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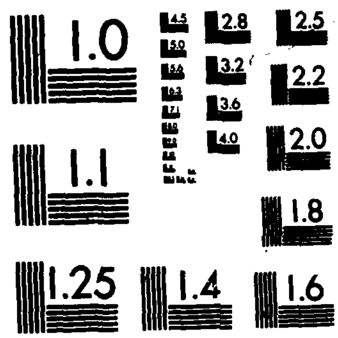

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WING-ALONE AERODYNAMIC CHARACTERISTICS TO HIGH ANGLES OF ATTACK AT SUBSONIC AND TRANSONIC SPEEDS

by

M. M. Briggs, R. E. Reed, J. N. Nielsen

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This report documents the results of a wind tunnel test conducted to determine the aerodynamic characteristics of unbanked wings from low to high angles of attack at subsonic and transonic speeds. The test was conducted in the NASA/Ames Research Laboratory 6- by 6-Foot Wing Tunnel at Mach numbers from 0.6 to 1.6. Nominal angles of attack ranged from zero to 55° in 5° increments. Several wing models with differing

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planform geometry were tested, to provide aspect ratios of 0.5, 1.0, and 2.0 with taper ratios of 0, 0.5, and 1.0; in addition, an aspect ratio 4, taper ratio 0.5 wing was tested. All wings were full-span with straight taper, zero trailing-edge sweep, constant bevel angle normal to all edges and constant thickness.

The aerodynamic data obtained consisted of normal-force, axial-force, pitching-moment, yawing-moment, and semispan root bending-moment coefficients. Longitudinal, spanwise, and vertical aerodynamic centers of pressure were computed from the force and moment data. The aerodynamic force and moment coefficients were obtained by integrating the surface pressure distributions of the wings. Surface pressures were measured at 60 to 70 locations on one side of each wing configuration, with windward and leeward data obtained in separate runs by rolling the models 180°.

WING-ALONE AERODYNAMIC CHARACTERISTICS TO HIGH ANGLES OF ATTACK AT SUBSONIC AND TRANSONIC SPEEDS

SUMMARY

This report documents the results of a wind tunnel test conducted to determine the aerodynamic characteristics of unbanked wings from low to high angles of attack at subsonic and transonic speeds. The test was conducted in the NASA/Ames Research Laboratory 6- by 6-Foot Wind Tunnel at Mach numbers of 0.6, 0.8, 0.9, and 1.2 with limited additional testing at Mach 1.6. Nominal angles of attack ranged from zero to 55° in 5° increments, with supplementary angles of -2.5° and 56.5°. Several wing models with differing planform geometry were tested to provide aspect ratios of 0.5, 1.0, and 2.0 with taper ratios of 0, 0.5, and 1.0; in addition, an aspect ratio 4, taper ratio 0.5 wing was tested. All wings were full-span with straight taper, zero trailing-edge sweep, constant bevel angle normal to all edges and constant thickness (root chord thickness ratio varied from .029 to .125).

The aerodynamic data obtained consisted of normal-force, axial-force, pitching-moment, yawing-moment, and semispan root bending-moment coefficients of which the yawing-moment coefficients were computed only as indicators of symmetry since the wings were unbanked within the limits of tolerances and flow angularity. Longitudinal, spanwise, and vertical aerodynamic centers of pressure were computed from the force and moment data. The aerodynamic force and moment coefficients were obtained by integrating the surface pressure distributions of the wings. Surface pressures were measured at 60 to 70 locations on one side of each wing configuration, with windward and leeward data obtained in separate runs by rolling the models 180°.

The longitudinal and spanwise aerodynamic centers of pressure approached the wing planform area centroids to within 5% of the root chord or semispan for increasing angle of attack in the 35° to 55° range. Mach number variation had little effect upon center of pressure above 35° angle of attack. At lower angles of attack, the effects of taper ratio and aspect ratio upon longitudinal centers of pressure were large.

Normal-force coefficients showed systematic increases with aspect ratio except in the case of the aspect ratio 4 wing at Mach 0.6, where wing-to-wing differences in section geometry may have masked the true aspect ratio effect. At the Mach 0.6 test condition, the effects of taper ratio (λ) in the λ = 0 to 0.5 range were much less than anticipated, again very likely due to the importance of section geometry at subsonic speeds. At

Mach 1.2, the effects of aspect ratio and taper ratio were as expected, and closely followed the results of complementary tests conducted previously with these models at higher supersonic speeds in the NASA/Langley Research Center (LRC) Unitary Plan Wind Tunnel. The limited amount of data obtained at Mach 1.6 compared well with the NASA/LRC Mach 1.6 data.

In addition to the pressure-model tests, two replicas of pressure-model wings were constructed as force models and suspended from a sting and external strain-gage balance arrangement to obtain aerodynamic data for comparison with the pressure model results. The objective here was to determine the extent of sting interference effects on the force-models, so as to either validate or disqualify the potentially more cost/effective force-model concept for the obtaining of aerodynamic data on an additional assortment of wing configurations. The sting interference effects were found to be excessive, and so the force-model concept was abandoned.

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WING-ALONE AERODYNAMIC CHARACTERISTICS TO HIGH ANGLES OF ATTACK AT SUBSONIC AND TRANSONIC SPEEDS

1. INTRODUCTION

The objective of the effort described and documented by this report was to acquire a systematic data base for the aerodynamic characteristics of low-aspect-ratio wings from low to high angles of attack at subsonic and transonic speeds. This work complements the supersonic data base for the same wings acquired by NASA/LRC and documented in Reference 1.

A comprehensive and systematic data base of low-aspect-ratio wing aerodynamic data is needed to support the design of high-performance missiles and fighter aircraft. The aspect ratio range of interest is 0.5 to 4, with taper ratios from 0 to 1.0. Unswept trailing edges are preferred for modern high-performance missiles and aircraft. The angle of attack need ranges as high as 50 to 60 degrees because the use of all-moveable lifting surfaces for purposes of control often leads to angle of attack and control deflection angle combinations that produce a total incidence angle in the 50-60 degree range. Surface and air-launched missiles must fly at speeds from the subsonic launch condition to the high supersonic regime.

Wing-alone data are needed as the starting point in the design process; analytical formulations developed over the years allow prediction of missile and aircraft aerodynamic characteristics if the wing and body aerodynamics are separately known. Although much aerodynamic data have been obtained for wing-body combinations in the past, these data are affected by the presence of the body so that the wing-body interference factors cannot be isolated. According to the current state-of-the-art in aerodynamics prediction methodology, the most precise aerodynamic characteristics estimates for arbitrary configurations can be provided if wing-alone and body-alone aerodynamic data are available to allow calculation of the wing-body interference factors by comparison with data for wing-body combinations.

Although the aerodynamic characteristics of bodies and airfoil sections are well documented, the aerodynamic characteristics of low-aspect-ratio finite wings alone have seen little attention, due to the physical difficulties associated with suspending slender wings in wind tunnels and measuring the forces acting upon these in the absence of sting interference effects.

To provide the needed wing-alone aerodynamic data, the current effort was undertaken in which the wing model pressure distribution was measured on the side opposite to the model support sting. Data for both windward and leeward sides of each wing were obtained in two runs for each combination of model configuration, angle of attack, and Mach number; the opposite-side data for a given windward run was acquired by rolling the model 180° and repeating the angle of attack sequence.

The following sections discuss the design of the wing models and their instrumentation, the test facility and experimental methods used, and the data acquired. The Discussion of Results section treats the data uncertainties, effects of the test parameter variations, sting-interference effects, and comparisons with other sources of wing-alone data. The final section provides a comprehensive summary of the relevant conclusions.

2. SYMBOLS AND NOMENCLATURE

A = one-half the wing planform area = S/2

Æ = aspect ratio, b^2/S

b = wing total span

C = wing chord at arbitrary station (in.)

$\bar{C}$ = wing mean aerodynamic chord (in.), reference length

CA = wing axial-force coefficient = $CA_W + CA_L$ (pressure models)

CA_L = leeward-side axial-force coefficient (pressure models)

CA_W = windward-side axial-force coefficient (pressure models)

CBM = wing pressure model semispan root bending-moment coefficient = $CBM_W + CBM_L$

CBM_L = pressure model leeward side semispan root bending-moment coefficient

CBM_W = pressure model windward side semispan root bending-moment coefficient

CFN = force model normal-force coefficient

CMA = wing pressure model pitching-moment coefficient due to axial force = $CMA_W + CMA_L$

CMA_L = pressure model leeward side pitching-moment coefficient due to axial force

CMA_W = pressure model windward side pitching-moment coefficient due to axial force

CMBT = pressure model total pitching-moment coefficient about the wing trailing edge = CMNB + CMA

CMCT = total pitching-moment coefficient about pressure wing area centroids = CMNC + CMA

CMNB = wing pitching-moment coefficient due to normal force = $CMNB_W + CMNB_L$ (pressure models)

$CMNB_L$ = leeward-side pitching-moment coefficient due to normal force (pressure models)

$CMNB_W$ = windward-side pitching-moment coefficient component due to normal force (pressure models)

CMNBF = force model pitching-moment coefficient about wing trailing edge

$CMNBR_L$, $CMNBR_W$ = pressure model windward and leeward components of P_∞ - relative pitching-moment coefficients about the wing trailing edge

CMNC = pressure wing pitching-moment coefficient about the pressure wing area centroid = CMNB - CN $X_C/\bar{C}$

CN = wing normal-force coefficient, $CN_W + CN_L$ (pressure models)

CN_L = leeward-side normal-force coefficient component (pressure models)

CN_W = windward-side normal-force coefficient component (pressure models)

CNR_L,CNR_W = pressure model windward and leeward components of normal-force coefficient computed from pressure coefficients

C_P = pressure coefficient $(P - P_\infty)/q_\infty$

C_R = wing root chord (in.)

C_T = wing tip chord (in.)

CYM = pressure model wing yawing-moment coefficient = $CYM_W + CYM_L$

CYM_L	=	pressure model leeward side yawing-moment coefficient
CYM_W	=	pressure model windward side yawing-moment coefficient
M, M_∞	=	freestream Mach number
M.A.C.	=	wing mean aerodynamic chord (in.)
P	=	pressure (lbs./in.^{2})
P_L	=	pressure model leeward side local pressure
P_W	=	pressure model windward side local pressure
PHI	=	roll position of wing-plane relative to the wind-tunnel horizontal plane (deg.)
q_∞	=	freestream dynamic pressure
RMS	=	root mean square
RN/L	=	Reynold's number per foot, $\frac{\rho_\infty V_\infty}{\mu_\infty}$
S	=	wing total planview area, reference area
t	=	wing maximum thickness = 0.51 in.
V_∞	=	freestream velocity
X	=	wing longitudinal station, inches forward of trailing edge
X_C	=	longitudinal station of pressure wing area centroid, inches from wing trailing edge
X_{CP}	=	longitudinal center of pressure for force or pressure models, from wing leading edge
$\frac{XCP}{C_R}$	=	$1 - \frac{XCPNB}{\bar{C}}\left(\frac{\bar{C}}{C_R}\right)$ = total longitudinal center of pressure as fraction of root chord measured from the pressure wing leading edge
XCPNB	=	pressure wing longitudinal center of pressure $= \frac{(XCPNB)_W CN_W + (XCPNB)_L CN_L}{\bar{C}\ C_N}$

$\left(\frac{XCPNB}{\bar{C}}\right)_L$ = pressure model leeward side center of pressure as fraction of M.A.C. from trailing edge

$\left(\frac{XCPNB}{\bar{C}}\right)_W$ = pressure model windward side longitudinal center of pressure as fraction of M.A.C. from trailing edge

$\bar{X},\bar{Y},\bar{Z}$ = coordinates of the centroids of the area elements allocated to each pressure orifice, referenced to the wing trailing edge and centerline

Y = wing lateral station, inches left of wing centerline in top view

$\left(\frac{YCP}{b/2}\right)_L$ = pressure model leeward side lateral center of pressure of normal forces as fraction of semispan from wing centerline

$\left(\frac{YCP}{b/2}\right)_W$ = pressure model windward side lateral center of pressure of normal forces as fraction of semispan from wing centerline

Z = wing surface coordinate normal to X and Y, inches from plane of the wing edges

$\left(\frac{ZCP}{t/2}\right)_W$ = pressure model leeward side vertical center of pressure of axial forces as fraction of one-half the wing thickness from the wing geometric centerline

$\left(\frac{ZCP}{t/2}\right)_W$ = pressure model windward side vertical center of pressure of axial forces as fraction of one-half the wing thickness from the wing geometric centerline

α = wing angle of attack, deg.

$\Delta\alpha_{SD}$ = change in angle of attack due to structural deformation of the pressure model sting.

$\Delta\bar{M}$ = average Mach number error

ΔP = differential pressure

γ = ratio of specific heats

λ = taper ratio, C_T/C_R

μ_∞ = freestream absolute viscosity

ρ_∞ = freestream density

σ_M = standard deviation of Mach number uncertainty

σ_{ALLOW} = allowable yield stress (lb./in.^{2})

θ = 90° - (sweepback angle)

Subscripts

∞ = freestream conditions

i = *ith* term in a set of numbers

L = leeward side

SC = stilling chamber conditions

t = total quantities

W = windward side

W = test section wall condition

3. MODELS AND INSTRUMENTATION

Two separate systems of instrumentation and models were tested in this program. The major portion of the program was devoted to a family of 10 wings obtained on loan from NASA/Langley Research Center (LRC). Each wing was equipped with a large number of orifices and internal plumbing to enable measurement of the surface pressure distribution. Tests were also run on two wings mounted from a 6-component cage-type balance, which allowed measurement of the orthogonal load components and positions on the wing. These force-test wings had the same dimensions as two corresponding pressure wings in order to allow comparison of interference effects from the differing model support systems. These pressure and force wing model configurations are discussed below.

3.1 Pressure Models

The general configuration of the pressure model system is shown in Figure 1. The wings and dogleg sting were provided by LRC and the adapter was fabricated by NEAR, Inc. The remaining sting equipment was provided by NASA/Ames Research Laboratory (ARC). Details typical of all the wings are shown in Figure 2. A summary of the individual wing dimensions is given in Table 1. The Mean Aerodynamic Chord listed in Table 1 is defined by

$$\text{M.A.C.} = \frac{2}{S}\int_0^{b/2} c^2(y)\,dy$$

where S is the wing planform area. For wings with straight leading edges

$$\text{M.A.C.} = \frac{2}{3}\,\frac{\left[C_R^2 + C_R C_T + C_T^2\right]}{(C_R + C_T)}$$

The ten pressure models were configured to provide systematic parameterization of wing aspect ratio (Æ) and taper ratio (λ); Table 2 shows how the pressure wing configurations are disposed in an (Æ ,λ) matrix, with a cross-reference between NEAR, Inc. and NASA designations. Configuration no. 11 with model roll angle (PHI) set at 0 or 180° is wing P8 with attached dummy sting and shroud components as displayed in Figures 3 and 4. These components were fabricated by LRC to simulate the support system designed for the force wings. Configuration no. 11 with PHI = 0 simulates the interference effect of the force-model support system on the windward side of the wing, whereas configuration no. 11 with PHI = 180° is designed to measure the effect of the force model support system on the leeward side of the wing.

Each wing had 60 to 70 pressure orifices machined into one semi-span surface on the wing surface opposite to that which was utilized to suspend the wing model from its support sting. The orifice diameter was .018 in. The layout of the orifices for each wing is shown in Figures 5 through 14. Additional orifices (nos. 59-70) were added to wing P8 (Fig. 12) to obtain a more detailed pressure distribution in the neighborhood of the attached dummy sting for test configuration P11; although these are shown in Figure 12 as being interspersed among the original orifices, for illustration purposes, they were actually installed on the right-hand side of the wing (not shown) in symmetric locations with respect to the wing centerline.

Stainless steel tubes (.030 in. OD, .018 in. ID), running to the wing surface were potted into machined groves in the wings. When a given wing was attached to the sting, the bundle of pressure tubes was routed up through the hollow blade of the sting to the elbow (see Fig. 1). Outside the sting and aft of the forward blade the stainless steel tubing was attached to .030 in. ID flexible plastic tubing which was in turn connected to a .018 in. ID quick-disconnect fitting (to facilitate changing wings). A matching set of flexible tubes connected the fitting to six 24-port scanivalve barrels that were provided by ARC. Each of the scanivalve barrels was connected to a Statham PM 131-TC, 0-12.5 psia pressure transducer to convert pressure levels to electrical signals. The electrical output from each channel was fed into the ARC data reduction computer system. The wing geometric parameters (elementary areas, centroids, and coordinates) used in the data reduction for integrating the pressures over the wing surfaces to obtain resultant forces are provided in Table 3. The tributary area of any orifice that was determined to be plugged or excessively leaking was set to zero and redistributed to adjoining orifices.

3.2 Force Models

To extend the range of aspect ratios covered by the pressure wings to 5.0, an additional low-cost family of wings was designed. To minimize fabrication costs and required testing time, these wings were designed to be supported by a 6 degree-of-freedom balance which measured the orthogonal components or aerodynamic loads acting on the wing models. A view of the model and sting configuration is shown in Figure 15. The wings were to have a thickness of 0.350 in. and be constructed from 17-4 PH stainless steel. In order to minimize the sting interference, the sting was connected as far rearward on the wing as possible and its diameter kept small near the trailing edge of the wing. An external non-metric shroud shielded the sting and balance from aerodynamic loads. A gap of 0.1 in. was allowed between the shroud and sting to ensure that loads were not transferred between metric and non-metric components due to deflection-induced grounding. Absence of grounding was assured by monitoring an electrical grounding indication circuit.

The force wings and support system were designed to be used in either the 6- by 6-Foot Wind Tunnel at NASA/Ames or the 4 foot tunnel at NASA/Langley. The limiting components in the overall system is the NASA/Ames 2 inch balance which has a capacity of 900 pounds on each of the two normal force gages. Because of the large moment arm from the wing to the balance, a normal force on the wing of about 350 pounds produces the maximum allowable balance loads. However, to allow the wings to be tested at near-maximum values of dynamic pressure in either of the two tunnels, the wings and sting were designed for a normal force of 400 pounds using the strength criteria required by ARC for models being tested in their wind tunnels. That is, the maximum allowable stress is either 1/5 of the ultimate strength of the material or 1/3 of the yield strength, whichever is less. This gives, for the materials used for the wings and sting,

7075-T6 Aluminum, $\sigma_{ALLOW} = 1/5(76{,}000) - 15{,}200$ psi

17-4 PH (H900) stainless steel, $\sigma_{ALLOW} = 1/5(190{,}000)$

$= 38{,}000$ psi.

One sting was fabricated for the entire family of wings being considered so the wing producing the largest pitching moment (lowest aspect ratio) determined the size of the sting.

Before the entire family of force wings was fabricated and tested in the wind tunnel, it was deemed necessary to evaluate the interference introduced by the sting and shroud. For this purpose, two force wings (FP7 and FP9) were made with the same dimensions as the pressure wings P7 and P9 except that the force wings had an aft-protruding tang for attachment of the sting. These wings are shown in Figure 16. Although true wing-alone data were not available for comparison, it was felt that the pressure wings would exhibit a small amount of sting interference because the pressures were to be measured on the surface opposite to that attached to the sting. Differences in resultant forces applied to the corresponding pressure and force wings are, therefore, attributed mainly to interference effects of the sting and shroud upon the force wing flowfields. Although this is discussed in more detail in a later section, it is of importance to note here that the interference effects of the force-model sting were found to be excessive. In view of this, plans to test additional wings using the force-balance method were abandoned. Table 4 shows the aspect ratio/taper ratio matrix of the force wings that were designed to extend the aspect ratio extent of the range covered by the pressure wings (Table 2).

Table 5 provides the configurational details of the complete set of force wings that were designed, including the two pressure wing replicas (FP7 and FP9). Of these, FP7 and FP9 were fabricated and tested to determine the extent of sting interference, F1 through F5 were fabricated in "rough-cut" form (17-4 PH stainless), and A1 through A6 were designed but not fabricated.

The 6-component force balance used to measure the force-wing loads was a Task 2.00 in. diameter unit designated MKIIIC. It had the following rated load capabilities:

Forward normal-force gage	– 900 lbs.
Aft normal-force gage	– 900 lbs.
Forward side-force gage	– 450 lbs.
Aft side-force gage	– 450 lbs.
Axial force	– 500 lbs.

4.0 TEST FACILITY AND METHODS

4.1 Facility Description

All testing for this phase of the effort was accomplished in the NASA/Ames Research Center's (ARC) 6- by 6-Foot Supersonic Wind Tunnel. Although characterized as supersonic in it's title, this facility is calibrated for operation at subsonic, transonic, and supersonic Mach numbers. This closed-circuit, single-return wind tunnel is equipped with an asymmetric sliding-block nozzle and the test section is vented to evacuable plenum chambers via variable orifice perforations in the test section floor and ceiling; these features allow continuous variation of the test section Mach number from 0.25 to 2.2. Airflow is provided for by an eight-stage, axial-flow compressor powered by two electric motors (60,000 total horsepower) that are mounted in tandem outside the tunnel. Twin ejectors are utilized downstream of the test section to provide adjustment of the test section static pressure in addition to that provided by evacuation of the tunnel circuit.

Performance parameters and relevant test section dimensions for the ARC 6- by 6-Foot Wind Tunnel are listed belcw:

Performance:

Mach number – continuously variable between 0.25 and 2.2
Stagnation pressure – 0.3 to 1.0 atmosphere
Reynolds number – 1.0×10^6 to 5.0×10^6 per foot
Stagnation temperature – 580° F

Flow quality and measurement uncertainties:

- Mach number uncertainty: true test section centerline Mach number relative to value indicated by test section wall pressure instrumentation –

Mach Number	RMS Mach Number Uncertainty
0.6	.005
0.8	.005
0.9	.010
1.2	.010
1.6	.005

- Flow angularity – 0.08 deg. RMS

- Angle of attack measurement uncertainty – 0.08 deg. RMS

- Turbulence level as RMS of $\Delta p/q$ –

Mach Number	$(\Delta p/q)$ RMS
0.8	.015
0.94	.011
1.2	.011
1.6	.011

- Manometer uncertainties on stilling chamber total pressure and wall static pressure – 0.01 in. of Hg RMS.

Test section Dimensions:

Height – 6.0 feet
Width – 6.0 feet
Length – 14.4 feet
Access – Side doors, 5.0 × 5.0 feet

4.2 Experimental Methodology – Pressure Models

Figure 17 shows the operative envelope of the ARC 6- by 6-Foot Wind Tunnel. For this effort, most data runs that utilized the baseline models were accomplished at a fixed Reynolds number of 2.0×10^6 ft. One wing configuration (P8) was tested at a constant Reynold's number of approximately 1.5×10^6 so that the data could be directly compared with results obtained when a "dummy" version of the force-model sting was mounted on configuration P8. As was discussed in section 3, the "dummy" sting configuration (designated config. 11) was tested to determine the interference effects of the force-model sting hardware upon the wing pressure distribution, and this configuration consisted of pressure wing configuration 8 with a force-model sting replica cantilevered from it; to provide an adequate structural margin, the dynamic pressure (and thus, Reynolds number) was reduced for all runs involving pressure wing configuration number 8.

All model configurations were tested at Mach 0.6, 0.8, 0.9, and 1.2, and configurations 1, 8, 9, and 11 were also tested at Mach 1.6 to provide a basis for comparing the ARC 6- by 6-Foot Wind Tunnel results with those obtained with the same models in the NASA/Langley Research Center (LRC) Unitary Plan Wind Tunnel (ref. 1). Nominal test angles of attack were -2.7°, 0°, 5°, 10°, 15°, 20°, 25°, 26.5°, 27°, 30°, 35°, 40°, 35°, 50°, 55°, and 56.3°. The precision in setting the angle of attack was within ±0.5 deg. Table 6 shows the test run schedule with indication of test conditions for which data were obtained.

The pressure models were mounted in the ARC 6- by 6-Foot Wind Tunnel using the sting arrangements depicted in Figure 18. The model support sting arrangement was mounted to the main sting body, which was in turn suspended from a vertical, slotted strut that provides for translation and rotation in the vertical plane. Two sting assemblies were employed: the low-α-range assembly ($-3.3° < \alpha < 26.9°$) and the high-α-range assembly ($26.9° < \alpha < 56.6°$). Sixty to seventy pressure lines, corresponding to the number of pressure taps utilized on each wing configuration, were routed through the outer leg of the dogleg blade (diamond cross-section) model support sting and thence external to the sting components but within a segment of 1 in. ID high pressure line downstream to the main sting body. The 60 to 70 pressure lines were connected to the monitoring ports of six 24-port scanivalve barrels which were mounted within the main sting body. The scanivalves were motor-driven via a remote controller located in the tunnel control room. Each of the scanivalve barrels was connected to individual Statham PM 131-TC 0 to 12.5 PSI pressure transducers.

Since all pressure taps were located on only one side of each wing model (the side opposite the dogleg blade sting), it was necessary to conduct separate runs to obtain data for the windward and leeward sides of each wing model; this was accomplished by rolling the model and blade sting 180° as a unit between the windward and leeward run sequenced.

The testing procedure consisted of establishing the test section flow at each desired Mach number beginning with the lowest angle-of-attack in a α-sweep range, scanning the 60 to 70 active pressure monitoring ports of the scanivalves serially, and repeating this process at increasing angle of attack until the data at the maximum angle-of-attack in each sweep range were recorded. Since all desired combinations of Mach number and angle of attack within a given sweep range (low or high) could be obtained in a single run series without opening the test section, four such run series were required to obtain the desired (windward and leeward sides, high and low α) pressure data for each wing configuration. Shadowgraph photographs were taken at most Mach 1.2 combinations of angle of attack and configuration to monitor the possible presence of a wall-reflected waves in the vicinity of the models; no such reflected shocks intersected the models.

4.3 Experimental Methodology – Force Models

Two force model configurations were tested that were replicas of two of the pressure wing models. Configuration FP7 was a replica of pressure model P7 (aspect ratio 2.0, triangular) whereas configuration FP9 was a replica of pressure model P9 (aspect ratio 2.0, rectangular). Certain configurational and support system compromises were required to devise a cost-effective means of obtaining direct force measurements using a strain gage balance; these are detailed in section 3. Testing was accomplished at Mach numbers of 0.6, 0.8, 0.9, and 1.2 for the same angles of attack as the pressure models. The run schedule of Table 6 includes a listing of runs conducted with the force models. Figure 19 shows now the force models were installed in the NASA/ARC 6- by 6-Foot Wind Tunnel.

The force model testing procedure was identical to that utilized for the pressure models except that the six components of the strain gage balance output were read rather than 60 to 70 pressures. Accordingly, the running rate was much greater than that experienced with the pressure models, and the data reduction computational effort was greatly reduced.

5.0 RESULTS AND DISCUSSION

The data obtained or derived as a result of this experimental effort are in the form of surface pressure coefficients, aerodynamic force and moment coefficients computed by summation of elemental forces associated with the individual values of measured absolute pressure, and aerodynamic force and moment coefficients computed from the components of forces measured with an external strain-gage balance. These three types of data are discussed in the following subsections in terms of the data variation with the relevant fluid dynamic and geometrical parameters, and the data uncertainties associated with the information acquisition procedures and data reduction techniques. The final two subsections deal with sting interference effects and comparison of the data obtained in this effort with that extracted from other sources.

5.1 Surface Pressure Coefficients

Values of absolute pressure were measured at 60 to 70 0.0019 in. diameter orifices that were (more or less) uniformly distributed over one-half a single surface of ten wing configurations. The orifices were located on the wing surface opposite to that of the sting attachments. The configurations, pressure measurement locations, and methods of instrumentation are discussed in section 3, whereas section 4 describes the test facility, experimental methods employed, and provides the test run schedule. The pressure data for opposite sides of each wing configuration (upper vs. lower) for a given combination of angle of attack and Mach number were necessarily obtained during separate runs that were separated in time-of-measurement by (typically) several hours. Owing to limits on the precision to which the wing model angle-of-attack could be set, the angles of attack at which windward-side pressures were measured differ from the angles of attack at which the corresponding leeward-side pressures were measured by as much as one degree. This discrepancy resulted from the ±0.5 degree tolerance upon remotely positioning the wing models in angle of attack using the ARC 6- by 6-Foot Wind Tunnel's manual (open-loop) attitude controller.

Table 6 provides the complete test run schedule, wherein the nominal values of Mach number and angle-of-attack at which pressure distribution data were obtained for each configuration are shown. The allowed tolerance on manual setting of the test section Mach number of ±0.005 according to common practice in the

ARC 6- by 6-Foot Wind Tunnel. However, the actual test Mach numbers varied in the following manner:

Nominal M	Average Value of Set Mach Number	Standard Deviation of Set Mach Number
0.6	0.602	.011
0.8	0.802	.0016
0.9	0.903	.0018
1.2	1.203	.0020
1.6	1.604	.0020

Thus, it is evident that the operators interpreted the operational policy as meaning "stay between the nominal M and M + 0.005", which resulted in better precision than called for by the ±.005 policy. The ±.005 precision standard for operator-set Mach number is consistent with the level of random variability between instrumentation-indicated Mach number and actual test section Mach number. The random variability of test section Mach number, expressed as the standard deviation of the run-to-run residual found after introducing the correction terms for all bias contributors to Mach number error from wing-tunnel calibration, is indicated below:

M	Standard Deviation of M
0.6	.005
0.8	.005
0.9	.010
1.2	.010
1.6	.005

Pressure variations at the model surface were communicated through about 15 feet of tubing to six scanivalves, each of which was connected to a Statham PM-131-TC pressure transducer. These transducers has a range of 0-12.5 psia and a specified RMS measurement uncertainty of 0.7% of full scale. The wing model orifices were 0.018 in. in diameter, consistent with the 0.018 in. internal diameter (ID) stainless steel tubing used to communicate pressure disturbances out of the model and through the dogleg blade sting. Plastic tubing (.030 in. ID) was used to communicate pressures from the model sting aft over the main support sting to the scanivalves and pressure transducer (located in the main pod of the wind tunnel pitch mechanism).

The surface pressure data were obtained at Mach 0.6, 0.8, 0.9, and 1.2 for seven of the wing configurations, and at Mach 0.6, 0.8, 0.9, 1.2, and 1.6 for four of the wing configurations (1, 8, 9, and 11). At each test Mach number, data were obtained at nominal angles of attack of -3°, 0°, 5°, 10°, 15°, 20°, 25°, and 26.5° with a main sting offset strut installed to provide the low angle-of-attack range. Data were also obtained at 27.5°, 30°, 35°, 40°, 45°, 50°, 55°, and 56.5° angles of attack with an offset strut installed to provide the high angle-of-attack range. The position of the models in the test section varied very little with angle of attack, in that axial or vertical excursions were of the order ±3 in.

Model surface pressure coefficients (C_P) were computed from the values of pressure measured at the model surface according to the following formula:

$$C_P = \frac{P - P_\infty}{q_\infty}$$

where P = local value of pressure on the wing model surface.

P_∞ = test section static pressure as determined from an electronic-output manometer connected to an orifice in the test section wall.

q_∞ = test section dynamic pressure as determined from the isentropic relationship: $q_\infty = \frac{\gamma}{2} P_\infty M_\infty^2$ (γ = specific heats ratio, M_∞ = test section Mach number determined from a calibration of test section Mach numbers vs. stilling chamber total pressure and wall static pressure.

5.1.1 Pressure coefficient data.- Pressure coefficients were computed for each orifice of every model configuration at each of the test Mach number/angle of attack combinations. The resulting 92,000 or so pressure coefficient values are listed in Appendix A. On each of two successive pages, all of the windward (lower) surface and leeward (upper) surface pressure coefficients determined for a given model at a given Mach number are listed (i.e., the data for all 16 angles of attack). Upon each pair of successive pages, the first page contains data from the low angle-of-attack range, whereas the second page contains data from the high angle-of-attack range.

The data lists are organized so that the data for each wing configuration are listed on successive pages according to increasing Mach number (two pages per Mach number). All of the data are listed for a given configuration, followed then by the next configuration according to configuration number, beginning with configuration 1 and ending with configuration 11. The (X,Y) locations of the pressure orifices on each model are listed with the orifice numbers along the left-hand margin of each page. The details of the wing model geometries and respective orifice locations on the models may be found in Figures 5 through 14 and in Table 3. In certain cases, the data for a given angle of attack were lost or deleted due to determination of some acquisition fault; in such cases, the C_p data tables are blank. Data from plugged or leaking orifices were also deleted.

The listed values of angle-of-attack were not corrected for sting deflections due to lack of a direct measurement of the loads acting on the model; this correction could have been incorporated in post-test data processing, but was neglected due to the small error involved. A crude correction for sting deflection may be applied according to the formula:

$$\Delta\alpha_{SD} \cong 3.7 \times 10^{-5} \alpha q(M)$$

where α = angle of attack, degrees, $\leq 35°$

q(M) (PSF)	245	305	325	380	450
M	.6000	.8000	.9000	1.2000	1.6000
$\frac{\Delta\alpha_{SD}}{\alpha}$	.0091	.0113	.0120	0.0141	0.0167

This correction is approximate for all but configurations 8 and 11; multiply the results of 0.75 to obtain corrections for configurations 8 and 11 (reduced q).

Graphical display of the pressure coefficient distributions would provide insight regarding detailed features of the flow over this parametric series of wing models; however, accomplishing this would require expenditure of considerable effort to interpolate in the C_p data to provide spanwise and chordwise distributions at constant values of station or butline, and to generate utilitarian displays. For current purposes, we have listed all of the pressure coefficients obtained for inspection in Appendix A.

5.1.2 Comparison of NASA/ARC and NASA/LRC data.- Mach 1.6 data were obtained for wing configurations 1, 8, and 9 to provide a basis for comparing the NASA/ARC 6- by 6-Foot Wind Tunnel results with those measured using the same model and sting at M = 1.6 in the NASA/LRC 4- by 4-Foot Unitary Wind Tunnel (Ref. 1). The ARC 6- by 6-Foot Wind Tunnel plenum control system was not engaged during the low angle sweep range run for configuration 1 (run 1), and so these data are not good. Pressure coefficient data from the two facilities are compared in Figures 20 and 21 or configurations 8 (port no. 31) and 9 (port no. 38). The two pressure ports selected for this comparison are located on their respective wing centerlines about 1.7 in. forward of the wing trailing edges on the flat portions of the wings. The data show good agreement, but the LRC data reflect a systematically larger windward-to-leeward pressure difference than is typical of the ARC data; this minor but systematic shift is borne out in the aerodynamic coefficients at Mach 1.6 that were obtained by integrating the wing surface pressures over the wing surface area (Figs. 22 through 30).

5.1.3 Pressure coefficient data uncertainties.- It remains to indicate the levels of uncertainty associated with the pressure coefficient data. The potentially significant sources of error in the C_p data are listed below:

1. Uncertainty of the surface pressure (P) measurements (1.35 lb./ft.^{2} RMS).

2. Uncertainty in determining test section local dynamic pressure (q_∞) associated with wall manometer uncertainty (.706 lb./ft.^{2} RMS) and random Mach number uncertainty (.005 to .010 RMS).

3. Uncertainty of the test section static pressure (P_∞) associated with the wall manometer output uncertainty (.706 lb./ft.^{2}).

4. Dispersions in the pressure coefficient values from the true values at the nominal Mach numbers due to variations in the Mach number set by the wind tunnel operator (±.005 by specification).

5. Uncertainty in the wing model angle of attack due to position potentiometer errors (.08 deg. RMS) and sting bending uncertainty [about $9 \times 10^{-6} \alpha_{deg.} q(M)$ RMS].

Determination of the test section Mach number and dynamic pressure was accomplished according to convention in the following manner:

a. Stilling chamber total pressure (P_{tsc}) and test section wall pressure (P_W) were measured at each data-taking point using the electronic-output manometers.

b. The test section Mach number (M) was computed from:

$$M = \sqrt{5}\left[(P_W/P_{tsc})^{-2/7} - 1\right]^{1/2}$$

and then corrected via a calibration curve.

c. The dynamic pressure (q_∞) was computed from

$$q_\infty = 0.7\ P_W M_\infty^2$$

Random dispersions in true (local value) M_∞ from the computed value amount to .005 to .010 depending upon M_∞, thus causing the local values of P_∞ and q_∞ to differ from P_W and the computed value of q_∞. Also, uncertainties in the manometer outputs (.706 lb./ft.^{2} RMS) for P_W and P_{tsc} lead to uncertainties in C_p. The observed dispersions in M_∞ probably arise in part from the instrument uncertainties associated with the manometers, so care must be taken to avoid double accounting for a single type of error measurement.

The assessment of uncertainties in C_p was approached by establishing the test section static pressure measurement as the reference measurement point. Since it can be shown that total pressure is virtually invariant throughout the test sections of transonic wind tunnels (Ref. 2), random variations in local test section Mach number and local static pressure are governed by the following relationship:

$$P = P_{t_\infty} (1 + M^2/5)^{-7/2}$$

If P_{t_∞} is constant, local static pressure and Mach number variations are related as follows:

$$\frac{dP}{P} = - \frac{(7M/5)dM}{(1 + M^2/5)}$$

Given that C_p is computed from the relationship:

$$C_p = \frac{P - P_\infty}{q_\infty}$$

disturbances in P, P_∞, and q_∞ affect C_p in the following way:

$$dC_p = \frac{\partial C_p}{\partial p} dp + \frac{\partial C_p}{\partial p_\infty} dP_\infty + \frac{\partial C_p}{\partial q_\infty} dq_\infty$$

$$= \frac{1}{q_\infty} dp - \frac{1}{q_\infty} dP_\infty - \frac{(P - P_\infty) dq_\infty}{q_\infty^2}$$

$$= \frac{1}{q_\infty}\left(P \frac{dp}{P} - P_\infty \frac{dP_\infty}{P_\infty} - P \frac{dq_\infty}{q_\infty} + P_\infty \frac{dq_\infty}{q_\infty}\right)$$

and;

$$\frac{dC_p}{C_p} = \frac{P}{P - P_\infty}\frac{dP}{P} - \frac{P_\infty}{P - P_\infty}\frac{dP_\infty}{P_\infty} - \frac{dq_\infty}{q_\infty}$$

Since the total error is the square root of the sum of the squares, we have

$$\frac{\Delta C_p}{C_p} \approx \left[\left(\frac{P}{P - P_\infty}\right)^2\left(\frac{\Delta P}{P}\right)^2 + \left(\frac{-P_\infty}{P - P_\infty}\right)^2\left(\frac{\Delta P_\infty}{P_\infty}\right)^2 + (-1)^2\left(\frac{\Delta q_\infty}{q_\infty}\right)^2\right]^{1/2}$$

and the uncertainty in C_p is

$$\Delta C_p = \left[\left(\frac{P}{P_\infty}\right)^2\left(\frac{1}{.7M^2}\right)^2\left(\frac{\Delta P}{P}\right)^2 + \left(\frac{1}{.7M^2}\right)^2\left(\frac{\Delta P_\infty}{P_\infty}\right)^2 + \left(\frac{P/P_\infty - 1}{.7M^2}\right)^2\left(\frac{\Delta q_\infty}{q_\infty}\right)^2\right]^{1/2}$$

We now determine $\Delta P/P$, $\Delta P_\infty/P_\infty$, and $\Delta q_\infty/q_\infty$ to put in this equation.

Now the uncertainty in true q_∞ at the reference condition is due entirely to measurement uncertainties in P_∞ and to P_t. We find that

$$\left(\frac{\Delta q_\infty}{q_\infty}\right)_{P_\infty} = \left(\frac{2}{7M^2}(M^2 + 5)\right)\frac{\Delta P_t}{P_t}\,; \quad P_\infty \text{ constant}$$

$$\left(\frac{\Delta q_\infty}{q_\infty}\right)_{P_t} = \left(\frac{5(M^2 - 2)}{7M^2}\right)\frac{\Delta P_\infty}{P_\infty}\,; \quad P_t \text{ constant}$$

The square root of the sum of the squares established $\left(\frac{\Delta q_\infty}{q_\infty}\right)$.

The uncertainty in the manometer measurements of $P_t(P_{tsc})$ and $P_\infty(P_W)$ are known, and the uncertainty in model surface pressure owing to Mach number random variability at constant total pressure is

$$\left.\frac{\Delta P}{P}\right|_{P_t} = \frac{7/5\ M\Delta M}{1 + M^2/5}$$

The uncertainty in measuring p is 1.35 psf.

The net effect of these uncertainties is

$$\frac{\Delta P}{P} = \left\{ \left(\frac{7/5\ M^2 \Delta M}{1 + M^2/5} \right)^2 + \left(\frac{1.35}{P} \right)^2 \right\}^{1/2}$$

The uncertainty in P_∞ is 0.706 psf. The expression for uncertainty in C_p becomes a function of M and P/P_∞ only, and so can be readily evaluated at the specific test Mach numbers and various levels of P/P_∞; this has been accomplished in the following table:

Case (a): If $P/P_\infty = 1(C_p = 0)$

$1/.7M^2$	M	P_t nom. (psf)	P_∞ nom. (psf)	$\Delta P_\infty/P_\infty$	$\Delta P/P$	ΔC_p
3.97	0.6	1220	955	.00070	.0041	.0165
2.23	0.8	1030	675	.00105	.0054	.0123
1.76	0.9	945	560	.00130	.0111	.0197
0.99	1.2	933	380	.00190	.0135	.0135
0.56	1.6	1030	230	.00310	.0094	.0056

Case (b): If $P/P_\infty = 0.5$

M	$\Delta P_\infty/P_\infty$	$\Delta P/P$	$(\Delta q_\infty/q_\infty)_{P_t}$	$(\Delta q_\infty/q_\infty)_{P_\infty}$	C_p	ΔC_p
0.6	.00070	.0048	.00250	.0023	-1.98	.0120
0.8	.00105	.0064	.00174	.0016	-1.12	.0080
0.9	.00130	.0118	.00154	.0014	-0.88	.0108
1.2	.00190	.0148	.00100	.0005	-0.50	.0076
1.6	.00310	.0139	.00060	.0005	-0.28	.0043

Case (c): If $P = P_t$

M	P/P_∞	$\Delta P_\infty/P_\infty$	$\Delta P/P$	$(\Delta q_\infty/q_\infty)_{P_t}$	$(\Delta q_\infty/q_\infty)_{P_\infty}$	C_p	ΔC_p
0.6	1.28	.00070	.0041	.00250	.0023	1.112	.0217
0.8	1.53	.00105	.0052	.00174	.0016	1.182	.0181
0.9	1.69	.00130	.0109	.00154	.0014	1.210	.0326
1.2	2.46	.00190	.0131	.00100	.0005	1.450	.0320
1.6	4.48	.00310	.0075	.00060	.0005	1.950	.0190

Inspection of the above results indicates that the maximum uncertainty in C_p is of the order 0.03 or less, and ranges from .004 to .03 depending upon Mach number and the magnitude of local pressure.

5.2 Forces and Moments Integrated from Pressures

The absolute values of pressure measured at the surface of the models at each combination angle of attack and Mach number were multiplied by their allocated local areas (Table 3) to yield local forces. The local force values were then resolved into axial (with respect to symmetry axis) and normal (to plane formed by root and tip chords) components and summed to provide the total axial and normal pressure forces acting upon one side of each wing relative to zero absolute pressure. Also, the summation of moments of the local force components about the wing centerlines and trailing edges was computed to obtain the normal and axial pressure force contributions to total bending moment and pitching moment. Total force components were divided by the reference area and dynamic pressure to yield normal and axial force coefficients for the aerodynamic contribution of one side (windward or leeward) of the wing. The total moments were divided by the product of reference area, dynamic pressure, and mean aerodynamic chord to yield pitching- and bending-moment coefficients for one side (windward or leeward) of the wing. This calculation procedure was carried out for each successive run, until the complementary run that characterized the pressures on the opposite side of the wing at very nearly the same angle of attack and Mach number was completed. If force and moment coefficients were available for both sides (windward and leeward) of a given wing model at the same angle of attack and Mach number, the differences between the windward and leeward force and moment coefficient values could be computed, thus yielding the total force and moment coefficients for the configuration at the stipulated test conditions. Unfortunately, the windward run-to-leeward run mismatch in angle of attack was as great as one degree (±0.5 deg. tolerance on independent windward and leeward runs), necessitating interpolation in angle-of-attack of the upper and lower wing surface data to yield force and moment components at a common angle of attack. This was accomplished by fitting a second-degree Lagrangian interpolating polynomial to each set of three data points taken at successive angles of attack, and solving for the roots of the polynomial at even 5 degree increments in angle of attack. Stepping the polynomial solution through the monotonic α-sequence provided the desired interpolated polynomial roots at even 5.0 degree α-increments, and these roots were within 0.5 degree of the actual data points except at the upper and lower ends of the angle of attack range where extrapolation was necessary. Extrapolated polynomial roots based upon the lowest three α-points

($\alpha \cong 2.7°$, $0°$, and $5°$) were obtained at $\alpha = -5°$ in the reduced data. Similarly, the $\alpha = 60°$ point was extrapolated from the polynomial constructed with the $\alpha = 50°$, $55°$, and $57°$ The $\alpha = -5°$ and $60°$ data points are uncertain and should be so regarded. When interpolated values of the forces and moment coefficient values acting respectively on the upper and lower wing surfaces were derived, subtraction of the upper surface values from the lower surface values yielded the total configuration force and moment coefficients in even 5 degree increments (0°, 5°, 10°, 15°, etc.).

5.2.1 Force and moment coefficient computations.- The aerodynamic parameters computed from the measured pressure data consisted of the normal-force coefficient (CN). The axial-force coefficient (CA), the pitching-moment coefficient about the model trailing edges (CMBT), the wing root bending-moment coefficient (CBM), and the yawing-moment coefficient (CYM). Center-of-pressure locations were also computed, consisting of longitudinal (XCP), lateral (YCP), and vertical (ZCP) components. Equations that mathematically describe the computational process whereby force and moment coefficients were derived from the absolute pressure data are listed below:

For the windward ($\phi = 0$) and leeward ($\phi = 180°$) surfaces separately

$$CN_W, CN_L = \sum_{i=1}^{n} P_i A_i / A q_\infty$$ = Normal-force coefficient acting on either windward or leeward side.

$$CA_W, CA_L = \sum_{i=1}^{n} \frac{P_i \Delta A_i (\tan 15°)(\sin\theta)}{A q_\infty}$$ = Axial-force coefficient due to pressures acting on beveled edges only, either windward or leeward side.

$$CMNB_W, CMNB_L = \sum_{i=1}^{n} P_i A_i \bar{x} / A q_\infty \bar{c}$$ = Normal-force contribution to pitching-moment coefficient about wing trailing edge, windward or leeward side

$$CMA_W, CMA_L = \sum_{i=1}^{n} \frac{P_i A_i \bar{z} (\tan 15°)(\sin\theta)}{A q_\infty \bar{c}}$$ = Either windward or leeward axial-force contribution to pitching-moment coefficient about wing trailing edge due to pressure acting upon beveled edges only.

$CBM_W, CBM_L = 2 \sum_{i=1}^{n} P_i \Delta A_i \bar{y}/Sq_\infty b$ = Root bending-moment coefficient due to the normal force acting upon a single side (windward or leeward) of a semispan of each wing.

$CYM_W, CYM_L = \sum_{i=1}^{n} \dfrac{P_i \Delta A_i \bar{y} (\tan 15°)(\sin\theta)}{Aq_\infty \bar{c}}$ = Windward or leeward component of yawing moment coefficient due to axial forces components only about any axis normal to both the wing centerline and a spanwise axis.

$\dfrac{XCPNB_{W\ or\ L}}{\bar{c}} = \dfrac{CMNB_{W\ or\ L}}{CN_{W\ or\ L}}$ = Longitudinal center of pressure of normal forces a fraction of mean aerodynamic chord from trailing edge.

$\dfrac{YCP_{W\ or\ L}}{b/2} = \dfrac{CBM_{W\ or\ L}}{CN_{W\ or\ L}}$ = Lateral center of pressure of normal forces as fraction of semispan from wing centerline (root).

$\dfrac{ZCP_{W\ or\ L}}{b/2} = \dfrac{CMA_{W\ or\ L}}{CA_{W\ or\ L}} \dfrac{\bar{c}}{t/2}$ = Vertical center of pressure of axial forces as fraction of one-half the wing thickness from the wing geometric centerline.

Where subscripts W or L refer to wing windward or leeward side (respectively) for positive angle of attack.

$$A = \sum_{i=1}^{n} A_i = \text{one-half the wing planform area} = S/2$$

$$\bar{c} = \text{mean aerodynamic chord} = \frac{2(C_R + C_R C_T + C_T^2)}{3(C_R + C_T)}$$

t = wing maximum thickness

C_R = root chord

C_T = tip chord

q_∞ = freestream dynamic pressure

$\bar{X},\bar{Y},\bar{Z}$ = coordinates of the centroids of the area increments associated with each pressure tap referenced to the wing trailing edge and centerline (Table 3).

θ = 90° minus the sweepback angle of any edge

After interpolation in angle of attack to yield common α-values in integral 5° increments:

$$CN = CN_W - CN_L$$

$$CA = CA_W + CA_L$$

$$CMNB = CMNB_W - CMNB_L$$

$$CMA = CMA_W - CMA_L$$

$$CBM = CBM_W - CBM_L$$

$$CYM = CYM_W + CYM_L$$

$$CMBT = CMNB + CMA$$

$$\frac{XCPNB}{\bar{C}} = \frac{\dfrac{XCPNB}{\bar{C}_W} CN_W - \dfrac{XCPNB}{\bar{C}_L}}{CN}$$

$\dfrac{XCP}{C_R} = 1 - \dfrac{XCPNB}{\bar{C}} \dfrac{\bar{C}}{C_R}$ = total aerodynamic center of normal forces as fraction of root chord from leading edge.

The pitching-moment coefficient about the wing area centroid (CMCT) was computed as follows:

$$CMNC = CMNB - CN \frac{X_C}{\bar{C}}$$, where X_C = centroid axial station

Then,

$$CMCT = CMNC + CMA$$

The data reduction procedure for computing aerodynamic force and moment coefficients from the measured pressure data was originally devised and programmed by NASA/Langley Research Center personnel and was previously reported in Reference 1. The data reduction program was adapted for use at NASA/Ames Research Center by Sverdup, Inc. personnel.

The complete configuration force, moment, and center-of-pressure data are listed in Appendix B, where the center-of-pressure column labels should be interpreted as follows:

Column Label		
XCP	$\frac{XCP}{C_R}$,	longitudinal center of pressure of normal forces as fraction of root chord measured from leading edge
YCP	$\frac{YCP}{b/2}$,	lateral center of pressure of normal forces as fraction of the wing semispan
ZCP	$\frac{ZCP}{t/2}$,	vertical center of pressure of axial forces with respect to wing centerline, as fraction of one-half the maximum wing thickness

The index to these data tables is provided at the beginning of Appendix B. As was mentioned previously, the XCP and YCP data are not valid at $\alpha = 5°$ and $60°$, and are meaningless at $\alpha = 0$.

All of the force and moment coefficient data and the center of pressure data are plotted in Appendix C. The plots are organized to display the data at each value of taper ratio (λ) on two successive graphs, beginning with $\lambda = 0$ (configs. P1, P4, and P7) and followed by $\lambda = 0.5$ (P2, P5, P8, P10) and $\lambda = 1.0$ (P3, P6, P9). An index to the plotted data is provided at the beginning of Appendix C. In the case of the Mach 0.6 and 0.8 XCP/C_R plots, "corrected" data points have been added at $\alpha = 3°$, $5°$, and $10°$ because a correction procedure was employed to account for the effects of the run-to-run ±0.005 Mach number variability upon the model surface pressures. Although application of the correction procedure to the YCP/(b/2) and ZCP/(t/2) data is warranted, this has not been accomplished.

5.2.2 Correction of the data for run-to-run M_∞ Differences.- The procedure for computing force, moment, and center-of-pressure information from the absolute pressure data is well posed at supersonic Mach numbers but is not well posed at subsonic Mach numbers. The isentropic relationship between static (P_∞) and dynamic (q_∞) pressures:

$$q_\infty = \frac{\gamma P_\infty M^2}{2}$$

demonstrates the sensitivity of P_∞ to Mach number at subsonic speeds and constant dynamic pressures:

$$\frac{\partial P_\infty}{\partial M} = \frac{\partial}{\partial M}\left(\frac{2q_\infty}{\gamma M^2}\right) = -\frac{4q_\infty}{\gamma M^3}$$

This equation, when evaluated at nominal values of q_∞ (240 psf) and M(0.6), yields

$$\frac{\partial P_\infty}{\partial M} = 3175$$

Thus a ±0.0005 Mach number tolerance yields a static pressure uncertainty of about ±16 psf, and a corresponding $\Delta P/q_\infty$ uncertainty of about 7% per wing side (windward vs. leeward). Subtraction of the leeward force components from the windward counterparts in the data reduction process can result in very large percentage errors when the windward and leeward force components are nearly equal and opposite, such as is expected near $\alpha = 0$ with symmetric airfoil sections. To compensate for the effects of Mach number differences between the windward and leeward runs, the following correction procedure was applied for a limited number of cases.

The windward and leeward normal-force coefficients (CN_W, CN_L) and pitching-moment coefficients ($CMNB_W$, $CMNB_L$) relative to a vaccum on the opposite side were utilized to computer corresponding coefficients (CNR_W, CNR_L, $CMNBR_W$, $CMNBR_L$) relative to freestream pressure on the opposite side as follows:

$$CNR_{W/L} = CN_{W/L} - 2/\gamma M^2$$

$$CMNBR_{W/L} = CMNB_{W/L} - 1/\gamma M^2$$

The moment relationship was derived using the result that

$$\frac{X_C}{\bar{C}} = 0.5$$

for all wings tested (where X_C = wing area centroid). This procedure is equivalent to computing the force and moment coefficients from pressure coefficients instead of absolute pressures. The actual Mach number at the beginning of each run was utilized in the correction procedure. The variation of Mach number during each run was not determined, but instances of as much as ±.0003 variation in Mach number during a run are suspected. The result obtained by utilizing the correction procedure outlined above are listed in Table 7.

5.2.3 Comparison of NASA/LRC and NASA/ARC data.- Wing surface pressure data were obtained at Mach 1.6 for configurations 1(P1), 9(P9), and 9(P9) only. These data were obtained to provide a representative sample for comparison with the Mach 1.6 data of Reference 1, which data were obtained in the NASA/LRC 4- by 4-Foot Unitary Plan Wind Tunnel. Comparisons of the NASA/ARC 6- by 6-Foot and NASA/LRC 4- by 4-Foot data are shown in Figures 22 through 30 in terms of the normal-force, pitching-moment (about centroid) and spanwise root bending-moment coefficients as computed from the surface pressure coefficients. The ARC and LRC normal-force coefficient data are generally in close agreement. The pitching-moment coefficients about the area centroids were somewhat less in agreement, and the resulting center-of-pressure values differed by as much as 10% of $\bar{C}$ in the 30°-50° region for configuration 8. The spanwise root bending-moment data were generally in close agreement. The NASA/LRC data exhibit coefficient values that are systematically larger than their NASA/ARC counterparts, very likely owing to the positive shift of the NASA/LRC pressure coefficient data relative to the NASA/ARC data noted in subsection 5.1. Up to 1% difference in normal-force and pitching-moment coefficient between the two facilities maybe due to the fact that the NASA/ARC 6- by 6-Foot actual Mach number varied from 1.602 to 1.610, compared to the NASA/LRC 4- by 4-Foot value of 1.600. On the whole, it is considered that the data from the two facilities largely agree within the confidence level typical of wind tunnel test data.

5.2.4 Systematic effects of parameter variation in the data.- The wing configuration variables consisted of aspect ratio (Æ) and taper ratio (λ), whereas the fluid dynamic variables were Mach number and angle of attack. Figure 31 shows the combined effects of Mach number and angle of attack upon the normal-force coefficient and longitudinal center of pressure of a representative wing configuration (Æ = 1, $\lambda = 0.5$); the effects of stall are noticeable at subsonic Mach numbers, but the angle of attack associated with stall increases with Mach number and stall is barely noticeable at Mach 1.2.

Figures 32 and 33 show the effects of taper ratio and angle of attack variation for Æ = 1 at Mach 0.6 and 1.2, respectively. At Mach 0.6 there are large effects of λ on the onset of stall. As λ decreases and sweepback increases stall is delayed to higher angles of attack. The center-of-pressure data for the rectangular wing show strong nonlinear effects. At $M_\infty = 1.2$ the effect of λ on the normal-force curve is much reduced, and the center of pressure positions are much more uniform.

Figures 34 and 35 show the combined effects of angle of attack and aspect ratio upon taper ratio 0.5 wings at Mach 0.6 and 1.2, respectively. The Mach 0.6 data displays a decreasing angle of stall as the aspect ratio is increased at constant taper ratio. This is associated with decreasing leading-edge sweep which causes the nonlinear effect of wing thickness to increase *significantly with increase in aspect ratio. The change in thickness ratio is illustrated by the following tabulation:*

Configuration	λ	$A\!\!R$	t/c_R	δ	Λ
1	0	0.5	.030	1.9°	82.9°
2	0.5	0.5	.044	5.4°	69.4°
3	1.0	0.5	.060	15.0°	0.0°
4	0	1.0	.043	3.7°	76.0°
5	0.5	1.0	.063	9.1°	53.1°
6	1.0	1.0	.085	15.0°	0.0°
7	0	2.0	.060	6.8°	63.4°
8	0.5	2.0	.088	12.6°	33.7°
9	1.0	2.0	.120	15.0°	0.0°
10	0.5	4.0	.125	14.3°	18.4°

NOTE: δ = streamwise component of the leading-edge bevel half-angle
Λ = leading edge sweepback angle

At M_∞ = 1.2, the wings do not stall and the ratio are much less than at M_∞ = 0.6.

5.2.5 Force and moment coefficient data uncertainties.- Uncertainties in the force and moment coefficients computed by integrating surface pressures arose mostly from three sources:

1. Run-to-run Mach number differences.- Differences between the data-cycle initiation Mach number at which the wing lower surface pressures were measured and the data-cycle initiation Mach number at which the wing upper surface pressures were measured led to a systematic differential error in the coefficients. This error source could essentially be removed by recomputing all the force and moment coefficients directly from the pressure coefficients, as was essentially done in Table 7 at low angles of attack for Mach 0.6 and 0.8 in the case of the previously-discussed XCP/C_R plots for certain configurations. The statistics of the observed differences in Mach number between respective runs where the upper and lower wing surface pressures were recorded at about the same angle of attack are as follows:

M	Average Run-to-Run Mach Number Difference, $\overline{\lvert \Delta M \rvert}$	Standard Deviation of Run-to-Run Mach Number Difference, $\sigma_{\Delta M}$
0.6	.001222	.001053
0.8	.001500	.001190
0.9	.001648	.001374
1.2	.001321	.001157
1.6	.001200 (est.)	.001000 (est.)

The frequency distribution of the absolute Mach number differences resembles a gamma distribution.

2. Mach number drift during a run.- During each pressure data acquisition run the Mach number drifted by an unknown amount. We suspect that such variation may have been as large as 0.003 in isolated cases, based upon the magnitude of certain anomalies we have observed in CN_W compared to CN_L near $\alpha = 0$ in cases where the indicated Mach numbers associated with the upper vs. lower surfaces were nearly identical. The indicated, or "set" Mach number was recorded only at the beginning of data acquisition cycle (at a given nominal Mach number/angle-of-attack combination), and the "drift" in Mach number during the approximately one-minute long pressure data recording cycle was not recorded nor noted so long as the variation did not exceed the specified ±.005 tolerance. Based upon the foregoing, we feel that an approximate RMS value for indicated Mach number drift during a run of 1/3(.003) = .001 is appropriate. Prior to measuring model surface pressures, a series of tunnel P_T and P_{WALL} readings were taken, averaged, and utilized to compute test section Mach number and dynamic pressure, which were assumed constant during a wing surface pressure data recording cycle. These q and $P_{WALL} = P_\infty$ fixed values were used in computing pressure coefficients. No correction procedure for this source of data uncertainty is envisioned.

3. Mach number fluctuation.- The fluctuation of test section Mach number relative to indicated Mach number is a short-period random phenomenon of unknown frequency content that results in measurement of individual wing surface pressures or groups of such pressures at test section conditions other than that at which tunnel P_T and P_{WALL} were recorded prior to recording the wing surface pressures. It is suspected that these random errors between pressure instrumentation-indicated (P_T and P_{WALL}) Mach number and the true test section Mach number are due to a combination of instrumentation error and unsteadiness in the test section flow. According to Sverdrup, Inc. personnel in charge of the ARC 6- by 6-Foot Wind Tunnel operation, the period of the 6- by 6-Foot Wind Tunnel Mach number fluctuation is less than the data-sampling rate. If it can be assumed that the frequency of flow fluctuation is at least the same order as the wing surface pressure data-taking rate (~0.6 sec./data point), then the expected RMS error in Mach number over sixty sequential pressure measurements required to determine the contribution of one side of the wing to normal force or pitching moment is:

$$\sigma_{\bar{M}} = \frac{\sigma_M}{\sqrt{60}} = 0.129\ \sigma_M$$

Here σ_m is the standard deviation of the indefinitely large population of Mach number errors. The estimated values of σ_m are as follows:

M	σ_M	.129 σ_M
0.6	.005	.000645
0.8	.005	.000645
0.9	.010	.001290
1.2	.010	.001290
1.6	.005	.000645

Since the pressure coefficient data uncertainty analysis revealed that Mach number uncertainty is the dominant contributor to surface pressure uncertainty, the remaining uncertainty associated with the pressure measurements will be assumed negligible.

As was previously stated, the normal-force coefficient, C_N, was computed according to:

$$C_N = CN_W - CN_L = \frac{1}{S}\left[\sum_{i=1}^{n} \frac{P_{W_i} A_i}{q_{W_\infty}} - \sum_{i=1}^{n} \frac{P_{L_i} A_i}{q_{L_\infty}}\right]$$

Applying the identity:

$$P = P_\infty\left(1 + \gamma \frac{C_P}{2} M^2\right) ,$$

we obtain

$$C_N = \sum_{i=1}^{n} \frac{P_{\infty_W}\left(1 + \gamma \frac{C_{P_{wi}}}{2} M_W^2\right) A_i}{Sq_W} - \sum_{i=1}^{n} \frac{P_{\infty_L}\left(1 + \gamma \frac{C_{P_{Li}}}{2} M_L^2\right) A_i}{Sq_L}$$

Then, since $P_\infty/q_\infty = 10/7M^2$ and $\Sigma P_\infty \Delta A = P_\infty S$ (and after some manipulation):

$$C_N = \frac{10}{7}\left(\frac{1}{M_W^2} - \frac{1}{M_L^2}\right) + \frac{1}{S}\sum_{i=1}^{n} A_i\left(C_{P_{wi}} - C_{P_{Li}}\right)$$

For small angles of attack in the present Mach number range linear wing theory gives the result that both surfaces contribute equal to normal-force coefficient and those contributions vary similarly with Mach number, about as $(M^2 - 1)^{-1/2}$. Under these circumstances the second term represents the true normal-force coefficient at the average of the test Mach numbers and the first term represents the error.

Now the first term,

$$\frac{10}{7}\left[\frac{1}{M_W^2} - \frac{1}{M_L^2}\right] = \frac{10}{7}\,\frac{(M_L - M_W)(M_L + M_W)}{M_W^2 M_L^2} \approx \frac{2.86\ \Delta M}{M^3}$$

where

$$\Delta M = M_W - M_L \text{ and } \frac{\Delta M}{M} <<< 1$$

Therefore,

$$\frac{\partial C_N}{\partial \Delta M} = \frac{2.86}{M^3}$$

Similar arguments can be posed to derive the C_M uncertainty:

$$C_M = \frac{5}{7}\left(\frac{1}{M_W^2} - \frac{1}{M_L^2}\right) - \frac{1}{S\bar{c}} \sum_{i=1}^{n} A_i \bar{X}_i \left(C_{P_{wi}} - C_{P_{Li}}\right) ;$$

$$\frac{\partial C_M}{\partial_{\Delta M}} = \frac{1.43}{M^3}$$

Given that $C_{N_{true}} = \frac{1}{S} \sum_{i=1}^{n} \Delta C_{P_i} A_i$ and $C_{M_{true}} = \frac{1}{S\bar{c}} \sum_{i=1}^{n} \Delta C_{P_i} A_i \bar{X}_i$;

$\frac{X_{CP}}{\bar{C}}$ can be defined:

$$\frac{X_{CP}}{\bar{C}} = \frac{C_M}{C_N} = \frac{\frac{1.43\ \Delta M}{M^3} + C_{M_{true}}}{\frac{2.86\ \Delta M}{M^3} + C_{N_{true}}}$$

and the dispersion in $\frac{X_{CP}}{\bar{C}}$ due to the coupled uncertainties C_M and C_N may be written:

$$\frac{\Delta X_{CP}}{\bar{C}} = \frac{X_{CP}}{\bar{C}} - \left(\frac{X_{CP}}{\bar{C}}\right)_{true}$$

$$= \frac{C_{M_{true}}}{C_{N_{true}} + \frac{2.86\ \Delta M}{M^3}} - \frac{C_{M_{true}}}{C_{N_{true}}} + \frac{\frac{1.43\ \Delta M}{M^3}}{C_{N_{true}} + \frac{2.86\ \Delta M}{M^3}}$$

If $\frac{C_{M_{true}}}{C_{N_{true}}} = K$ and $\frac{2.86\ \Delta M}{M^3} = \varepsilon$, then $\frac{\Delta X_{CP}}{\bar{C}} = \frac{(0.5 - K)}{C_N + \varepsilon}$

Typical values for K are in the range 0.5 to 1.0 for all wing configurations. The following table lists the sources of Mach number uncertainty and their cumulative effect:

M	Run-to-Run $\Delta\bar{M} + \sigma_M$	Drift σ_M	Random $\sigma_{\bar{M}}$	Cumulative RSS σ_M
0.6	.02270	.001	.00065	.0026
0.8	.00269	.001	.00065	.0029
0.9	.00302	.001	.00129	.0034
1.2	.00348	.001	.00129	.0035
1.6	.00220	.001	.00065	.0025

The resulting uncertainties in C_N, C_M, and $X_{CP}/\bar{C}$ are listed below for K = 0.75 and 1.0. For K = 0.5, $\Delta X_{CP}/\bar{C}$ is zero.

			$\Delta X_{CP}/\bar{C}$ for Various C_N							
			C_N=0		$C_N=\varepsilon$		C_N=0.2		C_N=1.0	
M	$\varepsilon=\Delta C_N$	$\varepsilon/2=\Delta C_m$	K=.75	K=1.0	K=.75	K=1.0	K=.75	K=1.0	K=.75	K=1.0
0.6	±.034	±.0170	.25	-.5	-.125/ +∞	-.25/ +∞	-.036/ +.051	-.073/ +.102	-.0082/ +.0088	-.016/ +.0176
0.8	±.016	±.0080	.25	-.5	-.125/ +∞	-.25/ +∞	-.019/ +.022	-.037/ +.043	±.004	±.008
0.9	±.013	±.0067	.25	-.5	-.125/ +∞	-.25/ +∞	-.015/ +.017	-.031/ +.034	±.0033	±.0066
1.2	±.005	±.0025	.25	-.5	-.125/ +∞	-.25/ +∞	±.06	±.012	±.00125	±.0025
1.6	±.002	±.0010	.25	-.5	-.125 +∞	-.25/ +∞	±.0025	±.005	±.0005	±.001
			α=0		α=0 to 2°		α=2° to 10°		α=22° to 50°	

This table illustrates the well known fact that at zero or small angles of attack large errors occur in $X_{CP}/\bar{C}$ values unless the C_M vs. C_N curve is made to go through the origin. For values of $C_N > 0.2$, the error in $X_{CP}/\bar{C}$ is tolerable for Mach numbers equal to or exceeding 0.8. For $M_\infty = 0.6$ the error does not become tolerable unless α is somewhat greater than 10°. Application of the error corrections substantially reduces the errors of the measured data.

5.3 Directly Measured Forces and Moments

An external force-balance arrangement (discussed in sections 3 and 4) was used to measure directly the forces and moments acting on two wing configurations. These were:

1. An aspect-ratio 2.0 triangular ($\lambda = 0$) wing designated configuration FP7. This configuration is a geometric replica of the pressure wing model P7.

2. An aspect-ratio 2.0, taper ratio 0.5 wing designated configuration FP9. This configuration is a geometric replica of the pressure wing model P9.

The objective of this series of runs was to obtain data that allows comparison of the pressure-model results with the force-model results in order to assess sting-interference effects.

The direct-force measurement technique saves test time and data reduction effort compared with the surface pressure measurement technique in cases where the desired data are force and moment aerodynamic coefficients. Therefore, establishing the validity of the direct-force measuring technique would certify it for extensive use in testing a large number of wing configurations.

Surface oil-flow patterns on the lee sides of the two force-model wings were made by applying a mixture of mineral oil and titanium oxide pigment to the model surface prior to starting the wind tunnel, pitching the model to the desired angle of attack, and then running the wind tunnel up to steady-state, Mach 1.2 conditions (all oil flows were made at Mach 1.2). When the surface flow pattern was fully developed at the steady state condition (as determined by observation through a window in the test-section wall), a photograph of the oil-flow patterns was taken using a remotely-controlled camera. The surface oil-flow results are discussed in the following subsection (5.4).

5.3.1 <u>The directly-measured force and moment coefficient data</u>.- The force model and sting arrangement was tested in the position shown in Figure 15 ($\phi = 0$), as well as inverted ($\phi = 180°$). In the $\phi = 0$ case, the conical sting protrusion (which is metric) where the wing models mount to the sting via a trailing-edge tab was located on the leeward side of the wing at positive α. In the $\phi = 180°$ case, the sting assembly was rolled 180° on the balance so the metric conical sting protrusion was on the windward side. Although the original design anticipated that the $\phi = 0$ position would be preferred for minimizing flow interference effects, tests of dummy versions of the force model sting on pressure-model configuration 8 (designated configuration 11 in the data) revealed that minimum interference effects were probably associated with the $\phi = 180°$ position. Low (-3° to 27°) and high (27° to 57°) angle of attack sweep-range data were obtained at $\phi = 180°$. Only low-angle sweep range data were obtained at $\phi = 0$.

The complete force-model data are provided in Appendix D; an index to these data and definitions of the mnemonic data labels are also provided there.

5.3.2 Comparison of force-model and pressure-model aerodynamic data.- Comparisons of normal-force coefficients and centers of pressure obtained for the force and pressure models are provided in Figures 36 through 51. Each graph compares data obtained by integrating model surface pressures with force-model data for the $\phi = 0°$ and $\phi = 180°$ cases. Data for configurations 7(P7) and 12(FP7) are shown in Figures 36 through 43, whereas the configuration 9(P9) data are shown in Figures 44 through 51. The normal-force coefficient comparisons show superficial agreement up to about $\alpha = 20°$; at higher angles of attack it is clear that sting interference has a large influence upon the force-model results. The aerodynamic center data for the triangular, aspect ratio two wings (configurations 9 and 12) show that the force-model results are shifted aft 15% of the root chord for $\phi = 180°$ and about 10% for $\phi = 0$. In the case of the rectangular aspect ratio two wings (configurations 9 and 13), the force-model and pressure-model data are in wide disagreement below $\alpha = 25°$ regardless of whether the force model was upright or inverted. Because of the last sting-interference effects, the utility of the force-model data is limited to the study of sting interference, the subject of subsection 5.4.

5.3.3 Force-model data uncertainties.- The uncertainty level associated with the force-balance measured loads was quoted as 1% or less of the full-scale rated capacity of each balance gage or element. Since the rated capacity of the balance normal-force gages was 900 lbs. this corresponds to a load uncertainty of 9 lbs. per gage.

The normal-force and pitching-moment (about wing trailing edge) coefficients were computed from the formulas:

$$CFN = \frac{R_2 - R_1}{qS}$$

$$CMNBF = \frac{R_2(X_1 + X) - R_1X_1}{qS\bar{C}}$$

where R_1 = balance forward gage load, negative for + CFN

R_2 = balance aft gage load, positive for + CFN

X_1 = distance from the wing trailing edge to the forward gage of the balance

= 25.525 in.

X = distance between balance gage elements = 7.25 in.

$q, S, \bar{C}$ = as previously

Following the same approach as used in subsection 5.1, the fractional uncertainties in CFN or CMNBF (stated as "C") are given as:

$$\frac{\Delta C}{C} = \sqrt{\left(\frac{\partial \ell nC}{\partial \ell nR_1}\right)^2\left(\frac{\Delta R_1}{R_1}\right)^2 + \left(\frac{\partial \ell nC}{\partial \ell nR_2}\right)^2\left(\frac{\Delta R_2}{R_2}\right)^2 + \left(\frac{\partial \ell nC}{\partial \ell nq}\right)^2\left(\frac{\Delta q}{q}\right)^2}$$

now

$$\frac{\partial \ell nCFN}{\partial \ell nR_1} = \frac{-R_1}{R_2 - R_1} \cong -5.0 \text{ (when } X_{cp} \cong 4 \text{ in. forward of wing trailing edge)}$$

$$\frac{\partial \ell nCFN}{\partial \ell nR_2} = \frac{R_2}{R_2 - R_1} \cong 4.0 \ (X_{cp} \cong 4)$$

$$\frac{\partial \ell nCFN}{\partial \ell nq} = -1$$

and

$$\frac{\partial \ell nCMNBF}{\partial \ell nR_1} = \frac{-X_1R_1}{\left[R_2(X_1 + \Delta X) - R_1X_1\right]} \cong 36.7 \quad (X_{CP} \cong 4)$$

$$\frac{\partial \ell nCMNBF}{\partial \ell nR_2} = \frac{X_1 + \Delta X}{\left[R_2(X_1 + \Delta X) - R_1X_1\right]} \cong 37.7 \quad (X_{CP} \approx 4)$$

$$\frac{\partial \ell nCMNBF}{\partial \ell nq} = -1$$

The task corp. MKIIIC 2-inch balance load measurement RMS uncertainty of 1% of the full-scale normal load capacity of 900 lbs/element includes temperature effects, nonlinearities, and hysterysis; also, three readings were taken and averaged at each data recording cycle to "average out" the effects of the low-frequency flow unsteadiness characteristics of continuous-return wind tunnels. Therefore, the quoted 1% uncertainty is with respect to an absolute reference but on a relative basis with the forward and aft elements of the balance exposed to virtually identical conditions, the RMS uncertainty is more like 0.5% (of full scale). Accordingly, we have used the 0.5% RMS uncertainty (4.5 lbs) for R_1 and R_2 measurements, so that:

$$\frac{\Delta R_2}{R_2} = \frac{\Delta R_1}{R_1} = \frac{4.5}{900} = .005$$

We have elected to use the full-scale values for R_1 and R_2 in the uncertainty calculations. The results are conservatively small for the lower angles of attack.

The uncertainty in normal-force coefficient $\left(\frac{\Delta CFN}{CFN}\right)$ is:

M	$\frac{\Delta q}{q}$	$\left(\frac{R_2}{R_2 - R_1}\right)\left(\frac{\Delta R_2}{R_2}\right)$	$\left(\frac{R_1}{R_2 - R_1}\right)\left(\frac{R_1}{R_1}\right)$	$\frac{\Delta CFN}{CFN}$
0.6	.0034	.02	.025	.032
0.8	.0024	.02	.025	.032
0.9	.0021	.02	.025	.032
1.2	.0011	.02	.025	.032

The uncertainty in pitching-moment coefficient $\left(\frac{\Delta CMNBF}{CMNBF}\right)$ is:

M	$\left(\frac{X_1 R_1}{M}\right)\left(\frac{\Delta R_1}{R_1}\right)$	$\left(\frac{(X_1 + \Delta X)}{M}\right)\left(\frac{\Delta R_2}{R_2}\right)$	$\frac{\Delta CMNBF}{CMNBF}$
0.6	.189	.184	.264
0.8	.189	.184	.264
0.9	.189	.184	.264
1.2	.189	.184	.264

where

$$M = R_2(X_1 + \Delta X) - R_1 X_1$$

The error due to $\Delta q/q$ is comparatively negligible. The indicated 26.4%CMNBF uncertainty level is a consequence of the 29-inch separation between the model trailing edge and the balance centerline. The uncertainty in center of pressure (X_{CP}) is dominated by the CMNBF uncertainty, so that:

$$\frac{\Delta X_{CP}}{X_{CP}} \approx \frac{\Delta CMNBF}{CFN} \cdot \frac{CFN}{CMNBF} = \frac{\Delta CMNBF}{CMNBF}$$

and if X_{CP} is of the order $0.5\bar{C}$ to $\bar{C}$, $\Delta X_{CP} \approx (.132 \text{ to } .264)\ \bar{C}$.

Thus the direct force measurements were found unsuitable for obtaining the data base because of sting interference and poor precision for center of pressure position. However they do provide insight into sting interference and are now considered in this light.

5.4 Analysis of Sting Interference Effects

In the present investigation it was found that the structural requirement of handling high loads at high angles of attack is in conflict with minimizing support interference. The conservative point of view led to design and construction of the pressure wing models by NASA/Langley Research Center; the design of these models is discussed in subsection 3.1 of this report. Whereas the pressure models were conceived to provide data that is largely unaffected by the model support subsystems, the testing of these models consumes a disproportionate amount of model construction effort and wind-tunnel testing time compared with the test time associated with using a strain-gage force balance to obtain total wing-model forces and moments. Also, certain of the pressure-model wings were considerably thicker relative to chord length than is typical of wings designed for high-speed missiles or aircraft, and the edge-bevel angle of these wings (15° half-angle) was large. The thickness and bevel angles were dictated by internal space requirements for mounting and routing tubes to the pressure orifices. Therefore, it was considered that if a force-model suspension and balance arrangement could be devised that was relatively free of sting interference effects, more wings and thinner wings could be tested within the limited amount of available testing time. Accordingly, NEAR Inc. designed and fabricated a model, sting, and balance arrangement suitable for obtaining direct force and moment measurements; this design is discussed in subsection 3.2. The force-model sting arrangement was recognized at the outset as having a higher potential for sting interference effects than was associated with the pressure model installation, but it was hoped that simple corrections for the interference could be made. Figures 52 and 53 show photographs of the installations for the pressure models and the force models, respectively.

5.4.1 Approach for assessing sting interference effects.- Ten pressure-model wings were fabricated and tested, and initial plans called for testing of an additional 13 force models, two of which closely replicated two of the pressure models. Testing of the two force-model replicas of the pressure-model wings was planned immediately to follow the pressure-model tests. If the force and moment data were found to be substantially in agreement, then the remaining 11 force-model wings could be tested with a high degree of confidence. If differences between the force and pressure model results were found to be significant, then it was postulated that a correction procedure could be devised from the data obtained on the identically-configured models that could be applied to correct force-model data obtained subsequently.

To provide a basis for quantifying the sting interference effects possibly associated with the force-model sting arrangement, "dummy" sting components that separately replicated the windward and leeward force-model sting hardware were designed and fabricated for mounting on pressure model P8 (config. 8). This additional pressure-model configuration was designated No. 11, and it is illustrated in Figures 3 and 4 of subsection 3.2. Testing of configuration 11 was accomplished at Mach 0.6, 0.8, 0.9, 1.2, and 1.6 from -3° to 27° angle of attack; comparison of the configuration 11 pressure data and force/moment data obtained by integrating the pressures with similar results obtained for configuration 8 provides an assessment of the interference effects between the support system and the wing.

5.4.2 Effects of force-model sting simulation upon wing pressure distributions and forces and moments integrated from pressures.- The force-model dummy sting mounted on model P8 produced interference effects mostly on the wing leeward side that ranged from significant to large. At low angles of attack, lee-side pressure coefficients were altered by factors of two to four over wing portions within an inch of the conical tip of the dummy sting as well as over the entire trailing-edge bevel. As the angle of attack was increased, the affected region progressed forward from the trailing edge, involving the entire leeward surface of the wing at $\alpha = 25°$. At the $\alpha = 25°$, Mach 1.2 condition, the pressure coefficients were typically increased by 50 to 60% over the entire lee side of the wing. Figures 54, 55, and 56 show comparisons of the pressure coefficients obtained at each orifice of wing P8 with and without the dummy sting hardware installed; in these figures, the regions of significant interference are indicated by a circle drawn around the pressure coefficient numbers. Figures 57 and 58 provide comparisons at Mach 1.2 of the normal-force coefficients and aerodynamic centers of pressure for pressure model P8 with (config. 11) and without (config. 8) the dummy force-model sting installed. These data were obtained by integrating the model pressure distributions. At low α, the dummy force-model sting shifted the aerodynamic center forward nearly 10% of the root chord while reducing C_N values by about 0.05; higher angles of attack resulted in increased loss of C_N, whereas the forward shift in aerodynamic center systematically decreased. Figures 59 and 60 compare normal-force coefficients and aerodynamic center for P8 with and without the dummy sting at Mach 0.6. In this case, the loss of C_N at low angles of attack remains but the attendant forward shift in aerodynamic center is not so large. At angles of attack above 15°, the Mach 0.6 data indicate thta the dummy sting increases the normal-force coefficient while shifting the aerodynamic center aft about 6% of the wing root chord.

It is apparent that presence of the dummy sting on pressure model P8 had a major effect upon the model leeside flowfield. This is particularly noticeable in Figure 61, which provides shadowgraph photographs of the model leeside flowfield at Mach 1.2 with and without the dummy force-model sting hardware installed. For the $\alpha = 20°$ case shown, the configuration 8 (P8 alone) leeside flow is attached to the wing surface, whereas the flow is evidently separated with the dummy sting hardware installed. Based upon the pressure data results, the forces and aerodynamic centers integrated from the pressures, and the shadowgraph evidence, it was concluded that the sting interference effects associated with the force-model installation were too large to provide interference-free force-model data. It was further concluded that the interference effects were too complex to allow correction of force-model aerodynamic data based upon an algorithm derived from a single wing configuration (P8).

5.4.3 <u>Comparison of aerodynamic data from force and pressure models</u>.- Let us now examine the results for the other five force-model replicas of two pressure models. Force and moment data were obtained for configurations 12(FP7) and 13(FP9) which are replicas of configuration 7(P7) and 9(P9), respectively. The data were obtained at Mach 0.6, 0.8, 0.9, and 1.2 from -3° to 57° angle of attack with the model and sting assembly rolled 180° (ϕ = 180°) on the balance. This orientation placed the major sting protuberances on the windward side of the model and provides the opportunity to see if the sting interference effects might be less severe in this orientation. [Owing to the high run-rate achieved with the force models, sufficient occupancy time remained near the end of the test to obtain force data in the $-3° \leq \alpha \leq 27°$ range with the model at the design bank angle (ϕ = 0) with the main protuberant features of the sting located on the lee sides of the wings.] The force-model data, compared with their pressure-model replicas in Figures 36 through 51, indicate that the sting interference effects were increased with the force model and sting assembly rolled 180° on the balance.

5.4.4 Visualization of surface flow characteristics on the force models.- A mixture of machine oil and titanium dioxide pigment was applied to the force models immediately after completion of each installation to reveal the pattern of leeside surface streamlines for various angles of attack and upright or inverted model roll angles. Photographs were taken of these surface oil-flow patterns at Mach 1.2 only. Figures 62 (a), (b), and (c) shows force-model surface oil-flow patterns at α = 5°, 20°, and 28° (Mach 1.2) made on configuration 13 (FP9, replica of P9). The model is rolled 180° so that the most protuberant sting features lie on the wing windward side. At α = 5° [fig. 62(a)], the flow is separated over the trailing-edge. At α = 20°, there is evidence of a source-flow phenomenon with airflow apparently directed forward from the sting shroud so as to cause the leeside flow to separate from the model surface at about midchord. The sting shroud (described in section 3.2) performs the function of isolating the metric portions of the model sting from external airloads; Figure 62(c) (α = 28°) reveals that the shroud provides the added but very undesirable function of a windward air-scoop with a high-speed, forward-directed air jet emanating from its leeward lip. This air-jet phenomenon was in evidence to a somewhat lesser degree with the model rolled to its design position (ϕ = 0). The air-jet phenomenon was noticable in surface oil-flow photographs taken at Mach 1.2 for the triangular configuration 12(FP7), but the extent of its influence was substantially reduced probably by the presence of vortices shed from the leading edges. Figures 63 (a) and (b) shows the surface oil-flow patterns on configuration 12 at α = 25° for ϕ = 0 and 180°.

In view of the complex and severe nature of flow interference effects caused by the force-model sting and balance arrangement, further experimentation with the force-models was abandoned.

5.5 Comparison of Results With Other Sources of Wing-Alone Aerodynamic Data

Three information sources have been found wherein limited normal-force coefficient and center-of-pressure data are provided for some of the planform and Mach number combinations that were investigated in this experimental effort. These data may be found in References 2, 3, and 4 at the following combinations of wing aspect ratio, taper ratio, and Mach number for angles of attack up to 30°:

For Mach 0.8:

		Taper Ratio		
		0.0	0.5	1.0
Aspect Ratio	0.5	Ref. 4	Ref. 2	
	1.0		Ref. 2 and Ref. 3	Ref. 2
	2.0	Ref. 3	Ref. 2	

For Mach 1.2:

		Taper Ratio		
		0.0	0.5	1.0
Aspect Ratio	0.5	Ref. 4	Ref. 2	
	1.0		Ref. 2	Ref. 2
	2.0		Ref. 2	

Comparisons of the normal-force coefficient and longitudinal center of pressure data from References 2, 3, and 4 with the present data of like aspect ratio and taper ratio are shown in Figures 64 through 67.

Considering the importance of airfoil section effects at transonic speeds, the data comparisons show good agreement for the most part, with the main differences notable in the aerodynamic center of pressure data at angles of attack below 10° where experimental errors can have large effects.

The differences in the data are mainly attributable to differences in the longitudinal section geometry of the wings. For example, the configurations of Reference 2 utilized 4° half-angle streamwise bevels at the leading and trailing edges with root chord thickness ratios from .025 to .049; in the present work, the wing leading edges were beveled 15° normal to all edges (variable streamwise), and root-chord thickness ratios varied from .029 to .125. The wings from Reference 3 had NACA 63A004 longitudinal sections. The pressure model used in Reference 4 was completely flat on its instrumented side (tested windward and leeward), and so represents wing of zero thickness. Table 8 presents descriptions of the sectional geometries of all the pressure-wing models tested. Differences in the stall characteristics of the wings are probably due to the combined effects of test Reynolds number differences and wing section differences.

6.0 CONCLUSIONS AND RECOMMENDATIONS

An experiment has been conducted in the NASA/Ames Research Center 6- by 6-Foot Wind Tunnel to determine the aerodynamic characteristics of unbanked wings at subsonic and transonic speeds from low to high angles of attack. The wing planforms varied in aspect ratio and taper ratio with unswept trailing edges, 15° bevels normal to all edges, and constant thickness (root thickness ratios varies from .029 to .125). The wings had aspect ratios of 0.5, 1.0, and 2.0 with taper ratios of 0, 0.5, and 1.0. In addition an aspect ratio 4, 0.5 taper ratio wing was tested. The wings were tested in 5° angles of attack increments from 0° to 55°, with supplementary points at about -3° and 57° angle of attack. Nominal test Mach numbers were 0.6, 0.8, 0.9, and 1.2 with a limited amount of data taken at Mach 1.6. The aerodynamic force and moment coefficients of the wings were determined by integration of the measured surface pressure distributions; in addition, pilot runs were made with two force-balance-mounted wings to assess the extent of sting interference effects upon the data acquired through comparison with aerodynamic data from the pressure models. The results of this experimental effort may be summarized by the following conclusions:

1. The pressure model results yielded results which appear more accurate than the force model results. The pressure distribution measurement and integration technique appears to be the better means of isolating the wing aerodynamic data from sting interference effects.

2. The pressure model data reduction technique, involving integration of absolute pressures, is not so accurate as integration of nondimensionalized pressure coefficients for testing below Mach 0.9. Run-to-run variations in Mach number lead to significant run-to-run differences in test section static pressure, thus introducing significant errors when data from windward and leeward runs were combined in the integration procedure.

3. The estimated uncertainty of the normal-force coefficients obtained by integration of the wing surface pressure distributions ranges from ±.002 at Mach 1.6 to ±.034 at Mach 0.6. The estimated uncertainty of the pitching moment coefficients ranges from ±.001 (Mach 1.6) to ±.017 (Mach 0.6). The resulting Mach 0.6 uncertainty in longitudinal aerodynamic center is less than 2% of the mean aerodynamic chord (MAC) when C_N is greater than 1, but increases to more than 25% of the MAC near 2° angle

of attack. About half of the uncertainty is due to use of absolute pressures in the data reduction procedure.

4. The force-model results were greatly affected by sting interference, and should not be used in any data base of wing aerodynamic characteristics.

5. The NASA/ARC 6- by 6-Foot Wind Tunnel data taken at Mach 1.6 are in good agreement with NASA/LRC Unitary Plan Wind Tunnel data obtained at Mach 1.6 using the same pressure models.

6. At angles of attack above 35°, the longitudinal aerodynamic centers of wings of identical taper ratio converged to nearly common locations regardless of aspect ratio and Mach number.

7. Below 35° angle of attack, the longitudinal aerodynamic centers varied widely with aspect ratio for subsonic Mach numbers, and this variation decreased slightly with increasing Mach numbers. At Mach 1.2, however, the aspect ratio effect on aerodynamic center for constant taper ratio is much reduced.

8. Except for its influence on aspect-ratio-effects below α = 35°, varying Mach number did not greatly affect longitudinal aerodynamic center.

9. Taper ratio had the largest effect upon longitudinal aerodynamic center; at the higher angles of attack, the aerodynamic centers systematically approach positions within 5% ahead of the geometric planform area centroids of the wings. At angles of attack below 35°, increasing the taper ratio significantly increased the variability of aerodynamic center with aspect ratio.

10. The normal-force coefficients of the wings showed the expected increase in C_{N_α} with aspect ratio at constant taper ratio with the exception of the aspect ratio 4, taper ratio 0.5 wing at subsonic speeds; the anomalous behavior of this wing is likely due to its increased streamwise component of leading-edge bevel angle compared with the lower aspect ratio, 0.5 taper ratio wings.

11. The Mach 0.6 normal-force coefficient slopes of all aspect ratio 1 and 2 wings were largely unaffected by taper ratio and associated sweepback angle.

12. The angle of attack apparently associated with stall shows the expected decrease with increase in aspect ratio. Increasing the Mach number systematically decreased the effects and significance of "stall."

13. Increasing Mach number systematically increased the value of normal-force coefficient at the highest angles of attack. All wings exhibited a C_N of about 1.4 at $\alpha = 55°$ and Mach 1.2.

14. At subsonic speeds, longitudinal section geometry effects on normal-force coefficient can be as important as aspect ratio and taper ratio, whereas the effects of section geometry are not nearly so important at supersonic speeds. Recognition of this fact is necessary in the application of data presented in this report to design activities.

Table 1.- Dimensions of pressure wings.

Configuration		Aspect Ratio $Æ$	Taper Ratio λ	Tip Chord C_T(in)	Root Chord C_R(in)	Span b(in)	Mean Aero Chord M.A.C.(in)
NEAR	NASA						
P1	1	0.5	0	0	16.971	4.243	11.313
P2	2	0.5	0.5	5.657	11.314	4.243	8.800
P3	3	0.5	1.0	8.486	8.486	4.243	8.486
P4	4	1.0	0	0	12.000	6.000	8.000
P5	5	1.0	0.5	4.000	8.000	6.000	6.222
P6	6	1.0	1.0	6.000	6.000	6.000	6.000
P7	7	2.0	0	0	8.486	8.486	5.657
P8	8	2.0	0.5	2.828	5.657	8.486	4.400
P9	9	2.0	1.0	4.243	4.243	8.486	4.243
P10	10	4.0	0.5	2.000	4.000	12.000	3.111

NOTES:
(1) All wings have 0.5 inch maximum thickness.
(2) The wing areas are equal at 36 square inches.
(3) The leading, side, and trailing edges are uniformly straight-beveled with a 15° wedge half angle normal to each edge.
(4) All wing edges have a 0.005-inch radius.

Table 2.- Matrix of configurations according to aspect ratio and taper ratio.

Aspect Ratio (Æ) \ Taper Ratio (λ)	0.0	0.5	1.0
0.5	P1	P2	P3
1.0	P4	P5	P6
2.0	P7	P8	P9
4.0		P10	

Pressure Wing Configuration Cross-Reference:

NASA	NEAR, Inc.
1	P1
2	P2
3	P3
4	P4
5	P5
6	P6
7	P7
8	P8
9	P9
10	P10
11	DNP8 @ ϕ = 0 DNP8 @ ϕ = 180

Table 3.- Elementary values of surface area, area centroid coordinates, and other model geometric data used to compute aerodynamic force and moment coefficients from surface pressure coefficients.

NOTE: The parameter tables consist of computer printout with the parameters defined and arranged as listed below. The configuration number is indicated within parenthesis. When data are shown for individual pressure orifices, the orifice number follows the configuration number within the parenthesis; e.g., (n,m). An arrow indicates invariant parameters between (config., orifice) combinations.

NUM — number of active pressure orifices per wing, with the wing configuration number indicated parenthetically: (n)

AR — wing aspect ratio (configuration no. indicated parenthetically)

CBAR — mean aerodynamic chord (in feet)

CROOT — root chord (in feet)

ANGLE — bevel angle of all edges, degrees

XBAR — axial component of centroid of elementary area associated with the indicated orifice, inches forward of trailing edge

YBAR — spanwise component of centroid of elementary area associated with the indicated orifice, inches laterally from the wing root

ZBAR — component of centroid of elementary area measured orthogonally to XBAR and ZBAR (wing thickness direction), inches normal to the wing centerplane.

AREA — surface area associated with the indicated orifice, square inches

THETA — for orifices located on edge bevels: the angle between the wing edge and its centerline. For orifices located on flat, unbeveled wing surfaces: THETA $\doteq$ 0.0.

Table 3.- (Continued).

Corrected Orifice Parameters

Orifice Number	Configuration	Area in.^{2}	$\bar{X}$ in.	$\bar{Y}$ in.	$\bar{Z}$ in.
12	2;PHI=0,180 (P2LN,P2LU)	0.392	6.950	0.201	0.250
13		0.000	6.950	0.268	0.250
50		0.394	0.442	1.380	0.118
58		0.000	0.161	1.664	0.043
38	11;PHI=180 (DUP8LU)	0.000	1.216	0.063	0.250
64		0.195	1.021	0.362	0.250
70		0.535	0.479	0.209	0.500
55	3;PHI=0,180 (P3HN,P3HU)	0.000	0.500	0.609	0.134
56		0.180	0.500	0.609	0.134
57		0.164	0.492	1.299	0.132
11	9;PHI=0,180 (P9HN,P9HU)	0.234	3.753	4.074	0.045
16		0.109	3.531	3.755	0.131

Table 3.- (Continued).

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TST-401 PH-1 TN-F6  47:0          ID-PARAMS            16 NOV 81 10:51       PAGE  61

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  BY MORGAN                AT 16NOV81005

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(7)=     63        (8)=     71        (9)=     69        (10)=    62        (11)=    70       -> (12)=    70
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(10)=  4.000000    (11)=  2.000000 -> (12)=  2.000000
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(1,56)= 0.5000000  (1,57)= 0.4880000  (1,58)= 0.1870000 -> (1,60)= 0.1970000  (1,61)= 0.1690000  (1,62)=  0.000000 ->
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Table 3.- (Continued).

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(5,49)= 0.7790000     (5,50)= 0.7679999     (5,51)= 0.5870000      (5,52)= 0.5000000  -> (5,54)= 0.5000000      (5,55)= 0.4949999
(5,56)= 0.1970000  -> (5,59)= 0.1870000     (5,60)= 0.1730000      (5,61)=  0.000000  -> (5,72)=  0.000000      (6,1)=  5.813000  ->
(6,2)=  5.813000      (6,4)=  5.827000      (6,5)=  5.500000   -> (6,7)=  5.500000      (6,8)=  5.509999      (6,9)=  5.221000  ->
(6,10)=  5.221000     (6,11)=  5.230000     (6,12)=  5.254999  -> (6,13)=  5.254999      (6,14)=  4.721000  -> (6,16)=  4.721000
(6,17)=  4.807999     (6,18)=  4.688000  -> (6,19)=  4.688000      (6,20)=  3.938000  -> (6,21)=  3.938000      (6,22)=  3.698000
(6,23)=  3.938000  -> (6,24)=  3.938000     (6,25)=  2.941000      (6,26)=  3.000000  -> (6,31)=  3.000000      (6,32)=  2.063000  ->
(6,33)=  2.063000     (6,34)=  2.313000     (6,35)=  2.063000  -> (6,36)=  2.063000      (6,37)=  2.313000      (6,38)=  1.278999  ->
(6,40)=  1.278999     (6,41)=  1.197000     (6,42)=  1.313000  -> (6,43)=  1.313000      (6,44)= 0.7790000  -> (6,45)= 0.7790000
(6,46)= 0.7730000     (6,47)= 0.7449999     (6,48)= 0.5870000      (6,49)= 0.5100000  -> (6,51)= 0.5000000      (6,52)= 0.4999999
(6,53)= 0.1890000  -> (6,55)= 0.1880000     (6,56)= 0.1730000      (6,57)=  0.000000  -> (6,72)=  0.000000      (7,1)=  7.991999
(7,2)=  7.188999      (7,3)=  7.410000      (7,4)=  6.794999       (7,5)=  6.716999      (7,6)=  6.547000      (7,7)=  6.696000
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  4710          ID-PARAMS             16 NOV 01:10:51       PAGE  63

PRMS
.XBAR
(7,8)=  5.966000       (7,9)=  5.329000  -> (7,10)=  5.329000     (7,11)=  5.544000     (7,12)=  5.669000     (7,13)=  5.908000
(7,14)=  4.394000 -> (7,17)=  4.394000     (7,18)=  4.506000     (7,19)=  4.631000     (7,20)=  4.770000     (7,21)=  3.209000  ->
(7,24)=  3.209000      (7,25)=  3.318999     (7,26)=  3.443999     (7,27)=  3.582999     (7,28)=  2.105000 -> (7,32)=  2.105000
(7,33)=  2.192999      (7,34)=  2.318999     (7,35)=  2.457999     (7,36)=  1.271000 -> (7,40)=  1.271000     (7,41)=  1.233000
(7,42)=  1.570000      (7,43)=  1.568999     (7,44)= 0.8580000     (7,45)= 0.7790000 -> (7,48)= 0.7790000     (7,49)= 0.7560000
(7,50)= 0.6790000      (7,51)= 0.5000000 -> (7,55)= 0.5000000     (7,56)= 0.4959999     (7,57)= 0.1970000 -> (7,62)= 0.1970000
(7,63)= 0.1610000      (7,64)=  0.000000 -> (7,72)=  0.000000     (8,1)=  5.355000      (8,2)=  5.007999      (8,3)=  4.707000
(8,4)=  4.179000       (8,5)=  4.441000      (8,6)=  4.698000      (8,7)=  4.988000      (8,8)=  3.648999  -> (8,10)=  3.648999
(8,11)=  3.870000      (8,12)=  4.101999     (8,13)=  4.362000     (8,14)=  2.992000 -> (8,17)=  2.992000     (8,18)=  3.183000
(8,19)=  3.415000      (8,20)=  3.674999     (8,21)=  2.641000     (8,22)=  2.830000     (8,23)=  3.046000     (8,24)=  2.344000
(8,25)=  2.342999 -> (8,26)=  2.342999     (8,27)=  2.344000     (8,28)=  2.228999     (8,29)=  2.301999     (8,30)=  2.386999
(8,31)=  1.770000 -> (8,37)=  1.770000     (8,38)=  1.216000 -> (8,41)=  1.216000     (8,42)=  1.134000     (8,43)= 0.9970000
(8,44)= 0.8400000      (8,45)= 0.7790000 -> (8,47)= 0.7790000     (8,48)= 0.7980000     (8,49)= 0.5870000     (8,50)= 0.5000000  ->
(8,52)= 0.5000000      (8,53)= 0.4949999     (8,54)= 0.1870000 -> (8,57)= 0.1870000     (8,58)= 0.1730000     (8,59)=  2.344000
(8,60)=  2.342999      (8,61)=  1.770000 -> (8,63)=  1.770000     (8,64)=  1.021000     (8,65)=  1.311000     (8,66)=  1.216000
(8,67)= 0.7790000 -> (8,68)= 0.7790000     (8,69)= 0.1870000     (8,70)= 0.4790000     (8,71)=  0.000000 -> (8,72)=  0.000000
(9,1)=  4.056000   -> (9,4)=  4.056000      (9,5)=  4.073000      (9,6)=  3.742999   -> (9,9)=  3.742999      (9,10)=  3.754000
(9,11)=  3.681999      (9,12)=  3.464000 -> (9,14)=  3.464000     (9,15)=  3.473000     (9,16)=  2.530999     (9,17)=  3.091000  ->
(9,20)=  3.091000      (9,21)=  3.174000     (9,22)=  3.089999     (9,23)=  3.151999     (9,24)=  2.622000 -> (9,30)=  2.622000
(9,31)=  2.122000 -> (9,37)=  2.122000     (9,38)=  1.622000 -> (9,44)=  1.622000     (9,45)=  1.153000 -> (9,48)=  1.153000
(9,49)=  1.068999      (9,50)=  1.153999     (9,51)=  1.091999     (9,52)= 0.7790000 -> (9,54)= 0.7790000     (9,55)= 0.7300000
(9,56)= 0.7120000      (9,57)= 0.5000000 -> (9,60)= 0.5000000     (9,61)= 0.4890000     (9,62)= 0.4899999     (9,63)= 0.1880000  ->
(9,66)= 0.1890000      (9,67)= 0.1709999     (9,68)=  0.000000 -> (9,72)=  0.000000     (10,1)=  3.719000     (10,2)=  3.396999
(10,3)=  3.110999      (10,4)=  2.756000 -> (10,5)=  2.756000     (10,6)=  2.910999     (10,7)=  3.177999     (10,8)=  3.483000
(10,9)=  2.417000 -> (10,12)=  2.417000    (10,13)=  2.584999    (10,14)=  2.849000    (10,15)=  3.145000    (10,16)=  1.980000 ->
(10,20)=  1.980000     (10,21)=  2.146999    (10,22)=  2.410999    (10,23)=  2.707000    (10,24)=  1.487000                          ->
(10,28)=  1.487000     (10,29)=  1.733999    (10,30)=  1.999000    (10,31)=  2.294999    (10,32)=  1.516999    (10,33)=  1.742999
(10,34)=  2.007000     (10,35)=  1.561999    (10,36)=  1.091999                       -> (10,41)=  1.091999    (10,42)=  1.106000
(10,43)=  1.068999     (10,44)=  1.000000    (10,45)= 0.7790000                       -> (10,49)= 0.7790000    (10,50)= 0.5000000 ->
(10,53)= 0.5000000     (10,54)= 0.4970000    (10,55)= 0.4579999    (10,56)= 0.1870000                       -> (10,60)= 0.1870000
(10,61)= 0.1750000     (10,62)=  0.000000    (10,63)=  1.000000    (10,64)=  0.000000                       -> (10,72)=  0.000000
(11,1)=  5.355000      (11,2)=  5.007999     (11,3)=  4.707000     (11,4)=  4.179000     (11,5)=  4.441000     (11,6)=  4.698000
(11,7)=  4.988000      (11,8)=  3.648999 -> (11,10)=  3.648999    (11,11)=  3.870000    (11,12)=  4.101999    (11,13)=  4.362000
(11,14)=  2.992000                       -> (11,17)=  2.992000    (11,18)=  3.183000    (11,19)=  3.415000    (11,20)=  3.674999
(11,21)=  2.641000     (11,22)=  2.830000    (11,23)=  3.046000    (11,24)=  2.344000    (11,25)=  2.342999                          ->
(11,26)=  2.342999     (11,27)=  2.344000    (11,28)=  2.228999    (11,29)=  2.301999    (11,30)=  2.396999    (11,31)=  1.770000 ->
(11,37)=  1.770000     (11,38)=  1.216000                       -> (11,41)=  1.216000    (11,42)=  1.134000    (11,43)= 0.9970000
(11,44)= 0.8400000     (11,45)= 0.7790000                       -> (11,47)= 0.7790000    (11,48)= 0.7890000    (11,49)= 0.5870000
(11,50)= 0.5000000                       -> (11,52)= 0.5000000    (11,53)= 0.4949999    (11,54)= 0.1870000                          ->
(11,57)= 0.1870000     (11,58)= 0.1730000    (11,59)=  2.344000    (11,60)=  2.342999    (11,61)=  1.770000                          ->
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  4719           IO-PARAMS             16 NOV 81 10:51       PAGE  64

PRMS
.XBAR
(11,63)=  1.770000   (11,64)=  1.716000                          -> (11,66)=  1.716000   (11,67)= 0.7160000                          ->
(11,68)= 0.7160000   (11,69)= 0.2500000   (11,70)= 0.4170000   (11,71)=  0.000000                          -> (11,72)=  0.000000
(12,1)=  5.355000    (12,2)=  5.002999    (12,3)=  4.737000    (12,4)=  4.170000    (12,5)=  4.441000    (12,6)=  4.698000
(12,7)=  4.988000    (12,8)=  3.648999 -> (12,10)=  3.648999   (12,11)=  2.870000   (12,12)=  4.101999   (12,13)=  4.362000
(12,14)=  2.992000                     -> (12,17)=  2.992000   (12,18)=  3.187000   (12,19)=  3.415000   (12,20)=  3.674999
(12,21)=  2.541000   (12,22)=  2.870000   (12,23)=  3.046000   (12,24)=  2.344000   (12,25)=  2.342999                          ->
(12,26)=  2.342999   (12,27)=  2.344000   (12,28)=  2.228999   (12,29)=  2.301999   (12,30)=  2.336999   (12,31)=  1.770000 ->
(12,32)=  1.770000   (12,33)= 0.1770000                          -> (12,34)= 0.1770000   (12,35)=  1.770000                          ->
(12,37)=  1.770000   (12,38)=  1.716000                          -> (12,41)=  1.716000   (12,42)=  1.136000   (12,43)= 0.9970000
(12,44)=  1.250000   (12,45)= 0.7790000                          -> (12,47)= 0.7790000   (12,48)= 0.7880000   (12,49)= 0.5870000
(12,50)= 0.5000000                     -> (12,52)= 0.5000000   (12,53)= 0.6949999   (12,54)= 0.1870000                          ->
(12,57)= 0.1970000   (12,58)= 0.1730000   (12,59)=  2.344000   (12,60)=  2.342999   (12,61)=  1.770000                          ->
(12,63)=  1.770000   (12,64)=  1.716000                          -> (12,66)=  1.716000   (12,67)= 0.7160000                          ->
(12,68)= 0.7160000   (12,69)= 0.2500000   (12,70)= 0.4170000   (12,71)=  0.000000                          -> (12,72)=  0.000000
.YBAR
(1,1)= 0.1020000     (1,2)= 0.1880000     (1,3)= 6.699997E-02  (1,4)= 0.3410000     (1,5)= 0.1260000     (1,6)= 6.200000E-02
(1,7)= 0.2620000     (1,8)= 0.5409999     (1,9)= 0.1090000     (1,10)= 0.1650000    (1,11)= 0.4160000    (1,12)= 0.7260000
(1,13)= 6.000000E-02 (1,14)= 0.2729999    (1,15)= 0.5500000    (1,16)= 0.8660000    (1,17)= 0.1260000    (1,18)= 0.3960000
(1,19)= 0.6730000    (1,20)= 0.9830000    (1,21)= 4.400000E-02 (1,22)= 0.2200000    (1,23)= 0.5210000    (1,24)= 0.7980000
(1,25)=  1.138000    (1,26)= 6.000000E-02 (1,27)= 0.2210000    (1,28)= 0.6619999    (1,29)= 0.9299999    (1,30)=  1.269000
(1,31)= 8.099997E-02 (1,32)= 0.3220000    (1,33)= 0.5650000    (1,34)= 0.8730000    (1,35)=  1.158999    (1,36)=  1.421000
(1,37)= 0.1010000    (1,38)=  0.000000    (1,39)= 0.7020000    (1,40)=  0.000000 -> (1,41)=  0.000000    (1,42)=  1.591999
(1,43)= 0.1170000    (1,44)= 0.4170000    (1,45)= 0.8239999    (1,46)=  1.127999    (1,47)=  1.370000    (1,48)=  1.728000
(1,49)=  1.431000    (1,50)= 0.1250000    (1,51)= 0.4690000    (1,52)= 0.5730000    (1,53)=  1.862000    (1,54)= 0.1250000
(1,55)= 0.4690000    (1,56)= 0.8790000    (1,57)=  1.318999    (1,58)= 0.7750000    (1,59)= 0.4690000    (1,60)= 0.9599999
(1,61)=  1.572000    (1,62)=  0.000000 -> (1,72)=  0.000000    (2,1)= 0.1170000     (2,2)= 7.799995E-02  (2,3)= 0.2930000
(2,4)= 0.1100000     (2,5)= 0.2800000     (2,6)= 0.5730000     (2,7)= 3.000000E-02  (2,8)= 0.1450000     (2,9)= 0.3900000
(2,10)= 0.6410000    (2,11)= 0.9360000    (2,12)= 6.699997E-02 (2,13)= 0.2679999    (2,14)= 0.5210000    (2,15)= 0.7460000
(2,16)=  1.076999    (2,17)=  1.320000    (2,18)= 0.1070000    (2,19)= 0.4130000    (2,20)= 0.8010000    (2,21)=  1.150000
(2,22)=  1.419000    (2,23)=  1.723000    (2,24)= 0.1250000    (2,25)= 0.4980000    (2,26)= 0.9660000    (2,27)=  1.369999
(2,28)=  1.622999    (2,29)=  1.936999    (2,30)= 0.1250000    (2,31)= 0.5300000    (2,32)= 0.9690000    (2,33)=  1.342999
(2,34)=  1.622000    (2,35)=  1.934999    (2,36)= 0.1250000    (2,37)= 0.5310000    (2,38)= 0.9690000    (2,39)=  1.342999
(2,40)=  1.622000    (2,41)=  1.936999    (2,42)= 0.1250000    (2,43)= 0.5000000    (2,44)= 0.9690000    (2,45)=  1.369000
(2,46)=  1.625000    (2,47)=  1.936999    (2,48)= 0.1250000    (2,49)= 0.5000000    (2,50)=  1.052999    (2,51)= 0.1250000
(2,52)= 0.5000000    (2,53)=  1.198999    (2,54)=  1.952000    (2,55)= 0.1250000    (2,56)= 0.5000000    (2,57)= 0.1061000
(2,58)=  1.664000    (2,59)=  0.000000 -> (2,72)=  0.000000    (3,1)= 0.1250000     (3,2)= 0.5000000     (3,3)=  1.030999
(3,4)=  1.632000     (3,5)= 0.1250000     (3,6)= 0.5000000     (3,7)= 0.9780000     (3,8)=  1.413000     (3,9)=  1.952000
(3,10)= 0.1250000    (3,11)= 0.5000000    (3,12)=  1.052999    (3,13)=  1.632999    (3,14)= 0.1250000    (3,15)= 0.5000000
(3,16)= 0.9700000    (3,17)=  1.251000    (3,18)=  1.622000    (3,19)=  1.934999    (3,20)= 0.1250000    (3,21)= 0.5000000
(3,22)= 0.9700000    (3,23)=  1.342999    (3,24)=  1.622000    (3,25)=  1.934999    (3,26)= 0.1250000    (3,27)= 0.5300000
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Table 3.- (Continued).

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PRMS

.VRAR

(3,28)= 0.9700000	(3,29)= 1.342999	(3,30)= 1.467999	(3,31)= 1.934999	(3,32)= 0.1250000	(3,33)= 0.5000000
(3,34)= 0.9700000	(3,35)= 1.342999	(3,36)= 1.622000	(3,37)= 1.934999	(3,38)= 0.1250000	(3,39)= 0.5000000
(3,40)= 0.9700000	(3,41)= 1.342999	(3,42)= 1.622000	(3,43)= 1.934999	(3,44)= 0.1250000	(3,45)= 0.5000000
(3,46)= 0.9700000	(3,47)= 1.351000	(3,48)= 1.622000	(3,49)= 1.934999	(3,50)= 0.1250000	(3,51)= 0.5000000
(3,52)= 1.052999	(3,53)= 1.632000	(3,54)= 0.1250000	(3,55)= 0.5000000	(3,56)= 0.9680000	(3,57)= 1.410000
(3,58)= 1.952000	(3,59)= 0.1250000	(3,60)= 0.5000000	(3,61)= 1.930999	(3,62)= 1.632000	(3,63)= 0.000000 ->
(3,72)= 0.000000	(4,1)= 0.1710000	(4,2)= 0.2680000	(4,3)= 6.599997E-02	(4,4)= 0.2500000	(4,5)= 0.5530000
(4,6)= 6.500000E-02	(4,7)= 0.2907999	(4,8)= 0.5620000	(4,9)= 0.8669999	(4,10)= 4.400000E-02	(4,11)= 0.2029999
(4,12)= 4.100000E-02	(4,13)= 0.1640000	(4,14)= 0.3290000	(4,15)= 0.4990000	(4,16)= 0.6720000	(4,17)= 0.9420000
(4,18)= 1.245999	(4,19)= 6.500000E-02	(4,20)= 0.2599999	(4,21)= 0.5710000	(4,22)= 0.7460000	(4,23)= 0.8820000
(4,24)= 1.063000	(4,25)= 1.332999	(4,26)= 1.636999	(4,27)= 9.399996E-02	(4,28)= 0.3640000	(4,29)= 0.7309999
(4,30)= 1.046000	(4,31)= 1.235999	(4,32)= 1.438000	(4,33)= 1.707999	(4,34)= 2.011000	(4,35)= 0.1149999
(4,36)= 0.4610000	(4,37)= 0.9270000	(4,38)= 1.325999	(4,39)= 1.566999	(4,40)= 1.754000	(4,41)= 2.037000
(4,42)= 2.359999	(4,43)= 1.954000	(4,44)= 2.273999	(4,45)= 2.646999	(4,46)= 0.1289999	(4,47)= 0.5170000
(4,48)= 1.039000	(4,49)= 1.485999	(4,50)= 1.853999	(4,51)= 0.1339999	(4,52)= 0.5360000	(4,53)= 1.079000
(4,54)= 1.542000	(4,55)= 2.051999	(4,56)= 0.1390000	(4,57)= 0.5590000	(4,58)= 1.122999	(4,59)= 1.605000
(4,60)= 2.290000	(4,61)= 0.000000 ->	(4,72)= 0.000000	(5,1)= 0.1520000	(5,2)= 8.699995E-02	(5,3)= 0.1640000
(5,4)= 0.3979999	(5,5)= 0.5829999	(5,6)= 0.1109999	(5,7)= 9.059996E-02	(5,8)= 0.3950000	(5,9)= 0.6190000
(5,10)= 0.8730000	(5,11)= 1.127999	(5,12)= 0.1059999	(5,13)= 0.3860000	(5,14)= 0.7329999	(5,15)= 1.002999
(5,16)= 1.254000	(5,17)= 1.476999	(5,18)= 1.726999	(5,19)= 0.1630000	(5,20)= 0.6120000	(5,21)= 1.113999
(5,22)= 1.599000	(5,23)= 1.503999	(5,24)= 2.153999	(5,25)= 2.436999	(5,26)= 0.1880000	(5,27)= 0.6870000
(5,28)= 1.250000	(5,29)= 1.783999	(5,30)= 2.222000	(5,31)= 2.500999	(5,32)= 2.815000	(5,33)= 0.1880000
(5,34)= 0.6870000	(5,35)= 1.250000	(5,36)= 1.783999	(5,37)= 2.221000	(5,38)= 2.500000	(5,39)= 2.813000
(5,40)= 0.1880000	(5,41)= 0.6870000	(5,42)= 1.250000	(5,43)= 1.783999	(5,44)= 2.230000	(5,45)= 2.504999
(5,46)= 2.813000	(5,47)= 0.1880000	(5,48)= 0.6870000	(5,49)= 1.250000	(5,50)= 1.865999	(5,51)= 2.827000
(5,52)= 0.1830000	(5,53)= 0.6870000	(5,54)= 1.250000	(5,55)= 2.002999	(5,56)= 0.1890000	(5,57)= 0.6970000
(5,58)= 1.250000	(5,59)= 1.750000	(5,60)= 2.412999	(5,61)= 0.000000 ->	(5,72)= 0.000000	(6,1)= 0.2500000
(6,2)= 0.9380000	(6,3)= 1.688000	(6,4)= 2.412999	(6,5)= 0.2500000	(6,6)= 0.9380000	(6,7)= 1.688000
(6,8)= 2.254999	(6,9)= 0.2500000	(6,10)= 0.9380000	(6,11)= 1.802999	(6,12)= 2.509999	(6,13)= 2.823000
(6,14)= 0.2500000	(6,15)= 0.9380000	(6,16)= 1.721000	(6,17)= 2.230000	(6,18)= 2.500000	(6,19)= 2.913000
(6,20)= 0.2500000	(6,21)= 0.9380000	(6,22)= 1.721000	(6,23)= 2.221000	(6,24)= 2.500000	(6,25)= 2.913000
(6,26)= 0.2500000	(6,27)= 0.9380000	(6,28)= 1.721000	(6,29)= 2.221000	(6,30)= 2.500000	(6,31)= 2.813000
(6,32)= 0.2500000	(6,33)= 0.9380000	(6,34)= 1.721000	(6,35)= 2.221000	(6,36)= 2.500000	(6,37)= 2.913000
(6,38)= 0.2500000	(6,39)= 0.9390000	(6,40)= 1.721000	(6,41)= 2.230000	(6,42)= 2.500000	(6,43)= 2.913000
(6,44)= 0.2500000	(6,45)= 0.9390000	(6,46)= 1.802999	(6,47)= 2.509999	(6,48)= 2.827000	(6,49)= 0.2500000
(6,50)= 0.9380000	(6,51)= 1.688000	(6,52)= 2.254999	(6,53)= 0.2500000	(6,54)= 0.9380000	(6,55)= 1.688000
(6,56)= 2.412999	(6,57)= 0.000000 ->	(6,72)= 0.000000	(7,1)= 0.1120000	(7,2)= 0.1140000	(7,3)= 0.3779999
(7,4)= 6.500000E-02	(7,5)= 0.2190000	(7,6)= 0.4100000	(7,7)= 0.6900000	(7,8)= 0.1080000	(7,9)= 9.599997E-02
(7,10)= 0.3530000	(7,11)= 0.5000000	(7,12)= 0.8490000	(7,13)= 1.127999	(7,14)= 5.199995E-02	(7,15)= 0.3450000
(7,16)= 0.6230000	(7,17)= 0.9720000	(7,18)= 1.118999	(7,19)= 1.367999	(7,20)= 1.648000	(7,21)= 0.1460000

Table 3.- (Continued).

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PRMS

.YRAR

(7,22)= 0.5470000	(7,23)= 0.9950000	(7,24)= 1.391000	(7,25)= 1.712999	(7,26)= 1.962000	(7,27)= 3.242000
(7,28)= 0.1960000	(7,29)= 0.7370000	(7,30)= 1.325000	(7,31)= 1.742999	(7,32)= 2.020999	(7,33)= 2.275000
(7,34)= 2.523999	(7,35)= 2.836000	(7,36)= 0.2350000	(7,37)= 0.8789999	(7,38)= 1.586000	(7,39)= 2.082000
(7,40)= 2.476000	(7,41)= 2.770000	(7,42)= 2.974000	(7,43)= 3.249000	(7,44)= 3.266000	(7,45)= 0.2500000
(7,46)= 0.9370000	(7,47)= 1.686999	(7,48)= 2.219000	(7,49)= 2.728999	(7,50)= 3.712000	(7,51)= 0.2500000
(7,52)= 0.9370000	(7,53)= 1.686999	(7,54)= 2.219000	(7,55)= 2.632999	(7,56)= 3.141999	(7,57)= 0.2500000
(7,58)= 0.9370000	(7,59)= 1.686999	(7,60)= 2.219000	(7,61)= 2.824999	(7,62)= 3.030000	(7,63)= 3.606999
(7,64)= 0.000000 ->	(7,72)= 0.000000	(8,1)= 0.1380000	(8,2)= 9.399998E-02	(8,3)= 5.700000E-02	(8,4)= 0.2679999
(8,5)= 0.4760000	(8,6)= 0.5409999	(8,7)= 0.6730000	(8,8)= 0.1510000	(8,9)= 0.5530000	(8,10)= 1.066999
(8,11)= 1.276999	(8,12)= 1.431000	(8,13)= 1.602999	(8,14)= 0.2620000	(8,15)= 0.9670000	(8,16)= 1.660999
(8,17)= 2.120000	(8,18)= 2.306999	(8,19)= 2.460999	(8,20)= 2.634000	(8,21)= 3.129000	(8,22)= 3.344000
(8,23)= 3.587999	(8,24)= 6.000000E-02	(8,25)= 1.443000	(8,26)= 2.783999	(8,27)= 2.914000	(8,28)= 3.474999
(8,29)= 3.747999	(8,30)= 4.066999	(8,31)= 6.299996E-02	(8,32)= 1.625000	(8,33)= 2.375000	(8,34)= 2.969000
(8,35)= 3.466000	(8,36)= 3.742999	(8,37)= 4.058000	(8,38)= 0.3750000	(8,39)= 1.625000	(8,40)= 2.375000
(8,41)= 3.030999	(8,42)= 3.474999	(8,43)= 3.747999	(8,44)= 4.066999	(8,45)= 0.1250000	(8,46)= 1.625000
(8,47)= 2.375000	(8,48)= 3.113000	(8,49)= 4.372000	(8,50)= 0.3750000	(8,51)= 1.375000	(8,52)= 2.375000
(8,53)= 3.249000	(8,54)= 0.2500000	(8,55)= 1.625000	(8,56)= 2.375000	(8,57)= 2.997999	(8,58)= 3.658000
(8,59)= 0.2410000	(8,60)= 0.6619999	(8,61)= 0.2500000	(8,62)= 0.5630000	(8,63)= 1.000000	(8,64)= 0.3620000
(8,65)= 0.5000000	(8,66)= 1.000000	(8,67)= 0.5000000	(8,68)= 1.000000	(8,69)= 0.8750000	(8,70)= 0.2090000
(8,71)= 0.000000 ->	(8,72)= 0.000000	(9,1)= 0.3130000	(9,2)= 1.188000	(9,3)= 2.188000	(9,4)= 2.999000
(9,5)= 3.721000	(9,6)= 0.3130000	(9,7)= 1.189000	(9,8)= 2.188000	(9,9)= 2.936000	(9,10)= 3.499000
(9,11)= 3.973000	(9,12)= 0.3130000	(9,13)= 1.188000	(9,14)= 2.188000	(9,15)= 3.049000	(9,16)= 3.754999
(9,17)= 0.3130000	(9,18)= 1.188000	(9,19)= 2.188000	(9,20)= 2.967999	(9,21)= 3.476999	(9,22)= 3.742999
(9,23)= 4.056000	(9,24)= 0.3130000	(9,25)= 1.188000	(9,26)= 2.188000	(9,27)= 2.967999	(9,28)= 3.464000
(9,29)= 3.742999	(9,30)= 4.056000	(9,31)= 0.3130000	(9,32)= 1.188000	(9,33)= 2.188000	(9,34)= 2.967999
(9,35)= 3.464000	(9,36)= 3.742999	(9,37)= 4.056000	(9,38)= 0.3130000	(9,39)= 1.188000	(9,40)= 2.188000
(9,41)= 2.967999	(9,42)= 3.464000	(9,43)= 3.742999	(9,44)= 4.056000	(9,45)= 0.3130000	(9,46)= 1.188000
(9,47)= 2.189000	(9,48)= 2.967999	(9,49)= 3.476999	(9,50)= 3.742999	(9,51)= 4.056000	(9,52)= 0.3130000
(9,53)= 1.188000	(9,54)= 2.188000	(9,55)= 3.049000	(9,56)= 3.754999	(9,57)= 0.3130000	(9,58)= 1.188000
(9,59)= 2.188000	(9,60)= 2.936000	(9,61)= 3.499000	(9,62)= 4.073999	(9,63)= 0.3130000	(9,64)= 1.188000
(9,65)= 2.188000	(9,66)= 2.999000	(9,67)= 3.721000	(9,68)= 0.000000 ->	(9,72)= 0.000000	(10,1)= 0.2600000
(10,2)= 0.2740000	(10,3)= 0.2120000	(10,4)= 9.699996E-02	(10,5)= 0.4880000	(10,6)= 0.8250000	(10,7)= 0.8910000
(10,8)= 0.9650000	(10,9)= 0.1330000	(10,10)= 0.4880000	(10,11)= 0.8870000	(10,12)= 1.431999	(10,13)= 1.787000
(10,14)= 1.875000	(10,15)= 1.974000	(10,16)= 0.2309999	(10,17)= 0.8440000	(10,18)= 1.535000	(10,19)= 2.149999
(10,20)= 2.785000	(10,21)= 3.099000	(10,22)= 3.188000	(10,23)= 3.285999	(10,24)= 0.3380000	(10,25)= 1.240000
(10,26)= 2.254000	(10,27)= 3.157000	(10,28)= 4.097999	(10,29)= 4.327000	(10,30)= 4.474999	(10,31)= 4.523999
(10,32)= 5.032000	(10,33)= 5.210999	(10,34)= 5.419000	(10,35)= 5.825999	(10,36)= 0.3750000	(10,37)= 1.375000
(10,38)= 2.500000	(10,39)= 3.500000	(10,40)= 4.375000	(10,41)= 4.909000	(10,42)= 5.242000	(10,43)= 5.507999
(10,44)= 5.813000	(10,45)= 0.3750000	(10,46)= 1.375000	(10,47)= 2.500000	(10,48)= 3.500000	(10,49)= 4.613999
(10,50)= 0.3750000	(10,51)= 1.375000	(10,52)= 2.500000	(10,53)= 3.500000	(10,54)= 4.752000	(10,55)= 5.832999

Table 3.- (Continued).

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TST-401 PH-I TN-66  4710          IO-PARAMS            14 NOV 81@10:51       PAGE  67

PRMS
.YBAR
(10,56)= 0.3750000   (10,57)=  1.375000   (10,58)=  2.500000   (10,59)=  2.500000   (10,60)=  4.476999   (10,61)=  5.349999
(10,62)=  0.000000                     -> (10,72)=  0.000000   (11,1)= 0.1280000    (11,2)= 9.399998E-02 (11,3)= 5.700000E-02
(11,4)= 0.2679999    (11,5)= 0.4159999    (11,6)= 0.5409999    (11,7)= 0.6730000    (11,8)= 0.1510000    (11,9)= 0.5530000
(11,10)=  1.066999   (11,11)=  1.276999   (11,12)=  1.431000   (11,13)=  1.603999   (11,14)= 0.2620000   (11,15)= 0.9620000
(11,16)=  1.660999   (11,17)=  2.120000   (11,18)=  2.306999   (11,19)=  2.460999   (11,20)=  2.634000   (11,21)=  3.129000
(11,22)=  3.344000   (11,23)=  3.587999   (11,24)= 6.000000E-02                     (11,25)=  1.443000   (11,26)=  2.783999
(11,27)=  2.914000   (11,28)=  3.474999   (11,29)=  3.747999   (11,30)=  4.066999   (11,31)= 6.299996E-02
(11,32)=  1.625000   (11,33)=  2.375000   (11,34)=  2.969000   (11,35)=  3.464000   (11,36)=  3.742999   (11,37)=  4.058000
(11,38)= 6.299996E-02                     (11,39)=  1.625000   (11,40)=  2.375000   (11,41)=  3.030999   (11,42)=  3.474999
(11,43)=  3.747999   (11,44)=  4.066999   (11,45)= 0.1250000   (11,46)=  1.625000   (11,47)=  2.375000   (11,48)=  3.113000
(11,49)=  4.072000   (11,50)= 0.3750000   (11,51)=  1.625000   (11,52)=  2.375000   (11,53)=  3.249000   (11,54)= 0.2500000
(11,55)=  1.625000   (11,56)=  2.375000   (11,57)=  2.997999   (11,58)=  3.658000   (11,59)= 0.2410000   (11,60)= 0.6619999
(11,61)= 0.2500000   (11,62)= 0.5630000   (11,63)=  1.000000   (11,64)= 0.2500000   (11,65)= 0.5630000   (11,66)=  1.000000
(11,67)= 0.6250000   (11,68)=  1.000000   (11,69)= 0.8750000   (11,70)= 0.2500000   (11,71)=  0.000000               ->
(11,72)=  0.000000   (12,1)= 0.1380000    (12,2)= 9.399998E-02 (12,3)= 5.700000E-02 (12,4)= 0.2679999    (12,5)= 0.4260000
(12,6)= 0.5409999    (12,7)= 0.6730000    (12,8)= 0.1510000    (12,9)= 0.5530000    (12,10)=  1.066999   (12,11)=  1.276999
(12,12)=  1.431000   (12,13)=  1.603999   (12,14)= 0.2620000   (12,15)= 0.9620000   (12,16)=  1.660999   (12,17)=  2.120000
(12,18)=  2.306999   (12,19)=  2.460999   (12,20)=  2.634000   (12,21)=  3.129000   (12,22)=  3.344000   (12,23)=  3.587999
(12,24)= 6.000000E-02                     (12,25)=  1.443000   (12,26)=  2.783999   (12,27)=  2.914000   (12,28)=  3.474999
(12,29)=  3.747999   (12,30)=  4.066999   (12,31)= 6.299996E-02                     (12,32)=  1.625000   (12,33)=  2.375000
(12,34)=  2.969000   (12,35)=  3.464000   (12,36)=  3.742999   (12,37)=  4.058000   (12,38)= 6.299996E-02
(12,39)=  1.625000   (12,40)=  2.375000   (12,41)=  3.030999   (12,42)=  3.474999   (12,43)=  3.747999   (12,44)=  4.058000
(12,45)= 0.1250000   (12,46)=  1.625000   (12,47)=  2.375000   (12,48)=  3.113000   (12,49)=  4.072000   (12,50)= 0.3750000
(12,51)=  1.625000   (12,52)=  2.375000   (12,53)=  3.249000   (12,54)= 0.2500000   (12,55)=  1.625000   (12,56)=  2.375000
(12,57)=  2.968000   (12,58)=  3.659000   (12,59)= 0.2410000   (12,60)= 0.6619999   (12,61)= 0.2500000   (12,62)= 0.5630000
(12,63)=  1.000000   (12,64)= 0.2500000   (12,65)= 0.5630000   (12,66)=  1.000000   (12,67)= 0.6250000   (12,68)=  1.000000
(12,69)= 0.8750000   (12,70)= 0.2500000   (12,71)=  0.000000                     -> (12,72)=  0.000000
.ZBAR
(1,1)= 2.800000E-02  (1,2)= 5.100000E-02  (1,3)= 0.1190000     (1,4)= 5.000000E-02  (1,5)= 0.1350000     (1,6)= 0.1840000
(1,7)= 0.1339999     (1,8)= 5.000000E-02  (1,9)= 0.1970000     (1,10)= 0.2079999    (1,11)= 0.1339999    (1,12)= 5.000000E-02
(1,13)= 0.2500000    (1,14)= 0.2090000    (1,15)= 0.1339999    (1,16)= 5.000000E-02 (1,17)= 0.2500000    (1,18)= 0.2090000
(1,19)= 0.1339999    (1,20)= 5.000000E-02 (1,21)= 0.2500000 -> (1,22)= 0.2500000    (1,23)= 0.2090000    (1,24)= 0.1339999
(1,25)= 5.000000E-02 (1,26)= 0.2500000 -> (1,27)= 0.2500000    (1,28)= 0.2090000    (1,29)= 0.1339999    (1,30)= 5.000000E-02
(1,31)= 0.2500000 -> (1,33)= 0.2500000    (1,34)= 0.2090000    (1,35)= 0.1339999    (1,36)= 5.000000E-02 (1,37)= 0.2500000
(1,38)=  0.000000    (1,39)= 0.2500000    (1,40)=  0.000000 -> (1,41)=  0.000000    (1,42)= 5.000000E-02 (1,43)= 0.2500000  ->
(1,45)= 0.2500000    (1,46)= 0.2070000    (1,47)= 0.1339999    (1,48)= 5.000000E-02 (1,49)= 0.1320000    (1,50)= 0.2090000  ->
(1,51)= 0.2090000    (1,52)= 0.2040000    (1,53)= 4.600000E-02 (1,54)= 0.1339999 -> (1,56)= 0.1339999    (1,57)= 0.1310000
(1,58)= 5.000000E-02                   -> (1,60)= 5.000000E-02 (1,61)= 4.500000E-02 (1,62)=  0.000000 -> (1,72)=  0.000000
(2,1)= 3.200000E-02  (2,2)= 0.1220000     (2,3)= 5.000000E-02  (2,4)= 0.1980000     (2,5)= 0.1339999     (2,6)= 5.000000E-02
(2,7)=  0.000000     (2,8)= 0.2500000     (2,9)= 0.2090000     (2,10)= 0.1339999    (2,11)= 5.000000E-02 (2,12)= 0.2500000  ->
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  4710          ID-PARAMS            16 NOV 81.10:51       PAGE  68

PRMS
.ZBAR
(2,14)= 0.2500000     (2,15)= 0.2090000     (2,16)= 0.1339999     (2,17)= 5.000000E-02 (2,18)= 0.2500000 -> (2,20)= 0.2500000
(2,21)= 0.2079999     (2,22)= 0.1339999     (2,23)= 5.000000E-02 (2,24)= 0.2500000 -> (2,26)= 0.2500000     (2,27)= 0.2079999
(2,28)= 0.1339999     (2,29)= 5.000000E-02 (2,30)= 0.2500000 -> (2,32)= 0.2500000     (2,33)= 0.2090000     (2,34)= 0.1339999
(2,35)= 5.000000E-02 (2,36)= 0.2500000 -> (2,38)= 0.2500000     (2,39)= 0.2090000     (2,40)= 0.1339999     (2,41)= 5.000000E-02
(2,42)= 0.2500000 -> (2,44)= 0.2500000     (2,45)= 0.2070000     (2,46)= 0.1330000     (2,47)= 5.000000E-02 (2,48)= 0.2090000 ->
(2,49)= 0.2090000     (2,50)= 0.2050000     (2,51)= 0.1339999 -> (2,52)= 0.1339999     (2,53)= 0.1320000     (2,54)= 4.600000E-02
(2,55)= 5.000000E-02                     -> (2,57)= 5.000000E-02 (2,58)= 4.300000E-02 (2,59)=  0.000000 -> (2,72)=  0.000000
(3,1)= 5.000000E-02                      -> (3,3)= 5.000000E-02  (3,4)= 4.500000E-02  (3,5)= 0.1339999  -> (3,7)= 0.1339999
(3,8)= 0.1310000      (3,9)= 4.600000E-02  (3,10)= 0.2090000 -> (3,11)= 0.2090000     (3,12)= 0.2050000     (3,13)= 0.1310000
(3,14)= 0.2500000 -> (3,16)= 0.2500000     (3,17)= 0.2070000     (3,18)= 0.1339999     (3,19)= 5.000000E-02 (3,20)= 0.2500000 ->
(3,22)= 0.2500000     (3,23)= 0.2090000     (3,24)= 0.1339999     (3,25)= 5.000000E-02 (3,26)= 0.2500000 -> (3,28)= 0.2500000
(3,29)= 0.2090000     (3,30)= 0.1750000     (3,31)= 5.000000E-02 (3,32)= 0.2500000 -> (3,34)= 0.2500000     (3,35)= 0.2090000
(3,36)= 0.1339999     (3,37)= 5.000000E-02 (3,38)= 0.2500000 -> (3,40)= 0.2500000     (3,41)= 0.2090000     (3,42)= 0.1339999
(3,43)= 5.000000E-02 (3,44)= 0.2500000 -> (3,46)= 0.2500000     (3,47)= 0.2070000     (3,48)= 0.1339999     (3,49)= 5.000000E-02
(3,50)= 0.2090000 -> (3,51)= 0.2090000     (3,52)= 0.2050000     (3,53)= 0.1310000     (3,54)= 0.1339999 -> (3,56)= 0.1339999
(3,57)= 0.1310000     (3,58)= 4.600000E-02 (3,59)= 5.000000E-02                     -> (3,61)= 5.000000E-02 (3,62)= 4.500000E-02
(3,63)=  0.000000 -> (3,72)=  0.000000     (4,1)= 3.400000E-02  (4,2)= 6.799996E-02  (4,3)= 0.1910000     (4,4)= 0.1339999
(4,5)= 5.000000E-02   (4,6)= 0.2500000     (4,7)= 0.2090000     (4,8)= 0.1339999     (4,9)= 5.000000E-02  (4,10)= 0.2500000 ->
(4,15)= 0.2500000     (4,16)= 0.2090000     (4,17)= 0.1339999     (4,18)= 5.000000E-02 (4,19)= 0.2500000 -> (4,23)= 0.2500000
(4,24)= 0.2090000     (4,25)= 0.1339999     (4,26)= 5.000000E-02 (4,27)= 0.2500000 -> (4,31)= 0.2500000     (4,32)= 0.2090000
(4,33)= 0.1339999     (4,34)= 5.000000E-02 (4,35)= 0.2500000 -> (4,39)= 0.2500000     (4,40)= 0.2079999     (4,41)= 0.1339999
(4,42)= 4.900000E-02 (4,43)= 0.2050000     (4,44)= 0.1320000     (4,45)= 4.800000E-02 (4,46)= 0.2079999 -> (4,49)= 0.2079999
(4,50)= 0.2020000     (4,51)= 0.1339999 -> (4,54)= 0.1339999     (4,55)= 0.1320000     (4,56)= 5.000000E-02                     ->
(4,59)= 5.000000E-02 (4,60)= 0.1470000     (4,61)=  0.000000 -> (4,72)=  0.000000     (5,1)= 4.600000E-02  (5,2)= 0.1310000
(5,3)= 0.2029999      (5,4)= 0.1330000     (5,5)= 4.900000E-02  (5,6)= 0.2500000  -> (5,8)= 0.2500000      (5,9)= 0.2090000
(5,10)= 0.1339999     (5,11)= 5.000000E-02 (5,12)= 0.2500000 -> (5,15)= 0.2500000     (5,16)= 0.2090000     (5,17)= 0.1339999
(5,18)= 5.000000E-02 (5,19)= 0.2500000 -> (5,22)= 0.2500000     (5,23)= 0.2079999     (5,24)= 0.1339999     (5,25)= 4.900000E-02
(5,26)= 0.2500000 -> (5,29)= 0.2500000     (5,30)= 0.2079999     (5,31)= 0.1339999     (5,32)= 5.000000E-02 (5,33)= 0.2500000 ->
(5,36)= 0.2500000     (5,37)= 0.2090000     (5,38)= 0.1339999     (5,39)= 5.000000E-02 (5,40)= 0.2500000 -> (5,43)= 0.2500000
(5,44)= 0.2060000     (5,45)= 0.1330000     (5,46)= 5.000000E-02 (5,47)= 0.2090000 -> (5,49)= 0.2090000     (5,50)= 0.2060000
(5,51)= 4.600000E-02 (5,52)= 0.1339999 -> (5,54)= 0.1339999     (5,55)= 0.1330000     (5,56)= 5.000000E-02                     ->
(5,59)= 5.000000E-02 (5,60)= 4.600000E-02 (5,61)=  0.000000 -> (5,72)=  0.000000     (6,1)= 5.000000E-02                      ->
(6,3)= 5.000000E-02   (6,4)= 4.600000E-02  (6,5)= 0.1339999  -> (6,7)= 0.1339999      (6,8)= 0.1310000      (6,9)= 0.2090000   ->
(6,10)= 0.2090000     (6,11)= 0.2060000     (6,12)= 0.1310000     (6,13)= 4.700000E-02 (6,14)= 0.2500000 -> (6,16)= 0.2500000
(6,17)= 0.2060000     (6,18)= 0.1339999     (6,19)= 5.000000E-02 (6,20)= 0.2500000 -> (6,22)= 0.2500000     (6,23)= 0.2090000
(6,24)= 0.1339999     (6,25)= 5.000000E-02 (6,26)= 0.2500000 -> (6,28)= 0.2500000     (6,29)= 0.2090000     (6,30)= 0.1339999
(6,31)= 5.000000E-02 (6,32)= 0.2500000 -> (6,34)= 0.2500000     (6,35)= 0.2090000     (6,36)= 0.1339999     (6,37)= 5.000000E-02
(6,38)= 0.2500000 -> (6,40)= 0.2500000     (6,41)= 0.2050000     (6,42)= 0.1339999     (6,43)= 5.000000E-02 (6,44)= 0.2090000 ->
(6,45)= 0.2090000     (6,46)= 0.2060000     (6,47)= 0.1310000     (6,48)= 4.600000E-02 (6,49)= 0.1339999 -> (6,51)= 0.1339999
(6,52)= 0.1310000     (6,53)= 5.000000E-02                     -> (6,55)= 5.000000E-02 (6,56)= 4.600000E-02 (6,57)=  0.000000 ->
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  4710          ID-PARAMS              16 NOV 81@10:51       PAGE  69

PRMS
.7BAR
(6,72)=  0.000000     (7,1)= 3.330000E-02  (7,2)= 0.1283000      (7,3)= 5.000000E-02  (7,4)= 0.1870000      (7,5)= 0.2070000
(7,6)= 0.1339999      (7,7)= 5.000000E-02  (7,8)= 0.2500000   -> (7,10)= 0.2500000    (7,11)= 0.2090000     (7,12)= 0.1339999
(7,13)= 5.000000E-02  (7,14)= 0.2500000 -> (7,17)= 0.2500000     (7,18)= 0.2090000    (7,19)= 0.1339999     (7,20)= 5.000000E-02
(7,21)= 0.2500000 ->  (7,24)= 0.2500000    (7,25)= 0.2090000     (7,26)= 0.1339999    (7,27)= 5.000000E-02  (7,28)= 0.2500000  ->
(7,32)= 0.2500000     (7,33)= 0.2090000    (7,34)= 0.1339999     (7,35)= 5.000000E-02 (7,36)= 0.2500000 ->  (7,40)= 0.2500000
(7,41)= 0.2050000     (7,42)= 0.1339999    (7,43)= 5.000000E-02  (7,44)= 0.1310000    (7,45)= 0.2090000 ->  (7,48)= 0.2390000
(7,49)= 0.2029999     (7,50)= 4.600000E-02 (7,51)= 0.1339999 ->  (7,55)= 0.1339999    (7,56)= 0.1300000     (7,57)= 5.000000E-02
                   -> (7,62)= 5.000000E-02 (7,63)= 4.700000E-02  (7,64)=  0.000000 -> (7,72)=  0.000000     (8,1)= 4.700000E-02
(8,2)= 0.1370000      (8,3)= 0.2079999     (8,4)= 0.2500000      (8,5)= 0.2079999     (8,6)= 0.1330000      (8,7)= 4.900000E-02
(8,8)= 0.2500000   -> (8,10)= 0.2500000    (8,11)= 0.2090000     (8,12)= 0.1339999    (8,13)= 5.000000E-02  (8,14)= 0.2500000  ->
(8,17)= 0.2500000     (8,18)= 0.2090000    (8,19)= 0.1339999     (8,20)= 5.000000E-02 (8,21)= 0.2070000     (8,22)= 0.1330000
(8,23)= 4.900000E-02  (8,24)= 0.2500000 -> (8,27)= 0.2500000     (8,28)= 0.2060000    (8,29)= 0.1330000     (8,30)= 4.700000E-02
(8,31)= 0.2500000 ->  (8,34)= 0.2500000    (8,35)= 0.2090000     (8,36)= 0.1339999    (8,37)= 5.000000E-02  (8,38)= 0.2500000  ->
(8,41)= 0.2500000     (8,42)= 0.2060000    (8,43)= 0.1330000     (8,44)= 4.900000E-02 (8,45)= 0.2090000 ->  (8,47)= 0.2090000
(8,48)= 0.2060000     (8,49)= 4.600000E-02 (8,50)= 0.1339999 ->  (8,52)= 0.1339999    (8,53)= 0.1330000     (8,54)= 5.000000E-02
                   -> (8,57)= 5.000000E-02 (8,58)= 4.600000E-02  (8,59)= 0.2500000 -> (8,66)= 0.2530000     (8,67)= 0.2090000  ->
(8,68)= 0.2090000     (8,69)= 5.000000E-02 (8,70)= 0.5000000     (8,71)=  0.000000 -> (8,72)=  0.000000     (9,1)= 5.000000E-02
                   -> (9,4)= 5.000000E-02  (9,5)= 4.600000E-02   (9,6)= 0.1339959  -> (9,9)= 0.1339999      (9,10)= 0.1310000
(9,11)= 7.199997E-02  (9,12)= 0.2050000 -> (9,14)= 0.2090000     (9,15)= 0.2060000    (9,16)= 0.1310000     (9,17)= 0.2500000  ->
(9,20)= 0.2500000     (9,21)= 0.2050000    (9,22)= 0.1339999     (9,23)= 5.000000E-02 (9,24)= 0.2500000 ->  (9,27)= 0.2500000
(9,28)= 0.2090000     (9,29)= 0.1339999    (9,30)= 5.000000E-02  (9,31)= 0.2500000 -> (9,34)= 0.2530000     (9,35)= 0.2090000
(9,36)= 0.1339999     (9,37)= 5.000000E-02 (9,38)= 0.2500000 ->  (9,41)= 0.2500000    (9,42)= 0.2090000     (9,43)= 0.1339999
(9,44)= 5.000000E-02  (9,45)= 0.2500000 -> (9,48)= 0.2500000     (9,49)= 0.2050000    (9,50)= 0.1339999     (9,51)= 5.000000E-02
(9,52)= 0.2090000 ->  (9,54)= 0.2090000    (9,55)= 0.1960000     (9,56)= 0.1310000    (9,57)= 0.1339999 ->  (9,60)= 0.1339999
(9,61)= 0.1310000     (9,62)= 4.500000E-02 (9,63)= 5.000000E-02                    -> (9,66)= 5.000000E-02  (9,67)= 4.600000E-02
(9,68)=  0.000000 ->  (9,72)=  0.000000    (10,1)= 4.900000E-02  (10,2)= 0.1370000    (10,3)= 0.2079999     (10,4)= 0.2500000  ->
(10,5)= 0.2500000     (10,6)= 0.2070000    (10,7)= 0.1330000     (10,8)= 5.000000E-02 (10,9)= 0.2500000 ->  (10,12)= 0.2500000
(10,13)= 0.2090000    (10,14)= 0.1339999   (10,15)= 5.000000E-02                      (10,16)= 0.2500000                       ->
(10,20)= 0.2500000    (10,21)= 0.2090000   (10,22)= 0.1339999    (10,23)= 5.000000E-02                      (10,24)= 0.2500000 ->
(10,28)= 0.2500000    (10,29)= 0.2090000   (10,30)= 0.1339999    (10,31)= 5.000000E-02                      (10,32)= 0.2050000
(10,33)= 0.1370000    (10,34)= 4.700000E-02                   -> (10,35)= 4.700000E-02                      (10,36)= 0.2500000 ->
(10,41)= 0.2500000    (10,42)= 0.2029999   (10,43)= 0.1320000    (10,44)= 5.000000E-02                      (10,45)= 0.2090000 ->
(10,48)= 0.2090000    (10,49)= 0.2070000   (10,50)= 0.1339999                      -> (10,53)= 0.1339999    (10,54)= 0.1330000
(10,55)= 4.500000E-02                      (10,56)= 5.000000E-02                   -> (10,60)= 5.000000E-02
(10,61)= 4.700000E-02                      (10,62)=  0.000000                      -> (10,72)=  0.000000    (11,1)= 4.700000E-02
(11,2)= 0.1320000     (11,3)= 0.2079999    (11,4)= 0.2500000     (11,5)= 0.2079999    (11,6)= 0.1330000     (11,7)= 4.900000E-02
(11,8)= 0.2500000 ->  (11,10)= 0.2500000   (11,11)= 0.2090000    (11,12)= 0.1339999   (11,13)= 5.000000E-02
(11,14)= 0.2500000                      -> (11,17)= 0.2500000    (11,18)= 0.2090000   (11,19)= 0.1339999    (11,20)= 5.000000E-02
(11,21)= 0.2070000    (11,22)= 0.1330000   (11,23)= 4.900000E-02                      (11,24)= 0.2530000                       ->
(11,27)= 0.2500000    (11,28)= 0.2060000   (11,29)= 0.1320000    (11,30)= 4.700000E-02                      (11,31)= 0.2500000 ->
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  47:0          IO-PARAMS          15 NOV 61 10:51       PAGE  70

PRMS
.ZBAR
(11,34)= 0.2500000   (11,35)= 0.2090000   (11,36)= 0.1339999   (11,37)= 5.000000E-02                          (11,38)= 0.2500000 ->
(11,41)= 0.2500000   (11,42)= 0.2060000   (11,43)= 0.1330000   (11,44)= 4.800000E-02                          (11,45)= 0.2090000 ->
(11,47)= 0.2090000   (11,48)= 0.2060000   (11,49)= 0.4060000   (11,50)= 0.1339999                          -> (11,52)= 0.1339999
(11,53)= 0.1330000   (11,54)= 5.000000E-02                  -> (11,57)= 5.000000E-02                          (11,58)= 4.600000E-02
(11,59)= 0.2500000                     -> (11,66)= 0.2500000   (11,67)= 0.2090000                          -> (11,68)= 0.2090000
(11,69)= 5.000000E-02                     (11,70)= 0.2500000   (11,71)=  0.000000                          -> (11,72)=  0.000000
(12,1)= 4.700000E-02 (12,2)= 0.1330000    (12,3)= 0.2079999    (12,4)= 0.2500000    (12,5)= 0.2079999    (12,6)= 0.1330000
(12,7)= 4.900000E-02 (12,8)= 0.2500000 -> (12,10)= 0.2500000   (12,11)= 0.2090000   (12,12)= 0.1339999   (12,13)= 5.000000E-02
(12,14)= 0.2500000                     -> (12,17)= 0.2500000   (12,18)= 0.2090000   (12,19)= 0.1339999   (12,20)= 5.000000E-02
(12,21)= 0.2070000   (12,22)= 0.1330000   (12,23)= 4.900000E-02                     (12,24)= 0.2500000                     ->
(12,27)= 0.2500000   (12,28)= 0.2060000   (12,29)= 0.1330000   (12,30)= 4.700000E-02                     (12,31)= 0.2500000 ->
(12,34)= 0.2500000   (12,35)= 0.2090000   (12,36)= 0.1339999   (12,37)= 5.000000E-02                     (12,38)= 0.2500000 ->
(12,41)= 0.2500000   (12,42)= 0.2060000   (12,43)= 0.1330000   (12,44)= 5.000000E-02                     (12,45)= 0.2090000 ->
(12,47)= 0.2090000   (12,48)= 0.2060000   (12,49)= 4.600000E-02                     (12,50)= 0.1339999                     ->
(12,52)= 0.1339999   (12,53)= 0.1330000   (12,54)= 0.5000000                     -> (12,57)= 0.5000000    (12,58)= 4.600000E-02
(12,59)= 0.2500000                     -> (12,66)= 0.2500000   (12,67)= 0.2090000                     -> (12,68)= 0.2090000
(12,69)= 5.000000E-02                     (12,70)= 0.2500000   (12,71)=  0.000000                     -> (12,72)=  0.000000
.AREA
(1,1)= 0.3900000     (1,2)= 0.3750000     (1,3)= 0.1250000     (1,4)= 0.5630000     (1,5)= 0.2500000     (1,6)= 0.1010000
(1,7)= 0.2080000     (1,8)= 0.6500000     (1,9)= 0.1580000     (1,10)= 0.2510000    (1,11)= 0.3030000    (1,12)= 0.4540000
(1,13)= 0.1310000    (1,14)= 0.3070000    (1,15)= 0.2470000    (1,16)= 0.3680000    (1,17)= 0.2440000    (1,18)= 0.3099999
(1,19)= 0.2570000    (1,20)= 0.3780000    (1,21)= 8.699995E-02 (1,22)= 0.2919999    (1,23)= 0.3099999    (1,24)= 0.2520000
(1,25)= 0.3780000    (1,26)= 0.1490000    (1,27)= 0.4870000    (1,28)= 0.3880000    (1,29)= 0.3150000    (1,30)= 0.4730000
(1,31)= 0.2399999    (1,32)= 0.6149999    (1,33)= 0.3620000    (1,34)= 0.6600000    (1,35)= 0.5737000    (1,36)= 0.5670000
(1,37)= 0.2510000    (1,38)=  0.000000    (1,39)= 0.3780000    (1,40)=  0.000000 -> (1,41)=  0.000000    (1,42)= 0.4730000
(1,43)= 0.2500000    (1,44)= 0.6600000    (1,45)= 0.3770000    (1,46)= 0.5790000    (1,47)=  0.000000    (1,48)= 0.3469999
(1,49)= 0.5113000    (1,50)= 7.699996E-02 (1,51)= 0.1350000    (1,52)= 0.1700000    (1,53)= 0.2730000    (1,54)= 6.299996E-02
(1,55)= 0.1100000    (1,56)= 9.699994E-02 (1,57)= 0.1199999    (1,58)= 9.399998E-02 (1,59)= 0.1640000    (1,60)= 0.1980000
(1,61)= 0.2600000    (1,62)=  0.000000 -> (1,72)=  0.000000    (2,1)= 0.1880000     (2,2)= 8.299994E-02  (2,3)= 0.2500000
(2,4)= 0.1590000     (2,5)= 0.2320000     (2,6)= 0.3480000     (2,7)=  0.000000     (2,8)= 0.2510000     (2,9)= 0.3490000
(2,10)= 0.2819999    (2,11)= 0.4230000    (2,12)= 0.1310000    (2,13)= 0.2610000    (2,14)= 0.2290000    (2,15)= 0.3290000
(2,16)= 0.2670000    (2,17)= 0.4010000    (2,18)= 0.1790000    (2,19)= 0.2580000    (2,20)= 0.3160000    (2,21)= 0.3419999
(2,22)= 0.2900000    (2,23)= 0.4570000    (2,24)= 0.2190000    (2,25)= 0.4360000    (2,26)= 0.2830000    (2,27)= 0.2350000
(2,28)= 0.2040000    (2,29)= 0.3270000    (2,30)= 0.3130000    (2,31)= 0.6250000    (2,32)= 0.5490000    (2,33)= 0.2850000
(2,34)= 0.3130000    (2,35)= 0.4690000    (2,36)= 0.3750000    (2,37)= 0.7500000    (2,38)= 0.6590000    (2,39)= 0.4670000
(2,40)= 0.3750000    (2,41)= 0.5630000    (2,42)= 0.2670000    (2,43)= 0.5340000    (2,44)= 0.4680000    (2,45)= 0.3760000
(2,46)= 0.3750000    (2,47)= 0.4220000    (2,48)= 7.699996E-02 (2,49)= 0.1540000    (2,50)= 0.1830000    (2,51)= 6.299996E-02
(2,52)= 0.1250000    (2,53)= 0.2180000    (2,54)= 0.2580000    (2,55)= 9.399998E-02 (2,56)= 0.1880000    (2,57)= 0.2330000
(2,58)=  0.000000 -> (2,72)=  0.000000    (3,1)= 9.399998E-02  (3,2)= 0.1880000     (3,3)= 0.2100000     (3,4)= 0.2340000
(3,5)= 6.299996E-02  (3,6)= 0.1250000     (3,7)= 0.1090000  -> (3,8)= 0.1090000     (3,9)= 0.2560000     (3,10)= 7.699996E-02
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  47:0          ID-PARAMS          16 NOV 81=10:51       PAGE  71

PRMS
.AREA
(3,11)= 0.1560000     (3,12)= 0.1830000     (3,13)= 0.1240000     (3,14)= 0.2029999     (3,15)= 0.4050000     (3,16)= 0.3559999
(3,17)= 0.2970000     (3,18)= 0.1870000     (3,19)= 0.3270000     (3,20)= 0.2810000     (3,21)= 0.5630000     (3,22)= 0.4940000
(3,23)= 0.3469999     (3,24)= 0.2810000     (3,25)= 0.4220000     (3,26)= 0.3440000     (3,27)= 0.6880000     (3,28)= 0.6040000
(3,29)=  0.000000     (3,30)= 0.7679999     (3,31)= 0.5160000     (3,32)= 0.2440000     (3,33)= 0.6880000     (3,34)= 0.6040000
(3,35)= 0.4240000     (3,36)= 0.3440000     (3,37)= 0.5160000     (3,38)= 0.2810000     (3,39)= 0.5630000     (3,40)= 0.4940000
(3,41)= 0.3469999     (3,42)= 0.2910000     (3,43)= 0.4220000     (3,44)= 0.2029999     (3,45)= 0.4050000     (3,46)= 0.3559999
(3,47)= 0.2970000     (3,48)= 0.1970000     (3,49)= 0.3270000     (3,50)= 7.699996E-02 (3,51)= 0.1540000     (3,52)= 0.1830000
(3,53)= 0.1240000     (3,54)= 6.299996E-02 (3,55)= 0.1250000     (3,56)= 0.1090000 -> (3,57)= 0.1090000     (3,58)= 0.2570000
(3,59)= 9.399998E-02 (3,60)= 0.1880000     (3,61)= 0.2100000     (3,62)= 0.2340000     (3,63)=  0.000000 -> (3,72)=  0.000000
(4,1)= 0.2810000      (4,2)= 0.5000000      (4,3)= 0.1410000      (4,4)= 0.2650000      (4,5)= 0.3979999      (4,6)= 7.499999E-02
(4,7)= 0.4550000      (4,8)= 0.2720000      (4,9)= 0.5580000      (4,10)= 7.399994E-02 (4,11)= 0.1920000     (4,12)= 9.999998E-02
(4,13)= 0.2000000     (4,14)= 0.2029999     (4,15)= 0.2090000     (4,16)= 0.5160000     (4,17)= 0.4190000     (4,18)= 0.6280000
(4,19)= 0.1910000     (4,20)= 0.3850000     (4,21)= 0.3910000     (4,22)= 0.2720000     (4,23)= 0.1300000     (4,24)= 0.4760000
(4,25)= 0.3870000     (4,26)= 0.5800000     (4,27)= 0.2700000     (4,28)= 0.5430000     (4,29)= 0.5510000     (4,30)= 0.3850000
(4,31)= 0.1830000     (4,32)= 0.4760000     (4,33)= 0.3970000     (4,34)= 0.5800000     (4,35)= 0.3020000     (4,36)= 0.6070000
(4,37)= 0.6160000     (4,38)= 0.4799999     (4,39)= 0.2050000     (4,40)= 0.3189999     (4,41)= 0.2880000     (4,42)= 0.4830000
(4,43)= 0.1600000     (4,44)= 0.1900000     (4,45)= 0.3850000     (4,46)= 7.900000E-02 (4,47)= 0.1630000     (4,48)= 0.1619999
(4,49)= 0.1130000     (4,50)= 0.1030000     (4,51)= 6.399995E-02 (4,52)= 0.1350000     (4,53)= 0.1370000     (4,54)= 9.499997E-02
(4,55)= 0.1569999     (4,56)= 0.1040000     (4,57)= 0.2100000     (4,58)= 0.2130000     (4,59)= 0.1490000     (4,60)= 0.3590000
(4,61)=  0.000000 -> (4,72)=  0.000000     (5,1)= 0.1820000      (5,2)= 7.199997E-02  (5,3)= 0.1600000      (5,4)= 0.1910000
(5,5)= 0.3500000      (5,6)= 7.399994E-02  (5,7)= 0.1080000      (5,8)= 0.2480000      (5,9)= 0.3160000      (5,10)= 0.2260000
(5,11)= 0.3390000     (5,12)= 0.1799999     (5,13)= 0.2990000     (5,14)= 0.2390000     (5,15)= 0.2710000     (5,16)= 0.3370000
(5,17)= 0.2740000     (5,18)= 0.4100000     (5,19)= 0.3310000     (5,20)= 0.5500000     (5,21)= 0.4410000     (5,22)= 0.4990000
(5,23)= 0.3279999     (5,24)= 0.2900000     (5,25)= 0.4730000     (5,26)= 0.2750000     (5,27)= 0.6250000     (5,28)= 0.5000000
(5,29)= 0.5670000     (5,30)= 0.3810000     (5,31)= 0.3329999     (5,32)= 0.5390000     (5,33)= 0.3279999     (5,34)= 0.5470000
(5,35)= 0.4390000     (5,36)= 0.4960000     (5,37)= 0.2700000     (5,38)= 0.2190000     (5,39)= 0.3279999     (5,40)= 0.2600000
(5,41)= 0.4330000     (5,42)= 0.3460000     (5,43)= 0.3920000     (5,44)= 0.2610000     (5,45)= 0.2810000     (5,46)= 0.2340000
(5,47)= 0.1160000     (5,48)= 0.1930000     (5,49)= 0.1540000     (5,50)= 0.2219999     (5,51)= 0.3049999     (5,52)= 9.399998E-02
(5,53)= 0.1560000     (5,54)= 0.1250000     (5,55)= 0.2500000     (5,56)= 0.1410000     (5,57)= 0.2340000     (5,58)= 0.1880000 ->
(5,59)= 0.1880000     (5,60)= 0.3049999     (5,61)=  0.000000 -> (5,72)=  0.000000     (6,1)= 0.1880000      (6,2)= 0.3279999
(6,3)= 0.2340000      (6,4)= 0.3049999      (6,5)= 0.1250000      (6,6)= 0.2190000      (6,7)= 0.1560000      (6,8)= 0.1250000
(6,9)= 0.1540000      (6,10)= 0.2700000     (6,11)= 0.2610000     (6,12)= 0.1250000     (6,13)= 0.4220000     (6,14)= 0.3460000
(6,15)= 0.6059999     (6,16)= 0.4750000     (6,17)= 0.2610000     (6,18)= 0.1560000     (6,19)=  0.000000     (6,20)= 0.4380000
(6,21)= 0.7660000     (6,22)= 0.9520000     (6,23)= 0.2700000     (6,24)= 0.2190000     (6,25)= 0.6330000     (6,26)= 0.5000000
(6,27)= 0.8750000     (6,28)=  0.000000     (6,29)= 0.3080000     (6,30)= 0.2500000     (6,31)=  0.000000     (6,32)= 0.4380000
(6,33)= 0.7660000     (6,34)= 0.9520000     (6,35)= 0.2700000     (6,36)= 0.2190000     (6,37)= 0.5160000     (6,38)= 0.3460000
(6,39)= 0.6059999     (6,40)= 0.4790000     (6,41)= 0.2610000     (6,42)= 0.1560000     (6,43)= 0.2340000     (6,44)= 0.1540000
(6,45)= 0.2700000     (6,46)= 0.2610000     (6,47)= 0.1250000     (6,48)= 0.3049999     (6,49)= 0.1250000     (6,50)= 0.2190000
(6,51)= 0.1560000     (6,52)= 0.1250000     (6,53)= 0.1880000     (6,54)= 0.3279999     (6,55)= 0.2340000     (6,56)= 0.3049999
(6,57)=  0.000000 -> (6,72)=  0.000000     (7,1)= 0.1410000      (7,2)= 0.1170000      (7,3)= 0.2690000      (7,4)= 4.700000E-02
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  4710          ID-PARAMS          16 NOV 81:10:51       PAGE  72

PRMS
.APFA
(7,5)= 0.2079999      (7,6)= 0.2260000      (7,7)= 0.2390000      (7,8)= 0.1050000      (7,9)= 0.1230000      (7,10)= 0.2610000
(7,11)= 0.3270000     (7,12)= 0.2660000     (7,13)= 0.3979999     (7,14)= 0.2020000     (7,15)= 0.3530000     (7,16)= 0.2520000
(7,17)= 0.2959999     (7,18)= 0.3870000     (7,19)= 0.3150000     (7,20)= 0.4719999     (7,21)= 0.3600000     (7,22)= 0.6300000
(7,23)= 0.4510000     (7,24)= 0.5280000     (7,25)= 0.4310000     (7,26)= 0.3500000     (7,27)= 0.5240000     (7,28)= 0.3910000
(7,29)= 0.6840000     (7,30)= 0.4890000     (7,31)= 0.3630000     (7,32)= 0.2309999     (7,33)= 0.3440000     (7,34)= 0.2800000
(7,35)= 0.4190000     (7,36)= 0.3229999     (7,37)= 0.5670000     (7,38)= 0.4050000     (7,39)= 0.2840000     (7,40)= 0.1910000
(7,41)= 0.3150000     (7,42)= 0.1670000     (7,43)= 0.3260000     (7,44)= 0.2020000     (7,45)= 0.1560000     (7,46)= 0.2700000
(7,47)= 0.1930000     (7,48)= 0.1350000     (7,49)= 0.1690000     (7,50)= 0.4170000     (7,51)= 0.1250000     (7,52)= 0.2190000
(7,53)= 0.1560000     (7,54)= 0.1100000     (7,55)= 9.699996E-02  (7,56)= 0.1520000     (7,57)= 0.1890000     (7,58)= 0.3279999
(7,59)= 0.2340000     (7,60)= 0.1640000     (7,61)= 0.2980000     (7,62)=  0.000000     (7,63)= 0.2650000     (7,64)=  0.000000  ->
(7,72)=  0.000000     (8,1)= 0.1220000      (8,2)= 5.600000E-02   (8,3)= 4.000000E-02   (8,4)= 0.2150000      (8,5)= 0.2340000
(8,6)= 0.2130000      (8,7)= 0.3590000      (8,8)= 0.1799999      (8,9)= 0.3010000      (8,10)= 0.3150000     (8,11)= 0.4070000
(8,12)= 0.3270000     (8,13)= 0.4899999     (8,14)= 0.2640000     (8,15)= 0.6100000     (8,16)= 0.3660000     (8,17)= 0.1729999
(8,18)= 0.3550000     (8,19)= 0.2980000     (8,20)= 0.4320000     (8,21)= 0.2510000     (8,22)= 1.2410000     (8,23)= 0.4250000
(8,24)= 7.499999E-02  (8,25)= 0.5990000     (8,26)= 0.4500000     (8,27)= 0.3360000     (8,28)= 0.1140000     (8,29)= 0.1300000
(8,30)= 0.2580000     (8,31)= 6.799996E-02  (8,32)= 0.4050000 ->  (8,33)= 0.4050000     (8,34)= 0.3030000     (8,35)= 0.1659999
(8,36)= 0.1350000     (8,37)= 0.2029999     (8,38)= 0.4250000 ->  (8,40)= 0.4250000     (8,41)= 0.3180000     (8,42)= 0.2219999
(8,43)= 0.2500000     (8,44)= 0.4930000     (8,45)= 7.699996E-02  (8,46)= 0.2309999 ->  (8,47)= 0.2309999     (8,48)= 0.2200000
(8,49)=  0.000000     (8,50)= 0.1980000     (8,51)= 0.3130000     (8,52)= 0.1880000     (8,53)= 0.2480000     (8,54)= 0.1980000
(8,55)= 0.2810000 ->  (8,56)= 0.2810000     (8,57)= 0.1860000     (8,58)= 0.3030000     (8,59)= 0.1500000     (8,60)= 0.3750000
(8,61)= 0.1350000     (8,62)= 0.2029999     (8,63)= 0.2700000     (8,64)= 0.1950000     (8,65)= 0.2130000     (8,66)= 0.2840000
(8,67)= 0.1540000 ->  (8,68)= 0.1540000     (8,69)= 0.2810000     (8,70)=  0.000000 ->  (8,72)=  0.000000     (9,1)= 0.2340000
(9,2)= 0.4220000      (9,3)= 0.3279999      (9,4)= 0.2800000      (9,5)= 0.2560000      (9,6)= 0.1560000      (9,7)= 0.2810000
(9,8)= 0.2190000      (9,9)= 0.1560000      (9,10)= 0.1240000     (9,11)= 0.3430000     (9,12)= 0.1930000     (9,13)= 0.3469999
(9,14)= 0.2700000     (9,15)= 0.2590000     (9,16)=  0.000000     (9,17)= 0.2740000     (9,18)= 0.4940000     (9,19)= 0.3839999
(9,20)= 0.3010000     (9,21)= 0.1830000     (9,22)= 0.1090000     (9,23)= 0.2100000     (9,24)= 0.3130000     (9,25)= 0.5630000
(9,26)= 0.4380000     (9,27)= 0.3430000     (9,28)= 0.1540000     (9,29)= 0.1250000     (9,30)= 0.1980000     (9,31)= 0.3130000
(9,32)= 0.5630000     (9,33)= 0.4380000     (9,34)= 0.3430000     (9,35)= 0.1540000     (9,36)= 0.1250000     (9,37)= 0.1880000
(9,38)= 0.3130000     (9,39)= 0.5630000     (9,40)= 0.4380000     (9,41)= 0.3430000     (9,42)= 0.1540000     (9,43)= 0.1250000
(9,44)= 0.1880000     (9,45)= 0.2740000     (9,46)= 0.4940000     (9,47)= 0.3839999     (9,48)= 0.3010000     (9,49)= 0.1830000
(9,50)= 0.1090000     (9,51)= 0.2100000     (9,52)= 0.1930000     (9,53)= 0.3469999     (9,54)= 0.2700000     (9,55)= 0.2580000
(9,56)= 0.1190000     (9,57)= 0.1560000     (9,58)= 0.2810000     (9,59)= 0.2190000     (9,60)= 0.1560000     (9,61)= 0.1240000
(9,62)= 0.2340000 ->  (9,63)= 0.2340000     (9,64)= 0.4220000     (9,65)= 0.3279999     (9,66)= 0.2800000     (9,67)= 0.2560000
(9,68)=  0.000000 ->  (9,72)=  0.000000     (10,1)= 0.2050000     (10,2)= 0.1240000     (10,3)= 0.1390000     (10,4)= 5.700000E-02
(10,5)= 0.1740000     (10,6)= 0.2600000     (10,7)= 0.2230000     (10,8)= 0.3540000     (10,9)= 9.699996E-02  (10,10)= 0.1610000
(10,11)= 0.1789999    (10,12)= 0.2660000    (10,13)= 0.3649999    (10,14)= 0.2970000    (10,15)= 0.4450000    (10,16)= 0.2260000
(10,17)= 0.3770000    (10,18)= 0.3010000                       -> (10,19)= 0.3010000    (10,20)= 0.3210000    (10,21)= 0.4870000
(10,22)= 0.2950000    (10,23)= 0.5530000    (10,24)= 0.3360000    (10,25)= 0.5599999    (10,26)= 0.4470000                       ->
(10,27)= 0.4470000    (10,28)= 0.4770000    (10,29)= 0.3170000    (10,30)= 0.2570000    (10,31)= 0.3850000    (10,32)= 0.1289999
(10,33)= 0.1550000    (10,34)= 0.3170000    (10,35)= 0.2309999    (10,36)= 0.2380000    (10,37)= 0.2960000    (10,38)= 0.3170000 ->
```

Table 3.- (Continued).

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TST-401 PM-1 TN-66  47:0          IO-PARAMS             16 NOV 01:10:51      PAGE  73

PRMS
.AREA
(10,39)= 0.3170000   (10,40)= 0.2380000   (10,41)= 0.1000000   (10,42)= 0.2029999   (10,43)= 0.2850000   (10,44)= 0.1880000
(10,45)= 0.2309999   (10,46)= 0.3950000   (10,47)= 0.3080000                     -> (10,48)= 0.3080000   (10,49)= 0.2760000
(10,50)= 0.1880000   (10,51)= 0.3170000   (10,52)= 0.2500000                     -> (10,53)= 0.2500000   (10,54)= 0.3750000
(10,55)= 0.2110000   (10,56)= 0.2810000   (10,57)= 0.4690000   (10,58)= 0.3750000                     -> (10,59)= 0.3750000
(10,60)= 0.3279999   (10,61)= 0.3570000   (10,62)=  0.000000                     -> (10,72)=  0.000000   (11,1)= 0.1230000
(11,2)= 5.600000E-02 (11,3)= 4.000000E-02 (11,4)= 0.2150000    (11,5)= 0.2340000    (11,6)= 0.2130000    (11,7)= 0.3590000
(11,8)= 0.1799999    (11,9)= 0.3010000    (11,10)= 0.3150000   (11,11)= 0.4020000   (11,12)= 0.3270000   (11,13)= 0.4899999
(11,14)= 0.3660000   (11,15)= 0.6100000   (11,16)= 0.3660000   (11,17)= 0.2729999   (11,18)= 0.3550000   (11,19)= 0.2880000
(11,20)= 0.4320000   (11,21)= 0.2510000   (11,22)= 0.2410000   (11,23)= 0.4250000   (11,24)= 7.499999E-02
(11,25)= 0.5990000   (11,26)= 0.4500000   (11,27)= 0.3360000   (11,28)= 0.1140000   (11,29)= 0.1300000   (11,30)= 0.2580000
(11,31)= 6.799996E-02                     (11,32)= 0.4050000                     -> (11,33)= 0.4050000   (11,34)= 0.3030000
(11,35)= 0.1659999   (11,36)= 0.1350000   (11,37)= 0.2029999   (11,38)= 7.099999E-02                     (11,39)= 0.4250000 ->
(11,40)= 0.4250000   (11,41)= 0.3180000   (11,42)= 0.2219999   (11,43)= 0.2500000   (11,44)= 0.4930000   (11,45)=  0.000000
(11,46)= 0.2309999                     -> (11,47)= 0.2309999   (11,48)= 0.2200000   (11,49)=  0.000000                     ->
(11,50)=  0.000000   (11,51)= 0.1880000                     -> (11,52)= 0.1880000   (11,53)= 0.2480000   (11,54)=  0.000000
(11,55)= 0.2810000                     -> (11,56)= 0.2810000   (11,57)= 0.1860000   (11,58)= 0.3030000   (11,59)= 0.1500000
(11,60)= 0.3750000   (11,61)= 0.1350000   (11,62)= 0.2029999   (11,63)= 0.2700000   (11,64)= 0.1420000   (11,65)= 0.2130000
(11,66)= 0.2840000   (11,67)= 0.1080000   (11,68)= 0.2169999   (11,69)= 0.3750000   (11,70)= 0.5170000   (11,71)=  0.000000 ->
(11,72)=  0.000000   (12,1)= 0.1230000    (12,2)= 5.600000E-02 (12,3)= 4.000000E-02 (12,4)= 0.2150000    (12,5)= 0.2340000
(12,6)= 0.2130000    (12,7)= 0.3590000    (12,8)= 0.1799999    (12,9)= 0.3010000    (12,10)= 0.3150000   (12,11)= 0.4020000
(12,12)= 0.3270000   (12,13)= 0.4899999   (12,14)= 0.3660000   (12,15)= 0.6100000   (12,16)= 0.3660000   (12,17)= 0.2729999
(12,18)= 0.3550000   (12,19)= 0.2880000   (12,20)= 0.4320000   (12,21)= 0.2510000   (12,22)= 0.2410000   (12,23)= 0.4250000
(12,24)= 7.499999E-02                     (12,25)= 0.5990000   (12,26)= 0.4500000   (12,27)= 0.3360000   (12,28)= 0.1140000
(12,29)= 0.1300000   (12,30)= 0.2580000   (12,31)= 6.799996E-02                     (12,32)= 0.4050000   (12,33)= 0.4040000
(12,34)= 0.3020000   (12,35)= 0.1659999   (12,36)= 0.1250000   (12,37)= 0.2029999   (12,38)= 7.099998E-02
(12,39)= 0.4250000                     -> (12,40)= 0.4250000   (12,41)= 0.3180000   (12,42)= 0.2219999   (12,43)= 0.2500000
(12,44)= 0.1880000   (12,45)=  0.000000   (12,46)= 0.2309999                     -> (12,47)= 0.2309999   (12,48)= 0.2200000
(12,49)= 0.3049999   (12,50)=  0.000000   (12,51)= 0.1880000                     -> (12,52)= 0.1880000   (12,53)= 0.2480000
(12,54)=  0.000000   (12,55)= 0.2810000                     -> (12,56)= 0.2810000   (12,57)= 0.1860000   (12,58)= 0.3030000
(12,59)= 0.1500000   (12,60)= 0.3750000   (12,61)= 0.1350000   (12,62)= 0.2029999   (12,63)= 0.2700000   (12,64)= 0.1420000
(12,65)= 0.2130000   (12,66)= 0.2840000   (12,67)= 0.1080000   (12,68)= 0.2169999   (12,69)= 0.3750000   (12,70)= 0.5170000
(12,71)=  0.000000                     -> (12,72)=  0.000000
.THETA
(1,1)=   7.125000  -> (1,12)=   7.125000   (1,13)=   0.000000    (1,14)=   7.125000 -> (1,16)=   7.125000    (1,17)=   0.000000
(1,18)=  7.125000  -> (1,20)=   7.125000   (1,21)=   0.000000 -> (1,22)=   0.000000    (1,23)=   7.125000 -> (1,25)=   7.125000
(1,26)=  0.000000  -> (1,27)=   0.000000   (1,28)=   7.125000 -> (1,30)=   7.125000    (1,31)=   0.000000 -> (1,33)=   0.000000
(1,34)=  7.125000  -> (1,36)=   7.125000   (1,37)=   0.000000 -> (1,39)=   0.000000    (1,40)=   7.125000 -> (1,42)=   7.125000
(1,43)=  0.000000  -> (1,45)=   0.000000   (1,46)=   7.125000 -> (1,49)=   7.125000    (1,50)= -90.00000 -> (1,52)= -50.00000
(1,53)=  7.125000     (1,54)= -90.00000 -> (1,61)= -90.00000    (1,62)=   0.000000 -> (1,72)=   0.000000    (2,1)=  20.55600   ->
(2,6)=  20.55600      (2,7)=   0.000000 -> (2,8)=   0.000000    (2,9)=  20.55600 -> (2,11)=  20.55600    (2,12)=   0.000000   ->
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Table 3.- (Continued).

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TST-401 PH-1 TN-66  47:0           ID-PARAMS              16 NOV 81-10:51        PAGE  74

PRMS
.THETA
(2,14)=  0.000000    (2,15)=  20.55600 -> (2,17)=  20.55600    (2,19)=  0.000000 -> (2,20)=  0.000000    (2,21)=  20.55600  ->
(2,23)=  20.55600    (2,24)=  0.000000 -> (2,47)=  0.000000    (2,40)= -90.00000 -> (2,53)= -90.00000    (2,54)=  0.000000
(2,55)= -90.00000 -> (2,58)= -90.00000    (2,59)=  0.000000 -> (2,72)=  0.000000    (3,1)=  90.00000  -> (3,8)=  90.00000
(3,9)=  0.000000     (3,10)=  90.00000 -> (3,12)=  90.00000    (3,13)=  0.000000 -> (3,49)=  0.000000    (3,50)= -90.00000  ->
(3,52)= -90.00000    (3,53)=  0.000000    (3,54)= -90.00000 -> (3,57)= -90.00000    (3,58)=  0.000000    (3,59)= -90.00000  ->
(3,62)= -90.00000    (3,63)=  0.000000 -> (3,72)=  0.000000    (4,1)=  14.03600  -> (4,5)=  14.03600    (4,6)=  0.000000
(4,7)=  14.03600  -> (4,9)=  14.03600     (4,10)=  0.000000 -> (4,15)=  0.000000    (4,16)=  14.03600 -> (4,18)=  14.03600
(4,19)=  0.000000 -> (4,23)=  0.000000    (4,24)=  14.03600 -> (4,25)=  14.03600    (4,27)=  0.000000 -> (4,31)=  0.000000
(4,32)=  14.03600 -> (4,34)=  14.03600    (4,35)=  0.000000 -> (4,39)=  0.000000    (4,40)=  14.03600 -> (4,45)=  14.03600
(4,46)= -90.00000 -> (4,60)= -90.00000    (4,61)=  0.000000 -> (4,72)=  0.000000    (5,1)=  36.87000  -> (5,5)=  36.87000
(5,6)=  0.000000  -> (5,8)=  0.000000     (5,9)=  36.87000  -> (5,11)=  36.87000    (5,12)=  0.000000 -> (5,15)=  0.000000
(5,16)=  36.87000 -> (5,18)=  36.87000    (5,19)=  0.000000 -> (5,22)=  0.000000    (5,23)=  36.87000 -> (5,25)=  36.87000
(5,26)=  0.000000 -> (5,46)=  0.000000    (5,47)= -90.00000 -> (5,50)= -90.00000    (5,51)=  0.000000    (5,52)= -90.00000  ->
(5,60)= -90.00000    (5,61)=  0.000000 -> (5,72)=  0.000000    (6,1)=  90.00000  -> (6,11)=  90.00000    (6,12)=  0.000000  ->
(6,43)=  0.000000    (6,44)= -90.00000 -> (6,46)= -90.00000    (6,47)=  0.000000 -> (6,48)=  0.000000    (6,49)= -90.00000  ->
(6,56)= -90.00000    (6,57)=  0.000000 -> (6,72)=  0.000000    (7,1)=  26.56499  -> (7,7)=  26.56499    (7,8)=  0.000000   ->
(7,10)=  0.000000    (7,11)=  26.56499 -> (7,13)=  26.56499    (7,14)=  0.000000 -> (7,17)=  0.000000    (7,18)=  26.56499  ->
(7,20)=  26.56499    (7,21)=  0.000000 -> (7,24)=  0.000000    (7,25)=  26.56499 -> (7,27)=  26.56499    (7,28)=  0.000000  ->
(7,32)=  0.000000    (7,33)=  26.56499 -> (7,35)=  26.56499    (7,36)=  0.000000 -> (7,40)=  0.000000    (7,41)=  26.56499  ->
(7,44)=  26.56499    (7,45)= -90.00000 -> (7,49)= -90.00000    (7,50)=  26.56499    (7,51)= -90.00000 -> (7,63)= -90.00000
(7,64)=  0.000000 -> (7,72)=  0.000000    (8,1)=  56.31000  -> (8,3)=  56.31000     (8,4)=  0.000000     (8,5)=  56.31000   ->
(8,7)=  56.31000     (8,8)=  0.000000  -> (8,10)=  0.000000    (8,11)=  56.31000 -> (8,13)=  56.31000    (8,14)=  0.000000  ->
(8,17)=  0.000000    (8,18)=  56.31000 -> (8,23)=  56.31000    (8,24)=  0.000000 -> (8,44)=  0.000000    (8,45)= -90.00000  ->
(8,48)= -90.00000    (8,49)=  0.000000    (8,50)= -90.00000 -> (8,56)= -90.00000    (8,59)=  0.000000 -> (8,66)=  0.000000
(8,67)= -90.00000 -> (8,69)= -90.00000    (8,70)=  0.000000 -> (8,72)=  0.000000    (9,1)=  90.00000  -> (9,10)=  90.00000
(9,11)=  0.000000    (9,12)=  90.00000 -> (9,15)=  90.00000    (9,16)=  0.000000 -> (9,51)=  0.000000    (9,52)= -90.00000  ->
(9,55)= -90.00000    (9,56)=  0.000000    (9,57)= -90.00000 -> (9,61)= -90.00000    (9,62)=  0.000000    (9,63)= -90.00000  ->
(9,67)= -90.00000    (9,68)=  0.000000 -> (9,72)=  0.000000    (10,1)=  71.56499 -> (10,3)=  71.56499    (10,4)=  0.000000  ->
(10,5)=  0.000000    (10,6)=  71.56499 -> (10,8)=  71.56499    (10,9)=  0.000000 -> (10,12)=  0.000000   (10,13)=  71.56499 ->
(10,15)=  71.56499   (10,16)=  0.000000                     -> (10,20)=  0.000000   (10,21)=  71.56499                        ->
(10,23)=  71.56499   (10,24)=  0.000000                     -> (10,28)=  0.000000   (10,29)=  71.56499                        ->
(10,34)=  71.56499   (10,35)=  0.000000                     -> (10,44)=  0.000000   (10,45)= -90.00000                        ->
(10,54)= -90.00000   (10,55)=  0.000000   (10,56)= -90.00000                     -> (10,61)= -90.00000   (10,62)=  0.000000 ->
(10,77)=  0.000000   (11,1)=  56.31000 -> (11,3)=  56.31000    (11,4)=  0.000000    (11,5)=  56.31000 -> (11,7)=  56.31000
(11,8)=  0.000000 -> (11,10)=  0.000000   (11,11)=  56.31000                     -> (11,13)=  56.31000   (11,14)=  0.000000 ->
(11,17)=  0.000000   (11,19)=  56.31000                     -> (11,23)=  56.31000   (11,24)=  0.000000                        ->
(11,44)=  0.000000   (11,45)= -90.00000                     -> (11,48)= -90.00000   (11,49)=  0.000000   (11,50)= -90.00000 ->
(11,58)= -90.00000   (11,59)=  0.000000                     -> (11,66)=  0.000000   (11,67)= -90.00000                        ->
(11,69)= -90.00000   (11,70)=  0.000000                     -> (11,72)=  0.000000   (12,1)=  56.31000 -> (12,2)=  56.31000
(12,4)=  0.000000    (12,5)=  56.31000 -> (12,7)=  56.31000    (12,8)=  0.000000 -> (12,10)=  0.000000   (12,11)=  56.31000 ->
```

Table 3.- (Concluded).

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TST-401 PH-1 TN-66  4710           ID-PARAMS            17 NOV 81 10:51       PAGE  75

