was used to determine the local flow parameters.

The probes were traversed by remotely controlled electric motors and gearboxes inside the model. The position of each probe relative to the model was determined by a potentiometer located inside the model and measuring a change in relative position of the probe support and the model. This scheme enabled the position of each probe to be measured independently without errors due to backlash in the driving mechanism. Two types of traverse mechanism were installed in the model, one with a linear movement and one with a rotary movement, see Figs 3 and 4 respectively. The linear traverse mechanism was used where sufficient depth was available within the model to accommodate the requisite probe movement, elsewhere, ie aft of 0.7 chord the rotary type was used.

The linear mechanism shown in Fig 3 could be used for probes located between 0.1 to 0.7 chord with a travel normal to the model chord line of 7.5 mm. The probes were arranged in two groups of seven units each, one group for the upper surface and one for the lower. The probes were moved by racks driven by pinions mounted on a common shaft which was rotated by an electric motor through speed-reducing gearboxes buried in the wing. All these traverses were used for two-dimensional testing, but in the swept wing tests only one of the traverse positions was used (0.3 chord on the upper surface) the other positions being converted to surface pressure measuring points.

The traverse mechanism sketched in Fig 4 was used to mount the yawmeter probes in the region of the trailing edge of the wing. In this case the movement of the probe was achieved by rotating the tube supporting the probe head about an axis in the chordal plane of the wing and normal to the leading edge. This method of operation gave a compact mechanism but, of course, resulted in variation of the spanwise position of the probe with its distance from the surface. The probe was carried on an arm extending from the axis of length about 50 mm. The rotation of the arm was limited to about 60 degrees resulting in a maximum traverse of about 40 mm. The height was measured by a circular arc potentiometer track attached to the arbor which supports the probe arm. The rotary motion about the axis of the arbor was imparted to the arbor by driving the actuating rod, the connection being made by a pin offset radially from the axis of rotation of the arbor. The actuating rod was driven in the direction of the generators of the wing by an electrically operated linear actuator located outside the working section.

3 THE PROBES

Two types of probe have been used in these tests, 3-hole 'Conrad' type yawme ers and a flattened pitot tube.

3.1 The pitot probe

This probe, Fig 5, was made from standard 1mm OD hypodermic tubing. The nominal half-thickness is 0.075 mm but measured dimensions for the actual probe were used in computing the probe height. The nominal size of the orifice is 0.05 mm × 1.1 mm. A rectangular rather than a circular orifice was preferred, despite the unpredictability of the 'displacement' effect (see section 7.2), as measurements could be made close to the model surface without incurring an unacceptable manometer settling time. The pitot probes were used only for the traverses made at x/c = 0.28.

3.2 The yawmeter probes

Figs 6 and 7 show a yawmeter probe head fitted to a probe support arm. The detachable probe head was manufactured from standard 0.5mm OD hypodermic tubing. Three lengths of tube were laid side-by-side and soldered together. The centre tube was 'faced-off' at 90 degrees to the probe axis and the two outer tubes at 45 degrees, as shown in Fig 6. The side of the probe adjacent to the model surface was ground away until the tube centres were 0.15 mm from the flattened surface. Two versions of the probe were made, one straight and one with a 1.75 mm off-set from the axis of the support tube which enabled the probe head to touch the model surface without the brass attachment nut making contact.

The probe support arms consisted of a 3.0mm OD hypodermic tube casing containing three 1.0mm OD hypodermic tubes. The 1.0mm tubes were brazed into one end of the casing which was machined flat and normal to the tube axis of symmetry and a screw thread cut on the outside. At the other end of the arm the 1.0mm tubes protruded from the casing for about 12 mm. The arm was installed in the traverse mechanism, as shown in Fig 4, with the 0.5mm OD tubes of the probe head inserted into the 1.0mm OD tubes in the support arm as shown in Fig 7. The brass nut was tightened to pull the head down on to a soft rubber seal making a leak-proof joint.

In order to achieve the required orientation of the probe head relative to the axis of rotation of the traverse mechanism, sets of probe support arms were specially designed for each angle of sweepback. For these tests, where measurements were made at two angles of sweepback and two yaw settings of the probe head (see section 5.3.1(b)), it was possible to use one set of probe support arms for both angles of sweepback. The probe support arms were designed to position the probe head so that the plane in which the angle of yaw was measured was parallel to the surface of the model when the probe was touching the surface*.

4 TEST CONDITIONS

The aim of the test was to provide a region of the wing where any changes in surface pressure distribution in a spanwise direction was small, so that it should be possible to interpolate from the rather sparse coverage of pressure distribution to obtain accurately the pressure field in which the boundary layer was developing.

The test conditions for the two angles of sweepback (Λ) are given in the table below as α , M_∞ and Re which have their usual definitions. The conditions are such that in a plane normal to the leading edge the incidence (α_N) and the Mach number (M_N) of the component of the free stream velocity (U_N) are the same for both angles of sweep (and for tests previously made at zero sweepback). So that $\alpha = \sin^{-1}(\sin \alpha_N \cos \Lambda)$**, $M_\infty = M_N \sec \Lambda$.

The quoted Reynolds numbers result from testing at a given unit Reynolds number for each of the two values of M_N ; consequently Re varies as $\sec \Lambda$ because the representative length (the streamwise chord) is proportional to $\sec \Lambda$. It could be argued that for equivalent conditions at different angles of sweepback the tests should have been made at constant Reynolds number based on streamwise chord, *ie* at unit Reynolds numbers proportional to $\cos \Lambda$. However, if consideration is to be given to the effectiveness of two-dimensional calculations for predicting three-dimensional boundary layer development (see section 10) by making calculations based on the flow components normal to the leading edge and ignoring the spanwise component, it can also be argued that the Reynolds number should be based on flow conditions normal to the leading edge and the length of the surface streamline in the three-dimensional flow, as this is the path along which the boundary layer develops. As the streamwise chord is a reasonably close approximation to this path length the representative length is taken as proportional to $\sec \Lambda$ and therefore, with the component of the free

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* In the wake the chordal plane replaces the surface of the model.

** The form of this equation depends upon the precise definition of α which is adopted. Since the angle of incidence in the tests is applied about an axis parallel to the leading edge, the equivalent conditions for a swept-winged aircraft would include also an angle of sideslip. The angle of sideslip is, however, second order in α_N and can be ignored for the small values of α_N in the present tests.

stream velocity normal to the leading edge invariant with sweepback, the unit Reynolds number of the free stream is constant for each M_N . That is for constant Reynolds number for the flow normal to the leading edge

$$(Re_N) = \frac{U_N\ c\ \sec\Lambda}{\nu_\infty}$$

$$= \frac{U_\infty \cos\Lambda\ c\ \sec\Lambda}{\nu_\infty}$$

$$= \frac{U_\infty c}{\nu_\infty}$$

which is independent of sweepback and proportional to the free stream unit Reynolds number as used in these tests.

Λ^o	20		28	
α^o	0 and ±1.88		0 and ±1.77	
α_N^o	0 and ±2.0		0 and ±2.0	
M_∞	0.426	0.718	0.453	0.764
M_N	0.4	0.675	0.4	0.675
Re	1.06×10^7	7.45×10^6	1.13×10^7	7.93×10^6

A turbulent boundary layer was created artificially on both surfaces of the model with a strip of sparsely distributed 0.1mm diameter ballotini 6.35 mm wide centred at 0.06 chord. The boundary layer profiles were measured on the upper surface only at x/c = 0.28, 0.814, 0.903, 0.986 and in the wake at x/c = 1.01 and 1.05. Since the wing section is symmetrical results for the lower surface are effectively given by the measurements made at negative incidence. Yawmeters were used in an attempt to measure the local Mach number, flow direction and static pressure coefficient at all positions with the exception of x/c = 0.28 where a flattened pitot was more appropriate in the thin (3mm) boundary layers.

The pressure distributions in which the measured boundary layers developed are illustrated in Fig 8 as the upper surface pressure distributions measured across a normal chord close to the centre-line of the working section (see Fig 2). The complete pressure distributions for all the test conditions are presented in Table 1. The individually calibrated capsule manometers used to measure the pressures gave an overall accuracy equivalent to about ±0.003 in C_p for all test conditions. The pressure hole geometry (0.35 mm diameter ahead of x/c = 0.023 and 0.65 mm elsewhere) would, at the most adverse conditions, result in errors in surface pressure coefficient of less than 0.0007. The error was calculated for pressure hole length/diameter ratios of 1.5 to 6 using the method proposed by Shaw in Ref 3.

The spanwise coverage of surface pressure distribution on this model was limited as it was designed primarily for two-dimensional tests. The spanwise upper surface pressure distribution was measured at x/c = 0.2 and 0.7. Over the section of the model covered by these measurements (see Fig 2) the spanwise variation in C_p about the centre-line did not exceed about ±0.01. The two cases with the greatest variation in pressure across the span are shown in Fig 9. The spanwise variation in pressure shown in Fig 9b was used to assess the effect of the deviation from infinite-yawed wing flow on the calculation of boundary layer development (see section 9.1 where a theoretical method has been used to assist in the interpolation for spanwise pressure distribution between x/c = 0.2 and 0.7 and to extrapolate at x/c > 0.7). Pressures were measured at orifices inserted at the unused traverse stations on the upper and lower surfaces in order to provide further data on the spanwise variation, but these results cannot in general be quoted as local imperfections were found afterwards in the surface at these orifices. However, selected pressures at x/c = 0.5 and 0.6 on the upper surface, where no imperfections at the orifices were observed, have been used to confirm the spanwise surface pressure gradient used for calculating three-dimensional boundary layer development.

5 YAWMETER CALIBRATION

The need for calibrated, 'fixed-direction' probes was, as previously mentioned, a direct consequence of attempting to minimize the distortion of the flow about the model due to the presence of the traverse support mechanism. Each 3-hole yawmeter required a separate calibration as, even though the accuracy of manufacture was high, they could not be made accurately enough to permit the use of a calibration common to all probes. Ideally this type of yawmeter should be used for flows which are uniform in and parallel to the plane of the three tubes (*ie* the yaw plane), but although this plane was made parallel to the model surface when the probe was at the surface, the flow away from the surface does not remain parallel to the surface and the geometry of the mechanism induced varying angles of pitch and roll (about the axes of the three tubes) throughout the traverse. The effect of pitch on the probe calibrations has therefore been investigated (see section 5.2), and the effect of roll on the subsequent analysis of the yawmeter measurements is discussed in section 6.

The local Mach number (M), flow direction (γ) and static pressure (p_s) has to be determined from the three probe pressures, *ie* p_1 and p_2 from the two outer orifices and p_0 from the central orifice. The definitions of the angles of yaw (γ) and pitch (α) of the local flow relative to the probe are shown in Fig 6, where u_{xy} and u_{xz} are the components of the local velocity vector (u) in the planes shown.

The difference between the two outer pressures, *ie* ($p_1 - p_2$) is strongly dependent upon the angle of yaw (γ), with p_1 approaching total head and p_2 approaching static pressure as γ increases. The mean of the two outer pressures (p_A) has been taken as a measure of the static pressure and the difference ($p_A - p_s$) was used in the calibration to evaluate p_s. Similarly the total head (p_t) is obtained from the pressure difference ($p_0 - p_t$). The three pressure differences ($p_1 - p_2$), ($p_0 - p_t$) and ($p_A - p_s$) require normalizing with respect to the pressure level of the calibration test. Using ($p_0 - p_A$) for this purpose has been shown in Refs 4 and 5 to have two advantages, (1) that both p_0 and p_A are obtained directly from the probe pressures, and (2) a good collapse of the data with respect to Mach number and pitch is achieved.

The following functions have therefore been adopted as calibration factors,

$$A = \frac{p_1 - p_2}{p_0 - p_A} \qquad (1)$$

$$B = \frac{p_0 - p_t}{p_0 - p_A} \qquad (2)$$

$$C = \frac{p_A - p_s}{p_0 - p_A} \qquad (3)$$

all of which are functions of (M, γ, α). Factor A is used to obtain γ, B to obtain p_t and C to obtain p_s. The Mach number (M) is calculated from the isentropic relationship between the total head (p_t) and static pressure (p_s).

5.1 Calibration at zero pitch

The calibrations at zero pitch covered the following conditions,

γ = -20 degrees, (2 degrees), +20 degrees

M = 0.3, 0.45, 0.6, 0.7, 0.8, 0.85, 0.9.

These increments in Mach number (M) and angle of yaw (γ) ensured that the errors due to linear interpolation did not exceed $\pm 0.1^{\circ}$ for γ, ± 0.001 for M and ± 0.001 for $(C_p)_s$, the static pressure coefficient. Errors incurred during the experiment due to inaccuracies in pressure measurement and knowledge of the position of the probe relative to the model will degrade these accuracies.

The calibration factors were obtained for each probe by installing it in a test rig attached to a turntable in a wind tunnel wall. This calibration tunnel was of the suck-down type run at atmospheric total pressure in the RAE HATP facility and specially adapted for the purpose. The tunnel had previously been calibrated for total head, static pressure and flow direction at the calibration station. The Mach number was controlled by choking the flow downstream of the working section. The probe was set with the tip of the probe at the centre of rotation of the turntable and on the centre-line of the 140mm square working section so that the probe remained at zero angle of pitch and roll whilst the turntable was rotated to give varying angle of yaw. The probe datum for pitch and roll was the surface which had been ground flat (see Fig 6), and the yaw datum was a specified side of the probe. From these measurements, tables were compiled of the calibration factors A, B and C as functions of M and γ.

Plots of a typical probe calibration are shown in Figs 10, 11 and 12 for the calibration factors A, B and C respectively. In Fig 10 the main gradient term $0.09\,\gamma^{\circ}$ has been subtracted from A in order to show the nonlinearity of the calibration more clearly. The calibration curves for each probe were examined and any obvious errors in pressure measurement eliminated before the calibration tables were formulated. When investigating an unknown flow the tables were to be interrogated by computer using a linear interpolation between calibration points. In order to indicate the loss of accuracy likely to result from the interpolation, changes in the calibration factors equivalent to 10 times the desired accuracy of measurement of the main parameters has been shown in Figs 10, 11 and 12. For γ and M the required accuracy should be met, but for the static pressure coefficient $(C_p)_s$, at angles of yaw (γ) > 12°, linear interpolation will result in errors > 0.001.

5.2 Calibration with pitch

As angle of pitch cannot be measured with the type of 3-hole yawmeter used here, but only estimated from a knowledge of the flow environment and the traverse geometry, the effort required to obtain a complete pitch-yaw calibration for each probe head was not justified. A 'universal' correction to the calibration of all the probes has therefore been sought which was based on the pitch calibration of one probe at zero yaw.

A probe head was mounted in the calibration tunnel so that the angle of yaw was maintained at zero while the pitch angle was varied. The effect of pitch on the calibration factors is shown in Figs 13, 14 and 15. The asymmetry of the results about zero angle of pitch is attributed to the asymmetry of the probe design in the pitch plane. The estimated range of pitch angle to which the probe was subjected in the trailing edge traverse was -7 to +10 degrees. Over this range errors in the calibration factors A and B amount to about 0.2 degree yaw and 0.001 in M, and have therefore been accepted as being within the overall accuracy anticipated for the test results. The effect of pitch on the calibration factor C however can result in significant errors in static pressure, $\Delta(C_p)_s = -0.01$ at $\alpha = -7$ degrees and $\Delta(C_p)_s = -0.03$ at $\alpha = +10$ degrees. In order to reduce these errors an empirical correction to C has been derived, *ie*

$$\text{for } \alpha \geq 4^o , \quad C = C + 0.012(\alpha - 4) + 0.018$$
$$\text{for } \alpha < 4^o , \quad C = C + 0.0045\alpha$$

which is shown as the dotted lines in Fig 15. Errors in $(C_p)_s$ after applying this correction for pitch could still be of the order of ± 0.005, especially at local Mach numbers <0.5.

5.3 Use of the calibration

When unknown flow conditions were probed by a 3-hole yawmeter, the pressures p_0, p_1 and p_2 were measured and p_A derived directly from them. From these pressures the local Mach number, static pressure and flow direction in the plane of the three tubes were obtained by using the probe calibration tables set up in a computer in the following iterative procedure:-

(1) M_0 was calculated from the isentropic relationship assuming that the total pressure $p_{t_0} = p_0$ and the static pressure $p_{s_0} = p_A$.

(2) The calibration factor A was formulated from the measured probe pressures.

(3) At M_0 this was compared with the calibration table for A to obtain γ_1 by linear interpolation between the calibration values.

(4) M_0 and γ_1 were then used to enter the calibration tables to obtain the calibration factors B and C again by linear interpolation between the calibration values.

(5) C was corrected for an estimated pitch angle (see section 6).

(6) Pressures p_{t_1} and p_{s_1} were evaluated from B and C ,

$$p_{t_1} = B(p_A - p_0) + p_0$$

$$p_{s_1} = C(p_A - p_0) + p_A .$$

(7) M_1 was calculated from p_{t_1} and p_{s_1} .

(8) The iteration was continued from (3) above to obtain $\gamma_2 M_2$, $\gamma_3 M_3$ ... etc.

until the difference between successive values of M was less than 0.00001.

5.3.1 Prediction of known flows

(a) Uniform flow

As a test of the validity of the iterative procedure and calibration technique, predictions have been made of the known flow in the calibration tunnel. The flow parameters $(C_p)_s$, M and γ were calculated, both with and without the pitch correction (see section 5.2), from pressures measured at various combinations of pitch and yaw on two probes. One of the probes (No.1) had been used to obtain the data for the pitch correction.

If pressures measured during the calibration where yaw only was applied were used with the calibration tables, errors in the predicted flow parameters were zero both with and without the inclusion of a pitch calibration. This result would be expected if the iteration and interrogation procedures within the calibration tables were satisfactory.

Errors in the predicted flow parameters ($\Delta(C_p)_s$, ΔM and $\Delta\gamma$) when the probe was subjected to pitch only are shown in Fig 16. These results were obtained from the calibration of probe 1, including the pitch calibration which was obtained using this probe, and the pressure measurements from which the pitch calibration was derived. As would be expected, the inclusion of the pitch correction greatly improves the prediction of M and $(C_p)_s$. The prediction of angle of yaw remains unchanged, but is acceptable if angles of pitch of less than -7 degrees are avoided.

A further test was made using probe 1 rolled some 30 degrees from the zero pitch setting. This resulted in data for combinations of pitch and yaw

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as shown in Fig 17. The prediction of the flow over a range of angles of yaw of ±12 degrees is generally improved by the application of the pitch correction, but, as would be expected from a pitch correction derived from data obtained at zero yaw, at large yaw angles the correction is not as effective, particularly at negative yaw. In order to explore the effect of large angles of pitch with moderate angles of yaw a probe was set at ±60 degrees roll relative to the setting for zero pitch. The probe used for this test (No.2) was not the one used to obtain the pitch correction. The pressures measured by probe 2 in the calibration tunnel were used to predict the calibration tunnel flow using the calibration for probe 2 at zero pitch and the pitch correction obtained for probe 1. In Fig 18a&b the pitch correction is shown to be effective in reducing errors in static pressure coefficient and Mach number for angles of pitch in the range -7 degrees to +10 degrees and thus to some extent substantiates the use of a 'universal' correction to the calibration for angle of pitch. The small changes in predicted angle of yaw when applying the pitch correction (see Figs 17 and 18) arise from the effect of the change in Mach number on the calibration for yaw.

The results presented in Figs 16, 17 and 18 indicate the confidence with which the 3-hole yawmeters can be used to measure Mach number, angle of yaw and static pressure in a uniform flow. The accuracy of measurement is similar to that obtained from consideration of the calibrations (see section 5.2), provided angles of flow outside the ranges ±12 degrees in yaw and -7 degrees to +10 degrees in pitch are avoided.

(b) Shear layers

Pilot experiments on the use of 3-hole yawmeters in a shear layer were made by traversing the boundary layer on the wall of a wind tunnel with the probe at several fixed settings in yaw relative to the tunnel flow direction. The local Mach number and static pressure were consistently predicted throughout the boundary layer at each yaw setting. The results for angle of yaw however were not, as shown in Fig 19. Away from the surface, at $z/\delta > 0.065$, the angle of flow is consistently predicted at each yaw setting, but close to the wall where the error in measured angle increases as z/δ decreases, an apparent wall interference effect is observed. The error in angle of flow shown in Fig 19 is approximately linear with probe yaw angle. Therefore, if the error is assumed to be zero when the probe is aligned with the local flow, a correction for this interference effect on the measurement of angle of flow close to the surface can be made if the boundary layers are traversed twice with the same probe set at different angles of yaw. This was attempted in the subsequent work but not used in the results presented (see section 7.2.1).

The overall accuracy of the probe calibrations in the range of pitch and yaw attained in these experiments, *ie* $\gamma = \pm 12$ degrees and -7 degrees $< \alpha < +10$ degrees, is

$$\Delta M = \pm 0.001$$

$$\Delta \gamma = \pm 0.2 \text{ degree}$$

$$\Delta (C_p)_s = \pm 0.005 \ .$$

6 MEASUREMENT OF THE POSITION AND ATTITUDE OF THE PROBES RELATIVE TO THE MODEL

As mentioned in section 2, the probes were mounted in the model using one of two types of traverse mechanism. The position of the probe head relative to the model was determined from the position of a wiper on a potentiometer track. The instrument sensing this position was an automatic self-balancing indicator normally used for measuring the output from strain-gauge force and moment balances. This apparatus has a resolution of 0.1%. A calibration for probe movement vs servo read-out was obtained for each traverse. The movement of the traverse apparatus of the type which has a linear potentiometer was calibrated using a dial gauge graduated in 0.0001 inch (0.00254 mm) units and placed on top of and parallel to the probe shank. The angular rotation of the type of traverse used near the trailing edge of the aerofoil was calibrated by viewing a straight edge attached to a probe support arm with a telescope having a protractor head with 0.1 degree graduations. Accuracies were obtained of about 0.008 mm for the traverses using linear motion installed forward of 70% chord and 0.05 mm for the other (rotary) traverses used in the thicker boundary layers near the trailing edge.

With the probes assembled in the traverses, the datum positions of the probe tips relative to the model were measured. These measurements were made with the probes just clear of the surface. The measurements consist of the chordwise and spanwise co-ordinates, and also in the case of the yawmeter heads the angles of yaw and pitch with respect to the model. The yaw angles were measured with a protractor head attached to a microscope mounted on the model by means of a magnetic base, and the pitch with feeler gauges between the probe and the model surface (or an extension of it in the case of the wake) over a measured base length.

When 3-hole yawmeters are used in boundary layers and wakes where the measured pressures vary rapidly across the layer it is preferable that the three tubes are maintained in a plane parallel to the surface of the wing or the dividing streamline in the case of a wake flow. However, for the traverses which were made by rotation of the yawmeter assembly this condition could be achieved at one one position only. The condition was obtained approximately when the probe was at the model surface, or the extended chordal plane, where the pressure gradients normal to the surface are greatest. At all other probe positions the three orifices were at different levels in the layer. In the analysis of probe data, it has been assumed that the location of the individual hole within the boundary layer or wake is the important parameter, and pressure measurements for each orifice have been interpolated to a given height relative to the model surface or the extended chord-line. The adoption of this procedure made it unnecessary to set the probe head exactly parallel with the model surface in the datum position, provided the datum height of each orifice relative to the model was accurately recorded. The datum heights were obtained by photographing the probe and its reflection in the model surface from directly ahead of the probe. A typical photographic record is shown in Fig 20. Analysis of measurements taken from these photographs can be used, as described in Ref 6, to establish the datum height for the centre of each orifice above the model surface, or in the case of the wake a polished metal plate forming a temporary extension of the chordal plane downstream of the trailing edge. Knowing the co-ordinates of the orifices relative to the model, the radius arm for each orifice can be calculated and the change in position of each orifice within the traverse computed from the calibrated angular rotation of the supporting arm.

The probes were assembled in the traverses such that their tips pressed against the surface of the model, elastically deflecting the probe head when the traverse was in the fully down position. The initial increase in traverse height relieved the deflection of the probe without the probe leaving the surface of the model. An indication of the probe height at which the probe left the model surface was obtained from plots of the readings of probe height vs probe pressure. Whilst the probe was touching the surface the pressures recorded were near to a constant, but they increased rapidly when the tip of the probe left the surface. This method worked well when the boundary layers were well away from separation, as in these tests, but for conditions involving separated boundary layers an alternative method would be necessary. As the datum heights have been obtained with the wind on, the main effect of an aeroelastic deflection is removed but the change in radius arm still remains. The deflection of a typical probe increases the radius of the support arm by about 1% for an applied drag load calculated at full free stream conditions. In practice the deflection should be less than this as the support arm is partly within the shear layer. This deflection also increases the yaw setting by about 1.5 degrees but it is likely to be unimportant as relative yaw angles are used in the subsequent analysis.

The above measurements enable the position and attitude of the probes relative to the model to be calculated at all points within the traverses. If the local flow vector relative to the probe can also be determined then the flow direction relative to the model can be calculated. It should be noted that because the axis of rotation was not parallel to the probe axis, the rotary motion of the transverse induced changes in both pitch and yaw of the probe relative to the model.

The flow angle γ obtaired from the measured probe pressures and the probe calibration is the component of the local flow in the plane of the ground under-surface of the probe, *ie* the angle of yaw in the probe axes. In order to obtain results that can be compared with estimates for the boundary layer, it is necessary to deduce results in a frame of reference fixed in the model, and as a consequence an estimate of the angle of pitch (α) of the local flow relative to the probe is needed*. As this was not measured it has been obtained from an estimate of the local flow direction relative to the model and the calculated attitude of the probe relative to the model. The local flow direction relative to the model has been obtained using the VISTRAN method of Ref 7, which was modified to output the flow field over the required region. For this correction the flow field was assumed to be two-dimensional in form, with constant velocity components along the generators. The angle of pitch relative to the model was interpolated between points outside the boundary layer and the known direction at the wing surface.

The local flow direction defined in the probe axes was thus obtained from a measured yaw component and an estimated pitch component. The crossflow angle (β_F) relative to the tunnel free stream direction, in a plane parallel with the model surface for the boundary layers and with the chordal plane for the wake, was then obtained by the transformation described in the Appendix.

7 DERIVATION OF BOUNDARY LAYER PROPERTIES

From the pressures sensed by the yawmeter probe at a point in the boundary layer or wake, the local Mach number (M_L), the local static pressure and the local flow angle are calculated from the probe calibration (see section 5.3). The description of the boundary layer requires the evaluation of the velocity profiles in some normalized form, the profiles of the crossflow angles across the layer and the evaluation of the usual integral parameters of displacement and momentum thickness in their forms for three-dimensional flow. Because the static

* This same angle is used as a correction for the calibration of the yawmeter (see section 5).

pressure was not constant across the boundary layer special forms are used for the various quantities.

7.1 Measured profiles

The measured velocity and density are normalized with respect to a fictitious inviscid flow noted by the subscript 'P', U_P and ρ_P being the velocity and density for a flow with the same static pressure as that measured locally but having the same total head as that measured at the edge of the boundary layer. The quantities required are then defined as:

$$\frac{u}{U_P} = \frac{M_L}{M_P}\left(\frac{1 + 0.2M_P^2}{1 + 0.2M_L^2}\right)^{\frac{1}{2}} \tag{4}$$

and

$$\frac{\rho u}{\rho_P U_P} = \frac{M_L}{M_P}\left(\frac{1 + 0.2M_L^2}{1 + 0.2M_P^2}\right)^{\frac{1}{2}} \tag{5}$$

where, making the assumption of constant total temperature within the boundary layer or wake we define M_P as:

$$M_P = \sqrt{5}\left[\frac{1 + 0.2M_\infty^2}{\left(1 + 0.7M_\infty^2(C_p)_P\right)^{2/7}} - 1\right]^{\frac{1}{2}} \tag{6}$$

where M_∞ = free stream Mach number

$(C_p)_P$ = the local static pressure coefficient.

For each traverse the velocity ratios from equation (4) are listed in Table 2 together with the local static pressure coefficients and the crossflow angles (β) obtained from the local flow directions as discussed in section 6. The crossflow angle (β) is the local flow direction relative to the flow at the edge of the boundary layer or wake (ie $\beta = \beta_F - \beta_F$ at $u/U_P = 0.995$) in the plane of the model surface or the chordal plane respectively. For the wakes the crossflow (β) is referred to a linear interpolation against z/c between the values of β_F measured at $u/U_P = 0.995$, in the upper and lower parts of the wake. Also in Table 2 are the measured angles of yaw (γ) and the estimated angles of pitch (α) of the local flow relative to the probe. The accuracy of measurement of the boundary layer and wake parameters will decrease with the numerical size of these angles (see section 5.3.1). Some judgement can therefore be exercised as to which of the two measurements made at each station with different yaw settings of the probe is likely to be the more reliable. In this respect it should be noted that the values for β quoted in Table 2 are the difference between the local values for β_F and the value at the edge of the boundary layer or wake. Therefore any disagreement between measurements 1 and 2 at the model surface and the centre of the wake, where the angle of pitch relative to the probe would be small, may result from disagreement at the edge of the boundary layer or wake where the angle of pitch relative to the probe can be large.

7.2 Extrapolation of the boundary layer profiles to the surface

Despite the comparatively small size of the probes used for these experiments, pressures could not be measured at a point closer to the wall than that at which the deduced local velocity ratio was about 0.5 (*ie* $z \triangleq 0.02\delta$). Consequently the calculation of the integral boundary-layer parameters from the experimental results required the extrapolation of the measured profiles of velocity and flow direction down to the surface of the model.

In a total pressure gradient such as that found in a boundary layer or wake it has been shown (see Refs 8 and 9) that the effective point of measurement is displaced from the geometric centre of the orifice of a pitot probe. As the displacement effect for rectangular pitots is unpredictable[9] and data are not available for the miniature yawmeters, corrections for displacement effect have not been made in the analysis of these results. However, in order to assess the magnitude of a displacement correction to the results an arbitrary displacement of 0.18 of the external probe height (as suggested in Ref 8 for a circular pitot) has been applied to both the rectangular pitot and yawmeter probes. This amounted to increments in z/c of 0.000044 and 0.000118 respectively. These corrections have been applied to the case where the effect would be greatest, that is where the boundary layer was relatively thin (Λ = 20 degrees, M_N = 0.4, α_N = -2 degrees). The results presented in Table 6 show the greatest effect is for the flattened probe at x/c = 0.28 where C_f is reduced by about 8% and $\bar{\delta}_1$, $\bar{\theta}_{11}$ and H increased by 4%, 3% and 1% respectively. Further aft the influence is considerably less, being about half the above values at x/c = 0.986, because of the increase in boundary layer thickness, even though larger probes were used at the aft stations.

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7.2.1 Local angle of flow

The measurement of the local angle of yaw close to the surface of the model has been discussed in section 5.3.1. Each traverse was repeated with the probe arm changed so that the yaw setting of the probe head was altered by about 10 degrees. The proposed method for correcting errors due to interference from the surface proved impossible to achieve because of the lack of sufficient experimental data close to the surface of the model. In Fig 19 (for a probe of overall thickness (t) = 0.4 mm giving $t/\delta = 0.043$) the interference effect is shown to be small enough to be neglected for $z/\delta \simeq 0.065$, *ie* at about 1.5 probe thickness or $z/c = 0.001$ for these experiments.

Values of the crossflow angle (β) at the surface were therefore obtained by taking the mean of values obtained at the surface by extrapolation, using a Mager profile*, for each of the measurements for the four smallest values of z/c excluding $z/c < 0.001$. Values of β for $0 < z/c < 0.001$ were determined by interpolation using the Mager profile.

7.2.2 Local velocity profile

The required extrapolation to the wall for the velocity distribution is based on the logarithmic form of the velocity profiles given by Winter and Gaudet[10] for two-dimensional flow together with an equation for the velocity distribution in the viscous sub-layer. It is assumed that for the flow very close to the surface these equations may be considered to apply to the component of the flow in the direction of the limiting surface streamline as suggested by East and Hoxey[11].

The equations are modified slightly, in the manner adopted by the present authors for two-dimensional flow[12], so that they can be written in terms of the quantities measured in the experiment. The resulting equations are

$$\frac{u}{U_P} \cos \beta \sec \beta_0$$

$$= \frac{U_W}{U_P}\left[\frac{C_f}{2}\left(1 + 0.2M_W^2\right)^{\frac{1}{2}}\right]^{\frac{1}{2}}\left[6.05 \log_{10}\left\{Re_W \frac{z}{c}\left[\frac{C_f}{2}\left(1 + 0.2M_W^2\right)^{\frac{1}{2}}\right]^{\frac{1}{2}}\right\} + 4.05\right] \qquad (7)$$

* See section 9.2.

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and

$$\frac{u}{U_P} \cos \beta \sec \beta_0 = \frac{U_W}{U_P} Re_W \frac{z}{c} \frac{C_f}{2} \left(1 + 0.2M_W^2\right)^{\frac{1}{2}} \tag{8}$$

where

$$\frac{Re_W}{Re_N} = \frac{M_W}{M_\infty} \left\{\frac{\left(1 + 0.2M_\infty^2\right)}{\left(1 + 0.2M_W^2\right)}\right\}^{\frac{5}{2}} \left\{\frac{T_0 + 117\left(1 + 0.2M_W^2\right)}{T_0 + 117\left(1 + 0.2M_\infty^2\right)}\right\} \tag{9}$$

and Re_N is the Reynolds number for the experiment based on the normal chord (c) of the aerofoil, and T_0 is the corresponding stagnation temperature in K .

From the values of u/U_P deduced previously it is possible using equation (7) to obtain an apparent skin friction coefficient (C_f) as a function of height above the aerofoil surface, which can then be used to extrapolate the profile to the surface of the aerofoil using in addition the profile for the viscous sub-layer as given in equation (8). In practice a mean value has been obtained for the skin friction coefficient by averaging the values obtained for all measured points with $u/U_P \leqslant 0.6$ or, where there are less than three points meeting this condition, by averaging the values for the three points closest to the surface. The profile is assumed to change to the form for the viscous sub-layer at the point where the two equations intersect, *ie*

$$\frac{z_s}{c} = \frac{10.135}{Re_W\left[\frac{C_f}{2}\left(1 + 0.2M_W^2\right)^{\frac{1}{2}}\right]^{\frac{1}{2}}} \quad . \tag{10}$$

From these extrapolated values of u/U_P corresponding values of $\rho u/\rho_P U_P$ were calculated by obtaining M_L/M_P in terms of u/U_P and M_P from equation (4) and substituting in equation (5). In this thin sub-layer M_P was taken to be M_W by using the static pressure measured at the surface of the model.

7.3 Calculation of the experimental values for the three-dimensional boundary-layer integral parameters

As noted previously the conventional definitions of boundary-layer integral parameters are unsatisfactory if, as is the case for the present results, the static pressure through the boundary layer varies. P.D. Smith (unpublished) has extended these definitions for the three-dimensional boundary layers in the manner suggested by Myring for two-dimensional flow. The integral quantities defined in this way, and given below, should enable direct comparisons with the predictions of an integral calculation method such as that of Ref 13.

$$\bar{\delta}_1 = \frac{1}{\rho_W U_W} \int_0^{\delta} (\rho_P U_P - \rho u \cos \beta) dz \tag{11}$$

$$\bar{\delta}_2 = \frac{-1}{\rho_W U_W} \int_0^{\delta} \rho u \sin \beta \, dz \tag{12}$$

$$\bar{\theta}_{11} = \frac{1}{\rho_W U_W^2} \int_0^{\delta} \left(\rho_P U_P^2 - \rho u^2 \cos^2 \beta\right) - U_W(\rho_P U_P - \rho u \cos \beta) dz \tag{13}$$

$$\bar{\theta}_{12} = \frac{1}{\rho_W U_W^2} \int_0^{\delta} \rho u \sin \beta (U_W - u \cos \beta) dz \tag{14}$$

$$\bar{\theta}_{21} = \frac{-1}{\rho_W U_W^2} \int_0^{\delta} \rho u^2 \sin \beta \cos \beta \, dz \tag{15}$$

$$\bar{\theta}_{22} = \frac{-1}{\rho_W U_W^2} \int_0^{\delta} \rho u^2 \sin^2 \beta \, dz \quad . \tag{16}$$

For convenience in the computation of the experimental values of these quantities they have been expressed in terms of ratios of mass flow and momentum flux, *ie*

$$\bar{\delta}_1 = \int_0^{\delta} \frac{\rho_P U_P}{\rho_W U_W} \left(1 - \frac{\rho u}{\rho_P U_P} \cos \beta\right) dz \tag{17}$$

$$\bar{\delta}_2 = -\int_0^{\delta} \frac{\rho_P U_P}{\rho_W U_W} \frac{\rho u}{\rho_P U_P} \sin \beta \, dz \tag{18}$$

$$\bar{\theta}_{11} = \int_0^{\delta} \frac{\rho_P U_P^2}{\rho_W U_W^2} \left(1 - \frac{\rho u^2}{\rho_P U_P^2} \cos^2\beta\right) - \frac{\rho_P U_P}{\rho_W U_W} \left(1 - \frac{\rho u}{\rho_P U_P} \cos \beta\right) dz \qquad (19)$$

$$\bar{\theta}_{12} = \int_0^{\delta} \frac{\rho_P U_P}{\rho_W U_W} \frac{\rho u}{\rho_P U_P} \sin \beta - \frac{\rho_P U_P^2}{\rho_W U_W^2} \frac{\rho u^2}{\rho_P U_P^2} \sin \beta \cos \beta \, dz \qquad (20)$$

$$\bar{\theta}_{21} = - \int_0^{\delta} \frac{\rho_P U_P^2}{\rho_W U_W^2} \frac{\rho u^2}{\rho_P U_P^2} \sin \beta \cos \beta \, dz \qquad (21)$$

$$\bar{\theta}_{22} = - \int_0^{\delta} \frac{\rho_P U_P^2}{\rho_W U_W^2} \frac{\rho u^2}{\rho_P U_P^2} \sin^2\beta \, dz \qquad (22)$$

where ratios involving ρu and ρu^2 were obtained from equations (4) and (5) and those involving $\rho_W U_W$ and $\rho_W U_W^2$ from the following two equations:

$$\frac{\rho_P U_P}{\rho_W U_W} = \frac{M_P}{M_W} \left(\frac{1 + 0.2M_P^2}{1 + 0.2M_W^2}\right)^{\frac{1}{2}} \left(\frac{1 + 0.7(C_p)_P M_\infty^2}{1 + 0.7(C_p)_W M_\infty^2}\right) \qquad (23)$$

and

$$\frac{\rho_P U_P^2}{\rho_W U_W^2} = \left(\frac{M_P}{M_W}\right)^2 \left(\frac{1 + 0.7(C_p)_P M_\infty^2}{1 + 0.7(C_p)_W M_\infty^2}\right) \qquad (24)$$

where M_W and $(C_p)_W$ represent the values of M_P and $(C_p)_P$ for the measurement made nearest to the model surface.

The boundary layer integral quantities were calculated using the measured profile data in Table 2 and the extrapolations to the model surface described in section 7.2. The wake was divided into upper and lower parts at the point of minimum velocity. Each part was treated separately as a boundary layer and the integral quantities for both parts summed to obtain the total wake integral thicknesses.

8 PRESENTATION OF FINAL RESULTS

The measurements of chordwise surface pressure distribution are given in Table 1 and the surface pressure gradients over which the boundary layer growth has been measured are illustrated in Fig 8 for all the test cases. Examples of the measured spanwise surface pressure distribution are shown in Fig 9.

The two groups of traverse measurements 1 and 2, made at different yaw settings of the probe relative to the model, are presented for each test case in Table 2 and consist of the velocity ratio u/U_P, the crossflow angle (β) and the local static pressure coefficient $(C_p)_P$. Also included are the angles of yaw (γ) and pitch (α) of the local flow relative to the yawmeter probes.

The boundary layer and wake profiles in Table 2 were used to derive the values quoted in Table 3 for the boundary-layer integral parameters $\bar{\delta}_1$, $\bar{\delta}_2$ $\bar{\theta}_{11}$, $\bar{\theta}_{12}$, $\bar{\theta}_{21}$, $\bar{\theta}_{22}$, H and H_T, the change in crossflow direction through the layer (β_0) and the local skin friction coefficient (C_f) obtained from the law of the wall as described in section 7.2.2. The angle (β_F) of flow relative to the free-stream direction, measured at the edge of the boundary layer or wake, is given in Table 4.

8.1 Pitot and yawmeter measurements

Typical results obtained from the pitot and yawmeter measurements are shown in Figs 21 to 26 where the angle of yaw, velocity ratio and static pressure variations through the upper surface boundary layer at x/c = 0.814, 0.903 and 0.986 and the wake at x/c = 1.01 and 1.05 are presented. The case shown is $\Lambda = 28$ degrees, $M_N = 0.673$ and $\alpha_N = +2$ degrees, where the three-dimensional nature of the boundary layer and wake was most pronounced. Two sets of symbols distinguish between the two measurements made with the same probe head set at different angles about 10 degrees apart. Generally, and this is typical of all the results, the agreement between the two measurements is good for local velocity ratio and for the change in crossflow through the boundary layer or wake, but there are inconsistencies in the static pressure obtained from the yawmeter measurements, particularly at the edge of the boundary layer or wake. One of the worst examples of disagreement between the two measurements of static pressure is shown in Fig 22c, yet no obvious error was apparent in the experimental data which would invalidate either measurement. Measurement 1 would be the preferred result as the angles of yaw (γ) relative to the probe (see Table 2) are considerably smaller. The two measurements of static pressure are, in the vicinity of the model surface (where the angle of pitch relative to the probe is always small), not only in close mutual agreement but also tend toward values obtained from the surface pressure measurements. However, it should be noted that the pressure gradients close to the surface of the model imply unrealistically large curvature of the flow at the surface and for that reason are suspect.

The static pressure was the parameter found to be most sensitive to pitch during the probe calibrations. In the data presented the angle of pitch was calculated from the traverse geometry and an estimated direction of the pitch of the flow relative to the surface. In order to assess the sensitivity of the results to the probe pitch calibration an example has been re-computed without applying the pitch correction to the probe calibration. These results are shown in Figs 22 to 26 and Table 5. The plots of velocity ratio and change of crossflow angle are almost identical to those with a pitch correction applied (Figs 22 to 26) but there are considerable differences between the static pressures, particularly at the outer edge of the layer. The effect on the displacement and momentum thickness, however, is small when compared with the difference between two measurements made at different yaw settings (see Table 5). This result is attributed to the insensitivity to static pressure of the velocity ratio u/U_p towards the edge of the layer where the local total head approaches the free stream value. It was at the edge of the layer that the angle of pitch arising from the geometry of the traverse mechanism was large and therefore the correction to static pressure was the greatest. It is therefore fortunate that where the effect of pitch on the accuracy of static pressure measurement was greatest the results were least sensitive to static pressure.

9 COMPARISON BETWEEN MEASUREMENT AND CALCULATION

The effect of the relatively small variation in the measured spanwise surface pressure distribution on estimates of boundary layer growth have been demonstrated, for one experimental case, by comparison between results obtained from both infinite yawed wing[14] and three-dimensional boundary layer calculations[13] using measured surface pressures. This effect is shown to be small, in section 9.1, so the subsequent comparisons made in section 9.2 between the experimental results and calculations by the more economical infinite yawed wing method are justified, particularly in the absence of more adequate experimental data on the spanwise variation of surface pressure.

9.1 Three-dimensional boundary layer method

In order to test the validity of comparisons to be made between experiment and calculations[14] for an infinite yawed wing estimates have been made for one case only ($\Lambda = 28$ degrees, $M_N = 0.4$, $\alpha_N = +2$ degrees) using a three-dimensional boundary layer method[13]. In the experiment insufficient surface pressure measurements were made to interpolate without the guidance of a theoretical method. The theoretical method used as a guide was the vortex lattice method described in the appendix of Ref 15, with the wing panel being crudely represented by a flat plate at incidence, and with one wall of the tunnel being taken as the centre-line of an M wing and the other wall being approximated by the crank station. The measured rate of change of upper surface pressure across the span confirmed that given by calculation at $x/c = 0.2$ but at $x/c = 0.7$ the trend was different (see Fig 9b). In Fig 27 the spanwise rate of change of pressure vs x/c is shown for both theory and experiment. The measurements at $x/c = 0.2$ and 0.7 were based on several points (see Fig 9b) and the calculated values were therefore modified, by increasing the rate of change of $dC_p/d\eta$ with x/c by a factor of about 2, to satisfy these two conditions. At $x/c = 0.5$ and 0.6 measurements made at two spanwise points (see section 4) also agree very closely with this modification. At $x/c > 0.75$, pressures measured at a second spanwise position do not invalidate this modification to the theory although the scatter is rather high. The effect on the upper surface pressures of using this modified pressure change across the span is shown in Fig 28 and compared with the measured chordwise surface pressure distribution used in the yawed wing calculations.

Calculations were made using the pressure distribution given by theory but scaled to fit the experimental data as described above. The three-dimensional boundary layer method was used in such a way that the velocity field at $x/c = 0.28$ was calculated from this pressure distribution and an assumption of local sheared-wing flow was made to determine the local velocity vector. The initial boundary layer conditions used in the calculation were assumed to be constant across the span and equal to the measured values at $x/c = 0.28$ with the assumption $\beta_0 = 0$, and conditions at the edges of the region were obtained by assuming that the spanwise derivatives could be obtained from extrapolation from within the region.

The boundary layer growth calculated by the three-dimensional boundary layer method is compared with the infinite yawed wing estimates in Table 7 and in Fig 29 where the variation with x/c of the change in crossflow angle (β_0) across the layer is shown. The maximum differences, in the range $x/c = 0.8$ to 0.99, between the values of $\bar{\theta}_{11}/c$ and H obtained from the two theoretical methods are small (about 4% and 2% respectively), but the angular change through the boundary layer (β_0) at the trailing edge given by the infinite yawed wing method can be up to a degree larger than the three-dimensional boundary layer estimate.

9.2 Infinite yawed wing method

As the differences quoted in the previous section between results from the full three-dimensional boundary layer method and the infinite yawed wing method were small, all comparisons with experiment are made with the latter. Boundary layer growth has been calculated for the measured surface pressure distributions shown in Fig 8 and Table 1. The boundary layer measurements made with the flattened pitot at x/c = 0.28 were used to obtain the starting conditions for the calculations. The values of $\bar{\theta}_{11}$ and H were therefore reasonably well defined (see Table 2), but as β_0 the total crossflow angle through the layer was unknown it was assumed to be zero. The effect of error in this assumption is demonstrated later.

As previously stated, yawmeter measurements in the boundary layer were duplicated at all twelve test conditions with the probe yaw settings relative to the model differing by about 10 degrees. In Fig 30 the two experimental results are compared with estimates of H, $\bar{\theta}_{11}/c$, C_f and β_0. Substantial agreement was achieved between the two measurements and the calculations, although the prediction of H is somewhat less satisfactory. The calculations were based on starting conditions obtained from measurement 1 with $\beta_0 = 0$. The largest discrepancies between the two measurements at x/c = 0.28 occurred in the two test cases $\Lambda = 28$ degrees, $M_N = 0.675$, $\alpha_N = 0$ and $\Lambda = 20$ degrees, $M_N = 0.675$, $\alpha_N = -2$ degrees. The effect of these differences on the calculated boundary layer growth are shown in Fig 30b&j to be small. The insensitivity of the calculated results to the assumed change of crossflow (β_0) through the boundary layer at x/c = 0.28 is illustrated in Fig 31 where the difference in β_0 at x/c = 0.8 is less than 25% of the assumed error at x/c = 0.28. The effect on the other boundary layer parameters (H, $\bar{\theta}_{11}/c$ and C_f) is negligible as shown in Table 8.

The infinite yawed wing calculations assumed the boundary-layer crossflow profile proposed by Mager and quoted in Ref 14 for compressible flow as

$$\frac{u \sin \beta}{U_P} = \left(1 - \frac{Z}{Z_\delta}\right)^2 \frac{u \cos \beta}{U_P} \tan \beta_0 \qquad (25)$$

or

$$\frac{\tan \beta}{\tan \beta_0} = \left(1 - \frac{Z}{Z_\delta}\right)^2 \qquad (26)$$

$$\text{where} \quad Z = \int_0^z \frac{\rho}{\rho_p}\, dz$$

$$\text{and} \quad Z_\delta = \int_0^z \frac{\rho}{\rho_p}\, dz \; .$$

Comparison with the measured crossflow profiles in Fig 32a&b for measurements 1 and 2 respectively at the test conditions Λ = 28 degrees, M_N = 0.675 and α_N = +2 degrees suggest that the measured crossflow profiles are very similar to Mager profiles.

10 COMPARISON WITH MEASUREMENTS MADE AT ZERO SWEEPBACK

The model used for these swept-wing experiments had previously been tested with the model spanning the tunnel at zero sweepback (Λ = 0), and at comparable conditions so that the opportunity arises to examine these results and make comparisons with the swept-wing results presented in this paper.

A simple relationship exists between the surface pressure coefficients at Λ = 0 and the values at some other sweepback Λ for inviscid flow over an untapered wing of constant section and infinite span if the flow conditions are otherwise comparable, *ie* if, as discussed in section 4, $M_{\infty_\Lambda} = M_{\infty_{\Lambda=0}} \sec \Lambda$ and $\alpha_\Lambda = \sin^{-1}[\sin \alpha_{\Lambda=0} \cos \Lambda]$, then the pressure coefficients expressed as $C_p \sec^2 \Lambda$ are independent of angle of sweep. This parameter is plotted in Fig 33a for Λ = 0 and 28 degrees and in Fig 33b for Λ = 0 and 20 degrees. The collapse of the data is reasonably good. The greatest discrepancy occurs on the upper surface at 28 degrees sweep. It should be noted that the results are being compared with the yawed-wing relationship where there is a small spanwise variation in surface pressure coefficient due to the existence of plane end walls and any other imperfections in the flow (see sections 4 and 9.1 and Fig 28). The flow over the upper surface when the model is swept is locally supersonic where $-C_p$ > 0.545 and >0.707 (*ie* from 0.02 chord to 0.3 chord and from 0.04 chord to 0.1 chord), at Λ = 28 degrees and 20 degrees respectively (see Fig 8a&c). The effect of the local flow disturbance in the region of the transition band appears to be more severe when the wing is swept. This is presumably due to the higher velocity in the region of the band.

The measured development of the boundary layer along the chord of the unswept wing at M_∞ = 0.675 and α = 2 degrees is shown in Fig 34a&b for the upper and lower surface respectively. A two-dimensional calculation using the entrainment method[14] starting with conditions measured at x/c = 0.08 is compared with these results showing a large measure of agreement, although the values of H_T on the upper surface at the rear of the section are over-estimated. Also plotted in Fig 34 are the boundary layer parameters measured at Λ = 28 degrees, M_N = 0.675 and α_N = ±2 degrees which are surprisingly very similar in magnitude to the two-dimensional values; this would probably not be the case if the adverse pressure gradient were more severe and the boundary layers were nearer separation. Nevertheless, this agreement between swept-wing measurement and two-dimensional measurement and calculation suggests that, at least for conditions similar to those investigated in this Report, a two-dimensional calculation at the equivalent free-stream velocity and surface pressure distribution for the swept wing could provide a reasonable estimate of swept-wing boundary layer parameters. Before three-dimensional boundary layer methods were readily available, use was made of strip-theory calculations for estimating swept wing boundary layer parameters (with the exception of crossflow) from two-dimensional calculations, and the evidence presented here allows these rather crude ideas to be examined.

Two schemes for achieving this have been investigated, one working with conditions in the free stream direction and using the streamwise section as a two-dimensional aerofoil, and the other with equivalent conditions normal to the leading edge and so ignoring the flow parallel to the leading edge. In Fig 35 the results from four calculations of the boundary layer development are shown:

(1) The infinite yawed wing calculation which was used in section 9.2 of this Report to compare with the measured results.

(2) A two-dimensional calculation using the streamwise chord and free stream conditions.

(3) A two-dimensional calculation using equivalent conditions in the plane normal to the leading edge, but taking the streamwise chord as the representative length for Reynolds number (see section 4).

(4) An infinite yawed-wing calculation, as in (1) above, with the effect of crossflow angle suppressed.

For each calculation the starting conditions were the measured values of H_T and θ at 0.28 chord for Λ = 28 degrees, M_N = 0.675, and α_N = +2 degrees. All the results presented have been normalized with respect to the normal chord (c), or the local kinetic pressure. In the calculation along the streamwise chord the measured surface pressure coefficients at Λ = 28 degrees (C_{p_Λ}) and the free stream Mach number ($M_{\infty\Lambda}$) were used. For the calculation along the normal chord, the required surface pressure coefficients ($C_{p_{\Lambda=0}}$) were obtained from the measured pressures at Λ = 28 degrees according to the yawed-wing relationship,

$$C_{p_{\Lambda=0}} = C_{p_{\Lambda}} \sec^2\Lambda \ ,$$

and the corresponding Mach number was obtained as

$$M_{\infty\Lambda=0} = M_{\infty\Lambda} \cos\Lambda \ .$$

The values for θ and δ_I obtained from the two-dimensional calculation using equivalent conditions normal to the leading edge are, as shown in Fig 35a, in closer agreement with both the infinite yawed wing calculation and the measurements than the values which are obtained from the two-dimensional calculation in the streamwise direction*. However, values for H_T and C_f are best predicted by the two-dimensional calculation in the streamwise direction. It therefore appears that, even for the limited conditions investigated in this Report, neither of the two-dimensional calculation methods can predict the boundary layer parameters δ_I, θ, H_T and C_f (and of course β) as well as an infinite yawed wing calculation.

11 CONCLUDING REMARKS

Wind tunnel measurements are presented which have been made with calibrated 'fixed-direction' yawmeters which were traversed through the boundary layer and wake of a swept, constant chord wing of RAE 101 aerofoil section which spanned the 1.8 m (6 ft) dimension of the 8ft × 6ft (2.4m × 1.8m) transonic wind tunnel. The traverse mechanisms were almost completely contained within the model thus minimising the interference with the flow about the model. The results presented indicate that adequate data on the behaviour of three-dimensional boundary layers and wakes can be obtained by this technique. This is substantiated by comparison between independent measurements, using a probe

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* The streamwise two-dimensional calculation differs from the infinite yawed-wing calculation because
  (a) crossflow angles are neglected and
  (b) convergence and divergence of the streamlines are not represented.

A calculation (4) using the infinite yawed-wing method but with the effects of crossflow suppressed shows that the effect of crossflow accounts for 2/3 of the difference.

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mounted at two different attitudes to the local flow, and supported by calculations using infinite yawed-wing boundary-layer methods.

The calculations are in good agreement with the measurements, which also confirm that the crossflow profile is very similar to the Mager profile used in the calculation method. It has also been shown that the complication and expense of making full three-dimensional boundary layer calculations are unnecessary for the flow conditions obtained in these tests. Comparisons with tests previously made at zero sweepback show that a comparatively good collapse of the surface pressure measurements at different angles of sweepback is achieved by the parameter $C_p \sec^2\Lambda$ at equivalent flow conditions in a plane normal to the leading edge. Two-dimensional calculations are also shown to make reasonable predictions of the analogues of the three-dimensional boundary layer parameters (*ie* $\bar{\theta}_{11}$, $\bar{\delta}_1$ and C_f) under the flow conditions experienced in these tests. This result is unlikely to apply over a wider range of flow conditions, particularly if flow separations and shock waves are present.

The accuracy of measurement of the local flow parameters in the boundary layers and wakes was, from consideration of the yawmeter calibration, ±0.2 degree in yaw, ±0.001 in Mach number and ±0.005 in local static pressure coefficient. However, the degree of repeatability of the measurements indicates that the ultimate overall accuracy, is somewhat less, particularly for local flow angle and static pressure. The difference between the two measurements of static pressure coefficient can be as high as 0.05. This occurs at the outer edge of the boundary layer or wake and is mainly due to operating at the extremes of the probe calibration, *ie* at large angles of pitch and/or yaw. The value derived from the measurement made at the numerically smaller angles of yaw (γ) and pitch (α) relative to the probe is probably the more accurate. Fortunately the error in static pressure is greatest at the edge of the boundary layer or wake where the local velocity ratio and, therefore, the integral thickness parameters are less sensitive to error in static pressure. The two measurements of total change in angle of crossflow through the boundary layer can differ by about 1 degree, although the mean difference is less than 0.5 degree.

The results indicate that useful data on the behaviour of three-dimensional boundary layers and wakes can be obtained by this technique, and are sufficiently encouraging to proceed with the analysis of measurements made under the more pronounced three-dimensional conditions obtained during tests on the RAE 2822 aerofoil section[12] at 28 degrees sweepback.

Appendix

AXES TRANSFORMATIONS

The local flow direction is measured with a yawmeter in terms of a frame of reference fixed in the probe, but it is required to specify the boundary-layer parameters in terms of a frame of reference fixed in the surface on which the boundary layer is growing. The mechanism used in the present tests results in the attitude of the probe changing as the boundary layer is traversed so it is necessary to convert the measurements at each point from one system of axes to another.

Let us consider a rectangular system of axes (x, y, z) fixed in the probe and another (x_m, y_m, z_m) fixed in the yawed wing. It is straightforward to relate the location of a point P in one frame of reference to the other by a series of known rotations. In principle a rotation about each of the principle axes in turn is sufficient but in practice the required angles could not be measured and a series of six rotations was undertaken using more easily determined angles of rotation. This resulted in the transformations about a given principle axis being applied more than once but leading to very little additional complexity. Also, since we require only flow directions, the translation of the origin of the frame of reference can be ignored for this purpose.

Let us consider an axis transformation which is achieved by a rotation about the x-axis through an angle λ_x without any translation of the origin, then for a point $P(x_n, y_n, z_n)$ in the old 'n' system we have $P(x_{n+1}, y_{n+1}, z_{n+1})$ in the new 'n + 1' system so that

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\lambda_x & -\sin\lambda_x \\ 0 & \sin\lambda_x & \cos\lambda_x \end{bmatrix} \begin{bmatrix} x_{n+1} \\ y_{n+1} \\ z_{n+1} \end{bmatrix} = \begin{bmatrix} x_n \\ y_n \\ z_n \end{bmatrix} \qquad \text{(A-1)}$$

and if the line defining the local flow direction is:

$$\begin{bmatrix} A_1 & A_2 & A_3 \\ B_1 & B_2 & B_3 \end{bmatrix} \begin{bmatrix} x_n \\ y_n \\ z_n \end{bmatrix} = 0 \qquad \text{(A-2)}$$

it becomes:

$$\begin{bmatrix} A_1 & A_2 \cos\lambda_x + A_3 \sin\lambda_x & A_3 \cos\lambda_x - A_2 \sin\lambda_x \\ B_1 & B_2 \cos\lambda_x + B_3 \sin\lambda_x & B_3 \cos\lambda_x - B_2 \sin\lambda_x \end{bmatrix} \begin{bmatrix} x_{n+1} \\ y_{n+1} \\ z_{n+1} \end{bmatrix} = 0 \qquad \text{(A-3)}$$

in the new system.

Similar transformations exist for rotations about the y-axis and z-axis so that new equations for the line become:-

$$\begin{bmatrix} A_1 \cos\lambda_y - A_3 \sin\lambda_y & A_2 & A_3 \cos\lambda_y + A_1 \sin\lambda_y \\ B_1 \cos\lambda_y - B_3 \sin\lambda_y & B_2 & B_3 \cos\lambda_y + B_1 \sin\lambda_y \end{bmatrix} \begin{bmatrix} x_{n+1} \\ y_{n+1} \\ z_{n+1} \end{bmatrix} = 0 \qquad \text{(A-4)}$$

for a rotation λ_y about the old y_n axis and

$$\begin{bmatrix} A_1 \cos\lambda_z + A_2 \sin\lambda_z & A_2 \cos\lambda_z - A_1 \sin\lambda_z & A_3 \\ B_1 \cos\lambda_z + B_2 \sin\lambda_z & B_2 \cos\lambda_z - B_1 \sin\lambda_z & B_3 \end{bmatrix} \begin{bmatrix} x_{n+1} \\ y_{n+1} \\ z_{n+1} \end{bmatrix} = 0 \qquad \text{(A-5)}$$

for a rotation λ_z about the old z_n axis.

The planes in which the angle of pitch (α) and the angle of yaw (γ) are specified will be defined with respect to rectangular axes fixed in the probe, with the x-axis along the probe centre-line and the y-axis in the plane of the holes making up the yawmeter so that

$$\tan\gamma = \bar{y}/\bar{x} \quad , \quad \tan\alpha = \bar{z}/\bar{x} \qquad \text{(A-6)}$$

where $\bar{x}$, $\bar{y}$, $\bar{z}$ define any point on the line defining the local stream direction at the probe. Equations (A-6) may be re-written as:

$$\begin{bmatrix} -\tan\gamma & 1 & 0 \\ -\tan\alpha & 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = 0 . \qquad \text{(A-7)}$$

It is therefore convenient to choose

$$A_1 = -\tan\gamma\,, \quad A_2 = 1\,, \quad A_3 = 0$$
$$B_1 = -\tan\alpha\,, \quad B_2 = 0\,, \quad B_3 = 1 \tag{A-8}$$

for the planes defining the line representing the local flow direction through the probe.

A subroutine for a computer program is easily written which will output new coefficients defining the line given by equations (A-2) starting with the values for A_1, A_2 etc, given by the conditions given in (A-8). Repeated use of the subroutine can then cope with a series of axes transformations.

The angle of pitch and angle of yaw can then be determined for the final frame of reference fixed in the yawed wing (x_m, y_m, z_m). In order to obtain the datum values for the undisturbed flow with respect to the same frame of reference similar transformations are made using the free stream as the initial flow direction. From the two results the change in flow direction due to the presence of the wing is determined. In this work the angle of yaw with respect to the probe was measured but the angle of pitch was estimated.

Table 1

SURFACE PRESSURE DISTRIBUTION

Λ = 28 degrees, M_N = 0.675, α_N = +2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000			
0.00018	0.5228	0.00022	
0.00065	0.2799	0.00073	0.8739
0.00145	0.1640	0.00145	0.8496
0.00247		0.00242	0.7972
0.00347	-0.1626	0.00347	0.7310
0.00467	-0.3048	0.00466	0.6652
0.00591	-0.3684	0.00585	0.6138
0.00725	-0.4018	0.00719	0.5663
0.00865	-0.4258	0.00860	0.5253
0.01039	-0.4434	0.01024	0.4757
0.01244	-0.4766	0.01229	0.4125
0.01456	-0.5128	0.01440	0.3621
0.01875	-0.5609	0.01857	0.2970
0.02699	-0.6186	0.02690	
0.03745		0.03762	0.1286
0.04995	-0.6485	0.05000	0.0650
0.06241	-0.6908	0.06252	0.0062
0.07497	-0.6094	0.07503	-0.0114
0.09999	-0.6101	0.10003	-0.0695
0.14992	-0.6053	0.15000	-0.1274
0.19982	-0.5866	0.19997	-0.1755
0.25005	-0.5773	0.25013	-0.2046
0.30003	-0.5483	0.30007	-0.2209
0.34976	-0.4844	0.34993	-0.2111
0.39977	-0.4177	0.39985	-0.1776
0.44979	-0.3568	0.44995	-0.1602
0.49979	-0.3026	0.49987	-0.1335
0.54980	-0.2542	0.55004	-0.1137
0.59976		0.59992	-0.0852
0.64978	-0.1566	0.64995	-0.0593
0.69982	-0.1209	0.69990	
0.74982		0.74990	
0.77477	-0.0630	0.77489	0.0018
0.79984	-0.0451	0.79977	0.0129
0.82478	-0.0281	0.82485	0.0201
0.84978	-0.0104	0.84985	0.0320
0.87483	0.0115	0.87483	0.0444
0.89983	0.0295	0.89991	0.0567
0.92483	0.0518	0.92490	0.0685
0.94983	0.0741	0.94993	0.0876
0.97482	0.1031	0.97493	0.1083
0.98738	0.1187	0.98744	

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Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 28 degrees, M_N = 0.675, α_N = 0

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.8736		
0.00018	0.8354	0.00022	0.8245
0.00065	0.7363	0.00073	0.7484
0.00145	0.6433	0.00145	0.6806
0.00247		0.00242	0.5169
0.00347	0.4137	0.00347	0.3955
0.00467	0.3136	0.00466	0.2980
0.00591	0.2442	0.00585	0.2390
0.00725	0.1968	0.00719	0.1962
0.00865	0.1544	0.00860	0.1548
0.01039	0.1145	0.01024	0.1039
0.01244	0.0676	0.01229	0.0323
0.01456	0.0223	0.01440	-0.0209
0.01875	-0.0388	0.01857	-0.0760
0.02699	-0.1256	0.02690	
0.03745	-0.1681	0.03762	-0.1913
0.04995	-0.2333	0.05000	-0.2315
0.06241	-0.2650	0.06252	-0.2818
0.07497	-0.2774	0.07503	-0.2852
0.09999	-0.3059	0.10003	-0.2994
0.14992	-0.3315	0.15000	-0.3334
0.19982	-0.3512	0.19997	-0.3604
0.25005	-0.3670	0.25013	-0.3736
0.30003	-0.3653	0.30007	-0.3699
0.34976	-0.3338	0.34993	-0.3396
0.39977	-0.2895	0.39985	-0.2869
0.44979	-0.2482	0.44995	-0.2536
0.49979	-0.2078	0.49987	-0.2145
0.54980	-0.1737	0.55004	-0.1808
0.59976	-0.1360	0.59992	-0.1430
0.64978	-0.0994	0.64995	-0.1133
0.69982	-0.0729	0.69990	
0.74982		0.74990	
0.77477	-0.0274	0.77489	-0.0335
0.79984	-0.0132	0.79977	-0.0176
0.82478	-0.0013	0.82485	-0.0064
0.84978	0.0138	0.84985	0.0104
0.87483	0.0306	0.87483	0.0261
0.89983	0.0461	0.89991	0.0431
0.92483	0.0643	0.92490	0.0601
0.94983	0.0833	0.94993	0.0832
0.97482	0.1086	0.97493	0.1098
0.98738	0.1243	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 28 degrees, M_N = 0.675, α_N = −2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.7174		
0.00018	0.8493	0.00022	0.5181
0.00065	0.8805	0.00073	
0.00145	0.8585	0.00145	0.2297
0.00247		0.00242	0.0125
0.00347	0.7438	0.00347	−0.1598
0.00467	0.6777	0.00466	−0.2786
0.00591	0.6230	0.00585	−0.3295
0.00725	0.5746	0.00719	−0.3538
0.00865	0.5349	0.00860	−0.3721
0.01039	0.4869	0.01024	−0.4152
0.01244	0.4366	0.01229	−0.4971
0.01456	0.3908	0.01440	−0.5544
0.01875	0.3217	0.01857	−0.5930
0.02699	0.2202	0.02690	
0.03745	0.1492	0.03762	−0.6265
0.04995	0.0712	0.05000	−0.6287
0.06241	0.0199	0.06252	−0.6465
0.07497	0.0008	0.07503	−0.6473
0.09999	−0.0585	0.10003	−0.6170
0.14992	−0.1280	0.15000	−0.5957
0.19982	−0.1691	0.19997	−0.5964
0.25005	−0.2015	0.25013	−0.5806
0.30003	−0.2175	0.30007	−0.5529
0.34976	−0.2062	0.34993	−0.4925
0.39977	−0.1798	0.39985	−0.4132
0.44979	−0.1539	0.44995	−0.3612
0.49979	−0.1266	0.49987	−0.3070
0.54980	−0.1029	0.55004	−0.2614
0.59976	−0.0743	0.59992	−0.2111
0.64978		0.64995	−0.1662
0.69982	−0.0277	0.69990	
0.74982		0.74990	
0.77477	0.0078	0.77489	−0.0672
0.79984	0.0177	0.79977	−0.0482
0.82478	0.0271	0.82485	−0.0328
0.84978	0.0373	0.84985	−0.0127
0.87483	0.0507	0.87483	0.0077
0.89983	0.0620	0.89991	0.0295
0.92483	0.0757	0.92490	0.0498
0.94983	0.0902	0.94993	0.0769
0.97482	0.1112	0.97493	0.1065
0.98738	0.1249	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 28 degrees, M_N = 0.4, α_N = +2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000			
0.00018	0.3352	0.00022	
0.00065	0.0476	0.00073	0.8129
0.00145	-0.0612	0.00145	0.8057
0.00247		0.00242	0.7633
0.00347	-0.3788	0.00347	0.7033
0.00467	-0.4938	0.00466	0.6377
0.00591	-0.5280	0.00585	0.5854
0.00725	-0.5434	0.00719	0.5371
0.00865	-0.5398	0.00860	0.4966
0.01039	-0.5375	0.01024	0.4445
0.01244	-0.5515	0.01229	0.3823
0.01456	-0.5668	0.01440	0.3333
0.01875	-0.5706	0.01857	0.2688
0.02699	-0.5724	0.02690	
0.03745	-0.5385	0.03762	0.1109
0.04995	-0.5412	0.05000	0.0575
0.06241	-0.5105	0.06252	0.0115
0.07497	-0.4883	0.07503	-0.0068
0.09999	-0.4718	0.10003	-0.0501
0.14992	-0.4484	0.15000	-0.1045
0.19982	-0.4248	0.19997	-0.1391
0.25005	-0.4113	0.25013	-0.1609
0.30003	-0.3917	0.30007	-0.1717
0.34976	-0.3544	0.34993	-0.1640
0.39977	-0.3097	0.39985	-0.1384
0.44979	-0.2698	0.44995	-0.1259
0.49979	-0.2305	0.49987	-0.1062
0.54980	-0.1965	0.55004	-0.0900
0.59976		0.59992	-0.0682
0.64978	-0.1221	0.64995	-0.0464
0.69982	-0.0972	0.69990	
0.74982		0.74990	
0.77477	-0.0502	0.77489	0.0046
0.79984	-0.0349	0.79977	0 0155
0.82478	-0.0241	0.82485	0.0182
0.84978	-0.0093	0.84985	0.0292
0.87483	0.0084	0.87483	0.0403
0.89983	0 0241	0.89991	0.0511
0.92483	0.0429	0.92490	0.0606
0.94983	0.0626	0.94993	0.0769
0.97482	0.0904	0.97493	0.0985
0.98738	0.1065	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 28 degrees, M_N = 0.4, α_0 = 0

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.8144		
0.00018	0.7682	0.00022	0.7618
0.00065	0.6651	0.00073	0.6826
0.00145	0.5661	0.00145	0.5781
0.00247		0.00242	0.4431
0.00347	0.3305	0.00347	0.3217
0.00467	0.2314	0.00466	0.2257
0.00591	0.1678	0.00585	0.1701
0.00725	0.1230	0.00719	0.1289
0.00865	0.0887	0.00860	0.0943
0.01039	0.0536	0.01024	0.0476
0.01244	0.0144	0.01229	-0.0144
0.01456	-0.0231	0.01440	-0.0581
0.01875	-0.0702	0.01857	-0.0995
0.02699	-0.1349	0.02690	
0.03745	-0.1641	0.03762	-0.1829
0.04995	-0.2074	0.05000	-0.2080
0.06241	-0.2187	0.06252	-0.2432
0.07497	-0.2174	0.07503	-0.2285
0.09999	-0.2388	0.10003	-0.2395
0.14992	-0.2607	0.15000	-0.2613
0.19982	-0.2666	0.19997	-0.2742
0.25005	-0.2734	0.25013	-0.2779
0.30003	-0.2707	0.30007	-0.2742
0.34976	-0.2484	0.34993	-0.2534
0.39977	-0.2192	0.39985	-0.2156
0.44979	-0.1896	0.44995	-0.1946
0.49979	-0.1612	0.49987	-0.1650
0.54980	-0.1345	0.55004	-0.1426
0.59976	-0.1055	0.59992	-0.1126
0.64978		0.64995	-0.0847
0.69982	-0.0580	0.69990	
0.74982		0.74990	
0.77477	-0.0197	0.77489	-0.0236
0.79984	-0.0061	0.79977	-0.0112
0.82478	0.0017	0.82485	-0.0048
0.84978	0.0131	0.84985	0.0096
0.87483	0.0279	0.87483	0.0238
0.89983	0.0404	0.89991	0.0374
0.92483	0.0554	0.92490	0.0512
0.94983	0.0713	0.94993	0.0720
0.97482	0.0972	0.97493	0.0961
0.98738	0.1100	0.98744	

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Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 28 degrees, M_N = 0.4, α_N = -2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.5572		
0.00018	0.7636	0.00022	0.3039
0.00065	0.8080	0.00073	
0.00145	0.8061	0.00145	-0.0087
0.00247		0.00242	-0.2381
0.00347	0.7132	0.00347	-0.3947
0.00467	0.6514	0.00466	-0.4842
0.00591	0.5982	0.00585	-0.5109
0.00725	0.5514	0.00719	-0.5129
0.00865	0.5098	0.00860	-0.5168
0.01039	0.4640	0.01024	-0.5377
0.01244	0.4147	0.01229	-0.5825
0.01456	0.3705	0.01440	-0.6044
0.01875	0.3059	0.01857	-0.6020
0.02699	0.2099	0.02690	
0.03745	0.1431	0.03762	-0.5448
0.04995	0.0735	0.05000	-0.5167
0.06241	0.0431	0.06252	-0.5154
0.07497	0.0124	0.07503	-0.4815
0.09999	-0.0351	0.10003	-0.4704
0.14992	-0.0933	0.15000	-0.4406
0.19982	-0.1248	0.19997	-0.4245
0.25005	-0.1488	0.25013	-0.4086
0.30003	-0.1624	0.30007	-0.3887
0.34976	-0.1533	0.34993	-0.3528
0.39977	-0.1357	0.39985	-0.3012
0.44979	-0.1166	0.44995	-0.2687
0.49979	-0.0962	0.49987	-0.2309
0.54980	-0.0772	0.55004	-0.1994
0.59976	-0.0558	0.59992	-0.1627
0.64978		0.64995	-0.1302
0.69982	-0.0216	0.69990	
0.74982		0.74990	
0.77477	0.0097	0.77489	-0.0536
0.79984	0.0190	0.79977	-0.0381
0.82478	0.0250	0.82485	-0.0277
0.84978	0.0333	0.84985	-0.0111
0.87483	0.0440	0.87483	0.0055
0.89983	0.0532	0.89991	0.0230
0.92483	0.0657	0.92490	0.0393
0.94983	0.0777	0.94993	0.0629
0.97482	0.0979	0.97493	0.0915
0.98738	0.1101	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 20 degrees, M_N = 0.675, α_N = +2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.8314		
0.00018	0.5737	0.00022	0.9554
0.00065	0.2901	0.00073	0.9896
0.00145	0.1656	0.00145	0.9717
0.00247		0.00242	0.9205
0.00347	-0.2148	0.00347	0.8484
0.00467	-0.3729	0.00466	0.7739
0.00591	-0.4506	0.00585	0.7172
0.00725	-0.4909	0.00719	0.6627
0.00865	-0.5119	0.00860	0.6138
0.01039	-0.5046	0.01024	0.5613
0.01244	-0.5653	0.01229	0.4897
0.01456	-0.6084	0.01440	0.4310
0.01875	-0.6602	0.01857	0.3570
0.02699		0.02690	
0.03745	-0.7018	0.03762	0.1646
0.04995	-0.7487	0.05000	0.0926
0.06241	-0.7968	0.06252	0.0204
0.07497	-0.6869	0.07503	-0.0088
0.09999	-0.7003	0.10003	-0.0646
0.14992	-0.6876	0.15000	-0.1326
0.19982	-0.6573	0.19997	-0.1886
0.25005	-0.6412	0.25013	-0.2234
0.30003	-0.6037	0.30007	-0.2421
0.34976	-0.5332	0.34993	-0.2308
0.39977	-0.4426	0.39985	-0.1951
0.44979	-0.3841	0.44995	-0.1735
0.49979	-0.3203	0.49987	-0.1433
0.54980	-0.2677	0.55004	-0.1200
0.59976	-0.2157	0.59992	-0.0891
0.64978	-0.1650	0.64995	-0.0605
0.69982	-0.1230	0.69990	
0.74982		0.74990	
0.77477	-0.0569	0.77489	0.0077
0.79984	-0.0368	0.79977	0.0204
0.82478	-0.0178	0.82485	0.0285
0.84978	0.0017	0.84985	0.0431
0.87483	0.0237	0.87483	0.0572
0.89983	0.0455	0.89991	0.0716
0.92483	0.0685	0.92490	0.0856
0.94983	0.0936	0.94993	0.1063
0.97482	0.1281	0.97493	0.1324
0.98738	0.1456	0.98744	

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Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 20 degrees, M_N = 0.675, α_N = 0

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.9916		
0.00018	0.9508	0.00022	0.9329
0.00065	0.8449	0.00073	0.8395
0.00145	0.7424	0.00145	0.7282
0.00247		0.00242	0.5774
0.00347	0.4779	0.00347	0.4401
0.00467	0.3613	0.00466	0.3278
0.00591	0.2894	0.00585	0.2618
0.00725	0.2265	0.00719	0.2105
0.00865	0.1818	0.00860	0.1664
0.01039	0.1417	0.01024	0.1096
0.01244	0.0875	0.01229	0.0288
0.01456	0.0358	0.01440	-0.0319
0.01875	-0.0331	0.01857	-0.0928
0.02699	-0.1303	0.02690	
0.03745	-0.1776	0.03762	-0.2222
0.04995	-0.2493	0.05000	-0.2655
0.06241	-0.2968	0.06252	-0.3232
0.07497	-0.2818	0.07503	-0.3277
0.09999	-0.3265	0.10003	-0.3502
0.14992	-0.3697	0.15000	-0.3763
0.19982	-0.3373	0.19997	-0.4024
0.25005	-0.4040	0.25013	-0.4144
0.30003	-0.4011	0.30007	-0.4123
0.34976	-0.3653	0.34993	-0.3762
0.39977		0.39985	-0.3173
0.44979	-0.2682	0.44995	-0.2785
0.49979	-0.2231	0.49987	-0.2338
0.54980	-0.1870	0.55004	-0.1981
0.59976	-0.1416	0.59992	-0.1568
0.64978	-0.1016	0.64995	-0.1165
0.69982	-0.0702	0.69990	
0.74982		0.74990	
0.77477	-0.0175	0.77489	-0.0256
0.79984	-0.0024	0.79977	-0.0089
0.82478	0.0129	0.82485	0.0032
0.84978	0.0292	0.84985	0.0218
0.87483	0.0478	0.87483	0.0409
0.89983	0.0647	0.89991	0.0595
0.92483	0.0854	0.92490	0.0783
0.94983	0.1051	0.94993	0.1044
0.97482	0.1366	0.97493	0.1348
0.98738	0.1534	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 20 degrees, M_N = 0.675, α_N = − 2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.7819		
0.00018	0.9499	0.00022	0.5366
0.00065	0.9945	0.00073	0.3460
0.00145	0.9806	0.00145	0.1788
0.00247		0.00242	-0.0617
0.00347	0.8670	0.00347	-0.2609
0.00467	0.7970	0.00466	-0.3999
0.00591	0.7352	0.00585	-0.4564
0.00725	0.6826	0.00719	-0.4782
0.00865	0.6368	0.00860	-0.4968
0.01039	0.5874	0.01024	-0.5421
0.01244	0.5274	0.01229	-0.6369
0.01456	0.4750	0.01440	-0.7066
0.01875	0.3963	0.01857	-0.7478
0.02699	0.2802	0.02690	
0.03745	0.1982	0.03762	-0.7589
0.04995	0.1082	0.05000	-0.7565
0.06241	0.0447	0.06252	-0.8042
0.07497	0.0268	0.07503	-0.7692
0.09999	-0.0421	0.10003	-0.7151
0.14992	-0.1242	0.15000	-0.6891
0.19982	-0.1716	0.19997	-0.6717
0.25005	-0.2100	0.25013	-0.6519
0.30003	-0.2297	0.30007	-0.6165
0.34976		0.34993	-0.5434
0.39977		0.39985	-0.4552
0.44979	-0.1613	0.44995	-0.3958
0.49979	-0.1315	0.49987	-0.3338
0.54980	-0.1060	0.55004	-0.2845
0.59976	-0.0740	0.59992	-0.2283
0.64978	-0.0433	0.64995	-0.1778
0.69982	-0.0209	0.69990	
0.74982		0.74990	
0.77477	0.0184	0.77489	-0.0642
0.79984	0.0289	0.79977	-0.0425
0.82478	0.0392	0.82485	-0.0259
0.84978	0.0511	0.84985	-0.0029
0.87483	0.0643	0.87483	0.0198
0.89983	0.0780	0.89991	0.0431
0.92483	0.0948	0.92490	0.0655
0.94983	0.1119	0.94993	0.0956
0.97482	0.1369	0.97493	0.1296
0.98738	0.1527	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 20 degrees, M_N = 0.4, α_N = +2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.6726		
0.00018	0.3451	0.00022	0.8538
0.00065	0.0168	0.00073	0.9161
0.00145	-0.0956	0.00145	0.9144
0.00247		0.00242	0.8721
0.00347	-0.4608	0.00347	0.8055
0.00467	-0.5820	0.00466	0.7331
0.00591		0.00585	0.6746
0.00725	-0.6435	0.00719	
0.00865	-0.6371	0.00860	0.5734
0.01039	-0.6061	0.01024	0.5174
0.01244	-0.6415	0.01229	0.4472
0.01456	-0.6576	0.01440	0.3908
0.01875	-0.6581	0.01857	0.3185
0.02699	-0.6583	0.02690	
0.03745	-0.6120	0.03762	0.1382
0.04995	-0.6084	0.05000	0.0748
0.06241	-0.5783	0.06252	0.0191
0.07497	-0.5564	0.07503	0.0034
0.09999	-0.5352	0.10003	-0.0480
0.14992	-0.5081	0.15000	-0.1083
0.19982	-0.4779	0.19997	-0.1491
0.25005	-0.4621	0.25013	-0.1739
0.30003	-0.4390	0.30007	-0.1870
0.34976	-0.3965	0.34993	-0.1786
0.39977	-0.3334	0.39985	-0.1508
0.44979	-0.3004	0.44995	-0.1360
0.49979	-0.2550	0.49987	-0.1132
0.54980	-0.2190	0.55004	-0.0938
0.59976	-0.1774	0.59992	-0.0713
0.64978	-0.1380	0.64995	-0.0497
0.69982	-0.1069	0.69990	
0.74982		0.74990	
0.77477	-0.0561	0.77489	0.0056
0.79984	-0.0397	0.79977	0.0172
0.82478	-0.0261	0.82485	0.0208
0.84978	-0.0095	0.84985	0.0336
0.87483	0.0087	0.87483	0.0464
0.89983	0.0289	0.89991	0.0582
0.92483	0.0494	0.92490	0.0692
0.94983	0.0728	0.94993	0.0867
0.97482	0.1052	0.97493	0.1128
0.98738	0.1235	0.98744	

Table 1 (continued)

SURFACE PRESSURE DISTRIBUTION

Λ = 20 degrees, M_N = 0.4, α_N = 0

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.9207		
0.00018	0.8729	0.00022	0.8638
0.00065	0.7546	0.00073	0.7685
0.00145	0.6442	0.00145	0.6526
0.00247		0.00242	0.4980
0.00347	0.3729	0.00347	0.3621
0.00467	0.2570	0.00466	0.2551
0.00591	0.1909	0.00585	0.1920
0.00725	0.1327	0.00719	0.1475
0.00865	0.0956	0.00860	0.1069
0.01039	0.0598	0.01024	0.0562
0.01244	0.0133	0.01229	-0.0136
0.01456	-0.0282	0.01440	-0.0637
0.01875	-0.0812	0.01857	-0.1103
0.02699	-0.1548	0.02690	
0.03745	-0.1855	0.03762	-0.2040
0.04995	-0.2343	0.05000	-0.2313
0.06241	-0.2350	0.06252	-0.2673
0.07497	-0.2451	0.07503	-0.2686
0.09999	-0.2701	0.10003	-0.2738
0.14992	-0.2938	0.15000	-0.2951
0.19982	-0.2986	0.19997	-0.3075
0.25005	-0.3068	0.25013	-0.3119
0.30003	-0.3041	0.30007	-0.3081
0.34976	-0.2775	0.34993	-0.2839
0.39977		0.39985	-0.2415
0.44979	-0.2106	0.44995	-0.2159
0.49979	-0.1758	0.49987	-0.1830
0.54980	-0.1504	0.55004	-0.1549
0.59976	-0.1143	0.59992	-0.1250
0.64978	-0.0830	0.64995	-0.0939
0.69982	-0.0597	0.69990	
0.74982		0.74990	
0.77477	-0.0171	0.77489	-0.0228
0.79984	-0.0049	0.79977	-0.0091
0.82478	0.0052	0.82485	-0.0018
0.84978	0.0194	0.84985	0.0145
0.87483	0.0344	0.87483	0.0298
0.89983	0.0488	0.89991	0.0460
0.92483	0.0665	0.92490	0.0607
0.94983	0.0857	0.94993	0.0847
0.97482	0.1144	0.97493	0.1134
0.98738	0.1312	0.98744	

Table 1 (concluded)

SURFACE PRESSURE DISTRIBUTION

Λ = 20 degrees, M_N = 0.4, α_N = -2 degrees

Upper surface		Lower surface	
x/c	C_p	x/c	C_p
0.00000	0.5957		
0.00018	0.8289	0.00022	0.2992
0.00065	0.9086	0.00073	0.0853
0.00145	0.9174	0.00145	-0.0862
0.00247		0.00242	-0.3304
0.00347	0.8257	0.00347	-0.5039
0.00467	0.7603	0.00466	-0.6051
0.00591	0.6996	0.00585	-0.6316
0.00725	0.6474	0.00719	-0.6293
0.00865	0.5992	0.00860	-0.6321
0.01039	0.5523	0.01024	-0.6509
0.01244	0.4940	0.01229	-0.6999
0.01456	0.4439	0.01440	-0.7240
0.01875	0.3689	0.01857	-0.7138
0.02699	0.2593	0.02690	
0.03745	0.1803	0.03762	-0.6408
0.04995	0.1007	0.05000	-0.6153
0.06241	0.0594	0.06252	-0.6167
0.07497	0.0305	0.07503	-0.5792
0.09999	-0.0270	0.10003	-0.5388
0.14992	-0.0945	0.15000	-0.5077
0.19982	-0.1301	0.19997	-0.4885
0.25005	-0.1588	0.25013	-0.4672
0.30003	-0.1740	0.30007	-0.4436
0.34976	-0.1641	0.34993	-0.4008
0.39977		0.39985	-0.3438
0.44979	-0.1245	0.44995	-0.3041
0.49979	-0.1014	0.49987	-0.2607
0.54980	-0.0839	0.55004	-0.2233
0.59976	-0.0580	0.59992	-0.1835
0.64978	-0.0328	0.64995	-0.1443
0.69982	-0.0175	0.69990	
0.74982		0.74990	
0.77477	0.0153	0.77489	-0.0568
0.79984	0.0249	0.79977	-0.0395
0.82478	0.0324	0.82485	-0.0294
0.84978	0.0426	0.84985	-0.0094
0.87483	0.0544	0.87483	0.0095
0.89983	0.0650	0.89991	0.0292
0.92483	0.0781	0.92490	0.0481
0.94983	0.0929	0.94993	0.0744
0.97482	0.1172	0.97493	0.1077
0.98738	0.1310	0.98744	

*Table 2

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{\circ}$, $M_N = 0.675$, $\alpha_N = +2^{\circ}$

x/c = 0.280

MEASUREMENT 1

Constant $(C_p)_p = -0.5750$

z/c	u/U_p
0.00014	0.5409
0.00015	0.5563
0.00017	0.5682
0.00018	0.5803
0.00020	0.5906
0.00023	0.6154
0.00028	0.6352
0.00032	0.6444
0.00035	0.6544
0.00039	0.6647
0.00044	0.6763
0.00051	0.6891
0.00061	0.7065
0.00071	0.7258
0.00084	0.7430
0.00093	0.7555
0.00106	0.7720
0.00119	0.7897
0.00133	0.8040
0.00158	0.8317
0.00179	0.8572
0.00197	0.8729
0.00220	0.8884
0.00239	0.9069
0.00260	0.9255
0.00279	0.9392
0.00297	0.9531
0.00316	0.9656
0.00337	0.9752
0.00358	0.9844
0.00370	0.9871
0.00386	0.9912
0.00399	0.9936
0.00410	0.9950
0.00423	0.9965
0.00444	0.9984
0.00462	0.9987
0.00488	0.9998
0.00510	1.0000
0.00530	0.9999
0.00556	1.0000

MEASUREMENT 2

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* The data in Table 2 are available on 8-hole paper tape.

