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NOMENCLATURE

A	axial force
b	wingspan
c	mean aerodynamic chord
C_{i_β}	static derivatives due to sideslip, $\partial C_i/\partial\beta$ (i = A,N,Y,ℓ,m,n)
C_{i_ω}	dynamic rotary coefficients due to coning, $\partial C_i/\partial(\omega b/2V)$ (i = A,N,Y,ℓ,m,n)
$C_{i_{\omega\beta}}$	dynamic rotary coefficients due to combined coning and sideslip, $\partial C_{i_\omega}/\partial\beta$ (i = A,N,Y,ℓ,m,n)
C_A	axial-force coefficient = A/qS
C_N	normal-force coefficient = N/qS
C_Y	side-force coefficient = Y/qS
C_ℓ	rolling-moment coefficient = ℓ/qSb
C_m	pitching-moment coefficient = m/qSc
C_n	yawing-moment coefficient = n/qSb
ℓ	rolling moment
M	Mach number of free stream
m	pitching moment
N	normal force
n	yawing moment
P_s	static pressure of free stream
P_t	total pressure of free stream
q	dynamic pressure of free stream
Re,Rn	Reynolds number of free stream, based on mean aerodynamic chord
S	effective wing area

T_s static temperature of free stream

T_t Total temperature of free stream

V free stream velocity

Y side force

α angle of attack

β angle of sideslip

σ angle of pitch

ϕ angle of roll of rotary rig about rotary rig axis

ψ angle of roll of model about model axis

ω rotation speed of rotary rig, $\dot{\phi}$

SUMMARY

A wind-tunnel test has been conducted on the Standard Dynamics Model (a simplified generic fighter-aircraft shape) undergoing coning motion at Mach 0.6. Six-component force and moment data are presented for a range of angle of attack, sideslip, and coning rates. At the relatively low nondimensional coning rates employed ($\omega b/2V \leq 0.04$), the lateral aerodynamic characteristics generally show a linear variation with coning rate.

1. INTRODUCTION

The NASA Ames Research Center is conducting an ongoing program of research into the aerodynamics affecting aircraft maneuvering in the high-angle-of-attack regime. A major thrust of this research has been the development of mathematical models describing the aerodynamic response of aircraft to arbitrary maneuvers (cf., refs. 1-3). Models have been developed that are applicable to the wide variety of nonlinear phenomena observed on aircraft at high incidence, including aerodynamic hysteresis and dynamic stall.

Models encompassing a more restricted set of aerodynamic phenomena suggest that the response to a general maneuver can be built up from the known aerodynamic responses to a limited number of so-called characteristic motions (ref. 1). The restricted models were derived under the assumptions that: (1) the aerodynamic response to a steady motion is itself steady; (2) the response is a single-valued (although allowably nonlinear) function of the orientation of the body; and (3) the responses are linear in the motion rates. The form the models take depends on the coordinates used to describe the motion. In the conventional body-fixed axis system shown in figure 1, the orientation of the body relative to the flight velocity is specified by the angles of attack and sideslip. The characteristic motions in this axis system are steady motion where the angles of attack and sideslip are held fixed, small-amplitude pitch and yaw oscillations about the steady motion, and coning motion (fig. 1). An equivalent model is obtained if the motion of the body is described in the aerodynamic axis system shown in figure 2. In the aerodynamic axes the orientation of the body is specified in terms of the resultant angle of attack, σ, and roll angle ψ. In these axes the characteristic motions are steady motion with the resultant angle of attack and roll angle held fixed, small-amplitude pitch and roll oscillations about the steady motion, and again, coning motion (fig. 2).

This report describes an experiment carried out in 1984 in the 6- by 6-Foot Supersonic Wind Tunnel to measure the aerodynamic response of a representative aircraft shape to one of these characteristic motions, namely, a steady coning motion. The response of the same aircraft shape to the other characteristic motions has been measured in separate forced-oscillation experiments (refs. 4 and 5).

2. EXPERIMENTAL TECHNIQUE

2.1 Description of Model

Figures 3 and 4 show the model used in this investigation. The model is designated the "Standard Dynamics Model" (SDM) and follows the basic planform of a current high-performance aircraft configuration. It was deliberately designed for manufacture by simple machining techniques to encourage its widespread use as a standard model for testing in different wind tunnels and on different dynamic test rigs. The model was designed and manufactured by the National Aeronautical Establishment (NAE), Canada. A more complete description of its geometry and characteristics is contained in reference 4.

2.2 Rotary Rig and Tunnel Installation

Figures 5 and 6 show the experimental apparatus used in this investigation and how it was mounted in the wind tunnel. The rotary rig uses a hydraulic motor to turn a shaft aligned with the central axis of the wind tunnel, to which any one of a series of interchangeable bent stings can be attached. The stings are designed to support a model on a strain-gage balance at pitch angles ranging from 0° to 30° while keeping the same axial model station on the axis of rotation. The center of rotation was located at 0.35 of the wing mean aerodynamic chord. This point was also chosen as the moment reference center. The rig follows the same basic concept, and uses the same bent stings, as an earlier rotary-balance apparatus (described in ref. 6), but it is considerably more sophisticated in that it uses speed and position sensors and the corresponding feedback control loops to give the operator close control of either the speed or angular position of the rotating shaft.

The balance used was a standard six-component Task Corporation 1.50 in. MK XIXA balance, with all power and signal lines routed through the bent sting and the shaft of the hydraulic motor. A set of gold slip rings and brushes was used to transfer the signals to the nonrotating part of the rig. Model attitude was set by adjustment of the pitch and roll angles of the model. Pitch angles were determined by the choice of bent sting, and roll angles by choice of a fixture located between the balance and the model which maintained a set roll angle. A set of such roll fixtures was available, including one for use with all bent stings giving zero sideslip angle, and one for each of the bent stings to obtain sideslip angles of either -5° or +5°.

The rig is capable of being driven at rotation rates from 0 to 63 rad/sec (600 rpm) in either direction. Since the rotating parts are neither statically nor dynamically balanced, the centrifugally induced oscillatory loads generated on the nonrotating structures at maximum rotation rate are quite large. The rig itself is designed to withstand these loads, but some additional measures, shown in figure 5, were necessary to prevent excessive deflection of the rig support structure in the tunnel. The tunnel's body of revolution, normally supported only by lead screws vertically and restrained laterally by rollers, was clamped rigidly to the vertical strut. Brass pads were installed between the body of revolution and the vertical strut to distribute the load and prevent damage to the strut surface. In addition, a pair of diagonal braces, extending from the leading edge of the vertical strut to the tunnel floor, was installed to restrain lateral movement of the rig support. Vibration amplitudes, both vertical and lateral, were monitored by accelerometers clamped to the body of revolution, and these confirmed that no excessive vibration occurred at any running condition.

An additional feature of the rotary rig is the camera enclosure shown in figure 5. This is capable of accepting either a miniature video or movie camera, with power and signal lines routed through the previously mentioned slip ring set. So mounted, the camera views the upper surface of the model, and since the camera and model rotate together the model image remains steady regardless of the motion of the rig. This feature was included to enable vapor-screen investigations of the behavior of the vortex wake of the model in response to coning motion.

2.3 Data Acquisition and Reduction

Data were taken with a stand-alone, microcomputer-based, data acquisition and reduction system. The balance signals, shaft tachometer output, and output from a shaft position encoder were sent directly to the data acquisition system. In addition, tunnel conditions were sent to the system by paralleling the conventional tunnel data acquisition sensors.

In coning motion at constant rotation rate, the flow field surrounding the model is steady with respect to an observer fixed in the rotating body. Since the balance in this apparatus rotated with the model, it experienced steady aerodynamic forces and moments, in addition to steady centrifugally induced inertial loads. The only nonsteady forces seen by the balance were due to the change in orientation of the mass of the model relative to gravity as the rig rotated. For data taken when the apparatus was rotating, these oscillatory signals were eliminated by use of a low-pass filter. The centrifugally induced inertial loads on the balance were accounted for by rotary tare measurements. These tare loads were stored in the computer and subtracted from the wind-on balance data at each data point, thus permitting on-line computation of the aerodynamic force and moment coefficients. The plotted coefficients were typically available less than 30 sec after the data point was taken.

For data taken while the model is stationary, the weight of the model must be accounted for. This was accomplished by a series of static tare measurements taken

with the model at various values of the shaft rotation angle. Whether the wind-on data were treated as rotating or nonrotating data was governed by the value of the shaft tachometer reading.

2.4 Experimental Procedure

The experimental results presented in this report were all obtained from a test using the rotary rig and the Standard Dynamics Model, and conducted in the 6- by 6-Foot Supersonic Wind Tunnel at the NASA Ames Research Center. All runs were performed at a Mach number of 0.6 and a Reynolds number of approximately 0.88×10^6 based on mean aerodynamic chord. These test conditions were chosen to match those of complementary forced-oscillation tests which were conducted at the NAE, and reported in references 4 and 5.

The test consisted of many separate experimental runs, each of relatively short duration and each following a common pattern, as described below.

1. The rig was first fitted with the appropriate bent sting and roll angle fixture to obtain the desired model attitude.

2. The wind tunnel was closed and partially evacuated to reach normal tunnel starting pressure.

3. During the evacuation procedure, all data acquisition instrumentation was adjusted. Once the tunnel reached its starting pressure, static tares (i.e., data with the rig stationary at four equispaced rotation angles to measure gravitational effects of the model mass) and rotary tares (i.e., data with the rig rotating over the whole range of test speeds to measure centrifugal effects) were taken.

4. The wind tunnel was started and brought to operating conditions.

5. Static aerodynamic data were taken with the model stationary at four equispaced rotation angles, ϕ = 0°, 90°, 180°, and 270°.

6. Rotary aerodynamic data were taken over the full range of rotational speeds, usually following a routine of: ω = 600 rpm to -600 rpm, data at 100 rpm spacing, then ω = -550 rpm to 550 rpm, data at 100 rpm spacing. This procedure was adopted to permit detection of possible aerodynamic hysteresis caused by coning rate.

7. The tunnel was shut down, and access to the model obtained enabling its adjustment to the next required attitude.

Some runs were also conducted in which a laser vapor-screen technique and the rig-mounted video camera were used to examine the vortex wake of the model and its response to coning rate. Video recordings were made of runs at various attitudes and coning rates. This report, however, is limited to consideration of the force and moment data and does not specifically address the vapor-screen results.

2.5 Accuracy of Results

Sources of error are identified below, together with an estimate of maximum uncertainty levels and, where appropriate, a short discussion of the derivation and/or consequences of that uncertainty.

2.5.1 Flow Conditions-

Mach number - The maximum observed variation in Mach number in any one run was ±0.005.

Reynolds number - The Reynolds number was held within the range from 0.87×10^6 to 0.89×10^6 (based on mean aerodynamic chord).

Flow angularity - From static normal-force data, flow angle on the tunnel centerline was estimated to be less than 0.3° in both the vertical and horizontal planes. This had a significant effect on the measured static data, but rotating data were taken via low-pass filters so that, for rotating data, the effective average flow angle was zero.

Blockage and wall interference - These effects are assumed to be negligible, since the model was small (solid blockage of less than 0.1% in a slotted test section).

Sting interference - The sting diameter was rather large (75% of the body base diameter) and almost certainly had a significant effect upon the flow structure near and over the model base, particularly at the higher angles of attack. No attempt has been made to correct this, however, since the data are intended primarily for combination and comparison with other experimental data obtained using the same model on a similarly sized sting support (refs. 4 and 5). The presence of a fairly massive sting base and rig body farther downstream of the model (approximately 0.4% blockage at 4 wing chord lengths from model base) may have influenced the vortex wake structure behind the model, particularly at the higher angles of attack, but any resultant effect upon the model forces and moments is expected to be small.

2.5.2 Model Attitude and Rates-

Pitch angle - Uncertainty in the quoted pitch angles arises from a combination of manufacturing errors in the stings, balance, and model mount, plus effects of sting and support deflections produced by centrifugal and aerodynamic loadings. No attempt has been made to measure these effects, but it is estimated that with reasonable manufacturing tolerances, and bearing in mind the relatively light loading and rigid support structure, quoted pitch angles should be correct to within ±0.2°.

Roll angle - A measurement was made of the roll angle and mechanical tolerances obtained with each roll fixture. Quoted roll angles may be in error by up to ±0.2°.

Angle of attack and sideslip angles - Since model angle of attack and sideslip were obtained by setting appropriate pitch and roll angles, a reasonable estimate of the maximum uncertainty in these angles is the same as for pitch and roll, ±0.2°.

Coning rates - The rotation rate of the rig shaft (coning rate) was measured by a DC tachometer, which during calibration showed a maximum error of less than ±0.5 rpm (±0.05 rad/sec).

2.5.3 Force and Moment Coefficients and Derived Coefficients-

Basic coefficients - By assuming that errors in the balance calibration and in data system resolution combine to give an overall accuracy of 0.5% of full-capacity loads for rolling moment and 0.2% of full capacity for all other components, an estimate of the uncertainty in measured aerodynamic coefficients was obtained. A check of this estimate was obtained by conducting a standard data measuring run with the model set at 30° angle of attack and 5° angle of sideslip, but with no airflow and with the tunnel evacuated (i.e., with negligible aerodynamic loads). Results indicated that the initial estimate of uncertainty was adequate for all parameters with the exception of side force, which showed variations up to twice those estimated. In the uncertainties given below, therefore, the side-force coefficient uncertainty is based on the larger errors observed in the wind-off test.

C_A ±0.01

C_N ±0.01

C_Y ±0.005

C_ℓ ±0.0005

C_m ±0.01

C_n ±0.0005

Note that these estimates only reflect the ability of the system to read aerodynamic loads and convert them to coefficient form, and should not be considered the accuracy of measurement of clean-model aerodynamics. As explained in the Flow Conditions section, the large sting diameter/base diameter ratio will influence the near-base flows, making the aerodynamic coefficients given here specific to this particular model/sting combination. Since clean-model aerodynamics were not specifically required, no attempt has been made to assess or correct for sting effects. Further, no base-pressure measurements were obtained, and no base-pressure corrections made.

Derived coefficients - The derived coefficients presented here have been obtained by curve fitting and differencing between various groups of coefficient data. Estimates of uncertainty in these procedures are very subjective, depending upon the scatter of the source data and how well it conforms to the assumed relationship. A proper assessment of uncertainty would require an examination of the source data in each specific case, but a reasonable estimate of maximum uncertainty levels may be taken as

$$\left.\begin{matrix} C_{Y_\omega} \\ C_{n_\omega} \\ C_{\ell_\omega} \end{matrix}\right\} \quad \pm 10\%$$

$$\left.\begin{matrix} C_{N_{\omega\beta}} \\ C_{A_{\omega\beta}} \\ C_{m_{\omega\beta}} \end{matrix}\right\} \quad \pm 30\%$$

3. PRESENTATION AND DISCUSSION OF RESULTS

Table 1 provides a complete listing of the measured aerodynamic coefficients given in both aerodynamic and body-fixed axes. Tables 2 and 3 list the static aerodynamic coefficients and derivatives, respectively, obtained as explained in section 3.2 below, and given in body-fixed axes only. Table 4 lists the dynamic rotary coefficients, obtained as explained in section 3.3 below, and again given only in the body-fixed axis system. Where required, conversion to aerodynamic axes can be achieved by using the following equations, where quantities on the left-hand side of the equations are those in the aerodynamic axes, while quantities on the right-hand side are in the body-fixed axes.

$$C_N = C_N \cos \psi - C_Y \sin \psi$$

$$C_Y = C_Y \cos \psi + C_N \sin \psi$$

$$C_A = C_A$$

$$C_m = C_m \cos \psi - C_n \sin \psi$$

$$C_n = C_n \cos \psi + C_m \sin \psi$$

$$C_\ell = C_\ell$$

Selected data are presented in plotted form in figures 8-13, all of which are referred to the body-fixed axis system shown in figures 1 and 7.

3.1 Rotary Aerodynamic Data

The term "rotary data" as used here refers to the measured six-component aerodynamic coefficient data produced by the data acquisition system, and normally

output as plots of aerodynamic coefficients versus the coning-rate parameter, $\omega b/2V$ ($\dot{\phi} b/2V$).

Figure 8 shows a set of data obtained at each available angle of attack and zero angle of sideslip as a function of the coning-rate parameter. Note that although data were taken at zero coning rate, they have not been included in figure 8 because a small misalignment between the rotary rig axis and the local free-stream direction on the tunnel centerline made this static data dependent upon the angular position of the rotary rig. However, for the data obtained with the apparatus rotating at coning rates greater than 10 rpm, low-pass filtering of the data signals averaged the influence of flow angularity and yielded a steady output signal.

At zero angle of sideslip, symmetry conditions dictate that the lateral aerodynamic coefficients (C_Y, C_n, C_ℓ) should be odd functions of the coning rate, while the longitudinal aerodynamic coefficients (C_N, C_A, C_m) should be even functions of the coning rate. This is demonstrated by the data presented in figure 8. For all angles of attack tested, the lateral aerodynamic coefficients are seen to be very closely linear with coning-rate parameter over the range of coning rates achieved in the test. The longitudinal aerodynamic coefficients are seen to be even functions of the coning rate. At the lower angles of attack ($\alpha \leq 15°$), the longitudinal aerodynamic coefficients are almost independent of coning rate. At the higher angles of attack ($\alpha \geq 20°$), the axial-force and pitching-moment coefficients show a parabolic variation with coning rate. Some of this parabolic variation is undoubtedly real, and is probably caused by increased velocities and dynamic pressure on the tail resulting from the coning motion, which produces increased tail lift. However, limitations of data resolution at these low levels of C_A and C_m, and in particular the choice of the moment center position, may also be responsible for exaggerating the scale of the variation.

The effects of variation of sideslip angle are shown in figure 9, which presents data obtained at $\beta = -5°$ and $\beta = +5°$ for all angles of attack as functions of the coning-rate parameter. Once again, the linear variation of the lateral aerodynamic coefficients with coning rate is apparent, and also the nonlinear variation of the longitudinal aerodynamic coefficients with coning rate. The longitudinal aerodynamics also show an effect due to sideslip which, as expected, introduces a reasonably symmetric and linear component with coning rate. In general, the results show a reasonable symmetry with direction of sideslip, but with some offsets possibly introduced by small asymmetries in the model and/or the effects of combined centrifugal and aerodynamic loading.

3.2 Static Aerodynamic Data

Static aerodynamic data are presented in figures 10 and 11. These data were obtained from the intercepts, at $\omega b/2V = 0$, of the low-coning-rate data shown in figures 8 and 9. As explained above, the actual static data taken at $\omega = 0$ were not used because of the scatter caused by flow angularity relative to the rotary rig's axis of rotation.

Figures 10 and 11 show the effect of variations in the angle of attack and sideslip angle on the longitudinal and lateral aerodynamics, respectively. Figure 11 also presents lateral aerodynamic derivatives obtained by differencing between the results measured at +5° and -5° sideslip. Also plotted in figures 10 and 11 are the static data given in reference 4, obtained at the NAE using the same model on a similarly sized sting support. In most respects the two sets of data match well, with the exception of the normal-force and pitching-moment coefficients measured at the larger angles of attack. It is suggested that this discrepancy is probably attributable to wall- and strut-interference effects in the small (0.75 m × 0.38 m) solid-wall tunnel used for the NAE tests. Such effects should be negligible for measurements made in the 6- by 6-ft tunnel, where blockage and chord/height ratios were approximately 0.1% and 5%, respectively.

3.3 Dynamic Rotary Coefficients

The rotary coefficients presented here were obtained by least-squares fitting of straight lines through the data presenting the aerodynamic forces and moments as functions of the coning-rate parameter (e.g., figures 8 and 9). The coefficients presented in figure 12 are the slopes of these lines; those presented in figure 13 are obtained by differencing between the slopes observed at +5° and -5° sideslip.

The results show a gradual change with increase in angle of attack up to about 15°, then a more rapid change as the angle of attack reaches and exceeds 20°. In particular, the rolling-moment coefficient changes from anti-spin to pro-spin, indicating a significant change in flow characteristics within the angle-of-attack range from 15° to 20°. This is in agreement with the static aerodynamic data which also show a major change in lateral aerodynamics within the 15° to 20° angle-of-attack range. In addition, the vapor-screen flow visualization studies indicated a major change in the vortices shed from the wing leading-edge strake. At 15° angle of attack these vortices passed over the wing surface and remained intact well downstream of the wing trailing edge, but at 20° they burst while still above the wing surface.

The coefficients given in figure 13, particularly $C_{A_{\omega\beta}}$ and $C_{m_{\omega\beta}}$, should be treated with some caution as they represent a double differentiation of low level data and thus may contain large introduced errors.

4. CONCLUDING REMARKS

As part of an ongoing research program at the NASA Ames Research Center to investigate aerodynamic phenomena affecting high-angle-of-attack flight, rotary-balance tests were conducted on the Standard Dynamics Model in coning motion in the 6- by 6-Foot Supersonic Wind Tunnel. Aerodynamic force and moment coefficients were

measured on the SDM at Mach 0.6, at coning rates ranging up to 600 rpm (nondimensional coning-rate parameter $\omega b/2V$ ranging up to 0.04) in both directions. Over the angle-of-attack range investigated ($0° \leq \alpha \leq 30°$), the lateral aerodynamic characteristics show a linear variation over the full range of coning-rate parameter achieved in the tests. Although no discontinuous changes in the aerodynamic characteristics of the SDM were observed with changes in attitude or coning rate, evidence exists of a significant change in flow characteristics between 15° and 20° angle of attack. This is believed to be associated with forward movement of the burst point of the wing-strake vortices with increasing incidence; from behind the wing at angles of attack $\leq 15°$, to above the wing at angles of attack $\geq 20°$.

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TABLE 1.- MEASURED AERODYNAMIC COEFFICIENTS

Run = 1	Q = 377 80 psi	Sigma= 0 00 ^{0}	Pt= 1903 1 psf
Config= 1	M = 0 601	Psi = 0 00 ^{0}	Ps= 1497 4 psf
File1 = 1CTD	Rn= 0 991 x10^6	Alpha= 0 00 ^{0}	Tt= 537 3 ^{0}R
File2 = 2CTD	V = 659 5 ft/s	Beta = 0 00 ^{0}	Ts= 501 0 ^{0}R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 0263	-0 0091	0 0465	-0 0143	0 0019	0 0000	0 0263	-0 0091	0 0465	-0 0143	0 0019	0 0000
1	0 000	0 2	-0 0147	-0 0094	0 0467	-0 0153	0.0021	-0 0006	-0 0147	-0 0094	0 0467	-0 0153	0 0021	-0 0006
2	0 000	0 2	-0 0171	0 0043	0 0465	-0 0117	0 0000	0 0008	-0 0171	0 0043	0 0465	-0 0117	0 0000	0 0008
3	0 000	0 2	0 0257	0 0062	0 0464	-0 0104	-0 0009	0 0003	0 0257	0 0062	0 0464	-0 0104	-0 0009	0 0003
4	0 003	50 6	0 0022	-0 0027	0 0468	-0 0115	0 0009	-0 0006	0 0022	-0 0027	0 0468	-0 0115	0.0009	-0 0006
5	0 006	100 7	0 0026	-0 0029	0 0470	-0 0115	0 0011	-0 0014	0 0026	-0 0029	0 0470	-0 0115	0 0011	-0 0014
6	0 012	202 1	0 0018	-0 0029	0 0468	-0 0117	0 0013	-0 0030	0 0018	-0 0029	0 0468	-0 0117	0 0013	-0 0030
7	0 018	301 5	0 0021	-0 0035	0 0467	-0 0117	0 0017	-0 0046	0 0021	-0 0035	0 0467	-0 0117	0 0017	-0 0046
8	0 024	400 3	0 0025	-0 0040	0 0461	-0 0117	0 0019	-0 0061	0 0025	-0 0040	0 0461	-0 0117	0 0019	-0 0061
9	0 030	499 2	0 0014	-0 0049	0 0455	-0 0115	0 0025	-0 0079	0 0014	-0 0049	0 0455	-0 0115	0 0025	-0 0079
10	0.036	599 1	0 0027	-0 0046	0 0450	-0 0115	0 0027	-0 0097	0 0027	-0 0046	0 0450	-0 0115	0 0027	-0 0097
11	-0 003	-51 1	0 0085	-0 0018	0 0462	-0 0153	0 0007	0 0009	0 0085	-0 0018	0.0462	-0 0153	0 0007	0 0009
12	-0 006	-100 1	0 0065	-0 0019	0 0468	-0 0145	0 0006	0 0016	0 0065	-0 0019	0 0468	-0 0145	0 0006	0 0016
13	-0 012	-200 7	0 0034	-0 0008	0 0469	-0 0140	0 0003	0 0033	0 0034	-0 0008	0 0469	-0 0140	0 0003	0 0033
14	-0 018	-301 2	0 0021	-0 0004	0 0465	-0 0131	0 0001	0 0049	0 0021	-0 0004	0 0465	-0 0131	0 0001	0.0049
15	-0 024	-401 7	-0 0005	-0 0002	0 0461	-0 0135	-0 0001	0 0065	-0 0005	-0 0002	0 0461	-0 0135	-0 0001	0 0065
16	-0 030	-502 9	0 0004	0 0005	0 0451	-0 0140	-0 0003	0 0081	0 0004	0 0005	0.0451	-0 0140	-0 0003	0 0081
17	-0 036	-601 7	0 0022	0 0016	0 0452	-0 0136	-0 0008	0 0099	0 0022	0 0016	0 0452	-0.0136	-0 0008	0.0099
18	0 000	0 2	0 0238	-0 0097	0 0461	-0 0132	0 0020	0 0001	0 0238	-0 0097	0 0461	-0 0132	0 0020	0 0001

TABLE 1.- CONTINUED

Run =	3	Q = 368 01 psi	Sigma=	5 00 °	Pt= 1857 8 psf
Config=	1	M = 0 600	Psi =	0 00 °	Ps= 1462 7 psf
File1 =	3CTD	Rn= 0 885 x10⁶	Alpha=	5 00 °	Tt= 529 4 °R
File2 =	4CTD	V = 653 8 ft/s	Beta =	0 00 °	Ts= 493 8 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 3978	-0 0080	0 0360	-0 0156	0 0017	-0 0022	0 3978	-0 0080	0 0360	-0 0156	0 0017	-0 0022
1	0 000	0 2	0 3352	-0 0088	0 0372	-0 0136	0 0021	-0 0037	0 3352	-0 0088	0 0372	-0 0136	0 0021	-0 0037
2	0 000	0 2	0 3346	0 0044	0 0375	-0 0093	-0 0000	-0 0015	0 3346	0 0044	0 0375	-0 0093	-0 0000	-0 0015
3	0 000	0 2	0 3919	0 0071	0 0361	-0 0123	-0 0008	-0 0021	0 3919	0 0071	0 0361	-0 0123	-0 0008	-0 0021
4	0 003	50 1	0 3597	-0 0016	0 0368	-0 0108	0 0009	-0 0036	0 3597	-0 0016	0 0368	-0 0108	0 0009	-0 0036
5	0 006	99 9	0 3637	-0 0013	0 0365	-0 0112	0 0009	-0 0046	0 3637	-0 0013	0 0365	-0 0112	0 0009	-0 0046
6	0 012	200 3	0 3626	0 0001	0 0361	-0 0117	0 0007	-0 0069	0 3626	0 0001	0 0361	-0 0117	0 0007	-0 0069
7	0 018	301 2	0 3628	0 0017	0 0363	-0 0113	0 0004	-0 0089	0 3628	0 0017	0 0363	-0 0113	0 0004	-0 0089
8	0 024	401 6	0 3638	0 0024	0 0354	-0 0115	0 0003	-0 0109	0 3638	0 0024	0 0354	-0 0115	0 0003	-0 0109
9	0 030	500 9	0 3661	0 0029	0 0362	-0 0113	0 0001	-0 0128	0 3661	0 0029	0 0362	-0 0113	0 0001	-0 0128
10	0 036	600 5	0 3642	0 0039	0 0366	-0 0119	-0 0002	-0 0147	0 3642	0 0039	0 0366	-0 0119	-0 0002	-0 0147
11	-0 003	-50 6	0 3704	-0 0010	0 0350	-0 0148	0 0008	-0 0010	0 3704	-0 0010	0 0350	-0 0148	0 0008	-0 0010
12	-0 006	-100 8	0 3666	-0 0020	0 0357	-0 0141	0 0009	-0 0002	0 3666	-0 0020	0 0357	-0 0141	0 0009	-0 0002
13	-0 012	-200 7	0 3670	-0 0026	0 0359	-0 0138	0 0010	0 0022	0 3670	-0 0026	0 0359	-0 0138	0 0010	0 0022
14	-0 018	-301 9	0 3679	-0 0040	0 0359	-0 0141	0 0013	0 0045	0 3679	-0 0040	0 0359	-0 0141	0 0013	0 0045
15	-0 024	-400 0	0 3670	-0 0042	0 0361	-0 0133	0 0015	0 0065	0 3670	-0 0042	0 0361	-0 0133	0 0015	0 0065
16	-0 030	-501 4	0 3657	-0 0050	0 0359	-0 0134	0 0016	0 0087	0 3657	-0 0050	0 0359	-0 0134	0 0016	0 0087
17	-0 036	-601 2	0 3708	-0 0050	0 0353	-0 0151	0 0017	0 0108	0 3708	-0 0050	0 0353	-0 0151	0 0017	0 0108
18	0 000	0 2	0 3973	-0 0081	0 0346	-0 0169	0 0018	-0 0027	0 3973	-0 0081	0 0346	-0 0169	0 0018	-0 0027

TABLE 1.- CONTINUED

Run = 5	Q = 371 04 psi	Sigma= 5 00 °	Pt= 1875 9 psf
Config= 1	M = 0 600	Psi = 90 40 °	Ps= 1477 6 psf
File1 = 5CTD	Rn= 0 885 x10⁶	Alpha= -0 03 °	Tt= 533 4 °R
File2 = 6CTD	V = 655 7 ft/s	Beta = 5 00 °	Ts= 497 6 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 1205	-0 0211	0 0434	-0 0606	-0 0042	-0 0085	-0 0219	-0 1204	0 0434	-0 0108	0 0229	-0.0085
1	0 000	0 2	0 1038	-0 0220	0 0440	-0 0527	-0 0034	-0 0065	-0 0227	-0 1036	0 0440	-0 0086	0 0199	-0 0065
2	0 000	0 2	0 1002	0 0192	0 0441	-0 0479	-0 0041	-0 0076	0 0185	-0 1003	0 0441	-0 0104	0.0181	-0 0076
3	0 000	0 2	0 1191	0 0190	0 0439	-0 0596	-0 0047	-0 0084	0 0182	-0 1193	0.0439	-0 0121	0 0225	-0 0084
4	0 003	49 5	0 1110	0 0005	0 0446	-0 0554	-0 0043	-0 0085	-0 0003	-0 1110	0 0446	-0 0110	0.0209	-0 0085
5	0 006	99 3	0 1130	-0 0015	0 0448	-0 0554	-0 0043	-0 0094	-0 0023	-0 1130	0 0448	-0 0111	0 0209	-0.0094
6	0 012	199 8	0 1144	0 0003	0 0444	-0 0567	-0 0045	-0 0110	-0 0005	-0 1144	0 0444	-0 0114	0 0214	-0 0110
7	0 018	300 9	0 1148	0 0008	0 0443	-0 0577	-0 0048	-0 0126	-0 0001	-0 1148	0 0443	-0 0122	0 0218	-0 0126
8	0 024	399 8	0 1154	0 0023	0 0442	-0 0583	-0 0049	-0 0140	0 0015	-0 1154	0 0442	-0 0126	0.0220	-0 0140
9	0 030	499 8	0 1163	0 0041	0.0441	-0 0591	-0 0051	-0 0157	0 0033	-0 1164	0 0441	-0 0130	0 0223	-0 0157
10	0 036	599 3	0 1176	0 0054	0 0436	-0 0602	-0 0055	-0.0173	0 0046	-0 1176	0 0436	-0 0141	0.0227	-0 0173
11	-0 003	-50 7	0 1141	-0 0028	0 0429	-0 0564	-0 0039	-0 0070	-0 0036	-0 1141	0 0429	-0 0100	0.0213	-0 0070
12	-0 006	-101 0	0 1128	-0 0048	0 0441	-0 0548	-0 0039	-0 0061	-0 0056	-0 1127	0 0441	-0 0100	0.0207	-0 0061
13	-0 012	-200 2	0 1114	-0 0063	0 0444	-0 0540	-0 0036	-0 0044	-0 0071	-0 1114	0 0444	-0 0093	0 0204	-0 0044
14	-0 018	-301 0	0 1103	-0 0062	0 0443	-0 0527	-0 0033	-0 0028	-0 0070	-0 1103	0 0443	-0 0082	0.0199	-0 0028
15	-0 024	-401 5	0 1083	-0 0061	0 0443	-0 0518	-0 0032	-0 0012	-0 0069	-0 1082	0 0443	-0 0082	0 0196	-0 0012
16	-0 030	-501 7	0 1074	-0 0074	0 0438	-0 0507	-0 0033	0 0004	-0 0081	-0 1073	0 0438	-0 0084	0.0191	0.0004
17	-0 036	-601 1	0 1072	-0 0086	0 0440	-0 0495	-0 0032	0 0023	-0 0093	-0 1071	0.0440	-0 0081	0 0187	0.0023
18	0 000	0 2	0 1233	-0 0238	0 0430	-0 0621	-0 0043	-0 0084	-0 0247	-0 1232	0 0430	-0 0110	0.0234	-0 0084