PRMS
.THETA
(12,13)=  56.31000   (12,14)=  0.000000                          -> (12,17)=  0.000000   (12,18)=  56.31000                          ->
(12,23)=  56.31000   (12,24)=  0.000000                          -> (12,44)=  0.000000   (12,45)= [illegible]                        ->
(12,48)= -90.00000   (12,49)=  0.000000   (12,50)= -90.00000                          -> (12,58)= -90.00000   (12,59)=  0.000000 ->
(12,66)=  0.000000   (12,67)= -90.00000                          -> (12,69)= -90.00000   (12,70)=  0.000000                          ->
(12,72)=  0.000000
```

Table 4.- Taper ratio/aspect ratio matrix of force wing configurations.

Aspect Ratio ($\mathcal{R}$)	Taper Ratio (λ) 0.0	0.25	0.5	1.0
3	A1	F5	A3	A5
4	F1	F2	F3	
5	A2	F4	A4	A6

NOTE: FP7 and FP9 not shown; they are replicas of P7 and P9, respectively.

Table 5.- Configurational details of the force wing models.

Configuration	Aspect Ratio Æ	Taper Ratio λ	Tip Chord C_T(in)	Root Chord C_R(in)	Span b(in)	Mean Aero Chord M.A.C.(in)
FP7	2.0	0	0	8.486	8.486	5.657
FP9	2.0	0.5	4.243	4.243	8.486	4.243
F1	4.0	0	0	6.000	12.000	4.000
F2	4.0	0.25	1.200	4.800	12.000	3.360
F3	4.0	0.50	2.000	4.000	12.000	3.111
F4	5.0	0.25	1.073	4.293	13.416	3.005
F5	3.0	0.25	1.386	5.543	10.392	3.880
A1	3.0	0	0	6.928	10.392	4.619
A2	5.0	0	0	5.367	13.416	3.578
A3	3.0	0.5	2.309	4.619	10.392	3.592
A4	5.0	0.5	1.789	3.578	13.416	2.783
A5	3.0	1.0	3.464	3.464	10.392	3.464
A6	5.0	1.0	2.683	2.683	13.416	2.683

NOTES:

(1) Only FP7 and FP9 were tested. NASA/ARC designation was configuration FP7 was no. 12, whereas configuration FP9 was identified by NASA/ARC as configuration no. 13.

(2) F1 through F5 were rough-machined but not tested.

(3) A1 through A6 were neither fabricated nor tested.

(4) FP7 and FP9 are replicas of P7 and P9 and are 0.5 in. thick with 15° half-angle wedges for all edges, measured normal to edge.

(5) All other force model configurations were to be 0.35 in. thick with all edges straight-beveled at a 10° half angle normal to each edge.

Table 6.- Run Schedule for wing-alone high angles of attack wind tunnel test.

- NOMENCLATURE FOR THE RUN SCHEDULE -

<u>α Schedule</u> = The sequence of angle of attack nominal values at which data were obtained. The schedules are:

A = -3°, 0°, 5°, 10°, 15°, 20°, 25°, 26.5°

B = 27°, 30°, 35°, 40°, 45°, 50°, 55°, 56.6°

C = 0°, 5°, 10°, 15°, 25°, 26.5°

D = -3°, 0°, 5°, 10°, 15°, 20°

E = 30°, 35°, 40°, 45°, 50°, 55°, 56.5°

F = 27.5°, 30°, 35°, 40°, 45°, 50°, 55°

<u>$RN/L \times 10^{-6}$</u> = Nominal Reynolds number per foot $\times 10^{-6}$

	NASA Code No.	NEAR Code	Description: AR = Aspect Ratio, λ = Taper Ratio
Configuration Code:	1	P1	Pressure Model, AR = 0.5, λ = 0.0
	2	P2	Pressure Model, AR = 0.5, λ = 0.5
	3	P3	Pressure Model, AR = 0.5, λ = 1.0
	4	P4	Pressure Model, AR = 1.0, λ = 0.0
	5	P5	Pressure Model, AR = 1.0, λ = 0.5
	6	P6	Pressure Model, AR = 1.0, λ = 1.0
	7	P7	Pressure Model, AR = 2.0, λ = 0.0
	8	P8	Pressure Model, AR = 2.0, λ = 0.5
	9	P9	Pressure Model, AR = 2.0, λ = 1.0
	10	P10	Pressure Model, AR = 4.0, λ = 0.5
	11,PHI=0 or 11,PHI-180	DN P8 or DU P8	AR = 2.0, λ = 0.5 Press. model with dummy force model stings (DN = windward replica, DU = leeward replica)
	12	FP7	Force model, replica of P7 (AR = 2.0, λ = 0.0)
	13	FP9	Force model, replica of P9 (AR = 2.0, λ = 1.0)

<u>Model Roll Angle, PHI</u>: When PHI = 0, the pressure model pressure ports are on the wing windward side for positive angle-of-attack. When PHI = 180, the pressure model is rolled 180°(re PHI = 0) so that the pressure ports are on the wing leeward side for positive angle-of-attack. PHI is the variable name for this quantity in the data tapes.

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times 10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
1	1.60	A	2.0	1 (P1)	0	Tunnel upper and lower slot valves on manual. Data no good.
2	1.20					Bad pressure ports: 38, 40, & 41
3	0.90					
4	0.80					
5	0.60				0	
6	1.60				180	Bad pressure ports: 38, 40, 41, & 47
7	1.20					
8	0.90					
9	0.80					
10	0.60			1 (P1)		
11	1.20			2 (P2)	180	Bad pressure ports: 7, 13, & 58
12	0.90					
13	0.80					
14	0.60				180	
15	1.20				0	
16	0.90					
17	0.80	A				
18	0.60	C	2.0	2 (P2)	0	Skipped α = -3° point Bad ports: 7, 13, & 58
19	1.60	A	1.5	8 (P8)	180	Bad pressure ports: 70, 49
20	1.20					
21	0.90					
22	0.80	A	1.5	8 (P8)	180	

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $x10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
23	0.60	A	1.5	8 (P8)	180	Bad pressure ports: 70, 4, 9
24	1.60				0	
25	1.20					
26	0.90					
27	0.80					
28	0.60			8 (P8)		
29	1.60			11 (DNP8)		Bad Pressure ports: 45, 50, 54, 49, 70
30	1.20					
31	0.90					
32	0.80					
33	0.60			11 (DNP8)	0	
34	1.60			11 (DUP8)	180	
35	1.20					
36	0.90					
37	0.80					
38	0.60		1.5	11 (DUP8)		
39	1.20		2.0	3 (P3)		No bad ports
40	0.90					
41	0.80					
42	0.60				180	
43	1.20				0	Bad pressure port: 29
44	0.90	A	2.0	3 (P3)	0	Bad Pressure port: 29

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times 10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
45	0.80	A	2.0	3 (P3)	0	Bad pressure port: 29
46	0.60			3 (P3)	0	Bad pressure port: 29
47	1.20			7 (P7)	0	Bad pressure port: 62
48	0.90					
49	0.80					
50	0.60	A			0	
51	1.20	D			180	Skipped α = 25°, 26.5° points Bad pressure port: 62
52	0.90	A				Bad pressure port: 62
53	0.80					
54	0.60			7 (P7)	180	
55	1.60			9 (P9)	180	Bad pressure port: 16
56	1.20					
57	0.90					
58	0.80					
59	0.60				180	
60	1.60				0	
61	1.20					
62	0.90					
63	0.80					
64	0.60			9 (P9)		
65	1.20			4 (P4)		No bad pressure ports
66	0.90	A	2.0	4 (P4)	0	No bad pressure ports

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times 10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
67	0.80	A	2.0	4 (P4)	0	No bad pressure ports
68	0.60				0	
69	1.20				180	
70	0.90					
71	0.80					
72	0.60			4 (P4)	180	
73	1.20			5 (P5)	180	
74	0.90					
75	0.80					
76	0.60				180	
77	1.20				0	
78	0.90					
79	0.80					
80	0.60			5 (P5)	0	
81	1.20			10 (P10)	180	
82	0.90					
83	0.80					
84	0.60				180	
85	1.20				0	
86	0.90					
87	0.80					
88	0.60	A	2.0	10 (P10)	0	

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times 10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
89	1.20	A	2.0	6 (P6)	0	Bad pressure ports: 19, 28, 31
90	0.90					
91	0.80					
92	0.60				0	
93	1.20				180	
94	0.90					
95	0.80					
96	0.60	A		6 (P6)		
97	1.20	E		10 (P10)		Skipped α = 27.5° point No bad pressure ports
98	0.90	B				No bad pressure ports
99	0.80	B				
100	0.60	B			180	
101	1.20	F			0	Skipped α = 56.5° point No bad pressure ports
102	0.90	B				No bad pressure ports
103	0.80					
104	0.60			10 (P10)		
105	1.20			6 (P6)		Bad pressure ports: 19, 28, 31
106	0.90					
107	0.80					
108	0.60				0	
109	1.20				180	
110	0.90	B	2.0	6 (P6)	180	

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $x10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
111	0.80	B	2.0	6 (P6)	180	Bad pressure ports: 19, 28, 31
112	0.60	B		6 (P6)		Bad pressure ports: 19, 28, 31
113	1.20	E		4 (P4)		Skipped α = 27.5° point No bad pressure ports
114	0.90	B				No bad pressure ports
115	0.80					
116	0.60				180	
117	1.20				0	
118	0.60					
119	0.90					
120	0.80			4 (P4)		
121	1.20			5 (P5)	0	
122	0.90					
123	0.80					
124	0.60				0	
125	1.20				180	
126	0.90					
127	0.80					
128	0.60		2.0	5 (P5)		
129	1.60		1.5	8 (P8)		Bad pressure ports: 49, 70
130	1.20					
131	0.90					
132	0.80	B	1.5	8 (P8)	180	

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times 10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
133	0.60	B	1.5	8 (P8)	180	Bad pressure ports: 49, 70
134	1.60			8 (P8)	0	
135	1.20			8 (P8)		
136	0.90					
137	0.80					
138	0.60		1.5	8 (P8)	0	
139	1.20		2.0	2 (P2)	180	Bad pressure port: 7
140	0.90					
141	0.80					
142	0.60				180	
143	1.20				0	
144	0.90					
145	0.80					
146	0.60			2 (P2)		
147	1.20			7 (P7)	0	Bad pressure port: 62
148	0.90					
149	0.80					
150	0.60				0	
151	1.20				180	
152	0.90					
153	0.80					
154	0.60	B	2.0	7 (P7)	180	

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
155	1.60	B	2.0	1 (P1)	180	Bad Pressure ports: 38,40,41,47
156	1.20					
157	0.90					
158	0.80					
159	0.60				180	
160	1.60				0	
161	1.20					
162	0.90					
163	0.80					
164	0.60			1 (P1)		
165	1.20			3 (P3)		Bad pressure port: 56
166	0.90					
167	0.80					
168	0.60				0	
169	1.20				180	
170	0.90					
171	0.80					
172	0.60			3 (P3)		
173	1.60			9 (P9)		No bad pressure ports
174	1.20					
175	0.90					
176	0.80	B	2.0	9 (P9)	180	

Table 6.- (Continued).

Run No.	Mach No.	α Schedule	RN/L $\times 10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
177	0.60	B	2.0	9 (P9)	180	No bad pressure ports
178	1.60				0	
179	1.20					
180	0.90					
181	0.80					
182	0.60				0	
183	1.20			12 (FP7)	180	Force runs from 183 on. Oil flows @ α = 50° + 28°
184	0.90					
185	0.80					
186	0.60			12 (FP7)		
187	1.20			13 (FP9)	180	Oil flows @ α = 28°
188	0.90					
189	0.80					
190	0.60	B				
191	1.20	A				Oil flows @ α = -2° to 27°
192	0.90					
193	0.80					
194	0.60			13 (FP9)		
195	1.20			12 (FP7)		Oil flows @ = -2° to 25°
196	0.90					
197	0.80					
198	0.60	A	2.0	12(FP7)	180	

Table 6.- (Concluded).

Run No.	Mach No.	α Schedule	RN/L $x10^{-6}$	Config. Code	Model Roll Angle, PHI	Comments
199	1.20	A	2.0	12 (FP7)	0	Oil flow @ α = 25°
200	0.90					
201	0.80					
202	0.60			12 (FP7)		
203	1.20			13 (FP9)		Oil flow @ α = 25° + 15°
204	0.90					
205	0.80					
206	0.60	A	2.0	13 (FP9)	0	Oil flow @ α = 25° + 15°

Table 7.- Corrected values of CN, CMB, and $\frac{XCP}{C_R}$ for certain combinations of configurations and Mach numbers.

Configuration	Mach	α	CN Uncorr.	CN Corr.	CMNB Uncorr.	CMNB Corr.	$\frac{XCP}{C_R}$ Uncorr.	$\frac{XCP}{C_R}$ Corr.
2(P2)	0.6	3	---	0.0487	---	0.0391	---	0.3760
		5	0.0778	0.0900	0.0614	0.0722	0.3856	0.3750
		10	0.2685	0.2410	0.1861	0.1709	0.4604	0.4500
3(P3)	0.6	3	---	0.0390	---	0.0390	---	0.0000
		5	0.1013	0.0760	0.0785	0.0675	0.2242	0.1120
		10	0.1920	0.2290	0.1581	0.1800	0.1756	0.2140
5(P5)	0.6	3	---	0.0712	---	0.0606	---	0.3380
		5	0.1481	0.1378	0.1083	0.1102	0.4304	0.3780
		10	0.3428	0.3540	0.2542	0.2650	0.4219	0.4180
6(P6)	0.6	3	---	0.0700	---	0.0600	---	0.1430
		5	0.0785	0.1190	0.0810	0.1020	-.0365	0.1460
		10	0.2620	0.3290	0.2344	0.2650	0.1022	0.1950
8(P8)	0.6	3	---	0.0790	---	0.0770	---	0.2400
		5	0.1796	0.1590	0.1513	0.1530	0.3416	0.2520
		10	0.4950	0.4840	0.3753	0.3640	0.4077	0.4150
9(P9)	0.6	3	---	0.1020	---	0.0870	---	0.1470
		5	0.1553	0.1750	0.1361	0.1475	0.1188	0.1570
		10	0.4753	0.4830	0.3876	0.3940	0.1798	0.1840
10(P10)	0.6	3	---	0.0630	---	0.0780	---	0.0300
		5	0.1984	0.0960	0.1355	0.1320	0.0113	0.0000
		10	0.4711	0.4710	0.4033	0.4060	0.3259	0.3300
2(P2)	0.8	3	---	0.0400	---	0.0300	---	0.4100
		5	0.1027	0.0950	0.0699	0.0660	0.4700	0.4600
		10	0.2558	0.2520	0.1770	0.1740	0.4613	0.4600
3(P3)	0.8	3	---	0.0520	---	0.0370	---	0.2800
		5	0.0838	0.1030	0.0596	0.0700	0.2878	0.3170
		10	0.2683	0.2620	0.1944	0.1880	0.2746	0.2800
4(P4)	0.8	3	---	0.0710	---	0.0310	---	0.7150
		5	0.1288	0.1220	0.0722	0.0620	0.6259	0.6650
		10	0.3224	0.3100	0.1829	0.1800	0.6215	0.6150

Table 7.- (Concluded).

Configuration	Mach		CN		CMNB		$\frac{XCP}{C_R}$	
			Uncorr.	Corr.	Uncorr.	Corr.	Uncorr.	Corr.
5(P5)	0.8	3	---	0.0800	---	0.0640	---	0.3810
		5	0.1586	0.1600	0.1122	0.1120	0.4491	0.4560
		10	0.3976	0.3980	0.2814	0.2830	0.4484	0.4480
6(P6)	0.8	3	---	0.0930	---	0.0610	---	0.3500
		5	0.1682	0.1640	0.1165	0.1160	0.3064	0.2870
		10	0.4328	0.4250	0.3201	0.3160	0.2584	0.2550
7(P7)	0.8	3	---	0.1180	---	0.0700	---	0.6050
		5	0.1891	0.2080	0.1171	0.1230	0.5863	0.6050
		10	0.4718	0.4650	0.2922	0.2870	0.5861	0.5890
8(P8)	0.8	3	---	0.1660	---	0.1180	---	0.4470
		5	0.2759	0.2790	0.1951	0.1980	0.4482	0.4480
		10	0.6066	0.6040	0.4208	0.4160	0.4585	0.4640
9(P9)	0.8	3	---	0.1870	---	0.1290	---	0.3130
		5	0.2605	0.2920	0.1818	0.1910	0.3003	0.3460
		10	0.5846	0.5860	0.4266	0.4280	0.2674	0.2710
10(P10)	0.8	3	---	0.1200	---	0.1080	---	0.2950
		5	0.2131	0.2000	0.1864	0.1780	0.3127	0.3090
		10	0.4540	0.4920	0.3942	0.4100	0.3164	0.3510

Table 8.- Streamwise section geometry of the pressure wing models.

NOTE: See Table 1 for further details of pressure wing geometry.

Configuration	Æ	Λ	δ_{LE}	δ_{TE}	t/C_R	t/C_T	$t/\bar{c}$
1	0.5	82.9°	1.9°	15°	.030	undefined	.045
2	0.5	69.4°	5.4°	15°	.044	.088	.056
3	0.5	0	15.0°	15°	.060	.060	.060
4	1.0	76.0°	3.7°	15°	.043	undefined	.064
5	1.0	53.1°	9.1°	15°	.063	.126	.082
6	1.0	0	15.0°	15°	.085	.085	.085
7	2.0	63.4°	6.8°	15°	.060	undefined	.090
8	2.0	33.7°	12.6°	15°	.088	.176	.116
9	2.0	0	15.0°	15°	.120	.120	.120
10	4.0	18.4°	14.3°	15°	.125	.250	.164

δ_{LE} = leading edge bevel angle in streamwise direction

δ_{TE} = trailing edge bevel angle in streamwise direction

t = thickness of wing flat (unbeveled) portion

Λ = sweepback angle

C_R = root chord

C_T = tip chord

$\bar{c}$ = mean aerodynamic chord

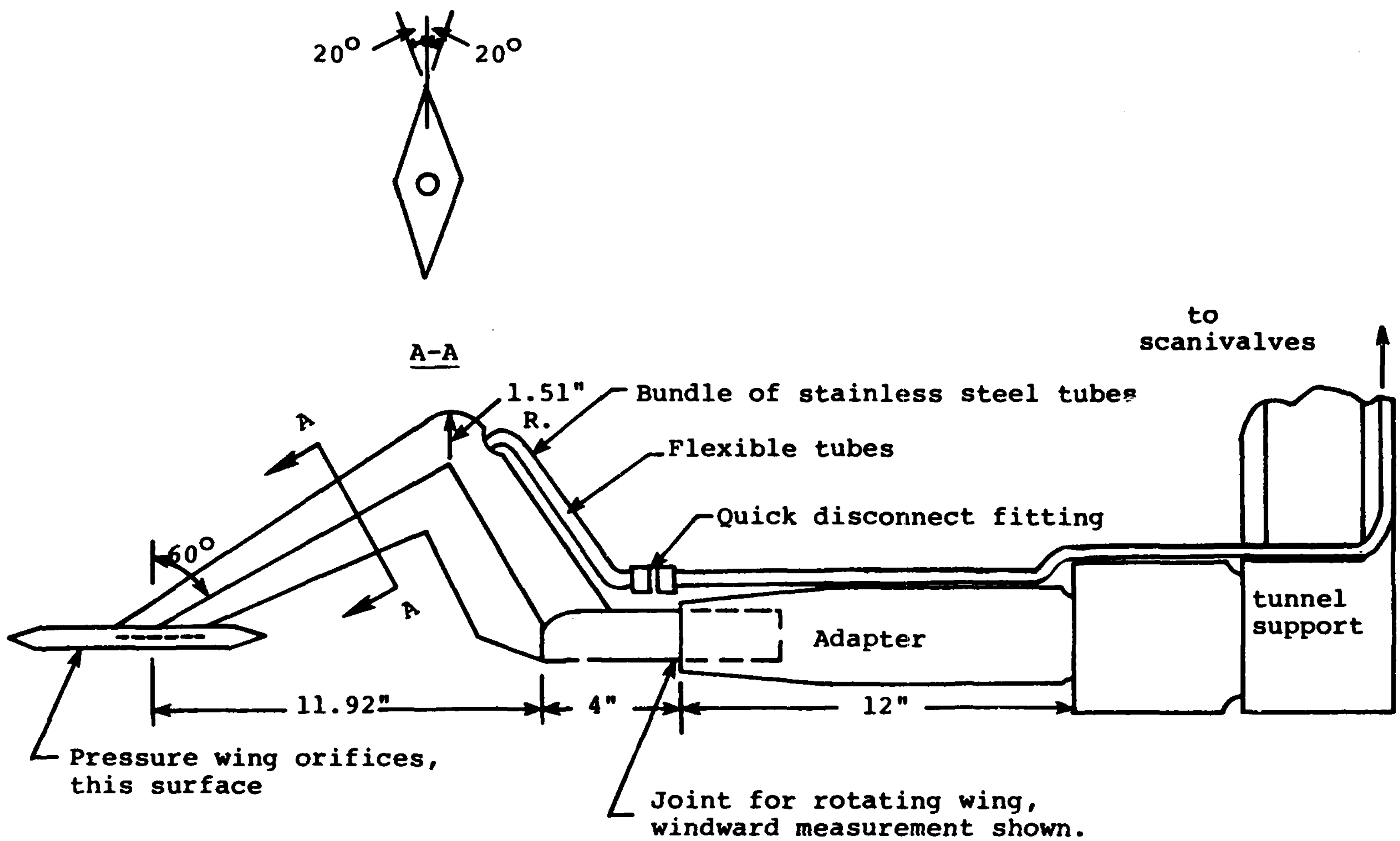


Figure 1.- Pressure wing support system.

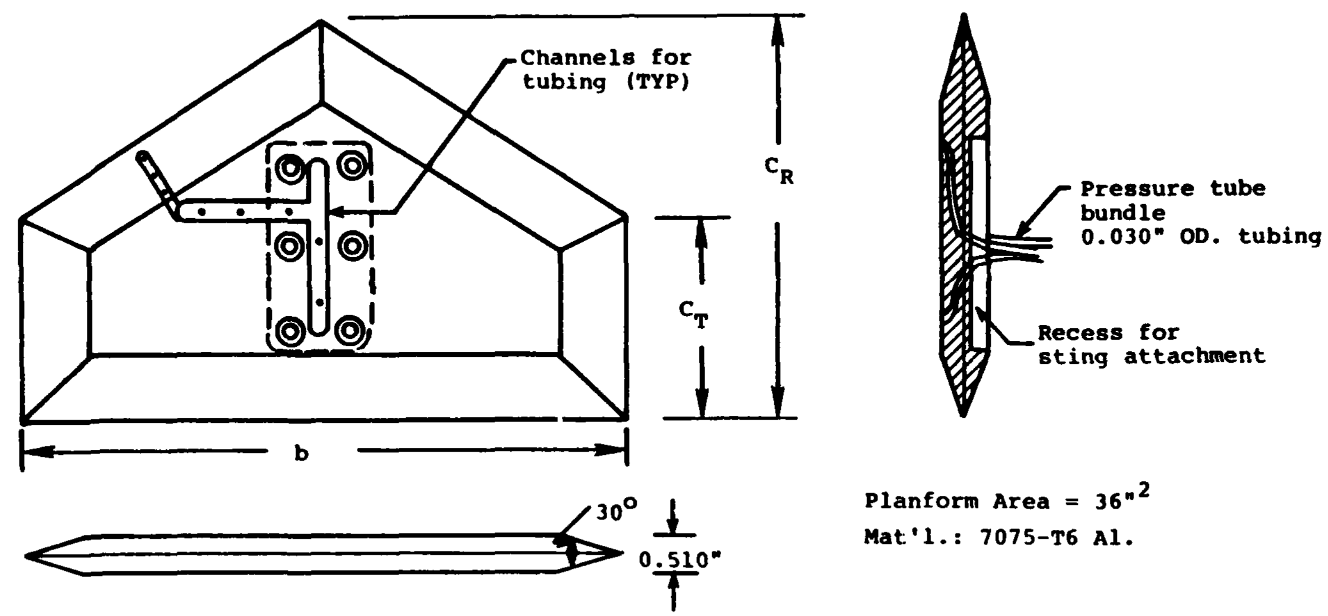


Figure 2.- Notation and dimensions of pressure wings.

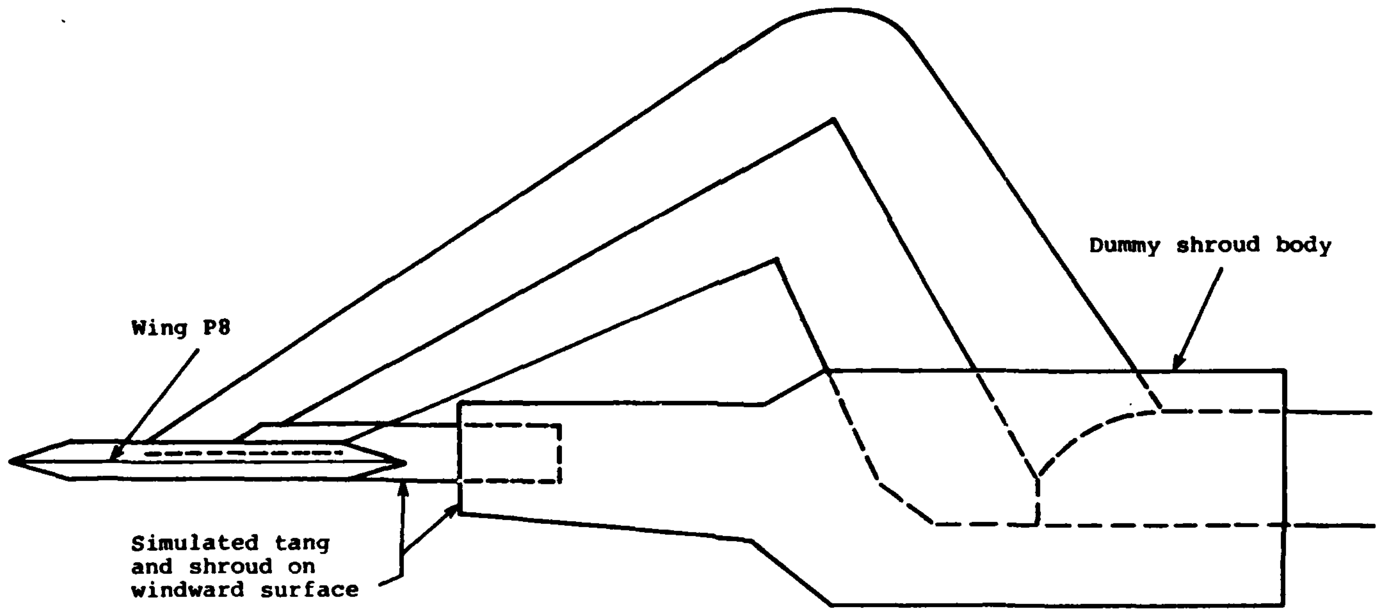


Figure 3.- Configuration with PHI = 0, simulation of force wing tang and shroud on windward surface.

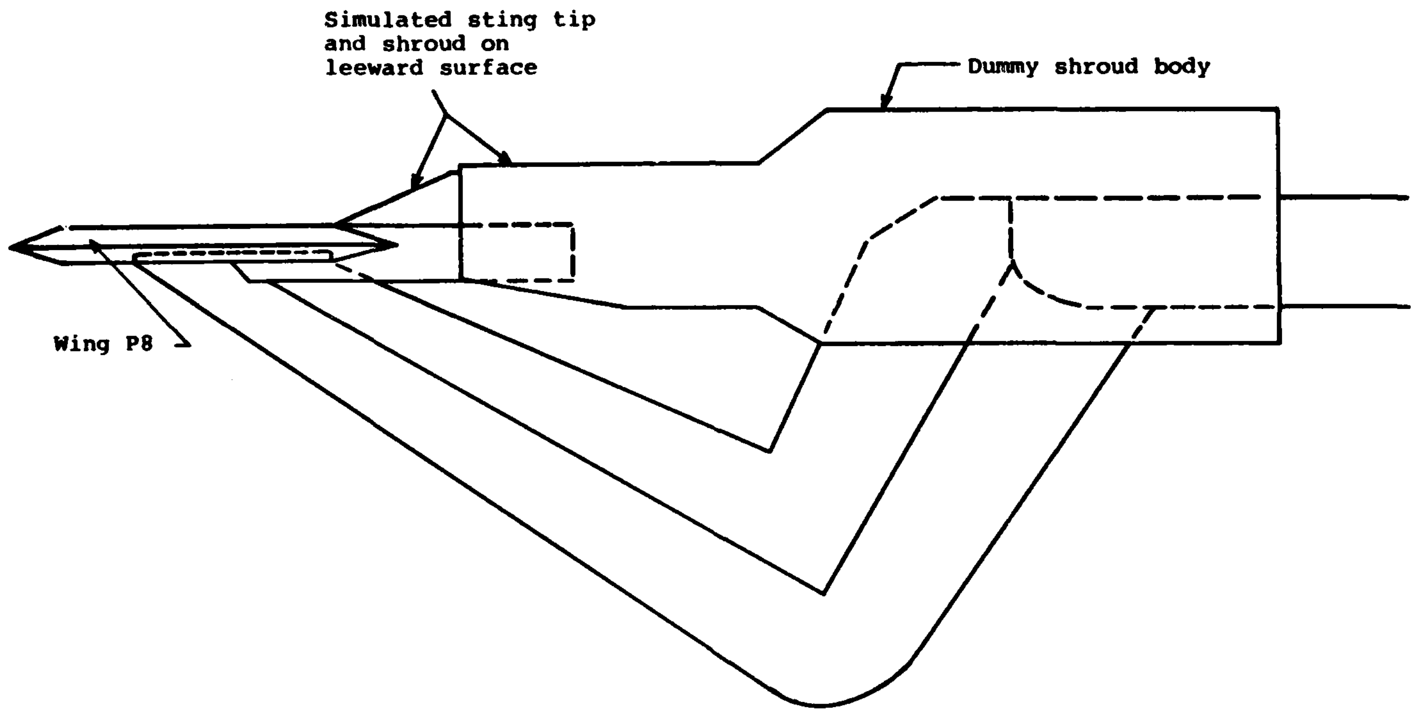


Figure 4.- Configuration with PHI = 180, simulation of force wing sting and shroud on leeward surface.

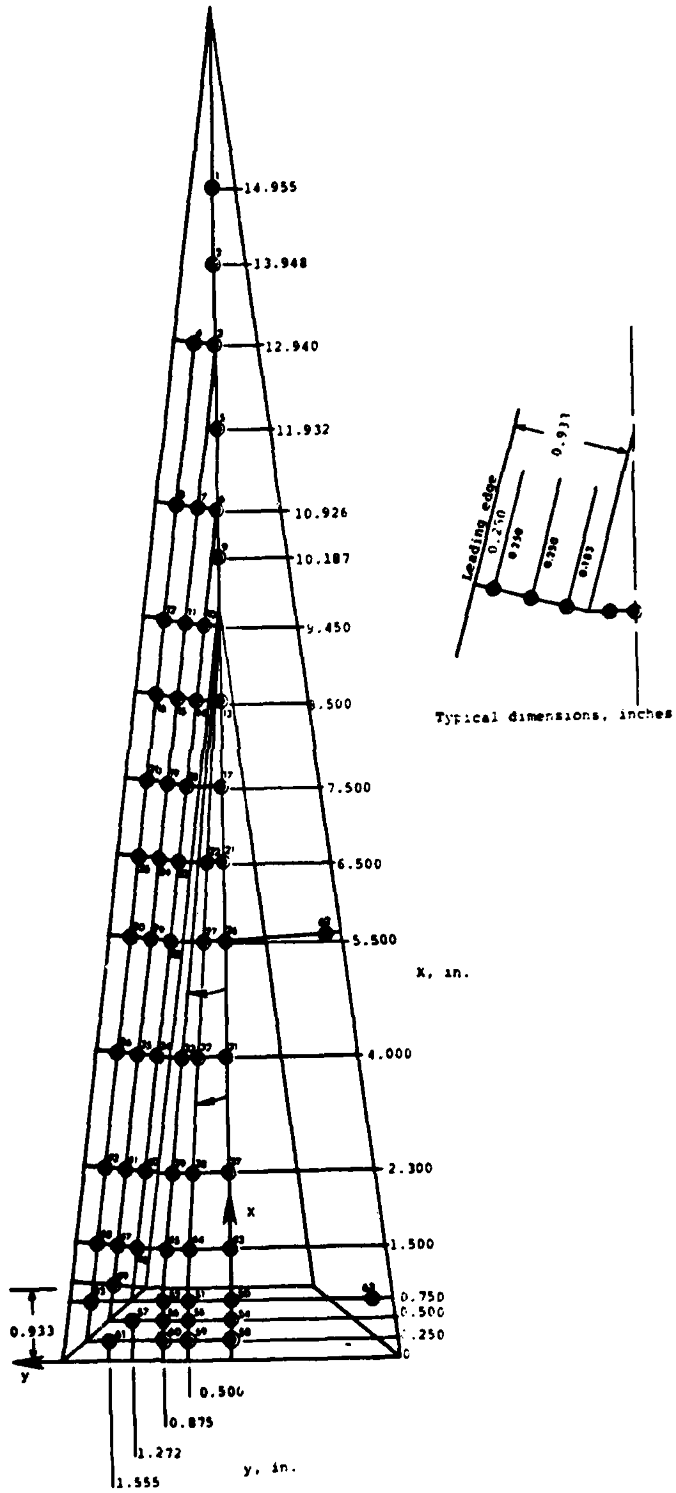


Figure 5.- Orifice locations, wing no. 1.

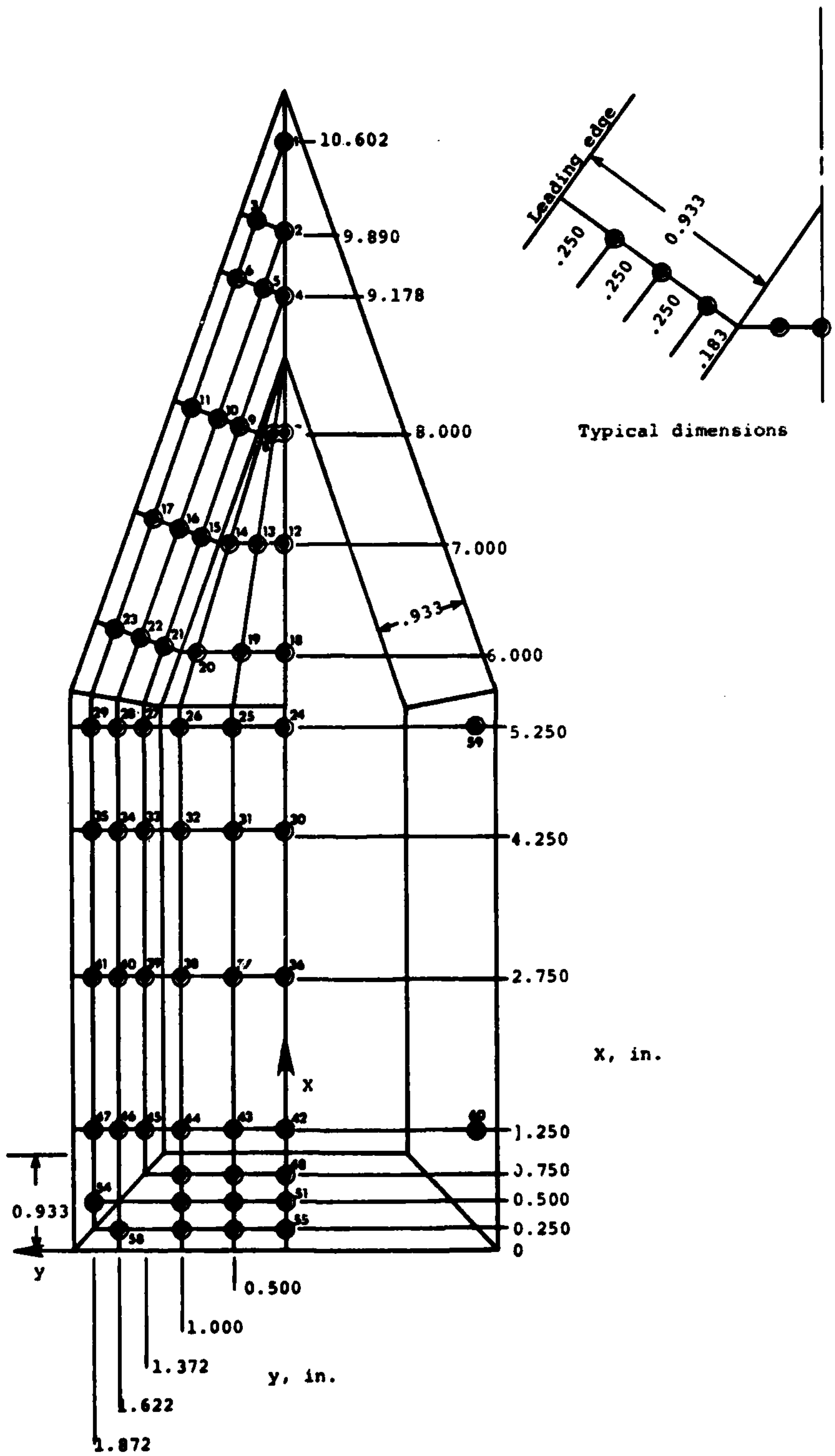


Figure 6.- Orifice locations, wing no. 2.

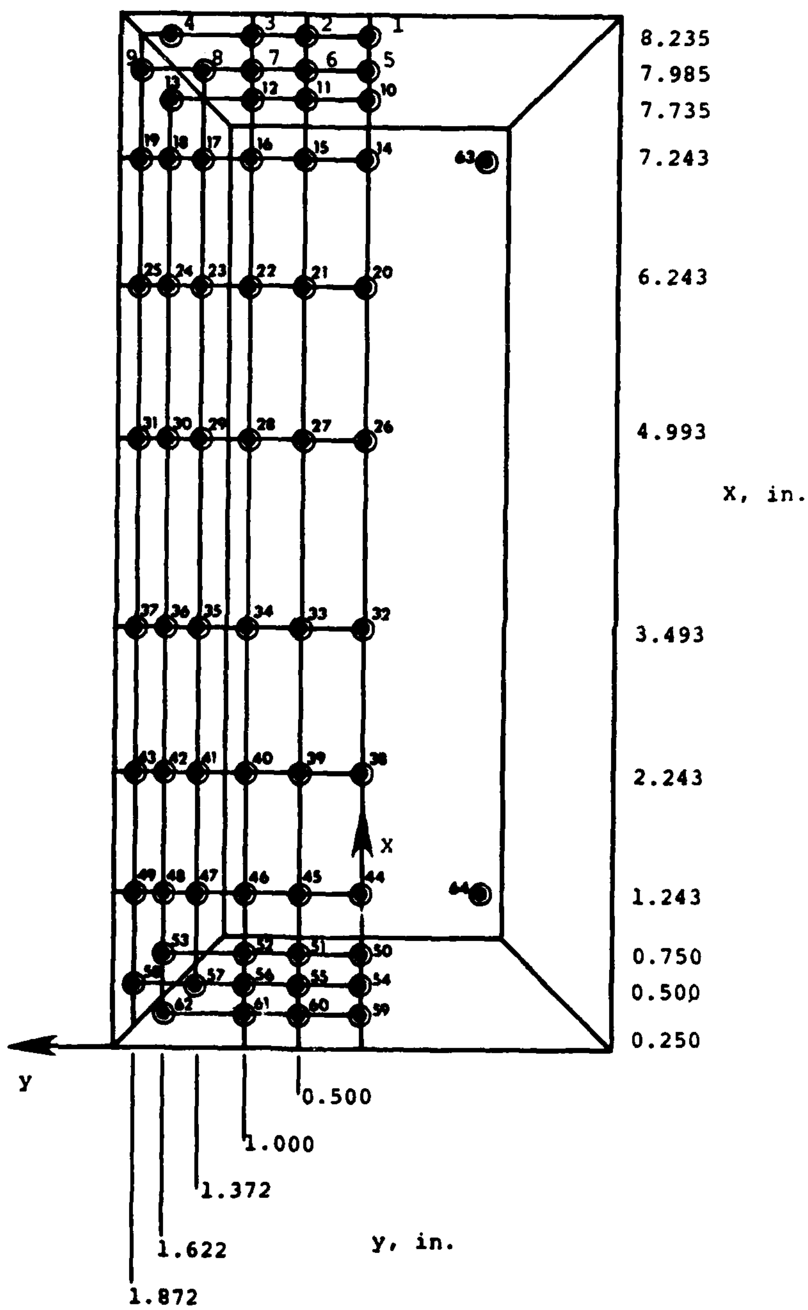


Figure 7.- Orifice locations, wing no.3.

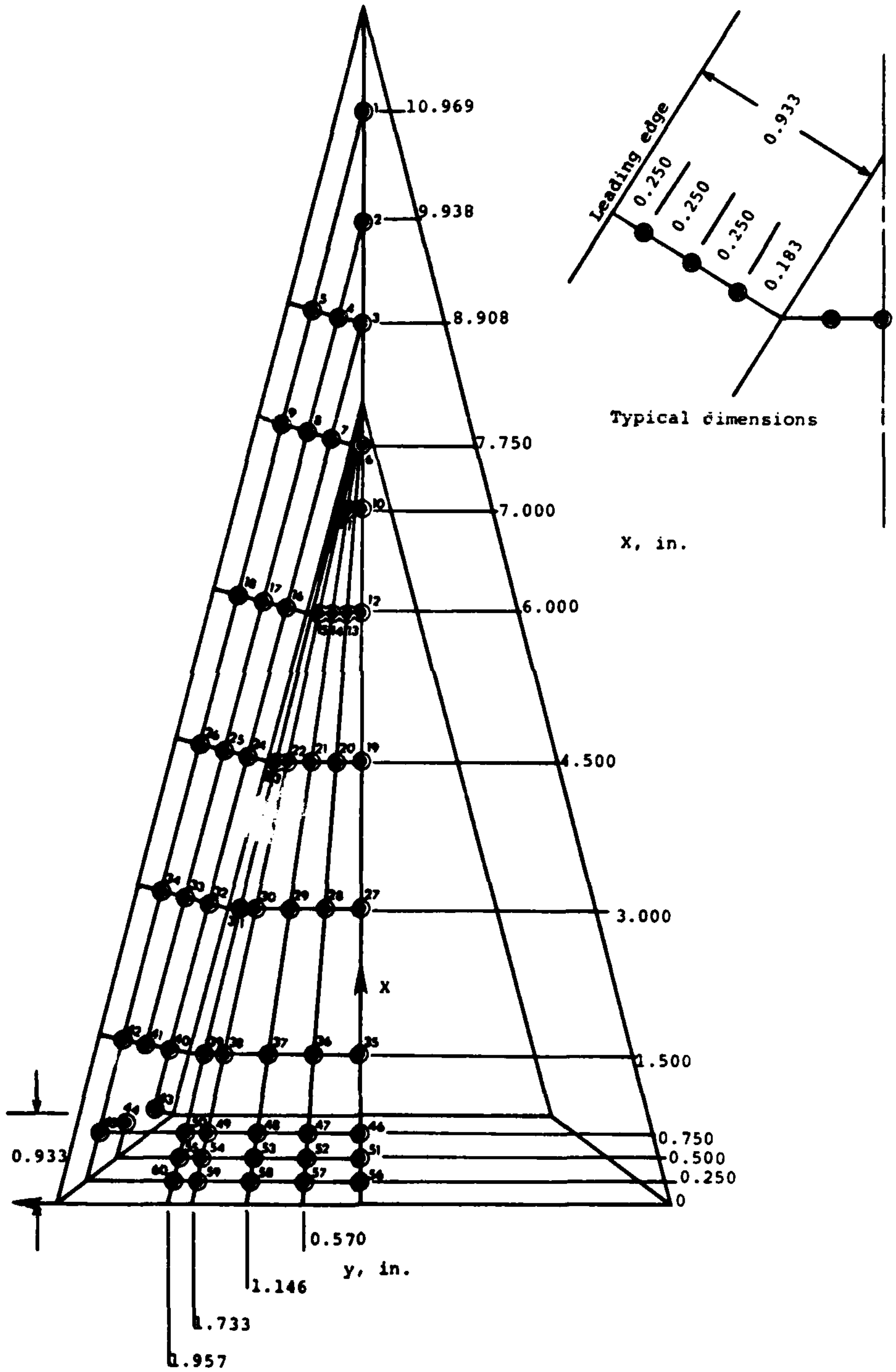


Figure 8.- Orifice locations, wing no.4.

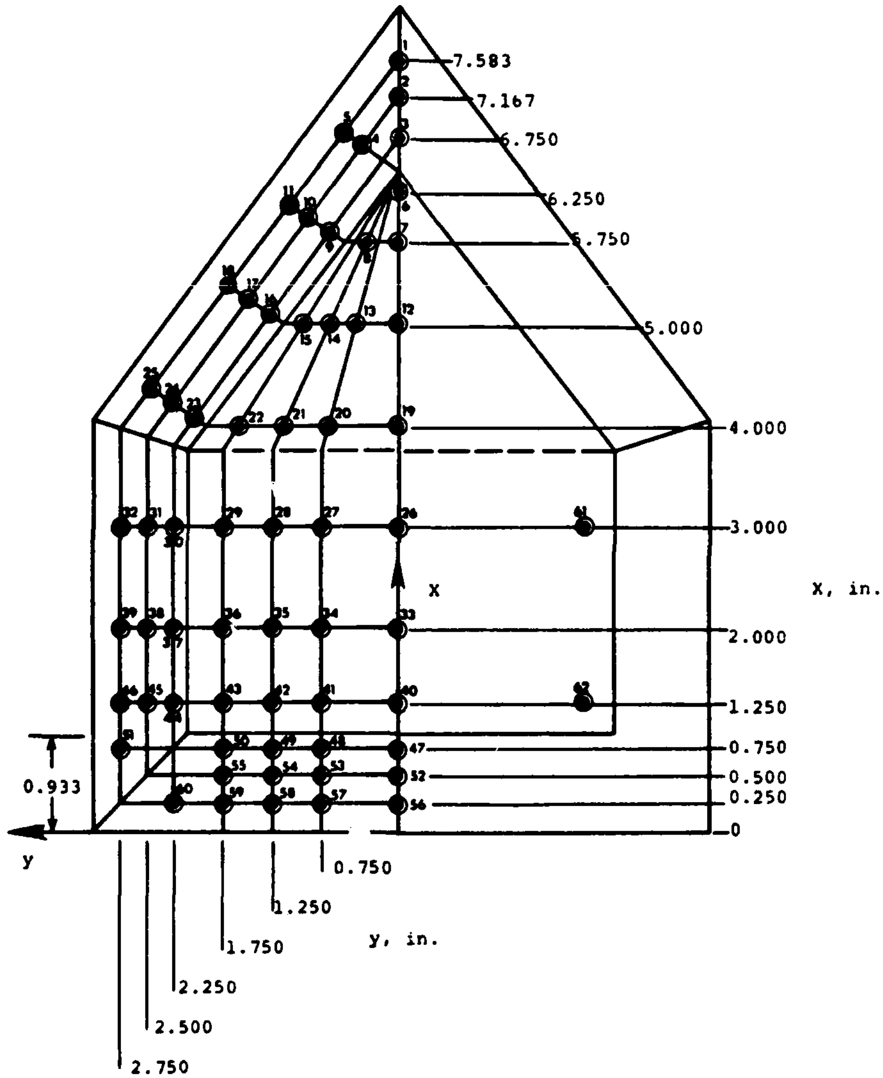
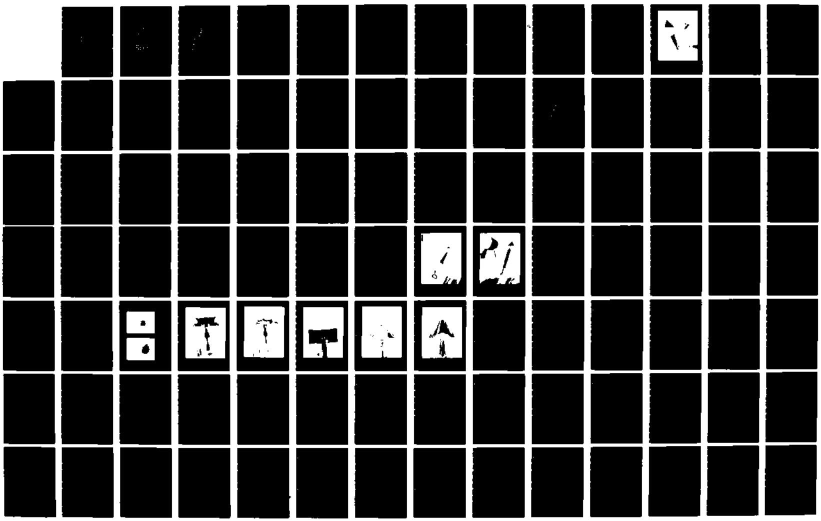
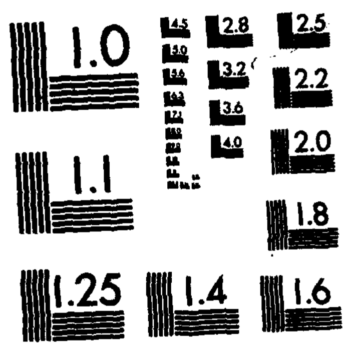


Figure 9.- Orifice locations, wing no. 5.

AD-A125 764 WING-ALONE AERODYNAMIC CHARACTERISTICS TO HIGH ANGLES OF ATTACK AT SUBSON..(U) NIELSEN ENGINEERING AND RESEARCH INC MOUNTAIN VIEW CA M M BRIGGS ET AL. NOV 82 2/4

UNCLASSIFIED NEAR-TR-269 ARO-16030.1-EG DAAG29-79-C-0020 F/G 20/4 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

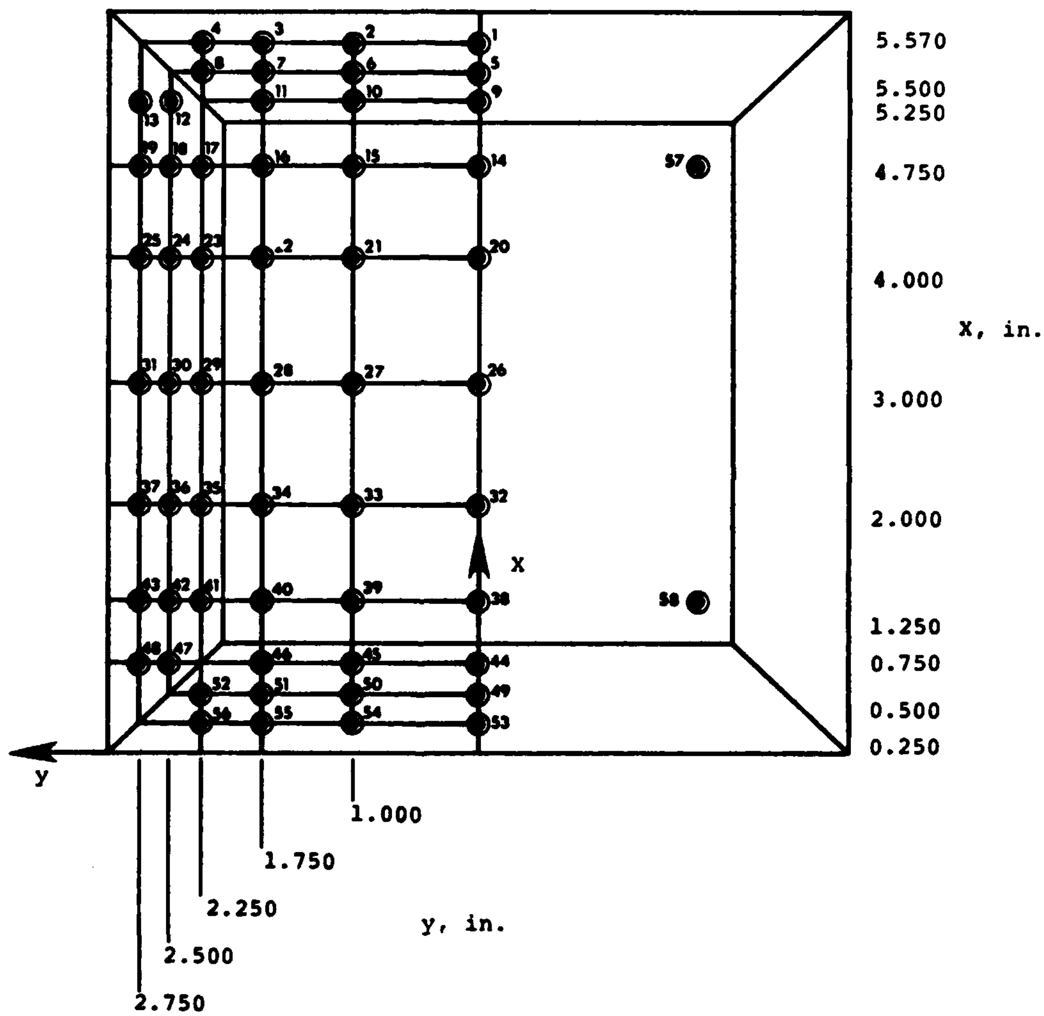


Figure 10.- Orifice locations, wing no. 6.

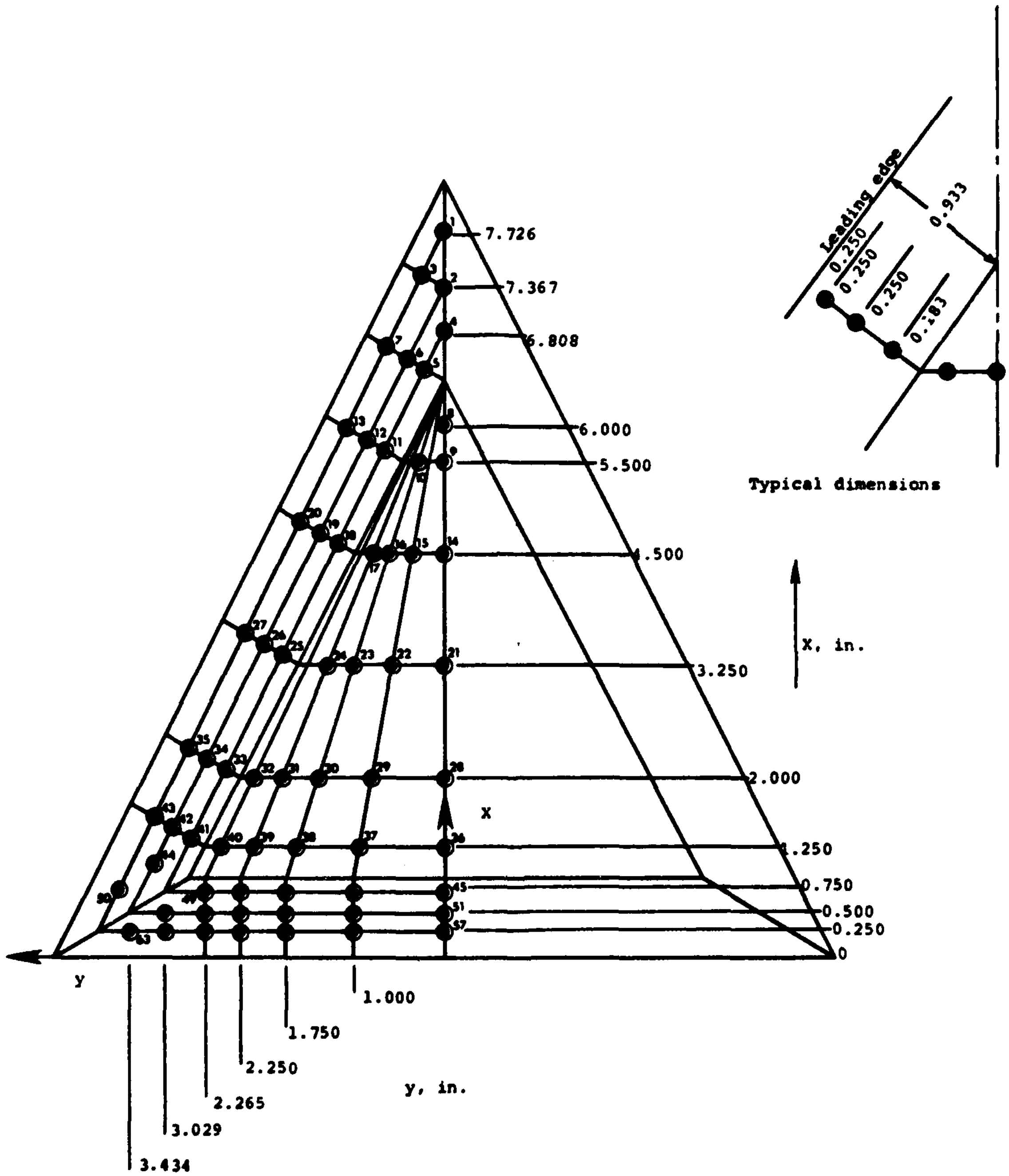


Figure 11.- Orifice locations, wing no. 7.

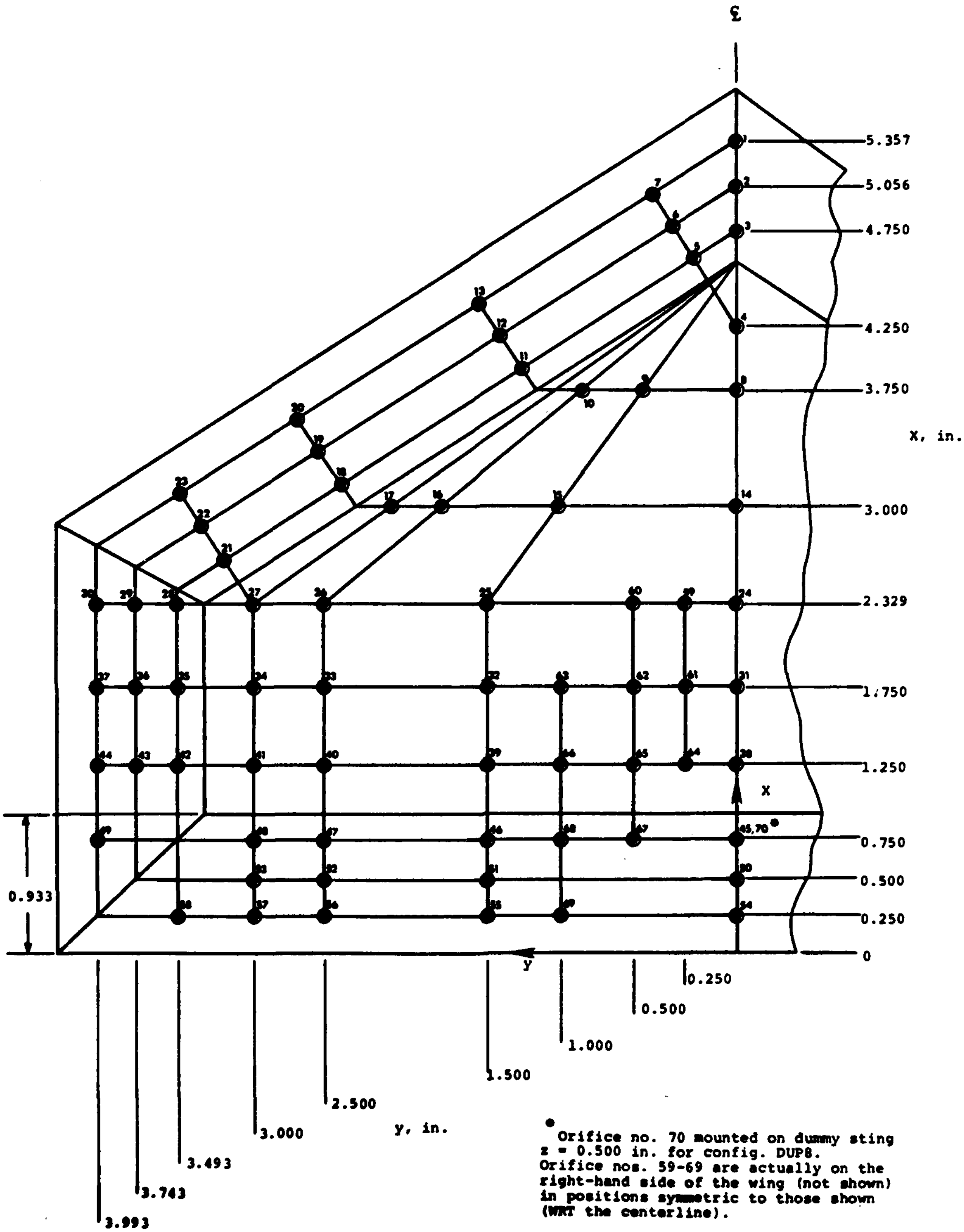


Figure 12.- Orifice locations, wing no. 8.

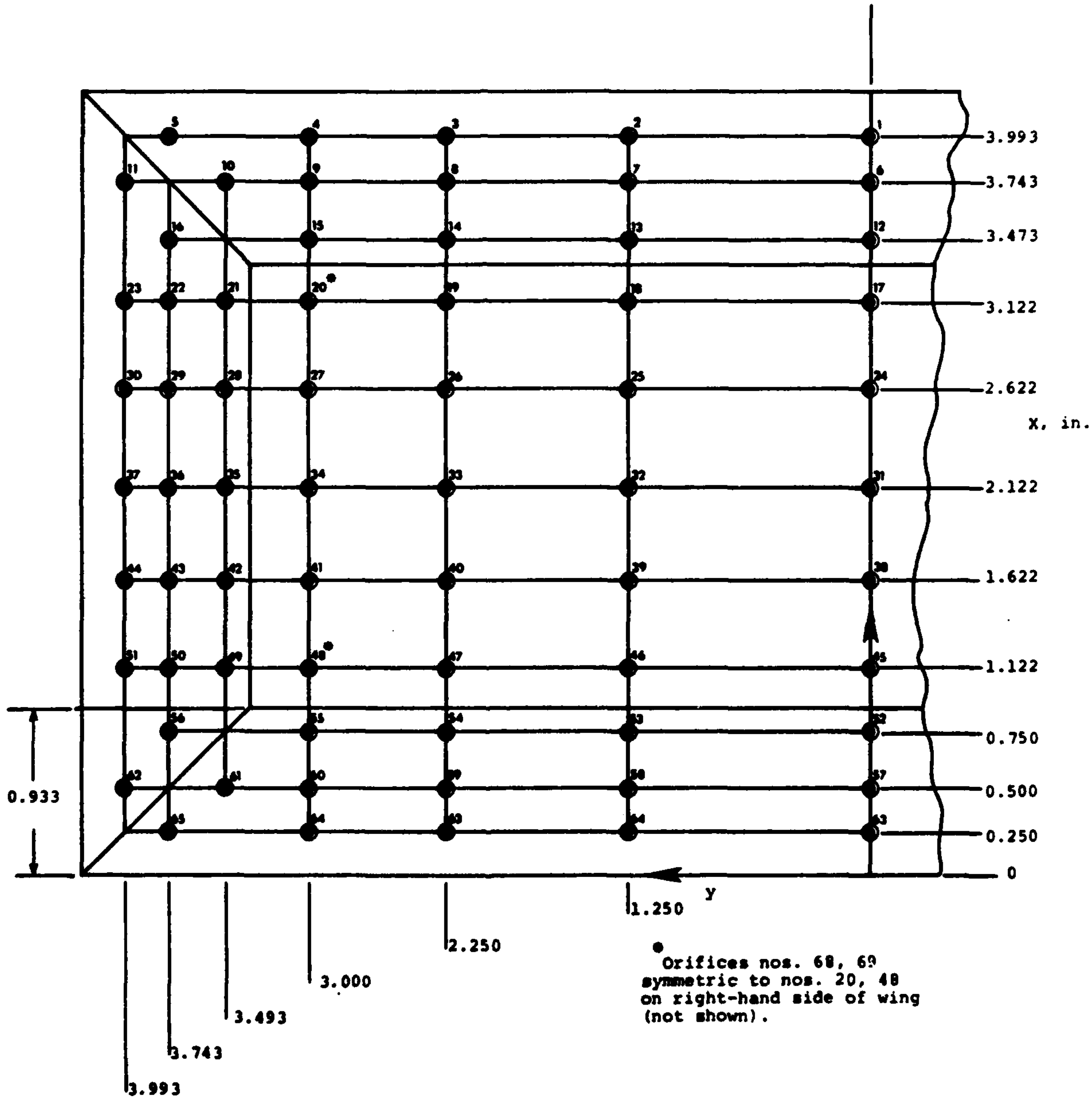


Figure 13.- Orifice locations, wing no. 9.

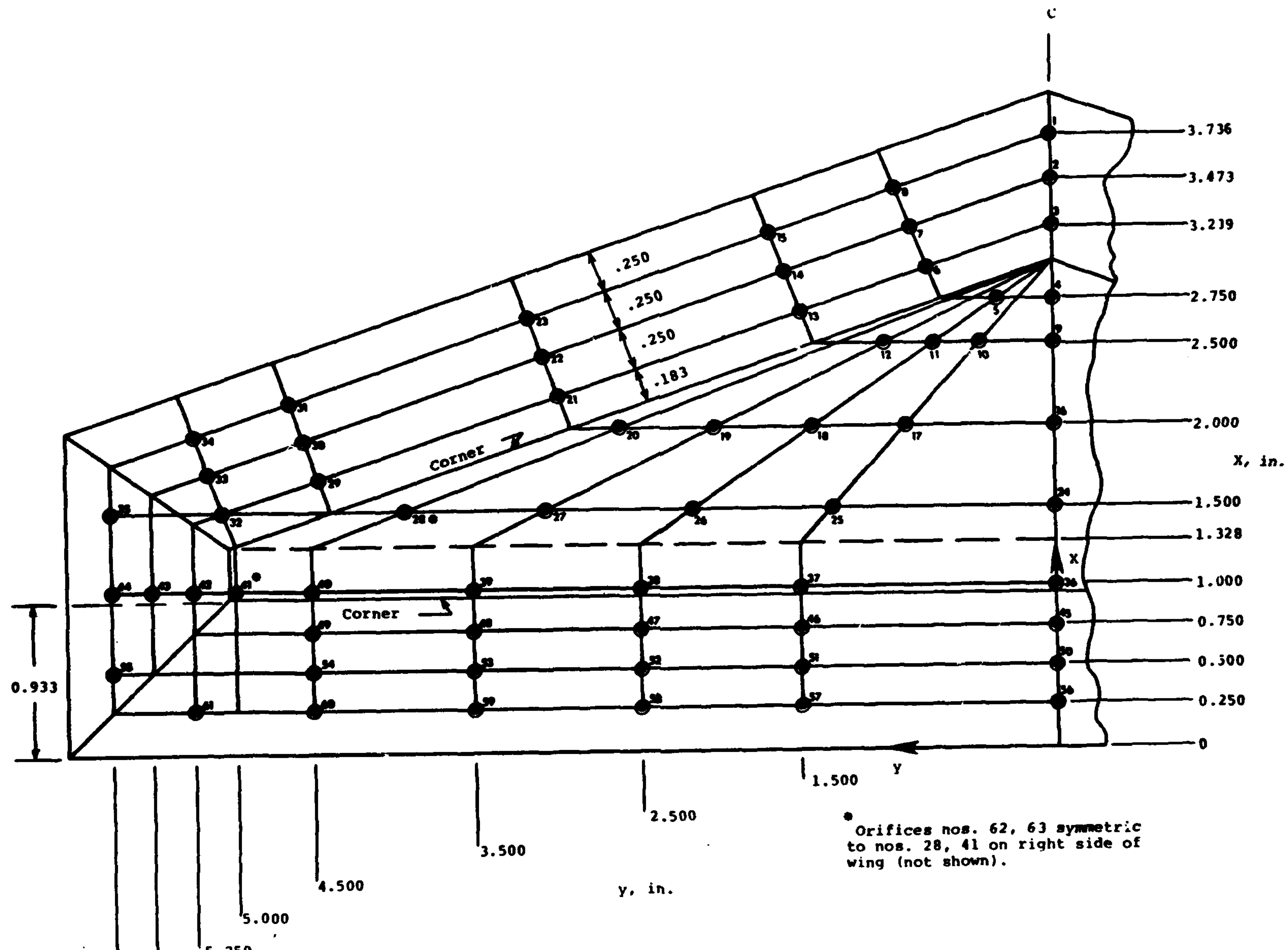


Figure 14.- Orifice locations, wing no. 10.

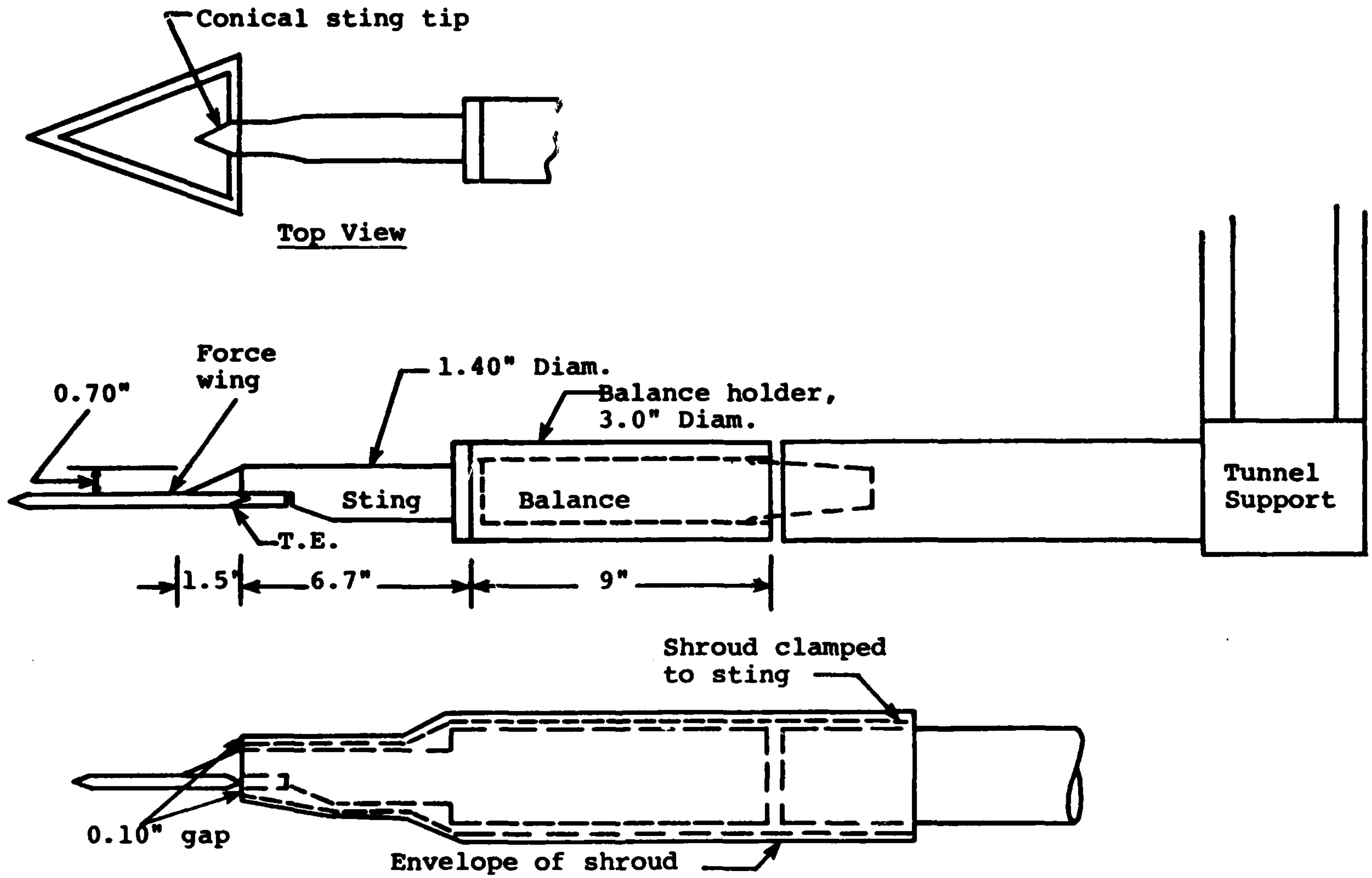


Figure 15.- Force wing support system.

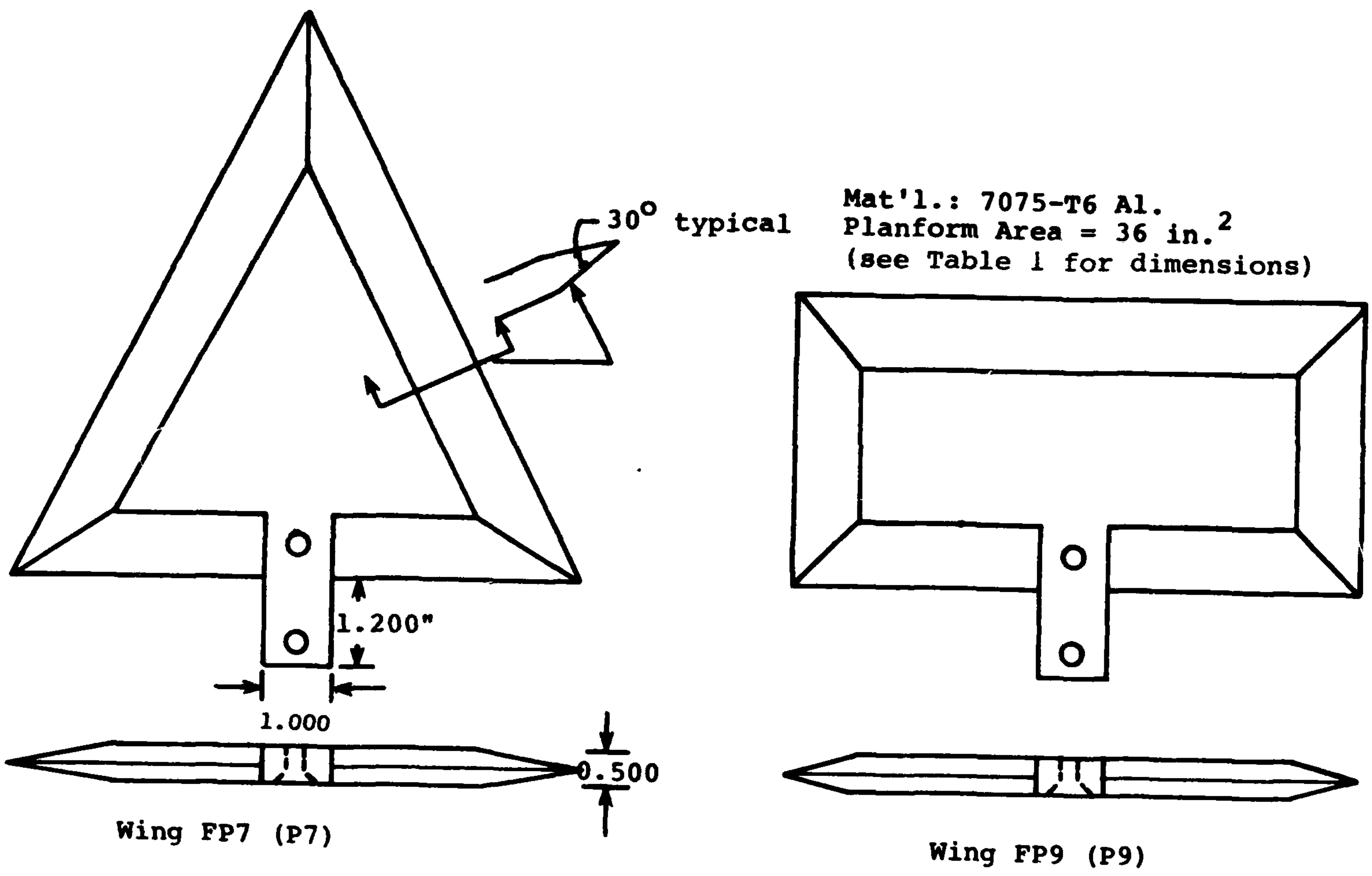


Figure 16.- Force wings to evaluate sting interference.

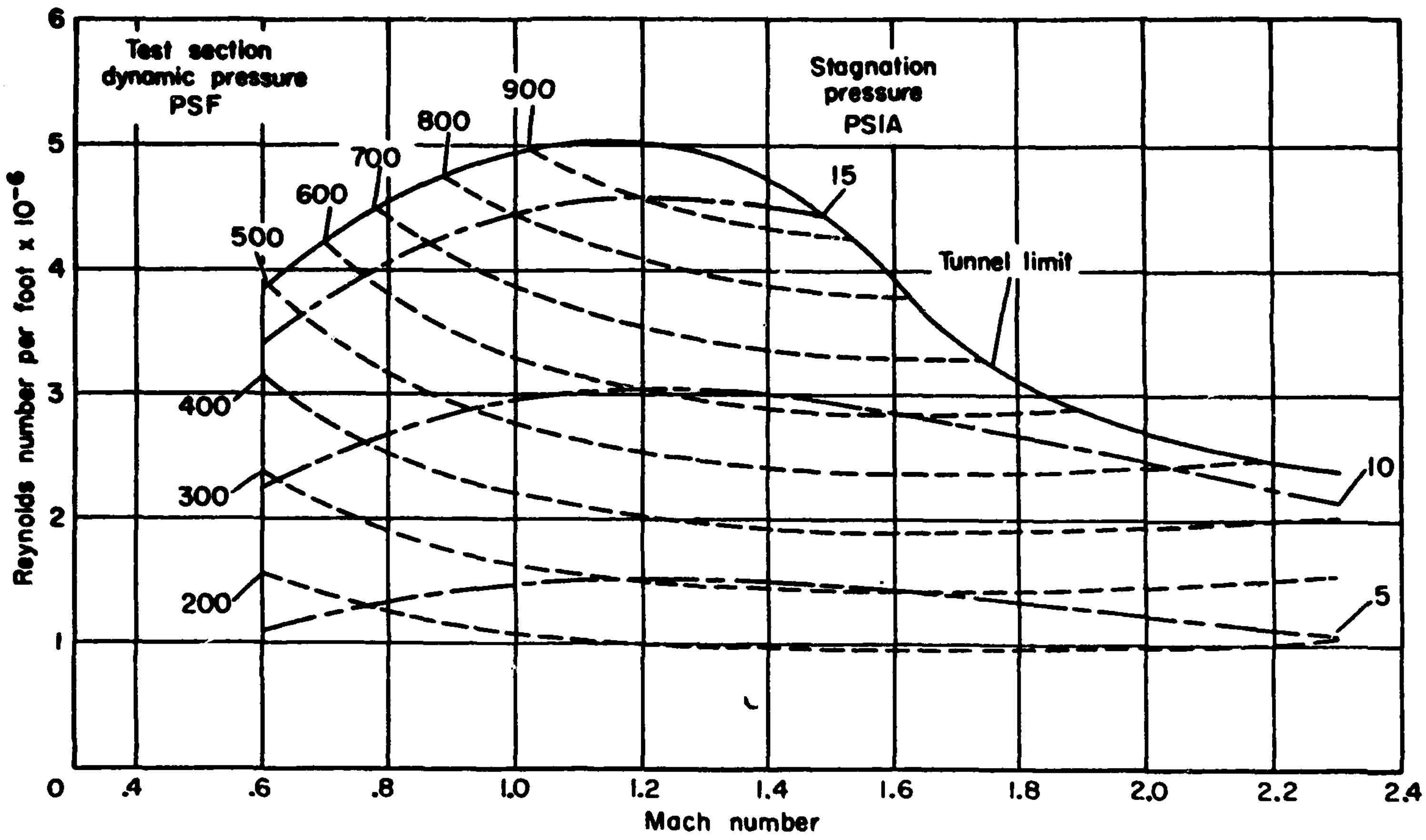


Figure 17.- Operating charactistics of the Ames 6 by 6-foot Supersonic Wind Tunnel with stagnation temperature 560° R.

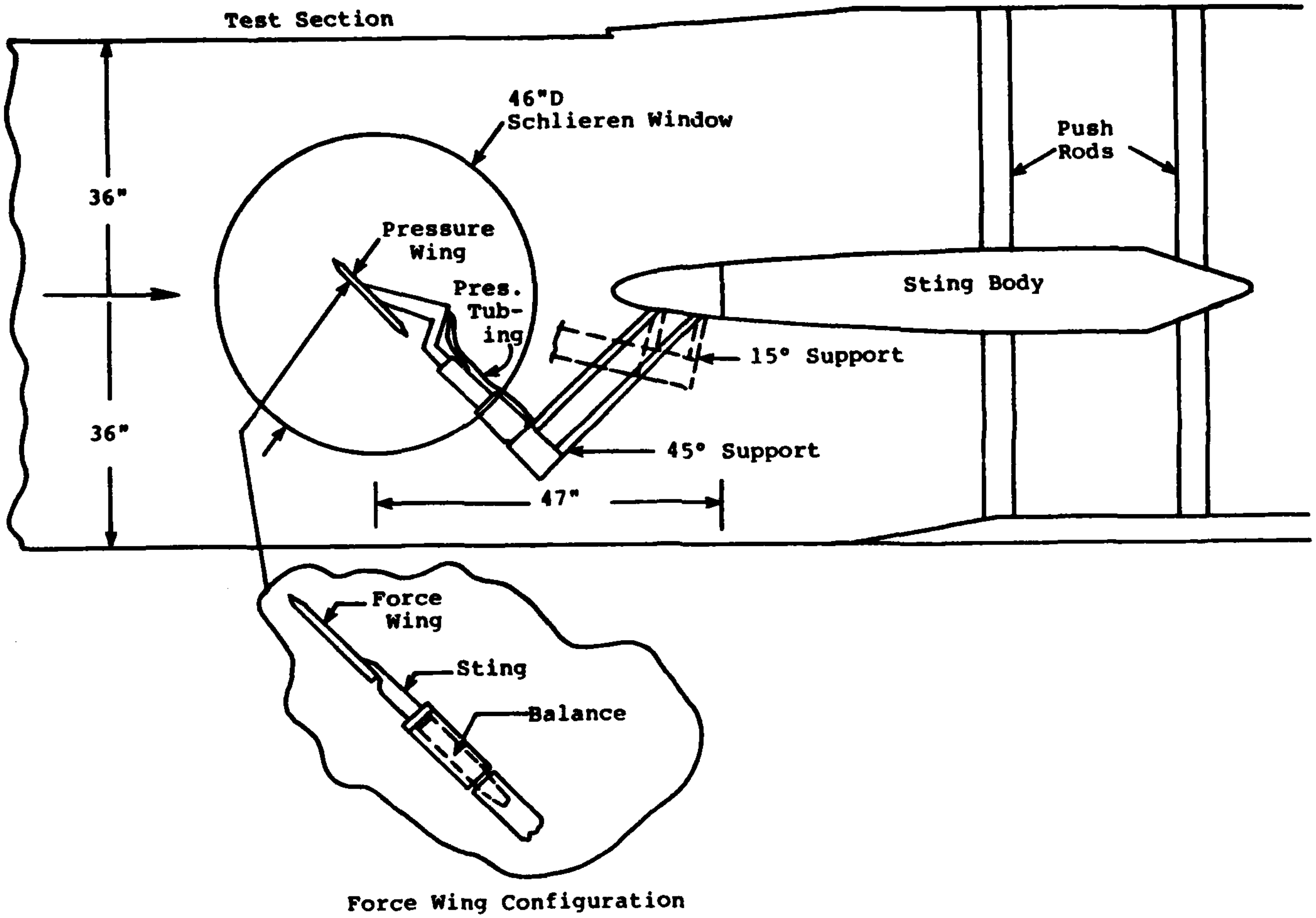


Figure 18.- Installation of the wing models in the NASA/Ames Research Center 6X6 foot wind tunnel.

Figure 19.- Photo for typical force model installation.

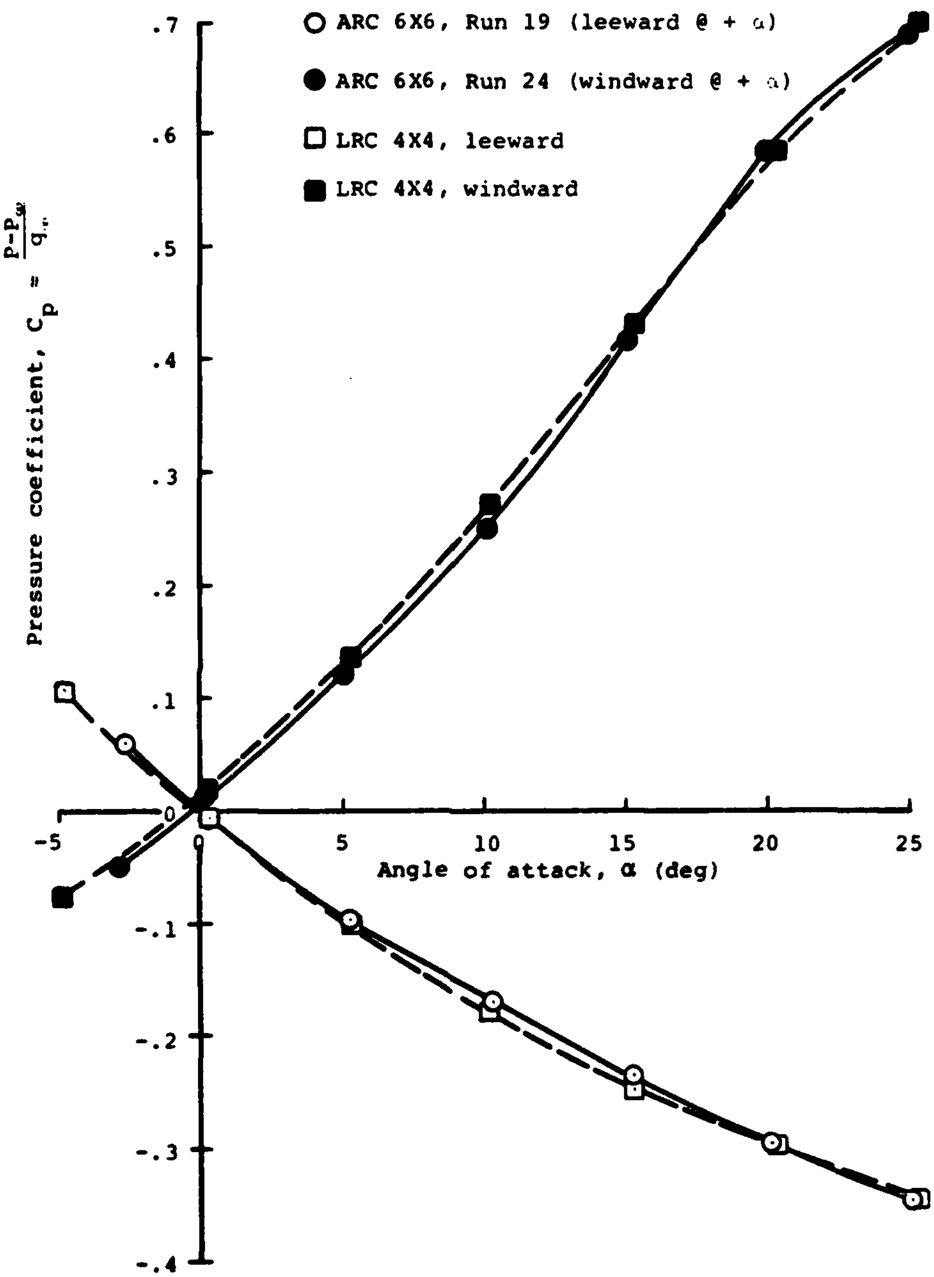


Figure 20.- Comparison of configuration 8, port 31 pressure coefficients from ARC and LRC Mach 1.6 data.

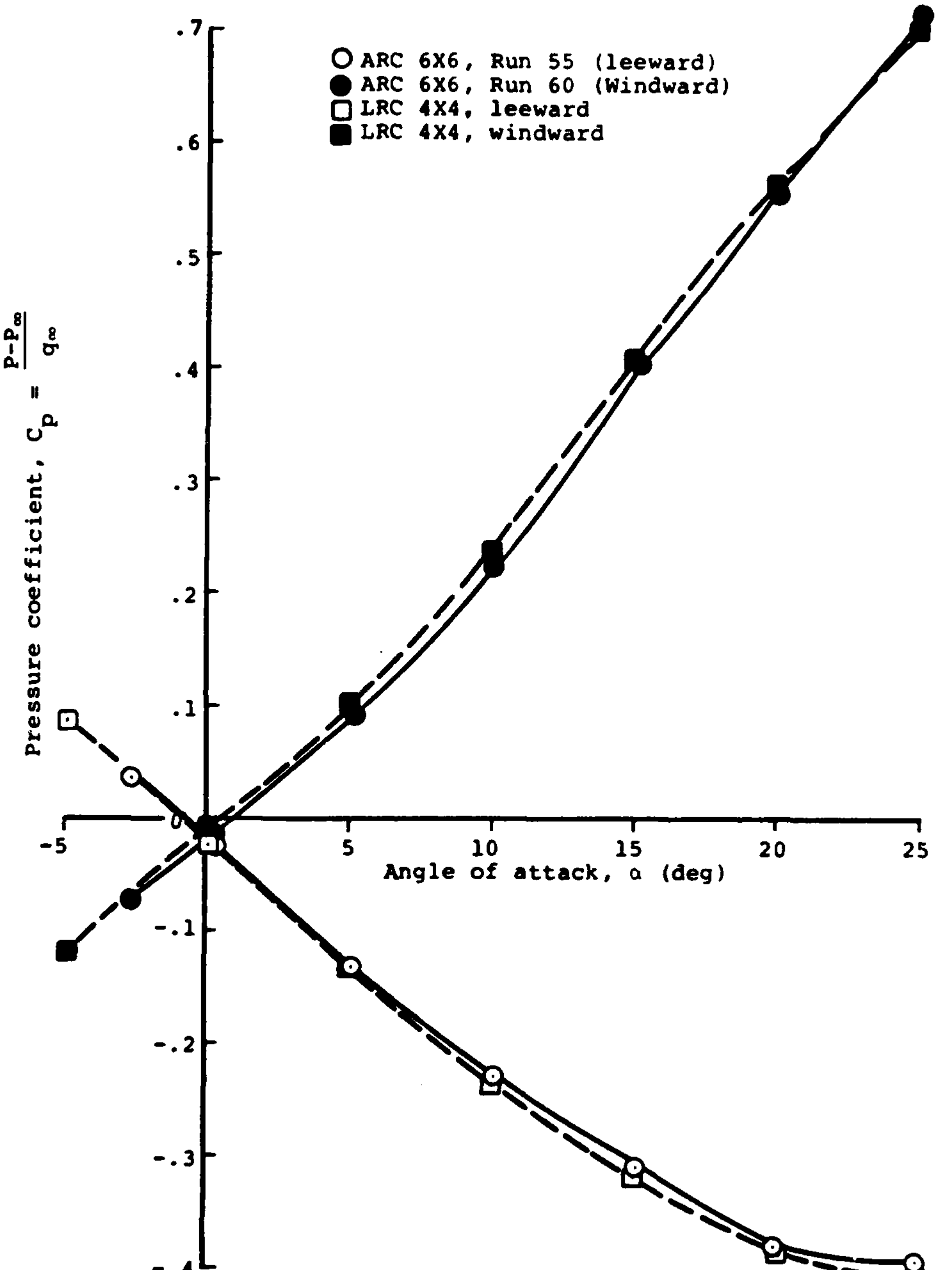


Figure 21.- Comparison of configuration 9. Port 38 pressure coefficients from ARC and LRC Mach 1.6 data.

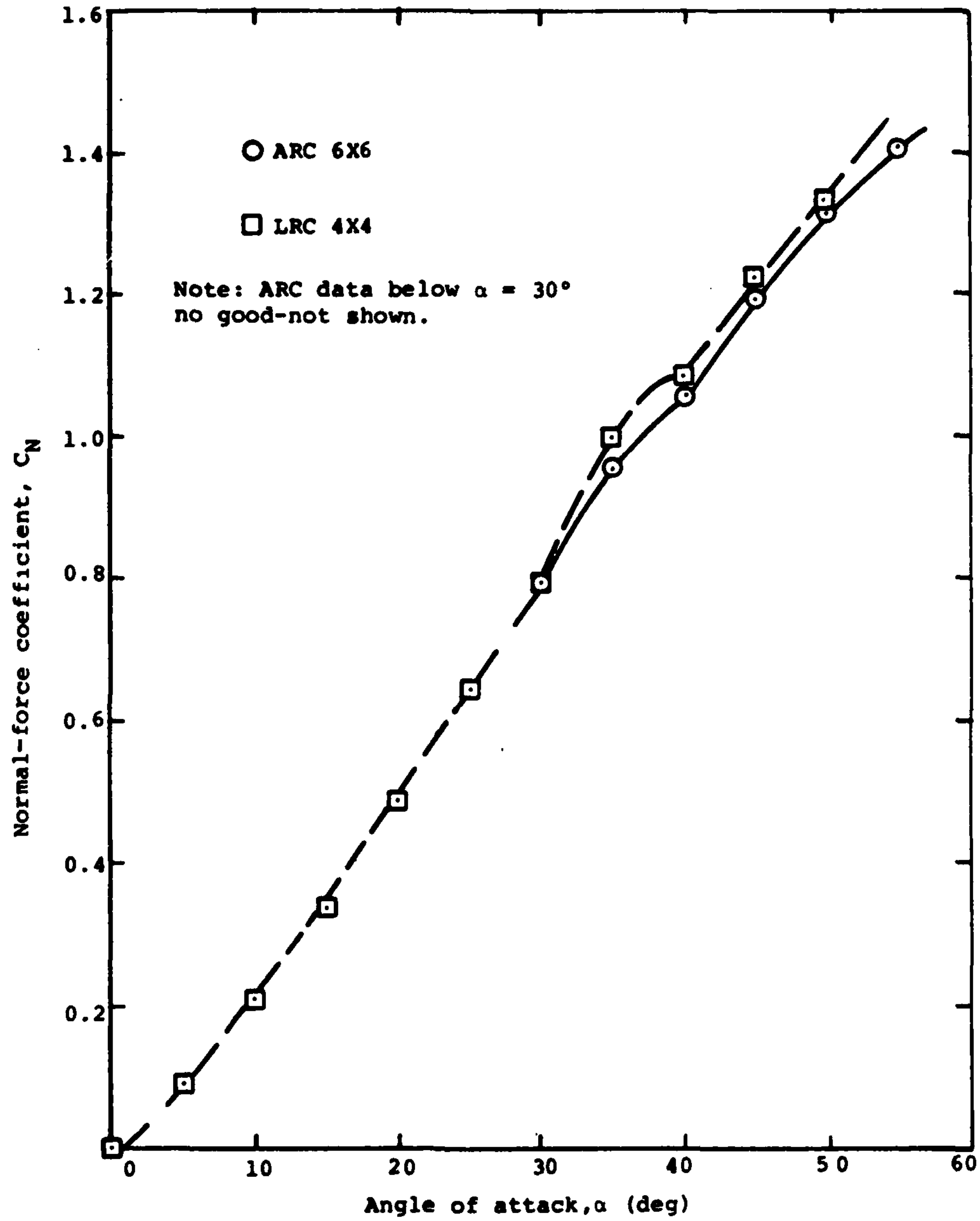


Figure 22.- Comparison of Mach 1.6 C_N data from ARC 6 ft. and LRC 4 ft. wind tunnels for configuration 1 (Æ = 0.5, λ = 0).

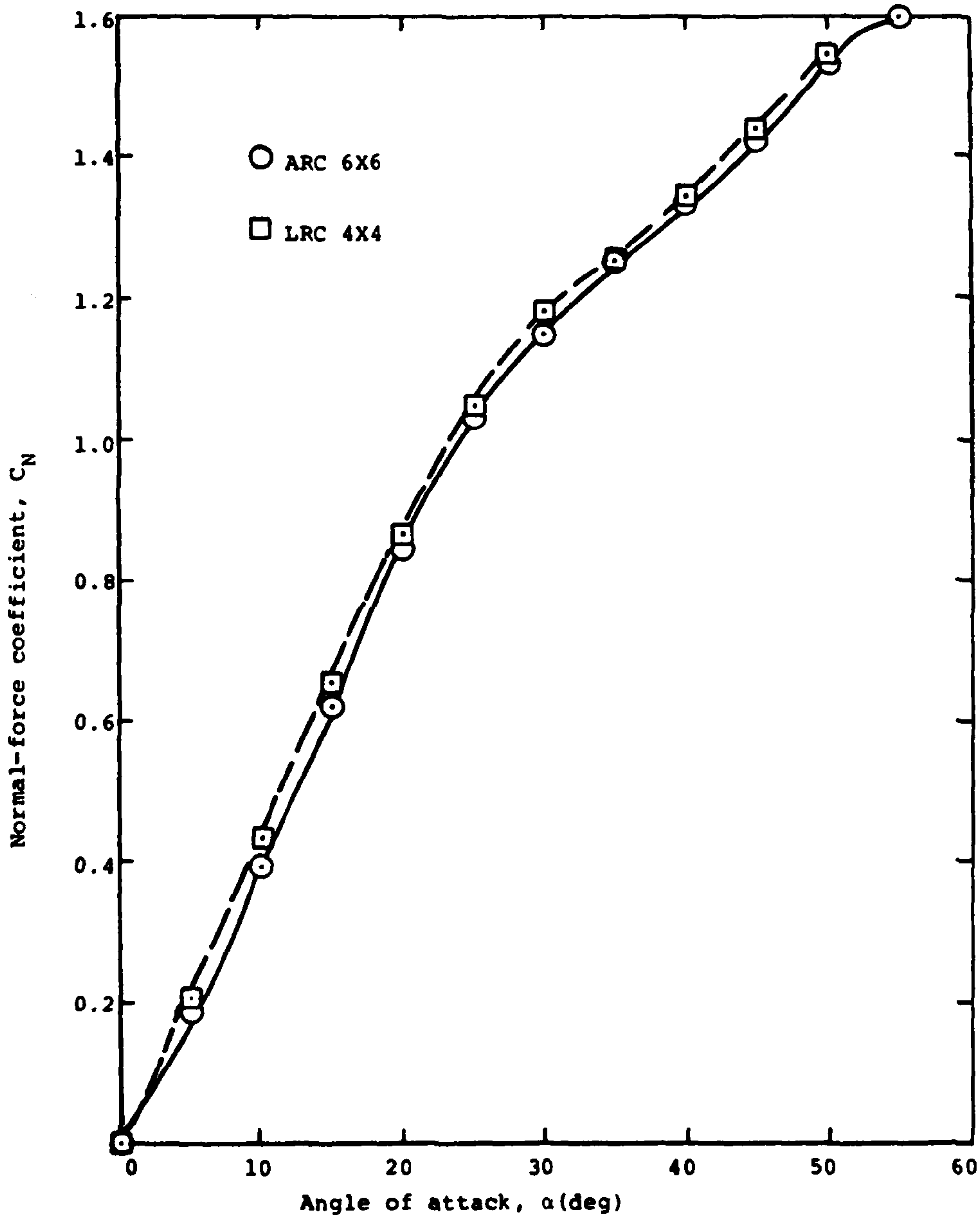


Figure 23.- Comparison of Mach 1.6 C_N data from ARC 6 ft. LRC 4 ft. wind tunnels for configuration 8 ($Æ = 2$, $\lambda = 0.5$).

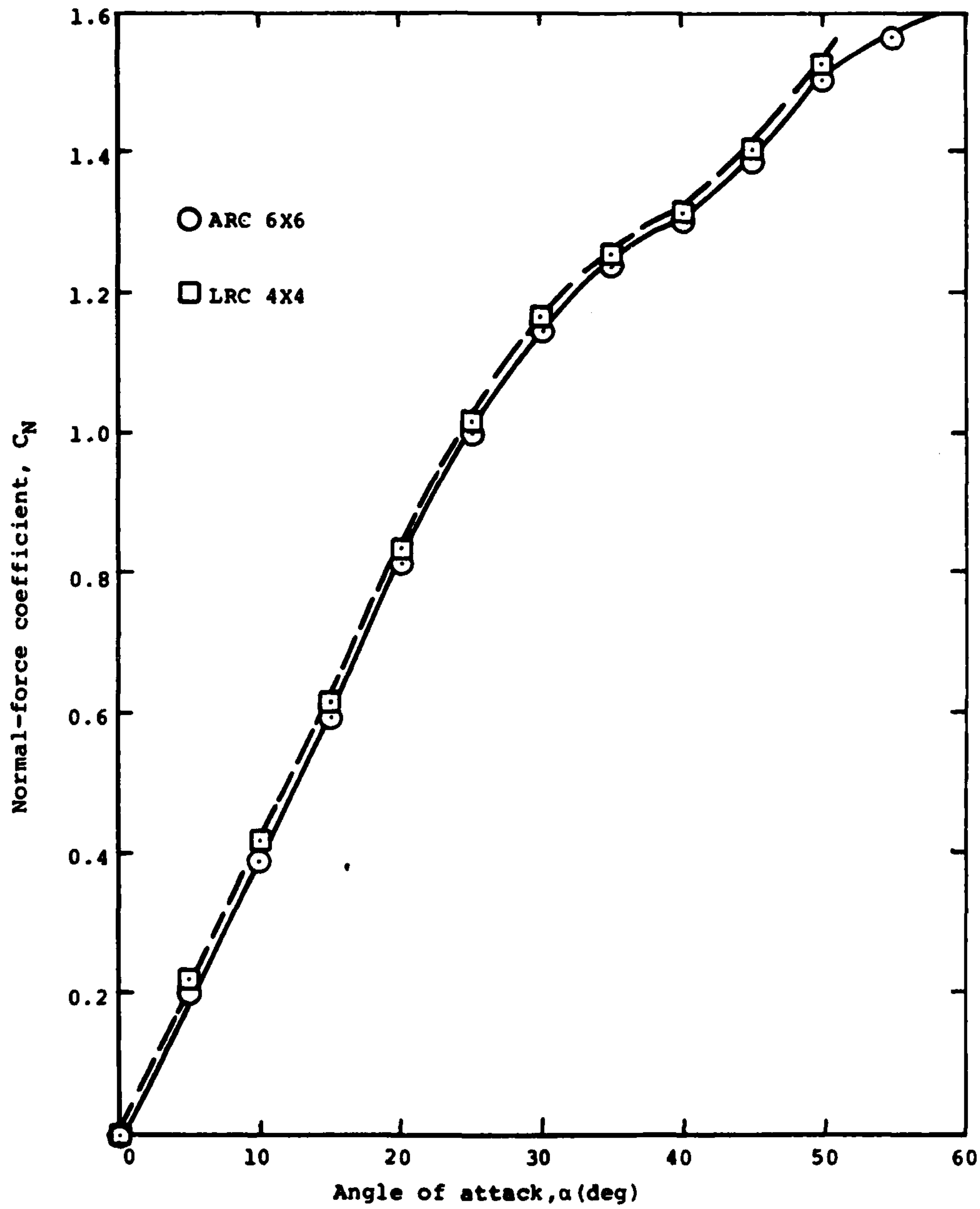


Figure 24.- Comparison of Mach 1.6 C_N data from ARC 6 ft. and LRC 4 ft. wind tunnels for configuration 9 (AR = 2.0, λ = 1.0).

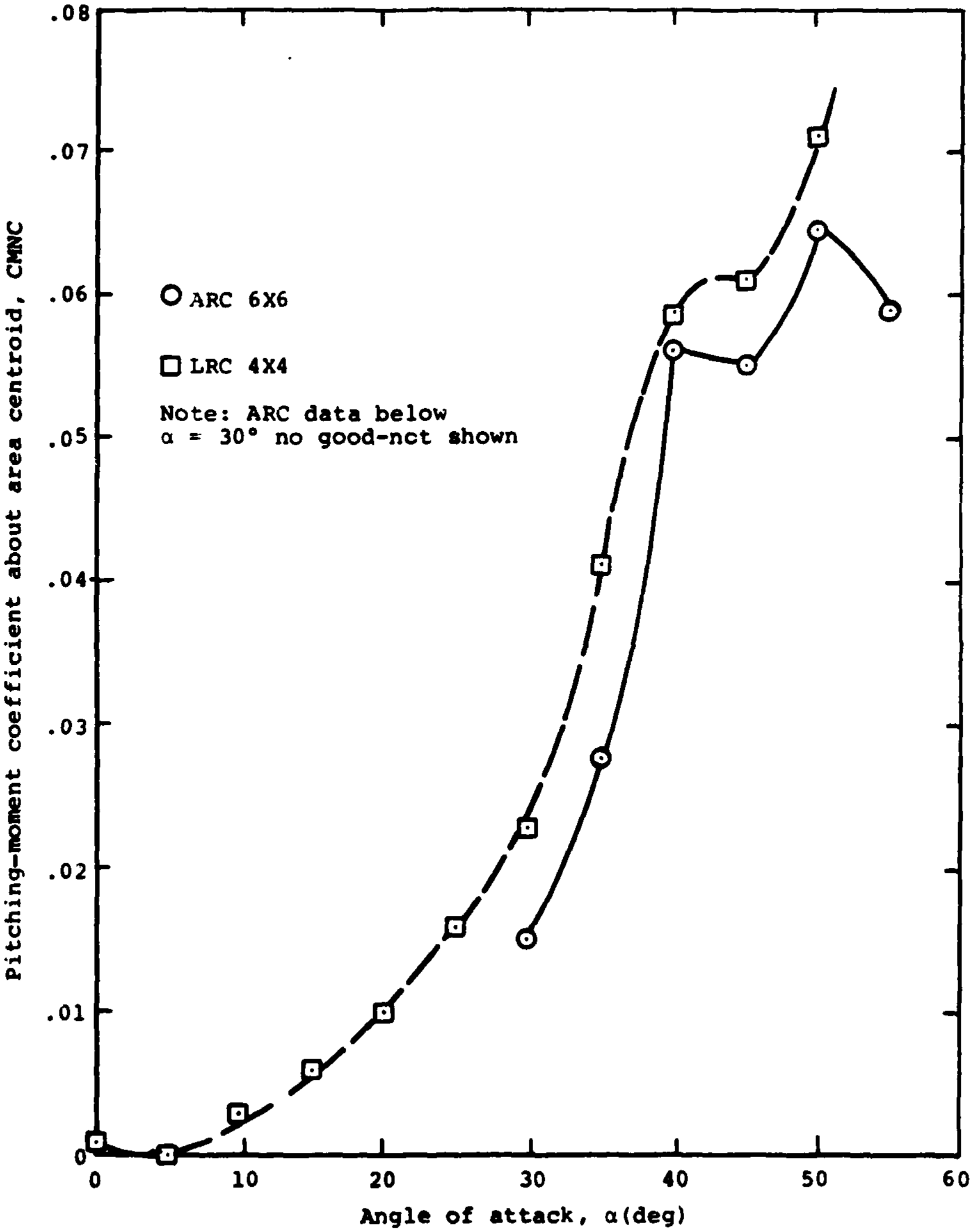


Figure 25.- Comparison of ARC and LRC pitching-moment coefficient data at Mach 1.6 for configuration 1 (Æ = 0.5, λ = 0).

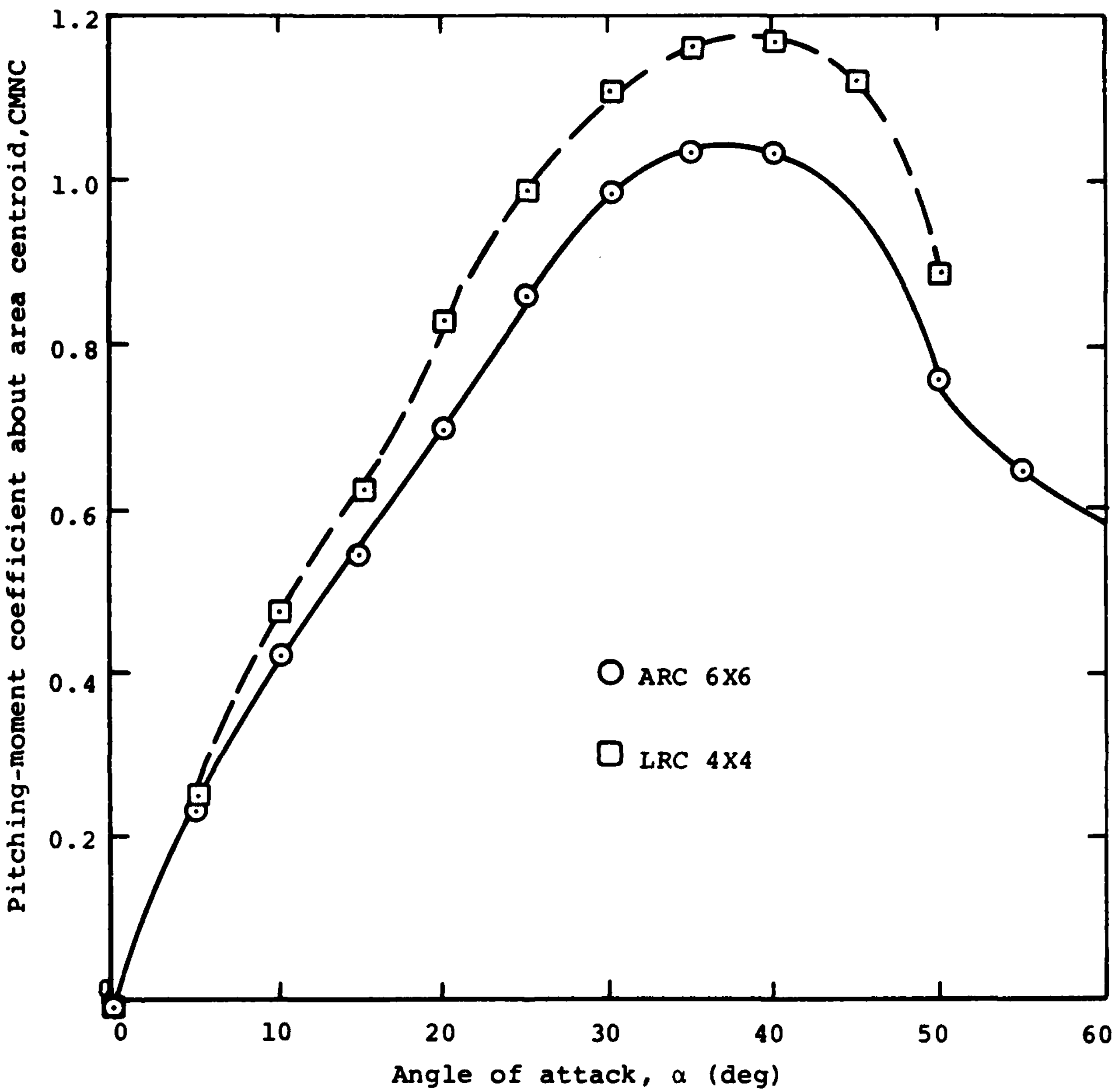


Figure 26.- Comparison of ARC and LRC pitching-moment coefficient data for configuration 8 at Mach 1.6 ($AR = 2.0$, $\lambda = 0.5$).

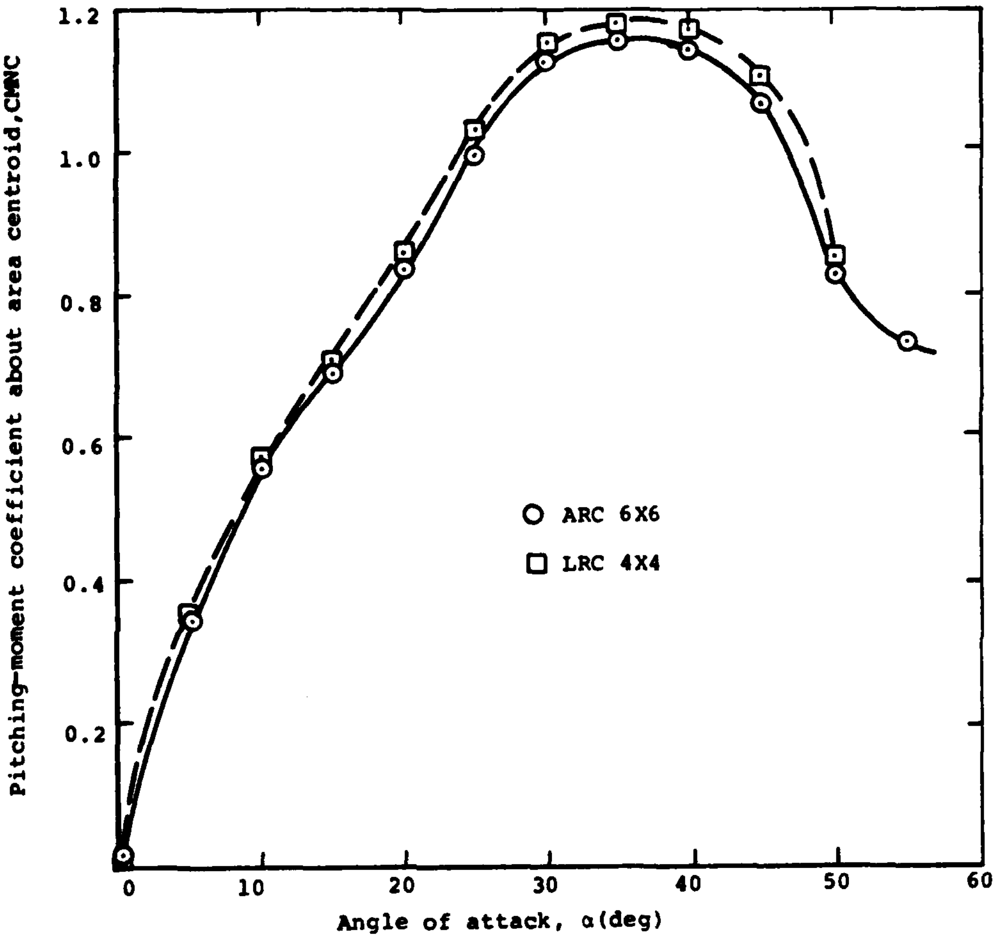


Figure 27.- Comparison of ARC and LRC pitching-moment coefficient data for configuration 9 at Mach 1.6 (AR = 2.0, λ = 1.0).

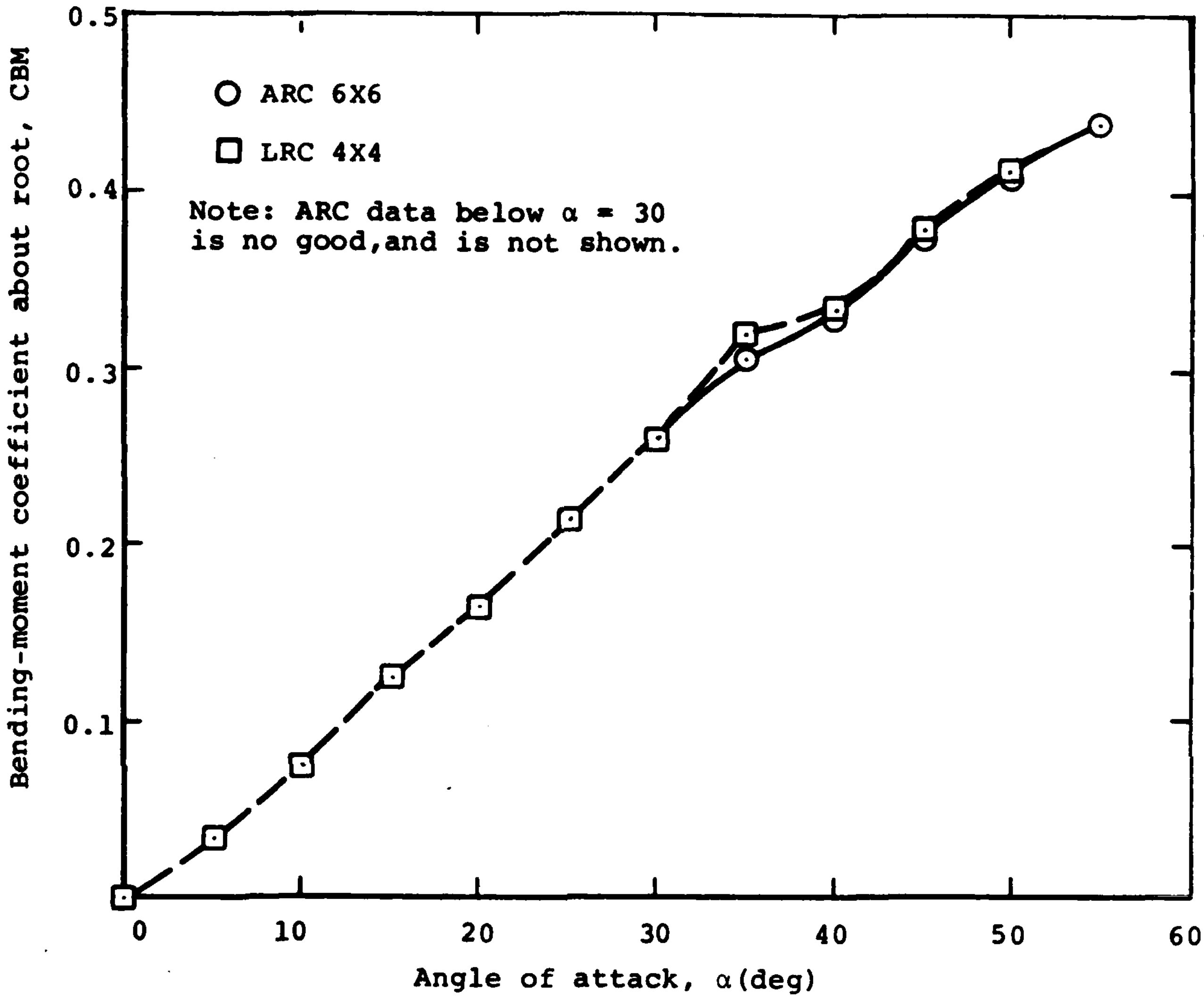


Figure 28.- Comparison of ARC and LRC root bending-moment coefficient data for configuration 1 at Mach 1.6 ($AR = 0.5$, $\lambda = 0.0$).

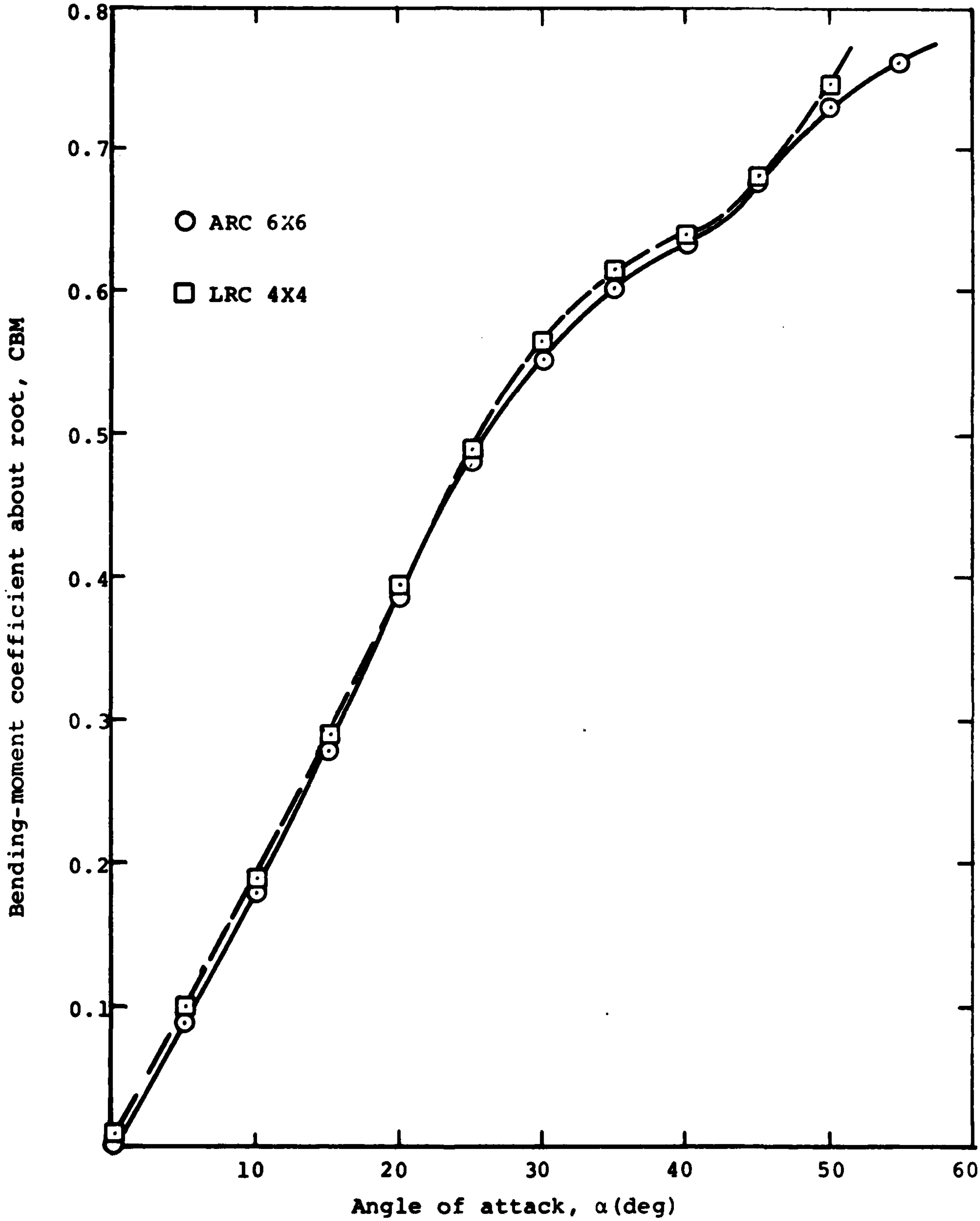


Figure 29.- Comparison of ARC and LRC bending-moment coefficient data for configuration 9 at Mach 1.6 (Æ = 2.0, λ = 1.0).

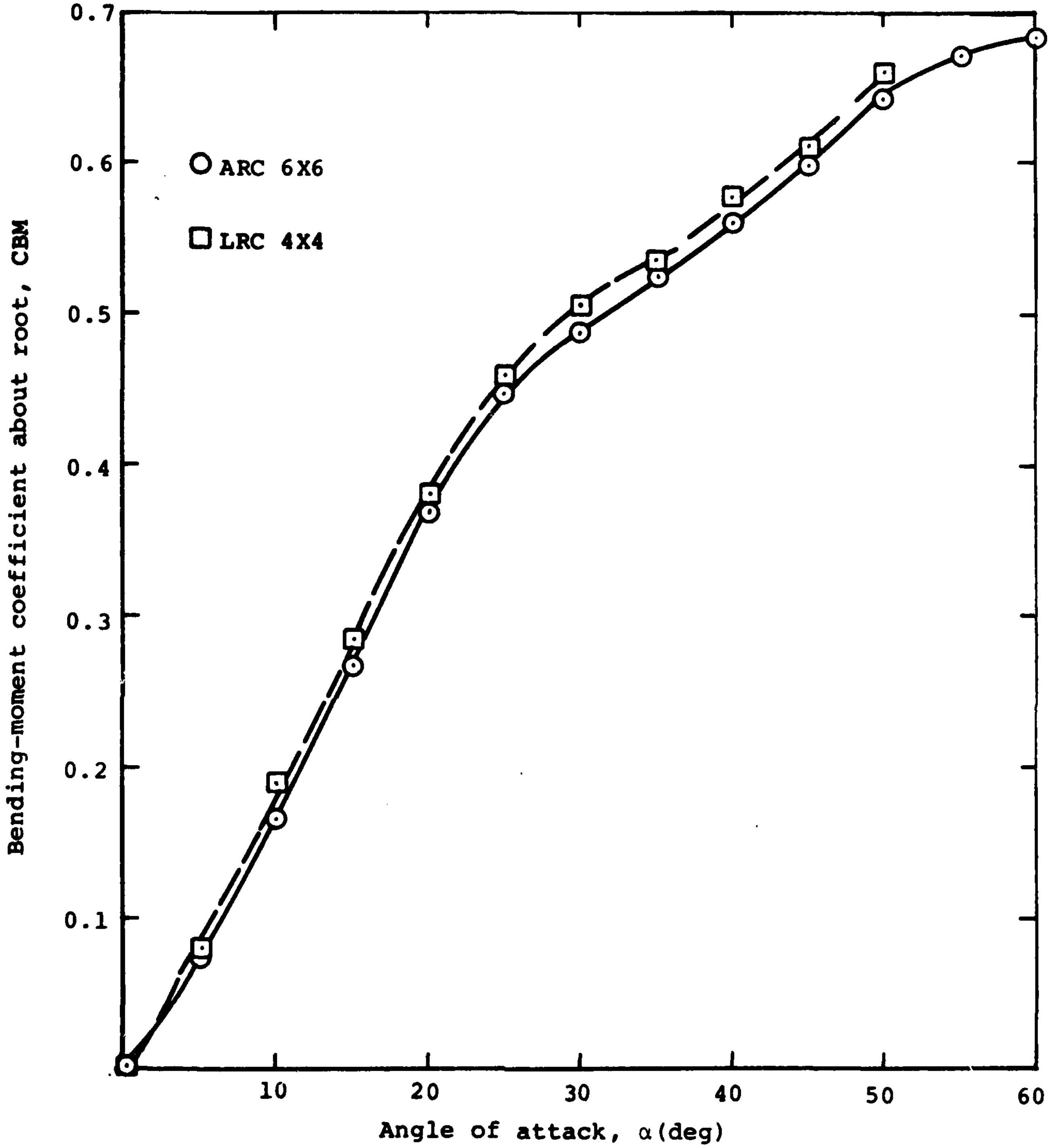


Figure 30.- Comparison of ARC and LRC root bending-moment coefficient data for configuration 8 at Mach 1.6 (Æ = 2.0, λ = 0.5).

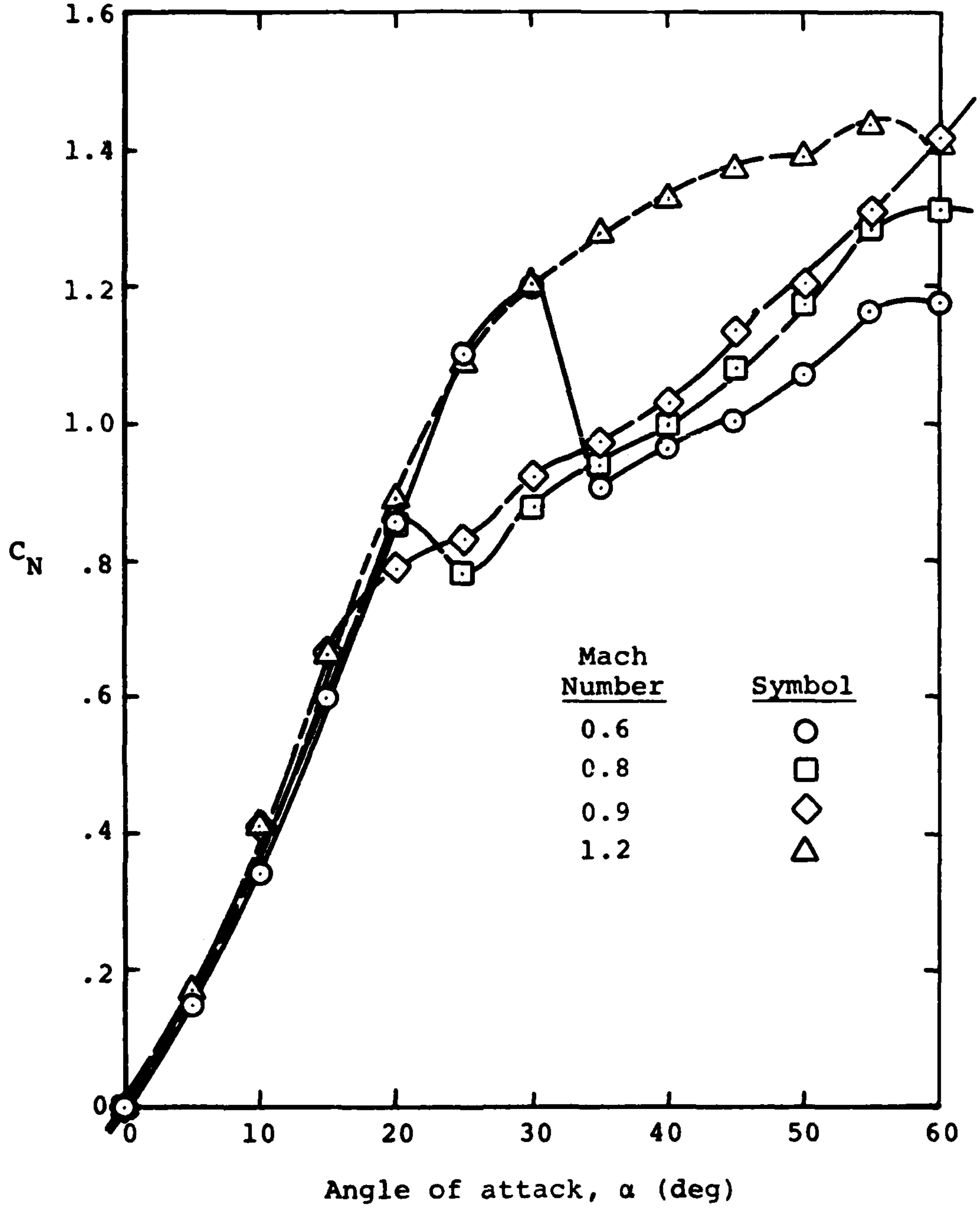


Figure 31. - Effect of Mach number on configuration 5 (λ = .5, $Æ$ = 1).

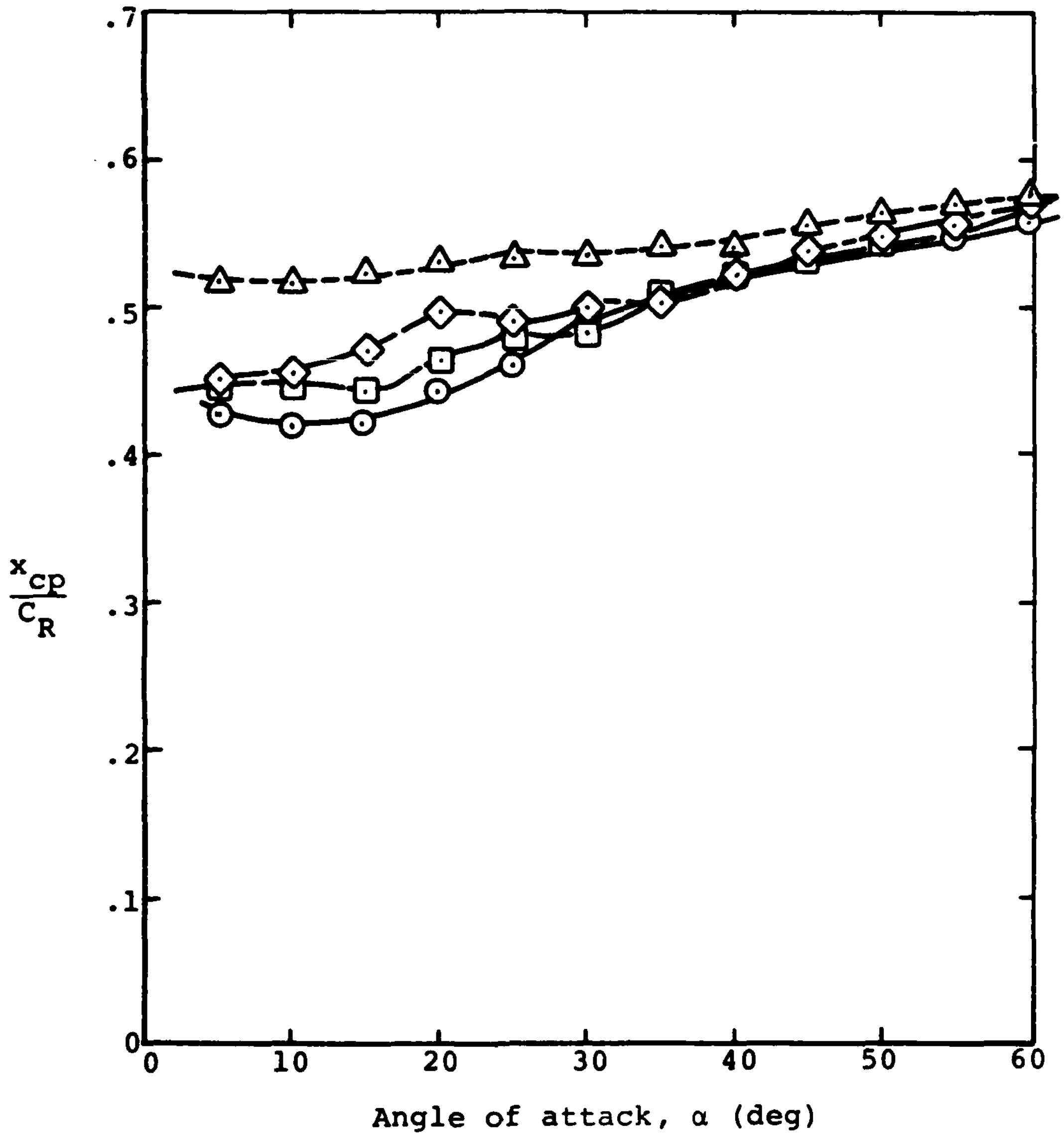


Figure 31.- Concluded.

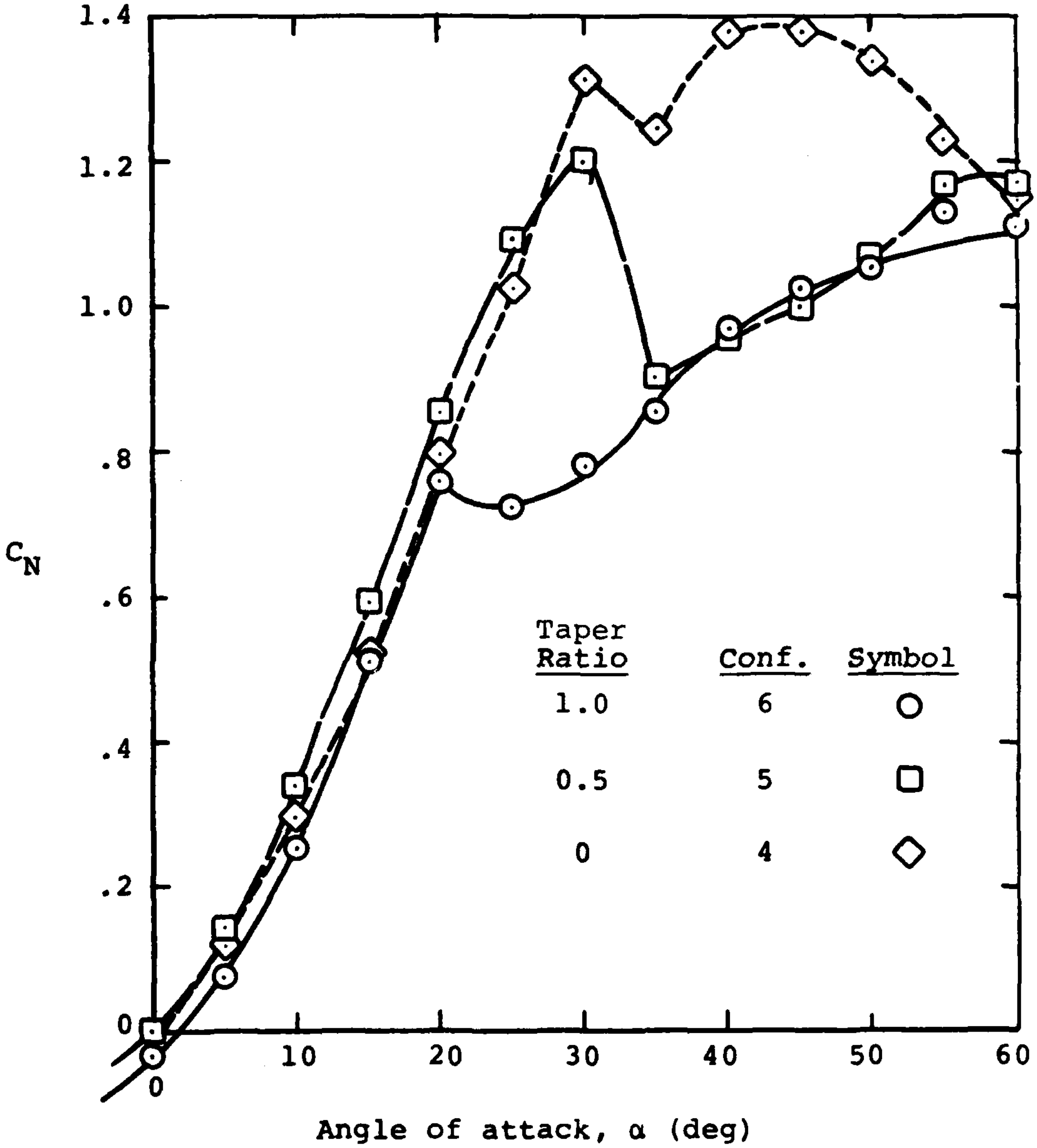


Figure 32. - Effect of taper ratio at Mach 0.6, Æ = 1.0.

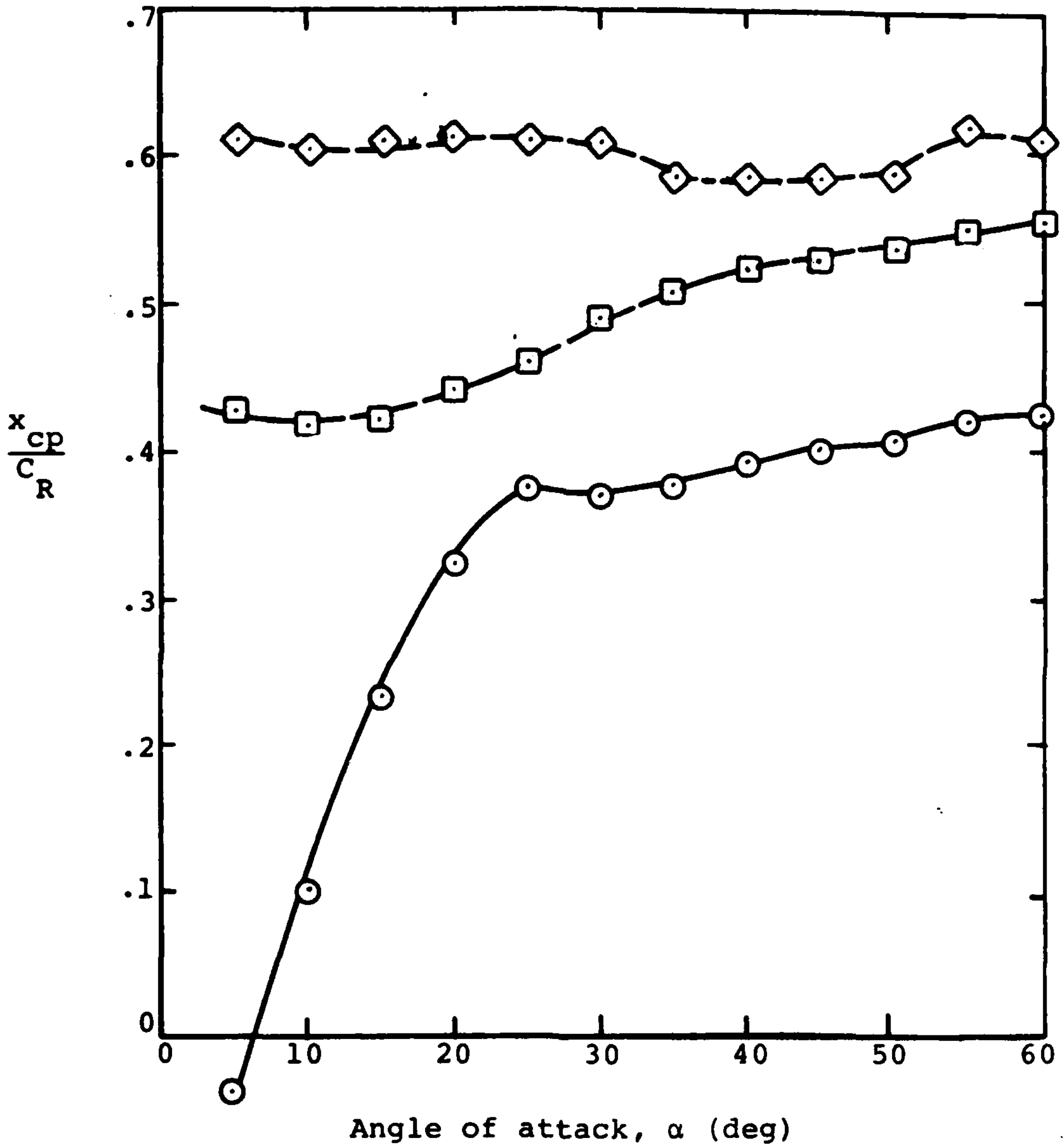


Figure 32 . - Concluded.

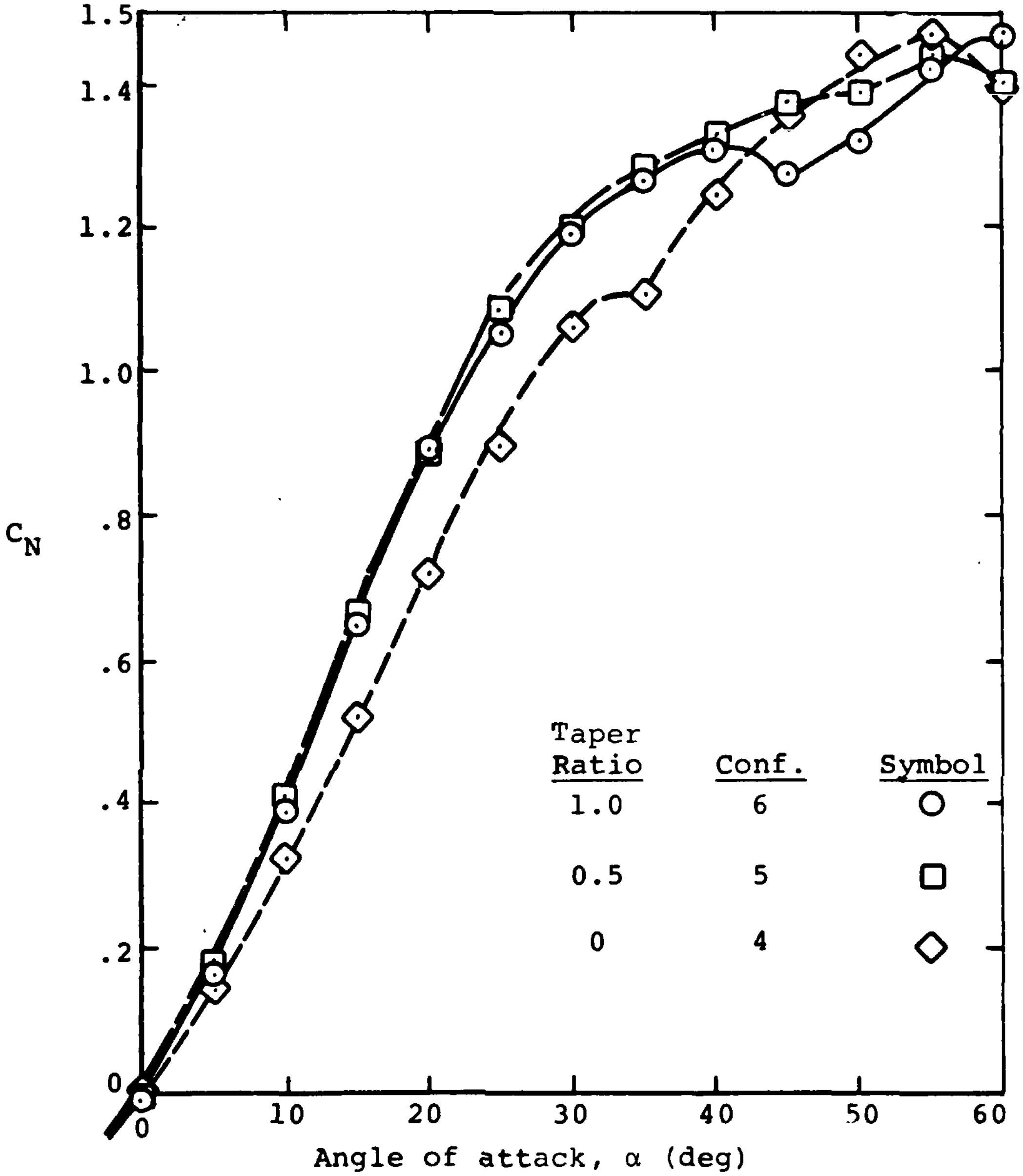


Figure 33 . - Effect of taper ratio at Mach 1.2, Æ = 1.

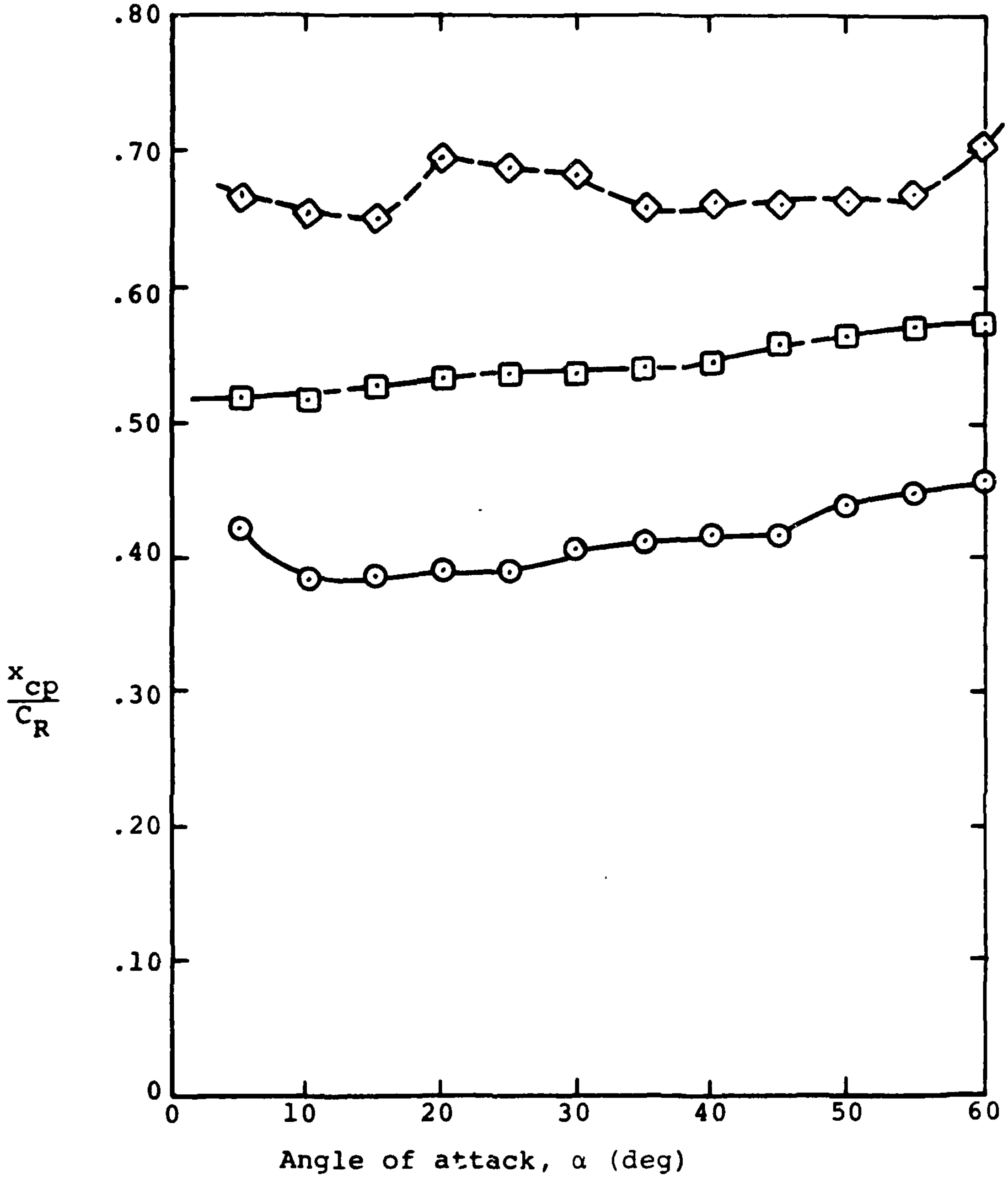


Figure 33.- Concluded.

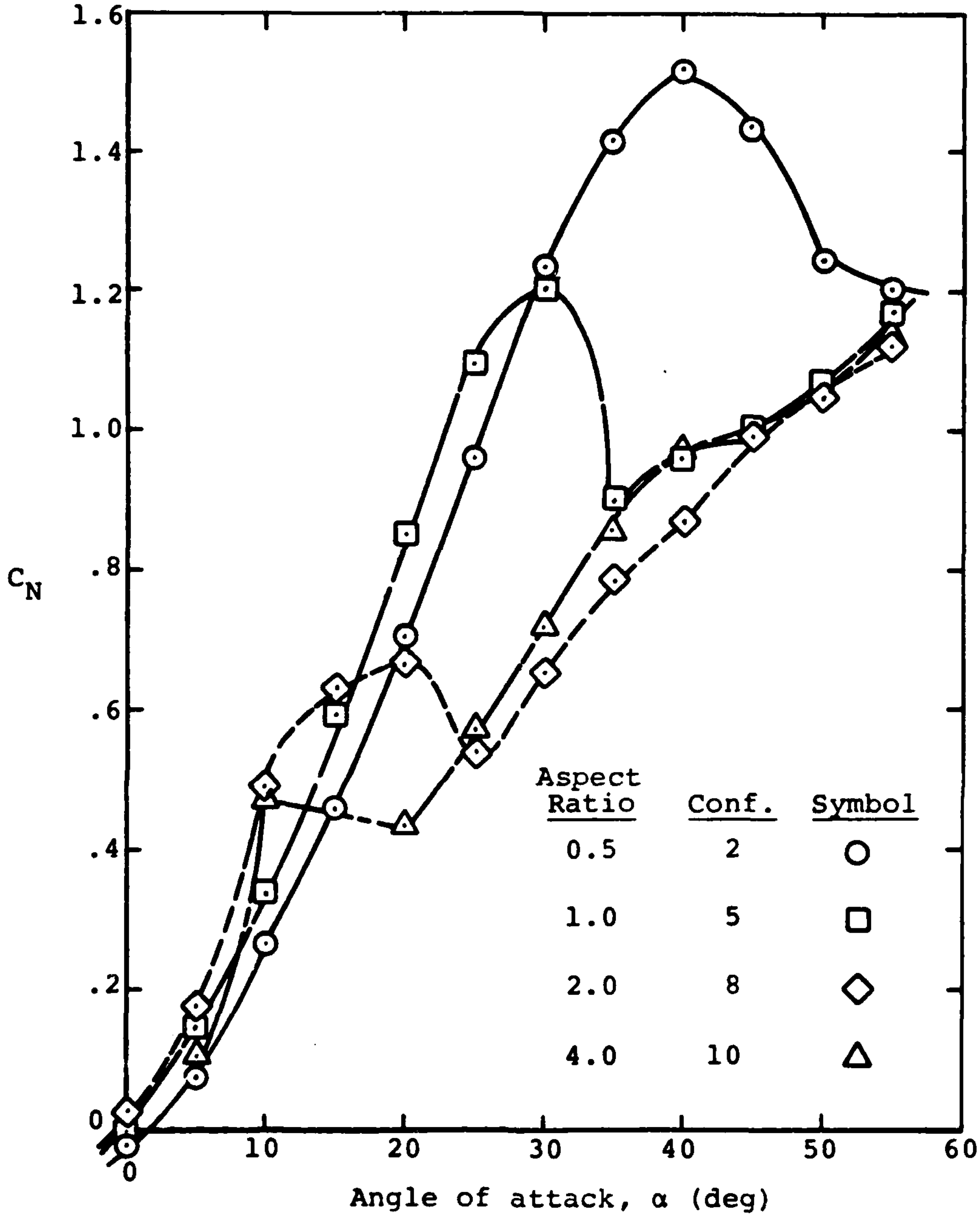


Figure 34. - Effect of aspect ratio at Mach 0.6 for λ = 0.5.

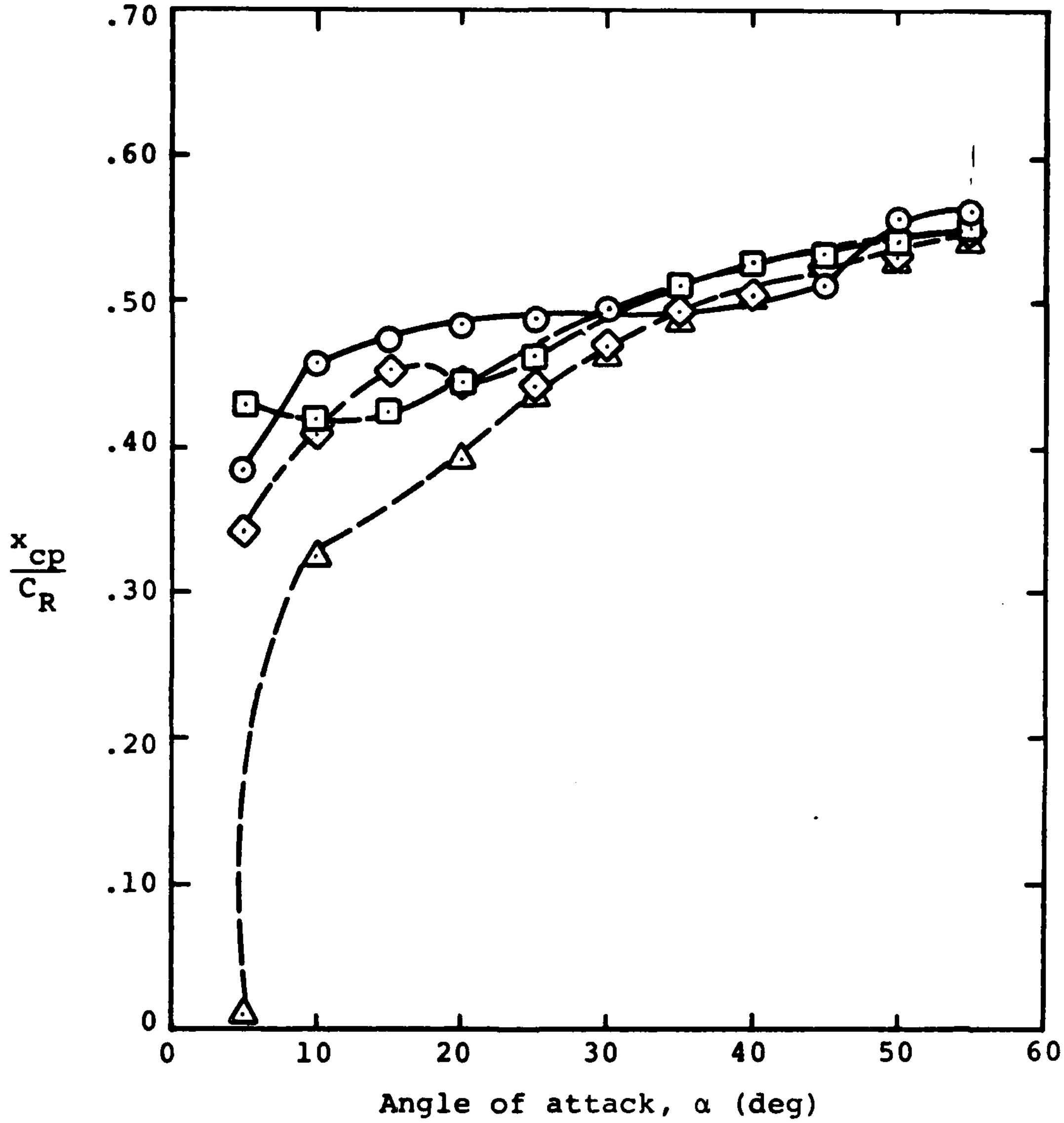


Figure 34.- Concluded.

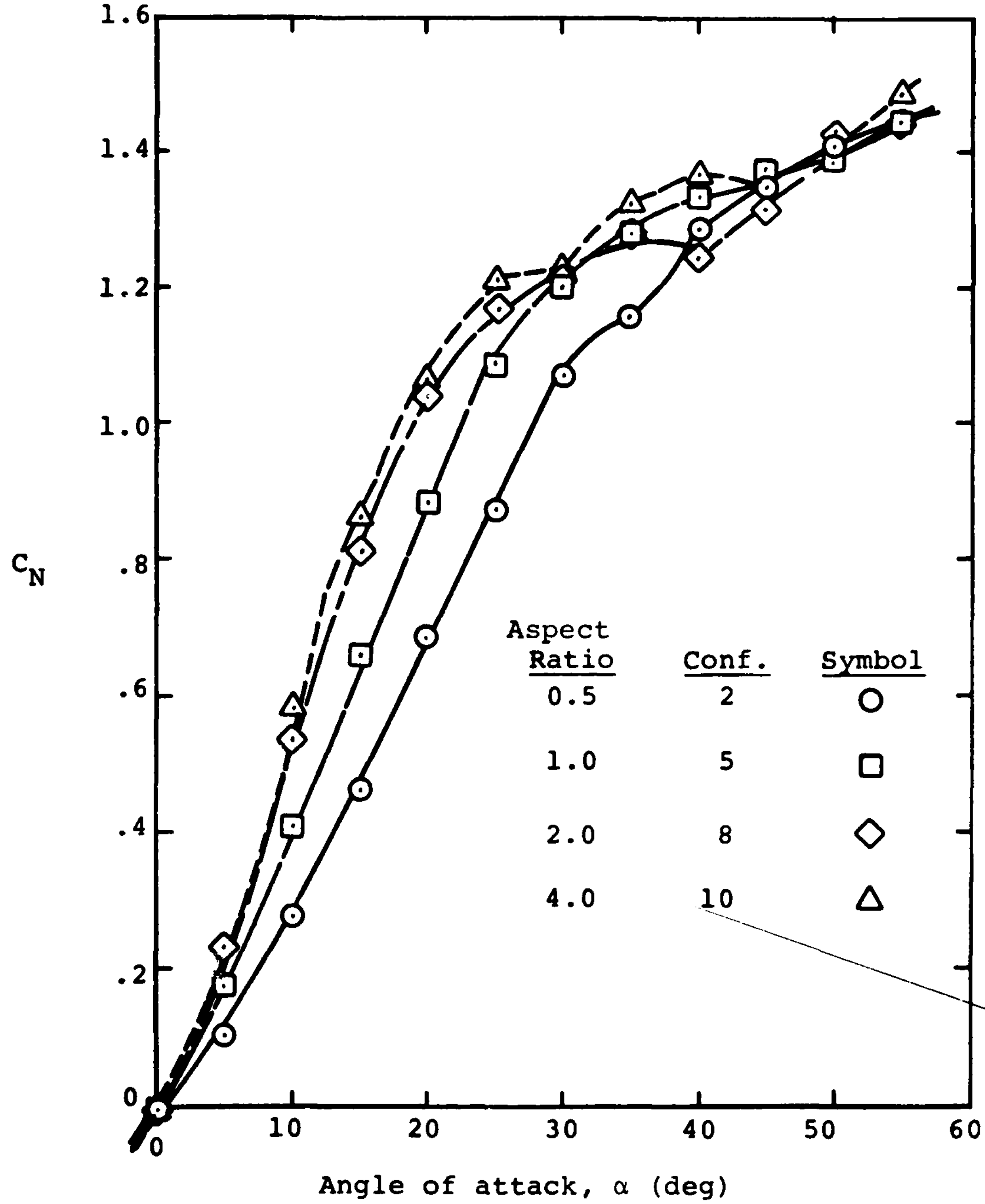


Figure 35 . - Effect of aspect ratio at Mach 1.2 for λ = 0.5.

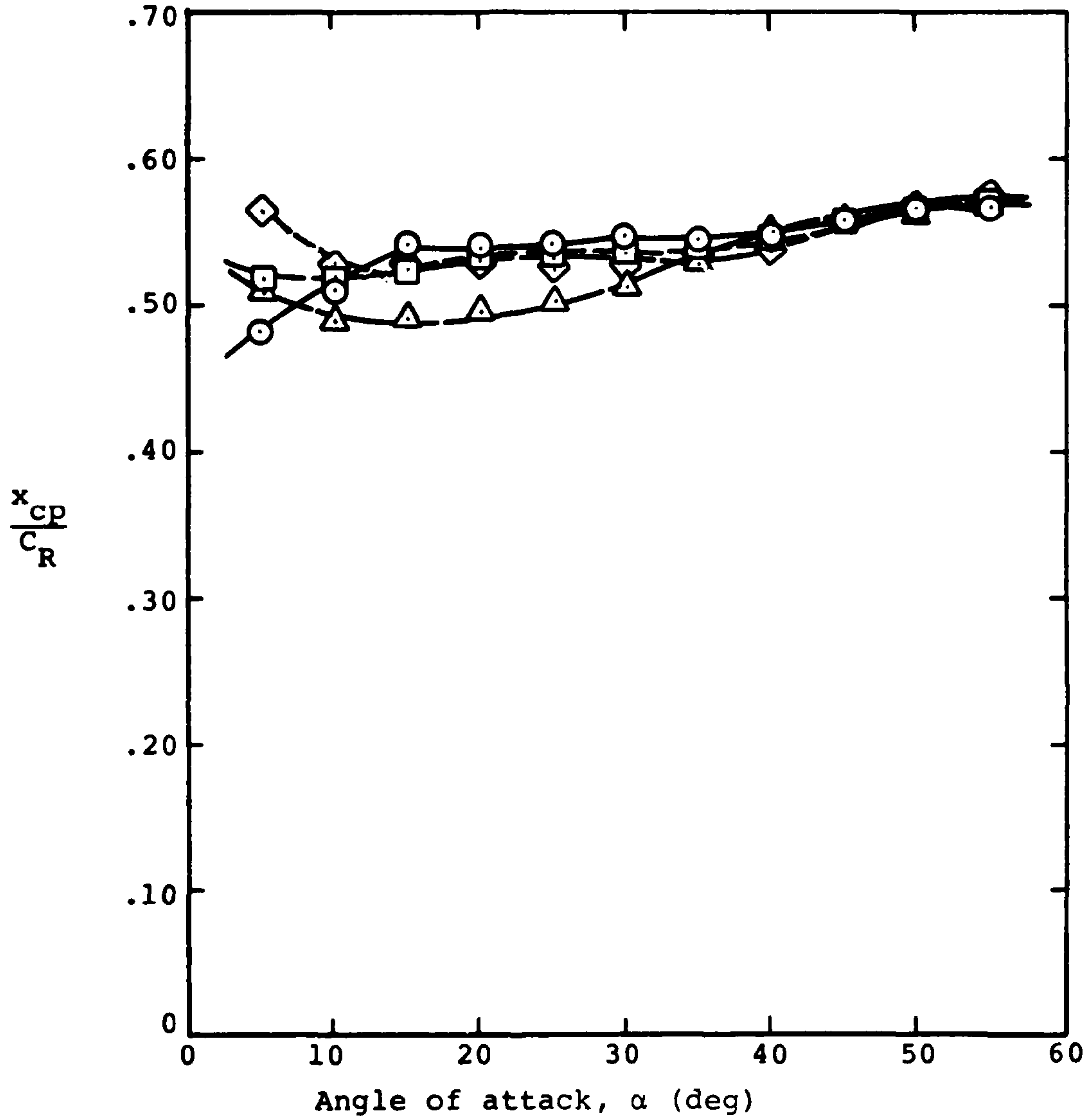


Figure 35.- Concluded.

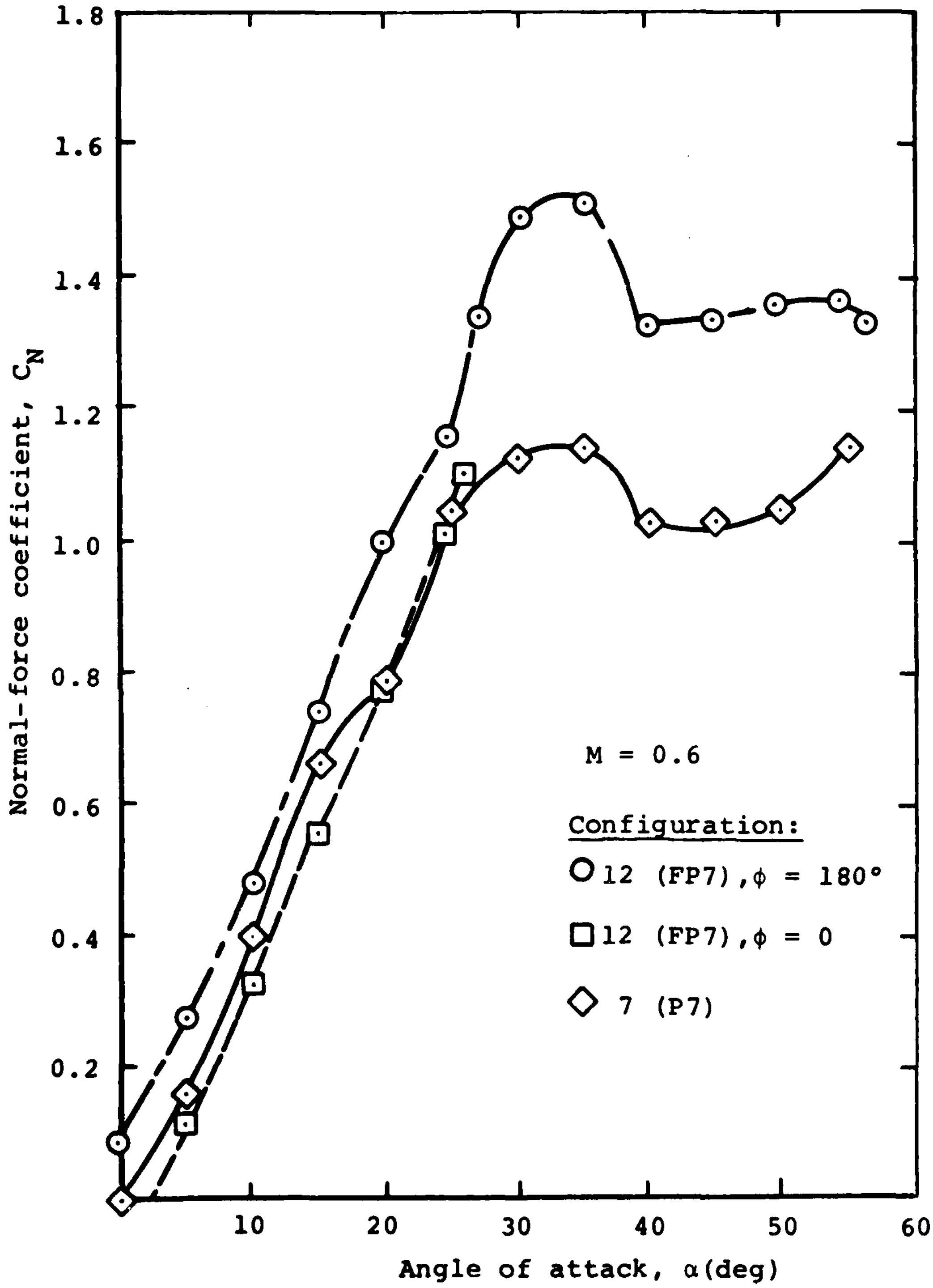


Figure 36.- Comparison of normal-force coefficients from force (FP7) and pressure (P7) models.

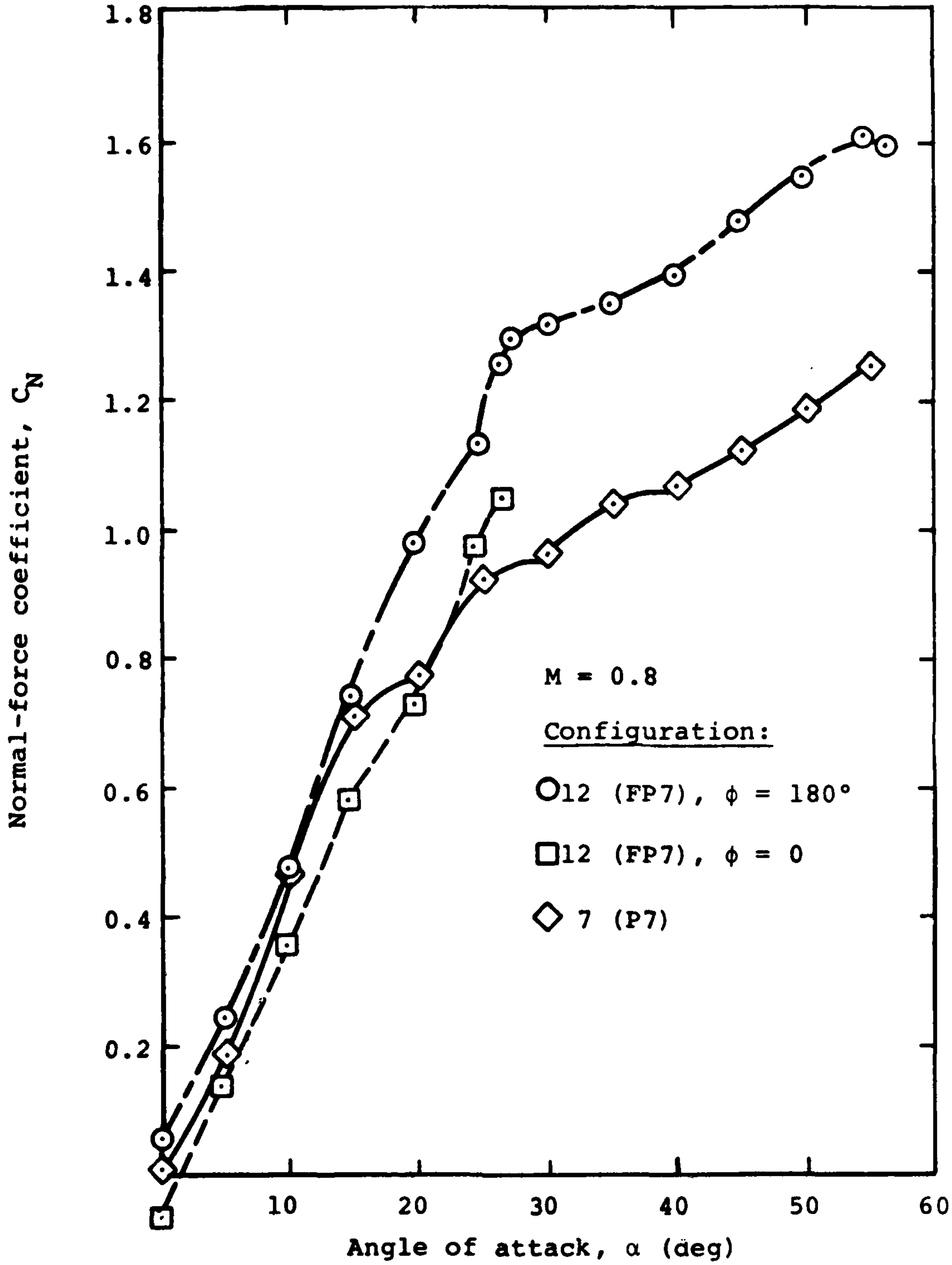


Figure 37.- Comparison of normal-force coefficients from force (FP7) and pressure (P7) models.

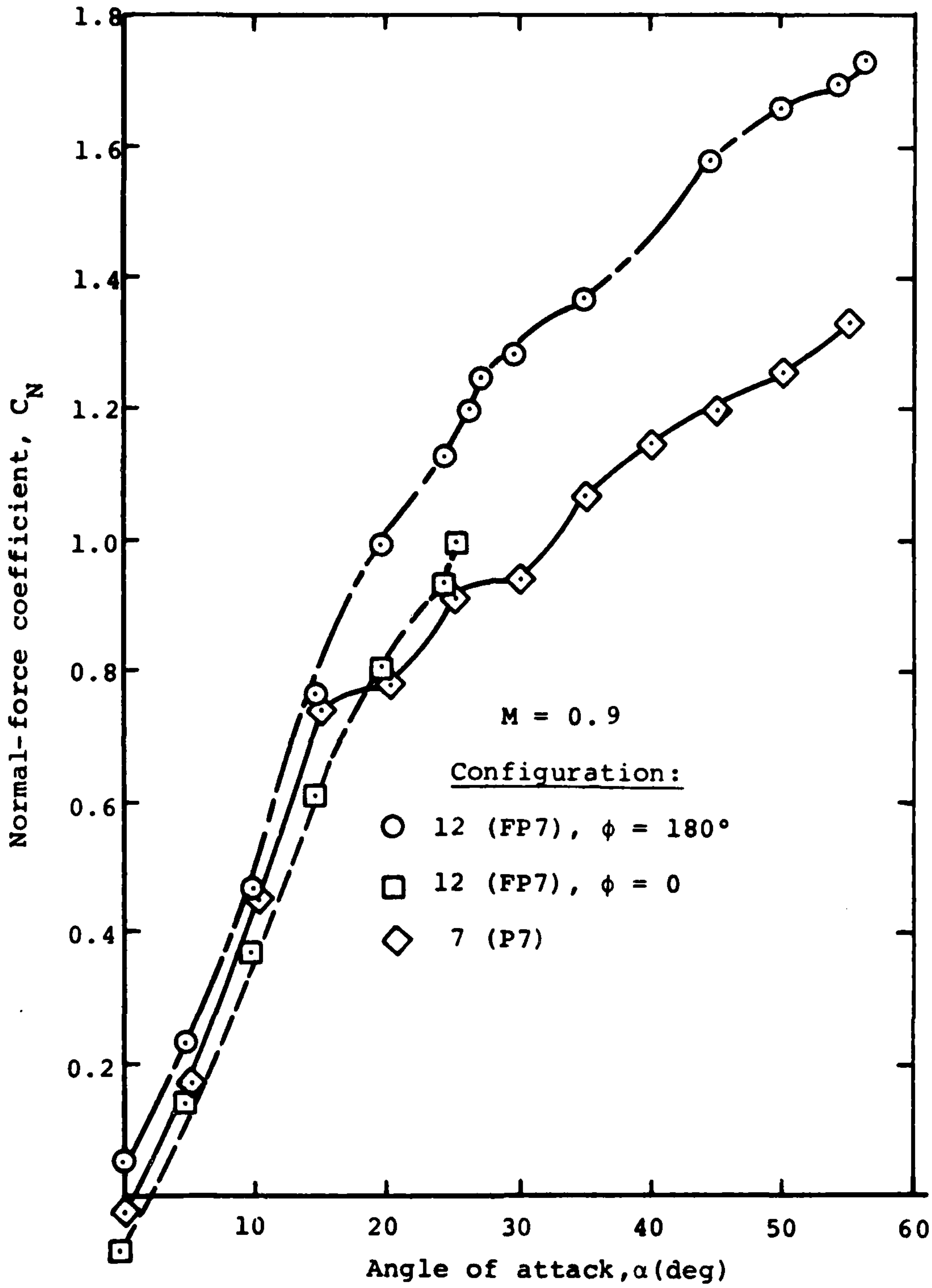


Figure 38.- Comparison of normal-force coefficients from force (FP7) and pressure (P7) models.

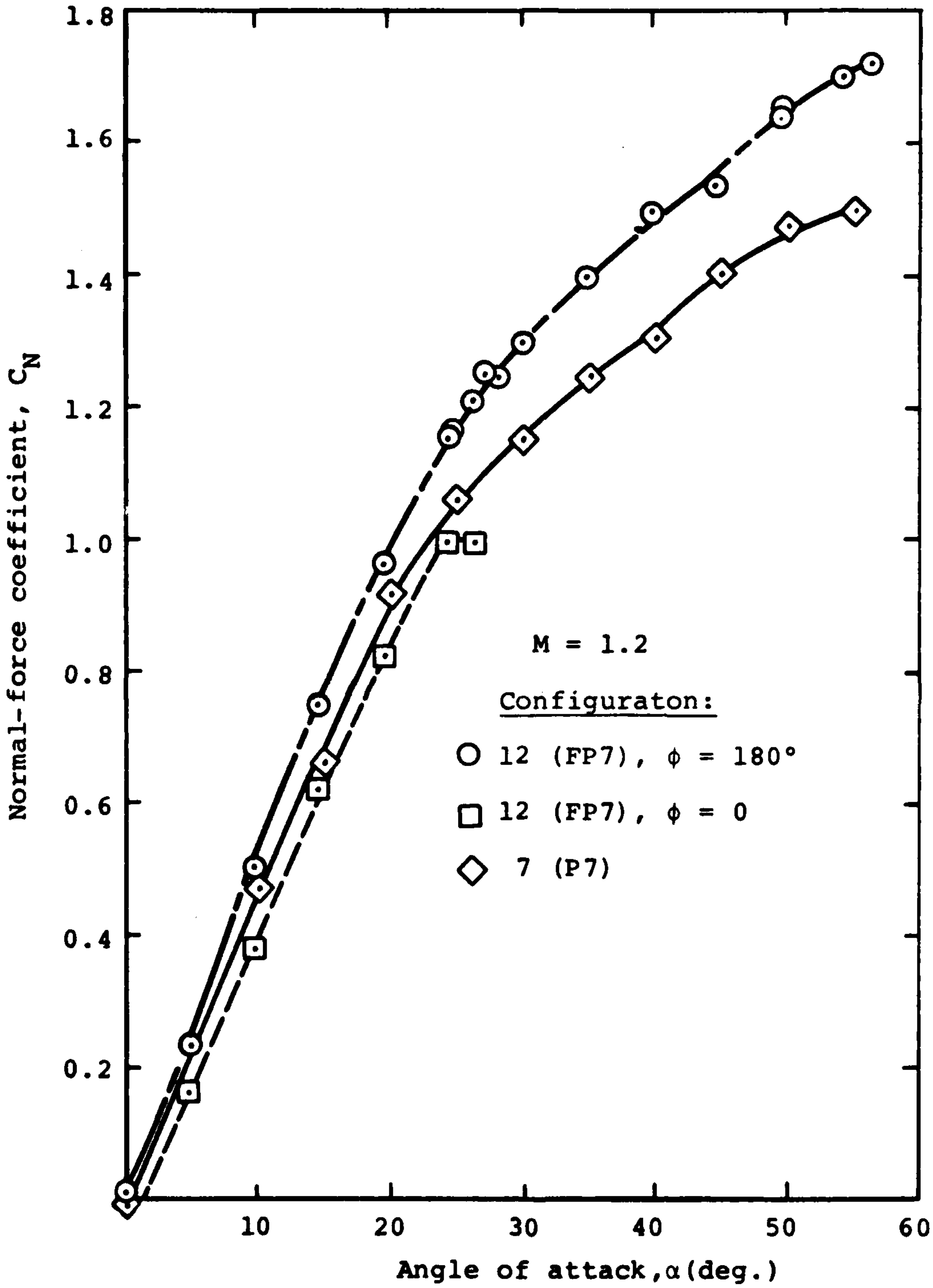


Figure 39.- Comparison of normal-force coefficients from force (FP7) and pressure (P7) models.

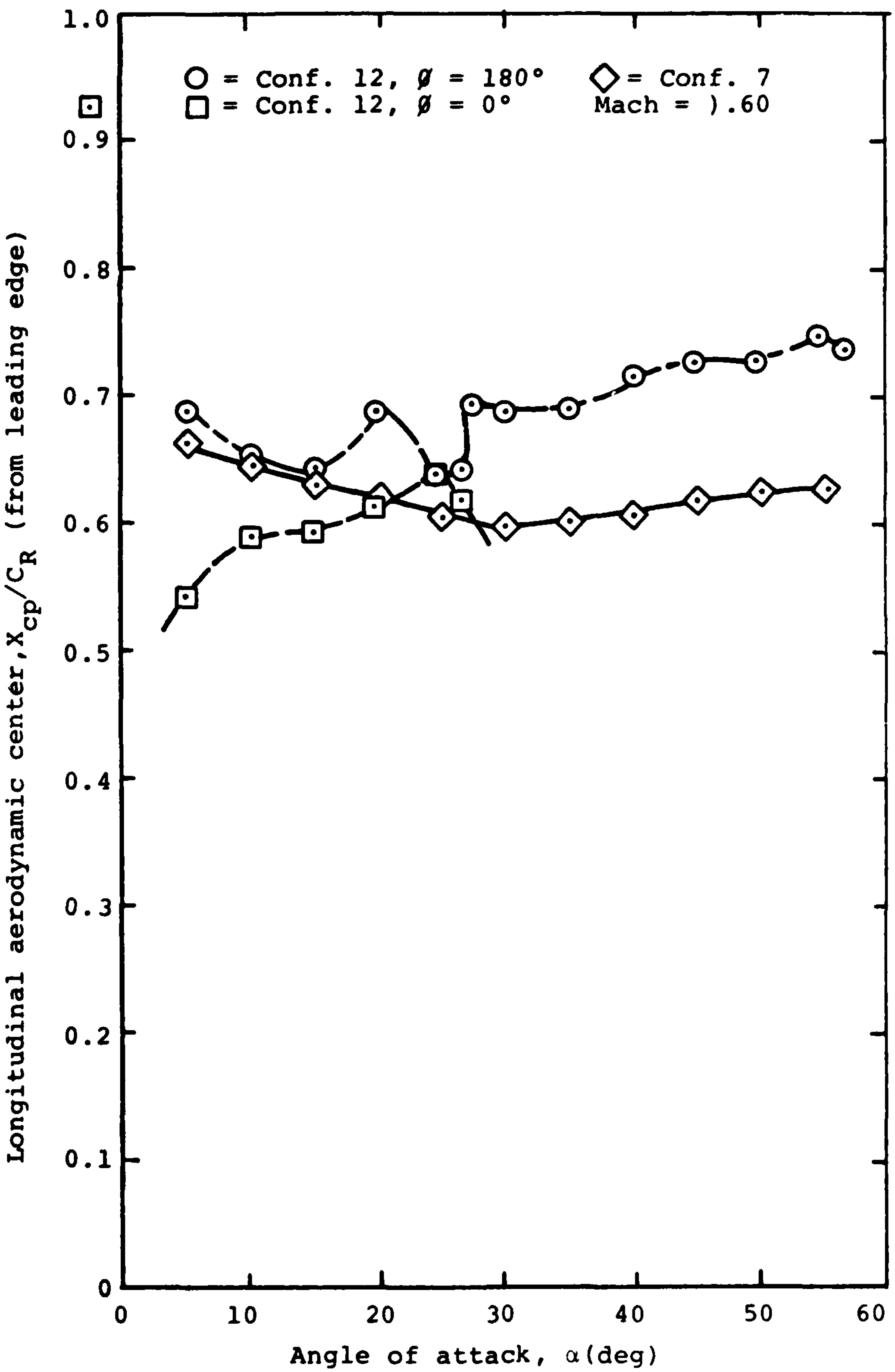


Figure 40.- Comparison of longitudinal centers of pressure from force (FP7) and pressure (P7) models.

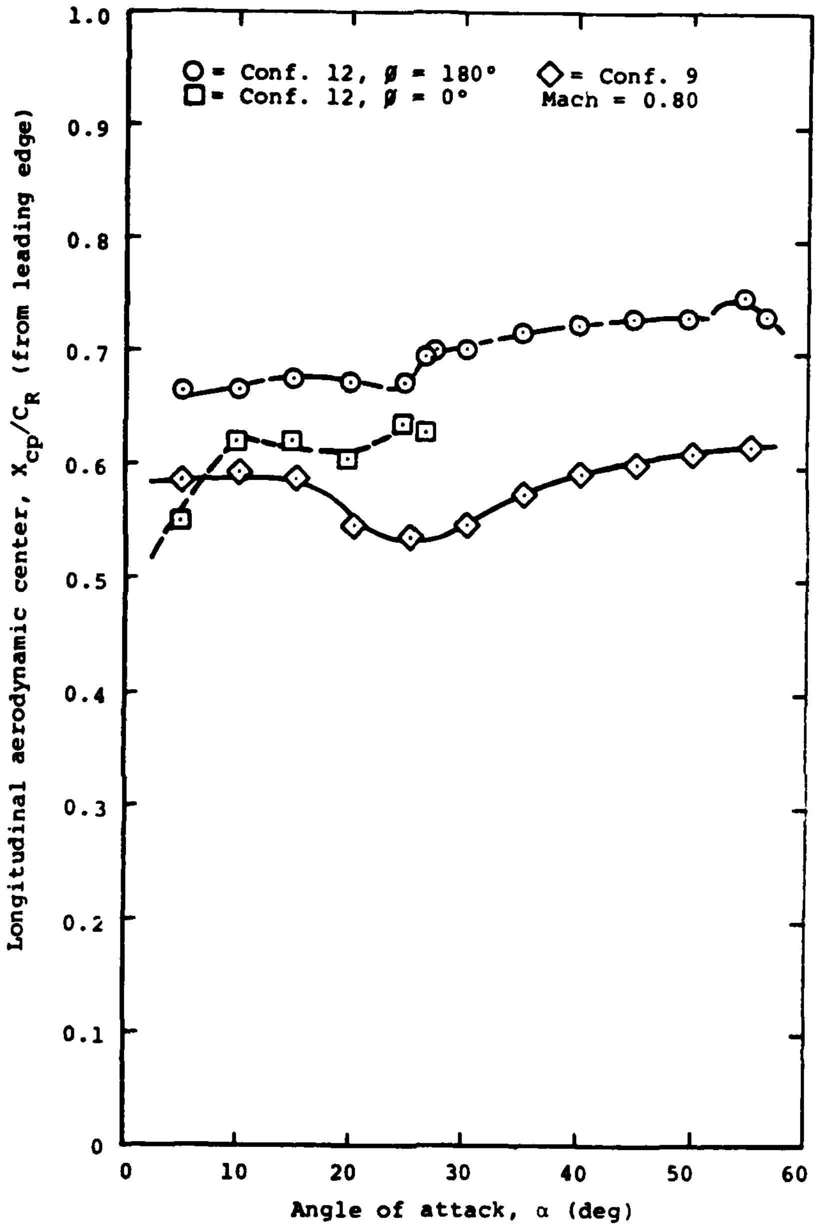


Figure 41.- Comparison of longitudinal centers of pressure from force (FP7) and pressure (P7) models.

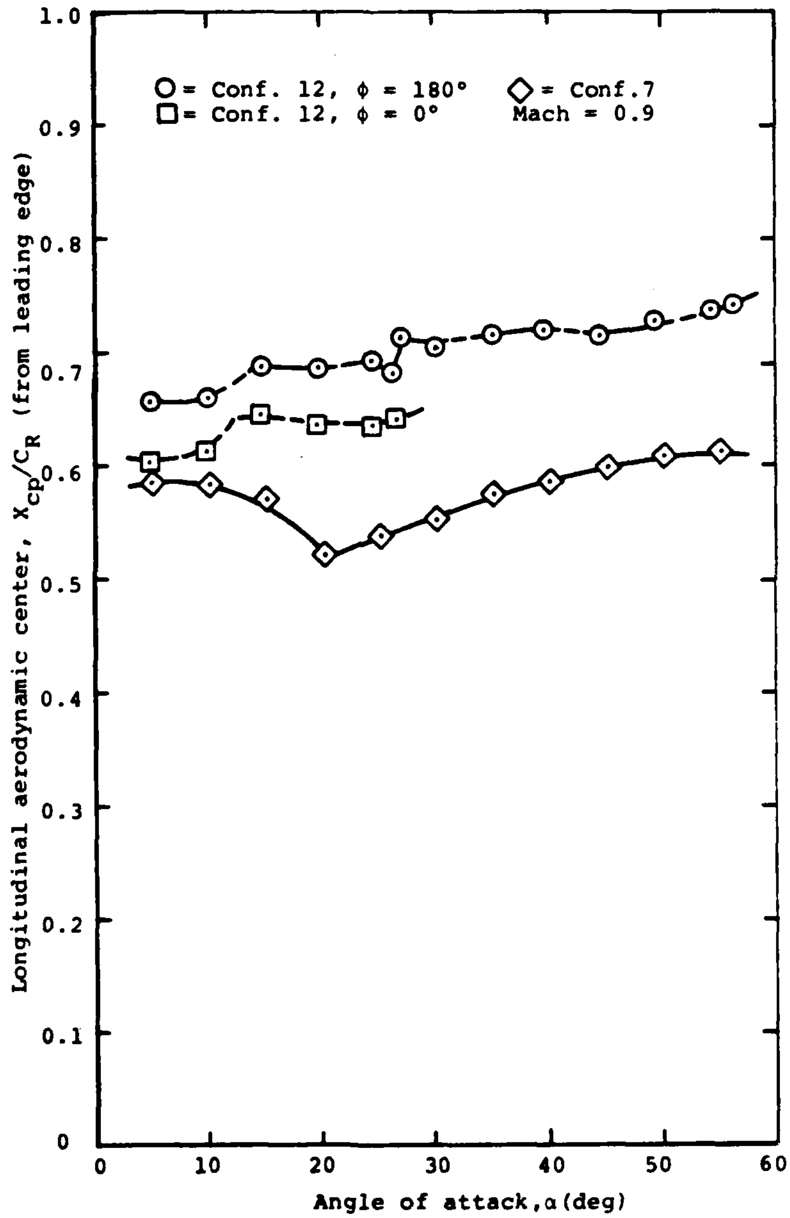


Figure 42.- Comparison of longitudinal centers of pressure from force (FP7) and pressure (P7) models.

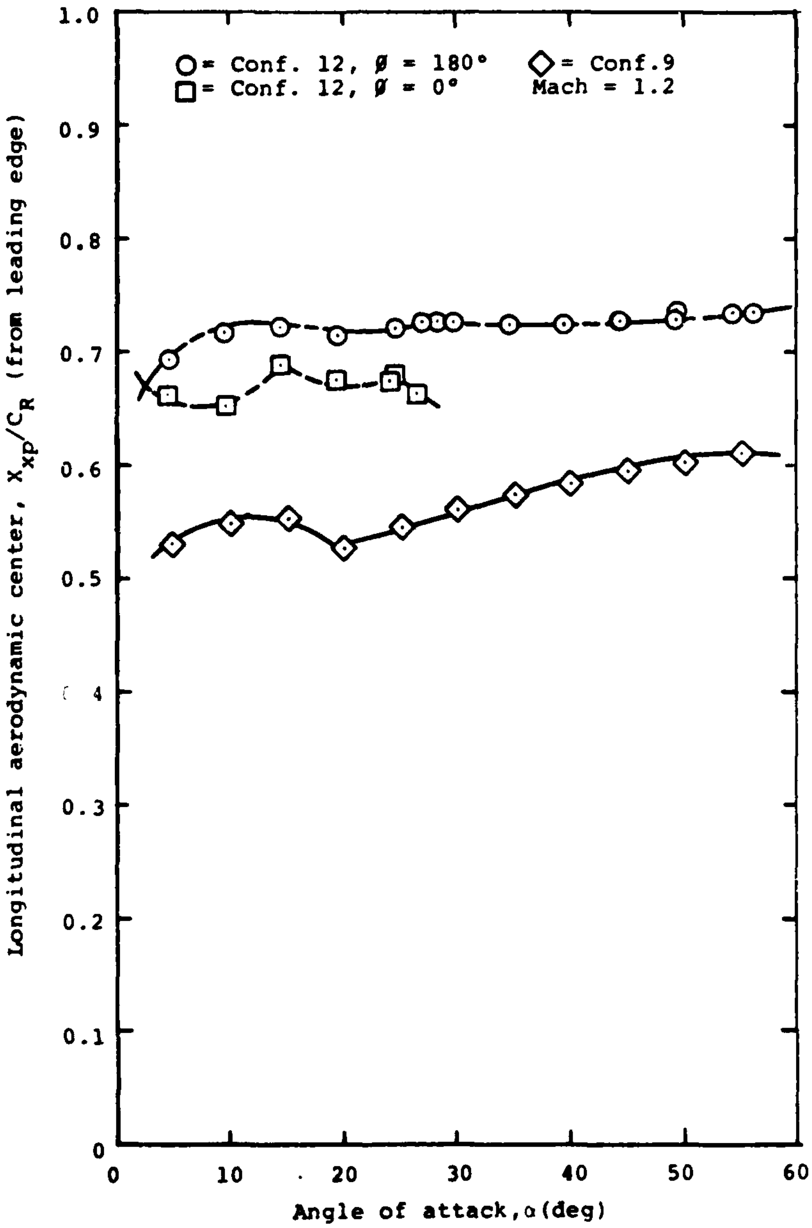


Figure 43.- Comparison of longitudinal centers of pressure from force (FP7) and pressure (P7) models.

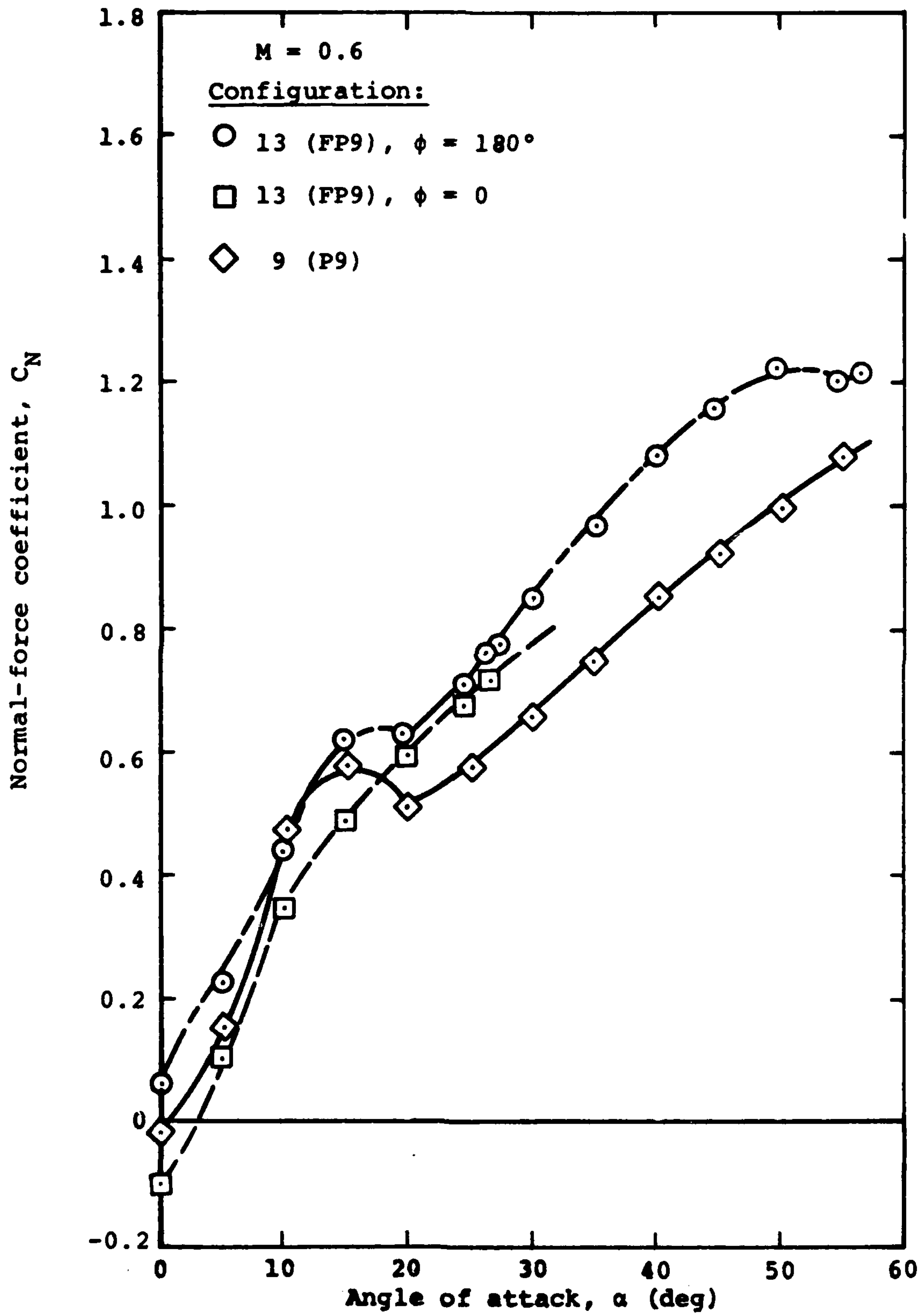


Figure 44.- Comparison of normal-force coefficients From force (FP7) and pressure (P7) models.

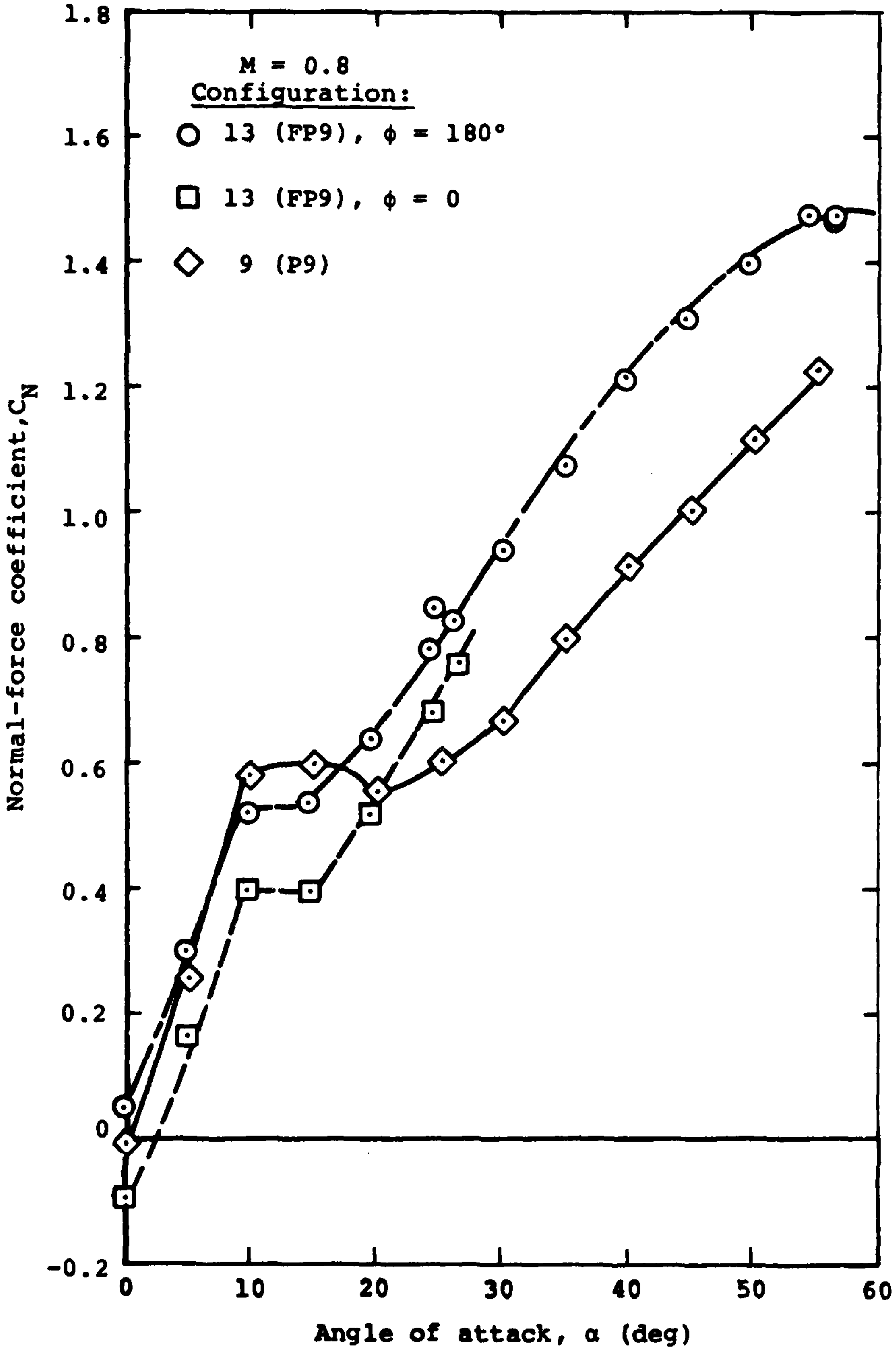


Figure 45.- Comparison of normal-force coefficients from force (FP9) and pressure (P9) models.

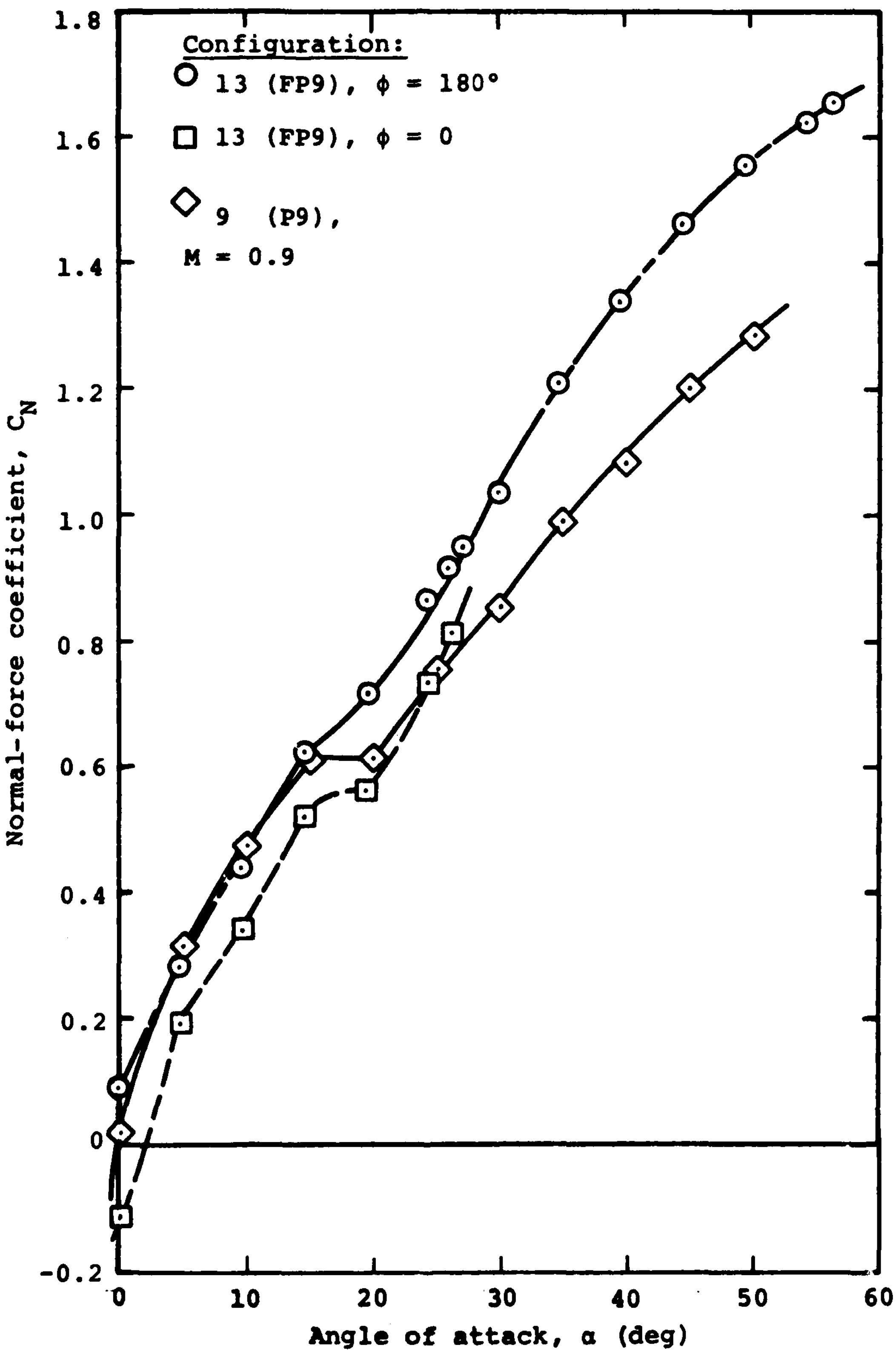


Figure 46.- Comparison of normal-force coefficients from force (FP9) and pressure (P9) models.

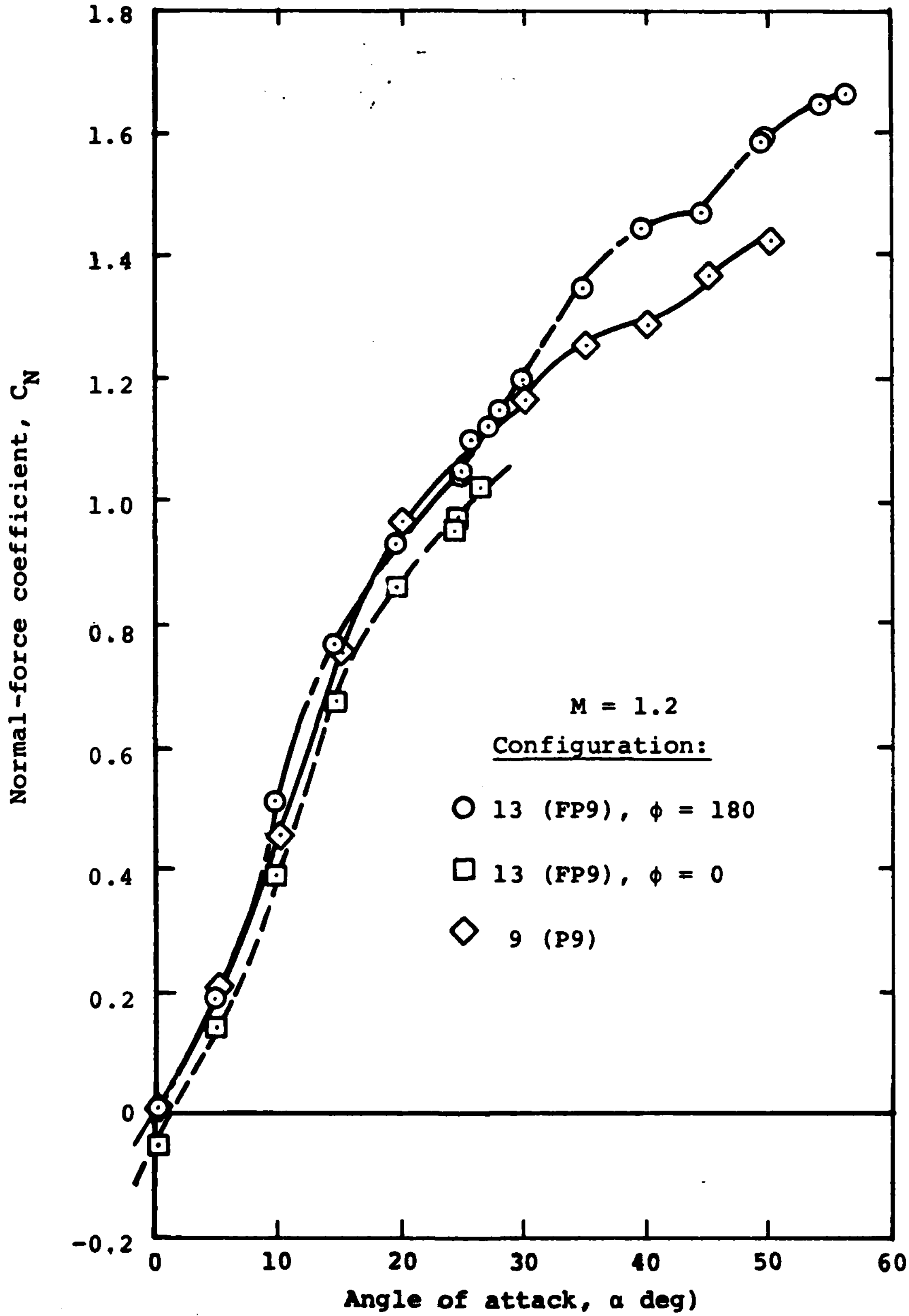


Figure 47.- Comparison of normal-force coefficients from from force (FP9) and pressure (P9) models.

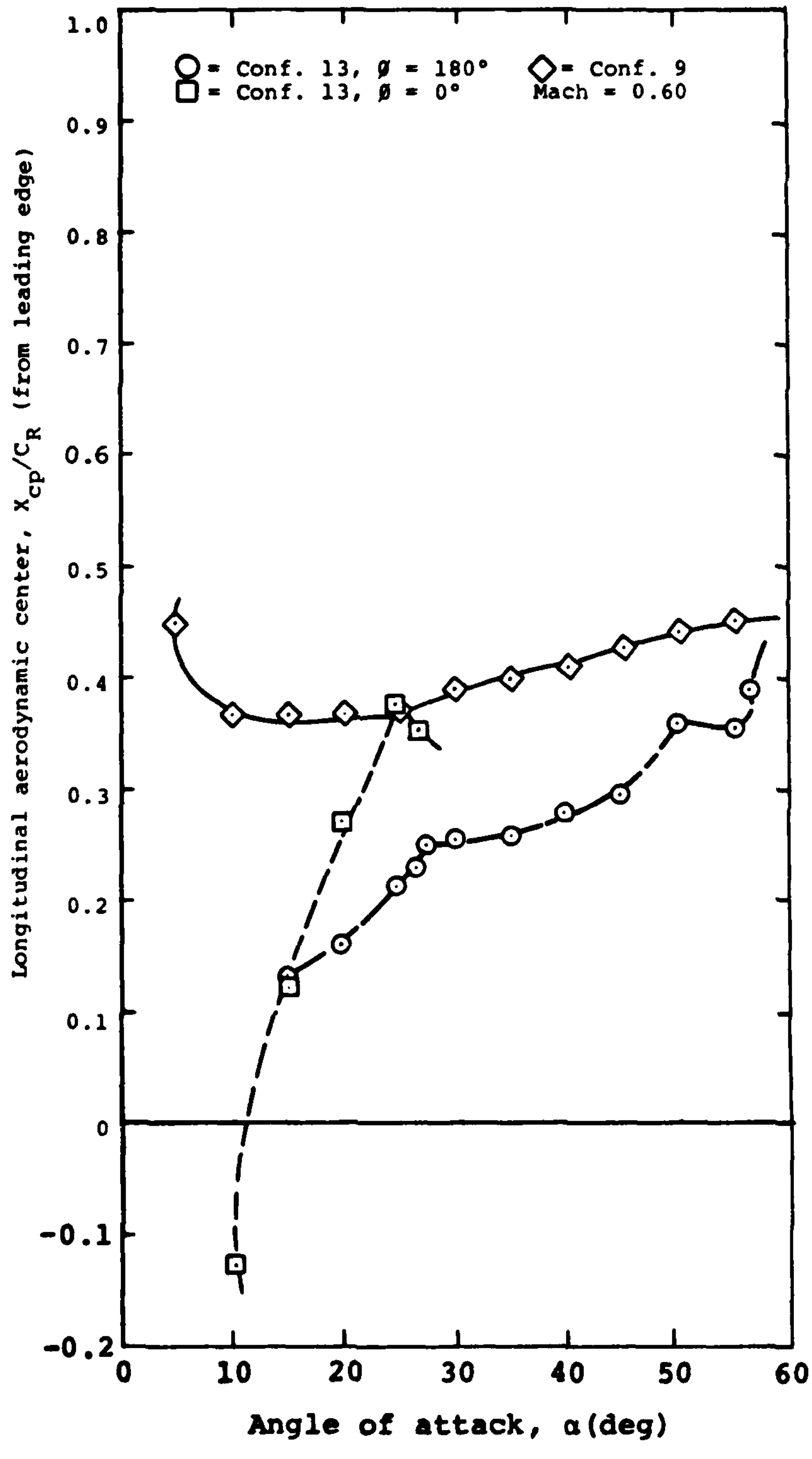


Figure 48.- Comparison of longitudinal aerodynamic centers from froce (FP9) and pressure (P9) models

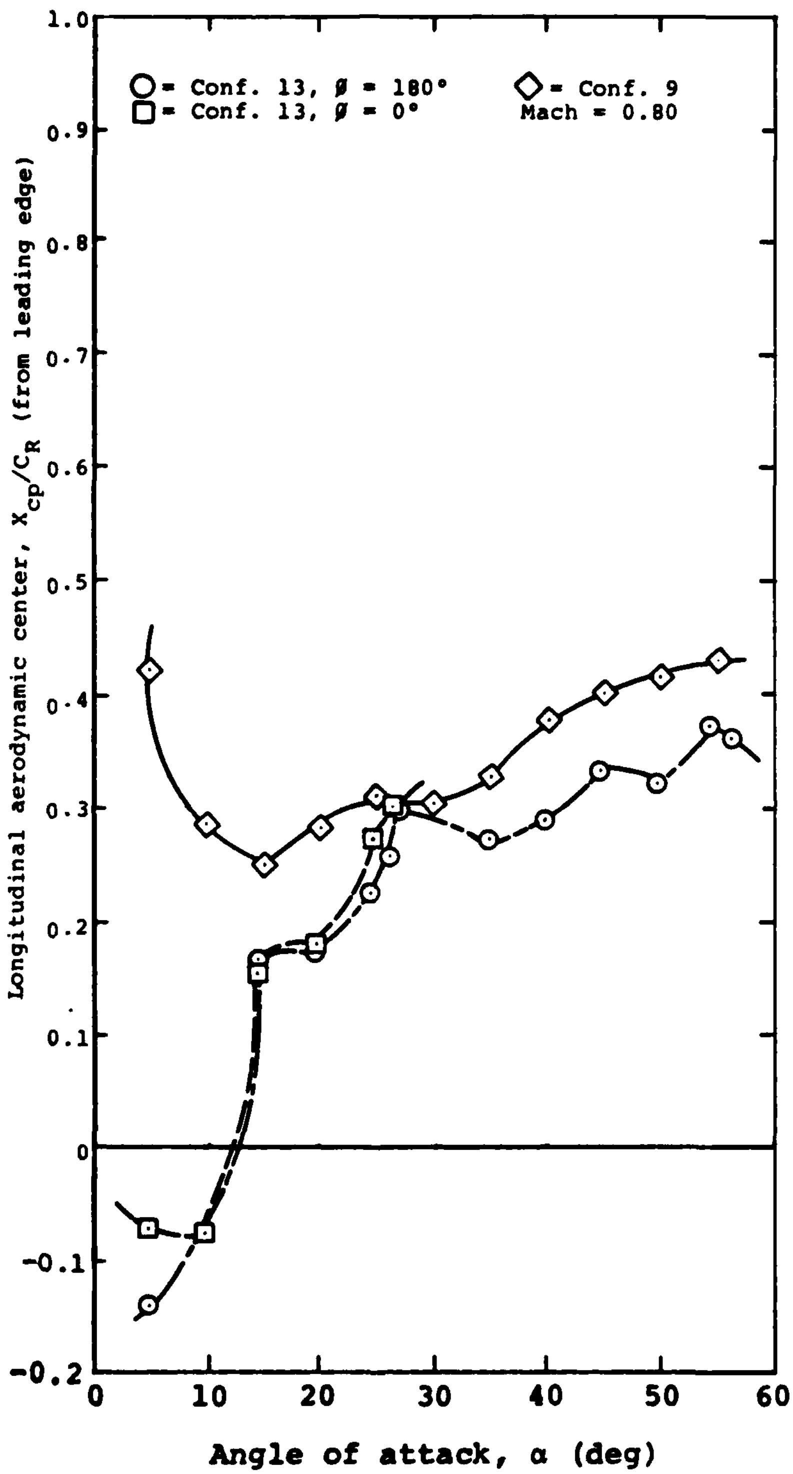


Figure 49.- Comparison of longitudinal aerodynamic centers from force (FP9) and pressure (P9) models.

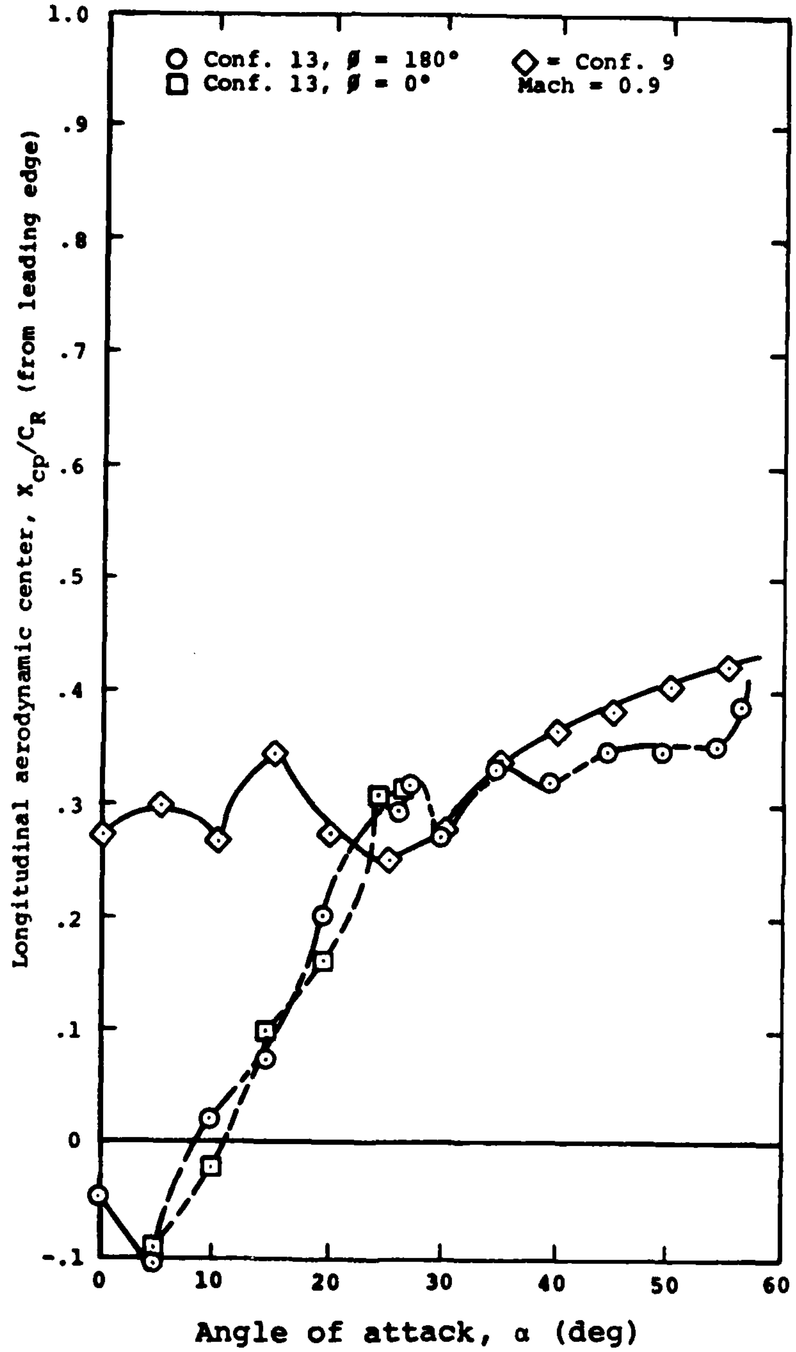


Figure 50.- Comparison of longitudinal aerodynamic centers from force (FP9) and pressure (P9) models.

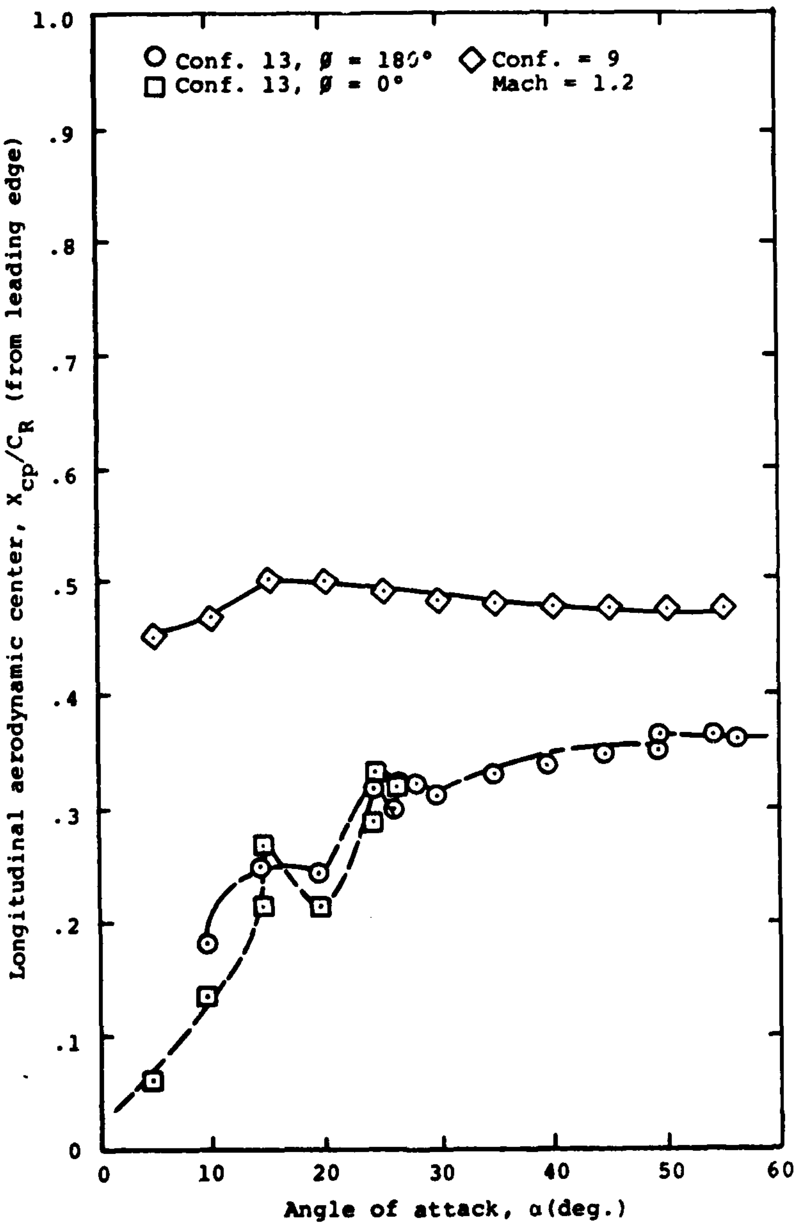


Figure 51.- Comparison of longitudinal centers of pressure from force (FP9) and pressure (P9) models.

Figure 52.- Photo of pressure model installation for $-3° \leq \alpha \leq 27°$ (config. 4) model P4 shown: aspect ratio 1, taper ratio zero.

Figure 53.- Photo of force-model installation for 27° $\leq \alpha \leq$ 57° (config. 12, model P4 shown: aspect ratio 2.0, taper ratio zero).

Nomenclature

.XXX ← C_p from run 20-config. 8 (P8)
.XXX ← C_p from run 35-config. 11 (P8 with dummy sting)
ⓝ Pressure orifice number

Note: Circled C_p's differ by mre than 0.1

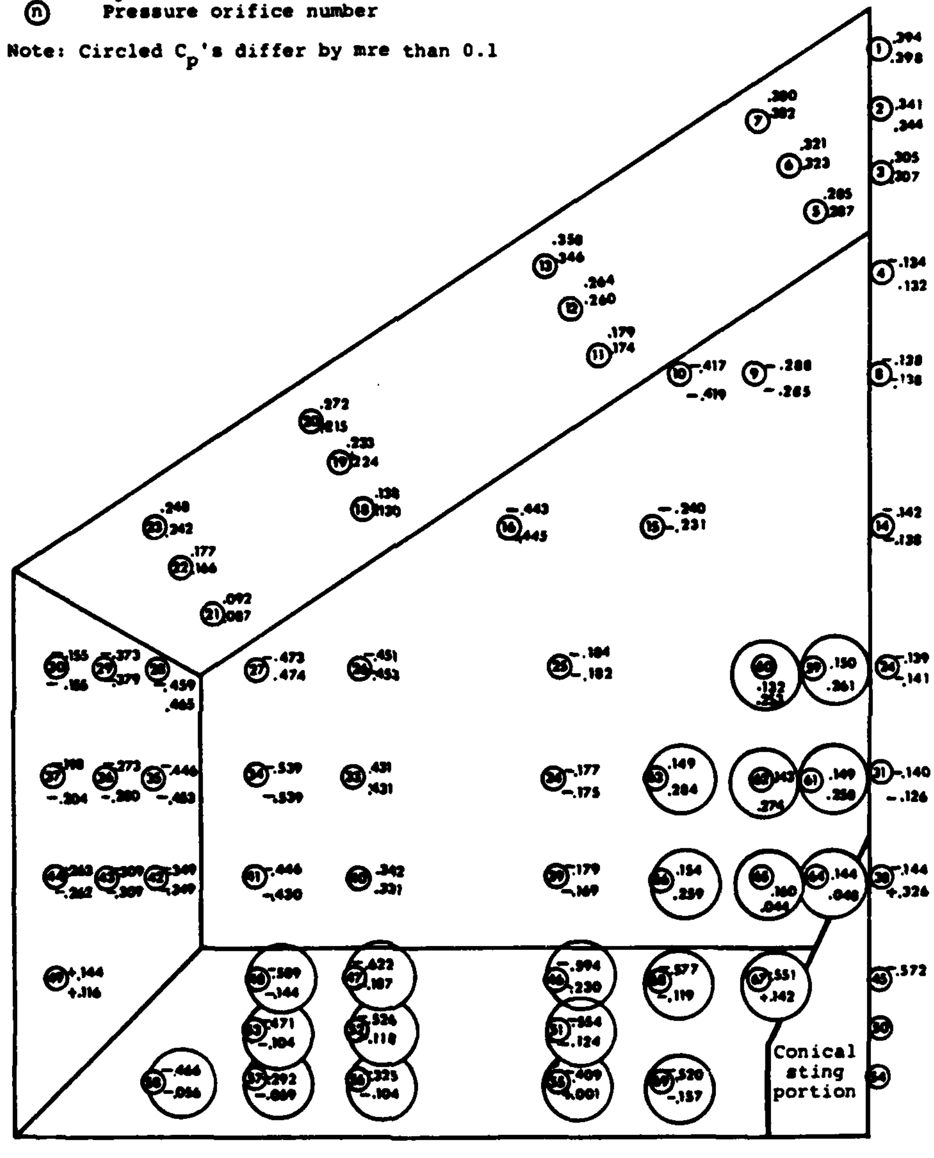


Figure 54.- Dummy force sting effect on leeward side pressure coefficients ($M_\infty = 1.2$, $\alpha = 5°$, $\phi = 180°$.

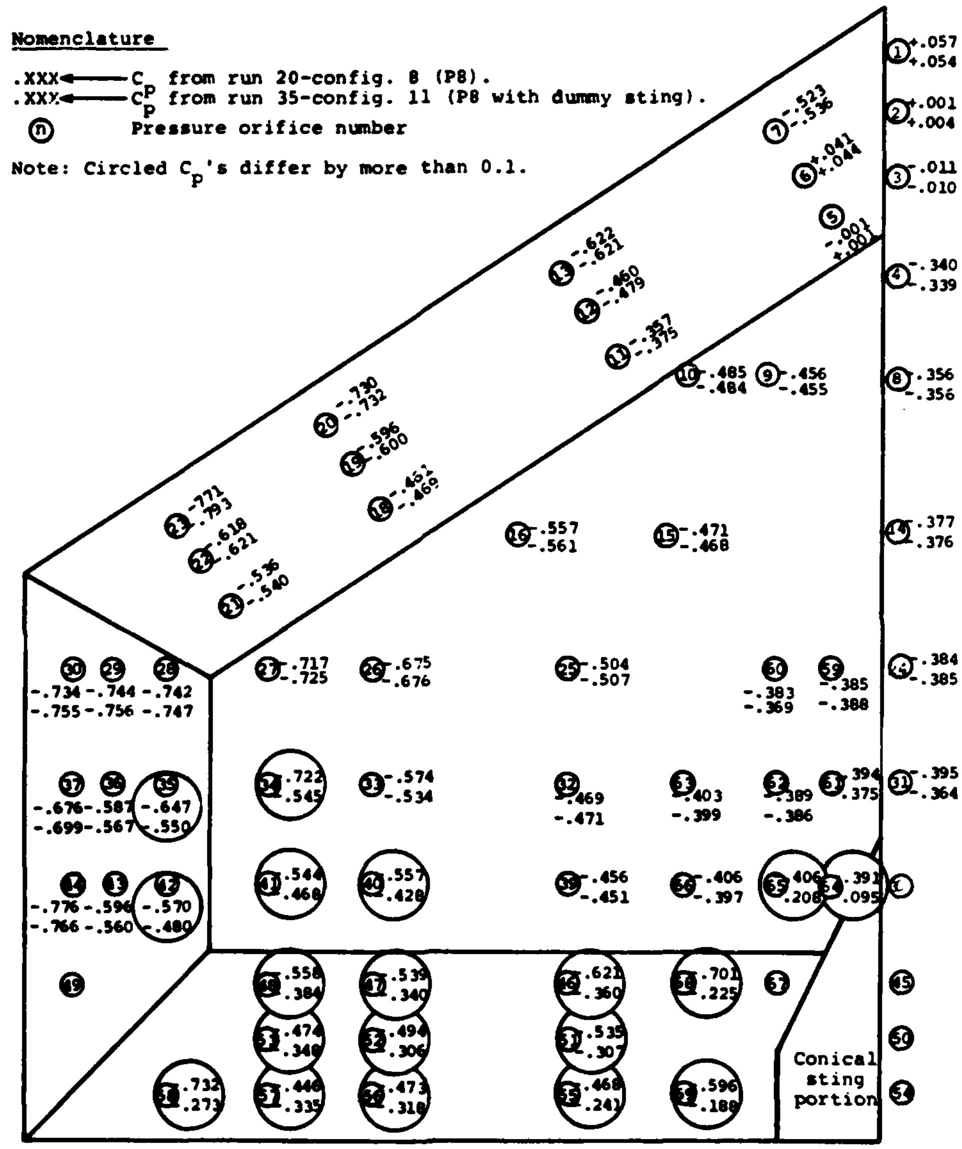


Figure 55.- Dummy force sting effect on leeward side pressure coefficients ($M = 1.2$, $\alpha = 15°$, $\phi = 180°$).

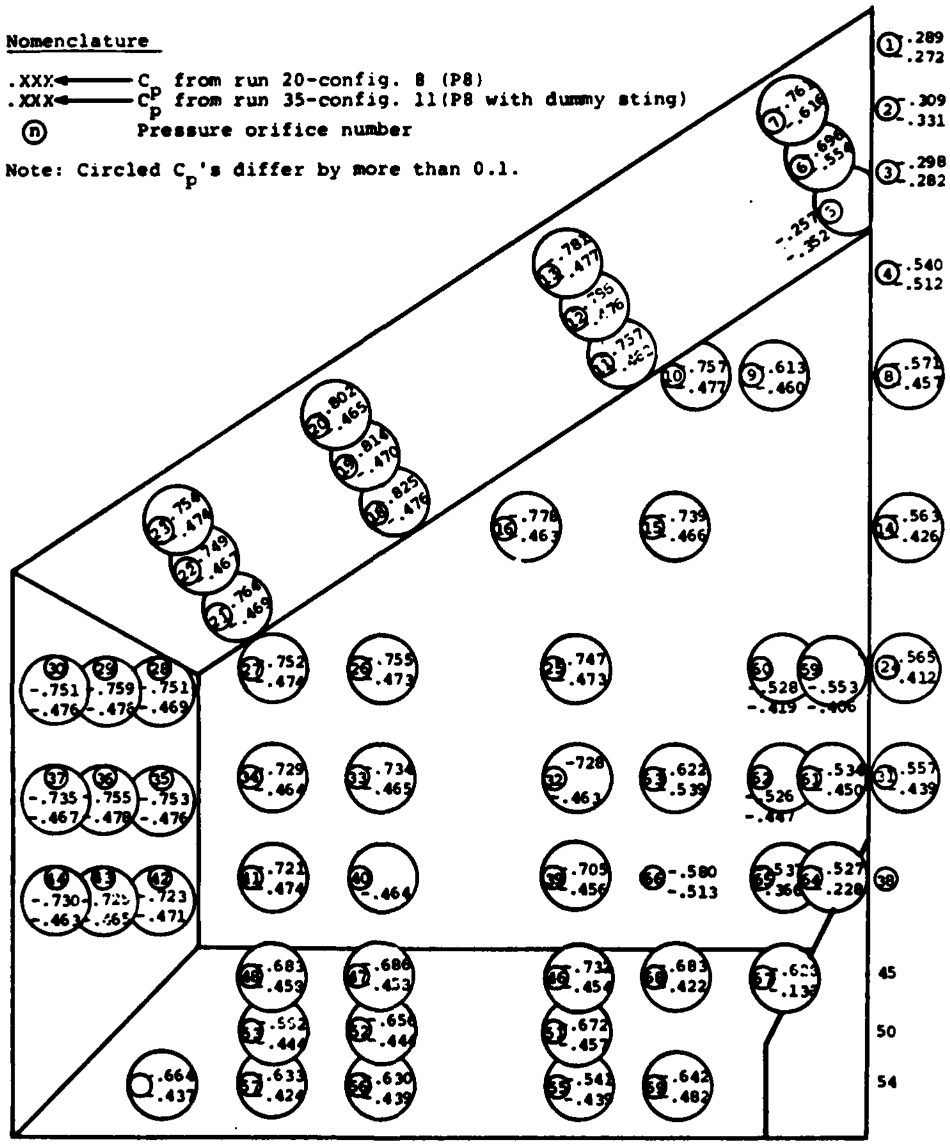


Figure 56.- Dummy force effect on leeward side pressure coefficients (M = 1.2, α = 25°, ϕ = 180°).

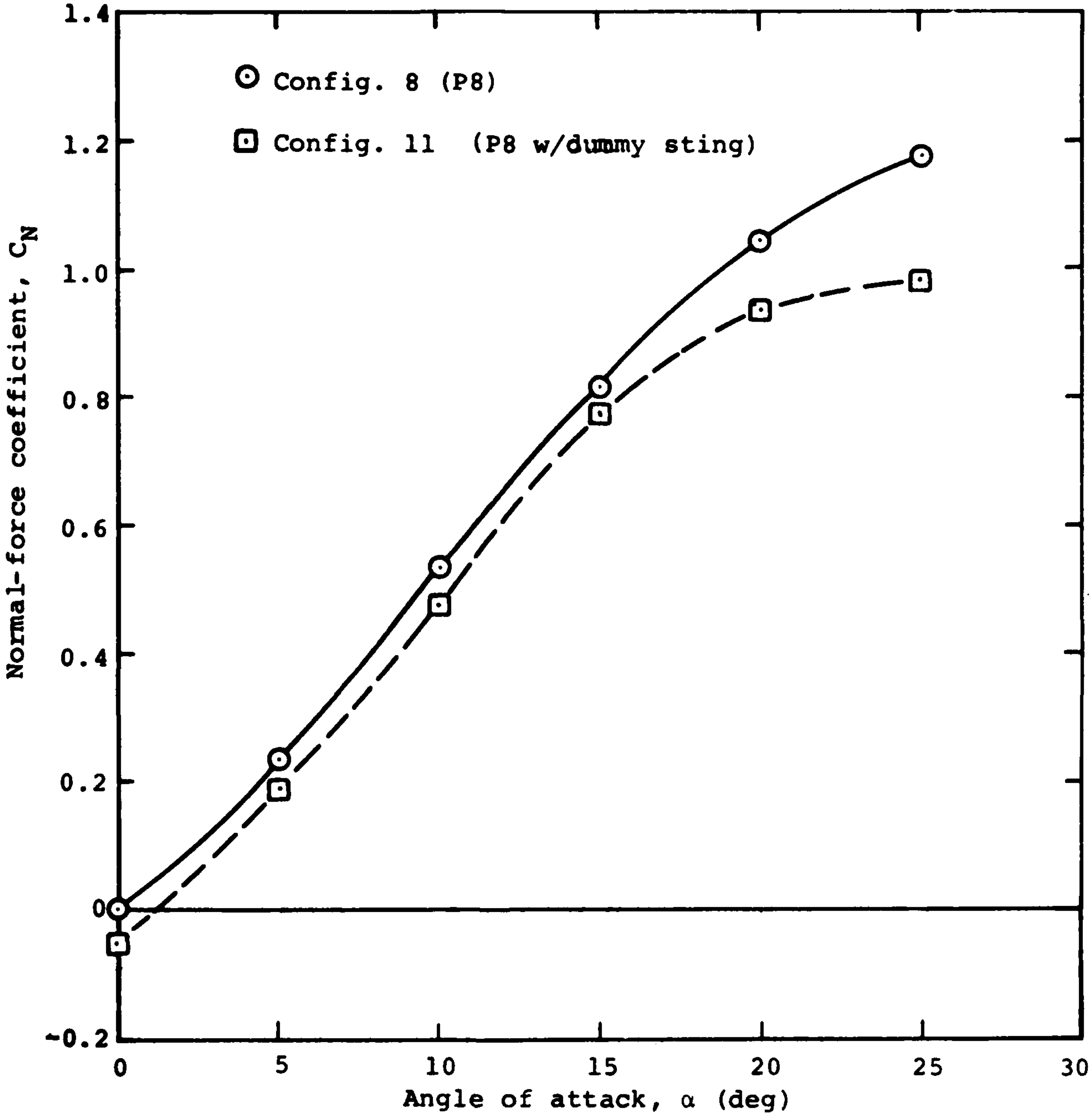


Figure 57.- Comparison of normal-force coefficients for pressure model P8 with (config. 11) and without (config. 8) dummy force-model sting hardware installed. Mach 1.2

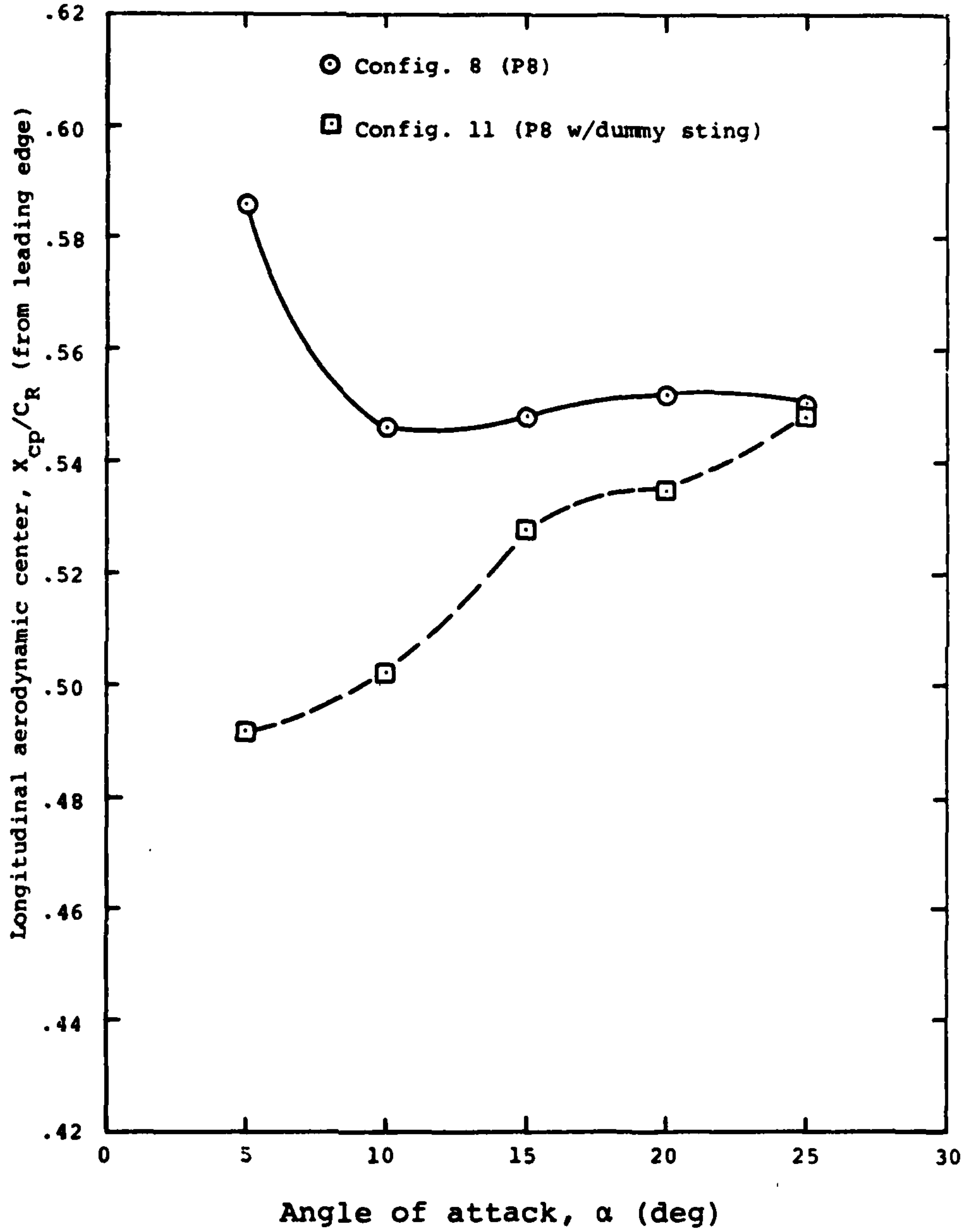


Figure 58.- Comparison of aerodynamic centers for pressure model P8 with and without the dummy force-model sting. Mach 1.2.

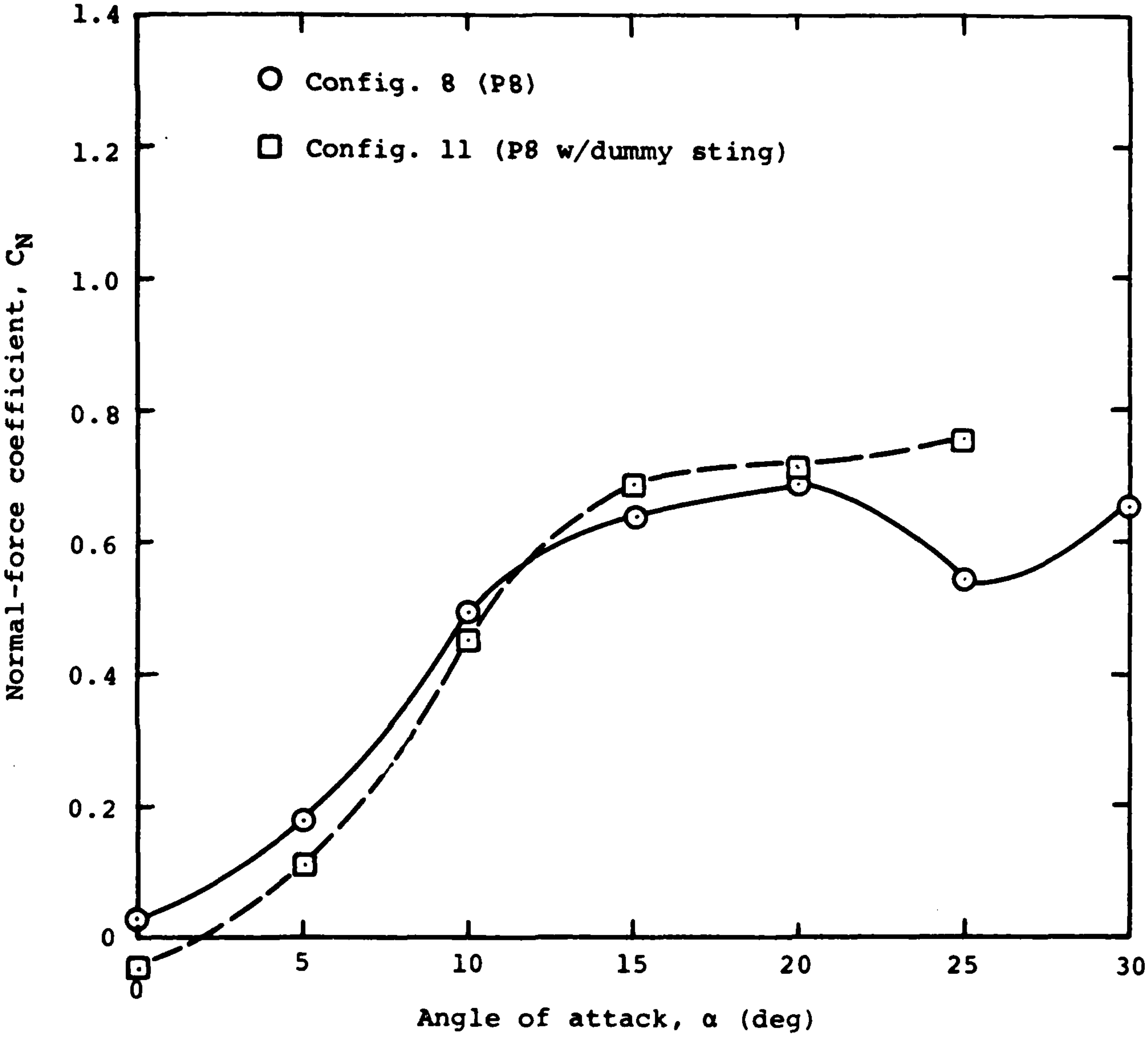


Figure 59.- Comparison of normal-force coefficients for pressure model P8 with and without dummy force-model sting installed. Mach 0.6.

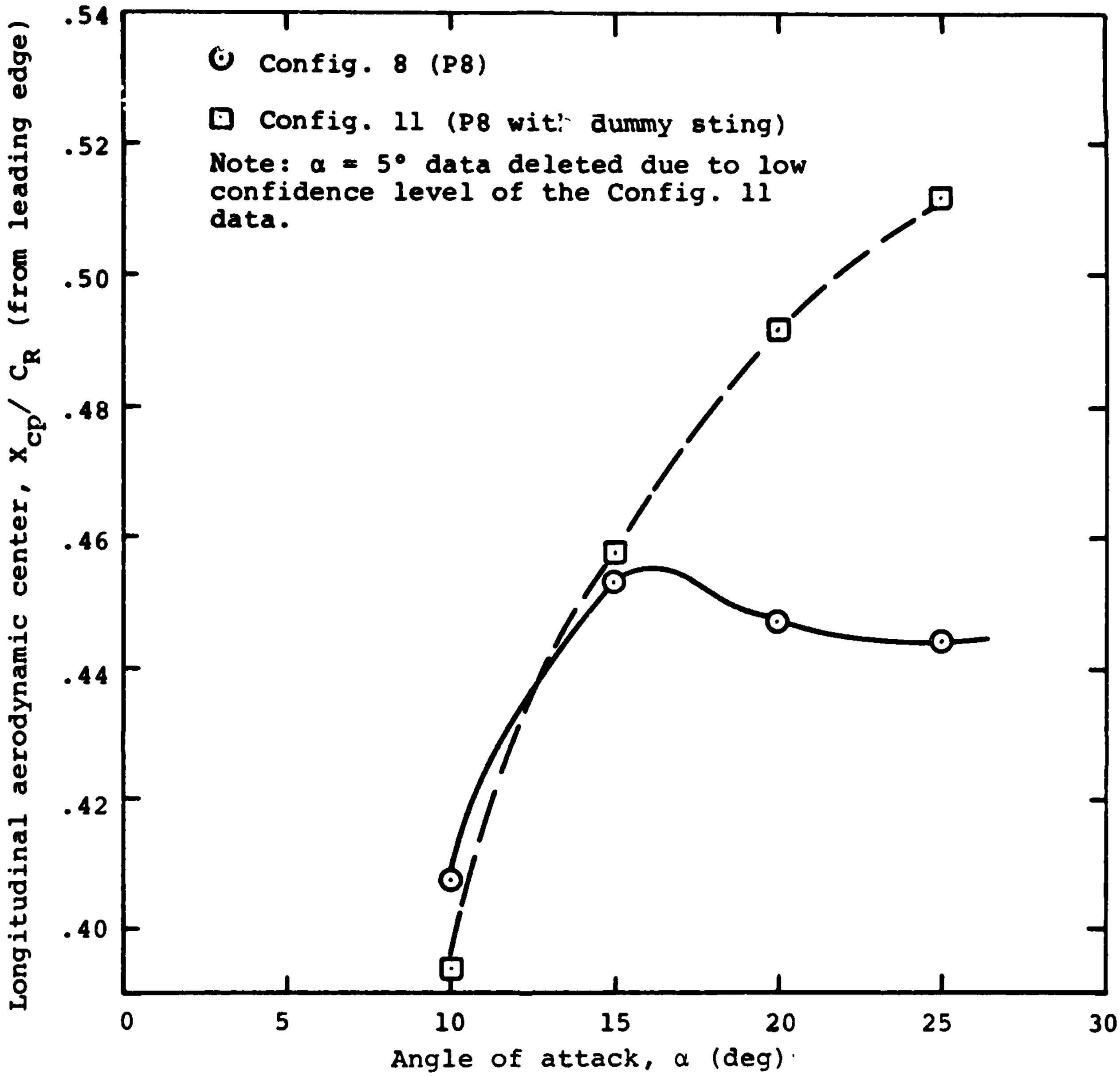
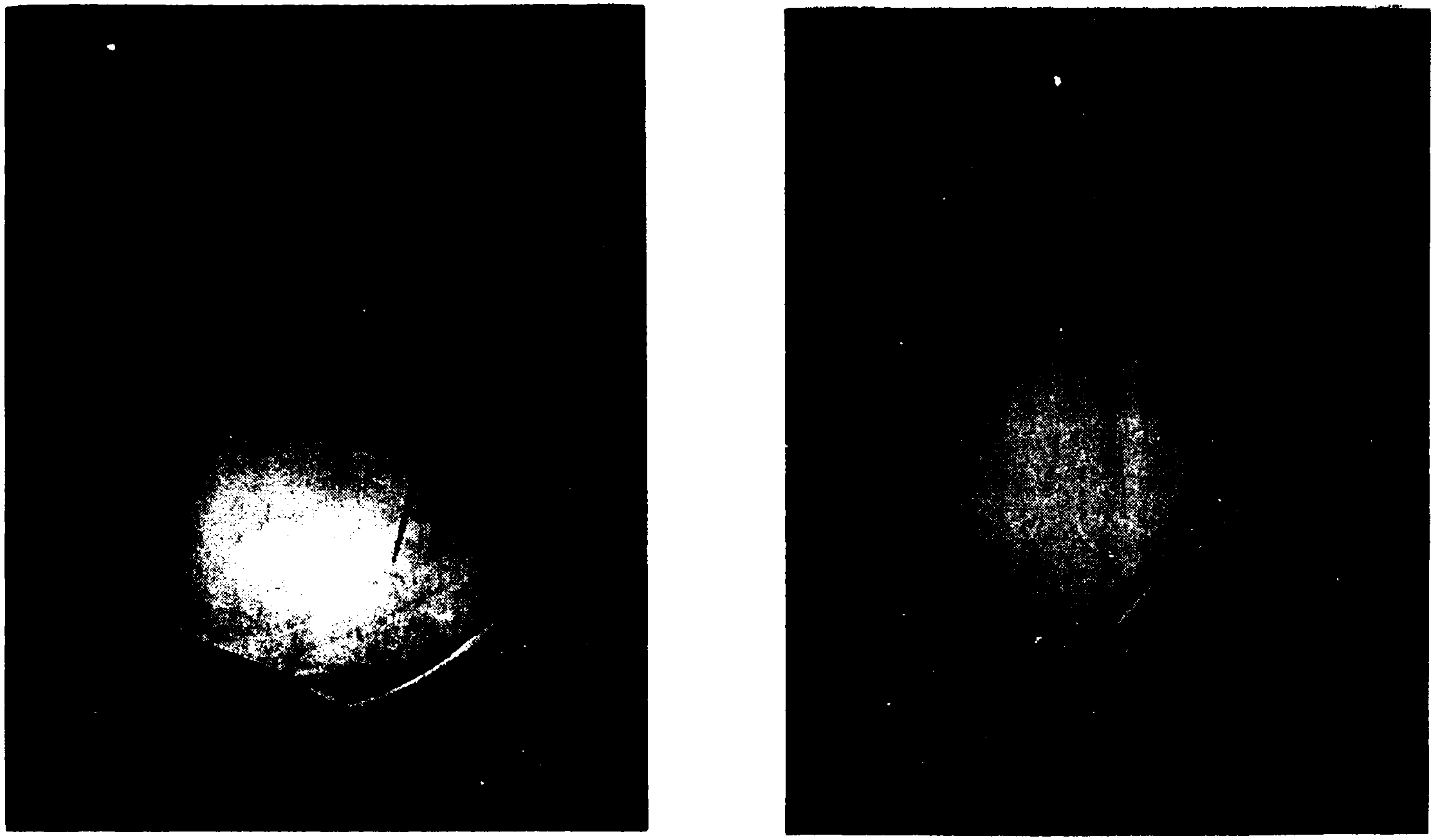


Figure 60.- Comparison of aerodynamic centers for pressure model P8 with and without the dummy force-model sting installed. Mach 0.6.



without dummy sting
Run 20, $\alpha = 20°$, Mach 1.2
config. 8 (P8)

with dummy sting
Run 35, $\alpha = 20°$, Mach 1.2
config. 11 (P8 with dummy sting)

Figure 61.- Comparison of pressure model P8 lee-side flow fields at Mach 1.2 without (config. 8) and with (config. 11) the dummy force model sting installed.

Figure 62a.- Force model FP9 (config. 13) surface oil flow pattern at Mach 1.2, $\alpha = 5°$, $\phi = 180°$, run 191.

Figure 62b.- Force model FP9 (config. 13) surface oil flow pattern at Mach 1.2, $\alpha = 20°$, $\phi = 180°$, run 191.

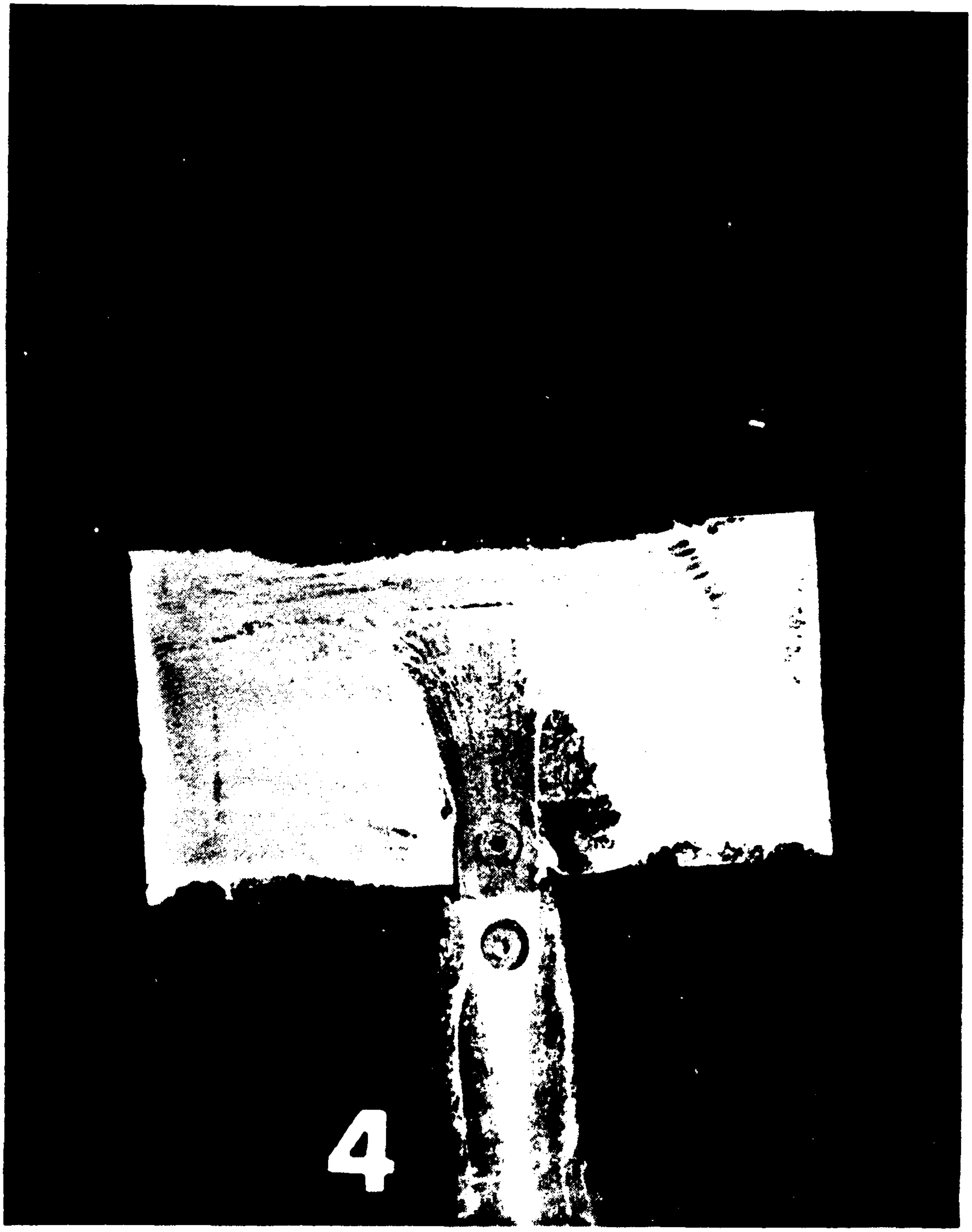


Figure 62c.- Force model FP9 (config. 13) surface oil flow pattern at Mach 1.2, $\alpha = 28°$, $\phi = 180°$, run 187.

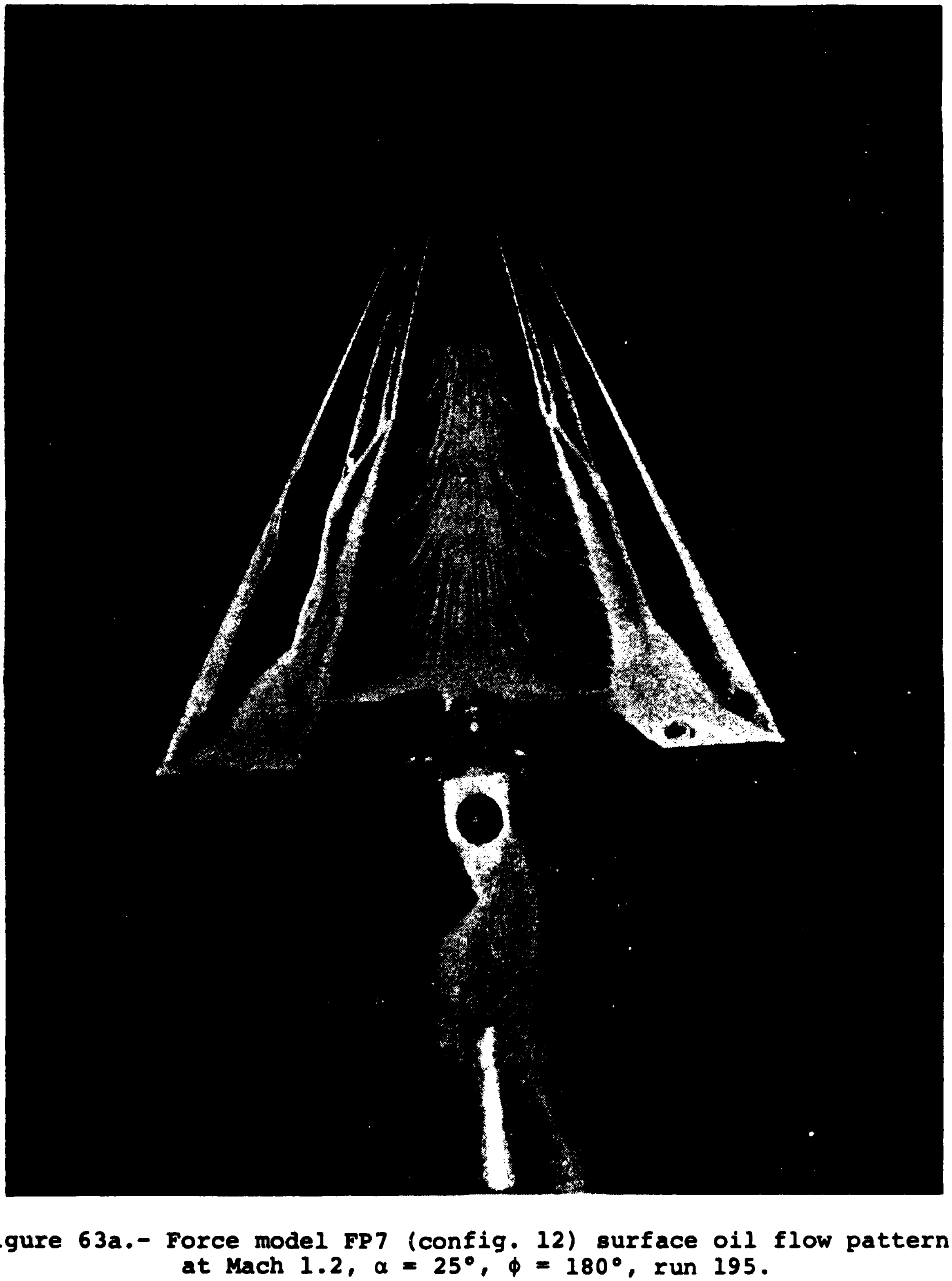


Figure 63a.- Force model FP7 (config. 12) surface oil flow pattern at Mach 1.2, $\alpha = 25°$, $\phi = 180°$, run 195.

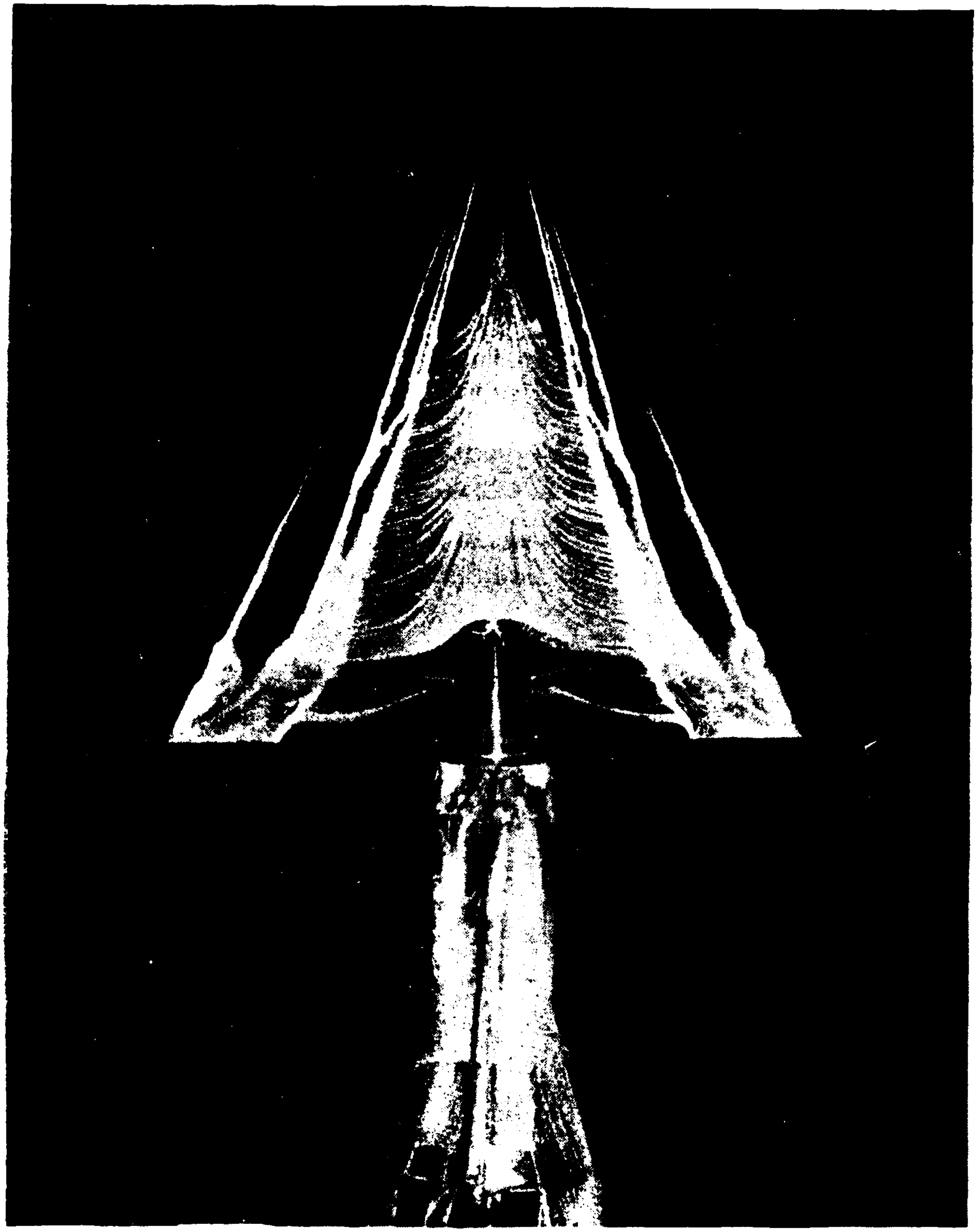
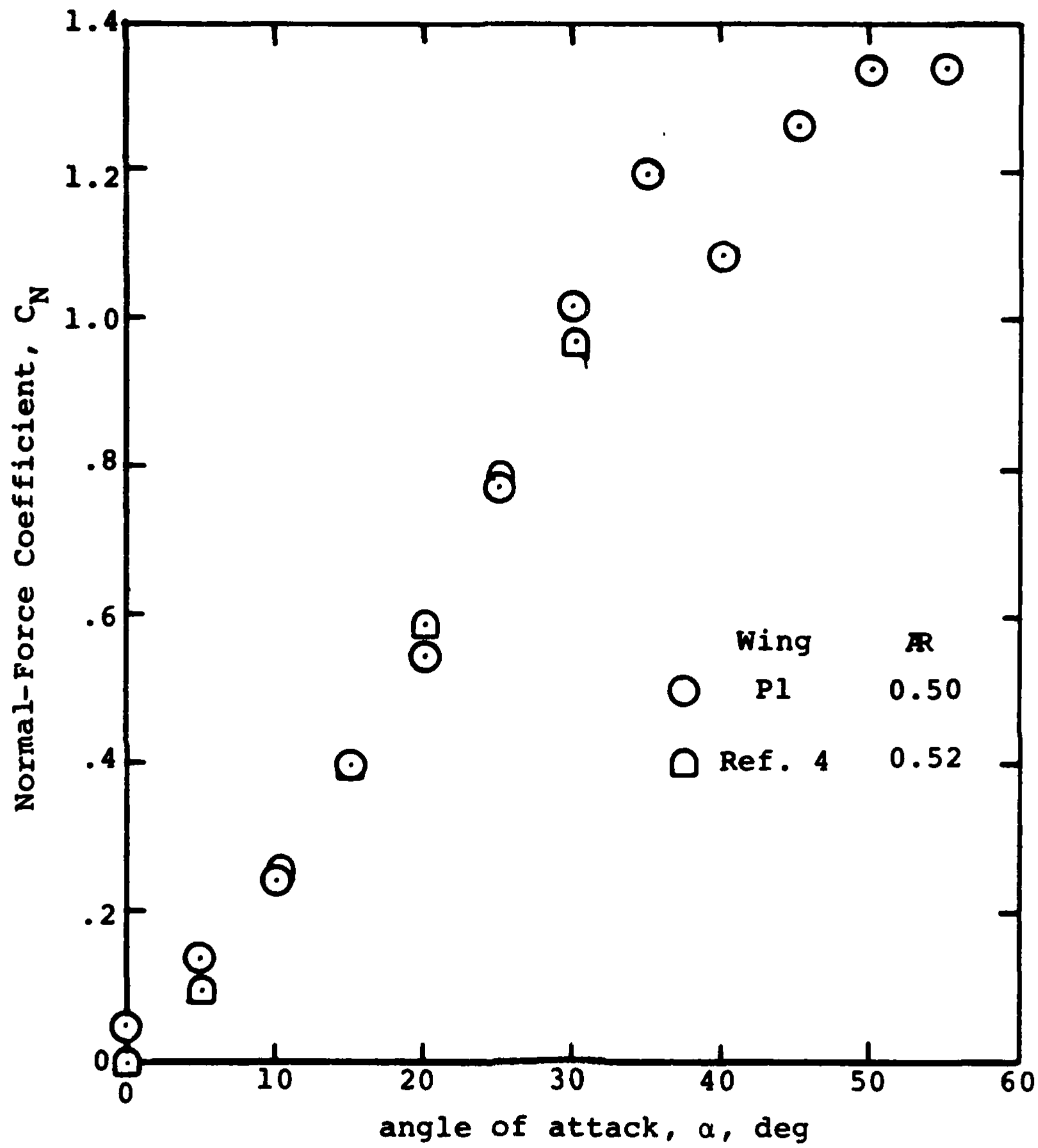
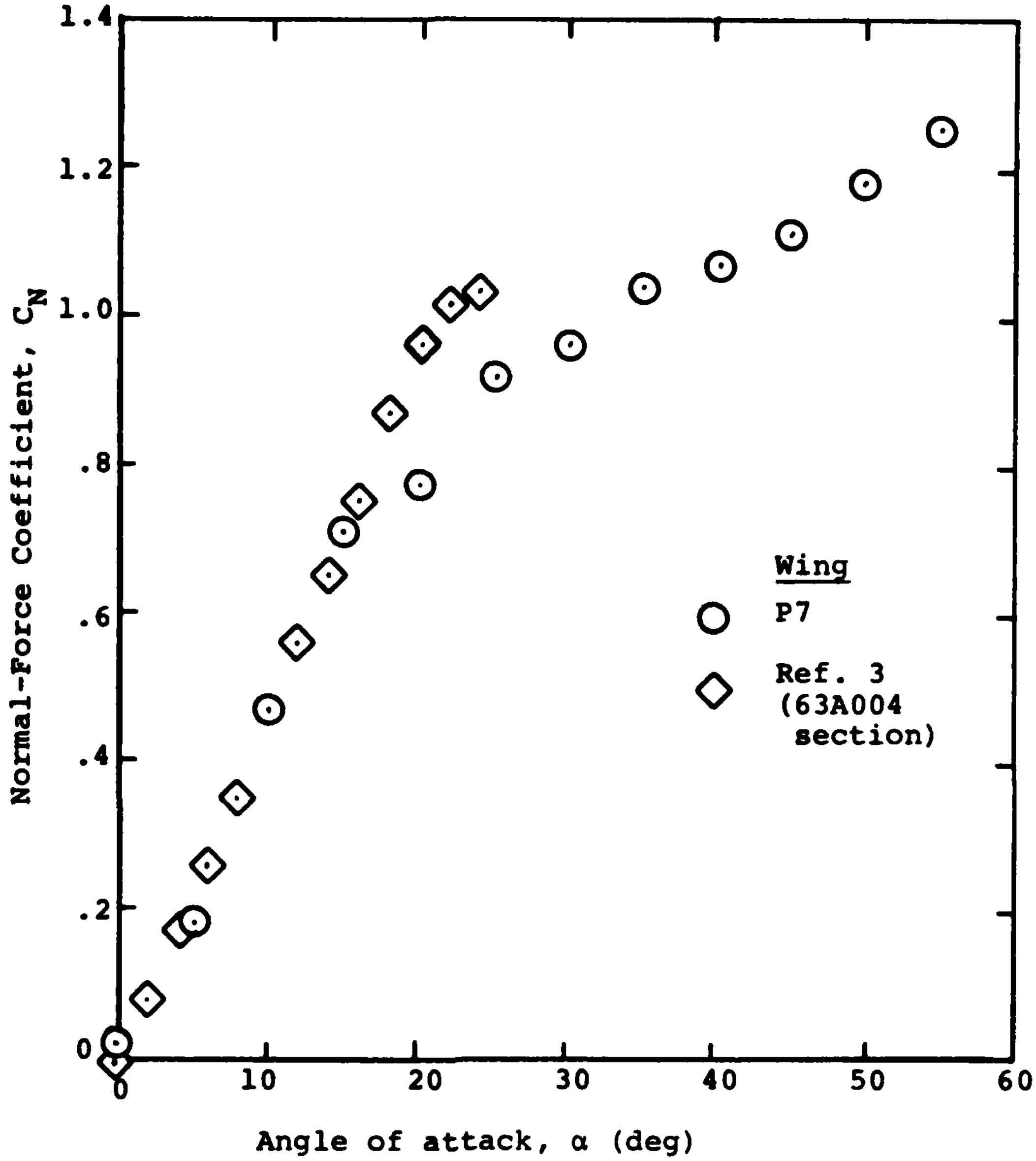


Figure 63b.- Force model FP7 (config. 12) surface oil flow pattern at Mach 1.2, $\alpha = 25°$, $\phi = 0$, run 199.



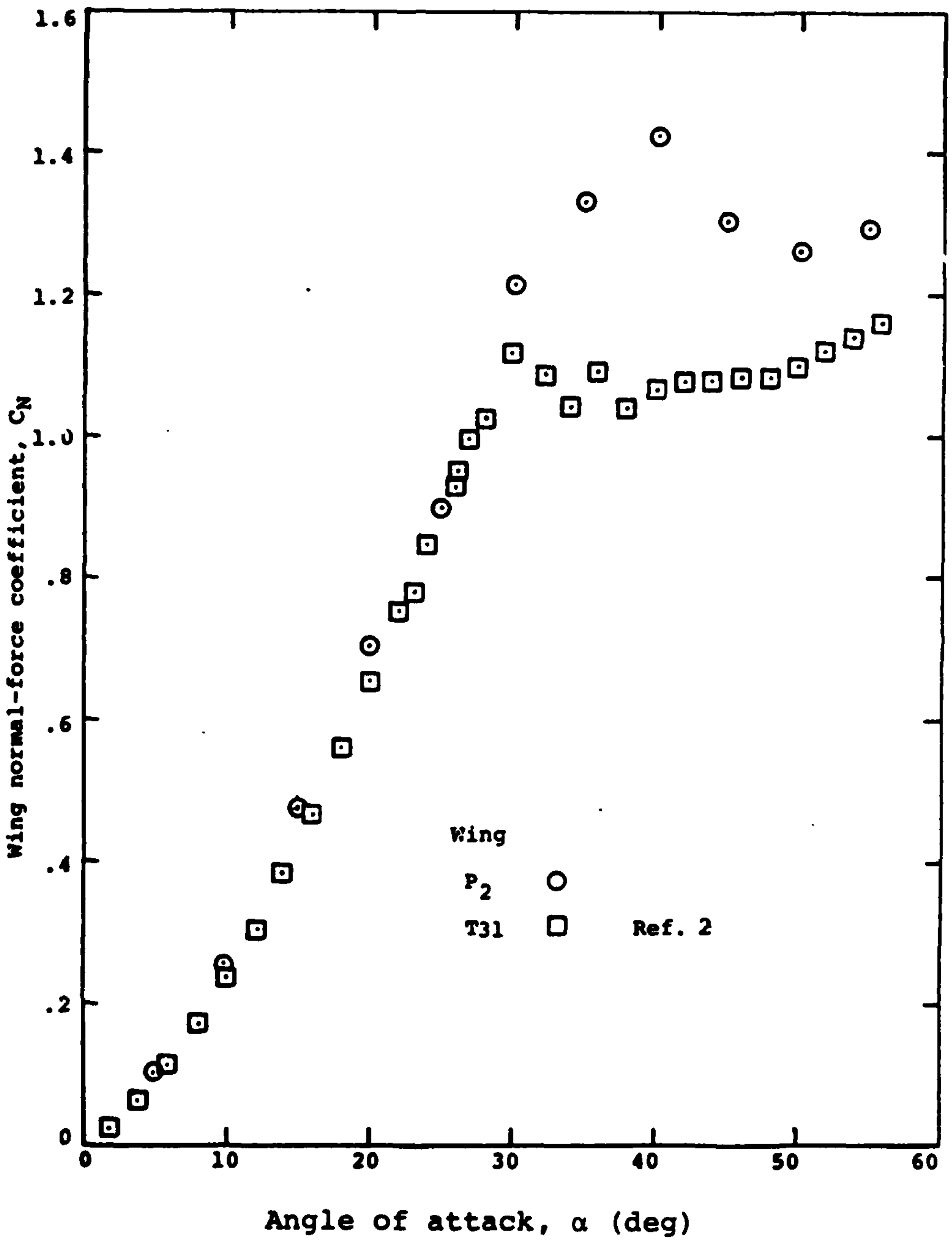
(a) Æ ≅ 0.5, λ = 0, M = 0.8

Figure 64. - Comparison of wing normal-force coefficients at Mach 0.8.



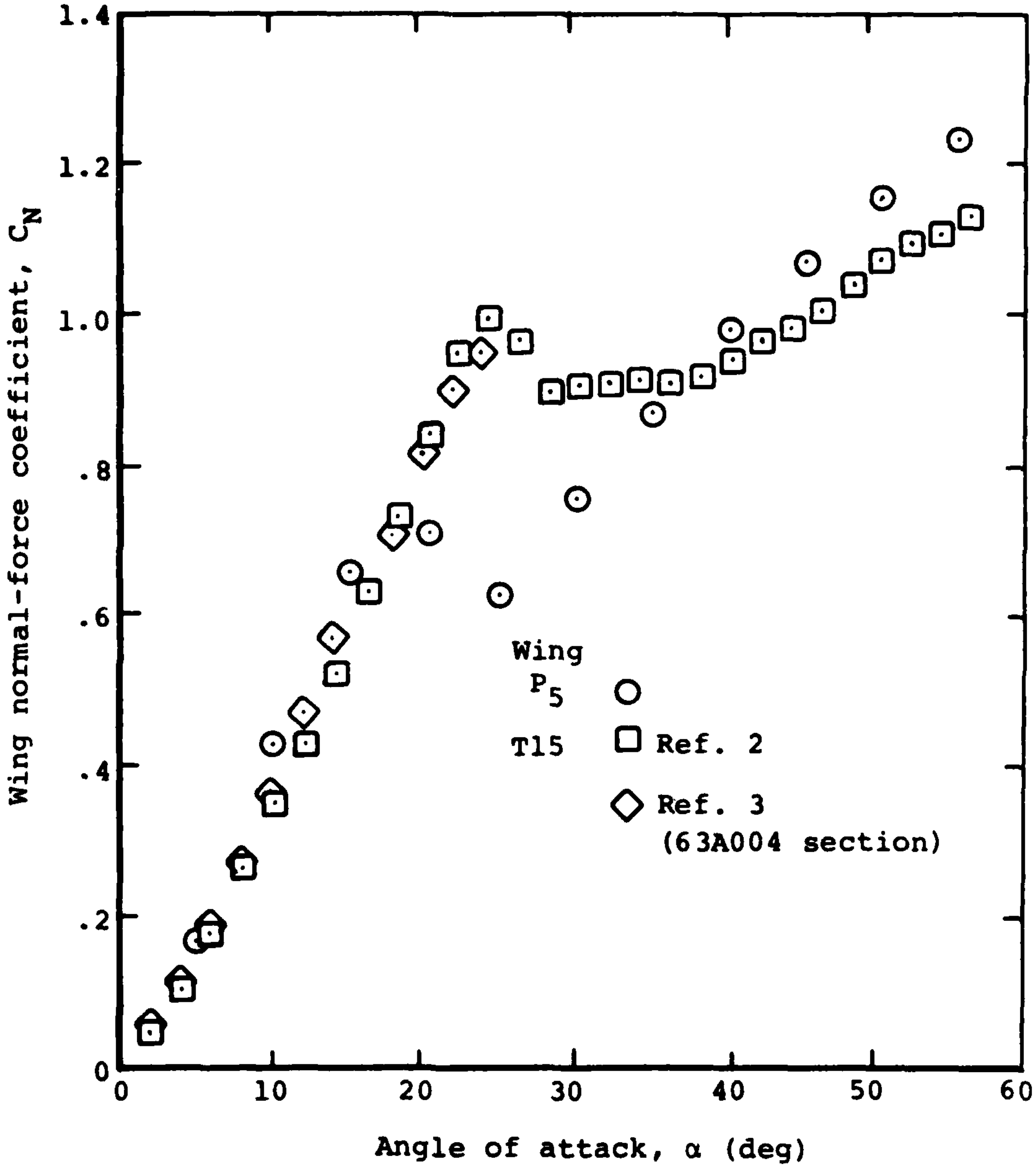
(b) $A\!\!R = 2$, $\lambda = 0$, $M = 0.8$

Figure 64. - Continued.



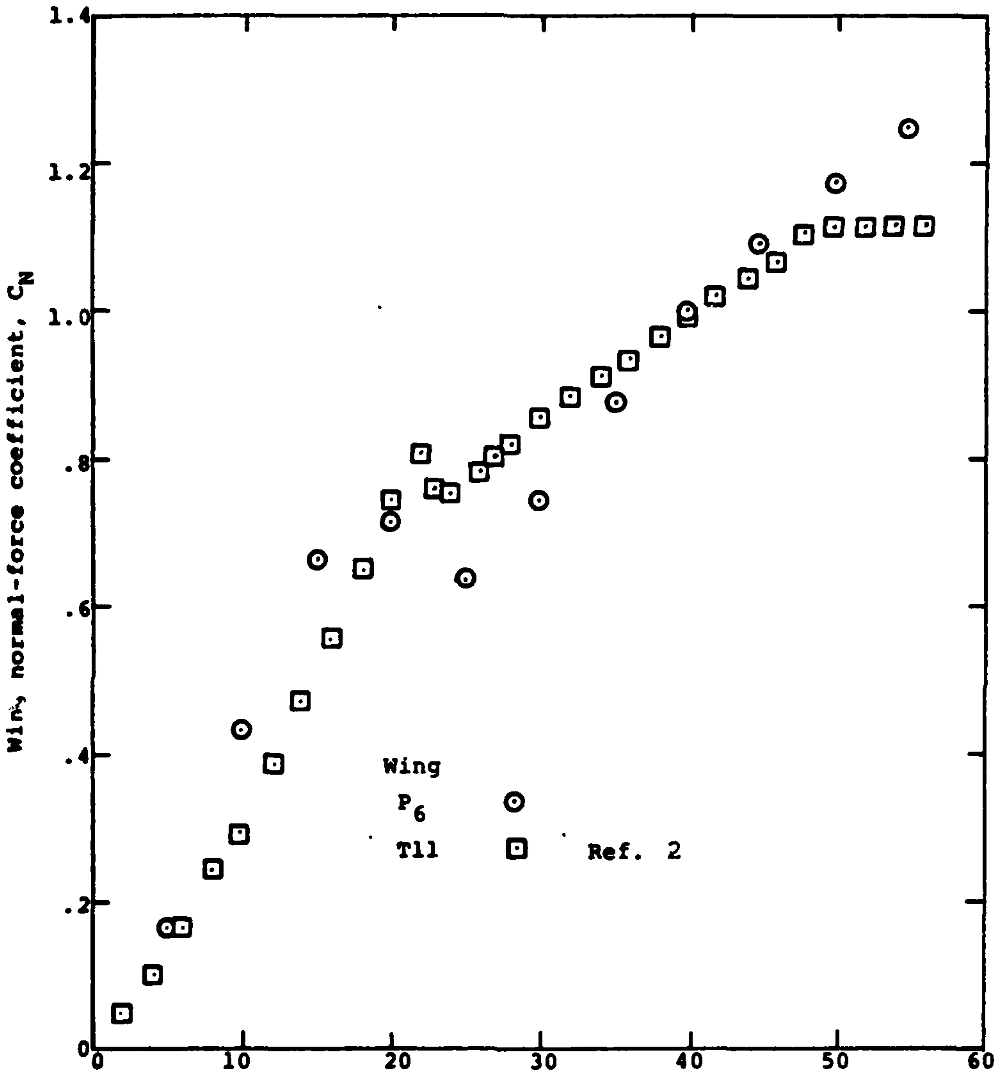
(c) Æ = 0.5, λ = 0.5

Figure 64.- Continued.



d) Æ = 1.0, λ = 0.5, M = 0.8

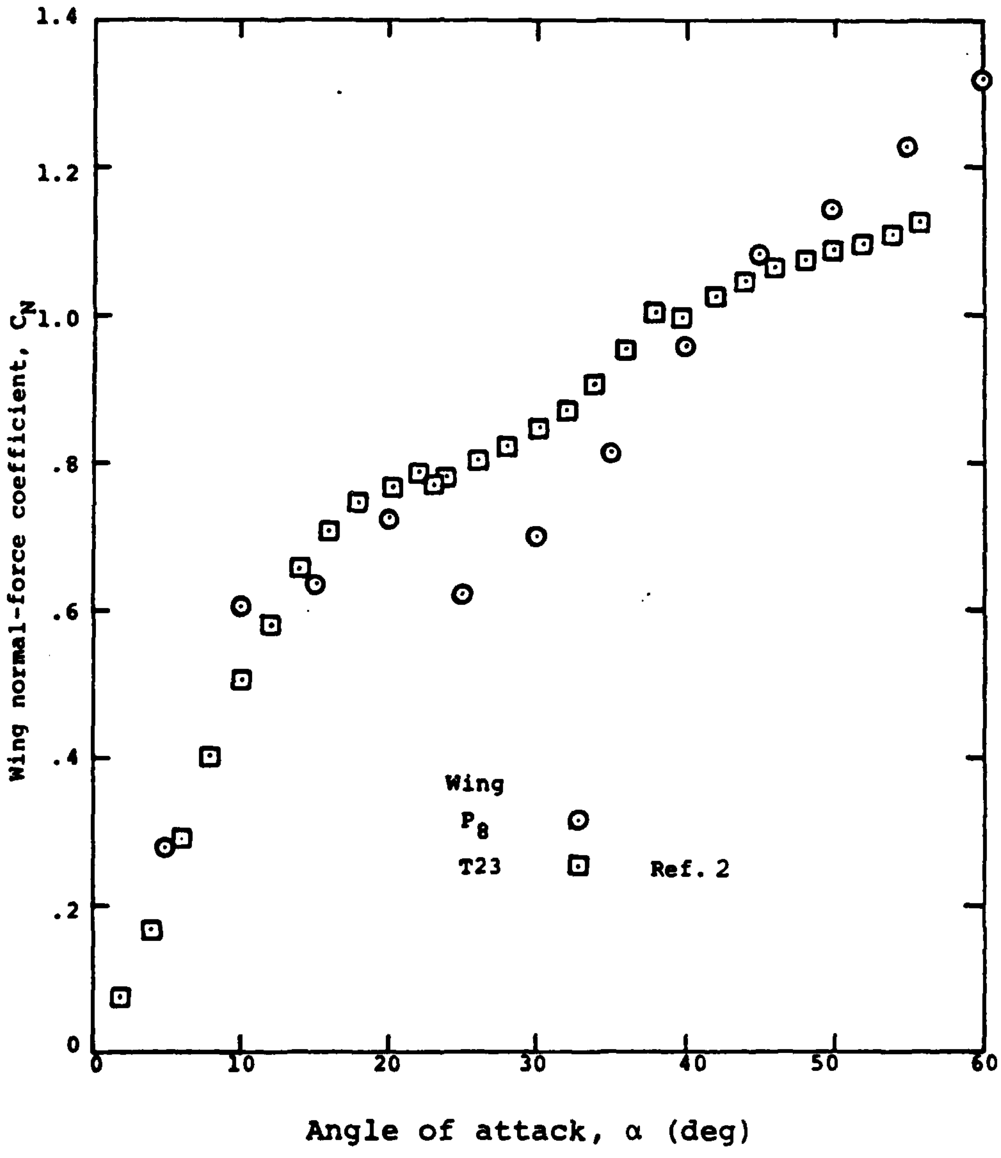
Figure 64.- Continued.



Angle of attack, α (deg)

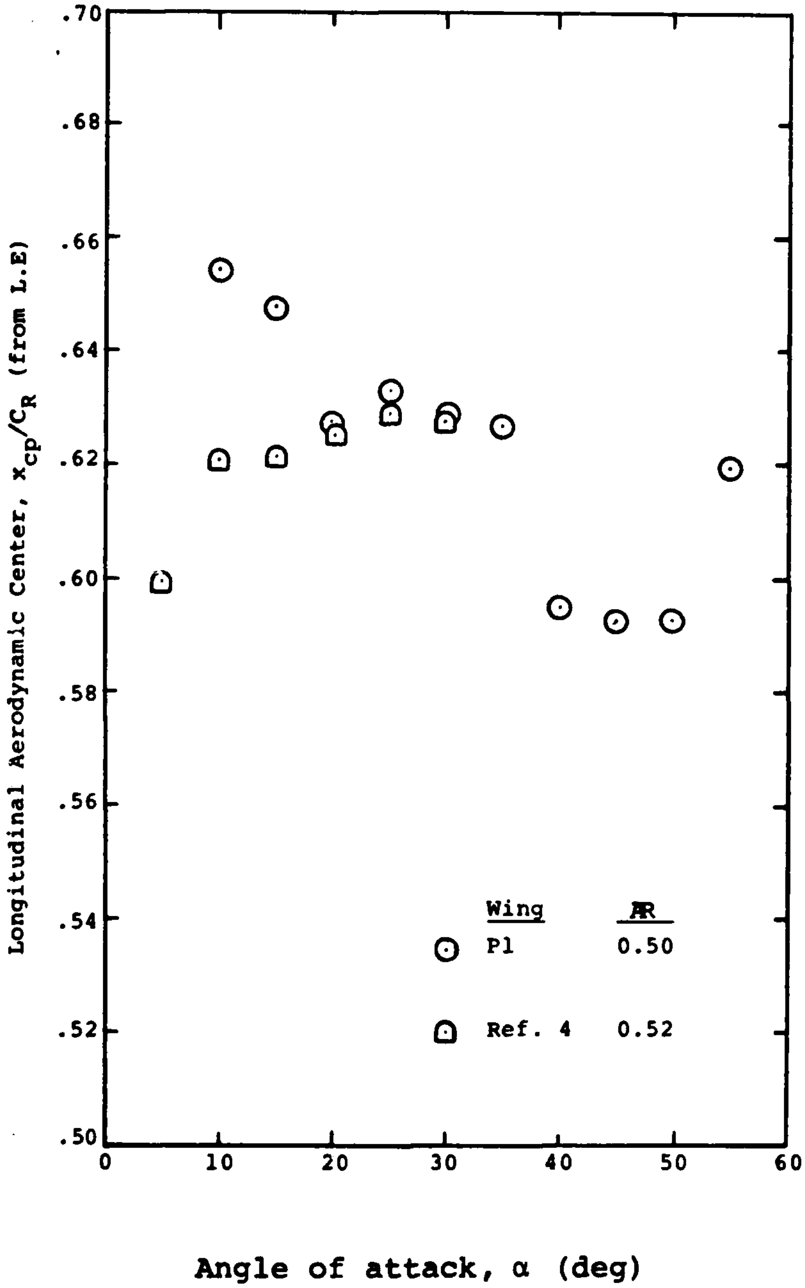
e) Æ = 1.0, λ = 0.5, M = 0.8

Figure 64.- Continued.



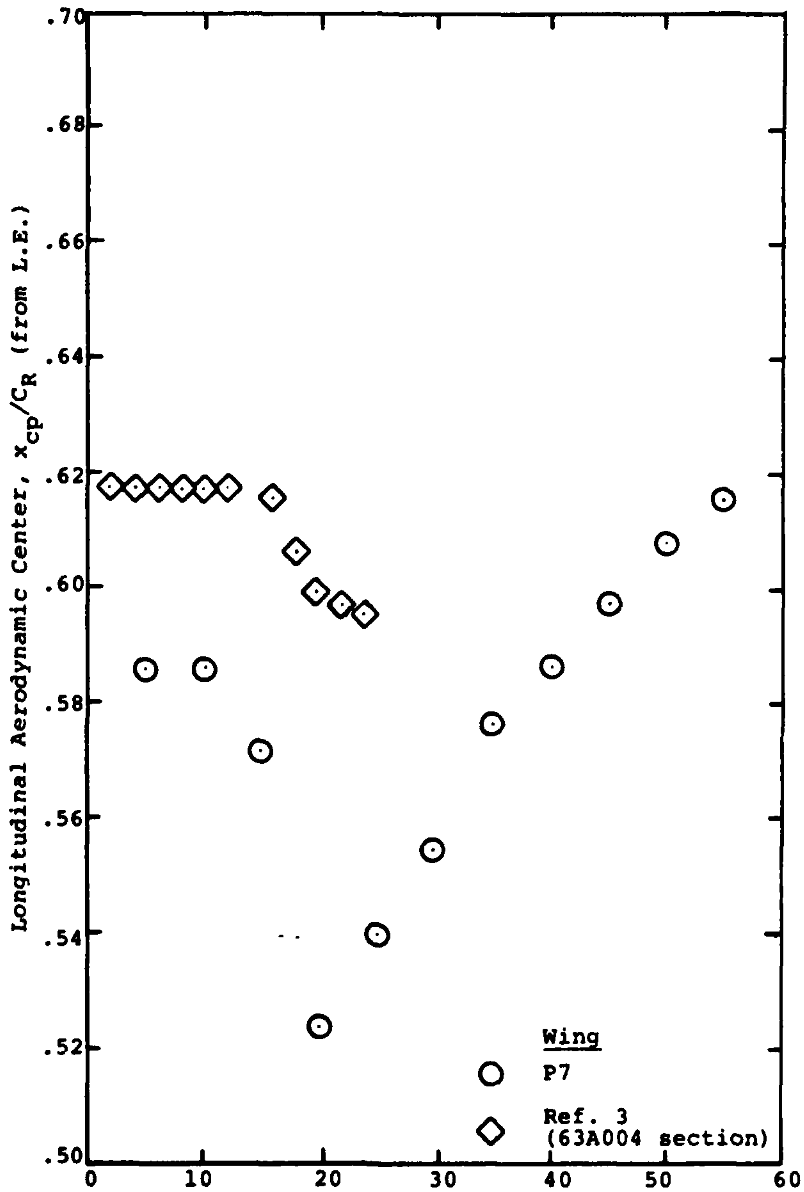
f) Æ = 2.0, λ = 0.5, M = 0.8

Figure 64.- Concluded.



(a) AR ≅ 0.5, λ = 0, M = 0.8

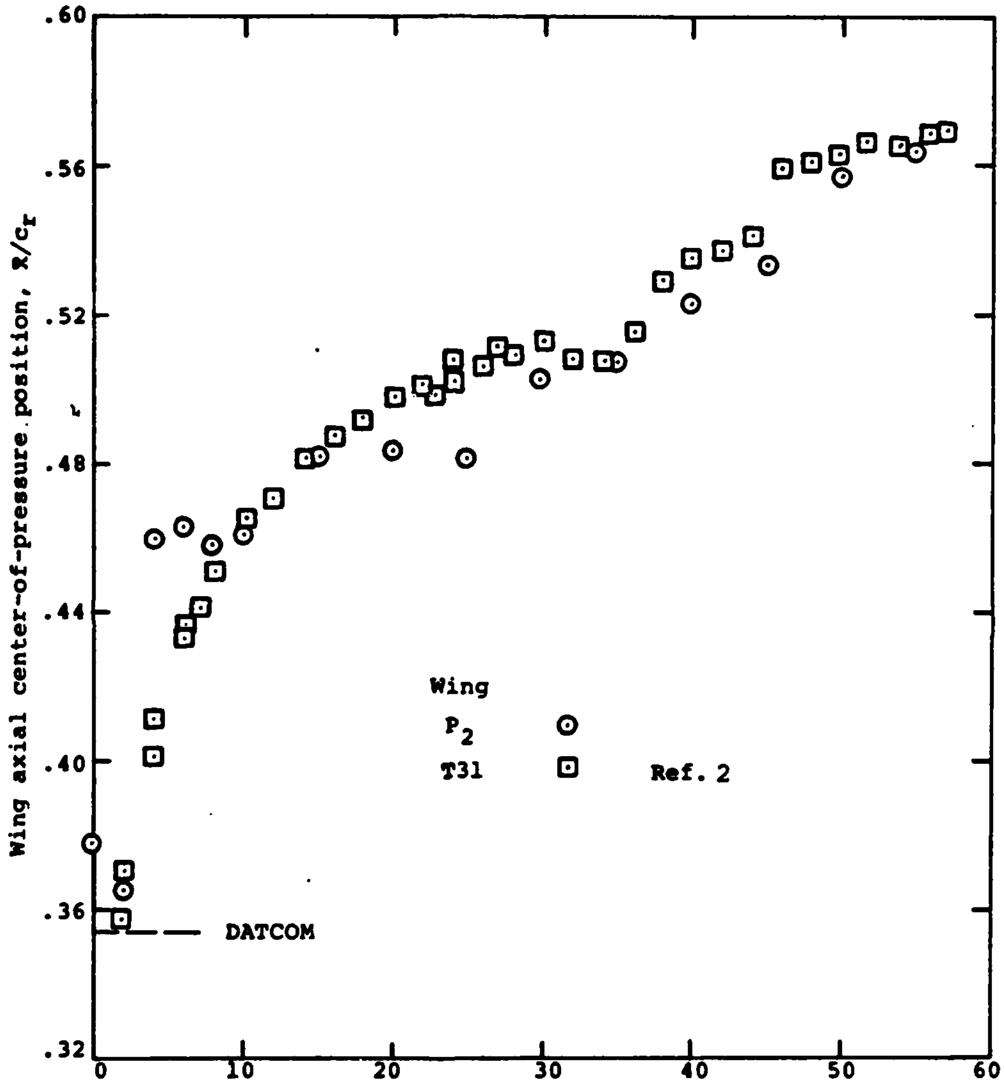
Figure 65.- Comparison of wing longitudinal aerodynamic center data at Mach 0.8.



Angle of attack, α (deg)

(b) Æ = 2, λ = 0, M = 0.8

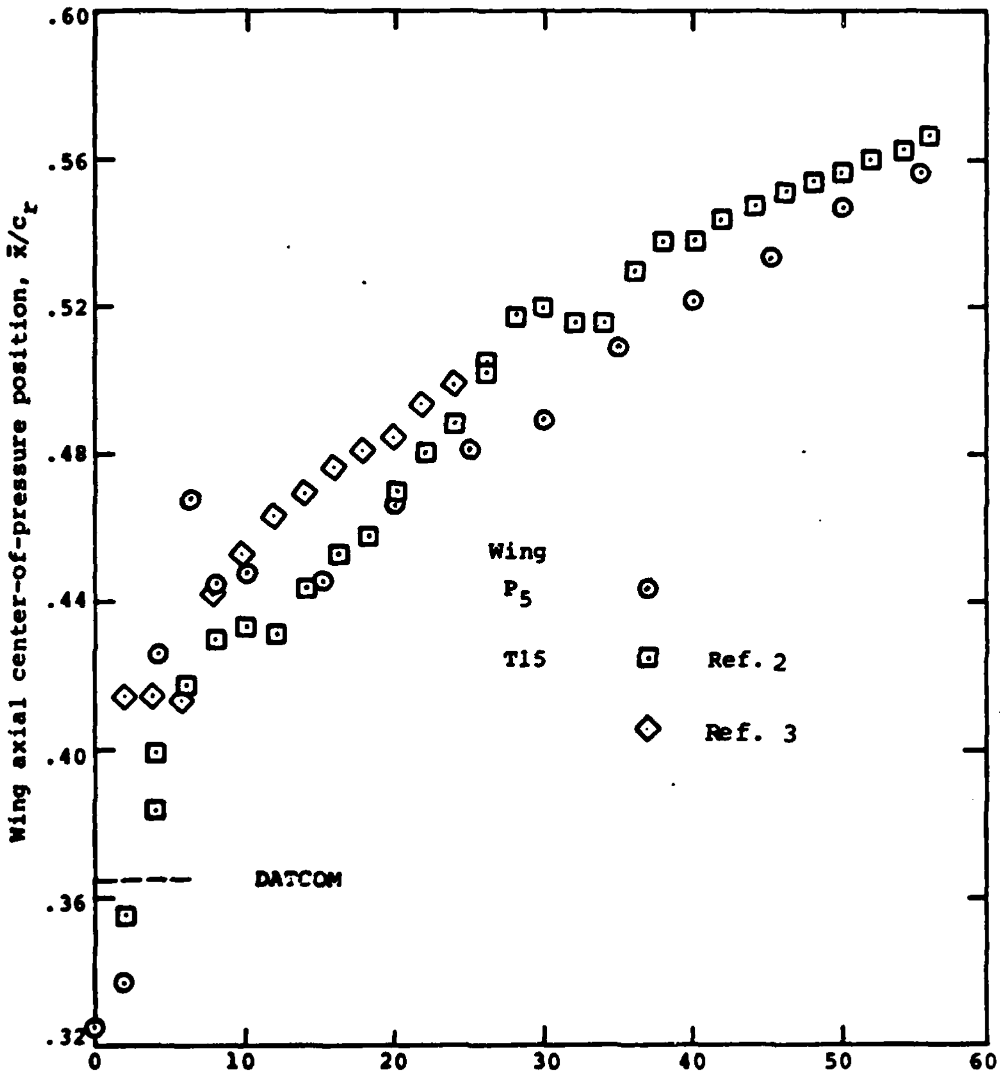
Figure 65.- Continued.



Angle of attack, α (deg)

(c) Æ = 0.5, λ = 0.5, M = 0.8

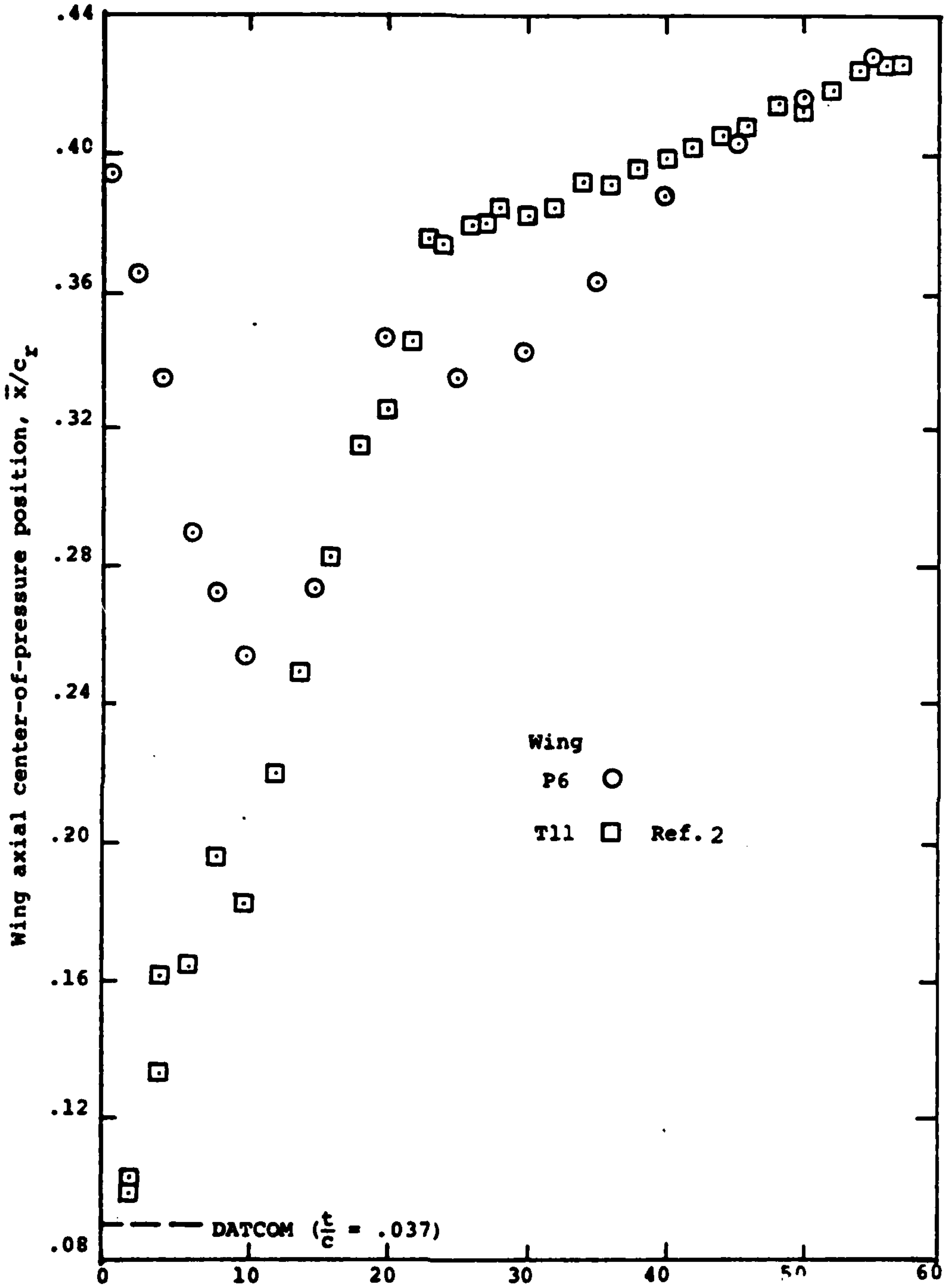
Figure 65.- Continued.



Angle of attack, α (deg)

(d) Æ = 1.0, λ = 0.5, M = 0.8

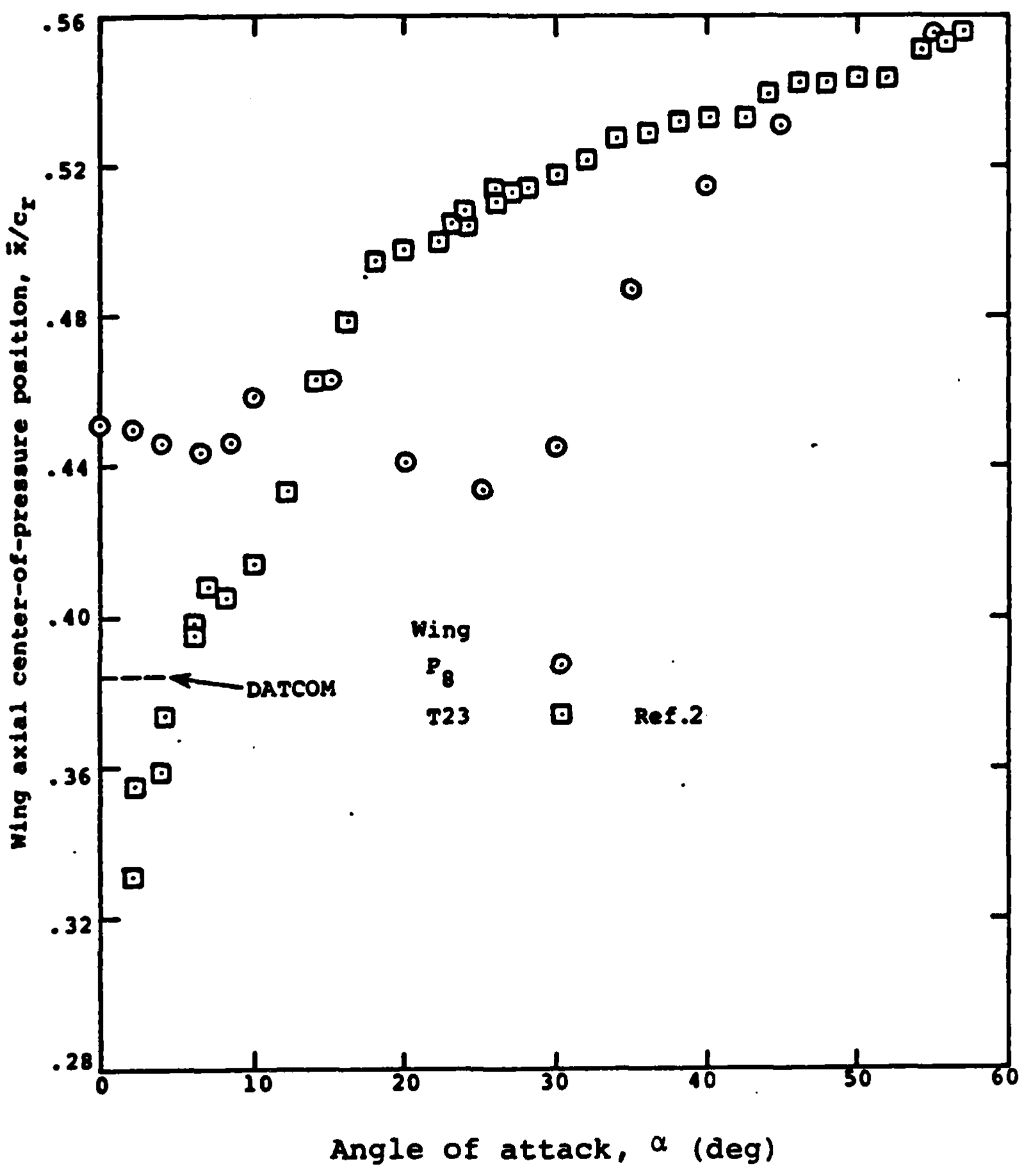
Figure 65.- Continued.



Angle of attack, α (deg)

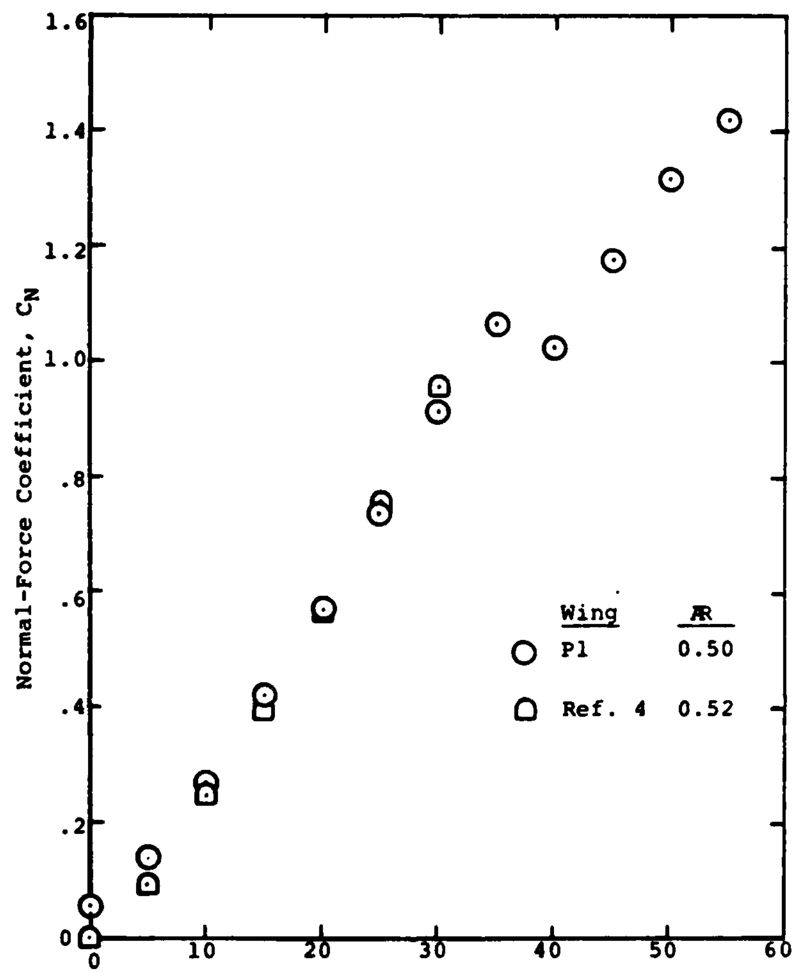
(e) $A\!\!R$ = 1.0, λ = 1.0, M = 0.8

Figure 65.- Continued.



(f) Æ = 2, λ = 0.5, M = 0.8

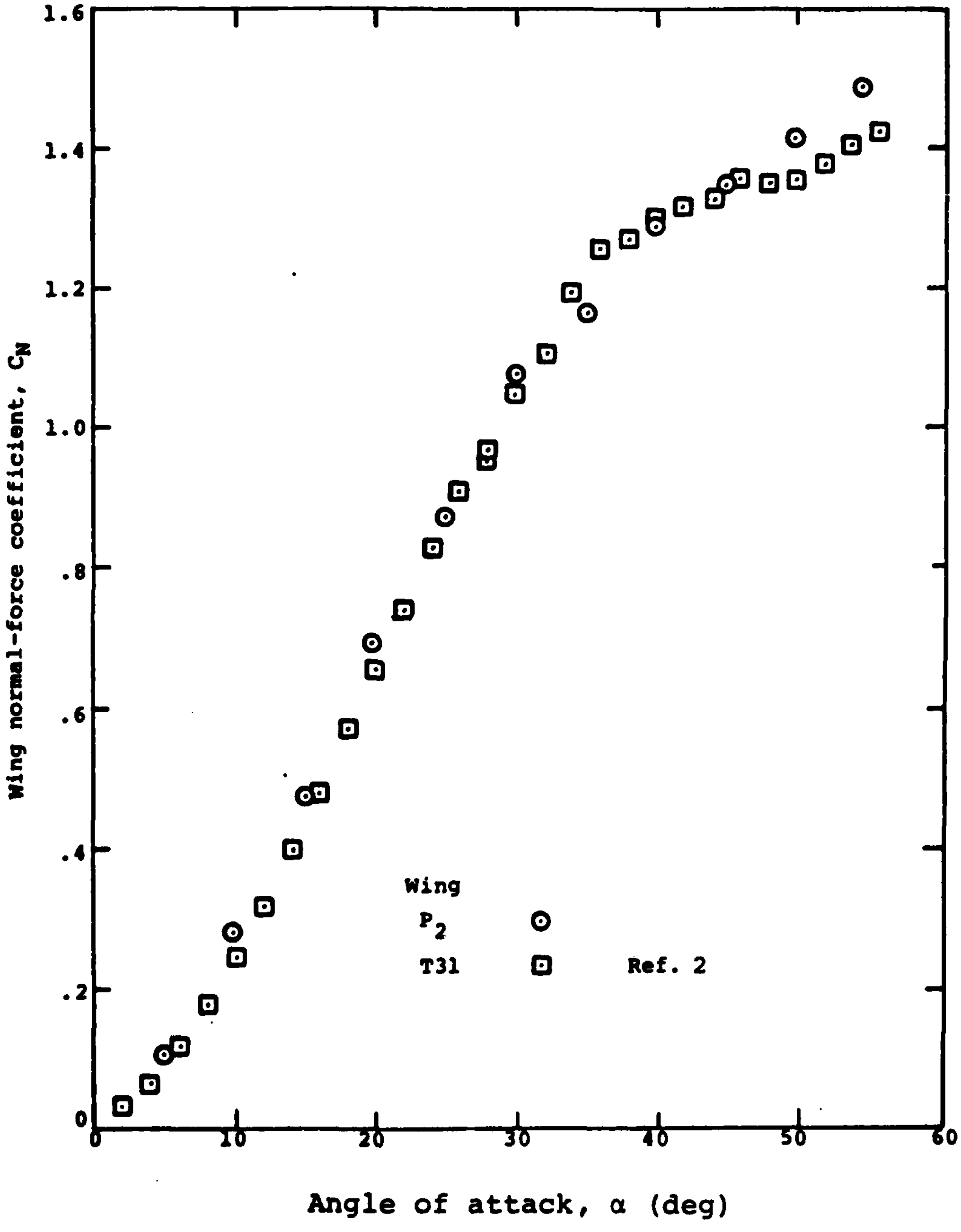
Figure 65.- Concluded.



Angle of attack, α (deg)

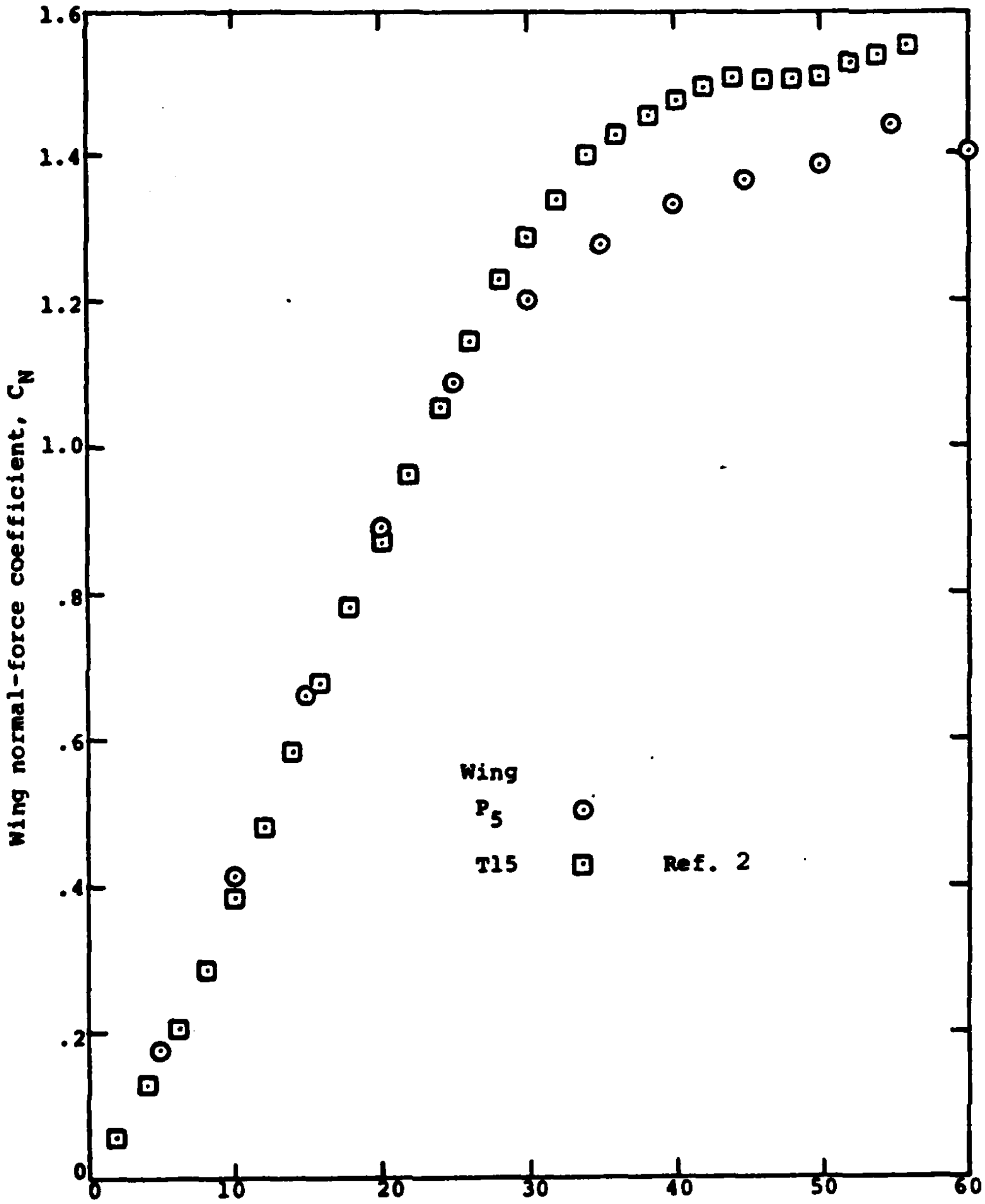
(a) Æ ≅ 0.5, λ = 0, M = 1.2

Figure 66.- Comparison of wing normal-force coefficients at Mach 1.2.



(b) Æ = 0.5, λ = 0.5, M = 1.2

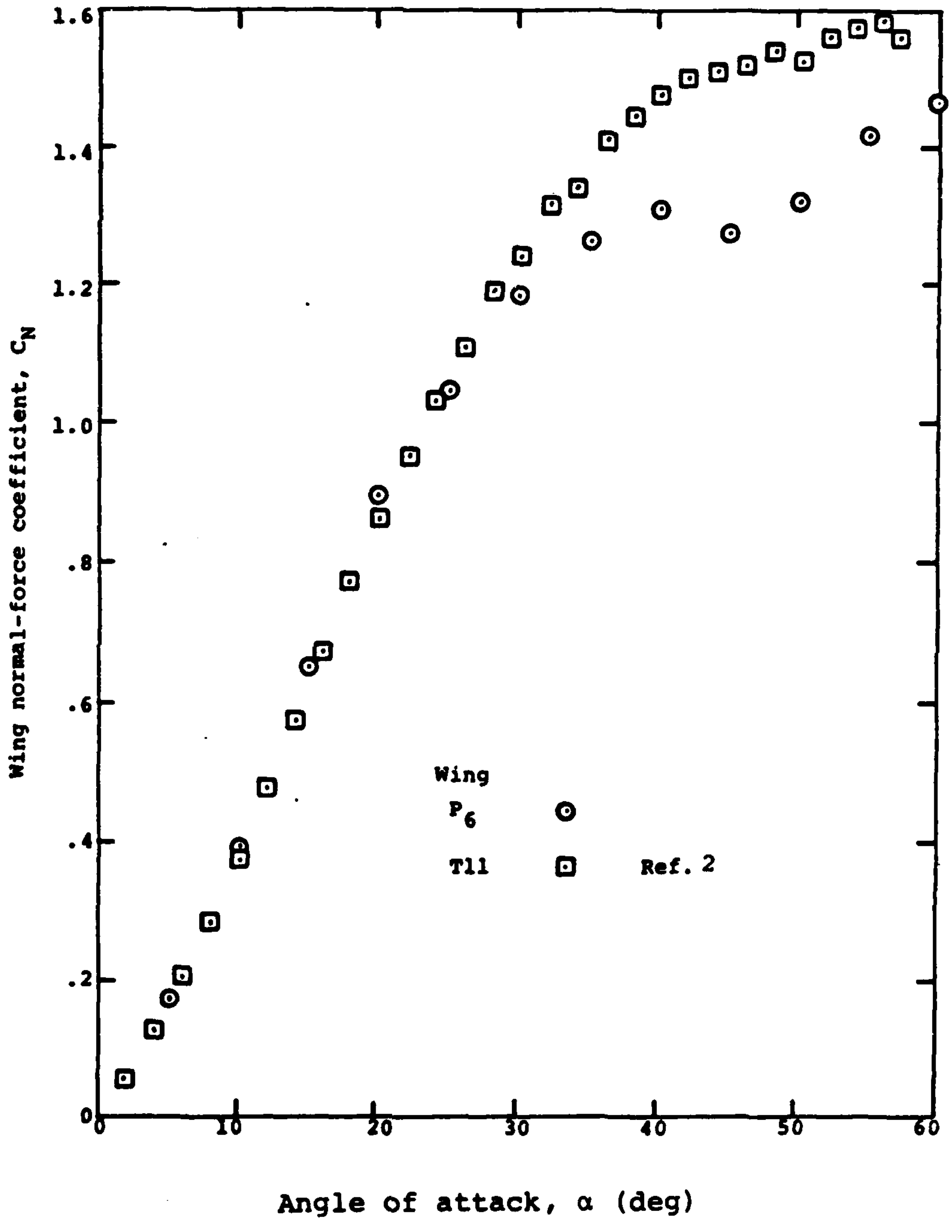
Figure 66.- Continued.



Angle of attack, α (deg)

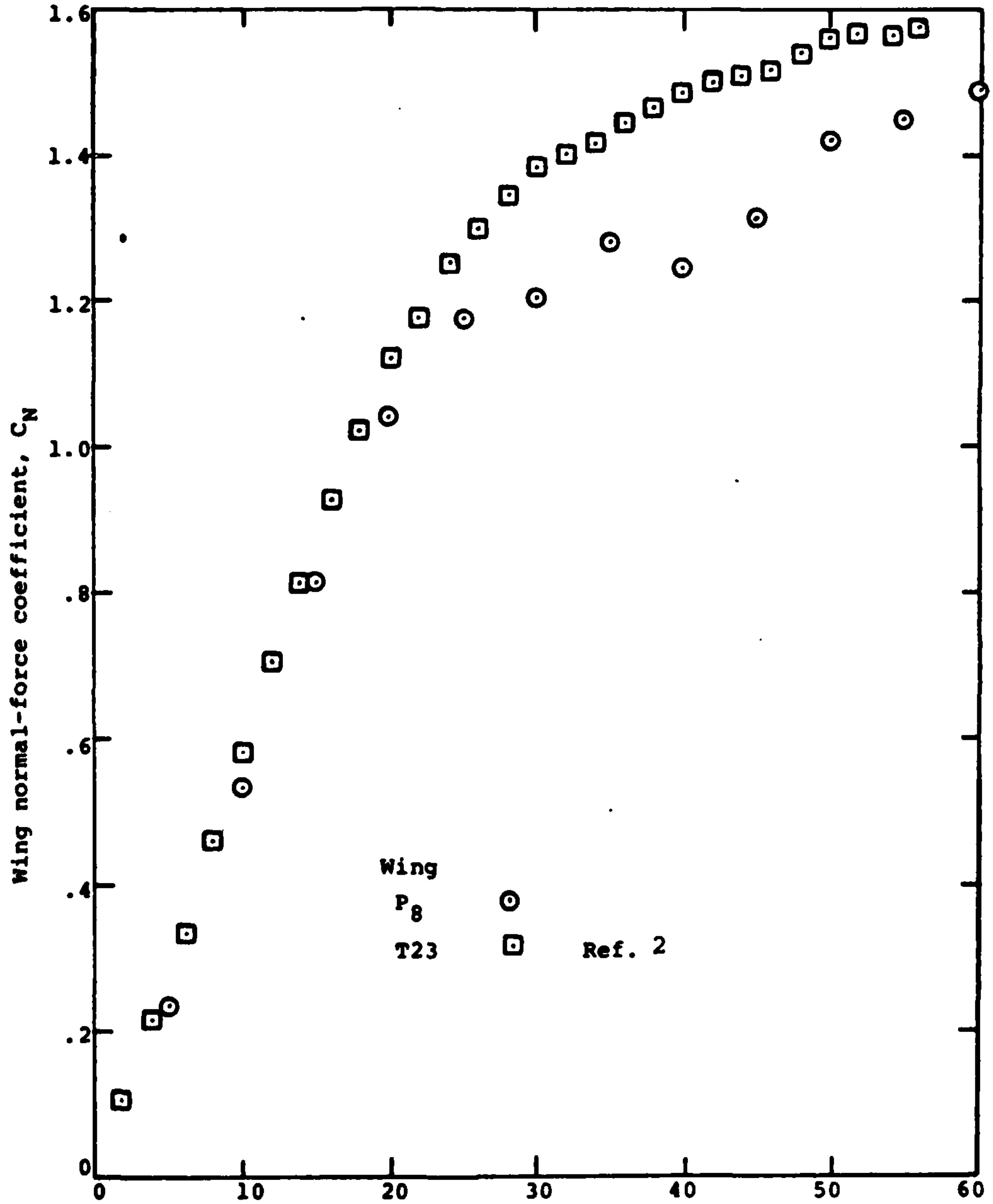
(c) Æ = 1, λ = 0.5, M = 1.2

Figure 66.- Continued.



(d) $\mathcal{R} = 1$, $\lambda = 1$, $M = 1.2$

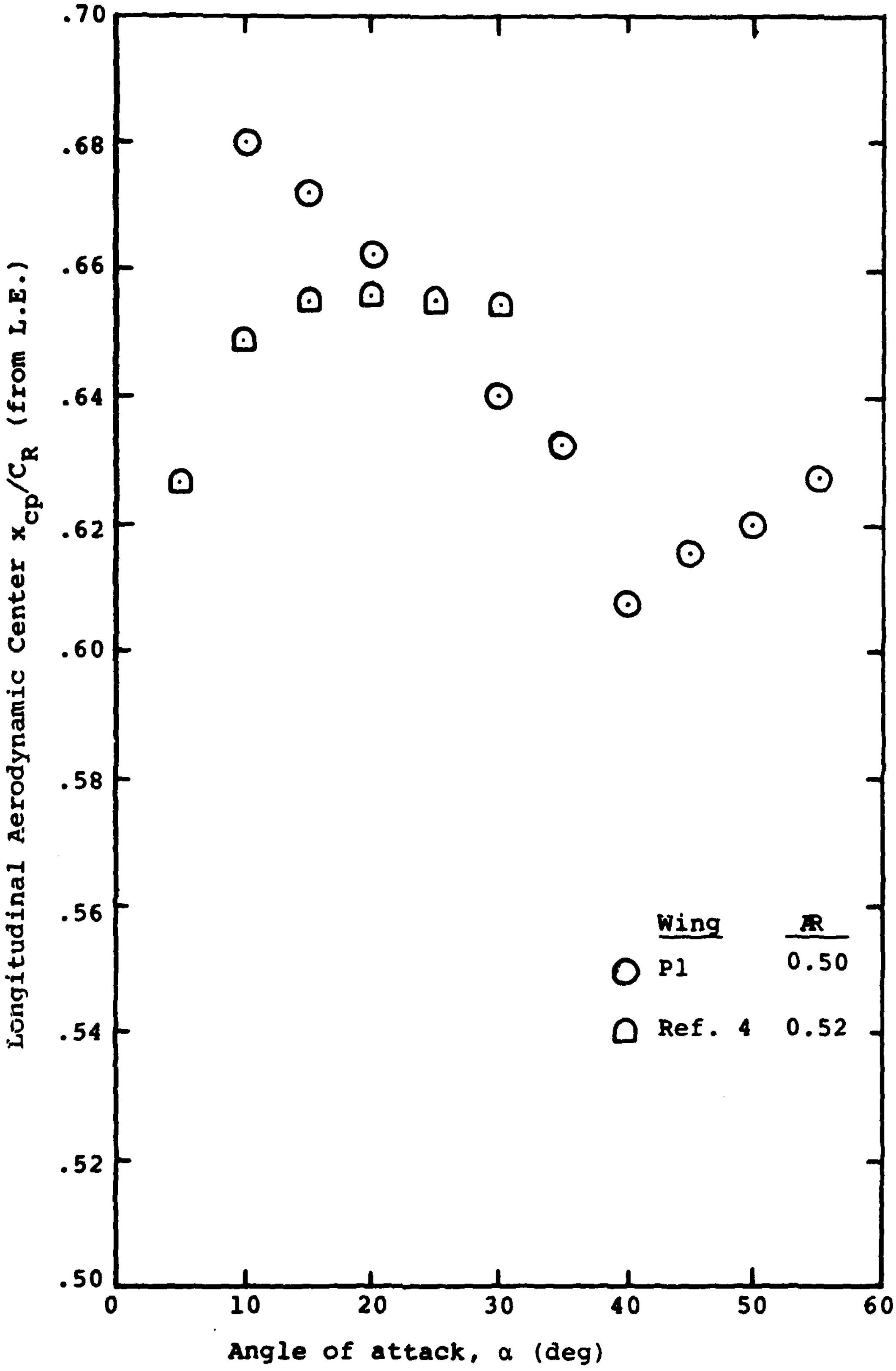
Figure 66.- Continued.



Angle of attack, α (deg)

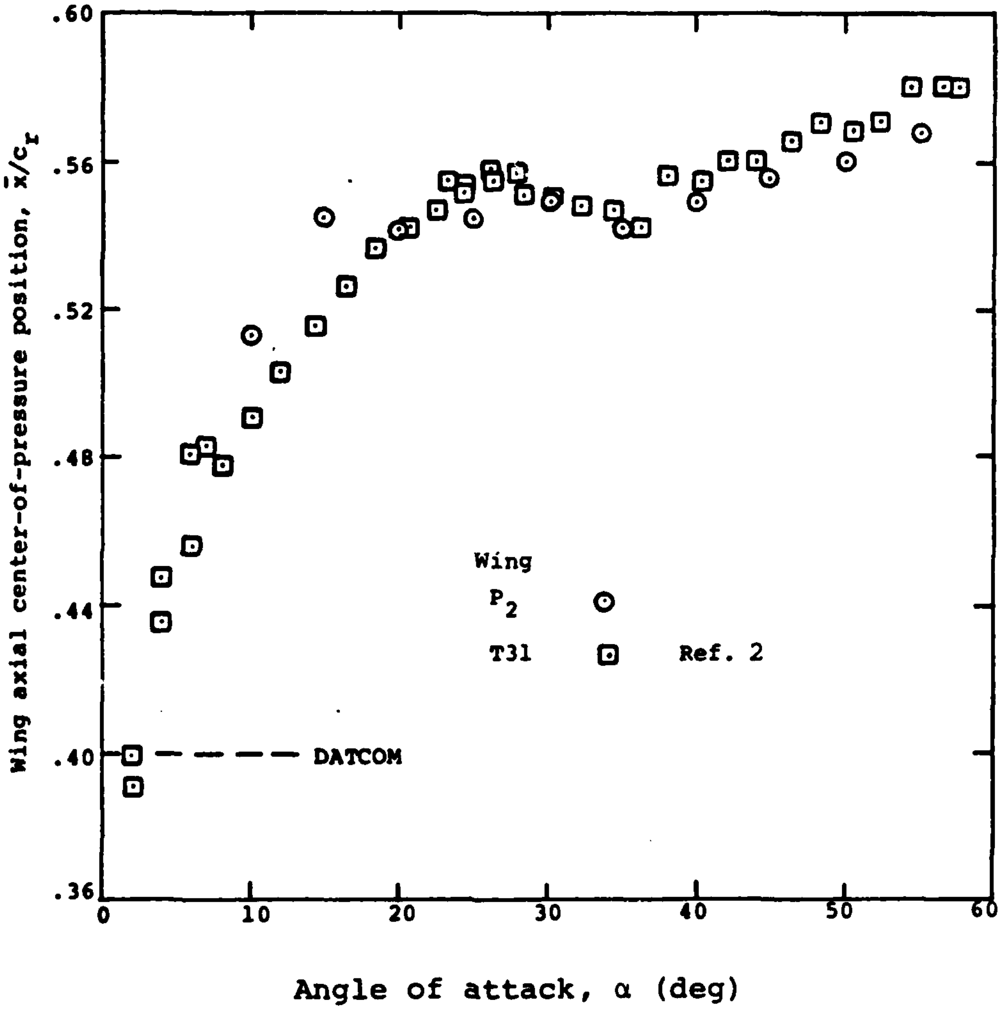
(e) $Æ$ = 2, λ = 0.5, M = 1.2

Figure 65.- Concluded.



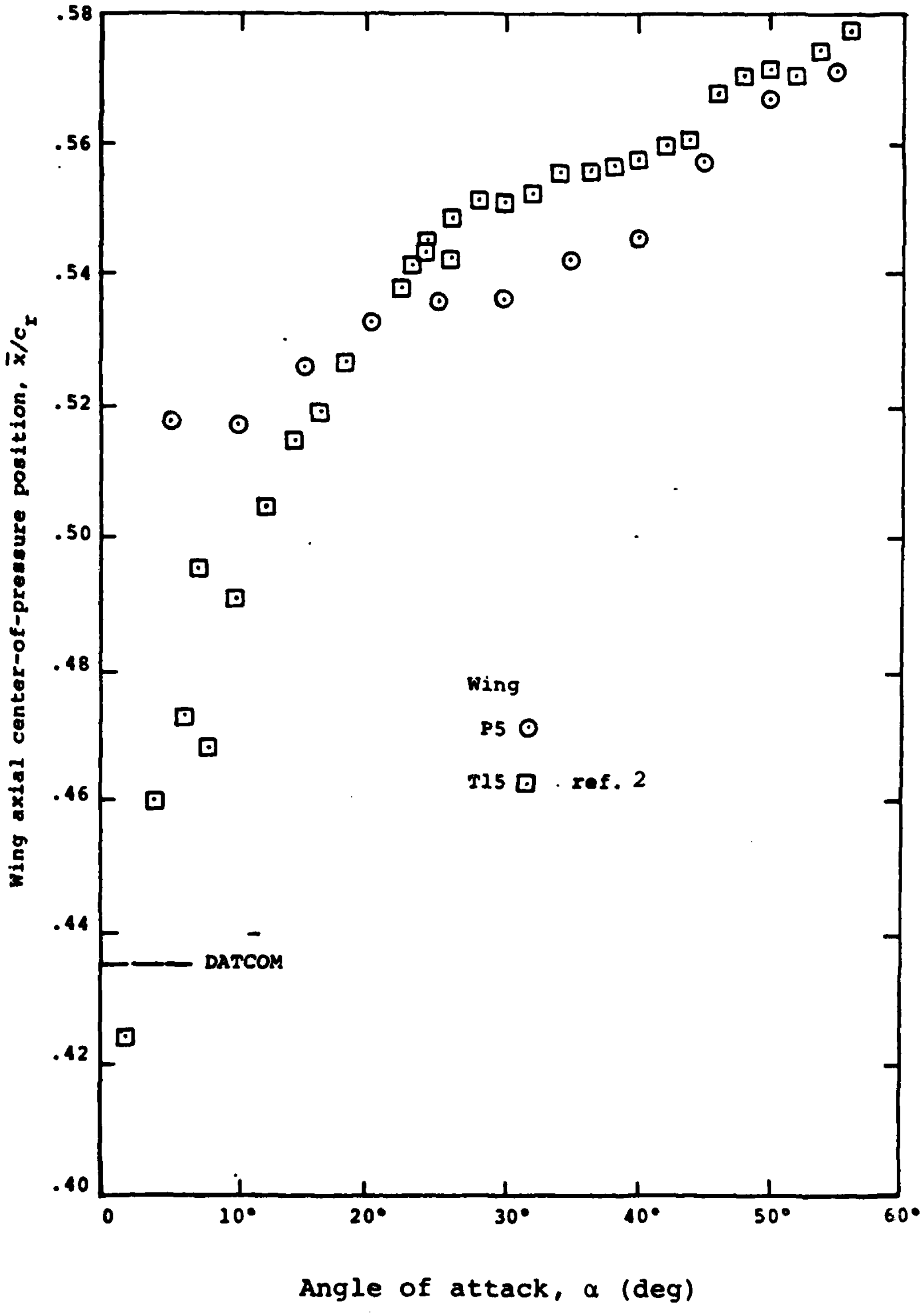
(a) Æ ≅ 0.5, λ = 0, M = 1.2

Figure 67. - Comparison of wing longitudinal aerodynamic centers at Mach 1.2.



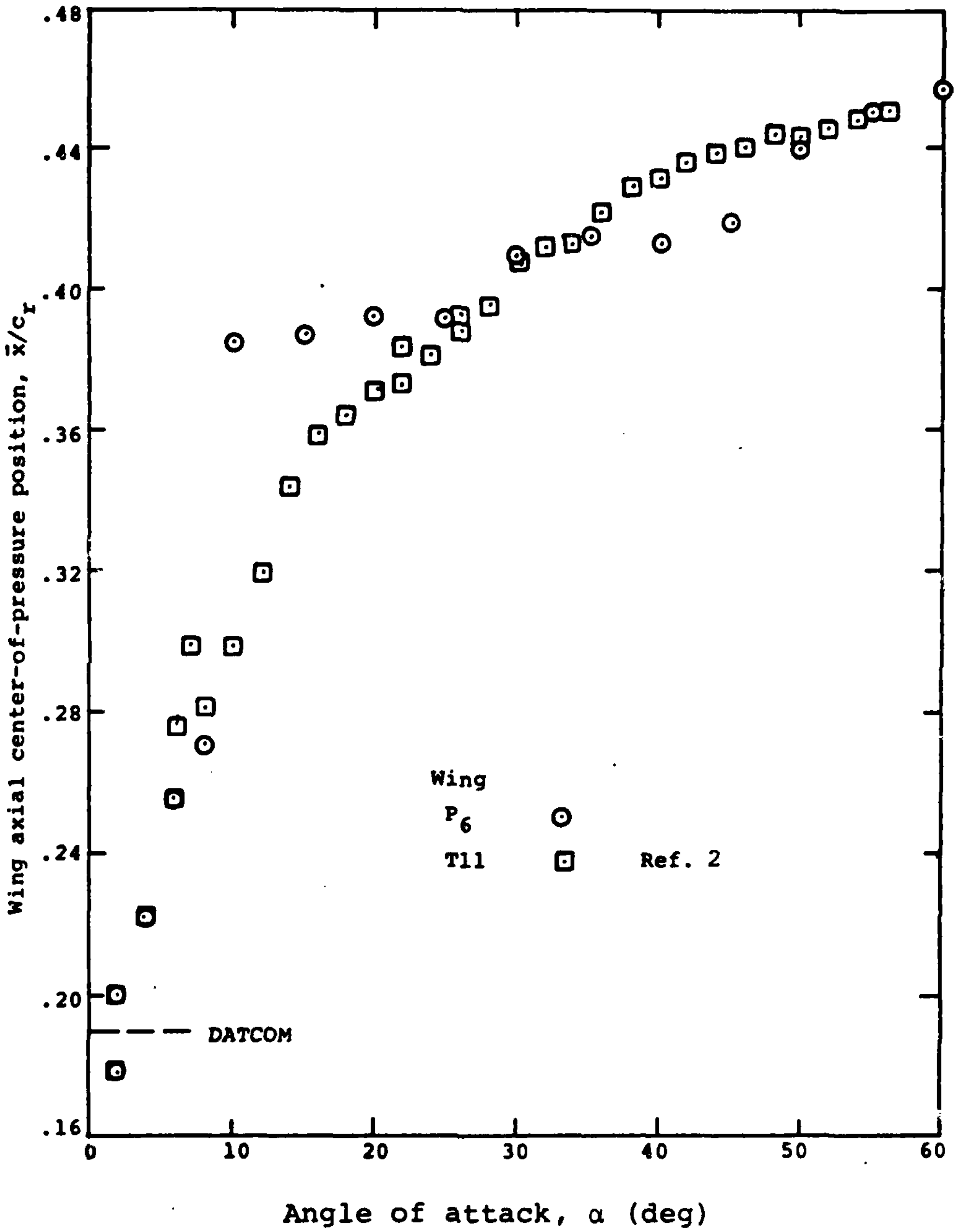
(b) $AR = 0.5$, $\lambda = 0.5$, $M = 1.2$

Figure 67.- Continued.



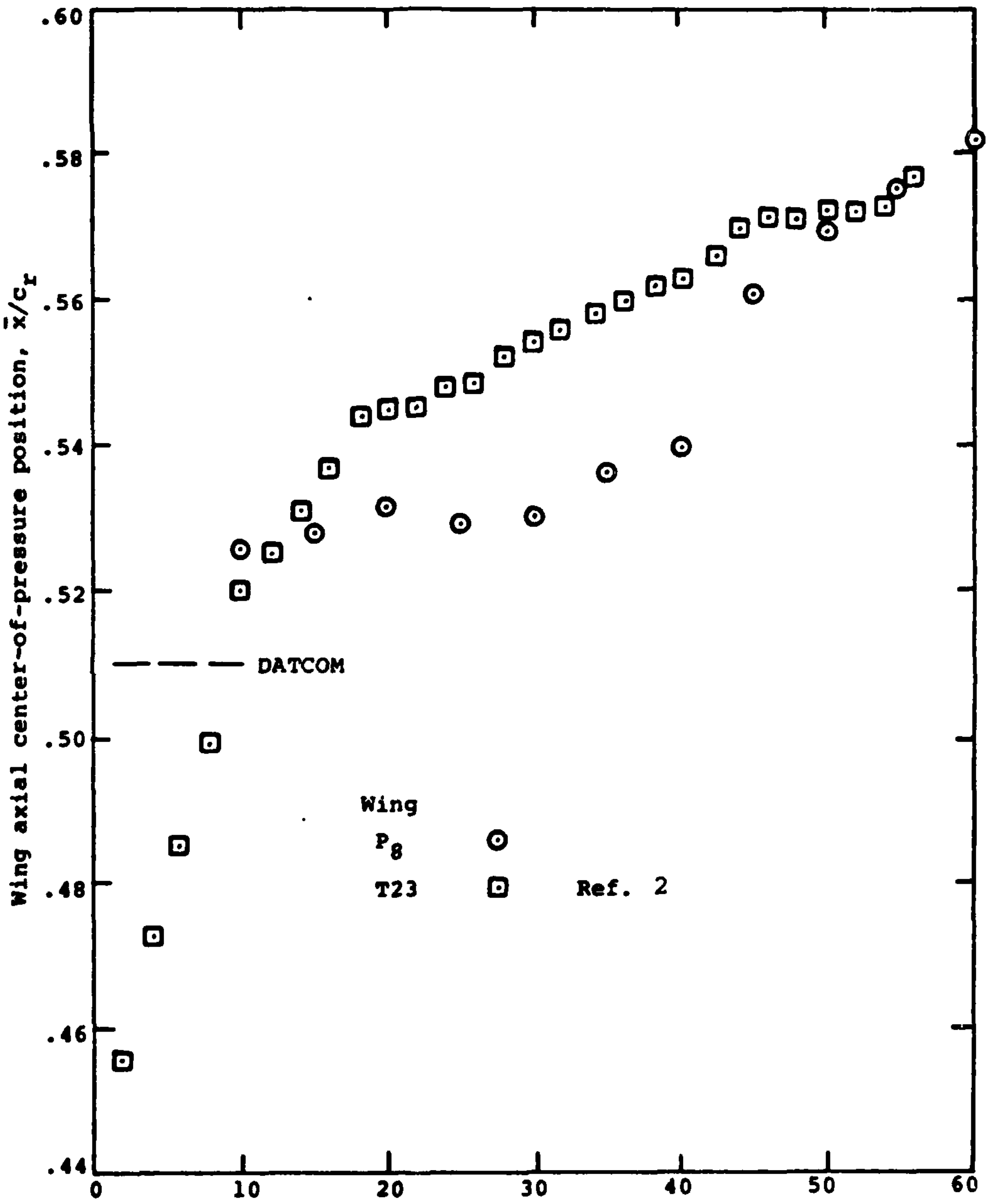
(c) $A\!\!R$ = 1.0, λ = 0.5, M = 1.2

Figure 67.- Continued.



(d) Æ = 1, λ = 1.0, M = 1.2

Figure 67.- Continued.



Angle of attack, α (deg)

(e) Æ = 2.0, λ = 0.5

Figure 67.- Concluded.

REFERENCES

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2. Baker, W. B., Jr.: Static Aerodynamic Characteristics of a Series of Generalized Slender Bodies With and Without Fins at Mach Numbers from 0.6 and 3.0 and Angles of Attack From 0 to 180 Degrees. Volume I, Volume II, and Supplementary Tabular Data: AEDC-TR-75-124 (revised) and AEDC-TR-75-124, U. S. Air Force, May 1976.

3. Emerson, H. F.: Wind Tunnel Investigation of the Effect of Clipping the Tip of Triangular Wings of Different Thickness, Camber, and Aspect Ratio – Transonic Bump Method. NACA TN 3671, Jun. 1956.

4. Stahl, W., Hartmann, K., and Schneider, W.: Force and Pressure Measurements on a Slender Delta Wing at Transonic Speeds and Varying Reynolds Numbers. DFVLR/Aerodynamische Versuchsanstalt Göttingen Report No. 71A01, Jan. 6, 1971.

APPENDIX A

PRESSURE COEFFICIENT DATA

NOMENCLATURE

Symbol	Definition
M	Mach number
ALPHA	Angle of attack, deg
TUBE	Pressure orifice number
X/L	Axial distance from wing trailing edge to indicated TUBE number as fraction of overall length
y/b/2	Spanwise distance from wing root to indicated TUBE number as fraction of semispan
C_p	Pressure coefficient, $(P - P_\infty)/q_\infty$
windward	C_p data for the windward side of the wing (given positive ALPHA)
leeward	C_p data for the leeward side of the wing (given positive ALPHA)

The data are organized according to configuration number; the table number corresponds to the configuration number. Within each configuration, the data are organized according to increasing Mach number. There are two pages of pressure coefficient data for each combination of configuration and Mach number; the first provides C_p data for angles of attack from $\sim -3°$ to $\sim +27°$, and the second provides C_p data for angles of attack between $\sim 27°$ and $\sim 57°$.

Table A-1.- Pressure coefficients for configuration 1.
M = 0.6

			ALPHA =															
			-2.7	-2.6	0.2	0.3	5.2	5.3	10.1	10.3	15.1	15.2	20.1	20.2	25.0	25.2	26.5	26.6
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.881	0.000	0.0093	0.0373	0.0248	0.0249	0.0604	-0.0021	0.1089	-0.0510	0.1761	-0.1130	0.2648	-0.1872	0.3542	-0.2511	0.3824	-0.2749
2	0.822	0.000	0.0064	0.0315	0.0224	0.0209	0.0590	-0.0059	0.1071	-0.0577	0.1757	-0.1181	0.2655	-0.1912	0.3548	-0.2569	0.3789	-0.2764
3	0.762	0.000	0.0053	0.0276	0.0173	0.0180	0.0545	-0.0093	0.1029	-0.0582	0.1715	-0.1161	0.2594	-0.1899	0.3476	-0.2517	0.3728	-0.2710
4	0.764	0.117	0.0104	0.0374	0.0264	0.0215	0.0528	-0.0121	0.0990	-0.2228	0.1526	-0.4015	0.2187	-0.6166	0.2966	-0.8783	0.3212	-0.9549
5	0.703	0.000	0.0094	0.0346	0.0219	0.0169	0.0568	-0.0061	0.1094	-0.0519	0.1740	-0.1127	0.2552	-0.1823	0.3448	-0.2401	0.3779	-0.2548
6	0.644	0.000	0.0035	0.0296	0.0157	0.0158	0.0514	-0.0115	0.1032	-0.0560	0.1888	-0.1188	0.2496	-0.1829	0.3408	-0.2436	0.3769	-0.2549
7	0.646	0.117	0.0064	0.0316	0.0162	0.0192	0.0512	-0.0030	0.0980	-0.1230	0.1594	-0.3029	0.2336	-0.5073	0.3193	-0.7291	0.3438	-0.8025
8	0.647	0.234	0.0042	0.0309	0.0104	0.0203	0.0527	-0.1183	0.0894	-0.2288	0.1328	-0.3781	0.1880	-0.5670	0.2507	-0.7963	0.2706	-0.8641
9	0.688	0.000	-0.0009	0.0253	0.0128	0.0110	0.0482	-0.0150	0.0995	-0.0616	0.1669	-0.1189	0.2492	-0.1876	0.3407	-0.2438	0.3677	-0.2573
10	0.558	0.086	-0.0015	0.0243	0.0059	0.0067	0.0419	-0.0104	0.0916	-0.0849	0.1554	-0.2017	0.2351	-0.3409	0.3194	-0.4876	0.3508	-0.5250
11	0.560	0.203	0.0001	0.0306	0.0150	0.0152	0.0488	-0.0049	0.0922	-0.2135	0.1478	-0.4818	0.2178	-0.6806	0.2935	-0.8445	0.3198	-0.9130
12	0.562	0.320	-0.0361	0.0371	0.0128	0.0130	0.0457	-0.1426	0.0767	-0.2419	0.1129	-0.3985	0.1639	-0.5798	0.2179	-0.8144	0.2374	-0.8761
13	0.501	0.000	-0.0067	0.0094	0.0042	0.0067	0.0357	-0.0250	0.0888	-0.0741	0.1525	-0.1338	0.2336	-0.2091	0.3261	-0.2690	0.3523	-0.2807
14	0.502	0.141	-0.0015	0.0168	0.0071	0.0078	0.0413	-0.0201	0.0912	-0.1100	0.1517	-0.2865	0.2265	-0.4518	0.3116	-0.6575	0.3309	-0.7107
15	0.504	0.258	0.0036	0.0213	0.0105	0.0129	0.0396	-0.0286	0.0852	-0.2562	0.1388	-0.4856	0.2032	-0.5988	0.2739	-0.8469	0.2997	-0.9187
16	0.506	0.375	-0.0497	0.0272	0.0110	0.0124	0.0425	-0.1305	0.0718	-0.2228	0.1096	-0.3658	0.1529	-0.5427	0.2027	-0.7424	0.2165	-0.8048
17	0.442	0.000	-0.0062	0.0197	0.0013	0.0038	0.0391	-0.0244	0.0859	-0.0739	0.1544	-0.1357	0.2325	-0.2065	0.3231	-0.2644	0.3460	-0.2756
18	0.443	0.200	-0.0105	0.0181	0.0030	0.0055	0.0387	-0.0228	0.0825	-0.1531	0.1476	-0.3520	0.2165	-0.5640	0.3000	-0.7973	0.3161	-0.8820
19	0.445	0.317	-0.0033	0.0208	0.0105	0.0118	0.0415	-0.0532	0.0826	-0.2668	0.1324	-0.3986	0.1909	-0.5918	0.2660	-0.8339	0.2876	-0.9267
20	0.447	0.434	-0.0583	0.0275	0.0127	0.0124	0.0413	-0.1132	0.0724	-0.2135	0.1025	-0.3548	0.1405	-0.5318	0.1892	-0.7674	0.2085	-0.8593
21	0.383	0.000	-0.0139	0.0202	0.0042	0.0016	0.0328	-0.0252	0.0835	-0.0741	0.1474	-0.1342	0.2242	-0.2029	0.3110	-0.2535	0.3433	-0.2681
22	0.383	0.082	-0.0140	0.0231	0.0048	0.0033	0.0373	-0.0257	0.0636	-0.0752	0.1497	-0.1519	0.2277	-0.2443	0.3125	-0.3277	0.3349	-0.3424
23	0.384	0.259	-0.0079	0.0237	0.0076	0.0050	0.0408	-0.0187	0.0865	-0.1951	0.1453	-0.3978	0.2126	-0.6167	0.2884	-0.8850	0.3096	-0.9731
24	0.386	0.376	-0.0029	0.0227	0.0094	0.0101	0.0393	-0.0972	0.0802	-0.2670	0.1291	-0.4068	0.1862	-0.5968	0.2506	-0.8532	0.2674	-0.9313
25	0.388	0.493	-0.0542	0.0299	0.0139	0.0129	0.0466	-0.1054	0.0705	-0.2162	0.0962	-0.3665	0.1317	-0.5740	0.1743	-0.8153	0.1848	-0.8726
26	0.324	0.000	0.0688	0.0196	0.0056	0.0027	0.1126	-0.0229	0.1253	-0.0742	0.1128	-0.1334	0.0975	-0.1991	0.0605	-0.2397	0.0415	-0.2576
27	0.324	0.109	-0.0066	0.0162	0.0020	-0.0012	0.0379	-0.0269	0.0824	-0.0797	0.1423	-0.1596	0.2185	-0.2545	0.3036	-0.3340	0.3365	-0.3615
28	0.325	0.318	-0.0145	0.0237	0.0059	0.0067	0.0379	-0.0218	0.0802	-0.2427	0.1371	-0.4275	0.2022	-0.6444	0.2778	-0.9286	0.3036	-1.0137
29	0.327	0.435	-0.0079	0.0277	0.0099	0.0112	0.0425	-0.1282	0.0791	-0.2663	0.1258	-0.4846	0.1797	-0.5592	0.2440	-0.8705	0.2640	-0.9373
30	0.329	0.552	-0.0493	0.0285	0.0139	0.0158	0.0399	-0.1065	0.0663	-0.2255	0.0928	-0.3660	0.1296	-0.5989	0.1738	-0.7308	0.1797	-0.7505
31	0.236	0.000	-0.0182	0.0060	-0.0044	-0.0116	0.0282	-0.0394	0.0665	-0.0856	0.1284	-0.1350	0.1994	-0.1947	0.2832	-0.2302	0.3132	-0.2304
32	0.236	0.151	1.0757	0.0037	1.0812	-0.0148	1.0815	-0.0417	1.0795	-0.0953	1.0784	-0.1770	1.0789	-0.2775	1.0834	-0.3501	1.0664	-0.3593
33	0.236	0.264	-0.0752	0.0037	-0.0076	-0.0181	0.0236	-0.0433	0.0647	-0.1348	0.1233	-0.2925	0.1942	-0.4752	0.2733	-0.6497	0.2958	-0.6868
34	0.237	0.407	-0.0174	0.0128	-0.0099	-0.0108	0.0310	-0.0507	0.0653	-0.3006	0.1170	-0.4598	0.1824	-0.6938	0.2494	-0.9860	0.2643	-1.0073
35	0.239	0.524	-0.0211	0.0232	0.0002	-0.0030	0.0379	-0.1798	0.0665	-0.2875	0.1097	-0.4184	0.1644	-0.5551	0.2183	-0.7680	0.2372	-0.8229
36	0.241	0.640	-0.0951	0.0261	0.0059	-0.0920	0.0364	-0.1327	0.0537	-0.2489	0.0805	-0.3893	0.1170	-0.5266	0.1541	-0.6938	0.1654	-0.7464
37	0.147	0.000	-0.0565	-0.0363	-0.0468	-0.0467	-0.0178	-0.0670	0.0265	-0.1000	0.0778	-0.1424	0.1448	-0.1855	0.2247	-0.2123	0.2462	-0.2085
38	0.147	0.192																
39	0.147	0.336	-0.0568	-0.0379	-0.0466	-0.0485	-0.0140	-0.0666	0.0293	-0.1711	0.0786	-0.3479	0.1415	-0.5285	0.2173	-0.7196	0.2329	-0.7609
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	-0.1346	-0.0162	-0.0267	-0.0328	0.0011	-0.1613	0.0151	-0.2623	0.0368	-0.3753	0.0666	-0.4962	0.1231	-0.6155	0.1252	-0.6448
43	0.088	0.000	-0.1456	-0.1311	-0.1476	-0.1413	-0.1147	-0.1514	-0.0733	-0.1888	-0.0311	-0.2135	0.0293	-0.2470	0.0901	-0.2673	0.1099	-0.2703
44	0.088	0.220	-0.1423	-0.1274	-0.1450	-0.1394	-0.1098	-0.1495	-0.0698	-0.1913	-0.0254	-0.2648	0.0360	-0.3502	0.0953	-0.4263	0.1165	-0.4501
45	0.088	0.385	-0.1375	-0.1251	-0.1342	-0.1348	-0.1036	-0.1346	-0.0625	-0.2550	-0.0146	-0.4304	0.0429	-0.6215	0.1036	-0.8207	0.1216	-0.8594
46	0.090	0.554	-0.0978	-0.0906	-0.1004	-0.1050	-0.0704	-0.1651	-0.0298	-0.4016	0.0093	-0.5112	0.0570	-0.7046	0.1157	-0.9743	0.1323	-1.0320
47	0.092	0.671	-0.1465		-0.0989		-0.0573		-0.0360		-0.0011		0.0440		0.0999		0.1176	
48	0.093	0.787	-0.1404	-0.0437	-0.0569	-0.0503	-0.0282	-0.1764	-0.0128	-0.2583	0.0018	-0.3456	0.0283	-0.4652	0.0766	-0.5902	0.0926	-0.6178
49	0.059	0.703	-0.2051	-0.1397	-0.1534	-0.1544	-0.1291	-0.3265	-0.0957	-0.3428	-0.0599	-0.3688	-0.0128	-0.4498	0.0460	-0.5318	0.0610	-0.5448
50	0.044	0.000	-0.2138	-0.2619	-0.2231	-0.2189	-0.2595	-0.2107	-0.4177	-0.8047	-0.5177	-0.9049	-0.4928	-1.0167	-0.4311	-1.1097	-0.4145	-1.0879
51	0.044	0.236	-0.2306	-0.2686	-0.2377	-0.2384	-0.2665	-0.2408	-0.2825	-0.7350	-0.5344	-0.8657	-0.4754	-1.0448	-0.3968	-1.1011	-0.3695	-1.1278
52	0.044	0.412	-0.2495	-0.2907	-0.2679	-0.2707	-0.2763	-0.2943	-0.2732	-0.4796	-0.5053	-0.9080	-0.3688	-1.0368	-0.2292	-1.1885	-0.1896	-1.2129
53	0.044	0.837	-0.1928	-0.0936	-0.1155	-0.1224	-0.0875	-0.2326	-0.0688	-0.2525	-0.0454	-0.2773	-0.0037	-0.3348	0.0366	-0.3976	0.0595	-0.4177
54	0.029	0.000	-0.0187	-0.0495	-0.0348	-0.0398	-0.0405	-0.0096	-0.0483	-0.0966	0.0174	-0.1474	0.0541	-0.1922	0.0197	-0.2018	0.0071	-0.1914
55	0.029	0.236	-0.0347	-0.0666	-0.0560	-0.0584	-0.0570	-0.0245	-0.0165	-0.1241	0.0243	-0.1068	0.0544	-0.2412	0.0386	-0.2058	0.0213	-0.2807
56	0.029	0.412	-0.0434	-0.0888	-0.0840	-0.0892	-0.0741	-0.0757	-0.0319	-0.2027	0.0104	-0.2427	0.0405	-0.3309	0.0435	-0.4183	0.0274	-0.4170
57	0.029	0.599	-0.2097	-0.2084	-0.2297	-0.2528	-0.1746	-0.2366	-0.1496	-0.2312	-0.0885	-0.1936	-0.0069	-0.2925	0.0339	-0.4134	0.0348	-0.4430
58	0.015	0.000	0.0777	0.0729	0.0566	0.0692	0.0952	0.0932	0.1481	0.0796	0.1835	0.0586	0.1665	0.0493	0.0850	0.0668	0.0526	0.0800
59	0.015	0.236	0.0594	0.0340	0.0327	0.0402	0.0591	0.0859	0.1454	0.0362	0.1808	0.0191	0.1843	0.0058	0.1175	0.0093	0.0897	0.0203
60	0.015	0.412	0.0490	0.0210	0.0162	0.0198	0.0491	0.0589	0.1187	-0.0169	0.1635	-0.0284	0.1679	-0.0590	0.1409	-0.0859	0.1315	-0.0740
61	0.015	0.733	-0.1462	-0.1254	-0.1551	-0.1618	-0.0772	-0.1152	-0.1094	-0.0695	-0.1090	-0.0777	-0.0111	-0.1223	0.0712	-0.2048	0.0974	-0.2224
62	0.329	-0.552	-0.0608	0.0264	0.0167	0.0107	0.0498	-0.1018	0.0724	-0.2044	0.0085	-0.3288	0.1292	-0.4830	0.1519	-0.6003	0.1679	-0.4330
63	0.044	-0.837	-0.1985	-0.0941	-0.1031	-0.1105	-0.0770	-0.2190	-0.0625	-0.2471	-0.0478	-0.2716	-0.0052	-0.3175	0.0493	-0.3228	0.0631	-0.3188

Table A-1.- (Continued).
M = 0.6

TUBE	X/L	Y/B/2	ALPHA =															
			27.4 WINDWARD	27.4 LEEWARD	30.1 WINDWARD	30.1 LEEWARD	35.0 WINDWARD	35.1 LEEWARD	40.0 WINDWARD	40.0 LEEWARD	45.0 WINDWARD	45.0 LEEWARD	50.0 WINDWARD	50.0 LEEWARD	54.9 WINDWARD	54.9 LEEWARD	56.5 WINDWARD	56.5 LEEWARD
1	0.881	0.000	0.4184	-0.3263	0.4781	-0.4565	0.5833	-0.5851	0.6929	-0.9294	0.7951	-1.4354	0.9064	-1.8372	0.9841	-1.6683	1.0072	-1.3374
2	0.822	0.000	0.4066	-0.3023	0.4651	-0.3930	0.5768	-0.4960	0.6854	-0.9344	0.7851	-1.2044	0.8992	-1.7709	0.9735	-1.2094	0.9935	-1.0499
3	0.762	0.000	0.4053	-0.2878	0.4615	-0.3635	0.5725	-0.4581	0.6790	-0.8760	0.7789	-0.9726	0.8838	-1.4027	0.9631	-0.9776	0.9793	-0.8644
4	0.764	0.117	0.3415	-1.0312	0.3918	-1.2848	0.4867	-1.4235	0.5405	-0.6114	0.6089	-0.9930	0.7411	-1.2883	0.7986	-1.0107	0.8198	-0.8533
5	0.703	0.000	0.4032	-0.2853	0.4598	-0.3453	0.5788	-0.4224	0.6695	-0.6881	0.7675	-0.8617	0.8665	-1.1287	0.9514	-0.8656	0.9676	-0.7756
6	0.644	0.000	0.3975	-0.2777	0.4520	-0.3325	0.5667	-0.4091	0.6636	-0.7442	0.7615	-0.7699	0.8584	-0.9887	0.9404	-0.8076	0.9560	-0.7570
7	0.646	0.117	0.3454	-0.9541	0.4200	-1.1439	0.5235	-1.3264	0.5974	-0.5591	0.6847	-0.9300	0.7808	-1.0104	0.8570	-0.7725	0.8769	-0.7330
8	0.647	0.234	0.2953	-0.9665	0.3280	-1.1456	0.4106	-1.3393	0.4388	-0.6033	0.4974	-1.1731	0.6145	-0.9828	0.6683	-0.7528	0.6856	-0.7181
9	0.609	0.000	0.3938	-0.2758	0.4517	-0.3264	0.5616	-0.4018	0.6595	-0.5962	0.7618	-0.7361	0.8550	-0.9216	0.9270	-0.7692	0.9494	-0.7348
10	0.558	0.000	0.3788	-0.6269	0.4292	-0.7636	0.5413	-0.8954	0.6191	-0.4399	0.7131	-0.7556	0.8116	-0.8852	0.8800	-0.7403	0.9033	-0.7120
11	0.560	0.203	0.3194	-1.0138	0.3900	-1.2120	0.4902	-1.5251	0.5463	-0.6513	0.6267	-1.2272	0.7292	-0.9858	0.7876	-0.7318	0.8063	-0.7060
12	0.562	0.320	0.2496	-0.9807	0.2880	-1.1551	0.3783	-1.3281	0.3844	-0.6724	0.4360	-1.2375	0.5546	-0.8835	0.5926	-0.7268	0.6097	-0.7029
13	0.501	0.000	0.3787	-0.2835	0.4355	-0.3252	0.5476	-0.3898	0.6480	-0.3666	0.7488	-0.5798	0.8296	-0.7916	0.9041	-0.7436	0.9242	-0.7248
14	0.502	0.141	0.3629	-0.8356	0.4135	-1.0254	0.5212	-1.1789	0.5988	-0.4871	0.6866	-0.9262	0.7787	-0.8318	0.8444	-0.7203	0.8606	-0.7055
15	0.504	0.258	0.3197	-0.9868	0.3685	-1.2316	0.4677	-1.5257	0.5173	-0.5985	0.5907	-1.2857	0.6927	-0.8318	0.7480	-0.7077	0.7592	-0.6953
16	0.504	0.375	0.2289	-0.9012	0.2697	-1.0392	0.3406	-1.1757	0.3535	-0.5472	0.4097	-1.0844	0.5228	-0.8153	0.5539	-0.6891	0.5715	-0.6943
17	0.442	0.000	0.3710	-0.2824	0.4302	-0.3209	0.5378	-0.3803	0.6351	-0.2729	0.7383	-0.5316	0.8111	-0.7544	0.8904	-0.7105	0.9111	-0.7275
18	0.443	0.200	0.3436	-1.0190	0.3948	-1.2683	0.4972	-1.4627	0.5682	-0.4440	0.6605	-1.0522	0.7408	-0.8042	0.8053	-0.7039	0.8241	-0.7235
19	0.445	0.317	0.3066	-1.0114	0.3474	-1.2579	0.4450	-1.5101	0.4940	-0.5591	0.5628	-1.2573	0.6564	-0.8037	0.7075	-0.6920	0.7271	-0.7126
20	0.447	0.434	0.2704	-0.9357	0.2505	-1.0740	0.3367	-1.1675	0.3370	-0.4526	0.3856	-1.0172	0.4986	-0.7765	0.5175	-0.6724	0.5349	-0.7015
21	0.383	0.000	0.3788	-0.2753	0.4230	-0.3047	0.5238	-0.3538	0.6303	-0.5673	0.7248	-0.3764	0.7923	-0.7198	0.8714	-0.6911	0.8954	-0.7228
22	0.383	0.082	0.3604	-0.3767	0.4177	-0.4519	0.5189	-0.5222	0.6140	-0.4887	0.7103	-0.5170	0.7838	-0.7397	0.8590	-0.6743	0.8831	-0.7178
23	0.384	0.259	0.3319	-1.0735	0.3808	-1.3434	0.4770	-1.5741	0.5457	-0.6076	0.6324	-1.1664	0.7061	-0.7724	0.7675	-0.6724	0.7827	-0.7275
24	0.384	0.376	0.2862	-1.0066	0.3282	-1.2394	0.4225	-1.4375	0.4682	-0.5935	0.5445	-1.2020	0.6181	-0.7731	0.6662	-0.6764	0.6812	-0.7294
25	0.388	0.493	0.2068	-0.9431	0.2392	-1.0889	0.3245	-1.1720	0.3284	-0.4695	0.3906	-0.9225	0.4550	-0.7598	0.4832	-0.6708	0.4994	-0.7109
26	0.324	0.000	0.3624	-0.2560	0.4164	-0.2883	0.5081	-0.3338	0.6164	-0.5850	0.6972	-0.2433	0.7724	-0.6990	0.8501	-0.6078	0.8756	-0.7141
27	0.324	0.109	0.3593	-0.4035	0.4093	-0.4793	0.5009	-0.5427	0.6033	-0.5769	0.6828	-0.3418	0.7583	-0.7073	0.8358	-0.6837	0.8581	-0.7142
28	0.325	0.318	0.3191	-1.0890	0.3641	-1.3486	0.4493	-1.6069	0.5239	-0.6313	0.5957	-1.0890	0.6666	-0.7265	0.7234	-0.6805	0.7446	-0.7172
29	0.327	0.435	0.2802	-0.9784	0.3158	-1.0968	0.4011	-1.2536	0.4529	-0.5928	0.5196	-0.9399	0.5831	-0.7312	0.6255	-0.6868	0.6451	-0.7159
30	0.329	0.552	0.1969	-0.9171	0.2218	-1.0178	0.3048	-1.1144	0.3168	-0.4527	0.3754	-0.6964	0.4231	-0.7202	0.4447	-0.6916	0.4627	-0.7170
31	0.236	0.000	0.3349	-0.2384	0.3877	-0.2598	0.4619	-0.2884	0.5721	-0.5063	0.6469	-0.2396	0.7188	-0.6600	0.8041	-0.6918	0.8268	-0.7018
32	0.234	0.151	0.3338	-0.4183	0.3802	-0.4783	0.4519	-0.5378	0.5566	-0.4702	0.6293	-0.3537	0.7090	-0.6683	0.7813	-0.6781	0.8065	-0.6894
33	0.236	0.264	0.3208	-0.8169	0.3679	-0.9480	0.4385	-1.0401	0.5328	-0.5276	0.5993	-0.5019	0.6823	-0.6800	0.7440	-0.6900	0.7690	-0.6970
34	0.237	0.407	0.2886	-1.1743	0.3338	-1.4402	0.3958	-1.6998	0.4763	-0.5966	0.5242	-0.8631	0.6008	-0.6830	0.6533	-0.6800	0.6730	-0.6938
35	0.239	0.524	0.2583	-0.8392	0.2934	-1.0097	0.3534	-1.1642	0.4213	-0.5518	0.4578	-0.6764	0.5254	-0.6847	0.5648	-0.6868	0.5812	-0.7008
36	0.241	0.640	0.1835	-0.8251	0.2148	-0.9418	0.2643	-1.0384	0.3052	-0.5018	0.3246	-0.5111	0.3766	-0.6779	0.3908	-0.6922	0.4075	-0.6999
37	0.147	0.000	0.2720	-0.2227	0.3134	-0.2372	0.3722	-0.2447	0.4773	-0.4545	0.5411	-0.2488	0.6212	-0.6074	0.7088	-0.6616	0.7320	-0.6527
38	0.147	0.192																
39	0.147	0.336	0.2439	-0.4127	0.3088	-1.0399	0.3588	-1.1395	0.4433	-0.4965	0.4926	-0.4088	0.5016	-0.6225	0.6534	-0.6558	0.6731	-0.6425
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	0.1407	-0.7538	0.1792	-0.8469	0.1994	-0.9681	0.2602	-0.4212	0.2449	-0.3417	0.3188	-0.6209	0.3189	-0.6694	0.3430	-0.6558
43	0.088	0.000	0.1203	-0.2719	0.1603	-0.2829	0.2043	-0.2925	0.3071	-0.4097	0.3585	-0.3261	0.4371	-0.5779	0.5355	-0.6269	0.5686	-0.6143
44	0.088	0.220	0.1348	-0.5172	0.1661	-0.5807	0.2140	-0.6252	0.3025	-0.4117	0.3496	-0.3486	0.4352	-0.5708	0.5232	-0.6206	0.5579	-0.6020
45	0.088	0.385	0.1433	-1.0108	0.1729	-1.1557	0.2196	-1.2332	0.2954	-0.4466	0.3357	-0.4359	0.4218	-0.5839	0.4945	-0.6222	0.5254	-0.6030
46	0.090	0.554	0.1571	-1.0461	0.1845	-1.1394	0.2215	-1.1984	0.2806	-0.4745	0.3077	-0.4821	0.3865	-0.5805	0.4390	-0.6139	0.4653	-0.5742
47	0.092	0.671																
48	0.093	0.787	0.1157	-0.6937	0.1445	-0.7862	0.1635	-0.9131	0.2012	-0.3791	0.1855	-0.2935	0.2451	-0.5810	0.2581	-0.6290	0.2808	-0.5975
49	0.059	0.703	0.0439	-0.5965	0.1113	-0.6654	0.1376	-0.7579	0.1783	-0.3551	0.1691	-0.3618	0.2437	-0.5600	0.3003	-0.6015	0.3253	-0.5678
50	0.044	0.000	-0.4038	-1.0271	-0.3646	-0.9064	-0.2958	-0.7669	-0.1632	-0.4079	-0.0869	-0.4092	-0.0319	-0.5401	0.1206	-0.5750	0.1619	-0.5525
51	0.044	0.236	-0.3402	-1.2011	-0.2897	-1.1940	-0.2280	-1.0668	-0.1311	-0.4251	-0.0771	-0.4638	-0.0044	-0.5497	0.1275	-0.5784	0.1668	-0.5514
52	0.044	0.412	-0.1543	-1.1795	-0.1044	-1.2065	-0.0672	-1.1403	-0.0341	-0.4115	-0.0139	-0.4781	0.0827	-0.5519	0.1673	-0.5724	0.2021	-0.5530
53	0.044	0.837	0.0899	-0.4825	0.1129	-0.5571	0.1260	-0.6743	0.1004	-0.2540	0.0644	-0.2855	0.1571	-0.5321	0.1668	-0.5657	0.1896	-0.5478
54	0.029	0.000	0.0072	-0.1834	-0.0457	-0.1863	-0.0593	-0.1814	0.0046	-0.3949	-0.0816	-0.3706	0.0397	-0.5340	0.1178	-0.5448	0.1448	-0.5316
55	0.029	0.236	0.0280	-0.3171	0.0013	-0.3396	-0.0137	-0.3449	0.0150	-0.3430	-0.0868	-0.3768	0.0446	-0.5392	0.1215	-0.5506	0.1495	-0.5247
56	0.029	0.412	0.0468	-0.4749	0.0295	-0.5029	0.0082	-0.5017	0.0219	-0.3111	-0.0053	-0.4049	0.0572	-0.5281	0.1223	-0.5402	0.1516	-0.5152
57	0.029	0.599	0.0606	-0.[illegible]310	0.0702	-0.5764	0.0472	-0.6040	0.0311	-0.2727	-0.0115	-0.4105	0.0623	-0.5270	0.1131	-0.5419	0.1456	-0.5164
58	0.015	0.000	0.0405	0.0929	-0.0455	0.1108	-0.0780	0.1415	-0.0232	-0.3456	-0.0537	-0.2744	-0.0047	-0.5215	0.0007	-0.4927	0.0238	-0.4747
59	0.015	0.236	0.0888	0.0006	0.0209	0.0023	-0.0857	0.0145	-0.0207	-0.2867	-0.0630	-0.2930	-0.0515	-0.5339	-0.0033	-0.4965	0.0186	-0.4794
60	0.015	0.412	0.1319	-0.1356	0.0871	-0.1568	0.0424	-0.1674	-0.0147	-0.2564	-0.0459	-0.3088	-0.0406	-0.5323	-0.0035	-0.5013	0.0170	-0.4800
61	0.015	0.733	0.1156	-0.3037	0.1269	-0.3373	0.0881	-0.4036	0.0133	-0.1682	-0.0922	-0.3013	-0.0011	-0.5086	0.0042	-0.4928	0.0302	-0.4840
62	0.329	-0.552	0.1922	-0.6201	0.2155	-0.6517	0.2908	-0.7447	0.3732	-0.9771	0.4849	-0.7583	0.4393	-0.6460	0.5054	-0.6895	0.5153	-0.7170
63	0.044	-0.837	0.0979	-0.2027	0.1207	-0.2670	0.0305	-0.2707	0.1836	-0.5690	0.1640	-0.3594	0.1521	-0.4684	0.2353	-0.5499	0.2553	-0.5399

Table A-1.- (Continued).
M = 0.8

			ALPHA =																	
			-2.9	-2.7	0.0	0.2	5.0	5.2	10.0	10.1	14.9	15.1	19.9	20.0	24.9	25.0	26.4	26.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.881	0.000	0.0214	0.0462	0.0318	0.0333	0.0687	0.0096	0.1215	-0.0316	0.1935	-0.0946	0.2813	-0.1582	0.3781	-0.7133	0.4182	-0.2451
2	0.822	0.000	0.0173	0.0365	0.0272	0.0255	0.0635	0.0002	0.1164	-0.0409	0.1898	-0.1051	0.2773	-0.1681	0.3729	-0.2291	0.4126	-0.2579
3	0.762	0.000	0.0146	0.0324	0.0223	0.0228	0.0596	-0.0017	0.1109	-0.0418	0.1836	-0.1055	0.2707	-0.1684	0.3646	-0.2293	0.4037	-0.2563
4	0.704	0.117	0.0191	0.0378	0.0327	0.0251	0.0618	-0.0012	0.1028	-0.1965	0.1635	-0.3643	0.2343	-0.5328	0.3180	-0.7332	0.3543	-0.8044
5	0.703	0.000	0.0196	0.0374	0.0327	0.0251	0.0668	0.0050	0.1159	-0.0335	0.1858	-0.0982	0.2683	-0.1573	0.3634	-0.2125	0.4034	-0.2393
6	0.644	0.000	0.0150	0.0339	0.0255	0.0201	0.0594	0.0002	0.1103	-0.0395	0.1816	-0.1049	0.2638	-0.1640	0.3562	-0.2212	0.3969	-0.2405
7	0.646	0.117	0.0146	0.0361	0.0255	0.0196	0.0555	0.0032	0.1038	-0.1029	0.1718	-0.2801	0.2466	-0.4591	0.3378	-0.6409	0.3684	-0.7163
8	0.647	0.234	0.0003	0.0379	0.0277	0.0228	0.0553	-0.1063	0.0940	-0.1980	0.1464	-0.3395	0.2022	-0.5028	0.2737	-0.6899	0.3003	-0.7602
9	0.600	0.000	0.0065	0.0287	0.0214	0.0191	0.0532	-0.0062	0.1060	-0.0463	0.1773	-0.1078	0.2599	-0.1787	0.3538	-0.2293	0.3933	-0.2550
10	0.558	0.006	0.0019	0.0273	0.0209	0.0118	0.0458	-0.0098	0.0974	-0.0715	0.1644	-0.1901	0.2420	-0.3144	0.3361	-0.4448	0.3692	-0.4924
11	0.560	0.203	0.0123	0.0315	0.0268	0.0214	0.0500	0.0022	0.0984	-0.1888	0.1577	-0.3661	0.2277	-0.5329	0.3099	-0.7247	0.3419	-0.7920
12	0.562	0.320	-0.0272	0.0307	0.0209	0.0206	0.0453	-0.1237	0.0835	-0.2107	0.1279	-0.3538	0.1795	-0.5153	0.2344	-0.7087	0.2648	-0.7759
13	0.501	0.000	-0.0032	0.0178	0.0109	0.0096	0.0378	-0.0169	0.0922	-0.0684	0.1636	-0.1268	0.2425	-0.1949	0.3351	-0.2545	0.3702	-0.2887
14	0.502	0.141	0.0029	0.0251	0.0137	0.0123	0.0449	-0.0134	0.0949	-0.0924	0.1623	-0.2533	0.2359	-0.4154	0.3233	-0.5779	0.3580	-0.6466
15	0.504	0.250	0.0003	0.0274	0.0173	0.0159	0.0446	-0.0220	0.0982	-0.2249	0.1488	-0.3647	0.2144	-0.5275	0.2918	-0.7115	0.3219	-0.7809
16	0.506	0.375	-0.0419	0.0305	0.0227	0.0150	0.0450	-0.1164	0.0803	-0.2055	0.1196	-0.3493	0.1657	-0.5057	0.2197	-0.6827	0.2457	-0.7443
17	0.442	0.000	0.0000	0.0191	0.0158	0.0077	0.0418	-0.0170	0.0943	-0.0606	0.1431	-0.1290	0.2412	-0.1973	0.3317	-0.2582	0.3645	-0.2837
18	0.443	0.200	0.0011	0.0210	0.0102	0.0109	0.0438	-0.0123	0.0926	-0.1335	0.1557	-0.3258	0.2285	-0.5143	0.3124	-0.7045	0.3409	-0.7759
19	0.445	0.317	0.0032	0.0233	0.0191	0.0123	0.0469	-0.0480	0.0890	-0.2286	0.1446	-0.3553	0.2059	-0.5234	0.2763	-0.7130	0.3071	-0.7751
20	0.447	0.434	-0.0520	0.0292	0.0218	0.0137	0.0401	-0.0995	0.0783	-0.1980	0.1173	-0.3422	0.1558	-0.5019	0.2061	-0.7043	0.2314	-0.7720
21	0.383	0.000	-0.0043	0.0237	0.0146	0.0078	0.0414	-0.0170	0.0920	-0.0621	0.1410	-0.1259	0.2369	-0.1951	0.3203	-0.2604	0.3594	-0.2807
22	0.383	0.002	-0.0021	0.0246	0.0120	0.0087	0.0441	-0.0140	0.0929	-0.0624	0.1509	-0.1446	0.2338	-0.2276	0.3207	-0.3059	0.3592	-0.3355
23	0.384	0.259	0.0000	0.0255	0.0168	0.0114	0.0477	-0.0069	0.0957	-0.1728	0.1532	-0.3712	0.2209	-0.5504	0.3000	-0.7404	0.3337	-0.8195
24	0.386	0.374	0.0044	0.0284	0.0102	0.0155	0.0475	-0.0033	0.0903	-0.2270	0.1379	-0.3692	0.1958	-0.5307	0.2627	-0.7165	0.2944	-0.7838
25	0.388	0.493	-0.0493	0.0320	0.0237	0.0173	0.0478	-0.0087	0.0773	-0.1948	0.1093	-0.3516	0.1459	-0.5303	0.1891	-0.7212	0.2119	-0.7815
26	0.324	0.000	0.0084	0.0273	0.1109	0.0118	0.1355	-0.0129	0.1302	-0.0576	0.1565	-0.1255	0.1072	-0.1857	0.0812	-0.2530	0.0628	-0.2733
27	0.324	0.109	0.0002	0.0219	0.0137	0.0078	0.0450	-0.0165	0.0906	-0.0630	0.1565	-0.1535	0.2310	-0.2400	0.3131	-0.3325	0.3450	-0.3594
28	0.325	0.310	0.0037	0.0333	0.0146	0.0128	0.0459	-0.0112	0.0916	-0.2151	0.1490	-0.3920	0.2144	-0.5666	0.2858	-0.7797	0.3231	-0.8537
29	0.327	0.435	0.0073	0.0360	0.0191	0.0191	0.0496	-0.1144	0.0907	-0.2204	0.1369	-0.3707	0.1920	-0.5168	0.2538	-0.7370	0.2857	-0.8190
30	0.329	0.552	-0.0472	0.0371	0.0232	0.0238	0.0498	-0.0903	0.0790	-0.2014	0.1070	-0.3613	0.1422	-0.5377	0.1806	-0.7031	0.2004	-0.7541
31	0.234	0.000	-0.0105	0.0205	0.0077	0.0022	0.0396	-0.0261	0.0840	-0.0700	0.1482	-0.1373	0.2181	-0.1990	0.2976	-0.2691	0.3316	-0.2873
32	0.236	0.151	1.1429	0.0107	1.1711	-0.0008	1.1690	-0.0296	1.1574	-0.0788	1.1567	-0.1745	1.1628	-0.2606	1.1467	-0.3750	1.1603	-0.4009
33	0.234	0.264	-0.0201	0.0173	0.0029	-0.0053	0.0337	-0.0310	0.0812	-0.1203	0.1450	-0.2849	0.2135	-0.4415	0.2859	-0.6119	0.3201	-0.6524
34	0.237	0.407	-0.0112	0.0205	0.0105	0.0001	0.0423	-0.0419	0.0794	-0.2730	0.1306	-0.4152	0.1991	-0.6124	0.2695	-0.8655	0.2923	-0.9414
35	0.239	0.524	-0.0220	0.0301	0.0168	0.0006	0.0505	-0.1624	0.0822	-0.2557	0.1319	-0.3960	0.1834	-0.5044	0.2415	-0.7334	0.2622	-0.7847
36	0.241	0.640	-0.0737	0.0339	0.0196	0.0146	0.0507	-0.1181	0.0726	-0.2340	0.1070	-0.3921	0.1418	-0.5358	0.1765	-0.6744	0.1937	-0.7216
37	0.147	0.000	-0.0507	-0.0199	-0.0287	-0.0371	0.0050	-0.0512	0.0444	-0.0782	0.1124	-0.1327	0.1649	-0.1880	0.2406	-0.2330	0.2695	-0.2552
38	0.147	0.192																
39	0.147	0.336	-0.0516	-0.0218	-0.0344	-0.0396	0.0033	-0.0500	0.0425	-0.1514	0.1090	-0.3348	0.1584	-0.5094	0.2312	-0.6610	0.2080	-0.7143
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	-0.1336	-0.0105	-0.0284	-0.0239	0.0113	-0.1608	0.0260	-0.2559	0.0615	-0.3074	0.0995	-0.4031	0.1428	-0.6322	0.1636	-0.6849
43	0.088	0.000	-0.1041	-0.0792	-0.0984	-0.1044	-0.0566	-0.1084	-0.0189	-0.0842	0.0545	-0.1176	0.0457	-0.1457	0.1032	-0.1609	0.1289	-0.1863
44	0.088	0.220	-0.1024	-0.0812	-0.0962	-0.1042	-0.0574	-0.1054	-0.0180	-0.0942	0.0556	-0.1745	0.0479	-0.2473	0.1051	-0.3149	0.1308	-0.3425
45	0.088	0.385	-0.1025	-0.0812	-0.0960	-0.1005	-0.0562	-0.0964	-0.0211	-0.1094	0.0514	-0.3434	0.0497	-0.5013	0.1059	-0.6565	0.1294	-0.6967
46	0.090	0.554	-0.0726	-0.0635	-0.0780	-0.0800	-0.0373	-0.1381	-0.0091	-0.3147	0.0403	-0.3947	0.0561	-0.5706	0.1092	-0.7869	0.1322	-0.8813
47	0.092	0.671	-0.1218		-0.0750		-0.0439		-0.0194		0.0368		0.0475		0.0948		0.1196	
48	0.093	0.787	-0.1406	-0.0362	-0.0510	-0.0518	-0.0225	-0.1627	-0.0116	-0.2121	0.0196	-0.2917	0.0346	-0.4024	0.0776	-0.5307	0.0975	-0.5841
49	0.059	0.703	-0.1754	-0.1266	-0.1408	-0.1419	-0.1077	-0.3113	-0.0945	-0.2153	-0.0113	-0.2222	-0.0714	-0.2077	-0.0321	-0.4846	-0.0159	-0.4708
50	0.044	0.000	-0.2256	-0.2251	-0.2236	-0.2261	-0.1946	-0.2362	-0.2314	-0.2035	-0.1067	-0.3290	-0.6227	-0.4322	-0.7492	-0.6037	-0.7576	-0.6502
51	0.044	0.236	-0.2466	-0.2399	-0.2443	-0.2386	-0.2161	-0.2580	-0.2829	-0.2434	-0.1319	-0.3166	-0.6319	-0.4383	-0.7512	-0.6624	-0.7568	-0.7297
52	0.044	0.412	-0.2767	-0.2702	-0.2714	-0.2705	-0.2388	-0.3130	-0.3078	-0.3129	-0.1490	-0.3224	-0.6442	-0.4116	-0.7717	-0.6331	-0.7730	-0.7113
53	0.044	0.837	-0.1878	-0.1099	-0.1192	-0.1255	-0.0936	-0.2196	-0.0904	-0.1714	-0.0390	-0.1866	-0.0868	-0.2286	-0.0432	-0.3266	-0.0259	-0.3021
54	0.029	0.000	-0.1002	-0.1066	-0.0994	-0.1043	-0.0791	-0.1144	-0.1885	-0.2410	-0.1297	-0.3258	-0.4431	-0.3032	-0.4930	-0.4385	-0.4812	-0.4574
55	0.029	0.236	-0.1178	-0.1220	-0.1107	-0.1122	-0.0894	-0.1326	-0.1379	-0.2556	-0.1467	-0.3342	-0.4147	-0.4246	-0.4367	-0.5240	-0.4108	-0.5415
56	0.029	0.412	-0.1356	-0.1284	-0.1191	-0.1200	-0.1001	-0.1604	-0.1222	-0.2549	-0.1573	-0.3118	-0.3483	-0.4290	-0.2362	-0.6244	-0.1994	-0.6923
57	0.029	0.599	-0.3398	-0.3125	-0.3298	-0.3424	-0.2553	-0.2562	-0.2548	-0.2141	-0.1557	-0.2324	-0.4087	-0.3246	-0.3594	-0.4776	-0.3393	-0.5394
58	0.015	0.000	-0.0473	-0.0444	-0.0362	-0.0420	-0.0206	-0.0518	-0.0659	-0.1965	-0.0955	-0.2397	-0.2225	-0.2799	-0.1726	-0.3845	-0.1876	-0.3852
59	0.015	0.236	-0.0559	-0.0530	-0.0414	-0.0481	-0.0242	-0.0641	-0.0139	-0.1957	-0.0964	-0.2570	-0.1678	-0.3283	-0.1306	-0.3667	-0.1428	-0.3679
60	0.015	0.412	-0.0788	-0.0609	-0.0505	-0.0611	-0.0318	-0.0894	-0.0084	-0.2038	-0.1816	-0.2945	-0.0553	-0.4271	-0.0624	-0.5372	-0.0870	-0.5391
61	0.015	0.733	-0.2078	-0.1970	-0.1941	-0.2065	-0.1757	-0.1765	-0.2143	-0.1198	-0.1526	-0.1672	-0.2304	-0.2514	-0.1768	-0.3538	-0.1674	-0.3997
62	0.329	-0.552	-0.0475	0.0340	0.0290	0.0196	0.0517	-0.0837	0.0805	-0.1795	0.1132	-0.3182	0.1423	-0.4711	0.1723	-0.5915	0.1944	-0.6362
63	0.044	-0.837	-0.1858	-0.0966	-0.1122	-0.1143	-0.0823	-0.2070	-0.0862	-0.1329	-0.0438	-0.1653	-0.0780	-0.2006	-0.0397	-0.2419	-0.0177	-0.2541

Table A-1.- (Continued).
M = 0.8

			ALPHA =															
TUBE	X/L	Y/B/2	27.2 WINDWARD	27.2 LEEWARD	29.9 WINDWARD	29.9 LEEWARD	34.9 WINDWARD	34.9 LEEWARD	39.8 WINDWARD	39.9 LEEWARD	44.8 WINDWARD	44.8 LEEWARD	49.7 WINDWARD	49.8 LEEWARD	54.7 WINDWARD	54.7 LEEWARD	56.4 WINDWARD	56.3 LEEWARD
1	0.881	0.000	0.4413	-0.2957	0.5049	-0.4138	0.6310	-0.5868	0.7493	-0.8602	0.8478	-1.0363	0.9721	-1.3987	1.0596	-0.9550	1.0875	-1.1535
2	0.822	0.000	0.4324	-0.2828	0.4954	-0.3759	0.6187	-0.5735	0.7335	-0.8675	0.8462	-0.9658	0.9552	-1.3058	1.0407	-0.8634	1.0701	-1.0266
3	0.762	0.000	0.4268	-0.2675	0.4903	-0.3537	0.6105	-0.5576	0.7226	-0.8152	0.8335	-0.8959	0.9425	-1.2784	1.0265	-0.8153	1.0551	-0.9367
4	0.764	0.117	0.3680	-0.8595	0.4217	-0.9790	0.5249	-1.0870	0.6150	-0.7660	0.7125	-1.1212	0.8072	-1.3458	0.8871	-0.7951	0.9148	-0.9040
5	0.703	0.000	0.4249	-0.2648	0.4847	-0.3451	0.6036	-0.5514	0.7095	-0.7761	0.8251	-0.8681	0.9299	-1.1712	1.0116	-0.7917	1.0417	-0.8576
6	0.644	0.000	0.4184	-0.2642	0.4777	-0.3390	0.5942	-0.5478	0.7009	-0.7660	0.8141	-0.8517	0.9199	-1.0869	0.9990	-0.7866	1.0292	-0.8254
7	0.646	0.117	0.3986	-0.8380	0.4458	-0.9641	0.5510	-1.0280	0.6486	-0.7445	0.7463	-1.0782	0.8526	-1.2019	0.9278	-0.7580	0.9619	-0.8097
8	0.647	0.234	0.3177	-0.8316	0.3588	-0.9570	0.4464	-1.0447	0.5225	-0.8356	0.5996	-1.2157	0.6929	-1.1624	0.7646	-0.7420	0.7955	-0.7969
9	0.600	0.000	0.4158	-0.2644	0.4710	-0.3318	0.5889	-0.5363	0.6943	-0.7404	0.8011	-0.8233	0.9139	-0.9692	0.9876	-0.7549	1.0248	-0.7915
10	0.558	0.086	0.3928	-0.5613	0.4467	-0.6685	0.5599	-0.7961	0.6589	-0.7253	0.7636	-0.9333	0.8672	-0.8789	0.9454	-0.7284	0.9788	-0.7393
11	0.568	0.203	0.3598	-0.8433	0.4095	-0.9724	0.5120	-1.1382	0.5999	-0.8467	0.6935	-1.2291	0.7918	-0.9930	0.8648	-0.7179	0.8944	-0.7431
12	0.562	0.320	0.2754	-0.8396	0.3171	-0.9671	0.3996	-1.0226	0.4655	-0.8573	0.5415	-1.2857	0.6307	-0.9496	0.6972	-0.7238	0.7239	-0.7453
13	0.501	0.000	0.3925	-0.2773	0.4510	-0.3353	0.5688	-0.5357	0.6701	-0.7181	0.7770	-0.7395	0.8848	-0.6505	0.9636	-0.7151	1.0016	-0.7232
14	0.502	0.141	0.3773	-0.7414	0.4303	-0.8566	0.5411	-0.9474	0.6325	-0.7683	0.7298	-1.0148	0.8348	-0.7599	0.9089	-0.6959	0.9457	-0.7118
15	0.504	0.258	0.3412	-0.8354	0.3857	-0.9545	0.4865	-1.1368	0.5675	-0.8720	0.6537	-1.2454	0.7546	-0.8243	0.8228	-0.6872	0.8570	-0.7031
16	0.506	0.375	0.2557	-0.8031	0.2949	-0.9083	0.3731	-0.9753	0.4356	-0.8421	0.5050	-1.1321	0.6051	-0.7813	0.6576	-0.6900	0.6886	-0.7027
17	0.442	0.000	0.3868	-0.2731	0.4437	-0.3777	0.5594	-0.5343	0.6597	-0.6971	0.7650	-0.6645	0.8677	-0.7252	0.9469	-0.7073	0.9809	-0.6959
18	0.443	0.200	0.3573	-0.8677	0.4121	-1.0079	0.5168	-1.1074	0.6074	-0.8167	0.7833	-1.0974	0.7964	-0.7821	0.8728	-0.7027	0.9041	-0.6997
19	0.445	0.317	0.3216	-0.8333	0.3696	-0.9581	0.4619	-1.1237	0.5420	-0.8933	0.6757	-1.2323	0.7199	-0.7877	0.7836	-0.6898	0.8166	-0.6880
20	0.447	0.434	0.2416	-0.8328	0.2773	-0.9474	0.3495	-1.0056	0.4092	-0.8393	0.4776	-1.0653	0.5690	-0.7228	0.6185	-0.6781	0.6476	-0.6739
21	0.383	0.000	0.3881	-0.2744	0.4371	-0.3255	0.5476	-0.5248	0.6473	-0.6610	0.7483	-0.4661	0.8458	-0.7351	0.9253	-0.6840	0.9618	-0.6665
22	0.383	0.082	0.3822	-0.3678	0.4308	-0.4496	0.5424	-0.6219	0.6411	-0.6596	0.7378	-0.5761	0.8345	-0.7474	0.9161	-0.6775	0.9507	-0.6710
23	0.386	0.259	0.3586	-0.8945	0.3963	-1.0182	0.4959	-1.1770	0.5830	-0.8435	0.6727	-1.0615	0.7577	-0.7804	0.8331	-0.6751	0.8645	-0.6743
24	0.386	0.376	0.3083	-0.8537	0.3478	-0.9742	0.4353	-1.1181	0.5125	-0.8987	0.5967	-1.0894	0.6760	-0.7751	0.7429	-0.6751	0.7735	-0.6769
25	0.388	0.493	0.2268	-0.8389	0.2586	-0.9516	0.3269	-0.9917	0.3856	-0.8288	0.4540	-0.8993	0.5271	-0.7471	0.5051	-0.6672	0.6163	-0.6637
26	0.324	0.000	0.3769	-0.2691	0.4303	-0.3262	0.5388	-0.5067	0.6334	-0.5903	0.7212	-0.2532	0.8227	-0.7142	0.9024	-0.6736	0.9429	-0.6499
27	0.324	0.109	0.3714	-0.3943	0.4252	-0.4693	0.5315	-0.6293	0.6249	-0.5970	0.7114	-0.3704	0.8095	-0.7178	0.8892	-0.6681	0.9278	-0.6503
28	0.325	0.318	0.3341	-0.8891	0.3828	-1.0406	0.4752	-1.2124	0.5564	-0.8258	0.6386	-0.8676	0.7162	-0.7227	0.7983	-0.6584	0.8234	-0.6552
29	0.327	0.435	0.2938	-0.8493	0.3357	-0.9308	0.4177	-1.0514	0.4893	-0.8545	0.5492	-0.8002	0.6373	-0.7238	0.7037	-0.6603	0.7352	-0.6606
30	0.329	0.552	0.2098	-0.8476	0.2445	-0.9418	0.3069	-0.9983	0.3628	-0.7925	0.4435	-0.6393	0.4897	-0.7064	0.5438	-0.6615	0.5715	-0.6658
31	0.234	0.000	0.3533	-0.2694	0.4025	-0.3118	0.5089	-0.4961	0.5997	-0.3688	0.6672	-0.2044	0.7644	-0.6625	0.8502	-0.6621	0.8973	-0.6546
32	0.236	0.151	0.3498	-0.4226	0.3966	-0.4898	0.4993	-0.6431	0.5873	-0.4219	0.6513	-0.3254	0.7469	-0.6457	0.8318	-0.6476	0.8761	-0.6409
33	0.234	0.264	0.3389	-0.7232	0.3857	-0.8138	0.4882	-0.9137	0.5675	-0.5435	0.6285	-0.4969	0.7201	-0.6548	0.7998	-0.6535	0.8418	-0.6435
34	0.237	0.407	0.3116	-1.0038	0.3487	-1.1986	0.4378	-1.2983	0.5139	-0.7225	0.5764	-0.6619	0.6524	-0.6521	0.7191	-0.6475	0.7535	-0.6393
35	0.239	0.524	0.2888	-0.7963	0.3116	-0.8957	0.3981	-1.0857	0.4681	-0.6957	0.5288	-0.5703	0.5801	-0.6546	0.6367	-0.6511	0.6685	-0.6459
36	0.241	0.640	0.2107	-0.7882	0.2326	-0.8674	0.2940	-0.9528	0.3504	-0.6388	0.4187	-0.4452	0.4379	-0.6419	0.4809	-0.6535	0.5089	-0.6536
37	0.147	0.000	0.2988	-0.2458	0.3294	-0.2841	0.4352	-0.4386	0.5132	-0.2221	0.5483	-0.5168	0.6676	-0.5945	0.7565	-0.6423	0.7491	-0.6527
38	0.147	0.192																
39	0.147	0.336	0.2778	-0.7988	0.3161	-0.8726	0.4144	-0.9287	0.4876	-0.4668	0.5303	-0.4470	0.6212	-0.5862	0.7033	-0.6354	0.7444	-0.6426
40	0.149	0.495																
41	0.158	0.612																
42	0.152	0.729	0.1746	-0.7328	0.2028	-0.8313	0.2611	-0.9187	0.3117	-0.4058	0.3263	-0.5676	0.3615	-0.5742	0.3973	-0.6456	0.4269	-0.6495
43	0.088	0.000	0.1448	-0.1602	0.1841	-0.1982	0.2855	-0.3351	0.3517	-0.2612	0.4002	-0.5858	0.4499	-0.5502	0.5934	-0.6275	0.6389	-0.6399
44	0.088	0.220	0.1444	-0.3888	0.1830	-0.4625	0.2834	-0.5553	0.3498	-0.3213	0.3924	-0.6254	0.4914	-0.5356	0.5801	-0.6238	0.6241	-0.6295
45	0.088	0.385	0.1492	-0.7777	0.1824	-0.8521	0.2767	-0.8979	0.3630	-0.4432	0.3699	-0.6488	0.4664	-0.5420	0.5499	-0.6276	0.5941	-0.6291
46	0.090	0.554	0.1507	-0.8213	0.1837	-0.8833	0.2677	-0.9183	0.3331	-0.4829	0.3463	-0.6427	0.4231	-0.5490	0.4956	-0.6160	0.5355	-0.6203
47	0.092	0.671																
48	0.093	0.787	0.1182	-0.4690	0.1472	-0.8065	0.2096	-0.7772	0.2624	-0.2932	0.2383	-0.5816	0.2814	-0.5460	0.3170	-0.6357	0.3519	-0.6364
49	0.059	0.703	0.0150	-0.5659	0.0401	-0.6289	0.1404	-0.6406	0.2140	-0.3127	0.2010	-0.5973	0.2722	-0.5243	0.3371	-0.6243	0.3768	-0.6125
50	0.044	0.000	-0.7275	-0.6266	-0.7196	-0.6720	-0.5731	-0.5553	-0.4664	-0.5598	-0.3678	-0.6208	-0.1885	-0.5218	0.0489	-0.6060	0.1146	-0.5965
51	0.044	0.236	-0.7142	-0.7368	-0.7051	-0.8061	-0.5685	-0.6837	-0.4341	-0.5488	-0.3368	-0.4216	-0.1507	-0.5147	0.0626	-0.6058	0.1621	-0.5957
52	0.044	0.412	-0.7259	-0.6660	-0.7080	-0.7186	-0.5092	-0.7081	-0.2460	-0.5123	-0.1389	-0.6163	0.0318	-0.5151	0.1743	-0.6083	0.2261	-0.5991
53	0.044	0.837	0.0195	-0.5133	0.0350	-0.6021	0.1236	-0.5634	0.1927	-0.2135	0.1125	-0.5412	0.1635	-0.5019	0.2018	-0.6032	0.2391	-0.5895
54	0.029	0.000	-0.3850	-0.4135	-0.3085	-0.4177	-0.0357	-0.4185	0.0491	-0.3579	0.0437	-0.5352	0.1111	-0.5187	0.1852	-0.5861	0.2380	-0.5894
55	0.029	0.236	-0.2957	-0.5535	-0.2394	-0.5823	-0.0087	-0.5601	0.0736	-0.3384	0.0627	-0.5587	0.1222	-0.5224	0.1882	-0.5860	0.2328	-0.5832
56	0.029	0.412	-0.1250	-0.6922	-0.1013	-0.7604	0.0132	-0.7154	0.0748	-0.3200	0.0536	-0.5594	0.1179	-0.5036	0.1853	-0.5885	0.2311	-0.5753
57	0.029	0.599	-0.2270	-0.4930	-0.1075	-0.5540	0.0339	-0.6134	0.1058	-0.2622	0.0531	-0.5522	0.1034	-0.4987	0.1702	-0.5808	0.2173	-0.5763
58	0.015	0.000	-0.1453	-0.2599	-0.1445	-0.2027	-0.0613	-0.3170	-0.0159	-0.2550	-0.0140	-0.4621	0.0127	-0.5009	0.0747	-0.5468	0.1130	-0.5493
59	0.015	0.236	-0.0960	-0.3044	-0.1180	-0.3955	-0.0419	-0.4799	0.0287	-0.2121	-0.0060	-0.5015	0.0167	-0.4984	0.0705	-0.5543	0.1075	-0.5551
60	0.015	0.412	-0.0495	-0.3750	-0.0899	-0.6187	-0.0169	-0.6883	0.0639	-0.2056	-0.0089	-0.5235	0.0159	-0.4942	0.0450	-0.5612	0.1058	-0.5578
61	0.015	0.733	-0.0995	-0.3939	-0.1115	-0.5085	0.0307	-0.6236	0.1207	-0.1780	0.0099	-0.5159	0.0240	-0.4915	0.0582	-0.5569	0.0958	-0.5475
62	0.329	-0.552	0.2154	-0.5911	0.2471	-0.6336	0.3109	-0.7445	0.3763	-0.9635	0.4491	-0.4580	0.5150	-0.7188	0.5833	-0.6681	0.6232	-0.6418
63	0.044	-0.837	0.0196	-0.1939	0.0295	-0.1953	0.1574	-0.2641	0.1167	-0.4215	0.1256	-0.4638	0.1914	-0.5320	0.2513	-0.5735	0.2876	-0.5849

Table A-1.- (Continued).
M = 0.9

			ALPHA =															
			-3.0	-2.9	-0.1	0.1	5.0	5.0	9.0	10.0	14.8	15.0	19.	19.0	24.7	24.9	26.2	26.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.001	0.000	0.0187	0.0566	0.0407	0.0440	0.0753	0.0128	0.1263	-0.0237	0.2025	-0.0790	0.2031	-0.1389	0.4012	-0.1943	0.4347	-0.2260
2	0.922	0.000	0.0005	0.0449	0.0311	0.0322	0.0659	0.0003	0.1180	-0.0393	0.1956	-0.0969	0.2855	-0.1570	0.3923	-0.2169	0.4255	-0.2402
3	0.762	0.000	0.0051	0.0419	0.0265	0.0301	0.0610	-0.0022	0.1132	-0.0414	0.1901	-0.0972	0.2777	-0.1509	0.3831	-0.2161	0.4152	-0.2369
4	0.764	0.117	0.0106	0.0462	0.0291	0.0340	0.0602	0.0012	0.1058	-0.1914	0.1695	-0.3376	0.2462	-0.4910	0.3356	-0.6696	0.3942	-0.7290
5	0.703	0.000	0.0136	0.0510	0.0339	0.0300	0.0697	0.0001	0.1200	-0.0201	0.1931	-0.0833	0.2820	-0.1435	0.3004	-0.2016	0.4128	-0.2200
6	0.644	0.000	0.0047	0.0427	0.0236	0.0302	0.0640	0.0033	0.1142	-0.0360	0.1865	-0.0920	0.2750	-0.1517	0.3723	-0.2160	0.4053	-0.2333
7	0.644	0.117	0.0000	0.0420	0.0270	0.0200	0.0563	0.0042	0.1078	-0.0971	0.1760	-0.2697	0.2561	-0.4285	0.3541	-0.6027	0.3779	-0.6552
8	0.647	0.234	-0.0013	0.0436	0.0307	0.0309	0.0557	-0.0978	0.0983	-0.1097	0.1522	-0.3229	0.2145	-0.4692	0.2928	-0.6399	0.3116	-0.6964
9	0.600	0.000	0.0013	0.0347	0.0217	0.0232	0.0549	-0.0040	0.1102	-0.0448	0.1833	-0.0994	0.2661	-0.1505	0.3696	-0.2178	0.3994	-0.2420
10	0.559	0.006	-0.0013	0.0292	0.0192	0.0206	0.0434	-0.0002	0.0985	-0.0658	0.1602	-0.1012	0.2509	-0.2961	0.3519	-0.4123	0.3766	-0.4540
11	0.560	0.203	0.0009	0.0356	0.0274	0.0279	0.0495	0.0029	0.0990	-0.1790	0.1620	-0.3446	0.2369	-0.4942	0.3272	-0.6632	0.3514	-0.7231
12	0.542	0.320	-0.0407	0.0341	0.0241	0.0259	0.0463	-0.1140	0.0874	-0.1975	0.1325	-0.3292	0.1856	-0.4780	0.2606	-0.6471	0.2802	-0.7092
13	0.501	0.000	-0.0090	0.0232	0.0106	0.0137	0.0400	-0.0120	0.0945	-0.0593	0.1700	-0.1192	0.2471	-0.1820	0.3476	-0.2478	0.3787	-0.2771
14	0.502	0.141	-0.0047	0.0283	0.0149	0.0100	0.0462	-0.0061	0.0974	-0.0890	0.1701	-0.2408	0.2405	-0.3880	0.3359	-0.5369	0.3651	-0.5957
15	0.504	0.250	0.0021	0.0300	0.0179	0.0210	0.0468	-0.0142	0.0926	-0.2156	0.1581	-0.3380	0.2190	-0.4806	0.3052	-0.6491	0.3298	-0.7149
16	0.506	0.375	-0.0537	0.0343	0.0196	0.0279	0.0460	-0.1037	0.0817	-0.2016	0.1278	-0.3342	0.1728	-0.4725	0.2379	-0.6344	0.2578	-0.6953
17	0.442	0.000	-0.0047	0.0266	0.0120	0.0193	0.0452	-0.0110	0.0904	-0.0598	0.1680	-0.1202	0.2451	-0.1832	0.3414	-0.2425	0.3710	-0.2747
18	0.443	0.200	-0.0013	0.0285	0.0132	0.0202	0.0476	-0.0059	0.0952	-0.1300	0.1629	-0.3103	0.2310	-0.4753	0.3197	-0.6471	0.3483	-0.7136
19	0.445	0.317	0.0026	0.0322	0.0171	0.0214	0.0486	-0.0401	0.0910	-0.2103	0.1487	-0.3289	0.2115	-0.4746	0.2914	-0.6410	0.3134	-0.7082
20	0.447	0.434	-0.0535	0.0364	0.0221	0.0244	0.0497	-0.0080	0.0808	-0.1935	0.1212	-0.3237	0.1648	-0.4739	0.2244	-0.6601	0.2414	-0.7201
21	0.383	0.000	-0.0021	0.0292	0.0153	0.0175	0.0476	-0.0070	0.0956	-0.0542	0.1650	-0.1143	0.2434	-0.1752	0.3377	-0.2461	0.3631	-0.2679
22	0.383	0.082	-0.0030	0.0326	0.0166	0.0201	0.0438	-0.0074	0.1019	-0.0521	0.1665	-0.1311	0.2427	-0.2092	0.3321	-0.2980	0.3587	-0.3231
23	0.384	0.259	0.0000	0.0356	0.0196	0.0219	0.0503	-0.0023	0.1015	-0.1608	0.1599	-0.3433	0.2296	-0.5051	0.3105	-0.6893	0.3339	-0.7480
24	0.384	0.376	0.0047	0.0375	0.0215	0.0246	0.0582	-0.0744	0.0970	-0.2063	0.1466	-0.3384	0.2046	-0.4864	0.2744	-0.6625	0.2948	-0.7181
25	0.389	0.493	-0.0568	0.0399	0.0227	0.0288	0.0529	-0.0783	0.0854	-0.1920	0.1165	-0.3297	0.1561	-0.4951	0.2074	-0.6653	0.2237	-0.7186
26	0.324	0.000	0.1745	0.0402	0.1563	0.0253	0.1773	-0.0010	0.1048	-0.0513	0.1862	-0.1086	0.1469	-0.1797	0.0574	-0.2508	0.0745	-0.2717
27	0.324	0.109	-0.0026	0.0355	0.0175	0.0210	0.0519	-0.0044	0.1011	-0.0568	0.1637	-0.1348	0.2395	-0.2305	0.3262	-0.3197	0.3524	-0.3406
28	0.325	0.310	0.0047	0.0360	0.0244	0.0266	0.0524	0.0029	0.1007	-0.1995	0.1610	-0.3591	0.2243	-0.5172	0.3004	-0.6958	0.3200	-0.7580
29	0.327	0.435	0.0025	0.0420	0.0270	0.0297	0.0568	-0.0994	0.0909	-0.2055	0.1493	-0.3381	0.2025	-0.4877	0.2677	-0.6763	0.2841	-0.7436
30	0.329	0.552	-0.0450	0.0436	0.0306	0.0333	0.0567	-0.0744	0.0822	-0.1931	0.1216	-0.3426	0.1519	-0.4974	0.1972	-0.6731	0.2082	-0.7203
31	0.234	0.000	-0.0081	0.0343	0.0127	0.0145	0.0507	-0.0162	0.0966	-0.0689	0.1653	-0.1369	0.2364	-0.2089	0.3176	-0.2869	0.3429	-0.3082
32	0.234	0.151	1.2311	0.0317	1.2512	0.0111	1.2514	-0.0105	1.2469	-0.0770	1.2389	-0.1742	1.2307	-0.2772	1.2454	-0.3773	1.2338	-0.4070
33	0.234	0.264	-0.0114	0.0300	0.0093	0.0090	0.0405	-0.0198	0.0964	-0.1171	0.1626	-0.2761	0.2305	-0.4291	0.3002	-0.5708	0.3319	-0.6247
34	0.237	0.407	-0.0017	0.0403	0.0179	0.0167	0.0490	-0.0208	0.0993	-0.2522	0.1606	-0.3826	0.2187	-0.5564	0.2842	-0.7749	0.3021	-0.8530
35	0.239	0.524	-0.0175	0.0510	0.0270	0.0253	0.0560	-0.1462	0.1002	-0.2350	0.1531	-0.3750	0.2017	-0.4921	0.2565	-0.6893	0.2721	-0.7633
36	0.241	0.640	-0.0590	0.0539	0.0301	0.0285	0.0597	-0.1017	0.0935	-0.2243	0.1312	-0.3824	0.1584	-0.5345	0.1929	-0.6687	0.2043	-0.6977
37	0.147	0.000	-0.0449	-0.0033	-0.0213	-0.0232	0.0094	-0.0531	0.0592	-0.0953	0.1269	-0.1590	0.1934	-0.2529	0.2713	-0.3282	0.2907	-0.3501
38	0.147	0.192																
39	0.147	0.336	-0.0476	-0.0061	-0.0248	-0.0292	0.0001	-0.0536	0.0578	-0.1685	0.1232	-0.3504	0.1876	-0.5286	0.2623	-0.4029	0.2807	-0.7209
40	0.149	0.495																
41	0.150	0.612																
42	0.157	0.729	-0.1452	0.0005	-0.0262	-0.0229	0.0095	-0.1706	0.0361	-0.2881	0.0845	-0.4304	0.1281	-0.5420	0.1653	-0.6068	0.1769	-0.7274
43	0.088	0.000	-0.0923	-0.0560	-0.0779	-0.0797	-0.0372	-0.0003	0.0007	-0.0944	0.0586	-0.1279	0.1028	-0.1950	0.1653	-0.3130	0.1006	-0.3156
44	0.088	0.228	-0.0900	-0.0560	-0.0763	-0.0796	-0.0301	-0.0045	0.0020	-0.1070	0.0401	-0.1832	0.1024	-0.2965	0.1644	-0.4400	0.1797	-0.4523
45	0.088	0.385	-0.0897	-0.0556	-0.0767	-0.0785	-0.0303	-0.0006	-0.0001	-0.1026	0.0572	-0.3376	0.1001	-0.5222	0.1600	-0.7030	0.1749	-0.7386
46	0.090	0.554	-0.0403	-0.0409	-0.0643	-0.0629	-0.0278	-0.1272	0.0042	-0.3117	0.0589	-0.4092	0.0972	-0.6510	0.1540	-0.8479	0.1672	-0.9018
47	0.092	0.671	-0.1287		-0.0606		-0.0390		-0.0114		0.0432		0.0839		0.1343		0.1486	
48	0.093	0.787	-0.1556	-0.0308	-0.0481	-0.0462	-0.0238	-0.1610	-0.0138	-0.2402	0.0344	-0.3350	0.0093	-0.4652	0.1136	-0.6502	0.1255	-0.6956
49	0.050	0.703	-0.1594	-0.0900	-0.1181	-0.1157	-0.0900	-0.2919	-0.0873	-0.2406	-0.0358	-0.2567	-0.0425	-0.3429	-0.0071	-0.5224	0.0029	-0.5888
50	0.044	0.000	-0.2495	-0.2201	-0.2316	-0.2324	-0.2212	-0.2614	-0.1642	-0.2591	-0.2419	-0.3263	-0.6035	-0.4297	-0.0101	-0.5208	-0.0088	-0.5538
51	0.044	0.236	-0.2572	-0.2206	-0.2401	-0.2409	-0.2370	-0.2646	-0.3076	-0.2721	-0.2197	-0.3252	-0.6282	-0.4343	-0.7853	-0.5036	-0.7908	-0.6243
52	0.044	0.412	-0.2780	-0.2468	-0.2623	-0.2626	-0.2556	-0.2812	-0.3753	-0.2937	-0.2454	-0.3183	-0.6314	-0.4208	-0.7780	-0.5751	-0.7785	-0.6190
53	0.044	0.837	-0.1890	-0.1037	-0.1140	-0.1116	-0.1052	-0.2017	-0.1295	-0.2159	-0.0881	-0.2556	-0.1272	-0.3156	-0.6972	-0.4296	-0.0879	-0.4604
54	0.029	0.000	-0.1824	-0.1554	-0.1506	-0.1570	-0.1581	-0.1900	-0.1886	-0.2921	-0.2208	-0.3680	-0.5738	-0.4117	-0.7699	-0.4569	-0.7551	-0.4653
55	0.029	0.236	-0.1850	-0.1606	-0.1600	-0.1613	-0.1633	-0.2012	-0.2275	-0.3009	-0.2375	-0.3600	-0.5845	-0.4406	-0.7447	-0.5371	-0.7367	-0.5455
56	0.029	0.412	-0.1910	-0.1643	-0.1657	-0.1690	-0.1509	-0.2074	-0.2220	-0.2930	-0.2546	-0.3361	-0.5980	-0.4520	-0.6884	-0.4210	-0.6716	-0.6722
57	0.029	0.599	-0.2109	-0.2216	-0.2039	-0.2070	-0..217	-0.2497	-0.3527	-0.2499	-0.2415	-0.2821	-0.5772	-0.3541	-0.7093	-0.4705	-0.7202	-0.5117
58	0.015	0.000	-0.1399	-0.1260	-0.1126	-0.1170	-0.1295	-0.1567	-0.1709	-0.2758	-0.1849	-0.3158	-0.3982	-0.3262	-0.7004	-0.3538	-0.7806	-0.3585
59	0.015	0.236	-0.1454	-0.1295	-0.1153	-0.1225	-0.1316	-0.1679	-0.1437	-0.2723	-0.1920	-0.3312	-0.4027	-0.3710	-0.7205	-0.4196	-0.7272	-0.4335
60	0.015	0.412	-0.1421	-0.1353	-0.1250	-0.1336	-0.1326	-0.1851	-0.1383	-0.2657	-0.1965	-0.3565	-0.3089	-0.4683	-0.4257	-0.5805	-0.4438	-0.5970
61	0.015	0.733	-0.1806	-0.1603	-0.1423	-0.1506	-0.1654	-0.2038	-0.2620	-0.1916	-0.2960	-0.2554	-0.2872	-0.3251	-0.3626	-0.3899	-0.5117	-0.6375
62	0.320	-0.552	-0.0421	0.0436	0.0363	0.0290	0.0650	-0.0074	0.0880	-0.1027	0.1700	-0.3811	0.1499	-0.4460	0.1050	-0.5755	0.2044	-0.6195
63	0.044	-0.837	-0.1827	-0.1016	-0.1035	-0.1162	-0.0830	-0.1953	-0.1069	-0.1060	-0.1129	-0.2339	-0.1252	-0.2734	-0.0945	-0.3077	-0.0813	-0.3236

Table A-1.- (Continued).
M = 0.9

			ALPHA =															
TUBE	X/L	Y/B/2	27.1 WINDWARD	27.1 LEEWARD	29.8 WINDWARD	29.8 LEEWARD	34.7 WINDWARD	34.8 LEEWARD	39.7 WINDWARD	39.8 LEEWARD	44.7 WINDWARD	44.7 LEEWARD	49.6 WINDWARD	49.6 LEEWARD	54.6 WINDWARD	54.6 LEEWARD	56.2 WINDWARD	56.2 LEEWARD
1	0.881	0.000	0.4681	-0.2653	0.5380	-0.3907	0.6584	-0.5868	0.7901	-0.6663	0.9144	-0.8586	1.0272	-1.0265	1.1075	-1.2019	1.1290	-0.9757
2	0.822	0.000	0.4567	-0.2706	0.5262	-0.3809	0.6425	-0.5840	0.7725	-0.7133	0.8944	-0.8799	1.0023	-0.7803	1.0892	-1.0916	1.1119	-0.8209
3	0.762	0.000	0.4520	-0.2597	0.5177	-0.3715	0.6320	-0.5737	0.7600	-0.6958	0.8796	-0.8787	0.9865	-0.8030	1.0738	-0.8966	1.0961	-0.7422
4	0.764	0.117	0.3907	-0.7707	0.4505	-0.8550	0.5504	-0.9585	0.6641	-0.7796	0.7470	-1.0720	0.8651	-0.7227	0.9477	-0.9462	0.9706	-0.7321
5	0.703	0.000	0.4466	-0.2532	0.5120	-0.3616	0.6236	-0.5653	0.7498	-0.6740	0.8840	-0.8806	0.9710	-0.7042	1.0569	-0.8346	1.0830	-0.6993
6	0.644	0.000	0.4401	-0.2512	0.5041	-0.3632	0.6135	-0.5690	0.7383	-0.6809	0.8527	-0.9072	0.9611	-0.7461	1.0425	-0.7914	1.0692	-0.7010
7	0.646	0.117	0.4005	-0.7507	0.4660	-0.8309	0.5711	-0.9309	0.6861	-0.7585	0.7981	-1.0569	0.8993	-0.7292	0.9802	-0.7850	1.0040	-0.6893
8	0.647	0.234	0.3357	-0.7404	0.3850	-0.8304	0.4699	-0.9317	0.5678	-0.8364	0.6662	-1.1126	0.7572	-0.7801	0.8334	-0.7648	0.8546	-0.6746
9	0.600	0.000	0.4359	-0.2550	0.4952	-0.3629	0.6053	-0.5694	0.7277	-0.6717	0.8452	-0.8912	0.9503	-0.7211	1.0338	-0.7404	1.0587	-0.6824
10	0.559	0.006	0.4120	-0.5212	0.4691	-0.6194	0.5731	-0.7621	0.6933	-0.7144	0.8075	-0.9791	0.9091	-0.6890	0.9908	-0.7172	1.0145	-0.6660
11	0.560	0.203	0.3799	-0.7655	0.4324	-0.8458	0.5265	-0.9769	0.6379	-0.8576	0.7462	-1.1495	0.8398	-0.6896	0.9101	-0.7195	0.9400	-0.6659
12	0.562	0.320	0.3009	-0.7505	0.3420	-0.8401	0.4206	-0.9278	0.5121	-0.8526	0.6123	-1.1156	0.6951	-0.6857	0.7662	-0.7177	0.7830	-0.6701
13	0.501	0.000	0.4124	-0.2720	0.4751	-0.3702	0.5831	-0.5750	0.7027	-0.6912	0.8212	-0.8020	0.9210	-0.6864	1.0066	-0.7096	1.0294	-0.6698
14	0.502	0.141	0.3934	-0.6805	0.4543	-0.7686	0.5553	-0.8863	0.6678	-0.7725	0.7827	-1.0458	0.8776	-0.6658	0.9596	-0.6967	0.9808	-0.6575
15	0.504	0.258	0.3569	-0.7523	0.4100	-0.8366	0.5032	-0.9756	0.6073	-0.8903	0.7176	-1.1523	0.8028	-0.6616	0.8810	-0.6903	0.8994	-0.6512
16	0.506	0.375	0.2780	-0.7447	0.3230	-0.8196	0.3955	-0.9066	0.4850	-0.8453	0.5858	-1.0715	0.6584	-0.6565	0.7282	-0.6841	0.7461	-0.6522
17	0.442	0.000	0.4052	-0.2756	0.4640	-0.3673	0.5602	-0.5710	0.6934	-0.6981	0.7983	-0.6803	0.8976	-0.6690	0.9869	-0.6970	1.0102	-0.6676
18	0.443	0.200	0.3773	-0.7972	0.4322	-0.8734	0.5270	-0.9790	0.6428	-0.8429	0.7441	-1.0637	0.8348	-0.6582	0.9102	-0.6957	0.9415	-0.6705
19	0.445	0.317	0.3415	-0.7524	0.3896	-0.8315	0.4756	-0.9624	0.5830	-0.9219	0.6837	-1.0896	0.7623	-0.6488	0.8413	-0.6837	0.8642	-0.6568
20	0.447	0.434	0.2819	-0.7635	0.3015	-0.8441	0.3690	-0.9503	0.4590	-0.8494	0.5571	-0.9825	0.6208	-0.6372	0.6912	-0.6693	0.7097	-0.6489
21	0.383	0.000	0.4010	-0.2670	0.4563	-0.3616	0.5577	-0.5642	0.6780	-0.6765	0.7801	-0.4523	0.8770	-0.6474	0.9649	-0.6741	0.9911	-0.6585
22	0.383	0.002	0.3901	-0.3505	0.4540	-0.4559	0.5525	-0.6405	0.6780	-0.6950	0.7731	-0.5097	0.8694	-0.6410	0.9542	-0.6717	0.9814	-0.6578
23	0.384	0.259	0.3677	-0.7997	0.4172	-0.8000	0.5059	-1.0133	0.6247	-0.8908	0.7144	-0.9510	0.7997	-0.6375	0.8802	-0.6717	0.9051	-0.6615
24	0.386	0.376	0.3259	-0.7661	0.3712	-0.8521	0.4500	-0.9790	0.5587	-0.9405	0.6464	-0.9302	0.7229	-0.6360	0.7978	-0.6723	0.8221	-0.6657
25	0.388	0.493	0.2486	-0.7699	0.2846	-0.8446	0.3474	-0.9514	0.4371	-0.8515	0.5278	-0.7680	0.5858	-0.6291	0.6532	-0.6590	0.6732	-0.6564
26	0.324	0.000	0.3956	-0.2684	0.4500	-0.3691	0.5459	-0.5723	0.6634	-0.6490	0.7575	-0.3445	0.8539	-0.6372	0.9393	-0.6590	0.9670	-0.6622
27	0.324	0.109	0.3910	-0.3786	0.4429	-0.4860	0.5375	-0.6603	0.6553	-0.6730	0.7471	-0.4605	0.8421	-0.6293	0.9275	-0.6549	0.9554	-0.6590
28	0.325	0.310	0.3554	-0.7923	0.3991	-0.8802	0.4822	-1.0217	0.5985	-0.9083	0.6788	-0.7705	0.7602	-0.6185	0.8300	-0.6486	0.8646	-0.6591
29	0.327	0.435	0.3141	-0.7747	0.3532	-0.8467	0.4269	-0.9541	0.5421	-0.9188	0.6127	-0.7192	0.6866	-0.6204	0.7583	-0.6522	0.7845	-0.6632
30	0.329	0.552	0.2350	-0.7879	0.2645	-0.8721	0.3211	-0.9323	0.4315	-0.8695	0.4918	-0.6025	0.5497	-0.6183	0.6129	-0.6574	0.6349	-0.6609
31	0.236	0.000	0.3796	-0.2977	0.4274	-0.3934	0.5186	-0.5920	0.6154	-0.5147	0.7067	-0.5078	0.8064	-0.6287	0.8905	-0.6512	0.9190	-0.6677
32	0.236	0.151	0.3720	-0.4293	0.4108	-0.5258	0.5072	-0.6904	0.6066	-0.5285	0.6927	-0.5756	0.7917	-0.6061	0.8752	-0.6367	0.9033	-0.6575
33	0.234	0.264	0.3839	-0.6751	0.4070	-0.7609	0.4912	-0.8832	0.5898	-0.6222	0.6707	-0.6606	0.7636	-0.6090	0.8470	-0.6391	0.8727	-0.6623
34	0.237	0.407	0.3367	-0.8550	0.3744	-0.9736	0.4452	-1.0970	0.5448	-0.8448	0.6105	-0.6804	0.6951	-0.6033	0.7700	-0.6314	0.7952	-0.6634
35	0.239	0.524	0.3040	-0.7874	0.3359	-0.8694	0.3960	-0.9607	0.4958	-0.7911	0.5480	-0.6300	0.6245	-0.6047	0.6945	-0.6352	0.7177	-0.6676
36	0.241	0.640	0.2363	-0.7359	0.2597	-0.8056	0.3004	-0.9158	0.3985	-0.7329	0.4261	-0.5285	0.4916	-0.6023	0.5522	-0.6303	0.5724	-0.6714
37	0.147	0.000	0.3283	-0.3401	0.3701	-0.4427	0.4506	-0.6257	0.5275	-0.1599	0.6171	-0.6202	0.7091	-0.6147	0.8003	-0.6373	0.8293	-0.6629
38	0.147	0.192																
39	0.147	0.336	0.3133	-0.7794	0.3525	-0.8625	0.4255	-0.9574	0.5022	-0.4277	0.5791	-0.6821	0.6648	-0.5982	0.7540	-0.6275	0.7785	-0.6577
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	0.2030	-0.7648	0.2296	-0.8437	0.2627	-0.9470	0.3034	-0.4378	0.3442	-0.6212	0.4061	-0.5845	0.4899	-0.6387	0.4855	-0.6683
43	0.089	0.000	0.2104	-0.2701	0.2473	-0.3466	0.3177	-0.5224	0.3763	-0.2245	0.4551	-0.6259	0.5551	-0.6042	0.6446	-0.6386	0.6764	-0.6512
44	0.088	0.220	0.2064	-0.4591	0.2417	-0.5371	0.3097	-0.6670	0.3682	-0.2794	0.4458	-0.6385	0.5445	-0.5914	0.6335	-0.6320	0.6645	-0.6468
45	0.088	0.385	0.2003	-0.7647	0.2332	-0.8431	0.2968	-0.9117	0.3561	-0.4269	0.4245	-0.6430	0.5156	-0.5883	0.6034	-0.6292	0.6330	-0.6470
46	0.090	0.554	0.1935	-0.7901	0.2240	-0.8429	0.2809	-0.8603	0.3308	-0.4723	0.3849	-0.6310	0.4677	-0.5700	0.5505	-0.6233	0.5785	-0.6462
47	0.092	0.671																
48	0.093	0.787	0.1530	-0.7434	0.1774	-0.8229	0.2083	-0.8189	0.2290	-0.2981	0.2570	-0.6065	0.3206	-0.5717	0.3855	-0.6370	0.4074	-0.6506
49	0.059	0.703	0.0729	-0.5342	0.0522	-0.5541	0.1129	-0.5977	0.1504	-0.2931	0.2157	-0.5910	0.3040	-0.5646	0.3952	-0.6248	0.4265	-0.6417
50	0.044	0.000	-0.7715	-0.4911	-0.7150	-0.4710	-0.5657	-0.3946	-0.5060	-0.6162	-0.3754	-0.5967	-0.2072	-0.5931	-0.0164	-0.6093	0.0749	-0.6206
51	0.044	0.236	-0.7788	-0.5889	-0.7271	-0.6185	-0.5592	-0.5431	-0.4975	-0.6136	-0.3627	-0.6009	-0.1926	-0.5887	-0.0013	-0.6122	0.0821	-0.6239
52	0.044	0.412	-0.7879	-0.5502	-0.7254	-0.6026	-0.5787	-0.6492	-0.5062	-0.5664	-0.3547	-0.5973	-0.1100	-0.5783	0.1515	-0.6130	0.2175	-0.6260
53	0.044	0.837	-0.0446	-0.4820	-0.0034	-0.4844	0.0766	-0.4794	0.0945	-0.2054	0.1315	-0.5575	0.1966	-0.5442	0.2671	-0.6087	0.2903	-0.6220
54	0.029	0.000	-0.7580	-0.3806	-0.7094	-0.4080	-0.5113	-0.3773	-0.2197	-0.4001	0.1060	-0.5613	0.2074	-0.5912	0.2724	-0.5964	0.3001	-0.6052
55	0.029	0.236	-0.7490	-0.5041	-0.7035	-0.4965	-0.4085	-0.4586	-0.1550	-0.3456	0.1207	-0.5701	0.2079	-0.5797	0.2774	-0.5927	0.3040	-0.6009
56	0.029	0.412	-0.6747	-0.6243	-0.5361	-0.6481	-0.1363	-0.5723	0.0067	-0.3420	0.1163	-0.5704	0.1867	-0.5642	0.2704	-0.5879	0.3007	-0.5975
57	0.029	0.599	-0.5778	-0.4493	-0.5861	-0.5032	-0.2615	-0.5893	0.0041	-0.2922	0.1045	-0.5683	0.1542	-0.5560	0.2466	-0.5908	0.2766	-0.6000
58	0.015	0.000	-0.5750	-0.2856	-0.3399	-0.3411	-0.0825	-0.3744	0.0154	-0.2219	0.0511	-0.5269	0.1043	-0.5770	0.1760	-0.5645	0.2007	-0.5711
59	0.015	0.236	-0.4407	-0.3981	-0.1738	-0.4613	-0.0343	-0.4719	0.0202	-0.2189	0.0494	-0.5518	0.1012	-0.5710	0.1710	-0.5718	0.1981	-0.5785
60	0.015	0.412	-0.2433	-0.5852	-0.0308	-0.6132	0.0076	-0.6032	0.0081	-0.2360	0.0336	-0.5591	0.0932	-0.5637	0.1659	-0.5765	0.1916	-0.5849
61	0.015	0.733	-0.3305	-0.3934	-0.2605	-0.5039	-0.0654	-0.5820	-0.0078	-0.1795	0.0299	-0.5457	0.0864	-0.5306	0.1510	-0.5741	0.1716	-0.5745
62	0.320	-0.552	0.2501	-0.5490	0.2759	-0.6066	0.3376	-0.7025	0.4534	-0.9172	0.5245	-0.4626	0.5820	-0.6463	0.6434	-0.6633	0.6636	-0.6596
63	0.044	-0.837	-0.0249	-0.2037	-0.0058	-0.2306	0.0654	-0.2992	0.0813	-0.3675	0.1483	-0.5804	0.2340	-0.5797	0.3034	-0.5891	0.3270	-0.5897

# Table A-1.- (Continued).
M = 1.2

			ALPHA =															
			-3.0	-2.9	-0.1	0.0	4.8	5.0	9.8	9.9	14.8	14.9	19.7	19.8	24.7	24.9	26.2	26.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.881	0.000	0.0154	0.0493	0.0388	0.0444	0.0851	0.0317	0.1313	-0.0184	0.2081	-0.0675	0.2962	-0.1057	0.4181	-0.1052	0.4479	-0.2198
2	0.822	0.000	-0.0103	0.0307	0.0125	0.0067	0.0565	-0.0019	0.1133	-0.0441	0.1876	-0.0973	0.2830	-0.1417	0.3975	-0.2215	0.4401	-0.2576
3	0.762	0.000	-0.0074	0.0379	0.0060	0.0059	0.0440	-0.0145	0.1066	-0.0505	0.1836	-0.0982	0.2760	-0.1449	0.3951	-0.2147	0.4355	-0.2535
4	0.764	0.117	-0.0096	0.0303	0.0060	0.0063	0.0419	-0.0185	0.0973	-0.1934	0.1651	-0.2969	0.2460	-0.3921	0.3555	-0.4791	0.3924	-0.5088
5	0.703	0.000	0.0161	0.0572	0.0251	0.0244	0.0616	0.0013	0.1118	-0.0359	0.1854	-0.0826	0.2778	-0.1196	0.4009	-0.1856	0.4485	-0.2236
6	0.644	0.000	0.0039	0.0418	0.0140	0.0060	0.0439	-0.0113	0.0993	-0.0578	0.1750	-0.1048	0.2724	-0.1438	0.3978	-0.2157	0.4387	-0.2536
7	0.644	0.117	0.0036	0.0369	0.0009	0.0005	0.0362	-0.0167	0.0903	-0.1223	0.1616	-0.2608	0.2548	-0.3660	0.3773	-0.4434	0.4159	-0.4686
8	0.647	0.234	-0.0056	0.0394	0.0064	0.0016	0.0354	-0.1160	0.0803	-0.2011	0.1395	-0.3088	0.2181	-0.3954	0.3261	-0.4770	0.3599	-0.5036
9	0.600	0.000	0.0054	0.0336	0.0121	-0.0009	0.0365	-0.0235	0.0926	-0.0656	0.1717	-0.1104	0.2670	-0.1507	0.3983	-0.2251	0.4359	-0.2643
10	0.558	0.000	-0.0007	0.0252	0.0093	0.0063	0.0350	-0.0246	0.0805	-0.0867	0.1568	-0.1788	0.2503	-0.2563	0.3796	-0.3286	0.4143	-0.3655
11	0.560	0.203	0.0100	0.0293	0.0125	0.0110	0.0387	-0.0148	0.0819	-0.1932	0.1519	-0.3105	0.2379	-0.4028	0.3596	-0.4826	0.3927	-0.5101
12	0.562	0.320	-0.0260	0.0290	0.0104	0.0111	0.0345	-0.1176	0.0683	-0.2061	0.1251	-0.3059	0.1951	-0.3973	0.3012	-0.4754	0.3308	-0.5051
13	0.501	0.000	-0.0216	0.0176	0.0028	0.0012	0.0290	-0.0297	0.0784	-0.0862	0.1540	-0.1258	0.2516	-0.1704	0.3777	-0.2388	0.4108	-0.2806
14	0.502	0.141	-0.0173	0.0227	0.0093	0.0023	0.0343	-0.0268	0.0799	-0.1136	0.1524	-0.2381	0.2454	-0.3357	0.3684	-0.4060	0.3997	-0.4393
15	0.504	0.258	-0.0109	0.0267	0.0132	0.0070	0.0354	-0.0350	0.0764	-0.2189	0.1426	-0.3034	0.2268	-0.3937	0.3437	-0.4771	0.3727	-0.5094
16	0.506	0.375	-0.0586	0.0311	0.0146	0.0099	0.0344	-0.1084	0.0639	-0.2860	0.1281	-0.3034	0.1835	-0.3982	0.2865	-0.4791	0.3113	-0.5073
17	0.442	0.000	-0.0227	0.0191	0.0013	-0.0042	0.0362	-0.0213	0.0826	-0.0775	0.1624	-0.1202	0.2578	-0.1673	0.3657	-0.2516	0.4028	-0.2932
18	0.443	0.200	-0.0238	0.0195	0.0031	-0.0006	0.0381	-0.0209	0.0805	-0.1429	0.1551	-0.2878	0.2439	-0.3966	0.3482	-0.4828	0.3845	-0.5095
19	0.445	0.317	-0.0162	0.0213	0.0067	0.0023	0.0391	-0.0613	0.0781	-0.2087	0.1447	-0.2936	0.2264	-0.3860	0.3248	-0.4752	0.3572	-0.5028
20	0.447	0.434	-0.0656	0.0245	0.0009	0.0034	0.0418	-0.0991	0.0674	-0.2087	0.1194	-0.3029	0.1855	-0.3997	0.2687	-0.4864	0.2969	-0.5148
21	0.383	0.000	-0.0145	0.0194	-0.0060	-0.0056	0.0318	-0.0206	0.0879	-0.0685	0.1642	-0.1122	0.2577	-0.1546	0.3627	-0.2474	0.4032	-0.2069
22	0.383	[illegible]	-0.0071	0.0263	-0.0104	-0.0080	0.0308	-0.0221	0.0869	-0.0730	0.1622	-0.1291	0.2550	-0.1833	0.3609	-0.2796	0.4075	-0.3194
23	0.386	0.259	-0.0033	0.0256	-0.0066	-0.0042	0.0365	-0.0155	0.0880	-0.1779	0.1577	-0.3076	0.2444	-0.4115	0.3430	-0.5019	0.3862	-0.5243
24	0.386	0.376	0.0021	0.0264	-0.0046	-0.0021	0.0377	-0.0966	0.0834	-0.2113	0.1443	-0.3014	0.2226	-0.4006	0.3120	-0.4947	0.3542	-0.5191
25	0.388	0.493	-0.0544	0.0253	-0.0001	-0.0602	0.0373	-0.0922	0.0734	-0.2101	0.1107	-0.3030	0.1814	-0.4045	0.2573	-0.4974	0.2910	-0.5196
26	0.324	0.000	0.2326	0.0358	0.1458	-0.0077	0.1216	-0.0239	0.1255	-0.0668	0.1553	-0.1157	0.1042	-0.1600	0.1313	-0.2442	0.1755	-0.2796
27	0.324	0.109	0.0022	0.0329	-0.0078	-0.0095	0.0207	-0.0242	0.0811	-0.0720	0.1537	-0.1395	0.2444	-0.1991	0.3627	-0.2863	0.4028	-0.3210
28	0.325	0.318	-0.0007	0.0292	-0.0104	-0.0092	0.0222	-0.0206	0.0805	-0.2121	0.1478	-0.3203	0.2302	-0.4147	0.3350	-0.5043	0.3755	-0.5275
29	0.327	0.435	-0.0026	0.0314	-0.0052	-0.0042	0.0254	-0.1233	0.0783	-0.2111	0.1382	-0.3083	0.2113	-0.4071	0.3074	-0.4935	0.3456	-0.5152
30	0.329	0.552	-0.0552	0.0301	-0.0039	-0.0021	0.0262	-0.0925	0.0661	-0.2113	0.1103	-0.3221	0.1665	-0.4205	0.2476	-0.5057	0.2819	-0.5246
31	0.236	0.000	0.0020	0.0362	0.0017	-0.0024	0.0262	-0.0315	0.0673	-0.0745	0.1429	-0.1250	0.2339	-0.1751	0.3672	-0.2282	0.4058	-0.2639
32	0.234	0.151	1.4011	0.0350	1.4132	-0.0001	1.4061	-0.0350	1.4033	-0.0797	1.4039	-0.1557	1.4051	-0.2215	1.4125	-0.2780	1.4089	-0.3098
33	0.234	0.264	-0.0014	0.0350	-0.0025	-0.0142	0.0222	-0.0339	0.0650	-0.1149	0.1390	-0.2423	0.2279	-0.3374	0.3580	-0.3995	0.3942	-0.4235
34	0.237	0.407	0.0000	0.0379	0.0003	-0.0095	0.0225	-0.0437	0.0636	-0.2240	0.1306	-0.3203	0.2111	-0.4291	0.3368	-0.5223	0.3673	-0.5437
35	0.239	0.524	-0.0123	0.0463	0.0042	-0.0042	0.0254	-0.1430	0.0622	-0.2089	0.1202	-0.3069	0.1915	-0.3958	0.3081	-0.4687	0.3367	-0.4915
36	0.241	0.640	-0.0479	0.0451	0.0075	-0.0021	0.0255	-0.0918	0.0498	-0.2065	0.0987	-0.3129	0.1449	-0.4224	0.2458	-0.5039	0.2704	-0.5228
37	0.147	0.000	0.0204	0.0384	0.0236	0.0143	0.0402	-0.0060	0.0813	-0.0577	0.1526	-0.0930	0.2397	-0.1260	0.3752	-0.1830	0.4047	-0.2249
38	0.147	0.192																
39	0.147	0.336	0.0711	0.0430	0.0283	0.0172	0.0494	-0.0098	0.0840	-0.1181	0.1527	-0.2545	0.2340	-0.3446	0.3634	-0.4074	0.3913	-0.4328
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	-0.0446	0.0743	0.0461	0.0402	0.0756	-0.1073	0.0925	-0.2254	0.1240	-0.3476	0.1586	-0.4452	0.2480	-0.4555	0.2602	-0.4803
43	0.088	0.000	0.0751	0.0577	0.0538	0.0407	0.0722	0.0103	0.1032	-0.0402	0.1695	-0.0788	0.2545	-0.1242	0.3433	-0.2034	0.3864	-0.2478
44	0.088	0.220	0.0750	0.0553	0.0551	0.0468	0.0729	0.0082	0.1083	-0.0585	0.1714	-0.1359	0.2554	-0.2039	0.3605	-0.2776	0.3825	-0.3152
45	0.088	0.385	0.0190	0.0499	0.0473	0.0414	0.0698	0.0017	0.1080	-0.1422	0.1703	-0.2807	0.2487	-0.3748	0.3498	-0.4448	0.3712	-0.4688
46	0.090	0.554	0.0179	0.0510	0.0448	0.0407	0.0690	-0.0890	0.1067	-0.2442	0.1637	-0.3610	0.2359	-0.4502	0.3260	-0.5771	0.3454	-0.6031
47	0.092	0.671	-0.0411		0.0412		0.0674		0.0977		0.1516		0.2131		0.2909		0.3068	
48	0.093	0.787	-0.0031	0.0500	0.0353	0.0333	0.0596	-0.1372	0.0892	-0.2420	0.1294	-0.3388	0.1810	-0.4331	0.2462	-0.4474	0.2628	-0.4787
49	0.059	0.703	-0.0544	0.0270	0.0233	0.0147	0.0546	-0.1697	0.0842	-0.2255	0.1400	-0.3089	0.1965	-0.4114	0.2396	-0.5025	0.2493	-0.5161
50	0.044	0.000	-0.4958	-0.4775	-0.4734	-0.4704	-0.4642	-0.4901	-0.4199	-0.4792	-0.2904	-0.5524	-0.3754	-0.5754	-0.3713	-0.6232	-0.3639	-0.6238
51	0.044	0.236	-0.4866	-0.4807	-0.4750	-0.4773	-0.4633	-0.4992	-0.4434	-0.5013	-0.3056	-0.4617	-0.3883	-0.5389	-0.3717	-0.5666	-0.3648	-0.5762
52	0.044	0.412	-0.4834	-0.4492	-0.4539	-0.4545	-0.4452	-0.5001	-0.4329	-0.5528	-0.3306	-0.5062	-0.3682	-0.5131	-0.3521	-0.5530	-0.3442	-0.5649
53	0.044	0.837	-0.1231	0.0118	0.0075	0.0056	0.0351	-0.1452	0.0445	-0.2436	0.0799	-0.3226	0.1135	-0.4242	0.1288	-0.4705	0.1261	-0.4862
54	0.029	0.000	-0.4923	-0.4829	-0.4768	-0.4803	-0.4725	-0.4935	-0.3712	-0.4377	-0.2852	-0.4873	-0.2970	-0.5348	-0.3592	-0.5678	-0.3546	-0.5745
55	0.029	0.236	-0.4757	-0.4626	-0.4626	-0.4618	-0.4520	-0.4928	-0.4022	-0.4416	-0.2898	-0.4902	-0.2998	-0.5241	-0.3357	-0.5638	-0.3296	-0.5742
56	0.029	0.412	-0.4446	-0.4342	-0.4350	-0.4390	-0.4195	-0.4829	-0.3996	-0.4972	-0.2996	-0.5150	-0.3089	-0.5218	-0.2908	-0.5649	-0.2863	-0.5749
57	0.029	0.590	-0.5308	-0.5375	-0.5454	-0.5519	-0.5081	-0.4862	-0.4583	-0.4772	-0.3479	-0.5258	-0.3167	-0.5367	-0.2518	-0.5817	-0.2388	-0.5982
58	0.015	0.000	-0.4748	-0.4291	-0.4158	-0.4272	-0.4224	-0.4249	-0.3585	-0.4320	-0.2452	-0.4752	-0.2912	-0.5023	-0.2928	-0.5538	-0.3349	-0.5674
59	0.015	0.236	-0.4308	-0.4261	-0.4235	-0.4271	-0.4221	-0.4443	-0.3620	-0.4479	-0.2875	-0.4863	-0.2905	-0.5250	-0.2818	-0.5639	-0.2886	-0.5768
60	0.015	0.412	-0.4584	-0.4373	-0.4394	-0.4398	-0.4225	-0.4768	-0.3832	-0.5146	-0.2731	-0.5150	-0.2563	-0.5337	-0.2584	-0.5726	-0.2482	-0.5837
61	0.015	0.733	-0.5826	-0.5721	-0.5578	-0.5599	-0.5635	-0.5281	-0.5556	-0.4931	-0.4721	-0.5360	-0.3820	-0.5623	-0.3484	-0.5218	-0.3372	-0.5367
62	0.320	-0.552	-0.0496	0.0339	0.0057	-0.0045	0.0296	-0.0880	0.0631	-0.1792	0.1065	-0.2961	0.1655	-0.3745	0.2547	-0.4608	0.2768	-0.4688
63	0.044	-0.837	-0.1322	0.0205	0.0125	0.0070	0.0343	-0.1305	0.0423	-0.1973	0.0801	-0.2700	0.1130	-0.3446	0.1315	-0.4160	0.1375	-0.4296

Table A-1.- (Continued).
M = 1.2

			ALPHA =													
			27.0	27.0	29.7	29.8	34.7	34.7	39.7	39.8	44.7	44.7	49.6	49.6	54.6	54.6	56.2	56.7
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.881	0.000	0.4429	-0.2767	0.5408	-0.3549	0.6911	-0.5062	0.8474	-0.5137	0.9967	-0.6011	1.2196	-0.5326	1.3146	-0.5178	1.3363	-0.5605
2	0.822	0.000	0.4552	-0.3059	0.5305	-0.3061	0.6809	-0.5165	0.8341	-0.6085	0.9859	-0.6029	1.2038	-0.6942	1.2984	-0.6500	1.3210	-0.6867
3	0.762	0.000	0.4565	-0.2958	0.5208	-0.3742	0.6779	-0.4956	0.8316	-0.6259	0.9804	-0.6314	1.1939	-0.7148	1.2859	-0.6043	1.3084	-0.5461
4	0.764	0.117	0.4849	-0.5528	0.4708	-0.6057	0.6057	-0.6868	0.7555	-0.5934	0.8948	-0.5936	1.0926	-0.6893	1.1801	-0.6356	1.2027	-0.5773
5	0.703	0.000	0.4622	-0.2772	0.5323	-0.3499	0.6774	-0.4621	0.8317	-0.6003	0.9771	-0.6226	1.1819	-0.6019	1.2714	-0.4969	1.2964	-0.4603
6	0.644	0.000	0.4564	-0.2901	0.5304	-0.3688	0.6743	-0.4798	0.8265	-0.6521	0.9684	-0.6830	1.1709	-0.5623	1.2592	-0.4549	1.2837	-0.4887
7	0.646	0.117	0.4208	-0.5424	0.5009	-0.5859	0.6388	-0.6769	0.7833	-0.4571	0.9705	-0.5749	1.1236	-0.5512	1.2052	-0.5472	1.2303	-0.4916
8	0.647	0.234	0.3663	-0.5516	0.4314	-0.5983	0.5565	-0.6815	0.6893	-0.5334	0.8150	-0.6036	1.0081	-0.5536	1.0818	-0.5469	1.1042	-0.4874
9	0.600	0.000	0.4518	-0.2933	0.5277	-0.3767	0.6714	-0.4857	0.8194	-0.6729	0.9605	-0.6871	1.1662	-0.4692	1.2504	-0.4928	1.2752	-0.4782
10	0.558	0.086	0.4270	-0.4229	0.5086	-0.4986	0.6425	-0.5781	0.7933	-0.4584	0.9303	-0.4909	1.1323	-0.4082	1.2141	-0.5133	1.2392	-0.4534
11	0.560	0.203	0.4081	-0.5562	0.4702	-0.6056	0.6063	-0.6955	0.7485	-0.4771	0.8794	-0.5190	1.0741	-0.4349	1.1515	-0.5157	1.1764	-0.4570
12	0.562	0.320	0.3345	-0.5538	0.3963	-0.6041	0.5104	-0.6779	0.6508	-0.5336	0.7701	-0.5595	0.9540	-0.4344	1.0236	-0.5035	1.0453	-0.4550
13	0.501	0.000	0.4289	-0.2933	0.5038	-0.3078	0.6512	-0.4965	0.8029	-0.6009	0.9440	-0.4899	1.1436	-0.4534	1.2238	-0.4791	1.2504	-0.4474
14	0.502	0.141	0.4124	-0.4986	0.4855	-0.5632	0.6276	-0.6448	0.7749	-0.4575	0.9102	-0.4288	1.1056	-0.4221	1.1832	-0.4813	1.2091	-0.4411
15	0.504	0.258	0.3834	-0.5415	0.4505	-0.5978	0.5851	-0.6898	0.7265	-0.4922	0.8550	-0.4589	1.0449	-0.4218	1.1175	-0.4736	1.1416	-0.4340
16	0.506	0.375	0.3715	-0.5430	0.3786	-0.5944	0.4981	-0. 52	0.6299	-0.5235	0.7476	-0.5278	0.9236	-0.3980	0.9908	-0.4656	1.0127	-0.4301
17	0.442	0.000	0.4780	-0.2979	0.4989	-0.3858	0.6448	-0.4855	0.7984	-0.5825	0.9298	-0.5013	1.1249	-0.4301	1.2074	-0.4460	1.2327	-0.4381
18	0.443	0.200	0.4071	-0.5560	0.4719	-0.6098	0.6090	-0.6922	0.7596	-0.4583	0.8811	-0.4848	1.0727	-0.3989	1.1499	-0.4512	1.1741	-0.4344
19	0.445	0.317	0.3779	-0.5320	0.4373	-0.5904	0.5684	-0.6843	0.7143	-0.5070	0.8272	-0.4925	1.0108	-0.3890	1.0845	-0.4434	1.1075	-0.4301
20	0.447	0.434	0.3129	-0.5443	0.3646	-0.5994	0.4821	-0.6686	0.6240	-0.5249	0.7208	-0.5016	0.8920	-0.3773	0.9574	-0.4376	0.9784	-0.4239
21	0.383	0.000	0.4301	-0.2893	0.4987	-0.3648	0.6395	-0.4706	0.7859	-0.5767	0.9150	-0.4713	1.1079	-0.4257	1.1887	-0.4206	1.2135	-0.4213
22	0.383	0.082	0.4781	-0.3327	0.4962	-0.4048	0.6330	-0.5082	0.7828	-0.5037	0.9079	-0.4636	1.0998	-0.4246	1.1805	-0.4231	1.2078	-0.4214
23	0.384	0.259	0.4019	-0.5577	0.4662	-0.6078	0.5976	-0.7044	0.7430	-0.4586	0.8566	-0.4787	1.0420	-0.4117	1.1160	-0.4323	1.1416	-0.4252
24	0.386	0.376	0.3681	-0.5448	0.4262	-0.5978	0.5502	-0.6941	0.6957	-0.5134	0.7974	-0.5077	0.9765	-0.4127	1.0464	-0.4355	1.0703	-0.4232
25	0.388	0.493	0.3067	-0.5483	0.3566	-0.5974	0.4679	-0.6654	0.6105	-0.5174	0.6978	-0.5073	0.8633	-0.4081	0.9235	-0.4306	0.9459	-0.4161
26	0.324	0.000	0.4319	-0.2869	0.4989	-0.3564	0.6348	-0.4600	0.7702	-0.5645	0.8994	-0.4438	1.0863	-0.4162	1.1642	-0.4121	1.1908	-0.4166
27	0.324	0.109	0.4276	-0.3424	0.4937	-0.4059	0.6279	-0.5043	0.7634	-0.4776	0.8915	-0.4312	1.0777	-0.4062	1.1551	-0.4141	1.1814	-0.4104
28	0.325	0.310	0.3948	-0.5481	0.4596	-0.5958	0.5814	-0.7018	0.7131	-0.4537	0.8283	-0.4610	1.0082	-0.3951	1.0789	-0.4223	1.1055	-0.4086
29	0.327	0.435	0.3572	-0.5495	0.4201	-0.5949	0.5369	-0.6818	0.6628	-0.5097	0.7706	-0.4828	0.9449	-0.3970	1.0103	-0.4286	1.0363	-0.4139
30	0.329	0.552	0.2914	-0.5575	0.3458	-0.5895	0.4501	-0.6587	0.5698	-0.5108	0.6645	-0.4810	0.8291	-0.3959	0.8856	-0.4306	0.9108	-0.4101
31	0.234	0.000	0.4758	-0.2730	0.4987	-0.3489	0.6207	-0.4395	0.7430	-0.3585	0.8619	-0.4196	1.0469	-0.3853	1.1192	-0.4000	1.1488	-0.4077
32	0.234	0.151	0.4182	-0.3311	0.4902	-0.3992	0.6116	-0.4784	0.7314	-0.2560	0.8483	-0.3991	1.0330	-0.3667	1.1052	-0.3964	1.1345	-0.3944
33	0.236	0.264	0.4084	-0.4629	0.4781	-0.5118	0.5967	-0.5806	0.7141	-0.2378	0.8787	-0.4120	1.0117	-0.3703	1.0810	-0.4090	1.1095	-0.3958
34	0.237	0.407	0.3778	-0.5554	0.4414	-0.6068	0.5541	-0.7048	0.6662	-0.3408	0.7765	-0.4281	0.9517	-0.3591	1.0160	-0.4125	1.0420	-0.3937
35	0.239	0.524	0.3416	-0.5432	0.4034	-0.5737	0.5119	-0.6599	0.6155	-0.4190	0.7239	-0.4318	0.8919	-0.3601	0.9511	-0.4176	0.9770	-0.3982
36	0.241	0.640	0.2731	-0.5594	0.3265	-0.5824	0.4249	-0.6362	0.5194	-0.4328	0.6215	-0.4202	0.7791	-0.3555	0.8297	-0.4171	0.8541	-0.3944
37	0.147	0.000	0.4193	-0.2545	0.4834	-0.3345	0.5917	-0.4499	0.6907	-0.3433	0.8030	-0.4160	0.9703	-0.3559	1.0391	-0.3882	1.0720	-0.3944
38	0.147	0.192																
39	0.147	0.336	0.4822	-0.4971	0.4621	-0.5406	0.5659	-0.6142	0.6601	-0.1875	0.7876	-0.3930	0.9333	-0.3315	0.9981	-0.3985	1.0299	-0.3813
40	0.149	0.495																
41	0.150	0.612																
42	0.157	0.729	0.2717	-0.5636	0.3184	-0.5786	0.3920	-0.6452	0.4672	-0.1459	0.5607	-0.3834	0.7119	-0.3185	0.7553	-0.4033	0.7831	-0.3742
43	0.088	0.000	0.3972	-0.2896	0.4464	-0.3630	0.5267	-0.4773	0.5992	-0.4294	0.6865	-0.4083	0.8382	-0.3427	0.9081	-0.3787	0.9415	-0.3844
44	0.088	0.220	0.3906	-0.3831	0.4383	-0.4421	0.5169	-0.5344	0.5884	-0.3868	0.6738	-0.3871	0.8271	-0.3252	0.8967	-0.3829	0.9298	-0.3743
45	0.088	0.385	0.3776	-0.5423	0.4226	-0.5741	0.4956	-0.6419	0.5655	-0.3227	0.6495	-0.3792	0.8039	-0.3152	0.8702	-0.3890	0.9018	-0.3683
46	0.090	0.554	0.3534	-0.5671	0.3920	-0.6188	0.4570	-0.6920	0.5242	-0.2491	0.6018	-0.3649	0.7637	-0.2958	0.8241	-0.3834	0.8549	-0.3562
47	0.092	0.671																
48	0.093	0.787	0.2757	-0.5673	0.2987	-0.5801	0.3475	-0.6550	0.4025	-0.1294	0.4774	-0.3590	0.6343	-0.2893	0.6795	-0.3887	0.7085	-0.3592
49	0.059	0.703	0.2497	-0.5649	0.2690	-0.5970	0.3039	-0.6165	0.3437	-0.2701	0.4101	-0.3455	0.6206	-0.2798	0.6054	-0.3790	0.7185	-0.3513
50	0.044	0.000	-0.3635	-0.5926	-0.3466	-0.5786	-0.3216	-0.5773	-0.2891	-0.5524	-0.1120	-0.3991	0.1896	-0.3277	0.3211	-0.3665	0.3705	-0.3743
51	0.044	0.236	-0.3421	-0.5823	-0.3473	-0.5843	-0.3212	-0.5970	-0.2779	-0.5603	-0.1176	-0.3814	0.2017	-0.3112	0.3388	-0.3731	0.3851	-0.3639
52	0.044	0.412	-0.3414	-0.5678	-0.3259	-0.5765	-0.2957	-0.5796	-0.2252	-0.5662	-0.1219	-0.3722	0.2180	-0.2984	0.4176	-0.3750	0.4761	-0.3587
53	0.044	0.837	0.1290	-0.5625	0.1317	-0.5737	0.1545	-0.5797	0.1949	-0.2545	0.2877	-0.3115	0.5231	-0.2503	0.5751	-0.3659	0.6009	-0.3391
54	0.029	0.000	-0.3520	-0.5838	-0.3279	-0.5841	-0.2781	-0.5648	-0.1852	-0.4620	-0.0962	-0.3906	0.5660	-0.3222	0.6026	-0.3633	0.6297	-0.3734
55	0.029	0.236	-0.3344	-0.5878	-0.3082	-0.5937	-0.2474	-0.5928	-0.1582	-0.4605	-0.0662	-0.3643	0.5713	-0.2971	0.6067	-0.3691	0.6326	-0.3627
56	0.029	0.412	-0.2831	-0.5856	-0.2546	-0.5830	-0.2016	-0.5766	-0.1442	-0.4416	0.0436	-0.3446	0.5416	-0.2792	0.5970	-0.3705	0.6227	-0.3542
57	0.029	0.599	-0.2175	-0.5885	-0.2308	-0.5807	-0.1352	-0.5569	-0.0497	-0.4466	0.0116	-0.3297	0.5094	-0.2641	0.5711	-0.3684	0.5975	-0.3443
58	0.015	0.000	-0.3270	-0.5711	-0.2956	-0.5852	-0.2274	-0.5580	-0.1285	-0.4073	0.3370	-0.3667	0.4805	-0.3838	0.5269	-0.3474	0.5503	-0.3616
59	0.015	0.236	-0.2938	-0.5918	-0.2645	-0.6015	-0.1988	-0.5990	-0.1265	-0.3920	0.3489	-0.3433	0.4749	-0.2823	0.5217	-0.3641	0.5449	-0.3594
60	0.015	0.412	-0.2477	-0.5872	-0.2142	-0.5929	-0.1413	-0.5986	-0.0158	-0.3724	0.4035	-0.3249	0.4620	-0.2661	0.5128	-0.3723	0.5374	-0.3521
61	0.015	0.733	-0.3231	-0.5546	-0.3027	-0.5493	-0.2263	-0.5425	-0.1750	-0.3507	0.2079	-0.2853	0.4498	-0.2327	0.4959	-0.3625	0.5185	-0.3344
62	0.329	-0.552	0.3107	-0.4328	0.3039	-0.4541	0.4734	-0.4883	0.5862	-0.7312	0.6948	-0.4836	0.8533	-0.4210	0.9168	-0.3887	0.9353	-0.4236
63	0.044	-0.837	0.1577	-0.4043	0.1673	-0.4423	0.1908	-0.4948	0.2334	-0.4193	0.3218	-0.4018	0.5480	-0.3442	0.6113	-0.3063	0.6325	-0.3650

Table A-1.- (Continued).
M = 1.6

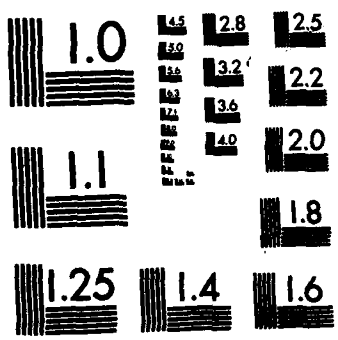
TUBE	X/L	Y/B/2	ALPHA = -2.8 WINDWARD	-2.7 LEEWARD	0.1 WINDWARD	0.2 LEEWARD	5.1 WINDWARD	5.2 LEEWARD	10.0 WINDWARD	10.2 LEEWARD	15.0 WINDWARD	15.1 LEEWARD	19.9 WINDWARD	20.1 LEEWARD	24.9 WINDWARD	25.1 LEEWARD	26.4 WINDWARD	26.6 LEEWARD
1	0.841	0.000	0.0892	0.0861	0.0756	0.0742	0.1067	0.0617	0.1634	-0.0300	0.2143	-0.0054	0.3266	-0.0489	0.4330	-0.1196	0.4619	-0.1291
2	0.822	0.000	0.0132	0.0285	0.0253	0.0163	0.0509	-0.0068	0.1102	-0.0373	0.1916	-0.0741	0.2904	-0.1194	0.4012	-0.1996	0.4346	-0.2253
3	0.762	0.000	0.0129	0.0250	0.0249	0.0142	0.0519	-0.0076	0.1060	-0.0345	0.1808	-0.0783	0.2785	-0.1160	0.3948	-0.2008	0.4393	-0.2226
4	0.764	0.117	0.0064	0.0226	0.0226	0.0135	0.0452	-0.0345	0.0936	-0.1634	0.1616	-0.2281	0.2514	-0.2896	0.3623	-0.3400	0.4066	-0.3527
5	0.703	0.000	0.0579	0.0743	0.0654	0.0559	0.0928	0.0405	0.1444	0.0140	0.2098	-0.0205	0.2996	-0.0578	0.4245	-0.1321	0.4577	-0.1499
6	0.644	0.000	0.0255	0.0324	0.0346	0.0270	0.0617	0.0004	0.1198	-0.0269	0.1940	-0.0573	0.2862	-0.1110	0.4100	-0.1911	0.4412	-0.2039
7	0.646	0.117	0.0053	0.0144	0.0131	0.0098	0.0449	-0.0177	0.1022	-0.1067	0.1751	-0.2101	0.2681	-0.2838	0.3889	-0.3370	0.4207	-0.3440
8	0.647	0.236	-0.0109	0.0116	0.0100	0.0077	0.0459	-0.0957	0.0906	-0.1669	0.1548	-0.2414	0.2381	-0.3089	0.3485	-0.3597	0.3770	-0.3701
9	0.600	0.000	-0.0011	0.0144	0.0151	0.0052	0.0425	-0.0212	0.1020	-0.0517	0.1828	-0.0871	0.2842	-0.1417	0.4012	-0.2234	0.4330	-0.2438
10	0.558	0.000	-0.0038	0.0182	0.0104	-0.0016	0.0394	-0.0189	0.1017	-0.0688	0.1815	-0.1549	0.2716	-0.2183	0.3851	-0.2839	0.4183	-0.3012
11	0.560	0.203	0.0040	0.0251	0.0124	0.0028	0.0412	-0.0219	0.1035	-0.1652	0.1770	-0.2417	0.2609	-0.3037	0.3683	-0.3524	0.4000	-0.3629
12	0.562	0.320	-0.0259	0.0214	0.0114	0.0007	0.0372	-0.0898	0.0918	-0.1683	0.1522	-0.2465	0.2258	-0.3125	0.3220	-0.3559	0.3507	-0.3651
13	0.501	0.000	-0.0121	-0.0004	0.0000	-0.0030	0.0358	-0.0280	0.0900	-0.0645	0.1663	-0.1125	0.2600	-0.1573	0.3795	-0.2447	0.4126	-0.2670
14	0.502	0.141	-0.0069	0.0061	0.0049	0.0018	0.0378	-0.0281	0.0885	-0.0997	0.1636	-0.2086	0.2542	-0.2707	0.3726	-0.3219	0.4054	-0.3367
15	0.504	0.258	0.0003	0.0102	0.0070	0.0063	0.0318	-0.0571	0.0854	-0.1773	0.1555	-0.2442	0.2409	-0.3095	0.3539	-0.3558	0.3857	-0.3670
16	0.506	0.375	-0.0305	0.0154	0.0097	0.0093	0.0353	-0.0939	0.0753	-0.1722	0.1346	-0.2521	0.2085	-0.3140	0.3110	-0.3565	0.3396	-0.3678
17	0.442	0.000	-0.0166	-0.0029	0.0001	-0.0096	0.0327	-0.0308	0.0944	-0.0688	0.1692	-0.1097	0.2619	-0.1619	0.3751	-0.2477	0.4124	-0.2728
18	0.443	0.200	-0.0123	0.0034	0.0053	-0.0070	0.0341	-0.0299	0.0900	-0.1370	0.1681	-0.2427	0.2524	-0.3184	0.3628	-0.3573	0.4002	-0.3685
19	0.445	0.317	-0.0456	0.0085	0.0083	-0.0003	0.0337	-0.0809	0.0860	-0.1688	0.1518	-0.2340	0.2405	-0.3010	0.3452	-0.3520	0.3821	-0.3651
20	0.447	0.434	-0.0356	0.0102	0.0121	0.0018	0.0316	-0.0954	0.0748	-0.1800	0.1282	-0.2516	0.2065	-0.3148	0.3025	-0.3608	0.3358	-0.3728
21	0.383	0.000	-0.0166	-0.0004	-0.0035	-0.0156	0.0289	-0.0297	0.089[illegible]	-0.0646	0.1643	-0.1111	0.2573	-0.1613	0.3787	-0.2486	0.4125	-0.2706
22	0.383	0.082	-0.0100	-0.0032	-0.0035	-0.0170	0.0292	-0.0287	0.0882	-0.0661	0.1626	-0.1241	0.2555	-0.1784	0.3788	-0.2644	0.4096	-0.2857
23	0.384	0.259	-0.0183	0.0023	0.0012	-0.0136	0.0344	-0.0236	0.0903	-0.1583	0.1611	-0.2547	0.2475	-0.3119	0.3668	-0.3640	0.3943	-0.3748
24	0.386	0.376	-0.0186	0.0075	0.0063	-0.0112	0.0369	-0.0984	0.0849	-0.1749	0.1492	-0.2534	0.2309	-0.3150	0.3439	-0.3673	0.3702	-0.3779
25	0.398	0.493	-0.0395	0.0130	0.0100	-0.0051	0.0358	-0.0888	0.0741	-0.1790	0.1291	-0.2505	0.2008	-0.3184	0.3022	-0.3667	0.3274	-0.3760
26	0.326	0.000	0.0411	-0.0059	-0.0204	-0.0074	-0.0669	-0.0369	-0.0425	-0.0699	0.0006	-0.1144	0.0565	-0.1580	0.0791	-0.2493	0.1058	-0.2698
27	0.326	0.189	-0.0136	-0.0093	-0.0035	-0.0101	0.0265	-0.0371	0.0871	-0.0724	0.1639	-0.1327	0.2560	-0.1846	0.3736	-0.2682	0.4062	-0.2884
28	0.325	0.318	-0.0156	-0.0083	-0.0018	-0.0078	0.0316	-0.0437	0.0882	-0.1875	0.1595	-0.2582	0.2457	-0.3181	0.3559	-0.3714	0.3865	-0.3799
29	0.327	0.435	-0.0276	-0.0039	0.0008	-0.0027	0.0354	-0.1096	0.0876	-0.1796	0.1517	-0.2561	0.2297	-0.3153	0.3330	-0.3674	0.3614	-0.3772
30	0.329	0.552	-0.0422	0.0013	0.0042	-0.0016	0.0376	-0.0981	0.0764	-0.1808	0.1278	-0.2604	0.1954	-0.3243	0.2879	-0.3708	0.3123	-0.3756
31	0.236	0.000	-0.0162	0.0085	0.0073	-0.0144	0.0313	-0.0342	0.0833	-0.0755	0.1572	-0.1143	0.2546	-0.1672	0.3677	-0.2563	0.4029	-0.2755
32	0.236	0.151	1.8246	0.0061	1.8281	-0.0197	1.8283	-0.0349	1.8295	-0.0804	1.8265	-0.1395	1.8261	-0.1986	1.8272	-0.2729	1.8221	-0.2916
33	0.236	0.284	-0.0190	0.0044	-0.0004	-0.0234	0.0289	-0.0348	0.0831	-0.1167	0.1562	-0.2111	0.2516	-0.2743	0.3619	-0.3238	0.3444	-0.3361
34	0.237	0.407	-0.0129	0.0071	0.0012	-0.0197	0.0330	-0.0715	0.0828	-0.1936	0.1508	-0.2643	0.2410	-0.3309	0.3432	-0.3710	0.3738	-0.3803
35	0.239	0.524	-0.0314	0.0109	0.0025	-0.0145	0.0347	-0.1189	0.0826	-0.1885	0.1432	-0.2622	0.2253	-0.3273	0.3199	-0.3695	0.3487	-0.3808
36	0.241	0.640	-0.0439	0.0106	0.0042	-0.0140	0.0335	-0.1051	0.0710	-0.1808	0.1186	-0.2732	0.1894	-0.3358	0.2727	-0.3708	0.2985	-0.3768
37	0.147	0.000	-0.0172	0.0102	-0.0005	-0.0075	0.0337	-0.0359	0.0860	-0.0697	0.1602	-0.1091	0.2553	-0.1590	0.3661	-0.2495	0.4035	-0.2670
38	0.147	0.192																
39	0.147	0.336	-0.0190	0.0078	-0.0001	-0.0129	0.0289	-0.0378	0.0858	-0.1390	0.1979	-0.2364	0.2483	-0.2949	0.3599	-0.3379	0.3958	-0.3486
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	-0.0415	0.0179	0.0114	0.0000	0.0352	-0.1037	0.0716	-0.1864	0.1166	-0.2739	0.1786	-0.3451	0.2670	-0.3791	0.2958	-0.3854
43	0.088	0.000	-0.0128	0.0123	-0.0016	-0.0072	0.0371	-0.0332	0.0877	-0.0731	0.1595	-0.1088	0.2539	-0.1604	0.3728	-0.2498	0.4203	-0.2684
44	0.088	0.220	-0.0058	0.0206	0.0066	-0.0030	0.0425	-0.0298	0.0916	-0.0756	0.1619	-0.1198	0.2535	-0.1972	0.3736	-0.2662	0.4181	-0.2835
45	0.088	0.385	-0.0153	0.0133	-0.0001	-0.0156	0.0326	-0.0422	0.0844	-0.1509	0.1541	-0.2459	0.2443	-0.3003	0.3629	-0.3440	0.4072	-0.3533
46	[illegible]	0.554	-0.0089	0.0275	0.0104	-0.0078	0.0384	-0.1211	0.0861	-0.2021	0.1491	-0.2673	0.2300	-0.3265	0.3425	-0.3771	0.3838	-0.3877
47	0.092	0.671	0.0207		0.0661		0.0847		0.1221		0.1475		0.2307		0.3263		0.3621	
48	0.093	0.787	-0.0404	0.0466	0.0295	0.0091	0.0495	-0.1263	0.0842	-0.1958	0.1207	-0.2864	0.1786	-0.3531	0.2714	-0.3881	0.3073	-0.3917
49	0.059	0.703	-0.0368	0.0278	0.0189	0.0015	0.0422	-0.1334	0.0877	-0.2058	0.1403	-0.2717	0.2102	-0.3225	0.3210	-0.3704	0.3549	-0.3786
50	0.044	0.000	-0.2800	-0.2782	-0.2805	-0.2814	-0.2679	-0.2931	-0.2403	-0.3297	-0.2043	-0.3525	-0.1585	-0.3803	-0.0900	-0.4145	-0.0715	-0.4166
51	0.044	0.236	-0.2788	-0.2767	-0.2797	-0.2814	-0.2666	-0.3007	-0.2402	-0.3396	-0.2048	-0.3746	-0.1583	-0.3992	-0.0908	-0.3928	-0.0730	-0.3989
52	0.044	0.412	-0.2884	-0.2678	-0.2716	-0.2745	-0.2628	-0.3116	-0.2348	-0.3444	-0.1979	-0.3472	-0.1534	-0.3657	-0.0854	-0.3849	-0.0682	-0.3921
53	0.044	0.837	-0.0488	0.0295	0.0175	0.0028	0.0378	-0.1354	0.0755	-0.2088	0.1151	-0.2856	0.1695	-0.3359	0.2665	-0.3796	0.2899	-0.3844
54	0.029	0.000	-0.2884	-0.2847	-0.2886	-0.2913	-0.2788	-0.3063	-0.2458	-0.3084	-0.2111	-0.3583	-0.1654	-0.3816	-0.0946	-0.3884	-0.0772	-0.3930
55	0.029	0.236	-0.2764	-0.2704	-0.2717	-0.2719	-0.2623	-0.3003	-0.2307	-0.3107	-0.1947	-0.3497	-0.1486	-0.3690	-0.0815	-0.3896	-0.0624	-0.3947
56	0.029	0.412	-0.2838	-0.2693	-0.2707	-0.2721	-0.2588	-0.3156	-0.2289	-0.3246	-0.1916	-0.3512	-0.1425	-0.3722	-0.0671	-0.3851	-0.0469	-0.3923
57	0.029	0.599	-0.3176	-0.3111	-0.3187	-0.3247	-0.2847	-0.3285	-0.2550	-0.3234	-0.2152	-0.3473	-0.1583	-0.3702	-0.0566	-0.3827	-0.0299	-0.3889
58	0.015	0.000	-0.2648	-0.2692	-0.2655	-0.2653	-0.2715	-0.2855	-0.2513	-0.2868	-0.2187	-0.3147	-0.1707	-0.3427	-0.1004	-0.3792	-0.0832	-0.3863
59	0.015	0.236	-0.2595	-0.2563	-0.2554	-0.2545	-0.2593	-0.2850	-0.2320	-0.2891	-0.1983	-0.3281	-0.1529	-0.3615	-0.0813	-0.3897	-0.0628	-0.3957
60	0.015	0.412	-0.2773	-0.2715	-0.2700	-0.2703	-0.2501	-0.3073	-0.2290	-0.3198	-0.1928	-0.3531	-0.1408	-0.3734	-0.0635	-0.3898	-0.0421	-0.3951
61	0.015	0.733	-0.3421	-0.3392	-0.3450	-0.3400	-0.2811	-0.3387	-0.2795	-0.3622	-0.2544	-0.3761	-0.2154	-0.3796	-0.1604	-0.3886	-0.1377	-0.3937
62	0.329	-0.552	-0.0634	0.0061	0.0083	-0.0061	0.0262	-0.0977	0.0720	-0.1693	0.1248	-0.2431	0.1455	-0.2984	0.2894	-0.3395	0.3200	-0.3512
63	0.046	-0.837	-0.0686	0.0216	0.0215	0.0001	0.0367	-0.1181	0.0730	-0.1823	0.1157	-0.2587	0.1718	-0.3219	0.2777	-0.3457	0.3000	-0.3513

Table A-1.- (Concluded).
M' = 1.6

			ALPHA =													
			27.3	27.3	30.0	30.0	34.9	34.9	39.9	40.0	44.9	44.9	49.9	49.8	54.8	54.8	56.5	56.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.881	0.000	0.4775	-0.1950	0.5530	-0.2146	0.6962	-0.3065	0.8421	-0.3203	0.9420	-0.3361	1.1351	-0.3606	1.2739	-0.3662	1.3152	-0.3673
2	0.822	0.000	0.4410	-0.2583	0.5399	-0.2824	0.6786	-0.3736	0.8239	-0.3968	0.9766	-0.4264	1.1308	-0.4372	1.2623	-0.4443	1.3087	-0.4372
3	0.762	0.000	0.4430	-0.2513	0.5407	-0.2707	0.6833	-0.3625	0.8281	-0.4219	0.9813	-0.4373	1.1316	-0.4349	1.2554	-0.4393	1.3025	-0.4071
4	0.766	0.117	0.4201	-0.3670	0.4894	-0.3755	0.6239	-0.3919	0.7651	-0.4671	0.9864	-0.4587	1.0476	-0.4562	1.1656	-0.4549	1.2082	-0.4208
5	0.703	0.000	0.4724	-0.2085	0.5501	-0.2269	0.6913	-0.2990	0.8348	-0.3670	0.9827	-0.3586	1.1288	-0.3611	1.2548	-0.3565	1.2958	-0.3277
6	0.644	0.000	0.4582	-0.2556	0.5408	-0.2710	0.6870	-0.3503	0.8304	-0.4312	0.9751	-0.4045	1.1240	-0.4226	1.2526	-0.3912	1.2923	-0.3708
7	0.646	0.117	0.4367	-0.3784	0.5143	-0.3644	0.6575	-0.3933	0.7994	-0.4820	0.9174	-0.4353	1.0821	-0.4552	1.2053	-0.4313	1.2470	-0.4108
8	0.647	0.234	0.3833	-0.3886	0.4566	-0.3812	0.5899	-0.4197	0.7208	-0.4914	0.8497	-0.4408	0.9826	-0.4633	1.0973	-0.4357	1.1369	-0.4137
9	0.600	0.000	0.4520	-0.2833	0.5339	-0.3001	0.6833	-0.3861	0.8284	-0.4749	0.9727	-0.4451	1.1252	-0.4666	1.2507	-0.4195	1.2940	-0.3965
10	0.558	0.086	0.4401	-0.3414	0.5151	-0.3464	0.6565	-0.3840	0.8019	-0.4750	0.9482	-0.4186	1.0973	-0.4596	1.2209	-0.4070	1.2628	-0.3935
11	0.560	0.203	0.4202	-0.3886	0.4950	-0.3903	0.6300	-0.4115	0.7655	-0.4688	0.9055	-0.4260	1.0489	-0.4655	1.1664	-0.4082	1.2072	-0.3961
12	0.562	0.320	0.3845	-0.3951	0.4330	-0.3906	0.5587	-0.4223	0.6832	-0.4781	0.8131	-0.4325	0.9455	-0.4731	1.0567	-0.4099	1.0940	-0.3991
13	0.501	0.000	0.4481	-0.2858	0.5270	-0.3181	0.6708	-0.3805	0.8165	-0.4411	0.9636	-0.4519	1.1150	-0.4659	1.2372	-0.4022	1.2782	-0.3893
14	0.502	0.141	0.4338	-0.3775	0.5114	-0.3694	0.6512	-0.4039	0.7908	-0.4666	0.9364	-0.4226	1.0815	-0.4674	1.2011	-0.4014	1.2418	-0.3895
15	0.504	0.258	0.4113	-0.3916	0.4846	-0.3911	0.6180	-0.4211	0.7513	-0.4585	0.8904	-0.4274	1.0295	-0.4700	1.1434	-0.3974	1.1838	-0.3853
16	0.506	0.375	0.3620	-0.3902	0.4248	-0.3911	0.5474	-0.4166	0.6750	-0.4579	0.8011	-0.4289	0.9283	-0.4706	1.0352	-0.3967	1.0729	-0.3847
17	0.442	0.000	0.4450	-0.2908	0.5237	-0.3143	0.6656	-0.3833	0.8126	-0.4287	0.9590	-0.4541	1.1064	-0.4547	1.2283	-0.3919	1.2683	-0.3840
18	0.443	0.200	0.4252	-0.4047	0.5015	-0.3899	0.6378	-0.4195	0.7783	-0.4608	0.9190	-0.4332	1.0602	-0.4703	1.1775	-0.3958	1.2163	-0.3869
19	0.445	0.317	0.4067	-0.3853	0.4773	-0.3899	0.6068	-0.4246	0.7421	-0.4490	0.8764	-0.4395	1.0111	-0.4690	1.1228	-0.3919	1.1611	0.3828
20	0.447	0.434	0.3522	-0.3955	0.4182	-0.3881	0.5378	-0.4194	0.6617	-0.4477	0.7859	-0.4405	0.9099	-0.4647	1.0140	-0.3897	1.0492	-0.3806
21	0.383	0.000	0.4427	-0.2875	0.5150	-0.3090	0.6583	-0.3765	0.8079	-0.4116	0.9561	-0.4448	1.1011	-0.4083	1.2201	-0.3748	1.2601	-0.3694
22	0.383	0.082	0.4384	-0.3103	0.5093	-0.3249	0.6524	-0.3844	0.8029	-0.4225	0.9499	-0.4361	1.0932	-0.4151	1.2131	-0.3762	1.2516	-0.3704
23	0.384	0.259	0.4178	-0.3977	0.4088	-0.3973	0.6262	-0.4209	0.7675	-0.4465	0.9069	-0.4398	1.0438	-0.4422	1.1579	-0.3840	1.1950	-0.3785
24	0.386	0.376	0.3871	-0.3998	0.4561	-0.3991	0.5873	-0.4329	0.7217	-0.4439	0.8542	-0.4526	0.9861	-0.4447	1.0956	-0.3856	1.1304	-0.3792
25	0.388	0.493	0.3411	-0.3923	0.4047	-0.3888	0.5253	-0.4211	0.6502	-0.4383	0.7724	-0.4488	0.8933	-0.4362	0.9937	-0.3808	1.0281	-0.3756
26	0.324	0.000	0.4390	-0.2860	0.5152	-0.3112	0.6574	-0.3763	0.8048	-0.4037	0.9520	-0.4394	1.0924	-0.3862	1.2058	-0.3698	1.2445	-0.3666
27	0.324	0.109	0.4368	-0.3137	0.5123	-0.3238	0.6525	-0.3851	0.7994	-0.4092	0.9468	-0.4301	1.0858	-0.3892	1.1981	-0.3680	1.2371	-0.3650
28	0.325	0.318	0.4132	-0.3957	0.4805	-0.4029	0.6130	-0.4194	0.7565	-0.4335	0.8924	-0.4419	1.0255	-0.4056	1.1344	-0.3710	1.1699	-0.3666
29	0.327	0.435	0.3861	-0.3967	0.4525	-0.3980	0.5779	-0.4310	0.7129	-0.4326	0.8421	-0.4593	0.9704	-0.4107	1.0746	-0.3774	1.1087	-0.3733
30	0.329	0.552	0.3128	-0.4085	0.3927	-0.3910	0.5089	-0.4233	0.6318	-0.4305	0.7515	-0.4613	0.8708	-0.4026	0.9673	-0.3772	0.9989	-0.3729
31	0.236	0.000	0.4471	-0.2876	0.5225	-0.3164	0.6684	-0.3773	0.8097	-0.3994	0.9486	-0.3817	1.0766	-0.3774	1.1781	-0.3624	1.2127	-0.3618
32	0.238	0.151	0.4397	-0.3051	0.5142	-0.3153	0.6581	-0.3758	0.7983	-0.3851	0.9360	-0.3791	1.0642	-0.3690	1.1657	-0.3537	1.1994	-0.3479
33	0.234	0.264	0.4309	-0.3671	0.5055	-0.3621	0.6474	-0.4022	0.7844	-0.4064	0.9196	-0.4011	1.0461	-0.3763	1.1451	-0.3612	1.1787	-0.3592
34	0.237	0.407	0.4088	-0.4002	0.4743	-0.4046	0.6092	-0.4204	0.7446	-0.4208	0.8716	-0.4323	0.9922	-0.3765	1.0895	-0.3625	1.1217	-0.3595
35	0.239	0.524	0.3823	-0.4016	0.4491	-0.3994	0.5755	-0.4268	0.7027	-0.4176	0.8236	-0.4471	0.9398	-0.3805	1.0327	-0.3676	1.0629	-0.3657
36	0.241	0.640	0.3260	-0.4008	0.3886	-0.3920	0.5047	-0.4170	0.6201	-0.4161	0.7327	-0.4445	0.8407	-0.3741	0.9273	-0.3677	0.9552	-0.3652
37	0.147	0.000	0.4561	-0.2862	0.5259	-0.3174	0.6630	-0.3759	0.8063	-0.3158	0.9265	-0.2991	1.0294	-0.3618	1.1160	-0.3530	1.1465	-0.3553
38	0.147	0.192																
39	0.147	0.330	0.4178	-0.3830	0.5072	-0.3769	0.6409	-0.4091	0.7790	-0.3123	0.8951	-0.3360	0.9966	-0.3596	1.0793	-0.3509	1.1106	-0.3518
40	0.149	0.495																
41	0.150	0.612																
42	0.152	0.729	0.3253	-0.4125	0.3831	-0.4055	0.4975	-0.4255	0.6098	-0.3593	0.7090	-0.3683	0.7943	-0.3622	0.8656	-0.3551	0.8915	-0.3579
43	0.088	0.000	0.4457	-0.2863	0.5181	-0.3157	0.6558	-0.3700	0.7848	-0.2449	0.8692	-0.3186	0.9418	-0.3532	1.0059	-0.3486	1.0338	-0.3504
44	0.088	0.220	0.4362	-0.3307	0.5098	-0.3330	0.6444	-0.3850	0.7720	-0.2262	0.8565	-0.3311	0.9293	-0.3519	0.9936	-0.3437	1.0217	-0.3451
45	0.088	0.385	0.4240	-0.3892	0.4938	-0.3818	0.6262	-0.4108	0.7493	-0.2514	0.8321	-0.3411	0.9043	-0.3527	0.9670	-0.3451	0.9956	-0.3463
46	0.090	0.554	0.4035	-0.3971	0.4629	-0.4081	0.5872	-0.4228	0.7081	-0.2879	0.7872	-0.3519	0.8568	-0.3525	0.9191	-0.3412	0.9484	-0.3474
47	0.092	0.671																
48	0.093	0.787	0.3260	-0.4182	0.3800	-0.4087	0.4875	-0.4255	0.5937	-0.2709	0.6824	-0.3371	0.7295	-0.3583	0.7877	-0.3491	0.8141	-0.3506
49	0.059	0.703	0.3687	-0.3951	0.4222	-0.3990	0.5222	-0.4128	0.5953	-0.2630	0.6351	-0.3361	0.6797	-0.3508	0.7369	-0.3427	0.7830	-0.3446
50	0.044	0.000	-0.0702	-0.4253	-0.0363	-0.4279	0.0123	-0.4473	0.0432	-0.3552	0.0700	-0.3489	0.1089	-0.3467	0.2835	-0.3434	0.3542	-0.3448
51	0.044	0.236	-0.0699	-0.4085	-0.0368	-0.4114	0.0192	-0.4286	0.0421	-0.3510	0.0689	-0.3469	0.1301	-0.3469	0.2897	-0.3407	0.3624	-0.3416
52	0.044	0.412	-0.0632	-0.4006	-0.0360	-0.4095	0.0126	-0.4111	0.0538	-0.3445	0.0910	-0.3451	0.1756	-0.3474	0.2806	-0.3402	0.3641	-0.3411
53	0.044	0.837	0.2901	-0.3795	0.3323	-0.3798	0.3940	-0.3787	0.4402	-0.2303	0.4758	-0.3153	0.5281	-0.3409	0.6399	-0.3291	0.6932	-0.3271
54	0.029	0.000	-0.0744	-0.4040	-0.0388	-0.4109	0.0157	-0.4336	0.0622	-0.3269	0.1151	-0.3230	0.2186	-0.3489	0.3846	-0.3452	0.6488	-0.3480
55	0.029	0.236	-0.0435	-0.4035	-0.0291	-0.4084	0.0229	-0.4201	0.0719	-0.3088	0.1347	-0.3267	0.2355	-0.3480	0.4510	-0.3410	0.6927	-0.3432
56	0.029	0.412	-0.0437	-0.4038	-0.0057	-0.4065	0.0554	-0.4039	0.1126	-0.2939	0.1768	-0.3290	0.2401	-0.3474	0.6481	-0.3396	0.7472	-0.3397
57	0.029	0.599	-0.0217	-0.3999	0.0230	-0.4087	0.0909	-0.3871	0.1533	-0.2654	0.2768	-0.3251	0.3432	-0.3439	0.6161	-0.3353	0.7524	-0.3344
58	0.015	0.000	-0.0778	-0.3923	-0.0456	-0.4064	0.0143	-0.3953	0.0814	-0.2827	0.1602	-0.2968	0.2678	-0.3382	0.7267	-0.3334	0.7378	-0.3336
59	0.015	0.236	-0.0637	-0.4076	-0.0265	-0.4092	0.0352	-0.4024	0.1033	-0.2624	0.1829	-0.3136	0.2585	-0.3482	0.7175	-0.3399	0.7295	-0.3409
60	0.015	0.412	-0.0375	-0.4093	0.0038	-0.4109	0.0721	-0.3987	0.1436	-0.2473	0.2261	-0.3209	0.3797	-0.3496	0.6966	-0.3413	0.7048	-0.3408
61	0.015	0.733	-0.1099	-0.3913	-0.0628	-0.4004	-0.0437	-0.3700	0.0190	-0.2050	0.1122	-0.3129	0.2450	-0.3401	0.6520	-0.3296	0.6757	-0.3305
62	0.329	-0.552	0.3539	-0.3345	0.4182	-0.3891	0.5399	-0.3987	0.6610	-0.4573	0.7832	-0.4573	0.8973	-0.3810	0.9919	-0.3684	1.0251	-0.3612
63	0.044	-0.837	0.3077	-0.3323	0.3587	-0.3818	0.4266	-0.3817	0.4738	-0.3082	0.5138	-0.2756	0.5644	-0.3292	0.6687	-0.3301	0.7209	-0.3287

AD-A125 764 WING-ALONE AERODYNAMIC CHARACTERISTICS TO HIGH ANGLES OF ATTACK AT SUBSON..(U) NIELSEN ENGINEERING AND RESEARCH INC MOUNTAIN VIEW CA M M BRIGGS ET AL. NOV 82 3/4

UNCLASSIFIED NEAR-TR-269 ARO-16030.1-EG DAAG29-79-C-0020 F/G 20/4 NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Table A-2.- Pressure coefficients for configuration 2.
M = 0.6

			ALPHA =															
TUBE	X/L	Y/B/2	-2.7 WINDWARD	-2.6 LEEWARD	0.3 WINDWARD	0.3 LEEWARD	5.3 WINDWARD	5.3 LEEWARD	10.2 WINDWARD	10.3 LEEWARD	15.3 WINDWARD	15.2 LEEWARD	20.2 WINDWARD	20.3 LEEWARD	25.2 WINDWARD	25.2 LEEWARD	26.6 WINDWARD	26.6 LEEWARD
1	0.937	0.000		0.1413	0.1005	0.0905	0.1065	0.0215	0.2876	-0.0781	0.3902	-0.2083	0.5220	-0.3699	0.6407	-0.5913	0.6794	-0.6490
2	0.874	0.000		0.1123	0.0710	0.0581	0.1520	-0.0073	0.2520	-0.0976	0.3589	-0.2207	0.4771	-0.3663	0.5904	-0.5693	0.6264	-0.6227
3	0.082	0.110		0.1210	0.0704	0.0673	0.1623	0.0013	0.2542	-0.0628	0.3470	-0.4572	0.4455	-1.1451	0.5366	-1.7726	0.5652	-1.8904
4	0.011	0.000		0.0820	0.0440	0.0378	0.1264	-0.0320	0.2102	-0.1209	0.3223	-0.2311	0.4360	-0.3707	0.5480	-0.5414	0.5671	-0.5904
5	0.019	0.110		0.0921	0.0541	0.0403	0.1350	-0.0220	0.2228	-0.1079	0.3234	-0.2236	0.4273	-0.4578	0.5286	-0.8322	0.5651	-0.9513
6	0.027	0.221		0.1050	0.0653	0.0569	0.1409	0.0146	0.2313	-0.4509	0.3134	-1.0439	0.3939	-1.3282	0.4698	-1.6767	0.4960	-1.7762
7	0.707	0.000																
8	0.707	0.049		-0.0104	-0.0562	-0.0633	0.0294	-0.1107	0.1224	-0.2211	0.2106	-0.3056	0.3303	-0.4300	0.4495	-0.6079	0.4845	-0.6537
9	0.713	0.197		0.0173	-0.0209	-0.0246	0.0655	-0.0926	0.1544	-0.1719	0.2408	-0.2655	0.3504	-0.4952	0.4623	-0.8949	0.4930	-0.9956
10	0.721	0.307		0.0486	0.0100	0.0024	0.0949	-0.0595	0.1774	-0.1320	0.2647	-0.6970	0.3500	-1.3235	0.4420	-1.6977	0.4671	-1.7679
11	0.728	0.418		0.0794	0.0326	0.0250	0.1231	-0.2463	0.1950	-0.6465	0.2636	-0.9812	0.3297	-1.3195	0.3821	-1.6950	0.3972	-1.8146
12	0.619	0.000		-0.0085	-0.0362	-0.0423	0.0302	-0.0845	0.1041	-0.1504	0.2003	-0.2505	0.3048	-0.3690	0.4123	-0.5204	0.4436	-0.5621
13	0.619	0.123																
14	0.619	0.246		-0.0400	-0.0742	-0.0869	0.0031	-0.1297	0.1005	-0.2024	0.1950	-0.2480	0.3028	-0.3956	0.4054	-0.6683	0.4409	-0.7613
15	0.624	0.374		0.0006	-0.0207	-0.0398	0.0437	-0.1010	0.1355	-0.1225	0.2235	-0.4051	0.3200	-1.0271	0.4103	-1.6283	0.4404	-1.7752
16	0.632	0.484		0.0353	-0.0086	-0.0068	0.0800	-0.0280	0.1591	-0.6140	0.2337	-0.9818	0.3173	-1.2749	0.3948	-1.6954	0.4180	-1.7823
17	0.640	0.594		0.0666	0.0160	0.0140	0.1105	-0.3463	0.1792	-0.6569	0.2319	-1.0318	0.2860	-1.3747	0.3302	-1.5905	0.3412	-1.6048
18	0.530	0.000		-0.0130	-0.0419	-0.0351	0.0169	-0.0721	0.0798	-0.1274	0.1505	-0.1938	0.2555	-0.2906	0.3560	-0.4130	0.3890	-0.4440
19	0.530	0.197		-0.0164	-0.0274	-0.0406	0.0191	-0.0853	0.0805	-0.1305	0.1577	-0.1914	0.2582	-0.2917	0.3539	-0.4413	0.3840	-0.4765
20	0.530	0.395		-0.0616	-0.0854	-0.1083	-0.0117	-0.1262	0.0667	-0.1477	0.1508	-0.2029	0.2483	-0.4610	0.3436	-0.8514	0.3705	-0.9464
21	0.534	0.550		-0.0304	-0.0500	-0.0705	0.0145	-0.1029	0.0908	-0.2219	0.1678	-0.9507	0.2563	-1.2920	0.3355	-1.7709	0.3591	-1.8509
22	0.544	0.661		0.0006	-0.0311	-0.0403	0.0426	-0.1141	0.1143	-0.7593	0.1836	-0.9754	0.2530	-1.1547	0.3168	-1.4221	0.3374	-1.4328
23	0.557	0.771		0.0308	-0.0082	-0.0150	0.0760	-0.3474	0.1355	-0.5936	0.1036	-0.8793	0.2251	-1.1849	0.2572	-1.4085	0.2686	-1.4543
24	0.464	0.000		-0.0132	-0.0252	-0.0322	0.0008	-0.0615	0.0590	-0.1022	0.1312	-0.1631	0.2105	-0.2356	0.3129	-0.3322	0.3458	-0.3496
25	0.464	0.236		-0.0146	-0.0308	-0.0337	0.0111	-0.0655	0.0587	-0.1017	0.1290	-0.1549	0.2106	-0.2476	0.3133	-0.3715	0.3423	-0.4067
26	0.464	0.471		-0.0259	-0.0400	-0.0425	-0.0043	-0.0855	0.0392	-0.1079	0.1059	-0.1972	0.1893	-0.5022	0.2795	-0.9266	0.3035	-0.9148
27	0.464	0.647		-0.0758	-0.0982	-0.1027	-0.0457	-0.0846	0.0099	-0.2543	0.0656	-0.9610	0.1336	-1.2785	0.2132	-1.9605	0.2308	-1.8956
28	0.464	0.764		-0.0685	-0.0839	-0.0881	-0.0414	-0.1043	0.0099	-0.7548	0.0536	-0.7505	0.1108	-0.8508	0.1659	-0.9932	0.1053	-1.0632
29	0.464	0.882		-0.0502	-0.0491	-0.0520	-0.0299	-0.3400	0.0047	-0.4630	0.0243	-0.6568	0.0575	-0.8637	0.0839	-0.9520	0.0930	-1.0130
30	0.376	0.000		-0.0114	-0.0154	-0.0203	0.0128	-0.0367	0.0509	-0.0771	0.1074	-0.1359	0.1872	-0.2121	0.2730	-0.3110	0.2981	-0.3348
31	0.376	0.236		-0.0123	-0.0291	-0.0232	-0.0010	-0.0481	0.0449	-0.0856	0.1019	-0.1404	0.1802	-0.2302	0.2669	-0.3502	0.2949	-0.3886
32	0.376	0.471		-0.0086	-0.0220	-0.0224	0.0037	-0.0401	0.0374	-0.0794	0.0887	-0.1559	0.1509	-0.3692	0.2354	-0.6750	0.2600	-0.7340
33	0.376	0.647		-0.0075	-0.0101	-0.0108	0.0065	-0.0496	0.0317	-0.0830	0.0685	-0.4830	0.1199	-0.9555	0.1806	-1.0294	0.1988	-0.9670
34	0.376	0.764		-0.0081	-0.0086	-0.0137	0.0059	-0.0417	0.0225	-0.3257	0.0519	-0.7103	0.0959	-0.7026	0.1334	-0.7791	0.1493	-0.8228
35	0.376	0.882		-0.0152	-0.0082	-0.0117	-0.0022	-0.1487	0.0093	-0.5102	0.0179	-0.4839	0.0357	-0.5507	0.0452	-0.7828	0.0510	-0.8931
36	0.243	0.000		-0.0381	-0.0391	-0.0381	-0.0211	-0.0485	0.0174	-0.0835	0.0627	-0.1501	0.1269	-0.2300	0.2048	-0.3263	0.2342	-0.3590
37	0.243	0.236		-0.0330	-0.0337	-0.0348	-0.0136	-0.0470	0.0162	-0.0867	0.0622	-0.1555	0.1337	-0.2459	0.2028	-0.3657	0.2326	-0.3933
38	0.243	0.471		-0.0293	-0.0304	-0.0322	-0.0111	-0.0475	0.0122	-0.0959	0.0542	-0.1926	0.1220	-0.3577	0.1816	-0.5635	0.2097	-0.6100
39	0.243	0.647		-0.0247	-0.0253	-0.0269	-0.0077	-0.0502	0.0145	-0.1389	0.0380	-0.3580	0.0901	-0.6607	0.1372	-0.8449	0.1610	-0.8580
40	0.243	0.764		-0.0253	-0.0198	-0.0264	-0.0117	-0.0641	0.0116	-0.2296	0.0268	-0.5032	0.0643	-0.6431	0.1078	-0.6528	0.1236	-0.6495
41	0.243	0.882		-0.0222	-0.0162	-0.0228	-0.0132	-0.1301	0.0030	-0.3347	0.0012	-0.4175	0.0207	-0.4027	0.0423	-0.5188	0.0521	-0.5740
42	0.110	0.000		-0.2238	-0.2026	-0.2006	-0.2146	-0.1060	-0.1045	-0.2081	-0.1487	-0.2771	-0.0911	-0.3734	-0.0232	-0.4561	0.0029	-0.4712
43	0.110	0.236		-0.2117	-0.1960	-0.2020	-0.1994	-0.1769	-0.1714	-0.2065	-0.1304	-0.2762	-0.0822	-0.3694	-0.0171	-0.4020	0.0024	-0.4016
44	0.110	0.471		-0.1812	-0.1690	-0.1740	-0.1692	-0.1636	-0.1440	-0.1932	-0.1112	-0.2913	-0.0608	-0.4323	0.0013	-0.5762	0.0167	-0.5945
45	0.110	0.647		-0.1263	-0.1179	-0.1205	-0.1139	-0.1230	-0.0930	-0.1890	-0.0710	-0.3571	-0.0266	-0.5141	0.0247	-0.4023	0.0379	-0.5909
46	0.110	0.764		-0.0806	-0.0873	-0.0881	-0.0830	-0.1060	-0.0693	-0.2222	-0.0490	-0.3749	-0.0073	-0.4268	0.0286	-0.4174	0.0510	-0.3987
47	0.110	0.882		-0.0054	-0.0634	-0.0640	-0.0599	-0.1330	-0.0547	-0.2213	-0.0433	-0.2690	-0.0190	-0.2780	0.0041	-0.3228	0.0236	-0.3284
48	0.066	0.000		-0.2409	-0.2141	-0.2133	-0.2557	-0.1459	-0.5140	-0.1504	-0.5954	-0.2301	-0.5507	-0.3616	-0.4618	-0.4714	-0.4108	-0.4796
49	0.066	0.236		-0.2260	-0.1926	-0.1947	-0.2362	-0.1320	-0.4742	-0.1510	-0.5003	-0.2408	-0.4333	-0.3491	-0.3560	-0.4518	-0.3363	-0.4584
50	0.066	0.471		-0.2410	-0.2066	-0.2143	-0.2409	-0.1608	-0.4150	-0.2080	-0.2900	-0.2930	-0.1958	-0.3807	-0.1551	-0.4449	-0.1949	-0.4352
51	0.044	0.000		-0.0207	0.0016	0.0007	-0.0315	0.0429	-0.0867	0.0427	-0.0260	0.0105	0.0167	-0.0457	0.0373	-0.1247	0.0391	-0.1358
52	0.044	0.236		-0.0236	-0.0087	-0.0062	-0.0431	0.0452	-0.0813	0.0432	-0.0330	0.0087	0.0104	-0.0580	0.0241	-0.1280	0.0350	-0.1474
53	0.044	0.471		-0.0473	-0.0207	-0.0257	-0.0578	0.0230	-0.0662	0.0071	-0.0503	-0.0440	-0.0271	-0.0975	0.0026	-0.1594	0.0201	-0.1793
54	0.044	0.882		-0.1078	-0.0922	-0.1011	-0.1089	-0.1476	-0.0902	-0.1613	-0.0729	-0.1241	-0.0459	-0.1002	-0.0289	-0.1458	-0.0047	-0.1560
55	0.022	0.000		0.1025	0.1129	0.1102	0.0976	0.1395	0.0868	0.1317	0.1215	0.1083	0.1406	0.0815	0.1375	0.0145	0.1350	-0.0023
56	0.022	0.236		0.0799	0.0998	0.1005	0.0712	0.1314	0.0552	0.1206	0.0887	0.1052	0.1199	0.0757	0.1140	0.0066	0.1204	-0.0172
57	0.022	0.471		0.0608	0.0909	0.0922	0.0649	0.1249	0.0403	0.1195	0.0570	0.0902	0.0826	0.0468	0.0835	-0.0460	0.0906	-0.0676
58	0.022	0.764																
59	0.464	-0.471		-0.0275	-0.0361	-0.0391	-0.0051	-0.0825	0.0397	-0.1056	0.1083	-0.2125	0.1890	-0.4938	0.2732	-0.0380	0.3046	-0.9292
60	0.110	-0.471		-0.1818	-0.1708	-0.1700	-0.1712	-0.1630	-0.1541	-0.1900	-0.1169	-0.2943	-0.0611	-0.4322	-0.0017	-0.5658	0.0208	-0.5898

Table A-2.- (Continued).
M = 0.6

			ALPHA s															
			27.3	27.3	30.1	30.2	35.0	35.1	40.0	40.0	45.0	45.0	49.9	50.0	54.9	54.9	56.5	56.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.937	0.000	0.7012	-0.6837	0.7723	-0.8020	0.8765	-1.0780	0.9627	-1.3505	1.0783	-1.5695	1.0723	-0.7110	1.0908	-0.5998	1.0956	-0.5726
2	0.874	0.000	0.6523	-0.6476	0.7200	-0.7487	0.8254	-0.9998	0.9120	-1.1725	0.9861	-1.2964	1.0378	-0.6981	1.0740	-0.6031	1.0859	-0.5815
3	0.802	0.110	0.5811	-1.9940	0.6337	-2.1718	0.7143	-2.5295	0.7822	-2.8020	0.8481	-1.9955	0.9130	-0.6912	0.9398	-0.5978	0.9448	-0.5726
4	0.811	0.000	0.6100	-0.6036	0.6788	-0.6992	0.7820	-0.9075	0.8741	-0.9794	0.9507	-1.1486	1.0039	-0.7057	1.0555	-0.6050	1.0669	-0.5843
5	0.819	0.110	0.5879	-1.0345	0.6448	-1.2755	0.7353	-1.6912	0.8214	-1.8990	0.8953	-1.6455	0.9512	-0.7102	0.9981	-0.6092	1.0089	-0.5924
6	0.827	0.221	0.5112	-1.8663	0.5498	-2.0460	0.6164	-2.4058	0.6795	-2.5745	0.7427	-1.8758	0.8110	-0.7174	0.8479	-0.6156	0.8515	-0.5961
7	0.707	0.000																
8	0.707	0.049	0.5168	-0.6731	0.5859	-0.7757	0.6917	-0.9001	0.7836	-1.0951	0.8643	-1.1506	0.9355	-0.6993	0.9998	-0.6211	1.0152	-0.6039
9	0.713	0.197	0.5162	-1.0760	0.5810	-1.3267	0.6729	-1.7271	0.7569	-1.8561	0.8259	-1.4518	0.8957	-0.6923	0.9507	-0.6174	0.9648	-0.5973
10	0.721	0.307	0.4988	-1.8160	0.5386	-1.9563	0.6103	-2.2538	0.6969	-2.1586	0.7606	-1.5771	0.8234	-0.6976	0.8787	-0.6097	0.8830	-0.5953
11	0.728	0.418	0.4111	-1.9262	0.4627	-2.0004	0.4937	-2.3959	0.5547	-2.0401	0.6058	-1.5785	0.6766	-0.6968	0.7120	-0.6145	0.7142	-0.5982
12	0.619	0.000	0.4744	-0.5745	0.5376	-0.6472	0.6378	-0.7856	0.7328	-0.9249	0.8143	-1.0450	0.8809	-0.7227	0.9586	-0.6406	0.9724	-0.6258
13	0.619	0.123	0.4687	-0.5939	0.5348	-0.6912	0.6331	-0.8684	0.7235	-1.0420	0.8014	-1.1226	0.8792	-0.7106	0.9474	-0.6362	0.9692	-0.6175
14	0.619	0.246	0.4655	-0.8144	0.5297	-0.9922	0.6239	-1.2978	0.7101	-1.4376	0.7848	-1.2676	0.8608	-0.7050	0.9218	-0.6356	0.9423	-0.6114
15	0.624	0.374	0.4593	-1.9115	0.5108	-2.1039	0.5961	-2.4475	0.6739	-1.9525	0.7374	-1.4278	0.8877	-0.6969	0.8568	-0.6387	0.8742	-0.6001
16	0.632	0.484	0.4321	-1.8368	0.4765	-1.8249	0.5453	-1.9794	0.6094	-1.8390	0.6676	-1.4609	0.7285	-0.7068	0.7745	-0.6241	0.7870	-0.6039
17	0.640	0.594	0.3470	-1.7629	0.3758	-1.9346	0.4185	-2.2080	0.4703	-1.7520	0.5112	-1.4125	0.5784	-0.7086	0.6094	-0.6297	0.6206	-0.6116
18	0.530	0.000	0.4133	-0.4525	0.4769	-0.5017	0.5673	-0.5877	0.6564	-0.7753	0.7375	-0.9596	0.8093	-0.7470	0.8892	-0.6615	0.9134	-0.6496
19	0.530	0.197	0.4087	-0.5041	0.4716	-0.5995	0.5698	-0.7275	0.6557	-1.0140	0.7349	-1.0754	0.8071	-0.7441	0.8843	-0.6543	0.9106	-0.6430
20	0.530	0.395	0.3966	-1.0521	0.4564	-1.2553	0.5482	-1.5198	0.6281	-1.5404	0.7025	-1.2566	0.7693	-0.7372	0.8418	-0.6472	0.8613	-0.6362
21	0.534	0.550	0.3826	-1.0954	0.4292	-2.0690	0.5060	-2.2859	0.5730	-1.7407	0.6323	-1.3498	0.6915	-0.7289	0.7543	-0.6365	0.7670	-0.6276
22	0.544	0.661	0.3548	-1.4910	0.3932	-1.5851	0.4534	-1.7610	0.5116	-1.6346	0.5625	-1.3459	0.6101	-0.7304	0.6726	-0.6455	0.6801	-0.6212
23	0.552	0.771	0.2789	-1.5302	0.2992	-1.6671	0.3404	-1.7975	0.3806	-1.5420	0.4120	-1.2883	0.4699	-0.7265	0.5092	-0.6502	0.5137	-0.6227
24	0.464	0.000	0.3776	-0.3729	0.4329	-0.4206	0.5239	-0.4760	0.6124	-0.6810	0.6971	-0.9814	0.7665	-0.7713	0.8554	-0.6901	0.8764	-0.6573
25	0.464	0.236	0.3642	-0.4237	0.4210	-0.5107	0.5151	-0.6101	0.6005	-0.9365	0.6782	-1.0096	0.7541	-0.7604	0.8380	-0.6819	0.8583	-0.6595
26	0.464	0.471	0.3203	-1.0074	0.3778	-1.2036	0.4632	-1.4140	0.5387	-1.4480	0.6156	-1.2105	0.6831	-0.7527	0.7626	-0.6706	0.7808	-0.6518
27	0.464	0.647	0.2432	-1.8394	0.2917	-1.8030	0.3706	-1.4927	0.4338	-1.6093	0.4953	-1.2672	0.5592	-0.7392	0.6264	-0.6683	0.6448	-0.6408
28	0.464	0.764	0.1984	-1.1828	0.2357	-1.4009	0.3029	-1.4605	0.3632	-1.3916	0.4086	-1.2833	0.4664	-0.7309	0.5359	-0.6455	0.5536	-0.6425
29	0.464	0.882	0.1050	-1.1167	0.1293	-1.2359	0.1791	-1.4018	0.2260	-1.2300	0.2492	-1.1397	0.3062	-0.7288	0.3679	-0.6561	0.3804	-0.6444
30	0.376	0.000	0.3297	-0.3376	0.3870	-0.3733	0.4667	-0.4067	0.5534	-0.5795	0.6270	-0.7839	0.7023	-0.7725	0.7937	-0.6919	0.8150	-0.6775
31	0.376	0.236	0.3133	-0.3979	0.3601	-0.4578	0.4576	-0.4798	0.5366	-0.7819	0.6158	-0.8838	0.6889	-0.7778	0.7704	-0.6784	0.8008	-0.6677
32	0.376	0.471	0.2770	-0.7627	0.3274	-0.8802	0.4122	-0.9237	0.4830	-1.2285	0.5538	-1.0716	0.6153	-0.7694	0.6939	-0.6792	0.7217	-0.6550
33	0.376	0.647	0.2119	-0.9855	0.2539	-1.0401	0.3299	-1.0540	0.3874	-1.3963	0.4428	-1.1508	0.4925	-0.7598	0.5653	-0.6723	0.5875	-0.6529
34	0.376	0.764	0.1652	-0.8851	0.1972	-0.9448	0.2667	-0.9874	0.3171	-1.2028	0.3558	-1.0739	0.4060	-0.7398	0.4779	-0.6773	0.4898	-0.6459
35	0.376	0.882	0.0609	-0.9567	0.0874	-1.0453	0.1522	-1.0007	0.1869	-1.0241	0.2022	-1.0000	0.2442	-0.7422	0.3036	-0.6784	0.3172	-0.6479
36	0.243	0.000	0.2664	-0.3669	0.3005	-0.4053	0.3759	-0.5136	0.4504	-0.4910	0.5199	-0.6439	0.5838	-0.7553	0.6760	-0.6889	0.7051	-0.6514
37	0.243	0.236	0.2539	-0.4202	0.3014	-0.4712	0.3712	-0.5770	0.4423	-0.6245	0.5097	-0.7160	0.5737	-0.7586	0.6605	-0.6819	0.6818	-0.6601
38	0.243	0.471	0.2250	-0.6650	0.2718	-0.7499	0.3347	-0.8714	0.3959	-0.9819	0.4572	-0.8663	0.5089	-0.7487	0.5947	-0.6774	0.6160	-0.6518
39	0.243	0.647	0.1749	-0.8992	0.2132	-0.8951	0.2680	-1.0217	0.3187	-1.0910	0.3606	-0.9243	0.3947	-0.7438	0.4748	-0.6712	9.4940	-0.6466
40	0.243	0.764	0.1417	-0.6784	0.1696	-0.7164	0.2190	-0.8235	0.2698	-0.9005	0.3018	-0.8434	0.3180	-0.7183	0.3910	-0.6657	0.4076	-0.6436
41	0.243	0.882	0.0472	-0.6483	0.0805	-0.7173	0.1326	-0.7969	0.1553	-0.7856	0.1729	-0.7755	0.1684	-0.7218	0.2335	-0.6708	0.2440	-0.6449
42	0.110	0.000	0.0325	-0.4639	0.0602	-0.4780	0.0995	-0.5190	0.1535	-0.5266	0.2099	-0.5442	0.2469	-0.6883	0.3496	-0.6544	0.3792	-0.6211
43	0.110	0.236	0.0380	-0.5071	0.0720	-0.5304	0.1082	-0.5672	0.1611	-0.5930	0.2106	-0.5060	0.2439	-0.6936	0.3441	-0.6473	0.3740	-0.6330
44	0.110	0.471	0.0516	-0.6330	0.0924	-0.6632	0.1246	-0.7163	0.1705	-0.7820	0.2176	-0.6778	0.2364	-0.6861	0.3329	-0.6408	0.3661	-0.6241
45	0.110	0.647	0.0440	-0.6037	0.1073	-0.5816	0.1297	-0.6801	0.1640	-0.7724	0.2030	-0.6891	0.2043	-0.6752	0.2864	-0.6307	0.3167	-0.6196
46	0.110	0.764	0.0753	-0.3912	0.1145	-0.3960	0.1259	-0.5090	0.1532	-0.6000	0.1829	-0.6254	0.1703	-0.6637	0.2445	-0.6218	0.2640	-0.5964
47	0.110	0.882	0.0489	-0.3610	0.0862	-0.3974	0.0798	-0.4799	0.0967	-0.5348	0.1087	-0.5704	0.0719	-0.6642	0.1288	-0.6227	0.1438	-0.5994
48	0.066	0.000	-0.3898	-0.4663	-0.3571	-0.4620	-0.2806	-0.4754	-0.1993	-0.5925	-0.1104	-0.4025	-0.0762	-0.6468	0.0571	-0.6013	0.0968	-0.5813
49	0.066	0.236	-0.3545	-0.4589	-0.2941	-0.4570	-0.2199	-0.4956	-0.1424	-0.5866	-0.0681	-0.5144	-0.0370	-0.6396	0.0810	-0.6115	0.1208	-0.5802
50	0.066	0.471	-0.1942	-0.4303	-0.1210	-0.4105	-0.0734	-0.4816	-0.0306	-0.5937	0.0152	-0.5596	0.0024	-0.6355	0.0872	-0.6089	0.1162	-0.5757
51	0.044	0.000	0.0731	-0.1205	0.0729	-0.1562	0.0520	-0.2176	0.0299	-0.2352	0.0044	-0.3106	-0.0430	-0.5809	0.0335	-0.5614	0.0586	-0.5434
52	0.044	0.236	0.0707	-0.1533	0.0691	-0.2035	0.0627	-0.2670	0.0410	-0.2815	0.0072	-0.3644	-0.0364	-0.5867	0.0371	-0.5525	0.0622	-0.5406
53	0.044	0.471	0.0558	-0.2071	0.0748	-0.2657	0.0684	-0.3342	0.0496	-0.3768	0.0221	-0.4580	-0.0213	-0.5937	0.0522	-0.5635	0.0754	-0.5456
54	0.044	0.882	0.0255	-0.1892	0.0609	-0.2396	0.0530	-0.2626	0.0377	-0.3367	0.0309	-0.4617	-0.0235	-0.6190	0.0303	-0.5870	0.0412	-0.5641
55	0.022	0.000	0.1505	0.0034	0.1467	-0.0417	0.1054	-0.1375	0.0369	-0.0822	-0.0479	-0.2062	-0.1393	-0.5450	-0.0766	-0.5352	-0.0518	-0.5225
56	0.022	0.236	0.1427	-0.0251	0.1400	-0.0840	0.1149	-0.1007	0.0512	-0.1306	-0.0326	-0.2576	-0.1329	-0.5441	-0.0732	-0.5339	-0.0506	-0.5146
57	0.022	0.471	0.1146	-0.0992	0.1405	-0.1796	0.1159	-0.2736	0.0557	-0.2565	-0.0075	-0.3479	-0.1162	-0.5392	-0.0587	-0.5343	-0.0400	-0.5101
58	0.022	0.764	0.0661	-0.1144	0.1099	-0.1725	0.0753	-0.2346	0.0260	-0.3109	-0.0185	-0.4305	-0.1124	-0.5464	-0.0684	-0.5299	-0.0506	-0.5175
59	0.464	-0.471	0.3361	-0.9254	0.3979	-1.0634	0.4787	-1.2784	0.5565	-1.3467	0.6258	-1.1800	0.6939	-0.7649	0.7739	-0.6713	0.7946	-0.6537
60	0.110	-0.471	0.0624	-0.5596	0.0810	-0.5057	0.1186	-0.6212	0.1760	-0.7077	0.2270	-0.6392	0.2532	-0.6960	0.3450	-0.6466	0.3769	-0.6235

Table A-2.- (Continued).

M = 0.8

TUBE	X/L	Y/B/2	ALPHA = -2.7 WINDWARD	-2.8 LEEWARD	0.2 WINDWARD	0.2 LEEWARD	5.2 WINDWARD	5.1 LEEWARD	10.1 WINDWARD	10.1 LEEWARD	15.1 WINDWARD	15.1 LEEWARD	20.0 WINDWARD	20.0 LEEWARD	25.0 WINDWARD	25.0 LEEWARD	26.5 WINDWARD	26.5 LEEWARD
1	0.937	0.000	0.0498	0.1562	0.1158	0.1163	0.2059	0.0420	0.3060	-0.0450	0.4221	-0.1463	0.5508	-0.2808	0.6810	-0.4446	0.7218	-0.4931
2	0.874	0.000	0.0376	0.1231	0.0839	0.0828	0.1704	0.0114	0.2689	-0.0741	0.3793	-0.1809	0.5011	-0.3158	0.6262	-0.4741	0.6640	-0.5254
3	0.882	0.110	0.0430	0.1366	0.0925	0.0925	0.1795	0.0187	0.2712	-0.0374	0.3682	-0.4327	0.4761	-1.0260	0.5822	-1.3630	0.6159	-1.4330
4	0.811	0.000	0.0173	0.0981	0.0562	0.0559	0.1430	-0.0093	0.2337	-0.0977	0.3401	-0.2086	0.4589	-0.3300	0.5811	-0.4810	0.6160	-0.5315
5	0.819	0.110	0.0236	0.1094	0.0605	0.0656	0.1534	0.0016	0.2416	-0.0847	0.3401	-0.1895	0.4524	-0.4201	0.5645	-0.7471	0.6085	-0.8555
6	0.827	0.221	0.0305	0.1226	0.0757	0.0740	0.1606	0.0290	0.2473	-0.4226	0.3317	-0.8440	0.4254	-1.0771	0.5196	-1.3084	0.5480	-1.3784
7	0.707	0.000																
8	0.707	0.049	-0.0911	-0.0136	-0.0543	-0.0507	0.0350	-0.1079	0.1329	-0.2201	0.2318	-0.3203	0.3516	-0.4590	0.4701	-0.6608	0.5075	-0.7197
9	0.713	0.197	-0.0541	0.0234	-0.0173	-0.0194	0.0721	-0.0803	0.1651	-0.1702	0.2612	-0.2771	0.3733	-0.5382	0.4837	-0.9293	0.5184	-1.0405
10	0.721	0.307	-0.0790	0.0558	0.0159	0.0150	0.1001	-0.0519	0.1056	-0.1364	0.2789	-0.7374	0.3777	-1.1723	0.4713	-1.3527	0.5038	-1.4171
11	0.729	0.418	-0.0054	0.0071	0.0399	0.0406	0.1308	-0.1963	0.2062	-0.5911	0.2798	-0.8033	0.3561	-1.1538	0.4243	-1.3968	0.4494	-1.4595
12	0.619	0.000	-0.0605	-0.0052	-0.0343	-0.0306	0.0346	-0.0834	0.1170	-0.1711	0.2135	-0.2754	0.3216	-0.4298	0.4259	-0.6013	0.4639	-0.6555
13	0.619	0.123																
14	0.619	0.246	-0.0003	-0.0361	-0.0702	-0.0031	0.0133	-0.1331	0.1075	-0.2210	0.2060	-0.2731	0.3158	-0.4796	0.4257	-0.7807	0.4586	-0.8826
15	0.626	0.374	-0.0730	0.0095	-0.0317	-0.0337	0.0540	-0.1043	0.1415	-0.1336	0.2349	-0.5234	0.3362	-1.0958	0.4329	-1.4542	0.4612	-1.5156
16	0.632	0.484	-0.0461	0.0405	0.0020	-0.0039	0.0051	-0.0395	0.1605	-0.6324	0.2486	-0.9219	0.3341	-1.1691	0.4155	-1.3908	0.4453	-1.4540
17	0.640	0.594	-0.0327	0.0736	0.0255	0.0286	0.1160	-0.3096	0.1866	-0.6251	0.2463	-0.9545	0.3071	-1.2416	0.3616	-1.4726	0.3836	-1.5438