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (continued)

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.4857	-0.0385	7.37	-5.26	-2.46
0.00054	0.5140	-0.0228	7.16	-5.01	-2.37
0.00076	0.5268	-0.0205	6.96	-4.98	-2.28
0.00098	0.5651	-0.0170	6.76	-5.01	-2.20
0.00154	0.5974	-0.0119	6.10	-4.77	-1.97
0.00188	0.6207	-0.0119	5.93	-4.62	-1.83
0.00233	0.6403	-0.0117	5.64	-4.35	-1.65
0.00267	0.6547	-0.0090	5.53	-4.26	-1.52
0.00278	0.6627	-0.0093	5.31	-4.04	-1.47
0.00312	0.6756	-0.0059	5.15	-3.90	-1.33
0.00379	0.6992	-0.0054	4.69	-3.46	-1.06
0.00468	0.7266	-0.0044	4.16	-2.97	-0.70
0.00546	0.7536	-0.0033	3.72	-2.56	-0.40
0.00601	0.7726	-0.0030	3.30	-2.17	-0.20
0.00633	0.7929	-0.0059	3.02	-1.89	-0.08
0.00709	0.8097	-0.0036	2.68	-1.59	0.19
0.00774	0.8308	-0.0053	2.36	-1.28	0.43
0.00828	0.8470	-0.0036	2.12	-1.06	0.63
0.00882	0.8594	-0.0006	1.93	-0.88	0.83
0.00957	0.8836	-0.0016	1.53	-0.50	1.10
0.01045	0.9093	-0.0039	1.18	-0.17	1.43
0.01157	0.9372	-0.0031	0.73	0.27	1.83
0.01268	0.9584	-0.0042	0.51	0.48	2.24
0.01368	0.9744	-0.0021	0.22	0.76	2.61
0.01474	0.9876	-0.0018	0.12	0.86	3.00
0.01575	0.9940	0.0014	0.02	0.96	3.37
0.01667	0.9974	0.0036	-0.04	1.03	3.70
0.01807	0.9995	0.0060	-0.02	1.02	4.21
0.01955	0.9999	0.0039	-0.13	1.16	4.75
0.02090	0.9998	0.0034	-0.14	1.20	5.25
0.02177	1.0000	0.0028	-0.10	1.18	5.57

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5199	-0.0417	7.18	3.78	-1.30
0.00077	0.5988	-0.0227	6.81	4.87	-1.15
0.00135	0.6324	-0.0226	6.12	5.09	-0.91
0.00175	0.6512	-0.0230	6.00	5.19	-0.75
0.00194	0.6522	-0.0239	5.87	5.32	-0.67
0.00233	0.6673	-0.0201	5.35	5.81	-0.51
0.00253	0.6816	-0.0212	5.27	5.89	-0.43
0.00282	0.6929	-0.0223	5.11	6.05	-0.31
0.00310	0.7030	-0.0206	4.84	6.30	-0.20
0.00347	0.7143	-0.0201	4.56	6.57	-0.05
0.00393	0.7301	-0.0198	4.22	6.90	0.14
0.00430	0.7414	-0.0184	3.99	7.12	0.29
0.00458	0.7530	-0.0197	3.79	7.30	0.41
0.00495	0.7659	-0.0198	3.66	7.43	0.56
0.00532	0.7780	-0.0192	3.40	7.68	0.70
0.00569	0.7891	-0.0186	3.13	7.93	0.83
0.00615	0.8068	-0.0174	2.89	8.17	1.00
0.00698	0.8406	-0.0201	2.31	8.74	1.30
0.00834	0.8733	-0.0213	1.68	9.34	1.80
0.00941	0.9012	-0.0239	1.26	9.75	2.20
0.01048	0.9296	-0.0279	0.88	10.13	2.59
0.01164	0.9547	-0.0299	0.52	10.48	3.01
0.01278	0.9749	-0.0338	0.28	10.72	3.42
0.01400	0.9888	-0.0333	0.10	10.91	3.87
0.01493	0.9943	-0.0349	0.00	11.02	4.22
0.01607	0.9984	-0.0357	0.02	11.02	4.63
0.01700	0.9994	-0.0367	-0.02	11.08	4.96
0.01834	0.9997	-0.0384	-0.12	11.20	5.45
0.01926	1.0000	-0.0390	-0.04	11.15	5.79
0.02040	1.0000	-0.0406	-0.05	11.19	6.20

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.4818	0.0383	7.94	-4.74	-0.89
0.00038	0.4835	0.0379	7.94	-4.81	-0.89
0.00081	0.5330	0.0482	7.58	-5.26	-0.71
0.00124	0.5712	0.0493	7.24	-5.21	-0.54
0.00156	0.5927	0.0525	6.87	-4.86	-0.41
0.00199	0.6141	0.0524	6.82	-4.84	-0.23
0.00209	0.6187	0.0553	6.53	-4.57	-0.19
0.00250	0.6346	0.0582	6.34	-4.40	-0.02
0.00322	0.6639	0.0584	5.85	-3.96	0.27
0.00413	0.6906	0.0584	5.31	-3.49	0.65
0.00494	0.7156	0.0594	4.87	-3.10	0.98
0.00524	0.7293	0.0609	4.45	-2.70	1.10
0.00595	0.7476	0.0593	4.17	-2.46	1.37
0.00645	0.7623	0.0592	3.82	-2.14	1.56
0.00705	0.7782	0.0585	3.48	-1.84	1.78
0.00754	0.7927	0.0599	3.23	-1.61	1.97
0.00793	0.8036	0.0613	3.08	-1.48	2.12
0.00852	0.8195	0.0631	2.81	-1.24	2.34
0.00940	0.8439	0.0620	2.40	-0.87	2.68
0.01048	0.8712	0.0632	1.85	-0.37	3.08
0.01140	0.8959	0.0617	1.48	-0.04	3.42
0.01234	0.9181	0.0605	1.01	0.40	3.77
0.01348	0.9410	0.0568	0.72	0.66	4.19
0.01532	0.9717	0.0510	0.29	1.05	4.87
0.01669	0.9859	0.0496	0.16	1.16	5.37
0.02050	0.9995	0.0412	-0.08	1.38	6.77
0.02147	1.0000	0.0427	-0.12	1.42	7.12
0.02255	1.0000	0.0429	-0.19	1.50	7.52

x/c = 0.986 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.4499	0.1266	11.58	-11.76	-0.46
0.00122	0.5285	0.1334	10.97	-11.53	-0.08
0.00190	0.5688	0.1359	10.19	-10.81	0.26
0.00239	0.5898	0.1366	9.44	-10.10	0.50
0.00307	0.6127	0.1347	8.91	-9.63	0.84
0.00355	0.6292	0.1347	8.38	-9.14	1.08
0.00412	0.6464	0.1339	7.88	-8.68	1.37
0.00450	0.6599	0.1349	7.54	-8.37	1.56
0.00497	0.6718	0.1357	7.26	-8.12	1.79
0.00554	0.6867	0.1366	6.95	-7.85	2.03
0.00639	0.7106	0.1357	6.25	-7.20	2.37
0.00743	0.7386	0.1366	5.45	-6.46	2.79
0.00830	0.7624	0.1361	4.87	-5.93	3.15
0.00917	0.7870	0.1367	4.12	-5.23	3.50
0.01023	0.8127	0.1348	3.61	-4.76	3.93
0.01129	0.8347	0.1316	3.21	-4.41	4.34
0.01215	0.8552	0.1287	2.75	-3.98	4.68
0.01499	0.9189	0.1207	1.39	-2.70	5.79
0.01627	0.9426	0.1159	1.08	-2.41	6.27
0.01734	0.9564	0.1123	0.94	-2.30	6.67
0.01820	0.9696	0.1132	0.62	-1.99	7.00
0.01927	0.9815	0.1108	0.27	-1.64	7.41
0.01936	0.9824	0.1020	0.45	-1.82	7.44
0.01975	0.9829	0.1096	0.38	-1.75	7.59
0.02003	0.9857	0.1103	0.27	-1.64	7.70
0.02013	0.9871	0.1067	0.35	-1.72	7.74
0.02032	0.9872	0.1143	0.16	-1.53	7.81
0.02041	0.9886	0.1082	0.20	-1.57	7.84
0.02077	0.9904	0.1099	0.13	-1.49	7.97
0.02131	0.9930	0.1094	0.07	-1.44	8.17
0.02140	0.9935	0.1112	0.03	-1.40	8.21
0.02185	0.9947	0.1077	0.08	-1.45	8.38
0.02194	0.9948	0.1140	-0.04	-1.32	8.41
0.02238	0.9956	0.1054	0.13	-1.50	8.58
0.02265	0.9968	0.1146	0.04	-1.40	8.68
0.02274	0.9974	0.1097	0.04	-1.40	8.71
0.02310	0.9978	0.1096	-0.02	-1.33	8.84
0.02372	0.9985	0.1086	-0.06	-1.29	9.08
0.02425	0.9988	0.1098	-0.12	-1.21	9.28
0.02584	0.9997	0.1100	-0.14	-1.17	9.87
0.02743	1.0000	0.1101	-0.17	-1.10	10.47

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00035	0.4724	0.0384	7.85	5.61	0.29
0.00045	0.4844	0.0404	7.77	6.72	0.33
0.00053	0.5067	0.0464	7.69	6.01	0.36
0.00062	0.5106	0.0488	7.61	5.79	0.40
0.00080	0.5337	0.0535	7.46	5.92	0.48
0.00117	0.5636	0.0550	7.14	5.99	0.63
0.00162	0.5922	0.0573	6.78	6.32	0.82
0.00180	0.6059	0.0581	6.60	6.49	0.89
0.00270	0.6465	0.0601	5.97	7.06	1.27
0.00306	0.6640	0.0607	5.66	7.35	1.43
0.00324	0.6601	0.0601	5.74	7.25	1.50
0.00360	0.6707	0.0608	5.50	7.47	1.65
0.00378	0.6852	0.0624	5.09	7.87	1.73
0.00405	0.6933	0.0604	5.22	7.73	1.84
0.00432	0.7027	0.0626	4.75	8.18	1.96
0.00467	0.7118	0.0628	4.61	8.30	2.11
0.00512	0.7251	0.0642	4.29	8.59	2.29
0.00548	0.7344	0.0633	4.16	8.70	2.43
0.00575	0.7427	0.0642	3.95	8.90	2.53
0.00611	0.7524	0.0635	3.95	8.89	2.67
0.00647	0.7639	0.0647	3.64	9.18	2.81
0.00682	0.7727	0.0642	3.47	9.33	2.95
0.00727	0.7851	0.0646	3.39	9.39	3.12
0.00807	0.8151	0.0642	2.65	10.10	3.43
0.00931	0.8435	0.0620	2.19	10.51	3.91
0.01029	0.8675	0.0605	1.86	10.81	4.29
0.01126	0.8930	0.0573	1.41	11.22	4.65
0.01231	0.9173	0.0537	1.05	11.56	5.05
0.01336	0.9399	0.0490	0.70	11.89	5.45
0.01450	0.9607	0.0451	0.44	12.13	5.88
0.01536	0.9736	0.0423	0.24	12.32	6.20
0.01643	0.9846	0.0393	0.23	12.33	6.60
0.01724	0.9910	0.0375	0.18	12.37	6.90
0.01841	0.9963	0.0390	-0.06	12.61	7.33
0.01922	0.9982	0.0375	0.02	12.52	7.63
0.02027	0.9997	0.0382	-0.02	12.57	8.03
0.02120	0.9997	0.0382	-0.10	12.67	8.37
0.02180	0.9999	0.0391	-0.14	12.71	8.59
0.02247	0.9999	0.0389	-0.04	12.62	8.84
0.02289	0.9998	0.0400	-0.03	12.62	9.00
0.02330	1.0000	0.0387	0.00	12.60	9.15

x/c = 0.986 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.4620	0.1203	12.11	-0.32	0.39
0.00054	0.4721	0.1224	12.02	-0.38	0.43
0.00085	0.5066	0.1286	11.68	-0.06	0.59
0.00116	0.5321	0.1296	11.41	9.25	0.74
0.00157	0.5549	0.1320	10.80	0.83	0.94
0.00188	0.5690	0.1331	10.41	1.19	1.09
0.00240	0.5901	0.1318	10.20	1.36	1.35
0.00342	0.6246	0.1331	8.87	2.61	1.86
0.00443	0.6562	0.1336	7.91	3.49	2.35
0.00543	0.6797	0.1343	7.26	4.08	2.81
0.00643	0.7070	0.1333	6.45	4.83	3.21
0.00743	0.7342	0.1335	5.68	5.54	3.61
0.00854	0.7613	0.1337	4.92	6.24	4.05
0.00967	0.7925	0.1315	4.20	6.91	4.50
0.01048	0.8146	0.1298	3.54	7.53	4.82
0.01171	0.8420	0.1263	3.15	7.87	5.28
0.01262	0.8607	0.1237	2.78	8.21	5.63
0.01378	0.8894	0.1215	2.02	8.94	6.07
0.01446	0.9049	0.1206	1.83	9.11	6.33
0.01552	0.9271	0.1172	1.40	9.51	6.73
0.01649	0.9463	0.1148	0.90	10.00	7.09
0.01718	0.9563	0.1140	0.74	10.14	7.34
0.01780	0.9650	0.1136	0.71	10.16	7.57
0.01831	0.9704	0.1129	0.59	10.28	7.76
0.01882	0.9747	0.1119	0.55	10.31	7.95
0.01933	0.9834	0.1146	0.19	10.67	8.14
0.01985	0.9846	0.1114	0.37	10.48	8.33
0.02035	0.9885	0.1134	0.16	10.68	8.51
0.02076	0.9900	0.1119	0.26	10.59	8.66
0.02096	0.9921	0.1152	0.14	10.71	8.73
0.02127	0.9945	0.1147	-0.04	10.89	8.85
0.02165	0.9953	0.1133	0.02	10.83	8.98
0.02222	0.9974	0.1151	-0.03	10.88	9.19
0.02316	0.9991	0.1151	-0.18	11.04	9.54
0.02411	0.9999	0.1160	-0.07	10.93	9.88
0.02533	1.0000	0.1161	-0.09	10.96	10.33

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02134	1.0000	0.1092	0.14	0.23	-5.79
-0.02124	1.0000	0.1237	-0.05	0.43	-5.76
-0.02094	0.9995	0.1219	0.03	0.32	-5.66
-0.02033	0.9990	0.1223	-0.01	0.31	-5.48
-0.01950	0.9982	0.1237	0.00	0.23	-5.22
-0.01877	0.9965	0.1263	0.02	0.14	-5.00
-0.01825	0.9952	0.1281	-0.01	0.13	-4.83
-0.01762	0.9933	0.1271	0.05	0.03	-4.64
-0.01710	0.9905	0.1294	-0.05	0.09	-4.48
-0.01657	0.9864	0.1305	0.05	-0.06	-4.32
-0.01605	0.9825	0.1337	0.09	-0 14	-4.16
-0.01564	0.9776	0.1375	0.14	-0.22	-4.04
-0.01317	0.9398	0.1471	0.39	-0.63	-3.30
-0.01224	0.9226	0.1513	0.66	-0.96	-3.02
-0.01121	0.9023	0.1535	0.74	-1.09	-2.72
-0.00997	0.8760	0.1543	1.10	-1.52	-2.35
-0.00914	0.8532	0.1554	1.17	-1.64	-2.11
-0.00831	0.8286	0.1566	1.47	-1.98	-1.87
-0.00508	0.7459	0.1570	2.45	-3.10	-0.94
-0.00383	0.7031	0.1564	3.22	-3.91	-0.57
-0.00262	0.6745	0.1545	3.68	-4.41	-0.21
-0.00192	0.6315	0.1589	4.16	-4.92	-0.01
-0.00083	0.5713	0.1458	5.99	-6.79	0.31
-0.00033	0.5275	0.1504	7.58	-8.40	0.46
0.00016	0.5201	0.1512	8.87	-9.70	0.60
0.00066	0.5442	0.1427	10.18	-11.03	0.73
0.00120	0.5562	0.1468	10.54	-11.41	0.87
0.00130	0.5596	0.1462	10.54	-11.41	0.90
0.00141	0.5676	0.1434	10.39	-11.26	0.93
0.00184	0.5814	0.1443	10.58	-11.46	1.05
0.00258	0.6043	0.1448	10.39	-11.30	1.24
0.00269	0.6067	0.1478	9.95	-10.86	1.27
0.00290	0.6165	0.1450	9.55	-10.47	1.33
0.00397	0.6446	0.1437	8.72	-9.67	1.61
0.00450	0.6599	0.1450	8.39	-9.35	1.76
0.00618	0.7009	0.1433	7.23	-8.24	2.21
0.00816	0.7458	0.1439	5.93	-6.96	2.76
0.01117	0.8219	0.1382	4.26	-5.34	3.59
0.01323	0.8695	0.1363	2.98	-4.05	4.17
0.01477	0.8974	0.1327	2.40	-3.47	4.61
0.01642	0.9291	0.1324	1.63	-2.69	5.07
0.01805	0.9563	0.1253	0.95	-1.98	5.54
0.01958	0.9753	0.1216	0.55	-1.54	5.97
0.02099	0.9859	0.1222	0.26	-1.23	6.39
0.02272	0.9937	0.1171	0.08	-1.00	6.90
0.02467	0.9978	0.1186	-0.16	-0.68	7.48
0.02705	0.9998	0.1153	-0.39	-0.35	8.23
0.02894	1.0000	0.1163	-0.60	-0.03	8.83

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02008	1.0000	0.1234	0.07	10.84	-3.20
-0.01966	0.9997	0.1282	0.07	10.82	-3.07
-0.01945	0.9989	0.1133	0.21	10.64	-3.01
-0.01914	0.9995	0.1223	-0.02	10.86	-2.91
-0.01893	0.9993	0.1193	0.02	10.81	-2.85
-0.01841	0.9974	0.1321	-0.10	10.89	-2.69
-0.01820	0.9964	0.1193	0.07	10.69	-2.62
-0.01789	0.9958	0.1317	-0.05	10.79	-2.52
-0.01715	0.9918	0.1210	0.19	10.48	-2.30
-0.01684	0.9895	0.1289	0.16	10.50	-2.20
-0.01537	0.9775	0.1268	0.16	10.39	-1.75
-0.01445	0.9643	0.1350	0.14	10.35	-1.47
-0.01352	0.9498	0.1374	0.26	10.17	-1.20
-0.01248	0.9309	0.1401	0.41	9.94	-0.89
-0.01145	0.9112	0.1367	0.51	9.78	-0.58
-0.01041	0.8866	0.1426	0.57	9.65	-0.27
-0.00927	0.8608	0.1452	0.74	9.42	0.06
-0.00844	0.8385	0.1467	0.88	9.24	0.31
-0.00531	0.7521	0.1512	1.85	8.13	1.22
-0.00353	0.6976	0.1520	2.44	7.45	1.75
-0.00251	0.6573	0.1529	3.06	6.80	2.06
-0.00192	0.6348	0.1538	3.31	6.53	2.24
-0.00122	0.5978	0.1533	3.87	5.94	2.44
-0.00082	0.5680	0.1489	4.90	4.90	2.56
-0.00032	0.5416	0.1481	6.13	3.65	2.71
0.00018	0.5299	0.1432	8.69	1.06	2.85
0.00068	0.5410	0.1420	10.19	-0.45	2.98
0.00108	0.5584	0.1407	10.64	-0.92	3.09
0.00149	0.5770	0.1427	10.73	-1.01	3.20
0.00170	0.5823	0.1429	10.62	-0.91	3.26
0.00202	0.5937	0.1434	9.97	-0.26	3.35
0.00245	0.6079	0.1440	9.86	-0.16	3.47
0.00298	0.6227	0.1440	9.43	0.27	3.61
0.00395	0.6474	0.1419	8.52	1.16	3.87
0.00501	0.6758	0.1436	7.77	1.90	4.17
0.00628	0.7080	0.1392	7.00	2.64	4.52
0.00774	0.7439	0.1407	5.67	3.96	4.94
0.00940	0.7866	0.1360	4.51	5.11	5.41
0.01106	0.8226	0.1322	3.77	5.83	5.88
0.01271	0.8614	0.1258	2.89	6.71	6.36
0.01374	0.8830	0.1205	2.66	6.95	6.66
0.01692	0.9429	0.1097	1.35	8.28	7.60
0.01866	0.9643	0.1075	1.04	8.61	8.11
0.02109	0.9872	0.1058	0.45	9.27	8.85
0.02343	0.9978	0.1089	-0.16	9.95	9.58
0.02465	0.9997	0.1046	-0.31	10.14	9.96
0.02537	0.9989	0.0991	-0.13	9.99	10.20
0.02715	1.0002	0.1057	-0.46	10.40	10.79
0.02936	1.0000	0.1037	-0.36	10.41	11.54

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02163	1.0000	0.0879	0.20	0.83	-4.98
-0.02143	0.9999	0.0992	0.06	0.96	-4.92
-0.02102	0.9995	0.0978	0.07	0.90	-4.79
-0.02041	0.9992	0.0959	0.07	0.83	-4.60
-0.01950	0.9989	0.0959	0.04	0.76	-4.32
-0.01869	0.9978	0.0952	0.07	0.65	-4.07
-0.01818	0.9972	0.0979	-0.01	0.69	-3.92
-0.01757	0.9962	0.0926	0.03	0.58	-3.73
-0.01695	0.9942	0.1015	-0.02	0.56	-3.54
-0.01655	0.9928	0.0928	0.12	0.39	-3.41
-0.01592	0.9901	0.0979	-0.01	0.46	-3.22
-0.01550	0.9863	0.1028	0.04	0.36	-3.09
-0.01508	0.9818	0.1033	0.22	0.14	-2.97
-0.01308	0.9607	0.1054	0.18	0.01	-2.35
-0.01107	0.9309	0.1114	0.26	-0.24	-1.73
-0.01000	0.9094	0.1111	0.41	-0.47	-1.41
-0.00905	0.8875	0.1133	0.40	-0.53	-1.11
-0.00513	0.7972	0.1085	1.25	-1.65	0.09
-0.00380	0.7571	0.1142	1.58	-2.05	0.50
-0.00277	0.7306	0.1111	1.98	-2.51	0.82
-0.00036	0.6705	0.1072	3.18	-3.82	1.57
0.00005	0.6634	0.1068	3.35	-4.01	1.70
0.00037	0.6581	0.1065	3.67	-4.35	1.79
0.00047	0.6587	0.1074	3.62	-4.30	1.82
0.00110	0.6503	0.1082	3.93	-4.63	2.01
0.00152	0.6486	0.1094	4.17	-4.89	2.14
0.00183	0.6494	0.1080	4.35	-5.09	2.24
0.00214	0.6520	0.1061	4.72	-5.46	2.33
0.00225	0.6517	0.1078	4.55	-5.30	2.36
0.00297	0.6608	0.1049	5.05	-5.83	2.59
0.00318	0.6639	0.1056	4.92	-5.70	2.65
0.00340	0.6717	0.1051	5.25	-6.04	2.71
0.00412	0.6833	0.1039	5.12	-5.93	2.93
0.00475	0.6945	0.1019	5.08	-5.91	3.12
0.00624	0.7301	0.1055	4.98	-5.85	3.58
0.00794	0.7726	0.0971	4.38	-5.29	4.11
0.01108	0.8401	0.1010	3.10	-4.05	5.09
0.01459	0.9102	0.0884	2.00	-2.98	6.19
0.01633	0.9369	0.0968	1.36	-2.32	6.74
0.01933	0.9759	0.0814	0.65	-1.58	7.69
0.02078	0.9852	0.0954	0.37	-1.27	8.16
0.02275	0.9933	0.0933	0.12	-0.97	8.78
0.02448	0.9974	0.0947	-0.17	-0.62	9.34
0.02695	0.9995	0.0916	-0.31	-0.38	10.13
0.02880	1.0000	0.0945	-0.42	-0.18	10.73

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01896	1.0000	0.1152	-0.07	9.67	-3.82
-0.01857	0.9992	0.1216	-0.03	9.59	-3.69
-0.01807	0.9990	0.1145	-0.22	9.73	-3.53
-0.01778	0.9982	0.1127	-0.17	9.65	-3.43
-0.01728	0.9970	0.1179	-0.25	9.68	-3.27
-0.01699	0.9966	0.1136	-0.12	9.53	-3.18
-0.01669	0.9947	0.1322	0.02	9.36	-3.08
-0.01600	0.9921	0.1135	-0.02	9.33	-2.85
-0.01570	0.9897	0.1206	0.08	9.20	-2.76
-0.01438	0.9798	0.1087	0.15	9.02	-2.33
-0.01335	0.9697	0.1149	-0.05	9.14	-2.00
-0.01254	0.9569	0.1120	0.27	8.74	-1.73
-0.01151	0.9421	0.1141	0.15	8.79	-1.40
-0.01058	0.9224	0.1145	0.33	8.54	-1.10
-0.00955	0.9043	0.1139	0.40	8.39	-0.77
-0.00831	0.8798	0.1139	0.41	8.31	-0.36
-0.00748	0.8616	0.1148	0.40	8.26	-0.10
-0.00649	0.8391	0.1188	0.42	8.18	0.22
-0.00452	0.7877	0.1158	0.77	7.72	0.86
-0.00293	0.7383	0.1145	1.13	7.29	1.38
-0.00202	0.7109	0.1130	1.62	6.75	1.68
-0.00141	0.6945	0.1133	1.91	6.44	1.87
-0.00070	0.6794	0.1106	2.45	5.87	2.10
-0.00030	0.6695	0.1088	2.97	5.33	2.24
0.00011	0.6636	0.1086	3.17	5.12	2.37
0.00072	0.6548	0.1087	3.34	4.93	2.56
0.00122	0.6540	0.1077	3.92	4.32	2.72
0.00163	0.6523	0.1068	4.13	4.12	2.85
0.00203	0.6572	0.1063	4.68	3.55	2.98
0.00224	0.6581	0.1065	4.75	3.46	3.04
0.00254	0.6570	0.1072	4.58	3.63	3.14
0.00295	0.6660	0.1057	4.95	3.25	3.27
0.00335	0.6723	0.1065	5.13	3.06	3.40
0.00436	0.6873	0.1057	4.93	3.23	3.72
0.00528	0.7125	0.1069	5.00	3.14	4.01
0.00642	0.7387	0.1054	4.66	3.46	4.38
0.00797	0.7704	0.1064	3.65	4.45	4.89
0.00940	0.8011	0.1121	3.12	4.96	5.36
0.01101	0.8387	0.1040	2.66	5.42	5.88
0.01261	0.8705	0.1028	[illegible]	6.05	6.40
0.01351	0.8939	0.1013	[illegible]	6.23	6.70
0.01650	0.9457	0.1009	0.89	7.24	7.68
0.01961	0.9813	0.1037	0.30	7.91	8.72
0.02062	0.9874	0.0986	0.46	7.77	9.05
0.02312	0.9963	0.1089	-0.08	8.41	9.89
0.02420	0.9983	0.1059	-0.19	8.58	10.25
0.02489	0.9983	0.1003	0.08	8.33	10.48
0.02680	1.0004	0.1138	-0.36	8.88	11.13
0.03107	1.0000	0.1253	-0.55	9.35	12.58

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = 0$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.3720$

z/c	u/U_p
0.00014	0.5628
0.00014	0.5653
0.00017	0.5947
0.00022	0.6291
0.00027	0.6566
0.00035	0.6794
0.00040	0.6927
0.00045	0.7029
0.00060	0.7269
0.00071	0.7471
0.00085	0.7645
0.00100	0.7855
0.00113	0.7990
0.00128	0.8161
0.00146	0.8350
0.00165	0.8539
0.00186	0.8750
0.00204	0.8902
0.00227	0.9094
0.00245	0.9235
0.00267	0.9405
0.00284	0.9503
0.00307	0.9666
0.00329	0.9779
0.00349	0.9837
0.00360	0.9878
0.00369	0.9904
0.00382	0.9928
0.00390	0.9946
0.00396	0.9956
0.00410	0.9975
0.00426	0.9988
0.00438	0.9993
0.00450	0.9998
0.00462	0.9998
0.00475	0.9999
0.00489	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.3720$

z/c	u/U_p
0.00014	0.5648
0.00015	0.5695
0.00018	0.5915
0.00021	0.6052
0.00023	0.6062
0.00025	0.6210
0.00027	0.6329
0.00030	0.6435
0.00034	0.6568
0.00036	0.6647
0.00038	0.6733
0.00044	0.6870
0.00051	0.7053
0.00071	0.7372
0.00082	0.7586
0.00091	0.7722
0.00105	0.7887
0.00119	0.8094
0.00131	0.8241
0.00144	0.8383
0.00160	0.8553
0.00170	0.8669
0.00184	0.8816
0.00196	0.8929
0.00212	0.9068
0.00223	0.9169
0.00238	0.9287
0.00251	0.9382
0.00263	0.9481
0.00273	0.9554
0.00288	0.9648
0.00300	0.9714
0.00316	0.9787
0.00328	0.9828
0.00342	0.9875
0.00357	0.9912
0.00373	0.9942
0.00386	0.9966
0.00398	0.9975
0.00412	0.9985
0.00430	0.9988
0.00447	0.9994
0.00465	0.9999
0.00482	1.0002
0.00494	1.0000

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5044	-0.0166	5.03	-2.94	-2.47
0.00043	0.5237	-0.0012	4.95	-2.90	-2.43
0.00088	0.5739	0.0065	4.66	-2.67	-2.27
0.00132	0.6095	0.0114	4.27	-2.60	-2.10
0.00143	0.6182	0.0130	4.15	-2.48	-2.06
0.00210	0.6446	0.0144	3.96	-2.33	-1.81
0.00243	0.6589	0.0157	3.85	-2.24	-1.66
0.00300	0.6860	0.0182	3.56	-1.97	-1.48
0.00322	0.6981	0.0181	3.43	-1.86	-1.39
0.00345	0.7067	0.0192	3.35	-1.78	-1.31
0.00378	0.7173	0.0170	3.20	-1.65	-1.18
0.00412	0.7302	0.0170	3.05	-1.51	-1.05
0.00434	0.7392	0.0171	2.94	-1.41	-0.97
0.00535	0.7700	0.0170	2.53	-1.05	-0.60
0.00568	0.7804	0.0190	2.43	-0.96	-0.49
0.00590	0.7892	0.0186	2.25	-0.79	-0.41
0.00634	0.8036	0.0191	2.12	-0.68	-0.26
0.00645	0.8066	0.0198	2.07	-0.63	-0.22
0.00688	0.8224	0.0184	1.88	-0.45	-0.07
0.00731	0.8370	0.0201	1.71	-0.30	0.09
0.00785	0.8519	0.0202	1.50	-0.11	0.27
0.00904	0.8891	0.0184	1.09	0.26	0.69
0.01022	0.9222	0.0172	0.78	0.55	1.11
0.01110	0.9415	0.0172	0.52	0.79	1.42
0.01222	0.9654	0.0152	0.25	1.04	1.82
0.01366	0.9851	0.0162	0.07	1.21	2.33
0.01443	0.9924	0.0162	0.02	1.25	2.61
0.01587	0.9978	0.0197	-0.03	1.30	3.13
0.01698	0.9993	0.0216	-0.04	1.31	3.53
0.01839	1.0000	0.0237	-0.05	1.33	4.03
0.01986	1.0000	0.0231	-0.09	1.40	4.57

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5265	-0.0139	4.57	5.59	-1.31
0.00067	0.6059	0.0068	4.25	7.77	-1.13
0.00096	0.6137	0.0109	4.19	7.55	-1.09
0.00135	0.6434	0.0069	4.04	7.57	-0.95
0.00155	0.6475	0.0082	3.72	7.69	-0.87
0.00194	0.6750	0.0111	3.69	7.91	-0.73
0.00204	0.6789	0.0119	3.48	8.11	-0.69
0.00223	0.6888	0.0122	3.52	8.07	-0.62
0.00233	0.6922	0.0118	3.36	8.21	-0.58
0.00282	0.7113	0.0139	3.19	8.37	-0.40
0.00340	0.7336	0.0126	2.88	8.66	-0.18
0.00389	0.7522	0.0112	2.51	9.02	0.01
0.00408	0.7610	0.0133	2.58	8.94	0.08
0.00445	0.7733	0.0149	2.27	9.24	0.22
0.00473	0.7856	0.0158	2.21	9.29	0.32
0.00510	0.7973	0.0160	2.06	9.42	0.46
0.00557	0.8104	0.0149	1.96	9.51	0.62
0.00584	0.8218	0.0044	1.69	9.78	0.72
0.00667	0.8506	0.0122	1.40	10.05	1.01
0.00767	0.8868	0.0102	0.99	10.43	1.43
0.00958	0.9324	0.0051	0.54	10.86	2.03
0.01113	0.9653	0.0015	0.28	11.11	2.58
0.01268	0.9863	0.0020	0.06	11.31	3.13
0.01456	0.9965	0.0025	-0.01	11.40	3.80
0.01567	0.9986	0.0006	-0.04	11.44	4.20
0.01679	0.9991	-0.0010	-0.08	11.49	4.60
0.01778	0.9993	-0.0041	-0.12	11.55	4.95
0.01942	1.0000	-0.0044	-0.12	11.59	5.54
0.02074	1.0000	-0.0027	-0.07	11.57	6.02

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^o$, $M_\infty = 0.675$, $\alpha_N = 0$ (continued)

MEASUREMENT 1

$x/c = 0.903$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00035	0.4972	0.0545	4.38	10.11	0.28
0.00064	0.5761	0.0752	4.23	9.75	0.39
0.00109	0.6030	0.0786	3.92	9.87	0.57
0.00127	0.6181	0.0779	3.91	9.87	0.64
0.00154	0.6316	0.0806	3.73	10.03	0.75
0.00208	0.6583	0.0822	3.53	10.19	0.97
0.00244	0.6731	0.0780	3.48	10.21	1.11
0.00262	0.6758	0.0801	3.29	10.39	1.19
0.00298	0.6948	0.0821	3.08	10.58	1.33
0.00307	0.6983	0.0817	3.10	10.55	1.37
0.00325	0.7052	0.0826	3.05	10.60	1.44
0.00334	0.7088	0.0824	2.94	10.70	1.48
0.00379	0.7222	0.0847	2.85	10.76	1.66
0.00433	0.7427	0.0836	2.50	11.08	1.87
0.00478	0.7536	0.0824	2.36	11.19	2.06
0.00496	0.7625	0.0850	2.33	11.21	2.13
0.00532	0.7733	0.0853	2.14	11.38	2.26
0.00559	0.7831	0.0865	2.02	11.49	2.36
0.00595	0.7926	0.0875	1.85	11.64	2.49
0.00639	0.8049	0.0877	1.67	11.80	2.65
0.00666	0.8140	0.0756	1.63	11.83	2.75
0.00746	0.8371	0.0828	1.33	12.09	3.04
0.00862	0.8687	0.0818	1.01	12.36	3.47
0.01022	0.9097	0.0786	0.63	12.68	4.05
0.01163	0.9416	0.0727	0.42	12.85	4.57
0.01304	0.9677	0.0703	0.14	13.09	5.09
0.01479	0.9871	0.0648	0.05	13.15	5.73
0.01583	0.9938	0.0626	0.00	13.19	6.12
0.01687	0.9971	0.0618	-0.01	13.18	6.51
0.01777	0.9985	0.0621	-0.08	13.25	6.85
0.01921	0.9999	0.0664	-0.22	13.40	7.38
0.02037	1.0000	0.0677	-0.12	13.30	7.82

$x/c = 0.986$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.4762	0.1290	8.04	-7.36	-0.48
0.00071	0.5106	0.1332	7.81	-7.81	-0.35
0.00101	0.5452	0.1367	7.76	-7.50	-0.21
0.00120	0.5616	0.1372	7.42	-7.17	-0.11
0.00198	0.6043	0.1390	6.74	-6.56	0.26
0.00227	0.6164	0.1403	6.44	-6.28	0.40
0.00247	0.6233	0.1406	6.27	-6.13	0.49
0.00295	0.6401	0.1411	5.95	-5.85	0.73
0.00305	0.6442	0.1401	5.96	-5.87	0.77
0.00344	0.6591	0.1416	5.57	-5.51	0.96
0.00383	0.6733	0.1419	5.34	-5.31	1.15
0.00440	0.6876	0.1402	5.12	-5.14	1.42
0.00544	0.7204	0.1407	4.54	-4.63	1.89
0.00658	0.7538	0.1423	3.77	-3.93	2.35
0.00733	0.7737	0.1421	3.49	-3.69	2.66
0.00838	0.8035	0.1393	2.93	-3.19	3.08
0.00963	0.8379	0.1371	2.33	-2.65	3.60
0.01041	0.8562	0.1355	2.06	-2.42	3.90
0.01175	0.8892	0.1307	1.63	-2.04	4.41
0.01297	0.9130	0.1273	1.30	-1.76	4.87
0.01425	0.9413	0.1227	0.82	-1.31	5.36
0.01572	0.9643	0.1167	0.51	-1.04	5.91
0.01732	0.9836	0.1162	0.17	-0.72	6.51
0.01877	0.9931	0.1145	0.06	-0.63	7.05
0.02011	0.9970	0.1139	-0.07	-0.50	7.56
0.02095	0.9982	0.1114	-0.10	-0.48	7.87
0.02113	0.9985	0.1118	-0.13	-0.45	7.93
0.02158	0.9989	0.1112	-0.08	-0.49	8.10
0.02274	0.9992	0.1134	-0.18	-0.39	8.53
0.02416	0.9996	0.1129	-0.24	-0.31	9.06
0.02563	1.0000	0.1114	-0.32	-0.20	9.60
0.02714	0.9998	0.1114	-0.38	-0.10	10.16
0.02863	1.0000	0.1118	-0.34	-0.09	10.72

$x/c = 0.986$ MEASUREMENT 2

0.00046	0.4859	0.1293	7.71	5.04	0.38
0.00051	0.4935	0.1295	7.67	4.70	0.40
0.00062	0.5290	0.1369	7.42	4.67	0.55
0.00113	0.5552	0.1400	7.39	4.96	0.69
0.00144	0.5776	0.1407	6.61	5.72	0.84
0.00175	0.5943	0.1332	6.76	5.54	0.99
0.00257	0.6292	0.1405	6.10	6.13	1.38
0.00370	0.6668	0.1412	5.39	6.75	1.92
0.00530	0.7141	0.1417	4.38	7.64	2.66
0.00670	0.7552	0.1415	3.64	8.30	3.22
0.00810	0.7949	0.1408	2.92	8.95	3.78
0.00984	0.8434	0.1352	2.13	9.64	4.47
0.01086	0.8696	0.1316	1.82	9.91	4.85
0.01198	0.8957	0.1273	1.47	10.21	5.27
0.01269	0.9165	0.1238	1.11	10.54	5.60
0.01425	0.9454	0.1226	0.64	10.98	6.11
0.01541	0.9644	0.1223	0.50	11.08	6.53
0.01637	0.9780	0.1212	0.29	11.27	6.88
0.01766	0.9887	0.1174	0.17	11.37	7.35
0.01869	0.9937	0.1187	0.03	11.50	7.73
0.01971	0.9971	0.1187	-0.06	11.57	8.10
0.01991	0.9971	0.1196	-0.06	11.57	8.18
0.02042	0.9985	0.1209	-0.11	11.62	8.36
0.02172	1.0000	0.1182	-0.07	11.58	8.83
0.02277	1.0003	0.1209	-0.12	11.62	9.20
0.02380	1.0000	0.1216	-0.05	11.56	9.58

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{\circ}$, $M_N = 0.675$, $\alpha_N = 0$ (continued)

$x/c = 1.010$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.02295	1.0000	0.1306	-0.15	-0.04	-6.80
-0.02275	1.0000	0.1264	-0.10	-0.10	-6.74
-0.02235	0.9998	0.1257	-0.14	-0.09	-6.61
-0.02205	0.9996	0.1265	-0.10	-0.15	-6.51
-0.02144	0.9990	0.1305	-0.04	-0.25	-6.32
-0.02124	0.9980	0.1295	-0.03	-0.27	-6.26
-0.02104	0.9960	0.1276	-0.09	-0.22	-6.19
-0.02084	0.9977	0.1322	-0.09	-0.23	-6.13
-0.02054	0.9969	0.1294	-0.01	-0.33	-6.03
-0.02022	0.9960	0.1305	-0.02	-0.33	-5.93
-0.01950	0.9932	0.1327	0.04	-0.43	-5.71
-0.01918	0.9920	0.1336	0.07	-0.48	-5.61
-0.01908	0.9909	0.1346	0.08	-0.50	-5.58
-0.01856	0.9865	0.1389	0.21	-0.65	-5.43
-0.01845	0.9861	0.1359	0.26	-0.70	-5.39
-0.01804	0.9829	0.1400	0.21	-0.67	-5.27
-0.01762	0.9787	0.1428	0.26	-0.75	-5.14
-0.01710	0.9733	0.1417	0.29	-0.80	-4.98
-0.01605	0.9564	0.1483	0.64	-1.19	-4.67
-0.01492	0.9383	0.1515	0.87	-1.46	-4.33
-0.01410	0.9231	0.1541	1.09	-1.71	-4.09
-0.01307	0.9041	0.1517	1.34	-1.99	-3.78
-0.01172	0.8701	0.1592	1.87	-2.55	-3.37
-0.01100	0.8539	0.1579	2.17	-2.88	-3.16
-0.00955	0.8196	0.1569	2.75	-3.48	-2.73
-0.00841	0.7900	0.1583	3.24	-3.99	-2.40
-0.00696	0.7516	0.1611	4.05	-4.83	-1.98
-0.00550	0.7134	0.1547	4.88	-5.66	-1.56
-0.00372	0.6627	0.1584	5.88	-6.68	-1.06
-0.00222	0.6142	0.1579	6.72	-7.52	-0.64
-0.00093	0.5488	0.1603	7.72	-8.52	-0.28
-0.00013	0.5247	0.1555	7.75	-8.56	-0.06
0.00056	0.5470	0.1569	7.07	-7.89	0.14
0.00194	0.6078	0.1541	6.53	-7.33	0.53
0.00344	0.6609	0.1515	5.50	-6.28	0.94
0.00493	0.7060	0.1495	4.64	-5.41	1.30
0.00660	0.7535	0.1527	3.73	-4.45	1.84
0.00816	0.7960	0.1513	3.04	-3.76	2.29
0.00962	0.8310	0.1501	2.39	-3.07	2.70
0.01117	0.8679	0.1469	1.86	[illegible]	3.16
0.01282	0.9050	0.1446	1.15	-1.72	3.65
0.01436	0.9327	0.1393	0.84	-1.36	4.11
0.01601	0.9597	0.1364	0.56	-0.99	4.60
0.01744	0.9762	0.1348	0.31	-0.68	5.03
0.01836	0.9859	0.1314	0.17	-0.49	5.30
0.01948	0.9921	0.1324	0.03	-0.29	5.63
0.02059	0.9964	0.1284	-0.01	-0.18	5.98
0.02139	0.9980	0.1270	-0.03	-0.11	6.23
0.02252	0.9993	0.1270	-0.07	0.01	6.59
0.02467	1.0000	0.1244	-0.10	0.20	7.27
0.02647	1.0002	0.1216	-0.22	0.47	7.83
0.02820	1.0000	0.1229	-0.23	0.63	8.30
0.02984	1.0001	0.1235	-0.17	0.71	8.89
0.03173	1.0000	0.1141	-0.20	0.93	9.49

$x/c = 1.010$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.02291	1.0000	0.1266	-0.06	10.55	-4.68
-0.02261	1.0000	0.1243	0.00	10.49	-4.65
-0.02200	0.9998	0.1282	-0.17	10.62	-4.39
-0.02180	0.9987	0.1296	-0.07	10.50	-4.33
-0.02150	0.9963	0.1257	-0.02	10.43	-4.23
-0.02080	0.9985	0.1227	-0.09	10.46	-4.01
-0.02070	0.9975	0.1264	-0.01	10.37	-3.97
-0.02049	0.9976	0.1252	0.02	10.32	-3.91
-0.02029	0.9975	0.1237	0.08	10.26	-3.84
-0.02019	0.9967	0.1263	0.01	10.32	-3.81
-0.01999	0.9967	0.1238	0.06	10.25	-3.75
-0.01989	0.9961	0.1241	0.06	10.24	-3.72
-0.01948	0.9944	0.1279	-0.04	10.32	-3.59
-0.01885	0.9914	0.1260	-0.06	10.32	-3.40
-0.01854	0.9888	0.1290	0.06	10.18	-3.31
-0.01812	0.9861	0.1251	0.20	10.02	-3.18
-0.01791	0.9847	0.1304	0.15	10.06	-3.12
-0.01760	0.9829	0.1296	0.20	10.00	-3.02
-0.01717	0.9796	0.1338	0.04	10.14	-2.90
-0.01697	0.9758	0.1262	0.06	10.11	-2.83
-0.01665	0.9711	0.1227	0.28	9.87	-2.74
-0.01560	0.9640	0.1308	0.42	9.68	-2.42
-0.01446	0.9457	0.1361	0.56	9.51	-2.08
-0.01323	0.9179	0.1444	0.76	9.25	-1.71
-0.01168	0.8874	0.1485	1.20	8.77	-1.30
-0.01022	0.8546	0.1516	1.67	8.24	-0.80
-0.00877	0.8073	0.1527	2.57	7.30	-0.38
-0.00773	0.7826	0.1529	2.99	6.86	-0.07
[illegible]	[illegible]	0.1536	3.45	6.38	0.32
[illegible]	0.7304	0.1506	4.01	5.81	0.56
-0.00439	[illegible]	0.1558	4.68	5.13	0.89
[illegible]	[illegible]	0.1575	5.65	4.14	1.22
[illegible]	0.6215	0.1574	6.15	3.64	1.51
[illegible]	0.5694	0.1514	6.84	2.96	1.85
[illegible]	0.5346	0.1501	7.22	2.57	2.04
[illegible]	[illegible]	0.1470	7.40	2.39	2.16
[illegible]	0.5474	0.1471	6.94	2.87	2.30
[illegible]	0.5756	0.1510	6.63	3.18	2.47
[illegible]	0.5990	0.1526	6.32	3.49	2.61
[illegible]	0.6428	0.1468	5.60	4.22	2.92
[illegible]	0.6775	0.1468	5.04	4.80	3.25
[illegible]	0.7136	0.1494	4.29	5.56	3.58
0.00615	0.7401	0.1472	3.70	6.16	3.90
0.00761	0.7800	0.1481	2.86	7.03	4.32
0.00918	0.8169	0.1426	2.30	7.63	4.78
0.01063	0.8576	0.1380	1.77	8.20	5.22
0.01207	0.8902	0.1324	1.29	8.71	5.66
0.01362	0.9243	0.1267	0.86	9.20	6.20
0.01537	0.9526	0.1199	0.49	9.64	6.67
0.01712	0.9740	0.1155	0.23	9.98	7.21
0.01895	0.9895	0.1119	0.18	10.11	7.78
0.02007	0.9956	0.1124	-0.03	10.38	8.12
0.02057	0.9971	0.1091	0.04	10.35	8.29
0.02178	0.9994	0.1114	-0.11	10.56	8.69
0.02351	1.0002	0.1114	-0.22	10.79	9.26
0.02607	1.0004	0.1090	-0.30	11.06	10.10
0.02900	1.0000	0.1104	-0.41	11.41	11.08

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^o$, $M_N = 0.675$, $\alpha_N = 0$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02305	1.0000	0.0972	-0.15	0.62	-6.03
-0.02295	0.9999	0.1010	-0.21	0.67	-6.00
-0.02265	0.9996	0.1013	-0.19	0.62	-5.90
-0.02224	0.9993	0.0985	-0.13	0.53	-5.77
-0.02194	0.9988	0.1028	-0.14	0.52	-5.68
-0.02143	0.9986	0.1009	-0.08	0.43	-5.52
-0.02102	0.9977	0.0983	-0.11	0.43	-5.39
-0.02082	0.9978	0.0987	-0.08	0.39	-5.32
-0.02071	0.9978	0.1027	-0.13	0.44	-5.29
-0.02041	0.9961	0.1036	-0.08	0.35	-5.19
-0.02021	0.9957	0.1004	-0.01	0.28	-5.13
-0.01920	0.9931	0.1060	0.04	0.16	-4.82
-0.01899	0.9918	0.1075	0.10	0.08	-4.76
-0.01838	0.9888	0.1016	0.16	-0.01	-4.57
-0.01828	0.9886	0.0984	0.16	-0.02	-4.54
-0.01787	0.9853	0.1065	0.05	0.07	-4.41
-0.01746	0.9817	0.1055	0.19	-0.09	-4.29
-0.01685	0.9759	0.1061	0.31	-0.25	-4.10
-0.01571	0.9620	0.1167	0.46	-0.46	-3.75
-0.01456	0.9466	0.1147	0.61	-0.66	-3.40
-0.01382	0.9347	0.1126	0.80	-0.89	-3.17
-0.01277	0.9165	0.1124	0.90	-1.04	-2.84
-0.01139	0.8891	0.1152	1.23	-1.41	-2.42
-0.01054	0.8754	0.1094	1.55	-1.77	-2.15
-0.00937	0.8460	0.1133	1.86	-2.12	-1.79
-0.00809	0.8192	0.1119	2.25	-2.54	-1.41
-0.00665	0.7852	0.1125	2.69	-3.01	-0.98
-0.00523	0.7508	0.1098	3.17	-3.51	-0.55
-0.00360	0.7067	0.1104	3.58	-3.95	-0.04
-0.00203	0.6754	0.1129	3.68	-4.04	0.46
-0.00068	0.6561	0.1106	3.71	-4.08	0.89
0.00005	0.6530	0.1091	3.42	-3.78	1.13
0.00078	0.6569	0.1086	3.32	-3.68	1.36
0.00214	0.6745	0.1107	3.04	-3.39	1.79
0.00360	0.7066	0.1106	2.68	-3.02	2.26
0.00666	0.7830	0.1104	1.85	-2.13	3.21
0.00973	0.8520	0.1095	1.24	-1.44	4.15
0.01108	0.8850	0.1071	0.92	-1.08	4.58
0.01284	0.9191	0.0985	0.72	-0.80	5.14
0.01428	0.9425	0.1028	0.39	-0.42	5.60
0.01582	0.9650	0.1009	0.26	-0.21	6.09
0.01725	0.9794	0.0995	0.24	-0.12	6.54
0.01807	0.9873	0.1000	0.03	0.15	6.80
0.01912	0.9920	0.0997	0.04	0.20	7.13
0.02027	0.9963	0.0979	-0.02	0.33	7.50
0.02130	0.9976	0.0970	0.03	0.36	7.84
0.02244	0.9988	0.0985	0.10	0.37	8.21
0.02448	0.9996	0.0985	0.08	0.55	8.89
0.02633	1.0003	0.0976	-0.12	0.93	9.49
0.02819	1.0000	0.0970	0.04	0.94	10.10

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02221	1.0000	0.1190	-0.05	9.38	-5.51
-0.02143	1.0001	0.1220	-0.05	9.31	-5.24
-0.02054	0.9985	0.1191	0.01	9.18	-4.94
-0.01975	0.9978	0.1224	-0.03	9.17	-4.68
-0.01955	0.9977	0.1198	0.02	9.10	-4.61
-0.01906	0.9967	0.1199	-0.07	9.16	-4.46
-0.01876	0.9959	0.1174	0.02	9.05	-4.36
-0.01867	0.9956	0.1196	0.01	9.06	-4.33
-0.01827	0.9938	0.1226	-0.02	9.07	-4.20
-0.01768	0.9897	0.1218	-0.05	9.06	-4.01
-0.01738	0.9874	0.1271	0.16	8.83	-3.91
-0.01679	0.9839	0.1215	0.23	8.72	-3.72
-0.01639	0.9808	0.1202	0.25	8.68	-3.59
-0.01610	0.9781	0.1253	0.20	8.71	-3.50
-0.01580	0.9742	0.1245	0.07	8.83	-3.40
-0.01540	0.9687	0.1139	0.37	8.51	-3.27
-0.01468	0.9627	0.1244	0.23	8.62	-3.04
-0.01377	0.9443	0.1234	0.62	8.17	-2.74
-0.01233	0.9208	0.1270	0.71	8.02	-2.27
-0.01100	0.8951	0.1271	1.06	7.62	-1.83
-0.00976	0.8638	0.1263	1.50	7.12	-1.42
-0.00800	0.8235	0.1229	2.21	6.37	-0.87
-0.00699	0.7980	0.1224	2.50	6.06	-0.55
-0.00600	0.7737	0.1215	2.72	5.81	-0.23
-0.00511	0.7516	0.1190	2.94	5.59	0.05
-0.00383	0.7196	0.1191	3.13	5.37	0.48
-0.00181	0.6710	0.1192	3.62	4.86	1.15
-0.00070	0.6541	0.1139	3.44	5.05	1.52
0.00001	0.6524	0.1137	3.35	5.13	1.75
0.00031	0.6521	0.1128	3.34	5.14	1.86
0.00092	0.6581	0.1120	3.11	5.38	2.06
0.00153	0.6649	0.1158	2.96	5.53	2.26
0.00203	0.6747	0.1132	2.68	5.61	2.43
0.00416	0.7235	0.1140	2.31	6.21	3.14
0.00518	0.7496	0.1174	2.00	6.54	3.48
0.00610	0.7758	0.1152	1.83	6.72	3.78
0.00755	0.8102	0.1173	1.47	7.11	4.24
0.01051	0.8804	0.1157	0.77	7.89	5.19
0.01161	0.9089	0.1170	0.44	8.28	5.62
0.01491	0.9602	0.1215	0.23	8.63	6.66
0.01650	0.9794	0.1197	0.12	8.83	7.18
0.01820	0.9918	0.1209	0.08	8.97	7.74
0.01941	0.9960	0.1208	-0.02	9.15	8.15
0.01992	0.9971	0.1197	0.00	9.16	8.31
0.02122	0.9994	0.1204	0.03	9.22	8.76
0.02312	1.0002	0.1191	0.11	9.29	9.42
0.02559	1.0000	0.1203	0.02	9.61	10.27

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = -2^{o}$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.2110$

z/c	u/U_p
0.00014	0.5674
0.00019	0.6120
0.00025	0.6424
0.00033	0.6649
0.00038	0.6799
0.00045	0.7011
0.00053	0.7151
0.00064	0.7329
0.00077	0.7562
0.00092	0.7769
0.00104	0.7931
0.00119	0.8099
0.00131	0.8253
0.00144	0.8412
0.00158	0.8560
0.00171	0.8693
0.00185	0.8814
0.00197	0.8927
0.00210	0.9041
0.00232	0.9195
0.00250	0.9354
0.00271	0.9488
0.00289	0.9602
0.00307	0.9719
0.00327	0.9803
0.00348	0.9870
0.00368	0.9920
0.00390	0.9956
0.00411	0.9977
0.00431	0.9990
0.00449	0.9996
0.00470	1.0000
0.00493	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.2110$

z/c	u/U_p
0.00014	0.5649
0.00015	0.5870
0.00020	0.6133
0.00023	0.6348
0.00025	0.6489
0.00031	0.6669
0.00038	0.6870
0.00044	0.7009
0.00054	0.7192
0.00065	0.7384
0.00072	0.7511
0.00082	0.7642
0.00094	0.7852
0.00109	0.8024
0.00122	0.8195
0.00138	0.8370
0.00146	0.8457
0.00156	0.8566
0.00171	0.8709
0.00184	0.8838
0.00197	0.8957
0.00214	0.9100
0.00231	0.9233
0.00246	0.9340
0.00260	0.9450
0.00271	0.9534
0.00287	0.9627
0.00300	0.9689
0.00315	0.9761
0.00333	0.9832
0.00348	0.9880
0.00365	0.9922
0.00380	0.9946
0.00395	0.9966
0.00408	0.9979
0.00422	0.9986
0.00437	0.9992
0.00451	0.9997
0.00466	0.9998
0.00483	1.0000
0.00499	1.0000

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
0.00031	0.5222	0.0179	2.99	-0.44	-2.48
0.00087	0.5955	0.0402	2.74	-0.38	-2.30
0.00120	0.6434	0.0477	2.48	-0.36	-2.18
0.00210	0.6765	0.0477	2.26	-0.18	-1.87
0.00244	0.6965	0.0495	2.18	-0.13	-1.76
0.00300	0.7184	0.0536	1.89	0.14	-1.56
0.00412	0.7664	0.0511	1.60	0.37	-1.18
0.00434	0.7765	0.0538	1.59	0.37	-1.10
0.00490	0.7952	0.0537	1.47	0.46	-0.90
0.00512	0.8042	0.0535	1.40	0.52	-0.63
0.00578	0.8238	0.0546	1.20	0.69	-0.60
0.00633	0.8429	0.0551	1.06	0.82	-0.41
0.00719	0.8699	0.0539	0.88	0.97	-0.11
0.00827	0.9059	0.0536	0.64	1.17	0.26
0.00935	0.9342	0.0508	0.41	1.37	0.64
0.01045	0.9593	0.0505	0.22	1.53	1.03
0.01168	0.9797	0.0505	0.07	1.66	1.46
0.01290	0.9919	0.0545	-0.01	1.72	1.89
0.01421	0.9980	0.0577	0.00	1.69	2.35
0.01523	0.9995	0.0591	-0.02	1.71	2.71
0.01605	1.0000	0.0609	-0.05	1.74	3.01
0.01706	1.0001	0.0613	-0.06	1.75	3.37
0.01806	1.0000	0.0625	-0.10	1.80	3.73

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
0.00038	0.5360	0.0201	2.90	8.91	-1.32
0.00085	0.6305	0.0387	2.69	9.42	-1.16
0.00124	0.6632	0.0399	2.47	9.53	-1.02
0.00163	0.6808	0.0422	2.39	9.58	-0.89
0.00173	0.6852	0.0424	2.32	9.65	-0.86
0.00213	0.7055	0.0407	2.21	9.74	-0.72
0.00251	0.7224	0.0409	2.09	9.85	-0.59
0.00290	0.7362	0.0413	1.97	9.96	-0.45
0.00368	0.7655	0.0419	1.70	10.19	-0.18
0.00398	0.7792	0.0403	1.63	10.25	-0.08
0.00444	0.7965	0.0392	1.48	10.39	0.08
0.00491	0.8128	0.0415	1.31	10.55	0.24
0.00527	0.8267	0.0411	1.28	10.56	0.37
0.00583	0.8439	0.0403	1.10	10.73	0.56
0.00666	0.8718	0.0400	0.92	10.88	0.85
0.00703	0.8826	0.0403	0.82	10.98	0.98
0.00767	0.9043	0.0366	0.72	11.06	1.20
0.00869	0.9283	0.0346	0.48	11.28	1.56
0.00996	0.9601	0.0305	0.26	11.48	2.00
0.01103	0.9786	0.0295	0.16	11.57	2.37
0.01228	0.9915	0.0293	0.06	11.67	2.81
0.01408	0.9979	0.0322	-0.04	11.77	3.44
0.01455	0.9994	0.0320	-0.03	11.76	3.61
0.01567	0.9999	0.0319	-0.03	11.77	4.01
0.01660	1.0001	0.0294	-0.03	11.78	4.34
0.01767	1.0001	0.0270	-0.03	11.80	4.72
0.01900	1.0000	0.0250	-0.06	11.85	5.20

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = -2^{o}$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
0.00038	0.5205	0.0677	3.45	0.50	-0.92
0.00039	0.5220	0.0685	3.44	0.52	-0.92
0.00071	0.5606	0.0814	3.29	0.29	-0.80
0.00124	0.6142	0.0865	2.92	0.13	-0.61
0.00177	0.6470	0.0865	2.80	0.21	-0.42
0.00241	0.6755	0.0889	2.63	0.33	-0.19
0.00292	0.6983	0.0915	2.41	0.51	0.00
0.00363	0.7149	0.0926	2.31	0.56	0.25
0.00384	0.7244	0.0910	2.28	0.58	0.33
0.00404	0.7359	0.0920	2.12	0.72	0.40
0.00434	0.7449	0.0939	2.04	0.79	0.51
0.00485	0.7613	0.0937	1.88	0.91	0.70
0.00505	0.7707	0.0934	1.79	0.99	0.77
0.00545	0.7852	0.0947	1.72	1.03	0.91
0.00596	0.8018	0.0952	1.56	1.15	1.09
0.00677	0.8266	0.0926	1.36	1.31	1.38
0.01088	0.9377	0.0908	0.43	2.03	2.85
0.01202	0.9611	0.0899	0.29	2.13	3.26
0.01296	0.9780	0.0885	0.20	2.18	3.59
0.01410	0.9890	0.0890	0.06	2.29	4.00
0.01503	0.9949	0.0877	0.00	2.32	4.34
0.01591	0.9979	0.0855	-0.03	2.34	4.66
0.01601	0.9988	0.0860	-0.08	2.38	4.69
0.01689	0.9997	0.0831	-0.05	2.34	5.01
0.01786	0.9999	0.0821	-0.05	2.32	5.37
0.01873	1.0000	0.0791	-0.10	2.36	5.68
0.01971	1.0000	0.0775	-0.09	2.35	6.04
0.02070	1.0000	0.0771	-0.06	2.31	6.41

x/c' = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
0.00035	0.5112	0.0710	2.47	12.81	0.26
0.00046	0.5334	0.0783	2.44	12.89	0.30
0.00064	0.5572	0.0849	2.38	11.88	0.37
0.00091	0.5994	0.0903	2.29	12.01	0.47
0.00118	0.6206	0.0929	2.09	11.95	0.57
0.00145	0.6248	0.0932	2.23	11.80	0.67
0.00155	0.6373	0.0942	2.05	11.97	0.70
0.00173	0.6489	0.0963	2.06	11.94	0.77
0.00217	0.6723	0.0965	1.95	12.02	0.94
0.00245	0.6791	0.0966	1.98	11.97	1.04
0.00254	0.6870	0.0981	1.85	12.10	1.07
0.00290	0.7013	0.0960	1.74	12.19	1.20
0.00299	0.7029	0.0983	1.78	12.14	1.24
0.00335	0.7185	0.0966	1.69	12.21	1.37
0.00370	0.7322	0.0968	1.62	12.26	1.50
0.00406	0.7441	0.0975	1.47	12.39	1.63
0.00478	0.7689	0.0981	1.30	12.51	1.90
0.00505	0.7805	0.0974	1.22	12.57	2.00
0.00550	0.7949	0.0955	1.18	12.59	2.16
0.00595	0.8083	0.0970	1.03	12.72	2.33
0.00630	0.8201	0.0966	0.97	12.76	2.46
0.00684	0.8353	0.0962	0.87	12.83	2.65
0.00764	0.8595	0.0951	0.72	12.95	2.94
0.00800	0.8688	0.0944	0.67	12.98	3.07
0.00862	0.8878	0.0935	0.54	13.09	3.30
0.00960	0.9098	0.0911	0.41	13.17	3.66
0.01075	0.9393	0.0879	0.26	13.29	4.08
0.01172	0.9596	0.0850	0.14	13.37	4.43
0.01286	0.9780	0.0818	0.07	13.41	4.84
0.01452	0.9892	0.0779	0.10	13.34	5.45
0.01495	0.9949	0.0790	0.00	13.43	5.61
0.01599	0.9983	0.0773	0.02	13.40	5.99
0.01685	0.9994	0.0764	0.01	13.40	6.31
0.01784	1.0000	0.0775	-0.04	13.44	6.67
0.01901	1.0000	0.0778	-0.04	13.44	7.10

x/c = 0.986 MEASUREMENT 1

0.00044	0.5164	0.1299	4.93	-4.65	-0.50
0.00068	0.5604	0.1343	4.79	-4.71	-0.40
0.00088	0.5813	0.1358	4.67	-4.29	-0.31
0.00117	0.6056	0.1367	4.67	-4.17	-0.18
0.00136	0.6186	0.1383	4.35	-3.86	-0.10
0.00185	0.6411	0.1383	4.06	-3.62	0.11
0.00214	0.6528	0.1383	3.95	-3.52	0.24
0.00263	0.6713	0.1395	3.79	-3.41	0.46
0.00312	0.6898	0.1400	3.52	-3.18	0.67
0.00388	0.7160	0.1384	3.17	-2.90	1.01
0.00492	0.7485	0.1397	2.77	-2.57	1.47
0.00587	0.7765	0.1394	2.38	-2.24	1.84
0.00681	0.8052	0.1378	2.00	-1.92	2.21
0.00786	0.8342	0.1367	1.71	-1.70	2.62
0.00902	0.8635	0.1352	1.37	-1.43	3.08
0.00999	0.8890	0.1327	1.11	-1.21	3.46
0.01105	0.9127	0.1310	0.75	-0.90	3.86
0.01200	0.9314	0.129[illegible]	0.63	-0.81	4.23
0.01292	0.9510	0.1258	0.40	-0.63	4.58
0.01384	0.9661	0.1226	0.27	-0.53	4.93
0.01484	0.9791	0.1201	0.16	-0.44	5.32
0.01566	0.9873	0.1175	0.02	-0.33	5.63
0.01671	0.9937	0.1147	0.01	-0.34	6.02
0.01758	0.9968	0.1151	-0.01	-0.33	6.35
0.01816	0.9980	0.[illegible]	-0.03	-0.32	6.56
0.01864	0.9990	0.1[illegible]	0.00	-0.35	6.74
0.01913	0.9994	0.11[illegible]	-0.05	-0.31	6.93
0.01941	0.9996	0.112[illegible]	-0.07	-0.29	7.03
0.01980	0.9997	0.1118	-0.07	-0.29	7.18
0.02045	0.9999	0.1102	-0.10	-0.26	7.42
0.02090	0.9999	0.1094	-0.10	-0.27	7.58
0.02126	1.0000	0.1099	-0.13	-0.24	7.72

x/c = 0.986 MEASUREMENT 2

0.00046	0.5106	0.1261	4.96	8.09	0.35
0.00047	0.5124	0.1258	4.95	7.96	0.36
0.00078	0.5487	0.1347	4.77	7.83	0.49
0.00119	0.5818	0.1383	4.47	8.11	0.67
0.00170	0.6127	0.1393	4.25	8.28	0.89
0.00253	0.6510	0.1409	3.85	8.62	1.25
0.00284	0.6635	0.1410	3.66	8.79	1.38
0.00356	0.6890	0.1400	3.35	9.03	1.70
0.00436	0.7166	0.1401	2.98	9.35	2.05
0.00556	0.7558	0.1391	2.47	9.77	2.54
0.00657	0.7860	0.1384	2.08	10.10	2.92
0.00766	0.8192	0.1370	1.68	10.43	3.34
0.00878	0.8485	0.1362	1.41	10.64	3.77
0.00980	0.8780	0.1329	1.13	10.87	4.17
0.01093	0.9041	0.1295	0.82	11.13	4.59
0.01184	0.9241	0.1261	0.65	11.26	4.93
0.01285	0.9446	0.1245	0.41	11.46	5.31
0.01402	0.9650	0.1222	0.25	11.59	5.74
0.01479	0.9757	0.1216	0.21	11.60	6.04
0.01537	0.9837	0.1213	0.10	11.69	6.25
0.01585	0.9882	0.1210	0.06	11.72	6.42
0.01614	0.9904	0.1205	0.07	11.70	6.53
0.01682	0.9939	0.1208	-0.01	11.77	6.77
0.01742	0.9961	0.1210	0.01	11.74	6.99
0.01793	0.9976	0.1210	-0.06	11.79	7.18
0.01844	0.9986	0.1204	-0.08	11.81	7.37
0.01895	0.9991	0.1210	-0.11	11.83	7.55
0.01957	0.9997	0.1209	-0.10	11.82	7.78
0.02038	1.0000	0.1206	-0.12	11.82	8.07
0.02150	1.0000	0.1206	-0.17	11.87	8.47

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = -2^{o}$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02405	1.0000	0.1217	-0.15	-0.39	-7.39
-0.02335	0.9989	0.1221	-0.02	-0.55	-7.18
-0.02305	0.9980	0.1231	-0.02	-0.56	-7.08
-0.02265	0.9978	0.1198	-0.01	-0.60	-6.96
-0.02255	0.9975	0.1212	-0.03	-0.58	-6.93
-0.02245	0.9966	0.1253	-0.08	-0.53	-6.90
-0.02225	0.9958	0.1238	0.01	-0.63	-6.84
-0.02185	0.9939	0.1277	-0.01	-0.63	-6.72
-0.02134	0.9912	0.1278	0.13	-0.79	-6.57
-0.02094	0.9867	0.1285	0.25	-0.93	-6.45
-0.02054	0.9853	0.1296	0.32	-1.01	-6.33
-0.02022	0.9831	0.1300	0.34	-1.05	-6.24
-0.01991	0.9798	0.1371	0.36	-1.07	-6.14
-0.01970	0.9769	0.1372	0.53	-1.26	-6.08
-0.01950	0.9740	0.1394	0.61	-1.34	-6.02
-0.01897	0.9671	0.1391	0.72	-1.47	-5.87
-0.01877	0.9645	0.1358	0.81	-1.57	-5.81
-0.01825	0.9579	0.1416	0.82	-1.59	-5.66
-0.01772	0.9498	0.1442	1.04	-1.83	-5.51
-0.01699	0.9366	0.1472	1.39	-2.20	-5.30
-0.01595	0.9169	0.1494	1.76	-2.59	-5.00
-0.01492	0.8982	0.1507	2.10	-2.95	-4.71
-0.01400	0.8773	0.1512	2.56	-3.43	-4.44
-0.01286	0.8517	0.1547	3.02	-3.90	-4.12
-0.01172	0.8252	0.1554	3.59	-4.49	-3.80
-0.01069	0.8007	0.1545	4.27	-5.19	-3.51
-0.00966	0.7774	0.1557	4.87	-5.78	-3.22
-0.00883	0.7541	0.1569	5.41	-6.33	-2.99
-0.00779	0.7294	0.1555	6.00	-6.92	-2.70
-0.00769	0.7273	0.1554	5.98	-6.90	-2.67
-0.00685	0.7038	0.1546	6.75	-7.66	-2.44
-0.00581	0.6795	0.1559	7.33	-8.25	-2.15
-0.00487	0.6545	0.1536	8.26	-9.16	-1.89
-0.00383	0.6283	0.1528	9.06	-9.95	-1.61
-0.00292	0.5989	0.1526	9.94	-10.83	-1.37
-0.00233	0.5836	0.1544	10.31	-11.20	-1.21
-0.00183	0.5630	0.1540	10.94	-11.83	-1.08
-0.00133	0.5381	0.1539	11.13	-12.00	-0.95
-0.00103	0.5289	0.1526	10.86	-11.73	-0.87
-0.00073	0.5165	0.1537	10.35	-11.22	-0.79
-0.00004	0.5295	0.1505	7.32	-8.17	-0.60
0.00046	0.5631	0.1476	5.37	-6.23	-0.46
0.00088	0.5943	0.1463	4.47	-5.32	-0.33
0.00152	0.6271	0.1477	4.09	-4.92	-0.15
0.00258	0.6717	0.1489	3.57	-4.38	0.17
0.00333	0.6955	0.1492	3.28	-4.08	0.39
0.00461	0.7318	0.1501	2.82	-3.58	0.76
0.00556	0.7612	0.1500	2.46	-3.20	1.04
0.00660	0.7917	0.1490	2.05	-2.76	1.34
0.00795	0.8272	0.1476	1.65	-2.32	1.73
0.00900	0.8530	0.1456	1.43	-2.07	2.03
0.00993	0.8763	0.1438	1.15	-1.75	2.30
0.01117	0.9044	0.1436	0.83	-1.37	2.67
0.01210	0.9259	0.1398	0.66	-1.16	2.94
0.01313	0.9456	0.1354	0.52	-0.97	3.24
0.01416	0.9613	0.1334	0.39	-0.79	3.54
0.01529	0.9779	0.1329	0.16	-0.49	3.88
0.01611	0.9860	0.1316	0.08	-0.36	4.13
0.01693	0.9913	0.1277	0.09	-0.33	4.38
0.01775	0.9953	0.1318	-0.01	-0.17	4.63
0.01846	0.9978	0.1286	0.02	-0.16	4.84
0.01988	0.9991	0.1281	0.10	-0.14	5.28
0.02109	1.0001	0.1275	0.07	-0.03	5.64
0.02241	1.0003	0.1264	0.03	0.12	6.05
0.02518	1.0001	0.1206	0.05	0.34	6.91
0.02755	1.0000	0.1180	0.06	0.55	7.66

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02321	1.0000	0.1200	-0.09	10.18	-5.02
-0.02291	0.9996	0.1215	-0.07	10.14	-4.93
-0.02261	0.9990	0.1190	-0.04	10.10	-4.84
-0.02251	0.9987	0.1262	-0.12	10.18	-4.81
-0.02240	0.9985	0.1222	-0.06	10.11	-4.78
-0.02220	0.9979	0.1228	0.01	10.04	-4.72
-0.02190	0.9972	0.1196	-0.08	10.12	-4.63
-0.02170	0.9959	0.1250	-0.01	10.04	-4.57
-0.02160	0.9954	0.1261	-0.04	10.06	-4.54
-0.02140	0.9943	0.1235	0.07	9.93	-4.48
-0.02130	0.9942	0.1233	0.09	9.92	-4.45
-0.02110	0.9932	0.1245	0.06	9.93	-4.39
-0.02070	0.9903	0.1263	0.08	9.90	-4.27
-0.02019	0.9863	0.1244	0.21	9.75	-4.11
-0.01989	0.9834	0.1231	0.27	9.68	-4.02
-0.01948	0.9796	0.1256	0.28	9.66	-3.91
-0.01875	0.9706	0.1263	0.48	9.43	-3.69
-0.01854	0.9677	0.1230	0.59	9.31	-3.63
-0.01801	0.9614	0.1277	0.57	9.31	-3.48
-0.01760	0.9546	0.1310	0.71	9.16	-3.36
-0.01728	0.9483	0.1307	0.87	8.99	-3.27
-0.01686	0.9409	0.1321	0.98	8.86	-3.15
-0.01602	0.9261	0.1363	1.21	8.61	-2.91
-0.01570	0.9201	0.1367	1.35	8.46	-2.82
-0.01508	0.9073	0.1374	1.65	8.14	-2.64
-0.01426	0.8906	0.1398	1.91	7.66	-2.40
-0.01312	0.8636	0.1419	2.44	7.30	-2.08
-0.01219	0.8417	0.1433	2.90	6.82	-1.82
-0.01105	0.8146	0.1452	3.44	6.27	-1.49
-0.01002	0.7905	0.1482	4.01	5.68	-1.20
-0.00887	0.7648	0.1493	4.60	5.09	-0.88
-0.00784	0.7376	0.1490	5.37	4.31	-0.59
-0.00700	0.7153	0.1470	6.09	3.59	-0.36
-0.00607	0.6906	0.1485	6.70	2.99	-0.09
-0.00481	0.6601	0.1497	7.54	2.15	0.25
-0.00408	0.6390	0.1496	8.25	1.45	0.45
-0.00345	0.6223	0.1466	8.83	0.87	0.62
-0.00293	0.6071	0.1482	9.36	0.35	0.76
-0.00262	0.5995	0.1474	9.51	0.21	0.85
-0.00202	0.5800	0.1474	10.02	-0.30	1.01
-0.00142	0.5554	0.1471	10.26	-0.53	1.17
-0.00093	0.5315	0.1448	9.94	-0.19	1.30
-0.00033	0.5242	0.1442	8.79	0.97	1.46
0.00007	0.5379	0.1464	6.77	3.01	1.57
0.00067	0.5768	0.1465	5.10	4.70	1.75
0.00137	0.6238	0.1476	4.15	5.66	1.96
0.00252	0.6702	0.1470	3.49	6.34	2.31
0.00392	0.7148	0.1456	2.92	6.94	2.72
0.00520	0.7534	0.1453	2.26	7.63	3.10
0.00667	0.7961	0.1442	1.83	8.10	3.54
0.00782	0.8261	0.1419	1.47	8.50	3.88
0.00897	0.8562	0.1382	1.09	8.91	4.21
0.01032	0.8897	0.1329	0.84	9.22	4.62
0.01135	0.9133	0.1307	0.55	9.55	4.93
0.01249	0.9373	0.1259	0.35	9.80	5.27
0.01372	0.9598	0.1194	0.18	10.03	5.64
0.01506	0.9786	0.1147	0.09	10.18	6.05
0.01640	0.9900	0.1129	0.03	10.31	6.47
0.01773	0.9969	0.1121	-0.01	10.44	6.88
0.01885	0.9997	0.1107	-0.02	10.51	7.24
0.02067	1.0008	0.1062	-0.01	10.62	7.81
0.02249	1.0011	0.1084	-0.02	10.76	8.39
0.02596	1.0005	0.1076	0.02	11.01	9.53
0.02850	1.0000	0.1100	-0.06	11.34	10.37

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.675$, $\alpha_N = -2^{o}$ (concluded)

x/c - 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02366	1.0000	0.0970	-0.06	0.25	-6.65
-0.02345	0.9999	0.0989	-0.08	0.26	-6.59
-0.02305	0.9991	0.0954	-0.10	0.25	-6.47
-0.02265	0.9989	0.0953	-0.09	0.21	-6.34
-0.02255	0.9986	0.0959	-0.09	0.21	-6.31
-0.02204	0.9972	0.0955	-0.06	0.16	-6.16
-0.02183	0.9964	0.0986	-0.10	0.19	-6.10
-0.02102	0.9938	0.0964	0.09	-0.06	-5.85
-0.02071	0.9916	0.0956	0.14	-0.13	-5.76
-0.02041	0.9894	0.0952	0.17	-0.18	-5.66
-0.02000	0.9877	0.0948	0.19	-0.23	-5.54
-0.01970	0.9858	0.0976	0.21	-0.25	-5.45
-0.01940	0.9831	0.0980	0.28	-0.35	-5.35
-0.01920	0.9804	0.1014	0.32	-0.40	-5.29
-0.01879	0.9759	0.0977	0.46	-0.56	-5.17
-0.01848	0.9718	0.0969	0.48	-0.60	-5.08
-0.01818	0.9679	0.1020	0.52	-0.65	-4.98
-0.01757	0.9598	0.1032	0.71	-0.87	-4.80
-0.01685	0.9491	0.1035	0.95	-1.16	-4.58
-0.01582	0.9331	0.1100	1.07	-1.33	-4.26
-0.01487	0.9147	0.1080	1.43	-1.73	-3.97
-0.01393	0.8962	0.1080	1.76	-2.10	-3.69
-0.01277	0.8751	0.1088	2.07	-2.45	-3.33
-0.01160	0.8489	0.1109	2.44	-2.85	-2.98
-0.01054	0.8242	0.1101	2.93	-3.37	-2.66
-0.00958	0.8028	0.1103	3.38	-3.84	-2.36
-0.00862	0.7814	0.1120	3.72	-4.20	-2.07
-0.00767	0.7581	0.1118	4.09	-4.58	-1.78
-0.00665	0.7363	0.1101	4.61	-5.11	-1.47
-0.00553	0.7131	0.1111	4.86	-5.36	-1.13
-0.00472	0.6928	0.1088	5.32	-5.83	-0.88
-0.00370	0.6731	0.1077	5.40	-5.91	-0.58
-0.00277	0.6564	0.1077	5.35	-5.86	-0.29
-0.00224	0.6506	0.1086	5.01	-5.51	-0.14
-0.00172	0.6459	0.1079	4.69	-5.18	0.02
-0.00120	0.6448	0.1083	4.19	-4.67	0.18
-0.00089	0.6458	0.1077	4.00	-4.48	0.27
-0.00057	0.6491	0.1070	3.69	-4.16	0.37
0.00037	0.6616	0.1025	3.13	-3.59	0.65
0.00068	0.6699	0.1056	2.70	-3.15	0.75
0.00110	0.6782	0.1073	2.26	-2.71	0.88
0.00173	0.6948	0.1072	1.90	-2.34	1.07
0.00277	0.7249	0.1074	1.54	-1.96	1.40
0.00350	0.7438	0.1079	1.32	-1.73	1.62
0.00465	0.7739	0.1090	1.12	-1.50	1.98
0.00570	0.8005	0.1084	0.98	-1.34	2.31
0.00677	0.8266	0.1058	0.85	-1.19	2.64
0.00794	0.8580	0.1060	0.64	-0.95	3.00
0.00900	0.8818	0.1028	0.67	-0.93	3.33
0.00994	0.9010	0.1035	0.50	-0.73	3.63
0.01108	0.9254	0.1056	0.28	-0.47	3.98
0.01212	0.9425	0.0998	0.29	-0.44	4.30
0.01304	0.9600	0.0972	0.20	-0.30	4.60
0.01397	0.9718	0.0978	0.17	-0.23	4.89
0.01520	0.9847	0.1000	0.00	0.00	5.28
0.01592	0.9901	0.0951	0.04	0.01	5.50
0.01674	0.9938	0.0970	0.02	0.08	5.76
0.01745	0.9966	0.0965	-0.03	0.18	5.99
0.01818	0.9984	0.0954	-0.02	0.21	6.22
0.01954	0.9991	0.0934	0.11	0.17	6.65
0.02089	1.0001	0.0955	0.11	0.27	7.08
0.02233	1.0000	0.0966	0.11	0.38	7.55

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02212	1.0000	0.1183	0.06	9.05	-5.94
-0.02153	0.9985	0.1228	0.10	8.96	-5.74
-0.02133	0.9986	0.1223	0.01	9.05	-5.68
-0.02123	0.9978	0.1206	0.10	8.95	[illegible]
-0.02103	0.9975	0.1205	0.02	9.02	[illegible]
-0.02084	0.9960	0.1209	0.01	9.02	-5.52
-0.02054	0.9937	0.1291	-0.01	9.03	-5.42
-0.02044	0.9925	0.1232	0.18	8.82	-5.39
-0.02034	0.9924	0.1232	0.20	8.80	-5.36
-0.02014	0.9907	0.1252	0.16	8.83	-5.30
-0.01985	0.9893	0.1221	0.23	8.73	-5.20
-0.01975	0.9888	0.1264	0.14	8.83	-5.17
-0.01965	0.9878	0.1257	0.17	8.79	-5.14
-0.01935	0.9853	0.1241	0.23	8.71	-5.04
-0.01886	0.9815	0.1249	0.22	8.70	-4.88
-0.01847	0.9773	0.1257	0.26	8.63	-4.75
-0.01768	0.9677	0.1244	0.45	8.40	-4.50
-0.01738	0.9639	0.1166	0.64	8.19	-4.40
-0.01689	0.9579	0.1199	0.60	8.21	-4.24
-0.01649	0.9510	0.1213	0.75	8.04	-4.11
-0.01620	0.9459	0.1195	0.90	7.87	-4.02
-0.01570	0.9361	0.1220	0.99	7.76	-3.85
-0.01509	0.9233	0.1209	1.23	7.49	-3.66
-0.01478	0.9180	0.1199	1.36	7.35	-3.56
-0.01407	0.9059	0.1209	1.55	7.12	-3.33
-0.01335	0.8893	0.1203	1.86	6.79	-3.10
-0.01223	0.8647	0.1190	2.19	6.42	-2.74
-0.01131	0.8434	0.1180	2.56	6.02	-2.44
-0.01038	0.8192	0.1180	2.94	5.61	-2.14
-0.00924	0.7968	0.1189	3.32	5.21	-1.78
-0.00821	0.7728	0.1186	3.69	4.81	-1.44
-0.00718	0.7487	0.1169	4.23	4.26	-1.11
-0.00630	0.7289	0.1151	4.62	3.86	-0.83
-0.00541	0.7068	0.1145	4.98	3.49	-0.54
-0.00432	0.6825	0.1141	5.30	3.18	-0.20
-0.00363	0.6668	0.1145	5.45	3.02	0.02
-0.00293	0.6568	0.1123	5.17	3.31	0.24
-0.00262	0.6514	0.1124	5.12	3.36	0.34
-0.00232	0.6478	0.1128	4.87	3.62	0.44
-0.00120	0.6448	0.1131	3.95	4.54	0.79
-0.00060	0.6492	0.1125	3.32	5.19	0.98
-0.00009	0.6568	0.1125	2.85	5.65	1.14
0.00031	0.6658	0.1137	2.42	6.09	1.27
0.00092	0.6799	0.1130	1.99	6.53	1.47
0.00163	0.7004	0.1132	1.55	6.98	1.70
0.00275	0.7301	0.1127	1.25	7.30	2.06
0.00396	0.7640	0.1136	1.02	7.55	2.46
0.00518	0.7973	0.1149	0.76	7.84	2.85
0.00652	0.8356	0.1156	0.64	7.99	3.29
0.00765	0.8616	0.1157	0.52	8.14	3.66
0.00869	0.8853	0.1164	0.37	8.34	3.99
0.01001	0.9150	0.1138	0.23	8.52	4.43
0.01101	0.9358	0.1144	0.12	8.67	4.75
0.01201	0.9539	0.1133	0.07	8.77	5.08
0.01321	0.9719	0.1157	-0.06	[illegible]	5.48
0.01451	0.9861	0.1157	-0.04	9.01	5.90
0.01570	0.9937	0.1172	0.01	9.03	6.30
0.01680	0.9980	0.1190	-0.02	9.13	6.66
0.01800	0.9999	0.1172	0.04	9.15	7.06
0.01971	1.0003	0.1172	0.01	9.31	7.63
0.02182	1.0000	0.1158	0.10	9.38	8.34

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$A = 28^{\circ}$, $M_N = 0.4$, $\alpha_N = +2^{\circ}$

x/c = 0.280 — MEASUREMENT 1

Constant $(C_p)_p = -0.4140$

z/c	u/U_p
0.00014	0.5307
0.00015	0.5409
0.00017	0.5609
0.00020	0.5813
0.00023	0.5994
0.00025	0.6060
0.00027	0.6135
0.00029	0.6215
0.00031	0.6274
0.00034	0.6366
0.00036	0.6457
0.00039	0.6532
0.00041	0.6611
0.00044	0.6672
0.00049	0.6769
0.00056	0.6912
0.00066	0.7078
0.00076	0.7209
0.00088	0.7354
0.00103	0.7540
0.00115	0.7688
0.00128	0.7830
0.00143	0.7983
0.00155	0.8102
0.00168	0.8223
0.00182	0.8366
0.00194	0.8482
0.00209	0.8607
0.00220	0.8701
0.00237	0.8840
0.00249	0.8940
0.00260	0.9029
0.00273	0.9130
0.00285	0.9226
0.00299	0.9315
0.00312	0.9404
0.00323	0.9486
0.00337	0.9563
0.00352	0.9642
0.00366	0.9703
0.00380	0.9774
0.00393	0.9813
0.00407	0.9864
0.00417	0.9897
0.00432	0.9923
0.00445	0.9951
0.00458	0.9962
0.00471	0.9978
0.00484	0.9983
0.00497	0.9989
0.00511	0.9988
0.00525	0.9993
0.00538	0.9995
0.00548	1.0000
0.00611	1.0000

x/c = 0.280 — MEASUREMENT 2

Constant $(C_p)_p = -0.4140$

z/c	u/U_p
0.00014	0.5357
0.00015	0.5500
0.00016	0.5729
0.00018	0.5766
0.00020	0.5917
0.00023	0.6075
0.00028	0.6252
0.00032	0.6379
0.00037	0.6493
0.00042	0.6653
0.00049	0.6786
0.00056	0.6932
0.00065	0.7087
0.00075	0.7192
0.00085	0.7360
0.00094	0.7472
0.00105	0.7614
0.00113	0.7709
0.00123	0.7829
0.00137	0.7980
0.00149	0.8120
0.00162	0.8239
0.00176	0.8386
0.00190	0.8513
0.00204	0.8640
0.00219	0.8769
0.00235	0.8910
0.00252	0.9055
0.00267	0.9170
0.00281	0.9267
0.00293	0.9362
0.00310	0.9476
0.00324	0.9552
0.00342	0.9649
0.00357	0.9722
0.00372	0.9785
0.00387	0.9845
0.00388	0.9842
0.00403	0.9588
0.00417	0.9923
0.00433	0.9948
0.00452	0.9969
0.00473	0.9984
0.00493	0.9991
0.00510	0.9998
0.00532	1.0000
0.00550	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = +2^{o}$ (continued)

$x/c = 0.814$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5187	-0.0333	4.14	-1.77	-2.45
0.00037	0.5265	-0.0312	4.10	-1.98	-2.43
0.00059	0.5783	-0.0126	3.98	-1.91	-2.33
0.00092	0.6067	-0.0069	3.80	-1.86	-2.18
0.00114	0.6287	-0.0036	3.63	-1.77	-2.09
0.00170	0.6502	0.0025	3.33	-1.49	-1.84
0.00215	0.6824	-0.0004	3.18	-1.37	-1.64
0.00248	0.6970	0.0015	3.07	-1.27	-1.49
0.00271	0.7079	0.0000	2.95	-1.16	-1.39
0.00305	0.7202	0.0001	2.81	-1.04	-1.24
0.00338	0.7283	0.0033	2.78	-1.03	-1.09
0.00372	0.7396	0.0017	2.66	-0.92	-0.94
0.00394	0.7470	0.0037	2.56	-0.82	-0.84
0.00428	0.7536	0.0083	2.44	-0.72	-0.69
0.00439	0.7657	0.0040	2.34	-0.62	-0.64
0.00461	0.7712	0.0048	2.26	-0.55	-0.54
0.00495	0.7811	0.0048	2.19	-0.49	-0.39
0.00517	0.7860	0.0073	2.12	-0.43	-0.31
0.00550	0.7995	0.0014	1.99	-0.31	-0.18
0.00595	0.8126	0.0028	1.77	-0.11	-0.01
0.00692	0.8374	0.0052	1.47	0.16	0.36
0.00779	0.8657	0.0029	1.23	0.38	0.68
0.00844	0.8801	0.0078	1.11	0.48	0.93
0.00897	0.8952	0.0052	0.98	0.61	1.14
0.00940	0.9064	0.0060	0.81	0.77	1.30
0.00983	0.9197	0.0047	0.63	0.94	1.46
0.01115	0.9472	0.0040	0.39	1.17	1.96
0.01205	0.9668	0.0019	0.24	1.31	2.30
0.01316	0.9812	0.0041	0.18	1.36	2.72
0.01415	0.9914	0.0038	0.00	1.55	3.10
0.01510	0.9962	0.0035	0.00	1.55	3.46
0.01611	0.9993	0.0035	-0.01	1.57	3.83
0.01813	1.0000	0.0002	0.02	1.56	4.57
0.01892	1.0000	0.0004	-0.02	1.63	4.87

$x/c = 0.814$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5407	-0.0401	3.79	7.09	-1.29
0.00067	0.6361	-0.0131	3.53	7.90	-1.07
0.00155	0.6672	-0.0110	3.11	8.08	-0.77
0.00194	0.6870	-0.0113	2.94	8.24	-0.59
0.00233	0.7039	-0.0103	2.80	8.36	-0.42
0.00272	0.7166	-0.0094	2.70	8.45	-0.24
0.00311	0.7286	-0.0088	2.60	8.54	-0.07
0.00350	0.7389	-0.0093	2.42	8.70	0.11
0.00408	0.7575	-0.0072	2.16	8.95	0.37
0.00437	0.7688	-0.0057	2.08	9.02	0.50
0.00485	0.7832	-0.0054	1.85	9.24	0.71
0.00532	0.8016	-0.0034	1.62	9.46	0.90
0.00550	0.8090	-0.0044	1.60	9.48	0.97
0.00605	0.8254	-0.0042	1.47	9.60	1.18
0.00670	0.8441	-0.0045	1.25	9.81	1.42
0.00734	0.8637	-0.0017	1.08	9.97	1.67
0.00789	0.8789	-0.0008	0.88	10.16	1.88
0.00853	0.8997	0.0004	0.72	10.31	2.12
0.00947	0.9224	0.0017	0.51	10.52	2.48
0.01044	0.9439	0.0014	0.32	10.70	2.85
0.01132	0.9612	0.0027	0.19	10.83	3.18
0.01237	0.9771	0.0084	0.08	10.95	3.58
0.01334	0.9885	0.0066	0.02	11.02	3.94
0.01409	0.9944	0.0076	0.00	11.05	4.23
0.01484	0.9973	0.0078	-0.02	11.09	4.51
0.01567	0.9989	0.0089	-0.06	11.14	4.82
0.01679	1.0000	0.0088	-0.05	11.15	5.23
0.01781	1.0001	0.0058	0.00	11.13	5.60
0.01874	1.0000	0.0032	0.01	11.14	5.94

$x/c = 0.903$ MEASUREMENT 1

0.00038	0.5155	0.0318	5.05	-0.82	-0.87
0.00077	0.5605	0.0275	4.81	-3.37	-0.70
0.00120	0.6085	0.0480	4.57	-1.98	-0.50
0.00173	0.6365	0.0509	4.19	-1.63	-0.26
0.00216	0.6548	0.0528	4.02	-1.50	-0.06
0.00237	0.6649	0.0520	3.90	-1.39	0.03
0.00269	0.6754	0.0531	3.84	-1.36	0.18
0.00299	0.6852	0.0553	3.73	-1.27	0.32
0.00330	0.6967	0.0543	3.61	-1.17	0.46
0.00350	0.7026	0.0560	3.54	-1.12	0.55
0.00380	0.7103	0.0581	3.46	-1.06	0.69
0.00400	0.7206	0.0554	3.31	-0.92	0.78
0.00411	0.7247	0.0566	3.12	-0.74	0.83
0.00441	0.7326	0.0579	3.11	-0.75	0.97
0.00461	0.7386	0.0588	3.10	-0.75	1.06
0.00492	0.7484	0.0549	2.89	-0.57	1.20
0.00532	0.7615	0.0557	2.64	-0.33	1.37
0.00613	0.7851	0.0575	2.43	-0.17	1.68
0.00693	0.8093	0.0562	2.07	0.14	2.00
0.00743	0.8242	0.0604	1.92	0.27	2.19
0.00792	0.8370	0.0581	1.70	0.46	2.38
0.00831	0.8475	0.0577	1.75	0.40	2.54
0.00880	0.8612	0.0581	1.50	0.63	2.73
0.00998	0.8903	0.0578	1.23	0.85	3.20
0.01085	0.9126	0.0561	0.94	1.10	3.52
0.01167	0.9334	0.0569	0.71	1.31	3.83
0.01292	0.9557	0.0536	0.53	1.45	4.30
0.01385	0.9707	0.0502	0.32	1.64	4.65
0.01478	0.9829	0.0500	0.18	1.77	5.00
0.01578	0.9915	0.0489	0.07	1.87	5.38
0.01666	0.9962	0.0448	-0.02	1.95	5.71
0.01754	0.9981	0.0435	0.02	1.90	6.04
0.01851	0.9993	0.0423	0.01	1.91	6.40
0.01938	0.9997	0.0415	0.11	1.81	6.73
0.02046	0.9998	0.0422	0.10	1.83	7.14
0.02242	0.9999	0.0377	0.01	1.94	7.86
0.02271	1.0000	0.0352	0.07	1.88	7.97

$x/c = 0.903$ MEASUREMENT 2

0.00035	0.4989	0.0287	4.31	10.37	0.31
0.00047	0.5246	0.0375	4.25	10.00	0.36
0.00074	0.5717	0.0502	4.11	9.76	0.49
0.00101	0.5985	0.0540	3.91	9.62	0.61
0.00173	0.6423	0.0585	3.65	9.83	0.95
0.00218	0.6617	0.0607	3.41	10.04	1.16
0.00281	0.6816	0.0615	3.18	10.23	1.46
0.00317	0.6945	0.0624	3.02	10.37	1.62
0.00353	0.7077	0.0636	2.82	10.54	1.79
0.00389	0.7194	0.0639	2.90	10.45	1.96
0.00425	0.7299	0.0644	2.71	10.61	2.13
0.00461	0.7372	0.0646	2.64	10.67	2.30
0.00515	0.7511	0.0663	2.38	10.90	2.54
0.00542	0.7618	0.0684	2.32	10.95	2.65
0.00586	0.7722	0.0683	2.13	11.12	2.83
0.00631	0.7856	0.0706	1.97	11.25	3.01
0.00649	0.7924	0.0716	1.87	11.34	3.08
0.00703	0.8053	0.0725	1.63	11.56	3.29
0.00765	0.8221	0.0718	1.65	11.52	3.54
0.00827	0.8371	0.0758	1.32	11.82	3.79
0.00880	0.8511	0.0761	1.21	11.91	4.01
0.00942	0.8704	0.0780	0.99	12.11	4.26
0.01031	0.8929	0.0787	0.87	12.21	4.61
0.01120	0.9123	0.0775	0.70	12.36	4.95
0.01199	0.9299	0.0786	0.46	12.58	5.25
0.01295	0.9505	0.0805	0.39	12.64	5.62
0.01383	0.9653	0.0777	0.23	12.78	5.95
0.01453	0.9758	0.0781	0.06	12.94	6.22
0.01600	0.9899	0.0774	-0.04	13.04	6.78
0.01703	0.9956	0.0762	0.01	12.98	7.18
0.01800	0.9976	0.0739	-0.05	13.05	7.55
0.01881	0.9987	0.0719	-0.18	13.19	7.86
0.01962	0.9995	0.0706	-0.24	13.26	8.17
0.02086	1.0000	0.0655	-0.25	13.28	8.64
0.02199	1.0000	0.0626	-0.31	13.36	9.06