TABLE 1.- CONTINUED

Run = 7	Q = 369 00 psi	Sigma= 5 00 °	Pt= 1866 1 psf
Config= 1	M = 0 600	Psi = -90 40 °	Ps= 1470 0 psf
File1 = 7CTD	Rn= 0 885 x10⁶	Alpha= -0 03 °	Tt= 531 0 °R
File2 = 8CTD	V = 654 0 ft/s	Beta = -5 00 °	Ts= 495 3 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 1179	-0 0221	0 0431	-0 0554	0 0017	0 0084	0 0213	0 1180	0.0431	-0 0042	-0 0209	0 0084
1	0 000	0 2	0 0971	-0 0257	0 0435	-0 0436	0 0039	0 0078	0 0250	0 0972	0 0435	-0 0100	-0 0165	0 0078
2	0 000	0 2	0 0980	0 0154	0 0436	-0 0436	0 0029	0 0065	-0 0160	0 0979	0 0436	-0 0074	-0 0165	0 0065
3	0 000	0 2	0 1145	0 0180	0 0433	-0 0518	0 0011	0 0084	-0 0188	0 1143	0 0433	-0 0025	-0 0195	0 0084
4	0 003	50 6	0 1054	-0 0040	0 0438	-0 0475	0 0023	0 0070	0 0032	0 1054	0 0438	-0 0058	-0 0179	0 0070
5	0 006	100 5	0 1044	-0 0039	0 0438	-0 0467	0 0021	0 0061	0 0031	0 1044	0 0438	-0 0052	-0 0176	0 0061
6	0 012	200 4	0 1044	-0 0015	0 0436	-0 0459	0 0019	0 0045	0 0008	0 1044	0 0436	-0.0047	-0 0173	0 0045
7	0 018	299 7	0 1046	0 0022	0 0432	-0 0452	0 0016	0 0028	-0 0029	0 1045	0 0432	-0 0039	-0 0171	0 0028
8	0 024	399 6	0 1049	0 0017	0 0429	-0 0442	0 0014	0 0012	-0 0025	0 1049	0 0429	-0 0034	-0 0167	0 0012
9	0 030	499 2	0 1055	0 0020	0 0424	-0 0436	0 0013	-0 0006	-0 0028	0 1054	0 0424	-0 0031	-0 0164	-0 0006
10	0 036	599 6	0 1070	0 0040	0 0419	-0 0427	0 0012	-0 0023	-0 0047	0 1070	0 0419	-0 0028	-0 0161	-0 0023
11	-0 003	-50 6	0 1123	-0 0058	0 0423	-0 0518	0 0026	0 0087	0 0050	0 1124	0 0423	-0 0067	-0 0196	0 0087
12	-0 006	-101 3	0 1093	-0 0058	0 0435	-0 0507	0 0028	0 0096	0 0050	0 1093	0 0435	-0 0070	-0 0191	0 0096
13	-0 012	-200 4	0 1090	-0 0064	0 0435	-0 0505	0 0032	0 0112	0 0057	0 1091	0 0435	-0 0082	-0 0191	0 0112
14	-0 018	-300 8	0 1093	-0 0091	0 0434	-0 0516	0 0036	0 0128	0 0083	0 1094	0 0434	-0 0092	-0 0195	0 0128
15	-0 024	-400 0	0 1080	-0 0094	0 0429	-0 0522	0 0040	0 0144	0 0087	0 1081	0 0429	-0 0102	-0 0197	0 0144
16	-0 030	-501 2	0 1098	-0 0106	0 0424	-0 0538	0 0041	0 0162	0 0098	0 1099	0 0424	-0 0105	-0 0203	0 0162
17	-0 036	-600 5	0 1139	-0 0111	0 0421	-0 0555	0 0042	0 0180	0 0103	0 1140	0 0421	-0 0107	-0 0210	0 0180
18	0 000	0 2	0 1213	-0 0233	0 0415	-0 0570	0 0016	0 0084	0 0225	0 1215	0 0415	-0 0039	-0 0215	0 0084

TABLE 1.- CONTINUED

Run = 9	Q = 377 38 psi	Sigma= 7 50 °	Pt= 1903 6 psf
Config= 1	M = 0 601	Psi = 0 00 °	Ps= 1498 4 psf
File1 = 9CTD	Rn= 0 883 x10⁶	Alpha= 7 50 °	Tt= 540 7 °R
File2 = 10CTD	V = 661 0 ft/s	Beta = 0 00 °	Ts= 504 3 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 5569	-0 0081	0 0354	0 0078	0 0014	-0 0013	0 5569	-0 0081	0 0354	0 0078	0 0014	-0 0013
1	0 000	0 2	0 5183	-0 0103	0 0361	0 0040	0 0021	-0 0015	0 5183	-0 0103	0 0361	0 0040	0 0021	-0 0015
2	0 000	0 2	0 5135	0 0045	0 0360	0 0082	-0 0002	0 0001	0 5135	0 0045	0 0360	0 0082	-0 0002	0 0001
3	0 000	0 2	0 5537	0 0066	0 0356	0 0112	-0 0010	-0 0007	0 5537	0 0066	0 0356	0 0112	-0 0010	-0 0007
4	0 036	599 5	0 5327	0 0042	0 0354	0 0106	-0 0010	-0 0068	0 5327	0 0042	0 0354	0 0106	-0 0010	-0 0068
5	0 030	499 0	0 5335	0 0036	0 0347	0 0083	-0 0007	-0 0057	0 5335	0 0036	0 0347	0 0083	-0 0007	-0 0057
6	0 024	399 8	0 5372	0 0027	0 0350	0 0082	-0 0005	-0 0047	0 5372	0 0027	0 0350	0 0082	-0.0005	-0 0047
7	0 018	299 6	0 5358	0 0021	0 0352	0 0080	-0 0003	-0 0037	0 5358	0 0021	0 0352	0 0080	-0.0003	-0 0037
8	0 012	199 6	0 5387	0 0004	0 0358	0 0070	0 0001	-0 0027	0 5387	0 0004	0 0358	0 0070	0 0001	-0 0027
9	0 006	100 1	0 5413	-0 0006	0 0362	0 0067	0.0003	-0 0018	0 5413	-0 0006	0 0362	0 0067	0 0003	-0 0018
10	-0 006	-100 6	0 5341	-0 0030	0 0359	0 0068	0 0009	0 0002	0 5341	-0 0030	0 0359	0 0068	0 0009	0 0002
11	-0 012	-200 6	0 5349	-0 0042	0 0356	0 0083	0 0012	0 0012	0 5349	-0 0042	0 0356	0 0083	0 0012	0 0012
12	-0 018	-300 3	0 5332	-0 0058	0 0353	0 0088	0 0015	0 0023	0 5332	-0 0058	0 0353	0 0088	0 0015	0.0023
13	-0 024	-400 4	0 5333	-0 0068	0 0345	0 0085	0 0017	0 0034	0 5333	-0 0068	0 0345	0 0085	0 0017	0 0034
14	-0 030	-500 8	0 5345	-0 0075	0 0341	0 0080	0.0020	0 0046	0 5345	-0 0075	0 0341	0 0080	0 0020	0 0046
15	-0 036	-601 1	0 5337	-0 0082	0 0338	0 0080	0 0023	0 0058	0 5337	-0 0082	0 0338	0 0080	0 0023	0 0058
16	-0 033	-550 6	0 5358	-0 0080	0 0336	0 0074	0 0022	0 0052	0 5358	-0 0080	0 0336	0 0074	0 0022	0 0052
17	-0 027	-449 7	0 5360	-0 0064	0 0341	0 0072	0.0018	0 0039	0 5360	-0 0064	0 0341	0 0072	0 0018	0 0039
18	-0 021	-350 0	0 5359	-0 0057	0 0343	0 0078	0 0016	0 0028	0 5359	-0 0057	0 0343	0 0078	0 0016	0 0028
19	-0 015	-250 1	0 5343	-0 0043	0 0348	0 0073	0.0012	0 0016	0 5343	-0 0043	0 0348	0 0073	0.0012	0 0016
20	-0 009	-149 4	0 5346	-0 0040	0 0352	0 0063	0 0011	0 0007	0 5346	-0 0040	0 0352	0 0063	0 0011	0 0007
21	-0 003	-50 5	0 5341	-0 0026	0 0352	0 0073	0.0008	-0 0003	0 5341	-0 0026	0 0352	0 0073	0.0008	-0 0003
22	0 003	50 4	0 5324	-0 0011	0 0351	0 0079	0 0006	-0 0014	0 5324	-0 0011	0 0351	0 0079	0 0006	-0 0014
23	0 009	150 6	0 5321	-0 0005	0 0350	0 0081	0 0003	-0 0023	0 5321	-0 0005	0 0350	0 0081	0 0003	-0 0023
24	0 015	250 7	0 5349	0 0012	0 0348	0 0089	0 0000	-0 0032	0 5349	0 0012	0 0348	0 0089	0.0000	-0 0032
25	0 021	350 9	0 5318	0 0027	0 0339	0 0095	-0 0003	-0 0042	0 5318	0 0027	0 0339	0 0095	-0 0003	-0 0042
26	0 027	451 1	0 5331	0 0026	0 0338	0 0091	-0 0005	-0 0051	0 5331	0 0026	0 0338	0 0091	-0 0005	-0 0051
27	0 033	551 2	0 5341	0 0038	0 0335	0 0088	-0 0008	-0 0062	0 5341	0 0038	0 0335	0 0088	-0 0008	-0 0062
28	0 000	0 2	0 5565	-0 0073	0 0341	0 0081	0 0014	-0 0014	0 5565	-0 0073	0 0341	0 0081	0 0014	-0 0014

TABLE 1.- CONTINUED

Run = 11	Q = 374 07 psi	Sigma= 7 50 ^{0}	Pt= 1893 9 psf
Config= 1	M = 0 599	Psi = 42 00 ^{0}	Ps= 1492.4 psf
File1 = 11CTD	Rn= 0 888 x10^{6}	Alpha= 5 59 ^{0}	Tt= 535 7 ^{0}R
File2 = 12CTD	V = 656 5 ft/s	Beta = 5 01 ^{0}	Ts= 499 8 ^{0}R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 3898	0 1789	0 0345	-0 0437	0 0137	-0 0132	0 4094	-0.1279	0 0345	-0.0081	0 0212	-0 0132
1	0 000	0 2	0 3500	0 1606	0 0356	-0 0382	0 0131	-0 0132	0 3676	-0 1149	0 0356	-0 0051	0 0194	-0.0132
2	0.000	0 2	0 3676	0 1979	0 0351	-0 0307	0 0098	-0 0107	0 4056	-0 0989	0 0351	-0 0055	0.0150	-0 0107
3	0 000	0 2	0 4047	0 2132	0 0340	-0 0324	0 0116	-0 0135	0 4434	-0 1123	0 0340	-0 0034	0 0168	-0 0135
4	0 036	601 6	0 3727	0 1936	0 0339	-0 0302	0 0119	-0 0246	0 4065	-0 1055	0 0339	-0 0013	0 0165	-0 0246
5	0 030	501 4	0 3756	0 1940	0 0332	-0 0321	0 0118	-0 0222	0 4089	-0 1071	0 0332	-0 0029	0 0169	-0.0222
6	0 024	401 1	0 3771	0 1927	0 0330	-0 0332	0 0119	-0 0206	0 4092	-0 1091	0 0330	-0 0036	0 0172	-0 0206
7	0.018	300 6	0 3784	0 1915	0 0333	-0 0346	0 0119	-0 0184	0 4094	-0 1109	0 0333	-0 0046	0.0176	-0 0184
8	0.012	199 7	0 3800	0 1911	0 0334	-0 0349	0 0123	-0 0164	0 4102	-0 1123	0.0334	-0 0042	0 0180	-0 0164
9	0 006	99 6	0 3777	0 1911	0 0338	-0 0347	0 0122	-0 0144	0 4085	-0 1107	0 0338	-0 0041	0 0178	-0 0144
10	-0.006	-100 4	0 3767	0 1874	0 0336	-0 0349	0 0125	-0 0106	0 4053	-0 1129	0 0336	-0 0037	0 0181	-0 0106
11	-0.012	-199 8	0 3771	0 1869	0 0335	-0 0343	0 0126	-0 0084	0 4053	-0 1134	0 0335	-0 0031	0 0180	-0 0084
12	-0.018	-298 8	0 3765	0 1853	0 0330	-0 0346	0 0129	-0 0066	0 4038	-0 1142	0 0330	-0 0028	0 0183	-0 0066
13	-0.024	-397 3	0 3756	0 1841	0 0329	-0 0339	0 0131	-0 0046	0 4024	-0 1145	0 0329	-0 0020	0 0183	-0 0046
14	-0.030	-500 0	0 3742	0 1820	0 0329	-0 0340	0 0134	-0 0029	0 3999	-0 1151	0.0329	-0 0015	0 0185	-0 0029
15	-0.036	-600 4	0 3747	0 1804	0 0325	-0 0347	0 0136	-0 0009	0 3992	-0.1167	0 0325	-0 0017	0 0189	-0 0009
16	-0 033	-548 4	0 3755	0 1818	0 0325	-0 0349	0 0134	-0 0020	0 4007	-0 1162	0.0325	-0 0021	0 0188	-0 0020
17	-0.027	-448 3	0 3767	0 1826	0 0328	-0 0354	0 0132	-0 0038	0 4021	-0 1164	0 0328	-0 0028	0 0188	-0 0038
18	-0.021	-348 9	0 3792	0 1845	0 0324	-0 0355	0 0133	-0 0056	0 4053	-0 1166	0 0324	-0 0028	0 0188	-0 0056
19	-0.015	-248 8	0 3793	0 1876	0 0330	-0 0351	0 0128	-0 0074	0 4074	-0 1144	0 0330	-0 0033	0 0184	-0 0074
20	-0.009	-149 5	0 3775	0 1869	0 0332	-0 0355	0 0128	-0 0094	0 4056	-0 1137	0 0332	-0 0037	0 0184	-0 0094
21	-0.003	-50 3	0 3761	0 1878	0 0325	-0 0344	0 0125	-0 0112	0 4052	-0 1121	0 0325	-0 0035	0 0180	-0 0112
22	0.003	50 1	0 3754	0 1895	0 0323	-0 0336	0 0123	-0 0131	0 4058	-0 1104	0 0323	-0 0032	0 0176	-0 0131
23	0.006	100 4	0 3766	0 1906	0 0327	-0 0336	0 0123	-0 0140	0 4074	-0 1104	0 0327	-0 0032	0 0176	-0 0140
24	0.009	150 4	0 3771	0 1925	0 0322	-0 0331	0 0121	-0 0150	0 4090	-0 1093	0 0322	-0 0032	0 0173	-0 0150
25	0.015	250 0	0 3738	0 1911	0 0317	-0 0328	0 0121	-0 0171	0 4056	-0 1081	0 0317	-0 0030	0 0173	-0 0171
26	0.021	349 2	0 3753	0 1934	0 0315	-0 0318	0 0121	-0 0192	0 4083	-0 1075	0 0315	-0 0021	0 0171	-0 0192
27	0.027	448 8	0 3748	0 1930	0 0310	-0 0308	0 0122	-0 0211	0 4077	-0 1074	0 0310	-0 0012	0 0169	-0 0211
28	0.033	548 2	0 3730	0 1921	0 0312	-0 0309	0 0121	-0 0233	0 4058	-0 1069	0 0312	-0 0014	0 0168	-0 0233
29	0 000	0 2	0 3909	0 1813	0 0325	-0 0423	0 0141	-0 0130	0 4118	-0 1268	0 0325	-0 0064	0 0212	-0 0130

TABLE 1.- CONTINUED

Run = 13	Q = 370 84 psi	Sigma= 7 50 °	Pt= 1874 4 psf
Config= 1	M = 0 600	Psi = -42 00 °	Ps= 1476.3 psf
File1 = 13CTD	Rn= 0.883 x10⁶	Alpha= 5 59 °	Tt= 534 0 °R
File2 = 14CTD	V = 656 1 ft/s	Beta = -5 01 °	Ts= 498 1 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 4036	-0 2236	0 0329	-0 0270	-0 0100	0 0109	0 4495	0 1039	0 0329	-0 0024	-0 0142	0 0109
1	0 000	0 2	0 3680	-0 2133	0 0337	-0 0253	-0 0055	0 0101	0 4162	0 0877	0 0337	-0 0091	-0 0105	0 0101
2	0 000	0 2	0 3463	-0 1767	0 0340	-0 0280	-0 0088	0 0108	0 3756	0 1005	0 0340	-0 0053	-0 0136	0 0108
3	0 000	0 2	0 3840	-0 1910	0 0331	-0 0299	-0 0118	0 0130	0 4132	0 1150	0 0331	-0 0012	-0 0163	0 0130
4	0 036	600 9	0 3685	-0 1886	0 0329	-0 0254	-0 0108	-0 0011	0 4000	0 1064	0 0329	0 0003	-0 0145	-0 0011
5	0 030	499 2	0 3717	-0 1901	0 0326	-0 0265	-0 0106	0 0012	0 4035	0 1075	0 0326	-0 0010	-0 0145	0 0012
6	0 024	398 7	0 3736	-0 1913	0 0323	-0 0272	-0 0104	0 0032	0 4057	0 1078	0 0323	-0 0018	-0 0146	0 0032
7	0 018	300 8	0 3754	-0 1941	0 0324	-0 0276	-0 0101	0 0053	0 4089	0 1070	0 0324	-0 0026	-0 0145	0 0053
8	0 012	200 5	0 3770	-0 1977	0 0320	-0 0270	-0 0096	0 0072	0 4125	0 1054	0 0320	-0 0031	-0 0139	0 0072
9	0 006	99 9	0 3761	-0 1978	0 0325	-0 0273	-0 0092	0 0093	0 4119	0 1047	0 0325	-0 0039	-0 0137	0 0093
10	-0 006	-100 1	0 3771	-0 2030	0 0329	-0 0270	-0 0087	0 0129	0 4160	0 1015	0 0329	-0 0047	-0 0133	0 0129
11	-0 012	-200 5	0 3779	-0 2038	0 0331	-0 0267	-0 0086	0 0148	0 4173	0 1014	0 0331	-0 0046	-0 0131	0 0148
12	-0 018	-301 1	0 3764	-0 2055	0 0329	-0 0262	-0 0084	0 0167	0 4172	0 0991	0 0329	-0 0047	-0 0128	0 0167
13	-0 024	-400 3	0 3782	-0 2067	0 0327	-0 0266	-0 0083	0 0183	0 4193	0 0995	0 0327	-0 0051	-0 0129	0 0183
14	-0 030	-502 4	0 3760	-0 2062	0 0328	-0 0264	-0 0081	0 0200	0 4174	0 0984	0 0328	-0 0052	-0 0127	0 0200
15	-0 036	-603 1	0 3787	-0 2075	0 0329	-0 0274	-0 0080	0 0217	0 4203	0 0992	0 0329	-0 0063	-0 0128	0 0217
16	-0 033	-548 0	0 3794	-0 2072	0 0328	-0 0275	-0 0081	0 0207	0 4206	0 0999	0 0328	-0 0060	-0 0130	0 0207
17	-0 027	-446 5	0 3810	-0 2069	0 0323	-0 0279	-0 0083	0 0191	0 4216	0 1011	0 0323	-0 0061	-0 0132	0 0191
18	-0 021	-347 0	0 3804	-0 2056	0 0318	-0 0280	-0 0085	0 0173	0 4203	0 1017	0 0318	-0 0057	-0 0134	0 0173
19	-0 015	-248 1	0 3797	-0 2034	0 0322	-0 0279	-0 0087	0 0155	0 4183	0 1029	0 0322	-0 0054	-0 0135	0 0155
20	-0 009	-148 8	0 3788	-0 2032	0 0323	-0 0278	-0 0088	0 0138	0 4175	0 1024	0 0323	-0 0050	-0 0136	0 0138
21	-0 003	-49 0	0 3751	-0 2015	0 0323	-0 0269	-0 0089	0 0121	0 4136	0 1012	0 0323	-0 0043	-0 0134	0 0121
22	0 003	49 9	0 3749	-0 1988	0 0324	-0 0267	-0 0093	0 0101	0 4116	0 1031	0 0324	-0 0034	-0 0136	0 0101
23	0 009	150 1	0 3728	-0 1961	0 0315	-0 0264	-0 0094	0 0082	0 4082	0 1037	0 0315	-0 0029	-0 0137	0 0082
24	0 015	250 3	0 3728	-0 1960	0 0313	-0 0260	-0 0098	0 0063	0 4082	0 1038	0 0313	-0 0020	-0 0138	0 0063
25	0 021	350 6	0 3742	-0 1945	0 0309	-0 0262	-0 0101	0 0043	0 4082	0 1058	0 0309	-0 0015	-0 0141	0 0043
26	0 027	450 4	0 3718	-0 1911	0 0309	-0 0267	-0 0104	0 0022	0 4042	0 1068	0 0309	-0 0014	-0 0145	0 0022
27	0 033	549 3	0 3704	-0 1890	0 0311	-0 0269	-0 0106	0 0002	0 4017	0 1074	0 0311	-0 0013	-0 0146	0 0002
28	0 000	0 2	0 4104	-0 2227	0 0326	-0 0304	-0 0102	0 0111	0 4540	0 1091	0 0326	-0 0045	-0 0153	0 0111

TABLE 1.- CONTINUED

Run = 15	Q = 367 07 psi	Sigma= 10 00 °	Pt= 1848 3 psf
Config= 1	M = 0 601	Psi = 0 00 °	Ps= 1454 1 psf
File1 = 15CTD	Rn= 0 885 x10⁶	Alpha= 10 00 °	Tt= 528 0 °R
File2 = 16CTD	V = 653 9 ft/s	Beta = 0 00 °	Ts= 492 4 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 6994	-0 0043	0 0329	0 0290	0 0008	-0 0003	0 6994	-0 0043	0 0329	0 0290	0 0008	-0 0003
1	0 000	0 2	0 6530	-0 0077	0 0337	0 0256	0 0018	0 0002	0 6530	-0 0077	0 0337	0 0256	0 0018	0 0002
2	0 000	0 2	0 6560	0 0055	0 0336	0 0297	-0 0001	0 0018	0 6560	0 0055	0 0336	0 0297	-0 0001	0 0018
3	0 000	0 2	0 7012	0 0077	0 0327	0 0324	-0 0010	0 0001	0 7012	0 0077	0 0327	0 0324	-0 0010	0 0001
4	0 003	51 3	0 6747	0 0004	0 0329	0 0308	0 0003	-0 0000	0 6747	0 0004	0 0329	0 0308	0 0003	-0 0000
5	0 006	100 2	0 6778	0 0021	0 0331	0 0301	-0 0000	-0 0007	0 6778	0 0021	0 0331	0.0301	-0 0000	-0 0007
6	0.012	200 7	0 6765	0 0038	0 0327	0 0285	-0 0004	-0 0019	0 6765	0 0038	0 0327	0 0285	-0 0004	-0 0019
7	0 018	301 9	0 6795	0 0051	0 0322	0 0287	-0 0009	-0 0031	0 6795	0 0051	0 0322	0 0287	-0 0009	-0 0031
8	0 024	402 1	0 6822	0 0078	0 0318	0 0280	-0 0014	-0 0042	0 6822	0 0078	0 0318	0 0280	-0 0014	-0 0042
9	0 030	502 0	0 6844	0 0082	0 0315	0 0274	-0 0017	-0 0053	0 6844	0 0082	0 0315	0 0274	-0 0017	-0 0053
10	0 036	601 0	0 6865	0 0104	0 0312	0 0265	-0 0022	-0 0066	0 6865	0 0104	0 0312	0 0265	-0 0022	-0 0066
11	-0 003	-50 8	0 6810	-0 0011	0 0320	0 0273	0 0009	0 0009	0 6810	-0 0011	0 0320	0 0273	0 0009	0 0009
12	-0 006	-100 7	0 6799	-0 0017	0 0329	0 0284	0 0010	0 0016	0 6799	-0 0017	0 0329	0 0284	0 0010	0 0016
13	-0 012	-200 6	0 6784	-0 0036	0 0331	0 0282	0 0016	0 0026	0 6784	-0 0036	0 0331	0 0282	0 0016	0 0026
14	-0 018	-300 5	0 6771	-0 0052	0 0323	0 0285	0 0021	0 0036	0 6771	-0 0052	0 0323	0 0285	0 0021	0 0036
15	-0 024	-400 8	0 6752	-0 0064	0 0316	0 0284	0 0024	0 0046	0 6752	-0 0064	0 0316	0.0284	0 0024	0 0046
16	-0 030	-500 8	0 6769	-0 0074	0 0315	0 0275	0 0028	0 0055	0 6769	-0 0074	0 0315	0 0275	0 0028	0 0055
17	-0 036	-599 8	0 6790	-0 0093	0 0313	0 0265	0 0033	0 0063	0 6790	-0 0093	0 0313	0 0265	0 0033	0 0063
18	0 000	0 2	0 7040	-0 0064	0 0322	0 0278	0 0011	-0 0005	0 7040	-0 0064	0 0322	0 0278	0 0011	-0 0005

TABLE 1.- CONTINUED

Run = 17	Q = 365 64 psi	Sigma= 10 00 °	Pt= 1848 7 psf
Config= 1	M = 0 600	Psi = 29 80 °	Ps= 1456 2 psf
File1 = 17CTD	Rn= 0 885 x10⁶	Alpha= 8 70 °	Tt= 527 3 °R
File2 = 18CTD	V = 651 9 ft/s	Beta = 4 95 °	Ts= 491 9 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 5733	0 1892	0 0309	-0 0011	0 0209	-0 0128	0 5915	-0 1207	0 0309	0 0265	0 0183	-0 0128
1	0.000	0 2	0 5335	0 1781	0 0319	0 0003	0 0203	-0 0125	0 5515	-0 1105	0 0319	0 0269	0 0176	-0 0125
2	0 000	0 2	0.5467	0 2041	0 0313	0 0068	0 0168	-0 0108	0 5759	-0 0946	0 0313	0 0280	0 0133	-0 0108
3	0 000	0.2	0 5786	0 2165	0 0312	0 0071	0 0169	-0 0116	0 6097	-0 0997	0 0312	0 0284	0 0133	-0 0116
4	0 003	50 7	0 5555	0 1982	0 0316	0 0038	0 0183	-0 0121	0 5806	-0 1041	0 0316	0 0274	0 0152	-0 0121
5	0 006	100 5	0 5572	0 1988	0 0316	0 0033	0 0182	-0 0127	0 5823	-0 1044	0 0316	0 0268	0.0151	-0 0127
6	0 012	200 7	0.5590	0 1994	0 0315	0 0018	0 0177	-0 0138	0 5842	-0 1047	0 0315	0 0249	0 0151	-0 0138
7	0 018	301 4	0 5589	0 2023	0 0313	0 0013	0 0171	-0 0148	0 5856	-0 1022	0 0313	0 0236	0 0146	-0 0148
8	0 024	400 3	0 5630	0 2060	0 0312	0 0007	0 0165	-0 0159	0 5910	-0 1010	0 0312	0 0224	0 0142	-0 0159
9	0 030	499 7	0 5631	0 2068	0 0313	-0 0001	0 0159	-0 0170	0 5914	-0 1004	0 0313	0 0208	0 0138	-0 0170
10	0 036	597 9	0 5646	0 2102	0 0304	0 0003	0 0151	-0 0181	0 5944	-0 0982	0 0304	0 0202	0 0131	-0 0181
11	-0 003	-51 2	0 5615	0 1962	0 0303	0 0033	0 0192	-0 0112	0 5847	-0 1088	0 0303	0 0282	0 0160	-0 0112
12	-0 006	-100 4	0 5594	0 1953	0 0310	0 0057	0 0195	-0 0106	0 5825	-0 1086	0 0310	0.0307	0 0158	-0 0106
13	-0 012	-201 0	0 5583	0 1948	0 0309	0 0091	0 0200	-0 0096	0 5813	-0 1084	0 0309	0 0342	0 0157	-0 0096
14	-0 024	-402 2	0 5549	0 1919	0 0302	0 0159	0 0213	-0 0075	0 5769	-0 1092	0 0302	0 0419	0 0155	-0 0075
15	-0 030	-499 6	0 5518	0 1911	0 0295	0 0176	0 0215	-0 0066	0 5738	-0 1084	0 0295	0 0436	0 0154	-0 0066
16	-0 036	-600 4	0 5568	0 1914	0 0284	0 0180	0 0217	-0 0055	0 5784	-0 1106	0 0284	0.0442	0.0155	-0 0055
17	-0 018	-301 0	0 5627	0 1935	0 0304	0 0093	0 0205	-0 0087	0 5844	-0 1117	0 0304	0 0350	0 0160	-0 0087
18	0 000	0 2	0 5755	0 1904	0 0305	-0 0029	0 0207	-0 0126	0 5940	-0 1208	0 0305	0 0247	0 0185	-0 0126

TABLE 1.- CONTINUED

Run = 19	Q = 369 11 psi	Sigma= 10 00 ^{0}	Pt= 1867 3 psf
Config= 1	M = 0 599	Psi = -29 80 ^{0}	Ps= 1471 1 psf
File1 = 19CTD	Rn= 0 980 x10^6	Alpha= 8 70 ^{0}	Tt= 533 7 ^{0}R
File2 = 20CTD	V = 655 6 ft/s	Beta = -4 95 ^{0}	Ts= 497 9 ^{0}R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 5886	-0 2269	0 0332	0 0042	-0 0142	0 0125	0 6235	0 0956	0 0332	0 0224	-0 0115	0 0125
1	0 000	0 2	0 5551	-0 2201	0 0337	0 0013	-0 0110	0 0110	0 5911	0 0849	0 0337	0 0157	-0 0093	0 0110
2	0 000	0 2	0 5420	-0 1958	0 0340	0 0027	-0 0153	0 0119	0 5676	0 0994	0 0340	0 0225	-0 0128	0 0119
3	0 000	0 2	0 5742	-0 2044	0 0335	0 0029	-0 0172	0 0137	0 5998	0 1080	0 0335	0 0251	-0 0144	0 0137
4	0 003	50 5	0 5660	-0 2108	0 0345	0 0030	-0 0147	0 0117	0 5959	0 0984	0 0345	0 0220	-0 0122	0 0117
5	0 006	99 7	0 5644	-0 2096	0 0344	0 0040	-0 0151	0 0113	0 5939	0 0986	0 0344	0 0233	-0 0123	0 0113
6	0 012	200 0	0 5647	-0 2065	0 0338	0 0032	-0 0158	0 0102	0 5926	0 1014	0 0338	0 0236	-0 0131	0 0102
7	0 018	300 1	0 5636	-0 2043	0 0338	0 0024	-0 0161	0 0092	0 5906	0 1028	0 0338	0 0233	-0 0135	0 0092
8	0 024	401 7	0 5634	-0 2019	0 0336	0 0042	-0 0168	0 0082	0 5892	0 1048	0 0336	0 0257	-0 0138	0 0082
9	0 030	500 0	0 5656	-0 2026	0 0339	0 0057	-0 0175	0 0072	0 5914	0 1053	0 0339	0 0280	-0 0141	0 0072
10	0 036	598 4	0 5695	-0 2014	0 0329	0 0011	-0 0180	0 0060	0 5943	0 1083	0 0329	0 0247	-0 0154	0 0060
11	-0 003	-49 4	0 5690	-0 2118	0 0335	0 0002	-0 0142	0 0126	0 5990	0 0990	0 0335	0 0189	-0 0123	0 0126
12	-0 036	-597 1	0 5708	-0 2238	0 0346	-0 0056	-0 0109	0 0186	0 6066	0 0894	0 0346	0 0095	-0 0105	0 0186
13	-0 030	-497 9	0 5675	-0 2203	0 0326	-0 0012	-0 0118	0 0175	0 6020	0 0909	0 0326	0 0144	-0 0104	0 0175
14	-0 024	-400 2	0 5704	-0 2180	0 0319	-0 0005	-0 0123	0 0164	0 6033	0 0943	0 0319	0 0158	-0 0108	0 0164
15	-0 018	-299 5	0 5745	-0 2161	0 0318	-0 0029	-0 0129	0 0154	0 6059	0 0980	0 0318	0 0144	-0 0117	0 0154
16	-0 012	-199 1	0 5711	-0 2139	0 0326	-0 0011	-0 0134	0 0143	0 6019	0 0982	0 0326	0 0167	-0 0118	0 0143
17	-0 006	-99 5	0 5696	-0 2128	0 0333	0 0012	-0 0138	0 0133	0 6001	0 0984	0 0333	0 0193	-0 0118	0 0133
18	-0 003	-49 3	0 5674	-0 2118	0 0336	0 0016	-0 0140	0 0128	0 5976	0 0982	0 0336	0 0198	-0 0119	0 0128
19	0 003	49 9	0 5655	-0 2104	0 0334	0 0029	-0 0147	0 0118	0 5953	0 0985	0 0334	0 0219	-0 0122	0 0118
20	0 006	100 2	0 5638	-0 2080	0 0333	0 0037	-0 0149	0 0113	0 5926	0 0997	0 0333	0 0229	-0 0122	0 0113
21	0 012	200 4	0 5655	-0 2068	0 0330	0 0028	-0 0156	0 0103	0 5935	0 1016	0 0330	0 0231	-0 0130	0 0103
22	0 018	299 5	0 5652	-0 2046	0 0326	0 0032	-0 0163	0 0093	0 5921	0 1033	0 0326	0 0242	-0 0135	0 0093
23	0 024	398 5	0 5657	-0 2036	0 0318	0 0040	-0 0166	0 0083	0 5921	0 1045	0 0318	0 0254	-0 0137	0 0083
24	0 030	497 5	0 5656	-0 2023	0 0320	0 0044	-0 0173	0 0072	0 5913	0 1055	0 0320	0 0266	-0 0142	0 0072
25	0 036	596 5	0 5709	-0 2010	0 0313	-0 0005	-0 0177	0 0061	0 5953	0 1093	0 0313	0 0229	-0 0155	0 0061
26	0 000	0 2	0 5904	-0 2261	0 0319	0 0028	-0 0143	0 0125	0 6247	0 0972	0 0319	0 0213	-0 0119	0 0125