18	0.530	0.000	-0.0687	-0.0152	-0.0308	-0.0399	0.0164	-0.0840	0.0850	-0.1413	0.1693	-0.2296	0.2677	-0.3725	0.3687	-0.5606	0.4027	-0.6152
19	0.530	0.197	-0.0731	-0.0138	-0.0409	-0.0395	0.0220	-0.0944	0.0831	-0.1465	0.1498	-0.2261	0.2682	-0.3717	0.3666	-0.5919	0.4002	-0.6653
20	0.538	0.395	-0.1104	-0.0592	-0.1029	-0.1020	-0.0003	-0.1331	0.0708	-0.1672	0.1629	-0.2556	0.2614	-0.5921	0.3590	-1.0231	0.3928	-1.1338
21	0.534	0.550	-0.1056	-0.0241	-0.0627	-0.0613	0.0196	-0.1098	0.0971	-0.2979	0.1828	-0.9744	0.2723	-1.1922	0.3562	-1.4892	0.3831	-1.5576
22	0.544	0.661	-0.0761	0.0104	-0.0304	-0.0311	0.0544	-0.1262	0.1248	-0.6988	0.1956	-0.9044	0.2696	-1.1650	0.3411	-1.3910	0.3604	-1.4656
23	0.552	0.771	-0.0844	0.0452	-0.0054	-0.0046	0.0074	-0.3361	0.1462	-0.5939	0.1946	-0.8478	0.2448	-1.1395	0.2867	-1.3814	0.2987	-1.4524
24	0.464	0.000	-0.0503	-0.0175	-0.0371	-0.0266	0.0095	-0.0640	0.0612	-0.1059	0.1360	-0.1660	0.2275	-0.2522	0.3240	-0.3652	0.3524	-0.4181
25	0.464	0.236	-0.0610	-0.0241	-0.0332	-0.0339	0.0119	-0.0670	0.0600	-0.1083	0.1335	-0.1663	0.2242	-0.2698	0.3180	-0.3975	0.3452	-0.4818
26	0.464	0.471	-0.0807	-0.0463	-0.0561	-0.0564	-0.0120	-0.0836	0.0363	-0.1138	0.1067	-0.2267	0.1908	-0.4887	0.2787	-0.8821	0.3053	-1.0172
27	0.464	0.647	-0.0898	-0.1037	-0.1310	-0.1293	-0.0577	-0.0769	0.0015	-0.3025	0.0654	-0.9611	0.1401	-1.2425	0.2138	-1.4496	0.2356	-1.4070
28	0.464	0.764	-0.0828	-0.1016	-0.1312	-0.1203	-0.0595	-0.1046	-0.0007	-0.7060	0.0526	-0.7989	0.1122	-1.0064	0.1774	-1.2509	0.1943	-1.3362
29	0.464	0.882	-0.0872	-0.0685	-0.0651	-0.0662	-0.0306	-0.3421	-0.0010	-0.4802	0.0264	-0.6907	0.0655	-0.9540	0.1018	-1.1366	0.1113	-1.2355
30	0.376	0.000	-0.0291	-0.0076	-0.0117	-0.0124	0.0178	-0.0363	0.0530	-0.0719	0.1136	-0.1266	0.1932	-0.1968	0.2801	-0.2610	0.3067	-0.3041
31	0.376	0.236	-0.0363	-0.0129	-0.0141	-0.0111	0.0078	-0.0430	0.0495	-0.0804	0.1085	-0.1310	0.1852	-0.2198	0.2703	-0.3158	0.2966	-0.3597
32	0.376	0.471	-0.0345	-0.0085	-0.0004	-0.0080	0.0119	-0.0440	0.0454	-0.0733	0.0953	-0.1382	0.1613	-0.3675	0.2383	-0.5778	0.2617	-0.6670
33	0.376	0.647	-0.0348	-0.0048	-0.0057	-0.0070	0.0128	-0.0471	0.0373	-0.0727	0.0726	-0.4909	0.1224	-0.7807	0.1847	-0.8662	0.2011	-0.9689
34	0.376	0.764	-0.0326	-0.0002	-0.0021	-0.0071	0.0137	-0.0450	0.0323	-0.3462	0.0558	-0.6603	0.0926	-0.5956	0.1420	-0.8486	0.1571	-0.9805
35	0.376	0.882	-0.0454	-0.0036	0.0009	-0.0046	0.0007	-0.1331	0.0159	-0.5156	0.0196	-0.4593	0.0278	-0.6473	0.0523	-0.9377	0.0591	-0.9839
36	0.243	0.000	-0.0337	-0.0200	-0.0233	-0.0257	-0.0030	-0.0443	0.0297	-0.0837	0.0812	-0.1540	0.1439	-0.2404	0.2184	-0.3288	0.2386	-0.3691
37	0.243	0.236	-0.0363	-0.0208	-0.0268	-0.0199	-0.0013	-0.0415	0.0300	-0.0846	0.0808	-0.1570	0.1421	-0.2559	0.2086	-0.3649	0.2388	-0.4070
38	0.243	0.471	-0.0372	-0.0196	-0.0241	-0.0209	-0.0020	-0.0446	0.0241	-0.0959	0.0685	-0.1974	0.1269	-0.3762	0.1866	-0.5488	0.2064	-0.4161
39	0.243	0.647	-0.0393	-0.0209	-0.0232	-0.0185	-0.0030	-0.0504	0.0173	-0.1431	0.0504	-0.3709	0.0907	-0.7081	0.1366	-0.6853	0.1521	-0.7136
40	0.243	0.764	-0.0461	-0.0186	-0.0219	-0.0195	-0.0034	-0.0630	0.0132	-0.2390	0.0381	-0.5186	0.0686	-0.6290	0.1048	-0.5781	0.1217	-0.6317
41	0.243	0.882	-0.0613	-0.0195	-0.0216	-0.0206	-0.0081	-0.1312	0.0006	-0.3451	0.0091	-0.4257	0.0228	-0.4493	0.0378	-0.5799	0.0473	-0.6329
42	0.110	0.000	-0.1652	-0.1326	-0.1327	-0.1331	-0.1192	-0.1475	-0.1082	-0.1640	-0.0293	-0.2083	-0.0123	-0.2677	0.0062	-0.3340	0.0160	-0.3406
43	0.110	0.236	-0.1350	-0.1294	-0.1274	-0.1247	-0.1132	-0.1435	-0.1016	-0.1606	-0.0287	-0.2062	-0.0091	-0.2019	0.0046	-0.3677	0.0178	-0.3747
44	0.110	0.471	-0.1266	-0.1106	-0.1173	-0.1158	-0.1028	-0.1345	-0.0935	-0.1543	-0.0359	-0.2377	-0.0147	-0.3675	0.0029	-0.5285	0.0173	-0.5109
45	0.110	0.647	-0.1028	-0.0963	-0.0950	-0.0921	-0.0815	-0.1135	-0.0794	-0.1715	-0.0385	-0.3402	-0.0195	-0.4747	-0.0002	-0.5449	0.0155	-0.5728
46	0.110	0.764	-0.0855	-0.0799	-0.0754	-0.0799	-0.0680	-0.1097	-0.0608	-0.2275	-0.0421	-0.3713	-0.0255	-0.3794	0.0011	-0.3647	0.0173	-0.3961
47	0.110	0.882	-0.0849	-0.0690	-0.0601	-0.0657	-0.0577	-0.1433	-0.0666	-0.2378	-0.0560	-0.2766	-0.0457	-0.2860	-0.0108	-0.3464	-0.0032	-0.3987
48	0.066	0.000	-0.1821	-0.2003	-0.1780	-0.1832	-0.1966	-0.1918	-0.3277	-0.2113	-0.1443	-0.2565	-0.2488	-0.2718	-0.5650	-0.2962	-0.6286	-0.3169
49	0.066	0.236	-0.1884	-0.1867	-0.1728	-0.1745	-0.1892	-0.1769	-0.3165	-0.1935	-0.1957	-0.2488	-0.3022	-0.2661	-0.5829	-0.2931	-0.6274	-0.3106
50	0.066	0.471	-0.2106	-0.2181	-0.2042	-0.2103	-0.2224	-0.2075	-0.3568	-0.2256	-0.3076	-0.2538	-0.3498	-0.2577	-0.6288	-0.2713	-0.6453	-0.2866
51	0.044	0.000	-0.0675	-0.0733	-0.0578	-0.0645	-0.0707	-0.0664	-0.1854	-0.0847	-0.1657	-0.1443	-0.2225	-0.1869	-0.2998	-0.2336	-0.3084	-0.2556
52	0.044	0.236	-0.0640	-0.0702	-0.0583	-0.0647	-0.0707	-0.0624	-0.1984	-0.0871	-0.2027	-0.1497	-0.2334	-0.1943	-0.2688	-0.2444	-0.2748	-0.2806
53	0.044	0.471	-0.0863	-0.0779	-0.0633	-0.0741	-0.0731	-0.0685	-0.1597	-0.0996	-0.2064	-0.1601	-0.1803	-0.2057	-0.1461	-0.2451	-0.1288	-0.2675
54	0.044	0.882	-0.1263	-0.1136	-0.1027	-0.1151	-0.1026	-0.1569	-0.1174	-0.1593	-0.1111	-0.1140	-0.1048	-0.1127	-0.0757	-0.1808	-0.0604	-0.2209
55	0.022	0.000	-0.0050	-0.0199	-0.0013	-0.0073	-0.0086	-0.0067	-0.0615	-0.0340	-0.1397	-0.0921	-0.1324	-0.1605	-0.0178	-0.2292	-0.0328	-0.2699
56	0.022	0.236	0.0019	-0.0205	-0.0003	-0.0085	-0.0038	-0.0079	-0.0624	-0.0378	-0.1499	-0.0923	-0.1244	-0.1767	-0.0138	-0.2505	-0.0237	-0.2954
57	0.022	0.471	0.0042	-0.0227	-0.0034	-0.0103	0.0025	-0.0324	-0.0331	-0.0456	-0.0969	-0.1067	-0.0721	-0.2002	-0.0016	-0.2594	0.0020	-0.3036
58	0.022	0.764																
59	0.464	-0.471	-0.0749	-0.0503	-0.0546	-0.0512	-0.0163	-0.0011	0.0355	-0.1201	0.1057	-0.2309	0.1926	-0.5035	0.2817	-0.8490	0.3168	-0.9872
60	0.110	-0.471	-0.1309	-0.1231	-0.1212	-0.1151	-0.1067	-0.1330	-0.0970	-0.1612	-0.0487	-0.2461	-0.0187	-0.3682	0.0067	-0.5251	0.0265	-0.5244

Table A-2.- (Continued).
M = 0.8

			ALPHA =													
			27.1	27.2	29.9	29.9	34.9	34.9	39.9	39.9	44.8	44.9	49.8	49.8	54.7	54.7	56.3	56.3
TUBE	X/L	Y/(B/2)	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.037	0.000	0.7446	-0.5115	0.8175	-0.6348	0.9295	-0.8476	1.0246	-1.0524	1.0986	-1.1050	1.1514	-0.6888	1.1693	-0.6289	1.1751	-0.6124
2	0.074	0.000	0.6918	-0.5455	0.7603	-0.6457	0.8713	-0.8503	0.9659	-1.0160	1.0472	-1.0847	1.1150	-0.6934	1.1506	-0.6244	1.1628	-0.6144
3	0.082	0.110	0.6346	-1.4589	0.6914	-1.5575	0.7849	-1.7254	0.8684	-1.5062	0.9418	-1.0877	1.0009	-0.6832	1.0297	-0.6166	1.0375	-0.6099
4	0.011	0.000	0.6404	-0.5303	0.7087	-0.6405	0.8217	-0.8140	0.9237	-0.9602	1.0034	-1.0415	1.0750	-0.6864	1.1295	-0.6218	1.1423	-0.6151
5	0.019	0.110	0.6192	-0.9400	0.6842	-1.1317	0.7875	-1.3671	0.8828	-1.3731	0.9590	-1.0595	1.0295	-0.6813	1.0784	-0.6274	1.0908	-0.6216
6	0.027	0.221	0.5590	-1.4351	0.6107	-1.5534	0.6966	-1.7059	0.7755	-1.4869	0.8415	-1.0818	0.9010	-0.6882	0.9407	-0.6332	0.9468	-0.6260
7	0.707	0.000																
8	0.707	0.049	0.5352	-0.7244	0.6080	-0.8241	0.7210	-1.0076	0.8271	-1.0698	0.9145	-0.9560	0.9997	-0.6934	1.0710	-0.6299	1.0958	-0.6297
9	0.713	0.197	0.5408	-1.1038	0.6066	-1.2690	0.7111	-1.5103	0.8072	-1.3656	0.8868	-1.0049	0.9640	-0.6846	1.0265	-0.6212	1.0498	-0.6242
10	0.721	0.307	0.5227	-1.4429	0.5772	-1.5491	0.6712	-1.7169	0.7607	-1.4210	0.8309	-1.0276	0.9015	-0.6900	0.9597	-0.6203	0.9723	-0.6206
11	0.728	0.410	0.4622	-1.5116	0.5017	-1.6197	0.5759	-1.7598	0.6497	-1.4131	0.7054	-1.0435	0.7692	-0.7081	0.8146	-0.6363	0.8235	-0.6386
12	0.619	0.000	0.4916	-0.6776	0.5569	-0.8888	0.6658	-1.0029	0.7705	-1.0116	0.8553	-0.9134	0.9472	-0.7221	1.0312	-0.6517	1.0539	-0.6436
13	0.619	0.123	0.4899	-0.7899	0.5561	-0.8499	0.6615	-1.0537	0.7622	-1.1080	0.8546	-0.9228	0.9400	-0.7019	1.0189	-0.6410	1.0482	-0.6340
14	0.619	0.246	0.4805	-0.9503	0.5519	-1.1298	0.6558	-1.3530	0.7536	-1.2047	0.8404	-0.9574	0.9235	-0.7032	0.9973	-0.6383	1.0256	-0.6301
15	0.626	0.374	0.4878	-1.5163	0.5410	-1.5971	0.6360	-1.7319	0.7250	-1.3745	0.8013	-0.9846	0.8767	-0.6924	0.9401	-0.6336	0.9651	-0.6256
16	0.632	0.484	0.4446	-1.4825	0.5078	-1.5057	0.5919	-1.7192	0.6755	-1.3726	0.7422	-0.9818	0.8063	-0.6888	0.8679	-0.6329	0.8812	-0.6335
17	0.640	0.594	0.3963	-1.5556	0.4260	-1.6620	0.4938	-1.8033	0.5609	-1.3589	0.6159	-0.9853	0.6708	-0.6944	0.7170	-0.6405	0.7203	-0.6413
18	0.530	0.000	0.4331	-0.6248	0.4809	-0.7228	0.5928	-0.6493	0.6970	-0.9537	0.7852	-0.8621	0.8717	-0.7240	0.9623	-0.6617	0.9918	-0.6640
19	0.530	0.197	0.4303	-0.7061	0.4865	-0.8499	0.5898	-0.7770	0.6935	-1.1026	0.7826	-0.8933	0.8742	-0.7113	0.9592	-0.6616	0.9933	-0.6640
20	0.530	0.395	0.4211	-1.2244	0.4725	-1.3824	0.5738	-1.3669	0.6706	-1.2851	0.7518	-0.9287	0.8392	-0.7088	0.9186	-0.6568	0.9588	-0.6575
21	0.536	0.550	0.4040	-1.5961	0.4490	-1.6639	0.5390	-1.4919	0.6225	-1.3202	0.6945	-0.9432	0.7693	-0.6966	0.8369	-0.6455	0.8654	-0.6455
22	0.544	0.661	0.3806	-1.5165	0.4196	-1.6242	0.4993	-1.4152	0.5684	-1.3071	0.6330	-0.9445	0.7087	-0.6952	0.7661	-0.6482	0.7832	-0.6455
23	0.552	0.771	0.3115	-1.4563	0.3393	-1.5748	0.4035	-1.4613	0.4553	-1.2930	0.5091	-0.9454	0.5662	-0.7081	0.6147	-0.6542	0.6308	-0.6549
24	0.464	0.000	0.3951	-0.4164	0.4416	-0.5214	0.5441	-0.2056	0.6452	-0.8901	0.7325	-0.8559	0.8273	-0.7426	0.9242	-0.6803	0.9543	-0.6783
25	0.464	0.236	0.3748	-0.4898	0.4321	-0.6433	0.5314	-0.4668	0.6303	-1.0482	0.7206	-0.8568	0.8134	-0.7314	0.9059	-0.6704	0.9394	-0.6762
26	0.464	0.471	0.3346	-1.1089	0.3806	-1.2736	0.4828	-1.1727	0.5744	-1.2403	0.6422	-0.8963	0.7462	-0.7204	0.8376	-0.6660	0.8688	-0.6705
27	0.464	0.647	0.2605	-1.4853	0.3054	-1.5925	0.3952	-1.5291	0.4760	-1.2891	0.5536	-0.9083	0.6328	-0.7109	0.7156	-0.6552	0.7438	-0.6657
28	0.464	0.764	0.2189	-1.3627	0.2552	-1.4717	0.3388	-1.0684	0.4058	-1.2170	0.4881	-0.8923	0.5577	-0.7124	0.6318	-0.6568	0.6561	-0.6589
29	0.464	0.882	0.1312	-1.2858	0.1551	-1.4587	0.2387	-1.0607	0.2832	-1.1723	0.3468	-0.8913	0.4146	-0.7118	0.4785	-0.6612	0.4992	-0.6667
30	0.376	0.000	0.3184	-0.3836	0.3985	-0.3436	0.4817	-0.6498	0.5782	-0.7854	0.6661	-0.7993	0.7598	-0.7598	0.8558	-0.6927	0.8937	-0.6939
31	0.376	0.236	0.3298	-0.3823	0.3753	-0.4582	0.4679	-0.8752	0.5616	-0.9201	0.6490	-0.8167	0.7422	-0.7404	0.8384	-0.6831	0.8796	-0.6931
32	0.376	0.471	0.2957	-0.7511	0.3361	-0.9163	0.4236	-1.2522	0.5077	-1.1272	0.5988	-0.8468	0.6783	-0.7413	0.7698	-0.6776	0.8104	-0.6867
33	0.376	0.647	0.2381	-0.9592	0.2652	-1.0926	0.3447	-1.3136	0.4147	-1.2088	0.4873	-0.8888	0.5669	-0.7335	0.6518	-0.6717	0.6873	-0.6791
34	0.376	0.764	0.1771	-1.0288	0.2118	-1.1768	0.2886	-1.2768	0.3488	-1.1386	0.4209	-0.8488	0.4872	-0.7313	0.5698	-0.6694	0.5964	-0.6667
35	0.376	0.882	0.0827	-1.0497	0.1076	-1.1599	0.1707	-1.1268	0.2185	-1.0729	0.2814	-0.8448	0.3409	-0.7353	0.4139	-0.6814	0.4381	-0.6756
36	0.243	0.000	0.2703	-0.3574	0.3087	-0.4048	0.3857	-0.4421	0.4703	-0.6151	0.5492	-0.7114	0.6363	-0.7564	0.7434	-0.6946	0.7802	-0.6859
37	0.243	0.236	0.2657	-0.4882	0.3087	-0.4788	0.3771	-0.5261	0.4616	-0.7066	0.5392	-0.7195	0.6262	-0.7617	0.7308	-0.6938	0.7686	-0.6940
38	0.243	0.471	0.2382	-0.6187	0.2789	-0.7188	0.3416	-0.8411	0.4147	-0.9249	0.4877	-0.7463	0.5688	-0.7376	0.6661	-0.6864	0.7047	-0.6858
39	0.243	0.647	0.1867	-0.7886	0.2119	-0.8148	0.2732	-0.9628	0.3294	-1.0285	0.3932	-0.7574	0.4627	-0.7298	0.5518	-0.6795	0.5884	-0.6828
40	0.243	0.764	0.1494	-0.6548	0.1600	-0.7670	0.2271	-0.9001	0.2728	-0.9360	0.3276	-0.7446	0.3847	-0.7300	0.4730	-0.6787	0.5016	-0.6778
41	0.243	0.882	0.0772	-0.6644	0.0880	-0.7519	0.1395	-0.8770	0.1648	-0.8675	0.2036	-0.7429	0.2480	-0.7353	0.3254	-0.6856	0.3502	-0.6840
42	0.110	0.000	0.0983	-0.3307	0.0842	-0.3898	0.1152	-0.3746	0.1830	-0.4975	0.2350	-0.6102	0.3191	-0.7202	0.4350	-0.6722	0.4725	-0.6697
43	0.110	0.236	0.0496	-0.3014	0.0606	-0.4451	0.1141	-0.4401	0.1751	-0.5639	0.2311	-0.6317	0.3179	-0.7183	0.4292	-0.6658	0.4736	-0.6715
44	0.110	0.471	0.0949	-0.5340	0.0730	-0.6105	0.1098	-0.6626	0.1643	-0.7563	0.2159	-0.6528	0.3004	-0.7134	0.4072	-0.6568	0.4517	-0.6607
45	0.110	0.647	0.0535	-0.5152	0.0693	-0.5319	0.0928	-0.7174	0.1361	-0.7952	0.1777	-0.6576	0.2502	-0.7049	0.3505	-0.6501	0.3917	-0.6528
46	0.110	0.764	0.0688	-0.4135	0.0712	-0.5153	0.0857	-0.5975	0.1152	-0.6885	0.1502	-0.6458	0.2062	-0.6911	0.3073	-0.6491	0.3422	-0.6428
47	0.110	0.882	0.0459	-0.6304	0.0502	-0.5416	0.0433	-0.5626	0.0560	-0.6224	0.0727	-0.6443	0.1088	-0.6954	0.1921	-0.6579	0.2241	-0.6512
48	0.066	0.000	-0.5761	-0.3017	-0.6054	-0.3264	-0.6213	-0.4178	-0.5883	-0.6017	-0.5403	-0.5878	-0.3892	-0.6820	-0.1160	-0.6427	0.0178	-0.6351
49	0.066	0.236	-0.5604	-0.3074	-0.5893	-0.3392	-0.5963	-0.4499	-0.5584	-0.6198	-0.5204	-0.5988	-0.3409	-0.6719	-0.0708	-0.6284	0.0072	-0.6377
50	0.066	0.471	-0.5493	-0.2867	-0.5676	-0.3214	-0.5401	-0.4762	-0.4821	-0.6530	-0.4049	-0.6107	-0.1639	-0.6675	0.0806	-0.6253	0.1363	-0.6334
51	0.044	0.000	-0.1969	-0.2353	-0.1815	-0.2787	-0.0998	-0.3478	-0.0188	-0.4488	0.0028	-0.5591	0.0585	-0.6288	0.1428	-0.5922	0.1701	-0.6087
52	0.044	0.236	-0.1636	-0.2691	-0.1215	-0.2974	-0.0497	-0.3969	0.0085	-0.4889	0.0037	-0.5760	0.0455	-0.6216	0.1379	-0.5969	0.1781	-0.5976
53	0.044	0.471	-0.0374	-0.2795	-0.0092	-0.3157	0.0064	-0.4582	0.0073	-0.5588	-0.0133	-0.6053	0.0437	-0.6306	0.1486	-0.6077	0.1817	-0.6085
54	0.044	0.882	0.0128	-0.2588	0.0137	-0.2935	-0.0123	-0.3537	-0.0160	-0.4850	-0.0531	-0.6015	-0.0112	-0.6496	0.0724	-0.6175	0.1069	-0.6142
55	0.022	0.000	0.0528	-0.2503	0.0375	-0.2942	0.0041	-0.3611	-0.0415	-0.3985	-0.0919	-0.5396	-0.0463	-0.5959	0.0360	-0.5826	0.0685	-0.5908
56	0.022	0.236	0.0784	-0.2867	0.0598	-0.3376	0.0287	-0.4128	-0.0265	-0.4367	-0.0866	-0.5501	-0.0462	-0.5927	0.0351	-0.5786	0.0608	-0.5865
57	0.022	0.471	0.0948	-0.3698	0.0665	-0.3637	0.0383	-0.4765	-0.0161	-0.5077	-0.0864	-0.5628	-0.0468	-0.5863	0.0358	-0.5697	0.0674	-0.5814
58	0.022	0.764	0.0159	-0.2263	0.0342	-0.2858	0.0078	-0.4121	-0.0321	-0.5130	-0.0926	-0.5811	-0.0642	-0.5827	0.0046	-0.5705	0.0337	-0.5787
59	0.464	-0.471	0.3498	-0.9424	0.4046	-1.1199	0.4902	-0.9037	0.5869	-1.2218	0.6722	-0.9021	0.7623	-0.7334	0.8475	-0.4805	0.8822	-0.6821
60	0.110	-0.471	0.0608	-0.4988	0.0707	-0.5261	0.1092	-0.5566	0.1743	-0.6926	0.2267	-0.6372	0.3127	-0.7092	0.4105	-0.6708	0.4596	-0.6664

Table A-2.- (Continued).
M = 0.9

			ALPHA =															
			-2.0	-2.0	0.1	0.1	5.0	5.0	10.0	10.0	15.0	15.0	19.9	19.9	24.9	24.9	26.4	26.4
TAP	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.037	0.000	0.0983	0.1764	0.1362	0.1375	0.2162	0.0626	0.3136	-0.0085	0.4370	-0.1026	0.5720	-0.1946	0.7066	-0.3292	0.7453	-0.3792
2	0.074	0.000	0.0642	0.1410	0.1088	0.1106	0.1793	0.0264	0.2739	-0.0466	0.3939	-0.1479	0.5198	-0.2434	0.6469	-0.3908	0.6844	-0.4351
3	0.082	0.110	0.0681	0.1514	0.1093	0.1097	0.1890	0.0343	0.2771	-0.0062	0.3853	-0.3863	0.4968	-0.8491	0.6092	-1.1342	0.6427	-1.1743
4	0.011	0.000	0.0350	0.1157	0.0725	0.0715	0.1517	0.0031	0.2416	-0.0732	0.3462	-0.1686	0.4778	-0.2724	0.5997	-0.4096	0.6408	-0.4524
5	0.019	0.110	0.0459	0.1263	0.0854	0.0832	0.1639	0.0110	0.2489	-0.0603	0.3570	-0.1590	0.4726	-0.3512	0.5076	-0.6556	0.6272	-0.7368
6	0.027	0.221	0.0517	0.1379	0.0916	0.0915	0.1744	0.0371	0.2542	-0.3860	0.3492	-0.7401	0.4499	-0.9174	0.5453	-1.1091	0.5792	-1.1473
7	0.707	0.000																
8	0.707	0.049	-0.0052	-0.0002	-0.0412	-0.0365	0.0339	-0.1222	0.1278	-0.2151	0.2397	-0.3238	0.3627	-0.4339	0.4842	-0.5678	0.5254	-0.6161
9	0.713	0.197	-0.0446	0.0379	-0.0036	-0.0090	0.0721	-0.0932	0.1622	-0.1672	0.2487	-0.2758	0.3046	-0.4970	0.4991	-0.8231	0.5392	-0.9107
10	0.721	0.307	-0.0187	0.0711	0.0234	0.0242	0.1042	-0.0438	0.1073	-0.1199	0.2056	-0.7205	0.3956	-0.9959	0.4910	-1.1571	0.5302	-1.1935
11	0.729	0.418	0.0083	0.0990	0.0492	0.0472	0.1343	-0.1050	0.2081	-0.5377	0.2875	-0.8840	0.3764	-1.0828	0.4519	-1.1913	0.4834	-1.2241
12	0.619	0.000	-0.0464	0.0085	-0.0290	-0.0314	0.0375	-0.0810	0.1164	-0.1784	0.2142	-0.2989	0.3325	-0.4428	0.4362	-0.5928	0.4795	-0.6437
13	0.619	0.123																
14	0.619	0.246	-0.0074	-0.0268	-0.0468	-0.0641	0.0163	-0.1283	0.1055	-0.2402	0.2102	-0.3021	0.3253	-0.4027	0.4372	-0.7656	0.4768	-0.8457
15	0.624	0.374	-0.0430	0.0159	-0.0207	-0.0263	0.0593	-0.0988	0.1416	-0.1442	0.2384	-0.5546	0.3441	-1.0476	0.4451	-1.2395	0.4825	-1.2673
16	0.632	0.484	-0.0405	0.0496	0.0062	0.0071	0.0926	-0.0438	0.1667	-0.6159	0.2553	-0.8493	0.3461	-1.0457	0.4336	-1.2129	0.4678	-1.2430
17	0.640	0.594	-0.0286	0.0793	0.0294	0.0276	0.1223	-0.2020	0.1849	-0.5969	0.2523	-0.8664	0.3226	-1.0675	0.3880	-1.2542	0.4158	-1.2832
18	0.530	0.000	-0.0748	-0.0219	-0.0457	-0.0480	0.0146	-0.1038	0.0788	-0.1802	0.1403	-0.3012	0.2727	-0.4370	0.3750	-0.6049	0.4167	-0.6576
19	0.530	0.197	-0.0798	-0.0131	-0.0371	-0.0404	0.0218	-0.1118	0.0798	-0.1818	0.1714	-0.2910	0.2727	-0.4348	0.3747	-0.6378	0.4076	-0.7024
20	0.530	0.395	-0.1139	-0.0569	-0.0946	-0.0909	-0.0089	-0.1502	0.0683	-0.2025	0.1651	-0.3086	0.2655	-0.6775	0.3668	-1.0263	0.3986	-1.1002
21	0.538	0.550	-0.0996	-0.0154	-0.0522	-0.0576	0.0249	-0.1275	0.0978	-0.3497	0.1863	-0.9438	0.2762	-1.1092	0.3652	-1.2969	0.3936	-1.3306
22	0.544	0.661	-0.0619	0.0264	-0.0212	-0.0212	0.0557	-0.1199	0.1250	-0.6548	0.2024	-0.9093	0.2798	-1.1045	0.3542	-1.2726	0.3762	-1.3082
23	0.552	0.771	-0.0850	0.0573	0.0053	0.0040	0.0097	-0.3168	0.1467	-0.5046	0.2086	-0.8376	0.2544	-1.0297	0.3059	-1.2104	0.3220	-1.2448
24	0.464	0.000	-0.0476	-0.0286	-0.0427	-0.0453	-0.0041	-0.0631	0.0583	-0.1176	0.1333	-0.3012	0.2267	-0.4402	0.3254	-0.6215	0.3551	-0.6772
25	0.464	0.236	-0.0552	-0.0329	-0.0418	-0.0435	-0.0022	-0.0733	0.0460	-0.1278	0.1288	-0.2808	0.2232	-0.4654	0.3163	-0.6775	0.3478	-0.7469
26	0.464	0.471	-0.0647	-0.0747	-0.0916	-0.0836	-0.0427	-0.0768	0.0164	-0.1609	0.0988	-0.3487	0.1885	-0.7621	0.2775	-1.0978	0.3071	-1.1633
27	0.464	0.647	-0.0586	-0.1471	-0.1613	-0.1604	-0.1034	-0.0348	-0.0292	-0.3988	0.0533	-0.9938	0.1330	-1.1373	0.2094	-1.3213	0.2386	-1.3546
28	0.464	0.764	-0.0589	-0.1528	-0.1718	-0.1749	-0.1119	-0.0821	-0.0382	-0.6345	0.0399	-0.9459	0.1004	-1.2187	0.1734	-1.3860	0.1981	-1.4137
29	0.464	0.882	-0.0750	-0.1328	-0.0990	-0.1012	-0.0816	-0.3239	-0.0223	-0.4951	0.0165	-0.7616	0.0454	-1.2269	0.0950	-1.3848	0.1169	-1.4159
30	0.376	0.000	-0.0133	0.0028	-0.0014	0.0040	0.0155	-0.0269	0.0498	-0.0585	0.1106	-0.1018	0.1886	-0.0039	0.2789	-0.5507	0.3057	-0.6063
31	0.376	0.236	-0.0232	-0.0330	-0.0030	-0.0026	0.0154	-0.0340	0.0482	-0.0678	0.1081	-0.1020	0.1836	-0.0479	0.2710	-0.5937	0.2996	-0.7271
32	0.376	0.471	-0.0207	0.0041	0.0023	0.0119	0.0193	-0.0357	0.0430	-0.0600	0.0940	-0.0930	0.1606	-0.1912	0.2302	-0.8624	0.2671	-0.9893
33	0.376	0.647	-0.0224	0.0054	0.0070	0.0041	0.0240	-0.0387	0.0303	-0.0497	0.0702	-0.5416	0.1205	-0.9350	0.1813	-1.0994	0.2068	-1.2300
34	0.376	0.764	-0.0268	0.0009	0.0066	0.0084	0.0184	-0.0373	0.0413	-0.3518	0.0516	-0.7545	0.0888	-0.5662	0.1316	-1.0351	0.1594	-1.1822
35	0.376	0.882	-0.0412	0.0090	0.0007	0.0084	0.0210	-0.1205	0.0294	-0.5372	0.0152	-0.4402	0.0208	-0.7272	0.0488	-1.0629	0.0666	-1.1698
36	0.243	0.000	-0.0282	-0.0120	-0.0163	-0.0144	0.0055	-0.0487	0.0330	-0.0851	0.0817	-0.1788	0.1496	-0.2788	0.2168	-0.2271	0.2451	-0.1566
37	0.243	0.236	-0.0276	-0.0065	-0.0111	-0.0114	0.0021	-0.0437	0.0319	-0.0849	0.0851	-0.1769	0.1521	-0.2903	0.2144	-0.2648	0.2416	-0.2164
38	0.243	0.471	-0.0284	-0.0055	-0.0113	0.0002	0.0013	-0.0458	0.0246	-0.0964	0.0728	-0.7128	0.1361	-0.4011	0.1894	-0.4741	0.2147	-0.4290
39	0.243	0.647	-0.0322	-0.0059	-0.0104	-0.0111	-0.0012	-0.0548	0.0101	-0.1434	0.0529	-0.3016	0.1088	-0.7104	0.1360	-0.9906	0.1617	-0.9150
40	0.243	0.764	-0.0371	-0.0067	-0.0131	-0.0125	-0.0034	-0.0617	0.0108	-0.2430	0.0368	-0.5844	0.0767	-0.5840	0.0979	-0.7827	0.1215	-0.6809
41	0.243	0.882	-0.0559	-0.0136	-0.0138	-0.0172	-0.0087	-0.1306	-0.0042	-0.3512	0.0070	-0.4065	0.0294	-0.4916	0.0259	-0.6375	0.0459	-0.0469
42	0.110	0.000	-0.1135	-0.0961	-0.0980	-0.0994	-0.0837	-0.1213	-0.0497	-0.1429	-0.0101	-0.1847	0.0227	-0.2588	0.0535	-0.3934	0.0691	-0.4317
43	0.110	0.236	-0.1071	-0.0916	-0.0932	-0.0946	-0.0764	-0.1202	-0.0450	-0.1379	-0.0131	-0.1875	0.0221	-0.2763	0.0519	-0.4068	0.0606	-0.4733
44	0.110	0.471	-0.1015	-0.0843	-0.0861	-0.0758	-0.0739	-0.1122	-0.0463	-0.1354	-0.0151	-0.2306	0.0130	-0.3799	0.0358	-0.5065	0.0509	-0.6265
45	0.110	0.647	-0.0960	-0.0680	-0.0718	-0.0676	-0.0625	-0.0949	-0.0449	-0.1576	-0.0249	-0.3546	-0.0058	-0.6005	0.0091	-0.6499	0.0251	-0.6305
46	0.110	0.764	-0.0825	-0.0641	-0.0640	-0.0647	-0.0570	-0.1069	-0.0472	-0.2240	-0.0327	-0.4061	-0.0217	-0.4442	-0.0065	-0.3943	0.0063	-0.4997
47	0.110	0.882	-0.0863	-0.0630	-0.0553	-0.0601	-0.0544	-0.1465	-0.0603	-0.2411	-0.0567	-0.3102	-0.0584	-0.3208	-0.0443	-0.3722	-0.0335	-0.4392
48	0.066	0.000	-0.1870	-0.1825	-0.1731	-0.1792	-0.1751	-0.2005	-0.1819	-0.2407	-0.1815	-0.3142	-0.2325	-0.3185	-0.4308	-0.3392	-0.5102	-0.3910
49	0.066	0.236	-0.1784	-0.1741	-0.1673	-0.1606	-0.1665	-0.2006	-0.1603	-0.2344	-0.1694	-0.2079	-0.2340	-0.2951	-0.5589	-0.3332	-0.6212	-0.3924
50	0.066	0.471	-0.2091	-0.2087	-0.1916	-0.1051	-0.1939	-0.2257	-0.2199	-0.2407	-0.1701	-0.2598	-0.3237	-0.2702	-0.5766	-0.3085	-0.6144	-0.3742
51	0.044	0.000	-0.1026	-0.1071	-0.0914	-0.1011	-0.0991	-0.1267	-0.1725	-0.1080	-0.1942	-0.2315	-0.2424	-0.2564	-0.3881	-0.2923	-0.4446	-0.3555
52	0.044	0.236	-0.1039	-0.1111	-0.0931	-0.1000	-0.1030	-0.1243	-0.1794	-0.1652	-0.1894	-0.2277	-0.2439	-0.2512	-0.3592	-0.2963	-0.4343	-0.3698
53	0.044	0.471	-0.1154	-0.1266	-0.1002	-0.1105	-0.1109	-0.1377	-0.1990	-0.1766	-0.1916	-0.2231	-0.2520	-0.2605	-0.3825	-0.3063	-0.4685	-0.3823
54	0.044	0.882	-0.1294	-0.1194	-0.1028	-0.1128	-0.1078	-0.1723	-0.1429	-0.1989	-0.1690	-0.1744	-0.1474	-0.1808	-0.1575	-0.2392	-0.1804	-0.3433
55	0.022	0.000	-0.0669	-0.0744	-0.0621	-0.0673	-0.0660	-0.0923	-0.1590	-0.1445	-0.1911	-0.2135	-0.2055	-0.2497	-0.2697	-0.3023	-0.3079	-0.3036
56	0.022	0.236	-0.0673	-0.0730	-0.0639	-0.0577	-0.0650	-0.0903	-0.1625	-0.1419	-0.1899	-0.2120	-0.2011	-0.2516	-0.2538	-0.3106	-0.2763	-0.3912
57	0.022	0.471	-0.0748	-0.0832	-0.0739	-0.0807	-0.0693	-0.1010	-0.1495	-0.1490	-0.1484	-0.2048	-0.1750	-0.2663	-0.1776	-0.3279	-0.2054	-0.4054
58	0.022	0.764																
59	0.464	-0.471	-0.0677	-0.0670	-0.0895	-0.0933	-0.0414	-0.0760	0.0173	-0.1634	0.0977	-0.3787	0.1085	-0.7166	0.2756	-1.0550	0.3124	-1.1213
60	0.110	-0.471	-0.1056	-0.0791	-0.0897	-0.0887	-0.0741	-0.1146	-0.0528	-0.1487	-0.0230	-0.2425	0.0149	-0.3809	0.0489	-0.6107	0.0596	-0.6504

Table A-2.- (Continued).
M = 0.9

TUBE	X/L	Y/B/2	ALPHA = 27.0 WINDWARD	27.0 LEEWARD	29.0 WINDWARD	29.0 LEEWARD	34.0 WINDWARD	34.0 LEEWARD	39.0 WINDWARD	39.7 LEEWARD	44.7 WINDWARD	44.7 LEEWARD	49.7 WINDWARD	49.7 LEEWARD	54.6 WINDWARD	54.7 LEEWARD	56.2 WINDWARD	56.2 LEEWARD
1	0.937	0.000	0.7761	-0.4849	0.8515	-0.5078	0.9689	-0.6655	1.0784	-0.7971	1.1431	-0.9235	1.1948	-0.7382	1.2141	-0.6380	1.2137	-0.6364
2	0.874	0.000	0.7184	-0.4489	0.7917	-0.5320	0.9050	-0.7099	1.0103	-0.7970	1.0915	-0.9371	1.1579	-0.7419	1.1951	-0.6270	1.2085	-0.6344
3	0.882	0.110	0.6677	-1.2027	0.7312	-1.2033	0.8292	-1.4026	0.9233	-1.1306	0.9940	-0.9568	1.0515	-0.7347	1.0809	-0.6212	1.0844	-0.6253
4	0.911	0.000	0.6705	-0.4577	0.7450	-0.5500	0.8555	-0.7096	0.9626	-0.7911	1.0487	-0.9068	1.1205	-0.7409	1.1690	-0.6260	1.1031	-0.6281
5	0.819	0.110	0.6490	-0.8220	0.7187	-0.9740	0.8241	-1.1487	0.9267	-1.0605	1.0078	-0.9289	1.0761	-0.7323	1.1216	-0.6237	1.1333	-0.6243
6	0.827	0.221	0.5975	-1.1967	0.6556	-1.2876	0.7436	-1.3964	0.8322	-1.1212	0.9819	-0.9470	0.9583	-0.7483	0.9935	-0.6317	1.0013	-0.6328
7	0.707	0.000																
8	0.707	0.049	0.5414	-0.6257	0.6327	-0.7288	0.7499	-0.8695	0.8642	-0.9029	0.9618	-0.8630	1.0469	-0.7236	1.1129	-0.6460	1.1274	-0.6383
9	0.713	0.197	0.5680	-0.9739	0.6365	-1.1236	0.7436	-1.2853	0.8494	-1.0716	0.9389	-0.8978	1.0147	-0.7229	1.0732	-0.6333	1.0848	-0.6318
10	0.721	0.307	0.5557	-1.2261	0.6165	-1.3164	0.7105	-1.4125	0.8029	-1.0951	0.8836	-0.9150	0.9519	-0.7488	1.0050	-0.6312	1.0195	-0.6238
11	0.728	0.418	0.5010	-1.2707	0.5502	-1.3618	0.6254	-1.4423	0.7047	-1.1017	0.7718	-0.9258	0.8275	-0.7505	0.8683	-0.6391	0.8790	-0.6318
12	0.619	0.000	0.5153	-0.6515	0.5864	-0.7545	0.6933	-0.8956	0.8008	-0.8873	0.9086	-0.8366	0.9924	-0.7515	1.0650	-0.6571	1.0870	-0.6476
13	0.619	0.123	0.5116	-0.6743	0.5775	-0.7874	0.6871	-0.8199	0.7997	-0.9345	0.8969	-0.8376	0.9851	-0.7364	1.0611	-0.6476	1.0794	-0.6444
14	0.619	0.246	0.5095	-0.8999	0.5735	-1.0374	0.6821	-1.0850	0.7909	-1.0487	0.8852	-0.8695	0.9697	-0.7363	1.0409	-0.6483	1.0578	-0.6418
15	0.626	0.374	0.5192	-1.2781	0.5690	-1.3506	0.6686	-1.3400	0.7656	-1.0781	0.8509	-0.8908	0.9265	-0.7320	0.9885	-0.6419	1.0029	-0.6344
16	0.632	0.484	0.4965	-1.2738	0.5440	-1.3503	0.6331	-1.3087	0.7190	-1.0790	0.7960	-0.8933	0.8619	-0.7315	0.9181	-0.6407	0.9320	-0.6347
17	0.640	0.594	0.4348	-1.2854	0.4735	-1.3748	0.5444	-1.3186	0.6165	-1.0831	0.6803	-0.8971	0.7337	-0.7372	0.7784	-0.6492	0.7882	-0.6420
18	0.530	0.000	0.4522	-0.6633	0.5115	-0.7563	0.6196	-0.6930	0.7237	-0.8698	0.8244	-0.8156	0.9195	-0.7452	1.0089	-0.6723	1.0251	-0.6664
19	0.530	0.197	0.4492	-0.7438	0.5091	-0.8572	0.6178	-0.8479	0.7259	-0.9001	0.8278	-0.8341	0.9182	-0.7368	1.0021	-0.6616	1.0192	-0.6594
20	0.530	0.395	0.4488	-1.1658	0.4957	-1.2787	0.6013	[illegible]1971	0.7052	-1.0428	0.8017	-0.8608	0.8878	-0.7336	0.9647	-0.6574	0.9808	-0.6544
21	0.536	0.550	0.4289	-1.3342	0.4793	-1.3939	0.5744	[illegible]2119	0.6639	-1.0534	0.7505	-0.8701	0.8243	-0.7277	0.8905	-0.6408	0.9030	-0.6457
22	0.544	0.661	0.4112	-1.3396	0.4517	-1.4214	0.5406	[illegible]1290	0.6184	-1.0550	0.6953	-0.8655	0.7618	-0.7189	0.8157	-0.6446	0.8329	-0.6377
23	0.552	0.771	0.3474	-1.2475	0.3795	-1.3408	0.4536	-1.1095	0.5177	-1.0578	0.5818	-0.8671	0.6343	-0.7266	0.6774	-0.6532	0.6918	-0.6459
24	0.464	0.000	0.4033	-0.6782	0.4584	-0.7740	0.5684	-0.7394	0.6755	-0.8496	0.7884	-0.7955	0.8773	-0.7421	0.9686	-0.6843	0.9883	-0.6748
25	0.464	0.236	0.3942	-0.7700	0.4455	-0.8901	0.5589	-0.9695	0.6641	-0.9376	0.7698	-0.8011	0.8650	-0.7395	0.9478	-0.6801	0.9705	-0.6766
26	0.464	0.471	0.3529	-1.2249	0.4015	-1.3231	0.5120	-1.1721	0.6118	-1.0193	0.7135	-0.8324	0.8042	-0.7384	0.8833	-0.6735	0.9044	-0.6718
27	0.464	0.647	0.2792	-1.3657	0.3252	-1.4281	0.4288	-1.2517	0.5199	-1.0368	0.6133	-0.8419	0.6959	-0.7303	0.7693	-0.6652	0.7886	-0.6630
28	0.464	0.764	0.2321	-1.4279	0.2913	-1.4843	0.3751	-1.1018	0.4614	-1.0127	0.5454	-0.8238	0.6221	-0.7097	0.6901	-0.6618	0.7123	-0.6551
29	0.464	0.882	0.1444	-1.4198	0.2019	-1.4919	0.2745	-1.0041	0.3491	-0.9976	0.4265	-0.8212	0.4911	-0.7116	0.5492	-0.6668	0.5687	-0.6609
30	0.376	0.000	0.3497	-0.6719	0.4079	-0.8124	0.4999	-0.6772	0.6066	-0.8056	0.7107	-0.7490	0.8079	-0.7317	0.8974	-0.7075	0.9259	-0.6977
31	0.376	0.236	0.3379	-0.7130	0.3862	-0.8634	0.4931	-0.8319	0.5988	-0.8839	0.6978	-0.7672	0.7912	-0.7174	0.8789	-0.6988	0.9072	-0.6938
32	0.376	0.471	0.3023	-1.0424	0.3466	-1.1800	0.4463	-1.0080	0.5411	-0.9696	0.6418	-0.7940	0.7322	-0.7144	0.8157	-0.6988	0.8416	-0.6854
33	0.376	0.647	0.2487	-1.2312	0.2791	-1.3449	0.3705	-1.1107	0.4546	-0.9957	0.5467	-0.8837	0.6287	-0.7069	0.7048	-0.6834	0.7290	-0.6782
34	0.376	0.764	0.1935	-1.1837	0.2270	-1.3076	0.3135	-1.0181	0.3899	-0.9678	0.4791	-0.7956	0.5573	-0.7054	0.6277	-0.6814	0.6533	-0.6755
35	0.376	0.882	0.1018	-1.1885	0.1266	-1.2827	0.2060	-0.9472	0.2708	-0.9526	0.3527	-0.7916	0.4221	-0.7103	0.4838	-0.6897	0.5067	-0.6834
36	0.243	0.000	0.2835	-0.1868	0.3178	-0.1215	0.4024	-0.5365	0.4977	-0.7271	0.5969	-0.6927	0.6924	-0.7004	0.7830	-0.7129	0.8154	-0.7026
37	0.243	0.236	0.2772	-0.2437	0.3078	-0.2082	0.3911	-0.6024	0.4891	-0.7781	0.5829	-0.6964	0.6802	-0.7143	0.7733	-0.7051	0.8005	-0.6986
38	0.243	0.471	0.2478	-0.4904	0.2736	-0.5122	0.3518	-0.8260	0.4413	-0.8620	0.531	-0.7155	0.6255	-0.7031	0.7123	-0.6982	0.7394	-0.6907
39	0.243	0.647	0.1958	-0.9879	0.2133	-1.0868	0.2835	-1.0132	0.3572	-0.9037	0.4407	-0.7238	0.5255	-0.7012	0.6064	-0.6916	0.6304	-0.6838
40	0.243	0.764	0.1681	-0.8043	0.1692	-0.8594	0.2361	-0.8709	0.2974	-0.8731	0.3784	-0.7078	0.4548	-0.7128	0.5305	-0.6944	0.5572	-0.6803
41	0.243	0.882	0.0833	-0.6675	0.0837	-0.7031	0.1431	-0.7884	0.1988	-0.8523	0.2624	-0.7056	0.3274	-0.7284	0.3931	-0.7028	0.4176	-0.6883
42	0.110	0.000	0.1041	-0.3540	0.1188	-0.3961	0.1704	-0.3998	0.2372	-0.6440	0.3113	-0.6212	0.3984	-0.6918	0.4937	-0.6933	0.5289	-0.6798
43	0.110	0.236	0.0996	-0.3960	0.1131	-0.4438	0.1644	-0.4919	0.2308	-0.6715	0.3014	-0.6242	0.3946	-0.6812	0.4911	-0.6827	0.5228	-0.6739
44	0.110	0.471	0.0806	-0.5534	0.0968	-0.6288	0.1488	-0.6896	0.2026	-0.7408	0.2742	-0.6348	0.3679	-0.6791	0.4668	-0.6748	0.4974	-0.6649
45	0.110	0.647	0.0627	-0.5663	0.0647	-0.6604	0.0951	-0.7634	0.1478	-0.7631	0.2198	-0.6367	0.3124	-0.6743	0.4078	-0.6665	0.4379	-0.6557
46	0.110	0.764	0.0457	-0.5139	0.0476	-0.6383	0.0667	-0.6837	0.1147	-0.7278	0.1818	-0.6253	0.2729	-0.6692	0.3596	-0.6615	0.3931	-0.6555
47	0.110	0.882	0.0123	-0.4894	0.0078	-0.5918	0.0073	-0.6313	0.0462	-0.7043	0.1016	-0.6260	0.1783	-0.6745	0.2524	-0.6681	0.2834	-0.6681
48	0.066	0.000	-0.4483	-0.2894	-0.6092	-0.3237	-0.7053	-0.5726	-0.5887	-0.6911	-0.4653	-0.5984	-0.3815	-0.6547	-0.1898	-0.6527	-0.0544	-0.6489
49	0.066	0.236	-0.4695	-0.3068	-0.6673	-0.3434	-0.6958	-0.5989	-0.5781	-0.6745	-0.4525	-0.6044	-0.2838	-0.6388	-0.0847	-0.6489	-0.0287	-0.6483
50	0.066	0.471	-0.4764	-0.2994	-0.6779	-0.3524	-0.7098	-0.6131	-0.5971	-0.6763	-0.4471	-0.6099	-0.2546	-0.6328	0.0108	-0.6461	0.0797	-0.6427
51	0.044	0.000	-0.3734	-0.2488	-0.6541	-0.2898	-0.6738	-0.4117	-0.5541	-0.5293	-0.1421	-0.5768	0.1808	-0.6857	0.2329	-0.6138	0.2651	-0.6101
52	0.044	0.236	-0.3705	-0.2724	-0.5489	-0.3258	-0.6917	-0.4778	-0.5068	-0.5565	-0.0725	-0.5783	0.1794	-0.6074	0.2301	-0.6156	0.2617	-0.6116
53	0.044	0.471	-0.3595	-0.3023	-0.4844	-0.3711	-0.5540	-0.5659	-0.1957	-0.6090	0.0588	-0.5988	0.1505	-0.6148	0.2245	-0.6255	0.2571	-0.6208
54	0.044	0.882	-0.0764	-0.2481	-0.0953	-0.3129	-0.1476	-0.4878	-0.0754	-0.5978	-0.0188	-0.5957	0.0548	-0.6198	0.1330	-0.6331	0.1624	-0.6278
55	0.022	0.000	-0.2867	-0.2748	-0.2185	-0.3238	-0.3458	-0.4116	-0.0586	-0.4596	0.0188	-0.5661	0.0887	-0.5952	0.1408	-0.5989	0.1638	-0.6028
56	0.022	0.236	-0.1817	-0.3052	-0.2011	-0.3612	-0.2274	-0.4750	-0.0422	-0.4833	0.0366	-0.5689	0.0772	-0.5909	0.1378	-0.5978	0.1631	-0.5982
57	0.022	0.471	-0.1151	-0.3428	-0.0894	-0.4062	-0.0885	-0.5495	-0.0056	-0.5379	0.0131	-0.5752	0.0659	-0.5853	0.1341	-0.5923	0.1601	-0.5928
58	0.022	0.764	-0.1322	-0.2583	-0.1279	-0.3328	-0.1466	-0.5119	-0.0588	-0.5757	-0.0278	-0.5809	0.0331	-0.5808	0.0942	-0.5913	0.1178	-0.5898
59	0.464	-0.471	0.3586	-1.0908	0.4211	-1.1968	0.5194	-1.0263	0.6284	-1.0388	0.7222	-0.8296	0.8138	-0.7385	0.8894	-0.6928	0.9168	-0.6834
60	0.110	-0.471	0.0937	-0.5023	0.1058	-0.5862	0.1491	-0.5307	0.2157	-0.7136	0.2902	-0.6337	0.3799	-0.6488	0.4738	-0.6897	0.5077	-0.6775

Table A-2.- (Continued).
M = 1.2

			ALPHA =															
			-2.9	-2.9	0.0	0.0	5.0	5.0	9.9	10.0	15.0	14.9	20.0	19.9	24.9	24.9	26.4	26.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.037	0.000	0.0093	0.1660	0.1103	0.1069	0.1703	0.0453	0.2856	-0.0066	0.4074	-0.0601	0.5511	-0.1207	0.7308	-0.1611	0.7867	-0.1791
2	0.076	0.000	0.0593	0.1370	0.0930	0.0880	0.1660	0.0174	0.2639	-0.0373	0.3895	-0.0912	0.5357	-0.1431	0.7072	-0.1093	0.7548	-0.2103
3	0.082	0.118	0.0633	0.1459	0.0978	0.0958	0.1711	0.0215	0.2670	-0.0168	0.3824	-0.3091	0.5163	-0.6163	0.6771	-0.6762	0.7205	-0.6935
4	0.011	0.000	0.0519	0.1293	0.0944	0.0979	0.1667	0.0170	0.2615	-0.0406	0.3814	-0.0946	0.5214	-0.1405	0.6791	-0.2107	0.7215	-0.2343
5	0.019	0.118	0.0653	0.1448	0.1100	0.1128	0.1792	0.0329	0.2605	-0.0194	0.3842	-0.0666	0.5102	-0.1958	0.6706	-0.3755	0.7102	-0.4341
6	0.027	0.221	0.0607	0.1450	0.1064	0.1103	0.1806	0.0383	0.2665	-0.3273	0.3747	-0.5073	0.4971	-0.5988	0.6398	-0.6537	0.6751	-0.6763
7	0.707	0.000																
8	0.707	0.049	-0.0375	0.0212	-0.0060	-0.0076	0.0702	-0.0706	0.1599	-0.1415	0.2846	-0.1074	0.4321	-0.2493	0.5820	-0.3256	0.6262	-0.3523
9	0.713	0.197	0.0042	0.0639	0.0351	0.0327	0.1091	-0.0303	0.1950	-0.0073	0.3143	-0.1347	0.4556	-0.3045	0.5907	-0.5355	0.6418	-0.5911
10	0.721	0.307	0.0395	0.1016	0.0722	0.0703	0.1437	0.0129	0.2219	-0.0336	0.3337	-0.5312	0.4650	-0.6402	0.5993	-0.7091	0.6370	-0.7312
11	0.728	0.418	0.0598	0.1331	0.1005	0.0956	0.1759	-0.0015	0.2448	-0.3835	0.3412	-0.1833	0.4556	-0.6502	0.5724	-0.7161	0.6058	-0.7391
12	0.619	0.000	-0.0227	0.0236	-0.0005	0.0005	0.0695	-0.0515	0.1758	-0.1200	0.2948	0.1465	0.4265	-0.2503	0.5610	-0.3464	0.6013	-0.3746
13	0.619	0.123																
14	0.619	0.246	-0.0691	-0.0027	-0.0440	-0.0366	0.0472	-0.0948	0.1620	-0.1750	0.2879	-0.4102	0.4240	-0.3892	0.5507	-0.4077	0.6023	-0.5344
15	0.626	0.374	-0.0417	0.0425	0.0023	0.0095	0.0916	-0.0619	0.1983	-0.0843	0.3158	-0.5544	0.4436	-0.6933	0.5686	-0.7434	0.6120	-0.7626
16	0.632	0.484	0.0042	0.0781	0.0347	0.0420	0.1248	-0.0110	0.2219	-0.4390	0.3312	-0.5293	0.4491	-0.6712	0.5630	-0.7309	0.6023	-0.7593
17	0.640	0.594	0.0140	0.1007	0.0611	0.0642	0.1532	-0.1005	0.2401	-0.4137	0.3339	-0.1810	0.4355	-0.6205	0.5309	-0.7169	0.5664	-0.7458
18	0.530	0.000	-0.0190	0.0277	-0.0163	-0.0040	0.0509	-0.0576	0.1677	-0.1162	0.2768	-0.1601	0.3924	-0.2689	0.5120	-0.3427	0.5533	-0.3645
19	0.530	0.197	-0.0205	0.0406	-0.0072	0.0035	0.0670	-0.0617	0.1730	-0.1146	0.2784	-0.2439	0.3934	-0.2638	0.5095	-0.3694	0.5519	-0.4023
20	0.530	0.395	-0.0546	-0.0076	-0.0567	-0.0503	0.0374	-0.0975	0.1631	-0.1460	0.2777	-0.5935	0.3931	-0.4970	0.5084	-0.6645	0.5503	-0.6986
21	0.536	0.550	-0.0392	0.0339	-0.0121	-0.0039	0.0741	-0.0678	0.1928	-0.3476	0.3012	-0.5976	0.4101	-0.7091	0.5149	-0.7761	0.5542	-0.7937
22	0.544	0.661	-0.0063	0.0690	0.0172	0.0255	0.1055	-0.0091	0.2146	-0.4494	0.3170	-0.5426	0.4167	-0.7198	0.5090	-0.7756	0.5455	-0.7984
23	0.552	0.771	-0.0120	0.0908	0.0406	0.0462	0.1320	-0.2248	0.2306	-0.4144	0.3167	-0.1033	0.4009	-0.6229	0.4760	-0.6926	0.5080	-0.7172
24	0.464	0.000	-0.0183	0.0334	-0.0148	-0.0079	0.0548	-0.0591	0.1487	-0.1143	0.2348	-0.1647	0.3233	-0.2701	0.4532	-0.3460	0.4981	-0.3705
25	0.464	0.236	-0.0337	0.0414	-0.0123	-0.0077	0.0549	-0.0707	0.1491	-0.1168	0.2759	-0.1765	0.3159	-0.2817	0.4496	-0.4022	0.4908	-0.4387
26	0.464	0.471	-0.1014	-0.0262	-0.0947	-0.0934	-0.0082	-0.1373	0.0064	-0.1408	0.1674	-0.2674	0.2647	-0.5632	0.4123	-0.7021	0.4532	-0.7308
27	0.464	0.647	-0.2052	-0.1093	-0.1519	-0.1512	-0.0850	-0.2461	0.0085	-0.4011	0.0974	-0.6927	0.2068	-0.7426	0.3502	-0.7908	0.3977	-0.8072
28	0.464	0.764	-0.2161	-0.1258	-0.1706	-0.1702	-0.1149	-0.2648	-0.0175	-0.5686	0.0756	-0.6509	0.1888	-0.7891	0.3396	-0.8257	0.3714	-0.8383
29	0.464	0.882	-0.1675	-0.1198	-0.1444	-0.1416	-0.1162	-0.3295	-0.0317	-0.5163	0.0589	-0.6518	0.1696	-0.7363	0.2988	-0.7953	0.3262	-0.8141
30	0.376	0.000	-0.0938	-0.0320	-0.0735	-0.0745	-0.0233	-0.1356	0.0459	-0.1626	0.1416	-0.1048	0.2724	-0.2765	0.4040	-0.3438	0.4385	-0.3754
31	0.376	0.236	-0.0788	-0.0102	-0.0735	-0.0659	-0.0302	-0.1114	0.0438	-0.1714	0.1391	-0.2110	0.2663	-0.2948	0.3969	-0.3977	0.4318	-0.4331
32	0.376	0.471	-0.0902	-0.0080	-0.0560	-0.0536	-0.0233	-0.0022	0.0434	-0.1222	0.1258	-0.2207	0.2436	-0.4553	0.3713	-0.6081	0.4048	-0.6408
33	0.376	0.647	-0.0428	-0.0094	-0.0591	-0.0620	-0.0215	-0.0715	0.0292	-0.0862	0.0992	-0.5588	0.2035	-0.7132	0.3219	-0.7713	0.3544	-0.7085
34	0.376	0.764	-0.0393	-0.0154	-0.0639	-0.0642	-0.0345	-0.0668	0.0132	-0.4706	0.0756	-0.5618	0.1717	-0.6978	0.2052	-0.7429	0.3179	-0.7567
35	0.376	0.882	-0.0548	-0.0228	-0.0524	-0.0578	-0.0468	-0.1738	-0.0156	-0.4465	0.0312	-0.5448	0.1127	-0.6839	0.2119	-0.7027	0.2418	-0.7198
36	0.243	0.000	-0.0041	-0.0251	-0.0209	-0.0307	-0.0351	-0.0381	0.0217	-0.0742	0.1020	-0.1533	0.2106	-0.2223	0.3415	-0.3003	0.3803	-0.3438
37	0.243	0.236	-0.0043	-0.0156	-0.0255	-0.0276	-0.0353	-0.0432	0.0202	-0.0810	0.0906	-0.1458	0.2077	-0.2408	0.3348	-0.3325	0.3735	-0.3738
38	0.243	0.471	-0.0013	-0.0095	-0.0161	-0.0190	-0.0273	-0.0494	0.0161	-0.1117	0.0814	-0.1026	0.1832	-0.3317	0.3096	-0.4715	0.3470	-0.5198
39	0.243	0.647	-0.0052	0.0010	-0.0078	-0.0068	-0.0179	-0.0641	0.0136	-0.1603	0.0533	-0.3210	0.1428	-0.4912	0.2559	-0.5498	0.2911	-0.5768
40	0.243	0.764	-0.0118	0.0152	-0.0006	0.0035	-0.0099	-0.0742	0.0147	-0.2564	0.0384	-0.4355	0.1139	-0.5149	0.2203	-0.5914	0.2525	-0.6251
41	0.243	0.882	-0.0345	0.0269	0.0052	0.0110	0.0013	-0.1499	0.0132	-0.3533	0.0100	-0.4292	0.0584	-0.6079	0.1409	-0.6698	0.1799	-0.6956
42	0.110	0.000	0.0144	0.0262	0.0243	0.0205	0.0071	-0.0079	0.0488	-0.0536	0.0856	-0.1377	0.1765	-0.2246	0.2800	-0.3189	0.3153	-0.3532
43	0.110	0.236	0.0155	0.0290	0.0227	0.0105	0.0030	-0.0130	0.0504	-0.0630	0.0906	-0.1511	0.1771	-0.2526	0.2825	-0.3437	0.3110	-0.3808
44	0.110	0.471	0.0111	0.0190	0.0154	0.0129	0.0020	-0.0222	0.0434	-0.0824	0.0869	-0.2103	0.1588	-0.3598	0.2599	-0.4357	0.2859	-0.4740
45	0.110	0.647	0.0027	0.0129	0.0063	0.0062	-0.0012	-0.0308	0.0329	-0.1444	0.0752	-0.3608	0.1257	-0.5059	0.2170	-0.5381	0.2431	-0.5615
46	0.110	0.764	-0.0096	0.0077	-0.0013	0.0013	-0.0063	-0.0683	0.0198	-0.2419	0.0628	-0.4196	0.1001	-0.4408	0.1022	-0.4788	0.2055	-0.5293
47	0.110	0.882	-0.0463	0.0082	-0.0105	-0.0066	-0.0163	-0.1454	0.0085	-0.2624	0.0356	-0.3523	0.0526	-0.4088	0.1144	-0.4995	0.1368	-0.5407
48	0.066	0.000	-0.4928	-0.4857	-0.4842	-0.4848	-0.4903	-0.5071	-0.4759	-0.5258	-0.3988	-0.5749	-0.4195	-0.6265	-0.3835	-0.5857	-0.3729	-0.5786
49	0.066	0.236	-0.4735	-0.4835	-0.4695	-0.4685	-0.4728	-0.4828	-0.4548	-0.5071	-0.3831	-0.5645	-0.4028	-0.6212	-0.3669	-0.5635	-0.3566	-0.5614
50	0.066	0.471	-0.4391	-0.4484	-0.4458	-0.4461	-0.4599	-0.4642	-0.4402	-0.5328	-0.3963	-0.6142	-0.4042	-0.6942	-0.3724	-0.5709	-0.3606	-0.5696
51	0.044	0.000	-0.4841	-0.4836	-0.4841	-0.4806	-0.4906	-0.4804	-0.4752	-0.5045	-0.3552	-0.5802	-0.3878	-0.6266	-0.3151	-0.5730	-0.3278	-0.5739
52	0.044	0.236	-0.4818	-0.4812	-0.4836	-0.4779	-0.4985	-0.4826	-0.4751	-0.5048	-0.3455	-0.5877	-0.4002	-0.6446	-0.3211	-0.5712	-0.3321	-0.5718
53	0.044	0.471	-0.4199	-0.4178	-0.4168	-0.4151	-0.4217	-0.4415	-0.4088	-0.5035	-0.3528	-0.5985	-0.3565	-0.6326	-0.3048	-0.5873	-0.2973	-0.5946
54	0.044	0.882	-0.1102	-0.0828	-0.0757	-0.0745	-0.0976	-0.1769	-0.1071	-0.2746	-0.0411	-0.3501	-0.0892	-0.4051	-0.0991	-0.4780	-0.0805	-0.5174
55	0.022	0.000	-0.3774	-0.3835	-0.3941	-0.3825	-0.4175	-0.3406	-0.4390	-0.3573	-0.3546	-0.5087	-0.3454	-0.5869	-0.2988	-0.5766	-0.2916	-0.5822
56	0.022	0.236	-0.3828	-0.3929	-0.3976	-0.3893	-0.4215	-0.3706	-0.4448	-0.3539	-0.3551	-0.5065	-0.3637	-0.5910	-0.2960	-0.5742	-0.2953	-0.5769
57	0.022	0.471	-0.4078	-0.4131	-0.4108	-0.4108	-0.4198	-0.4159	-0.4067	-0.4118	-0.3459	-0.5109	-0.3460	-0.5556	-0.2882	-0.5928	-0.2752	-0.5831
58	0.022	0.764																
59	0.464	-0.471	-0.1177	-0.0217	-0.1084	-0.0957	-0.0806	-0.1306	0.0788	-0.1537	0.1585	-0.2532	0.2588	-0.5331	0.4091	-0.6789	0.4512	-0.6975
60	0.118	-0.471	0.0093	0.0209	0.0206	0.0141	0.0038	-0.0243	0.0389	-0.0794	0.0008	-0.2061	0.1593	-0.3482	0.2605	-0.4334	0.2887	-0.4659

Table A-2.- (Concluded).
M = 1.2

			ALPHA =															
			27.0	27.0	29.8	29.8	34.7	34.7	39.7	39.7	44.7	44.8	49.6	49.7	54.6	54.6	56.2	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.937	0.000	0.8184	-0.2035	0.9195	-0.2339	1.0821	-0.3063	1.2193	-0.4521	1.3135	-0.5336	1.3773	-0.5380	1.4075	-0.5684	1.4099	-0.5294
2	0.874	0.000	0.7790	-0.2347	0.8752	-0.2736	1.0245	-0.3625	1.1540	-0.5012	1.2602	-0.5214	1.3437	-0.5815	1.3930	-0.5937	1.4001	-0.5770
3	0.882	0.110	0.7388	-0.7160	0.8270	-0.7430	0.9649	-0.7010	1.0825	-0.8113	1.1700	-0.6042	1.2537	-0.5954	1.2966	-0.5875	1.3014	-0.5690
4	0.811	0.000	0.7491	-0.2443	0.8397	-0.2883	0.9803	-0.3737	1.1070	-0.4950	1.2174	-0.4971	1.3159	-0.5690	1.3753	-0.5036	1.3041	-0.5700
5	0.819	0.110	0.7322	-0.5117	0.8203	-0.5840	0.9549	-0.6470	1.0771	-0.6650	1.1830	-0.6105	1.2775	-0.5580	1.3334	-0.5541	1.3410	-0.5372
6	0.827	0.221	0.6920	-0.7154	0.7703	-0.7474	0.8923	-0.7021	1.0008	-0.7921	1.0942	-0.6451	1.1772	-0.5976	1.2250	-0.5845	1.2290	-0.5663
7	0.707	0.000																
8	0.707	0.049	0.6502	-0.3020	0.7412	-0.4110	0.8019	-0.5195	1.0111	-0.5807	1.1290	-0.5795	1.2521	-0.5647	1.3204	-0.5665	1.3393	-0.5537
9	0.713	0.197	0.6694	-0.6373	0.7489	-0.7073	0.8811	-0.7724	1.0025	-0.7503	1.1104	-0.6001	1.2235	-0.5940	1.2930	-0.5771	1.3029	-0.5609
10	0.721	0.307	0.6405	-0.7502	0.7357	-0.7053	0.8575	-0.8249	0.9703	-0.7921	1.0696	-0.6654	1.1697	-0.6047	1.2349	-0.5829	1.2437	-0.5640
11	0.728	0.418	0.6246	-0.7659	0.6890	-0.8027	0.7949	-0.8300	0.8929	-0.7679	0.9772	-0.6704	1.0045	-0.6074	1.1196	-0.5895	1.1250	-0.5718
12	0.619	0.000	0.6204	-0.3757	0.7055	-0.4207	0.8375	-0.5216	0.9606	-0.5839	1.0754	-0.5746	1.2067	-0.5602	1.2087	-0.5008	1.3030	-0.5484
13	0.619	0.123	0.6270	-0.3792	0.7035	-0.4501	0.8334	-0.5516	0.9566	-0.5763	1.0704	-0.5927	1.1997	-0.5493	1.2814	-0.5465	1.2975	-0.5327
14	0.619	0.246	0.6251	-0.5715	0.7000	-0.6431	0.8292	-0.7320	0.9499	-0.7200	1.0615	-0.6510	1.1863	-0.5815	1.2643	-0.5647	1.2796	-0.5499
15	0.626	0.374	0.6310	-0.7711	0.7019	-0.8005	0.8212	-0.8323	0.9324	-0.7780	1.0347	-0.6616	1.1489	-0.5954	1.2204	-0.5745	1.2325	-0.5576
16	0.632	0.484	0.6218	-0.7765	0.6883	-0.8101	0.7942	-0.8369	0.8960	-0.7671	0.9905	-0.6600	1.0901	-0.5961	1.1602	-0.5751	1.1710	-0.5563
17	0.640	0.594	0.5795	-0.7301	0.6379	-0.7916	0.7271	-0.8600	0.8146	-0.7546	0.8951	-0.6652	0.9821	-0.5969	1.0418	-0.5801	1.0496	-0.5613
18	0.530	0.000	0.5748	-0.3000	0.6470	-0.4217	0.7700	-0.5127	0.8892	-0.5627	1.0057	-0.5811	1.1380	-0.5514	1.2290	-0.5470	1.2408	-0.5346
19	0.530	0.197	0.5775	-0.4350	0.6491	-0.5092	0.7715	-0.5740	0.8907	-0.6309	1.0009	-0.6200	1.1464	-0.5576	1.2309	-0.5484	1.2495	-0.5357
20	0.530	0.395	0.5719	-0.7309	0.6400	-0.7737	0.7584	-0.7530	0.8741	-0.7511	0.9878	-0.6525	1.1206	-0.5755	1.1999	-0.5595	1.2166	-0.5447
21	0.536	0.550	0.5713	-0.7053	0.6340	-0.8129	0.7396	-0.7762	0.8440	-0.7530	0.9455	-0.6509	1.0652	-0.5828	1.1363	-0.5660	1.1494	-0.5407
22	0.544	0.661	0.5605	-0.8059	0.6170	-0.8327	0.7140	-0.7706	0.8083	-0.7473	0.9003	-0.6517	1.0137	-0.9750	1.0770	-0.5655	1.0898	-0.5455
23	0.552	0.771	0.5102	-0.7160	0.5665	-0.7610	0.6464	-0.7047	0.7275	-0.7459	0.8061	-0.6569	0.9052	-0.5750	0.9607	-0.5680	0.9684	-0.5492
24	0.464	0.000	0.5223	-0.3726	0.5963	-0.4240	0.7222	-0.3840	0.8435	-0.5277	0.9630	-0.5803	1.1130	-0.5330	1.1990	-0.5360	1.2192	-0.5232
25	0.464	0.236	0.5150	-0.4514	0.5895	-0.5217	0.7151	-0.4443	0.8329	-0.6252	0.9532	-0.6254	1.1037	-0.5350	1.1891	-0.5352	1.2070	-0.5252
26	0.464	0.471	0.4757	-0.7595	0.5408	-0.7945	0.6710	-0.6523	0.7872	-0.7489	0.9053	-0.6469	1.0519	-0.5547	1.1340	-0.5494	1.1515	-0.5365
27	0.464	0.647	0.4175	-0.8149	0.4864	-0.8433	0.6017	-0.7496	0.7095	-0.7949	0.8209	-0.6497	0.9612	-0.5650	1.0391	-0.5560	1.0539	-0.5390
28	0.464	0.764	0.3021	-0.8306	0.4571	-0.8591	0.5625	-0.6402	0.6638	-0.7577	0.7670	-0.6394	0.9002	-0.5531	0.9734	-0.5465	0.9871	-0.5307
29	0.464	0.882	0.3400	-0.8109	0.3065	-0.8459	0.4880	-0.6112	0.5778	-0.6973	0.6694	-0.6384	0.7900	-0.5490	0.8556	-0.5480	0.8657	-0.5330
30	0.376	0.000	0.4650	-0.3006	0.5370	-0.4301	0.6629	-0.4253	0.7805	-0.5319	0.9011	-0.5780	1.0550	-0.5097	1.1446	-0.5100	1.1632	-0.5030
31	0.376	0.236	0.4573	-0.6487	0.5207	-0.5114	0.6525	-0.5873	0.7692	-0.6074	0.8899	-0.6066	1.0414	-0.5124	1.1313	-0.5134	1.1506	-0.5053
32	0.376	0.471	0.4254	-0.6076	0.4936	-0.7307	0.6121	-0.7042	0.7257	-0.7207	0.8430	-0.6297	0.9913	-0.5286	1.0781	-0.5248	1.0961	-0.5142
33	0.376	0.647	0.3733	-0.7904	0.4360	-0.8264	0.5466	-0.7489	0.6533	-0.7766	0.7631	-0.6383	0.9033	-0.5410	0.9847	-0.5319	1.0002	-0.5173
34	0.376	0.764	0.3305	-0.7750	0.3947	-0.8041	0.4996	-0.6454	0.6024	-0.7091	0.7095	-0.6268	0.8420	-0.5260	0.9226	-0.5224	0.9366	-0.5090
35	0.376	0.882	0.2539	-0.7203	0.3100	-0.7584	0.4090	-0.5994	0.5045	-0.6608	0.6035	-0.6267	0.7273	-0.5219	0.8022	-0.5231	0.8139	-0.5131
36	0.243	0.000	0.3902	-0.3440	0.4697	-0.4151	0.5847	-0.4842	0.6924	-0.5165	0.8100	-0.5482	0.9545	-0.4581	1.0495	-0.4676	1.0694	-0.4606
37	0.243	0.236	0.3919	-0.3827	0.4618	-0.4607	0.5751	-0.5513	0.6832	-0.5593	0.7994	-0.5776	0.9429	-0.4583	1.0306	-0.4683	1.0575	-0.4617
38	0.243	0.471	0.3580	-0.5617	0.4251	-0.6322	0.5355	-0.6140	0.6395	-0.6483	0.7532	-0.6026	0.8942	-0.4716	0.9875	-0.4738	1.0059	-0.4655
39	0.243	0.647	0.3050	-0.5912	0.3604	-0.6457	0.4607	-0.6607	0.5678	-0.7350	0.6750	-0.6201	0.8090	-0.4787	0.8970	-0.4760	0.9139	-0.4673
40	0.243	0.764	0.2047	-0.6544	0.3249	-0.7039	0.4231	-0.6079	0.5103	-0.6661	0.6181	-0.6075	0.7518	-0.4624	0.8359	-0.4700	0.8524	-0.4610
41	0.243	0.882	0.1809	-0.7103	0.2446	-0.7500	0.3354	-0.5751	0.4247	-0.6199	0.5174	-0.6029	0.6431	-0.4583	0.7218	-0.4726	0.7345	-0.4640
42	0.110	0.000	0.3796	-0.3622	0.3779	-0.4209	0.4506	-0.4518	0.5105	-0.4565	0.5951	-0.5104	0.7094	-0.3951	0.8064	-0.4210	0.8253	-0.4244
43	0.110	0.236	0.3239	-0.3902	0.3720	-0.4653	0.4429	-0.4944	0.5126	-0.4990	0.5805	-0.5374	0.7058	-0.3932	0.8031	-0.4220	0.8229	-0.4201
44	0.110	0.471	0.2937	-0.5176	0.3390	-0.5827	0.4007	-0.5512	0.4794	-0.6044	0.5552	-0.4672	0.6788	-0.4001	0.7791	-0.4232	0.7988	-0.4194
45	0.110	0.647	0.2468	-0.5949	0.2867	-0.6205	0.3510	-0.5766	0.4202	-0.6605	0.4929	-0.5786	0.6268	-0.4043	0.7265	-0.4253	0.7459	-0.4207
46	0.110	0.764	0.2131	-0.5698	0.2469	-0.6151	0.3105	-0.5400	0.3768	-0.5990	0.4531	-0.5592	0.5903	-0.3930	0.6865	-0.4173	0.7072	-0.4154
47	0.110	0.882	0.1901	-0.5765	0.1722	-0.6337	0.2311	-0.5237	0.2901	-0.5690	0.3705	-0.5550	0.5070	-0.3920	0.5961	-0.4224	0.6114	-0.4216
48	0.066	0.000	-0.3430	-0.5693	-0.3612	-0.5700	-0.3338	-0.6145	-0.3009	-0.6251	-0.1590	-0.5471	0.1162	-0.3745	0.2710	-0.4073	0.3223	-0.4130
49	0.066	0.236	-0.3942	-0.5550	-0.3544	-0.5675	-0.3267	-0.6271	-0.2897	-0.6097	-0.1355	-0.5423	0.1323	-0.3740	0.2935	-0.4036	0.3446	-0.4080
50	0.066	0.471	-0.3523	-0.5610	-0.3487	-0.5604	-0.3110	-0.6249	-0.2433	-0.5019	-0.1459	-0.5440	0.1379	-0.3766	0.3580	-0.4045	0.4049	-0.4070
51	0.044	0.000	-0.2701	-0.5646	-0.3099	-0.5709	-0.2932	-0.5171	-0.2210	-0.5482	-0.1092	-0.4738	0.5191	-0.3505	0.6083	-0.3894	0.6109	-0.4011
52	0.044	0.236	-0.2721	-0.5668	-0.3241	-0.5763	-0.2886	-0.5319	-0.1916	-0.5507	-0.1201	-0.4067	0.5255	-0.3510	0.5950	-0.3895	0.6081	-0.3995
53	0.044	0.471	-0.2752	-0.5796	-0.2766	-0.5944	-0.2240	-0.5328	-0.1596	-0.5603	-0.0677	-0.5154	0.5056	-0.3630	0.5837	-0.4009	0.5987	-0.4076
54	0.044	0.882	-0.0690	-0.5361	-0.0631	-0.5662	-0.0241	-0.4054	0.0432	-0.4900	0.1637	-0.5115	0.4060	-0.3610	0.4926	-0.3981	0.5079	-0.4053
55	0.022	0.000	-0.2655	-0.5603	-0.2735	-0.5816	-0.2602	-0.4792	-0.1593	-0.5013	-0.0425	-0.4572	0.4563	-0.3360	0.5207	-0.3822	0.5334	-0.3972
56	0.022	0.236	-0.2474	-0.5730	-0.2796	-0.5035	-0.2422	-0.4749	-0.1512	-0.5275	0.0034	-0.4681	0.4509	-0.3390	0.5180	-0.3822	0.5301	-0.3940
57	0.022	0.471	-0.2617	-0.5687	-0.2415	-0.5706	-0.1762	-0.4633	-0.0534	-0.5419	0.2420	-0.4882	0.4365	-0.3457	0.5104	-0.3846	0.5249	-0.3937
58	0.022	0.764	-0.3139	-0.5190	-0.2777	-0.5172	-0.2272	-0.4610	-0.1429	-0.5015	0.0609	-0.4960	0.4019	-0.3466	0.4725	-0.3813	0.4833	-0.3877
59	0.464	-0.471	0.4827	-0.6775	0.5555	-0.7232	0.6807	-0.7455	0.7963	-0.7049	0.9134	-0.6040	1.0536	-0.5347	1.1425	-0.5458	1.1553	-0.5345
60	0.110	-0.471	0.3047	-0.4560	0.3479	-0.5123	0.4224	-0.5940	0.4061	-0.5616	0.5630	-0.5524	0.6074	-0.4000	0.7859	-0.4210	0.8033	-0.4202

Table A-3.- Pressure coefficients for configuration 3.

M = 0.6

			ALPHA =															
			-2.6	-2.7	0.4	0.2	5.3	5.2	10.3	10.1	15.3	15.2	20.3	20.0	25.2	25.0	26.7	26.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.971	0.000	0.0721	0.3672	0.2301	0.2175	0.4766	-0.0373	0.6608	-0.9996	0.7031	-0.9776	0.8988	-0.9462	0.9835	-1.0968	1.0046	-1.1375
2	0.971	0.236	0.0709	0.3588	0.2310	0.2125	0.4694	-0.0431	0.6608	-0.9913	0.7875	-0.9948	0.8931	-0.9055	0.9788	-1.1389	0.9973	-1.1079
3	0.971	0.471	0.0576	0.3312	0.2115	0.1943	0.4384	-0.0476	0.6269	-0.9431	0.7543	-1.0363	0.8623	-1.0437	0.9495	-1.2236	0.9704	-1.2757
4	0.971	0.764	-0.0581	0.1595	0.0643	0.0531	0.2585	-0.1511	0.4325	-0.6692	0.5556	-1.1715	0.6729	-1.0586	0.7747	-1.2299	0.8077	-1.2933
5	0.941	0.000	-0.0635	0.1441	0.0591	0.0414	0.2496	-0.1670	0.4222	-0.6170	0.5594	-1.0068	0.6882	-0.9937	0.8052	-1.1705	0.8447	-1.2297
6	0.941	0.236	-0.0477	0.1371	0.0530	0.0347	0.2402	-0.1669	0.4114	-0.5774	0.5495	-1.0313	0.6764	-1.0331	0.7948	-1.2245	0.8322	-1.2865
7	0.941	0.471	-0.0694	0.1216	0.0333	0.0198	0.2036	-0.1597	0.3743	-0.4448	0.5069	-1.0344	0.6348	-1.0897	0.7579	-1.2053	0.7848	-1.3435
8	0.941	0.647	-0.1873	0.0046	-0.0729	-0.0774	0.0737	-0.2488	0.2331	-0.3717	0.3686	-1.0688	0.4986	-1.1049	0.6236	-1.3085	0.6476	-1.3705
9	0.941	0.882	-0.1255	-0.0475	-0.0836	-0.0633	-0.0454	-0.2266	0.0180	-0.4143	0.0624	-1.0117	0.1588	-1.0737	0.2446	-1.2242	0.2610	-1.2728
10	0.912	0.000	-0.3028	-0.1001	-0.1829	-0.2001	-0.0170	-0.3834	0.1558	-0.4838	0.3082	-0.9457	0.4546	-1.0615	0.5996	-1.2558	0.6425	-1.3264
11	0.912	0.236	-0.2955	-0.0947	-0.1799	-0.1956	-0.0167	-0.3738	0.1514	-0.4627	0.3010	-0.9615	0.4452	-1.0917	0.5896	-1.3080	0.6322	-1.3648
12	0.912	0.471	-0.2968	-0.1165	-0.1910	-0.2051	-0.0427	-0.3622	0.1110	-0.4391	0.2410	-0.9718	0.3057	-1.1308	0.5255	-1.3608	0.5686	-1.4438
13	0.912	0.764	-0.2723	-0.1315	-0.1897	-0.2124	-0.0679	-0.2926	0.0344	-0.4092	0.1129	-0.9631	0.2061	-1.1119	0.3144	-1.3308	0.3474	-1.4030
14	0.854	0.000	-0.2757	-0.1530	-0.1818	-0.1907	-0.0979	-0.3308	0.0192	-0.4004	0.1386	-0.7246	0.2631	-1.0765	0.3927	-1.3674	0.4284	-1.4462
15	0.854	0.236	-0.2684	-0.1448	-0.1748	-0.1809	-0.0988	-0.3147	0.0157	-0.3868	0.1297	-0.7301	0.2501	-1.0986	0.3846	-1.4085	0.4176	-1.4829
16	0.854	0.471	-0.2288	-0.1088	-0.1481	-0.1473	-0.0708	-0.2745	0.0110	-0.3588	0.1077	-0.7183	0.2113	-1.1369	0.3323	-1.4459	0.3689	-1.5784
17	0.854	0.647	-0.1498	-0.0672	-0.0888	-0.0911	-0.0414	-0.2018	0.0233	-0.3037	0.0918	-0.6831	0.1686	-1.1488	0.2671	-1.4516	0.2932	-1.5685
18	0.854	0.764	-0.1164	-0.0607	-0.0798	-0.0815	-0.0445	-0.1663	0.0117	-0.2936	0.0595	-0.4732	0.1180	-1.1451	0.2034	-1.4301	0.2193	-1.5511
19	0.854	0.882	-0.0806	-0.0453	-0.0521	-0.0521	-0.0349	-0.1369	-0.0024	-0.3978	0.0839	-0.6482	0.0216	-1.2208	0.0729	-1.4434	0.0938	-1.5063
20	0.736	0.000	-0.0726	-0.0373	-0.0434	-0.0491	-0.0083	-0.0882	0.0547	-0.1448	0.1304	-0.3745	0.2152	-0.8188	0.3185	-1.2047	0.3539	-1.3104
21	0.736	0.236	-0.0656	-0.0365	-0.0415	-0.0477	-0.0071	-0.0867	0.0518	-0.1412	0.1262	-0.3638	0.2099	-0.8293	0.3105	-1.2179	0.3419	-1.3217
22	0.736	0.471	-0.0616	-0.0249	-0.0348	-0.0423	-0.0106	-0.0818	0.0437	-0.1478	0.1088	-0.3086	0.1769	-0.7084	0.2683	-1.1769	0.2934	-1.2892
23	0.736	0.647	-0.0507	-0.0141	-0.0241	-0.0203	-0.0031	-0.0750	0.0367	-0.1583	0.0812	-0.2041	0.1264	-0.6881	0.1955	-1.1857	0.2165	-1.3295
24	0.736	0.764	-0.0488	-0.0120	-0.0229	-0.0209	-0.0068	-0.0885	0.0234	-0.1927	0.0547	-0.3965	0.0786	-0.8425	0.1288	-1.4088	0.1438	-1.5654
25	0.736	0.882	-0.0498	-0.0107	-0.0123	-0.0129	-0.0084	-0.0909	0.0023	-0.3244	0.0033	-0.7613	-0.0089	-1.3432	0.0022	-1.6791	0.0116	-1.7561
26	0.588	0.000	-0.0305	-0.0175	-0.0138	-0.0173	0.0016	-0.0414	0.0483	-0.0877	0.1058	-0.1519	0.1872	-0.1699	0.2761	-0.1349	0.3022	-0.0785
27	0.588	0.236	-0.0787	-0.0122	-0.0168	-0.0132	0.0011	-0.0378	0.0454	-0.0885	0.1046	-0.1528	0.1887	-0.1537	0.2678	-0.1751	0.2956	-0.1474
28	0.588	0.471	-0.0258	-0.0024	-0.0116	-0.0058	0.0040	-0.0422	0.0431	-0.1041	0.0948	-0.1682	0.1525	-0.2111	0.2242	-0.3228	0.2586	-0.3713
29	0.588	0.647		-0.0001		-0.0007		-0.0463		-0.1251		-0.2585		-0.4465		-0.8288		-0.9819
30	0.588	0.764	-0.0351	-0.0037	-0.0014	-0.0020	0.0028	-0.0579	0.0240	-0.1807	0.0538	-0.4242	0.0733	-0.8776	0.1099	-1.4085	0.1308	-1.5332
31	0.588	0.882	-0.0326	0.0022	-0.0018	-0.0012	0.0016	-0.0926	0.0116	-0.3179	0.0115	-0.6082	0.0099	-1.1061	0.0151	-1.4521	0.0163	-1.5472
32	0.412	0.000	-0.0253	-0.0175	-0.0138	-0.0173	-0.0059	-0.0264	0.0338	-0.0724	0.0835	-0.1255	0.1569	-0.0963	0.2366	-0.0513	0.2535	-0.0306
33	0.412	0.236	-0.0752	-0.0145	-0.0103	-0.0143	-0.0030	-0.0269	0.0355	-0.0710	0.0829	-0.1309	0.1551	-0.1208	0.2293	-0.1359	0.2469	-0.1255
34	0.412	0.471	-0.0178	-0.0122	-0.0162	-0.0087	-0.0001	-0.0375	0.0297	-0.0830	0.0701	-0.1694	0.1286	-0.2401	0.2082	-0.3778	0.2260	-0.4416
35	0.412	0.647	-0.0151	-0.0053	-0.0083	-0.0048	-0.0019	-0.0398	0.0262	-0.1209	0.0549	-0.2808	0.0986	-0.5198	0.1579	-0.9822	0.1796	-1.0588
36	0.412	0.764	-0.0262	-0.0091	-0.0098	-0.0074	-0.0068	-0.0555	0.0140	-0.1957	0.0358	-0.4077	0.0686	-0.7498	0.1208	-1.1138	0.1406	-1.2245
37	0.412	0.882	-0.0373	-0.0042	-0.0006	-0.0036	-0.0072	-0.1031	0.0005	-0.2498	0.0076	-0.4093	0.0288	-0.6611	0.0575	-0.8401	0.0603	-0.8772
38	0.264	0.000	-0.0438	-0.0425	-0.0347	-0.0352	-0.0409	-0.0431	-0.0069	-0.0759	0.0379	-0.1306	0.1050	-0.1612	0.1765	-0.2013	0.1942	-0.2308
39	0.264	0.236	-0.0431	-0.0308	-0.0322	-0.0351	-0.0361	-0.0413	-0.0075	-0.0788	0.0361	-0.1309	0.1037	-0.1919	0.1746	-0.2588	0.1882	-0.2924
40	0.264	0.471	-0.0339	-0.0324	-0.0377	-0.0313	-0.0316	-0.0404	-0.0035	-0.0883	0.0303	-0.1746	0.0884	-0.2963	0.1526	-0.4683	0.1733	-0.5212
41	0.264	0.647	-0.0285	-0.0240	-0.0283	-0.0194	-0.0225	-0.0398	-0.0007	-0.1268	0.0226	-0.2771	0.0676	-0.5016	0.1226	-0.7838	0.1418	-0.8557
42	0.264	0.764	-0.0321	-0.0251	-0.0301	-0.0194	-0.0230	-0.0579	-0.0044	-0.1079	0.0116	-0.3429	0.0492	-0.5661	0.0915	-0.7764	0.1087	-0.8150
43	0.264	0.882	-0.0466	-0.0189	-0.0135	-0.0188	-0.0225	-0.0926	-0.0141	-0.1933	-0.0049	-0.2944	0.0188	-0.4252	0.0499	-0.5449	0.0533	-0.5422
44	0.146	0.000	-0.1548	-0.1978	-0.1702	-0.1682	-0.2027	-0.1239	-0.1812	-0.1487	-0.1572	-0.1656	-0.0945	-0.2303	-0.0253	-0.3732	-0.0048	-0.4079
45	0.146	0.236	-0.1572	-0.1987	-0.1720	-0.1717	-0.2009	-0.1334	-0.1794	-0.1578	-0.1539	-0.1835	-0.0942	-0.2722	-0.0264	-0.4113	-0.0047	-0.4484
46	0.146	0.471	-0.1394	-0.1626	-0.1518	-0.1415	-0.1656	-0.1297	-0.1444	-0.1657	-0.1167	-0.2255	-0.0659	-0.3519	-0.0001	-0.5219	0.0198	-0.5665
47	0.146	0.647	-0.0933	-0.1048	-0.0953	-0.0917	-0.1058	-0.0955	-0.0826	-0.1638	-0.0621	-0.2759	-0.0212	-0.4412	0.0322	-0.6281	0.0498	-0.6738
48	0.146	0.764	-0.0737	-0.0726	-0.0642	-0.0659	-0.0726	-0.0871	-0.0562	-0.1873	-0.0362	-0.2858	-0.0001	-0.4189	0.0424	-0.5299	0.0542	-0.5474
49	0.146	0.882	-0.0708	-0.0447	-0.0445	-0.0346	-0.0526	-0.1068	-0.0463	-0.1666	-0.0332	-0.2237	0.0005	-0.2934	0.0163	-0.3617	0.0310	-0.3668
50	0.088	0.000	-0.0963	-0.1955	-0.1548	-0.1335	-0.2307	-0.0593	-0.2437	-0.0625	-0.2538	-0.1174	-0.1988	-0.2099	-0.1511	-0.3758	-0.1261	-0.4368
51	0.088	0.236	-0.1025	-0.1946	-0.1569	-0.1434	-0.2322	-0.0637	-0.2448	-0.0815	-0.2485	-0.1406	-0.1965	-0.2323	-0.1447	-0.3854	-0.1251	-0.4467
52	0.088	0.471	-0.1348	-0.1990	-0.1696	-0.1682	-0.2279	-0.1146	-0.2308	-0.1417	-0.2308	-0.1849	-0.1879	-0.2893	-0.1244	-0.4118	-0.1118	-0.4643
53	0.088	0.764	-0.1341	-0.1391	-0.1323	-0.1363	-0.1474	-0.1424	-0.1308	-0.1897	-0.1127	-0.2087	-0.0709	-0.2775	-0.0191	-0.3237	-0.0031	-0.3425
54	0.059	0.000	0.0633	0.0058	0.0318	0.0370	-0.0230	0.0864	-0.0264	0.0663	-0.0524	0.0060	-0.0239	-0.0436	0.0241	-0.0938	0.0341	-0.1206
55	0.059	0.236	0.0417	-0.0089	0.0210	0.0305	-0.0367	0.0785	-0.0416	0.0647	-0.0549	-0.0004	-0.0171	-0.0610	0.0169	-0.1219	0.0386	-0.1454
56	0.059	0.471	0.0326	-0.0367	-0.0045	0.0111	-0.0548	0.0460	-0.0631	0.0363	-0.0659	-0.0291	-0.0313	-0.0963	0.0063	-0.1650	0.0175	-0.1936
57	0.059	0.647	-0.0869	-0.1066	-0.0923	-0.0852	-0.1115	-0.0706	-0.1159	-0.0464	-0.1116	-0.0691	-0.0723	-0.1306	-0.0298	-0.1981	-0.0148	-0.2222
58	0.059	0.882	-0.0933	-0.0851	-0.0772	-0.0702	-0.0823	-0.1111	-0.0748	-0.0959	-0.0625	-0.0829	-0.0330	-0.1096	-0.0118	-0.1330	0.0098	-0.1383
59	0.029	0.000	0.1341	0.1057	0.1228	0.1291	0.1001	0.1353	0.1077	0.1248	0.0713	0.0818	0.0967	0.0787	0.1332	0.0824	0.1515	0.0788
60	0.029	0.236	0.1259	0.0826	0.1038	0.1107	0.0624	0.1293	0.0718	0.1259	0.0686	0.0769	0.0874	0.0605	0.1229	0.0649	0.1353	0.0587
61	0.029	0.471	0.1221	0.0808	0.0463	0.1044	0.0544	0.1297	0.0542	0.1288	0.0638	0.0655	0.0648	0.0291	0.0988	0.0064	0.1102	-0.0042
62	0.029	0.764	-0.0138	0.0017	-0.0022	-0.0046	-0.0001	0.0108	-0.0145	0.0422	-0.0363	0.0135	-0.0255	-0.0366	0.0869	-0.0686	0.0169	-0.0763
63	0.854	-0.471	0.0733	0.0881	0.0967	0.1053	0.1047	0.1069	0.1187	0.1165	0.1233	0.1174	0.1037	0.1113	0.1034	0.0907	0.0767	0.0813
64	0.146	-0.471	-0.1285	-0.1637	-0.1457	-0.1415	-0.1626	-0.1279	-0.1450	-0.1552	-0.1184	-0.2147	-0.0578	-0.3415	0.0051	-0.4931	0.0292	-0.5520

Table A-3.- (Continued).
M = 0.6

			ALPHA =															
			27.3	27.3	30.1	30.1	35.0	35.1	39.9	40.0	44.9	45.0	49.9	50.0	54.9	54.9	56.4	56.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.971	0.000	1.0151	-1.1547	1.0481	-1.2389	1.0884	-1.4184	1.0918	-1.5987	1.0898	-0.7275	1.0713	-0.6327	1.0219	-0.5928	1.0104	-0.5815
2	0.971	0.236	1.0104	-1.2080	1.0417	-1.3104	1.0740	-1.4790	1.0871	-1.6059	1.0833	-0.7198	1.0648	-0.6322	1.0179	-0.5907	1.0053	-0.5787
3	0.971	0.471	0.9852	-1.3084	1.0151	-1.4335	1.0525	-1.5904	1.0672	-1.6256	1.0852	-0.7239	1.0508	-0.6224	1.0088	-0.5848	0.9951	-0.5785
4	0.971	0.764	0.8201	-1.3242	0.8632	-1.4530	0.9193	-1.6190	0.9544	-1.6254	0.9494	-0.7136	0.9703	-0.6055	0.9410	-0.5759	0.9286	-0.5687
5	0.941	0.000	0.8547	-1.2524	0.9102	-1.3642	0.9877	-1.5389	1.0420	-1.6196	1.0710	-0.7440	1.0924	-0.6232	1.0873	-0.5942	1.0850	-0.5886
6	0.941	0.236	0.8436	-1.3248	0.8975	-1.4402	0.9764	-1.6165	1.0328	-1.6464	1.0827	-0.7558	1.0854	-0.6282	1.0821	-0.5963	1.0785	-0.5969
7	0.941	0.471	0.7956	-1.3914	0.8566	-1.5363	0.9352	-1.7048	0.9978	-1.6570	1.0316	-0.7315	1.0560	-0.6286	1.0575	-0.5922	1.0592	-0.5936
8	0.941	0.647	0.6653	-1.4134	0.7289	-1.5617	0.8213	-1.7267	0.8919	-1.6521	0.9638	-0.7254	0.9786	-0.6242	0.9899	-0.5810	0.9924	-0.5850
9	0.941	0.882	0.2791	-1.3079	0.3268	-1.4353	0.4179	-1.6189	0.5003	-1.6285	0.5934	-0.7163	0.6437	-0.6144	0.6691	-0.5746	0.6739	-0.5768
10	0.912	0.000	0.6672	-1.3248	0.7372	-1.4530	0.8506	-1.6332	0.9415	-1.6630	1.0827	-0.7428	1.0625	-0.6284	1.0862	-0.5902	1.0914	-0.5778
11	0.912	0.236	0.6554	-1.3864	0.7238	-1.5262	0.8402	-1.7074	0.9289	-1.6795	0.9896	-0.7492	1.0512	-0.6325	1.0788	-0.5913	1.0821	-0.5822
12	0.912	0.471	0.5948	-1.4713	0.6629	-1.6287	0.7777	-1.8103	0.8697	-1.6844	0.9382	-0.7506	1.0025	-0.6311	1.0321	-0.5916	1.0402	-0.5928
13	0.912	0.764	0.3636	-1.4464	0.4204	-1.6208	0.5134	-1.7995	0.5802	-1.6893	0.6703	-0.7287	0.7335	-0.6257	0.7839	-0.5853	0.7944	-0.5855
14	0.854	0.000	0.4573	-1.4741	0.5293	-1.6532	0.6524	-1.8539	0.7659	-1.7291	0.8576	-0.7396	0.9427	-0.6345	1.0173	-0.5878	1.0334	-0.5924
15	0.854	0.236	0.4458	-1.5226	0.5128	-1.7064	0.6353	-1.8876	0.7469	-1.7216	0.8398	-0.7425	0.9254	-0.6286	1.0001	-0.5848	1.0173	-0.5905
16	0.854	0.471	0.3922	-1.5916	0.4532	-1.7810	0.5726	-1.9406	0.6801	-1.7022	0.7742	-0.7510	0.8652	-0.6221	0.9282	-0.5919	0.9467	-0.5864
17	0.854	0.647	0.3121	-1.5957	0.3692	-1.7936	0.4741	-1.9466	0.5684	-1.7049	0.6639	-0.7521	0.7461	-0.6294	0.8012	-0.5977	0.8187	-0.5932
18	0.854	0.764	0.2635	-1.5758	0.2922	-1.7667	0.3915	-1.9172	0.4815	-1.6984	0.5808	-0.7465	0.6551	-0.6299	0.7033	-0.6018	0.7208	-0.6004
19	0.854	0.882	0.1098	-1.5536	0.1372	-1.7298	0.2305	-1.8624	0.3089	-1.6882	0.4236	-0.7424	0.4816	-0.6217	0.5209	-0.5939	0.5355	-0.5936
20	0.736	0.000	0.3765	-1.3579	0.4313	-1.5159	0.5388	-1.5731	0.6399	-1.6105	0.7339	-0.7526	0.8266	-0.6397	0.9122	-0.6112	0.9407	-0.6098
21	0.736	0.236	0.3659	-1.3708	0.4221	-1.5315	0.5249	-1.6489	0.6242	-1.6824	0.7168	-0.7555	0.8118	-0.6366	0.8942	-0.6092	0.9238	-0.6030
22	0.736	0.471	0.3163	-1.3231	0.3698	-1.5015	0.4661	-1.6841	0.5598	-1.6829	0.6521	-0.7533	0.7414	-0.6438	0.8203	-0.6068	0.8358	-0.6006
23	0.736	0.647	0.2342	-1.3789	0.2781	-1.5922	0.3633	-1.7543	0.4506	-1.6766	0.5443	-0.7595	0.6232	-0.6493	0.6926	-0.6156	0.7052	-0.6071
24	0.736	0.764	0.1598	-1.6342	0.1974	-1.8324	0.2788	-1.8602	0.3621	-1.6873	0.4682	-0.7675	0.5337	-0.6517	0.5948	-0.6203	0.6076	-0.6116
25	0.736	0.882	0.0175	-1.8001	0.0421	-1.9292	0.1173	-1.8445	0.1885	-1.6639	0.3061	-0.7598	0.3676	-0.6437	0.4139	-0.6142	0.4263	-0.5982
26	0.588	0.000	0.3132	-0.0257	0.3694	0.1695	0.4625	0.2249	0.5503	-0.7013	0.6331	-0.7696	0.7322	-0.6649	0.8235	-0.6306	0.8517	-0.6221
27	0.588	0.236	0.3051	-0.1654	0.3576	-0.0887	0.4482	-0.3481	0.5342	-1.2186	0.6186	-0.7747	0.7163	-0.6600	0.8052	-0.6251	0.8298	-0.6228
28	0.588	0.471	0.2717	-0.4049	0.3126	-0.4837	0.3916	-0.9808	0.4787	-1.4979	0.5510	-0.7647	0.6488	-0.6599	0.7300	-0.6258	0.7506	-0.6217
29	0.588	0.647	0.1982	-1.0609	0.2296	-1.2501	0.2945	-1.4862	0.3645	-1.6317	0.4461	-0.7641	0.5315	-0.6661	0.5997	-0.6313	0.6180	-0.6314
30	0.588	0.764	0.1611	-1.6091	0.1620	-1.6903	0.2193	-1.6182	0.2806	-1.6329	0.3658	-0.7628	0.4479	-0.6664	0.5057	-0.6344	0.5233	-0.6375
31	0.588	0.882	0.0291	-1.5931	0.0321	-1.6687	0.0689	-1.5962	0.1180	-1.5439	0.2203	-0.7734	0.2881	-0.6634	0.3321	-0.6384	0.3493	-0.6254
32	0.412	0.000	0.2772	-0.0076	0.3262	-0.0760	0.3990	-0.2069	0.4735	-0.1207	0.5323	-0.7719	0.6307	-0.6708	0.7204	-0.6431	0.7562	-0.6278
33	0.412	0.236	0.2750	-0.1200	0.3108	-0.2106	0.3895	-0.3481	0.4605	-0.5975	0.5174	-0.7758	0.6168	-0.6629	0.7121	-0.6433	0.7416	-0.6297
34	0.412	0.471	0.2427	-0.4525	0.2747	-0.6343	0.3398	-0.8333	0.3976	-1.0984	0.4581	-0.7641	0.5512	-0.6656	0.6367	-0.6273	0.6677	-0.6251
35	0.412	0.647	0.1877	-1.1080	0.2189	-1.2559	0.2572	-1.3548	0.2994	-1.4525	0.3588	-0.7718	0.4483	-0.6708	0.5145	-0.6330	0.5408	-0.6349
36	0.412	0.764	0.1463	-1.2285	0.1628	-1.2541	0.1946	-1.3034	0.2256	-1.4056	0.2832	-0.7728	0.3683	-0.6711	0.4269	-0.6374	0.4497	-0.6369
37	0.412	0.882	0.0686	-0.8560	0.0753	-0.9501	0.0753	-1.0373	0.0798	-1.1688	0.1504	-0.7573	0.2061	-0.6745	0.2619	-0.6413	0.2783	-0.6262
38	0.264	0.000	0.2185	-0.2241	0.2588	-0.3278	0.3239	-0.4061	0.3727	-0.3289	0.4104	-0.7339	0.5121	-0.6666	0.6105	-0.6329	0.6487	-0.6284
39	0.264	0.236	0.2154	-0.2987	0.2494	-0.3946	0.3157	-0.4839	0.3647	-0.4489	0.3982	-0.7388	0.5082	-0.6629	0.5969	-0.6268	0.6249	-0.6200
40	0.264	0.471	0.1941	-0.5399	0.2275	-0.6582	0.2828	-0.7939	0.3251	-0.8132	0.3538	-0.7476	0.4514	-0.6627	0.5341	-0.6298	0.5673	-0.6205
41	0.264	0.647	0.1546	-0.8814	0.1811	-0.9879	0.2205	-1.0884	0.2455	-1.1488	0.2654	-0.7595	0.3551	-0.6667	0.4246	-0.6324	0.4547	-0.6291
42	0.264	0.764	0.1244	-0.8269	0.1461	-0.8881	0.1752	-0.9386	0.1848	-1.0356	0.2006	-0.7611	0.2810	-0.6648	0.3458	-0.6333	0.3731	-0.6357
43	0.264	0.882	0.0898	-0.5471	0.0864	-0.6041	0.0864	-0.6349	0.0704	-0.7055	0.0828	-0.7361	0.1391	-0.6658	0.1976	-0.6269	0.2208	-0.6161
44	0.144	0.000	0.0187	-0.4220	0.0520	-0.4766	0.1088	-0.5082	0.1219	-0.5034	0.1161	-0.6943	0.2223	-0.6523	0.3385	-0.6078	0.3716	-0.5993
45	0.144	0.236	0.0186	-0.4687	0.0588	-0.5239	0.1030	-0.5566	0.1239	-0.5714	0.1146	-0.6991	0.2288	-0.6486	0.3348	-0.6030	0.3662	-0.5973
46	0.144	0.471	0.0486	-0.6046	0.0683	-0.6702	0.1147	-0.7288	0.1286	-0.7762	0.1284	-0.7045	0.2213	-0.6484	0.3281	-0.6113	0.3572	-0.5972
47	0.144	0.647	0.0634	-0.7158	0.0865	-0.7582	0.1243	-0.7818	0.1301	-0.8728	0.1108	-0.7164	0.1969	-0.6493	0.2889	-0.6145	0.3137	-0.5998
48	0.144	0.764	0.0685	-0.5882	0.0883	-0.5836	0.1181	-0.5788	0.1218	-0.6866	0.0914	-0.7133	0.1638	-0.6493	0.2378	-0.6118	0.2699	-0.6004
49	0.144	0.882	0.0436	-0.3941	0.0526	-0.3958	0.0788	-0.3982	0.0618	-0.4712	0.0041	-0.6983	0.0618	-0.6327	0.1257	-0.6003	0.1491	-0.5913
50	0.088	0.000	-0.1028	-0.4594	-0.0944	-0.5035	-0.2283	-0.4974	-0.1985	-0.5547	-0.2084	-0.6564	-0.0926	-0.6118	0.0415	-0.5787	0.0903	-0.5747
51	0.088	0.236	-0.0973	-0.4743	-0.0886	-0.5102	-0.2181	-0.5066	-0.1749	-0.5652	-0.1988	-0.6579	-0.0673	-0.6058	0.0646	-0.5729	0.1075	-0.5689
52	0.088	0.471	-0.0763	-0.4866	-0.0642	-0.5076	-0.0686	-0.4951	-0.0412	-0.5729	-0.1148	-0.6671	-0.0093	-0.6181	0.0974	-0.5788	0.1366	-0.5678
53	0.088	0.764	0.0152	-0.3466	0.0321	-0.3218	0.0668	-0.3044	0.0627	-0.4889	-0.0259	-0.6986	0.0528	-0.6308	0.1398	-0.5981	0.1783	-0.5834
54	0.059	0.000	0.0544	-0.1213	0.0538	-0.1445	0.0494	-0.2062	-0.0535	-0.2298	-0.1495	-0.6234	-0.0638	-0.5982	0.0235	-0.5523	0.0548	-0.5475
55	0.059	0.236	0.0471	-0.1413	0.0555	-0.1822	0.0520	-0.2464	-0.0425	-0.2716	-0.1462	-0.6284	-0.0625	-0.5880	0.0263	-0.5581	0.0578	-0.5474
56	0.059	0.471																
57	0.059	0.647	0.0037	-0.2121	0.0152	-0.2334	0.0571	-0.2844	0.0041	-0.3551	-0.1262	-0.6438	-0.0534	-0.5898	0.0291	-0.5626	0.0613	-0.5405
58	0.059	0.882	0.0192	-0.1418	0.0344	-0.1311	0.0686	-0.1689	0.0368	-0.2183	-0.1026	-0.6416	-0.0437	-0.5948	0.0175	-0.5582	0.0388	-0.5408
59	0.029	0.000	0.1987	0.0712	0.1548	0.0294	0.0969	-0.0624	-0.0988	-0.0488	-0.2102	-0.5584	-0.1502	-0.5467	-0.0898	-0.5258	-0.0665	-0.5076
60	0.029	0.236	0.1498	0.0429	0.1443	-0.0042	0.0946	-0.1069	-0.0726	-0.0969	-0.2081	-0.5674	-0.1472	-0.5552	-0.0912	-0.5247	-0.0681	-0.5164
61	0.029	0.471	0.1185	-0.0221	0.1188	-0.0723	0.0934	-0.1996	-0.0368	-0.2150	-0.1951	-0.5774	-0.1503	-0.5521	-0.0756	-0.5252	-0.0542	-0.5228
62	0.029	0.764	0.0256	-0.1088	0.0356	-0.1309	0.0786	-0.2177	0.0117	-0.2861	-0.1793	-0.5879	-0.1387	-0.5688	-0.0875	-0.5234	-0.0669	-0.5199
63	0.854	-0.471	0.3966	-1.5418	0.4685	-1.7326	0.5887	-1.9189	0.6891	-1.7221	0.7752	-0.7298	0.8669	-0.6286	0.9314	-0.5956	0.9513	-0.5751
64	0.146	-0.471	0.0435	-0.5422	0.0764	-0.6172	0.1199	-0.6528	0.1392	-0.6874	0.1257	-0.6943	0.2277	-0.6524	0.3300	-0.6051	0.3619	-0.5864

Table A-3.- (Continued).
M = 0.8

			ALPHA =															
			-2.8	-2.9	0.1	0.0	5.1	5.0	10.1	10.0	15.1	15.0	20.1	19.9	25.0	24.9	26.5	26.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.971	0.000	0.1761	0.4569	0.3247	0.3193	0.5528	0.0993	0.7243	-0.9796	0.8544	-1.5697	0.9492	-0.8422	1.0404	-0.9837	1.0687	-1.0678
2	0.971	0.236	0.1852	0.4493	0.3179	0.3099	0.5449	0.0911	0.7161	-0.9841	0.8466	-1.6099	0.9436	-0.8717	1.0334	-1.0151	1.0546	-1.0774
3	0.971	0.471	0.1421	0.4174	0.2873	0.2816	0.5095	0.0685	0.6801	-0.9815	0.8120	-1.5971	0.9120	-0.9064	1.0051	-1.0601	1.0246	-1.1199
4	0.971	0.764	0.0825	0.2361	0.1239	0.1198	0.3198	-0.0541	0.4812	-0.8948	0.6142	-1.4270	0.7326	-0.9249	0.8372	-1.0682	0.8676	-1.1282
5	0.941	0.000	0.0418	0.2409	0.1513	0.1461	0.3262	-0.0387	0.4792	-0.2805	0.6152	-1.2743	0.7358	-0.8838	0.8539	-1.0255	0.8898	-1.0031
6	0.941	0.236	0.0293	0.2367	0.1394	0.1359	0.3120	-0.0479	0.4656	-0.2702	0.6013	-1.2864	0.7230	-0.9144	0.8420	-1.0666	0.8775	-1.1247
7	0.941	0.471	-0.0047	0.1954	0.0955	0.1013	0.2701	-0.0768	0.4218	-0.2330	0.5578	-1.2489	0.6812	-0.9266	0.8046	-1.0910	0.8364	-1.1599
8	0.941	0.647	-0.1252	0.0574	-0.0336	-0.0256	0.1260	-0.1945	0.2713	-0.2652	0.4059	-1.1790	0.5400	-0.9335	0.6711	-1.0965	0.7069	-1.1647
9	0.941	0.882	-0.2341	-0.0562	-0.1707	-0.0825	-0.0743	-0.2549	0.0211	-0.4182	0.0920	-0.9496	0.2144	-0.9114	0.3220	-1.0569	0.3406	-1.1231
10	0.912	0.000	-0.1251	0.0164	-0.0483	-0.0541	0.0791	-0.1891	0.2099	-0.3128	0.3512	-1.1071	0.4963	-0.8999	0.6355	-1.0783	0.6796	-1.1369
11	0.912	0.236	-0.1371	0.0123	-0.0595	-0.0592	0.0721	-0.1966	0.2028	-0.3135	0.3420	-1.1050	0.4823	-0.9229	0.6253	-1.1005	0.6701	-1.1639
12	0.912	0.471	-0.1999	-0.0465	-0.1209	-0.1192	0.0131	-0.2548	0.1424	-0.3535	0.2840	-1.0640	0.4228	-0.9574	0.5668	-1.1395	0.6121	-1.2057
13	0.912	0.764	-0.5423	-0.3427	-0.4762	-0.4577	-0.2888	-0.4282	-0.1191	-0.4538	0.0814	-1.0672	0.2305	-0.9298	0.3554	-1.1118	0.3971	-1.1807
14	0.854	0.000	-0.5985	-0.6670	-0.6809	-0.6850	-0.5573	-0.5872	0.0197	-0.6262	0.1542	-0.5958	0.2712	-0.8894	0.4105	-1.1226	0.4610	-1.1954
15	0.854	0.236	-0.5855	-0.6113	-0.6476	-0.6515	-0.4713	-0.5645	0.0002	-0.5973	0.1452	-0.6224	0.2560	-0.9055	0.4032	-1.1463	0.4490	-1.2176
16	0.854	0.471	-0.6009	-0.4566	-0.6010	-0.5798	-0.3363	-0.5625	-0.0507	-0.5366	0.1324	-0.5724	0.2295	-0.9395	0.3588	-1.1076	0.4050	-1.2547
17	0.854	0.647	-0.3111	-0.1113	-0.1866	-0.1729	-0.0696	-0.3267	0.0333	-0.4030	0.1841	-0.5547	0.1941	-0.9529	0.3090	-1.1917	0.3437	-1.2650
18	0.854	0.764	-0.1875	-0.0982	-0.1423	-0.1338	-0.0714	-0.2369	-0.0092	-0.3677	0.0545	-0.4291	0.1428	-0.9518	0.2484	-1.1899	0.2815	-1.2622
19	0.854	0.882	-0.1525	-0.0794	-0.1055	-0.0969	-0.0654	-0.1961	-0.0328	-0.3782	-0.0860	-0.6695	0.0573	-0.9849	0.1397	-1.2052	0.1630	-1.2734
20	0.736	0.000	-0.0783	-0.0156	-0.0355	-0.0353	0.0016	-0.1103	0.0505	-0.1487	0.1332	-0.2475	0.2164	-0.9062	0.3255	-1.2035	0.3572	-1.2887
21	0.736	0.236	-0.0729	-0.0133	-0.0284	-0.0305	0.0016	-0.1064	0.0491	-0.1466	0.1298	-0.2165	0.2088	-0.9164	0.3136	-1.2206	0.3463	-1.3020
22	0.736	0.471	-0.0416	-0.0060	-0.0205	-0.0100	0.0021	-0.0632	0.0477	-0.1354	0.1147	-0.2159	0.1762	-0.9086	0.2745	-1.2183	0.3073	-1.2964
23	0.736	0.647	-0.0476	-0.0053	-0.0210	-0.0156	0.0056	-0.0706	0.0370	-0.1566	0.0869	-0.2661	0.1242	-0.8760	0.2110	-1.2069	0.2390	-1.2901
24	0.736	0.764	-0.0546	-0.0080	-0.0234	-0.0152	-0.0026	-0.0809	0.0230	-0.1935	0.0611	-0.3895	0.0782	-0.9252	0.1503	-1.2908	0.1773	-1.3650
25	0.736	0.882	-0.0470	-0.0067	-0.0178	-0.0127	-0.0024	-0.0991	-0.0014	-0.3351	0.0123	-0.7377	-0.0024	-1.1203	0.0581	-1.3597	0.0625	-1.4132
26	0.588	0.000	-0.0124	0.0063	-0.0039	-0.0020	0.0207	-0.0252	0.0538	-0.0735	0.1182	-0.1217	0.1022	-0.5588	0.2751	-0.7870	0.2976	-0.8680
27	0.588	0.236	-0.0151	0.0068	-0.0034	0.0009	0.0202	-0.0265	0.0510	-0.0752	0.1130	-0.1319	0.1751	-0.5334	0.2656	-0.7704	0.2887	-0.8825
28	0.588	0.471	-0.0096	0.0063	0.0012	0.0045	0.0169	-0.0257	0.0477	-0.0890	0.1030	-0.1701	0.1514	-0.4861	0.2190	-0.7517	0.2463	-0.9023
29	0.588	0.647		0.0104		0.0071		-0.0345		-0.1106		-0.2643		-0.6269		-0.9852		-1.1156
30	0.588	0.764	-0.0183	0.0108	0.0022	0.0065	0.0150	-0.0409	0.0292	-0.1008	0.0806	-0.4244	0.0645	-0.9191	0.1071	-1.2675	0.1220	-1.3460
31	0.588	0.882	-0.0310	0.0160	0.0094	0.0109	0.0110	-0.0972	0.0136	-0.3221	0.0272	-0.5555	-0.0141	-1.0804	0.0122	-1.3444	0.0155	-1.3933
32	0.412	0.000	-0.0230	0.0045	-0.0030	-0.0037	0.0109	-0.0289	0.0449	-0.0703	0.0991	-0.1461	0.1626	0.0032	0.2322	0.2071	0.2511	0.4001
33	0.412	0.236	-0.0220	0.0045	-0.0025	0.0005	0.0123	-0.0265	0.0454	-0.0724	0.0985	-0.1570	0.1592	-0.0416	0.2236	0.0520	0.2445	0.1117
34	0.412	0.471	-0.0184	0.0022	0.0017	0.0032	0.0141	-0.0298	0.0421	-0.0849	0.0881	-0.1921	0.1374	-0.1969	0.1958	-0.3054	0.2091	-0.3268
35	0.412	0.647	-0.0240	0.0058	0.0015	0.0071	0.0146	-0.0373	0.0328	-0.1232	0.0673	-0.2953	0.1027	-0.5615	0.1461	-0.9167	0.1552	-0.9922
36	0.412	0.764	-0.0321	0.0066	0.0013	0.0027	0.0117	-0.0578	0.0230	-0.1982	0.0484	-0.4084	0.0740	-0.8584	0.1071	-1.1089	0.1098	-1.1836
37	0.412	0.882	-0.0420	0.0118	-0.0023	0.0039	0.0033	-0.1143	0.0094	-0.2660	0.0174	-0.3845	0.0244	-0.7353	0.0323	-0.9361	0.0304	-0.9552
38	0.264	0.000	-0.0388	-0.0186	-0.0225	-0.0202	-0.0048	-0.0435	0.0216	-0.0849	0.0655	-0.1543	0.1335	-0.0773	0.1841	-0.0805	0.2036	-0.1419
39	0.264	0.236	-0.0396	-0.0119	-0.0201	-0.0200	-0.0030	-0.0425	0.0202	-0.0866	0.0640	-0.1639	0.1283	-0.1332	0.1783	-0.1519	0.1962	-0.2055
40	0.264	0.471	-0.0365	-0.0165	-0.0224	-0.0083	-0.0002	-0.0426	0.0160	-0.0950	0.0556	-0.1990	0.1108	-0.2819	0.1510	-0.4173	0.1677	-0.4592
41	0.264	0.647	-0.0340	-0.0113	-0.0210	-0.0035	-0.0024	-0.0456	0.0108	-0.1339	0.0398	-0.2888	0.0839	-0.5022	0.1177	-0.9024	0.1282	-0.9078
42	0.264	0.764	-0.0303	-0.0145	-0.0230	-0.0062	-0.0065	-0.0625	0.0037	-0.1935	0.0245	-0.3335	0.0645	-0.6664	0.0907	-0.8945	0.0957	-0.8253
43	0.264	0.882	-0.0513	-0.0076	-0.0140	-0.0044	-0.0089	-0.1069	-0.0126	-0.2080	-0.0027	-0.2053	0.0235	-0.4884	0.0365	-0.5593	0.0462	-0.5601
44	0.144	0.000	-0.1512	-0.1057	-0.1295	-0.1226	-0.0947	-0.1561	-0.0870	-0.1808	-0.0619	-0.2309	-0.0170	-0.2292	0.0048	-0.2474	0.0160	-0.3135
45	0.144	0.236	-0.1563	-0.1138	-0.1324	-0.1227	-0.1003	-0.1538	-0.0908	-0.1846	-0.0672	-0.2367	-0.0225	-0.2746	-0.0083	-0.3086	0.0113	-0.3621
46	0.144	0.471	-0.1290	-0.1002	-0.1153	-0.1064	-0.0903	-0.1282	-0.0790	-0.1711	-0.0576	-0.2503	-0.0114	-0.3797	0.0053	-0.4882	0.0104	-0.5381
47	0.144	0.647	-0.0947	-0.0673	-0.0839	-0.0788	-0.0654	-0.0965	-0.0596	-0.1798	-0.0426	-0.2972	-0.0033	-0.5435	0.0118	-0.7061	0.0146	-0.7106
48	0.144	0.764	-0.0737	-0.0512	-0.0662	-0.0585	-0.0508	-0.0908	-0.0477	-0.2095	-0.0350	-0.2972	0.0036	-0.5066	0.0105	-0.5192	0.0155	-0.5781
49	0.144	0.882	-0.0772	-0.0354	-0.0431	-0.0331	-0.0408	-0.1222	-0.0469	-0.1922	-0.0416	-0.2309	-0.0080	-0.3530	0.0019	-0.3225	0.0020	-0.3665
50	0.088	0.000	-0.1763	-0.1194	-0.1481	-0.1409	-0.1212	-0.1648	-0.1015	-0.1643	-0.2252	-0.2654	-0.2310	-0.4183	-0.3722	-0.4038	-0.4247	-0.3994
51	0.088	0.236	-0.1947	-0.1390	-0.1642	-0.1455	-0.1290	-0.1932	-0.1930	-0.2086	-0.2378	-0.2746	-0.2423	-0.4246	-0.3730	-0.4133	-0.4115	-0.4128
52	0.088	0.471	-0.2324	-0.1643	-0.1938	-0.1785	-0.1516	-0.2238	-0.2114	-0.2560	-0.2527	-0.2585	-0.2341	-0.4284	-0.3216	-0.4186	-0.3354	-0.4185
53	0.088	0.764	-0.1426	-0.1214	-0.1289	-0.1172	-0.1100	-0.1794	-0.1192	-0.2248	-0.1171	-0.2012	-0.0754	-0.2879	-0.0839	-0.2738	-0.0724	-0.3027
54	0.059	0.000	-0.0054	0.0038	0.0079	0.0178	0.0026	0.0052	-0.0430	-0.0052	-0.0667	-0.0720	-0.0246	-0.1423	-0.0848	-0.2798	-0.0970	-0.3219
55	0.059	0.236	-0.0169	0.0012	0.0043	0.0164	0.0009	-0.0168	-0.0469	-0.0298	-0.0665	-0.0939	-0.0151	-0.1676	-0.0702	-0.2934	-0.0835	-0.3378
56	0.059	0.471	-0.0308	-0.0037	-0.0104	0.0064	0.0030	-0.0398	-0.0420	-0.0680	-0.0573	-0.1870	-0.0054	-0.2073	-0.0541	-0.3178	-0.0571	-0.3574
57	0.059	0.647	-0.1753	-0.1065	-0.1226	-0.1104	-0.0618	-0.1781	-0.0011	-0.1077	-0.0908	-0.0889	-0.0462	-0.2093	-0.0872	-0.2915	-0.0808	-0.3256
58	0.059	0.882	-0.1033	-0.0527	-0.0607	-0.0505	-0.0550	-0.1296	-0.0693	-0.1101	-0.0659	-0.0707	-0.0276	-0.1260	-0.0562	-0.1556	-0.0419	-0.1921
59	0.029	0.000	0.0704	0.0032	0.0813	0.0967	0.0707	0.0883	0.0253	0.0040	0.0230	0.0330	0.0947	0.0173	0.0673	-0.1738	0.0551	-0.2665
60	0.029	0.236	0.0576	0.0795	0.0761	0.0861	0.0706	0.0652	0.0245	0.0522	0.0226	0.0080	0.0975	-0.0129	0.0545	-0.1876	0.0432	-0.2828
61	0.029	0.471	0.0569	0.0861	0.0702	0.0759	0.0751	0.0454	0.0304	0.0317	0.0309	-0.0211	0.0902	-0.0639	0.0449	-0.2333	0.0383	-0.3300
62	0.029	0.764	0.0574	-0.0260	-0.0331	-0.0220	-0.0179	-0.0522	-0.0179	-0.0047	-0.0364	-0.0199	-0.0077	-0.1250	-0.0536	-0.2280	-0.0456	-0.2791
63	0.854	-0.471	0.1122	0.1054	0.1027	0.1416	0.1473	0.1611	0.1396	0.1513	0.1470	0.1337	0.1231	0.1527	0.0706	0.0924	0.0935	0.0892
64	0.144	-0.471	-0.1344	-0.0993	-0.1003	-0.1091	-0.0866	-0.1374	-0.0771	-0.1757	-0.0534	-0.2530	-0.0077	-0.3661	0.0122	-0.4685	0.0155	-0.5243

Table A-3.- (Continued).
M = 0.8

			ALPHA =															
TUBE	X/L	Y/B/2	27.1 WINDWARD	27.2 LEEWARD	29.9 WINDWARD	29.9 LEEWARD	35.1 WINDWARD	34.9 LEEWARD	39.8 WINDWARD	39.9 LEEWARD	44.8 WINDWARD	44.8 LEEWARD	49.7 WINDWARD	49.8 LEEWARD	54.7 WINDWARD	54.8 LEEWARD	56.3 WINDWARD	56.4 LEEWARD
1	0.971	0.000	1.0717	-1.0391	1.1096	-1.1541	1.1482	-1.3265	1.1658	-0.7157	1.1729	-0.6461	1.1519	-0.6232	1.1160	-0.5974	1.1026	-0.6112
2	0.971	0.236	1.0658	-1.0730	1.1035	-1.1980	1.1422	-1.3630	1.1616	-0.7150	1.1668	-0.6430	1.1467	-0.6210	1.1118	-0.5947	1.0961	-0.6092
3	0.971	0.471	1.0387	-1.1210	1.0778	-1.2293	1.1195	-1.3760	1.1408	-0.7112	1.1491	-0.6382	1.1301	-0.6161	1.0981	-0.5933	1.0838	-0.6049
4	0.971	0.764	0.8802	-1.1271	0.9276	-1.2417	0.9909	-1.3816	1.0338	-0.7025	1.0544	-0.6309	1.0501	-0.6104	1.0298	-0.5961	1.0193	-0.5965
5	0.941	0.000	0.9049	-1.0797	0.9629	-1.1951	1.0409	-1.3513	1.1043	-0.7222	1.1477	-0.6482	1.1673	-0.6234	1.1677	-0.6072	1.1654	-0.6064
6	0.941	0.236	0.8931	-1.1221	0.9511	-1.2377	1.0311	-1.3884	1.0935	-0.7304	1.1395	-0.6558	1.1508	-0.6294	1.1621	-0.6174	1.1584	-0.6102
7	0.941	0.471	0.8527	-1.1610	0.9111	-1.2770	0.9934	-1.4032	1.0551	-0.7258	1.1112	-0.6489	1.1328	-0.6209	1.1347	-0.6057	1.1366	-0.6172
8	0.941	0.647	0.7228	-1.1647	0.7805	-1.2837	0.8869	-1.3943	0.9592	-0.7158	1.0257	-0.6385	1.0619	-0.6147	1.0722	-0.5970	1.0789	-0.6133
9	0.941	0.882	0.3410	-1.1174	0.4167	-1.2352	0.5420	-1.3863	0.6215	-0.7053	0.6941	-0.6323	0.7464	-0.6120	0.7745	-0.5924	0.7866	-0.6090
10	0.912	0.000	0.7044	-1.1330	0.7035	-1.2495	0.8977	-1.3862	0.9938	-0.7279	1.0773	-0.6558	1.1296	-0.6281	1.1617	-0.5984	1.1677	-0.6083
11	0.912	0.236	0.6834	-1.1663	0.7716	-1.2773	0.8861	-1.4070	0.9822	-0.7314	1.0659	-0.6602	1.1198	-0.6326	1.1519	-0.6049	1.1575	-0.6133
12	0.912	0.471	0.6739	-1.2109	0.7119	-1.3108	0.8303	-1.4216	0.9288	-0.7327	1.0190	-0.6596	1.0736	-0.6364	1.1101	-0.6090	1.1108	-0.6224
13	0.912	0.764	0.4260	-1.1881	0.5010	-1.3080	0.6205	-1.4124	0.6862	-0.7212	0.7416	-0.6452	0.8293	-0.6232	0.8818	-0.6070	0.8937	-0.6131
14	0.854	0.000	0.4901	-1.2055	0.5637	-1.3362	0.6921	-1.4106	0.8131	-0.7276	0.9284	-0.6553	1.0185	-0.6274	1.0918	-0.6098	1.1077	-0.6137
15	0.854	0.236	0.4738	-1.2274	0.5488	-1.3521	0.6783	-1.4144	0.7977	-0.7252	0.9135	-0.6513	1.0016	-0.6256	1.0749	-0.6055	1.0926	-0.6108
16	0.854	0.471	0.4267	-1.2676	0.5008	-1.3860	0.6271	-1.4162	0.7422	-0.7307	0.8496	-0.6463	0.9400	-0.6245	1.0103	-0.6080	1.0276	-0.6111
17	0.854	0.647	0.3600	-1.2773	0.4270	-1.3961	0.5561	-1.4218	0.6541	-0.7364	0.7502	-0.6510	0.8294	-0.6271	0.8929	-0.6127	0.9091	-0.6174
18	0.854	0.764	0.2949	-1.2702	0.3600	-1.3905	0.4887	-1.4127	0.5841	-0.7336	0.6720	-0.6540	0.7457	-0.6280	0.8046	-0.6151	0.8201	-0.6229
19	0.854	0.882	0.1767	-1.2033	0.2350	-1.4003	0.3708	-1.4009	0.4513	-0.7244	0.5255	-0.6507	0.5907	-0.6209	0.6396	-0.6057	0.6546	-0.6117
20	0.736	0.000	0.3794	-1.2977	0.4534	-1.4367	0.5735	-1.4015	0.6874	-0.7321	0.7985	-0.6607	0.9019	-0.6320	0.9859	-0.6143	1.0110	-0.6228
21	0.736	0.236	0.3717	-1.3128	0.4436	-1.4444	0.5620	-1.4090	0.6743	-0.7290	0.7845	-0.6585	0.8851	-0.6333	0.9704	-0.6128	0.9943	-0.6213
22	0.736	0.471	0.3299	-1.3090	0.3932	-1.4413	0.5139	-1.3930	0.6181	-0.7361	0.7213	-0.6626	0.8191	-0.6390	0.9039	-0.6111	0.9251	-0.6234
23	0.736	0.647	0.2559	-1.3060	0.3169	-1.4437	0.4343	-1.3393	0.5277	-0.7429	0.6208	-0.6703	0.7684	-0.6455	0.7846	-0.6192	0.8037	-0.6318
24	0.736	0.764	0.1925	-1.3830	0.2477	-1.5002	0.3708	-1.3459	0.4569	-0.7444	0.5420	-0.6764	0.6249	-0.6480	0.6945	-0.6254	0.7141	-0.6384
25	0.736	0.882	0.0705	-1.4226	0.1257	-1.5047	0.2568	-1.3614	0.3327	-0.7299	0.4007	-0.6659	0.4686	-0.6462	0.5297	-0.6241	0.5481	-0.6265
26	0.588	0.000	0.3166	-0.8359	0.3771	-0.7012	0.4749	-1.0647	0.5832	-0.7367	0.6919	-0.6879	0.7975	-0.6614	0.8946	-0.6380	0.9235	-0.6361
27	0.588	0.236	0.3105	-0.8605	0.3667	-0.9141	0.4646	-1.1100	0.5695	-0.7343	0.6769	-0.6834	0.7821	-0.6581	0.8766	-0.6359	0.9067	-0.6368
28	0.588	0.471	0.2634	-0.8901	0.3214	-0.9462	0.4174	-1.1711	0.5167	-0.7370	0.6701	-0.6858	0.7211	-0.6458	0.8115	-0.6343	0.8337	-0.6320
29	0.588	0.647	0.1915	-1.1332	0.2435	-1.1225	0.3409	-1.2087	0.4285	-0.7438	0.5200	-0.6928	0.6116	-0.6538	0.6906	-0.6418	0.7109	-0.6405
30	0.588	0.764	0.1362	-1.3042	0.1812	-1.3075	0.2818	-1.3128	0.3611	-0.7444	0.4465	-0.6945	0.5322	-0.6583	0.6036	-0.6488	0.6253	-0.6431
31	0.588	0.882	0.0281	-1.3908	0.0625	-1.3809	0.1736	-1.3045	0.2406	-0.7432	0.3872	-0.6805	0.3786	-0.6530	0.4463	-0.6466	0.4625	-0.6481
32	0.412	0.000	0.2691	0.3895	0.3166	0.2335	0.3833	-0.0336	0.4799	-0.7408	0.5854	-0.6929	0.6977	-0.6623	0.8000	-0.6498	0.8249	-0.6534
33	0.412	0.236	0.2655	0.0959	0.3111	-0.1032	0.3761	-0.0107	0.4694	-0.7397	0.5730	-0.6919	0.6832	-0.6618	0.7833	-0.6445	0.8107	-0.6477
34	0.412	0.471	0.2281	-0.3702	0.2686	-0.7225	0.3297	-1.0337	0.4228	-0.7484	0.5156	-0.6921	0.6211	-0.6699	0.7154	-0.6461	0.7423	-0.6448
35	0.412	0.647	0.1658	-1.0008	0.1985	-1.1359	0.2563	-1.2099	0.3371	-0.7544	0.4196	-0.7020	0.5162	-0.6740	0.5986	-0.6542	0.6250	-0.6479
36	0.412	0.764	0.1212	-1.1076	0.1433	-1.0769	0.1985	-1.1854	0.2724	-0.7518	0.3466	-0.7048	0.4385	-0.6760	0.5141	-0.6572	0.5407	-0.6496
37	0.412	0.882	0.0360	-0.9081	0.0443	-0.9027	0.0992	-1.0984	0.1620	-0.7460	0.2254	-0.6948	0.2980	-0.6691	0.3671	-0.6457	0.3872	-0.6491
38	0.264	0.000	0.2193	-0.1840	0.2538	-0.2641	0.2843	-0.2256	0.3761	-0.7308	0.4708	-0.6901	0.5821	-0.6636	0.6872	-0.6389	0.7179	-0.6452
39	0.264	0.236	0.2131	-0.2611	0.2472	-0.3247	0.2755	-0.4279	0.3655	-0.7329	0.4580	-0.6874	0.5686	-0.6640	0.6724	-0.6377	0.7040	-0.6463
40	0.264	0.471	0.1885	-0.5358	0.2162	-0.5887	0.2378	-0.7504	0.3191	-0.7307	0.4046	-0.6862	0.5170	-0.6630	0.6137	-0.6416	0.6412	-0.6448
41	0.264	0.647	0.1425	-0.9360	0.1613	-1.0245	0.1731	-1.0183	0.2425	-0.7392	0.3196	-0.6956	0.4204	-0.6685	0.5074	-0.6473	0.5322	-0.6486
42	0.264	0.764	0.1099	-0.8234	0.1213	-0.8876	0.1241	-0.9609	0.1850	-0.7397	0.2553	-0.6969	0.3495	-0.6714	0.4307	-0.6516	0.4543	-0.6553
43	0.264	0.882	0.0500	-0.5950	0.0522	-0.6654	0.0304	-0.7953	0.0815	-0.7262	0.1413	-0.6998	0.2211	-0.6608	0.2898	-0.6434	0.3090	-0.6495
44	0.146	0.000	0.0253	-0.2965	0.0532	-0.3390	0.0457	-0.2937	0.1165	-0.6945	0.2011	-0.6892	0.3158	-0.6528	0.4285	-0.6352	0.4607	-0.6392
45	0.146	0.236	0.0238	-0.3457	0.0530	-0.3938	0.0410	-0.3636	0.1110	-0.7012	0.1944	-0.6865	0.3088	-0.6514	0.4226	-0.6336	0.4546	-0.6377
46	0.146	0.471	0.0253	-0.5317	0.0484	-0.6101	0.0271	-0.6117	0.0931	-0.7116	0.1788	-0.6785	0.2907	-0.6558	0.4028	-0.6330	0.4371	-0.6330
47	0.146	0.647	0.0253	-0.7127	0.0457	-0.7490	-0.0018	-0.7913	0.0560	-0.7185	0.1393	-0.6832	0.2482	-0.6579	0.3526	-0.6395	0.3831	-0.6364
48	0.146	0.764	0.0306	-0.5397	0.0441	-0.5300	-0.0238	-0.6594	0.0301	-0.7150	0.1093	-0.6829	0.2104	-0.6574	0.3089	-0.6431	0.3375	-0.6403
49	0.146	0.882	0.0099	-0.3482	0.0151	-0.3550	-0.0415	-0.5080	-0.0358	-0.7097	0.0277	-0.6760	0.1157	-0.6466	0.1971	-0.6310	0.2174	-0.6228
50	0.088	0.000	-0.4084	-0.3700	-0.4439	-0.3733	-0.8366	-0.4140	-0.7463	-0.6840	-0.6103	-0.6584	-0.4013	-0.6333	-0.0322	-0.6152	0.0625	-0.6060
51	0.088	0.236	-0.3905	-0.3901	-0.4138	-0.3943	-0.8266	-0.4506	-0.7319	-0.6868	-0.5925	-0.6563	-0.3704	-0.6333	-0.0439	-0.6132	0.0405	-0.6036
52	0.088	0.471	-0.3029	-0.4002	-0.2879	-0.3983	-0.8474	-0.4966	-0.7337	-0.6852	-0.5128	-0.6604	-0.1456	-0.6299	0.1149	-0.6102	0.1671	-0.6115
53	0.088	0.764	-0.0581	-0.2908	-0.0288	-0.3039	-0.2222	-0.4307	-0.1339	-0.7005	-0.0201	-0.6749	0.0969	-0.6386	0.2033	-0.6210	0.2355	-0.6211
54	0.059	0.000	-0.0743	-0.2995	-0.0830	-0.3219	-0.6562	-0.3616	-0.3372	-0.6617	-0.0386	-0.6456	0.0455	-0.6205	0.1327	-0.6057	0.1674	-0.6027
55	0.059	0.236	-0.0551	-0.3194	-0.0740	-0.3499	-0.5811	-0.3927	-0.2710	-0.6605	-0.0271	-0.6370	0.0458	-0.6191	0.1338	-0.5923	0.1671	-0.5992
56	0.059	0.471																
57	0.059	0.647	-0.0487	-0.3113	-0.0562	-0.3324	-0.2983	-0.4243	-0.1372	-0.6032	-0.0493	-0.6332	0.0155	-0.6093	0.1148	-0.5868	0.1476	-0.5948
58	0.059	0.882	-0.0284	-0.1724	-0.0011	-0.1982	-0.2136	-0.3252	-0.1702	-0.6570	-0.1013	-0.6309	-0.0085	-0.6095	0.0712	-0.5993	0.0485	-0.5965
59	0.029	0.000	0.0753	-0.2415	0.0327	-0.2960	-0.2409	-0.3488	-0.1554	-0.6217	-0.1208	-0.6027	-0.0462	-0.5899	0.0304	-0.5869	0.0573	-0.5885
60	0.029	0.236	0.0444	-0.2863	0.0324	-0.3313	-0.2224	-0.3737	-0.1598	-0.6249	-0.1249	-0.6088	-0.0488	-0.5958	0.0277	-0.5926	0.0562	-0.5863
61	0.029	0.471	0.0537	-0.3123	0.0430	-0.3827	-0.1995	-0.4184	-0.1726	-0.6205	-0.1316	-0.6058	-0.0513	-0.5934	0.0253	-0.5766	0.0555	-0.5790
62	0.029	0.764	-0.0317	-0.2601	-0.0184	-0.3015	-0.2561	-0.3882	-0.2064	-0.6141	-0.1447	-0.5977	-0.0716	-0.5852	-0.0058	-0.5729	0.0220	-0.5745
63	0.854	-0.471	0.4292	-1.2346	0.5052	-1.3580	0.6329	-1.3922	0.7443	-0.7239	0.8515	-0.6536	0.9491	-0.6215	1.0145	-0.6069	1.0360	-0.6095
64	0.146	-0.471	0.0318	-0.4816	0.0558	-0.5563	0.0336	-0.5371	0.0982	-0.6879	0.1881	-0.6812	0.3041	-0.6413	0.4102	-0.6261	0.4455	-0.6298

Table A-3.- (Continued).

M = 0.9

			ALPHA =															
TUBE	X/L	Y/B/2	-2.9 WINDWARD	-3.0 LEEWARD	0.1 WINDWARD	-0.1 LEEWARD	5.0 WINDWARD	4.9 LEEWARD	10.0 WINDWARD	9.8 LEEWARD	15.0 WINDWARD	14.8 LEEWARD	19.9 WINDWARD	19.8 LEEWARD	24.9 WINDWARD	24.8 LEEWARD	26.4 WINDWARD	26.2 LEEWARD
1	0.971	0.000	0.2461	0.5363	0.4828	0.4181	0.6130	0.2254	0.7642	-0.7590	0.8798	-1.1306	0.9876	-1.3047	1.0695	-0.9927	1.0948	-1.0657
2	0.971	0.236	0.2514	0.5267	0.3931	0.3981	0.6027	0.2177	0.7555	-0.7644	0.8709	-1.1653	0.9805	-1.3679	1.0624	-1.0325	1.0873	-1.1149
3	0.971	0.471	0.2221	0.4904	0.3613	0.3680	0.5650	0.2014	0.7194	-0.7140	0.8373	-1.1175	0.9486	-1.3650	1.0339	-1.0543	1.0595	-1.1329
4	0.971	0.764	0.0869	0.3142	0.2043	0.2096	0.3825	0.0700	0.5249	-0.6094	0.6506	-0.9897	0.7705	-1.3031	0.8764	-1.0681	0.9079	-1.1443
5	0.941	0.000	0.1380	0.3392	0.2415	0.2470	0.3987	0.0696	0.5291	-0.4704	0.6474	-0.8824	0.7718	-1.1800	0.8864	-1.0356	0.9239	-1.1056
6	0.941	0.236	0.1234	0.3247	0.2278	0.2336	0.3833	0.0553	0.5152	-0.4690	0.6343	-0.9006	0.7589	-1.2111	0.8746	-1.0746	0.9124	-1.1483
7	0.941	0.471	0.0861	0.2009	0.1833	0.1909	0.3355	0.0266	0.4677	-0.4231	0.5902	-0.8846	0.7101	-1.1850	0.8339	-1.0892	0.8603	-1.1643
8	0.941	0.647	-0.0317	0.1411	0.0531	0.0623	0.1911	-0.0890	0.3186	-0.4212	0.4423	-0.8554	0.5771	-1.1424	0.7039	-1.0854	0.7398	-1.1600
9	0.941	0.882	-0.1059	-0.0601	-0.1502	-0.0749	-0.1027	-0.1930	-0.0232	-0.4241	0.1063	-0.6321	0.2458	-1.1579	0.3600	-1.0792	0.3964	-1.1607
10	0.917	0.000	-0.0010	0.1350	0.0718	0.0735	0.1020	-0.0543	0.2829	-0.2000	0.3945	-0.8001	0.5219	-1.0742	0.6670	-1.0550	0.7157	-1.1241
11	0.912	0.236	-0.0136	0.1250	0.0569	0.0627	0.1713	-0.0649	0.2703	-0.2009	0.3818	-0.7987	0.5092	-1.0820	0.6553	-1.0703	0.7035	-1.1477
12	0.912	0.471	-0.0832	0.0550	-0.0107	-0.0041	0.1013	-0.1344	0.2005	-0.2592	0.3177	-0.7823	0.4495	-1.0718	0.5901	-1.1027	0.6453	-1.1641
13	0.912	0.764	-0.6390	-0.4806	-0.6020	-0.5690	-0.4873	-0.5085	-0.2934	-0.5612	0.0145	-0.9617	0.2107	-1.1170	0.3092	-1.0830	0.4357	-1.1563
14	0.854	0.000	-0.7849	-0.6009	-0.6567	-0.6006	-0.6335	-0.8640	-0.5116	-0.9009	0.0678	-0.5857	0.3027	-0.7770	0.4403	-1.0351	0.4922	-1.0940
15	0.854	0.236	-0.7061	-0.6827	-0.6595	-0.6057	-0.6337	-0.8649	-0.5080	-0.8084	0.0487	-0.6317	0.2886	-0.6207	0.4229	-1.0512	0.4770	-1.1136
16	0.854	0.471	-0.7207	-0.7292	-0.6893	-0.7306	-0.6580	-0.8614	-0.4310	-0.8049	-0.0433	-0.6573	0.2545	-0.8623	0.3800	-1.0755	0.4293	-1.1276
17	0.854	0.647	-0.5896	-0.4500	-0.4708	-0.4647	-0.3996	-0.5029	-0.1046	-0.5661	0.0787	-0.6830	0.2064	-0.8955	0.3367	-1.0872	0.3789	-1.1421
18	0.854	0.764	-0.3280	-0.3170	-0.3031	-0.3187	-0.2715	-0.3806	-0.0604	-0.3965	0.0357	-0.5362	0.1402	-0.7811	0.2746	-1.0910	0.3151	-1.1421
19	0.854	0.882	-0.2731	-0.2441	-0.2409	-0.2506	-0.2035	-0.2960	-0.0685	-0.3796	-0.0206	-0.7325	0.0542	-1.0339	0.1006	-1.1543	0.2110	-1.2132
20	0.736	0.000	-0.1979	-0.0071	-0.1370	-0.1357	0.0243	-0.2233	0.0623	-0.2360	0.1219	-0.5411	0.2161	-0.7607	0.3375	-1.0771	0.3733	-1.1201
21	0.736	0.236	-0.2103	-0.0045	-0.1299	-0.1265	0.0252	-0.2132	0.0605	-0.2310	0.1165	-0.5456	0.2084	-0.7735	0.3295	-1.0918	0.3649	-1.1299
22	0.736	0.471	-0.1443	0.0060	-0.0793	-0.0724	0.0252	-0.1514	0.0572	-0.1944	0.1037	-0.5049	0.1789	-0.7275	0.2940	-1.0768	0.3290	-1.1164
23	0.736	0.647	-0.0532	0.0063	-0.0203	-0.0202	0.0163	-0.0807	0.0476	-0.1594	0.0703	-0.4038	0.1274	-0.7152	0.2300	-1.0655	0.2636	-1.1017
24	0.736	0.764	-0.0550	-0.0060	-0.0294	-0.0267	0.0009	-0.0850	0.0250	-0.1997	0.0478	-0.5060	0.0854	-0.8679	0.1759	-1.1404	0.2053	-1.1026
25	0.736	0.882	-0.0596	-0.0103	-0.0256	-0.0254	-0.0094	-0.1013	-0.0054	-0.3893	-0.0028	-0.8053	0.0015	-1.1916	0.0845	-1.2839	0.1075	-1.3337
26	0.588	0.000	0.0199	0.0190	0.0241	0.0220	0.0275	0.0053	0.0614	-0.0354	0.1175	-0.2290	0.1791	-0.4983	0.2715	-0.9839	0.3023	-1.0300
27	0.588	0.236	0.0151	0.0203	0.0223	0.0228	0.0243	0.0101	0.0592	-0.0336	0.1103	-0.2002	0.1705	-0.4809	0.2631	-0.9607	0.2939	-1.0015
28	0.588	0.471	0.0299	0.0203	0.0343	0.0302	0.0279	0.0019	0.0564	-0.0533	0.0975	-0.1011	0.1536	-0.4740	0.2258	-0.9154	0.2557	-0.9569
29	0.588	0.647		0.0225		0.0220		-0.0130		-0.0955		-0.2540		-0.5044		-1.0580		-1.1143
30	0.588	0.764	0.0032	0.0230	0.0224	0.0199	0.0240	-0.0291	0.0394	-0.1684	0.0500	-0.4174	0.0742	-0.8154	0.1156	-1.2519	0.1362	-1.3022
31	0.588	0.882	-0.0100	0.0260	0.0232	0.0246	0.0208	-0.0061	0.0232	-0.3493	0.0105	-0.6067	0.0113	-0.8304	0.0207	-1.2706	0.0400	-1.3136
32	0.412	0.000	0.0014	0.0107	0.0129	0.0107	0.0185	-0.0085	0.0596	-0.0584	0.1126	-0.0838	0.1715	-0.1050	0.2276	-0.1406	0.2490	-0.0957
33	0.412	0.236	-0.0004	0.0107	0.0143	0.0107	0.0109	-0.0072	0.0605	-0.0574	0.1112	-0.0979	0.1673	-0.1537	0.2220	-0.3003	0.2421	-0.4306
34	0.412	0.471	0.0050	0.0142	0.0169	0.0150	0.0230	-0.0193	0.0617	-0.0816	0.0971	-0.1486	0.1478	-0.2742	0.1957	-0.6262	0.2118	-0.7216
35	0.412	0.647	-0.0046	0.0164	0.0107	0.0137	0.0235	-0.0313	0.0512	-0.1241	0.0752	-0.2920	0.1104	-0.5111	0.1412	-0.9999	0.1532	-1.0973
36	0.412	0.764	-0.0144	0.0142	0.0103	0.0095	0.0195	-0.0535	0.0403	-0.2078	0.0577	-0.4526	0.0832	-0.6650	0.0995	-1.1305	0.1058	-1.1806
37	0.412	0.882	-0.0357	0.0151	0.0094	0.0090	0.0212	-0.1166	0.0254	-0.2758	0.0323	-0.4309	0.0332	-0.6195	0.0207	-0.9631	0.0285	-1.0050
38	0.264	0.000	-0.0187	0.0011	-0.0064	-0.0066	0.0167	-0.0326	0.0459	-0.0732	0.0931	-0.1245	0.1465	-0.1207	0.1926	0.1506	0.2104	0.0863
39	0.264	0.236	-0.0216	-0.0015	-0.0075	-0.0061	0.0149	-0.0296	0.0432	-0.0743	0.0890	-0.1390	0.1415	-0.1689	0.1866	-0.0438	0.2022	-0.0018
40	0.264	0.471	-0.0098	-0.0020	-0.0089	-0.0027	0.0118	-0.0327	0.0408	-0.0868	0.0771	-0.1901	0.1265	-0.3002	0.1607	-0.3085	0.1714	-0.3033
41	0.264	0.647	-0.0154	-0.0007	-0.0032	-0.0006	0.0077	-0.0392	0.0280	-0.1290	0.0569	-0.3047	0.0952	-0.5067	0.1163	-0.7623	0.1211	-0.8473
42	0.264	0.764	-0.0205	-0.0029	-0.0034	-0.0028	0.0064	-0.0570	0.0170	-0.1930	0.0433	-0.3761	0.0733	-0.5074	0.0865	-0.8164	0.0829	-0.8527
43	0.264	0.882	-0.0399	-0.0002	-0.0050	-0.0014	-0.0017	-0.1057	0.0013	-0.1998	0.0154	-0.3135	0.0274	-0.4117	0.0256	-0.6400	0.0089	-0.6524
44	0.146	0.000	-0.1050	-0.0773	-0.0983	-0.0922	-0.0666	-0.1260	-0.0339	-0.1580	0.0021	-0.2246	0.0309	-0.2259	0.0615	-0.1165	0.0613	-0.1133
45	0.146	0.236	-0.1059	-0.0819	-0.0999	-0.0913	-0.0703	-0.1177	-0.0396	-0.1520	-0.0031	-0.2333	0.0247	-0.2577	0.0517	-0.1758	0.0528	-0.1652
46	0.146	0.471	-0.0794	-0.0082	-0.0717	-0.0673	-0.0612	-0.0970	-0.0329	-0.1369	-0.0001	-0.2546	0.0233	-0.3526	0.0437	-0.3790	0.0431	-0.3702
47	0.146	0.647	-0.0616	-0.0436	-0.0523	-0.0446	-0.0460	-0.0700	-0.0259	-0.1594	-0.0029	-0.3280	0.0117	-0.4975	0.0234	-0.7711	0.0174	-0.7692
48	0.146	0.764	-0.0516	-0.0309	-0.0399	-0.0324	-0.0334	-0.0036	-0.0246	-0.1975	-0.0044	-0.3511	0.0086	-0.4593	0.0137	-0.6906	0.0027	-0.6720
49	0.146	0.882	-0.0566	-0.0234	-0.0274	-0.0197	-0.0242	-0.1144	-0.0300	-0.1862	-0.0229	-0.2806	-0.0160	-0.3440	-0.0192	-0.3666	-0.0352	-0.3739
50	0.088	0.000	-0.1801	-0.1859	-0.1466	-0.1323	-0.0956	-0.1859	-0.1108	-0.2550	-0.1305	-0.3439	-0.1869	-0.4127	-0.2677	-0.4036	-0.3729	-0.3010
51	0.088	0.236	-0.1973	-0.1199	-0.1525	-0.1299	-0.1045	-0.1861	-0.1149	-0.2466	-0.1168	-0.3040	-0.1979	-0.4060	-0.2891	-0.4240	-0.4130	-0.4065
52	0.088	0.471	-0.1939	-0.1605	-0.1537	-0.1383	-0.1377	-0.1855	-0.1324	-0.2170	-0.1579	-0.3347	-0.2198	-0.3596	-0.3155	-0.4621	-0.4317	-0.4480
53	0.088	0.764	-0.1097	-0.0993	-0.0892	-0.0702	-0.0925	-0.1370	-0.0778	-0.2035	-0.0781	-0.2583	-0.0847	-0.2342	-0.1082	-0.3229	-0.1441	-0.3291
54	0.059	0.000	-0.0242	-0.0114	-0.0086	0.0030	-0.0037	-0.0304	-0.0255	-0.0839	-0.0434	-0.1367	-0.0760	-0.2363	-0.1269	-0.2861	-0.1671	-0.2841
55	0.059	0.236	-0.0518	-0.0169	-0.0166	-0.0150	-0.0170	-0.0695	-0.0255	-0.1277	-0.0416	-0.1697	-0.0820	-0.2376	-0.1232	-0.2980	-0.1577	-0.3080
56	0.059	0.471	-0.0702	-0.0284	-0.0416	-0.0303	-0.0279	-0.0813	-0.0300	-0.1433	-0.0441	-0.1908	-0.0814	-0.2402	-0.1116	-0.3572	-0.1340	-0.3716
57	0.059	0.647	-0.1100	-0.1070	-0.0840	-0.0771	-0.0903	-0.1216	-0.0559	-0.1264	-0.0515	-0.1584	-0.0754	-0.2144	-0.0903	-0.3505	-0.1160	-0.3493
58	0.059	0.882	-0.0635	-0.0478	-0.0319	-0.0281	-0.0523	-0.1091	-0.0395	-0.1121	-0.0371	-0.0923	-0.0467	-0.1316	-0.0661	-0.2477	-0.0745	-0.2560
59	0.029	0.000	0.0520	0.0434	0.0734	0.0749	0.0365	0.0457	0.0214	0.0033	0.0101	-0.0115	-0.0170	-0.1263	-0.0483	-0.2312	-0.0613	-0.2505
60	0.029	0.236	0.0236	0.0410	0.0567	0.0496	0.0344	0.0010	0.0183	-0.0436	0.0119	-0.0490	-0.0190	-0.1415	-0.0355	-0.2390	-0.0563	-0.2678
61	0.029	0.471	0.0808	0.0347	0.0326	0.0303	0.0351	-0.0186	0.0232	-0.0705	0.0119	-0.1031	-0.0093	-0.1550	-0.0086	-0.3037	-0.0223	-0.3436
62	0.029	0.764	-0.0278	-0.0227	-0.0035	-0.0006	-0.0359	-0.0356	-0.0145	-0.0523	-0.0225	-0.0851	-0.0446	-0.1437	-0.0476	-0.3178	-0.0789	-0.3394
63	0.854	-0.471	0.1394	0.0083	0.1521	0.1404	0.1814	0.1463	0.1858	0.1671	0.1888	0.1697	0.1611	0.1798	0.0968	0.0832	0.1078	0.1104
64	0.146	-0.471	0.0788	-0.0743	-0.0646	-0.0720	-0.0567	-0.1048	-0.0267	-0.1439	0.0030	-0.2533	0.0344	-0.3509	0.0594	-0.3041	0.0449	-0.3962

Table A-3.- (Continued).
M = 0.9

			ALPHA =													
			27.0	27.1	29.7	29.9	34.7	34.7	39.7	39.7	44.6	44.7	49.6	49.6	54.6	54.6	56.2	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.971	0.000	1.1147	-1.0419	1.1463	-1.1132	1.1886	-1.1848	1.2129	-0.6726	1.2196	-0.6382	1.2009	-0.5872	1.1690	-0.5873	1.1525	-0.5909
2	0.971	0.236	1.1001	-1.0925	1.1396	-1.1016	1.1819	-1.1391	1.2071	-0.6808	1.2143	-0.6399	1.1964	-0.5914	1.1627	-0.5954	1.1468	-0.5965
3	0.971	0.471	1.0797	-1.1125	1.1130	-1.2086	1.1604	-1.1373	1.1873	-0.6724	1.1976	-0.6240	1.1815	-0.5815	1.1502	-0.5896	1.1362	-0.5917
4	0.971	0.764	0.9244	-1.1239	0.9670	-1.2190	1.0362	-1.1480	1.0779	-0.6694	1.1829	-0.6087	1.1088	-0.5828	1.0845	-0.5855	1.0746	-0.5916
5	0.941	0.000	0.9423	-1.0751	0.9946	-1.1495	1.0791	-1.1182	1.1418	-0.6813	1.1896	-0.6481	1.2177	-0.6002	1.2140	-0.5947	1.2110	-0.5961
6	0.941	0.236	0.9311	-1.1207	0.9839	-1.2086	1.0699	-1.1496	1.1327	-0.6932	1.1812	-0.6501	1.2095	-0.6082	1.2075	-0.6042	1.2047	-0.6100
7	0.941	0.471	0.8951	-1.1489	0.9471	-1.2423	1.0332	-1.1676	1.1001	-0.6862	1.1554	-0.6382	1.1781	-0.6007	1.1840	-0.6008	1.1772	-0.6062
8	0.941	0.647	0.7698	-1.1479	0.8275	-1.2411	0.9272	-1.1647	1.0062	-0.6791	1.0723	-0.6283	1.1063	-0.5940	1.1239	-0.5972	1.1195	-0.6008
9	0.941	0.882	0.4229	-1.1363	0.4754	-1.2307	0.5895	-1.1633	0.6785	-0.6724	0.7597	-0.6124	0.8078	-0.5841	0.8450	-0.5905	0.8483	-0.5968
10	0.912	0.000	0.7428	-1.1178	0.8123	-1.2086	0.9342	-1.1575	1.0301	-0.6800	1.1179	-0.6544	1.1762	-0.6053	1.2061	-0.5997	1.2085	-0.6037
11	0.912	0.236	0.7304	-1.1496	0.8011	-1.2415	0.9227	-1.1715	1.0192	-0.6945	1.1069	-0.6525	1.1671	-0.6072	1.1980	-0.6052	1.2005	-0.6079
12	0.912	0.471	0.6712	-1.1716	0.7440	-1.2630	0.8605	-1.1804	0.9681	-0.6954	1.0588	-0.6479	1.1211	-0.6064	1.1501	-0.6064	1.1613	-0.6134
13	0.912	0.764	0.4650	-1.1555	0.5456	-1.2524	0.6653	-1.1777	0.7333	-0.6875	0.8147	-0.6321	0.8810	-0.5933	0.9369	-0.5970	0.9497	-0.6018
14	0.854	0.000	0.5190	-1.1187	0.5965	-1.2194	0.7252	-1.1621	0.8471	-0.6916	0.9453	-0.6672	1.0568	-0.6125	1.1287	-0.6032	1.1455	-0.6047
15	0.854	0.236	0.5025	-1.1337	0.5839	-1.2363	0.7107	-1.1585	0.8324	-0.6892	0.9527	-0.6584	1.0415	-0.6051	1.1159	-0.5978	1.1323	-0.6033
16	0.854	0.471	0.4533	-1.1500	0.5338	-1.2438	0.6595	-1.1623	0.7790	-0.6850	0.8940	-0.6484	0.9868	-0.6053	1.0540	-0.5924	1.0724	-0.6015
17	0.854	0.647	0.3970	-1.1642	0.4670	-1.2570	0.5907	-1.1754	0.6950	-0.6936	0.7989	-0.6481	0.8836	-0.6077	0.9450	-0.6084	0.9624	-0.6079
18	0.854	0.764	0.3353	-1.1645	0.4040	-1.2630	0.5274	-1.1581	0.6311	-0.6936	0.7269	-0.6439	0.8026	-0.6082	0.8627	-0.6020	0.8797	-0.6139
19	0.854	0.882	0.2300	-1.2373	0.2949	-1.3309	0.4154	-1.1333	0.5051	-0.6910	0.5895	-0.6369	0.6557	-0.5994	0.7089	-0.5970	0.7254	-0.6062
20	0.736	0.000	0.3092	-1.1540	0.4740	-1.2420	0.6085	-1.1656	0.7196	-0.6959	0.8361	-0.6754	0.9403	-0.6203	1.0232	-0.6097	1.0487	-0.6146
21	0.736	0.236	0.3016	-1.1675	0.4646	-1.2506	0.5980	-1.1581	0.7068	-0.6940	0.8736	-0.6679	0.9242	-0.6137	1.0086	-0.6064	1.0346	-0.6107
22	0.736	0.471	0.3497	-1.1517	0.4200	-1.2234	0.5443	-1.1419	0.6528	-0.6967	0.7644	-0.6665	0.8675	-0.6130	0.9445	-0.6040	0.9714	-0.6120
23	0.736	0.647	0.2819	-1.1496	0.3492	-1.2111	0.4658	-1.1187	0.5670	-0.7019	0.6702	-0.6660	0.7640	-0.6173	0.8345	-0.6127	0.8603	-0.6189
24	0.736	0.764	0.2236	-1.2355	0.2891	-1.2702	0.4043	-1.1247	0.5001	-0.7030	0.5965	-0.6630	0.6841	-0.6192	0.7520	-0.6152	0.7761	-0.6256
25	0.736	0.882	0.1233	-1.3002	0.1825	-1.3415	0.3027	-1.1272	0.3812	-0.6949	0.4683	-0.6500	0.5380	-0.6107	0.6030	-0.6118	0.6247	-0.6156
26	0.588	0.000	0.3235	-1.0659	0.3867	-1.1082	0.5007	-1.0592	0.6121	-0.6959	0.7322	-0.6880	0.8400	-0.6406	0.9336	-0.6270	0.9647	-0.6260
27	0.588	0.236	0.3150	-1.0263	0.3702	-1.0297	0.4918	-1.0651	0.6011	-0.6927	0.7188	-0.6808	0.8255	-0.6322	0.9189	-0.6232	0.9495	-0.6249
28	0.588	0.471	0.2765	-0.9596	0.3374	-1.0212	0.4476	-1.0738	0.5537	-0.6911	0.6604	-0.6777	0.7697	-0.6294	0.8542	-0.6280	0.8850	-0.6249
29	0.588	0.647	0.2094	-1.1267	0.2663	-1.1715	0.3787	-1.0927	0.4680	-0.6989	0.5460	-0.6809	0.6642	-0.6325	0.7425	-0.6280	0.7732	-0.6312
30	0.588	0.764	0.1560	-1.3036	0.2120	-1.2662	0.3157	-1.1184	0.4049	-0.6999	0.4977	-0.6793	0.5890	-0.6347	0.6639	-0.6307	0.6929	-0.6361
31	0.588	0.882	0.0604	-1.2752	0.1098	-1.2721	0.2131	-1.1109	0.2924	-0.6971	0.3723	-0.6710	0.4478	-0.6299	0.5170	-0.6214	0.5446	-0.6272
32	0.412	0.000	0.2709	0.1981	0.3183	-0.0810	0.4119	-0.7917	0.5166	-0.6873	0.6256	-0.7061	0.7382	-0.6526	0.8361	-0.6335	0.8723	-0.6367
33	0.412	0.236	0.2652	-0.3086	0.3133	-0.6126	0.4033	-0.9025	0.5064	-0.6875	0.6144	-0.7005	0.7251	-0.6459	0.8225	-0.6283	0.8500	-0.6335
34	0.412	0.471	0.2294	-0.5968	0.2742	-0.8545	0.3506	-0.9980	0.4576	-0.6854	0.5812	-0.6950	0.6683	-0.6479	0.7689	-0.6286	0.7958	-0.6344
35	0.412	0.647	0.1670	-1.0839	0.2064	-1.0483	0.2049	-1.0593	0.3751	-0.6927	0.4709	-0.6984	0.5670	-0.6513	0.6536	-0.6358	9.6865	-0.6399
36	0.412	0.764	0.1203	-1.1805	0.1552	-1.0293	0.2302	-1.0614	0.3155	-0.6932	0.4038	-0.6966	0.4939	-0.6547	0.5758	-0.6396	0.6088	-0.6464
37	0.412	0.882	0.0330	-1.0207	0.0600	-0.9696	0.1359	-1.0499	0.2067	-0.6901	0.2905	-0.6818	0.3613	-0.6425	0.4350	-0.6340	0.4632	-0.6360
38	0.264	0.000	0.2244	0.0564	0.2566	-0.0692	0.3222	-0.5758	0.4121	-0.6722	0.5217	-0.6996	0.6263	-0.6496	0.7275	-0.6348	0.7646	-0.6350
39	0.264	0.236	0.2159	-0.0530	0.2400	-0.2327	0.3127	-0.8325	0.4015	-0.6724	0.5108	-0.6950	0.6140	-0.6450	0.7157	-0.6322	0.7515	-0.6344
40	0.264	0.471	0.1840	-0.3039	0.2149	-0.5269	0.2735	-0.8848	0.3584	-0.6790	0.4590	-0.6872	0.5637	-0.6436	0.6583	-0.6350	0.6922	-0.6314
41	0.264	0.647	0.1298	-0.8731	0.1535	-0.8067	0.2049	-0.9225	0.2827	-0.6870	0.3759	-0.6905	0.4716	-0.6496	0.5590	-0.6424	0.5910	-0.6377
42	0.264	0.764	0.0910	-0.8744	0.1100	-0.8334	0.1559	-0.9073	0.2269	-0.6888	0.3157	-0.6882	0.4029	-0.6529	0.4806	-0.6449	0.5189	-0.6428
43	0.264	0.882	0.0219	-0.6241	0.0305	-0.7431	0.0466	-0.8852	0.1295	-0.6796	0.2064	-0.6700	0.2832	-0.6486	0.3595	-0.6345	0.3889	-0.6346
44	0.146	0.000	0.0820	-0.2792	0.0970	-0.2206	0.1345	-0.4677	0.2024	-0.6579	0.2877	-0.6849	0.3867	-0.6475	0.4887	-0.6278	0.5301	-0.6269
45	0.146	0.236	0.0746	-0.3173	0.0891	-0.2841	0.1269	-0.6020	0.1944	-0.6604	0.2795	-0.6842	0.3780	-0.6442	0.4825	-0.6262	0.5232	-0.6270
46	0.146	0.471	0.0597	-0.5103	0.0690	-0.4966	0.1024	-0.7020	0.1640	-0.6651	0.2505	-0.6859	0.3533	-0.6380	0.4566	-0.6234	0.5009	-0.6253
47	0.146	0.647	0.0307	-0.7081	0.0300	-0.7350	0.0521	-0.7210	0.1086	-0.6726	0.1964	-0.6857	0.3023	-0.6395	0.4029	-0.6301	0.4467	-0.6281
48	0.146	0.764	0.0122	-0.4932	0.0041	-0.5742	0.0175	-0.7081	0.0709	-0.6719	0.1591	-0.6789	0.2632	-0.6387	0.3614	-0.6307	0.4016	-0.6326
49	0.146	0.882	-0.0291	-0.3573	-0.0460	-0.4226	-0.0502	-0.6982	-0.0082	-0.6639	0.0790	-0.6652	0.1660	-0.6343	0.2572	-0.6240	0.2904	-0.6237
50	0.088	0.000	-0.4465	-0.3546	-0.8901	-0.3620	-0.7872	-0.7630	-0.6940	-0.6506	-0.4979	-0.6615	-0.3391	-0.6259	-0.0794	-0.6140	-0.0350	-0.6120
51	0.088	0.236	-0.4837	-0.3762	-0.8809	-0.3906	-0.7899	-0.6015	-0.6998	-0.6509	-0.4862	-0.6593	-0.3191	-0.6236	-0.0700	-0.6120	-0.0250	-0.6102
52	0.088	0.471	-0.5045	-0.3956	-0.8177	-0.4393	-0.7783	-0.5571	-0.7079	-0.6448	-0.4962	-0.6574	-0.2761	-0.6216	0.0577	-0.6066	0.1307	-0.6071
53	0.088	0.764	-0.1674	-0.3112	-0.2538	-0.3405	-0.2576	-0.6089	-0.1810	-0.6603	0.0073	-0.6700	0.1464	-0.6339	0.2596	-0.6175	0.3019	-0.6150
54	0.059	0.000	-0.1675	-0.2957	-0.7612	-0.2980	-0.7430	-0.3820	-0.6884	-0.6474	-0.2396	-0.6355	0.1582	-0.6144	0.2221	-0.6006	0.2640	-0.6050
55	0.059	0.236	-0.1663	-0.3133	-0.7210	-0.3243	-0.7314	-0.4299	-0.6398	-0.6460	-0.1654	-0.6321	0.1663	-0.6044	0.2250	-0.5991	0.2670	-0.6010
56	0.059	0.471																
57	0.059	0.647	-0.1180	-0.3264	-0.5374	-0.3554	-0.6474	-0.5194	-0.4088	-0.6380	0.0112	-0.6330	0.1021	-0.6030	0.1922	-0.5940	0.2357	-0.5947
58	0.059	0.882	-0.0738	-0.2283	-0.2610	-0.2601	-0.3139	-0.5385	-0.2092	-0.6388	-0.0462	-0.6359	0.0464	-0.6065	0.1378	-0.5997	0.1730	-0.5985
59	0.029	0.000	-0.0549	-0.2640	-0.3101	-0.2790	-0.7405	-0.1936	-0.2551	-0.6301	0.0254	-0.6022	0.0698	-0.5876	0.1362	-0.5917	0.1721	-0.5904
60	0.029	0.236	-0.0489	-0.2823	-0.2564	-0.3038	-0.7253	-0.2991	-0.1726	-0.6332	0.0189	-0.6084	0.0645	-0.5944	0.1318	-0.5958	0.1683	-0.6001
61	0.029	0.471	-0.0313	-0.3392	-0.1454	-0.3612	-0.4380	-0.4160	-0.0363	-0.6276	-0.0011	-0.6033	0.0521	-0.5920	0.1284	-0.5877	0.1646	-0.5896
62	0.029	0.764	-0.0797	-0.3075	-0.2053	-0.3329	-0.5986	-0.4994	-0.3237	-0.6160	-0.0525	-0.6019	0.0164	-0.5884	0.0852	-0.5838	0.1188	-0.5835
63	0.854	-0.471	0.4647	-1.1147	0.5418	-1.2021	0.6550	-1.1598	0.7851	-0.6927	0.8085	-0.6713	0.9953	-0.6180	1.0535	-0.6047	1.0797	-0.6059
64	0.146	-0.471	0.0641	-0.4860	0.0734	-0.4128	0.1055	-0.7045	0.1725	-0.6491	0.2638	-0.6887	0.3631	-0.6358	0.4637	-0.6289	0.5066	-0.6253

Table A-3.- (Continued).
M = 1.2

TUBE	X/L	Y/B/2	ALPHA = -2.0 WINDWARD	-3.1 LEEWARD	0.1 WINDWARD	-0.2 LEEWARD	5.0 WINDWARD	4.9 LEEWARD	10.0 WINDWARD	9.8 LEEWARD	15.0 WINDWARD	15.0 LEEWARD	20.0 WINDWARD	19.7 LEEWARD	24.9 WINDWARD	24.7 LEEWARD	26.4 WINDWARD	26.3 LEEWARD
1	0.971	0.000	0.5462	0.7909	0.6821	0.6772	0.8640	0.5257	0.9835	-0.1443	1.0779	-0.4586	1.1594	-0.5880	1.2387	-0.7155	1.2635	-0.7364
2	0.971	0.236	0.5330	0.7011	0.6735	0.6679	0.8550	0.5130	0.9760	-0.1520	1.0709	-0.4777	1.1522	-0.6312	1.2335	-0.7866	1.2572	-0.8126
3	0.971	0.471	0.5189	0.7509	0.6468	0.6415	0.8240	0.5012	0.9440	-0.1273	1.0401	-0.4521	1.1241	-0.6063	1.2066	-0.7670	1.2309	-0.8003
4	0.971	0.764	0.3999	0.6061	0.5177	0.5134	0.6703	0.3775	0.7840	-0.0803	0.8800	-0.3990	0.9686	-0.5506	1.0596	-0.7190	1.0886	-0.7605
5	0.941	0.000	0.4394	0.6269	0.5448	0.5428	0.6838	0.3825	0.7886	-0.0165	0.8775	-0.3379	0.9619	-0.4764	1.0593	-0.6287	1.0917	-0.6657
6	0.941	0.236	0.4246	0.6132	0.5310	0.5281	0.6690	0.3706	0.7761	-0.0179	0.8457	-0.3492	0.9505	-0.4972	1.0482	-0.6625	1.0814	-0.7044
7	0.941	0.471	0.3943	0.5740	0.4926	0.4910	0.6309	0.3445	0.7367	-0.0109	0.8265	-0.3470	0.9122	-0.5029	1.0121	-0.6776	1.0467	-0.7216
8	0.941	0.647	0.2971	0.4585	0.3867	0.3849	0.5120	0.2487	0.6120	-0.0144	0.7007	-0.3379	0.7888	-0.4901	0.8927	-0.6602	0.9302	-0.7030
9	0.941	0.882	-0.0794	0.0957	-0.0127	-0.0143	0.0790	-0.0464	0.1576	-0.2600	0.2465	-0.5080	0.4615	-0.6946	0.5934	-0.7785	0.6226	-0.7970
10	0.912	0.000	0.3348	0.4722	0.4115	0.4120	0.5169	0.2878	0.5991	0.0288	0.6711	-0.3161	0.7426	-0.4622	0.8492	-0.6317	0.8897	-0.6744
11	0.912	0.236	0.3222	0.4603	0.3992	0.4004	0.5034	0.2742	0.5874	0.0304	0.6596	-0.3189	0.7325	-0.4660	0.8384	-0.6369	0.8795	-0.6794
12	0.912	0.471	0.2589	0.3950	0.3360	0.3350	0.4401	0.2141	0.5245	0.0193	0.5991	-0.3149	0.6763	-0.4625	0.7846	-0.6330	0.8267	-0.6775
13	0.912	0.764	-0.3203	-0.2382	-0.3077	-0.2720	-0.2460	-0.3054	-0.1393	-0.4295	0.0754	-0.5539	0.3772	-0.6351	0.5430	-0.7761	0.5905	-0.7878
14	0.854	0.000	-0.3936	-0.3112	-0.3551	-0.3518	-0.2802	-0.4155	-0.1862	-0.4829	-0.0565	-0.6505	0.1112	-0.7212	0.6305	-0.7380	0.6673	-0.7158
15	0.854	0.236	-0.4055	-0.3270	-0.3678	-0.3654	-0.2959	-0.4281	-0.2056	-0.4913	-0.0704	-0.6496	0.0925	-0.7214	0.6240	-0.7436	0.6548	-0.7340
16	0.854	0.471	-0.4424	-0.3592	-0.4183	-0.4019	-0.3395	-0.4517	-0.2177	-0.5127	-0.0945	-0.6123	0.0698	-0.6730	0.5903	-0.7424	0.6191	-0.7299
17	0.854	0.647	-0.2610	-0.2088	-0.3358	-0.2516	-0.1905	-0.2757	-0.0547	-0.3497	0.0727	-0.5546	0.3027	-0.6539	0.5263	-0.7707	0.5732	-0.7702
18	0.854	0.764	-0.0250	-0.0017	-0.0059	-0.0012	-0.0036	-0.0553	0.0288	-0.1382	0.0828	-0.2829	0.3108	-0.3680	0.4661	-0.5207	0.5098	-0.5373
19	0.854	0.882	0.0313	0.0427	0.0305	0.0437	0.0279	-0.0086	0.0309	-0.1663	0.0754	-0.3867	0.2524	-0.5126	0.3870	-0.6623	0.4250	-0.6979
20	0.736	0.000	-0.3613	-0.2164	-0.2056	-0.2807	-0.1771	-0.4517	-0.0260	-0.5161	0.2846	-0.5839	0.3492	-0.6496	0.4898	-0.7223	0.5366	-0.6993
21	0.736	0.236	-0.3525	-0.2210	-0.2099	-0.2065	-0.1757	-0.3651	-0.0208	-0.4061	0.2878	-0.5741	0.3434	-0.6558	0.4829	-0.7338	0.5204	-0.7085
22	0.736	0.471	-0.2014	-0.1009	-0.1541	-0.1491	-0.0698	-0.2421	0.0349	-0.3239	0.2215	-0.4559	0.3177	-0.5352	0.4503	-0.5682	0.4946	-0.6328
23	0.736	0.647	-0.1492	-0.0838	-0.1267	-0.1223	-0.0630	-0.1852	0.0268	-0.2515	0.1759	-0.3983	0.2744	-0.4652	0.3994	-0.5859	0.4418	-0.5986
24	0.736	0.764	-0.1352	-0.0773	-0.1144	-0.1096	-0.0687	-0.1685	0.0119	-0.2527	0.1380	-0.4073	0.2412	-0.5024	0.3546	-0.6323	0.3936	-0.6666
25	0.736	0.882	-0.1124	-0.0633	-0.0947	-0.0875	-0.0591	-0.1486	-0.0046	-0.2722	0.6844	-0.5012	0.1744	-0.6333	0.2847	-0.7581	0.3194	-0.7806
26	0.588	0.000	-0.0675	0.0483	-0.0302	-0.0327	0.0604	-0.0953	0.1003	-0.1387	0.1618	-0.2644	0.2092	-0.2954	0.4033	-0.3753	0.4466	-0.4603
27	0.588	0.236	-0.0776	0.0018	-0.0515	-0.0700	0.0200	-0.1167	0.0924	-0.1644	0.1539	-0.3019	0.2594	-0.3715	0.3942	-0.3949	0.4378	-0.4617
28	0.588	0.471	-0.1776	-0.0607	-0.1400	-0.1547	-0.0390	-0.2274	0.0748	-0.2838	0.1418	-0.3917	0.2379	-0.4747	0.3684	-0.5598	0.4077	-0.5682
29	0.588	0.647		-0.0867		-0.1416		-0.2155		-0.2780		-0.4270		-0.5293		-0.6570		-0.6813
30	0.588	0.764	-0.1605	-0.0807	-0.1338	-0.1341	-0.0821	-0.2022	0.0145	-0.2959	0.0847	-0.5080	0.1627	-0.6294	0.2788	-0.7586	0.3128	-0.7839
31	0.588	0.882	-0.1522	-0.0887	-0.1213	-0.1190	-0.0910	-0.2076	-0.0102	-0.3751	0.0354	-0.5878	0.1010	-0.6708	0.2070	-0.7695	0.2398	-0.7896
32	0.412	0.000	-0.0079	-0.0016	-0.0150	-0.0180	-0.0079	-0.0325	0.0320	-0.0609	0.1017	-0.1092	0.2127	-0.1646	0.3438	-0.2697	0.3036	-0.3248
33	0.412	0.236	-0.0053	-0.0023	-0.0127	-0.0150	-0.0067	-0.0346	0.0290	-0.0651	0.0972	-0.1294	0.2092	-0.1945	0.3381	-0.2875	0.3775	-0.3316
34	0.412	0.471	0.0021	-0.0027	-0.0097	-0.0059	-0.0083	-0.0306	0.0208	-0.0740	0.0818	-0.1865	0.1870	-0.2815	0.3112	-0.4104	0.3478	-0.4725
35	0.412	0.647	0.0040	0.0032	0.0036	0.0052	-0.0122	-0.0442	0.0051	-0.1372	0.0522	-0.3718	0.1493	-0.5025	0.2624	-0.6619	0.2962	-0.6987
36	0.412	0.764	-0.0052	0.0111	0.0088	0.0137	-0.0124	-0.0716	-0.0086	-0.2679	0.0265	-0.5612	0.1170	-0.6768	0.2226	-0.7711	0.2535	-0.7921
37	0.412	0.882	-0.0460	0.0237	0.0167	0.0256	-0.0028	-0.1086	-0.0305	-0.3766	-0.0166	-0.5747	0.0585	-0.6771	0.1553	-0.7297	0.1827	-0.7564
38	0.264	0.000	0.0403	0.0114	0.0316	0.0289	0.0018	0.0200	0.0230	-0.0270	0.0453	-0.1151	0.1960	-0.1950	0.3157	-0.3087	0.3529	-0.3430
39	0.264	0.236	0.0372	0.0133	0.0323	0.0292	0.0062	0.0159	0.0241	-0.0398	0.0801	-0.1334	0.1906	-0.2213	0.3082	-0.3370	0.3450	-0.3731
40	0.264	0.471	0.0327	0.0200	0.0297	0.0277	0.0133	0.0103	0.0338	-0.0681	0.0706	-0.1751	0.1708	-0.3171	0.2798	-0.4603	0.3149	-0.5003
41	0.264	0.647	0.0144	0.0256	0.0256	0.0259	0.0167	-0.0150	0.0358	-0.1544	0.0567	-0.3916	0.1322	-0.5375	0.2306	-0.6678	0.2633	-0.7005
42	0.264	0.764	0.0802	0.0268	0.0201	0.0212	0.0190	-0.0542	0.0344	-0.2075	0.0509	-0.5570	0.1040	-0.6629	0.1933	-0.7522	0.2230	-0.7711
43	0.264	0.882	-0.0535	0.0319	0.0170	0.0185	0.0148	-0.1860	0.0223	-0.3121	0.0343	-0.4677	0.0540	-0.5486	0.1268	-0.6270	0.1523	-0.6491
44	0.146	0.000	0.0111	0.0286	0.0204	0.0155	0.0230	-0.0111	0.0540	-0.0760	0.1021	-0.1820	0.1792	-0.2355	0.2780	-0.3333	0.3070	-0.3759
45	0.146	0.236	0.0122	0.0741	0.0208	0.0141	0.0189	-0.0052	0.0491	-0.0740	0.0965	-0.2004	0.1720	-0.2704	0.2675	-0.3703	0.2962	-0.4077
46	0.146	0.471	0.0148	0.0196	0.0192	0.0155	0.0159	-0.0015	0.0450	-0.0854	0.0941	-0.2559	0.1577	-0.3743	0.2455	-0.4937	0.2743	-0.5160
47	0.146	0.647	0.0043	0.0137	0.0107	0.0078	0.0062	-0.0139	0.0283	-0.1585	0.0754	-0.4322	0.1266	-0.5698	0.2043	-0.6016	0.2329	-0.6987
48	0.146	0.764	-0.0871	0.0073	0.0040	0.0014	0.0021	-0.0406	0.0152	-0.2527	0.0822	-0.5160	0.1043	-0.6034	0.1754	-0.6686	0.2018	-0.6422
49	0.146	0.882	-0.0482	0.0018	-0.0054	-0.0079	-0.0125	-0.1419	-0.0095	-0.2431	0.0317	-0.3124	0.0563	-0.4334	0.1194	-0.5415	0.1412	-0.5608
50	0.088	0.000	-0.4858	-0.4842	-0.4712	-0.4677	-0.4925	-0.4919	-0.4754	-0.5031	-0.4516	-0.6060	-0.4281	-0.6375	-0.3949	-0.6789	-0.3865	-0.6792
51	0.088	0.236	-0.5022	-0.4899	-0.4987	-0.4718	-0.4981	-0.5149	-0.4735	-0.5380	-0.4522	-0.6005	-0.4291	-0.6448	-0.3954	-0.7008	-0.3866	-0.7012
52	0.088	0.471	-0.4617	-0.4312	-0.4712	-0.4585	-0.4533	-0.4576	-0.4484	-0.5299	-0.4278	-0.6417	-0.4088	-0.6221	-0.3778	-0.6232	-0.3682	-0.6167
53	0.088	0.764	-0.0570	-0.0474	-0.0618	-0.0455	-0.0652	-0.0850	-0.0558	-0.2630	-0.0268	-0.4162	-0.0102	-0.4541	0.0211	-0.4834	0.0363	-0.5079
54	0.059	0.000	-0.4301	-0.4214	-0.3959	-0.3535	-0.4568	-0.4236	-0.4780	-0.4142	-0.4607	-0.5680	-0.4347	-0.6241	-0.3939	-0.6666	-0.3834	-0.6745
55	0.059	0.236	-0.4334	-0.3855	-0.3988	-0.3163	-0.4458	-0.4204	-0.4686	-0.4023	-0.4508	-0.5420	-0.4272	-0.5935	-0.3834	-0.6583	-0.3725	-0.6599
56	0.059	0.471	-0.4487	-0.4034	-0.4152	-0.4007	-0.4268	-0.4362	-0.4212	-0.4117	-0.3934	-0.5674	-0.3687	-0.5320	-0.3274	-0.5888	-0.3138	-0.5897
57	0.059	0.647	-0.4809	-0.4870	-0.4750	-0.4061	-0.4305	-0.5054	-0.4099	-0.5064	-0.3698	-0.5595	-0.3356	-0.4631	-0.2899	-0.5392	-0.2726	-0.5444
58	0.059	0.882	-0.1052	-0.0828	-0.0838	-0.0676	-0.1039	-0.1758	-0.1159	-0.2709	-0.1078	-0.3183	-0.1025	-0.3677	-0.0802	-0.4757	-0.0628	-0.4788
59	0.029	0.000	-0.2883	-0.1927	-0.1924	-0.1715	-0.2447	-0.1882	-0.3587	-0.1888	-0.4193	-0.3905	-0.4032	-0.4790	-0.3567	-0.5255	-0.3570	-0.5320
60	0.029	0.236	-0.2230	-0.1738	-0.2087	-0.1636	-0.2527	-0.2064	-0.3890	-0.2236	-0.4314	-0.3666	-0.4105	-0.4471	-0.3472	-0.5279	-0.3543	-0.5287
61	0.029	0.471	-0.3498	-0.2659	-0.2953	-0.2579	-0.3388	-0.2920	-0.4041	-0.2252	-0.3833	-0.3960	-0.3531	-0.4498	-0.2952	-0.5631	-0.2818	-0.5704
62	0.029	0.764	-0.5128	-0.5334	-0.4397	-0.4526	-0.5221	-0.5429	-0.5028	-0.5157	-0.4467	-0.3515	-0.3650	-0.4045	-0.2907	-0.4991	-0.2663	-0.5093
63	0.854	-0.471	0.1968	0.1695	0.1494	0.1250	0.0985	0.1177	0.1296	0.1372	0.1401	0.1223	0.1222	0.1116	0.1271	0.1464	0.1383	0.1759
64	0.146	-0.471	0.0133	0.0211	0.0185	0.0203	0.0163	-0.0140	0.0390	-0.0792	0.0904	-0.2449	0.1570	-0.3647	0.2510	-0.4798	0.2791	-0.4978

Table A-3.- (Concluded).

M = 1.2

			ALPHA =															
			27.0	27.0	29.7	29.8	34.6	34.7	39.6	39.7	44.6	44.7	49.6	49.6	54.6	54.6	56.1	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.971	0.000	1.2755	-0.7397	1.3112	-0.7497	1.3609	-0.7263	1.3888	-0.6809	1.3990	-0.5291	1.3878	-0.4572	1.3680	-0.4280	1.3614	-0.4340
2	0.971	0.236	1.2481	-0.8239	1.3044	-0.8317	1.3552	-0.8104	1.3821	-0.7493	1.3934	-0.5729	1.3836	-0.4905	1.3639	-0.4533	1.3576	-0.4580
3	0.971	0.471	1.2436	-0.8114	1.2807	-0.8279	1.3343	-0.8058	1.3646	-0.7481	1.3777	-0.5736	1.3700	-0.4855	1.3529	-0.4453	1.3459	-0.4432
4	0.971	0.764	1.1010	-0.7802	1.1454	-0.8388	1.2150	-0.8126	1.2613	-0.7610	1.2915	-0.5784	1.3060	-0.4807	1.2974	-0.4427	1.2431	-0.4327
5	0.941	0.000	1.1069	-0.6837	1.1599	-0.7580	1.2483	-0.7448	1.3148	-0.6966	1.3674	-0.5437	1.3994	-0.4653	1.4081	-0.4348	1.4108	-0.4481
6	0.941	0.236	1.0958	-0.7270	1.1489	-0.8135	1.2385	-0.8065	1.3059	-0.7480	1.3593	-0.5769	1.3941	-0.4883	1.4028	-0.4560	1.4048	-0.4634
7	0.941	0.471	1.0612	-0.7341	1.1168	-0.8366	1.2053	-0.8416	1.2757	-0.7795	1.3303	-0.5911	1.3720	-0.4922	1.3834	-0.4609	1.3846	-0.4598
8	0.941	0.647	0.9458	-0.7243	1.0065	-0.8150	1.1055	-0.8384	1.1872	-0.7815	1.2555	-0.5924	1.3132	-0.4894	1.3335	-0.4562	1.3373	-0.4536
9	0.941	0.882	0.6351	-0.7974	0.6959	-0.8102	0.7948	-0.8267	0.8891	-0.7742	0.9770	-0.5897	1.0674	-0.4815	1.1004	-0.4464	1.1083	-0.4370
10	0.912	0.000	0.9065	-0.6916	0.9790	-0.7732	1.1008	-0.8351	1.2032	-0.7725	1.2904	-0.5813	1.3684	-0.4896	1.4036	-0.4639	1.4116	-0.4787
11	0.912	0.236	0.8972	-0.6954	0.9697	-0.7812	1.0911	-0.8476	1.1934	-0.7811	1.2817	-0.5914	1.3600	-0.4963	1.3965	-0.4678	1.4041	-0.4777
12	0.912	0.471	0.8439	-0.6965	0.9162	-0.7803	1.0401	-0.8558	1.1462	-0.7936	1.2372	-0.5973	1.3239	-0.4996	1.3625	-0.4692	1.3713	-0.4720
13	0.912	0.764	0.6183	-0.7771	0.7223	-0.7950	0.8521	-0.8446	0.9463	-0.7926	1.0223	-0.5985	1.1292	-0.4859	1.1803	-0.4583	1.1916	-0.4532
14	0.854	0.000	0.6853	-0.7198	0.7649	-0.7408	0.8928	-0.8447	1.0251	-0.7782	1.1491	-0.5876	1.2761	-0.4879	1.3432	-0.4735	1.3598	-0.4876
15	0.854	0.236	0.6702	-0.7376	0.7497	-0.7540	0.8818	-0.8528	1.0123	-0.7779	1.1356	-0.5864	1.2636	-0.4837	1.3312	-0.4682	1.3470	-0.4705
16	0.854	0.471	0.6336	-0.7320	0.7034	-0.7569	0.8372	-0.8499	0.9623	-0.7817	1.0806	-0.5912	1.2137	-0.4833	1.2817	-0.4657	1.2979	-0.4718
17	0.854	0.647	0.5927	-0.7675	0.6579	-0.7598	0.7802	-0.8558	0.8919	-0.7848	0.9989	-0.5940	1.1253	-0.4903	1.1897	-0.4682	1.2039	-0.4703
18	0.854	0.764	0.5275	-0.5477	0.5969	-0.6067	0.7208	-0.8186	0.8322	-0.7499	0.9364	-0.5890	1.0601	-0.4898	1.1208	-0.4681	1.1339	-0.4668
19	0.854	0.882	0.4449	-0.7079	0.5082	-0.7688	0.6206	-0.7733	0.7248	-0.7347	0.8228	-0.5815	0.9430	-0.4862	0.9929	-0.4631	1.0043	-0.4573
20	0.736	0.000	0.5548	-0.7102	0.6336	-0.7368	0.7719	-0.8093	0.9010	-0.7678	1.0289	-0.5806	1.1794	-0.4890	1.2574	-0.4798	1.2762	-0.4939
21	0.736	0.236	0.5481	-0.7132	0.6263	-0.7364	0.7632	-0.8058	0.8898	-0.7610	1.0166	-0.5788	1.1666	-0.4855	1.2442	-0.4761	1.2631	-0.4861
22	0.736	0.471	0.5137	-0.6320	0.5882	-0.7269	0.7226	-0.7898	0.8452	-0.7551	0.9656	-0.5755	1.1139	-0.4829	1.1916	-0.4687	1.2090	-0.4809
23	0.736	0.647	0.4596	-0.6030	0.5292	-0.6521	0.6552	-0.6895	0.7694	-0.7029	0.8831	-0.5761	1.0268	-0.4899	1.0978	-0.4727	1.1148	-0.4829
24	0.736	0.764	0.4183	-0.6877	0.4769	-0.7457	0.5984	-0.7515	0.7092	-0.7158	0.8196	-0.5777	0.9606	-0.4909	1.0287	-0.4741	1.0442	-0.4807
25	0.736	0.882	0.3181	-0.7861	0.3950	-0.8302	0.5051	-0.8028	0.6067	-0.7197	0.7102	-0.5744	0.8430	-0.4859	0.9049	-0.4698	0.9185	-0.4728
26	0.588	0.000	0.4684	-0.4772	0.5418	-0.5895	0.6778	-0.7288	0.8032	-0.7075	0.9334	-0.5696	1.0928	-0.4839	1.1801	-0.4801	1.2016	-0.4986
27	0.588	0.236	0.4628	-0.4755	0.5349	-0.5789	0.6699	-0.6948	0.7931	-0.7003	0.9220	-0.5643	1.0793	-0.4815	1.1676	-0.4766	1.1881	-0.4927
28	0.588	0.471	0.4296	-0.5808	0.4997	-0.6362	0.6287	-0.7002	0.7477	-0.6968	0.8742	-0.5641	1.0276	-0.4774	1.1119	-0.4763	1.1324	-0.4911
29	0.588	0.647	0.3758	-0.7082	0.4421	-0.7490	0.5622	-0.7721	0.6731	-0.7089	0.7925	-0.5746	0.9409	-0.4854	1.0183	-0.4812	1.0372	-0.4952
30	0.588	0.764	0.3317	-0.8048	0.3957	-0.8485	0.5098	-0.8046	0.6173	-0.7192	0.7338	-0.5788	0.8777	-0.4860	0.9514	-0.4816	0.9692	-0.4945
31	0.588	0.882	0.2586	-0.7958	0.3146	-0.8351	0.4205	-0.8028	0.5199	-0.7153	0.6253	-0.5740	0.7639	-0.4769	0.8303	-0.4724	0.8470	-0.4875
32	0.412	0.000	0.4028	-0.3528	0.4754	-0.4393	0.6015	-0.4828	0.7201	-0.5721	0.8455	-0.5490	1.0055	-0.4717	1.0950	-0.4798	1.1192	-0.5038
33	0.412	0.236	0.3973	-0.3614	0.4699	-0.4523	0.5949	-0.5307	0.7114	-0.6252	0.8351	-0.5506	0.9939	-0.4697	1.0836	-0.4755	1.1068	-0.4988
34	0.412	0.471	0.3664	-0.5134	0.4339	-0.6088	0.5548	-0.7149	0.6678	-0.6835	0.7918	-0.5586	0.9431	-0.4708	1.0311	-0.4774	1.0520	-0.4970
35	0.412	0.647	0.3137	-0.7307	0.3768	-0.7974	0.4897	-0.7829	0.5949	-0.7085	0.7132	-0.5746	0.8588	-0.4787	0.9406	-0.4808	0.9592	-0.5007
36	0.412	0.764	0.2699	-0.8204	0.3308	-0.8542	0.4388	-0.7970	0.5397	-0.7143	0.6552	-0.5769	0.7981	-0.4785	0.8752	-0.4808	0.8935	-0.5002
37	0.412	0.882	0.2011	-0.7715	0.2531	-0.8149	0.3540	-0.7920	0.4477	-0.7078	0.5543	-0.5718	0.6897	-0.4751	0.7595	-0.4724	0.7778	-0.4934
38	0.264	0.000	0.3728	-0.3624	0.4373	-0.3899	0.5494	-0.4765	0.6498	-0.5810	0.7658	-0.5336	0.9103	-0.4669	1.0042	-0.4727	1.0262	-0.5001
39	0.264	0.236	0.3433	-0.3995	0.4281	-0.4660	0.5408	-0.5655	0.6395	-0.6466	0.7547	-0.5370	0.8995	-0.4653	0.9918	-0.4701	1.0143	-0.4948
40	0.264	0.471	0.3312	-0.5289	0.3943	-0.5818	0.5016	-0.6969	0.5968	-0.6798	0.7158	-0.5491	0.8546	-0.4701	0.9417	-0.4712	0.9657	-0.4938
41	0.264	0.647	0.2788	-0.7288	0.3372	-0.7678	0.4388	-0.7631	0.5284	-0.6954	0.6414	-0.5634	0.7759	-0.4776	0.8573	-0.4756	0.8794	-0.4974
42	0.264	0.764	0.2363	-0.7899	0.2921	-0.8020	0.3893	-0.7652	0.4773	-0.6972	0.5872	-0.5619	0.7197	-0.4792	0.7975	-0.4756	0.8181	-0.4968
43	0.264	0.882	0.1685	-0.6664	0.2176	-0.7066	0.3064	-0.7438	0.3875	-0.6906	0.4882	-0.5495	0.6178	-0.4732	0.6890	-0.4789	0.7085	-0.4898
44	0.146	0.000	0.3201	-0.3973	0.3656	-0.4468	0.4425	-0.6242	0.5106	-0.6461	0.5940	-0.5108	0.7139	-0.4647	0.8024	-0.4683	0.8287	-0.4898
45	0.146	0.236	0.3104	-0.4338	0.3559	-0.5083	0.4327	-0.6445	0.5012	-0.6661	0.5844	-0.5133	0.7051	-0.4628	0.7950	-0.4671	0.8210	-0.4857
46	0.146	0.471	0.2847	-0.5375	0.3277	-0.6048	0.4017	-0.6792	0.4708	-0.6555	0.5525	-0.5219	0.6812	-0.4601	0.7704	-0.4665	0.7986	-0.4827
47	0.146	0.647	0.2306	-0.7217	0.2783	-0.7272	0.3484	-0.6977	0.4137	-0.6629	0.4936	-0.5363	0.6320	-0.4664	0.7218	-0.4693	0.7501	-0.4848
48	0.146	0.764	0.2016	-0.6660	0.2385	-0.6341	0.3057	-0.6605	0.3702	-0.6630	0.4507	-0.5332	0.5976	-0.4663	0.6844	-0.4658	0.7123	-0.4777
49	0.146	0.882	0.1409	-0.5985	0.1662	-0.5904	0.2279	-0.6438	0.2924	-0.6551	0.3695	-0.5247	0.5173	-0.4583	0.5972	-0.4583	0.6289	-0.4683
50	0.088	0.000	-0.3780	-0.6834	-0.3635	-0.7253	-0.3364	-0.5618	-0.3049	-0.6317	-0.1486	-0.4986	0.1127	-0.4573	0.2598	-0.4526	0.3173	-0.4624
51	0.088	0.236	-0.3775	-0.7078	-0.3621	-0.7172	-0.3338	-0.5637	-0.3028	-0.6010	-0.1473	-0.5012	0.1242	-0.4533	0.2744	-0.4511	0.3371	-0.4556
52	0.088	0.471	-0.3627	-0.6379	-0.3472	-0.6062	-0.3122	-0.5232	-0.2498	-0.5865	-0.1500	-0.4984	0.1378	-0.4469	0.3436	-0.4471	0.4218	-0.4539
53	0.088	0.764	0.0365	-0.5350	0.0496	-0.5725	0.0893	-0.5354	0.1423	-0.6255	0.2353	-0.5188	0.4974	-0.4582	0.5961	-0.4556	0.6268	-0.4648
54	0.050	0.000	-0.3746	-0.6946	-0.3522	-0.6958	-0.3054	-0.5563	-0.2371	-0.6069	-0.1197	-0.4962	0.5135	-0.4592	0.5961	-0.4466	0.6120	-0.4397
55	0.050	0.236	-0.3403	-0.6732	-0.3426	-0.6642	-0.2932	-0.5553	-0.2088	-0.5909	-0.1426	-0.4998	0.5286	-0.4557	0.5972	-0.4446	0.6127	-0.4358
56	0.050	0.471																
57	0.050	0.647	-0.2651	-0.5482	-0.2399	-0.5656	-0.1767	-0.5221	-0.0862	-0.5962	0.0168	-0.5060	0.4775	-0.4463	0.5477	-0.4376	0.5764	-0.4327
58	0.050	0.882	-0.0698	-0.5082	-0.0641	-0.5362	-0.0264	-0.5092	0.0404	-0.5953	0.1481	-0.5036	0.4143	-0.4429	0.4910	-0.4347	0.5175	-0.4327
59	0.020	0.000	-0.3425	-0.5575	-0.3223	-0.5515	-0.2646	-0.5530	-0.1698	-0.5795	0.0868	-0.4923	0.4655	-0.4526	0.5181	-0.4356	0.5388	-0.4162
60	0.020	0.236	-0.3379	-0.5619	-0.3168	-0.5527	-0.2538	-0.5567	-0.1647	-0.5918	0.2198	-0.5004	0.4608	-0.4558	0.5135	-0.4385	0.5348	-0.4183
61	0.020	0.471	-0.2696	-0.5872	-0.2407	-0.5728	-0.1587	-0.5430	-0.0628	-0.5946	0.3952	-0.5072	0.4458	-0.4460	0.5065	-0.4265	0.5292	-0.4148
62	0.020	0.764	-0.2689	-0.5311	-0.2312	-0.5461	-0.1578	-0.5075	-0.1943	-0.5854	0.1040	-0.5034	0.4039	-0.4337	0.4664	-0.4192	0.4857	-0.4133
63	0.854	-0.471	0.6404	-0.7339	0.7091	-0.7615	0.8381	-0.8197	0.9662	-0.7727	1.0859	-0.5086	1.2162	-0.4763	1.2838	-0.4719	1.3023	-0.4961
64	0.146	-0.471	0.2987	-0.5119	0.3322	-0.5796	0.4070	-0.6622	0.4771	-0.6392	0.5607	-0.5241	0.6079	-0.4540	0.7730	-0.4588	0.8027	-0.4794

Table A-4.- Pressure coefficients for configuration 4.
M = 0.6

			ALPHA =															
			-2.0	-3.0	0.2	-0.4	5.2	4.6	10.2	9.6	15.1	14.5	20.1	19.5	25.1	24.5	26.8	26.7
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.916	0.000	0.0298	0.0830	0.0605	0.0526	0.1145	0.0180	0.1936	-0.0565	0.2865	-0.1502	0.3932	-0.2792	0.5031	-0.6353	0.5307	-0.4824
2	0.828	0.000	0.0222	0.0723	0.0511	0.0427	0.1055	0.0036	0.1836	-0.0662	0.2743	-0.1540	0.3775	-0.2776	0.4062	-0.4200	0.5236	-0.4604
3	0.742	0.000	0.0105	0.0577	0.0361	0.0317	0.0900	-0.0072	0.1636	-0.0767	0.2439	-0.1618	0.3523	-0.2067	0.4595	-0.4203	0.4971	-0.4645
4	0.747	0.081	0.0140	0.0777	0.0396	0.0417	0.0922	-0.0072	0.1662	-0.0680	0.2511	-0.2113	0.3461	-0.4976	0.4434	-0.8354	0.4750	-0.9471
5	0.752	0.162	0.0134	0.0816	0.0431	0.0436	0.0930	0.0094	0.1622	-0.4245	0.2270	-0.6413	0.2974	-0.9049	0.3697	-1.1083	0.3907	-1.2063
6	0.646	0.000	-0.0375	0.0133	-0.0150	-0.0104	0.0271	-0.0668	0.1139	-0.1284	0.2020	-0.2255	0.3060	-0.3456	0.4136	-0.4700	0.4440	-0.5209
7	0.650	0.092	-0.0199	0.0359	0.0000	0.0041	0.0637	-0.0429	0.1375	-0.1031	0.2207	-0.2134	0.3169	-0.4322	0.4135	-0.7174	0.4462	-0.8149
8	0.654	0.174	-0.0063	0.0503	0.0233	0.0133	0.0720	-0.0234	0.1453	-0.1267	0.2179	-0.5256	0.3061	-0.9206	0.3082	-1.2458	0.4143	-1.3479
9	0.660	0.254	0.0030	0.0676	0.0326	0.0237	0.0824	-0.1429	0.1421	-0.4075	0.1957	-0.6320	0.2573	-0.8990	0.3127	-1.1769	0.3219	-1.2706
10	0.503	0.000	-0.0712	0.0173	-0.0067	-0.0119	0.0443	-0.0513	0.1174	-0.1138	0.2052	-0.1987	0.3027	-0.3235	0.4036	-0.4579	0.4459	-0.5040
11	0.503	0.054	-0.0322	0.0092	-0.0120	-0.0227	0.0374	-0.0587	0.1167	-0.1230	0.2013	-0.2087	0.3003	-0.3400	0.4010	-0.4906	0.4410	-0.5502
12	0.500	0.000	-0.0304	0.0151	-0.0001	-0.0101	0.0347	-0.0532	0.1121	-0.1186	0.1926	-0.1966	0.2900	-0.3196	0.3803	-0.4395	0.4235	-0.4060
13	0.500	0.050	-0.0222	0.0105	-0.0005	-0.0028	0.0444	-0.0447	0.1125	-0.1043	0.1998	-0.1925	0.2940	-0.3163	0.3890	-0.4540	0.4253	-0.4912
14	0.500	0.101	-0.0300	0.0191	-0.0084	-0.0062	0.0305	-0.0526	0.1116	-0.1094	0.1970	-0.1959	0.2897	-0.3406	0.3864	-0.5098	0.4240	-0.5654
15	0.500	0.153	-0.0392	0.0057	-0.0222	-0.0238	0.0304	-0.0662	0.1040	-0.1168	0.1934	-0.2075	0.2855	-0.4175	0.3803	-0.6775	0.4237	-0.7561
16	0.504	0.239	-0.0350	0.0191	-0.0009	0.0024	0.0537	-0.0427	0.1250	-0.1086	0.2017	-0.4547	0.2852	-0.8945	0.3710	-1.2870	0.3993	-1.4022
17	0.509	0.319	-0.0276	0.0314	0.0123	0.0117	0.0649	-0.0174	0.1301	-0.4695	0.1949	-0.6738	0.2651	-0.9532	0.3305	-1.2546	0.3597	-1.3577
18	0.514	0.400	-0.0435	0.0427	0.0108	0.0101	0.0742	-0.2332	0.1257	-0.4592	0.1691	-0.7189	0.2124	-0.8902	0.2541	-1.1325	0.2633	-1.2351
19	0.375	0.000	-0.0257	0.0173	-0.0040	-0.0115	0.0316	-0.0493	0.0944	-0.1031	0.1712	-0.1832	0.2599	-0.2044	0.3557	-0.3957	0.3903	-0.4259
20	0.375	0.085	-0.0311	0.0040	-0.0038	-0.0291	0.0290	-0.0630	0.0930	-0.1192	0.1697	-0.1861	0.2507	-0.3045	0.3510	-0.4315	0.3876	-0.4741
21	0.375	0.171	-0.0334	0.0190	-0.0090	-0.0164	0.0286	-0.0553	0.0926	-0.1031	0.1689	-0.1869	0.2579	-0.3409	0.3491	-0.5440	0.3818	-0.6097
22	0.375	0.259	-0.0518	0.0069	-0.0251	-0.0269	0.0268	-0.0713	0.0953	-0.1023	0.1730	-0.2615	0.2617	-0.5772	0.3516	-0.9164	0.3708	-1.0380
23	0.375	0.292	-0.0680	-0.0054	-0.0356	-0.0379	0.0187	-0.0965	0.0899	-0.1154	0.1690	-0.3889	0.2580	-0.8268	0.3454	-1.2677	0.3050	-1.4074
24	0.379	0.364	-0.0435	0.0180	-0.0096	-0.0107	0.0308	-0.0496	0.1051	-0.2989	0.1774	-0.7407	0.2539	-1.0326	0.3203	-1.4215	0.3428	-1.5318
25	0.384	0.444	-0.0104	0.0301	0.0146	-0.0020	0.0578	-0.1028	0.1103	-0.4695	0.1753	-0.6676	0.2376	-0.8145	0.3007	-1.0898	0.3182	-1.1567
26	0.389	0.525	-0.0061	0.0469	0.0210	0.0110	0.0700	-0.2318	0.1151	-0.4579	0.1558	-0.6901	0.1849	-0.9257	0.2215	-1.1261	0.2324	-1.2006
27	0.250	0.000	-0.0404	-0.0177	-0.0200	-0.0335	0.0824	-0.0616	0.0587	-0.0996	0.1217	-0.1670	0.1987	-0.2455	0.2902	-0.3252	0.3205	-0.3410
28	0.250	0.120	-0.0472	-0.0110	-0.0245	-0.0309	0.0053	-0.0616	0.0581	-0.1023	0.1290	-0.1672	0.2102	-0.2599	0.2904	-0.3590	0.3259	-0.3901
29	0.250	0.241	-0.0551	-0.0148	-0.0327	-0.0426	0.0041	-0.0721	0.0613	-0.1054	0.1307	-0.1912	0.2092	-0.3651	0.2904	-0.5512	0.3246	-0.6081
30	0.250	0.365	-0.0813	-0.0098	-0.0351	-0.0414	0.0082	-0.0756	0.0628	-0.1029	0.1327	-0.3725	0.2130	-0.7490	0.2898	-1.0869	0.3199	-1.1751
31	0.250	0.412	-0.0767	-0.0327	-0.0529	-0.0654	-0.0012	-0.0912	0.0629	-0.1672	0.1388	-0.6304	0.2112	-1.0602	0.2063	-1.4325	0.3199	-1.5341
32	0.254	0.489	-0.0508	-0.0069	-0.0262	-0.0325	0.0204	-0.0406	0.0785	-0.5454	0.1447	-0.7578	0.2089	-0.9383	0.2757	-1.1082	0.3004	-1.2434
33	0.259	0.569	-0.0276	0.0098	-0.0113	-0.0164	0.0333	-0.2437	0.0874	-0.4356	0.1398	-0.5801	0.1936	-0.7448	0.2491	-0.9363	0.2631	-1.0030
34	0.264	0.650	-0.1637	0.0342	-0.0049	0.0007	0.0548	-0.2504	0.0936	-0.4150	0.1267	-0.6016	0.1533	-0.7702	0.1773	-0.9233	0.1938	-0.9948
35	0.125	0.000	-0.1704	-0.1819	-0.1017	-0.1061	-0.1593	-0.1966	-0.1179	-0.2067	-0.0563	-0.2639	0.0087	-0.3226	0.0852	-0.3782	0.1199	-0.3924
36	0.125	0.155	-0.1911	-0.1804	-0.1833	-0.1840	-0.1617	-0.1978	-0.1227	-0.2068	-0.0590	-0.2021	0.0099	-0.3326	0.0882	-0.4147	0.1237	-0.4399
37	0.125	0.312	-0.1738	-0.1598	-0.1670	-0.1771	-0.1430	-0.1871	-0.1017	-0.1905	-0.0438	-0.2714	0.0269	-0.4438	0.1134	-0.6364	0.1279	-0.7029
38	0.125	0.471	-0.1659	-0.1386	-0.1488	-0.1646	-0.1106	-0.1773	-0.0784	-0.2027	-0.0166	-0.5732	0.0496	-0.9332	0.1408	-1.2216	0.1551	-1.2908
39	0.125	0.532	-0.1803	-0.1460	-0.1759	-0.1817	-0.1233	-0.1818	-0.0732	-0.3662	-0.0114	-0.8660	0.0564	-1.1583	0.1393	-1.3556	0.1589	-1.3745
40	0.129	0.614	-0.1239	-0.0934	-0.1120	-0.1215	-0.0631	-0.1274	-0.0213	-0.6642	0.0320	-0.6702	0.0877	-0.8080	0.1571	-1.0347	0.1676	-1.0581
41	0.134	0.694	-0.0932	-0.0680	-0.0806	-0.0892	-0.0270	-0.3728	0.0070	-0.4719	0.0537	-0.5796	0.0992	-0.7401	0.1571	-0.9042	0.1655	-0.9671
42	0.139	0.775	-0.1865	-0.0228	-0.0529	-0.0604	0.0041	-0.2745	0.0293	-0.4248	0.0558	-0.5590	0.0033	-0.7012	0.1174	-0.8618	0.1119	-0.9105
43	0.085	0.658	-0.2797	-0.2414	-0.2515	-0.2536	-0.2145	-0.3470	-0.1911	-0.7805	-0.1355	-0.6316	-0.0744	-0.7137	0.0087	-0.7581	0.0360	-0.7362
44	0.077	0.756	-0.2520	-0.1599	-0.1821	-0.1824	-0.1441	-0.4050	-0.1234	-0.4925	-0.0755	-0.4711	-0.0210	-0.5546	0.0418	-0.6951	0.0708	-0.6994
45	0.060	0.854	-0.2392	-0.0756	[illegible]	-0.1887	-0.0603	-0.3616	-0.0467	-0.3691	-0.0161	-0.3821	0.0139	-0.4637	0.0486	-0.5772	0.0692	-0.5971
46	0.063	0.000	-0.2216	-0.2981	[illegible]	-0.2781	-0.2844	-0.2275	-0.5510	-0.2145	-0.5153	-0.4307	-0.4644	-0.7760	-0.3698	-1.0525	-0.3476	-1.0811
47	0.063	0.173	-0.2308	-0.3160	-0.2799	-0.2935	-0.2974	-0.2449	-0.3304	-0.2477	-0.2780	-0.4587	-0.2360	-0.8519	-0.1502	-1.1427	-0.1382	-1.1758
48	0.063	0.347	-0.2206	-0.3291	-0.2989	-0.3142	-0.3187	-0.2792	-0.3092	-0.3197	-0.2833	-0.4920	-0.2217	-0.8063	-0.1208	-1.1911	-0.1170	-1.2055
49	0.063	0.525	-0.2680	-0.4413	-0.4015	-0.5176	-0.5573	-0.3150	-0.5967	-0.3056	-0.4860	-0.6056	-0.3306	-0.8105	-0.0997	-0.9896	-0.0838	-1.0062
50	0.063	0.592	-0.3671	-0.5919	-0.6176	-0.6235	-0.6351	-0.3679	-0.6537	-0.5316	-0.4437	-0.6420	-0.2554	-0.6194	-0.0938	-0.7210	-0.0899	-0.7666
51	0.042	0.000	-0.0375	-0.0744	-0.0591	-0.0648	-0.0735	-0.0290	-0.1142	-0.0056	-0.0184	-0.0540	0.0268	-0.1498	0.0469	-0.1689	0.0442	-0.1855
52	0.042	0.170	-0.0761	-0.0934	-0.0642	-0.0785	-0.0880	-0.0318	-0.1061	-0.0160	-0.0478	-0.1158	-0.0152	-0.1632	0.0353	-0.2016	0.0325	-0.2187
53	0.042	0.359	-0.0123	-0.1016	-0.0660	-0.0707	-0.0817	-0.0407	-0.0892	-0.0597	-0.0622	-0.1802	-0.0410	-0.2760	0.0360	-0.3595	0.0333	-0.3778
54	0.042	0.542	-0.0340	-0.1025	-0.0814	-0.1047	-0.0621	-0.0768	-0.0668	-0.2133	-0.0620	-0.3060	-0.0471	-0.4679	0.0222	-0.5396	0.0178	-0.6120
55	0.042	0.612	-0.0749	-0.1761	-0.2160	-0.2524	-0.1201	-0.1307	-0.0882	-0.3044	-0.0890	-0.3735	-0.0703	-0.4664	0.0064	-0.5676	0.0174	-0.6277
56	0.021	0.000	0.0763	0.0521	0.0627	0.0531	0.0572	0.0782	0.0628	0.0853	0.1325	0.1012	0.1509	0.0907	0.1183	0.0892	0.1045	0.0938
57	0.021	0.104	0.0549	0.0098	0.0286	0.0260	0.0146	0.0654	0.0098	0.0857	0.0757	0.0690	0.1001	0.0698	0.1434	0.0676	0.1431	0.0683
58	0.021	0.370	0.0796	0.0307	0.0627	0.0578	0.0502	0.0854	0.0413	0.0069	0.0529	0.0497	0.0631	-0.0079	0.1473	-0.0413	0.1490	-0.0524
59	0.021	0.560	0.1026	0.0409	0.0710	0.0715	0.1000	0.0817	0.0537	-0.0328	0.0070	-0.1197	0.0022	-0.1945	0.0018	-0.2356	0.0083	-0.2515
60	0.021	0.632	0.0925	0.0227	-0.0096	-0.0195	0.0730	0.0432	0.0246	-0.1724	-0.0239	-0.1683	-0.0297	-0.2617	0.0415	-0.2790	0.0524	-0.3224
61	0.125	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Continued).
M = 0.6

			ALPHA =															
			27.3	27.3	30.1	30.1	35.0	35.0	40.0	40.0	45.0	45.0	49.9	49.9	54.9	55.0	56.4	56.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.914	0.000	0.5595	-0.5278	0.6253	-0.6147	0.7412	-0.7544	0.8429	-0.9594	0.9405	-1.2063	1.0111	-1.3482	1.0579	-0.6600	1.0727	-0.6342
2	0.828	0.000	0.5404	-0.5036	0.6070	-0.5860	0.7215	-0.7128	0.8224	-0.8737	0.9160	-0.9928	0.9891	-1.2100	1.0422	-0.6551	1.0569	-0.6295
3	0.742	0.000	0.5181	-0.4992	0.5821	-0.5786	0.6945	-0.6719	0.7946	-0.7752	0.8865	-0.8617	0.9621	-1.0332	1.0202	-0.6577	1.0348	-0.6340
4	0.747	0.081	0.4813	-1.0601	0.5485	-1.2490	0.6431	-1.4892	0.7296	-1.6080	0.8162	-1.5040	0.8953	-1.2478	0.9393	-0.6638	0.9586	-0.6344
5	0.752	0.162	0.3901	-1.3799	0.4375	-1.5481	0.5134	-1.7834	0.5770	-2.0132	0.6481	-1.7108	0.7193	-1.4004	0.7669	-0.6582	0.7867	-0.6377
6	0.646	0.000	0.4666	-0.5654	0.5342	-0.6484	0.6478	-0.6839	0.7457	-0.7469	0.8468	-0.8940	0.9257	-0.9514	0.9762	-0.6750	0.9948	-0.6569
7	0.650	0.092	0.4634	-0.9035	0.5213	-1.0730	0.6245	-1.2200	0.7153	-1.3524	0.8102	-1.2403	0.8831	-1.0448	0.9404	-0.6665	0.9551	-0.6419
8	0.655	0.174	0.4242	-1.4190	0.4763	-1.5720	0.5647	-1.7858	0.6450	-1.8507	0.7317	-1.6938	0.7966	-1.1302	0.8492	-0.6603	0.8653	-0.6365
9	0.660	0.254	0.3314	-1.3859	0.3635	-1.5467	0.4289	-1.8951	0.4828	-1.6998	0.5578	-1.4559	0.6162	-1.1376	0.6635	-0.6560	0.6844	-0.6359
10	0.583	0.000	0.4613	-0.5338	0.5271	-0.6132	0.6320	-0.5834	0.7290	-0.7128	0.8220	-0.8503	0.9052	-0.8794	0.9608	-0.6807	0.9767	-0.6587
11	0.583	0.054	0.4560	-0.5845	0.5248	-0.6782	0.6259	-0.6566	0.7217	-0.8115	0.8155	-0.9196	0.8973	-0.9053	0.9515	-0.6825	0.9694	-0.6537
12	0.580	0.000	0.4422	-0.5212	0.5067	-0.5857	0.6023	-0.5648	0.6976	-0.6310	0.7877	-0.7863	0.8744	-0.8263	0.9322	-0.7023	0.9586	-0.6719
13	0.580	0.050	0.4433	-0.5308	0.5045	-0.6188	0.6011	-0.5959	0.6929	-0.6949	0.7934	-0.8176	0.8673	-0.8352	0.9328	-0.6955	0.9584	-0.6720
14	0.580	0.101	0.4304	-0.6215	0.4995	-0.7249	0.5939	-0.7088	0.6838	-0.8532	0.7810	-0.8968	0.8556	-0.8479	0.9190	-0.6981	0.9397	-0.6674
15	0.580	0.153	0.4324	-0.8509	0.4919	-0.9950	0.5824	-0.9789	0.6789	-1.1397	0.7629	-1.0186	0.8319	-0.8778	0.8957	-0.6868	0.9149	-0.6690
16	0.584	0.239	0.4187	-1.5695	0.4610	-1.7657	0.5413	-1.5199	0.6255	-1.5757	0.7068	-1.2223	0.7742	-0.9598	0.8240	-0.6936	0.8368	-0.6741
17	0.589	0.319	0.3647	-1.4523	0.4090	-1.6122	0.4795	-1.3276	0.5529	-1.5145	0.6302	-1.2639	0.6848	-0.9765	0.7302	-0.6956	0.7475	-0.6726
18	0.514	0.400	0.2620	-1.2423	0.2877	-1.3621	0.3425	-1.1465	0.3995	-1.3286	0.4702	-1.1957	0.5067	-0.9466	0.5495	-0.7017	0.5641	-0.6797
19	0.375	0.000	0.4067	-0.4517	0.4673	-0.5098	0.5477	-0.5158	0.6304	-0.6019	0.7294	-0.7251	0.8106	-0.7309	0.8755	-0.7050	0.8992	-0.6909
20	0.375	0.085	0.4012	-0.4856	0.4618	-0.5587	0.5430	-0.5650	0.6327	-0.6796	0.7109	-0.7489	0.8054	-0.7251	0.8661	-0.7006	0.8910	-0.6849
21	0.375	0.171	0.3989	-0.6577	0.4572	-0.7659	0.5340	-0.7581	0.6229	-0.8759	0.7068	-0.8421	0.7894	-0.7474	0.8497	-0.6987	0.8745	-0.6859
22	0.375	0.259	0.3931	-1.1590	0.4453	-1.3223	0.5161	-1.0302	0.6032	-1.1457	0.6860	-0.9766	0.7625	-0.8002	0.8152	-0.7077	0.8322	-0.6916
23	0.375	0.292	0.3830	-1.5041	0.4350	-1.7479	0.5041	-1.1793	0.5053	-1.3187	0.6449	-1.0583	0.7339	-0.8288	0.7844	-0.7104	0.8013	-0.6993
24	0.379	0.384	0.3687	-1.7289	0.4057	-1.9891	0.4683	-1.1751	0.5459	-1.3186	0.6170	-1.0960	0.6796	-0.8413	0.7291	-0.7161	0.7429	-0.7002
25	0.384	0.444	0.3200	-1.2218	0.3604	-1.3250	0.4134	-1.0550	0.4888	-1.2145	0.5462	-1.0676	0.5991	-0.8293	0.6445	-0.7044	0.6540	-0.6944