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^o$, $M_N = 0.4$, $\alpha_N = +2^o$ (continued)

x/c = 0.986 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.4931	0.1114	7.38	-7.16	-0.46
0.00050	0.4969	0.1135	7.33	-7.17	-0.44
0.00079	0.5424	0.1137	7.11	-7.37	-0.29
0.00089	0.5485	0.1183	7.04	-6.90	-0.24
0.00118	0.5683	0.1219	7.02	-6.92	-0.10
0.00137	0.5813	0.1225	6.69	-6.61	0.00
0.00167	0.5983	0.1204	6.41	-6.36	0.14
0.00205	0.6171	0.1211	6.03	-6.02	0.34
0.00293	0.6437	0.1218	5.51	-5.57	0.77
0.00371	0.6757	0.1207	5.05	-5.17	1.16
0.00428	0.6931	0.1234	4.63	-4.80	1.44
0.00465	0.7055	0.1223	4.28	-4.48	1.63
0.00513	0.7170	0.1216	4.31	-4.54	1.86
0.00560	0.7301	0.1223	4.01	-4.27	2.06
0.00674	0.7620	0.1214	3.47	-3.60	2.54
0.00759	0.7833	0.1202	3.09	-3.47	2.90
0.00845	0.8068	0.1216	2.64	-3.07	3.27
0.00951	0.8323	0.1196	2.28	-2.76	3.72
0.01038	0.8556	0.1178	1.89	-2.41	4.08
0.01135	0.8752	0.1167	1.59	-2.14	4.47
0.01239	0.8986	0.1137	1.16	-1.75	4.89
0.01331	0.9180	0.1094	0.81	-1.42	5.26
0.01413	0.9324	0.1067	0.72	-1.36	5.60
0.01505	0.9490	0.1031	0.58	-1.23	5.97
0.01596	0.9639	0.1012	0.49	-1.16	6.33
0.01700	0.9777	0.0984	0.22	-0.90	6.75
0.01884	0.9922	0.0902	-0.10	-0.59	7.48
0.01923	0.9940	0.0892	-0.03	-0.65	7.64
0.01951	0.9951	0.0901	0.00	-0.69	7.76
0.01980	0.9959	0.0921	-0.01	-0.68	7.87
0.02000	0.9965	0.0925	-0.02	-0.66	7.95
0.02028	0.9977	0.0909	-0.06	-0.62	8.06
0.02056	0.9978	0.0884	-0.11	-0.57	8.16
0.02083	0.9987	0.0914	-0.08	-0.60	8.26
0.02110	0.9989	0.0896	-0.19	-0.49	8.36
0.02137	0.9993	0.0869	-0.14	-0.53	8.46
0.02173	0.9994	0.0889	-0.11	-0.56	8.60
0.02235	1.0000	0.0916	-0.20	-0.46	8.83
0.02289	0.9998	0.0879	-0.13	-0.52	9.03
0.02342	1.0000	0.0883	-0.15	-0.50	9.24

x/c = 0.986 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.5040	0.1026	7.65	5.14	0.39
0.00077	0.5332	0.1111	7.42	4.69	0.55
0.00128	0.5767	0.1180	7.13	5.11	0.80
0.00149	0.5697	0.1188	6.88	5.35	0.90
0.00200	0.6140	0.1201	6.33	5.86	1.15
0.00262	0.6381	0.1193	6.15	5.98	1.46
0.00324	0.6596	0.1217	5.54	6.54	1.77
0.00375	0.6752	0.1216	5.21	6.83	2.02
0.00455	0.6990	0.1217	4.84	7.15	2.42
0.00536	0.7233	0.1227	4.39	7.54	2.79
0.00616	0.7453	0.1211	4.00	7.88	3.12
0.00696	0.7632	0.1221	3.59	8.24	3.45
0.00795	0.7918	0.1246	3.25	8.53	3.87
0.00887	0.8139	0.1209	2.83	8.91	4.25
0.00959	0.8317	0.1203	2.38	9.32	4.55
0.01030	0.8474	0.1192	2.07	9.60	4.85
0.01112	0.8673	0.1187	1.89	9.75	5.17
0.01314	0.9106	0.1156	1.36	10.21	5.96
0.01411	0.9290	0.1150	0.89	10.65	6.35
0.01488	0.9432	0.1171	0.66	10.87	6.66
0.01604	0.9630	0.1152	0.54	10.97	7.11
0.01710	0.9774	0.1160	0.27	11.22	7.52
0.01863	0.9909	0.1119	0.11	11.37	8.12
0.02177	0.9993	0.1062	-0.12	11.59	9.31
0.02301	1.0003	0.1038	-0.16	11.64	9.76
0.02414	1.0000	0.1029	-0.33	11.82	10.17

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^o$, $M_N = 0.4$, $\alpha_N = +2^o$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01940	1.0000	0.1133	0.04	0.43	-5.24
-0.01930	0.9999	0.1159	-0.08	0.54	-5.21
-0.01898	0.9997	0.1145	-0.06	0.50	-5.11
-0.01857	0.9991	0.1154	-0.03	0.44	-4.99
-0.01783	0.9980	0.1181	-0.07	0.42	-4.77
-0.01689	0.9953	0.1184	0.00	0.29	-4.48
-0.01637	0.9918	0.1221	-0.03	0.28	-4.33
-0.01595	0.9888	0.1227	-0.05	0.28	-4.20
-0.01555	0.9856	0.1225	0.10	0.10	-4.08
-0.01503	0.9803	0.1238	0.12	0.04	-3.93
-0.01390	0.9671	0.1253	0.26	-0.16	-3.59
-0.01297	0.9505	0.1271	0.45	-0.40	-3.31
-0.01204	0.9359	0.1306	0.49	-0.50	-3.04
-0.01101	0.9126	0.1309	0.70	-0.76	-2.73
-0.00998	0.8915	0.1301	0.91	-1.02	-2.42
-0.00904	0.8678	0.1334	1.16	-1.31	-2.15
-0.00790	0.8404	0.1366	1.19	-1.39	-1.81
-0.00696	0.8176	0.1356	1.33	-1.57	-1.54
-0.00613	0.7923	0.1371	1.69	-1.96	-1.29
-0.00519	0.7645	0.1365	1.88	-2.18	-1.01
-0.00415	0.7357	0.1396	2.14	-2.48	-0.70
-0.00302	0.7019	0.1408	2.61	-2.98	-0.36
-0.00213	0.6636	0.1411	2.89	-3.28	-0.09
-0.00113	0.6075	0.1420	3.44	-3.86	0.21
-0.00073	0.5798	0.1419	3.98	-4.41	0.33
-0.00043	0.5613	0.1411	4.49	-4.93	0.42
-0.00023	0.5482	0.1404	5.22	-5.67	0.49
0.00016	0.5428	0.1398	5.78	-6.23	0.60
0.00046	0.5495	0.1325	6.53	-6.99	0.69
0.00087	0.5794	0.1322	7.00	-7.46	0.80
0.00172	0.6070	0.1331	6.82	-7.30	1.04
0.00258	0.6456	0.1370	6.00	-6.50	1.28
0.00322	0.6652	0.1353	5.68	-6.19	1.46
0.00375	0.6807	0.1342	5.36	-5.87	1.61
0.00503	0.7159	0.1311	4.77	-5.31	1.97
0.00618	0.7461	0.1289	4.13	-4.68	2.30
0.00722	0.7728	0.1279	3.69	-4.25	2.60
0.00837	0.7985	0.1297	3.12	-3.68	2.93
0.00930	0.8187	0.1257	2.88	-3.44	3.20
0.01044	0.8469	0.1239	2.34	-2.90	3.53
0.01137	0.8680	0.1244	1.99	-2.54	3.80
0.01230	0.8878	0.1241	1.76	-2.29	4.07
0.01353	0.9092	0.1186	1.41	-1.93	4.43
0.01446	0.9321	0.1124	1.05	-1.56	4.71
0.01559	0.9500	0.1106	0.80	-1.29	5.04
0.01662	0.9659	0.1090	0.42	-0.88	5.35
0.01754	0.9779	0.1071	0.30	-0.73	5.62
0.01856	0.9873	0.1057	0.13	-0.53	5.93
0.01957	0.9935	0.1017	0.05	-0.42	6.23
0.02068	0.9977	0.1022	-0.08	-0.25	6.57
0.02179	0.9995	0.0982	-0.14	-0.15	6.91
0.02272	1.0000	0.0993	-0.23	-0.01	7.19
0.02395	1.0002	0.0978	-0.31	0.12	7.57
0.02517	1.0000	0.0990	-0.37	0.24	7.95

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01854	1.0000	0.1173	-0.01	11.09	-2.87
-0.01813	0.9999	0.1169	0.01	11.03	-2.74
-0.01781	0.9989	0.1185	0.00	11.01	-2.65
-0.01739	0.9983	0.1199	-0.02	11.01	-2.52
-0.01707	0.9976	0.1212	-0.03	11.00	-2.43
-0.01666	0.9960	0.1215	0.00	10.95	-2.30
-0.01603	0.9934	0.1232	0.00	10.90	-2.11
-0.01550	0.9893	0.1258	0.02	10.84	-1.96
-0.01498	0.9848	0.1258	0.10	10.72	-1.80
-0.01426	0.9768	0.1291	0.13	10.64	-1.58
-0.01344	0.9650	0.1288	0.30	10.43	-1.34
-0.01261	0.9523	0.1300	0.33	10.34	-1.09
-0.01178	0.9378	0.1308	0.51	10.11	-0.84
-0.01085	0.9188	0.1351	0.63	9.94	-0.56
-0.01002	0.8978	0.1328	0.80	9.74	-0.31
-0.00930	0.8828	0.1324	0.91	9.59	-0.10
-0.00857	0.8639	0.1357	0.91	9.55	0.12
-0.00784	0.8444	0.1362	1.14	9.28	0.34
-0.00680	0.8171	0.1368	1.42	8.96	0.65
-0.00502	0.7686	0.1344	1.76	8.55	1.18
-0.00419	0.7445	0.1363	1.92	8.36	1.43
-0.00283	0.7053	0.1341	2.42	7.81	1.85
-0.00182	0.6662	0.1366	2.76	7.45	2.16
-0.00043	0.5775	0.1320	3.93	6.24	2.59
0.00007	0.5515	0.1359	4.86	5.28	2.74
0.00027	0.5504	0.1277	6.02	4.11	2.80
0.00057	0.5590	0.1262	6.84	3.29	2.88
0.00097	0.5688	0.1298	7.00	3.12	3.00
0.00156	0.6057	0.1281	6.84	3.27	3.17
0.00262	0.6460	0.1267	6.19	3.91	3.47
0.00402	0.6846	0.1242	5.70	4.38	3.87
0.00519	0.7173	0.1262	4.75	5.32	4.21
0.00760	0.7783	0.1224	3.54	6.52	4.92
0.00896	0.8127	0.1186	3.10	6.95	5.32
0.01062	0.8502	0.1178	2.32	7.74	5.82
0.01217	0.8836	0.1160	1.61	8.46	6.29
0.01341	0.9085	0.1118	1.35	8.74	6.66
0.01475	0.9354	0.1081	1.04	9.06	7.07
0.01629	0.9593	0.1077	0.70	9.44	7.54
0.01772	0.9780	0.1042	0.47	9.69	7.99
0.01925	0.9912	0.1065	0.15	10.05	8.47
0.02248	0.9999	0.1043	-0.20	10.53	9.50
0.02381	1.0002	0.1017	-0.34	10.74	9.92
0.02966	1.0000	0.0952	-0.58	11.31	11.83

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^\circ$, $M_N = 0.4$, $\alpha_N = +2^\circ$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.01950	1.0000	0.0892	0.02	0.88	-4.39
-0.01920	1.0001	0.0890	0.10	0.77	-4.29
-0.01879	1.0001	0.0873	0.13	0.70	-4.17
-0.01797	0.9999	0.0894	0.05	0.72	-3.91
-0.01716	0.9984	0.0894	0.02	0.67	-3.66
-0.01634	0.9954	0.0951	-0.06	0.69	-3.41
-0.01612	0.9947	0.0948	0.03	0.58	-3.34
-0.01560	0.9922	0.0912	0.10	0.47	-3.18
-0.01529	0.9901	0.0937	0.07	0.48	-3.08
-0.01402	0.9804	0.0933	0.18	0.27	-2.69
-0.01318	0.9686	0.0935	0.25	0.14	-2.43
-0.01106	0.9369	0.0975	0.32	-0.06	-1.77
-0.01021	0.9173	0.0969	0.48	-0.29	-1.51
-0.00936	0.8991	0.0996	0.57	-0.43	-1.24
-0.00819	0.8736	0.1007	0.52	-0.43	-0.88
-0.00717	0.8519	0.1003	0.58	-0.55	-0.56
-0.00625	0.8308	0.1005	0.79	-0.79	-0.27
-0.00432	0.7780	0.0989	1.12	-1.21	0.33
-0.00339	0.7514	0.1002	1.22	-1.35	0.62
-0.00235	0.7233	0.0995	1.38	-1.54	0.95
-0.00130	0.6968	0.0969	1.75	-1.94	1.27
-0.00099	0.6883	0.0965	1.93	-2.14	1.37
-0.00078	0.6842	0.0979	2.03	-2.24	1.44
-0.00036	0.6789	0.0982	2.16	-2.39	1.57
-0.00015	0.6743	0.0982	2.21	-2.44	1.63
0.00016	0.6724	0.0906	2.64	-2.88	1.73
0.00047	0.6683	0.0973	2.50	-2.74	1.83
0.00068	0.6690	0.0911	2.84	-3.09	1.89
0.00099	0.6652	0.0958	2.77	-3.02	1.99
0.00120	0.6689	0.0928	3.01	-3.27	2.06
0.00162	0.6704	0.0955	3.07	-3.34	2.19
0.00245	0.6772	0.0984	3.33	-3.61	2.45
0.00297	0.6897	0.0949	3.31	-3.62	2.62
0.00350	0.7007	0.0948	3.39	-3.70	2.78
0.00475	0.7278	0.0941	3.08	-3.40	3.18
0.00678	0.7763	0.0938	2.54	-2.87	3.81
0.00795	0.8020	0.0952	2.22	-2.55	4.18
0.00880	0.8213	0.0944	2.12	-2.45	4.45
0.01005	0.8448	0.0925	1.79	-2.12	4.84
0.01191	0.8836	0.0909	1.33	-1.65	5.43
0.01284	0.9041	0.0891	1.06	-1.36	5.73
0.01407	0.9289	0.0845	0.86	-1.13	6.12
0.01500	0.9434	0.0799	0.72	-0.98	6.42
0.01612	0.9583	0.0826	0.52	-0.75	6.78
0.01705	0.9712	0.0839	0.32	-0.53	7.07
0.01797	0.9807	0.0800	0.27	-0.45	7.37
0.01902	0.9886	0.0797	0.17	-0.31	7.71
0.02006	0.9946	0.0796	-0.02	-0.08	8.04
0.02141	0.9973	0.0735	0.12	-0.15	8.48
0.02234	0.9984	0.0806	-0.03	0.04	8.78
0.02347	0.9991	0.0792	-0.07	0.13	9.15
0.02480	0.9996	0.0787	-0.18	0.32	9.59
0.02602	1.0000	0.0834	-0.22	0.44	9.99
0.02727	1.0000	0.0835	-0.22	0.52	10.40

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.01847	1.0000	0.0969	0.13	9.60	-3.72
-0.01827	1.0000	0.0988	0.03	9.70	-3.66
-0.01768	0.9996	0.1021	-0.03	9.70	-3.46
-0.01738	0.9993	0.0997	-0.06	9.71	-3.36
-0.01709	0.9985	0.1014	-0.06	9.68	-3.27
-0.01659	0.9978	0.1006	-0.02	9.60	-3.10
-0.01620	0.9969	0.1019	-0.09	9.64	-2.97
-0.01580	0.9952	0.1001	0.00	9.52	-2.84
-0.01529	0.9925	0.0981	0.07	9.41	-2.68
-0.01478	0.9891	0.1012	-0.04	9.48	-2.51
-0.01427	0.9857	0.1011	-0.02	9.42	-2.34
-0.01356	0.9792	0.1031	-0.04	9.39	-2.11
-0.01274	0.9687	0.1030	0.11	9.18	-1.84
-0.01192	0.9565	0.0992	0.29	8.95	-1.57
-0.01120	0.9447	0.1031	0.29	8.90	-1.34
-0.01037	0.9287	0.1049	0.41	8.73	-1.07
-0.00945	0.9110	0.0994	0.57	8.51	-0.76
-0.00883	0.8965	0.1011	0.43	8.63	-0.56
-0.00800	0.8779	0.1015	0.55	8.46	-0.29
-0.00728	0.8628	0.1024	0.67	8.30	-0.06
-0.00531	0.8144	0.1012	0.95	7.93	0.59
-0.00462	0.7925	0.0991	0.89	7.97	0.81
-0.00383	0.7696	0.1005	0.97	7.86	1.07
-0.00273	0.7391	0.0979	1.33	7.46	1.44
-0.00181	0.7095	0.0973	1.42	7.35	1.73
-0.00040	0.6792	0.0907	2.06	6.66	2.20
0.00001	0.6729	0.0969	2.36	6.35	2.33
0.00042	0.6691	0.0919	2.48	6.23	2.47
0.00072	0.6676	0.0917	2.67	6.03	2.57
0.00102	0.6672	0.0936	2.81	5.88	2.67
0.00173	0.6691	0.0914	3.16	5.52	2.90
0.00275	0.6830	0.0904	3.34	5.33	3.23
0.00396	0.7102	0.0896	3.41	5.24	3.63
0.00507	0.7338	0.0901	3.03	5.61	4.00
0.00725	0.7870	0.0911	2.53	6.11	4.71
0.00859	0.8219	0.0901	2.06	6.58	5.16
0.01011	0.8541	0.0895	1.74	6.91	5.66
0.01161	0.8823	0.0892	1.36	7.31	6.16
0.01391	0.9299	0.0839	0.89	7.83	6.92
0.01530	0.9527	0.0857	0.63	8.13	7.39
0.01660	0.9720	0.0837	0.40	8.40	7.62
0.01810	0.9868	0.0855	0.18	8.68	8.32
0.02142	0.9988	0.0828	-0.08	9.10	9.45
0.02292	0.9995	0.0794	-0.12	9.23	9.96
0.02430	1.0000	0.0818	-0.21	9.40	10.43
0.02670	1.0000	0.0852	-0.25	9.61	11.26

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = 0$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.2770$

z/c	u/U_p
0.00014	0.5456
0.00015	0.5616
0.00018	0.5771
0.00019	0.5937
0.00024	0.6246
0.00027	0.6368
0.00030	0.6395
0.00031	0.6471
0.00038	0.6659
0.00044	0.6826
0.00053	0.7027
0.00057	0.7110
0.00067	0.7267
0.00072	0.7347
0.00077	0.7437
0.00092	0.7645
0.00104	0.7784
0.00117	0.7945
0.00133	0.8124
0.00144	0.8248
0.00158	0.8390
0.00172	0.8520
0.00186	0.8648
0.00195	0.8762
0.00210	0.8883
0.00225	0.9006
0.00237	0.9109
0.00251	0.9223
0.00264	0.9310
0.00278	0.9416
0.00291	0.9498
0.00303	0.9579
0.00315	0.9655
0.00326	0.9714
0.00345	0.9793
0.00360	0.9852
0.00383	0.9911
0.00402	0.9948
0.00423	0.9977
0.00443	0.9988
0.00468	0.9998
0.00494	1.0000
0.00572	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.2770$

z/c	u/U_p
0.00014	0.5539
0.00020	0.6117
0.00024	0.6281
0.00027	0.6419
0.00031	0.6506
0.00035	0.6647
0.00039	0.6753
0.00041	0.6849
0.00046	0.6925
0.00047	0.6985
0.00053	0.7049
0.00057	0.7162
0.00065	0.7264
0.00072	0.7366
0.00081	0.7511
0.00091	0.7652
0.00101	0.7791
0.00112	0.7924
0.00127	0.8102
0.00139	0.8241
0.00156	0.8424
0.00166	0.8522
0.00177	0.8651
0.00190	0.8755
0.00203	0.8875
0.00218	0.9017
0.00233	0.9128
0.00246	0.9242
0.00257	0.9324
0.00272	0.9432
0.00285	0.9535
0.00294	0.9589
0.00308	0.9661
0.00320	0.9725
0.00338	0.9798
0.00348	0.9845
0.00365	0.9895
0.00377	0.9925
0.00390	0.9949
0.00403	0.9962
0.00421	0.9981
0.00431	0.9990
0.00440	0.9993
0.00456	0.9996
0.00470	0.9999
0.00495	0.9999
0.00507	1.0000
0.00525	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (continued)

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5221	-0.0104	3.24	-1.05	-2.47
0.00075	0.5977	0.0140	3.03	-0.71	-2.30
0.00087	0.6107	0.0155	2.97	-0.66	-2.26
0.00142	0.6459	0.0220	2.68	-0.53	-2.05
0.00153	0.6753	0.0206	2.58	-0.43	-2.01
0.00210	0.6908	0.0223	2.47	-0.36	-1.79
0.00243	0.7048	0.0223	2.37	-0.27	-1.66
0.00277	0.7189	0.0244	2.26	-0.18	-1.53
0.00322	0.7393	0.0237	2.16	-0.10	-1.36
0.00333	0.7388	0.0254	2.12	-0.07	-1.32
0.00356	0.7514	0.0244	2.04	0.00	-1.23
0.00378	0.7607	0.0248	1.94	0.09	-1.15
0.00412	0.7681	0.0250	1.84	0.18	-1.02
0.00490	0.8004	0.0254	1.57	0.42	-0.72
0.00535	0.8171	0.0250	1.46	0.51	-0.55
0.00589	0.8312	0.0263	1.34	0.60	-0.35
0.00643	0.8439	0.0265	1.20	0.72	-0.15
0.00665	0.8531	0.0248	1.14	0.77	-0.07
0.00719	0.8702	0.0241	1.00	0.90	0.13
0.00795	0.8898	0.0252	0.81	1.07	0.40
0.00849	0.9059	0.0243	0.72	1.14	0.60
0.00902	0.9205	0.0236	0.60	1.25	0.80
0.00956	0.9328	0.0238	0.49	1.34	1.00
0.01000	0.9449	0.0222	0.42	1.41	1.16
0.01089	0.9628	0.0223	0.27	1.55	1.49
0.01201	0.9809	0.0209	0.12	1.68	1.90
0.01301	0.9912	0.0201	0.02	1.77	2.27
0.01400	0.9967	0.0199	-0.01	1.80	2.64
0.01513	0.9992	0.0200	-0.05	1.84	3.06
0.01645	1.0000	0.0205	-0.05	1.85	3.54
0.01797	1.0000	0.0230	-0.04	1.85	4.10
0.01934	1.0000	0.0204	-0.04	1.87	4.61

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5475	-0.0069	2.66	8.96	-1.31
0.00057	0.5904	0.0083	2.58	9.22	-1.23
0.00126	0.6517	0.0179	2.27	9.28	-0.97
0.00155	0.6684	0.0191	2.20	9.34	-0.86
0.00223	0.7008	0.0210	1.96	9.56	-0.60
0.00243	0.7104	0.0219	1.95	9.56	-0.52
0.00282	0.7278	0.0227	1.89	9.60	-0.37
0.00321	0.7412	0.0232	1.74	9.74	-0.22
0.00360	0.7548	0.0243	1.62	9.85	-0.07
0.00399	0.7700	0.0249	1.55	9.91	0.08
0.00437	0.7805	0.0260	1.42	10.02	0.23
0.00466	0.7910	0.0265	1.29	10.14	0.34
0.00503	0.8050	0.0270	1.19	10.23	0.48
0.00531	0.8155	0.0272	1.16	10.25	0.58
0.00577	0.8299	0.0281	1.02	10.38	0.75
0.00605	0.8397	0.0285	1.03	10.37	0.85
0.00651	0.8532	0.0298	0.86	10.53	1.02
0.00706	0.8722	0.0304	0.74	10.64	1.23
0.00825	0.9075	0.0311	0.50	10.86	1.67
0.00957	0.9385	0.0327	0.33	11.02	2.15
0.01064	0.9617	0.0341	0.16	11.18	2.55
0.01161	0.9780	0.0353	0.07	11.26	2.90
0.01286	0.9909	0.0358	0.03	11.31	3.36
0.01446	0.9981	0.0368	-0.03	11.38	3.96
0.01605	0.9994	0.0335	-0.01	11.37	4.54
0.01706	0.9996	0.0312	-0.03	11.42	4.91
0.01813	0.9997	0.0294	-0.01	11.43	5.31
0.01926	0.9998	0.0272	-0.02	11.46	5.72
0.02038	1.0000	0.0253	0.00	11.47	6.14
0.02149	1.0000	0.0240	0.00	11.52	6.55
0.02252	1.0000	0.0221	-0.06	11.63	6.93

x/c = 0.903 MEASUREMENT 1

0.00038	0.5271	0.0428	3.83	-0.65	-0.91
0.00041	0.5322	0.0454	3.61	-0.57	-0.89
0.00084	0.5951	0.0590	3.60	-0.72	-0.73
0.00116	0.6226	0.0631	3.42	-0.52	-0.60
0.00148	0.6389	0.0663	3.20	-0.33	-0.48
0.00180	0.6525	0.0669	3.20	-0.36	-0.36
0.00212	0.6671	0.0688	3.03	-0.21	-0.23
0.00287	0.6954	0.0709	2.78	-0.01	0.05
0.00297	0.6995	0.0697	2.81	-0.05	0.09
0.00317	0.7085	0.0714	2.63	0.11	0.17
0.00348	0.7181	0.0713	2.53	0.19	0.29
0.00368	0.7240	0.0722	2.43	0.28	0.37
0.00439	0.7403	0.0691	2.40	0.26	0.65
0.00459	0.7547	0.0714	2.19	0.45	0.72
0.00500	0.7692	0.0723	2.10	0.52	0.88
0.00540	0.7832	0.0725	1.95	0.64	1.03
0.00560	0.7923	0.0738	1.83	0.75	1.11
0.00590	0.8007	0.0732	1.77	0.79	1.22
0.00651	0.8161	0.0733	1.64	0.89	1.45
0.00711	0.8354	0.0743	1.42	1.07	1.68
0.00770	0.8500	0.0739	1.34	1.12	1.90
0.00820	0.8642	0.0739	1.16	1.28	2.08
0.00859	0.8771	0.0734	1.06	1.35	2.23
0.00937	0.8891	0.0743	0.94	1.44	2.53
0.00986	0.9101	0.0730	0.74	1.61	2.71
0.01093	0.9352	0.0725	0.59	1.73	3.12
0.01184	0.9548	0.0715	0.37	1.91	3.46
0.01278	0.9708	0.0715	0.27	1.98	3.81
0.01392	0.9844	0.0716	0.10	2.12	4.24
0.01515	0.9942	0.0682	0.00	2.19	4.71
0.01673	0.9989	0.0641	-0.01	2.18	5.30
0.01819	0.9998	0.0628	-0.03	2.18	5.85
0.01945	1.0000	0.0622	-0.03	2.18	6.33
0.02092	1.0000	0.0615	-0.04	2.19	6.89
0.02238	1.0000	0.0637	0.00	2.17	7.44

x/c = 0.903 MEASUREMENT 2

0.00035	0.5232	0.0509	2.73	12.17	0.28
0.00043	0.5344	0.0574	2.70	12.17	0.31
0.00088	0.5921	0.0730	2.55	11.68	0.48
0.00097	0.5923	0.0647	2.52	12.96	0.52
0.00250	0.6847	0.0837	2.00	11.55	1.13
0.00277	0.6948	0.0844	1.91	11.62	1.23
0.00340	0.7175	0.0858	1.76	11.74	1.48
0.00358	0.7252	0.0864	1.75	11.73	1.55
0.00394	0.7381	0.0879	1.63	11.84	1.70
0.00430	0.7501	0.0889	1.55	11.89	1.84
0.00465	0.7609	0.0893	1.51	11.91	1.98
0.00502	0.7736	0.0907	1.44	11.96	2.13
0.00537	0.7822	0.0911	1.40	11.98	2.26
0.00564	0.7917	0.0932	1.20	12.16	2.37
0.00600	0.8019	0.0942	1.16	12.18	2.50
0.00627	0.8108	0.0944	1.11	12.23	2.60
0.00671	0.8227	0.0955	1.01	12.30	2.78
0.00698	0.8311	0.0962	1.01	12.29	2.88
0.00743	0.8431	0.0971	0.93	12.36	3.05
0.00796	0.8586	0.0990	0.78	12.48	3.25
0.00912	0.8903	0.1011	0.61	12.60	3.70
0.01035	0.9185	0.1031	0.45	12.72	4.18
0.01132	0.9412	0.1036	0.27	12.87	4.55
0.01221	0.9596	0.1031	0.19	12.93	4.88
0.01335	0.9763	0.1027	0.10	12.99	5.32
0.01483	0.9915	0.1020	-0.02	13.10	5.89
0.01630	0.9969	0.0985	0.01	13.05	6.45
0.01725	0.9982	0.0980	-0.09	13.14	6.82
0.01823	0.9987	0.0955	-0.07	13.12	7.19
0.01921	0.9992	0.0940	-0.17	13.23	7.57
0.02020	0.9992	0.0904	-0.18	13.25	7.95
0.02117	0.9995	0.0877	-0.23	13.31	8.32
0.02219	0.9999	0.0852	-0.31	13.41	8.72
0.02345	1.0000	0.0813	-0.35	13.48	9.20
0.02353	1.0000	0.0812	-0.36	13.49	9.24
0.02378	1.0000	0.0810	-0.38	13.52	9.33

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{\circ}$, $M_N = 0.4$, $\alpha_N = 0$ (continued)

$x/c = 0.986$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
0.00044	0.5134	0.1086	5.72	-4.79	-0.49
0.00062	0.5251	0.1180	5.60	-5.91	-0.40
0.00081	0.5549	0.1210	5.48	-5.17	-0.31
0.00110	0.5776	0.1234	5.38	-4.96	-0.17
0.00130	0.5905	0.1245	5.19	-4.79	-0.08
0.00169	0.6136	0.1258	4.94	-4.58	0.10
0.00208	0.6367	0.1265	4.61	-4.28	0.28
0.00257	0.6556	0.1278	4.39	-4.10	0.51
0.00296	0.6706	0.1275	4.16	-3.90	0.69
0.00335	0.6836	0.1273	3.98	-3.75	0.88
0.00354	0.6908	0.1280	3.81	-3.60	0.97
0.00411	0.7078	0.1272	3.60	-3.44	1.23
0.00477	0.7267	0.1284	3.29	-3.17	1.55
0.00525	0.7417	0.1280	3.15	-3.07	1.75
0.00572	0.7557	0.1276	2.87	-2.82	1.95
0.00619	0.7687	0.1284	2.71	-2.69	2.14
0.00666	0.7813	0.1283	2.56	-2.58	2.34
0.00742	0.8036	0.1277	2.20	-2.26	2.65
0.00847	0.8305	0.1273	1.89	-2.01	3.08
0.00935	0.8532	0.1255	1.59	-1.75	3.44
0.01021	0.8747	0.1253	1.33	-1.53	3.79
0.01127	0.8983	0.1241	1.06	-1.30	4.21
0.01269	0.9260	0.1192	0.75	-1.05	4.77
0.01406	0.9542	0.1155	0.45	-0.78	5.32
0.01543	0.9751	0.1114	0.22	-0.58	5.85
0.01683	0.9882	0.1079	0.08	-0.47	6.39
0.01829	0.9955	0.1050	-0.01	-0.40	6.94
0.01983	0.9988	0.1003	-0.11	-0.30	7.54
0.02058	0.9994	0.0985	-0.16	-0.25	7.82
0.02085	0.9993	0.0970	-0.13	-0.28	7.92
0.02103	0.9994	0.0988	-0.16	-0.25	7.99
0.02157	0.9997	0.0978	-0.20	-0.21	8.19
0.02335	1.0000	0.0966	-0.23	-0.15	8.86
0.02388	1.0000	0.0971	-0.29	-0.08	9.06
0.02507	1.0000	0.0951	-0.29	-0.06	9.51

$x/c = 0.986$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
0.00046	0.5204	0.1130	5.41	7.30	0.37
0.00076	0.5531	0.1205	5.22	7.25	0.51
0.00096	0.5731	0.1217	5.09	7.06	0.60
0.00117	0.5910	0.1248	4.99	7.41	0.70
0.00148	0.6099	0.1263	4.82	7.56	0.84
0.00189	0.6312	0.1277	4.56	7.79	1.03
0.00240	0.6548	0.1291	4.19	8.12	1.27
0.00364	0.6968	0.1292	3.69	8.52	1.85
0.00474	0.7319	0.1293	3.19	8.93	2.36
0.00574	0.7612	0.1296	2.76	9.30	2.78
0.00665	0.7857	0.1294	2.41	9.59	3.14
0.00774	0.8161	0.1296	1.97	9.97	3.59
0.00927	0.8580	0.1289	1.50	10.36	4.20
0.01080	0.8940	0.1254	1.20	10.58	4.81
0.01182	0.9158	0.1249	0.91	10.84	5.20
0.01283	0.9370	0.1240	0.77	10.94	5.59
0.01380	0.9544	0.1253	0.48	11.20	5.97
0.01477	0.9704	0.1258	0.35	11.31	6.34
0.01574	0.9823	0.1259	0.21	11.43	6.70
0.01670	0.9911	0.1254	0.06	11.55	7.06
0.01770	0.9959	0.1237	-0.01	11.61	7.44
0.01811	0.9969	0.1231	-0.01	11.60	7.59
0.01842	0.9977	0.1224	-0.01	11.59	7.71
0.01873	0.9986	0.1223	-0.06	11.64	7.82
0.01893	0.9989	0.1208	-0.03	11.61	7.90
0.01924	0.9991	0.1199	-0.01	11.59	8.01
0.01965	0.9995	0.1191	-0.05	11.63	8.17
0.02005	0.9994	0.1176	-0.04	11.62	8.32
0.02046	0.9997	0.1160	-0.04	11.61	8.47
0.02097	1.0001	0.1157	-0.12	11.69	8.65
0.02147	1.0000	0.1139	-0.05	11.62	8.84
0.02205	0.9999	0.1123	-0.04	11.61	9.04
0.02384	1.0002	0.1103	-0.20	11.77	9.70
0.02544	1.0000	0.1088	-0.26	11.86	10.29

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02145	1.0000	0.1119	-0.01	0.13	-6.43
-0.02115	1.0001	0.1134	-0.04	0.13	-6.34
-0.02074	0.9999	0.1150	-0.01	0.09	-6.21
-0.02054	0.9996	0.1130	0.03	0.03	-6.15
-0.02044	0.9996	0.1149	-0.02	0.08	-6.12
-0.02013	0.9994	0.1154	-0.03	0.06	-6.02
-0.01982	0.9990	0.1151	-0.03	0.04	-5.93
-0.01961	0.9984	0.1170	-0.05	0.05	-5.86
-0.01909	0.9972	0.1178	0.00	-0.03	-5.70
-0.01867	0.9958	0.1187	0.00	-0.05	-5.58
-0.01825	0.9938	0.1202	0.00	-0.08	-5.45
-0.01794	0.9921	0.1200	0.06	-0.16	-5.35
-0.01762	0.9903	0.1208	0.07	-0.18	-5.26
-0.01710	0.9864	0.1218	0.14	-0.28	-5.10
-0.01648	0.9811	0.1242	0.20	-0.37	-4.91
-0.01595	0.9741	0.1249	0.37	-0.57	-4.75
-0.01544	0.9676	0.1266	0.41	-0.65	-4.60
-0.01493	0.9607	0.1281	0.46	-0.71	-4.44
-0.01452	0.9543	0.1280	0.51	-0.78	-4.32
-0.01369	0.9403	0.1296	0.70	-1.01	-4.07
-0.01266	0.9190	0.1301	1.06	-1.41	-3.76
-0.01162	0.8998	0.1309	1.18	-1.57	-3.45
-0.01080	0.8793	0.1339	1.44	-1.85	-3.20
-0.00977	0.8556	0.1349	1.63	-2.09	-2.89
-0.00842	0.8221	0.1351	2.10	-2.59	-2.49
-0.00686	0.7820	0.1380	2.56	-3.10	-2.03
-0.00540	0.7426	0.1376	3.27	-3.83	-1.60
-0.00394	0.7013	0.1389	3.89	-4.47	-1.17
-0.00242	0.6501	0.1422	4.62	-5.22	-0.73
-0.00093	0.5792	0.1422	5.42	-6.04	-0.29
-0.00023	0.5383	0.1425	5.62	-6.44	-0.09
0.00006	0.5363	0.1384	5.65	-6.28	0.00
0.00026	0.5422	0.1357	5.36	-6.00	0.06
0.00087	0.5740	0.1326	5.05	-5.69	0.24
0.00290	0.6616	0.1321	4.18	-4.82	0.83
0.00354	0.6848	0.1312	3.86	-4.50	1.01
0.00471	0.7207	0.1317	3.30	-3.93	1.36
0.00649	0.7666	0.1315	2.65	-3.28	1.88
0.00795	0.8067	0.1274	2.09	-2.70	2.31
0.01075	0.8725	0.1244	1.30	-1.86	3.14
0.01220	0.9031	0.1224	1.03	-1.55	3.57
0.01395	0.9390	0.1178	0.57	-1.03	4.09
0.01549	0.9646	0.1140	0.28	-0.69	4.55
0.01652	0.9771	0.1117	0.18	-0.55	4.86
0.01754	0.9869	0.1107	0.04	-0.37	5.17
0.01856	0.9935	0.1091	0.01	-0.30	5.48
0.01957	0.9971	0.1093	-0.01	-0.22	5.78
0.02068	0.9988	0.1080	-0.07	-0.11	6.12
0.02179	0.9998	0.1071	-0.17	0.05	6.47
0.02364	1.0001	0.1023	-0.18	0.17	7.04
0.02578	1.0000	0.0981	-0.25	0.40	7.71

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02120	1.0000	0.1238	-0.19	10.83	-4.25
-0.02060	1.0000	0.1254	-0.18	10.79	-4.06
-0.02030	0.9999	0.1243	-0.13	10.72	-3.97
-0.01989	0.9996	0.1250	-0.11	10.66	-3.84
-0.01959	0.9992	0.1247	-0.06	10.60	-3.75
-0.01917	0.9985	0.1263	-0.08	10.60	-3.62
-0.01875	0.9975	0.1274	-0.04	10.54	-3.49
-0.01854	0.9969	0.1259	-0.01	10.49	-3.43
-0.01823	0.9959	0.1288	-0.04	10.51	-3.33
-0.01792	0.9945	0.1289	0.02	10.43	-3.24
-0.01760	0.9930	0.1289	0.03	10.40	-3.14
-0.01718	0.9901	0.1316	0.06	10.36	-3.01
-0.01697	0.9883	0.1309	0.13	10.26	-2.95
-0.01655	0.9854	0.1326	0.11	10.27	-2.82
-0.01592	0.9798	0.1334	0.13	10.22	-2.63
-0.01488	0.9661	0.1334	0.37	9.92	-2.31
-0.01385	0.9480	0.1351	0.58	9.67	-2.00
-0.01282	0.9313	0.1367	0.66	9.55	-1.69
-0.01199	0.9135	0.1364	0.95	9.23	-1.44
-0.01095	0.8908	0.1358	1.29	8.84	-1.13
-0.00930	0.8543	0.1362	1.65	8.43	-0.63
-0.00784	0.8164	0.1356	2.21	7.63	-0.19
-0.00690	0.7937	0.1376	2.33	7.70	0.09
-0.00586	0.7658	0.1367	2.85	7.16	0.40
-0.00492	0.7411	0.1367	3.15	6.83	0.68
-0.00398	0.7126	0.1357	3.64	6.33	0.96
-0.00293	0.6821	0.1365	4.04	5.92	1.27
-0.00192	0.6438	0.1373	4.50	5.45	1.57
-0.00093	0.5961	0.1367	4.88	5.07	1.86
-0.00063	0.5717	0.1359	5.03	4.92	1.95
-0.00023	0.5537	0.1352	5.12	4.82	2.07
0.00007	0.5512	0.1329	5.24	4.70	2.16
0.00027	0.5568	0.1328	5.12	4.82	2.22
0.00057	0.5681	0.1331	5.11	4.83	2.31
0.00087	0.5911	0.1336	4.98	4.97	2.39
0.00166	0.6330	0.1335	4.70	5.25	2.63
0.00220	0.6516	0.1345	4.31	5.64	2.79
0.00273	0.6722	0.1342	4.18	5.77	2.95
0.00327	0.6903	0.1330	3.93	6.03	3.11
0.00519	0.7454	0.1328	2.97	7.01	3.68
0.00677	0.7886	0.1334	2.28	7.72	4.16
0.00854	0.8326	0.1303	1.82	8.20	4.69
0.01010	0.8677	0.1289	1.41	8.65	5.17
0.01176	0.9045	0.1264	0.90	9.21	5.67
0.01351	0.9401	0.1211	0.62	9.54	6.21
0.01505	0.9662	0.1210	0.34	9.87	6.68
0.01660	0.9825	0.1159	0.23	10.04	7.16
0.01854	0.9951	0.1141	0.00	10.36	7.77
0.02016	0.9991	0.1105	-0.04	10.49	8.28
0.02147	1.0001	0.1091	-0.17	10.69	8.70
0.02268	1.0002	0.1067	-0.13	10.73	9.09
0.02535	.0000	0.1057	-0.32	11.10	9.96

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (concluded)

$x/c = 1.050$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02081	1.0000	0.0912	-0.17	0.86	-5.37
-0.02051	0.9999	0.0928	-0.11	0.77	-5.27
-0.02031	0.9999	0.0937	-0.15	0.79	-5.21
-0.02010	0.9997	0.0899	-0.07	0.69	-5.15
-0.01970	0.9990	0.0907	-0.14	0.73	-5.02
-0.01920	0.9984	0.0926	-0.13	0.69	-4.86
-0.01869	0.9965	0.0959	-0.09	0.60	-4.70
-0.01838	0.9956	0.0911	0.04	0.44	-4.61
-0.01797	0.9940	0.0916	-0.07	0.53	-4.48
-0.01777	0.9930	0.0946	-0.10	0.54	-4.42
-0.01726	0.9901	0.0925	0.01	0.39	-4.26
-0.01655	0.9850	0.1005	-0.01	0.37	-4.04
-0.01602	0.9795	0.1023	0.11	0.21	-3.87
-0.01560	0.9749	0.1043	0.06	0.23	-3.74
-0.01507	0.9692	0.1010	0.06	0.20	-3.58
-0.01476	0.9648	0.0996	0.14	0.09	-3.48
-0.01392	0.9522	0.1036	0.21	-0.02	-3.22
-0.01297	0.9359	0.1046	0.45	-0.33	-2.92
-0.01181	0.9171	0.1071	0.44	-0.38	-2.56
-0.01106	0.8990	0.1061	0.62	-0.59	-2.33
-0.00990	0.8769	0.1056	0.80	-0.83	-1.97
-0.00851	0.8465	0.1046	1.06	-1.16	-1.54
-0.00696	0.8088	0.1055	1.34	-1.50	-1.06
-0.00554	0.7718	0.1052	1.73	-1.94	-0.61
-0.00411	0.7353	0.1039	2.13	-2.39	-0.17
-0.00266	0.7000	0.1027	2.27	-2.55	0.28
-0.00110	0.6690	0.1006	2.41	-2.72	0.77
-0.00026	0.6618	0.1002	2.40	-2.72	1.03
0.00005	0.6605	0.1002	2.52	-2.85	1.13
0.00026	0.6620	0.0988	2.52	-2.84	1.19
0.00068	0.6644	0.0998	2.52	-2.86	1.32
0.00277	0.7022	0.0949	2.44	-2.79	1.97
0.00454	0.7450	0.0984	1.96	-2.31	2.53
0.00614	0.7867	0.1002	1.64	-1.98	3.03
0.00763	0.8203	0.1007	1.35	-1.68	3.50
0.01046	0.8851	0.0939	1.04	-1.34	4.40
0.01170	0.9123	0.0944	0.71	-0.98	4.79
0.01356	0.9426	0.0943	0.40	-0.62	5.38
0.01500	0.9652	0.0883	0.37	-0.54	5.84
0.01602	0.9759	0.0906	0.21	-0.35	6.17
0.01694	0.9856	0.0883	0.11	-0.21	6.47
0.01797	0.9928	0.0884	0.06	-0.12	6.81
0.01892	0.9966	0.0895	-0.04	0.04	7.11
0.02006	0.9984	0.0897	-0.03	0.07	7.48
0.02120	0.9999	0.0893	-0.05	0.15	7.85
0.02131	1.0001	0.0897	-0.06	0.17	7.88
0.02316	1.0000	0.0871	-0.10	0.32	8.48

$x/c = 1.050$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02024	1.0000	0.1044	0.10	9.58	-4.89
-0.01965	0.9998	0.1059	0.06	9.57	-4.70
-0.01925	0.9993	0.1061	0.00	9.60	-4.57
-0.01866	0.9987	0.1099	-0.01	9.57	-4.44
-0.01857	0.9984	0.1060	0.05	9.49	-4.34
-0.01817	0.9975	0.1075	-0.01	9.51	-4.21
-0.01768	0.9958	0.1079	-0.06	9.51	-4.04
-0.01748	0.9950	0.1070	0.00	9.44	-3.98
-0.01718	0.9943	0.1077	0.00	9.41	-3.88
-0.01679	0.9925	0.1090	-0.04	9.42	-3.75
-0.01649	0.9903	0.1082	0.01	9.35	-3.65
-0.01610	0.9875	0.1096	0.07	9.25	-3.52
-0.01560	0.9845	0.1076	0.14	9.16	-3.42
-0.01550	0.9818	0.1090	0.11	9.17	-3.32
-0.01488	0.9756	0.1092	0.17	9.05	-3.12
-0.01397	0.9626	0.1107	0.27	8.88	-2.82
-0.01295	0.9458	0.1108	0.47	8.62	-2.48
-0.01192	0.9284	0.1109	0.49	8.52	-2.15
-0.01110	0.9114	0.1108	0.67	8.29	-1.88
-0.01017	0.8904	0.1104	0.85	8.05	-1.57
-0.00862	0.8560	0.1110	1.14	7.67	-1.07
-0.00719	0.8242	0.1101	1.44	7.30	-0.60
-0.00630	0.8009	0.1094	1.60	7.10	-0.31
-0.00521	0.7752	0.1086	1.89	6.76	0.05
-0.00442	0.7502	0.1084	2.08	6.54	0.31
-0.00353	0.7267	0.1072	2.17	6.41	0.60
-0.00262	0.7034	0.1057	2.25	6.31	0.89
-0.00161	0.6840	0.1025	2.34	6.19	1.22
-0.00070	0.6702	0.1018	2.24	6.26	1.52
-0.00030	0.6683	0.1014	2.37	6.12	1.65
0.00001	0.6687	0.1015	2.37	6.11	1.75
0.00021	0.6683	0.1017	2.30	6.18	1.82
0.00052	0.6699	0.1010	2.17	5.30	1.92
0.00082	0.6725	0.1015	2.21	6.26	2.02
0.00113	0.6782	0.1003	2.27	6.19	2.12
0.00153	0.6650	0.1001	2.28	6.17	2.25
0.00193	0.6923	0.0993	2.13	6.31	2.38
0.00244	0.7020	0.1005	2.08	6.36	2.55
0.00295	0.7139	0.1019	2.01	6.42	2.71
0.00345	0.7260	0.1021	1.99	6.44	2.88
0.00528	0.7752	0.1041	1.58	6.83	3.48
0.00683	0.8140	0.1058	1.28	7.12	3.99
0.00848	0.8527	0.1068	1.14	7.26	4.54
0.00980	0.8830	0.1069	0.90	7.50	4.98
0.01141	0.9165	0.1099	0.51	7.92	5.51
0.01301	0.9471	0.1110	0.36	8.10	6.04
0.01451	0.9698	0.1144	0.26	8.23	6.54
0.01590	0.9840	0.1151	0.20	8.33	7.01
0.01739	0.9944	0.1175	0.01	8.58	7.51
0.01901	0.9994	0.1176	-0.04	8.68	8.06
0.02042	1.0000	0.1187	-0.10	8.80	8.54
0.02172	1.0002	0.1199	-0.11	8.88	8.98
0.02460	1.0000	0.1220	-0.15	9.09	9.95

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = -2^{o}$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.1570$

z/c	u/U_p
0.00014	0.5600
0.00016	0.5919
0.00020	0.6178
0.00023	0.6324
0.00025	0.6389
0.00026	0.6530
0.00030	0.6650
0.00034	0.6807
0.00043	0.7015
0.00050	0.7138
0.00055	0.7275
0.00059	0.7362
0.00065	0.7451
0.00073	0.7565
0.00085	0.7743
0.00100	0.7947
0.00112	0.8109
0.00125	0.8262
0.00140	0.8429
0.00159	0.8635
0.00177	0.8828
0.00197	0.9029
0.00219	0.9206
0.00238	0.9352
0.00258	0.9507
0.00278	0.9633
0.00298	0.9746
0.00316	0.9838
0.00335	0.9893
0.00350	0.9928
0.00364	0.9952
0.00377	0.9972
0.00392	0.9983
0.00412	0.9992
0.00432	0.9997
0.00457	1.0000
0.00484	0.9998
0.00509	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.1570$

z/c	u/U_p
0.00014	0.5545
0.00015	0.5767
0.00018	0.6061
0.00023	0.6336
0.00027	0.6448
0.00031	0.6584
0.00033	0.6658
0.00037	0.6776
0.00045	0.6952
0.00048	0.7062
0.00055	0.7178
0.00063	0.7319
0.00067	0.7377
0.00075	0.7523
0.00089	0.7704
0.00102	0.7886
0.00114	0.8057
0.00128	0.8212
0.00142	0.8388
0.00154	0.8533
0.00167	0.8664
0.00180	0.8797
0.00196	0.8927
0.00209	0.9052
0.00221	0.9159
0.00235	0.9275
0.00248	0.9376
0.00262	0.9476
0.00274	0.9563
0.00287	0.9643
0.00299	0.9721
0.00313	0.9783
0.00327	0.9839
0.00339	0.9885
0.00353	0.9919
0.00365	0.9948
0.00379	0.9964
0.00395	0.9979
0.00406	0.9987
0.00418	0.9993
0.00435	0.9997
0.00446	0.9999
0.00459	1.0000
0.00470	1.0000

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5396	0.0122	2.06	0.41	-2.48
0.00082	0.6128	0.0376	1.90	0.53	-2.31
0.00104	0.6434	0.0427	1.74	0.51	-2.23
0.00160	0.6722	0.0473	1.64	0.58	-2.05
0.00182	0.6842	0.0492	1.63	0.58	-1.97
0.00193	0.6930	0.0494	1.60	0.60	-1.93
0.00238	0.7104	0.0525	1.49	0.69	-1.78
0.00250	0.7214	0.0528	1.38	0.79	-1.74
0.00261	0.7338	0.0514	1.37	0.80	-1.70
0.00317	0.7498	0.0529	1.33	0.80	-1.50
0.00362	0.7652	0.0546	1.23	0.89	-1.35
0.00406	0.7833	0.0542	1.14	0.96	-1.19
0.00429	0.7910	0.0544	1.15	0.93	-1.12
0.00462	0.7998	0.0553	1.07	1.00	-1.00
0.00507	0.8153	0.0560	0.95	1.10	-0.85
0.00540	0.8310	0.0555	0.84	1.19	-0.73
0.00607	0.8491	0.0568	0.80	1.21	-0.50
0.00639	0.8622	0.0560	0.69	1.31	-0.39
0.00682	0.8759	0.0566	0.64	1.34	-0.24
0.00758	0.8970	0.0564	0.50	1.45	0.02
0.00802	0.9111	0.0553	0.44	1.50	0.17
0.00887	0.9342	0.0553	0.31	1.60	0.48
0.00984	0.9559	0.0550	0.19	1.70	0.81
0.01038	0.9699	0.0537	0.12	1.75	1.00
0.01117	0.9830	0.0540	0.07	1.79	1.28
0.01239	0.9941	0.0537	0.00	1.84	1.71
0.01350	0.9985	0.0536	-0.01	1.83	2.10
0.01490	0.9998	0.0549	-0.04	1.85	2.60
0.01582	1.0000	0.0545	-0.08	1.89	2.92
0.01673	1.0002	0.0541	-0.07	1.88	3.25
0.01763	0.9998	0.0542	-0.06	1.87	3.58
0.01864	1.0000	0.0539	0.00	1.82	3.94

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00036	0.5648	0.0178	1.53	10.50	-1.32
0.00043	0.5711	0.0234	1.52	10.09	-1.30
0.00121	0.6738	0.0442	1.24	10.40	-1.01
0.00170	0.7020	0.0468	1.19	10.42	-0.84
0.00219	0.7248	0.0477	1.13	10.47	-0.66
0.00238	0.7330	0.0480	1.10	10.48	-0.59
0.00277	0.7502	0.0488	1.02	10.55	-0.45
0.00297	0.7590	0.0495	1.04	10.53	-0.38
0.00355	0.7802	0.0506	0.93	10.61	-0.16
0.00413	0.8009	0.0515	0.83	10.69	0.05
0.00452	0.8132	0.0522	0.76	10.76	0.19
0.00490	0.8280	0.0535	0.71	10.79	0.33
0.00527	0.8427	0.0536	0.64	10.85	0.46
0.00582	0.8606	0.0546	0.56	10.92	0.66
0.00619	0.8740	0.0551	0.52	10.95	0.79
0.00656	0.8856	0.0553	0.47	10.98	0.92
0.00766	0.9194	0.0569	0.29	11.14	1.31
0.00867	0.9466	0.0571	0.19	11.22	1.67
0.00961	0.9703	0.0583	0.11	11.29	2.07
0.01059	0.9859	0.0586	0.05	11.34	2.45
0.01204	0.9953	0.0596	0.00	11.39	2.86
0.01310	0.9986	0.0596	0.00	11.39	3.24
0.01432	0.9996	0.0593	-0.01	11.40	3.68
0.01535	0.9996	0.0582	0.00	11.40	4.05
0.01637	1.0000	0.0561	-0.04	11.45	4.41
0.01730	0.9999	0.0545	-0.02	11.44	4.75
0.01849	1.0000	0.0516	0.02	11.42	5.18
0.01951	1.0000	0.0506	0.04	11.43	5.55

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{o}$, $M_N = 0.4$, $\alpha_N = -2^{o}$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5530	0.0566	2.34	1.03	-0.92
0.00053	0.5799	0.0644	2.29	0.89	-0.87
0.00085	0.6182	0.0763	2.18	1.07	-0.75
0.00127	0.6464	0.0807	1.96	1.04	-0.60
0.00181	0.6734	0.0820	1.97	0.99	-0.41
0.00191	0.6791	0.0841	1.80	1.15	-0.37
0.00223	0.6922	0.0839	1.79	1.14	-0.25
0.00266	0.7096	0.0843	1.67	1.22	-0.10
0.00297	0.7244	0.0867	1.56	1.31	0.02
0.00338	0.7392	0.0881	1.46	1.38	0.16
0.00368	0.7483	0.0871	1.52	1.30	0.27
0.00389	0.7561	0.0861	1.39	1.42	0.35
0.00429	0.7701	0.0879	1.30	1.47	0.49
0.00470	0.7831	0.0890	1.23	1.52	0.64
0.00520	0.8008	0.0898	1.11	1.61	0.82
0.00561	0.8133	0.0886	1.05	1.64	0.97
0.00601	0.8248	0.0894	0.97	1.70	1.11
0.00791	0.8821	0.0891	0.59	1.97	1.79
0.00879	0.9050	0.0881	0.53	1.98	2.10
0.00938	0.9211	0.0880	0.43	2.05	2.31
0.01016	0.9396	0.0876	0.32	2.13	2.60
0.01123	0.9621	0.0865	0.22	2.18	2.98
0.01227	0.9787	0.0852	0.09	2.27	3.35
0.01372	0.9920	0.0831	0.04	2.27	3.87
0.01455	0.9965	0.0820	-0.02	2.31	4.16
0.01743	0.9998	0.0755	-0.02	2.25	5.21
0.01820	1.0000	0.0744	-0.04	2.25	5.49

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00035	0.5411	0.0591	1.31	13.39	0.27
0.00043	0.5409	0.0691	1.30	13.70	0.30
0.00079	0.5949	0.0863	1.23	12.96	0.45
0.00106	0.6252	0.0925	1.07	12.72	0.55
0.00133	0.6444	0.0947	1.12	12.65	0.66
0.00241	0.6987	0.1004	1.00	12.70	1.09
0.00286	0.7188	0.1021	0.92	12.75	1.27
0.00331	0.7353	0.1034	0.89	12.75	1.45
0.00349	0.7434	0.1041	0.86	12.77	1.52
0.00385	0.7555	0.1045	0.89	12.72	1.66
0.00403	0.7645	0.1052	0.85	12.75	1.73
0.00457	0.7802	0.1062	0.80	12.76	1.95
0.00510	0.7978	0.1085	0.68	12.86	2.16
0.00546	0.8083	0.1097	0.60	12.92	2.29
0.00582	0.8200	0.1105	0.64	12.86	2.43
0.00618	0.8323	0.1120	0.55	12.93	2.57
0.00672	0.8470	0.1127	0.56	12.90	2.77
0.00707	0.8589	0.1145	0.49	12.95	2.90
0.00743	0.8702	0.1156	0.40	13.02	3.04
0.00850	0.8985	0.1181	0.33	13.05	3.45
0.00947	0.9242	0.1198	0.24	13.10	3.82
0.01053	0.9489	0.1197	0.17	13.13	4.21
0.01150	0.9673	0.1189	0.14	13.13	4.55
0.01256	0.9827	0.1193	0.01	13.23	4.92
0.01352	0.9913	0.1166	0.04	13.18	5.26
0.01466	0.9965	0.1155	-0.02	13.22	5.66
0.01561	0.9988	0.1144	-0.08	13.26	6.00
0.01656	0.9996	0.1120	-0.07	13.24	6.35
0.01743	0.9996	0.1105	-0.11	13.27	6.67
0.01850	0.9999	0.1078	-0.12	13.28	7.07
0.01940	1.0000	0.1056	-0.13	13.29	7.40

x/c = 0.986 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5361	0.1152	3.71	-3.09	-0.50
0.00057	0.5574	0.1182	3.66	-3.26	-0.45
0.00076	0.5847	0.1199	3.57	-3.16	-0.36
0.00095	0.6033	0.1228	3.48	-2.88	-0.28
0.00183	0.6551	0.1276	3.14	-2.49	0.11
0.00232	0.6795	0.1269	2.88	-2.27	0.32
0.00271	0.6930	0.1266	2.71	-2.14	0.49
0.00310	0.7078	0.1269	2.59	-2.05	0.66
0.00377	0.7296	0.1268	2.33	-1.84	0.96
0.00415	0.7435	0.1277	2.12	-1.66	1.13
0.00500	0.7684	0.1279	1.85	-1.46	1.50
0.00576	0.7924	0.1267	1.75	-1.41	1.80
0.00643	0.8109	0.1275	1.54	-1.24	2.06
0.00718	0.8309	0.1273	1.35	-1.10	2.35
0.00823	0.8592	0.1268	1.10	-0.91	2.76
0.00929	0.8846	0.1253	0.83	-0.69	3.18
0.01065	0.9153	0.1226	0.64	-0.57	3.71
0.01151	0.9338	0.1210	0.42	-0.39	4.04
0.01246	0.9504	0.1187	0.26	-0.26	4.40
0.01337	0.9656	0.1148	0.20	-0.24	4.75
0.01429	0.9793	0.1114	0.06	-0.13	5.11
0.01502	0.9870	0.1094	-0.03	-0.05	5.39
0.01630	0.9944	0.1049	0.01	-0.12	5.86
0.01717	0.9974	0.1039	-0.04	-0.09	6.19
0.01833	0.9993	0.1011	-0.06	-0.09	6.63
0.01900	0.9998	0.0992	-0.11	-0.05	6.88
0.01949	0.9999	0.0987	-0.16	0.00	7.06
0.02025	1.0000	0.0972	-0.18	0.02	7.35

x/c = 0.986 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.5365	0.1140	3.80	9.41	0.35
0.00077	0.5828	0.1243	3.66	9.29	0.48
0.00128	0.6214	0.1287	3.38	9.32	0.71
0.00170	0.6449	0.1298	3.22	9.44	0.88
0.00314	0.7028	0.1322	2.60	9.94	1.51
0.00415	0.7353	0.1322	2.29	10.17	1.94
0.00515	0.7684	0.1316	2.04	10.35	2.37
0.00605	0.7978	0.1328	1.67	10.66	2.72
0.00715	0.8278	0.1325	1.37	10.90	3.15
0.00815	0.8543	0.1311	1.22	10.99	3.55
0.00928	0.8839	0.1306	0.92	11.23	3.99
0.01020	0.9079	0.1299	0.72	11.39	4.34
0.01122	0.9283	0.1286	0.55	11.51	4.72
0.01224	0.9478	0.1288	0.41	11.61	5.09
0.01323	0.9649	0.1295	0.32	11.66	5.46
0.01410	0.9779	0.1304	0.23	11.72	5.78
0.01516	0.9886	0.1311	0.06	11.86	6.17
0.01593	0.9936	0.1305	0.04	11.86	6.45
0.01700	0.9975	0.1302	-0.08	11.96	6.84
0.01792	0.9991	0.1283	-0.10	11.96	7.18
0.01823	0.9993	0.1274	-0.10	11.96	7.29
0.01843	0.9999	0.1276	-0.14	11.99	7.36
0.01905	1.0000	0.1266	-0.11	11.95	7.59
0.01915	0.9999	0.1262	-0.10	11.94	7.63
0.01935	1.0000	0.1262	-0.14	11.97	7.70

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{\circ}$, $M_N = 0.4$, $\alpha_N = -2^{\circ}$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.02255	1.0000	0.1156	-0.24	-0.03	-6.94
-0.02235	0.9999	0.1148	-0.19	-0.07	-6.87
-0.02195	0.9999	0.1173	-0.19	-0.10	-6.75
-0.02185	0.9997	0.1167	-0.13	-0.17	-6.72
-0.02155	0.9992	0.1165	-0.21	-0.10	-6.63
-0.02125	0.9987	0.1168	-0.14	-0.18	-6.54
-0.02084	0.9982	0.1168	-0.04	-0.30	-6.42
-0.02044	0.9969	0.1167	-0.11	-0.24	-6.30
-0.02023	0.9963	0.1192	-0.05	-0.32	-6.24
-0.02003	0.9955	0.1201	-0.01	-0.37	-6.18
-0.01961	0.9936	0.1225	0.02	-0.41	-6.06
-0.01919	0.9909	0.1228	0.09	-0.49	-5.93
-0.01867	0.9872	0.1195	0.24	-0.67	-5.78
-0.01794	0.9804	0.1233	0.28	-0.74	-5.57
-0.01731	0.9742	0.1246	0.40	-0.87	-5.39
-0.01679	0.9685	0.1239	0.49	-0.98	-5.24
-0.01606	0.9573	0.1257	0.56	-1.08	-5.03
-0.01513	0.9418	0.1271	0.91	-1.45	-4.77
-0.01452	0.9297	0.1283	1.12	-1.68	-4.59
-0.01380	0.9168	0.1291	1.32	-1.69	-4.39
-0.01266	0.8933	0.1321	1.62	-2.22	-4.07
-0.01162	0.8709	0.1320	2.06	-2.67	-3.77
-0.01018	0.8400	0.1352	2.52	-3.16	-3.36
-0.00925	0.8188	0.1373	2.84	-3.48	-3.10
-0.00842	0.7965	0.1363	3.18	-3.83	-2.87
-0.00748	0.7729	0.1372	3.71	-4.36	-2.62
-0.00644	0.7466	0.1375	4.19	-4.85	-2.33
-0.00561	0.7271	0.1387	4.44	-5.10	-2.10
-0.00425	0.6890	0.1398	5.35	-6.00	-1.73
-0.00332	0.6642	0.1404	5.77	-6.43	-1.48
-0.00213	0.6216	0.1427	6.64	-7.29	-1.16
-0.00153	0.5956	0.1424	7.13	-7.77	-1.00
-0.00103	0.5690	0.1432	7.31	-7.95	-0.87
-0.00023	0.5421	0.1396	6.43	-7.07	-0.65
0.00006	0.5467	0.1381	5.17	-5.81	-0.57
0.00036	0.5678	0.1366	4.14	-4.77	-0.49
0.00225	0.6787	0.1342	2.66	-3.27	0.07
0.00343	0.7197	0.1348	2.19	-2.78	0.42
0.00503	0.7647	0.1339	1.81	-2.37	0.89
0.00639	0.8044	0.1330	1.40	-1.92	1.28
0.00732	0.8302	0.1322	1.25	-1.74	1.55
0.00785	0.8442	0.1319	1.11	-1.59	1.70
0.00920	0.8760	0.1289	0.90	-1.34	2.09
0.00992	0.8920	0.1293	0.77	-1.18	2.30
0.01106	0.9158	0.1277	0.60	-0.97	2.63
0.01220	0.9371	0.1259	0.48	-0.80	2.97
0.01323	0.9559	0.1249	0.26	-0.54	3.27
0.01415	0.9705	0.1224	0.20	-0.44	3.54
0.01518	0.9830	0.1216	0.13	-0.32	3.85
0.01631	0.9920	0.1196	0.02	-0.14	4.19
0.01744	0.9969	0.1170	-0.01	-0.04	4.53
0.01896	0.9995	0.1139	-0.08	0.12	5.00
0.02038	1.0000	0.1108	-0.06	0.19	5.43
0.02189	1.0001	0.1094	-0.06	0.29	5.89
0.02405	1.0001	0.1055	-0.03	0.43	6.55
0.02568	1.0000	0.1041	-0.11	0.66	7.07

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.02261	1.0000	0.1165	-0.25	10.69	-5.14
-0.02231	1.0000	0.1167	-0.23	10.65	-5.05
-0.02211	0.9999	0.1180	-0.23	10.64	-4.98
-0.02130	0.9995	0.1209	-0.13	10.49	-4.73
-0.02090	0.9988	0.1205	-0.08	10.42	-4.61
-0.02050	0.9973	0.1207	-0.07	10.38	-4.48
-0.02030	0.9970	0.1218	-0.10	10.41	-4.42
-0.01989	0.9959	0.1233	-0.05	10.33	-4.29
-0.01969	0.9949	0.1230	0.01	10.26	-4.23
-0.01917	0.9916	0.1232	0.09	10.17	-4.08
-0.01865	0.9886	0.1252	0.11	10.11	-3.92
-0.01844	0.9865	0.1255	0.17	10.05	-3.85
-0.01802	0.9826	0.1233	0.30	9.89	-3.73
-0.01760	0.9792	0.1278	0.22	9.96	-3.60
-0.01718	0.9743	0.1266	0.40	9.76	-3.47
-0.01676	0.9702	0.1285	0.43	9.72	-3.34
-0.01634	0.9645	0.1274	0.58	9.54	-3.22
-0.01540	0.9497	0.1289	0.80	9.28	-2.93
-0.01447	0.9328	0.1311	0.99	9.07	-2.65
-0.01344	0.9129	0.1303	1.39	8.63	-2.35
-0.01250	0.8942	0.1298	1.64	8.34	-2.07
-0.01147	0.8717	0.1316	1.88	8.09	-1.76
-0.01054	0.8487	0.1324	2.24	7.70	-1.49
-0.00940	0.8256	0.1309	2.82	7.10	-1.15
-0.00836	0.8012	0.1309	3.20	6.70	-0.85
-0.00743	0.7784	0.1328	3.45	6.44	-0.58
-0.00659	0.7549	0.1321	3.98	5.90	-0.33
-0.00555	0.7276	0.1326	4.45	5.42	-0.03
-0.00471	0.7059	0.1322	5.11	4.77	0.21
-0.00356	0.6750	0.1327	5.63	4.24	0.54
-0.00273	0.6520	0.1332	6.01	3.85	0.78
-0.00163	0.6116	0.1338	6.68	3.19	1.09
-0.00102	0.5777	0.1334	6.98	2.69	1.26
-0.00053	0.5544	0.1317	6.48	3.40	1.40
-0.00033	0.5499	0.1311	6.09	3.81	1.46
-0.00003	0.5569	0.1326	4.90	5.00	1.55
0.00017	0.5603	0.1328	4.82	5.08	1.61
0.00047	0.5788	0.1336	4.12	5.78	1.70
0.00087	0.6086	0.1360	3.58	6.33	1.82
0.00107	0.6246	0.1363	3.29	6.62	1.88
0.00147	0.6455	0.1360	3.17	6.75	2.00
0.00209	0.6731	0.1353	2.84	7.09	2.20
0.00327	0.7142	0.1351	2.42	7.53	2.56
0.00433	0.7488	0.1347	2.01	7.95	2.89
0.00604	0.7960	0.1349	1.48	8.51	3.40
0.00771	0.8395	0.1343	1.16	8.87	3.90
0.00927	0.8790	0.1321	0.81	9.27	4.37
0.01104	0.9174	0.1314	0.51	9.62	4.91
0.01269	0.9495	0.1263	0.35	9.85	5.41
0.01423	0.9725	0.1232	0.18	10.08	5.88
0.01505	0.9826	0.1213	0.09	10.20	6.13
0.01639	0.9923	0.1197	-0.01	10.38	6.54
0.01742	0.9969	0.1174	0.01	10.40	6.85
0.01854	0.9993	0.1166	-0.03	10.50	7.20
0.02047	1.0002	0.1126	-0.03	10.62	7.80
0.02178	1.0002	0.1107	-0.03	10.71	8.22
0.02278	1.0003	0.1102	-0.10	10.85	8.54
0.02535	1.0000	0.1090	-0.21	11.15	9.37

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 28^{\circ}$, $M_N = 0.4$, $\alpha_N = -2^{\circ}$ (concluded)

$x/c = 1.050$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
-0.02305	1.0000	0.0896	-0.16	0.68	-6.47
-0.02285	1.0000	0.0903	-0.15	0.67	-6.40
-0.02214	0.9996	0.0864	-0.16	0.63	-6.19
-0.02193	0.9994	0.0868	-0.11	0.56	-6.13
-0.02173	0.9992	0.0887	-0.13	0.56	-6.06
-0.02142	0.9986	0.0875	-0.06	0.47	-5.97
-0.02092	0.9977	0.0875	-0.02	0.39	-5.82
-0.02061	0.9966	0.0888	-0.04	0.39	-5.72
-0.02051	0.9964	0.0872	-0.01	0.36	-5.69
-0.02041	0.9961	0.0863	-0.01	0.35	-5.66
-0.01970	0.9935	0.0881	0.01	0.29	-5.45
-0.01930	0.9910	0.0924	0.12	0.14	-5.32
-0.01879	0.9883	0.0858	0.14	0.10	-5.17
-0.01838	0.9853	0.0914	0.13	0.09	-5.04
-0.01797	0.9806	0.0919	0.21	-0.03	-4.92
-0.01746	0.9751	0.0912	0.32	-0.16	-4.76
-0.01705	0.9710	0.0900	0.36	-0.24	-4.64
-0.01612	0.9593	0.0943	0.43	-0.34	-4.36
-0.01539	0.9483	0.0937	0.71	-0.68	-4.13
-0.01476	0.9395	0.0922	0.85	-0.85	-3.94
-0.01392	0.9259	0.0973	0.81	-0.84	-3.68
-0.01276	0.9017	0.0992	1.19	-1.28	-3.33
-0.01170	0.8805	0.0996	1.48	-1.60	-3.01
-0.01021	0.8514	0.1004	1.73	-1.90	-2.56
-0.00947	0.8331	0.1005	1.97	-2.18	-2.33
-0.00840	0.8107	0.1002	2.29	-2.52	-2.01
-0.00747	0.7910	0.0999	2.48	-2.73	-1.72
-0.00645	0.7659	0.1001	2.84	-3.11	-1.41
-0.00564	0.7466	0.0988	2.96	-3.25	-1.16
-0.00442	0.7165	0.1007	3.50	-3.80	-0.79
-0.00350	0.6994	0.0975	3.54	-3.85	-0.51
-0.00224	0.6751	0.0962	3.44	-3.76	-0.14
-0.00172	0.6695	0.0972	3.13	-3.44	0.02
-0.00099	0.6686	0.0970	2.72	-3.03	0.24
-0.00047	0.6732	0.0949	2.38	-2.69	0.40
0.00005	0.6792	0.0948	1.98	-2.29	0.56
0.00026	0.6821	0.0970	1.80	-2.11	0.62
0.00068	0.6919	0.0941	1.80	-2.11	0.75
0.00141	0.7059	0.0966	1.25	-1.55	0.98
0.00225	0.7312	0.0974	1.08	-1.38	1.23
0.00496	0.7988	0.0995	0.71	-0.98	2.08
0.00635	0.8335	0.1000	0.44	-0.69	2.51
0.00720	0.8580	0.0991	0.51	-0.74	2.77
0.00773	0.8670	0.0990	0.43	-0.66	2.94
0.00890	0.8974	0.0977	0.29	-0.49	3.30
0.00963	0.9112	0.0981	0.25	-0.43	3.53
0.01180	0.9516	0.0948	0.16	-0.27	4.21
0.01284	0.9660	0.0938	0.12	-0.19	4.53
0.01376	0.9775	0.0921	0.08	-0.12	4.82
0.01479	0.9876	0.0899	-0.04	0.06	5.15
0.01582	0.9935	0.0887	0.00	0.06	5.47
0.01694	0.9976	0.0884	0.00	0.11	5.82
0.01840	0.9996	0.0863	-0.02	0.21	6.29
0.01985	1.0003	0.0840	-0.03	0.31	6.75
0.02151	1.0001	0.0831	0.05	0.34	7.29
0.02357	1.0002	0.0835	0.13	0.41	7.95
0.02520	1.0000	0.0838	0.11	0.55	8.49

$x/c = 1.050$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
-0.02280	1.0000	0.1084	0.04	9.47	-6.29
-0.02241	0.9998	0.1084	0.01	9.47	-6.16
-0.02192	0.9997	0.1082	-0.02	9.46	-6.00
-0.02153	0.9993	0.1082	-0.05	9.46	-5.87
-0.02123	0.9992	0.1073	0.00	9.37	-5.77
-0.02093	0.9985	0.1079	0.03	9.32	-5.67
-0.02064	0.9980	0.1091	0.01	9.32	-5.57
-0.02014	0.9970	0.1105	-0.03	9.32	-5.41
-0.01965	0.9939	0.1061	0.02	9.24	-5.25
-0.01906	0.9918	0.1061	0.10	9.11	-5.05
-0.01876	0.9909	0.1072	0.11	9.08	-4.96
-0.01827	0.9878	0.1084	0.12	9.04	-4.80
-0.01778	0.9831	0.1083	0.16	8.97	-4.63
-0.01758	0.9813	0.1072	0.25	8.85	-4.57
-0.01699	0.9758	0.1054	0.31	8.75	-4.38
-0.01669	0.9721	0.1084	0.29	8.75	-4.28
-0.01630	0.9670	0.1061	0.41	8.62	-4.15
-0.01590	0.9620	0.1079	0.45	8.55	-4.02
-0.01560	0.9577	0.1071	0.53	8.45	-3.92
-0.01468	0.9414	0.1080	0.67	8.25	-3.62
-0.01376	0.9240	0.1066	0.96	7.91	-3.32
-0.01274	0.9070	0.1048	1.26	7.55	-2.99
-0.01192	0.8889	0.1050	1.41	7.36	-2.72
-0.01069	0.8697	0.1079	1.42	7.31	-2.38
-0.00996	0.8488	0.1048	1.80	6.89	-2.08
-0.00893	0.8243	0.1059	2.12	6.54	-1.74
-0.00800	0.8034	0.1045	2.38	6.25	-1.44
-0.00709	0.7809	0.1049	2.53	6.06	-1.14
-0.00600	0.7575	0.1048	2.89	5.69	-0.79
-0.00511	0.7367	0.1020	3.29	5.27	-0.50
-0.00442	0.7173	0.1021	3.51	5.03	-0.28
-0.00333	0.6938	0.0999	3.56	4.96	0.08
-0.00262	0.6792	0.1005	3.36	5.16	0.31
-0.00161	0.6680	0.0994	2.86	5.64	0.64
-0.00090	0.6680	0.0998	2.50	6.00	0.87
-0.00050	0.6719	0.0986	2.12	6.37	1.01
-0.00030	0.6742	0.0994	1.94	6.56	1.07
0.00021	0.6815	0.1007	1.60	6.89	1.24
0.00052	0.6891	0.1000	1.50	7.00	1.34
0.00092	0.6974	0.1020	1.36	7.14	1.47
0.00113	0.7031	0.1011	1.18	7.31	1.54
0.00153	0.7130	0.1014	1.01	7.49	1.67
0.00214	0.7292	0.1001	0.98	7.51	1.87
0.00315	0.7592	0.1024	0.82	7.68	2.20
0.00426	0.7869	0.1021	0.79	7.72	2.57
0.00560	0.8286	0.1045	0.48	8.04	3.08
0.00735	0.8698	0.1046	0.40	8.14	3.59
0.00879	0.9018	0.1045	0.20	8.37	4.06
0.01041	0.9347	0.1069	0.07	8.55	4.59
0.01201	0.9614	0.1038	0.08	8.59	5.12
0.01341	0.9808	0.1038	-0.05	8.78	5.59
0.01421	0.9881	0.1026	-0.03	8.79	5.85
0.01540	0.9947	0.1018	0.00	8.61	6.25
0.01640	0.9981	0.1018	-0.04	8.90	6.58
0.01739	1.0006	0.1018	-0.15	9.07	6.92
0.01921	1.0008	0.0996	-0.05	9.07	7.53
0.02073	1.0009	0.0993	-0.01	9.13	8.03
0.02450	1.0003	0.0995	-0.12	9.52	9.29
0.02710	1.0000	0.1016	-0.18	9.80	10.16

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{\circ}$, $M_N = 0.675$, $\alpha_N = +2^{\circ}$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.6440$

z/c	u/U_p
0.00014	0.5984
0.00015	0.6088
0.00016	0.6113
0.00017	0.6204
0.00018	0.6446
0.00020	0.6462
0.00022	0.6562
0.00025	0.6763
0.00027	0.6862
0.00033	0.7059
0.00040	0.7243
0.00045	0.7413
0.00052	0.7604
0.00058	0.7743
0.00072	0.7985
0.00085	0.8268
0.00099	0.8467
0.00112	0.8646
0.00125	0.8837
0.00139	0.8986
0.00152	0.9131
0.00165	0.9264
0.00177	0.9364
0.00190	0.9465
0.00205	0.9569
0.00218	0.9636
0.00231	0.9716
0.00244	0.9773
0.00257	0.9808
0.00272	0.9855
0.00284	0.9891
0.00297	0.9913
0.00309	0.9935
0.00321	0.9949
0.00335	0.9961
0.00351	0.9973
0.00364	0.9981
0.00376	0.9986
0.00391	0.9994
0.00403	0.9994
0.00416	0.9999
0.00429	1.0000
0.00442	1.0000

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
0.00031	0.4812	-0.0310	5.53	5.10	-2.46
0.00065	0.5298	-0.0143	5.31	4.85	-2.35
0.00142	0.5780	-0.0066	4.69	4.93	-2.10
0.00166	0.6019	-0.0044	4.55	5.04	-1.96
0.00208	0.6219	-0.0024	4.39	5.19	-1.88
0.00276	0.6445	-0.0004	4.05	5.49	-1.66
0.00287	0.6502	-0.0025	4.10	5.44	-1.63
0.00332	0.6618	-0.0005	3.72	5.80	-1.48
0.00343	0.6697	-0.0007	3.78	5.73	-1.44
0.00387	0.6817	0.0003	3.51	5.98	-1.29
0.00399	0.6878	-0.0002	3.53	5.96	-1.26
0.00421	0.6958	0.0010	3.45	6.03	-1.18
0.00444	0.7036	0.0014	3.35	6.11	-1.11
0.00477	0.7144	0.0025	3.16	6.29	-1.00
0.00500	0.7243	-0.0007	3.24	6.20	-0.92
0.00533	0.7291	0.0025	3.02	6.40	-0.83
0.00566	0.7407	0.0031	2.80	6.61	-0.74
0.00600	0.7524	0.0023	2.63	6.77	-0.64
0.00665	0.7733	0.0027	2.34	7.03	-0.46
0.00730	0.7943	0.0045	2.11	7.24	-0.27
0.00774	0.8107	0.0040	1.94	7.38	-0.15
0.00828	0.8272	0.0032	1.79	7.52	0.01
0.00881	0.8438	0.0055	1.59	7.71	0.16
0.00924	0.8548	0.0055	1.41	7.87	0.28
0.01042	0.8916	0.0057	0.92	8.33	0.62
0.01142	0.9177	0.0083	0.67	8.55	0.90
0.01242	0.9445	0.0045	0.36	8.85	1.18
0.01353	0.9656	0.0022	0.21	8.98	1.49
0.01474	0.9814	0.0034	0.07	9.10	1.84
0.01577	0.9915	0.0025	-0.04	9.20	2.12
0.01668	0.9962	0.0036	0.01	9.15	2.38
0.01768	0.9988	0.0050	-0.04	9.19	2.66
0.01869	0.9994	0.0046	0.01	9.14	2.94
0.01957	1.0000	0.0042	0.04	9.12	3.18
0.02045	1.0000	0.0066	-0.06	9.23	3.43

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.6440$

z/c	u/U_p
0.00014	0.5876
0.00015	0.6165
0.00020	0.6508
0.00023	0.6654
0.00027	0.6773
0.00029	0.6901
0.00032	0.6976
0.00035	0.7125
0.00043	0.7368
0.00049	0.7500
0.00060	0.7732
0.00067	0.7867
0.00072	0.7965
0.00085	0.8152
0.00099	0.8406
0.00113	0.8600
0.00127	0.8772
0.00140	0.8946
0.00153	0.9106
0.00165	0.9232
0.00178	0.9356
0.00193	0.9463
0.00205	0.9542
0.00220	0.9634
0.00230	0.9701
0.00245	0.9769
0.00259	0.9813
0.00271	0.9862
0.00283	0.9890
0.00296	0.9910
0.00308	0.9936
0.00321	0.9958
0.00336	0.9965
0.00350	0.9971
0.00363	0.9981
0.00378	0.9986
0.00390	0.9991
0.00405	0.9994
0.00416	0.9995
0.00432	0.9997
0.00443	0.9999
0.00455	1.0001
0.00469	0.9999
0.00483	1.0000
0.00496	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.4852	0.0470	5.93	5.36	-0.38
0.00040	0.4864	0.0499	5.92	5.52	-0.38
0.00061	0.5090	0.0578	5.78	5.02	-0.31
0.00093	0.5378	0.0610	5.57	4.68	-0.20
0.00125	0.5633	0.0652	5.27	4.92	-0.09
0.00168	0.5844	0.0683	5.09	5.07	0.05
0.00221	0.6085	0.0690	4.86	5.25	0.22
0.00232	0.6144	0.0691	4.75	5.35	0.26
0.00264	0.6270	0.0708	4.52	5.56	0.37
0.00306	0.6390	0.0716	4.43	5.62	0.51
0.00338	0.6516	0.0709	4.30	5.73	0.61
0.00348	0.6558	0.0731	4.15	5.68	0.65
0.00368	0.6629	0.0731	4.11	5.90	0.71
0.00388	0.6681	0.0737	3.95	6.05	0.78
0.00429	0.6793	0.0747	3.72	6.25	0.92
0.00449	0.6855	0.0743	3.72	6.24	0.98
0.00479	0.6933	0.0741	3.54	6.40	1.09
0.00520	0.7030	0.0748	3.45	6.47	1.21
0.00550	0.7124	0.0746	3.22	6.68	1.30
0.00611	0.7314	0.0746	3.02	6.84	1.48
0.00661	0.7486	0.0768	2.74	7.09	1.63
0.00722	0.7636	0.0761	2.60	7.21	1.81
0.00761	0.7768	0.0774	2.27	7.51	1.93
0.00810	0.7913	0.0783	2.25	7.51	2.07
0.00850	0.8033	0.0783	2.06	7.68	2.19
0.00957	0.8365	0.0787	1.53	8.16	2.51
0.01055	0.8630	0.0789	1.26	8.38	2.79
0.01153	0.8886	0.0772	0.90	8.71	3.07
0.01245	0.9141	0.0753	0.63	8.95	3.34
0.01360	0.9377	0.0747	0.42	9.12	3.66
0.01654	0.9834	0.0664	-0.03	9.50	4.49
0.01752	0.9913	0.0630	-0.06	9.50	4.76
0.01839	0.9955	0.0596	0.01	9.42	5.01
0.01926	0.9979	0.0609	-0.10	9.52	5.25
0.02023	0.9994	0.0614	-0.20	9.61	5.52
0.02150	1.0000	0.0572	-0.08	9.49	5.87
0.02238	1.0001	0.0569	-0.07	9.47	6.12
0.02287	0.9999	0.0564	-0.04	9.43	6.25
0.02296	1.0000	0.0593	-0.13	9.52	6.28

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.4960	0.0496	6.02	-2.45	-0.33
0.00065	0.5173	0.0557	5.86	-2.79	-0.26
0.00097	0.5435	0.0605	5.65	-2.90	-0.16
0.00148	0.5967	0.0655	5.32	-2.76	0.01
0.00190	0.6318	0.0663	4.96	-2.43	0.14
0.00231	0.6455	0.0651	4.91	-2.41	0.27
0.00251	0.6570	0.0687	4.52	-2.04	0.34
0.00322	0.6734	0.0716	4.16	-1.73	0.57
0.00392	0.6904	0.0681	4.06	-1.68	0.80
0.00432	0.7119	0.0698	3.77	-1.42	0.93
0.00473	0.7283	0.0713	3.56	-1.23	1.06
0.00543	0.7480	0.0719	3.19	-0.92	1.27
0.00623	0.7746	0.0713	2.76	-0.53	1.50
0.00726	0.8008	0.0729	2.40	-0.24	1.79
0.00801	0.8180	0.0744	2.17	-0.04	2.01
0.00919	0.8343	0.0707	1.91	0.15	2.35
0.00961	0.8545	0.0736	1.75	0.28	2.47
0.00982	0.8565	0.0727	1.70	0.32	2.53
0.01120	0.8983	0.0718	1.12	0.84	2.91
0.01251	0.9356	0.0716	0.61	1.30	3.28
0.01422	0.9713	0.0683	0.30	1.54	3.75
0.01532	0.9816	0.0676	0.18	1.62	4.05
0.01644	0.9911	0.0659	0.05	1.72	4.35
0.01725	0.9952	0.0639	0.00	1.75	4.57
0.01816	0.9970	0.0630	-0.03	1.76	4.82
0.01887	0.9984	0.0615	-0.05	1.76	5.01
0.01967	0.9994	0.0616	-0.15	1.84	5.23
0.01986	0.9994	0.0605	-0.15	1.84	5.28
0.02015	1.0000	0.0597	-0.15	1.83	5.36
0.02064	0.9997	0.0608	-0.15	1.82	5.49
0.02142	0.9999	0.0598	-0.20	1.87	5.70
0.02190	1.0000	0.0578	-0.15	1.80	5.83
0.02210	1.0000	0.0576	-0.09	1.75	5.68

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (continued)

$x/c = 0.986$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.4542	0.1493	8.93	-0.97	0.25
0.00053	0.4667	0.1504	8.85	-1.20	0.29
0.00073	0.4910	0.1511	8.68	-1.17	0.37
0.00093	0.5093	0.1527	8.52	-0.83	0.45
0.00122	0.5294	0.1537	8.40	-0.59	0.58
0.00151	0.5448	0.1547	7.99	-0.21	0.70
0.00210	0.5722	0.1552	7.48	0.25	0.95
0.00268	0.5933	0.1561	7.15	0.54	1.20
0.00317	0.6098	0.1554	6.84	0.82	1.41
0.00355	0.6215	0.1564	6.45	1.17	1.57
0.00403	0.6365	0.1567	6.30	1.29	1.77
0.00440	0.6494	0.1562	5.97	1.59	1.94
0.00554	0.6795	0.1565	5.19	2.30	2.37
0.00639	0.7051	0.1586	4.64	2.80	2.64
0.00734	0.7294	0.1570	4.16	3.23	2.95
0.00830	0.7564	0.1575	3.60	3.74	3.27
0.00926	0.7830	0.1580	3.11	4.19	3.58
0.01023	0.8063	0.1563	2.64	4.62	3.89
0.01119	0.8312	0.1544	2.28	4.94	4.19
0.01224	0.8548	0.1524	1.90	5.28	4.51
0.01316	0.8795	0.1487	1.52	5.63	4.79
0.01407	0.9008	0.1443	1.29	5.84	5.07
0.01499	0.9193	0.1428	1.00	6.11	5.35
0.01590	0.9388	0.1418	0.63	6.46	5.62
0.01714	0.9598	0.1359	0.46	6.61	5.98
0.01801	0.9723	0.1339	0.29	6.77	6.24
0.01850	0.9770	0.1321	0.27	6.78	6.38
0.01859	0.9780	0.1330	0.22	6.83	6.41
0.01898	0.9813	0.1322	0.20	6.85	6.53
0.01917	0.9831	0.1324	0.16	6.88	6.58
0.01946	0.9860	0.1315	0.07	6.98	6.67
0.01965	0.9872	0.1281	0.08	6.96	6.72
0.01984	0.9888	0.1274	0.12	6.92	6.78
0.02003	0.9901	0.1300	0.12	6.92	6.84
0.02032	0.9914	0.1294	0.08	6.96	6.92
0.02077	0.9936	0.1288	0.01	7.02	7.05
0.02113	0.9950	0.1278	0.00	7.04	7.15
0.02158	0.9964	0.1267	0.01	7.02	7.28
0.02202	0.9974	0.1265	-0.05	7.08	7.41
0.02229	0.9980	0.1256	-0.04	7.07	7.49
0.02318	0.9992	0.1252	-0.03	7.07	7.74
0.02416	0.9997	0.1255	-0.07	7.12	8.02
0.02518	1.0000	0.1240	-0.10	7.16	8.32
0.02613	1.0001	0.1230	-0.12	7.19	8.59
0.02715	1.0000	0.1234	-0.13	7.21	8.88