TABLE 1.- CONTINUED

Run = 21	Q = 369 07 psi	Sigma= 15 00 °	Pt= 1875 2 psf
Config= 1	M = 0.598	Psi = 0 00 °	Ps= 1479 2 psf
File1 = 21CTD	Rn= 0 885 x10⁶	Alpha= 15 00 °	Tt= 532 3 °R
File2 = 22CTD	V = 653 0 ft/s	Beta = 0 00 °	Ts= 496 8 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 0331	-0 0048	0 0291	0 0754	0 0011	0 0001	1 0331	-0 0048	0 0291	0 0754	0 0011	0 0001
1	0 000	0 2	0 9816	-0 0061	0 0308	0 0760	0 0020	-0 0000	0 9816	-0 0061	0 0308	0 0760	0 0020	-0 0000
2	0 000	0 2	0 9824	0 0103	0 0298	0 0804	-0 0002	0 0027	0 9824	0 0103	0 0298	0 0804	-0 0002	0 0027
3	0 000	0 2	1.0377	0 0101	0 0284	0 0789	-0 0007	0 0013	1 0377	0 0101	0 0284	0 0789	-0 0007	0 0013
4	0 036	599 0	1 0098	0 0198	0 0281	0 0760	-0 0049	-0 0081	1 0098	0 0198	0 0281	0 0760	-0 0049	-0 0081
5	0 030	498 7	1.0097	0 0166	0 0278	0 0761	-0 0039	-0 0065	1 0097	0.0166	0 0278	0.0761	-0 0039	-0 0065
6	0 024	400 0	1 0132	0 0143	0 0262	0 0760	-0.0031	-0 0049	1 0132	0 0143	0 0282	0.0760	-0 0031	-0 0049
7	0 018	300 4	1 0102	0 0125	0 0286	0 0756	-0 0024	-0 0038	1 0102	0 0125	0.0286	0 0756	-0 0024	-0 0038
8	0 012	199 7	1 0144	0 0090	0 0293	0 0762	-0 0014	-0.0021	1 0144	0 0090	0 0293	0 0762	-0 0014	-0 0021
9	0 006	99 5	1 0115	0 0052	0 0296	0 0765	-0 0003	-0 0006	1 0115	0 0052	0 0296	0 0765	-0 0003	-0 0006
10	0 003	50 2	1 0070	0 0045	0 0297	0 0762	0 0001	0 0002	1 0070	0 0045	0 0297	0 0762	0 0001	0 0002
11	-0 003	-50 6	1.0087	0 0012	0.0296	0 0783	0 0011	0 0017	1 0087	0 0012	0 0296	0 0783	0 0011	0 0017
12	-0 006	-100 6	1 0083	-0 0013	0 0295	0 0782	0 0017	0 0025	1 0083	-0 0013	0 0295	0 0782	0 0017	0 0025
13	-0 012	-199 6	1 0093	-0 0035	0 0291	0 0773	0 0027	0 0040	1 0093	-0 0035	0.0291	0 0773	0.0027	0 0040
14	-0 018	-299 2	1 0092	-0 0071	0 0286	0.0769	0 0037	0 0053	1 0092	-0 0071	0 0286	0.0769	0 0037	0.0053
15	-0 024	-399 0	1 0096	-0 0096	0 0280	0 0760	0 0046	0 0069	1.0096	-0 0096	0 0280	0 0760	0 0046	0 0069
16	-0 030	-500 0	1 0125	-0 0124	0 0276	0 0753	0 0056	0 0084	1 0125	-0 0124	0.0276	0 0753	0 0056	0 0084
17	-0 036	-598 8	1 0114	-0 0149	0 0264	0 0732	0 0065	0 0098	1 0114	-0 0149	0.0264	0 0732	0 0065	0 0098
18	-0 030	-497 9	1 0130	-0 0115	0 0267	0 0745	0 0055	0 0083	1 0130	-0 0115	0,0267	0 0745	0 0055	0.0083
19	-0 024	-397 8	1 0121	-0 0085	0 0270	0 0745	0 0046	0 0069	1 0121	-0 0085	0 0270	0 0745	0 0046	0 0069
20	-0 018	-298 8	1.0105	-0 0065	0 0276	0 0749	0 0036	0 0053	1 0105	-0 0065	0 0276	0 0749	0.0036	0 0053
21	-0 012	-199 6	1 0139	-0 0034	0 0283	0 0757	0 0026	0 0040	1 0139	-0 0034	0 0283	0 0757	0 0026	0 0040
22	-0 006	-99 6	1 0119	-0 0011	0 0288	0 0759	0 0018	0 0023	1 0119	-0 0011	0 0288	0.0759	0 0018	0 0023
23	-0.003	-49 2	1 0129	0 0009	0 0292	0 0768	0 0013	0 0015	1.0129	0 0009	0 0292	0.0768	0.0013	0 0015
24	0 003	49 9	1 0076	0 0036	0 0289	0 0776	0 0003	0 0001	1.0076	0 0036	0 0289	0 0776	0 0003	0 0001
25	0.006	100 2	1 0108	0 0045	0 0290	0 0775	-0 0001	-0 0006	1 0108	0 0045	0 0290	0.0775	-0 0001	-0 0006
26	0.012	200 0	1 0091	0 0086	0 0284	0 0779	-0 0012	-0 0022	1 0091	0 0086	0 0284	0 0779	-0 0012	-0 0022
27	0 018	299 3	1 0043	0 0116	0 0276	0 0769	-0.0020	-0 0036	1 0043	0 0116	0 0276	0 0769	-0 0020	-0 0036
28	0 024	398 5	1 0098	0 0137	0 0271	0 0767	-0 0029	-0 0050	1 0098	0 0137	0 0271	0 0767	-0 0029	-0 0050
29	0 030	497 7	1 0077	0 0159	0 0264	0 0766	-0 0037	-0 0065	1 0077	0 0159	0 0264	0 0766	-0 0037	-0 0065
30	0 036	596.7	1 0129	0 0195	0 0256	0 0745	-0 0047	-0 0079	1 0129	0 0195	0 0256	0 0745	-0 0047	-0 0079
31	0 000	0 2	1 0369	-0 0051	0 0277	0 0747	0 0012	0 0001	1 0369	-0 0051	0 0277	0 0747	0 0012	0 0001

TABLE 1.- CONTINUED

Run = 23	Q = 366 22 psi	Sigma= 15 00 °	Pt= 1857 4 psf
Config= 1	M = 0 598	Psi = 19 50 °	Ps= 1464 4 psf
File1 = 23CTD	Rn= 0 881 x10⁶	Alpha= 14 18 °	Tt= 530 5 °R
File2 = 24CTD	V = 652 6 ft/s	Beta = 4 96 °	Ts= 495 1 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 9247	0 1974	0 0282	0 0427	0 0227	-0 0157	0 9375	-0 1226	0 0282	0 0603	0 0160	-0 0157
1	0 000	0 2	0 8796	0 1890	0 0297	0 0440	0 0231	-0 0152	0 8922	-0 1155	0 0297	0 0619	0 0162	-0 0152
2	0 000	0 2	0 8923	0 2121	0 0293	0 0511	0 0202	-0 0134	0 9119	-0 0979	0 0293	0 0660	0 0126	-0 0134
3	0 000	0 2	0 9388	0 2231	0 0285	0 0500	0 0194	-0 0149	0 9594	-0 1030	0 0285	0 0643	0 0119	-0 0149
4	0 036	596 8	0 9146	0 2241	0 0282	0 0459	0 0159	-0 0207	0 9369	-0 0940	0 0282	0 0573	0 0092	-0 0207
5	0 030	498 1	0 9159	0 2202	0 0280	0 0456	0 0169	-0 0199	0 9369	-0 0981	0 0280	0 0579	0 0102	-0 0199
6	0 024	399 0	0 9173	0 2183	0 0285	0 0443	0 0178	-0 0189	0 9375	-0 1004	0 0285	0 0575	0 0112	-0 0189
7	0 018	299 7	0 9139	0 2147	0 0290	0 0441	0 0188	-0 0179	0 9331	-0 1026	0 0290	0 0582	0 0121	-0 0179
8	0 012	199 5	0 9151	0 2107	0 0289	0 0441	0 0198	-0 0170	0 9330	-0 1069	0 0289	0 0590	0 0131	-0 0170
9	0 006	99 7	0 9131	0 2088	0 0293	0 0447	0 0204	-0 0159	0 9304	-0 1080	0 0293	0 0602	0 0136	-0 0159
10	0 003	49 3	0 9103	0 2082	0 0296	0 0452	0 0208	-0 0155	0 9276	-0 1076	0 0296	0 0610	0 0139	-0 0155
11	-0 003	-51 0	0 9135	0 2051	0 0298	0 0455	0 0218	-0 0144	0 9296	-0 1116	0 0298	0 0622	0 0148	-0 0144
12	-0 006	-100 7	0 9125	0 2032	0 0291	0 0460	0 0223	-0 0138	0 9280	-0 1131	0 0291	0 0631	0 0152	-0 0138
13	-0 012	-200 4	0 9118	0 1996	0 0288	0 0455	0 0233	-0 0126	0 9262	-0 1162	0 0288	0 0635	0 0162	-0 0126
14	-0 018	-300 3	0 9129	0 1976	0 0284	0 0448	0 0243	-0 0116	0 9265	-0 1185	0 0284	0 0637	0 0172	-0 0116
15	-0 024	-399 8	0 9122	0 1952	0 0279	0 0439	0 0251	-0 0103	0 9250	-0 1205	0 0279	0 0636	0 0182	-0 0103
16	-0 030	-499 5	0 9142	0 1931	0 0274	0 0424	0 0260	-0 0092	0 9263	-0 1231	0 0274	0 0630	0 0192	-0 0092
17	-0 036	-599 1	0 9205	0 1919	0 0267	0 0404	0 0268	-0 0081	0 9318	-0 1263	0 0267	0 0618	0 0201	-0 0081
18	-0 030	-497 9	0 9136	0 1933	0 0270	0 0417	0 0260	-0 0094	0 9257	-0 1228	0 0270	0 0623	0 0192	-0 0094
19	-0 024	-398 7	0 9119	0 1942	0 0277	0 0416	0 0251	-0 0104	0 9244	-0 1213	0 0277	0 0615	0 0184	-0 0104
20	-0 018	-298 9	0 9150	0 1969	0 0284	0 0424	0 0243	-0 0115	0 9282	-0 1198	0 0284	0 0615	0 0176	-0 0115
21	-0 012	-199 1	0 9165	0 2002	0 0288	0 0430	0 0233	-0 0127	0 9308	-0 1172	0 0288	0 0611	0 0166	-0 0127
22	-0 006	-100 4	0 9152	0 2024	0 0291	0 0436	0 0224	-0 0138	0 9303	-0 1147	0 0291	0 0609	0 0156	-0 0138
23	-0 003	-49 7	0 9150	0 2046	0 0295	0 0442	0 0219	-0 0142	0 9308	-0 1126	0 0295	0 0610	0 0151	-0 0142
24	0 003	49 9	0 9117	0 2078	0 0295	0 0447	0 0208	-0 0154	0 9287	-0 1084	0 0295	0 0606	0 0140	-0 0154
25	0 006	100 4	0 9097	0 2077	0 0288	0 0442	0 0204	-0 0159	0 9269	-0 1079	0 0288	0 0598	0 0137	-0 0159
26	0 012	199 5	0 9135	0 2119	0 0284	0 0444	0 0197	-0 0169	0 9318	-0 1052	0 0284	0 0593	0 0130	-0 0169
27	0 018	299 5	0 9136	0 2155	0 0280	0 0438	0 0187	-0 0180	0 9331	-0 1019	0 0280	0 0579	0 0121	-0 0180
28	0 024	399 1	0 9136	0 2176	0 0275	0 0435	0 0178	-0 0189	0 9338	-0 0999	0 0275	0 0567	0 0113	-0 0189
29	0 030	499 0	0 9168	0 2213	0 0268	0 0436	0 0169	-0 0200	0 9380	-0 0974	0 0268	0 0560	0 0104	-0 0200
30	0 036	599 9	0 9178	0 2252	0 0262	0 0433	0 0158	-0 0210	0 9403	-0 0941	0 0262	0 0548	0 0095	-0 0210
31	0 000	0 2	0 9306	0 1987	0 0281	0 0391	0 0225	-0 0156	0 9436	-0 1233	0 0281	0 0568	0 0163	-0 0156

TABLE 1.- CONTINUED

Run = 25	Q = 368 52 psi	Sigma= 15 00 °	Pt= 1858 4 psf
Config= 1	M = 0 601	Psi = -19 50 °	Ps= 1462 7 psf
File1 = 25CTD	Rn= 0 886 x10⁶	Alpha= 14 18 °	Tt= 529 3 °R
File2 = 26CTD	V = 654.2 ft/s	Beta = -4 96 °	Ts= 493 7 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	0 9391	-0 2288	0 0276	0 0549	-0 0174	0.0168	0 9616	0 0978	0.0276	0 0671	-0 0095	0 0168
1	0 000	0 2	0 8967	-0 2205	0.0291	0 0552	-0 0157	0 0162	0 9189	0 0915	0 0291	0 0659	-0 0078	0 0162
2	0 000	0 2	0 8801	-0 1983	0 0282	0 0560	-0 0187	0 0176	0 8958	0 1069	0.0282	0.0693	-0 0106	0 0176
3	0 000	0 2	0 9304	-0 2080	0 0269	0 0535	-0 0201	0 0183	0.9464	0 1145	0.0269	0.0682	-0 0123	0 0183
4	0 036	600 3	0 9168	-0 1978	0 0258	0 0526	-0 0235	0 0097	0 9302	0 1195	0 0258	0 0705	-0.0156	0.0097
5	0 030	501 9	0 9181	-0 2005	0 0265	0 0526	-0.0227	0 0109	0 9324	0 1175	0 0265	0 0697	-0.0147	0 0109
6	0.024	401 4	0 9163	-0 2017	0 0268	0 0524	-0 0219	0 0122	0.9311	0.1158	0.0268	0 0687	-0 0140	0 0122
7	0 018	300 5	0 9173	-0 2043	0 0272	0 0526	-0 0211	0 0135	0 9329	0.1136	0.0272	0 0682	-0 0133	0 0135
8	0 012	200 4	0 9161	-0 2077	0 0276	0 0529	-0.0200	0 0147	0.9328	0.1100	0 0276	0 0676	-0.0122	0.0147
9	0 006	100.0	0 9195	-0 2119	0 0279	0 0532	-0 0189	0 0161	0.9375	0.1072	0.0279	0 0669	-0.0112	0 0161
10	0 003	50 6	0 9180	-0 2129	0 0281	0 0534	-0 0183	0 0166	0 9364	0 1058	0 0281	0 0666	-0 0105	0.0166
11	-0 003	-50 8	0 9161	-0 2167	0 0284	0 0535	-0 0173	0.0178	0.9358	0 1015	0 0284	0.0658	-0.0096	0 0178
12	-0 006	-100 7	0 9179	-0 2170	0 0285	0 0534	-0 0169	0 0184	0 9377	0 1019	0 0285	0 0653	-0 0092	0 0184
13	-0 012	-201 0	0 9159	-0 2191	0 0282	0 0528	-0 0160	0 0197	0.9365	0 0992	0 0282	0 0639	-0 0084	0 0197
14	-0.018	-301 8	0 9197	-0 2237	0 0281	0 0524	-0 0151	0 0208	0.9416	0.0962	0 0281	0 0628	-0 0077	0 0208
15	-0 024	-402.5	0 9208	-0 2262	0 0281	0 0514	-0.0142	0 0218	0 9435	0.0942	0 0281	0 0610	-0.0069	0 0218
16	-0.030	-502 2	0 9241	-0 2297	0 0271	0.0498	-0 0132	0 0229	0 9478	0 0920	0.0271	0 0586	-0 0061	0 0229
17	-0.036	-599 7	0 9242	-0 2331	0 0264	0 0480	-0.0122	0 0238	0.9490	0 0887	0 0264	0 0560	-0 0055	0 0238
18	-0.030	-500 3	0 9222	-0 2287	0 0269	0 0488	-0 0132	0 0228	0 9456	0 0923	0 0269	0 0577	-0 0063	0 0228
19	-0 024	-401 2	0 9217	-0 2249	0 0271	0 0495	-0 0143	0.0218	0.9439	0 0957	0 0271	0 0593	-0 0073	0 0218
20	-0.018	-300 5	0.9235	-0 2228	0 0278	0.0501	-0 0153	0.0207	0.9449	0 0982	0 0278	0 0608	-0 0081	0 0207
21	-0.012	-200 7	0 9205	-0 2195	0 0281	0 0514	-0.0163	0 0196	0.9410	0 1003	0 0281	0 0628	-0 0089	0 0196
22	-0 006	-100 6	0 9184	-0 2165	0 0283	0.0524	-0 0171	0 0184	0 9380	0 1025	0 0283	0 0644	-0 0095	0 0184
23	-0.003	-49.8	0 9142	-0 2153	0 0280	0 0532	-0 0174	0 0179	0 9336	0 1022	0 0280	0 0655	-0.0097	0 0179
24	0.003	50 1	0.9123	-0 2112	0 0283	0 0538	-0 0185	0 0167	0.9304	0 1055	0 0283	0.0671	-0 0107	0 0167
25	0 006	100 7	0 9154	-0 2110	0 0280	0.0541	-0.0190	0 0160	0 9333	0 1067	0 0280	0 0678	-0 0111	0 0160
26	0 012	199 9	0.9152	-0 2076	0 0276	0 0544	-0 0200	0 0148	0.9320	0 1098	0.0276	0 0690	-0 0120	0 0148
27	0 018	299.8	0 9151	-0 2046	0 0272	0.0534	-0 0209	0 0134	0 9309	0 1126	0 0272	0 0689	-0 0130	0 0134
28	0 024	399 4	0.9141	-0 2018	0 0266	0 0521	-0.0219	0 0121	0.9290	0 1149	0 0266	0 0685	-0 0140	0 0121
29	0.030	501 9	0 9212	-0.2005	0.0262	0.0515	-0 0228	0 0110	0 9353	0 1185	0.0262	0 0688	-0.0150	0 0110
30	0.036	601.4	0.9205	-0 1976	0 0248	0 0506	-0 0236	0 0097	0.9337	0 1211	0 0248	0 0685	-0 0159	0 0097
31	0.000	0.2	0.9461	-0.2275	0 0273	0 0513	-0 0177	0 0168	0 9678	0 1014	0 0273	0 0639	-0 0102	0 0168

TABLE 1.- CONTINUED

Run = 27	Q = 367 42 psi	Sigma= 20 00 °	Pt= 1848 9 psf
Config= 1	M = 0 302	Psi = 0 00 °	Ps= 1454 3 psf
File1 = 27CTD	Rn= 0 885 x10⁶	Alpha= 20 00 °	Tt= 528 1 °R
File2 = 28CTD	V = 654 3 ft/s	Beta = 0 00 °	Ts= 492 5 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 2262	-0 0084	0 0308	0 0592	-0 0002	0 0016	1 2262	-0 0084	0 0308	0 0592	-0 0002	0 0016
1	0 000	0 2	1 2148	-0 0103	0 0285	0 0649	0 0007	0 0031	1 2148	-0 0103	0 0285	0 0649	0 0007	0 0031
2	0 000	0 2	1 2080	-0 0000	0 0277	0 0687	0 0005	0 0016	1 2080	-0 0000	0 0277	0 0687	0 0005	0 0016
3	0 000	0 2	1 2164	0 0020	0 0296	0 0610	-0 0006	0 0013	1 2164	0 0020	0 0296	0 0610	-0 0006	0 0013
4	0 036	600 7	1 2285	0 0249	0 0272	0 0616	-0 0108	0 0056	1 2285	0 0249	0 0272	0 0616	-0 0108	0 0056
5	0 030	501 3	1 2276	0 0197	0 0272	0 0609	-0 0091	0 0052	1 2276	0 0197	0 0272	0 0609	-0 0091	0 0052
6	0 024	400 9	1 2261	0 0154	0 0276	0 0609	-0 0073	0 0045	1 2261	0 0154	0 0276	0 0609	-0 0073	0 0045
7	0 018	300 7	1 2230	0 0124	0 0286	0 0611	-0 0057	0 0040	1 2230	0 0124	0 0286	0 0611	-0 0057	0 0040
8	0 012	200 7	1 2216	0 0055	0 0288	0 0615	-0 0035	0 0033	1 2216	0 0055	0 0288	0 0615	-0 0035	0 0033
9	0 006	100 4	1 2187	0 0008	0 0289	0 0627	-0 0017	0 0026	1 2187	0 0008	0 0289	0 0627	-0 0017	0 0026
10	0 003	49 9	1 2190	-0 0015	0 0294	0 0631	-0 0008	0 0022	1 2190	-0 0015	0 0294	0 0631	-0 0008	0 0022
11	-0 003	-51 0	1 2142	-0 0071	0 0294	0 0635	0 0013	0 0015	1 2142	-0 0071	0 0294	0 0635	0 0013	0 0015
12	-0 006	-101 2	1 2197	-0 0095	0 0290	0 0639	0 0022	0 0012	1 2197	-0 0095	0 0290	0 0639	0 0022	0 0012
13	-0 012	-200 9	1 2175	-0 0146	0 0285	0 0634	0 0041	0 0005	1 2175	-0 0146	0 0285	0 0634	0 0041	0 0005
14	-0 018	-300 2	1 2202	-0 0196	0 0283	0 0634	0 0059	-0 0003	1 2202	-0 0196	0 0283	0 0634	0 0059	-0 0003
15	-0 024	-401 7	1 2217	-0 0237	0 0272	0 0633	0 0078	-0 0010	1 2217	-0 0237	0 0272	0 0633	0 0078	-0 0010
16	-0 030	-502 8	1 2201	-0 0283	0 0259	0 0628	0 0096	-0 0016	1 2201	-0 0283	0 0259	0 0628	0 0096	-0 0016
17	-0 036	-600 9	1 2254	-0 0345	0 0245	0 0615	0 0117	-0 0021	1 2254	-0 0345	0 0245	0 0615	0 0117	-0 0021
18	-0 030	-499 3	1 2265	-0 0281	0 0255	0 0607	0 0097	-0 0015	1 2265	-0 0281	0 0255	0 0607	0 0097	-0 0015
19	-0 024	-399 9	1 2276	-0 0230	0 0264	0 0609	0 0077	-0 0012	1 2276	-0 0230	0 0264	0 0609	0 0077	-0 0012
20	-0 018	-300 4	1 2223	-0 0196	0 0276	0 0615	0 0059	-0 0003	1 2223	-0 0196	0 0276	0 0615	0 0059	-0 0003
21	-0 012	-199 9	1 2227	-0 0140	0 0284	0 0611	0 0040	0 0004	1 2227	-0 0140	0 0284	0 0611	0 0040	0 0004
22	-0 006	-99 8	1 2196	-0 0098	0 0286	0 0620	0 0022	0 0011	1 2196	-0 0098	0 0286	0 0620	0 0022	0 0011
23	-0 003	-48 8	1 2169	-0 0076	0 0288	0 0634	0 0014	0 0015	1 2169	-0 0076	0 0288	0 0634	0 0014	0 0015
24	0 003	49 9	1 2186	-0 0016	0 0287	0 0636	-0 0007	0 0022	1 2186	-0 0016	0 0287	0 0636	-0 0007	0 0022
25	0 006	100 1	1 2199	0 0009	0 0286	0 0631	-0 0017	0 0027	1 2199	0 0009	0 0286	0 0631	-0 0017	0 0027
26	0 012	199 8	1 2187	0 0050	0 0281	0 0621	-0 0034	0 0034	1 2187	0 0050	0 0281	0 0621	-0 0034	0 0034
27	0 018	300 7	1 2205	0 0121	0 0276	0 0620	-0 0056	0 0040	1 2205	0 0121	0 0276	0 0620	-0 0056	0 0040
28	0 024	400 4	1 2293	0 0155	0 0276	0 0580	-0 0074	0 0047	1 2293	0 0155	0 0276	0 0580	-0 0074	0 0047
29	0 030	500 7	1 2367	0 0199	0 0266	0 0570	-0 0090	0 0052	1 2367	0 0199	0 0266	0 0570	-0 0090	0 0052
30	0 036	600 9	1 2393	0 0255	0 0258	0 0563	-0 0109	0 0056	1 2393	0 0255	0 0258	0 0563	-0 0109	0 0056
31	0 000	0 2	1 2254	-0 0080	0 0304	0 0552	-0 0001	0 0015	1 2254	-0 0080	0 0304	0 0552	-0 0001	0 0015

TABLE 1.- CONTINUED

Run = 29	Q = 367 77 psi	Sigma= 20 00 °	Pt= 1849.5 psf
Config= 1	M = 0 602	Psi = 14 10 °	Ps= 1454.5 psf
File1 = 29CTD	Rn= 0 886 x10⁶	Alpha= 19 44 °	Tt= 528.0 °R
File2 = 30CTD	V = 654 4 ft/s	Beta = 4 78 °	Ts= 492.3 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0.2	1.1660	0 2061	0 0320	0 0349	0.0057	0 0003	1 1811	-0 0842	0 0320	0 0375	0 0023	0 0003
1	0 000	0 2	1 1430	0 1992	0 0313	0 0376	0.0082	0 0012	1 1570	-0.0853	0.0313	0 0418	0 0045	0.0012
2	0.000	0.2	1 1509	0 2159	0 0301	0 0427	0.0062	0 0021	1 1689	-0 0710	0 0301	0 0455	0.0021	0.0021
3	0.000	0 2	1 1681	0 2243	0 0312	0 0390	0 0033	0.0003	1 1875	-0.0670	0.0312	0.0400	-0.0004	0 0003
4	0 036	598 4	1 1475	0 2400	0 0317	0.0388	-0.0047	0 0003	1 1714	-0 0468	0 0317	0 0346	-0.0081	0.0003
5	0 030	501 5	1 1500	0 2345	0 0304	0 0379	-0.0030	0 0005	1 1724	-0 0527	0 0304	0 0349	-0 0064	0.0005
6	0 024	401 8	1 1543	0.2306	0 0302	0 0368	-0 0013	0 0006	1 1757	-0 0576	0 0302	0.0348	-0.0047	0.0006
7	0.018	301 3	1 1539	0 2273	0 0305	0 0357	0 0004	0 0008	1.1745	-0.0606	0 0305	0.0349	-0 0029	0 0008
8	0 012	200 7	1 1558	0.2205	0 0309	0 0362	0 0025	0 0010	1 1747	-0.0677	0 0309	0.0367	-0 0009	0.0010
9	0.006	99 9	1 1569	0 2156	0.0307	0 0368	0 0044	0 0010	1 1746	-0 0728	0.0307	0.0385	0 0009	0.0010
10	0 003	49 6	1.1564	0 2139	0 0312	0 0378	0 0052	0 0010	1 1736	-0 0742	0.0312	0 0400	0.0016	0.0010
11	-0 003	-50 4	1 1568	0 2074	0 0311	0 0380	0 0072	0 0011	1 1725	-0 0806	0 0311	0.0415	0 0035	0.0011
12	-0 006	-100 9	1 1575	0 2068	0.0305	0 0385	0 0080	0 0011	1 1730	-0 0814	0.0305	0 0425	0.0042	0 0011
13	-0 012	-201 6	1 1596	0 2018	0 0296	0 0384	0 0101	0 0011	1.1738	-0 0867	0 0296	0.0438	0.0063	0.0011
14	-0 018	-302 9	1 1607	0 1965	0 0289	0 0385	0 0122	0 0009	1.1736	-0 0921	0 0289	0 0452	0 0082	0.0009
15	-0 024	-402 1	1 1626	0 1949	0 0276	0 0383	0 0135	0.0009	1.1750	-0 0942	0.0276	0.0459	0.0096	0.0009
16	-0.030	-503 4	1 1614	0 1897	0.0265	0 0396	0 0158	0 0006	1 1726	-0 0990	0.0265	0 0486	0 0117	0 0006
17	-0.036	-602 2	1 1724	0 1849	0 0254	0 0391	0 0181	0 0006	1 1821	-0 1063	0 0254	0 0496	0.0140	0 0006
18	-0 030	-501 4	1 1718	0 1921	0 0265	0 0383	0 0158	0 0006	1 1833	-0 0992	0.0265	0 0473	0 0118	0 0006
19	-0.024	-400 0	1 1661	0 1947	0 0271	0 0370	0 0139	0 0008	1.1784	-0.0952	0.0271	0 0448	0 0100	0.0008
20	-0.018	-300 1	1 1657	0 1982	0.0286	0 0363	0 0119	0 0010	1.1789	-0 0917	0 0286	0.0429	0.0082	0.0010
21	-0 012	-200 2	1 1666	0.2026	0 0294	0 0364	0 0101	0 0010	1.1808	-0 0877	0.0294	0 0418	0.0064	0.0010
22	-0.006	-100 5	1 1636	0 2065	0 0301	0 0362	0.0082	0 0010	1.1789	-0 0832	0.0301	0 0404	0 0046	0.0010
23	-0.003	-50 8	1 1597	0 2085	0 0310	0 0364	0 0071	0 0010	1.1756	-0 0803	0.0310	0.0398	0.0035	0.0010
24	0 003	49 8	1 1563	0 2133	0 0310	0.0365	0 0053	0 0011	1 1734	-0 0748	0.0310	0.0388	0.0018	0 0011
25	0.006	100 9	1 1587	0 2162	0 0314	0 0357	0 0040	0 0010	1 1765	-0 0726	0 0314	0 0373	0 0006	0.0010
26	0 012	200 6	1 1571	0 2206	0 0315	0 0347	0 0023	0 0010	1 1760	-0 0680	0.0315	0 0352	-0 0009	0 0010
27	0.018	301 1	1 1580	0 2261	0 0316	0 0346	0 0007	0 0009	1 1782	-0 0628	0.0316	0.0340	-0 0025	0.0009
28	0 024	401 1	1.1558	0 2302	0 0308	0 0334	-0 0013	0 0007	1 1770	-0 0583	0 0308	0.0315	-0 0043	0 0007
29	0 030	501 6	1 1528	0 2347	0 0303	0 0337	-0.0031	0 0005	1 1753	-0 0532	0.0303	0 0307	-0.0061	0 0005
30	0 036	599 5	1 1579	0 2406	0 0300	0 0334	-0 0046	0 0003	1 1816	-0 0487	0.0300	0 0294	-0 0076	0 0003
31	0 000	0 2	1 1692	0 2072	0 0317	0 0294	0 0056	0 0005	1 1845	-0 0839	0.0317	0 0321	0 0027	0.0005

TABLE 1.- CONTINUED

Run = 31	Q = 379 05 psi	Sigma= 20 00 °	Pt= 1911 5 psf
Config= 1	M = 0 601	Psi = -14 10 °	Ps= 1504 5 psf
File1 = 31CTD	Rn= 0 888 x10⁶	Alpha= 19 44 °	Tt= 540 1 °R
File2 = 32CTD	V = 660 8 ft/s	Beta = -4 78 °	Ts= 503 7 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 1825	-0 2263	0 0307	0 0446	-0 0041	0 0031	1 2020	0 0686	0 0307	0 0459	0 0001	0 0031
1	0 000	0 2	1 1627	-0 2208	0 0299	0 0487	-0 0048	0 0023	1 1814	0 0691	0 0299	0 0504	-0 0002	0 0023
2	0 000	0 2	1 1517	-0 2079	0 0293	0 0493	-0 0058	0 0028	1 1677	0 0789	0 0293	0 0516	-0 0011	0 0028
3	0 000	0 2	1 1755	-0 2129	0 0303	0.0439	-0 0054	0 0039	1 1920	0 0799	0 0303	0 0461	-0.0012	0 0039
4	0 036	602 1	1 1815	-0 1875	0 0279	0 0448	-0 0174	0 0048	1 1916	0 1060	0 0279	0 0546	-0 0128	0 0048
5	0 030	501 9	1 1818	-0 1933	0 0276	0 0443	-0 0151	0 0045	1 1933	0 1004	0 0276	0 0527	-0 0106	0 0045
6	0 024	403 2	1 1811	-0 1960	0 0284	0 0429	-0 0134	0 0041	1 1933	0 0977	0 0284	0 0502	-0.0090	0 0041
7	0 018	301 6	1 1802	-0 2005	0 0297	0 0432	-0 0113	0 0038	1 1934	0 0931	0 0297	0 0492	-0 0070	0 0038
8	0 012	200 6	1 1780	-0 2069	0 0303	0 0429	-0 0089	0 0036	1 1929	0 0864	0 0303	0 0474	-0 0047	0 0036
9	0 006	99 9	1 1747	-0 2111	0 0304	0 0436	-0 0069	0 0034	1 1908	0 0815	0 0304	0 0468	-0 0027	0 0034
10	0 003	50 6	1 1732	-0 2140	0 0311	0 0445	-0 0060	0 0033	1 1900	0 0782	0 0311	0 0470	-0.0017	0 0033
11	-0 003	-49 7	1 1691	-0 2203	0 0313	0 0450	-0 0038	0 0032	1 1875	0 0711	0 0313	0 0461	0 0005	0 0032
12	-0 006	-101 0	1 1683	-0 2215	0 0307	0 0449	-0 0029	0 0031	1 1871	0 0698	0 0307	0 0455	0 0013	0 0031
13	-0 012	-200 3	1 1688	-0 2268	0 0307	0 0438	-0 0010	0 0029	1 1888	0 0647	0 0307	0.0431	0 0030	0 0029
14	-0 018	-301 1	1 1654	-0 2316	0 0306	0 0442	0 0007	0 0028	1 1867	0 0593	0 0306	0 0424	0 0048	0 0028
15	-0 024	-400 6	1 1652	-0 2344	0 0297	0 0433	0 0022	0 0028	1 1872	0 0565	0 0297	0 0406	0 0061	0 0028
16	-0 030	-500 9	1 1667	-0 2397	0 0294	0 0431	0 0040	0 0028	1 1899	0 0518	0 0294	0 0392	0 0079	0 0028
17	-0 036	-598 6	1 1660	-0 2450	0 0286	0 0416	0 0057	0 0027	1 1906	0 0465	0 0286	0 0367	0 0093	0 0027
18	-0 030	-501 0	1 1671	-0 2404	0 0290	0 0418	0 0040	0 0027	1 1905	0 0511	0 0290	0 0380	0 0078	0 0027
19	-0 024	-401 6	1 1711	-0 2353	0 0299	0 0417	0 0023	0 0027	1 1931	0 0571	0 0299	0 0389	0 0061	0 0027
20	-0 018	-299 4	1 1744	-0 2322	0 0309	0 0419	0 0007	0 0028	1 1956	0 0609	0 0309	0 0402	0 0045	0 0028
21	-0 012	-199 6	1 1697	-0 2258	0 0309	0 0434	-0 0010	0 0028	1 1894	0 0660	0 0309	0 0428	0 0030	0 0028
22	-0 006	-100 0	1 1699	-0 2209	0 0307	0 0443	-0 0029	0 0030	1 1885	0 0708	0 0307	0 0448	0 0013	0 0030
23	-0 003	-49 8	1 1695	-0 2190	0 0310	0 0449	-0 0038	0 0032	1 1876	0 0725	0 0310	0 0460	0 0004	0 0032
24	0 003	50 7	1 1706	-0 2139	0 0301	0 0456	-0 0059	0 0033	1 1875	0 0777	0 0301	0 0480	-0 0015	0 0033
25	0 006	100 6	1 1699	-0 2118	0 0302	0 0450	-0 0067	0 0033	1 1862	0 0796	0 0302	0 0480	-0 0024	0 0033
26	0 012	201 0	1 1713	-0 2073	0 0297	0 0446	-0 0086	0 0037	1 1865	0 0843	0.0297	0 0489	-0 0043	0 0037
27	0 018	300 1	1 1754	-0 2015	0 0294	0 0449	-0 0109	0 0039	1 1891	0 0909	0 0294	0 0506	-0 0064	0 0039
28	0 024	400 6	1 1769	-0 1970	0 0277	0 0446	-0 0130	0 0044	1 1894	0 0957	0 0277	0 0517	-0 0085	0 0044
29	0 030	501 5	1 1800	-0 1927	0 0273	0 0444	-0 0150	0 0046	1 1914	0 1006	0 0273	0 0527	-0 0104	0 0046
30	0 036	600 7	1 1887	-0 1877	0 0261	0 0442	-0 0170	0 0047	1 1986	0 1075	0 0261	0 0538	-0 0124	0 0047
31	0 000	0 2	1 1832	-0 2261	0 0303	0 0428	-0 0036	0 0030	1 2026	0 0689	0 0303	0 0438	0 0004	0 0030