26	0.389	0.525	0.2244	-1.1937	0.2499	-1.2998	0.2926	-0.9391	0.3580	-1.0754	0.4001	-0.9850	0.4356	-0.7949	0.4725	-0.6965	0.4786	-0.6732
27	0.250	0.000	0.3390	-0.3679	0.3953	-0.3996	0.4505	-0.4022	0.5391	-0.5186	0.6259	-0.6374	0.7069	-0.6477	0.7770	-0.7084	0.8008	-0.6947
28	0.250	0.120	0.3372	-0.4288	0.3940	-0.4783	0.4470	-0.5045	0.5309	-0.6455	0.6188	-0.6798	0.7000	-0.6600	0.7704	-0.7211	0.7920	-0.6975
29	0.250	0.241	0.3290	-0.6923	0.3892	-0.7922	0.4432	-0.7673	0.5247	-0.8464	0.6076	-0.7785	0.6877	-0.6901	0.7529	-0.7252	0.7761	-0.7022
30	0.250	0.305	0.3185	-1.3728	0.3734	-1.4988	0.4263	-0.9149	0.5026	-1.0303	0.5766	-0.8910	0.6550	-0.7168	0.7150	-0.7299	0.7340	-0.7076
31	0.250	0.412	0.3153	-1.7047	0.3633	-1.0583	0.4175	-0.9755	0.4988	-1.1304	0.5607	-0.9435	0.6388	-0.7433	0.6888	-0.7162	0.6963	-0.6945
32	0.254	0.489	0.2920	-1.4614	0.3375	-1.8120	0.3874	-0.9454	0.4566	-1.0906	0.5161	-0.9395	0.5776	-0.7367	0.6241	-0.7047	0.6343	-0.6886
33	0.259	0.569	0.2598	-1.1083	0.2964	-1.2615	0.3305	-0.8063	0.4049	-1.0186	0.4555	-0.9021	0.5057	-0.7219	0.5471	-0.6996	0.5528	-0.6859
34	0.264	0.650	0.1809	-1.0787	0.2050	-1.2310	0.2352	-0.8253	0.2939	-0.9322	0.3271	-0.8387	0.3660	-0.7145	0.3931	-0.7047	0.3985	-0.6794
35	0.125	0.000	0.1450	-0.3067	0.1938	-0.4196	0.1926	-0.4793	0.2782	-0.5109	0.3580	-0.6016	0.4379	-0.6047	0.5113	-0.7021	0.5443	-0.6788
36	0.125	0.155	0.1430	-0.4493	0.1930	-0.5039	0.1990	-0.5815	0.2760	-0.6350	0.3568	-0.6422	0.4378	-0.6163	0.5188	-0.7187	0.5485	-0.6821
37	0.125	0.312	0.1490	-0.7294	0.1909	-0.8257	0.2252	-0.6895	0.2917	-0.7700	0.3677	-0.7076	0.4383	-0.6166	0.5112	-0.7014	0.5393	-0.6821
38	0.125	0.471	0.1572	-1.3667	0.2092	-1.4429	0.2440	-0.7752	0.2964	-0.8981	0.3688	-0.7779	0.4351	-0.6273	0.4970	-0.6901	0.5247	-0.6714
39	0.125	0.532	0.1630	-1.3657	0.2119	-1.3767	0.2498	-0.8156	0.2924	-0.9545	0.3596	-0.8139	0.4203	-0.6438	0.4798	-0.6961	0.5019	-0.6731
40	0.129	0.614	0.1685	-1.0462	0.2143	-1.0849	0.2516	-0.7831	0.2984	-0.9199	0.3474	-0.7799	0.4058	-0.6576	0.4588	-0.6872	0.4668	-0.6687
41	0.134	0.694	0.1968	-1.1161	0.2002	-1.0103	0.2435	-0.7306	0.2705	-0.8588	0.3204	-0.7391	0.3707	-0.6444	0.3984	-0.6843	0.4158	-0.6689
42	0.139	0.775	0.0984	-1.0975	0.1316	-1.1883	0.1771	-0.6910	0.1967	-0.7895	0.2291	-0.6948	0.2639	-0.6290	0.2748	-0.6824	0.2838	-0.6599
43	0.985	0.690	0.0257	-0.7159	0.0827	-0.7243	0.1108	-0.7275	0.1305	-0.8405	0.1915	-0.7304	0.2495	-0.6137	0.3094	-0.6789	0.3329	-0.6584
44	0.072	0.756	0.0558	-0.6250	0.1076	-0.6653	0.1451	-0.6476	0.1379	-0.7340	0.1862	-0.6470	0.2321	-0.5854	0.2771	-0.6400	0.2931	-0.6295
45	0.080	0.854	0.0526	-0.6415	0.0933	-0.5959	0.1401	-0.5057	0.1031	-0.6500	0.1360	-0.5849	0.1610	-0.5648	0.1794	-0.6257	0.1884	-0.6092
46	0.063	0.000	-0.2729	-1.1165	-0.2113	-1.1485	-0.2406	-0.6766	-0.1268	-0.7619	-0.0612	-0.6882	0.0870	-0.5667	0.0910	-0.6579	0.1236	-0.6373
47	0.063	0.173	-0.3830	-1.1968	-0.2331	-1.2319	-0.2395	-0.6560	-0.1467	-0.7410	-0.0598	-0.6228	-0.0089	-0.5798	0.0694	-0.6630	0.1022	-0.6407
48	0.063	0.347	-0.2098	-1.2232	-0.2129	-1.3430	-0.1934	-0.6851	-0.1250	-0.7643	-0.0391	-0.6661	0.0094	-0.5905	0.0852	-0.6600	0.1139	-0.6449
49	0.063	0.525	-0.1477	-1.0288	-0.0727	-1.0074	-0.0259	-0.6953	-0.0087	-0.7961	0.0441	-0.6877	0.1169	-0.5960	0.1738	-0.6553	0.2053	-0.6378
50	0.063	0.592	-0.0805	-0.7609	0.0066	-0.7689	-0.0092	-0.6892	0.0035	-0.7013	0.0593	-0.6794	0.1079	-0.5941	0.1727	-0.6521	0.2052	-0.6312
51	0.042	0.000	0.0861	-0.1909	0.0812	-0.2386	-0.0699	-0.3736	0.0085	-0.3828	0.0146	-0.4320	0.0174	-0.5340	0.0788	-0.6198	0.0938	-0.6095
52	0.042	0.170	0.0921	-0.2205	0.0977	-0.2900	-0.0348	-0.4572	0.0070	-0.4670	0.0222	-0.4621	0.0245	-0.5491	0.0747	-0.6234	0.0910	-0.6022
53	0.042	0.359	0.0812	-0.3061	0.1118	-0.4981	0.0101	-0.5612	0.0102	-0.5976	0.0320	-0.5393	0.0426	-0.5715	0.0857	-0.6251	0.1011	-0.6087
54	0.042	0.542	0.0449	-0.5624	0.0940	-0.7099	0.0495	-0.6418	0.0159	-0.7019	0.0418	-0.6070	0.0630	-0.5807	0.1040	-0.6277	0.1174	-0.6106
55	0.042	0.612	0.0139	-0.6229	0.0635	-0.6833	0.0522	-0.6351	0.0084	-0.7174	0.0350	-0.6122	0.0625	-0.5842	0.1089	-0.6174	0.1235	-0.6017
56	0.021	0.000	0.1989	0.1018	0.1175	0.1061	-0.0796	-0.1552	-0.0186	-0.1889	-0.0166	-0.2977	-0.0788	-0.5109	-0.0560	-0.5050	-0.0547	-0.5759
57	0.021	0.194	0.1700	0.0671	0.1622	0.0599	0.0087	-0.2977	0.0117	-0.2366	-0.0261	-0.3374	-0.0639	-0.5195	-0.0586	-0.5078	-0.0589	-0.5726
58	0.021	0.370	0.1820	-0.1111	0.1975	-0.1630	0.0782	-0.4548	0.0186	-0.4382	-0.0705	-0.4380	-0.0482	-0.5579	-0.0426	-0.5848	-0.0288	-0.5730
59	0.021	0.560	0.0880	-0.2914	0.1409	-0.3297	0.0888	-0.5665	-0.0181	-0.6086	-0.0266	-0.5393	-0.0341	-0.5733	-0.0262	-0.5836	-0.0080	-0.5750
60	0.021	0.632	0.0431	-0.3667	0.1022	-0.4257	0.0649	-0.5916	-0.0289	-0.6400	-0.0397	-0.5682	-0.0389	-0.5778	-0.0262	-0.5916	-0.0091	-0.5817
61	0.129	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.379	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Continued).
M = 0.8

TUBE	X/L	Y/B/2	ALPHA = -2.4 WINDWARD	-3.1 LEEWARD	0.1 WINDWARD	-0.6 LEEWARD	5.1 WINDWARD	6.4 LEEWARD	10.0 WINDWARD	9.4 LEEWARD	15.0 WINDWARD	16.4 LEEWARD	20.0 WINDWARD	19.3 LEEWARD	24.0 WINDWARD	24.2 LEEWARD	28.7 WINDWARD	28.1 LEEWARD
1	0.916	0.000	0.0410	0.0992	0.0737	0.0746	0.1260	0.0238	0.2116	-0.0355	0.2996	-0.1190	0.4097	-0.2277	0.5303	-0.3443	0.5729	-0.4055
2	0.828	0.000	0.0205	0.0081	0.0634	0.0657	0.1149	0.0132	0.1963	-0.0459	0.2854	-0.1301	0.3918	-0.2374	0.5175	-0.3569	0.5512	-0.4061
3	0.742	0.000	0.0178	0.0742	0.0499	0.6538	0.0906	0.0042	0.1781	-0.0611	0.2622	-0.1433	0.3662	-0.2541	0.4802	-0.3675	0.5205	-0.4274
4	0.747	0.081	0.0145	0.0031	0.0493	0.0552	0.1046	0.0046	0.1831	-0.0510	0.2612	-0.1009	0.3585	-0.4473	0.4719	-0.7219	0.4968	-0.8250
5	0.752	0.162	0.0136	0.0071	0.0500	0.0595	0.1007	0.0210	0.1799	-0.3053	0.2397	-0.5595	0.3184	-0.7566	0.4092	-0.9617	0.4207	-1.0424
6	0.646	0.000	-0.0460	0.0192	-0.0124	-0.0010	0.0441	-0.0562	0.1275	-0.1107	0.2106	-0.2127	0.3163	-0.3295	0.4360	-0.4530	0.4642	-0.5072
7	0.650	0.092	-0.0227	0.0440	0.0127	0.0224	0.0675	-0.0333	0.1485	-0.6912	0.2270	-0.2048	0.3272	-0.4157	0.4370	-0.6597	0.4605	-0.7516
8	0.654	0.176	-0.0127	0.0591	0.0271	0.0379	0.0768	-0.0159	0.1539	-0.1095	0.2273	-0.5017	0.3150	-0.8214	0.4127	-1.0129	0.4413	-1.0847
9	0.660	0.254	0.0011	0.0756	0.0383	0.0511	0.0879	-0.1107	0.1534	-0.3677	0.2079	-0.5708	0.2741	-0.7773	0.3464	-0.9772	0.3647	-1.0624
10	0.503	0.000	-0.0301	0.0334	-0.0020	0.0047	0.0512	-0.0391	0.1330	-0.1054	0.2111	-0.1962	0.3167	-0.3111	0.4270	-0.4327	0.4603	-0.5005
11	0.503	0.054	-0.0367	0.0247	-0.0070	-0.0038	0.0467	-0.0460	0.1305	-0.1170	0.2099	-0.2053	0.3119	-0.3269	0.4250	-0.4712	0.4506	-0.5456
12	0.500	0.000	-0.0312	0.0299	0.0020	0.0005	0.0511	-0.0360	0.1200	-0.1056	0.2036	-0.1971	0.3027	-0.3110	0.4089	-0.4421	0.4419	-0.4945
13	0.500	0.050	-0.0270	0.0357	0.0005	0.0006	0.0499	-0.0379	0.1303	-0.0950	0.2083	-0.1891	0.3039	-0.3105	0.4161	-0.4560	0.4422	-0.5112
14	0.500	0.101	-0.0381	0.0279	-0.0053	0.0006	0.0424	-0.0445	0.1255	-0.1004	0.2064	-0.1927	0.3004	-0.3330	0.4100	-0.5001	0.4343	-0.5715
15	0.500	0.153	-0.0475	0.0187	-0.0126	-0.0107	0.0309	-0.0552	0.1227	-0.1086	0.2037	-0.2069	0.3002	-0.4001	0.4066	-0.6503	0.4292	-0.7306
16	0.504	0.239	-0.0319	0.0339	0.0109	0.0155	0.0615	-0.0373	0.1301	-0.1004	0.2111	-0.4669	0.2967	-0.8197	0.3930	-1.0710	0.4107	-1.1472
17	0.509	0.319	-0.0227	0.0492	0.0219	0.0270	0.0719	-0.0113	0.1426	-0.4347	0.2043	-0.6199	0.2763	-0.8104	0.3603	-1.0300	0.3017	-1.1072
18	0.514	0.400	-0.0373	0.0630	0.0319	0.0367	0.0811	-0.2066	0.1303	-0.4254	0.1902	-0.6701	0.2276	-0.8544	0.2804	-1.0721	0.2955	-1.1599
19	0.375	0.000	-0.0334	0.0206	0.0052	0.0114	0.0494	-0.0379	0.1172	-0.0990	0.1879	-0.1910	0.2773	-0.3059	0.3840	-0.4200	0.3982	-0.4849
20	0.375	0.005	-0.0339	0.0105	0.0017	-0.0026	0.0471	-0.0516	0.1138	-0.1127	0.1964	-0.1965	0.2764	-0.3247	0.3779	-0.4564	0.3960	-0.5237
21	0.375	0.171	-0.0356	0.0247	0.0012	0.0000	0.0409	-0.0443	0.1134	-0.0982	0.1856	-0.2019	0.2750	-0.3709	0.3742	-0.5560	0.3946	-0.6410
22	0.375	0.259	-0.0494	0.0196	-0.0140	-0.0130	0.0438	-0.0614	0.1150	-0.0999	0.1898	-0.2017	0.2748	-0.5067	0.3722	-0.8531	0.3934	-0.9526
23	0.375	0.292	-0.0676	0.0141	-0.0246	-0.0222	0.0356	-0.0857	0.1124	-0.1115	0.1957	-0.4135	0.2690	-0.7977	0.3654	-1.0793	0.3915	-1.1725
24	0.379	0.364	-0.0625	0.0370	0.0023	0.0071	0.0502	-0.0407	0.1257	-0.2996	0.1909	-0.6080	0.2675	-0.8754	0.3490	-1.1013	0.3758	-1.2359
25	0.384	0.444	-0.0100	0.0520	0.0122	0.0200	0.0736	-0.0918	0.1363	-0.4365	0.1925	-0.6298	0.2534	-0.8070	0.3208	-0.9964	0.3313	-1.0692
26	0.389	0.525	-0.0400	0.0603	0.0220	0.0430	0.0824	-0.2038	0.1329	-0.4307	0.1403	-0.6615	0.2048	-0.8820	0.2470	-1.0924	0.2474	-1.1699
27	0.250	0.000	-0.0448	0.0169	-0.0163	0.0029	0.0298	-0.0461	0.0849	-0.0950	0.1408	-0.1769	0.2229	-0.2668	0.3139	-0.3061	0.3277	-0.4269
28	0.250	0.120	-0.0471	0.0110	-0.0111	-0.0071	0.0294	-0.0487	0.0940	-0.0945	0.1536	-0.1752	0.2283	-0.2865	0.3108	-0.4167	0.3321	-0.4731
29	0.250	0.241	-0.0554	0.0095	-0.0105	-0.0130	0.0267	-0.0598	0.0951	-0.0999	0.1545	-0.2039	0.2263	-0.3930	0.3161	-0.6042	0.3300	-0.6813
30	0.250	0.365	-0.0614	0.0132	-0.0237	-0.0167	0.0282	-0.0637	0.0966	-0.0999	0.1549	-0.3929	0.2290	-0.7371	0.3135	-1.0006	0.3248	-1.0862
31	0.250	0.412	-0.0762	-0.0062	-0.0447	-0.0350	0.0220	-0.0771	0.0958	-0.1693	0.1554	-0.6229	0.2290	-0.9518	0.3069	-1.1469	0.3280	-1.2105
32	0.254	0.489	-0.0556	0.0164	-0.0228	-0.0053	0.0392	-0.0332	0.1059	-0.5270	0.1576	-0.6929	0.2253	-0.8159	0.2930	-1.0554	0.3124	-1.1357
33	0.259	0.569	-0.0333	0.0329	-0.0103	0.0097	0.0517	-0.2084	0.1124	-0.4148	0.1540	-0.5749	0.2113	-0.7311	0.2695	-0.9456	0.2809	-1.0952
34	0.264	0.650	-0.1761	0.0564	0.0109	0.0151	0.0664	-0.2321	0.1130	-0.4066	0.1308	-0.6036	0.1726	-0.7992	0.2122	-0.9412	0.2071	-1.0442
35	0.125	0.000	-0.1410	-0.0959	-0.1156	-0.1120	-0.0855	-0.1366	-0.0294	-0.1550	0.0127	-0.1099	0.0478	-0.2102	0.1110	-0.2351	0.1203	-0.2498
36	0.125	0.155	-0.1447	-0.0960	-0.1104	-0.1096	-0.0863	-0.1391	-0.0353	-0.1537	0.0094	-0.1891	0.0475	-0.2255	0.1137	-0.2797	0.1206	-0.3012
37	0.125	0.312	-0.1372	-0.0860	-0.1091	-0.1002	-0.0720	-0.1259	-0.0266	-0.1395	0.0134	-0.2219	0.0570	-0.3652	0.1233	-0.5171	0.1266	-0.5841
38	0.125	0.471	-0.1372	-0.0744	-0.1004	-0.0896	-0.0583	-0.1219	-0.0164	-0.1685	0.0729	-0.5295	0.0694	-0.7064	0.1348	-0.9005	0.1413	-1.0632
39	0.125	0.532	-0.1549	-0.0855	-0.1240	-0.1070	-0.0669	-0.1309	-0.0159	-0.3410	0.0720	-0.7527	0.0713	-0.8024	0.1314	-0.9294	0.1349	-0.9720
40	0.129	0.614	-0.1022	-0.0448	-0.0792	-0.0674	-0.0348	-0.0955	0.0109	-0.5925	0.0470	-0.5903	0.0973	-0.6744	0.1514	-0.7201	0.1504	-0.7420
41	0.134	0.694	-0.0792	-0.0108	-0.0601	-0.0400	-0.0116	-0.3372	0.0346	-0.4435	0.0569	-0.5432	0.0983	-0.7003	0.1508	-0.7437	0.1527	-0.7479
42	0.139	0.775	-0.1996	0.0076	-0.0398	-0.0298	0.0090	-0.2502	0.0432	-0.4025	0.0478	-0.5407	0.0761	-0.6745	0.1152	-0.8037	0.1103	-0.8328
43	0.095	0.650	-0.2000	-0.1539	-0.1805	-0.1626	-0.1409	-0.2241	-0.1137	-0.6963	-0.1239	-0.5430	-0.0887	-0.4930	-0.0516	-0.4522	-0.0510	-0.5125
44	0.072	0.756	-0.2160	-0.1223	-0.1545	-0.1336	-0.1127	-0.4290	-0.0937	-0.4552	-0.1179	-0.4296	-0.0737	-0.4353	-0.0315	-0.4003	-0.0217	-0.4676
45	0.068	0.854	-0.2357	-0.0686	-0.1175	-0.0952	-0.0632	-0.3095	-0.0464	-0.3518	-0.0712	-0.3620	-0.0321	-0.3981	0.0072	-0.3780	0.0095	-0.4142
46	0.063	0.000	-0.2564	-0.2791	-0.2675	-0.2694	-0.2786	-0.2453	-0.2026	-0.2522	-0.1824	-0.4907	-0.4467	-0.4836	-0.6770	-0.4825	-0.7192	-0.5442
47	0.063	0.173	-0.2701	-0.2839	-0.2798	-0.2723	-0.2924	-0.2471	-0.3167	-0.2696	-0.2953	-0.5325	-0.4094	-0.5023	-0.7294	-0.5126	-0.7959	-0.5796
48	0.063	0.347	-0.2819	-0.3004	-0.3076	-0.2945	-0.3134	-0.2666	-0.4513	-0.3777	-0.5141	-0.5995	-0.5020	-0.6030	-0.5857	-0.5777	-0.5771	-0.6700
49	0.063	0.525	-0.3707	-0.3453	-0.4241	-0.3586	-0.3980	-0.3305	-0.4436	-0.6096	-0.6129	-0.6238	-0.6215	-0.5022	-0.6400	-0.5310	-0.5302	-0.5666
50	0.063	0.592	-0.4209	-0.4577	-0.4404	-0.4160	-0.4230	-0.4358	-0.4264	-0.7170	-0.6194	-0.5423	-0.5926	-0.5035	-0.5974	-0.4359	-0.5230	-0.4836
51	0.042	0.000	-0.1559	-0.1523	-0.1590	-0.1517	-0.1649	-0.1354	-0.2251	-0.1557	-0.2880	-0.3629	-0.3474	-0.4017	-0.3924	-0.3980	-0.3737	-0.4365
52	0.047	0.178	-0.1495	-0.1613	-0.1619	-0.1548	-0.1630	-0.1374	-0.2279	-0.1667	-0.2462	-0.3855	-0.2542	-0.4220	-0.2521	-0.4327	-0.2430	-0.4914
53	0.047	0.359	-0.1698	-0.1813	-0.1940	-0.1770	-0.1857	-0.1662	-0.2273	-0.2463	-0.2472	-0.4117	-0.2015	-0.4474	-0.1687	-0.5633	-0.1611	-0.6490
54	0.047	0.542	-0.2106	-0.2463	-0.2835	-0.2497	-0.2707	-0.2314	-0.3236	-0.3057	-0.3127	-0.5463	-0.1939	-0.5512	-0.1091	-0.5179	-0.0965	-0.6108
55	0.042	0.612	-0.2760	-0.3510	-0.3068	-0.3002	-0.3407	-0.2049	-0.3701	-0.4471	-0.2871	-0.6811	-0.1710	-0.4461	-0.0791	-0.4546	-0.0943	-0.5241
56	0.021	0.000	-0.0901	-0.0906	-0.1037	-0.1000	-0.0952	-0.0773	-0.1997	-0.1022	-0.1733	-0.7023	-0.1703	-0.2665	-0.1195	-0.3108	-0.1567	-0.3428
57	0.021	0.104	-0.0902	-0.0902	-0.1056	-0.1056	-0.0959	-0.0792	-0.1512	-0.1109	-0.1208	-0.2074	-0.0773	-0.2917	-0.0502	-0.3525	-0.0080	-0.3910
58	0.021	0.370	-0.1100	-0.1074	-0.1187	-0.1280	-0.1076	-0.0987	-0.0767	-0.1536	-0.0776	-0.2506	-0.0312	-0.3274	0.0114	-0.5255	-0.0129	-0.5985
59	0.021	0.560	-0.1423	-0.1395	-0.1721	-0.1820	-0.1295	-0.1532	-0.1202	-0.1997	-0.1182	-0.3061	-0.0347	-0.4151	-0.0158	-0.6428	-0.0253	-0.7563
60	0.021	0.632	-0.1934	-0.1935	-0.2026	-0.2094	-0.1920	-0.1635	-0.1580	-0.2795	-0.1136	-0.4465	-0.0547	-0.4236	-0.0442	-0.5440	-0.0448	-0.6559
61	0.125	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Continued).
M = 0.8

			ALPHA =															
			27.1	27.1	29.9	29.9	34.8	34.9	39.8	39.8	44.8	44.9	49.7	49.8	54.7	54.7	56.3	56.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.914	0.000	0.5989	-0.4283	0.6638	-0.5026	0.7920	-0.6831	0.9026	-0.9438	0.9990	-1.2171	1.0809	-1.1773	1.1396	-0.6899	1.1662	-0.6594
2	0.828	0.000	0.5790	-0.4320	0.6398	-0.5061	0.7673	-0.6981	0.8733	-0.9430	0.9725	-1.1902	1.0560	-1.1313	1.1197	-0.6939	1.1250	-0.6667
3	0.742	0.000	0.5503	-0.4402	0.6095	-0.5187	0.7342	-0.6990	0.8393	-0.9505	0.9383	-1.0004	1.0256	-1.0125	1.0944	-0.6050	1.1033	-0.6687
4	0.747	0.081	0.5217	-0.9125	0.5739	-1.0360	0.6935	-1.2154	0.7894	-1.3555	0.8798	-1.3219	0.9650	-1.0027	1.0299	-0.6810	1.0451	-0.6640
5	0.752	0.162	0.4490	-1.1045	0.4885	-1.2159	0.5908	-1.3915	0.6664	-1.5051	0.7460	-1.4416	0.8175	-1.1479	0.8746	-0.6830	0.8897	-0.6659
6	0.646	0.000	0.4964	-0.5443	0.5547	-0.6133	0.6823	-0.7805	0.7887	-1.0006	0.8895	-0.6960	0.9812	-0.9060	1.0580	-0.6979	1.0750	-0.6059
7	0.650	0.092	0.4939	-0.8262	0.5466	-0.9362	0.6661	-1.1253	0.7657	-1.2917	0.8614	-0.9745	0.9435	-0.9553	1.0211	-0.6917	1.0314	-0.6760
8	0.655	0.174	0.4637	-1.1392	0.5090	-1.2415	0.6179	-1.4402	0.7064	-1.5712	0.7955	-1.1056	0.8696	-1.0029	0.9403	-0.6832	0.9510	-0.6690
9	0.660	0.254	0.3865	-1.1346	0.4150	-1.2475	0.5075	-1.4221	0.5772	-1.5425	0.6543	-1.1200	0.7150	-1.0000	0.7770	-0.6035	0.7808	-0.6602
10	0.503	0.000	0.4804	-0.5327	0.5424	-0.6136	0.6626	-0.7776	0.7745	-1.0069	0.8673	-0.7806	0.9543	-0.8442	1.0336	-0.6070	1.0534	-0.6754
11	0.503	0.054	0.4864	-0.5000	0.5408	-0.6724	0.6599	-0.8496	0.7699	-1.0772	0.8622	-0.8463	0.9475	-0.8653	1.0271	-0.6952	1.0452	-0.6813
12	0.500	0.000	0.4671	-0.5253	0.5212	-0.5991	0.6330	-0.7682	0.7449	-0.9449	0.8323	-0.8509	0.9214	-0.8037	1.0030	-0.7169	1.0269	-0.7050
13	0.500	0.050	0.4680	-0.5459	0.5211	-0.6271	0.6320	-0.8071	0.7360	-0.9701	0.8337	-0.8628	0.9193	-0.8019	1.0025	-0.7058	1.0161	-0.6927
14	0.508	0.101	0.4646	-0.6166	0.5155	-0.7100	0.6253	-0.8955	0.7301	-1.0466	0.8255	-0.8827	0.9091	-0.8055	0.9013	-0.7008	1.0054	-0.6057
15	0.500	0.153	0.4595	-0.7900	0.5066	-0.9068	0.6167	-1.0054	0.7195	-1.2043	0.8108	-0.9235	0.8906	-0.8276	0.9704	-0.6996	0.9054	-0.6066
16	0.504	0.239	0.4353	-1.2475	0.4705	-1.3612	0.5816	-1.5083	0.6793	-1.5079	0.7594	-1.0100	0.8330	-0.8711	0.9044	-0.6939	0.9233	-0.6820
17	0.509	0.319	0.3995	-1.2207	0.4362	-1.3356	0.5300	-1.4634	0.6163	-1.5576	0.6930	-1.0221	0.7549	-0.8911	0.8232	-0.6900	0.8300	-0.6806
18	0.516	0.400	0.3110	-1.1735	0.3334	-1.2595	0.4176	-1.4525	0.4846	-1.5057	0.5546	-0.9806	0.6011	-0.8767	0.6599	-0.7031	0.6722	-0.6959
19	0.379	0.000	0.4300	-0.5136	0.4780	-0.5046	0.5703	-0.7566	0.6813	-0.4904	0.7742	-0.7772	0.8579	-0.7503	0.9401	-0.7147	0.9643	-0.7110
20	0.375	0.085	0.4272	-0.5500	0.4743	-0.6203	0.5719	-0.8100	0.6772	-0.5448	0.7683	-0.7690	0.8543	-0.7452	0.9390	-0.7096	0.9579	-0.7043
21	0.379	0.171	0.4245	-0.6993	0.4683	-0.7970	0.5644	-0.9791	0.6696	-0.7165	0.7561	-0.7931	0.8419	-0.7605	0.9232	-0.7075	0.9426	-0.7020
22	0.375	0.259	0.4160	-1.0460	0.4568	-1.1517	0.5512	-1.3007	0.6496	-1.0370	0.7317	-0.8423	0.8117	-0.7816	0.8910	-0.7008	0.9112	-0.6977
23	0.375	0.292	0.4129	-1.2609	0.4492	-1.3650	0.5405	-1.4863	0.6354	-1.2559	0.7128	-0.8818	0.7874	-0.8069	0.8635	-0.7101	0.8832	-0.7057
24	0.379	0.364	0.3802	-1.4225	0.4219	-1.5603	0.5006	-1.6787	0.5988	-1.5153	0.6606	-0.9110	0.7304	-0.8132	0.8111	-0.7145	0.8290	-0.7121
25	0.384	0.444	0.3560	-1.1562	0.3816	-1.2505	0.4624	-1.4333	0.5467	-1.1309	0.6075	-0.9024	0.6674	-0.7995	0.7347	-0.7142	0.7404	-0.7044
26	0.389	0.525	0.2735	-1.1962	0.2844	-1.2053	0.3576	-1.4148	0.4321	-1.0822	0.4770	-0.8680	0.5244	-0.7754	0.5781	-0.7059	0.5833	-0.6979
27	0.259	0.000	0.3660	-0.4422	0.4033	-0.5210	0.4822	-0.6677	0.5816	0.0271	0.6737	-0.6773	0.7603	-0.6704	0.8543	-0.7282	0.8721	-0.7121
28	0.250	0.120	0.3562	-0.5120	0.3979	-0.6016	0.4770	-0.7541	0.5771	-0.0047	0.6425	-0.6927	0.7536	-0.6791	0.8433	-0.7207	0.8640	-0.7153
29	0.250	0.241	0.3533	-0.7479	0.3936	-0.8599	0.4714	-1.0121	0.5681	-0.3696	0.6519	-0.7387	0.7423	-0.7058	0.8209	-0.7251	0.8462	-0.7190
30	0.250	0.365	0.3465	-1.1916	0.3814	-1.2917	0.4561	-1.4122	0.5469	-0.7790	0.6234	-0.7902	0.7109	-0.7255	0.7807	-0.7293	0.8062	-0.7280
31	0.259	0.412	0.3435	-1.2023	0.3751	-1.3069	0.4449	-1.5404	0.5328	-0.8965	0.6070	-0.8084	0.6823	-0.7343	0.7580	-0.7259	0.7720	-0.7176
32	0.254	0.489	0.3752	-1.1003	0.3523	-1.3121	0.4156	-1.5072	0.4993	-0.8843	0.5622	-0.8141	0.6345	-0.7262	0.7033	-0.7156	0.7167	-0.7084
33	0.259	0.569	0.2933	-1.2286	0.3161	-1.3394	0.3707	-1.4870	0.4494	-0.8443	0.5015	-0.7981	0.5683	-0.7198	0.6285	-0.7134	0.6404	-0.7052
34	0.204	0.650	0.2185	-1.1703	0.2313	-1.2916	0.2744	-1.4430	0.3472	-0.6916	0.3844	-0.7755	0.4307	-0.7129	0.4866	-0.7070	0.4930	-0.7125
35	0.125	0.000	0.1560	-0.2081	0.1012	-0.3034	0.2354	-0.3610	0.3315	-0.3401	0.4140	-0.6426	0.5052	-0.6353	0.6073	-0.7246	0.6347	-0.7160
36	0.125	0.155	0.1539	-0.3559	0.1001	-0.4079	0.2338	-0.4964	0.3279	-0.5412	0.4114	-0.6633	0.5017	-0.6496	0.6020	-0.7293	0.6204	-0.7226
37	0.125	0.312	0.1626	-0.6467	0.1851	-0.7284	0.2436	-0.8404	0.3310	-0.7530	0.4131	-0.6762	0.4998	-0.6470	0.5998	-0.7095	0.6220	-0.7101
38	0.125	0.471	0.1697	-1.1513	0.1981	-1.2457	0.2459	-1.3352	0.3264	-0.8370	0.4061	-0.7070	0.4872	-0.6507	0.5785	-0.6999	0.5999	-0.7001
39	0.129	0.532	0.1703	-1.0471	0.1902	-1.1066	0.2427	-1.1033	0.3187	-0.8273	0.3915	-0.7254	0.4704	-0.6503	0.5549	-0.6992	0.5750	-0.6996
40	0.129	0.614	0.1770	-0.7447	0.1951	-0.8347	0.2426	-1.0041	0.3096	-0.7453	0.3775	-0.7332	0.4466	-0.6587	0.5227	-0.6985	0.5407	-0.6944
41	0.134	0.694	0.1726	-0.7577	0.1886	-0.8389	0.2303	-1.0285	0.2083	-0.7173	0.3400	-0.7219	0.4091	-0.6574	0.4729	-0.7012	0.4875	-0.6945
42	0.139	0.775	0.1273	-0.8520	0.1301	-0.9236	0.1729	-1.0409	0.2145	-0.7430	0.2569	-0.7083	0.3074	-0.6510	0.3524	-0.7055	0.3596	-0.6993
43	0.085	0.650	-0.0258	-0.5023	-0.0130	-0.7065	0.0270	-0.8067	0.1060	-0.6883	0.1924	-0.6970	0.2023	-0.6410	0.3750	-0.7011	0.3944	-0.6922
44	0.072	0.756	-0.0010	-0.4892	0.0150	-0.6006	0.0546	-0.7485	0.1147	-0.6307	0.1907	-0.6585	0.2637	-0.6170	0.3401	-0.6712	0.3550	-0.6630
45	0.060	0.854	0.0275	-0.4270	0.0450	-0.4935	0.0719	-0.5923	0.0848	-0.5938	0.1351	-0.6224	0.1024	-0.6043	0.2394	-0.6490	0.2453	-0.6465
46	0.063	0.000	-0.6925	-0.5544	-0.7504	-0.6410	-0.7605	-0.7310	-0.5650	-0.8106	-0.4230	-0.6222	-0.1036	-0.5990	0.0986	-0.6769	0.1507	-0.6773
47	0.063	0.173	-0.6788	-0.6224	-0.7334	-0.7031	-0.7275	-0.8141	-0.5547	-0.7863	-0.4118	-0.6360	-0.1729	-0.6150	0.0600	-0.6049	0.1201	-0.6790
48	0.063	0.347	-0.6457	-0.7718	-0.7061	-0.0909	-0.6908	-0.9726	-0.5339	-0.7619	-0.3441	-0.6506	-0.1371	-0.6296	0.0032	-0.6931	0.1295	-0.6040
49	0.063	0.525	-0.6357	-0.6106	-0.6692	-0.7592	-0.6376	-0.9284	-0.3894	-0.7084	-0.1170	-0.6664	0.0844	-0.6325	0.2136	-0.6000	0.2412	-0.6730
50	0.063	0.592	-0.5676	-0.5453	-0.5020	-0.6061	-0.3606	-0.8058	-0.0812	-0.6673	0.0640	-0.6636	0.1670	-0.6261	0.2715	-0.6735	0.3001	-0.6630
51	0.042	0.000	-0.3500	-0.4357	-0.3037	-0.4719	-0.2790	-0.4056	0.0035	-0.5278	0.0454	-0.5413	0.0996	-0.5030	0.1036	-0.6531	0.2116	-0.6474
52	0.042	0.178	-0.3174	-0.4999	-0.3521	-0.5555	-0.2540	-0.5076	0.0104	-0.5490	0.0427	-0.5546	0.0963	-0.5914	0.1809	-0.6520	0.2000	-0.6509
53	0.042	0.350	-0.2167	-0.6037	-0.2250	-0.7931	-0.1526	-0.8753	0.0192	-0.6066	0.0487	-0.5946	0.1060	-0.6113	0.1070	-0.6591	0.2140	-0.6513
54	0.042	0.542	-0.0600	-0.6952	-0.0466	-0.8396	-0.0445	-1.0527	0.0001	-0.6400	0.0532	-0.6320	0.1169	-0.6229	0.1961	-0.6599	0.2219	-0.6550
55	0.042	0.612	-0.0560	-0.5600	-0.0947	-0.6780	-0.0650	-0.8736	-0.0130	-0.6217	0.0414	-0.6375	0.1096	-0.6212	0.1931	-0.6510	0.2209	-0.6472
56	0.021	0.000	-0.1082	-0.3467	-0.1673	-0.3512	-0.1444	-0.3291	-0.0251	-0.2891	-0.0423	-0.4059	-0.0058	-0.5672	0.0610	-0.6264	0.0047	-0.6301
57	0.021	0.184	-0.0530	-0.3957	-0.1254	-0.3909	-0.1224	-0.4225	-0.0243	-0.3404	-0.0389	-0.4988	-0.0021	-0.5737	0.0599	-0.6287	0.0027	-0.6300
58	0.021	0.370	0.0126	-0.6422	-0.0163	-0.7041	-0.0829	-0.7758	-0.0339	-0.4615	-0.0276	-0.5390	0.0067	-0.5974	0.0664	-0.6271	0.0087	-0.6310
59	0.021	0.560	0.0174	-0.7891	0.0220	-0.9175	-0.0660	-1.0046	-0.0511	-0.5573	-0.0234	-0.5923	0.0150	-0.6160	0.0730	-0.6207	0.0969	-0.6279
60	0.021	0.632	-0.0120	-0.7095	0.0029	-0.8567	-0.0672	-1.0741	-0.0626	-0.5696	-0.0300	-0.6093	0.0140	-0.6191	0.0720	-0.6328	0.0926	-0.6321
61	0.125	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Continued).
M = 0.9

			ALPHA, °															
			-2.7	-3.3	0.0	-0.9	4.9	4.4	9.9	9.3	14.8	14.3	19.8	19.2	24.8	24.2	26.6	25.9
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.916	0.000	0.0510	0.1176	0.0000	0.0903	0.1364	0.0352	0.2185	-0.0153	0.3119	-0.0900	0.4381	-0.1814	0.5592	-0.2858	0.6896	-0.3280
2	0.829	0.000	0.0759	0.1048	0.0651	0.0798	0.1212	0.0225	0.2030	-0.0280	0.2945	-0.1057	0.4181	-0.1982	0.5350	-0.3044	0.5848	-0.3447
3	0.742	0.000	0.0235	0.0922	0.0531	0.0669	0.1060	0.0104	0.1852	-0.0417	0.2739	-0.1199	0.3946	-0.2120	0.5069	-0.3260	0.5542	-0.3680
4	0.747	0.081	0.0297	0.0906	0.0595	0.0606	0.1158	0.0106	0.1917	-0.0314	0.2747	-0.1609	0.3909	-0.4042	0.4918	-0.6597	0.5324	-0.7258
5	0.752	0.162	0.0329	0.0967	0.0637	0.0734	0.1190	0.0349	0.1883	-0.3401	0.2529	-0.5000	0.3528	-0.6733	0.4369	-0.8454	0.4713	-0.8930
6	0.646	0.000	-0.0309	0.0260	-0.0015	0.0081	0.0554	-0.0481	0.1340	-0.1088	0.2175	-0.1954	0.3483	-0.3032	0.4517	-0.4154	0.4956	-0.4490
7	0.650	0.092	-0.0049	0.0534	0.0184	0.0270	0.0887	-0.0253	0.1561	-0.0771	0.2365	-0.1807	0.3514	-0.3033	0.4543	-0.6010	0.4991	-0.6675
8	0.654	0.174	0.0090	0.0660	0.0281	0.0408	0.0989	-0.0104	0.1597	-0.0802	0.2350	-0.4633	0.3380	-0.7435	0.4331	-0.8893	0.4730	-0.9404
9	0.660	0.253	0.0173	0.0818	0.0399	0.0551	0.1028	-0.1035	0.1598	-0.3317	0.2207	-0.5178	0.3014	-0.6990	0.3762	-0.8715	0.4082	-0.9202
10	0.503	0.000	-0.0007	0.0406	0.0004	0.0111	0.0506	-0.0332	0.1332	-0.0897	0.2177	-0.1800	0.3329	-0.2951	0.4437	-0.4305	0.4845	-0.4719
11	0.503	0.054	-0.0170	0.0351	-0.0032	0.0055	0.0530	-0.0413	0.1305	-0.0995	0.2126	-0.1870	0.3319	-0.3090	0.4409	-0.4661	0.4845	-0.5151
12	0.500	0.000	-0.0055	0.0445	0.0052	0.0147	0.0595	-0.0312	0.1312	-0.0817	0.2098	-0.1793	0.3220	-0.2902	0.4223	-0.4234	0.4660	-0.4763
13	0.500	0.050	-0.0111	0.0407	0.0003	0.0164	0.0629	-0.0232	0.1374	-0.0792	0.2143	-0.1772	0.3260	-0.2948	0.4234	-0.4334	0.4695	-0.4875
14	0.500	0.101	-0.0193	0.0307	-0.0009	0.0037	0.0566	-0.0276	0.1338	-0.0834	0.2097	-0.1804	0.3210	-0.3159	0.4194	-0.4800	0.4642	-0.5430
15	0.500	0.153	-0.0302	0.0266	-0.0061	-0.0006	0.0530	-0.0382	0.1313	-0.0912	0.2105	-0.1917	0.3205	-0.3913	0.4158	-0.6061	0.4598	-0.6793
16	0.504	0.239	-0.0065	0.0462	0.0113	0.0220	0.0790	-0.0250	0.1492	-0.0853	0.2216	-0.4377	0.3231	-0.7602	0.4102	-0.9500	0.4405	-0.9977
17	0.509	0.319	0.0000	0.0600	0.0228	0.0352	0.0873	0.0012	0.1519	-0.3967	0.2124	-0.5676	0.3061	-0.7512	0.3828	-0.9160	0.4176	-0.9713
18	0.514	0.400	-0.0714	0.0713	0.0304	0.0472	0.0975	-0.1014	0.1446	-0.3945	0.1888	-0.6210	0.2589	-0.7957	0.3145	-0.9888	0.3424	-1.0444
19	0.375	0.000	-0.0124	0.0433	0.0153	0.0212	0.0633	-0.0306	0.1249	-0.0880	0.2014	-0.1895	0.3065	-0.3010	0.3965	-0.4321	0.4320	-0.4792
20	0.375	0.085	-0.0149	0.0302	0.0131	0.0090	0.0597	-0.0431	0.1200	-0.1020	0.1977	-0.1939	0.3037	-0.3194	0.3917	-0.4684	0.4297	-0.5190
21	0.375	0.171	-0.0108	0.0466	0.0153	0.0229	0.0427	-0.0369	0.1207	-0.0878	0.1990	-0.1973	0.3041	-0.3672	0.3880	-0.5658	0.4281	-0.6280
22	0.375	0.259	-0.0259	0.0353	-0.0013	0.0029	0.0599	-0.0513	0.1212	-0.0862	0.1969	-0.2773	0.3041	-0.5780	0.3059	-0.8212	0.4200	-0.8823
23	0.375	0.292	-0.0448	0.0250	-0.0090	-0.0056	0.0525	-0.0733	0.1172	-0.0947	0.1924	-0.4051	0.3008	-0.7561	0.3811	-0.9011	0.4163	-1.0393
24	0.379	0.364	-0.0160	0.0493	0.0136	0.0204	0.0733	-0.0294	0.1294	-0.2769	0.1969	-0.6318	0.2960	-0.8100	0.3680	-1.0398	0.3990	-1.1023
25	0.384	0.444	-0.0013	0.0682	0.0307	0.0365	0.0887	-0.0790	0.1454	-0.3955	0.1966	-0.5963	0.2820	-0.7731	0.3370	-0.9405	0.3718	-0.9832
26	0.389	0.525	-0.0694	0.0826	0.0306	0.0491	0.0981	-0.1772	0.1396	-0.3971	0.1724	-0.6197	0.2316	-0.8205	0.2674	-0.9861	0.2932	-1.0382
27	0.250	0.000	-0.0207	0.0353	0.0061	0.0089	0.0587	-0.0348	0.0998	-0.0806	0.1631	-0.2016	0.2646	-0.3327	0.3303	-0.4665	0.3760	-0.5078
28	0.250	0.120	-0.0220	0.0310	0.0070	0.0107	0.0532	-0.0319	0.1040	-0.0849	0.1694	-0.1974	0.2682	-0.3531	0.3444	-0.5072	0.3769	-0.5530
29	0.250	0.241	-0.0331	0.0260	0.0021	0.0063	0.0401	-0.0426	0.1051	-0.0920	0.1675	-0.2284	0.2679	-0.4581	0.3439	-0.6718	0.3745	-0.7330
30	0.250	0.365	-0.0395	0.0300	-0.0083	0.0041	0.0501	-0.0494	0.1057	-0.0919	0.1692	-0.4201	0.2692	-0.7498	0.3399	-0.9737	0.3685	-1.0329
31	0.250	0.412	-0.0560	0.0115	-0.0231	-0.0130	0.0300	-0.0646	0.1000	-0.1712	0.1739	-0.6100	0.2718	-0.8559	0.3303	-1.0141	0.3630	-1.0732
32	0.254	0.489	-0.0373	0.0320	-0.0089	0.0090	0.0540	-0.0194	0.1165	-0.5023	0.1759	-0.6806	0.2641	-0.7716	0.3211	-0.9267	0.3449	-0.9914
33	0.259	0.569	-0.0157	0.0400	0.0105	0.0251	0.0681	-0.1937	0.1229	-0.4056	0.1729	-0.5944	0.2508	-0.8499	0.2956	-0.9987	0.3174	-1.0543
34	0.264	0.650	-0.1619	0.0667	0.0210	0.0306	0.0821	-0.2208	0.1323	-0.4005	0.1526	-0.5989	0.2110	-0.8215	0.2390	-0.9961	0.2492	-1.0470
35	0.125	0.000	-0.1047	-0.0566	-0.0721	-0.0707	-0.0430	-0.1092	0.0072	-0.1345	0.0426	-0.1803	0.1230	-0.3015	0.1760	-0.4933	0.1990	-0.5500
36	0.125	0.155	-0.1052	-0.0538	-0.0746	-0.0699	-0.0423	-0.1116	0.0068	-0.1332	0.0417	-0.1887	0.1226	-0.3237	0.1734	-0.5368	0.1972	-0.6044
37	0.125	0.312	-0.0903	-0.0503	-0.0685	-0.0656	-0.0309	-0.1065	0.0104	-0.1217	0.0506	-0.2190	0.1304	-0.4792	0.1779	-0.7377	0.2021	-0.8166
38	0.125	0.471	-0.1007	-0.0441	-0.0602	-0.0628	-0.0248	-0.1069	0.0138	-0.1496	0.0529	-0.5172	0.1345	-0.8348	0.1823	-1.0604	0.2057	-1.1266
39	0.125	0.532	-0.1253	-0.0567	-0.0914	-0.0018	-0.0343	-0.1185	0.0117	-0.3252	0.0524	-0.6098	0.1332	-0.8253	0.1754	-0.9914	0.1969	-1.0449
40	0.129	0.614	-0.0862	-0.0219	-0.0535	-0.0473	-0.0074	-0.0690	0.0418	-0.5395	0.0744	-0.5815	0.1441	-0.7261	0.1873	-0.9060	0.2035	-0.9089
41	0.134	0.694	-0.0663	-0.0039	-0.0394	-0.0315	0.0067	-0.3193	0.0526	-0.4427	0.0744	-0.6206	0.1407	-0.7724	0.1769	-0.9544	0.1928	-0.9700
42	0.139	0.775	-0.2000	0.0120	-0.0253	-0.0160	0.0232	-0.2405	0.0547	-0.4020	0.0409	-0.5893	0.1132	-0.7618	0.1378	-0.9507	0.1467	-1.0157
43	0.085	0.658	-0.1570	-0.1095	-0.1321	-0.1297	-0.1007	-0.1645	-0.0862	-0.5891	-0.0751	-0.5550	-0.0262	-0.4950	-0.0078	-0.5718	-0.0003	-0.6614
44	0.072	0.756	-0.1944	-0.1099	-0.1329	-0.1247	-0.1049	-0.4209	-0.1070	-0.4629	-0.1208	-0.5050	-0.0896	-0.4380	-0.0760	-0.6865	-0.0669	-0.5417
45	0.060	0.854	-0.2560	-0.0834	-0.1210	-0.1055	-0.0789	-0.3204	-0.0827	-0.3603	-0.1124	-0.4231	-0.0978	-0.4245	-0.0887	-0.4447	-0.0785	-0.4809
46	0.063	0.000	-0.2927	-0.2906	-0.2708	-0.2954	-0.2018	-0.2982	-0.2277	-0.3001	-0.2596	-0.3221	-0.5881	-0.4671	-0.8343	-0.4590	-0.8393	-0.4749
47	0.063	0.173	-0.3057	-0.2951	-0.2781	-0.2970	-0.2927	-0.3013	-0.3523	-0.3222	-0.3569	-0.3856	-0.7268	-0.4995	-0.8932	-0.4880	-0.8765	-0.5095
48	0.063	0.347	-0.3290	-0.3054	-0.3102	-0.3083	-0.3160	-0.3196	-0.5062	-0.4069	-0.5755	-0.6434	-0.7618	-0.6540	-0.9092	-0.6055	-0.8910	-0.6278
49	0.063	0.525	-0.3429	-0.3224	-0.3572	-0.3402	-0.3543	-0.3560	-0.4618	-0.6136	-0.5561	-0.4420	-0.6449	-0.5318	-0.8361	-0.5757	-0.8240	-0.6219
50	0.063	0.592	-0.4012	-0.3812	-0.3646	-0.3719	-0.3626	-0.4239	-0.4382	-0.7187	-0.5388	-0.5863	-0.6028	-0.4683	-0.7476	-0.4929	-0.7346	-0.5593
51	0.042	0.000	-0.2227	-0.2203	-0.2186	-0.2265	-0.2138	-0.2259	-0.2432	-0.2477	-0.2740	-0.3574	-0.4747	-0.4599	-0.7580	-0.4648	-0.7462	-0.5091
52	0.042	0.178	-0.2222	-0.2228	-0.2140	-0.2200	-0.2116	-0.2316	-0.2707	-0.2588	-0.3009	-0.3886	[illegible]	-0.4662	-0.7866	-0.5029	-0.7695	-0.5485
53	0.042	0.359	-0.2402	-0.2411	-0.2476	-0.2411	-0.2377	-0.2588	-0.3366	-0.3243	-0.3206	-0.4413	-0.3821	-0.5044	-0.8868	-0.6145	-0.7987	-0.6694
54	0.042	0.542	-0.2704	-0.2747	-0.2945	-0.2860	-0.2983	-0.3036	-0.4076	-0.4619	-0.4319	-0.5615	-0.4330	-0.5461	-0.7899	-0.6286	-0.6686	-0.6715
55	0.042	0.612	-0.3353	-0.3614	-0.3613	-0.3473	-0.3413	-0.3498	-0.4234	-0.4822	-0.3897	-0.4786	-0.4049	-0.4560	-0.6370	-0.5309	-0.5993	-0.5884
56	0.021	0.000	-0.1922	-0.2040	-0.1937	-0.1967	-0.1797	-0.2018	-0.2562	-0.2253	-0.2588	-0.3460	-0.3252	-0.3999	-0.7441	-0.3777	-0.7368	-0.4233
57	0.021	0.184	-0.1889	-0.1910	-0.1977	-0.1867	-0.1728	-0.1988	-0.2538	-0.2265	-0.2577	-0.3409	-0.2324	-0.3918	-0.7196	-0.4168	-0.7252	-0.4736
58	0.021	0.370	-0.2055	-0.1973	-0.2246	-0.2027	-0.1930	-0.2096	-0.2307	-0.2716	-0.1814	-0.3498	-0.1833	-0.3947	-0.5569	-0.5571	-0.6317	-0.6546
59	0.021	0.560	-0.2506	-0.2367	-0.2476	-0.2468	-0.2421	-0.2671	-0.2995	-0.3506	-0.2683	-0.4276	-0.2141	-0.5325	-0.4685	-0.7195	-0.4432	-0.8119
60	0.021	0.632	-0.2991	-0.2805	-0.2900	-0.3012	-0.2888	-0.3120	-0.3158	-0.3834	-0.2571	-0.4344	-0.2107	-0.4979	-0.4830	-0.6458	-0.4627	-0.7237
61	0.125	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Continued).
M = 0.9

			ALPHA =													
			27.0	27.0	29.8	29.8	34.8	34.7	39.8	39.7	44.7	44.7	49.7	49.7	54.6	54.6	56.2	58.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.914	0.000	0.6303	-0.3452	0.7019	-0.4067	0.8277	-0.5803	0.9485	-0.8368	1.0446	-1.0014	1.1282	-0.9940	1.1780	-0.6453	1.1930	-0.6392
2	0.828	0.000	0.6055	-0.3624	0.6749	-0.4348	0.7994	-0.5967	0.9177	-0.8462	1.0144	-0.9846	1.1003	-0.9937	1.1562	-0.6683	1.1736	-0.6605
3	0.742	0.000	0.5753	-0.3828	0.6437	-0.4487	0.7637	-0.5989	0.8804	-0.8610	0.9797	-0.9809	1.0677	-0.9536	1.1297	-0.6707	1.1497	-0.6616
4	0.747	0.081	0.5495	-0.7926	0.6156	-0.8897	0.7270	-1.0162	0.8360	-1.1484	0.9768	-1.0934	1.0121	-0.9981	1.0729	-0.6686	1.0871	-0.6630
5	0.752	0.162	0.4820	-0.9428	0.5380	-1.0208	0.6342	-1.1384	0.7258	-1.2224	0.8850	-1.1602	0.8704	-1.0878	0.9311	-0.6640	0.9446	-0.6611
6	0.646	0.000	0.5184	-0.4678	0.5905	-0.5323	0.7081	-0.5586	0.8267	-0.9200	0.9768	-0.8119	1.0223	-0.8655	1.0953	-0.6864	1.1121	-0.6823
7	0.654	0.092	0.5161	-0.7220	0.5843	-0.8191	0.6966	-0.8372	0.8094	-1.1213	0.9028	-0.9517	0.9941	-0.9284	1.0584	-0.6812	1.0774	-0.6793
8	0.655	0.174	0.4467	-0.9835	0.5483	-1.0803	0.6514	-1.0831	0.7554	-1.3108	0.8429	-1.0615	0.9258	-0.9580	0.9853	-0.6789	1.0039	-0.6763
9	0.660	0.254	0.4161	-0.9838	0.4669	-1.0712	0.5538	-1.0534	0.6382	-1.2818	0.7144	-1.0418	0.7860	-0.9558	0.8358	-0.6728	0.8529	-0.6716
10	0.583	0.000	0.5046	-0.4891	0.5780	-0.5681	0.6904	-0.3969	0.8066	-0.9255	0.9055	-0.7641	1.0020	-0.8108	1.0752	-0.6839	1.0924	-0.6881
11	0.583	0.054	0.5020	-0.5414	0.5766	-0.6246	0.6864	-0.4557	0.8030	-0.9771	0.9000	-0.8157	0.9954	-0.8295	1.0672	-0.6906	1.0847	-0.6865
12	0.540	0.000	0.4829	-0.4974	0.5565	-0.5791	0.6586	-0.6340	0.7732	-0.9029	0.8709	-0.7093	0.9674	-0.7700	1.0439	-0.7080	1.0612	-0.7000
13	0.500	0.050	0.4869	-0.5204	0.5555	-0.5991	0.6578	-0.6543	0.7727	-0.9405	0.8699	-0.8039	0.9666	-0.7723	1.0403	-0.6990	1.0619	-0.6926
14	0.500	0.101	0.4787	-0.5848	0.5403	-0.6710	0.6496	-0.7277	0.7644	-0.9920	0.8620	-0.8206	0.9556	-0.7761	1.0291	-0.6969	1.0506	-0.6900
15	0.500	0.153	0.4744	-0.7358	0.5429	-0.8254	0.6421	-0.8140	0.7571	-1.0923	0.8495	-0.8670	0.9395	-0.7910	1.0102	-0.6916	1.0307	-0.6861
16	0.504	0.239	0.4584	-1.0492	0.5222	-1.1396	0.6148	-0.9216	0.7163	-1.2029	0.8037	-0.9331	0.8840	-0.8308	0.9554	-0.6984	0.9706	-0.6902
17	0.509	0.319	0.4221	-1.0463	0.4825	-1.1354	0.5673	-0.9033	0.6606	-1.2705	0.7393	-0.9449	0.8128	-0.8458	0.8775	-0.6978	0.8927	-0.6958
18	0.514	0.400	0.3405	-1.0704	0.3915	-1.1600	0.4649	-0.8351	0.5405	-1.2947	0.6094	-0.9225	0.6720	-0.8328	0.7259	-0.7017	0.7404	-0.6995
19	0.375	0.000	0.4670	-0.5041	0.5115	-0.5704	0.6017	-0.6516	0.7159	-0.2032	0.8103	-0.7431	0.9062	-0.7190	0.9876	-0.7229	1.0094	-0.7148
20	0.375	0.085	0.4420	-0.5434	0.5070	-0.6237	0.5961	-0.6755	0.7103	-0.3082	0.8056	-0.7438	0.8992	-0.7159	0.9808	-0.7184	1.0026	-0.7084
21	0.375	0.171	0.4388	-0.6755	0.5018	-0.7686	0.5902	-0.7191	0.7028	-0.4359	0.7959	-0.7734	0.8873	-0.7246	0.9660	-0.7117	0.9882	-0.7027
22	0.375	0.250	0.4335	-0.9496	0.4934	-1.0341	0.5806	-0.7630	0.6878	-0.6792	0.7781	-0.8106	0.8597	-0.7459	0.9360	-0.7088	0.9569	-0.7034
23	0.375	0.292	0.4261	-1.0963	0.4856	-1.1748	0.5700	-0.7950	0.6740	-0.8488	0.7522	-0.8553	0.8376	-0.7690	0.9103	-0.7177	0.9297	-0.7119
24	0.379	0.364	0.4054	-1.1451	0.4613	-1.2310	0.5400	-0.8091	0.6309	-0.9612	0.7118	-0.8796	0.7921	-0.7821	0.8608	-0.7198	0.8790	-0.7150
25	0.384	0.444	0.3721	-1.0423	0.4259	-1.1270	0.4961	-0.7974	0.5911	-0.8942	0.6530	-0.8661	0.7272	-0.7697	0.7883	-0.7109	0.8069	-0.7162
26	0.389	0.525	0.2897	-1.0825	0.3383	-1.1508	0.3977	-0.7650	0.4832	-0.8448	0.5279	-0.8383	0.5916	-0.7468	0.6442	-0.7070	0.6597	-0.7119
27	0.250	0.000	0.3814	-0.5290	0.4338	-0.5953	0.5125	-0.5580	0.6213	-0.2853	0.7117	-0.6703	0.8090	-0.6587	0.8941	-0.7308	0.9210	-0.7246
28	0.250	0.120	0.3810	-0.5839	0.4306	-0.6589	0.5104	-0.5769	0.6153	-0.4468	0.7019	-0.6778	0.8005	-0.6653	0.8878	-0.7307	0.9095	-0.7249
29	0.250	0.241	0.3757	-0.7832	0.4249	-0.8729	0.5027	-0.6483	0.6048	-0.6591	0.6908	-0.7277	0.7862	-0.6909	0.8717	-0.7344	0.8922	-0.7315
30	0.250	0.305	0.3652	-1.1026	0.4126	-1.1928	0.4847	-0.6969	0.5831	-0.8298	0.6635	-0.7721	0.7546	-0.7077	0.8362	-0.7396	0.8551	-0.7353
31	0.250	0.412	0.3619	-1.1195	0.4077	-1.2128	0.4742	-0.7172	0.5701	-0.8853	0.6485	-0.7919	0.7330	-0.7132	0.8047	-0.7304	0.8254	-0.7237
32	0.254	0.489	0.3424	-1.0432	0.3848	-1.1518	0.4432	-0.7150	0.5346	-0.8863	0.6070	-0.7992	0.6844	-0.7085	0.7531	-0.7241	0.7721	-0.7172
33	0.259	0.569	0.3121	-1.0883	0.3583	-1.1712	0.4007	-0.6947	0.4864	-0.7495	0.5523	-0.7835	0.6215	-0.6964	0.6837	-0.7173	0.7016	-0.7119
34	0.264	0.650	0.2448	-1.1814	0.2757	-1.1904	0.3143	-0.6736	0.3892	-0.6344	0.4394	-0.7553	0.5085	-0.6945	0.5515	-0.7167	0.5652	-0.7130
35	0.125	0.000	0.2088	-0.5710	0.2452	-0.6313	0.3082	-0.5569	0.3883	-0.5263	0.4715	-0.6446	0.5681	-0.6220	0.6639	-0.7422	0.6909	-0.7329
36	0.125	0.155	0.2052	-0.6300	0.2413	-0.7027	0.2958	-0.5892	0.3836	-0.6389	0.4672	-0.6619	0.5640	-0.6369	0.6590	-0.7450	0.6856	-0.7353
37	0.125	0.312	0.2090	-0.8711	0.2444	-0.9584	0.2937	-0.6215	0.3827	-0.7186	0.4654	-0.6796	0.5629	-0.6414	0.6546	-0.7313	0.6842	-0.7246
38	0.125	0.471	0.2035	-1.1662	0.2361	-1.2166	0.2813	-0.6427	0.3692	-0.7574	0.4510	-0.7069	0.5441	-0.6465	0.6322	-0.7223	0.6610	-0.7155
39	0.125	0.532	0.2009	-1.0900	0.2319	-1.1264	0.2738	-0.6464	0.3578	-0.7796	0.4362	-0.7236	0.5260	-0.6508	0.6105	-0.7165	0.6369	-0.7118
40	0.129	0.614	0.2040	-0.9135	0.2301	-0.9814	0.2716	-0.6379	0.3470	-0.7532	0.4186	-0.7216	0.5022	-0.6453	0.5816	-0.7093	0.6060	-0.7100
41	0.134	0.694	0.1985	-0.9756	0.2137	-0.9239	0.2582	-0.6333	0.3191	-0.7279	0.3832	-0.7126	0.4604	-0.6463	0.5323	-0.7142	0.5539	-0.7137
42	0.138	0.775	0.1636	-1.0569	0.1590	-1.1173	0.1870	-0.6282	0.2452	-0.6967	0.2960	-0.6976	0.3614	-0.6422	0.4187	-0.7148	0.4364	-0.7131
43	0.089	0.658	-0.0815	-0.7852	0.0101	-0.8487	0.0379	-0.6233	0.1197	-0.7067	0.2147	-0.6956	0.3325	-0.6348	0.4283	-0.7083	0.4619	-0.7010
44	0.077	0.756	-0.0462	-0.5778	-0.0314	-0.6873	-0.0173	-0.6072	0.1103	-0.6470	0.2106	-0.6559	0.3124	-0.6156	0.3934	-0.6886	0.4248	-0.6759
45	0.068	0.854	-0.0631	-0.5886	-0.0862	-0.5757	-0.0115	-0.5933	0.0911	-0.5968	0.1594	-0.6222	0.2346	-0.5984	0.2925	-0.6532	0.3195	-0.6528
46	0.063	0.000	-0.8000	-0.4841	-0.7097	-0.5306	-0.7583	-0.6152	-0.5293	-0.8111	-0.3836	-0.6467	-0.1960	-0.5886	0.0491	-0.6984	0.1623	-0.6897
47	0.063	0.173	-0.7990	-0.5485	-0.6930	-0.5972	-0.7298	-0.6848	-0.5192	-0.7888	-0.3740	-0.6611	-0.1885	-0.6048	0.0382	-0.6978	0.1223	-0.6958
48	0.063	0.347	-0.8032	-0.6985	-0.6968	-0.7584	-0.7377	-0.6237	-0.5111	-0.7438	-0.3558	-0.6759	-0.1505	-0.6176	0.0596	-0.6986	0.1404	-0.6977
49	0.063	0.525	-0.7796	-0.6474	-0.6835	-0.7434	-0.7078	-0.6220	-0.4995	-0.6996	-0.3032	-0.6730	0.0105	-0.6220	0.2153	-0.6879	0.2699	-0.6864
50	0.063	0.592	-0.7218	-0.5996	-0.6427	-0.7206	-0.6169	-0.6173	-0.3652	-0.6797	0.0306	-0.6660	0.2298	-0.6191	0.3403	-0.6841	0.3785	-0.6803
51	0.042	0.000	-0.7498	-0.5112	-0.6858	-0.4978	-0.6854	-0.5332	-0.2632	-0.6463	0.1206	-0.5802	0.2032	-0.5741	0.2179	-0.6567	0.3107	-0.6603
52	0.042	0.178	-0.7514	-0.5587	-0.6772	-0.5743	-0.6855	-0.5638	-0.2619	-0.6208	0.1380	-0.5657	0.2040	-0.5843	0.2753	-0.6576	0.3095	-0.6638
53	0.042	0.359	-0.8044	-0.7160	-0.6640	-0.7579	-0.7298	-0.6028	-0.1553	-0.6255	0.1474	-0.6033	0.2024	-0.6052	0.2770	-0.6649	0.3104	-0.6691
54	0.042	0.542	-0.6757	-0.7299	-0.5297	-0.8794	-0.5000	-0.6192	0.0303	-0.6474	0.1288	-0.6362	0.2034	-0.6176	0.2807	-0.6630	0.3150	-0.6683
55	0.042	0.612	-0.5118	-0.6298	-0.4057	-0.7651	-0.3966	-0.6148	0.0236	-0.6405	0.0938	-0.6366	0.1899	-0.6114	0.2720	-0.6573	0.3110	-0.6586
56	0.021	0.000	-0.7515	-0.4265	-0.4835	-0.4388	-0.6045	-0.4902	0.0146	-0.4928	0.0471	-0.5025	0.1038	-0.5632	0.1697	-0.6332	0.2035	-0.6308
57	0.021	0.186	-0.7326	-0.4843	-0.4208	-0.5078	-0.6318	-0.5406	0.0208	-0.4762	0.0473	-0.5121	0.1029	-0.5689	0.1668	-0.6350	0.2022	-0.6388
58	0.021	0.370	-0.4475	-0.7035	-0.2582	-0.7723	-0.2690	-0.5791	0.0279	-0.5312	0.0504	-0.5495	0.1103	-0.5869	0.1750	-0.6357	0.2077	-0.6427
59	0.021	0.560	-0.2868	-0.8584	-0.0309	-0.9792	-0.0601	-0.6811	0.0000	-0.6008	0.0395	-0.5979	0.1085	-0.6030	0.1747	-0.6382	0.2060	-0.6450
60	0.021	0.632	-0.2183	-0.7756	-0.0192	-0.9329	-0.0596	-0.6071	-0.0150	-0.6152	0.0327	-0.6141	0.1026	-0.6108	0.1699	-0.6404	0.2016	-0.6483
61	0.125	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Continued).
M = 1.2

			ALPHA =															
			-2.7	-3.3	-0.1	-0.7	4.9	4.3	9.9	9.3	14.9	14.2	19.8	19.1	24.8	24.2	26.5	25.9
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.914	0.000	0.0417	0.0995	0.0587	0.0553	0.1081	0.0107	0.1861	-0.0313	0.2879	-0.0877	0.4068	-0.1415	0.5563	-0.2024	0.6128	-0.2125
2	0.828	0.000	0.0380	0.0915	0.0405	0.0449	0.0934	-0.0037	0.1758	-0.0462	0.2812	-0.1053	0.4020	-0.1636	0.5532	-0.2215	0.6093	-0.2390
3	0.742	0.000	0.0186	0.0816	0.0442	0.0569	0.0909	-0.0066	0.1707	-0.0529	0.2728	-0.1077	0.3963	-0.1667	0.5449	-0.2189	0.5931	-0.2387
4	0.747	0.081	0.0747	0.0825	0.0468	0.0595	0.1011	-0.0063	0.1721	-0.0464	0.2782	-0.1434	0.3988	-0.3221	0.5320	-0.4708	0.5781	-0.5046
5	0.752	0.162	0.0330	0.0930	0.0545	0.0661	0.1072	0.0056	0.1704	-0.2967	0.2608	-0.3898	0.3632	-0.4806	0.4988	-0.5543	0.5320	-0.5737
6	0.644	0.000	-0.0303	0.0290	0.0077	0.0122	0.0556	-0.0458	0.1295	-0.0961	0.2218	-0.1475	0.3536	-0.2091	0.4899	-0.2746	0.5408	-0.2971
7	0.650	0.092	-0.0051	0.0591	0.0311	0.0375	0.0802	-0.0209	0.1533	-0.0667	0.2416	-0.1329	0.3669	-0.2782	0.5024	-0.4214	0.5494	-0.4686
8	0.654	0.174	0.0001	0.0696	0.0439	0.0508	0.0916	-0.0041	0.1615	-0.0786	0.2435	-0.3913	0.3602	-0.5406	0.4888	-0.6084	0.5312	-0.6359
9	0.660	0.254	0.0160	0.0846	0.0555	0.0632	0.1034	-0.0896	0.1643	-0.2860	0.2333	-0.4153	0.3339	-0.5221	0.4459	-0.6078	0.4835	-0.6347
10	0.583	0.000	-0.0206	0.0222	-0.0036	0.0088	0.0593	-0.0380	0.1307	-0.0917	0.2339	-0.1416	0.3582	-0.2899	0.4896	-0.2932	0.5420	-0.3145
11	0.583	0.054	-0.0367	0.0192	-0.0078	0.0025	0.0561	-0.0475	0.1270	-0.1024	0.2272	-0.1509	0.3553	-0.2260	0.4881	-0.3244	0.5407	-0.3494
12	0.500	0.000	-0.0241	0.0163	-0.0133	0.0025	0.0488	-0.0364	0.1363	-0.0844	0.2332	-0.1403	0.3475	-0.2201	0.4843	-0.3164	0.5400	-0.3260
13	0.500	0.050	-0.0263	0.0225	-0.0120	0.0003	0.0519	-0.0325	0.1378	-0.0816	0.2367	-0.1392	0.3515	-0.2225	0.4877	-0.3262	0.5407	-0.3405
14	0.500	0.101	-0.0335	0.0107	-0.0208	-0.0078	0.0451	-0.0410	0.1347	-0.0981	0.2334	-0.1468	0.3489	-0.2445	0.4842	-0.3610	0.5365	-0.3814
15	0.500	0.153	-0.0434	0.0066	-0.0267	-0.0128	0.0413	-0.0511	0.1319	-0.0999	0.2314	-0.1548	0.3478	-0.3031	0.4817	-0.4484	0.5344	-0.4719
16	0.504	0.239	-0.0248	0.0321	-0.0036	0.0096	0.0638	-0.0354	0.1487	-0.0935	0.2427	-0.3775	0.3518	-0.5617	0.4741	-0.6300	0.5250	-0.6511
17	0.509	0.319	-0.0166	0.0456	0.0058	0.0200	0.0758	-0.0135	0.1542	-0.3349	0.2363	-0.4376	0.3394	-0.5398	0.4526	-0.6209	0.5014	-0.6421
18	0.514	0.400	-0.0257	0.0577	0.0157	0.0313	0.0849	-0.1636	0.1519	-0.3420	0.2165	-0.4768	0.3051	-0.5823	0.4008	-0.6674	0.4429	-0.6843
19	0.375	0.000	-0.0108	0.0492	-0.0105	-0.0049	0.0421	-0.0418	0.1178	-0.0809	0.2281	-0.1486	0.3372	-0.2191	0.4862	-0.2988	0.5392	-0.2997
20	0.375	0.085	-0.0140	0.0337	-0.0129	-0.0170	0.0391	-0.0554	0.1143	-0.0945	0.2176	-0.1537	0.3346	-0.2368	0.4827	-0.3260	0.5365	-0.3337
21	0.375	0.171	-0.0181	0.0484	-0.0136	-0.0029	0.0394	-0.0489	0.1142	-0.0793	0.2183	-0.1588	0.3339	-0.2812	0.4805	-0.4020	0.5355	-0.4172
22	0.375	0.259	-0.0304	0.0203	-0.0327	-0.0272	0.0315	-0.0627	0.1145	-0.0769	0.2246	-0.2422	0.3326	-0.4443	0.4775	-0.5715	0.5311	-0.5877
23	0.375	0.292	-0.0500	0.0155	-0.0400	-0.0360	0.0255	-0.0850	0.1100	-0.0856	0.2163	-0.3605	0.3285	-0.5551	0.4741	-0.6566	0.5271	-0.6730
24	0.379	0.364	-0.0253	0.0383	-0.0153	-0.0096	0.0454	-0.0421	0.1234	-0.3026	0.2222	-0.4776	0.3255	-0.5879	0.4630	-0.6734	0.5135	-0.6892
25	0.384	0.444	-0.0055	0.0577	-0.0002	0.0059	0.0610	-0.1026	0.1329	-0.3376	0.2739	-0.4601	0.3168	-0.5548	0.4444	-0.6412	0.4897	-0.6572
26	0.389	0.525	-0.0398	0.0637	0.0084	0.0181	0.0678	-0.1533	0.1298	-0.3226	0.2029	-0.4457	0.2800	-0.5420	0.3881	-0.6414	0.4290	-0.6663
27	0.250	0.000	-0.0046	0.0554	0.0054	0.0114	0.0507	-0.0478	0.1236	-0.0826	0.2149	-0.1415	0.3467	-0.2029	0.4932	-0.2676	0.5238	-0.2679
28	0.250	0.170	-0.0043	0.0514	0.0035	0.0066	0.0510	-0.0520	0.1232	-0.0861	0.1903	-0.1438	0.3465	-0.2242	0.4839	-0.3097	0.5250	-0.3130
29	0.250	0.241	-0.0158	0.0474	0.0001	0.0010	0.0455	-0.0599	0.1206	-0.0882	0.2163	-0.1685	0.3432	-0.3292	0.4813	-0.4561	0.5226	-0.4651
30	0.250	0.305	-0.0199	0.0532	-0.0114	-0.0111	0.0473	-0.0591	0.1223	-0.0870	0.2176	-0.3533	0.3418	-0.5589	0.4774	-0.6670	0.5150	-0.6723
31	0.250	0.412	-0.0373	0.0414	-0.0108	-0.0198	0.0440	-0.0716	0.1242	-0.1655	0.2182	-0.4732	0.3409	-0.5815	0.4764	-0.6734	0.5116	-0.6853
32	0.254	0.489	-0.0174	0.0607	0.0039	0.0033	0.0591	-0.0340	0.1328	-0.3739	0.2183	-0.4811	0.3320	-0.5520	0.4589	-0.6304	0.4924	-0.6476
33	0.259	0.569	-0.0009	0.0772	0.0178	0.0166	0.0722	-0.1517	0.1368	-0.3281	0.2126	-0.5163	0.3159	-0.6036	0.4346	-0.6614	0.4651	-0.6672
34	0.264	0.650	-0.0529	0.0921	0.0321	0.0307	0.0861	-0.1448	0.1360	-0.3085	0.1988	-0.4288	0.2804	-0.5485	0.3790	-0.6487	0.4065	-0.6697
35	0.125	0.000	0.0153	0.0489	0.0262	0.0263	0.0656	-0.0199	0.1342	-0.0647	0.2723	-0.1344	0.3307	-0.2110	0.4194	-0.2786	0.4474	-0.2908
36	0.125	0.155	0.0146	0.0529	0.0282	0.0316	0.0708	-0.0231	0.1401	-0.0628	0.2745	-0.1392	0.3304	-0.2355	0.4179	-0.3266	0.4448	-0.3438
37	0.125	0.312	0.0058	0.0569	0.0243	0.0382	0.0711	-0.0276	0.1427	-0.0697	0.2265	-0.1982	0.3315	-0.3736	0.4198	-0.4952	0.4437	-0.5066
38	0.125	0.471	-0.0865	0.0559	0.0209	0.0400	0.0727	-0.0429	0.1422	-0.1536	0.2740	-0.4778	0.3297	-0.6329	0.4152	-0.7074	0.4399	-0.7159
39	0.125	0.532	-0.0322	0.0439	-0.0043	0.0173	0.0578	-0.0573	0.1383	-0.3333	0.2224	-0.5277	0.3249	-0.5941	0.4052	-0.6819	0.4274	-0.6917
40	0.129	0.614	-0.0043	0.0732	0.0163	0.0462	0.0808	-0.0859	0.1533	-0.4137	0.2139	-0.4771	0.3255	-0.5437	0.3978	-0.6246	0.4212	-0.6335
41	0.134	0.694	0.0013	0.0879	0.0258	0.0572	0.0913	-0.1834	0.1550	-0.3704	0.2708	-0.5125	0.3089	-0.5611	0.3772	-0.6346	0.3976	-0.6455
42	0.139	0.775	-0.1737	0.1051	0.0346	0.0712	0.1031	-0.2257	0.1507	-0.3480	0.1991	-0.4442	0.2717	-0.5212	0.3262	-0.6218	0.3416	-0.6283
43	0.095	0.650	-0.0176	0.0643	0.0035	0.0245	0.0749	-0.0839	0.1314	-0.4397	0.1900	-0.4739	0.2506	-0.5437	0.2894	-0.6238	0.2983	-0.6371
44	0.072	0.756	0.0021	0.0689	0.0111	0.0330	0.0776	-0.2626	0.1192	-0.3843	0.1576	-0.4981	0.1874	-0.5751	0.2064	-0.6425	0.2125	-0.6553
45	0.060	0.854	-0.1823	0.0779	0.0194	0.0410	0.0827	-0.2409	0.1014	-0.3612	0.1165	-0.4333	0.1257	-0.5239	0.1361	-0.6118	0.1413	-0.6303
46	0.063	0.000	-0.4959	-0.4732	-0.4835	-0.4797	-0.4712	-0.5151	-0.4358	-0.5315	-0.3799	-0.5519	-0.3776	-0.6156	-0.3622	-0.6538	-0.3548	-0.6646
47	0.063	0.173	-0.4926	-0.4669	-0.4824	-0.4807	-0.4649	-0.5082	-0.4393	-0.5393	-0.4043	-0.5645	-0.3787	-0.6405	-0.3576	-0.6848	-0.3504	-0.6957
48	0.063	0.347	-0.5097	-0.4815	-0.4999	-0.4966	-0.4796	-0.5312	-0.4517	-0.5538	-0.4190	-0.6284	-0.3882	-0.7091	-0.3629	-0.7619	-0.3570	-0.7400
49	0.063	0.525	-0.4925	-0.4560	-0.4670	-0.4644	-0.4516	-0.5214	-0.4180	-0.6044	-0.3819	-0.7038	-0.3685	-0.6736	-0.3483	-0.7281	-0.3418	-0.7143
50	0.063	0.592	-0.4843	-0.4330	-0.4551	-0.4450	-0.4243	-0.5004	-0.3850	-0.6685	-0.3528	-0.6932	-0.3197	-0.6601	-0.2993	-0.7133	-0.2909	-0.7115
51	0.042	0.000	-0.5014	-0.4763	-0.4872	-0.4832	-0.4730	-0.5126	-0.3987	-0.5272	-0.3085	-0.5046	-0.3084	-0.5528	-0.3502	-0.6067	-0.3386	-0.6209
52	0.042	0.178	-0.4985	-0.4765	-0.4925	-0.4871	-0.4742	-0.5133	-0.4370	-0.5392	-0.3584	-0.5014	-0.3591	-0.5709	-0.3499	-0.6300	-0.3365	-0.6445
53	0.042	0.359	-0.5115	-0.4861	-0.5051	-0.5039	-0.4839	-0.5351	-0.4564	-0.5572	-0.3460	-0.5926	-0.3852	-0.6472	-0.3515	-0.7046	-0.3368	-0.7182
54	0.042	0.542	-0.4858	-0.4426	-0.4457	-0.4444	-0.4378	-0.5108	-0.4056	-0.6207	-0.1384	-0.6792	-0.3306	-0.6883	-0.2918	-0.7156	-0.2751	-0.7084
55	0.042	0.612	-0.4925	-0.4329	-0.4458	-0.4398	-0.4262	-0.5091	-0.3862	-0.6372	-0.3143	-0.6483	-0.2964	-0.6844	-0.2537	-0.7101	-0.2392	-0.7054
56	0.021	0.000	-0.4397	-0.4400	-0.4431	-0.4424	-0.4412	-0.4436	-0.3711	-0.4433	-0.3082	-0.4911	-0.2868	-0.5407	-0.3267	-0.5912	-0.3220	-0.6058
57	0.021	0.184	-0.4619	-0.4589	-0.4679	-0.4649	-0.4615	-0.4675	-0.4129	-0.4765	-0.3380	-0.4969	-0.3235	-0.5405	-0.3209	-0.6100	-0.3151	-0.6245
58	0.021	0.370	-0.4585	-0.4518	-0.4619	-0.4588	-0.4555	-0.4881	-0.4299	-0.4984	-0.3454	-0.5717	-0.3323	-0.6248	-0.3148	-0.6813	-0.2995	-0.6891
59	0.021	0.560	-0.4456	-0.4281	-0.3990	-0.3839	-0.4224	-0.4977	-0.3881	-0.5689	-0.2952	-0.6233	-0.2726	-0.6487	-0.2407	-0.6800	-0.2210	-0.6857
60	0.021	0.632	-0.4966	-0.4293	-0.3789	-0.4504	-0.4228	-0.5218	-0.3841	-0.5890	-0.3080	-0.5816	-0.2685	-0.6480	-0.2162	-0.6716	-0.2050	-0.6723
61	0.125	-0.532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-4.- (Concluded).

M = 1.2

			ALPHA =															
			27.0	27.5	29.8	29.7	34.7	34.7	39.7	39.7	44.7	44.7	49.6	49.7	54.7	54.6	56.1	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.916	0.000	0.6783		0.7237	-0.2703	0.8778	-0.3761	1.0552	-0.4575	1.1966	-0.5257	1.3371	-0.6878	1.3806	-0.6195	1.3898	-0.6687
2	0.828	0.000	0.6217		0.7152	-0.3017	0.8654	-0.4082	1.0322	-0.5135	1.1672	-0.6008	1.3151	-0.6501	1.3629	-0.6475	1.3734	-0.6933
3	0.747	0.000	0.6072		0.6981	-0.3076	0.8470	-0.4194	1.0017	-0.5177	1.1748	-0.6012	1.2871	-0.6339	1.3405	-0.5872	1.3532	-0.6246
4	0.747	0.081	0.5869		0.6744	-0.6016	0.8176	-0.6499	0.9653	-0.6784	1.0949	-0.7228	1.2427	-0.7016	1.2921	-0.6305	1.3038	-0.6626
5	0.752	0.162	0.5368		0.6143	-0.6332	0.7432	-0.6562	0.8781	-0.6814	0.9959	-0.7048	1.1318	-0.6892	1.1746	-0.6174	1.1835	-0.6317
6	0.666	0.000	0.5995		0.6581	-0.3648	0.8012	-0.4657	0.9527	-0.5676	1.0912	-0.6126	1.2501	-0.5652	1.3102	-0.5515	1.3234	-0.5614
7	0.650	0.092	0.5451		0.6505	-0.5502	0.7965	-0.6212	0.9390	-0.6839	1.0784	-0.6741	1.2238	-0.6424	1.2783	-0.5918	1.2919	-0.6088
8	0.655	0.174	0.5432		0.6234	-0.7058	0.7599	-0.7425	0.8963	-0.7834	1.0288	-0.7628	1.1674	-0.7093	1.2179	-0.6212	1.2302	-0.6109
9	0.660	0.256	0.4904		0.5626	-0.7049	0.6830	-0.7359	0.8058	-0.7653	0.9181	-0.7616	1.0513	-0.7057	1.0929	-0.6222	1.1037	-0.6169
10	0.583	0.000	0.5612		0.6499	-0.3776	0.7036	-0.4865	0.9380	-0.5782	1.0721	-0.5478	1.2315	-0.4771	1.2921	-0.5475	1.3061	-0.5614
11	0.583	0.054	0.5606		0.6482	-0.4231	0.7904	-0.5318	0.9348	-0.6124	1.0683	-0.5588	1.2268	-0.4958	1.2865	-0.5532	1.2989	-0.5651
12	0.500	0.000	0.5582		0.6421	-0.3988	0.7763	-0.5071	0.9128	-0.6015	1.0485	-0.5418	1.2012	-0.5014	1.2648	-0.5184	1.2705	-0.5347
13	0.500	0.050	0.5486		0.6452	-0.4156	0.7776	-0.5279	0.9142	-0.6184	1.0539	-0.5517	1.1988	-0.5185	1.2638	-0.5138	1.2763	-0.5278
14	0.500	0.101	0.5562		0.6404	-0.4678	0.7715	-0.5703	0.9076	-0.6496	1.0469	-0.5758	1.1898	-0.5298	1.2548	-0.5186	1.2674	-0.5283
15	0.500	0.153	0.5498		0.6367	-0.5649	0.7653	-0.6422	0.8992	-0.6956	1.0341	-0.6146	1.1769	-0.5682	1.2377	-0.5171	1.2508	-0.5284
16	0.504	0.239	0.5408		0.6285	-0.7218	0.7627	-0.7588	0.8783	-0.7736	0.9967	-0.6752	1.1338	-0.6168	1.1893	-0.5398	1.2018	-0.5284
17	0.509	0.319	0.5164		0.5893	-0.7156	0.7038	-0.7482	0.8237	-0.7686	0.9411	-0.6878	1.0738	-0.6078	1.1247	-0.5573	1.1354	-0.5417
18	0.514	0.400	0.4905		0.5179	-0.7473	0.6195	-0.7786	0.7269	-0.7829	0.8326	-0.6643	0.9559	-0.5744	0.9979	-0.5553	1.0081	-0.5408
19	0.375	0.000	0.5811		0.6297	-0.3796	0.7494	-0.5049	0.8715	-0.5151	0.9976	-0.5031	1.1472	-0.5132	1.2149	-0.4722	1.2302	-0.4918
20	0.375	0.085	0.5466		0.6257	-0.4121	0.7449	-0.5328	0.8678	-0.5311	0.9926	-0.5336	1.1416	-0.5268	1.2184	-0.4641	1.2249	-0.4838
21	0.375	0.171	0.5430		0.6224	-0.5033	0.7395	-0.6089	0.8607	-0.5863	0.9836	-0.5634	1.1314	-0.5407	1.1976	-0.4714	1.2127	-0.4838
22	0.375	0.259	0.5373		0.6149	-0.6605	0.7292	-0.7077	0.8456	-0.6597	0.9674	-0.5878	1.1099	-0.5619	1.1748	-0.4828	1.1078	-0.4895
23	0.379	0.292	0.5330		0.6094	-0.7297	0.7203	-0.7542	0.8350	-0.7087	0.9535	-0.6887	1.0917	-0.5788	1.1538	-0.5887	1.1648	-0.5022
24	0.379	0.364	0.5146		0.5882	-0.7477	0.6954	-0.7587	0.8058	-0.7422	0.9179	-0.6183	1.0529	-0.5837	1.1104	-0.5126	1.1223	-0.5091
25	0.384	0.444	0.4932		0.5595	-0.7248	0.6578	-0.7421	0.7616	-0.7131	0.8692	-0.6025	0.9987	-0.5687	1.0487	-0.5055	1.0612	-0.5019
26	0.389	0.525	0.4271		0.4871	-0.7351	0.5748	-0.7739	0.6695	-0.7054	0.7478	-0.5855	0.8854	-0.5523	0.9289	-0.4913	0.9399	-0.4909
27	0.250	0.000	0.5282		0.5972	-0.3699	0.6972	-0.1423	0.8028	-0.3123	0.9249	-0.4752	1.0643	-0.4363	1.1366	-0.4249	1.1537	-0.4457
28	0.250	0.120	0.5264		0.5919	-0.4216	0.6933	-0.0848	0.7996	-0.3178	0.9195	-0.4654	1.0599	-0.4493	1.1324	-0.4237	1.1481	-0.4454
29	0.250	0.241	0.5289		0.5856	-0.5614	0.6854	-0.2325	0.7988	-0.4578	0.9088	-0.5887	1.0487	-0.4848	1.1188	-0.4433	1.1339	-0.4684
30	0.258	0.365	0.5889		0.5719	-0.7483	0.6497	-0.4488	0.7783	-0.5992	0.8843	-0.5395	1.0213	-0.5866	1.0864	-0.4593	1.1021	-0.4671
31	0.250	0.412	0.5080		0.5675	-0.7403	0.6615	-0.5351	0.7586	-0.6476	0.8719	-0.5573	1.0824	-0.5132	1.0636	-0.4658	1.0768	-0.4684
32	0.254	0.489	0.4859		0.5638	-0.7231	0.6322	-0.6257	0.7262	-0.6735	0.8379	-0.5624	0.9620	-0.5128	1.0199	-0.4653	1.0329	-0.4649
33	0.259	0.569	0.4568		0.5118	-0.7247	0.5939	-0.5113	0.6835	-0.5807	0.7913	-0.5516	0.9086	-0.5022	0.9619	-0.4566	0.9739	-0.4593
34	0.264	0.650	0.3928		0.4436	-0.7328	0.5173	-0.4522	0.5985	-0.5457	0.7003	-0.5394	0.8056	-0.4902	0.8513	-0.4448	0.8614	-0.4528
35	0.125	0.000	0.4557		0.5003	-0.4079	0.5664	-0.4542	0.6403	-0.4964	0.7448	-0.4578	0.8665	-0.3968	0.9439	-0.3922	0.9626	-0.4178
36	0.125	0.155	0.4505		0.4955	-0.4631	0.5620	-0.5784	0.6351	-0.5673	0.7485	-0.4588	0.8622	-0.4152	0.9398	-0.3992	0.9503	-0.4259
37	0.125	0.312	0.4520		0.4935	-0.6187	0.5582	-0.5748	0.6312	-0.5995	0.7364	-0.4775	0.8585	-0.4625	0.9354	-0.4054	0.9551	-0.4278
38	0.125	0.471	0.4374		0.4788	-0.7676	0.5418	-0.5553	0.6121	-0.6128	0.7189	-0.5169	0.8485	-0.4669	0.9159	-0.4119	0.9339	-0.4303
39	0.125	0.532	0.4288		0.4692	-0.7411	0.5204	-0.5768	0.5979	-0.6199	0.7037	-0.5349	0.8248	-0.4749	0.8951	-0.4171	0.9131	-0.4316
40	0.129	0.614	0.4178		0.4553	-0.7085	0.5117	-0.5857	0.5805	-0.6062	0.6858	-0.5346	0.8038	-0.4748	0.8782	-0.4126	0.8866	-0.4296
41	0.134	0.694	0.3948		0.4278	-0.7191	0.4805	-0.5678	0.5473	-0.5791	0.6521	-0.5264	0.7674	-0.4699	0.8279	-0.4186	0.8423	-0.4321
42	0.139	0.775	0.3333		0.3625	-0.7088	0.4098	-0.5474	0.4720	-0.5642	0.5748	-0.5151	0.6812	-0.4654	0.7322	-0.4068	0.7449	-0.4316
43	0.085	0.658	0.2979		0.3146	-0.7096	0.3468	-0.5691	0.3985	-0.5738	0.4871	-0.5212	0.6546	-0.4596	0.7398	-0.3983	0.7682	-0.4233
44	0.072	0.756	0.2852		0.2185	-0.7249	0.2488	-0.5321	0.2975	-0.5303	0.4787	-0.4911	0.6382	-0.4489	0.7120	-0.3811	0.7384	-0.4185
45	0.060	0.854	0.1301		0.1447	-0.7185	0.1787	-0.4879	0.2398	-0.4931	0.4362	-0.4648	0.5699	-0.4218	0.6264	-0.3659	0.6486	-0.3987
46	0.063	0.000	-0.3518		-0.3338	-0.7223	-0.3059	-0.6892	-0.2664	-0.5715	-0.0317	-0.5048	0.2113	-0.4219	0.3773	-0.3623	0.4286	-0.3861
47	0.063	0.173	-0.3487		-0.3281	-0.7536	-0.2978	-0.6146	-0.2585	-0.5533	-0.0179	-0.5286	0.2735	-0.4314	0.3798	-0.3716	0.4263	-0.3986
48	0.063	0.347	-0.3488		-0.3448	-0.7299	-0.3138	-0.6383	-0.2448	-0.5507	-0.0856	-0.5353	0.2462	-0.4438	0.3963	-0.3832	0.4431	-0.4186
49	0.063	0.525	-0.3314		-0.3176	-0.7278	-0.2764	-0.6281	-0.1815	-0.5586	0.0126	-0.5223	0.3229	-0.4475	0.5101	-0.3871	0.5503	-0.4132
50	0.063	0.592	-0.2836		-0.2651	-0.7288	-0.2244	-0.6013	-0.1685	-0.5528	0.0821	-0.5128	0.5675	-0.4478	0.6688	-0.3837	0.6883	-0.4182
51	0.042	0.000	-0.3308		-0.2898	-0.6785	-0.2536	-0.5615	-0.1665	-0.4953	0.1851	-0.4173	0.5778	-0.3613	0.6316	-0.3386	0.6465	-0.3758
52	0.042	0.178	-0.3322		-0.3042	-0.6972	-0.2531	-0.5537	-0.1609	-0.5173	0.1872	-0.4286	0.5774	-0.3618	0.6321	-0.3416	0.6456	-0.3835
53	0.042	0.359	-0.3254		-0.2977	-0.7282	-0.2423	-0.5594	-0.1446	-0.5351	0.2982	-0.4588	0.5785	-0.4009	0.6303	-0.3596	0.6446	-0.4001
54	0.042	0.542	-0.2749		-0.2451	-0.7241	-0.1840	-0.5516	-0.1251	-0.5411	0.4362	-0.4886	0.5668	-0.4318	0.6295	-0.3756	0.6450	-0.4186
55	0.042	0.612	-0.2319		-0.2021	-0.7153	-0.1291	-0.5385	-0.0130	-0.5340	0.4755	-0.4809	0.5499	-0.4311	0.6197	-0.3739	0.6385	-0.4090
56	0.021	0.000	-0.3130		-0.2557	-0.6856	-0.2087	-0.5265	-0.1035	-0.4082	0.4181	-0.3646	0.4923	-0.2934	0.5475	-0.3191	0.5629	-0.3696
57	0.021	0.184	-0.3084		-0.2603	-0.6862	-0.2054	-0.5057	-0.0990	-0.4864	0.4216	-0.3728	0.4913	-0.3193	0.5451	-0.3235	0.5681	-0.3754
58	0.021	0.370	-0.2746		-0.2332	-0.7178	-0.1813	-0.4899	-0.1101	-0.5255	0.4240	-0.4096	0.4469	-0.3655	0.5500	-0.3357	0.5655	-0.3872
59	0.021	0.560	-0.2173		-0.1778	-0.7092	-0.0881	-0.4958	0.0710	-0.5328	0.4022	-0.4524	0.4913	-0.4089	0.5464	-0.3558	0.5615	-0.4008
60	0.021	0.632	-0.2838		-0.1685	-0.7002	-0.0696	-0.4945	0.0662	-0.5300	0.3841	-0.4653	0.4836	-0.4221	0.5403	-0.3642	0.5555	-0.4037
61	0.125	-0.532	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.375	-0.292	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A-5.- Pressure coefficients for configuration 5.
M = 0.6

			ALPHA =															
			-2.6	-2.7	0.1	-0.2	5.0	4.8	10.1	9.8	15.0	14.8	20.0	19.6	25.0	24.7	26.6	26.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.948	0.000	0.1168	0.2748	0.2006	0.2031	0.3384	0.0426	0.4094	-0.1501	0.6357	-0.4174	0.7723	-0.7442	0.8894	-1.1375	0.9197	-1.2641
2	0.896	0.000	0.0625	0.2113	0.1400	0.1446	0.2665	-0.0004	0.4080	-0.1691	0.5485	-0.3816	0.6815	-0.6250	0.8028	-0.8951	0.8350	-0.9344
3	0.844	0.000	-0.0001	0.1393	0.0737	0.0755	0.1924	-0.0612	0.3315	-0.2141	0.4485	-0.3996	0.6040	-0.5981	0.7264	-0.7814	0.7577	-0.8111
4	0.838	0.115	0.0166	0.1490	0.0768	0.0865	0.2090	-0.0511	0.3485	-0.1894	0.4808	-0.3109	0.6026	-0.5421	0.7164	-0.9922	0.7409	-1.2104
5	0.857	0.182	0.0469	0.2059	0.1256	0.1375	0.2733	-0.0105	0.4086	-0.5016	0.5280	-1.7980	0.6269	-2.2462	0.7151	-2.6908	0.7340	-2.5434
6	0.781	0.000	-0.2332	-0.0954	-0.1684	-0.1585	-0.0282	-0.3081	0.1226	-0.4605	0.2790	-0.6785	0.4322	-0.8982	0.5731	-1.0467	0.6047	-1.2149
7	0.719	0.000	-0.1497	-0.0348	-0.0905	-0.0852	0.0202	-0.2047	0.1461	-0.3189	0.2809	-0.4821	0.4079	-0.6098	0.5363	-0.8534	0.5759	-0.8921
8	0.719	0.105	-0.1947	-0.1509	-0.2313	-0.2223	-0.0678	-0.2511	0.0982	-0.3619	0.2584	-0.5093	0.3977	-0.5889	0.5302	-0.9541	0.5661	-0.9246
9	0.733	0.223	-0.1448	0.0110	-0.0615	-0.0498	0.0730	-0.2046	0.2069	-0.3106	0.3469	-0.3580	0.4723	-0.5654	0.5939	-1.3280	0.6261	-1.7759
10	0.751	0.289	-0.0489	0.0930	0.0232	0.0308	0.1636	-0.1115	0.2905	-0.0716	0.4168	-1.2718	0.5306	-2.0903	0.6319	-2.0305	0.6546	-2.0411
11	0.770	0.356	-0.0155	0.1095	0.0014	0.0890	0.2401	-0.1364	0.3688	-1.2230	0.4701	-1.6166	0.5574	-2.1488	0.6283	-2.1706	0.6462	-1.9888
12	0.625	0.000	-0.1168	-0.0338	-0.0728	-0.0749	0.0167	-0.1656	0.1171	-0.2539	0.2262	-0.3474	0.3482	-0.4620	0.4590	-0.7022	0.4884	-0.8102
13	0.625	0.131	-0.1261	-0.0312	-0.0760	-0.0735	0.0130	-0.1772	0.1173	-0.2576	0.2347	-0.3504	0.3502	-0.4527	0.4632	-0.6988	0.4902	-0.8658
14	0.625	0.218	-0.1922	-0.0308	-0.0792	-0.0748	0.0142	-0.2056	0.1168	-0.2799	0.2283	-0.3583	0.3490	-0.4307	0.4468	-0.7609	0.4886	-1.0615
15	0.625	0.306	-0.2085	-0.1718	-0.2498	-0.2446	-0.0977	-0.2757	0.0560	-0.3611	0.2134	-0.3586	0.3453	-0.3734	0.4679	-1.2577	0.4897	-1.5069
16	0.639	0.410	-0.1528	-0.0174	-0.0683	-0.0039	0.0478	-0.2295	0.1019	-0.1507	0.3094	-0.9950	0.4268	-1.9687	0.5281	-1.7063	0.5522	-1.6952
17	0.658	0.477	-0.0834	0.0674	0.0051	-0.0006	0.1326	-0.1505	0.2610	-0.9702	0.3784	-1.7141	0.4813	-1.8018	0.5639	-1.6673	0.5821	-1.6878
18	0.676	0.543	-0.0423	0.1463	0.0587	0.0615	0.2117	-0.3555	0.3369	-1.0125	0.4352	-1.4054	0.5088	-1.6548	0.5591	-1.6372	0.5722	-1.6302
19	0.500	0.000	-0.0983	-0.0418	-0.0675	-0.0595	-0.0039	-0.1300	0.0747	-0.1793	0.1643	-0.2340	0.2648	-0.3038	0.3685	-0.5717	0.3962	-0.6523
20	0.500	0.222	-0.1103	-0.0467	-0.0760	-0.0655	-0.0128	-0.1422	0.0682	-0.1887	0.1603	-0.2335	0.2624	-0.4128	0.3650	-0.6521	0.3695	-0.7420
21	0.500	0.370	-0.1341	-0.0596	-0.0949	-0.0816	-0.0228	-0.1690	0.0626	-0.2078	0.1583	-0.2151	0.2698	-0.5119	0.3630	-1.0067	0.3098	-1.1993
22	0.500	0.518	-0.2128	-0.0887	-0.1580	-0.1461	-0.0449	-0.2474	0.0272	-0.2351	0.1446	-0.1815	0.2498	-1.1817	0.3532	-1.3607	0.3825	-1.3833
23	0.514	0.660	-0.2363	-0.0934	-0.1453	-0.1452	-0.0343	-0.2617	0.0744	-0.7850	0.1896	-1.4630	0.2897	-1.2711	0.3762	-1.3337	0.4026	-1.3319
24	0.533	0.727	-0.1544	-0.0045	-0.0670	-0.0595	0.0513	-0.1757	0.1619	-0.9768	0.2663	-1.2563	0.3488	-1.1770	0.4139	-1.2808	0.4360	-1.2694
25	0.551	0.793	-0.0971	0.0024	-0.0021	0.0078	0.1462	-0.4064	0.2584	-0.8387	0.3453	-1.0746	0.3977	-1.1168	0.4367	-1.2478	0.4411	-1.2501
26	0.375	0.000	-0.0822	-0.0021	-0.0691	-0.0667	-0.0319	-0.1087	0.0261	-0.1374	0.0977	-0.1713	0.1788	-0.2782	0.2764	-0.4171	0.2984	-0.4657
27	0.375	0.250	-0.0858	-0.0619	-0.0687	-0.0664	-0.0329	-0.1071	0.0255	-0.1349	0.0960	-0.1706	0.1770	-0.2821	0.2732	-0.4514	0.2869	-0.5426
28	0.375	0.417	-0.0805	-0.0557	-0.0624	-0.0706	-0.0353	-0.1144	0.0236	-0.1415	0.0937	-0.1601	0.1694	-0.3393	0.2597	-0.7555	0.2724	-0.9249
29	0.375	0.583	-0.0883	-0.0592	-0.0643	-0.0720	-0.0374	-0.1235	0.0153	-0.1341	0.0798	-0.1212	0.1501	-0.8296	0.2274	-1.1593	0.2457	-1.2337
30	0.375	0.750	-0.0860	-0.0535	-0.0598	-0.0630	-0.0344	-0.1265	0.0802	-0.1036	0.0524	-0.0557	0.1006	-1.0030	0.1509	-1.1406	0.1684	-1.1052
31	0.375	0.833	-0.0892	-0.0459	-0.0451	-0.0542	-0.0245	-0.1317	-0.0015	-0.6454	0.0417	-0.8712	0.0808	-0.8797	0.1216	-1.0151	0.1266	-1.0746
32	0.375	0.917	-0.0878	-0.0372	-0.0367	-0.0436	-0.0253	-0.1686	-0.0313	-0.5207	-0.0028	-0.6173	0.0093	-0.8216	0.0220	-0.9431	0.0177	-1.0176
33	0.250	0.000	-0.1174	-0.1082	-0.1068	-0.1124	-0.0802	-0.1300	-0.0524	-0.1446	0.0803	-0.1660	0.0638	-0.2288	0.1358	-0.2821	0.1457	-0.3087
34	0.250	0.250	-0.1121	-0.1067	-0.0994	-0.1029	-0.0896	-0.1340	-0.0471	-0.1404	0.0020	-0.1682	0.0674	-0.2085	0.1354	-0.2894	0.1497	-0.3188
35	0.250	0.417	-0.1150	-0.1046	-0.0960	-0.1025	-0.0859	-0.1352	-0.0475	-0.1577	0.0850	-0.1821	0.0667	-0.2161	0.1296	-0.4198	0.1427	-0.5155
36	0.250	0.583	-0.1027	-0.0876	-0.0790	-0.0874	-0.0719	-0.1217	-0.0368	-0.1508	0.0110	-0.1786	0.0647	-0.4605	0.1222	-0.8774	0.1292	-0.9832
37	0.250	0.750	-0.0801	-0.0694	-0.0633	-0.0677	-0.0505	-0.1160	-0.0244	-0.1571	0.0050	-0.5050	0.0477	-0.8998	0.0823	-1.0414	0.0823	-1.0804
38	0.250	0.833	-0.0822	-0.0598	-0.0571	-0.0598	-0.0457	-0.1226	-0.0289	-0.3203	-0.0058	-0.6969	0.0327	-0.7979	0.0558	-0.8268	0.0403	-0.8633
39	0.250	0.917	-0.0864	-0.0498	-0.0470	-0.0527	-0.0406	-0.1770	-0.0370	-0.5845	-0.0229	-0.6627	-0.0003	-0.5797	-0.0039	-0.7209	-0.0218	-0.7667
40	0.156	0.000	-0.2592	-0.2770	-0.2690	-0.2682	-0.2703	-0.2756	-0.2446	-0.2605	-0.2158	-0.2470	-0.1535	-0.2805	-0.0902	-0.3564	-0.0736	-0.3745
41	0.156	0.250	-0.2539	-0.2740	-0.2634	-0.2053	-0.2093	-0.2758	-0.2424	-0.2705	-0.2121	-0.2559	-0.1517	-0.2894	-0.0908	-0.3587	-0.0780	-0.3659
42	0.156	0.417	-0.2467	-0.2611	-0.2517	-0.2546	-0.2584	-0.2671	-0.2292	-0.2741	-0.1926	-0.2744	-0.1435	-0.2848	-0.0840	-0.3993	-0.0798	-0.4292
43	0.156	0.583	-0.2114	-0.2266	-0.2055	-0.2019	-0.2022	-0.2356	-0.1809	-0.2512	-0.1476	-0.2658	-0.1102	-0.3744	-0.0567	-0.7211	-0.0647	-0.7956
44	0.156	0.750	-0.1456	-0.1462	-0.1337	-0.1289	-0.1252	-0.1744	-0.1136	-0.2089	-0.0924	-0.4176	-0.0630	-0.8054	-0.0322	-0.9483	-0.0457	-0.9743
45	0.156	0.833	-0.1174	-0.1082	-0.1002	-0.1089	-0.0971	-0.1587	-0.0821	-0.3025	-0.0704	-0.5823	-0.0395	-0.7447	-0.0200	-0.7175	-0.0388	-0.7425
46	0.156	0.917	-0.0900	-0.0670	-0.0546	-0.0683	-0.0634	-0.2019	-0.0619	-0.4950	-0.0527	-0.5520	-0.0373	-0.4822	-0.0369	-0.5050	-0.0659	-0.6152
47	0.094	0.000	-0.2502	-0.3064	-0.2689	-0.2887	-0.3020	-0.2816	-0.3241	-0.2212	-0.3267	-0.1008	-0.5769	-0.1574	-0.4510	-0.2610	-0.4462	-0.3016
48	0.094	0.250	-0.2270	-0.2996	-0.2536	-0.2724	-0.2941	-0.2641	-0.3169	-0.2116	-0.3305	-0.1367	-0.6095	-0.1829	-0.4901	-0.3191	-0.5053	-0.3486
49	0.094	0.417	-0.2078	-0.2830	-0.2480	-0.2474	-0.2784	-0.2251	-0.2841	-0.2737	-0.4287	-0.1978	-0.5632	-0.2845	-0.4825	-0.4036	-0.4733	-0.4493
50	0.094	0.583	-0.2031	-0.2092	-0.2254	-0.2306	-0.2610	-0.2205	-0.2567	-0.2667	-0.5593	-0.3032	-0.4721	-0.4301	-0.4145	-0.6139	-0.4233	-0.6876
51	0.094	0.917	-0.1222	-0.1064	-0.0877	-0.0883	-0.0930	-0.7235	-0.0791	-0.4283	-0.0808	-0.4713	-0.0751	-0.4556	-0.0923	-0.4911	-0.1159	-0.5501
52	0.063	0.000	-0.0501	-0.0922	-0.0596	-0.0695	-0.0819	-0.0614	-0.0981	-0.0104	-0.1206	0.0052	-0.0891	0.0012	-0.0549	-0.0235	-0.0570	-0.0402
53	0.063	0.250	-0.0434	-0.0922	-0.0540	-0.0638	-0.0829	-0.0585	-0.1032	-0.0113	-0.1290	-0.0066	-0.0934	-0.0088	-0.0560	-0.0468	-0.0678	-0.0731
54	0.063	0.417	-0.0115	-0.0727	-0.0296	-0.0322	-0.0664	-0.0238	-0.0777	-0.0079	-0.1028	-0.0151	-0.0881	-0.0436	-0.0686	-0.1367	-0.1043	-0.1839
55	0.063	0.583	0.0040	-0.0453	-0.0136	-0.0268	-0.0511	-0.0215	-0.0509	-0.0374	-0.0553	-0.0706	-0.0770	-0.2109	-0.0878	-0.4012	-0.1320	-0.4803
56	0.031	0.000	0.0580	0.0285	0.0480	0.0407	0.0467	0.0483	0.0243	0.0037	0.0008	0.0701	0.0185	0.0442	0.0183	0.0350	0.0303	0.0512
57	0.031	0.250	0.0551	0.0186	0.0394	0.0390	0.0286	0.0320	0.0039	0.0730	-0.0276	0.0449	-0.0199	0.0441	0.0111	0.0384	0.0063	0.0500
58	0.031	0.417	0.0844	0.0512	0.0852	0.0900	0.0574	0.0766	0.0398	0.0959	0.0050	0.0540	-0.0027	0.0522	0.0093	0.0001	-0.0564	-0.0172
59	0.031	0.583	0.1084	0.0633	0.1081	0.1090	0.0740	0.0974	0.0792	0.1011	0.0424	0.0634	-0.0041	-0.0106	-0.0444	-0.1949	-0.1466	-0.2677
60	0.031	0.750	0.0520	0.0382	0.0587	0.0632	0.0562	0.0422	0.0785	0.0117	0.0141	-0.0768	-0.0616	-0.2967	-0.1335	-0.4961	-0.2202	-0.5672
61	0.375	-0.583	-0.1013	-0.0041	-0.0675	-0.0659	-0.0338	-0.1142	-0.0201	-0.1309	0.0850	-0.1018	0.1554	-0.7757	0.2363	-1.1645	0.2554	-1.2313
62	0.156	-0.583	-0.2235	-0.2257	-0.2104	-0.2039	-0.2132	-0.2321	-0.1821	-0.2470	-0.1564	-0.2741	-0.1078	-0.3504	-0.0496	-0.6625	-0.0421	-0.7454

Table A-5.- (Continued).
M = 0.6

			ALPHA =															
			27.4	27.2	30.2	30.0	35.2	35.0	40.2	39.9	45.1	44.9	50.1	49.9	55.0	54.8	56.5	56.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.948	0.000	0.9291	-1.2780	0.9709	-1.3884	1.0336	-0.6974	1.0721	-0.5784	1.0968	-0.5362	1.0821	-0.5489	1.0585	-0.5548	1.0636	-0.5368
2	0.898	0.000	0.8421	-0.9689	0.8905	-1.2452	0.9622	-0.6915	1.0243	-0.5863	1.0707	-0.5403	1.0879	-0.5597	1.0942	-0.5623	1.0892	-0.5474
3	0.844	0.000	0.7893	-0.8344	0.8177	-1.1111	0.8969	-0.6697	0.9740	-0.5802	1.0363	-0.5365	1.0723	-0.5572	1.0936	-0.5564	1.0938	-0.5496
4	0.838	0.115	0.7453	-1.7385	0.7956	-1.4390	0.8653	-0.6745	0.9281	-0.5743	0.9820	-0.5456	1.0112	-0.5527	1.0254	-0.5478	1.0256	-0.5399
5	0.857	0.182	0.7193	-2.2292	0.7733	-1.4582	0.8301	-0.6822	0.8728	-0.5822	0.9024	-0.5561	0.9075	-0.5629	0.9011	-0.5547	0.8956	-0.5441
6	0.781	0.000	0.6162	-1.2109	0.6810	-1.2342	0.7724	-0.6764	0.8715	-0.5861	0.9611	-0.5649	1.0186	-0.5747	1.0603	-0.5652	1.0751	-0.5513
7	0.719	0.000	0.5813	-0.9519	0.6346	-1.1015	0.7276	-0.6667	0.8212	-0.5878	0.9144	-0.5561	0.9865	-0.5566	1.0369	-0.5692	1.0535	-0.5579
8	0.719	0.105	0.5781	-1.0325	0.6277	-1.2823	0.7201	-0.6711	0.8198	-0.5898	0.9105	-0.5595	0.9795	-0.5597	1.0269	-0.5658	1.0447	-0.5543
9	0.733	0.223	0.6304	-1.7498	0.6774	-1.3786	0.7565	-0.6610	0.8364	-0.5790	0.9108	-0.5509	0.9602	-0.5543	0.9892	-0.5576	1.0018	-0.5427
10	0.751	0.289	0.6546	-1.8232	0.6988	-1.3639	0.7664	-0.6599	0.8283	-0.5824	0.8829	-0.5357	0.9144	-0.5706	0.9332	-0.5634	0.9393	-0.5463
11	0.770	0.356	0.6279	-1.8124	0.6738	-1.3683	0.7272	-0.6709	0.7632	-0.5928	0.7908	-0.5467	0.7994	-0.5778	0.7935	-0.5694	0.7926	-0.5542
12	0.625	0.000	0.5066	-0.8366	0.5511	-1.0578	0.6421	-0.6704	0.7338	-0.6064	0.8328	-0.5595	0.9173	-0.5914	0.9846	-0.5819	1.0085	-0.5686
13	0.625	0.131	0.5082	-0.8994	0.5537	-1.2166	0.6382	-0.6655	0.7351	-0.5895	0.8374	-0.5690	0.9072	-0.5689	0.9737	-0.5751	0.9945	-0.5626
14	0.625	0.218	0.5096	-1.1944	0.5554	-1.3078	0.6376	-0.6717	0.7370	-0.5910	0.8330	-0.5694	0.9013	-0.5666	0.9677	-0.5740	0.9879	-0.5638
15	0.625	0.306	0.5139	-1.4469	0.5560	-1.3164	0.6381	-0.6639	0.7372	-0.5819	0.8279	-0.5636	0.8950	-0.5624	0.9543	-0.5726	0.9703	-0.5565
16	0.639	0.418	0.5409	-1.5572	0.6009	-1.2945	0.6697	-0.6599	0.7488	-0.5829	0.8224	-0.5688	0.8671	-0.5694	0.9052	-0.5616	0.9236	-0.5707
17	0.658	0.477	0.5825	-1.5395	0.6171	-1.3018	0.6743	-0.6709	0.7347	-0.5910	0.7885	-0.5697	0.8167	-0.5700	0.8626	-0.5724	0.8511	-0.5795
18	0.676	0.543	0.5593	-1.4723	0.5968	-1.2985	0.6391	-0.6716	0.6757	-0.5885	0.7023	-0.5649	0.7048	-0.5687	0.7104	-0.5771	0.7108	-0.5794
19	0.500	0.000	0.4083	-0.7069	0.4422	-0.9075	0.5262	-0.6532	0.6221	-0.5919	0.7291	-0.5707	0.8151	-0.6035	0.8909	-0.5933	0.9202	-0.5802
20	0.500	0.222	0.4029	-0.9093	0.4364	-1.1919	0.5198	-0.6605	0.6147	-0.5950	0.7714	-0.5723	0.8045	-0.6015	0.8874	-0.5926	0.9072	-0.5810
21	0.500	0.370	0.4026	-1.2594	0.4357	-1.2532	0.5156	-0.6540	0.6089	-0.5882	0.7104	-0.5665	0.7916	-0.5889	0.8680	-0.5824	0.8894	-0.5709
22	0.500	0.518	0.3984	-1.3321	0.4299	-1.2477	0.5042	-0.6617	0.5920	-0.5905	0.6881	-0.5758	0.7582	-0.5793	0.8329	-0.5824	0.8495	-0.5782
23	0.51[illegible]	0.660	0.4039	-1.2971	0.4371	-1.2407	0.5023	-0.6685	0.5756	-0.5963	0.6490	-0.5803	0.6993	-0.5811	0.7525	-0.5812	0.7639	-0.5807
24	0.533	0.727	0.4352	-1.2792	0.4649	-1.2300	0.5193	-0.6638	0.5743	-0.5956	0.6324	-0.5744	0.6634	-0.5747	0.6992	-0.5753	0.7103	-0.5734
25	0.551	0.793	0.4356	-1.2454	0.4543	-1.2125	0.4965	-0.6484	0.5279	-0.5849	0.5577	-0.5608	0.5701	-0.5876	0.5819	-0.5745	0.5799	-0.5667
26	0.375	0.000	0.3025	-0.4988	0.3301	-0.6645	0.3949	-0.6471	0.4917	-0.6142	0.5981	-0.6002	0.6915	-0.6357	0.7982	-0.6123	0.8124	-0.6030
27	0.375	0.250	0.2983	-0.6474	0.3253	-0.9500	0.3896	-0.6494	0.4829	-0.6061	0.5987	-0.5936	0.6812	-0.6240	0.7782	-0.6078	0.8049	-0.5899
28	0.375	0.417	0.2846	-1.0217	0.3084	-1.1246	0.3758	-0.6553	0.4678	-0.6037	0.5637	-0.5921	0.6619	-0.6250	0.7472	-0.6073	0.7737	-0.5873
29	0.375	0.583	0.2497	-1.2261	0.2727	-1.1948	0.3390	-0.6650	0.4247	-0.6157	0.5148	-0.5975	0.6056	-0.6258	0.6846	-0.6135	0.7113	-0.5896
30	0.375	0.750	0.1588	-1.1693	0.1881	-1.1627	0.2421	-0.6554	0.3094	-0.6141	0.3806	-0.5948	0.4567	-0.6194	0.5206	-0.6117	0.5434	-0.5884
31	0.375	0.833	0.1151	-1.0704	0.1389	-1.1009	0.1993	-0.6384	0.2578	-0.6042	0.3260	-0.5889	0.3900	-0.5964	0.4474	-0.6050	0.4689	-0.5796
32	0.375	0.917	0.0031	-1.0209	0.0291	-1.0511	0.0948	-0.6342	0.1380	-0.6008	0.1880	-0.5839	0.2407	-0.5904	0.2823	-0.5972	0.3014	-0.5735
33	0.250	0.000	0.1611	-0.3199	0.1682	-0.3748	0.2169	-0.6169	0.3088	-0.6187	0.4180	-0.6127	0.5201	-0.6131	0.6232	-0.6136	0.6564	-0.5882
34	0.250	0.250	0.1597	-0.3518	0.1781	-0.5425	0.2137	-0.6162	0.3035	-0.6234	0.4121	-0.6072	0.5138	-0.6181	0.6148	-0.6003	0.6495	-0.5898
35	0.250	0.417	0.1526	-0.6509	0.1628	-0.8373	0.2065	-0.6377	0.2938	-0.6309	0.3992	-0.6134	0.4993	-0.6329	0.5986	-0.6106	0.6312	-0.6063
36	0.250	0.583	0.1377	-1.0445	0.1446	-1.0578	0.1854	-0.6409	0.2660	-0.6272	0.3584	-0.6127	0.4573	-0.6301	0.5483	-0.6052	0.5798	-0.6045
37	0.250	0.750	0.0814	-1.0289	0.0753	-1.0606	0.1221	-0.6331	0.1839	-0.6161	0.2600	-0.6018	0.3356	-0.6058	0.4123	-0.6062	0.4379	-0.5960
38	0.250	0.833	0.0495	-0.8590	0.0372	-0.9091	0.0814	-0.6272	0.1345	-0.6154	0.2065	-0.6060	0.2691	-0.5997	0.3403	-0.6007	0.3599	-0.5949
39	0.250	0.917	-0.0237	-0.7701	-0.0435	-0.8091	-0.0003	-0.6134	0.0342	-0.6055	0.0904	-0.5994	0.1383	-0.5895	0.1938	-0.5905	0.2079	-0.5818
40	0.156	0.000	-0.0819	-0.3838	-0.1135	-0.3772	-0.0889	-0.5946	-0.0023	-0.6263	0.1044	-0.6113	0.2337	-0.6111	0.3488	-0.5807	0.3930	-0.5724
41	0.156	0.250	-0.0777	-0.3656	-0.1121	-0.3910	-0.0840	-0.6133	0.0034	-0.6380	0.1094	-0.6235	0.2379	-0.6208	0.3499	-0.5935	0.3901	-0.5854
42	0.156	0.417	-0.0754	-0.4979	-0.1104	-0.6502	-0.0794	-0.6187	0.0046	-0.6379	0.1113	-0.6247	0.2349	-0.6206	0.3449	-0.5956	0.3818	-0.5902
43	0.156	0.583	-0.0459	-0.8533	-0.0775	-0.9232	-0.0541	-0.6195	0.0244	-0.6276	0.1297	-0.6100	0.2278	-0.6082	0.3415	-0.5986	0.3765	-0.5720
44	0.156	0.750	-0.0217	-0.9579	-0.0565	-1.0001	-0.0396	-0.6172	0.0197	-0.6206	0.1076	-0.6025	0.1851	-0.6009	0.2806	-0.5914	0.3072	-0.5665
45	0.156	0.833	-0.0111	-0.7380	-0.0510	-0.8016	-0.0364	-0.6035	0.0127	-0.6055	0.0987	-0.5913	0.1556	-0.5946	0.2390	-0.5772	0.2621	-0.5605
46	0.156	0.917	-0.0460	-0.6256	-0.1015	-0.6905	-0.0837	-0.5987	-0.0490	-0.5980	0.0006	-0.5857	0.0631	-0.5758	0.1126	-0.5790	0.1405	-0.5649
47	0.094	0.000	-0.4759	-0.3245	-0.5629	-0.3663	-0.5338	-0.6056	-0.3737	-0.6221	-0.2209	-0.5898	-0.0899	-0.5758	0.0222	-0.5777	0.0701	-0.5624
48	0.094	0.250	-0.3608	-0.3702	-0.4538	-0.3080	-0.4448	-0.6102	-0.3024	-0.6218	-0.1707	-0.5948	-0.0406	-0.5801	0.0860	-0.5771	0.1292	-0.5644
49	0.094	0.417	-0.4338	-0.4707	-0.5122	-0.5872	-0.4868	-0.6030	-0.3306	-0.6118	-0.1975	-0.5883	-0.0742	-0.5859	0.0433	-0.5739	0.0917	-0.5685
50	0.094	0.583	-0.3675	-0.7307	-0.4244	-0.8355	-0.3913	-0.6050	-0.2732	-0.6067	-0.1407	-0.5833	-0.0613	-0.5939	0.0351	-0.5705	0.0760	-0.5717
51	0.094	0.917	-0.0786	-0.5464	-0.1462	-0.6336	-0.1498	-0.5815	-0.1191	-0.5882	-0.0650	-0.5665	-0.0037	-0.5820	0.0583	-0.5662	0.0844	-0.5577
52	0.063	0.000	-0.0870	-0.0442	-0.2039	-0.1073	-0.2814	-0.5934	-0.2307	-0.5864	-0.1556	-0.5555	-0.0695	-0.5388	0.0216	-0.5321	0.0530	-0.5243
53	0.063	0.250	-0.0982	-0.1033	-0.2197	-0.2352	-0.2885	-0.6020	-0.2349	-0.5945	-0.1575	-0.5620	-0.0742	-0.5505	0.0217	-0.5488	0.0514	-0.5323
54	0.063	0.417	-0.0950	-0.2728	-0.2190	-0.4798	-0.2778	-0.6024	-0.2234	-0.5921	-0.1471	-0.5649	-0.0689	-0.5544	0.0271	-0.5545	0.0575	-0.5387
55	0.063	0.583	-0.1071	-0.5079	-0.2178	-0.7444	-0.2451	-0.5900	-0.1946	-0.5808	-0.1284	-0.5637	-0.0451	-0.5548	0.0468	-0.5598	0.0789	-0.5422
56	0.031	0.000	-0.0228	0.0572	-0.1902	0.0363	-0.3077	-0.5816	-0.2883	-0.5730	-0.2412	-0.5426	-0.1793	-0.5196	-0.1041	-0.5275	-0.0762	-0.5138
57	0.031	0.250	-0.0437	0.0499	-0.2032	-0.0711	-0.3176	-0.5710	-0.2986	-0.5554	-0.2504	-0.5302	-0.1875	-0.5151	-0.1137	-0.5252	-0.0831	-0.5145
58	0.031	0.417	-0.0359	-0.0860	-0.2268	-0.3212	-0.2929	-0.5625	-0.2694	-0.5437	-0.2237	-0.5235	-0.1543	-0.5197	-0.0880	-0.5258	-0.0677	-0.5092
59	0.031	0.583	-0.0748	-0.3985	-0.2488	-0.6626	-0.2815	-0.5676	-0.2566	-0.5475	-0.2104	-0.5337	-0.1416	-0.5282	-0.0735	-0.5371	-0.0554	-0.5284
60	0.031	0.750	-0.1407	-0.6530	-0.2632	-0.8176	-0.2778	-0.5621	-0.2566	-0.5409	-0.2096	-0.5374	-0.1438	-0.5354	-0.0724	-0.5354	-0.0526	-0.5369
61	0.375	-0.583	0.2781	-1.2261	0.2926	-1.2897	0.3572	-0.6614	0.4405	-0.6112	0.5388	-0.6000	0.6240	-0.6170	0.7106	-0.6103	0.7308	-0.6085
62	0.156	-0.583	-0.0493	-0.7382	-0.0605	-0.8587	-0.0396	-0.6213	0.0378	-0.6270	0.1435	-0.6124	0.2482	-0.6154	0.3573	-0.5989	0.3898	-0.5897

Table A-5.- (Continued).
M = 0.8

			ALPHA =															
			-2.7	-2.9	-0.1	-0.2	4.9	4.7	9.9	9.7	14.9	14.7	19.8	19.6	24.8	24.5	26.5	26.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.968	0.000	0.1523	0.3053	0.2248	0.2383	0.3739	0.0968	0.5231	-0.0783	0.6650	-0.2857	0.8039	-0.5344	0.9195	-0.6241	0.9586	-0.6197
2	0.896	0.000	0.0953	0.2406	0.1615	0.1783	0.3073	0.0457	0.4428	-0.1141	0.5784	-0.2965	0.7146	-0.5106	0.8264	-0.6018	0.8666	-0.6122
3	0.844	0.000	0.0299	0.1695	0.0960	0.1115	0.2346	-0.0149	0.3665	-0.1627	0.4998	-0.3191	0.6359	-0.5031	0.7475	-0.5642	0.7880	-0.6095
4	0.838	0.115	0.0401	0.1801	0.1138	0.1201	0.2442	-0.0053	0.3815	-0.1502	0.5070	-0.2544	0.6318	-0.5025	0.7426	-0.0629	0.7764	-0.6203
5	0.857	0.182	0.0742	0.2487	0.1581	0.1690	0.3064	0.0267	0.4419	-0.5735	0.5540	-1.2963	0.6616	-1.5941	0.7626	-0.8718	0.7986	-0.6336
6	0.781	0.000	-0.2580	-0.0811	-0.1680	-0.1634	-0.0107	-0.3210	0.1440	-0.5145	0.2933	-0.7006	0.4477	-0.8412	0.5793	-0.7759	0.6254	-0.6200
7	0.719	0.000	-0.1713	-0.0233	-0.0950	-0.0876	0.0295	-0.2185	0.1669	-0.3965	0.2962	-0.6512	0.4324	-0.8343	0.5481	-0.6315	0.5913	-0.6220
8	0.719	0.105	-0.2083	-0.1423	-0.2383	-0.2320	-0.0627	-0.2631	0.1144	-0.4827	0.2710	-0.8544	0.4193	-0.9240	0.5361	-0.6053	0.5812	-0.6242
9	0.733	0.223	-0.1483	0.0299	-0.0546	-0.0430	0.0913	-0.2020	0.2319	-0.3470	0.3442	-0.4206	0.4989	-0.7827	0.6063	-0.7455	0.6471	-0.6237
10	0.751	0.289	-0.0490	0.1108	0.0318	0.0474	0.1846	-0.1007	0.3226	-0.1600	0.4389	-1.3384	0.5563	-1.6441	0.6556	-0.7399	0.6869	-0.6240
11	0.770	0.356	-0.0060	0.1973	0.0955	0.1136	0.2624	-0.0880	0.3955	-0.9750	0.4954	-1.2750	0.5890	-1.7095	0.6762	-0.7635	0.6994	-0.6370
12	0.625	0.000	-0.1513	-0.0291	-0.0883	-0.0782	0.0273	-0.1862	0.1434	-0.3042	0.2489	-0.5315	0.3699	-0.7608	0.4760	-0.5857	0.5101	-0.6384
13	0.625	0.131	-0.1577	-0.0252	-0.0846	-0.0723	0.0258	-0.1993	0.1425	-0.3163	0.2550	-0.5494	0.3721	-0.7634	0.4754	-0.6061	0.5129	-0.6336
14	0.625	0.210	-0.1861	-0.0103	-0.0809	-0.0667	0.0290	-0.2285	0.1434	-0.3314	0.2473	-0.5791	0.3706	-0.7371	0.4728	-0.6053	0.5118	-0.6203
15	0.625	0.306	-0.2534	-0.1694	-0.2625	-0.2484	-0.0873	-0.3068	0.0767	-0.5181	0.2250	-0.6514	0.3629	-0.8700	0.4697	-0.6651	0.5110	-0.6278
16	0.639	0.410	-0.1026	0.0067	-0.0923	-0.0789	0.0677	-0.2451	0.2043	-0.2750	0.3226	-1.3594	0.4413	-1.6441	0.5393	-0.6496	0.5735	-0.6226
17	0.658	0.477	-0.0972	0.0964	-0.0051	0.0150	0.1558	-0.1545	0.2885	-0.9081	0.3954	-1.4896	0.4998	-1.6983	0.5852	-0.6597	0.6120	-0.6359
18	0.676	0.543	-0.0460	0.1750	0.0560	0.0800	0.2388	-0.2350	0.3620	-0.9356	0.4504	-1.3298	0.5325	-1.5783	0.6032	-0.6635	0.6216	-0.6342
19	0.500	0.000	-0.1203	-0.0373	-0.0785	-0.0732	0.0020	-0.1419	0.0896	-0.2005	0.1846	-0.2519	0.2854	-0.3483	0.3718	-0.6278	0.4073	-0.6271
20	0.500	0.222	-0.1337	-0.0433	-0.0901	-0.0828	-0.0067	-0.1566	0.0825	-0.2128	0.1782	-0.2558	0.2825	-0.3578	0.3667	-0.6669	0.4026	-0.6301
21	0.500	0.370	-0.1635	-0.0611	-0.1085	-0.1025	-0.0190	-0.1919	0.0767	-0.2362	0.1727	-0.2304	0.2787	-0.3983	0.3657	-0.6761	0.4015	-0.6283
22	0.500	0.518	-0.2457	-0.1472	-0.2648	-0.2479	-0.0622	-0.2075	0.0366	-0.2758	0.1531	-0.7345	0.2606	-1.1036	0.3537	-0.6635	0.3915	-0.6286
23	0.514	0.660	-0.2596	-0.0910	-0.1663	-0.1546	-0.0254	-0.3068	0.0967	-0.8042	0.2071	-1.2898	0.3043	-1.0802	0.3900	-0.6714	0.4223	-0.6350
24	0.533	0.727	-0.1598	0.0104	-0.0707	-0.0564	0.0752	-0.2075	0.1911	-0.9697	0.2872	-1.0645	0.3671	-1.0363	0.4432	-0.6696	0.4682	-0.6309
25	0.551	0.793	-0.1067	0.1093	0.0001	0.0192	0.1690	-0.4546	0.2850	-0.9355	0.3429	-0.9455	0.4166	-0.9826	0.4763	-0.6516	0.4918	-0.6225
26	0.375	0.000	-0.0880	-0.0419	-0.0683	-0.0598	-0.0183	-0.0952	0.0469	-0.1298	0.1156	-0.2018	0.1967	-0.5645	0.2667	-0.6013	0.2962	-0.6195
27	0.375	0.250	-0.0906	-0.0422	-0.0666	-0.0590	-0.0206	-0.0976	0.0436	-0.1319	0.1117	-0.2113	0.1917	-0.5960	0.2621	-0.6490	0.2916	-0.6264
28	0.375	0.417	-0.0830	-0.0497	-0.0654	-0.0608	-0.0210	-0.1049	0.0384	-0.1327	0.1053	-0.2302	0.1804	-0.7026	0.2509	-0.6612	0.2772	-0.6272
29	0.375	0.583	-0.0870	-0.0483	-0.0606	-0.0570	-0.0216	-0.1086	0.0305	-0.1290	0.0852	-0.2701	0.1534	-0.9526	0.2233	-0.6708	0.2472	-0.6382
30	0.375	0.750	-0.0873	-0.0396	-0.0473	-0.0427	-0.0212	-0.1164	0.0145	-0.1583	0.0473	-0.8382	0.0924	-1.0098	0.1587	-0.6692	0.1760	-0.6320
31	0.375	0.833	-0.0842	-0.0327	-0.0392	-0.0390	-0.0205	-0.1246	0.0023	-0.6434	0.0307	-0.7697	0.0628	-0.9518	0.1296	-0.6451	0.1469	-0.6150
32	0.375	0.917	-0.0902	-0.0322	-0.0387	-0.0360	-0.0270	-0.1409	-0.0301	-0.5648	-0.0168	-0.6715	-0.0118	-0.8751	0.0569	-0.6304	0.0699	-0.6030
33	0.250	0.000	-0.0920	-0.0680	-0.0749	-0.0746	-0.0504	-0.0990	-0.0067	-0.1232	0.0372	-0.1767	0.0922	-0.2940	0.1334	-0.5736	0.1559	-0.6049
34	0.250	0.250	-0.0836	-0.0617	-0.0761	-0.0755	-0.0460	-0.1053	-0.0068	-0.1240	0.0172	-0.1027	0.0905	-0.3033	0.1262	-0.6289	0.1503	-0.6235
35	0.250	0.417	-0.0879	-0.0619	-0.0775	-0.0765	-0.0465	-0.1100	-0.0081	-0.1328	0.0322	-0.1968	0.0835	-0.3760	0.1163	-0.6550	0.1405	-0.6406
36	0.250	0.583	-0.0802	-0.0525	-0.0670	-0.0683	-0.0416	-0.1055	-0.0060	-0.1317	0.0249	-0.2225	0.0704	-0.6609	0.0977	-0.6583	0.1200	-0.6410
37	0.250	0.750	-0.0800	-0.0505	-0.0579	-0.0514	-0.0359	-0.0994	-0.0080	-0.1459	0.0048	-0.6124	0.0317	-0.9028	0.0508	-0.6465	0.0606	-0.6271
38	0.250	0.833	-0.0855	-0.0404	-0.0560	-0.0483	-0.0395	-0.1151	-0.0170	-0.3028	-0.0136	-0.6934	0.0094	-0.8654	0.0159	-0.6304	0.0268	-0.6136
39	0.250	0.917	-0.0952	-0.0445	-0.0527	-0.0444	-0.0393	-0.1735	-0.0322	-0.6357	-0.0674	-0.6564	-0.0351	-0.7629	-0.0454	-0.6195	-0.0356	-0.6049
40	0.156	0.000	-0.1954	-0.1712	-0.1732	-0.1720	-0.1533	-0.1971	-0.1275	-0.2096	-0.1098	-0.2439	-0.0739	-0.2017	-0.0650	-0.5589	-0.0536	-0.5968
41	0.156	0.250	-0.1894	-0.1723	-0.1762	-0.1756	-0.1537	-0.2037	-0.1283	-0.2170	-0.1125	-0.2470	-0.0729	-0.2751	-0.0685	-0.6185	-0.0560	-0.6265
42	0.156	0.417	-0.1883	-0.1744	-0.1774	-0.1748	-0.1540	-0.2099	-0.1289	-0.2170	-0.1123	-0.2286	-0.0740	-0.2741	-0.0738	-0.6364	-0.0630	-0.6356
43	0.156	0.583	-0.1736	-0.1469	-0.1506	-0.1536	-0.1322	-0.1086	-0.1100	-0.1996	-0.0962	-0.2085	-0.0664	-0.4695	-0.0747	-0.6437	-0.0781	-0.6336
44	0.156	0.750	-0.1435	-0.1159	-0.1250	-0.1181	-0.1071	-0.1598	-0.0915	-0.1990	-0.0850	-0.5165	-0.0707	-0.8271	-0.1071	-0.6304	-0.1093	-0.6200
45	0.156	0.833	-0.1330	-0.1049	-0.1085	-0.1011	-0.0946	-0.1602	-0.0827	-0.3115	-0.0809	-0.6227	-0.0644	-0.7551	-0.1195	-0.6122	-0.1200	-0.6053
46	0.156	0.917	-0.1204	-0.0797	-0.0821	-0.0764	-0.0714	-0.2036	-0.0680	-0.5350	-0.0711	-0.5515	-0.0698	-0.5991	-0.1491	-0.5804	-0.1458	-0.5963
47	0.094	0.000	-0.2643	-0.2043	-0.2621	-0.2560	-0.2552	-0.2702	-0.2900	-0.2905	-0.3733	-0.3263	-0.5598	-0.3466	-0.9601	-0.5062	-1.0344	-0.5910
48	0.094	0.250	-0.2627	-0.2668	-0.2665	-0.2619	-0.2497	-0.2749	-0.2867	-0.2918	-0.3927	-0.3324	-0.5036	-0.3768	-0.9577	-0.5710	-1.0377	-0.6105
49	0.094	0.417	-0.2743	-0.2719	-0.2782	-0.2762	-0.2575	-0.2057	-0.2915	-0.3121	-0.4172	-0.3565	-0.5112	-0.4509	-0.9358	-0.5960	-1.0290	-0.6103
50	0.094	0.583	-0.3071	-0.3052	-0.3109	-0.3142	-0.2477	-0.3152	-0.3191	-0.3632	-0.4808	-0.4145	-0.5441	-0.5705	-0.9495	-0.6073	-1.0486	-0.6108
51	0.094	0.917	-0.1556	-0.1312	-0.1205	-0.1176	-0.1150	-0.2475	-0.1095	-0.4603	-0.1323	-0.4048	-0.1442	-0.4907	-0.2480	-0.5676	-0.3129	-0.5732
52	0.063	0.000	-0.1485	-0.1955	-0.1510	-0.1426	-0.1450	-0.1616	-0.1660	-0.1783	-0.2313	-0.2183	-0.4237	-0.2518	-0.8899	-0.4636	-0.9990	-0.5660
53	0.063	0.250	-0.1536	-0.1558	-0.1561	-0.1490	-0.1452	-0.1615	-0.1660	-0.1043	-0.2390	-0.2321	-0.4081	-0.2742	-0.8960	-0.5314	-1.0288	-0.5947
54	0.063	0.417	-0.1584	-0.1607	-0.1679	-0.1606	-0.1507	-0.1619	-0.1686	-0.1985	-0.2525	-0.2587	-0.4011	-0.3120	-0.8911	-0.5724	-1.0206	-0.6043
55	0.063	0.583	-0.1582	-0.1703	-0.1748	-0.1694	-0.1631	-0.1769	-0.1651	-0.2262	-0.2639	-0.2880	-0.3679	-0.3680	-0.8344	-0.5806	-0.9537	-0.5956
56	0.031	0.000	-0.0925	-0.1030	-0.1031	-0.0910	-0.0946	-0.1077	-0.1022	-0.1155	-0.1545	-0.1675	-0.2517	-0.2028	-0.5816	-0.3811	-0.7228	-0.5339
57	0.031	0.250	-0.0911	-0.0897	-0.0933	-0.0842	-0.0840	-0.0000	-0.0906	-0.1126	-0.1465	-0.1658	-0.2433	-0.1979	-0.5822	-0.4775	-0.7475	-0.5530
58	0.031	0.417	-0.0882	-0.0936	-0.0955	-0.0900	-0.0890	-0.0869	-0.0857	-0.1161	-0.1457	-0.1864	-0.2120	-0.2187	-0.5706	-0.5354	-0.6287	-0.5627
59	0.031	0.583	-0.0795	-0.0995	-0.0850	-0.0915	-0.0897	-0.0847	-0.0764	-0.1304	-0.1149	-0.2252	-0.1619	-0.2681	-0.4538	-0.5660	-0.3881	-0.5774
60	0.031	0.750	-0.0731	-0.0734	-0.0664	-0.0754	-0.0383	-0.0870	-0.0175	-0.0948	-0.0805	-0.2718	-0.1296	-0.4535	-0.3158	-0.5577	-0.3028	-0.5726
61	0.375	-0.583	-0.0964	-0.0467	-0.0578	-0.0565	-0.0177	-0.1078	0.0319	-0.1179	0.0848	-0.1844	0.1523	-0.9504	0.2247	-1.0199	0.2581	-0.9319
62	0.156	-0.583	-0.1792	-0.1469	-0.1540	-0.1587	-0.1275	-0.1866	-0.1069	-0.1907	-0.0974	-0.2082	-0.0693	-0.4492	-0.0719	-0.6346	-0.0627	-0.6697

Table A-5.- (Continued).
M = 0.8

			ALPHA =																			
			27.3	27.0	30.1	29.9	35.0	34.8	40.0	39.7	45.0	44.7	49.9	49.7	54.9	54.7	56.5	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.944	0.000	0.9734	-0.6155	1.0282	-0.6912	1.1005	-0.6788	1.1484	-0.5927	1.1624	-0.5483	1.1696	-0.5542	1.1403	-0.5869	1.1255	-0.5913
2	0.896	0.000	0.8835	-0.6199	0.9447	-0.6734	1.0284	-0.6561	1.0951	-0.6025	1.1349	-0.5567	1.1705	-0.5618	1.1718	-0.5944	1.1660	-0.6016
3	0.844	0.000	0.8874	-0.6165	0.8713	-0.6549	0.9631	-0.6223	1.0409	-0.5956	1.1001	-0.5528	1.1491	-0.5580	1.1718	-0.5937	1.1706	-0.6004
4	0.838	0.115	0.7931	-0.6251	0.8483	-0.7575	0.9329	-0.6108	0.9997	-0.5821	1.0545	-0.5512	1.0946	-0.5543	1.1127	-0.5860	1.1127	-0.6033
5	0.857	0.182	0.7891	-0.6318	0.8384	-0.7816	0.9046	-0.6199	0.9491	-0.5881	0.9807	-0.5597	1.0025	-0.5589	0.9984	-0.5913	0.9933	-0.6088
6	0.781	0.000	0.6516	-0.6342	0.7237	-0.6931	0.8302	-0.6140	0.9373	-0.5931	1.0252	-0.5687	1.1005	-0.5714	1.1449	-0.6014	1.1554	-0.6221
7	0.719	0.000	0.6164	-0.6253	0.6812	-0.6720	0.7914	-0.6056	0.8900	-0.5913	0.9815	-0.5705	1.0577	-0.5598	1.1208	-0.6084	1.1297	-0.6156
8	0.719	0.105	0.6096	-0.6222	0.6734	-0.7095	0.7865	-0.6099	0.8824	-0.5951	0.9749	-0.5680	1.0492	-0.5558	1.1125	-0.6036	1.1200	-0.6143
9	0.733	0.223	0.6672	-0.6197	0.7246	-0.7376	0.8213	-0.6054	0.9030	-0.5896	0.9752	-0.5607	1.0320	-0.5498	1.0771	-0.5992	1.0812	-0.6045
10	0.751	0.289	0.6993	-0.6187	0.7530	-0.7414	0.8319	-0.6081	0.9002	-0.5839	0.9545	-0.5633	0.9982	-0.5556	1.0230	-0.5948	1.0254	-0.6061
11	0.770	0.356	0.6986	-0.6285	0.7410	-0.7511	0.7981	-0.6161	0.8414	-0.5928	0.8714	-0.5696	0.8905	-0.5584	0.8943	-0.6030	0.8920	-0.6139
12	0.625	0.000	0.5350	-0.6333	0.5953	-0.6727	0.7035	-0.6112	0.8067	-0.6003	0.9026	-0.5788	0.9892	-0.5657	1.0611	-0.6161	1.0794	-0.6273
13	0.625	0.131	0.5350	-0.6230	0.5957	-0.6945	0.7072	-0.6102	0.8049	-0.5950	0.8967	-0.5686	0.9854	-0.5631	1.0558	-0.6047	1.0703	-0.6147
14	0.625	0.210	0.5353	-0.6227	0.5971	-0.7137	0.7069	-0.6145	0.8037	-0.5951	0.8947	-0.5675	0.9801	-0.5623	1.0508	-0.6041	1.0638	-0.6152
15	0.625	0.306	0.5352	-0.6197	0.5987	-0.7160	0.7073	-0.6086	0.8029	-0.5905	0.8906	-0.5584	0.9716	-0.5575	1.0360	-0.6020	1.0481	-0.6123
16	0.639	0.410	0.5940	-0.6233	0.6409	-0.7151	0.7360	-0.6123	0.8160	-0.5839	0.8857	-0.5694	0.9516	-0.5621	0.9912	-0.6004	0.9987	-0.6102
17	0.658	0.477	0.6246	-0.6332	0.6701	-0.7240	0.7409	-0.6227	0.8044	-0.5942	0.8531	-0.5796	0.9059	-0.5663	0.9285	-0.6072	0.9329	-0.6214
18	0.676	0.543	0.6256	-0.6356	0.6605	-0.7216	0.7101	-0.6211	0.7481	-0.5955	0.7743	-0.5802	0.8036	-0.5648	0.8874	-0.6047	0.8843	-0.6244
19	0.500	0.000	0.4746	-0.6262	0.4907	-0.6557	0.5959	-0.6070	0.6961	-0.5978	0.7950	-0.5738	0.8973	-0.5644	0.9779	-0.6192	0.9972	-0.6399
20	0.500	0.222	0.4204	-0.6202	0.4031	-0.6878	0.5878	-0.6150	0.6892	-0.5979	0.7860	-0.5684	0.8882	-0.5658	0.9664	-0.6166	0.9855	-0.6412
21	0.500	0.370	0.4195	-0.6243	0.4816	-0.6935	0.5836	-0.6099	0.6834	-0.5896	0.7782	-0.5607	0.8767	-0.5607	0.9500	-0.6079	0.9679	-0.6362
22	0.500	0.518	0.4099	-0.6228	0.4691	-0.6889	0.5784	-0.6109	0.6648	-0.5909	0.7541	-0.5717	0.8561	-0.5648	0.9159	-0.6013	0.9321	-0.6171
23	0.514	0.640	0.4345	-0.6285	0.4855	-0.6977	0.5715	-0.6284	0.6490	-0.5999	0.7181	-0.5810	0.8000	-0.5691	0.8402	-0.6119	0.8491	-0.6247
24	0.533	0.727	0.4756	-0.6290	0.5175	-0.6979	0.5871	-0.6192	0.6477	-0.5984	0.7015	-0.5788	0.7669	-0.5719	0.7934	-0.6138	0.7969	-0.6221
25	0.551	0.793	0.4907	-0.6160	0.5205	-0.6945	0.5661	-0.6121	0.6007	-0.5903	0.6351	-0.5690	0.6720	-0.5603	0.6823	-0.6042	0.6765	-0.6217
26	0.375	0.000	0.3107	-0.6157	0.3687	-0.6498	0.4682	-0.6126	0.5650	-0.6039	0.6759	-0.5871	0.7892	-0.5793	0.8745	-0.6245	0.8925	-0.6490
27	0.375	9.250	0.3085	-0.6207	0.3636	-0.6742	0.4613	-0.6177	0.5570	-0.5965	0.6663	-0.5807	0.7787	-0.5749	0.8623	-0.6167	0.8812	-0.6390
28	0.375	0.417	0.2961	-0.6265	0.3455	-0.6870	0.4438	-0.6192	0.5391	-0.5987	0.6420	-0.5811	0.7569	-0.5786	0.8382	-0.6175	0.8554	-0.6323
29	0.375	0.583	0.2614	-0.6341	0.3093	-0.7040	0.4040	-0.6330	0.4922	-0.6065	0.5897	-0.5938	0.7020	-0.5802	0.7754	-0.6289	0.7934	-0.6406
30	0.375	0.750	0.1803	-0.6323	0.2204	-0.7050	0.3013	-0.6301	0.3777	-0.6003	0.4577	-0.5941	0.5545	-0.5870	0.6165	-0.6257	0.6311	-0.6401
31	0.375	0.833	0.1444	-0.6188	0.1855	-0.6931	0.2585	-0.6196	0.3285	-0.5903	0.4053	-0.5827	0.4911	-0.5691	0.5519	-0.6164	0.5638	-0.6319
32	0.375	0.917	0.0583	-0.6093	0.0904	-0.6878	0.1514	-0.6163	0.2097	-0.5844	0.2730	-0.5792	0.3468	-0.5669	0.3972	-0.6087	0.4073	-0.6315
33	0.250	0.000	0.1691	-0.6041	0.2187	-0.6283	0.3070	-0.6067	0.3974	-0.6002	0.5837	-0.5904	0.6248	-0.5785	0.7214	-0.6222	0.7418	-0.6445
34	0.250	0.250	0.1655	-0.6237	0.2116	-0.6566	0.2987	-0.6201	0.3890	-0.5987	0.4945	-0.5895	0.6130	-0.5947	0.7075	-0.6272	0.7327	-0.6360
35	0.250	0.417	0.1532	-0.6482	0.1997	-0.6893	0.2848	-0.6363	0.3729	-0.6093	0.4771	-0.6024	0.5960	-0.6018	0.6875	-0.6359	0.7142	-0.6499
36	0.250	0.583	0.1296	-0.6447	0.1716	-0.7031	0.2503	-0.6382	0.3367	-0.6127	0.4361	-0.6042	0.5503	-0.6026	0.6370	-0.6347	0.6607	-0.6538
37	0.250	0.750	0.0672	-0.6221	0.0977	-0.6959	0.1686	-0.6284	0.2405	-0.6006	0.3256	-0.5955	0.4324	-0.5927	0.5013	-0.6313	0.5183	-0.6394
38	0.250	0.833	0.0318	-0.6134	0.0574	-0.6878	0.1207	-0.6242	0.1874	-0.5951	0.2665	-0.5913	0.3655	-0.5894	0.4311	-0.6235	0.4464	-0.6375
39	0.250	0.917	-0.0355	-0.6037	-0.0157	-0.6747	0.0313	-0.6132	0.0868	-0.5859	0.1507	-0.5830	0.2344	-0.5808	0.2894	-0.6144	0.3048	-0.6298
40	0.156	0.000	-0.0427	-0.5910	-0.0094	-0.6253	0.0577	-0.6031	0.1329	-0.6026	0.2257	-0.5993	0.3592	-0.5924	0.4645	-0.6198	0.4956	-0.6356
41	0.156	0.250	-0.0449	-0.6224	-0.0116	-0.6509	0.0569	-0.6227	0.1306	-0.6130	0.2253	-0.6095	0.3585	-0.6008	0.4614	-0.6307	0.4912	-0.6467
42	0.156	0.417	-0.0852	-0.6366	-0.0238	-0.6760	0.0450	-0.6287	0.1286	-0.6155	0.2153	-0.6100	0.3435	-0.6021	0.4512	-0.6352	0.4782	-0.6467
43	0.156	0.583	-0.0592	-0.6300	-0.0329	-0.6904	0.0332	-0.6196	0.1086	-0.6114	0.2048	-0.6054	0.3340	-0.5876	0.4350	-0.6236	0.4589	-0.6403
44	0.156	0.750	-0.0986	-0.6176	-0.0815	-0.6762	-0.0164	-0.6177	0.0544	-0.6021	0.1489	-0.5956	0.2670	-0.5779	0.3583	-0.6124	0.3801	-0.6352
45	0.156	0.833	-0.1098	-0.6014	-0.0951	-0.6609	-0.0332	-0.6090	0.0362	-0.5910	0.1256	-0.5853	0.2340	-0.5712	0.3162	-0.6056	0.3360	-0.6289
46	0.156	0.917	-0.1414	-0.5910	-0.1387	-0.6479	-0.0872	-0.6067	-0.0244	-0.5835	0.0416	-0.5745	0.1343	-0.5814	0.1993	-0.6087	0.2149	-0.6158
47	0.094	0.000	-1.0756	-0.5790	-1.0696	-0.6088	-0.9417	-0.6063	-0.7796	-0.6126	-0.6102	-0.6043	-0.3006	-0.5943	0.0164	-0.6180	0.0747	-0.6242
48	0.094	0.250	-1.0785	-0.6066	-1.0792	-0.6243	-0.9714	-0.6126	-0.8026	-0.6141	-0.6157	-0.6009	-0.2010	-0.5974	0.1308	-0.6204	0.1868	-0.6273
49	0.094	0.417	-0.9975	-0.6109	-1.0377	-0.6454	-0.8820	-0.6098	-0.7225	-0.6114	-0.5545	-0.5974	-0.2436	-0.5899	0.0271	-0.6103	0.0868	-0.6217
50	0.094	0.583	-0.9851	-0.6140	-1.0420	-0.6567	-0.8519	-0.6113	-0.7018	-0.6062	-0.4973	-0.5942	-0.2037	-0.5829	0.0327	-0.6022	0.0818	-0.6203
51	0.094	0.917	-0.2786	-0.5761	-0.2760	-0.6306	-0.1852	-0.5939	-0.1122	-0.5818	-0.0780	-0.5737	0.0559	-0.5653	0.1231	-0.5877	0.1452	-0.6105
52	0.063	0.000	-1.0481	-0.5516	-1.0310	-0.5236	-0.8060	-0.5805	-0.2994	-0.6047	-0.0211	-0.5904	0.0635	-0.5703	0.1913	-0.5962	0.1795	-0.5959
53	0.063	0.250	-0.9880	-0.5873	-1.0561	-0.5746	-0.6803	-0.5988	-0.2494	-0.6159	-0.0450	-0.5995	0.0556	-0.5780	0.1454	-0.6087	0.1734	-0.6088
54	0.063	0.417	-0.9407	-0.5996	-1.0208	-0.6209	-0.6696	-0.6097	-0.2239	-0.6174	-0.0209	-0.5961	0.0606	-0.5790	0.1477	-0.6099	0.1758	-0.6145
55	0.063	0.583	-0.8441	-0.5936	-0.7949	-0.6393	-0.4421	-0.6070	-0.1252	-0.6028	-0.0148	-0.5785	0.0733	-0.5714	0.1593	-0.6037	0.1884	-0.6109
56	0.031	0.000	-0.7713	-0.5312	-0.7420	-0.4785	-0.2867	-0.5734	-0.1815	-0.6109	-0.1355	-0.5815	-0.0447	-0.5714	0.0331	-0.5967	0.0578	-0.6000
57	0.031	0.250	-0.5557	-0.5555	-0.5763	-0.5277	-0.2927	-0.5760	-0.1945	-0.6016	-0.1453	-0.5737	-0.0559	-0.5653	0.0206	-0.5877	0.0471	-0.5917
58	0.031	0.417	-0.5190	-0.5675	-0.5010	-0.5071	-0.2580	-0.5902	-0.1699	-0.5941	-0.1782	-0.5713	-0.0395	-0.5511	0.0372	-0.5768	0.0577	-0.5927
59	0.031	0.583	-0.3619	-0.5790	-0.2773	-0.6312	-0.2006	-0.6068	-0.1764	-0.5975	-0.1266	-0.5758	-0.0304	-0.5523	0.0437	-0.5852	0.0629	-0.6013
60	0.031	0.750	-0.2462	-0.5762	-0.2590	-0.6330	-0.2465	-0.6031	-0.2098	-0.5869	-0.1484	-0.5667	-0.0468	-0.5459	0.0290	-0.5828	0.0466	-0.5960
61	0.375	-0.583	0.2757	-0.6524	0.3249	-0.6921	0.4728	-0.6084	0.5072	-0.6067	0.6076	-0.5993	0.7219	-0.5909	0.7895	-0.6253	0.8108	-0.6347
62	0.156	-0.583	-0.0423	-0.6319	-0.0150	-0.6595	0.0509	-0.6126	0.1221	-0.6109	0.2235	-0.6072	0.3492	-0.5981	0.4473	-0.6217	0.4782	-0.6291

Table A-5.- (Continued).
M = 0.9

			ALPHA =															
			-2.9	-3.0	-0.2	-0.4	4.8	4.6	9.7	9.6	14.7	14.6	19.7	19.5	24.7	24.5	26.4	26.2
TUBE	X/L	Y/R/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.948	0.000	0.1923	0.3489	0.2641	0.2788	0.3966	0.1476	0.5485	-0.0051	0.6466	-0.1789	0.8336	-0.3526	0.9506	-0.5310	0.9958	-0.5243
2	0.896	0.000	0.1303	0.2755	0.2028	0.2191	0.3269	0.0948	0.4658	-0.0462	0.6087	-0.2014	0.7430	-0.3744	0.8645	-0.4829	0.9073	-0.5330
3	0.844	0.000	0.0776	0.2074	0.1384	0.1546	0.2575	0.0397	0.3903	-0.0800	0.5293	-0.2230	0.6634	-0.3773	0.7855	-0.4414	0.8296	-0.5237
4	0.838	0.115	0.0862	0.2226	0.1489	0.1638	0.2664	0.0441	0.4024	-0.0781	0.5334	-0.1732	0.6628	-0.4081	0.7819	-0.8676	0.8244	-0.7297
5	0.857	0.192	0.1206	0.2808	0.1917	0.2110	0.3243	0.0759	0.4616	-0.4421	0.5822	-1.0862	0.6956	-1.2583	0.8036	-0.9559	0.8382	-0.7390
6	0.781	0.000	-0.2351	-0.0441	-0.1517	-0.1345	-0.0056	-0.2962	0.1546	-0.4332	0.3143	-0.5358	0.4720	-0.6626	0.6164	-0.7457	0.6697	-0.7167
7	0.719	0.000	-0.1614	-0.0162	-0.0896	-0.0706	0.0323	-0.2135	0.1754	-0.4026	0.3228	-0.5351	0.4611	-0.6414	0.5847	-0.6360	0.6306	-0.5975
8	0.719	0.105	-0.1977	-0.1359	-0.2305	-0.2149	-0.0596	-0.2587	0.1213	-0.4655	0.2942	-0.7035	0.4442	-0.7272	0.5739	-0.6475	0.6289	-0.6292
9	0.733	0.223	-0.1269	0.0467	-0.0360	-0.0148	0.1008	-0.1792	0.2462	-0.3005	0.3903	-0.3105	0.5231	-0.6312	0.6432	-0.7618	0.6944	-0.6726
10	0.751	0.289	-0.0217	0.1442	0.0563	0.0777	0.1929	-0.0720	0.3352	-0.1462	0.4623	-1.0634	0.5837	-1.2431	0.6944	-0.7857	0.7353	-0.6681
11	0.770	0.356	0.0257	0.2230	0.1208	0.1465	0.2713	-0.0370	0.4091	-0.7462	0.5210	-1.0486	0.6201	-1.2392	0.7166	-0.7734	0.7482	-0.6697
12	0.625	0.000	-0.1497	-0.0151	-0.0858	-0.0688	0.0263	-0.2052	0.1492	-0.3820	0.2706	-0.5537	0.3948	-0.4577	0.5120	-0.5846	0.5612	-0.5731
13	0.625	0.131	-0.1610	-0.0148	-0.0824	-0.0720	0.0247	-0.2157	0.1534	-0.3964	0.2777	-0.5562	0.4005	-0.4886	0.5173	-0.6117	0.5642	-0.6135
14	0.625	0.218	-0.1867	-0.0024	-0.0635	-0.0576	0.0371	-0.2474	0.1566	-0.4134	0.2689	-0.5621	0.3973	-0.5558	0.5159	-0.6515	0.5646	-0.6296
15	0.625	0.306	-0.2639	-0.1630	-0.2526	-0.2446	-0.0989	-0.3484	0.0806	-0.6619	0.2437	-0.6659	0.3885	-0.7703	0.5133	-0.6676	0.5622	-0.6128
16	0.639	0.410	-0.1626	0.0161	-0.0703	-0.0540	0.0689	-0.2453	0.2099	-0.3651	0.3466	-1.1273	0.4720	-0.8919	0.5813	-0.6536	0.6225	-0.5942
17	0.658	0.477	-0.0720	0.1111	0.0153	0.0362	0.1601	-0.1391	0.2958	-0.7129	0.4169	-1.2245	0.5296	-0.8771	0.6273	-0.6604	0.6622	-0.6026
18	0.676	0.543	-0.0171	0.1914	0.0795	0.1048	0.2425	-0.1384	0.3689	-0.8015	0.4743	-1.0812	0.5653	-0.8167	0.6463	-0.6546	0.6719	-0.6846
19	0.500	0.000	-0.1534	-0.0489	-0.0935	-0.0887	-0.0082	-0.1874	0.0895	-0.3694	0.1966	-0.5487	0.3112	-0.4444	0.4189	-0.4957	0.4646	-0.5748
20	0.500	0.222	-0.1688	-0.0602	-0.1056	-0.1012	-0.0177	-0.2081	0.0808	-0.3854	0.1905	-0.5569	0.3061	-0.5261	0.4149	-0.6122	0.4611	-0.6054
21	0.500	0.370	-0.2002	-0.0760	-0.1253	-0.1197	-0.0299	-0.2488	0.0749	-0.4182	0.1841	-0.5581	0.3029	-0.6673	0.4125	-0.6250	0.4589	-0.6023
22	0.500	0.518	-0.2743	-0.1884	-0.3131	-0.3037	-0.0885	-0.3506	0.0318	-0.5259	0.1655	-1.0860	0.2891	-0.7091	0.4033	-0.6209	0.4453	-0.6051
23	0.514	0.660	-0.2516	-0.0651	-0.1478	-0.1335	-0.0118	-0.3181	0.1083	-0.7799	0.2269	-1.1737	0.3375	-0.7082	0.4413	-0.6254	0.4766	-0.6106
24	0.533	0.727	-0.1439	0.0434	-0.0460	-0.0258	0.0921	-0.1998	0.2030	-0.9192	0.3116	-1.1878	0.4028	-0.7035	0.4933	-0.6241	0.5204	-0.6118
25	0.551	0.793	-0.0794	0.1403	0.0241	0.0524	0.1090	-0.3865	0.2960	-0.9434	0.3816	-1.1332	0.4518	-0.6824	0.5284	-0.6104	0.5461	-0.6007
26	0.375	0.000	-0.0723	-0.0484	-0.0564	-0.0581	-0.0195	-0.0779	0.0425	-0.0773	0.1290	-0.1009	0.2171	-0.4579	0.3219	-0.6034	0.3580	-0.5857
27	0.375	0.250	-0.0719	-0.0430	-0.0557	-0.0547	-0.0220	-0.0758	0.0397	-0.0713	0.1241	-0.1156	0.2120	-0.5703	0.3162	-0.6055	0.3509	-0.6014
28	0.375	0.417	-0.0679	-0.0440	-0.0510	-0.0496	-0.0247	-0.0781	0.0336	-0.0666	0.1152	-0.0957	0.2030	-0.6511	0.3088	-0.6188	0.3418	-0.6060
29	0.375	0.583	-0.0594	-0.0335	-0.0395	-0.0360	-0.0180	-0.0683	0.0266	-0.0828	0.0913	-0.5417	0.1720	-0.6847	0.2725	-0.6298	0.3098	-0.6151
30	0.375	0.750	-0.0405	0.0078	-0.0239	-0.0165	0.0106	-0.0609	0.0095	-0.3043	0.0509	-0.8481	0.1078	-0.6810	0.2055	-0.6263	0.2378	-0.6163
31	0.375	0.833	-0.0519	0.0205	-0.0060	-0.0033	0.0167	-0.0934	0.0654	-0.6765	0.0222	-0.8126	0.0772	-0.6696	0.1786	-0.6227	0.2030	-0.5998
32	0.375	0.917	-0.0740	-0.0002	-0.0164	-0.0145	-0.0006	-0.1281	-0.0226	-0.6988	-0.0387	-0.7731	-0.0042	-0.6625	0.1071	-0.6161	0.1277	-0.5905
33	0.250	0.000	-0.0671	-0.0473	-0.0513	-0.0482	-0.0365	-0.0679	0.0098	-0.0721	0.0649	-0.1364	0.1304	-0.5451	0.2066	-0.5417	0.2393	-0.5708
34	0.250	0.250	-0.0631	-0.0462	-0.0479	-0.0466	-0.0322	-0.0676	0.0138	-0.0701	0.0636	-0.1506	0.1261	-0.5390	0.2009	-0.6039	0.2373	-0.5994
35	0.250	0.417	-0.0652	-0.0473	-0.0493	-0.0475	-0.0337	-0.0754	0.0103	-0.0780	0.0559	-0.1758	0.1138	-0.6107	0.1882	-0.6272	0.2226	-0.6120
36	0.250	0.583	-0.0612	-0.0421	-0.0438	-0.0410	-0.0315	-0.0752	0.0081	-0.0739	0.0459	-0.2320	0.0908	-0.6487	0.1649	-0.6290	0.1962	-0.6140
37	0.250	0.750	-0.0616	-0.0325	-0.0331	-0.0346	-0.0273	-0.0832	-0.0007	-0.0950	0.0204	-0.5980	0.0378	-0.6528	0.1076	-0.6139	0.1347	-0.6077
38	0.250	0.833	-0.0696	-0.0353	-0.0358	-0.0350	-0.0336	-0.1067	-0.0112	-0.2305	0.0014	-0.6326	0.0038	-0.6446	0.0787	-0.6087	0.0955	-0.6028
39	0.250	0.917	-0.0859	-0.0325	-0.0351	-0.0322	-0.0356	-0.1606	-0.0277	-0.6492	-0.0319	-0.5759	-0.0531	-0.6321	0.0056	-0.5994	0.0255	-0.5962
40	0.156	0.000	-0.1373	-0.1206	-0.1207	-0.1200	-0.1101	-0.1395	-0.0714	-0.1501	-0.0372	-0.1967	0.0033	-0.4312	0.0507	-0.5577	0.0790	-0.5819
41	0.156	0.250	-0.1407	-0.1219	-0.1215	-0.1221	-0.1097	-0.1470	-0.0712	-0.1534	-0.0409	-0.1992	0.0011	-0.4790	0.0456	-0.6033	0.0731	-0.6044
42	0.156	0.417	-0.1448	-0.1241	-0.1228	-0.1238	-0.1099	-0.1550	-0.0731	-0.1489	-0.0456	-0.1827	-0.0056	-0.5620	0.0369	-0.6124	0.0633	-0.6095
43	0.156	0.583	-0.1312	-0.1059	-0.1113	-0.1094	-0.0995	-0.1451	-0.0648	-0.1348	-0.0399	-0.1886	-0.0122	-0.6034	0.0251	-0.6095	0.0493	-0.6077
44	0.156	0.750	-0.1174	-0.0961	-0.0999	-0.0994	-0.0918	-0.1392	-0.0685	-0.1495	-0.0536	-0.5195	-0.0495	-0.6179	-0.0230	-0.6026	-0.0022	-0.6033
45	0.156	0.833	-0.1160	-0.0934	-0.0938	-0.0920	-0.0905	-0.1501	-0.0686	-0.2378	-0.0612	-0.5746	-0.0628	-0.6047	-0.0444	-0.5938	-0.0269	-0.5903
46	0.156	0.917	-0.1155	-0.0799	-0.0720	-0.0716	-0.0788	-0.2004	-0.0644	-0.4735	-0.0688	-0.5395	-0.0954	-0.5857	-0.0875	-0.5904	-0.0736	-0.5902
47	0.094	0.000	-0.2743	-0.2801	-0.2663	-0.2642	-0.2707	-0.2881	-0.2606	-0.3315	-0.3152	-0.4410	-0.5755	-0.6461	-0.7709	-0.7969	-0.7880	-0.6018
48	0.094	0.250	-0.2796	-0.2853	-0.2750	-0.2740	-0.2746	-0.2993	-0.2534	-0.3407	-0.3201	-0.4471	-0.4486	-0.6631	-0.7606	-0.5994	-0.7931	-0.6010
49	0.094	0.417	-0.2958	-0.2810	-0.2890	-0.2885	-0.2679	-0.3071	-0.2476	-0.4003	-0.3330	-0.4256	-0.4049	-0.5919	-0.7470	-0.5918	-0.7769	-0.5944
50	0.094	0.583	-0.3236	-0.3065	-0.3315	-0.3264	-0.2941	-0.3330	-0.2751	-0.4734	-0.3969	-0.4855	-0.3954	-0.5659	-0.7507	-0.5890	-0.7940	-0.5927
51	0.094	0.917	-0.2028	-0.1660	-0.1498	-0.1557	-0.1510	-0.2806	-0.1252	-0.3982	-0.1601	-0.5018	-0.1655	-0.5490	-0.2612	-0.5742	-0.2555	-0.5809
52	0.063	0.000	-0.2019	-0.2085	-0.1969	-0.2025	-0.2029	-0.2217	-0.1893	-0.2467	-0.2348	-0.3311	-0.4754	-0.4443	-0.7546	-0.5590	-0.7595	-0.5653
53	0.063	0.250	-0.2032	-0.2090	-0.1999	-0.2059	-0.1996	-0.2240	-0.1812	-0.2587	-0.2364	-0.3340	-0.4306	-0.4817	-0.7526	-0.5651	-0.7787	-0.5898
54	0.063	0.417	-0.2104	-0.2168	-0.2181	-0.2230	-0.2075	-0.2285	-0.1828	-0.2846	-0.2501	-0.3458	-0.4125	-0.4802	-0.7552	-0.5846	-0.7720	-0.5942
55	0.063	0.583	-0.2403	-0.2416	-0.2446	-0.2471	-0.2278	-0.2475	-0.1990	-0.2990	-0.2989	-0.3746	-0.3867	-0.5160	-0.7497	-0.5848	-0.7698	-0.5931
56	0.031	0.000	-0.1850	-0.1915	-0.1760	-0.1739	-0.1808	-0.1906	-0.1731	-0.2217	-0.2121	-0.3063	-0.3699	-0.4042	-0.6649	-0.4510	-0.7008	-0.5536
57	0.031	0.250	-0.1662	-0.1678	-0.1550	-0.1540	-0.1524	-0.1671	-0.1457	-0.2068	-0.1912	-0.2845	-0.3667	-0.3986	-0.6111	-0.5317	-0.6686	-0.5809
58	0.031	0.417	-0.1652	-0.1761	-0.1471	-0.1678	-0.1563	-0.1647	-0.1382	-0.2208	-0.2068	-0.2915	-0.3394	-0.4099	-0.6142	-0.5651	-0.6850	-0.5745
59	0.031	0.583	-0.1899	-0.2054	-0.1798	-0.1905	-0.1835	-0.1917	-0.1528	-0.2254	-0.2306	-0.3327	-0.3012	-0.4706	-0.6071	-0.5051	-0.6604	-0.5831
60	0.031	0.750	-0.1555	-0.1050	-0.1273	-0.1407	-0.1358	-0.1474	-0.1194	-0.1871	-0.1842	-0.3440	-0.2150	-0.5220	-0.5505	-0.5814	-0.5396	-0.5767
61	0.375	-0.583	-0.0638	-0.0414	-0.0402	-0.0442	-0.0220	-0.0638	0.0270	-0.0613	0.0952	-0.4296	0.1719	-0.8060	0.2664	-0.9289	0.3070	-1.0620
62	0.156	-0.583	-0.1385	-0.1096	-0.1118	-0.1099	-0.0980	-0.1417	-0.0668	-0.1337	-0.0426	-0.2036	-0.0174	-0.5620	0.0269	-0.6869	0.0475	-0.7244

Table A-5.- (Continued).
M = 0.9

			ALPHA =															
			27.1	26.9	29.9	29.7	34.9	34.7	39.9	39.7	44.9	44.6	49.8	49.6	54.8	54.6	56.4	56.1
TUBE	X/L	Y/D/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.948	0.000	1.0176	-0.5238	1.0697	-0.5601	1.1415	-0.6358	1.1690	-0.5980	1.2137	-0.5451	1.2099	-0.5492	1.1872	-0.5562	1.1713	-0.5618
2	0.896	0.000	0.9290	-0.5292	0.9860	-0.5735	1.0691	-0.6151	1.1344	-0.5995	1.1868	-0.5604	1.2069	-0.5614	1.2153	-0.5701	1.2082	-0.5753
3	0.844	0.000	0.8522	-0.5208	0.9131	-0.5625	1.0066	-0.6011	1.0827	-0.5840	1.1483	-0.5579	1.1857	-0.5588	1.2123	-0.5686	1.2096	-0.5726
4	0.838	0.115	0.8309	-0.6475	0.8918	-0.6943	0.9744	-0.6301	1.0448	-0.5777	1.1009	-0.5550	1.1359	-0.5561	1.1578	-0.5628	1.1540	-0.5707
5	0.857	0.182	0.8338	-0.6484	0.8814	-0.6990	0.9471	-0.6368	0.9980	-0.5791	1.0336	-0.5576	1.0485	-0.5568	1.0533	-0.5649	1.0434	-0.5701
6	0.781	0.000	0.6915	-0.5896	0.7674	-0.6783	0.8793	-0.6093	0.9889	-0.5821	1.0691	-0.5687	1.1334	-0.5708	1.1881	-0.5709	1.1929	-0.5824
7	0.719	0.000	0.6601	-0.5501	0.7296	-0.6176	0.8386	-0.6037	0.9345	-0.5802	1.0248	-0.5659	1.0917	-0.5643	1.1568	-0.5770	1.1678	-0.5850
8	0.719	0.105	0.6528	-0.5847	0.7229	-0.6476	0.8333	-0.6142	0.9299	-0.5820	1.0195	-0.5653	1.0855	-0.5666	1.1497	-0.5775	1.1581	-0.5871
9	0.733	0.223	0.7084	-0.6027	0.7732	-0.6687	0.8696	-0.6208	0.9504	-0.5788	1.0224	-0.5610	1.0731	-0.5601	1.1185	-0.5729	1.1227	-0.5822
10	0.751	0.289	0.7425	-0.5992	0.8005	-0.6681	0.8806	-0.6222	0.9433	-0.5685	1.0020	-0.5576	1.0393	-0.5596	1.0673	-0.5738	1.0708	-0.5834
11	0.770	0.356	0.7419	-0.6037	0.7884	-0.6741	0.8476	-0.6292	0.8885	-0.5783	0.9243	-0.5665	0.9483	-0.5662	0.9485	-0.5809	0.9467	-0.5902
12	0.625	0.000	0.5823	-0.5719	0.6500	-0.6298	0.7567	-0.6112	0.8520	-0.5776	0.9472	-0.5692	1.0259	-0.5745	1.0970	-0.5880	1.1164	-0.5986
13	0.625	0.131	0.5845	-0.5902	0.6516	-0.6464	0.7526	-0.6153	0.8492	-0.5767	0.9432	-0.5659	1.0228	-0.5683	1.0900	-0.5805	1.1107	-0.5902
14	0.625	0.218	0.5852	-0.5874	0.6527	-0.6520	0.7535	-0.6204	0.8469	-0.5763	0.9432	-0.5639	1.0183	-0.5666	1.0836	-0.5810	1.1031	-0.5907
15	0.625	0.306	0.5947	-0.5786	0.6544	-0.6439	0.7550	-0.6186	0.8465	-0.5710	0.9407	-0.5601	1.0109	-0.5601	1.0782	-0.5769	1.0868	-0.5861
16	0.639	0.410	0.6392	-0.5732	0.7026	-0.6405	0.7873	-0.6235	0.8626	-0.5702	0.9394	-0.5598	0.9914	-0.5636	1.0340	-0.5791	1.0415	-0.5865
17	0.658	0.477	0.6676	-0.5814	0.7221	-0.6501	0.7899	-0.6323	0.8495	-0.5800	0.9090	-0.5692	0.9477	-0.5729	0.9767	-0.5867	0.9806	-0.5946
18	0.676	0.543	0.6681	-0.5833	0.7136	-0.6518	0.7611	-0.6320	0.7979	-0.5798	0.8346	-0.5676	0.8547	-0.5758	0.8644	-0.5862	0.8640	-0.5973
19	0.500	0.000	0.4835	-0.5719	0.5496	-0.6252	0.6450	-0.6122	0.7421	-0.5802	0.8499	-0.5721	0.9347	-0.5745	1.0157	-0.5872	1.0373	-0.6000
20	0.500	0.222	0.4794	-0.5817	0.5444	-0.6463	0.6384	-0.6173	0.7337	-0.5794	0.8420	-0.5714	0.9245	-0.5781	1.0048	-0.5894	1.0263	-0.6016
21	0.500	0.370	0.4772	-0.5756	0.5425	-0.6409	0.6347	-0.6155	0.7286	-0.5727	0.8340	-0.5658	0.9131	-0.5776	0.9895	-0.5869	1.0103	-0.5974
22	0.500	0.518	0.4645	-0.5772	0.5314	-0.6388	0.6244	-0.6235	0.7158	-0.5707	0.8120	-0.5607	0.8890	-0.5732	0.9593	-0.5878	0.9754	-0.5939
23	0.514	0.660	0.4895	-0.5836	0.5470	-0.6501	0.6249	-0.6323	0.6989	-0.5791	0.7780	-0.5696	0.8361	-0.5801	0.8877	-0.5961	0.8982	-0.6009
24	0.533	0.727	0.5296	-0.5846	0.5781	-0.6514	0.6404	-0.6334	0.6998	-0.5798	0.7631	-0.5696	0.8060	-0.5817	0.8458	-0.5952	0.8529	-0.6013
25	0.551	0.793	0.5432	-0.5781	0.5825	-0.6424	0.6200	-0.6229	0.6529	-0.5718	0.6925	-0.5633	0.7170	-0.5758	0.7348	-0.5854	0.7404	-0.5933
26	0.375	0.000	0.3744	-0.5702	0.4387	-0.6249	0.5291	-0.6155	0.6214	-0.5820	0.7280	-0.5740	0.8202	-0.5785	0.9106	-0.5951	0.9349	-0.6060
27	0.375	0.250	0.3688	-0.5769	0.4320	-0.6387	0.5231	-0.6173	0.6130	-0.5766	0.7195	-0.5693	0.8101	-0.5798	0.8992	-0.5956	0.9230	-0.6053
28	0.375	0.417	0.3546	-0.5737	0.4165	-0.6440	0.5026	-0.6195	0.5968	-0.5798	0.6982	-0.5743	0.7897	-0.5855	0.8785	-0.5891	0.8993	-0.6115
29	0.375	0.583	0.3197	-0.5823	0.3785	-0.6545	0.4611	-0.6323	0.5522	-0.5876	0.6489	-0.5843	0.7366	-0.5961	0.8204	-0.6019	0.8413	-0.6223
30	0.375	0.750	0.2404	-0.5824	0.2905	-0.6536	0.3603	-0.6352	0.4384	-0.5874	0.5215	-0.5804	0.6086	-0.5984	0.6717	-0.6042	0.6986	-0.6253
31	0.375	0.833	0.2081	-0.5741	0.2521	-0.6451	0.3206	-0.6282	0.3888	-0.5820	0.4720	-0.5646	0.5420	-0.5856	0.6078	-0.5925	0.6293	-0.6164
32	0.375	0.917	0.1299	-0.5684	0.1687	-0.6419	0.2162	-0.6239	0.2736	-0.5785	0.3483	-0.5604	0.4895	-0.5842	0.4669	-0.5898	0.4858	-0.6157
33	0.250	0.000	0.2561	-0.5664	0.3087	-0.6243	0.3879	-0.6107	0.4689	-0.5854	0.5731	-0.5754	0.6683	-0.5798	0.7650	-0.5887	0.7957	-0.6101
34	0.250	0.250	0.2460	-0.5788	0.3088	-0.6440	0.3787	-0.6156	0.4560	-0.5877	0.5613	-0.5743	0.6569	-0.5912	0.7542	-0.5931	0.7833	-0.6132
35	0.250	0.417	0.2317	-0.5885	0.2850	-0.6581	0.3603	-0.6319	0.4384	-0.5982	0.5440	-0.5852	0.6384	-0.6024	0.7359	-0.6059	0.7653	-0.6236
36	0.250	0.583	0.2037	-0.5923	0.2530	-0.6590	0.3249	-0.6347	0.3988	-0.5991	0.4998	-0.5854	0.5936	-0.6048	0.6859	-0.6096	0.7167	-0.6262
37	0.250	0.750	0.1370	-0.5830	0.1749	-0.6495	0.2359	-0.6273	0.3022	-0.5873	0.3931	-0.5779	0.4753	-0.5891	0.5590	-0.6103	0.5836	-0.6155
38	0.250	0.833	0.1008	-0.5773	0.1322	-0.6450	0.1863	-0.6239	0.2482	-0.5820	0.3352	-0.5714	0.4135	-0.5842	0.4924	-0.6074	0.5144	-0.6126
39	0.250	0.917	0.0784	-0.5721	0.0531	-0.6370	0.0934	-0.6173	0.1483	-0.5745	0.2222	-0.5623	0.2914	-0.5759	0.3607	-0.6004	0.3814	-0.6061
40	0.156	0.000	0.0871	-0.5684	0.1304	-0.6318	0.1837	-0.6120	0.2393	-0.5912	0.3298	-0.5808	0.4209	-0.5869	0.5316	-0.5988	0.5658	-0.6084
41	0.156	0.250	0.0826	-0.5827	0.1240	-0.6514	0.1776	-0.6256	0.2352	-0.6022	0.3261	-0.5928	0.4194	-0.6006	0.5281	-0.6139	0.5619	-0.6209
42	0.156	0.417	0.0498	-0.5878	0.1108	-0.6581	0.1626	-0.6325	0.2192	-0.6059	0.3091	-0.5940	0.4058	-0.6061	0.5149	-0.6178	0.5492	-0.6239
43	0.156	0.583	0.0544	-0.5835	0.0897	-0.6504	0.1411	-0.6358	0.1964	-0.6002	0.2892	-0.5806	0.3863	-0.5922	0.4957	-0.6088	0.5308	-0.6155
44	0.156	0.750	0.0017	-0.5764	0.0252	-0.6463	0.0665	-0.6327	0.1158	-0.5947	0.2146	-0.5710	0.3144	-0.5812	0.4188	-0.5986	0.4498	-0.6087
45	0.156	0.833	-0.0234	-0.5699	-0.0086	-0.6404	0.0330	-0.6252	0.0835	-0.5867	0.1859	-0.5623	0.2827	-0.5698	0.3791	-0.5908	0.4085	-0.5996
46	0.156	0.917	-0.0757	-0.5644	-0.0587	-0.6397	-0.0346	-0.6182	0.0105	-0.5750	0.1022	-0.5607	0.1870	-0.5693	0.2787	-0.5830	0.2935	-0.5978
47	0.094	0.000	-0.8586	-0.5747	-0.8497	-0.6603	-0.8218	-0.6337	-0.6886	-0.5969	-0.4865	-0.5941	-0.2869	-0.5898	-0.0386	-0.5925	0.0601	-0.6053
48	0.094	0.250	-0.8584	-0.5805	-0.8669	-0.6550	-0.8562	-0.6393	-0.6988	-0.6005	-0.5099	-0.5940	-0.2983	-0.5948	0.0557	-0.5961	0.1716	-0.6086
49	0.094	0.417	-0.8051	-0.5786	-0.8209	-0.6482	-0.7616	-0.6331	-0.6535	-0.6011	-0.4488	-0.5899	-0.2492	-0.5843	-0.0160	-0.5881	0.0733	-0.6044
50	0.094	0.583	-0.8203	-0.5759	-0.8203	-0.6454	-0.7597	-0.6305	-0.6601	-0.5978	-0.4113	-0.5833	-0.2075	-0.5772	0.0232	-0.5841	0.0961	-0.6025
51	0.094	0.917	-0.2560	-0.5611	-0.2479	-0.6326	-0.2162	-0.6164	-0.1052	-0.5810	0.0199	-0.5623	0.1093	-0.5558	0.1949	-0.5747	0.2223	-0.5935
52	0.063	0.000	-0.7789	-0.5605	-0.7465	-0.6178	-0.7016	-0.5949	-0.6577	-0.5833	-0.0559	-0.5861	0.1826	-0.5671	0.2532	-0.5782	0.2826	-0.5882
53	0.063	0.250	-0.7945	-0.5733	-0.7641	-0.6479	-0.7263	-0.6158	-0.6828	-0.5989	-0.0846	-0.5977	0.1594	-0.5756	0.2419	-0.5849	0.2732	-0.5955
54	0.063	0.417	-0.7894	-0.5774	-0.7632	-0.6536	-0.7208	-0.6311	-0.6502	-0.6027	-0.0841	-0.5971	0.1719	-0.5767	0.2439	-0.5857	0.2737	-0.5950
55	0.063	0.583	-0.7809	-0.5728	-0.7561	-0.6482	-0.7097	-0.6224	-0.3925	-0.6038	0.0713	-0.5806	0.1777	-0.5612	0.2526	-0.5770	0.2810	-0.5888
56	0.031	0.000	-0.7523	-0.5614	-0.7397	-0.6016	-0.6817	-0.5732	-0.1619	-0.5873	0.0200	-0.5841	0.0709	-0.5605	0.1477	-0.5731	0.1735	-0.5841
57	0.031	0.250	-0.7468	-0.5629	-0.7395	-0.6343	-0.6469	-0.5875	-0.1130	-0.5875	0.0820	-0.5797	0.0597	-0.5536	0.1357	-0.5668	0.1615	-0.5752
58	0.031	0.417	-0.7082	-0.5583	-0.7465	-0.6397	-0.7242	-0.6085	-0.0849	-0.5899	0.0261	-0.5830	0.0751	-0.5553	0.1469	-0.5598	0.1718	-0.5707
59	0.031	0.583	-0.6428	-0.5639	-0.6733	-0.6492	-0.5537	-0.6292	-0.0435	-0.6027	0.0148	-0.5878	0.0748	-0.5560	0.1482	-0.5649	0.1708	-0.5768
60	0.031	0.750	-0.5528	-0.5611	-0.5255	-0.6446	-0.4112	-0.6370	-0.0894	-0.6045	-0.0286	-0.5764	0.0481	-0.5519	0.1266	-0.5636	0.1498	-0.5770
61	0.375	-0.583	0.3337	-0.9315	0.3859	-0.7318	0.4782	-0.6278	0.5619	-0.5833	0.6649	-0.5735	0.7536	-0.5723	0.8377	-0.5854	0.8608	-0.6009
62	0.156	-0.583	0.0693	-0.6826	0.1002	-0.6027	0.1568	-0.6283	0.2133	-0.5921	0.3067	-0.5815	0.4856	-0.5781	0.5185	-0.5885	0.5438	-0.6038

Table A-5.- (Continued).
M = 1.2

			ALPHA =															
			-2.9	-3.0	-0.3	-0.5	4.8	4.6	9.7	9.6	14.7	14.5	19.7	19.5	24.7	24.6	26.3	26.2
TUBE	X/L	Y/H/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.968	0.000	0.1847	0.3165	0.2565	0.2590	0.3790	0.1397	0.5365	0.0563	0.7794	-0.0110	0.9257	-0.0556	1.0985	-0.1304	1.1317	-0.1670
2	0.906	0.000	0.1892	0.3114	0.2425	0.2528	0.3769	0.1432	0.5167	0.0361	0.6861	-0.0425	0.8486	-0.1073	1.0046	-0.1861	1.0454	-0.2128
3	0.844	0.000	0.1665	0.3037	0.2339	0.2477	0.3619	0.1400	0.4794	0.0386	0.6271	-0.0459	0.7798	-0.1186	0.9325	-0.1877	0.9744	-0.2806
4	0.838	0.115	0.1778	0.3155	0.2442	0.2593	0.3742	0.1560	0.4872	0.0468	0.6308	-0.0209	0.7805	-0.1308	0.9241	-0.5451	0.9673	-0.6492
5	0.857	0.182	0.1891	0.3484	0.2652	0.2854	0.4145	0.1663	0.5335	-0.1292	0.6759	-0.5530	0.8158	-0.6609	0.9435	-0.7333	0.9610	-0.7530
6	0.781	0.000	-0.0535	0.0432	-0.0028	0.0051	0.0867	-0.0693	0.2193	-0.1563	0.4030	-0.2401	0.5077	-0.2996	0.7639	-0.3755	0.8178	-0.3904
7	0.719	0.000	-0.0472	0.0535	-0.0045	0.0009	0.1033	-0.0797	0.2545	-0.1582	0.4209	-0.2392	0.5914	-0.3120	0.7492	-0.3882	0.7984	-0.4141
8	0.719	0.105	-0.0941	-0.0529	-0.1203	-0.1192	0.0130	-0.1358	0.1863	-0.2828	0.3881	-0.3912	0.5708	-0.4830	0.7383	-0.4163	0.7879	-0.4374
9	0.737	0.223	0.0492	0.1561	0.0941	0.1081	0.1955	0.0320	0.3320	-0.0277	0.4968	-0.0441	0.6524	-0.3505	0.8023	-0.8078	0.8484	-0.8416
10	0.751	0.289	0.1450	0.2602	0.1920	0.2072	0.2940	0.1230	0.4191	0.0040	0.5785	-0.5443	0.7189	-0.7449	0.8467	-0.8195	0.8860	-0.8413
11	0.770	0.356	0.1828	0.3372	0.2497	0.2727	0.3729	0.1363	0.4924	-0.3492	0.6286	-0.5993	0.7515	-0.6962	0.8664	-0.7969	0.9018	-0.7913
12	0.625	0.000	-0.0623	0.0771	-0.0105	-0.0087	0.0962	-0.0923	0.2531	-0.1788	0.4125	-0.2565	0.5465	-0.3289	0.6900	-0.4150	0.7378	-0.4417
13	0.625	0.131	-0.0643	0.0802	-0.0106	-0.0077	0.0965	-0.1050	0.2583	-0.1904	0.4183	-0.2639	0.5524	-0.3349	0.6963	-0.4137	0.7392	-0.4480
14	0.625	0.218	-0.0870	0.0730	-0.0398	-0.0472	0.0915	-0.1332	0.2639	-0.2213	0.4179	-0.3452	0.5490	-0.3488	0.6952	-0.4649	0.7388	-0.5581
15	0.625	0.306	-0.2724	-0.0715	-0.1732	-0.1775	-0.0255	-0.3461	0.1788	-0.4266	0.3787	-0.3981	0.5348	-0.5861	0.6917	-0.8543	0.7359	-0.8759
16	0.639	0.410	-0.0877	0.1349	0.0466	0.0542	0.1571	-0.0429	0.3138	-0.0500	0.4775	-0.5718	0.6168	-0.7864	0.7539	-0.8573	0.7942	-0.8590
17	0.658	0.477	0.0799	0.2280	0.1343	0.1496	0.2502	0.0438	0.3950	-0.2981	0.5454	-0.6275	0.6718	-0.7826	0.7947	-0.8508	0.8301	-0.8502
18	0.676	0.543	0.1317	0.3044	0.1990	0.2191	0.3299	0.0727	0.4654	-0.4011	0.5095	-0.5879	0.7083	-0.7144	0.8103	-0.8027	0.8389	-0.8177
19	0.500	0.000	-0.0593	0.0952	-0.0087	0.0213	0.1086	-0.1031	0.2504	-0.1040	0.3681	-0.2587	0.4806	-0.3368	0.6168	-0.4284	0.6567	-0.4437
20	0.500	0.222	-0.0720	0.0917	-0.0082	0.0073	0.1032	-0.1131	0.2458	-0.1976	0.3647	-0.2698	0.4769	-0.3429	0.6127	-0.4292	0.6540	-0.4671
21	0.500	0.370	-0.0926	0.0081	-0.0130	-0.0012	0.0992	-0.1403	0.2478	-0.2260	0.3669	-0.2745	0.4756	-0.4364	0.6113	-0.8003	0.6525	-0.8390
22	0.500	0.518	-0.2228	-0.0595	-0.2093	-0.2187	0.0115	-0.3268	0.2040	-0.4198	0.3498	-0.5881	0.4459	-0.7745	0.6025	-0.8658	0.6432	-0.8542
23	0.514	0.660	-0.0557	0.1117	0.0095	0.0149	0.1293	-0.0908	0.2931	-0.3379	0.4229	-0.6572	0.5243	-0.7935	0.6422	-0.8639	0.6788	-0.8575
24	0.533	0.727	0.0290	0.2064	0.1025	0.1109	0.2244	-0.0036	0.3756	-0.3966	0.4969	-0.6809	0.5877	-0.7951	0.6893	-0.8565	0.7198	-0.8534
25	0.551	0.793	0.0892	0.2924	0.1656	0.1845	0.3068	0.0108	0.4513	-0.4451	0.5608	-0.6542	0.6369	-0.7663	0.7173	-0.8268	0.7377	-0.8284
26	0.375	0.000	-0.0645	0.0775	-0.0036	0.0122	0.0998	-0.1123	0.1810	-0.1898	0.2559	-0.2657	0.3953	-0.3466	0.5320	-0.4252	0.5696	-0.4485
27	0.375	0.250	-0.0713	0.0604	-0.0137	0.0078	0.0826	-0.1173	0.1580	-0.1948	0.2366	-0.2730	0.3883	-0.3501	0.5256	-0.4333	0.5636	-0.4658
28	0.375	0.417	-0.1093	0.0085	-0.0498	-0.0303	0.0329	-0.1616	0.1118	-0.2297	0.2866	-0.2788	0.3737	-0.3762	0.5123	-0.6056	0.5512	-0.7587
29	0.375	0.583	-0.1925	-0.0635	-0.1178	-0.1088	-0.0378	-0.2524	0.0564	-0.3540	0.1737	-0.6132	0.3497	-0.8074	0.4816	-0.8794	0.5191	-0.8443
30	0.375	0.750	-0.2134	-0.1300	-0.2375	-0.2193	-0.1274	-0.2746	0.0252	-0.3529	0.1583	-0.6325	0.3081	-0.8464	0.4147	-0.8905	0.4493	-0.8454
31	0.375	0.833	-0.2767	-0.1217	-0.2067	-0.1979	-0.1116	-0.3348	-0.0104	-0.4267	0.1936	-0.6118	0.2823	-0.7551	0.3817	-0.8610	0.4156	-0.8284
32	0.375	0.917	-0.2467	-0.1192	-0.1962	-0.1890	-0.1160	-0.2756	-0.0459	-0.5692	0.0851	-0.7515	0.2036	-0.7427	0.3014	-0.7819	0.3337	-0.7890
33	0.250	0.000	-0.1109	-0.0393	-0.0718	-0.0580	-0.0196	-0.1459	0.0471	-0.2861	0.2046	-0.2775	0.3351	-0.3626	0.4550	-0.4359	0.4084	-0.4666
34	0.250	0.250	-0.1179	-0.0368	-0.0832	-0.0623	-0.0204	-0.1620	0.0588	-0.2375	0.1998	-0.3139	0.3291	-0.3784	0.4487	-0.4465	0.4828	-0.4823
35	0.250	0.417	-0.0935	-0.0103	-0.0598	-0.0301	-0.0074	-0.1282	0.0628	-0.1791	0.1847	-0.2173	0.3125	-0.3485	0.4322	-0.5209	0.4664	-0.6139
36	0.250	0.583	-0.0627	0.0002	-0.0306	-0.0091	0.0066	-0.1064	0.0597	-0.1590	0.1640	-0.2824	0.2847	-0.6010	0.4015	-0.8207	0.4369	-0.7804
37	0.250	0.750	-0.0419	0.0036	-0.0193	-0.0089	0.0002	-0.0963	0.0375	-0.1911	0.1225	-0.5307	0.2282	-0.7990	0.3329	-0.8021	0.3688	-0.7706
38	0.250	0.833	-0.0400	-0.0045	-0.0134	-0.0080	-0.0141	-0.0974	0.0133	-0.2976	0.0855	-0.6635	0.1870	-0.7850	0.2905	-0.8046	0.3243	-0.7682
39	0.250	0.917	-0.0533	-0.0060	0.0020	0.0051	-0.0315	-0.1755	-0.0222	-0.6042	0.0284	-0.7003	0.1285	-0.7517	0.2145	-0.7793	0.2464	-0.7430
40	0.156	0.000	-0.1329	-0.0744	-0.1117	-0.0984	-0.0540	-0.1601	0.0483	-0.2449	0.1769	-0.3276	0.2797	-0.3958	0.3668	-0.4647	0.3931	-0.4915
41	0.156	0.250	-0.0937	-0.0446	-0.0697	-0.0592	-0.0398	-0.1165	0.0375	-0.1592	0.1696	-0.2139	0.2718	-0.2970	0.3601	-0.3759	0.3866	-0.4324
42	0.156	0.417	-0.0573	-0.0285	-0.0407	-0.0340	-0.0256	-0.0846	0.0294	-0.1351	0.1545	-0.1956	0.2579	-0.2547	0.3460	-0.3732	0.3731	-0.4618
43	0.156	0.583	-0.0745	-0.0869	-0.0083	-0.0013	-0.0150	-0.0688	0.0265	-0.1417	0.1392	-0.1728	0.2399	-0.3679	0.3258	-0.7289	0.3507	-0.7695
44	0.156	0.750	-0.0231	0.0100	0.0111	0.0235	-0.0111	-0.0736	0.0035	-0.1961	0.0874	-0.5119	0.1799	-0.7646	0.2598	-0.7125	0.2838	-0.7021
45	0.156	0.833	-0.0275	0.0186	0.0167	0.0328	-0.0047	-0.0865	-0.0088	-0.3086	0.0544	-0.6977	0.1471	-0.7923	0.2250	-0.7254	0.2496	-0.7028
46	0.156	0.917	-0.0448	0.0380	0.0311	0.0516	0.0096	-0.1601	-0.0253	-0.5418	0.0103	-0.6670	0.0856	-0.7856	0.1596	-0.7275	0.1811	-0.7006
47	0.094	0.000	-0.5318	-0.5190	-0.5299	-0.5286	-0.5153	-0.5473	-0.4805	-0.5755	-0.4348	-0.6143	-0.4032	-0.4519	-0.3679	-0.6750	-0.3554	-0.5233
48	0.094	0.250	-0.5501	-0.5351	-0.5428	-0.5444	-0.5317	-0.5620	-0.4934	-0.5893	-0.4465	-0.6070	-0.4094	-0.6246	-0.3789	-0.6441	-0.3660	-0.6552
49	0.094	0.417	-0.5142	-0.5141	-0.5107	-0.5149	-0.5105	-0.5234	-0.4815	-0.5616	-0.4356	-0.6024	-0.4000	-0.6305	-0.3647	-0.6917	-0.3538	-0.6944
50	0.094	0.583	-0.5036	-0.5072	-0.5013	-0.5063	-0.5142	-0.5172	-0.4950	-0.5840	-0.4538	-0.6249	-0.4183	-0.6292	-0.3793	-0.7370	-0.3708	-0.7225
51	0.094	0.917	-0.0746	0.0044	0.0028	0.0182	-0.0084	-0.1922	-0.0487	-0.4981	-0.0457	-0.6479	-0.0061	-0.7119	0.0324	-0.6759	0.0404	-0.6497
52	0.063	0.000	-0.5319	-0.5253	-0.5275	-0.5308	-0.5182	-0.5478	-0.4896	-0.5618	-0.4421	-0.5703	-0.4031	-0.4051	-0.3589	-0.4518	-0.3417	-0.4967
53	0.063	0.250	-0.5466	-0.5435	-0.5474	-0.5501	-0.5339	-0.5658	-0.4991	-0.5898	-0.4510	-0.5974	-0.4089	-0.5139	-0.3660	-0.5107	-0.3501	-0.5238
54	0.063	0.417	-0.5478	-0.5446	-0.5378	-0.5387	-0.5482	-0.5594	-0.5069	-0.5881	-0.4608	-0.6317	-0.4185	-0.6014	-0.3441	-0.6059	-0.3404	-0.5699
55	0.063	0.583	-0.4703	-0.4829	-0.4704	-0.4787	-0.4893	-0.4909	-0.4732	-0.5042	-0.4311	-0.6377	-0.3747	-0.5879	-0.3189	-0.7068	-0.3008	-0.6929
56	0.031	0.000	-0.4897	-0.4942	-0.4911	-0.4962	-0.4928	-0.5026	-0.4751	-0.4955	-0.4388	-0.3797	-0.3989	-0.3922	-0.3513	-0.4471	-0.3310	-0.4857
57	0.031	0.250	-0.5027	-0.5012	-0.5008	-0.5022	-0.5008	-0.5189	-0.4853	-0.5346	-0.4458	-0.4470	-0.4019	-0.3859	-0.3392	-0.4259	-0.3246	-0.4522
58	0.031	0.417	-0.4411	-0.4819	-0.4844	-0.4835	-0.4849	-0.5027	-0.4758	-0.5408	-0.4447	-0.5455	-0.3916	-0.5013	-0.3092	-0.4361	-0.2930	-0.4741
59	0.031	0.583	-0.4531	-0.4511	-0.4449	-0.4423	-0.4557	-0.4695	-0.4445	-0.5410	-0.4042	-0.5759	-0.3352	-0.5662	-0.2806	-0.5412	-0.2716	-0.5564
60	0.031	0.750	-0.4619	-0.4320	-0.4204	-0.4219	-0.4326	-0.4978	-0.4189	-0.5798	-0.3780	-0.6862	-0.2647	-0.6352	-0.2482	-0.6978	-0.2285	-0.6327
61	0.375	-0.583	-0.1919	-0.0607	-0.1311	-0.1130	-0.0460	-0.2469	0.0567	-0.3454	0.1773	-0.5942	0.3518	-0.8065	0.4829	-0.8794	0.5210	-0.8849
62	0.156	-0.583	-0.0145	-0.0250	-0.0021	-0.0090	-0.0111	-0.0557	0.0288	-0.1313	0.1380	-0.1700	0.2494	-0.3136	0.3269	-0.6817	0.3513	-0.7474

Table A-5.- (Concluded).
M = 1.2

TUBE	X/L	Y/B/2	ALPHA = 27.1 WINDWARD	26.9 LEEWARD	29.9 WINDWARD	29.7 LEEWARD	34.9 WINDWARD	34.6 LEEWARD
1	0.944	0.000	1.1585	-0.1779	1.2244	-0.2509	1.3106	-0.3867
2	0.896	0.000	1.0729	-0.2217	1.1427	-0.2790	1.2392	-0.3874
3	0.844	0.000	1.0016	-0.2141	1.0725	-0.2783	1.1764	-0.3726
4	0.838	0.115	0.9871	-0.7026	1.0545	-0.8030	1.1694	-0.7795
5	0.857	0.182	0.9969	-0.7591	1.0527	-0.7804	1.1280	-0.7062
6	0.781	0.000	0.8455	-0.4092	0.9387	-0.4525	1.0559	-0.5369
7	0.719	0.000	0.8241	-0.4170	0.9003	-0.4781	1.0107	-0.5828
8	0.719	0.105	0.8143	-0.4443	0.8930	-0.5175	1.0127	-0.6309
9	0.733	0.273	0.8699	-0.8580	0.9407	-0.8733	1.0463	-0.7373
10	0.751	0.289	0.9053	-0.8436	0.9678	-0.8688	1.0577	-0.7385
11	0.770	0.356	0.9133	-0.7798	0.9632	-0.8115	1.0305	-0.7425
12	0.625	0.000	0.7601	-0.4478	0.8318	-0.5697	0.9459	-0.5879
13	0.625	0.131	0.7648	-0.4452	0.8357	-0.5179	0.9470	-0.6577
14	0.625	0.218	0.7630	-0.6181	0.8347	-0.7356	0.9457	-0.7285
15	0.625	0.306	0.7622	-0.8585	0.8342	-0.8665	0.9466	-0.7310
16	0.639	0.410	0.8132	-0.8421	0.8784	-0.8647	0.9757	-0.7288
17	0.658	0.477	0.8386	-0.8425	0.8953	-0.8648	0.9759	-0.7342
18	0.676	0.543	0.8477	-0.8108	0.8911	-0.8433	0.9522	-0.7260
19	0.500	0.000	0.6912	-0.4589	0.7486	-0.5038	0.8555	-0.5806
20	0.500	0.222	0.6748	-0.6964	0.7428	-0.6893	0.8498	-0.7068
21	0.500	0.370	0.6738	-0.8355	0.7404	-0.8243	0.8458	-0.7224
22	0.500	0.518	0.6642	-0.8384	0.7305	-0.8382	0.8350	-0.7251
23	0.514	0.660	0.6926	-0.8337	0.7498	-0.8188	0.8368	-0.7327
24	0.533	0.727	0.7293	-0.8340	0.7771	-0.8192	0.8505	-0.7321
25	0.551	0.793	0.7435	-0.8061	0.7785	-0.8103	0.8302	-0.7189
26	0.375	0.000	0.5902	-0.4658	0.6549	-0.5308	0.7572	-0.5972
27	0.375	0.250	0.5839	-0.5067	0.6484	-0.5206	0.7494	-0.6756
28	0.375	0.417	0.5468	-0.7934	0.6311	-0.7429	0.7322	-0.7132
29	0.375	0.583	0.5350	-0.7954	0.5972	-0.7624	0.6947	-0.7353
30	0.375	0.750	0.4591	-0.7914	0.5140	-0.7744	0.6009	-0.7287
31	0.375	0.833	0.4256	-0.7717	0.4794	-0.7429	0.5621	-0.7045
32	0.375	0.917	0.3399	-0.7507	0.3941	-0.7128	0.4682	-0.6907
33	0.250	0.000	0.5052	-0.4859	0.5602	-0.4581	0.6475	-0.5704
34	0.250	0.250	0.4963	-0.5054	0.5507	-0.5122	0.6387	-0.6312
35	0.250	0.417	0.4812	-0.6647	0.5356	-0.7145	0.6225	-0.6876
36	0.250	0.583	0.4452	-0.7473	0.4978	-0.7511	0.5840	-0.7091
37	0.250	0.750	0.3726	-0.7362	0.4200	-0.7513	0.4982	-0.7023
38	0.250	0.833	0.3261	-0.7213	0.3747	-0.6977	0.4500	-0.6784
39	0.250	0.917	0.2453	-0.7039	0.2910	-0.6653	0.3613	-0.6644
40	0.154	0.000	0.4033	-0.5020	0.4427	-0.4317	0.5043	-0.5455
41	0.156	0.250	0.3979	-0.3960	0.4364	-0.5504	0.4998	-0.6172
42	0.156	0.417	0.3802	-0.3514	0.4183	-0.6656	0.4811	-0.6692
43	0.156	0.583	0.3584	-0.6132	0.3946	-0.6804	0.4550	-0.6924
44	0.156	0.750	0.2838	-0.7130	0.3190	-0.7280	0.3756	-0.6922
45	0.156	0.833	0.2402	-0.6599	0.2821	-0.6642	0.3361	-0.6581
46	0.156	0.917	0.1749	-0.6464	0.2077	-0.6359	0.2579	-0.6431
47	0.094	0.000	-0.3507	-0.5921	-0.3346	-0.7106	-0.3085	-0.6710
48	0.094	0.250	-0.3668	-0.6489	-0.3492	-0.7239	-0.3223	-0.6880
49	0.094	0.417	-0.3524	-0.6984	-0.3380	-0.7252	-0.3104	-0.7242
50	0.094	0.583	-0.3758	-0.7058	-0.3571	-0.7193	-0.3181	-0.7390
51	0.094	0.917	0.0316	-0.5904	0.0513	-0.6065	0.0889	-0.6221
52	0.063	0.000	-0.3282	-0.5684	-0.3134	-0.6869	-0.2629	-0.6629
53	0.063	0.250	-0.3455	-0.6425	-0.3189	-0.6872	-0.2601	-0.6748
54	0.063	0.417	-0.3566	-0.7116	-0.3279	-0.6912	-0.2685	-0.6880
55	0.063	0.583	-0.3112	-0.7038	-0.2803	-0.6624	-0.2146	-0.6679
56	0.031	0.000	-0.2926	-0.5153	-0.2874	-0.6317	-0.2202	-0.6642
57	0.031	0.250	-0.3214	-0.5678	-0.2857	-0.6039	-0.2190	-0.6496
58	0.031	0.417	-0.3238	-0.6328	-0.2830	-0.5913	-0.2005	-0.6178
59	0.031	0.583	-0.2787	-0.6404	-0.2424	-0.5967	-0.1006	-0.6267
60	0.031	0.750	-0.2313	-0.6206	-0.1873	-0.6022	-0.0938	-0.6190
61	0.375	-0.583	0.5450	-0.8916	0.6058	-0.8003	0.7057	-0.7559
62	0.150	-0.583	0.3495	-0.7250	0.4072	-0.7621	0.4671	-0.7031

TUBE	X/L	Y/B/2	ALPHA = 39.9 WINDWARD	39.6 LEEWARD	44.8 WINDWARD	44.6 LEEWARD	49.8 WINDWARD	49.5 LEEWARD	54.8 WINDWARD	54.5 LEEWARD	56.3 WINDWARD	56.1 LEEWARD
1	0.944	0.000	1.3661	-0.5125	1.3939	-0.5611	1.4014	-0.4151	1.3859	-0.4181	1.3735	-0.4082
2	0.896	0.000	1.3124	-0.5240	1.3431	-0.5534	1.4036	-0.4487	1.4100	-0.4506	1.4067	-0.4316
3	0.844	0.000	1.2686	-0.4905	1.3259	-0.5418	1.3885	-0.4443	1.4090	-0.4482	1.4106	-0.4294
4	0.838	0.115	1.2277	-0.6738	1.2847	-0.5830	1.3424	-0.4561	1.3612	-0.4406	1.3632	-0.4296
5	0.857	0.182	1.1886	-0.6317	1.2281	-0.5541	1.2670	-0.4392	1.2711	-0.4303	1.2692	-0.4114
6	0.781	0.000	1.1639	-0.6192	1.2515	-0.5652	1.3459	-0.4569	1.3061	-0.4507	1.3959	-0.4317
7	0.719	0.000	1.1207	-0.6212	1.2116	-0.5743	1.3134	-0.4624	1.3610	-0.4585	1.3720	-0.4391
8	0.719	0.105	1.1155	-0.6600	1.2066	-0.5864	1.3075	-0.4646	1.3543	-0.4501	1.3654	-0.4398
9	0.733	0.273	1.1346	-0.6766	1.2115	-0.5920	1.2935	-0.4631	1.3283	-0.4563	1.3347	-0.4360
10	0.751	0.289	1.1342	-0.6801	1.1950	-0.5908	1.2635	-0.4589	1.2864	-0.4546	1.2907	-0.4374
11	0.770	0.356	1.0870	-0.6841	1.1280	-0.5990	1.1766	-0.4573	1.1852	-0.4606	1.1858	-0.4439
12	0.625	0.000	1.0488	-0.6192	1.1401	-0.5017	1.2574	-0.4512	1.3140	-0.4633	1.3290	-0.4471
13	0.625	0.131	1.0482	-0.6694	1.1395	-0.5864	1.2535	-0.4467	1.3098	-0.4596	1.3226	-0.4432
14	0.625	0.218	1.0466	-0.6763	1.1371	-0.5879	1.2490	-0.4470	1.3030	-0.4592	1.3163	-0.4432
15	0.625	0.306	1.0460	-0.6733	1.1345	-0.5876	1.2412	-0.4473	1.2925	-0.4571	1.3031	-0.4409
16	0.639	0.410	1.0592	-0.6775	1.1335	-0.5886	1.2226	-0.4476	1.2601	-0.4576	1.2676	-0.4404
17	0.658	0.477	1.0460	-0.6829	1.1039	-0.5967	1.1781	-0.4542	1.2064	-0.4644	1.2101	-0.4465
18	0.676	0.543	1.0032	-0.6816	1.0471	-0.5952	1.1020	-0.4542	1.1149	-0.4664	1.1156	-0.4478
19	0.500	0.000	0.9552	-0.6197	1.0574	-0.5781	1.1803	-0.4467	1.2452	-0.4615	1.2621	-0.4443
20	0.500	0.222	0.9483	-0.6624	1.0505	-0.5822	1.1721	-0.4460	1.2361	-0.4614	1.2529	-0.4439
21	0.500	0.370	0.9426	-0.6666	1.0420	-0.5850	1.1617	-0.4461	1.2226	-0.4589	1.2308	-0.4413
22	0.500	0.518	0.9307	-0.6708	1.0234	-0.5908	1.1406	-0.4572	1.1957	-0.4591	1.2105	-0.4419
23	0.514	0.660	0.9173	-0.6750	0.9927	-0.5997	1.0926	-0.4663	1.1335	-0.4667	1.1632	-0.4481
24	0.533	0.727	0.9168	-0.6781	0.9806	-0.6017	1.0663	-0.4694	1.0977	-0.4691	1.1048	-0.4490
25	0.551	0.793	0.8771	-0.6678	0.9233	-0.5929	0.9918	-0.4673	1.0079	-0.4642	1.0099	-0.4447
26	0.375	0.000	0.8533	-0.6076	0.9550	-0.5785	1.0897	-0.4646	1.1581	-0.4622	1.1780	-0.4443
27	0.375	0.250	0.8451	-0.6479	0.9457	-0.5802	1.0806	-0.4639	1.1406	-0.4600	1.1679	-0.4424
28	0.375	0.417	0.8279	-0.6569	0.9315	-0.5886	1.0618	-0.4665	1.1291	-0.4591	1.1472	-0.4407
29	0.375	0.583	0.7870	-0.6651	0.8875	-0.6024	1.0159	-0.4753	1.0800	-0.4682	1.0967	-0.4492
30	0.375	0.750	0.6842	-0.6616	0.7785	-0.6063	0.8986	-0.4763	0.9527	-0.4786	0.9686	-0.4501
31	0.375	0.833	0.6448	-0.6523	0.7320	-0.5993	0.8502	-0.4662	0.9013	-0.4660	0.9141	-0.4455
32	0.375	0.917	0.5424	-0.6485	0.6280	-0.5946	0.7384	-0.4654	0.7845	-0.4648	0.7963	-0.4439
33	0.250	0.000	0.7317	-0.5976	0.8280	-0.5787	0.9602	-0.4565	1.0347	-0.4600	1.0551	-0.4413
34	0.250	0.250	0.7228	-0.6308	0.8144	-0.5818	0.9475	-0.4646	1.0232	-0.4602	1.0434	-0.4404
35	0.250	0.417	0.7070	-0.6537	0.7982	-0.6012	0.9336	-0.4768	1.0083	-0.4693	1.0283	-0.4481
36	0.250	0.583	0.6659	-0.6604	0.7583	-0.6086	0.8930	-0.4816	0.9650	-0.4729	0.9845	-0.4501
37	0.250	0.750	0.5737	-0.6519	0.6592	-0.6008	0.7896	-0.4767	0.8549	-0.4687	0.8717	-0.4443
38	0.250	0.833	0.5231	-0.6444	0.6083	-0.5912	0.7347	-0.4739	0.7983	-0.4667	0.8147	-0.4417
39	0.250	0.917	0.4288	-0.6375	0.5104	-0.5854	0.6302	-0.4712	0.6886	-0.4634	0.7036	-0.4396
40	0.154	0.000	0.5654	-0.5825	0.6377	-0.5624	0.7544	-0.4646	0.8374	-0.4606	0.8609	-0.4385
41	0.156	0.250	0.5604	-0.6298	0.6317	-0.5758	0.7580	-0.4749	0.8340	-0.4693	0.8572	-0.4462
42	0.156	0.417	0.5417	-0.6515	0.6145	-0.5871	0.7372	-0.4790	0.8212	-0.4721	0.8449	-0.4478
43	0.156	0.583	0.5161	-0.6527	0.5902	-0.5910	0.7238	-0.4710	0.8021	-0.4664	0.8263	-0.4436
44	0.156	0.750	0.4311	-0.6452	0.5083	-0.5060	0.6556	-0.4683	0.7325	-0.4637	0.7557	-0.4409
45	0.156	0.833	0.3918	-0.6360	0.4719	-0.5802	0.6254	-0.4639	0.6906	-0.4612	0.7197	-0.4376
46	0.156	0.917	0.3122	-0.6296	0.3939	-0.5777	0.5449	-0.4513	0.6060	-0.4568	0.6264	-0.4359
47	0.094	0.000	-0.2701	-0.7390	-0.0969	-0.5704	0.1699	-0.4512	0.3616	-0.4640	0.3928	-0.4465
48	0.094	0.250	-0.2816	-0.6031	-0.1058	-0.5005	0.1605	-0.4534	0.4012	-0.4604	0.4577	-0.4486
49	0.094	0.417	-0.2630	-0.6379	-0.0716	-0.5789	0.2062	-0.4433	0.3591	-0.4023	0.4078	-0.4455
50	0.094	0.583	-0.2078	-0.6365	-0.0687	-0.5781	0.2307	-0.4424	0.3850	-0.4607	0.4345	-0.4432
51	0.094	0.917	0.1634	-0.6210	0.3031	-0.5686	0.4818	-0.4380	0.5443	-0.4568	0.5621	-0.4387
52	0.063	0.000	-0.1869	-0.6566	-0.0850	-0.5388	0.5678	-0.4284	0.6075	-0.4542	0.6297	-0.4392
53	0.063	0.250	-0.1875	-0.6116	-0.0703	-0.5594	0.5453	-0.4400	0.5007	-0.4629	0.6193	-0.4465
54	0.063	0.417	-0.1676	-0.6380	-0.0320	-0.5732	0.5621	-0.4435	0.6007	-0.4652	0.6207	-0.4486
55	0.063	0.583	-0.1681	-0.6315	0.1923	-0.5758	0.5615	-0.4406	0.6004	-0.4680	0.6230	-0.4443
56	0.031	0.000	-0.1217	-0.5690	0.3991	-0.5249	0.4770	-0.4308	0.5255	-0.4551	0.5438	-0.4402
57	0.031	0.250	-0.1150	-0.5774	0.3420	-0.5302	0.4667	-0.4314	0.5159	-0.4534	0.5327	-0.4376
58	0.031	0.417	-0.1150	-0.6102	0.3960	-0.5523	0.4767	-0.4298	0.5245	-0.4524	0.5418	-0.4378
59	0.031	0.583	-0.1205	-0.6279	0.3889	-0.5735	0.4720	-0.4400	0.5225	-0.4602	0.5395	-0.4450
60	0.031	0.750	0.0298	-0.6304	0.3388	-0.5767	0.4442	-0.4393	0.4907	-0.4625	0.5171	-0.4459
61	0.375	-0.583	0.7994	-0.7220	0.8947	-0.5921	1.0310	-0.4504	1.0920	-0.4611	1.1087	-0.4455
62	0.150	-0.583	0.5294	-0.6951	0.6046	-0.5768	0.7406	-0.4461	0.8154	-0.4573	0.8307	-0.4428

Table A-6.- Pressure coefficients for configuration 6.
M = 0.6

			ALPHA =															
			-2.4	-2.8	0.1	0.1	5.0	5.1	10.0	10.0	15.0	15.0	20.1	19.9	24.9	24.9	26.6	26.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	0.0447	0.3837	0.2260	0.2132	0.5019	-0.0881	0.7115	-1.2466	0.8102	-0.8728	0.9301	-0.7316	0.9948	-0.4975	1.0103	-0.5009
2	0.958	0.333	0.0423	0.1754	0.2186	0.2116	0.4840	-0.0010	0.6946	-1.2178	0.8122	-0.8743	0.9148	-0.7829	0.9777	-0.5062	0.9943	-0.5164
3	0.958	0.583	0.0320	0.3467	0.1900	0.1937	0.4496	-0.0783	0.6522	-1.1675	0.7707	-0.9411	0.8747	-0.8332	0.9412	-0.5131	0.9578	-0.5185
4	0.958	0.750	-0.0037	0.2664	0.1268	0.1244	0.3628	-0.1230	0.5578	-1.0385	0.6800	-0.9861	0.7830	-0.8295	0.8645	-0.5024	0.8798	-0.5117
5	0.917	0.000	-0.1870	0.1626	0.0285	0.0247	0.2622	-0.2294	0.4599	-0.9757	0.6009	-0.8688	0.7237	-0.7610	0.8231	-0.5062	0.8461	-0.5092
6	0.917	0.333	-0.1042	0.1569	0.0269	0.0248	0.2504	-0.2172	0.4414	-0.9309	0.5833	-0.9236	0.7087	-0.8209	0.8050	-0.5230	0.8315	-0.5188
7	0.917	0.583	-0.1452	0.1302	0.0106	0.0064	0.2122	-0.2127	0.3945	-0.6799	0.5259	-0.9614	0.6530	-0.8528	0.7523	-0.5281	0.7015	-0.5296
8	0.917	0.750	-0.1972	0.0093	-0.0905	-0.0968	0.0672	-0.2904	0.2340	-0.4484	0.3535	-0.9756	0.4859	-0.8386	0.5952	-0.5225	0.6315	-0.5269
9	0.875	0.000	-0.3451	-0.0878	-0.2152	-0.2153	-0.0066	-0.4473	0.1959	-0.6814	0.3522	-0.8586	0.5041	-0.7813	0.6250	-0.5142	0.6654	-0.5197
10	0.875	0.333	-0.3744	-0.1040	-0.2084	-0.2222	-0.0101	-0.4362	0.1813	-0.6134	0.3343	-0.8983	0.4891	-0.8260	0.6078	-0.5176	0.6427	-0.5147
11	0.875	0.583	-0.3097	-0.1127	-0.2070	-0.2119	-0.0312	-0.3956	0.1408	-0.4847	0.2782	-0.9424	0.4241	-0.8740	0.5410	-0.5310	0.5792	-0.5259
12	0.875	0.833	-0.2037	-0.1480	-0.2095	-0.2093	-0.0981	-0.3401	-0.0093	-0.4922	0.0580	-0.9452	0.1859	-0.8687	0.3020	-0.5278	0.3433	-0.5355
13	0.875	0.917	-0.1419	-0.0835	-0.1131	-0.1051	-0.0760	-0.2205	-0.0252	-0.4246	-0.0968	-0.8986	0.0809	-0.8350	0.1872	-0.5181	0.2253	-0.5275
14	0.792	0.000	-0.3489	-0.1677	-0.2178	-0.2162	-0.1026	-0.4106	0.0411	-0.5037	0.1702	-0.7708	0.3036	-0.8561	0.4056	-0.5520	0.4526	-0.5363
15	0.792	0.333	-0.3331	-0.1546	-0.2209	-0.2153	-0.1173	-0.3948	0.0204	-0.4834	0.1420	-0.8019	0.2747	-0.8899	0.3857	-0.5577	0.4332	-0.5325
16	0.792	0.583	-0.2914	-0.1292	-0.1913	-0.1923	-0.1030	-0.3377	0.0055	-0.4376	0.0996	-0.8193	0.2156	-0.9070	0.3273	-0.5776	0.3650	-0.5480
17	0.792	0.750	-0.2813	-0.0884	-0.1391	-0.1390	-0.0737	-0.2502	0.0060	-0.3715	0.0821	-0.8439	0.1506	-0.9108	0.2406	-0.5058	0.2797	-0.5520
18	0.792	0.833	-0.1533	-0.0687	-0.1163	-0.1057	-0.0450	-0.2046	-0.0057	-0.3490	0.6299	-0.7488	0.1038	-0.9041	0.2001	-0.5750	0.2332	-0.5554
19	0.792	0.917																
20	0.667	0.000	-0.1409	-0.0000	-0.1105	-0.1068	-0.0628	-0.1743	0.0429	-0.2467	0.1314	-0.6746	0.2357	-0.9288	0.3176	-0.5906	0.3554	-0.5844
21	0.667	0.333	-0.1449	-0.0761	-0.1121	-0.0977	-0.0679	-0.1641	0.0325	-0.2345	0.1136	-0.6813	0.2131	-0.9587	0.2948	-0.5896	0.3307	-0.5781
22	0.667	0.583	-0.1091	-0.0509	-0.0815	-0.0827	-0.0307	-0.1378	0.0325	-0.2236	0.0961	-0.6302	0.1785	-0.9680	0.2550	-0.5823	0.2800	-0.5790
23	0.667	0.750	-0.0895	-0.0381	-0.0614	-0.0595	-0.0312	-0.1213	0.0147	-0.2309	0.0482	-0.6722	0.1029	-0.9595	0.1729	-0.5828	0.2002	-0.5835
24	0.667	0.833	-0.0817	-0.0339	-0.0578	-0.0515	-0.0331	-0.1202	0.0060	-0.2518	0.0208	-0.6716	0.0527	-0.9644	0.1264	-0.5981	0.1570	-0.5862
25	0.667	0.917	-0.0727	-0.0256	-0.0399	-0.0387	-0.0278	-0.1338	-0.0154	-0.3943	-0.0159	-0.8600	-0.0392	-0.9954	0.0447	-0.5870	0.0784	-0.5480
26	0.500	0.000	-0.0855	-0.0473	-0.0652	-0.0697	-0.0338	-0.0933	0.0210	-0.1367	0.0806	-0.4115	0.1584	-0.8210	0.2098	-0.6498	0.2304	-0.6240
27	0.500	0.333	-0.0954	-0.0482	-0.0457	-0.0640	-0.0365	-0.0912	0.0158	-0.1349	0.0702	-0.3952	0.1423	-0.8496	0.1423	-0.6505	0.2131	-0.6230
28	0.500	0.583																
29	0.500	0.750	-0.0433	-0.0310	-0.0515	-0.0447	-0.0324	-0.0917	0.0037	-0.1009	0.0706	-0.3321	0.0459	-0.8040	0.0859	-0.6407	0.1109	-0.6121
30	0.500	0.833	-0.0645	-0.0267	-0.0490	-0.0358	-0.0325	-0.0943	-0.0058	-0.2276	0.0830	-0.4915	0.0105	-0.9192	0.0456	-0.6357	0.0738	-0.6097