$x/c = 0.986$ MEASUREMENT 2

z/c	u/U_F	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.4422	0.1586	9.48	-11.95	-1.91
0.00057	0.4594	0.1579	9.37	-11.70	-1.86
0.00107	0.5052	0.1620	9.20	-11.34	-1.66
0.00126	0.5281	0.1593	8.75	-10.90	-1.57
0.00185	0.5566	0.1612	8.25	-10.44	-1.33
0.00243	0.5772	0.1626	7.53	-9.77	-1.09
0.00252	0.5793	0.1632	7.72	-9.97	-1.05
0.00272	0.5893	0.1632	7.29	-9.56	-0.97
0.00290	0.5969	0.1618	7.27	-9.54	-0.89
0.00338	0.6126	0.1636	6.82	-9.13	-0.69
0.00395	0.6305	0.1635	6.43	-8.78	-0.45
0.00462	0.6486	0.1637	6.00	-8.40	-0.17
0.00547	0.6742	0.1639	5.38	-7.83	0.14
0.00633	0.7000	0.1638	4.85	-7.36	0.42
0.00691	0.7158	0.1641	4.54	-7.08	0.60
0.00740	0.7317	0.1634	4.21	-6.78	0.76
0.00818	0.7526	0.1652	3.99	-6.60	1.01
0.00973	0.7954	0.1626	3.01	-5.69	1.51
0.01126	0.8332	0.1613	2.32	-5.07	1.98
0.01310	0.8823	0.1562	1.64	-4.46	2.53
0.01402	0.9059	0.1526	1.32	-4.17	2.81
0.01504	0.9276	0.1505	1.01	-3.88	3.12
0.01592	0.9419	0.1475	0.84	-3.74	3.37
0.01650	0.9530	0.1464	0.67	-3.58	3.54
0.01718	0.9649	0.1436	0.50	-3.42	3.74
0.01796	0.9738	0.1425	0.36	-3.30	3.96
0.01835	0.9780	0.1414	0.29	-3.23	4.08
0.01883	0.9834	0.1396	0.19	-3.14	4.22
0.01931	0.9866	0.1380	0.16	-3.11	4.36
0.01985	0.9903	0.1372	0.06	-3.02	4.51
0.02040	0.9931	0.1353	0.07	-3.03	4.67
0.02067	0.9944	0.1350	0.08	-3.05	4.75
0.02085	0.9948	0.1354	0.00	-2.97	4.80
0.02130	0.9959	0.1336	-0.03	-2.94	4.92
0.02157	0.9966	0.1333	-0.05	-2.92	5.00
0.02255	0.9982	0.1312	-0.15	-2.83	5.28
0.02336	0.9989	0.1298	-0.17	-2.81	5.51
0.02460	0.9996	0.1289	-0.19	-2.78	5.86
0.02603	0.9998	0.1288	-0.20	-2.76	6.26
0.02744	1.0000	0.1285	-0.22	-2.73	6.66

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.675$, $\alpha_N = +2^o$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_n	$(C_p)_p$	β^o	γ^o	α^o
-0.01961	1.0000	0.1508	-0.08	8.08	-3.70
-0.01940	1.0000	0.1522	-0.06	8.04	-3.66
-0.01909	0.9999	0.1503	-0.02	7.98	-3.59
-0.01888	0.9998	0.1501	-0.09	8.04	-3.54
-0.01857	0.9997	0.1526	-0.16	8.09	-3.47
-0.01805	0.9995	0.1541	-0.10	8.01	-3.36
-0.01742	0.9983	0.1546	-0.09	7.97	-3.22
-0.01689	0.9969	0.1557	-0.04	7.88	-3.11
-0.01648	0.9952	0.1570	0.00	7.83	-3.02
-0.01595	0.9930	0.1589	0.03	7.77	-2.91
-0.01544	0.9899	0.1597	0.06	7.71	-2.80
-0.01452	0.9802	0.1633	0.06	7.65	-2.60
-0.01359	0.9674	0.1662	0.18	7.52	-2.41
-0.01256	0.9507	0.1707	0.18	7.46	-2.20
-0.01153	0.9291	0.1758	0.35	7.25	-1.98
-0.01049	0.9031	0.1779	0.61	6.96	-1.77
-0.00956	0.8795	0.1791	0.74	6.80	-1.58
-0.00842	0.8520	0.1824	0.99	6.51	-1.35
-0.00759	0.8253	0.1842	1.15	6.32	-1.19
-0.00655	0.7948	0.1827	1.55	5.89	-0.98
-0.00561	0.7660	0.1821	1.89	5.52	-0.79
-0.00456	0.7361	0.1843	2.01	5.38	-0.58
-0.00362	0.7022	0.1852	2.43	4.93	-0.39
-0.00233	0.6567	0.1826	2.98	4.35	-0.12
-0.00143	0.6146	0.1817	3.46	3.84	0.06
-0.00103	0.5884	0.1824	3.77	3.52	0.14
-0.00083	0.5764	0.1820	3.87	3.43	0.18
-0.00043	0.5543	0.1805	4.19	3.09	0.27
-0.00023	0.5372	0.1791	4.93	2.35	0.31
-0.00004	0.5211	0.1756	5.92	1.35	0.35
0.00026	0.5125	0.1741	6.34	0.93	0.40
0.00046	0.5129	0.1713	7.03	0.24	0.43
0.00066	0.5153	0.1706	7.47	-0.21	0.47
0.00098	0.5244	0.1709	8.10	-0.85	0.52
0.00140	0.5430	0.1706	8.20	-0.96	0.60
0.00183	0.5607	0.1725	8.00	-0.77	0.67
0.00236	0.5818	0.1709	7.87	-0.65	0.77
0.00279	0.5942	0.1730	7.48	-0.28	0.84
0.00311	0.6047	0.1723	7.36	-0.16	0.90
0.00407	0.6328	0.1730	6.65	0.53	1.07
0.00524	0.6627	0.1746	5.92	1.23	1.28
0.00628	0.6906	0.1749	5.29	1.85	1.47
0.00732	0.7184	0.1722	4.78	2.34	1.66
0.00868	0.7470	0.1723	4.11	2.99	1.91
0.00982	0.7811	0.1733	3.32	3.78	2.12
0.01127	0.8170	0.1704	2.83	4.25	2.40
0.01292	0.8561	0.1667	2.12	4.95	2.72
0.01457	0.8960	0.1630	1.48	5.60	3.03
0.01600	0.9256	0.1608	1.09	5.99	3.31
0.01754	0.9520	0.1575	0.72	6.36	3.61
0.01927	0.9753	0.1564	0.37	6.73	3.95
0.02068	0.9881	0.1529	0.19	6.92	4.23
0.02210	0.9948	0.1517	0.00	7.13	4.53
0.02385	0.9984	0.1477	-0.08	7.24	4.89
0.02548	1.0001	0.1476	-0.24	7.44	5.25
0.02682	1.0001	0.1463	-0.31	7.54	5.55
0.02821	1.0002	0.1441	-0.25	7.53	5.87
0.03092	0.9999	0.1397	-0.36	7.73	6.50
0.03313	1.0000	0.1393	-0.57	8.05	7.01

x/c = 1.010 MEASUREMENT 2

z/c	u/U_n	$(C_p)_p$	β^o	γ^o	α^o
-0.01878	1.0000	0.1525	-0.22	-1.62	-3.95
-0.01867	1.0000	0.1529	-0.17	-1.67	-3.93
-0.01847	0.9998	0.1516	-0.14	-1.72	-3.88
-0.01836	0.9999	0.1512	-0.13	-1.73	-3.86
-0.01815	0.9994	0.1540	-0.15	-1.73	-3.82
-0.01784	0.9988	0.1549	-0.08	-1.80	-3.75
-0.01763	0.9983	0.1533	-0.07	-1.83	-3.70
-0.01721	0.9974	0.1548	-0.05	-1.86	-3.61
-0.01690	0.9959	0.1589	-0.07	-1.86	-3.55
-0.01680	0.9959	0.1552	0.01	-1.94	-3.52
-0.01617	0.9938	0.1573	-0.01	-1.96	-3.39
-0.01565	0.9903	0.1595	0.02	-2.00	-3.28
-0.01493	0.9850	0.1610	0.04	-2.05	-3.12
-0.01400	0.9741	0.1651	0.10	-2.15	-2.93
-0.01318	0.9611	0.1662	0.21	-2.29	-2.76
-0.01256	0.9499	0.1681	0.30	-2.40	-2.63
-0.01205	0.9391	0.1695	0.36	-2.48	-2.53
-0.01122	0.9214	0.1711	0.56	-2.70	-2.36
-0.00967	0.8837	0.1758	0.70	-2.90	-2.05
-0.00822	0.8429	0.1773	1.13	-3.37	-1.76
-0.00625	0.7850	0.1790	1.67	-3.95	-1.37
-0.00542	0.7539	0.1782	1.98	-4.28	-1.20
-0.00416	0.7177	0.1794	2.26	-4.59	-0.95
-0.00323	0.6909	0.1789	2.60	-4.94	-0.76
-0.00263	0.6653	0.1802	2.87	-5.23	-0.64
-0.00183	0.6338	0.1792	3.25	-5.62	-0.48
-0.00114	0.5913	0.1804	3.61	-5.99	-0.34
-0.00074	0.5646	0.1789	4.21	-6.59	-0.26
-0.00024	0.5355	0.1779	5.20	-7.59	-0.16
0.00025	0.5174	0.1767	6.63	-9.03	-0.06
0.00055	0.5231	0.1702	7.66	-10.06	0.00
0.00085	0.5275	0.1728	7.94	-10.35	0.05
0.00137	0.5500	0.1708	8.06	-10.48	0.14
0.00169	0.5613	0.1702	8.05	-10.48	0.20
0.00190	0.5688	0.1711	7.82	-10.25	0.23
0.00244	0.5860	0.1718	7.71	-10.15	0.33
0.00276	0.5960	0.1712	7.49	-9.93	0.38
0.00383	0.6283	0.1699	6.64	-9.09	0.57
0.00478	0.6534	0.1710	6.10	-8.57	0.73
0.00594	0.6871	0.1685	5.36	-7.84	0.94
0.00751	0.7313	0.1668	4.38	-6.88	1.22
0.00907	0.7701	0.1674	3.71	-6.22	1.51
0.01052	0.8076	0.1663	3.08	-5.58	1.77
0.01227	0.8510	0.1628	2.37	-4.87	2.10
0.01392	0.8896	0.1594	1.73	-4.22	2.41
0.01547	0.9235	0.1524	1.22	-3.70	2.70
0.01710	0.9516	0.1501	0.79	-3.24	3.02
0.01864	0.9723	0.1445	0.42	-2.85	3.31
0.02026	0.9880	0.1429	0.09	-2.48	3.62
0.02127	0.9935	0.1423	0.04	-2.41	3.82
0.02217	0.9965	0.1444	-0.04	-2.31	4.01
0.02320	0.9985	0.1411	-0.07	-2.26	4.22
0.02413	0.9996	0.1386	-0.14	-2.15	4.41
0.02515	0.9998	0.1358	-0.20	-2.06	4.62
0.02825	1.0002	0.1317	-0.38	-1.76	5.31
0.03104	1.0003	0.1296	-0.42	-1.59	5.93
0.03318	1.0000	0.1274	-0.47	-1.42	6.41
0.03762	1.0000	0.1253	-0.75	-0.83	7.42

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N = +2^{o}$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01970	1.0000	0.1270	0.05	8.54	-1.83
-0.01940	1.0000	0.1235	0.00	8.57	-1.76
-0.01909	1.0001	0.1264	-0.07	8.63	-1.70
-0.01848	0.9996	0.1239	0.03	8.48	-1.56
-0.01787	0.9989	0.1285	-0.08	8.55	-1.43
-0.01746	0.9980	0.1281	0.02	8.41	-1.34
-0.01695	0.9971	0.1300	0.00	8.41	-1.22
-0.01654	0.9957	0.1288	0.04	8.33	-1.13
-0.01602	0.9937	0.1321	-0.07	8.41	-1.02
-0.01486	0.9864	0.1311	-0.05	8.31	-0.76
-0.01402	0.9769	0.1368	-0.10	8.32	-0.58
-0.01307	0.9652	0.1328	0.03	8.13	-0.37
-0.01202	0.9488	0.1351	0.08	8.01	-0.14
-0.01095	0.9279	0.1363	0.17	7.85	0.10
-0.01000	0.9074	0.1354	0.27	7.71	0.31
-0.00893	0.8842	0.1390	0.37	7.55	0.54
-0.00788	0.8607	0.1387	0.50	7.37	0.77
-0.00595	0.8102	0.1420	0.63	7.16	1.20
-0.00493	0.7836	0.1383	0.88	6.86	1.42
-0.00391	0.7545	0.1397	0.98	6.72	1.65
-0.00277	0.7187	0.1342	1.43	6.22	1.91
-0.00182	0.6905	0.1329	1.68	5.95	2.12
-0.00130	0.6794	0.1318	1.89	5.72	2.23
-0.00110	0.6744	0.1312	1.96	5.64	2.28
-0.00078	0.6659	0.1307	2.11	5.48	2.35
-0.00057	0.6600	0.1313	2.17	5.41	2.39
-0.00026	0.6545	0.1296	2.41	5.16	2.46
0.00016	0.6476	0.1293	2.69	4.88	2.56
0.00037	0.6450	0.1299	2.81	4.75	2.60
0.00068	0.6430	0.1293	3.00	4.55	2.67
0.00110	0.6417	0.1269	3.29	4.24	2.76
0.00152	0.6419	0.1288	3.42	4.11	2.85
0.00204	0.6462	0.1239	3.79	3.72	2.96
0.00245	0.6502	0.1273	3.90	3.61	3.05
0.00371	0.6696	0.1270	3.92	3.56	3.32
0.00582	0.7156	0.1279	3.48	3.97	3.78
0.00688	0.7373	0.1282	3.21	4.23	4.02
0.00795	0.7621	0.1294	2.73	4.69	4.25
0.00932	0.7958	0.1293	2.25	5.16	4.56
0.01067	0.8261	0.1272	2.01	5.39	4.86
0.01212	0.8593	0.1274	1.43	5.97	5.18
0.01397	0.8986	0.1255	0.99	6.41	5.60
0.01530	0.9242	0.1251	0.81	6.59	5.90
0.01674	0.9498	0.1247	0.52	6.89	6.22
0.01850	0.9724	0.1260	0.23	7.20	6.62
0.01986	0.9850	0.1219	0.13	7.32	6.93
0.02152	0.9931	0.1230	0.03	7.46	7.31
0.02316	0.9971	0.1196	-0.03	7.55	7.69
0.02480	0.9996	0.1210	-0.17	7.74	8.06
0.02623	0.9998	0.1207	-0.28	7.90	8.39
0.02769	1.0001	0.1204	-0.30	7.96	8.73
0.02964	1.0000	0.1169	-0.39	8.13	9.18

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01990	1.0000	0.1276	-0.06	-0.10	-3.61
-0.01960	1.0000	0.1204	-0.07	-0.10	-3.54
-0.01919	0.9999	0.1275	-0.18	-0.02	-3.45
-0.01899	0.9999	0.1260	-0.11	-0.09	-3.41
-0.01848	0.9995	0.1230	-0.12	-0.10	-3.29
-0.01828	0.9991	0.1264	-0.15	-0.08	-3.25
-0.01818	0.9989	0.1276	-0.15	-0.09	-3.22
-0.01767	0.9982	0.1252	-0.04	-0.21	-3.11
-0.01706	0.9974	0.1240	-0.08	-0.20	-2.97
-0.01695	0.9970	0.1273	-0.13	-0.15	-2.95
-0.01675	0.9959	0.1279	-0.06	-0.23	-2.91
-0.01655	0.9947	0.1248	0.02	-0.32	-2.86
-0.01384	0.9762	0.1322	0.02	-0.42	-2.26
-0.01299	0.9647	0.1333	0.06	-0.47	-2.07
-0.01236	0.9547	0.1336	0.09	-0.53	-1.93
-0.00939	0.8934	0.1364	0.21	-0.72	-1.28
-0.00779	0.8553	0.1382	0.47	-1.01	-0.92
-0.00573	0.8029	0.1377	0.81	-1.38	-0.47
-0.00482	0.7724	0.1373	1.08	-1.66	-0.27
-0.00370	0.7418	0.1371	1.08	-1.67	-0.02
-0.00288	0.7164	0.1366	1.35	-1.95	0.16
-0.00225	0.6973	0.1372	1.75	-2.36	0.30
-0.00142	0.6766	0.1356	2.02	-2.63	0.48
-0.00069	0.6591	0.1325	2.31	-2.92	0.65
-0.00027	0.6531	0.1301	2.51	-3.12	0.74
0.00015	0.6466	0.1306	2.80	-3.41	0.83
0.00078	0.6441	0.1298	3.25	-3.86	0.96
0.00140	0.6449	0.1273	3.59	-4.20	1.10
0.00192	0.6489	0.1266	3.69	-4.30	1.21
0.00223	0.6525	0.1247	3.92	-4.53	1.27
0.00244	0.6565	0.1237	3.90	-4.51	1.32
0.00286	0.6654	0.1231	3.96	-4.56	1.41
0.00317	0.6684	0.1253	4.13	-4.75	1.47
0.00422	0.6895	0.1272	4.01	-4.62	1.70
0.00526	0.7110	0.1239	3.72	-4.32	1.92
0.00642	0.7367	0.1248	3.47	-4.06	2.17
0.00791	0.7739	0.1265	2.77	-3.34	2.50
0.00929	0.8082	0.1240	2.26	-2.80	2.80
0.01251	0.8774	0.1223	1.39	-1.86	3.50
0.01426	0.9133	0.1189	0.97	-1.39	3.89
0.01570	0.9406	0.1187	0.63	-1.00	4.20
0.01733	0.9657	0.1178	0.41	-0.73	4.56
0.01877	0.9786	0.1168	0.21	-0.46	4.88
0.02043	0.9910	0.1154	-0.02	-0.17	5.25
0.02147	0.9948	0.1156	0.00	-0.14	5.48
0.02240	0.9972	0.1169	-0.05	-0.04	5.68
0.02343	0.9987	0.1154	-0.12	0.08	5.91
0.02445	0.9994	0.1160	-0.20	0.23	6.14
0.02546	0.9997	0.1134	-0.20	0.29	6.36
0.02854	1.0000	0.1144	-0.41	0.70	7.04
0.03058	1.0001	0.1149	-0.51	0.94	7.49
0.03308	1.0000	0.1115	-0.51	1.12	8.05
0.03767	1.0000	0.1134	-0.81	1.87	9.09

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N = 0$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.4110$

z/c	u/U_p
0.00014	0.6101
0.00015	0.6200
0.00018	0.6478
0.00023	0.6687
0.00025	0.6834
0.00029	0.6982
0.00031	0.7097
0.00035	0.7217
0.00040	0.7422
0.00053	0.7742
0.00067	0.8060
0.00079	0.8315
0.00093	0.8540
0.00106	0.8765
0.00120	0.8961
0.00132	0.9149
0.00148	0.9333
0.00159	0.9471
0.00172	0.9583
0.00185	0.9686
0.00199	0.9765
0.00212	0.9830
0.00227	0.9886
0.00240	0.9921
0.00254	0.9943
0.00266	0.9963
0.00278	0.9976
0.00291	0.9985
0.00303	0.9989
0.00317	0.9995
0.00331	0.9996
0.00345	0.9997
0.00358	0.9999
0.00372	0.9999
0.00387	0.9999
0.00399	1.0000
0.00410	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.4110$

z/c	u/U_p
0.00015	0.6114
0.00017	0.6244
0.00020	0.6551
0.00023	0.6712
0.00026	0.6859
0.00031	0.7030
0.00035	0.7198
0.00038	0.7343
0.00046	0.7555
0.00050	0.7668
0.00056	0.7819
0.00065	0.7994
0.00070	0.8135
0.00079	0.8279
0.00088	0.8429
0.00098	0.8590
0.00108	0.8758
0.00122	0.8948
0.00135	0.9138
0.00147	0.9294
0.00159	0.9430
0.00173	0.9570
0.00182	0.9647
0.00194	0.9732
0.00207	0.9807
0.00221	0.9863
0.00235	0.9907
0.00249	0.9941
0.00261	0.9959
0.00275	0.9974
0.00285	0.9983
0.00298	0.9989
0.00309	0.9994
0.00326	0.9996
0.00340	0.9998
0.00357	0.9999
0.00370	1.0000
0.00382	1.0000

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5090	-0.0041	3.36	6.78	-2.47
0.00065	0.5516	0.0169	3.20	6.75	-2.38
0.00109	0.6059	0.0256	2.86	6.61	-2.25
0.00153	0.6316	0.0265	2.77	6.88	-2.12
0.00176	0.6475	0.0284	2.71	6.93	-2.05
0.00221	0.6666	0.0303	2.56	7.05	-1.92
0.00266	0.6869	0.0302	2.45	7.13	-1.79
0.00288	0.6951	0.0314	2.37	7.20	-1.72
0.00333	0.7139	0.0310	2.24	7.31	-1.59
0.00355	0.7208	0.0327	2.08	7.46	-1.52
0.00378	0.7311	0.0326	2.06	7.47	-1.45
0.00411	0.7442	0.0328	1.93	7.59	-1.35
0.00445	0.7573	0.0330	1.82	7.68	-1.26
0.00467	0.7660	0.0338	1.75	7.73	-1.19
0.00490	0.7730	0.0340	1.69	7.78	-1.12
0.00534	0.7878	0.0349	1.49	7.97	-1.00
0.00557	0.7968	0.0361	1.37	8.07	-0.94
0.00611	0.8147	0.0348	1.28	8.14	-0.80
0.00665	0.8333	0.0351	1.13	8.27	-0.65
0.00730	0.8554	0.0357	0.96	8.41	-0.48
0.00795	0.8778	0.0353	0.76	8.58	-0.31
0.00838	0.8909	0.0354	0.70	8.63	-0.19
0.00902	0.9085	0.0369	0.50	8.81	-0.02
0.00967	0.9274	0.0366	0.36	8.92	0.16
0.01022	0.9439	0.0341	0.30	8.98	0.31
0.01089	0.9598	0.0323	0.18	9.07	0.49
0.01189	0.9777	0.0312	0.06	9.16	0.76
0.01311	0.9912	0.0299	-0.01	9.20	1.09
0.01432	0.9975	0.0305	0.00	9.18	1.42
0.01524	0.9990	0.0329	0.00	9.16	1.68
0.01635	0.9998	0.0336	0.00	9.15	1.98
0.01727	0.9998	0.0347	0.00	9.14	2.23
0.01817	1.0000	0.0349	0.02	9.11	2.47
0.01905	1.0000	0.0353	-0.01	9.13	2.72

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.5181	0.0270	3.67	-1.62	-0.12
0.00070	0.5509	0.0324	3.54	-2.32	-0.06
0.00106	0.5910	0.0367	3.25	-2.13	0.04
0.00153	0.6234	0.0403	3.04	-1.95	0.17
0.00200	0.6465	0.0422	2.96	-1.91	0.30
0.00235	0.6660	0.0436	2.74	-1.71	0.39
0.00270	0.6797	0.0446	2.66	-1.66	0.49
0.00293	0.6912	0.0449	2.57	-1.59	0.55
0.00328	0.7058	0.0462	2.41	-1.45	0.65
0.00374	0.7213	0.0473	2.32	-1.39	0.78
0.00396	0.7323	0.0479	2.15	-1.24	0.84
0.00419	0.7400	0.0487	2.08	-1.19	0.90
0.00453	0.7477	0.0536	1.99	-1.12	1.00
0.00488	0.7670	0.0488	1.86	-1.01	1.09
0.00521	0.7798	0.0507	1.71	-0.88	1.18
0.00578	0.7999	0.0509	1.54	-0.75	1.32
0.00623	0.8192	0.0523	1.40	-0.63	1.43
0.00680	0.8386	0.0519	1.25	-0.52	1.57
0.00736	0.8564	0.0527	1.10	-0.40	1.71
0.00805	0.8799	0.0539	0.87	-0.21	1.89
0.00864	0.8921	0.0647	0.74	-0.11	2.04
0.00946	0.9231	0.0563	0.51	0.07	2.24
0.01028	0.9434	0.0564	0.39	0.14	2.45
0.01121	0.9642	0.0584	0.22	0.28	2.69
0.01247	0.9846	0.0574	0.08	0.36	3.01
0.01323	0.9923	0.0565	0.01	0.39	3.20
0.01397	0.9961	0.0571	-0.01	0.38	3.39
0.01472	0.9986	0.0571	-0.05	0.39	3.59
0.01547	0.9994	0.0574	-0.03	0.34	3.78
0.01632	0.9998	0.0584	-0.04	0.32	3.99
0.01705	1.0000	0.0575	-0.04	0.30	4.18
0.01777	1.0001	0.0578	-0.03	0.27	4.37
0.01838	1.0000	0.0587	-0.04	0.25	4.53
0.01941	1.0000	0.0591	0.01	0.18	4.79

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N = 0$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5099	0.0679	3.64	8.70	-0.40
0.00085	0.5629	0.0837	3.42	7.61	-0.25
0.00138	0.6040	0.0894	3.04	7.77	-0.08
0.00181	0.6234	0.0903	3.04	7.74	0.05
0.00223	0.6459	0.0922	2.83	7.92	0.18
0.00255	0.6573	0.0933	2.72	8.00	0.28
0.00317	0.6795	0.0937	2.58	8.10	0.47
0.00337	0.6886	0.0936	2.60	8.06	0.54
0.00357	0.6977	0.0952	2.38	8.27	0.60
0.00398	0.7109	0.0956	2.26	8.36	0.73
0.00428	0.7251	0.0940	2.30	8.30	0.82
0.00438	0.7297	0.0971	2.09	8.51	0.86
0.00469	0.7372	0.0967	2.05	8.53	0.95
0.00509	0.7508	0.0969	1.92	8.63	1.08
0.00530	0.7589	0.0981	1.77	8.77	1.13
0.00580	0.7753	0.0975	1.62	8.89	1.27
0.00630	0.7916	0.0986	1.51	8.97	1.41
0.00691	0.8113	0.0989	1.34	9.10	1.57
0.00750	0.8316	0.0967	1.19	9.22	1.73
0.00789	0.8439	0.0986	1.08	9.31	1.84
0.00848	0.8604	0.0987	0.95	9.42	2.00
0.00907	0.8790	0.0981	0.77	9.57	2.16
0.00966	0.8958	0.0969	0.70	9.61	2.33
0.01024	0.9126	0.0963	0.51	9.77	2.49
0.01123	0.9359	0.0949	0.34	9.90	2.76
0.01237	0.9599	0.0928	0.18	10.01	3.07
0.01351	0.9775	0.0909	0.07	10.08	3.39
0.01444	0.9879	0.0886	0.05	10.08	3.65
0.01536	0.9947	0.0876	0.00	10.10	3.91
0.01625	0.9979	0.0859	0.03	10.04	4.15
0.01732	0.9992	0.0845	0.03	10.02	4.45
0.01819	0.9998	0.0831	0.00	10.03	4.70
0.01897	1.0001	0.0823	-0.01	10.03	4.92
0.02004	1.0000	0.0812	0.02	9.99	5.22
0.02103	1.0000	0.0806	0.07	9.92	5.49
0.02200	1.0000	0.0808	0.09	9.90	5.76

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5249	0.0690	4.02	0.14	-0.34
0.00045	0.5255	0.0701	4.01	0.20	-0.34
0.00086	0.5711	0.0808	3.80	-0.29	-0.21
0.00117	0.5971	0.0831	3.70	-0.30	-0.12
0.00138	0.6091	0.0868	3.42	-0.03	-0.06
0.00179	0.6288	0.0886	3.33	0.03	0.07
0.00220	0.6469	0.0894	3.24	0.09	0.19
0.00251	0.6645	0.0879	3.21	0.09	0.28
0.00262	0.6667	0.0905	3.02	0.28	0.32
0.00303	0.6808	0.0899	2.93	0.33	0.44
0.00334	0.6921	0.0901	2.86	0.38	0.53
0.00365	0.7025	0.0914	2.71	0.51	0.63
0.00405	0.7171	0.0909	2.57	0.62	0.75
0.00465	0.7358	0.0915	2.38	0.76	0.94
0.00516	0.7530	0.0924	2.24	0.87	1.08
0.00566	0.7688	0.0934	2.08	1.00	1.21
0.00636	0.7907	0.0936	1.82	1.22	1.40
0.00666	0.8078	0.0943	1.66	1.34	1.53
0.00766	0.8301	0.0946	1.43	1.52	1.74
0.00838	0.8516	0.0932	1.27	1.64	1.93
0.00912	0.8757	0.0942	1.04	1.83	2.13
0.01040	0.9064	0.0937	0.77	2.04	2.48
0.01125	0.9254	0.0932	0.56	2.20	2.70
0.01178	0.9408	0.0923	0.47	2.27	2.84
0.01261	0.9572	0.0926	0.31	2.40	3.07
0.01322	0.9707	0.0914	0.18	2.50	3.23
0.01412	0.9804	0.0904	0.17	2.47	3.47
0.01492	0.9891	0.0891	0.07	2.54	3.69
0.01622	0.9968	0.0878	-0.02	2.59	4.04
0.01682	0.9940	0.0876	0.01	2.53	4.20
0.01712	0.9985	0.0849	-0.06	2.60	4.28
0.01823	0.9996	0.0847	-0.07	2.58	4.59
0.01924	1.0000	0.0839	-0.08	2.57	4.86
0.01954	0.9999	0.0829	-0.07	2.55	4.95
0.01964	0.9999	0.0828	-0.09	2.57	5.03
0.02024	1.0000	0.0817	-0.12	2.58	5.14
0.02064	1.0000	0.0811	-0.12	2.57	5.30

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{\circ}$, $M_N = 0.675$, $\alpha_N = 0$ (continued)

x/c = 0.986 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
0.00044	0.4886	0.1528	5.78	2.90	0.23
0.00052	0.4932	0.1561	5.73	3.16	0.26
0.00081	0.5287	0.1564	5.54	2.37	0.38
0.00090	0.5376	0.1600	5.48	2.85	0.42
0.00120	0.5609	0.1626	5.27	3.24	0.54
0.00149	0.5764	0.1626	5.09	3.39	0.66
0.00197	0.5967	0.1631	4.81	3.63	0.86
0.00246	0.6194	0.1640	4.56	3.85	1.06
0.00305	0.6415	0.1642	4.23	4.13	1.29
0.00372	0.6643	0.1632	4.00	4.31	1.57
0.00400	0.6756	0.1643	3.73	4.56	1.69
0.00457	0.6935	0.1640	3.51	4.74	1.92
0.00514	0.7123	0.1643	3.18	5.04	2.14
0.00571	0.7295	0.1638	2.97	5.21	2.32
0.00637	0.7475	0.1640	2.70	5.44	2.54
0.00723	0.7747	0.1639	2.32	5.77	2.81
0.00828	0.8054	0.1624	1.91	6.13	3.16
0.00934	0.8356	0.1614	1.55	6.44	3.50
0.01021	0.8601	0.1597	1.27	6.68	3.78
0.01127	0.8855	0.1569	1.00	6.91	4.09
0.01213	0.9066	0.1536	0.82	7.05	4.35
0.01305	0.9286	0.1504	0.58	7.26	4.62
0.01396	0.9473	0.1473	0.38	7.44	4.89
0.01478	0.9632	0.1445	0.23	7.57	5.14
0.01579	0.9777	0.1421	0.11	7.67	5.43
0.01683	0.9875	0.1398	0.08	7.68	5.73
0.01770	0.9935	0.1375	0.06	7.68	5.98
0.01819	0.9956	0.1367	-0.03	7.76	6.12
0.01848	0.9968	0.1361	-0.05	7.78	6.20
0.01877	0.9973	0.1341	0.05	7.67	6.28
0.01896	0.9978	0.1358	0.02	7.70	6.34
0.01925	0.9983	0.1342	0.04	7.68	6.42
0.01954	0.9985	0.1350	-0.01	7.73	6.51
0.01983	0.9990	0.1343	-0.04	7.76	6.59
0.02011	0.9993	0.1321	0.01	7.71	6.68
0.02040	0.9996	0.1337	-0.02	7.73	6.75
0.02075	0.9998	0.1323	-0.04	7.75	6.86
0.02129	0.9999	0.1305	0.00	7.71	7.01
0.02210	1.0001	0.1302	0.01	7.69	7.23
0.02299	1.0000	0.1295	-0.02	7.73	7.49

x/c = 0.986 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
0.00046	0.4606	0.1633	6.72	-7.72	-1.92
0.00055	0.4732	0.1648	6.65	-7.94	-1.69
0.00074	0.4987	0.1673	6.50	-7.71	-1.81
0.00104	0.5287	0.1699	6.36	-7.31	-1.69
0.00143	0.5578	0.1722	6.18	-7.17	-1.54
0.00163	0.5729	0.1725	5.77	-6.77	-1.46
0.00182	0.5839	0.1722	5.57	-6.59	-1.38
0.00211	0.5985	0.1718	5.33	-6.37	-1.26
0.00250	0.6140	0.1728	5.30	-6.37	-1.11
0.00269	0.6251	0.1727	4.96	-6.04	-1.03
0.00316	0.6415	0.1728	4.66	-5.79	-0.84
0.00364	0.6562	0.1731	4.44	-5.60	-0.65
0.00412	0.6739	0.1736	4.24	-5.43	-0.46
0.00450	0.6864	0.1740	4.03	-5.25	-0.31
0.00516	0.7066	0.1740	3.62	-4.89	-0.05
0.00573	0.7261	0.1744	3.37	-4.68	0.13
0.00640	0.7474	0.1749	3.06	-4.41	0.34
0.00696	0.7674	0.1745	2.80	-4.19	0.53
0.00776	0.7918	0.1745	2.46	-3.89	0.78
0.00892	0.8237	0.1739	2.08	-3.57	1.15
0.00960	0.8427	0.1741	1.78	-3.30	1.37
0.01019	0.8596	0.1725	1.64	-3.19	1.55
0.01095	0.8798	0.1708	1.31	-2.89	1.77
0.01160	0.8970	0.1695	1.12	-2.73	1.96
0.01243	0.9166	0.1682	0.95	-2.59	2.20
0.01317	0.9332	0.1666	0.71	-2.37	2.42
0.01381	0.9456	0.1656	0.60	-2.28	2.60
0.01437	0.9581	0.1629	0.47	-2.17	2.77
0.01530	0.9733	0.1613	0.35	-2.08	3.04
0.01637	0.9850	0.1595	0.15	-1.90	3.34
0.01745	0.9925	0.1581	0.05	-1.83	3.65
0.01774	0.9943	0.1579	0.02	-1.80	3.73
0.01803	0.9956	0.1574	-0.01	-1.78	3.81
0.01842	0.9969	0.1568	-0.07	-1.73	3.92
0.01890	0.9978	0.1554	-0.03	-1.77	4.06
0.01919	0.9983	0 1564	-0.07	-1.74	4.14
0.01928	0.9986	0.1536	-0.02	-1.78	4.17
0.01955	0.9990	0.1569	-0.09	-1.72	4.25
0.01992	0.9994	0.1540	-0.10	-1.71	4.35
0.02046	0.9999	0.1531	-0.12	-1.70	4.50
0.02136	0.9999	0.1515	-0.12	-1.71	4.75
0.02208	1.0001	0.1507	-0.15	-1.67	4.95
0.02307	1.0001	0.1500	-0.21	-1.62	5.23
0.02410	1.0000	0.1483	-0.18	-1.64	5.52

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.675$, $\alpha_N = 0$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02225	1.0000	0.1562	-0.11	7.88	-4.83
-0.02195	1.0001	0.1569	-0.12	7.89	-4.76
-0.02165	1.0002	0.1590	-0.16	7.91	-4.69
-0.02125	0.9999	0.1603	-0.09	7.83	-4.60
-0.02105	0.9997	0.1590	-0.04	7.77	-4.55
-0.02054	0.9995	0.1590	-0.04	7.75	-4.44
-0.02044	0.9996	0.1602	-0.05	7.75	-4.41
-0.02034	0.9993	0.1619	-0.08	7.77	-4.39
-0.02013	0.9990	0.1601	-0.04	7.72	-4.34
-0.01961	0.9981	0.1645	-0.07	7.74	-4.23
-0.01940	0.9979	0.1600	0.05	7.61	-4.18
-0.01930	0.9977	0.1621	0.00	7.67	-4.16
-0.01888	0.9961	0.1628	0.03	7.62	-4.07
-0.01878	0.9956	0.1647	-0.01	7.66	-4.05
-0.01857	0.9948	0.1650	0.01	7.63	-4.01
-0.01815	0.9927	0.1652	0.09	7.53	-3.92
-0.01762	0.9889	0.1667	0.17	7.43	-3.81
-0.01700	0.9842	0.1692	0.22	7.37	-3.68
-0.01637	0.9769	0.1708	0.32	7.24	-3.54
-0.01595	0.9717	0.1717	0.42	7.13	-3.46
-0.01544	0.9640	0.1728	0.49	7.06	-3.35
-0.01483	0.9538	0.1751	0.62	6.91	-3.22
-0.01421	0.9418	0.1762	0.79	6.72	-3.09
-0.01359	0.9293	0.1787	0.87	6.62	-2.96
-0.01266	0.9087	0.1814	1.10	6.37	-2.76
-0.01153	0.8807	0.1847	1.43	6.02	-2.52
-0.01039	0.8531	0.1871	1.71	5.73	-2.28
-0.00945	0.8269	0.1881	2.09	5.33	-2.09
-0.00842	0.7987	0.1878	2.50	4.90	-1.89
-0.00759	0.7737	0.1886	2.89	4.52	-1.72
-0.00655	0.7438	0.1885	3.36	4.03	-1.52
-0.00561	0.7173	0.1886	3.70	3.69	-1.33
-0.00477	0.6921	[illegible]	4.11	3.26	-1.17
-0.00362	0.6567	0.1866	4.75	2.62	-0.95
-0.00262	0.6217	0.1872	5.33	2.04	-0.76
-0.00163	0.5827	0.1858	5.90	1.47	-0.57
-0.00103	0.5590	0.1841	6.08	1.28	-0.46
-0.00083	0.5416	0.1847	6.45	0.91	-0.42
-0.00063	0.5268	0.1836	6.60	0.76	-0.38
-0.00033	0.5171	0.1824	6.47	0.89	-0.33
-0.00004	0.5136	0.1806	6.33	1.03	-0.27
0.00016	0.5170	0.1791	6.08	1.28	-0.23
0.00046	0.5317	0.1777	5.73	1.62	-0.18
0.00076	0.5470	0.1781	5.46	1.90	-0.12
0.00119	0.5648	0.1783	5.42	1.93	-0.04
0.00151	0.5841	0.1790	5.00	2.35	0.02
0.00215	0.6104	0.1796	4.90	2.47	0.14
0.00290	0.6399	0.1814	4.33	3.03	0.28
0.00396	0.6699	0.1814	3.90	3.46	0.49
0.00503	0.7012	0.1835	3.31	4.05	0.69
0.00618	0.7337	0.1819	2.86	4.51	0.91
0.00712	0.7629	0.1827	2.38	5.01	1.10
0.00816	0.7919	0.1808	2.08	5.31	1.30
0.00930	0.8221	0.1801	1.67	5.74	1.53
0.01034	0.8488	0.1792	1.36	6.07	1.74
0.01137	0.8772	0.1771	0.98	6.47	1.95
0.01240	0.9027	0.1742	0.73	6.73	2.17
0.01343	0.9251	0.1709	0.53	6.96	2.39
0.01446	0.9466	0.1680	0.37	7.14	2.60
0.01549	0.9631	0.1687	0.27	7.28	2.82
0.01662	0.9791	0.1660	0.10	7.48	3.05
0.01754	0.9879	0.1629	0.03	7.58	3.25
0.01866	0.9941	0.1614	0.00	7.64	3.48
0.01967	0.9973	0.1604	0.00	7.68	3.69
0.02058	0.9991	0.1598	0.00	7.71	3.89
0.02159	0.9998	0.1587	-0.02	7.77	4.13
0.02261	1.0003	0.1566	-0.03	7.84	4.36
0.02374	1.0002	0.1546	-0.03	7.88	4.62
0.02517	1.0003	0.1529	-0.06	7.98	4.94
0.02731	1.0001	0.1530	-0.13	8.17	5.43
0.02944	1.0000	0.1502	-0.08	8.24	5.91

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02133	1.0000	0.1662	-0.23	-1.74	-4.93
-0.02093	0.9999	0.1656	-0.19	-1.79	-4.84
-0.02062	0.9995	0.1666	-0.19	-1.80	-4.77
-0.02021	0.9989	0.1694	-0.13	-1.87	-4.67
-0.01990	0.9983	0.1687	-0.07	-1.94	-4.60
-0.01948	0.9973	0.1701	-0.10	-1.92	-4.52
-0.01917	0.9963	0.1711	-0.07	-1.96	-4.45
-0.01907	0.9961	0.1715	-0.04	-1.98	-4.43
-0.01875	0.9951	0.1718	0.00	-2.03	-4.36
-0.01844	0.9934	0.1720	0.03	-2.08	-4.30
-0.01813	0.9913	0.1722	0.03	-2.08	-4.23
-0.01803	0.9908	0.1727	0.04	-2.09	-4.21
-0.01771	0.9889	0.1735	0.09	-2.15	-4.14
-0.01730	0.9856	0.1725	0.20	-2.26	-4.06
-0.01698	0.9831	0.1752	0.16	-2.22	-3.99
-0.01656	0.9785	0.1761	0.21	-2.29	-3.90
-0.01615	0.9729	0.1760	0.36	-2.45	-3.82
-0.01553	0.9645	0.1778	0.49	-2.58	-3.69
-0.01512	0.9571	0.1787	0.57	-2.67	-3.61
-0.01450	0.9471	0.1793	0.65	-2.76	-3.48
-0.01399	0.9359	0.1816	0.77	-2.89	-3.37
-0.01327	0.9204	0.1832	0.94	-3.06	-3.22
-0.01255	0.9042	0.1849	1.19	-3.32	-3.07
-0.01172	0.8839	0.1862	1.41	-3.54	-2.90
-0.01059	0.8549	0.1875	1.79	-3.94	-2.66
-0.00986	0.8374	0.1871	1.98	-4.11	-2.51
-0.00924	0.8202	0.1882	2.22	-4.36	-2.39
-0.00852	0.8008	0.1876	2.43	-4.57	-2.25
-0.00779	0.7806	0.1872	2.77	-4.91	-2.10
-0.00696	0.7565	0.1873	3.10	-5.23	-1.94
-0.00613	0.7353	0.1871	3.37	-5.49	-1.78
-0.00550	0.7146	0.1879	3.76	-5.89	-1.66
-0.00477	0.6941	0.1874	4.05	-6.16	-1.51
-0.00383	0.6648	0.1854	4.57	-6.68	-1.34
-0.00273	0.6284	0.1867	5.17	-7.27	-1.13
-0.00174	0.5875	0.1855	5.73	-7.82	-0.95
-0.00134	0.5703	0.1856	5.90	-8.00	-0.67
-0.00104	0.5557	0.1849	6.04	-8.12	-0.62
-0.00064	0.5368	0.1833	6.29	-8.37	-0.74
-0.00025	0.5200	0.1829	6.37	-8.45	-0.67
0.00005	0.5180	0.1821	6.09	-8.17	-0.61
0.00025	0.5208	0.1811	5.95	-8.03	-0.57
0.00055	0.5329	0.1798	5.57	-7.65	-0.52
0.00087	0.5512	0.1785	5.30	-7.37	-0.46
0.00140	0.5777	0.1790	5.10	-7.16	-0.36
0.00237	0.6174	0.1803	4.62	-6.66	-0.18
0.00322	0.6466	0.1805	[illegible]	-6.23	-0.02
0.00439	0.6822	0.1801	3.68	-5.68	0.20
0.00555	0.7174	0.1808	3.13	-5.12	0.42
0.00670	0.7514	0.1812	2.67	-4.63	0.64
0.00794	0.7877	0.1801	2.24	-4.18	0.89
0.00919	0.8191	0.1800	1.93	-3.83	1.13
0.01033	0.8484	0.1794	1.59	-3.45	1.35
0.01136	0.8764	0.1757	1.24	-3.07	1.57
0.01270	0.9085	0.1737	0.86	-2.64	1.84
0.01394	0.9342	0.1695	0.61	-2.33	2.10
0.01507	0.9555	0.1673	0.38	-2.05	2.33
0.01620	0.9728	0.1642	0.25	-1.86	2.56
0.01732	0.9850	0.1631	0.12	-1.68	2.80
0.01864	0.9934	0.1616	0.02	-1.52	3.07
0.01976	0.9971	0.1617	-0.03	-1.40	3.30
0.02077	0.9990	0.1612	-0.05	-1.33	3.52
0.02177	1.0000	0.1606	-0.06	-1.26	3.75
0.02373	1.0001	0.1590	-0.06	-1.12	4.18
0.02577	1.0003	0.1551	-0.06	-0.98	4.64
0.02898	1.0000	0.1504	-0.06	-0.74	5.34

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N = 0$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02305	1.0000	0.1239	-0.07	8.57	-3.23
-0.02285	1.0000	0.1260	-0.10	8.58	-3.19
-0.02254	1.0001	0.1291	-0.12	8.57	-3.12
-0.02214	1.0000	0.1304	-0.09	8.52	-3.02
-0.02173	0.9998	0.1304	-0.01	8.42	-2.93
-0.02132	0.9995	0.1270	0.05	8.33	-2.84
-0.02081	0.9991	0.1292	0.01	8.35	-2.72
-0.02061	0.9992	0.1288	0.01	8.33	-2.67
-0.02041	0.9988	0.1302	-0.01	8.33	-2.62
-0.02010	0.9985	0.1309	0.02	8.29	-2.55
-0.01980	0.9979	0.1307	0.04	8.25	-2.49
-0.01950	0.9970	0.1285	0.05	8.22	-2.42
-0.01930	0.9966	0.1279	0.08	8.19	-2.38
-0.01899	0.9959	0.1331	-0.02	8.28	-2.31
-0.01879	0.9948	0.1330	0.00	8.24	-2.26
-0.01838	0.9931	0.1344	0.08	8.14	-2.18
-0.01777	0.9901	0.1328	0.13	8.06	-2.04
-0.01716	0.9863	0.1335	0.17	7.99	-1.91
-0.01644	0.9800	0.1338	0.30	7.82	-1.75
-0.01612	0.9768	0.1320	0.36	7.74	-1.68
-0.01560	0.9708	0.1361	0.31	7.77	-1.57
-0.01497	0.9618	0.1363	0.46	7.59	-1.43
-0.01434	0.9515	0.1390	0.53	7.50	-1.29
-0.01381	0.9418	0.1357	0.71	7.29	-1.17
-0.01286	0.9244	0.1359	0.82	7.14	-0.96
-0.01170	0.8999	0.1375	1.08	6.84	-0.70
-0.01064	0.8751	0.1369	1.25	6.63	-0.46
-0.00968	0.8538	0.1376	1.54	6.31	-0.25
-0.00850	0.8281	0.1379	1.80	6.02	0.00
-0.00758	0.8051	0.1399	2.05	5.74	0.20
-0.00656	0.7812	0.1359	2.37	5.39	0.42
-0.00565	0.7548	0.1381	2.43	5.33	0.61
-0.00493	0.7365	0.1354	2.64	5.11	0.77
-0.00391	0.7078	0.1340	2.93	4.80	1.00
-0.00297	0.6838	0.1351	3.02	4.69	1.22
-0.00203	0.6634	0.1335	3.12	4.58	1.44
-0.00130	0.6543	0.1308	3.10	4.59	1.61
-0.00078	0.6473	0.1325	3.11	4.58	1.73
-0.00057	0.6460	0.1302	3.20	4.48	1.77
-0.00026	0.6449	0.1306	3.02	4.67	1.85
-0.00005	0.6448	0.1300	3.02	4.67	1.90
0.00026	0.6450	0.1309	2.85	4.84	1.97
0.00057	0.6468	0.1316	2.80	4.89	2.04
0.00069	0.6502	0.1305	2.75	4.93	2.11
0.00131	0.6565	0.1279	2.77	4.92	2.21
0.00193	0.6670	0.1304	2.56	5.12	2.35
0.00266	0.6834	0.1292	2.45	5.22	2.52
0.00371	0.7062	0.1302	2.21	5.48	2.77
0.00475	0.7300	0.1322	1.88	5.80	3.01
0.00571	0.7600	0.1294	1.79	5.90	3.22
0.00678	0.7817	0.1327	1.52	6.18	3.45
0.00774	0.8081	0.1305	1.39	6.32	3.66
0.00880	0.8335	0.1329	1.02	6.70	3.89
0.00984	0.8592	0.1322	0.79	6.95	4.11
0.01087	0.8825	0.1310	0.57	7.18	4.35
0.01180	0.9034	0.1308	0.45	7.31	4.56
0.01397	0.9431	0.1272	0.30	7.52	5.06
0.01490	0.9594	0.1285	0.17	7.67	5.27
0.01592	0.9747	0.1282	0.02	7.86	5.51
0.01684	0.9834	0.1267	-0.06	7.97	5.71
0.01788	0.9907	0.1254	-0.08	8.01	5.95
0.01892	0.9949	0.1239	0.00	7.98	6.18
0.01975	0.9970	0.1214	0.11	7.90	6.37
0.02090	0.9987	0.1227	0.04	8.01	6.65
0.02193	0.9995	0.1228	0.04	8.07	6.89
0.02316	0.9996	0.1214	0.05	8.11	7.19
0.02449	1.0000	0.1224	-0.03	8.27	7.51
0.02675	1.0000	0.1202	0.01	8.35	8.04

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02133	1.0000	0.1225	-0.19	-0.61	-4.58
-0.02112	1.0000	0.1210	-0.20	-0.59	-4.54
-0.02082	0.9999	0.1260	-0.23	-0.58	-4.46
-0.02041	0.9996	0.1240	-0.14	-0.67	-4.37
-0.02011	0.9992	0.1245	-0.18	-0.65	-4.30
-0.01970	0.9986	0.1277	-0.11	-0.71	-4.21
-0.01930	0.9976	0.1268	-0.0[illegible]	-0.80	-4.12
-0.01899	0.9967	0.1250	-0.02	-0.81	-4.05
-0.01869	0.9961	0.1263	-0.04	-0.80	-3.98
-0.01838	0.9943	0.1283	0.02	-0.87	-3.91
-0.01818	0.9934	0.1287	0.04	-0.89	-3.87
-0.01787	0.9919	0.1263	0.07	-0.92	-3.80
-0.01757	0.9899	0.1301	0.03	-0.87	-3.73
-0.01736	0.9885	0.1298	0.07	-0.92	-3.69
-0.01706	0.9866	0.1313	0.12	-0.97	-3.62
-0.01665	0.9828	0.1300	0.18	-1.04	-3.53
-0.01634	0.9798	0.1297	0.21	-1.07	-3.46
-0.01593	0.9763	0.1303	0.23	-1.10	-3.37
-0.01531	0.9698	0.1344	0.30	-1.16	-3.23
-0.01489	0.9635	0.1329	0.46	-1.33	-3.14
-0.01447	0.9567	0.1338	0.48	-1.35	-3.05
-0.01384	0.9459	0.1341	0.58	-1.45	-2.90
-0.01320	0.9356	0.1368	0.61	-1.48	-2.76
-0.01257	0.9217	0.1358	0.78	-1.65	-2.62
-0.01183	0.9075	0.1371	0.88	-1.74	-2.45
-0.01098	0.8878	0.1379	1.08	-1.94	-2.26
-0.00982	0.8619	0.1381	1.35	-2.21	-2.00
-0.00907	0.8429	0.1397	1.45	-2.31	-1.84
-0.00843	0.8286	0.1390	1.58	-2.43	-1.70
-0.00768	0.8110	0.1393	1.69	-2.53	-1.54
-0.00695	0.7939	0.1395	1.91	-2.73	-1.38
-0.00604	0.7704	0.1389	2.19	-2.99	-1.19
-0.00533	0.7500	0.1397	2.26	-3.04	-1.04
-0.00471	0.7345	0.1385	2.60	-3.37	-0.90
-0.00400	0.7170	0.1373	2.72	-3.49	-0.74
-0.00308	0.6921	0.1365	2.87	-3.61	-0.52
-0.00204	0.6677	0.1358	3.02	-3.74	-0.28
-0.00100	0.6519	0.1328	3.04	-3.73	-0.04
-0.00058	0.6480	0.1334	3.06	-3.74	0.05
-0.00027	0.6453	0.1339	3.02	-3.69	0.12
0.00015	0.6451	0.1327	3.07	-3.73	0.22
0.00057	0.6478	0.1311	2.99	-3.64	0.32
0.00098	0.6507	0.1319	2.92	-3.55	0.41
0.00140	0.6563	0.1308	2.79	-3.41	0.51
0.00171	0.6632	0.1295	2.77	-3.39	0.58
0.00223	0.6737	0.1286	2.58	-3.17	0.70
0.00328	0.6945	0.1298	2.49	-3.04	0.94
0.00401	0.7144	0.1290	2.29	-2.82	1.11
0.00515	0.7418	0.1304	2.07	-2.56	1.37
0.00621	0.7706	0.1306	1.74	-2.18	1.60
0.00727	0.7984	0.1297	1.56	-1.95	1.82
0.00855	0.8297	0.1305	1.30	-1.62	2.10
0.00961	0.85[illegible]6	0.1283	1.08	-1.3[illegible]	2.32
0.01086	0.8784	0.1270	1.13	-1.34	2.60
0.01189	0.9033	0.1266	0.73	-0.89	2.83
0.01313	0.9307	0.1257	0.47	-0.56	3.11
0.01426	0.9509	0.1261	0.30	-0.31	3.37
0.01539	0.9669	0.1265	0.23	-0.16	3.62
0.01651	0.9793	0.1259	0.14	0.00	3.87
0.01764	0.9883	0.1256	0.02	0.20	4.11
0.01877	0.9944	0.1249	0.00	0.30	4.36
0.01991	0.9973	0.1248	-0.01	0.39	4.62
0.02105	0.9992	0.1224	0.00	0.49	4.88
0.02219	0.9998	0.1223	0.01	0.57	5.15
0.02393	1.0000	0.1196	0.02	0.72	5.55
0.02597	1.0002	0.1209	-0.02	0.95	6.02
0.02926	1.0000	0.1201	0.07	1.19	6.77

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.675$, $\alpha_N = -2^o$

$x/c = 0.280$ MEASUREMENT 1

Constant $(C_p)_p = -0.2270$

z/c	u/U_p
0.00014	0.5805
0.00016	0.5998
0.00019	0.6134
0.00023	0.6330
0.00025	0.6479
0.00029	0.6547
0.00031	0.6694
0.00037	0.6925
0.00043	0.7046
0.00048	0.7145
0.00054	0.7295
0.00059	0.7462
0.00067	0.7592
0.00073	0.7710
0.00088	0.7937
0.00099	0.8109
0.00114	0.8291
0.00128	0.8466
0.00141	0.8640
0.00154	0.8802
0.00167	0.8930
0.00180	0.9046
0.00193	0.9181
0.00207	0.9293
0.00220	0.9401
0.00233	0.9513
0.00247	0.9601
0.00262	0.9692
0.00274	0.9764
0.00286	0.9827
0.00297	0.9875
0.00310	0.9916
0.00322	0.9936
0.00337	0.9961
0.00350	0.9976
0.00365	0.9987
0.00378	0.9991
0.00392	0.9994
0.00405	0.9996
0.00418	1.0000
0.00431	0.9999
0.00452	1.0000

$x/c = 0.280$ MEASUREMENT 2

Constant $(C_p)_p = -0.2270$

z/c	u/U_p
0.00014	0.5967
0.00016	0.6259
0.00018	0.6421
0.00022	0.6699
0.00026	0.6932
0.00030	0.7090
0.00033	0.7191
0.00035	0.7236
0.00038	0.7329
0.00043	0.7491
0.00050	0.7673
0.00057	0.7857
0.00065	0.7988
0.00076	0.8218
0.00090	0.8467
0.00105	0.8693
0.00117	0.8859
0.00129	0.9018
0.00145	0.9179
0.00156	0.9332
0.00170	0.9447
0.00184	0.9566
0.00198	0.9671
0.00209	0.9739
0.00224	0.9810
0.00238	0.9866
0.00252	0.9904
0.00265	0.9931
0.00276	0.9956
0.00288	0.9970
0.00300	0.9978
0.00315	0.9988
0.00328	0.9993
0.00343	0.9991
0.00357	0.9996
0.00370	0.9999
0.00384	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.675$, $\alpha_N' = -2^{o}$ (continued)

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5133	0.0310	1.84	9.26	-2.48
0.00035	0.5207	0.0295	1.83	9.07	-2.47
0.00057	0.5533	0.0414	1.76	8.69	-2.42
0.00079	0.5867	0.0508	1.70	8.85	-2.36
0.00090	0.6049	0.0521	1.67	8.63	-2.33
0.00112	0.6162	0.0523	1.60	8.70	-2.27
0.00145	0.6434	0.0571	1.46	8.82	-2.19
0.00179	0.6627	0.0595	1.47	6.80	-2.10
0.00213	0.6775	0.0609	1.37	8.87	-2.01
0.00258	0.6994	0.0614	1.39	8.83	-1.89
0.00280	0.7098	0.0616	1.34	8.86	-1.83
0.00303	0.7217	0.0626	1.27	8.93	-1.77
0.00337	0.7362	0.0628	1.20	8.98	-1.68
0.00359	0.7462	0.0628	1.13	9.03	-1.63
0.00392	0.7607	0.0635	1.07	9.08	-1.54
0.00426	0.7710	0.0642	0.99	9.14	-1.45
0.00448	0.7811	0.0650	0.91	9.21	-1.39
0.00460	0.7894	0.0635	0.93	9.18	-1.36
0.00504	0.8031	0.0651	0.83	9.26	-1.24
0.00526	0.8132	0.0643	0.79	9.29	-1.18
0.00571	0.8272	0.0640	0.73	9.32	-1.07
0.00647	0.8555	0.0641	0.60	9.42	-0.87
0.00679	0.8659	0.0652	0.49	9.52	-0.78
0.00723	0.8803	0.0659	0.40	9.59	-0.67
0.00788	0.9010	0.0653	0.29	9.67	-0.50
0.00830	0.9160	0.0637	0.25	9.70	-0.38
0.00884	0.9307	0.0640	0.24	9.69	-0.24
0.01003	0.9619	0.0622	0.10	9.79	0.08
0.01081	0.9766	0.0609	0.03	9.84	0.29
0.01193	0.9896	0.0596	-0.05	9.88	0.58
0.01304	0.9966	0.0601	0.02	9.78	0.88
0.01415	0.9992	0.0620	0.03	9.76	1.18
0.01527	1.0000	0.0614	0.01	9.75	1.48
0.01618	0.9998	0.0635	0.02	9.73	1.73
0.01709	1.0000	0.0640	0.00	9.74	1.98
0.01810	1.0000	0.0648	0.03	9.70	2.25
0.01898	1.0000	0.0642	0.00	9.73	2.50
0.01995	1.0000	0.0638	-0.01	9.73	2.77

MEASUREMENT 2

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.675$, $\alpha_N = -2^o$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5195	0.0882	2.13	10.73	-0.41
0.00046	0.5266	0.0902	2.10	10.40	-0.39
0.00068	0.5488	0.0936	2.04	9.62	-0.33
0.00100	0.5943	0.1004	1.94	9.24	-0.24
0.00132	0.6130	0.1042	1.79	9.45	-0.15
0.00153	0.6267	0.1066	1.68	9.54	-0.09
0.00206	0.6616	0.1083	1.68	9.50	0.06
0.00260	0.6820	0.1095	1.59	9.55	0.20
0.00310	0.7029	0.1107	1.38	9.73	0.35
0.00341	0.7135	0.1099	1.46	9.62	0.43
0.00371	0.7264	0.1104	1.33	9.73	0.52
0.00392	0.7356	0.1118	1.24	9.81	0.57
0.00412	0.7437	0.1119	1.21	9.83	0.63
0.00432	0.7512	0.1122	1.18	9.84	0.69
0.00473	0.7652	0.1119	1.14	9.86	0.80
0.00493	0.7729	0.1129	1.04	9.94	0.86
0.00523	0.7854	0.1129	0.95	10.01	0.94
0.00604	0.8115	0.1131	0.85	10.06	1.16
0.00624	0.8211	0.1141	0.75	10.15	1.21
0.00665	0.8349	0.1135	0.71	10.17	1.32
0.00724	0.8538	0.1134	0.53	10.31	1.49
0.00773	0.8678	0.1133	0.45	10.36	1.62
0.00822	0.8818	0.1124	0.48	10.31	1.75
0.00940	0.9162	0.1100	0.33	10.40	2.08
0.01008	0.9360	0.1087	0.19	10.50	2.26
0.01106	0.9584	0.1059	0.10	10.56	2.53
0.01210	0.9768	0.1034	0.14	10.46	2.81
0.01324	0.9889	0.1017	0.10	10.46	3.12
0.01427	0.9960	0.1004	-0.02	10.55	3.40
0.01520	0.9986	0.0989	0.02	10.48	3.66
0.01609	1.0002	0.0985	0.00	10.48	3.90
0.01716	1.0001	0.0977	0.07	10.38	4.19
0.01803	1.0003	0.0969	0.02	10.40	4.43
0.01890	1.0000	0.0959	0.07	10.34	4.68

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5461	0.0844	2.54	1.58	-0.36
0.00052	0.5564	0.0882	2.51	1.56	-0.34
0.00083	0.5893	0.0962	2.40	1.48	-0.26
0.00135	0.6249	0.1015	2.20	1.49	-0.12
0.00166	0.6438	0.1046	2.12	1.54	-0.03
0.00186	0.6531	0.1062	2.00	1.65	0.02
0.00228	0.6717	0.1061	1.99	1.62	0.13
0.00269	0.6875	0.1070	1.85	1.73	0.24
0.00300	0.6996	0.1077	1.79	1.77	0.33
0.00351	0.7214	0.1087	1.64	1.88	0.47
0.00453	0.7554	0.1106	1.41	2.04	0.74
0.00733	0.8487	0.1108	0.84	2.42	1.48
0.00813	0.8726	0.1112	0.71	2.51	1.69
0.00919	0.9013	0.1095	0.58	2.57	1.98
0.01047	0.9327	0.1109	0.33	2.75	2.31
0.01195	0.9644	0.1091	0.22	2.79	2.70
0.01339	0.9867	0.1070	0.10	2.84	3.08
0.01469	0.9960	0.1058	-0.01	2.90	3.42
0.01609	0.9995	0.1044	-0.06	2.90	3.79
0.01770	1.0001	0.1035	-0.12	2.91	4.22
0.01800	0.9998	0.1025	-0.11	2.89	4.30
0.01890	0.9999	0.1010	-0.07	2.82	4.55
0.01951	1.0000	0.1013	-0.10	2.84	4.71
0.02031	1.0000	0.1002	-0.10	2.82	4.93

x/c = 0.986 MEASUREMENT 1

0.00044	0.5036	0.1542	3.85	5.76	0.21
0.00050	0.5122	0.1540	3.82	5.33	0.23
0.00069	0.5377	0.1559	3.73	5.03	0.30
0.00098	0.5690	0.1598	3.59	5.24	0.41
0.00118	0.5831	0.1610	3.47	5.43	0.48
0.00157	0.6057	0.1613	3.38	5.49	0.62
0.00225	0.6409	0.1641	3.01	5.60	0.86
0.00254	0.6522	0.1645	2.88	5.90	0.97
0.00303	0.6696	0.1636	2.77	5.98	1.15
0.00351	0.6896	0.1639	2.53	6.18	1.32
0.00399	0.7048	0.1645	2.34	6.34	1.49
0.00446	0.7208	0.1641	2.29	6.36	1.67
0.00560	0.7592	0.1639	1.91	6.67	2.05
0.00626	0.7816	0.1633	1.59	6.93	2.25
0.00720	0.8107	0.1627	1.35	7.12	2.54
0.00816	0.8401	0.1619	1.20	7.23	2.84
0.00913	0.8697	0.1598	0.95	7.42	3.14
0.01019	0.8965	0.1577	0.64	7.68	3.47
0.01106	0.9179	0.1559	0.48	7.81	3.73
0.01211	0.9390	0.1533	0.35	7.90	4.05
0.01303	0.9585	0.1500	0.28	7.93	4.32
0.01394	0.9734	0.1471	0.13	8.05	4.60
0.01486	0.9847	0.1456	0.09	8.06	4.87
0.01568	0.9921	0.1446	0.02	8.11	5.11
0.01662	0.9971	0.1421	-0.01	8.13	5.38
0.01759	0.9990	0.1397	0.01	8.08	5.66
0.01836	0.9997	0.1383	-0.03	8.11	5.89
0.01865	1.0000	0.1361	-0.04	8.12	5.97
0.01875	1.0001	0.1374	-0.01	8.09	6.00
0.01913	1.0000	0.1365	0.03	8.04	6.11

x/c = 0.986 MEASUREMENT 2

0.00050	0.5100	0.1622	4.11	-4.44	-1.93
0.00060	0.5194	0.1632	4.06	-5.11	-1.90
0.00089	0.5591	0.1637	3.91	-4.70	-1.80
0.00128	0.5856	0.1662	3.78	-4.52	-1.66
0.00177	0.6179	0.1670	3.50	-4.29	-1.48
0.00254	0.6576	0.1665	3.06	-3.91	-1.21
0.00320	0.6839	0.1669	2.78	-3.68	-0.97
0.00397	0.7126	0.1675	2.43	-3.39	-0.70
0.00520	0.7532	0.1667	2.07	-3.12	-0.27
0.00596	0.7783	0.1666	1.85	-2.95	-0.04
0.00683	0.8061	0.1654	1.56	-2.71	0.23
0.00790	0.8386	0.1657	1.25	-2.46	0.55
0.00936	0.8767	0.1618	0.95	-2.25	1.00
0.01080	0.9168	0.1567	0.66	-2.03	1.43
0.01210	0.9463	0.1529	0.37	-1.79	1.81
0.01348	0.9714	0.1479	0.22	-1.69	2.22
0.01496	0.9892	0.1440	0.01	-1.53	2.66
0.01526	0.9914	0.1431	0.02	-1.55	2.75
0.01623	0.9959	0.1413	0.00	-1.55	3.02
0.01672	0.9978	0.1411	-0.03	-1.53	3.16
0.01750	0.9992	0.1400	-0.03	-1.56	3.38
0.01770	0.9993	0.1411	-0.07	-1.52	3.44
0.01779	0.9996	0.1413	-0.11	-1.48	3.47
0.01789	0.9997	0.1375	-0.07	-1.52	3.49
0.01828	1.0001	0.1397	-0.06	-1.54	3.61
0.01866	0.9999	0.1396	-0.10	-1.51	3.72
0.01914	1.0000	0.1381	-0.08	-1.54	3.85

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda_N = 20^o$, $M_N = 0.675$, $\alpha_N = -2^o$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02365	1.0000	0.1410	-0.15	7.79	-5.41
-0.02335	0.9998	0.1473	-0.19	7.81	-5.35
-0.02315	0.9990	0.1449	-0.12	7.74	-5.31
-0.02295	0.9968	0.1429	-0.12	7.73	-5.27
-0.02285	0.9990	0.1451	-0.19	7.81	-5.24
-0.02275	0.9987	0.1433	-0.12	7.73	-5.22
-0.02265	0.9989	0.1455	-0.16	7.77	-5.20
-0.02225	0.9982	0.1456	-0.15	7.75	-5.12
-0.02195	0.9975	0.1483	-0.12	7.70	-5.05
-0.02175	0.9969	0.1502	-0.13	7.70	-5.01
-0.02135	0.9953	0.1491	-0.01	7.57	-4.93
-0.02095	0.9937	0.1505	0.03	7.51	-4.84
-0.02074	0.9928	0.1487	0.08	7.47	-4.80
-0.02044	0.9914	0.1511	0.03	7.51	-4.74
-0.02013	0.9896	0.1530	0.07	7.46	-4.67
-0.01992	0.9886	0.1525	0.10	7.42	-4.63
-0.01961	0.9852	0.1573	0.06	7.45	-4.57
-0.01950	0.9836	0.1550	0.18	7.32	-4.55
-0.01930	0.9817	0.1550	0.25	7.25	-4.50
-0.01888	0.9777	0.1560	0.30	7.19	-4.42
-0.01878	0.9765	0.1572	0.30	7.18	-4.40
-0.01836	0.9719	0.1584	0.40	7.07	[illegible]
-0.01762	0.9628	0.1596	0.52	6.94	-4.17
-0.01731	0.9583	0.1626	0.53	6.92	-4.11
-0.01689	0.9507	0.1631	0.70	6.73	-4.03
-0.01637	0.9410	0.1651	0.82	6.61	-3.93
-0.01595	0.9320	0.1664	0.98	6.45	-3.85
-0.01544	0.9217	0.1678	1.19	6.22	-3.75
-0.01431	0.8963	0.1719	1.54	5.85	-3.53
-0.01359	0.8811	0.1737	1.72	5.66	-3.39
-0.01256	0.8592	0.1755	2.02	5.34	-3.19
-0.01153	0.8293	0.1768	2.65	4.71	-2.99
-0.01049	0.8024	0.1772	3.21	4.12	-2.79
-0.00945	0.7744	0.1791	3.55	3.84	-2.59
-0.00852	0.7512	0.1781	4.00	3.32	-2.42
-0.00759	0.7264	0.1781	4.51	2.82	-2.24
-0.00655	0.6980	0.1783	5.19	2.12	-2.05
-0.00561	0.6735	0.1792	5.53	1.79	-1.88
-0.00467	0.6459	0.1791	6.21	1.10	-1.70
-0.00362	0.6227	0.1783	6.77	0.55	-1.52
-0.00272	0.5901	0.1765	7.54	-0.23	-1.36
-0.00173	0.5504	0.1785	8.30	-0.99	-1.19
-0.00123	0.5315	0.1781	8.45	-1.13	-1.10
-0.00093	0.5158	0.1780	8.46	-1.14	-1.05
-0.00053	0.5059	0.1765	7.83	-0.52	-0.98
-0.00023	0.5058	0.1755	7.06	0.25	-0.92
-0.00013	0.5081	0.1742	6.86	0.45	-0.91
0.00006	0.5164	0.1761	5.87	1.44	-0.87
0.00026	0.5296	0.1752	5.00	2.31	-0.83
0.00046	0.5432	0.1752	4.53	2.78	-0.79
0.00066	0.5642	0.1768	3.74	3.58	-0.75
0.00098	0.5846	0.1753	3.63	3.50	-0.68
0.00151	0.6196	0.1749	3.18	4.14	-0.57
0.00268	0.6639	0.1762	2.94	4.38	-0.33
0.00375	0.7022	0.1774	2.52	4.82	-0.11
0.00471	0.7312	0.1767	2.07	5.27	0.08
0.00567	0.7643	0.1771	1.83	5.53	0.31
0.00712	0.8009	0.1760	1.47	5.91	0.56
0.00805	0.8297	0.1754	1.17	6.22	0.75
0.00910	0.8571	0.1729	0.97	6.43	0.96
0.01034	0.8878	0.1708	0.71	6.72	1.21
0.01137	0.9113	0.1674	0.57	6.89	1.42
0.01240	0.9370	0.1637	0.39	7.08	1.63
0.01353	0.9600	0.1626	0.23	7.28	1.86
0.01446	0.9744	0.1567	0.18	7.36	2.06
0.01549	0.9849	0.1580	0.04	7.52	2.27
0.01652	0.9925	0.1552	0.06	7.54	2.49
0.01774	0.9973	0.1556	-0.05	7.70	2.76
0.01876	0.9996	0.1537	-0.03	7.71	2.98
0.01987	0.9999	0.1532	0.02	7.71	3.22
0.02078	1.0004	0.1534	0.00	7.76	3.42
0.02179	1.0006	0.1527	0.02	7.78	3.63
0.02272	1.0007	0.1529	0.04	7.81	3.83
0.02548	1.0003	0.1478	0.07	7.92	4.46
0.02764	1.0000	0.1449	0.00	8.12	4.95
0.03117	1.0000	0.1426	0.05	8.30	5.77

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02323	1.0000	0.1488	-0.17	-1.80	-5.73
-0.02304	0.9998	0.1471	-0.16	-1.82	-5.69
-0.02274	1.0000	0.1478	-0.14	-1.85	-5.63
-0.02234	0.9991	0.1513	-0.14	-1.86	-5.54
-0.02224	0.9992	0.1487	-0.09	-1.92	-5.52
-0.02204	0.9983	0.1527	-0.10	-1.91	-5.48
-0.02163	0.9971	0.1482	-0.02	-2.01	-5.40
-0.02143	0.9974	0.1515	-0.06	-1.96	-5.35
-0.02123	0.9966	0.1532	-0.05	-1.98	-5.31
-0.02093	0.9949	0.1540	0.00	-2.05	-5.25
-0.02063	0.9932	0.1572	0.09	-2.14	-5.19
-0.02033	0.9919	0.1564	0.09	-2.15	-5.12
-0.02013	0.9908	0.1545	0.15	-2.21	-5.08
-0.01971	0.9886	0.1563	0.20	-2.29	-5.00
-0.01961	0.9872	0.1571	0.22	-2.31	-4.97
-0.01940	0.9855	0.1571	0.26	-2.35	-4.93
-0.01919	0.9839	0.1567	0.29	-2.38	-4.89
-0.01878	0.9819	0.1560	0.30	-2.40	-4.81
-0.01867	0.9801	0.1608	0.30	-2.40	-4.79
-0.01847	0.9773	0.1571	0.42	-2.53	-4.75
-0.01815	0.9731	0.1612	0.42	-2.54	-4.69
-0.01763	0.9659	0.1626	0.58	-2.71	-4.59
-0.01648	0.9499	0.1675	0.68	-2.82	-4.36
-0.01617	0.9399	0.1656	0.99	-3.14	-4.30
-0.01534	0.9252	0.1675	1.13	-3.30	-4.14
-0.01411	0.8985	0.1700	1.53	-3.72	-3.90
-0.01328	0.8796	0.1717	1.85	-4.05	-3.75
-0.01246	0.8563	0.1745	2.28	-4.50	-3.59
-0.01133	0.8313	0.1755	2.64	-4.86	-3.37
-0.00968	0.7904	0.1763	3.36	-5.58	-3.10
-0.00833	0.7510	0.1771	4.10	-6.33	-2.81
-0.00708	0.7157	0.1759	4.74	-6.97	-2.58
-0.00552	0.6764	0.1761	5.58	-7.81	-2.29
-0.00395	0.6336	0.1769	6.46	-8.67	-2.01
-0.00375	0.6219	0.1782	6.78	-9.00	-1.97
-0.00263	0.5941	0.1770	7.52	-9.74	-1.81
-0.00144	0.5440	0.1781	8.59	-10.80	-1.57
-0.00124	0.5333	0.1787	8.56	-10.77	-1.53
-0.00104	0.5317	0.1740	8.47	-10.67	-1.50
-0.00054	0.5120	0.1760	7.91	-10.12	-1.41
-0.00024	0.5107	0.1771	6.88	-9.09	-1.36
0.00045	0.5378	0.1745	5.09	-7.28	-1.24
0.00137	0.6102	0.1738	3.33	-5.52	-1.06
0.00265	0.6678	0.1732	2.78	-4.96	-0.80
0.00404	0.7137	0.1727	2.39	-4.55	-0.52
0.00542	0.7623	0.1741	1.82	-3.96	-0.23
0.00668	0.8031	0.1725	1.56	-3.67	0.05
0.00855	0.8493	0.1703	1.21	-3.28	0.38
0.01021	0.8921	0.1659	0.84	-2.87	0.71
0.01155	0.9256	0.1625	0.46	-2.45	0.98
0.01258	0.9460	0.1569	0.45	-2.41	1.19
0.01372	0.9680	0.1568	0.17	-2.09	1.42
0.01485	0.9828	0.1532	0.11	-1.99	1.65
0.01578	0.9916	0.1513	0.03	-1.87	1.84
0.01690	0.9968	0.1505	-0.01	-1.78	2.08
0.01792	0.9985	0.1492	-0.01	-1.74	2.29
0.01894	0.9996	0.1466	0.04	-1.75	2.51
0.01995	1.0002	0.1488	-0.08	-1.58	2.73
0.02300	1.0006	0.1443	-0.01	-1.49	3.37
0.02759	1.0002	0.1423	-0.06	-1.14	4.39
0.03162	1.0002	0.1340	0.01	-0.91	5.30
0.03622	1.0000	0.1312	0.01	-0.49	6.35

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.675$, $\alpha_N = -2^o$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02386	1.0000	0.1178	-0.20	8.71	-3.88
-0.02365	0.9994	0.1175	-0.14	8.63	-3.84
-0.02355	0.9993	0.1220	-0.20	8.70	-3.82
-0.02315	0.9980	0.1195	-0.16	8.63	-3.73
-0.02295	0.9980	0.1175	-0.06	8.51	-3.68
-0.02275	0.9975	0.1220	-0.12	8.57	-3.64
-0.02264	0.9973	0.1231	-0.11	8.56	-3.62
-0.02214	0.9951	0.1190	0.00	8.41	-3.51
-0.02173	0.9933	0.1229	0.01	8.38	-3.42
-0.02142	0.9923	0.1168	0.13	8.24	-3.35
-0.02112	0.9906	0.1209	0.03	8.34	-3.29
-0.02081	0.9885	0.1223	0.03	8.33	-3.22
-0.02061	0.9878	0.1220	0.05	8.29	-3.18
-0.02021	0.9839	0.1284	0.06	8.26	-3.09
-0.02010	0.9823	0.1259	0.15	8.16	-3.07
-0.01980	0.9806	0.1207	0.31	7.98	-3.00
-0.01950	0.9776	0.1255	0.24	8.04	-2.93
-0.01930	0.9758	0.1259	0.27	8.01	-2.89
-0.01899	0.9720	0.1264	0.29	7.96	-2.82
-0.01828	0.9630	0.1245	0.45	7.77	-2.67
-0.01787	0.9576	0.1298	0.43	7.77	-2.58
-0.01757	0.9530	0.1253	0.61	7.58	-2.51
-0.01695	0.9433	0.1280	0.67	7.49	-2.38
-0.01644	0.9352	0.1299	0.82	7.31	-2.26
-0.01602	0.9277	0.1274	1.00	7.12	-2.17
-0.01497	0.9055	0.1298	1.19	6.89	-1.94
-0.01423	0.8900	0.1317	1.32	6.74	-1.78
-0.01318	0.8692	0.1323	1.57	6.45	-1.55
-0.01212	0.8475	0.1321	2.07	5.92	-1.32
-0.01106	0.82[illegible]	0.1318	2.44	5.52	-1.09
-0.00989	0.7966	0.1321	2.66	5.27	-0.84
-0.00904	0.7782	0.1309	3.03	4.88	-0.65
-0.00788	0.7540	0.1305	3.45	4.44	-0.40
-0.00697	0.7308	0.1300	3.91	3.97	-0.20
-0.00605	0.7105	0.1296	3.99	3.88	0.00
-0.00513	0.6881	0.1308	4.32	3.54	0.20
-0.00329	0.6515	0.1287	4.36	3.50	0.59
-0.00235	0.6415	0.1280	3.89	3.97	0.79
-0.00172	0.6393	0.1292	3.27	4.59	0.93
-0.00141	0.6404	0.1283	3.19	4.68	0.99
-0.00110	0.6443	0.1262	3.09	4.79	1.06
-0.00078	0.6459	0.1296	2.61	5.27	1.13
-0.00057	0.6479	0.1269	2.78	5.09	1.17
-0.00036	0.6529	0.1275	2.37	5.51	1.22
-0.00026	0.6546	0.1292	2.14	5.74	1.24
0.00005	0.6598	0.1275	2.14	5.74	1.31
0.00026	0.6651	0.1279	1.88	5.99	1.35
0.00068	0.6735	0.1279	1.65	6.23	1.44
0.00120	0.6907	0.1269	1.41	6.48	1.56
0.00235	0.7193	0.1289	0.98	6.91	1.81
0.00340	0.7504	0.1285	0.83	7.07	2.05
0.00656	0.8386	0.1294	0.45	7.48	2.75
0.00731	0.8642	0.1266	0.41	7.53	2.92
0.00848	0.8876	0.1244	0.34	7.63	3.18
0.00973	0.9135	0.1261	0.19	7.80	3.45
0.01067	0.9333	0.1238	0.21	7.80	3.66
0.01180	0.9547	0.1207	0.17	7.86	3.92
0.01294	0.9715	0.1245	-0.07	8.14	4.17
0.01387	0.9822	0.1222	-0.04	8.13	4.38
0.01479	0.9904	0.1231	-0.11	8.25	4.59
0.01582	0.9951	0.1216	0.00	8.16	4.82
0.01694	0.9985	0.1235	-0.13	8.33	5.07
0.01798	1.0003	0.1202	-0.01	8.26	5.31
0.01903	1.0003	0.1206	0.01	8.29	5.55
0.01996	1.0003	0.1212	0.05	8.28	5.76
0.02110	1.0005	0.1197	0.10	8.29	6.03
0.02213	1.0004	0.1191	0.13	8.31	6.27
0.02470	1.0003	0.1199	0.23	8.35	6.87
0.02707	1.0000	0.1200	0.30	8.44	7.44

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02396	1.0000	0.1233	-0.14	-0.43	-5.67
-0.02356	0.9997	0.1233	-0.13	-0.45	-5.58
-0.02305	0.9988	0.1221	-0.09	-0.49	-5.47
-0.02285	0.9987	0.1228	-0.11	-0.49	-5.42
-0.02235	0.9976	0.1259	-0.09	-0.51	-5.31
-0.02204	0.9969	0.1255	-0.04	-0.57	-5.24
-0.02184	0.9955	0.1264	-0.03	-0.58	-5.20
-0.02163	0.9952	0.1213	0.01	-0.64	-5.15
-0.02133	0.9952	0.1226	0.00	-0.63	-5.09
-0.02112	0.9939	0.1244	-0.02	-0.61	-5.04
-0.02082	0.9918	0.1266	0.04	-0.68	-4.97
-0.02052	0.9902	0.1254	0.12	-0.76	-4.91
-0.02021	0.9886	0.1255	0.22	-0.87	-4.84
-0.01990	0.9858	0.1296	0.28	-0.94	-4.77
-0.01960	0.9842	0.1240	0.33	-0.99	-4.70
-0.01940	0.9806	0.1333	0.23	-0.89	-4.66
-0.01930	0.9798	0.1268	0.36	-1.03	-4.64
-0.01909	0.9779	0.1271	0.37	-1.03	-4.59
-0.01879	0.9746	0.1310	0.37	-1.04	-4.52
-0.01838	0.9706	0.1292	0.45	-1.13	-4.43
-0.01807	0.9657	0.1328	0.47	-1.15	-4.37
-0.01757	0.9579	0.1310	0.64	-1.33	-4.25
-0.01655	0.9435	0.1331	0.77	-1.46	-4.03
-0.01593	0.9333	0.1322	0.92	-1.62	-3.89
-0.01510	0.9165	0.1337	1.04	-1.74	-3.71
-0.01384	0.8903	0.1353	1.37	-2.08	-3.43
-0.01299	0.8723	0.1359	1.68	-2.39	-3.24
-0.01215	0.8544	0.1354	1.98	-2.69	-3.06
-0.01088	0.8250	0.1384	2.27	-2.97	-2.78
-0.00939	0.7905	0.1367	2.97	-3.66	-2.45
-0.00790	0.7538	0.1365	3.52	-4.20	-2.13
-0.00645	0.7223	0.1345	3.91	-4.56	-1.81
-0.00502	0.6892	0.1333	4.41	-5.03	-1.50
-0.00349	0.6573	0.1332	4.47	-5.05	-1.17
-0.00308	0.6496	0.1316	4.52	-5.10	-1.08
-0.00225	0.6413	0.1313	4.22	-4.78	-0.91
-0.00163	0.6405	0.1295	3.79	-4.33	-0.77
-0.00090	0.6446	0.1297	3.39	-3.91	-0.62
-0.00058	0.6477	0.1307	2.91	-3.42	-0.55
-0.00038	0.6521	0.1281	2.82	-3.32	-0.50
-0.00006	0.6582	0.1289	2.49	-2.99	-0.44
0.00035	0.6666	0.1304	2.22	-2.71	-0.35
0.00098	0.6803	0.1287	1.99	-2.46	-0.21
0.00140	0.6978	0.1255	1.42	-1.87	-0.12
0.00192	0.7158	0.1269	1.30	-1.74	0.00
0.00328	0.7507	0.1282	1.05	-1.44	0.30
0.00474	0.7852	0.1294	1.01	-1.35	0.62
0.00600	0.8288	0.1298	0.62	-0.91	0.90
0.00738	0.8613	0.1293	0.69	-0.92	1.20
0.00897	0.9026	0.1239	0.50	-0.66	1.56
0.01065	0.9346	0.1251	0.42	-0.48	1.92
0.01200	0.9579	0.1265	0.11	-0.11	2.22
0.01303	0.9744	0.1223	0.18	-0.11	2.45
0.01416	0.9864	0.1256	0.05	0.08	2.70
0.01518	0.9940	0.1254	-0.01	0.20	2.93
0.01610	0.9976	0.1241	0.03	0.23	3.13
0.01723	0.9992	0.1240	0.05	0.28	3.38
0.01815	0.9997	0.1251	0.01	0.39	3.58
0.01908	0.9999	0.1217	0.19	0.27	3.79
0.02022	1.0005	0.1251	0.10	0.45	4.05
0.02332	1.0004	0.1188	0.18	0.62	4.75
0.02803	1.0000	0.1162	0.29	0.94	5.84

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = +2^{o}$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.4620$

z/c	u/U_D
0.00014	0.5465
0.00015	0.5658
0.00017	0.5787
0.00019	0.5966
0.00020	0.6068
0.00022	0.6185
0.00027	0.6350
0.00030	0.6496
0.00034	0.6638
0.00037	0.6686
0.00043	0.6830
0.00049	0.6966
0.00053	0.7028
0.00063	0.7209
0.00074	0.7391
0.00088	0.7641
0.00103	0.7813
0.00115	0.7969
0.00128	0.8106
0.00142	0.8244
0.00157	0.8407
0.00182	0.8659
0.00195	0.8782
0.00209	0.8916
0.00221	0.9026
0.00233	0.9137
0.00248	0.9256
0.00262	0.9351
0.00275	0.[illegible]451
0.00287	0.9540
0.00299	0.9621
0.00310	0.9687
0.00326	0.9763
0.00339	0.9817
0.00355	0.9871
0.00368	0.9902
0.00360	0.9930
0.00381	0.9931
0.00393	0.9953
0.00407	0.9974
0.00418	0.9980
0.00434	0.9984
0.00447	0.9990
0.00460	0.9999
0.00473	1.0000
0.00484	0.9999
0.00496	1.0001
0.00512	1.0000
0.00526	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.4620$

z/c	u/U_D
0.00018	0.5759
0.00023	0.6003
0.00025	0.6148
0.00027	0.6256
0.00031	0.6416
0.00036	0.6478
0.00040	0.6613
0.00045	0.6720
0.00049	0.6841
0.00059	0.7006
0.00068	0.7184
0.00080	0.7339
0.00095	0.7574
0.00108	0.7750
0.00122	0.7910
0.00135	0.8056
0.00148	0.8222
0.00163	0.8377
0.00181	0.8556
0.00197	0.8722
0.00215	0.8873
0.00230	0.9025
0.00245	0.9140
0.00260	0.9271
0.00273	0.9365
0.00284	0.9461
0.00296	0.9550
0.00305	0.9605
0.00319	0.9697
0.00335	0.9762
0.00346	0.9816
0.00365	0.9867
0.00381	0.9924
0.00397	0.9944
0.00412	0.9971
0.00430	0.9989
0.00443	0.9984
0.00460	0.9987
0.00475	0.9994
0.00494	0.9994
0.00528	1.0002
0.00548	1.0000
0.00565	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.4$, $\alpha_N = +2^o$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5261	0.0370	3.52	7.35	-0.37
0.00055	0.5551	0.0463	3.45	6.73	-0.30
0.00087	0.5875	0.0562	3.31	7.22	-0.18
0.00119	0.6047	0.0609	3.08	7.33	-0.06
0.00161	0.6270	0.0612	3.04	7.34	0.11
0.00183	0.6384	0.0630	2.86	7.50	0.19
0.00215	0.6513	0.0641	2.83	7.50	0.31
0.00279	0.6719	0.0654	2.69	7.60	0.55
0.00311	0.6819	0.0666	2.45	7.81	0.68
0.00351	0.6974	0.0655	2.49	7.75	0.83
0.00372	0.7058	0.0698	2.31	7.92	0.91
0.00392	0.7132	0.0686	2.24	7.98	0.99
0.00432	0.7273	0.0673	2.06	8.13	1.14
0.00453	0.7319	0.0695	2.10	8.08	1.22
0.00473	0.7385	0.0724	2.06	8.10	1.30
0.00503	0.7516	0.0707	1.84	8.30	1.41
0.00554	0.7656	0.0713	1.71	8.40	1.57
0.00615	0.7854	0.0749	1.55	8.54	1.76
0.00675	0.8018	0.0704	1.51	8.53	1.95
0.00715	0.8180	0.0696	1.38	8.65	2.07
0.00863	0.8603	0.0738	0.87	9.09	2.53
0.00922	0.8763	0.0745	0.76	9.18	2.72
0.00971	0.8895	0.0734	0.69	9.23	2.87
0.01020	0.8998	0.0720	0.56	9.34	3.02
0.01136	0.9289	0.0735	0.38	9.47	3.36
0.01229	0.9488	0.0727	0.23	9.60	3.63
0.01333	0.9695	0.0723	0.10	9.70	3.93
0.01457	0.9847	0.0710	0.01	9.76	4.29
0.01549	0.9916	0.0690	0.01	9.74	4.56
0.01628	0.9964	0.0674	-0.01	9.75	4.79
0.01716	0.9983	0.0674	-0.07	9.79	5.04
0.01823	1.0005	0.0670	0.00	9.71	5.35
0.01977	1.0000	0.0651	0.05	9.65	5.80
0.01997	0.9999	0.0646	0.06	9.64	5.86
0.02105	1.0000	0.0640	0.09	9.61	6.16