TABLE 1.- CONTINUED

Run = 33	Q = 375 86 psi	Sigma= 25 00 °	Pt= 1903 8 psf
Config= 1	M = 0 599	Psi = 0 00 °	Ps= 1500 4 psf
File1 = 33CTD	Rn= 0 885 x10⁶	Alpha= 25 00 °	Tt= 539 1 °R
File2 = 34CTD	V = 658 4 ft/s	Beta = 0 00 °	Ts= 503.0 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 4159	-0 0021	0 0386	0 0132	-0 0018	0 0019	1 4159	-0 0021	0 0386	0 0132	-0.0018	0.0019
1	0 000	0 2	1 3854	-0 0047	0 0390	0 0156	-0 0004	0 0024	1 3854	-0 0047	0 0390	0 0156	-0 0004	0 0024
2	0 000	0 2	1 3876	0 0043	0 0379	0 0186	-0 0001	0 0018	1 3876	0 0043	0 0379	0 0186	-0 0001	0 0018
3	0 000	0 2	1 4206	0 0062	0 0381	0 0143	-0 0010	0 0012	1 4206	0 0062	0 0381	0 0143	-0 0010	0 0012
4	0 036	598 9	1 4020	0 0278	0 0339	0 0144	-0 0132	0 0032	1 4020	0 0278	0 0339	0 0144	-0 0132	0 0032
5	0 030	500 4	1 4094	0 0228	0 0348	0 0153	-0 0113	0 0032	1 4094	0 0228	0 0348	0 0153	-0 0113	0 0032
6	0 024	399 7	1 4081	0 0188	0 0358	0 0145	-0 0093	0 0030	1 4081	0 0188	0 0358	0 0145	-0 0093	0 0030
7	0 018	299 9	1 4054	0 0158	0 0364	0 0140	-0 0074	0 0029	1 4054	0 0158	0 0364	0 0140	-0 0074	0 0029
8	0 012	200 0	1 4089	0 0105	0 0375	0 0147	-0 0048	0 0026	1 4089	0 0105	0 0375	0 0147	-0 0048	0 0026
9	0 006	100 6	1 4055	0 0058	0 0377	0 0150	-0 0030	0 0022	1 4055	0 0058	0 0377	0 0150	-0 0030	0 0022
10	-0 006	-100 5	1 4091	-0 0031	0 0379	0 0154	0 0015	0 0014	1 4091	-0 0031	0.0379	0 0154	0 0015	0 0014
11	-0 012	-200 3	1 4071	-0 0080	0 0374	0 0155	0 0036	0 0010	1 4071	-0 0080	0 0374	0 0155	0 0036	0 0010
12	-0 018	-300 5	1 4061	-0 0125	0 0362	0 0152	0 0057	0 0008	1 4061	-0 0125	0 0362	0 0152	0 0057	0 0008
13	-0 024	-399 8	1 4030	-0 0155	0 0350	0 0139	0 0075	0 0004	1 4030	-0 0155	0 0350	0 0139	0 0075	0 0004
14	-0 030	-499 2	1 4085	-0 0199	0 0342	0 0130	0 0096	0 0000	1 4085	-0 0199	0 0342	0 0130	0 0096	0 0000
15	-0 036	-596 1	1 4094	-0 0260	0 0323	0 0115	0 0119	-0 0003	1 4094	-0 0260	0 0323	0 0115	0 0119	-0 0003
16	-0 033	-549 4	1 4117	-0 0226	0 0327	0 0115	0 0107	-0 0001	1 4117	-0 0226	0 0327	0 0115	0 0107	-0 0001
17	-0 030	-499 8	1 4123	-0 0206	0 0336	0 0116	0 0100	0 0001	1 4123	-0 0206	0.0336	0 0116	0 0100	0 0001
18	-0 027	-450 1	1 4110	-0 0177	0 0342	0 0120	0 0087	0 0002	1 4110	-0 0177	0 0342	0 0120	0 0087	0 0002
19	-0 021	-349 3	1 4099	-0 0126	0 0350	0 0126	0 0065	0 0006	1 4099	-0 0126	0 0350	0 0126	0 0065	0 0006
20	-0 015	-249 4	1 4109	-0 0107	0 0371	0 0131	0 0050	0 0009	1 4109	-0 0107	0 0371	0 0131	0 0050	0 0009
21	-0 009	-149 6	1 4061	-0 0053	0 0372	0 0136	0 0026	0 0013	1 4061	-0 0053	0 0372	0 0136	0 0026	0 0013
22	-0 003	-50 5	1 4027	-0 0013	0 0378	0 0140	0 0002	0 0018	1 4027	-0 0013	0 0378	0 0140	0 0002	0 0018
23	0 003	50 0	1 4034	0 0036	0 0382	0 0151	-0 0018	0 0020	1 4034	0 0036	0 0382	0 0151	-0 0018	0 0020
24	0 009	150 6	1 4054	0 0071	0 0373	0 0150	-0 0038	0 0023	1 4054	0 0071	0 0373	0.0150	-0 0038	0 0023
25	0 015	250 2	1 4020	0 0123	0 0368	0 0152	-0 0058	0 0026	1 4020	0 0123	0 0368	0 0152	-0 0058	0.0026
26	0 021	349 2	1 4062	0 0173	0 0355	0 0144	-0 0085	0 0028	1 4062	0 0173	0 0355	0 0144	-0 0085	0 0028
27	0 027	448 5	1 4084	0 0204	0 0347	0 0143	-0 0103	0 0029	1 4084	0 0204	0 0347	0 0143	-0 0103	0 0029
28	0 033	548 5	1 4123	0 0251	0 0332	0 0135	-0 0123	0 0030	1 4123	0 0251	0 0332	0 0135	-0 0123	0 0030
29	0 000	0 2	1 4223	-0 0024	0 0375	0 0113	-0 0018	0 0019	1 4223	-0 0024	0 0375	0 0113	-0 0018	0 0019

TABLE 1.- CONTINUED

Run = 35	Q = 373 72 psi	Sigma= 25 00 °	Pt= 1883 8 psf
Config= 1	M = 0 601	Psi = 11 80 °	Ps= 1482 5 psf
File1 = 35CTD	Rn= 0 884 x10⁶	Alpha= 24 53 °	Tt= 535 9 °R
File2 = 36CTD	V = 658 4 ft/s	Beta = 4 96 °	Ts= 499 8 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 3342	0 2115	0 0394	0 0240	-0 0129	0 0044	1 3492	-0 0658	0 0394	0 0165	-0 0145	0 0044
1	0 000	0 2	1 3012	0 2039	0 0392	0 0266	-0 0087	0 0038	1 3154	-0 0665	0 0392	0 0214	-0 0106	0 0038
2	0 000	0 2	1 3161	0 2165	0 0389	0 0274	-0 0077	0 0028	1 3326	-0 0572	0 0389	0 0227	-0 0096	0 0028
3	0 000	0 2	1 3429	0 2223	0 0397	0 0252	-0 0110	0 0033	1 3600	-0 0570	0 0397	0 0187	-0 0128	0 0033
4	0 036	599 0	1 3200	0 2430	0 0375	0 0360	-0 0231	0 0046	1 3418	-0 0321	0 0375	0 0227	-0 0254	0 0046
5	0 030	501 0	1 3247	0 2373	0 0363	0 0303	-0 0210	0 0043	1 3453	-0 0386	0 0363	0 0183	-0 0229	0 0043
6	0 024	400 6	1 3229	0 2321	0 0375	0 0278	-0 0190	0 0042	1 3424	-0 0434	0 0375	0 0170	-0 0207	0 0042
7	0 018	300 5	1 3244	0 2288	0 0384	0 0276	-0 0169	0 0041	1 3432	-0 0469	0 0384	0 0179	-0 0187	0 0041
8	0 012	201 3	1 3223	0 2221	0 0388	0 0271	-0 0140	0 0038	1 3398	-0 0530	0 0388	0 0189	-0 0158	0 0038
9	0 006	100 3	1 3240	0 2179	0 0387	0 0271	-0 0120	0 0039	1 3406	-0 0575	0 0387	0 0200	-0 0138	0 0039
10	-0 006	-101 0	1 3260	0 2094	0 0384	0 0258	-0 0077	0 0034	1 3408	-0 0662	0 0384	0 0211	-0 0095	0 0034
11	-0 012	-201 1	1 3271	0 2049	0 0380	0 0236	-0 0050	0 0030	1 3410	-0 0708	0 0380	0 0204	-0 0067	0 0030
12	-0 018	-301 3	1 3319	0 1999	0 0367	0 0218	-0 0028	0 0029	1 3446	-0 0767	0 0367	0 0199	-0 0044	0 0029
13	-0 024	-401 9	1 3341	0 1989	0 0353	0 0198	-0 0011	0 0026	1 3465	-0 0781	0 0353	0 0188	-0 0026	0 0026
14	-0 030	-502 4	1 3393	0 1949	0 0337	0 0181	0 0015	0 0023	1 3509	-0 0831	0 0337	0 0185	0 0001	0 0023
15	-0 036	-602 2	1 3471	0 1895	0 0319	0 0156	0 0042	0 0015	1 3573	-0 0900	0 0319	0 0175	0 0029	0 0015
16	-0 033	-550 9	1 3437	0 1934	0 0327	0 0172	0 0024	0 0019	1 3549	-0 0855	0 0327	0 0181	0 0010	0 0019
17	-0 027	-450 2	1 3407	0 1980	0 0345	0 0183	0 0002	0 0023	1 3529	-0 0803	0 0345	0 0180	-0 0012	0 0023
18	-0 021	-348 8	1 3345	0 2004	0 0355	0 0200	-0 0021	0 0027	1 3473	-0 0767	0 0355	0 0184	-0 0036	0 0027
19	-0 015	-249 4	1 3321	0 2019	0 0374	0 0222	-0 0039	0 0029	1 3453	-0 0747	0 0374	0 0196	-0 0056	0 0029
20	-0 009	-150 3	1 3286	0 2074	0 0377	0 0233	-0 0063	0 0032	1 3430	-0 0687	0 0377	0 0193	-0 0080	0 0032
21	-0 003	-50 6	1 3250	0 2101	0 0385	0 0254	-0 0085	0 0034	1 3399	-0 0653	0 0385	0 0203	-0 0103	0 0034
22	0 003	51 2	1 3191	0 2150	0 0383	0 0271	-0 0108	0 0036	1 3352	-0 0593	0 0383	0 0207	-0 0127	0 0036
23	0 009	151 0	1 3216	0 2198	0 0379	0 0283	-0 0130	0 0038	1 3387	-0 0551	0 0379	0 0207	-0 0149	0 0038
24	0 015	249 8	1 3175	0 2241	0 0375	0 0283	-0 0152	0 0040	1 3355	-0 0501	0 0375	0 0195	-0 0170	0 0040
25	0 021	349 4	1 3228	0 2291	0 0364	0 0289	-0 0174	0 0042	1 3417	-0 0462	0 0364	0 0189	-0 0192	0 0042
26	0 027	448 9	1 3246	0 2332	0 0357	0 0291	-0 0198	0 0043	1 3443	-0 0426	0 0357	0 0178	-0 0216	0 0043
27	0 033	548 5	1 3211	0 2376	0 0338	0 0297	-0 0213	0 0045	1 3418	-0 0376	0 0338	0 0176	-0 0231	0 0045
28	0 000	0 2	1 3320	0 2108	0 0379	0 0243	-0 0123	0 0041	1 3470	-0 0661	0 0379	0 0171	-0 0139	0 0041

TABLE 1.- CONTINUED

Run = 37	Q = 373 23 psi	Sigma= 25 00 °	Pt= 1884 7 psf
Config= 1	M = 0 600	Psi = -11 80 °	Ps= 1484 0 psf
File1 = 37CTD	Rn= 0 885 x10⁶	Alpha= 24 53 °	Tt= 535 3 °R
File2 = 38CTD	V = 657 3 ft/s	Beta = -4 96 °	Ts= 499 3 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 3557	-0 2171	0 0388	0 0229	0 0075	0 0006	1 3714	0 0647	0 0388	0 0183	0 0091	0 0006
1	0 000	0 2	1 3280	-0 2150	0 0390	0 0253	0 0071	0 0017	1 3439	0 0611	0 0390	0 0209	0 0089	0 0017
2	0 000	0 2	1 3181	-0.2063	0 0378	0 0286	0 0079	0.0011	1 3324	0 0676	0 0378	0 0237	0 0100	0 0011
3	0 000	0 2	1 3504	-0.2077	0 0384	0 0247	0 0090	0.0001	1 3643	0 0728	0 0384	0 0193	0 0107	0 0001
4	0 036	602 4	1 3515	-0.1865	0 0330	0 0215	-0 0058	0.0026	1 3611	0 0938	0 0330	0 0242	-0 0040	0 0026
5	0 030	498 3	1 3515	-0.1928	0 0338	0 0215	-0 0031	0.0026	1 3624	0 0876	0 0338	0 0227	-0 0013	0 0026
6	0 024	400 1	1 3481	-0 1951	0 0346	0 0209	-0 0011	0.0021	1 3595	0 0847	0 0346	0 0211	0.0005	0 0021
7	0 018	300 1	1 3451	-0.1972	0 0360	0 0217	0 0014	0 0016	1 3570	0 0820	0 0360	0 0205	0 0030	0 0016
8	0 012	199 9	1 3455	-0 2032	0 0374	0 0216	0 0036	0 0015	1 3586	0 0762	0 0374	0 0192	0 0052	0 0015
9	0 006	100 0	1 3411	-0.2068	0 0377	0 0237	0 0059	0 0011	1 3550	0 0719	0 0377	0 0199	0 0076	0 0011
10	-0 006	-101 0	1 3390	-0.2155	0 0382	0 0259	0 0101	0 0008	1 3548	0 0629	0 0382	0 0199	0 0119	0 0008
11	-0 012	-200 7	1 3338	-0 2200	0 0379	0 0262	0 0126	0 0007	1 3506	0 0575	0 0379	0 0188	0 0144	0 0007
12	-0 018	-299 4	1 3335	-0 2245	0 0370	0 0265	0 0145	0 0005	1 3512	0 0530	0 0370	0 0181	0 0163	0 0005
13	-0 024	-401 3	1 3366	-0 2272	0 0359	0 0277	0 0163	0 0004	1 3548	0 0509	0 0359	0 0182	0 0181	0 0004
14	-0 030	-501 6	1 3370	-0 2324	0 0348	0 0279	0 0180	0 0001	1 3562	0 0459	0 0348	0 0176	0 0198	0.0001
15	-0 036	-596 3	1 3379	-0.2380	0 0331	0 0274	0 0204	0 0001	1 3583	0 0406	0 0331	0 0158	0 0221	0 0001
16	-0 033	-552 7	1 3428	-0 2361	0 0336	0 0270	0 0194	0 0000	1 3627	0 0435	0 0336	0 0159	0 0211	0 0000
17	-0 027	-451 2	1 3347	-0 2294	0 0347	0 0269	0 0174	0 0001	1 3534	0 0484	0 0347	0 0169	0 0192	0 0001
18	-0 021	-350 6	1 3397	-0 2260	0 0356	0 0263	0 0152	0 0003	1 3576	0 0527	0 0356	0 0175	0 0169	0 0003
19	-0 015	-250 2	1 3389	-0 2241	0 0371	0 0258	0 0138	0 0002	1 3564	0 0544	0 0371	0 0178	0 0155	0 0002
20	-0 009	-149 7	1 3383	-0 2182	0 0372	0 0254	0 0116	0 0006	1 3546	0 0600	0 0372	0 0186	0 0133	0 0006
21	-0 003	-50 8	1 3418	-0 2152	0 0380	0 0255	0 0093	0 0006	1 3574	0 0637	0 0380	0 0199	0 0111	0 0006
22	0 003	49 6	1 3412	-0 2109	0 0377	0 0257	0 0073	0 0010	1 3560	0 0678	0 0377	0 0213	0 0091	0 0010
23	0 009	149 6	1 3364	-0 2052	0 0365	0 0250	0 0050	0 0012	1 3501	0 0724	0 0365	0 0217	0 0069	0 0012
24	0 015	249 3	1 3409	-0 2011	0 0363	0 0238	0 0029	0 0014	1 3536	0 0773	0 0363	0 0217	0 0046	0 0014
25	0 021	348 5	1 3420	-0 1973	0 0341	0 0226	0 0004	0 0017	1 3540	0 0813	0 0341	0 0220	0 0021	0 0017
26	0 027	447 5	1 3484	-0 1958	0 0334	0 0221	-0 0016	0 0018	1 3599	0 0841	0 0334	0 0225	0 0001	0 0018
27	0 033	547 1	1 3508	-0 1894	0 0316	0 0214	-0 0043	0 0026	1 3610	0 0909	0 0316	0 0233	-0 0026	0 0026
28	0 000	0 2	1 3532	-0 2174	0 0375	0 0231	0 0082	0 0003	1 3691	0 0639	0 0375	0 0182	0 0098	0 0003

TABLE 1.- CONTINUED

Run = 39	Q = 376 35 psi	Sigma= 30 00 °	Pt= 1902 7 psf
Config= 1	M = 0 600	Psi = 0 00 °	Ps= 1498 7 psf
File1 = 39CTD	Rn= 0 886 x10⁶	Alpha= 30 00 °	Tt= 538 8 °R
File2 = 40CTD	V = 659 0 ft/s	Beta = 0 00 °	Ts= 502 7 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 5573	0 0024	0 0369	0 0631	-0 0023	0 0014	1 5573	0 0024	0 0369	0 0631	-0.0023	0 0014
1	0 000	0 2	1 5220	-0 0076	0 0388	0 0623	0 0003	0 0014	1 5220	-0 0076	0 0388	0 0623	0 0003	0 0014
2	0 000	0 2	1 4987	0 0034	0 0396	0 0766	0 0002	0 0009	1 4987	0 0034	0 0396	0 0766	0 0002	0 0009
3	0 000	0 2	1 5385	0 0082	0 0365	0 0710	-0 0011	0 0007	1 5385	0 0082	0 0365	0 0710	-0 0011	0 0007
4	0 003	50 0	1 5353	0 0046	0 0375	0 0679	-0 0019	0 0013	1 5353	0 0046	0 0375	0 0679	-0 0019	0 0013
5	0 006	99 8	1 5423	0 0075	0 0371	0 0663	-0 0036	0 0019	1 5423	0 0075	0 0371	0 0663	-0 0036	0 0019
6	0 012	200 7	1 5381	0 0102	0 0368	0 0645	-0 0055	0 0022	1 5381	0 0102	0 0368	0 0645	-0 0055	0.0022
7	0 018	301 0	1 5461	0 0148	0 0356	0 0622	-0 0077	0 0032	1 5461	0 0148	0 0356	0 0622	-0 0077	0 0032
8	0 024	400 6	1 5635	0 0178	0 0350	0 0532	-0 0100	0 0034	1 5635	0 0178	0 0350	0 0532	-0 0100	0 0034
9	0 030	500 5	1 5791	0 0196	0 0327	0 0428	-0 0117	0 0038	1 5791	0 0196	0 0327	0 0428	-0 0117	0 0038
10	0 036	599 6	1 6010	0 0262	0 0320	0 0373	-0 0141	0 0039	1 6010	0 0262	0 0320	0 0373	-0 0141	0 0039
11	-0 003	-52 5	1 5564	0 0011	0 0384	0 0570	0 0006	0 0004	1 5564	0 0011	0 0384	0 0570	0 0006	0 0004
12	-0 006	-100 8	1 5511	-0 0025	0 0373	0 0606	0 0016	0 0003	1 5511	-0 0025	0 0373	0 0606	0 0016	0 0003
13	-0 012	-200 9	1 5439	-0 0067	0 0373	0 0607	0 0037	-0 0002	1 5439	-0 0067	0 0373	0 0607	0 0037	-0 0002
14	-0 018	-300 5	1 5555	-0 0096	0 0359	0 0569	0 0063	-0 0014	1 5555	-0 0096	0 0359	0 0569	0 0063	-0 0014
15	-0 024	-400 6	1 5706	-0 0132	0 0346	0 0485	0 0085	-0 0021	1 5706	-0 0132	0 0346	0 0485	0 0085	-0 0021
16	-0 030	-501 4	1 5810	-0 0172	0 0331	0 0383	0 0111	-0 0033	1 5810	-0 0172	0 0331	0 0383	0 0111	-0 0033
17	-0 035	-593 5	1 6162	-0 0229	0 0304	0 0269	0 0132	-0 0042	1 6162	-0 0229	0 0304	0 0269	0 0132	-0 0042
18	0 000	0 2	1 5920	0 0004	0 0364	0 0486	-0 0019	0 0012	1 5920	0 0004	0 0364	0 0486	-0 0019	0 0012
19	0 012	199 3	1 5581	0 0103	0 0362	0 0529	-0 0053	0 0026	1 5581	0 0103	0 0362	0 0529	-0 0053	0 0026
20	0 024	398 1	1 5785	0 0155	0 0344	0 0449	-0 0097	0 0037	1 5785	0 0155	0 0344	0 0449	-0 0097	0 0037
21	0 035	594 6	1 6079	0 0239	0 0307	0 0312	-0 0135	0 0043	1 6079	0 0239	0 0307	0 0312	-0 0135	0 0043
22	-0 012	-199 2	1 5478	-0 0072	0 0371	0 0604	0 0045	-0 0011	1 5478	-0 0072	0 0371	0 0604	0 0045	-0 0011
23	-0 024	-398 1	1 5691	-0 0115	0 0354	0 0458	0 0084	-0 0027	1 5691	-0 0115	0 0354	0 0458	0 0084	-0 0027
24	-0 035	-589 8	1 6034	-0 0233	0 0304	0 0268	0 0136	-0 0046	1 6034	-0 0233	0 0304	0 0268	0 0136	-0 0046

TABLE 1.- CONTINUED

Run = 41	Q = 373 80 psi	Sigma= 30 00 °	Pt= 1902 7 psf
Config= 1	M = 0 597	Psi = 10 00 °	Ps= 1501 7 psf
File1 = 41CTD	Rn= 0 886 x10⁶	Alpha= 29 62 °	Tt= 537 7 °R
File2 = 42CTD	V = 655 6 ft/s	Beta = 4 98 °	Ts= 501 9 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 5688	0 2196	0 0380	0 0279	-0 0200	0 0036	1 5831	-0 0561	0 0380	0 0182	-0 0216	0 0036
1	0 000	0 2	1 5388	0 2148	0 0396	0 0305	-0 0184	0 0055	1 5527	-0 0557	0 0396	0 0215	-0 0201	0 0055
2	0 000	0 2	1 5286	0 2226	0 0391	0 0352	-0 0162	0 0049	1 5440	-0 0462	0 0391	0 0272	-0 0183	0 0049
3	0 000	0 2	1 5654	0 2269	0 0383	0 0340	-0 0170	0 0035	1 5810	-0 0484	0 0383	0 0257	-0 0190	0 0035
4	0 003	48 9	1 5516	0 2229	0 0370	0 0325	-0 0190	0 0044	1 5667	-0 0499	0 0370	0 0233	-0 0209	0 0044
5	0 006	100 2	1 5565	0 2251	0 0359	0 0340	-0 0201	0 0046	1 5719	-0 0486	0 0359	0 0242	-0 0221	0 0046
6	0 012	198 9	1 5549	0 2281	0 0362	0 0345	-0 0223	0 0049	1 5709	-0 0454	0 0362	0 0237	-0 0242	0 0049
7	0 018	298 7	1 5593	0 2330	0 0343	0 0329	-0 0248	0 0054	1 5761	-0 0413	0 0343	0 0210	-0 0266	0 0054
8	0 024	399 4	1 5703	0 2345	0 0338	0 0299	-0 0264	0 0055	1 5872	-0 0417	0 0338	0 0173	-0 0279	0 0055
9	0 030	499 9	1 5771	0 2393	0 0318	0 0285	-0 0288	0 0058	1 5947	-0 0382	0 0318	0 0148	-0 0303	0 0058
10	0 036	598 7	1 5825	0 2469	0 0296	0 0266	-0 0312	0 0061	1 6014	-0 0316	0 0296	0 0118	-0 0325	0 0061
11	-0 003	-51 9	1 5637	0 2194	0 0362	0 0281	-0 0167	0 0045	1 5780	-0 0555	0 0362	0 0200	-0 0183	0 0045
12	-0 006	-100 2	1 5596	0 2175	0 0363	0 0278	-0 0155	0 0041	1 5737	-0 0567	0 0363	0 0202	-0 0171	0 0041
13	-0 012	-200 0	1 5612	0 2142	0 0368	0 0260	-0 0135	0 0043	1 5746	-0 0602	0 0368	0 0194	-0 0150	0 0043
14	-0 018	-299 4	1 5625	0 2118	0 0355	0 0231	-0 0111	0 0044	1 5756	-0 0628	0 0355	0 0177	-0 0124	0 0044
15	-0 024	-398 7	1 5692	0 2119	0 0347	0 0198	-0 0093	0 0043	1 5821	-0 0638	0 0347	0 0152	-0 0105	0 0043
16	-0 030	-497 3	1 5666	0 2077	0 0326	0 0178	-0 0073	0 0043	1 5788	-0 0675	0 0326	0 0141	-0 0084	0 0043
17	-0 035	-589 7	1 5691	0 2028	0 0301	0 0161	-0 0052	0 0042	1 5805	-0 0728	0 0301	0 0135	-0 0062	0 0042
18	0 000	0 2	1 5840	0 2199	0 0363	0 0247	-0 0201	0 0040	1 5981	-0 0585	0 0363	0 0151	-0 0214	0 0040
19	-0 018	-298 9	1 5644	0 2124	0 0344	0 0242	-0 0111	0 0046	1 5775	-0 0625	0 0344	0 0187	-0 0125	0 0046
20	-0 035	-587 9	1 5670	0 2028	0 0306	0 0184	-0 0054	0 0046	1 5784	-0 0724	0 0306	0 0156	-0 0065	0 0046
21	0 018	300 9	1 5703	0 2325	0 0331	0 0283	-0 0247	0 0053	1 5868	-0 0437	0 0331	0 0165	-0 0262	0 0053
22	0 036	594 0	1 5810	0 2454	0 0292	0 0271	-0 0311	0 0062	1 5996	-0 0328	0 0292	0 0124	-0 0324	0 0062

TABLE 1.- CONTINUED

Run = 43	Q = 373 92 psi	Sigma= 30 00 °	Pt= 1894 7 psf
Config= 1	M = 0 599	Psi = -10 00 °	Ps= 1493 4 psf
File1 = 43CTD	Rn= 0 886 x10⁶	Alpha= 29 62 °	Tt= 536 4 °R
File2 = 44CTD	V = 656 6 ft/s	Beta = -4 98 °	Ts= 500 5 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 5874	-0 2181	0 0373	0 0280	0 0130	0 0017	1 6011	0 0608	0 0373	0 0216	0 0146	0 0017
1	0 000	0 2	1 5588	-0 2178	0 0396	0 0243	0 0138	0 0026	1 5729	0 0562	0 0396	0 0176	0 0152	0 0026
2	0 000	0 2	1 5509	-0 2097	0 0386	0 0299	0 0154	0 0016	1 5637	0 0628	0 0386	0 0223	0 0172	0 0016
3	0 000	0 2	1 5813	-0 2119	0 0378	0 0288	0 0150	0 0018	1 5941	0 0659	0 0378	0 0214	0 0167	0 0018
4	0 003	51 1	1 5673	-0 2118	0 0383	0 0293	0 0129	0 0026	1 5802	0 0636	0 0383	0 0229	0 0146	0 0026
5	0 006	100 5	1 5658	-0 2094	0 0374	0 0286	0 0118	0 0028	1 5784	0 0657	0 0374	0 0227	0 0135	0 0028
6	0 012	200 4	1 5715	-0 2076	0 0378	0 0281	0 0094	0 0033	1 5837	0 0685	0 0378	0 0233	0 0111	0 0033
7	0 018	300 2	1 5745	-0 2024	0 0362	0 0271	0 0073	0 0036	1 5858	0 0741	0 0362	0 0233	0 0089	0 0036
8	0 024	399 2	1 5757	-0 2017	0 0358	0 0260	0 0055	0 0040	1 5868	0 0750	0 0358	0 0231	0 0071	0 0040
9	0 030	498 2	1 5798	-0 1977	0 0334	0 0256	0 0036	0 0040	1 5901	0 0796	0 0334	0 0236	0 0052	0 0040
10	0 036	598 2	1 5834	-0 1911	0 0309	0 0221	0 0011	0 0050	1 5925	0 0868	0 0309	0 0213	0 0025	0 0050
11	-0 003	-49 4	1 5707	-0 2152	0 0382	0 0259	0 0148	0 0021	1 5842	0 0609	0 0382	0 0187	0 0163	0 0021
12	-0 006	-100 8	1 5675	-0 2152	0 0377	0 0257	0 0160	0 0019	1 5811	0 0603	0 0377	0 0179	0 0175	0 0019
13	-0 012	-200 4	1 5758	-0 2206	0 0380	0 0260	0 0186	0 0016	1 5901	0 0564	0 0380	0 0170	0 0200	0 0016
14	-0 018	-301 5	1 5728	-0 2219	0 0366	0 0243	0 0203	0 0013	1 5874	0 0545	0 0366	0 0145	0 0216	0 0013
15	-0 024	-401 4	1 5764	-0 2234	0 0359	0 0231	0 0221	0 0011	1 5912	0 0537	0 0359	0 0126	0 0233	0 0011
16	-0 030	-497 5	1 5759	-0 2265	0 0333	0 0215	0 0240	0 0011	1 5912	0 0506	0 0333	0 0102	0 0250	0 0011
17	-0 035	-589 7	1 5843	-0 2323	0 0314	0 0195	0 0261	0 0009	1 6006	0 0464	0 0314	0 0072	0 0270	0 0009
18	0 000	0 2	1 5926	-0 2181	0 0372	0 0261	0 0131	0 0014	1 6063	0 0618	0 0372	0 0196	0 0146	0 0014