31	0.500	0.917																
32	0.333	0.000	-0.1113	-0.0893	-0.1048	-0.1013	-0.0934	-0.1021	-0.0586	-0.1126	-0.0142	-0.1874	0.0429	-0.5044	0.0487	-0.6523	0.0637	-0.6372
33	0.333	0.333	-0.1117	-0.0868	-0.1035	-0.0942	-0.0909	-0.1011	-0.0544	-0.1185	-0.0147	-0.1703	0.0383	-0.4795	0.0440	-0.6505	0.0609	-0.6429
34	0.333	0.583	-0.0816	-0.0783	-0.0815	-0.0798	-0.0674	-0.0974	-0.0339	-0.1301	-0.0084	-0.1664	0.0371	-0.3479	0.0324	-0.6482	0.0504	-0.6464
35	0.333	0.750	-0.0761	-0.0594	-0.0643	-0.0595	-0.0539	-0.0940	-0.0334	-0.1666	-0.0127	-0.2967	0.0017	-0.5541	-0.0082	-0.6277	0.0082	-0.6281
36	0.333	0.833	-0.0481	-0.0459	-0.0566	-0.0515	-0.0490	-0.0974	-0.0370	-0.2342	-0.0224	-0.4909	-0.0204	-0.7564	-0.0336	-0.6249	-0.0100	-0.6206
37	0.333	0.917	-0.0751	-0.0356	-0.0434	-0.0369	-0.0411	-0.1510	-0.0414	-0.3586	-0.0534	-0.6337	-0.0766	-0.8326	-0.0922	-0.6123	-0.0810	-0.5979
38	0.208	0.000	-0.2764	-0.2481	-0.2431	-0.2336	-0.2633	-0.1831	-0.2456	-0.1467	-0.2307	-0.0867	-0.1735	-0.2318	-0.2360	-0.6319	-0.2327	-0.6143
39	0.208	0.333	-0.2324	-0.2413	-0.2381	-0.2257	-0.2572	-0.1910	-0.2308	-0.1780	-0.2196	-0.0998	-0.1704	-0.2045	-0.2290	-0.6435	-0.2352	-0.6393
40	0.208	0.583	-0.1991	-0.1964	-0.1964	-0.1970	-0.2044	-0.1065	-0.1804	-0.2025	-0.1663	-0.1741	-0.1330	-0.2566	-0.1976	-0.6330	-0.1935	-0.6420
41	0.208	0.750	-0.1448	-0.1270	-0.1310	-0.1271	-0.1359	-0.1469	-0.1196	-0.2106	-0.1070	-0.3173	-0.0960	-0.5024	-0.1593	-0.6277	-0.1551	-0.6436
42	0.208	0.833	-0.1202	-0.0856	-0.0974	-0.0967	-0.1022	-0.1350	-0.0935	-0.2657	-0.0798	-0.4818	-0.0816	-0.6419	-0.1467	-0.6195	-0.1415	-0.6368
43	0.208	0.917	-0.0859	-0.0551	-0.0637	-0.0642	-0.0690	-0.1718	-0.0715	-0.3228	-0.0667	-0.5022	-0.0871	-0.6443	-0.1529	-0.6023	-0.1509	-0.6133
44	0.125	0.000	-0.1920	-0.2591	-0.2310	-0.2259	-0.3064	-0.1139	-0.3245	-0.0420	-0.3554	-0.0388	-0.3706	-0.0694	-0.5077	-0.5091	-0.5212	-0.5023
45	0.125	0.333	-0.1964	-0.2552	-0.2284	-0.2135	-0.3002	-0.1256	-0.3179	-0.0822	-0.3350	-0.0654	-0.3132	-0.0942	-0.4949	-0.5478	-0.5038	-0.5535
46	0.125	0.583	-0.1991	-0.2390	-0.2142	-0.2064	-0.2577	-0.1666	-0.2808	-0.1742	-0.2898	-0.1676	-0.2838	-0.2916	-0.4371	-0.5934	-0.4474	-0.6025
47	0.125	0.833	-0.1009	-0.1741	-0.1493	-0.1663	-0.1708	-0.2098	-0.1625	-0.3018	-0.1501	-0.4087	-0.1609	-0.5855	-0.2614	-0.6230	-0.2671	-0.6394
48	0.125	0.917	-0.1172	-0.0844	-0.0897	-0.0928	-0.0922	-0.1919	-0.0900	-0.2918	-0.0828	-0.3715	-0.1203	-0.5472	-0.2096	-0.6057	-0.2157	-0.6181
49	0.083	0.000	0.0068	-0.0433	-0.0283	-0.0162	-0.0818	0.0488	-0.0998	0.0507	-0.1528	-0.0150	-0.1256	-0.0278	-0.3255	-0.4276	-0.3565	-0.4216
50	0.083	0.333	0.0032	-0.0420	-0.0308	-0.0135	-0.0830	0.0353	-0.1028	0.0449	-0.1131	-0.0183	-0.1130	-0.0453	-0.3315	-0.4742	-0.3580	-0.4853
51	0.083	0.583	-0.0185	-0.0273	-0.0244	-0.0087	-0.0623	0.0116	-0.0824	0.0139	-0.1083	-0.0508	-0.1220	-0.2004	-0.3295	-0.5333	-0.3488	-0.5442
52	0.083	0.750	-0.1487	-0.1256	-0.1164	-0.1179	-0.1230	-0.1502	-0.1310	-0.1337	-0.1508	-0.1635	-0.1756	-0.4137	-0.3550	-0.5745	-0.3670	-0.5849
53	0.042	0.000	0.0929	0.0695	0.0828	0.0872	0.0499	0.1067	0.0383	0.0958	-0.0136	0.0081	-0.0124	0.0281	-0.2439	-0.3582	-0.2846	-0.3638
54	0.042	0.333	0.0828	0.0562	0.0683	0.0789	0.0258	0.1008	0.0118	0.1059	-0.0165	0.0147	-0.0002	0.0007	-0.2748	-0.4217	-0.3136	-0.4432
55	0.042	0.583	0.1013	0.0942	0.0893	0.0986	0.0645	0.1105	0.0441	0.1095	0.0158	0.0187	-0.0258	-0.1078	-0.2870	-0.4745	-0.3081	-0.5065
56	0.042	0.750	0.0533	0.0669	0.0539	0.0582	0.0632	0.0512	0.0314	0.0607	-0.0079	-0.0277	-0.0928	-0.2845	-0.3874	-0.5120	-0.3258	-0.5381
57	0.792	-0.583	-0.2709	-0.1296	-0.1837	-0.1815	-0.0938	-0.3288	0.0100	-0.4365	0.1148	-0.8106	0.2271	-0.9050	0.3388	-0.5380	0.3747	-0.5442
58	0.208	-0.583	-0.2808	-0.2880	-0.2079	-0.2417	-0.2136	-0.1771	-0.1921	-0.1995	-0.1721	-0.1612	-0.1347	-0.2595	-0.1867	-0.6359	-0.1866	-0.6444

Table A-6.0 (Continued).
M = 0.6

			ALPHA =															
			27.4	27.2	30.1	29.9	35.0	34.8	40.0	39.8	45.0	44.8	49.9	49.7	54.9	54.7	56.6	56.4
TUBE	A/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	1.0210	-0.5223	1.0673	-0.5649	1.0772	-0.5771	1.0634	-0.5808	1.0824	-0.5846	1.0567	-0.5751	1.0115	-0.5475	0.9948	-0.5570
2	0.958	0.333	1.0875	-0.5163	1.0343	-0.5554	1.0669	-0.5696	1.0835	-0.5775	1.0732	-0.5760	1.0409	-0.5732	1.0041	-0.5426	0.9890	-0.5406
3	0.958	0.583	0.9707	-0.5176	1.0002	-0.5423	1.0348	-0.5586	1.0563	-0.5677	1.0491	-0.5736	1.0265	-0.5642	0.9881	-0.5377	0.9716	-0.5415
4	0.958	0.750	0.8899	-0.5252	0.9254	-0.5306	0.9673	-0.5527	0.9472	-0.5587	1.0004	-0.5800	0.9837	-0.5707	0.9443	-0.5392	0.9319	-0.5533
5	0.917	0.000	0.8638	-0.5337	0.9129	-0.5647	0.9824	-0.5828	1.0441	-0.5786	1.0784	-0.5960	1.0905	-0.5913	1.0813	-0.5537	1.0841	-0.5699
6	0.717	0.333	0.8476	-0.5393	0.8932	-0.5655	0.9676	-0.5838	1.0276	-0.5818	1.0638	-0.6003	1.0779	-0.5944	1.0691	-0.5546	1.0715	-0.5813
7	0.917	0.583	0.7882	-0.5316	0.8391	-0.5434	0.9169	-0.5754	0.9825	-0.5755	1.0160	-0.5881	1.0343	-0.5716	1.0391	-0.5567	1.0338	-0.5594
8	0.917	0.750	0.6403	-0.5255	0.6916	-0.5303	0.7795	-0.5581	0.8546	-0.5655	0.8988	-0.5800	0.9348	-0.5645	0.9500	-0.5506	0.9491	-0.5507
9	0.875	0.000	0.6785	-0.5250	0.7429	-0.5679	0.8529	-0.5798	0.9476	-0.5791	1.0111	-0.5947	1.0636	-0.5728	1.0957	-0.5528	1.0984	-0.5588
10	0.875	0.333	0.6586	-0.5290	0.7224	-0.5627	0.8297	-0.5734	0.9288	-0.5839	0.9881	-0.5955	1.0454	-0.5880	1.0783	-0.5564	1.0727	-0.5682
11	0.875	0.583	0.5916	-0.5325	0.6544	-0.5511	0.7632	-0.5688	0.8622	-0.5809	0.9317	-0.5919	0.9836	-0.5861	1.0122	-0.5583	1.0194	-0.5583
12	0.875	0.833	0.3415	-0.5346	0.3913	-0.5478	0.4883	-0.5596	0.5741	-0.5783	0.6163	-0.5932	0.6759	-0.5861	0.7182	-0.5617	0.7305	-0.5606
13	0.875	0.917	0.2377	-0.5362	0.2706	-0.5399	0.3507	-0.5550	0.4233	-0.5657	0.4757	-0.5782	0.5173	-0.5728	0.5482	-0.5527	0.5504	-0.5716
14	0.792	0.000	0.4633	-0.5454	0.5263	-0.5811	0.6531	-0.5891	0.7712	-0.5855	0.8711	-0.5939	0.9566	-0.5905	1.0225	-0.5678	1.0412	-0.5761
15	0.792	0.333	0.4433	-0.5460	0.5018	-0.5748	0.6239	-0.5844	0.7424	-0.5825	0.8422	-0.5987	0.9288	-0.5884	0.9955	-0.5651	1.0144	-0.5743
16	0.792	0.583	0.3793	-0.5435	0.4399	-0.5644	0.5488	-0.5803	0.6617	-0.5874	0.7548	-0.6053	0.8379	-0.5880	0.9081	-0.5593	0.9205	-0.5769
17	0.792	0.750	0.2937	-0.5488	0.3421	-0.5586	0.4303	-0.5723	0.5295	-0.5867	0.6019	-0.5989	0.6715	-0.5884	0.7286	-0.5566	0.7409	-0.5769
18	0.792	0.833	0.2499	-0.5546	0.2945	-0.5578	0.3752	-0.5737	0.4552	-0.5871	0.5216	-0.5980	0.5809	-0.5932	0.6367	-0.5576	0.6464	-0.5842
19	0.792	0.917																
20	0.667	0.000	0.3657	-0.5746	0.4191	-0.5886	0.5312	-0.6017	0.6472	-0.5987	0.7456	-0.6088	0.8301	-0.5985	0.9235	-0.5750	0.9480	-0.5969
21	0.667	0.333	0.3442	-0.5682	0.3963	-0.5867	0.5051	-0.5987	0.6198	-0.5956	0.7157	-0.6079	0.8094	-0.5958	0.8914	-0.5686	0.9161	-0.5968
22	0.667	0.583	0.2940	-0.5739	0.3501	-0.5696	0.4428	-0.5941	0.5464	-0.5994	0.6334	-0.6145	0.7180	-0.5950	0.7970	-0.5765	0.8260	-0.5913
23	0.667	0.750	0.2113	-0.5761	0.2552	-0.5580	0.3319	-0.5880	0.4166	-0.5977	0.4847	-0.6146	0.5548	-0.5919	0.6169	-0.5752	0.6430	-0.5921
24	0.667	0.833	0.1669	-0.5747	0.2058	-0.5637	0.2738	-0.5873	0.3515	-0.6000	0.4111	-0.6221	0.4737	-0.5986	0.5303	-0.5782	0.5485	-0.5990
25	0.667	0.917	0.0844	-0.5663	0.1110	-0.5567	0.1645	-0.5838	0.2212	-0.5935	0.2671	-0.6060	0.3178	-0.5949	0.3596	-0.5707	0.3752	-0.5884
26	0.588	0.000	0.2635	-0.6471	0.2908	-0.6400	0.3921	-0.6414	0.4909	-0.6416	0.5994	-0.6398	0.6979	-0.6239	0.7969	-0.6016	0.8239	-0.6032
27	0.500	0.333	0.2264	-0.6446	0.2744	-0.6391	0.3725	-0.6370	0.4776	-0.6304	0.5743	-0.6364	0.6717	-0.6194	0.7694	-0.5971	0.7938	-0.6014
28	0.500	0.583																
29	0.500	0.750	0.1158	-0.5935	0.1482	-0.6103	0.2146	-0.6177	0.2914	-0.6266	0.3634	-0.6360	0.4376	-0.6276	0.5070	-0.5973	0.5312	-0.6025
30	0.500	0.833	0.0793	-0.5940	0.1073	-0.6021	0.1659	-0.6174	0.2326	-0.6265	0.2978	-0.6374	0.3637	-0.6276	0.4262	-0.6031	0.4471	-0.6073
31	0.500	0.917																
32	0.333	0.000	0.0739	-0.6363	0.1198	-0.6314	0.2065	-0.6483	0.3100	-0.6530	0.4068	-0.6512	0.5154	-0.6337	0.6230	-0.6085	0.6551	-0.6199
33	0.333	0.333	0.0692	-0.6491	0.1162	-0.6437	0.1981	-0.6473	0.2977	-0.6486	0.3915	-0.6541	0.4991	-0.6268	0.6049	-0.6079	0.6384	-0.6238
34	0.333	0.583	0.0461	-0.6496	0.0870	-0.6396	0.1648	-0.6447	0.2555	-0.6426	0.3474	-0.6547	0.4465	-0.6383	0.5352	-0.6082	0.5707	-0.6011
35	0.333	0.750	0.0849	-0.6347	0.0298	-0.6266	0.0927	-0.6380	0.1640	-0.6382	0.2364	-0.6546	0.3204	-0.6363	0.3925	-0.6095	0.4207	-0.6020
36	0.333	0.833	-0.0184	-0.6249	0.0087	-0.6192	0.0564	-0.6328	0.1195	-0.6347	0.1862	-0.6556	0.2606	-0.6318	0.3204	-0.6137	0.3503	-0.6055
37	0.333	0.917	-0.0789	-0.5999	-0.0613	-0.6037	-0.0213	-0.6219	0.0238	-0.6380	0.0683	-0.6403	0.1207	-0.6282	0.1784	-0.6014	0.1988	-0.6066
38	0.208	0.000	-0.2209	-0.6020	-0.1800	-0.6057	-0.0941	-0.6408	0.0086	-0.6530	0.1130	-0.6587	0.2258	-0.6406	0.3507	-0.6091	0.3605	-0.6136
39	0.208	0.333	-0.2148	-0.6298	-0.1805	-0.6295	-0.0921	-0.6433	0.0029	-0.6531	0.1105	-0.6484	0.2214	-0.6389	0.3419	-0.6068	0.3824	-0.6123
40	0.208	0.583	-0.1834	-0.6496	-0.1465	-0.6413	-0.0697	-0.6482	0.0145	-0.6538	0.1082	-0.6604	0.2180	-0.6256	0.3229	-0.6041	0.3573	-0.5999
41	0.208	0.750	-0.1474	-0.6451	-0.1194	-0.6388	-0.0588	-0.6409	0.0081	-0.6452	0.0827	-0.6522	0.1741	-0.6235	0.2567	-0.6014	0.2866	-0.6008
42	0.208	0.833	-0.1351	-0.6367	-0.1096	-0.6304	-0.0550	-0.6310	0.0035	-0.6371	0.0682	-0.6479	0.1489	-0.6271	0.2164	-0.6048	0.2478	-0.5990
43	0.208	0.917	-0.1467	-0.6213	-0.1353	-0.6031	-0.0988	-0.6219	-0.0559	-0.6236	-0.0102	-0.6287	0.0519	-0.6177	0.1028	-0.5788	0.1301	-0.5862
44	0.125	0.000	-0.5110	-0.5106	-0.7429	-0.5240	-0.5525	-0.5926	-0.3834	-0.6141	-0.2287	-0.6186	-0.0913	-0.6037	0.0260	-0.5626	0.0750	-0.5720
45	0.125	0.333	-0.4925	-0.5677	-0.6905	-0.5736	-0.6444	-0.6078	-0.4683	-0.6144	-0.3059	-0.6221	-0.1674	-0.6044	-0.0342	-0.5651	0.0212	-0.5743
46	0.125	0.583	-0.4450	-0.6003	-0.4231	-0.6074	-0.5391	-0.6194	-0.3851	-0.6195	-0.2392	-0.6300	-0.1150	-0.5967	0.0059	-0.5576	0.0596	-0.5712
47	0.125	0.833	-0.2612	-0.6265	-0.2413	-0.6306	-0.1802	-0.6305	-0.1118	-0.6295	-0.0387	-0.6377	0.0426	-0.6048	0.1233	-0.5711	0.1519	-0.5769
48	0.125	0.917	-0.2116	-0.6060	-0.2012	-0.6091	-0.1665	-0.6074	-0.1174	-0.6136	-0.0644	-0.6244	-0.0649	-0.5974	0.0429	-0.5635	0.0687	-0.5724
49	0.083	0.000	-0.3516	-0.4383	-0.3017	-0.4063	-0.2798	-0.5387	-0.2371	-0.5744	-0.1754	-0.5852	-0.0808	-0.5599	0.0042	-0.5399	0.0442	-0.5541
50	0.083	0.333	-0.3457	-0.5826	-0.2995	-0.5171	-0.2671	-0.5581	-0.2222	-0.5758	-0.1618	-0.5796	-0.0742	-0.5640	0.0076	-0.5420	0.0476	-0.5472
51	0.083	0.583	-0.3277	-0.5523	-0.3102	-0.5571	-0.2462	-0.5758	-0.1949	-0.5825	-0.1350	-0.5850	-0.0541	-0.5700	0.0272	-0.5440	0.0641	-0.5456
52	0.083	0.750	-0.3449	-0.5940	-0.3368	-0.5954	-0.2469	-0.6062	-0.2015	-0.6034	-0.1474	-0.6116	-0.0656	-0.5875	0.0214	-0.5553	0.0505	-0.5602
53	0.042	0.000	-0.2612	-0.3706	-0.2631	-0.4012	-0.2651	-0.4757	-0.2510	-0.5212	-0.2273	-0.5455	-0.1749	-0.5458	-0.1051	-0.5194	-0.0776	-0.5304
54	0.042	0.333	-0.2881	-0.4508	-0.2905	-0.4682	-0.2852	-0.5129	-0.2597	-0.5383	-0.2292	-0.5562	-0.1776	-0.5558	-0.1104	-0.5310	-0.0821	-0.5381
55	0.042	0.583	-0.3045	-0.5055	-0.2904	-0.5272	-0.2775	-0.5457	-0.2447	-0.5564	-0.2084	-0.5620	-0.1498	-0.5483	-0.0942	-0.5206	-0.0614	-0.5306
56	0.042	0.750	-0.3162	-0.5374	-0.3091	-0.5440	-0.2785	-0.5552	-0.2493	-0.5604	-0.2029	-0.5642	-0.1527	-0.5524	-0.0977	-0.5242	-0.0647	-0.5374
57	0.792	-0.583	0.4012	-0.5432	0.4549	-0.5548	0.5694	-0.5735	0.6863	-0.5820	0.7761	-0.5941	0.8591	-0.5843	0.9311	-0.5486	0.9424	-0.5651
58	0.208	-0.583	-0.1771	-0.6502	-0.1453	-0.6413	-0.0862	-0.6476	0.0231	-0.6481	0.1215	-0.6576	0.2340	-0.6389	0.3442	-0.6053	0.3801	-0.6080

Table A-6.- (Continued).
M = 0.8

			ALPHA =															
			-2.7	-2.9	-0.1	0.0	4.9	4.9	9.9	9.9	14.9	14.9	19.8	19.8	24.8	24.8	26.5	26.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	0.1474	0.4890	0.3380	0.3370	0.5805	0.0861	0.7647	-1.3034	0.8981	-1.5986	0.9804	-0.5999	1.0551	-0.4336	1.0849	-0.4784
2	0.958	0.333	0.1706	0.4729	0.3258	0.3226	0.5631	0.0817	0.7471	-1.3031	0.8805	-1.6437	0.9637	-0.6271	1.0395	-0.4399	1.0721	-0.4791
3	0.958	0.583	0.1396	0.4347	0.2901	0.2879	0.5205	0.0595	0.7022	-1.2502	0.8347	-1.6307	0.9234	-0.6503	1.0018	-0.4435	1.0367	-0.4831
4	0.958	0.750	0.0762	0.3492	0.2098	0.2101	0.4302	0.0040	0.6069	-1.1271	0.7413	-1.5766	0.8415	-0.6619	0.9251	-0.4422	0.9562	-0.4767
5	0.917	0.000	0.0483	0.2755	0.1613	0.1578	0.3489	-0.0470	0.5162	-0.4904	0.6639	-1.3641	0.7764	-0.6239	0.8800	-0.4420	0.9190	-0.4741
6	0.917	0.333	0.0308	0.2632	0.1482	0.1468	0.3351	-0.0544	0.4998	-0.3626	0.6460	-1.3635	0.7572	-0.6718	0.8643	-0.4500	0.9010	-0.4835
7	0.917	0.583	-0.0026	0.2075	0.0990	0.1025	0.2794	-0.0949	0.4436	-0.2258	0.5898	-1.3050	0.6999	-0.6925	0.8108	-0.4563	0.8496	-0.4790
8	0.917	0.750	-0.1350	0.0526	-0.0439	-0.0383	0.1155	-0.2154	0.2702	-0.2431	0.4139	-1.2175	0.5377	-0.6901	0.6570	-0.4558	0.6995	-0.4745
9	0.875	0.000	-0.1145	0.0380	-0.0405	-0.0386	0.0943	-0.1911	0.2455	-0.2431	0.4087	-1.1858	0.5435	-0.6489	0.6761	-0.4505	0.7260	-0.4705
10	0.875	0.333	-0.1233	0.0301	-0.0470	-0.0472	0.0902	-0.1990	0.2371	-0.2513	0.3886	-1.1745	0.5245	-0.6838	0.6629	-0.4464	0.7077	-0.4819
11	0.875	0.583	-0.1723	-0.0143	-0.0960	-0.0942	0.0393	-0.2398	0.1058	-0.2915	0.3263	-1.1340	0.4607	-0.7109	0.5998	-0.4584	0.6431	-0.4907
12	0.875	0.833	-0.5683	-0.3044	-0.4719	-0.4310	-0.2777	-0.4942	-0.0856	-0.4990	0.0263	-1.1642	0.1843	-0.6940	0.3556	-0.4577	0.4046	-0.4927
13	0.875	0.917	-0.2279	-0.1360	-0.1820	-0.1666	-0.1259	-0.2737	-0.0600	-0.4107	-0.0134	-0.8805	0.1282	-0.6545	0.2593	-0.4436	0.2838	-0.4728
14	0.792	0.000	-1.0087	-0.7001	-0.8079	-0.8075	-0.6365	-1.1029	0.0736	-1.2521	0.2006	-0.6302	0.3235	-0.6516	0.4644	-0.4679	0.5027	-0.4787
15	0.792	0.333	-0.8434	-0.7176	-0.7860	-0.7816	-0.6054	-0.9791	0.0471	-1.2129	0.1485	-0.7213	0.2927	-0.6802	0.4420	-0.4519	0.4831	-0.4775
16	0.792	0.583	-0.6838	-0.5556	-0.7806	-0.7058	-0.4250	-0.7062	-0.0108	-1.0391	0.1312	-0.7985	0.2367	-0.7078	0.3720	-0.4585	0.4152	-0.4973
17	0.792	0.750	-0.4532	-0.1870	-0.3103	-0.2922	-0.1136	-0.4602	0.0030	-0.7039	0.0874	-0.7720	0.1863	-0.7124	0.3032	-0.4655	0.3383	-0.5007
18	0.792	0.833	-0.2820	-0.1355	-0.1950	-0.1853	-0.1064	-0.3263	-0.0101	-0.5063	0.0384	-0.6150	0.1380	-0.7051	0.2537	-0.4659	0.2059	-0.5014
19	0.792	0.917																
20	0.667	0.000	-0.2030	-0.0420	-0.1312	-0.1353	-0.0250	-0.2639	0.0452	-0.3021	0.1496	-0.6316	0.2463	-0.7126	0.3576	-0.4773	0.3969	-0.4900
21	0.667	0.333	-0.2143	-0.0440	-0.1287	-0.1295	-0.0300	-0.2050	0.0336	-0.2949	0.1323	-0.6422	0.2246	-0.7228	0.3347	-0.4765	0.3712	-0.4970
22	0.667	0.583	-0.1763	-0.0451	-0.0815	-0.0701	-0.0200	-0.1966	0.0332	-0.2419	0.1085	-0.5245	0.1885	-0.7471	0.2962	-0.4754	0.3301	-0.5044
23	0.667	0.750	-0.1109	-0.0427	-0.0694	-0.0626	-0.0234	-0.1504	0.0123	-0.2687	0.0554	-0.4565	0.1181	-0.7571	0.2207	-0.4874	0.2408	-0.5088
24	0.667	0.833	-0.1214	-0.0444	-0.0682	-0.0601	-0.0319	-0.1585	-0.0001	-0.3008	0.0263	-0.5789	0.0791	-0.7553	0.1884	-0.4866	0.2037	-0.5096
25	0.667	0.917	-0.1157	-0.0411	-0.0537	-0.0475	-0.0361	-0.1742	-0.0265	-0.4766	-0.0311	-0.9797	0.0095	-0.7604	0.0993	-0.4729	0.1196	-0.5111
26	0.500	0.000	-0.0717	-0.0312	-0.0439	-0.0383	-0.0121	-0.0838	0.0411	-0.1171	0.1134	-0.4075	0.1723	-0.7751	0.2504	-0.5040	0.2851	-0.5401
27	0.500	0.333	-0.0729	-0.0314	-0.0456	-0.0376	-0.0167	-0.0830	0.0327	-0.1217	0.1017	-0.3429	0.1557	-0.7802	0.2339	-0.5049	0.2686	-0.5413
28	0.500	0.583																
29	0.500	0.750	-0.0677	-0.0256	-0.0461	-0.0377	-0.0200	-0.0937	0.0048	-0.1994	0.0355	-0.4091	0.0508	-0.7766	0.1220	-0.5177	0.1421	-0.5445
30	0.500	0.833	-0.0715	-0.0252	-0.0441	-0.0331	-0.0214	-0.1057	-0.0034	-0.2609	0.0118	-0.5842	0.0174	-0.7987	0.0888	-0.5212	0.1024	-0.5477
31	0.500	0.917																
32	0.333	0.000	-0.1002	-0.0582	-0.0802	-0.0760	-0.0583	-0.1067	-0.0071	-0.1339	0.0494	-0.1848	0.0627	-0.6948	0.1139	-0.5493	0.1375	-0.5723
33	0.333	0.333	-0.0990	-0.0584	-0.0772	-0.0740	-0.0502	-0.1048	-0.0122	-0.1376	0.0410	-0.1614	0.0525	-0.7069	0.1000	-0.5505	0.1237	-0.5687
34	0.333	0.583	-0.0790	-0.0493	-0.0663	-0.0594	-0.0370	-0.0927	-0.0099	-0.1469	0.0331	-0.2136	0.0335	-0.6525	0.0700	-0.5393	0.0973	-0.5789
35	0.333	0.750	-0.0803	-0.0413	-0.0615	-0.0524	-0.0369	-0.1003	-0.0230	-0.1947	0.0048	-0.3654	-0.0148	-0.6267	0.0160	-0.5476	0.0308	-0.5816
36	0.333	0.833	-0.0786	-0.0362	-0.0568	-0.0461	-0.0352	-0.1101	-0.0300	-0.2782	-0.0114	-0.5611	-0.0403	-0.6694	-0.0115	-0.5457	0.0033	-0.5834
37	0.333	0.917	-0.0814	-0.0331	-0.0444	-0.0371	-0.0413	-0.1878	-0.0400	-0.4225	-0.0483	-0.6308	-0.0938	-0.6702	-0.0657	-0.5377	-0.0619	-0.5585
38	0.208	0.000	-0.2061	-0.1519	-0.1929	-0.1859	-0.1436	-0.2191	-0.1184	-0.2374	-0.0730	-0.1346	-0.1049	-0.5614	-0.0804	-0.5760	-0.0666	-0.5961
39	0.208	0.333	-0.2152	-0.1586	-0.1994	-0.1901	-0.1508	-0.2222	-0.1227	-0.2440	-0.0815	-0.2023	-0.1139	-0.5251	-0.0923	-0.5803	-0.0799	-0.5985
40	0.208	0.583	-0.1768	-0.1519	-0.1624	-0.1535	-0.1361	-0.1850	-0.1087	-0.2260	-0.0732	-0.2534	-0.1128	-0.4375	-0.0995	-0.5800	-0.0899	-0.6023
41	0.208	0.750	-0.1431	-0.1184	-0.1231	-0.1132	-0.1131	-0.1575	-0.0963	-0.2440	-0.0758	-0.3944	-0.1361	-0.4531	-0.1415	-0.5837	-0.1369	-0.6015
42	0.208	0.833	-0.1233	-0.0976	-0.1013	-0.0924	-0.0926	-0.1551	-0.0870	-0.3249	-0.0748	-0.5563	-0.1422	-0.5268	-0.1590	-0.5812	-0.1571	-0.6012
43	0.208	0.917	-0.1152	-0.0756	-0.0649	-0.0713	-0.0771	-0.2171	-0.0847	-0.3946	-0.0847	-0.5329	-0.1538	-0.5501	-0.1852	-0.5646	-0.1888	-0.5708
44	0.125	0.000	-0.2529	-0.2000	-0.2366	-0.2370	-0.2084	-0.2331	-0.2375	-0.2304	-0.2277	-0.0982	-0.5721	-0.3730	-1.0676	-0.5320	-1.1043	-0.5432
45	0.125	0.333	-0.2898	-0.2232	-0.2691	-0.2694	-0.2288	-0.2766	-0.2535	-0.3079	-0.2438	-0.2163	-0.6207	-0.3396	-1.1230	-0.5533	-1.2077	-0.5645
46	0.125	0.583	-0.3607	-0.2773	-0.3265	-0.3089	-0.2587	-0.3608	-0.2808	-0.3725	-0.2792	-0.5035	-0.6689	-0.4295	-1.1378	-0.5786	-1.1034	-0.5906
47	0.125	0.833	-0.2072	-0.1899	-0.1796	-0.1664	-0.1838	-0.2592	-0.1683	-0.4139	-0.1462	-0.5495	-0.3167	-0.4959	-0.4601	-0.5903	-0.4605	-0.6001
48	0.125	0.917	-0.1492	-0.1068	-0.1065	-0.0963	-0.1145	-0.2525	-0.1117	-0.3084	-0.1037	-0.4046	-0.2298	-0.5082	-0.3608	-0.5822	-0.3733	-0.5930
49	0.083	0.000	-0.0823	-0.0614	-0.0770	-0.0637	-0.0799	-0.0538	-0.1197	-0.0579	-0.0996	-0.0488	-0.3668	-0.3026	-0.7426	-0.4927	-0.9337	-0.5088
50	0.083	0.333	-0.0918	-0.0633	-0.0811	-0.0674	-0.0882	-0.0946	-0.1178	-0.1194	-0.1052	-0.0987	-0.3741	-0.3039	-0.8007	-0.5227	-0.9774	-0.5339
51	0.083	0.583	-0.1475	-0.0662	-0.1085	-0.1053	-0.0810	-0.1726	-0.1144	-0.2043	-0.1054	-0.2936	-0.3602	-0.3662	-0.7503	-0.5598	-0.8983	-0.5706
52	0.083	0.750	-0.2207	-0.1957	-0.1716	-0.1661	-0.1458	-0.3057	-0.1276	-0.3122	-0.1073	-0.3081	-0.3325	-0.4590	-0.6863	-0.5800	-0.7545	-0.5911
53	0.042	0.000	0.0085	0.0122	0.0127	0.0190	-0.0135	0.0306	-0.0514	0.0316	-0.0260	-0.0082	-0.2695	-0.2242	-0.4569	-0.4712	-0.5057	-0.4836
54	0.042	0.333	-0.0089	0.0160	0.0137	0.0174	-0.0118	-0.0036	-0.0406	-0.0243	-0.0270	-0.0380	-0.2734	-0.2520	-0.4883	-0.5067	-0.5436	-0.5231
55	0.042	0.583	-0.0091	0.0339	0.0150	0.0127	0.0123	-0.0486	-0.0246	-0.0864	-0.0157	-0.1197	-0.2375	-0.3288	-0.4023	-0.5400	-0.3852	-0.5452
56	0.042	0.750	-0.0777	-0.0050	-0.0420	-0.0468	0.0183	-0.1095	0.0090	-0.1096	-0.0089	-0.1801	-0.2308	-0.3988	-0.3755	-0.5535	-0.3533	-0.5596
57	0.792	-0.583	-0.6390	-0.5496	-0.7070	-0.7059	-0.4286	-0.7204	-0.0089	-0.9828	0.1416	-0.7911	0.2492	-0.6845	0.3858	-0.4621	0.4274	-0.4929
58	0.208	-0.583	-0.1805	-0.1519	-0.1665	-0.1595	-0.1421	-0.1938	-0.1110	-0.2349	-0.0769	-0.2548	-0.1128	-0.4675	-0.1013	-0.5753	-0.0880	-0.5981

Table A-6.- (Continued).
M = 0.8

			ALPHA =															
			27.2	27.0	29.9	29.7	34.9	34.7	39.8	39.6	44.8	44.6	49.8	49.6	54.7	54.5	56.5	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	1.0898	-0.4479	1.1180	-0.5122	1.1571	-0.5602	1.1699	-0.5621	1.1704	-0.5763	1.1386	-0.5951	1.0981	-0.5873	1.0811	-0.5893
2	0.958	0.333	1.0740	-0.4528	1.1053	-0.5141	1.1447	-0.5609	1.1593	-0.5623	1.1593	-0.5742	1.1302	-0.5844	1.0918	-0.5860	1.0767	-0.5805
3	0.958	0.583	1.0371	-0.4589	1.0690	-0.5187	1.1132	-0.5572	1.1321	-0.5559	1.1314	-0.5673	1.1086	-0.5827	1.0727	-0.5819	1.0573	-0.5843
4	0.958	0.750	0.9861	-0.4650	0.9974	-0.5197	1.0517	-0.5579	1.0753	-0.5561	1.0777	-0.5631	1.0673	-0.5769	1.0409	-0.5806	1.0185	-0.5752
5	0.917	0.000	0.9338	-0.4592	0.9822	-0.5136	1.0627	-0.5673	1.1187	-0.5664	1.1520	-0.5730	1.1707	-0.5845	1.1711	-0.5889	1.1594	-0.5850
6	0.917	0.333	0.9148	-0.4712	0.9651	-0.5230	1.0476	-0.5745	1.1031	-0.5748	1.1362	-0.5822	1.1582	-0.5889	1.1574	-0.5926	1.1474	-0.5932
7	0.917	0.583	0.8597	-0.4734	0.9103	-0.5302	0.9964	-0.5672	1.0563	-0.5653	1.0972	-0.5832	1.1135	-0.5921	1.1154	-0.5920	1.1006	-0.5921
8	0.917	0.750	0.7116	-0.4640	0.7670	-0.5256	0.8640	-0.5572	0.9348	-0.5572	0.9858	-0.5720	1.0161	-0.5857	1.0307	-0.5845	1.0264	-0.5830
9	0.875	0.000	0.7461	-0.4612	0.8138	-0.5200	0.9307	-0.5618	1.0207	-0.5641	1.0883	-0.5797	1.1371	-0.5937	1.1656	-0.5911	1.1653	-0.5912
10	0.875	0.333	0.7272	-0.4714	0.7926	-0.5279	0.9091	-0.5675	0.9974	-0.5745	1.0708	-0.5825	1.1227	-0.5915	1.1487	-0.5922	1.1484	-0.5982
11	0.875	0.583	0.6603	-0.4754	0.7208	-0.5330	0.8428	-0.5701	0.9333	-0.5715	1.0092	-0.5820	1.0641	-0.5906	1.0944	-0.5935	1.0949	-0.5966
12	0.875	0.833	0.4188	-0.4806	0.4841	-0.5376	0.5902	-0.5689	0.6687	-0.5710	0.7188	-0.5826	0.7696	-0.5870	0.8160	-0.5940	0.8240	-0.6008
13	0.875	0.917	0.2075	-0.4716	0.3495	-0.5293	0.4360	-0.5625	0.5098	-0.5598	0.5752	-0.5804	0.6210	-0.5851	0.6647	-0.5896	0.6693	-0.5950
14	0.792	0.000	0.5248	-0.4711	0.5919	-0.5228	0.7257	-0.5714	0.8413	-0.5746	0.9453	-0.5862	1.0217	-0.5890	1.0959	-0.5955	1.1087	-0.6014
15	0.792	0.333	0.5966	-0.4721	0.5709	-0.5241	0.6988	-0.5785	0.8135	-0.5737	0.9151	-0.5857	0.9957	-0.5887	1.0709	-0.5911	1.0837	-0.6003
16	0.792	0.583	0.4378	-0.4805	0.5032	-0.5279	0.6284	-0.5721	0.7317	-0.5726	0.8362	-0.5830	0.9170	-0.5814	0.9097	-0.6060	1.0043	-0.5858
17	0.792	0.750	0.3510	-0.4832	0.4069	-0.5335	0.5061	-0.5733	0.6003	-0.5697	0.6879	-0.5833	0.7601	-0.5813	0.8234	-0.6071	0.8307	-0.5878
18	0.792	0.833	0.3026	-0.4867	0.3568	-0.5352	0.4515	-0.5741	0.5350	-0.5734	0.6126	-0.5869	0.6800	-0.5846	0.7308	-0.6068	0.7517	-0.5889
19	0.792	0.917																
20	0.667	0.000	0.4177	-0.4921	0.4841	-0.5430	0.6062	-0.5765	0.7155	-0.5774	0.8208	-0.5913	0.9104	-0.5986	0.9929	-0.6047	1.0228	-0.6027
21	0.667	0.333	0.3920	-0.4962	0.4602	-0.5442	0.5799	-0.5750	0.6891	-0.5751	0.7984	-0.5926	0.8808	-0.5983	0.9648	-0.6044	0.9917	-0.6003
22	0.667	0.583	0.3427	-0.5002	0.4050	-0.5567	0.5155	-0.5767	0.6141	-0.5827	0.7131	-0.5910	0.8002	-0.5897	0.8832	-0.6107	0.9087	-0.6088
23	0.667	0.750	0.2587	-0.4999	0.3123	-0.5566	0.4035	-0.5771	0.4859	-0.5799	0.5718	-0.5875	0.6452	-0.5887	0.7169	-0.6122	0.7418	-0.6074
24	0.667	0.833	0.2142	-0.5064	0.2639	-0.5592	0.3460	-0.5807	0.4203	-0.5852	0.4972	-0.5902	0.5677	-0.5926	0.6316	-0.6210	0.6559	-0.6116
25	0.667	0.917	0.1326	-0.4999	0.1697	-0.5469	0.2372	-0.5686	0.2980	-0.5714	0.3487	-0.5897	0.4190	-0.5990	0.4748	-0.6100	0.4895	-0.6061
26	0.500	0.000	0.3915	-0.5291	0.3558	-0.5759	0.4656	-0.5875	0.5694	-0.5843	0.6744	-0.6015	0.7779	-0.6110	0.8744	-0.6269	0.9008	-0.6184
27	0.500	0.333	0.2805	-0.5281	0.3372	-0.5715	0.4445	-0.5833	0.5459	-0.5810	0.6483	-0.5990	0.7499	-0.6120	0.8451	-0.6232	0.8718	-0.6187
28	0.500	0.583																
29	0.500	0.750	0.1541	-0.5285	0.1975	-0.5682	0.2816	-0.5878	0.3582	-0.5966	0.4373	-0.5978	0.5202	-0.6137	0.5995	-0.6295	0.6274	-0.6162
30	0.500	0.833	0.1177	-0.5309	0.1586	-0.5708	0.2312	-0.5896	0.3006	-0.6012	0.3707	-0.6040	0.4493	-0.6123	0.5225	-0.6333	0.5472	-0.6225
31	0.500	0.917																
32	0.333	0.000	0.1573	-0.5694	0.2073	-0.6006	0.2994	-0.6090	0.3952	-0.6109	0.4986	-0.6176	0.6041	-0.6229	0.7117	-0.6315	0.7459	-0.6253
33	0.333	0.333	0.1416	-0.5696	0.1923	-0.5980	0.2835	-0.6071	0.3779	-0.6052	0.4774	-0.6156	0.5846	-0.6221	0.6893	-0.6287	0.7246	-0.6205
34	0.333	0.583	0.1051	-0.5619	0.1517	-0.5897	0.2378	-0.6002	0.3240	-0.6090	0.4195	-0.6214	0.5248	-0.6199	0.6196	-0.6393	0.6567	-0.6180
35	0.333	0.750	0.0403	-0.5609	0.0800	-0.5853	0.1488	-0.5999	0.2207	-0.6087	0.3037	-0.6203	0.3938	-0.6212	0.4770	-0.6398	0.5090	-0.6176
36	0.333	0.833	0.0092	-0.5661	0.0487	-0.5860	0.1091	-0.5981	0.1730	-0.6121	0.2511	-0.6211	0.3309	-0.6236	0.4098	-0.6385	0.4389	-0.6178
37	0.333	0.917	-0.0557	-0.5533	-0.0212	-0.5748	0.0242	-0.5904	0.0704	-0.6002	0.1338	-0.6164	0.2005	-0.6116	0.2693	-0.6316	0.2923	-0.6219
38	0.208	0.000	-0.0583	-0.5808	-0.0177	-0.5979	0.0585	-0.6081	0.1312	-0.6224	0.2290	-0.6334	0.3392	-0.6210	0.4575	-0.6398	0.5001	-0.6290
39	0.208	0.333	-0.0685	-0.5860	-0.0316	-0.5989	0.0457	-0.6093	0.1186	-0.6198	0.2171	-0.6304	0.3255	-0.6244	0.4434	-0.6356	0.4857	-0.6292
40	0.208	0.583	-0.0822	-0.5875	-0.0486	-0.6011	0.0237	-0.6140	0.0471	-0.6205	0.1934	-0.6293	0.3034	-0.6282	0.4171	-0.6315	0.4541	-0.6176
41	0.208	0.750	-0.1265	-0.5831	-0.0984	-0.5960	-0.0314	-0.6106	0.0395	-0.6166	0.1316	-0.6273	0.2347	-0.6253	0.3363	-0.6309	0.3681	-0.6185
42	0.208	0.833	-0.1441	-0.5863	-0.1133	-0.5968	-0.0487	-0.6085	0.0207	-0.6182	0.1084	-0.6292	0.2018	-0.6227	0.2944	-0.6310	0.3219	-0.6220
43	0.208	0.917	-0.1763	-0.5783	-0.1478	-0.5863	-0.0973	-0.5997	-0.0395	-0.6039	0.0326	-0.6234	0.1050	-0.6171	0.1858	-0.6185	0.2104	-0.6065
44	0.125	0.000	-1.1837	-0.5374	-1.1913	-0.5521	-0.9493	-0.5907	-0.7957	-0.6104	-0.6236	-0.6213	-0.3660	-0.6142	0.0063	-0.6138	0.0908	-0.6027
45	0.125	0.333	-1.1913	-0.5618	-1.2046	-0.5711	-0.9226	-0.5984	-0.7633	-0.6098	-0.5807	-0.6175	-0.3466	-0.6120	-0.0827	-0.6122	-0.0078	-0.6017
46	0.125	0.583	-1.1730	-0.5811	-1.1379	-0.5796	-0.9005	-0.6002	-0.7180	-0.6076	-0.5259	-0.6154	-0.2755	-0.6016	-0.0632	-0.6199	-0.0038	-0.6083
47	0.125	0.833	-0.4582	-0.5877	-0.4164	-0.5876	-0.2708	-0.6041	-0.1262	-0.6068	-0.0135	-0.6179	0.0958	-0.6068	0.1919	-0.6202	0.2304	-0.6134
48	0.125	0.917	-0.3425	-0.5863	-0.2996	-0.5822	-0.2083	-0.5948	-0.1214	-0.6017	-0.0445	-0.6159	0.0342	-0.6020	0.1094	-0.6158	0.1400	-0.6149
49	0.083	0.000	-0.9431	-0.5804	-1.0391	-0.5112	-0.9450	-0.5658	-0.4229	-0.5923	-0.0389	-0.6043	0.0395	-0.6013	0.1323	-0.6058	0.1733	-0.5940
50	0.083	0.333	-0.9537	-0.5250	-1.0103	-0.5311	-0.8860	-0.5714	-0.3563	-0.5834	-0.0743	-0.5973	0.0376	-0.5926	0.1289	-0.6006	0.1721	-0.5866
51	0.083	0.583	-0.7873	-0.5573	-0.6657	-0.5501	-0.5672	-0.5755	-0.1723	-0.5773	-0.0160	-0.5903	0.0490	-0.5914	0.1383	-0.5970	0.1817	-0.5824
52	0.083	0.750	-0.6545	-0.5802	-0.4908	-0.5737	-0.3588	-0.5855	-0.1211	-0.5892	-0.0762	-0.6010	0.0146	-0.5883	0.1128	-0.5968	0.1554	-0.5913
53	0.042	0.000	-0.4788	-0.4638	-0.5341	-0.4779	-0.3666	-0.5314	-0.1680	-0.5645	-0.1233	-0.5833	-0.0521	-0.5795	0.0283	-0.5889	0.0658	-0.5859
54	0.042	0.333	-0.4651	-0.5116	-0.4216	-0.5202	-0.3367	-0.5523	-0.1675	-0.5739	-0.1306	-0.5850	-0.0632	-0.5780	0.0151	-0.5945	0.0520	-0.5913
55	0.042	0.583	-0.3364	-0.5495	-0.2869	-0.5372	-0.2253	-0.5602	-0.1696	-0.5667	-0.1248	-0.5733	-0.0510	-0.5735	0.0241	-0.5813	0.0534	-0.5828
56	0.042	0.750	-0.3174	-0.5547	-0.2990	-0.5384	-0.2511	-0.5540	-0.2020	-0.5604	-0.1461	-0.5645	-0.0463	-0.5665	0.0109	-0.5729	0.0392	-0.5778
57	0.792	-0.583	0.4605	-0.4817	0.5231	-0.5232	0.6421	-0.5531	0.7541	-0.5563	0.8514	-0.5696	0.9534	-0.5782	1.0035	-0.5924	1.0286	-0.6017
58	0.208	-0.583	-0.0777	-0.5852	-0.0431	-0.5998	0.0343	-0.6016	0.1119	-0.6177	0.2099	-0.6186	0.3265	-0.6236	0.4299	-0.6384	0.4701	-0.6309

Table A-6.- (Continued).
M = 0.9

			ALPHA =															
			-2.0	-3.1	-0.3	-0.1	4.7	4.8	9.6	9.8	14.7	14.7	19.6	19.7	24.6	24.7	29.3	29.1
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	0.2075	0.5752	0.6333	0.6648	0.6662	0.2265	0.8008	-0.8603	0.9187	-1.2087	1.0256	-0.6701	1.0972	-0.5075	1.1202	-0.5571
2	0.958	0.333	0.2759	0.5561	0.4150	0.4273	0.6251	0.2122	0.7622	-0.8362	0.9018	-1.2456	1.0099	-0.4904	1.0015	-0.5185	1.1059	-0.5679
3	0.958	0.583	0.2404	0.5150	0.3757	0.3842	0.5811	0.1096	0.7365	-0.7629	0.8598	-1.1081	0.9712	-0.4976	1.0469	-0.5156	1.0711	-0.5680
4	0.958	0.750	0.1717	0.4278	0.2484	0.3095	0.4930	0.1487	0.6445	-0.6779	0.7496	-1.1008	0.8868	-0.5045	0.9678	-0.5238	0.9980	-0.6059
5	0.917	0.000	0.1480	0.3751	0.2732	0.2790	0.4333	0.0053	0.5673	-0.5390	0.6890	-0.9554	0.8208	-0.4918	0.9208	-0.5221	0.9605	-0.6028
6	0.917	0.333	0.1947	0.3012	0.2575	0.2640	0.4172	0.0744	0.5511	-0.5307	0.6730	-0.9022	0.8030	-0.5083	0.9048	-0.5391	0.9435	-0.6134
7	0.917	0.583	0.1921	0.3053	0.2058	0.2097	0.3568	0.0218	0.4941	-0.4936	0.6144	-0.9423	0.7452	-0.5171	0.8536	-0.5350	0.8875	-0.6063
8	0.917	0.750	-0.0291	0.1483	0.0583	0.0630	0.1936	-0.0993	0.3245	-0.4610	0.4484	-0.8981	0.5810	-0.5160	0.7052	-0.5341	0.7417	-0.6009
9	0.875	0.000	0.0279	0.1741	0.1042	0.1006	0.2124	-0.0341	0.3199	-0.3722	0.4373	-0.8588	0.5861	-0.4967	0.7240	-0.5236	0.7678	-0.5915
10	0.875	0.333	0.0208	0.1600	0.0926	0.0945	0.2005	-0.0472	0.3075	-0.3477	0.4250	-0.8484	0.5684	-0.4955	0.7019	-0.5345	0.7491	-0.6393
11	0.875	0.583	-0.0389	0.0986	0.0310	0.0352	0.1389	-0.1000	0.2481	-0.3113	0.3453	-0.8247	0.5034	-0.5090	0.6387	-0.5497	0.6865	-0.6399
12	0.875	0.833	-0.6773	-0.5055	-0.6155	-0.6083	-0.4100	-0.5844	-0.4293	-0.7253	-0.1043	-0.0898	0.1341	-0.4982	0.3769	-0.5491	0.4312	-0.6277
13	0.875	0.917	-0.2060	-0.1530	-0.1698	-0.1597	-0.1509	-0.2360	-0.1222	-0.4619	-0.0053	-0.7153	0.1206	-0.5004	0.2927	-0.5305	0.3258	-0.5693
14	0.792	0.000	-0.9289	-0.7154	-0.7753	-0.7688	-0.6497	-0.9717	-0.5181	-1.0487	0.2293	-0.5839	0.3659	-0.4931	0.5045	-0.5319	0.5460	-0.5612
15	0.792	0.333	-0.9304	-0.7132	-0.7626	-0.7543	-0.6806	-0.9763	-0.5209	-1.0307	0.1905	-0.6322	0.3326	-0.4998	0.4781	-0.5321	0.5287	-0.5582
16	0.792	0.583	-0.9142	-0.7416	-0.7915	-0.7910	-0.6970	-0.9551	-0.4959	-0.9773	0.0547	-0.6630	0.2688	-0.5134	0.4117	-0.5318	0.4599	-0.5983
17	0.792	0.750	-0.6595	-0.5161	-0.5863	-0.5676	-0.5047	-0.6341	-0.2455	-0.6345	0.0302	-0.7063	0.2026	-0.5236	0.3460	-0.5433	0.3856	-0.5983
18	0.792	0.833	-0.3984	-0.3510	-0.3714	-0.3638	-0.3522	-0.3935	-0.0641	-0.3917	0.0321	-0.5578	0.1438	-0.5221	0.2448	-0.5395	0.3332	-0.5923
19	0.792	0.917																
20	0.667	0.000	-0.5911	-0.1090	-0.6238	-0.5355	0.0391	-0.7894	0.0555	-0.4717	0.1458	-0.5943	0.2690	-0.5025	0.3979	-0.5565	0.4454	-0.5746
21	0.667	0.333	-0.4998	-0.0731	-0.4403	-0.3595	0.0285	-0.6314	0.0464	-0.5268	0.1270	-0.6219	0.2473	-0.5056	0.3765	-0.5556	0.4211	-0.5738
22	0.667	0.583	-0.3735	-0.0529	-0.2496	-0.1840	-0.0222	-0.4550	0.0416	-0.6132	0.0985	-0.6210	0.2046	-0.5134	0.3332	-0.5469	0.3711	-0.6018
23	0.667	0.750	-0.3154	-0.0322	-0.1356	-0.1136	-0.0163	-0.4096	0.0168	-0.5558	0.0421	-0.5615	0.1237	-0.5236	0.2552	-0.5510	0.2861	-0.6141
24	0.667	0.833	-0.2927	-0.0373	-0.1112	-0.0978	-0.0361	-0.3829	-0.0158	-0.5445	0.0148	-0.6181	0.0790	-0.5267	0.2128	-0.5450	0.2391	-0.6102
25	0.667	0.917	-0.2790	-0.0465	-0.0949	-0.0787	-0.0554	-0.3717	-0.0627	-0.6106	-0.0498	-0.8569	-0.0057	-0.5284	0.1323	-0.5391	0.1562	-0.6202
26	0.500	0.000	-0.0339	0.0760	0.0464	0.0455	0.0120	-0.0532	0.0379	-0.2512	0.1109	-0.5574	0.1928	-0.5446	0.2932	-0.5632	0.3315	-0.6379
27	0.500	0.333	-0.0098	0.0206	0.0358	0.0368	0.0075	-0.0252	0.0308	-0.1699	0.0968	-0.5510	0.1755	-0.5461	0.2754	-0.5667	0.3131	-0.6319
28	0.500	0.583																
29	0.500	0.750	-0.0305	-0.0020	0.0069	0.0060	-0.0074	-0.0678	-0.0020	-0.1247	0.0127	-0.4998	0.0583	-0.5703	0.1569	-0.5940	0.1874	-0.6626
30	0.500	0.833	-0.0440	-0.0025	-0.0017	-0.0005	-0.0137	-0.0930	-0.0100	-0.1981	-0.0153	-0.6379	0.0194	-0.5796	0.1202	-0.5894	0.1482	-0.6598
31	0.500	0.917																
32	0.333	0.000	-0.0133	-0.0250	-0.0110	-0.0167	-0.0266	-0.0254	0.0068	-0.0755	0.0583	-0.4338	0.1161	-0.5850	0.1823	-0.5972	0.2116	-0.6705
33	0.333	0.333	-0.0163	-0.0244	-0.0135	-0.0157	-0.0278	-0.0279	0.0020	-0.0674	0.0490	-0.4060	0.1033	-0.5835	0.1676	-0.6018	0.1969	-0.6873
34	0.333	0.583	-0.0277	-0.0173	-0.0109	-0.0135	-0.0274	-0.0418	0.0002	-0.0960	0.0280	-0.3619	0.0752	-0.5916	0.1282	-0.6100	0.1616	-0.6527
35	0.333	0.750	-0.0433	-0.0241	-0.0143	-0.0157	-0.0313	-0.0669	-0.0140	-0.1050	-0.0102	-0.4734	0.0110	-0.6067	0.0613	-0.6247	0.0896	-0.6345
36	0.333	0.833	-0.0507	-0.0185	-0.0160	-0.0160	-0.0334	-0.0838	-0.0229	-0.2751	-0.0287	-0.8360	-0.0174	-0.6100	0.0297	-0.6205	0.0536	-0.6391
37	0.333	0.917	-0.0786	-0.0172	-0.0143	-0.0156	-0.0294	-0.1908	-0.0438	-0.5231	-0.0496	-0.8936	-0.0796	-0.5850	-0.0305	-0.6150	-0.0161	-0.6234
38	0.208	0.000	-0.1413	-0.1045	-0.1180	-0.1171	-0.0998	-0.1580	-0.0722	-0.1772	-0.0353	-0.3151	-0.0017	-0.6011	0.0260	-0.6437	0.0492	-0.6147
39	0.208	0.333	-0.1327	-0.1104	-0.1208	-0.1167	-0.1068	-0.1454	-0.0756	-0.1641	-0.0426	-0.2811	-0.0100	-0.5915	0.0132	-0.6423	0.0360	-0.6163
40	0.208	0.583	-0.1054	-0.0975	-0.0925	-0.0899	-0.1039	-0.1199	-0.0675	-0.1447	-0.0448	-0.2757	-0.0248	-0.5858	-0.0039	-0.6425	0.0163	-0.6259
41	0.208	0.750	-0.0944	-0.0829	-0.0730	-0.0694	-0.0953	-0.1144	-0.0719	-0.1899	-0.0472	-0.3958	-0.0731	-0.5953	-0.0589	-0.6550	-0.0412	-0.6363
42	0.208	0.833	-0.0867	-0.0690	-0.0630	-0.0585	-0.0849	-0.1228	-0.0738	-0.2963	-0.0739	-0.5486	-0.0942	-0.5962	-0.0870	-0.6507	-0.0731	-0.6378
43	0.208	0.917	-0.0889	-0.0550	-0.0486	-0.0458	-0.0735	-0.2080	-0.0839	-0.4157	-0.0964	-0.5688	-0.1307	-0.5837	-0.1313	-0.6462	-0.1220	-0.6202
44	0.125	0.000	-0.2622	-0.1550	-0.2062	-0.1907	-0.1596	-0.2866	-0.1681	-0.2180	-0.2252	-0.2302	-0.4526	-0.5698	-0.9552	-0.6330	-0.9460	-0.5701
45	0.125	0.333	-0.2840	-0.1827	-0.2373	-0.2217	-0.1775	-0.2878	-0.1879	-0.3570	-0.2294	-0.2084	-0.4464	-0.5657	-0.9570	-0.6432	-0.9449	-0.5556
46	0.125	0.583	-0.2986	-0.2604	-0.2496	-0.2333	-0.2487	-0.2488	-0.2193	-0.3370	-0.2305	-0.2833	-0.4706	-0.5693	-0.9517	-0.6438	-0.9458	-0.6148
47	0.125	0.833	-0.1809	-0.1403	-0.1501	-0.1443	-0.1907	-0.2271	-0.1567	-0.4177	-0.1497	-0.5569	-0.3018	-0.5731	-0.3663	-0.6581	-0.3608	-0.6322
48	0.125	0.917	-0.1470	-0.1121	-0.0965	-0.0869	-0.1315	-0.2540	-0.1269	-0.4422	-0.1767	-0.4920	-0.2376	-0.5727	-0.3179	-0.6544	-0.3178	-0.6323
49	0.083	0.000	-0.0976	-0.0759	-0.0997	-0.0854	-0.0823	-0.1188	-0.0927	-0.0704	-0.1457	-0.2125	-0.2675	-0.5230	-0.8618	-0.5879	-0.8685	-0.5783
50	0.083	0.333	-0.1799	-0.0956	-0.1071	-0.0953	-0.0968	-0.1692	-0.1097	-0.2149	-0.1425	-0.1992	-0.2672	-0.5429	-0.8831	-0.6182	-0.8860	-0.5902
51	0.083	0.583	-0.1889	-0.1308	-0.1376	-0.1233	-0.1241	-0.2059	-0.1275	-0.2510	-0.1360	-0.2164	-0.2690	-0.5564	-0.8428	-0.6383	-0.8314	-0.6119
52	0.083	0.750	-0.1986	-0.2208	-0.1502	-0.1485	-0.2148	-0.2270	-0.1417	-0.3116	-0.1218	-0.3382	-0.2540	-0.5581	-0.7329	-0.6487	-0.7142	-0.5961
53	0.042	0.000	-0.0171	-0.0345	-0.0240	-0.0184	-0.0481	-0.0157	-0.0600	0.0061	-0.1144	-0.1603	-0.2181	-0.4809	-0.6578	-0.5641	-0.6900	-0.5046
54	0.042	0.333	-0.0687	-0.0355	-0.0214	-0.0170	-0.0536	-0.0833	-0.0707	-0.1320	-0.1128	-0.1805	-0.2193	-0.5198	-0.7251	-0.6082	-0.7616	-0.5405
55	0.042	0.583	-0.0992	-0.0515	-0.0434	-0.0341	-0.0563	-0.1274	-0.0812	-0.1892	-0.0876	-0.1857	-0.2081	-0.5452	-0.7128	-0.6331	-0.7041	-0.5806
56	0.042	0.750	-0.1123	-0.0898	-0.0678	-0.0640	-0.0567	-0.1464	-0.0779	-0.2140	-0.0562	-0.2302	-0.1628	-0.5433	-0.8759	-0.6330	-0.6555	-0.5933
57	0.792	-0.583	-0.9190	-0.7424	-0.7915	-0.7888	-0.7053	-0.9647	-0.4738	-0.9817	0.0587	-0.6616	0.2871	-0.4989	0.4267	-0.5378	0.4648	-0.6221
58	0.208	-0.583	-0.1107	-0.1028	-0.0955	-0.0988	-0.1087	-0.1221	-0.0714	-0.1491	-0.0426	-0.2770	-0.0265	-0.5805	0.0040	-0.6340	0.0137	-0.6437

Table A-6.- (Continued).
M = 0.9

			ALPHA =															
			27.1	26.9	29.7	29.6	34.7	34.5	39.7	39.5	44.7	44.5	49.6	49.5	54.6	54.4	56.3	56.1
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	1.1372	-0.5531	1.1624	-0.5870	1.1987	-0.5923	1.2126	-0.5590	1.2172	-0.5526	1.1898	-0.5516	1.1499	-0.5793	1.1378	-0.5918
2	0.958	0.333	1.1232	-0.5674	1.1496	-0.5978	1.1858	-0.6073	1.2027	-0.5689	1.2086	-0.5637	1.1808	-0.5620	1.1435	-0.5833	1.1310	-0.5955
3	0.958	0.583	1.0875	-0.5668	1.1151	-0.6036	1.1551	-0.6083	1.1754	-0.5657	1.1844	-0.5649	1.1589	-0.5606	1.1241	-0.5784	1.1118	-0.5935
4	0.958	0.750	1.0140	-0.5605	1.0461	-0.6142	1.0949	-0.6151	1.1215	-0.5633	1.1316	-0.5688	1.1178	-0.5657	1.0850	-0.5804	1.0733	-0.5939
5	0.917	0.000	0.9830	-0.5660	1.0279	-0.5963	1.1048	-0.6027	1.1608	-0.5689	1.1990	-0.5617	1.2119	-0.5622	1.2077	-0.5832	1.2045	-0.5906
6	0.917	0.333	0.9456	-0.5800	1.0115	-0.6178	1.0892	-0.6208	1.1453	-0.5770	1.1839	-0.5749	1.1981	-0.5711	1.1948	-0.5925	1.1917	-0.6068
7	0.917	0.583	0.9131	-0.5724	0.9597	-0.6199	1.0372	-0.6202	1.0952	-0.5731	1.1428	-0.5702	1.1590	-0.5700	1.1590	-0.5903	1.1626	-0.6027
8	0.917	0.750	0.7688	-0.5643	0.8207	-0.6096	0.9082	-0.6121	0.9780	-0.5650	1.0371	-0.5646	1.0653	-0.5654	1.0775	-0.5833	1.0845	-0.5947
9	0.875	0.000	0.8000	-0.5560	0.8621	-0.5967	0.9704	-0.6086	1.0609	-0.5675	1.1367	-0.5593	1.1792	-0.5606	1.2043	-0.5862	1.2137	-0.5983
10	0.875	0.333	0.7772	-0.5752	0.8406	-0.5981	0.9484	-0.6177	1.0408	-0.5676	1.1156	-0.5728	1.1650	-0.5635	1.1916	-0.5904	1.1949	-0.6013
11	0.875	0.583	0.7123	-0.5836	0.7755	-0.6033	0.8846	-0.6218	0.9791	-0.5697	1.0565	-0.5758	1.1088	-0.5696	1.1402	-0.5920	1.1450	-0.6008
12	0.875	0.833	0.4712	-0.5778	0.5360	-0.6080	0.6357	-0.6248	0.7228	-0.5730	0.7775	-0.5817	0.8291	-0.5737	0.8762	-0.5938	0.8877	-0.6023
13	0.875	0.917	0.3470	-0.5540	0.3984	-0.6026	0.4873	-0.6181	0.5679	-0.5717	0.6410	-0.5698	0.6981	-0.5678	0.7359	-0.5868	0.7462	-0.5940
14	0.792	0.000	0.5784	-0.5566	0.6431	-0.5991	0.7674	-0.6078	0.8824	-0.5754	0.9898	-0.5650	1.0731	-0.5654	1.1365	-0.5881	1.1562	-0.5985
15	0.792	0.333	0.5579	-0.5685	0.6212	-0.6015	0.7397	-0.6147	0.8562	-0.5740	0.9625	-0.5684	1.0484	-0.5679	1.1116	-0.5871	1.1308	-0.5970
16	0.792	0.583	0.4867	-0.5683	0.5529	-0.5981	0.6657	-0.6220	0.7814	-0.5763	0.8836	-0.5763	0.9708	-0.5722	1.0366	-0.5883	1.0533	-0.6026
17	0.792	0.750	0.4024	-0.5748	0.4566	-0.6016	0.5540	-0.6262	0.6562	-0.5799	0.7637	-0.5793	0.8213	-0.5775	0.8804	-0.5903	0.8967	-0.6047
18	0.792	0.833	0.3521	-0.5698	0.4050	-0.6067	0.5001	-0.6297	0.5925	-0.5824	0.6735	-0.5830	0.7454	-0.5782	0.8009	-0.5938	0.8105	-0.6103
19	0.792	0.917																
20	0.667	0.000	0.4730	-0.5964	0.5363	-0.6109	0.6540	-0.6155	0.7663	-0.5776	0.8705	-0.5698	0.9641	-0.5763	1.0427	-0.5981	1.0675	-0.6042
21	0.667	0.333	0.4475	-0.5947	0.5128	-0.6131	0.6261	-0.6224	0.7391	-0.5761	0.8412	-0.5753	0.9368	-0.5766	1.0149	-0.5975	1.0398	-0.6068
22	0.667	0.583	0.3931	-0.6041	0.4529	-0.6228	0.5614	-0.6285	0.6663	-0.5785	0.7663	-0.5863	0.8585	-0.5774	0.9364	-0.6026	0.9546	-0.6151
23	0.667	0.750	0.3061	-0.6156	0.3574	-0.6152	0.4513	-0.6266	0.5425	-0.5799	0.6299	-0.5868	0.7113	-0.5789	0.7816	-0.6048	0.7972	-0.6174
24	0.667	0.833	0.2427	-0.6240	0.3067	-0.6192	0.3925	-0.6323	0.4784	-0.5859	0.5590	-0.5929	0.6368	-0.5822	0.7027	-0.6103	0.7172	-0.6224
25	0.667	0.917	0.1769	-0.6188	0.2126	-0.6199	0.2844	-0.6263	0.3569	-0.5832	0.4270	-0.5834	0.4988	-0.5722	0.5550	-0.5951	0.5720	-0.6141
26	0.500	0.000	0.3646	-0.6367	0.4174	-0.6334	0.5193	-0.6189	0.6259	-0.5893	0.7273	-0.5811	0.8335	-0.5836	0.9228	-0.5998	0.9505	-0.6184
27	0.500	0.333	0.3431	-0.6343	0.3933	-0.6403	0.4969	-0.6254	0.6025	-0.5891	0.7022	-0.5857	0.8084	-0.5787	0.8960	-0.6009	0.9227	-0.6211
28	0.500	0.583																
29	0.500	0.750	0.2085	-0.6213	0.2484	-0.6310	0.3294	-0.6253	0.4162	-0.5931	0.4978	-0.5943	0.5904	-0.5903	0.6675	-0.6118	0.6869	-0.6235
30	0.500	0.833	0.1690	-0.6182	0.2040	-0.6347	0.2783	-0.6274	0.3586	-0.5971	0.4322	-0.5973	0.5199	-0.5928	0.5936	-0.6130	0.6119	-0.6277
31	0.500	0.917																
32	0.333	0.000	0.2427	-0.6267	0.2835	-0.6338	0.3720	-0.6134	0.4656	-0.5854	0.5450	-0.5833	0.6731	-0.5953	0.7695	-0.6129	0.8005	-0.6249
33	0.333	0.333	0.2254	-0.6300	0.2650	-0.6364	0.3543	-0.6134	0.4464	-0.5869	0.5453	-0.5870	0.6531	-0.5982	0.7486	-0.6130	0.7796	-0.6224
34	0.333	0.583	0.1818	-0.6214	0.2180	-0.6371	0.3018	-0.6134	0.3908	-0.5906	0.4835	-0.5959	0.5898	-0.6008	0.6812	-0.6096	0.7061	-0.6324
35	0.333	0.750	0.1065	-0.6331	0.1372	-0.6358	0.2076	-0.6096	0.2850	-0.5939	0.3657	-0.5987	0.4623	-0.6030	0.5443	-0.6123	0.5600	-0.6336
36	0.333	0.833	0.0730	-0.6342	0.0996	-0.6396	0.1629	-0.6187	0.2340	-0.5962	0.3094	-0.6014	0.4012	-0.6013	0.4797	-0.6166	0.5017	-0.6370
37	0.333	0.917	0.0006	-0.6215	0.0220	-0.6283	0.0745	-0.6028	0.1306	-0.5841	0.1961	-0.5966	0.2770	-0.5841	0.3489	-0.6114	0.3606	-0.6237
38	0.208	0.000	0.0765	-0.6341	0.1067	-0.6399	0.1726	-0.6134	0.2404	-0.5932	0.3241	-0.5963	0.4283	-0.6001	0.5336	-0.6129	0.5662	-0.6296
39	0.208	0.333	0.0604	-0.6317	0.0889	-0.6381	0.1579	-0.6092	0.2243	-0.5913	0.3084	-0.6000	0.4136	-0.5926	0.5183	-0.6135	0.5520	-0.6276
40	0.208	0.583	0.0331	-0.6322	0.0601	-0.6328	0.1231	-0.6056	0.1893	-0.5924	0.2736	-0.5998	0.3817	-0.5982	0.4892	-0.6231	0.5184	-0.6259
41	0.208	0.750	-0.0259	-0.6450	-0.0074	-0.6283	0.0475	-0.5988	0.1060	-0.5909	0.1924	-0.6000	0.3025	-0.5999	0.4063	-0.6211	0.4329	-0.6243
42	0.208	0.833	-0.0536	-0.6449	-0.0347	-0.6276	0.0163	-0.5987	0.0708	-0.5904	0.1613	-0.6040	0.2673	-0.6000	0.3640	-0.6206	0.3902	-0.6277
43	0.208	0.917	-0.1080	-0.6333	-0.0921	-0.6199	-0.0505	-0.5876	-0.0030	-0.5823	0.0800	-0.5944	0.1765	-0.5950	0.2576	-0.6119	0.2815	-0.6286
44	0.125	0.000	-0.9300	-0.6055	-0.9123	-0.6104	-0.8010	-0.5953	-0.7355	-0.5863	-0.5119	-0.5811	-0.3148	-0.5832	-0.0478	-0.6094	0.0483	-0.6223
45	0.125	0.333	-0.9308	-0.6201	-0.9125	-0.6153	-0.7874	-0.5920	-0.7037	-0.5848	-0.4860	-0.5866	-0.2828	-0.5861	-0.0683	-0.6057	0.0048	-0.6220
46	0.125	0.583	-0.9332	-0.6300	-0.9159	-0.6198	-0.7904	-0.5940	-0.7132	-0.5880	-0.4468	-0.5885	-0.2277	-0.5895	-0.0202	-0.6091	0.0413	-0.6203
47	0.125	0.833	-0.3460	-0.6393	-0.3310	-0.6139	-0.2854	-0.5861	-0.1842	-0.5843	0.0273	-0.5926	0.1621	-0.5964	0.2684	-0.6123	0.2962	-0.6227
48	0.125	0.917	-0.2052	-0.6320	-0.2810	-0.6125	-0.2403	-0.5877	-0.1513	-0.5820	-0.0004	-0.5929	0.0994	-0.5924	0.1857	-0.6121	0.2079	-0.6224
49	0.083	0.000	-0.8427	-0.5790	-0.8407	-0.5848	-0.7289	-0.5954	-0.6668	-0.5849	-0.1719	-0.5803	0.1739	-0.5832	0.2441	-0.6048	0.2710	-0.6141
50	0.083	0.333	-0.8482	-0.6025	-0.8436	-0.5926	-0.7272	-0.5863	-0.6712	-0.5815	-0.1261	-0.5763	0.1796	-0.5784	0.2417	-0.5950	0.2675	-0.6020
51	0.083	0.583	-0.8132	-0.6162	-0.7824	-0.5997	-0.7264	-0.5796	-0.5971	-0.5740	0.0237	-0.5757	0.1783	-0.5749	0.2456	-0.5888	0.2719	-0.6000
52	0.083	0.750	-0.6959	-0.6283	-0.6520	-0.6094	-0.6025	-0.5785	-0.4412	-0.5733	0.0347	-0.5784	0.1073	-0.5787	0.2057	-0.5896	0.2347	-0.6030
53	0.042	0.000	-0.6343	-0.5437	-0.7242	-0.5481	-0.7153	-0.5796	-0.5726	-0.5763	0.0230	-0.5670	0.0799	-0.5781	0.1521	-0.5898	0.1755	-0.6021
54	0.042	0.333	-0.7095	-0.5831	-0.7447	-0.5778	-0.7170	-0.5855	-0.4979	-0.5801	0.0175	-0.5691	0.0684	-0.5702	0.1392	-0.5916	0.1616	-0.6019
55	0.042	0.583	-0.6755	-0.6057	-0.6313	-0.5861	-0.6319	-0.5797	-0.0243	-0.5722	0.0034	-0.5601	0.0704	-0.5639	0.1415	-0.5762	0.1635	-0.5984
56	0.042	0.750	-0.6263	-0.6038	-0.5698	-0.5762	-0.4329	-0.5686	-0.0772	-0.5615	-0.0429	-0.5519	0.0412	-0.5611	0.1196	-0.5694	0.1405	-0.5882
57	0.792	-0.583	0.5085	-0.5323	0.5737	-0.6084	0.6825	-0.5839	0.8055	-0.5571	0.8963	-0.5493	0.9919	-0.5585	1.0552	-0.5771	1.0654	-0.6084
58	0.208	-0.583	0.0414	-0.6248	0.0785	-0.6285	0.1322	-0.6001	0.2063	-0.5880	0.2867	-0.5819	0.3973	-0.5821	0.5823	-0.6144	0.5336	-0.6238

Table A-6.- (Continued).
M = 1.2

			ALPHA =															
TUBE	X/L	Y/B/2	-2.9 WINDWARD	-3.1 LEEWARD	-0.2 WINDWARD	-0.5 LEEWARD	4.7 WINDWARD	4.5 LEEWARD	9.7 WINDWARD	9.7 LEEWARD	14.7 WINDWARD	14.7 LEEWARD	19.7 WINDWARD	19.7 LEEWARD	24.6 WINDWARD	24.7 LEEWARD	26.3 WINDWARD	26.1 LEEWARD
1	0.958	0.000	0.5915	0.8605	0.7122	0.7365	0.8973	0.5818	1.0187	-0.1798	1.1097	-0.4466	1.1932	-0.6398	1.2766	-0.7170	1.2955	-0.7221
2	0.958	0.333	0.5734	0.8204	0.6449	0.7197	0.8800	0.5755	1.0017	-0.1742	1.0941	-0.4646	1.1796	-0.6902	1.2632	-0.7962	1.2828	-0.8044
3	0.958	0.583	0.5409	0.7874	0.6683	0.6842	0.8408	0.5591	0.9635	-0.1428	1.0590	-0.4197	1.1452	-0.6517	1.2300	-0.7892	1.2507	-0.7996
4	0.958	0.750	0.4841	0.7060	0.5958	0.6180	0.7634	0.4941	0.8840	-0.1004	0.9821	-0.3817	1.0699	-0.6118	1.1593	-0.7849	1.1838	-0.8093
5	0.917	0.000	0.4885	0.6742	0.5821	0.6005	0.7201	0.4260	0.8241	-0.0258	0.9108	-0.3067	1.0011	-0.5147	1.1110	-0.6855	1.1442	-0.7234
6	0.917	0.333	0.4721	0.6570	0.5647	0.5840	0.7037	0.4138	0.8080	-0.0254	0.8964	-0.3106	0.9871	-0.5330	1.0960	-0.7208	1.1278	-0.7695
7	0.917	0.583	0.4293	0.6074	0.5175	0.5334	0.6531	0.3727	0.7594	-0.0169	0.8485	-0.3009	0.9404	-0.5300	1.0491	-0.7189	1.0817	-0.7733
8	0.917	0.750	0.3194	0.4757	0.3980	0.4119	0.5192	0.2698	0.6200	-0.0148	0.7068	-0.2847	0.8003	-0.5102	0.9120	-0.6897	0.9474	-0.7381
9	0.875	0.000	0.3874	0.5176	0.4524	0.4659	0.5507	0.3425	0.6306	0.0344	0.7001	-0.2659	0.7880	-0.4918	0.9208	-0.6608	0.9633	-0.7074
10	0.875	0.333	0.3757	0.5027	0.4398	0.4512	0.5340	0.3271	0.6197	0.0375	0.6893	-0.2614	0.7753	-0.4863	0.9038	-0.6606	0.9480	-0.7070
11	0.875	0.583	0.3707	0.4468	0.3837	0.3942	0.4824	0.2733	0.5662	0.0445	0.6384	-0.2565	0.7228	-0.4818	0.8461	-0.6571	0.8896	-0.6992
12	0.875	0.833	-0.3299	-0.2506	-0.3257	-0.3132	-0.2446	-0.3001	-0.1639	-0.4411	-0.0508	-0.5403	0.2192	-0.6703	0.5181	-0.7091	0.5945	-0.7388
13	0.875	0.917	0.0963	0.1480	0.1116	0.1305	0.1432	0.0623	0.1731	-0.1153	0.2361	-0.2547	0.3436	-0.4168	0.4913	-0.5802	0.5328	-0.6142
14	0.792	0.000	-0.3455	-0.2792	-0.3305	-0.3199	-0.2478	-0.3894	-0.1400	-0.4816	-0.0086	-0.6228	0.5644	-0.7379	0.7106	-0.6419	0.7538	-0.6684
15	0.792	0.333	-0.3760	-0.2922	-0.3418	-0.3295	-0.2625	-0.3963	-0.1612	-0.4769	-0.0171	-0.6183	0.5166	-0.7328	0.6829	-0.6596	0.7292	-0.6893
16	0.792	0.583	-0.4281	-0.3498	-0.3989	-0.3893	-0.3300	-0.4509	-0.2328	-0.5188	-0.0771	-0.6056	0.4071	-0.6966	0.6160	-0.6693	0.6610	-0.6946
17	0.792	0.750	-0.2568	-0.1655	-0.2481	-0.2306	-0.1895	-0.2791	-0.0481	-0.3881	0.0040	-0.5477	0.3319	-0.6637	0.5564	-0.6763	0.6016	-0.7027
18	0.792	0.833	-0.0704	-0.0016	-0.0159	-0.0029	-0.0025	-0.0425	0.0160	-0.1531	0.0595	-0.2473	0.3545	-0.3684	0.5001	-0.5732	0.5414	-0.6086
19	0.792	0.917																
20	0.667	0.000	-0.3578	-0.2180	-0.3016	-0.2855	-0.1706	-0.3959	-0.0049	-0.4824	0.3375	-0.6175	0.4459	-0.7299	0.6013	-0.6465	0.6498	-0.6741
21	0.667	0.333	-0.3712	-0.2146	-0.3050	-0.2836	-0.1913	-0.4122	-0.0270	-0.4954	0.3733	-0.6134	0.4267	-0.7059	0.5790	-0.6619	0.6270	-0.6900
22	0.667	0.583	-0.3026	-0.1963	-0.2737	-0.2572	-0.1742	-0.2983	-0.0034	-0.3781	0.3210	-0.5064	0.3949	-0.5319	0.5366	-0.6067	0.5802	-0.6923
23	0.667	0.750	-0.1357	-0.0497	-0.1008	-0.0949	-0.0360	-0.1586	0.0550	-0.2359	0.2402	-0.3252	0.3308	-0.4278	0.4578	-0.5181	0.4961	-0.5398
24	0.667	0.833	-0.1112	-0.0448	-0.0846	-0.0797	-0.0323	-0.1334	0.0227	-0.2343	0.2014	-0.3321	0.2964	-0.4751	0.4111	-0.5957	0.4484	-0.6286
25	0.667	0.917	-0.0842	-0.0317	-0.0676	-0.0593	-0.0254	-0.1133	0.0081	-0.2413	0.1491	-0.4019	0.2270	-0.6070	0.3341	-0.7284	0.3654	-0.7519
26	0.508	0.000	-0.3551	-0.1628	-0.2488	-0.2309	-0.1225	-0.4177	0.0558	-0.4881	0.2417	-0.4030	0.3755	-0.7104	0.5162	-0.5987	0.5569	-0.6317
27	0.508	0.333	-0.2637	-0.1496	-0.2456	-0.2270	-0.1067	-0.2580	0.0731	-0.3416	0.2474	-0.4417	0.3590	-0.6119	0.4962	-0.6009	0.5381	-0.6336
28	0.500	0.583																
29	0.508	0.750	-0.1326	-0.0524	-0.1076	-0.0965	-0.0341	-0.1714	0.0427	-0.2521	0.1626	-0.3673	0.2559	-0.5108	0.3712	-0.6014	0.4080	-0.6364
30	0.500	0.833	-0.1262	-0.0523	-0.0965	-0.0852	-0.0419	-0.1593	0.0272	-0.2487	0.1354	-0.4131	0.2203	-0.5948	0.3293	-0.7052	0.3636	-0.7376
31	0.500	0.917																
32	0.333	0.000	-0.1475	-0.0855	-0.2156	-0.2011	-0.0341	-0.1511	0.1251	-0.2343	0.1986	-0.2836	0.3148	-0.4073	0.4385	-0.5358	0.4729	-0.5661
33	0.333	0.333	-0.1877	-0.0579	-0.1264	-0.1105	-0.0232	-0.2352	0.0473	-0.2944	0.1860	-0.3925	0.3007	-0.4770	0.4212	-0.5237	0.4566	-0.5527
34	0.333	0.583	-0.1645	-0.0642	-0.1224	-0.1071	-0.0478	-0.1499	0.0675	-0.2495	0.1641	-0.3657	0.2671	-0.4901	0.3812	-0.5171	0.4148	-0.5556
35	0.333	0.750	-0.1345	-0.0617	-0.1110	-0.1007	-0.0549	-0.1659	0.0289	-0.2617	0.1170	-0.4179	0.2030	-0.5784	0.3033	-0.6613	0.3363	-0.7004
36	0.333	0.833	-0.1185	-0.0594	-0.1030	-0.0903	-0.0606	-0.1536	0.0119	-0.3069	0.0907	-0.5160	0.1697	-0.6824	0.2672	-0.7624	0.2963	-0.7928
37	0.333	0.917	-0.0980	-0.0522	-0.0815	-0.0724	-0.0649	-0.1666	-0.0211	-0.3889	0.0406	-0.5591	0.1098	-0.6609	0.1932	-0.7124	0.2168	-0.7328
38	0.208	0.000	-0.0321	0.0419	0.0154	0.0207	0.0543	-0.0804	0.0942	-0.1343	0.1464	-0.2216	0.2863	-0.3120	0.3556	-0.4774	0.3797	-0.5112
39	0.208	0.333	-0.0883	-0.0050	-0.0811	-0.0650	0.0290	-0.1330	0.0821	-0.2263	0.1570	-0.3372	0.2542	-0.4805	0.3400	-0.4713	0.3655	-0.5000
40	0.208	0.583	-0.1493	-0.0482	-0.1091	-0.0991	-0.0135	-0.1850	0.0690	-0.2597	0.1373	-0.3824	0.2288	-0.5129	0.3100	-0.5311	0.3351	-0.5753
41	0.208	0.750	-0.1319	-0.0836	-0.0967	-0.0868	-0.0447	-0.1721	0.0334	-0.2902	0.0879	-0.4666	0.1676	-0.6328	0.2402	-0.7008	0.2631	-0.7387
42	0.208	0.833	-0.1238	-0.0586	-0.0839	-0.0703	-0.0534	-0.1699	0.0134	-0.3748	0.0588	-0.5900	0.1352	-0.7328	0.2029	-0.7861	0.2245	-0.8122
43	0.208	0.917	-0.1321	-0.0406	-0.0645	-0.0542	-0.0510	-0.2323	-0.0113	-0.4546	0.0133	-0.6027	0.0789	-0.7160	0.1408	-0.7399	0.1574	-0.7657
44	0.125	0.000	-0.4980	-0.4965	-0.5016	-0.4995	-0.4920	-0.5297	-0.4702	-0.5319	-0.4404	-0.4945	-0.4075	-0.4652	-0.3795	-0.4547	-0.3708	-0.4847
45	0.125	0.333	-0.5098	-0.4950	-0.5085	-0.5060	-0.4915	-0.5228	-0.4720	-0.5850	-0.4407	-0.6149	-0.4105	-0.6744	-0.3829	-0.4936	-0.3714	-0.5399
46	0.125	0.583	-0.5528	[illegible]	-0.5141	-0.5154	-0.4836	-0.5771	-0.4732	-0.6409	-0.4504	-0.7105	-0.4171	-0.7658	-0.3923	-0.7664	-0.3818	-0.7810
47	0.125	0.833	-0.1447	-0.0683	-0.0974	-0.0866	-0.0678	-0.1888	-0.0645	-0.4101	-0.0474	-0.6215	-0.0222	-0.7482	0.0074	-0.7837	0.0182	-0.7920
48	0.125	0.917	-0.1685	-0.0401	-0.0751	-0.0589	-0.0381	-0.2711	-0.0488	-0.4681	-0.0470	-0.6111	-0.0252	-0.7215	0.0059	-0.7363	0.0156	-0.7571
49	0.083	0.000	-0.5003	-0.4879	-0.4981	-0.4975	-0.4903	-0.5240	-0.4654	-0.4853	-0.4363	-0.3183	-0.4001	-0.3540	-0.3595	-0.4538	-0.3483	-0.4852
50	0.083	0.333	-0.5140	-0.5021	-0.5135	-0.5117	-0.5040	-0.5240	-0.4613	-0.5596	-0.4500	-0.5458	-0.4131	-0.6406	-0.3739	-0.4502	-0.3609	-0.4855
51	0.083	0.583	-0.4816	-0.4546	-0.4684	-0.4707	-0.4522	-0.5402	-0.4510	-0.6069	-0.4255	-0.6562	-0.3899	-0.7161	-0.3517	-0.7131	-0.3347	-0.7299
52	0.083	0.750	-0.5969	-0.5037	-0.5606	-0.5520	-0.4773	-0.6286	-0.3971	-0.6875	-0.3845	-0.7174	-0.3222	-0.7353	-0.2774	-0.7407	-0.2592	-0.7421
53	0.042	0.000	-0.4826	-0.4918	-0.4972	-0.4978	-0.4868	-0.4217	-0.4409	-0.2844	-0.4112	-0.2541	-0.3596	-0.2954	-0.3328	-0.4356	-0.3343	-0.4616
54	0.042	0.333	-0.4977	-0.4901	-0.5029	-0.4966	-0.4883	-0.4962	-0.4639	-0.4841	-0.4477	-0.3439	-0.4064	-0.4333	-0.3663	-0.4348	-0.3469	-0.4605
55	0.042	0.583	-0.4467	-0.4204	-0.4315	-0.4330	-0.4270	-0.4846	-0.4224	-0.4900	-0.4007	-0.5202	-0.3601	-0.6425	-0.3080	-0.6197	-0.2902	-0.6436
56	0.042	0.750	-0.4898	-0.4320	-0.4386	-0.4208	-0.4078	-0.5760	-0.3951	-0.6448	-0.3481	-0.6838	-0.3009	-0.7360	-0.2669	-0.6965	-0.2457	-0.7116
57	0.792	-0.583	-0.4360	-0.3596	-0.4065	-0.3929	-0.3186	-0.4551	-0.2242	-0.5230	-0.0757	-0.6209	0.4133	-0.7051	0.6335	-0.5754	0.6766	-0.6949
58	0.208	-0.583	-0.1408	-0.0563	-0.1128	-0.1109	-0.0217	-0.1839	0.0701	-0.2601	0.1388	-0.3817	0.2266	-0.5044	0.3126	-0.5303	0.3366	-0.5654

Table A-6.- (Concluded).
M = 1.2

			ALPHA =															
			27.1	26.9	29.7	29.6	34.7	34.5	39.7	39.5	44.6	44.5	49.6	49.4	54.6	54.3	56.3	56.1
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.958	0.000	1.3042	-0.7245	1.3357	-0.6096	1.3768	-0.5414	1.3957	-0.5797	1.3938	-0.4702	1.3800	-0.3634	1.3527	-0.3950	1.3437	-0.3914
2	0.958	0.333	1.2911	-0.8077	1.3234	-0.6755	1.3652	-0.6031	1.3868	-0.6280	1.3846	-0.5148	1.3715	-0.3900	1.3455	-0.4250	1.3379	-0.4199
3	0.959	0.583	1.2589	-0.8082	1.2907	-0.6849	1.3354	-0.6110	1.3611	-0.6238	1.3623	-0.5154	1.3523	-0.3863	1.3293	-0.4212	1.3220	-0.4150
4	0.958	0.750	1.1908	-0.8246	1.2266	-0.6985	1.2772	-0.6176	1.3090	-0.6349	1.3159	-0.5206	1.3153	-0.3921	1.2963	-0.4217	1.2890	-0.4200
5	0.917	0.000	1.1561	-0.7337	1.2059	-0.6336	1.2833	-0.5611	1.3398	-0.5991	1.3731	-0.4878	1.3998	-0.3809	1.4019	-0.4078	1.4025	-0.4063
6	0.917	0.333	1.1394	-0.7890	1.1901	-0.6810	1.2679	-0.6067	1.3252	-0.6317	1.3592	-0.5203	1.3883	-0.3960	1.3919	-0.4250	1.3914	-0.4228
7	0.917	0.583	1.0926	-0.7975	1.1426	-0.7135	1.2226	-0.6316	1.2845	-0.6488	1.3216	-0.5302	1.3550	-0.3999	1.3604	-0.4290	1.3643	-0.4322
8	0.917	0.750	0.9597	-0.7607	1.0141	-0.7125	1.1033	-0.6309	1.1771	-0.6476	1.2257	-0.5288	1.2772	-0.3989	1.2917	-0.4298	1.2975	-0.4313
9	0.875	0.000	0.9912	-0.7391	1.0471	-0.7026	1.1581	-0.6092	1.2471	-0.6470	1.3109	-0.5154	1.3761	-0.3980	1.4004	-0.4271	1.4091	-0.4297
10	0.875	0.333	0.9424	-0.7408	1.0284	-0.7148	1.1390	-0.6261	1.2208	-0.6479	1.2946	-0.5206	1.3585	-0.4028	1.3873	-0.4272	1.3941	-0.4310
11	0.875	0.583	0.9032	-0.7224	0.9680	-0.7217	1.0797	-0.6384	1.1716	-0.6519	1.2408	-0.5278	1.3122	-0.4066	1.3437	-0.4309	1.3515	-0.4349
12	0.875	0.833	0.6239	-0.7563	0.7156	-0.7263	0.8446	-0.6401	0.9433	-0.6582	1.0833	-0.5324	1.0785	-0.4104	1.1248	-0.4349	1.1355	-0.4375
13	0.875	0.917	0.5472	-0.6144	0.6080	-0.7266	0.7133	-0.6327	0.8057	-0.6537	0.8775	-0.5287	0.9661	-0.4051	1.0074	-0.4313	1.0198	-0.4352
14	0.792	0.000	0.7724	-0.6865	0.8408	-0.6659	0.9659	-0.6198	1.0829	-0.6535	1.1756	-0.5211	1.2823	-0.4066	1.3433	-0.4339	1.3621	-0.4360
15	0.792	0.333	0.7479	-0.7103	0.8191	-0.6790	0.9415	-0.6335	1.0575	-0.6481	1.1526	-0.5257	1.2595	-0.4035	1.3224	-0.4296	1.3417	-0.4334
16	0.792	0.583	0.6783	-0.7151	0.7514	-0.6952	0.8740	-0.6431	0.9888	-0.6493	1.0839	-0.5346	1.1924	-0.4057	1.2598	-0.4309	1.2777	-0.4328
17	0.792	0.750	0.6125	-0.7179	0.6663	-0.7142	0.7730	-0.6500	0.8764	-0.6575	0.9617	-0.5387	1.0661	-0.4099	1.1292	-0.4354	1.1455	-0.4390
18	0.792	0.833	0.5514	-0.5888	0.6106	-0.7114	0.7199	-0.6519	0.8181	-0.6620	0.8995	-0.5464	1.0032	-0.4123	1.0633	-0.4391	1.0790	-0.4412
19	0.792	0.917																
20	0.667	0.000	0.6695	-0.6921	0.7383	-0.6696	0.8631	-0.6420	0.9747	-0.6583	1.0695	-0.5340	1.1898	-0.4099	1.2660	-0.4372	1.2891	-0.4364
21	0.667	0.333	0.6465	-0.7129	0.7136	-0.6779	0.8384	-0.6542	0.9502	-0.6521	1.0450	-0.5370	1.1659	-0.4075	1.2426	-0.4333	1.2660	-0.4341
22	0.667	0.583	0.5945	-0.7148	0.6599	-0.6859	0.7800	-0.6601	0.8853	-0.6545	0.9776	-0.5383	1.1013	-0.4123	1.1747	-0.4346	1.1965	-0.4347
23	0.667	0.750	0.5086	-0.5521	0.5667	-0.6636	0.6759	-0.6672	0.7723	-0.6620	0.8580	-0.5379	0.9755	-0.4163	1.0439	-0.4369	1.0637	-0.4371
24	0.667	0.833	0.4590	-0.6558	0.5153	-0.6864	0.6199	-0.6827	0.7138	-0.6715	0.7968	-0.5442	0.9129	-0.4198	0.9794	-0.4436	0.9972	-0.4420
25	0.667	0.917	0.3760	-0.7713	0.4279	-0.7611	0.5219	-0.6660	0.6085	-0.6563	0.6899	-0.5354	0.7981	-0.4163	0.8579	-0.4354	0.8766	-0.4340
26	0.500	0.000	0.5766	-0.6547	0.6395	-0.6740	0.7498	-0.6735	0.8550	-0.6705	0.9505	-0.5314	1.0796	-0.4173	1.1668	-0.4379	1.1922	-0.4360
27	0.500	0.333	0.5557	-0.6623	0.6174	-0.6768	0.7290	-0.6811	0.8322	-0.6613	0.9279	-0.5334	1.0580	-0.4149	1.1445	-0.4348	1.1694	-0.4337
28	0.500	0.583																
29	0.500	0.750	0.4187	-0.6601	0.4724	-0.6849	0.5702	-0.7017	0.6619	-0.6713	0.7474	-0.5195	0.8783	-0.4204	0.9480	-0.4403	0.9680	-0.4397
30	0.500	0.833	0.3730	-0.7639	0.4257	-0.7662	0.5191	-0.7081	0.6091	-0.6745	0.6919	-0.5233	0.8126	-0.4236	0.8873	-0.4451	0.9065	-0.4420
31	0.500	0.917																
32	0.333	0.000	0.4878	-0.5928	0.5411	-0.6696	0.6362	-0.6917	0.7286	-0.6716	0.8137	-0.5122	0.9437	-0.4110	1.0383	-0.4361	1.0649	-0.4360
33	0.333	0.333	0.4710	-0.5810	0.5231	-0.6646	0.6189	-0.6936	0.7104	-0.6657	0.7946	-0.5073	0.9253	-0.4097	1.0198	-0.4344	1.0464	-0.4341
34	0.333	0.583	0.4261	-0.5879	0.4751	-0.6433	0.5678	-0.6890	0.6549	-0.6493	0.7398	-0.5029	0.8664	-0.4053	0.9618	-0.4335	0.9875	-0.4339
35	0.333	0.750	0.3456	-0.7277	0.3885	-0.7498	0.4734	-0.7032	0.5523	-0.6388	0.6324	-0.5095	0.7570	-0.4122	0.8452	-0.4403	0.8690	-0.4412
36	0.333	0.833	0.3028	-0.8191	0.3458	-0.8156	0.4266	-0.7051	0.5041	-0.6442	0.5818	-0.5153	0.7056	-0.4130	0.7901	-0.4436	0.8128	-0.4427
37	0.333	0.917	0.2749	-0.7455	0.2639	-0.7382	0.3376	-0.6582	0.4103	-0.6133	0.4813	-0.4899	0.6051	-0.3995	0.6775	-0.4286	0.7022	-0.4296
38	0.208	0.000	0.3908	-0.5401	0.4278	-0.6573	0.4984	-0.6983	0.5659	-0.6531	0.6280	-0.5019	0.7462	-0.4018	0.8414	-0.4335	0.8741	-0.4346
39	0.208	0.333	0.3743	-0.5282	0.4106	-0.6211	0.4831	-0.6844	0.5492	-0.6484	0.6118	-0.4956	0.7330	-0.4021	0.8292	-0.4315	0.8609	-0.4337
40	0.208	0.583	0.3480	-0.6124	0.3762	-0.6463	0.4444	-0.6805	0.5108	-0.6257	0.5725	-0.4948	0.7025	-0.4009	0.7981	-0.4339	0.8268	-0.4328
41	0.208	0.750	0.2665	-0.7052	0.2979	-0.7821	0.3614	-0.6905	0.4212	-0.6257	0.4809	-0.5020	0.6282	-0.4066	0.7237	-0.4395	0.7502	-0.4378
42	0.208	0.833	0.2273	-0.8358	0.2584	-0.8239	0.3202	-0.6952	0.3800	-0.6385	0.4405	-0.5074	0.5964	-0.4074	0.6884	-0.4428	0.7129	-0.4387
43	0.208	0.917	0.1426	-0.7878	0.1908	-0.7810	0.2479	-0.6874	0.3028	-0.6350	0.3653	-0.5004	0.5192	-0.3995	0.5994	-0.4365	0.6236	-0.4352
44	0.125	0.000	-0.3680	-0.5116	-0.3533	-0.6270	-0.3268	-0.6320	-0.2875	-0.6213	-0.1850	-0.4919	0.1278	-0.3926	0.3387	-0.4317	0.3813	-0.4324
45	0.125	0.333	-0.3697	-0.8246	-0.3539	-0.6038	-0.3265	-0.6641	-0.2862	-0.6153	-0.1510	-0.4915	0.1521	-0.3936	0.3346	-0.4307	0.3851	-0.4315
46	0.125	0.583	-0.3824	-0.8071	-0.3669	-0.7033	-0.3342	-0.6631	-0.2267	-0.6261	-0.1486	-0.4937	0.1998	-0.3947	0.3781	-0.4302	0.4221	-0.4310
47	0.125	0.833	0.0174	-0.7985	0.0346	-0.7787	0.0883	-0.6755	0.1322	-0.6350	0.2746	-0.5032	0.5164	-0.4010	0.6102	-0.4358	0.6384	-0.4371
48	0.125	0.917	0.0131	-0.7753	0.0348	-0.7453	0.0790	-0.6823	0.1337	-0.6385	0.2247	-0.5046	0.4611	-0.4009	0.5389	-0.4379	0.5635	-0.4382
49	0.083	0.000	-0.3419	-0.5121	-0.3217	-0.6029	-0.2701	-0.5994	-0.1952	-0.5995	-0.0990	-0.4899	0.5416	-0.3898	0.6016	-0.4298	0.6332	-0.4340
50	0.083	0.333	-0.3565	-0.5427	-0.3337	-0.6177	-0.2816	-0.6513	-0.1973	-0.5980	-0.1083	-0.4923	0.5486	-0.3908	0.5997	-0.4302	0.6294	-0.4324
51	0.083	0.583	-0.3122	-0.7613	-0.3057	-0.6631	-0.2287	-0.6586	-0.1656	-0.6043	-0.0811	-0.4930	0.5502	-0.3892	0.6042	-0.4274	0.6303	-0.4301
52	0.083	0.750	-0.2542	-0.7578	-0.2228	-0.7322	-0.1496	-0.6583	-0.0436	-0.6220	0.0666	-0.4963	0.4812	-0.3918	0.5644	-0.4272	0.5952	-0.4306
53	0.042	0.000	-0.3120	-0.4891	-0.3006	-0.5597	-0.2297	-0.5690	-0.1314	-0.5740	-0.0066	-0.4807	0.4753	-0.3902	0.5308	-0.4291	0.5567	-0.4345
54	0.042	0.333	-0.3431	-0.4906	-0.3126	-0.6347	-0.2379	-0.6401	-0.1318	-0.5888	0.0153	-0.4941	0.4651	-0.3960	0.5182	-0.4353	0.5440	-0.4382
55	0.042	0.583	-0.2850	-0.6840	-0.2518	-0.6524	-0.1950	-0.6526	-0.1324	-0.5961	0.3756	-0.4952	0.4620	-0.3958	0.5180	-0.4301	0.5461	-0.4359
56	0.042	0.750	-0.2388	-0.7329	-0.2000	-0.6914	-0.1125	-0.6494	0.0078	-0.6087	0.3187	-0.4952	0.4315	-0.3945	0.4969	-0.4283	0.5241	-0.4324
57	0.792	-0.583	0.7002	-0.7162	0.7697	-0.6838	0.8881	-0.6247	1.0041	-0.6565	1.1030	-0.5279	1.2065	-0.3966	1.2736	-0.4278	1.2945	-0.4312
58	0.208	-0.583	0.3467	-0.5868	0.3855	-0.6247	0.4552	-0.6790	0.5215	-0.6220	0.5894	-0.5040	0.7182	-0.3936	0.8120	-0.4279	0.8437	-0.4336

Table A-7.- Pressure coefficients for configuration 7.
M = 0.6

			ALPHA =																	
			-2.8	-2.6	0.0	0.4	5.1	5.3	10.0	10.4	15.0	15.3	19.9	20.2	25.0	25.2	26.4	26.7		
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD		
1	0.934	0.000	0.0849	0.1875	0.1359	0.1356	0.2436	0.0249	0.3701	-0.1077	0.4950	-0.2853	0.6270	-0.5056	0.7524	-0.7705	0.7872	-0.8363		
2	0.868	0.000	0.0479	0.1518	0.0978	0.0991	0.2004	-0.0037	0.3217	-0.1344	0.4429	-0.2897	0.5671	-0.4756	0.6906	-0.6973	0.7243	-0.7392		
3	0.881	0.053	0.0581	0.1692	0.1087	0.1117	0.2188	0.0054	0.3327	-0.0983	0.4622	-0.3095	0.5500	-0.9277	0.6566	-1.7629	0.6789	-1.9338		
4	0.802	0.000	0.0094	0.1018	0.0550	0.0548	0.1547	-0.0454	0.2753	-0.1614	0.3902	-0.2993	0.5170	-0.4621	0.6365	-0.6352	0.6723	-0.6698		
5	0.764	0.039	-0.0311	0.0641	0.0162	0.0151	0.1140	-0.0852	0.2337	-0.2041	0.3467	-0.3348	0.4740	-0.5002	0.5945	-0.6821	0.6264	-0.7193		
6	0.777	0.091	0.0007	0.0977	0.0475	0.0487	0.1479	-0.0556	0.2628	-0.1543	0.3712	-0.2929	0.4848	-0.6648	0.5955	-1.2615	0.6188	-1.4322		
7	0.790	0.144	0.0185	0.1308	0.0784	0.0785	0.1902	0.0054	0.2915	-0.0648	0.3856	-1.2826	0.4720	-1.7042	0.5466	-2.0770	0.5749	-2.1490		
8	0.707	0.000	-0.1150	-0.0251	-0.0666	-0.0694	0.0306	-0.1581	0.1478	-0.2838	0.2722	-0.4330	0.3958	-0.5852	0.5229	-0.7258	0.5620	-0.7089		
9	0.648	0.000	-0.0888	-0.0079	-0.0470	-0.0499	0.0392	-0.1329	0.1473	-0.2395	0.2633	-0.3719	0.3812	-0.5061	0.5009	-0.6038	0.5377	-0.5732		
10	0.648	0.068	-0.1146	-0.0573	-0.1076	-0.1066	0.0134	-0.1698	0.1349	-0.3173	0.2527	-0.4126	0.3756	-0.5122	0.501[illegible]	-0.6158	0.5345	-0.5729		
11	0.658	0.144	-0.0801	0.0168	-0.0299	-0.0230	0.0757	-0.1342	0.1873	-0.2070	0.2935	-0.3032	0.4063	-0.6327	0.5152	-1.1245	0.5448	-1.1751		
12	0.671	0.197	-0.0433	0.0578	0.0087	0.0145	0.1191	-0.0884	0.2281	-0.2247	0.3279	-1.2644	0.4263	-1.737[illegible]	0.5201	-1.9880	0.5475	-1.9166		
13	0.684	0.250	-0.0820	0.1106	0.0467	0.0387	0.1673	-0.3743	0.2634	-0.8844	0.3398	-1.3488	0.4122	-1.8219	0.[illegible]707	-2.1690	0.4917	-2.1328		
14	0.530	0.000	-0.0812	-0.0160	-0.0449	-0.0477	0.0317	-0.1251	0.1232	-0.1994	0.2212	-0.3065	0.3327	-0.4047	0.[illegible]407	-0.4314	0.4711	-0.5189		
15	0.530	0.082	-0.0753	-0.0108	-0.0351	-0.0442	0.0404	-0.1255	0.1290	-0.1962	0.2255	-0.2982	0.3346	-0.3852	0.4450	-0.3976	0.4736	-0.5173		
16	0.530	0.143	-0.0920	0.0093	-0.0260	-0.0266	0.0460	-0.1453	0.1292	-0.2008	0.2304	-0.3021	0.3396	-0.3830	0.4469	-0.4111	0.4814	-0.5655		
17	0.530	0.184	-0.1148	-0.0684	-0.1273	-0.1304	0.0007	-0.1694	0.1244	-0.2434	0.2312	-0.2905	0.3442	-0.4154	0.4513	-0.5783	0.4821	-0.7337		
18	0.540	0.263	-0.1011	0.0087	-0.0516	-0.0482	0.0590	-0.1418	0.1698	-0.1232	0.2721	-0.4012	0.3741	-1.7322	0.4718	-1.7074	0.4957	-1.4521		
19	0.553	0.315	-0.0624	0.0475	-0.0068	-0.0074	0.1110	-0.0466	0.2101	-1.0004	0.3037	-1.3459	0.3934	-1.6583	0.4781	-1.4720	0.5008	-1.1672		
20	0.564	0.368	-0.0531	0.0907	0.0214	0.0232	0.1562	-0.4709	0.2444	-0.8097	0.3134	-1.2273	0.3725	-1.[illegible]287	0.4224	-1.5064	0.4431	-1.2377		
21	0.393	0.000	-0.0888	-0.0428	-0.0653	-0.0539	0.0042	-0.1192	0.0757	-0.1598	0.1401	-0.2306	0.2533	-0.2825	0.3435	-0.4169	0.3713	-0.5150		
22	0.383	0.136	-0.0960	-0.0344	-0.0699	-0.0655	-0.0020	-0.1225	0.0804	-0.1688	0.1645	-0.2367	0.2575	-0.2663	0.3498	-0.5120	0.3717	-0.5712		
23	0.393	0.238	-0.0932	-0.0139	-0.0535	-0.0524	0.0162	-0.1233	0.0889	-0.1585	0.1774	-0.2122	0.2719	-0.2737	0.3635	-0.6729	0.3869	-0.7551		
24	0.393	0.305	-0.1213	-0.0318	-0.0797	-0.0757	-0.0046	-0.1570	0.0856	-0.1648	0.1787	-0.2374	0.2743	-0.6274	0.3677	-0.9755	0.3932	-0.9689		
25	0.393	0.410	-0.1745	-0.0174	-0.0784	-0.0745	0.0295	-0.1054	0.1373	-0.7171	0.2298	-1.5157	0.3239	-1.3345	0.3988	-1.0942	0.4294	-1.1000		
26	0.406	0.462	-0.0466	0.0312	-0.0295	-0.0277	0.0799	-0.3627	0.1821	-1.0441	0.2607	-1.1329	0.3418	-1.2982	0.4042	-1.0036	0.4271	-1.0471		
27	0.419	0.515	-0.1634	0.0774	0.0059	0.0117	0.1305	-0.4537	0.2200	-0.7669	0.2753	-1.0528	0.3329	-1.1405	0.3766	-0.9470	0.3873	-0.9891		
28	0.236	0.000	-0.1242	-0.1119	-0.1258	-0.1146	-0.0856	-0.1402	-0.0231	-0.1459	0.0373	-0.1831	0.1098	-0.2407	0.1887	-0.4396	0.1985	-0.4509		
29	0.236	0.190	-0.1273	-0.1096	-0.1227	-0.1171	-0.0809	-0.1435	-0.0159	-0.1499	0.0493	-0.1794	0.1193	-0.2039	0.1998	-0.4970	0.2060	-0.5451		
30	0.236	0.332	-0.1633	-0.1107	-0.1248	-0.1250	-0.0783	-0.1611	-0.0087	-0.1560	0.0429	-0.1526	0.1316	-0.2411	0.2106	-0.7200	0.2194	-0.7666		
31	0.236	0.427	-0.1501	-0.0853	-0.1188	-0.1271	-0.0615	-0.1724	0.0088	-0.1014	0.0797	-0.3952	0.1513	-0.7140	0.2306	-0.8314	0.2573	-0.8224		
32	0.236	0.498	-0.2102	-0.1644	-0.2132	-0.1871	-0.1137	-0.2054	0.0008	-0.3591	0.0849	-1.2363	0.1676	-0.7652	0.2444	-0.8670	0.2688	-0.8528		
33	0.245	0.557	-0.1444	-0.0652	-0.1148	-0.1120	-0.0262	-0.7256	0.0746	-0.9241	0.1503	-1.2100	0.2283	-0.6615	0.2882	-0.8465	0.3072	-0.8522		
34	0.259	0.610	-0.1098	-0.0108	-0.0602	-0.0655	0.0391	-0.4451	0.1292	-0.8695	0.1994	-0.9468	0.2615	-0.6733	0.3081	-0.8200	0.3185	-0.8192		
35	0.272	0.663	-0.2362	0.0456	-0.0126	-0.0189	0.1015	-0.4325	0.1633	-0.7057	0.2317	-0.8863	0.2702	-0.6667	0.2996	-0.7796	0.3024	-0.7834		
36	0.147	0.000	-0.2514	-0.3044	-0.2712	-0.2762	-0.2719	-0.2350	-0.2280	-0.1906	-0.1680	-0.1999	-0.1101	-0.3295	-0.0583	-0.4974	-0.0507	-0.5255		
37	0.147	0.222	-0.2469	-0.2920	-0.2660	-0.2560	-0.2614	-0.2301	-0.2168	-0.1868	-0.1602	-0.2179	-0.1095	-0.3679	-0.0439	-0.5289	-0.0297	-0.5911		
38	0.147	0.389	-0.2524	-0.2848	-0.2725	-0.2488	-0.2556	-0.2584	-0.1889	-0.2188	-0.1421	-0.1981	-0.1003	-0.5017	-0.0332	-0.6774	-0.0180	-0.7295		
39	0.147	0.500	-0.2712	-0.2552	-0.2685	-0.2517	-0.2352	-0.2791	-0.1677	-0.1729	-0.1153	-0.6102	-0.0741	-0.6842	-0.0037	-0.7351	0.0081	-0.7603		
40	0.147	0.583	-0.3243	-0.2956	-0.3129	-0.3084	-0.2573	-0.3199	-0.1564	-0.6924	-0.0921	-1.3512	-0.0394	-0.7052	0.0304	-0.7435	0.0447	-0.7753		
41	0.157	0.646	-0.2202	-0.1455	-0.1820	-0.1950	-0.1148	-0.3540	-0.0240	-0.9198	0.0367	-1.0382	0.0840	-0.6333	0.1467	-0.7041	0.1593	-0.7453		
42	0.170	0.698	-0.1572	-0.0565	-0.1072	-0.1109	-0.0216	-0.4753	0.0631	-0.7967	0.1194	-0.8421	0.1619	-0.5887	0.2118	-0.6966	0.2205	-0.7126		
43	0.183	0.751	-0.2498	0.0197	-0.0455	-0.0491	0.0674	-0.4534	0.1384	-0.6686	0.1851	-0.7457	0.2111	-0.5475	0.2363	-0.6658	0.2379	-0.6792		
44	0.118	0.750	-0.2259	-0.0991	-0.1458	-0.1711	-0.0892	-0.5142	-0.0338	-0.6882	0.0173	-0.6638	0.0401	-0.5222	0.0909	-0.6051	0.0939	-0.6311		
45	0.088	0.000	-0.2207	-0.3301	-0.2765	-0.2813	-0.3143	-0.1841	-0.3225	-0.0931	-0.6137	-0.0610	-0.5125	-0.2149	-0.4108	-0.4220	-0.4063	-0.5064		
46	0.088	0.236	-0.2031	-0.3559	-0.3037	-0.2667	-0.3380	-0.1299	-0.3420	-0.0631	-0.6570	-0.1341	-0.5974	-0.3847	-0.5128	-0.5371	-0.4687	-0.5985		
47	0.088	0.412	-0.1735	-0.3648	-0.2910	-0.2141	-0.3333	-0.1919	-0.5584	-0.1972	-0.5821	-0.2755	-0.5234	-0.5976	-0.4309	-0.6487	-0.3989	-0.6859		
48	0.088	0.530	-0.2708	-0.4380	-0.3415	-0.2352	-0.5233	-0.2701	-0.6028	-0.2718	-0.5112	-0.6134	-0.4400	-0.6467	-0.3473	-0.6942	-0.3194	-0.7267		
49	0.088	0.619	-0.3415	-0.5578	-0.5430	-0.3803	-0.7337	-0.3760	-0.5257	-0.7079	-0.3435	-1.0564	-0.2792	-0.6319	-0.1853	-0.6600	-0.1868	-0.7030		
50	0.088	0.846	-0.2494	-0.0257	-0.0820	-0.1117	0.0008	-0.4367	0.0334	-0.4538	0.0700	-0.4364	0.0640	-0.4188	0.0989	-0.5271	0.0904	-0.5538		
51	0.059	0.000	-0.0136	-0.0800	-0.0482	-0.0539	-0.0851	0.0100	-0.1058	0.0410	-0.0903	0.0363	-0.0572	-0.0538	-0.0303	-0.2254	-0.0390	-0.2731		
52	0.059	0.236	-0.0058	-0.1090	-0.0597	-0.0403	-0.0987	0.0284	-0.1006	0.0249	-0.0687	0.0077	-0.0796	-0.1342	-0.0634	-0.3010	-0.0674	-0.3556		
53	0.059	0.412	0.0270	-0.1200	-0.0293	0.0065	-0.0832	0.0232	-0.0384	0.0197	-0.0275	-0.0303	-0.1045	-0.3619	-0.1036	-0.4889	-0.1148	-0.5405		
54	0.059	0.530	0.0191	-0.1943	-0.0645	-0.0007	-0.0742	-0.0111	-0.0187	-0.0357	-0.0373	-0.2958	-0.1369	-0.5402	-0.1317	-0.5952	-0.1486	-0.6258		
55	0.059	0.619	-0.0373	-0.4510	-0.2215	-0.0537	-0.1162	-0.1014	-0.0597	-0.4182	-0.0941	-0.7767	-0.1649	-0.5636	-0.1629	-0.6169	-0.1576	-0.6427		
56	0.059	0.714	-0.4528	-0.4069	-0.4573	-0.5464	-0.5575	-0.3530	-0.3844	-0.6449	-0.2366	-0.[illegible]346	-0.2037	-0.4887	-0.1698	-0.5823	-0.1616	-0.6042		
57	0.029	0.000	0.0949	0.0601	0.0633	0.0755	0.0541	0.0840	0.0225	0.0870	0.0167	0.0678	0.0600	-0.0067	0.0697	-0.1857	0.0716	-0.1955		
58	0.029	0.236	0.0792	0.0070	0.0610	0.0617	0.0202	0.0829	0.0180	0.0652	0.0770	0.0524	0.0111	-0.0494	-0.0129	-0.2097	-0.0044	-0.2650		
59	0.029	0.412	0.1012	0.0145	0.1120	0.0950	0.0580	0.1144	0.1101	0.1208	0.0945	0.1302	-0.0312	-0.2016	-0.0864	-0.3840	-0.0922	-0.4557		
60	0.029	0.530	0.0073	-0.0124	0.1093	0.0904	0.0729	0.1309	0.1433	0.1380	0.0888	-0.0280	-0.1003	-0.4091	-0.1480	-0.5044	-0.1609	-0.5607		
61	0.029	0.619	0.0085	-0.1323	0.0484	0.0676	0.0553	0.0905	0.0488	-0.1348	-0.0005	-0.4424	-0.1478	-0.4907	-0.1738	-0.5433	-0.1897	-0.5830		
62	0.029	0.714																		
63	0.029	0.809	-0.2398	-0.2723	-0.2440	-0.3024	-0.3058	-0.2785	-0.3491	-0.2908	-0.2716	-0.3038	-0.2273	-0.4005	-0.2033	-0.5016	-0.2243	-0.5253		

Table A-7.- (Continued).
M = 0.6

			ALPHA =															
			27.2	27.3	30.0	30.2	34.9	35.0	39.6	40.1	44.8	45.0	49.8	49.9	54.7	54.9	56.3	56.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	0.8887	-0.8341	0.8733	-0.9573	0.9547	-1.0901	1.0176	-0.7678	1.0676	-0.5549	1.0919	-0.5247	1.0919	-0.5155	1.0789	-0.5240
2	0.868	0.000	0.7469	-0.7387	0.8107	-0.7722	0.8910	-0.9681	0.9619	-0.7600	1.0261	-0.5597	1.0701	-0.5258	1.0919	-0.5198	1.0881	-0.5334
3	0.881	0.053	0.6961	-2.0134	0.7466	-2.2609	0.8263	-1.3301	0.8914	-0.7434	0.9441	-0.5518	0.9742	-0.5218	0.9808	-0.5168	0.9753	-0.5332
4	0.802	0.000	0.6987	-0.6614	0.7554	-0.7067	0.8356	-0.8696	0.9102	-0.7389	0.9889	-0.5621	1.0414	-0.5400	1.0786	-0.5216	1.0784	-0.5205
5	0.764	0.039	0.6470	-0.6980	0.7017	-0.8761	0.7859	-0.9831	0.8606	-0.7305	0.9441	-0.5666	0.9988	-0.5462	1.0413	-0.5290	1.0443	-0.5267
6	0.777	0.091	0.6315	-1.4896	0.6867	-1.5982	0.7605	-1.1915	0.8302	-0.7463	0.9840	-0.5711	0.9487	-0.5466	0.9782	-0.5324	0.9782	-0.5329
7	0.790	0.144	0.5777	-2.1630	0.6139	-1.6749	0.6866	-1.2188	0.7460	-0.7327	0.7939	-0.5666	0.8283	-0.5364	0.8364	-0.5237	0.8337	-0.5356
8	0.787	0.000	0.5839	-0.6845	0.6488	-0.7884	0.7346	-0.8514	0.8183	-0.7138	0.9971	-0.5678	0.9867	-0.5385	1.0368	-0.5267	1.0495	-0.5380
9	0.648	0.000	0.5805	-0.5951	0.6168	-0.7000	0.6992	-0.7936	0.7817	-0.7043	0.8742	-0.5651	0.9547	-0.5419	1.0126	-0.5317	1.0271	-0.5389
10	0.648	0.068	0.5545	-0.5816	0.6101	-0.8340	0.6939	-0.8996	0.7741	-0.7071	0.8662	-0.5551	0.9420	-0.5435	1.0012	-0.5363	1.0111	-0.5441
11	0.658	0.144	0.5498	-1.1704	0.6189	-1.2629	0.6929	-1.0634	0.7660	-0.7206	0.8439	-0.5595	0.9051	-0.5456	0.9459	-0.5395	0.9526	-0.5488
12	0.671	0.197	0.5531	-1.6510	0.5990	-1.3778	0.6631	-1.1105	0.7272	-0.7303	0.7937	-0.5669	0.8444	-0.5454	0.8731	-0.5460	0.8747	-0.5589
13	0.684	0.250	0.4964	-1.7574	0.5247	-1.3275	0.5852	-1.0766	0.6387	-0.7123	0.6828	-0.5637	0.7132	-0.5393	0.7214	-0.5278	0.7212	-0.5379
14	0.538	0.000	0.4909	-0.5508	0.5430	-0.7059	0.6212	-0.7606	0.7019	-0.6792	0.7974	-0.5644	0.8872	-0.5489	0.9515	-0.5342	0.9694	-0.5529
15	0.538	0.082	0.4907	-0.6255	0.5447	-0.7627	0.6213	-0.8098	0.6981	-0.6767	0.7957	-0.5611	0.8801	-0.5466	0.9449	-0.5357	0.9644	-0.5486
16	0.538	0.143	0.4971	-0.7823	0.5470	-0.9121	0.6196	-0.8799	0.6964	-0.6852	0.7933	-0.5713	0.8748	-0.5516	0.9361	-0.5446	0.9507	-0.5647
17	0.538	0.186	0.5025	-1.0048	0.5476	-1.0224	0.6197	-0.9345	0.6923	-0.6955	0.7865	-0.5771	0.8625	-0.5574	0.9214	-0.5518	0.9330	-0.5692
18	0.540	0.263	0.5115	-1.3888	0.5529	-1.1372	0.6121	-0.9974	0.6757	-0.7095	0.7564	-0.5842	0.8171	-0.5633	0.8567	-0.5567	0.8648	-0.5731
19	0.553	0.315	0.4976	-1.2747	0.5357	-1.1327	0.5875	-0.9772	0.6440	-0.6930	0.7007	-0.5690	0.7530	-0.5528	0.7847	-0.5453	0.7905	-0.5553
20	0.564	0.368	0.4388	-1.2038	0.4668	-1.0931	0.5054	-0.9398	0.5490	-0.6844	0.5867	-0.5661	0.6197	-0.5460	0.6330	-0.5383	0.6323	-0.5471
21	0.383	0.000	0.3856	-0.5141	0.4351	-0.5850	0.5023	-0.6992	0.5797	-0.6513	0.6721	-0.5789	0.7705	-0.5667	0.8500	-0.5596	0.8734	-0.5583
22	0.383	0.136	0.3911	-0.5802	0.4336	-0.7241	0.4982	-0.7772	0.5753	-0.6592	0.6764	-0.5835	0.7703	-0.5603	0.8437	-0.5412	0.8685	-0.5693
23	0.383	0.238	0.4022	-0.7744	0.4450	-0.8802	0.5069	-0.8536	0.5803	-0.6709	0.6758	-0.5918	0.7625	-0.5656	0.8353	-0.5477	0.8558	-0.5756
24	0.383	0.305	0.4062	-0.9131	0.4477	-0.9561	0.5060	-0.8932	0.5762	-0.6798	0.6467	-0.6003	0.7493	-0.5716	0.8180	-0.5591	0.8328	-0.5879
25	0.393	0.410	0.4273	-0.9911	0.4610	-0.9468	0.5129	-0.9070	0.5676	-0.6684	0.6383	-0.5865	0.7029	-0.5674	0.7493	-0.5651	0.7633	-0.5698
26	0.406	0.462	0.4290	-0.9473	0.4541	-0.8962	0.4944	-0.8751	0.5397	-0.6584	0.5959	-0.5829	0.6502	-0.5604	0.6911	-0.5564	0.6951	-0.5632
27	0.419	0.515	0.3845	-0.9099	0.4011	-0.8651	0.4257	-0.8523	0.4584	-0.6548	0.4960	-0.5772	0.5300	-0.5581	0.5422	-0.5523	0.5516	-0.5560
28	0.234	0.000	0.2127	-0.4593	0.2524	-0.5141	0.3020	-0.6414	0.3679	-0.6361	0.4693	-0.5945	0.5791	-0.5777	0.6698	-0.5728	0.6925	-0.5779
29	0.236	0.190	0.2194	-0.5890	0.2567	-0.6601	0.3087	-0.7447	0.3714	-0.6681	0.4718	-0.6035	0.5791	-0.5797	0.6665	-0.5763	0.6891	-0.5808
30	0.236	0.332	0.2300	-0.7690	0.2688	-0.8096	0.3219	-0.8265	0.3831	-0.6566	0.4780	-0.6086	0.5811	-0.5812	0.6631	-0.5781	0.6844	-0.5826
31	0.236	0.427	0.2584	-0.8090	0.2454	-0.8263	0.3352	-0.8240	0.3992	-0.6474	0.4890	-0.5977	0.5866	-0.5733	0.6639	-0.5680	0.6855	-0.5796
32	0.236	0.498	0.2764	-0.8159	0.3111	-0.8230	0.3490	-0.8190	0.4096	-0.6382	0.4937	-0.5916	0.5796	-0.5714	0.6492	-0.5601	0.6680	-0.5758
33	0.245	0.557	0.3123	-0.8047	0.3440	-0.7978	0.3740	-0.7988	0.4236	-0.6301	0.4969	-0.5841	0.5650	-0.5684	0.6215	-0.5523	0.6368	-0.5651
34	0.259	0.610	0.3291	-0.7667	0.3502	-0.7588	0.3740	-0.7829	0.4165	-0.6286	0.4739	-0.5870	0.5303	-0.5632	0.5710	-0.5533	0.5798	-0.5579
35	0.272	0.663	0.3059	-0.7406	0.3205	-0.7508	0.3302	-0.7775	0.3592	-0.6294	0.3924	-0.5906	0.4308	-0.5650	0.4499	-0.5518	0.4545	-0.5576
36	0.147	0.000	-0.0338	-0.5240	-0.0269	-0.5898	-0.0002	-0.6634	0.0543	-0.6352	0.1410	-0.6175	0.2895	-0.5841	0.3955	-0.5722	0.4301	-0.5826
37	0.147	0.222	-0.0348	-0.5994	-0.0098	-0.6719	0.0099	-0.7281	0.0604	-0.6369	0.1765	-0.6065	0.3046	-0.5850	0.4013	-0.5651	0.4414	-0.5837
38	0.147	0.389	-0.0142	-0.7116	0.0122	-0.7555	0.0349	-0.7694	0.0959	-0.6295	0.2033	-0.6002	0.3223	-0.5760	0.4160	-0.5567	0.4548	-0.5792
39	0.147	0.500	0.0169	-0.7358	0.0451	-0.7622	0.0726	-0.7649	0.1346	-0.6249	0.2379	-0.5876	0.3492	-0.5707	0.4386	-0.5534	0.4756	-0.5771
40	0.147	0.583	0.0688	-0.7224	0.0794	-0.7426	0.1150	-0.7523	0.1755	-0.6148	0.2743	-0.5818	0.3752	-0.5684	0.4663	-0.5533	0.4872	-0.5670
41	0.157	0.646	0.1579	-0.6864	0.1849	-0.7169	0.2134	-0.7435	0.2628	-0.6136	0.3443	-0.5818	0.4251	-0.5680	0.4924	-0.5495	0.5087	-0.5692
42	0.170	0.698	0.2207	-0.6640	0.2349	-0.7077	0.2562	-0.7390	0.2959	-0.6192	0.3453	-0.5860	0.4263	-0.5680	0.4759	-0.5514	0.4912	-0.5708
43	0.183	0.751	0.2399	-0.6502	0.2468	-0.6936	0.2536	-0.7246	0.2779	-0.6065	0.3200	-0.5696	0.3622	-0.5528	0.3874	-0.5429	0.3964	-0.5478
44	0.118	0.750	0.1859	-0.6027	0.1201	-0.6499	0.1460	-0.6912	0.1872	-0.5925	0.2581	-0.5568	0.3350	-0.5443	0.3928	-0.5377	0.4139	-0.5431
45	0.088	0.000	-0.4230	-0.5261	-0.4338	-0.6994	-0.3907	-0.6290	-0.3279	-0.6105	-0.1888	-0.5887	-0.0514	-0.5610	0.0503	-0.5408	0.0908	-0.5389
46	0.088	0.236	-0.2645	-0.5969	-0.2752	-0.6691	-0.3119	-0.6761	-0.3379	-0.6211	-0.2264	-0.5876	-0.0978	-0.5516	0.0244	-0.5417	0.0674	-0.5538
47	0.088	0.412	-0.4085	-0.6677	-0.3727	-0.7187	-0.3412	-0.7347	-0.2515	-0.6224	-0.1177	-0.5859	0.0077	-0.5533	0.1106	-0.5425	0.1403	-0.5587
48	0.088	0.530	-0.3701	-0.6942	-0.2862	-0.7262	-0.2484	-0.7467	-0.1744	-0.6233	-0.0469	-0.5842	0.0378	-0.5555	0.1332	-0.5472	0.1659	-0.5702
49	0.088	0.619	-0.1787	-0.6625	-0.1504	-0.6941	-0.1181	-0.7246	-0.0834	-0.6112	0.0590	-0.5690	0.1631	-0.5575	0.2288	-0.5447	0.2528	-0.5524
50	0.088	0.846	0.0938	-0.5439	0.1068	-0.5992	0.1111	-0.6519	0.1430	-0.5717	0.1868	-0.5371	0.2429	-0.5315	0.2814	-0.5227	0.3015	-0.5254
51	0.059	0.000	-0.0381	-0.2590	-0.1050	-0.3617	-0.1932	-0.4765	-0.2089	-0.6047	-0.1361	-0.5806	-0.0361	-0.5517	0.0503	-0.5305	0.0870	-0.5218
52	0.059	0.236	-0.0850	-0.3753	-0.1171	-0.5158	-0.2069	-0.5981	-0.2090	-0.6055	-0.1310	-0.5725	-0.0345	-0.5412	0.0529	-0.5187	0.0864	-0.5292
53	0.059	0.412	-0.1066	-0.5057	-0.1217	-0.6525	-0.1986	-0.7019	-0.1792	-0.6096	-0.1025	-0.5666	-0.0045	-0.5421	0.0762	-0.5261	0.1108	-0.5354
54	0.059	0.530	-0.1340	-0.6337	-0.1405	-0.6833	-0.1891	-0.7265	-0.1531	-0.6085	-0.0740	-0.5621	0.0216	-0.5454	0.0985	-0.5354	0.1319	-0.5471
55	0.059	0.619	-0.1507	-0.6234	-0.1510	-0.6667	-0.1743	-0.7076	-0.1282	-0.5954	-0.0557	-0.5462	0.0416	-0.5376	0.1231	-0.5266	0.1570	-0.5307
56	0.059	0.714	-0.1496	-0.5785	-0.1419	-0.6263	-0.1484	-0.6797	-0.1006	-0.5810	-0.0269	-0.5395	0.0646	-0.5315	0.1398	-0.5210	0.1741	-0.5346
57	0.029	0.000	0.0459	-0.1429	-0.0581	-0.1690	-0.2007	-0.3561	-0.2589	-0.4921	-0.2122	-0.5011	-0.1356	-0.5264	-0.0494	-0.5036	-0.0398	-0.5138
58	0.029	0.236	-0.0119	-0.2401	-0.0700	-0.3770	-0.2196	-0.5277	-0.2665	-0.6050	-0.2149	-0.5476	-0.1457	-0.5220	-0.0826	-0.4957	-0.0547	-0.5096
59	0.029	0.412	-0.0868	-0.4700	-0.1275	-0.5805	-0.2436	-0.6732	-0.2463	-0.6090	-0.1934	-0.5378	-0.1258	-0.5204	-0.0656	-0.4981	-0.0353	-0.5188
60	0.029	0.530	-0.1488	-0.5637	-0.1766	-0.6434	-0.2544	-0.7122	-0.2319	-0.6097	-0.1763	-0.5383	-0.1058	-0.5185	-0.0494	-0.5039	-0.0183	-0.5252
61	0.029	0.619	-0.1810	-0.5808	-0.1911	-0.6409	-0.2491	-0.6889	-0.2112	-0.5954	-0.1533	-0.5234	-0.0853	-0.5183	-0.0280	-0.5185	0.0024	-0.5304
62	0.029	0.714																
63	0.029	0.809	-0.2108	-0.5296	-0.2056	-0.5809	-0.2180	-0.6296	-0.1784	-0.5558	-0.1172	-0.5075	-0.0474	-0.5034	0.0116	-0.5122	0.0404	-0.5223

Table A-7.- (Continued).
M = 0.8

			ALPHA =															
TUBE	X/L	Y/R/2	-3.0 WINDWARD	-2.7 LEEWARD	-0.1 WINDWARD	0.1 LEEWARD	4.9 WINDWARD	5.1 LEEWARD	9.9 WINDWARD	10.2 LEEWARD	14.9 WINDWARD	15.0 LEEWARD	19.8 WINDWARD	20.0 LEEWARD	24.8 WINDWARD	25.0 LEEWARD	26.3 WINDWARD	26.6 LEEWARD
1	0.034	0.000	0.1034	0.2121	0.1662	0.1660	0.2663	0.0582	0.3910	-0.0533	0.5229	-0.1971	0.6600	-0.3647	0.7975	-0.5509	0.8259	-0.6173
2	0.068	0.000	0.0664	0.1721	0.1252	0.1274	0.2253	0.0233	0.3459	-0.0870	0.4694	-0.2238	0.5999	-0.3797	0.7330	-0.5497	0.7595	-0.6080
3	0.081	0.053	0.0750	0.1093	0.1384	0.1421	0.2409	0.0334	0.3557	-0.0551	0.4712	-0.2326	0.5905	-0.8722	0.7084	-1.4211	0.7323	-1.5283
4	0.082	0.000	0.0746	0.1382	0.0901	0.0840	0.1040	-0.0137	0.2944	-0.1211	0.4177	-0.2523	0.5478	-0.3953	0.6726	-0.5486	0.7028	-0.5929
5	0.764	0.039	-0.0165	0.0957	0.0433	0.0420	0.1411	-0.0582	0.2504	-0.1699	0.3723	-0.2969	0.5015	-0.4109	0.6205	-0.5786	0.6500	-0.6160
6	0.777	0.091	0.0183	0.1330	0.0754	0.0753	0.1742	-0.0265	0.2804	-0.1229	0.3958	-0.2505	0.5136	-0.6475	0.6293	-1.2060	0.6584	-1.3204
7	0.790	0.144	0.0337	0.1637	0.1050	0.1042	0.2092	0.0242	0.3100	-0.7610	0.4160	-1.0379	0.5110	-1.3228	0.6020	-1.5602	0.6221	-1.6082
8	0.707	0.000	-0.1236	-0.0024	-0.0532	-0.0539	0.0447	-0.1552	0.1684	-0.2872	0.2942	-0.4427	0.4235	-0.6179	0.5511	-0.7358	0.5837	-0.6684
9	0.068	0.000	-0.0941	0.0127	-0.0337	-0.0339	0.0556	-0.1314	0.1700	-0.2573	0.2869	-0.4054	0.4092	-0.5696	0.5279	-0.6280	0.5606	-0.3059
10	0.068	0.068	-0.1129	-0.0349	-0.0880	-0.0970	0.0219	-0.1637	0.1509	-0.3306	0.2792	-0.4691	0.4022	-0.5907	0.5281	-0.6473	0.5614	-0.2762
11	0.058	0.144	-0.0805	0.0413	-0.0101	-0.0116	0.0095	-0.1237	0.2044	-0.2094	0.3108	-0.3342	0.4329	-0.7799	0.5428	-1.1907	0.5757	-0.9735
12	0.071	0.197	-0.0373	0.0830	0.0320	0.0256	0.1333	-0.0743	0.2451	-0.2842	0.3482	-1.2085	0.4542	-1.4215	0.5519	-1.5641	0.5872	-1.2551
13	0.084	0.250	-0.0046	0.1281	0.0630	0.0690	0.1804	-0.2802	0.2807	-0.7830	0.3660	-1.1752	0.4461	-1.4787	0.5245	-1.6608	0.5461	-1.2895
14	0.530	0.000	-0.0938	0.0095	-0.0329	-0.0240	0.0520	-0.1220	0.1479	-0.2283	0.2524	-0.3646	0.3587	-0.4742	0.4727	-0.3373	0.4944	-0.6702
15	0.530	0.082	-0.0910	0.0173	-0.0278	-0.0189	0.0620	-0.1227	0.1558	-0.2252	0.2565	-0.3605	0.3631	-0.4635	0.4746	-0.3171	0.4903	-0.7529
16	0.530	0.143	-0.0957	0.0233	-0.0182	-0.0122	0.0648	-0.1427	0.1518	-0.2196	0.2574	-0.3712	0.3688	-0.4705	0.4817	-0.4071	0.5054	-0.8519
17	0.530	0.184	-0.1171	-0.0512	-0.1061	-0.1153	0.0164	-0.1702	0.1434	-0.2916	0.2585	-0.3595	0.3716	-0.5549	0.4836	-0.6304	0.5068	-0.9436
18	0.540	0.263	-0.1019	0.0220	-0.0295	-0.0353	0.0701	-0.1411	0.1909	-0.1672	0.2970	-1.1889	0.4039	-1.4920	0.5047	-1.1294	0.5266	-1.0776
19	0.553	0.315	-0.0595	0.0732	0.0169	0.0091	0.1270	-0.0591	0.2301	-0.9301	0.3260	-1.2078	0.4102	-1.5003	0.5090	-0.9354	0.5260	-1.0246
20	0.564	0.368	-0.0470	0.1196	0.0460	0.0392	0.1710	-0.4229	0.2640	-0.7716	0.3364	-1.1107	0.4048	-1.3176	0.4705	-0.8992	0.4871	-0.9492
21	0.383	0.000	-0.0955	-0.0080	-0.0410	-0.0470	0.0296	-0.1210	0.1116	-0.1981	0.1979	-0.3056	0.2882	-0.2549	0.3806	-0.5084	0.4012	-0.4846
22	0.383	0.136	-0.0998	-0.0024	-0.0423	-0.0462	0.0333	-0.1300	0.1121	-0.2087	0.1993	-0.3133	0.2924	-0.2260	0.3864	-0.5740	0.3990	-0.5447
23	0.383	0.230	-0.1034	0.0110	-0.0284	-0.0327	0.0520	-0.1329	0.1257	-0.2021	0.2109	-0.2904	0.3052	-0.2332	0.3984	-0.7027	0.4108	-0.6803
24	0.383	0.305	-0.1394	-0.0164	-0.0630	-0.0772	0.0238	-0.1692	0.1174	-0.2031	0.2111	-0.3787	0.3085	-0.7695	0.4021	-0.8176	0.4128	-0.7632
25	0.393	0.410	-0.1336	0.0044	-0.0587	-0.0620	0.0580	-0.1241	0.1654	-0.8636	0.2601	-1.2845	0.3492	-1.1899	0.4361	-0.8477	0.4308	-0.8005
26	0.404	0.462	-0.0780	0.0524	-0.0134	-0.0126	0.1063	-0.3191	0.2048	-0.9574	0.2887	-1.1393	0.3664	-1.3726	0.4413	-0.8194	0.4431	-0.7723
27	0.419	0.515	-0.1870	0.1013	0.0214	0.0219	0.1556	-0.4541	0.2409	-0.7943	0.3033	-1.0717	0.3599	-1.0160	0.4153	-0.7859	0.4167	-0.7479
28	0.234	0.000	-0.1246	-0.0629	-0.0807	-0.0848	-0.0326	-0.1363	0.0305	-0.1865	0.0963	-0.2341	0.1574	-0.1763	0.2251	-0.4749	0.2322	-0.4519
29	0.236	0.190	-0.1281	-0.0600	-0.0796	-0.0836	-0.0276	-0.1431	0.0373	-0.1924	0.1034	-0.2320	0.1647	-0.1125	0.2345	-0.5052	0.2400	-0.5515
30	0.234	0.332	-0.1441	-0.0615	-0.0860	-0.0907	-0.0282	-0.1613	0.0421	-0.1952	0.1124	-0.2173	0.1763	-0.1292	0.2445	-0.6444	0.2505	-0.6697
31	0.236	0.427	-0.1578	-0.0493	-0.0862	-0.0854	-0.0156	-0.1724	0.0547	-0.1312	0.1314	-0.6861	0.1947	-0.5959	0.2711	-0.6878	0.2696	-0.6953
32	0.234	0.490	-0.2268	-0.1282	-0.1920	-0.1868	-0.0692	-0.2190	0.0414	-0.5573	0.1330	-1.2528	0.2047	-0.5142	0.2813	-0.6990	0.2815	-0.7019
33	0.245	0.557	-0.1550	-0.0339	-0.0964	-0.0937	0.0132	-0.1864	0.1004	-0.9513	0.1884	-1.2154	0.2576	-0.5606	0.3210	-0.6859	0.3196	-0.6909
34	0.259	0.610	-0.1220	0.0247	-0.0455	-0.0439	0.0644	-0.4696	0.1563	-0.8805	0.2252	-1.0014	0.2910	-0.5875	0.3422	-0.6609	0.3319	-0.6730
35	0.277	0.663	-0.2876	0.0014	-0.0033	-0.0024	0.1233	-0.4487	0.2021	-0.7695	0.2481	-0.9502	0.3075	-0.5652	0.3379	-0.6493	0.3222	-0.6596
36	0.147	0.000	-0.2132	-0.1739	-0.1040	-0.1900	-0.1573	-0.2141	-0.1120	-0.2311	-0.0608	-0.2449	-0.0307	-0.2787	0.0099	-0.4451	0.0059	-0.4707
37	0.147	0.222	-0.2132	-0.1748	-0.1047	-0.1900	-0.1508	-0.2231	-0.1052	-0.2312	-0.0484	-0.2315	-0.0304	-0.2884	0.0178	-0.5109	0.0105	-0.5704
38	0.147	0.389	-0.2224	-0.1721	-0.1029	-0.1895	-0.1444	-0.2312	-0.0939	-0.2165	-0.0360	-0.1921	-0.0208	-0.4137	0.0296	-0.6210	0.0201	-0.6398
39	0.147	0.500	-0.2352	-0.1591	-0.1776	-0.1865	-0.1301	-0.2391	-0.0771	-0.1570	-0.0711	-0.8472	0.0001	-0.5887	0.0520	-0.6416	0.0444	-0.6497
40	0.147	0.583	-0.2777	-0.2210	-0.2534	-0.2427	-0.1651	-0.2622	-0.0751	-0.8219	-0.0099	-1.1818	0.0237	-0.6166	0.0752	-0.6405	0.0674	-0.6539
41	0.157	0.646	-0.1921	-0.0984	-0.1400	-0.1410	-0.0524	-0.3449	0.0264	-0.9178	0.0430	-1.0364	0.1230	-0.5712	0.1671	-0.6235	0.1615	-0.6398
42	0.170	0.690	-0.1552	-0.0229	-0.0758	-0.0739	0.0187	-0.4943	0.0954	-0.8558	0.1467	-0.9134	0.1855	-0.5306	0.2207	-0.6099	0.2154	-0.6267
43	0.183	0.751	-0.2808	0.0460	-0.0276	-0.0272	0.0880	-0.4571	0.1572	-0.7393	0.1937	-0.8170	0.2253	-0.5040	0.2520	-0.5054	0.2339	-0.6131
44	0.118	0.750	-0.2058	-0.0815	-0.1237	-0.1237	-0.0479	-0.5207	0.0864	-0.7961	0.0295	-0.7111	0.0361	-0.5147	0.0697	-0.5570	0.0622	-0.5805
45	0.088	0.000	-0.2618	-0.3076	-0.2634	-0.2775	-0.2976	-0.2537	-0.3259	-0.2058	-0.4792	-0.2018	-0.4612	-0.4259	-0.7084	-0.4945	-0.7436	-0.5781
46	0.088	0.236	-0.3035	-0.3423	-0.3076	-0.3243	-0.3271	-0.2791	-0.3422	-0.2314	-0.3756	-0.2855	-0.6546	-0.4951	-0.8015	-0.6000	-0.8063	-0.6485
47	0.088	0.412	-0.3224	-0.3751	-0.3439	-0.3525	-0.3598	-0.2965	-0.4178	-0.3485	-0.3992	-0.5881	-0.7375	-0.5869	-0.8018	-0.6125	-0.8104	-0.6328
48	0.088	0.530	-0.3488	-0.4499	-0.3976	-0.4023	-0.4875	-0.3727	-0.4263	-0.5266	-0.4673	-1.0065	-0.7981	-0.6134	-0.8369	-0.6169	-0.8364	-0.6342
49	0.088	0.619	-0.4162	-0.6179	-0.5327	-0.4979	-0.5114	-0.4797	-0.5097	-0.9384	-0.5903	-1.0237	-0.8219	-0.5996	-0.8224	-0.6074	-0.8158	-0.6251
50	0.088	0.866	-0.3074	-0.4367	-0.0925	-0.0920	0.0042	-0.4511	0.0378	-0.5260	0.0572	-0.4613	0.0411	-0.4388	0.0597	-0.5315	0.0508	-0.5563
51	0.059	0.000	-0.1698	[illegible]	-0.1704	-0.1770	-0.1876	-0.1605	-0.1954	-0.1261	-0.3248	-0.1356	-0.3752	-0.3442	-0.4779	-0.4375	-0.4653	-0.4963
52	0.059	0.236	-0.1815	[illegible]	-0.1869	-0.1937	-0.2005	-0.1619	-0.2018	-0.1570	-0.3291	-0.1854	-0.4459	-0.4063	-0.5172	-0.4813	-0.4971	-0.5261
53	0.059	0.412	-0.2104	-0.2406	-0.2254	-0.2282	-0.2364	-0.1947	-0.2401	-0.2462	-0.3277	-0.3287	-0.5208	-0.4800	-0.5487	-0.5475	-0.5104	-0.5800
54	0.059	0.530	-0.2485	-0.2914	-0.2636	-0.2668	-0.3083	-0.2609	-0.3114	-0.3294	-0.3316	-0.5293	-0.5008	-0.5420	-0.4648	-0.5819	-0.4845	-0.6871
55	0.059	0.619	-0.3101	-0.3850	-0.3894	-0.3805	-0.3657	-0.3222	-0.3113	-0.6632	-0.2728	-0.8161	-0.3647	-0.5532	-0.2647	-0.5748	-0.2417	-0.6803
56	0.059	0.714	-0.3764	-0.4178	-0.3755	-0.3709	-0.4193	-0.4879	-0.5767	-0.7952	-0.5297	-0.5753	-0.6952	-0.4997	-0.5210	-0.5470	-0.4670	-0.5753
57	0.029	0.000	-0.1240	-0.1271	-0.1190	-0.1236	-0.1140	-0.1027	-0.1173	-0.0877	-0.1718	-0.1093	-0.2448	-0.3120	-0.2113	-0.4009	-0.1961	-0.4633
58	0.029	0.236	-0.1296	-0.1293	-0.1220	-0.1224	-0.1274	-0.0950	-0.1204	-0.1121	-0.1952	-0.1385	-0.2473	-0.3616	-0.2375	-0.4130	-0.2157	-0.4492
59	0.029	0.412	-0.1496	-0.1517	-0.1432	-0.1442	-0.1692	-0.1237	-0.1210	-0.1649	-0.1727	-0.1291	-0.2619	-0.4240	-0.2334	-0.4835	-0.2239	-0.5211
60	0.029	0.530	-0.1914	-0.1743	-0.1737	-0.1787	-0.1773	-0.1659	-0.1314	-0.1677	-0.1663	-0.2435	-0.2426	-0.4820	-0.2087	-0.5324	-0.2026	-0.5600
61	0.029	0.619	-0.2430	-0.2160	-0.2295	-0.2396	-0.2026	-0.1992	-0.1276	-0.3740	-0.1520	-0.5723	-0.2069	-0.4856	-0.1856	-0.5509	-0.2026	-0.5746
62	0.029	0.714																
63	0.029	0.009	-0.2955	-0.2939	-0.2507	-0.2572	-0.2650	-0.3060	-0.4798	-0.3935	-0.5295	-0.3551	-0.5404	-0.4050	-0.4020	-0.5131	-0.3641	-0.5309

Table A-7.- (Continued).
M = 0.8

			ALPHA =															
			27.0	27.2	29.8	30.0	34.8	34.9	39.7	39.9	44.7	44.8	49.6	49.8	54.6	54.8	56.2	56.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.836	0.000	0.8527	-0.6248	0.9180	-0.7090	1.0128	-0.7779	1.0868	-0.7571	1.1451	-0.6247	1.1630	-0.5670	1.1701	-0.5667	1.1646	-0.5562
2	0.869	0.000	0.7861	-0.6177	0.8498	-0.6225	0.9473	-0.7762	1.0283	-0.7571	1.1027	-0.6303	1.1391	-0.5778	1.1687	-0.5766	1.1709	-0.5648
3	0.881	0.053	0.7501	-1.5828	0.8041	-1.3337	0.8934	-0.9358	0.9635	-0.7327	1.0271	-0.6243	1.0530	-0.5725	1.0686	-0.5787	1.0688	-0.5572
4	0.887	0.000	0.7305	-0.5595	0.7915	-0.5861	0.8925	-0.7379	0.9797	-0.7291	1.0556	-0.6271	1.1116	-0.5746	1.1553	-0.5696	1.1614	-0.5668
5	0.764	0.039	0.6782	-0.5098	0.7410	-0.7611	0.8416	-0.7578	0.9324	-0.7063	1.0103	-0.6233	1.0717	-0.5755	1.1206	-0.5698	1.1298	-0.5702
6	0.777	0.091	0.6720	-1.3116	0.7323	-1.1007	0.8239	-0.8618	0.9063	-0.7334	0.9717	-0.6334	1.0256	-0.5826	1.0625	-0.5808	1.0709	-0.5787
7	0.790	0.144	0.6755	-1.5282	0.6847	-1.1057	0.7592	-0.8694	0.8252	-0.7247	0.8769	-0.6288	0.9104	-0.5786	0.9318	-0.5792	0.9350	-0.5775
8	0.707	0.000	0.6119	-0.5329	0.6797	-0.7257	0.7841	-0.7188	0.8862	-0.6808	0.9786	-0.6257	1.0520	-0.5778	1.1138	-0.5844	1.1258	-0.5809
9	0.649	0.000	0.5956	-0.5865	0.6588	-0.6919	0.7501	-0.6966	0.8505	-0.6752	0.9454	-0.6216	1.0213	-0.5770	1.0894	-0.5825	1.1030	-0.5801
10	0.648	0.068	0.5803	-0.6244	0.6442	-0.7758	0.7466	-0.7379	0.8426	-0.6805	0.9787	-0.6179	1.0101	-0.5797	1.0782	-0.5847	1.0915	-0.5738
11	0.658	0.144	0.6002	-1.0273	0.6590	-0.9478	0.7491	-0.8051	0.8355	-0.7021	0.9077	-0.6242	0.9745	-0.5875	1.0388	-0.5934	1.0397	-0.5748
12	0.671	0.197	0.5947	-1.0465	0.6463	-0.9021	0.7268	-0.8294	0.8008	-0.7145	0.8632	-0.6311	0.9179	-0.5948	0.9623	-0.5996	0.9698	-0.5797
13	0.684	0.250	0.5556	-1.0242	0.5970	-0.9637	0.6587	-0.8197	0.7150	-0.7047	0.7595	-0.6229	0.7946	-0.5823	0.8228	-0.5806	0.8289	-0.5757
14	0.530	0.009	0.5193	-0.5689	0.5797	-0.6298	0.6741	-0.6866	0.7721	-0.6658	0.8651	-0.6161	0.9493	-0.5846	1.0311	-0.5862	1.0496	-0.5832
15	0.530	0.082	0.5225	-0.6058	0.5804	-0.6928	0.6738	-0.7098	0.7705	-0.6665	0.8615	-0.6156	0.9463	-0.5811	1.0248	-0.5816	1.0451	-0.5801
16	0.530	0.143	0.5246	-0.6939	0.5811	-0.7758	0.6758	-0.7342	0.7674	-0.6773	0.8542	-0.6179	0.9397	-0.5815	1.0164	-0.5732	1.0325	-0.5742
17	0.530	0.184	0.5263	-0.7908	0.5811	-0.8282	0.6749	-0.7605	0.7625	-0.6900	0.8492	-0.6284	0.9283	-0.5852	1.0023	-0.5805	1.0169	-0.5809
18	0.540	0.263	0.5398	-0.9037	0.5905	-0.8782	0.6703	-0.7870	0.7448	-0.7036	0.8182	-0.6363	0.8845	-0.5915	0.9423	-0.5836	0.9537	-0.5858
19	0.553	0.315	0.5353	-0.8928	0.5785	-0.8626	0.6471	-0.7756	0.7150	-0.6931	0.7757	-0.6210	0.8274	-0.5943	0.8728	-0.5815	0.8833	-0.5859
20	0.566	0.368	0.4911	-0.8648	0.5267	-0.8316	0.5752	-0.7592	0.6264	-0.6828	0.6717	-0.6129	0.7023	-0.5942	0.7315	-0.5798	0.7383	-0.5823
21	0.383	0.300	0.4196	-0.5198	0.4690	-0.5681	0.5612	-0.6609	0.6551	-0.6427	0.7548	-0.6065	0.8432	-0.6012	0.9358	-0.5825	0.9576	-0.5892
22	0.383	0.136	0.4242	-0.5756	0.4715	-0.6435	0.5640	-0.6952	0.6528	-0.6511	0.7433	-0.6041	0.8421	-0.6021	0.9291	-0.5805	0.9516	-0.5820
23	0.393	0.238	0.4313	-0.6923	0.4806	-0.7179	0.5695	-0.7308	0.6563	-0.6663	0.7415	-0.6145	0.8352	-0.6107	0.9173	-0.5883	0.9382	-0.5920
24	0.383	0.305	0.4325	-0.7334	0.4803	-0.7530	0.5663	-0.7521	0.6494	-0.6762	0.7305	-0.6235	0.8209	-0.6165	0.8990	-0.5949	0.9163	-0.5999
25	0.393	0.410	0.4586	-0.7638	0.4986	-0.7653	0.5683	-0.7505	0.6388	-0.6662	0.7040	-0.6261	0.7730	-0.5989	0.8312	-0.5838	0.8449	-0.5970
26	0.406	0.462	0.4589	-0.7344	0.4935	-0.7414	0.5495	-0.7349	0.6081	-0.6567	0.6620	-0.6225	0.7194	-0.5938	0.7684	-0.5798	0.7780	-0.5965
27	0.419	0.515	0.4272	-0.7072	0.4506	-0.7226	0.4864	-0.7236	0.5298	-0.6487	0.5635	-0.6166	0.6053	-0.5870	0.6375	-0.5770	0.6436	-0.5901
28	0.236	0.000	0.2592	-0.4596	0.2983	-0.5292	0.3781	-0.6329	0.4694	-0.6351	0.5617	-0.6128	0.6652	-0.5975	0.7652	-0.5801	0.7954	-0.5879
29	0.236	0.190	0.2628	-0.5809	0.3017	-0.6463	0.3798	-0.6830	0.4698	-0.6496	0.5624	-0.6191	0.6685	-0.6051	0.7624	-0.5902	0.7905	-0.5943
30	0.236	0.332	0.2703	-0.6594	0.3089	-0.7028	0.3849	-0.7163	0.4727	-0.6616	0.5413	-0.6221	0.6571	-0.6118	0.7559	-0.5968	0.7829	-0.6018
31	0.236	0.427	0.2909	-0.6706	0.3263	-0.7062	0.4014	-0.7152	0.4832	-0.6556	0.5681	-0.6173	0.6614	-0.6017	0.7493	-0.5852	0.7759	-0.6054
32	0.236	0.498	0.3008	-0.6680	0.3372	-0.6994	0.4083	-0.7087	0.4861	-0.6489	0.5646	-0.6120	0.6521	-0.5979	0.7315	-0.5830	0.7538	-0.6039
33	0.245	0.557	0.3360	-0.6494	0.3672	-0.6827	0.4253	-0.6993	0.4936	-0.6414	0.5603	-0.6051	0.6348	-0.5925	0.7016	-0.5789	0.7192	-0.5970
34	0.259	0.610	0.3523	-0.6345	0.3734	-0.6683	0.4236	-0.6920	0.4804	-0.6328	0.5295	-0.5995	0.5920	-0.5888	0.6489	-0.5751	0.6652	-0.5843
35	0.272	0.663	0.3353	-0.6281	0.3488	-0.6699	0.3784	-0.6941	0.4188	-0.6366	0.4505	-0.6052	0.4922	-0.5949	0.5322	-0.5786	0.5463	-0.5897
36	0.147	0.000	0.0234	-0.4753	0.0490	-0.5607	0.1139	-0.6625	0.1923	-0.6455	0.2803	-0.6263	0.3939	-0.6118	0.5081	-0.5982	0.5490	-0.6060
37	0.147	0.222	0.0298	-0.5840	0.0575	-0.6526	0.1206	-0.6827	0.2000	-0.6440	0.2911	-0.6187	0.4009	-0.6026	0.5158	-0.5890	0.5573	-0.5984
38	0.147	0.389	0.0413	-0.6224	0.0708	-0.6704	0.1337	-0.6889	0.2121	-0.6303	0.3044	-0.6074	0.4112	-0.5979	0.5228	-0.5830	0.5631	-0.5947
39	0.147	0.500	0.0638	-0.6186	0.0915	-0.6594	0.1538	-0.6429	0.2337	-0.6318	0.3255	-0.6019	0.4282	-0.5939	0.5370	-0.5784	0.5734	-0.5888
40	0.147	0.583	0.0883	-0.6092	0.1159	-0.6472	0.1793	-0.6769	0.2576	-0.6223	0.3479	-0.5949	0.4470	-0.6021	0.5455	-0.5810	0.5756	-0.5843
41	0.157	0.646	0.1733	-0.6075	0.1990	-0.6462	0.2554	-0.6769	0.3247	-0.6250	0.4017	-0.5954	0.4850	-0.6033	0.5651	-0.5819	0.5902	-0.5873
42	0.170	0.698	0.2224	-0.6006	0.2437	-0.6458	0.2907	-0.6753	0.3478	-0.6271	0.4124	-0.5971	0.4816	-0.6047	0.5458	-0.5846	0.5660	-0.5896
43	0.183	0.751	0.2359	-0.5896	0.2561	-0.6354	0.2834	-0.6636	0.3258	-0.6222	0.3665	-0.5936	0.4148	-0.5901	0.4603	-0.5760	0.4755	-0.5812
44	0.118	0.750	0.0857	-0.5670	0.0925	-0.6156	0.1507	-0.6476	0.2201	-0.6108	0.3048	-0.5844	0.3854	-0.5819	0.4628	-0.5684	0.4882	-0.5754
45	0.088	0.000	-0.7709	-0.5989	-0.8786	-0.6005	-0.8155	-0.6508	-0.6835	-0.6308	-0.5159	-0.6225	-0.2218	-0.6043	0.0745	-0.5834	0.1385	-0.5892
46	0.088	0.236	-0.8376	-0.6345	-0.9777	-0.6578	-0.8095	-0.6623	-0.6718	-0.6273	-0.4838	-0.6101	-0.2325	-0.6026	0.0284	-0.5828	0.0881	-0.5811
47	0.088	0.412	-0.8812	-0.6108	-0.8336	-0.6495	-0.7518	-0.6774	-0.6096	-0.6338	-0.3470	-0.6121	-0.1040	-0.6033	0.1167	-0.5870	0.1604	-0.5841
48	0.088	0.530	-0.8827	-0.6067	-0.8250	-0.6434	-0.7228	-0.6795	-0.5557	-0.6347	-0.2662	-0.6098	0.0054	-0.6019	0.1610	-0.5888	0.1927	-0.5816
49	0.088	0.619	-0.8012	-0.5863	-0.8268	-0.6331	-0.6482	-0.6683	-0.3114	-0.6273	0.0478	-0.5908	0.2354	-0.5887	0.3068	-0.5709	0.3246	-0.5821
50	0.088	0.846	0.0528	-0.5435	0.0690	-0.5972	0.1153	-0.6241	0.1722	-0.5915	0.2287	-0.5596	0.2882	-0.5641	0.3405	-0.5506	0.3627	-0.5639
51	0.059	0.000	-0.5132	-0.5116	-0.7901	-0.5727	-0.5687	-0.5694	-0.1120	-0.6167	-0.0810	-0.4042	0.0845	-0.5984	0.1819	-0.5734	0.2201	-0.5874
52	0.059	0.236	-0.4463	-0.5153	-0.5554	-0.5746	-0.3191	-0.6132	-0.0825	-0.6186	-0.0019	-0.6124	0.0786	-0.5975	0.1812	-0.5732	0.2183	-0.5834
53	0.059	0.412	-0.5215	-0.5753	-0.6219	-0.6281	-0.3126	-0.6574	-0.0388	-0.6296	0.0109	-0.6117	0.0971	-0.5986	0.1995	-0.5754	0.2368	-0.5827
54	0.059	0.530	-0.4133	-0.5859	-0.4469	-0.6339	-0.1438	-0.6668	-0.0172	-0.6366	0.0280	-0.6093	0.1177	-0.5967	0.2164	-0.5780	0.2522	-0.5825
55	0.059	0.619	-0.2158	-0.5709	-0.1768	-0.6238	-0.0969	-0.6604	-0.0324	-0.6259	0.0345	-0.5922	0.1340	-0.5836	0.2338	-0.5640	0.2706	-0.5729
56	0.059	0.714	-0.4048	-0.5518	-0.3278	-0.6082	-0.0978	-0.6453	-0.0082	-0.6135	0.0570	-0.5766	0.1505	-0.5732	0.2399	-0.5602	0.2728	-0.5648
57	0.029	0.000	-0.1914	-0.4474	-0.3130	-0.4306	-0.1744	-0.5099	-0.1356	-0.6058	-0.0057	-0.6065	-0.0133	-0.5984	0.0680	-0.5743	0.1002	-0.5760
58	0.029	0.236	-0.1459	-0.4264	-0.2512	-0.5113	-0.1993	-0.5775	-0.1517	-0.6140	-0.1088	-0.6014	-0.0244	-0.5971	0.0538	-0.5705	0.0849	-0.5697
59	0.029	0.412	-0.2025	-0.5276	-0.2346	-0.6071	-0.1733	-0.6483	-0.1419	-0.6282	-0.0941	-0.6024	-0.0127	-0.5949	0.0668	-0.5708	0.0964	-0.5670
60	0.029	0.530	-0.1950	-0.5598	-0.1881	-0.6254	-0.1728	-0.6588	-0.1372	-0.6352	-0.0421	-0.5985	-0.0003	-0.5831	0.0757	-0.5724	0.1064	-0.5689
61	0.029	0.619	-0.1903	-0.5584	-0.1925	-0.6191	-0.1797	-0.6548	-0.1286	-0.6217	-0.0475	-0.5857	0.0090	-0.5758	0.0918	-0.5630	0.1247	-0.5580
62	0.029	0.714																
63	0.029	0.809	-0.3338	-0.5286	-0.2747	-0.5888	-0.1788	-0.6160	-0.1030	-0.5893	-0.0417	-0.5556	0.0330	-0.5529	0.1072	-0.5456	0.1385	-0.5454

Table A-7.- (Continued).
M = 0.9

			ALPHA =															
TUBE	X/L	Y/B/2	-3.1 WINDWARD	-2.8 LEEWARD	-0.3 WINDWARD	0.0 LEEWARD	4.8 WINDWARD	5.1 LEEWARD	9.8 WINDWARD	10.1 LEEWARD	14.7 WINDWARD	15.0 LEEWARD	19.7 WINDWARD	19.9 LEEWARD	24.7 WINDWARD	24.9 LEEWARD	26.2 WINDWARD	26.4 LEEWARD
1	0.034	0.000	0.1301	0.2486	0.1822	0.2082	0.2911	0.1086	0.4064	0.0042	0.5507	-0.1216	0.6856	-0.2673	0.8186	-0.4234	0.8606	-0.4647
2	0.068	0.000	0.0927	0.2091	0.1430	0.1690	0.2496	0.0673	0.3584	-0.0333	0.4943	-0.1582	0.6237	-0.2077	0.7508	-0.4396	0.7918	-0.4797
3	0.081	0.053	0.1013	0.2261	0.1555	0.1826	0.2661	0.0768	0.3713	-0.0026	0.4972	-0.1539	0.6166	-0.7438	0.7310	-1.2036	0.7680	-1.2690
4	0.082	0.000	0.0422	0.1692	0.1065	0.1288	0.2036	0.0269	0.3131	-0.0661	0.4426	-0.1806	0.5694	-0.3038	0.6966	-0.4569	0.7323	-0.4955
5	0.764	0.039	0.0046	0.1263	0.0615	0.0869	0.1594	-0.0179	0.2674	-0.1070	0.3959	-0.2049	0.5222	-0.3149	0.6492	-0.4902	0.6848	-0.5435
6	0.777	0.091	0.0346	0.1606	0.0929	0.1171	0.1912	0.0156	0.2960	-0.0680	0.4191	-0.1735	0.5372	-0.5643	0.6546	-1.0641	0.6870	-1.1593
7	0.790	0.144	0.0570	0.1954	0.1196	0.1476	0.2300	0.0604	0.3330	-0.6292	0.4375	-0.8735	0.5360	-1.1116	0.6338	-1.3094	0.6634	-1.3310
8	0.707	0.000	-0.1152	0.0204	-0.0490	-0.0201	0.0588	-0.1443	0.1762	-0.2553	0.3075	-0.3879	0.4392	-0.4937	0.5753	-0.6363	0.6141	-0.6575
9	0.648	0.000	-0.0790	0.0356	-0.0327	-0.0016	0.0720	-0.1104	0.1797	-0.2281	0.3037	-0.3752	0.4254	-0.5084	0.5551	-0.6536	0.5925	-0.5741
10	0.648	0.068	-0.1115	-0.0050	-0.0808	-0.0567	0.0424	-0.1373	0.1598	-0.2643	0.2966	-0.4357	0.4191	-0.5209	0.5501	-0.6768	0.5858	-0.5566
11	0.658	0.144	-0.0750	0.0782	-0.0029	0.0358	0.1065	-0.0885	0.2134	-0.1772	0.3375	-0.2937	0.4477	-0.6724	0.5668	-1.0920	0.6084	-1.0601
12	0.671	0.197	-0.0329	0.1135	0.0355	0.0661	0.1501	-0.0492	0.2548	-0.2301	0.3698	-1.0189	0.4717	-1.1091	0.5808	-1.3537	0.6125	-1.2241
13	0.684	0.250	0.0102	0.1577	0.0730	0.1053	0.1939	-0.2014	0.2450	-0.6697	0.3981	-1.0029	0.4708	-1.2203	0.5553	-1.4102	0.5842	-1.2417
14	0.530	0.000	-0.0813	0.0377	-0.0221	0.0080	0.0670	-0.1034	0.1654	-0.2242	0.2776	-0.3564	0.3818	-0.5128	0.4955	-0.3677	0.5306	-0.3286
15	0.530	0.082	-0.0833	0.0404	-0.0169	0.0139	0.0780	-0.1074	0.1685	-0.2209	0.2810	-0.3529	0.3870	-0.5101	0.5001	-0.3309	0.5341	-0.3920
16	0.530	0.143	-0.0969	0.0421	-0.0190	0.0084	0.0717	-0.1149	0.1663	-0.2144	0.2837	-0.3626	0.3876	-0.5261	0.5055	-0.4743	0.5378	-0.5484
17	0.530	0.184	-0.1194	-0.0178	-0.0907	-0.0731	0.0317	-0.1429	0.1560	-0.3155	0.2821	-0.3546	0.3877	-0.6527	0.5078	-0.7719	0.5399	-0.7742
18	0.540	0.263	-0.0977	0.0537	-0.0210	0.0043	0.0934	-0.1123	0.2031	-0.1861	0.3206	-1.1010	0.4167	-1.2344	0.5293	-1.1487	0.5598	-0.9615
19	0.553	0.315	-0.0536	0.1105	0.0221	0.0536	0.1444	-0.0441	0.2437	-8.0089	0.3493	-1.0687	0.4333	-1.2775	0.5332	-1.1311	0.5622	-0.9251
20	0.566	0.368	-0.0375	0.1533	0.0552	0.0882	0.1864	-0.3006	0.2755	-0.6921	0.3592	-0.9866	0.4202	-1.1243	0.5020	-1.0185	0.5271	-0.8659
21	0.383	0.000	-0.0931	0.0274	-0.0293	0.0034	0.0531	-0.1044	0.1340	-0.2213	0.2345	-0.3636	0.3190	-0.2916	0.4152	-0.3946	0.4447	-0.6030
22	0.383	0.136	-0.0943	0.0231	-0.0318	-0.0038	0.0519	-0.1084	0.1296	-0.2259	0.2330	-0.3596	0.3251	-0.2220	0.4150	-0.5149	0.4465	-0.5865
23	0.383	0.238	-0.0976	0.0396	-0.0189	0.0092	0.0708	-0.1163	0.1396	-0.2216	0.2442	-0.3346	0.3356	-0.3906	0.4259	-0.6716	0.4577	-0.6023
24	0.383	0.305	-0.1326	-0.0133	-0.1067	-0.0719	0.0327	-0.1525	0.1296	-0.2224	0.2436	-0.5602	0.3390	-0.9467	0.4263	-0.7705	0.4682	-0.7584
25	0.393	0.410	-0.1301	0.0404	-0.0463	-0.0151	0.0773	-0.1121	0.1828	-0.8274	0.2847	-1.1667	0.3703	-0.8663	0.4680	-0.7958	0.4835	-0.7909
26	0.406	0.462	-0.0727	0.0888	-0.0007	0.0274	0.1228	-0.2766	0.2198	-0.8642	0.3105	-1.0664	0.3827	-0.8276	0.4639	-0.7578	0.4843	-0.7623
27	0.419	0.515	-0.1946	0.1373	0.0311	0.0637	0.1738	-0.4266	0.2557	-0.7601	0.3261	-1.0247	0.3737	-0.6921	0.4438	-0.7009	0.4572	-0.7351
28	0.236	0.000	-0.1137	-0.0123	-0.0557	-0.0285	0.0063	-0.1084	0.0678	-0.2029	0.1471	-0.3686	0.2152	-0.2181	0.2801	-0.5214	0.3078	-0.4747
29	0.236	0.190	-0.1190	-0.0109	-0.0573	-0.0307	0.0060	-0.1172	0.0701	-0.2130	0.1527	-0.3711	0.2209	-0.2221	0.2867	-0.5290	0.3127	-0.5711
30	0.236	0.332	-0.1397	-0.0120	-0.0656	-0.0396	0.0068	-0.1375	0.0753	-0.2224	0.1584	-0.3594	0.2280	-0.4524	0.2918	-0.6433	0.3191	-0.6749
31	0.234	0.427	-0.1518	0.0018	-0.0510	-0.0265	0.0171	-0.1540	0.0861	-0.1613	0.1680	-1.0173	0.2422	-0.5489	0.3117	-0.6796	0.3356	-0.6995
32	0.234	0.498	-0.2247	-0.0793	-0.1653	-0.1309	-0.0359	-0.2111	0.0696	-0.7262	0.1646	-1.2444	0.2464	-0.5803	0.3178	-0.6916	0.3395	-0.7036
33	0.245	0.557	-0.1526	0.0075	-0.0758	-0.0465	0.0415	-0.1586	0.1313	-0.9086	0.2147	-1.2106	0.2858	-0.5830	0.3515	-0.6805	0.3712	-0.6976
34	0.259	0.610	-0.1175	0.0582	-0.0318	-0.0021	0.0897	-0.4550	0.1698	-0.8494	0.2515	-1.0289	0.3083	-0.5464	0.3624	-0.6563	0.3821	-0.6847
35	0.272	0.663	-0.3051	0.1098	0.0074	0.0354	0.1409	-0.4412	0.2113	-0.7040	0.2743	-0.9994	0.3058	-0.5017	0.3526	-0.6416	0.3681	-0.6478
36	0.147	0.000	-0.1772	-0.1022	-0.1307	-0.1093	-0.0936	-0.1675	-0.0496	-0.2057	0.0166	-0.3607	0.0623	-0.3561	0.1005	-0.4012	0.1206	-0.4056
37	0.147	0.222	-0.1792	-0.0937	-0.1285	-0.1051	-0.0830	-0.1665	-0.0406	-0.2026	0.0243	-0.3150	0.0697	-0.4001	0.1106	-0.5106	0.1275	-0.5727
38	0.147	0.389	-0.1856	-0.0879	-0.1273	-0.1024	-0.0790	-0.1732	-0.0325	-0.1892	0.0303	-0.3108	0.0765	-0.5227	0.1158	-0.6028	0.1332	-0.6437
39	0.147	0.500	-0.1904	-0.0749	-0.1245	-0.0934	-0.0677	-0.1814	-0.0213	-0.1405	0.0444	-1.1116	0.0928	-0.5576	0.1322	-0.6211	0.1473	-0.6598
40	0.147	0.583	-0.2555	-0.1459	-0.1848	-0.1780	-0.1085	-0.2066	-0.0256	-0.8511	0.0508	-1.1472	0.1045	-0.5680	0.1449	-0.6362	0.1651	-0.6696
41	0.157	0.646	-0.1785	-0.0383	-0.1107	-0.0850	-0.0110	-0.3018	0.0576	-0.8469	0.1282	-1.0577	0.1761	-0.5438	0.2156	-0.6213	0.2318	-0.6569
42	0.170	0.698	-0.1749	0.0232	-0.0550	-0.0293	0.0479	-0.4786	0.1162	-0.8427	0.1757	-0.9390	0.2282	-0.5159	0.2551	-0.6066	0.2677	-0.6451
43	0.183	0.751	-0.3143	0.0032	-0.0129	0.0142	0.1117	-0.4415	0.1672	-0.7520	0.2145	-0.8844	0.2422	-0.4769	0.2701	-0.5871	0.2733	-0.6181
44	0.118	0.750	-0.2315	-0.0286	-0.0973	-0.0692	-0.0150	-0.4977	0.0252	-0.7782	0.0873	-0.6224	0.0916	-0.4700	0.1006	-0.5619	0.1051	-0.5936
45	0.088	0.000	-0.3325	-0.3092	-0.3413	-0.2812	-0.3176	-0.2863	-0.3144	-0.2554	-0.3301	-0.2226	-0.3388	-0.3890	-0.5523	-0.6345	-0.6143	-0.7075
46	0.088	0.236	-0.3793	-0.3401	-0.3753	-0.3207	-0.3583	-0.3172	-0.3279	-0.2822	-0.3164	-0.2912	-0.3371	-0.5075	-0.7340	-0.7318	-0.7498	-0.7467
47	0.088	0.412	-0.3798	-0.3513	-0.3867	-0.3298	-0.3740	-0.3123	-0.3935	-0.3285	-0.3341	-0.6618	-0.3884	-0.5600	-0.7285	-0.6447	-0.7522	-0.6517
48	0.088	0.530	-0.3815	-0.3939	-0.4477	-0.3839	-0.4440	-0.3347	-0.3955	-0.5188	-0.3854	-1.0639	-0.4488	-0.5341	-0.7598	-0.6223	-0.7894	-0.6407
49	0.088	0.619	-0.4185	-0.4217	-0.4580	-0.4109	-0.4052	-0.4101	-0.5227	-1.0833	-0.5060	-0.9959	-0.5567	-0.5131	-0.7465	-0.6105	-0.7706	-0.6339
50	0.088	0.846	-0.3659	-0.0076	-0.0969	-0.0646	-0.0022	-0.3856	0.0286	-0.4662	0.0570	-0.4314	0.0666	-0.4229	0.0447	-0.5475	0.0389	-0.5664
51	0.059	0.000	-0.2747	-0.2401	-0.2683	-0.2196	-0.2550	-0.2223	-0.2403	-0.2107	-0.3016	-0.1698	-0.3153	-0.3579	-0.5016	-0.5213	-0.5330	-0.5444
52	0.059	0.236	-0.2933	-0.2626	-0.2862	-0.2401	-0.2776	-0.2492	-0.2447	-0.2259	-0.3057	-0.2159	-0.3195	-0.4309	-0.6987	-0.5681	-0.7211	-0.5852
53	0.059	0.412	-0.3077	-0.2772	-0.3013	-0.2547	-0.2945	-0.2574	-0.2988	-0.2707	-0.3251	-0.2946	-0.3468	-0.4956	-0.7032	-0.5745	-0.7383	-0.6013
54	0.059	0.530	-0.3197	-0.2949	-0.3279	-0.2776	-0.3348	-0.2866	-0.3409	-0.3797	-0.3469	-0.5254	-0.3609	-0.4986	-0.7199	-0.5865	-0.7396	-0.6162
55	0.059	0.619	-0.3464	-0.4347	-0.4351	-0.3965	-0.3816	-0.3404	-0.4192	-0.7884	-0.3345	-0.8339	-0.3265	-0.4856	-0.6609	-0.5801	-0.6400	-0.6116
56	0.059	0.714	-0.3393	-0.3410	-0.3897	-0.3430	-0.4830	-0.4072	-0.6035	-0.7185	-0.6394	-0.6817	-0.5908	-0.4570	-0.8631	-0.5614	-0.8604	-0.5897
57	0.029	0.000	-0.2588	-0.2288	-0.2615	-0.1987	-0.2300	-0.2244	-0.2130	-0.2022	-0.2410	-0.1638	-0.2398	-0.3601	-0.3375	-0.4853	-0.3453	-0.5134
58	0.029	0.236	-0.2420	-0.2169	-0.2534	-0.1960	-0.2383	-0.2126	-0.1950	-0.1927	-0.2528	-0.1062	-0.2275	-0.4106	-0.4249	-0.5018	-0.4600	-0.5103
59	0.029	0.412	-0.2764	-0.2349	-0.2668	-0.2148	-0.2538	-0.2300	-0.2299	-0.2406	-0.2607	-0.1136	-0.2432	-0.4676	-0.5259	-0.5303	-0.6157	-0.5540
60	0.029	0.530	-0.3020	-0.2503	-0.2903	-0.2397	-0.2879	-0.2668	-0.2582	-0.3067	-0.2772	-0.2419	-0.2520	-0.4733	-0.5607	-0.5534	-0.6205	-0.5807
61	0.029	0.619	-0.3347	-0,3352	-0.3704	-0.3162	-0.3104	-0.3016	-0.2533	-0.5344	-0.2590	-0.6178	-0.2144	-0.4551	-0.4465	-0.5620	-0.4708	-0.5862
62	0.029	0.714																
63	0.029	0.809	-0.3021	-0.2466	-0.2705	-0.2347	-0.2912	-0.2863	-0.4572	-0.4137	-0.5769	-0.4002	-0.5450	-0.4097	-0.7975	-0.5369	-0.7061	-0.5526

Table A-7.- (Continued).
M = 0.9

			ALPHA =															
			26.0	27.0	29.7	29.8	34.7	34.8	39.6	39.7	44.6	44.7	49.5	49.7	54.5	54.6	56.0	56.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.938	0.000	0.8869	-0.6721	0.9580	-0.5386	1.0509	-0.6124	1.1312	-0.7365	1.1487	-0.6465	1.2121	-0.5947	1.2150	-0.5703	1.2015	-0.5056
2	0.868	0.000	0.8174	-0.4920	0.8847	-0.5153	0.9847	-0.6416	1.0731	-0.7200	1.1367	-0.6650	1.1859	-0.6126	1.2132	-0.5886	1.2072	-0.6017
3	0.881	0.053	0.7874	-1.3054	0.8461	-1.1294	0.9357	-0.8433	1.0120	-0.7300	1.0650	-0.6481	1.1042	-0.6038	1.1210	-0.5839	1.1119	-0.5970
4	0.802	0.000	0.7611	-0.4979	0.8277	-0.5000	0.9270	-0.6426	1.0205	-0.6961	1.0946	-0.6595	1.1560	-0.6103	1.1960	-0.5911	1.1972	-0.6010
5	0.764	0.039	0.7105	-0.5258	0.7758	-0.6660	0.8760	-0.7200	0.9712	-0.6801	1.0511	-0.6423	1.1172	-0.6026	1.1624	-0.5895	1.1673	-0.6005
6	0.777	0.091	0.7093	-1.1827	0.7690	-0.9543	0.8601	-0.8212	0.9467	-0.7155	1.0160	-0.6595	1.0726	-0.6151	1.1002	-0.6039	1.1126	-0.6143
7	0.790	0.144	0.6779	-1.2920	0.7305	-0.9480	0.8033	-0.8229	0.8760	-0.7168	0.9254	-0.6557	0.9648	-0.6132	0.9888	-0.5980	0.9854	-0.6076
8	0.707	0.000	0.6431	-0.5591	0.7130	-0.6476	0.8193	-0.6815	0.9276	-0.6710	1.0164	-0.6432	1.0930	-0.6139	1.1530	-0.6030	1.1621	-0.6091
9	0.648	0.000	0.6186	-0.5229	0.6853	-0.6222	0.7881	-0.6675	0.8939	-0.6602	0.9446	-0.6325	1.0629	-0.6094	1.1284	-0.6020	1.1393	-0.6070
10	0.648	0.068	0.6130	-0.5526	0.6796	-0.7126	0.7819	-0.7191	0.8857	-0.6737	0.9771	-0.6377	1.0555	-0.6050	1.1160	-0.5963	1.1300	-0.6080
11	0.658	0.144	0.6327	-1.0085	0.6935	-0.8559	0.7856	-0.7910	0.8771	-0.6998	0.9487	-0.6512	1.0239	-0.6114	1.0714	-0.6022	1.0820	-0.6154
12	0.671	0.197	0.6302	-1.0110	0.6854	-0.8737	0.7655	-0.8087	0.8446	-0.7080	0.9171	-0.6591	0.9696	-0.6142	1.0079	-0.6070	1.0170	-0.6214
13	0.686	0.250	0.5076	-0.8547	0.6389	-0.8535	0.7071	-0.7934	0.7711	-0.7082	0.8196	-0.6447	0.8554	-0.6061	0.8819	-0.5966	0.8820	-0.6120
14	0.530	0.000	0.5543	-0.4419	0.6145	-0.6067	0.7175	-0.6662	0.8209	-0.6615	0.9140	-0.6314	0.9949	-0.6065	1.0695	-0.6016	1.0852	-0.6161
15	0.530	0.082	0.5563	-0.5537	0.6162	-0.6616	0.7168	-0.6918	0.8193	-0.6624	0.9124	-0.6282	0.9911	-0.6021	1.0644	-0.5986	1.0792	-0.6126
16	0.530	0.143	0.5571	-0.7137	0.6162	-0.7335	0.7166	-0.7212	0.8131	-0.6664	0.9070	-0.6299	0.9811	-0.6033	1.0503	-0.6006	1.0697	-0.6145
17	0.530	0.184	0.5563	-0.8187	0.6156	-0.7769	0.7150	-0.7500	0.8092	-0.6836	0.9011	-0.6401	0.9713	-0.6096	1.0374	-0.6080	1.0563	-0.6229
18	0.540	0.263	0.5708	-0.8749	0.6245	-0.8066	0.7127	-0.7715	0.7941	-0.6955	0.8736	-0.6461	0.9315	-0.6151	0.9816	-0.6141	0.9485	-0.6272
19	0.553	0.315	0.5711	-0.8635	0.6193	-0.8003	0.6987	-0.7652	0.7632	-0.6893	0.8313	-0.6372	0.8882	-0.6185	0.9255	-0.6049	0.9313	-0.6186
20	0.564	0.368	0.5317	-0.8302	0.5691	-0.7809	0.6218	-0.7530	0.6771	-0.6810	0.7288	-0.6358	0.7625	-0.6095	0.7927	-0.6038	0.7955	-0.6170
21	0.383	0.000	0.4437	-0.6102	0.5197	-0.5485	0.6089	-0.6554	0.7077	-0.6417	0.8084	-0.6238	0.8936	-0.6055	0.9773	-0.6030	0.9968	-0.6169
22	0.383	0.136	0.4465	-0.5691	0.5194	-0.6292	0.6121	-0.6930	0.7022	-0.6582	0.8030	-0.6212	0.8876	-0.6042	0.9703	-0.5998	0.9849	-0.6110
23	0.383	0.238	0.4708	-0.6767	0.5250	-0.6978	0.6151	-0.7207	0.7028	-0.6766	0.8000	-0.6300	0.8820	-0.6096	0.9595	-0.6071	0.9789	-0.6221
24	0.383	0.305	0.4712	-0.7223	0.5246	-0.7251	0.6112	-0.7465	0.6960	-0.6844	0.7901	-0.6344	0.8679	-0.6156	0.9413	-0.6137	0.9597	-0.6272
25	0.393	0.410	0.4942	-0.7462	0.5394	-0.7155	0.6119	-0.7436	0.6867	-0.6775	0.7625	-0.6209	0.8231	-0.6057	0.8845	-0.6067	0.8920	-0.6230
26	0.404	0.462	0.4927	-0.7234	0.5312	-0.6964	0.5920	-0.7334	0.6561	-0.6714	0.7210	-0.6161	0.7716	-0.6034	0.8232	-0.6030	0.8287	-0.6213
27	0.419	0.515	0.4411	-0.7035	0.4885	-0.6824	0.5333	-0.7231	0.5795	-0.6626	0.6296	-0.6125	0.6638	-0.5998	0.7018	-0.5999	0.7026	-0.6169
28	0.236	0.000	0.3233	-0.4619	0.3789	-0.5148	0.4519	-0.6378	0.5335	-0.6348	0.6307	-0.6090	0.7232	-0.6011	0.8173	-0.6015	0.8402	-0.6219
29	0.236	0.190	0.3245	-0.5924	0.3722	-0.6175	0.4525	-0.6927	0.5320	-0.6643	0.6285	-0.6181	0.7209	-0.6066	0.8123	-0.6097	0.8350	-0.6300
30	0.236	0.332	0.3301	-0.6593	0.3775	-0.6651	0.4543	-0.7241	0.5333	-0.6764	0.6271	-0.6197	0.7154	-0.6186	0.8036	-0.6173	0.8275	-0.6339
31	0.236	0.427	0.3443	-0.6810	0.3890	-0.6676	0.4638	-0.7216	0.5425	-0.6648	0.6305	-0.6152	0.7184	-0.6088	0.8020	-0.6093	0.8191	-0.6252
32	0.236	0.498	0.3581	-0.6842	0.3931	-0.6642	0.4651	-0.7195	0.5412	-0.6615	0.6251	-0.6135	0.7036	-0.5973	0.7817	-0.6064	0.7981	-0.6222
33	0.245	0.557	0.3750	-0.6770	0.4158	-0.6534	0.4772	-0.7109	0.5455	-0.6550	0.6187	-0.6082	0.6856	-0.5899	0.7523	-0.5981	0.7651	-0.6148
34	0.259	0.618	0.3868	-0.6564	0.4169	-0.6370	0.4687	-0.6991	0.5257	-0.6521	0.5898	-0.5982	0.6479	-0.5898	0.7047	-0.5963	0.7150	-0.6080
35	0.277	0.663	0.3849	-0.6506	0.3874	-0.6440	0.4222	-0.7037	0.4645	-0.6577	0.5117	-0.6057	0.5545	-0.5925	0.5955	-0.6022	0.6028	-0.6154
36	0.147	0.000	0.1304	-0.4856	0.1601	-0.5258	0.2276	-0.6678	0.2938	-0.6488	0.3790	-0.6192	0.4757	-0.6169	0.5809	-0.6213	0.6124	-0.6304
37	0.147	0.222	0.1371	-0.5867	0.1748	-0.6214	0.2347	-0.6903	0.2999	-0.6608	0.3826	-0.6152	0.4829	-0.6070	0.5894	-0.6120	0.6152	-0.6238
38	0.147	0.389	0.1429	-0.6314	0.1782	-0.6426	0.2373	-0.7016	0.3036	-0.6606	0.3884	-0.6126	0.4877	-0.5986	0.5926	-0.6094	0.6181	-0.6208
39	0.147	0.508	0.1560	-0.6392	0.1916	-0.6368	0.2487	-0.6957	0.3166	-0.6546	0.4021	-0.6078	0.5015	-0.5891	0.6029	-0.6029	0.6266	-0.6143
40	0.147	0.583	0.1708	-0.6325	0.2050	-0.6335	0.2601	-0.6878	0.3318	-0.6456	0.4153	-0.6086	0.5122	-0.5916	0.6073	-0.6015	0.6312	-0.6101
41	0.157	0.646	0.2312	-0.6277	0.2634	-0.6368	0.3123	-0.6927	0.3826	-0.6516	0.4505	-0.6124	0.5445	-0.5911	0.6230	-0.6031	0.6435	-0.6132
42	0.170	0.698	0.2656	-0.6128	0.2921	-0.6320	0.3335	-0.6915	0.4088	-0.6511	0.4650	-0.6130	0.5388	-0.5932	0.6033	-0.6061	0.6208	-0.6138
43	0.183	0.751	0.2722	-0.6021	0.2913	-0.6201	0.3213	-0.6815	0.3703	-0.6460	0.4188	-0.5990	0.4734	-0.5846	0.5252	-0.5931	0.5306	-0.6062
44	0.118	0.758	0.1860	-0.5808	0.1263	-0.6050	0.1693	-0.6728	0.2662	-0.6398	0.3562	-0.5961	0.4420	-0.5812	0.5249	-0.5877	0.5394	-0.5995
45	0.088	0.000	-0.6867	-0.7477	-0.7569	-0.8942	-0.7436	-0.7686	-0.5752	-0.6456	-0.3971	-0.6184	-0.1975	-0.6055	0.0574	-0.6072	0.1238	-0.6182
46	0.088	0.236	-0.7852	-0.7146	-0.8382	-0.6908	-0.7933	-0.7052	-0.5984	-0.6443	-0.3751	-0.6125	-0.1753	-0.5998	0.0565	-0.6058	0.1188	-0.6162
47	0.088	0.412	-0.7846	-0.6250	-0.7767	-0.6440	-0.6925	-0.7015	-0.5105	-0.6564	-0.3268	-0.6212	-0.0829	-0.5986	0.1350	-0.6097	0.1878	-0.6221
48	0.088	0.530	-0.7812	-0.6163	-0.7805	-0.6351	-0.6830	-0.7080	-0.4880	-0.6591	-0.2716	-0.6250	-0.0364	-0.5972	0.1942	-0.6115	0.2334	-0.6219
49	0.088	0.619	-0.7642	-0.6067	-0.7329	-0.6216	-0.6502	-0.6877	-0.4270	-0.6530	-0.0872	-0.6086	0.2405	-0.5890	0.3562	-0.5966	0.3687	-0.6111
50	0.088	0.846	0.0410	-0.5530	0.0570	-0.5958	0.1118	-0.6503	0.2094	-0.6268	0.2786	-0.5891	0.3447	-0.5707	0.4061	-0.5778	0.4206	-0.5908
51	0.059	0.000	-0.5737	-0.5611	-0.7173	-0.6356	-0.6651	-0.6194	-0.5126	-0.6146	0.1158	-0.6069	0.2034	-0.6047	0.2895	-0.6055	0.3155	-0.6169
52	0.059	0.236	-0.5594	-0.5639	-0.7261	-0.5908	-0.6663	-0.6444	-0.2915	-0.6323	0.1316	-0.6086	0.1998	-0.5998	0.2868	-0.6019	0.3135	-0.6171
53	0.059	0.412	-0.7415	-0.5886	-0.7124	-0.6232	-0.6572	-0.6869	-0.1957	-0.6555	0.1519	-0.6176	0.2092	-0.5982	0.2977	-0.6053	0.3255	-0.6207
54	0.059	0.530	-0.7312	-0.5927	-0.6931	-0.6230	-0.6714	-0.6937	-0.0145	-0.6622	0.1428	-0.6197	0.2259	-0.5981	0.3113	-0.6048	0.3392	-0.6201
55	0.059	0.619	-0.6288	-0.5875	-0.5786	-0.6117	-0.3227	-0.6842	0.0814	-0.6547	0.1426	-0.6113	0.2309	-0.5907	0.3248	-0.5896	0.3494	-0.6111
56	0.059	0.714	-0.0411	-0.5661	-0.0006	-0.6006	-0.5070	-0.6741	0.0870	-0.6459	0.1531	-0.6030	0.2366	-0.5829	0.3236	-0.5804	0.3463	-0.6030
57	0.029	0.000	-0.3335	-0.5069	-0.6690	-0.5140	-0.6249	-0.5326	-0.0030	-0.5092	0.0449	-0.6039	0.1107	-0.5990	0.1893	-0.5969	0.2118	-0.6174
58	0.029	0.236	-0.3439	-0.4966	-0.6091	-0.5361	-0.5548	-0.6079	-0.0130	-0.6120	0.0345	-0.6047	0.1020	-0.5964	0.1768	-0.5972	0.1991	-0.6193
59	0.029	0.412	-0.5948	-0.5606	-0.6997	-0.5908	-0.5464	-0.6750	-0.0086	-0.6446	0.0407	-0.6168	0.1117	-0.5969	0.1828	-0.6014	0.2070	-0.6256
60	0.029	0.530	-0.6020	-0.5761	-0.6367	-0.6105	-0.0793	-0.6901	0.0045	-0.6533	0.0437	-0.6218	0.1203	-0.5981	0.1898	-0.6021	0.2145	-0.6232
61	0.029	0.619	-0.4386	-0.5695	-0.6891	-0.6043	-0.0582	-0.6815	-0.0074	-0.6478	0.0472	-0.6086	0.1258	-0.5881	0.2008	-0.5931	0.2237	-0.6084
62	0.029	0.714																
63	0.029	0.809	-0.7474	-0.5394	-0.6841	-0.5849	-0.1763	-0.6532	-0.0069	-0.6240	0.0576	-0.5878	0.1338	-0.5678	0.2054	-0.5718	0.2288	-0.5870

Table A-7.- (Continued).
M = 1.2

			ALPHA =													
			-3.1	-2.9	-0.3	0.0	4.8	5.0	9.7	10.0	14.7	15.0	19.7	19.9	24.7	25.0	26.2	26.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	0.0965	0.2024	0.1586	0.1552	0.2453	0.0666	0.3607	-0.0081	0.5148	-0.0671	0.6973	-0.0898	0.8839	0.0000	0.9607	
2	0.868	0.000	0.0794	0.1939	0.1396	0.1399	0.2420	0.0625	0.3579	-0.0193	0.5090	-0.0869	0.6689	-0.1162	0.8359	0.0000	0.8877	
3	0.881	0.053	0.0838	0.2053	0.1473	0.1409	0.2481	0.0620	0.3623	-0.0185	0.5068	-0.1398	0.6636	-0.5014	0.8215	0.0000	0.8709	
4	0.887	0.000	0.0786	0.1975	0.1323	0.1364	0.2429	0.0654	0.3566	-0.0116	0.4868	-0.0879	0.6324	-0.1271	0.7925	0.0000	0.8427	
5	0.764	0.039	0.0754	0.1921	0.1229	0.1292	0.2254	0.0607	0.3277	-0.0051	0.4446	-0.0824	0.5864	-0.1236	0.7506	0.0000	0.8002	
6	0.777	0.091	0.0790	0.2061	0.1333	0.1413	0.2432	0.0662	0.3495	0.0007	0.4671	-0.0535	0.6040	-0.3446	0.7509	0.0000	0.8055	
7	0.790	0.144	0.0913	0.2294	0.1489	0.1563	0.2678	0.0833	0.3762	-0.3060	0.4879	-0.5957	0.6125	-0.6777	0.7514	0.0000	0.7927	
8	0.707	0.000	-0.0512	0.0603	-0.0070	-0.0047	0.0786	-0.0683	0.1976	-0.1292	0.3104	-0.2096	0.5033	-0.2600	0.6826	0.0000	0.7336	
9	0.648	0.000	-0.0441	0.0065	-0.0048	-0.0073	0.0765	-0.0688	0.1987	-0.1322	0.3407	-0.2064	0.5054	-0.2629	0.6760	0.0000	0.7238	
10	0.648	0.068	-0.0769	0.0281	-0.0519	-0.0557	0.0480	-0.0984	0.1803	-0.1808	0.3278	-0.2048	0.4973	-0.2824	0.6713	0.0000	0.7200	
11	0.658	0.144	-0.0034	0.1081	0.0312	0.0365	0.1212	-0.0394	0.2424	-0.0828	0.3747	-0.1163	0.5273	-0.4351	0.6890	0.0000	0.7350	
12	0.671	0.197	0.0474	0.1571	0.0773	0.0856	0.1697	0.0175	0.2863	-0.0337	0.4116	-0.6043	0.5553	-0.7196	0.7070	0.0000	0.7503	
13	0.684	0.250	0.1017	0.2120	0.1244	0.1337	0.2220	-0.0468	0.3289	-0.4440	0.4412	-0.6137	0.5641	-0.7206	0.6960	0.0000	0.7330	
14	0.530	0.000	-0.0372	0.0624	-0.0067	-0.0073	0.0773	-0.0826	0.1880	-0.1493	0.3329	-0.2070	0.4945	-0.2706	0.6464	0.0000	0.6900	
15	0.530	0.082	-0.0356	0.0680	-0.0055	-0.0084	0.0780	-0.0864	0.1891	-0.1486	0.3348	-0.2053	0.4970	-0.2680	0.6496	0.0000	0.6924	
16	0.530	0.143	-0.0471	0.0451	-0.0435	-0.0575	0.0653	-0.1024	0.1840	-0.1545	0.3345	-0.2181	0.4992	-0.2872	0.6510	0.0000	0.6947	
17	0.530	0.184	-0.0736	0.0089	-0.0766	-0.0887	0.0319	-0.1347	0.1674	-0.2486	0.3261	-0.2186	0.4950	-0.4311	0.6588	0.0000	0.6955	
18	0.540	0.263	-0.0485	0.0906	0.0040	0.0002	0.1022	-0.0920	0.2236	-0.0633	0.3676	-0.6068	0.5240	-0.7638	0.6705	0.0000	0.7116	
19	0.553	0.315	0.0856	0.1462	0.0512	0.0506	0.1525	-0.0420	0.2679	-0.4928	0.4000	-0.6554	0.5432	-0.7675	0.6809	0.0000	0.7154	
20	0.566	0.368	0.0319	0.1921	0.0847	0.0893	0.1951	-0.1208	0.3025	-0.4113	0.4174	-0.5790	0.5410	-0.6704	0.6587	0.0000	0.6874	
21	0.387	0.000	-0.0367	0.0613	-0.0022	0.0118	0.0854	-0.0912	0.2001	-0.1461	0.3377	-0.1995	0.4700	-0.2709	0.6056	0.0000	0.6393	
22	0.393	0.136	-0.0397	0.0609	-0.0037	0.0001	0.0893	-0.0958	0.2014	-0.1501	0.3392	-0.2075	0.4809	-0.2817	0.6064	0.0000	0.6420	
23	0.383	0.238	-0.0475	0.0722	0.0070	0.0221	0.1054	-0.1038	0.2202	-0.1513	0.3430	-0.1994	0.4858	-0.4522	0.6123	0.0000	0.6486	
24	0.383	0.305	-0.0799	0.0070	-0.0966	-0.0089	0.0550	-0.1372	0.1968	-0.1611	0.3369	-0.5419	0.4067	-0.7995	0.6126	0.0000	0.6479	
25	0.393	0.410	-0.0675	0.0725	-0.0112	-0.0127	0.1025	-0.1200	0.2336	-0.4766	0.3702	-0.6783	0.5164	-0.7060	0.6347	0.0000	0.6664	
26	0.406	0.462	-0.0192	0.1206	0.0319	0.0302	0.1460	-0.0862	0.2678	-0.5135	0.3939	-0.6633	0.5289	-0.7666	0.6356	0.0000	0.6644	
27	0.419	0.515	0.0015	0.1695	0.0705	0.0700	0.1913	-0.2417	0.3017	-0.5021	0.4087	-0.6626	0.5252	-0.7287	0.6130	0.0000	0.6360	
28	0.236	0.000	-0.0254	0.0554	0.0048	0.0144	0.0915	-0.0753	0.2017	-0.1395	0.3356	-0.2083	0.4384	-0.2770	0.5309	0.0000	0.5570	
29	0.236	0.190	-0.0322	0.0540	0.0040	0.0177	0.0910	-0.0882	0.2039	-0.1468	0.3372	-0.2094	0.4407	-0.2960	0.5341	0.0000	0.5615	
30	0.236	0.332	-0.0497	0.0531	-0.0009	0.0163	0.0907	-0.1146	0.2050	-0.1510	0.3413	-0.2466	0.4447	-0.6569	0.5374	0.0000	0.5644	
31	0.236	0.427	-0.0719	0.0666	-0.0131	0.0040	0.1099	-0.1382	0.2177	-0.2901	0.3481	-0.7067	0.4550	-0.8156	0.5495	0.0000	0.5740	
32	0.236	0.490	-0.1707	-0.0120	-0.0982	-0.0817	0.0440	-0.2370	0.1062	-0.4416	0.3402	-0.7269	0.4574	-0.8024	0.5506	0.0000	0.5776	
33	0.245	0.557	-0.0841	0.0694	-0.0081	0.0118	0.1138	-0.1274	0.2404	-0.5528	0.3789	-0.7157	0.4864	-0.7939	0.5723	0.0000	0.5954	
34	0.259	0.610	-0.0305	0.1207	0.0326	0.0582	0.1619	-0.1718	0.2792	-0.5877	0.4024	-0.6733	0.4995	-0.7306	0.5742	0.0000	0.5955	
35	0.272	0.663	-0.1012	0.1699	0.0698	0.0985	0.2058	-0.3745	0.3111	-0.5606	0.4148	-0.6544	0.4935	-0.7164	0.5547	0.0000	0.5721	
36	0.147	0.000	-0.0300	0.0575	0.0066	0.0211	0.0918	-0.0645	0.1961	-0.1375	0.2925	-0.2186	0.3599	-0.2900	0.4232	0.0000	0.4422	
37	0.147	0.222	-0.0321	0.0537	0.0100	0.0170	0.0985	-0.0791	0.2058	-0.1541	0.2995	-0.2209	0.3656	-0.3071	0.4299	0.0000	0.4481	
38	0.147	0.389	-0.0520	0.0495	0.0074	0.0136	0.0987	-0.1105	0.2060	-0.1504	0.3053	-0.3034	0.3699	-0.7110	0.4321	0.0000	0.4516	
39	0.147	0.500	-0.0775	0.0576	0.0111	0.0203	0.1020	-0.1457	0.2168	-0.3487	0.3124	-0.7492	0.3791	-0.9180	0.4403	0.0000	0.4586	
40	0.147	0.583	-0.1649	-0.0261	-0.1013	-0.0927	0.0491	-0.2431	0.2006	-0.5300	0.3135	-0.7448	0.3854	-0.7971	0.4470	0.0000	0.4637	
41	0.157	0.646	-0.0900	0.0662	-0.0031	0.0118	0.1242	-0.1350	0.2523	-0.5919	0.3509	-0.7154	0.4260	-0.7885	0.4864	0.0000	0.5032	
42	0.170	0.698	-0.0785	0.1108	0.0395	0.0593	0.1664	-0.3055	0.2841	-0.6148	0.3861	-0.6696	0.4480	-0.7289	0.5035	0.0000	0.5176	
43	0.183	0.751	-0.2072	0.1604	0.0787	0.0949	0.2116	-0.3944	0.3109	-0.5709	0.4033	-0.6487	0.4551	-0.7036	0.4985	0.0000	0.5107	
44	0.119	0.750	-0.0453	0.1119	0.0356	0.0590	0.1044	-0.3571	0.2685	-0.6100	0.3255	-0.6601	0.3592	-0.7179	0.3092	0.0000	0.3978	
45	0.088	0.000	-0.5802	-0.4720	-0.4905	-0.4870	-0.4604	-0.5332	-0.4224	-0.5739	-0.3962	-0.6090	-0.3715	-0.6491	-0.3493	0.0000	-0.3422	
46	0.088	0.236	-0.5147	-0.4799	-0.4950	-0.4953	-0.4592	-0.5368	-0.4183	-0.5753	-0.3904	-0.6182	-0.3712	-0.6600	-0.3499	0.0000	-0.3447	
47	0.088	0.412	-0.5243	-0.4777	-0.4991	-0.4910	-0.4602	-0.5516	-0.4148	-0.5900	-0.3858	-0.6489	-0.3666	-0.8107	-0.3415	0.0000	-0.3319	
48	0.088	0.530	-0.5460	-0.4905	-0.5144	-0.5023	-0.4726	-0.5763	-0.4200	-0.6747	-0.3918	-0.8342	-0.3738	-0.8261	-0.3454	0.0000	-0.3382	
49	0.088	0.619	-0.5450	-0.4447	-0.4913	-0.4863	-0.4169	-0.5834	-0.3771	-0.7531	-0.3458	-0.8160	-0.3268	-0.7657	-0.2941	0.0000	-0.2829	
50	0.088	0.846	-0.2457	0.1470	0.0609	0.0812	0.1991	-0.3903	0.2538	-0.6106	0.2740	-0.6611	0.2860	-0.7026	0.3074	0.0000	0.3128	
51	0.059	0.000	-0.5703	-0.4827	-0.5038	-0.4998	-0.4703	-0.5412	-0.4297	-0.5659	-0.3077	-0.5799	-0.3671	-0.6243	-0.3334	0.0000	-0.2908	
52	0.059	0.236	-0.5224	-0.4816	-0.5017	-0.5016	-0.4654	-0.5482	-0.4249	-0.5812	-0.3926	-0.6000	-0.3669	-0.6622	-0.3306	0.0000	-0.3025	
53	0.059	0.412	-0.5377	-0.4952	-0.5141	-0.5099	-0.4739	-0.5575	-0.4308	-0.5963	-0.3083	-0.6131	-0.3692	-0.8041	-0.3253	0.0000	-0.2756	
54	0.059	0.530	-0.5469	-0.4833	-0.5023	-0.4955	-0.4658	-0.5725	-0.4282	-0.6616	-0.3808	-0.8357	-0.3566	-0.8013	-0.3054	0.0000	-0.2733	
55	0.059	0.619	-0.5447	-0.4481	-0.4864	-0.4817	-0.4277	-0.5804	-0.3863	-0.7616	-0.3403	-0.8306	-0.3010	-0.7638	-0.2429	0.0000	-0.2211	
56	0.059	0.714	-0.6943	-0.5733	-0.6092	-0.6005	-0.5547	-0.7014	-0.5235	-0.7433	-0.4876	-0.7802	-0.4390	-0.7253	-0.2825	0.0000	-0.2170	
57	0.029	0.000	-0.4441	-0.4486	-0.4618	-0.4578	-0.4454	-0.4753	-0.4147	-0.4559	-0.3871	-0.4321	-0.3145	-0.4905	-0.3094	0.0000	-0.2454	
58	0.029	0.236	-0.4981	-0.4726	-0.4928	-0.4909	-0.4595	-0.5133	-0.4249	-0.5099	-0.3923	-0.5226	-0.3582	-0.5661	-0.3103	0.0000	-0.2603	
59	0.029	0.412	-0.5094	-0.4818	-0.5111	-0.5054	-0.4617	-0.5319	-0.4308	-0.5671	-0.3965	-0.5706	-0.3596	-0.7467	-0.2925	0.0000	-0.2325	
60	0.029	0.530	-0.5223	-0.4638	-0.4921	-0.4797	-0.4463	-0.5409	-0.4109	-0.6455	-0.3708	-0.8215	-0.3275	-0.7916	-0.2580	0.0000	-0.2234	
61	0.029	0.619	-0.5398	-0.4035	-0.4760	-0.4687	-0.3720	-0.5726	-0.3863	-0.7602	-0.3329	-0.8240	-0.2789	-0.7650	-0.2021	0.0000	-0.1700	
62	0.029	0.714																
63	0.020	0.809	-0.6908	-0.5672	-0.6045	-0.5950	-0.5412	-0.7335	-0.5450	-0.8406	-0.5102	-0.6571	-0.4876	-0.7039	-0.3802	0.0000	-0.3640	

Table A-7.- (Concluded).
M = 1.2

TUBE	X/L	Y/B/2	ALPHA = 26.0 WINDWARD	27.0 LEEWARD	29.6 WINDWARD	29.8 LEEWARD	34.6 WINDWARD	34.7 LEEWARD	39.5 WINDWARD	39.7 LEEWARD	44.6 WINDWARD	44.7 LEEWARD	49.5 WINDWARD	49.7 LEEWARD	54.5 WINDWARD	54.6 LEEWARD	56.0 WINDWARD	56.2 LEEWARD
1	0.934	0.000	0.9603	-0.1443	1.0659	-0.1916	1.2012	-0.3030	1.2040	-0.4076	1.3437	-0.4907	1.4009	-0.4826	1.4035	-0.4705	1.4067	-0.4609
2	0.868	0.000	0.9130	-0.1920	1.0020	-0.2370	1.1343	-0.3200	1.2356	-0.4009	1.3194	-0.5151	1.3020	-0.5159	1.4035	-0.5064	1.4110	-0.4940
3	0.881	0.053	0.8916	-0.7483	0.9733	-0.7055	1.0941	-0.8145	1.1044	-0.6676	1.2500	-0.6025	1.3119	-0.5073	1.3251	-0.4982	1.3313	-0.4888
4	0.882	0.000	0.8681	-0.2002	0.9519	-0.2485	1.0814	-0.3441	1.1050	-0.4304	1.2777	-0.5126	1.3596	-0.5120	1.3903	-0.4992	1.4026	-0.4094
5	0.764	0.039	0.8744	-0.2352	0.9467	-0.3223	1.0352	-0.4067	1.1400	-0.5306	1.2365	-0.5273	1.3277	-0.4761	1.3636	-0.4677	1.3764	-0.4601
6	0.777	0.091	0.8263	-0.7060	0.9032	-0.7578	1.0232	-0.7429	1.1199	-0.6535	1.2065	-0.5911	1.2091	-0.5147	1.3181	-0.4989	1.3299	-0.4867
7	0.790	0.144	0.8897	-0.7613	0.8766	-0.7430	0.9786	-0.7233	1.0606	-0.6593	1.1312	-0.6049	1.1987	-0.5316	1.2160	-0.5106	1.2259	-0.4969
8	0.707	0.000	0.7599	-0.3359	0.8476	-0.3056	0.9012	-0.4817	1.0965	-0.5546	1.2039	-0.5499	1.3124	-0.5054	1.3581	-0.5013	1.3753	-0.4900
9	0.648	0.000	0.7490	-0.3536	0.8298	-0.4041	0.9555	-0.4900	1.0660	-0.5460	1.1739	-0.5429	1.2071	-0.5021	1.3373	-0.4976	1.3555	-0.4885
10	0.648	0.060	0.7440	-0.3862	0.8239	-0.4641	0.9490	-0.5649	1.0594	-0.6007	1.1652	-0.5702	1.2772	-0.5146	1.3277	-0.4999	1.3464	-0.4876
11	0.658	0.144	0.7650	-0.7644	0.8393	-0.8089	0.9560	-0.7120	1.0552	-0.6581	1.1495	-0.6007	1.2496	-0.5307	1.2901	-0.5096	1.3053	-0.4901
12	0.671	0.197	0.7650	-0.8184	0.8324	-0.8457	0.9306	-0.7311	1.0279	-0.6604	1.1129	-0.6093	1.2027	-0.5397	1.2361	-0.5166	1.2495	-0.5018
13	0.684	0.250	0.7444	-0.8067	0.8003	-0.8513	0.8894	-0.7056	0.9632	-0.6567	1.0318	-0.6045	1.1080	-0.5378	1.1278	-0.5110	1.1384	-0.4972
14	0.530	0.000	0.7118	-0.3791	0.7837	-0.4307	0.8981	-0.5132	1.0032	-0.5527	1.1086	-0.5591	1.2334	-0.5213	1.2091	-0.4990	1.3123	-0.4886
15	0.530	0.082	0.7134	-0.4037	0.7844	-0.4672	0.8982	-0.5731	1.0010	-0.6102	1.1063	-0.5746	1.2294	-0.5249	1.2035	-0.4996	1.3070	-0.4881
16	0.530	0.143	0.7136	-0.5432	0.7841	-0.6240	0.8905	-0.6753	0.9906	-0.6420	1.1039	-0.5905	1.2221	-0.5360	1.2743	-0.4902	1.2986	-0.4865
17	0.530	0.184	0.7138	-0.7320	0.7831	-0.7815	0.8960	-0.7109	0.9957	-0.6532	1.0978	-0.6055	1.2152	-0.5464	1.2628	-0.5067	1.2865	-0.4962
18	0.540	0.263	0.7254	-0.8532	0.7905	-0.8606	0.8929	-0.7193	0.9827	-0.6627	1.0743	-0.6150	1.1777	-0.5579	1.2161	-0.5154	1.2365	-0.5003
19	0.553	0.315	0.7273	-0.8481	0.7846	-0.8550	0.8773	-0.7079	0.9580	-0.6540	1.0370	-0.6124	1.1354	-0.5572	1.1643	-0.5106	1.1827	-0.4943
20	0.568	0.368	0.6938	-0.7206	0.7416	-0.7601	0.8108	-0.6876	0.8846	-0.6465	0.9507	-0.6072	1.0340	-0.5553	1.0535	-0.5072	1.0683	-0.4915
21	0.383	0.000	0.6592	-0.3910	0.7201	-0.4249	0.8209	-0.4200	0.9157	-0.5530	1.0219	-0.5657	1.1522	-0.5359	1.2121	-0.4945	1.2397	-0.4819
22	0.383	0.136	0.6590	-0.4550	0.7190	-0.4496	0.8193	-0.5930	0.9122	-0.6161	1.0163	-0.5839	1.1460	-0.5397	1.2055	-0.4944	1.2327	-0.4795
23	0.393	0.230	0.6648	-0.7362	0.7235	-0.6850	0.8212	-0.6977	0.9121	-0.6374	1.0133	-0.6040	1.1401	-0.5527	1.1955	-0.5041	1.2230	-0.4986
24	0.383	0.305	0.6622	-0.8402	0.7212	-0.7215	0.8169	-0.7075	0.9050	-0.6501	1.0067	-0.6127	1.1267	-0.5613	1.1789	-0.5113	1.2061	-0.4928
25	0.393	0.410	0.6778	-0.8330	0.7306	-0.7325	0.8159	-0.6990	0.8929	-0.6516	0.9790	-0.6060	1.0862	-0.5598	1.1274	-0.5069	1.1495	-0.4898
26	0.408	0.462	0.6703	-0.8105	0.7192	-0.7160	0.7949	-0.6095	0.8852	-0.6456	0.9629	-0.6006	1.0411	-0.5567	1.0775	-0.5035	1.0959	-0.4871
27	0.419	0.515	0.6392	-0.7943	0.6792	-0.6724	0.7399	-0.6788	0.7974	-0.6605	0.8428	-0.5941	0.9482	-0.5510	0.9734	-0.5003	0.9895	-0.4864
28	0.236	0.000	0.5751	-0.4000	0.6223	-0.3396	0.7010	-0.5475	0.7797	-0.5325	0.8807	-0.5543	1.0104	-0.5260	1.0785	-0.4827	1.1092	-0.4729
29	0.236	0.190	0.5761	-0.5188	0.6210	-0.5965	0.7007	-0.6222	0.7700	-0.6146	0.8779	-0.5786	1.0083	-0.5389	1.0736	-0.4918	1.1054	-0.4850
30	0.236	0.332	0.5766	-0.7653	0.6219	-0.7120	0.6997	-0.6709	0.7745	-0.6464	0.8739	-0.5949	1.0033	-0.5522	1.0657	-0.5011	1.0464	-0.4886
31	0.236	0.427	0.5878	-0.7399	0.6311	-0.6703	0.7076	-0.6986	0.7006	-0.6424	0.8759	-0.5900	1.0051	-0.5504	1.0625	-0.4961	1.0912	-0.4865
32	0.236	0.498	0.5855	-0.7279	0.6316	-0.6782	0.7064	-0.6069	0.7753	-0.6324	0.8476	-0.5800	0.9933	-0.5519	1.0454	-0.4943	1.0716	-0.4842
33	0.245	0.557	0.6013	-0.7212	0.6432	-0.6402	0.7087	-0.6810	0.7725	-0.6264	0.8500	-0.5827	0.9748	-0.5485	1.0187	-0.4923	1.0618	-0.4822
34	0.259	0.610	0.5992	-0.7273	0.6368	-0.5998	0.6947	-0.6727	0.7523	-0.6261	0.8310	-0.5743	0.9376	-0.5419	0.9761	-0.4882	0.9970	-0.4795
35	0.272	0.643	0.5785	-0.7098	0.6013	-0.5946	0.6471	-0.6756	0.6936	-0.6292	0.7407	-0.5797	0.8563	-0.5460	0.8830	-0.4929	0.9015	-0.4880
36	0.147	0.000	0.4525	-0.4286	0.4859	-0.4702	0.5436	-0.5380	0.6016	-0.5436	0.6811	-0.5547	0.8070	-0.5287	0.8831	-0.4849	0.9192	-0.4799
37	0.147	0.222	0.4612	-0.5337	0.4910	-0.6456	0.5479	-0.5096	0.6044	-0.6129	0.6826	-0.5590	0.8144	-0.5281	0.8875	-0.4850	0.9214	-0.4796
38	0.147	0.389	0.4591	-0.7354	0.4896	-0.6467	0.5466	-0.6813	0.6012	-0.6281	0.6811	-0.5720	0.8168	-0.5397	0.8896	-0.4880	0.9227	-0.4809
39	0.147	0.500	0.4650	-0.7122	0.4956	-0.6727	0.5489	-0.6751	0.6037	-0.6172	0.6863	-0.5731	0.8254	-0.5396	0.8942	-0.4886	0.9259	-0.4808
40	0.147	0.583	0.4711	-0.7046	0.5009	-0.6509	0.5527	-0.6645	0.6050	-0.6006	0.6929	-0.5702	0.8311	-0.5360	0.8944	-0.4853	0.9260	-0.4780
41	0.157	0.646	0.5063	-0.7027	0.5336	-0.6549	0.5820	-0.6666	0.6320	-0.6041	0.7198	-0.5756	0.8529	-0.5400	0.9041	-0.4892	0.9340	-0.4861
42	0.170	0.698	0.5100	-0.6872	0.5432	-0.6497	0.5062	-0.6629	0.6336	-0.6064	0.7196	-0.5748	0.8427	-0.5393	0.8861	-0.4917	0.9133	-0.4852
43	0.183	0.751	0.5095	-0.6261	0.5249	-0.6377	0.5609	-0.6520	0.5992	-0.6013	0.6731	-0.5646	0.7855	-0.5255	0.8170	-0.4861	0.8410	-0.4787
44	0.118	0.750	0.3952	-0.6247	0.4099	-0.6293	0.4429	-0.6301	0.4867	-0.5942	0.6159	-0.5595	0.7668	-0.5209	0.8190	-0.4803	0.8497	-0.4739
45	0.088	0.000	-0.3702	-0.5971	-0.3236	-0.6434	-0.2940	-0.6884	-0.2530	-0.6810	-0.0210	-0.5690	0.2484	-0.4995	0.4111	-0.4722	0.4830	-0.4672
46	0.088	0.236	-0.3323	-0.6574	-0.3243	-0.6608	-0.2954	-0.7149	-0.2490	-0.6624	-0.0078	-0.5647	0.2687	-0.4954	0.4227	-0.4754	0.4877	-0.4696
47	0.088	0.412	-0.3206	-0.6925	-0.3130	-0.7103	-0.2795	-0.6883	-0.1677	-0.6288	0.0263	-0.5722	0.3382	-0.5127	0.4766	-0.4881	0.5431	-0.4832
48	0.088	0.530	-0.3201	-0.6788	-0.3171	-0.6959	-0.2668	-0.6869	-0.1426	-0.6231	0.0785	-0.5744	0.3695	-0.5162	0.5297	-0.4940	0.5867	-0.4852
49	0.088	0.619	-0.2707	-0.6496	-0.2580	-0.6580	-0.1976	-0.6620	-0.1201	-0.6136	0.1357	-0.5657	0.5688	-0.5016	0.6704	-0.4891	0.7037	-0.4813
50	0.088	0.846	0.3078	-0.5632	0.3186	-0.5644	0.3581	-0.5911	0.4116	-0.5961	0.5582	-0.5495	0.6805	-0.4865	0.7175	-0.4759	0.7450	-0.4706
51	0.058	0.000	-0.2483	-0.6023	-0.2842	-0.6341	-0.2303	-0.6655	-0.1386	-0.6419	0.1586	-0.5194	0.5874	-0.4583	0.6428	-0.4685	0.6772	-0.4672
52	0.058	0.236	-0.2796	-0.6429	-0.2829	-0.6455	-0.2220	-0.6864	-0.1252	-0.6832	0.2862	-0.5348	0.5847	-0.4693	0.6381	-0.4732	0.6741	-0.4696
53	0.058	0.412	-0.2732	-0.6816	-0.2755	-0.6613	-0.1987	-0.6714	-0.1143	-0.6131	0.4184	-0.5686	0.5895	-0.4922	0.6451	-0.4874	0.6821	-0.4835
54	0.058	0.530	-0.2449	-0.6482	-0.2427	-0.6508	-0.1511	-0.6530	-0.1066	-0.6197	0.4468	-0.5695	0.6086	-0.4984	0.6548	-0.4928	0.6924	-0.4852
55	0.058	0.619	-0.2075	-0.6246	-0.1787	-0.6125	-0.0991	-0.6292	0.0635	-0.6080	0.4493	-0.5650	0.6033	-0.4945	0.6623	-0.4865	0.6996	-0.4794
56	0.058	0.714	-0.1518	-0.5829	-0.0563	-0.5797	-0.0289	-0.6088	-0.0236	-0.6013	0.4982	-0.5610	0.6030	-0.4921	0.6599	-0.4814	0.6949	-0.4753
57	0.029	0.000	-0.2307	-0.6190	-0.2582	-0.6278	-0.1735	-0.6233	-0.0786	-0.6061	0.4425	-0.5021	0.5083	-0.4432	0.5609	-0.4630	0.5937	-0.4650
58	0.029	0.236	-0.2397	-0.6232	-0.2449	-0.6240	-0.1651	-0.6360	-0.0589	-0.5528	0.4262	-0.5193	0.4963	-0.4678	0.5498	-0.4688	0.5887	-0.4670
59	0.029	0.412	-0.2254	-0.6074	-0.2269	-0.6104	-0.1385	-0.6602	-0.0662	-0.5913	0.4229	-0.5531	0.5036	-0.4952	0.5542	-0.4836	0.5863	-0.4817
60	0.029	0.530	-0.2145	-0.5996	-0.1880	-0.6077	-0.1113	-0.6416	0.1087	-0.6060	0.4249	-0.5049	0.5074	-0.5045	0.5590	-0.4902	0.5908	-0.4837
61	0.029	0.619	-0.1572	-0.5964	-0.1137	-0.5877	0.0204	-0.6134	0.2524	-0.5994	0.4156	-0.5661	0.5125	-0.5016	0.5671	-0.4865	0.5967	-0.4779
62	0.029	0.714																
63	0.029	0.809	-0.3540	-0.5262	-0.3088	-0.5277	-0.1540	-0.5668	0.2427	-0.5088	0.4106	-0.5547	0.5135	-0.4874	0.5668	-0.4729	0.5948	-0.4669

Table A-8.- Pressure coefficients for configuration 8.
M = 0.6

			ALPHA =															
			-2.7	-2.6	0.2	0.3	5.1	5.3	10.1	10.2	15.1	15.2	20.1	20.3	25.0	25.1	26.5	26.6
TAP	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.967	0.000	0.1328	0.3466	0.2751	0.2536	0.4886	-0.0156	0.6842	-0.4028	0.8387	-0.7019	0.9122	-0.6716	0.9804	-0.4296	1.0076	-0.4231
2	0.894	0.000	0.0339	0.2530	0.1518	0.1362	0.3442	-0.0894	0.5298	-0.3737	0.6861	-0.5382	0.7765	-0.5767	0.8810	-0.4394	0.8962	-0.4337
3	0.841	0.000	-0.0810	0.1094	0.0153	0.0001	0.1984	-0.2062	0.3025	-0.4468	0.5429	-0.5253	0.6444	-0.5263	0.7414	-0.4363	0.7778	-0.4361
4	0.751	0.000	-0.3722	-0.1945	-0.2881	-0.3073	-0.0989	-0.4846	0.0959	-0.7444	0.2713	-0.7464	0.3885	-0.4817	0.5045	-0.4246	0.5464	-0.4328
5	0.813	0.055	-0.1871	0.0184	-0.0734	-0.0980	0.1142	-0.3019	0.3043	-0.5218	0.4710	-0.5680	0.5765	-0.5548	0.6819	-0.4324	0.7152	-0.4306
6	0.858	0.088	-0.0451	0.1751	0.0772	0.0613	0.2716	-0.1544	0.4552	-0.3285	0.6114	-0.9046	0.7014	-1.0462	0.7919	-0.4328	0.8172	-0.4394
7	0.887	0.120	0.0548	0.3139	0.1902	0.1698	0.4201	-0.0562	0.6057	-1.5125	0.7494	-1.1290	0.8176	-1.2746	0.8846	-0.4298	0.9079	-0.4261
8	0.863	0.000	-0.2478	-0.1148	-0.1789	-0.1978	-0.0413	-0.3211	0.1041	-0.4565	0.2400	-0.8072	0.3378	-0.4962	0.4359	-0.4518	0.4709	-0.4474
9	0.863	0.126	-0.2953	-0.0400	-0.1344	-0.1584	-0.0038	-0.3798	0.1208	-0.4782	0.2310	-0.7192	0.3283	-0.4722	0.4249	-0.4540	0.4065	-0.4476
10	0.863	0.210	-0.3088	-0.3884	-0.5028	-0.5265	-0.2763	-0.4998	-0.0412	-0.6604	0.1606	-0.8335	0.2934	-0.5635	0.4137	-0.4429	0.4502	-0.4406