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5412	0.0328	3.60	-0.10	-0.30
0.00053	0.5497	0.0378	3.56	-0.18	-0.27
0.00089	0.5847	0.0499	3.40	-0.46	-0.14
0.00116	0.6054	0.0528	3.28	-0.44	-0.04
0.00153	0.6237	0.0588	2.98	-0.17	0.10
0.00180	0.6365	0.0570	3.08	-0.29	0.20
0.00207	0.6473	0.0571	2.99	-0.23	0.30
0.00225	0.6560	0.0569	3.03	-0.28	0.36
0.00252	0.6647	0.0616	2.81	-0.08	0.46
0.00279	0.6731	0.0582	2.89	-0.18	0.57
0.00315	0.6824	0.0587	2.83	-0.15	0.70
0.00360	0.6974	0.0547	2.76	-0.12	0.87
0.00414	0.7142	0.0592	2.51	0.10	1.07
0.00459	0.7262	0.0599	2.40	0.17	1.24
0.00522	0.7427	0.0605	2.37	0.17	1.46
0.00585	0.7605	0.0610	2.19	0.30	1.65
0.00666	0.7885	0.0610	1.88	0.57	1.89
0.00791	0.8251	0.0621	1.45	0.93	2.27
0.00898	0.8535	0.0609	1.13	1.20	2.59
0.00996	0.8797	0.0612	0.91	1.36	2.89
0.01111	0.9102	0.0605	0.70	1.53	3.22
0.01208	0.9332	0.0590	0.52	1.67	3.49
0.01278	0.9506	0.0589	0.42	1.75	3.69
0.01383	0.9702	0.0584	0.25	1.88	3.98
0.01490	0.9844	0.0568	0.16	1.93	4.29
0.01600	0.9930	0.0534	0.06	2.00	4.60
0.01691	0.9965	0.0525	-0.04	2.08	4.85
0.01781	0.9983	0.0510	0.02	2.01	5.10
0.01879	0.9994	0.0493	0.03	1.98	5.38
0.01982	1.0000	0.0478	0.00	2.00	5.67
0.02075	0.9999	0.0466	0.00	1.99	5.93
0.02143	1.0000	0.0466	0.01	1.97	6.11

x/c = 0.986 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.4904	0.1266	5.75	3.02	0.25
0.00047	0.4960	0.1259	5.73	2.78	0.26
0.00087	0.5364	0.1328	5.50	2.52	0.43
0.00116	0.5631	0.1394	5.40	2.74	0.55
0.00165	0.5904	0.1382	5.08	3.02	0.76
0.00203	0.6114	0.1393	4.84	3.22	0.92
0.00262	0.6344	0.1419	4.37	3.66	1.17
0.00330	0.6539	0.1382	4.22	3.75	1.46
0.00473	0.7013	0.1381	3.51	4.35	2.08
0.00511	0.7113	0.1395	3.18	4.66	2.23
0.00558	0.7266	0.1403	2.96	4.85	2.39
0.00606	0.7407	0.1390	2.81	4.97	2.55
0.00653	0.7511	0.1370	2.69	5.06	2.72
0.00766	0.7828	0.1384	2.34	5.36	3.11
0.00853	0.8058	0.1385	1.97	5.69	3.41
0.00959	0.8344	0.1384	1.56	6.05	3.78
0.01065	0.8614	0.1367	1.21	6.36	4.13
0.01162	0.8812	0.1321	1.14	6.39	4.44
0.01256	0.9041	0.1296	0.79	6.71	4.74
0.01339	0.9207	0.1275	0.59	6.89	5.01
0.01440	0.9426	0.1265	0.48	6.98	5.33
0.01522	0.9589	0.1243	0.23	7.21	5.60
0.01613	0.9720	0.1213	0.14	7.29	5.88
0.01708	0.9833	0.1177	0.02	7.40	6.19
0.01814	0.9904	0.1181	-0.04	7.45	6.52
0.01862	0.9935	0.1161	-0.02	7.43	6.68
0.01901	0.9947	0.1149	0.02	7.39	6.80
0.01930	0.9954	0.1160	-0.03	7.43	6.89
0.01959	0.9965	0.1141	-0.01	7.41	6.98
0.01997	0.9976	0.1138	-0.02	7.43	7.10
0.02036	0.9984	0.1120	-0.04	7.44	7.22
0.02064	0.9989	0.1104	0.02	7.39	7.30
0.02082	0.9990	0.1120	-0.01	7.42	7.35
0.02127	0.9996	0.1109	-0.01	7.42	7.48
0.02171	0.9999	0.1104	-0.06	7.46	7.61
0.02198	0.9996	0.1080	-0.03	7.44	7.68
0.02305	1.0000	0.1071	-0.03	7.44	7.99

x/c = 0.986 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.4962	0.1380	5.84	-8.51	-1.91
0.00055	0.5116	0.1389	5.78	-7.84	-1.87
0.00075	0.5357	0.1427	5.66	-8.20	-1.79
0.00094	0.5575	0.1444	5.54	-7.07	-1.71
0.00123	0.5746	0.1430	5.47	-7.14	-1.58
0.00153	0.5917	0.1428	5.09	-6.79	-1.46
0.00212	0.6141	0.1401	4.95	-6.69	-1.22
0.00259	0.6359	0.1433	4.41	-6.20	-1.02
0.00307	0.6525	0.1436	4.17	-5.99	-0.82
0.00373	0.6728	0.1439	3.94	-5.81	-0.54
0.00421	0.6893	0.1436	3.70	-5.61	-0.34
0.00497	0.7130	0.1432	3.24	-5.21	-0.02
0.00592	0.7391	0.1436	2.90	-4.92	0.31
0.00688	0.7654	0.1414	2.60	-4.67	0.63
0.00776	0.7927	0.1413	2.25	-4.37	0.93
0.00893	0.8249	0.1405	1.79	-3.97	1.33
0.00990	0.8475	0.1394	1.54	-3.77	1.66
0.01067	0.8671	0.1388	1.35	-3.61	1.91
0.01178	0.8926	0.1374	1.01	-3.31	2.26
0.01280	0.9174	0.1349	0.84	-3.18	2.58
0.01372	0.9370	0.1311	0.57	-2.94	2.87
0.01445	0.9505	0.1285	0.40	-2.79	3.11
0.01540	0.9659	0.1258	0.38	-2.79	3.40
0.01648	0.9803	0.1230	0.15	-2.58	3.74
0.01735	0.9887	0.1209	0.11	-2.55	4.01
0.01842	0.9946	0.1167	0.00	-2.46	4.34
0.01919	0.9970	0.1161	0.00	-2.46	4.59
0.01937	0.9975	0.1164	0.00	-2.46	4.64
0.01955	0.9980	0.1171	-0.02	-2.44	4.70
0.02000	0.9988	0.1141	-0.03	-2.43	4.84
0.02037	0.9991	0.1134	-0.12	-2.35	4.94
0.02109	0.9997	0.1107	-0.10	-2.37	5.15
0.02135	0.9999	0.1100	-0.08	-2.39	5.22
0.02180	1.0004	0.1097	-0.16	-2.30	5.35
0.02315	1.0000	0.1072	-0.17	-2.29	5.73

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = +2^{o}$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01858	1.0000	0.1350	-0.04	8.22	-3.54
-0.01806	1.0000	0.1373	0.00	8.14	-3.43
-0.01754	1.0002	0.1406	0.01	8.10	-3.32
-0.01691	0.9986	0.1408	0.02	8.06	-3.18
-0.01535	0.9933	0.1423	-0.01	8.02	-2.86
-0.01525	0.9926	0.1421	0.04	7.96	-2.84
-0.01504	0.9911	0.1436	0.04	7.94	-2.79
-0.01442	0.9861	0.1451	0.13	7.83	-2.66
-0.01391	0.9807	0.1453	0.09	7.84	-2.56
-0.01350	0.9757	0.1432	0.12	7.79	-2.47
-0.01236	0.9574	0.1494	0.28	7.59	-2.23
-0.01143	0.9385	0.1552	0.49	7.33	-2.04
-0.01029	0.9167	0.1527	0.57	7.21	-1.81
-0.00915	0.8864	0.1569	0.84	6.90	-1.57
-0.00833	0.8637	0.1585	0.97	6.74	-1.40
-0.00729	0.8387	0.1532	1.08	6.58	-1.19
-0.00645	0.8126	0.1654	1.32	6.32	-1.02
-0.00242	0.6853	0.1648	2.36	5.17	-0.16
-0.00143	0.6394	0.1651	2.49	5.01	0.05
-0.00093	0.6103	0.1625	2.78	4.71	0.15
-0.00053	0.5826	0.1627	2.98	4.51	0.24
-0.00013	0.5523	0.1618	3.60	3.88	0.32
0.00006	0.5392	0.1582	4.31	3.16	0.37
0.00046	0.5353	0.1524	5.12	2.34	0.44
0.00086	0.5495	0.1500	5.51	1.93	0.52
0.00139	0.5781	0.1504	5.63	1.82	0.62
0.00192	0.6016	0.1517	5.49	1.94	0.72
0.00224	0.6148	0.1519	5.32	2.10	0.78
0.00267	0.6290	0.1519	5.14	2.27	0.86
0.00384	0.6673	0.1511	4.50	2.90	1.09
0.00480	0.6942	0.1492	4.11	3.26	1.27
0.00596	0.7241	0.1503	3.41	3.95	1.50
0.00731	0.7617	0.1468	2.93	4.41	1.77
0.00804	0.7798	0.1497	2.50	4.83	1.91
0.00971	0.8173	0.1467	2.18	5.14	2.24
0.01095	0.8518	0.1455	1.63	5.68	2.49
0.01260	0.8879	0.1417	1.31	6.01	2.83
0.01414	0.9228	0.1407	0.77	6.55	3.15
0.01579	0.9513	0.1352	0.56	6.76	3.49
0.01733	0.9741	0.1369	0.19	7.15	3.81
0.01895	0.9893	0.1285	0.14	7.22	4.16
0.02057	0.9966	0.1239	-0.04	7.42	4.50
0.02332	1.0000	0.1184	-0.11	7.54	5.10
0.02506	0.9998	0.1174	-0.27	7.74	5.48
0.02651	1.0000	0.1153	-0.30	7.82	5.80
0.02807	1.0000	0.1134	-0.36	7.94	6.15

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.01851	1.0000	0.1265	-0.07	-1.46	-3.64
-0.01820	0.9999	0.1249	-0.07	-1.47	-3.78
-0.01768	0.9995	0.1249	-0.07	-1.49	-3.67
-0.01715	0.9986	0.1266	0.06	-1.65	-3.56
-0.01664	0.9978	0.1267	0.03	-1.65	-3.45
-0.01602	0.9959	0.1284	0.01	-1.65	-3.33
-0.01540	0.9930	0.1314	-0.01	-1.65	-3.20
-0.01469	0.9876	0.1322	0.11	-1.81	-3.05
-0.01386	0.9786	0.1331	0.19	-1.91	-2.88
-0.01263	0.9635	0.1341	0.24	-2.00	-2.67
-0.01190	0.9463	0.1390	0.31	-2.10	-2.48
-0.01077	0.9236	0.1423	0.54	-2.38	-2.24
-0.00984	0.9022	0.1423	0.58	-2.45	-2.05
-0.00901	0.8814	0.1447	0.77	-2.66	-1.88
-0.00797	0.8531	0.1485	0.93	-2.84	-1.67
-0.00683	0.8213	0.1509	1.12	-3.06	-1.44
-0.00589	0.7917	0.1493	1.34	-3.31	-1.25
-0.00495	0.7629	0.1517	1.45	-3.43	-1.06
-0.00402	0.7316	0.1517	1.71	-3.71	-0.86
-0.00303	0.6964	0.1534	2.08	-4.09	-0.65
-0.00203	0.6533	0.1559	2.47	-4.50	-0.44
-0.00104	0.5922	0.1565	2.99	-5.03	-0.23
-0.00044	0.5488	0.1590	4.00	-6.06	-0.10
-0.00005	0.5373	0.1577	4.83	-6.89	-0.02
0.00005	0.5365	0.1580	4.87	-6.93	0.00
0.00059	0.5586	0.1529	5.38	-7.45	0.10
0.00101	0.5765	0.1533	5.23	-7.31	0.18
0.00197	0.6170	0.1520	4.92	-7.02	0.36
0.00230	0.6302	0.1506	4.89	-6.98	0.42
0.00293	0.6497	0.1503	4.55	-6.64	0.54
0.00400	0.6815	0.1508	3.92	-6.03	0.74
0.00515	0.7192	0.1467	3.53	-5.64	0.96
0.00662	0.7575	0.1452	3.01	-5.13	1.25
0.00797	0.7914	0.1402	2.33	-4.45	1.51
0.00921	0.8244	0.1381	1.88	-4.00	1.75
0.01035	0.8520	0.1357	1.53	-3.65	1.98
0.01159	0.8800	0.1310	1.28	-3.38	2.23
0.01303	0.9121	0.1277	0.99	-3.07	2.52
0.01406	0.9316	0.1235	0.63	-2.91	2.72
0.01509	0.9489	0.1212	0.60	-2.65	2.93
0.01622	0.9671	0.1188	0.29	-2.32	3.17
0.01735	0.9798	0.1144	0.20	-2.21	3.40
0.01867	0.9905	0.1122	-0.02	-1.95	3.67
0.01968	0.9956	0.1086	0.00	-1.95	3.88
0.02069	0.9981	0.1087	-0.10	-1.81	4.09
0.02233	0.9991	0.1053	-0.32	-1.53	4.44
0.02448	0.9996	0.0994	-0.29	-1.49	4.91
0.02580	1.0001	0.0981	-0.24	-1.49	5.19
0.02769	0.9998	0.0951	-0.34	-1.30	5.59
0.03082	1.0000	0.0891	-0.34	-1.15	6.27

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{\circ}$, $M_N = 0.4$, $\alpha_N = +2^{\circ}$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.01858	1.0000	0.1124	0.18	8.74	-1.65
-0.01797	0.9999	0.1140	0.09	8.79	-1.52
-0.01736	0.9989	0.1135	0.13	8.71	-1.38
-0.01571	0.9956	0.1112	0.03	8.69	-1.01
-0.01540	0.9943	0.1147	-0.04	8.74	-0.94
-0.01487	0.9913	0.1168	0.03	8.63	-0.82
-0.01434	0.9874	0.1133	0.17	8.45	-0.70
-0.01382	0.9828	0.1150	0.12	8.47	-0.58
-0.01276	0.9697	0.1167	0.24	8.28	-0.35
-0.01181	0.9564	0.1176	0.26	8.20	-0.13
-0.01064	0.9339	0.1205	0.20	8.20	0.13
-0.00958	0.9105	0.1190	0.45	7.88	0.37
-0.00862	0.8914	0.1200	0.46	7.82	0.58
-0.00655	0.8460	0.1203	0.53	7.65	1.04
-0.00554	0.8178	0.1214	0.68	7.46	1.27
-0.00462	0.7919	0.1208	0.73	7.37	1.48
-0.00370	0.7641	0.1197	0.77	7.29	1.68
-0.00277	0.7329	0.1171	0.84	7.18	1.90
-0.00162	0.7034	0.1171	1.12	6.87	2.16
-0.00110	0.6893	0.1138	1.35	6.61	2.27
-0.00078	0.6812	0.1143	1.39	6.56	2.34
-0.00036	0.6724	0.1135	1.57	6.37	2.44
-0.00005	0.6670	0.1137	1.64	6.29	2.51
0.00026	0.6636	0.1106	1.89	6.03	2.58
0.00068	0.6603	0.1111	2.00	5.90	2.68
0.00089	0.6595	0.1106	2.16	5.75	2.72
0.00120	0.6598	0.1104	2.26	5.63	2.79
0.00173	0.6628	0.1104	2.49	5.38	2.91
0.00204	0.6676	0.1087	2.66	5.21	2.98
0.00235	0.6740	0.1084	2.68	5.18	3.05
0.00381	0.6957	0.1096	2.62	5.21	3.39
0.00454	0.7176	0.1087	2.47	5.35	3.55
0.00560	0.7423	0.1111	2.23	5.57	3.79
0.00688	0.7750	0.1101	1.86	5.92	4.08
0.00773	0.7921	0.1133	1.66	6.10	4.27
0.00901	0.8267	0.1108	1.37	6.38	4.56
0.01046	0.8580	0.1097	1.08	6.66	4.89
0.01201	0.8946	0.1081	0.85	6.88	5.25
0.01356	0.9232	0.1073	0.57	7.17	5.60
0.01510	0.9521	0.1049	0.34	7.40	5.96
0.01653	0.9710	0.1060	0.15	7.60	6.29
0.01808	0.9876	0.1018	0.10	7.67	6.64
0.01975	0.9953	0.1011	0.00	7.81	7.03
0.02275	0.9997	0.0983	-0.09	7.96	7.74
0.02428	0.9996	0.0990	-0.32	8.23	8.10
0.02581	1.0003	0.0933	-0.27	8.24	8.46
0.02758	1.0000	0.0926	-0.41	8.45	8.88

MEASUREMENT 2

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = 0$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.3110$

z/c	u/U_p
0.00014	0.5607
0.00015	0.5815
0.00017	0.5962
0.00020	0.6239
0.00023	0.6291
0.00024	0.6430
0.00029	0.6627
0.00034	0.6754
0.00038	0.6850
0.00043	0.7007
0.00056	0.7305
0.00069	0.7538
0.00084	0.7767
0.00097	0.7964
0.00109	0.8132
0.00122	0.8301
0.00136	0.8468
0.00149	0.8623
0.00164	0.8777
0.00175	0.8915
0.00189	0.9035
0.00200	0.9146
0.00217	0.9284
0.00229	0.9393
0.00248	0.9522
0.00254	0.9590
0.00275	0.9690
0.00282	0.9754
0.00293	0.9818
0.00305	0.9876
0.00321	0.9912
0.00333	0.9946
0.00347	0.9964
0.00363	0.9980
0.00374	0.9988
0.00388	0.9994
0.00402	0.9995
0.00417	0.9997
0.00430	0.9998
0.00438	1.0000
0.00453	1.0000
0.00477	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.3110$

z/c	u/U_p
0.00014	0.5599
0.00015	0.5746
0.00020	0.6025
0.00021	0.6171
0.00025	0.6412
0.00029	0.6591
0.00034	0.6752
0.00039	0.6939
0.00046	0.7101
0.00052	0.7238
0.00059	0.7413
0.00067	0.7553
0.00075	0.7674
0.00086	0.7849
0.00100	0.8049
0.00113	0.8223
0.00123	0.8351
0.00138	0.8538
0.00151	0.8695
0.00164	0.8842
0.00177	0.8984
0.00190	0.9125
0.00204	0.9231
0.00222	0.9401
0.00236	0.9510
0.00250	0.9596
0.00263	0.9683
0.00276	0.9763
0.00289	0.9833
0.00303	0.9895
0.00320	0.9938
0.00344	0.9975
0.00362	0.9986
0.00378	0.9993
0.00397	0.9997
0.00415	1.0000
0.00441	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (continued)

x/c = 0.814 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00031	0.5214	-0.0066	2.12	8.33	-2.47
0.00055	0.5518	0.0069	2.04	8.09	-2.40
0.00088	0.5975	0.0213	1.94	8.09	-2.30
0.00133	0.6301	0.0266	1.69	8.14	-2.16
0.00165	0.6566	0.0299	1.72	8.10	-2.06
0.00199	0.6749	0.0324	1.60	8.20	-1.96
0.00255	0.6981	0.0325	1.57	8.19	-1.79
0.00277	0.7088	0.0332	1.53	8.22	-1.73
0.00311	0.7262	0.0333	1.46	8.28	-1.62
0.00345	0.7399	0.0345	1.38	8.34	-1.52
0.00367	0.7459	0.0358	1.29	8.42	-1.45
0.00389	0.7566	0.0362	1.24	8.46	-1.38
0.00423	0.7650	0.0362	1.25	8.43	-1.28
0.00445	0.7698	0.0389	1.04	8.63	-1.21
0.00490	0.7891	0.0372	1.09	8.56	-1.08
0.00523	0.7973	0.0379	1.00	8.64	-0.98
0.00546	0.8077	0.0380	0.95	8.68	-0.92
0.00579	0.8178	0.0376	0.96	8.65	-0.82
0.00613	0.8290	0.0389	0.86	8.74	-0.72
0.00689	0.8555	0.0391	0.72	8.85	-0.51
0.00765	0.8806	0.0391	0.55	8.99	-0.29
0.00840	0.9033	0.0392	0.46	9.05	-0.07
0.00883	0.9135	0.0402	0.37	9.13	0.05
0.00947	0.9323	0.0393	0.31	9.17	0.24
0.01044	0.9560	0.0390	0.19	9.26	0.51
0.01166	0.9779	0.0388	0.08	9.34	0.86
0.01255	0.9890	0.0382	0.05	9.36	1.11
0.01377	0.9967	0.0398	-0.01	9.39	1.46
0.01465	0.9990	0.0405	0.01	9.37	1.72
0.01568	1.0000	0.0396	0.00	9.36	2.01
0.01670	0.9999	0.0399	0.01	9.35	2.30
0.01771	1.0000	0.0404	0.00	9.35	2.58

x/c = 0.814 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.5474	0.0141	2.46	-0.43	-0.12
0.00078	0.5859	0.0266	2.34	-1.00	-0.03
0.00113	0.6151	0.0350	2.16	-0.83	0.07
0.00148	0.6400	0.0344	2.11	-0.80	0.17
0.00171	0.6554	0.0352	1.99	-0.70	0.23
0.00206	0.6714	0.0382	1.95	-0.69	0.33
0.00241	0.6838	0.0405	1.83	-0.59	0.43
0.00264	0.6947	0.0395	1.90	-0.68	0.50
0.00288	0.7082	0.0402	1.79	-0.59	0.57
0.00311	0.7182	0.0403	1.71	-0.53	0.63
0.00346	0.7324	0.0425	1.65	-0.49	0.73
0.00370	0.7413	0.0453	1.52	-0.38	0.80
0.00416	0.7570	0.0438	1.46	-0.36	0.93
0.00439	0.7700	0.0435	1.31	-0.21	1.00
0.00555	0.8050	0.0445	1.13	-0.11	1.32
0.00602	0.8222	0.0453	1.02	-0.03	1.45
0.00669	0.8418	0.0437	0.90	0.05	1.63
0.00726	0.8623	0.0442	0.72	0.19	1.78
0.00782	0.8817	0.0454	0.67	0.21	1.93
0.00861	0.9022	0.0469	0.56	0.28	2.14
0.00917	0.9182	0.0472	0.43	0.38	2.29
0.00973	0.9345	0.0449	0.35	0.43	2.45
0.01051	0.9522	0.0474	0.25	0.49	2.66
0.01133	0.9697	0.0468	0.12	0.58	2.87
0.01214	0.9804	0.0452	0.10	0.56	3.09
0.01319	0.9912	0.0443	0.02	0.60	3.37
0.01423	0.9974	0.0420	-0.02	0.60	3.65
0.01501	0.9984	0.0422	-0.02	0.58	3.87
0.01586	0.9997	0.0418	-0.03	0.56	4.09
0.01650	0.9997	0.0398	-0.03	0.54	4.26
0.01702	1.0000	0.0393	-0.03	0.52	4.40
0.01797	1.0000	0.0394	-0.02	0.49	4.66
0.01870	1.0000	0.0378	0.00	0.45	4.86
0.01963	1.0000	0.0367	0.00	0.43	5.11

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5308	0.0564	2.29	9.59	-0.40
0.00040	0.5346	0.0562	2.28	9.22	-0.39
0.00061	0.5581	0.0669	2.22	8.75	-0.33
0.00104	0.5950	0.0745	2.03	8.52	-0.20
0.00136	0.6196	0.0795	1.98	8.54	-0.10
0.00168	0.6384	0.0823	1.90	8.60	0.00
0.00200	0.6531	0.0839	1.86	8.61	0.10
0.00211	0.6571	0.0850	1.76	8.71	0.13
0.00242	0.6677	0.0856	1.72	8.73	0.23
0.00285	0.6853	0.0863	1.69	8.73	0.36
0.00328	0.7036	0.0861	1.70	8.68	0.49
0.00338	0.7084	0.0878	1.58	8.79	0.52
0.00368	0.7176	0.0894	1.43	8.92	0.62
0.00389	0.7249	0.0896	1.39	8.95	0.68
0.00399	0.7273	0.0900	1.34	9.00	0.71
0.00409	0.7303	0.0896	1.36	8.97	0.74
0.00429	0.7378	0.0896	1.35	8.96	0.80
0.00450	0.7463	0.0892	1.38	8.92	0.87
0.00460	0.7509	0.0913	1.23	9.06	0.90
0.00490	0.7602	0.0912	1.24	9.04	0.99
0.00510	0.7684	0.0914	1.16	9.10	1.05
0.00540	0.7789	0.0922	1.09	9.15	1.14
0.00621	0.8040	0.0933	0.96	9.23	1.37
0.00692	0.8268	0.0947	0.76	9.39	1.58
0.00772	0.8500	0.0948	0.69	9.42	1.82
0.00801	0.8604	0.0953	0.64	9.46	1.90
0.00870	0.8799	0.0960	0.52	9.55	2.10
0.00958	0.9054	0.0967	0.36	9.66	2.37
0.01065	0.9332	0.0960	0.24	9.73	2.68
0.01153	0.9528	0.0962	0.11	9.83	2.93
0.01266	0.9742	0.0954	0.05	9.85	3.26
0.01360	0.9853	0.0953	0.02	9.85	3.54
0.01462	0.9931	0.0943	0.01	9.83	3.84
0.01555	0.9973	0.0938	-0.02	9.83	4.11
0.01655	0.9991	0.0927	-0.04	9.83	4.39
0.01791	1.0000	0.0903	0.00	9.77	4.79
0.01887	1.0000	0.0889	0.07	9.69	5.07

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5618	0.0531	2.76	0.67	-0.34
0.00055	0.5707	0.0604	2.72	0.92	-0.31
0.00087	0.5986	0.0684	2.61	0.87	-0.22
0.00118	0.6149	0.0726	2.31	0.97	-0.13
0.00138	0.6280	0.0717	2.54	0.72	-0.06
0.00159	0.6396	0.0751	2.35	0.89	0.00
0.00180	0.6492	0.0759	2.32	0.91	0.06
0.00210	0.6627	0.0789	2.33	0.87	0.15
0.00231	0.6695	0.0824	2.16	1.02	0.21
0.00273	0.6897	0.0762	2.26	0.90	0.33
0.00293	0.6973	0.0807	1.99	1.16	0.39
0.00345	0.7107	0.0808	2.00	1.11	0.55
0.00396	0.7290	0.0800	1.90	1.17	0.70
0.00437	0.7439	0.0816	1.75	1.29	0.82
0.00499	0.7614	0.0797	1.64	1.35	1.01
0.00549	0.7789	0.0811	1.47	1.49	1.15
0.00609	0.7955	0.0833	1.36	1.56	1.32
0.00669	0.8150	0.0832	1.18	1.70	1.49
0.00719	0.8316	0.0863	1.03	1.83	1.63
0.00769	0.8469	0.0840	0.95	1.87	1.77
0.00839	0.8674	0.0862	0.80	1.98	1.97
0.00908	0.8873	0.0857	0.67	2.07	2.17
0.00962	0.9032	0.0851	0.57	2.13	2.38
0.01077	0.9274	0.0837	0.43	2.22	2.65
0.01172	0.9482	0.0822	0.31	2.31	2.92
0.01247	0.9638	0.0813	0.20	2.38	3.13
0.01331	0.9775	0.0803	0.13	2.41	3.37
0.01392	0.9854	0.0795	0.07	2.46	3.54
0.01442	0.9899	0.0790	0.03	2.48	3.69
0.01532	0.9957	0.0789	-0.01	2.49	3.94
0.01602	0.9981	0.0779	-0.03	2.48	4.14
0.01681	0.9994	0.0755	-0.02	2.46	4.36
0.01790	0.9998	0.0742	-0.02	2.43	4.67
0.01871	1.0001	0.0732	-0.04	2.43	4.90
0.01981	1.0000	0.0712	-0.04	2.41	5.21
0.02031	1.0000	0.0703	-0.03	2.39	5.35
0.02061	1.0000	0.0704	-0.02	2.37	5.43

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (continued)

x/c = 0.986 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5084	0.1361	4.06	5.49	0.23
0.00055	0.5223	0.1343	4.01	4.67	0.27
0.00075	0.5417	0.1371	3.91	4.31	0.35
0.00095	0.5606	0.1400	3.82	4.49	0.43
0.00124	0.5839	0.1423	3.73	4.59	0.54
0.00143	0.5979	0.1434	3.62	4.67	0.62
0.00173	0.6165	0.1444	3.44	4.84	0.73
0.00250	0.6509	0.1455	3.11	5.10	1.04
0.00328	0.6766	0.1455	2.84	5.31	1.35
0.00396	0.7009	0.1453	2.61	5.49	1.61
0.00434	0.7130	0.1456	2.48	5.59	1.76
0.00490	0.7321	0.1463	2.22	5.81	1.99
0.00576	0.7585	0.1463	1.96	6.02	2.28
0.00689	0.7903	0.1447	1.68	6.24	2.65
0.00765	0.8135	0.1445	1.45	6.42	2.90
0.00870	0.8433	0.1445	1.14	6.68	3.25
0.00947	0.8653	0.1429	0.94	6.84	3.51
0.01044	0.8877	0.1411	0.76	6.98	3.82
0.01150	0.9108	0.1386	0.59	7.11	4.15
0.01255	0.9336	0.1361	0.35	7.31	4.48
0.01383	0.9598	0.1312	0.23	7.39	4.88
0.01475	0.9743	0.1289	0.17	7.43	5.17
0.01575	0.9863	0.1280	0.04	7.54	5.47
0.01677	0.9930	0.1257	0.01	7.55	5.77
0.01764	0.9968	0.1248	0.00	7.55	6.03
0.01812	0.9981	0.1241	0.03	7.51	6.18
0.01822	0.9983	0.1254	-0.02	7.56	6.20
0.01851	0.9987	0.1236	0.01	7.53	6.29
0.01870	0.9991	0.1248	-0.04	7.57	6.35
0.01890	0.9993	0.1230	0.01	7.52	6.41
0.01909	0.9995	0.1223	-0.02	7.56	6.46
0.01918	0.9996	0.1223	-0.04	7.57	6.49
0.01938	0.9997	0.1220	-0.04	7.57	6.55
0.01957	0.9997	0.1217	-0.02	7.55	6.61
0.01976	1.0000	0.1228	-0.04	7.56	6.67
0.02005	1.0000	0.1205	0.00	7.52	6.75
0.02034	1.0000	0.1200	-0.01	7.53	6.83

x/c = 0.986 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00046	0.4974	0.1386	4.67	-5.14	-1.93
0.00047	0.4980	0.1390	4.67	-5.16	-1.93
0.00066	0.5160	0.1449	4.56	-6.04	-1.85
0.00096	0.5548	0.1503	4.40	-5.87	-1.74
0.00115	0.5716	0.1520	4.35	-5.41	-1.66
0.00155	0.5987	0.1510	4.10	-5.20	-1.51
0.00184	0.6155	0.1523	3.83	-4.95	-1.40
0.00223	0.6327	0.1536	3.76	-4.91	-1.25
0.00261	0.6513	0.1537	3.53	-4.71	-1.10
0.00309	0.6701	0.1538	3.31	-4.53	-0.91
0.00347	0.6863	0.1527	3.10	-4.35	-0.77
0.00404	0.7037	0.1537	2.85	-4.15	-0.54
0.00452	0.7207	0.1547	2.69	-4.02	-0.36
0.00509	0.7400	0.1545	2.42	-3.79	-0.14
0.00556	0.7534	0.1558	2.30	-3.71	0.01
0.00604	0.7701	0.1536	2.13	-3.56	0.17
0.00670	0.7895	0.1559	1.88	-3.36	0.38
0.00739	0.8100	0.1553	1.71	-3.22	0.60
0.00797	0.8264	0.1536	1.57	-3.12	0.80
0.00885	0.8501	0.1538	1.33	-2.92	1.08
0.00972	0.8735	0.1522	1.13	-2.77	1.37
0.01050	0.8926	0.1510	0.92	-2.59	1.61
0.01134	0.9113	0.1501	0.77	-2.47	1.87
0.01180	0.9242	0.1489	0.66	-2.38	2.01
0.01227	0.9343	0.1486	0.54	-2.28	2.15
0.01319	0.9530	0.1476	0.36	-2.14	2.44
0.01393	0.9658	0.1453	0.29	-2.09	2.67
0.01466	0.9764	0.1436	0.23	-2.05	2.89
0.01571	0.9872	0.1422	0.10	-1.95	3.21
0.01649	0.9930	0.1401	0.04	-1.91	3.44
0.01756	0.9972	0.1392	-0.04	-1.85	3.75
0.01795	0.9981	0.1374	-0.04	-1.85	3.86
0.01824	0.9985	0.1372	-0.03	-1.86	3.95
0.01853	0.9991	0.1377	-0.04	-1.85	4.04
0.01882	0.9994	0.1358	-0.04	-1.86	4.12
0.01912	0.9994	0.1357	-0.07	-1.83	4.21
0.01939	0.9997	0.1341	-0.06	-1.84	4.29
0.01967	0.9998	0.1345	-0.10	-1.81	4.37
0.02012	1.0000	0.1338	-0.15	-1.76	4.50
0.02093	1.0000	0.1305	-0.15	-1.77	4.73
0.02174	1.0000	0.1294	-0.18	-1.74	4.96

AD-A084 707 ROYAL AIRCRAFT ESTABLISHMENT FARNBOROUGH (ENGLAND) F/G 20/4
WIND TUNNEL MEASUREMENTS OF THE MEAN FLOW IN THE TURBULENT BOUN--ETC(U)
JUN 79 P H COOK, M A MCDONALD
UNCLASSIFIED RAE -TR-79062 DRIC -BR-71526 NL

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Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02075	1.0000	0.1411	-0.06	8.15	-4.61
-0.02065	1.0000	0.1397	-0.03	8.11	-4.59
-0.02045	1.0001	0.1427	-0.11	8.18	-4.54
-0.02025	1.0000	0.1409	-0.07	8.13	-4.50
-0.02004	0.9999	0.1442	-0.11	8.16	-4.45
-0.01993	0.9998	0.1450	-0.06	8.10	-4.43
-0.01973	0.9997	0.1430	-0.10	8.14	-4.38
-0.01963	0.9996	0.1436	-0.11	8.14	-4.36
-0.01942	0.9994	0.1431	-0.08	8.10	-4.32
-0.01910	0.9991	0.1447	-0.08	8.09	-4.25
-0.01890	0.9986	0.1440	-0.01	8.01	-4.20
-0.01858	0.9978	0.1446	0.00	7.98	-4.14
-0.01775	0.9953	0.1465	-0.01	7.95	-3.96
-0.01712	0.9916	0.1486	0.08	7.83	-3.82
-0.01638	0.9863	0.1483	0.18	7.70	-3.66
-0.01597	0.9828	0.1502	0.15	7.71	-3.57
-0.01535	0.9755	0.1517	0.32	7.51	-3.44
-0.01442	0.9623	0.1547	0.41	7.39	-3.25
-0.01329	0.9433	0.1549	0.61	7.15	-3.01
-0.01246	0.9251	0.1576	0.74	6.98	-2.83
-0.01132	0.8991	0.1602	1.05	6.64	-2.59
-0.01050	0.8807	0.1611	1.20	6.47	-2.42
-0.00947	0.8562	0.1616	1.47	6.16	-2.20
-0.00853	0.8298	0.1631	1.68	5.93	-2.01
-0.00739	0.8012	0.1644	1.91	5.67	-1.77
-0.00603	0.7625	0.1646	2.35	5.21	-1.49
-0.00499	0.7328	0.1642	2.68	4.84	-1.28
-0.00395	0.7030	0.1646	3.04	4.47	-1.06
-0.00282	0.6655	0.1658	3.50	3.99	-0.84
-0.00192	0.6284	0.1663	3.94	3.54	-0.65
-0.00173	0.6187	0.1666	4.06	3.41	-0.61
-0.00133	0.5997	0.1671	4.22	3.25	-0.53
-0.00103	0.5808	0.1678	4.25	3.21	-0.47
-0.00083	0.5661	0.1664	4.55	2.91	-0.43
-0.00053	0.5545	0.1640	4.29	3.16	-0.37
-0.00043	0.5434	0.1641	4.65	2.80	-0.35
-0.00013	0.5352	0.1619	4.48	2.96	-0.29
0.00006	0.5354	0.1605	4.45	3.00	-0.25
0.00026	0.5419	0.1591	4.26	3.19	-0.21
0.00076	0.5574	0.1587	4.23	3.21	-0.11
0.00107	0.5731	0.1586	4.04	3.38	-0.05
0.00203	0.6375	0.1595	3.60	3.82	0.15
0.00320	0.6779	0.1611	3.13	4.29	0.38
0.00427	0.7125	0.1614	2.72	4.69	0.60
0.00533	0.7412	0.1607	2.38	5.02	0.82
0.00637	0.7721	0.1591	2.03	5.36	1.03
0.00752	0.7993	0.1576	1.76	5.63	1.27
0.00846	0.8289	0.1587	1.44	5.95	1.46
0.00960	0.8576	0.1570	1.15	6.24	1.70
0.01074	0.8846	0.1555	0.92	6.48	1.94
0.01177	0.9093	0.1528	0.73	6.68	2.15
0.01270	0.9321	0.1509	0.49	6.93	2.35
0.01383	0.9510	0.1482	0.38	7.05	2.58
0.01466	0.9670	0.1468	0.21	7.24	2.76
0.01569	0.9806	0.1444	0.10	7.37	2.97
0.01671	0.9900	0.1426	-0.01	7.50	3.19
0.01773	0.9951	0.1397	0.00	7.51	3.41
0.01855	0.9981	0.1396	-0.07	7.60	3.58
0.01976	0.9996	0.1372	-0.07	7.62	3.84
0.02067	1.0002	0.1366	-0.08	7.66	4.04
0.02178	1.0005	0.1359	-0.17	7.78	4.29
0.02290	1.0004	0.1330	-0.14	7.78	4.54
0.02536	1.0000	0.1305	-0.12	7.86	5.08
0.02758	1.0000	0.1282	0.21	8.04	5.58
0.02971	1.0000	0.1249	-0.27	8.20	6.06

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02038	1.0000	0.1377	-0.14	-1.39	-4.84
-0.02017	0.9999	0.1387	-0.14	-1.40	-4.79
-0.01986	1.0000	0.1381	-0.08	-1.47	-4.72
-0.01976	0.9999	0.1379	-0.06	-1.50	-4.70
-0.01924	0.9996	0.1365	-0.05	-1.53	-4.59
-0.01893	0.9994	0.1414	-0.05	-1.54	-4.52
-0.01862	0.9989	0.1426	-0.13	-1.47	-4.46
-0.01830	0.9980	0.1395	-0.08	-1.54	-4.39
-0.01799	0.9974	0.1427	-0.04	-1.58	-4.32
-0.01768	0.9961	0.1413	0.04	-1.67	-4.26
-0.01715	0.9945	0.1434	-0.02	-1.64	-4.15
-0.01674	0.9917	0.1448	0.01	-1.68	-4.06
-0.01633	0.9888	0.1446	0.07	-1.74	-3.97
-0.01551	0.9835	0.1454	0.19	-1.89	-3.80
-0.01500	0.9774	0.1466	0.22	-1.95	-3.69
-0.01458	0.9703	0.1478	0.28	-2.02	-3.60
-0.01386	0.9596	0.1505	0.31	-2.06	-3.45
-0.01366	0.9536	0.1495	0.42	-2.19	-3.41
-0.01293	0.9413	0.1531	0.55	-2.33	-3.26
-0.01221	0.9266	0.1542	0.63	-2.43	-3.11
-0.01160	0.9129	0.1542	0.81	-2.62	-2.98
-0.01046	0.8926	0.1554	1.04	-2.87	-2.74
-0.00953	0.8687	0.1588	1.19	-3.04	-2.55
-0.00912	0.8501	0.1598	1.28	-3.14	-2.47
-0.00818	0.8301	0.1596	1.55	-3.42	-2.28
-0.00766	0.8132	0.1605	1.67	-3.55	-2.17
-0.00714	0.7994	0.1621	1.82	-3.70	-2.06
-0.00631	0.7759	0.1621	1.99	-3.88	-1.89
-0.00547	0.7535	0.1619	2.26	-4.17	-1.72
-0.00464	0.7278	0.1632	2.53	-4.44	-1.55
-0.00363	0.6942	0.1645	3.01	-4.92	-1.35
-0.00273	0.6652	0.1642	3.26	-5.18	-1.17
-0.00174	0.6235	0.1649	3.77	-5.70	-0.97
-0.00124	0.5981	0.1647	3.96	-5.88	-0.87
-0.00084	0.5780	0.1649	4.14	-6.07	-0.79
-0.00054	0.5596	0.1636	4.40	-6.33	-0.73
-0.00025	0.5450	0.1627	4.37	-6.30	-0.67
-0.00005	0.5419	0.1610	4.30	-6.22	-0.63
0.00038	0.5497	0.1602	4.17	-6.11	-0.55
0.00070	0.5653	0.1597	3.90	-5.83	-0.48
0.00112	0.5939	0.1581	3.70	-5.62	-0.40
0.00197	0.6341	0.1595	3.43	-5.35	-0.23
0.00293	0.6712	0.1588	3.09	-5.02	-0.03
0.00411	0.7103	0.1583	2.59	-4.51	0.20
0.00547	0.7499	0.1565	2.16	-4.07	0.47
0.00672	0.7877	0.1547	1.80	-3.69	0.73
0.00807	0.8254	0.1533	1.42	-3.29	1.01
0.00932	0.8549	0.1513	1.20	-3.05	1.26
0.01045	0.8795	0.1497	1.00	-2.83	1.49
0.01159	0.9085	0.1468	0.66	-2.46	1.73
0.01273	0.9313	0.1440	0.53	-2.31	1.96
0.01375	0.9521	0.1427	0.32	-2.06	2.17
0.01478	0.9694	0.1410	0.19	-1.90	2.38
0.01581	0.9819	0.1387	0.08	-1.77	2.60
0.01683	0.9909	0.1355	0.02	-1.67	2.81
0.01795	0.9960	0.1339	-0.01	-1.60	3.05
0.01897	0.9984	0.1333	-0.06	-1.50	3.26
0.02018	0.9996	0.1307	-0.06	-1.46	3.51
0.02171	1.0000	0.1287	-0.10	-1.35	3.84
0.02397	1.0001	0.1252	-0.13	-1.20	4.34
0.02613	0.9997	0.1229	-0.16	-1.06	4.81
0.02876	1.0000	0.1186	-0.19	-0.86	5.38

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = 0$ (concluded)

x/c = 1.050 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02010	1.0000	0.1115	-0.07	8.72	-2.61
-0.01980	1.0000	0.1128	-0.07	8.70	-2.54
-0.01950	0.9999	0.1133	-0.07	8.68	-2.47
-0.01940	0.9998	0.1131	-0.05	8.65	-2.45
-0.01909	0.9990	0.1117	0.04	8.54	-2.38
-0.01879	0.9985	0.1118	0.04	8.51	-2.31
-0.01797	0.9969	0.1136	-0.01	8.52	-2.13
-0.01746	0.9948	0.1150	0.00	8.48	-2.01
-0.01665	0.9913	0.1148	0.05	8.36	-1.83
-0.01603	0.9874	0.1172	0.01	8.37	-1.69
-0.01560	0.9828	0.1163	0.11	8.24	-1.59
-0.01466	0.9718	0.1184	0.15	8.16	-1.38
-0.01350	0.9538	0.1188	0.26	7.98	-1.12
-0.01276	0.9404	0.1205	0.34	7.86	-0.95
-0.01149	0.9179	0.1209	0.58	7.55	-0.67
-0.01075	0.9023	0.1199	0.68	7.41	-0.50
-0.00958	0.8805	0.1202	0.80	7.26	-0.24
-0.00851	0.8570	0.1203	0.99	7.02	0.00
-0.00757	0.8325	0.1204	1.06	6.91	0.21
-0.00421	0.7434	0.1192	1.61	6.25	0.97
-0.00318	0.7138	0.1176	1.89	5.94	1.20
-0.00214	0.6910	0.1153	1.91	5.90	1.43
-0.00182	0.6812	0.1158	2.00	5.80	1.50
-0.00162	0.6791	0.1151	2.04	5.76	1.55
-0.00110	0.6711	0.1137	1.99	5.80	1.66
-0.00068	0.6660	0.1129	1.93	5.84	1.76
-0.00057	0.6650	0.1134	1.90	5.88	1.78
-0.00036	0.6640	0.1130	1.93	5.84	1.83
-0.00026	0.6633	0.1139	1.86	5.92	1.85
0.00016	0.6633	0.1128	1.91	5.86	1.94
0.00037	0.6639	0.1134	1.76	6.00	1.99
0.00057	0.6660	0.1123	1.75	6.02	2.04
0.00120	0.6742	0.1121	1.63	6.13	2.18
0.00183	0.6869	0.1130	1.44	6.30	2.32
0.00297	0.7121	0.1133	1.46	6.27	2.57
0.00402	0.7390	0.1144	1.21	6.51	2.81
0.00496	0.7662	0.1145	1.14	6.58	3.02
0.00602	0.7916	0.1140	0.96	6.75	3.26
0.00688	0.8136	0.1154	0.89	6.81	3.46
0.00805	0.8442	0.1131	0.70	7.00	3.72
0.00911	0.8659	0.1166	0.57	7.13	3.97
0.01015	0.8907	0.1151	0.44	7.27	4.20
0.01118	0.9115	0.1129	0.34	7.38	4.44
0.01222	0.9312	0.1117	0.27	7.45	4.68
0.01315	0.9501	0.1122	0.14	7.59	4.89
0.01397	0.9638	0.1081	0.12	7.62	5.08
0.01500	0.9769	0.1093	0.01	7.76	5.32
0.01592	0.9865	0.1088	-0.12	7.90	5.53
0.01694	0.9934	0.1051	0.07	7.73	5.77
0.01777	0.9971	0.1074	-0.09	7.91	5.96
0.01891	0.9990	0.1055	-0.07	7.91	6.23
0.01975	0.9996	0.1062	-0.15	8.02	6.43
0.02100	1.0002	0.1030	-0.19	8.11	6.72
0.02213	1.0000	0.0978	-0.09	8.04	6.98
0.02459	1.0000	0.0973	-0.07	8.11	7.56

x/c = 1.050 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
-0.02071	1.0000	0.1144	-0.01	-0.24	-4.49
-0.02041	1.0000	0.1085	-0.04	-0.23	-4.42
-0.02010	0.9999	0.1099	-0.10	-0.17	-4.35
-0.01990	1.0000	0.1100	-0.08	-0.20	-4.30
-0.01960	0.9999	0.1093	-0.07	-0.21	-4.24
-0.01930	0.9995	0.1129	-0.01	-0.29	-4.17
-0.01919	0.9993	0.1135	0.02	-0.31	-4.14
-0.01889	0.9992	0.1081	-0.01	-0.29	-4.07
-0.01869	0.9988	0.1110	-0.09	-0.21	-4.03
-0.01838	0.9992	0.1154	-0.09	-0.22	-3.96
-0.01818	0.9984	0.1139	-0.06	-0.25	-3.91
-0.01787	0.9978	0.1103	-0.05	-0.28	-3.84
-0.01746	0.9968	0.1161	-0.06	-0.27	-3.75
-0.01716	0.9956	0.1137	0.02	-0.36	-3.68
-0.01665	0.9931	0.1163	-0.04	-0.30	-3.56
-0.01613	0.9900	0.1150	0.00	-0.35	-3.44
-0.01561	0.9864	0.1152	0.04	-0.40	-3.32
-0.01509	0.9818	0.1179	0.07	-0.44	-3.20
-0.01456	0.9764	0.1177	0.11	-0.49	-3.08
-0.01403	0.9696	0.1200	0.15	-0.53	-2.97
-0.01351	0.9608	0.1205	0.21	-0.59	-2.85
-0.01309	0.9538	0.1205	0.21	-0.60	-2.75
-0.01235	0.9426	0.1238	0.27	-0.67	-2.58
-0.01161	0.9257	0.1243	0.31	-0.72	-2.42
-0.01108	0.9141	0.1223	0.49	-0.91	-2.30
-0.01012	0.8965	0.1221	0.64	-1.05	-2.08
-0.00916	0.8748	0.1231	0.71	-1.12	-1.87
-0.00842	0.8542	0.1228	0.90	-1.30	-1.70
-0.00768	0.8354	0.1234	1.03	-1.44	-1.53
-0.00707	0.8200	0.1237	1.07	-1.48	-1.39
-0.00656	0.8061	0.1226	1.18	-1.59	-1.28
-0.00564	0.7836	0.1237	1.25	-1.64	-1.07
-0.00483	0.7618	0.1233	1.47	-1.86	-0.89
-0.00412	0.7407	0.1215	1.73	-2.10	-0.73
-0.00309	0.7132	0.1210	1.92	-2.29	-0.50
-0.00215	0.6932	0.1194	1.92	-2.27	-0.29
-0.00121	0.6717	0.1170	2.11	-2.44	-0.08
-0.00069	0.6667	0.1167	2.02	-2.34	0.03
-0.00038	0.6646	0.1165	2.03	-2.35	0.10
-0.00006	0.6643	0.1155	2.06	-2.37	0.17
0.00035	0.6659	0.1143	2.07	-2.37	0.27
0.00057	0.6689	0.1131	2.08	-2.38	0.31
0.00088	0.6706	0.1147	2.00	-2.29	0.38
0.00119	0.6758	0.1135	1.99	-2.28	0.45
0.00161	0.6840	0.1141	1.88	-2.15	0.54
0.00244	0.7025	0.1127	1.83	-2.08	0.73
0.00338	0.7260	0.1146	1.66	-1.89	0.94
0.00463	0.7555	0.1146	1.53	-1.72	1.22
0.00580	0.7890	0.1146	1.18	-1.34	1.48
0.00707	0.8217	0.1138	1.08	-1.19	1.77
0.00845	0.8548	0.1155	0.80	-0.85	2.08
0.00962	0.8808	0.1130	0.86	-0.86	2.34
0.01055	0.9029	0.1138	0.64	-0.60	2.55
0.01179	0.9278	0.1127	0.46	-0.36	2.83
0.01282	0.9468	0.1113	0.37	-0.21	3.06
0.01395	0.9650	0.1106	0.25	-0.04	3.32
0.01498	0.9782	0.1113	0.15	0.12	3.55
0.01590	0.9882	0.1096	0.05	0.28	3.76
0.01692	0.9944	0.1098	0.00	0.39	3.99
0.01805	0.9980	0.1084	0.01	0.46	4.25
0.01910	0.9992	0.1073	0.02	0.51	4.49
0.02045	0.9997	0.1062	0.03	0.60	4.79
0.02200	1.0001	0.1030	0.07	0.68	5.14
0.02395	1.0003	0.1019	0.06	0.83	5.58
0.02629	1.0003	0.1005	-0.01	1.11	6.11
0.02898	1.0003	0.0983	-0.02	1.37	6.72
0.03213	1.0000	0.0958	0.04	1.63	7.44

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = -2^{o}$

x/c = 0.280 MEASUREMENT 1

Constant $(C_p)_p = -0.1700$

z/c	u/U_p
0.00014	0.5691
0.00014	0.5753
0.00015	0.5999
0.00019	0.6193
0.00020	0.6263
0.00022	0.6397
0.00024	0.6482
0.00027	0.6614
0.00030	0.6691
0.00033	0.6786
0.00041	0.7028
0.00047	0.7198
0.00053	0.7328
0.00060	0.7478
0.00067	0.7584
0.00074	0.7699
0.00087	0.7917
0.00100	0.8103
0.00114	0.8299
0.00126	0.8456
0.00140	0.8631
0.00154	0.8799
0.00167	0.8933
0.00180	0.9054
0.00192	0.9167
0.00207	0.9304
0.00220	0.9416
0.00232	0.9514
0.00247	0.9617
0.00262	0.9712
0.00271	0.9776
0.00285	0.9845
0.00296	0.9892
0.00310	0.9926
0.00323	0.9953
0.00336	0.9972
0.00353	0.9983
0.00368	0.9994
0.00405	0.9996
0.00437	0.9998
0.00471	1.0000
0.00505	0.9998
0.00536	1.0000
0.00567	1.0000

x/c = 0.280 MEASUREMENT 2

Constant $(C_p)_p = -0.1700$

z/c	u/U_p
0.00014	0.5610
0.00015	0.5715
0.00018	0.5930
0.00021	0.6254
0.00024	0.6421
0.00027	0.6569
0.00034	0.6796
0.00039	0.6976
0.00044	0.7102
0.00051	0.7256
0.00058	0.7400
0.00065	0.7513
0.00072	0.7643
0.00078	0.7738
0.00093	0.7957
0.00105	0.8147
0.00118	0.8331
0.00132	0.8499
0.00145	0.8673
0.00163	0.8818
0.00191	0.9137
0.00202	0.9255
0.00217	0.9394
0.00234	0.9511
0.00243	0.9596
0.00260	0.9706
0.00271	0.9770
0.00284	0.9842
0.00298	0.9902
0.00313	0.9941
0.00328	0.9963
0.00344	0.9981
0.00357	0.9990
0.00371	0.9996
0.00382	0.9997
0.00398	0.9998
0.00412	1.0000
0.00423	1.0000
0.00435	1.0000
0.00474	1.0000

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{o}$, $M_N = 0.4$, $\alpha_N = -2^{o}$ (continued)

$x/c = 0.814$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
0.00031	0.5383	0.0170	1.22	9.00	-2.48
0.00052	0.5676	0.0335	1.17	8.94	-2.42
0.00097	0.6283	0.0494	1.09	8.92	-2.29
0.00130	0.6506	0.0537	0.98	8.90	-2.20
0.00163	0.6792	0.0546	0.95	8.90	-2.11
0.00208	0.7022	0.0584	0.92	8.90	-1.98
0.00253	0.7197	0.0597	0.83	8.97	-1.86
0.00287	0.7346	0.0604	0.85	8.93	-1.76
0.00354	0.7635	0.0617	0.76	8.99	-1.57
0.00387	0.7789	0.0623	0.68	9.05	-1.48
0.00421	0.7879	0.0635	0.58	9.14	-1.38
0.00443	0.7992	0.0627	0.57	9.13	-1.32
0.00466	0.8075	0.0641	0.52	9.17	-1.25
0.00477	0.8141	0.0627	0.58	9.10	-1.22
0.00499	0.8190	0.0656	0.51	9.16	-1.16
0.00522	0.8282	0.0643	0.52	9.14	-1.10
0.00555	0.8404	0.0654	0.47	9.19	-1.01
0.00599	0.8572	0.0653	0.42	9.21	-0.89
0.00664	0.8770	0.0660	0.32	9.28	-0.71
0.00707	0.8917	0.0657	0.29	9.30	-0.60
0.00762	0.9096	0.0652	0.24	9.32	-0.45
0.00805	0.9225	0.0655	0.18	9.37	-0.33
0.00859	0.9361	0.0655	0.18	9.35	-0.18
0.00923	0.9542	0.0653	0.09	9.41	-0.01
0.01020	0.9757	0.0634	0.10	9.38	0.26
0.01131	0.9895	0.0636	0.02	9.42	0.56
0.01243	0.9964	0.0635	0.00	9.42	0.86
0.01354	0.9992	0.0640	0.00	9.40	1.17
0.01462	0.9997	0.0642	0.01	9.37	1.47
0.01554	0.9997	0.0642	-0.02	9.38	1.72
0.01645	1.0000	0.0641	0.01	9.33	1.97
0.01736	1.0000	0.0637	0.01	9.33	2.22

MEASUREMENT 2

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^o$, $M_N = 0.4$, $\alpha_N = -2^o$ (continued)

x/c = 0.903 MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00038	0.5530	0.0701	1.21	10.06	-0.40
0.00059	0.5863	0.0857	1.17	9.71	-0.34
0.00080	0.6080	0.0919	1.13	9.88	-0.27
0.00113	0.6339	0.0968	1.04	9.83	-0.17
0.00155	0.6586	0.0997	0.98	9.86	-0.04
0.00187	0.6753	0.1014	0.95	9.86	0.06
0.00219	0.6893	0.1026	0.93	9.85	0.15
0.00333	0.7385	0.1048	0.80	9.90	0.51
0.00354	0.7474	0.1062	0.62	10.08	0.57
0.00384	0.7567	0.1064	0.65	10.02	0.66
0.00404	0.7646	0.1062	0.67	9.98	0.72
0.00415	0.7706	0.1049	0.78	9.87	0.76
0.00425	0.7754	0.1079	0.60	10.05	0.79
0.00445	0.7823	0.1077	0.59	10.04	0.85
0.00485	0.7945	0.1086	0.51	10.10	0.97
0.00526	0.8093	0.1083	0.52	10.06	1.09
0.00576	0.8278	0.1099	0.44	10.11	1.24
0.00617	0.8418	0.1099	0.36	10.17	1.36
0.00667	0.8588	0.1103	0.36	10.14	1.50
0.00717	0.8720	0.1120	0.28	10.19	1.65
0.00766	0.8864	0.1115	0.26	10.18	1.79
0.00825	0.9061	0.1124	0.15	10.26	1.96
0.00913	0.9314	0.1115	0.14	10.23	2.22
0.01011	0.9553	0.1122	0.03	10.29	2.50
0.01118	0.9752	0.1112	0.00	10.28	2.77
0.01222	0.9886	0.1110	-0.04	10.27	3.04
0.01326	0.9954	0.1098	0.00	10.19	3.31
0.01420	0.9985	0.1097	-0.05	10.21	3.55
0.01512	0.9996	0.1088	-0.01	10.14	3.79
0.01601	1.0000	0.1076	-0.04	10.15	4.04
0.01699	0.9999	0.1054	-0.03	10.12	4.31
0.01787	1.0003	0.1036	0.02	10.05	4.55
0.01883	1.0000	0.1036	0.06	10.00	4.82

x/c = 0.903 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^o	γ^o	α^o
0.00044	0.5915	0.0632	1.60	1.10	-0.35
0.00073	0.6312	0.0889	1.54	2.10	-0.26
0.00104	0.6498	0.0905	1.48	2.03	-0.17
0.00125	0.6601	0.0931	1.33	2.16	-0.11
0.00155	0.6801	0.0904	1.52	1.94	-0.02
0.00166	0.6819	0.0948	1.27	2.18	0.01
0.00217	0.6971	0.0973	1.26	2.15	0.17
0.00372	0.7352	0.0942	1.28	2.01	0.63
0.00403	0.7560	0.0979	1.05	2.22	0.72
0.00473	0.7846	0.0985	1.03	2.19	0.93
0.00563	0.8163	0.0993	0.83	2.33	1.19
0.00664	0.8485	0.1003	0.61	2.49	1.47
0.00754	0.8745	0.1002	0.56	2.47	1.72
0.00877	0.9111	0.0998	0.39	2.58	2.07
0.01037	0.9477	0.0985	0.27	2.61	2.51
0.01217	0.9774	0.0973	-0.01	2.81	2.95
0.01429	0.9937	0.0941	0.02	2.69	3.49
0.01539	0.9984	0.0946	-0.04	2.71	3.77
0.01709	1.0000	0.0929	-0.06	2.67	4.22
0.01800	1.0001	0.0922	-0.04	2.62	4.46
0.01830	1.0000	0.0919	-0.03	2.61	4.55

x/c = 0.986 MEASUREMENT 1

0.00044	0.5271	0.1333	2.72	7.05	0.21
0.00052	0.5325	0.1349	2.69	6.86	0.24
0.00071	0.5573	0.1353	2.63	5.82	0.31
0.00081	0.5681	0.1396	2.59	6.17	0.34
0.00100	0.5868	0.1420	2.61	6.23	0.41
0.00130	0.6117	0.1451	2.39	6.43	0.52
0.00178	0.6387	0.1467	2.29	6.48	0.69
0.00227	0.6643	0.1485	2.03	6.70	0.87
0.00275	0.6831	0.1474	1.97	6.72	1.04
0.00324	0.7029	0.1474	1.84	6.82	1.22
0.00363	0.7167	0.1481	1.74	6.89	1.36
0.00410	0.7328	0.1484	1.58	7.02	1.53
0.00477	0.7541	0.1479	1.47	7.07	1.77
0.00562	0.7826	0.1486	1.30	7.19	2.05
0.00657	0.8113	0.1490	1.01	7.42	2.35
0.00760	0.8413	0.1466	0.85	7.52	2.68
0.00857	0.8697	0.1463	0.63	7.69	2.99
0.00963	0.8954	0.1446	0.55	7.72	3.33
0.01040	0.9175	0.1439	0.34	7.90	3.56
0.01137	0.9375	0.1421	0.28	7.91	3.84
0.01232	0.9556	0.1392	0.17	7.98	4.12
0.01333	0.9731	0.1370	0.07	8.05	4.42
0.01415	0.9838	0.1349	0.11	7.98	4.67
0.01507	0.9922	0.1340	0.05	8.02	4.94
0.01598	0.9965	0.1331	-0.03	8.08	5.20
0.01693	0.9989	0.1311	-0.03	8.05	5.47
0.01789	0.9998	0.1297	0.03	7.97	5.75
0.01867	1.0001	0.1295	-0.02	8.01	5.97
0.01895	1.0000	0.1281	0.03	7.96	6.06

x/c = 0.986 MEASUREMENT 2

0.00046	0.5240	0.1387	3.02	-3.51	-1.95
0.00055	0.5366	0.1408	2.98	-3.77	-1.91
0.00075	0.5615	0.1433	2.91	-3.88	-1.85
0.00114	0.6055	0.1458	2.83	-3.51	-1.71
0.00203	0.6572	0.1481	2.37	-3.13	-1.40
0.00279	0.6915	0.1491	2.05	-2.87	-1.13
0.00355	0.7212	0.1487	1.95	-2.84	-0.86
0.00432	0.7479	0.1480	1.70	-2.64	-0.58
0.00517	0.7757	0.1482	1.45	-2.45	-0.29
0.00602	0.8017	0.1481	1.31	-2.37	-0.02
0.00718	0.8379	0.1466	1.07	-2.20	0.34
0.00855	0.8772	0.1448	0.80	-2.01	0.77
0.01000	0.9143	0.1415	0.46	-1.75	1.22
0.01152	0.9479	0.1372	0.37	-1.72	1.66
0.01290	0.9725	0.1345	0.18	-1.59	2.06
0.01456	0.9919	0.1302	0.02	-1.49	2.54
0.01551	0.9965	0.1290	-0.01	-1.49	2.82
0.01570	0.9973	0.1285	0.00	-1.50	2.87
0.01678	0.9990	0.1260	-0.06	-1.47	3.18
0.01736	0.9995	0.1253	-0.06	-1.48	3.34
0.01785	0.9999	0.1244	-0.08	-1.48	3.48
0.01833	1.0001	0.1230	-0.06	-1.50	3.62
0.01872	1.0000	0.1221	-0.05	-1.52	3.73
0.01929	1.0000	0.1215	-0.07	-1.51	3.90
0.01975	1.0000	0.1218	-0.10	-1.48	4.20

Table 2 (continued)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{\circ}$, $M_N = 0.4$, $\alpha_N = -2^{\circ}$ (continued)

x/c = 1.010 MEASUREMENT 1

z/c	u/U_p	$(C_p)_r$	β^{o}	γ^{o}	α^{o}
-0.02286	1.0000	0.1228	-0.18	7.95	-5.57
-0.02256	1.0000	0.1247	-0.18	7.93	-5.50
-0.02226	1.0000	0.1242	-0.13	7.88	-5.43
-0.02216	0.9999	0.1258	-0.16	7.90	-5.41
-0.02186	0.9995	0.1273	-0.11	7.84	-5.35
-0.02146	0.9990	0.1304	-0.08	7.79	-5.26
-0.02115	0.9985	0.1306	-0.05	7.75	-5.19
-0.02055	0.9979	0.1325	-0.07	7.75	-5.06
-0.02025	0.9970	0.1310	-0.04	7.70	-4.99
-0.02004	0.9966	0.1345	-0.06	7.72	-4.94
-0.01973	0.9956	0.1335	0.01	7.64	-4.88
-0.01952	0.9946	0.1384	-0.01	7.64	-4.83
-0.01942	0.9940	0.1361	0.08	7.55	-4.81
-0.01931	0.9935	0.1351	0.11	7.52	-4.79
-0.01910	0.9926	0.1361	0.11	7.51	-4.74
-0.01869	0.9906	0.1366	0.15	7.45	-4.65
-0.01827	0.9877	0.1373	0.17	7.42	-4.56
-0.01775	0.9828	0.1394	0.19	7.40	-4.45
-0.01733	0.9783	0.1396	0.30	7.27	-4.36
-0.01680	0.9717	0.1419	0.40	7.15	-4.25
-0.01638	0.9659	0.1426	0.52	7.01	-4.16
-0.01586	0.9589	0.1439	0.57	6.95	-4.05
-0.01525	0.9480	0.1450	0.80	6.70	-3.92
-0.01432	0.9309	0.1480	1.02	6.46	-3.73
-0.01339	0.9108	0.1498	1.25	6.21	-3.53
-0.01236	0.8891	0.1513	1.42	6.03	-3.32
-0.01132	0.8653	0.1534	1.81	5.61	-3.11
-0.01019	0.8388	0.1541	2.22	5.18	-2.88
-0.00936	0.8199	0.1540	2.43	4.97	-2.71
-0.00843	0.7955	0.1564	2.74	4.65	-2.52
-0.00750	0.7703	0.1566	3.13	4.25	-2.34
-0.00645	0.7425	0.1582	3.53	3.83	-2.13
-0.00551	0.7183	0.1587	3.91	3.45	-1.94
-0.00447	0.6908	0.1586	4.41	2.95	-1.74
-0.00353	0.6607	0.1612	4.87	2.48	-1.56
-0.00252	0.6254	0.1639	5.39	1.95	-1.37
-0.00153	0.5889	0.1616	6.01	1.33	-1.17
-0.00103	0.5617	0.1623	6.20	1.14	-1.08
-0.00063	0.5436	0.1608	6.21	1.13	-1.00
-0.00043	0.5319	0.1615	6.06	1.28	-0.97
-0.00004	0.5284	0.1604	4.98	2.37	-0.89
0.00016	0.5376	0.1586	4.27	3.07	-0.85
0.00046	0.5571	0.1593	3.45	3.90	-0.78
0.00076	0.5809	0.1593	2.95	4.40	-0.72
0.00139	0.6212	0.1598	2.52	4.82	-0.59
0.00181	0.6487	0.1594	2.33	5.01	-0.49
0.00267	0.6805	0.1608	2.12	5.23	-0.31
0.00384	0.7222	0.1598	1.83	5.54	-0.06
0.00491	0.7556	0.1580	1.59	5.78	0.17
0.00596	0.7870	0.1572	1.32	6.06	0.39
0.00721	0.8209	0.1572	1.03	6.36	0.64
0.00835	0.8525	0.1558	0.85	6.57	0.88
0.00940	0.8811	0.1537	0.68	6.75	1.09
0.01043	0.9063	0.1529	0.50	6.95	1.30
0.01146	0.9301	0.1501	0.45	7.02	1.52
0.01270	0.9531	0.1488	0.30	7.20	1.77
0.01383	0.9720	0.1463	0.15	7.38	2.01
0.01466	0.9832	0.1441	0.06	7.48	2.18
0.01579	0.9925	0.1424	0.01	7.57	2.41
0.01692	0.9971	0.1405	-0.01	7.63	2.65
0.01804	0.9991	0.1375	0.06	7.59	2.88
0.01905	1.0001	0.1369	0.03	7.65	3.09
0.02007	1.0001	0.1365	-0.02	7.74	3.31
0.02107	1.0001	0.1353	-0.01	7.77	3.53
0.02188	1.0002	0.1350	-0.03	7.83	3.71
0.02280	1.0002	0.1339	0.00	7.83	3.91
0.02547	1.0000	0.1332	0.04	7.93	4.50

x/c = 1.010 MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β^{o}	γ^{o}	α^{o}
-0.02162	1.0000	0.1278	-0.17	-1.76	-5.88
-0.02132	1.0001	0.1265	-0.11	-1.83	-5.81
-0.02122	1.0001	0.1272	-0.13	-1.81	-5.79
-0.02072	0.9997	0.1287	-0.12	-1.84	-5.68
-0.02022	0.9991	0.1287	-0.06	-1.92	-5.57
-0.02002	0.9982	0.1308	-0.03	-1.96	-5.52
-0.01971	0.9978	0.1283	0.00	-2.00	-5.46
-0.01950	0.9966	0.1308	-0.02	-1.98	-5.41
-0.01940	0.9964	0.1305	-0.02	-1.99	-5.39
-0.01909	0.9950	0.1307	0.00	-2.02	-5.32
-0.01888	0.9937	0.1305	0.03	-2.05	-5.28
-0.01868	0.9922	0.1314	0.06	-2.09	-5.23
-0.01826	0.9893	0.1330	0.10	-2.14	-5.14
-0.01743	0.9829	0.1333	0.21	-2.26	-4.97
-0.01659	0.9750	0.1352	0.23	-2.32	-4.79
-0.01575	0.9629	0.1363	0.43	-2.54	-4.62
-0.01504	0.9508	0.1383	0.61	-2.73	-4.46
-0.01411	0.9340	0.1393	0.86	-2.99	-4.27
-0.01329	0.9175	0.1417	1.02	-3.18	-4.10
-0.01205	0.8897	0.1445	1.30	-3.47	-3.85
-0.01061	0.8562	0.1475	1.74	-3.91	-3.55
-0.00917	0.8212	0.1494	2.05	-4.24	-3.26
-0.00762	0.7775	0.1528	2.75	-4.95	-2.95
-0.00627	0.7404	0.1541	3.29	-5.48	-2.68
-0.00429	0.6881	0.1583	4.09	-6.29	-2.29
-0.00345	0.6587	0.1599	4.60	-6.79	-2.13
-0.00314	0.6503	0.1598	4.63	-6.83	-2.07
-0.00204	0.6116	0.1603	5.32	-7.51	-1.86
-0.00154	0.5898	0.1609	5.59	-7.77	-1.77
-0.00094	0.5623	0.1598	5.76	-7.95	-1.65
-0.00045	0.5413	0.1594	5.51	-7.68	-1.56
-0.00005	0.5372	0.1588	4.70	-6.87	-1.48
0.00045	0.5621	0.1573	3.29	-5.46	-1.39
0.00095	0.6027	0.1555	2.43	-4.59	-1.30
0.00167	0.6397	0.1554	2.19	-4.35	-1.15
0.00209	0.6598	0.1550	1.99	-4.15	-1.06
0.00295	0.6981	0.1532	1.77	-3.91	-0.88
0.00390	0.7294	0.1532	1.56	-3.68	-0.68
0.00519	0.7726	0.1507	1.23	-3.33	-0.41
0.00655	0.8116	0.1499	0.91	-2.98	-0.12
0.00791	0.8536	0.1456	0.68	-2.73	0.15
0.00978	0.8987	0.1429	0.45	-2.44	0.54
0.01144	0.9361	0.1377	0.28	-2.22	0.87
0.01298	0.9642	0.1344	0.10	-2.00	1.19
0.01463	0.9850	0.1299	-0.02	-1.82	1.52
0.01659	0.9963	0.1249	0.00	-1.76	1.92
0.01772	0.9993	0.1237	-0.07	-1.65	2.15
0.01874	0.9999	0.1215	-0.07	-1.60	2.36
0.01986	1.0002	0.1201	-0.09	-1.52	2.59
0.02238	1.0002	0.1157	-0.11	-1.37	3.12
0.02444	0.9999	0.1134	-0.06	-1.31	3.57
0.02816	1.0000	0.1111	-0.04	-1.07	4.38

Table 2 (concluded)

BOUNDARY LAYER AND WAKE PROFILES

$\Lambda = 20^{\circ}$, $M_N = 0.4$, $\alpha_N = -2^{\circ}$ (concluded)

$x/c = 1.050$ MEASUREMENT 1

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.02335	1.0000	0.1013	-0.14	8.91	-3.91
-0.02305	1.0001	0.1021	-0.18	8.93	-3.84
-0.02275	0.9996	0.0982	-0.10	8.83	-3.78
-0.02214	0.9994	0.1036	-0.13	8.82	-3.64
-0.02183	0.9992	0.1048	-0.08	8.76	-3.57
-0.02142	0.9988	0.1010	-0.02	8.67	-3.48
-0.02082	0.9981	0.1018	-0.11	8.72	-3.34
-0.02051	0.9973	0.1011	-0.08	8.68	-3.27
-0.02031	0.9971	0.1004	-0.06	8.65	-3.23
-0.02000	0.9963	0.1027	-0.05	8.62	-3.16
-0.01960	0.9955	0.1031	-0.09	8.63	-3.07
-0.01950	0.9952	0.0997	0.01	8.54	-3.05
-0.01899	0.9929	0.1056	-0.06	8.57	-2.94
-0.01858	0.9903	0.1033	0.02	8.47	-2.85
-0.01807	0.9872	0.1045	0.02	8.45	-2.73
-0.01736	0.9791	0.1104	0.07	8.35	-2.57
-0.01716	0.9769	0.1082	0.22	8.19	-2.53
-0.01665	0.9712	0.1064	0.35	8.04	-2.42
-0.01623	0.9655	0.1086	0.36	8.00	-2.32
-0.01560	0.9563	0.1083	0.54	7.79	-2.18
-0.01466	0.9425	0.1107	0.63	7.66	-1.97
-0.01371	0.9246	0.1114	0.77	7.49	-1.76
-0.01276	0.9041	0.1126	0.93	7.29	-1.55
-0.01160	0.8805	0.1135	1.17	7.00	-1.29
-0.01053	0.8602	0.1122	1.50	6.62	-1.06
-0.00947	0.8393	0.1124	[illegible]	6.51	-0.82
-0.00851	0.8175	0.1124	1.80	6.27	-0.61
-0.00757	0.7936	0.1118	2.11	5.94	-0.40
-0.00666	0.7692	0.1126	2.38	5.65	-0.20
-0.00574	0.7477	0.1132	2.58	5.43	0.01
-0.00472	0.7228	0.1123	2.87	5.11	0.23
-0.00380	0.7002	0.1125	3.09	4.89	0.44
-0.00287	0.6780	0.1124	3.02	4.94	0.65
-0.00193	0.6641	0.1099	2.71	5.25	0.86
-0.00120	0.6602	0.1104	2.33	5.63	1.02
-0.00078	0.6613	0.1104	2.15	5.80	1.12
-0.00036	0.6646	0.1103	1.79	6.16	1.21
-0.00005	0.6678	0.1104	1.66	6.29	1.28
0.00016	0.6717	0.1107	1.49	6.46	1.33
0.00057	0.6783	0.1110	1.32	6.63	1.42
0.00099	0.6914	0.1102	1.15	6.81	1.52
0.00152	0.7058	0.1111	0.87	7.08	1.63
0.00245	0.7325	0.1126	0.54	7.40	1.85
0.00371	0.7657	0.1125	0.49	7.47	2.13
0.00465	0.7950	0.1127	0.42	7.53	2.34
0.00560	0.8214	0.1131	0.35	7.61	2.56
0.00677	0.8513	0.1136	0.21	7.76	2.82
0.00784	0.8778	0.1120	0.23	7.75	3.06
0.00890	0.9029	0.1122	0.06	7.93	3.30
0.00994	0.9246	0.1114	0.10	7.91	3.54
0.01098	0.9443	0.1107	0.06	7.97	3.77
0.01222	0.9644	0.1093	0.09	7.96	4.06
0.01325	0.9786	0.1075	0.01	8.06	4.29
0.01407	0.9865	0.1073	-0.02	8.11	4.48
0.01510	0.9944	0.1063	-0.02	8.14	4.72
0.01623	0.9981	0.1052	0.09	8.07	4.97
0.01725	0.9996	0.1054	0.14	8.05	5.21
0.01818	0.9997	0.1043	0.13	8.09	5.42
0.01933	1.0000	0.1041	0.08	8.18	5.69
0.02037	1.0000	0.1029	0.11	8.19	5.93

$x/c = 1.050$ MEASUREMENT 2

z/c	u/U_p	$(C_p)_p$	β°	γ°	α°
-0.02214	1.0000	0.1037	0.01	-0.34	-5.56
-0.02204	1.0000	0.1039	0.01	-0.34	-5.54
-0.02163	0.9999	0.1060	-0.03	-0.31	-5.45
-0.02112	0.9993	0.1050	-0.03	-0.33	-5.33
-0.02103	0.9994	0.1055	-0.05	-0.30	-5.31
-0.02072	0.9990	0.1090	-0.06	-0.30	-5.24
-0.02000	0.9979	0.1079	0.02	-0.41	-5.07
-0.01970	0.9972	0.1077	0.04	-0.43	-5.01
-0.01960	0.9970	0.1095	0.00	-0.39	-4.98
-0.01930	0.9957	0.1089	0.00	-0.40	-4.91
-0.01909	0.9945	0.1089	0.00	-0.40	-4.87
-0.01889	0.9932	0.1112	-0.02	-0.39	-4.82
-0.01869	0.9923	0.1117	0.01	-0.42	-4.78
-0.01838	0.9909	0.1113	0.08	-0.50	-4.71
-0.01798	0.9881	0.1113	0.14	-0.57	-4.62
-0.01716	0.9813	0.1121	0.22	-0.65	-4.43
-0.01615	0.9719	0.1153	0.16	-0.61	-4.20
-0.01532	0.9598	0.1156	0.36	-0.81	-4.02
-0.01459	0.9477	0.1176	0.49	-0.96	-3.85
-0.01364	0.9313	0.1177	0.75	-1.23	-3.64
-0.01280	0.9163	0.1177	0.81	-1.29	-3.45
-0.01153	0.8899	0.1194	1.03	-1.51	-3.17
-0.01015	0.8557	0.1192	1.44	-1.92	-2.86
-0.00856	0.8210	0.1198	1.60	-2.07	-2.50
-0.00707	0.7820	0.1178	2.22	-2.69	-2.17
-0.00555	0.7472	0.1184	2.69	-3.14	-1.83
-0.00371	0.7017	0.1177	3.00	-3.42	-1.42
-0.00290	0.6830	0.1168	3.14	-3.54	-1.23
-0.00248	0.6760	0.1161	3.05	-3.45	-1.14
-0.00155	0.6623	0.1142	2.81	-3.19	-0.93
-0.00092	0.6623	0.1123	2.44	-2.81	-0.79
-0.00040	0.6651	0.1122	2.15	-2.49	-0.67
0.00013	0.6715	0.1118	1.79	-2.14	-0.56
0.00044	0.6802	0.1114	1.62	-1.95	-0.49
0.00106	0.6921	0.1118	1.34	-1.66	-0.34
0.00159	0.7078	0.1120	1.08	-1.37	-0.23
0.00211	0.7238	0.1119	0.99	-1.27	-0.11
0.00253	0.7335	0.1124	0.91	-1.18	-0.02
0.00346	0.7620	0.1127	0.79	-1.03	0.20
0.00440	0.7888	0.1127	0.71	-0.92	0.41
0.00576	0.8234	0.1142	0.56	-0.72	0.71
0.00693	0.8566	0.1135	0.47	-0.58	0.97
0.00842	0.8926	0.1133	0.34	-0.38	1.31
0.01022	0.9320	0.1117	0.21	-0.18	1.71
0.01177	0.9606	0.1091	0.19	-0.08	2.06
0.01322	0.9823	0.1081	0.05	0.14	2.38
0.01497	0.9937	0.1101	-0.03	0.32	2.78
0.01681	0.9985	0.1078	0.07	0.34	3.19
0.01783	0.9997	0.1101	-0.01	0.48	3.42
0.01897	0.9998	0.1082	0.06	0.50	3.68
0.02001	1.0002	0.1084	0.08	0.55	3.91
0.02260	1.0000	0.1049	0.08	0.74	4.49

Table 3 - MEASURED BOUNDARY LAYER AND WAKE PARAMETERS

Λ = 28 degrees $\qquad M_N$ = 0.675

α_N^o	x/c	Measure-ment No.	c_f	$\bar{\delta}_1/c$	$\bar{\delta}_2/c$	$\bar{\theta}_{11}/c$	$\bar{\theta}_{12}/c$	$\bar{\theta}_{21}/c$	$\bar{\theta}_{22}/c$	H	H_T	ε_0^o
+2	0.280	1	0.002823	0.000784		0.000421				1.862	1.375	
		2										
	0.814	1	0.001796	0.003420	-0.000495	0.001896	0.000145	-0.000350	-0.000024	1.804	1.500	7.67
		2	0.002067	0.003019	-0.000464	0.001745	0.000127	-0.000338	-0.000023	1.730	1.434	7.54
	0.903	1	0.001783	0.003897	-0.000622	0.002222	0.000181	-0.000442	-0.000033	1.754	1.477	8.26
		2	0.001753	0.003853	-0.000593	0.002189	0.000173	-0.000421	-0.000030	1.761	1.483	8.16
	0.986	1	0.001597	0.004892	-0.001020	0.002793	0.000309	-0.000711	-0.000072	1.751	1.500	12.04
		2	0.001612	0.004925	-0.001062	0.002799	0.000326	-0.000736	-0.000079	1.759	1.506	12.63
	1.010	1		0.008511	-0.001605	0.005194	0.000450	-0.001154	-0.000109	1.639	1.404	
		2		0.008346	-0.001468	0.005090	0.000407	-0.001062	-0.000096	1.640	1.403	
	1.050	1		0.007074	-0.001037	0.004577	0.000230	-0.000807	-0.000045	1.545	1.308	
		2		0.006896	-0.000865	0.004434	0.000200	-0.000665	-0.000035	1.555	1.316	
0	0.280	1	0.003063	0.000699		0.000398				1.754	1.353	
		2	0.003038	0.000681		0.000383				1.777	1.373	
	0.814	1	0.001975	0.003103	-0.000335	0.001750	0.000095	-0.000241	-0.000011	1.773	1.479	5.25
		2	0.002094	0.002686	-0.000276	0.001560	0.000074	-0.000202	-0.000009	1.722	1.434	4.82
	0.903	1										
		2	0.002009	0.003134	-0.000295	0.001827	0.000082	-0.000213	-0.000009	1.716	1.447	4.58
	0.986	1	0.001729	0.004108	-0.000655	0.002394	0.000188	-0.000467	-0.000033	1.716	1.469	8.41
		2	0.001756	0.004072	-0.000623	0.002369	0.000180	-0.000443	-0.000031	1.719	1.471	8.09
	1.010	1		0.008354	-0.001375	0.005090	0.000383	-0.000992	-0.000072	1.641	1.407	
		2		0.008082	-0.001198	0.004926	0.000339	-0.000859	-0.000058	1.641	1.405	
	1.050	1		0.007033	-0.000814	0.004528	0.000187	-0.000627	-0.000025	1.553	1.315	
		2		0.006730	-0.000707	0.004309	0.000168	-0.000539	-0.000021	1.562	1.324	
-2	0.280	1	0.003200	0.000661		0.000389				1.701	1.358	
		2	0.003177	0.000650		0.000382				1.700	1.357	
	0.814	1	0.002124	0.002586	-0.000181	0.001494	0.000048	-0.000133	-0.000004	1.731	1.451	3.13
		2	0.002236	0.002378	-0.000179	0.001416	0.000044	-0.000135	-0.000004	1.679	1.404	3.07
	0.903	1	0.002040	0.002998	-0.000242	0.001745	0.000065	-0.000176	-0.000006	1.718	1.454	3.63
		2	0.002034	0.002904	-0.000165	0.001705	0.000044	-0.000121	-0.000003	1.703	1.441	2.59
	0.986	1	0.002007	0.003341	-0.000370	0.002017	0.000099	-0.000271	-0.000012	1.656	1.414	5.19
		2	0.001892	0.003513	-0.000361	0.002071	0.000101	-0.000260	-0.000012	1.696	1.450	5.23
	1.010	1		0.008542	-0.001552	0.005180	0.000445	-0.001107	-0.000102	1.649	1.414	
		2		0.008319	-0.001383	0.005034	0.000407	-0.000977	-0.000086	1.653	1.415	
	1.050	1		0.007134	-0.000930	0.004572	0.000221	-0.000709	-0.000039	1.560	1.322	
		2		0.006892	-0.000836	0.004400	0.000205	-0.000632	-0.000035	1.566	1.328	

Table 3 (continued)

MEASURED BOUNDARY LAYER AND WAKE PARAMETERS

Λ = 28 degrees　　　M_N = 0.4

α_N^o	x/c	Measurement No.	c_f	$\bar{\delta}_1/c$	$\bar{\delta}_2/c$	$\bar{\theta}_{11}/c$	$\bar{\theta}_{12}/c$	$\bar{\theta}_{21}/c$	$\bar{\theta}_{22}/c$	H	H_T	β_0^o
+2	0.280	1	0.002617	0.000752		0.000497				1.514	1.373	
		2	0.002684	0.000723		0.000479				1.511	1.371	
	0.814	1	0.001996	0.002622	-0.000288	0.001700	0.000076	-0.000212	-0.000008	1.542	1.439	4.31
		2	0.002080	0.002460	-0.000244	0.001614	0.000065	-0.000179	-0.000007	1.524	1.421	4.00
	0.903	1	0.001874	0.003062	-0.000397	0.001987	0.000107	-0.000290	-0.000014	1.541	1.445	5.29
		2	0.001855	0.003101	-0.000323	0.001984	0.000091	-0.000232	-0.000010	1.563	1.466	4.50
	0.986	1	0.001709	0.003804	-0.000615	0.002477	0.000176	-0.000439	-0.000029	1.536	1.447	7.72
		2	0.001710	0.003838	-0.000672	0.002468	0.000191	-0.000481	-0.000033	1.555	1.465	8.01
	1.010	1		0.006800	-0.001024	0.004705	0.000264	-0.000760	-0.000045	1.445	1.362	
		2		0.006671	-0.001015	0.004584	0.000262	-0.000753	-0.000045	1.455	1.371	
	1.050	1		0.005837	-0.000629	0.004228	0.000136	-0.000493	-0.000017	1.381	1.296	
		2		0.005685	-0.000612	0.004112	0.000133	-0.000479	-0.000017	1.383	1.297	
0	0.280	1	0.002766	0.000650		0.000435				1.493	1.368	
		2	0.002878	0.000628		0.000422				1.489	1.363	
	0.814	1	0.002017	0.002368	-0.000214	0.001542	0.000055	-0.000159	-0.000005	1.536	1.435	3.39
		2	0.002097	0.002307	-0.000168	0.001515	0.000044	-0.000124	-0.000003	1.523	1.423	2.81
	0.903	1	0.001972	0.002773	-0.000285	0.001805	0.000075	-0.000210	-0.000008	1.536	1.441	4.02
		2	0.001937	0.002776	-0.000190	0.001780	0.000052	-0.000138	-0.000004	1.559	1.464	2.85
	0.986	1	0.001773	0.003401	-0.000456	0.002210	0.000127	-0.000329	-0.000017	1.539	1.450	6.00
		2	0.001821	0.003300	-0.000439	0.002157	0.000119	-0.000320	-0.000016	1.530	1.441	5.70
	1.010	1		0.006992	-0.000978	0.004787	0.000258	-0.000720	-0.000037	1.461	1.377	
		2		0.006581	-0.000922	0.004535	0.000237	-0.000685	-0.000034	1.451	1.367	
	1.050	1		0.005953	-0.000558	0.004293	0.000126	-0.000432	-0.000012	1.387	1.302	
		2		0.005602	-0.000525	0.004037	0.000115	-0.000410	-0.000011	1.388	1.303	
-2	0.280	1	0.002962	0.000562		0.000382				1.474	1.362	
		2	0.002927	0.000585		0.000396				1.478	1.366	
	0.814	1	0.002106	0.002167	-0.000128	0.001408	0.000033	-0.000095	-0.000002	1.539	1.440	2.17
		2	0.002209	0.001976	-0.000092	0.001308	0.000023	-0.000069	-0.000001	1.510	1.414	1.63
	0.903	1	0.002128	0.002440	-0.000160	0.001611	0.000041	-0.000119	-0.000003	1.515	1.422	2.46
		2	0.002029	0.002432	-0.000094	0.001561	0.000024	-0.000069	-0.000001	1.558	1.464	1.38
	0.986	1	0.001983	0.002879	-0.000272	0.001935	0.000072	-0.000201	-0.000007	1.488	1.402	3.92
		2	0.001952	0.002902	-0.000289	0.001922	0.000076	-0.000214	-0.000007	1.510	1.423	4.03
	1.010	1		0.006790	-0.001018	0.004673	0.000267	-0.000750	-0.000046	1.453	1.370	
		2		0.006648	-0.000992	0.004567	0.000260	-0.000732	-0.000044	1.456	1.372	
	1.050	1		0.005765	-0.000591	0.004177	0.000131	-0.000459	-0.000017	1.380	1.296	
		2		0.005602	-0.000554	0.004045	0.000124	-0.000430	-0.000016	1.385	1.301	

Table 3 (continued)

MEASURED BOUNDARY LAYER AND WAKE PARAMETERS

Λ = 20 degrees M_N = 0.675

α_N^o	x/c	Measure-ment No.	C_f	$\bar{\delta}_1/c$	$\bar{\delta}_2/c$	$\bar{\theta}_{11}/c$	$\bar{\theta}_{12}/c$	$\bar{\theta}_{21}/c$	θ_{22}/c	H	H_T	β_0^o
+2	0.280	1	0.002947	0.000490		0.000274				1.787	1.345	
		2	0.002956	0.000500		0.000279				1.788	1.345	
	0.814	1	0.001633	0.003601	-0.000380	0.002027	0.000116	-0.000264	-0.000014	1.776	1.509	5.75
		2										
	0.903	1	0.001602	0.004018	-0.000434	0.002291	0.000137	-0.000298	-0.000017	1.754	1.509	6.18
		2	0.001634	0.003605	-0.000458	0.002107	0.000130	-0.000327	-0.000018	1.711	1.470	6.33
	0.986	1	0.001464	0.004822	-0.000750	0.002806	0.000236	-0.000514	-0.000041	1.719	1.503	9.31
		2	0.001439	0.004822	-0.000785	0.002792	0.000247	-0.000538	-0.000044	1.727	1.513	9.90
	1.010	1		0.008220	-0.001130	0.005022	0.000333	-0.000797	-0.000056	1.637	1.433	
		2		0.008104	-0.001130	0.005002	0.000326	-0.000804	-0.000056	1.620	1.419	
	1.050	1		0.007001	-0.000648	0.004531	0.000163	-0.000485	-0.000020	1.545	1.337	
		2		0.006873	-0.000670	0.004483	0.000165	-0.000505	-0.000022	1.533	1.328	
0	0.280	1	0.003510	0.000409		0.000235				1.742	1.375	
		2	0.003444	0.000416		0.000238				1.746	1.378	
	0.814	1	0.002008	0.002783	-0.000202	0.001602	0.000058	-0.000144	-0.000005	1.737	1.481	3.52
		2	0.001943	0.002838	-0.000229	0.001659	0.000064	-0.000165	-0.000006	1.710	1.464	3.93
	0.903	1	0.001937	0.003187	-0.000241	0.001856	0.000070	-0.000171	-0.000006	1.717	1.481	3.83
		2	0.001987	0.003236	-0.000297	0.001912	0.000082	-0.000215	-0.000008	1.693	1.459	4.25
	0.986	1	0.001767	0.003916	-0.000430	0.002314	0.000129	-0.000301	-0.000016	1.692	1.479	6.07
		2	0.001670	0.003945	-0.000500	0.002306	0.000150	-0.000351	-0.000021	1.711	1.498	7.07
	1.010	1		0.008004	-0.001011	0.004900	0.000294	-0.000717	-0.000042	1.634	1.432	
		2		0.008022	-0.001031	0.004932	0.000293	-0.000738	-0.000042	1.627	1.425	
	1.050	1		0.006869	-0.000654	0.004465	0.000157	-0.000497	-0.000017	1.538	1.332	
		2		0.006795	-0.000665	0.004443	0.000155	-0.000509	-0.000017	1.529	1.325	
-2	0.280	1	0.003273	0.000559		0.000333				1.678	1.371	
		2	0.003512	0.000418		0.000250				1.675	1.369	
	0.814	1	0.002096	0.002475	-0.000103	0.001452	0.000029	-0.000074	-0.000001	1.705	1.461	1.93
		2										
	0.903	1	0.002018	0.002804	-0.000133	0.001663	0.000037	-0.000096	-0.000002	1.687	1.458	2.25
		2	0.002134	0.002867	-0.000176	0.001712	0.000047	-0.000129	-0.000003	1.674	1.446	2.70
	0.986	1	0.001904	0.003351	-0.000269	0.002019	0.000076	-0.000193	-0.000007	1.660	1.449	4.06
		2	0.001883	0.003276	-0.000286	0.001987	0.000080	-0.000207	-0.000008	1.649	1.442	4.38
	1.010	1		0.008268	-0.001124	0.005041	0.000335	-0.000790	-0.000056	1.640	1.436	
		2		0.008087	-0.001137	0.004958	0.000333	-0.000804	-0.000057	1.631	1.428	
	1.050	1		0.007011	-0.000708	0.004559	0.000175	-0.000534	-0.000025	1.538	1.331	
		2		0.006868	-0.000769	0.004458	0.000186	-0.000583	-0.000027	1.541	1.334	

Table 3 (concluded)