TABLE 1.- CONTINUED

Run = 45	Q = 378 65 psi	Sigma= 30 00 °	Pt= 1912 7 psf
Config= 1	M = 0 600	Psi = 0 00 °	Ps= 1506 2 psf
File1 = 45CTD	Rn= 0 883 x10⁶	Alpha= 30 00 °	Tt= 542 8 °R
File2 = 46CTD	V = 661 7 ft/s	Beta = 0 00 °	Ts= 506 3 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 1	1 6541	-0 0064	0 0351	0 0308	-0 0020	0 0017	1 6541	-0 0064	0 0351	0 0308	-0 0020	0 0017
1	0 000	0 2	1 6290	-0 0106	0 0374	0 0262	-0 0003	0 0015	1 6290	-0 0106	0 0374	0 0262	-0 0003	0 0015
2	0 000	0 2	1 6244	0 0001	0 0360	0 0282	0 0002	0 0016	1 6244	0 0001	0 0360	0 0282	0 0002	0 0016
3	0 000	0 2	1 6502	0 0013	0 0353	0 0291	-0 0009	0 0011	1 6502	0 0013	0 0353	0 0291	-0.0009	0 0011
4	0 036	599 5	1 6424	0 0186	0 0297	0 0250	-0 0140	0 0055	1 6424	0 0186	0 0297	0 0250	-0 0140	0 0055
5	0 030	499 9	1 6448	0 0135	0 0324	0 0251	-0 0119	0 0046	1 6448	0 0135	0 0324	0 0251	-0 0119	0 0046
6	0 024	400 0	1 6446	0 0099	0 0346	0 0251	-0 0099	0 0043	1 6446	0 0099	0 0346	0 0251	-0 0099	0 0043
7	0 018	300 2	1 6430	0 0071	0 0350	0 0253	-0 0075	0 0035	1 6430	0 0071	0 0350	0 0253	-0 0075	0 0035
8	0 012	200 0	1 6398	0 0032	0 0365	0 0259	-0 0052	0 0032	1 6398	0 0032	0 0365	0 0259	-0 0052	0 0032
9	0 006	99 8	1 6415	-0 0008	0 0365	0 0269	-0 0027	0 0022	1 6415	-0 0008	0 0365	0 0269	-0 0027	0 0022
10	-0 006	-100 6	1 6498	-0 0067	0 0365	0 0273	0 0014	0 0010	1 6498	-0 0067	0 0365	0 0273	0 0014	0 0010
11	-0 012	-199 9	1 6470	-0 0102	0 0360	0 0265	0 0039	0 0001	1 6470	-0 0102	0 0360	0 0265	0 0039	0 0001
12	-0 018	-300 9	1 6441	-0 0137	0 0345	0 0251	0 0062	-0 0009	1 6441	-0 0137	0 0345	0 0251	0 0062	-0 0009
13	-0 024	-401 5	1 6451	-0 0143	0 0329	0 0243	0 0076	-0 0014	1 6451	-0 0143	0 0329	0 0243	0 0076	-0 0014
14	-0 030	-501 3	1 6475	-0 0195	0 0304	0 0227	0 0104	-0 0020	1 6475	-0 0195	0 0304	0 0227	0 0104	-0 0020
15	-0 036	-600 2	1 6490	-0 0257	0 0278	0 0210	0 0127	-0 0025	1 6490	-0 0257	0 0278	0 0210	0 0127	-0 0025
16	-0 033	-551 0	1 6530	-0 0218	0 0289	0 0208	0 0115	-0 0023	1 6530	-0 0218	0 0289	0 0208	0 0115	-0 0023
17	-0 027	-451 9	1 6466	-0 0165	0 0318	0 0221	0 0091	-0 0017	1 6466	-0 0165	0 0318	0 0221	0 0091	-0 0017
18	-0 021	-350 9	1 6490	-0 0129	0 0337	0 0230	0 0072	-0 0008	1 6490	-0 0129	0 0337	0 0230	0 0072	-0 0008
19	-0 015	-249 9	1 6508	-0 0131	0 0356	0 0243	0 0053	-0 0004	1 6508	-0 0131	0 0356	0 0243	0 0053	-0 0004
20	-0 009	-149 3	1 6491	-0 0077	0 0364	0 0246	0 0025	0 0005	1 6491	-0 0077	0 0364	0 0246	0 0025	0 0005
21	-0 003	-51 4	1 6444	-0 0048	0 0367	0 0250	0 0007	0 0013	1 6444	-0 0048	0 0367	0 0250	0 0007	0 0013
22	0 003	48 9	1 6411	-0 0012	0 0371	0 0258	-0 0020	0 0021	1 6411	-0 0012	0 0371	0 0258	-0 0020	0 0021
23	0 009	149 7	1 6459	0 0020	0 0363	0 0260	-0 0041	0 0029	1 6459	0 0020	0 0363	0 0260	-0 0041	0 0029
24	0 015	248 9	1 6414	0 0065	0 0360	0 0261	-0 0065	0 0036	1 6414	0 0065	0 0360	0 0261	-0 0065	0 0036
25	0 021	349 6	1 6377	0 0082	0 0342	0.0245	-0 0082	0 0044	1 6377	0 0082	0 0342	0 0245	-0 0082	0 0044
26	0 027	448 1	1 6421	0 0109	0 0332	0 0239	-0 0106	0 0052	1 6421	0 0109	0 0332	0 0239	-0 0106	0 0052
27	0 033	547 8	1 6462	0 0161	0 0306	0 0225	-0 0132	0 0058	1 6462	0 0161	0 0306	0 0225	-0 0132	0 0058
28	0 000	0 1	1 6562	-0 0048	0 0355	0 0261	-0 0023	0 0021	1 6562	-0 0048	0 0355	0 0261	-0 0023	0 0021

TABLE 1.- CONTINUED

Run = 47	Q = 378 91 psi	Sigma= 30 00 °	Pt= 1913 2 psf
Config= 1	M = 0 600	Psi = 10 00 °	Ps= 1506 4 psf
File1 = 47CTD	Rn= 0 889 x10⁶	Alpha= 29 62 °	Tt= 540 0 °R
File2 = 48CTD	V = 660 2 ft/s	Beta = 4 98 °	Ts= 503 7 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 2	1 5840	0 2219	0 0381	0 0306	-0 0188	0 0028	1 5985	-0 0565	0 0381	0 0215	-0 0205	0 0028
1	0 000	0 2	1 5499	0 2120	0 0396	0 0284	-0 0164	0 0038	1 5632	-0 0603	0 0396	0 0204	-0 0180	0 0038
2	0 000	0 2	1 5598	0 2239	0 0385	0 0301	-0 0154	0 0032	1 5750	-0 0504	0 0385	0 0226	-0 0171	0 0032
3	0 000	0 2	1 5890	0 2305	0 0377	0 0323	-0 0172	0 0030	1 6049	-0 0489	0 0377	0 0239	-0 0191	0 0030
4	0 036	601 8	1 5817	0 2449	0 0330	0 0298	-0 0299	0 0041	1 6002	-0 0335	0 0330	0 0156	-0 0314	0 0041
5	0 030	500 1	1 5811	0 2383	0 0341	0 0278	-0 0275	0 0042	1 5984	-0 0399	0 0341	0 0148	-0 0289	0 0042
6	0 024	398 8	1 5734	0 2371	0 0364	0 0247	-0 0263	0 0042	1 5907	-0 0397	0 0364	0 0122	-0 0275	0 0042
7	0 018	298 8	1 5632	0 2358	0 0385	0 0149	-0 0234	0 0084	1 5804	-0 0392	0 0385	0 0039	-0 0240	0 0084
8	0 012	199 7	1 5615	0 2337	0 0400	0 0154	-0 0222	0 0084	1 5784	-0 0410	0 0400	0 0049	-0 0229	0 0084
9	0 006	100 2	1 5622	0 2319	0 0403	0 0160	-0 0203	0 0086	1 5788	-0 0429	0 0403	0 0064	-0 0210	0 0086
10	-0 006	-100 8	1 5607	0 2257	0 0398	0 0165	-0 0160	0 0081	1 5762	-0 0487	0 0398	0 0089	-0 0169	0 0081
11	-0 012	-200 6	1 5592	0 2231	0 0401	0 0158	-0 0144	0 0079	1 5743	-0 0511	0 0401	0 0089	-0 0152	0 0079
12	-0 018	-301 4	1 5544	0 2209	0 0377	0 0165	-0 0126	0 0077	1 5691	-0 0523	0 0377	0 0104	-0 0134	0 0077
13	-0 024	-401 8	1 5607	0 2204	0 0364	0 0149	-0 0107	0 0076	1 5753	-0 0540	0 0364	0 0097	-0 0115	0 0076
14	-0 030	-501 4	1 5652	0 2190	0 0339	0 0135	-0 0095	0 0072	1 5795	-0 0562	0 0339	0 0090	-0 0102	0 0072
15	-0 036	-598 5	1 5677	0 2129	0 0312	0 0115	-0 0072	0 0065	1 5808	-0 0625	0 0312	0 0080	-0 0078	0 0065
16	-0 033	-549 5	1 5691	0 2162	0 0321	0 0115	-0 0082	0 0070	1 5828	-0 0595	0 0321	0 0075	-0 0089	0 0070
17	-0 027	-449 8	1 5637	0 2200	0 0347	0 0129	-0 0101	0 0073	1 5781	-0 0549	0 0347	0 0080	-0 0108	0 0073
18	-0 021	-349 6	1 5613	0 2211	0 0368	0 0134	-0 0117	0 0074	1 5759	-0 0534	0 0368	0 0078	-0 0124	0 0074
19	-0 015	-249 8	1 5643	0 2210	0 0385	0 0150	-0 0133	0 0078	1 5789	-0 0540	0 0385	0 0086	-0 0141	0 0078
20	-0 009	-149 8	1 5612	0 2227	0 0384	0 0165	-0 0152	0 0070	1 5762	-0 0518	0 0384	0 0092	-0 0160	0 0070
21	-0 003	-49 6	1 5645	0 2233	0 0386	0 0211	-0 0170	0 0063	1 5795	-0 0518	0 0386	0 0129	-0 0182	0 0063
22	0 003	51 1	1 5701	0 2248	0 0379	0 0244	-0 0186	0 0052	1 5852	-0 0513	0 0379	0 0154	-0 0199	0 0052
23	0 009	150 3	1 5754	0 2273	0 0368	0 0269	-0 0205	0 0043	1 5909	-0 0497	0 0368	0 0171	-0 0220	0 0043
24	0 015	249 7	1 5729	0 2306	0 0365	0 0281	-0 0222	0 0035	1 5890	-0 0460	0 0365	0 0175	-0 0237	0 0035
25	0 021	349 2	1 5758	0 2317	0 0348	0 0274	-0 0240	0 0033	1 5921	-0 0454	0 0348	0 0159	-0 0254	0 0033
26	0 027	448 8	1 5826	0 2353	0 0333	0 0261	-0 0261	0 0033	1 5994	-0 0431	0 0333	0 0137	-0 0274	0 0033
27	0 033	549 2	1 5843	0 2394	0 0306	0 0244	-0 0283	0 0030	1 6018	-0 0393	0 0306	0 0110	-0 0294	0 0030

TABLE 1.- CONTINUED

Run = 49	Q = 378 72 psi	Sigma= 30 00 °	Pt= 1912 0 psf
Config= 1	M = 0 600	Psi = 10 00 °	Ps= 1505 4 psf
File1 = 49CTD	Rn= 0 882 x10⁶	Alpha= 29 62 °	Tt= 543 1 °R
File2 = 50CTD	V = 662 2 ft/s	Beta = 4 98 °	Ts= 506 6 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 036	600 2	1 5846	0 2422	0 0289	0 0229	-0 0292	0 0031	1 6026	-0 0366	0 0289	0 0091	-0 0303	0 0031
1	0 033	548 9	1 5888	0 2400	0 0303	0 0229	-0 0283	0 0032	1 6064	-0 0395	0 0303	0 0095	-0 0294	0 0032
2	0 030	501 2	1 5839	0 2371	0 0312	0 0222	-0 0270	0 0030	1 6010	-0 0415	0 0312	0 0094	-0 0281	0 0030
3	0 027	450 4	1 5840	0 2358	0 0324	0 0229	-0 0259	0 0030	1 6009	-0 0429	0 0324	0 0106	-0 0270	0 0030
4	0 024	400 4	1 5835	0 2337	0 0339	0 0236	-0 0253	0 0030	1 6000	-0 0448	0 0339	0 0116	-0 0265	0 0030
5	0 021	350 5	1 5801	0 2318	0 0342	0 0241	-0 0242	0 0033	1 5964	-0 0462	0 0342	0 0126	-0 0254	0 0033
6	0 021	350 5	1 5831	0 2323	0 0348	0 0237	-0 0238	0 0029	1 5994	-0 0461	0 0348	0 0124	-0 0250	0 0029
7	0 018	300 2	1 5815	0 2321	0 0351	0 0248	-0 0237	0 0033	1 5978	-0 0460	0 0351	0 0135	-0 0250	0 0033
8	0 015	249 9	1 5790	0 2312	0 0365	0 0255	-0 0222	0 0034	1 5952	-0 0465	0 0365	0 0149	-0 0235	0 0034
9	0 012	200 6	1 5800	0 2287	0 0372	0 0257	-0 0214	0 0033	1 5957	-0 0491	0 0372	0 0154	-0 0228	0 0033
10	0 009	149 9	1 5774	0 2263	0 0367	0 0250	-0 0200	0 0033	1 5927	-0 0510	0 0367	0 0154	-0 0214	0 0033
11	0 006	99 9	1 5760	0 2252	0 0372	0 0254	-0 0193	0 0037	1 5912	-0 0519	0 0372	0 0161	-0 0207	0 0037
12	0 003	50 3	1 5749	0 2246	0 0377	0 0258	-0 0183	0 0042	1 5900	-0 0523	0 0377	0 0170	-0 0197	0 0042
13	0 000	0 2	1 5845	0 2197	0 0365	0 0260	-0 0192	0 0029	1 5986	-0 0588	0 0365	0 0168	-0 0207	0 0029
14	-0 003	-52 5	1 5713	0 2194	0 0374	0 0235	-0 0160	0 0042	1 5855	-0 0568	0 0374	0 0157	-0 0173	0 0042
15	-0 006	-101 6	1 5709	0 2198	0 0374	0 0228	-0 0154	0 0046	1 5852	-0 0564	0 0374	0 0153	-0 0167	0 0046
16	-0 009	-151 1	1 5696	0 2195	0 0376	0 0208	-0 0145	0 0049	1 5839	-0 0564	0 0376	0 0138	-0.0156	0 0049
17	-0 012	-202 6	1 5654	0 2177	0 0383	0 0191	-0 0136	0 0054	1 5794	-0 0575	0 0383	0 0125	-0 0147	0 0054
18	-0 015	-255 6	1 5674	0 2161	0 0375	0 0182	-0 0123	0 0058	1 5811	-0 0594	0 0375	0 0123	-0 0133	0 0058
19	-0 018	-300 4	1 5643	0 2180	0 0370	0 0154	-0 0118	0 0065	1 5784	-0 0570	0 0370	0 0097	-0 0127	0 0065
20	-0 021	-349 5	1 5670	0 2185	0 0367	0 0150	-0 0113	0 0067	1 5811	-0 0569	0 0367	0 0096	-0 0121	0 0067
21	-0 024	-400 9	1 5668	0 2178	0 0359	0 0133	-0 0111	0 0070	1 5809	-0 0575	0 0359	0 0080	-0 0118	0 0070
22	-0 027	-450 0	1 5657	0 2191	0 0353	0 0123	-0 0106	0 0070	1 5800	-0 0561	0 0353	0 0072	-0 0112	0 0070
23	-0 030	-499 9	1 5701	0 2179	0 0339	0 0115	-0 0095	0 0071	1 5841	-0 0580	0 0339	0 0070	-0 0101	0 0071
24	-0 033	-549 2	1 5744	0 2162	0 0328	0 0109	-0 0083	0 0069	1 5880	-0 0605	0 0328	0 0069	-0 0089	0 0069
25	-0 036	-599 0	1 5747	0 2129	0 0312	0 0095	-0 0072	0 0068	1 5877	-0 0638	0 0312	0 0060	-0 0077	0 0068
26	-0 030	-497 5	1 5719	0 2174	0 0341	0 0108	-0 0093	0 0069	1 5858	-0 0588	0 0341	0 0063	-0 0099	0 0069
27	-0 024	-398 0	1 5732	0 2191	0 0363	0 0118	-0 0111	0 0066	1 5873	-0 0574	0 0363	0 0065	-0 0117	0 0066
28	-0 018	-298 6	1 5727	0 2184	0 0372	0 0138	-0 0121	0 0060	1 5867	-0 0580	0 0372	0 0080	-0 0128	0 0060
29	-0 012	-199 4	1 5716	0 2176	0 0389	0 0171	-0 0132	0 0047	1 5855	-0 0586	0 0389	0 0108	-0 0141	0 0047
30	-0 006	-98 8	1 5803	0 2199	0 0381	0 0203	-0 0148	0 0035	1 5944	-0 0578	0 0381	0 0132	-0 0159	0 0035
31	0 006	99 9	1 5786	0 2237	0 0381	0 0233	-0 0185	0 0023	1 5935	-0 0538	0 0381	0 0144	-0 0197	0 0023
32	0 012	200 6	1 5778	0 2268	0 0376	0 0238	-0 0207	0 0022	1 5932	-0 0506	0 0376	0 0139	-0 0220	0 0022
33	0 018	299 8	1 5817	0 2303	0 0353	0 0235	-0 0227	0 0021	1 5977	-0 0479	0 0353	0 0127	-0 0239	0 0021
34	0 024	399 8	1 5845	0 2324	0 0347	0 0221	-0 0249	0 0021	1 6007	-0 0462	0 0347	0 0103	-0 0260	0 0021

TABLE 1.- CONTINUED

Run = 51	Q = 385 20 psi	Sigma= 30 00 °	Pt= 1928 7 psf
Config= 1	M = 0 603	Psi = 10 00 °	Ps= 1514 8 psf
File1 = 51CTD	Rn= 0 888 x10⁶	Alpha= 29 62 °	Tt= 545 2 °R
File2 = 52CTD	V = 666 8 ft/s	Beta = 4 98 °	Ts= 508 2 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 035	600 2	1 5975	0 2428	0 0304	0 0196	-0 0289	0 0029	1 6154	-0 0383	0 0304	0 0060	-0 0297	0 0029
1	0 032	551 1	1 5940	0 2400	0 0309	0 0202	-0 0283	0 0033	1 6115	-0 0405	0 0309	0 0069	-0 0292	0 0033
2	0 030	501 0	1 5958	0 2389	0 0323	0 0200	-0 0273	0 0031	1 6130	-0 0418	0 0323	0 0071	-0 0282	0 0031
3	0 027	451 9	1 5862	0 2354	0 0336	0 0204	-0 0264	0 0029	1 6029	-0 0436	0 0336	0 0079	-0 0274	0 0029
4	0 024	402 3	1 5873	0 2349	0 0346	0 0213	-0 0260	0 0030	1 6040	-0 0443	0 0346	0 0091	-0 0270	0 0030
5	0 021	351 7	1 5879	0 2335	0 0356	0 0214	-0 0240	0 0034	1 6043	-0 0458	0 0356	0 0100	-0 0250	0 0034
6	0 018	301 7	1 5869	0 2327	0 0359	0 0225	-0 0232	0 0034	1 6032	-0 0464	0 0359	0 0115	-0 0243	0 0034
7	0 015	250 9	1 5830	0 2317	0 0371	0 0237	-0 0225	0 0035	1 5992	-0 0467	0 0371	0 0129	-0 0238	0 0035
8	0 012	201 0	1 5815	0 2293	0 0380	0 0229	-0 0217	0 0034	1 5973	-0 0488	0 0380	0 0126	-0 0229	0 0034
9	0 009	150 0	1 5803	0 2278	0 0378	0 0247	-0 0207	0 0035	1 5958	-0 0501	0 0378	0 0148	-0 0220	0 0035
10	0 006	99 2	1 5820	0 2264	0 0383	0 0240	-0 0195	0 0036	1 5973	-0 0517	0 0383	0 0147	-0 0208	0 0036
11	0 003	51 2	1 5810	0 2263	0 0387	0 0256	-0 0188	0 0037	1 5963	-0 0517	0 0387	0 0165	-0 0202	0 0037
12	0 000	0 3	1 5644	0 2127	0 0409	0 0229	-0 0172	0 0033	1 5776	-0 0622	0 0409	0 0146	-0 0185	0 0033
13	-0 003	-52 0	1 5812	0 2213	0 0392	0 0254	-0 0166	0 0040	1 5956	-0 0566	0 0392	0 0174	-0 0180	0 0040
14	-0 006	-100 9	1 5791	0 2213	0 0385	0 0234	-0 0158	0 0044	1 5935	-0 0563	0 0385	0 0158	-0 0171	0 0044
15	-0 009	-150 4	1 5788	0 2198	0 0384	0 0227	-0 0145	0 0048	1 5930	-0 0577	0 0384	0 0157	-0 0158	0 0048
16	-0 012	-201 0	1 5756	0 2174	0 0389	0 0218	-0 0135	0 0050	1 5894	-0 0595	0 0389	0 0153	-0 0148	0 0050
17	-0 015	-251 2	1 5736	0 2160	0 0384	0 0190	-0 0124	0 0053	1 5872	-0 0605	0 0384	0 0130	-0 0135	0 0053
18	-0 018	-300 6	1 5734	0 2170	0 0376	0 0171	-0 0119	0 0058	1 5872	-0 0595	0 0376	0 0114	-0 0128	0 0058
19	-0 021	-351 4	1 5702	0 2177	0 0375	0 0152	-0 0111	0 0061	1 5842	-0 0583	0 0375	0 0099	-0 0119	0 0061
20	-0 024	-401 1	1 5742	0 2185	0 0369	0 0144	-0 0111	0 0065	1 5882	-0 0581	0 0369	0 0091	-0 0118	0 0065
21	-0 027	-452 5	1 5703	0 2180	0 0355	0 0125	-0 0101	0 0065	1 5843	-0 0580	0 0355	0 0077	-0 0107	0 0065
22	-0 030	-504 5	1 5743	0 2176	0 0344	0 0109	-0 0091	0 0066	1 5881	-0 0590	0 0344	0 0065	-0 0097	0 0066
23	-0 033	-555 5	1 5730	0 2151	0 0330	0 0092	-0 0083	0 0065	1 5865	-0 0613	0 0330	0 0052	-0 0088	0 0065
24	-0 035	-601 8	1 5732	0 2130	0 0332	0 0102	-0 0076	0 0065	1 5863	-0 0634	0 0332	0 0065	-0 0082	0 0065
25	-0 029	-500 5	1 5711	0 2172	0 0352	0 0106	-0 0093	0 0064	1 5849	-0 0589	0 0352	0 0062	-0 0099	0 0064
26	-0 024	-400 3	1 5762	0 2192	0 0374	0 0125	-0 0109	0 0060	1 5903	-0 0579	0 0374	0 0073	-0 0116	0 0060
27	-0 018	-301 3	1 5805	0 2176	0 0378	0 0155	-0 0119	0 0053	1 5943	-0 0602	0 0378	0 0098	-0 0127	0 0053
28	-0 012	-201 6	1 5817	0 2182	0 0393	0 0195	-0 0132	0 0039	1 5955	-0 0598	0 0393	0 0131	-0 0143	0 0039
29	-0 006	-100 2	1 5839	0 2207	0 0389	0 0223	-0 0153	0 0032	1 5982	-0 0577	0 0389	0 0149	-0 0166	0 0032
30	0 006	100 8	1 5823	0 2255	0 0387	0 0239	-0 0188	0 0024	1 5974	-0 0527	0 0387	0 0148	-0 0201	0 0024
31	0 012	202 1	1 5859	0 2287	0 0387	0 0230	-0 0208	0 0021	1 6016	-0 0502	0 0387	0 0131	-0 0220	0 0021
32	0 018	302 0	1 5865	0 2314	0 0370	0 0222	-0 0224	0 0021	1 6026	-0 0476	0 0370	0 0116	-0 0235	0 0021
33	0 024	401 6	1 5848	0 2336	0 0358	0 0217	-0 0253	0 0022	1 6012	-0 0451	0 0358	0 0097	-0 0264	0 0022
34	0 030	501 7	1 5880	0 2376	0 0339	0 0222	-0 0272	0 0026	1 6052	-0 0418	0 0339	0 0094	-0 0282	0 0026

TABLE 1.- CONCLUDED

Run = 53	Q = 375 94 psi	Sigma= 30 00 °	Pt= 1894 2 psf
Config= 1	M = 0 601	Psi = -10 00 °	Ps= 1490 5 psf
File1 = 53CTD	Rn= 0 888 x10⁶	Alpha= 29 62 °	Tt= 536 6 °R
File2 = 54CTD	V = 659 0 ft/s	Beta = -4 98 °	Ts= 500 4 °R

			AERODYNAMIC AXES COEFFICIENTS						BODY AXES COEFFICIENTS					
Seq	ωb/2V	ω (rpm)	CN	CY	CA	Cm	Cn	Cl	CN	CY	CA	Cm	Cn	Cl
0	0 000	0 1	1 5953	-0 2154	0 0381	0 0318	0 0116	0 0014	1 6084	0 0649	0 0381	0 0260	0 0135	0.0014
1	0 000	0 2	1 5676	-0 2130	0 0405	0 0251	0 0111	0 0032	1 5808	0 0624	0 0405	0 0196	0 0126	0.0032
2	0 000	0 2	1 5623	-0 2066	0 0395	0 0291	0 0133	0 0022	1 5744	0 0679	0 0395	0 0226	0 0150	0.0022
3	0 000	0 2	1 5843	-0 2088	0 0385	0 0303	0 0140	0 0014	1 5964	0 0695	0 0385	0 0234	0 0158	0 0014
4	0 036	601 3	1 5879	-0 1893	0 0330	0 0268	-0 0013	0 0061	1 5966	0 0893	0 0330	0 0270	0 0005	0.0061
5	0 030	500 1	1 5860	-0 1953	0 0338	0 0273	0 0010	0 0052	1 5958	0 0830	0 0338	0 0265	0 0028	0.0052
6	0 024	400 4	1 5844	-0 1980	0 0353	0 0270	0 0032	0 0044	1 5948	0 0801	0 0353	0 0252	0 0049	0.0044
7	0 018	300 9	1 5839	-0 2003	0 0361	0 0274	0 0057	0 0040	1 5946	0 0778	0 0361	0 0244	0 0074	0.0040
8	0 012	200 0	1 5830	-0 2050	0 0381	0 0285	0 0084	0 0033	1 5945	0 0730	0 0381	0 0242	0 0102	0 0033
9	0 006	99 2	1 5798	-0 2087	0 0381	0 0287	0 0106	0 0024	1 5921	0 0688	0 0381	0 0234	0 0123	0.0024
10	-0 006	-100 5	1 5767	-0 2155	0 0378	0 0294	0 0151	0 0019	1 5902	0 0615	0 0378	0 0220	0 0168	0.0019
11	-0 012	-200 6	1 5732	-0 2185	0 0374	0 0290	0 0172	0 0013	1 5873	0 0580	0 0374	0 0206	0 0189	0.0013
12	-0 018	-300 9	1 5764	-0 2216	0 0358	0 0274	0 0195	0 0013	1 5910	0 0555	0 0358	0 0180	0 0210	0 0013
13	-0 024	-401 1	1 5776	-0 2236	0 0347	0 0265	0 0211	0 0007	1 5925	0 0537	0 0347	0 0164	0 0226	0 0007
14	-0 030	-501 6	1 5800	-0 2263	0 0325	0 0243	0 0230	0 0008	1 5953	0 0515	0 0325	0 0134	0 0243	0.0008
15	-0 036	-596 5	1 5886	-0 2323	0 0300	0 0192	0 0250	0 0007	1 6048	0 0471	0 0300	0 0074	0 0259	0.0007
16	-0 033	-551 4	1 5895	-0 2298	0 0308	0 0201	0 0241	0 0006	1 6052	0 0497	0 0308	0 0087	0 0251	0.0006
17	-0 027	-450 7	1 5851	-0 2257	0 0333	0 0226	0 0222	0 0007	1 6002	0 0530	0 0333	0 0121	0 0233	0.0007
18	-0 021	-351 4	1 5823	-0 2229	0 0347	0 0252	0 0207	0 0006	1 5970	0 0552	0 0347	0 0153	0 0220	0.0006
19	-0 015	-251 0	1 5771	-0 2220	0 0361	0 0275	0 0188	0 0008	1 5917	0 0553	0.0361	0 0184	0 0203	0.0008
20	-0 009	-149 8	1 5776	-0 2170	0 0363	0 0289	0 0159	0 0013	1 5913	0 0603	0 0363	0 0211	0 0176	0 0013
21	-0 003	-51 5	1 5771	-0 2156	0 0371	0 0300	0 0146	0 0014	1 5906	0 0615	0 0371	0 0228	0 0164	0 0014
22	0 003	49 3	1 5730	-0 2112	0 0374	0 0308	0 0117	0 0021	1 5858	0 0652	0 0374	0 0250	0 0135	0.0021
23	0 009	150 2	1 5728	-0 2075	0 0366	0 0306	0 0100	0 0024	1 5849	0 0688	0 0366	0 0256	0 0118	0 0024
24	0 015	250 1	1 5747	-0 2032	0 0360	0 0311	0 0075	0 0032	1 5861	0 0734	0 0360	0 0272	0 0094	0 0032
25	0 021	350 9	1 5805	-0 2017	0 0340	0 0296	0 0050	0 0040	1 5915	0 0758	0 0340	0 0269	0 0068	0 0040
26	0 027	450 4	1 5834	-0 1984	0 0327	0 0283	0 0024	0 0046	1 5938	0 0796	0 0327	0 0267	0 0042	0 0046
27	0 033	549 5	1 5869	-0 1931	0 0302	0 0269	-0 0001	0 0052	1 5964	0 0854	0 0302	0 0265	0 0017	0.0052
28	0 000	0 2	1 5931	-0 2173	0 0364	0 0314	0 0122	0 0013	1 6067	0 0626	0 0364	0 0254	0 0140	0 0013

TABLE 2.- STATIC AERODYNAMIC COEFFICIENTS

BODY AXES, $M = 0.6$, $R_e = 0.88 \times 10^6$

α, deg	β, deg	σ, deg	ψ, deg	C_N	C_y	C_A	C_m	C_n	C_l
0 0	0 0	0.0	0 0	0.00	-0.002	0 047	-0.013	0.001	0 000
5.0	0.0	5.0	0.0	0.37	-0.001	0.036	-0.013	0.001	-0.002
7 5	0.0	7.5	0.0	0.53	-0.002	0 036	0.008	0.001	-0.001
10 0	0 0	10 0	0.0	0.68	0.000	0.033	0.028	0 001	0.000
15 0	0.0	15 0	0 0	1.01	0.002	0 029	0.077	0.001	0.001
20 0	0 0	20.0	0.0	1.22	-0.004	0.029	0.063	0.000	0 002
25 0	0 0	25.0	0.0	1.41	0.001	0.038	0.015	-0.001	0 002
30.0	0.0	30 0	0.0	1.65	-0.003	0.037	0.026	-0.001	0.002
0 0	5.0	5.0	90.4	0.00	-0 112	0.044	-0 011	0.021	-0 008
5 6	5.0	7.5	42.0	0.41	-0.112	0.033	-0 003	0 018	-0.012
8 7	5.0	10.0	29.8	0.58	-0.106	0 031	0.030	0.015	-0.012
14 2	5.0	15.0	19.5	0.93	-0.111	0 029	0 060	0 015	-0.015
19.4	4.8	20.0	14.1	1.18	-0 077	0.031	0.040	0 003	0.001
24 5	5.0	25.0	11.8	1 34	-0.062	0.038	0 021	-0.011	0.003
29 6	5.0	30 0	10 0	1 60	-0 053	0.039	0 017	-0 019	0 004
0 0	-5 0	5.0	-90 4	0.00	0.108	0 044	-0 007	-0.018	0 008
5.6	-5 0	7.5	-42 0	0.41	0.103	0 032	-0.004	-0.014	0.011
8.7	-5 0	10 0	-29 8	0.60	0.099	0.034	0 020	-0.012	0.012
14 2	-5.0	15 0	-19.5	0.94	0.105	0.028	0.065	-0.010	0 017
19.4	-4.8	20.0	-14.1	1.19	0.076	0.031	0 046	-0.001	0 003
24.5	-5.0	25 0	-11 8	1.36	0 067	0 038	0.020	0 010	0.001
29 6	-5 0	30.0	-10.0	1.59	0 066	0 038	0 023	0.014	0.003

TABLE 3.- STATIC AERODYNAMIC DERIVATIVES

BODY AXES, $M = 0.6$, $R_e = 0.88 \times 10^6$

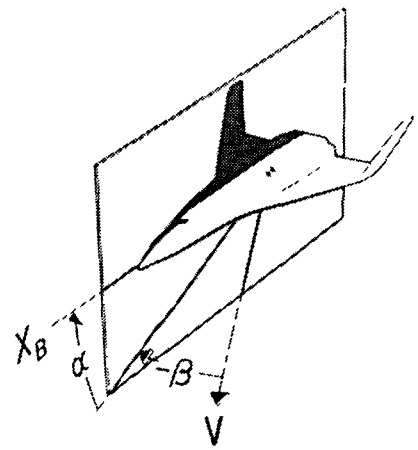
α, deg	C_{y_β}	C_{n_β}	C_{l_β}
0.0	-1.26	0.23	-0.09
5.6	-1.23	0.18	-0.13
8.7	-1.19	0.16	-0.14
14.2	-1.24	0.15	-0.18
19.4	-0.92	0.02	-0.02
24.5	-0.74	-0.12	0.01
29.6	-0 68	-0.19	0.01

TABLE 4.- DYNAMIC ROTARY COEFFICIENTS

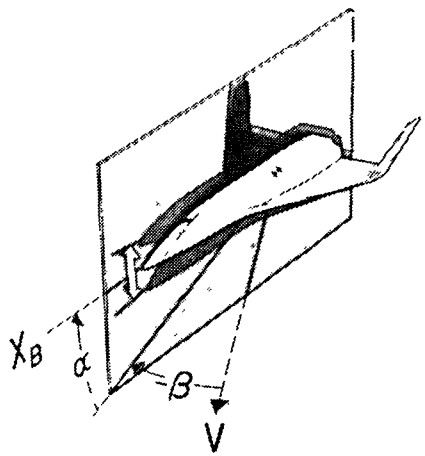
BODY AXES, $M = 0.6$, $R_e = 0.88 \times 10^6$

α, deg	β, deg	σ, deg	ψ, deg	C_{N_ω}	C_{y_ω}	C_{A_ω}	C_{m_ω}	C_{n_ω}	C_{l_ω}
0.0	0.0	0.0	0.0	0.01	-0.09	0 002	0.04	0.05	-0 27
5.0	0.0	5.0	0.0	-0.08	0.13	0.009	0.05	-0.03	-0 36
7.5	0.0	7.5	0.0	-0.01	0.19	0.006	0.02	-0.05	-0.17
10.0	0.0	10 0	0.0	0.10	0.28	0.000	0 00	-0 08	-0.18
15 0	0.0	15.0	0.0	-0 02	0.48	-0.002	0.02	-0.16	-0.25
20.0	0.0	20.0	0.0	0.12	0.82	0.012	-0.05	-0.31	0.11
25 0	0.0	25.0	0.0	-0 04	0.73	0.016	0.03	-0.35	0.05
30.0	0 0	30.0	0.0	-0.11	0.57	0.026	0.04	-0.38	0.12
0.0	5.0	5.0	90.4	0.19	-0.14	0.001	-0.09	0.05	-0.27
5 6	5.0	7.5	42.0	0.11	0.15	-0.006	-0 00	-0.03	-0 33
8 7	5.0	10.0	29.8	0.22	0.17	0 028	-0 36	-0.03	-0.17
14 2	5.0	15.0	19.5	0.17	0.44	0.000	-0.10	-0.15	-0 18
19.4	4.8	20.0	14.1	-0.04	0.79	0.063	-0.25	-0.30	-0.00
24.5	5.0	25.0	11.8	-0.16	0.76	0.040	0.01	-0.38	0.04
29.6	5.0	30 0	10.0	0.36	0 32	-0 035	0 01	-0 31	-0 06
0.0	-5.0	5 0	-90.4	-0.22	-0.10	-0 001	0.13	0 07	-0.28
5.6	-5.0	7.5	-42.0	-0.28	0.12	-0.015	0 08	-0 03	-0 31
8.7	-5.0	10.0	-29.8	-0 21	0.23	-0 006	0.21	-0.07	-0.17
14.2	-5 0	15.0	-19.5	-0.24	0.43	-0 021	0 18	-0 14	-0.20
19.4	-4 8	20 0	-14.1	0.05	0 84	-0 035	0.24	-0 31	0.03
24.5	-5.0	25 0	-11.8	0.05	0 72	-0 020	0.10	-0 36	0.04
29.6	-5.0	30.0	-10.0	-0 07	0.55	0.011	0.25	-0 36	0.07

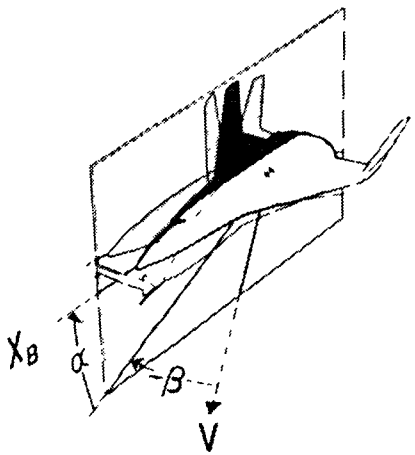
α, deg	$C_{N_{\omega\beta}}$	$C_{A_{\omega\beta}}$	$C_{m_{\omega\beta}}$
0 0	2.4	0 01	-1.2
5.6	2.2	0.05	-0.5
8 7	2.5	0.19	-3.3
14.2	2 4	0.12	-1.6
19.4	-0.5	0.59	-2.9
24 5	-1.2	0.35	-0.1
29.6	2.5	-0.26	-1.3



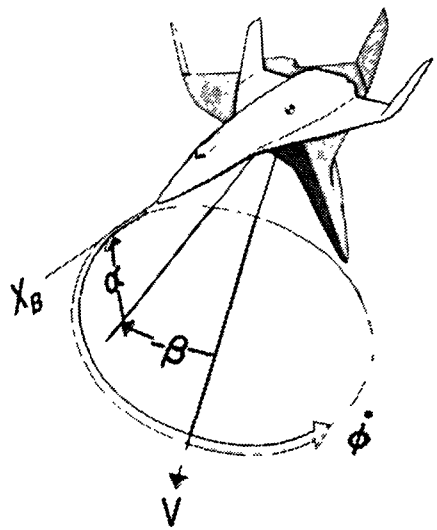
STEADY ANGLE OF ATTACK AND SIDESLIP



PITCH OSCILLATIONS



YAW OSCILLATIONS



CONING

Figure 1.- Characteristic motions in body-fixed axis system; linear dependence of responses on motion rates.