11	0.690	0.302	-0.2080	-0.0461	-0.1499	-0.1908	0.0254	-0.3943	0.2170	-0.6493	0.3697	-0.8364	0.4738	-0.9783	0.5712	-0.4464	0.6037	-0.4506
12	0.727	0.334	-0.1379	0.0941	-0.0057	-0.0284	0.1994	-0.2252	0.3860	-1.3010	0.5266	-0.9415	0.6154	-0.9603	0.6962	-0.4407	0.7198	-0.4505
13	0.763	0.367	-0.0272	0.2594	0.1181	0.0922	0.3725	-0.5295	0.5556	-1.2747	0.6814	-0.8157	0.7446	-0.8729	0.7977	-0.4392	0.8205	-0.4378
14	0.530	0.000	-0.1895	-0.1117	-0.1546	-0.1696	-0.0620	-0.2423	0.0485	-0.3414	0.1535	-0.5566	0.2270	-0.5118	0.3119	-0.4757	0.3400	-0.4674
15	0.530	0.246	-0.2257	-0.1258	-0.1685	-0.1874	-0.0781	-0.2869	0.0492	-0.3841	0.1571	-0.7459	0.2291	-0.5766	0.3176	-0.4740	0.3499	-0.4644
16	0.530	0.418	-0.3159	-0.1348	-0.2426	-0.2708	-0.0692	-0.3940	0.0368	-0.5025	0.1406	-0.7556	0.2275	-0.7290	0.3230	-0.4621	0.3578	-0.4406
17	0.530	0.492	-0.5801	-0.4628	-0.5651	-0.5863	-0.3631	-0.5976	-0.1289	-0.8491	0.0479	-0.7625	0.1690	-0.7118	0.2825	-0.4612	0.3235	-0.4521
18	0.557	0.567	-0.3376	-0.1199	-0.2138	-0.2392	-0.0381	-0.4132	0.1452	-0.8739	0.2823	-0.7657	0.3759	-0.6970	0.4603	-0.4502	0.5017	-0.4420
19	0.594	0.600	-0.1799	0.0633	-0.0423	-0.0709	0.1559	-0.2898	0.3317	-0.8922	0.4559	-0.7421	0.5356	-0.6724	0.6056	-0.4221	0.6316	-0.4231
20	0.631	0.632	-0.0767	0.2175	0.0759	0.0800	0.3250	-0.5826	0.5044	-0.9100	0.6097	-0.7414	0.6695	-0.6455	0.7139	-0.4186	0.7335	-0.4176
21	0.464	0.753	-0.3756	-0.1907	-0.2620	-0.2948	-0.1258	-0.4263	0.0230	-0.7628	0.1371	-0.6528	0.2214	-0.6353	0.3061	-0.4202	0.3367	-0.4277
22	0.501	0.786	-0.2237	-0.0258	-0.1190	-0.1330	0.0590	-0.3103	0.2079	-0.8047	0.3151	-0.6257	0.3877	-0.6214	0.4576	-0.4093	0.4810	-0.4206
23	0.537	0.819	-0.1359	0.1362	0.0077	-0.0101	0.2408	-0.4097	0.4001	-0.8242	0.4958	-0.6108	0.5471	-0.6185	0.5964	-0.4097	0.6076	-0.4310
24	0.412	0.000	-0.1882	-0.1467	-0.1700	-0.1810	-0.1071	-0.2220	-0.0127	-0.2946	0.0421	-0.4847	0.1046	-0.5496	0.1734	-0.5040	0.1994	-0.4909
25	0.412	0.354	-0.2079	-0.1392	-0.1701	-0.1842	-0.1056	-0.2443	-0.0109	-0.3168	0.0708	-0.6748	0.1191	-0.6346	0.1875	-0.4637	0.2175	-0.4695
26	0.412	0.589	-0.2831	-0.1584	-0.1934	-0.2093	-0.1232	-0.3302	-0.0192	-0.6491	0.0424	-0.6767	0.1038	-0.6776	0.1825	-0.4556	0.2130	-0.4574
27	0.412	0.707	-0.3055	-0.4860	-0.5453	-0.5768	-0.4216	-0.4400	-0.2289	-0.6381	-0.0580	-0.6490	0.0315	-0.6513	0.1284	-0.4402	0.1622	-0.4453
28	0.412	0.823	-0.6249	-0.4853	-0.5179	-0.5470	-0.4232	-0.5637	-0.3446	-0.6909	-0.2527	-0.6097	-0.1873	-0.6015	-0.0940	-0.4246	-0.0727	-0.4343
29	0.412	0.882	-0.3858	-0.4877	-0.5249	-0.5765	-0.4578	-0.3764	-0.3331	-0.7403	-0.1999	-0.5945	-0.0808	-0.5051	0.0139	-0.4308	0.0363	-0.4396
30	0.412	0.942	-0.2354	-0.1483	-0.1606	-0.1708	-0.1346	-0.3259	-0.1174	-0.7469	-0.0593	-0.5810	-0.0111	-0.5662	0.0372	-0.4305	0.0498	-0.4354
31	0.309	0.000	-0.2062	-0.1972	-0.1985	-0.2204	-0.1749	-0.2335	-0.1084	-0.2928	-0.0457	-0.6203	-0.0232	-0.5490	0.0199	-0.5000	0.0433	-0.4857
32	0.309	0.354	-0.1441	-0.1937	-0.1942	-0.2208	-0.1737	-0.2308	-0.0950	-0.2793	-0.0452	-0.5681	-0.0214	-0.5767	0.0277	-0.4958	0.0511	-0.4942
33	0.309	0.589	-0.1963	-0.1808	-0.1875	-0.2095	-0.1646	-0.2313	-0.0855	-0.4576	-0.0427	-0.6070	-0.0153	-0.6284	0.0446	-0.4740	0.0617	-0.4843
34	0.309	0.707	-0.1834	-0.1670	-0.1721	-0.1787	-0.1446	-0.2236	-0.0785	-0.4550	-0.0374	-0.5967	-0.0122	-0.6160	0.0407	-0.4559	0.0577	-0.4650
35	0.309	0.823	-0.1747	-0.1377	-0.1382	-0.1466	-0.1180	-0.2173	-0.0730	-0.5265	-0.0429	-0.5984	-0.0288	-0.5983	0.0185	-0.4480	0.0309	-0.4607
36	0.309	0.882	-0.1454	-0.1247	-0.1301	-0.1346	-0.1079	-0.2118	-0.0725	-0.5677	-0.0483	-0.5889	-0.0331	-0.5843	0.0162	-0.4447	0.0178	-0.4545
37	0.309	0.942	-0.1427	-0.1060	-0.1070	-0.1217	-0.0940	-0.2281	-0.0435	-0.6421	-0.0797	-0.5642	-0.0687	-0.5513	-0.0324	-0.4345	-0.0218	-0.4347
38	0.221	0.000	-0.3138	-0.3514	-0.3412	-0.3606	-0.3412	-0.3396	-0.2827	-0.3798	-0.2448	-0.4470	-0.2615	-0.5591	-0.2463	-0.5128	-0.2262	-0.4805
39	0.221	0.354	-0.2525	-0.3326	-0.3121	-0.3348	-0.3270	-0.2915	-0.2625	-0.3478	-0.2443	-0.4673	-0.2569	-0.5418	-0.2333	-0.5148	-0.2124	-0.5019
40	0.221	0.589	-0.2222	-0.3013	-0.2767	-0.2936	-0.2446	-0.2418	-0.2348	-0.3008	-0.2221	-0.5325	-0.2322	-0.5840	-0.1963	-0.4942	-0.1697	-0.5011
41	0.221	0.707	-0.2204	-0.2691	-0.2509	-0.2675	-0.2607	-0.2344	-0.2081	-0.3173	-0.1999	-0.5532	-0.2072	-0.5882	-0.1066	-0.4440	-0.1440	-0.5045
42	0.221	0.823	-0.1756	-0.1909	-0.1716	-0.1865	-0.1795	-0.2000	-0.1417	-0.3570	-0.1405	-0.5534	-0.1524	-0.5796	-0.1176	-0.4019	-0.1035	-0.4917
43	0.221	0.882	-0.1619	-0.1330	-0.1308	-0.1379	-0.1318	-0.1795	-0.1105	-0.3532	-0.1152	-0.5371	-0.1250	-0.5483	-0.0841	-0.4634	-0.0639	-0.4710
44	0.221	0.942	-0.1327	-0.1041	-0.1035	-0.1122	-0.1048	-0.2056	-0.1027	-0.5417	-0.1165	-0.5306	-0.1330	-0.5301	-0.1033	-0.4541	-0.1062	-0.4612
45	0.133	0.000	-0.3167	-0.4540	-0.3805	-0.4099	-0.4734	-0.3349	-0.4341	-0.3305	-0.7092	-0.3886	-0.9643	-0.5492	-1.0528	-0.5233	-1.0374	-0.5027
46	0.133	0.354	-0.1552	-0.3524	-0.2752	-0.3149	-0.3775	-0.1986	-0.3324	-0.3023	-0.3893	-0.3744	-0.9743	-0.5076	-1.0382	-0.5057	-0.9969	-0.4834
47	0.133	0.589	-0.1250	-0.3306	-0.2548	-0.2761	-0.3678	-0.1180	-0.3230	-0.1976	-0.6080	-0.4498	-0.9580	-0.5253	-0.9664	-0.4909	-0.9240	-0.4897
48	0.133	0.707	-0.1405	-0.3099	-0.2381	-0.2581	-0.3375	-0.1198	-0.3086	-0.2180	-0.5700	-0.4760	-0.9415	-0.5334	-0.9176	-0.5001	-0.8745	-0.5012
49	0.133	0.942																
50	0.088	0.000	-0.0951	-0.1774	-0.1332	-0.1673	-0.1652	-0.1200	-0.1055	-0.1059	-0.1518	-0.2163	-0.2500	-0.5263	-0.3687	-0.5305	-0.3578	-0.5126
51	0.088	0.354	0.0008	-0.0892	-0.0311	-0.0624	-0.1342	-0.0235	-0.0923	-0.0826	-0.1557	-0.3474	-0.2935	-0.4281	-0.3590	-0.4848	-0.3464	-0.4767
52	0.088	0.589	0.0215	-0.0495	-0.0029	-0.0182	-0.1149	0.0078	-0.0755	-0.1374	-0.2015	-0.3889	-0.2431	-0.4901	-0.3086	-0.4483	-0.3085	-0.4520
53	0.088	0.707	0.0138	-0.0661	-0.0178	-0.0279	-0.1196	0.0054	-0.1025	-0.1083	-0.2326	-0.4319	-0.3049	-0.5113	-0.3121	-0.4737	-0.3043	-0.4707
54	0.044	0.000	0.0076	-0.0718	-0.0049	-0.0512	-0.0198	-0.0080	-0.0426	0.0014	-0.0498	-0.1351	-0.1878	-0.5142	-0.3769	-0.5412	-0.3513	-0.5076
55	0.044	0.354	0.0486	0.0394	0.0905	0.0788	0.0046	0.0438	0.0577	0.0532	-0.0016	-0.2418	-0.2653	-0.3593	-0.3681	-0.4509	-0.3404	-0.4393
56	0.044	0.589	0.0409	0.0992	0.1165	0.1108	0.0130	0.0432	0.0624	-0.0036	-0.1526	-0.3343	-0.3188	-0.4591	-0.3305	-0.4201	-0.3309	-0.4314
57	0.044	0.707	0.0709	0.0779	0.1157	0.1084	0.0138	0.0415	0.0246	-0.1408	-0.1077	-0.3741	-0.3232	-0.4776	-0.3209	-0.4432	-0.3202	-0.4560
58	0.044	0.823	0.0274	0.0762	0.0497	0.0307	-0.0122	0.0078	-0.0541	-0.1412	-0.2420	-0.4118	-0.3395	-0.4733	-0.3277	-0.4758	-0.3395	-0.4834
59	0.412	0.059	-0.1455	-0.1336	-0.1583	-0.1745	-0.1040	-0.2212	-0.0125	-0.2932	0.0649	-0.4786	0.1072	-0.5463	0.1702	-0.5018	0.1966	-0.4858
60	0.221	0.118	-0.1803	-0.1294	-0.1512	-0.1724	-0.0477	-0.2173	-0.0056	-0.2851	0.0699	-0.4721	0.1061	-0.5504	0.1664	-0.5040	0.1939	-0.4886
61	0.309	0.059	-0.2117	-0.1895	-0.2078	-0.2184	-0.1726	-0.2343	-0.1084	-0.2905	-0.0418	-0.4203	-0.0263	-0.5490	0.0184	-0.4969	0.0417	-0.4772
62	0.309	0.118	-0.2184	-0.1990	-0.2155	-0.2276	-0.1821	-0.2423	-0.1088	-0.2977	-0.0506	-0.4217	-0.0322	-0.5484	0.0130	-0.4962	0.0363	-0.4781
63	0.309	0.236	-0.2188	-0.1983	-0.2184	-0.2278	-0.1799	-0.2405	-0.1081	-0.2938	-0.0450	-0.4818	-0.0282	-0.5378	0.0177	-0.4902	0.0400	-0.4858
64	0.221	0.059	-0.3158	-0.3464	-0.3313	-0.3461	-0.3326	-0.3324	-0.2745	-0.3695	-0.2336	-0.4481	-0.2505	-0.5550	-0.2414	-0.5183	-0.2110	-0.4888
65	0.221	0.118	-0.3376	-0.3640	-0.3551	-0.3660	-0.3538	-0.3508	-0.2943	-0.3881	-0.2528	-0.4342	-0.2654	-0.5657	-0.2545	-0.5182	-0.2249	-0.5022
66	0.221	0.236	-0.3766	-0.3478	-0.3474	-0.3510	-0.3478	-0.3361	-0.2885	-0.3759	-0.2469	-0.4232	-0.2616	-0.5638	-0.2461	-0.5206	-0.2140	-0.5123
67	0.133	0.118	-0.3434	-0.4288	-0.4032	-0.4061	-0.4369	-0.3314	-0.4093	-0.3245	-0.4165	-0.3808	-0.9707	-0.5483	-1.0656	-0.5250	-1.0344	-0.5058
68	0.133	0.236	-0.3330	-0.4051	-0.3998	-0.3912	-0.4468	-0.3865	-0.4091	-0.3284	-0.4140	-0.3520	-0.9876	-0.5367	-1.0618	-0.5220	-1.0333	-0.5034
69	0.044	0.236	-0.0298	-0.0898	-0.0455	-0.0090	-0.0709	0.0162	-0.0763	0.0077	-0.0947	-0.2047	-0.2318	-0.4684	-0.3537	-0.4956	-0.3446	-0.4744
70	0.133	0.000																

Table A-8.- (Continued).

M = 0.6

RUN	X/L	Y/R/2	θ = 27.3 WINDWARD	27.4 LEEWARD	30.1 WINDWARD	30.1 LEEWARD	35.0 WINDWARD	35.1 LEEWARD	40.0 WINDWARD	40.0 LEEWARD	45.0 WINDWARD	45.0 LEEWARD	50.0 WINDWARD	50.0 LEEWARD	54.4 WINDWARD	54.9 LEEWARD	56.5 WINDWARD	56.5 LEEWARD
1	0.947	0.000	1.0176	-0.4165	1.0481	-0.4563	1.0800	-0.4765	1.0926	-0.4966	1.0859	-0.4880	1.0556	-0.4896	0.9883	-0.4748	0.9665	-0.4986
2	0.896	0.000	0.9105	-0.4239	0.9546	-0.4650	1.0211	-0.4857	1.0667	-0.5035	1.0923	-0.4937	1.1032	-0.5003	1.0674	-0.4827	1.0600	-0.5124
3	0.841	0.000	0.7973	-0.4184	0.8525	-0.4573	0.9397	-0.4853	1.0114	-0.4962	1.0624	-0.4861	1.0934	-0.4967	1.0495	-0.4904	1.0866	-0.5085
4	0.751	0.000	0.5717	-0.4209	0.6408	-0.4589	0.7618	-0.4859	0.8681	-0.4827	0.9498	-0.4989	1.0239	-0.5061	1.0643	-0.4938	1.0725	-0.5028
5	0.813	0.055	0.7409	-0.4264	0.7965	-0.4639	0.8916	-0.4912	0.9724	-0.4902	1.0261	-0.5008	1.0718	-0.5094	1.0809	-0.4912	1.0796	-0.5066
6	0.850	0.088	0.8359	-0.4265	0.8803	-0.4617	0.9541	-0.4929	1.0096	-0.4937	1.0415	-0.5045	1.0663	-0.5176	1.0577	-0.4949	1.0496	-0.5157
7	0.887	0.120	0.9131	-0.4226	0.9456	-0.4516	0.9831	-0.4804	1.0104	-0.4990	1.0148	-0.4906	0.9997	-0.5089	0.9575	-0.4926	0.9443	-0.5016
8	0.663	0.000	0.4944	-0.4392	0.5632	-0.4656	0.6749	-0.4934	0.7828	-0.5174	0.8748	-0.5098	0.9563	-0.5332	1.0119	-0.5147	1.0278	-0.5207
9	0.663	0.126	0.4931	-0.4305	0.5631	-0.4557	0.6763	-0.4831	0.7856	-0.5038	0.8753	-0.4982	0.9565	-0.5241	1.0084	-0.5084	1.0258	-0.5108
10	0.663	0.210	0.4825	-0.4239	0.5550	-0.4546	0.6767	-0.4852	0.7875	-0.5056	0.8755	-0.5012	0.9508	-0.5145	1.0075	-0.4923	1.0188	-0.5126
11	0.690	0.302	0.6235	-0.4302	0.6831	-0.4631	0.7816	-0.4935	0.8671	-0.5088	0.9309	-0.5078	0.9792	-0.5140	1.0056	-0.4974	1.0092	-0.5135
12	0.727	0.334	0.7320	-0.4320	0.7786	-0.4695	0.8505	-0.4929	0.9049	-0.5111	0.9496	-0.5085	0.9721	-0.5176	0.9754	-0.5027	0.9714	-0.5181
13	0.763	0.367	0.8236	-0.4269	0.8470	-0.4563	0.8800	-0.4842	0.9077	-0.4944	0.9145	-0.5023	0.9047	-0.5042	0.8728	-0.4949	0.8637	-0.5039
14	0.530	0.000	0.3709	-0.4559	0.4294	-0.4811	0.5367	-0.5102	0.6408	-0.5258	0.7475	-0.5282	0.8379	-0.5363	0.9144	-0.5208	0.9322	-0.5290
15	0.530	0.266	0.3750	-0.4478	0.4378	-0.4747	0.5430	-0.5020	0.6551	-0.5175	0.7519	-0.5165	0.8413	-0.5309	0.9146	-0.5124	0.9306	-0.5182
16	0.530	0.410	0.3761	-0.4254	0.4460	-0.4650	0.5590	-0.4897	0.6686	-0.5171	0.7606	-0.5203	0.8412	-0.5267	0.9159	-0.5045	0.9284	-0.5081
17	0.530	0.492	0.3470	-0.4302	0.4246	-0.4732	0.5500	-0.5005	0.6660	-0.5236	0.7624	-0.5272	0.8416	-0.5318	0.9107	-0.5113	0.9224	-0.5188
18	0.557	0.567	0.5153	-0.4233	0.5727	-0.4672	0.6692	-0.4974	0.7547	-0.5214	0.8235	-0.5211	0.8717	-0.5294	0.9115	-0.5129	0.9169	-0.5157
19	0.594	0.600	0.6374	-0.4134	0.6963	-0.4516	0.7519	-0.4920	0.8121	-0.5099	0.8576	-0.5053	0.8809	-0.5166	0.8942	-0.5088	0.8919	-0.5115
20	0.631	0.632	0.7304	-0.4087	0.7570	-0.4464	0.7879	-0.4919	0.8135	-0.5082	0.8266	-0.5044	0.8163	-0.5156	0.7978	-0.5025	0.7688	-0.5102
21	0.464	0.753	0.3492	-0.4177	0.4107	-0.4603	0.5024	-0.5013	0.5919	-0.5130	0.6678	-0.5096	0.7261	-0.5165	0.7766	-0.5038	0.7864	-0.5093
22	0.501	0.786	0.4888	-0.4166	0.5295	-0.4597	0.6019	-0.4943	0.6655	-0.5079	0.7090	-0.5103	0.7445	-0.5092	0.7722	-0.4923	0.7757	-0.5103
23	0.537	0.819	0.6132	-0.4233	0.6335	-0.4639	0.6725	-0.4966	0.6498	-0.5143	0.7112	-0.5143	0.7115	-0.5117	0.7088	-0.4950	0.7011	-0.5188
24	0.412	0.000	0.2273	-0.4632	0.2816	-0.4884	0.3898	-0.5260	0.5006	-0.5458	0.6022	-0.5439	0.6986	-0.5420	0.7965	-0.5296	0.8182	-0.5506
25	0.412	0.354	0.2400	-0.4586	0.3011	-0.4903	0.4059	-0.5205	0.5152	-0.5347	0.6206	-0.5402	0.7130	-0.5359	0.7977	-0.5235	0.8231	-0.5320
26	0.412	0.589	0.2348	-0.4506	0.2948	-0.4888	0.4024	-0.5194	0.5124	-0.5328	0.6131	-0.5374	0.6994	-0.5363	0.7764	-0.5185	0.8021	-0.5275
27	0.412	0.707	0.1862	-0.4343	0.2498	-0.4762	0.3629	-0.5046	0.4747	-0.5221	0.5750	-0.5241	0.6598	-0.5279	0.7341	-0.5084	0.7543	-0.5175
28	0.412	0.823	-0.0518	-0.4292	0.0054	-0.4696	0.1191	-0.5042	0.2352	-0.5179	0.3406	-0.5187	0.4264	-0.5229	0.5212	-0.5014	0.5427	-0.5126
29	0.412	0.882	0.0460	-0.4387	0.1018	-0.4763	0.1964	-0.5129	0.2833	-0.5275	0.3417	-0.5256	0.4240	-0.5266	0.4919	-0.5020	0.5079	-0.5203
30	0.412	0.942	0.0806	-0.4398	0.0867	-0.4727	0.1445	-0.5157	0.2070	-0.5277	0.2460	-0.5266	0.3029	-0.5286	0.3588	-0.5092	0.3682	-0.5191
31	0.309	0.000	0.0464	-0.4618	0.1249	-0.5003	0.2286	-0.5236	0.3429	-0.5440	0.4546	-0.5479	0.5521	-0.5452	0.6509	-0.5235	0.6885	-0.5267
32	0.309	0.354	0.0488	-0.4826	0.1290	-0.5141	0.2274	-0.5370	0.3425	-0.5497	0.4542	-0.5536	0.5533	-0.5516	0.6527	-0.5231	0.6646	-0.5335
33	0.309	0.589	0.0833	-0.4712	0.1400	-0.5036	0.2359	-0.5324	0.3442	-0.5442	0.4532	-0.5439	0.5444	-0.5446	0.6426	-0.5198	0.6710	-0.5302
34	0.309	0.707	0.0802	-0.4639	0.1275	-0.5024	0.2212	-0.5309	0.3252	-0.5393	0.4196	-0.5401	0.5068	-0.5495	0.6025	-0.5197	0.6276	-0.5283
35	0.309	0.823	0.0453	-0.4634	0.0838	-0.5027	0.1536	-0.5307	0.2401	-0.5430	0.3200	-0.5427	0.3886	-0.5520	0.4705	-0.5229	0.4899	-0.5318
36	0.309	0.882	0.0320	-0.4632	0.0640	-0.4995	0.1278	-0.5299	0.2030	-0.5411	0.2755	-0.5392	0.3345	-0.5577	0.4091	-0.5208	0.4292	-0.5289
37	0.309	0.942	-0.0115	-0.4434	0.0084	-0.4826	0.0489	-0.5166	0.1117	-0.5300	0.1718	-0.5224	0.2103	-0.5305	0.2779	-0.5026	0.2627	-0.5092
38	0.221	0.000	-0.1464	-0.4734	-0.1368	-0.5033	-0.0401	-0.5332	0.0791	-0.5489	0.2012	-0.5328	0.3079	-0.5401	0.4403	-0.5101	0.4722	-0.5214
39	0.221	0.354	-0.1840	-0.4908	-0.1265	-0.5165	-0.0265	-0.5392	0.0888	-0.5526	0.2095	-0.5363	0.3154	-0.5438	0.4480	-0.5124	0.4784	-0.5205
40	0.221	0.589	-0.1511	-0.4927	-0.0490	-0.5313	-0.0018	-0.5438	0.1069	-0.5553	0.2225	-0.5478	0.3259	-0.5504	0.4486	-0.5174	0.4788	-0.5313
41	0.221	0.707	-0.1264	-0.5027	-0.0797	-0.5439	0.0075	-0.5563	0.1144	-0.5687	0.2232	-0.5583	0.3169	-0.5574	0.4349	-0.5275	0.4625	-0.5409
42	0.221	0.823	-0.0883	-0.4922	-0.0590	-0.5373	0.0123	-0.5551	0.0493	-0.5664	0.1898	-0.5597	0.2597	-0.5546	0.3612	-0.5286	0.3625	-0.5413
43	0.221	0.882	-0.0658	-0.4711	-0.0344	-0.5073	0.0177	-0.5405	0.0469	-0.5455	0.1734	-0.5363	0.2356	-0.5421	0.3270	-0.5119	0.3499	-0.5191
44	0.221	0.942	-0.0902	-0.4582	-0.0714	-0.4987	-0.0377	-0.5339	0.0185	-0.5381	0.0833	-0.5305	0.1295	-0.5347	0.2008	-0.5002	0.2214	-0.5139
45	0.133	0.000	-0.9739	-0.4705	-0.8902	-0.4952	-0.7419	-0.5210	-0.5747	-0.5213	-0.4055	-0.5051	-0.2336	-0.5157	-0.0207	-0.4761	0.0323	-0.4959
46	0.133	0.354	-0.9427	-0.4707	-0.8938	-0.4945	-0.7479	-0.5233	-0.5690	-0.5355	-0.3825	-0.5248	-0.2244	-0.5305	-0.0075	-0.4999	0.0448	-0.5096
47	0.133	0.589	-0.9015	-0.4904	-0.8374	-0.5229	-0.6979	-0.5516	-0.5234	-0.5586	-0.3407	-0.5536	-0.1780	-0.5481	0.0240	-0.5151	0.0786	-0.5295
48	0.133	0.707	-0.8687	-0.5055	-0.7820	-0.5373	-0.6434	-0.5637	-0.4800	-0.5672	-0.3075	-0.5660	-0.1481	-0.5543	0.0561	-0.5239	0.1046	-0.5390
49	0.133	0.942																
50	0.088	0.000	-0.3324	-0.4772	-0.3069	-0.4957	-0.2670	-0.5110	-0.1885	-0.5105	-0.0970	-0.5014	-0.0311	-0.5003	0.0811	-0.4827	0.1070	-0.4831
51	0.088	0.354	-0.3220	-0.4426	-0.2975	-0.4732	-0.2536	-0.4967	-0.1752	-0.5130	-0.0829	-0.5089	-0.0105	-0.5157	0.0996	-0.4896	0.1244	-0.4964
52	0.088	0.589	-0.2840	-0.4450	-0.2641	-0.4955	-0.2265	-0.5207	-0.1533	-0.5339	-0.0756	-0.5343	0.0070	-0.5321	0.1124	-0.5152	0.1375	-0.5126
53	0.088	0.707	-0.2815	-0.4773	-0.2600	-0.5276	-0.2197	-0.5478	-0.1441	-0.5539	-0.0677	-0.5583	0.0186	-0.5388	0.1261	-0.5260	0.1505	-0.5310
54	0.044	0.000	-0.3318	-0.4765	-0.3244	-0.5018	-0.3187	-0.5016	-0.2019	-0.4985	-0.2067	-0.5030	-0.1536	-0.4861	-0.0639	-0.4862	-0.0428	-0.4925
55	0.044	0.354	-0.3314	-0.4226	-0.3226	-0.4524	-0.3044	-0.4804	-0.2495	-0.5021	-0.1788	-0.5038	-0.1335	-0.5058	-0.0410	-0.4949	-0.0130	-0.4917
56	0.044	0.589	-0.3183	-0.4354	-0.3131	-0.4735	-0.2950	-0.5041	-0.2431	-0.5281	-0.1787	-0.5290	-0.1319	-0.5271	-0.0351	-0.5094	-0.0058	-0.5057
57	0.044	0.707	-0.3088	-0.4539	-0.3029	-0.4844	-0.2814	-0.5172	-0.2317	-0.5373	-0.1888	-0.5309	-0.1164	-0.5302	-0.0207	-0.5084	0.0019	-0.5063
58	0.044	0.823	-0.3151	-0.4783	-0.3110	-0.5107	-0.2885	-0.5408	-0.2310	-0.5431	-0.1712	-0.5386	-0.1155	-0.5389	-0.0208	-0.5075	-0.0012	-0.5096
59	0.412	0.059	0.2306	-0.4595	0.2872	-0.4911	0.3930	-0.5253	0.5049	-0.5376	0.6081	-0.5357	0.6416	-0.5473	0.7490	-0.5206	0.8223	-0.5280
60	0.221	0.118	0.2225	-0.4609	0.2792	-0.4908	0.3451	-0.5260	0.4935	-0.5395	0.5090	-0.5345	0.6826	-0.5435	0.7477	-0.5260	0.8127	-0.5281
61	0.309	0.059	0.0556	-0.4503	0.1272	-0.4934	0.2294	-0.5204	0.3397	-0.5401	0.4499	-0.5363	0.5424	-0.5428	0.6576	-0.5235	0.6678	-0.5214
62	0.309	0.118	0.0417	-0.4506	0.1238	-0.4849	0.2226	-0.5110	0.3346	-0.5328	0.4471	-0.5259	0.5348	-0.5355	0.6511	-0.5132	0.6606	-0.5184
63	0.309	0.235	0.0708	-0.4569	0.1314	-0.4907	0.2343	-0.5164	0.3466	-0.5343	0.4555	-0.5241	0.5429	-0.5332	0.6600	-0.5129	0.6847	-0.5160
64	0.221	0.059	-0.1476	-0.4692	-0.1336	-0.5016	-0.0274	-0.5271	0.0681	-0.5324	0.2038	-0.5256	0.3115	-0.5343	0.4439	-0.5113	0.4757	-0.5163
65	0.221	0.118	-0.1778	-0.4857	-0.1273	-0.5152	-0.0351	-0.5332	0.0728	-0.5430	0.1790	-0.5374	0.2763	-0.5365	0.4000	-0.5167	0.4289	-0.5242
66	0.221	0.236	-0.1912	-0.4930	-0.1335	-0.5231	-0.0261	-0.5417	0.0898	-0.5474	0.2057	-0.5345	0.3122	-0.5348	0.4395	-0.5231	0.4780	-0.5258
67	0.133	0.118	-0.9468	-0.4041	-0.8688	-0.4986	-0.7040	-0.5151	-0.5379	-0.5200	-0.3881	-0.5139	-0.2335	-0.5058	-0.0208	-0.4910	0.0246	-0.4971
68	0.133	0.236	-0.9401	-0.4749	-0.9120	-0.5087	-0.7575	-0.5194	-0.5876	-0.5312	-0.4088	-0.4205	-0.2334	-0.5133	-0.0249	-0.4972	0.0270	-0.5049
69	0.044	0.236	-0.3704	-0.4335	-0.3159	-0.4725	-0.2899	-0.4816	-0.2425	-0.4992	-0.1935	-0.4861	-0.1421	-0.4808	-0.0566	-0.4644	-0.0375	-0.4757
70	0.133	0.000																

Table A-8.- (Continued).

M = 0.8

ROW	X/L	Y/B/2	ALPHA = -2.0 WINDWARD	-2.0 LEEWARD	0.1 WINDWARD	0.2 LEEWARD	5.1 WINDWARD	5.2 LEEWARD	10.0 WINDWARD	10.1 LEEWARD	15.0 WINDWARD	15.2 LEEWARD	19.9 WINDWARD	20.1 LEEWARD	24.9 WINDWARD	25.1 LEEWARD	26.4 WINDWARD	26.5 LEEWARD
1	0.967	0.000	0.2112	0.4695	0.3513	0.3425	0.5575	0.0936	0.7386	-0.2213	0.8783	-0.5040	0.9716	-0.4902	1.0568	-0.5236	1.0763	-0.4898
2	0.894	0.000	0.1979	0.3384	0.2296	0.2229	0.4186	0.0146	0.5917	-0.2176	0.7363	-0.3801	0.6391	-0.4570	0.9347	-0.5117	0.9674	-0.5002
3	0.841	0.000	-0.0882	0.2009	0.0981	0.0922	0.2773	-0.0830	0.4495	-0.2579	0.5955	-0.3205	0.7079	-0.4400	0.6231	-0.4901	0.6580	-0.4866
4	0.751	0.000	-0.5445	-0.1952	-0.3531	-0.3634	-0.0838	-0.7216	0.1332	-0.8066	0.3866	-0.4754	0.4473	-0.4252	0.5819	-0.4821	0.6234	-0.4802
5	0.813	0.055	-0.0931	0.1112	0.0121	0.0053	0.1913	-0.1596	0.3709	-0.3018	0.5224	-0.3294	0.6454	-0.4129	0.7578	-0.5161	0.7414	-0.5007
6	0.850	0.088	0.0365	0.2622	0.1556	0.1459	0.3444	-0.0471	0.5179	-0.1825	0.6410	-0.2132	0.7580	-0.4189	0.8626	-0.5428	0.8403	-0.5114
7	0.887	0.120	0.1308	0.3973	0.2708	0.2574	0.4051	0.0522	0.6595	-0.8693	0.7927	-1.3688	0.8412	-1.4864	0.9588	-0.5340	0.9798	-0.5065
8	0.663	0.000	-0.3307	-0.0994	-0.2106	-0.2248	-0.0153	-0.5303	0.1469	-0.8132	0.2860	-0.4028	0.3994	-0.4424	0.5193	-0.4963	0.5581	-0.4917
9	0.663	0.126	-0.3774	-0.0730	-0.2107	-0.2302	0.0164	-0.6088	0.1693	-1.0125	0.2786	-0.4246	0.3895	-0.4253	0.5130	-0.5208	0.5544	-0.5025
10	0.663	0.210	-0.8840	-0.4043	-0.5750	-0.5954	-0.2721	-1.1120	-0.0158	-1.2917	0.1438	-0.4727	0.3434	-0.3670	0.4936	-0.5109	0.5367	-0.4991
11	0.690	0.302	-0.2493	-0.0101	-0.1326	-0.1421	0.0799	-0.3506	0.2700	-0.6418	0.4186	-0.8491	0.5303	-1.1420	0.6469	-0.5136	0.6845	-0.5001
12	0.727	0.334	-0.1034	0.1644	0.0387	0.0283	0.2590	-0.1863	0.4308	-0.9299	0.5765	-0.8589	0.6697	-1.2243	0.7646	-0.5111	0.7932	-0.5095
13	0.763	0.367	0.0189	0.3302	0.1780	0.1613	0.4299	-0.3116	0.6049	-1.0793	0.7737	-0.7997	0.7955	-0.9967	0.8657	-0.5141	0.8877	-0.5028
14	0.530	0.000	-0.2509	-0.0900	-0.1667	-0.1819	-0.0292	-0.3108	0.1044	-0.2701	0.2027	-0.4323	0.2421	-0.4637	0.3473	-0.5160	0.4381	-0.5094
15	0.530	0.246	-0.2069	-0.0942	-0.1711	-0.1880	-0.0358	-0.3728	0.0984	-0.4061	0.2060	-0.5606	0.2923	-0.6015	0.4928	-0.5220	0.4448	-0.5104
16	0.530	0.410	-0.5710	-0.3649	-0.5889	-0.6229	-0.1871	-0.7053	0.0237	-0.8287	0.1756	-0.7094	0.2856	-0.9260	0.4046	-0.5121	0.4439	-0.5046
17	0.530	0.492	-0.9454	-0.4932	-0.6460	-0.6625	-0.3734	-1.1270	-0.1060	-1.0321	0.0758	-0.7213	0.2156	-0.9158	0.3634	-0.5174	0.4126	-0.5131
18	0.557	0.567	-0.3344	-0.0744	-0.1896	-0.2046	0.0165	-0.4100	0.1489	-0.9117	0.3313	-0.7226	0.4321	-0.8929	0.5425	-0.5105	0.5803	-0.5070
19	0.594	0.600	-0.1623	0.1151	-0.0107	-0.0194	0.2078	-0.2650	0.3830	-1.0867	0.5819	-0.7128	0.5878	-0.8864	0.6783	-0.5047	0.7090	-0.4979
20	0.631	0.632	-0.0420	0.2750	0.1147	0.1033	0.3784	-0.5162	0.5409	-1.2291	0.6523	-0.6980	0.7189	-0.8701	0.7813	-0.5012	0.8042	-0.4947
21	0.464	0.753	-0.4485	-0.1841	-0.2825	-0.2881	-0.1026	-0.4838	0.0574	-0.8578	0.1777	-0.6408	0.2732	-0.7813	0.3801	-0.4926	0.4193	-0.4909
22	0.501	0.786	-0.2365	0.0104	-0.0954	-0.1112	0.1014	-0.3542	0.2567	-0.9597	0.3650	-0.6261	0.4424	-0.7674	0.5279	-0.4784	0.5619	-0.4761
23	0.537	0.819	-0.1267	0.1875	0.0429	0.0239	0.2898	-0.4215	0.4486	-1.0513	0.5422	-0.4285	0.5984	-0.7632	0.6568	-0.4849	0.6832	-0.4814
24	0.412	0.000	-0.2094	-0.1150	-0.1564	-0.1700	-0.0518	-0.2512	0.0412	-0.2950	0.1179	-0.4619	0.1870	-0.4947	0.2795	-0.5307	0.3170	-0.5240
25	0.412	0.354	-0.2429	-0.1251	-0.1734	-0.1833	-0.0703	-0.2887	0.0379	-0.3517	0.1224	-0.6520	0.1902	-0.6898	0.2495	-0.5203	0.3244	-0.5164
26	0.412	0.589	-0.3089	-0.1511	-0.3675	-0.4323	-0.0956	-0.4942	0.0146	-0.8201	0.0806	-0.6704	0.1595	-0.8143	0.2667	-0.5043	0.3046	-0.5051
27	0.412	0.707	-0.7518	-0.5523	-0.6161	-0.6299	-0.4833	-0.7613	-0.2577	-0.7676	-0.0678	-0.6439	0.0638	-0.7880	0.1936	-0.4932	0.2392	-0.4934
28	0.412	0.823	-0.8191	-0.5532	-0.6315	-0.6369	-0.4993	-0.9233	-0.4148	-0.8202	-0.3024	-0.5969	-0.1968	-0.7527	-0.0836	-0.4845	-0.0367	-0.4826
29	0.412	0.882	-0.5713	-0.5748	-0.6460	-0.6544	-0.5063	-0.5521	-0.3837	-0.8664	-0.2423	-0.5755	-0.1639	-0.7453	-0.0399	-0.4855	0.0094	-0.4832
30	0.412	0.942	-0.3416	-0.1862	-0.2567	-0.2613	-0.1326	-0.4455	-0.1363	-0.8652	-0.0533	-0.5566	0.0171	-0.7257	0.0717	-0.4814	0.0992	-0.4774
31	0.309	0.000	-0.2212	-0.1381	-0.1759	-0.1833	-0.1054	-0.2373	-0.0235	-0.3023	0.0732	-0.4708	0.0744	-0.5131	0.1508	-0.5358	0.1634	-0.5331
32	0.309	0.354	-0.2312	-0.1466	-0.1644	-0.1960	-0.1102	-0.2508	-0.0280	-0.2823	0.0164	-0.5747	0.0895	-0.6012	0.1471	-0.5234	0.1621	-0.5283
33	0.309	0.589	-0.2448	-0.1500	-0.1735	-0.1826	-0.1142	-0.2935	-0.0370	-0.4804	0.0084	-0.6298	0.0558	-0.7623	0.1352	-0.5055	0.1714	-0.5135
34	0.309	0.707	-0.2732	-0.1228	-0.1726	-0.1973	-0.1009	-0.3384	-0.0462	-0.5795	-0.0944	-0.6102	0.0367	-0.7595	0.1145	-0.4974	0.1456	-0.4942
35	0.309	0.823	-0.2494	-0.1382	-0.1852	-0.2067	-0.0813	-0.3139	-0.0522	-0.6195	-0.0795	-0.5917	0.0022	-0.7501	0.0520	-0.4930	0.0912	-0.4920
36	0.309	0.882	-0.2220	-0.0944	-0.1182	-0.1366	-0.0775	-0.2966	-0.0624	-0.6566	-0.0639	-0.5780	-0.0104	-0.7333	0.0401	-0.4909	0.0650	-0.4844
37	0.309	0.942	-0.2175	-0.1109	-0.1321	-0.1468	-0.0937	-0.3302	-0.0992	-0.7254	-0.0868	-0.5533	-0.0485	-0.7028	-0.0169	-0.4842	0.0059	-0.4775
38	0.221	0.000	-0.2779	-0.2776	-0.2473	-0.2572	-0.2026	-0.2912	-0.1473	-0.3495	-0.1257	-0.4765	-0.0988	-0.5214	-0.0412	-0.5535	-0.0124	-0.5473
39	0.221	0.354	-0.2890	-0.2317	-0.2521	-0.2662	-0.1979	-0.3093	-0.1364	-0.3244	-0.1292	-0.5096	-0.1003	-0.5745	-0.0422	-0.5392	-0.0111	-0.5416
40	0.221	0.589	-0.2811	-0.2116	-0.2352	-0.2437	-0.1816	-0.3109	-0.1257	-0.4205	-0.1235	-0.5771	-0.0967	-0.6939	-0.0410	-0.5214	-0.0098	-0.5168
41	0.221	0.707	-0.2755	-0.1944	-0.2192	-0.2291	-0.1717	-0.3101	-0.1233	-0.4451	-0.1744	-0.5861	-0.1054	-0.7332	-0.0523	-0.5199	-0.0209	-0.5156
42	0.221	0.823	-0.2271	-0.1635	-0.1714	-0.1788	-0.1464	-0.2657	-0.1119	-0.4470	-0.1353	-0.5730	-0.1182	-0.7175	-0.0858	-0.5130	-0.0567	-0.5032
43	0.221	0.882	-0.2014	-0.1406	-0.1358	-0.1530	-0.1263	-0.2571	-0.1090	-0.4733	-0.1358	-0.5514	-0.1196	-0.6880	-0.0948	-0.4904	-0.0806	-0.4911
44	0.221	0.942	-0.2017	-0.1261	-0.1185	-0.1397	-0.1150	-0.3077	-0.1204	-0.6501	-0.1564	-0.5317	-0.1454	-0.6553	-0.1336	-0.4797	-0.1095	-0.4863
45	0.133	0.000	-0.3943	-0.4243	-0.3501	-0.3900	-0.4122	-0.3514	-0.4293	-0.4390	-0.5491	-0.4951	-0.7442	-0.5317	-0.9491	-0.5558	-0.9774	-0.5593
46	0.133	0.354	-0.3515	-0.3630	-0.3458	-0.3884	-0.3208	-0.4031	-0.3025	-0.4735	-0.5357	-0.4975	-0.8722	-0.5801	-0.9743	-0.5361	-0.9848	-0.5431
47	0.133	0.589	-0.3496	-0.3781	-0.4035	-0.4542	-0.3258	-0.3269	-0.3034	-0.3856	-0.6708	-0.5164	-0.9435	-0.6342	-0.9814	-0.5174	-0.9948	-0.5237
48	0.133	0.707	-0.3300	-0.4275	-0.4026	-0.4346	-0.3700	-0.2405	-0.3305	-0.3283	-0.7465	-0.5264	-0.9373	-0.6626	-1.0276	-0.5130	-1.0383	-0.5152
49	0.133	0.942																
50	0.088	0.000	-0.2404	-0.2941	-0.2601	-0.2915	-0.2750	-0.2551	-0.2611	-0.3416	-0.4167	-0.4912	-0.7561	-0.5337	-0.9477	-0.5634	-0.9705	-0.5601
51	0.088	0.354	-0.2246	-0.2561	-0.2362	-0.2729	-0.2101	-0.2483	-0.1746	-0.3384	-0.3807	-0.4130	-0.8388	-0.5434	-0.9748	-0.5386	-0.9768	-0.5440
52	0.088	0.589	-0.2010	-0.2511	-0.2407	-0.2828	-0.2005	-0.1765	-0.1695	-0.2554	-0.4514	-0.4693	-0.8917	-0.5641	-0.9610	-0.4968	-1.0086	-0.5058
53	0.088	0.707	-0.1728	-0.2563	-0.1932	-0.2229	-0.2175	-0.1782	-0.1783	-0.2646	-0.4578	-0.4920	-0.8881	-0.6192	-0.9739	-0.4955	-0.9696	-0.5057
54	0.044	0.000	-0.1981	-0.2343	-0.2021	-0.2456	-0.1897	-0.2223	-0.1601	-0.2987	-0.2676	-0.4972	-0.5807	-0.5376	-0.7675	-0.5687	-0.8696	-0.5800
55	0.044	0.354	-0.1547	-0.1901	-0.1635	-0.2030	-0.1485	-0.1723	-0.1127	-0.2504	-0.2050	-0.3434	-0.6124	-0.5299	-0.8547	-0.5352	-0.9804	-0.5294
56	0.044	0.589	-0.1188	-0.1746	-0.1417	-0.1752	-0.1406	-0.1249	-0.1046	-0.1864	-0.3403	-0.4482	-0.5735	-0.5061	-0.7696	-0.5006	-0.7384	-0.4868
57	0.044	0.707	-0.0775	-0.1262	-0.0646	-0.0928	-0.1178	-0.1349	-0.1001	-0.2061	-0.3497	-0.4626	-0.5220	-0.5586	-0.4606	-0.4865	-0.3505	-0.4738
58	0.044	0.823	-0.1373	-0.0851	-0.1070	-0.1417	-0.0656	-0.1558	-0.0759	-0.2389	-0.3213	-0.4475	-0.3977	-0.5801	-0.4248	-0.4900	-0.3494	-0.4777
59	0.412	0.059	-0.2183	-0.1074	-0.1573	-0.1688	-0.0578	-0.2479	0.0429	-0.3018	0.1178	-0.4702	0.1780	-0.4902	0.2740	-0.5355	0.3186	-0.5274
60	0.221	0.118	-0.2464	-0.0983	-0.1413	-0.1567	-0.0474	-0.2336	0.0523	-0.3058	0.1260	-0.4777	0.1839	-0.4922	0.2770	-0.5396	0.3195	-0.5253
61	0.309	0.059	-0.2118	-0.1388	-0.1734	-0.1833	-0.1054	-0.2367	-0.0260	-0.3134	0.0701	-0.4763	0.0634	-0.5044	0.1409	-0.5445	0.1889	-0.5245
62	0.309	0.118	-0.2165	-0.1432	-0.1783	-0.1874	-0.1095	-0.2392	-0.0323	-0.3263	0.0177	-0.4795	0.0651	-0.5018	0.1459	-0.5412	0.1846	-0.5210
63	0.309	0.236	-0.2197	-0.1415	-0.1790	-0.1856	-0.1099	-0.2386	-0.0327	-0.3707	0.0195	-0.4816	0.0675	-0.4950	0.1475	-0.5361	0.1846	-0.5196
64	0.221	0.059	-0.2744	-0.2281	-0.2395	-0.2516	-0.1974	-0.2889	-0.1421	-0.3474	-0.1198	-0.4834	-0.0954	-0.5127	-0.0349	-0.5477	-0.0007	-0.5388
65	0.221	0.118	-0.2811	-0.2340	-0.2532	-0.2677	-0.2113	-0.3058	-0.1536	-0.3713	-0.1313	-0.4982	-0.1061	-0.5239	-0.0424	-0.5542	-0.0066	-0.5498
66	0.221	0.236	-0.2915	-0.2243	-0.2497	-0.2613	-0.2060	-0.2991	-0.1488	-0.3754	-0.1271	-0.5029	-0.1018	-0.5225	-0.0386	-0.5510	-0.0050	-0.5473
67	0.133	0.118	-0.3546	-0.3916	-0.3577	-0.3862	-0.3904	-0.3611	-0.4054	-0.4771	-0.5583	-0.4956	-0.8245	-0.5286	-0.9351	-0.5588	-0.9581	-0.5535
68	0.133	0.236	-0.3414	-0.3443	-0.3450	-0.3595	-0.3663	-0.3585	-0.3877	-0.4760	-0.5411	-0.4979	-0.8725	-0.5164	-0.9251	-0.5529	-0.9644	-0.5467
69	0.044	0.236	-0.1713	-0.1799	-0.1851	-0.1887	-0.1815	-0.1568	-0.1661	-0.2427	-0.2704	-0.4626	-0.5336	-0.4914	-0.7101	-0.5588	-0.8381	-0.5520
70	0.133	0.000																

Table A-8.- (Continued).
M = 0.8

			ALPHA =													
TU-F	X/L	Y/B/2	27.2 WINDWARD	27.2 LEEWARD	30.0 WINDWARD	30.0 LEEWARD	34.9 WINDWARD	34.9 LEEWARD	39.4 WINDWARD	40.0 LEEWARD	44.8 WINDWARD	44.9 LEEWARD	49.8 WINDWARD	49.9 LEEWARD	54.8 WINDWARD	54.9 LEEWARD	56.3 WINDWARD	56.3 LEEWARD
1	0.967	0.000	1.0885	-0.4880	1.1205	-0.4766	1.1563	-0.4814	1.1709	-0.5097	1.1422	-0.5334	1.1336	-0.5145	1.0769	-0.5274	1.0560	-0.5486
2	0.896	0.000	0.9917	-0.4926	1.0297	-0.4878	1.0948	-0.4991	1.1430	-0.5278	1.1659	-0.5475	1.1749	-0.5322	1.1564	-0.5449	1.1453	-0.5647
3	0.861	0.000	0.8703	-0.4742	0.9308	-0.4811	1.0155	-0.4957	1.0875	-0.5263	1.1367	-0.5420	1.1681	-0.5274	1.1738	-0.5421	1.1713	-0.5627
4	0.751	0.000	0.8456	-0.4717	0.7247	-0.4817	0.8404	-0.4976	0.9446	-0.5259	1.0334	-0.5473	1.1018	-0.5354	1.1429	-0.5509	1.1503	-0.5597
5	0.819	0.055	0.8133	-0.4815	0.8773	-0.4877	0.9699	-0.4979	1.0463	-0.5264	1.1088	-0.5483	1.1471	-0.5291	1.1589	-0.5468	1.1577	-0.5583
6	0.850	0.088	0.9073	-0.4472	0.9586	-0.4891	1.0311	-0.5018	1.0641	-0.5346	1.1251	-0.5531	1.1414	-0.5351	1.1370	-0.5550	1.1381	-0.5645
7	0.887	0.120	0.9842	-0.4811	1.0195	-0.4902	1.0584	-0.4906	1.0891	-0.5246	1.0960	-0.5384	1.0830	-0.5226	1.0563	-0.5504	1.0336	-0.5615
8	0.863	0.000	0.5789	-0.4802	0.6507	-0.5019	0.7606	-0.5095	0.8674	-0.5401	0.9584	-0.5500	1.0398	-0.5183	1.0474	-0.5452	1.1492	-0.5756
9	0.863	0.176	0.5752	-0.4826	0.6489	-0.4956	0.7605	-0.5024	0.8683	-0.5318	0.9577	-0.5429	1.0388	-0.5334	1.0958	-0.5544	1.1058	-0.5699
10	0.863	0.210	0.5597	-0.4893	0.6387	-0.4963	0.7576	-0.5067	0.8664	-0.5363	0.9607	-0.5498	1.0362	-0.5349	1.0916	-0.5509	1.1002	-0.5687
11	0.898	0.302	0.6947	-0.4959	0.7648	-0.5051	0.8680	-0.5134	0.9433	-0.5419	1.0107	-0.5606	1.0471	-0.5402	1.0888	-0.5555	1.0895	-0.5760
12	0.727	0.334	0.8036	-0.4947	0.8541	-0.5054	0.9265	-0.5144	0.9849	-0.5409	1.0281	-0.5632	1.0513	-0.5382	1.0600	-0.5556	1.0568	-0.5746
13	0.763	0.367	0.8869	-0.4860	0.9173	-0.4908	0.9562	-0.4987	0.9820	-0.5301	0.9923	-0.5501	0.9863	-0.5368	0.9672	-0.5504	0.9536	-0.5646
14	0.530	0.000	0.6541	-0.4984	0.5215	-0.5061	0.6294	-0.5187	0.7377	-0.5456	0.8375	-0.5652	0.9300	-0.5463	1.0086	-0.5726	1.0241	-0.5780
15	0.530	0.246	0.6595	-0.4950	0.5277	-0.4994	0.6358	-0.5103	0.7436	-0.5404	0.8617	-0.5565	[illegible]	-0.5394	1.0049	-0.5617	1.0192	-0.5681
16	0.530	0.410	0.6628	-0.4917	0.5329	-0.5042	0.6457	-0.5128	0.7492	-0.5375	0.8468	-0.5516	[illegible]	-0.5463	0.9982	-0.5626	1.0125	-0.5718
17	0.538	0.492	0.6324	-0.5002	0.5131	-0.5125	0.6376	-0.5203	0.7468	-0.5458	0.8657	-0.5637	0.9295	-0.5508	0.9934	-0.5686	1.0063	-0.5791
18	0.557	0.567	0.5929	-0.4950	0.8544	-0.5091	0.7496	-0.5175	0.8294	-0.5447	0.9020	-0.5619	0.9575	-0.5514	0.9975	-0.5670	1.0011	-0.5771
19	0.594	0.600	0.7886	-0.4854	0.7612	-0.4920	0.8280	-0.5067	0.8878	-0.5270	0.9328	-0.5531	0.9598	-0.5392	0.9759	-0.5616	0.9741	-0.5731
20	0.631	0.632	0.7055	-0.4790	0.8290	-0.4915	0.8618	-0.5034	0.8897	-0.5291	0.9007	-0.5530	0.8960	-0.5359	0.8888	-0.5591	0.8763	-0.5690
21	0.668	0.753	0.6265	-0.4765	0.6906	-0.4867	0.5865	-0.5005	0.6734	-0.5306	0.7683	-0.5498	0.8110	-0.5394	0.8626	-0.5562	0.8702	-0.5681
22	0.501	0.786	0.5610	-0.4643	0.6115	-0.4805	0.6791	-0.4945	0.7406	-0.5253	0.7934	-0.5473	0.8304	-0.5354	0.8585	-0.5478	0.8599	-0.5597
23	0.537	0.819	0.6742	-0.4744	0.7077	-0.4858	0.7432	-0.4998	0.7722	-0.5307	0.7911	-0.5545	0.7965	-0.5346	0.7928	-0.5530	0.7868	-0.5687
24	0.412	0.000	0.3253	-0.5267	0.3877	-0.5293	0.4967	-0.5339	0.5990	-0.5548	0.7067	-0.5757	0.8041	-0.5620	0.8943	-0.5714	0.9185	-0.5907
25	0.412	0.354	0.3349	-0.5135	0.4018	-0.5198	0.5040	-0.5253	0.6098	-0.5518	0.7175	-0.5692	0.8070	-0.5596	0.8970	-0.5710	0.9177	-0.5867
26	0.412	0.589	0.3157	-0.5015	0.3864	-0.5104	0.4923	-0.5230	0.6011	-0.5506	0.7063	-0.5643	0.7412	-0.5591	0.8750	-0.5720	0.8936	-0.5799
27	0.412	0.707	0.2516	-0.4972	0.3280	-0.4956	0.4456	-0.5097	0.5572	-0.5404	0.6609	-0.5589	0.7484	-0.5521	0.8292	-0.5623	0.8461	-0.5705
28	0.412	0.823	-0.0764	-0.4748	0.0529	-0.4850	0.1790	-0.5012	0.2474	-0.5308	0.4173	-0.5516	0.5192	-0.5475	0.6075	-0.5558	0.6263	-0.5627
29	0.412	0.882	0.0859	-0.4774	0.1060	-0.4871	0.2432	-0.5017	0.3531	-0.5345	0.4445	-0.5588	0.5177	-0.5508	0.5830	-0.5592	0.5964	-0.5711
30	0.412	0.942	0.1034	-0.4735	0.1511	-0.4791	0.2155	-0.4955	0.2794	-0.5366	0.3477	-0.5575	0.4022	-0.5514	0.4545	-0.5607	0.4641	-0.5686
31	0.309	0.000	0.1465	-0.5295	0.2513	-0.5303	0.3460	-0.5383	0.4543	-0.5500	0.5667	-0.5796	0.6702	-0.5639	0.7704	-0.5609	0.7961	-0.5701
32	0.309	0.354	0.1915	-0.5227	0.2657	-0.5306	0.3444	-0.5393	0.4515	-0.5561	0.5619	-0.5849	0.6660	-0.5671	0.7651	-0.5844	0.7899	-0.5690
33	0.309	0.589	0.1775	-0.5023	0.2347	-0.5153	0.3338	-0.5273	0.4387	-0.5465	0.5480	-0.5753	0.6490	-0.5548	0.7451	-0.5727	0.7670	-0.5627
34	0.309	0.707	0.1422	-0.4911	0.2070	-0.5085	0.3020	-0.5159	0.4053	-0.5442	0.5089	-0.5674	0.6045	-0.5616	0.6971	-0.5644	0.7190	-0.5609
35	0.309	0.823	0.0928	-0.4904	0.1402	-0.5051	0.2214	-0.5178	0.3078	-0.5488	0.3968	-0.5742	0.4788	-0.5525	0.5595	-0.5686	0.5778	-0.5687
36	0.309	0.882	0.0715	-0.4872	0.1141	-0.4979	0.1861	-0.5150	0.2644	-0.5491	0.3477	-0.5713	0.4240	-0.5627	0.4989	-0.5670	0.5180	-0.5709
37	0.309	0.942	0.0127	-0.4805	0.0487	-0.4840	0.1063	-0.5042	0.1676	-0.5394	0.2341	-0.5599	0.2999	-0.5448	0.3646	-0.5647	0.3787	-0.5652
38	0.221	0.000	-0.0060	-0.5446	0.0338	-0.5398	0.1165	-0.5438	0.2138	-0.5616	0.3256	-0.5775	0.4488	-0.5626	0.5644	-0.5788	0.5967	-0.5720
39	0.221	0.354	-0.0057	-0.5346	0.0344	-0.5333	0.1159	-0.5401	0.2146	-0.5611	0.3276	-0.5741	0.4486	-0.5631	0.5639	-0.5727	0.5945	-0.5681
40	0.221	0.589	-0.0082	-0.5153	0.0331	-0.5243	0.1166	-0.5330	0.2149	-0.5614	0.3288	-0.5759	0.4431	-0.5652	0.5574	-0.5724	0.5861	-0.5627
41	0.221	0.707	-0.0228	-0.5152	0.0183	-0.5255	0.1036	-0.5383	0.2012	-0.5668	0.3113	-0.5841	0.4233	-0.5712	0.5334	-0.5792	0.5610	-0.5748
42	0.221	0.823	-0.0406	-0.5072	-0.0197	-0.5149	0.0578	-0.5314	0.1520	-0.5656	0.2694	-0.5795	0.3494	-0.5727	0.4457	-0.5809	0.4691	-0.5728
43	0.221	0.882	-0.0614	-0.4903	-0.0271	-0.5031	0.0496	-0.5166	0.1397	-0.5493	0.2298	-0.5710	0.3268	-0.5547	0.4068	-0.5660	0.4283	-0.5646
44	0.221	0.942	-0.0965	-0.4416	-0.0736	-0.4976	-0.0095	-0.5119	0.0618	-0.5475	0.1329	-0.5665	0.2071	-0.5493	0.2749	-0.5646	0.2473	-0.5574
45	0.133	0.000	-1.0114	-0.5505	-1.0167	-0.5521	-0.7421	-0.5431	-0.0011	-0.5532	-0.3797	-0.5692	-0.1333	-0.5467	0.0752	-0.5537	0.1382	-0.5507
46	0.133	0.354	-0.9889	-0.5365	-0.9740	-0.5426	-0.7818	-0.5403	-0.5663	-0.5528	-0.3551	-0.5735	-0.1245	-0.5500	0.0838	-0.5549	0.1524	-0.5463
47	0.133	0.589	-0.9960	-0.5156	-0.9506	-0.5311	-0.7227	-0.5401	-0.5169	-0.5606	-0.2981	-0.5853	-0.0866	-0.5586	0.1120	-0.5705	0.1752	-0.5626
48	0.133	0.707	-1.0231	-0.5097	-0.9507	-0.5230	-0.7215	-0.5358	-0.4956	-0.5630	-0.2832	-0.5857	-0.0671	-0.5633	0.1298	-0.5752	0.1911	-0.5684
49	0.133	0.942																
50	0.088	0.000	-0.9862	-0.5622	-0.9646	-0.5605	-0.7528	-0.5493	-0.0761	-0.5463	0.0353	-0.5604	0.1262	-0.5463	0.2333	-0.5634	0.2563	-0.5538
51	0.088	0.354	-0.9721	-0.5366	-0.9512	-0.5375	-0.6678	-0.5322	-0.0620	-0.5367	0.0376	-0.5524	0.1275	-0.5406	0.2336	-0.5568	0.2613	-0.5537
52	0.088	0.589	-1.0167	-0.4884	-0.9466	-0.4988	-0.5196	-0.5146	-0.0261	-0.5351	0.0402	-0.5534	0.1386	-0.5427	0.2409	-0.5589	0.2655	-0.5537
53	0.088	0.707	-0.9311	-0.4479	-0.7457	-0.5007	-0.2014	-0.5178	-0.0104	-0.5463	0.0611	-0.5637	0.1459	-0.5495	0.2461	-0.5692	0.2745	-0.5662
54	0.044	0.000	-0.4503	-0.5665	-0.9391	-0.5670	-0.1865	-0.5576	-0.1572	-0.5529	-0.0929	-0.5544	-0.0073	-0.5382	0.0760	-0.5569	0.1079	-0.5442
55	0.044	0.354	-0.9152	-0.5271	-0.9177	-0.5235	-0.1880	-0.5216	-0.1513	-0.5307	-0.0877	-0.5464	-0.0076	-0.5380	0.0785	-0.5492	0.1076	-0.5486
56	0.044	0.589	-0.6588	-0.4740	-0.4633	-0.4478	-0.1618	-0.5028	-0.1420	-0.5297	-0.0820	-0.5442	-0.0050	-0.5420	0.0811	-0.5560	0.1072	-0.5508
57	0.044	0.707	-0.2750	-0.4485	-0.2017	-0.4738	-0.1419	-0.4916	-0.1410	-0.5263	-0.0784	-0.5420	0.0017	-0.5400	0.0845	-0.5476	0.1086	-0.5501
58	0.044	0.823	-0.2840	-0.4724	-0.2435	-0.4744	-0.2273	-0.4884	-0.1618	-0.5259	-0.0919	-0.5510	-0.0160	-0.5427	0.0698	-0.5478	0.0949	-0.5561
59	0.412	0.059	0.3270	-0.5133	0.3884	-0.5293	0.4978	-0.5345	0.6017	-0.5525	0.7083	-0.5755	0.6019	-0.5650	0.8995	-0.5723	0.9195	-0.5821
60	0.221	0.118	0.3235	-0.5197	0.3833	-0.5274	0.4904	-0.5339	0.5940	-0.5536	0.6999	-0.5745	0.7924	-0.5639	0.8905	-0.5727	0.9110	-0.5808
61	0.309	0.059	0.1903	-0.5376	0.2651	-0.5333	0.3473	-0.5321	0.4496	-0.5487	0.5592	-0.5747	0.6653	-0.5639	0.7704	-0.5710	0.7942	-0.5731
62	0.309	0.118	0.1927	-0.5124	0.2438	-0.5153	0.3438	-0.5169	0.4450	-0.5321	0.5533	-0.5598	0.6598	-0.5524	0.7657	-0.5603	0.7893	-0.5629
63	0.309	0.236	0.1967	-0.5236	0.2465	-0.5272	0.3511	-0.5267	0.4567	-0.5410	0.5426	-0.5680	0.6674	-0.5570	0.7736	-0.5546	0.7954	-0.5627
64	0.221	0.059	-0.0003	-0.5365	0.0418	-0.5347	0.1265	-0.5330	0.2192	-0.5504	0.3325	-0.5735	0.4486	-0.5579	0.5698	-0.5687	0.5985	-0.5639
65	0.221	0.118	0.0009	-0.5464	0.0351	-0.5460	0.1103	-0.5465	0.1950	-0.5587	0.3015	-0.5867	0.4110	-0.5650	0.5259	-0.5761	0.5542	-0.5748
66	0.221	0.236	0.0002	-0.5478	0.0415	-0.5463	0.1266	-0.5465	0.2201	-0.5670	0.3341	-0.5876	0.4482	-0.5666	0.5708	-0.5803	0.5493	-0.5765
67	0.133	0.118	-0.9961	-0.5528	-0.9923	-0.5506	-0.7883	-0.5432	-0.5986	-0.5569	-0.3931	-0.5673	-0.1368	-0.5485	0.0754	-0.5654	0.1386	-0.5541
68	0.133	0.236	-0.9967	-0.5464	-0.9856	-0.5489	-0.7911	-0.5437	-0.5927	-0.5542	-0.3789	-0.5683	-0.1337	-0.5511	0.0786	-0.5683	0.1420	-0.5580
69	0.066	0.236	-0.9136	-0.5475	-0.9274	-0.5450	-0.1825	-0.5370	-0.1403	-0.5446	-0.0832	-0.5498	-0.0013	-0.5339	0.0851	-0.5464	0.1129	-0.5380
70	0.133	0.000																

Table A-8.- (Continued).
M = 0.9

TUBE	X/L	Y/R/2	ALPHA = -3.0 WINDWARD	-2.9 LEEWARD	-0.1 WINDWARD	0.0 LEEWARD	4.9 WINDWARD	5.0 LEEWARD	9.9 WINDWARD	10.0 LEEWARD	14.8 WINDWARD	14.9 LEEWARD	19.8 WINDWARD	19.9 LEEWARD	24.8 WINDWARD	24.9 LEEWARD	26.2 WINDWARD	26.3 LEEWARD
1	0.947	0.000	0.2966	0.5362	0.4144	0.4192	0.6032	0.2089	0.7753	-0.0712	0.9113	-0.3711	1.0196	-0.5323	1.1036	-0.5536	1.1251	-0.5677
2	0.896	0.000	0.2908	0.4065	0.3006	0.3049	0.4483	0.1296	0.6322	-0.0896	0.7711	-0.3191	0.8904	-0.5002	0.9418	-0.5341	1.0163	-0.5534
3	0.841	0.000	0.1027	0.2776	0.1839	0.1982	0.3334	0.0459	0.4916	-0.1198	0.6359	-0.2556	0.7648	-0.4433	0.8799	-0.5067	0.9090	-0.5222
4	0.751	0.000	-0.4746	-0.1756	-0.3527	-0.3466	-0.0738	-0.5418	0.1516	-0.6585	0.3609	-0.6850	0.5037	-0.4950	0.6455	-0.5236	0.6846	-0.5295
5	0.813	0.055	0.0358	0.1944	0.1074	0.1105	0.2496	-0.0113	0.4128	-0.1416	0.5425	-0.2186	0.6981	-0.3622	0.8185	-0.5397	0.8509	-0.5381
6	0.858	0.088	0.1367	0.3328	0.2380	0.2341	0.3945	0.0760	0.5545	-0.0746	0.6961	-0.2726	0.8169	-0.6727	0.9212	-0.5929	0.9489	-0.5819
7	0.887	0.120	0.2206	0.4637	0.3345	0.3417	0.5320	0.1083	0.6942	-0.5561	0.8263	-1.0248	0.9283	-1.0155	1.0099	-0.5978	1.0325	-0.5942
8	0.663	0.000	-0.3989	-0.0812	-0.2466	-0.2362	-0.0032	-0.4839	0.1704	-0.6580	0.3252	-0.5208	0.4634	-0.4766	0.5871	-0.5306	0.6258	-0.5429
9	0.663	0.126	-0.4683	-0.1046	-0.2483	-0.2718	0.0016	-0.5785	0.1776	-0.8295	0.3192	-0.5346	0.4540	-0.5146	0.5822	-0.5577	0.6206	-0.5605
10	0.663	0.210	-0.8304	-0.3870	-0.6128	-0.6077	-0.2599	-0.9181	-0.0074	-0.9910	0.2166	-0.6200	0.4126	-0.6526	0.5614	-0.5584	0.6039	-0.5608
11	0.690	0.302	-0.1315	0.0560	-0.0499	-0.0449	0.1252	-0.1893	0.3009	-0.3788	0.4557	-0.4491	0.5958	-0.6687	0.7118	-0.5638	0.7472	-0.5676
12	0.727	0.334	0.0078	0.2318	0.1081	0.1135	0.3006	-0.0561	0.4688	-0.6129	0.6082	-0.6646	0.7291	-0.6751	0.8245	-0.5714	0.8534	-0.5741
13	0.763	0.367	0.1232	0.3913	0.2408	0.2478	0.4694	-0.0326	0.6316	-0.8020	0.7570	-0.4386	0.8466	-0.6610	0.9196	-0.5567	0.9417	-0.5677
14	0.538	0.000	-0.3585	-0.0917	-0.2176	-0.2054	-0.0211	-0.4477	0.1194	-0.6511	0.2496	-0.3463	0.3670	-0.4496	0.4770	-0.5347	0.5149	-0.5569
15	0.538	0.246	-0.3968	-0.0775	-0.1950	-0.1969	-0.0181	-0.5056	0.1192	-0.7286	0.2518	-0.5452	0.3677	-0.6299	0.4806	-0.5571	0.5189	-0.5739
16	0.538	0.410	-0.8442	-0.4742	-0.6493	-0.6955	-0.3288	-0.9554	-0.0280	-0.9640	0.2036	-0.5756	0.3618	-0.6366	0.4813	-0.5537	0.5221	-0.5695
17	0.538	0.492	-0.9968	-0.4898	-0.7062	-0.7121	-0.3592	-1.0253	-0.0990	-0.9643	0.1104	-0.5870	0.2966	-0.6416	0.4436	-0.5602	0.4888	-0.5770
18	0.557	0.567	-0.2017	-0.0056	-0.1120	-0.1073	0.0633	-0.2582	0.2256	-0.6436	0.3722	-0.5877	0.5023	-0.6351	0.6135	-0.5601	0.6501	-0.5771
19	0.596	0.600	-0.0591	0.1790	0.0488	0.0576	0.2533	-0.1239	0.4143	-0.7473	0.5416	-0.5795	0.6463	-0.6281	0.7396	-0.5479	0.7687	-0.5666
20	0.631	0.632	0.0596	0.3367	0.1706	0.1912	0.4178	-0.2393	0.5783	-0.9796	0.6868	-0.5671	0.7676	-0.6175	0.8375	-0.5480	0.8559	-0.5651
21	0.466	0.753	-0.2756	-0.1806	-0.1927	-0.1906	-0.0440	-0.3320	0.0431	-0.7118	0.2251	-0.5532	0.3441	-0.5038	0.4571	-0.5455	0.4900	-0.5571
22	0.501	0.786	-0.1376	0.0900	-0.0274	-0.0207	0.1566	-0.2206	0.2940	-0.7256	0.4099	-0.5377	0.5089	-0.5970	0.5979	-0.5410	0.6241	-0.5498
23	0.537	0.819	-0.0411	0.2547	0.0966	0.1066	0.3357	-0.1834	0.4800	-1.0629	0.5796	-0.5396	0.6553	-0.6045	0.7196	-0.5461	0.7362	-0.5564
24	0.412	0.000	-0.3552	-0.1955	-0.2212	-0.2079	-0.0514	-0.4428	0.0626	-0.6400	0.1495	-0.4519	0.2732	-0.5247	0.3727	-0.5601	0.4030	-0.5741
25	0.412	0.354	-0.3885	-0.1213	-0.2400	-0.2206	-0.0643	-0.4857	0.0545	-0.7421	0.1490	-0.5918	0.2766	-0.6375	0.3786	-0.5708	0.4112	-0.5801
26	0.412	0.589	-0.8900	-0.2156	-0.7016	-0.6927	-0.1282	-0.9948	0.0246	-1.0003	0.1223	-0.5659	0.2362	-0.6192	0.3529	-0.5614	0.3877	-0.5709
27	0.412	0.707	-1.0551	-0.5984	-0.6851	-0.6989	-0.5581	-1.0819	-0.3055	-0.9701	-0.0499	-0.5382	0.1328	-0.6055	0.2768	-0.5530	0.3156	-0.5594
28	0.412	0.823	-1.0476	-0.5796	-0.6658	-0.6687	-0.5201	-1.0808	-0.4896	-0.9864	-0.2709	-0.5146	-0.1621	-0.5912	-0.0167	-0.5439	0.0235	-0.5475
29	0.412	0.882	-0.8606	-0.5816	-0.6756	-0.6549	-0.5438	-0.8491	-0.5045	-0.9608	-0.2982	-0.5150	-0.1210	-0.5950	0.0158	-0.5461	0.0567	-0.5487
30	0.412	0.942	-0.4993	-0.4590	-0.4518	-0.4069	-0.5224	-0.5056	-0.3667	-0.9035	-0.0342	-0.5117	0.0611	-0.5921	0.1289	-0.5458	0.1537	-0.5430
31	0.300	0.000	-0.3466	-0.1256	-0.2406	-0.2125	-0.0823	-0.4439	0.0047	-0.5119	0.0893	-0.4753	0.1786	-0.5393	0.2598	-0.5616	0.2916	-0.5707
32	0.300	0.354	-0.4060	-0.1441	-0.2780	-0.2476	-0.1000	-0.4868	-0.0098	-0.6148	0.0804	-0.5806	0.1690	-0.6332	0.2539	-0.5730	0.2848	-0.5767
33	0.300	0.589	-0.5085	-0.1786	-0.3376	-0.2851	-0.1273	-0.5668	-0.0466	-0.5361	0.0577	-0.5711	0.1449	-0.6212	0.2332	-0.5646	0.2640	-0.5663
34	0.300	0.707	-0.7163	-0.1935	-0.5796	-0.5049	-0.1366	-0.6987	-0.0467	-0.5679	0.0373	-0.5377	0.1182	-0.6076	0.2007	-0.5636	0.2310	-0.5556
35	0.300	0.823	-0.6828	-0.3782	-0.5793	-0.5279	-0.2657	-0.6604	-0.0559	-0.5987	0.0334	-0.5325	0.0710	-0.6106	0.1382	-0.5620	0.1632	-0.5564
36	0.300	0.882	-0.5952	-0.2566	-0.4120	-0.3540	-0.1526	-0.6191	-0.0525	-0.5579	0.0084	-0.5343	0.0458	-0.6124	0.1108	-0.5643	0.1333	-0.5568
37	0.300	0.942	-0.4955	-0.1921	-0.3497	-0.2797	-0.0980	-0.5507	-0.1232	-0.7049	-0.0405	-0.5297	-0.0140	-0.5991	0.0390	-0.5502	0.0600	-0.5507
38	0.221	0.000	-0.3919	-0.1766	-0.2452	-0.2075	-0.1438	-0.4565	-0.0707	-0.3657	-0.0266	-0.5806	0.0397	-0.5513	0.0964	-0.5782	0.1276	-0.5855
39	0.221	0.354	-0.4226	-0.1757	-0.2328	-0.2067	-0.1479	-0.4444	-0.0865	-0.3639	-0.0309	-0.5653	0.0333	-0.6212	0.0968	-0.5797	0.1230	-0.5803
40	0.221	0.589	-0.3606	-0.1635	-0.1896	-0.1833	-0.1358	-0.3820	-0.0893	-0.4269	-0.0349	-0.5647	0.0240	-0.6207	0.0835	-0.5688	0.1123	-0.5747
41	0.221	0.707	-0.4335	-0.1270	-0.2475	-0.2586	-0.1225	-0.4700	-0.0926	-0.5380	-0.0467	-0.5630	0.0080	-0.6261	0.0618	-0.5708	0.0691	-0.5782
42	0.221	0.823	-0.3995	-0.1341	-0.2750	-0.2379	-0.0916	-0.4879	-0.0998	-0.4917	-0.0775	-0.5560	-0.0350	-0.6243	0.0096	-0.5678	0.0319	-0.5747
43	0.221	0.882	-0.4583	-0.0961	-0.1721	-0.1619	-0.0788	-0.5354	-0.1081	-0.5131	-0.0944	-0.5426	-0.0557	-0.6105	-0.0134	-0.5520	0.0062	-0.5666
44	0.221	0.942	-0.5062	-0.1003	-0.1458	-0.1483	-0.0442	-0.6056	-0.1324	-0.6942	-0.1332	-0.5313	-0.1134	-0.6012	-0.0746	-0.5445	-0.0553	-0.5616
45	0.133	0.000	-0.2955	-0.3578	-0.3817	-0.3688	-0.3570	-0.2900	-0.3514	-0.4718	-0.6066	-0.7572	-0.6550	-0.5882	-0.7315	-0.5901	-0.7323	-0.6041
46	0.133	0.354	-0.3357	-0.3442	-0.3602	-0.3790	-0.2995	-0.3166	-0.2824	-0.4896	-0.7509	-0.5348	-0.6882	-0.6045	-0.7477	-0.5798	-0.7450	-0.5805
47	0.133	0.589	-0.4136	-0.3865	-0.4226	-0.4659	-0.3142	-0.3044	-0.2820	-0.3636	-0.8410	-0.5501	-0.7210	-0.6098	-0.7560	-0.5767	-0.7494	-0.5796
48	0.133	0.707	-0.3440	-0.4113	-0.3606	-0.4026	-0.3502	-0.3111	-0.2858	-0.3942	-0.8874	-0.5592	-0.7413	-0.6214	-0.7716	-0.5810	-0.7755	-0.5765
49	0.133	0.942																
50	0.088	0.000	-0.2595	-0.3291	-0.3125	-0.3346	-0.2401	-0.2556	-0.2687	-0.3778	-0.4864	-0.5775	-0.6716	-0.5751	-0.7190	-0.5968	-0.7057	-0.5971
51	0.088	0.354	-0.2788	-0.2711	-0.2786	-0.2909	-0.2381	-0.2510	-0.2178	-0.3265	-0.4208	-0.5247	-0.6472	-0.5974	-0.7390	-0.5837	-0.7283	-0.5820
52	0.088	0.589	-0.2757	-0.2703	-0.3306	-0.3308	-0.2352	-0.2379	-0.2086	-0.3558	-0.5836	-0.5206	-0.7262	-0.5813	-0.7456	-0.5572	-0.7290	-0.5654
53	0.088	0.707	-0.2510	-0.3236	-0.2190	-0.2326	-0.2575	-0.2807	-0.2120	-0.3829	-0.6792	-0.5419	-0.7373	-0.6045	-0.7540	-0.5620	-0.7384	-0.5693
54	0.066	0.000	-0.2495	-0.2888	-0.2661	-0.2977	-0.2484	-0.2467	-0.2274	-0.35?7	-0.3417	-0.4993	-0.5716	-0.5897	-0.7211	-0.5495	-0.7141	-0.6087
55	0.066	0.354	-0.2506	-0.2360	-0.2365	-0.2491	-0.2038	-0.2143	-0.1856	-0.2689	-0.3315	-0.5022	-0.6286	-0.5787	-0.7005	-0.5719	-0.6826	-0.5772
56	0.066	0.589	-0.2353	-0.2342	-0.2776	-0.2626	-0.2112	-0.2142	-0.1439	-0.3466	-0.4126	-0.4925	-0.7013	-0.5780	-0.7306	-0.5591	-0.7114	-0.5686
57	0.066	0.707	-0.1979	-0.2530	-0.1378	-0.1422	-0.2077	-0.2506	-0.1860	-0.3575	-0.4375	-0.5055	-0.7035	-0.5856	-0.7168	-0.5513	-0.6853	-0.5571
58	0.066	0.923	-0.2285	-0.1692	-0.1963	-0.2089	-0.1720	-0.2770	-0.1655	-0.3558	-0.5518	-0.5286	-0.6086	-0.5912	-0.5676	-0.5462	-0.5355	-0.5492
59	0.412	0.059	-0.3519	-0.1129	-0.2236	-0.2161	-0.0512	-0.4427	0.0667	-0.6243	0.1635	-0.4576	0.2636	-0.5286	0.3620	-0.5591	0.3990	-0.5717
60	0.221	0.118	-0.3298	-0.0972	-0.1966	-0.1965	-0.0366	-0.4332	0.0770	-0.5815	0.1777	-0.4559	0.2491	-0.5336	0.3657	-0.5690	0.4036	-0.5789
61	0.300	0.059	-0.3666	-0.1318	-0.2400	-0.2255	-0.0866	-0.4465	0.0058	-0.4671	0.0866	-0.4741	0.1665	-0.5370	0.2469	-0.5667	0.2810	-0.5760
62	0.300	0.118	-0.3729	-0.1321	-0.2469	-0.2306	-0.0902	-0.4535	0.0029	-0.4330	0.0851	-0.4736	0.1694	-0.5327	0.2539	-0.5666	0.2865	-0.5795
63	0.309	0.236	-0.3833	-0.1353	-0.2540	-0.2410	-0.0928	-0.4625	0.0023	-0.3839	0.0827	-0.4921	0.1685	-0.5360	0.2536	-0.5710	0.2860	-0.5797
64	0.221	0.059	-0.3913	-0.1692	-0.2336	-0.2286	-0.1366	-0.4607	-0.0761	-0.4000	-0.0182	-0.4720	0.0401	-0.5425	0.1021	-0.5717	0.1313	-0.5817
65	0.221	0.118	-0.4096	-0.1816	-0.2368	-0.2309	-0.1488	-0.4796	-0.0856	-0.4097	-0.0279	-0.4898	0.0351	-0.5538	0.0979	-0.5791	0.1262	-0.5918
66	0.221	0.236	-0.4143	-0.1757	-0.2201	-0.2175	-0.1649	-0.4747	-0.0646	-0.4013	-0.0223	-0.4993	0.0359	-0.5605	0.0991	-0.5810	0.1269	-0.5926
67	0.133	0.118	-0.3047	-0.3686	-0.3601	-0.3733	-0.3432	-0.3069	-0.3377	-0.4735	-0.6866	-0.5602	-0.6806	-0.5669	-0.7098	-0.5860	-0.7105	-0.5942
68	0.133	0.236	-0.3113	-0.3396	-0.3297	-0.3341	-0.3166	-0.3070	-0.3142	-0.5205	-0.6835	-0.4862	-0.7511	-0.5566	-0.7288	-0.5736	-0.7286	-0.5825
69	0.044	0.236	-0.2438	-0.2516	-0.2425	-0.2555	-0.2278	-0.2359	-0.2109	-0.3627	-0.2966	-0.4906	-0.5557	-0.5650	-0.6948	-0.5826	-0.6951	-0.5867
70	0.133	0.000																

Table A-8.- (Continued).
M = 0.9

			ALPHA =													
NUM	X/L	Y/R/2	27.0 WINDWARD	27.1 LEEWARD	29.6 WINDWARD	29.8 LEEWARD	34.6 WINDWARD	34.8 LEEWARD	39.6 WINDWARD	39.6 LEEWARD	44.7 WINDWARD	44.8 LEEWARD	49.7 WINDWARD	49.7 LEEWARD	54.6 WINDWARD	54.7 LEEWARD	56.2 WINDWARD	56.2 LEEWARD
1	0.967	0.000	1.1380	-0.5519	1.1700	-0.5443	1.2057	-0.4926	1.2176	-0.4563	1.2059	-0.4788	1.1805	-0.5109	1.1275	-0.5386	1.1062	-0.5523
2	0.894	0.000	1.0335	-0.5430	1.0612	-0.5546	1.1438	-0.5146	1.1876	-0.4792	1.2088	-0.5036	1.2162	-0.5337	1.1998	-0.5606	1.1884	-0.5776
3	0.841	0.000	0.9279	-0.5103	0.9837	-0.5362	1.0653	-0.5097	1.1313	-0.4776	1.1773	-0.5041	1.2082	-0.5340	1.2134	-0.5576	1.2108	-0.5763
4	0.751	0.000	0.7895	-0.5056	0.7819	-0.5295	0.8944	-0.5133	0.9960	-0.4785	1.0498	-0.5059	1.1407	-0.5396	1.1835	-0.5595	1.1937	-0.5793
5	0.813	0.055	0.8722	-0.5229	0.9304	-0.5406	1.0202	-0.5094	1.0462	-0.4757	1.1428	-0.4991	1.1870	-0.5269	1.2015	-0.5533	1.2042	-0.5701
6	0.850	0.088	0.9405	-0.5508	1.0090	-0.5540	1.0788	-0.5200	1.1329	-0.4861	1.1400	-0.5069	1.1843	-0.5364	1.1822	-0.5661	1.1795	-0.5839
7	0.887	0.120	1.0382	-0.5578	1.0704	-0.5512	1.1104	-0.5166	1.1367	-0.4779	1.1329	-0.5015	1.1331	-0.5371	1.0987	-0.5618	1.0868	-0.5774
8	0.663	0.000	0.6463	-0.5205	0.7139	-0.5436	0.8171	-0.5269	0.9189	-0.4995	0.9079	-0.5237	1.0828	-0.5533	1.1362	-0.5738	1.1536	-0.5892
9	0.663	0.126	0.6632	-0.5286	0.7114	-0.5475	0.8169	-0.5204	0.9194	-0.4920	0.9989	-0.5155	1.0824	-0.5456	1.1326	-0.5667	1.1511	-0.5837
10	0.663	0.210	0.6299	-0.5322	0.7016	-0.5466	0.8130	-0.5216	0.9160	-0.4953	0.9988	-0.5151	1.0796	-0.5456	1.1330	-0.5698	1.1496	-0.5885
11	0.698	0.302	0.7468	-0.5393	0.8225	-0.5553	0.9113	-0.5331	0.9926	-0.5039	1.0474	-0.5236	1.1040	-0.5486	1.1308	-0.5789	1.1401	-0.5953
12	0.727	0.334	0.8638	-0.5413	0.9082	-0.5569	0.9746	-0.5314	1.0331	-0.5052	1.0846	-0.5240	1.0985	-0.5502	1.1056	-0.5803	1.1101	-0.5988
13	0.763	0.367	0.9414	-0.5403	0.9714	-0.5466	1.0064	-0.5235	1.0301	-0.4978	1.0348	-0.5102	1.0377	-0.5424	1.0163	-0.5682	1.0088	-0.5867
14	0.530	0.000	0.5313	-0.5338	0.5960	-0.5506	0.6946	-0.5383	0.7456	-0.5198	0.8848	-0.5374	0.9792	-0.5556	1.0490	-0.5796	1.0719	-0.5979
15	0.530	0.246	0.5357	-0.5400	0.5494	-0.5470	0.6988	-0.5340	0.7985	-0.5162	0.8868	-0.5263	0.9787	-0.5512	1.0468	-0.5736	1.0679	-0.5918
16	0.530	0.410	0.5795	-0.5347	0.6052	-0.5469	0.7071	-0.5400	0.8048	-0.5149	0.8925	-0.5266	0.9807	-0.5477	1.0414	-0.5727	1.0618	-0.5926
17	0.530	0.492	0.5107	-0.5468	0.5452	-0.5576	0.6964	-0.5522	0.8052	-0.5245	0.8918	-0.5364	0.9789	-0.5531	1.0347	-0.5842	1.0556	-0.6011
18	0.557	0.567	0.6415	-0.5419	0.7183	-0.5563	0.8026	-0.5505	0.8868	-0.5243	0.9448	-0.5323	1.0955	-0.5532	1.0368	-0.5850	1.0508	-0.6006
19	0.594	0.600	0.7742	-0.5310	0.8186	-0.5477	0.8806	-0.5396	0.9363	-0.5130	0.9704	-0.5206	1.0108	-0.5465	1.0199	-0.5734	1.0234	-0.5885
20	0.631	0.632	0.8534	-0.5280	0.8417	-0.5449	0.9130	-0.5383	0.9371	-0.5117	0.9407	-0.5204	0.9517	-0.5441	0.9359	-0.5698	0.9320	-0.5863
21	0.464	0.753	0.5024	-0.5200	0.5693	-0.5356	0.6459	-0.5340	0.7308	-0.5110	0.7459	-0.5223	0.8860	-0.5432	0.9086	-0.5707	0.9234	-0.5880
22	0.501	0.786	0.6307	-0.5150	0.6726	-0.5312	0.7364	-0.5269	0.7471	-0.5011	0.8368	-0.5157	0.8847	-0.5419	0.9035	-0.5664	0.9141	-0.5885
23	0.537	0.819	0.7372	-0.5235	0.7627	-0.5385	0.7453	-0.5331	0.8269	-0.5068	0.8347	-0.5247	0.8520	-0.5444	0.8401	-0.5748	0.8454	-0.5941
24	0.412	0.000	0.4192	-0.5495	0.4753	-0.5704	0.5675	-0.5576	0.6680	-0.5308	0.7575	-0.5496	0.8626	-0.5556	0.9388	-0.5927	0.9708	-0.6143
25	0.412	0.354	0.4268	-0.5450	0.4530	-0.5593	0.5784	-0.5500	0.6750	-0.5247	0.7668	-0.5342	0.8665	-0.5636	0.9381	-0.5861	0.9659	-0.6043
26	0.412	0.589	0.4026	-0.5361	0.4624	-0.5495	0.5616	-0.5442	0.6613	-0.5256	0.7534	-0.5375	0.8511	-0.5614	0.9159	-0.5867	0.9438	-0.6008
27	0.412	0.707	0.3352	-0.5251	0.4036	-0.5396	0.5112	-0.5363	0.6175	-0.5174	0.7128	-0.5248	0.8098	-0.5529	0.8717	-0.5782	0.8976	-0.5935
28	0.412	0.823	0.0394	-0.5213	0.1144	-0.5284	0.2394	-0.5263	0.3620	-0.5045	0.4723	-0.5254	0.5850	-0.5459	0.6628	-0.5761	0.6879	-0.5931
29	0.412	0.882	0.0724	-0.5256	0.1528	-0.5296	0.2896	-0.5236	0.4170	-0.5021	0.5018	-0.5265	0.5954	-0.5473	0.6409	-0.5842	0.6614	-0.6000
30	0.412	0.942	0.1649	-0.5212	0.2104	-0.5241	0.2793	-0.5130	0.3502	-0.4951	0.4125	-0.5193	0.4602	-0.5443	0.5220	-0.5839	0.5390	-0.6000
31	0.309	0.000	0.3071	-0.5502	0.3583	-0.5597	0.4420	-0.5621	0.5332	-0.5381	0.6263	-0.5433	0.7364	-0.5610	0.8211	-0.5943	0.8526	-0.6049
32	0.309	0.354	0.2983	-0.5459	0.3507	-0.5620	0.4369	-0.5646	0.5275	-0.5407	0.6198	-0.5433	0.7317	-0.5619	0.8158	-0.5951	0.8468	-0.6066
33	0.309	0.589	0.2767	-0.5331	0.3299	-0.5492	0.4169	-0.5532	0.5113	-0.5329	0.6035	-0.5355	0.7125	-0.5540	0.7920	-0.5890	0.8227	-0.6010
34	0.309	0.707	0.2433	-0.5294	0.2938	-0.5409	0.3749	-0.5400	0.4701	-0.5242	0.5827	-0.5368	0.6084	-0.5551	0.7479	-0.5893	0.7781	-0.6082
35	0.309	0.823	0.1751	-0.5317	0.2161	-0.5414	0.2884	-0.5356	0.3700	-0.5215	0.4523	-0.5376	0.5451	-0.5543	0.6143	-0.5984	0.6420	-0.6135
36	0.309	0.882	0.1644	-0.5271	0.1833	-0.5393	0.2497	-0.5265	0.3272	-0.5159	0.4053	-0.5323	0.4937	-0.5544	0.5588	-0.5963	0.5841	-0.6143
37	0.309	0.942	0.0742	-0.5200	0.1041	-0.5244	0.1640	-0.5137	0.2308	-0.5013	0.2929	-0.5177	0.3770	-0.5459	0.4317	-0.5821	0.4529	-0.6002
38	0.221	0.000	0.1393	-0.5603	0.1747	-0.5735	0.2443	-0.5653	0.3197	-0.5523	0.4060	-0.5582	0.5304	-0.5671	0.6302	-0.5974	0.6681	-0.6072
39	0.221	0.354	0.1335	-0.5446	0.1713	-0.5617	0.2407	-0.5617	0.3175	-0.5479	0.4028	-0.5532	0.5273	-0.5644	0.6273	-0.5947	0.6641	-0.6067
40	0.221	0.589	0.1223	-0.5403	0.1574	-0.5494	0.2265	-0.5508	0.3095	-0.5381	0.3977	-0.5477	0.5204	-0.5537	0.6205	-0.5944	0.6533	-0.6058
41	0.221	0.707	0.0994	-0.5463	0.1317	-0.5561	0.1478	-0.5545	0.2836	-0.5409	0.3763	-0.5533	0.4954	-0.5655	0.5925	-0.6040	0.6249	-0.6135
42	0.221	0.823	0.0387	-0.5401	0.0653	-0.5454	0.1243	-0.5394	0.2138	-0.5279	0.3063	-0.5412	0.4190	-0.5532	0.5048	-0.6033	0.5331	-0.6113
43	0.221	0.882	0.0178	-0.5299	0.0456	-0.5339	0.1028	-0.5253	0.1958	-0.5118	0.2829	-0.5264	0.3849	-0.5517	0.4682	-0.5879	0.4940	-0.5943
44	0.221	0.942	-0.0394	-0.5228	-0.0182	-0.5249	0.0259	-0.5178	0.1169	-0.5065	0.1883	-0.5208	0.2418	-0.5458	0.3499	-0.5630	0.3713	-0.5898
45	0.133	0.000	-0.7423	-0.5720	-0.7462	-0.5753	-0.7298	-0.5497	-0.4925	-0.5505	-0.2841	-0.5549	-0.0358	-0.5595	0.1604	-0.5850	0.2256	-0.5877
46	0.133	0.354	-0.7380	-0.5600	-0.7366	-0.5637	-0.7251	-0.5701	-0.4834	-0.5531	-0.2491	-0.5453	-0.0283	-0.5503	0.1662	-0.5836	0.2301	-0.5983
47	0.133	0.589	-0.7428	-0.5463	-0.7327	-0.5611	-0.6710	-0.5695	-0.4375	-0.5521	-0.2228	-0.5510	0.0001	-0.5613	0.1858	-0.5935	0.2491	-0.6070
48	0.133	0.707	-0.7611	-0.5431	-0.7517	-0.5536	-0.6865	-0.5564	-0.4396	-0.5428	-0.2102	-0.5429	0.0167	-0.5591	0.2038	-0.5945	0.2633	-0.6113
49	0.133	0.942																
50	0.088	0.000	-0.7114	-0.5736	-0.6907	-0.5820	-0.6321	-0.5765	-0.4605	-0.5662	0.1606	-0.5565	0.2541	-0.5671	0.3358	-0.5842	0.3660	-0.5950
51	0.088	0.356	-0.7165	-0.5537	-0.6926	-0.5562	-0.6328	-0.5697	-0.4026	-0.5583	0.1576	-0.5492	0.2506	-0.5564	0.3295	-0.5764	0.3609	-0.5889
52	0.088	0.589	-0.7166	-0.5340	-0.6926	-0.5506	-0.6420	-0.5531	-0.3000	-0.5352	0.1706	-0.5403	0.2561	-0.5496	0.3358	-0.5715	0.3608	-0.5943
53	0.088	0.707	-0.7269	-0.5375	-0.7632	-0.5512	-0.6165	-0.5510	-0.0018	-0.5309	0.1630	-0.5399	0.2551	-0.5514	0.3343	-0.5801	0.3644	-0.6047
54	0.044	0.000	-0.7162	-0.5803	-0.6886	-0.5933	-0.5970	-0.5869	0.0301	-0.5737	0.0283	-0.5737	0.1174	-0.5727	0.1919	-0.5886	0.2212	-0.6006
55	0.044	0.356	-0.6802	-0.5526	-0.6681	-0.5674	-0.5703	-0.5673	0.0157	-0.5504	0.0292	-0.5526	0.1164	-0.5564	0.1906	-0.5734	0.2169	-0.5856
56	0.044	0.589	-0.6846	-0.5309	-0.6774	-0.5563	-0.6136	-0.5537	0.0222	-0.5343	0.0316	-0.5381	0.1160	-0.5481	0.1909	-0.5715	0.2149	-0.5852
57	0.044	0.707	-0.6505	-0.5160	-0.5944	-0.5419	-0.1899	-0.5317	-0.0053	-0.5133	0.0262	-0.5212	0.1168	-0.5380	0.1488	-0.5662	0.2139	-0.5820
58	0.044	0.923	-0.5163	-0.5122	-0.4363	-0.5318	-0.1885	-0.5195	-0.0593	-0.4918	-0.0016	-0.5114	0.0420	-0.5321	0.1685	-0.5687	0.1920	-0.5839
59	0.412	0.059	0.4221	-0.5428	0.4680	-0.5663	0.5692	-0.5539	0.6689	-0.5306	0.7563	-0.5516	0.8614	-0.5518	0.9468	-0.5946	0.9713	-0.6070
60	0.221	0.118	0.4186	-0.5460	0.4666	-0.5675	0.5565	-0.5566	0.6621	-0.5350	0.7486	-0.5536	0.8532	-0.5638	0.9388	-0.5980	0.9631	-0.6107
61	0.309	0.059	0.3068	-0.5502	0.3466	-0.5645	0.4356	-0.5563	0.5314	-0.4387	0.6190	-0.5520	0.7317	-0.5622	0.8240	-0.5954	0.8697	-0.6037
62	0.309	0.118	0.3059	-0.5476	0.3466	-0.5649	0.4344	-0.5554	0.5257	-0.5413	0.6137	-0.5516	0.7258	-0.5625	0.8175	-0.5934	0.8433	-0.6019
63	0.309	0.236	0.3077	-0.5429	0.3503	-0.5583	0.4410	-0.5504	0.5335	-0.5398	0.6222	-0.5526	0.7335	-0.5569	0.8256	-0.5878	0.8514	-0.5964
64	0.221	0.059	0.1463	-0.5569	0.1771	-0.5694	0.2687	-0.5645	0.3276	-0.5433	0.4095	-0.5517	0.5297	-0.5614	0.6370	-0.5921	0.6697	-0.6001
65	0.221	0.118	0.1405	-0.5667	0.1645	-0.5786	0.2260	-0.5759	0.2995	-0.5550	0.3730	-0.5650	0.4888	-0.5648	0.5878	-0.6022	0.6208	-0.6088
66	0.221	0.236	0.1450	-0.5667	0.1745	-0.5775	0.2468	-0.5781	0.3272	-0.5636	0.4095	-0.5689	0.5279	-0.5715	0.6360	-0.6045	0.6701	-0.6119
67	0.133	0.118	-0.7409	-0.5776	-0.7486	-0.5841	-0.7231	-0.5776	-0.4862	-0.5615	-0.2807	-0.5630	-0.0427	-0.5657	0.1583	-0.5937	0.2181	-0.6008
68	0.133	0.236	-0.7605	-0.5672	-0.7606	-0.5775	-0.7374	-0.5788	-0.4914	-0.5662	-0.2788	-0.5451	-0.0395	-0.5462	0.1626	-0.5916	0.2249	-0.5973
69	0.044	0.236	-0.6957	-0.5652	-0.6782	-0.5748	-0.5742	-0.5770	0.0238	-0.5669	0.0391	-0.5624	0.1201	-0.5588	0.1993	-0.5810	0.2274	-0.5869
70	0.133	0.000																

Table A-8.- (Continued).
M = 1.2

			ALPHA =															
			-3.0	-2.9	-0.1	0.0	4.9	5.0	9.8	9.9	15.0	15.0	19.7	19.9	24.7	24.9	26.2	26.3
TUBE	X/L	Y/R/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.967	0.000	0.4747	0.6974	0.5922	0.5705	0.7440	0.3979	0.9120	0.2198	1.0688	0.0671	1.1050	-0.1227	1.2006	-0.2833	1.2996	-0.3171
2	0.896	0.000	0.4134	0.6026	0.5143	0.4961	0.6396	0.3451	0.7860	0.1777	0.9375	0.0056	1.0634	-0.1563	1.1764	-0.3032	1.2012	-0.3383
3	0.841	0.000	0.3658	0.5154	0.4433	0.4294	0.5435	0.3095	0.6698	0.1516	0.8173	-0.0064	0.9485	-0.1577	1.0734	-0.2922	1.1031	-0.3231
4	0.751	0.000	-0.0981	0.0425	-0.0323	-0.0414	0.0750	-0.1290	0.2420	-0.2230	0.5222	-0.3349	0.6486	-0.4407	0.8587	-0.5340	0.8965	-0.5599
5	0.813	0.055	0.3370	0.4639	0.3477	0.3589	0.4871	0.2896	0.5994	0.1510	0.7485	0.0043	0.8855	-0.1471	1.0176	-0.2515	1.0488	-0.3001
6	0.850	0.088	0.3980	0.5599	0.4736	0.4513	0.5895	0.3251	0.7213	0.1660	0.8686	0.0457	0.9467	-0.1535	1.1113	-0.6404	1.1366	-0.6736
7	0.887	0.120	0.4359	0.6620	0.5469	0.5380	0.6493	0.3646	0.8445	-0.0530	0.9882	-0.5175	1.0987	-0.6830	1.1927	-0.7568	1.2107	-0.6925
8	0.663	0.000	-0.0787	0.0876	-0.0092	-0.0152	0.1296	-0.1332	0.3452	-0.2386	0.5282	-0.3505	0.6759	-0.4647	0.8135	-0.5649	0.8461	-0.5883
9	0.663	0.126	-0.2495	-0.0947	-0.2182	-0.2243	-0.0015	-0.2831	0.3366	-0.3669	0.5291	-0.4505	0.6674	-0.5250	0.8078	-0.6092	0.8406	-0.6715
10	0.663	0.210	-0.3378	-0.1627	-0.2424	-0.2492	-0.1211	-0.4117	0.1525	-0.4532	0.4061	-0.4709	0.6115	-0.6014	0.7861	-0.7510	0.8263	-0.7822
11	0.690	0.302	0.2259	0.3464	0.2802	0.2766	0.3681	0.1838	0.4949	0.0269	0.6551	-0.3516	0.7938	-0.5723	0.9243	-0.7514	0.9563	-0.7254
12	0.727	0.334	0.3223	0.4866	0.3986	0.3945	0.5138	0.2686	0.6456	-0.0643	0.7939	-0.6542	0.9142	-0.7311	1.0248	-0.7806	1.0501	-0.7572
13	0.763	0.367	0.6083	0.6226	0.5060	0.5051	0.6585	0.3620	0.7950	-0.3531	0.9270	-0.6158	1.0270	-0.7731	1.1102	-0.7746	1.1282	-0.7467
14	0.530	0.000	-0.0763	0.0459	-0.0024	0.0009	0.1461	-0.1371	0.3350	-0.2518	0.4772	-0.3714	0.6047	-0.4750	0.7262	-0.5576	0.7564	-0.5620
15	0.530	0.246	-0.1273	0.1273	-0.0274	-0.0561	0.1818	-0.2350	0.3458	-0.3499	0.4826	-0.4655	0.6075	-0.5908	0.7289	-0.7332	0.7600	-0.7570
16	0.530	0.410	-0.3915	-0.1977	-0.2723	-0.2711	-0.1572	-0.4374	0.1288	-0.4615	0.4061	-0.5518	0.5951	-0.7159	0.7286	-0.7720	0.7633	-0.7583
17	0.530	0.492	-0.4157	-0.2210	-0.3401	-0.3395	-0.1641	-0.4317	0.1123	-0.4414	0.3443	-0.6449	0.5307	-0.7423	0.6939	-0.7929	0.7339	-0.7620
18	0.557	0.547	0.1869	0.3102	0.2458	0.2476	0.3347	0.1422	0.4576	-0.0829	0.5986	-0.4556	0.7252	-0.7701	0.8446	-0.8187	0.8760	-0.7672
19	0.594	0.600	0.2892	0.4574	0.3712	0.3733	0.4916	0.2372	0.6197	-0.1502	0.7477	-0.5903	0.8559	-0.8061	0.9524	-0.8076	0.9762	-0.7551
20	0.631	0.632	0.3830	0.5884	0.4720	0.4759	0.6301	0.2748	0.7612	-0.5118	0.8754	-0.7237	0.9651	-0.7991	1.0367	-0.7963	1.0523	-0.7404
21	0.464	0.753	0.1440	0.2581	0.2012	0.2031	0.2860	0.0470	0.3660	-0.0983	0.4966	-0.5310	0.6051	-0.7181	0.7129	-0.7585	0.7406	-0.7186
22	0.501	0.786	0.2432	0.4097	0.3245	0.3326	0.4436	0.1816	0.5539	-0.2974	0.6573	-0.6124	0.7487	-0.7940	0.8345	-0.7433	0.8568	-0.7048
23	0.537	0.819	0.3190	0.5435	0.4314	0.4362	0.5876	0.2527	0.7064	-0.5265	0.8000	-0.7652	0.8739	-0.8397	0.9369	-0.7479	0.9524	-0.7106
24	0.412	0.000	-0.0741	0.0956	0.0082	0.0064	0.1512	-0.1344	0.3032	-0.2608	0.4182	-0.3788	0.5341	-0.4663	0.6418	-0.5597	0.6702	-0.5576
25	0.412	0.354	-0.0865	0.1103	0.0228	0.0265	0.1567	-0.1786	0.3021	-0.3333	0.4193	-0.4989	0.5385	-0.6279	0.6461	-0.7415	0.6751	-0.7236
26	0.412	0.589	-0.4026	-0.2190	-0.2940	-0.2933	-0.1717	-0.4453	0.2693	-0.4957	0.3895	-0.6693	0.4971	-0.8108	0.6209	-0.7490	0.6521	-0.7258
27	0.412	0.707	-0.4530	-0.3113	-0.4235	-0.4236	-0.2557	-0.4679	-0.0302	-0.5231	0.2050	-0.7114	0.3933	-0.8267	0.5466	-0.7459	0.5834	-0.7162
28	0.412	0.823	-0.4404	-0.3920	-0.4203	-0.4206	-0.3816	-0.4540	-0.3159	-0.5174	-0.0937	-0.7356	0.0933	-0.8401	0.2385	-0.7452	0.2406	-0.7072
29	0.412	0.882	-0.3368	-0.2808	-0.2944	-0.2965	-0.2768	-0.3674	-0.1955	-0.5646	-0.0546	-0.7346	0.0957	-0.8673	0.2780	-0.7528	0.3271	-0.7131
30	0.412	0.942	-0.1564	-0.1552	-0.2096	-0.2044	-0.1603	-0.1494	-0.0766	-0.5644	0.0469	-0.7281	0.2422	-0.8540	0.3878	-0.7455	0.4229	-0.7076
31	0.309	0.000	-0.0778	0.0907	-0.0001	-0.0065	0.1431	-0.1352	0.2598	-0.2687	0.3629	-0.3698	0.4706	-0.4856	0.5617	-0.5516	0.5667	-0.5536
32	0.309	0.354	-0.1003	0.0690	-0.0125	-0.0166	0.1223	-0.1717	0.2340	-0.3128	0.3405	-0.4537	0.4548	-0.5926	0.5540	-0.7226	0.5603	-0.7038
33	0.309	0.589	-0.3457	0.0319	-0.2431	-0.2763	0.0610	-0.4251	0.1450	-0.4968	0.2480	-0.5683	0.4247	-0.7331	0.5287	-0.7279	0.5552	-0.7094
34	0.309	0.707	-0.4850	-0.3045	-0.3745	-0.3772	-0.1019	-0.5333	0.0479	-0.5710	0.2009	-0.7162	0.3422	-0.8324	0.4940	-0.7233	0.5202	-0.7000
35	0.309	0.823	-0.4571	-0.3721	-0.4190	-0.4182	-0.3305	-0.4406	-0.0333	-0.4266	0.2763	-0.6410	0.3671	-0.7499	0.4296	-0.7469	0.4521	-0.7106
36	0.309	0.882	-0.2590	-0.2482	-0.2567	-0.2435	-0.2305	-0.2711	-0.0041	-0.3209	0.2721	-0.5814	0.3353	-0.7206	0.3952	-0.7490	0.4170	-0.7126
37	0.309	0.942	-0.1480	-0.1439	-0.1579	-0.1506	-0.1408	-0.1924	-0.0512	-0.3506	0.1467	-0.6699	0.2521	-0.7953	0.3146	-0.7292	0.3361	-0.6955
38	0.221	0.000	-0.0493	0.0650	-0.0140	-0.0176	0.1145	-0.1391	0.2010	-0.2689	0.2983	-0.3855	0.3818	-0.4923	0.4502	-0.5317	0.4692	-0.5318
39	0.221	0.354	-0.1115	0.0318	-0.0395	-0.0414	0.0790	-0.1737	0.1630	-0.3109	0.2873	-0.4505	0.3754	-0.5730	0.4429	-0.6992	0.4618	-0.6866
40	0.221	0.589	-0.2310	-0.0670	-0.1214	-0.1174	-0.0197	-0.3362	0.0847	-0.4765	0.2912	-0.5518	0.3546	-0.6732	0.4253	-0.7048	0.4451	-0.6907
41	0.221	0.707	-0.3869	-0.0624	-0.3210	-0.3163	-0.0474	-0.4401	0.1181	-0.4602	0.2475	-0.5379	0.3292	-0.6938	0.3975	-0.7152	0.4171	-0.6948
42	0.221	0.823	-0.3177	-0.0682	-0.2146	-0.2260	-0.0031	-0.3437	0.1157	-0.3810	0.2223	-0.5644	0.2734	-0.6936	0.3312	-0.7175	0.3486	-0.6911
43	0.221	0.882	-0.2877	-0.1577	-0.2432	-0.2349	-0.0414	-0.3038	0.0894	-0.3555	0.1885	-0.5903	0.2404	-0.7564	0.2966	-0.7188	0.3157	-0.6876
44	0.221	0.942	-0.2482	-0.1850	-0.2214	-0.2206	-0.0955	-0.2576	0.0515	-0.4255	0.1218	-0.7704	0.1667	-0.8716	0.2207	-0.7246	0.2382	-0.6877
45	0.133	0.000	-0.5325	-0.4590	-0.4953	-0.4705	-0.4402	-0.5667	-0.4201	-0.6311	-0.3860	-0.6886	-0.3532	-0.7035	-0.3270	-0.6506	-0.3208	-0.6866
46	0.133	0.354	-0.5407	-0.5022	-0.5345	-0.5354	-0.4768	-0.5888	-0.4419	-0.6089	-0.3993	-0.6148	-0.3606	-0.6683	-0.3344	-0.7262	-0.3266	-0.7024
47	0.133	0.589	-0.5970	-0.5119	-0.5474	-0.5682	-0.4896	-0.6161	-0.4232	-0.5626	-0.3422	-0.5330	-0.3527	-0.5684	-0.3263	-0.6801	-0.3179	-0.6741
48	0.133	0.707	-0.4958	-0.4926	-0.4795	-0.4619	-0.4717	-0.5830	-0.4428	-0.6205	-0.4112	-0.5529	-0.3792	-0.5767	-0.3534	-0.6769	-0.3437	-0.6621
49	0.133	0.942																
50	0.088	0.000	-0.5258	-0.4010	-0.4403	-0.4162	-0.3930	-0.5736	-0.3924	-0.6177	-0.3631	-0.6581	-0.3112	-0.6887	-0.3102	-0.6538	-0.2963	-0.6512
51	0.088	0.354	-0.5593	-0.5187	-0.5454	-0.5381	-0.4748	-0.5487	-0.4480	-0.5240	-0.4009	-0.5245	-0.3623	-0.6116	-0.3198	-0.6661	-0.3073	-0.6185
52	0.088	0.589	-0.5454	-0.4925	-0.5312	-0.5296	-0.4556	-0.5202	-0.4448	-0.4391	-0.4061	-0.4887	-0.3676	-0.5407	-0.3252	-0.6503	-0.3107	-0.6455
53	0.088	0.707	-0.4498	-0.4561	-0.4214	-0.4058	-0.4359	-0.4658	-0.4173	-0.4845	-0.3841	-0.4664	-0.3415	-0.5452	-0.2901	-0.6563	-0.2724	-0.6429
54	0.044	0.000	-0.4938	-0.4061	-0.4393	-0.4258	-0.3639	-0.5250	-0.3533	-0.5679	-0.3291	-0.5964	-0.2745	-0.6581	-0.2851	-0.6338	-0.2603	-0.6056
55	0.044	0.354	-0.4432	-0.4211	-0.4355	-0.4308	-0.3623	-0.4033	-0.3406	-0.3901	-0.3372	-0.4625	-0.3267	-0.5452	-0.2781	-0.5353	-0.2611	-0.5206
56	0.044	0.589	-0.3524	-0.3383	-0.3544	-0.3494	-0.2490	-0.3200	-0.3775	-0.3899	-0.3549	-0.4671	-0.3627	-0.5427	-0.3030	-0.6245	-0.2833	-0.6195
57	0.044	0.707	-0.2438	-0.3181	-0.3045	-0.2671	-0.2859	-0.2865	-0.3662	-0.3917	-0.3447	-0.4409	-0.3110	-0.5424	-0.2511	-0.6272	-0.2323	-0.6156
58	0.044	0.823	-0.4049	-0.3677	-0.3620	-0.3512	-0.3739	-0.4603	-0.3601	-0.5539	-0.3259	-0.7254	-0.2714	-0.7484	-0.2022	-0.6581	-0.1774	-0.6387
59	0.412	0.059	-0.0863	0.0830	-0.0026	-0.0174	0.1413	-0.1445	0.2980	-0.2698	0.4134	-0.3826	0.5268	-0.4810	0.6351	-0.5475	0.6643	-0.5525
60	0.221	0.118	-0.0842	0.1035	0.0082	-0.0081	0.1747	-0.1284	0.3194	-0.2598	0.4280	-0.3773	0.5395	-0.4813	0.6394	-0.5226	0.6678	-0.5506
61	0.309	0.059	-0.0943	0.0745	-0.0093	-0.0213	0.1325	-0.1436	0.2453	-0.2706	0.3532	-0.1888	0.4540	-0.4851	0.5490	-0.5284	0.5755	-0.5432
62	0.309	0.118	-0.0850	0.0822	-0.0005	-0.0132	0.1374	-0.1376	0.2481	-0.2699	0.3579	-0.3835	0.4647	-0.4857	0.5569	-0.5210	0.5832	-0.5479
63	0.309	0.236	-0.0914	0.0778	-0.0029	-0.0151	0.1323	-0.1440	0.2420	-0.2808	0.3527	-0.3976	0.4634	-0.4910	0.5554	-0.6165	0.5809	-0.6302
64	0.221	0.059	-0.0891	0.0650	-0.0120	-0.0186	0.1171	-0.1392	0.2024	-0.2682	0.3006	-0.3853	0.3826	-0.4781	0.4509	-0.5218	0.4703	-0.5322
65	0.221	0.118	-0.1014	0.0530	-0.0148	-0.0243	0.1058	-0.1549	0.1940	-0.2861	0.2918	-0.4009	0.3753	-0.4963	0.4476	-0.5318	0.4667	-0.5491
66	0.221	0.236	-0.0987	0.0600	-0.0161	-0.0206	0.1034	-0.1484	0.1875	-0.2848	0.2921	-0.4008	0.3772	-0.4958	0.4469	-0.5747	0.4664	-0.6086
67	0.133	0.118	-0.5238	-0.4532	-0.4800	-0.4501	-0.4314	-0.5453	-0.3995	-0.6132	-0.3567	-0.6723	-0.3213	-0.7121	-0.2956	-0.6202	-0.2879	-0.6059
68	0.133	0.236	-0.5460	-0.4755	-0.5137	-0.5201	-0.4581	-0.5711	-0.4306	-0.6387	-0.3882	-0.6951	-0.3565	-0.7436	-0.3305	-0.6777	-0.3228	-0.7019
69	0.044	0.236	-0.5076	-0.4323	-0.4601	-0.4545	-0.3523	-0.5239	-0.3513	-0.5493	-0.3135	-0.5901	-0.3043	-0.6458	-0.2833	-0.6360	-0.2732	-0.5763
70	0.133	0.000																

Table A-8.- (Continued).
M = 1.2

TUBE	X/L	Y/R/2	ALPHA = 27.0 WINDWARD	27.0 LEEWARD	29.8 WINDWARD	29.9 LEEWARD	34.8 WINDWARD	34.8 LEEWARD	39.8 WINDWARD	39.7 LEEWARD	44.7 WINDWARD	44.8 LEEWARD	49.6 WINDWARD	49.7 LEEWARD	54.6 WINDWARD	54.6 LEEWARD	56.2 WINDWARD	56.2 LEEWARD
1	0.947	0.000	1.3130	-0.3806	1.3482	-0.4618	1.3849	-0.5570	1.4033	-0.4765	1.4010	-0.3928	1.3772	-0.4110	1.3366	-0.3697	1.3271	-0.3703
2	0.894	0.000	1.2161	-0.3666	1.2637	-0.4450	1.3256	-0.5652	1.3707	-0.5233	1.4015	-0.4322	1.4108	-0.4540	1.3946	-0.4106	1.3951	-0.4115
3	0.841	0.000	1.1178	-0.3586	1.1748	-0.4259	1.2446	-0.5438	1.3184	-0.5215	1.3745	-0.4293	1.4054	-0.4491	1.4095	-0.4076	1.4149	-0.4090
4	0.751	0.000	0.9201	-0.5809	0.9911	-0.6378	1.0981	-0.6666	1.1899	-0.5222	1.2824	-0.4384	1.3522	-0.4546	1.3857	-0.4121	1.3977	-0.4121
5	0.813	0.055	1.0480	-0.6841	1.1275	-0.6017	1.2119	-0.5944	1.2826	-0.4887	1.3463	-0.4125	1.3880	-0.4273	1.4010	-0.3860	1.4060	-0.3878
6	0.858	0.088	1.1493	-0.6624	1.1986	-0.6430	1.2669	-0.6383	1.3193	-0.5197	1.3422	-0.4402	1.3854	-0.4568	1.3845	-0.4125	1.3856	-0.4139
7	0.887	0.120	1.2700	-0.6507	1.2548	-0.6575	1.2965	-0.6542	1.3244	-0.5337	1.3414	-0.4453	1.3371	-0.4649	1.3137	-0.4183	1.3068	-0.4195
8	0.663	0.000	0.8489	-0.6141	0.9341	-0.6190	1.0336	-0.6026	1.1233	-0.5354	1.2763	-0.4468	1.3010	-0.4566	1.3445	-0.4223	1.3611	-0.4256
9	0.663	0.126	0.8451	-0.6933	0.9322	-0.6903	1.0332	-0.6472	1.1234	-0.5287	1.2230	-0.4404	1.2499	-0.4607	1.3418	-0.4172	1.3588	-0.4206
10	0.663	0.210	0.8511	-0.6923	0.9212	-0.6916	1.0288	-0.6560	1.1225	-0.5318	1.2265	-0.4394	1.2444	-0.4648	1.3392	-0.4188	1.3544	-0.4213
11	0.698	0.302	0.9728	-0.6935	1.0306	-0.6962	1.1155	-0.6630	1.1905	-0.5376	1.2675	-0.4474	1.3177	-0.4721	1.3370	-0.4254	1.3478	-0.4297
12	0.727	0.334	1.0408	-0.7025	1.1065	-0.6990	1.1730	-0.6661	1.2280	-0.5396	1.2815	-0.4506	1.3122	-0.4762	1.3169	-0.4285	1.3225	-0.4324
13	0.763	0.347	1.1314	-0.6922	1.1619	-0.6878	1.1997	-0.6557	1.2288	-0.5322	1.2528	-0.4438	1.2579	-0.4686	1.2608	-0.4222	[illegible]	-0.4256
14	0.530	0.000	0.7759	-0.5482	0.8363	-0.5455	0.9303	-0.6094	1.0183	-0.5291	1.1323	-0.4424	1.2164	-0.4676	1.2676	-0.4232	[illegible]	-0.4266
15	0.530	0.246	0.7793	-0.6788	0.8387	-0.6859	0.9338	-0.6457	1.0208	-0.5272	1.1338	-0.4394	1.2147	-0.4626	1.2601	-0.4201	1.2676	-0.4235
16	0.530	0.410	0.7811	-0.6846	0.8434	-0.6749	0.9397	-0.6420	1.0286	-0.5284	1.1392	-0.4409	1.2166	-0.4624	1.2636	-0.4227	1.2822	-0.4247
17	0.538	0.492	0.7567	-0.6930	0.8258	-0.6815	0.9311	-0.6527	1.0245	-0.5361	1.1389	-0.4495	1.2146	-0.4706	1.2585	-0.4249	1.2764	-0.4341
18	0.557	0.567	0.8882	-0.6876	0.9415	-0.6728	1.0233	-0.6517	1.0940	-0.5371	1.1814	-0.4492	1.2355	-0.4723	1.2604	-0.4310	1.2728	-0.4339
19	0.594	0.600	0.9865	-0.6790	1.0270	-0.6644	1.0865	-0.6464	1.1401	-0.5332	1.2035	-0.4428	1.2376	-0.4659	1.2448	-0.4237	1.2516	-0.4259
20	0.431	0.632	1.0529	-0.6889	1.0809	-0.6557	1.1146	-0.6413	1.1420	-0.5305	1.1745	-0.4405	1.1867	-0.4637	1.1724	-0.4227	1.1735	-0.4256
21	0.464	0.753	0.7537	-0.6500	0.8053	-0.6428	0.8861	-0.6352	0.9584	-0.5263	1.0588	-0.4341	1.1209	-0.4588	1.1490	-0.4187	[illegible]	-0.4206
22	0.501	0.786	0.8639	-0.6441	0.9030	-0.6398	0.9618	-0.6329	1.0153	-0.5275	1.0833	-0.4302	1.1319	-0.4580	1.1449	-0.4164	1.1555	-0.4164
23	0.537	0.819	0.9525	-0.6518	0.9786	-0.6511	1.0107	-0.6429	1.0407	-0.5332	1.0769	-0.4376	1.1011	-0.4652	1.0931	-0.4225	1.0980	-0.4238
24	0.412	0.000	0.6857	-0.5395	0.7406	-0.5637	0.8265	-0.6249	0.9109	-0.5396	1.0248	-0.4482	1.1190	-0.4747	1.1864	-0.4355	1.2048	-0.4359
25	0.412	0.354	0.6911	-0.6888	0.7469	-0.6702	0.8331	-0.6469	0.9159	-0.5366	1.0381	-0.4453	1.1209	-0.4699	1.1788	-0.4296	1.2028	-0.4303
26	0.412	0.589	0.6681	-0.6712	0.7261	-0.6557	0.8161	-0.6428	0.9000	-0.5344	1.0246	-0.4429	1.1065	-0.4695	1.1585	-0.4286	1.1810	-0.4295
27	0.412	0.707	0.6034	-0.6529	0.6695	-0.6442	0.7690	-0.6356	0.8582	-0.5296	0.9877	-0.4370	1.0698	-0.4631	1.1208	-0.4230	1.1426	-0.4235
28	0.412	0.823	0.2991	-0.6412	0.3867	-0.6398	0.5082	-0.6329	0.6170	-0.5299	0.7749	-0.4312	0.8780	-0.4624	0.9371	-0.4193	0.9627	-0.4184
29	0.412	0.882	0.3314	-0.6469	0.4182	-0.6487	0.5416	-0.6419	0.6658	-0.5371	0.7976	-0.4346	0.6777	-0.4672	0.9217	-0.4230	0.9432	-0.4238
30	0.412	0.942	0.4281	-0.6434	0.4840	-0.6450	0.5546	-0.6433	0.6226	-0.5371	0.7231	-0.4317	0.7414	-0.4653	0.8234	-0.4225	0.8432	-0.4284
31	0.309	0.000	0.6000	-0.5489	0.6515	-0.5765	0.7278	-0.6127	0.8021	-0.5366	0.9155	-0.4463	1.0110	-0.4723	1.0786	-0.4325	1.1061	-0.4328
32	0.309	0.354	0.5024	-0.6703	0.6431	-0.6519	0.7193	-0.6466	0.7469	-0.5378	0.9100	-0.4488	1.0084	-0.4725	1.0717	-0.4329	1.0991	-0.4334
33	0.309	0.589	0.5455	-0.6563	0.6183	-0.6437	0.6961	-0.6400	0.7747	-0.5339	0.8826	-0.4484	0.9684	-0.4675	1.0506	-0.4243	1.0742	-0.4303
34	0.309	0.707	0.5297	-0.6422	0.5801	-0.6396	0.6582	-0.6391	0.7350	-0.5323	0.8539	-0.4369	0.9520	-0.4672	1.0128	-0.4280	1.0369	-0.4261
35	0.309	0.823	0.4563	-0.6466	0.5023	-0.6482	0.5688	-0.6483	0.6402	-0.5390	0.7548	-0.4415	0.8455	-0.4726	0.8979	-0.4308	0.9235	-0.4302
36	0.309	0.882	0.4721	-0.6453	0.4652	-0.6475	0.5307	-0.6497	0.5982	-0.5396	0.7132	-0.4382	0.8014	-0.4723	0.8504	-0.4310	0.8765	-0.4289
37	0.309	0.942	0.3383	-0.6340	0.3837	-0.6375	0.4439	-0.6410	0.5083	-0.5380	0.6216	-0.4316	0.6998	-0.4625	0.7458	-0.4212	0.7678	-0.4190
38	0.221	0.000	0.4791	-0.5535	0.5176	-0.5736	0.5760	-0.6123	0.6372	-0.5364	0.7612	-0.4424	0.8403	-0.4700	0.9155	-0.4364	0.9466	-0.4334
39	0.221	0.354	0.4719	-0.6288	0.5100	-0.6442	0.5697	-0.6424	0.6308	-0.5339	0.7372	-0.4344	0.8371	-0.4655	0.9118	-0.4322	0.9450	-0.4322
40	0.221	0.589	0.4538	-0.6486	0.4415	-0.6427	0.5525	-0.6425	0.6150	-0.5323	0.7298	-0.4404	0.8278	-0.4682	0.9020	-0.4329	0.9347	-0.4315
41	0.221	0.707	0.4726	-0.6466	0.4622	-0.6477	0.5208	-0.6512	0.5845	-0.5400	0.7045	-0.4488	0.8039	-0.4775	0.8770	-0.4397	0.9102	-0.4401
42	0.221	0.823	0.3510	-0.6354	0.3881	-0.6455	0.4407	-0.6527	0.4990	-0.5415	0.6369	-0.4457	0.7356	-0.4782	0.7994	-0.4385	0.8308	-0.4354
43	0.221	0.882	0.3180	-0.6296	0.3565	-0.6380	0.4093	-0.6435	0.4699	-0.5380	0.6152	-0.4379	0.7092	-0.4703	0.7706	-0.4281	0.7978	-0.4254
44	0.221	0.942	0.2393	-0.6257	0.2765	-0.6325	0.3205	-0.6399	0.3873	-0.5354	0.5326	-0.4317	0.6167	-0.4671	0.6690	-0.4227	0.6495	-0.4703
45	0.133	0.000	-0.3121	-0.6591	-0.2898	-0.6572	-0.2536	-0.6905	-0.1919	-0.5325	0.1488	-0.4409	0.3571	-0.4694	0.5114	-0.4341	0.5660	-0.4337
46	0.133	0.354	-0.3227	-0.6151	-0.3018	-0.6364	-0.2635	-0.6343	-0.1916	-0.5318	0.1528	-0.4399	0.3630	-0.4711	0.5152	-0.4346	0.5710	-0.4334
47	0.133	0.589	-0.3274	-0.6376	-0.3035	-0.6463	-0.2620	-0.6478	-0.1052	-0.5410	0.1909	-0.4504	0.3872	-0.4805	0.5313	-0.4426	0.5603	-0.4435
48	0.133	0.707	-0.3444	-0.6306	-0.3167	-0.6400	-0.2118	-0.6497	-0.1150	-0.5430	0.1954	-0.4516	0.4000	-0.4827	0.5444	-0.4445	0.5902	-0.4439
49	0.133	0.942																
50	0.088	0.000	-0.2590	-0.6184	-0.2549	-0.6205	-0.1846	-0.6452	-0.0726	-0.5363	0.4418	-0.4446	0.6251	-0.4749	0.6744	-0.4368	0.7024	-0.4363
51	0.088	0.354	-0.2975	-0.5981	-0.2605	-0.6226	-0.1873	-0.6323	-0.0707	-0.5315	0.4548	-0.4419	0.6163	-0.4703	0.6666	-0.4346	0.6956	-0.4351
52	0.088	0.589	-0.3031	-0.6122	-0.2632	-0.6203	-0.1682	-0.6343	-0.0756	-0.5284	0.5128	-0.4418	0.6183	-0.4726	0.6576	-0.4348	0.6958	-0.4354
53	0.088	0.707	-0.2672	-0.6200	-0.2190	-0.6355	-0.1467	-0.6449	-0.0716	-0.5361	0.5430	-0.4504	0.6121	-0.4805	0.6669	-0.4426	0.6958	-0.4425
54	0.044	0.000	-0.2219	-0.5956	-0.2215	-0.6024	-0.1302	-0.6100	-0.0079	-0.5351	0.4565	-0.4531	0.5031	-0.4827	0.5579	-0.4440	0.5879	-0.4444
55	0.044	0.354	-0.2437	-0.5611	-0.2169	-0.5814	-0.1250	-0.6024	-0.0037	-0.5112	0.4527	-0.4340	0.4985	-0.4640	0.5544	-0.4335	0.5623	-0.4343
56	0.044	0.589	-0.2737	-0.6047	-0.2205	-0.6262	-0.1189	-0.6350	-0.0624	-0.5305	0.4536	-0.4448	0.4494	-0.4744	0.5509	-0.4383	0.5795	-0.4393
57	0.044	0.707	-0.2742	-0.6038	-0.1752	-0.6188	-0.1020	-0.6308	0.1462	-0.5277	0.4788	-0.4404	0.4451	-0.4589	0.5460	-0.4341	0.5773	-0.4337
58	0.044	0.823	-0.1455	-0.6055	-0.1048	-0.6200	0.0117	-0.6304	0.2004	-0.5275	0.4004	-0.4388	0.4714	-0.4572	0.5276	-0.4329	0.5577	-0.4295
59	0.412	0.059	0.6429	-0.5425	0.7397	-0.5620	0.8273	-0.6223	0.9102	-0.5376	1.0212	-0.4486	1.1155	-0.4750	1.1800	-0.4377	1.2074	-0.4371
60	0.221	0.118	0.6418	-0.5658	0.7371	-0.5910	0.8235	-0.6308	0.9054	-0.5381	1.0149	-0.4487	1.1094	-0.4772	1.1719	-0.4400	1.2008	-0.4394
61	0.309	0.059	0.5941	-0.5504	0.6441	-0.5741	0.7225	-0.6151	0.7476	-0.5307	0.9108	-0.4453	1.0061	-0.4706	1.0767	-0.4360	1.1051	-0.4363
62	0.309	0.119	0.5944	-0.5627	0.6436	-0.5871	0.7193	-0.6239	0.7440	-0.5305	0.9065	-0.4424	1.0011	-0.4635	1.0697	-0.4334	1.0441	-0.4344
63	0.309	0.236	0.5960	-0.4279	0.6468	-0.6236	0.7252	-0.4251	0.8003	-0.5272	0.9137	-0.4384	1.0088	-0.4550	1.0768	-0.4327	1.1072	-0.4327
64	0.221	0.059	0.4819	-0.5481	0.5201	-0.5714	0.5795	-0.6078	0.6416	-0.5241	0.7670	-0.4344	0.8421	-0.4568	0.9188	-0.4334	0.9524	-0.4310
65	0.221	0.118	0.4558	-0.5611	0.4974	-0.5914	0.5461	-0.6262	0.6047	-0.5327	0.7031	-0.4494	0.7456	-0.4736	0.8701	-0.4417	0.9067	-0.4420
66	0.221	0.236	0.4788	-0.6205	0.5179	-0.6296	0.5779	-0.6333	0.6404	-0.5346	0.7459	-0.4501	0.8416	-0.4742	0.9194	-0.4460	0.9534	-0.4444
67	0.133	0.118	-0.2935	-0.6639	-0.2793	-0.6898	-0.2430	-0.6469	-0.1772	-0.5283	0.1524	-0.4460	0.3685	-0.4684	0.5018	-0.4404	0.5631	-0.4387
68	0.133	0.236	-0.3101	-0.6944	-0.2490	-0.6625	-0.2641	-0.6220	-0.1941	-0.5257	0.1523	-0.4443	0.3609	-0.4476	0.5107	-0.4397	0.5642	-0.4393
69	0.044	0.236	-0.2932	-0.5740	-0.2103	-0.5857	-0.1229	-0.6135	-0.0045	-0.5215	0.4821	-0.4404	0.5109	-0.4626	0.5638	-0.4355	0.5936	-0.4365
70	0.133	0.000																

# Table A-8.- (Continued).
M = 1.6

CASE	X/L	Y/B/2	ALPHA = -2.8 WINDWARD	-2.7 LEEWARD	0.1 WINDWARD	0.2 LEEWARD	5.1 WINDWARD	5.2 LEEWARD	10.1 WINDWARD	10.2 LEEWARD	15.1 WINDWARD	15.2 LEEWARD	20.0 WINDWARD	20.1 LEEWARD	25.0 WINDWARD	25.1 LEEWARD	26.5 WINDWARD	26.5 LEEWARD
1	0.047	0.000	0.2432	0.4274	0.3487	0.3525	0.5074	0.2307	0.6433	0.1498	0.9084	0.0821	1.0918	0.0277	1.2729	0.0002	1.3108	-0.0184
2	0.094	0.000	0.2351	0.3952	0.3179	0.3138	0.4703	0.1720	0.6608	0.0837	0.8494	0.0055	0.9461	-0.0631	1.1591	-0.1015	1.1904	-0.1207
3	0.041	0.000	0.2320	0.3939	0.3152	0.3063	0.4605	0.1672	0.6406	0.0762	0.7915	-0.0036	0.9052	-0.0729	1.0573	-0.1142	1.0935	-0.1330
4	0.751	0.000	-0.0287	0.0773	0.0314	0.0163	0.1299	-0.0760	0.2403	-0.1460	0.3577	-0.2042	0.5433	-0.2500	0.8039	-0.2822	0.8558	-0.2963
5	0.813	0.055	0.2562	0.4082	0.3351	0.3254	0.4709	0.1935	0.6313	0.1078	0.7525	0.0364	0.8472	-0.0167	0.9992	-0.0465	1.0382	-0.0591
6	0.850	0.088	0.2505	0.4215	0.3369	0.3322	0.4974	0.1795	0.6705	0.0813	0.8297	-0.0171	0.9511	-0.1996	1.1017	-0.3009	1.1361	-0.3271
7	0.887	0.120	0.2950	0.4715	0.3804	0.3780	0.5492	0.1998	0.7429	0.0579	0.9254	-0.1163	1.0603	-0.2914	1.2020	-0.3923	1.2330	-0.4116
8	0.063	0.000	-0.0415	0.0594	0.0106	0.0024	0.1215	-0.0881	0.2381	-0.1620	0.3983	-0.2267	0.5957	-0.2759	0.8100	-0.3165	0.8602	-0.3317
9	0.063	0.126	-0.1077	-0.0113	-0.0491	-0.0649	0.0466	-0.1471	0.1406	-0.2211	0.2940	-0.2846	0.5311	-0.3277	0.8106	-0.3436	0.8562	-0.3468
10	0.063	0.210	-0.1568	-0.0922	-0.1159	-0.1265	-0.0375	-0.1828	0.0808	-0.2406	0.2253	-0.3087	0.4545	-0.3504	0.7479	-0.4324	0.8075	-0.4504
11	0.690	0.302	0.2530	0.4064	0.3453	0.3245	0.4783	0.1865	0.5716	0.0464	0.6590	-0.1246	0.7072	-0.2667	0.9466	-0.3795	0.9851	-0.4056
12	0.727	0.334	0.2913	0.4719	0.3954	0.3727	0.5598	0.2077	0.6894	0.0298	0.7979	-0.1670	0.9065	-0.3287	1.0599	-0.4511	1.0915	-0.4678
13	0.763	0.367	0.3533	0.5666	0.4736	0.4504	0.6577	0.2478	0.8148	-0.0272	0.9363	-0.2348	1.0482	-0.3834	1.1637	-0.4398	1.1895	-0.4577
14	0.530	0.000	-0.0484	0.0524	0.0140	0.0006	0.1210	-0.0867	0.2446	-0.1620	0.4054	-0.2313	0.6031	-0.2823	0.7851	-0.3275	0.8200	-0.3417
15	0.530	0.246	-0.1109	-0.0086	-0.0500	-0.0626	0.0470	-0.1489	0.1741	-0.2252	0.4425	-0.2994	0.6254	-0.3446	0.7979	-0.4377	0.8297	-0.4505
16	0.530	0.410	-0.1531	-0.0784	-0.1122	-0.1178	-0.0247	-0.1801	0.0947	-0.2443	0.2290	-0.3377	0.4491	-0.4107	0.7935	-0.4602	0.8307	-0.4649
17	0.530	0.492	-0.1285	-0.0706	-0.0964	-0.1002	-0.0483	-0.1570	0.0206	-0.2275	0.2102	-0.3350	0.4874	-0.4077	0.7435	-0.4656	0.7910	-0.4772
18	0.557	0.567	0.2802	0.4318	0.3708	0.3576	0.4808	0.2174	0.5606	0.0238	0.6423	-0.1656	0.7642	-0.3104	0.9277	-0.4502	0.9587	-0.4724
19	0.594	0.600	0.3338	0.5238	0.4450	0.4272	0.5929	0.2570	0.6479	-0.0022	0.7053	-0.1913	0.9096	-0.3594	1.0462	-0.4568	1.0706	-0.4734
20	0.631	0.632	0.3985	0.6149	0.5189	0.4945	0.7003	0.2287	0.8228	-0.0823	0.9767	-0.2767	1.0285	-0.4136	1.1381	-0.4571	1.1550	-0.4711
21	0.464	0.753	0.2920	0.4333	0.3810	0.3641	0.4742	0.2252	0.5471	0.0071	0.6216	-0.1769	0.7348	-0.3136	0.8517	-0.4291	0.8735	-0.4562
22	0.501	0.786	0.3453	0.5314	0.4594	0.4377	0.5906	0.2654	0.6866	-0.0203	0.7736	-0.1951	0.8761	-0.3673	0.9743	-0.4665	0.9925	-0.4708
23	0.537	0.819	0.3828	0.6241	0.5278	0.4999	0.7083	0.2105	0.8128	-0.1058	0.9066	-0.2960	0.9985	-0.4291	1.0765	-0.4730	1.0894	-0.4841
24	0.412	0.000	-0.0464	0.0639	0.0187	0.0019	0.1249	-0.0853	0.2478	-0.1565	0.4108	-0.2300	0.6021	-0.2869	0.7417	-0.3379	0.7703	-0.3510
25	0.412	0.354	-0.0795	0.0302	-0.0160	-0.0330	0.0852	-0.1335	0.2966	-0.2166	0.4413	-0.2941	0.6222	-0.3862	0.7542	-0.4513	0.7815	-0.4651
26	0.412	0.589	-0.1433	-0.0574	-0.0983	-0.1094	-0.0088	-0.1815	0.1175	-0.2509	0.2777	-0.3545	0.6437	-0.4260	0.7303	-0.4694	0.7606	-0.4665
27	0.412	0.707	-0.1415	-0.0867	-0.1084	-0.1167	-0.0406	-0.1717	0.0091	-0.2576	0.1734	-0.3560	0.4604	-0.4234	0.6566	-0.4741	0.6892	-0.4594
28	0.412	0.823	-0.1969	-0.0582	-0.0734	-0.0797	-0.0452	-0.1408	-0.0205	-0.2521	0.0062	-0.3541	0.0907	-0.4257	0.3025	-0.4797	0.3543	-0.4958
29	0.412	0.882	-0.0755	-0.0116	-0.0351	-0.0429	0.0094	-0.1213	0.0473	-0.2618	0.0929	-0.3637	0.1734	-0.4453	0.3240	-0.4952	0.3621	-0.5053
30	0.412	0.942	-0.0154	0.0234	0.0229	0.0173	0.0358	-0.0403	0.0955	-0.2303	0.1441	-0.3489	0.2614	-0.4390	0.4051	-0.4867	0.4468	-0.4925
31	0.309	0.000	-0.0489	0.0604	0.0131	-0.0074	0.1243	-0.0947	0.2520	-0.1666	0.4198	-0.2325	0.5896	-0.2933	0.6929	-0.3429	0.7282	-0.3572
32	0.309	0.354	-0.0961	0.0168	-0.0318	-0.0514	0.1192	-0.1494	0.2583	-0.2271	0.4255	-0.2973	0.5784	-0.3798	0.6847	-0.4361	0.7121	-0.4515
33	0.309	0.589	-0.1442	-0.0319	-0.0742	-0.1053	0.0356	-0.1895	0.1956	-0.2576	0.4133	-0.3501	0.5701	-0.4036	0.6356	-0.4577	0.6727	-0.4562
34	0.309	0.707	-0.1820	-0.1101	-0.1392	-0.1545	-0.0597	-0.2184	0.0577	-0.2818	0.3267	-0.3719	0.4199	-0.4335	0.5689	-0.4656	0.6251	-0.4540
35	0.309	0.823	-0.1740	-0.1428	-0.1489	-0.1529	-0.1166	-0.1968	-0.0482	-0.2693	0.0469	-0.3507	0.3568	-0.4207	0.5454	-0.4748	0.6024	-0.4869
36	0.309	0.882	-0.1067	-0.0921	-0.0939	-0.0454	-0.0938	-0.0830	-0.0258	-0.1857	0.1172	-0.3057	0.3725	-0.4005	0.6071	-0.4703	0.6200	-0.4860
37	0.309	0.942	0.0325	0.0160	0.0394	0.0464	-0.0085	-0.0123	0.0128	-0.1763	0.1116	-0.3080	0.3290	-0.4103	0.5170	-0.4730	0.5353	-0.4854
38	0.221	0.000	-0.0568	0.0497	0.0085	-0.0146	0.1169	-0.1018	0.2464	-0.1707	0.4113	-0.2354	0.5484	-0.2714	0.6280	-0.3343	0.6482	-0.3494
39	0.221	0.354	-0.0917	0.0561	-0.0034	-0.0443	0.1373	-0.1357	0.2584	-0.2174	0.4123	-0.2862	0.5252	-0.3509	0.6197	-0.4259	0.6422	-0.4408
40	0.221	0.589	-0.1435	-0.0375	-0.0789	-0.1036	0.0387	-0.1997	0.2206	-0.2649	0.3327	-0.3418	0.4513	-0.3897	0.5963	-0.4447	0.6224	-0.4345
41	0.221	0.707	-0.1889	-0.1124	-0.1419	-0.1581	-0.0469	-0.2224	0.1222	-0.2827	0.2434	-0.3592	0.4166	-0.4221	0.5806	-0.4619	0.6024	-0.4550
42	0.221	0.823	-0.1442	-0.1148	-0.1404	-0.1520	-0.0412	-0.1563	0.0119	-0.2012	0.2934	-0.3146	0.4258	-0.3808	0.5369	-0.4399	0.5419	-0.4351
43	0.221	0.882	-0.0735	-0.0660	-0.0702	-0.0697	-0.0569	-0.0993	0.0154	-0.1768	0.2714	-0.2802	0.3943	-0.3802	0.4964	-0.4605	0.5116	-0.4766
44	0.221	0.942	-0.0484	-0.0353	-0.0314	-0.0371	-0.0421	-0.0771	-0.0169	-0.1964	0.1441	-0.3445	0.3320	-0.4502	0.4248	-0.4891	0.4393	-0.4971
45	0.133	0.000	-0.2781	-0.2521	-0.2700	-0.2873	-0.2137	-0.3140	-0.1390	-0.3183	-0.0594	-0.3514	-0.0296	-0.3669	-0.0075	-0.3923	-0.0003	-0.3906
46	0.133	0.354	-0.2973	-0.2589	-0.2759	-0.2872	-0.2190	-0.3367	-0.1532	-0.3559	-0.0926	-0.3665	-0.0476	-0.3915	-0.0111	-0.4233	-0.0066	-0.4240
47	0.133	0.589	-0.2376	-0.2319	-0.2325	-0.2425	-0.2515	-0.2780	-0.1080	-0.3013	-0.1219	-0.3400	-0.0551	-0.3776	-0.0004	-0.4119	0.0097	-0.4245
48	0.133	0.707	-0.2501	-0.2305	-0.2471	-0.2600	-0.2878	-0.2942	-0.2114	-0.3206	-0.1379	-0.3696	-0.0642	-0.4099	-0.0238	-0.4104	-0.0177	-0.4206
49	0.133	0.942																
50	0.088	0.000	-0.2492	-0.2621	-0.2334	-0.2548	-0.2217	-0.2821	-0.1541	-0.3114	-0.0915	-0.3559	-0.0429	-0.3733	-0.0107	-0.3982	0.0011	-0.4027
51	0.088	0.354	-0.2767	-0.2746	-0.2860	-0.2818	-0.2323	-0.3236	-0.1721	-0.3348	-0.1083	-0.3610	-0.0630	-0.3860	-0.0183	-0.4154	-0.0080	-0.4181
52	0.088	0.589	-0.2433	-0.2327	-0.2370	-0.2463	-0.2636	-0.2803	-0.2160	-0.3065	-0.1497	-0.3372	-0.0735	-0.3682	-0.0256	-0.4042	-0.0143	-0.4154
53	0.088	0.707	-0.2548	-0.2323	-0.2506	-0.2644	-0.2492	-0.3007	-0.2125	-0.3255	-0.1301	-0.3590	-0.0578	-0.3836	-0.0091	-0.4082	0.0042	-0.4176
54	0.044	0.000	-0.2552	-0.2470	-0.2302	-0.2497	-0.2028	-0.2876	-0.1056	-0.3163	-0.0973	-0.3644	-0.0568	-0.3775	-0.0135	-0.4015	0.0010	-0.4061
55	0.044	0.354	-0.2208	-0.2401	-0.2267	-0.2260	-0.2048	-0.2367	-0.1548	-0.2476	-0.1008	-0.2946	-0.0576	-0.3173	-0.0105	-0.3591	0.0006	-0.3720
56	0.044	0.589	-0.2478	-0.2341	-0.2648	-0.2525	-0.2505	-0.2863	-0.2256	-0.3077	-0.1552	-0.3399	-0.0754	-0.3674	-0.0270	-0.3973	-0.0139	-0.4046
57	0.044	0.707	-0.2403	-0.2338	-0.2517	-0.2690	-0.2350	-0.3008	-0.1957	-0.3215	-0.1128	-0.3446	-0.0409	-0.3760	0.0084	-0.4104	0.0193	-0.4167
58	0.044	0.823	-0.2941	-0.2768	-0.2731	-0.2771	-0.2340	-0.2997	-0.1550	-0.3353	-0.0840	-0.3893	-0.0129	-0.4257	0.0443	-0.4324	0.0576	-0.4495
59	0.417	0.059	-0.0802	0.0470	0.0029	-0.0149	0.1101	-0.1028	0.2329	-0.1745	0.3986	-0.2415	0.5957	-0.2927	0.7357	-0.3384	0.7654	-0.3525
60	0.221	0.118	-0.0487	0.0569	0.0145	-0.0038	0.1240	-0.0914	0.2505	-0.1665	0.4191	-0.2380	0.6163	-0.2925	0.7477	-0.3402	0.7758	-0.3510
61	0.309	0.059	-0.0577	0.0451	0.0002	-0.0185	0.1082	-0.1039	0.2360	-0.1703	0.4024	-0.2353	0.5724	-0.2891	0.6806	-0.3365	0.7069	-0.3494
62	0.309	0.118	-0.0539	0.0552	0.0085	-0.0109	0.1159	-0.1005	0.2450	-0.1698	0.4109	-0.2400	0.5803	-0.2942	0.6888	-0.3375	0.7149	-0.3490
63	0.309	0.236	-0.0452	0.0575	0.0103	-0.0053	0.1199	-0.1147	0.2492	-0.1933	0.4155	-0.2556	0.5798	-0.3081	0.6871	-0.3373	0.7124	-0.3500
64	0.221	0.059	-0.0515	0.0505	0.0080	-0.0132	0.1106	-0.0997	0.2508	-0.1698	0.4139	-0.2362	0.5492	-0.2897	0.6277	-0.3309	0.6684	-0.3463
65	0.221	0.118	-0.0542	0.0470	0.0085	-0.0149	0.1161	-0.1042	0.2438	-0.1764	0.4055	-0.2490	0.5400	-0.3001	0.6213	-0.3416	0.6432	-0.3557
66	0.221	0.236	-0.0479	0.0541	0.0150	-0.0066	0.1244	-0.1008	0.2542	-0.1795	0.4117	-0.2516	0.5369	-0.3066	0.6218	-0.3397	0.6444	-0.3528
67	0.133	0.118	-0.2796	-0.2368	-0.2554	-0.2702	-0.1985	-0.3098	-0.1309	-0.3153	-0.0544	-0.3728	-0.0049	-0.3714	0.0230	-0.3937	0.0326	-0.3969
68	0.133	0.236	-0.3088	-0.2561	-0.2759	-0.2907	-0.2206	-0.3302	-0.1532	-0.3673	-0.0747	-0.4003	-0.0370	-0.4164	-0.0089	-0.4096	-0.0003	-0.4091
69	0.044	0.236	-0.2676	-0.2596	-0.2540	-0.2813	-0.2300	-0.3076	-0.1602	-0.3316	-0.0976	-0.3336	-0.0518	-0.3660	-0.0057	-0.3995	0.0079	-0.4049
70	0.133	0.000																

Table A-8.0 (Concluded).
M = 1.6

			ALPHA =															
			27.2	27.3	30.0	30.0	35.0	35.0	39.9	40.0	44.9	44.9	49.6	49.9	54.7	54.9	58.4	58.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.947	0.000	1.3570	-0.0724	1.4344	-0.1189	1.5102	-0.2214	1.5577	-0.3124	1.5471	-0.3247	1.5472	-0.3278	1.5195	-0.3226	1.4999	-0.3156
2	0.894	0.000	1.2423	-0.1416	1.3269	-0.1770	1.4338	-0.2620	1.5016	-0.3448	1.5443	-0.4226	1.5588	-0.4262	1.5599	-0.4180	1.5515	-0.4085
3	0.841	0.000	1.1377	-0.1517	1.2267	-0.1831	1.3489	-0.2567	1.4358	-0.3285	1.5036	-0.4065	1.5378	-0.4210	1.5574	-0.4119	1.5570	-0.4047
4	0.751	0.000	0.9105	-0.3056	1.0215	-0.3306	1.1743	-0.3796	1.2951	-0.4236	1.3926	-0.4432	1.4616	-0.4332	1.5088	-0.4233	1.5228	-0.4153
5	0.813	0.055	1.0848	-0.0935	1.1746	-0.1123	1.3017	-0.3365	1.3980	-0.3430	1.4713	-0.3479	1.5156	-0.3485	1.5348	-0.3425	1.5434	-0.3358
6	0.850	0.088	1.1745	-0.3686	1.2579	-0.4014	1.3663	-0.3939	1.4423	-0.4049	1.4967	-0.4111	1.5214	-0.4120	1.5312	-0.4032	1.5294	-0.3957
7	0.887	0.120	1.2448	-0.4355	1.3335	-0.4667	1.4146	-0.4276	1.4626	-0.4458	1.4891	-0.4535	1.4889	-0.4561	1.4784	-0.4445	1.4694	-0.4378
8	0.663	0.000	0.9023	-0.3326	0.9933	-0.3590	1.1244	-0.4165	1.2356	-0.4479	1.3304	-0.4617	1.4038	-0.4656	1.4417	-0.4554	1.4772	-0.4458
9	0.663	0.126	0.8998	-0.3284	0.9923	-0.4323	1.1249	-0.4325	1.2359	-0.4485	1.3308	-0.4553	1.4036	-0.4545	1.4402	-0.4477	1.4764	-0.4391
10	0.643	0.210	0.8458	-0.4560	0.9744	-0.4833	1.1198	-0.4432	1.2356	-0.4543	1.3316	-0.4609	1.4035	-0.4627	1.4408	-0.4515	1.4735	-0.4430
11	0.698	0.302	1.0228	-0.4274	1.1041	-0.4593	1.2196	-0.4463	1.3097	-0.4537	1.3830	-0.4607	1.4320	-0.4622	1.4487	-0.4589	1.4747	-0.4426
12	0.727	0.334	1.1205	-0.4802	1.1902	-0.4792	1.2832	-0.4542	1.3527	-0.4621	1.4055	-0.4689	1.4356	-0.4708	1.4532	-0.4588	1.4550	-0.4508
13	0.763	0.367	1.2098	-0.4627	1.2624	-0.4746	1.3259	-0.4474	1.3656	-0.4568	1.3919	-0.4617	1.3976	-0.4642	1.3969	-0.4537	1.3893	-0.4461
14	0.530	0.000	0.8513	-0.3413	0.9282	-0.3659	1.0436	-0.3906	1.1442	-0.4347	1.2360	-0.4594	1.3142	-0.4672	1.3823	-0.4563	1.4014	-0.4471
15	0.530	0.246	0.8588	-0.4633	0.9364	-0.4668	1.0509	-0.4561	1.1490	-0.4566	1.2395	-0.4621	1.3144	-0.4639	1.3820	-0.4522	1.4024	-0.4427
16	0.530	0.410	0.8448	-0.4605	0.9459	-0.4601	1.0516	-0.4610	1.1589	-0.4566	1.2463	-0.4631	1.3175	-0.4641	1.3438	-0.4520	1.4018	-0.4430
17	0.530	0.492	0.8328	-0.4662	0.9247	-0.4644	1.0525	-0.4671	1.1556	-0.4628	1.2445	-0.4708	1.3183	-0.4709	1.3808	-0.4592	1.3980	-0.4495
18	0.557	0.567	0.9867	-0.4779	1.0552	-0.4576	1.1521	-0.4636	1.2312	-0.4621	1.2970	-0.4708	1.3478	-0.4717	1.3403	-0.4592	1.3996	-0.4508
19	0.594	0.600	1.0959	-0.4714	1.1479	-0.4542	1.2223	-0.4553	1.2821	-0.4577	1.3290	-0.4631	1.3594	-0.4660	1.3841	-0.4542	1.3874	-0.4470
20	0.631	0.632	1.1704	-0.4692	1.2104	-0.4469	1.2553	-0.4512	1.2894	-0.4547	1.3124	-0.4626	1.3207	-0.4654	1.3234	-0.4531	1.3191	-0.4439
21	0.464	0.753	0.8979	-0.4601	0.9527	-0.4477	1.0364	-0.4402	1.1118	-0.4503	1.1762	-0.4599	1.2294	-0.4504	1.2410	-0.4495	1.2958	-0.4404
22	0.501	0.786	1.0120	-0.4797	1.0550	-0.4437	1.1152	-0.4369	1.1723	-0.4494	1.2175	-0.4591	1.2515	-0.4609	1.2840	-0.4497	1.2914	-0.4407
23	0.537	0.819	1.1343	-0.4805	1.1335	-0.4518	1.1669	-0.4449	1.2000	-0.4560	1.2221	-0.4671	1.2336	-0.4686	1.2406	-0.4570	1.2419	-0.4472
24	0.412	0.000	0.7942	-0.3560	0.8624	-0.3746	0.9623	-0.4033	1.0538	-0.4384	1.1372	-0.4647	1.2141	-0.4740	1.2916	-0.4625	1.3131	-0.4550
25	0.412	0.354	0.8085	-0.4562	0.8749	-0.4649	0.9749	-0.4723	1.0634	-0.4623	1.1458	-0.4672	1.2201	-0.4603	1.2477	-0.4560	1.3192	-0.4479
26	0.412	0.589	0.7869	-0.4509	0.8576	-0.4642	0.9628	-0.4594	1.0518	-0.4570	1.1331	-0.4667	1.2050	-0.4667	1.2022	-0.4554	1.3028	-0.4458
27	0.412	0.707	0.7200	-0.4446	0.7974	-0.4513	0.9149	-0.4439	1.0114	-0.4512	1.0961	-0.4608	1.1490	-0.4521	1.2462	-0.4504	1.2664	-0.4413
28	0.412	0.823	0.3638	-0.4970	0.4391	-0.4437	0.6159	-0.4351	0.7537	-0.4494	0.8430	-0.4591	0.9614	-0.4609	1.0564	-0.4497	1.0833	-0.4402
29	0.412	0.882	0.3875	-0.5051	0.4801	-0.4500	0.6456	-0.4412	0.7862	-0.4550	0.9041	-0.4645	0.9432	-0.4672	1.0542	-0.4564	1.0740	-0.4477
30	0.412	0.962	0.4373	-0.5037	0.5379	-0.4464	0.7251	-0.4402	0.8040	-0.4561	0.8427	-0.4644	0.9188	-0.4644	0.9756	-0.4569	0.9411	-0.4499
31	0.309	0.000	0.7466	-0.3553	0.8039	-0.3711	0.8874	-0.4175	0.9678	-0.4312	1.0421	-0.4585	1.1171	-0.4676	1.1960	-0.4583	1.2197	-0.4507
32	0.309	0.354	0.7341	-0.4418	0.7467	-0.4656	0.8838	-0.4740	0.9613	-0.4620	1.0359	-0.4644	1.1088	-0.4681	1.1920	-0.4558	1.2172	-0.4462
33	0.309	0.589	0.6968	-0.4342	0.7695	-0.4563	0.8632	-0.4579	0.9412	-0.4557	1.0164	-0.4635	1.0898	-0.4535	1.1745	-0.4513	1.1994	-0.4413
34	0.309	0.707	0.6521	-0.4359	0.7301	-0.4592	0.8250	-0.4451	0.9030	-0.4525	0.9771	-0.4514	1.0504	-0.4622	1.1351	-0.4506	1.1592	-0.4416
35	0.309	0.823	0.6210	-0.4884	0.6734	-0.4616	0.7460	-0.4463	0.8138	-0.4569	0.8775	-0.4703	0.9473	-0.4591	1.0247	-0.4578	1.0473	-0.4485
36	0.309	0.882	0.6237	-0.4943	0.6470	-0.4600	0.7124	-0.4458	0.7802	-0.4588	0.8415	-0.4708	0.9104	-0.4698	0.9868	-0.4588	1.0066	-0.4508
37	0.309	0.962	0.5422	-0.4922	0.5711	-0.4478	0.6398	-0.4359	0.7039	-0.4513	0.7424	-0.4617	0.8278	-0.4632	0.8976	-0.4537	0.9176	-0.4461
38	0.221	0.000	0.6654	-0.3554	0.7102	-0.3650	0.7740	-0.4193	0.8344	-0.4279	0.8934	-0.4644	0.9576	-0.4672	1.0387	-0.4599	1.0648	-0.4508
39	0.221	0.354	0.6567	-0.4751	0.7047	-0.4527	0.7705	-0.4597	0.8287	-0.4562	0.8888	-0.4639	0.9521	-0.4621	1.0368	-0.4508	1.0649	-0.4436
40	0.221	0.589	0.6376	-0.4218	0.6872	-0.4601	0.7542	-0.4555	0.8137	-0.4562	0.8727	-0.4650	0.9388	-0.4531	1.0265	-0.4506	1.0549	-0.4430
41	0.221	0.707	0.6140	-0.4375	0.6580	-0.4671	0.7226	-0.4578	0.7811	-0.4615	0.8387	-0.4717	0.9086	-0.4700	1.0004	-0.4587	1.0272	-0.4505
42	0.221	0.823	0.5453	-0.4315	0.5826	-0.4712	0.6424	-0.4528	0.6980	-0.4616	0.7508	-0.4731	0.8293	-0.4708	0.9228	-0.4597	0.9498	-0.4527
43	0.221	0.882	0.5148	-0.4733	0.5548	-0.4625	0.6145	-0.4415	0.6717	-0.4555	0.7246	-0.4636	0.8101	-0.4637	0.9037	-0.4537	0.9279	-0.4474
44	0.221	0.962	0.4412	-0.4962	0.4404	-0.4555	0.5380	-0.4375	0.5941	-0.4524	0.6489	-0.4645	0.7356	-0.4522	0.8269	-0.4513	0.8433	-0.4426
45	0.133	0.000	0.0068	-0.3920	0.0303	-0.4165	0.0585	-0.4189	0.0479	-0.4426	0.1545	-0.4639	0.3891	-0.4530	0.5444	-0.4558	0.6525	-0.4481
46	0.133	0.354	-0.0011	-0.4059	0.0214	-0.4300	0.0505	-0.4351	0.0905	-0.4448	0.1582	-0.4577	0.3429	-0.4577	0.6062	-0.4515	0.6578	-0.4452
47	0.133	0.589	0.0044	-0.4190	0.0233	-0.4477	0.0534	-0.4509	0.0922	-0.4601	0.2050	-0.4736	0.4253	-0.4700	0.6209	-0.4578	0.6733	-0.4505
48	0.133	0.707	-0.0194	-0.4146	0.0012	-0.4525	0.0321	-0.4566	0.1086	-0.4635	0.2197	-0.4745	0.4302	-0.4717	0.6301	-0.4592	0.6837	-0.4531
49	0.133	0.962																
50	0.088	0.000	0.0086	-0.3938	0.0369	-0.4162	0.0876	-0.4216	0.1612	-0.4461	0.2674	-0.4547	0.5434	-0.4640	0.8513	-0.4594	0.8862	-0.4521
51	0.088	0.354	0.0003	-0.4062	0.0303	-0.4273	0.0417	-0.4076	0.1551	-0.4413	0.2652	-0.4621	0.5934	-0.4608	0.8414	-0.4527	0.8587	-0.4454
52	0.088	0.589	-0.0071	-0.4059	0.0195	-0.4218	0.0752	-0.4337	0.1584	-0.4516	0.2504	-0.4636	0.6166	-0.4627	0.8455	-0.4501	0.8598	-0.4430
53	0.088	0.707	0.0063	-0.4093	0.0342	-0.4430	0.1080	-0.4514	0.1889	-0.4619	0.2523	-0.4731	0.7264	-0.4695	0.8401	-0.4544	0.8561	-0.4505
54	0.044	0.000	0.0101	-0.4005	0.0474	-0.4234	0.1120	-0.4299	0.2053	-0.4519	0.3221	-0.4698	0.7050	-0.4666	0.7401	-0.4634	0.7566	-0.4601
55	0.044	0.354	0.0086	-0.3747	0.0406	-0.4016	0.1071	-0.3761	0.2017	-0.4257	0.3711	-0.4466	0.6473	-0.4490	0.7379	-0.4413	0.7537	-0.4378
56	0.044	0.589	-0.0074	-0.3938	0.0280	-0.4116	0.1016	-0.4334	0.2060	-0.4542	0.3240	-0.4641	0.6495	-0.4657	0.7377	-0.4540	0.7544	-0.4462
57	0.044	0.707	0.0244	-0.4065	0.0647	-0.4250	0.1409	-0.4416	0.2253	-0.4566	0.4580	-0.4648	0.6660	-0.4617	0.7344	-0.4490	0.7507	-0.4422
58	0.044	0.823	0.0450	-0.4309	0.1091	-0.4446	0.1982	-0.4460	0.3100	-0.4568	0.4414	-0.4636	0.6410	-0.4604	0.7078	-0.4483	0.7262	-0.4416
59	0.412	0.059	0.7049	-0.3538	0.8617	-0.3777	0.9625	-0.4071	1.0524	-0.4403	1.1365	-0.4544	1.2174	-0.4718	1.2925	-0.4606	1.3134	-0.4541
60	0.221	0.118	0.7951	-0.3551	0.8615	-0.3737	0.9590	-0.4355	1.0500	-0.4519	1.1115	-0.4717	1.2114	-0.4722	1.2866	-0.4606	1.3060	-0.4555
61	0.309	0.059	0.7346	-0.3507	0.7459	-0.3715	0.8810	-0.4161	0.9614	-0.4243	1.0365	-0.4565	1.1139	-0.4678	1.1918	-0.4583	1.2160	-0.4516
62	0.309	0.118	0.7346	-0.3536	0.7435	-0.3696	0.8782	-0.4371	0.9585	-0.4415	1.0336	-0.4641	1.1074	-0.4672	1.1869	-0.4577	1.2118	-0.4509
63	0.309	0.236	0.7377	-0.3479	0.7493	-0.3754	0.8851	-0.4679	0.9669	-0.4580	1.0416	-0.4662	1.1161	-0.4626	1.1945	-0.4513	1.2190	-0.4450
64	0.221	0.059	0.6694	-0.3539	0.7128	-0.3648	0.7770	-0.4192	0.8375	-0.4245	0.8974	-0.4600	0.9621	-0.4531	1.0420	-0.4551	1.0684	-0.4460
65	0.221	0.118	0.6215	-0.3622	0.6650	-0.3759	0.7250	-0.4394	0.7843	-0.4445	0.8452	-0.4726	0.9137	-0.4704	0.9948	-0.4620	1.0214	-0.4540
66	0.221	0.236	0.6437	-0.3547	0.7096	-0.3732	0.7734	-0.4706	0.8355	-0.4663	0.8932	-0.4778	0.9601	-0.4706	1.0393	-0.4625	1.0659	-0.4542
67	0.133	0.118	0.0787	-0.3871	0.0463	-0.4154	0.0726	-0.4217	0.1121	-0.4481	0.1749	-0.4682	0.3986	-0.4655	0.5369	-0.4583	0.6523	-0.4534
68	0.133	0.236	0.0040	-0.3970	0.0228	-0.4217	0.0512	-0.4371	0.0912	-0.4597	0.1587	-0.4694	0.3433	-0.4635	0.5467	-0.4586	0.6516	-0.4517
69	0.044	0.236	0.0142	-0.3938	0.0508	-0.4159	0.1148	-0.4239	0.2099	-0.4444	0.3281	-0.4530	0.7087	-0.4540	0.7460	-0.4540	0.7626	-0.4486
70	0.133	0.000																

Table A-9.- Pressure coefficients for configuration 9.

M = 0.6

			ALPHA =																	
			-2.6	-2.7	0.3	0.2	5.3	5.2	10.3	10.2	15.2	15.2	20.2	20.1	25.2	25.1	26.6	26.5
LINE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	-0.0042	0.3675	0.1995	0.1634	0.5159	-0.3195	0.7347	-1.4880	0.8281	-0.5050	0.8935	-0.3881	0.9775	-0.3997	0.9925	-0.4233
2	0.941	0.295	-0.0104	0.3630	0.1968	0.1626	0.5095	-0.2493	0.7239	-1.4674	0.8154	-0.5765	0.8857	-0.4299	0.9718	-0.4250	0.9861	-0.4547
3	0.941	0.530	0.0081	0.3636	0.2019	0.1813	0.4957	-0.1503	0.7062	-1.4162	0.7996	-0.6442	0.8688	-0.4706	0.9540	-0.4474	0.9738	-0.4733
4	0.941	0.707	0.0289	0.3368	0.1884	0.1706	0.4607	-0.1127	0.6614	-1.3461	0.7568	-0.6727	0.8354	-0.4871	0.9162	-0.4615	0.9394	-0.4764
5	0.941	0.882	-0.0767	0.1638	0.0441	0.0319	0.2631	-0.2049	0.4469	-1.0253	0.5420	-0.6917	0.6363	-0.4725	0.7328	-0.4504	0.7598	-0.4607
6	0.882	0.000	-0.1589	0.1413	0.0058	-0.0204	0.2631	-0.2916	0.4800	-1.3186	0.5920	-0.5335	0.6860	-0.4021	0.7982	-0.4139	0.8326	-0.4304
7	0.882	0.295	-0.1540	0.1441	0.0018	-0.0129	0.2630	-0.2733	0.4789	-1.2744	0.5891	-0.5862	0.6815	-0.4304	0.7912	-0.4346	0.8223	-0.4614
8	0.882	0.530	-0.1381	0.1391	0.0899	-0.0023	0.2528	-0.2585	0.4586	-1.1342	0.5636	-0.6540	0.6576	-0.4818	0.7658	-0.4621	0.8000	-0.4810
9	0.882	0.707	-0.1324	0.1191	-0.0010	-0.0045	0.2182	-0.2326	0.4028	-0.8529	0.5099	-0.6736	0.6043	-0.4855	0.7120	-0.4629	0.7482	-0.4745
10	0.882	0.823	-0.2095	0.0023	-0.0940	-0.1050	0.0882	-0.3084	0.2490	-0.5228	0.3505	-0.6773	0.4537	-0.4813	0.5696	-0.4547	0.6010	-0.4683
11	0.882	0.941	-0.2053	-0.0550	-0.0891	-0.0906	-0.0319	-0.2924	0.0180	-0.5307	0.0642	-0.6735	0.1737	-0.4638	0.2691	-0.4463	0.2950	-0.4504
12	0.823	0.000	-0.4229	-0.1399	-0.2612	-0.2872	-0.0107	-0.5467	0.2097	-0.9972	0.3377	-0.5498	0.4517	-0.4175	0.5905	-0.4269	0.6233	-0.4485
13	0.823	0.295	-0.3988	-0.1261	-0.2425	-0.2639	-0.0040	-0.5151	0.2068	-0.9449	0.3378	-0.6037	0.4485	-0.4462	0.5022	-0.4456	0.6248	-0.4533
14	0.823	0.530	-0.3773	-0.1279	-0.2327	-0.2509	-0.0193	-0.4842	0.1793	-0.7654	0.3066	-0.6673	0.4135	-0.4875	0.5484	-0.4644	0.5913	-0.4787
15	0.823	0.707	-0.3305	-0.1243	-0.2177	-0.2284	-0.0358	-0.4289	0.1382	-0.5213	0.2500	-0.6839	0.3576	-0.4935	0.4867	-0.4583	0.5319	-0.4745
16	0.823	0.882																
17	0.736	0.000	-0.5888	-0.2565	-0.4876	-0.4872	-0.1580	-0.6721	0.0365	-0.7246	0.1575	-0.5399	0.2605	-0.4246	0.3775	-0.4433	0.4182	-0.4561
18	0.736	0.295	-0.5781	-0.2566	-0.4774	-0.4884	-0.1746	-0.6683	0.0163	-0.7190	0.1239	-0.5966	0.2173	-0.4644	0.3516	-0.4672	0.3923	-0.4782
19	0.736	0.530	-0.5037	-0.2678	-0.4478	-0.4606	-0.1602	-0.5822	0.0151	-0.6730	0.1192	-0.6399	0.2307	-0.4957	0.3254	-0.4828	0.3643	-0.5012
20	0.736	0.707	-0.4177	-0.3042	-0.4339	-0.4078	-0.2027	-0.4824	-0.0171	-0.5901	0.0748	-0.6633	0.1814	-0.5117	0.2669	-0.4868	0.2881	-0.4999
21	0.736	0.823	-0.2677	-0.1398	-0.1868	-0.1756	-0.0844	-0.3178	-0.0073	-0.4554	0.0380	-0.6672	0.1191	-0.4935	0.2142	-0.4744	0.2442	-0.4813
22	0.736	0.882	-0.1882	-0.1086	-0.1313	-0.1251	-0.0736	-0.2513	-0.0136	-0.4061	0.0163	-0.6612	0.0946	-0.4842	0.1852	-0.4633	0.2065	-0.4615
23	0.736	0.941	-0.1392	-0.0725	-0.0874	-0.0848	-0.0528	-0.2167	-0.0325	-0.4315	-0.0299	-0.6786	0.0470	-0.4848	0.1235	-0.4673	0.1386	-0.4689
24	0.618	0.000	-0.3075	-0.1820	-0.2287	-0.2468	-0.1127	-0.3659	0.0099	-0.4851	0.0758	-0.5645	0.1435	-0.4525	0.2708	-0.4613	0.3046	-0.4645
25	0.618	0.295	-0.2863	-0.1638	-0.2250	-0.2388	-0.1157	-0.3376	0.0082	-0.4611	0.0771	-0.6031	0.1463	-0.4707	0.2597	-0.4642	0.3006	-0.4833
26	0.618	0.530	-0.2536	-0.1452	-0.1982	-0.2087	-0.1053	-0.3008	0.0053	-0.3982	0.0654	-0.6361	0.1329	-0.5025	0.2378	-0.4874	0.2777	-0.5068
27	0.618	0.707	-0.2063	-0.1140	-0.1593	-0.1572	-0.0861	-0.2478	-0.0010	-0.3424	0.0444	-0.6459	0.1047	-0.5096	0.1979	-0.4985	0.2320	-0.5018
28	0.618	0.823	-0.1474	-0.0897	-0.1072	-0.1033	-0.0576	-0.1975	-0.0056	-0.3228	0.0122	-0.6433	0.0616	-0.5190	0.1382	-0.4879	0.1759	-0.4918
29	0.618	0.882	-0.1293	-0.0754	-0.0914	-0.0883	-0.0528	-0.1856	-0.0110	-0.3328	-0.0047	-0.6378	0.0397	-0.5170	0.1083	-0.4901	0.1433	-0.4998
30	0.618	0.941	-0.1133	-0.0576	-0.0686	-0.0725	-0.0520	-0.1051	-0.0402	-0.4543	-0.0643	-0.6709	-0.0125	-0.5100	0.0387	-0.4820	0.0649	-0.5043
31	0.500	0.000	-0.2373	-0.1632	-0.2052	-0.2143	-0.1301	-0.2722	-0.0353	-0.3534	0.0058	-0.5704	0.0458	-0.4866	0.1549	-0.4677	0.1836	-0.4689
32	0.500	0.295	-0.2225	-0.1544	-0.1946	-0.2081	-0.1253	-0.2534	-0.0395	-0.3331	0.0023	-0.6083	0.0417	-0.4985	0.1457	-0.4949	0.1757	-0.4993
33	0.500	0.530	-0.1894	-0.1261	-0.1673	-0.1698	-0.1142	-0.2182	-0.0359	-0.2924	0.0006	-0.6264	0.0377	-0.5273	0.1304	-0.5117	0.1607	-0.5172
34	0.500	0.707	-0.1520	-0.1029	-0.1313	-0.1303	-0.0827	-0.1848	-0.0251	-0.2659	0.0018	-0.6093	0.0320	-0.5503	0.1156	-0.5057	0.1418	-0.5257
35	0.500	0.823	-0.1217	-0.0743	-0.0996	-0.0959	-0.0592	-0.1650	-0.0285	-0.2738	-0.0158	-0.5879	0.0024	-0.5573	0.0693	-0.5163	0.0940	-0.5307
36	0.500	0.882	-0.1050	-0.0624	-0.0834	-0.0808	-0.0537	-0.1572	-0.0307	-0.2931	-0.0333	-0.5668	-0.0155	-0.5515	0.0381	-0.5175	0.0649	-0.5328
37	0.500	0.941	-0.1033	-0.0541	-0.0529	-0.0619	-0.0480	-0.1688	-0.0411	-0.4898	-0.0692	-0.6732	-0.0475	-0.5306	-0.0064	-0.4956	0.0110	-0.5035
38	0.382	0.000	-0.2658	-0.2310	-0.2315	-0.2440	-0.1998	-0.2678	-0.1285	-0.2927	-0.1178	-0.5366	-0.1025	-0.4933	-0.0179	-0.4747	0.0105	-0.4816
39	0.382	0.295	-0.2395	-0.2115	-0.2172	-0.2204	-0.1868	-0.2372	-0.1236	-0.2758	-0.1146	-0.5671	-0.1029	-0.5124	-0.0167	-0.4974	0.0070	-0.5018
40	0.382	0.530	-0.1985	-0.1725	-0.1858	-0.1877	-0.1565	-0.2027	-0.1083	-0.2527	-0.0989	-0.5683	-0.0921	-0.5566	-0.0161	-0.5208	0.0128	-0.5343
41	0.382	0.707	-0.1644	-0.1391	-0.1515	-0.1525	-0.1249	-0.1885	-0.0837	-0.2534	-0.0827	-0.5518	-0.0843	-0.5778	-0.0150	-0.5368	0.0145	-0.5482
42	0.382	0.823	-0.1316	-0.1089	-0.1094	-0.1105	-0.0915	-0.1637	-0.0667	-0.2517	-0.0750	-0.4836	-0.0891	-0.5770	-0.0410	-0.5323	-0.0025	-0.5512
43	0.382	0.882	-0.1173	-0.0814	-0.0866	-0.0917	-0.0775	-0.1501	-0.0509	-0.2917	-0.0727	-0.4986	-0.0851	-0.5510	-0.0467	-0.5294	-0.0186	-0.5197
44	0.382	0.941	-0.1110	-0.0645	-0.0683	-0.0732	-0.0651	-0.1863	-0.0613	-0.5164	-0.0969	-0.6766	-0.1162	-0.5469	-0.0874	-0.5255	-0.0656	-0.5182
45	0.264	0.000	-0.4259	-0.4298	-0.4333	-0.4363	-0.4315	-0.3034	-0.3796	-0.2896	-0.4186	-0.4998	-0.4492	-0.5182	-0.3791	-0.5048	-0.3443	-0.5029
46	0.264	0.295	-0.3632	-0.3956	-0.3942	-0.3848	-0.4012	-0.3107	-0.3676	-0.2791	-0.4071	-0.5188	-0.4470	-0.5543	-0.3749	-0.5223	-0.3343	-0.5257
47	0.264	0.530	-0.3093	-0.3540	-0.3455	-0.3382	-0.3683	-0.2671	-0.3397	-0.3071	-0.3835	-0.5153	-0.4333	-0.5866	-0.3630	-0.5531	-0.3235	-0.5506
48	0.264	0.707	-0.2933	-0.3822	-0.2966	-0.2949	-0.3107	-0.2856	-0.2809	-0.3397	-0.3201	-0.4620	-0.3751	-0.5936	-0.3157	-0.5601	-0.2773	-0.5600
49	0.264	0.823	-0.1863	-0.1756	-0.1797	-0.1798	-0.1764	-0.2115	-0.1552	-0.2951	-0.1980	-0.4087	-0.2402	-0.5702	-0.1980	-0.5439	-0.1725	-0.5515
50	0.264	0.882	-0.1387	-0.1187	-0.1240	-0.1257	-0.1190	-0.1736	-0.1067	-0.3164	-0.1375	-0.4655	-0.1990	-0.5653	-0.1621	-0.5358	-0.1352	-0.5497
51	0.264	0.941	-0.1188	-0.0739	-0.0876	-0.0866	-0.0821	-0.2050	-0.0846	-0.5081	-0.1239	-0.6385	-0.1933	-0.5537	-0.1633	-0.5290	-0.1396	-0.5411
52	0.177	0.000	-0.3476	-0.4117	-0.3902	-0.3951	-0.4204	-0.2975	-0.4095	-0.1964	-0.5268	-0.4305	-0.6706	-0.4974	-0.5721	-0.4759	-0.5469	-0.4959
53	0.177	0.295	-0.2439	-0.3528	-0.3204	-0.3120	-0.3986	-0.1720	-0.3920	-0.1658	-0.5242	-0.4625	-0.6816	-0.5450	-0.5813	-0.5239	-0.5602	-0.5453
54	0.177	0.530	-0.1524	-0.2797	-0.2316	-0.2326	-0.3396	-0.1120	-0.3494	-0.1513	-0.4848	-0.4556	-0.6481	-0.5808	-0.5577	-0.5559	-0.5600	-0.5791
55	0.177	0.707	-0.1849	-0.2521	-0.2192	-0.2148	-0.2066	-0.1750	-0.2937	-0.2206	-0.4045	-0.4110	-0.5460	-0.5772	-0.4888	-0.5505	-0.4560	-0.5549
56	0.177	0.882	-0.2022	-0.1078	-0.1758	-0.1753	-0.1860	-0.2331	-0.1664	-0.3619	-0.2199	-0.4690	-0.3318	-0.5601	-0.2912	-0.5525	-0.2630	-0.5537
57	0.118	0.000	-0.1560	-0.1028	-0.1690	-0.1670	-0.1845	-0.1359	-0.1854	-0.1100	-0.3039	-0.3773	-0.4097	-0.4476	-9.3843	-0.4531	-0.3678	-0.4603
58	0.118	0.295	-0.0368	-0.1064	-0.0779	-0.0717	-0.1548	-0.0307	-0.1605	-0.0573	-0.2943	-0.4069	-0.4222	-0.5158	-0.4088	-0.5028	-0.3780	-0.5217
59	0.118	0.530	0.0331	-0.0334	0.0035	0.0075	-0.0982	0.0098	-0.1163	-0.0041	-0.2692	-0.4156	-0.4288	-0.5702	-0.4045	-0.5514	-0.3824	-0.5669
60	0.118	0.707	0.0157	-0.0274	-0.0042	-0.0056	-0.0791	-0.0103	-0.0880	-0.0154	-0.2796	-0.3527	-0.4012	-0.5089	-0.3823	-0.5690	-0.3585	-0.5098
61	0.118	0.823	-0.1447	-0.1377	-0.1215	-0.1255	-0.1463	-0.1910	-0.1301	-0.2171	-0.2509	-0.3555	-0.4307	-0.5580	-0.3890	-0.5505	-0.3747	-0.5543
62	0.118	0.941	-0.1248	-0.1966	-0.0938	-0.0899	-0.1116	-0.2366	-0.1015	-0.4385	-0.1682	-0.5216	-0.3244	-0.5451	-0.2900	-0.5445	-0.2774	-0.5514
63	0.059	0.000	-0.0685	-0.0670	-0.0681	-0.0665	-0.0673	-0.0737	-0.0680	-0.0653	-0.2072	-0.3261	-0.3204	-0.4121	-0.3110	-0.4284	-0.3046	-0.4443
64	0.059	0.295	0.0225	0.0167	0.0301	0.0308	-0.0221	-0.0162	-0.0366	-0.0102	-0.1068	-0.3579	-0.3458	-0.4784	-0.3345	-0.4879	-0.3487	-0.5102
65	0.059	0.530	0.0802	0.0853	0.1056	0.1110	0.0365	0.0379	0.0117	0.0575	-0.1826	-0.3634	-0.3683	-0.5376	-0.3595	-0.5409	-0.3736	-0.5529
66	0.059	0.707	0.0887	0.0899	0.1079	0.1082	0.0495	0.0557	0.0379	0.0750	-0.1498	-0.2945	-0.3656	-0.5640	-0.3573	-0.5601	-0.3721	-0.5774
67	0.059	0.882	-0.0520	-0.0117	-0.0188	-0.0217	-0.0225	-0.0696	-0.0295	-0.1240	-0.1788	-0.3030	-0.4191	-0.5527	-0.4042	-0.5666	-0.3834	-0.5601
68	0.736	-0.707	-0.4356	-0.2541	-0.3021	-0.3928	-0.1637	-0.4992	-0.0079	-0.5936	0.0864	-0.6546	0.1727	-0.4852	0.2996	-0.4655	0.3316	-0.4673
69	0.288	-0.707	-0.2769	-0.2928	-0.2917	-0.2958	-0.3048	-0.2706	-0.2748	-0.3303	-0.3057	-0.4618	-0.3679	-0.5583	-0.3012	-0.5298	-0.2718	-0.5376

Table A-9.- (Continued).
M = 0.6

			ALPHA =															
			27.3	27.2	30.1	30.0	35.0	34.9	40.0	39.9	45.0	44.8	49.9	49.8	54.9	54.8	56.5	56.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	1.0105	-0.4081	1.0623	-0.4061	1.0725	-0.4175	1.0888	-0.4341	1.0931	-0.4328	1.0676	-0.4586	1.0301	-0.4520	1.0176	-0.4515
2	0.941	0.295	1.0011	-0.4375	1.0332	-0.4304	1.0656	-0.4387	1.0830	-0.4437	1.0862	-0.4413	1.0619	-0.4678	1.0238	-0.4628	1.0125	-0.4626
3	0.941	0.530	0.9866	-0.4587	1.0143	-0.4496	1.0500	-0.4489	1.0685	-0.4534	1.0719	-0.4463	1.0481	-0.4768	1.0129	-0.4714	1.0007	-0.4731
4	0.941	0.707	0.9410	-0.4597	0.9763	-0.4575	1.0142	-0.4498	1.0401	-0.4609	1.0451	-0.4568	1.0181	-0.4768	0.9924	-0.4568	0.9754	-0.4655
5	0.941	0.882	0.7531	-0.4480	0.7970	-0.4447	0.8500	-0.4396	0.8916	-0.4560	0.9135	-0.4463	0.9033	-0.4726	0.8900	-0.4535	0.8796	-0.4619
6	0.882	0.000	0.8483	-0.4254	0.8994	-0.4228	0.9767	-0.4269	1.0374	-0.4472	1.0816	-0.4448	1.0920	-0.4706	1.0891	-0.4562	1.0844	-0.4699
7	0.882	0.295	0.8423	-0.4406	0.8940	-0.4347	0.9692	-0.4454	1.0250	-0.4507	1.0701	-0.4559	1.0844	-0.4662	1.0838	-0.4630	1.0792	-0.4625
8	0.882	0.530	0.8148	-0.4616	0.8667	-0.4509	0.9439	-0.4593	0.9996	-0.4596	1.0461	-0.4608	1.0613	-0.4730	1.0646	-0.4668	1.0608	-0.4729
9	0.882	0.707	0.7982	-0.4604	0.8091	-0.4467	0.8873	-0.4558	0.9454	-0.4602	0.9941	-0.4606	1.0105	-0.4718	1.0204	-0.4679	1.0167	-0.4703
10	0.882	0.823	0.6022	-0.4579	0.6599	-0.4518	0.7442	-0.4475	0.8170	-0.4683	0.8733	-0.4605	0.9028	-0.4837	0.9201	-0.4637	0.9193	-0.4787
11	0.882	0.941	0.2852	-0.4440	0.3268	-0.4389	0.3894	-0.4390	0.4428	-0.4542	0.5075	-0.4579	0.5417	-0.4726	0.5740	-0.4576	0.5788	-0.4694
12	0.823	0.000	0.6519	-0.4331	0.7253	-0.4352	0.8331	-0.4399	0.9293	-0.4565	1.0044	-0.4617	1.0524	-0.4730	1.0867	-0.4657	1.0907	-0.4770
13	0.823	0.295	0.6429	-0.4465	0.7169	-0.4434	0.8259	-0.4506	0.9184	-0.4582	0.9995	-0.4664	1.0456	-0.4615	1.0791	-0.4764	1.0780	-0.4723
14	0.823	0.530	0.6117	-0.4645	0.6812	-0.4601	0.7904	-0.4610	0.8827	-0.4653	0.9470	-0.4746	1.0144	-0.4742	1.0523	-0.4789	1.0539	-0.4775
15	0.823	0.707	0.5429	-0.4661	0.6096	-0.4598	0.7195	-0.4581	0.8114	-0.4613	0.8947	-0.4737	0.9481	-0.4733	0.9873	-0.4823	0.9915	-0.4743
16	0.823	0.882	0.2744	-0.4522	0.3252	-0.4421	0.4210	-0.4440	0.5024	-0.4575	0.5737	-0.4520	0.6288	-0.4779	0.6779	-0.4740	0.6842	-0.4626
17	0.736	0.000	0.4368	-0.4364	0.4974	-0.4382	0.6229	-0.4408	0.7466	-0.4554	0.8534	-0.4526	0.9381	-0.4750	1.0149	-0.4763	1.0320	-0.4665
18	0.736	0.295	0.3948	-0.4726	0.4712	-0.4564	0.6043	-0.4594	0.7294	-0.4757	0.8380	-0.4675	0.9235	-0.4867	0.9986	-0.4948	1.0178	-0.4870
19	0.736	0.530	0.3488	-0.4865	0.4422	-0.4769	0.5688	-0.4738	0.6878	-0.4800	0.8028	-0.4838	0.8848	-0.4906	0.9606	-0.4898	0.9831	-0.4839
20	0.736	0.707	0.2871	-0.4863	0.3597	-0.4744	0.4839	-0.4713	0.5991	-0.4823	0.7116	-0.4855	0.7954	-0.4862	0.8694	-0.4858	0.8935	-0.4809
21	0.736	0.823	0.2432	-0.4787	0.2928	-0.4638	0.3815	-0.4632	0.4693	-0.4766	0.5569	-0.4794	0.6252	-0.4790	0.6890	-0.4771	0.7083	-0.4737
22	0.736	0.882	0.2018	-0.4625	0.2498	-0.4524	0.3796	-0.4544	0.4097	-0.4603	0.4864	-0.4583	0.5475	-0.4716	0.6103	-0.4539	0.6194	-0.4609
23	0.736	0.941	0.1274	-0.4585	0.1626	-0.4528	0.2237	-0.4530	0.2066	-0.4640	0.3502	-0.4584	0.3976	-0.4697	0.4464	-0.4605	0.4517	-0.4659
24	0.618	0.000	0.3219	-0.4543	0.3917	-0.4511	0.5114	-0.4576	0.6265	-0.4635	0.7630	-0.4681	0.8250	-0.4748	0.9205	-0.4651	0.9487	-0.4776
25	0.618	0.295	0.3169	-0.4784	0.3856	-0.4625	0.5009	-0.4703	0.6119	-0.4759	0.7276	-0.4681	0.8157	-0.4953	0.9058	-0.4910	0.9238	-0.4770
26	0.618	0.530	0.2929	-0.4966	0.3539	-0.4772	0.4647	-0.4822	0.5760	-0.4806	0.6864	-0.4780	0.7751	-0.4977	0.8647	-0.4904	0.8837	-0.4884
27	0.618	0.707	0.2455	-0.4976	0.2963	-0.4775	0.3971	-0.4804	0.5005	-0.4799	0.6021	-0.4777	0.6870	-0.4979	0.7727	-0.4966	0.7925	-0.4903
28	0.618	0.823	0.1638	-0.4826	0.2124	-0.4690	0.2892	-0.4710	0.3778	-0.4802	0.4590	-0.4811	0.5285	-0.4837	0.6027	-0.4873	0.6183	-0.4844
29	0.618	0.882	0.1303	-0.4840	0.1707	-0.4673	0.2405	-0.4687	0.3168	-0.4789	0.3919	-0.4781	0.4543	-0.4797	0.5223	-0.4822	0.5357	-0.4839
30	0.618	0.941	0.0566	-0.4855	0.0848	-0.4687	0.1372	-0.4676	0.1964	-0.4757	0.2547	-0.4805	0.3033	-0.4813	0.3617	-0.4800	0.3685	-0.4835
31	0.500	0.000	0.1990	-0.4639	0.2708	-0.4607	0.3761	-0.4599	0.4885	-0.4759	0.6060	-0.4739	0.7071	-0.4953	0.8066	-0.4578	0.8352	-0.4683
32	0.500	0.295	0.1893	-0.4891	0.2577	-0.4778	0.3622	-0.4788	0.4758	-0.4857	0.5919	-0.4883	0.6917	-0.5000	0.7954	-0.4766	0.8188	-0.4769
33	0.500	0.530	0.1734	-0.4861	0.2359	-0.4706	0.3392	-0.4741	0.4468	-0.4771	0.5598	-0.4800	0.6570	-0.4899	0.7599	-0.4834	0.7811	-0.4857
34	0.500	0.707	0.1413	-0.5181	0.1975	-0.5062	0.2886	-0.4986	0.3906	-0.5011	0.4893	-0.4857	0.5809	-0.5114	0.6790	-0.4936	0.6957	-0.4987
35	0.500	0.823	0.0817	-0.5136	0.1244	-0.4986	0.1971	-0.4903	0.2779	-0.4967	0.3416	-0.4839	0.4370	-0.5107	0.5182	-0.4898	0.5316	-0.4967
36	0.500	0.882	0.0525	-0.5138	0.0924	-0.5004	0.1524	-0.4913	0.2256	-0.5007	0.3031	-0.4857	0.3715	-0.5051	0.4469	-0.4900	0.4598	-0.4965
37	0.500	0.941	0.0007	-0.5074	0.0215	-0.4925	0.0662	-0.4779	0.1212	-0.4811	0.1786	-0.4901	0.2370	-0.4854	0.2952	-0.4828	0.3063	-0.4712
38	0.382	0.000	0.0221	-0.4891	0.0860	-0.4721	0.1965	-0.4633	0.3120	-0.4678	0.4275	-0.4820	0.5423	-0.4747	0.6572	-0.4668	0.6843	-0.4574
39	0.382	0.295	0.0233	-0.5130	0.0847	-0.4968	0.1905	-0.4918	0.3046	-0.4856	0.4197	-0.5028	0.5334	-0.4848	0.6506	-0.4886	0.6733	-0.4828
40	0.382	0.530	0.0732	-0.5262	0.0807	-0.5182	0.1799	-0.5158	0.2903	-0.5073	0.4060	-0.4954	0.5065	-0.5068	0.6260	-0.4931	0.6469	-0.5044
41	0.382	0.707	0.0163	-0.5345	0.0710	-0.5208	0.1548	-0.5235	0.2541	-0.5162	0.3433	-0.5071	0.4532	-0.5166	0.5632	-0.5108	0.5623	-0.5141
42	0.382	0.823	-0.0131	-0.5315	0.0262	-0.5275	0.0876	-0.5208	0.1787	-0.5141	0.2427	-0.5040	0.3347	-0.5163	0.4305	-0.5096	0.4483	-0.5136
43	0.382	0.882	-0.0312	-0.5219	0.0071	-0.5070	0.0627	-0.5022	0.1362	-0.5069	0.2096	-0.4948	0.2811	-0.4994	0.3688	-0.4851	0.3829	-0.4955
44	0.382	0.941	-0.0780	-0.5155	-0.0501	-0.4990	-0.0131	-0.4989	0.0435	-0.4982	0.1010	-0.4843	0.1577	-0.4857	0.2313	-0.4726	0.2434	-0.4826
45	0.264	0.000	-0.3317	-0.4981	-0.2692	-0.4803	-0.1576	-0.4804	-0.0314	-0.4777	0.0968	-0.4708	0.2278	-0.4762	0.3715	-0.4518	0.4101	-0.4646
46	0.264	0.295	-0.3254	-0.5279	-0.2660	-0.5113	-0.1538	-0.5043	-0.0281	-0.4983	0.0984	-0.4908	0.2245	-0.4952	0.3634	-0.4798	0.4004	-0.4838
47	0.264	0.530	-0.3190	-0.5496	-0.2581	-0.5387	-0.1496	-0.5351	-0.0297	-0.5254	0.0951	-0.5129	0.2194	-0.5148	0.3577	-0.5055	0.3924	-0.5072
48	0.264	0.707	-0.2764	-0.5574	-0.2257	-0.5475	-0.1243	-0.5445	-0.0113	-0.5356	0.1027	-0.5186	0.2152	-0.5229	0.3435	-0.5132	0.3783	-0.5219
49	0.264	0.823	-0.1762	-0.5481	-0.1336	-0.5347	-0.0634	-0.5318	0.0192	-0.5276	0.1081	-0.5237	0.2027	-0.5128	0.3081	-0.4980	0.3265	-0.5152
50	0.264	0.882	-0.1366	-0.5385	-0.1005	-0.5241	-0.0442	-0.5178	0.0273	-0.5095	0.1085	-0.5141	0.1872	-0.4972	0.2808	-0.4858	0.2957	-0.4998
51	0.264	0.941	-0.1485	-0.5359	-0.1234	-0.5213	-0.0853	-0.5130	-0.0285	-0.5054	0.0294	-0.5108	0.0874	-0.4922	0.1674	-0.4851	0.1774	-0.4885
52	0.177	0.000	-0.5446	-0.4872	-0.4791	-0.4770	-0.4432	-0.4704	-0.2669	-0.4830	-0.1199	-0.4663	0.0030	-0.4808	0.1397	-0.4677	0.1762	-0.4684
53	0.177	0.295	-0.5532	-0.5165	-0.5077	-0.5044	-0.3988	-0.4961	-0.2314	-0.4973	-0.0877	-0.4828	0.0314	-0.4855	0.1668	-0.4851	0.1998	-0.4903
54	0.177	0.530	-0.5422	-0.5562	-0.5072	-0.5434	-0.3750	-0.5392	-0.2185	-0.5339	-0.0822	-0.5092	0.0368	-0.5086	0.1655	-0.5108	0.1953	-0.5189
55	0.177	0.707	-0.4574	-0.5545	-0.4097	-0.5382	-0.2899	-0.5428	-0.1621	-0.5488	-0.0516	-0.5261	0.0460	-0.5186	0.1692	-0.5178	0.2108	-0.5002
56	0.177	0.882	-0.2647	-0.5522	-0.2286	-0.5276	-0.1553	-0.5299	-0.0798	-0.5367	0.0065	-0.5159	0.0917	-0.5115	0.1899	-0.5077	0.2250	-0.4878
57	0.118	0.000	-0.3712	-0.4587	-0.3462	-0.4382	-0.2609	-0.4558	-0.1894	-0.4771	-0.0989	-0.4851	-0.0073	-0.4865	0.1040	-0.4673	0.1424	-0.4688
58	0.118	0.295	-0.3832	-0.5055	-0.3391	-0.5010	-0.2744	-0.5015	-0.2002	-0.4971	-0.1102	-0.4925	-0.0136	-0.5126	0.0978	-0.4833	0.1286	-0.4938
59	0.118	0.530	-0.3829	-0.5479	-0.3334	-0.5433	-0.2702	-0.5456	-0.1953	-0.5311	-0.1067	-0.5215	-0.0132	-0.5283	0.0980	-0.5085	0.1296	-0.5147
60	0.118	0.707	-0.3520	-0.5633	-0.3203	-0.5628	-0.2479	-0.5648	-0.1712	-0.5496	-0.0968	-0.5351	0.0042	-0.5401	0.1085	-0.5227	0.1403	-0.5387
61	0.118	0.823	-0.3475	-0.5608	-0.3316	-0.5527	-0.2462	-0.5498	-0.1819	-0.5402	-0.0994	-0.5203	0.0001	-0.5175	0.1026	-0.5108	0.1291	-0.5036
62	0.118	0.941	-0.2437	-0.5482	-0.2550	-0.5430	-0.2111	-0.5322	-0.1562	-0.5259	-0.0947	-0.5027	-0.0194	-0.5058	0.0570	-0.4974	0.0761	-0.4895
63	0.059	0.000	-0.3220	-0.4444	-0.3143	-0.4433	-0.2833	-0.4507	-0.2444	-0.4743	-0.1867	-0.4720	-0.1229	-0.4979	-0.0310	-0.4859	-0.0082	-0.4817
64	0.059	0.295	-0.3425	-0.5107	-0.3220	-0.4987	-0.2968	-0.4934	-0.2456	-0.5005	-0.1794	-0.4965	-0.1069	-0.5039	-0.0225	-0.4787	0.0043	-0.4924
65	0.059	0.530	-0.3597	-0.5490	-0.3334	-0.5387	-0.3068	-0.5310	-0.2594	-0.5311	-0.1935	-0.5111	-0.1202	-0.5142	-0.0260	-0.5003	-0.0045	-0.5182
66	0.059	0.707	-0.3609	-0.5739	-0.3326	-0.5681	-0.2993	-0.5581	-0.2511	-0.5554	-0.1866	-0.5249	-0.1115	-0.5241	-0.0153	-0.5132	0.0070	-0.5331
67	0.059	0.882	-0.3461	-0.5736	-0.3594	-0.5556	-0.2759	-0.5492	-0.2307	-0.5373	-0.1446	-0.5301	-0.1303	-0.5157	-0.0335	-0.4950	-0.0068	-0.5042
68	0.736	-0.707	0.3476	-0.4679	0.4035	-0.4504	0.5198	-0.4501	0.6362	-0.4568	0.7500	-0.4665	0.8255	-0.4655	0.9166	-0.4473	0.9182	-0.4626
69	0.288	-0.707	-0.2476	-0.5416	-0.1946	-0.5213	-0.0974	-0.5130	0.0122	-0.5054	0.1305	-0.5005	0.2341	-0.4905	0.3692	-0.4714	0.3924	-0.4748

Table A-9.- (Continued).
M = 0.8

			ALPHA =															
			-2.7	-2.0	0.1	0.1	5.1	5.0	10.1	10.0	15.1	15.0	20.0	20.0	25.0	25.0	26.5	26.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	0.1685	0.4974	0.3425	0.3307	0.6089	0.0239	0.7970	-1.3995	0.9289	-0.4613	0.9803	-0.4268	1.0583	-0.4326	1.0791	-0.4494
2	0.941	0.295	0.1570	0.4992	0.3353	0.3251	0.5981	0.0290	0.7875	-1.4104	0.9096	-0.5150	0.9704	-0.4587	1.0489	-0.4577	1.0703	-0.4739
3	0.941	0.530	0.1544	0.4788	0.3246	0.3183	0.5841	0.0439	0.7691	-1.3653	0.8895	-0.5739	0.9529	-0.4891	1.0324	-0.4796	1.0519	-0.4932
4	0.941	0.707	0.1332	0.4381	0.2907	0.2877	0.5398	0.0429	0.7207	-1.2627	0.8430	-0.6092	0.9112	-0.4978	0.9944	-0.4848	1.0136	-0.4967
5	0.941	0.882	-0.0180	0.2424	0.1205	0.1166	0.3339	-0.0563	0.5021	-0.9981	0.6258	-0.6224	0.7152	-0.4982	0.8121	-0.4783	0.8350	-0.4921
6	0.882	0.000	0.0799	0.2788	0.1627	0.1553	0.3718	-0.0685	0.5530	-0.9650	0.6948	-0.4859	0.7778	-0.4359	0.8888	-0.4555	0.9159	-0.4722
7	0.882	0.295	0.0766	0.2806	0.1606	0.1550	0.3697	-0.0658	0.5482	-0.9459	0.6859	-0.5253	0.7695	-0.4650	0.8768	-0.4762	0.9096	-0.4774
8	0.882	0.530	0.0187	0.2631	0.1485	0.1415	0.3505	-0.0715	0.5249	-0.8881	0.6574	-0.5821	0.7428	-0.4965	0.8519	-0.4977	0.8819	-0.4938
9	0.882	0.707	-0.0706	0.2146	0.1006	0.0976	0.2970	-0.1028	0.4655	-0.7463	0.5939	-0.6015	0.6849	-0.5006	0.7960	-0.4961	0.8254	-0.4904
10	0.882	0.823	-0.1435	0.0644	-0.0347	-0.0375	0.1413	-0.2185	0.2988	-0.4819	0.4781	-0.5954	0.5329	-0.4932	0.6510	-0.4817	0.6842	-0.4888
11	0.882	0.941	-0.2324	-0.0565	-0.1344	-0.1474	-0.0655	-0.2997	0.0422	-0.6444	0.0889	-0.5892	0.2364	-0.4860	0.3346	-0.4723	0.3659	-0.4828
12	0.823	0.000	-0.1389	0.0436	-0.0417	-0.0436	0.1137	-0.2215	0.2843	-0.7285	0.4432	-0.4863	0.5441	-0.4549	0.6844	-0.4531	0.7240	-0.4722
13	0.823	0.295	-0.1361	0.0498	-0.0381	-0.0409	0.1204	-0.2121	0.2832	-0.6090	0.4363	-0.5183	0.5352	-0.4725	0.6764	-0.4748	0.7161	-0.4933
14	0.823	0.530	-0.1484	0.0299	-0.0549	-0.0579	0.0993	-0.2216	0.2532	-0.3824	0.3983	-0.5687	0.5005	-0.5011	0.6406	-0.4954	0.6796	-0.5082
15	0.823	0.707	-0.1928	-0.0158	-0.1040	-0.1036	0.0482	-0.2555	0.1984	-0.3172	0.3308	-0.5859	0.4366	-0.5048	0.5720	-0.4919	0.6122	-0.5038
16	0.823	0.882																
17	0.736	0.000	-1.2701	-0.8518	-0.9700	-0.9930	-0.7351	-1.2988	-0.2253	-0.0329	0.2307	-0.4524	0.3388	-0.4551	0.4759	-0.4569	0.5041	-0.4720
18	0.736	0.295	-1.2797	-0.8447	-0.9642	-0.9729	-0.7425	-1.3099	-0.2755	-1.1155	0.2060	-0.4944	0.3248	-0.4834	0.4538	-0.4833	0.4860	-0.4946
19	0.736	0.530	-1.2726	-0.7997	-0.8905	-0.9210	-0.7104	-1.2919	-0.3793	-1.3044	0.1224	-0.5318	0.2788	-0.5074	0.3586	-0.5091	0.4353	-0.5176
20	0.736	0.707	-1.1353	-0.7434	-0.8616	-0.8785	-0.6733	-1.2401	-0.4461	-1.2937	-0.0957	-0.5548	0.1957	-0.5140	0.2943	-0.5130	0.3226	-0.5183
21	0.736	0.823	-0.7024	-0.3655	-0.5257	-0.5375	-0.2531	-0.7141	-0.0982	-0.7221	0.0283	-0.5573	0.1617	-0.5029	0.2760	-0.5020	0.3104	-0.5061
22	0.736	0.882	-0.3797	-0.1781	-0.2661	-0.2499	-0.1268	-0.4497	-0.0275	-0.5657	0.0260	-0.5493	0.1350	-0.4862	0.2378	-0.4789	0.2684	-0.4944
23	0.736	0.941	-0.2723	-0.1340	-0.1834	-0.1778	-0.1053	-0.3457	-0.0577	-0.5364	-0.0491	-0.5550	0.0782	-0.4916	0.1669	-0.4802	0.1921	-0.4973
24	0.618	0.000	-0.9184	-0.1820	-0.5590	-0.5580	-0.0553	-1.2159	0.0522	-0.6653	0.1644	-0.4612	0.2684	-0.4720	0.3667	-0.4786	0.4821	-0.4927
25	0.618	0.295	-0.7784	-0.1744	-0.5154	-0.5386	-0.0546	-1.1251	0.0427	-0.7034	0.1536	-0.4926	0.2346	-0.4995	0.3566	-0.4975	0.3914	-0.5054
26	0.618	0.530	-0.5553	-0.1671	-0.4525	-0.4537	-0.0563	-0.6693	0.0307	-0.6190	0.1750	-0.5405	0.2049	-0.5260	0.3262	-0.5156	0.3577	-0.5234
27	0.618	0.707	-0.4531	-0.1722	-0.3593	-0.3592	-0.0720	-0.4998	0.0164	-0.5501	0.0851	-0.5555	0.1603	-0.5296	0.2709	-0.5167	0.3011	-0.5213
28	0.618	0.823	-0.2185	-0.0870	-0.1374	-0.1412	-0.0424	-0.3260	0.0045	-0.4930	0.0365	-0.5521	0.1055	-0.5222	0.1976	-0.5055	0.2255	-0.5101
29	0.618	0.882	-0.2189	-0.0943	-0.1256	-0.1394	-0.0632	-0.3044	-0.0160	-0.5257	0.0081	-0.5545	0.0764	-0.5230	0.1600	-0.5058	0.1884	-0.5104
30	0.618	0.941	-0.1939	-0.0854	-0.1120	-0.1156	-0.0722	-0.2984	-0.0597	-0.6634	-0.0659	-0.5717	0.0151	-0.5199	0.0877	-0.5022	0.1096	-0.5031
31	0.500	0.000	-0.2688	-0.1082	-0.1642	-0.1715	-0.0754	-0.3410	0.0215	-0.5795	0.1040	-0.4730	0.1577	-0.4883	0.2616	-0.4868	0.2954	-0.4956
32	0.500	0.295	-0.2624	-0.1033	-0.1714	-0.1743	-0.0723	-0.3225	0.0183	-0.5110	0.0934	-0.5063	0.1474	-0.5117	0.2495	-0.5078	0.2829	-0.5142
33	0.500	0.530	-0.2503	-0.0945	-0.1637	-0.1675	-0.0661	-0.2956	0.0128	-0.3749	0.0741	-0.5499	0.1244	-0.5351	0.2230	-0.5226	0.2555	-0.5300
34	0.500	0.707	-0.1595	-0.0875	-0.1004	-0.1158	-0.0575	-0.2213	0.0059	-0.2823	0.0466	-0.5567	0.0910	-0.5378	0.1842	-0.5344	0.2144	-0.5378
35	0.500	0.823	-0.1562	-0.0765	-0.0969	-0.1081	-0.0498	-0.2092	-0.0174	-0.3177	0.0021	-0.5601	0.0376	-0.5441	0.1211	-0.5337	0.1445	-0.5433
36	0.500	0.882	-0.1697	-0.0759	-0.0914	-0.1028	-0.0563	-0.2120	-0.0287	-0.3624	-0.0265	-0.5637	0.0105	-0.5427	0.0891	-0.5277	0.1073	-0.5307
37	0.500	0.941	-0.1477	-0.0573	-0.0787	-0.0815	-0.0588	-0.2490	-0.0631	-0.6088	-0.0770	-0.5952	-0.0311	-0.5335	0.0307	-0.5137	0.0409	-0.5227
38	0.382	0.000	-0.1754	-0.1518	-0.1788	-0.1858	-0.1207	-0.2077	-0.0426	-0.4462	0.0113	-0.4864	0.0388	-0.5094	0.1274	-0.5023	0.1522	-0.5128
39	0.382	0.295	-0.1818	-0.1442	-0.1692	-0.1753	-0.1131	-0.2094	-0.0393	-0.3488	0.0081	-0.5108	0.0325	-0.5305	0.1217	-0.5217	0.1484	-0.5296
40	0.382	0.530	-0.1819	-0.1261	-0.1497	-0.1577	-0.0971	-0.2074	-0.0357	-0.2635	0.0027	-0.5525	0.0224	-0.5489	0.1024	-0.5449	0.1304	-0.5429
41	0.382	0.707	-0.1655	-0.1158	-0.1210	-0.1320	-0.0910	-0.2031	-0.0377	-0.2567	-0.0145	-0.5629	-0.0030	-0.5652	0.0706	-0.5546	0.0973	-0.5578
42	0.382	0.823	-0.1655	-0.0986	-0.1012	-0.1085	-0.0760	-0.1882	-0.0541	-0.2897	-0.0495	-0.5509	-0.0440	-0.5673	0.0146	-0.5550	0.0360	-0.5530
43	0.382	0.882	-0.1640	-0.0862	-0.0931	-0.1016	-0.0740	-0.1882	-0.0529	-0.3490	-0.0683	-0.5523	-0.0634	-0.5568	-0.0063	-0.5393	0.0127	-0.5559
44	0.382	0.941	-0.1484	-0.0756	-0.0800	-0.0866	-0.0727	-0.2544	-0.0746	-0.6281	-0.1158	-0.5996	-0.1079	-0.5523	-0.0649	-0.5345	-0.0446	-0.5479
45	0.264	0.000	-0.3325	-0.3020	-0.3278	-0.3371	-0.2608	-0.3339	-0.1977	-0.3090	-0.1884	-0.4998	-0.1751	-0.5429	-0.1214	-0.5206	-0.0989	-0.5365
46	0.264	0.295	-0.3267	-0.2829	-0.3154	-0.3208	-0.2340	-0.3343	-0.1803	-0.2983	-0.1738	-0.5092	-0.1763	-0.5598	-0.1181	-0.5435	-0.1019	-0.5471
47	0.264	0.530	-0.3275	-0.2691	-0.3028	-0.3103	-0.2197	-0.3316	-0.1642	-0.3517	-0.1750	-0.5578	-0.1870	-0.5774	-0.1278	-0.5663	-0.1122	-0.5761
48	0.264	0.707	-0.2766	-0.2531	-0.2466	-0.2444	-0.2187	-0.2856	-0.1584	-0.3388	-0.1764	-0.5428	-0.1966	-0.5811	-0.1420	-0.5743	-0.1316	-0.5796
49	0.264	0.823	-0.1987	-0.1651	-0.1656	-0.1659	-0.1534	-0.2172	-0.1269	-0.3133	-0.1608	-0.5164	-0.2001	-0.5740	-0.1550	-0.5611	-0.1476	-0.5657
50	0.264	0.882	-0.1621	-0.1296	-0.1289	-0.1295	-0.1221	-0.2087	-0.1066	-0.3691	-0.1454	-0.5326	-0.1960	-0.5688	-0.1581	-0.5561	-0.1488	-0.5598
51	0.264	0.941	-0.1604	-0.0986	-0.1017	-0.1008	-0.0994	-0.2841	-0.1041	-0.6233	-0.1582	-0.5048	-0.2106	-0.5645	-0.1777	-0.5529	-0.1604	-0.5530
52	0.177	0.000	-0.4314	-0.4362	-0.4199	-0.4295	-0.3972	-0.3514	-0.3986	-0.2259	-0.5068	-0.4783	-0.8309	-0.5254	-1.2126	-0.5181	-1.2203	-0.5083
53	0.177	0.295	-0.3884	-0.3499	-0.3606	-0.3773	-0.3165	-0.3372	-0.3026	-0.2535	-0.4771	-0.5038	-1.0992	-0.5591	-1.2338	-0.5453	-1.2252	-0.5503
54	0.177	0.530	-0.3204	-0.2834	-0.3132	-0.3231	-0.2586	-0.3103	-0.2600	-0.3133	-0.4649	-0.5433	-1.2198	-0.5783	-1.2535	-0.5729	-1.2450	-0.5767
55	0.177	0.707	-0.3673	-0.3186	-0.3587	-0.3791	-0.2655	-0.3845	-0.2753	-0.3048	-0.4426	-0.5197	-1.1962	-0.5754	-1.1882	-0.5717	-1.1743	-0.5002
56	0.177	0.882	-0.1937	-0.2253	-0.1724	-0.1775	-0.1897	-0.2345	-0.1675	-0.4697	-0.2323	-0.5106	-0.4695	-0.5772	-0.4355	-0.5675	-0.4267	-0.5729
57	0.118	0.000	-0.2878	-0.2652	-0.2184	-0.2273	-0.2453	-0.1703	-0.2466	-0.2086	-0.3408	-0.4440	-0.5602	-0.4924	-1.0255	-0.4897	-1.0869	-0.5019
58	0.118	0.295	-0.1742	-0.1739	-0.1538	-0.1711	-0.1724	-0.1488	-0.1703	-0.2887	-0.3199	-0.4788	-0.6963	-0.5344	-1.0781	-0.5252	-1.0011	-0.5388
59	0.118	0.530	-0.1279	-0.1149	-0.0914	-0.1118	-0.1141	-0.1341	-0.1248	-0.1795	-0.3050	-0.5241	-0.8987	-0.5769	-1.0946	-0.5677	-1.0835	-0.5796
60	0.118	0.707	-0.1572	-0.0972	-0.1182	-0.1355	-0.0948	-0.1949	-0.1185	-0.2590	-0.2855	-0.5077	-0.8635	-0.5877	-0.9790	-0.5814	-0.9530	-0.5915
61	0.118	0.823	-0.1985	-0.2411	-0.1656	-0.1715	-0.1663	-0.2349	-0.1181	-0.4757	-0.2336	-0.4730	-0.8046	-0.5842	-0.7818	-0.5782	-0.7179	-0.5828
62	0.118	0.941	-0.1548	-0.1381	-0.0892	-0.0940	-0.1321	-0.2956	-0.1240	-0.5580	-0.1777	-0.5088	-0.4796	-0.5088	-0.4511	-0.5717	-0.4148	-0.5729
63	0.059	0.000	-0.1888	-0.1492	-0.1131	-0.1128	-0.1532	-0.0836	-0.1589	-0.1888	-0.2399	-0.4081	-0.4271	-0.4593	-0.0671	-0.4788	-0.0541	-0.4858
64	0.059	0.295	-0.0888	-0.0944	-0.0575	-0.0711	-0.0971	-0.0620	-0.1025	-0.1559	-0.2248	-0.4451	-0.4858	-0.5105	-0.7705	-0.5211	-0.8053	-0.5388
65	0.059	0.530	-0.0318	-0.0354	0.0127	-0.0027	-0.0336	-0.0384	-0.0526	-0.1064	-0.2073	-0.4899	-0.5509	-0.5727	-0.7725	-0.5709	-0.7351	-0.5766
66	0.059	0.707	-0.0590	0.0079	0.0248	0.0108	-0.0089	-0.0067	-0.0324	-0.1505	-0.1586	-0.4721	-0.4666	-0.5864	-0.4458	-0.5875	-0.3780	-0.5877
67	0.059	0.882	-0.1153	-0.1324	-0.0418	-0.0582	-0.1095	-0.1485	-0.0645	-0.2725	-0.1332	-0.4318	-0.5792	-0.5888	-0.4876	-0.5740	-0.4237	-0.5844
68	0.736	-0.707	-1.1412	-0.7568	-0.0783	-0.0559	-0.6678	-1.2618	-0.4318	-1.2988	0.0187	-0.5335	0.2453	-0.5016	0.3604	-0.4867	0.3767	-0.4947
69	0.288	-0.707	-0.2718	-0.2568	-0.2385	-0.2512	-0.2065	-0.2064	-0.1626	-0.3319	-0.1672	-0.5357	-0.1051	-0.5571	-0.1315	-0.5496	-0.1150	-0.5563

Table A-9.- (Continued).
M = 0.8

			ALPHA =															
TUBE	X/L	Y/B/2	27.2 WINDWARD	27.1 LEEWARD	30.1 WINDWARD	29.9 LEEWARD	34.9 WINDWARD	34.8 LEEWARD	39.8 WINDWARD	39.7 LEEWARD	44.8 WINDWARD	44.7 LEEWARD	49.8 WINDWARD	49.6 LEEWARD	54.7 WINDWARD	54.6 LEEWARD	56.3 WINDWARD	56.2 LEEWARD
1	0.941	0.000	1.0900	-0.4240	1.1224	-0.4204	1.1582	-0.4346	1.1723	-0.4574	1.1663	-0.4750	1.1549	-0.4903	1.1190	-0.4926	1.1082	-0.5111
2	0.941	0.295	1.0812	-0.4401	1.1132	-0.4425	1.1490	-0.4529	1.1641	-0.4692	1.1598	-0.4827	1.1472	-0.4944	1.1122	-0.4989	1.0920	-0.5144
3	0.941	0.530	1.0640	-0.4664	1.0941	-0.4580	1.1321	-0.4641	1.1481	-0.4766	1.1438	-0.4897	1.1345	-0.4997	1.1005	-0.5000	1.0803	-0.5204
4	0.941	0.707	1.0227	-0.4704	1.0584	-0.4614	1.0945	-0.4637	1.1146	-0.4825	1.1136	-0.4881	1.1033	-0.4988	1.0733	-0.5017	1.0530	-0.5212
5	0.941	0.882	0.8371	-0.4589	0.8827	-0.4513	0.9346	-0.4533	0.9701	-0.4744	0.9850	-0.4857	0.9888	-0.4984	0.9720	-0.4998	0.9584	-0.5187
6	0.882	0.000	0.9378	-0.4478	0.9894	-0.4398	1.0621	-0.4440	1.1161	-0.4740	1.1683	-0.4849	1.1759	-0.4951	1.1753	-0.5019	1.1664	-0.5196
7	0.882	0.295	0.9235	-0.4611	0.9794	-0.4497	1.0511	-0.4576	1.1112	-0.4852	1.1401	-0.4893	1.1663	-0.5010	1.1739	-0.5047	1.1591	-0.5226
8	0.882	0.530	0.8956	-0.4752	0.9530	-0.4606	1.0225	-0.4678	1.0843	-0.4884	1.1163	-0.4931	1.1449	-0.5036	1.1542	-0.5104	1.1384	-0.5280
9	0.882	0.707	0.8366	-0.4736	0.8952	-0.4598	0.9682	-0.4645	1.0314	-0.4843	1.0674	-0.4942	1.0977	-0.5015	1.1096	-0.5078	1.0954	-0.5281
10	0.882	0.823	0.6851	-0.4613	0.7492	-0.4527	0.8385	-0.4641	0.9044	-0.4770	0.9504	-0.4922	0.9986	-0.5130	1.0150	-0.5041	1.0030	-0.5194
11	0.882	0.941	0.3508	-0.4492	0.4090	-0.4425	0.4801	-0.4556	0.5354	-0.4730	0.5950	-0.4898	0.6467	-0.5101	0.6865	-0.5017	0.6821	-0.5187
12	0.823	0.000	0.7453	-0.4452	0.8191	-0.4482	0.9253	-0.4575	1.0160	-0.4787	1.0796	-0.4952	1.1389	-0.5093	1.1762	-0.5081	1.1603	-0.5257
13	0.823	0.295	0.7329	-0.4652	0.8075	-0.4561	0.9133	-0.4645	1.0088	-0.4833	1.0704	-0.4875	1.1335	-0.5028	1.1739	-0.5028	1.1623	-0.5240
14	0.823	0.530	0.6956	-0.4775	0.7711	-0.4688	0.8771	-0.4711	0.9734	-0.4852	1.0394	-0.4913	1.1031	-0.5041	1.1460	-0.5072	1.1320	-0.5303
15	0.823	0.707	0.6225	-0.4768	0.6987	-0.4643	0.8048	-0.4677	0.9019	-0.4839	0.9499	-0.4933	1.0378	-0.5038	1.0823	-0.5064	1.0693	-0.5304
16	0.823	0.882	0.3554	-0.4640	0.4187	-0.4468	0.5188	-0.4537	0.6127	-0.4789	0.6700	-0.4945	0.7424	-0.4988	0.7812	-0.5064	0.7818	-0.5253
17	0.736	0.000	0.5291	-0.4566	0.6017	-0.4430	0.7175	-0.4533	[illegible]	-0.4790	0.9333	-0.4958	1.0347	-0.5008	1.1064	-0.5045	1.1114	-0.5219
18	0.736	0.295	0.4427	-0.4811	0.5634	-0.4663	0.6984	-0.4715	[illegible]	-0.4942	0.9179	-0.5017	1.0187	-0.5112	1.0924	-0.5156	1.0954	-0.5360
19	0.736	0.530	0.4452	-0.4899	0.5300	-0.4767	0.6570	-0.4824	0.7850	-0.4944	0.8791	-0.4981	0.9864	-0.5209	1.0631	-0.5126	1.0644	-0.5332
20	0.736	0.707	0.3224	-0.4852	0.4340	-0.4711	0.5667	-0.4797	0.6920	-0.4925	0.7888	-0.4972	0.8954	-0.5174	0.9734	-0.5086	0.9750	-0.5312
21	0.736	0.823	0.3047	-0.4758	0.3746	-0.4639	0.4665	-0.4741	0.5600	-0.4857	0.6355	-0.4924	0.7276	-0.5129	0.7981	-0.5069	0.7977	-0.5299
22	0.736	0.882	0.2612	-0.4672	0.3239	-0.4632	0.4056	-0.4650	0.4977	-0.4807	0.5698	-0.4927	0.6559	-0.5107	0.7162	-0.5114	0.7141	-0.5240
23	0.736	0.941	0.1771	-0.4695	0.2312	-0.4614	0.2946	-0.4680	0.3699	-0.4836	0.4334	-0.4949	0.5051	-0.5147	0.5598	-0.5147	0.5547	-0.5298
24	0.618	0.000	0.4180	-0.4755	0.5031	-0.4649	0.6134	-0.4738	0.7303	-0.4928	0.8248	-0.5022	0.9338	-0.5182	1.0214	-0.5218	1.0226	-0.5374
25	0.618	0.295	0.4073	-0.4817	0.4853	-0.4744	0.5999	-0.4865	0.7184	-0.5014	0.8071	-0.5022	0.9249	-0.5181	1.0151	-0.5098	1.0106	-0.5313
26	0.618	0.530	0.3678	-0.4942	0.4460	-0.4878	0.5589	-0.4934	0.6759	-0.5035	0.7659	-0.5032	0.8818	-0.5155	0.9734	-0.5159	0.9690	-0.5326
27	0.618	0.707	0.3070	-0.4957	0.3792	-0.4864	0.4825	-0.4895	0.5939	-0.5026	0.6817	-0.5038	0.7921	-0.5152	0.8819	-0.5170	0.8769	-0.5372
28	0.618	0.823	0.2215	-0.4867	0.2815	-0.4845	0.3657	-0.4846	0.4583	-0.4953	0.5392	-0.5018	0.6301	-0.5130	0.7107	-0.5193	0.7068	-0.5376
29	0.618	0.882	0.1804	-0.4864	0.2344	-0.4811	0.3130	-0.4842	0.3460	-0.4957	0.4709	-0.5018	0.5573	-0.5161	0.6336	-0.5231	0.6285	-0.5372
30	0.618	0.941	0.1009	-0.4862	0.1440	-0.4799	0.2031	-0.4813	0.2716	-0.4961	0.3335	-0.5008	0.4098	-0.5182	0.4763	-0.5242	0.4677	-0.5487
31	0.500	0.000	0.3102	-0.4808	0.3811	-0.4685	0.4808	-0.4787	0.6054	-0.4949	0.7012	-0.4958	0.8261	-0.5284	0.9176	-0.5232	0.9200	-0.5216
32	0.500	0.295	0.2960	-0.4978	0.3641	-0.4878	0.4727	-0.4934	0.5902	-0.5035	0.6839	-0.4977	0.8072	-0.5357	0.9013	-0.5237	0.9101	-0.5280
33	0.500	0.530	0.2669	-0.4849	0.3337	-0.4756	0.4385	-0.4827	0.5541	-0.4935	0.6469	-0.4874	0.7694	-0.5280	0.8614	-0.5220	0.8724	-0.5327
34	0.500	0.707	0.2141	-0.5153	0.2788	-0.4963	0.3712	-0.5014	0.4785	-0.5091	0.5498	-0.5073	0.6876	-0.5327	0.7739	-0.5317	0.7832	-0.5444
35	0.500	0.823	0.1364	-0.5108	0.1911	-0.4885	0.2643	-0.5003	0.3543	-0.5073	0.4352	-0.5110	0.5378	-0.5367	0.6168	-0.5357	0.6216	-0.5459
36	0.500	0.882	0.1008	-0.5123	0.1486	-0.4864	0.2160	-0.5005	0.2965	-0.5079	0.3722	-0.5130	0.4696	-0.5357	0.5484	-0.5350	0.5488	-0.5454
37	0.500	0.941	0.0271	-0.5032	0.0676	-0.4836	0.1189	-0.4902	0.1891	-0.5032	0.2517	-0.5105	0.3411	-0.5237	0.3968	-0.5251	0.3997	-0.5456
38	0.382	0.000	0.1609	-0.4847	0.2287	-0.4729	0.3255	-0.4829	0.4399	-0.4944	0.5414	-0.5064	0.6700	-0.5215	0.7730	-0.5155	0.7838	-0.5348
39	0.382	0.295	0.1543	-0.5133	0.2217	-0.4936	0.3163	-0.5026	0.4305	-0.5076	0.5316	-0.5124	0.6577	-0.5257	0.7612	-0.5234	0.7730	-0.5417
40	0.382	0.530	0.1328	-0.5307	0.1992	-0.5131	0.2919	-0.5187	0.4020	-0.5214	0.5030	-0.5237	0.6224	-0.5314	0.7298	-0.5340	0.7448	-0.5467
41	0.382	0.707	0.0924	-0.5393	0.1533	-0.5179	0.2418	-0.5247	0.3456	-0.5286	0.4435	-0.5272	0.5587	-0.5384	0.6600	-0.5381	0.6743	-0.5593
42	0.382	0.823	0.0763	-0.5417	0.0777	-0.5134	0.1406	-0.5229	0.2393	-0.5286	0.3271	-0.5265	0.4303	-0.5376	0.5104	-0.5412	0.5285	-0.5660