MEASURED BOUNDARY LAYER AND WAKE PARAMETERS

Λ = 20 degrees									M_N = 0.4			
α_N^o	x/c	Measurement No.	C_f	$\bar{\delta}_1/c$	$\bar{\delta}_2/c$	$\bar{\theta}_{11}/c$	$\bar{\theta}_{12}/c$	$\bar{\theta}_{21}/c$	$\bar{\theta}_{22}/c$	H	H_T	β_0^o
+2	0.280	1	0.002736	0.000634		0.000423				1.496	1.369	
		2	0.002702	0.000669		0.000444				1.507	1.380	
	0.814	1										
		2										
	0.903	1	0.001946	0.002993	-0.000251	0.001933	0.000072	-0.000179	-0.000006	1.548	1.463	3.69
		2	0.001938	0.003144	-0.000309	0.002043	0.000084	-0.000224	-0.000008	1.538	1.454	3.79
	0.986	1	0.001686	0.003783	-0.000457	0.002453	0.000137	-0.000321	-0.000017	1.542	1.465	6.03
		2	0.001730	0.003685	-0.000472	0.002421	0.000135	-0.000337	-0.000018	1.522	1.446	6.14
	1.010	1		0.006705	-0.000806	0.004567	0.000218	-0.000588	-0.000029	1.468	1.396	
		2		0.006585	-0.000758	0.004579	0.000200	-0.000558	-0.000026	1.438	1.367	
	1.050	1		0.005699	-0.000447	0.004118	0.000101	-0.000346	-0.000009	1.384	1.310	
		2										
0	0.280	1	0.002894	0.000537		0.000362				1.484	1.371	
		2	0.002846	0.000524		0.000351				1.491	1.378	
	0.814	1	0.001959	0.002413	-0.000136	0.001550	0.000037	-0.000099	-0.000002	1.556	1.467	2.22
		2	0.001961	0.002483	-0.000165	0.001622	0.000044	-0.000121	-0.000003	1.531	1.445	2.63
	0.903	1	0.001953	0.002763	-0.000153	0.001783	0.000044	-0.000110	-0.000002	1.550	1.467	2.41
		2	0.002055	0.002791	-0.000213	0.001833	0.000057	-0.000156	-0.000004	1.522	1.440	2.93
	0.986	1	0.001782	0.003306	-0.000303	0.002178	0.000086	-0.000217	-0.000008	1.517	1.442	4.28
		2	0.001717	0.003270	-0.000351	0.002120	0.000099	-0.000251	-0.000011	1.542	1.466	4.93
	1.010	1		0.006654	-0.000756	0.004557	0.000201	-0.000555	-0.000023	1.460	1.389	
		2		0.006484	-0.000697	0.004472	0.000184	-0.000513	-0.000020	1.450	1.379	
	1.050	1		0.005609	-0.000384	0.004069	0.000087	-0.000297	-0.000006	1.378	1.305	
		2		0.005507	-0.000425	0.004000	0.000095	-0.000330	-0.000008	1.377	1.304	
-2	0.280	1	0.003010	0.000502		0.000342				1.470	1.370	
		2	0.002901	0.000511		0.000346				1.479	1.379	
	0.814	1	0.002084	0.002087	-0.000070	0.001352	0.000019	-0.000052	-0.000001	1.544	1.457	1.28
		2										
	0.903	1	0.002111	0.002297	-0.000069	0.001503	0.000019	-0.000049	-0.000001	1.528	1.447	1.28
		2	0.002248	0.002379	-0.000121	0.001588	0.000031	-0.000090	-0.000002	1.498	1.417	1.70
	0.986	1	0.001889	0.002876	-0.000190	0.001907	0.000052	-0.000138	-0.000004	1.508	1.433	2.88
		2	0.001879	0.002784	-0.000215	0.001858	0.000057	-0.000158	-0.000004	1.498	1.423	3.21
	1.010	1		0.006801	-0.000856	0.004658	0.000229	-0.000627	-0.000033	1.460	1.388	
		2		0.006602	-0.000743	0.004555	0.000202	-0.000541	-0.000027	1.450	1.378	
	1.050	1		0.005651	-0.000459	0.004099	0.000105	-0.000354	-0.000011	1.379	1.305	
		2		0.005534	-0.000489	0.004009	0.000112	-0.000377	-0.000012	1.381	1.307	

Table 4

THE ANGLE OF FLOW RELATIVE TO THE FREE-STREAM DIRECTION (β_F degrees)

α_N^o	x/c	Measurement No.	Λ = 28 degrees		Λ = 20 degrees	
			M_N = 0.675	M_N = 0.4	M_N = 0.675	M_N = 0.4
+2	0.814	1	0.23	-0.28	0.00	-
		2	0.07	0.09	-	-
	0.903	1	0.21	-0.35	0.09	-0.13
		2	0.75	0.36	0.76	0.51
	0.986	1	1.81	1.17	1.46	1.14
		2	2.38	1.80	1.80	1.34
	1.010 upper	1	2.78	2.11	2.41	2.17
		2	1.97	1.43	1.49	1.09
	1.010 lower	1	1.03	0.83	1.17	0.97
		2	1.44	1.20	0.45	0.15
	1.050 upper	1	1.25	0.40	0.87	0.50
		2	1.4[illegible]	0.67	1.21	-
	1.050 lower	1	0.45	0.35	0.28	-0.08
		2	0.55	0.36	0.85	-
0	0.814	1	-0.01	-0.49	0.03	-0.14
		2	-0.25	-0.18	0.29	0.08
	0.903	1	-	-0.55	-0.47	-0.18
		2	0.19	0.33	0.02	0.15
	0.986	1	1.10	0.95	0.84	1.04
		2	1.80	1.75	0.71	0.82
	1.010 upper	1	1.86	1.87	1.70	1.83
		2	1.26	1.21	0.46	0.57
	1.010 lower	1	1.67	1.33	1.50	1.21
		2	2.15	1.92	0.67	0.28
	1.050 upper	1	-0.04	0.23	0.23	0.37
		2	0.39	0.85	0.53	0.38
	1.050 lower	1	1.18	0.82	0.73	0.44
		2	1.16	0.72	1.58	1.04
-2	0.814	1	-0.39	-0.51	-0.55	-0.13
		2	-0.56	-0.20	-	-
	0.903	1	-0.65	-0.60	-0.84	-0.46
		2	-0.01	0.25	-0.22	-0.01
	0.986	1	0.92	0.62	0.51	0.59
		2	1.64	1.52	0.54	0.50
	1.010 upper	1	1.57	1.44	1.54	1.55
		2	1.07	1.07	0.54	0.48
	1.010 lower	1	2.07	1.73	1.72	1.64
		2	2.63	2.32	0.81	0.80
	1.050 upper	1	-0.02	0.01	-0.08	-0.05
		2	0.23	0.47	0.36	0.24
	1.050 lower	1	1.63	1.25	0.94	0.67
		2	1.50	1.22	1.60	1.33

Table 5

THE EFFECT OF THE PITCH CORRECTION TO THE YAWMETER PROBE CALIBRATION ON THE MEASURED BOUNDARY LAYER AND WAKE PARAMETERS

Λ = 28 degrees				M_N = 0.675				α_N = 2 degrees				
Measurement No.	x/c	Pitch correction	C_f	$\bar{\delta}_1/c$	$\bar{\delta}_2/c$	$\bar{\theta}_{11}/c$	$\bar{\theta}_{12}/c$	$\bar{\theta}_{21}/c$	$\bar{\theta}_{22}/c$	H	H_T	β_0^o
1	0.280											
	0.814	With	0.001796	0.003420	-0.000495	0.001896	0.000145	-0.000350	-0.000024	1.804	1.500	7.67
		Without	0.001803	0.003418	-0.000496	0.001893	0.000146	-0.000350	-0.000024	1.805	1.501	7.67
	0.903	With	0.001783	0.003897	-0.000622	0.002222	0.000181	-0.000442	-0.000033	1.754	1.477	8.26
		Without	0.001785	0.003906	-0.000623	0.002218	0.000182	-0.000441	-0.000033	1.761	1.483	8.26
	0.986	With	0.001597	0.004892	-0.001020	0.002793	0.000309	-0.000711	-0.000072	1.751	1.500	12.04
		Without	0.001596	0.004912	-0.001000	0.002785	0.000309	-0.000691	-0.000070	1.763	1.511	11.95
	1.010	With		0.008511	-0.001605	0.005194	0.000450	-0.001154	-0.000109	1.639	1.404	
		Without		0.008525	-0.001603	0.005192	0.000453	-0.001150	-0.000109	1.642	1.407	
	1.050	With		0.007074	-0.001037	0.004577	0.000230	-0.000807	-0.000045	1.545	1.308	
		Without		0.007109	-0.001041	0.004582	0.000235	-0.000806	-0.000045	1.551	1.314	
2	0.280											
	0.814	With	0.002067	0.003019	-0.000464	0.001745	0.000127	-0.000338	-0.000023	1.730	1.434	7.54
		Without	0.002070	0.003022	-0.000464	0.001743	0.000127	-0.000337	-0.000022	1.734	1.437	7.54
	0.903	With	0.001753	0.003853	-0.000593	0.002189	0.000173	-0.000421	-0.000030	1.761	1.483	8.16
		Without	0.001750	0.003873	-0.000601	0.002186	0.000176	-0.000425	-0.000030	1.771	1.493	8.20
	0.986	With	0.001612	0.004925	-0.001062	0.002799	0.000326	-0.000736	-0.000079	1.759	1.506	12.63
		Without	0.001608	0.004957	-0.001054	0.002793	0.000329	-0.000724	-0.000078	1.775	1.520	12.60
	1.010	With		0.008346	-0.001468	0.005090	0.000407	-0.001062	-0.000096	1.640	1.403	
		Without		0.008396	-0.001472	0.005087	0.000415	-0.001057	-0.000096	1.650	1.413	
	1.050	With		0.006896	-0.000865	0.004434	0.000200	-0.000665	-0.000035	1.555	1.316	
		Without		0.006946	-0.000873	0.004443	0.000206	-0.000667	-0.000036	1.564	1.325	

Table 6

THE INFLUENCE OF PROBE DISPLACEMENT-EFFECT ON THE MEASURED BOUNDARY LAYER AND WAKE PARAMETERS

Λ = 20 degrees						M_N = 0.4						
α_N^o	x/c	Displacement effect	C_f	$\bar{\delta}_1/c$	$\bar{\delta}_2/c$	$\bar{\theta}_{11}/c$	$\bar{\theta}_{12}/c$	$\bar{\theta}_{21}/c$	$\bar{\theta}_{22}/c$	H	H_T	β_0^o
-2	0.280	Without	0.003010	0.000502		0.000342				1.470	1.370	
		With	0.002782	0.000525		0.000352				1.492	1.391	
	0.814	Without	0.002084	0.002087	-0.000070	0.001352	0.000019	-0.000052	-0.000001	1.544	1.457	1.28
		With	0.001970	0.002149	-0.000071	0.001338	0.000019	-0.000052	-0.000001	1.557	1.470	1.26
	0.903	Without	0.002111	0.002297	-0.000069	0.001503	0.000019	-0.000049	-0.000001	1.528	1.447	1.28
		With	0.002005	0.002358	-0.000070	0.001531	0.000020	-0.000050	-0.000001	1.540	1.458	1.31
	0.986	Without	0.001889	0.002876	-0.000190	0.001907	0.000052	-0.000138	-0.000004	1.508	1.433	2.88
		With	0.001809	0.002939	-0.000193	0.001935	0.000054	-0.000140	-0.000004	1.519	1.443	2.92
	1.010	Without		0.006801	-0.000856	0.004658	0.000229	-0.000627	-0.000033	1.460	1.388	
		With		0.006915	-0.000867	0.004716	0.000234	-0.000633	-0.000033	1.466	1.394	
	1.050	Without		0.005651	-0.000459	0.004099	0.000105	-0.000354	-0.000011	1.379	1.305	
		With		0.005734	-0.000465	0.004150	0.000107	-0.000358	-0.000012	1.381	1.308	

Table 7

COMPARISON BETWFEN YAWED WING AND THREE-DIMENSIONAL BOUNDARY LAYER CALCULATIONS

Λ = 28 degrees, M_N = 0.4, α_N = 2 degrees

x/c	0.80			0.99		
Calculation method	Yawed wing	Three-dimensional		Yawed wing	Three-dimensional	
% span	-	0.25	0.70	-	0.25	0.70
H	1.497	1.48	1.49	1.536	1.51	1.53
$\bar{\theta}_{11}/c$	0.00177	0.00171	0.00179	0.00261	0.00250	0.00265
β_0^o	4.52	3.80	4.45	8.06	6.80	7.88

Table 8

THE EFFECT OF THE ASSUMPTION FOR β_0 AT x/c = 0.28 ON THE INFINITE YAWED WING CALCULATIONS

Λ = 28 degrees, M_N = 0.675, α_N = 2 degrees

x/c	0.80			0.99		
β^o at x/c = 0.28	-5	0	5	-5	0	5
H	1.7446	1.7448	1.7450	1.7720	1.7726	1.7733
$\bar{\theta}_{11}/c$	0.001847	0.001849	0.001850	0.002806	0.002811	0.002816
C_f	0.001846	0.001846	0.001846	0.001512	0.001510	0.001508
β_0^o	5.94	7.20	8.42	11.31	12.44	13.52

LIST OF SYMBOLS

a_∞ speed of sound in the free stream

$A = \dfrac{p_1 - p_2}{p_0 - p_A}$, $B = \dfrac{p_0 - p_t}{p_0 - p_A}$, $C = \dfrac{p_A - p_s}{p_0 - p_A}$ — yawmeter probe calibration factors

$(C_p)_P$ static pressure coefficient at the measurement point

$(C_p)_S$ yawmeter calibration tunnel static pressure coefficient

$(C_p)_W$ = $(C_p)_P$ for the measurement point nearest the wall or at the centre of the wake

C_p^* critical surface pressure coefficient at which the component of velocity normal to the leading edge is sonic

C_f skin friction coefficient based on local flow conditions

c chord length normal to the leading edge

H = $\bar{\delta}_1/\bar{\theta}_{11}$, also free stream total pressure

H_T = $\left(H - 0.2M_W^2\right)\Big/\left(1 + 0.2M_W^2\right)$

M yawmeter calibration tunnel Mach number

M_∞ free stream Mach number

M_L local Mach number

M_N = $\dfrac{U_\infty \cos \Lambda}{a_\infty}$ Mach number of the velocity component of the free stream normal to the leading edge

M_P Mach number for the measured total head at the edge of the boundary layer or wake and the local static pressure at the measurement point

M_W = M_P for the measurement point nearest to the wall or at the centre of wake

p_0 centre tube, p_1 port tube, p_2 starboard tube — yawmeter probe pressures

p_A = $\frac{1}{2}(p_1 + p_2)$

p_s static pressure of the yawmeter calibration tunnel

p_t total pressure of the yawmeter calibration tunnel

LIST OF SYMBOLS (continued)

$Re \quad = \quad \dfrac{U_\infty c \sec \Lambda}{\nu_\infty}$

$Re_N \quad = \quad \dfrac{U_\infty c}{\nu_\infty}$

Re_W see equation (9)

T_0 stagnation temperature (K)

u local velocity within the boundary layer or wake

U_N = $U_\infty \cos \Lambda$

U_P velocity obtained from the total pressure measured at the edge of the boundary layer or wake and the static pressure at the measurement point

U_W = U_P for the measurement point nearest to the wall or at the centre of the wake

U_∞ free stream velocity

x distance aft of the leading edge along a normal chord

z height above the model surface or, in the wake, the chordal plane

z_s height of the laminar sublayer, see equation (10)

α angle of incidence and angle of pitch of the local flow relative to the yawmeter probe, see Fig 6

α_N angle of incidence in a plane normal to the leading edge

β the direction of the local flow relative to that at the edge of the boundary layer or wake in the plane of the model surface or the chordal plane respectively, positive in the direction of the flow along the attachment line

β_F the direction of the local flow in the boundary layer or wake relative to the free stream in the plane of the model surface or the chordal plane respectively, positive in the direction of the flow along the attachment line

β_0 = the total change in direction of the flow (β) through the boundary layer

γ angle of yaw of the local flow relative to the yawmeter probe, see Fig 6

δ z for $u/U_p = 0.995$

$\bar{\delta}_1$ see equations (11) and (17)

$\bar{\delta}_2$ see equations (12) and (18)

η spanwise distance from tunnel roof/total span

$\bar{\theta}_{11}$ see equations (13) and (19)

$\bar{\theta}_{12}$ see equations (14) and (20)

$\bar{\theta}_{21}$ see equations (15) and (21)

$\bar{\theta}_{22}$ see equations (16) and (22)

LIST OF SYMBOLS (concluded)

Λ	angle of sweepback
ν_∞	kinematic coefficient of viscosity of the free stream
ρ	local density at the measurement point
ρ_P	density at the measurement point defined in the same way as U_P
ρ_W =	ρ_P for the measurement point nearest to the wall or the centre of the wake

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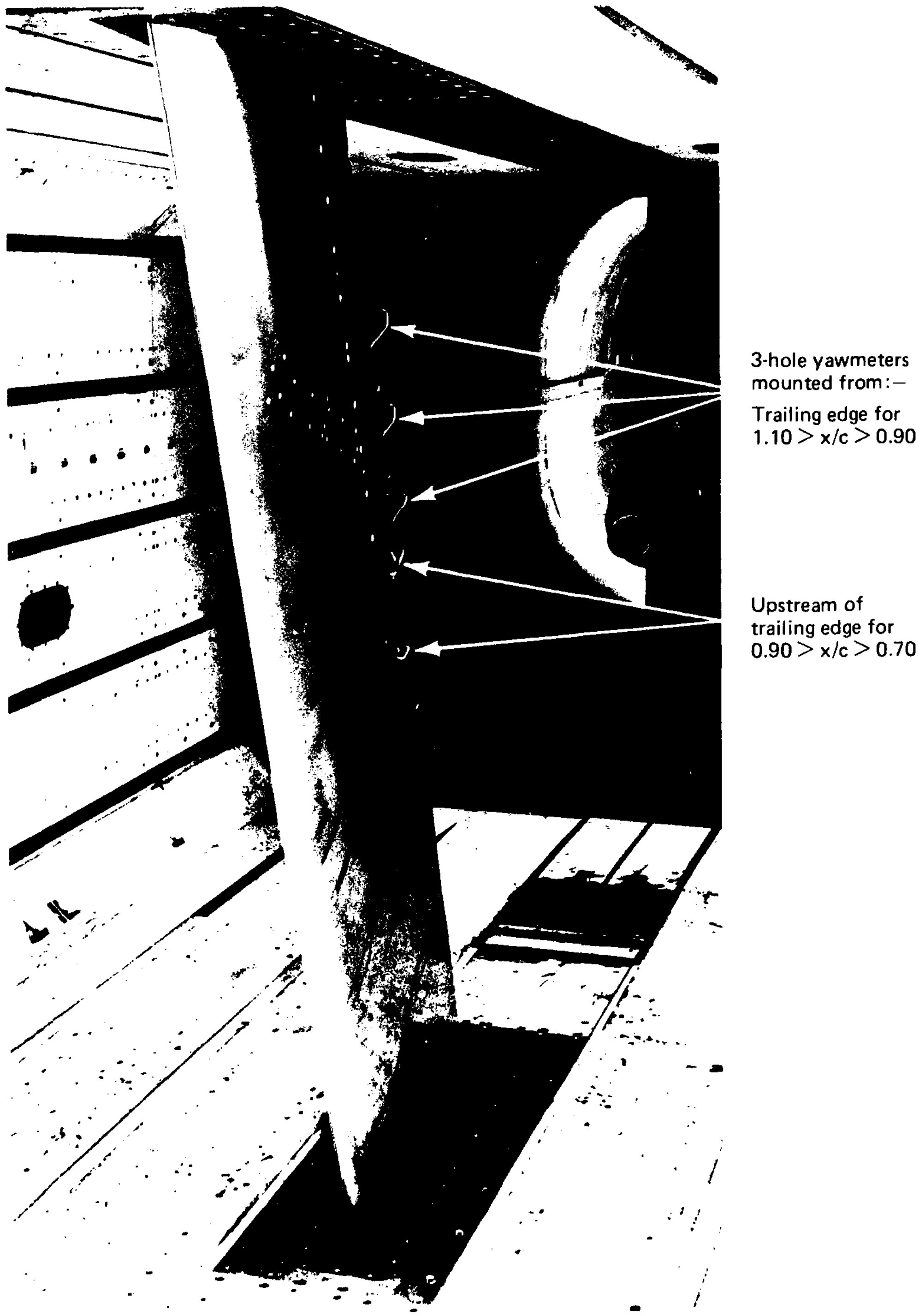


Fig 1 View of wing section, at sweep, spanning 8ft x 6ft tunnel

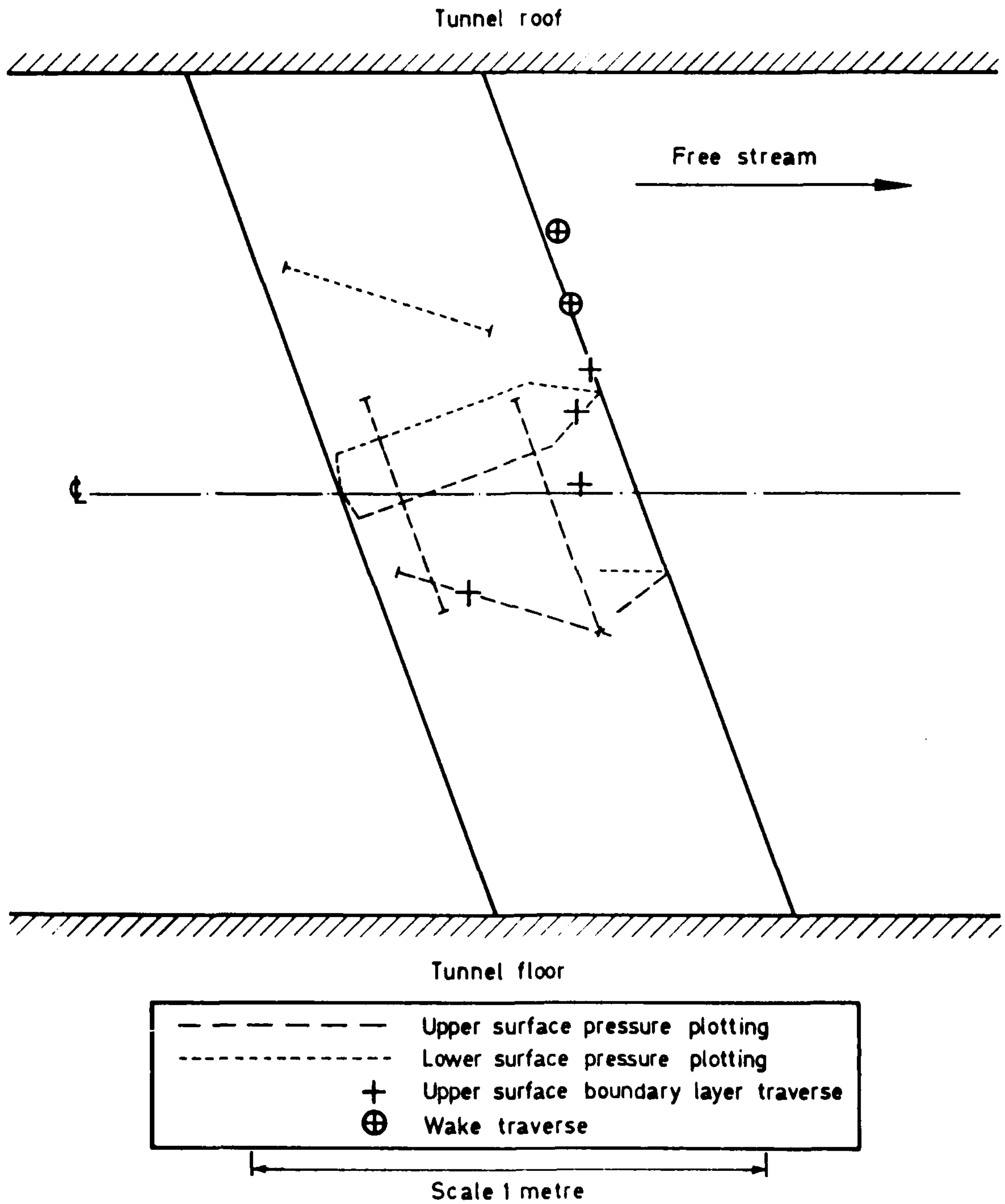


Fig 2 Location of surface pressure plotting and traverses

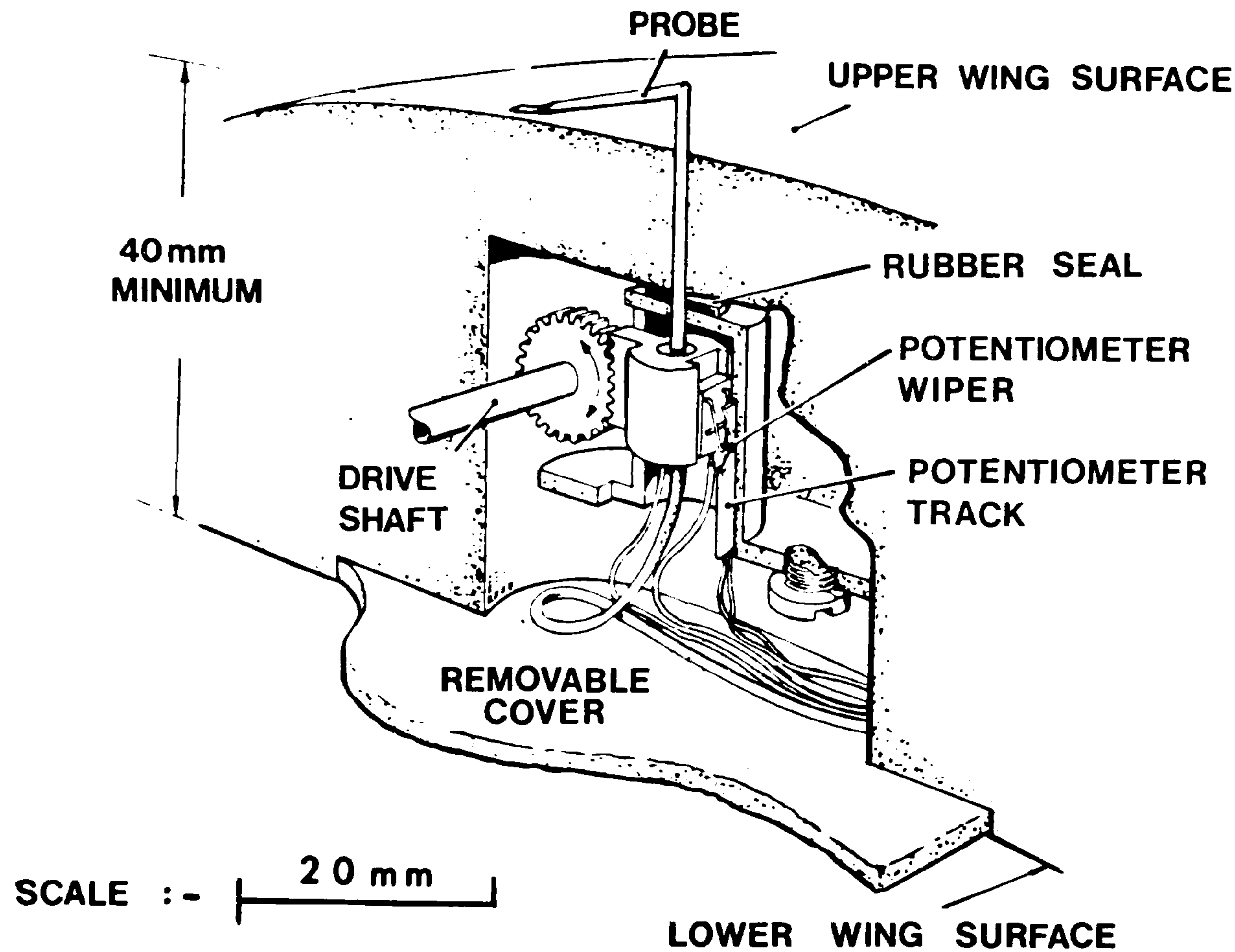


Fig 3 7.5mm boundary layer traverse gear

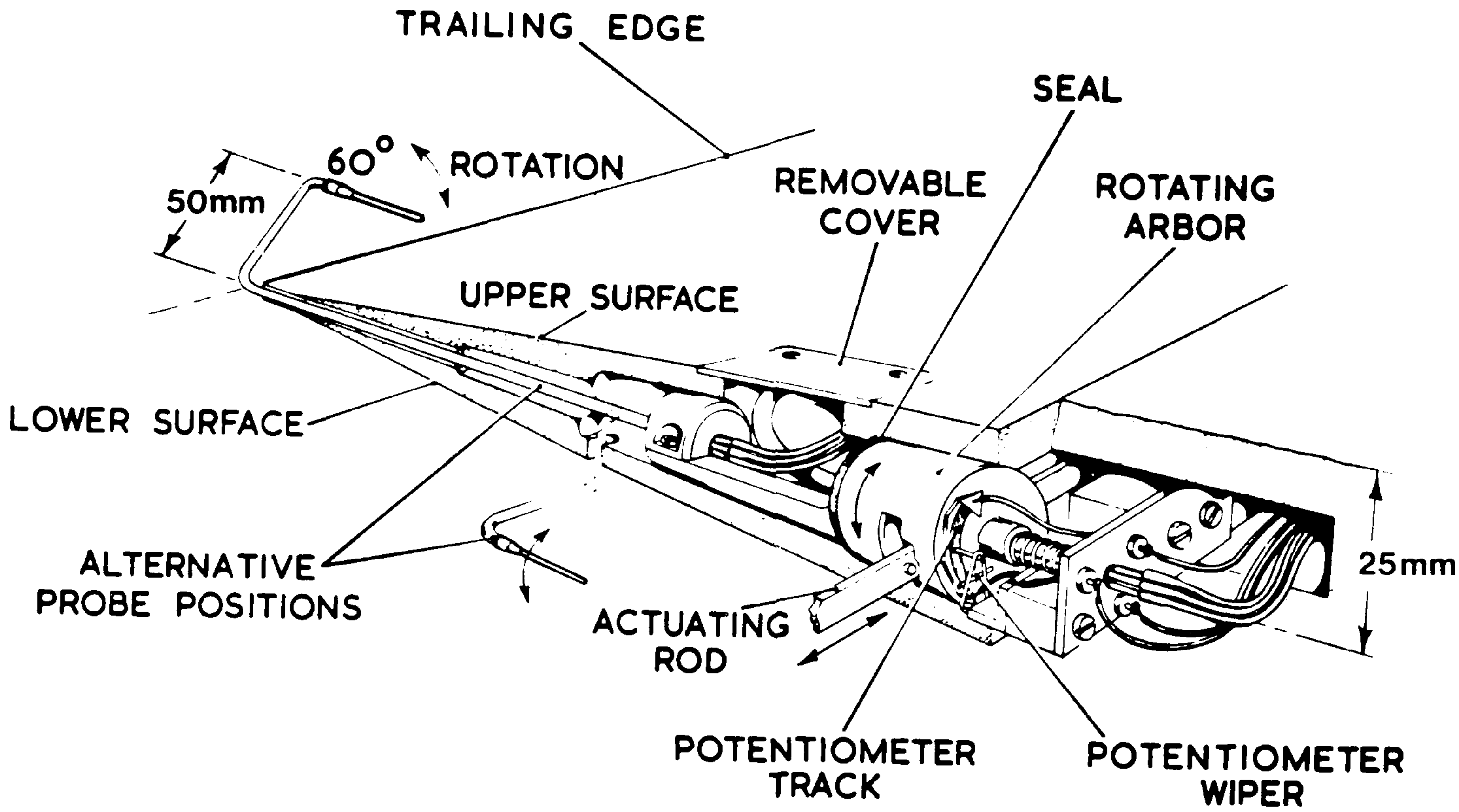


Fig 4 Wake and boundary layer traverse gear

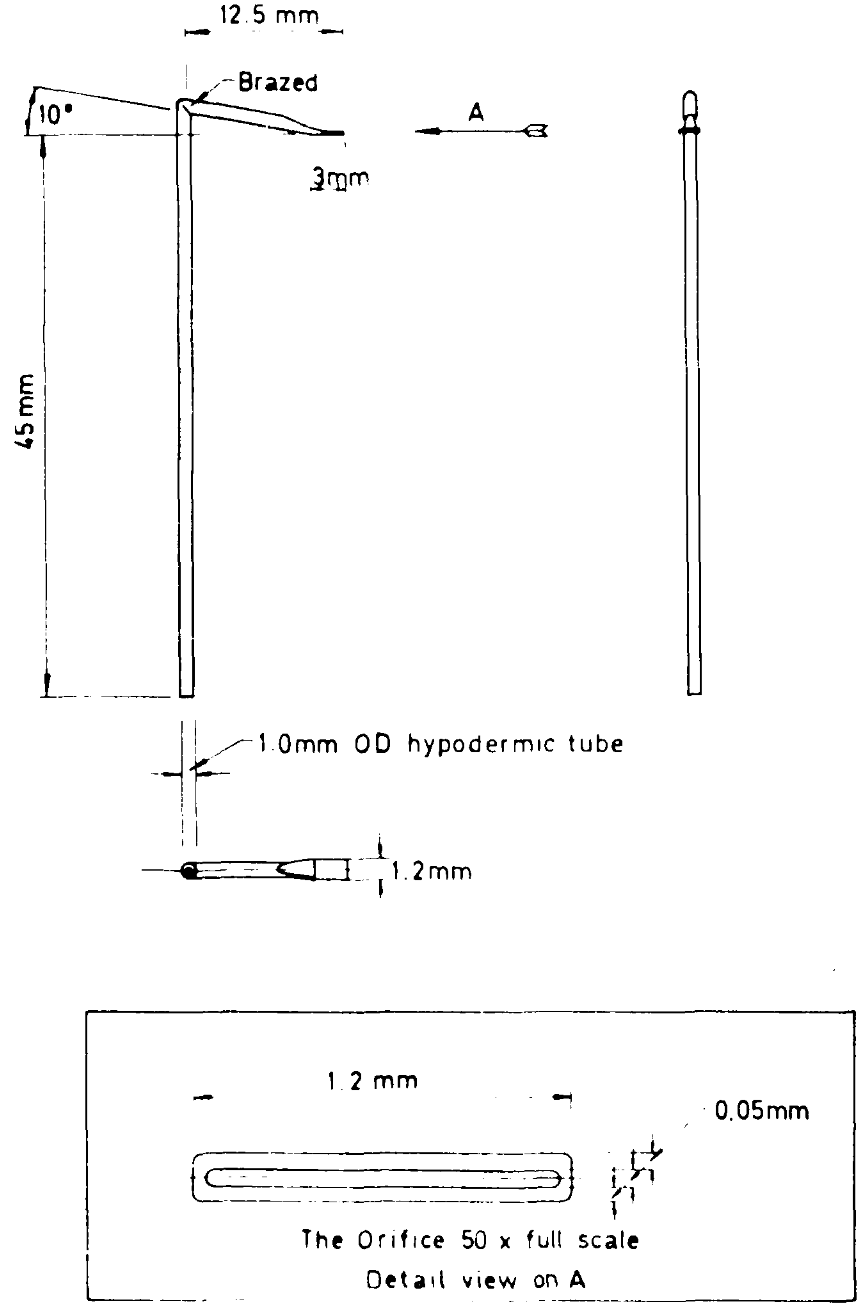


Fig 5 Flattened pitot probe – 2x full scale

Dimension 'C'	Type of probe
0.15mm	Straight
1.90mm	Offset

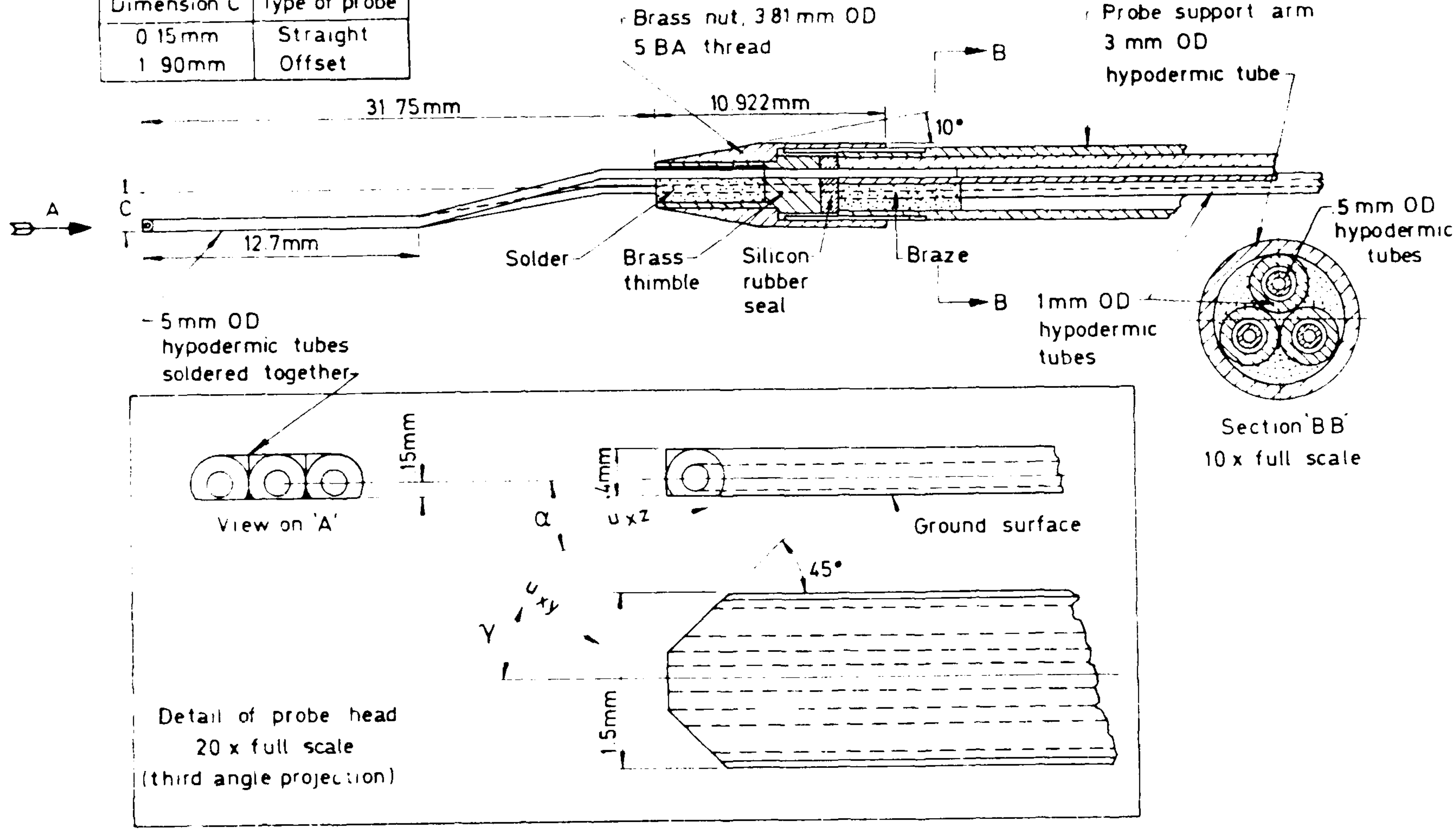


Fig 6 Detachable 3-hole yawmeter probe – 4x full scale

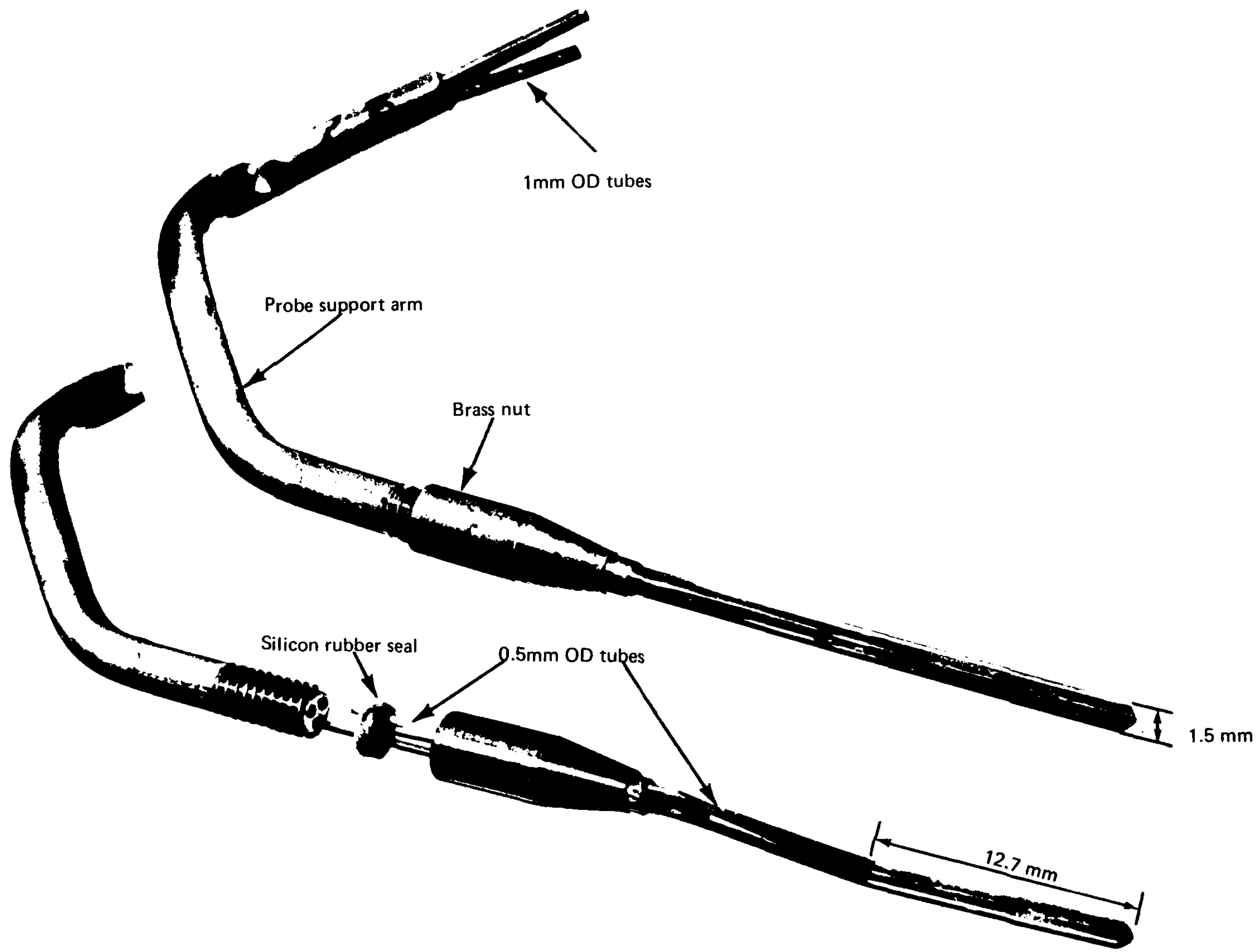
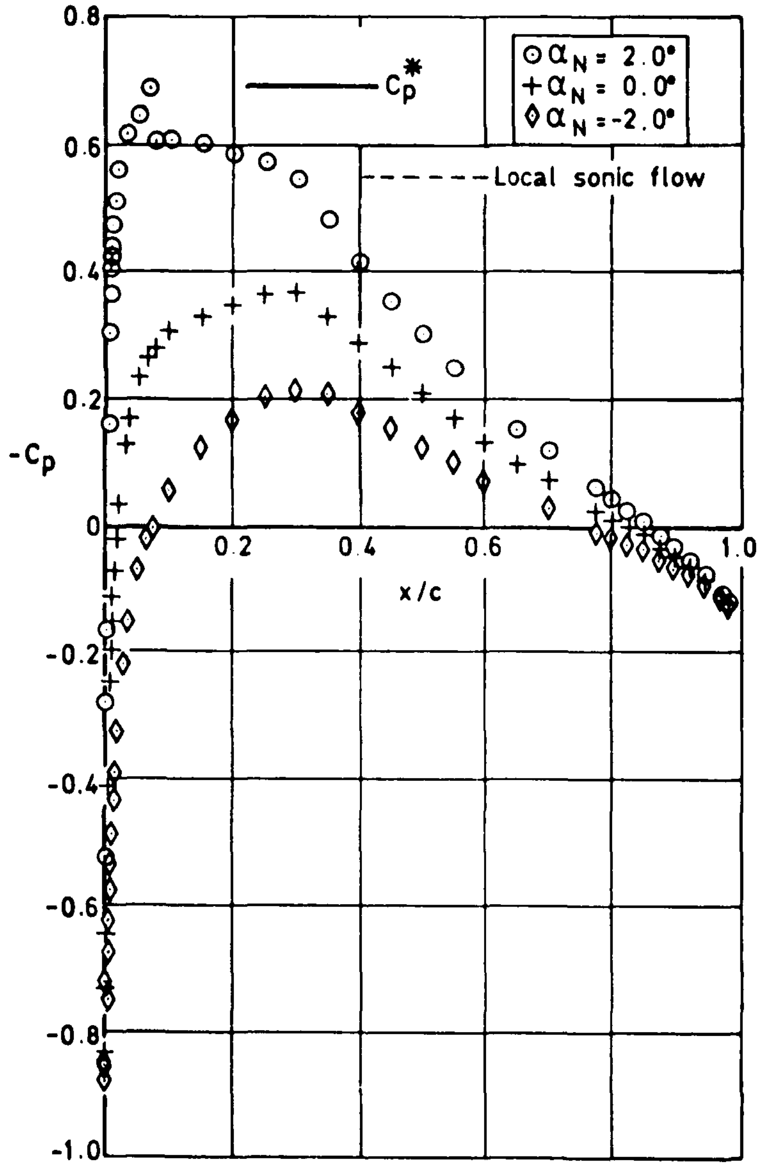


Fig 7 Photograph of detachable yawmeter head and support arm



Λ = 28°, M_N = 0.675

Fig 8a Upper surface chordwise pressure distribution

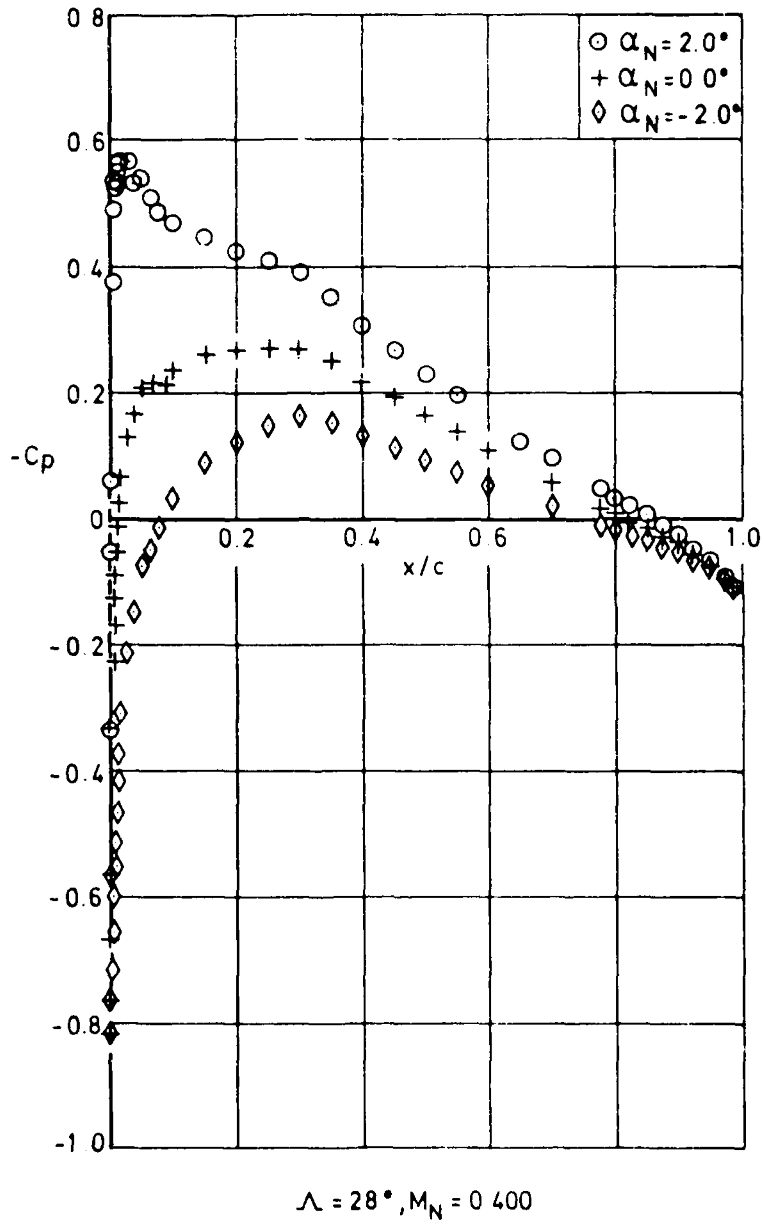


Fig 8b Upper surface chordwise pressure distribution

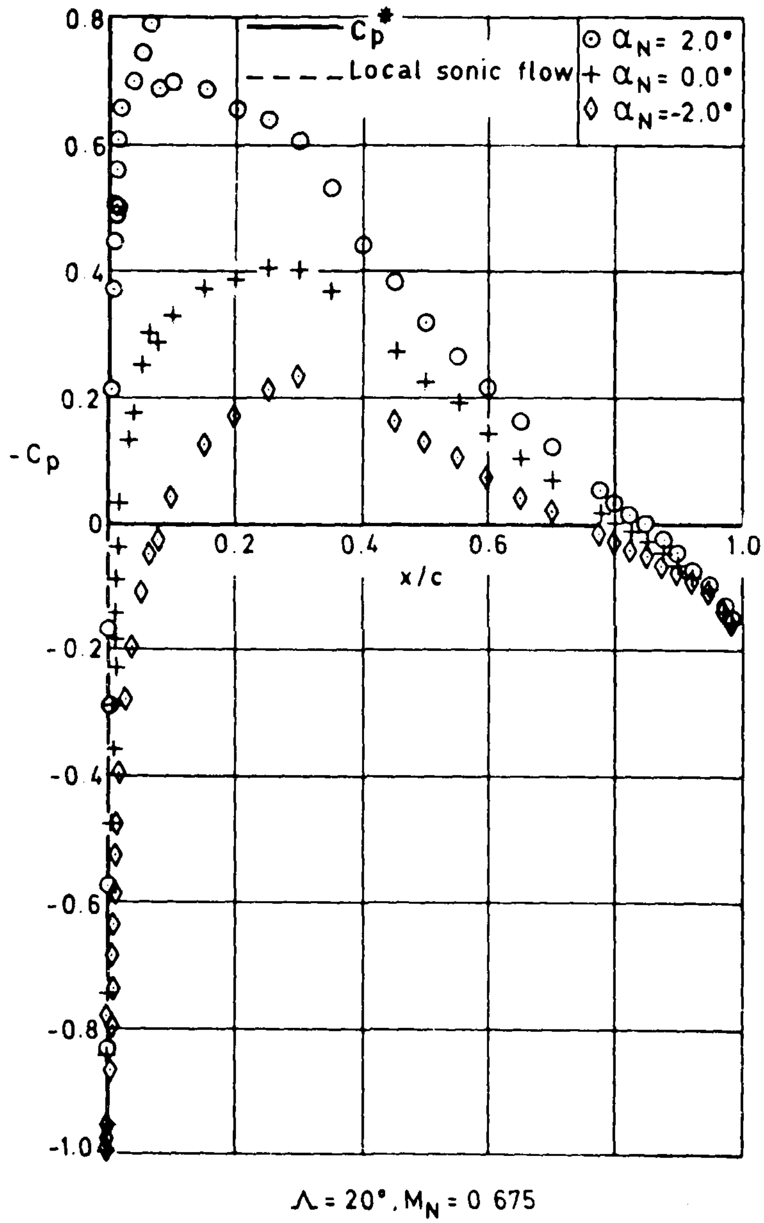


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Fig 8c Upper surface chordwise pressure distribution

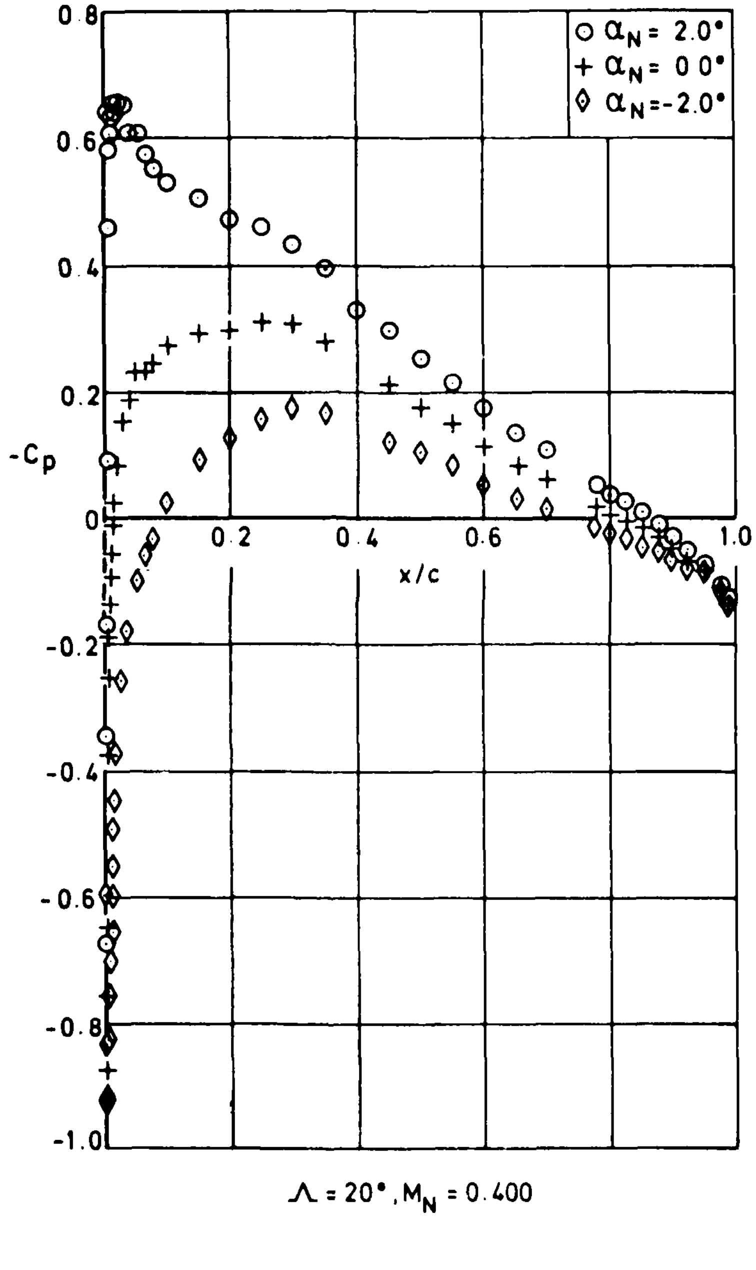

Fig 8d Upper surface chordwise pressure distribution

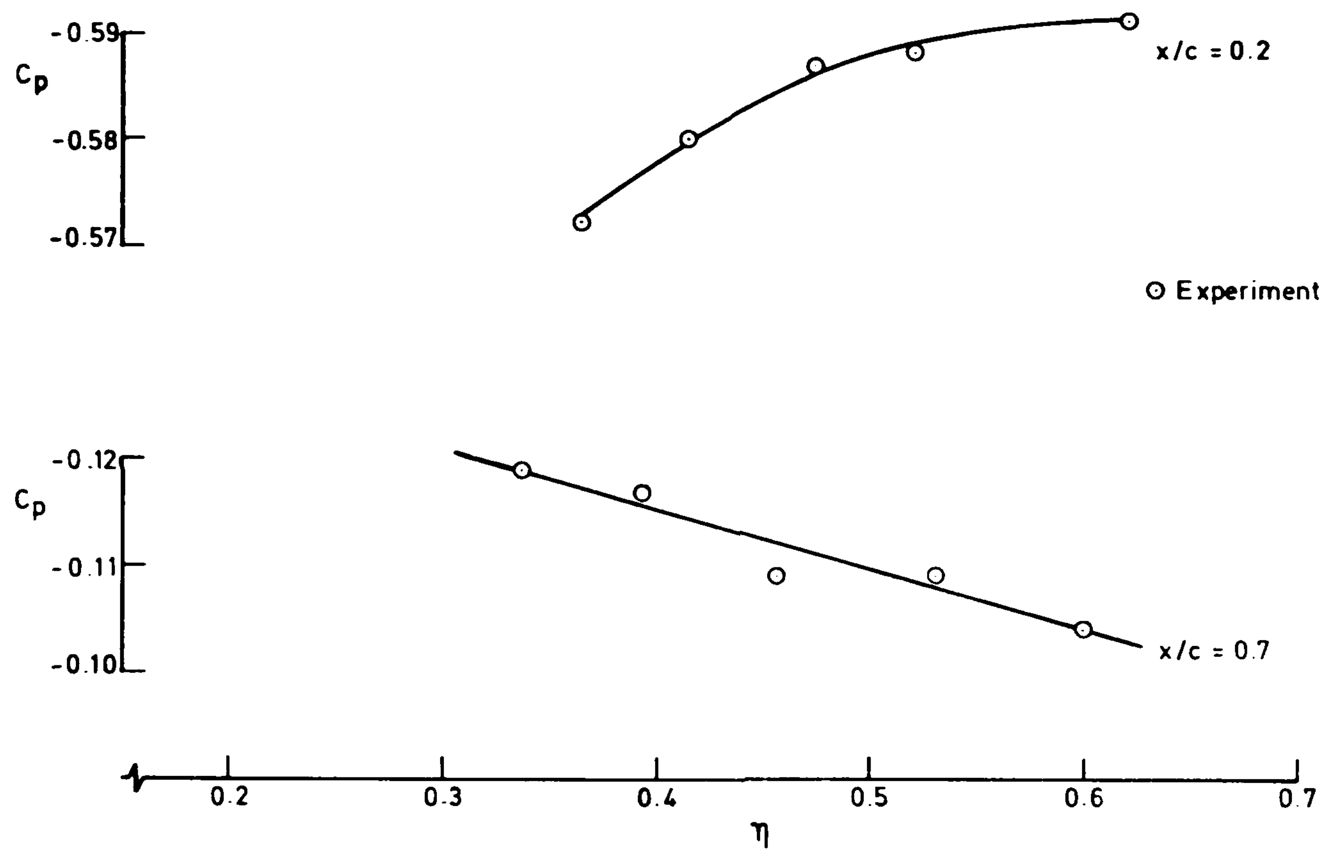

Fig 9a Spanwise upper surface pressure distribution, $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

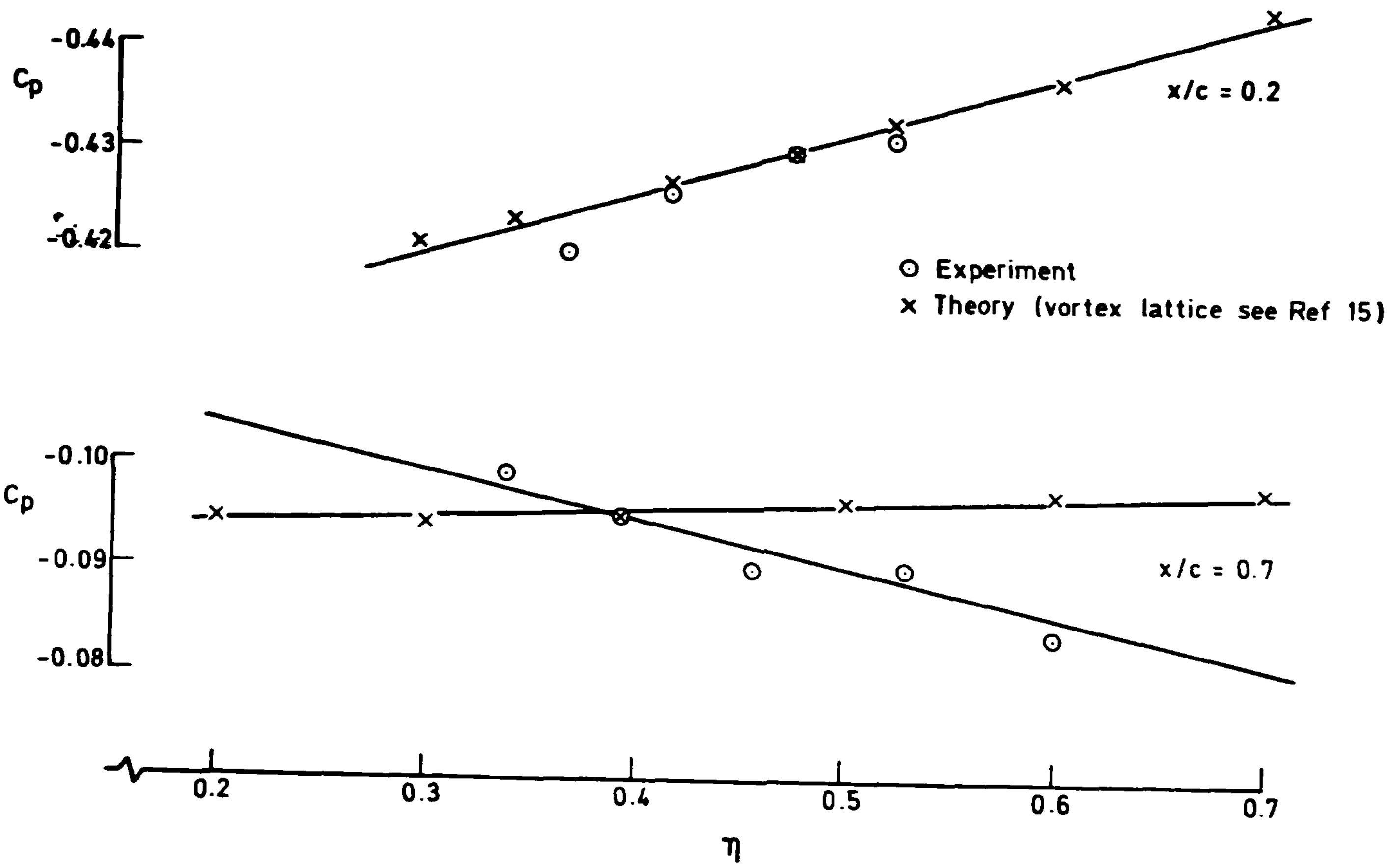

Fig 9b Spanwise upper surface pressure distribution, $\Lambda = 28°$, $M_N = 0.4$, $\alpha_N = +2°$

Fig 10a

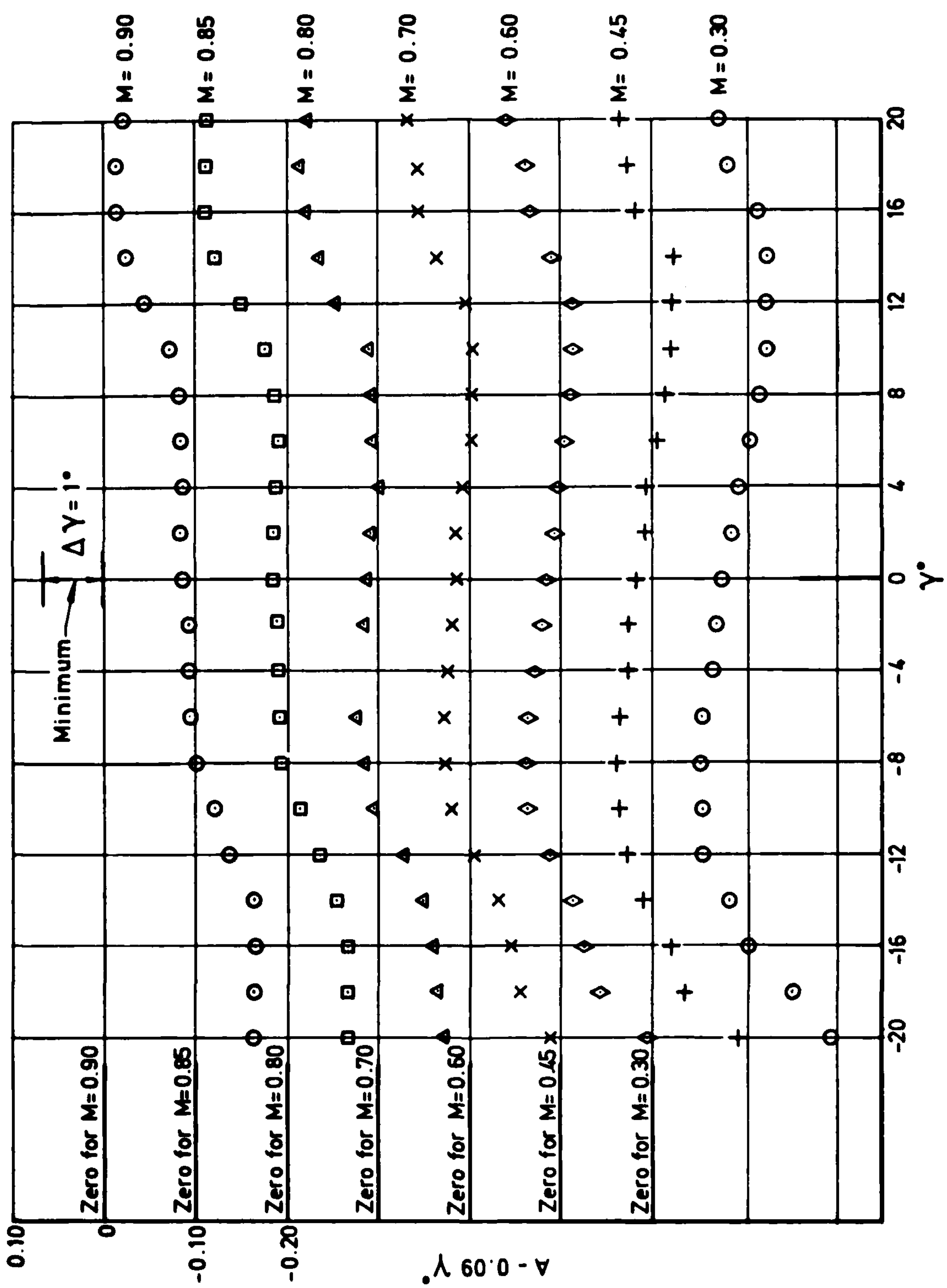

Fig 10a Yawmeter calibration factor A vs yaw angle γ°

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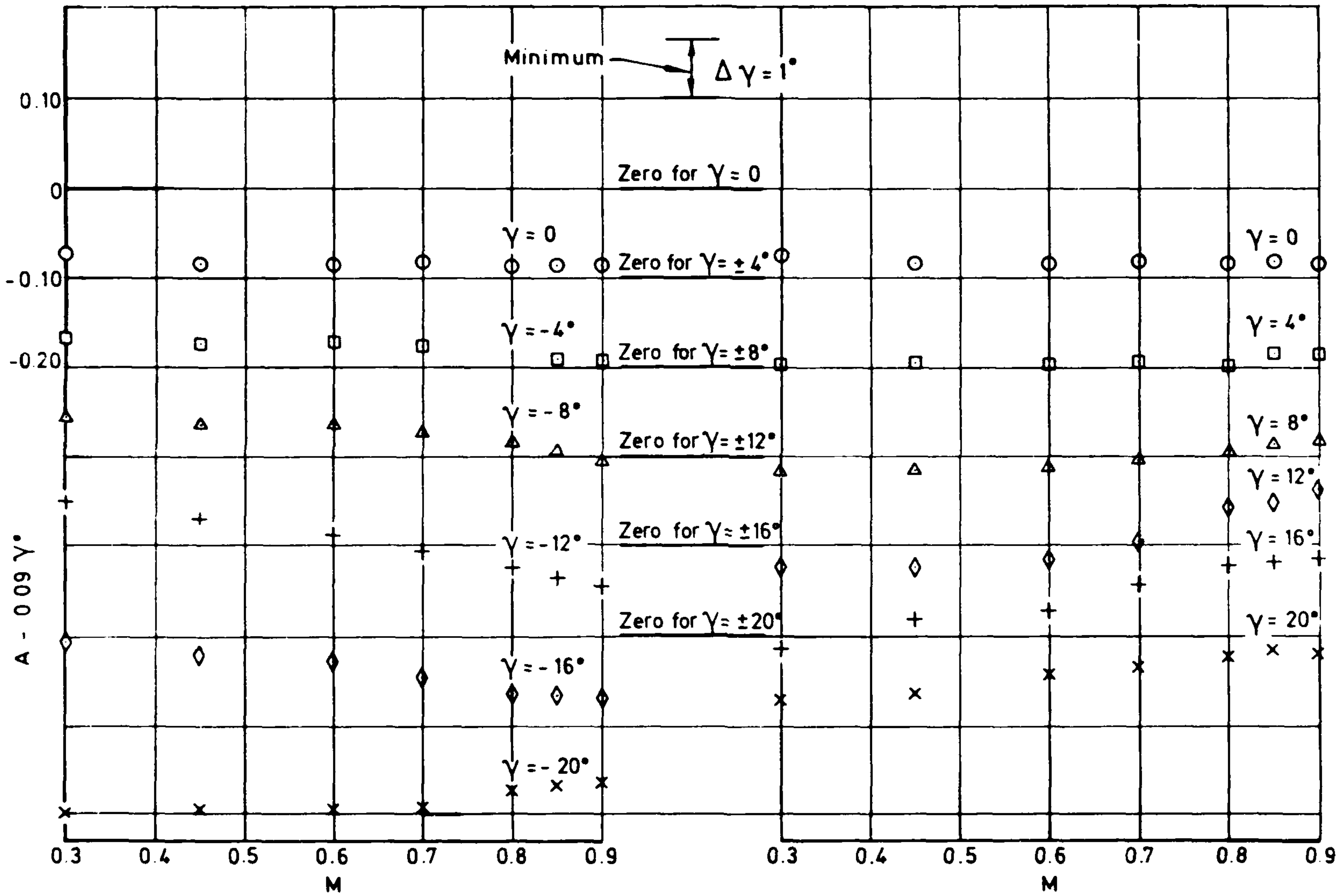

Fig 10b Yawmeter calibration factor A vs Mach number (M)

Fig 11a

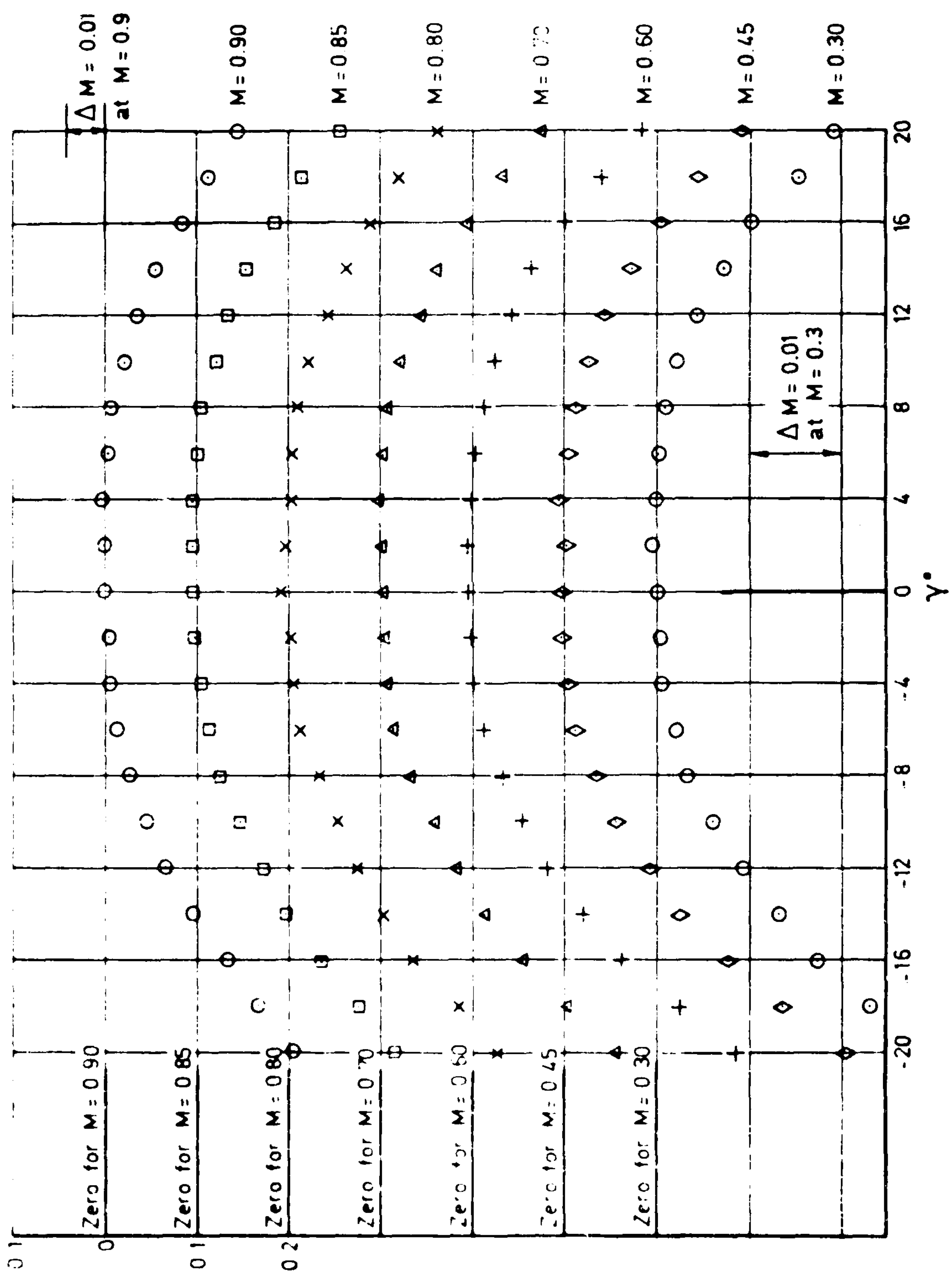

Fig 11a Yawmeter calibration factor B vs yaw angle γ°

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Fig 11b

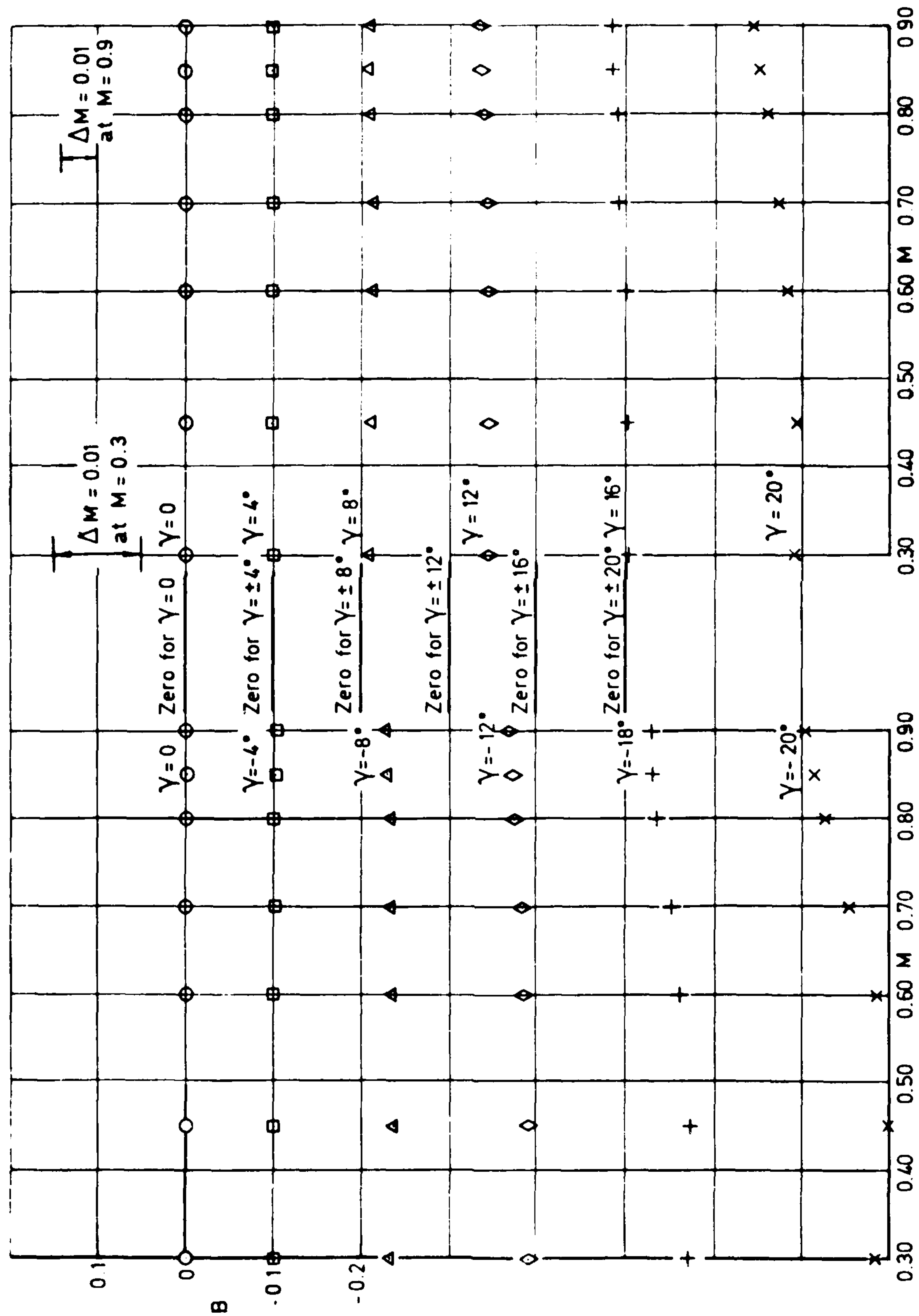

Fig 11b Yawmeter calibration factor B vs Mach number (M)

Fig 12a

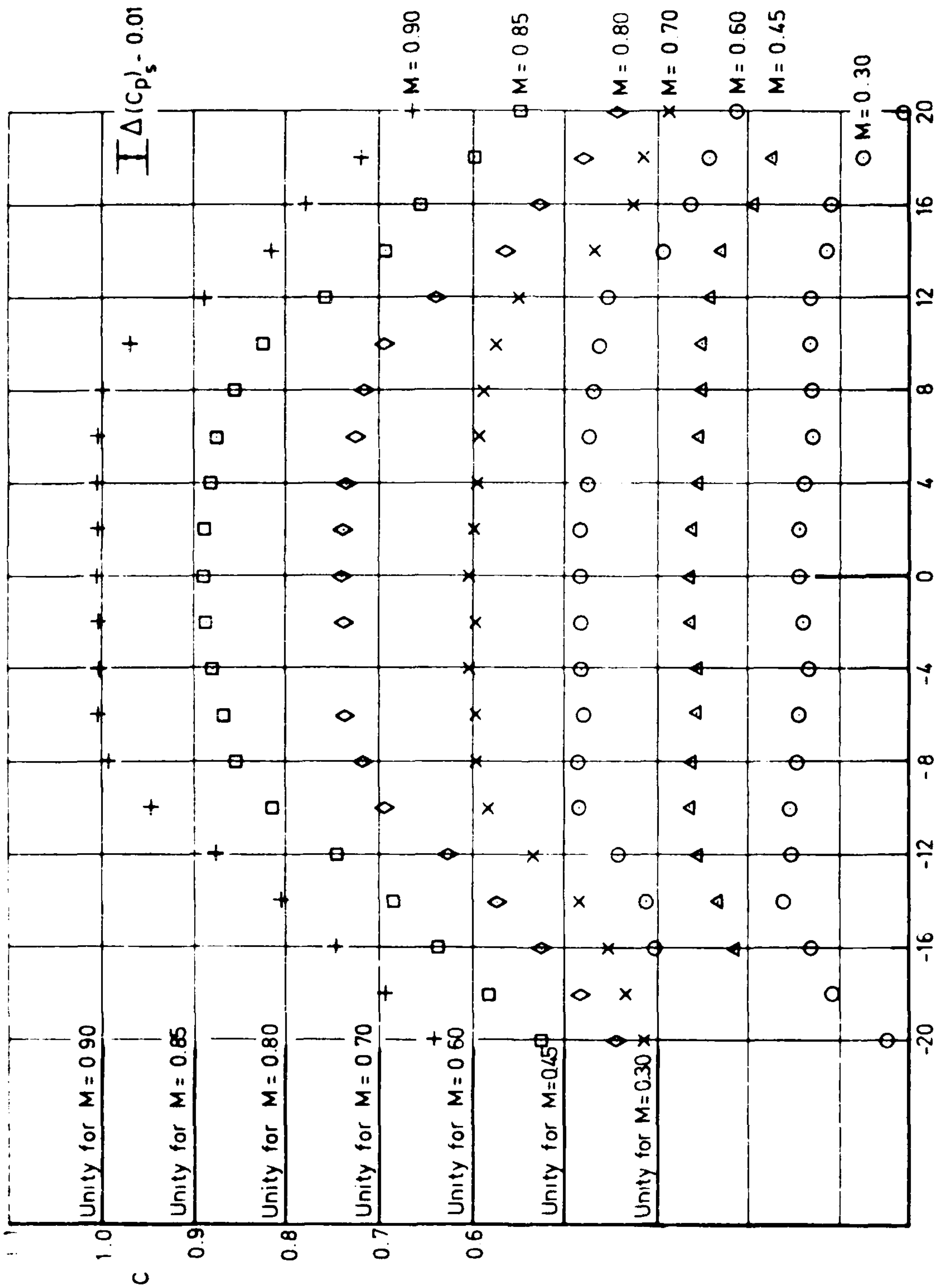

Fig 12a Yawmeter calibration factor C vs yaw angle γ°

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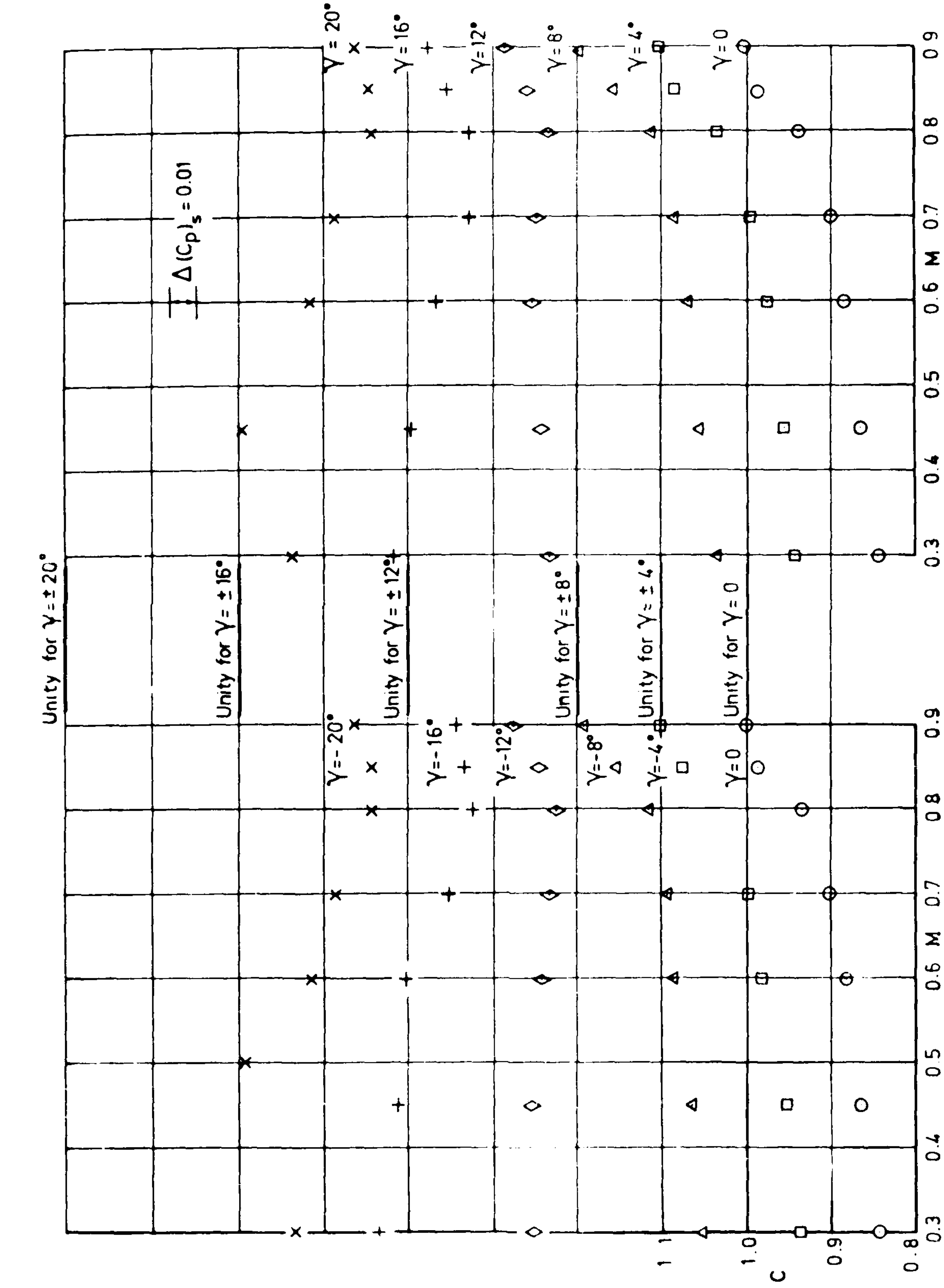

Fig 12b Yawmeter calibration factor C vs Mach number (M)

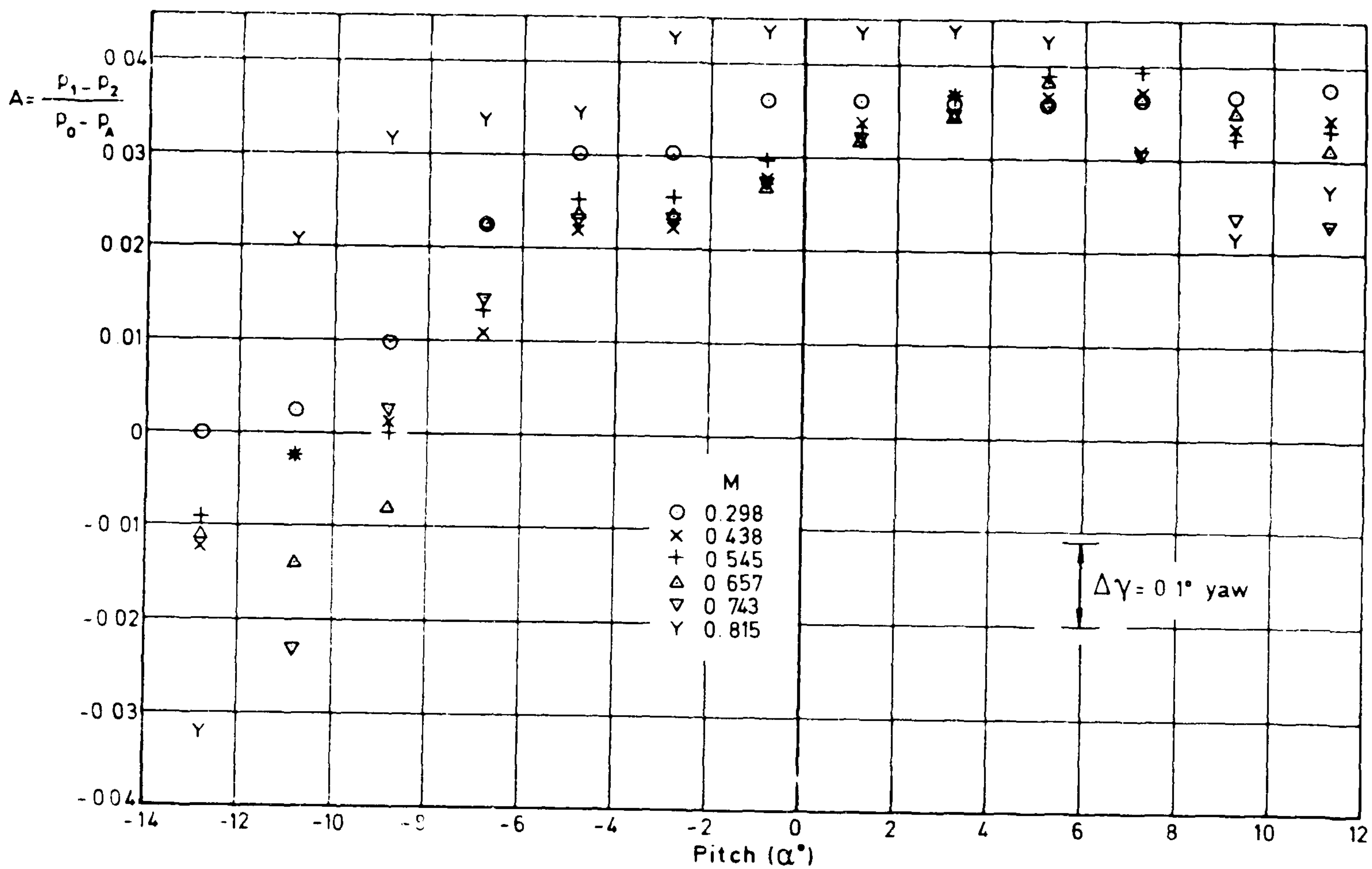

Fig 13 The effect of pitch on calibration factor A for probe 1

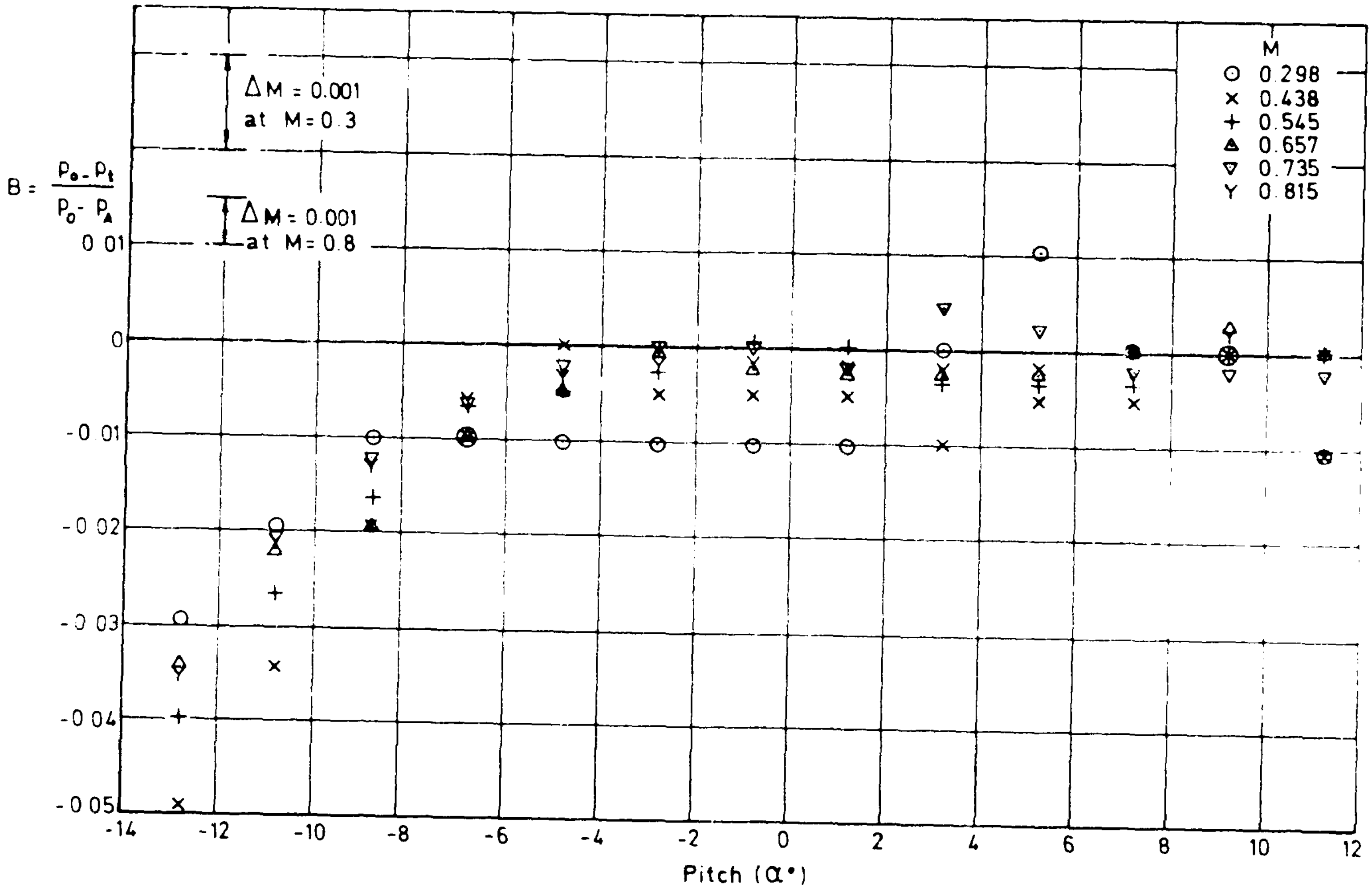

Fig 14 The effect of pitch on calibration factor B for probe 1

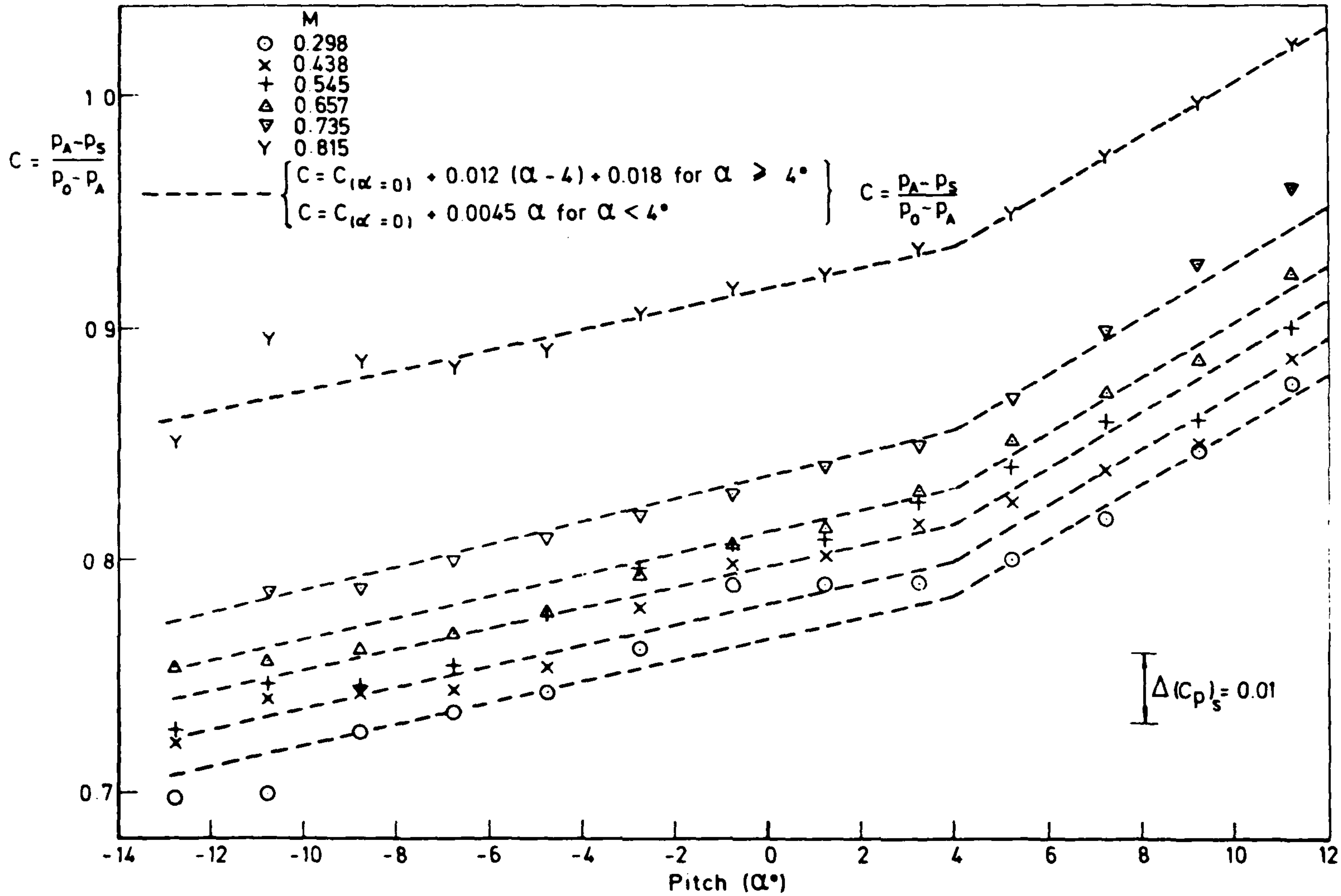

Fig 15 The effect of pitch on calibration factor C for probe 1

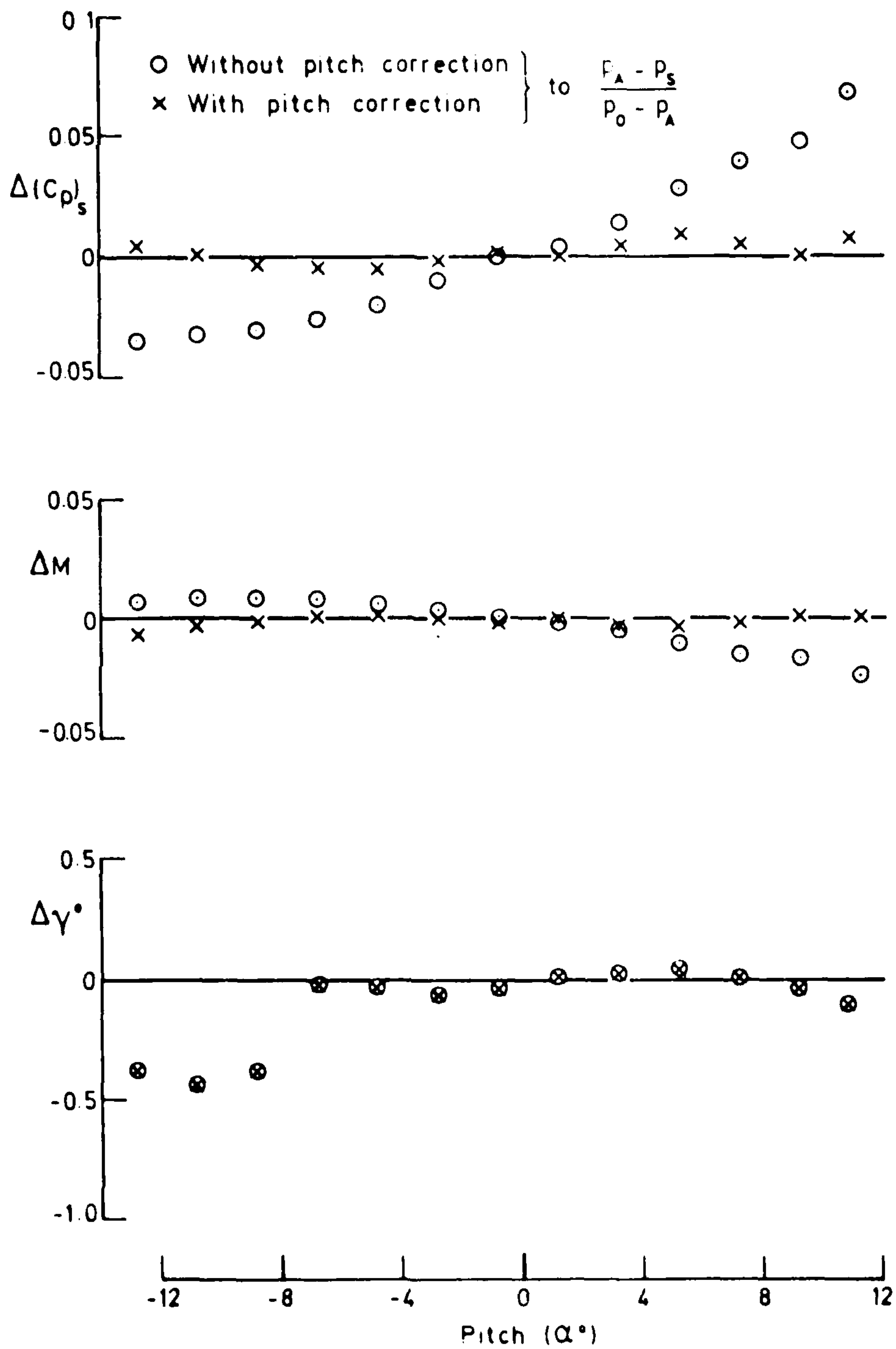

Fig 16 Errors in predicted flow parameters for probe 1 at M = 0.66 with pitch alone