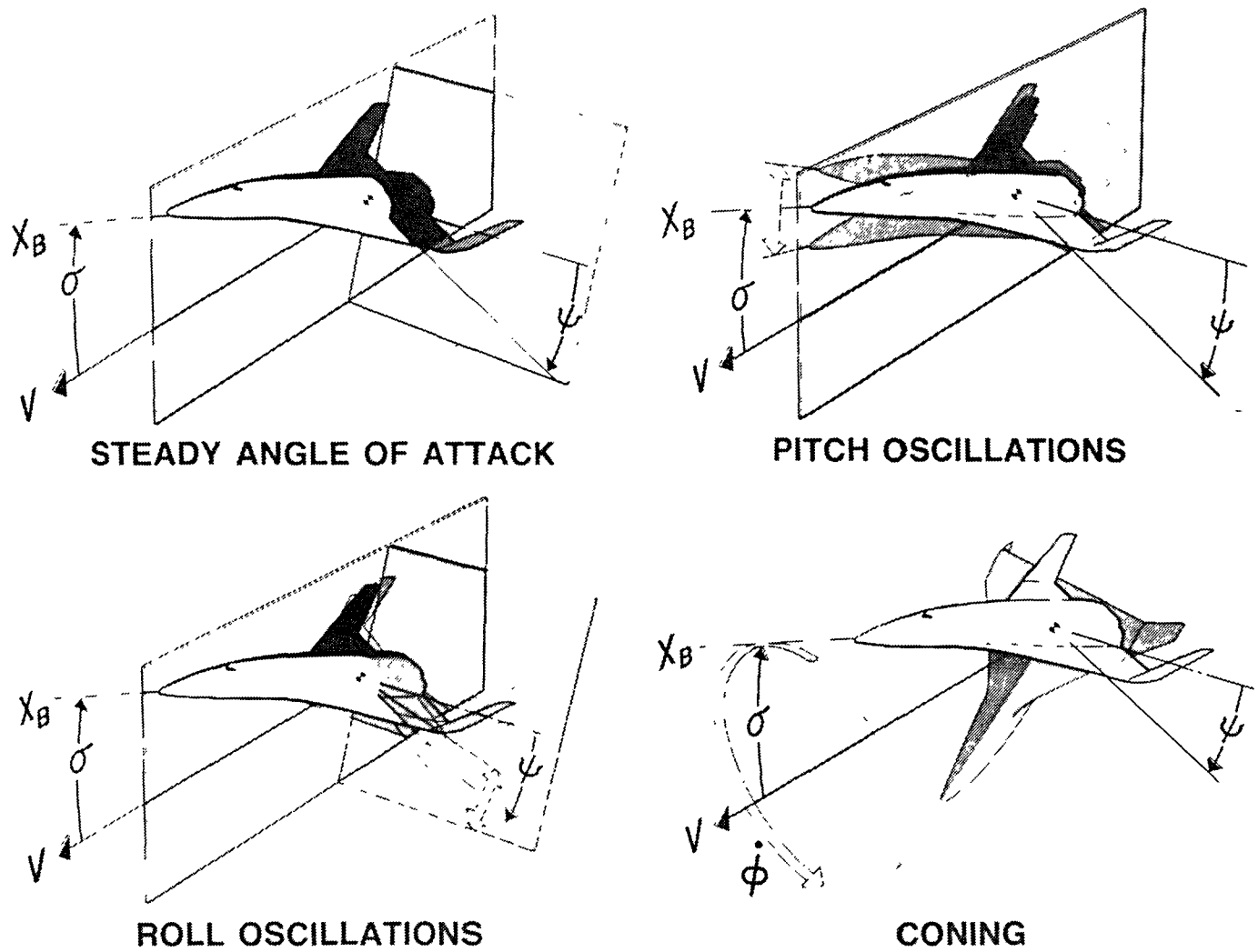


Figure 2.- Characteristic motions in aerodynamic axis system; linear dependence of responses on motion rates.

MATL.	ALUM. ALLOY 6061-T6
MASS	0.587 kg
INERTIAS	
I_{XX}	0.00074 kg m^2
I_{YY}	0.0040 kg m^2
I_{ZZ}	0.0044 kg m^2

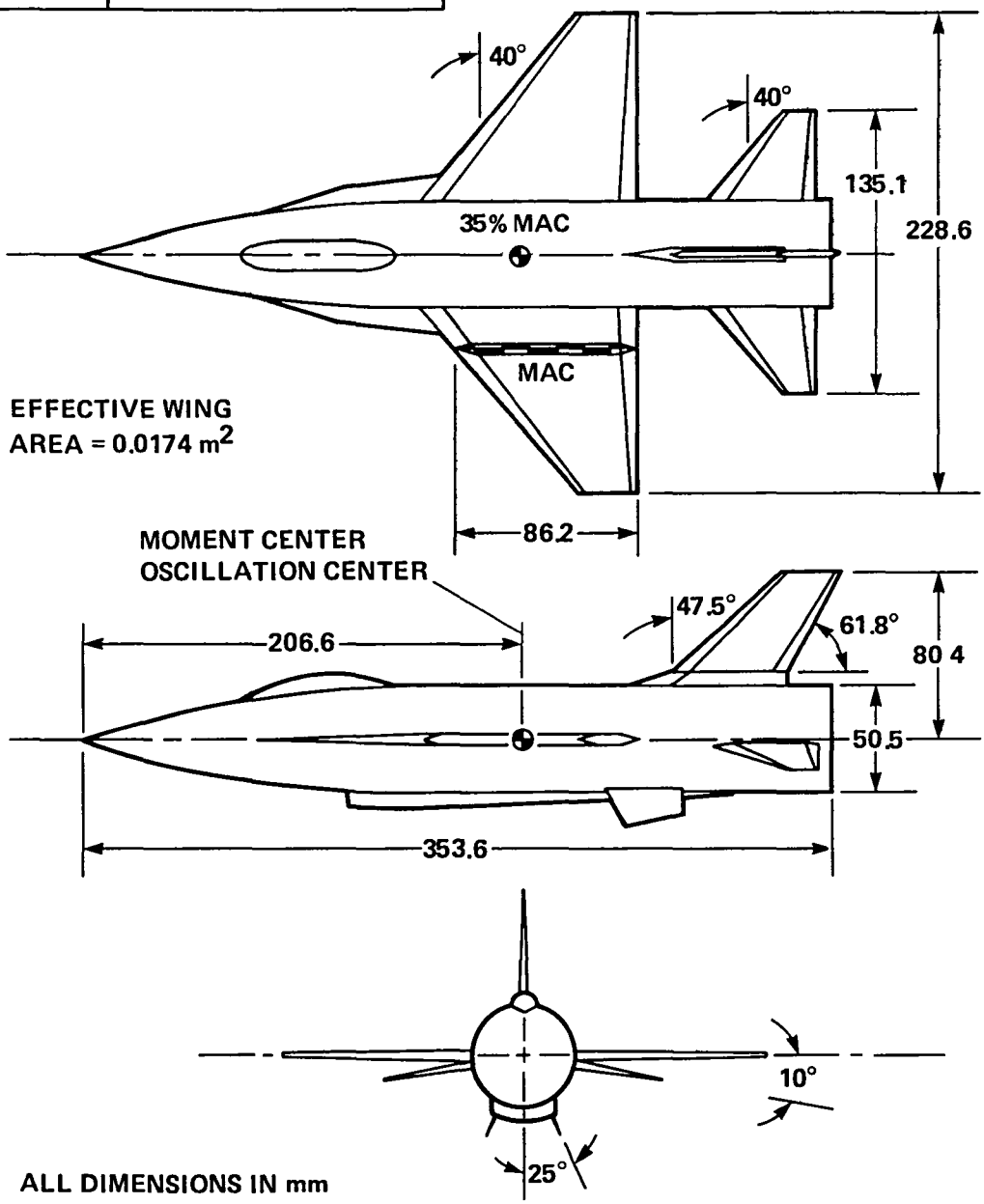


Figure 3.- Standard Dynamics Model.

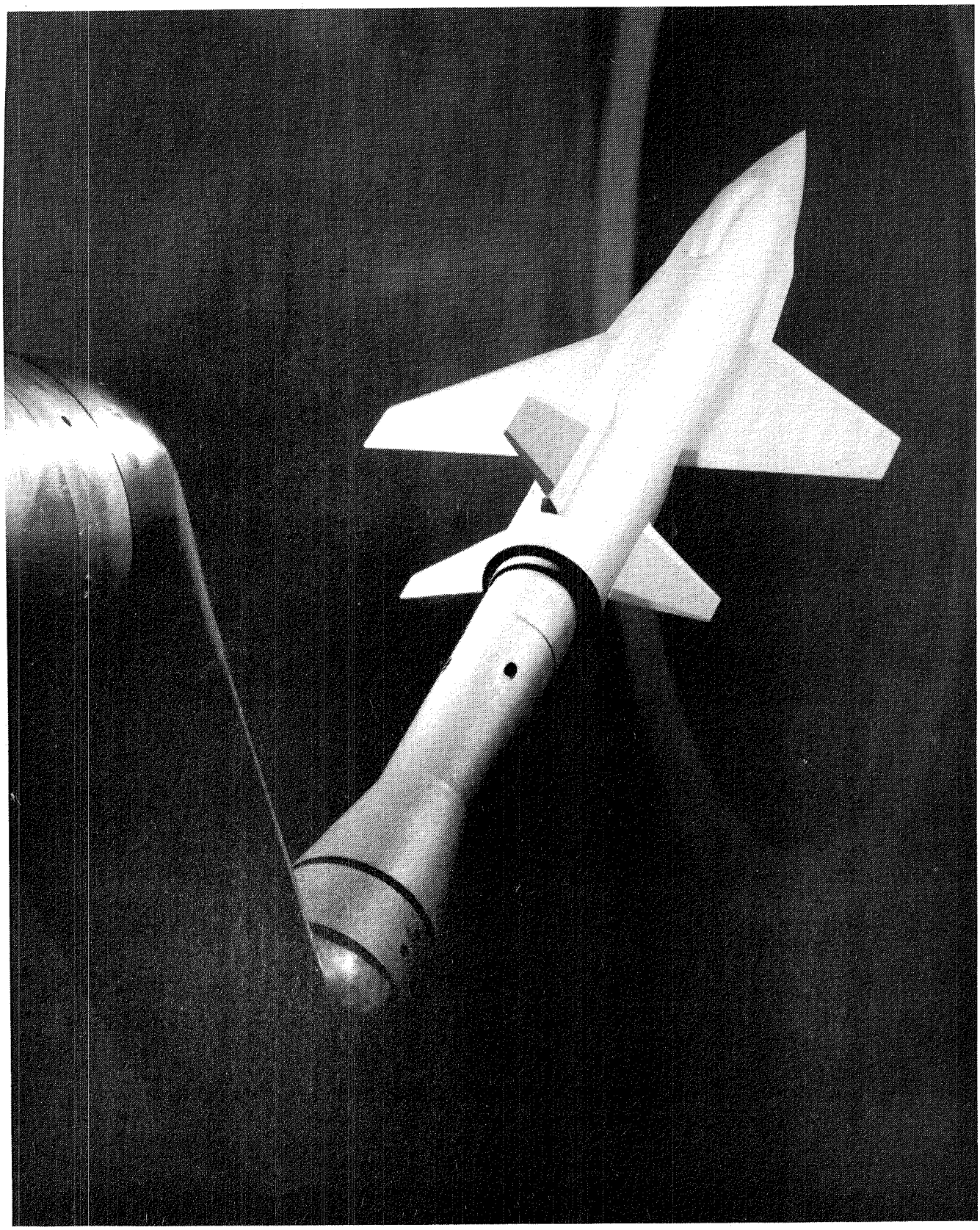


Figure 4.- Standard Dynamics Model in tunnel on 30° bent sting.

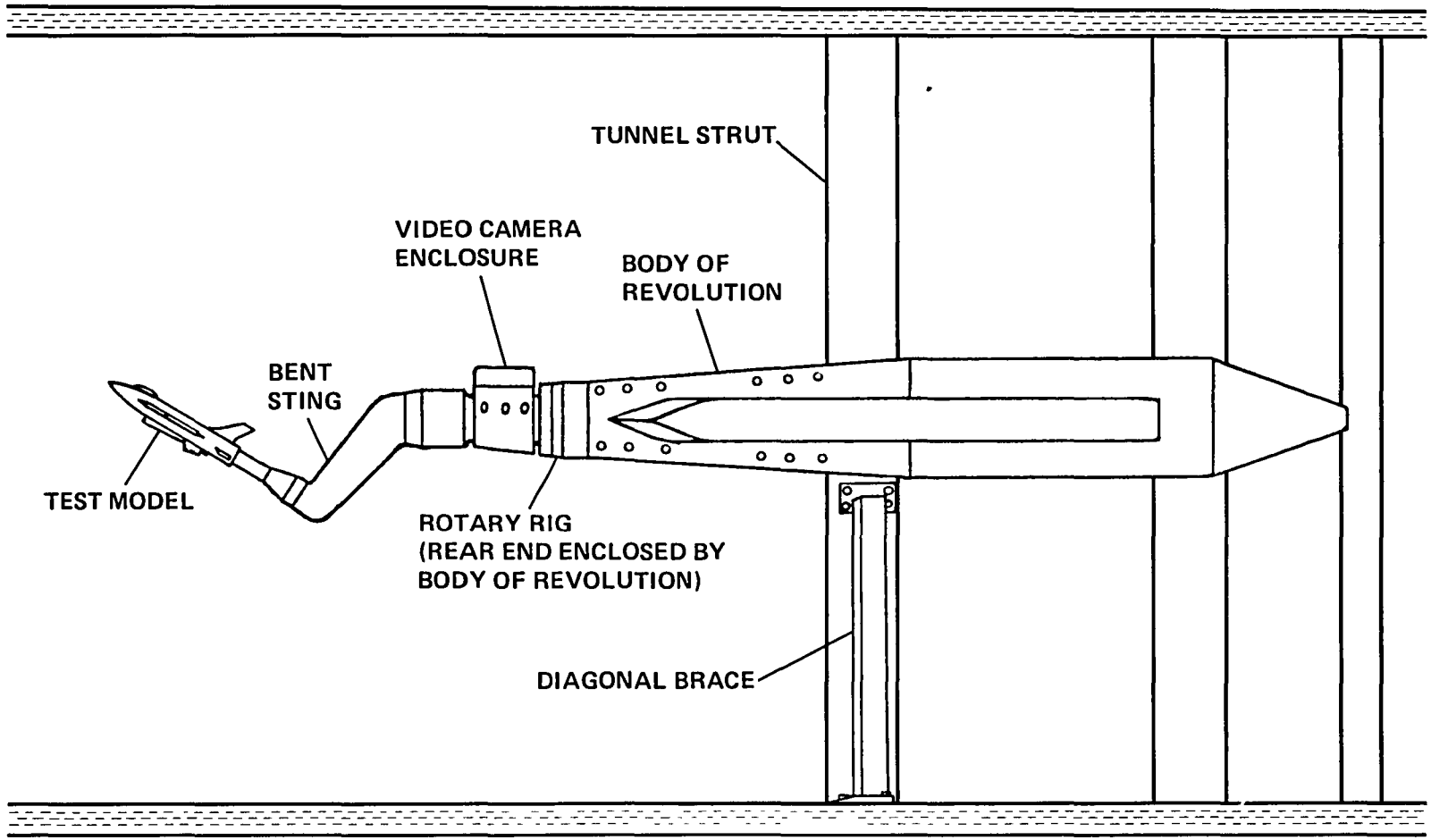


Figure 5.- Standard Dynamics Model, rotary rig and rig support in 6- by 6-Foot Supersonic Wind Tunnel.

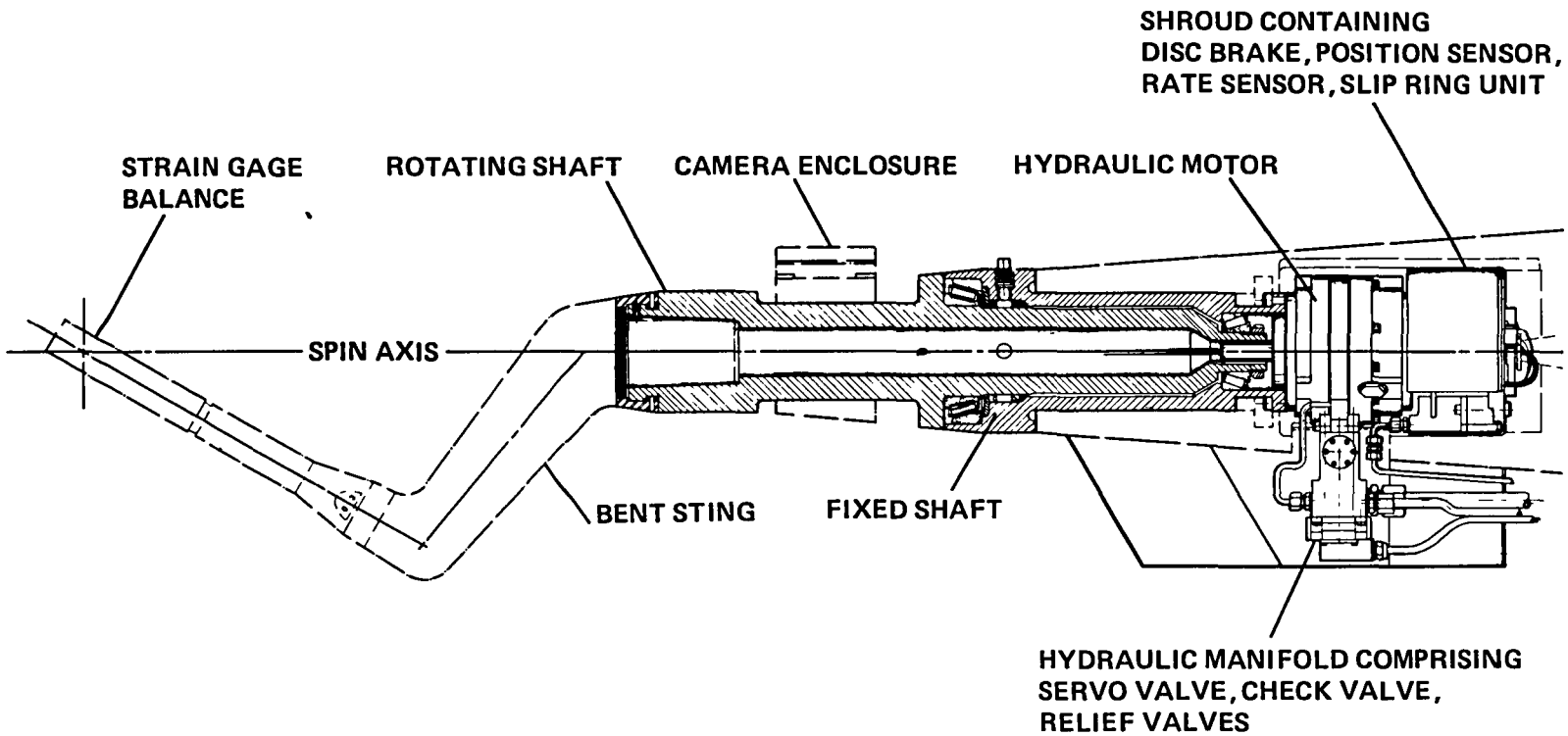


Figure 6.- Main features of the rotary rig apparatus.

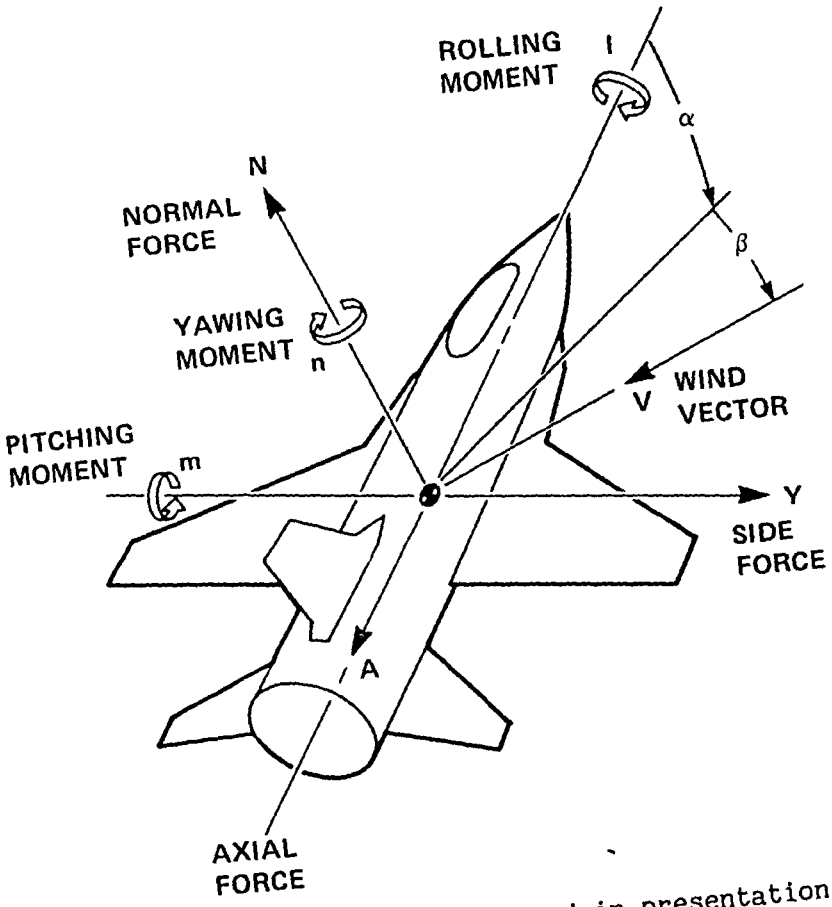
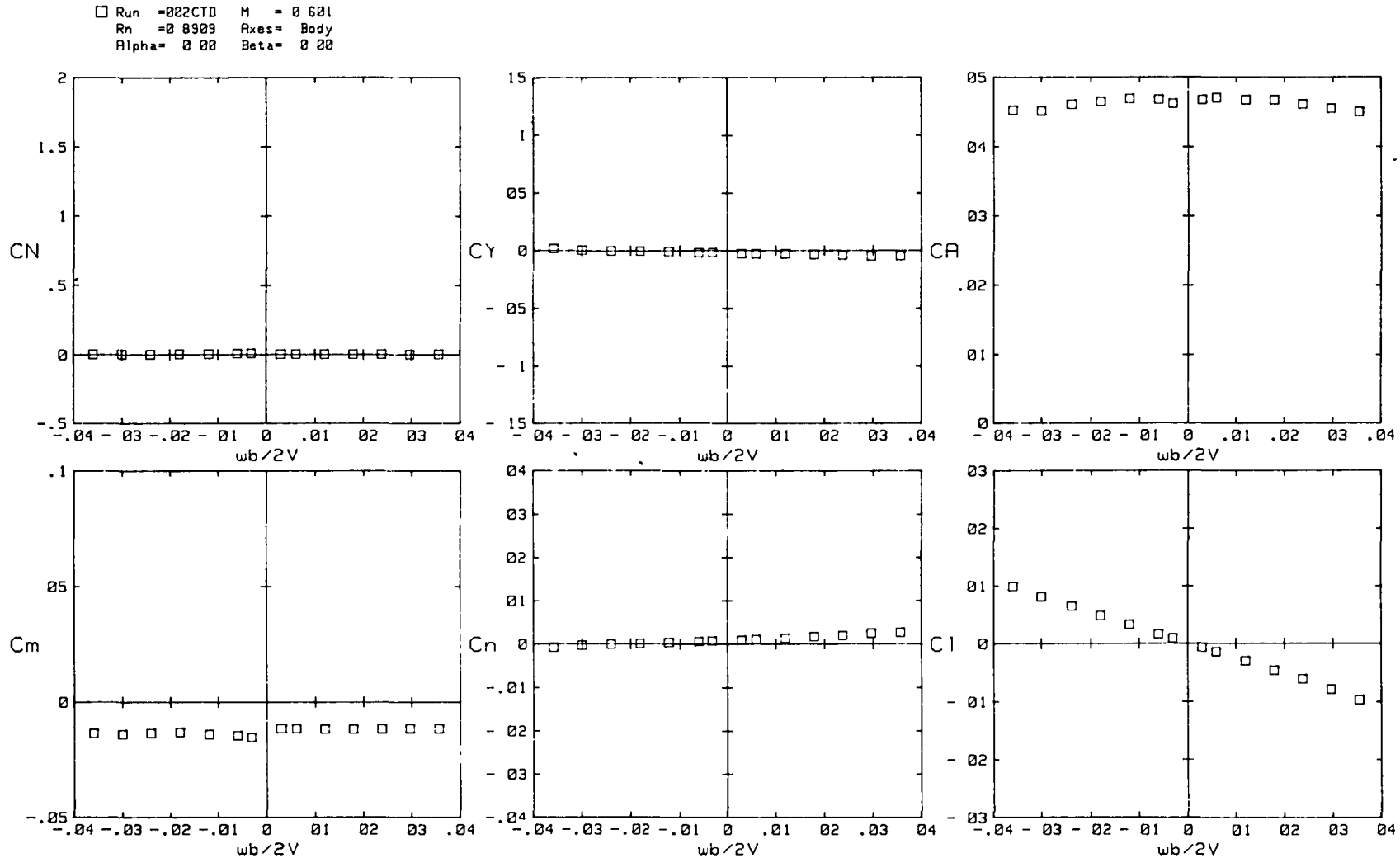
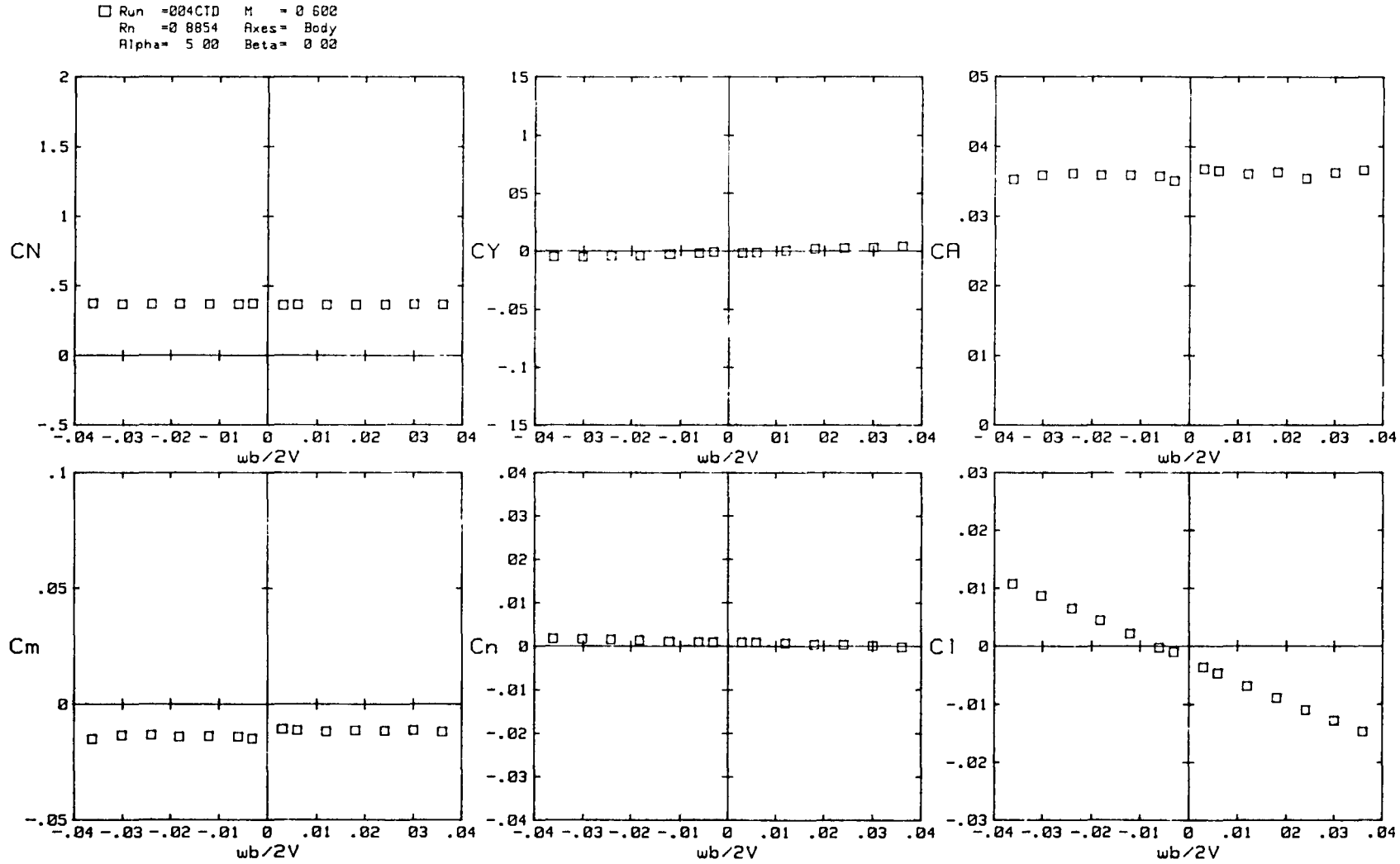


Figure 7.- Body-fixed axis system used in presentation of results.



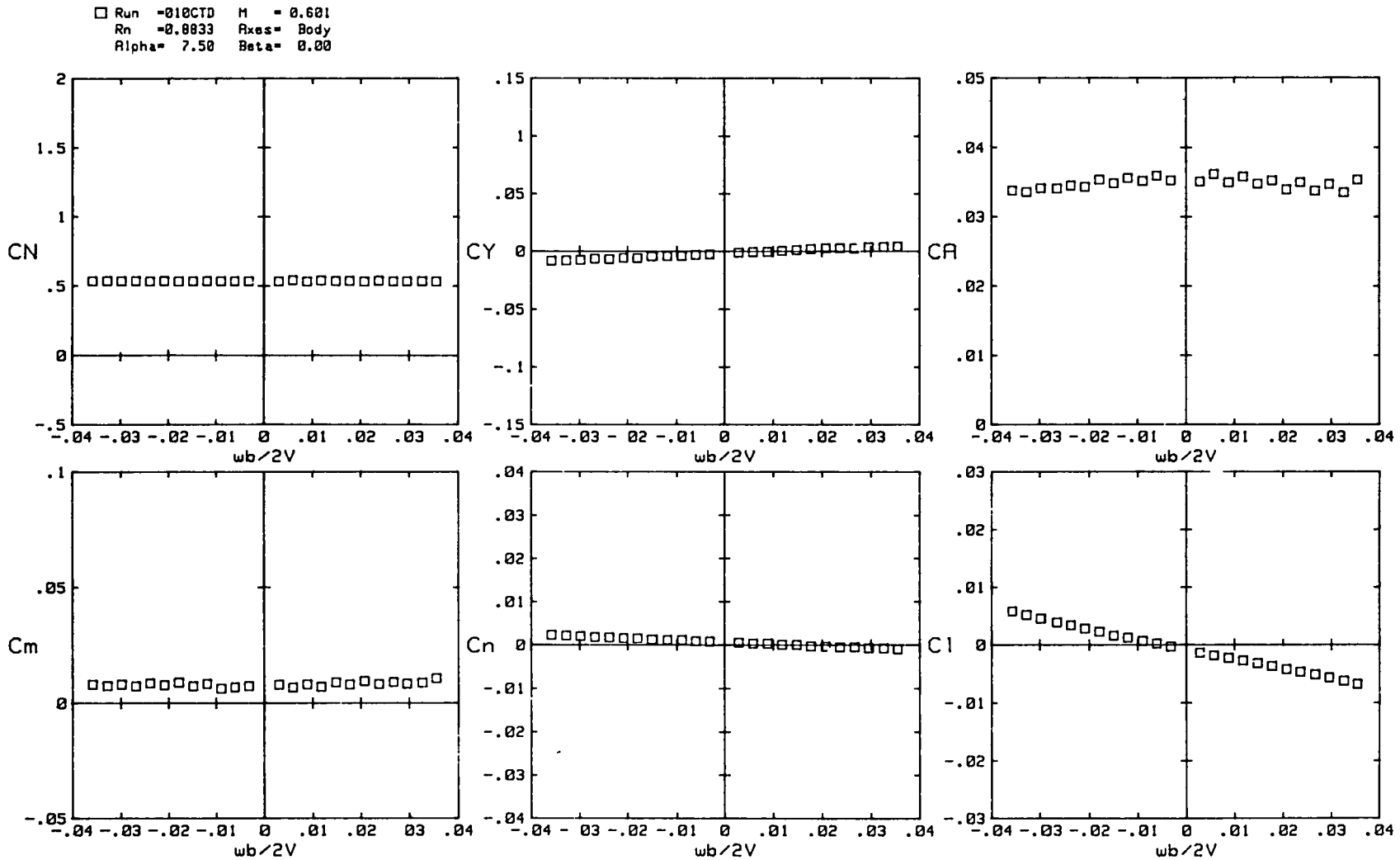
(a) $\alpha = 0°$.