43	0.382	0.882	0.0039	-0.5197	0.0501	-0.5088	0.1111	-0.5081	0.1960	-0.5167	0.2806	-0.5142	0.3785	-0.5260	0.4618	-0.5283	0.4687	-0.5480
44	0.382	0.941	-0.0577	-0.5101	-0.0156	-0.5005	0.0265	-0.5007	0.0970	-0.5058	0.1489	-0.5054	0.2523	-0.5192	0.3246	-0.5182	0.3292	-0.5366
45	0.264	0.000	-0.0907	-0.4993	-0.0350	-0.4900	0.0361	-0.4872	0.1331	-0.4948	0.2374	-0.5060	0.3743	-0.5198	0.5061	-0.5160	0.5284	-0.5304
46	0.264	0.295	-0.0942	-0.5261	-0.0384	-0.5158	0.0311	-0.5114	0.1263	-0.5205	0.2277	-0.5132	0.3651	-0.5300	0.4923	-0.5294	0.5172	-0.5521
47	0.264	0.530	-0.1097	-0.5521	-0.0544	-0.5386	0.0178	-0.5357	0.1131	-0.5365	0.2150	-0.5263	0.3490	-0.5398	0.4756	-0.5418	0.4993	-0.5625
48	0.264	0.707	-0.1308	-0.5608	-0.0800	-0.5451	-0.0046	-0.5402	0.0898	-0.5431	0.1934	-0.5350	0.3234	-0.5479	0.4452	-0.5516	0.4677	-0.5689
49	0.264	0.823	-0.1557	-0.5490	-0.1121	-0.5321	-0.0393	-0.5265	0.0614	-0.5320	0.1696	-0.5267	0.2401	-0.5376	0.3940	-0.5404	0.4108	-0.5585
50	0.264	0.882	-0.1561	-0.5363	-0.1116	-0.5231	-0.0328	-0.5179	0.0645	-0.5195	0.1639	-0.5123	0.2719	-0.5293	0.3625	-0.5311	0.3737	-0.5485
51	0.264	0.941	-0.1771	-0.5345	-0.1374	-0.5203	-0.0725	-0.5135	0.0045	-0.5122	0.0809	-0.5088	0.1686	-0.5262	0.2456	-0.5279	0.2541	-0.5440
52	0.177	0.000	-1.2213	-0.4935	-1.1731	-0.4827	-0.8628	-0.4864	-0.6547	-0.4972	-0.4067	-0.5118	-0.0348	-0.5231	0.1984	-0.5280	0.2201	-0.5430
53	0.177	0.295	-1.2333	-0.5163	-1.1786	-0.5018	-0.8639	-0.5086	-0.6693	-0.5128	-0.4073	-0.5134	0.0151	-0.5240	0.2114	-0.5395	0.2322	-0.5533
54	0.177	0.530	-1.2464	-0.5524	-1.1854	-0.5334	-0.8274	-0.5383	-0.6431	-0.5398	-0.3915	-0.5256	0.0338	-0.5314	0.2188	-0.5493	0.2312	-0.5632
55	0.177	0.707	-1.1785	-0.5573	-1.0792	-0.5436	-0.7856	-0.5430	-0.5786	-0.5417	-0.2633	-0.5308	0.0392	-0.5404	0.1922	-0.5450	0.2076	-0.5659
56	0.177	0.882	-0.4402	-0.5490	-0.3686	-0.5335	-0.1594	-0.5343	-0.0401	-0.5296	0.0431	-0.5237	0.1719	-0.5330	0.2749	-0.5357	0.2929	-0.5517
57	0.118	0.000	-1.0824	-0.4758	-1.0043	-0.4688	-0.5549	-0.4818	-0.0590	-0.4925	0.0223	-0.5138	0.1263	-0.5271	0.2419	-0.5298	0.2633	-0.5494
58	0.118	0.295	-1.0878	-0.5275	-0.9989	-0.5117	-0.5696	-0.5155	-0.0651	-0.5178	0.0086	-0.5250	0.1134	-0.5337	0.2266	-0.5409	0.2480	-0.5485
59	0.118	0.530	-1.0811	-0.5645	-0.9723	-0.5441	-0.5026	-0.5477	-0.0523	-0.5443	0.0104	-0.5350	0.1090	-0.5403	0.2205	-0.5502	0.2441	-0.5556
60	0.118	0.707	-0.9304	-0.5809	-0.5171	-0.5549	-0.2082	-0.5565	-0.0335	-0.5549	0.0224	-0.5420	0.1179	-0.5451	0.2258	-0.5559	0.2460	-0.5642
61	0.118	0.823	-0.6898	-0.5646	-0.3522	-0.5504	-0.2048	-0.5449	-0.0974	-0.5449	-0.0130	-0.5326	0.0970	-0.5441	0.2041	-0.5437	0.2246	-0.5617
62	0.118	0.941	-0.3998	-0.5490	-0.2854	-0.5367	-0.1926	-0.5334	-0.1202	-0.5333	-0.0405	-0.5214	0.0432	-0.5343	0.1274	-0.5324	0.1372	-0.5508
63	0.059	0.000	-0.8730	-0.4578	-0.7563	-0.4621	-0.1996	-0.4786	-0.1429	-0.5017	-0.0812	-0.5178	0.0097	-0.5372	0.1076	-0.5412	0.1194	-0.5599
64	0.059	0.295	-0.9245	-0.5157	-0.6592	-0.5054	-0.2012	-0.5150	-0.1415	-0.5159	-0.0813	-0.5177	0.0137	-0.5327	0.1043	-0.5386	0.1208	-0.5562
65	0.059	0.530	-0.7259	-0.5494	-0.3453	-0.5386	-0.1921	-0.5403	-0.1444	-0.5365	-0.0894	-0.5226	0.0037	-0.5356	0.0921	-0.5441	0.1089	-0.5653
66	0.059	0.707	-0.3450	-0.5715	-0.2614	-0.5577	-0.2082	-0.5537	-0.1457	-0.5511	-0.0839	-0.5364	0.0086	-0.5470	0.0961	-0.5540	0.1141	-0.5736
67	0.059	0.882	-0.4189	-0.5655	-0.3480	-0.5458	-0.2385	-0.5426	-0.1730	-0.5389	-0.1046	-0.5294	-0.0297	-0.5427	0.0540	-0.5413	0.0670	-0.5562
68	0.736	-0.707	0.3822	-0.4716	0.4644	-0.4593	0.6011	-0.4670	0.7268	-0.4806	0.8217	-0.4941	0.9122	-0.5100	0.9976	-0.5049	0.9974	-0.5244
69	0.298	-0.707	-0.0984	-0.5345	-0.0459	-0.5153	0.0279	-0.5148	0.1262	-0.5172	0.2292	-0.5124	0.3548	-0.5257	0.4774	-0.5156	0.4973	-0.5372

Table A-9.- (Continued).
M = 0.9

			ALPHA																	
			-2.9	-3.0	0.1	-0.1	5.0	4.9	10.0	9.9	14.9	14.9	19.9	19.8	24.9	24.8	26.4	26.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	0.3047	0.5981	0.4564	0.4562	0.6725	0.2165	0.8273	-0.9438	0.9509	-1.2354	1.0332	-0.4391	1.1112	-0.4836	1.1382	-0.4816
2	0.941	0.295	0.2930	0.5790	0.4454	0.4479	0.6627	0.2080	0.8184	-0.9391	0.9407	-1.2759	1.0239	-0.4738	1.1038	-0.5121	1.1224	-0.5107
3	0.941	0.530	0.2837	0.5640	0.4322	0.4348	0.6453	0.2058	0.8094	-0.9034	0.9712	-1.2539	1.0066	-0.5033	1.0853	-0.5328	1.1051	-0.5299
4	0.941	0.707	0.2536	0.5224	0.3918	0.3943	0.6013	0.1920	0.7577	-0.8288	0.8756	-1.2066	0.9672	-0.5039	1.0504	-0.5339	1.0679	-0.5339
5	0.941	0.882	0.1802	0.3318	0.2207	0.2240	0.4055	0.0965	0.5498	-0.6808	0.6702	-1.0311	0.7777	-0.4974	0.8747	-0.5256	0.8961	-0.5276
6	0.882	0.000	0.1777	0.3906	0.2921	0.2931	0.4614	0.0907	0.5987	-0.6320	0.7272	-1.0121	0.8408	-0.4578	0.9508	-0.5038	0.9779	-0.5098
7	0.882	0.295	0.1708	0.3896	0.2908	0.2877	0.4598	0.0887	0.5930	-0.6151	0.7244	-1.0075	0.8321	-0.4791	0.9392	-0.5244	0.9723	-0.5298
8	0.882	0.530	0.1530	0.3670	0.2698	0.2669	0.4367	0.0744	0.5701	-0.5796	0.6981	-0.9736	0.8049	-0.5085	0.9122	-0.5432	0.9470	-0.5479
9	0.882	0.707	0.1024	0.3104	0.2141	0.2131	0.3775	0.0334	0.5111	-0.5263	0.6371	-0.9322	0.7479	-0.5090	0.8557	-0.5446	0.8912	-0.5465
10	0.882	0.823	-0.0196	0.1639	0.0781	0.0773	0.2247	-0.0799	0.3542	-0.4864	0.4788	-0.8728	0.5983	-0.4995	0.7148	-0.5339	0.7517	-0.5356
11	0.882	0.941	-0.2728	-0.0263	-0.1515	-0.1234	-0.0522	-0.2195	-0.0138	-0.4774	0.1464	-0.9607	0.3030	-0.4921	0.4077	-0.5287	0.4413	-0.5289
12	0.823	0.000	0.0332	0.1071	0.1180	0.1151	0.2306	-0.0309	0.3509	-0.4608	0.4861	-0.8958	0.6138	-0.4641	0.7509	-0.5164	0.7909	-0.5201
13	0.823	0.295	0.0377	0.1865	0.1182	0.1157	0.2419	-0.0281	0.3527	-0.4427	0.4773	-0.8876	0.6082	-0.4920	0.7420	-0.5200	0.7887	-0.5303
14	0.823	0.530	0.0153	0.1616	0.0938	0.0913	0.2185	-0.0477	0.3270	-0.4031	0.4434	-0.8645	0.5730	-0.5186	0.7067	-0.5349	0.7524	-0.5523
15	0.823	0.707	-0.0304	0.1030	0.0347	0.0334	0.1568	-0.0973	0.2684	-0.3439	0.3905	-0.8235	0.5074	-0.5173	0.6392	-0.5341	0.6830	-0.5513
16	0.823	0.882																
17	0.736	0.000	-0.9380	-0.8502	-0.8987	-0.8995	-0.7516	-0.9750	-0.4265	-0.5016	-0.0204	-0.3913	0.3914	-0.4609	0.5402	-0.5002	0.5805	-0.5191
18	0.736	0.295	-0.9483	-0.8634	-0.9096	-0.9110	-0.7606	-0.9859	-0.4482	-0.6697	-0.0820	-0.4517	0.3563	-0.4917	0.5072	-0.5340	0.5756	-0.5404
19	0.736	0.530	-0.9411	-0.8484	-0.9036	-0.9042	-0.7369	-0.9731	-0.4561	-0.8758	-0.2047	-0.5020	0.2537	-0.5146	0.4219	-0.5421	0.4751	-0.5511
20	0.736	0.707	-0.9913	-0.7973	-0.8830	-0.9003	-0.7250	-1.0201	-0.4557	-0.9471	-0.2822	-0.5125	0.0872	-0.5208	0.3531	-0.5401	0.4112	-0.5501
21	0.736	0.823	-0.6789	-0.5552	-0.6509	-0.6601	-0.5288	-0.6744	-0.3840	-0.6962	-0.0462	-0.5916	0.1844	-0.5116	0.3357	-0.5310	0.3821	-0.5417
22	0.736	0.882	-0.3565	-0.3123	-0.3254	-0.3090	-0.2953	-0.3478	-0.0829	-0.4223	0.0394	-0.5531	0.1987	-0.4929	0.2980	-0.5217	0.3422	-0.5247
23	0.736	0.941	-0.2698	-0.2494	-0.2495	-0.2477	-0.2411	-0.2051	-0.1053	-0.4316	-0.0260	-0.6647	0.1317	-0.4979	0.2219	-0.5274	0.2594	-0.5298
24	0.618	0.000	-0.8826	-0.6527	-0.7873	-0.7896	-0.5709	-0.9386	0.0966	-0.4493	0.1896	-0.3985	0.3215	-0.4826	0.4501	-0.5255	0.4998	-0.5291
25	0.618	0.295	-0.8826	-0.6415	-0.7828	-0.7869	-0.5845	-0.9352	0.0951	-0.4756	0.1802	-0.4402	0.3082	-0.4991	0.4398	-0.5403	0.4851	-0.5498
26	0.618	0.530	-0.8940	-0.6620	-0.7492	-0.7480	-0.6128	-0.9511	0.0856	-0.5077	0.1525	-0.4782	0.2768	-0.5239	0.4019	-0.5568	0.4469	-0.5646
27	0.618	0.707	-0.8051	-0.6778	-0.7745	-0.7665	-0.4771	-0.7524	0.0407	-0.5232	0.1157	-0.4847	0.2275	-0.5287	0.3426	-0.5577	0.3039	-0.5622
28	0.618	0.823	-0.5017	-0.3758	-0.4525	-0.4680	-0.2146	-0.5103	0.0183	-0.4722	0.0695	-0.4756	0.1697	-0.5219	0.2680	-0.5475	0.3031	-0.5474
29	0.618	0.882	-0.4291	-0.3636	-0.4201	-0.4195	-0.1986	-0.4467	-0.0112	-0.4810	0.0417	-0.4715	0.1378	-0.5219	0.2289	-0.5479	0.2602	-0.5476
30	0.618	0.941	-0.3574	-0.3440	-0.3654	-0.3732	-0.1995	-0.3902	-0.0612	-0.5411	-0.0220	-0.7019	0.0736	-0.5250	0.1474	-0.5449	0.1747	-0.5431
31	0.500	0.000	-0.8345	-0.4996	-0.6978	-0.7080	0.0063	-0.8994	0.0455	-0.4256	0.1392	-0.4158	0.2464	-0.5013	0.3609	-0.5293	0.4063	-0.5307
32	0.500	0.295	-0.8399	-0.4356	-0.6715	-0.6751	0.0261	-0.9046	0.0390	-0.4409	0.1284	-0.4518	0.2340	-0.5278	0.3483	-0.5485	0.3921	-0.5611
33	0.500	0.530	-0.7824	-0.1716	-0.6910	-0.6931	0.0403	-0.8140	0.0290	-0.4380	0.1054	-0.4799	0.2068	-0.5501	0.3170	-0.5664	0.3591	-0.5779
34	0.500	0.707	-0.4670	-0.1025	-0.3396	-0.3733	-0.0079	-0.5266	0.0174	-0.3919	0.0768	-0.4699	0.1663	-0.5468	0.2689	-0.5681	0.3109	-0.5828
35	0.500	0.823	-0.3769	-0.0935	-0.2595	-0.2889	-0.0383	-0.4323	-0.0090	-0.3501	0.0279	-0.4688	0.1062	-0.5504	0.1944	-0.5711	0.2311	-0.5858
36	0.500	0.882	-0.3345	-0.0956	-0.2990	-0.2423	-0.0647	-0.4002	-0.0273	-0.4085	0.0051	-0.4941	0.0744	-0.5485	0.1531	-0.5679	0.1878	-0.5809
37	0.500	0.941	-0.3084	-0.0977	-0.1693	-0.1907	-0.1010	-0.3887	-0.0678	-0.5751	-0.0433	-0.6872	0.0164	-0.5386	0.0857	-0.5616	0.1144	-0.5724
38	0.382	0.000	-0.8851	0.0068	-0.6171	-0.6331	-0.0010	-0.5839	-0.0084	-0.3995	0.0646	-0.4276	0.1451	-0.5226	0.2455	-0.5546	0.2859	-0.5580
39	0.382	0.295	-0.7794	0.0095	-0.6109	-0.6285	-0.0015	-0.7788	-0.0088	-0.4096	0.0598	-0.4501	0.1377	-0.5444	0.2387	-0.5778	0.2778	-0.5775
40	0.382	0.530	-0.4413	-0.0232	-0.2211	-0.2649	-0.0096	-0.5195	-0.0075	-0.3861	0.0472	-0.4677	0.1226	-0.5573	0.2180	-0.5962	0.2584	-0.5925
41	0.382	0.707	-0.3481	-0.0563	-0.1672	-0.1981	-0.0413	-0.4646	-0.0242	-0.3320	0.0189	-0.4750	0.0845	-0.5660	0.1761	-0.6063	0.2119	-0.6022
42	0.382	0.823	-0.2922	-0.0611	-0.1283	-0.1567	-0.0603	-0.3970	-0.0524	-0.2818	-0.0220	-0.4711	0.0296	-0.5679	0.1057	-0.6058	0.1375	-0.6003
43	0.382	0.882	-0.2854	-0.0670	-0.1148	-0.1533	-0.0660	-0.3802	-0.0596	-0.3225	-0.0420	-0.5193	0.0051	-0.5559	0.0735	-0.5824	0.1066	-0.5861
44	0.382	0.941	-0.2960	-0.0659	-0.1035	-0.1394	-0.0816	-0.4150	-0.0899	-0.5241	-0.0948	-0.6420	-0.0472	-0.5512	0.0108	-0.5721	0.0335	-0.5790
45	0.264	0.000	-0.6643	-0.1070	-0.4258	-0.5766	-0.1280	-0.2207	-0.1190	-0.3524	-0.0709	-0.4413	-0.0176	-0.5480	0.0487	-0.5703	0.0800	-0.5740
46	0.264	0.295	-0.4516	-0.1140	-0.1568	-0.2764	-0.1232	-0.2428	-0.1104	-0.3621	-0.0713	-0.4502	-0.0206	-0.5643	0.0474	-0.5888	0.0777	-0.5964
47	0.264	0.530	-0.3283	-0.1472	-0.1795	-0.2151	-0.1341	-0.3340	-0.1249	-0.3542	-0.0809	-0.4688	-0.0358	-0.5811	0.0326	-0.6134	0.0618	-0.6209
48	0.264	0.707	-0.2812	-0.1574	-0.1780	-0.2110	-0.1495	-0.3561	-0.1360	-0.3364	-0.0983	-0.4621	-0.0583	-0.5846	0.0060	-0.6144	0.0310	-0.6273
49	0.264	0.823	-0.2704	-0.1178	-0.1148	-0.1466	-0.1227	-0.3673	-0.1414	-0.3063	-0.1195	-0.4660	-0.0872	-0.5767	-0.0350	-0.6081	-0.0123	-0.6207
50	0.264	0.882	-0.2118	-0.1043	-0.0966	-0.1314	-0.1081	-0.3667	-0.1396	-0.3550	-0.1289	-0.5209	-0.1021	-0.5750	-0.0549	-0.5962	-0.0332	-0.6132
51	0.264	0.941	-0.2395	-0.0899	-0.0843	-0.1172	-0.0959	-0.4568	-0.1447	-0.5396	-0.1550	-0.5938	-0.1400	-0.5703	-0.0965	-0.5913	-0.0792	-0.6080
52	0.177	0.000	-0.2709	-0.6478	-0.7012	-0.5160	-0.2089	-0.1792	-0.3317	-0.3113	-0.7735	-0.4305	-0.9239	-0.5346	-0.9090	-0.5603	-0.8855	-0.5763
53	0.177	0.295	-0.2275	-0.3068	-0.3129	-0.3027	-0.2736	-0.2271	-0.3262	-0.3397	-0.8306	-0.4501	-0.9473	-0.5646	-0.9126	-0.5956	-0.8893	-0.6156
54	0.177	0.530	-0.2088	-0.2754	-0.2059	-0.2079	-0.2320	-0.2638	-0.3725	-0.3437	-0.8494	-0.4598	-0.9691	-0.5837	-0.9350	-0.6198	-0.9106	-0.6422
55	0.177	0.707	-0.2388	-0.2913	-0.2526	-0.2402	-0.2772	-0.2985	-0.4509	-0.4603	-0.8778	-0.4602	-0.9459	-0.5852	-0.9118	-0.6148	-0.8805	-0.6255
56	0.177	0.882	-0.1818	-0.2430	-0.1281	-0.1610	-0.2345	-0.2388	-0.3146	-0.4231	-0.3566	-0.5200	-0.3505	-0.5877	-0.3175	-0.6061	-0.2965	-0.6158
57	0.118	0.000	-0.2783	-0.2648	-0.1782	-0.3440	-0.2032	-0.1850	-0.2455	-0.2074	-0.4106	-0.4194	-0.7641	-0.5151	-0.8353	-0.5359	-0.8143	-0.5534
58	0.118	0.295	-0.1566	-0.2079	-0.1068	-0.1429	-0.1868	-0.1991	-0.2140	-0.3264	-0.5009	-0.4349	-0.8433	-0.5543	-0.8442	-0.5698	-0.8173	-0.5938
59	0.118	0.530	-0.1305	-0.1553	-0.0886	-0.1135	-0.1462	-0.1773	-0.2355	-0.3324	-0.5250	-0.4599	-0.9002	-0.5927	-0.8622	-0.6152	-0.8316	-0.6356
60	0.118	0.707	-0.1784	-0.1781	-0.1243	-0.1535	-0.1530	-0.2219	-0.2588	-0.3396	-0.6219	-0.4630	-0.9618	-0.6048	-0.8042	-0.6288	-0.7731	-0.6453
61	0.118	0.823	-0.1546	-0.3385	-0.1143	-0.1426	-0.2369	-0.2220	-0.2669	-0.4081	-0.6828	-0.4584	-0.7438	-0.6012	-0.6689	-0.6232	-0.6333	-0.6331
62	0.118	0.941	-0.1874	-0.1695	-0.0820	-0.1111	-0.1574	-0.3875	-0.2258	-0.5905	-0.4067	-0.5289	-0.4247	-0.6009	-0.3888	-0.6128	-0.3673	-0.6233
63	0.059	0.000	-0.1779	-0.1703	-0.0912	-0.2051	-0.1621	-0.1969	-0.1938	-0.2041	-0.3146	-0.3878	-0.4902	-0.4985	-0.7060	-0.5254	-0.7040	-0.5434
64	0.059	0.295	-0.1240	-0.1466	-0.0605	-0.0813	-0.1437	-0.1968	-0.1955	-0.3086	-0.3273	-0.4204	-0.6154	-0.5346	-0.7305	-0.5778	-0.7125	-0.5912
65	0.059	0.530	-0.0826	-0.0912	-0.0287	-0.0630	-0.0942	-0.1495	-0.2160	-0.3043	-0.3447	-0.4479	-0.7425	-0.5842	-0.7540	-0.6272	-0.7340	-0.6391
66	0.059	0.707	-0.1418	-0.0938	-0.0689	-0.0878	-0.0818	-0.2015	-0.2091	-0.2753	-0.3732	-0.4585	-0.7405	-0.5986	-0.6694	-0.6369	-0.6208	-0.6512
67	0.059	0.882	-0.1212	-0.1591	-0.0537	-0.0859	-0.1716	-0.1935	-0.1977	-0.3045	-0.5759	-0.4669	-0.7135	-0.5958	-0.6003	-0.6250	-0.5592	-0.6357
68	0.736	-0.707	-1.0055	-0.7937	-0.9093	-0.9012	-0.7139	-1.0285	-0.4728	-0.0199	-0.2852	-0.5059	0.2003	-0.5085	0.4354	-0.5283	0.4591	-0.5413
69	0.288	-0.707	-0.3088	-0.1510	-0.1890	-0.2091	-0.1510	-0.3493	-0.1336	-0.3426	-0.0961	-0.4567	-0.0514	-0.5655	0.0195	-0.5935	0.0365	-0.6072

Table A-9.- (Continued).
M = 0.9

			ALPHA =															
			27.0	26.9	29.8	29.7	34.7	34.7	39.7	39.6	44.7	44.6	49.6	49.5	54.6	54.5	56.2	56.1
LINE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	1.1400	-0.4522	1.1691	-0.4491	1.2033	-0.4598	1.2116	-0.4700	1.2113	-0.4897	1.1940	-0.5063	1.1622	-0.5164	1.1457	-0.5258
2	0.941	0.295	1.1317	-0.4778	1.1608	-0.4720	1.1958	-0.4706	1.2042	-0.4823	1.2039	-0.4986	1.1871	-0.5151	1.1536	-0.5270	1.1384	-0.5378
3	0.941	0.530	1.1136	-0.4939	1.1415	-0.4887	1.1779	-0.4870	1.1881	-0.4873	1.1889	-0.5004	1.1720	-0.5155	1.1425	-0.5302	1.1253	-0.5412
4	0.941	0.707	1.0762	-0.4934	1.1035	-0.4870	1.1434	-0.4887	1.1545	-0.4917	1.1590	-0.5016	1.1442	-0.5179	1.1167	-0.5313	1.1012	-0.5396
5	0.941	0.882	0.8960	-0.4790	0.9335	-0.4742	0.9862	-0.4778	1.0145	-0.4862	1.0339	-0.4965	1.0328	-0.5131	1.0181	-0.5252	1.0072	-0.5347
6	0.882	0.000	0.9859	-0.4781	1.0405	-0.4664	1.1105	-0.4752	1.1551	-0.4874	1.1920	-0.5032	1.2105	-0.5181	1.2119	-0.5260	1.2054	-0.5363
7	0.882	0.295	0.9806	-0.4865	1.0209	-0.4852	1.1014	-0.4858	1.1491	-0.4931	1.1840	-0.4980	1.2045	-0.5163	1.2033	-0.5326	1.1965	-0.5475
8	0.882	0.530	0.9522	-0.5010	1.0017	-0.4960	1.0743	-0.4902	1.1246	-0.4927	1.1610	-0.4960	1.1827	-0.5164	1.1828	-0.5339	1.1770	-0.5511
9	0.882	0.707	0.8945	-0.4965	0.9447	-0.4925	1.0185	-0.4870	1.0730	-0.4924	1.1119	-0.4952	1.1380	-0.5168	1.1407	-0.5337	1.1340	-0.5514
10	0.882	0.823	0.7510	-0.4883	0.7997	-0.4853	0.8852	-0.4852	0.9492	-0.4917	1.0011	-0.5025	1.0314	-0.5209	1.0479	-0.5360	1.0488	-0.5504
11	0.882	0.941	0.4333	-0.4883	0.4765	-0.4781	0.5517	-0.4817	0.6045	-0.4914	0.6600	-0.5030	0.7027	-0.5227	0.7374	-0.5366	0.7450	-0.5495
12	0.823	0.000	0.8121	-0.4758	0.8749	-0.4761	0.9777	-0.4792	1.0604	-0.4909	1.1766	-0.5081	1.1733	-0.5269	1.2014	-0.5357	1.2050	-0.5476
13	0.823	0.295	0.7985	-0.4909	0.8638	-0.4891	0.9656	-0.4911	1.0494	-0.5000	1.1168	-0.5041	1.1630	-0.5241	1.1911	-0.5387	1.1948	-0.5471
14	0.823	0.530	0.7409	-0.5019	0.8260	-0.4965	0.9302	-0.4958	1.0143	-0.4970	1.0959	-0.5016	1.1334	-0.5228	1.1632	-0.5404	1.1670	-0.5498
15	0.823	0.707	0.6893	-0.4969	0.7540	-0.4951	0.8584	-0.4956	0.9442	-0.4959	1.0193	-0.4999	1.0696	-0.5220	1.1037	-0.5388	1.1088	-0.5497
16	0.823	0.882	0.4153	-0.4818	0.4846	-0.4823	0.5957	-0.4891	0.6771	-0.4960	0.7501	-0.4986	0.7881	-0.5209	0.8219	-0.5368	0.8311	-0.5504
17	0.736	0.000	0.5682	-0.4764	0.6511	-0.4790	0.7783	-0.4860	0.8901	-0.4993	0.9888	-0.5030	1.0686	-0.5236	1.1301	-0.5353	1.1449	-0.5482
18	0.736	0.295	0.5312	-0.4997	0.6232	-0.4986	0.7586	-0.4964	0.8733	-0.5060	0.9714	-0.5094	1.0536	-0.5287	1.1158	-0.5442	1.1316	-0.5616
19	0.736	0.530	0.4640	-0.5152	0.5786	-0.5052	0.7183	-0.5015	0.8311	-0.5079	0.9298	-0.5102	1.0189	-0.5315	1.0823	-0.5479	1.0948	-0.5549
20	0.736	0.707	0.3945	-0.5189	0.4864	-0.5003	0.6262	-0.4980	0.7400	-0.5052	0.8412	-0.5072	0.9308	-0.5280	0.9962	-0.5460	1.0107	-0.5546
21	0.736	0.823	0.3740	-0.5003	0.4327	-0.4921	0.5307	-0.4922	0.6131	-0.5040	0.6945	-0.5068	0.7721	-0.5275	0.8308	-0.5427	0.8439	-0.5536
22	0.736	0.882	0.3299	-0.4926	0.3778	-0.4832	0.4701	-0.4839	0.5517	-0.4964	0.6290	-0.5038	0.7010	-0.5218	0.7575	-0.5386	0.7683	-0.5534
23	0.736	0.941	0.2396	-0.4920	0.2823	-0.4829	0.3577	-0.4860	0.4267	-0.5006	0.4974	-0.5061	0.5596	-0.5262	0.6105	-0.5418	0.6209	-0.5569
24	0.618	0.000	0.5880	-0.4966	0.5727	-0.4880	0.6832	-0.4893	0.7865	-0.5055	0.8815	-0.5125	0.9698	-0.5313	1.0439	-0.5451	1.0617	-0.5602
25	0.618	0.295	0.4909	-0.5100	0.5572	-0.5013	0.6686	-0.5032	0.7712	-0.5031	0.8661	-0.5115	0.9577	-0.5380	1.0330	-0.5518	1.0449	-0.5592
26	0.618	0.530	0.4496	-0.5212	0.5139	-0.5094	0.6249	-0.5044	0.7286	-0.5000	0.8247	-0.5081	0.9163	-0.5357	0.9918	-0.5503	1.0055	-0.5602
27	0.618	0.707	0.3826	-0.5183	0.4436	-0.5071	0.5463	-0.5033	0.6458	-0.4997	0.7399	-0.5077	0.8296	-0.5327	0.9043	-0.5509	0.9188	-0.5617
28	0.618	0.823	0.2904	-0.5054	0.3403	-0.5025	0.4276	-0.5050	0.5124	-0.5012	0.5983	-0.5124	0.6788	-0.5286	0.7444	-0.5486	0.7574	-0.5637
29	0.618	0.882	0.2449	-0.5046	0.2911	-0.5087	0.3717	-0.5056	0.4490	-0.5041	0.5321	-0.5153	0.6076	-0.5336	0.6707	-0.5506	0.6851	-0.5661
30	0.618	0.941	0.1401	-0.5049	0.1963	-0.5000	0.2616	-0.5052	0.3268	-0.5037	0.3989	-0.5160	0.4677	-0.5335	0.5241	-0.5526	0.5375	-0.5700
31	0.500	0.000	0.4055	-0.5026	0.4664	-0.5013	0.5689	-0.5041	0.6662	-0.5057	0.7667	-0.5216	0.8651	-0.5380	0.9470	-0.5518	0.9636	-0.5627
32	0.500	0.295	0.3884	-0.5225	0.4484	-0.5193	0.5513	-0.5096	0.6489	+0.5073	0.7505	-0.5202	0.8482	-0.5379	0.9304	-0.5546	0.9478	-0.5653
33	0.500	0.530	0.3550	-0.4986	0.4118	-0.5011	0.5138	-0.4879	0.6122	-0.4868	0.7127	-0.5012	0.8100	-0.5297	0.8930	-0.5492	0.9102	-0.5656
34	0.500	0.707	0.2960	-0.5333	0.3499	-0.5283	0.4423	-0.5192	0.5377	-0.5089	0.6311	-0.5167	0.7271	-0.5338	0.8076	-0.5581	0.8263	-0.5641
35	0.500	0.823	0.2070	-0.5307	0.2544	-0.5243	0.3294	-0.5200	0.4122	-0.5120	0.4987	-0.5197	0.5841	-0.5406	0.6554	-0.5637	0.6725	-0.5704
36	0.500	0.882	0.1453	-0.5310	0.2090	-0.5247	0.2769	-0.5215	0.3554	-0.5117	0.4386	-0.5205	0.5199	-0.5410	0.5877	-0.5642	0.6043	-0.5726
37	0.500	0.941	0.0874	-0.5187	0.1235	-0.5157	0.1762	-0.5097	0.2459	-0.5136	0.3165	-0.5155	0.3916	-0.5328	0.4522	-0.5562	0.4645	-0.5627
38	0.382	0.000	0.2804	-0.5096	0.3325	-0.5068	0.4286	-0.5016	0.5172	-0.5112	0.6104	-0.5176	0.7172	-0.5344	0.8100	-0.5529	0.8306	-0.5589
39	0.382	0.295	0.2724	-0.5315	0.3243	-0.5281	0.4096	-0.5140	0.5066	-0.5186	0.5998	-0.5184	0.7054	-0.5365	0.7973	-0.5573	0.8175	-0.5626
40	0.382	0.530	0.2436	-0.5504	0.2937	-0.5430	0.3784	-0.5252	0.4744	-0.5175	0.5719	-0.5198	0.6727	-0.5381	0.7653	-0.5585	0.7865	-0.5676
41	0.382	0.707	0.1989	-0.5572	0.2387	-0.5487	0.3172	-0.5326	0.4100	-0.5238	0.5078	-0.5249	0.6063	-0.5467	0.6964	-0.5659	0.7177	-0.5761
42	0.382	0.823	0.1124	-0.5587	0.1501	-0.5472	0.2142	-0.5316	0.2991	-0.5254	0.3889	-0.5271	0.4791	-0.5476	0.5605	-0.5695	0.5790	-0.5819
43	0.382	0.882	0.0770	-0.5474	0.1139	-0.5361	0.1732	-0.5289	0.2537	-0.5186	0.3404	-0.5207	0.4292	-0.5432	0.5063	-0.5592	0.5214	-0.5740
44	0.382	0.941	0.0864	-0.5380	0.0340	-0.5261	0.0800	-0.5199	0.1484	-0.5060	0.2281	-0.5128	0.3059	-0.5361	0.3735	-0.5503	0.3877	-0.5670
45	0.264	0.000	0.0711	-0.5311	0.1101	-0.5196	0.1748	-0.5123	0.2461	-0.5070	0.3359	-0.5175	0.4484	-0.5404	0.5587	-0.5543	0.5873	-0.5707
46	0.264	0.295	0.0453	-0.5483	0.1037	-0.5387	0.1672	-0.5217	0.2390	-0.5184	0.3265	-0.5275	0.4372	-0.5445	0.5463	-0.5589	0.5775	-0.5697
47	0.264	0.530	0.0451	-0.5737	0.0829	-0.5617	0.1463	-0.5387	0.2191	-0.5281	0.3100	-0.5337	0.4197	-0.5523	0.5281	-0.5672	0.5597	-0.5813
48	0.264	0.707	0.0117	-0.5781	0.0460	-0.5667	0.1047	-0.5422	0.1802	-0.5303	0.2764	-0.5360	0.3887	-0.5529	0.4947	-0.5726	0.5244	-0.5859
49	0.264	0.823	-0.0384	-0.5700	-0.0119	-0.5592	0.0360	-0.5393	0.1190	-0.5297	0.2298	-0.5290	0.3440	-0.5424	0.4439	-0.5667	0.4653	-0.5810
50	0.264	0.882	-0.0575	-0.5590	-0.0352	-0.5477	0.0112	-0.5289	0.1073	-0.5211	0.2181	-0.5210	0.3238	-0.5379	0.4132	-0.5598	0.4325	-0.5731
51	0.264	0.941	-0.1030	-0.5516	-0.0850	-0.5440	-0.0470	-0.5269	0.0432	-0.5178	0.1374	-0.5184	0.2258	-0.5357	0.3014	-0.5560	0.3177	-0.5695
52	0.177	0.000	-0.8957	-0.5140	-0.8767	-0.5090	-0.7866	-0.5131	-0.5501	-0.5184	-0.3713	-0.5254	-0.0549	-0.5445	0.1757	-0.5615	0.2272	-0.5706
53	0.177	0.295	-0.9463	-0.5307	-0.8844	-0.5243	-0.7736	-0.5165	-0.5603	-0.5163	-0.3392	-0.5166	-0.0309	-0.5467	0.2077	-0.5681	0.2571	-0.5874
54	0.177	0.530	-0.9235	-0.5671	-0.8988	-0.5565	-0.7437	-0.5356	-0.5355	-0.5250	-0.3306	-0.5218	-0.0156	-0.5498	0.2113	-0.5740	0.2557	-0.5934
55	0.177	0.707	-0.9053	-0.5765	-0.8820	-0.5687	-0.7229	-0.5463	-0.4883	-0.5232	-0.2725	-0.5281	-0.0191	-0.5402	0.1989	-0.5706	0.2320	-0.5845
56	0.177	0.882	-0.3267	-0.5672	-0.3030	-0.5575	-0.2302	-0.5401	-0.0069	-0.5181	0.1287	-0.5232	0.2351	-0.5357	0.3299	-0.5603	0.3508	-0.5744
57	0.118	0.000	-0.8155	-0.4943	-0.7746	-0.5003	-0.6497	-0.5192	-0.2539	-0.5126	0.1638	-0.5227	0.2262	-0.5348	0.3228	-0.5616	0.3475	-0.5759
58	0.118	0.295	-0.8238	-0.5406	-0.7881	-0.5425	-0.6550	-0.5359	-0.2438	-0.5262	0.1495	-0.5275	0.2091	-0.5402	0.3076	-0.5637	0.3313	-0.5783
59	0.118	0.530	-0.8464	-0.5789	-0.7979	-0.5744	-0.6790	-0.5500	-0.2451	-0.5351	0.1447	-0.5346	0.2029	-0.5480	0.2997	-0.5699	0.3244	-0.5835
60	0.118	0.707	-0.7891	-0.5892	-0.7471	-0.5821	-0.6709	-0.5528	-0.0471	-0.5365	0.1556	-0.5400	0.2125	-0.5521	0.3008	-0.5713	0.3230	-0.5881
61	0.118	0.823	-0.6457	-0.5765	-0.5854	-0.5700	-0.5059	-0.5454	0.0110	-0.5275	0.0758	-0.5425	0.1714	-0.5450	0.2727	-0.5662	0.2946	-0.5784
62	0.118	0.941	-0.3908	-0.5633	-0.3612	-0.5575	-0.2575	-0.5358	-0.0643	-0.5177	0.0229	-0.5340	0.1028	-0.5379	0.1864	-0.5585	0.2032	-0.5713
63	0.059	0.000	-0.7084	-0.4802	-0.6710	-0.4912	-0.5591	-0.5179	0.0000	-0.5161	0.0478	-0.5344	0.1212	-0.5438	0.2052	-0.5659	0.2238	-0.5798
64	0.059	0.295	-0.7221	-0.5376	-0.6818	-0.5344	-0.5089	-0.5363	-0.0030	-0.5219	0.0466	-0.5301	0.1198	-0.5402	0.2023	-0.5581	0.2220	-0.5753
65	0.059	0.530	-0.7371	-0.5720	-0.6918	-0.5613	-0.6129	-0.5426	0.0005	-0.5266	0.0372	-0.5315	0.1052	-0.5449	0.1863	-0.5624	0.2056	-0.5822
66	0.059	0.707	-0.6366	-0.5958	-0.5309	-0.5808	-0.2873	-0.5514	-0.0110	-0.5378	0.0361	-0.5409	0.1059	-0.5507	0.1858	-0.5655	0.2042	-0.5863
67	0.059	0.882	-0.5444	-0.5895	-0.4847	-0.5722	-0.4176	-0.5486	-0.0763	-0.5328	-0.0079	-0.5373	0.0535	-0.5454	0.1347	-0.5667	0.1526	-0.5779
68	0.736	-0.707	0.4366	-0.4963	0.5138	-0.4896	0.6597	-0.4881	0.7750	-0.4884	0.8811	-0.5038	0.9648	-0.5142	1.0302	-0.5317	1.0381	-0.5408
69	0.288	-0.707	0.0400	-0.5602	0.0766	-0.5466	0.1414	-0.5239	0.2165	-0.5126	0.3203	-0.5197	0.4244	-0.5297	0.5330	-0.5474	0.5596	-0.5600

Table A-9.- (Continued).
M = 1.2

			ALPHA =															
			-2.9	-3.0	0.0	-0.1	5.0	4.9	10.0	9.9	14.9	14.8	19.9	19.8	24.9	24.8	26.3	26.2
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	0.6240	0.8737	0.7414	0.7498	0.9334	0.5608	1.0472	-0.2154	1.1334	-0.5176	1.2291	-0.6644	1.2990	-0.5066	1.3150	-0.5129
2	0.941	0.295	0.6110	0.8660	0.7341	0.7406	0.9242	0.5552	1.0307	-0.2210	1.1261	-0.5373	1.2200	-0.7223	1.2910	-0.5525	1.3084	-0.5568
3	0.941	0.530	0.6044	0.8509	0.7190	0.7258	0.9066	0.5567	1.0226	-0.2002	1.1104	-0.5053	1.2032	-0.7110	1.2746	-0.5753	1.2917	-0.5702
4	0.941	0.707	0.5478	0.8006	0.6837	0.6874	0.8658	0.5552	0.9807	-0.1588	1.0720	-0.4599	1.1659	-0.6945	1.2380	-0.6174	1.2558	-0.5884
5	0.941	0.882	0.4365	0.6506	0.5428	0.5448	0.7088	0.4599	0.8085	-0.0836	0.8998	-0.3600	0.9959	-0.5663	1.0762	-0.6061	1.0984	-0.5540
6	0.882	0.000	0.5118	0.7071	0.6087	0.6148	0.7544	0.4418	0.8542	-0.0391	0.9388	-0.3500	1.0540	-0.5921	1.1497	-0.5580	1.1761	-0.5624
7	0.882	0.295	0.5087	0.7046	0.6057	0.6095	0.7505	0.4368	0.8485	-0.0400	0.9340	-0.3524	1.0459	-0.5994	1.1436	-0.5830	1.1703	-0.5818
8	0.882	0.530	0.4911	0.6830	0.5852	0.5898	0.7286	0.4218	0.8282	-0.0273	0.9143	-0.3345	1.0226	-0.5715	1.1183	-0.6083	1.1455	-0.5959
9	0.882	0.707	0.4451	0.6336	0.5362	0.5407	0.6765	0.3852	0.7766	-0.0084	0.8638	-0.3114	0.9701	-0.5418	1.0662	-0.6330	1.0920	-0.6020
10	0.882	0.823	0.3620	0.5088	0.4232	0.4294	0.5518	0.2886	0.6452	-0.0059	0.7321	-0.2963	0.8376	-0.5212	0.9359	-0.6518	0.9647	-0.6025
11	0.882	0.941	-0.0458	0.1230	0.0534	0.0558	0.0523	-0.0219	0.1202	-0.0957	0.4019	-0.6121	0.4825	-0.7031	0.6583	-0.6601	0.6702	-0.6043
12	0.823	0.000	0.4059	0.5449	0.4737	0.4800	0.5797	0.3524	0.6549	0.0327	0.7264	-0.2940	0.8536	-0.5255	0.9760	-0.5643	1.0120	-0.5073
13	0.823	0.295	0.4059	0.5453	0.4722	0.4773	0.5781	0.3511	0.6533	0.0352	0.7250	-0.2873	0.8456	-0.5198	0.9606	-0.5676	1.0034	-0.5095
14	0.823	0.530	0.3932	0.5227	0.4498	0.4553	0.5560	0.3291	0.6309	0.0431	0.7043	-0.2762	0.8135	-0.5053	0.9335	-0.5782	0.9690	-0.6010
15	0.823	0.707	0.3293	0.4683	0.3944	0.4014	0.4996	0.2799	0.5768	0.0544	0.6518	-0.2612	0.7549	-0.4862	0.8698	-0.5778	0.9045	-0.6056
16	0.823	0.882																
17	0.736	0.000	-0.3713	-0.2803	-0.3342	-0.3301	-0.2569	-0.3810	-0.1623	-0.4794	0.0505	-0.6348	0.4756	-0.7499	0.7570	-0.5174	0.8034	-0.5537
18	0.736	0.295	-0.3757	-0.2875	-0.3407	-0.3380	-0.2639	-0.3083	-0.1757	-0.4848	0.0379	-0.6325	0.4336	-0.7487	0.7425	-0.5206	0.7905	-0.5613
19	0.736	0.530	-0.3730	-0.2891	-0.3395	-0.3372	-0.2689	-0.3060	-0.1952	-0.4701	-0.0839	-0.6190	0.3114	-0.7338	0.6397	-0.5259	0.6933	-0.5679
20	0.736	0.707	-0.4244	-0.3477	-0.3936	-0.3920	-0.3305	-0.4376	-0.2669	-0.5026	-0.0665	-0.6224	0.1968	-0.7150	0.5574	-0.5319	0.6275	-0.5727
21	0.736	0.823	-0.3064	-0.2426	-0.3833	-0.3381	-0.2972	-0.2072	-0.2675	-0.3906	-0.0897	-0.5714	0.3168	-0.6487	0.5372	-0.5399	0.5906	-0.5810
22	0.736	0.882	0.0006	0.0773	0.0518	0.0645	0.0638	-0.0240	0.0898	-0.1051	0.1617	-0.2872	0.4272	-0.3493	0.5363	-0.5277	0.5696	-0.5822
23	0.736	0.941	0.0702	0.1059	0.0872	0.0979	0.0876	0.0425	0.0713	-0.1316	0.1110	-0.3227	0.3395	-0.4947	0.4447	-0.5530	0.4805	-0.6006
24	0.618	0.000	-0.3474	-0.1840	-0.2783	-0.2747	-0.1326	-0.3765	0.0354	-0.4852	0.4455	-0.6288	0.5786	-0.7431	0.7070	-0.5113	0.7439	-0.5528
25	0.618	0.295	-0.3492	-0.1911	-0.2824	-0.2809	-0.1435	-0.3805	0.0235	-0.4807	0.4377	-0.6270	0.5664	-0.7393	0.6966	-0.5135	0.7330	-0.5543
26	0.618	0.530	-0.3721	-0.2268	-0.3131	-0.3094	-0.1854	-0.4022	-0.0299	-0.4809	0.4264	-0.4203	0.5303	-0.7317	0.6558	-0.5185	0.6931	-0.5604
27	0.618	0.707	-0.3527	-0.2148	-0.2990	-0.2892	-0.2005	-0.3702	-0.0724	-0.4425	0.3888	-0.5501	0.4769	-0.6764	0.5919	-0.5201	0.6277	-0.5626
28	0.618	0.823	-0.1633	-0.0565	-0.1140	-0.0893	-0.0432	-0.1836	0.0504	-0.2574	0.3084	-0.2872	0.4141	-0.3858	0.5098	-0.5132	0.5416	-0.5677
29	0.618	0.882	-0.0933	-0.0362	-0.0659	-0.0522	-0.0398	-0.1054	0.0180	-0.1872	0.2856	-0.2879	0.3730	-0.4281	0.4630	-0.5094	0.4957	-0.5749
30	0.618	0.941	-0.0498	-0.0026	-0.0257	-0.0152	-0.0266	-0.0663	-0.0133	-0.1948	0.2118	-0.3637	0.2912	-0.5718	0.3732	-0.6199	0.4059	-0.6330
31	0.500	0.000	-0.3298	-0.1418	-0.2479	-0.2453	-0.0825	-0.3702	0.1271	-0.4821	0.3867	-0.6175	0.5227	-0.7327	0.6368	-0.5118	0.6692	-0.5514
32	0.500	0.295	-0.3394	-0.1576	-0.2624	-0.2581	-0.1044	-0.3791	0.0906	-0.4791	0.3764	-0.6130	0.5081	-0.7281	0.6208	-0.5146	0.6537	-0.5539
33	0.500	0.530	-0.3473	-0.1575	-0.2573	-0.2402	-0.1276	-0.4016	0.0497	-0.4887	0.3553	-0.6043	0.4755	-0.7045	0.5846	-0.5175	0.6198	-0.5579
34	0.500	0.707	-0.2348	-0.1058	-0.2098	-0.1449	-0.0713	-0.2433	0.1382	-0.3315	0.3245	-0.4204	0.4265	-0.5150	0.5298	-0.5187	0.5612	-0.5615
35	0.500	0.823	-0.1257	-0.0160	-0.0774	-0.0603	-0.0013	-0.1420	0.0994	-0.2363	0.2492	-0.3216	0.3541	-0.4354	0.4444	-0.5138	0.4757	-0.5676
36	0.500	0.882	-0.1098	-0.0189	-0.0724	-0.0584	-0.0062	-0.1287	0.0762	-0.2288	0.2408	-0.3344	0.3077	-0.4915	0.3978	-0.5502	0.4282	-0.5888
37	0.500	0.941	-0.0898	-0.0127	-0.0598	-0.0491	-0.0108	-0.1133	0.0476	-0.2418	0.1748	-0.4465	0.2442	-0.6268	0.3163	-0.6510	0.3449	-0.6514
38	0.382	0.000	-0.3248	-0.1301	-0.2406	-0.2352	-0.0697	-0.3624	0.1435	-0.4764	0.3396	-0.6054	0.4555	-0.7216	0.5498	-0.5117	0.5765	-0.5506
39	0.382	0.295	-0.3382	-0.1416	-0.2540	-0.2435	-0.0904	-0.3738	0.1255	-0.4714	0.3331	-0.6007	0.4455	-0.7171	0.5387	-0.5157	0.5673	-0.5543
40	0.382	0.530	-0.3011	-0.1144	-0.2192	-0.2129	-0.0688	-0.2939	0.1626	-0.3893	0.3135	-0.4877	0.4185	-0.6125	0.5108	-0.5201	0.5379	-0.5615
41	0.382	0.707	-0.1552	-0.0179	-0.0899	-0.0824	0.0115	-0.1820	0.1661	-0.2864	0.2746	-0.3736	0.3698	-0.5075	0.4575	-0.5248	0.4852	-0.5661
42	0.382	0.823	-0.1250	-0.0152	-0.0766	-0.0659	0.0068	-0.1387	0.1141	-0.2162	0.2173	-0.3533	0.2982	-0.4885	0.3754	-0.5261	0.4015	-0.5743
43	0.382	0.882	-0.1146	-0.0226	-0.0701	-0.0616	-0.0028	-0.1283	0.0983	-0.2150	0.1879	-0.3883	0.2618	-0.5476	0.3356	-0.5096	0.3609	-0.6129
44	0.382	0.941	-0.1018	-0.0291	-0.0617	-0.0519	-0.0194	-0.1208	0.0589	-0.2770	0.1296	-0.4986	0.1855	-0.6438	0.2513	-0.6484	0.2772	-0.6601
45	0.264	0.000	-0.3303	-0.1427	-0.2485	-0.2424	-0.0893	-0.3640	0.1172	-0.4721	0.2639	-0.5996	0.3423	-0.6091	0.4068	-0.5157	0.4252	-0.5557
46	0.264	0.295	-0.3370	-0.1360	-0.2494	-0.2412	-0.0894	-0.3793	0.1819	-0.4785	0.2615	-0.5974	0.3383	-0.6703	0.4020	-0.5230	0.4281	-0.5623
47	0.264	0.530	-0.2074	-0.0402	-0.2002	-0.1575	-0.0134	-0.2146	0.1953	-0.3249	0.2444	-0.4216	0.3176	-0.5554	0.3808	-0.5292	0.4003	-0.5694
48	0.264	0.707	-0.1500	-0.0227	-0.0930	-0.0838	0.0078	-0.1728	0.1498	-0.2748	0.2133	-0.3796	0.2802	-0.4785	0.3405	-0.5269	0.3598	-0.5695
49	0.264	0.823	-0.1187	-0.0284	-0.0727	-0.0638	0.0016	-0.1334	0.1045	-0.2227	0.1672	-0.3787	0.2260	-0.5114	0.2795	-0.5400	0.2904	-0.5051
50	0.264	0.882	-0.1094	-0.0273	-0.0705	-0.0603	-0.0067	-0.1226	0.0888	-0.2434	0.1394	-0.4229	0.1935	-0.5896	0.2451	-0.6122	0.2641	-0.6340
51	0.264	0.941	-0.1036	-0.0330	-0.0633	-0.0490	-0.0229	-0.1225	0.0486	-0.3336	0.0854	-0.5346	0.1278	-0.6548	0.1750	-0.6319	0.1954	-0.6544
52	0.177	0.000	-0.6700	-0.3081	-0.4579	-0.5400	-0.3866	-0.6065	-0.4441	-0.4287	-0.4015	-0.3940	-0.3748	-0.3981	-0.3447	-0.5104	-0.3359	-0.5514
53	0.177	0.295	-0.6632	-0.3082	-0.4464	-0.5444	-0.3814	-0.6022	-0.4266	-0.4775	-0.4083	-0.4300	-0.3748	-0.4336	-0.3451	-0.5248	-0.3329	-0.5639
54	0.177	0.530	-0.5992	-0.5037	-0.5476	-0.5513	-0.4876	-0.6113	-0.4485	-0.6489	-0.4198	-0.5936	-0.3934	-0.6006	-0.3641	-0.5309	-0.3535	-0.5732
55	0.177	0.707	-0.5418	-0.5037	-0.5352	-0.5311	-0.4872	-0.5488	-0.4382	-0.6191	-0.4139	-0.6060	-0.3901	-0.7173	-0.3620	-0.5318	-0.3534	-0.5686
56	0.177	0.882	-0.1152	-0.0566	-0.0847	-0.0777	-0.0530	-0.1233	-0.0237	-0.2712	-0.0132	-0.4616	0.0063	-0.6228	0.0337	-0.6263	0.0465	-0.6347
57	0.118	0.000	-0.6612	-0.3621	-0.4559	-0.5263	-0.3488	-0.6334	-0.4439	-0.4181	-0.4071	-0.3930	-0.3715	-0.4066	-0.3252	-0.4995	-0.3095	-0.5373
58	0.118	0.295	-0.6250	-0.3724	-0.4469	-0.5266	-0.3426	-0.6413	-0.4441	-0.4496	-0.4087	-0.4164	-0.3719	-0.4284	-0.3263	-0.5132	-0.3090	-0.5528
59	0.118	0.530	-0.5984	-0.4565	-0.5180	-0.5492	-0.4491	-0.6093	-0.4497	-0.5789	-0.4161	-0.4824	-0.3821	-0.4884	-0.3370	-0.5310	-0.3175	-0.5694
60	0.118	0.707	-0.5174	-0.4777	-0.5084	-0.5017	-0.4653	-0.5497	-0.4248	-0.5960	-0.3971	-0.6737	-0.3629	-0.6895	-0.3125	-0.5343	-0.2930	-0.5747
61	0.118	0.823	-0.5785	-0.5388	-0.5618	-0.5561	-0.4744	-0.6037	-0.3515	-0.6571	-0.3247	-0.7098	-0.2869	-0.7086	-0.2318	-0.5786	-0.2112	-0.5855
62	0.118	0.941	-0.1127	-0.0870	-0.0894	-0.0784	-0.0917	-0.1451	-0.1060	-0.3978	-0.1222	-0.5746	-0.1086	-0.6746	-0.0784	-0.6061	-0.0600	-0.6039
63	0.059	0.000	-0.0242	-0.3830	-0.4566	-0.5295	-0.4007	-0.5348	-0.4272	-0.4083	-0.4089	-0.4028	-0.3556	-0.4123	-0.2945	-0.4876	-0.2713	-0.5235
64	0.059	0.295	-0.5757	-0.3721	-0.4455	-0.5269	-0.3862	-0.5345	-0.4351	-0.4435	-0.3928	-0.4175	-0.3531	-0.4316	-0.2973	-0.5053	-0.2748	-0.5467
65	0.059	0.530	-0.5240	-0.3808	-0.4811	-0.5157	-0.3803	-0.4755	-0.4541	-0.4244	-0.4080	-0.4026	-0.3611	-0.4647	-0.3172	-0.5303	-0.2919	-0.5687
66	0.059	0.707	-0.4938	-0.4269	-0.4410	-0.4480	-0.4340	-0.5126	-0.3069	-0.5680	-0.3681	-0.5069	-0.3246	-0.6351	-0.2628	-0.5324	-0.2359	-0.5760
67	0.059	0.882	-0.5109	-0.5647	-0.5095	-0.5256	-0.5702	-0.5795	-0.4466	-0.6367	-0.3536	-0.6045	-0.2950	-0.6797	-0.2219	-0.5614	-0.1940	-0.5806
68	0.736	-0.707	-0.4178	-0.3524	-0.3921	-0.3931	-0.3334	-0.4352	-0.2676	-0.5026	-0.0469	-0.6264	0.2118	-0.7252	0.6259	-0.5312	0.6051	-0.5731
69	0.288	-0.707	-0.1347	-0.0250	-0.0735	-0.0843	0.0114	-0.1763	0.1489	-0.2597	0.2180	-0.3015	0.2887	-0.4772	0.3466	-0.5197	0.3673	-0.5604

Table A-9.- (Continued).
M = 1.2

			ALPHA =															
			27.0	26.9	29.8	29.6	34.7	34.6	39.7	39.6	44.6	44.6	49.7	49.5	54.6	54.5	56.2	56.1
TAPS	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	1.3200	-0.5240	1.3492	-0.5470	1.3816	-0.5577	1.3972	-0.5305	1.3969	-0.3927	1.3810	-0.3957	1.3635	-0.3825	1.3517	-0.3825
2	0.941	0.295	1.3205	-0.5726	1.3400	-0.5915	1.3731	-0.6033	1.3891	-0.5696	1.3866	-0.4164	1.3747	-0.4188	1.3561	-0.4027	1.3457	-0.4012
3	0.941	0.530	1.3031	-0.5846	1.3233	-0.6012	1.3560	-0.6079	1.3734	-0.5706	1.3756	-0.4123	1.3632	-0.4137	1.3453	-0.3971	1.3361	-0.3966
4	0.941	0.707	1.2659	-0.5982	1.2886	-0.6133	1.3239	-0.6186	1.3429	-0.5794	1.3488	-0.4170	1.3415	-0.4165	1.3224	-0.3973	1.3144	-0.3972
5	0.941	0.882	1.1041	-0.5649	1.1349	-0.5777	1.1829	-0.5803	1.2156	-0.5440	1.2363	-0.3956	1.2505	-0.3940	1.2389	-0.3761	1.2332	-0.3773
6	0.882	0.000	1.1939	-0.5754	1.2320	-0.5960	1.2981	-0.6065	1.3450	-0.5725	1.3791	-0.4215	1.4004	-0.4241	1.4081	-0.4062	1.4030	-0.4069
7	0.882	0.295	1.1866	-0.5937	1.2238	-0.6118	1.2906	-0.6227	1.3380	-0.5834	1.3715	-0.4253	1.3924	-0.4214	1.4084	-0.4093	1.3994	-0.4096
8	0.882	0.530	1.1412	-0.6068	1.1961	-0.6205	1.2652	-0.6250	1.3134	-0.5844	1.3494	-0.4244	1.3744	-0.4188	1.3827	-0.4089	1.3821	-0.4077
9	0.882	0.707	1.1075	-0.6092	1.1460	-0.6233	1.2141	-0.6256	1.2658	-0.5839	1.3059	-0.4188	1.3368	-0.4130	1.3456	-0.4022	1.3456	-0.4020
10	0.882	0.823	0.9742	-0.6083	1.0175	-0.6263	1.0934	-0.6272	1.1547	-0.5848	1.2053	-0.4170	1.2525	-0.4093	1.2690	-0.4028	1.2715	-0.4005
11	0.882	0.941	0.7876	-0.6136	0.7305	-0.6279	0.7965	-0.6290	0.8568	-0.5885	0.9096	-0.4180	0.9813	-0.4106	1.0087	-0.4037	1.0150	-0.4026
12	0.823	0.000	1.0334	-0.5988	1.0870	-0.6206	1.1799	-0.6258	1.2563	-0.5877	1.3192	-0.4271	1.3724	-0.4211	1.4044	-0.4147	1.4008	-0.4155
13	0.823	0.295	1.0737	-0.6039	1.0773	-0.6282	1.1694	-0.6267	1.2471	-0.5874	1.3111	-0.4238	1.3631	-0.4211	1.3945	-0.4119	1.3983	-0.4100
14	0.823	0.530	0.9875	-0.6136	1.0418	-0.6244	1.1347	-0.6272	1.2142	-0.5872	1.2813	-0.4222	1.3380	-0.4195	1.3701	-0.4100	1.3759	-0.4081
15	0.823	0.707	0.9288	-0.6179	0.9750	-0.6280	1.0890	-0.6278	1.1517	-0.5871	1.2227	-0.4173	1.2856	-0.4144	1.3192	-0.4036	1.3251	-0.4020
16	0.823	0.882	0.5934	-0.6127	0.7184	-0.6263	0.8253	-0.6265	0.9100	-0.5899	0.9872	-0.4152	1.0478	-0.4180	1.0818	-0.4027	1.0907	-0.4016
17	0.736	0.000	0.7796	-0.5741	0.8783	-0.6096	1.0037	-0.6217	1.1060	-0.5900	1.1995	-0.4239	1.2872	-0.4290	1.3479	-0.4158	1.3593	-0.4158
18	0.736	0.295	0.7769	-0.5814	0.8636	-0.6195	0.9973	-0.6314	1.0897	-0.5944	1.1863	-0.4260	1.2743	-0.4331	1.3347	-0.4182	1.3473	-0.4189
19	0.736	0.530	0.7150	-0.5878	0.8135	-0.6231	0.9447	-0.6326	1.0510	-0.5899	1.1482	-0.4231	1.2443	-0.4288	1.3038	-0.4126	1.3164	-0.4125
20	0.736	0.707	0.6483	-0.5922	0.7274	-0.6252	0.8591	-0.6308	0.9656	-0.5887	1.0671	-0.4208	1.1716	-0.4264	1.2318	-0.4096	1.2446	-0.4091
21	0.736	0.823	0.6882	-0.5988	0.6801	-0.6272	0.7706	-0.6299	0.8535	-0.5875	0.9369	-0.4173	1.0379	-0.4228	1.0904	-0.4047	1.1025	-0.4045
22	0.736	0.882	0.5769	-0.6007	0.6246	-0.6278	0.7149	-0.6294	0.7990	-0.5870	0.8826	-0.4159	0.9793	-0.4191	1.0266	-0.4031	1.0382	-0.4034
23	0.736	0.941	0.4709	-0.6221	0.5274	-0.6532	0.6114	-0.6411	0.6913	-0.5925	0.7492	-0.4199	0.8614	-0.4231	0.9053	-0.4070	0.9143	-0.4081
24	0.618	0.000	0.7646	-0.5732	0.8221	-0.6146	0.9225	-0.6299	1.0160	-0.5903	1.1075	-0.4271	1.2068	-0.4316	1.2761	-0.4177	1.2885	-0.4215
25	0.618	0.295	0.7519	-0.5747	0.8095	-0.6136	0.9086	-0.6300	1.0020	-0.5885	1.0967	-0.4235	1.1952	-0.4240	1.2636	-0.4156	1.2771	-0.4166
26	0.618	0.530	0.7095	-0.5795	0.7665	-0.6193	0.8653	-0.6304	0.9608	-0.5872	1.0575	-0.4218	1.1595	-0.4220	1.2284	-0.4133	1.2435	-0.4139
27	0.618	0.707	0.6398	-0.5815	0.6955	-0.6207	0.7908	-0.6310	0.8841	-0.5868	0.9820	-0.4173	1.0870	-0.4170	1.1533	-0.4083	1.1681	-0.4096
28	0.618	0.823	0.5445	-0.5865	0.5937	-0.6242	0.6800	-0.6359	0.7626	-0.5895	0.8554	-0.4170	0.9588	-0.4129	1.0165	-0.4074	1.0320	-0.4088
29	0.618	0.882	0.4961	-0.5927	0.5415	-0.6389	0.6272	-0.6473	0.7082	-0.5940	0.7975	-0.4206	0.8988	-0.4168	0.9544	-0.4114	0.9702	-0.4144
30	0.618	0.941	0.4864	-0.6597	0.4470	-0.6823	0.5250	-0.6570	0.5993	-0.5962	0.6818	-0.4219	0.7801	-0.4174	0.8309	-0.4121	0.8460	-0.4174
31	0.500	0.000	0.6855	-0.5728	0.7375	-0.6121	0.8294	-0.6319	0.9189	-0.5903	1.0099	-0.4253	1.1171	-0.4141	1.1936	-0.4178	1.2102	-0.4166
32	0.500	0.295	0.6497	-0.5737	0.7189	-0.6125	0.8115	-0.6319	0.9016	-0.5887	0.9969	-0.4244	1.1033	-0.4133	1.1790	-0.4162	1.1972	-0.4153
33	0.500	0.530	0.6321	-0.5061	0.6823	-0.5435	0.7743	-0.5647	0.8653	-0.5364	0.9600	-0.3953	1.0709	-0.3964	1.1470	-0.4101	1.1649	-0.4099
34	0.500	0.707	0.5673	-0.5780	0.6169	-0.6187	0.7646	-0.6348	0.7931	-0.5873	0.8870	-0.4170	1.0039	-0.4056	1.0750	-0.4129	1.0918	-0.4121
35	0.500	0.823	0.4736	-0.5781	0.5174	-0.6224	0.5962	-0.6396	0.6781	-0.5889	0.7657	-0.4177	0.8805	-0.4073	0.9433	-0.4166	0.9592	-0.4173
36	0.500	0.882	0.4275	-0.6103	0.4693	-0.6615	0.5464	-0.6630	0.6248	-0.5981	0.7132	-0.4222	0.8251	-0.4111	0.8858	-0.4173	0.9007	-0.4204
37	0.500	0.941	0.3419	-0.6807	0.3823	-0.6912	0.4532	-0.6571	0.5263	-0.5939	0.6126	-0.4194	0.7160	-0.4060	0.7721	-0.4152	0.7848	-0.4151
38	0.382	0.000	0.5893	-0.5668	0.6326	-0.6074	0.7139	-0.6246	0.7933	-0.5865	0.8834	-0.4204	0.9968	-0.4071	1.0930	-0.4173	1.0994	-0.4146
39	0.382	0.295	0.5795	-0.5728	0.6731	-0.6134	0.7030	-0.6321	0.7820	-0.5896	0.8735	-0.4195	0.9875	-0.4065	1.0720	-0.4138	1.0897	-0.4121
40	0.382	0.530	0.5467	-0.5773	0.5904	-0.6191	0.6701	-0.6345	0.7483	-0.5924	0.8440	-0.4177	0.9607	-0.4082	1.0433	-0.4147	1.0632	-0.4131
41	0.382	0.707	0.4884	-0.5843	0.5293	-0.6250	0.6077	-0.6440	0.6862	-0.5984	0.7828	-0.4202	0.9029	-0.4113	0.9821	-0.4191	1.0018	-0.4191
42	0.382	0.823	0.3897	-0.5917	0.4363	-0.6462	0.5057	-0.6630	0.5764	-0.6066	0.6729	-0.4234	0.7922	-0.4144	0.8628	-0.4206	0.8814	-0.4226
43	0.382	0.882	0.3610	-0.6416	0.3955	-0.6780	0.4639	-0.6636	0.5344	-0.5994	0.6299	-0.4194	0.7494	-0.4112	0.8164	-0.4178	0.8336	-0.4173
44	0.382	0.941	0.2759	-0.6907	0.3067	-0.6933	0.3719	-0.6536	0.4361	-0.5923	0.5305	-0.4157	0.6439	-0.4086	0.7056	-0.4158	0.7210	-0.4139
45	0.264	0.000	0.4380	-0.5717	0.4671	-0.6139	0.5270	-0.6304	0.5656	-0.5886	0.6593	-0.4177	0.7793	-0.4101	0.8753	-0.4141	0.8997	-0.4121
46	0.264	0.295	0.4286	-0.5729	0.4574	-0.6151	0.5171	-0.6330	0.5756	-0.5866	0.6495	-0.4195	0.7717	-0.4114	0.8633	-0.4147	0.8879	-0.4128
47	0.264	0.530	0.4046	-0.5969	0.4340	-0.6279	0.4937	-0.6466	0.5553	-0.5951	0.6314	-0.4239	0.7558	-0.4161	0.8458	-0.4199	0.8713	-0.4191
48	0.264	0.707	0.3408	-0.5866	0.3884	-0.6321	0.4472	-0.6537	0.5073	-0.5981	0.5909	-0.4241	0.7268	-0.4185	0.8120	-0.4218	0.8371	-0.4233
49	0.264	0.823	0.2939	-0.6058	0.3188	-0.6524	0.3783	-0.6658	0.4258	-0.5983	0.5269	-0.4231	0.6838	-0.4148	0.7629	-0.4189	0.7837	-0.4191
50	0.264	0.882	0.2604	-0.6645	0.2831	-0.6824	0.3365	-0.6611	0.3919	-0.5916	0.5121	-0.4200	0.6633	-0.4133	0.7365	-0.4173	0.7556	-0.4153
51	0.264	0.941	0.1916	-0.6856	0.2126	-0.6843	0.2639	-0.6541	0.3191	-0.5868	0.4425	-0.4152	0.5792	-0.4101	0.6429	-0.4138	0.6591	-0.4121
52	0.177	0.000	-0.3328	-0.5704	-0.3134	-0.6151	-0.2735	-0.6312	-0.1922	-0.5848	0.0640	-0.4242	0.3590	-0.4154	0.5335	-0.4143	0.5791	-0.4128
53	0.177	0.295	-0.3361	-0.5337	-0.3174	-0.5740	-0.2768	-0.5961	-0.1758	-0.5571	0.0534	-0.4114	0.3690	-0.4106	0.5491	-0.4177	0.5955	-0.4177
54	0.177	0.530	-0.3535	-0.5472	-0.3349	-0.5916	-0.2935	-0.6147	-0.1610	-0.5674	0.0473	-0.4144	0.3810	-0.4159	0.5460	-0.4203	0.5903	-0.4226
55	0.177	0.707	-0.3551	-0.5695	-0.3357	-0.6132	-0.2328	-0.6392	-0.1476	-0.5823	0.1138	-0.4147	0.3784	-0.4141	0.5417	-0.4203	0.5790	-0.4180
56	0.177	0.882	0.0399	-0.6661	0.0580	-0.6661	0.1084	-0.6604	0.1861	-0.5927	0.4487	-0.4208	0.5969	-0.4151	0.6716	-0.4187	0.6880	-0.4157
57	0.118	0.000	-0.2991	-0.5480	-0.2634	-0.5908	-0.1809	-0.6097	-0.0795	-0.5724	0.4960	-0.4188	0.6081	-0.4123	0.6841	-0.4156	0.7612	-0.4121
58	0.118	0.295	-0.3017	-0.5693	-0.2669	-0.6140	-0.1862	-0.6330	-0.0841	-0.5827	0.4880	-0.4213	0.5944	-0.4165	0.6489	-0.4165	0.6862	-0.4124
59	0.118	0.530	-0.3176	-0.5854	-0.2851	-0.6276	-0.2023	-0.6473	-0.0927	-0.5896	0.4822	-0.4206	0.5868	-0.4198	0.6592	-0.4221	0.6778	-0.4195
60	0.118	0.707	-0.2965	-0.5903	-0.2579	-0.6355	-0.1734	-0.6589	-0.1143	-0.5966	0.4952	-0.4204	0.5905	-0.4223	0.6562	-0.4229	0.6735	-0.4230
61	0.118	0.823	-0.2090	-0.6083	-0.1676	-0.6410	-0.0628	-0.6629	0.0821	-0.5961	0.4301	-0.4194	0.5551	-0.4178	0.6287	-0.4218	0.6463	-0.4188
62	0.118	0.941	-0.0662	-0.6251	-0.0435	-0.6491	0.0291	-0.6550	0.1363	-0.5912	0.3568	-0.4144	0.4841	-0.4155	0.5084	-0.4205	0.5622	-0.4153
63	0.059	0.000	-0.2564	-0.5462	-0.2091	-0.5875	-0.1132	-0.6094	0.0100	-0.5778	0.4328	-0.4220	0.5210	-0.4132	0.5481	-0.4192	0.6013	-0.4146
64	0.059	0.295	-0.2652	-0.5642	-0.2201	-0.6086	-0.1238	-0.6290	-0.0210	-0.5787	0.4303	-0.4173	0.5179	-0.4191	0.5632	-0.4165	0.5957	-0.4124
65	0.059	0.530	-0.2838	-0.5660	-0.2398	-0.6059	-0.1356	-0.6287	-0.0214	-0.5750	0.4242	-0.4096	0.5035	-0.4187	0.5661	-0.4213	0.5793	-0.4191
66	0.059	0.707	-0.2375	-0.5929	-0.1891	-0.6369	-0.1367	-0.6592	0.2215	-0.5951	0.4150	-0.4170	0.5023	-0.4252	0.5631	-0.4232	0.5759	-0.4230
67	0.059	0.882	-0.1886	-0.6058	-0.1369	-0.6429	-0.1197	-0.6633	0.0947	-0.5903	0.3569	-0.4172	0.4546	-0.4229	0.5144	-0.4214	0.5283	-0.4191
68	0.736	-0.707	0.7065	-0.5875	0.7540	-0.6208	0.8882	-0.6199	0.9947	-0.5782	1.0969	-0.4135	1.2032	-0.4169	1.2639	-0.4125	1.2722	-0.4084
69	0.288	-0.707	0.3880	-0.5793	0.4171	-0.6218	0.4774	-0.6386	0.5372	-0.5796	0.6237	-0.4105	0.7614	-0.4181	0.8477	-0.4163	0.8678	-0.4121

Table A-9.- (Continued).
M = 1.6

			ALPHA =															
			-2.7	-2.8	0.2	0.1	5.2	5.1	10.1	10.1	15.2	15.1	20.1	20.0	25.1	25.0	26.5	26.5
TUMP	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	0.6886	0.8961	0.7425	0.6936	1.0246	0.3630	1.1787	0.1066	1.2891	-0.0820	1.3669	-0.2266	1.4378	-0.3174	1.4546	-0.3379
2	0.941	0.295	0.6830	0.8926	0.7415	0.6799	1.0069	0.3217	1.1630	0.0801	1.2757	-0.1188	1.3542	-0.2818	1.4286	-0.3951	1.4461	-0.4207
3	0.941	0.530	0.6856	0.8614	0.7325	0.6697	0.9834	0.3399	1.1398	0.0947	1.2553	-0.1024	1.3404	-0.2617	1.4165	-0.3768	1.4335	-0.4063
4	0.941	0.707	0.6816	0.4157	0.7020	0.6486	0.9363	0.3525	1.0430	0.1166	1.2162	-0.0814	1.3076	-0.2414	1.3834	-0.3662	1.4020	-0.4017
5	0.941	0.882	0.6521	0.6710	0.5901	0.5545	0.7796	0.3500	0.9296	0.1542	1.0570	-0.0205	1.1525	-0.1591	1.2327	-0.2610	1.2535	-0.2891
6	0.882	0.000	0.6664	0.7867	0.6869	0.6445	0.8780	0.3400	1.0021	0.1273	1.1039	-0.0461	1.1815	-0.1911	1.2746	-0.3116	1.3028	-0.3499
7	0.882	0.295	0.6741	0.7790	0.6478	0.6388	0.8707	[illegible]	0.9967	0.1178	1.0969	-0.0601	1.1763	-0.2074	1.2699	-0.3355	1.2963	-0.3772
8	0.882	0.530	0.6718	0.7505	0.6687	0.6199	0.8427	[illegible]	0.9685	0.1243	1.0714	-0.0544	1.1563	-0.2008	1.2488	-0.3231	1.2743	-0.3632
9	0.882	0.707	0.6638	0.6953	0.6224	0.5814	0.7868	0.3392	0.9125	0.1375	1.0196	-0.0403	1.1109	-0.1875	1.2005	-0.3071	1.2260	-0.3463
10	0.882	0.823	0.6097	0.5827	0.5260	0.4897	0.6709	0.3100	0.7918	0.1361	0.8989	-0.0334	0.9910	-0.1799	1.0779	-0.2973	1.1050	-0.3352
11	0.882	0.941	-0.1902	-0.0075	-0.0510	-0.0590	0.0354	-0.1344	0.1257	-0.2016	0.3187	-0.2772	0.6957	-0.3448	0.7078	-0.4013	0.7715	-0.4230
12	0.823	0.000	0.6539	0.6873	0.6314	0.6004	0.7512	0.3352	0.8401	0.1262	0.9171	-0.0406	0.9835	-0.1821	1.0902	-0.3069	1.1261	-0.3471
13	0.823	0.295	0.6617	0.6850	0.6324	0.5988	0.7482	0.3481	0.8375	0.1236	0.9174	-0.0423	0.9829	-0.1770	1.0852	-0.3008	1.1202	-0.3406
14	0.823	0.530	0.6542	0.6559	0.6063	0.5701	0.7187	0.3378	0.8095	0.1271	0.8911	-0.0409	0.9611	-0.1751	1.0546	-0.2896	1.0805	-0.3294
15	0.823	0.707	0.6267	0.5919	0.5435	0.5084	0.6577	0.3187	0.7523	0.1327	0.8377	-0.0326	0.9133	-0.1700	0.9978	-0.2811	1.0295	-0.3187
16	0.823	0.862																
17	0.734	0.000	-0.0851	0.0042	-0.0113	-0.0196	0.0337	-0.1196	0.0933	-0.2252	0.1865	-0.3101	0.3527	-0.3797	0.7046	-0.4359	0.8240	-0.4548
18	0.734	0.295	-0.0853	0.0045	-0.0119	-0.0185	0.0310	-0.1095	0.0886	-0.2241	0.1731	-0.3087	0.3351	-0.3754	0.6672	-0.4335	0.7820	-0.4551
19	0.734	0.530	-0.0534	0.0025	-0.0130	-0.0202	0.0271	-0.1041	0.0811	-0.2111	0.1555	-0.2979	0.3049	-0.3642	0.5847	-0.4229	0.6844	-0.4455
20	0.734	0.707	-0.1887	-0.0561	-0.0720	-0.0844	-0.0308	-0.1501	0.0163	-0.2312	0.0797	-0.3108	0.1976	-0.3779	0.4931	-0.4272	0.6047	-0.4474
21	0.736	0.823	-0.1750	-0.1099	-0.1401	-0.1415	-0.0928	-0.1988	-0.0548	-0.2446	-0.0887	-0.2971	0.0737	-0.3534	0.5216	-0.4014	0.6169	-0.4208
22	0.734	0.882	-0.1137	0.0100	-0.0746	-0.0346	0.0257	-0.1098	0.2211	-0.1962	0.3184	-0.2975	0.3817	-0.3553	0.6186	-0.4077	0.6750	-0.4311
23	0.734	0.941	0.0449	0.1102	0.0781	0.0704	0.1260	0.0110	0.1919	-0.0684	0.2686	-0.1634	0.3451	-0.2564	0.5427	-0.3295	0.5898	-0.3549
24	0.618	0.000	-0.0710	0.0252	-0.0108	-0.0181	0.0801	-0.1220	0.1954	-0.2283	0.3617	-0.3132	0.6743	-0.3805	0.8157	-0.4342	0.8568	-0.4208
25	0.618	0.295	-0.0862	0.0213	-0.0140	-0.0209	0.0701	-0.1185	0.1835	-0.2215	0.3463	-0.3089	0.6606	-0.3748	0.8026	-0.4321	0.8447	-0.4369
26	0.618	0.530	-0.0881	-0.0108	-0.0441	-0.0526	0.0319	-0.1341	0.1343	-0.2285	0.2827	-0.3138	0.6130	-0.3783	0.7600	-0.4306	0.8011	-0.4467
27	0.618	0.707	-0.1856	-0.1123	-0.1493	-0.1523	-0.0808	-0.2109	0.0187	-0.2650	0.1755	-0.3166	0.4563	-0.3649	0.6959	-0.4095	0.7356	-0.4289
28	0.618	0.823	-0.1586	-0.0431	-0.1491	-0.0925	-0.0294	-0.1530	0.1006	-0.2377	0.2443	-0.3025	0.4601	-0.3648	0.6282	-0.4020	0.6589	-0.4173
29	0.618	0.882	0.0190	0.0522	0.0373	0.0310	0.0640	-0.0151	0.1112	-0.0773	0.2102	-0.1490	0.4021	-0.2242	0.5618	-0.2874	0.6159	-0.3145
30	0.618	0.941	0.0356	0.0593	0.0544	0.0545	0.0503	0.0017	0.0905	-0.0999	0.1531	-0.2079	0.3120	-0.3043	0.5017	-0.3709	0.5341	-0.3932
31	0.500	0.000	-0.0452	0.0378	-0.0081	-0.0192	0.0942	-0.1243	0.2283	-0.2249	0.4140	-0.3092	0.6023	-0.3761	0.7608	-0.4082	0.7985	-0.4233
32	0.500	0.295	-0.0757	0.0241	-0.0224	-0.0333	0.0753	-0.1307	0.2029	-0.2224	0.3798	-0.3076	0.5828	-0.3783	0.7442	-0.4141	0.7809	-0.4241
33	0.500	0.530	-0.1126	-0.0250	-0.0670	-0.0776	0.0178	-0.1545	0.1317	-0.2321	0.2966	-0.3099	0.5660	-0.3740	0.7046	-0.4162	0.7429	-0.4252
34	0.500	0.707	-0.1360	-0.0665	-0.0934	-0.0965	-0.0103	-0.1686	0.1031	-0.2329	0.2889	-0.2968	0.5293	-0.3540	0.6473	-0.4101	0.6842	-0.4331
35	0.500	0.823	-0.0244	0.0323	0.0082	-0.0017	0.0412	-0.0531	0.1267	-0.1152	0.2569	-0.1706	0.4501	-0.2221	0.5666	-0.2798	0.6018	-0.3086
36	0.500	0.882	-0.0051	0.0152	0.0092	0.0083	0.0313	-0.0352	0.1102	-0.1118	0.2220	-0.1937	0.4140	-0.2714	0.5234	-0.3297	0.5578	-0.3599
37	0.500	0.941	0.0086	0.0261	0.0258	0.0248	0.0216	-0.0292	0.0796	-0.1369	0.1768	-0.2450	0.3499	-0.3293	0.4583	-0.3877	0.4878	-0.4103
38	0.382	0.000	-0.0736	0.0357	-0.0156	-0.0272	0.0901	-0.1326	0.2232	-0.2268	0.4035	-0.3091	0.5561	-0.3793	0.7017	-0.3992	0.7315	-0.4190
39	0.382	0.295	-0.0934	0.0179	-0.0306	-0.0450	0.0687	-0.1369	0.1961	-0.2256	0.3666	-0.3065	0.5475	-0.3763	0.6890	-0.4000	0.7193	-0.4218
40	0.382	0.530	-0.1376	-0.0421	-0.0906	-0.1040	0.0006	-0.1778	0.1265	-0.2396	0.3290	-0.3025	0.5221	-0.3645	0.6556	-0.4040	0.6869	-0.4217
41	0.382	0.707	-0.1708	-0.0220	-0.0764	-0.0835	0.0151	-0.1461	0.1453	-0.2086	0.3156	-0.2498	0.4676	-0.2913	0.5963	-0.3469	0.6303	-0.3727
42	0.392	0.823	-0.0199	0.0290	0.0096	0.0010	0.0351	-0.0534	0.1182	-0.1275	0.2486	-0.1996	0.3981	-0.2569	0.5189	-0.3228	0.5476	-0.3492
43	0.382	0.882	-0.0126	0.0251	0.0113	0.0045	0.0361	-0.0467	0.1056	-0.1276	0.2262	-0.2166	0.3680	-0.2839	0.4836	-0.3628	0.5121	-0.3891
44	0.382	0.941	-0.0114	0.0186	0.0144	0.0076	0.0226	-0.0496	0.0753	-0.1594	0.1745	-0.2627	0.3046	-0.3393	0.4103	-0.3931	0.4367	-0.4132
45	0.264	0.000	-0.0813	0.0196	-0.0268	-0.0386	0.0739	-0.1386	0.1995	-0.2337	0.3591	-0.3123	0.5070	-0.3683	0.6093	-0.3943	0.6290	-0.4131
46	0.264	0.295	-0.0952	-0.0040	-0.0450	-0.0652	0.0501	-0.1496	0.1688	-0.2343	0.3166	-0.3127	0.4998	-0.3709	0.6015	-0.4010	0.6219	-0.4230
47	0.264	0.530	-0.1406	-0.0346	-0.0968	-0.1042	0.0047	-0.1779	0.1436	-0.2431	0.3349	-0.3053	0.4700	-0.3667	0.5753	-0.4061	0.5977	-0.4240
48	0.264	0.707	-0.0491	0.0083	-0.0436	-0.0167	0.0234	-0.0725	0.1493	-0.1467	0.2931	-0.2179	0.4243	-0.2801	0.5306	-0.3522	0.5513	-0.3734
49	0.264	0.823	-0.0171	0.0275	0.0096	-0.0003	0.0364	-0.0580	0.1214	-0.1304	0.2448	-0.2074	0.3670	-0.2761	0.4679	[illegible]	0.4884	-0.3772
50	0.264	0.882	-0.0217	0.0231	0.0113	0.0018	0.0340	-0.0574	0.1053	-0.1356	0.2181	-0.2288	0.3331	-0.3136	0.4335	-0.3833	0.4535	-0.4055
51	0.264	0.941	-0.0199	0.0213	0.0144	0.0069	0.0237	-0.0636	0.0731	-0.1768	0.1698	-0.2755	0.2772	-0.3517	0.3689	-0.3970	0.3892	-0.4164
52	0.177	0.000	-0.3318	-0.2568	-0.3060	-0.3120	-0.2507	-0.3612	-0.1882	-0.3437	-0.1221	-0.3448	-0.0550	-0.3567	-0.0181	-0.3902	-0.0092	-0.4051
53	0.177	0.295	-0.3356	-0.2376	-0.3129	-0.3136	-0.2635	-0.3218	-0.2013	-0.3406	-0.1139	-0.3488	-0.0541	-0.3660	-0.0153	-0.4085	-0.0060	-0.4278
54	0.177	0.530	-0.3296	-0.2288	-0.2986	-0.3109	-0.2750	-0.3353	-0.2006	-0.3639	-0.1209	-0.3780	-0.0740	-0.4017	-0.0288	-0.4308	-0.0249	-0.4427
55	0.177	0.707	-0.2998	-0.2680	-0.2857	-0.2921	-0.2425	-0.3133	-0.1956	-0.3398	-0.1294	-0.3738	-0.0808	-0.4065	-0.0383	-0.4195	-0.0293	-0.4311
56	0.177	0.882	-0.0276	0.0155	0.0094	-0.0026	0.0251	-0.0649	0.0767	-0.1465	0.1590	-0.2407	0.2278	-0.3342	0.2777	-0.4019	0.2876	-0.4207
57	0.118	0.000	-0.3373	-0.2185	-0.3144	-0.3153	-0.2602	-0.3496	-0.2002	-0.3399	-0.1355	-0.3440	-0.0637	-0.3565	-0.0180	-0.3903	-0.0058	-0.4063
58	0.118	0.295	-0.3071	-0.2258	-0.2775	-0.2800	-0.2773	-0.3112	-0.2169	-0.3407	-0.1285	-0.3485	-0.0675	-0.3641	-0.0191	-0.4054	-0.0079	-0.4247
59	0.118	0.530	-0.3155	-0.2266	-0.2840	-0.2939	-0.2490	-0.3296	-0.2041	-0.3630	-0.1308	-0.3831	-0.0786	-0.4027	-0.0298	-0.4349	-0.0173	-0.4436
60	0.118	0.707	-0.3026	-0.2584	-0.2800	-0.2896	-0.2501	-0.3200	-0.2010	-0.3455	-0.1373	-0.3669	-0.0817	-0.3965	-0.0270	-0.4211	-0.0113	-0.4306
61	0.118	0.823	-0.3192	-0.2828	-0.2950	-0.3062	-0.2370	-0.3412	-0.1703	-0.3338	-0.0881	-0.3533	-0.0233	-0.3864	0.0372	-0.4109	0.0523	-0.4216
62	0.118	0.941	-0.0262	0.0117	0.0082	-0.0008	0.0089	-0.0830	0.0291	-0.2040	0.0770	-0.3006	0.1239	-0.3715	0.1715	-0.4110	0.1802	-0.4188
63	0.059	0.000	-0.3452	-0.2202	-0.3237	-0.3190	-0.2708	-0.3326	-0.2115	-0.3389	-0.1467	-0.3470	-0.0654	-0.3591	-0.0089	-0.3970	0.0050	-0.4114
64	0.059	0.295	-0.3060	-0.2258	-0.2765	-0.2793	-0.2592	-0.3118	-0.2210	-0.3430	-0.1302	-0.3539	-0.0662	-0.3692	-0.0102	-0.4060	0.0033	-0.4196
65	0.059	0.530	-0.3113	-0.2269	-0.2816	-0.2825	-0.2272	-0.3210	-0.2086	-0.3579	-0.1394	-0.3728	-0.0837	-0.3873	-0.0277	-0.4150	-0.0118	-0.4186
66	0.059	0.707	-0.2888	-0.2277	-0.2634	-0.2732	-0.2214	-0.2984	-0.1764	-0.3301	-0.1247	-0.3627	-0.0618	-0.3934	0.0036	-0.4204	0.0171	-0.4292
67	0.059	0.882	-0.3057	-0.3089	-0.3041	-0.3104	-0.2953	-0.3102	-0.2402	-0.3112	-0.1408	-0.3441	-0.0571	-0.3816	0.0208	-0.4075	0.0393	-0.4158
68	0.734	-0.707	-0.1149	-0.0561	-0.0775	-0.0831	-0.0353	-0.1494	0.0132	-0.2312	0.0770	-0.3125	0.2021	-0.3827	0.4575	-0.4330	0.5927	-0.4491
69	0.208	-0.707	-0.0494	-0.0182	-0.0234	-0.0352	0.0402	-0.0786	0.1592	-0.1422	0.3008	-0.2178	0.4276	-0.2769	0.5387	-0.3431	0.5604	-0.3676

Table A-9.- (Concluded).
M = 1.6

			ALPHA =															
			27.3	27.1	30.0	29.9	34.9	34.8	39.9	39.8	44.9	44.8	49.8	49.7	54.9	54.7	56.4	56.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.941	0.000	1.4561	-0.3370	1.4925	-0.3517	1.5329	-0.3164	1.5478	-0.3102	1.5508	-0.3157	1.5417	-0.3187	1.5207	-0.3156	1.5097	-0.3146
2	0.941	0.295	1.4463	-0.4299	1.4811	-0.4468	1.5255	-0.4009	1.5476	-0.3864	1.5532	-0.3920	1.5417	-0.3969	1.5156	-0.3944	1.5012	-0.3923
3	0.941	0.530	1.4321	-0.4198	1.4665	-0.4406	1.5120	-0.4042	1.5374	-0.3886	1.5438	-0.3933	1.5329	-0.3959	1.5072	-0.3915	1.4909	-0.3909
4	0.941	0.707	1.3087	-0.4176	1.4355	-0.4498	1.4807	-0.4185	1.5056	-0.4030	1.5148	-0.4069	1.5050	-0.4094	1.4849	-0.4050	1.4699	-0.4037
5	0.941	0.882	1.2497	-0.3028	1.2928	-0.3432	1.3442	-0.3375	1.3793	-0.3266	1.4001	-0.3280	1.4026	-0.3298	1.3957	-0.3270	1.3860	-0.3276
6	0.882	0.000	1.3073	-0.3668	1.3625	-0.4112	1.4349	-0.3837	1.4865	-0.3759	1.5215	-0.3810	1.5427	-0.3844	1.5501	-0.3831	1.5472	-0.3822
7	0.882	0.295	1.3024	-0.3916	1.3544	-0.4490	1.4311	-0.4262	1.4876	-0.4122	1.5246	-0.4187	1.5438	-0.4230	1.5474	-0.4206	1.5416	-0.4198
8	0.882	0.530	1.2782	-0.3809	1.3286	-0.4402	1.4075	-0.4392	1.4674	-0.4222	1.5060	-0.4278	1.5276	-0.4312	1.5312	-0.4273	1.5238	-0.4249
9	0.882	0.707	1.2299	-0.3617	1.2812	-0.4194	1.3584	-0.4359	1.4196	-0.4281	1.4611	-0.4258	1.4851	-0.4283	1.4944	-0.4236	1.4895	-0.4223
10	0.882	0.823	1.1053	-0.3500	1.1596	-0.4061	1.2403	-0.4366	1.3077	-0.4207	1.3402	-0.4259	1.3929	-0.4284	1.4121	-0.4244	1.4118	-0.4227
11	0.882	0.941	0.7019	-0.4269	0.8720	-0.4575	0.9734	-0.4338	1.0314	-0.4195	1.0759	-0.4231	1.1193	-0.4261	1.1579	-0.4224	1.1645	-0.4225
12	0.823	0.000	1.1363	-0.3616	1.2074	-0.4182	1.3077	-0.4289	1.3887	-0.4201	1.4541	-0.4263	1.5008	-0.4299	1.5341	-0.4283	1.5378	-0.4274
13	0.823	0.295	1.1310	-0.3512	1.1984	-0.4142	1.3038	-0.4328	1.3893	-0.4190	1.4530	-0.4252	1.5008	-0.4295	1.5297	-0.4275	1.5312	-0.4256
14	0.823	0.530	1.0965	-0.3428	1.1628	-0.4006	1.2706	-0.4399	1.3601	-0.4239	1.4276	-0.4295	1.4776	-0.4326	1.5069	-0.4287	1.5082	-0.4266
15	0.823	0.707	1.0347	-0.3333	1.0494	-0.3892	1.2058	-0.4389	1.2470	-0.4232	1.3677	-0.4285	1.4199	-0.4300	1.4559	-0.4253	1.4594	-0.4240
16	0.823	0.882	0.4567	-0.4248	0.6200	-0.4522	0.9233	-0.4373	1.0555	-0.4207	1.1338	-0.4263	1.1868	-0.4294	1.2246	-0.4250	1.2298	-0.4234
17	0.734	0.000	0.8515	-0.4473	0.9580	-0.4338	1.1263	-0.4286	1.2374	-0.4199	1.3768	-0.4265	1.4029	-0.4295	1.4659	-0.4269	1.4782	-0.4284
18	0.734	0.295	0.8054	-0.4599	0.9300	-0.4440	1.1099	-0.4362	1.2241	-0.4247	1.3152	-0.4294	1.3922	-0.4338	1.4549	-0.4321	1.4675	-0.4316
19	0.734	0.530	0.7261	-0.4477	0.8716	-0.4486	1.0720	-0.4431	1.1891	-0.4269	1.2839	-0.4311	1.3649	-0.4340	1.4281	-0.4299	1.4401	-0.4287
20	0.734	0.707	0.6293	-0.4526	0.7749	-0.4485	0.9824	-0.4467	1.1039	-0.4276	1.2023	-0.4329	1.2868	-0.4340	1.3541	-0.4296	1.3688	-0.4269
21	0.734	0.823	0.5902	-0.4263	0.7508	-0.4444	0.9167	-0.4396	1.0042	-0.4239	1.0802	-0.4295	1.1530	-0.4311	1.2157	-0.4260	1.2302	-0.4247
22	0.734	0.882	0.6852	-0.4395	0.7590	-0.4529	0.8604	-0.4390	0.9510	-0.4234	1.0315	-0.4283	1.1016	-0.4305	1.1590	-0.4261	1.1730	-0.4244
23	0.734	0.941	0.5952	-0.3652	0.6671	-0.4014	0.7673	-0.4403	0.8542	-0.4261	0.9309	-0.4310	0.9453	-0.4347	1.0516	-0.4303	1.0640	-0.4315
24	0.618	0.000	0.8492	-0.4318	0.9455	-0.4341	1.0562	-0.4327	1.1538	-0.4257	1.2387	-0.4305	1.3167	-0.4336	1.3869	-0.4318	1.4041	-0.4316
25	0.618	0.295	0.8575	-0.4324	0.9331	-0.4417	1.0468	-0.4369	1.1457	-0.4252	1.2311	-0.4300	1.3107	-0.4329	1.3816	-0.4305	1.3961	-0.4287
26	0.618	0.530	0.8893	-0.4461	0.8864	-0.4419	1.0023	-0.4471	1.1060	-0.4283	1.1936	-0.4335	1.2752	-0.4353	1.3471	-0.4307	1.3632	-0.4283
27	0.618	0.707	0.7394	-0.4378	0.8146	-0.4386	0.9289	-0.4475	1.0308	-0.4266	1.1175	-0.4322	1.1998	-0.4317	1.2728	-0.4270	1.2900	-0.4257
28	0.618	0.823	0.6577	-0.4292	0.7217	-0.4515	0.8252	-0.4431	0.9143	-0.4268	0.9963	-0.4310	1.0712	-0.4318	1.1407	-0.4267	1.1575	-0.4257
29	0.618	0.882	0.6158	-0.3218	0.6765	-0.3610	0.7771	-0.4448	0.8633	-0.4329	0.9448	-0.4351	1.0174	-0.4371	1.0870	-0.4317	1.1021	-0.4328
30	0.618	0.941	0.5296	-0.4048	0.5989	-0.4330	0.6845	-0.4569	0.7672	-0.4341	0.8432	-0.4350	0.9114	-0.4383	0.9772	-0.4349	0.9917	-0.4340
31	0.500	0.000	0.8101	-0.4245	0.8772	-0.4340	0.9779	-0.4335	1.0666	-0.4245	1.1480	-0.4307	1.2271	-0.4329	1.3053	-0.4299	1.3240	-0.4290
32	0.500	0.295	0.7897	-0.4286	0.8581	-0.4423	0.9614	-0.4403	1.0524	-0.4266	1.1334	-0.4329	1.2143	-0.4360	1.2944	-0.4304	1.3122	-0.4276
33	0.500	0.530	0.7495	-0.3477	0.8195	-0.3635	0.9244	-0.3806	1.0175	-0.3853	1.1011	-0.4017	1.1841	-0.4020	1.2638	-0.3996	1.2821	-0.4000
34	0.500	0.707	0.6852	-0.4385	0.7520	-0.4354	0.8552	-0.4517	0.9461	-0.4282	1.0294	-0.4331	1.1118	-0.4328	1.1920	-0.4288	1.2111	-0.4271
35	0.500	0.823	0.5970	-0.3114	0.6580	-0.3516	0.7516	-0.4518	0.8342	-0.4343	0.9127	-0.4372	0.9876	-0.4381	1.0665	-0.4331	1.0841	-0.4273
36	0.500	0.882	0.5517	-0.3675	0.6127	-0.4003	0.7056	-0.4544	0.7669	-0.4355	0.8632	-0.4385	0.9367	-0.4400	1.0142	-0.4360	1.0321	-0.4358
37	0.500	0.941	0.4826	-0.4151	0.5350	-0.4406	0.6261	-0.4635	0.7034	-0.4328	0.7752	-0.4359	0.8464	-0.4360	0.9174	-0.4329	0.9344	-0.4311
38	0.382	0.000	0.7390	-0.4186	0.7976	-0.4261	0.8826	-0.4300	0.9602	-0.4215	1.0320	-0.4295	1.1107	-0.4302	1.1947	-0.4266	1.2175	-0.4235
39	0.382	0.295	0.7276	-0.4259	0.7857	-0.4423	0.8734	-0.4346	0.9515	-0.4256	1.0244	-0.4319	1.1035	-0.4317	1.1880	-0.4277	1.2109	-0.4260
40	0.382	0.530	0.6404	-0.4748	0.7496	-0.4436	0.8395	-0.4506	0.9195	-0.4285	0.9969	-0.4344	1.0754	-0.4338	1.1597	-0.4294	1.1824	-0.4281
41	0.382	0.707	0.6301	-0.3790	0.6870	-0.4369	0.7764	-0.4586	0.8556	-0.4357	0.9309	-0.4392	1.0104	-0.4395	1.0982	-0.4344	1.1195	-0.4359
42	0.382	0.823	0.5415	-0.3538	0.5955	-0.3923	0.6764	-0.4509	0.7496	-0.4376	0.8190	-0.4406	0.8953	-0.4418	0.9814	-0.4384	1.0043	-0.4378
43	0.382	0.882	0.5077	-0.3923	0.5580	-0.4271	0.6415	-0.4569	0.7143	-0.4341	0.7812	-0.4379	0.8590	-0.4371	0.9434	-0.4340	0.9649	-0.4325
44	0.382	0.941	0.4308	-0.4197	0.4797	-0.4409	0.5600	-0.4649	0.6282	-0.4320	0.6919	-0.4376	0.7683	-0.4363	0.8468	-0.4311	0.8686	-0.4290
45	0.264	0.000	0.6365	-0.4170	0.6744	-0.4272	0.7382	-0.4345	0.7894	-0.4259	0.8432	-0.4312	0.9075	-0.4273	0.9948	-0.4219	1.0239	-0.4206
46	0.264	0.295	0.6235	-0.4213	0.6640	-0.4381	0.7263	-0.4356	0.7814	-0.4258	0.8337	-0.4310	0.8984	-0.4301	0.9861	-0.4261	1.0136	-0.4244
47	0.264	0.530	0.5980	-0.4272	0.6391	-0.4522	0.7040	-0.4542	0.7603	-0.4367	0.8159	-0.4403	0.8798	-0.4398	0.9706	-0.4361	0.9957	-0.4376
48	0.264	0.707	0.5475	-0.3633	0.5881	-0.4087	0.6529	-0.4513	0.7106	-0.4372	0.7653	-0.4413	0.8341	-0.4416	0.9308	-0.4391	0.9579	-0.4392
49	0.264	0.823	0.4812	-0.3785	0.5171	-0.4121	0.5778	-0.4431	0.6314	-0.4348	0.6830	-0.4393	0.7671	-0.4388	0.8786	-0.4360	0.9049	-0.4352
50	0.264	0.882	0.4455	-0.4152	0.4839	-0.4413	0.5446	-0.4594	0.5977	-0.4334	0.6503	-0.4386	0.7529	-0.4384	0.8596	-0.4338	0.8856	-0.4317
51	0.264	0.941	0.3931	-0.4242	0.4196	-0.4399	0.4778	-0.4631	0.5308	-0.4307	0.5838	-0.4370	0.6898	-0.4348	0.7836	-0.4294	0.8071	-0.4284
52	0.177	0.000	-0.0083	-0.4069	0.0082	-0.4233	0.0403	-0.4291	0.0785	-0.4204	0.1720	-0.4242	0.3878	-0.4260	0.5912	-0.4227	0.6517	-0.4217
53	0.177	0.295	-0.0039	-0.3912	0.0103	-0.4062	0.0421	-0.4099	0.0786	-0.4116	0.1831	-0.4182	0.3699	-0.4199	0.5824	-0.4138	0.6446	-0.4150
54	0.177	0.530	-0.0248	-0.4090	-0.0071	-0.4105	0.0254	-0.4142	0.0637	-0.4146	0.1715	-0.4238	0.3712	-0.4261	0.5692	-0.4227	0.6295	-0.4225
55	0.177	0.707	-0.0308	-0.4151	-0.0160	-0.4333	0.0190	-0.4338	0.0470	-0.4266	0.2089	-0.4341	0.4046	-0.4333	0.5993	-0.4299	0.6484	-0.4277
56	0.177	0.882	0.2757	-0.4282	0.2978	-0.4454	0.3443	-0.4636	0.3948	-0.4324	0.4743	-0.4400	0.6909	-0.4387	0.8002	-0.4345	0.8263	-0.4317
57	0.118	0.000	-0.0003	-0.3989	0.0263	-0.4139	0.0836	-0.4157	0.1671	-0.4069	0.2470	-0.4156	0.7571	-0.4199	0.8349	-0.4169	0.8572	-0.4159
58	0.118	0.295	-0.0045	-0.4292	0.0218	-0.4336	0.0829	-0.4281	0.1592	-0.4221	0.2526	-0.4276	0.7479	-0.4284	0.8221	-0.4267	0.8437	-0.4237
59	0.118	0.530	-0.0137	-0.4494	0.0099	-0.4477	0.0683	-0.4417	0.1427	-0.4329	0.2446	-0.4386	0.7323	-0.4395	0.8142	-0.4361	0.8338	-0.4376
60	0.118	0.707	-0.0139	-0.4287	0.0134	-0.4440	0.0897	-0.4387	0.1640	-0.4365	0.2175	-0.4409	0.7403	-0.4435	0.8068	-0.4401	0.8294	-0.4410
61	0.118	0.823	0.0537	-0.4200	0.0826	-0.4375	0.1582	-0.4487	0.2528	-0.4341	0.3787	-0.4393	0.6898	-0.4395	0.7714	-0.4367	0.7954	-0.4356
62	0.118	0.941	0.1495	-0.4226	0.1939	-0.4358	0.2498	-0.4533	0.3236	-0.4324	0.4247	-0.4400	0.6111	-0.4380	0.6967	-0.4341	0.7202	-0.4314
63	0.059	0.000	0.0150	-0.4136	0.0528	-0.4266	0.1286	-0.4192	0.2262	-0.4069	0.3510	-0.4187	0.6947	-0.4263	0.7542	-0.4236	0.7750	-0.4230
64	0.059	0.295	0.0094	-0.4724	0.0452	-0.4220	0.1217	-0.4195	0.2162	-0.4187	0.3217	-0.4266	0.6920	-0.4284	0.7521	-0.4267	0.7717	-0.4261
65	0.059	0.530	-0.0067	-0.4037	0.0239	-0.4160	0.0988	-0.4220	0.1970	-0.4226	0.3120	-0.4124	0.6830	-0.4343	0.7374	-0.4289	0.7548	-0.4308
66	0.059	0.707	0.0156	-0.4297	0.0524	-0.4425	0.1266	-0.4303	0.2058	-0.4337	0.4512	-0.4409	0.6752	-0.4435	0.7314	-0.4401	0.7490	-0.4413
67	0.059	0.882	0.0449	-0.4165	0.0837	-0.4358	0.1575	-0.4214	0.2416	-0.4331	0.4238	-0.4403	0.6136	-0.4395	0.6801	-0.4364	0.6990	-0.4356
68	0.734	-0.707	0.5975	-0.4564	0.8015	-0.4419	1.0020	-0.4379	1.1270	-0.4249	1.2251	-0.4318	1.3134	-0.4323	1.3857	-0.4273	1.3994	-0.4254
69	0.288	-0.707	0.5717	-0.3887	0.6134	-0.4379	0.6824	-0.4448	0.7377	-0.4290	0.7926	-0.4319	0.8667	-0.4307	0.9588	-0.4270	0.9869	-0.4257

Table 10.- Pressure coefficients for configuration 10.
M = 0.6

			ALPHA =															
			-2.7	-2.5	-0.1	0.1	4.9	5.1	9.9	10.1	14.9	15.0	19.8	20.0	24.8	25.0	26.5	26.6
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	0.1096	0.4020	0.2553	0.2673	0.5153	-0.0639	[illegible]	-0.5641	0.8485	-0.7252	0.9164	-0.4410	0.9980	-0.4207	1.0225	-0.4291
2	0.868	0.000	-0.0174	0.2169	0.0985	0.1081	0.3198	-0.1446	0.5412	-0.4566	0.6557	-0.6160	0.7423	-0.4444	0.8535	-0.4211	0.8863	-0.4321
3	0.802	0.000	-0.2179	0.0037	-0.1070	-0.0936	0.0962	-0.3179	0.3238	-0.5609	0.4505	-0.5806	0.5496	-0.4487	0.6841	-0.4275	0.7272	-0.4374
4	0.680	0.000	-0.4580	-0.2893	-0.4087	-0.4011	-0.2108	-0.5534	0.0160	-0.7779	0.1265	-0.5407	0.2278	-0.4482	0.3813	-0.4323	0.4304	-0.4505
5	0.680	0.066	-0.5941	-0.7123	-0.8790	-0.8597	-0.5910	-0.6845	-0.2571	-1.1317	-0.0837	-0.5501	0.0737	-0.4478	0.3028	-0.4392	0.3759	-0.4532
6	0.732	0.143	-0.3555	-0.1139	-0.2421	-0.2280	-0.0209	-0.4493	0.2103	-0.7514	0.3333	-0.5560	0.4340	-0.4481	0.5757	-0.4429	0.6204	-0.4558
7	0.790	0.156	-0.1147	0.1388	0.0132	0.0100	0.2298	-0.1990	0.4535	-1.1999	0.5681	-0.5612	0.6549	-0.4416	0.7718	-0.4362	0.8056	-0.4440
8	0.850	0.170	0.0345	0.3450	0.1755	0.1860	0.4524	-0.3739	0.6788	-1.2817	0.7813	-0.5413	0.8446	-0.4364	0.9316	-0.4268	0.9562	-0.4349
9	0.625	0.000	-0.3494	-0.2100	-0.2858	-0.2688	-0.1637	-0.4152	0.0227	-0.5444	0.1131	-0.5464	0.2012	-0.4499	0.3389	-0.4400	0.3844	-0.4459
10	0.625	0.077	-0.3903	-0.2222	-0.3039	-0.2959	-0.1722	-0.4608	0.0209	-0.5708	0.1092	-0.5493	0.1959	-0.4465	0.3391	-0.4432	0.3832	-0.4449
11	0.625	0.120	-0.4431	-0.2217	-0.3068	-0.2968	-0.1801	-0.5222	0.0186	-0.6279	0.1029	-0.5449	0.1932	-0.4461	0.3282	-0.4444	0.3765	-0.4474
12	0.625	0.179	-0.5519	-0.7222	-0.8878	-0.8782	-0.6223	-0.6298	-0.2634	-0.7385	-0.0951	-0.5431	0.0397	-0.4510	0.2695	-0.4575	0.3436	-0.4611
13	0.664	0.268	-0.3715	-0.1312	-0.2588	-0.2485	-0.0495	-0.4536	0.1819	-0.9417	0.2982	-0.5265	0.3975	-0.4376	0.5387	-0.4466	0.5876	-0.4491
14	0.720	0.281	-0.1486	0.1146	-0.0166	-0.0065	0.2074	-0.2188	0.4285	-1.0834	0.5410	-0.5059	0.6190	-0.4290	0.7395	-0.4347	0.7743	-0.4394
15	0.787	0.295	-0.0820	0.3223	0.1562	0.1639	0.4365	-0.4033	0.6579	-1.1238	0.7608	-0.4928	0.8154	-0.4254	0.9031	-0.4360	0.9277	-0.4414
16	0.500	0.000	-0.2721	-0.2023	-0.2463	-0.2484	-0.1604	-0.3098	-0.0275	-0.4008	0.0168	-0.5676	0.0742	-0.4511	0.2034	-0.4511	0.2409	-0.4641
17	0.500	0.151	-0.2973	-0.2091	-0.2607	-0.2529	-0.1790	-0.3350	-0.0267	-0.4228	0.0214	-0.5466	0.0918	-0.4519	0.2111	-0.4606	0.2520	-0.4698
18	0.500	0.251	-0.3461	-0.2455	-0.3088	-0.2980	-0.2135	-0.3899	-0.0445	-0.5495	0.0076	-0.5290	0.0742	-0.4598	0.2031	-0.4704	0.2494	-0.4873
19	0.500	0.351	-0.4146	-0.2552	-0.3448	-0.3338	-0.2235	-0.4710	-0.0395	-0.5757	0.0179	-0.4930	0.0938	-0.4531	0.2035	-0.4598	0.2522	-0.4863
20	0.500	0.452	-0.7709	-0.8261	-0.9637	-0.9430	-0.7324	-0.7167	-0.3920	-0.5901	-0.2666	-0.4808	-0.1182	-0.4603	0.0995	-0.4705	0.1732	-0.4971
21	0.544	0.518	-0.3447	-0.1692	-0.2728	-0.2666	-0.1005	-0.4477	0.1182	-0.8225	0.2140	-0.4889	0.3098	-0.4641	0.4512	-0.4802	0.4931	-0.5014
22	0.603	0.531	-0.1459	0.0862	-0.0384	-0.0317	0.1711	-0.2320	0.3834	-1.0402	0.4743	-0.4750	0.5540	-0.4545	0.6690	-0.4854	0.7087	-0.4897
23	0.662	0.545	-0.0868	0.2898	0.1397	0.1383	0.4077	-0.3049	0.6234	-1.0890	0.7073	-0.4610	0.7657	-0.4519	0.8537	-0.4825	0.8757	-0.4818
24	0.375	0.000	-0.3023	-0.2706	-0.3012	-0.2927	-0.2715	-0.3134	-0.1451	-0.3746	-0.1470	-0.5736	-0.1231	-0.4639	-0.0001	-0.4704	0.0384	-0.4768
25	0.375	0.225	-0.2419	-0.2770	-0.2909	-0.2779	-0.2742	-0.2920	-0.1498	-0.3365	-0.1389	-0.5219	-0.1044	-0.4577	0.0081	-0.4725	0.0498	-0.4863
26	0.375	0.374	-0.2933	-0.2983	-0.3066	-0.2940	-0.2922	-0.3026	-0.1624	-0.3725	-0.1464	-0.4888	-0.0987	-0.4598	0.0185	-0.4784	0.0630	-0.4948
27	0.375	0.524	-0.3414	-0.3404	-0.3463	-0.3383	-0.3251	-0.3589	-0.1641	-0.3915	-0.1560	-0.4860	-0.0915	-0.4772	0.0284	-0.5012	0.0729	-0.5166
28	0.375	0.674	-0.5103	-0.7343	-0.8959	-0.8603	-0.5789	-0.5277	-0.4278	-0.4220	-0.3753	-0.5116	-0.2721	-0.5156	-0.0482	-0.5248	0.0294	-0.5305
29	0.419	0.768	-0.3544	-0.2350	-0.3166	-0.3130	-0.1907	-0.4124	0.0082	-0.6013	0.0746	-0.5674	0.1607	-0.5321	0.2919	-0.5368	0.3373	-0.5380
30	0.479	0.781	-0.1467	0.0268	-0.0747	-0.0704	0.0988	-0.2270	0.2862	-0.9094	0.3572	-0.5695	0.4358	-0.5337	0.5483	-0.5402	0.5779	-0.5461
31	0.537	0.795	-0.0027	0.2509	0.1175	0.1249	0.3458	-0.1372	0.5421	-1.0530	0.6085	-0.5410	0.6798	-0.5176	0.7620	-0.5260	0.7654	-0.5304
32	0.381	0.843	-0.4183	-0.3432	-0.3927	-0.3817	-0.2997	-0.4583	-0.1348	-0.5140	-0.0864	-0.5914	0.0036	-0.5446	0.1192	-0.5352	0.1750	-0.5417
33	0.440	0.856	-0.1941	-0.0592	-0.1342	-0.1283	0.0052	-0.2667	0.1697	-0.8140	0.2371	-0.5806	0.3167	-0.5347	0.4246	-0.5267	0.4601	-0.5347
34	0.500	0.870	-0.0344	0.1916	0.0669	0.0694	0.2778	-0.1462	0.4633	-1.0367	0.5263	-0.5693	0.5928	-0.5338	0.6730	-0.5282	0.7029	-0.5322
35	0.375	0.958	-0.2322	-0.1936	-0.2157	-0.2043	-0.1795	-0.2778	-0.1308	-0.6499	-0.1075	-0.5746	-0.0635	-0.5269	0.0041	-0.5097	0.0404	-0.5156
36	0.250	0.000	-0.6791	-0.6661	-0.6876	-0.6538	-0.7204	-0.6804	-0.6161	-0.6792	-0.6942	-0.5542	-0.7249	-0.4833	-0.6056	-0.4921	-0.5573	-0.5001
37	0.250	0.250	-0.4577	-0.6289	-0.6085	-0.5526	-0.7288	-0.3682	-0.6198	-0.2552	-0.7204	-0.5427	-0.7317	-0.4928	-0.6050	-0.4915	-0.5459	-0.5001
38	0.250	0.417	-0.3984	-0.6555	-0.6006	-0.5713	-0.7485	-0.3197	-0.6505	-0.2162	-0.7376	-0.5207	-0.7307	-0.5002	-0.6034	-0.5012	-0.5447	-0.5095
39	0.250	0.583	-0.3760	-0.6766	-0.6149	-0.5972	-0.7497	-0.2837	-0.6599	-0.2112	-0.7197	-0.5134	-0.6917	-0.5227	-0.5730	-0.5256	-0.5075	-0.5392
40	0.250	0.750	-0.3573	-0.7053	-0.6338	-0.6155	-0.7505	-0.2731	-0.6533	-0.2289	-0.6972	-0.5493	-0.6586	-0.5481	-0.5279	-0.5670	-0.4658	-0.5776
41	0.250	0.833	-0.3693	-0.6002	-0.5407	-0.5337	-0.6289	[illegible]	-0.5276	-0.2778	-0.5743	-0.5929	-0.5374	-0.5771	-0.4261	-0.5772	-0.3835	-0.5821
42	0.250	0.875	-0.2596	-0.3595	-0.3340	-0.3268	-0.3776	-0.2317	-0.2972	-0.2865	-0.3342	-0.6148	-0.2983	-0.5865	-0.2029	-0.5725	-0.1691	-0.5781
43	0.250	0.917	-0.1842	-0.2345	-0.2261	-0.2203	-0.2476	-0.1829	-0.1888	-0.2834	-0.2262	-0.6097	-0.1990	-0.5683	-0.1327	-0.5456	-0.0946	-0.5413
44	0.250	0.958	-0.1406	-0.1570	-0.1554	-0.1534	-0.1645	-0.1634	-0.1336	-0.2719	-0.1808	-0.5932	-0.1619	-0.5503	-0.1155	-0.5239	-0.0900	-0.5231
45	0.188	0.000	-0.3443	-0.3971	-0.4085	-0.3787	-0.4842	-0.3275	-0.4005	-0.3744	-0.5619	-0.5276	-0.6935	-0.4590	-0.6247	-0.4592	-0.5860	-0.4540
46	0.188	0.250	-0.1641	-0.3115	-0.2845	-0.2158	-0.4654	-0.1233	-0.3691	-0.1871	-0.5554	-0.4984	-0.6289	-0.4751	-0.5508	-0.4837	-0.6918	-0.4795
47	0.188	0.417	-0.1140	-0.3155	-0.2474	-0.2090	-0.4675	-0.0842	-0.3926	-0.1772	-0.5696	-0.4859	-0.6068	-0.4906	-0.5037	-0.5108	-0.6309	-0.5087
48	0.188	0.583	-0.0899	-0.3619	-0.2579	-0.2380	-0.4937	-0.0747	-0.4306	-0.1708	-0.5991	-0.5019	-0.5959	-0.5255	-0.4859	-0.5537	-0.5573	-0.5502
49	0.188	0.750	-0.0630	-0.3758	-0.2542	-0.2313	-0.4570	-0.0495	-0.4153	-0.1808	-0.5393	-0.5444	-0.5274	-0.5470	-0.4136	-0.5675	-0.4009	-0.5716
50	0.125	0.000	-0.1383	-0.1388	-0.1695	-0.1261	-0.2134	-0.1155	-0.1901	-0.1690	-0.3038	-0.4973	-0.4204	-0.4512	-0.3546	-0.4529	-0.3285	-0.4474
51	0.125	0.250	-0.0252	-0.0365	-0.0313	0.0123	-0.1907	-0.0276	-0.1359	-0.1538	-0.3332	-0.4780	-0.4254	-0.4527	-0.3605	-0.4672	-0.3225	-0.4686
52	0.125	0.417	-0.0134	-0.0526	0.0067	0.0314	-0.1872	-0.0140	-0.1667	-0.1511	-0.3517	-0.4607	-0.4143	-0.4746	-0.3666	-0.4974	-0.3244	-0.5237
53	0.125	0.583	-0.0154	-0.0820	0.0135	0.0302	-0.2005	-0.0212	-0.2018	-0.1466	-0.3592	-0.4783	-0.4051	-0.5142	-0.3635	-0.5397	-0.3244	-0.5632
54	0.125	0.750	-0.0321	-0.1221	0.0044	0.0113	-0.2111	-0.0282	-0.2078	-0.1679	-0.3572	-0.5560	-0.3924	-0.5713	-0.3503	-0.5877	-0.3235	-0.6125
55	0.125	0.958	-0.0946	-0.1754	-0.1344	-0.1351	-0.2055	-0.1032	-0.1673	-0.2713	-0.2835	-0.5733	-0.3121	-0.5729	-0.2583	-0.5680	-0.2356	-0.5705
56	0.063	0.000	-0.0577	-0.0201	-0.0591	-0.0225	-0.0839	-0.0357	-0.0521	-0.0787	-0.2094	-0.4831	-0.3848	-0.4472	-0.3368	-0.4387	-0.3308	-0.4547
57	0.063	0.250	0.0152	0.0958	0.0837	0.1008	-0.0430	0.0009	0.0128	-0.1219	-0.2795	-0.4433	-0.3807	-0.4419	-0.3324	-0.4553	-0.3265	-0.4742
58	0.063	0.417	0.0202	0.0937	0.1105	0.1315	-0.0391	-0.0009	-0.0539	-0.1380	-0.2834	-0.4230	-0.3625	-0.4654	-0.3609	-0.4928	-0.3301	-0.4993
59	0.063	0.583	0.0128	0.0678	0.1219	0.1348	-0.0531	-0.0120	-0.1047	-0.1402	-0.2947	-0.4477	-0.3620	-0.5113	-0.3640	-0.5374	-0.3395	-0.5437
60	0.063	0.750	-0.0040	0.0181	0.1182	0.1175	-0.0760	-0.0230	-0.1149	-0.1603	-0.3041	-0.5286	-0.3728	-0.5666	-0.3698	-0.5889	-0.3529	-0.6014
61	0.063	0.875	-0.0372	-0.0147	0.0587	0.0692	-0.1048	-0.0322	-0.1156	-0.1324	-0.3356	-0.5641	-0.4050	-0.5873	-0.3764	-0.5916	-0.3539	-0.5848
62	0.375	-0.674	-0.5040	-0.6441	-0.7835	-0.7506	-0.5391	-0.5251	-0.3266	-0.4247	-0.2964	-0.5549	-0.2383	-0.4865	-0.0253	-0.5023	0.0416	-0.5101
63	0.250	-0.833	-0.3596	-0.6029	-0.5329	-0.5437	-0.6123	-0.2923	-0.5193	-0.2863	-0.5668	-0.5550	-0.5411	-0.5443	-0.4306	-0.5466	-0.3798	-0.5540

Table A-10.- (Continued).
M = 0.6

			ALPHA =															
			27.3	27.4	30.0	30.1	34.9	35.0	39.9	40.0	44.8	45.0	49.8	49.9	54.8	54.9	56.5	56.6
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.034	0.000	1.0260	-0.4717	1.0547	-0.5048	1.0881	-0.5512	1.0922	-0.5558	1.0776	-0.5249	1.0527	-0.4985	0.9990	-0.4613	0.9775	-0.4562
2	0.068	0.000	0.8468	-0.4651	0.9432	-0.5026	1.0144	-0.5468	1.0587	-0.5547	1.0796	-0.5292	1.0953	-0.4976	1.0081	-0.4650	1.0782	-0.4677
3	0.082	0.000	0.7410	-0.4710	0.8016	-0.5020	0.9013	-0.5451	0.9778	-0.5547	1.0292	-0.5386	1.0761	-0.4993	1.0883	-0.4659	1.0883	-0.4732
4	0.688	0.000	0.4485	-0.4838	0.5276	-0.5051	0.6627	-0.5559	0.7774	-0.5664	0.8769	-0.5472	0.9625	-0.5069	1.0174	-0.4845	1.0400	-0.4843
5	0.688	0.066	0.3946	-0.4841	0.4982	-0.5071	0.6459	-0.5589	0.7691	-0.5701	0.8747	-0.5474	0.9615	-0.5087	1.0186	-0.4919	1.0406	-0.4876
6	0.732	0.143	0.6370	-0.4846	0.7073	-0.5099	0.8208	-0.5547	0.9132	-0.5749	0.9820	-0.5456	1.0378	-0.5042	1.0624	-0.4887	1.0771	-0.4923
7	0.790	0.156	0.8218	-0.4924	0.8731	-0.5065	0.9531	-0.5512	1.0092	-0.5523	1.0429	-0.5414	1.0661	-0.4965	1.0666	-0.4778	1.0684	-0.4820
8	0.850	0.170	0.9478	-0.4802	0.9958	-0.4957	1.0355	-0.5416	1.0517	-0.5448	1.0454	-0.5257	1.0335	-0.4895	1.0006	-0.4636	0.9870	-0.4729
9	0.625	0.000	0.4036	-0.4840	0.4721	-0.4997	0.6012	-0.5509	0.7140	-0.5547	0.8100	-0.5386	0.9005	-0.4947	0.9718	-0.4653	0.9901	-0.4779
10	0.625	0.077	0.3937	-0.4913	0.4703	-0.5179	0.5947	-0.5658	0.7125	-0.5664	0.8120	-0.5531	0.9051	-0.5115	0.9746	-0.4787	0.9976	-0.4791
11	0.625	0.128	0.3876	-0.4965	0.4664	-0.5207	0.5956	-0.5665	0.7155	-0.5660	0.8157	-0.5515	0.9118	-0.5145	0.9793	-0.4854	1.0006	-0.4858
12	0.625	0.179	0.3508	-0.4990	0.4444	-0.5332	0.5877	-0.5696	0.7157	-0.5678	0.8283	-0.5438	0.9156	-0.5251	0.9829	-0.5018	1.0076	-0.5042
13	0.669	0.268	0.5985	-0.4953	0.6680	-0.5195	0.7835	-0.5623	0.8761	-0.5664	0.9444	-0.5520	1.0066	-0.5018	1.0421	-0.4866	1.0537	-0.4832
14	0.728	0.281	0.7915	-0.4802	0.8428	-0.5113	0.9237	-0.5474	0.9830	-0.5518	1.0158	-0.5431	1.0486	-0.4970	1.0526	-0.4729	1.0549	-0.4758
15	0.787	0.295	0.9407	-0.4739	0.9716	-0.5048	1.0122	-0.5429	1.0312	-0.5455	1.0263	-0.5380	1.0197	-0.4965	0.9891	-0.4647	0.9772	-0.4785
16	0.500	0.000	0.2496	-0.5088	0.3223	-0.5196	0.4412	-0.5675	0.5593	-0.5792	0.6707	-0.5490	0.7723	-0.5133	0.8550	-0.5008	0.8840	-0.4679
17	0.500	0.151	0.2686	-0.5106	0.3329	-0.5230	0.4550	-0.5748	0.5716	-0.5819	0.6837	-0.5586	0.7837	-0.5210	0.8638	-0.5054	0.8910	-0.4782
18	0.500	0.251	0.2598	-0.5187	0.3348	-0.5296	0.4632	-0.5797	0.5828	-0.5929	0.6939	-0.5671	0.7946	-0.5310	0.8721	-0.5096	0.9025	-0.4923
19	0.500	0.351	0.2589	-0.5177	0.3369	-0.5371	0.4736	-0.5723	0.5946	-0.5852	0.7067	-0.5738	0.8082	-0.5224	0.8898	-0.5118	0.9130	-0.5117
20	0.500	0.452	0.1862	-0.5245	0.2873	-0.5396	0.4528	-0.5705	0.5903	-0.5808	0.7105	-0.5751	0.8219	-0.5289	0.9011	-0.5159	0.9249	-0.5209
21	0.544	0.518	0.5099	-0.5255	0.5798	-0.5363	0.6976	-0.5676	0.7937	-0.5802	0.8703	-0.5681	0.9423	-0.5253	0.9803	-0.5115	0.9959	-0.5140
22	0.603	0.531	0.7226	-0.5094	0.7722	-0.5411	0.8596	-0.5762	0.9248	-0.5809	0.9468	-0.5734	1.0017	-0.5400	1.0092	-0.5077	1.0153	-0.5083
23	0.662	0.545	0.8930	-0.5065	0.9234	-0.5377	0.9663	-0.5724	0.9902	-0.5795	0.9920	-0.5709	0.9889	-0.5357	0.9599	-0.5089	0.9517	-0.5018
24	0.375	0.000	0.0435	-0.4990	0.1084	-0.5356	0.2313	-0.5726	0.3497	-0.5785	0.4710	-0.5676	0.5890	-0.5173	0.6900	-0.4929	0.7244	-0.4767
25	0.375	0.225	0.0509	-0.5219	0.1224	-0.5400	0.2470	-0.5788	0.3655	-0.5876	0.4906	-0.5702	0.6045	-0.5200	0.7060	-0.4983	0.7359	-0.5014
26	0.375	0.374	0.0658	-0.5262	0.1390	-0.5431	0.2673	-0.5792	0.3889	-0.5895	0.5108	-0.5693	0.6225	-0.5324	0.7245	-0.5159	0.7556	-0.5057
27	0.375	0.524	0.0786	-0.5481	0.1577	-0.5625	0.2918	-0.5912	0.4172	-0.6021	0.5381	-0.5802	0.6475	-0.5461	0.7498	-0.5322	0.7761	-0.5216
28	0.375	0.674	0.0488	-0.5676	0.1357	-0.5905	0.2830	-0.6209	0.4231	-0.6147	0.5515	-0.6083	0.6681	-0.5574	0.7595	-0.5466	0.7921	-0.5434
29	0.419	0.768	0.3538	-0.5742	0.4246	-0.5913	0.5423	-0.6217	0.6471	-0.6113	0.7380	-0.6015	0.8159	-0.5592	0.8685	-0.5430	0.8869	-0.5349
30	0.478	0.781	0.5094	-0.5749	0.6525	-0.5893	0.7400	-0.6178	0.8094	-0.6072	0.8632	-0.5987	0.9045	-0.5561	0.9251	-0.5352	0.9340	-0.5306
31	0.537	0.795	0.8831	-0.5620	0.8367	-0.5911	0.8821	-0.6040	0.9085	-0.6052	0.9194	-0.5932	0.9249	-0.5482	0.9039	-0.5230	0.8983	-0.5247
32	0.391	0.843	0.1880	-0.5716	0.2581	-0.5998	0.3761	-0.6070	0.4835	-0.6104	0.5839	-0.5954	0.6714	-0.5498	0.7374	-0.5251	0.7579	-0.5261
33	0.448	0.856	0.4802	-0.5548	0.5338	-0.5878	0.6199	-0.5958	0.6917	-0.6050	0.7520	-0.5854	0.8045	-0.5403	0.8332	-0.5195	0.8440	-0.5158
34	0.500	0.870	0.7173	-0.5676	0.7517	-0.5818	0.8033	-0.6052	0.8363	-0.6054	0.8564	-0.5723	0.8642	-0.5463	0.8474	-0.5106	0.8486	-0.5171
35	0.375	0.958	0.0420	-0.5506	0.0811	-0.5671	0.1510	-0.5930	0.2203	-0.5960	0.3025	-0.5639	0.3652	-0.5363	0.4119	-0.5019	0.4293	-0.5006
36	0.250	0.000	-0.5412	-0.5337	-0.4855	-0.5565	-0.3443	-0.5922	-0.1911	-0.5911	-0.0190	-0.5688	0.1320	-0.5245	0.2804	-0.4989	0.3283	-0.4887
37	0.250	0.250	-0.5593	-0.5455	-0.4786	-0.5664	-0.3386	-0.5993	-0.1798	-0.6017	-0.0105	-0.5797	0.1434	-0.5394	0.2955	-0.5247	0.3341	-0.5117
38	0.250	0.417	-0.5468	-0.5541	-0.4613	-0.5720	-0.3168	-0.6029	-0.1571	-0.6052	0.0058	-0.5931	0.1642	-0.5556	0.3145	-0.5391	0.3595	-0.5267
39	0.250	0.583	-0.5072	-0.5794	-0.4179	-0.5947	-0.2726	-0.6234	-0.1119	-0.6253	0.0487	-0.6126	0.2045	-0.5657	0.3529	-0.5496	0.3954	-0.5420
40	0.250	0.750	-0.4687	-0.6007	-0.3824	-0.6231	-0.2300	-0.6429	-0.0776	-0.6444	0.0871	-0.6112	0.2327	-0.5696	0.3726	-0.5437	0.4163	-0.5522
41	0.250	0.833	-0.3819	-0.6101	-0.3071	-0.6242	-0.1713	-0.6446	-0.0310	-0.6378	0.1185	-0.6139	0.2500	-0.5691	0.3773	-0.5430	0.4134	-0.5515
42	0.250	0.875	-0.1642	-0.6078	-0.1063	-0.6138	0.0047	-0.6357	0.1185	-0.6287	0.2382	-0.6106	0.3417	-0.5638	0.4342	-0.5376	0.4649	-0.5395
43	0.250	0.917	-0.0920	-0.5868	-0.0406	-0.5981	0.0481	-0.6228	0.1417	-0.6252	0.2430	-0.5991	0.3286	-0.5599	0.4156	-0.5142	0.4291	-0.5265
44	0.250	0.958	-0.0844	-0.5669	-0.0471	-0.5749	0.0116	-0.6012	0.0837	-0.6087	0.1843	-0.5797	0.2301	-0.5492	0.3005	-0.5077	0.3086	-0.5033
45	0.188	0.000	-0.4252	-0.5081	-0.4969	-0.5244	-0.3183	-0.5647	-0.1735	-0.5738	-0.0408	-0.5473	0.0690	-0.5172	0.2000	-0.4774	0.2290	-0.4691
46	0.188	0.250	-0.6790	-0.5175	-0.5353	-0.5516	-0.3336	-0.5884	-0.1888	-0.5839	-0.0444	-0.5577	0.0484	-0.5231	0.1839	-0.5002	0.2337	-0.4954
47	0.188	0.417	-0.6532	-0.5418	-0.5061	-0.5754	-0.3232	-0.6059	-0.1644	-0.6054	-0.0410	-0.5815	0.0565	-0.5451	0.2091	-0.5283	0.2549	-0.5261
48	0.188	0.583	-0.5552	-0.5785	-0.4246	-0.6144	-0.2391	-0.6399	-0.0926	-0.6370	0.0306	-0.6076	0.1250	-0.5656	0.2368	-0.5549	0.2838	-0.5437
49	0.188	0.750	-0.4721	-0.6199	-0.3633	-0.6369	-0.2185	-0.6604	-0.0859	-0.6517	0.0524	-0.6221	0.1498	-0.5787	0.2803	-0.5599	0.3130	-0.5472
50	0.125	0.000	-0.3616	-0.5018	-0.3041	-0.5206	-0.2459	-0.5590	-0.1513	-0.5692	-0.0392	-0.5339	0.0599	-0.4941	0.1730	-0.4938	0.1973	-0.4700
51	0.125	0.250	-0.3368	-0.5104	-0.2984	-0.5267	-0.2391	-0.5659	-0.1462	-0.5773	-0.0345	-0.5519	0.0719	-0.5178	0.1825	-0.5138	0.2079	-0.4942
52	0.125	0.417	-0.3366	-0.5385	-0.3040	-0.5597	-0.2306	-0.5901	-0.1443	-0.5972	-0.0336	-0.5763	0.0683	-0.5521	0.1769	-0.5292	0.2113	-0.5329
53	0.125	0.583	-0.3316	-0.5807	-0.2930	-0.6050	-0.2178	-0.6311	-0.1299	-0.6325	-0.0164	-0.6080	0.0846	-0.5809	0.1944	-0.5512	0.2290	-0.5479
54	0.125	0.750	-0.3219	-0.6263	-0.2837	-0.6526	-0.2009	-0.6672	-0.1112	-0.6555	-0.0017	-0.6226	0.1009	-0.5877	0.2020	-0.5615	0.2339	-0.5515
55	0.125	0.958	-0.2503	-0.6075	-0.2134	-0.6269	-0.1531	-0.6333	-0.0799	-0.6246	0.0187	-0.5973	0.0914	-0.5447	0.1626	-0.5194	0.1817	-0.5205
56	0.063	0.000	-0.3474	-0.4866	-0.3336	-0.5200	-0.3069	-0.5601	-0.2475	-0.5582	-0.1436	-0.5431	-0.0749	-0.4976	0.0104	-0.4822	0.0326	-0.4869
57	0.063	0.250	-0.3420	-0.4930	-0.3302	-0.5187	-0.3010	-0.5578	-0.2398	-0.5645	-0.1385	-0.5531	-0.0625	-0.5092	0.0290	-0.4993	0.0513	-0.5059
58	0.063	0.417	-0.3499	-0.5286	-0.3342	-0.5597	-0.3033	-0.5838	-0.2468	-0.6031	-0.1503	-0.5839	-0.0706	-0.5510	0.0122	-0.5164	0.0393	-0.5305
59	0.063	0.583	-0.3526	-0.5783	-0.3341	-0.6101	-0.2967	-0.6335	-0.2372	-0.6437	-0.1461	-0.6168	-0.0630	-0.5791	0.0186	-0.5430	0.0458	-0.5532
60	0.063	0.750	-0.3648	-0.6317	-0.3434	-0.6669	-0.2977	-0.6774	-0.2277	-0.6723	-0.1375	-0.6315	-0.0506	-0.5894	0.0293	-0.5465	0.0516	-0.5581
61	0.063	0.875	-0.3887	-0.6358	-0.3563	-0.6457	-0.3009	-0.6642	-0.2223	-0.6576	-0.1338	-0.6191	-0.0523	-0.5717	0.0344	-0.5365	0.0603	-0.5383
62	0.375	-0.674	0.0489	-0.5379	0.1343	-0.5553	0.2831	-0.5925	0.4154	-0.6029	0.5450	-0.5728	0.6615	-0.5347	0.7567	-0.5037	0.7879	-0.5121
63	0.250	-0.833	-0.3034	-0.5742	-0.3071	-0.5878	-0.1725	-0.6159	-0.0352	-0.6224	0.1096	-0.5878	0.2457	-0.5443	0.3716	-0.5109	0.4084	-0.5216

Table A-10.- (Continued).
M = 0.8

			ALPHA =																	
			-2.9	-2.7	-0.2	0.2	4.7	5.2	9.7	9.9	14.7	14.9	19.6	19.9	24.6	24.8	26.3	26.5
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	0.2180	0.5234	0.3777	0.3879	0.6125	0.0827	0.8097	-0.5619	0.9085	-0.5808	1.0005	-0.5065	1.0735	-0.4952	1.0970	-0.4890
2	0.068	0.000	0.1728	0.3503	0.2329	0.2407	0.4273	0.0164	0.6180	-0.3220	0.7274	-0.5278	0.8352	-0.5027	0.9364	-0.4993	0.9689	-0.4966
3	0.082	0.000	-0.0704	0.1588	0.0630	0.0705	0.2253	-0.0966	0.4126	-0.3252	0.5295	-0.4947	0.6557	-0.4951	0.7775	-0.5001	0.8183	-0.5012
4	0.098	0.000	-0.9177	-0.4553	-0.7625	-0.7368	-0.2559	-0.9475	0.0507	-1.1558	0.1895	-0.4779	0.3409	-0.5086	0.4899	-0.4939	0.5365	-0.5032
5	0.098	0.066	-1.1822	-0.7612	-1.0010	-0.9859	-0.6388	-1.2459	-0.2238	-1.3326	-0.0268	-0.4888	0.1896	-0.5154	0.4016	-0.4963	0.4704	-0.5082
6	0.732	0.143	-0.1431	0.0297	-0.0612	-0.0519	0.0970	-0.2129	0.2920	-0.4774	0.4126	-0.5130	0.5458	-0.5222	0.6808	-0.4950	0.7207	-0.5087
7	0.790	0.156	0.0330	0.2622	0.1437	0.1454	0.3436	-0.0432	0.5313	-0.7449	0.6407	-0.4980	0.7535	-0.5147	0.8582	-0.4929	0.8910	-0.4964
8	0.858	0.170	0.1667	0.4628	0.3038	0.3108	0.5562	-0.0790	0.7456	-1.0394	0.8417	-0.4878	0.9325	-0.5118	1.0069	-0.4848	1.0295	-0.4912
9	0.625	0.000	-0.8218	-0.2274	-0.5818	-0.5739	-0.1088	-0.9291	0.0808	-1.1342	0.1497	-0.4788	0.3209	-0.5123	0.4494	-0.5046	0.4951	-0.5067
10	0.625	0.077	-0.9437	-0.3249	-0.7787	-0.7436	-0.1314	-1.0678	0.0882	-1.2277	0.1905	-0.4902	0.3194	-0.5175	0.4501	-0.4926	0.4874	-0.5037
11	0.625	0.128	-1.1577	-0.7479	-0.9974	-0.9818	-0.3456	-1.2183	0.0914	-1.2489	0.1840	-0.4952	0.3170	-0.5191	0.4401	-0.5089	0.4787	-0.5027
12	0.625	0.170	-1.2775	-0.7789	-0.9584	-0.9401	-0.6278	-1.2892	-0.2842	-1.1893	-0.0779	-0.4994	0.1475	-0.5255	0.3643	-0.5067	0.4321	-0.5054
13	0.660	0.260	-0.1785	0.0105	-0.0828	-0.0760	0.0803	-0.2416	0.2693	-0.6750	0.3816	-0.4916	0.5112	-0.5097	0.6405	-0.4938	0.6836	-0.5056
14	0.728	0.281	0.0036	0.2360	0.1155	0.1224	0.3198	-0.0759	0.5095	-0.8341	0.6118	-0.4797	0.7219	-0.5027	0.8280	-0.4848	0.8601	-0.4966
15	0.787	0.295	0.1252	0.4374	0.2766	0.2867	0.5350	-0.1499	0.7285	-1.0744	0.8172	-0.4698	0.9058	-0.5014	0.9823	-0.4851	1.0022	-0.4921
16	0.500	0.000	-0.3085	-0.1069	-0.2472	-0.2437	-0.1068	-0.7442	0.0361	-0.4641	0.1108	-0.4938	0.2167	-0.5243	0.3298	-0.5108	0.3639	-0.5118
17	0.500	0.151	-0.4429	-0.1451	-0.2207	-0.2266	-0.1098	-0.7885	0.0384	-0.4243	0.1135	-0.4929	0.2230	-0.5246	0.3384	-0.5188	0.3735	-0.5137
18	0.500	0.251	-0.9764	-0.2195	-0.6812	-0.7001	-0.1268	-1.1475	0.0275	-0.4517	0.1027	-0.4835	0.2177	-0.5283	0.3343	-0.5254	0.3702	-0.5218
19	0.500	0.351	-1.1287	-0.7214	-0.9758	-0.9439	-0.4215	-1.2051	0.0552	-0.4567	0.1326	-0.4686	0.2583	-0.5147	0.3298	-0.5149	0.3723	-0.5047
20	0.500	0.452	-1.2098	-0.8367	-0.9537	-0.9307	-0.7121	-1.2520	-0.3418	-0.4550	-0.2133	-0.4628	0.0045	-0.5059	0.2081	-0.5066	0.2786	-0.4980
21	0.544	0.518	-0.1862	-0.0174	-0.1032	-0.0958	0.0433	-0.2616	0.2163	-0.5718	0.3114	-0.4743	0.4362	-0.5014	0.5553	-0.4996	0.5953	-0.4935
22	0.603	0.531	-0.0265	0.2078	0.0861	0.0912	0.2879	-0.1125	0.4679	-0.7660	0.5555	-0.4720	0.6614	-0.4942	0.7609	-0.4926	0.7950	-0.4978
23	0.662	0.545	0.0963	0.4064	0.2487	0.2486	0.5078	-0.1617	0.6951	-1.8677	0.7496	-0.4630	0.8535	-0.4946	0.9288	-0.4949	0.9511	-0.4963
24	0.375	0.000	-0.2587	-0.1940	-0.2655	-0.2534	-0.1613	-0.2455	-0.0558	-0.2272	-0.0115	-0.5210	0.0654	-0.5480	0.1535	-0.5441	0.1870	-0.5358
25	0.375	0.225	-0.2518	-0.2105	-0.2528	-0.2301	-0.1712	-0.2943	-0.0582	-0.3767	-0.0107	-0.4930	0.0722	-0.5405	0.1681	-0.5273	0.1980	-0.5176
26	0.375	0.374	-0.3868	-0.2220	-0.3552	-0.3338	-0.1827	-0.4268	-0.0705	-0.3766	-0.0173	-0.4624	0.0712	-0.5260	0.1738	-0.5098	0.2060	-0.5094
27	0.375	0.524	-0.5364	-0.4455	-0.8587	-0.8206	-0.2096	-0.4748	-0.0831	-0.3618	-0.0245	-0.4575	0.0717	-0.5201	0.1786	-0.5087	0.2127	-0.5149
28	0.375	0.674	-0.5905	-0.9373	-0.8676	-0.8813	-0.9270	-0.5336	-0.5696	-0.4044	-0.4077	-0.4733	-0.1781	-0.5252	0.0558	-0.5272	0.1353	-0.5202
29	0.419	0.768	-0.2321	-0.0897	-0.1553	-0.1482	-0.0364	-0.2990	0.1023	-0.4760	0.1771	-0.5086	0.2831	-0.5376	0.3993	-0.5346	0.4369	-0.5312
30	0.478	0.781	-0.0738	0.1338	0.0298	0.0394	0.2030	-0.1546	0.3666	-0.7393	0.4398	-0.5149	0.5352	-0.5395	0.6328	-0.5324	0.6666	-0.5311
31	0.537	0.795	0.0608	0.3491	0.2078	0.2161	0.4383	-0.1000	0.6130	-1.0336	0.6787	-0.4980	0.7595	-0.5244	0.8352	-0.5227	0.8565	-0.5176
32	0.381	0.843	-0.3440	-0.2270	-0.2608	-0.2543	-0.1836	-0.3993	-0.0614	-0.4995	0.0086	-0.5105	0.1059	-0.5369	0.2214	-0.5356	0.2593	-0.5330
33	0.440	0.856	-0.1477	0.0350	-0.0448	-0.0404	0.0994	-0.2195	0.2469	-0.6934	0.3201	-0.5124	0.4133	-0.5319	0.5117	-0.5241	0.5466	-0.5262
34	0.500	0.870	0.0192	0.2834	0.1530	0.1656	0.3638	-0.0952	0.5319	-1.0797	0.5959	-0.5057	0.6760	-0.5312	0.7471	-0.5276	0.7661	-0.5328
35	0.375	0.958	-0.3018	-0.2713	-0.2354	-0.2151	-0.2790	-0.3650	-0.2073	-0.6648	-0.1258	-0.4998	-0.0448	-0.5311	0.0430	-0.5286	0.0655	-0.5266
36	0.250	0.000	-0.4437	-0.3928	-0.4310	-0.4046	-0.3891	-0.4259	-0.3495	-0.5209	-0.3512	-0.5313	-0.3069	-0.5723	-0.2526	-0.5642	-0.2336	-0.5461
37	0.250	0.250	-0.5082	-0.4201	-0.5013	-0.4693	-0.4064	-0.4534	-0.3618	-0.3293	-0.3560	-0.5081	-0.3102	-0.5686	-0.2548	-0.5580	-0.2359	-0.5493
38	0.250	0.417	-0.3807	-0.4388	-0.4881	-0.4712	-0.4415	-0.2989	-0.3756	-0.3102	-0.3445	-0.4719	-0.3182	-0.5496	-0.2572	-0.5424	-0.2378	-0.5416
39	0.250	0.583	-0.3416	-0.4590	-0.4485	-0.4341	-0.4447	-0.2891	-0.3758	-0.3039	-0.3522	-0.4702	-0.2992	-0.5405	-0.2403	-0.5422	-0.2207	-0.5475
40	0.250	0.750	-0.3126	-0.6567	-0.3997	-0.3955	-0.4842	-0.2827	-0.4016	-0.3179	-0.3754	-0.4906	-0.3211	-0.5471	-0.2532	-0.5536	-0.2368	-0.5587
41	0.250	0.833	-0.3748	-0.6862	-0.3850	-0.3674	-0.8483	-0.2967	-0.4769	-0.3474	-0.3439	-0.5150	-0.3335	-0.5634	-0.2708	-0.5646	-0.2563	-0.5657
42	0.250	0.875	-0.3126	-0.4764	-0.3071	-0.2878	-0.4045	-0.2788	-0.3117	-0.3525	-0.2787	-0.5270	-0.2312	-0.5691	-0.1821	-0.5604	-0.1587	-0.5638
43	0.250	0.917	-0.2256	-0.3027	-0.1963	-0.1971	-0.3213	-0.2265	-0.2382	-0.3569	-0.2541	-0.5224	-0.2153	-0.5534	-0.1500	-0.5502	-0.1220	-0.5493
44	0.250	0.958	-0.1942	-0.2261	-0.1610	-0.1580	-0.2401	-0.2233	-0.2026	-0.3851	-0.2365	-0.5110	-0.2047	-0.5428	-0.1404	-0.5378	-0.1169	-0.5321
45	0.188	0.000	-0.3588	-0.3263	-0.3547	-0.3083	-0.3728	-0.3135	-0.5021	-0.5265	-1.1895	-0.5183	-1.2520	-0.5687	-1.2018	-0.5639	-1.1765	-0.5398
46	0.188	0.250	-0.4502	-0.3589	-0.4534	-0.3547	-0.4028	-0.2984	-0.4856	-0.3047	-1.1667	-0.4856	-1.2499	-0.5586	-1.1966	-0.5590	-1.1205	-0.5337
47	0.188	0.417	-0.2944	-0.3477	-0.4279	-0.3366	-0.4536	-0.2692	-0.5145	-0.2922	-1.0821	-0.4606	-1.2490	-0.5329	-1.1887	-0.5309	-1.1639	-0.5229
48	0.188	0.583	-0.2822	-0.4276	-0.3394	-0.3051	-0.5500	-0.2376	-0.5694	-0.2861	-1.1746	-0.4681	-1.2704	-0.5386	-1.2055	-0.5427	-1.1231	-0.5420
49	0.188	0.750	-0.2711	-0.5109	-0.3355	-0.3238	-0.5157	-0.2421	-0.6356	-0.2981	-1.2353	-0.4875	-1.2599	-0.5511	-1.1778	-0.5599	-1.0737	-0.5576
50	0.125	0.000	-0.2954	-0.2734	-0.2930	-0.2439	-0.3021	-0.2224	-0.3647	-0.3079	-0.9827	-0.5110	-1.1115	-0.5760	-1.0355	-0.5687	-0.9932	-0.5376
51	0.125	0.250	-0.2868	-0.2377	-0.2756	-0.1942	-0.2987	-0.1743	-0.3562	-0.2998	-0.8037	-0.4661	-1.1327	-0.5505	-1.0555	-0.5512	-0.9910	-0.5235
52	0.125	0.417	-0.2730	-0.2312	-0.2358	-0.1717	-0.3319	-0.2582	-0.3726	-0.2838	-0.6898	-0.4478	-1.1220	-0.5079	-1.0404	-0.5094	-0.9020	-0.5064
53	0.125	0.583	-0.2815	-0.2681	-0.2552	-0.2289	-0.3787	-0.2325	-0.4034	-0.2811	-0.7240	-0.4551	-1.1505	-0.5186	-1.0327	-0.5305	-0.9636	-0.5354
54	0.125	0.750	-0.2789	-0.4044	-0.3230	-0.3088	-0.3611	-0.2423	-0.4334	-0.3062	-0.8520	-0.4947	-1.1325	-0.5573	-0.9143	-0.5674	-0.5348	-0.5736
55	0.125	0.958	-0.2307	-0.2525	-0.2133	-0.1971	-0.2618	-0.2444	-0.2652	-0.3587	-0.4763	-0.5284	-0.4713	-0.5704	-0.3302	-0.5599	-0.2738	-0.5543
56	0.063	0.000	-0.2405	-0.2126	-0.2495	-0.2028	-0.2515	-0.1817	-0.2665	-0.2162	-0.5737	-0.4983	-1.0225	-0.5861	-0.9447	-0.5823	-0.9161	-0.5403
57	0.063	0.250	-0.1898	-0.1509	-0.1785	-0.1054	-0.2345	-0.1088	-0.2826	-0.2898	-0.5231	-0.4394	-0.9428	-0.5455	-0.9247	-0.5476	-0.8756	-0.5126
58	0.063	0.417	-0.2506	-0.1497	-0.1379	-0.0896	-0.2514	-0.2327	-0.2968	-0.2715	-0.4837	-0.4314	-0.8825	-0.4919	-0.9061	-0.5053	-0.8524	-0.5032
59	0.063	0.583	-0.2672	-0.1798	-0.1949	-0.1528	-0.2758	-0.2246	-0.3115	-0.2687	-0.4953	-0.4394	-0.9400	-0.5108	-0.7864	-0.5300	-0.4015	-0.5344
60	0.063	0.750	-0.2709	-0.2660	-0.2893	-0.2729	-0.2691	-0.2404	-0.3098	-0.3001	-0.4890	-0.4901	-0.7155	-0.5573	-0.3209	-0.5731	-0.2524	-0.5750
61	0.063	0.875	-0.2839	-0.2375	-0.2514	-0.2360	-0.1913	-0.2600	-0.2199	-0.3215	-0.4432	-0.5284	-0.5915	-0.5842	-0.3605	-0.5796	-0.3328	-0.5080
62	0.375	-0.674	-0.5749	-0.9380	-0.8280	-0.8494	-1.0003	-0.5685	-0.5433	-0.5172	-0.4031	-0.4906	-0.1716	-0.5050	0.0676	-0.5016	0.1496	-0.4966
63	0.250	-0.833	-0.3284	-0.6550	-0.3511	-0.3696	-0.8267	-0.3388	-0.4514	-0.3714	-0.3427	-0.5124	-0.3309	-0.5337	-0.2698	-0.5358	-0.2439	-0.5353

Table A-10.- (Continued).
M = 0.8

TUBE	X/L	Y/B/2	ALPHA = 27.1 WINDWARD	27.2 LEEWARD	29.8 WINDWARD	29.9 LEEWARD	34.8 WINDWARD	34.8 LEEWARD	39.8 WINDWARD	39.8 LEEWARD	44.7 WINDWARD	44.8 LEEWARD	49.7 WINDWARD	49.7 LEEWARD	54.8 WINDWARD	54.7 LEEWARD	56.3 WINDWARD	56.4 LEEWARD
1	0.934	0.000	1.1891	-0.5133	1.1313	-0.5512	1.1624	-0.5839	1.1687	-0.6136	1.1662	-0.6100	1.1299	-0.5846	1.0817	-0.5093	1.0663	-0.4959
2	0.848	0.000	0.9852	-0.5144	1.0253	-0.5531	1.0939	-0.5895	1.1378	-0.6175	1.1714	-0.6145	1.1691	-0.5937	1.1595	-0.5147	1.1529	-0.5067
3	0.802	0.000	0.8384	-0.5158	0.8918	-0.5540	0.9878	-0.5885	1.0625	-0.6175	1.1742	-0.6150	1.1505	-0.5909	1.1669	-0.5159	1.1688	-0.5155
4	0.688	0.000	0.5613	-0.5158	0.6309	-0.5455	0.7635	-0.5942	0.8727	-0.6276	0.9743	-0.6201	1.0435	-0.5880	1.1011	-0.5269	1.1216	-0.5242
5	0.688	0.066	0.4987	-0.5172	0.5980	-0.5448	0.7476	-0.5945	0.8641	-0.6224	0.9706	-0.6166	1.0443	-0.5880	1.1029	-0.5302	1.1243	-0.5274
6	0.732	0.143	0.7425	-0.5193	0.8028	-0.5464	0.9140	-0.5999	0.9467	-0.6267	1.0711	-0.6206	1.1170	-0.5908	1.1439	-0.5353	1.1552	-0.5360
7	0.790	0.156	0.9146	-0.5199	0.9569	-0.5429	1.0364	-0.5973	1.0871	-0.6322	1.1306	-0.6226	1.1477	-0.5893	1.1440	-0.5327	1.1482	-0.5310
8	0.850	0.170	1.0505	-0.5084	1.0725	-0.5325	1.1131	-0.5904	1.1265	-0.6249	1.1334	-0.6145	1.1150	-0.5803	1.0801	-0.5309	1.0758	-0.5192
9	0.625	0.000	0.5181	-0.5162	0.5812	-0.5417	0.7055	-0.5954	0.8125	-0.6290	0.9149	-0.6210	0.9934	-0.5890	1.0575	-0.5404	1.0849	-0.5234
10	0.625	0.077	0.5134	-0.5200	0.5749	-0.5496	0.7020	-0.5988	0.8112	-0.6382	0.9120	-0.6201	0.9963	-0.5972	1.0596	-0.5338	1.0814	-0.5242
11	0.625	0.128	0.5052	-0.5246	0.5718	-0.5495	0.7020	-0.6024	0.8143	-0.6392	0.9168	-0.6241	1.0003	-0.6030	1.0631	-0.5410	1.0855	-0.5209
12	0.625	0.179	0.4430	-0.5255	0.5494	-0.5506	0.6936	-0.6065	0.8138	-0.6442	0.9189	-0.6301	1.0041	-0.6094	1.0687	-0.5367	1.0891	-0.5336
13	0.650	0.268	0.7079	-0.5264	0.7671	-0.5605	0.8742	-0.5978	0.9651	-0.6341	1.0377	-0.6260	1.0879	-0.6052	1.1225	-0.5407	1.1314	-0.5320
14	0.728	0.281	0.8846	-0.5130	0.9281	-0.5508	1.0047	-0.5877	1.0633	-0.6240	1.1044	-0.6159	1.1216	-0.5908	1.1296	[illegible]	1.1319	-0.5229
15	0.787	0.295	1.0231	-0.5098	1.0489	-0.5463	1.0866	-0.5830	1.1079	-0.6198	1.1125	-0.6123	1.0924	-0.5450	1.0677	-0.5353	1.0602	-0.5151
16	0.500	0.000	0.3826	-0.5269	0.4417	-0.5620	0.5610	-0.6043	0.6723	-0.6327	0.7749	-0.6159	0.8724	-0.5977	0.9532	-0.5426	0.9618	-0.5246
17	0.500	0.151	0.3908	-0.5316	0.4521	-0.5652	0.5709	-0.6065	0.6648	-0.6355	0.7872	-0.6227	0.8830	-0.6035	0.9621	-0.5462	0.9913	-0.5289
18	0.500	0.251	0.3894	-0.5316	0.4542	-0.5652	0.5772	-0.6117	0.6933	-0.6366	0.7964	-0.6301	0.8916	-0.6060	0.9494	-0.5472	0.9990	-0.5336
19	0.500	0.351	0.3034	-0.5338	0.4614	-0.5628	0.5878	-0.6089	0.7056	-0.6430	0.8166	-0.6240	0.9070	-0.6005	0.9853	-0.5478	1.0102	-0.5409
20	0.500	0.452	0.3895	-0.5227	0.4068	-0.5604	0.5657	-0.6028	0.6498	-0.6346	0.8214	-0.6154	0.9141	-0.5960	0.9941	-0.5430	1.0197	-0.5414
21	0.544	0.518	0.6244	-0.5272	0.6847	-0.5568	0.7926	-0.5995	0.8859	-0.6267	0.9872	-0.6127	1.0204	-0.5923	1.0668	-0.5404	1.0817	-0.5431
22	0.603	0.531	0.8142	-0.5241	0.8637	-0.5519	0.9421	-0.6033	1.0012	-0.6313	1.0487	-0.6141	1.0738	-0.5935	1.0890	-0.5445	1.0926	-0.5477
23	0.662	0.545	0.9493	-0.5256	1.0010	-0.5513	1.0407	-0.6019	1.0612	-0.6313	1.0703	-0.6138	1.0602	-0.5955	1.0402	-0.5471	1.0335	-0.5457
24	0.375	0.000	0.2841	-0.5401	0.2610	-0.5676	0.3685	-0.6187	0.4797	-0.6470	0.5938	-0.6254	0.7006	-0.6051	0.8015	-0.5553	0.8329	-0.5454
25	0.375	0.225	0.2156	-0.5366	0.2734	-0.5749	0.3818	-0.6154	0.4945	-0.6402	0.6111	-0.6367	0.7178	-0.5893	0.8195	-0.5501	0.8445	-0.5432
26	0.375	0.374	0.2233	-0.5296	0.2857	-0.5668	0.3967	-0.6097	0.5097	-0.6323	0.6265	-0.6312	0.7345	-0.5849	0.8353	-0.5528	0.8579	-0.5451
27	0.375	0.524	0.2328	-0.5377	0.2976	-0.5709	0.4153	-0.6118	0.5325	-0.6317	0.6504	-0.6321	0.7559	-0.5900	0.8534	-0.5570	0.8766	-0.5477
28	0.375	0.674	0.1649	-0.5605	0.2590	-0.5854	0.4022	-0.6189	0.5358	-0.6429	0.6592	-0.6340	0.7640	-0.6000	0.8631	-0.5640	0.8883	-0.5491
29	0.419	0.768	0.4424	-0.5649	0.5265	-0.5985	0.6371	-0.6205	0.7388	-0.6434	0.8260	-0.6339	0.8937	-0.6021	0.9551	-0.5655	0.9693	-0.5490
30	0.479	0.781	0.6891	-0.5666	0.7392	-0.5878	0.8213	-0.6192	0.8880	-0.6423	0.9396	-0.6354	0.9763	-0.6037	1.0052	-0.5624	1.0085	-0.5464
31	0.537	0.795	0.8758	-0.5604	0.9082	-0.5883	0.9541	-0.6173	0.9801	-0.6388	0.9959	-0.6292	0.9916	-0.5949	0.9834	-0.5609	0.9741	-0.5483
32	0.381	0.843	0.2853	-0.5650	0.3521	-0.5942	0.4714	-0.6211	0.5776	-0.6401	0.6780	-0.6251	0.7536	-0.5965	0.8269	-0.5658	0.8453	-0.5465
33	0.440	0.856	0.5468	-0.5570	0.6185	-0.5873	0.7060	-0.6136	0.7769	-0.6345	0.8392	-0.6206	0.8791	-0.5918	0.9154	-0.5598	0.9232	-0.5385
34	0.500	0.870	0.7887	-0.5568	0.8253	-0.5854	0.8753	-0.6098	0.9055	-0.6350	0.9247	-0.6118	0.9295	-0.5954	0.9242	-0.5566	0.9234	-0.5348
35	0.375	0.958	0.0833	-0.5498	0.1375	-0.5801	0.2180	-0.6061	0.2990	-0.6364	0.3754	-0.6152	0.4509	-0.5978	0.5089	-0.5598	0.5261	-0.5349
36	0.250	0.000	-0.2789	-0.5505	-0.1856	-0.5840	-0.1179	-0.6253	-0.0100	-0.6537	0.1735	-0.6387	0.2716	-0.6146	0.4220	-0.5510	0.4630	-0.5431
37	0.250	0.250	-0.2152	-0.5572	-0.1829	-0.5846	-0.1113	-0.6303	-0.0051	-0.6476	0.1357	-0.6405	0.2832	-0.6113	0.4341	-0.5712	0.4775	-0.5498
38	0.250	0.417	-0.2197	-0.5498	-0.1852	-0.5796	-0.1095	-0.6243	0.0024	-0.6433	0.1500	-0.6362	0.3022	-0.6057	0.4536	-0.5690	0.4942	-0.5506
39	0.250	0.583	-0.1972	-0.5639	-0.1617	-0.5909	-0.0788	-0.6282	0.0393	-0.6469	0.1884	-0.6381	0.3389	-0.6066	0.4859	-0.5681	0.5252	-0.5542
40	0.250	0.750	-0.2120	-0.5793	-0.1740	-0.6033	-0.0723	-0.6368	0.0587	-0.6572	0.2089	-0.6386	0.3594	-0.6157	0.4981	-0.5682	0.5386	-0.5519
41	0.250	0.833	-0.2332	-0.5885	-0.1884	-0.6089	-0.0741	-0.6404	0.0662	-0.6612	0.2107	-0.6419	0.3531	-0.6208	0.4813	-0.5739	0.5191	-0.5597
42	0.250	0.875	-0.1369	-0.5821	-0.0721	-0.6033	0.0643	-0.6375	0.1966	-0.6598	0.3130	-0.6401	0.4287	-0.6203	0.5311	-0.5724	0.5616	-0.5620
43	0.250	0.917	-0.1010	-0.5716	-0.0211	-0.5994	0.1006	-0.6266	0.2098	-0.6528	0.3150	-0.6353	0.4117	-0.6033	0.5044	-0.5637	0.5276	-0.5483
44	0.250	0.958	-0.0971	-0.5554	-0.0273	-0.5846	0.0587	-0.6138	0.1401	-0.6373	0.2254	-0.6228	0.3116	-0.5923	0.3878	-0.5528	0.4063	-0.5345
45	0.188	0.000	-1.0971	-0.5391	-0.9249	-0.5745	-0.7192	-0.6068	-0.4332	-0.6322	-0.1869	-0.6219	0.1237	-0.5950	0.2483	-0.5501	0.3006	-0.5261
46	0.188	0.250	-1.0423	-0.5379	-0.9032	-0.5767	-0.6949	-0.6116	-0.4077	-0.6387	-0.1134	-0.6294	0.0893	-0.6037	0.2563	-0.5589	0.3208	-0.5436
47	0.188	0.417	-1.0423	-0.5503	-0.8762	-0.5838	-0.6625	-0.6172	-0.3448	-0.6425	-0.0785	-0.6363	0.1016	-0.6114	0.2956	-0.5659	0.3584	-0.5541
48	0.188	0.583	-1.0476	-0.5751	-0.8471	-0.6057	-0.6302	-0.6361	-0.2628	-0.6546	-0.0123	-0.6453	0.1422	-0.6217	0.3354	-0.5748	0.3988	-0.5626
49	0.188	0.750	-1.0306	-0.5963	-0.7807	-0.6217	-0.5500	-0.6488	-0.2503	-0.6607	0.0616	-0.6531	0.1828	-0.6193	0.3761	-0.5764	0.4307	-0.5608
50	0.125	0.000	-0.9700	-0.5406	-0.8729	-0.5716	-0.0909	-0.6087	-0.0111	-0.6281	0.0830	-0.6261	0.1941	-0.6016	0.3079	-0.5570	0.3406	-0.5322
51	0.125	0.250	-0.9474	-0.5281	-0.8505	-0.5636	-0.0760	-0.6017	-0.0064	-0.6221	0.0921	-0.6210	0.2046	-0.5996	0.3187	-0.5552	0.3496	-0.5367
52	0.125	0.417	-0.9478	-0.5315	-0.7617	-0.5730	-0.0625	-0.6070	-0.0046	-0.6364	0.0984	-0.6201	0.2085	-0.6037	0.3282	-0.5538	0.3591	-0.5376
53	0.125	0.583	-0.8441	-0.5989	-0.6061	-0.6033	-0.0529	-0.6311	0.0057	-0.6514	0.1133	-0.6316	0.2227	-0.6128	0.3391	-0.5678	0.3673	-0.5522
54	0.125	0.750	-0.5406	-0.5996	-0.2973	-0.6348	-0.0417	-0.6554	0.0199	-0.6688	0.1193	-0.6420	0.2292	-0.6203	0.3354	-0.5744	0.3639	-0.5606
55	0.125	0.958	-0.2723	-0.5851	-0.1952	-0.6152	-0.1085	-0.6386	-0.0240	-0.6537	0.0653	-0.6320	0.1608	-0.6089	0.2435	-0.5539	0.2678	-0.5460
56	0.063	0.000	-0.9484	-0.5337	-0.2353	-0.5750	-0.1893	-0.6051	-0.1242	-0.6313	-0.0353	-0.6159	0.0579	-0.6016	0.1528	-0.5481	0.1805	-0.5395
57	0.063	0.250	-0.8998	-0.5180	-0.2172	-0.5590	-0.1763	-0.5922	-0.1130	-0.6230	-0.0245	-0.6106	0.0688	-0.5944	0.1654	-0.5459	0.1944	-0.5385
58	0.063	0.417	-0.8215	-0.5296	-0.2018	-0.5616	-0.1796	-0.6020	-0.1113	-0.6313	-0.0241	-0.6187	0.0474	-0.6083	0.1653	-0.5552	0.1959	-0.5408
59	0.063	0.583	-0.4427	-0.5703	-0.1921	-0.5987	-0.1714	-0.6311	-0.0995	-0.6504	-0.0112	-0.6325	0.0772	-0.6199	0.1726	-0.5683	0.2034	-0.5508
60	0.063	0.750	-0.2513	-0.6058	-0.2000	-0.6353	-0.1678	-0.6596	-0.0947	-0.6722	-0.0075	-0.6491	0.0824	-0.6274	0.1736	-0.5782	0.2015	-0.5578
61	0.063	0.875	-0.3299	-0.6043	-0.2760	-0.6309	-0.2005	-0.6539	-0.1153	-0.6710	-0.0282	-0.6452	0.0664	-0.6216	0.1555	-0.5642	0.1849	-0.5540
62	0.375	-0.474	0.1720	-0.5301	0.2577	-0.5677	0.4014	-0.6046	0.5307	-0.6387	0.6541	-0.6233	0.7560	-0.6016	0.8540	-0.5458	0.8827	-0.5331
63	0.250	-0.833	-0.2437	-0.5556	-0.1968	-0.5896	-0.0830	-0.6177	0.0563	-0.6466	0.2010	-0.6321	0.3408	-0.6066	0.4729	-0.5533	0.5117	-0.5399

Table A-10.- (Continued).
M = 0.9

			ALPHA =															
			-3.8	-2.8	-0.4	0.1	4.6	5.0	9.6	10.0	14.8	15.0	19.5	20.0	24.5	24.9	26.2	26.6
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	0.3191	0.4109	0.4731	0.4864	0.6783	0.2279	0.8512	-0.3227	0.9449	-0.6168	1.0594	-0.5908	1.1247	-0.5592	1.1423	-0.5372
2	0.868	0.000	0.2364	0.4505	0.3413	0.3513	0.5094	0.1592	0.6683	-0.2027	0.7924	-0.4631	0.9058	-0.5707	0.9939	-0.5598	1.0207	-0.5456
3	0.802	0.000	0.1154	0.2789	0.1954	0.2043	0.3287	0.0599	0.4740	-0.1662	0.6064	-0.4081	0.7363	-0.5544	0.8457	-0.5582	0.8780	-0.5452
4	0.688	0.000	-0.4799	-0.4784	-0.5888	-0.5806	-0.3244	-0.7311	0.0736	-0.8508	0.2780	-0.7969	0.4367	-0.5579	0.5747	-0.5546	0.6139	-0.5522
5	0.688	0.066	-0.9057	-0.7003	-0.7927	-0.7889	-0.5664	-0.9340	-0.1910	-0.9858	0.0733	-0.5955	0.2876	-0.5811	0.4847	-0.5567	0.5446	-0.5507
6	0.732	0.143	0.0117	0.1047	0.0806	0.0990	0.2088	-0.0372	0.3543	-0.2879	0.5001	-0.5984	0.6312	-0.5930	0.7515	-0.5610	0.7858	-0.5543
7	0.798	0.156	0.1564	0.3692	0.2605	0.2746	0.4249	0.0966	0.5834	-0.4091	0.7146	-0.6159	0.8252	-0.5952	0.9205	-0.5596	0.9444	-0.5433
8	0.850	0.170	0.2727	0.5514	0.4050	0.4244	0.6203	0.1631	0.7894	-0.7578	0.9031	-0.6179	0.9927	-0.5800	1.0603	-0.5524	1.0736	-0.5375
9	0.625	0.000	-0.6380	-0.3443	-0.5238	-0.5083	-0.1615	-0.6960	0.1254	-0.8605	0.2831	-0.4283	0.4199	-0.5673	0.5412	-0.5612	0.5729	-0.5465
10	0.625	0.077	-0.7780	-0.5186	-0.6786	-0.6780	-0.2062	-0.8163	0.1537	-0.9346	0.2950	-0.5353	0.4251	-0.5856	0.5401	-0.5620	0.5701	-0.5470
11	0.625	0.120	-0.8091	-0.7056	-0.7835	-0.7745	-0.5755	-0.9252	0.1474	-0.9562	0.2789	-0.5516	0.4150	-0.6000	0.5311	-0.5642	0.5620	-0.5529
12	0.625	0.179	-0.9755	-0.7264	-0.8797	-0.8639	-0.5967	-0.9777	-0.2361	-0.9478	0.0229	-0.5644	0.2542	-0.6071	0.4578	-0.5685	0.5132	-0.5600
13	0.669	0.288	-0.0187	0.1467	0.0617	0.0758	0.1923	-0.0637	0.3295	-0.4052	0.4721	-0.5912	0.6049	-0.5917	0.7175	-0.5592	0.7495	-0.5563
14	0.728	0.281	0.1229	0.3474	0.2322	0.2491	0.4070	0.0660	0.5589	-0.4785	0.6874	-0.5960	0.8007	-0.5841	0.8897	-0.5503	0.9146	-0.5486
15	0.787	0.295	0.2355	0.5353	0.3760	0.3985	0.6052	0.1209	0.7066	-0.7418	0.8788	-0.5879	0.9782	-0.5824	1.0325	-0.5482	1.0475	-0.5447
16	0.500	0.000	-0.5586	-0.1939	-0.4283	-0.4121	-0.0558	-0.6282	0.0931	-0.8310	0.2177	-0.4936	0.3315	-0.5847	0.4334	-0.5767	0.4603	-0.5629
17	0.500	0.151	-0.7809	-0.1228	-0.5354	-0.5047	-0.0354	-0.7610	0.0975	-0.9053	0.2224	-0.5511	0.3364	-0.6092	0.4396	-0.5796	0.4673	-0.5672
18	0.500	0.251	-0.8834	-0.6607	-0.7538	-0.7399	-0.0899	-0.9355	0.0999	-0.9526	0.2151	-0.5573	0.3333	-0.6089	0.4356	-0.5819	0.4634	-0.5786
19	0.500	0.351	-0.9393	-0.7875	-0.7969	-0.7780	-0.6239	-0.9569	-0.0563	-0.9867	0.2653	-0.5403	0.3699	-0.5869	0.4372	-0.5649	0.4631	-0.5563
20	0.500	0.452	-0.9869	-0.8092	-0.9489	-0.9357	-0.6682	-1.0031	-0.3513	-1.0185	-0.0907	-0.5319	0.1294	-0.5681	0.3247	-0.5485	0.3773	-0.5431
21	0.544	0.510	-0.0418	0.1203	0.0339	0.0470	0.1662	-0.0939	0.2859	-0.2807	0.4122	-0.5728	0.5302	-0.5587	0.6434	-0.5404	0.6713	-0.5328
22	0.603	0.531	0.0945	0.3219	0.1977	0.2154	0.3834	0.0290	0.5209	-0.7025	0.6413	-0.5969	0.7391	-0.5493	0.8302	-0.5311	0.8525	-0.5359
23	0.662	0.545	0.2041	0.5017	0.3403	0.3582	0.5827	0.0939	0.7337	-1.1093	0.8416	-0.5881	0.9176	-0.5456	0.9869	-0.5343	0.9993	-0.5342
24	0.375	0.000	-0.5315	-0.1422	-0.3959	-0.3738	-0.0908	-0.6094	0.0205	-0.8157	0.1184	-0.5233	0.2020	-0.5991	0.2861	-0.5890	0.3080	-0.5922
25	0.375	0.225	-0.5765	-0.1486	-0.3599	-0.3373	-0.0926	-0.6856	0.0160	-0.6876	0.1197	-0.5585	0.2058	-0.5913	0.2956	-0.5790	0.3142	-0.5922
26	0.375	0.374	-0.8583	-0.4083	-0.7399	-0.7285	-0.0678	-0.9097	0.0065	-0.5365	0.1131	-0.5414	0.2060	-0.5694	0.2997	-0.5633	0.3184	-0.5752
27	0.375	0.524	-0.8714	-0.6980	-0.7783	-0.7660	-0.6202	-0.9525	0.0143	-0.5168	0.1063	-0.5287	0.2064	-0.5566	0.3022	-0.5570	0.3207	-0.5648
28	0.375	0.674	-0.7661	-0.7763	-0.7584	-0.7857	-0.7105	-0.9318	-0.5403	-0.7111	-0.2686	-0.5353	-0.0277	-0.5605	0.1826	-0.5676	0.2468	-0.5608
29	0.419	0.760	-0.1816	0.0531	-0.0304	-0.0186	0.1049	-0.1430	0.1916	-0.5661	0.2924	-0.5990	0.3988	-0.5706	0.4942	-0.5708	0.5228	-0.5638
30	0.478	0.781	0.0352	0.2518	0.1327	0.1484	0.3133	-0.0186	0.4263	-0.7163	0.5316	-0.6271	0.6198	-0.5680	0.7097	-0.5676	0.7307	-0.5631
31	0.537	0.795	0.1559	0.4481	0.2917	0.3186	0.5217	0.0770	0.6599	-1.0494	0.7563	-0.6185	0.8252	-0.5567	0.8915	-0.5543	0.9053	-0.5489
32	0.381	0.843	-0.2134	-0.0781	-0.1447	-0.1335	-0.0249	-0.2488	0.0538	-0.5894	0.1422	-0.5994	0.2297	-0.5750	0.3269	-0.5620	0.3513	-0.5581
33	0.440	0.856	-0.0354	0.1594	0.0534	0.0674	0.2194	-0.0865	0.3264	-0.7045	0.4239	-0.6132	0.5072	-0.5673	0.5921	-0.5578	0.6132	-0.5507
34	0.500	0.870	0.1139	0.3880	0.2387	0.2570	0.4616	0.0455	0.5855	-0.9888	0.6782	-0.6124	0.7430	-0.5596	0.8108	-0.5524	0.8230	-0.5539
35	0.375	0.958	-0.2971	-0.2924	-0.3086	-0.2962	-0.2314	-0.3515	-0.2855	-0.8266	-0.0623	-0.5828	0.0356	-0.5640	0.1259	-0.5519	0.1424	-0.5559
36	0.250	0.000	-0.5152	-0.2789	-0.3446	-0.3437	-0.2580	-0.5734	-0.2025	-0.7168	-0.1494	-0.6037	-0.1002	-0.6128	-0.0518	-0.6163	-0.0424	-0.6102
37	0.250	0.250	-0.5492	-0.3142	-0.4056	-0.3868	-0.2691	-0.6090	-0.2120	-0.4491	-0.1563	-0.5677	-0.1049	-0.5978	-0.0531	-0.5961	-0.0475	-0.6005
38	0.250	0.417	-0.5759	-0.3094	-0.6393	-0.6219	-0.2869	-0.5330	-0.2255	-0.4102	-0.1465	-0.5564	-0.1132	-0.5845	-0.0560	-0.5780	-0.0539	-0.5829
39	0.250	0.583	-0.4742	-0.4622	-0.6397	-0.6616	-0.2874	-0.4234	-0.2229	-0.4079	-0.1612	-0.5484	-0.1018	-0.5786	-0.0456	-0.5751	-0.0418	-0.5776
40	0.250	0.750	-0.3414	-0.4197	-0.4201	-0.4237	-0.5775	-0.3786	-0.3068	-0.4479	-0.2049	-0.5659	-0.1322	-0.5821	-0.0702	-0.5846	-0.0639	-0.5779
41	0.250	0.833	-0.3438	-0.4216	-0.4054	-0.4112	-0.5264	-0.3738	-0.7826	-0.4987	-0.2083	-0.5912	-0.1052	-0.5947	-0.1143	-0.5932	-0.1061	-0.5876
42	0.250	0.875	-0.3788	-0.4112	-0.3963	-0.3995	-0.4975	-0.3815	-0.6256	-0.5326	-0.3126	-0.6033	-0.1266	-0.5938	-0.0350	-0.5926	-0.0256	-0.5904
43	0.250	0.917	-0.3494	-0.3186	-0.3359	-0.3383	-0.3428	-0.3305	-0.4698	-0.5277	-0.1419	-0.5864	-0.0853	-0.5830	-0.0357	-0.5745	-0.0279	-0.5654
44	0.250	0.958	-0.2584	-0.2316	-0.2200	-0.2194	-0.2698	-0.2899	-0.4393	-0.5614	-0.1452	-0.5758	-0.1162	-0.5720	-0.0657	-0.5607	-0.0569	-0.5538
45	0.188	0.000	-0.3619	-0.3878	-0.3672	-0.3623	-0.4133	-0.3802	-0.8426	-0.4782	-0.9440	-0.5625	-0.9257	-0.5975	-0.8841	-0.6046	-0.8722	-0.6003
46	0.188	0.250	-0.4544	-0.6014	-0.6004	-0.5991	-0.8534	-0.4370	-0.9688	-0.4217	-0.9464	-0.5624	-0.9172	-0.5912	-0.8831	-0.5959	-0.8551	-0.5822
47	0.188	0.417	-0.4139	-0.4151	-0.4482	-0.4134	-0.8941	-0.3716	-0.9350	-0.3978	-0.9404	-0.5424	-0.9208	-0.5781	-0.8838	-0.5787	-0.8376	-0.5646
48	0.188	0.583	-0.3832	-0.5786	-0.5001	-0.4849	-0.9752	-0.3682	-0.8921	-0.3979	-0.9466	-0.5459	-0.9406	-0.5791	-0.8962	-0.5864	-0.8760	-0.5701
49	0.188	0.750	-0.3464	-0.3728	-0.3825	-0.3908	-0.4443	-0.3503	-0.9387	-0.4395	-0.9041	-0.5664	-0.9584	-0.5956	-0.8939	-0.6014	-0.8734	-0.5892
50	0.125	0.000	-0.3548	-0.3310	-0.4071	-0.4080	-0.3401	-0.3673	-0.6160	-0.4472	-0.8783	-0.5280	-0.8357	-0.6018	-0.7639	-0.6253	-0.7226	-0.6197
51	0.125	0.250	-0.4191	-0.3885	-0.4453	-0.4434	-0.4061	-0.4090	-0.8017	-0.4332	-0.9188	-0.5492	-0.8644	-0.5898	-0.7905	-0.6020	-0.7184	-0.5917
52	0.125	0.417	-0.4084	-0.3869	-0.3913	-0.3755	-0.4527	-0.3776	-0.6653	-0.3972	-0.9150	-0.5181	-0.8602	-0.5653	-0.7852	-0.5846	-0.7804	-0.5500
53	0.125	0.583	-0.3851	-0.4659	-0.4608	-0.4303	-0.4921	-0.3721	-0.5667	-0.3944	-0.9473	-0.5250	-0.8805	-0.5711	-0.7959	-0.5919	-0.7259	-0.5803
54	0.125	0.750	-0.3856	-0.4894	-0.4189	-0.4190	-0.4525	-0.3766	-0.5398	-0.4416	-0.9813	-0.5693	-0.8983	-0.6049	-0.7889	-0.6221	-0.7360	-0.5878
55	0.125	0.958	-0.2878	-0.2662	-0.2672	-0.2685	-0.2895	-0.3181	-0.3594	-0.5225	-0.4043	-0.5968	-0.3798	-0.6083	-0.3342	-0.6044	-0.3170	-0.5753
56	0.063	0.000	-0.3434	-0.3267	-0.4118	-0.3949	-0.3388	-0.3781	-0.4246	-0.3905	-0.8270	-0.5384	-0.7696	-0.6184	-0.6872	-0.6332	-0.6795	-0.6128
57	0.063	0.250	-0.3964	-0.3150	-0.3806	-0.3824	-0.3785	-0.4180	-0.4502	-0.4264	-0.8047	-0.5450	-0.7629	-0.5924	-0.6913	-0.6033	-0.6629	-0.5798
58	0.063	0.417	-0.3957	-0.3027	-0.3424	-0.3358	-0.3527	-0.3769	-0.4083	-0.3938	-0.7827	-0.5155	-0.7526	-0.5601	-0.6834	-0.5672	-0.6603	-0.5526
59	0.063	0.583	-0.3838	-0.3879	-0.4482	-0.4128	-0.3422	-0.3888	-0.3954	-0.3989	-0.8249	-0.5229	-0.7745	-0.5662	-0.6931	-0.5752	-0.6460	-0.5620
60	0.063	0.750	-0.3731	-0.4249	-0.4255	-0.4336	-0.4378	-0.3842	-0.4293	-0.4428	-0.8558	-0.5785	-0.7807	-0.6071	-0.6446	-0.6096	-0.5818	-0.5970
61	0.063	0.875	-0.3797	-0.3732	-0.3821	-0.3839	-0.4185	-0.3845	-0.4883	-0.4825	-0.7260	-0.5946	-0.6516	-0.6188	-0.4954	-0.6097	-0.4315	-0.6018
62	0.375	-0.674	-0.7475	-0.7742	-0.7735	-0.7831	-0.7072	-0.9227	-0.5970	-0.5808	-0.2773	-0.5280	-0.0294	-0.5681	0.1902	-0.5687	0.2543	-0.5572
63	0.250	-0.833	-0.3402	-0.3909	-0.3916	-0.4018	-0.5011	-0.3629	-0.8697	-0.4894	-0.1414	-0.5724	-0.1849	-0.6010	-0.1127	-0.5916	-0.0985	-0.5818

Table A-10.- (Continued).
M = 0.9

			ALPHA =															
			27.0	27.1	29.7	29.8	34.6	34.7	39.6	39.7	44.6	44.7	49.6	49.6	54.6	54.6	56.2	56.3
TUBE	X/L	Y/R/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	1.1599	-0.5185	1.1804	-0.5278	1.2102	-0.5350	1.2184	-0.5133	1.2042	-0.5167	1.1730	-0.5236	1.1417	-0.5310	1.1159	-0.5381
2	0.868	0.000	1.0420	-0.5270	1.0782	-0.5416	1.1425	-0.5513	1.1071	-0.5359	1.2060	-0.5337	1.2109	-0.5412	1.2127	-0.5475	1.1965	-0.5541
3	0.807	0.000	0.9041	-0.5270	0.9528	-0.5434	1.0438	-0.5554	1.1129	-0.5421	1.1613	-0.5371	1.1932	-0.5437	1.2195	-0.5520	1.2122	-0.5580
4	0.668	0.000	0.6424	-0.5393	0.7097	-0.5442	0.8339	-0.5583	0.9333	-0.5453	1.0179	-0.5445	1.0896	-0.5523	1.1540	-0.5611	1.1646	-0.5597
5	0.688	0.066	0.5812	-0.5376	0.6750	-0.5401	0.8176	-0.5528	0.9249	-0.5393	1.0139	-0.5379	1.0890	-0.5478	1.1551	-0.5560	1.1655	-0.5579
6	0.732	0.143	0.8126	-0.5407	0.8713	-0.5468	0.9718	-0.5577	1.0515	-0.5442	1.1107	-0.5460	1.1567	-0.5560	1.1946	-0.5626	1.1962	-0.5663
7	0.790	0.156	0.9720	-0.5397	1.0170	-0.5454	1.0871	-0.5548	1.1383	-0.5383	1.1458	-0.5450	1.1841	-0.5526	1.2007	-0.5573	1.1921	-0.5682
8	0.850	0.170	1.0988	-0.5309	1.1260	-0.5351	1.1601	-0.5465	1.1776	-0.5320	1.1698	-0.5363	1.1560	-0.5468	1.1408	-0.5497	1.1213	-0.5580
9	0.625	0.000	0.6019	-0.5422	0.6632	-0.5499	0.7797	-0.5636	0.8762	-0.5486	0.9607	-0.5505	1.0379	-0.5586	1.1147	-0.5598	1.1262	-0.5658
10	0.625	0.077	0.6010	-0.5410	0.6590	-0.5507	0.7761	-0.5631	0.8757	-0.5497	0.9618	-0.5528	1.0418	-0.5558	1.1115	-0.5624	1.1273	-0.5686
11	0.625	0.128	0.5915	-0.5455	0.6545	-0.5533	0.7754	-0.5656	0.8775	-0.5517	0.9647	-0.5546	1.0457	-0.5586	1.1143	-0.5693	1.1318	-0.5748
12	0.625	0.179	0.5521	-0.5425	0.6325	-0.5588	0.7671	-0.5676	0.8758	-0.5536	0.9666	-0.5570	1.0489	-0.5623	1.1172	-0.5702	1.1350	-0.5771
13	0.669	0.268	0.7832	-0.5339	0.8388	-0.5458	0.9367	-0.5575	1.0178	-0.5449	1.0791	-0.5468	1.1301	-0.5504	1.1714	-0.5674	1.1762	-0.5695
14	0.728	0.281	0.9481	-0.5239	0.9886	-0.5355	1.0555	-0.5487	1.1113	-0.5381	1.1412	-0.5381	1.1654	-0.5412	1.1794	-0.5596	1.1757	-0.5611
15	0.787	0.295	1.0792	-0.5209	1.1030	-0.5304	1.1334	-0.5454	1.1553	-0.5348	1.1493	-0.5340	1.1400	-0.5355	1.1222	-0.5563	1.1090	-0.5597
16	0.508	0.000	0.4859	-0.5489	0.5404	-0.5603	0.6505	-0.5785	0.7458	-0.5518	0.8356	-0.5602	0.9301	-0.5540	1.0106	-0.5685	1.0301	-0.5686
17	0.508	0.151	0.4909	-0.5546	0.5480	-0.5608	0.6591	-0.5722	0.7562	-0.5557	0.8463	-0.5612	0.9391	-0.5586	1.0181	-0.5753	1.0387	-0.5743
18	0.508	0.251	0.4920	-0.5523	0.5495	-0.5610	0.6636	-0.5711	0.7631	-0.5577	0.8540	-0.5623	0.9469	-0.5627	1.0251	-0.5760	1.0444	-0.5771
19	0.508	0.351	0.4947	-0.5454	0.5565	-0.5511	0.6768	-0.5632	0.7747	-0.5502	0.8660	-0.5613	0.9576	-0.5548	1.0395	-0.5688	1.0552	-0.5691
20	0.508	0.452	0.4134	-0.5353	0.5088	-0.5386	0.6533	-0.5513	0.7685	-0.5425	0.8690	-0.5507	0.9652	-0.5477	1.0484	-0.5596	1.0637	-0.5589
21	0.544	0.518	0.7059	-0.5283	0.7592	-0.5304	0.8628	-0.5432	0.9440	-0.5348	1.0074	-0.5418	1.0690	-0.5396	1.1195	-0.5542	1.1236	-0.5540
22	0.603	0.531	0.8847	-0.5192	0.9265	-0.5294	0.9946	-0.5396	1.0578	-0.5314	1.0893	-0.5349	1.1210	-0.5414	1.1421	-0.5524	1.1392	-0.5540
23	0.662	0.545	1.0271	-0.5216	1.0530	-0.5300	1.0857	-0.5404	1.1151	-0.5327	1.1100	-0.5362	1.1078	-0.5426	1.0966	-0.5573	1.0848	-0.5588
24	0.375	0.000	0.3330	-0.5662	0.3781	-0.5829	0.4766	-0.5850	0.5716	-0.5702	0.6658	-0.5721	0.7677	-0.5752	0.8695	-0.5826	0.8959	-0.5816
25	0.375	0.225	0.3443	-0.5640	0.3918	-0.5762	0.4921	-0.5795	0.5862	-0.5633	0.6810	-0.5653	0.7823	-0.5703	0.8849	-0.5736	0.9091	-0.5806
26	0.375	0.374	0.3490	-0.5471	0.3977	-0.5581	0.5016	-0.5662	0.6000	-0.5542	0.6951	-0.5538	0.7979	-0.5616	0.8988	-0.5622	0.9216	-0.5685
27	0.375	0.524	0.3558	-0.5422	0.4074	-0.5521	0.5178	-0.5584	0.6204	-0.5469	0.7174	-0.5440	0.8183	-0.5532	0.9170	-0.5550	0.9385	-0.5628
28	0.375	0.674	0.2840	-0.5493	0.3680	-0.5577	0.5013	-0.5609	0.6186	-0.5409	0.7241	-0.5423	0.8260	-0.5449	0.9279	-0.5520	0.9483	-0.5588
29	0.419	0.768	0.5540	-0.5566	0.6095	-0.5604	0.7114	-0.5625	0.8050	-0.5407	0.8776	-0.5397	0.9458	-0.5443	1.0132	-0.5538	1.0236	-0.5628
30	0.478	0.781	0.7427	-0.5578	0.8067	-0.5575	0.8776	-0.5604	0.9447	-0.5375	0.9873	-0.5382	1.0233	-0.5422	1.0609	-0.5524	1.0623	-0.5614
31	0.537	0.795	0.9176	-0.5476	0.9647	-0.5485	1.0013	-0.5548	1.0313	-0.5291	1.0371	-0.5379	1.0405	-0.5434	1.0426	-0.5512	1.0304	-0.5611
32	0.381	0.843	0.3870	-0.5545	0.4401	-0.5559	0.5513	-0.5614	0.6498	-0.5346	0.7335	-0.5376	0.8140	-0.5455	0.8921	-0.5510	0.9021	-0.5611
33	0.440	0.856	0.6681	-0.5483	0.6896	-0.5495	0.7683	-0.5554	0.8383	-0.5296	0.8868	-0.5310	0.9328	-0.5389	0.9780	-0.5468	0.9777	-0.5562
34	0.508	0.870	0.8545	-0.5467	0.8825	-0.5446	0.9280	-0.5500	0.9596	-0.5296	0.9725	-0.5293	0.9818	-0.5358	0.9876	-0.5459	0.9801	-0.5483
35	0.375	0.958	0.1480	-0.5496	0.2052	-0.5458	0.3046	-0.5541	0.3777	-0.5336	0.4518	-0.5349	0.5214	-0.5408	0.5902	-0.5529	0.6026	-0.5566
36	0.250	0.000	-0.0265	-0.5855	-0.0016	-0.5976	0.0720	-0.6020	0.1304	-0.5796	0.2379	-0.5761	0.3701	-0.5770	0.5144	-0.5782	0.5535	-0.5836
37	0.250	0.258	-0.0217	-0.5764	0.0019	-0.5911	0.0748	-0.6025	0.1353	-0.5787	0.2449	-0.5803	0.3797	-0.5799	0.5282	-0.5775	0.5667	-0.5859
38	0.250	0.417	-0.0295	-0.5632	-0.0035	-0.5724	0.0695	-0.5875	0.1367	-0.5668	0.2566	-0.5668	0.3935	-0.5682	0.5436	-0.5661	0.5816	-0.5729
39	0.250	0.583	-0.0125	-0.5631	0.0130	-0.5782	0.0937	-0.5792	0.1684	-0.5573	0.2921	-0.5549	0.4276	-0.5571	0.5742	-0.5576	0.6110	-0.5656
40	0.250	0.750	-0.0373	-0.5716	-0.0075	-0.5781	0.0850	-0.5784	0.1772	-0.5571	0.3045	-0.5488	0.4407	-0.5458	0.5819	-0.5533	0.6179	-0.5623
41	0.250	0.833	-0.0820	-0.5809	-0.0487	-0.5841	0.0523	-0.5828	0.1607	-0.5605	0.2945	-0.5520	0.4259	-0.5496	0.5619	-0.5595	0.5946	-0.5690
42	0.250	0.875	0.0142	-0.5783	0.0370	-0.5820	0.1538	-0.5743	0.2786	-0.5586	0.3879	-0.5503	0.4956	-0.5471	0.6061	-0.5591	0.6329	-0.5686
43	0.250	0.917	0.0016	-0.5693	0.0363	-0.5709	0.1838	-0.5707	0.2893	-0.5453	0.3905	-0.5450	0.4813	-0.5460	0.5829	-0.5512	0.5995	-0.5633
44	0.250	0.958	-0.0259	-0.5567	0.0059	-0.5568	0.1411	-0.5583	0.2201	-0.5364	0.3035	-0.5355	0.3819	-0.5372	0.4699	-0.5419	0.4828	-0.5506
45	0.188	0.000	-0.8397	-0.5879	-0.7785	-0.5984	-0.5303	-0.5962	-0.3514	-0.5738	-0.0519	-0.5700	0.1439	-0.5692	0.3256	-0.5697	0.3796	-0.5745
46	0.188	0.250	-0.7867	-0.5685	-0.7528	-0.5842	-0.5099	-0.5936	-0.3269	-0.5649	-0.0804	-0.5706	0.1488	-0.5666	0.3465	-0.5641	0.4009	-0.5662
47	0.188	0.417	-0.7832	-0.5597	-0.7449	-0.5678	-0.4886	-0.5797	-0.2922	-0.5561	-0.0255	-0.5612	0.1787	-0.5615	0.3858	-0.5635	0.4430	-0.5690
48	0.188	0.583	-0.8411	-0.5676	-0.7431	-0.5722	-0.4650	-0.5801	-0.2595	-0.5523	0.0105	-0.5538	0.2119	-0.5569	0.4241	-0.5586	0.4816	-0.5681
49	0.188	0.750	-0.8386	-0.5848	-0.6902	-0.5867	-0.4010	-0.5857	-0.1949	-0.5528	0.0764	-0.5525	0.2860	-0.5544	0.4749	-0.5600	0.5118	-0.5620
50	0.125	0.000	-0.6956	-0.5951	-0.6590	-0.6050	-0.3553	-0.6032	0.1412	-0.5729	0.2034	-0.5747	0.3034	-0.5769	0.4170	-0.5770	0.4390	-0.5677
51	0.125	0.250	-0.6860	-0.5657	-0.6520	-0.5826	-0.3084	-0.5858	0.1493	-0.5616	0.2152	-0.5640	0.3134	-0.5653	0.4269	-0.5701	0.4462	-0.5628
52	0.125	0.417	-0.6760	-0.5428	-0.6404	-0.5564	-0.1885	-0.5657	0.1491	-0.5497	0.2224	-0.5445	0.3223	-0.5493	0.4337	-0.5637	0.4544	-0.5610
53	0.125	0.583	-0.6924	-0.5641	-0.6432	-0.5657	-0.0670	-0.5682	0.1530	-0.5464	0.2306	-0.5415	0.3309	-0.5483	0.4435	-0.5635	0.4612	-0.5628
54	0.125	0.750	-0.6997	-0.5868	-0.6781	-0.5922	0.0521	-0.5898	0.1583	-0.5595	0.2303	-0.5485	0.3283	-0.5542	0.4357	-0.5644	0.4539	-0.5663
55	0.125	0.958	-0.2981	-0.5733	-0.2095	-0.5823	-0.0084	-0.5738	0.0663	-0.5484	0.1501	-0.5445	0.2396	-0.5487	0.3328	-0.5609	0.3478	-0.5633
56	0.063	0.000	-0.6587	-0.5881	-0.6187	-0.6167	0.0137	-0.6058	0.0269	-0.5807	0.0961	-0.5769	0.1803	-0.5747	0.2772	-0.5835	0.2947	-0.5768
57	0.063	0.250	-0.6618	-0.5513	-0.5979	-0.5819	0.0294	-0.5779	0.0392	-0.5625	0.1089	-0.5583	0.1913	-0.5597	0.2480	-0.5732	0.3084	-0.5671
58	0.063	0.417	-0.6508	-0.5358	-0.5764	-0.5498	0.0259	-0.5587	0.0402	-0.5427	0.1128	-0.5419	0.1977	-0.5466	0.2916	-0.5550	0.3103	-0.5588
59	0.063	0.583	-0.6200	-0.5615	-0.5599	-0.5608	0.0237	-0.5652	0.0470	-0.5393	0.1202	-0.5393	0.2041	-0.5430	0.3087	-0.5538	0.3185	-0.5632
60	0.063	0.750	-0.5023	-0.5900	-0.2289	-0.5931	0.0118	-0.5948	0.0456	-0.5577	0.1163	-0.5485	0.1998	-0.5498	0.2944	-0.5586	0.3111	-0.5699
61	0.063	0.875	-0.3839	-0.5949	-0.1849	-0.5955	-0.0534	-0.5936	0.0135	-0.5581	0.0925	-0.5525	0.1772	-0.5570	0.2724	-0.5587	0.2886	-0.5682
62	0.375	-0.674	0.2062	-0.5375	0.3620	-0.5377	0.4911	-0.5396	0.6459	-0.5147	0.7152	-0.5185	0.8207	-0.5351	0.9214	-0.5371	0.9393	-0.5445
63	0.250	-0.833	-0.0865	-0.5570	-0.0638	-0.5586	0.0381	-0.5641	0.1479	-0.5304	0.2432	-0.5249	0.4194	-0.5385	0.5543	-0.5421	0.5832	-0.5475

Table A-10.- (Continued).

M = 1.2

			ALPHA =															
			-3.1	-2.9	-0.5	-0.2	4.6	4.8	9.6	9.8	14.5	14.8	19.5	19.7	24.6	24.7	26.2	26.4
TUBE	X/L	Y/R/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	0.6175	0.8595	0.7291	0.7480	0.9016	0.5231	1.0397	0.1295	1.1403	-0.1512	1.2531	-0.3779	1.3195	-0.5428	1.3352	-0.6266
2	0.868	0.000	0.5370	0.7238	0.6222	0.6345	0.7596	0.4619	0.8819	0.1432	1.0071	-0.1130	1.1167	-0.3219	1.2046	-0.4988	1.2285	-0.5457
3	0.802	0.000	0.4537	0.5941	0.5149	0.5254	0.6198	0.3969	0.7221	0.1535	0.8470	-0.0921	0.9686	-0.2945	1.0734	-0.4612	1.1060	-0.5070
4	0.688	0.000	-0.1927	-0.0499	-0.1299	-0.1168	-0.0156	-0.2182	0.2447	-0.3242	0.5304	-0.4596	0.7017	-0.5744	0.8351	-0.6779	0.8784	-0.7095
5	0.688	0.066	-0.3449	-0.2101	-0.2838	-0.2798	-0.1738	-0.3602	0.0257	-0.4176	0.3404	-0.5245	0.5707	-0.5947	0.7584	-0.6554	0.8201	-0.6600
6	0.732	0.143	0.3787	0.5038	0.4336	0.4485	0.5285	0.3339	0.6206	0.1611	0.7479	-0.1198	0.8785	-0.4611	0.9911	-0.7058	1.0267	-0.7590
7	0.790	0.156	0.4929	0.6640	0.5635	0.5815	0.6953	0.4238	0.8123	0.1702	0.9368	-0.3647	1.0473	-0.6597	1.1383	-0.8354	1.1651	-0.8323
8	0.850	0.170	0.5715	0.8115	0.6783	0.7032	0.8556	0.5054	0.9871	-0.3850	1.1022	-0.6686	1.1938	-0.7774	1.2592	-0.8495	1.2764	-0.8418
9	0.625	0.000	-0.1499	-0.0022	-0.1040	-0.0904	0.0427	-0.2126	0.3495	-0.3467	0.5522	-0.4699	0.6935	-0.5789	0.8089	-0.6887	0.8463	-0.7200
10	0.625	0.077	-0.2468	-0.1331	-0.2159	-0.2018	-0.0696	-0.3007	0.3252	-0.4001	0.5695	-0.5273	0.6958	-0.6293	0.8103	-0.7073	0.8467	-0.7135
11	0.625	0.128	-0.3427	-0.1951	-0.2901	-0.2764	-0.1616	-0.3688	0.0606	-0.4321	0.5773	-0.5256	0.6913	-0.6237	0.8013	-0.8081	0.8398	-0.8044
12	0.625	0.179	-0.3914	-0.2685	-0.3574	-0.3431	-0.2147	-0.3971	-0.0175	-0.4643	0.3872	-0.5544	0.5431	-0.7117	0.7318	-0.8303	0.7953	-0.8381
13	0.669	0.268	0.3596	0.4943	0.4142	0.4327	0.5139	0.3123	0.6066	0.1539	0.7323	-0.3502	0.8570	-0.5989	0.9644	-0.7983	1.0085	-0.8230
14	0.728	0.281	0.4423	0.6466	0.5415	0.5643	0.6806	0.4001	0.7932	-0.0448	0.9172	-0.4495	1.0246	-0.7172	1.1121	-0.8403	1.1396	-0.8294
15	0.787	0.295	0.5484	0.8007	0.6598	0.6903	0.8442	0.4673	0.9716	-0.3830	1.0863	-0.6808	1.1726	-0.7767	1.2349	-0.8404	1.2542	-0.8267
16	0.500	0.000	-0.1388	0.0591	-0.0615	-0.0435	0.1121	-0.1942	0.3702	-0.3249	0.5133	-0.4717	0.6280	-0.5989	0.7245	-0.6812	0.7587	-0.6964
17	0.500	0.151	-0.2512	0.0001	-0.1844	-0.1710	0.1252	-0.3041	0.3823	-0.4205	0.5177	-0.5356	0.6324	-0.6345	0.7295	-0.7623	0.7638	-0.7611
18	0.500	0.251	-0.3518	-0.1625	-0.2476	-0.2273	-0.1394	-0.3858	0.4086	-0.4655	0.5169	-0.5634	0.6294	-0.7456	0.7274	-0.8393	0.7614	-0.7800
19	0.500	0.351	-0.3447	-0.2187	-0.3289	-0.3097	-0.1482	-0.3835	-0.0224	-0.4460	0.5319	-0.6486	0.6681	-0.7662	0.7293	-0.7756	0.7620	-0.7703
20	0.500	0.452	-0.3947	-0.3344	-0.3778	-0.3632	-0.3184	-0.4086	-0.0513	-0.4600	0.2238	-0.6649	0.4515	-0.7778	0.6298	-0.7418	0.6863	-0.7606
21	0.544	0.518	0.3394	0.4723	0.3942	0.4142	0.4961	0.2930	0.5818	-0.0373	0.6895	-0.3738	0.8040	-0.5898	0.9036	-0.8016	0.9361	-0.8037
22	0.603	0.531	0.4359	0.6274	0.5213	0.5448	0.6608	0.3809	0.7781	-0.1615	0.8794	-0.4530	0.9804	-0.7044	1.0621	-0.8332	1.0804	-0.8010
23	0.662	0.545	0.5213	0.7729	0.6367	0.6619	0.8232	0.4338	0.9457	-0.4001	1.0504	-0.6843	1.1329	-0.7836	1.1921	-0.8390	1.2099	-0.8055
24	0.375	0.000	-0.1335	0.0674	-0.0545	-0.0368	0.1229	-0.1918	0.3378	-0.3354	0.4437	-0.4753	0.5332	-0.5930	0.6112	-0.6039	0.6389	-0.6814
25	0.375	0.225	-0.2340	0.1071	-0.1980	-0.1772	0.1512	-0.2966	0.3371	-0.4238	0.4474	-0.5319	0.5387	-0.6356	0.6210	-0.6910	0.6475	-0.7046
26	0.375	0.374	-0.3399	-0.1520	-0.2508	-0.2296	-0.1212	-0.3791	0.3490	-0.4563	0.4414	-0.6245	0.5377	-0.7594	0.6251	-0.7363	0.6501	-0.7049
27	0.375	0.524	-0.3497	-0.2384	-0.3283	-0.3071	-0.1903	-0.3957	0.2191	-0.4664	0.4484	-0.6599	0.5409	-0.7506	0.6263	-0.7144	0.6538	-0.7054
28	0.375	0.674	-0.4867	-0.3305	-0.3817	-0.3642	-0.3137	-0.4124	-0.1094	-0.5180	0.0982	-0.6701	0.3336	-0.6751	0.5224	-0.7047	0.5863	-0.7211
29	0.419	0.768	0.2968	0.4226	0.3473	0.3672	0.4429	0.2537	0.5231	-0.1042	0.6844	-0.3940	0.6967	-0.5988	0.7808	-0.7727	0.8135	-0.8055
30	0.478	0.781	0.3987	0.5763	0.4726	0.5001	0.6066	0.3433	0.7077	-0.1696	0.7976	-0.4506	0.8859	-0.6702	0.9583	-0.8465	0.9852	-0.8114
31	0.537	0.795	0.4969	0.7411	0.5990	0.6335	0.7792	0.4350	0.8945	-0.3666	0.9840	-0.6527	1.0565	-0.7881	1.1126	-0.8325	1.1293	-0.7987
32	0.381	0.843	0.2156	0.3272	0.2606	0.2790	0.3468	0.1770	0.4194	-0.1109	0.4904	-0.3956	0.5674	-0.5902	0.6419	-0.7524	0.6706	-0.8005
33	0.440	0.856	0.3487	0.5103	0.4159	0.4409	0.5391	0.2978	0.6327	-0.1723	0.7158	-0.4447	0.7942	-0.6476	0.8619	-0.8323	0.8861	-0.8110
34	0.500	0.870	0.4450	0.6944	0.5641	0.5959	0.7320	0.4176	0.8404	-0.3348	0.9735	-0.6189	0.9910	-0.7905	1.0424	-0.8376	1.0607	-0.8057
35	0.375	0.958	-0.0841	-0.1253	-0.0983	-0.0973	-0.1180	-0.0203	-0.0025	-0.3856	0.1499	-0.6389	0.3223	-0.7487	0.4331	-0.8331	0.4613	-0.8270
36	0.250	0.000	-0.1448	0.0224	-0.0921	-0.0705	0.0715	-0.1975	0.2062	-0.3656	0.2579	-0.4968	0.3109	-0.6047	0.3538	-0.6568	0.3706	-0.6638
37	0.250	0.250	-0.1572	0.0662	-0.0459	-0.0094	0.0957	-0.2280	0.1963	-0.3937	0.2550	-0.5330	0.3074	-0.6338	0.3541	-0.6895	0.3703	-0.6801
38	0.250	0.417	-0.3414	-0.1602	-0.2728	-0.2488	-0.0226	-0.3761	0.1888	-0.4611	0.2458	-0.6040	0.2987	-0.6985	0.3473	-0.6921	0.3630	-0.6782
39	0.250	0.583	-0.3737	-0.2222	-0.3232	-0.3009	-0.1732	-0.4023	0.1898	-0.4751	0.2494	-0.6526	0.3074	-0.6666	0.3574	-0.6880	0.3723	-0.6818
40	0.250	0.750	-0.4277	-0.3187	-0.3897	-0.3715	-0.2867	-0.4437	-0.1287	-0.5308	0.1968	-0.6518	0.2661	-0.6612	0.3267	-0.6940	0.3431	-0.6993
41	0.250	0.833	-0.5485	-0.4853	-0.5071	-0.5057	-0.4658	-0.5517	-0.3583	-0.6185	0.0188	-0.4798	0.1543	-0.6947	0.2497	-0.7386	0.2771	-0.7352
42	0.250	0.875	-0.4748	-0.4168	-0.4757	-0.4571	-0.4115	-0.4577	-0.3574	-0.5186	-0.2089	-0.6482	0.1720	-0.7026	0.3321	-0.7643	0.3603	-0.7650
43	0.250	0.917	-0.1513	-0.1865	-0.0892	-0.0948	-0.1258	-0.1482	-0.0456	-0.3806	0.0827	-0.4948	0.2053	-0.6861	0.3219	-0.7586	0.3355	-0.7611
44	0.250	0.958	-0.0539	-0.0240	-0.0443	-0.0255	-0.0445	-0.0728	-0.0695	-0.3031	0.0704	-0.5093	0.2026	-0.6622	0.2485	-0.7815	0.2685	-0.7940
45	0.188	0.000	-0.5736	-0.4705	-0.5337	-0.5176	-0.4465	-0.6023	-0.4033	-0.6708	-0.3773	-0.6914	-0.3457	-0.6110	-0.3156	-0.6352	-0.2977	-0.6661
46	0.188	0.250	-0.5798	-0.4766	-0.5325	-0.5184	-0.4563	-0.6182	-0.4036	-0.6906	-0.3712	-0.6906	-0.3391	-0.6561	-0.3105	-0.6794	-0.2933	-0.6734
47	0.188	0.417	-0.4328	-0.4967	-0.5023	-0.4982	-0.4339	-0.6098	-0.4062	-0.6748	-0.3733	-0.6743	-0.3384	-0.6427	-0.3078	-0.6833	-0.2849	-0.6748
48	0.188	0.583	-0.5089	-0.4962	-0.5050	-0.4889	-0.5033	-0.6422	-0.4097	-0.6528	-0.3935	-0.6283	-0.3542	-0.6427	-0.3188	-0.6828	-0.2968	-0.6788
49	0.188	0.750	-0.5183	-0.5196	-0.5013	-0.5115	-0.5675	-0.5391	-0.4237	-0.5722	-0.4283	-0.6308	-0.3727	-0.6635	-0.3294	-0.7021	-0.3063	-0.7089
50	0.125	0.000	-0.5781	-0.4796	-0.5397	-0.5237	-0.4604	-0.6085	-0.4184	-0.6778	-0.3468	-0.6836	-0.3171	-0.6174	-0.2626	-0.6418	-0.2306	-0.6592
51	0.125	0.250	-0.5816	-0.4845	-0.5384	-0.5238	-0.4614	-0.6144	-0.3964	-0.6438	-0.3442	-0.6121	-0.3149	-0.6165	-0.2682	-0.6795	-0.2322	-0.6748
52	0.125	0.417	-0.5831	-0.4848	-0.4959	-0.4871	-0.4417	-0.6250	-0.4083	-0.5752	-0.3657	-0.6152	-0.3137	-0.6188	-0.2554	-0.6887	-0.2244	-0.6592
53	0.125	0.583	-0.5812	-0.4838	-0.5097	-0.4987	-0.5212	-0.6087	-0.4228	-0.5884	-0.3824	-0.6021	-0.3256	-0.6378	-0.2637	-0.6777	-0.2261	-0.6723
54	0.125	0.750	-0.5505	-0.5658	-0.5268	-0.5306	-0.5716	-0.5748	-0.4695	-0.5898	-0.4586	-0.6421	-0.3684	-0.6721	-0.2816	-0.7187	-0.2304	-0.7050
55	0.125	0.958	-0.1886	-0.1495	-0.1743	-0.1597	-0.1564	-0.1993	-0.1511	-0.3473	-0.0477	-0.5711	-0.0362	-0.7272	-0.0807	-0.8235	0.0210	-0.8835
56	0.063	0.000	-0.5835	-0.4856	-0.5451	-0.5322	-0.4641	-0.6099	-0.4029	-0.6462	-0.3548	-0.6012	-0.2939	-0.6236	-0.2226	-0.6518	-0.1883	-0.6519
57	0.063	0.250	-0.5728	-0.4853	-0.5206	-0.5176	-0.4854	-0.5666	-0.4001	-0.5135	-0.3552	-0.5726	-0.2918	-0.6077	-0.2168	-0.6660	-0.1819	-0.6672
58	0.063	0.417	-0.4097	-0.4274	-0.4992	-0.4898	-0.4512	-0.5019	-0.4040	-0.5158	-0.3577	-0.5848	-0.2916	-0.6161	-0.2126	-0.6625	-0.1743	-0.6526
59	0.063	0.583	-0.5246	-0.4864	-0.5090	-0.4911	-0.4887	-0.5281	-0.4305	-0.5519	-0.3886	-0.5962	-0.3072	-0.6334	-0.2210	-0.6732	-0.1758	-0.6648
60	0.063	0.750	-0.5513	-0.5010	-0.5389	-0.5468	-0.5956	-0.5517	-0.4829	-0.5815	-0.4308	-0.6474	-0.3129	-0.6759	-0.2056	-0.7081	-0.1607	-0.7028
61	0.063	0.875	-0.5150	-0.4770	-0.5039	-0.4913	-0.4782	-0.5152	-0.3366	-0.5563	-0.2825	-0.6812	-0.2125	-0.6931	-0.1145	-0.7315	-0.0867	-0.7288
62	0.375	-0.674	-0.4038	-0.3362	-0.3808	-0.3709	-0.3143	-0.4175	-0.1215	-0.5213	0.0787	-0.6766	0.3291	-0.6512	0.5277	-0.7128	0.5989	-0.7041
63	0.250	-0.833	-0.5499	-0.4930	-0.5009	-0.5036	-0.4767	-0.5659	-0.3656	-0.6119	0.0614	-0.6771	0.1468	-0.6867	0.2599	-0.7188	0.2843	-0.7189

Table A-10.- (Concluded).
M = 1.2

			ALPHA =															
			27.8	27.5	29.7	29.8	34.7	34.7	39.6	39.7	44.6	44.7	49.6	49.6	54.5	54.6	56.5	56.3
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.934	0.000	1.3489		1.3614	-0.6019	1.3903	-0.5874	1.3946	-0.4987	1.3926	-0.4063	1.3661	-0.3711	1.3379	-0.3978		-0.4089
2	0.868	0.000	1.2990		1.2717	-0.6452	1.3289	-0.6386	1.3641	-0.5425	1.3919	-0.4458	1.4018	-0.4073	1.3991	-0.4348		-0.4468
3	0.802	0.000	1.1187		1.1632	-0.5890	1.2415	-0.6371	1.2993	-0.5405	1.3510	-0.4452	1.3901	-0.4068	1.4067	-0.4344		-0.4459
4	0.688	0.000	0.8938		0.9521	-0.7021	1.0534	-0.6455	1.1426	-0.5495	1.2269	-0.4481	1.3094	-0.4138	1.3559	-0.4367		-0.4542
5	0.688	0.066	0.8392		0.9199	-0.8164	1.0385	-0.6034	1.1358	-0.5171	1.2237	-0.4250	1.3091	-0.3930	1.3565	-0.4126		-0.4311
6	0.732	0.143	1.0419		1.0922	-0.6490	1.1775	-0.6372	1.2469	-0.5426	1.3077	-0.4426	1.3616	-0.4103	1.3869	-0.4318		-0.4513
7	0.798	0.156	1.1802		1.2184	-0.6695	1.2793	-0.6594	1.3228	-0.5560	1.3602	-0.4512	1.3828	-0.4209	1.3889	-0.4384		-0.4589
8	0.850	0.170	1.2990		1.3116	-0.6640	1.3449	-0.6562	1.3568	-0.5527	1.3440	-0.4481	1.3550	-0.4197	1.3353	-0.4351		-0.4560
9	0.625	0.000	0.8630		0.9151	-0.6605	1.0087	-0.6575	1.0949	-0.5602	1.1825	-0.4566	1.2706	-0.4271	1.3211	-0.4402		-0.4612
10	0.625	0.077	0.8805		0.9112	-0.6663	1.0069	-0.6572	1.0950	-0.5601	1.1835	-0.4566	1.2700	-0.4339	1.3220	-0.4349		-0.4608
11	0.625	0.128	0.8530		0.9072	-0.6713	1.0060	-0.6620	1.0957	-0.5639	1.1852	-0.4611	1.2730	-0.4381	1.3255	-0.4396		-0.4671
12	0.625	0.179	0.8147		0.8873	-0.6751	0.9982	-0.6673	1.0936	-0.5670	1.1872	-0.4629	1.2759	-0.4425	1.3287	-0.4400		-0.4694
13	0.669	0.268	1.0156		1.0643	-0.6706	1.1477	-0.6623	1.2170	-0.5598	1.2816	-0.4590	1.3380	-0.4345	1.3689	-0.4369		-0.4626
14	0.728	0.281	1.1560		1.1920	-0.6600	1.2526	-0.6543	1.2965	-0.5524	1.3350	-0.4554	1.3630	-0.4307	1.3723	-0.4330		-0.4589
15	0.787	0.295	1.2690		1.2899	-0.6552	1.3221	-0.6502	1.3354	-0.5475	1.3434	-0.4492	1.3372	-0.4253	1.3218	-0.4283		-0.4532
16	0.500	0.000	0.7681		0.8153	-0.6608	0.9084	-0.6620	0.9826	-0.5704	1.0748	-0.4646	1.1753	-0.4393	1.2389	-0.4374		-0.4633
17	0.500	0.151	0.7749		0.8214	-0.6724	0.9083	-0.6688	0.9906	-0.5747	1.0818	-0.4715	1.1826	-0.4455	1.2447	-0.4425		-0.4716
18	0.500	0.251	0.7727		0.8221	-0.6732	0.9118	-0.6699	0.9956	-0.5746	1.0890	-0.4697	1.1895	-0.4463	1.2497	-0.4438		-0.4732
19	0.500	0.351	0.7772		0.8269	-0.6694	0.9191	-0.6631	1.0073	-0.5665	1.0989	-0.4624	1.1993	-0.4412	1.2597	-0.4409		-0.4675
20	0.500	0.452	0.7866		0.7811	-0.6633	0.8974	-0.6569	0.9997	-0.5612	1.0989	-0.4558	1.2040	-0.4354	1.2661	-0.4355		-0.4611
21	0.544	0.518	0.9554		1.0010	-0.6640	1.0794	-0.6542	1.1492	-0.5555	1.2174	-0.4467	1.2873	-0.4271	1.3207	-0.4290		-0.4532
22	0.603	0.531	1.1850		1.1414	-0.6545	1.2002	-0.6470	1.2442	-0.5495	1.2870	-0.4397	1.3242	-0.4182	1.3375	-0.4276		-0.4487
23	0.662	0.545	1.2250		1.2479	-0.6571	1.2785	-0.6506	1.2931	-0.5513	1.3069	-0.4425	1.3083	-0.4215	1.2968	-0.4292		-0.4541
24	0.375	0.000	0.6479		0.6879	-0.6622	0.7598	-0.6748	0.8368	-0.5870	0.9294	-0.4772	1.0457	-0.4470	1.1201	-0.4516		-0.4743
25	0.375	0.225	0.6597		0.6981	-0.6703	0.7711	-0.6712	0.8503	-0.5787	0.9444	-0.4746	1.0588	-0.4441	1.1312	-0.4505		-0.4686
26	0.375	0.376	0.6627		0.7033	-0.6687	0.7791	-0.6598	0.8599	-0.5656	0.9567	-0.4642	1.0710	-0.4373	1.1414	-0.4457		-0.4637
27	0.375	0.524	0.6681		0.7106	-0.6640	0.7984	-0.6619	0.8756	-0.5686	0.9730	-0.4551	1.0872	-0.4271	1.1543	-0.4355		-0.4528
28	0.375	0.674	0.6043		0.6754	-0.6781	0.7730	-0.6759	0.8695	-0.5792	0.9767	-0.4588	1.0924	-0.4284	1.1592	-0.4349		-0.4474
29	0.419	0.768	0.8704		0.8746	-0.6949	0.9503	-0.6862	1.0243	-0.5836	1.1024	-0.4622	1.1868	-0.4326	1.2274	-0.4385		-0.4545
30	0.478	0.781	1.0815		1.0374	-0.6933	1.0950	-0.6861	1.1435	-0.5825	1.1953	-0.4576	1.2461	-0.4294	1.2645	-0.4363		-0.4528
31	0.537	0.795	1.1465		1.1085	-0.6871	1.2003	-0.6812	1.2189	-0.5765	1.2397	-0.4553	1.2548	-0.4264	1.2476	-0.4347		-0.4441
32	0.381	0.843	0.6880		0.7304	-0.6965	0.8073	-0.6844	0.8885	-0.5821	0.9788	-0.4639	1.0786	-0.4318	1.1267	-0.4399		-0.4490
33	0.440	0.856	0.9066		0.9386	-0.6924	0.9977	-0.6801	1.0508	-0.5748	1.1096	-0.4569	1.1727	-0.4253	1.1960	-0.4344		-0.4422
34	0.500	0.870	1.0763		1.0497	-0.6911	1.1325	-0.6785	1.1559	-0.5715	1.1417	-0.4518	1.2068	-0.4193	1.2017	-0.4312		-0.4399
35	0.375	0.958	0.4753		0.5078	-0.6986	0.5690	-0.6840	0.6494	-0.5728	0.7341	-0.4574	0.8339	-0.4259	0.8755	-0.4370		-0.4496
36	0.250	0.000	0.3725		0.3954	-0.6687	0.4385	-0.6834	0.4678	-0.6028	0.5775	-0.4983	0.7242	-0.4526	0.8272	-0.4624		-0.4754
37	0.250	0.250	0.3785		0.3999	-0.6766	0.4422	-0.6764	0.4921	-0.5821	0.5821	-0.4850	0.7359	-0.4685	0.8373	-0.4642		-0.4764
38	0.250	0.417	0.3695		0.3921	-0.6707	0.4361	-0.6690	0.4694	-0.5700	0.5890	-0.4727	0.7475	-0.4376	0.8479	-0.4534		-0.4659
39	0.250	0.583	0.3808		0.4056	-0.6776	0.4516	-0.6783	0.5108	-0.5843	0.6163	-0.4686	0.7749	-0.4282	0.8715	-0.4439		-0.4525
40	0.250	0.750	0.3522		0.3807	-0.6911	0.4318	-0.6880	0.5051	-0.5930	0.6233	-0.4734	0.7826	-0.4269	0.8766	-0.4462		-0.4542
41	0.250	0.833	0.2989		0.3258	-0.7095	0.3763	-0.6977	0.4693	-0.5977	0.6010	-0.4808	0.7655	-0.4348	0.8555	-0.4529		-0.4634
42	0.250	0.875	0.3698		0.3927	-0.7130	0.4339	-0.6985	0.5578	-0.5971	0.6794	-0.4787	0.8186	-0.4328	0.8918	-0.4520		-0.4634
43	0.250	0.917	0.3448		0.3711	-0.7091	0.4315	-0.6935	0.5696	-0.5895	0.6832	-0.4702	0.8061	-0.4231	0.8694	-0.4483		-0.4563
44	0.250	0.958	0.2825		0.3150	-0.7061	0.3431	-0.6848	0.5066	-0.5802	0.6080	-0.4628	0.7186	-0.4168	0.7738	-0.4428		-0.4497
45	0.188	0.000	-0.2931		-0.2682	-0.7192	-0.1990	-0.6732	0.0472	-0.5905	0.2619	-0.4886	0.5253	-0.4387	0.6728	-0.4606		-0.4678
46	0.188	0.250	-0.2895		-0.2632	-0.6630	-0.1526	-0.6660	0.0698	-0.5718	0.2815	-0.4767	0.5402	-0.4346	0.6882	-0.4618		-0.4662
47	0.188	0.417	-0.2784		-0.2515	-0.6649	-0.1381	-0.6624	0.0959	-0.5654	0.3226	-0.4667	0.5706	-0.4267	0.7204	-0.4547		-0.4619
48	0.188	0.583	-0.2914		-0.2614	-0.6834	-0.1233	-0.6853	0.1162	-0.5892	0.3400	-0.4697	0.5946	-0.4231	0.7512	-0.4520		-0.4570
49	0.188	0.750	-0.2933		-0.2208	-0.6994	-0.0464	-0.6479	0.1639	-0.6032	0.3738	-0.4787	0.6215	-0.4330	0.7776	-0.4568		-0.4589
50	0.125	0.000	-0.2292		-0.1824	-0.6770	-0.0784	-0.6745	0.4512	-0.5949	0.5457	-0.4933	0.6714	-0.4471	0.7474	-0.4659		-0.4699
51	0.125	0.250	-0.2224		-0.1737	-0.6581	-0.0734	-0.6644	0.4751	-0.5727	0.5681	-0.4756	0.6792	-0.4369	0.7536	-0.4602		-0.4627
52	0.125	0.417	-0.2151		-0.1637	-0.6646	-0.0564	-0.6444	0.5096	-0.5583	0.5705	-0.4500	0.6856	-0.4164	0.7578	-0.4440		-0.4487