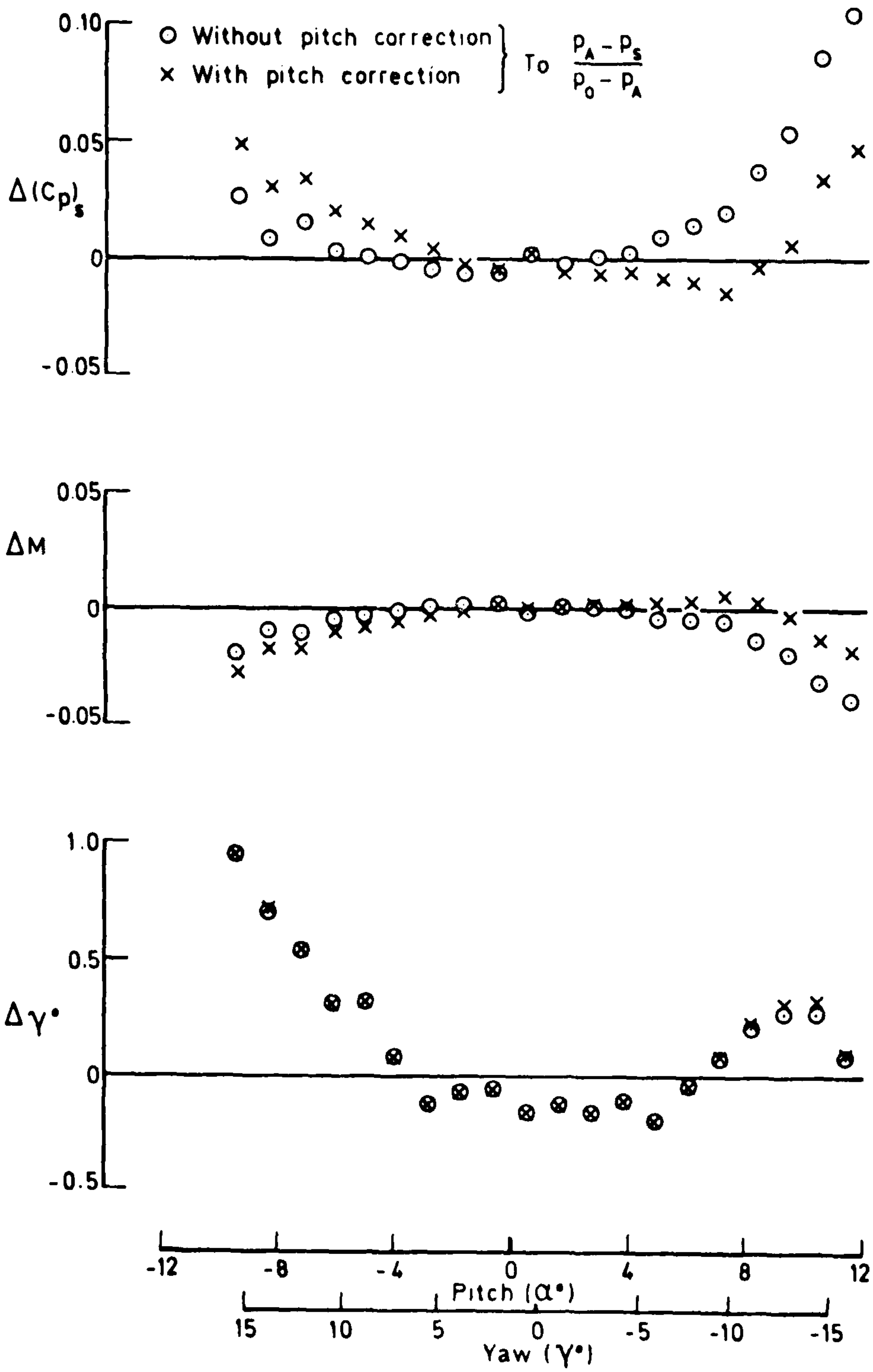

Fig 17 **Errors in predicted flow parameters for probe 1 at M = 0.66 with combined pitch and yaw**

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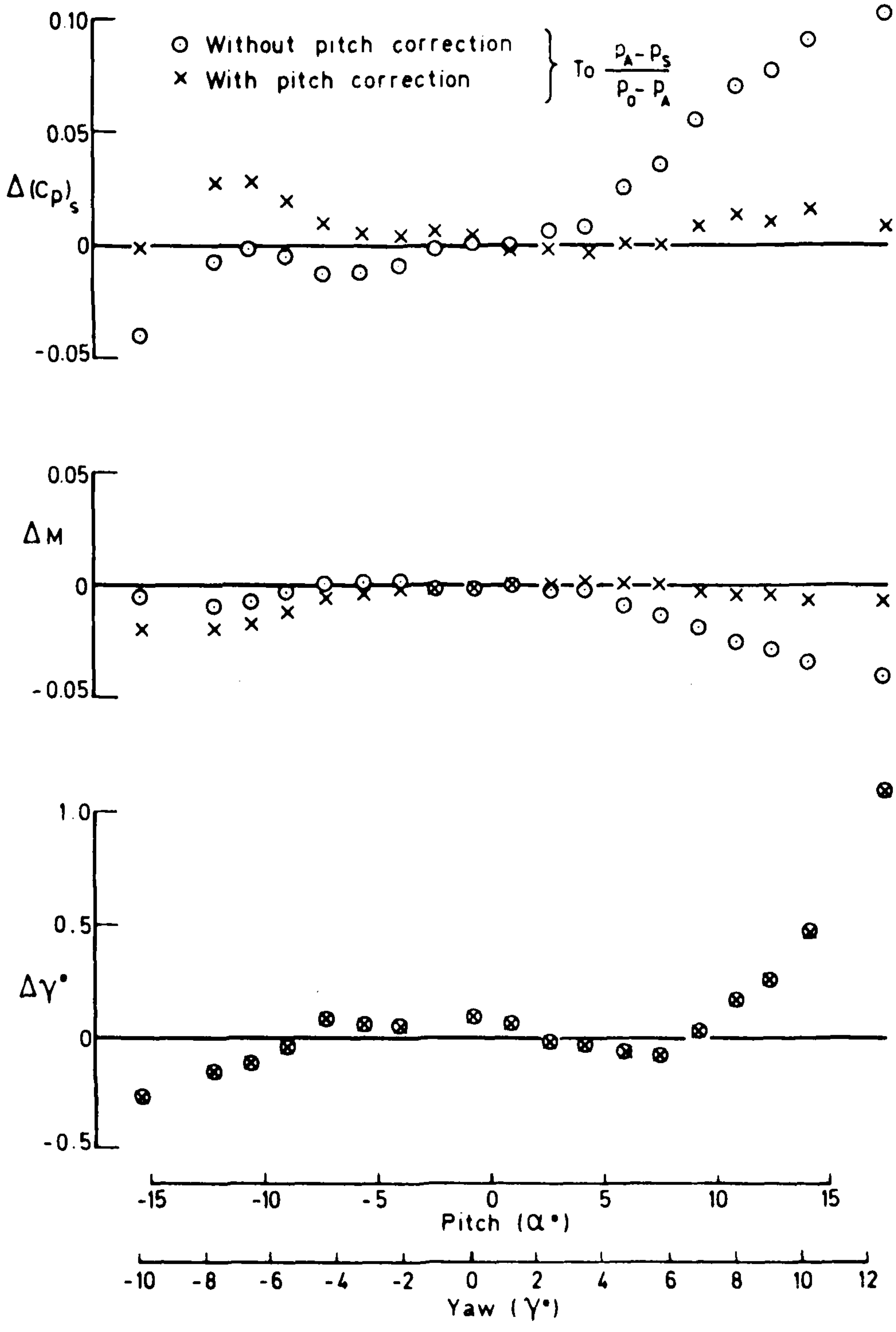

Fig 18a Errors in predicted flow parameters for probe 2 at M = 0.66 with combined pitch and yaw

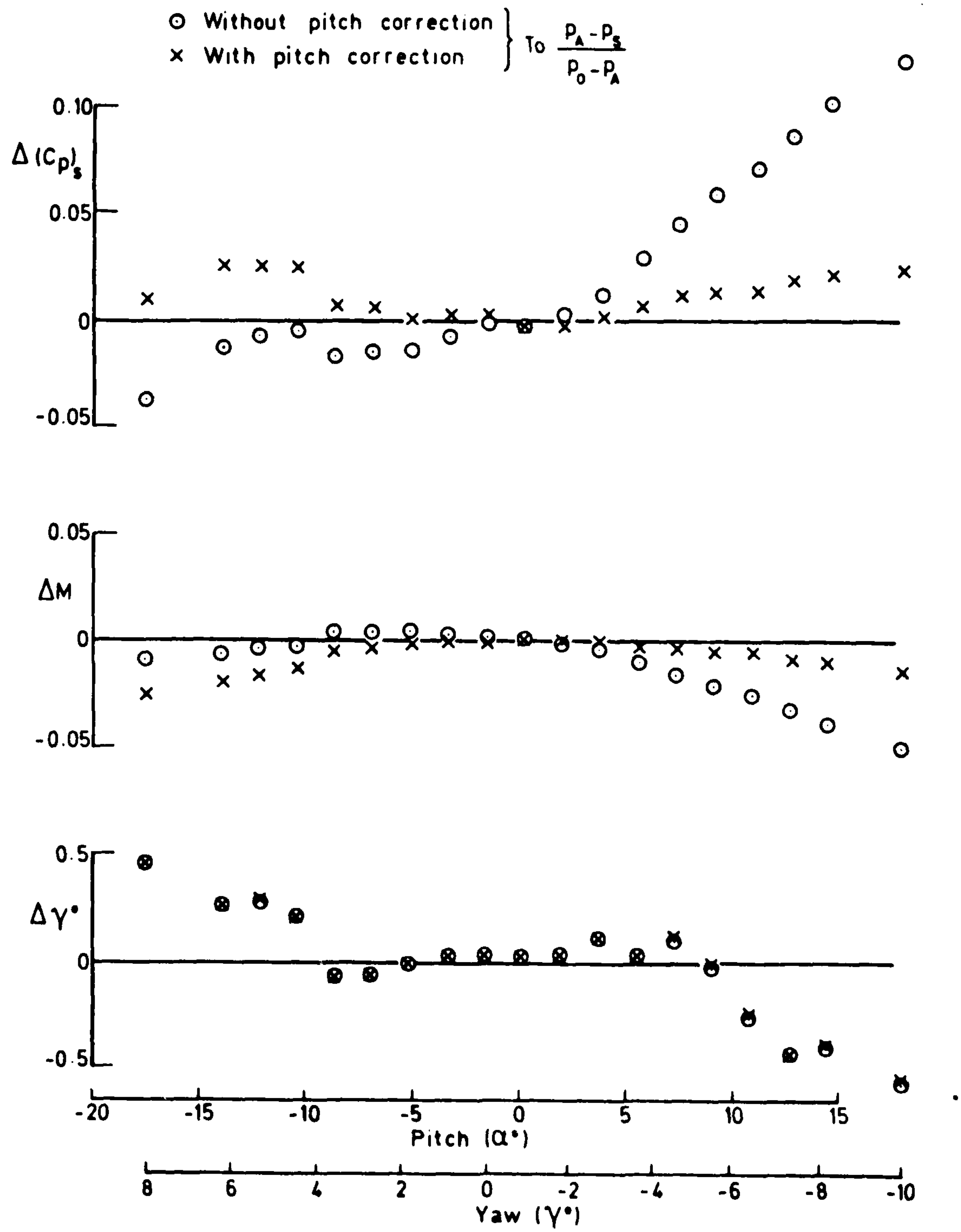

Fig 18b Errors in predicted flow parameters for probe 2 at M = 0.66 with combined pitch and yaw

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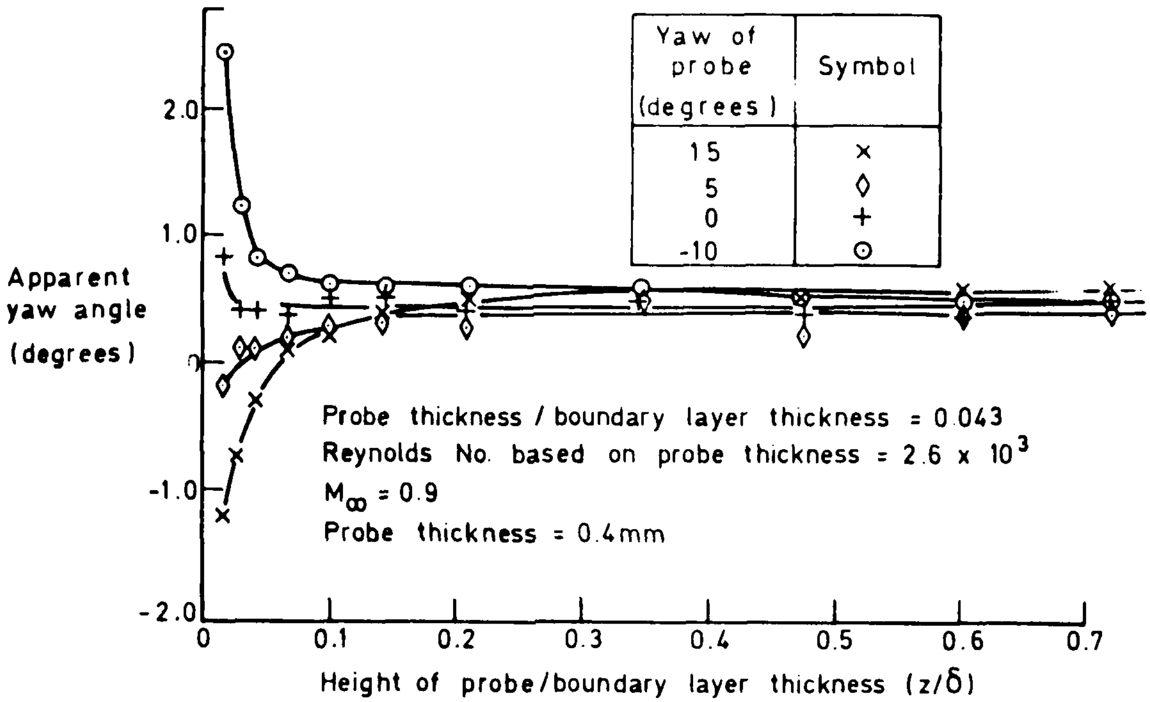


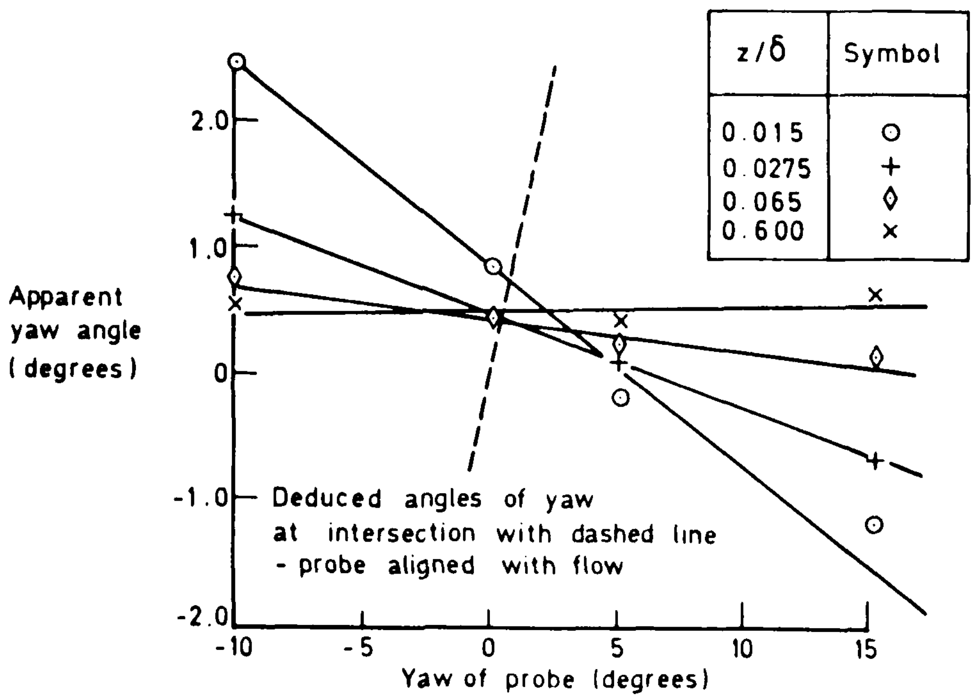


Fig 19 Measurement of yaw angles in a boundary layer

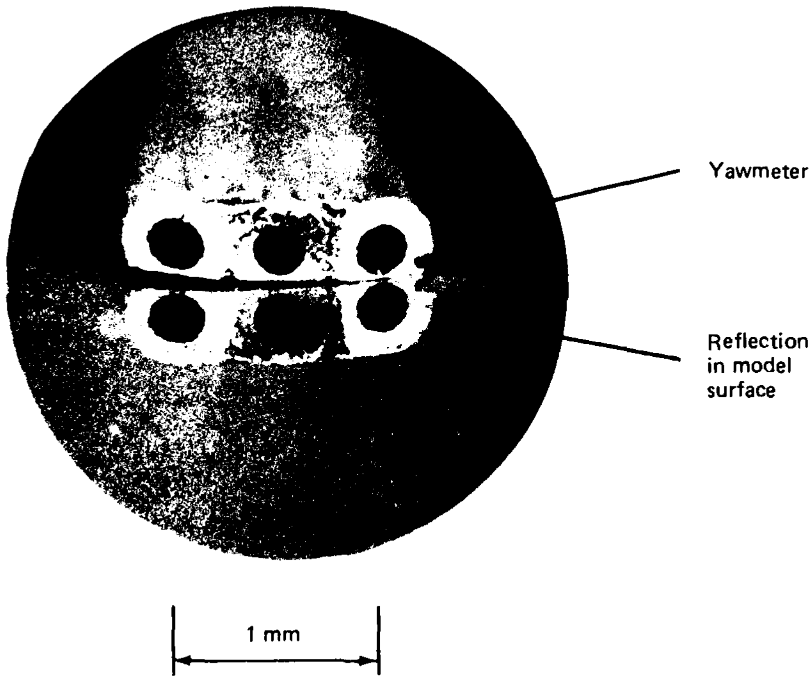


Fig 20 Photographic record of 3-hole yawmeter

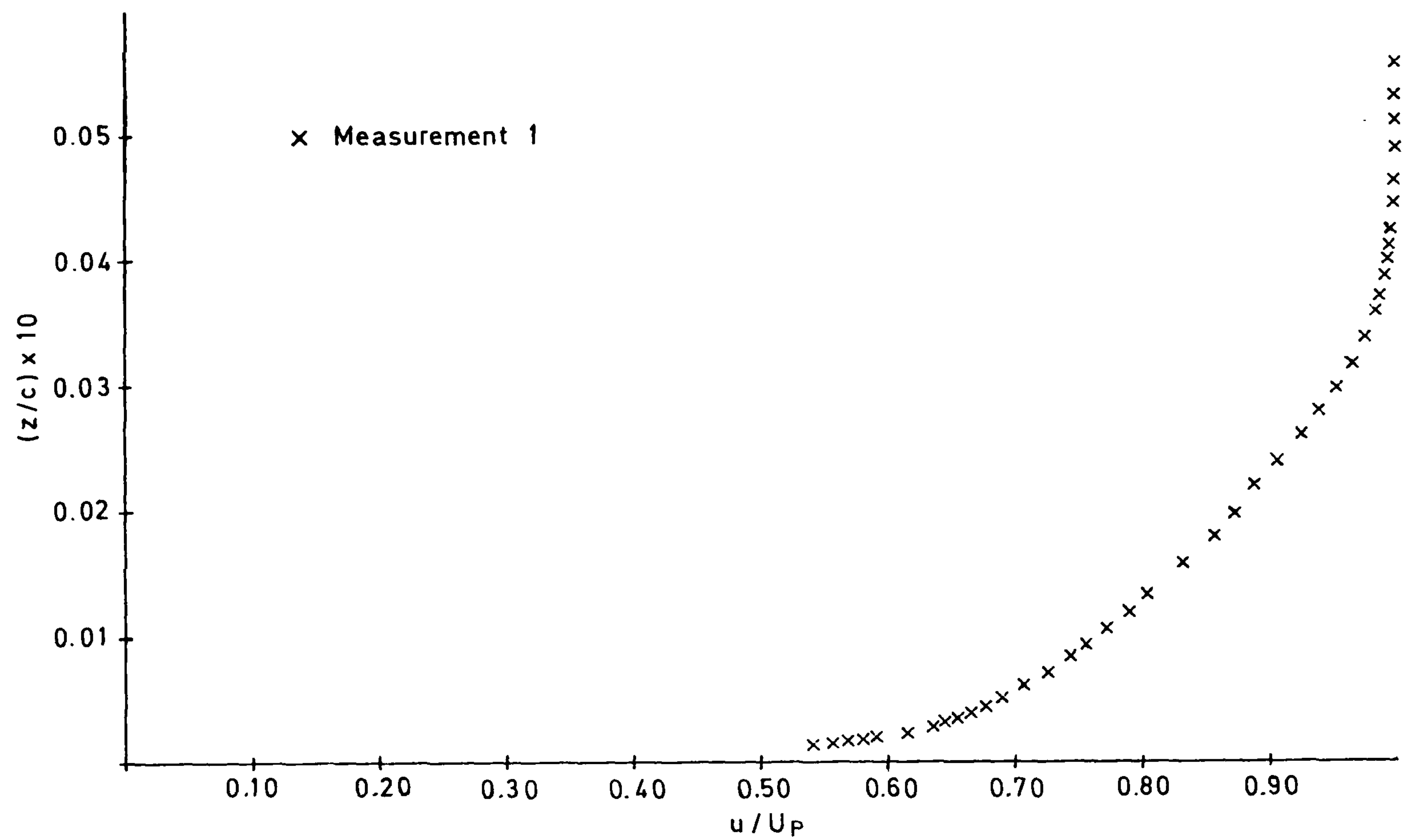
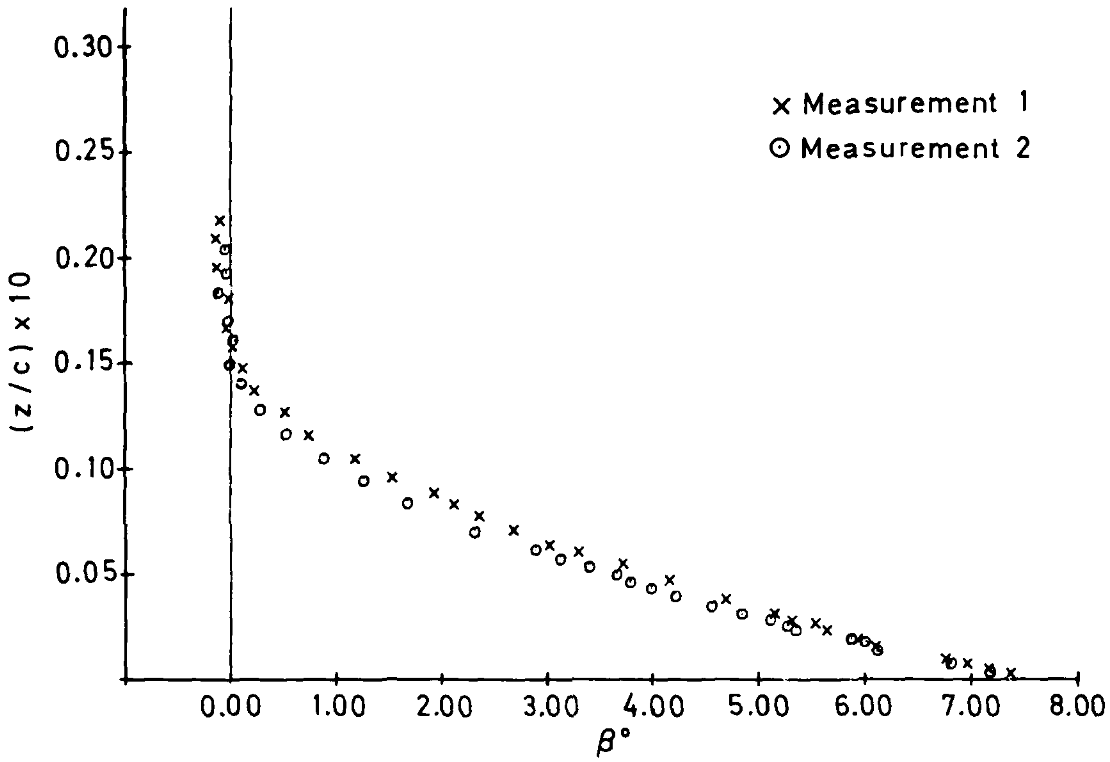


Fig 21 *Velocity profile at x/c = 0.280 for* $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

Fig 22a



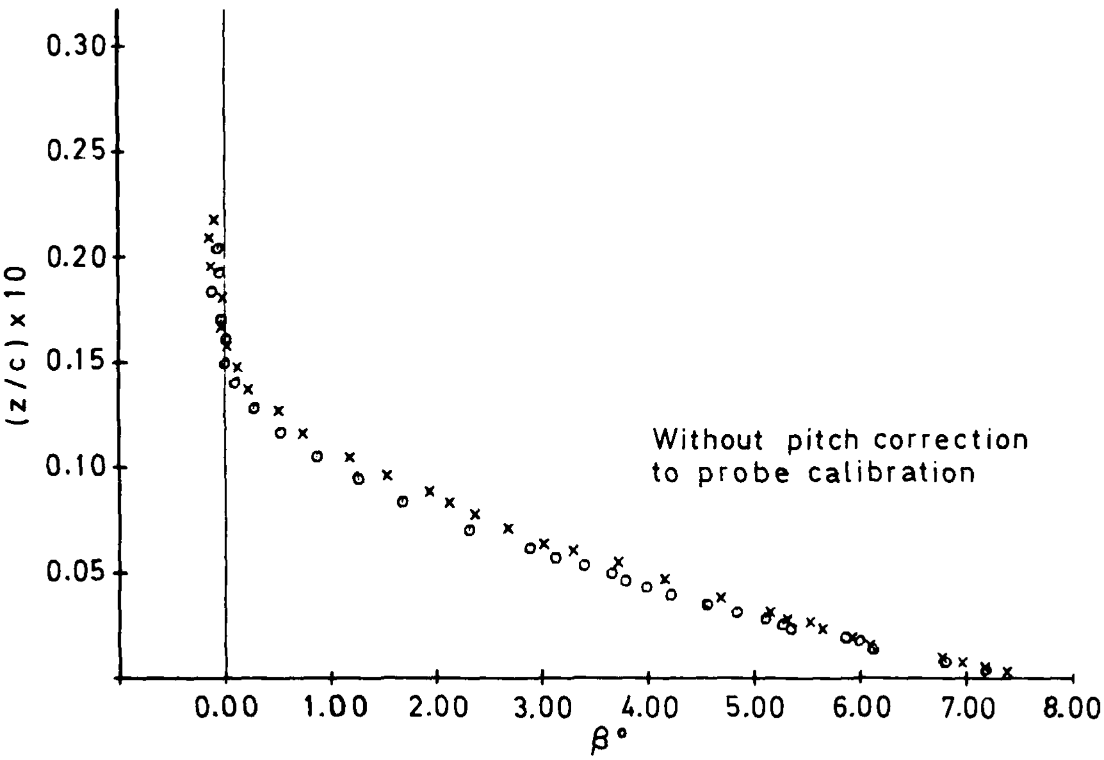
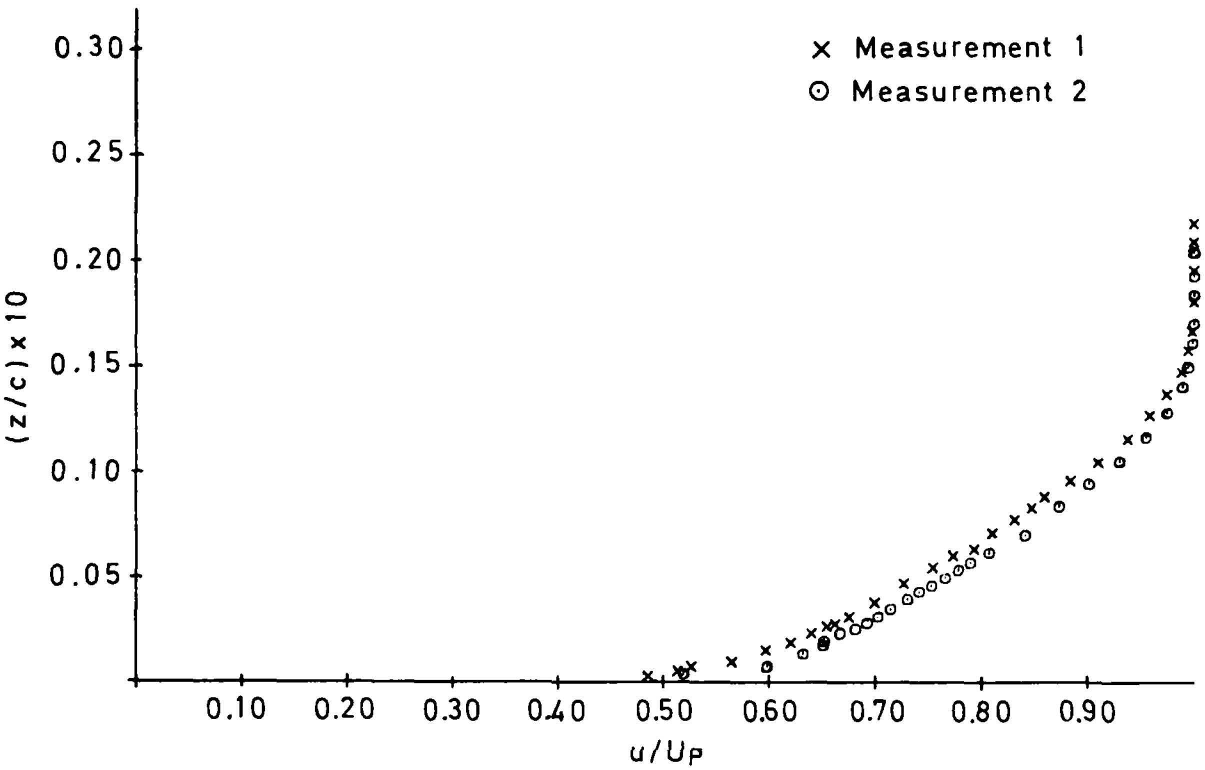
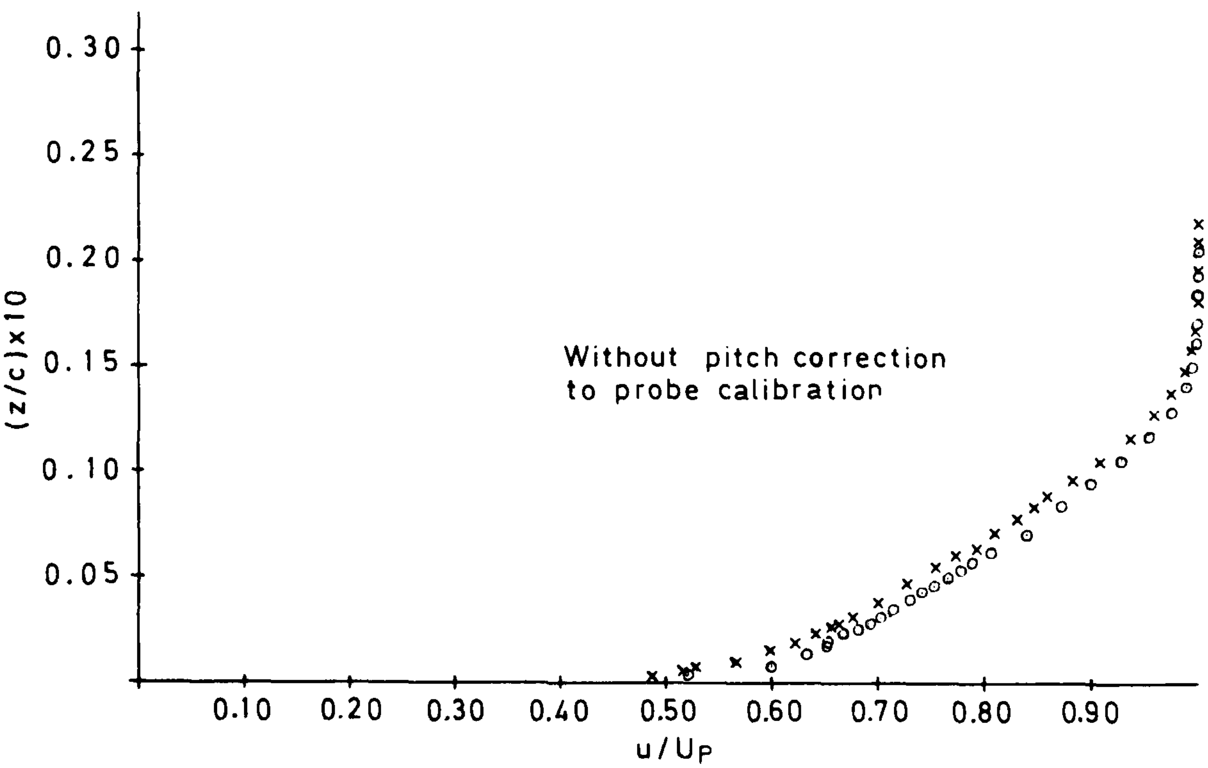


Fig 22a Crossflow profile at x/c = 0.814 for $\Lambda = 28^\circ$, $M_N = 0.675$, $\alpha_N = +2^\circ$

TR 79062





TR 79062

Fig 22b Velocity profile at x/c = 0.814 for $\Lambda = 28°$, $M_N = 0.675$ $\alpha_N = +2°$

Fig 22c

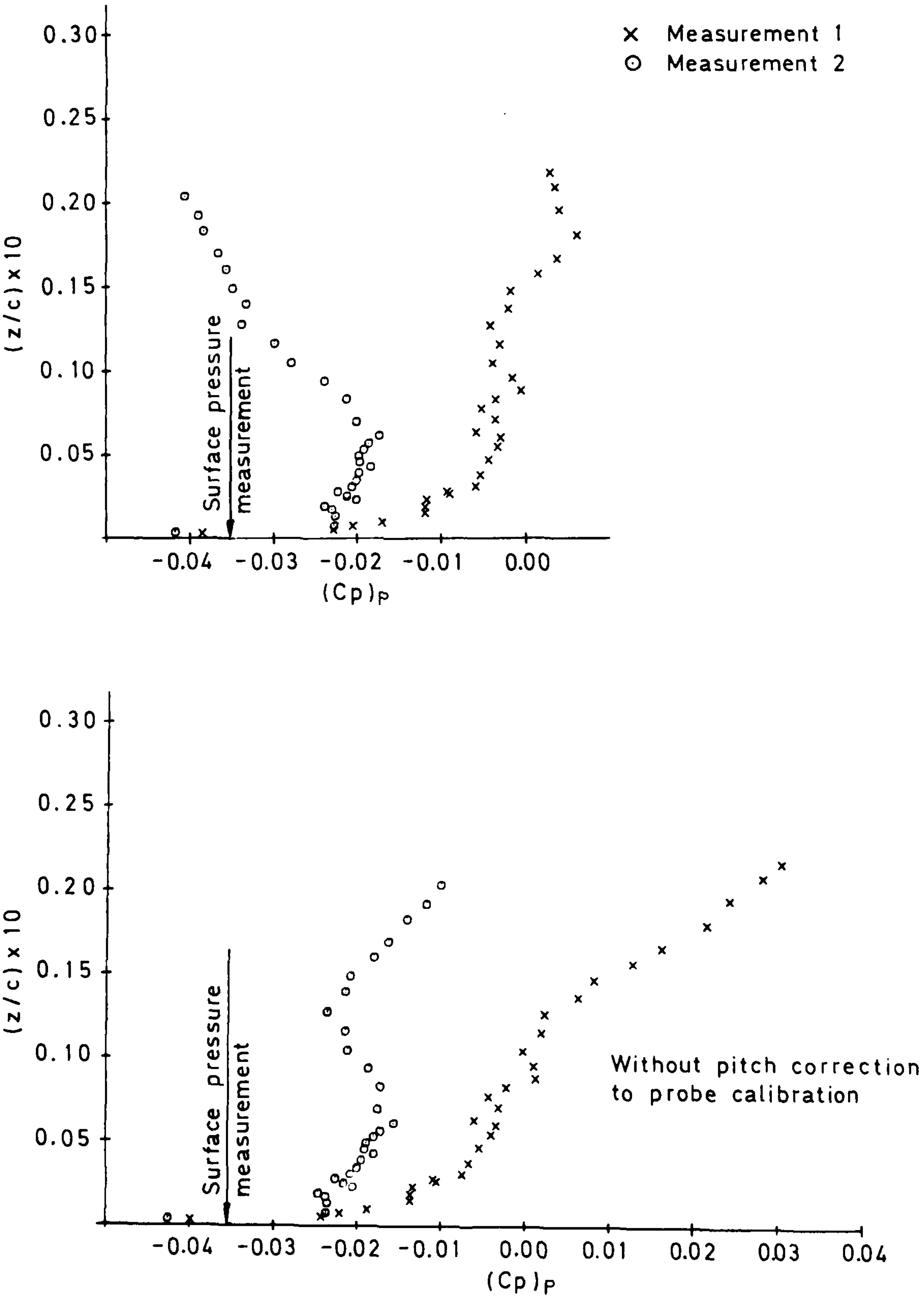


Fig 22c Static pressure profile at x/c = 0.814 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

TR 79062

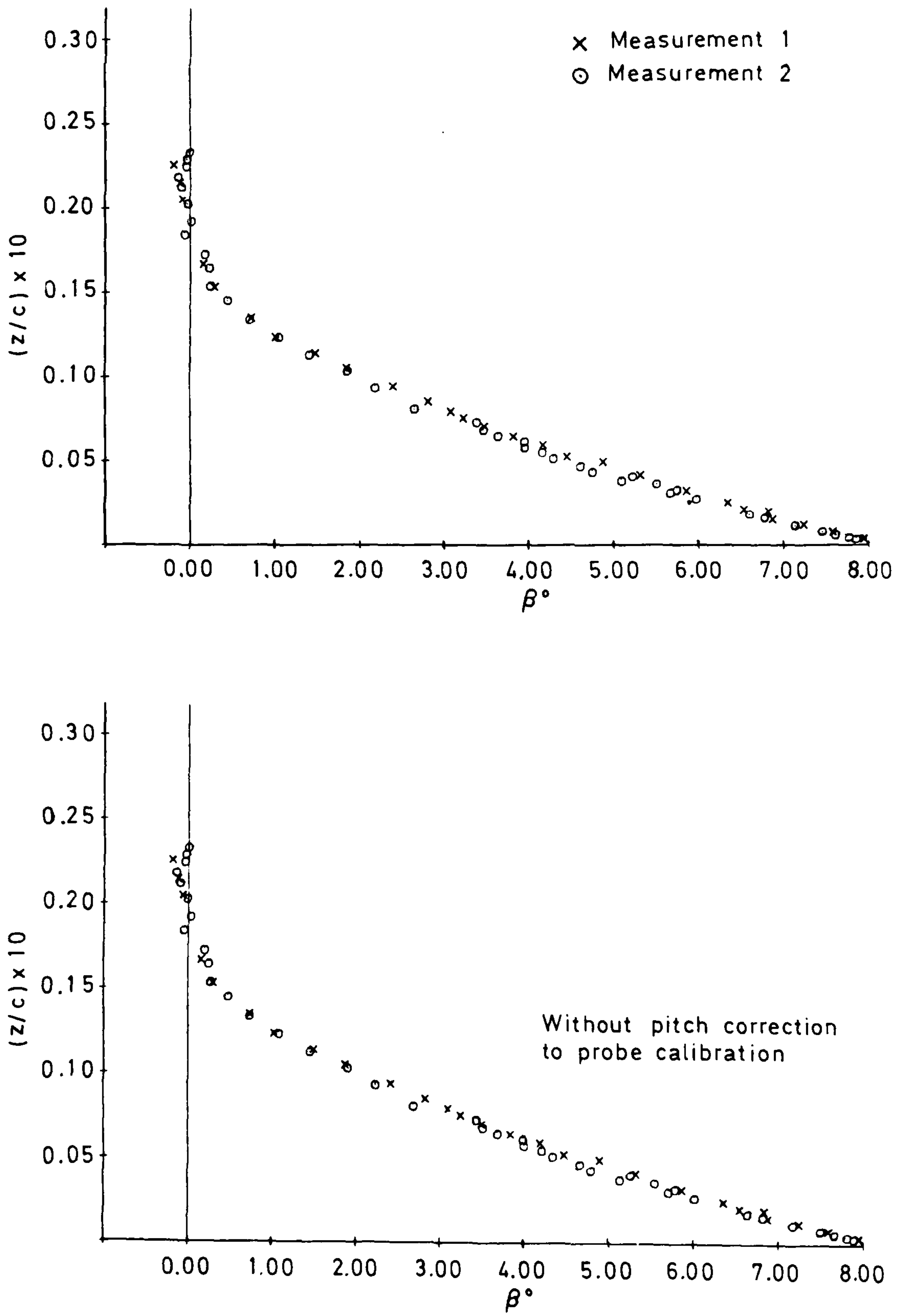


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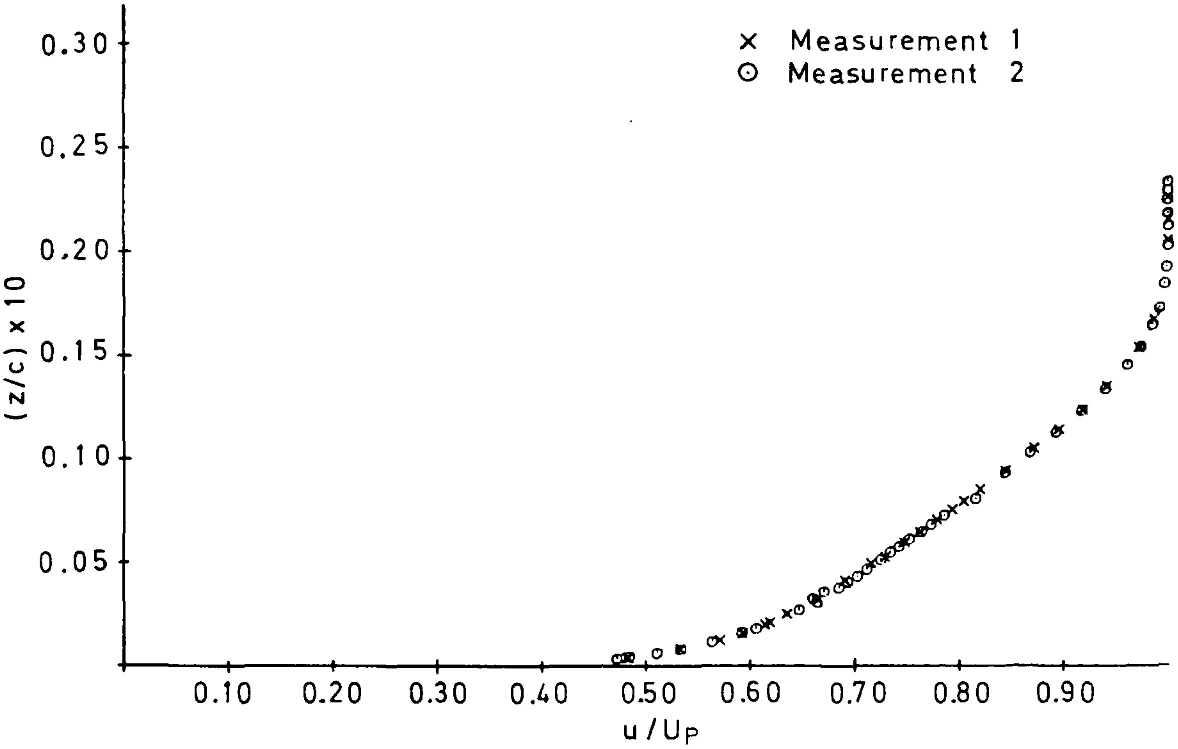
Fig 23a Crossflow profile at x/c = 0.903 for Λ = 28°, M_N = 0.675, α_N = +2°

Fig 23b



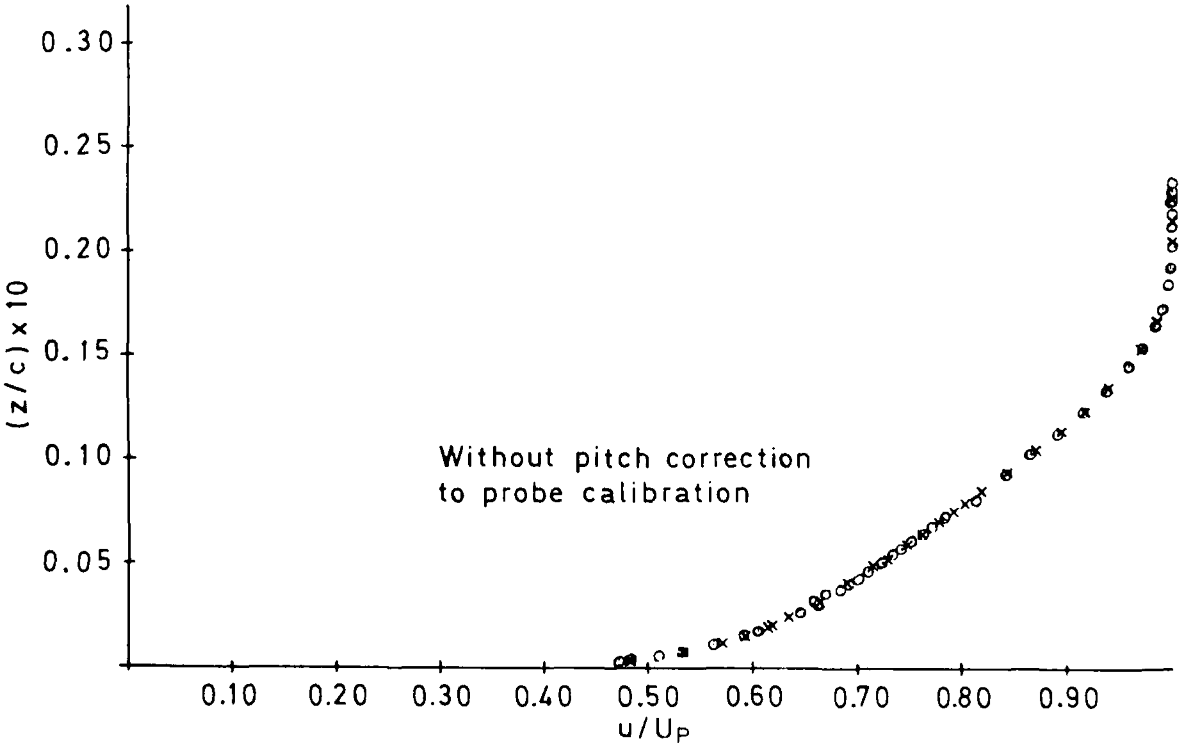


Fig 23b Velocity profile at x/c = 0.903 for $\Lambda = 28^\circ$, $M_N = 0.675$, $\alpha_N = +2^\circ$

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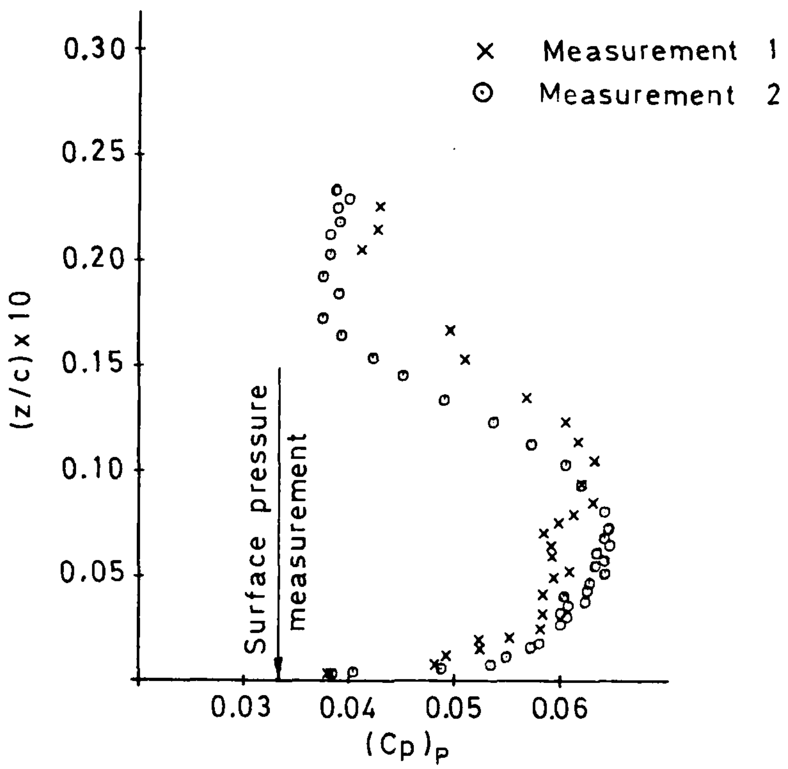


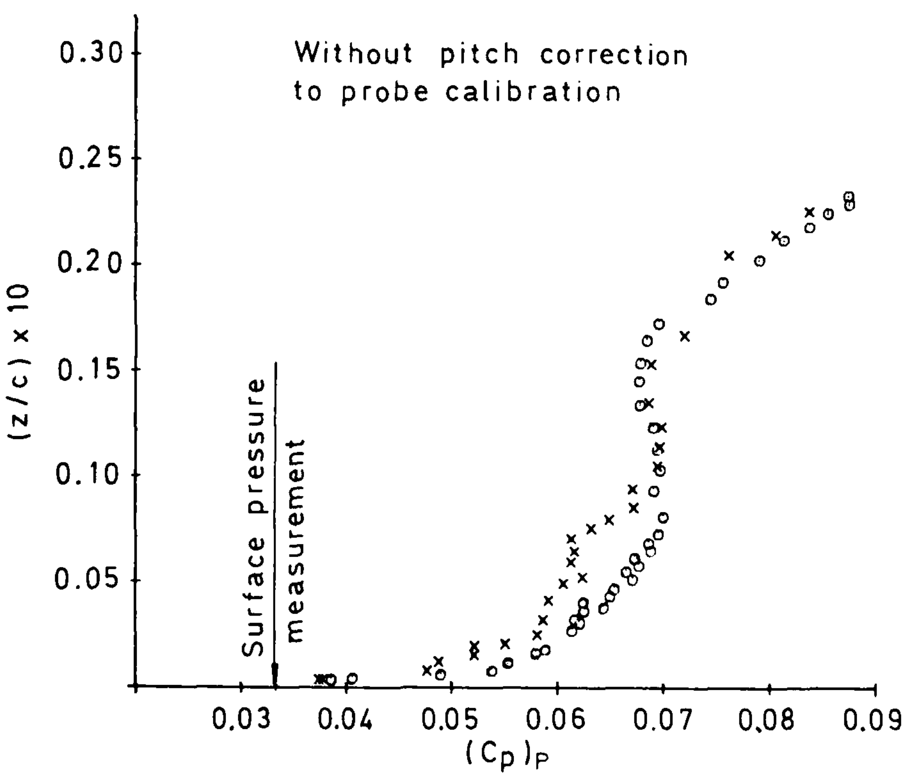
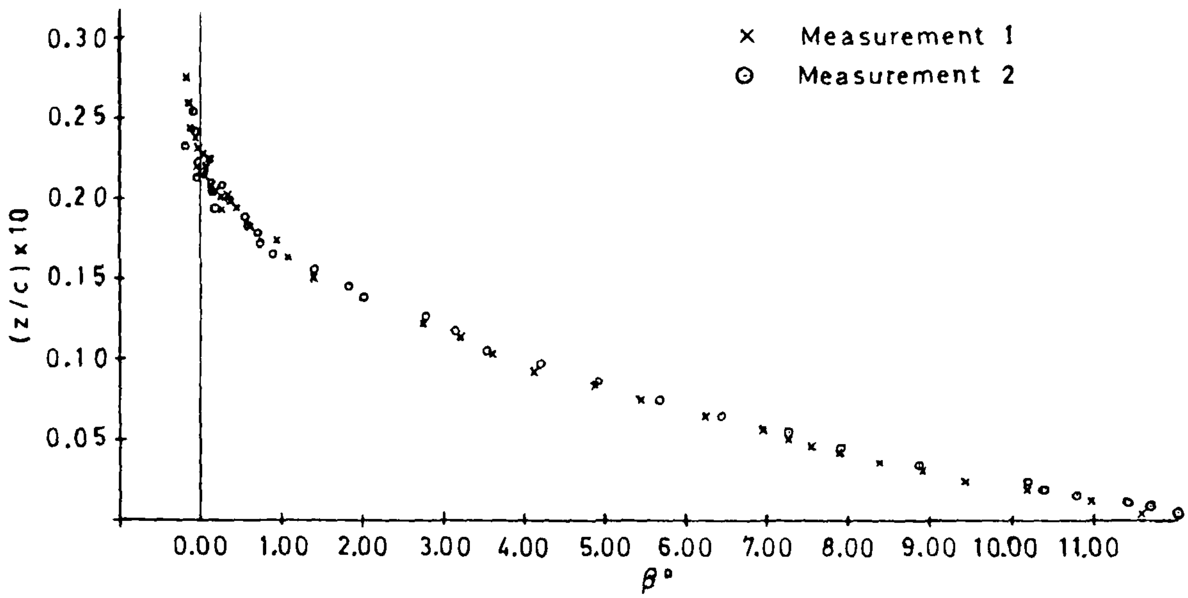


Fig 23c Static pressure profile at x/c = 0.903 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$



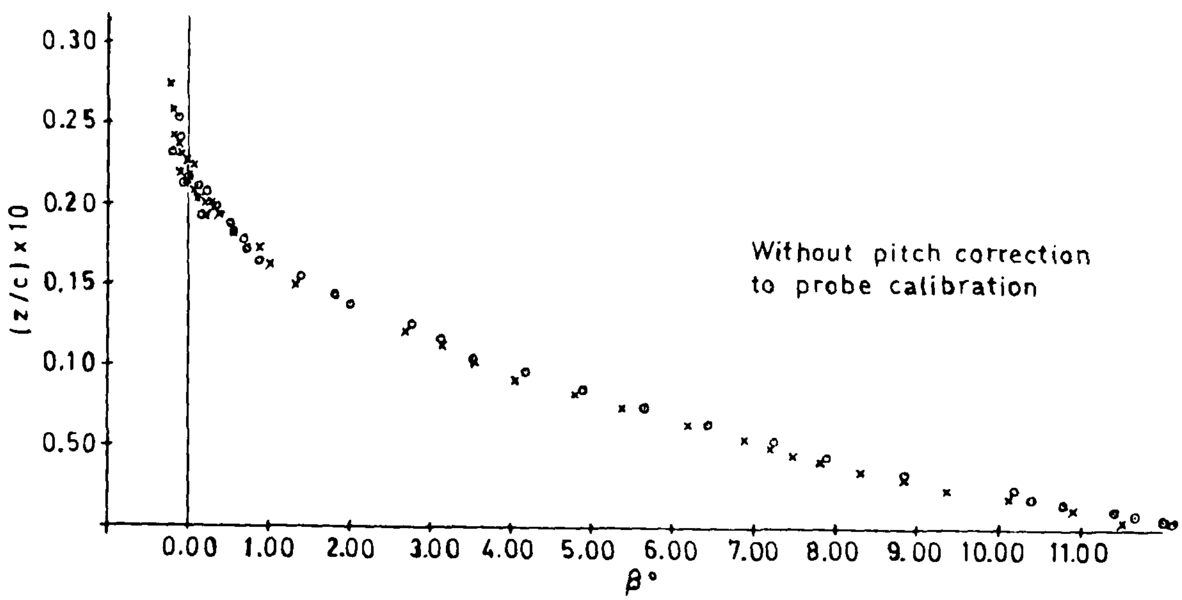


Fig 24a Crossflow profile at x/c = 0.986 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

TR 79062

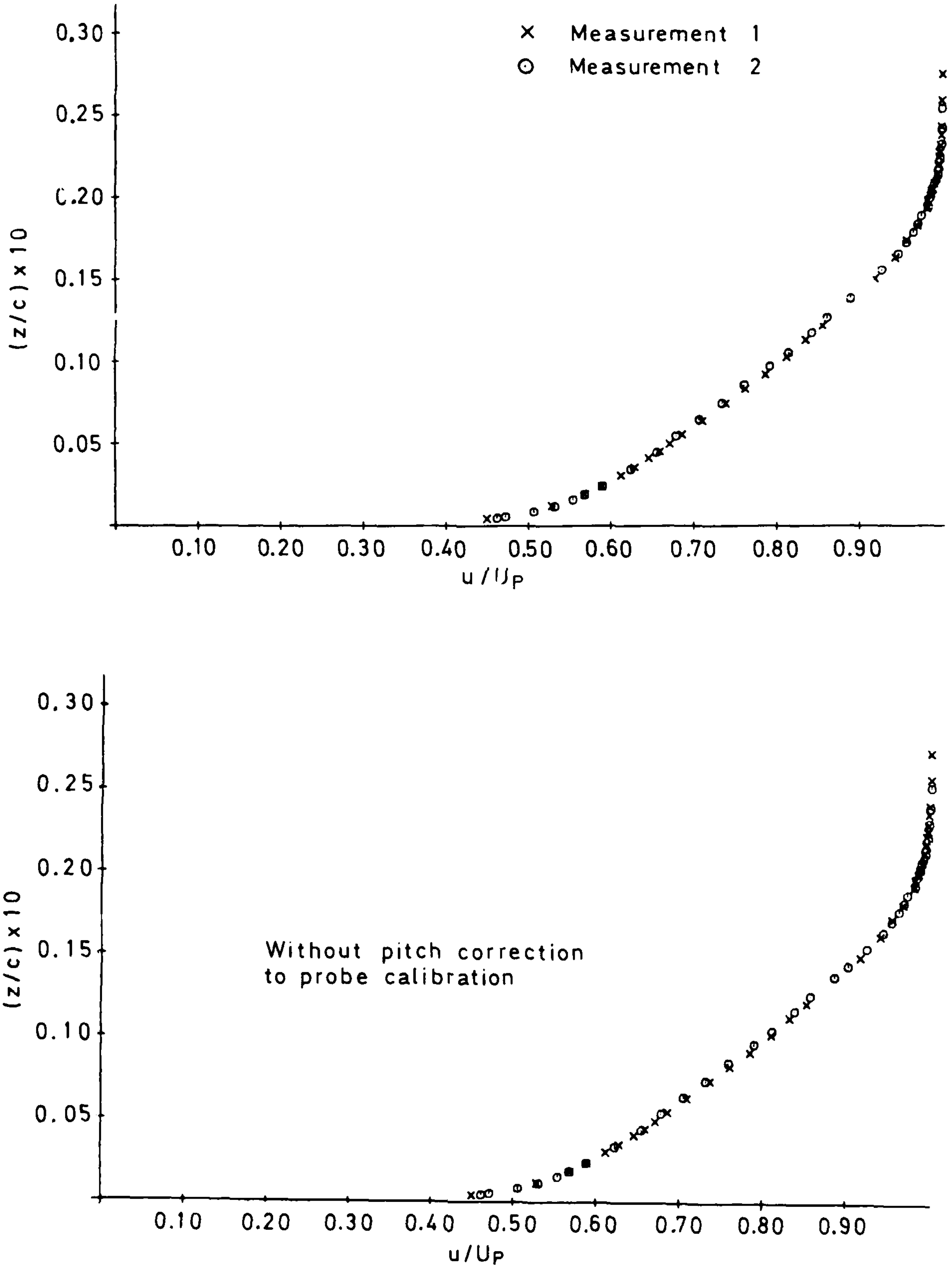
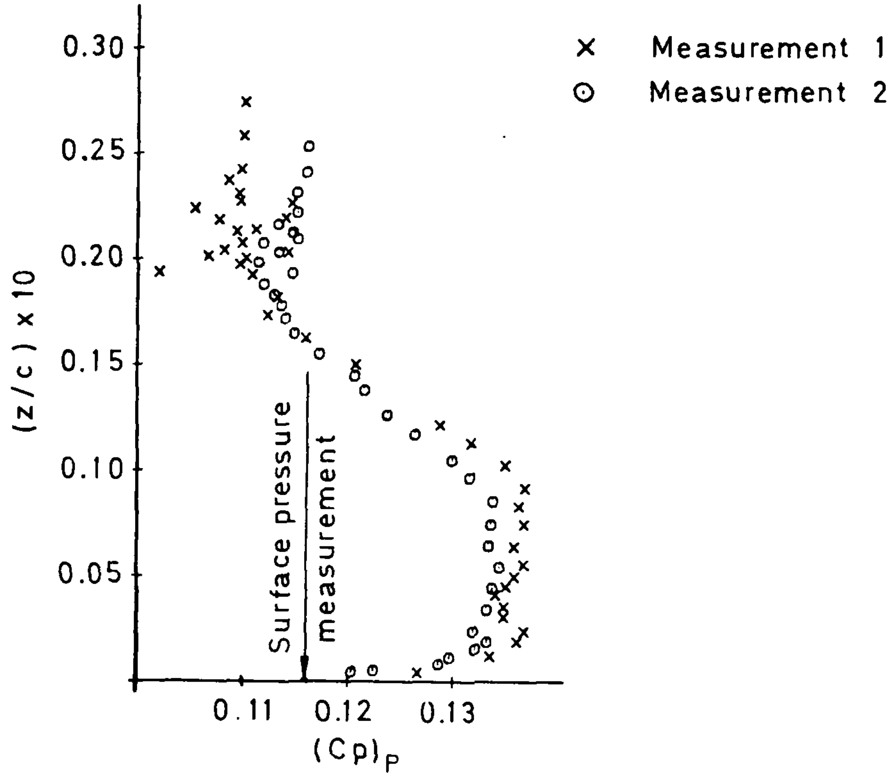
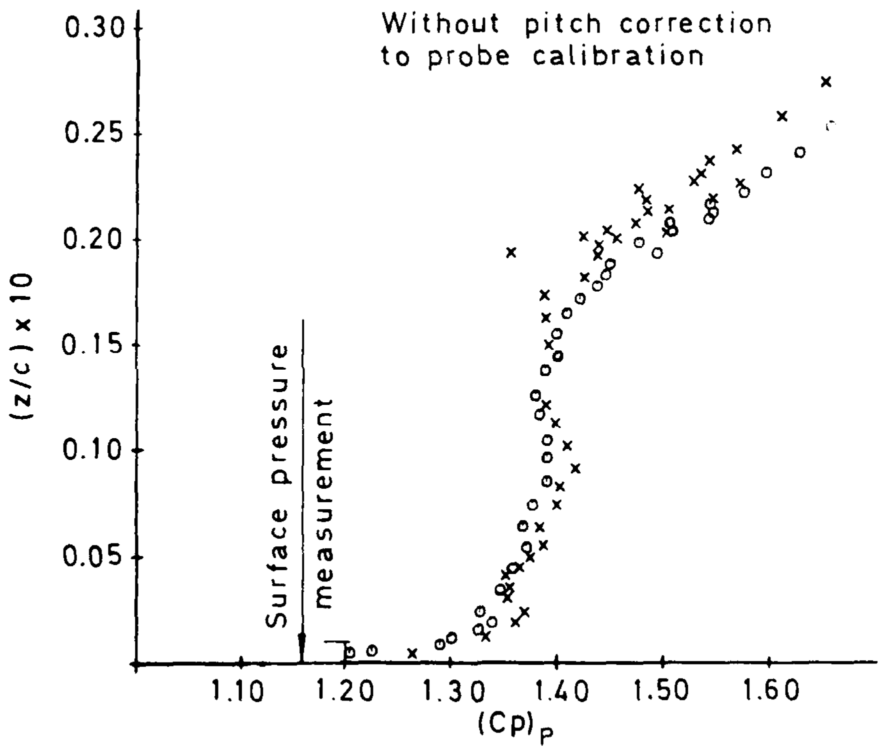


Fig 24b Velocity profile at x/c = 0.986 for $\Lambda = 28°$, $M_N = 0.986$, $\alpha_N = +2°$

Fig 24c





TR 79062

Fig 24c Static pressure profile at x/c = 0.986 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

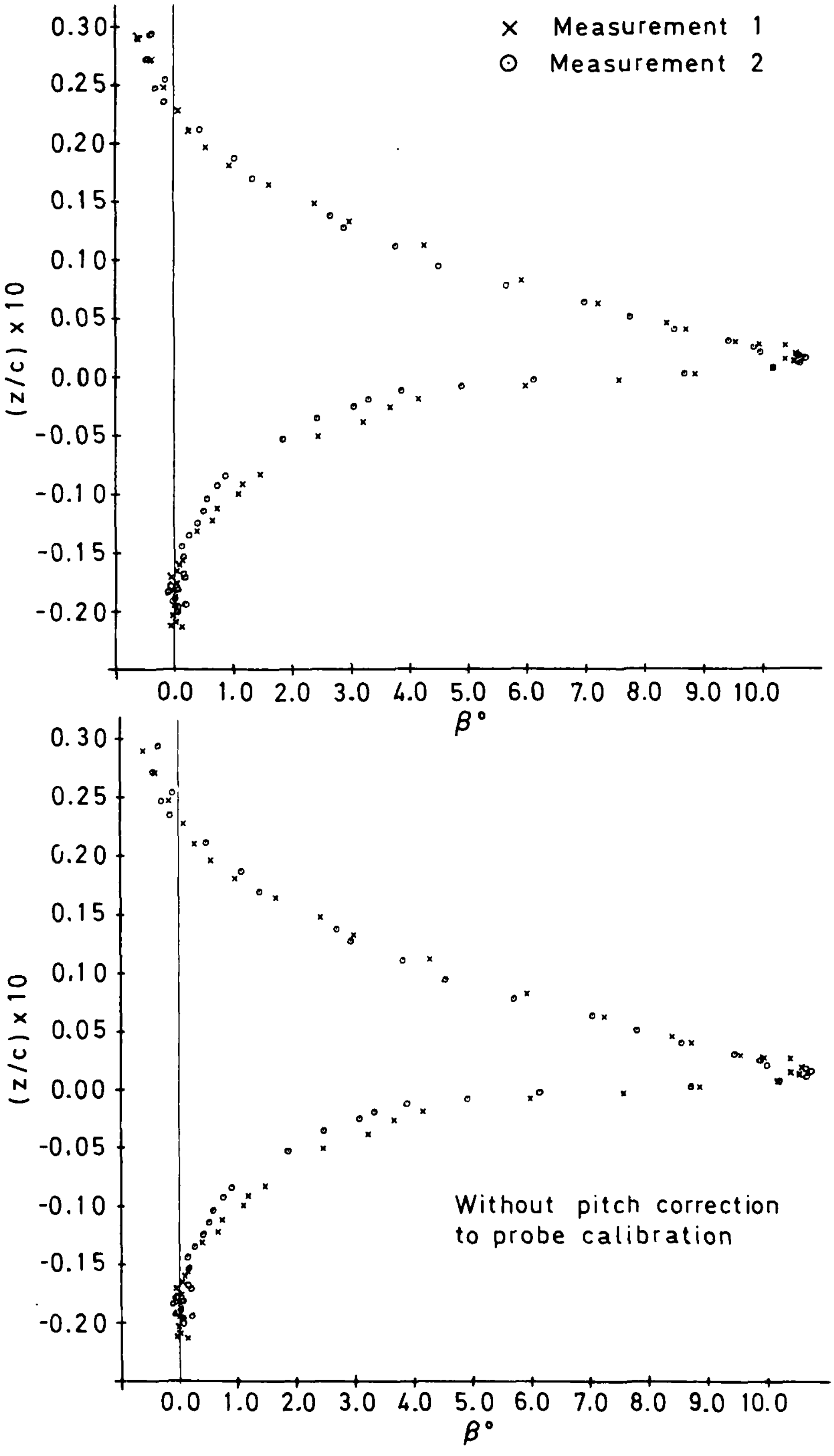


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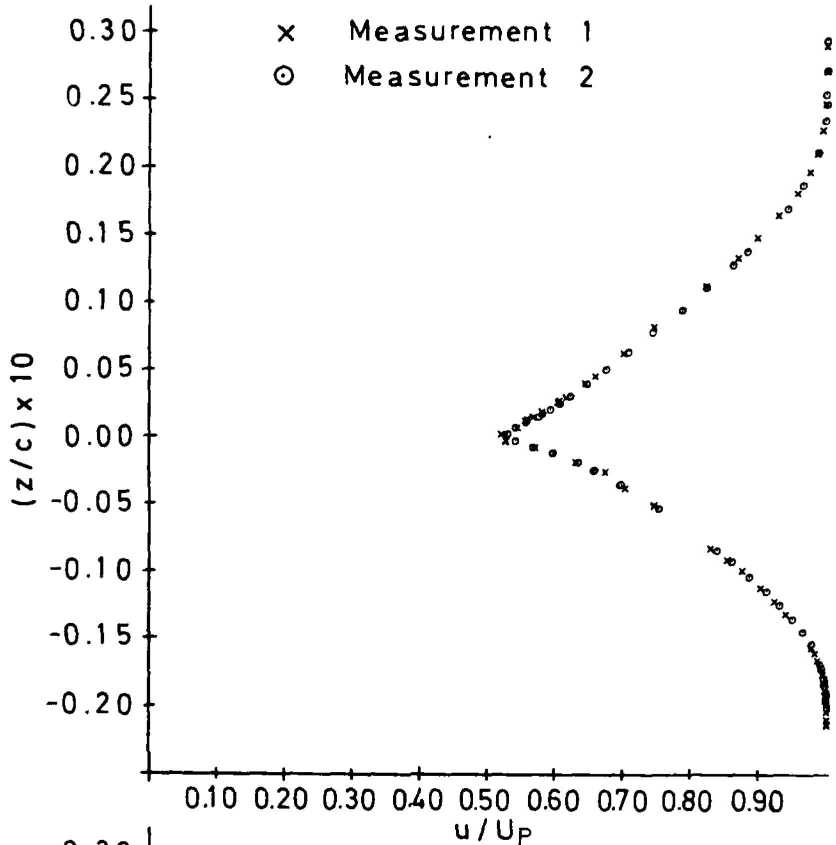
Fig 25a **Crossflow profile at $x/c = 1.010$ for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$**

Fig 25b



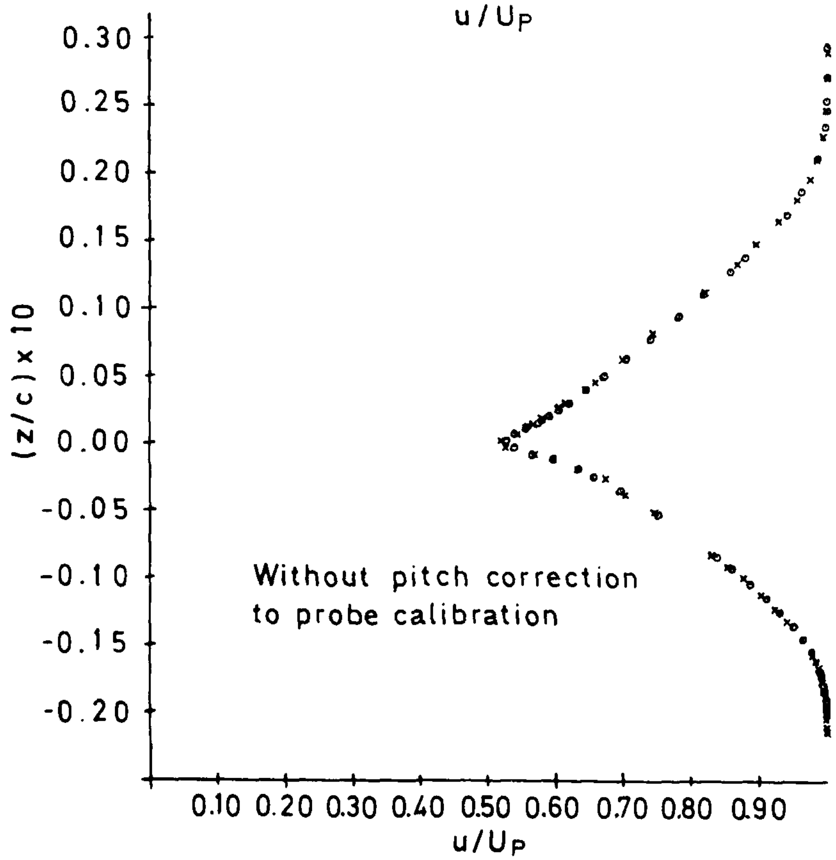


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Fig 25b Velocity profile at x/c = 1.010 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

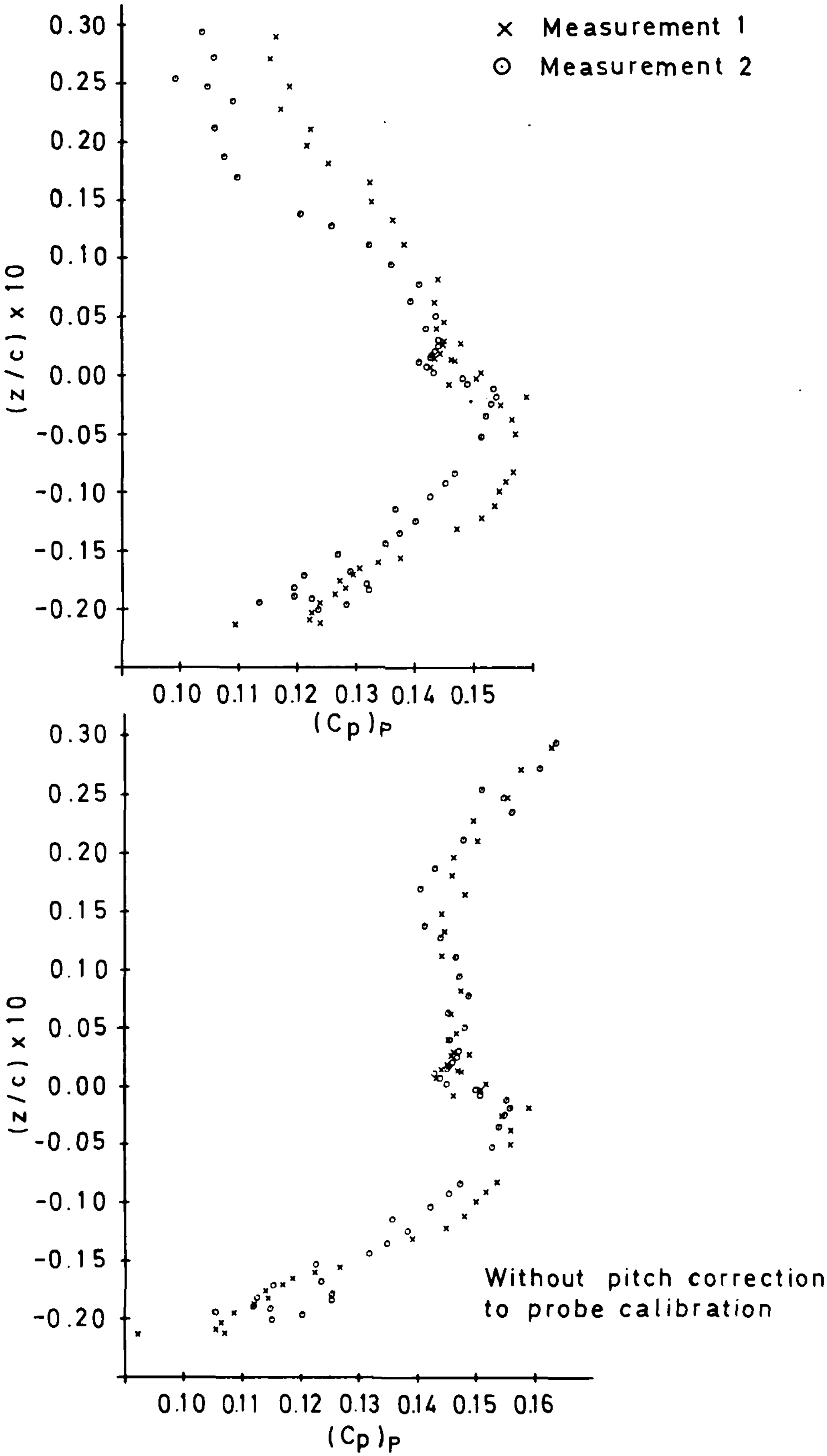

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Fig 25c Static pressure profile at x/c = 1.010 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

Fig 26a

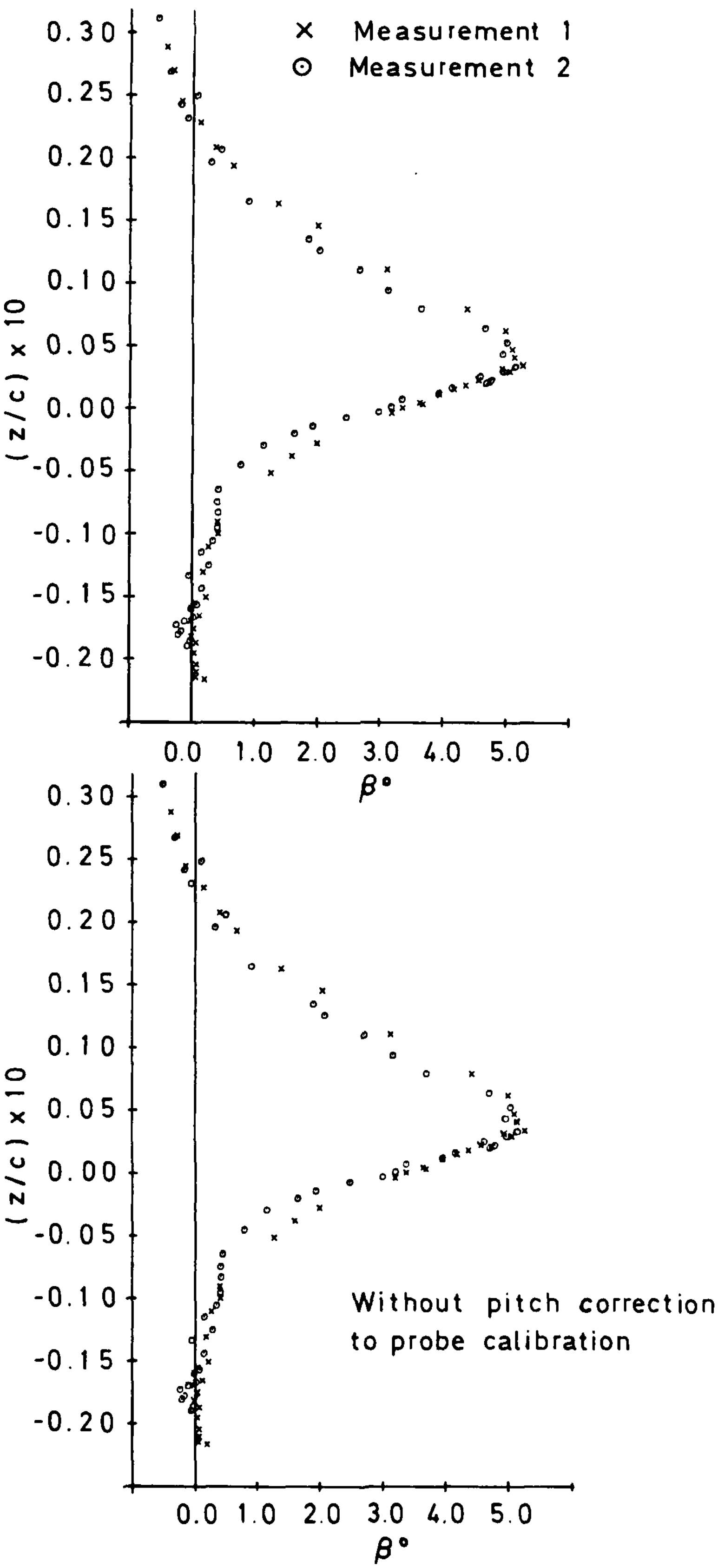

Fig 26a Crossflow profile at $x/c = 1.050$ for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

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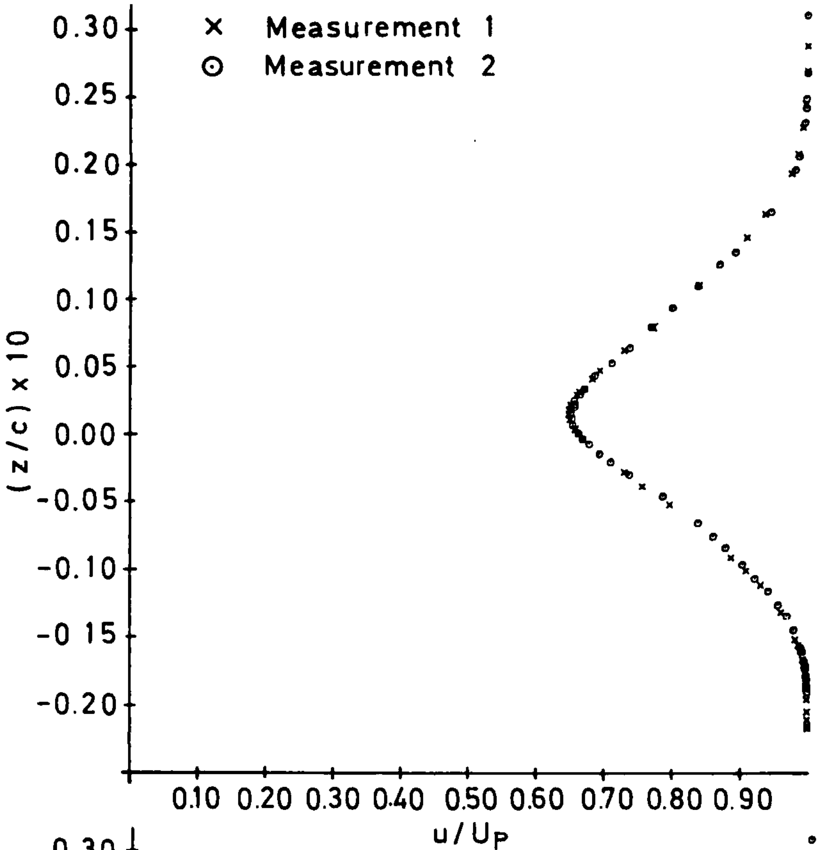

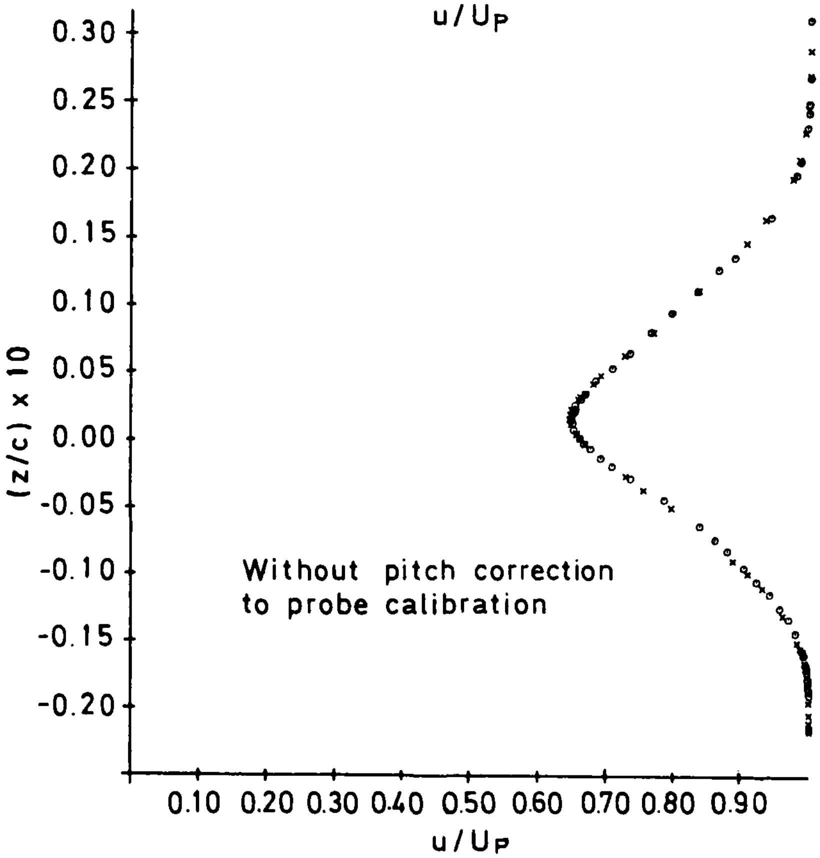

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Fig 26b Velocity profile at x/c = 1.050 for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