Figure 8.- Variation of aerodynamic coefficients with $\omega b/2V$.



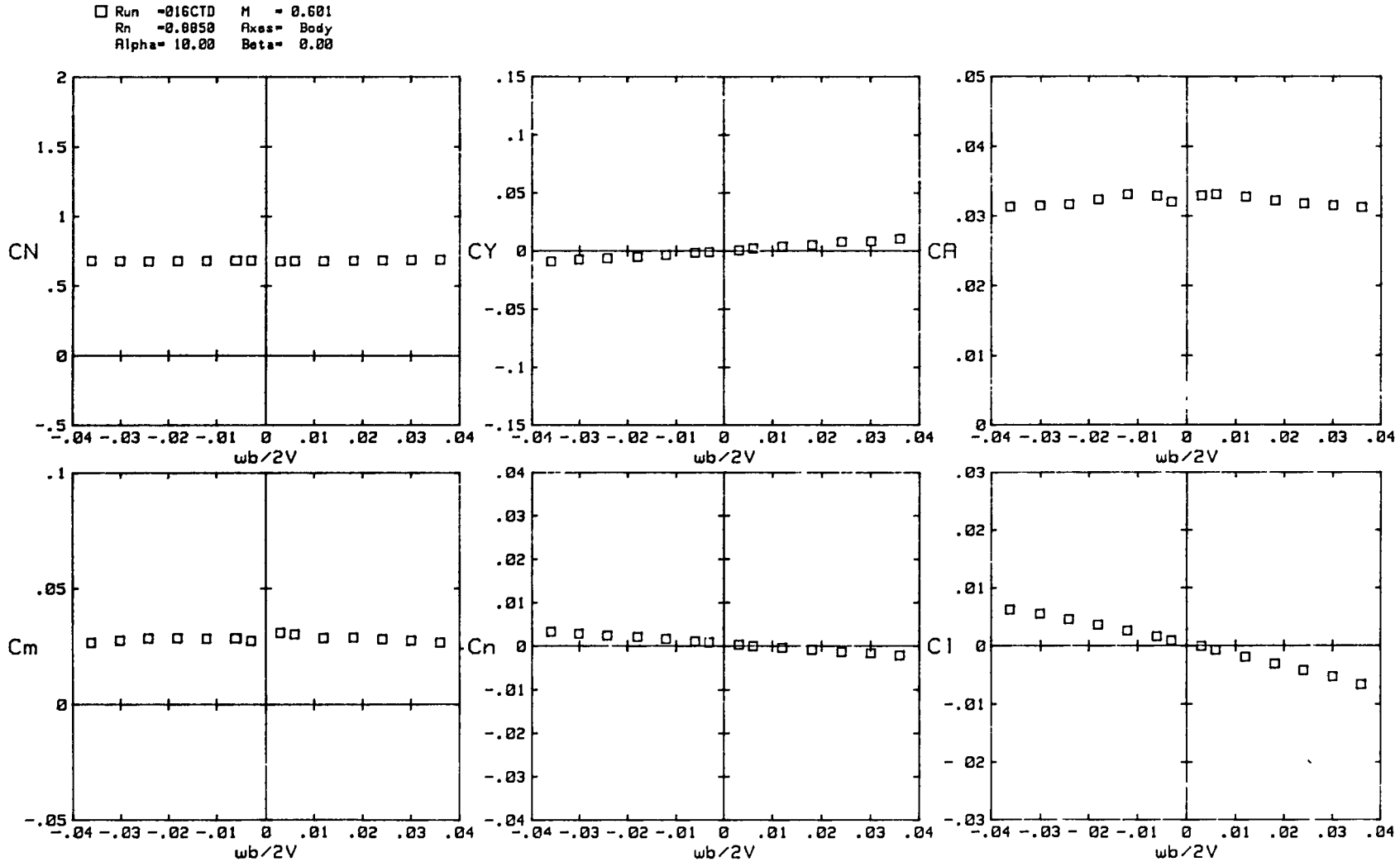
(b) $\alpha = 5°$.

Figure 8.- Continued.



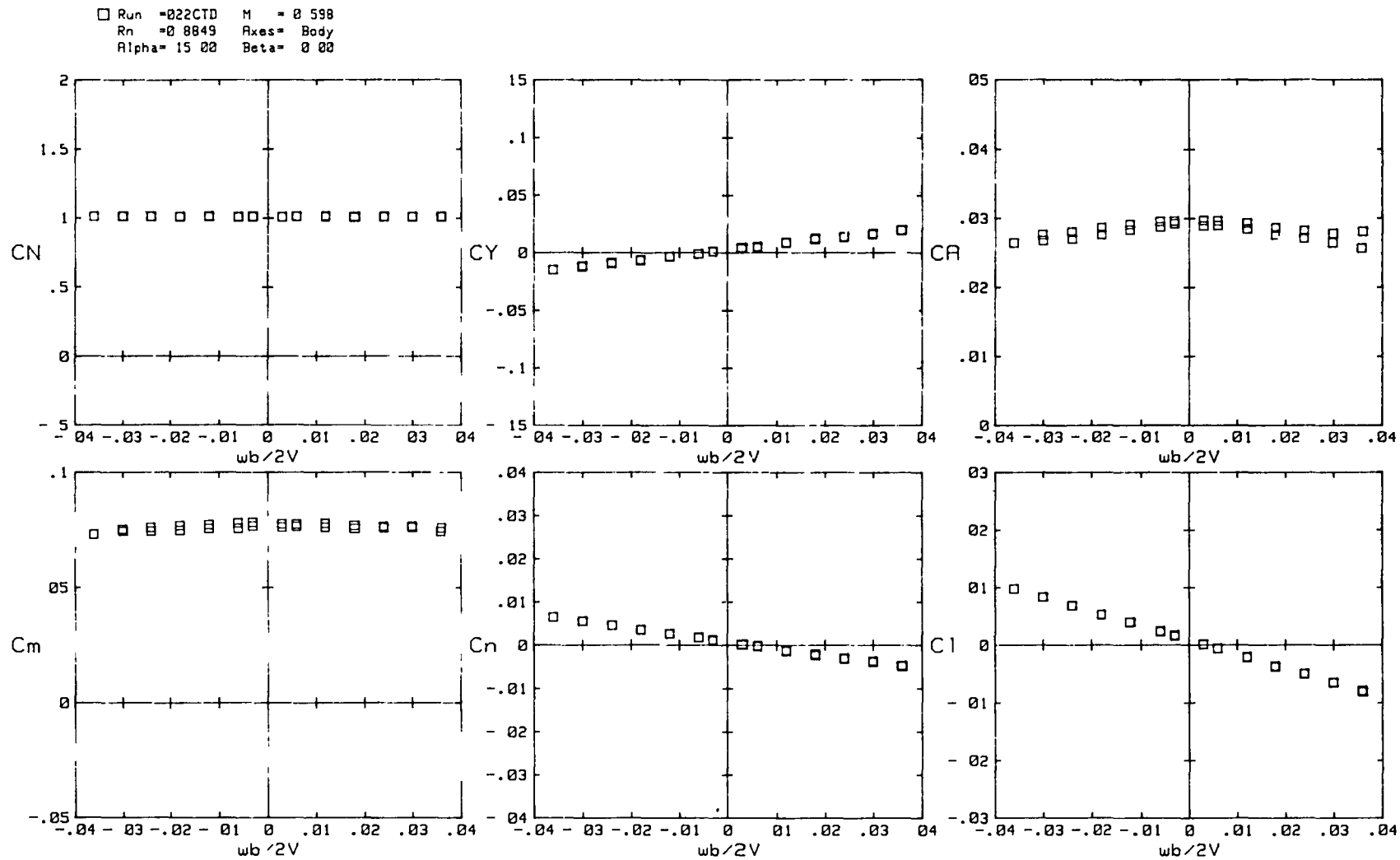
(c) $\alpha = 7.5°$.

Figure 8.- Continued.



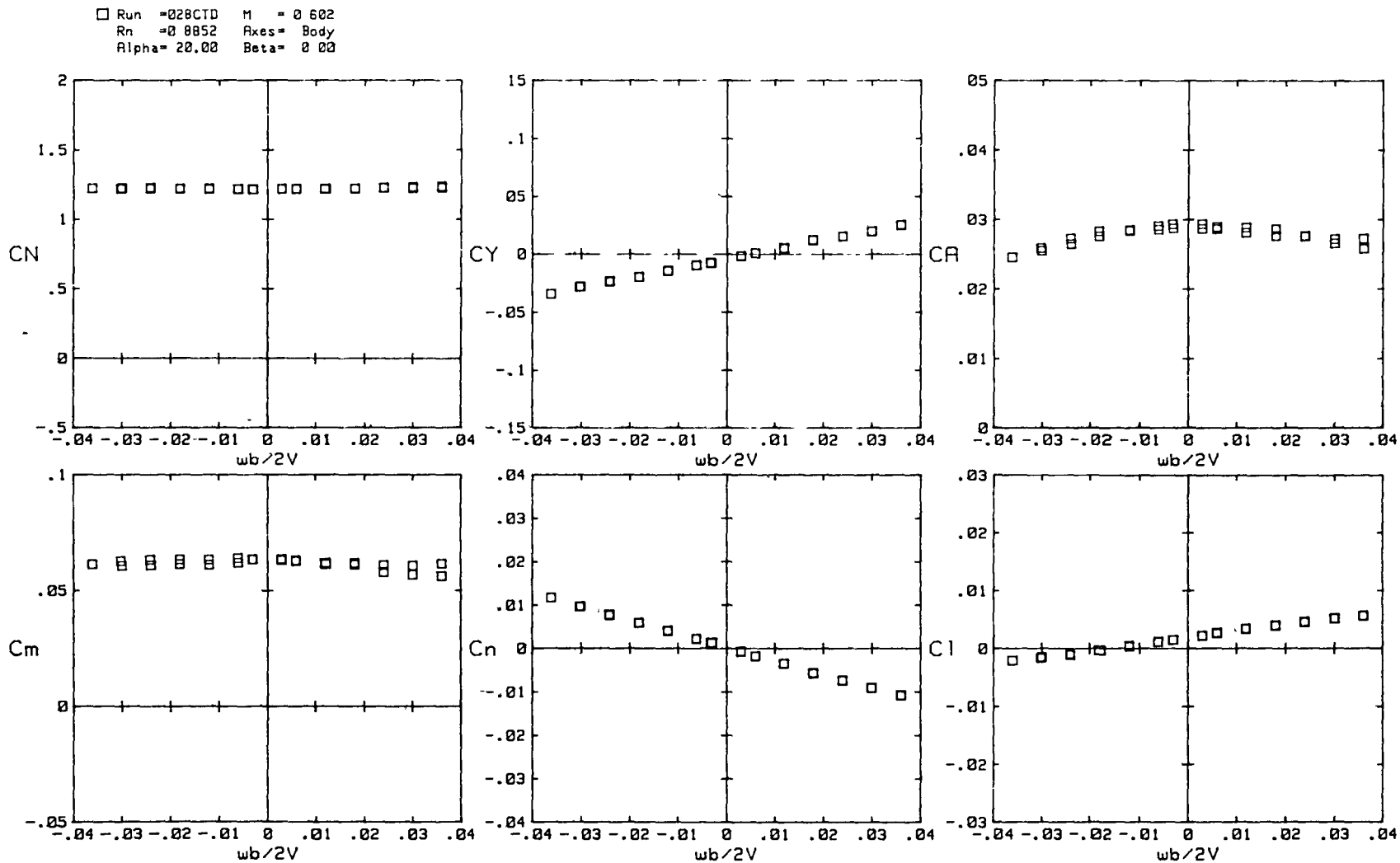
(d) $\alpha = 10°$.

Figure 8.- Continued.



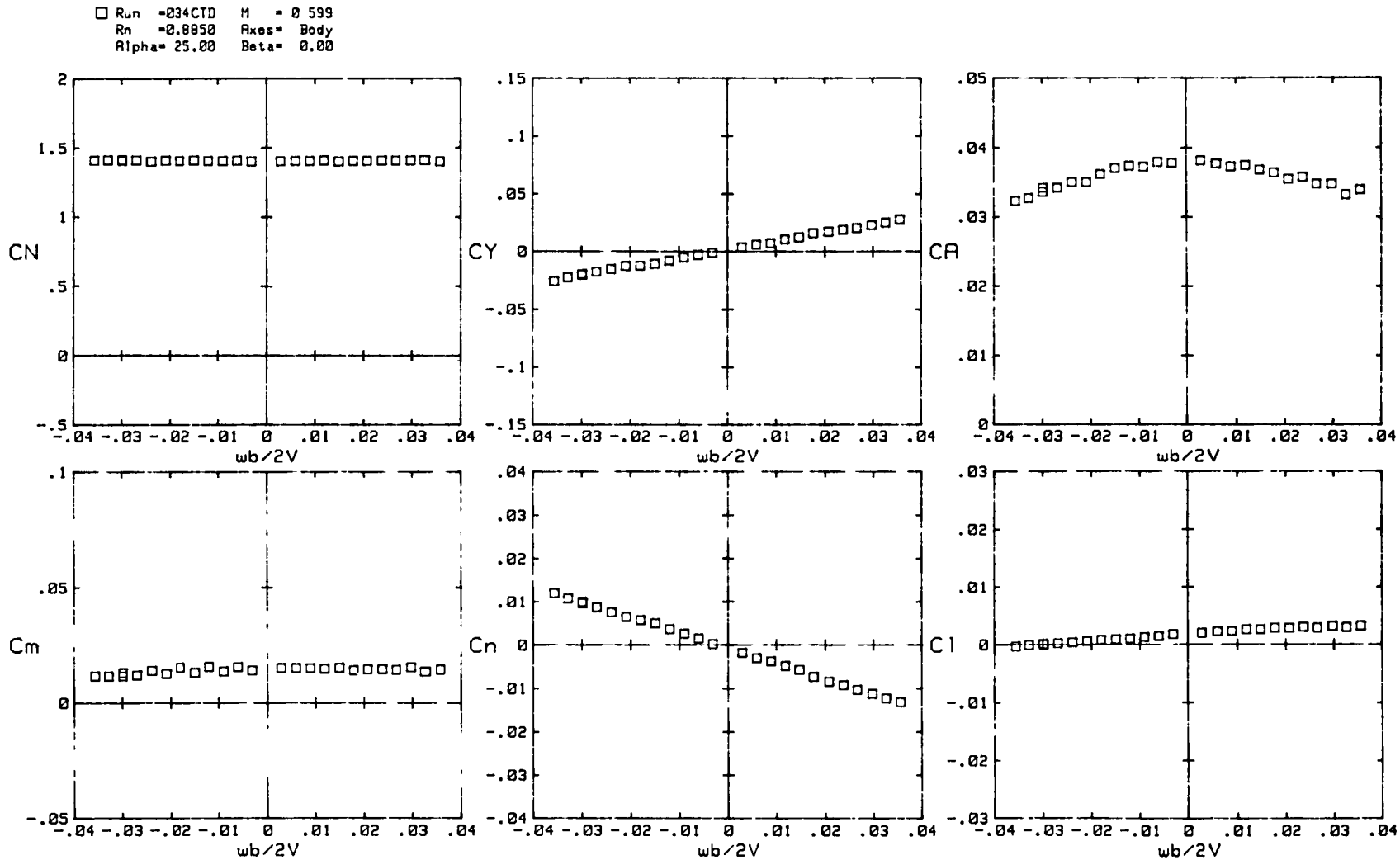
(e) α =15°.

Figure 8.- Continued.



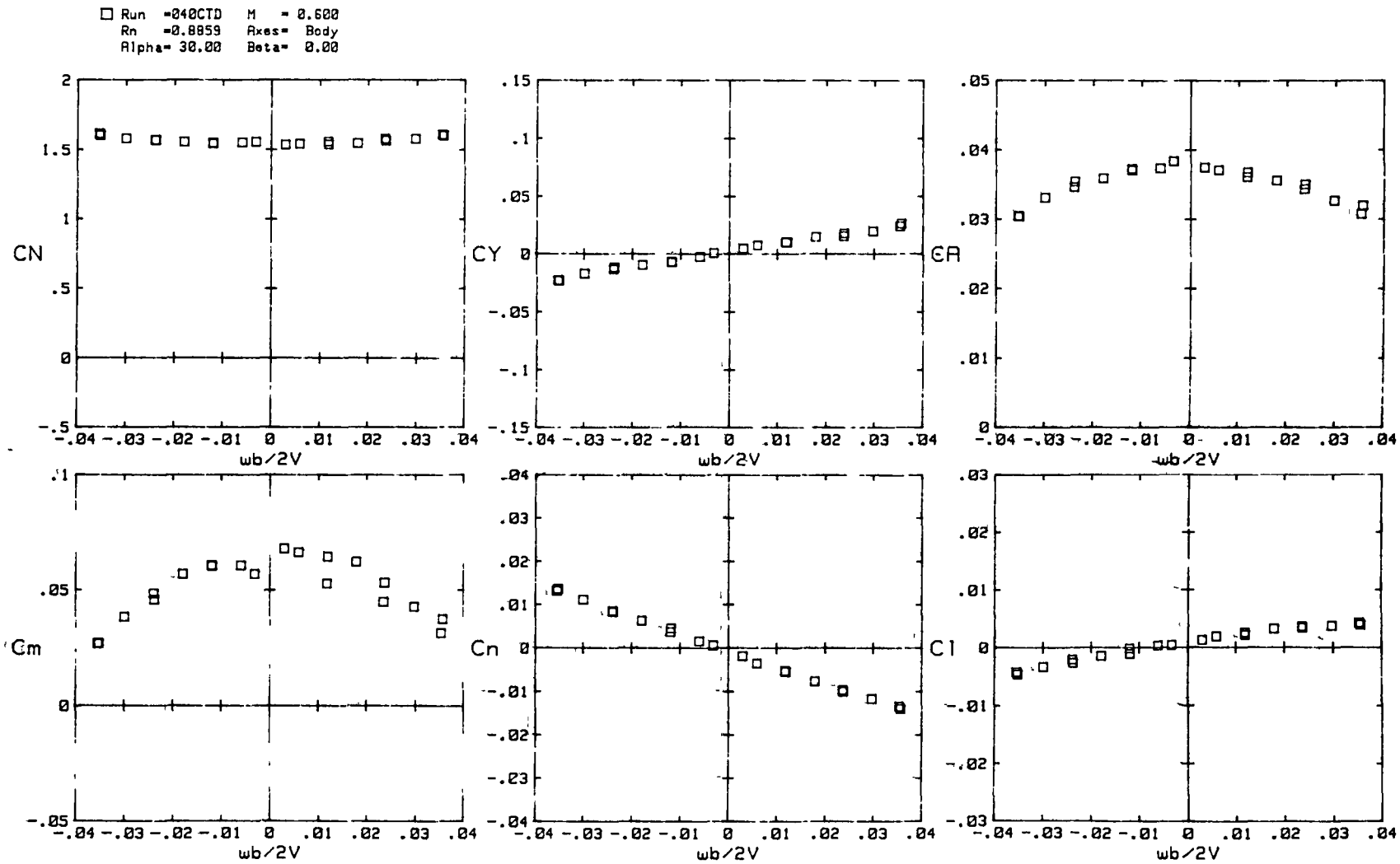
(f) $\alpha = 20°$.

Figure 8.- Continued.



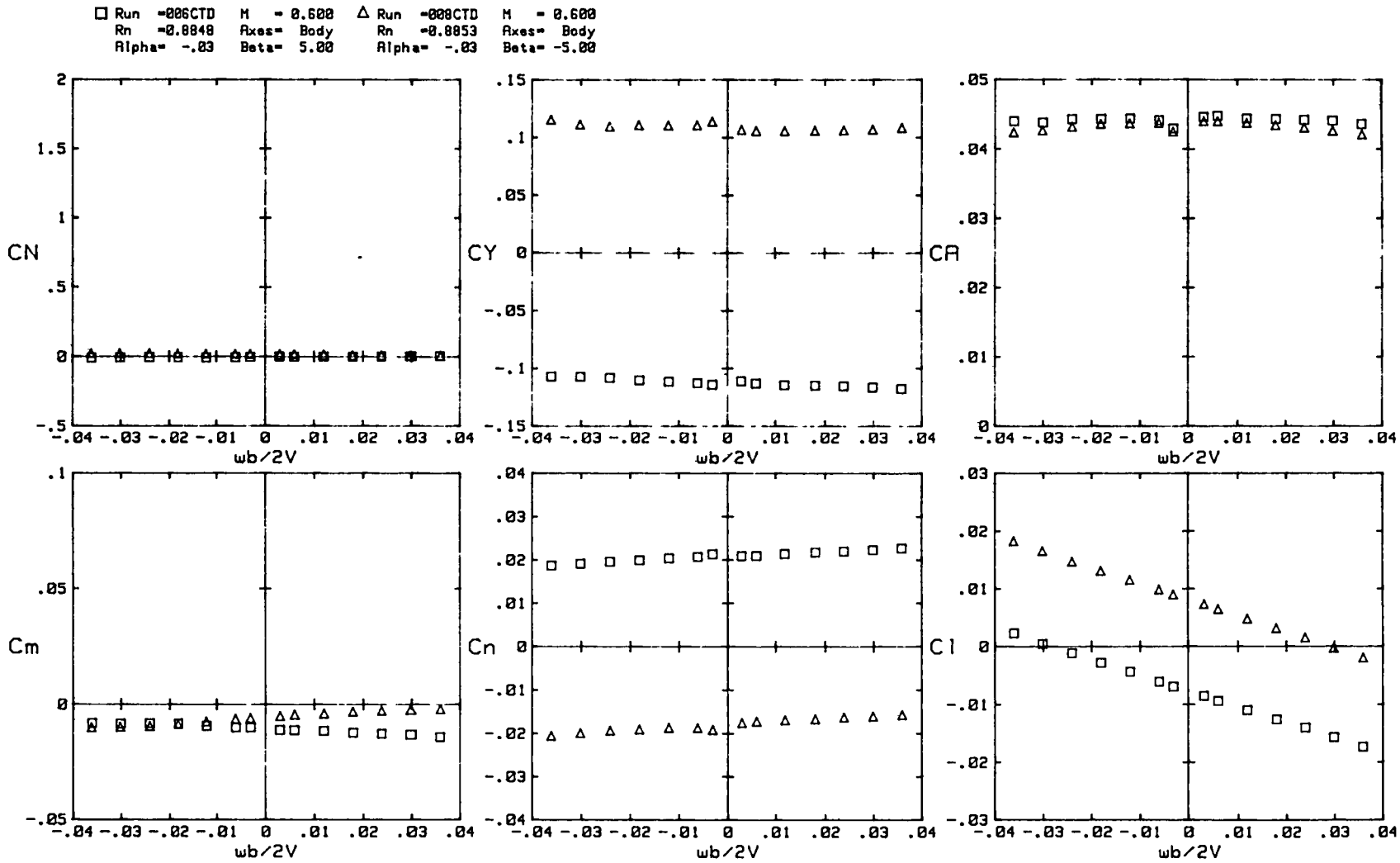
(g) $\alpha = 25°$.

Figure 8.- Continued.



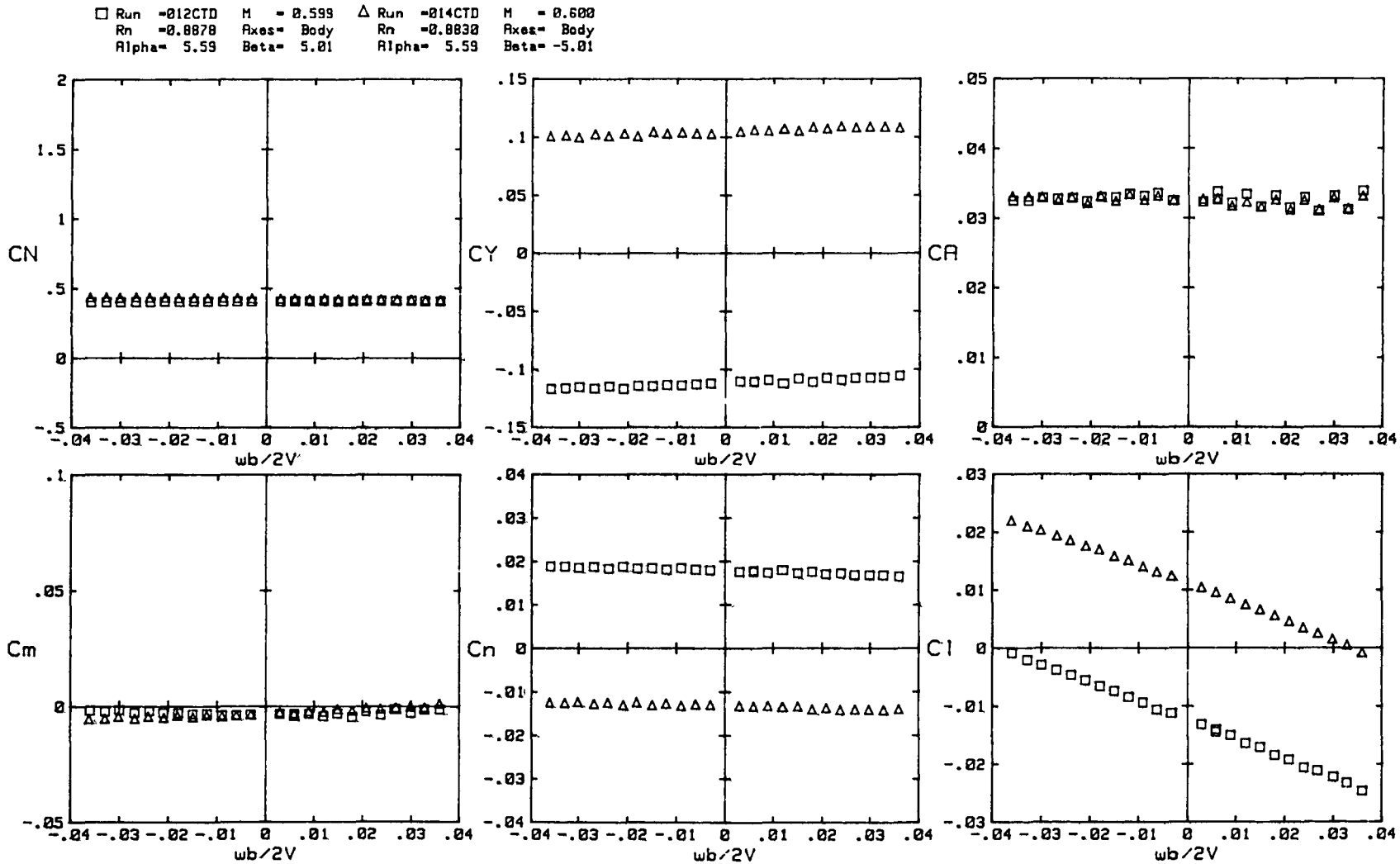
(h) $\alpha = 30°$.

Figure 8.- Concluded.



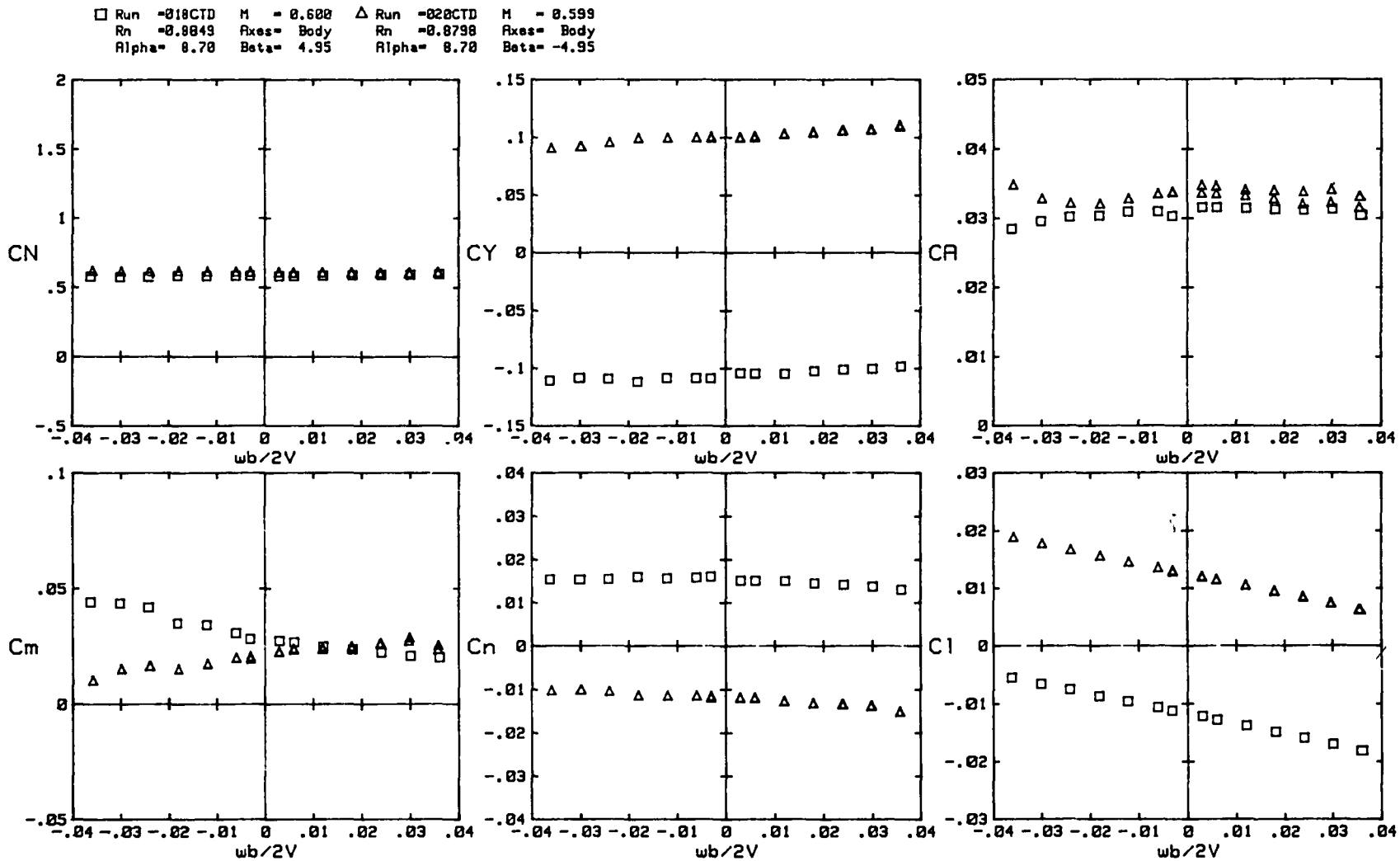
(a) = α = 0°.

Figure 9.- Variation of aerodynamic coefficients with β and ωb/2V.



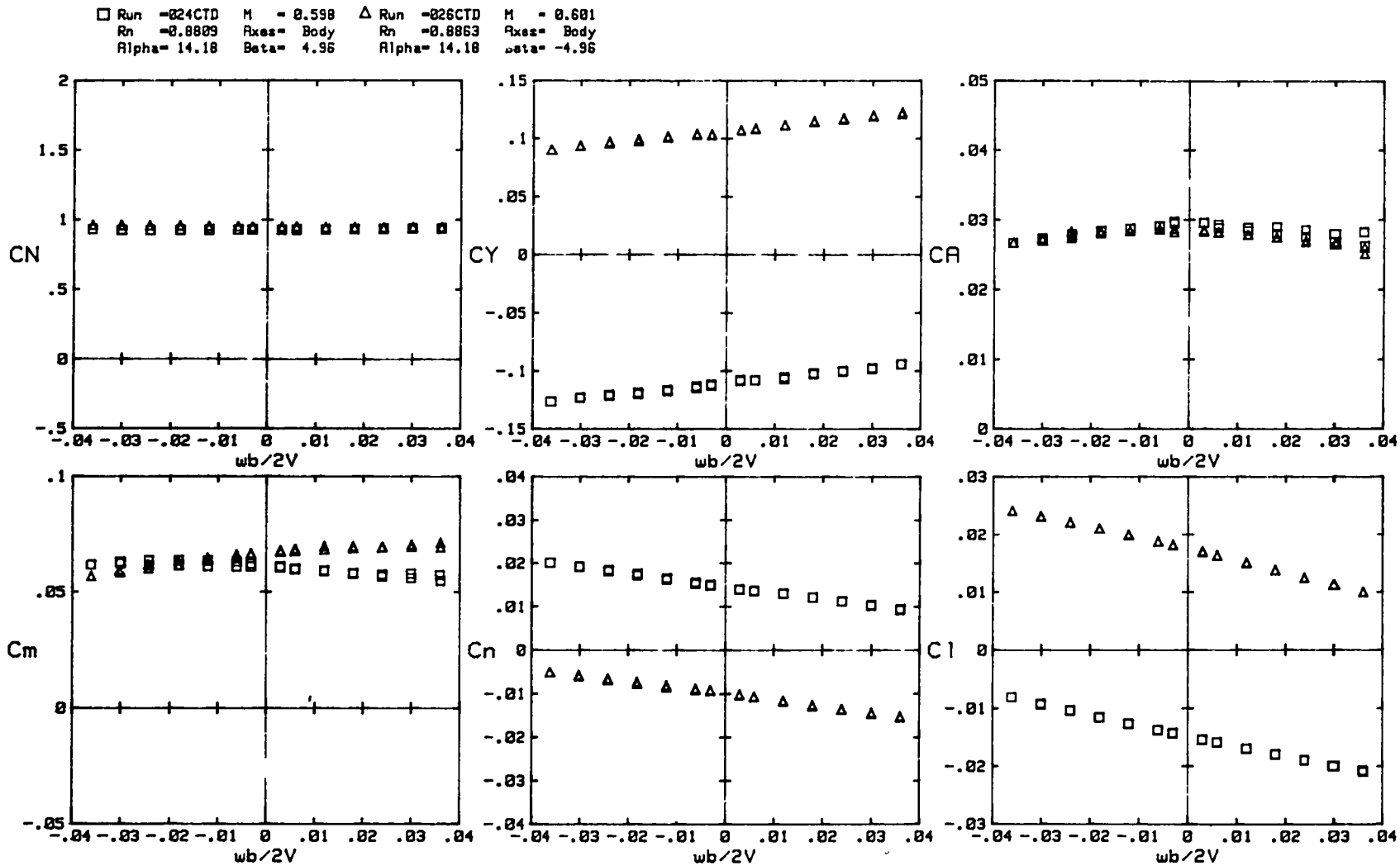
(b) = α = 5.6°.