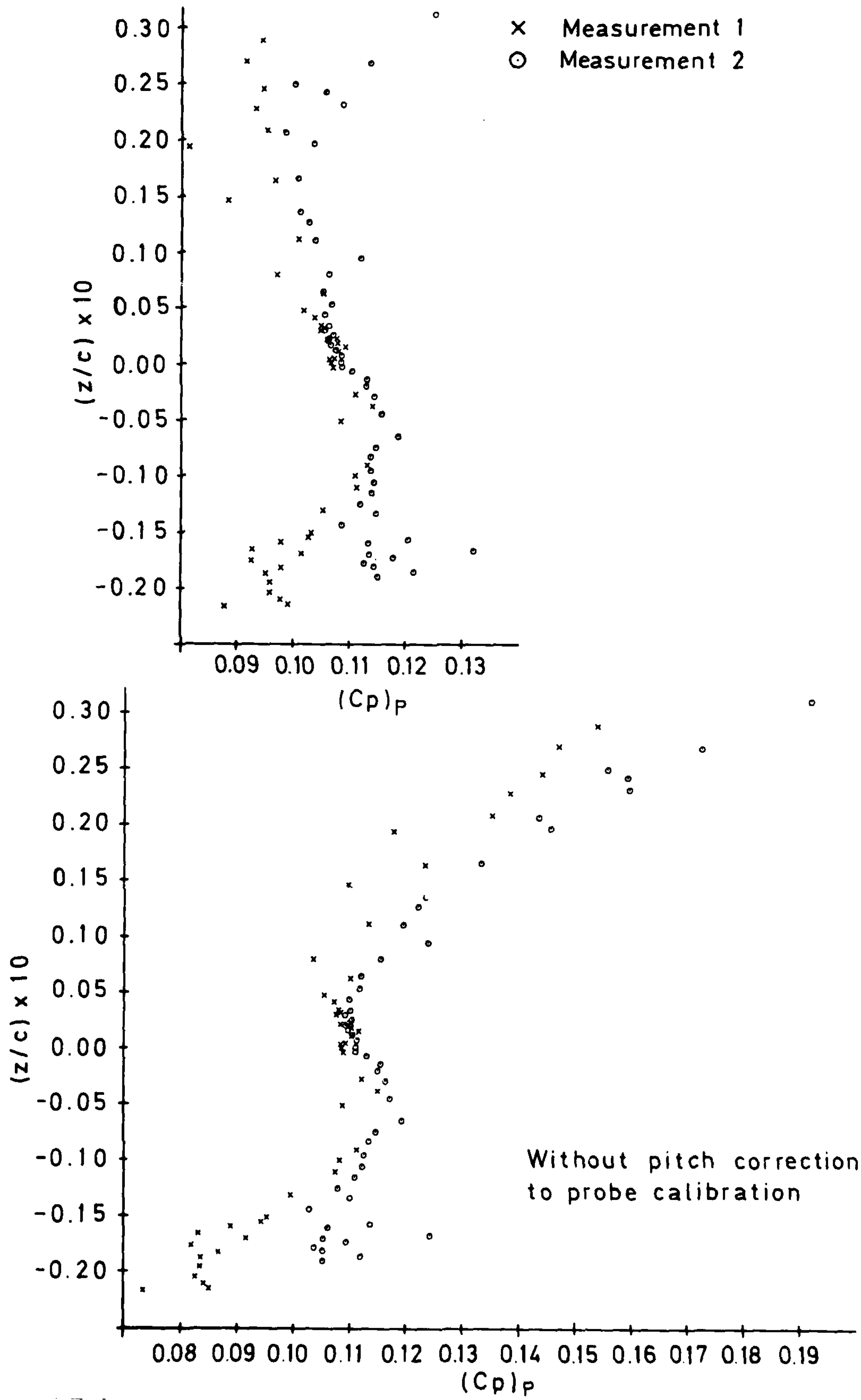

Fig 26c Static pressure profile at x/c = 1.050 for Λ = 28°, M_N = 0.675, α_N = +2°

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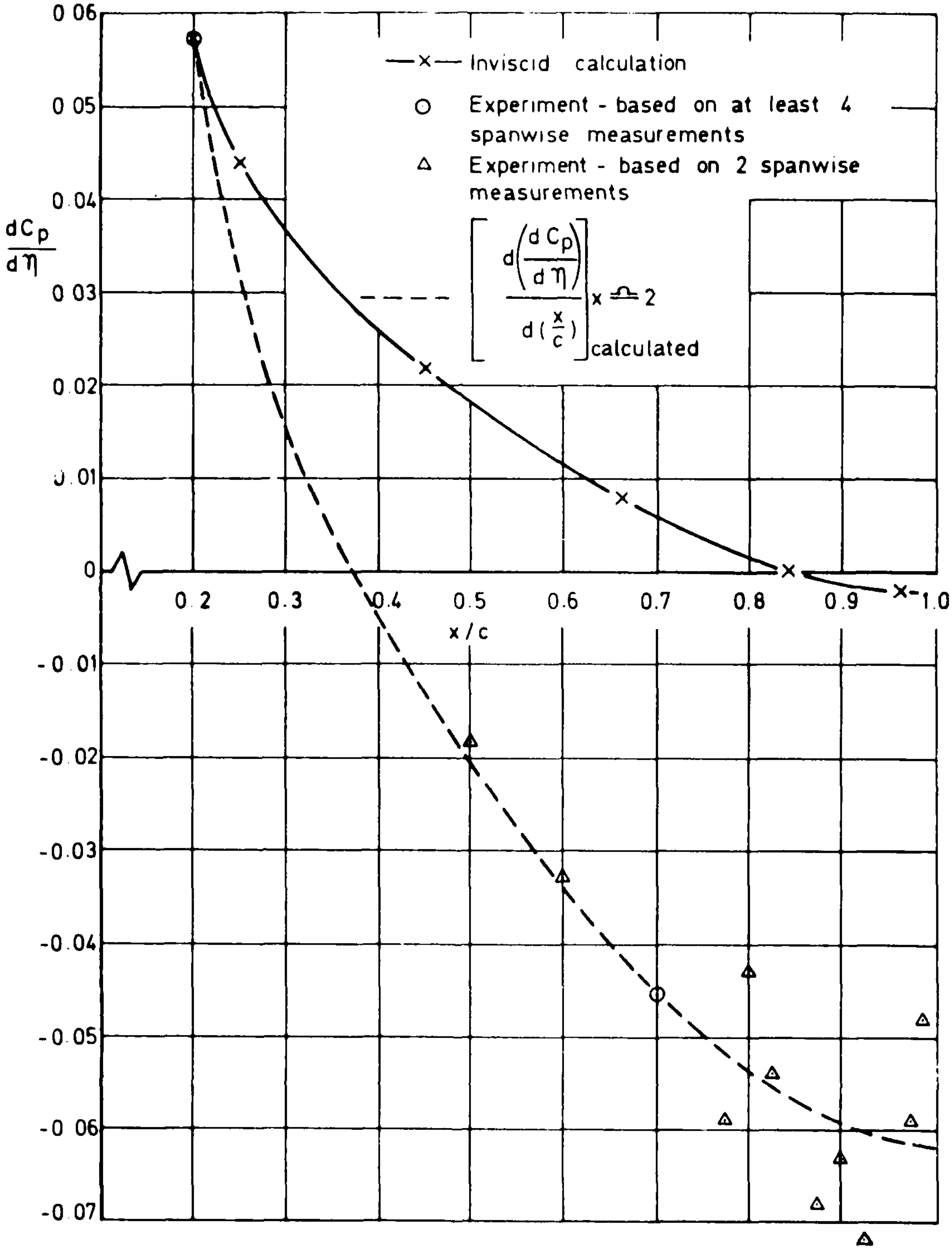

Fig 27 Rate of change of upper surface pressure across the span at $\Lambda = 28°$, $M_N = 0.4$, $\alpha_N = +2°$

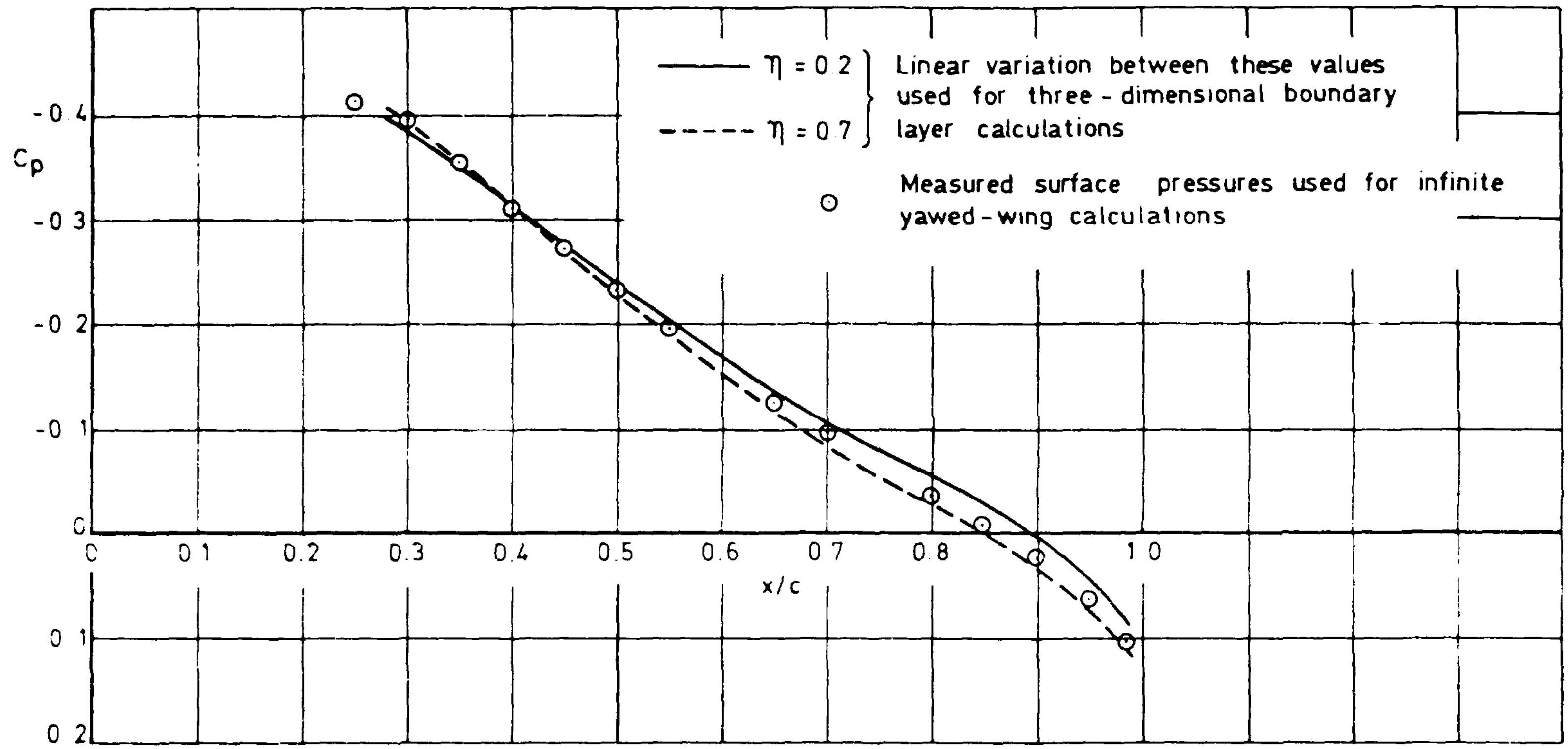

Fig 28 Spanwise variation in upper surface pressure distribution used in the three-dimensional boundary layer calculation at $\Lambda = 28^\circ$, $M_N = 0.4$, $\alpha_N = +2^\circ$

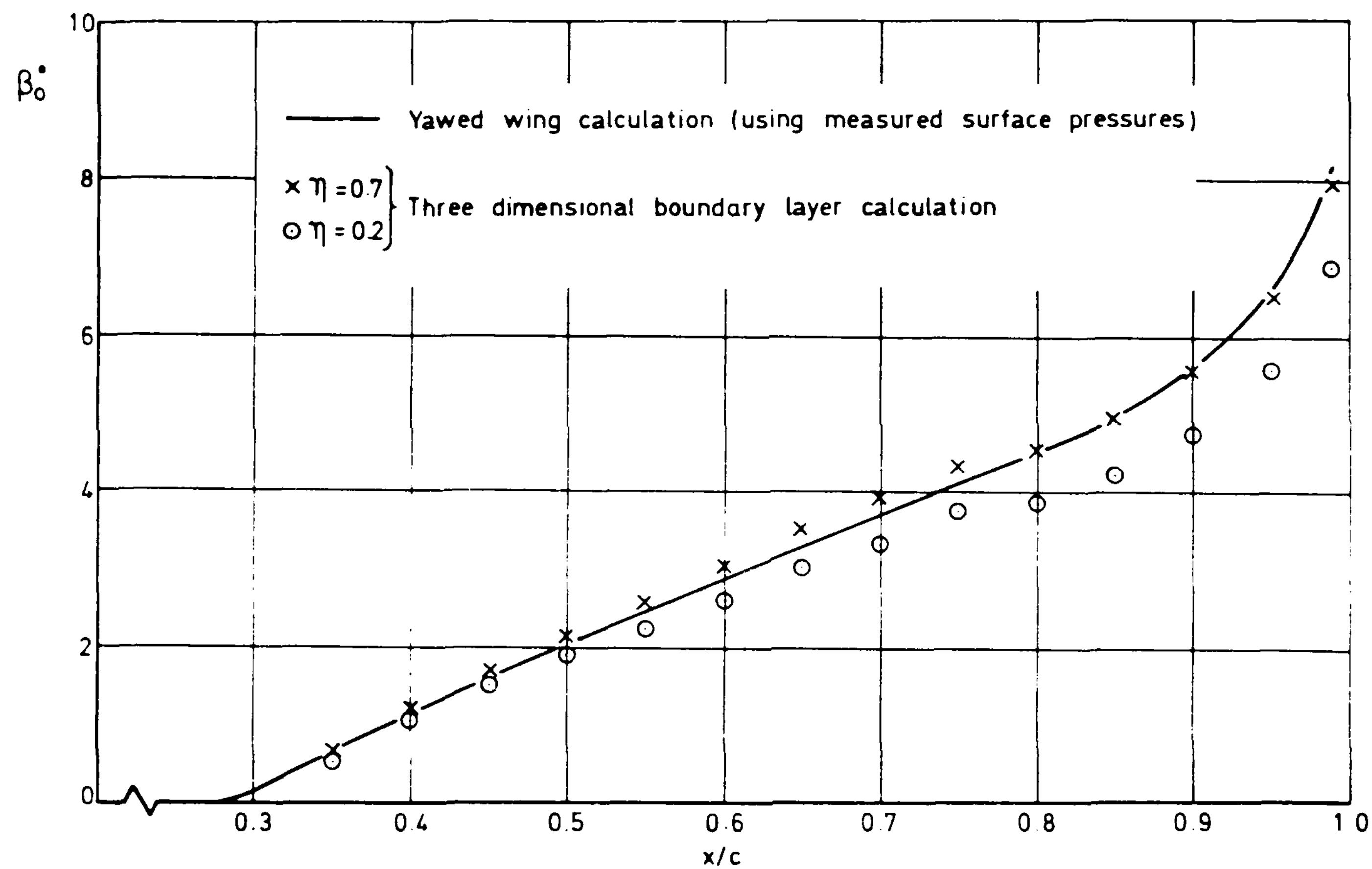

Fig 29 Comparison between yawed wing and three-dimensional boundary layer calculations for $\Lambda = 28^\circ$, $M_N = 0.4$, $\alpha = +2^\circ$

Fig 30a

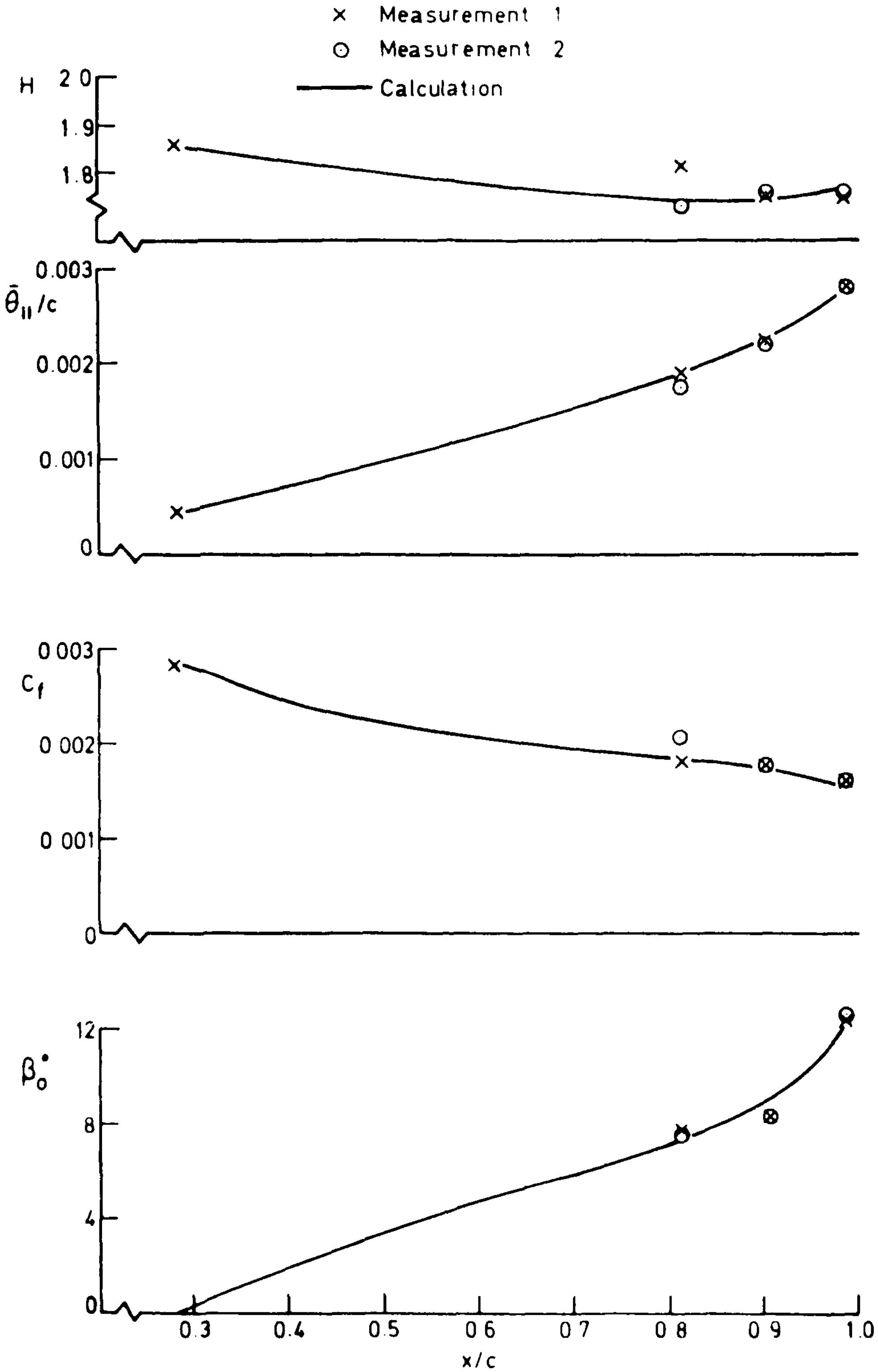

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Fig 30a Comparison with yawed wing calculation for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

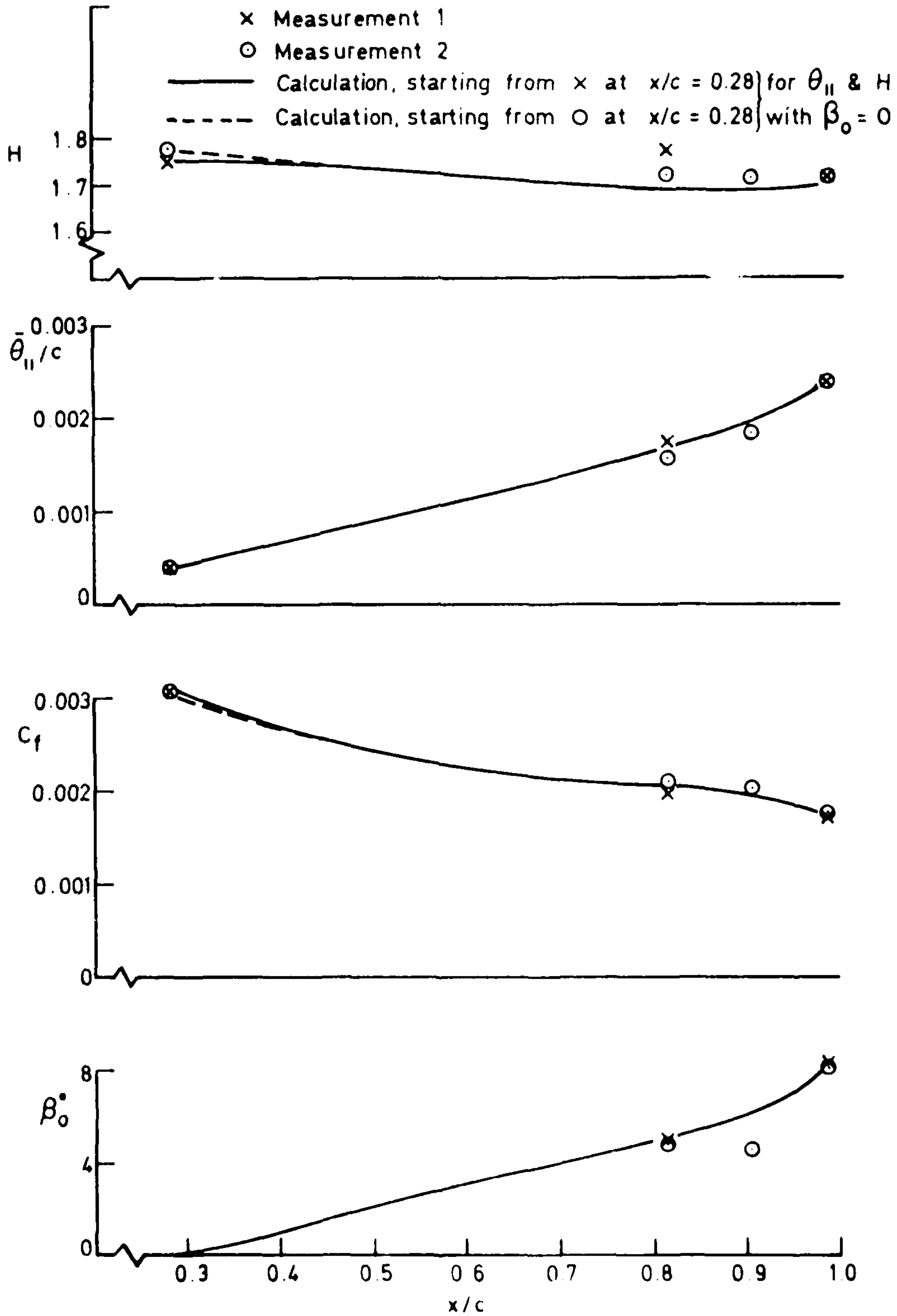

Fig 30b Comparison with yawed wing calculation for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = 0$

Fig 30c

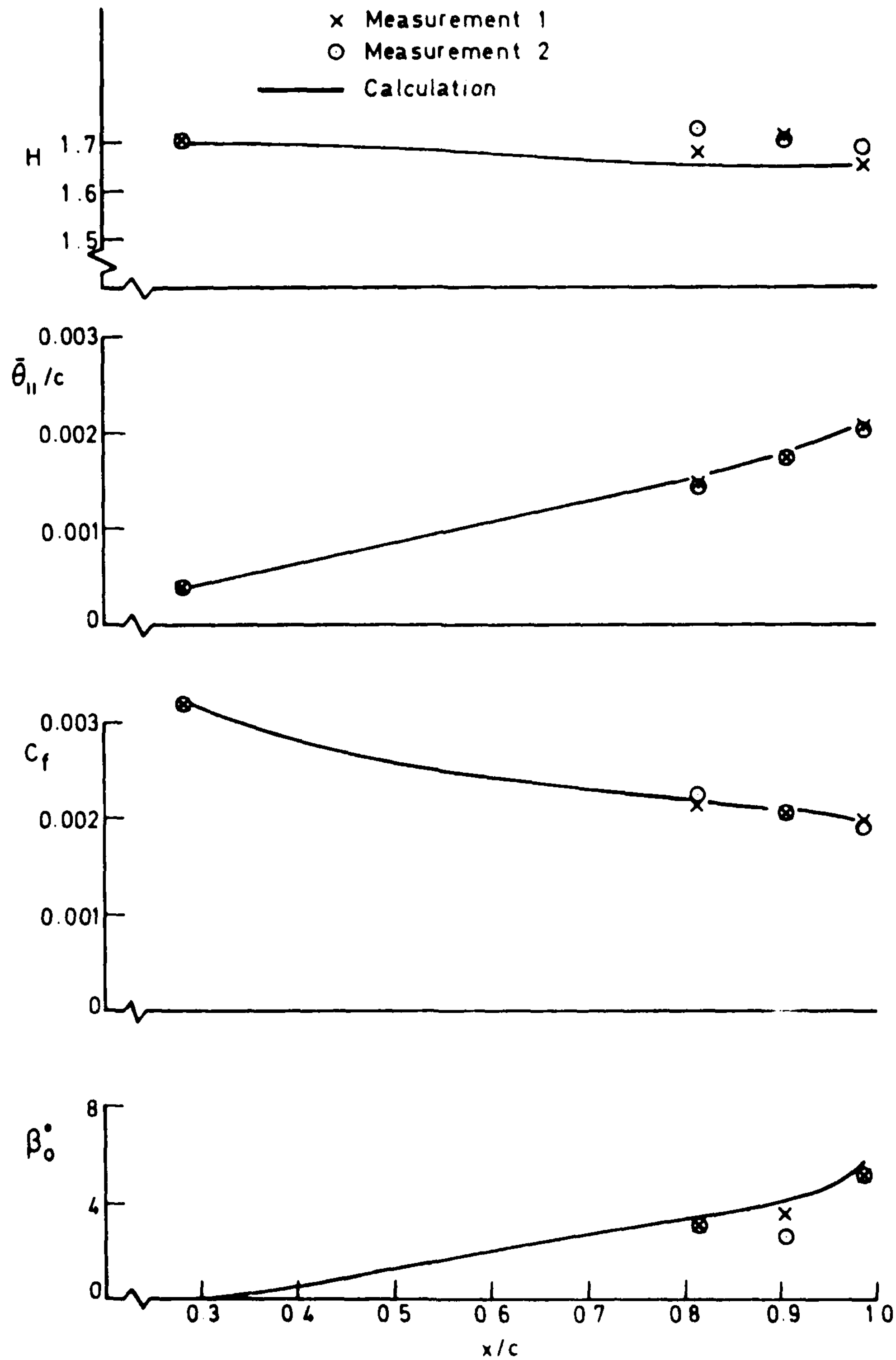

Fig 30c Comparison with yawed wing calculation for $\Lambda = 28^{\circ}$, $M_N = 0.675$, $\alpha_N = -2^{\circ}$

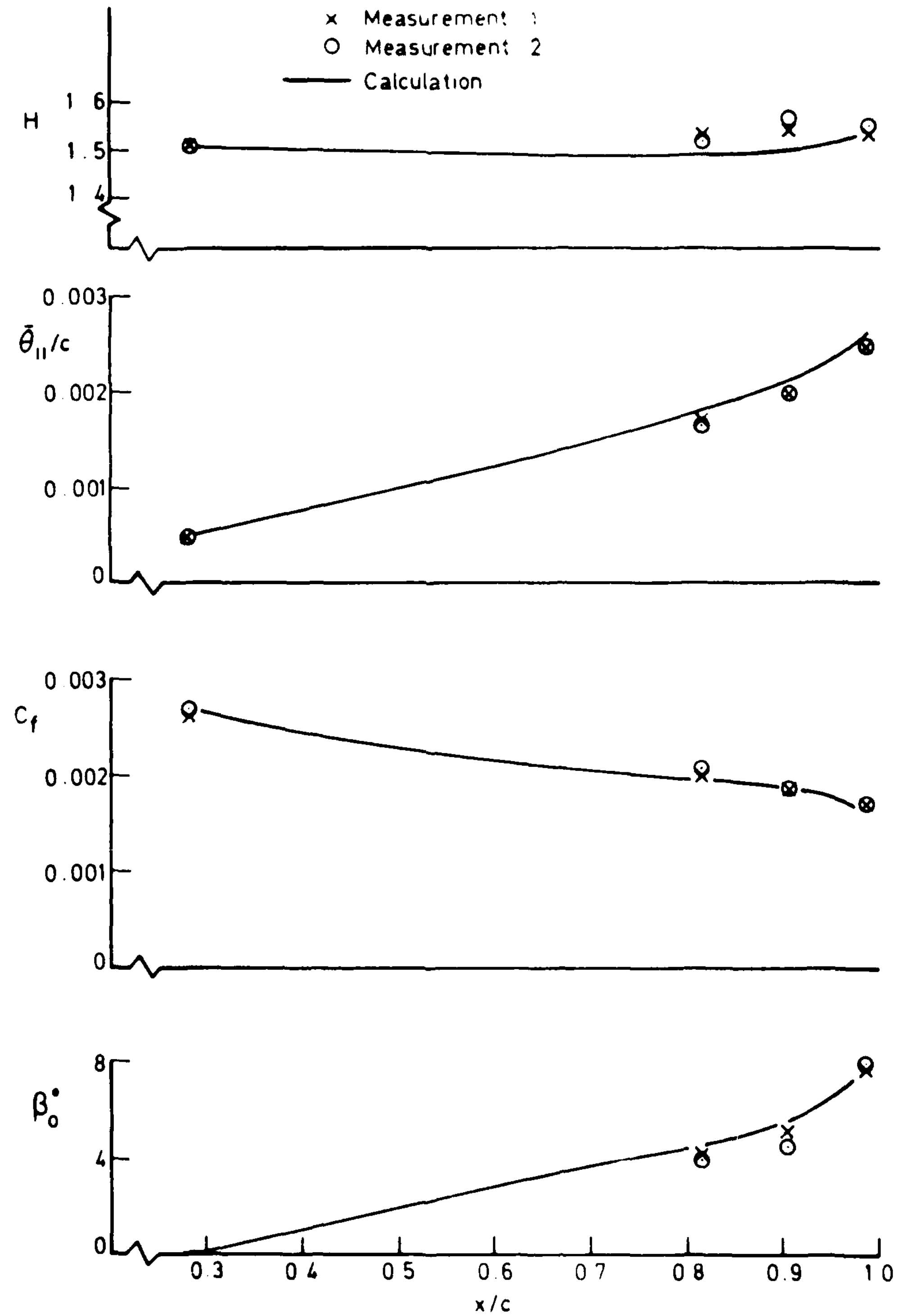

Fig 30d Comparison with yawed wing calculation for $\Lambda = 28°$, $M_N = 0.4$, $\alpha_N = +2$

Fig 30e

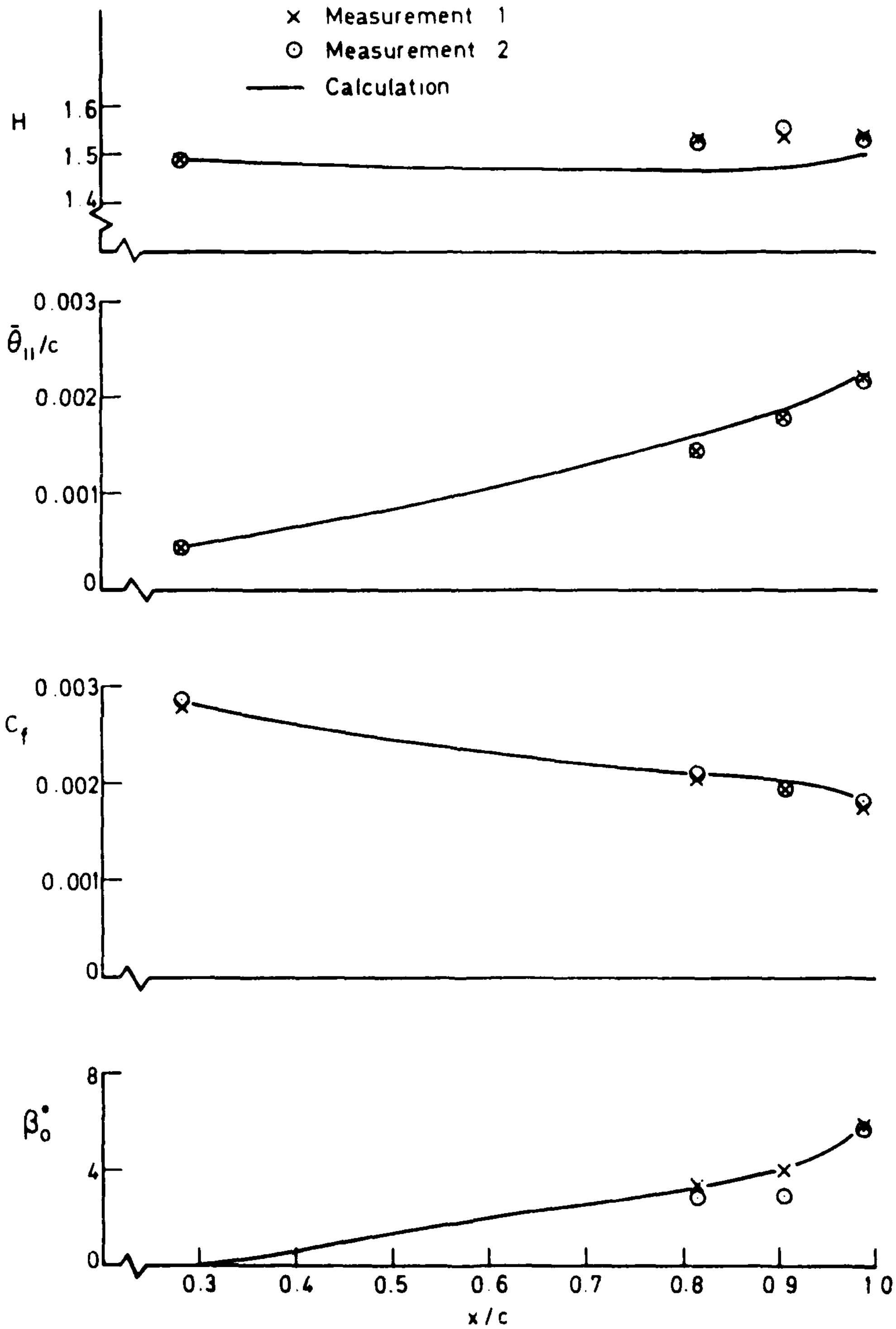

Fig 30e Comparison with yawed wing calculation for $\Lambda = 28^\circ$, $M_N = 0.4$, $\alpha_N = 0$

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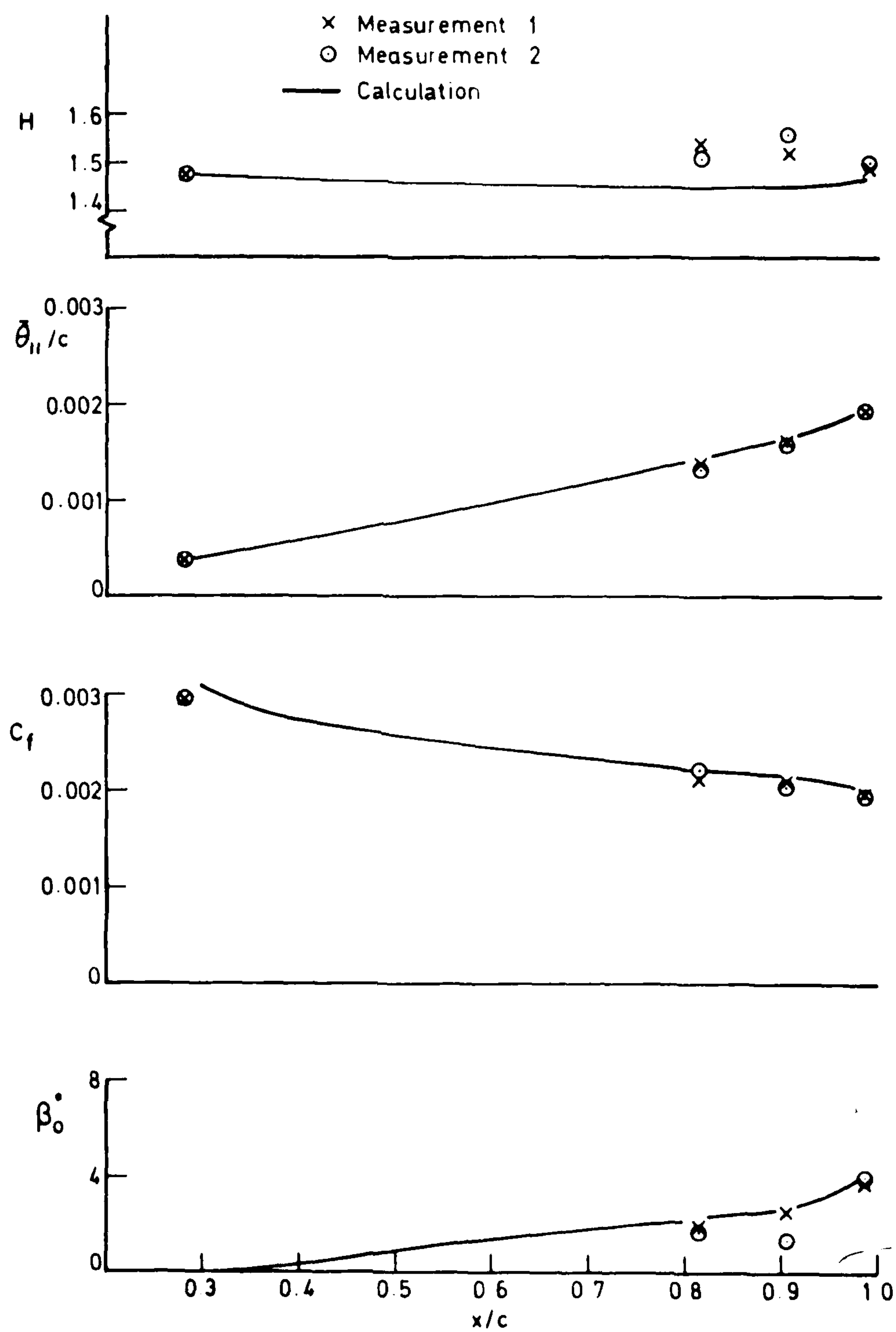

Fig 30f Comparison with yawed wing calculation for $\Lambda = 28°$, $M_N = 0.4$, $\alpha_N = -2°$

Fig 30g

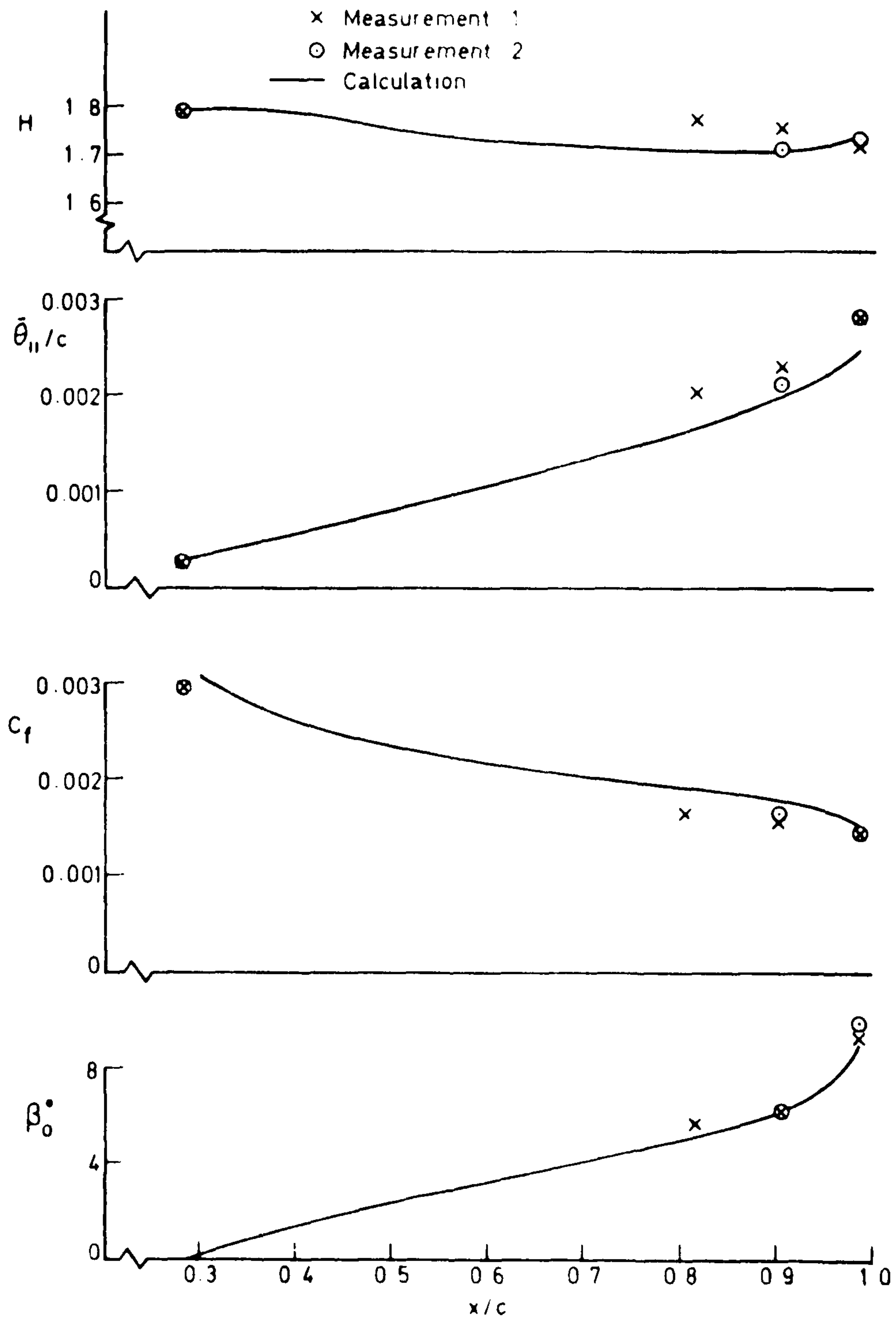

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Fig 30g Comparison with yawed wing calculation for $\Lambda = 20°$, $M_N = 0.675$, $\alpha_N = +2°$

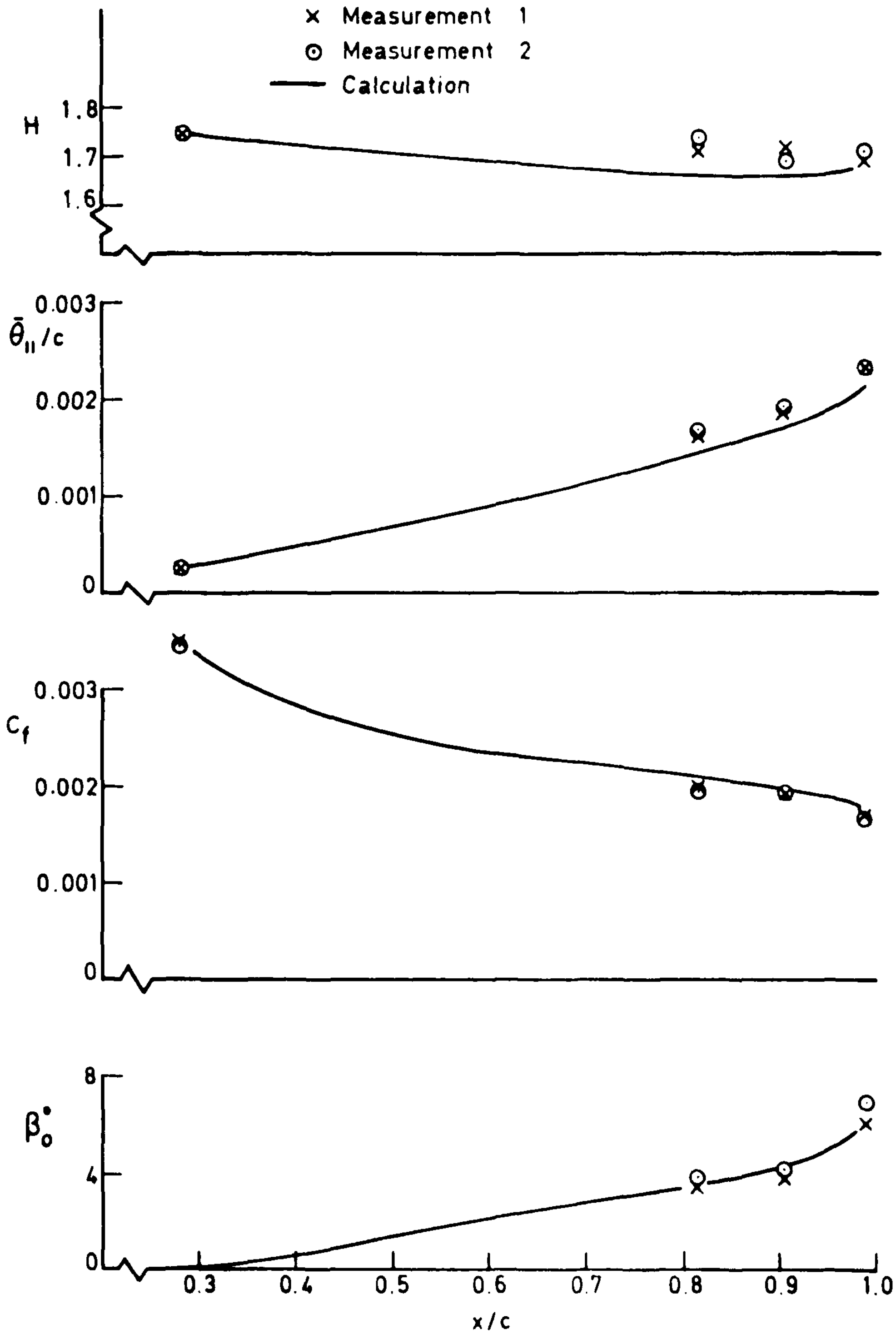

Fig 30h Comparison with yawed wing calculation for $\Lambda = 20°$, $M_N = 0.675$, $\alpha_N = 0$

Fig 30j

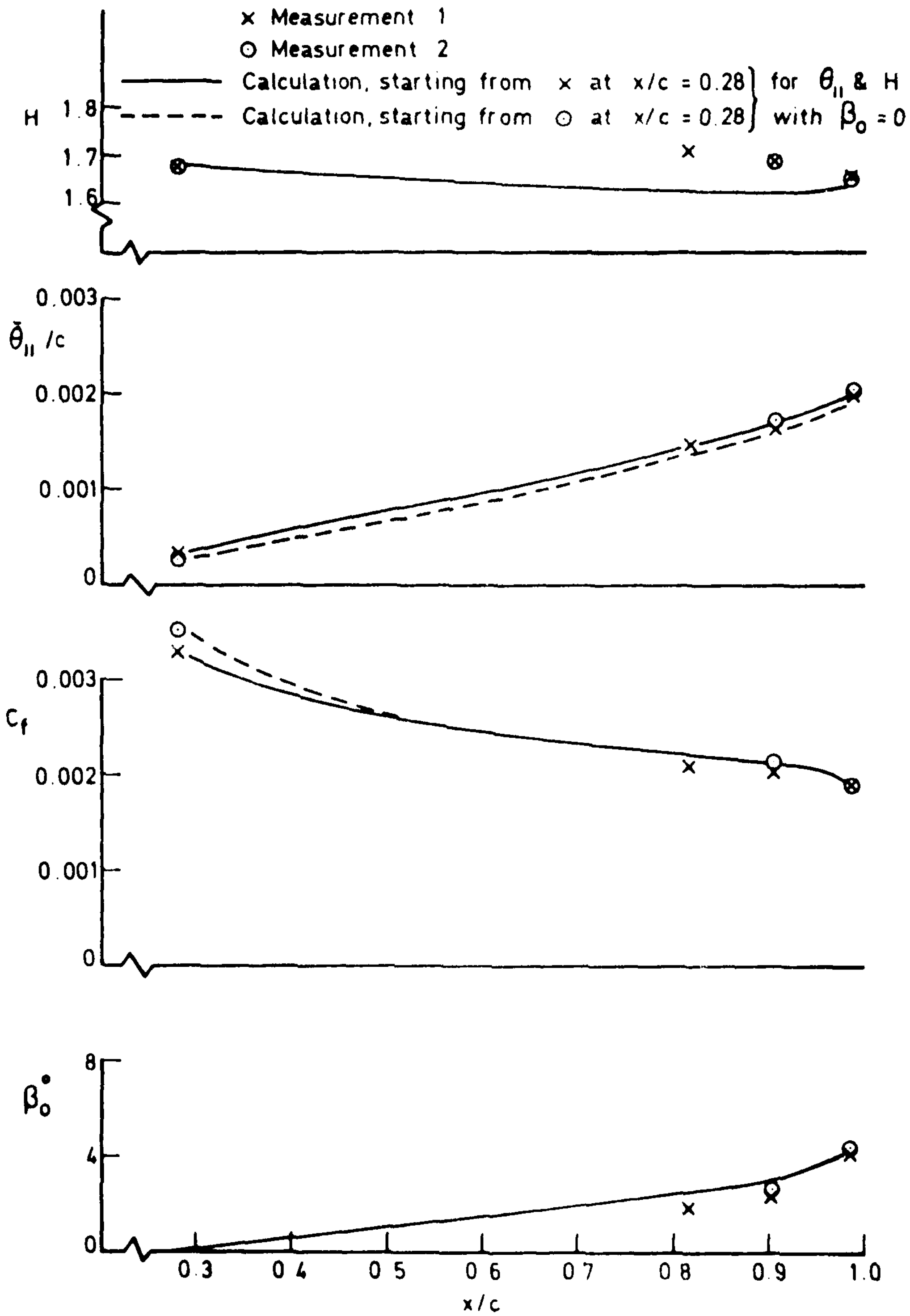

Fig 30j Comparison with yawed wing calculation for $\Lambda = 20°$, $M_N = 0.675$, $\alpha_N = -2°$

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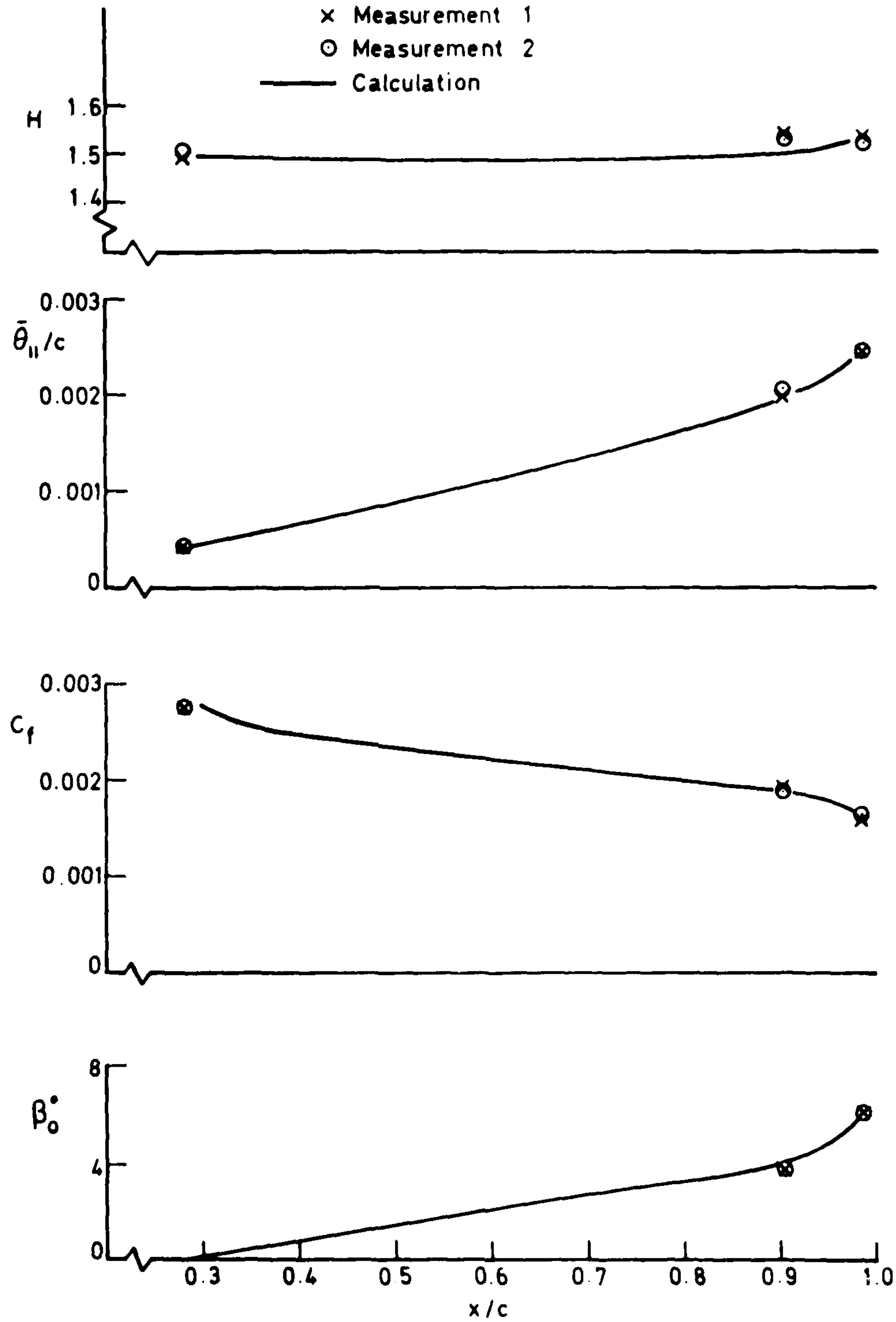

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Fig 30k Comparison with yawed wing calculation for $\Lambda = 20°$, $M_N = 0.4$, $\alpha_N = +2°$

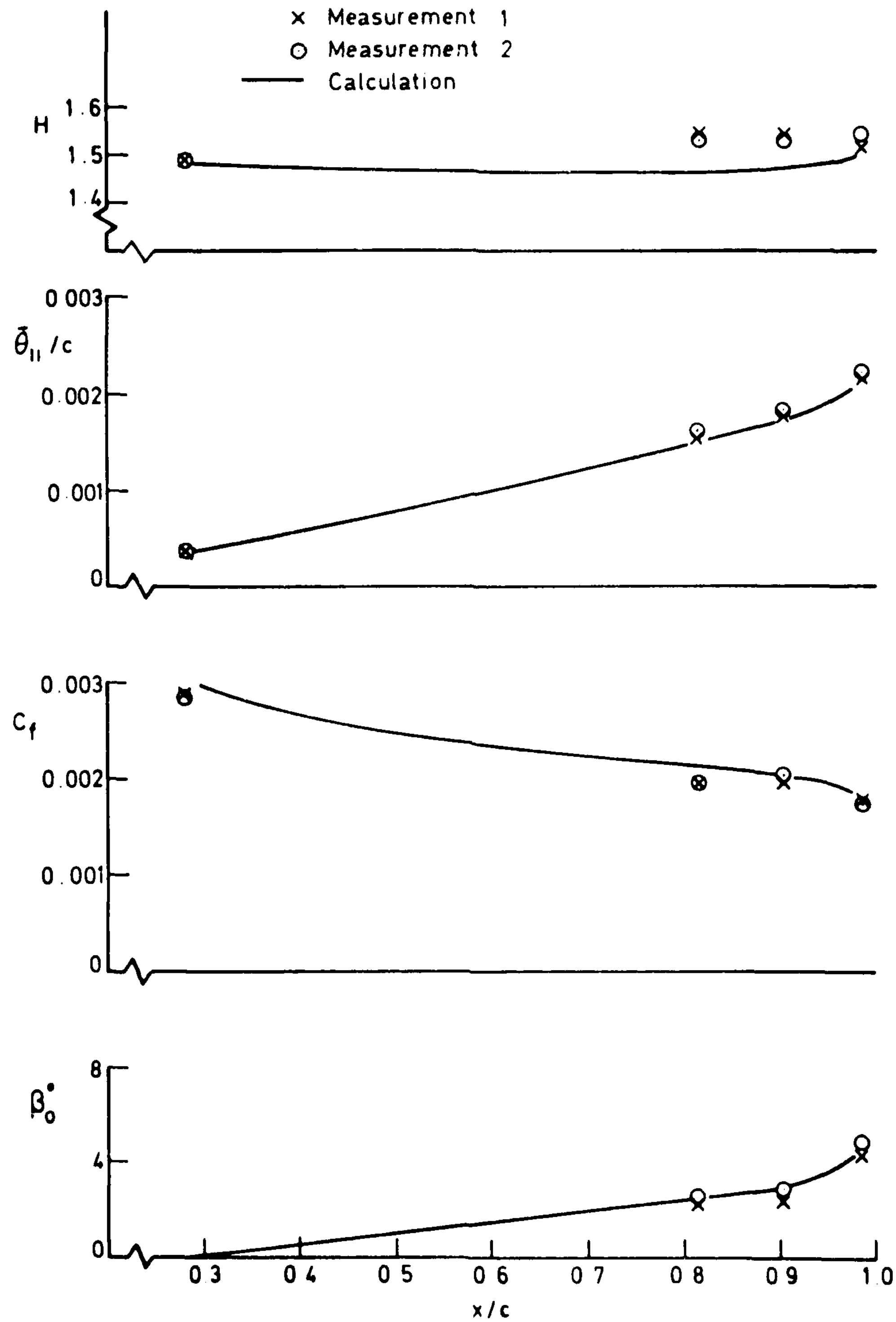

Fig 30ℓ Comparison with yawed wing calculation for $\Lambda = 20°$, $M_N = 0.4$, $\alpha_N = 0$

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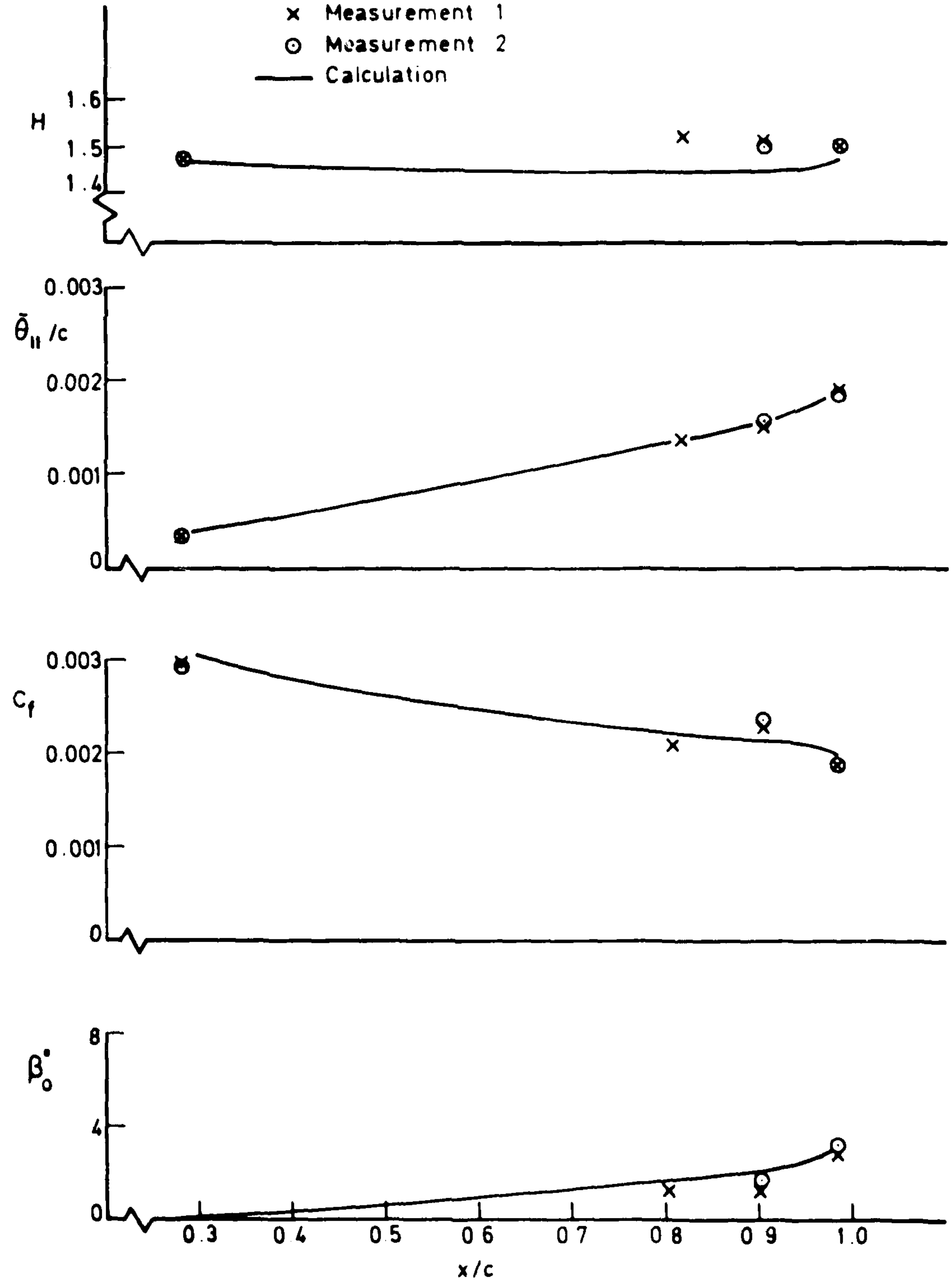

Fig 30m Comparison with yawed wing calculation for $\Lambda = 20°$, $M_N = 0.4$, $\alpha_N = -2°$

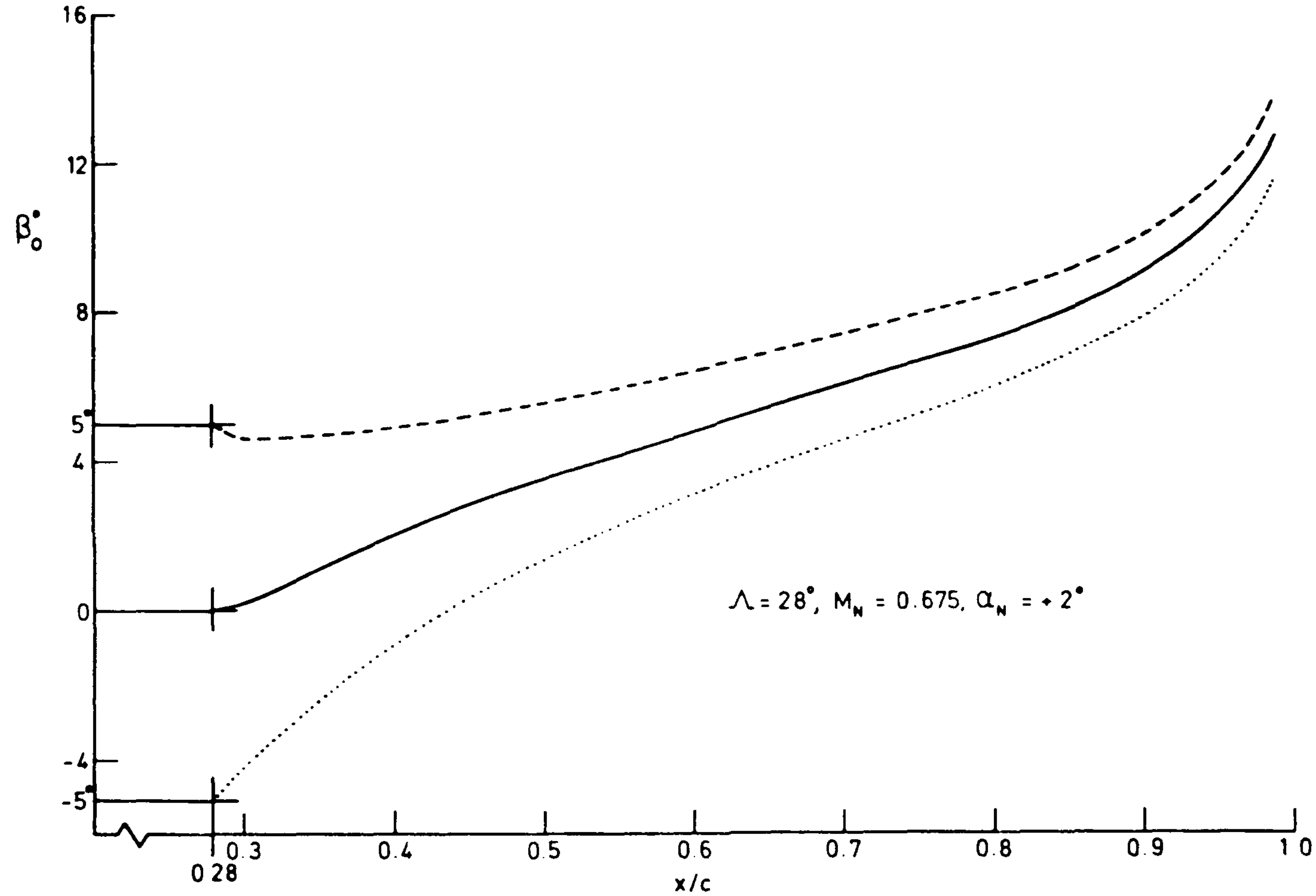

Fig 31 The effect on the yawed wing calculation of varying the assumed initial value for β_0 at $x/c = 0.28$

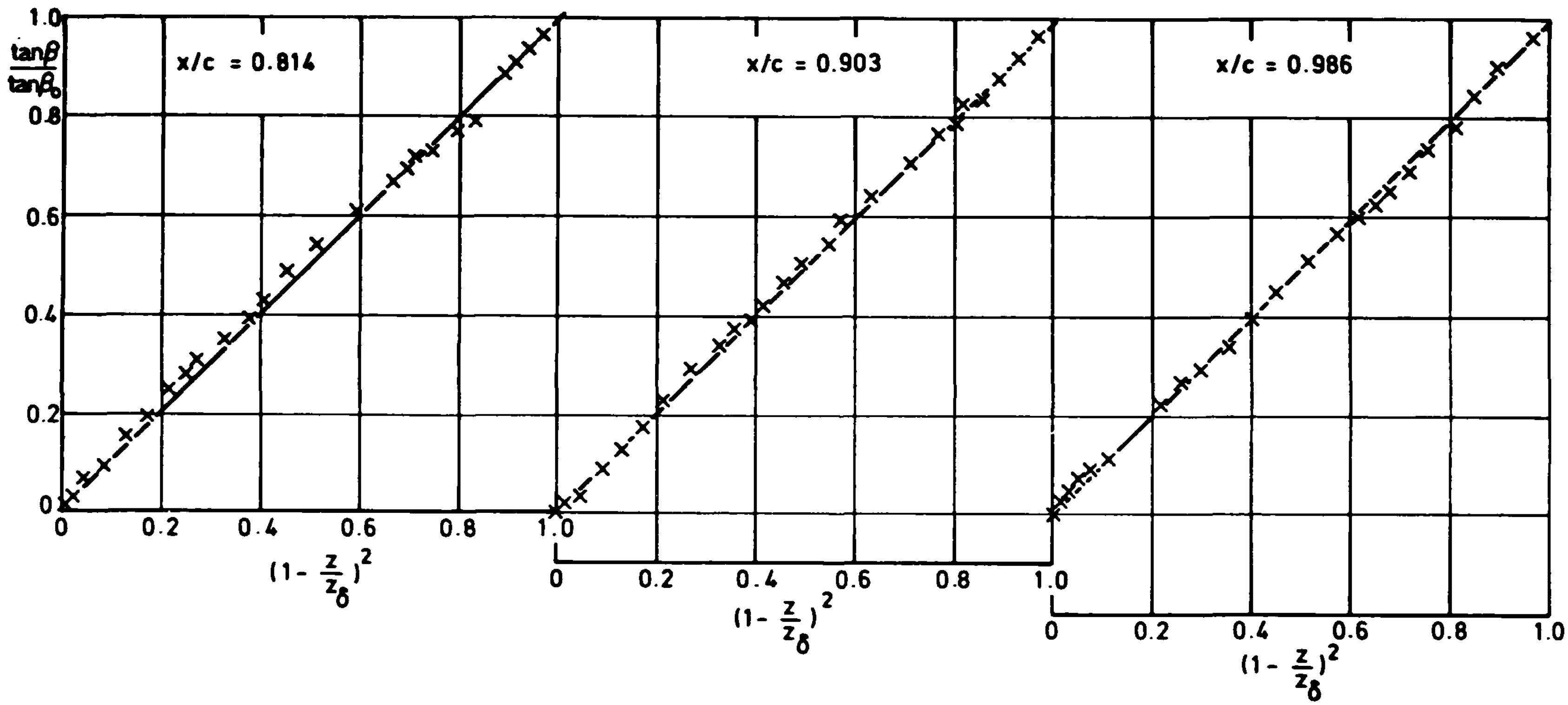

Fig 32a Comparison with the Mager crossflow profile for $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$ (measurement 1)

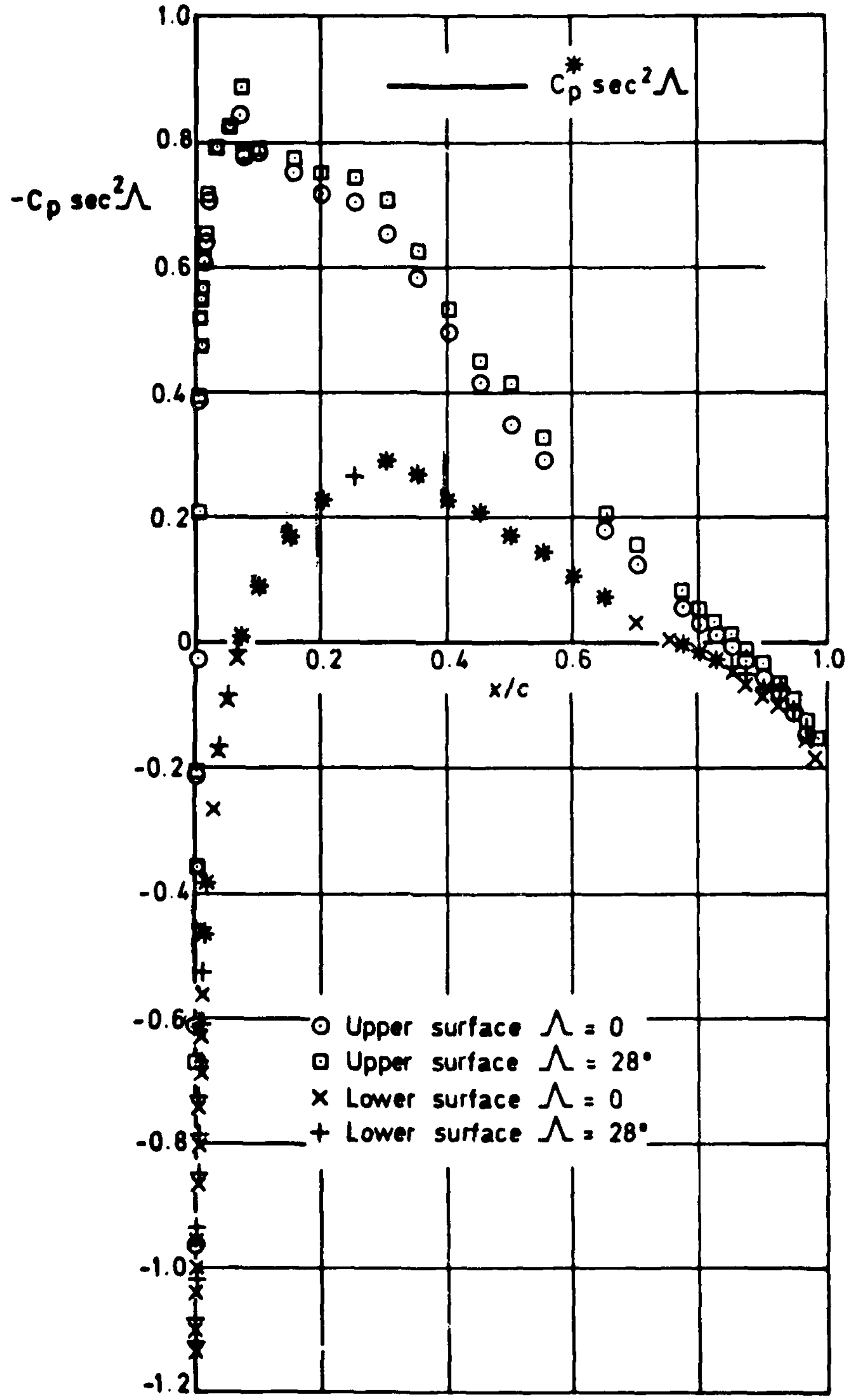

Fig 33a Comparison of surface pressures measured at Λ = 28° with measurements made at Λ = 0 for M_N = 0.675, α_N = +2°

Fig 33b

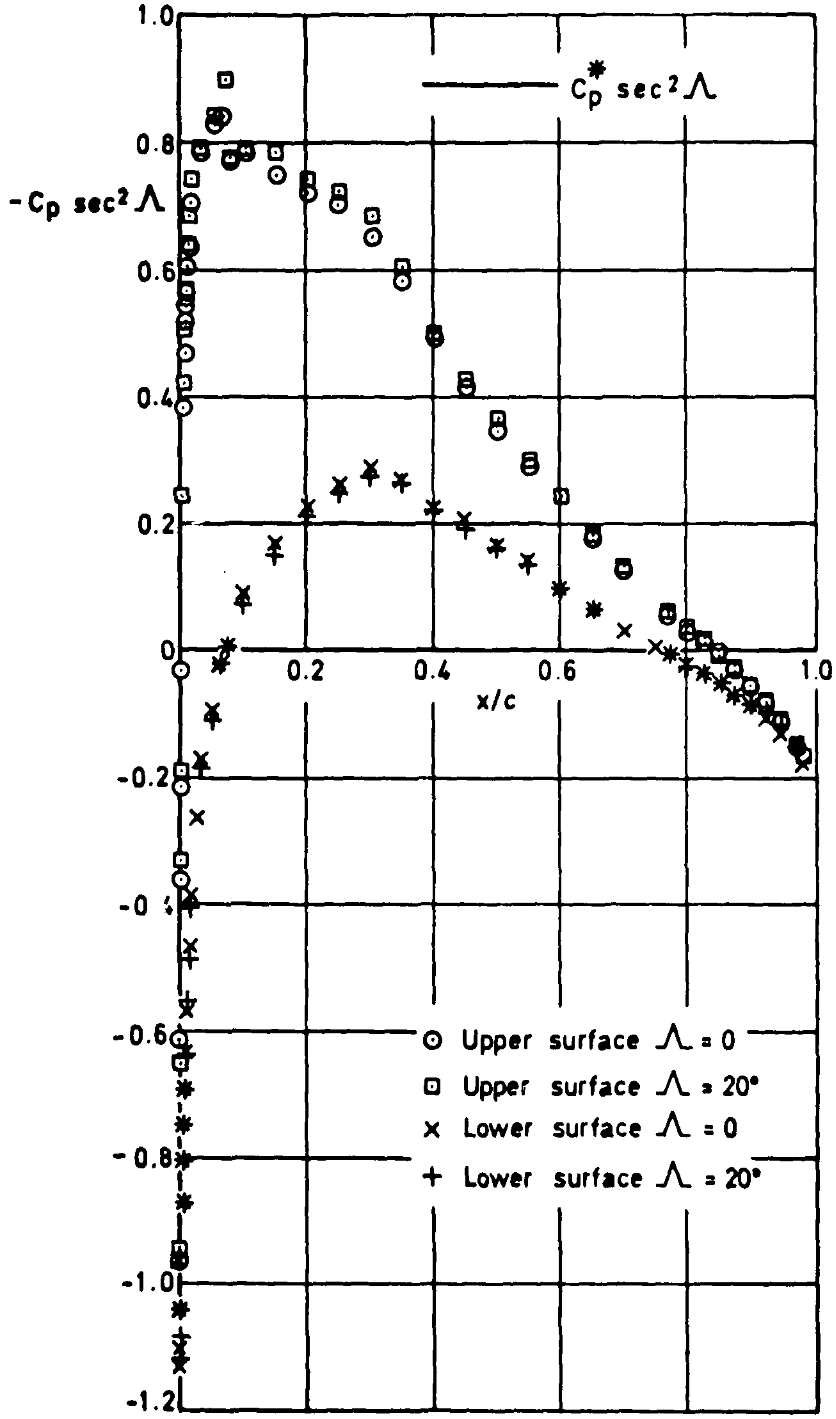

Fig 33b Comparison of surface pressures measured at $\Lambda = 20°$ with measurements made at $\Lambda = 0$ for $M_N = 0.675$, $\alpha_N = +2$

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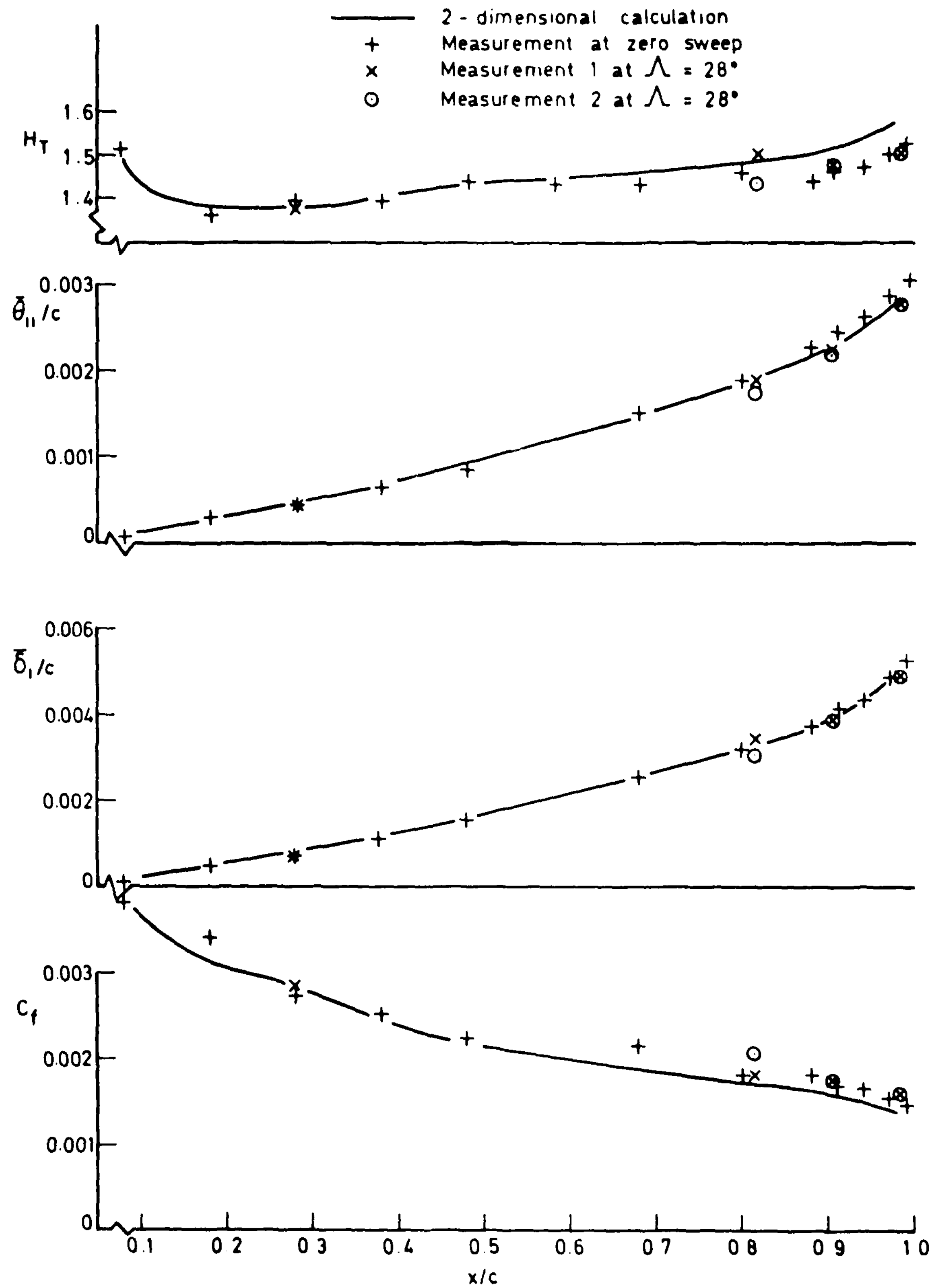

Fig 34a Comparison with two-dimensional calculation and measurement on the upper surface at M_N = 0.675 and α_N = +2°

Fig 34b

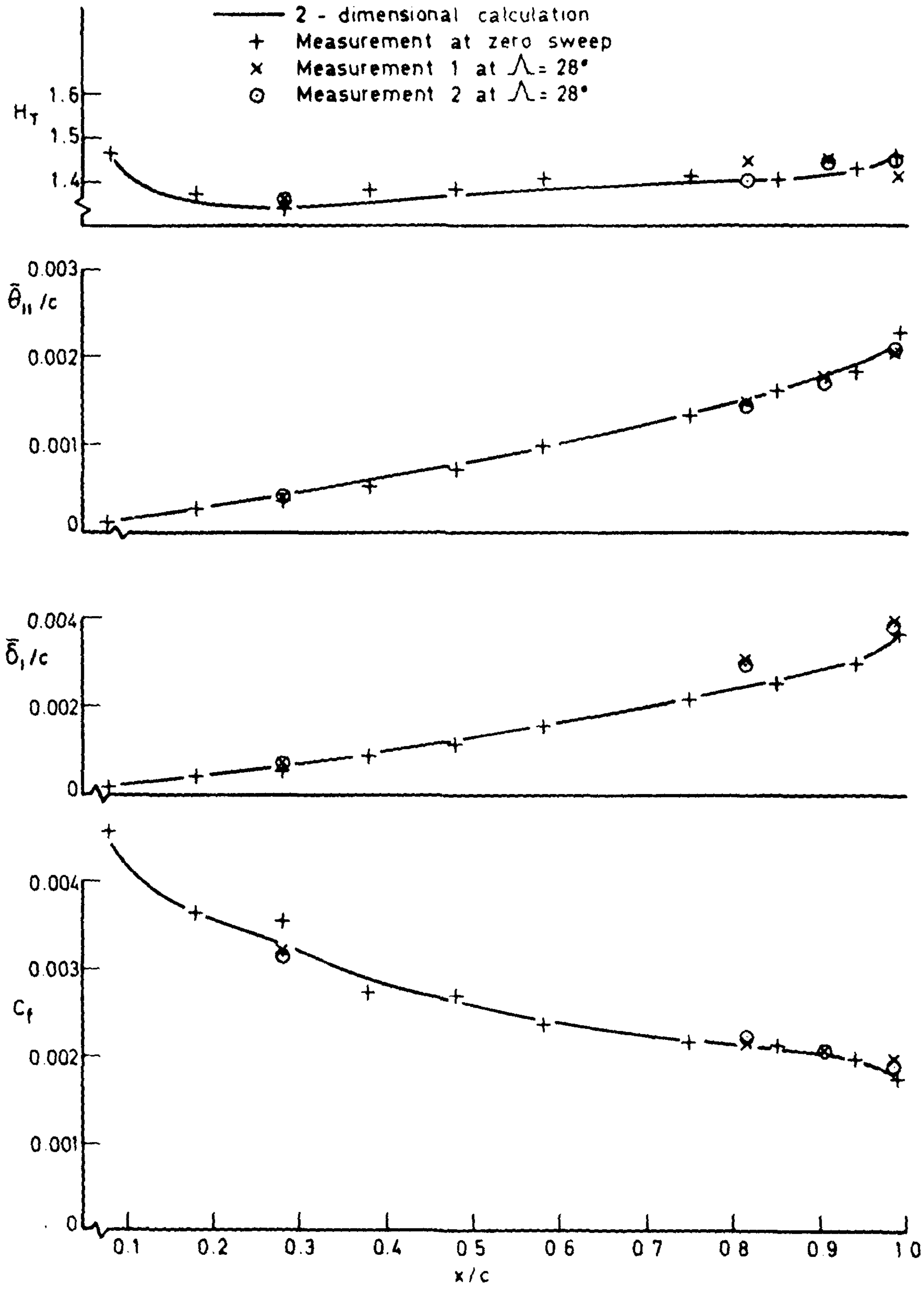

Fig 34b Comparison with two-dimensional calculation and measurement on the lower surface at $M_N = 0.675$ and $\alpha_N = +2°$

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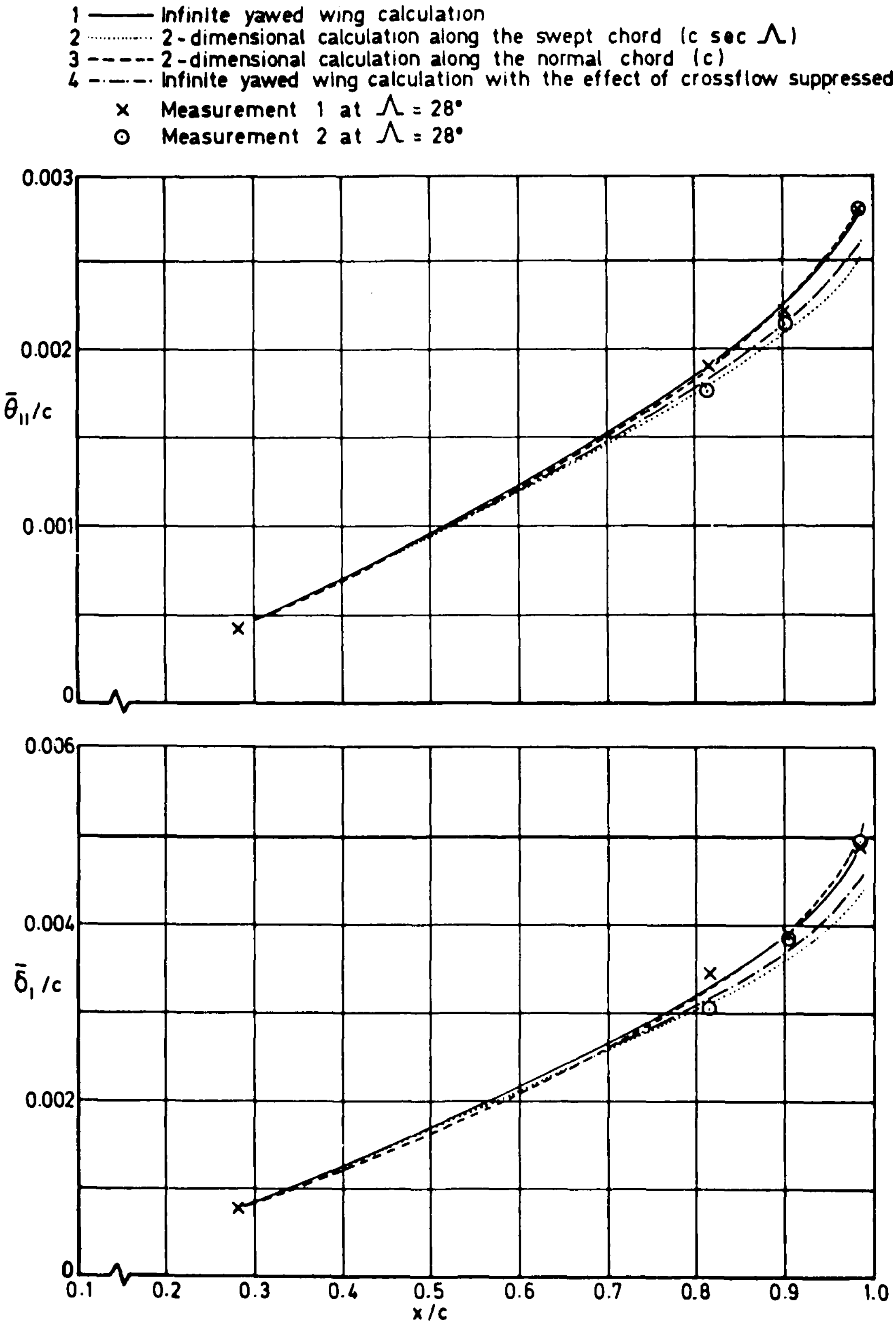

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Fig 35a Comparison between two-dimensional and three-dimensional calculations on the upper surface at $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

Fig 35b

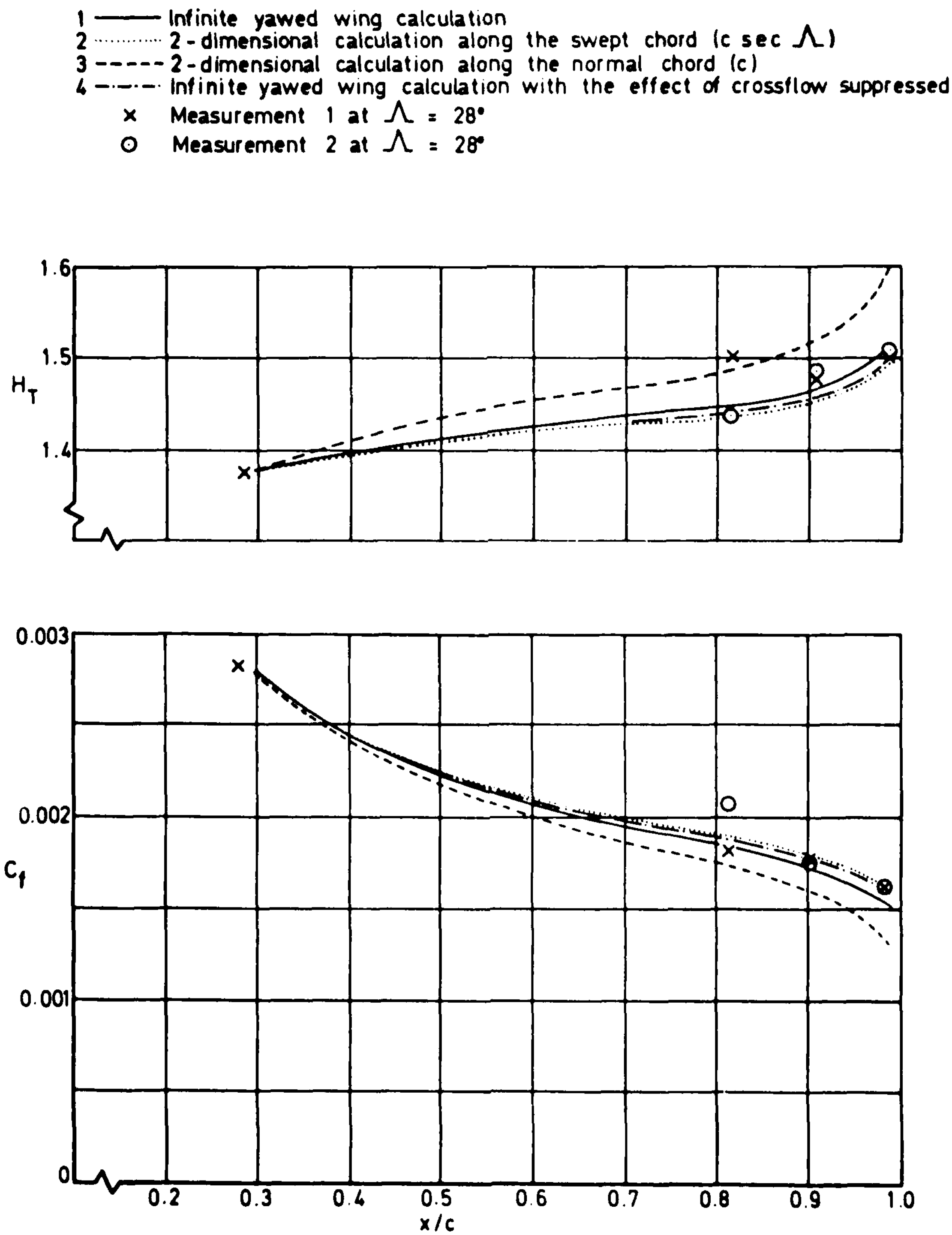

Fig 35b Comparison between two-dimensional and three-dimensional calculations on the upper surface at $\Lambda = 28°$, $M_N = 0.675$, $\alpha_N = +2°$

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REPORT DOCUMENTATION PAGE

Overall security classification of this page

UNLIMITED

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17\. Abstract

Measurements have been made of the distributions of local Mach number, flow direction and static pressure coefficient through the wake and boundary layers of a wing of constant chord (0.61 m normal to the leading edge) and RAE 101 section at sweep angles of 20 and 28 degrees. The model spanned the 1.8 m (6 ft) dimension of the wind tunnel working section and was set at incidences in the range of ±1.88 degrees. Tests were made at free stream Mach numbers in the range 0.43 to 0.76 and Reynolds numbers of 7 to 11 × 10^6.

The technique of measurement, using calibrated miniature three-hole yawmeters, is described and the experimental results are compared with an integral boundary-layer calculation method. Some comparisons are also made with previous tests at zero sweepback.