Figure 9.- Continued.



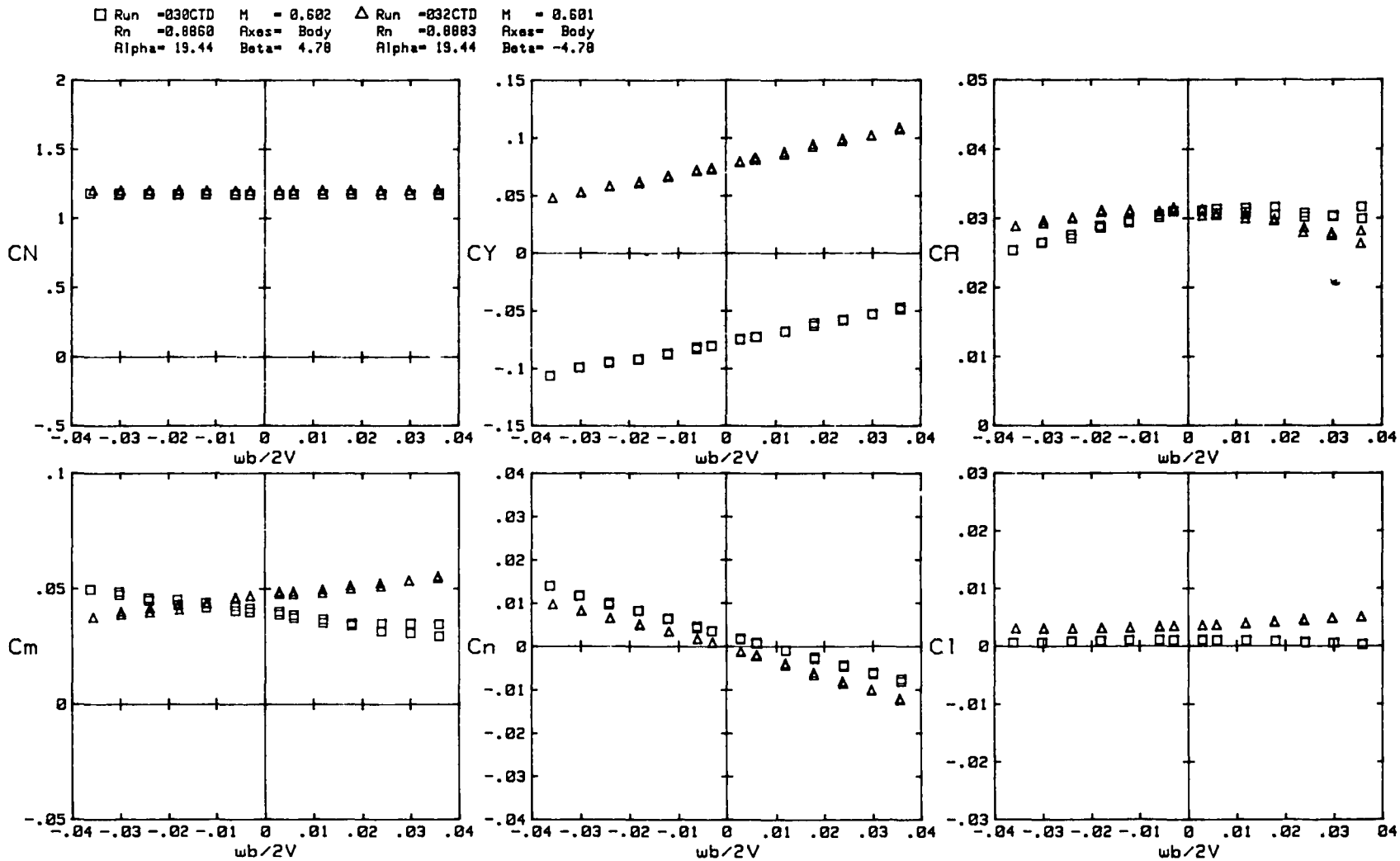
(c) $\alpha = 8.7°$.

Figure 9.- Continued.



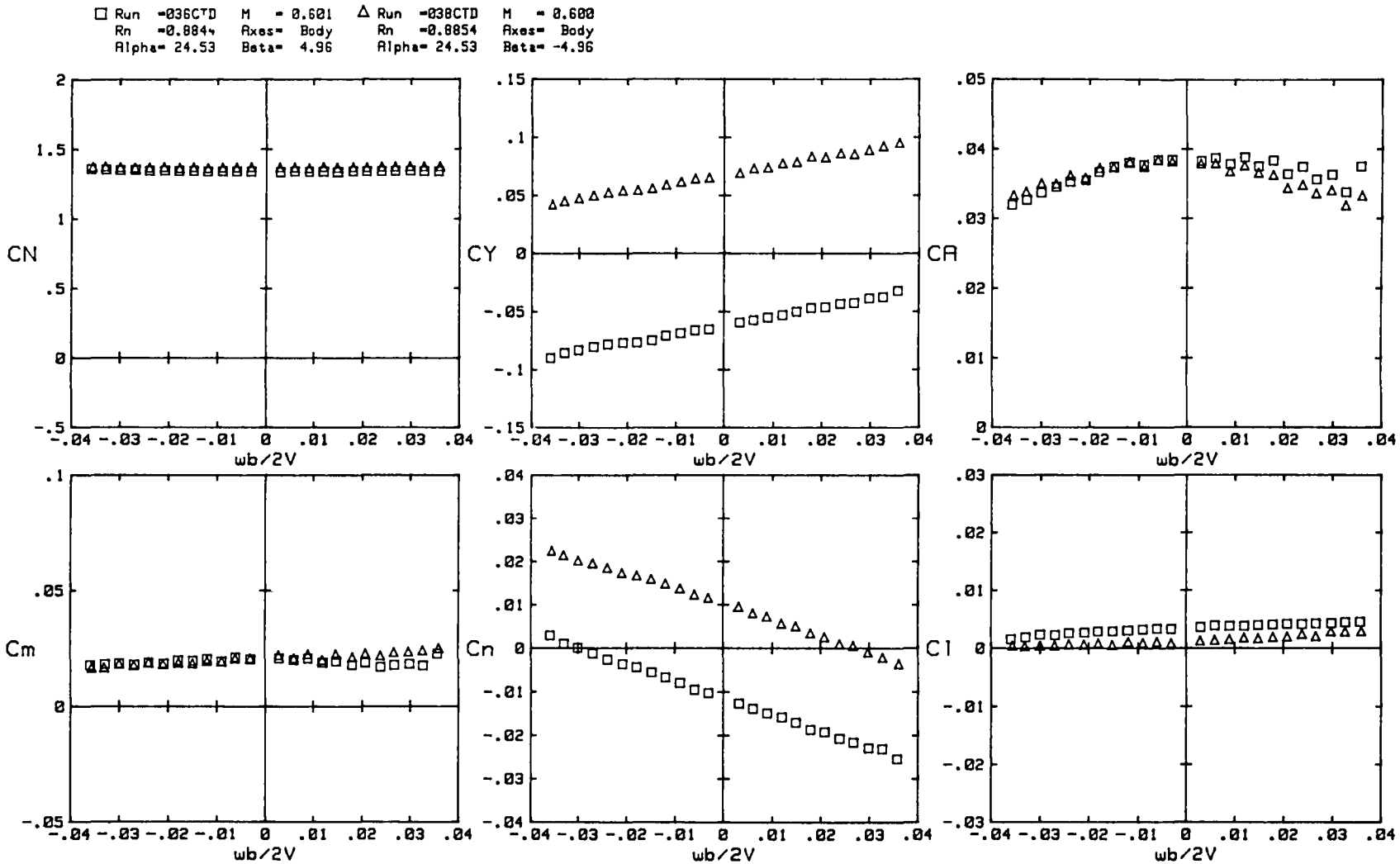
(d) α = 14.2°.

Figure 9.- Continued.



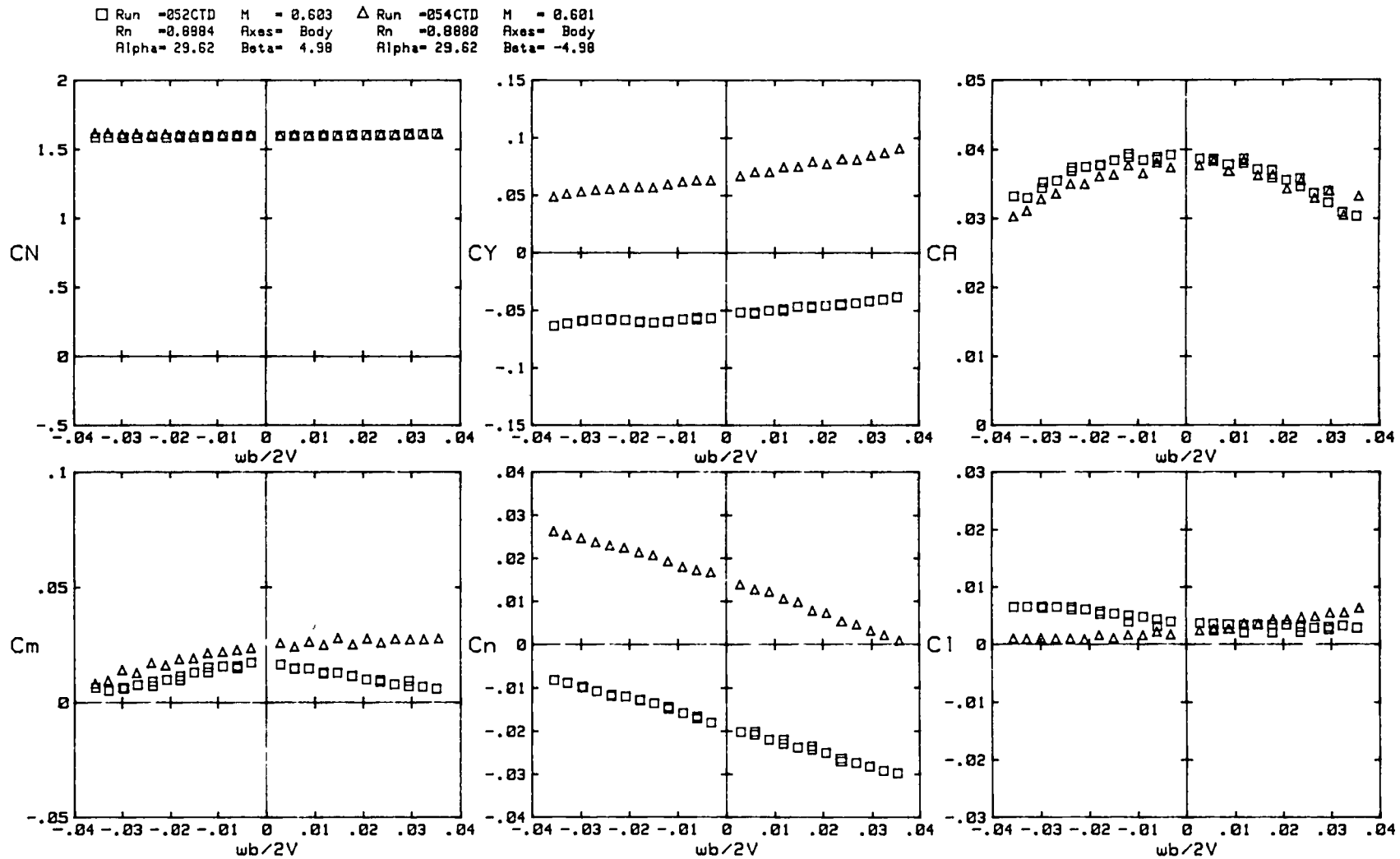
(e) α = 19.4°.

Figure 9.- Continued.



(f) $\alpha = 24.5°$.

Figure 9.- Continued.



(g) $\alpha = 29.6°$.

Figure 9.- Concluded.

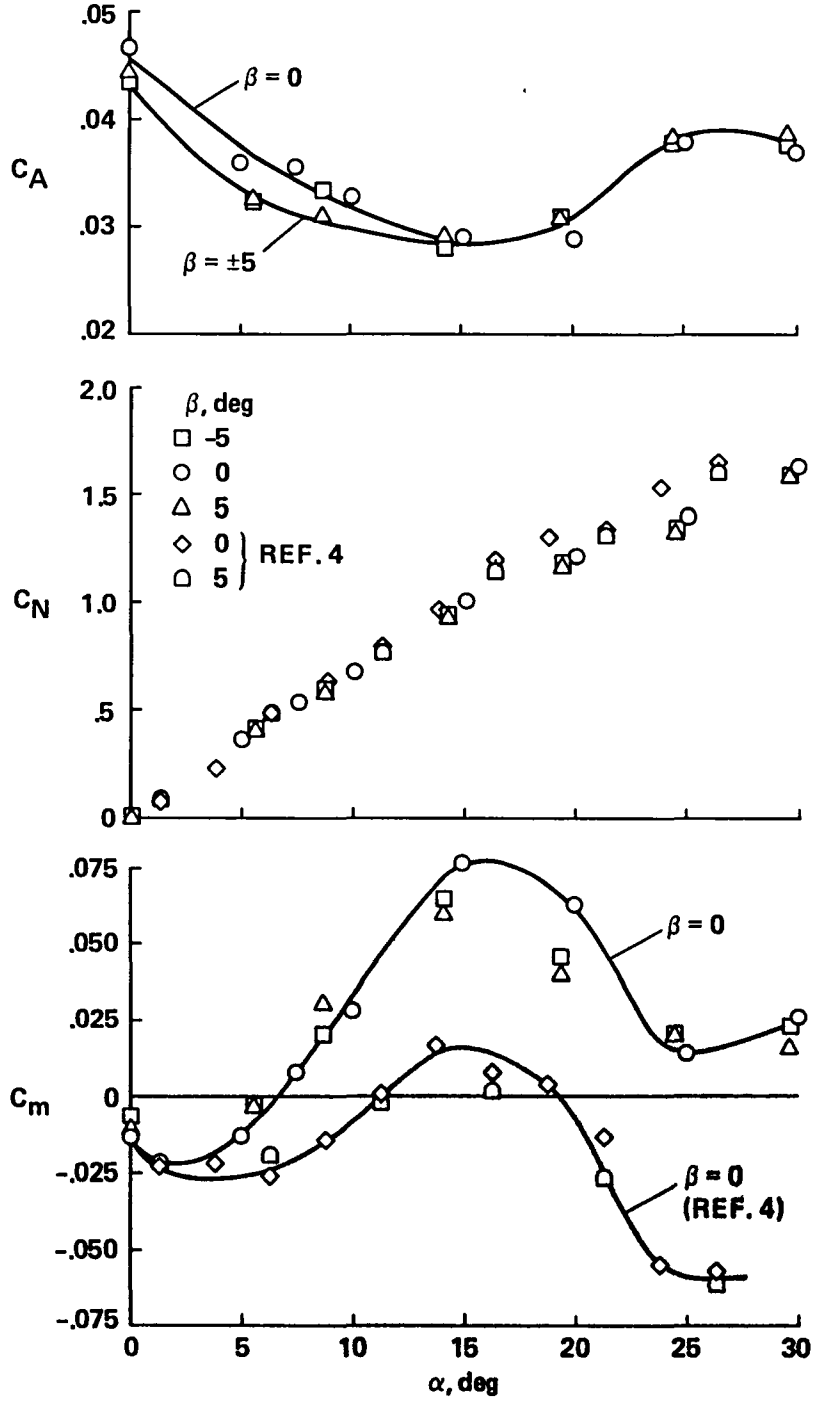
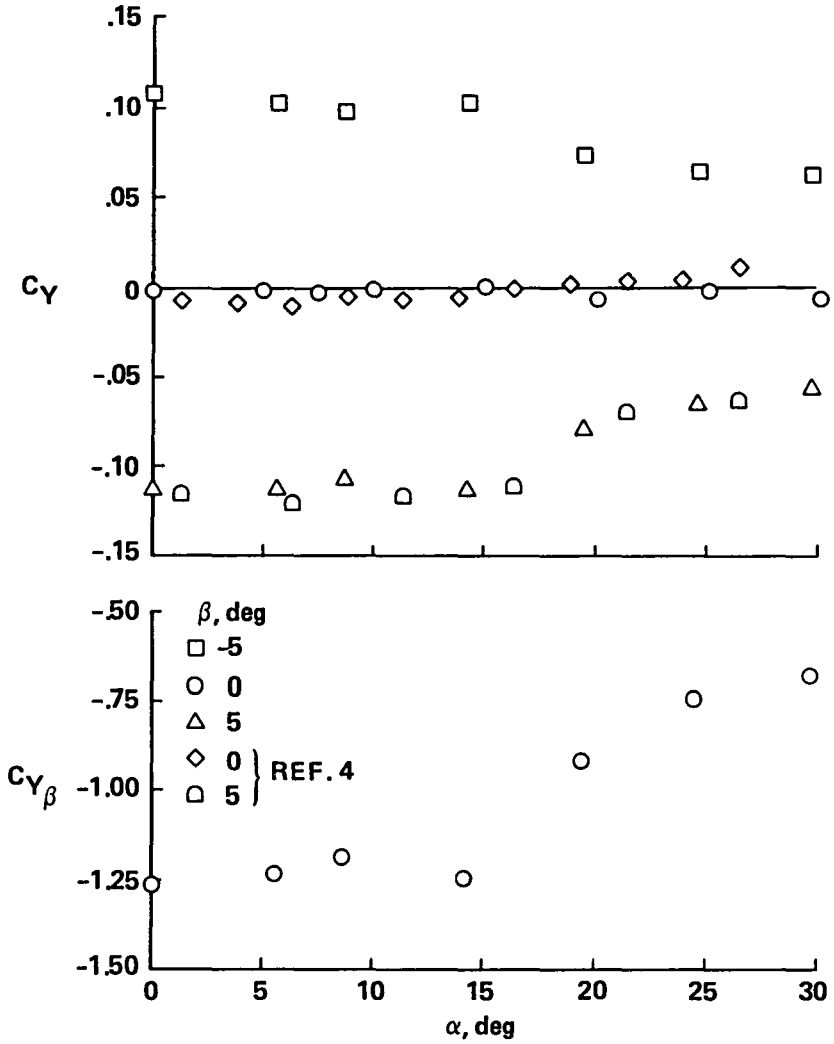
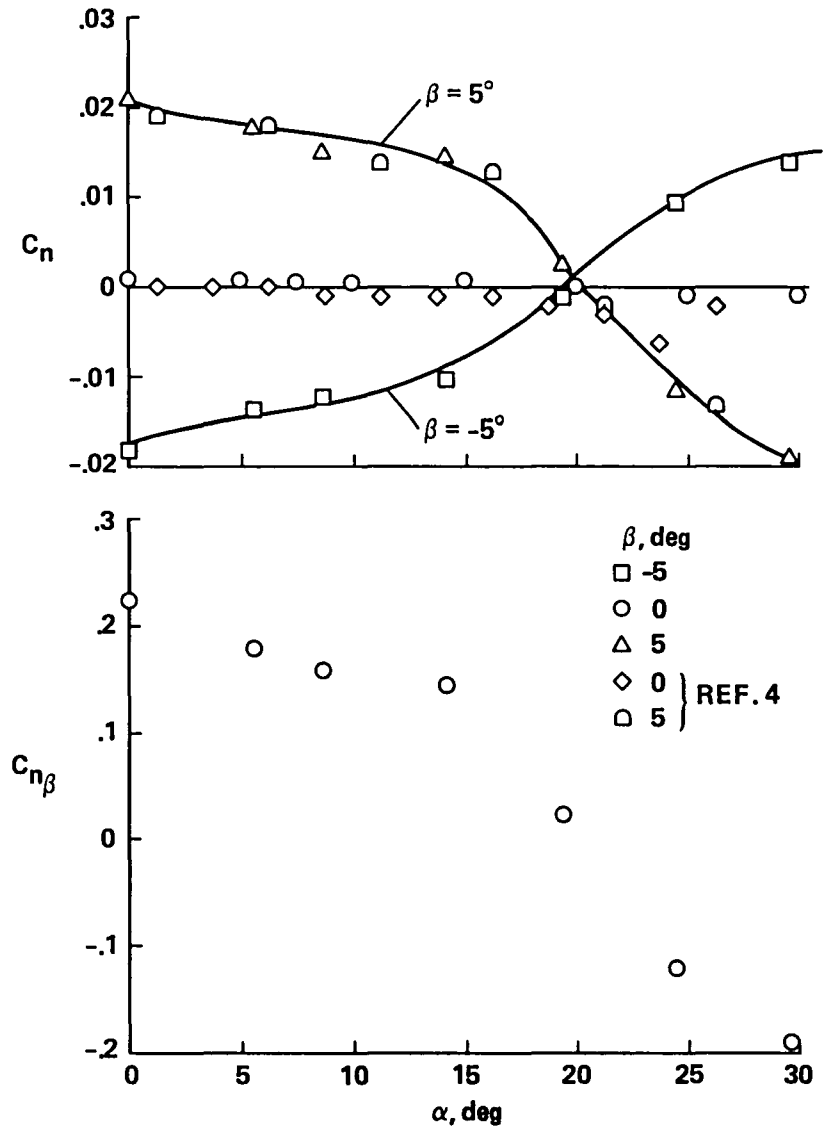


Figure 10.- Static longitudinal aerodynamics; variation with α and β.



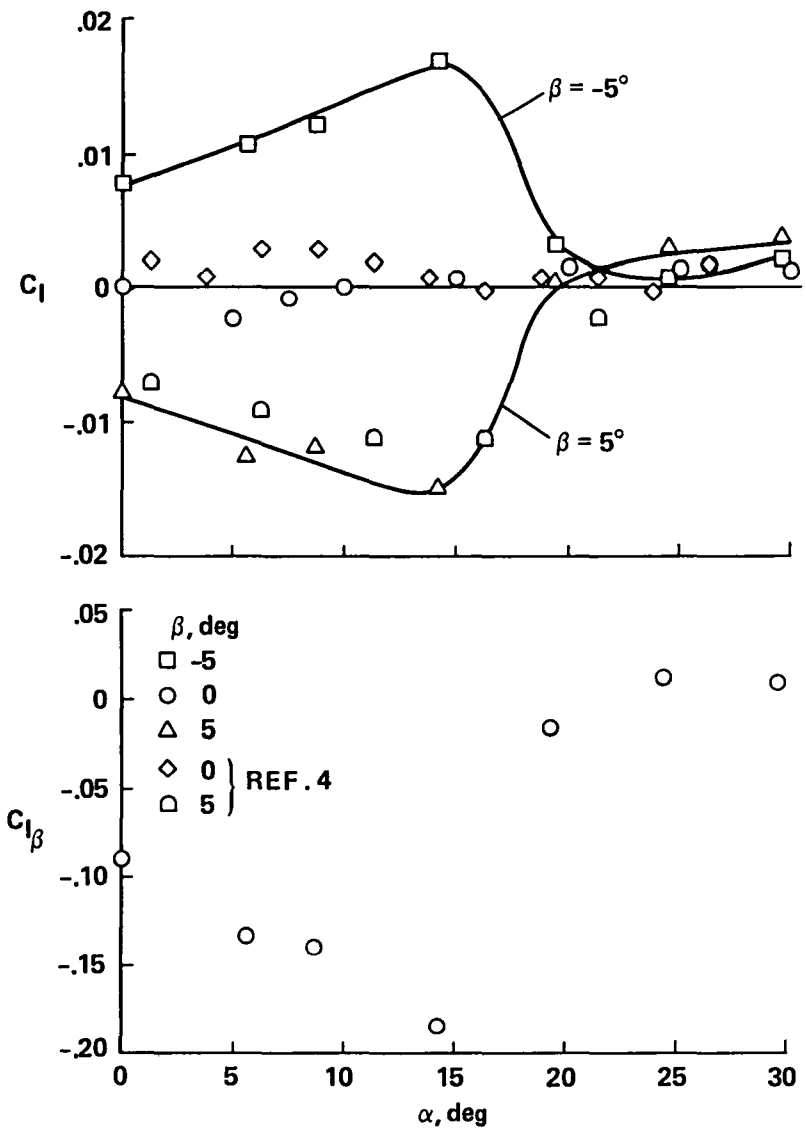
(a) Side-force coefficient.

Figure 11.- Static lateral aerodynamics; variation with α and β.



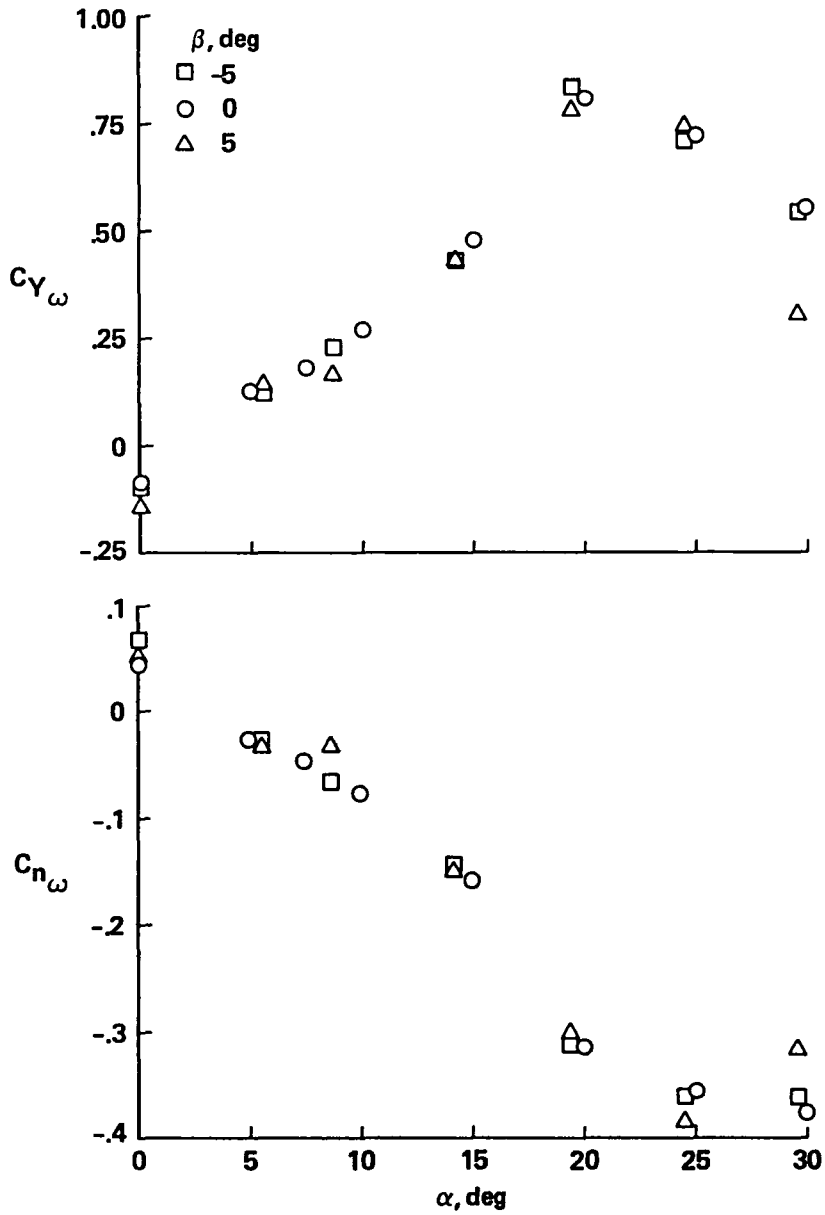
(b) Yawing-moment coefficient.

Figure 11.- Continued.



(c) Rolling-moment coefficient.

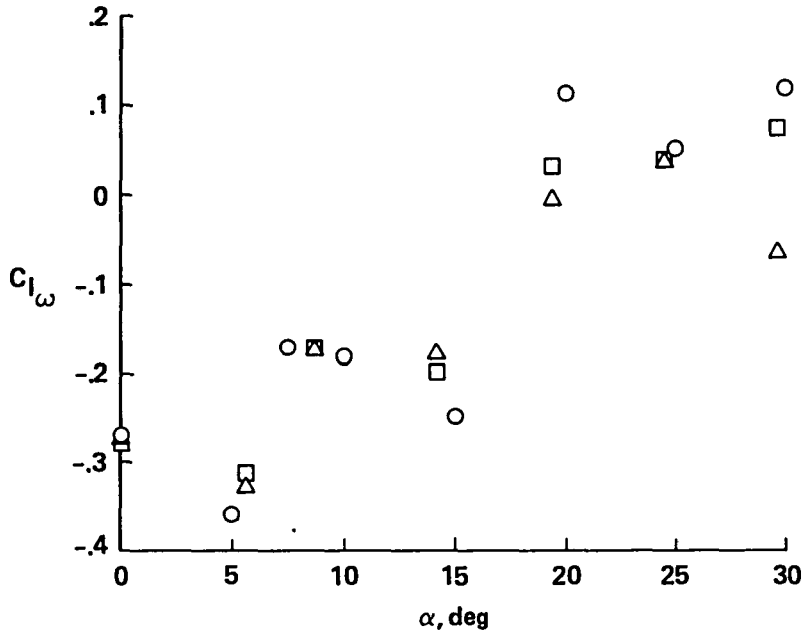
Figure 11.- Concluded.



(a) Side-force coefficient.

(b) Yawing-moment coefficient.

Figure 12.- Dynamic rotary coefficients due to coning rate; variation with α and β.



(c) Rolling-moment coefficient.

Figure 12.- Concluded.

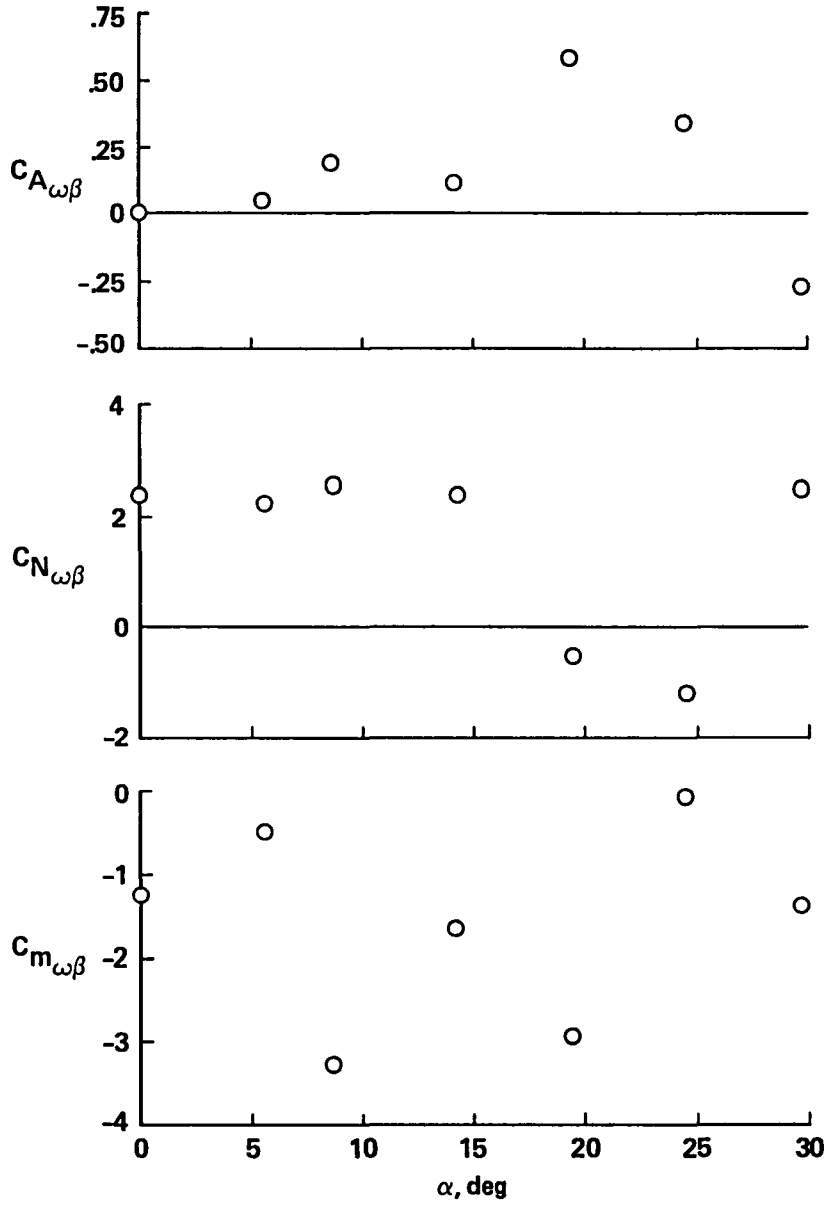


Figure 13.- Dynamic rotary coefficients due to combined coning rate and sideslip; variation with α.

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15 Supplementary Notes

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16 Abstract

A wind-tunnel test has been conducted on the Standard Dynamics Model (a simplified generic fighter-aircraft shape) undergoing coning motion at Mach 0.6. Six-component force and moment data are presented for a range of angle of attack, sideslip, and coning rates. At the relatively low non-dimensional coning rates employed ($\omega b/2V \leq 0.04$), the lateral aerodynamic characteristics generally show a linear variation with coning rate.

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