53	0.125	0.583	-0.2157		-0.1602	-0.6743	-0.0483	-0.6803	0.5239	-0.5851	0.5758	-0.4593	0.6929	-0.4215	0.7634	-0.4484		-0.4541
54	0.125	0.750	-0.2083		-0.1430	-0.7001	-0.0435	-0.7019	0.5232	-0.6088	0.5740	-0.4768	0.6898	-0.4350	0.7554	-0.4587		-0.4630
55	0.125	0.958	0.0394		0.0836	-0.7207	0.2476	-0.7013	0.3817	-0.5969	0.4467	-0.4642	0.6037	-0.4235	0.6609	-0.4531		-0.4534
56	0.063	0.000	-0.1778		-0.1215	-0.6666	-0.0250	-0.6730	0.4180	-0.5975	0.4783	-0.4885	0.5722	-0.4446	0.6344	-0.4680		-0.4681
57	0.063	0.250	-0.1679		-0.1094	-0.6552	0.0084	-0.6644	0.4287	-0.5759	0.4869	-0.4690	0.5820	-0.4282	0.6428	-0.4548		-0.4546
58	0.063	0.417	-0.1620		-0.0986	-0.6368	0.0396	-0.6367	0.4247	-0.5605	0.4864	-0.4463	0.5837	-0.4036	0.6434	-0.4392		-0.4395
59	0.063	0.583	-0.1627		-0.0936	-0.6687	0.0741	-0.6780	0.4246	-0.5828	0.4904	-0.4548	0.5896	-0.4106	0.6483	-0.4466		-0.4474
60	0.063	0.750	-0.1428		-0.1027	-0.6959	0.3386	-0.6992	0.4156	-0.6092	0.4854	-0.4742	0.5866	-0.4257	0.6418	-0.4606		-0.4600
61	0.063	0.875	-0.0630		0.0291	-0.7168	0.2873	-0.7057	0.3717	-0.6062	0.4570	-0.4761	0.5634	-0.4253	0.6186	-0.4623		-0.4571
62	0.375	-0.674	0.6121		0.6738	-0.6967	0.7665	-0.6734	0.8656	-0.5722	0.9692	-0.4514	1.0431	-0.4069	1.1566	-0.4461		-0.4417
63	0.250	-0.833	0.2808		0.3148	-0.7141	0.3665	-0.6867	0.4622	-0.5969	0.5936	-0.4626	0.7616	-0.4133	0.8501	-0.4511		-0.4468

Table A-11.- Pressure coefficients for configuration 11.
M = 0.6

			ALPHA =															
			-2.4	-2.5	0.3	0.4	5.3	5.4	10.3	10.4	15.3	15.3	20.3	20.3	25.4	25.3	26.9	26.7
TUBE	X/L	Y/R/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.947	0.000	0.1281	0.4135	0.2848	0.2793	0.5008	0.0077	0.6977	-0.3739	0.8590	-0.7139	0.9235	-0.5849	0.9917	-0.5018	1.0124	-0.5254
2	0.894	0.000	0.0301	0.2875	0.1678	0.1670	0.3619	-0.0562	0.5515	-0.3377	0.7132	-0.5615	0.7940	-0.5473	0.8825	-0.5081	0.9072	-0.5347
3	0.841	0.000	-0.0947	0.1555	0.0307	0.0393	0.2184	-0.1659	0.4058	-0.4047	0.5739	-0.5556	0.6677	-0.5641	0.7681	-0.4983	0.7984	-0.5302
4	0.751	0.000	-0.3670	-0.1103	-0.2547	-0.2344	-0.0673	-0.4164	0.1319	-0.6713	0.3102	-0.7725	0.4283	-0.6181	0.5494	-0.5040	0.5852	-0.5275
5	0.813	0.055	-0.1885	0.0779	-0.0481	-0.0418	0.1341	-0.2555	0.3312	-0.4729	0.5012	-0.5744	0.6030	-0.6464	0.7140	-0.5169	0.7431	-0.5349
6	0.858	0.088	-0.0442	0.2197	0.0968	0.0950	0.2851	-0.1160	0.4771	-0.2931	0.6368	-1.0598	0.7186	-0.6692	0.8116	-0.5179	0.8380	-0.5411
7	0.887	0.120	0.0556	0.3491	0.2070	0.2078	0.4248	-0.0176	0.6258	-1.5066	0.7701	-1.1519	0.8298	-0.6393	0.9016	-0.5049	0.9175	-0.5285
8	0.663	0.000	-0.2764	-0.0149	-0.1406	-0.1037	-0.0038	-0.2365	0.1502	-0.3681	0.2893	-0.6117	0.3816	-0.6484	0.4870	-0.5294	0.5169	-0.5526
9	0.663	0.126	-0.2766	0.0138	-0.0457	-0.0599	0.0286	-0.2948	0.1716	-0.3865	0.2780	-0.7346	0.3742	-0.6929	0.4821	-0.5401	0.5136	-0.5530
10	0.663	0.210	-0.3968	-0.2885	-0.4319	-0.4203	-0.2089	-0.4896	0.0138	-0.5818	0.2170	-0.8938	0.3448	-0.7125	0.4687	-0.5382	0.5051	-0.5527
11	0.698	0.302	-0.2968	0.0054	-0.1479	-0.1186	0.0566	-0.3227	0.2497	-0.5740	0.4121	-0.8889	0.5058	-0.7148	0.6107	-0.5479	0.6428	-0.5590
12	0.727	0.334	-0.1612	0.1576	0.0107	0.0211	0.2251	-0.1716	0.4116	-1.2682	0.5597	-0.9002	0.6364	-0.7045	0.7199	-0.5383	0.7430	-0.5608
13	0.763	0.347	-0.0763	0.3031	0.1308	0.1432	0.3828	-0.4879	0.5724	-1.1963	0.7060	-0.8853	0.7552	-0.6934	0.8115	-0.5241	0.8312	-0.5386
14	0.538	0.000	-0.1545	0.0162	-0.0985	-0.0312	-0.0038	-0.1209	0.1092	-0.2121	0.2227	-0.5157	0.2939	-0.6583	0.3801	-0.5622	0.4142	-0.5784
15	0.538	0.246	-0.1963	0.0001	-0.1178	-0.0576	-0.0152	-0.1735	0.1058	-0.2652	0.2217	-0.7520	0.2935	-0.6883	0.3821	-0.5704	0.4189	-0.5836
16	0.538	0.410	-0.2859	-0.0068	-0.1908	-0.1384	-0.0137	-0.2082	0.0817	-0.5302	0.1993	-0.7922	0.2050	-0.6645	0.3072	-0.5648	0.4150	-0.5626
17	0.538	0.492	-0.5759	-0.3231	-0.5017	-0.4599	-0.2913	-0.4787	-0.0641	-0.7916	0.1184	-0.7795	0.2306	-0.6581	0.3524	-0.5618	0.3889	-0.5590
18	0.557	0.567	-0.3178	-0.0371	-0.1833	-0.1608	0.0109	-0.3345	0.1878	-0.7998	0.3316	-0.7609	0.4144	-0.6338	0.5118	-0.5414	0.5382	-0.5474
19	0.594	0.600	-0.1633	0.1228	-0.0186	-0.0038	0.1845	-0.2305	0.3589	-0.8132	0.4912	-0.7362	0.5586	-0.6154	0.6391	-0.5195	0.6593	-0.5254
20	0.631	0.632	-0.0718	0.2637	0.0870	0.1089	0.3457	-0.5066	0.5221	-0.8238	0.6758	-0.7253	0.6817	-0.6109	0.7325	-0.5111	0.7426	-0.5201
21	0.464	0.753	-0.3492	-0.1205	-0.2303	-0.2120	-0.0817	-0.3585	0.0618	-0.6898	0.1853	-0.6345	0.2574	-0.5397	0.3499	-0.4998	0.3742	-0.5187
22	0.501	0.786	-0.2141	0.0345	-0.0843	-0.0714	0.0833	-0.2601	0.2360	-0.7259	0.3517	-0.6057	0.4153	-0.5092	0.4902	-0.4964	0.5074	-0.5084
23	0.537	0.819	-0.1231	0.1889	0.0300	0.0395	0.2589	-0.3691	0.4189	-0.7368	0.5221	-0.5944	0.5629	-0.5105	0.6138	-0.5014	0.6235	-0.5108
24	0.412	0.000	-0.1294	0.0815	-0.0796	0.0485	-0.0151	-0.0134	0.0755	-0.0816	0.1626	-0.3578	0.2126	-0.6417	0.2866	-0.6120	0.3115	-0.6003
25	0.412	0.354	-0.1582	0.0131	-0.1043	-0.0300	-0.0333	-0.1037	0.0626	-0.1689	0.1544	-0.6639	0.2036	-0.6586	0.2810	-0.5940	0.3084	-0.5865
26	0.412	0.589	-0.2349	-0.0601	-0.1406	-0.1113	-0.0675	-0.2327	0.0348	-0.5941	0.1090	-0.6750	0.1678	-0.6025	0.2532	-0.5409	0.2743	-0.5547
27	0.412	0.707	-0.3469	-0.3815	-0.4852	-0.4585	-0.3609	-0.3517	-0.1716	-0.5707	0.0869	-0.6322	0.0915	-0.5519	0.1899	-0.5165	0.2187	-0.5363
28	0.412	0.823	-0.6003	-0.4050	-0.4799	-0.4637	-0.3864	-0.4946	-0.3019	-0.6205	-0.2849	-0.5875	-0.1391	-0.5069	-0.0541	-0.4979	-0.0267	-0.5175
29	0.412	0.882	-0.2968	-0.4215	-0.4886	-0.4878	-0.4011	-0.3188	-0.2402	-0.6481	-0.1597	-0.5728	-0.0550	-0.4887	0.0424	-0.5014	0.0695	-0.5193
30	0.412	0.942	-0.2272	-0.1165	-0.1291	-0.1332	-0.0987	-0.2718	-0.0808	-0.6400	-0.0192	-0.5589	0.0116	-0.4666	0.0466	-0.4967	0.0615	-0.5213
31	0.309	0.000	-0.0991	0.2271	-0.0603	0.2031	-0.0224	0.1617	0.0487	0.1180	0.1212	-0.0845	0.1537	-0.5645	0.2095	-0.6017	0.2336	-0.5942
32	0.309	0.354	-0.1439	0.0062	-0.1138	-0.0199	-0.0760	-0.0547	0.0023	-0.0912	0.0672	-0.5119	0.0939	-0.6354	0.1516	-0.5957	0.1716	-0.5861
33	0.309	0.589	-0.1496	-0.0704	-0.1360	-0.0964	-0.0993	-0.1363	-0.0238	-0.4032	0.0316	-0.6019	0.0569	-0.5976	0.1177	-0.5514	0.1379	-0.5538
34	0.309	0.707	-0.1628	-0.0852	-0.1200	-0.0927	-0.0902	-0.1531	-0.0291	-0.4224	0.0700	-0.5799	0.0391	-0.5397	0.1061	-0.5382	0.1248	-0.5344
35	0.309	0.823	-0.1535	-0.0775	-0.0961	-0.0860	-0.0740	-0.1606	-0.0336	-0.4398	0.0045	-0.5736	0.0062	-0.5066	0.0579	-0.5308	0.0741	-0.5326
36	0.309	0.882	-0.1412	-0.0740	-0.0867	-0.0836	-0.0664	-0.1567	-0.0365	-0.4865	-0.0026	-0.5620	-0.0040	-0.4854	0.0357	-0.5249	0.0475	-0.5332
37	0.309	0.942	-0.1300	-0.0615	-0.0734	-0.0693	-0.0565	-0.1729	-0.0583	-0.5352	-0.0357	-0.5394	-0.0400	-0.4679	-0.0201	-0.4941	-0.0131	-0.5231
38	0.221	0.000	-0.0450	0.3925	-0.0488	0.3731	-0.0191	0.3294	0.0371	0.2973	0.0920	0.1042	0.1031	-0.4823	0.1362	-0.5828	0.1522	-0.5876
39	0.221	0.354	-0.1963	-0.0704	-0.2030	-0.0812	-0.1827	-0.0886	-0.1234	-0.1082	-0.0827	-0.3759	-0.0814	-0.5999	-0.0433	-0.5879	-0.0251	-0.5890
40	0.221	0.589	-0.1903	-0.1720	-0.2227	-0.1712	-0.2127	-0.1668	-0.1571	-0.2426	-0.1284	-0.5071	-0.1308	-0.5739	-0.0869	-0.5610	-0.0657	-0.5733
41	0.221	0.707	-0.1815	-0.1743	-0.2052	-0.1713	-0.1947	-0.1729	-0.1451	-0.3024	-0.1263	-0.5273	-0.1333	-0.5579	-0.0891	-0.5572	-0.0659	-0.5737
42	0.221	0.823	-0.1396	-0.1252	-0.1354	-0.1222	-0.1295	-0.1465	-0.0887	-0.3009	-0.0862	-0.5245	-0.1102	-0.5168	-0.0803	-0.5414	-0.0632	-0.5664
43	0.221	0.882	-0.1161	-0.0869	-0.0935	-0.0925	-0.0890	-0.1291	-0.0661	-0.3102	-0.0644	-0.5049	-0.0824	-0.4896	-0.0556	-0.5248	-0.0487	-0.5486
44	0.221	0.942	-0.1109	-0.0661	-0.0718	-0.0709	-0.0668	-0.1521	-0.0631	-0.4389	-0.0738	-0.4982	-0.1054	-0.4731	-0.0947	-0.5172	-0.0936	-0.5416
45	0.133	0.000																
46	0.133	0.354	-0.1292	-0.0905	-0.1702	-0.0745	-0.1897	-0.0537	-0.1632	-0.0567	-0.1590	-0.2713	-0.5987	-0.5359	-0.5829	-0.5534	-0.5506	-0.5573
47	0.133	0.589	-0.0943	-0.2077	-0.1975	-0.1651	-0.2625	-0.0841	-0.2278	-0.1489	-0.4190	-0.4094	-0.7393	-0.5493	-0.7362	-0.5463	-0.7057	-0.5683
48	0.133	0.707	-0.0976	-0.2180	-0.1888	-0.1742	-0.2589	-0.0737	-0.2277	-0.1811	-0.4538	-0.4384	-0.7768	-0.5388	-0.7569	-0.5492	-0.7204	-0.5814
49	0.133	0.942																
50	0.088	0.000																
51	0.088	0.354	0.0147	0.0394	0.0215	0.0585	-0.0053	0.0536	0.0061	0.0043	0.0023	-0.2031	-0.0981	-0.5023	-0.1386	-0.5264	-0.1483	-0.5233
52	0.088	0.589	0.0478	-0.0060	0.0269	0.0362	-0.0458	0.0604	-0.0192	-0.0416	-0.1123	-0.3517	-0.2152	-0.5006	-0.2327	-0.5055	-0.2255	-0.5336
53	0.088	0.707	0.0481	-0.0217	0.0185	0.0202	-0.0023	0.0561	-0.0414	-0.1180	-0.1574	-0.3893	-0.2379	-0.5081	-0.2503	-0.5355	-0.2420	-0.5582
54	0.044	0.000																
55	0.044	0.354	0.0780	0.0921	0.0978	0.1139	0.0834	0.1081	0.0027	0.1233	0.0919	-0.1183	-0.1264	-0.4463	-0.2132	-0.5018	-0.2112	-0.5122
56	0.044	0.589	0.0896	0.1035	0.1524	0.1470	0.0712	0.1234	0.1068	0.0560	-0.0538	-0.3001	-0.2605	-0.4647	-0.3010	-0.4845	-0.3608	-0.5102
57	0.044	0.707	0.0933	0.1011	0.1558	0.1459	0.0618	0.1095	0.0796	-0.0514	-0.1755	-0.3388	-0.2794	-0.4650	-0.3074	-0.5044	-0.3067	-0.5256
58	0.044	0.823	0.0501	0.0537	0.0935	0.0945	0.0232	0.0841	0.0031	-0.0886	-0.1980	-0.3721	-0.3012	-0.4674	-0.3059	-0.5268	-0.3135	-0.5489
59	0.412	0.059	-0.1285	0.0787	-0.0736	0.0449	-0.0156	-0.0162	0.0752	-0.0882	0.1642	-0.3554	0.2113	-0.6304	0.2922	-0.6037	0.3148	-0.5978
60	0.221	0.118	-0.1373	0.0706	-0.0843	0.0413	-0.0246	-0.0181	0.0654	-0.0840	0.1556	-0.3632	0.1979	-0.6487	0.2726	-0.6073	0.2952	-0.6050
61	0.309	0.059	-0.0967	0.1961	-0.0618	0.1701	-0.0248	0.1295	0.0487	0.0858	0.1189	-0.1160	0.1483	-0.5868	0.1987	-0.6017	0.2283	-0.6051
62	0.309	0.118	-0.1101	0.1442	-0.0756	0.1209	-0.0399	0.0797	0.0348	0.0345	0.1044	-0.1828	0.1378	-0.6139	0.1855	-0.6041	0.2125	-0.6068
63	0.309	0.236	-0.1314	0.0628	-0.0965	0.0385	-0.0580	0.0001	0.0134	-0.0438	0.0841	-0.3479	0.1168	-0.6457	0.1646	-0.6046	0.1941	-0.5949
64	0.221	0.059	-0.0787	0.3281	-0.0660	0.3038	-0.0244	0.2636	0.0262	0.2331	0.0823	0.0802	0.0943	-0.4948	0.1345	-0.5846	0.1517	-0.5833
65	0.221	0.118	-0.1168	0.2097	-0.1038	0.1869	-0.0623	0.1583	-0.0079	0.1298	0.0441	-0.0308	0.0540	-0.5540	0.0933	-0.6037	0.1142	-0.5911
66	0.221	0.236	-0.1885	0.0295	-0.1889	0.0086	-0.1374	-0.0056	-0.0839	-0.0315	-0.0794	-0.2278	-0.0197	-0.6103	0.0132	-0.6089	0.0342	-0.6050
67	0.133	0.118	-0.0774	0.0998	-0.0588	0.0932	-0.0472	0.0774	-0.0164	0.0705	0.0223	-0.0514	0.0080	-0.4602	-0.0208	-0.5848	-0.0209	-0.5811
68	0.133	0.236	-0.1460	-0.0128	-0.1543	-0.0082	-0.1474	-0.0212	-0.1101	-0.0234	-0.0884	-0.1576	-0.3186	-0.5221	-0.3041	-0.5957	-0.2893	-0.5846
69	0.044	0.236	-0.0075	0.0100	0.0231	0.0124	0.0363	-0.0181	0.0602	-0.0226	0.0525	-0.1568	0.0669	-0.3979	-0.0205	-0.5681	-0.0205	-0.5737
70	0.098	0.000																

Table A-11.- (Continued).
M = 0.8

			ALPHA =															
TUBE	X/L	Y/D/2	-2.8 WINDWARD	-2.7 LEEWARD	0.1 WINDWARD	0.3 LEEWARD	5.1 WINDWARD	5.3 LEEWARD	10.1 WINDWARD	10.2 LEEWARD	15.1 WINDWARD	15.1 LEEWARD	20.2 WINDWARD	20.1 LEEWARD	25.3 WINDWARD	25.1 LEEWARD	26.4 WINDWARD	26.5 LEEWARD
1	0.947	0.000	0.2117	0.4836	0.3511	0.3586	0.5631	0.1077	0.7502	-0.2255	0.9809	-0.5179	0.9823	-0.5250	1.0624	-0.5662	1.0652	-0.5776
2	0.896	0.000	0.1114	0.3572	0.2325	0.2419	0.4266	0.0287	0.6043	-0.2225	0.7558	-0.2918	0.8533	-0.4926	0.9516	-0.5535	0.9797	-0.5806
3	0.841	0.000	-0.0844	0.2224	0.1020	0.1158	0.2876	-0.0673	0.4629	-0.2617	0.6189	-0.3153	0.7257	-0.4732	0.8367	-0.5261	0.8711	-0.5596
4	0.751	0.000	-0.5433	-0.1345	-0.3272	-0.2940	-0.0620	-0.6871	0.1510	-0.8935	0.3342	-0.8244	0.4711	-0.4617	0.6073	-0.5174	0.6506	-0.5459
5	0.813	0.055	-0.0935	0.1376	0.0177	0.0305	0.2031	-0.1441	0.3050	-0.3025	0.5454	-0.3110	0.6594	-0.4150	0.7746	-0.5290	0.8149	-0.5592
6	0.858	0.088	0.0736	0.2844	0.1565	0.1704	0.3521	-0.0311	0.5299	-0.1801	0.6810	-0.5576	0.7786	-0.3803	0.8753	-0.5579	0.9115	-0.5780
7	0.807	0.120	0.1313	0.4141	0.2892	0.2786	0.4944	0.0673	0.6739	-0.9034	0.8169	-0.9809	0.8920	-1.2542	0.9672	-0.5575	0.9894	-0.5758
8	0.663	0.000	-0.3009	-0.0263	-0.1803	-0.1414	0.0146	-0.3212	0.1746	-0.8267	0.3192	-0.3556	0.4266	-0.4759	0.5474	-0.5339	0.5897	-0.5611
9	0.663	0.176	-0.3475	0.0000	-0.2073	-0.1697	0.0412	-0.4221	0.2052	-1.0253	0.3130	-0.5317	0.4179	-0.5367	0.5429	-0.5523	0.5866	-0.5736
10	0.663	0.210	-0.8864	-0.3092	-0.5024	-0.4785	-0.2097	-0.9200	0.0127	-1.2836	0.2180	-0.6133	0.3757	-0.7555	0.5292	-0.5535	0.5731	-0.5709
11	0.690	0.302	-0.2446	0.0375	-0.1217	-0.0913	0.0958	-0.3220	0.2808	-0.6565	0.4465	-0.5866	0.5524	-0.8421	0.6760	-0.5620	0.7145	-0.5803
12	0.727	0.334	-0.1025	0.2030	0.0433	0.0639	0.2712	-0.1607	0.4541	-0.9547	0.5989	-0.5908	0.6850	-0.8423	0.7839	-0.5661	0.8183	-0.5818
13	0.763	0.367	0.0146	0.3545	0.1729	0.1943	0.4369	-0.3149	0.6154	-1.0870	0.7490	-0.5948	0.8085	-0.8366	0.8801	-0.5538	0.8962	-0.5702
14	0.538	0.000	-0.2122	0.0189	-0.1297	-0.0546	0.0084	-0.1686	0.1309	-0.1757	0.2440	-0.5100	0.3332	-0.5053	0.4435	-0.5535	0.4793	-0.5758
15	0.538	0.246	-0.2573	0.0842	-0.1428	-0.0609	-0.0001	-0.2353	0.1290	-0.2581	0.2434	-0.6129	0.3339	-0.6589	0.4472	-0.5731	0.4857	-0.5810
16	0.530	0.410	-0.4547	-0.2035	-0.5375	-0.4688	-0.1638	-0.4651	0.0472	-0.5975	0.2131	-0.6096	0.3224	-0.7622	0.4456	-0.5743	0.4883	-0.5794
17	0.538	0.492	-0.9007	-0.3651	-0.5780	-0.5129	-0.3144	-0.8296	-0.0629	-0.7521	0.1190	-0.6119	0.2574	-0.7631	0.4118	-0.5813	0.4594	-0.5871
18	0.557	0.567	-0.3239	-0.0100	-0.1728	-0.1395	0.0395	-0.3641	0.2235	-0.0583	0.3433	-0.6071	0.4582	-0.7519	0.5725	-0.5762	0.6134	-0.5818
19	0.594	0.600	-0.1511	0.1603	-0.0029	0.0231	0.2267	-0.2356	0.4012	-0.8721	0.5334	-0.5898	0.6083	-0.7437	0.7026	-0.5606	0.7213	-0.5634
20	0.631	0.632	-0.0399	0.3086	0.1108	0.1411	0.3895	-0.4983	0.5049	-0.9568	0.6787	-0.5811	0.7299	-0.7334	0.7938	-0.5553	0.8113	-0.5611
21	0.484	0.753	-0.3833	-0.1158	-0.2528	-0.2186	-0.0687	-0.4221	0.0865	-0.7188	0.2125	-0.5360	0.3021	-0.6650	0.4108	-0.5456	0.4499	-0.5535
22	0.501	0.786	-0.2269	0.0626	-0.0844	-0.0508	0.1213	-0.3026	0.2783	-0.7540	0.3963	-0.5211	0.4632	-0.6514	0.5532	-0.5285	0.5793	-0.5447
23	0.537	0.819	-0.1155	0.2285	0.0432	0.0740	0.3029	-0.3763	0.4646	-0.7817	0.5483	-0.5219	0.6096	-0.6535	0.6742	-0.5358	0.6917	-0.5530
24	0.412	0.000	-0.1599	0.0824	-0.1019	0.0448	-0.0062	-0.0336	0.0917	-0.0762	0.1719	-0.5332	0.2385	-0.5383	0.3380	-0.5812	0.3755	-0.6025
25	0.412	0.354	-0.1899	0.0207	-0.1231	-0.0277	-0.0170	-0.1342	0.0854	-0.2451	0.1727	-0.6120	0.2381	-0.6780	0.3429	-0.5928	0.3661	-0.5961
26	0.412	0.589	-0.3319	-0.0471	-0.2913	-0.1547	-0.0481	-0.3066	0.0601	-0.5866	0.1250	-0.5708	0.1494	-0.6953	0.3110	-0.5712	0.3441	-0.5782
27	0.412	0.707	-0.6632	-0.4442	-0.5541	-0.4945	-0.4176	-0.5337	-0.2116	-0.6290	-0.0734	-0.5366	0.1059	-0.6620	0.2386	-0.5535	0.2818	-0.5657
28	0.412	0.823	-0.7556	-0.4436	-0.5393	-0.4936	-0.4273	-0.7332	-0.3628	-0.6509	-0.2621	-0.4986	-0.1588	-0.6129	-0.0368	-0.5333	0.0017	-0.5477
29	0.412	0.882	-0.4465	-0.4658	-0.5611	-0.5215	-0.4434	-0.4004	-0.3396	-0.6750	-0.2320	-0.4855	-0.1287	-0.5956	-0.0009	-0.5333	0.0405	-0.5486
30	0.412	0.942	-0.3067	-0.1082	-0.1766	-0.1788	-0.1078	-0.3435	-0.1030	-0.6556	-0.0269	-0.4762	0.0325	-0.5762	0.0868	-0.5308	0.1121	-0.5422
31	0.309	0.000	-0.1298	0.2494	-0.0845	0.2217	-0.0201	0.1721	0.0577	0.1333	0.1115	-0.3672	0.1570	-0.5473	0.2507	-0.5879	0.2697	-0.6023
32	0.309	0.354	-0.1552	0.0324	-0.1094	0.0067	-0.0438	-0.0530	0.0324	-0.1045	0.0818	-0.5884	0.1263	-0.6095	0.2182	-0.6055	0.2448	-0.6026
33	0.309	0.589	-0.1764	-0.0421	-0.1121	-0.0645	-0.0595	-0.1583	0.0115	-0.4441	0.0571	-0.5651	0.0479	-0.6632	0.1880	-0.5810	0.2203	-0.5828
34	0.309	0.707	-0.2058	-0.0422	-0.1090	-0.0671	-0.0491	-0.1825	0.0048	-0.4871	0.0398	-0.5302	0.0788	-0.6392	0.1578	-0.5554	0.1836	-0.5630
35	0.309	0.823	-0.1885	-0.0426	-0.1735	-0.0993	-0.0297	-0.1851	-0.0040	-0.5183	0.0109	-0.5046	0.0342	-0.6205	0.0940	-0.5489	0.1156	-0.5598
36	0.309	0.882	-0.1778	-0.0301	-0.0766	-0.0547	-0.0239	-0.1813	-0.0161	-0.5536	-0.0036	-0.4969	0.0195	-0.6122	0.0588	-0.5421	0.0842	-0.5548
37	0.309	0.942	-0.1730	-0.0446	-0.0801	-0.0664	-0.0425	-0.2123	-0.0552	-0.5491	-0.0443	-0.4718	-0.0224	-0.5820	-0.0021	-0.5309	0.0016	-0.5449
38	0.221	0.000	-0.1038	0.4365	-0.0804	0.4087	-0.0358	0.3612	0.0251	0.3286	0.0503	-0.0402	0.0667	-0.5421	0.1470	-0.5694	0.1763	-0.5880
39	0.221	0.354	-0.1899	-0.0305	-0.1588	-0.0531	-0.1158	-0.0825	-0.0604	-0.0939	-0.0515	-0.5402	-0.0287	-0.5526	0.0399	-0.6024	0.0719	-0.6059
40	0.221	0.589	-0.1916	-0.1131	-0.1600	-0.1342	-0.1147	-0.1050	-0.0703	-0.3257	-0.0716	-0.5435	-0.0506	-0.6055	0.0115	-0.5804	0.0342	-0.5843
41	0.221	0.707	-0.1898	-0.1165	-0.1504	-0.1374	-0.1063	-0.1947	-0.0691	-0.3604	-0.0792	-0.5348	-0.0863	-0.6037	-0.0046	-0.5725	0.0140	-0.5827
42	0.221	0.823	-0.1561	-0.0942	-0.1095	-0.1065	-0.0800	-0.1682	-0.0608	-0.3803	-0.0924	-0.5107	-0.0900	-0.5832	-0.0565	-0.5598	-0.0313	-0.5724
43	0.221	0.882	-0.1361	-0.0748	-0.0869	-0.0841	-0.0605	-0.1588	-0.0544	-0.3913	-0.0889	-0.4828	-0.0858	-0.5622	-0.0586	-0.5452	-0.0536	-0.5529
44	0.221	0.942	-0.1410	-0.0636	-0.0761	-0.0698	-0.0530	-0.2002	-0.0680	-0.4735	-0.1092	-0.4583	-0.1186	-0.5415	-0.1127	-0.5388	-0.0927	-0.5452
45	0.133	0.000																
46	0.133	0.354	-0.1718	-0.1785	-0.1981	-0.1609	-0.2275	-0.0995	-0.2236	-0.1188	-0.4776	-0.4604	-0.7662	-0.4966	-0.6964	-0.6000	-0.6568	-0.5995
47	0.133	0.589	-0.1363	-0.3291	-0.2054	-0.3313	-0.1935	-0.1793	-0.2037	-0.2155	-0.5860	-0.5145	-0.7521	-0.5619	-0.7350	-0.5794	-0.6987	-0.5840
48	0.133	0.707	-0.1248	-0.3116	-0.2026	-0.3080	-0.2018	-0.1438	-0.2075	-0.2414	-0.6276	-0.5194	-0.7655	-0.5636	-0.7406	-0.5642	-0.7019	-0.5755
49	0.133	0.942																
50	0.088	0.000																
51	0.088	0.354	-0.0305	0.0134	-0.0475	0.0128	-0.0650	0.0115	-0.0348	0.0177	-0.1840	-0.4165	-0.1787	-0.4089	-0.1023	-0.5890	-0.0941	-0.5980
52	0.088	0.589	-0.0139	-0.1009	-0.0364	-0.0916	-0.0596	-0.0408	-0.0593	-0.1243	-0.3341	-0.4780	-0.7388	-0.5223	-0.6244	-0.5499	-0.5805	-0.5611
53	0.088	0.707	-0.0117	-0.1010	-0.0204	-0.0703	-0.0608	-0.0373	-0.0592	-0.1809	-0.3494	-0.4898	-0.7416	-0.5345	-0.6186	-0.5458	-0.5532	-0.5635
54	0.044	0.000																
55	0.044	0.354	0.0740	0.0361	0.0276	0.0458	0.0146	0.0409	0.0645	0.0550	-0.0083	-0.3334	-0.1425	-0.4513	-0.1367	-0.5693	-0.1484	-0.5751
56	0.044	0.589	0.0259	0.0097	0.0487	0.0213	0.0041	0.0134	0.0121	-0.0589	-0.2133	-0.4492	-0.4350	-0.4961	-0.3008	-0.5369	-0.2533	-0.5428
57	0.044	0.707	0.0302	0.0115	0.0642	0.0353	0.0103	0.0115	0.0086	-0.1229	-0.2410	-0.4692	-0.3872	-0.5049	-0.2950	-0.5242	-0.2485	-0.5340
58	0.044	0.823	-0.0889	0.0306	0.0171	0.0164	0.0313	-0.0024	0.0133	-0.1474	-0.2486	-0.4404	-0.3223	-0.4892	-0.3019	-0.5285	-0.2400	-0.5416
59	0.412	0.059	-0.1414	0.0845	-0.0998	0.0415	-0.0053	-0.0323	0.0699	-0.0761	0.1728	-0.5287	0.2344	-0.5408	0.3447	-0.5769	0.3769	-0.5982
60	0.221	0.118	-0.1714	0.0855	-0.1101	0.0392	-0.0144	-0.0286	0.0793	-0.0756	0.1413	-0.5439	0.2224	-0.5478	0.3256	-0.6806	0.3668	-0.6013
61	0.309	0.059	-0.1330	0.2181	-0.0857	0.1894	-0.0208	0.1414	0.0552	0.1040	0.1097	-0.4860	0.1615	-0.5423	0.2501	-0.5868	0.2561	-0.6048
62	0.309	0.118	-0.1441	0.1720	-0.0970	0.1417	-0.0309	0.0960	0.0460	0.0593	0.1021	-0.4662	0.1435	-0.5421	0.2374	-0.5861	0.2725	-0.6026
63	0.309	0.236	-0.1566	0.0927	-0.1071	0.0840	-0.0393	0.0182	0.0355	-0.0290	0.0935	-0.5426	0.1378	-0.5416	0.2318	-0.5841	0.2720	-0.6011
64	0.221	0.059	-0.1154	0.3701	-0.0936	0.3496	-0.0412	0.2956	0.0164	0.2675	0.0434	-0.1571	0.0617	-0.5443	0.1480	-0.5676	0.1737	-0.5910
65	0.221	0.118	-0.1482	0.2502	-0.1204	0.2308	-0.0677	0.1946	-0.0057	0.1674	0.0183	-0.3283	0.0379	-0.5557	0.1248	-0.5925	0.1495	-0.6094
66	0.221	0.236	-0.2001	0.0718	-0.1639	0.0509	-0.1084	0.0263	-0.0520	-0.0024	-0.0225	-0.5138	-0.0022	-0.5842	0.0712	-0.6033	0.1041	-0.6132
67	0.133	0.118	-0.0861	0.1480	-0.0695	0.1393	-0.0381	0.1212	0.0056	0.1101	0.0102	-0.2578	0.0981	-0.5504	0.0962	-0.5953	0.0381	-0.6054
68	0.133	0.236	-0.2449	0.0128	-0.2771	0.0031	-0.2462	0.0079	-0.2575	-0.0085	-0.3174	-0.4018	-0.4728	-0.5615	-0.3727	-0.5994	-0.3354	-0.6088
69	0.044	0.236	-0.0330	0.0361	-0.0057	0.0207	0.0251	-0.0140	0.0386	-0.0109	0.0249	-0.3935	0.0299	-0.5202	0.0677	-0.5914	0.1033	-0.6053
70	0.099	0.000																

# Table A-11.- (Continued).
M = 0.9

			ALPHA =															
			-2.8	-2.8	0.0	3.1	4.9	5.1	10.0	10.1	14.9	15.0	19.9	20.0	25.0	24.9	26.5	26.4
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.967	0.000	0.2467	0.5488	0.4199	0.4286	0.6036	0.2138	0.7796	-0.0781	0.9135	-0.3555	1.0190	-0.5405	1.1112	-0.6071	1.1226	-0.6287
2	0.896	0.000	0.2028	0.4150	0.3071	0.3150	0.4723	0.1355	0.6385	-0.0909	0.7741	-0.3692	0.8909	-0.4927	0.9995	-0.5890	1.0181	-0.6087
3	0.841	0.000	0.1835	0.2865	0.1496	0.1980	0.3380	0.0532	0.4991	-0.1198	0.6415	-0.3187	0.7674	-0.4250	0.8883	-0.5585	0.9124	-0.5776
4	0.751	0.000	-0.4727	-0.1375	-0.3387	-0.3193	-0.0570	-0.5277	0.1669	-0.6582	0.3541	-0.6854	0.5114	-0.5401	0.6584	-0.5640	0.6956	-0.5867
5	0.813	0.059	0.0378	0.2022	0.1128	0.1237	0.2592	-0.0030	0.4220	-0.1419	0.5699	-0.2843	0.7011	-0.4905	0.8265	-0.5698	0.8585	-0.5879
6	0.850	0.000	0.1427	0.3416	0.2355	0.2476	0.4032	0.0023	0.5639	-0.0716	0.7016	-0.3602	0.8194	-0.6913	0.9249	-0.5983	0.9519	-0.6177
7	0.887	0.120	0.2755	0.4689	0.3403	0.3530	0.5363	0.1756	0.7856	-0.6802	0.8275	-1.0183	0.9250	-0.7376	1.0141	-0.6071	1.0287	-0.6235
8	0.663	0.000	-0.3914	-0.0279	-0.2243	-0.1843	0.0149	-0.4694	0.1973	-0.6552	0.3412	-0.6245	0.4687	-0.5231	0.6016	-0.5774	0.6339	-0.5983
9	0.663	0.126	-0.4581	-0.0561	-0.2696	-0.2356	0.0154	-0.5555	0.2145	-0.8288	0.3364	-0.5937	0.4604	-0.5856	0.5967	-0.5896	0.6304	-0.6069
10	0.663	0.210	-0.8306	-0.3106	-0.6331	-0.5435	-0.2209	-0.9032	0.0317	-0.9938	0.2339	-0.5990	0.4173	-0.6000	0.5780	-0.5900	0.6199	-0.6091
11	0.690	0.302	-0.1293	0.0776	-0.0445	-0.0277	0.1350	-0.1822	0.3163	-0.4144	0.4697	-0.6402	0.5960	-0.5947	0.7247	-0.5991	0.7586	-0.6194
12	0.727	0.334	0.0138	0.2465	0.1128	0.1284	0.3101	-0.0476	0.4794	-0.6560	0.6189	-0.6591	0.7290	-0.6026	0.8336	-0.6019	0.8588	-0.6260
13	0.763	0.367	0.1225	0.4006	0.2393	0.2505	0.4731	-0.0646	0.6402	-0.8244	0.7595	-0.6667	0.8425	-0.6042	0.9199	-0.5937	0.9382	-0.6162
14	0.530	0.000	-0.3419	0.0203	-0.1753	-0.0934	0.0188	-0.4337	0.1504	-0.6306	0.2675	-0.3157	0.3744	-0.5482	0.4905	-0.5890	0.5259	-0.6098
15	0.530	0.246	-0.3800	0.0185	-0.1776	-0.0720	-0.0082	-0.4872	0.1451	-0.7217	0.2674	-0.5755	0.3756	-0.6037	0.4951	-0.5988	0.5299	-0.6184
16	0.530	0.410	-0.8436	-0.3464	-0.6440	-0.5630	-0.2938	-0.9314	-0.0813	-0.9574	0.2281	-0.5739	0.3665	-0.6035	0.4969	-0.5911	0.5330	-0.6177
17	0.530	0.492	-0.9086	-0.3557	-0.6382	-0.5514	-0.3230	-1.0065	-0.0637	-0.9659	0.1398	-0.5847	0.3018	-0.6124	0.4605	-0.6014	0.5051	-0.6264
18	0.557	0.567	-0.1971	0.0263	-0.1039	-0.0831	0.0768	-0.2484	0.2449	-0.6042	0.3889	-0.5858	0.5034	-0.6122	0.6223	-0.5995	0.6549	-0.6248
19	0.594	0.600	-0.0596	0.1979	0.0557	0.0752	0.2613	-0.1227	0.4262	-0.7984	0.5526	-0.5780	0.6476	-0.5948	0.7420	-0.5988	0.7701	-0.6171
20	0.631	0.632	0.0581	0.3480	0.1736	0.1951	0.4232	-0.2985	0.5841	-1.0058	0.6940	-0.5675	0.7662	-0.5903	0.8331	-0.5898	0.8517	-0.6156
21	0.464	0.753	-0.2768	-0.0763	-0.1805	-0.1644	-0.0309	-0.3221	0.1115	-0.7661	0.2453	-0.5517	0.3487	-0.5688	0.4620	-0.5832	0.4967	-0.6088
22	0.501	0.786	-0.1484	0.1068	-0.0172	-0.0013	0.1664	-0.2170	0.3125	-0.7691	0.4238	-0.5415	0.5108	-0.5628	0.5982	-0.5733	0.6288	-0.5976
23	0.537	0.819	-0.0416	0.2712	0.1018	0.1266	0.3450	-0.2097	0.4934	-1.0920	0.5903	-0.5454	0.6541	-0.5698	0.7131	-0.5804	0.7352	-0.6042
24	0.412	0.000	-0.3164	0.0739	-0.1560	0.0191	-0.0041	-0.0369	0.1066	-0.2480	0.1983	-0.5096	0.2866	-0.5714	0.3876	-0.6120	0.4228	-0.6289
25	0.412	0.354	-0.3576	0.0267	-0.1696	-0.0322	-0.0156	-0.2012	0.0936	-0.6037	0.1981	-0.5837	0.2876	-0.6066	0.3915	-0.6118	0.4299	-0.6252
26	0.412	0.589	-0.8325	-0.0945	-0.6078	-0.5071	-0.0508	-0.7145	0.0659	-0.8413	0.1485	-0.5647	0.2467	-0.5938	0.3602	-0.6011	0.4003	-0.6144
27	0.412	0.707	-0.8962	-0.4776	-0.5990	-0.5228	-0.4804	-0.8994	-0.2524	-0.8698	-0.0127	-0.5443	0.1458	-0.5763	0.2848	-0.5987	0.3308	-0.6069
28	0.412	0.823	-0.8491	-0.4815	-0.6032	-0.5153	-0.4566	-0.8722	-0.4180	-0.9403	-0.2371	-0.5244	-0.1437	-0.5517	-0.0108	-0.5784	0.0423	-0.5987
29	0.412	0.882	-0.8830	-0.5173	-0.6154	-0.5771	-0.4838	-0.7777	-0.4272	-0.9098	-0.2583	-0.5188	-0.1055	-0.5414	0.0252	-0.5798	0.0798	-0.5937
30	0.412	0.942	-0.4535	-0.4879	-0.4527	-0.5349	-0.4786	-0.4592	-0.3215	-0.8764	-0.0095	-0.5108	0.0486	-0.5276	0.1208	-0.5775	0.1518	-0.5893
31	0.309	0.000	-0.1517	0.2791	-0.1184	0.2428	-0.0162	0.1924	0.0653	0.1081	0.1301	-0.4558	0.2015	-0.5393	0.2961	-0.6071	0.3307	-0.6218
32	0.309	0.354	-0.1786	0.0605	-0.1291	0.0259	-0.0334	-0.0143	0.0439	-0.1606	0.1131	-0.5761	0.1835	-0.6043	0.2736	-0.6283	0.3063	-0.6346
33	0.309	0.589	-0.3182	-0.0215	-0.1742	-0.0467	-0.0570	-0.2935	0.0149	-0.4356	0.0875	-0.5613	0.1558	-0.5914	0.2441	-0.6109	0.2771	-0.6212
34	0.309	0.707	-0.5283	-0.0149	-0.4077	-0.2560	-0.0506	-0.4186	0.0034	-0.5267	0.0644	-0.5330	0.1293	-0.5663	0.2126	-0.5905	0.2445	-0.6091
35	0.309	0.823	-0.5268	-0.1578	-0.4230	-0.3024	-0.1505	-0.4274	0.0220	-0.5678	0.0530	-0.5228	0.0801	-0.5520	0.1428	-0.5891	0.1721	-0.6083
36	0.309	0.882	-0.4928	-0.0799	-0.3040	-0.1956	-0.0644	-0.3550	0.0127	-0.5323	0.0217	-0.5184	0.0580	-0.5414	0.1085	-0.5870	0.1329	-0.6076
37	0.309	0.942	-0.3471	-0.0470	-0.1743	-0.0984	-0.0350	-0.3512	-0.0251	-0.6592	-0.0373	-0.5065	0.0002	-0.5334	0.0362	-0.5727	0.0575	-0.5996
38	0.221	0.000	-0.0930	0.4780	-0.0997	0.4517	-0.0328	0.4014	0.0190	0.3495	0.0493	0.0173	0.0951	-0.3964	0.1022	-0.5635	0.2152	-0.5972
39	0.221	0.354	-0.1505	0.0121	-0.1316	-0.0065	-0.0836	-0.0240	-0.0305	-0.0537	0.0952	-0.5534	0.0505	-0.5967	0.1216	-0.6252	0.1469	-0.6477
40	0.221	0.589	-0.1763	-0.0578	-0.0971	-0.0674	-0.0744	-0.1584	-0.0368	-0.3494	-0.0075	-0.5472	0.0341	-0.5872	0.0980	-0.6044	0.1256	-0.6246
41	0.221	0.707	-0.2659	-0.0560	-0.1697	-0.0879	-0.0587	-0.2581	-0.0375	-0.3716	-0.0194	-0.5431	0.0137	-0.5852	0.0700	-0.6089	0.0991	-0.6246
42	0.221	0.823	-0.2365	-0.0495	-0.1412	-0.1110	-0.0292	-0.2247	-0.0332	-0.3635	-0.0511	-0.5214	-0.0256	-0.5684	0.0102	-0.5924	0.0286	-0.6177
43	0.221	0.882	-0.2068	-0.0400	-0.0793	-0.0846	-0.0162	-0.2053	-0.0355	-0.3969	-0.0653	-0.4996	-0.0409	-0.5552	-0.0161	-0.5791	0.0079	-0.6002
44	0.221	0.942	-0.2048	-0.0412	-0.0767	-0.0617	-0.0241	-0.2537	-0.0542	-0.5855	-0.1021	-0.4826	-0.0981	-0.5412	-0.0836	-0.5734	-0.0617	-0.5943
45	0.133	0.000																
46	0.133	0.354	-0.1734	-0.2466	-0.1955	-0.2503	-0.2047	-0.0999	-0.2400	-0.0923	-0.5012	-0.5062	-0.6886	-0.5855	-0.5986	-0.6217	-0.5490	-0.6305
47	0.133	0.589	-0.1405	-0.2940	-0.1650	-0.3415	-0.1264	-0.1910	-0.1816	-0.2674	-0.5365	-0.5298	-0.7197	-0.5917	-0.7109	-0.6061	-0.6666	-0.6246
48	0.133	0.707	-0.1232	-0.2518	-0.1187	-0.3040	-0.1265	-0.1601	-0.1744	-0.2480	-0.5515	-0.5331	-0.7161	-0.5876	-0.7222	-0.6001	-0.6627	-0.6147
49	0.133	0.942																
50	0.088	0.000																
51	0.088	0.354	-0.0450	-0.0070	-0.0988	-0.0168	-0.1062	0.0069	-0.1228	-0.0036	-0.3024	-0.4789	-0.5979	-0.5810	-0.4121	-0.6183	-0.3151	-0.6419
52	0.088	0.589	-0.0309	-0.1294	-0.0460	-0.1405	-0.0431	-0.0579	-0.0983	-0.1050	-0.3483	-0.4988	-0.7153	-0.5721	-0.7153	-0.5882	-0.6602	-0.6056
53	0.088	0.707	-0.0551	-0.1394	-0.0206	-0.1002	-0.0422	-0.0947	-0.0952	-0.2038	-0.3403	-0.5089	-0.7161	-0.5716	-0.7063	-0.5886	-0.6502	-0.6059
54	0.044	0.000																
55	0.044	0.354	-0.0068	0.0238	-0.0333	0.0230	-0.0239	0.0203	-0.0135	-0.0047	-0.1662	-0.4074	-0.1202	-0.5611	-0.0832	-0.5966	-0.0365	-0.6194
56	0.044	0.589	0.0225	-0.0412	0.0127	-0.0347	0.0038	-0.0138	-0.0628	-0.1332	-0.2790	-0.4849	-0.6279	-0.5663	-0.4996	-0.5774	-0.3708	-0.5972
57	0.044	0.707	0.0032	-0.0544	0.0359	-0.0025	0.0009	-0.0383	-0.0632	-0.1523	-0.2800	-0.4896	-0.6385	-0.5513	-0.5733	-0.5088	-0.4557	-0.5868
58	0.044	0.873	-0.0471	-0.0220	0.0365	-0.0019	0.0102	-0.0654	-0.0420	-0.1543	-0.2330	-0.4778	-0.5580	-0.5203	-0.5123	-0.5658	-0.3858	-0.5815
59	0.412	0.059	-0.3066	0.0753	-0.1551	0.0120	-0.0039	-0.0655	0.1009	-0.2443	0.1929	-0.5060	0.2822	-0.5739	0.3790	-0.6044	0.4227	-0.6246
60	0.221	0.118	-0.3181	0.0838	-0.1690	0.0319	-0.0149	-0.0494	0.0915	-0.1988	0.1824	-0.4991	0.2748	-0.5876	0.3660	-0.6161	0.4081	-0.6337
61	0.309	0.059	-0.1300	0.2394	-0.1154	0.2126	-0.0221	0.1657	0.0606	0.0845	0.1284	-0.4506	0.2010	-0.5623	0.2956	-0.6059	0.3289	-0.6287
62	0.309	0.118	-0.1393	0.1911	-0.1176	0.1667	-0.0276	0.1251	0.0549	0.0281	0.1265	-0.4792	0.1970	-0.5798	0.2788	-0.6167	0.3209	-0.6369
63	0.309	0.236	-0.1505	0.1146	-0.1195	0.0885	-0.0309	0.0503	0.0502	-0.1352	0.1212	-0.5386	0.1943	-0.5938	0.2743	-0.6241	0.3174	-0.6425
64	0.221	0.059	-0.1097	0.4113	-0.0977	0.3905	-0.0367	0.3313	0.0126	0.2449	0.0429	-0.0950	0.0964	-0.4755	0.1785	-0.5813	0.2212	-0.6073
65	0.221	0.118	-0.1264	0.2875	-0.1165	0.2737	-0.0540	0.2306	0.0005	0.1479	0.0314	-0.2671	0.0842	-0.5615	0.1649	-0.6190	0.2054	-0.6392
66	0.221	0.236	-0.1435	0.1114	-0.1335	0.0962	-0.0770	0.0794	-0.0202	-0.0856	0.0129	-0.5126	0.0651	-0.5960	0.1372	-0.6434	0.1694	-0.6532
67	0.133	0.118	-0.0596	0.1856	-0.0502	0.1798	0.0166	0.1727	0.0126	0.0805	0.0273	-0.2587	0.0552	-0.5109	0.1769	-0.6176	0.2291	-0.6491
68	0.133	0.236	-0.2390	0.0121	-0.3004	-0.0002	-0.2710	0.0295	-0.2962	-0.1081	-0.4012	-0.4336	-0.5587	-0.5716	-0.4823	-0.6288	-0.3940	-0.6467
69	0.044	0.236	-0.0378	0.0599	0.0127	0.0491	0.0359	0.0012	0.0745	-0.1791	0.0649	-0.4755	0.0961	-0.5827	0.1036	-0.6195	0.1492	-0.6316
70	0.098	0.000																

Table A-11.- (Continued).
M = 1.2

			ALPHA =													
			-2.0	-2.0	0.0	0.1	5.0	5.1	9.9	10.0	15.2	15.0	19.9	20.0	24.9	24.9	29.3	29.4
TUBE	X/L	Y/R/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.947	0.000	0.4072	0.7068	0.5744	0.5717	0.7403	0.4019	0.9085	0.2197	1.0486	0.0583	1.1904	-0.1136	1.2420	-0.2672	1.3045	-0.3315
2	0.894	0.000	0.4316	0.6040	0.4991	0.4966	0.6366	0.3487	0.7834	0.1803	0.9386	0.0086	1.0693	-0.1469	1.1773	-0.3254	1.2041	-0.3316
3	0.841	0.000	0.3770	0.5137	0.4322	0.4305	0.5414	0.3111	0.6645	0.1537	0.8163	-0.0054	0.9544	-0.1526	1.0743	-0.2772	1.1063	-0.3273
4	0.751	0.000	-0.0845	0.0401	-0.0426	-0.0349	0.0763	-0.1266	0.2659	-0.2205	0.5195	-0.3340	0.7055	-0.4371	0.8595	-0.5065	0.9007	-0.5010
5	0.813	0.055	0.3421	0.4621	0.3916	0.3911	0.4841	0.2916	0.5964	0.1515	0.7466	0.0053	0.8913	-0.1209	1.0178	-0.3465	1.0521	-0.4047
6	0.850	0.088	0.3874	0.5592	0.4642	0.4637	0.5857	0.3276	0.7191	0.1687	0.8673	0.0488	1.0003	-0.4067	1.1118	-0.5487	1.1395	-0.4763
7	0.887	0.120	0.4466	0.5635	0.5425	0.5408	0.6957	0.3867	0.8417	-0.0703	0.9887	-0.5309	1.1034	-0.6249	1.1943	-0.6184	1.2146	-0.4873
8	0.663	0.000	-0.0740	0.0840	-0.0118	-0.0108	0.1314	-0.1334	0.3435	-0.2356	0.5284	-0.3506	0.6814	-0.4566	0.8164	-0.4514	0.8533	-0.4242
9	0.663	0.126	-0.2340	-0.0773	-0.2144	-0.2173	0.0019	-0.2795	0.3118	-0.3612	0.5333	-0.4497	0.6749	-0.5013	0.8117	-0.4542	0.8490	-0.4475
10	0.663	0.210	-0.3530	-0.1762	-0.2631	-0.2376	-0.1317	-0.4137	0.1470	-0.4497	0.4014	-0.4789	0.6188	-0.6534	0.7895	-0.4715	0.8327	-0.4465
11	0.690	0.302	0.2723	0.3415	0.2786	0.2807	0.3662	0.1789	0.4880	0.0185	0.6518	-0.3692	0.8002	-0.6439	0.9272	-0.4569	0.9406	-0.4457
12	0.727	0.334	0.3214	0.4795	0.3955	0.3982	0.5116	0.2648	0.6423	-0.0655	0.7901	-0.4738	0.9198	-0.6640	1.0255	-0.4708	1.0545	-0.4513
13	0.763	0.367	0.4088	0.6163	0.5022	0.5050	0.6555	0.3508	0.7905	-0.3537	0.9263	-0.6151	1.0311	-0.6603	1.1117	-0.4717	1.1292	-0.4479
14	0.530	0.000	-0.0764	0.0879	-0.0026	0.0019	0.1510	-0.1334	0.3331	-0.2458	0.4764	-0.3705	0.6107	-0.4712	0.7305	-0.4207	0.7631	-0.3988
15	0.530	0.246	-0.1160	0.1368	0.0018	-0.0427	0.1535	-0.2256	0.3314	-0.3437	0.4769	-0.4629	0.6126	-0.5541	0.7337	-0.4606	0.7667	-0.4363
16	0.530	0.410	-0.3018	-0.2083	-0.2792	-0.2671	-0.1560	-0.4400	0.1299	-0.4546	0.4082	-0.5553	0.5498	-0.5603	0.7317	-0.4573	0.7691	-0.4368
17	0.530	0.492	-0.4209	-0.2341	-0.3441	-0.3411	-0.1536	-0.4344	0.1112	-0.4352	0.3450	-0.6464	0.5374	-0.5796	0.6978	-0.4653	0.7408	-0.4428
18	0.557	0.567	0.1828	0.3028	0.2419	0.2518	0.3343	0.1343	0.4551	-0.0994	0.6006	-0.4638	0.7295	-0.6145	0.8471	-0.4700	0.8792	-0.4437
19	0.594	0.600	0.2861	0.4531	0.3657	0.3755	0.4932	0.2289	0.6165	-0.1754	0.7498	-0.5949	0.8616	-0.6106	0.9559	-0.4643	0.9804	-0.4385
20	0.631	0.632	0.4017	0.5824	0.4647	0.4755	0.6317	0.2200	0.7593	-0.5052	0.8772	-0.7264	0.9687	-0.5917	1.0374	-0.4597	1.0549	-0.4344
21	0.464	0.753	0.1775	0.2536	0.1969	0.2049	0.2849	0.0920	0.3835	-0.1128	0.4950	-0.5343	0.6077	-0.5837	0.7151	-0.4640	0.7451	-0.4334
22	0.501	0.786	0.2370	0.4032	0.3182	0.3352	0.4436	0.1703	0.5512	-0.3019	0.6567	-0.6151	0.7510	-0.5782	0.8365	-0.4617	0.8611	-0.4270
23	0.537	0.819	0.3126	0.5374	0.4211	0.4373	0.5882	0.2464	0.7038	-0.5326	0.8007	-0.7873	0.8775	-0.5769	0.9390	-0.4682	0.9552	-0.4324
24	0.412	0.000	-0.0771	0.1202	0.0017	0.0265	0.1575	-0.1364	0.2466	-0.2609	0.4165	-0.3797	0.5392	-0.4582	0.6484	-0.4068	0.6793	-0.4237
25	0.412	0.354	-0.0868	0.1017	0.0332	0.0239	0.1662	-0.1767	0.3013	-0.3326	0.4703	-0.5013	0.5426	-0.5462	0.6536	-0.4672	0.6838	-0.4400
26	0.412	0.589	-0.4050	-0.2378	-0.2936	-0.2913	-0.1311	-0.4477	0.2919	-0.4858	0.3885	-0.6704	0.5027	-0.5475	0.6250	-0.4676	0.6591	-0.4378
27	0.412	0.707	-0.4577	-0.3302	-0.4228	-0.4201	-0.2504	-0.4690	-0.0264	-0.5199	0.1979	-0.7193	0.3982	-0.5503	0.5511	-0.4688	0.5923	-0.4363
28	0.412	0.823	-0.4487	-0.3991	-0.4271	-0.4130	-0.3833	-0.4594	-0.3197	-0.5210	-0.0993	-0.7415	0.0949	-0.5680	0.2419	-0.4632	0.2454	-0.4304
29	0.412	0.882	-0.3400	-0.2895	-0.2971	-0.2888	-0.2769	-0.3740	-0.1996	-0.5709	-0.0434	-0.7502	0.0984	-0.5789	0.2814	-0.4707	0.3327	-0.4324
30	0.412	0.942	-0.1595	-0.1662	-0.2125	-0.1990	-0.1593	-0.1494	-0.0835	-0.5575	0.0410	-0.7489	0.2416	-0.5791	0.3859	-0.4710	0.4235	-0.4292
31	0.309	0.000	-0.0833	0.1779	0.0052	0.0901	0.1485	-0.1205	0.2570	-0.2579	0.3448	-0.3585	0.4757	-0.3535	0.5750	-0.4336	0.6023	-0.4198
32	0.309	0.354	-0.1032	0.0791	-0.0152	-0.0025	0.1255	-0.1695	0.2314	-0.3109	0.3403	-0.4656	0.4634	-0.5305	0.5636	-0.4578	0.5914	-0.4413
33	0.309	0.589	-0.3441	0.0142	-0.2708	-0.2518	0.0613	-0.4252	0.1428	-0.4870	0.2642	-0.5284	0.4272	-0.5372	0.5349	-0.4591	0.5643	-0.4416
34	0.309	0.707	-0.4865	-0.3047	-0.3817	-0.3641	-0.0481	-0.5334	0.0445	-0.5646	0.1950	-0.5347	0.3946	-0.5375	0.4985	-0.4583	0.5283	-0.4411
35	0.309	0.823	-0.4599	-0.3795	-0.4167	-0.4096	-0.3179	-0.4477	-0.0506	-0.4274	0.2492	-0.5447	0.3686	-0.5685	0.4325	-0.4702	0.4586	-0.4457
36	0.309	0.882	-0.2439	-0.2590	-0.2475	-0.2159	-0.2243	-0.2746	-0.0152	-0.3207	0.2631	-0.5618	0.3340	-0.5696	0.3978	-0.4720	0.4225	-0.4442
37	0.309	0.942	-0.1729	-0.1495	-0.1495	-0.1389	-0.1344	-0.1989	-0.0583	-0.3650	0.1627	-0.6934	0.2526	-0.5349	0.3184	-0.4613	0.3411	-0.4326
38	0.221	0.000	-0.0837	0.4473	0.0278	0.6016	0.1240	0.3300	0.2029	0.1823	0.2991	0.0456	0.3918	0.0587	0.4776	-0.1749	0.5066	-0.2511
39	0.221	0.354	-0.1155	0.1447	-0.0385	0.0200	0.0799	-0.1643	0.1625	-0.3069	0.2863	-0.4459	0.3786	-0.5091	0.4529	-0.4504	0.4771	-0.4392
40	0.221	0.589	-0.2302	-0.0662	-0.1246	-0.1101	-0.0141	-0.3261	0.0818	-0.4672	0.2818	-0.4230	0.3569	-0.5229	0.4314	-0.4583	0.4544	-0.4368
41	0.221	0.707	-0.3755	-0.0615	-0.3292	-0.2991	-0.0465	-0.4250	0.1082	-0.4446	0.2677	-0.4621	0.3307	-0.5246	0.4030	-0.4687	0.4247	-0.4443
42	0.221	0.823	-0.3169	-0.0654	-0.2125	-0.2010	0.0023	-0.3432	0.1108	-0.3755	0.2196	-0.4748	0.2737	-0.5241	0.3350	-0.4650	0.3539	-0.4407
43	0.221	0.882	-0.2916	-0.1618	-0.2386	-0.2264	-0.0084	-0.3039	0.0850	-0.3611	0.1902	-0.5540	0.2403	-0.4941	0.3007	-0.4598	0.3210	-0.4326
44	0.221	0.942	-0.2516	-0.1855	-0.2190	-0.2032	-0.0770	-0.2568	0.0510	-0.4387	0.1217	-0.7505	0.1664	-0.5115	0.2243	-0.4578	0.2446	-0.4232
45	0.133	0.000																
46	0.133	0.354	-0.3433	-0.2331	-0.3964	-0.2526	-0.4135	-0.2342	-0.4089	-0.2961	-0.3160	-0.3549	-0.2480	-0.4502	-0.1655	-0.4491	-0.1337	-0.4368
47	0.133	0.589	-0.1856	-0.4122	-0.2423	-0.3164	-0.4200	-0.1822	-0.4259	-0.1840	-0.3825	-0.3351	-0.3261	-0.5069	-0.2663	-0.4524	-0.2270	-0.4363
48	0.133	0.707	-0.1855	-0.4149	-0.3090	-0.3143	-0.4430	-0.1394	-0.4467	-0.1776	-0.4147	-0.3787	-0.3122	-0.4831	-0.3357	-0.4519	-0.2424	-0.4312
49	0.133	0.942																
50	0.088	0.000																
51	0.088	0.354	-0.2102	-0.0384	-0.2231	-0.0738	-0.2873	-0.1187	-0.3087	-0.2145	-0.2806	-0.3021	-0.0996	-0.3846	-0.1290	-0.4518	-0.0899	-0.4368
52	0.088	0.589	-0.1355	-0.1728	-0.1548	-0.1522	-0.2172	-0.1125	-0.3611	-0.1576	-0.3437	-0.3005	-0.2624	-0.4793	-0.2268	-0.4388	-0.2091	-0.4207
53	0.088	0.707	-0.1190	-0.1520	-0.1148	-0.0845	-0.2508	-0.0991	-0.3957	-0.1530	-0.3761	-0.3425	-0.2717	-0.4586	-0.2450	-0.4386	-0.2177	-0.4156
54	0.044	0.000																
55	0.044	0.354	-0.1621	0.0879	-0.1445	0.0646	-0.1452	0.0067	-0.1516	-0.1141	-0.0514	-0.2354	0.0093	-0.2985	0.2329	-0.4336	0.2552	-0.4114
56	0.044	0.589	-0.1134	-0.0474	-0.1128	-0.0736	-0.0921	-0.0992	-0.2476	-0.1652	-0.2971	-0.3130	-0.2404	-0.4415	-0.2561	-0.4334	-0.2281	-0.4081
57	0.044	0.707	-0.0879	-0.0311	-0.0701	0.0244	-0.0841	-0.0638	-0.2781	-0.1535	-0.3140	-0.3293	-0.2635	-0.4209	-0.2253	-0.4187	-0.2007	-0.3959
58	0.044	0.823	-0.3443	-0.0832	-0.2792	-0.1576	-0.2167	-0.0507	-0.3465	-0.1207	-0.3267	-0.2674	-0.2394	-0.4317	-0.1801	-0.4325	-0.1435	-0.4017
59	0.412	0.059	-0.0795	0.1141	-0.0012	0.0225	0.1472	-0.1352	0.2856	-0.2563	0.4089	-0.3796	0.5320	-0.4487	0.6417	-0.4009	0.6735	-0.4344
60	0.221	0.118	-0.0934	0.1231	-0.0083	0.0314	0.1323	-0.1219	0.2782	-0.2474	0.4007	-0.3632	0.5258	-0.3882	0.6360	-0.4133	0.6659	-0.4447
61	0.309	0.059	-0.0858	0.1764	-0.0036	0.0828	0.1407	-0.1249	0.2472	-0.2530	0.3403	-0.3694	0.4679	-0.3530	0.5691	-0.4445	0.5960	-0.4287
62	0.309	0.118	-0.0862	0.1680	-0.0040	0.0710	0.1407	-0.1392	0.2481	-0.2653	0.3575	-0.3803	0.4703	-0.3890	0.5690	-0.4417	0.5968	-0.4413
63	0.309	0.236	-0.0937	0.1211	-0.0086	0.0283	0.1353	-0.1464	0.2406	-0.2784	0.3526	-0.3939	0.4674	-0.4306	0.5673	-0.5335	0.5947	-0.5180
64	0.221	0.059	-0.0874	0.5120	0.0224	0.3825	0.1227	0.2355	0.2020	0.0526	0.3033	-0.0900	0.3902	-0.0670	0.4770	-0.2231	0.5048	-0.2698
65	0.221	0.118	-0.0968	0.4069	0.0151	0.2410	0.1153	0.1440	0.1979	-0.0390	0.3007	-0.2032	0.3883	-0.1899	0.4729	-0.3609	0.4984	-0.3547
66	0.221	0.236	-0.1011	0.2882	-0.0158	0.1660	0.1031	-0.0528	0.1651	-0.2539	0.2933	-0.3918	0.3820	-0.4157	0.4625	-0.5076	0.4857	-0.4938
67	0.133	0.118	0.0775	0.3420	0.0617	0.3304	0.0318	0.2510	0.0353	0.1467	0.0747	0.0176	0.2064	0.0269	0.3956	-0.1305	0.4437	-0.1895
68	0.133	0.236	0.0352	0.1208	-0.0686	0.0916	-0.1734	0.0033	-0.2007	-0.1137	-0.1971	-0.2194	-0.1512	-0.2232	-0.0957	-0.4168	-0.0756	-0.3876
69	0.044	0.236	-0.0592	0.1148	-0.0808	0.0757	-0.1133	-0.1017	-0.0744	-0.1516	0.0382	-0.1831	0.2280	-0.2916	0.3935	-0.4761	0.4193	-0.5623
70	0.098	0.000																

Table A-11.- (Concluded).

M = 1.6

			ALPHA =															
			-2.7	-2.5	0.2	0.3	5.2	5.3	10.2	10.2	15.2	15.2	20.2	20.2	25.1	25.2	26.5	26.6
TUBE	X/L	Y/B/2	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD	WINDWARD	LEEWARD
1	0.947	0.000	0.2908	0.4222	0.3587	0.3575	0.4939	0.2304	0.6863	0.1488	0.9003	0.0816	1.0471	0.0309	1.2560	-0.0015	1.3069	-0.0163
2	0.896	0.000	0.2465	0.3986	0.3104	0.3166	0.4603	0.1753	0.6522	0.0846	0.8626	0.0069	0.9935	-0.0591	1.1436	-0.1009	1.1913	-0.1167
3	0.841	0.000	0.2416	0.3888	0.3132	0.3077	0.4556	0.1708	0.6346	0.0757	0.7856	-0.0027	0.9023	-0.0693	1.0397	-0.1159	1.0872	-0.1317
4	0.751	0.000	-0.0314	0.0763	0.0177	0.0184	0.1250	-0.0768	0.2403	-0.1561	0.3570	-0.2129	0.5394	-0.2504	0.7797	-0.2696	0.8445	-0.2945
5	0.813	0.055	0.2425	0.4068	0.3297	0.3268	0.4676	0.1982	0.6288	0.1073	0.7479	0.0359	0.8442	-0.0154	0.9826	-0.0484	1.0311	-0.0582
6	0.850	0.088	0.2571	0.4179	0.3321	0.3336	0.4816	0.1832	0.6661	0.0813	0.8243	-0.0124	0.9462	-0.2094	1.0047	-0.3083	1.1291	-0.3313
7	0.887	0.120	0.2853	0.4663	0.3749	0.3807	0.5382	0.2017	0.7376	0.0583	0.9192	-0.1139	1.0553	-0.2973	1.1851	-0.3978	1.2249	-0.4147
8	0.663	0.000	-0.0424	0.0557	0.0112	0.0055	0.1176	-0.0828	0.2414	-0.1640	0.3889	-0.2276	0.5828	-0.2699	0.7919	-0.3182	0.8482	-0.3279
9	0.663	0.176	-0.1052	-0.0174	-0.0564	-0.0629	0.0409	-0.1419	0.1428	-0.2240	0.2928	-0.2877	0.5208	-0.3238	0.7873	-0.3464	0.8440	-0.3447
10	0.663	0.210	-0.1634	-0.0955	-0.1337	-0.1250	-0.0546	-0.1863	0.0699	-0.2595	0.2120	-0.3101	0.4399	-0.3489	0.7169	-0.4435	0.7925	-0.4512
11	0.690	0.302	0.2551	0.4003	0.3320	0.3254	0.4680	0.2010	0.5687	0.0431	0.6542	-0.1277	0.7617	-0.2684	0.9237	-0.3876	0.9736	-0.4123
12	0.727	0.334	0.2930	0.4455	0.3885	0.3737	0.5493	0.2242	0.6842	0.0265	0.7918	-0.1645	0.9017	-0.3372	1.0390	-0.4579	1.0886	-0.4576
13	0.763	0.367	0.3457	0.5605	0.4544	0.4526	0.6407	0.2614	0.8028	-0.0296	0.9252	-0.2356	1.0309	-0.3835	1.1438	-0.4418	1.1765	-0.4508
14	0.530	0.000	-0.0503	0.0464	0.0043	0.0036	0.1116	-0.0874	0.2396	-0.1649	0.3944	-0.2313	0.5934	-0.2786	0.7639	-0.3288	0.8181	-0.3375
15	0.530	0.246	-0.1140	-0.0160	-0.0648	-0.0615	0.0460	-0.1538	0.2355	-0.2281	0.4182	-0.2986	0.6049	-0.3416	0.7727	-0.4413	0.8179	-0.4492
16	0.530	0.410	-0.1615	-0.0835	-0.1291	-0.1172	-0.0445	-0.1936	0.0911	-0.2563	0.2212	-0.3464	0.4993	-0.4176	0.7687	-0.4550	0.8178	-0.4420
17	0.530	0.492	-0.1799	-0.0770	-0.1041	-0.0996	-0.0558	-0.1640	0.0261	-0.2289	0.2876	-0.3360	0.4880	-0.4123	0.7184	-0.4461	0.7883	-0.4462
18	0.557	0.567	0.2786	0.4268	0.3558	0.3607	0.4668	0.2116	0.5564	0.0242	0.6378	-0.1645	0.7595	-0.3227	0.9868	-0.4325	0.9470	-0.4407
19	0.594	0.600	0.3294	0.5169	0.4290	0.4285	0.5775	0.2581	0.6923	-0.0027	0.7985	-0.1940	0.9051	-0.3776	1.0269	-0.4233	1.0601	-0.4309
20	0.631	0.632	0.3789	0.6063	0.5021	0.4947	0.6868	0.2378	0.8154	-0.0824	0.9201	-0.2886	1.0234	-0.4138	1.1206	-0.4173	1.1453	-0.4204
21	0.464	0.753	0.2907	0.4277	0.3664	0.3655	0.4616	0.2263	0.5424	0.0057	0.6157	-0.1855	0.7272	-0.3202	0.8355	-0.4226	0.8665	-0.4273
22	0.501	0.786	0.3359	0.5263	0.4368	0.4392	0.5739	0.2592	0.6785	-0.0311	0.7680	-0.2115	0.8678	-0.3855	0.9594	-0.4220	0.9821	-0.4183
23	0.537	0.819	0.3782	0.6185	0.5182	0.5010	0.6836	0.2190	0.8051	-0.1063	0.8998	-0.3100	0.9922	-0.4328	1.0631	-0.4247	1.0813	-0.4269
24	0.412	0.000	-0.0460	0.0588	0.0048	0.0044	0.1177	-0.0888	0.2450	-0.1576	0.4044	-0.2279	0.5797	-0.2869	0.7248	-0.3389	0.7631	-0.3426
25	0.412	0.354	-0.0821	0.0255	-0.0273	-0.0300	0.0821	-0.1366	0.2919	-0.2172	0.4307	-0.2926	0.6028	-0.3835	0.7394	-0.4149	0.7748	-0.4337
26	0.412	0.589	-0.1439	-0.0613	-0.1078	-0.1083	-0.0170	-0.1835	0.1148	-0.2511	0.2457	-0.3536	0.6215	-0.3969	0.7165	-0.4273	0.7535	-0.4387
27	0.412	0.707	-0.1420	-0.0889	-0.1170	-0.1152	[illegible]	-0.1740	0.0085	-0.2596	0.1675	-0.3565	0.4500	-0.4142	0.6405	-0.4244	0.6021	-0.4291
28	0.412	0.823	-0.1154	-0.0606	-0.0886	-0.0777	[illegible]	-0.1495	-0.0230	-0.2641	0.0040	-0.3670	0.0783	-0.4313	0.2850	-0.4225	0.3467	-0.4174
29	0.412	0.882	-0.0795	-0.0163	-0.0431	-0.0417	0.0046	-0.1254	0.0469	-0.2619	0.0908	-0.3685	0.1692	-0.4448	0.3087	-0.4196	0.3574	-0.4188
30	0.412	0.942	-0.0195	0.0196	0.0150	0.0199	0.0296	-0.0389	0.0948	-0.2323	0.1608	-0.3527	0.2571	-0.4420	0.3847	-0.4109	0.4383	-0.4106
31	0.309	0.000	-0.0430	0.0979	0.0020	0.0296	0.1130	-0.0693	0.2494	-0.1482	0.4067	-0.2204	0.5677	-0.2776	0.6856	-0.3159	0.7177	-0.3245
32	0.309	0.354	-0.0950	0.0163	-0.0393	-0.0498	0.1111	-0.1494	0.2525	-0.2259	0.4101	-0.2959	0.5586	-0.3717	0.6742	-0.4091	0.7098	-0.4190
33	0.309	0.589	-0.1452	-0.0362	-0.0955	-0.1023	0.0257	-0.1923	0.1824	-0.2578	0.4001	-0.3474	0.5043	-0.3927	0.6235	-0.4267	0.6697	-0.4286
34	0.309	0.707	-0.1897	-0.1125	-0.1581	-0.1507	-0.0706	-0.2286	0.0556	-0.2917	0.3170	-0.3808	0.4016	-0.3988	0.5509	-0.4266	0.6163	-0.4251
35	0.309	0.823	-0.1766	-0.1451	-0.1580	-0.1472	-0.1258	-0.2012	-0.0408	-0.2693	0.0599	-0.3518	0.3333	-0.4077	0.5190	-0.4303	0.5935	-0.4291
36	0.309	0.882	-0.1899	-0.0983	-0.1048	-0.0943	-0.0988	-0.0921	-0.0250	-0.1858	0.1088	-0.3067	0.3494	-0.4030	0.5977	-0.4344	0.6171	-0.4275
37	0.309	0.942	0.0283	0.0112	0.0302	0.0486	-0.0135	-0.0173	0.0126	-0.1746	0.1059	-0.3134	0.3115	-0.4177	0.5076	-0.4122	0.5350	-0.4083
38	0.221	0.000	-0.0088	0.4730	0.0353	0.3834	0.1420	0.2601	0.2673	0.1723	0.3995	0.0664	0.5359	-0.0674	0.6241	-0.1403	0.6487	-0.1442
39	0.221	0.354	-0.0859	0.0546	-0.0167	-0.0409	0.1105	-0.1310	0.2484	-0.2167	0.3923	-0.2826	0.5116	-0.3435	0.6106	-0.3934	0.6394	-0.4004
40	0.221	0.589	-0.1514	-0.0390	-0.1006	-0.0993	0.0202	-0.2084	0.2117	-0.2701	0.3170	-0.3276	0.4302	-0.3745	0.5867	-0.4133	0.6163	-0.4123
41	0.221	0.707	-0.1715	-0.1134	-0.1557	-0.1323	-0.0604	-0.2022	0.1079	-0.2642	0.2478	-0.3458	0.3924	-0.3590	0.5729	-0.4080	0.5994	-0.4186
42	0.221	0.823	-0.1425	-0.1139	-0.1516	-0.1340	-0.0889	-0.1609	0.0117	-0.2017	0.2786	-0.3100	0.4054	-0.3603	0.5353	-0.4005	0.5399	-0.4064
43	0.221	0.882	-0.0779	-0.0693	-0.0848	-0.0686	-0.0658	-0.1046	0.0126	-0.1778	0.2582	-0.2847	0.3742	-0.3793	0.4938	-0.3941	0.5102	-0.3939
44	0.221	0.942	-0.0499	-0.0350	-0.0451	-0.0314	-0.0504	-0.0759	-0.0168	-0.1897	0.1572	-0.3394	0.3144	-0.4372	0.4218	-0.4044	0.4371	-0.3975
45	0.133	0.000																
46	0.133	0.354	-0.2068	-0.1506	-0.2413	-0.1457	-0.2319	-0.2327	-0.1631	-0.2195	-0.1011	-0.2445	-0.0475	-0.2894	0.0434	-0.3762	0.0679	-0.3712
47	0.133	0.589	-0.1939	-0.1759	-0.1999	-0.1588	-0.2376	-0.2147	-0.1942	-0.2173	-0.1288	-0.2530	-0.0621	-0.3371	-0.0012	-0.3894	0.0104	-0.3979
48	0.133	0.707	-0.1866	-0.1461	-0.1789	-0.1444	-0.2068	-0.1548	-0.2147	-0.1566	-0.1475	-0.2251	-0.0701	-0.3057	-0.0228	-0.3742	-0.0168	-0.3919
49	0.133	0.942																
50	0.088	0.000																
51	0.088	0.354	-0.1861	-0.0527	-0.1846	-0.0854	-0.1708	-0.1474	-0.1008	-0.1578	-0.0343	-0.2029	0.0345	-0.2527	0.1297	-0.3614	0.1618	-0.3682
52	0.088	0.589	-0.1971	-0.1846	-0.2133	-0.1525	-0.2204	-0.2005	-0.2231	-0.1956	-0.1605	-0.2294	-0.0859	-0.3132	-0.0224	-0.3647	-0.0084	-0.3735
53	0.088	0.707	-0.1789	-0.1559	-0.1859	-0.1524	-0.2186	-0.1542	-0.2179	-0.1476	-0.1413	-0.2103	-0.0621	-0.2967	-0.0086	-0.3615	0.0058	-0.3788
54	0.044	0.000																
55	0.044	0.354	-0.1544	-0.0591	-0.0978	-0.0644	-0.0932	-0.0878	-0.0537	-0.1231	0.0146	-0.1907	0.1128	-0.2149	0.2381	-0.2918	0.2796	-0.3008
56	0.044	0.589	-0.1826	-0.1636	-0.2038	-0.1290	-0.2094	-0.1540	-0.1994	-0.1672	-0.1587	-0.2139	-0.0708	-0.2906	-0.0038	-0.3356	0.0219	-0.3485
57	0.044	0.707	-0.1491	-0.1536	-0.1802	-0.1395	-0.2082	-0.1406	-0.2005	-0.1354	-0.1261	-0.1960	-0.0436	-0.2828	0.0090	-0.3459	0.0246	-0.3584
58	0.044	0.823	-0.2248	-0.0835	-0.2565	-0.0598	-0.1898	-0.0736	-0.1644	-0.0881	-0.0979	-0.1610	-0.0205	-0.2317	0.0448	-0.3464	0.0536	-0.3493
59	0.412	0.059	-0.0571	0.0437	-0.0055	-0.0086	0.1015	-0.0974	0.2305	-0.1611	0.3937	-0.2293	0.5699	-0.2842	0.7174	-0.3337	0.7568	-0.3309
60	0.221	0.118	-0.0531	0.0616	-0.0046	0.0115	0.1089	-0.0827	0.2376	-0.1543	0.3928	-0.2223	0.5625	-0.2761	0.7150	-0.3135	0.7543	-0.3186
61	0.309	0.059	-0.0427	0.0877	-0.0017	0.0226	0.1029	-0.0782	0.2364	-0.1468	0.3942	-0.2190	0.5548	-0.2700	0.6760	-0.3085	0.7094	-0.3171
62	0.309	0.118	-0.0530	0.0724	-0.0049	0.0115	0.1056	-0.0855	0.2442	-0.1603	0.4088	-0.2336	0.5603	-0.2883	0.6793	-0.3104	0.7126	-0.3228
63	0.309	0.236	-0.0485	0.0537	-0.0053	-0.0005	0.1087	-0.1126	0.2457	-0.1893	0.4038	-0.2507	0.5599	-0.3010	0.6777	-0.3122	0.7110	-0.3812
64	0.221	0.059	-0.0152	0.1397	0.0251	0.0632	0.1277	-0.0322	0.2565	-0.1033	0.3994	-0.1450	0.5320	-0.2399	0.6247	-0.2908	0.6462	-0.2941
65	0.221	0.118	-0.0239	0.2039	0.0150	0.1229	0.1103	-0.0146	0.2449	-0.1026	0.3985	-0.1829	0.5325	-0.2415	0.6226	-0.3039	0.6487	-0.3098
66	0.221	0.236	-0.0508	0.0704	-0.0037	0.0105	0.1098	-0.0907	0.2469	-0.1717	0.3956	-0.2471	0.5227	-0.2945	0.6166	-0.3144	0.6434	-0.3613
67	0.133	0.118	0.0148	0.3642	0.0478	0.3343	0.0858	0.1887	0.1487	0.0255	0.2028	0.0126	0.2890	-0.0473	0.3887	-0.1140	0.4218	-0.1371
68	0.133	0.236	-0.0918	0.0256	-0.1133	-0.0153	-0.1132	-0.1214	-0.0848	-0.1986	0.0109	-0.1713	0.0649	-0.1851	0.1281	-0.2279	0.1488	-0.2976
69	0.044	0.236	-0.0947	0.0459	-0.0735	-0.0065	-0.0548	-0.1145	0.0537	-0.1882	0.1763	-0.2133	0.3098	-0.2746	0.4307	-0.2944	0.4696	-0.3032
70	0.088	0.000																

APPENDIX B

AERODYNAMIC DATA COMPUTED FOR THE PRESSURE MODELS; TABULAR FORM

NOMENCLATURE

Symbol	Definition	Units
TST,TN	Test ID numbers	-
First "P" in header list	Not meaningful	-
TTF	Total temperature	deg F
TF	Test section static temperature	deg F
RN/L	Unit Reynolds number	ft^{-1}
PT	Total pressure	lbs/ft^2
Second "P" in header list	Test section static pressure	lbs/ft^2
Q	Free-stream dynamic pressure	lbs/ft^2
MACH	Free-stream Mach number	-
ALPHA	Angle of attack	deg
CN	Normal-force coefficient FN/QS	-
S	Wing plan-view area	ft^2
FN	Wing normal-force determined from pressure integration	lbs
CA	Axial-force coefficient FA/QS	-
FA	Axial-force determined from pressure integration	-
CMNB	Pitching-moment coefficient due to normal-force components only, about wing trailing edge $M_{YN}/QS\bar{C}$	-
$\bar{C}$	Mean aerodynamic chord	ft
CONF.	Wing configuration number	-

Symbol	Definition	Units
M_{YN}	Moment about wing trailing edge due to normal-force components only	ft-lbs
CMNC	Pitching-moment coefficient due to normal-force components only, about the wing area centroid, $M_{YNC}/QS\overline{C}$	-
M_{YNC}	Moment due to normal forces only, about a spanwise axis through the wing area centroid	ft-lbs
CMA	Pitching-moment coefficient due to axial-force components only, about any spanwise axis through the wing centerline, $M_{YA}/QS\overline{C}$	-
M_{YA}	Moment about any spanwise axis through centerline of axial force components only	ft-lbs
CMBT	Total pitching-moment coefficient about the wing traing edge, = CMNB + CMA	
CMCT	Total pitching-moment coefficient about the wing area centroid = CMNC + CMA	-
CMB	Semispan root bending-moment coefficient, $M_X'/QS(b/2)$	
b	wing span	ft
M_X'	Moment due to the normal force acting on a single semispan of the wing about the wing root chord (centerline)	ft-lbs
CYM	Yawing-moment coefficient $M_Z/QS\overline{C}$	-
M_Z	Moment about an axis normal to the wing plan view and its centerline	ft-lbs
XCP	Longitudinal aerodynamic center of the wing from its root leading edge as fraction of the root chord	root-chord fraction

Symbol	Definition	Units
YCP	Lateral aerodynamic center of the normal force acting upon a semispan with respect to the wing centerline (root) as fraction of the semispan (b/2)	Semispan fraction
ZCP	Vertical aerodynamic center of the wing axial force with respect to the wing centerline, as fraction of one-half the wing thickness. Positive down with the wing pitched up (positive ALPHA)	Half-thickness fraction

The data presented are organized in sets according to increasing configuration number. Within each set the data are organized according to increasing Mach number. The first set of data is for configuration 1, followed by sets corresponding to configurations 2 through 11.

TST P TN CONF RN/L PT P Q MACH TTF TF
401 1 66 1 2.324 1235 967 245.0 0.602 90.8 44.3

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 5 164 10 159

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0093	-0.0018	-0.0115	-0.0068	-0.0000	-0.0115	-0.0068	-0.0196	0.0001	0.1794	2.0888	0.1189
0.0000	0.0752	0.0044	0.0305	-0.0070	-0.0000	0.0305	-0.0070	0.0180	0.0004	0.7292	0.2394	-0.0526
5.0000	0.1539	0.0022	0.0723	-0.0047	0.0000	0.0723	-0.0047	0.0526	0.0001	0.6869	0.3417	0.5772
10.000	0.2732	0.0026	0.1352	-0.0013	0.0000	0.1353	-0.0013	0.0913	0.0001	0.6700	0.3342	0.3642
15.000	0.4481	0.0032	0.2329	0.0089	0.0000	0.2330	0.0089	0.1477	0.0001	0.6535	0.3295	0.6464
20.000	0.5898	0.0013	0.3123	0.0174	0.0001	0.3124	0.0175	0.1951	-0.0001	0.6469	0.3307	2.1964
25.000	0.8429	-0.0006	0.4499	0.0285	0.0001	0.4500	0.0286	0.2822	-0.0002	0.6441	0.3348	-6.7508
30.000	1.1302	-0.0044	0.6058	0.0557	0.0002	0.6060	0.0559	0.3739	-0.0005	0.6329	0.3399	-1.6645
35.000	1.3186	-0.0064	0.7394	0.0802	0.0002	0.7396	0.0804	0.4429	-0.0006	0.6261	0.3359	-1.5903
40.000	0.9483	0.0045	0.5634	0.0893	0.0002	0.5635	0.0895	0.2728	0.0002	0.6038	0.2877	1.5327
45.000	1.1447	0.0007	0.7315	0.1592	0.0002	0.7317	0.1594	0.3255	0.0001	0.5739	0.2843	15.138
50.000	1.3107	0.0053	0.8075	0.1521	0.0002	0.8076	0.1523	0.3705	0.0004	0.5893	0.2826	1.5792
55.000	1.3217	0.0071	0.7759	0.1151	0.0002	0.7760	0.1153	0.3818	0.0005	0.6086	0.2889	0.9949
60.000	1.1624	0.0061	0.6548	0.0736	0.0002	0.6549	0.0738	0.3424	0.0003	0.6250	0.2948	1.2561

TST P TN CONF RN/L PT P Q MACH TTF TF
401 1 36 1 2.026 1045 684 308.5 0.603 83.7 21.0

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 4 163 9 158

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0499	0.0061	-0.0293	-0.0043	-0.0000	-0.0293	-0.0043	-0.0319	0.0004	0.6086	0.6338	-0.1023
0.0000	0.0478	0.0071	0.0166	-0.0073	0.0000	0.0166	-0.0073	0.0082	0.0006	0.7691	0.1715	0.0014
5.0000	0.1398	0.0055	0.0624	-0.0075	0.0000	0.0624	-0.0075	0.0468	0.0004	0.7025	0.3349	0.1001
10.000	0.2429	0.0056	0.1255	0.0041	0.0000	0.1255	0.0041	0.0784	0.0003	0.6554	0.3428	0.4053
15.000	0.4006	0.0047	0.2116	0.0113	0.0001	0.2117	0.0114	0.1295	0.0002	0.6478	0.3233	0.6113
20.000	0.5494	0.0095	0.3068	0.0321	0.0002	0.3069	0.0322	0.1769	0.0005	0.6276	0.3220	0.7511
25.000	0.7772	0.0103	0.4282	0.0396	0.0002	0.4283	0.0398	0.2552	0.0005	0.6326	0.3283	0.8215
30.000	1.0197	0.0072	0.5679	0.0581	0.0002	0.5681	0.0583	0.3436	0.0003	0.6286	0.3369	1.3651
35.000	1.2008	0.0043	0.6720	0.0717	0.0002	0.6722	0.0719	0.3907	0.0002	0.6269	0.3255	2.3815
40.000	1.0902	0.0029	0.6615	0.1165	0.0002	0.6617	0.1167	0.3225	0.0001	0.5954	0.2458	3.2333
45.000	1.2691	0.0060	0.7741	0.1397	0.0002	0.7744	0.1399	0.3743	0.0004	0.5933	0.2949	1.6065
50.000	1.3410	0.0066	0.8179	0.1474	0.0002	0.8181	0.1476	0.3824	0.0005	0.5932	0.2851	1.3644
55.000	1.3476	0.0102	0.7684	0.0946	0.0002	0.7685	0.0948	0.3991	0.0006	0.6198	0.2962	0.6744
60.000	1.6618	0.0025	1.0114	0.1806	0.0002	1.0116	0.1808	0.4731	0.0003	0.5976	0.2864	3.1331

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	1	1.981	973	574	327.1	0.902	85.0	8.8

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 3 162 8 157

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0226	0.0079	-0.0158	-0.0045	-0.0000	-0.0158	-0.0045	-0.0231	0.0005	0.5308	1.0083	-0.0397
0.0000	0.0485	0.0079	0.0159	-0.0083	-0.0000	0.0159	-0.0083	0.0082	0.0005	0.7812	0.1686	-0.0063
5.0000	0.1462	0.0076	0.0654	-0.0077	0.0000	0.0654	-0.0077	0.0482	0.0005	0.7019	0.3294	0.0826
10.000	0.2598	0.0084	0.1316	0.0020	0.0001	0.1319	0.0020	0.0839	0.0005	0.6615	0.3230	0.2954
15.000	0.4171	0.0082	0.2181	0.0095	0.0001	0.2181	0.0096	0.1364	0.0005	0.6513	0.3270	0.4404
20.000	0.5716	0.0137	0.3117	0.0259	0.0002	0.3118	0.0261	0.1872	0.0008	0.6363	0.3276	0.5746
25.000	0.7528	0.0181	0.4139	0.0376	0.0002	0.4141	0.0378	0.2486	0.0010	0.6333	0.3304	0.5851
30.000	0.9843	0.0117	0.5499	0.0578	0.0003	0.5501	0.0580	0.3250	0.0007	0.6273	0.3301	0.9896
35.000	1.1652	0.0071	0.6553	0.0727	0.0003	0.6555	0.0730	0.3718	0.0004	0.6252	0.3194	1.6117
40.000	1.1082	0.0061	0.6722	0.1181	0.0002	0.6724	0.1184	0.3277	0.0003	0.5955	0.2956	1.7734
45.000	1.3048	0.0085	0.7752	0.1228	0.0002	0.7754	0.1231	0.3848	0.0005	0.6036	0.2949	1.1416
50.000	1.2819	0.0115	0.7416	0.1007	0.0002	0.7418	0.1009	0.3771	0.0007	0.6142	0.2941	0.6646
55.000	1.4103	0.0102	0.8065	0.1014	0.0002	0.8067	0.1016	0.4195	0.0006	0.6187	0.2975	0.6915
60.000	1.3652	0.0147	0.6627	-0.0198	0.0001	0.6628	-0.0197	0.4443	0.0007	0.6837	0.3293	0.2806

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	1	2.008	927	382	385.3	1.200	84.4	-37.3

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 2 161 7 156

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0358	0.0217	-0.0248	-0.0069	-0.0000	-0.0248	-0.0069	-0.0295	0.0016	0.5329	0.8098	-0.0242
0.0000	0.0568	0.0215	0.0191	-0.0092	0.0000	0.0191	-0.0092	0.0099	0.0016	0.7752	0.1744	0.0012
5.0000	0.1404	0.0204	0.0598	-0.0104	0.0000	0.0598	-0.0104	0.0462	0.0015	0.7160	0.3295	0.0358
10.000	0.2731	0.0179	0.1312	-0.0053	0.0000	0.1313	-0.0053	0.0915	0.0013	0.6796	0.3351	0.1064
15.000	0.4234	0.0157	0.2082	-0.0035	0.0001	0.2083	-0.0034	0.1420	0.0011	0.6721	0.3355	0.1477
20.000	0.5736	0.0156	0.2898	0.0030	0.0001	0.2899	0.0031	0.1931	0.0011	0.6632	0.3366	0.2598
25.000	0.7417	0.0165	0.3632	0.0124	0.0001	0.3633	0.0125	0.2435	0.0011	0.6555	0.3282	0.3311
30.000	0.9147	0.0157	0.4927	0.0354	0.0002	0.4929	0.0355	0.2992	0.0010	0.6406	0.3269	0.4598
35.000	1.0745	0.0154	0.5925	0.0553	0.0002	0.5926	0.0554	0.3405	0.0010	0.6328	0.3177	0.6210
40.000	1.0235	0.0172	0.6013	0.0896	0.0002	0.6015	0.0898	0.2979	0.0012	0.6082	0.2911	0.5277
45.000	1.1834	0.0107	0.6812	0.0895	0.0002	0.6814	0.0897	0.3523	0.0006	0.6162	0.2977	0.7991
50.000	1.3227	0.0084	0.7534	0.0921	0.0002	0.7536	0.0923	0.3956	0.0005	0.6203	0.2991	0.8246
55.000	1.4262	0.0092	0.7964	0.0833	0.0001	0.7965	0.0835	0.4337	0.0005	0.6277	0.3041	0.6773
60.000	1.3268	0.0094	0.7414	0.0781	0.0001	0.7415	0.0782	0.3917	0.0005	0.6283	0.2938	0.5759

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	1	1.993	979	229	412.2	1.604	85.1	-100.0

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 1 160 6 155

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	0.0203	0.0122	0.0038	-0.0066	-0.0000	0.0038	-0.0066	-0.0114	0.0009	0.8875	-0.5228	-0.0369
0.0000	0.0711	0.0131	0.0237	-0.0118	0.0000	0.0237	-0.0116	0.0126	0.0010	0.7774	0.1772	0.0066
5.0000	0.1539	0.0122	0.0634	-0.0136	0.0000	0.0634	-0.0136	0.0476	0.0009	0.7255	0.3093	0.0508
10.000	0.2699	0.0112	0.1252	-0.0098	0.0000	0.1252	-0.0097	0.0873	0.0008	0.6907	0.3235	0.1360
15.000	0.3973	0.0108	0.1921	-0.0065	0.0001	0.1922	-0.0065	0.1296	0.0007	0.6776	0.3261	0.2151
20.000	0.5336	0.0107	0.2647	-0.0021	0.0001	0.2648	-0.0020	0.1737	0.0007	0.6692	0.3256	0.2897
25.000	0.6880	0.0107	0.3467	0.0027	0.0001	0.3468	0.0028	0.2211	0.0007	0.6640	0.3213	0.3566
30.000	0.7988	0.0115	0.4172	0.0178	0.0001	0.4173	0.0179	0.2606	0.0008	0.6518	0.3263	0.4011
35.000	0.9579	0.0123	0.5066	0.0278	0.0001	0.5068	0.0279	0.3064	0.0008	0.6474	0.3199	0.4595
40.000	1.0613	0.0111	0.5669	0.0562	0.0002	0.5870	0.0564	0.3285	0.0007	0.6313	0.3095	0.6729
45.000	1.1973	0.0132	0.6538	0.0552	0.0002	0.6540	0.0554	0.3736	0.0009	0.6359	0.3121	0.6054
50.000	1.3137	0.0139	0.7211	0.0643	0.0002	0.7212	0.0645	0.4069	0.0009	0.6340	0.3097	0.5858
55.000	1.4054	0.0101	0.7618	0.0592	0.0001	0.7619	0.0593	0.4369	0.0006	0.6386	0.3109	0.6453
60.000	1.5089	0.0094	0.8039	0.0495	0.0001	0.8040	0.0496	0.4729	0.0006	0.6448	0.3134	0.4798

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	2	2.021	1223	957	243.0	0.602	77.7	41.4

SECOND ORDER LAGRANGIAN INTERPOLATION　　COMBINED DATA　　COMBINED RUNS:　18　146　14　142

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1506	0.0041	-0.0970	-0.0217	-0.0000	-0.0970	-0.0217	-0.0591	0.0035	0.4990	0.3914	-0.0927
0.0000	-0.0232	0.0029	-0.0125	-0.0009	-0.0000	-0.0125	-0.0009	-0.0102	0.0034	0.5811	0.4376	-0.0646
5.0000	0.0778	0.0015	0.0614	0.0225	0.0001	0.0615	0.0226	0.0410	0.0031	0.3856	0.5263	1.8025
10.000	0.2645	0.0002	0.1861	0.0518	0.0002	0.1863	0.0520	0.1384	0.0029	0.4604	0.5152	27.990
15.000	0.4649	-0.0054	0.3139	0.0815	0.0003	0.3142	0.0818	0.2281	0.0022	0.4743	0.4908	-1.8526
20.000	0.7085	-0.0110	0.4676	0.1134	0.0004	0.4680	0.1137	0.3277	0.0017	0.4863	0.4626	-1.1885
25.000	0.9645	-0.0166	0.6314	0.1491	0.0005	0.6318	0.1496	0.4293	0.0011	0.4905	0.4451	-1.0141
30.000	1.2411	-0.0234	0.8024	0.1816	0.0006	0.8030	0.1824	0.5445	0.0003	0.4968	0.4387	-0.8688
35.000	1.4205	-0.0267	0.9238	0.2136	0.0007	0.9245	0.2142	0.6103	-0.0000	0.4938	0.4297	-0.8727
40.000	1.5184	-0.0209	0.9717	0.2124	0.0006	0.9723	0.2131	0.6338	0.0008	0.5020	0.4174	-1.0374
45.000	1.4348	-0.0090	0.8970	0.1796	0.0005	0.8975	0.1801	0.5841	0.0019	0.5135	0.4071	-2.0190
50.000	1.2449	0.0160	0.7082	0.0857	0.0003	0.7084	0.0860	0.5032	0.0040	0.5574	0.4042	0.6098
55.000	1.2083	0.0168	0.6804	0.0763	0.0002	0.6807	0.0765	0.4874	0.0042	0.5618	0.4033	0.5222
60.000	1.2204	0.0144	0.6852	0.0750	0.0002	0.6855	0.0753	0.4878	0.0040	0.5630	0.3997	0.6002

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	2	2.017	1025	674	303.1	0.802	76.8	17.5

SECOND ORDER LAGRANGIAN INTERPOLATION　　COMBINED DATA　　COMBINED RUNS:　17　145　13　141

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0393	0.0054	-0.0352	-0.0155	-0.0000	-0.0352	-0.0156	-0.0148	0.0021	0.3049	0.3756	0.1211
0.0000	-0.0204	0.0053	-0.0109	-0.0007	-0.0000	-0.0109	-0.0007	-0.0088	0.0022	0.5832	0.4299	-0.0330
5.0000	0.1027	0.0045	0.0699	0.0186	0.0001	0.0700	0.0186	0.0509	0.0020	0.4700	0.4955	0.4550
10.000	0.2558	0.0034	0.1770	0.0491	0.0002	0.1772	0.0493	0.1314	0.0018	0.4613	0.5136	1.6704
15.000	0.4757	-0.0008	0.3164	0.0785	0.0003	0.3167	0.0788	0.2295	0.0012	0.4823	0.4823	-11.774
20.000	0.7034	-0.0042	0.4659	0.1142	0.0004	0.4663	0.1146	0.3222	0.0008	0.4844	0.4581	-3.2247
25.000	0.9000	-0.0052	0.5993	0.1494	0.0005	0.5999	0.1499	0.4007	0.0007	0.4815	0.4452	-3.5517
30.000	1.2142	-0.0103	0.7737	0.1667	0.0006	0.7743	0.1672	0.5395	0.0000	0.5040	0.4443	-1.9787
35.000	1.3351	-0.0076	0.8439	0.1764	0.0006	0.8445	0.1770	0.5766	0.0004	0.5081	0.4318	-2.7486
40.000	1.4269	0.0016	0.8720	0.1585	0.0005	0.8725	0.1590	0.5966	0.0013	0.5244	0.4181	14.690
45.000	1.3049	0.0120	0.7814	0.1290	0.0004	0.7819	0.1294	0.5286	0.0024	0.5339	0.4051	1.2511
50.000	1.2646	0.0195	0.7183	0.0860	0.0003	0.7186	0.0863	0.5143	0.0031	0.5581	0.4067	0.5548
55.000	1.2964	0.0184	0.7251	0.0769	0.0003	0.7254	0.0772	0.5279	0.0030	0.5648	0.4072	0.5072
60.000	1.5288	0.0165	0.8285	0.0641	0.0002	0.8287	0.0643	0.6277	0.0029	0.5787	0.4106	0.4713

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	2	1.978	960	565	322.9	0.903	79.7	4.0

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 16 144 12 140

ALPHA	CN	CA	CMNB	CMNC	CNA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0740	0.0078	-0.0500	-0.0130	-0.0000	-0.0500	-0.0130	-0.0289	0.0020	0.4741	0.3883	-0.2487
0.0000	-0.0030	0.0070	-0.0016	-0.0001	-0.0000	-0.0016	-0.0001	-0.0012	0.0019	0.5891	0.3992	-0.0034
5.0000	0.0931	0.0066	0.0634	0.0168	0.0000	0.0634	0.0169	0.0455	0.0018	0.4703	0.4887	0.2414
10.000	0.2751	0.0049	0.1815	0.0439	0.0001	0.1816	0.0441	0.1401	0.0014	0.4865	0.5094	0.9479
15.000	0.4976	0.0013	0.3216	0.0728	0.0002	0.3219	0.0730	0.2401	0.0009	0.4969	0.4825	6.6815
20.000	0.7215	0.0003	0.4644	0.1037	0.0004	0.4648	0.1040	0.3352	0.0008	0.4989	0.4646	37.725
25.000	0.9590	0.0033	0.6132	0.1337	0.0005	0.6137	0.1342	0.4315	0.0011	0.5023	0.4500	5.1668
30.000	1.1728	0.0023	0.7446	0.1582	0.0006	0.7452	0.1588	0.5219	0.0009	0.5058	0.4450	8.9690
35.000	1.2607	0.0090	0.7834	0.1530	0.0006	0.7839	0.1536	0.5342	0.0017	0.5164	0.4237	2.1854
40.000	1.3399	0.0127	0.7986	0.1287	0.0005	0.7991	0.1292	0.5571	0.0020	0.5361	0.4159	1.3090
45.000	1.3035	0.0148	0.7687	0.1170	0.0004	0.7691	0.1174	0.5302	0.0023	0.5410	0.4068	0.9601
50.000	1.3288	0.0178	0.7549	0.0905	0.0003	0.7552	0.0908	0.5421	0.0026	0.5579	0.4080	0.6333
55.000	1.3734	0.0185	0.7609	0.0742	0.0003	0.7612	0.0745	0.5633	0.0027	0.5689	0.4101	0.5055
60.000	1.4666	0.0151	0.8083	0.0750	0.0003	0.8085	0.0752	0.6018	0.0025	0.5712	0.4103	0.5659

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	2	2.008	910	374	378.7	1.203	76.9	-43.6

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 15 143 11 139

ALPHA	CN	CA	CMNB	CMNC	CNA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0602	0.0226	-0.0428	-0.0127	-0.0000	-0.0429	-0.0128	-0.0259	0.0025	0.4449	0.4245	-0.0574
0.0000	-0.0004	0.0227	-0.0004	-0.0002	-0.0000	-0.0004	-0.0002	-0.0002	0.0026	0.2045	0.4162	-0.0008
5.0000	0.1070	0.0223	0.0711	0.0176	0.0000	0.0711	0.0176	0.0534	0.0025	0.4831	0.4986	0.0780
10.000	0.2814	0.0206	0.1759	0.0352	0.0001	0.1760	0.0353	0.1427	0.0022	0.5135	0.5071	0.1930
15.000	0.4683	0.0219	0.2740	0.0399	0.0001	0.2741	0.0400	0.2215	0.0025	0.5446	0.4730	0.2353
20.000	0.6926	0.0210	0.4080	0.0617	0.0002	0.4082	0.0619	0.3202	0.0022	0.5415	0.4623	0.3726
25.000	0.8776	0.0198	0.5135	0.0747	0.0003	0.5138	0.0750	0.3937	0.0021	0.5447	0.4485	0.5179
30.000	1.0743	0.0197	0.6228	0.0857	0.0004	0.6232	0.0860	0.4727	0.0021	0.5488	0.4401	0.6304
35.000	1.1632	0.0198	0.6826	0.1010	0.0004	0.6830	0.1014	0.4930	0.0021	0.5434	0.4238	0.6848
40.000	1.2908	0.0214	0.7465	0.1011	0.0004	0.7469	0.1015	0.5446	0.0023	0.5499	0.4219	0.6375
45.000	1.3513	0.0199	0.7701	0.0945	0.0004	0.7705	0.0948	0.5631	0.0023	0.5565	0.4167	0.6414
50.000	1.4159	0.0118	0.7994	0.0914	0.0003	0.7997	0.0917	0.5852	0.0017	0.5607	0.4133	0.9250
55.000	1.4864	0.0120	0.8259	0.0827	0.0003	0.8262	0.0830	0.6160	0.0018	0.5677	0.4144	0.8090
60.000	1.4640	0.0134	0.8020	0.0760	0.0002	0.8022	0.0762	0.6050	0.0019	0.5744	0.4132	0.5922

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	3	2.032	1236	967	246.2	0.603	80.3	43.7

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 46   168   42   172

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0893	0.0010	-0.0749	-0.0302	-0.0002	-0.0751	-0.0304	-0.0444	0.0001	0.1609	0.4963	-13.444
0.0000	-0.0143	0.0015	-0.0075	-0.0004	-0.0000	-0.0075	-0.0004	-0.0076	0.0002	0.4712	0.5312	0.1370
5.0000	0.1013	0.0015	0.0785	0.0278	0.0001	0.0786	0.0279	0.0525	0.0002	0.2242	0.5179	3.1105
10.000	0.1920	-0.0052	0.1581	0.0620	0.0003	0.1583	0.0623	0.0992	-0.0005	0.1756	0.5168	-1.8726
15.000	0.4923	-0.0093	0.3476	0.1015	0.0005	0.3481	0.1019	0.2570	-0.0010	0.2930	0.5221	-1.6693
20.000	0.6971	-0.0065	0.4791	0.1306	0.0005	0.4796	0.1310	0.3750	-0.0007	0.3120	0.5380	-2.5503
25.000	0.9936	-0.0076	0.6533	0.1565	0.0005	0.6539	0.1571	0.5321	-0.0008	0.3419	0.5355	-2.4140
30.000	1.1999	-0.0094	0.7804	0.1805	0.0006	0.7810	0.1811	0.6374	-0.0010	0.3491	0.5313	-2.1913
35.000	1.3856	-0.0097	0.8927	0.2000	0.0007	0.8934	0.2006	0.7200	-0.0011	0.3552	0.5196	-2.4057
40.000	1.5282	-0.0064	0.9667	0.2026	0.0007	0.9674	0.2033	0.7706	-0.0007	0.3670	0.5042	-3.7189
45.000	1.1530	0.0246	0.6662	0.0897	0.0004	0.6666	0.0901	0.5465	0.0024	0.4218	0.4740	0.5373
50.000	1.1402	0.0249	0.6504	0.0803	0.0003	0.6507	0.0806	0.5369	0.0025	0.4293	0.4709	0.4757
55.000	1.1745	0.0229	0.6621	0.0749	0.0003	0.6624	0.0752	0.5509	0.0023	0.4360	0.4691	0.4744
60.000	1.2317	0.0197	0.6851	0.0693	0.0003	0.6854	0.0696	0.5768	0.0019	0.4435	0.4683	0.5055

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	3	2.026	1044	664	307.9	0.802	83.4	21.4

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 45   167   41   171

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1170	0.0075	-0.0762	-0.0177	-0.0001	-0.0763	-0.0178	-0.0610	0.0007	0.3474	0.5194	-0.5818
0.0000	-0.0170	0.0066	-0.0084	0.0002	0.0000	-0.0084	0.0002	-0.0096	0.0006	0.5093	0.5659	0.0206
5.0000	0.0338	0.0070	0.0596	0.0177	0.0001	0.0597	0.0178	0.0444	0.0007	0.2878	0.5293	0.3956
10.000	0.2683	-0.0011	0.1944	0.0602	0.0002	0.1946	0.0605	0.1363	-0.0002	0.2746	0.5080	-7.5551
15.000	0.4654	-0.0133	0.3384	0.1058	0.0005	0.3390	0.1063	0.2382	-0.0014	0.2716	0.5117	-1.3112
20.000	0.7516	0.0005	0.4922	0.1164	0.0004	0.4926	0.1168	0.3959	-0.0000	0.3446	0.5268	29.182
25.000	0.9806	0.0033	0.6385	0.1482	0.0005	0.6390	0.1487	0.5171	0.0002	0.3483	0.5273	5.2575
30.000	1.1689	0.0032	0.7542	0.1697	0.0006	0.7546	0.1704	0.6012	0.0002	0.3543	0.5143	6.3211
35.000	1.2913	0.0116	0.8360	0.1904	0.0008	0.8368	0.1911	0.6512	0.0010	0.3516	0.5045	2.2287
40.000	1.1221	0.0305	0.6563	0.0953	0.0005	0.6566	0.0958	0.5365	0.0029	0.4147	0.4781	0.5267
45.000	1.1433	0.0298	0.6601	0.0884	0.0004	0.6605	0.0889	0.5434	0.0029	0.4223	0.4753	0.4884
50.000	1.2134	0.0272	0.6888	0.0820	0.0004	0.6891	0.0824	0.5759	0.0026	0.4321	0.4746	0.4761
55.000	1.2775	0.0240	0.7130	0.0743	0.0003	0.7134	0.0746	0.6051	0.0023	0.4416	0.4737	0.4618
60.000	1.3666	0.0196	0.7540	0.0707	0.0003	0.7543	0.0710	0.6466	0.0020	0.4481	0.4732	0.5538

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	3	1.974	963	572	325.0	0.961	84.2	8.3

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 44   166   40   170

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1465	0.0127	-0.0929	-0.0196	-0.0001	-0.0929	-0.0197	-0.0676	0.0012	0.3666	0.4605	-0.1983
0.0000	0.0169	0.0111	0.0086	0.0001	0.0000	0.0086	0.0001	0.0077	0.0010	0.4945	0.4532	0.0008
5.0000	0.1135	0.0120	0.0753	0.0185	0.0001	0.0753	0.0186	0.0547	0.0011	0.3367	0.4814	0.2124
10.000	0.2776	0.0030	0.1910	0.0521	0.0002	0.1912	0.0523	0.1422	0.0002	0.3121	0.5120	2.4038
15.000	0.5068	-0.0030	0.3434	0.0900	0.0004	0.3438	0.0904	0.2593	-0.0004	0.3215	0.5116	-4.2829
20.000	0.7628	-0.0031	0.5084	0.1269	0.0005	0.5089	0.1274	0.3934	-0.0004	0.3331	0.5159	-5.3829
25.000	1.0028	0.0055	0.6456	0.1442	0.0005	0.6461	0.1448	0.5216	0.0005	0.3555	0.5201	3.1557
30.000	1.1347	0.0143	0.7466	0.1812	0.0007	0.7493	0.1819	0.5779	0.0012	0.3401	0.5091	1.7614
35.000	1.2532	0.0246	0.7833	0.1567	0.0007	0.7840	0.1574	0.6153	0.0024	0.3733	0.4911	0.9794
40.000	1.0957	0.0338	0.6474	0.0995	0.0005	0.6479	0.1000	0.5239	0.0033	0.4087	0.4782	0.5070
45.000	1.1960	0.0297	0.6842	0.0862	0.0004	0.6846	0.0866	0.5695	0.0029	0.4276	0.4762	0.4884
50.000	1.2479	0.0272	0.7034	0.0795	0.0004	0.7038	0.0799	0.5938	0.0027	0.4360	0.4758	0.4694
55.000	1.3216	0.0239	0.7337	0.0729	0.0003	0.7340	0.0732	0.6294	0.0023	0.4446	0.4763	0.4692
60.000	1.4019	0.0195	0.7637	0.0627	0.0003	0.7640	0.0630	0.6694	0.0019	0.4551	0.4775	0.4227

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	3	2.010	924	379	384.6	1.204	82.8	-39.1

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 43   165   39   169

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0906	0.0429	-0.0667	-0.0214	-0.0001	-0.0668	-0.0215	-0.0431	0.0044	0.2604	0.4725	-0.0635
0.0000	-0.0067	0.0408	-0.0035	-0.0001	0.0000	-0.0035	-0.0001	-0.0038	0.0041	0.4753	0.5599	0.0060
5.0000	0.1006	0.0423	0.0688	0.0185	0.0001	0.0689	0.0186	0.0516	0.0043	0.3155	0.5123	0.0666
10.000	0.2719	0.0356	0.1823	0.0463	0.0002	0.1825	0.0466	0.1417	0.0036	0.3287	0.5213	0.1830
15.000	0.4857	0.0325	0.3101	0.0673	0.0003	0.3104	0.0676	0.2494	0.0032	0.3607	0.5135	0.2695
20.000	0.7000	0.0301	0.4311	0.0811	0.0004	0.4314	0.0814	0.3601	0.0029	0.3836	0.5146	0.4011
25.000	0.9252	0.0288	0.5592	0.0965	0.0004	0.5596	0.0970	0.4684	0.0028	0.3952	0.5063	0.4925
30.000	1.1213	0.0281	0.6630	0.1023	0.0005	0.6635	0.1028	0.5603	0.0027	0.4083	0.4997	0.5743
35.000	1.2659	0.0275	0.7423	0.1093	0.0005	0.7428	0.1099	0.6221	0.0026	0.4134	0.4914	0.6504
40.000	1.3321	0.0297	0.7684	0.1024	0.0005	0.7689	0.1029	0.6471	0.0029	0.4227	0.4858	0.5665
45.000	1.3276	0.0272	0.7517	0.0879	0.0004	0.7521	0.0883	0.6418	0.0026	0.4334	0.4834	0.5382
50.000	1.3867	0.0217	0.7655	0.0721	0.0003	0.7658	0.0724	0.6683	0.0021	0.4477	0.4819	0.5169
55.000	1.4554	0.0200	0.7923	0.0646	0.0003	0.7926	0.0649	0.7006	0.0019	0.4554	0.4814	0.4959
60.000	1.5624	0.0158	0.8365	0.0553	0.0003	0.8368	0.0556	0.7496	0.0016	0.4643	0.4800	0.5400

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	4	2.030	1212	947	241.6	0.604	72.7	36.5

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 68 118 72 116

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1265	-0.0031	-0.0799	-0.0167	-0.0002	-0.0801	-0.0169	-0.0489	-0.0015	0.5778	0.3857	95.302
0.0000	-0.0058	0.0069	-0.0035	-0.0006	-0.0000	-0.0035	-0.0006	-0.0014	0.0008	0.6004	0.2474	0.0613
5.0000	0.1241	0.0021	0.0705	0.0084	0.0001	0.0706	0.0085	0.0549	-0.0002	0.6209	0.4426	1.8548
10.000	0.2988	0.0007	0.1757	0.0263	0.0002	0.1759	0.0265	0.1208	-0.0003	0.6075	0.4045	9.9043
15.000	0.5245	-0.0017	0.3039	0.0416	0.0003	0.3041	0.0419	0.1928	-0.0006	0.6135	0.3675	-4.7255
20.000	0.8046	-0.0043	0.4618	0.0595	0.0003	0.4620	0.0597	0.2805	-0.0010	0.6172	0.3486	-2.1882
25.000	1.0117	-0.0089	0.5932	0.0773	0.0003	0.5935	0.0777	0.3513	-0.0018	0.6165	0.3405	-1.1374
30.000	1.3201	-0.0144	0.7623	0.1023	0.0004	0.7628	0.1027	0.4421	-0.0025	0.6148	0.3349	-0.9701
35.000	1.2485	-0.0035	0.7661	0.1419	0.0004	0.7666	0.1423	0.3850	-0.0004	0.5907	0.3084	-4.0507
40.000	1.3850	-0.0044	0.8540	0.1615	0.0005	0.8545	0.1620	0.4235	-0.0004	0.5887	0.3057	-3.6293
45.000	1.3873	0.0005	0.8565	0.1628	0.0005	0.8569	0.1633	0.4104	0.0002	0.5882	0.2958	29.030
50.000	1.3441	0.0088	0.8252	0.1532	0.0004	0.8256	0.1536	0.3873	0.0013	0.5904	0.2882	1.5022
55.000	1.2362	0.0181	0.7013	0.0832	0.0003	0.7016	0.0835	0.3678	0.0020	0.6216	0.2975	0.4827
60.000	1.4747	0.0129	0.8552	0.1179	0.0003	0.8555	0.1182	0.4353	0.0015	0.6131	0.2951	2.0238

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	4	2.032	1030	675	303.1	0.801	75.9	14.9

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 67 120 71 115

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1338	0.0073	-0.0733	-0.0064	-0.0001	-0.0734	-0.0065	-0.0537	0.0005	0.6349	0.3994	0.2091
0.0000	0.0026	0.0156	0.0022	0.0009	0.0000	0.0022	0.0009	0.0011	0.0024	0.4474	0.4161	0.1583
5.0000	0.1288	0.0110	0.0722	0.0076	0.0001	0.0723	0.0079	0.0548	0.0014	0.6259	0.4259	0.0944
10.000	0.3224	0.0106	0.1829	0.0218	0.0002	0.1831	0.0219	0.1266	0.0013	0.6215	0.3928	0.5107
15.000	0.5375	0.0103	0.3077	0.0389	0.0002	0.3079	0.0392	0.1936	0.0012	0.6181	0.3601	0.7825
20.000	0.7384	0.0064	0.4328	0.0637	0.0004	0.4332	0.0640	0.2545	0.0004	0.6089	0.3447	1.8458
25.000	0.9458	0.0066	0.5589	0.0861	0.0005	0.5594	0.0865	0.3171	0.0004	0.6057	0.3353	2.2852
30.000	1.2360	0.0082	0.7179	0.0998	0.0005	0.7184	0.1004	0.4125	0.0007	0.6125	0.3337	2.0044
35.000	1.4226	0.0088	0.8335	0.1222	0.0006	0.8341	0.1228	0.4677	0.0011	0.6093	0.3288	2.0373
40.000	1.3338	0.0041	0.8462	0.1793	0.0006	0.8467	0.1799	0.4037	0.0006	0.5768	0.3027	4.4981
45.000	1.3501	0.0107	0.8279	0.1526	0.0005	0.8283	0.1533	0.3962	0.0014	0.5910	0.2935	1.3768
50.000	1.3720	0.0139	0.8215	0.1355	0.0004	0.8219	0.1359	0.4017	0.0018	0.6006	0.2928	0.9146
55.000	1.3684	0.0188	0.7677	0.0835	0.0003	0.7680	0.0838	0.4122	0.0021	0.6259	0.3012	0.4407
60.000	1.3969	0.0139	0.7982	0.0997	0.0005	0.7984	0.1000	0.4156	0.0016	0.6182	0.2972	1.4693

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	4	1.975	954	564	320.3	0.901	77.0	2.0

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 66 119 70 114

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	CP
-5.0000	-0.1151	0.0161	-0.0566	0.0008	-0.0000	-0.0563	0.0007	-0.0507	0.0021	0.6696	0.4366	-0.0879
0.0000	0.0007	0.0186	-0.0008	-0.0012	-0.0000	-0.0006	-0.0012	0.0018	0.0028	1.7549	2.2952	-0.0204
5.0000	0.1424	0.0166	0.0760	0.0048	0.0001	0.0761	0.0049	0.0596	0.0023	0.6439	0.4188	0.2124
10.000	0.3192	0.0163	0.1797	0.0201	0.0002	0.1796	0.0202	0.1247	0.0023	0.6245	0.3909	0.2651
15.000	0.5180	0.0147	0.2943	0.0353	0.0003	0.2946	0.0356	0.1877	0.0018	0.6208	0.3622	0.6434
20.000	0.7737	0.0157	0.4438	0.0570	0.0004	0.4443	0.0575	0.2662	0.0017	0.6170	0.3441	0.9158
25.000	0.9446	0.0260	0.5588	0.0865	0.0007	0.5595	0.0872	0.3145	0.0033	0.6051	0.3330	0.8191
30.000	1.1896	0.0196	0.6806	0.0859	0.0006	0.6812	0.0864	0.3954	0.0022	0.6184	0.3327	0.9022
35.000	1.0849	0.0243	0.6750	0.1325	0.0006	0.6756	0.1331	0.3254	0.0029	0.5847	0.2999	0.7519
40.000	1.2939	0.0131	0.7960	0.1490	0.0005	0.7965	0.1495	0.3894	0.0016	0.5896	0.3009	1.2610
45.000	1.3494	0.0132	0.8099	0.1352	0.0004	0.8104	0.1357	0.4002	0.0016	0.5997	0.2966	1.0341
50.000	1.3930	0.0149	0.8199	0.1234	0.0004	0.8203	0.1238	0.4129	0.0018	0.6074	0.2963	0.8274
55.000	1.4318	0.0185	0.7935	0.0776	0.0003	0.7937	0.0778	0.4362	0.0020	0.6304	0.3047	0.4292
60.000	1.4996	0.0122	0.8467	0.0969	0.0002	0.8469	0.0971	0.4541	0.0014	0.6231	0.3027	1.3810

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	4	2.008	909	374	378.3	1.203	76.6	-43.7

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 65 117 69 113

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1167	0.0334	-0.0524	0.0060	-0.0000	-0.0524	0.0060	-0.0550	0.0050	0.6973	0.4633	-0.0115
0.0000	0.0051	0.0322	0.0012	-0.0014	-0.0000	0.0011	-0.0014	0.0034	0.0047	0.8548	0.6529	-0.0090
5.0000	0.1483	0.0310	0.0733	-0.0008	0.0000	0.0733	-0.0008	0.0634	0.0045	0.6703	0.4284	0.0473
10.000	0.3265	0.0279	0.1681	0.0049	0.0001	0.1683	0.0050	0.1299	0.0040	0.6564	0.3980	0.1327
15.000	0.5205	0.0255	0.2718	0.0116	0.0002	0.2720	0.0117	0.1929	0.0036	0.6516	0.3706	0.2120
20.000	0.7216	0.0263	0.3822	0.0214	0.0002	0.3824	0.0216	0.2539	0.0036	0.6468	0.3519	0.2796
25.000	0.8986	0.0279	0.4846	0.0354	0.0003	0.4849	0.0357	0.3068	0.0037	0.6402	0.3414	0.3336
30.000	1.0647	0.0275	0.5842	0.0519	0.0003	0.5845	0.0522	0.3514	0.0035	0.6343	0.3303	0.3930
35.000	1.1086	0.0250	0.6468	0.0925	0.0004	0.6472	0.0929	0.3454	0.0032	0.6108	0.3116	0.5536
40.000	1.2489	0.0230	0.7272	0.1027	0.0005	0.7276	0.1032	0.3846	0.0029	0.6116	0.3080	0.6266
45.000	1.3635	0.0143	0.7800	0.0982	0.0003	0.7803	0.0985	0.4185	0.0017	0.6185	0.3069	0.7531
50.000	1.4488	0.0117	0.8264	0.1020	0.0003	0.8267	0.1023	0.4425	0.0014	0.6196	0.3054	0.8169
55.000	1.4746	0.0114	0.8353	0.0981	0.0003	0.8356	0.0983	0.4484	0.0013	0.6222	0.3041	0.7455
60.000	1.6363	0.0151	0.9015	0.0834	0.0002	0.9017	0.0835	0.5030	0.0020	0.6322	0.3076	0.2735

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	5	2.035	1212	947	241.0	0.604	71.6	35.5

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 80 124 76 128

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1772	0.0041	-0.1245	-0.0360	-0.0003	-0.1248	-0.0362	-0.0771	0.0002	0.4525	0.4337	1.1651
0.0000	-0.0032	0.0044	-0.0026	-0.0010	-0.0000	-0.0026	-0.0010	-0.0010	0.0002	0.3525	0.3028	-0.0205
5.0000	0.1481	0.0021	0.1083	0.0342	0.0002	0.1085	0.0344	0.0702	-0.0005	0.4304	0.4742	2.6314
10.000	0.3428	-0.0090	0.2542	0.0829	0.0006	0.2548	0.0834	0.1728	-0.0033	0.4219	0.5042	-1.5281
15.000	0.5985	-0.0202	0.4418	0.1425	0.0010	0.4428	0.1435	0.2873	-0.0052	0.4246	0.4800	-1.2660
20.000	0.8584	-0.0223	0.6120	0.1828	0.0013	0.6133	0.1841	0.3965	-0.0049	0.4443	0.4619	-1.4245
25.000	1.1017	-0.0218	0.7582	0.2074	0.0013	0.7596	0.2087	0.4874	-0.0040	0.4637	0.4425	-1.5304
30.000	1.2063	0.0028	0.7864	0.1833	0.0012	0.7876	0.1844	0.5170	0.0013	0.4922	0.4286	10.519
35.000	0.9075	0.0329	0.5686	0.1149	0.0007	0.5694	0.1156	0.3673	0.0061	0.5120	0.4048	0.5644
40.000	0.9660	0.0352	0.5682	0.1052	0.0007	0.5889	0.1059	0.3916	0.0065	0.5259	0.4054	0.4791
45.000	1.0046	0.0343	0.6035	0.1013	0.0007	0.6042	0.1019	0.4063	0.0064	0.5322	0.4045	0.4711
50.000	1.0731	0.0315	0.6329	0.0964	0.0006	0.6336	0.0970	0.4342	0.0059	0.5408	0.4046	0.4877
55.000	1.1707	0.0290	0.6749	0.0895	0.0006	0.6754	0.0901	0.4766	0.0054	0.5513	0.4071	0.4895
60.000	1.1755	0.0246	0.6668	0.0790	0.0005	0.6673	0.0796	0.4783	0.0046	0.5585	0.4069	0.5340

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	5	2.029	1025	670	302.3	0.803	74.8	13.8

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 79 123 75 127

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1257	0.0112	-0.0956	-0.0328	-0.0002	-0.0958	-0.0330	-0.0519	0.0016	0.4075	0.4113	0.1684
0.0000	-0.0058	0.0133	-0.0035	-0.0006	-0.0000	-0.0035	-0.0006	-0.0025	0.0022	0.5165	0.4531	0.1086
5.0000	0.1586	0.0103	0.1122	0.0329	0.0002	0.1124	0.0331	0.0739	0.0012	0.4491	0.4664	0.3294
10.000	0.3976	0.0004	0.2814	0.0826	0.0005	0.2819	0.0831	0.1945	-0.0014	0.4484	0.4892	35.686
15.000	0.6428	-0.0052	0.4566	0.1352	0.0009	0.4575	0.1361	0.3010	-0.0021	0.4459	0.4683	-4.5438
20.000	0.8499	0.0026	0.5816	0.1567	0.0011	0.5827	0.1578	0.3809	-0.0001	0.4665	0.4484	10.698
25.000	0.7810	0.0436	0.5196	0.1291	0.0010	0.5206	0.1301	0.3201	0.0083	0.4815	0.4098	0.5806
30.000	0.8792	0.0465	0.5772	0.1376	0.0011	0.5783	0.1387	0.3624	0.0086	0.4885	0.4122	0.5964
35.000	0.9398	0.0449	0.5920	0.1221	0.0010	0.5930	0.1231	0.3830	0.0083	0.5092	0.4076	0.5387
40.000	1.0001	0.0416	0.6133	0.1132	0.0009	0.6141	0.1141	0.4052	0.0077	0.5224	0.4051	0.5112
45.000	1.0805	0.0390	0.6464	0.1061	0.0008	0.6472	0.1069	0.4398	0.0072	0.5342	0.4070	0.4988
50.000	1.1789	0.0344	0.6861	0.0967	0.0007	0.6868	0.0973	0.4819	0.0064	0.5469	0.4087	0.4892
55.000	1.2850	0.0297	0.7307	0.0882	0.0006	0.7312	0.0887	0.5270	0.0056	0.5574	0.4101	0.4849
60.000	1.3174	0.0260	0.7367	0.0780	0.0005	0.7372	0.0785	0.5425	0.0049	0.5646	0.4118	0.5269

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	5	1.980	950	560	319.5	0.903	75.3	0.3

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 78 122 74 126

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1271	0.0181	-0.0936	-0.0300	-0.0002	-0.0938	-0.0302	-0.0544	0.0031	0.4263	0.4258	-0.2782
0.0000	-0.0005	0.0189	-0.0013	-0.0011	-0.0000	-0.0013	-0.0011	-0.0003	0.0034	-1.4252	0.9502	-0.0154
5.0000	0.1628	0.0161	0.1146	0.0332	0.0002	0.1140	0.0334	0.0755	0.0024	0.4516	0.4638	0.3262
10.000	0.4218	0.0069	0.2933	0.0624	0.0005	0.2930	0.0629	0.2064	-0.0001	0.4571	0.4903	1.7129
15.000	0.6084	0.0061	0.4526	0.1184	0.0008	0.4533	0.1191	0.3109	-0.0001	0.4727	0.4648	3.1024
20.000	0.7914	0.0235	0.5112	0.1154	0.0008	0.5119	0.1162	0.3345	0.0043	0.4970	0.4226	0.8177
25.000	0.8316	0.0442	0.5422	0.1264	0.0009	0.5432	0.1274	0.3399	0.0087	0.4921	0.4088	0.5349
30.000	0.9238	0.0518	0.5905	0.1286	0.0010	0.5915	0.1296	0.3785	0.0099	0.5020	0.4097	0.4825
35.000	0.9754	0.0519	0.6182	0.1305	0.0010	0.6192	0.1315	0.3987	0.0099	0.5063	0.4087	0.4895
40.000	1.0352	0.0444	0.6325	0.1149	0.0009	0.6334	0.1158	0.4220	0.0082	0.5241	0.4077	0.5094
45.000	1.1350	0.0373	0.6696	0.1021	0.0008	0.6703	0.1029	0.4639	0.0069	0.5406	0.4087	0.5093
50.000	1.2086	0.0332	0.6993	0.0950	0.0007	0.7000	0.0957	0.4965	0.0061	0.5495	0.4108	0.4835
55.000	1.3117	0.0493	0.7410	0.0852	0.0006	0.7416	0.0857	0.5419	0.0054	0.5603	0.4132	0.5503
60.000	1.4216	0.0249	0.7792	0.0684	0.0004	0.7796	0.0688	0.5933	0.0047	0.5734	0.4173	-9.4410

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	5	2.007	905	372	376.6	1.203	74.8	-45.2

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 77 121 73 125

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1752	0.0485	-0.1139	-0.0263	-0.0002	-0.1141	-0.0265	-0.0755	0.0097	0.4696	0.4273	-0.0872
0.0000	-0.0029	0.0468	-0.0011	0.0004	-0.0000	-0.0011	0.0004	-0.0017	0.0091	0.6874	0.6852	-0.0002
5.0000	0.1772	0.0474	0.1098	0.0212	0.0001	0.1099	0.0213	0.0790	0.0092	0.5180	0.4457	0.0738
10.000	0.4124	0.0432	0.2552	0.0490	0.0003	0.2555	0.0493	0.1958	0.0081	0.5180	0.4753	0.1814
15.000	0.6666	0.0384	0.4057	0.0724	0.0006	0.4063	0.0730	0.3178	0.0071	0.5260	0.4770	0.3712
20.000	0.8912	0.0349	0.5338	0.0882	0.0007	0.5346	0.0890	0.4184	0.0063	0.5333	0.4699	0.5257
25.000	1.0917	0.0340	0.6503	0.1045	0.0009	0.6512	0.1053	0.4962	0.0063	0.5361	0.4545	0.6317
30.000	1.2019	0.0389	0.7140	0.1131	0.0009	0.7149	0.1140	0.5196	0.0070	0.5374	0.4323	0.5548
35.000	1.2819	0.0424	0.7522	0.1112	0.0008	0.7530	0.1121	0.5428	0.0076	0.5432	0.4234	0.4965
40.000	1.3346	0.0416	0.7783	0.1110	0.0008	0.7792	0.1119	0.5605	0.0077	0.5459	0.4200	0.5063
45.000	1.3744	0.0330	0.7810	0.0939	0.0007	0.7818	0.0946	0.5775	0.0060	0.5576	0.4202	0.5508
50.000	1.3920	0.0267	0.7749	0.0789	0.0006	0.7755	0.0795	0.5847	0.0049	0.5667	0.4201	0.5320
55.000	1.4442	0.0249	0.7942	0.0721	0.0005	0.7947	0.0726	0.6070	0.0046	0.5720	0.4203	0.4993
60.000	1.4072	0.0219	0.7689	0.0653	0.0004	0.7693	0.0657	0.5897	0.0040	0.5747	0.4189	0.4966

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	6	2.040	1229	963	243.1	0.600	75.0	39.0

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 92 108 96 112

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1844	0.0033	-0.1362	-0.0440	-0.0004	-0.1366	-0.0444	-0.0873	0.0007	0.2610	0.4735	-5.0172
0.0000	-0.0269	0.0043	-0.0133	0.0001	0.0000	-0.0133	0.0001	-0.0134	0.0008	0.5053	0.4973	0.0413
5.0000	0.0785	0.0039	0.0810	0.0417	0.0004	0.0813	0.0421	0.0394	0.0008	-0.0365	0.5016	2.3096
10.000	0.2620	-0.0125	0.2344	0.1034	0.0008	0.2352	0.1042	0.1313	-0.0025	0.1022	0.5012	-1.6028
15.000	0.5176	-0.0059	0.3942	0.1354	0.0010	0.3953	0.1365	0.2687	-0.0016	0.2364	0.5192	-4.2694
20.000	0.7651	0.0057	0.5146	0.1320	0.0010	0.5156	0.1330	0.3855	0.0014	0.3261	0.5039	4.1942
25.000	0.7324	0.0396	0.4544	0.0882	0.0008	0.4551	0.0889	0.3524	0.0085	0.3786	0.4612	0.4599
30.000	0.7844	0.0433	0.4903	0.0981	0.0009	0.4912	0.0990	0.3758	0.0092	0.3738	0.4791	0.4783
35.000	0.8632	0.0455	0.5334	0.1018	0.0009	0.5343	0.1027	0.4111	0.0096	0.3810	0.4763	0.4794
40.000	0.9781	0.0452	0.5909	0.1019	0.0009	0.5918	0.1027	0.4652	0.0095	0.3949	0.4756	0.4643
45.000	1.0352	0.0433	0.6171	0.0995	0.0008	0.6180	0.1004	0.4909	0.0091	0.4030	0.4742	0.4621
50.000	1.0619	0.0405	0.6258	0.0949	0.0008	0.6266	0.0957	0.5010	0.0085	0.4099	0.4718	0.4675
55.000	1.1379	0.0371	0.6568	0.0879	0.0007	0.6575	0.0886	0.5357	0.0078	0.4222	0.4708	0.4700
60.000	1.1247	0.0320	0.6418	0.0795	0.0006	0.6424	0.0801	0.5269	0.0067	0.4287	0.4685	0.4632

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	6	2.029	1034	677	304.9	0.602	78.7	17.4

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 91 107 95 111

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0010	-0.1737	0.0171	-0.1190	-0.0321	-0.0002	-0.1192	-0.0323	-0.0807	0.0036	0.3150	0.4633	-0.2537
0.0000	-0.0053	0.0173	-0.0022	0.0005	0.0000	-0.0022	0.0005	-0.0033	0.0036	0.5905	0.6206	0.0066
5.0000	0.1682	0.0174	0.1165	0.0324	0.0002	0.1167	0.0326	0.0813	0.0037	0.3064	0.4833	0.2858
10.000	0.4328	0.0008	0.3201	0.1037	0.0006	0.3207	0.1043	0.2109	0.0001	0.2584	0.4875	16.696
15.000	0.6634	-0.0156	0.4807	0.1490	0.0012	0.4819	0.1502	0.3368	-0.0032	0.2739	0.5076	-1.8479
20.000	0.7188	0.0303	0.4685	0.1091	0.0010	0.4695	0.1101	0.3471	0.0064	0.3465	0.4829	0.7796
25.000	0.6386	0.0588	0.4238	0.1045	0.0011	0.4249	0.1056	0.3072	0.0122	0.3346	0.4811	0.4428
30.000	0.7646	0.0593	0.5012	0.1189	0.0012	0.5024	0.1201	0.3698	0.0119	0.3429	0.4837	0.4912
35.000	0.8803	0.0565	0.5592	0.1190	0.0012	0.5603	0.1202	0.4228	0.0114	0.3635	0.4802	0.4916
40.000	0.9978	0.0512	0.6090	0.1101	0.0010	0.6100	0.1111	0.4761	0.0105	0.3887	0.4772	0.4853
45.000	1.0922	0.0474	0.6505	0.1044	0.0009	0.6514	0.1054	0.5196	0.0098	0.4035	0.4757	0.4801
50.000	1.1745	0.0429	0.6848	0.0975	0.0009	0.6856	0.0984	0.5583	0.0089	0.4162	0.4754	0.4823
55.000	1.2497	0.0379	0.7123	0.0874	0.0007	0.7130	0.0882	0.5934	0.0080	0.4294	0.4749	0.4716
60.000	1.3230	0.0304	0.7391	0.0776	0.0007	0.7397	0.0782	0.6257	0.0065	0.4410	0.4729	0.5521

AD-A125 764 WING-ALONE AERODYNAMIC CHARACTERISTICS TO HIGH ANGLES OF ATTACK AT SUBSON..(U) NIELSEN ENGINEERING AND RESEARCH INC MOUNTAIN VIEW CA M M BRIGGS ET AL. NOV 82 4/4

UNCLASSIFIED NEAR-TR-269 ARO-16030.1-EG DAAG29-79-C-0020 F/G 20/4 NL

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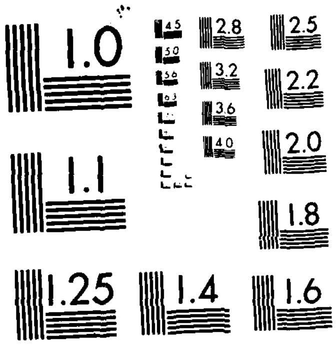


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	6	2.040	1229	963	243.1	0.600	75.0	39.0

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 92 108 96 112

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1844	0.0035	-0.1362	-0.0440	-0.0004	-0.1366	-0.0444	-0.0873	0.0007	0.2610	0.4735	-5.0172
0.0000	-0.0269	0.0043	-0.0135	0.0001	0.0000	-0.0133	0.0001	-0.0134	0.0008	0.5053	0.4973	0.0413
5.0000	0.0785	0.0033	0.0810	0.0417	0.0004	0.0813	0.0421	0.0394	0.0008	-0.0365	0.5016	2.3096
10.000	0.2620	-0.0125	0.2344	0.1034	0.0008	0.2352	0.1042	0.1313	-0.0025	0.1022	0.5012	-1.6028
15.000	0.5176	-0.0059	0.3942	0.1354	0.0010	0.3953	0.1365	0.2687	-0.0016	0.2364	0.5192	-4.2694
20.000	0.7651	0.0057	0.5146	0.1320	0.0010	0.5156	0.1330	0.3855	0.0014	0.3261	0.5039	4.1942
25.000	0.7324	0.0396	0.4544	0.0982	0.0008	0.4551	0.0889	0.3524	0.0085	0.3786	0.4612	0.4599
30.000	0.7844	0.0433	0.4903	0.0981	0.0009	0.4912	0.0990	0.3758	0.0092	0.3738	0.4791	0.4783
35.000	0.8632	0.0455	0.5334	0.1018	0.0009	0.5343	0.1027	0.4111	0.0096	0.3810	0.4763	0.4794
40.000	0.9781	0.0452	0.5909	0.1019	0.0009	0.5918	0.1027	0.4652	0.0095	0.3949	0.4756	0.4643
45.000	1.0352	0.0433	0.6171	0.0995	0.0008	0.6180	0.1004	0.4909	0.0091	0.4030	0.4742	0.4621
50.000	1.0619	0.0405	0.6258	0.0949	0.0008	0.6266	0.0957	0.5010	0.0085	0.4099	0.4718	0.4675
55.000	1.1379	0.0371	0.6568	0.0879	0.0007	0.6575	0.0886	0.5357	0.0078	0.4222	0.4708	0.4700
60.000	1.1247	0.0320	0.6418	0.0795	0.0006	0.6424	0.0801	0.5269	0.0067	0.4287	0.4685	0.4632

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	6	2.029	1034	677	304.9	0.602	78.7	17.4

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 91 107 95 111

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1737	0.0171	-0.1190	-0.0321	-0.0002	-0.1192	-0.0323	-0.0807	0.0036	0.3150	0.4633	-0.2537
0.0000	-0.0053	0.0173	-0.0022	0.0005	0.0000	-0.0022	0.0005	-0.0033	0.0036	0.5905	0.6206	0.0066
5.0000	0.1682	0.0174	0.1165	0.0324	0.0002	0.1167	0.0326	0.0813	0.0037	0.3064	0.4833	0.2858
10.000	0.4328	0.0006	0.3201	0.1037	0.0006	0.3207	0.1043	0.2109	0.0001	0.2584	0.4875	16.696
15.000	0.6034	-0.0156	0.4807	0.1490	0.0012	0.4819	0.1502	0.3368	-0.0032	0.2739	0.5076	-1.8479
20.000	0.7188	0.0303	0.4685	0.1091	0.0010	0.4695	0.1101	0.3471	0.0064	0.3465	0.4829	0.7796
25.000	0.6336	0.0586	0.4238	0.1045	0.0011	0.4249	0.1056	0.3072	0.0122	0.3346	0.4811	0.4428
30.000	0.7646	0.0593	0.5012	0.1189	0.0012	0.5024	0.1201	0.3698	0.0119	0.3429	0.4837	0.4912
35.000	0.8803	0.0565	0.5592	0.1190	0.0012	0.5603	0.1202	0.4228	0.0114	0.3635	0.4802	0.4916
40.000	0.9978	0.0512	0.6090	0.1101	0.0010	0.6100	0.1111	0.4761	0.0105	0.3887	0.4772	0.4853
45.000	1.0922	0.0474	0.6505	0.1044	0.0009	0.6514	0.1054	0.5196	0.0098	0.4035	0.4757	0.4801
50.000	1.1745	0.0429	0.6848	0.0975	0.0009	0.6856	0.0984	0.5583	0.0089	0.4162	0.4754	0.4823
55.000	1.2497	0.0379	0.7123	0.0874	0.0007	0.7130	0.0882	0.5934	0.0080	0.4294	0.4749	0.4716
60.000	1.3230	0.0304	0.7391	0.0776	0.0007	0.7397	0.0782	0.6257	0.0065	0.4410	0.4729	0.5521

TST	P	TH	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66		6	1.984	964	565	324.2	0.902	80.6	4.9

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 90 106 94 110

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2399	0.0279	-0.1467	-0.0418	-0.0002	-0.1469	-0.0420	-0.0994	0.0060	0.3023	0.4696	-0.1450
0.0000	-0.0129	0.0258	-0.0067	-0.0002	0.0000	-0.0067	-0.0002	-0.0062	0.0053	0.4749	0.4628	0.0053
5.0000	0.2022	0.0265	0.1374	0.0363	0.0002	0.1375	0.0364	0.0950	0.0056	0.3193	0.4698	0.1643
10.000	0.4160	0.0091	0.2927	0.0847	0.0006	0.2933	0.0852	0.2092	0.0021	0.2945	0.5029	1.5069
15.000	0.6592	0.0026	0.4420	0.1124	0.0010	0.4430	0.1134	0.3239	0.0005	0.3278	0.4914	8.9009
20.000	0.6834	0.0429	0.4149	0.0732	0.0007	0.4156	0.0739	0.3247	0.0090	0.3919	0.4750	0.3994
25.000	0.7458	0.0618	0.4868	0.1139	0.0011	0.4879	0.1150	0.3601	0.0130	0.3457	0.4828	0.4365
30.000	0.8652	0.0615	0.5603	0.1278	0.0012	0.5616	0.1290	0.4160	0.0127	0.3510	0.4808	0.4708
35.000	0.9409	0.0607	0.6022	0.1318	0.0012	0.6034	0.1330	0.4516	0.0124	0.3587	0.4800	0.4795
40.000	1.0184	0.0561	0.6293	0.1201	0.0011	0.6304	0.1213	0.4895	0.0112	0.3809	0.4807	0.4847
45.000	1.1345	0.0456	0.6703	0.1030	0.0009	0.6712	0.1040	0.5422	0.0094	0.4083	0.4779	0.4939
50.000	1.2210	0.0409	0.7036	0.0931	0.0008	0.7045	0.0940	0.5827	0.0085	0.4230	0.4772	0.4860
55.000	1.3227	0.0365	0.7456	0.0845	0.0007	0.7465	0.0852	0.6320	0.0076	0.4356	0.4778	0.4826
60.000	1.4385	0.0324	0.7941	0.0749	0.0006	0.7948	0.0755	0.6872	0.0069	0.4473	0.4777	0.4662

TST	P	TH	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66		6	2.004	918	377	381.8	1.203	81.3	-40.1

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 89 105 93 109

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1615	0.0731	-0.0975	-0.0167	-0.0002	-0.0976	-0.0169	-0.0740	0.0155	0.3944	0.4550	-0.0538
0.0000	-0.0018	0.0746	-0.0024	-0.0015	-0.0000	-0.0024	-0.0015	-0.0013	0.0156	-0.4971	0.7287	-0.0008
5.0000	0.1702	0.0735	0.0978	0.0127	0.0002	0.0979	0.0128	0.0800	0.0156	0.4243	0.4699	0.0512
10.000	0.3951	0.0607	0.2425	0.0449	0.0004	0.2429	0.0454	0.1899	0.0131	0.3850	0.4806	0.1781
15.000	0.6522	0.0526	0.3986	0.0726	0.0007	0.3993	0.0732	0.3168	0.0116	0.3877	0.4657	0.2902
20.000	0.8994	0.0485	0.5456	0.0959	0.0008	0.5464	0.0967	0.4383	0.0107	0.3925	0.4874	0.4238
25.000	1.0563	0.0447	0.6411	0.1130	0.0010	0.6422	0.1140	0.5233	0.0097	0.3920	0.4954	0.5518
30.000	1.1940	0.0508	0.7043	0.1074	0.0010	0.7054	0.1084	0.5863	0.0107	0.4092	0.4910	0.4771
35.000	1.2679	0.0533	0.7400	0.1060	0.0010	0.7409	0.1070	0.6157	0.0111	0.4156	0.4856	0.4485
40.000	1.3162	0.0502	0.7704	0.1123	0.0010	0.7714	0.1133	0.6374	0.0103	0.4140	0.4842	0.4964
45.000	1.2305	0.0441	0.7427	0.1025	0.0009	0.7437	0.1034	0.6199	0.0088	0.4191	0.4842	0.4924
50.000	1.3275	0.0336	0.7430	0.0793	0.0007	0.7437	0.0800	0.6399	0.0070	0.4396	0.4820	0.5022
55.000	1.4[illegible]49	0.0304	0.7838	0.0713	0.0006	0.7844	0.0720	0.6876	0.0063	0.4495	0.4826	0.4839
60.000	1.4711	0.0271	0.7990	0.0635	0.0005	0.7996	0.0640	0.7097	0.0056	0.4565	0.4824	0.5842

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	7	2.033	1224	957	243.6	0.603	75.0	39.5

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 50   150   54   154

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.000	-0.1018	0.0089	-0.0899	-0.0390	-0.0005	-0.0904	-0.0396	-0.0383	0.0022	0.4091	0.3738	1.1057
0.0000	-0.0017	0.0102	-0.0010	-0.0002	0.0000	-0.0010	-0.0002	-0.0006	0.0034	0.6036	0.3588	0.0258
5.0000	0.1582	0.0036	0.1108	0.0317	0.0004	0.1112	0.0321	0.0655	0.0006	0.5314	0.4142	2.6875
10.000	0.3972	-0.0070	0.2671	0.0685	0.0008	0.2679	0.0694	0.1593	-0.0025	0.5504	0.4010	-2.6901
15.000	0.6633	-0.0125	0.4401	0.1086	0.0012	0.4413	0.1098	0.2524	-0.0036	0.5564	0.3806	-2.1612
20.000	0.7885	-0.0082	0.5561	0.1619	0.0012	0.5573	0.1632	0.2612	-0.0006	0.5288	0.3312	-3.4413
25.000	1.0456	-0.0063	0.7108	0.1881	0.0013	0.7121	0.1894	0.3252	0.0005	0.5460	0.3110	-4.5581
30.000	1.1256	0.0084	0.7415	0.1788	0.0011	0.7425	0.1798	0.3348	0.0042	0.5603	0.2975	2.8437
35.000	1.1397	0.0217	0.7264	0.1566	0.0010	0.7274	0.1576	0.3405	0.0067	0.5745	0.2987	1.0486
40.000	1.0292	0.0336	0.6406	0.1261	0.0008	0.6415	0.1270	0.3046	0.0085	0.5845	0.2960	0.5678
45.000	1.0310	0.0353	0.6238	0.1083	0.0008	0.6245	0.1091	0.3079	0.0085	0.5962	0.2986	0.4842
50.000	1.0509	0.0332	0.6276	0.1022	0.0007	0.6263	0.1029	0.3137	0.0080	0.6014	0.2985	0.4859
55.000	1.1438	0.0306	0.6678	0.0960	0.0007	0.6685	0.0967	0.3438	0.0074	0.6104	0.3005	0.4920
60.000	1.1775	0.0264	0.6687	0.0800	0.0006	0.6692	0.0806	0.3559	0.0065	0.6210	0.3023	0.4675

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	7	2.029	1034	677	304.6	0.602	73.5	17.2

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 49   149   53   153

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.000	-0.1388	0.0188	-0.1150	-0.0207	-0.0003	-0.1154	-0.0210	-0.0694	0.0047	0.5929	0.3635	0.1124
0.0000	0.0120	0.0246	0.0056	-0.0004	-0.0000	0.0055	-0.0004	0.0035	0.0076	0.6906	0.2950	-0.0148
5.0000	0.1691	0.0175	0.1171	0.0225	0.0003	0.1174	0.0229	0.0783	0.0046	0.5863	0.4139	0.4700
10.000	0.4718	0.0085	0.2922	0.0563	0.0007	0.2929	0.0571	0.1866	0.0023	0.5861	0.3955	1.9313
15.000	0.7140	0.0050	0.4570	0.1001	0.0011	0.4581	0.1012	0.2634	0.0018	0.5723	0.3689	4.9758
20.000	0.7765	0.0171	0.5530	0.1648	0.0013	0.5543	0.1662	0.2453	0.0063	0.5241	0.3159	1.7712
25.000	0.9244	0.0242	0.6371	0.1750	0.0014	0.6385	0.1764	0.2756	0.0082	0.5395	0.2982	1.2742
30.000	0.9661	0.0377	0.6430	0.1601	0.0013	0.6443	0.1613	0.2851	0.0103	0.5554	0.2951	0.7752
35.000	1.0460	0.0389	0.6628	0.1399	0.0012	0.6639	0.1410	0.3126	0.0101	0.5769	0.2988	0.6769
40.000	1.0708	0.0387	0.6621	0.1268	0.0010	0.6631	0.1278	0.3184	0.0098	0.5872	0.2973	0.5856
45.000	1.1260	0.0377	0.6778	0.1149	0.0009	0.6787	0.1158	0.3375	0.0091	0.5982	0.2997	0.5243
50.000	1.1927	0.0347	0.6991	0.1028	0.0007	0.6996	0.1036	0.3602	0.0083	0.6089	0.3020	0.4885
55.000	1.2578	0.0306	0.7243	0.0955	0.0007	0.7250	0.0962	0.3804	0.0074	0.6158	0.3025	0.4896
60.000	1.3083	0.0263	0.7281	0.0741	0.0006	0.7287	0.0747	0.4029	0.0059	0.6286	0.3080	0.4995

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	7	1.982	960	566	322.9	0.903	79.1	3.6

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 48 148 52 152

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.000	-0.2056	0.0247	-0.1145	-0.0117	-0.0003	-0.1148	-0.0120	-0.0817	0.0057	0.6277	0.3921	-0.3400
0.000	-0.0195	0.0323	-0.0077	0.0020	0.0000	-0.0077	0.0021	-0.0067	0.0096	0.7376	0.3441	0.0200
5.000	0.1610	0.0251	0.1114	0.0209	0.0003	0.1117	0.0212	0.0746	0.0065	0.5886	0.4122	0.2991
10.000	0.4612	0.0171	0.2789	0.0483	0.0007	0.2796	0.0490	0.1824	0.0048	0.5959	0.3956	0.9286
15.000	0.7449	0.0109	0.4549	0.0826	0.0010	0.4559	0.0836	0.2717	0.0034	0.5919	0.3648	2.1115
20.000	0.7839	0.0215	0.5280	0.1361	0.0011	0.5290	0.1371	0.2415	0.0073	0.5500	0.3080	1.1158
25.000	0.9161	0.0390	0.6309	0.1729	0.0014	0.6322	0.1742	0.2680	0.0128	0.5400	0.2925	0.7991
30.000	0.9450	0.0528	0.6354	0.1630	0.0013	0.6367	0.1643	0.2735	0.0149	0.5509	0.2894	0.5753
35.000	1.0698	0.0492	0.6768	0.1420	0.0012	0.6781	0.1433	0.3224	0.0124	0.5774	0.3013	0.5736
40.000	1.1530	0.0391	0.6973	0.1209	0.0010	0.6983	0.1219	0.3489	0.0096	0.5962	0.3026	0.5834
45.000	1.2033	0.0354	0.7126	0.1110	0.0009	0.7134	0.1119	0.3631	0.0087	0.6048	0.3018	0.5443
50.000	1.2590	0.0326	0.7305	0.1011	0.0007	0.7312	0.1018	0.3823	0.0078	0.6128	0.3036	0.5167
55.000	1.3365	0.0294	0.7585	0.0903	0.0006	0.7591	0.0910	0.4087	0.0070	0.6214	0.3058	0.4934
60.000	1.5055	0.0261	0.8326	0.0800	0.0006	0.8332	0.0806	0.4640	0.0063	0.6311	0.3082	0.5459

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	7	2.019	920	378	382.8	1.203	79.2	-41.6

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 47 147 51 151

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.000	-0.1334	0.0540	-0.1015	-0.0046	-0.0002	-0.1017	-0.0050	-0.0786	0.0162	0.6438	0.3955	-0.0662
0.000	0.0014	0.0559	0.0016	0.0012	0.0000	0.0018	0.0012	-0.0002	0.0175	0.1046	-0.1322	0.0000
5.000	0.2354	0.0522	0.1164	-0.0012	0.0002	0.1166	-0.0011	0.0981	0.0155	0.6698	0.4165	0.0707
10.000	0.4735	0.0463	0.2510	0.0143	0.0004	0.2515	0.0147	0.1885	0.0134	0.6460	0.3980	0.2120
15.000	0.7122	0.0444	0.3917	0.0357	0.0007	0.3924	0.0363	0.2656	0.0131	0.6327	0.3729	0.3341
20.000	0.9201	0.0450	0.5185	0.0585	0.0008	0.5193	0.0594	0.3232	0.0130	0.6237	0.3512	0.4129
25.000	1.0652	0.0416	0.6242	0.0917	0.0010	0.6253	0.0927	0.3499	0.0114	0.6084	0.3282	0.5572
30.000	1.1573	0.0438	0.6915	0.1129	0.0010	0.6925	0.1139	0.3624	0.0119	0.6011	0.3131	0.5328
35.000	1.2468	0.0460	0.7376	0.1143	0.0010	0.7386	0.1153	0.3871	0.0119	0.6051	0.3105	0.4998
40.000	1.3134	0.0417	0.7681	0.1115	0.0010	0.7691	0.1125	0.4072	0.0101	0.6096	0.3100	0.5258
45.000	1.4072	0.0291	0.7976	0.0941	0.0006	0.7983	0.0948	0.4389	0.0069	0.6218	0.3119	0.5955
50.000	1.4763	0.0240	0.8229	0.0849	0.0007	0.8236	0.0856	0.4619	0.0058	0.6281	0.3129	0.5947
55.000	1.4299	0.0236	0.8285	0.0786	0.0006	0.8290	0.0792	0.4687	0.0057	0.6315	0.3125	0.5353
60.000	1.5496	0.0201	0.8352	0.0606	0.0004	0.8357	0.0610	0.4884	0.0048	0.6408	0.3153	0.4878

TST	P	IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	8	1.534	923	720	185.5	0.607	77.5	40.7

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 28 138 23 133

ALPHA	CN	CA	CMNP	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.0976	0.0065	-0.1048	-0.0560	-0.0006	-0.1055	-0.0568	-0.0372	0.0001	0.1586	0.3795	-1.4874
0.0000	0.0292	0.0072	0.0126	-0.0020	-0.0000	0.0125	-0.0021	0.0127	0.0000	0.6662	0.4346	-0.1008
5.0000	0.1796	0.0043	0.1513	0.0615	0.0008	0.1521	0.0623	0.0766	-0.0015	0.3416	0.4261	3.2688
10.000	0.4950	-0.0129	0.3753	0.1278	0.0016	0.3769	0.1294	0.2219	-0.0071	0.4077	0.4483	-2.1485
15.000	0.6317	0.0165	0.4430	0.1272	0.0016	0.4447	0.1288	0.2613	0.0080	0.4525	0.4137	1.7108
20.000	0.6685	0.0383	0.4737	0.1395	0.0020	0.4757	0.1415	0.2720	0.0166	0.4465	0.4069	0.9230
25.000	0.5412	0.0643	0.3655	0.1148	0.0017	0.3672	0.1166	0.2172	0.0253	0.4436	0.4013	0.4709
30.000	0.6552	0.0636	0.4446	0.1170	0.0017	0.4463	0.1187	0.2669	0.0254	0.4702	0.4074	0.4785
35.000	0.7917	0.0630	0.5142	0.1184	0.0017	0.5160	0.1201	0.3238	0.0252	0.4931	0.4091	0.4805
40.000	0.8755	0.0607	0.5531	0.1153	0.0017	0.5547	0.1170	0.3577	0.0243	0.5072	0.4086	0.4788
45.000	0.9909	0.0570	0.6047	0.1093	0.0015	0.6062	0.1108	0.4063	0.0228	0.5241	0.4101	0.4771
50.000	1.0460	0.0526	0.6265	0.1035	0.0014	0.6279	0.1049	0.4276	0.0210	0.5331	0.4088	0.4813
55.000	1.1228	0.0455	0.6519	0.0905	0.0012	0.6532	0.0918	0.4600	0.0181	0.5475	0.4097	0.4827
60.000	1.4668	0.0380	0.8137	0.0803	0.0011	0.8148	0.0814	0.6103	0.0150	0.5679	0.4160	0.5594

TST	P	IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	8	1.525	780	511	229.8	0.802	79.9	16.4

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 27 137 22 132

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1735	0.0238	-0.1517	-0.0550	-0.0007	-0.1524	-0.0556	-0.0813	0.0070	0.3891	0.4186	-0.4030
0.0000	0.0161	0.0292	0.0063	-0.0027	-0.0000	0.0063	-0.0023	0.0084	0.0098	0.7308	0.4646	-0.0291
5.0000	0.2759	0.0225	0.1951	0.0572	0.0006	0.1958	0.0578	0.1203	0.0061	0.4482	0.4359	0.5079
10.000	0.6066	0.0047	0.4208	0.1175	0.0014	0.4222	0.1189	0.2756	-0.0027	0.4585	0.4543	5.3661
15.000	0.6332	0.0372	0.4395	0.1202	0.0016	0.4410	0.1219	0.2640	0.0154	0.4626	0.4136	0.7790
20.000	0.7293	0.0525	0.5217	0.1570	0.0024	0.5240	0.1594	0.3136	0.0217	0.4411	0.4299	0.7922
25.000	0.6203	0.0616	0.4569	0.1466	0.0022	0.4591	0.1490	0.2431	0.0328	0.4242	0.3920	0.4750
30.000	0.7062	0.0641	0.5018	0.1487	0.0023	0.5041	0.1510	0.2857	0.0322	0.4448	0.4046	0.4742
35.000	0.8126	0.0690	0.5332	0.1269	0.0020	0.5352	0.1289	0.3277	0.0269	0.4877	0.4033	0.5004
40.000	0.9571	0.0604	0.5948	0.1163	0.0017	0.5965	0.1180	0.3886	0.0240	0.5152	0.4061	0.4982
45.000	1.0806	0.0560	0.6490	0.1087	0.0016	0.6506	0.1103	0.4414	0.0222	0.5317	0.4085	0.4929
50.000	1.1416	0.0506	0.6688	0.0980	0.0014	0.6702	0.0994	0.4669	0.0201	0.5434	0.4090	0.4833
55.000	1.2291	0.0439	0.7010	0.0864	0.0012	0.7022	0.0876	0.5041	0.0175	0.5556	0.4101	0.4830
60.000	1.3161	0.0310	0.7411	0.0831	0.0011	0.7423	0.0842	0.5408	0.0124	0.5614	0.4109	0.5198

TST	P	IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	8	1.491	727	429	244.4	0.902	81.7	5.9

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 26 136 21 131

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.3381	0.0401	-0.2258	-0.0318	-0.0005	-0.2264	-0.0323	-0.1781	0.0154	0.5458	0.4555	-0.2197
0.0000	-0.0063	0.0412	-0.0035	-0.0003	-0.0000	-0.0035	-0.0004	-0.0040	0.0151	0.5631	0.6332	-0.0132
5.0000	0.3537	0.0368	0.2111	0.0342	0.0005	0.2116	0.0347	0.1575	0.0133	0.5348	0.4453	0.2374
10.000	0.6365	0.0232	0.4132	0.0950	0.0011	0.4143	0.0961	0.2806	0.0055	0.4937	0.4410	0.8498
15.000	0.6319	0.0562	0.4292	0.1132	0.0016	0.4308	0.1149	0.2538	0.0237	0.4697	0.4016	0.5062
20.000	0.7159	0.0676	0.4926	0.1347	0.0019	0.4945	0.1366	0.2900	0.0285	0.4627	0.4051	0.4957
25.000	0.7547	0.0781	0.5172	0.1399	0.0020	0.5193	0.1419	0.3011	0.0321	0.4649	0.3990	0.4568
30.000	0.8212	0.0800	0.5548	0.1442	0.0021	0.5570	0.1464	0.3281	0.0323	0.4725	0.3995	0.4663
35.000	0.9094	0.0779	0.5922	0.1375	0.0021	0.5943	0.1396	0.3682	0.0306	0.4917	0.4048	0.4702
40.000	1.0209	0.0628	0.6219	0.1115	0.0017	0.6236	0.1132	0.4159	0.0244	0.5249	0.4074	0.4816
45.000	1.1253	0.0537	0.6627	0.1001	0.0015	0.6641	0.1015	0.4596	0.0212	0.5409	0.4084	0.4771
50.000	1.2265	0.0475	0.7047	0.0914	0.0013	0.7060	0.0927	0.5037	0.0188	0.5523	0.4107	0.4829
55.000	1.3299	0.0415	0.7399	0.0797	0.0011	0.7410	0.0808	0.5449	0.0164	0.5635	0.4127	0.4787
60.000	1.3310	0.0346	0.8360	0.0705	0.0010	0.8370	0.0715	0.6378	0.0141	0.5750	0.4166	0.5015

TST	P	IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	8	1.510	695	287	286.9	1.199	63.4	-37.9

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 25 135 20 130

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2521	0.0906	-0.1471	-0.0211	-0.0003	-0.1474	-0.0214	-0.0995	0.0373	0.5448	0.3958	-0.0548
0.0000	-0.0013	0.0878	0.0006	0.0012	0.0000	0.0006	0.0012	-0.0016	0.0362	1.3717	1.2149	0.0034
5.0000	0.2367	0.0871	0.1319	0.0136	0.0002	0.1321	0.0138	0.0956	0.0359	0.5659	0.4039	0.0385
10.000	0.5374	0.0726	0.3269	0.0582	0.0007	0.3277	0.0589	0.2343	0.0281	0.5258	0.4360	0.1789
15.000	0.8180	0.0637	0.4948	0.0858	0.0013	0.4961	0.0871	0.3652	0.0239	0.5282	0.4465	0.3617
20.000	1.0437	0.0616	0.6270	0.1051	0.0016	0.6286	0.1068	0.4619	0.0231	0.5315	0.4426	0.4699
25.000	1.1733	0.0630	0.7079	0.1213	0.0018	0.7097	0.1231	0.5033	0.0248	0.5295	0.4289	0.5081
30.000	1.2092	0.0657	0.7283	0.1237	0.0018	0.7301	0.1255	0.5044	0.0266	0.5304	0.4171	0.4925
35.000	1.2797	0.0658	0.7608	0.1210	0.0018	0.7626	0.1228	0.5328	0.0265	0.5365	0.4164	0.4889
40.000	1.2479	0.0614	0.7366	0.1126	0.0017	0.7383	0.1143	0.5184	0.0244	0.5397	0.4155	0.4927
45.000	1.3192	0.0438	0.7438	0.0841	0.0013	0.7450	0.0854	0.5492	0.0173	0.5607	0.4163	0.5057
50.000	1.4256	0.0394	0.7871	0.0743	0.0011	0.7881	0.0754	0.5958	0.0157	0.5700	0.4180	0.4847
55.000	1.4419	0.0355	0.7861	0.0652	0.0009	0.7870	0.0661	0.6024	0.0141	0.5754	0.4178	0.4677
60.000	1.4870	0.0283	0.7984	0.0549	0.0008	0.7991	0.0556	0.6220	0.0113	0.5820	0.4183	0.4903

TST	P	IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	06	8	1.492	735	171	309.4	1.607	86.1	-95.9

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 24 134 19 129

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMLT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1806	0.0668	-0.1161	-0.0258	-0.0004	-0.1165	-0.0262	-0.0719	0.0295	0.5002	0.3956	-0.1046
0.0000	0.0080	0.0688	0.0031	-0.0008	-0.0000	0.0031	-0.0008	0.0032	0.0308	0.6945	0.3941	-0.0013
5.0000	0.1661	0.0680	0.1168	0.0227	0.0003	0.1171	0.0231	0.0744	0.0302	0.5159	0.3951	0.0876
10.000	0.3[illegible]77	0.0620	0.2415	0.0426	0.0007	0.2421	0.0433	0.1666	0.0265	0.5264	0.4191	0.1852
15.000	0.6246	0.0571	0.3671	0.0548	0.0009	0.3680	0.0557	0.2685	0.0237	0.5418	0.4298	0.2731
20.000	0.8488	0.0540	0.4944	0.0700	0.0011	0.4956	0.0711	0.3684	0.0221	0.5459	0.4340	0.3675
25.000	1.0329	0.0555	0.6027	0.0862	0.0014	0.6041	0.0876	0.4469	0.0223	0.5451	0.4327	0.4354
30.000	1.1529	0.0565	0.6754	0.0990	0.0015	0.6770	0.1005	0.4889	0.0237	0.5433	0.4241	0.4554
35.000	1.2499	0.0595	0.7285	0.1035	0.0016	0.7301	0.1051	0.5249	0.0241	0.5457	0.4200	0.4718
40.000	1.3344	0.0591	0.7708	0.1035	0.0016	0.7724	0.1051	0.5596	0.0237	0.5498	0.4194	0.4745
45.000	1.4246	0.0556	0.8099	0.0975	0.0015	0.8114	0.0991	0.5976	0.0219	0.5570	0.4195	0.4813
50.000	1.5307	0.0413	0.8407	0.0753	0.0012	0.8418	0.0765	0.6436	0.0160	0.5722	0.4204	0.5024
55.000	1.5955	0.0350	0.8617	0.0639	0.0010	0.8626	0.0649	0.6716	0.0136	0.5795	0.4210	0.4831
60.000	1.6214	0.0324	0.8668	0.0561	0.0009	0.8676	0.0569	0.6832	0.0127	0.5837	0.4213	0.4647

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	9	2.031	1229	962	243.7	0.601	77.1	40.9

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 64 182 59 177

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1654	0.0078	-0.1441	-0.0614	-0.0009	-0.1450	-0.0623	-0.0711	0.0029	0.1212	0.4284	-1.9791
0.0000	-0.0145	0.0078	-0.0087	-0.0015	-0.0000	-0.0087	-0.0015	-0.0076	0.0022	0.3988	0.5278	-0.0432
5.0000	0.1553	0.0089	0.1361	0.0584	0.0009	0.1370	0.0593	0.0707	0.0033	0.1188	0.4552	1.6774
10.000	0.4753	-0.0233	0.3876	0.1499	0.0021	0.3897	0.1520	0.2239	-0.0096	0.1798	0.4711	-1.5526
15.000	0.5814	0.0309	0.3967	0.1059	0.0016	0.3983	0.1075	0.2931	0.0118	0.3151	0.5042	0.8492
20.000	0.5135	0.0618	0.3547	0.0979	0.0015	0.3562	0.0994	0.2580	0.0271	0.3063	0.5024	0.4061
25.000	0.5731	0.0662	0.3919	0.1052	0.0016	0.3934	0.1068	0.2821	0.0293	0.3135	0.4922	0.4031
30.000	0.6615	0.0685	0.4405	0.1097	0.0017	0.4422	0.1114	0.3216	0.0302	0.3316	0.4862	0.4115
35.000	0.7505	0.0684	0.4869	0.1115	0.0017	0.4886	0.1132	0.3629	0.0301	0.3491	0.4835	0.4165
40.000	0.8535	0.0662	0.5373	0.1104	0.0016	0.5389	0.1121	0.4105	0.0291	0.3686	0.4810	0.4174
45.000	0.9246	0.0629	0.5700	0.1076	0.0016	0.5715	0.1091	0.4425	0.0277	0.3818	0.4787	0.4274
50.000	0.9965	0.0579	0.5998	0.1014	0.0015	0.6013	0.1029	0.4757	0.0255	0.3966	0.4774	0.4335
55.000	1.0824	0.0517	0.6328	0.0915	0.0013	0.6342	0.0928	0.5173	0.0228	0.4141	0.4779	0.4396
60.000	1.0044	0.0473	0.5812	0.0788	0.0012	0.5823	0.0800	0.4768	0.0208	0.4199	0.4747	0.4239

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	9	2.032	1040	680	307.2	0.303	80.7	19.0

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 63 181 58 176

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.3310	0.0351	-0.2270	-0.0615	-0.0005	-0.2275	-0.0620	-0.1464	0.0146	0.3149	0.4417	-0.2442
0.0000	-0.0065	0.0319	-0.0047	-0.0014	-0.0000	-0.0047	-0.0015	-0.0032	0.0124	0.2736	0.4883	-0.0135
5.0000	0.2605	0.0321	0.1818	0.0515	0.0005	0.1823	0.0520	0.1168	0.0132	0.3003	0.4484	0.2756
10.000	0.5846	-0.0018	0.4266	0.1343	0.0017	0.4283	0.1359	0.2808	-0.0002	0.2674	0.4804	-15.465
15.000	0.6003	0.0463	0.3908	0.0906	0.0014	0.3922	0.0920	0.2961	0.0190	0.3467	0.4933	0.5275
20.000	0.5591	0.0822	0.4036	0.1240	0.0022	0.4058	0.1261	0.2706	0.0369	0.2743	0.4840	0.4461
25.000	0.6070	0.0964	0.4512	0.1477	0.0026	0.4538	0.1502	0.3003	0.0415	0.2524	0.4948	0.4562
30.000	0.6727	0.0937	0.4613	0.1449	0.0026	0.4639	0.1475	0.3329	0.0392	0.2806	0.4948	0.4679
35.000	0.8054	0.0801	0.5297	0.1269	0.0022	0.5319	0.1291	0.3891	0.0345	0.3395	0.4832	0.4697
40.000	0.9201	0.0724	0.5797	0.1196	0.0020	0.5817	0.1216	0.4412	0.0316	0.3678	0.4795	0.4726
45.000	1.0072	0.0664	0.6168	0.1131	0.0018	0.6186	0.1149	0.4827	0.0289	0.3858	0.4792	0.4690
50.000	1.1212	0.0581	0.6615	0.1007	0.0015	0.6630	0.1023	0.5363	0.0255	0.4087	0.4784	0.4478
55.000	1.2281	0.0517	0.7033	0.0891	0.0013	0.7047	0.0905	0.5882	0.0228	0.4262	0.4789	0.4384
60.000	1.2714	0.0460	0.7167	0.0809	0.0013	0.7180	0.0821	0.6105	0.0201	0.4350	0.4802	0.4644

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	9	1.984	969	574	325.9	0.902	82.7	6.7

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 62 180 57 175

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.3399	0.0511	-0.2137	-0.0187	-0.0006	-0.2145	-0.0195	-0.1689	0.0222	0.4472	0.4238	-0.2377
0.0000	0.0235	0.0451	0.0066	-0.0050	-0.0000	0.0068	-0.0050	0.0110	0.0176	0.7121	0.4664	-0.0042
5.0000	0.3160	0.0470	0.1821	0.0240	0.0005	0.1825	0.0245	0.1455	0.0202	0.4223	0.4604	0.1750
10.000	0.4786	0.0261	0.3395	0.1001	0.0015	0.3410	0.1016	0.2303	0.0120	0.2875	0.4813	0.9422
15.000	0.6162	0.0357	0.4598	0.1516	0.0026	0.4624	0.1542	0.3004	0.0166	0.2494	0.4876	1.2343
20.000	0.6158	0.0876	0.4377	0.1297	0.0022	0.4399	0.1319	0.2982	0.0391	0.2857	0.4843	0.4295
25.000	0.7587	0.0933	0.5205	0.1410	0.0024	0.5228	0.1434	0.3707	0.0409	0.3108	0.4887	0.4302
30.000	0.7653	0.0940	0.5298	0.1470	0.0025	0.5322	0.1495	0.3704	0.0409	0.3046	0.4840	0.4455
35.000	0.8588	0.0892	0.5738	0.1443	0.0024	0.5762	0.1467	0.4143	0.0385	0.3289	0.4824	0.4579
40.000	0.9965	0.0705	0.6164	0.1180	0.0020	0.6184	0.1200	0.4785	0.0304	0.3795	0.4802	0.4871
45.000	1.0919	0.0630	0.6541	0.1080	0.0018	0.6559	0.1098	0.5232	0.0275	0.3993	0.4792	0.4798
50.000	1.2048	0.0563	0.7006	0.0982	0.0015	0.7023	0.0997	0.5782	0.0247	0.4171	0.4799	0.4672
55.000	1.2919	0.0500	0.7323	0.0862	0.0013	0.7336	0.0875	0.6209	0.0220	0.4321	0.4806	0.4488
60.000	1.4463	0.0461	0.7990	0.0757	0.0012	0.8002	0.0769	0.6973	0.0204	0.4466	0.4821	0.4268

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	9	2.020	933	384	387.8	1.201	84.5	-37.3

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 61 179 56 174

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2598	0.1151	-0.1284	0.0015	0.0001	-0.1283	0.0016	-0.1048	0.0506	0.5067	0.4024	0.0199
0.0000	0.0079	0.1144	0.0002	-0.0038	-0.0001	0.0001	-0.0039	0.0009	0.0504	0.9980	0.1166	-0.0113
5.0000	0.2013	0.1134	0.1108	0.0101	0.0002	0.1109	0.0102	0.0844	0.0503	0.4490	0.4194	0.0232
10.000	0.4540	0.0890	0.2863	0.0592	0.0010	0.2873	0.0602	0.2091	0.0405	0.3672	0.4606	0.1893
15.000	0.7574	0.0749	0.4769	0.0981	0.0016	0.4784	0.0997	0.3602	0.0346	0.3679	0.4756	0.3593
20.000	0.9699	0.0681	0.6104	0.1253	0.0020	0.6124	0.1273	0.4663	0.0313	0.3685	0.4806	0.4939
25.000	1.0176	0.0723	0.6375	0.1285	0.0021	0.6396	0.1306	0.4989	0.0315	0.3716	0.4902	0.4934
30.000	1.1722	0.0760	0.7138	0.1276	0.0021	0.7159	0.1297	0.5721	0.0333	0.3893	0.4881	0.4714
35.000	1.2608	0.0761	0.7579	0.1274	0.0021	0.7600	0.1295	0.6139	0.0334	0.3972	0.4869	0.4695
40.000	1.2715	0.0692	0.7659	0.1200	0.0020	0.7679	0.1220	0.6280	0.0299	0.4054	0.4863	0.4903
45.000	1.2760	0.0518	0.7318	0.0936	0.0016	0.7333	0.0952	0.6165	0.0226	0.4253	0.4832	0.5092
50.000	1.3701	0.0452	0.7675	0.0823	0.0013	0.7688	0.0836	0.6638	0.0199	0.4389	0.4845	0.4921
55.000	1.4275	0.0409	0.7864	0.0725	0.0011	0.7875	0.0736	0.6913	0.0180	0.4483	0.4843	0.4716
60.000	1.4469	0.0360	0.7918	0.0682	0.0010	0.7929	0.0692	0.7017	0.0161	0.4519	0.4850	0.4874

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	9	1.992	983	230	413.9	1.605	86.9	-99.0

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 60 178 55 173

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2324	0.0852	-0.1504	-0.0342	-0.0005	-0.1509	-0.0347	-0.0995	0.0381	0.3615	0.4313	-0.1041
0.0000	0.0076	0.0973	0.0057	0.0019	0.0000	0.0057	0.0019	0.0032	0.0425	0.2536	0.4304	0.0059
5.0000	0.2009	0.0924	0.1351	0.0346	0.0006	0.1356	0.0351	0.0884	0.0406	0.3251	0.4398	0.1034
10.000	0.3932	0.0661	0.2525	0.0558	0.0009	0.2534	0.0568	0.1795	0.0380	0.3556	0.4565	0.1855
15.000	0.5986	0.0790	0.3689	0.0696	0.0012	0.3701	0.0708	0.2803	0.0350	0.3817	0.4682	0.2585
20.000	0.8149	0.0731	0.4909	0.0834	0.0014	0.4924	0.0848	0.3866	0.0326	0.3958	0.4744	0.3285
25.000	1.0057	0.0705	0.6025	0.0995	0.0016	0.6041	0.1012	0.4833	0.0313	0.3993	0.4605	0.3874
30.000	1.1444	0.0684	0.6848	0.1124	0.0018	0.6866	0.1142	0.5529	0.0302	0.4001	0.4831	0.4538
35.000	1.2396	0.0694	0.7353	0.1154	0.0019	0.7372	0.1173	0.6032	0.0304	0.4053	0.4866	0.4640
40.000	1.3049	0.0693	0.7668	0.1142	0.0019	0.7687	0.1160	0.6350	0.0301	0.4110	0.4866	0.4656
45.000	1.3907	0.0638	0.8022	0.1067	0.0018	0.8040	0.1085	0.6783	0.0277	0.4218	0.4877	0.4745
50.000	1.5035	0.0483	0.8344	0.0825	0.0014	0.8358	0.0839	0.7320	0.0212	0.4441	0.4869	0.4908
55.000	1.5659	0.0428	0.8565	0.0734	0.0012	0.8578	0.0746	0.7631	0.0188	0.4522	0.4873	0.4813
60.000	1.6186	0.0365	0.8709	0.0614	0.0010	0.8719	0.0624	0.7888	0.0161	0.4613	0.4873	0.4645

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	10	2.031	1217	952	242.3	0.603	73.8	37.7

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 88   104   84   100

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	0.0329	0.0222	-0.0427	-0.0642	-0.0020	-0.0447	-0.0662	0.0379	0.0201	1.8239	0.8863	-3.2868
0.0000	-0.0282	0.0051	-0.0122	0.0019	0.0001	-0.0121	0.0020	-0.0111	-0.0015	0.6640	0.3953	0.2215
5.0000	0.1084	0.0136	0.1355	0.0813	0.0020	0.1374	0.0832	0.0337	0.0091	0.0113	0.3107	1.7847
10.000	0.4711	-0.0133	0.4033	0.1677	0.0038	0.4070	0.1715	0.1922	-0.0143	0.3259	0.4080	-3.5525
15.000	0.4575	0.0647	0.3410	0.1122	0.0026	0.3436	0.1148	0.1913	0.0555	0.4142	0.4182	0.4994
20.000	0.4353	0.0816	0.3361	0.1184	0.0028	0.3389	0.1212	0.1911	0.0684	0.3929	0.4391	0.4291
25.000	0.5737	0.0869	0.4116	0.1248	0.0030	0.4146	0.1277	0.2500	0.0729	0.4363	0.4359	0.4247
30.000	0.7224	0.0913	0.4926	0.1314	0.0031	0.4957	0.1345	0.3133	0.0773	0.4648	0.4337	0.4269
35.000	0.8595	0.0898	0.5621	0.1323	0.0030	0.5651	0.1354	0.3699	0.0761	0.4871	0.4303	0.4235
40.000	0.9690	0.0866	0.6127	0.1282	0.0029	0.6156	0.1311	0.4163	0.0733	0.5044	0.4296	0.4242
45.000	0.9973	0.0799	0.6187	0.1201	0.0028	0.6215	0.1229	0.4278	0.0676	0.5139	0.4290	0.4351
50.000	1.0633	0.0749	0.6434	0.1117	0.0026	0.6460	0.1143	0.4562	0.0634	0.5262	0.4291	0.4330
55.000	1.1369	0.0670	0.6678	0.0993	0.0023	0.6701	0.1016	0.4878	0.0567	0.5403	0.4290	0.4290
60.000	1.1989	0.0596	0.6699	0.0905	0.0022	0.6921	0.0926	0.5183	0.0512	0.5497	0.4323	0.4476

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	10	2.025	1030	675	303.1	0.801	77.3	16.2

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 87   103   83   99

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1807	0.0634	-0.1619	-0.0715	-0.0014	-0.1633	-0.0729	-0.0377	0.0534	0.2945	0.2065	-0.2616
0.0000	-0.0158	0.0578	-0.0032	0.0047	0.0001	-0.0030	0.0048	-0.0058	0.0482	0.8480	0.3657	0.0303
5.0000	0.2131	0.0566	0.1864	0.0798	0.0015	0.1879	0.0814	0.0634	0.0475	0.3127	0.2974	0.3384
10.000	0.4540	0.0325	0.3942	0.1672	0.0036	0.3976	0.1708	0.1799	0.0235	0.3164	0.3962	1.4035
15.000	0.3322	0.1054	0.3457	0.1545	0.0043	0.3500	0.1589	0.1514	0.0889	0.2857	0.3962	0.5120
20.000	0.4273	0.1357	0.4017	0.1680	0.0051	0.4067	0.1931	0.1703	0.1138	0.2578	0.3986	0.4669
25.000	0.5432	0.1329	0.4566	0.1826	0.0050	0.4617	0.1876	0.2303	0.1080	0.3430	0.4200	0.4698
30.000	0.7835	0.1091	0.5428	0.1526	0.0043	0.5471	0.1569	0.3333	0.0901	0.4532	0.4271	0.4911
35.000	0.9031	0.0958	0.6215	0.1399	0.0037	0.6252	0.1436	0.4092	0.0805	0.4937	0.4249	0.4838
40.000	1.0717	0.0862	0.6689	0.1330	0.0034	0.6722	0.1364	0.4564	0.0739	0.5108	0.4258	0.4742
45.000	1.1578	0.0793	0.7012	0.1223	0.0029	0.7041	0.1252	0.4931	0.0665	0.5256	0.4259	0.4619
50.000	1.2335	0.0715	0.7262	0.1095	0.0026	0.7288	0.1121	0.5264	0.0603	0.5391	0.4267	0.4539
55.000	1.2562	0.0627	0.7234	0.0953	0.0022	0.7256	0.0975	0.5383	0.0525	0.5495	0.4285	0.4447
60.000	1.2794	0.0511	0.7264	0.0867	0.0020	0.7283	0.0886	0.5444	0.0433	0.5558	0.4255	0.4627

TST P IN CONF RN/L PT P Q MACH TTF TF
401 1 66 10 1.279 955 567 321.6 0.900 78.9 3.0

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 86 102 82 98

ALPHA	CN	CA	CMNB	CMNC	CHA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2475	0.0937	-0.1779	-0.0531	-0.0014	-0.1793	-0.0546	-0.0766	0.0798	0.4398	0.3046	-0.1928
0.0000	-0.0014	0.1002	0.0001	0.0008	0.0000	0.0001	0.0008	-0.0010	0.0845	1.0278	0.6048	0.0050
5.0000	0.2359	0.1026	0.1773	0.0593	0.0016	0.1789	0.0610	0.0759	0.0866	0.4086	0.3220	0.1955
10.000	0.5152	0.0765	0.4225	0.1034	0.0039	0.4264	0.1674	0.2086	0.0577	0.3581	0.4026	0.6431
15.000	0.5115	0.1155	0.4313	0.1755	0.0045	0.4358	0.1801	0.2065	0.0994	0.3354	0.4037	0.4914
20.000	0.6256	0.1238	0.4963	0.1775	0.0046	0.4940	0.1820	0.2515	0.1065	0.3831	0.4020	0.4612
25.000	0.6942	0.1255	0.5217	0.1746	0.0046	0.5265	0.1792	0.2829	0.1065	0.4087	0.4075	0.4532
30.000	0.8163	0.1181	0.5739	0.1658	0.0044	0.5783	0.1701	0.3419	0.0979	0.4472	0.4189	0.4619
35.000	0.9372	0.0922	0.6249	0.1313	0.0036	0.6285	0.1349	0.4178	0.0759	0.5034	0.4233	0.4819
40.000	1.0702	0.0836	0.6589	0.1238	0.0032	0.6621	0.1270	0.4522	0.0697	0.5175	0.4225	0.4767
45.000	1.1650	0.0751	0.6965	0.1140	0.0028	0.6993	0.1166	0.4940	0.0625	0.5318	0.4241	0.4659
50.000	1.2581	0.0668	0.7318	0.1028	0.0025	0.7343	0.1052	0.5357	0.0556	0.5447	0.4258	0.4603
55.000	1.3432	0.0576	0.7620	0.0904	0.0021	0.7641	0.0925	0.5742	0.0482	0.5563	0.4275	0.4580
60.000	1.2389	0.0491	0.7239	0.0795	0.0018	0.7257	0.0613	0.5510	0.0422	0.5604	0.4276	0.4586

TST P IN CONF RN/L PT P Q MACH TTF TF
401 1 66 10 2.017 923 379 384.1 1.204 30.8 -40.7

SECOND ORDER LAGRANGIAN INTERPOLATION COMBINED DATA COMBINED RUNS: 85 101 81 97

ALPHA	CN	CA	CMNB	CMNC	CHA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2312	0.1680	-0.1412	-0.0256	-0.0004	-0.1416	-0.0260	-0.0819	0.1473	0.5211	0.3514	-0.0335
0.0000	-0.0086	0.1641	-0.0044	-0.0002	-0.0000	-0.0045	-0.0002	-0.0053	0.1427	0.5597	0.6173	-0.0003
5.0000	0.2275	0.1620	0.1433	0.0276	0.0005	0.1418	0.0280	0.0830	0.1414	0.5129	0.3653	0.0573
10.000	0.5842	0.1261	0.3794	0.0873	0.0017	0.3811	0.0890	0.2443	0.1057	0.4912	0.4183	0.1596
15.000	0.8652	0.1098	0.5582	0.1256	0.0029	0.5611	0.1285	0.3706	0.0924	0.4940	0.4284	0.3406
20.000	1.0682	0.0983	0.6631	0.1490	0.0037	0.6868	0.1527	0.4621	0.0828	0.4984	0.4326	0.4614
25.000	1.2137	0.0921	0.7666	0.1597	0.0041	0.7707	0.1638	0.5236	0.0773	0.5048	0.4314	0.5579
30.000	1.2332	0.1004	0.7616	0.1450	0.0038	0.7654	0.1488	0.5302	0.0845	0.5160	0.4299	0.4704
35.000	1.3230	0.0915	0.7925	0.1310	0.0035	0.7960	0.1345	0.5720	0.0753	0.5305	0.4323	0.4773
40.000	1.3374	0.0705	0.7844	0.1097	0.0027	0.7871	0.1034	0.5896	0.0585	0.5511	0.4312	0.4733
45.000	1.3501	0.0635	0.7690	0.0939	0.0024	0.7713	0.0963	0.5803	0.0526	0.5544	0.4298	0.4684
50.000	1.4167	0.0537	0.7905	0.0821	0.0020	0.7925	0.0841	0.6106	0.0446	0.5637	0.4310	0.4645
55.000	1.4391	0.0482	0.8168	0.0722	0.0017	0.8185	0.0739	0.6426	0.0403	0.5712	0.4315	0.4390
60.000	1.5427	0.0378	0.8510	0.0797	0.0016	0.8529	0.0815	0.6594	0.0312	0.5684	0.4275	0.5957

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	11	1.534	923	720	185.5	0.607	77.5	40.7

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 33 183 38 183

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.3073	0.0556	-0.2057	-0.0521	-0.0008	-0.2065	-0.0529	-0.1134	0.0022	0.4778	0.3688	-0.2738
0.0000	-0.0400	0.0555	-0.0197	0.0003	-0.0000	-0.0197	0.0003	-0.0079	0.0018	0.6171	0.1966	-0.0016
5.0000	0.1135	0.0521	0.1147	0.0580	0.0007	0.1154	0.0586	0.0527	0.0001	0.2099	0.4642	0.2266
10.000	0.4536	0.0342	0.3547	0.1279	0.0015	0.3562	0.1294	0.2084	-0.0059	0.3889	0.4597	0.8117
15.000	0.6888	0.0575	0.4788	0.1344	0.0016	0.4805	0.1361	0.2885	0.0073	0.4575	0.4189	0.4857
20.000	0.7184	0.0872	0.4675	0.1082	0.0015	0.4690	0.1098	0.2738	0.0197	0.4923	0.3811	0.3147
25.000	0.7597	0.1012	0.4748	0.0949	0.0015	0.4763	0.0964	0.2929	0.0249	0.5124	0.3856	0.2536
30.000	0.6548	0.0636	0.4444	0.1170	0.0017	0.4461	0.1187	0.2668	0.0254	0.4701	0.4074	0.4785
35.000	0.7909	0.0630	0.5138	0.1184	0.0017	0.5156	0.1201	0.3235	0.0252	0.4930	0.4091	0.4805
40.000	0.8748	0.0607	0.5527	0.1153	0.0017	0.5544	0.1170	0.3574	0.0243	0.5071	0.4086	0.4788
45.000	0.9903	0.0570	0.6044	0.1093	0.0015	0.6060	0.1109	0.4061	0.0228	0.5240	0.4101	0.4771
50.000	1.0450	0.0527	0.6261	0.1036	0.0014	0.6275	0.1050	0.4272	0.0210	0.5329	0.4088	0.4814
55.000	1.1222	0.0455	0.6517	0.0906	0.0012	0.6530	0.0919	0.4597	0.0181	0.5474	0.4097	0.4828
60.000	1.4667	0.0380	0.8137	0.0804	0.0011	0.8149	0.0815	0.6103	0.0150	0.5678	0.4160	0.5590

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	11	1.525	780	511	229.8	0.802	79.9	18.4

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 32 182 37 183

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2876	0.0386	-0.1976	-0.0538	-0.0007	-0.1983	-0.0545	-0.1075	0.0033	0.4651	0.3727	-0.3784
0.0000	-0.0675	0.0416	-0.0335	0.0003	-0.0000	-0.0335	0.0002	-0.0179	0.0050	0.6136	0.2654	-0.0142
5.0000	0.1766	0.0364	0.1496	0.0614	0.0007	0.1503	0.0621	0.0856	0.0019	0.3381	0.4847	0.3318
10.000	0.4977	0.0200	0.3772	0.1283	0.0015	0.3787	0.1298	0.2316	-0.0043	0.4079	0.4654	1.3523
15.000	0.6568	0.0617	0.4331	0.1047	0.0014	0.4345	0.1060	0.2644	0.0173	0.4856	0.4025	0.3949
20.000	0.7906	0.0681	0.5176	0.1223	0.0019	0.5195	0.1241	0.3105	0.0207	0.4890	0.3927	0.4733
25.000	0.8137	0.0827	0.5108	0.1039	0.0016	0.5124	0.1056	0.3141	0.0264	0.5102	0.3661	0.3515
30.000	0.7054	0.0842	0.5015	0.1487	0.0023	0.5037	0.1510	0.2854	0.0323	0.4446	0.4046	0.4741
35.000	0.8115	0.0691	0.5328	0.1270	0.0020	0.5347	0.1290	0.3273	0.0269	0.4875	0.4033	0.5005
40.000	0.9405	0.0604	0.5897	0.1164	0.0017	0.5914	0.1181	0.3841	0.0240	0.5141	0.4058	0.4983
45.000	1.2041	0.0560	0.7101	0.1080	0.0016	0.7116	0.1096	0.4954	0.0223	0.5400	0.4113	0.4922
50.000	4.2131	0.0514	2.1857	0.0791	0.0014	2.1870	0.0805	1.8087	0.0205	0.5961	0.4293	0.4660
55.000	1.2124	0.0440	0.6928	0.0866	0.0012	0.6940	0.0878	0.4968	0.0175	0.5548	0.4098	0.4831
60.000	3.1803	0.0315	1.6618	0.0717	0.0011	1.6629	0.0728	1.3551	0.0127	0.5960	0.4264	0.5221

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	11	1.491	727	429	244.4	0.902	81.7	5.9

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 31 182 36 183

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.4143	0.0433	-0.2504	-0.0433	-0.0005	-0.2509	-0.0438	-0.1727	0.0085	0.5301	0.4154	-0.2090
0.0000	-0.0723	0.0429	-0.0342	0.0019	-0.0000	-0.0343	0.0019	-0.0190	0.0076	0.6311	0.2622	-0.0172
5.0000	0.2257	0.0398	0.1678	0.0550	0.0006	0.1684	0.0555	0.1114	0.0061	0.4200	0.4936	0.2489
10.000	0.5718	0.0248	0.4026	0.1167	0.0014	0.4039	0.1160	0.2690	-0.0016	0.4504	0.4705	0.9846
15.000	0.6733	0.0595	0.4399	0.1032	0.0014	0.4413	0.1046	0.2751	0.0185	0.4903	0.4086	0.4176
20.000	0.7515	0.0774	0.4904	0.1146	0.0017	0.4921	0.1164	0.2909	0.0277	0.4907	0.3870	0.3927
25.000	0.8760	0.0820	0.5520	0.1140	0.0018	0.5538	0.1158	0.3394	0.0292	0.5083	0.3874	0.3787
30.000	0.8205	0.0800	0.5544	0.1442	0.0021	0.5566	0.1463	0.3278	0.0323	0.4725	0.3995	0.4662
35.000	0.9083	0.0761	0.5919	0.1377	0.0021	0.5940	0.1398	0.3677	0.0307	0.4913	0.4048	0.4699
40.000	1.0202	0.0629	0.6217	0.1116	0.0017	0.6234	0.1133	0.4156	0.0245	0.5247	0.4074	0.4818
45.000	1.1244	0.0537	0.6624	0.1001	0.0015	0.6638	0.1016	0.4592	0.0212	0.5408	0.4084	0.4772
50.000	1.2262	0.0475	0.7046	0.0915	0.0013	0.7059	0.0928	0.5036	0.0188	0.5522	0.4107	0.4830
55.000	1.3197	0.0415	0.7396	0.0798	0.0011	0.7407	0.0809	0.5445	0.0165	0.5634	0.4126	0.4787
60.000	1.5298	0.0346	0.8355	0.0706	0.0010	0.8365	0.0716	0.6373	0.0141	0.5750	0.4166	0.5015

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	11	1.510	695	287	288.9	1.199	63.4	-37.9

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 30 182 35 183

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.2662	0.0660	-0.1459	-0.0118	-0.0004	-0.1463	-0.0122	-0.0986	0.0247	0.5755	0.3684	-0.1021
0.0000	-0.0499	0.0669	-0.0111	0.0138	0.0001	-0.0110	0.0139	-0.0142	0.0246	0.8281	0.2848	0.0243
5.0000	0.1997	0.0684	0.1283	0.0334	0.0006	0.1288	0.0340	0.0825	0.0246	0.4719	0.4350	0.1431
10.000	0.4811	0.0566	0.3191	0.0786	0.0012	0.3202	0.0797	0.2111	0.0194	0.4822	0.4387	0.3448
15.000	0.7777	0.0530	0.4906	0.1018	0.0016	0.4922	0.1033	0.3468	0.0174	0.5077	0.4459	0.5293
20.000	0.9375	0.0561	0.5627	0.1139	0.0017	0.5644	0.1156	0.3983	0.0206	0.5152	0.4249	0.5419
25.000	0.9853	0.0647	0.5961	0.1034	0.0016	0.5977	0.1050	0.4003	0.0245	0.5282	0.4061	0.4387
30.000	1.2085	0.0657	0.7279	0.1236	0.0018	0.7297	0.1255	0.5041	0.0266	0.5303	0.4171	0.4924
35.000	1.2796	0.0658	0.7607	0.1209	0.0018	0.7625	0.1227	0.5327	0.0265	0.5365	0.4164	0.4889
40.000	1.2465	0.0616	0.7362	0.1129	0.0017	0.7379	0.1147	0.5178	0.0245	0.5395	0.4154	0.4924
45.000	1.3184	0.0430	0.7434	0.0842	0.0013	0.7447	0.0855	0.5489	0.0173	0.5607	0.4163	0.5059
50.000	1.4252	0.0395	0.7869	0.0743	0.0011	0.7880	0.0754	0.5957	0.0157	0.5699	0.4180	0.4848
55.000	1.4415	0.0355	0.7860	0.0652	0.0009	0.7869	0.0662	0.6022	0.0141	0.5754	0.4177	0.4678
60.000	1.4666	0.0283	0.7983	0.0550	0.0008	0.7991	0.0558	0.6218	0.0113	0.5819	0.4183	0.4902

TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF
401	1	66	11	1.492	735	171	309.4	1.607	86.1	-99.9

SECOND ORDER LAGRANGIAN INTERPOLATION   COMBINED DATA   COMBINED RUNS: 29 182 34 183

ALPHA	CN	CA	CMNB	CMNC	CMA	CMBT	CMCT	CBM	CYM	XCP	YCP	ZCP
-5.0000	-0.1910	0.0608	-0.1133	-0.0178	-0.0004	-0.1136	-0.0162	-0.0687	0.0259	0.5379	0.3575	-0.1059
0.0000	-0.0299	0.0613	-0.0065	0.0084	0.0001	-0.0064	0.0085	-0.0098	0.0263	0.8324	0.3269	0.0242
5.0000	0.1527	0.0623	0.1072	0.0308	0.0004	0.1076	0.0312	0.0614	0.0262	0.4522	0.4015	0.1261
10.000	0.3634	0.0571	0.2381	0.0534	0.0008	0.2390	0.0543	0.1533	0.0227	0.4968	0.4149	0.2561
15.000	0.5976	0.0528	0.3627	0.0639	0.0011	0.3638	0.0650	0.2571	0.0203	0.5265	0.4303	0.3598
20.000	0.8222	0.0500	0.4658	0.0747	0.0013	0.4671	0.0760	0.3560	0.0191	0.5392	0.4331	0.4563
25.000	1.0096	0.0523	0.5889	0.0841	0.0014	0.5904	0.0855	0.4323	0.0203	0.5452	0.4281	0.4783
30.000	1.1522	0.0585	0.6750	0.0989	0.0015	0.6765	0.1004	0.4886	0.0237	0.5433	0.4241	0.4554
35.000	1.2492	0.0595	0.7281	0.1035	0.0016	0.7297	0.1051	0.5247	0.0241	0.5457	0.4200	0.4717
40.000	1.3339	0.0591	0.7705	0.1035	0.0016	0.7721	0.1051	0.5594	0.0237	0.5498	0.4194	0.4744
45.000	1.4237	0.0557	0.8096	0.0978	0.0015	0.8111	0.0993	0.5972	0.0220	0.5569	0.4195	0.4810
50.000	1.5300	0.0413	0.8404	0.0754	0.0012	0.8416	0.0766	0.6433	0.0160	0.5722	0.4204	0.5026
55.000	1.5950	0.0350	0.8615	0.0640	0.0010	0.8625	0.0650	0.6714	0.0136	0.5794	0.4210	0.4832
60.000	1.6211	0.0325	0.8667	0.0561	0.0009	0.8675	0.0570	0.6831	0.0127	0.5837	0.4213	0.4647

APPENDIX C

PLOTTED AERODYNAMIC DATA FROM THE WING PRESSURE MODELS

The data are grouped according to taper ratio in sets of increasing Mach number.

NOMENCLATURE

Symbol	Definition	Units
α	Angle of attack	deg
M	Mach number	
λ	Taper ratio, C_T/C_R, wing tip chord divided by root chord	
Æ	Aspect ratio, b^2/S, wing span squared and divided by wing planform area	
C_N	Normal-force coefficient, F_N/qS, wing normal force divided by dynamic pressure and wing planform	
C_A	Axial-force coefficient, F_A/qS, wing axial force divided by dynamic pressure and wing planform area	
C_Y	Side-force coefficient, F_y/qS (not computed)	
C_m	Pitching-moment coefficient, $M_{YC}/qS\bar{C}$, moment about a spanwise axis through the wing area centroid divided by the dynamic pressure, wing planform area, and mean aerodynamic chord	
C_b	Root bending moment coefficient, $M_X'/q(S/2)(b/2)$, moment about wing longitudinal axis due to load on one semispan of the wing divided by dynamic pressure, 1/2 the wing planform area, and 1/2 the total span	

Symbol	Definition	Units
C_n	Yawing-moment coefficient, $M_{ZC}/qS\bar{C}$, moment about an axis normal to the wing and through its area centroid divided by dynamic pressure, wing planform area, and the mean aerodynamic chord	
$\frac{x_{cp}}{C_r}$	Wing longitudinal aerodynamic center measured positive aft from the root leading edge divided by the root chord (longitudinal aerodynamic center as fraction of root chord)	
$\frac{y_{cp}}{b/2}$	Lateral aerodymaic center of the normal force acting on one semispan of the wing measured from the centerline (positive outboard) divided by 1/2 the total span (semispan lateral aerodynamic center as fraction of semispan)	
$\frac{z_{cp}}{t/2}$	Vertical aerodynamic center of the axial force with respect to centerline divided by 1/2 the wing thickness (vertical aerodynamic center as fraction of 1/2 the wing thickness), positive in the direction opposite to that of the normal force (e.g., down for the nose-up pitch attitude)	

INDEX

Figure	Data	M	λ	Configurations
C-1	C_N, C_A	0.6	0	1,4,7
C-2	C_m, C_b, C_n	0.6	0	1,4,7
C-3	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.6	0	1,4,7
C-4	C_N, C_A	0.6	0.5	2,5,8,10
C-5	C_m, C_b, C_n	0.6	0.5	2,5,8,10
C-6	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.6	0.5	2,5,8,10
C-7	C_N, C_A	0.6	1.0	3,6,9
C-8	C_m, C_b, C_n	0.6	1.0	3,6,9
C-9	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.6	1.0	3,6,9
C-10	C_N, C_A	0.8	0	1,4,7
C-11	C_m, C_b, C_n	0.8	0	1,4,7
C-12	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.8	0	1,4,7
C-13	C_N, C_A	0.8	0.5	2,5,8,10
C-14	C_m, C_b, C_n	0.8	0.5	2,5,8,10
C-15	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	018	0.5	2,5,8,10
C-16	C_N, C_A	0.8	1.0	3,6,9

Figure	Data	M	λ	Configurations
C-17	C_m, C_b, C_n	0.8	1.0	3,6,9
C-18	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.8	1.0	3,6,9
C-19	C_N, C_A	0.9	0	1,4,7
C-20	C_m, C_b, C_n	0.9	0	1,4,7
C-21	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.9	0	1,4,7
C-22	C_N, C_A	0.9	0.5	2,5,8,10
C-23	C_m, C_b, C_n	0.9	0.5	2,5,8,10
C-24	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.9	0.5	2,5,8,10
C-25	C_N, C_A	0.9	1.0	3,6,9
C-26	C_m, C_b, C_n	0.9	1.0	3,6,9
C-27	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	0.9	1.0	3,6,9
C-28	C_N, C_A	1.2	0	1,4,7
C-29	C_m, C_b, C_n	1.2	0	1,4,7
C-30	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	1.2	0	1,4,7
C-31	C_N, C_A	1.2	0.5	2,5,8,10
C-32	C_m, C_b, C_n	1.2	0.5	2,5,8,10

Figure	Data	M	λ	Configurations
C-33	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	1.2	0.5	2,5,8,10
C-34	C_N, C_A	1.2	1.0	3,6,9
C-35	C_m, C_b, C_n	1.2	1.0	3,6,9
C-36	$\frac{x_{cp}}{C_R}$, $\frac{y_{cp}}{b/2}$, $\frac{z_{cp}}{t/2}$	1.2	1.0	3,6,9

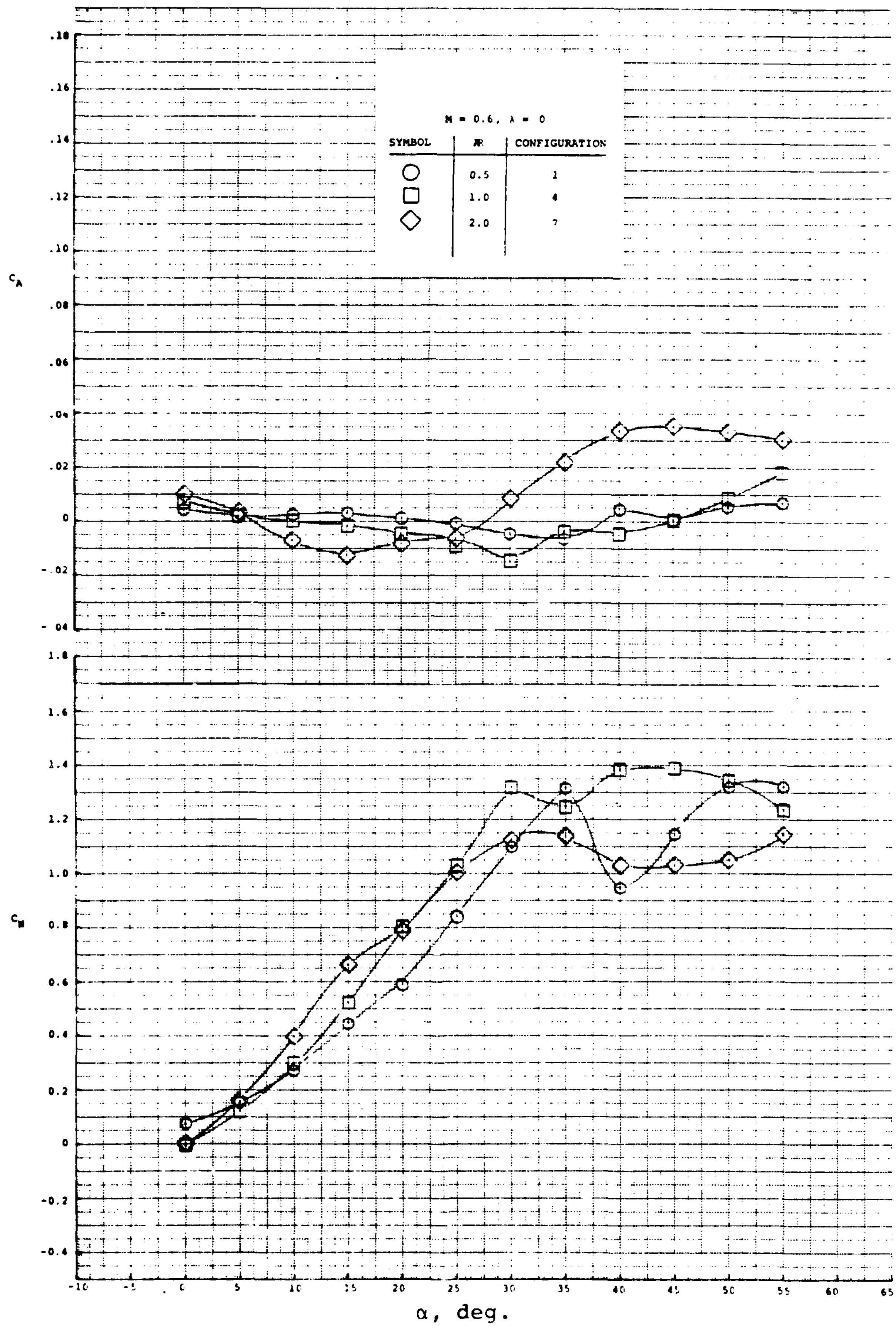


Figure C-1.- Triangular wings.

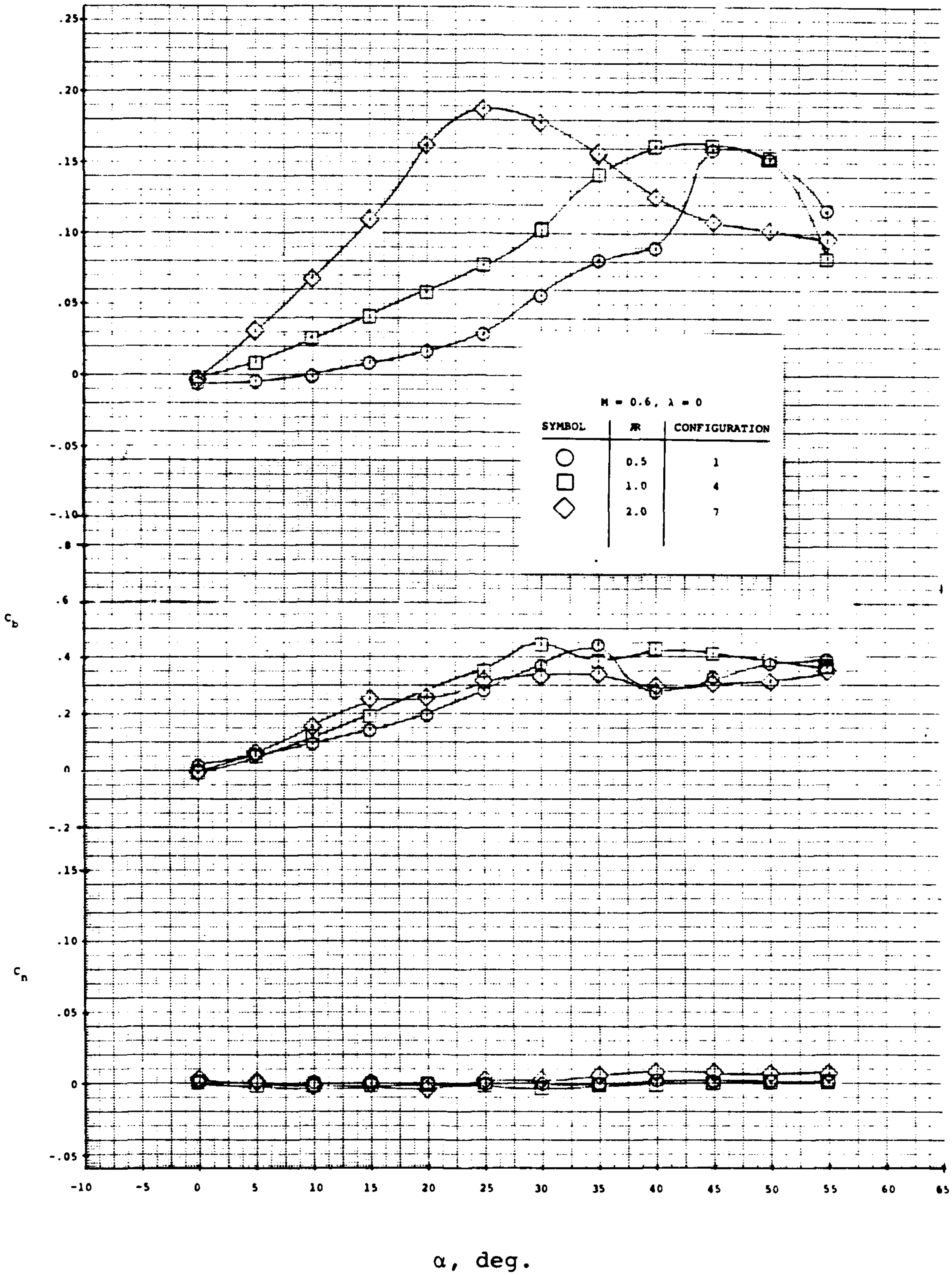


Figure C-2.- Triangular wings.

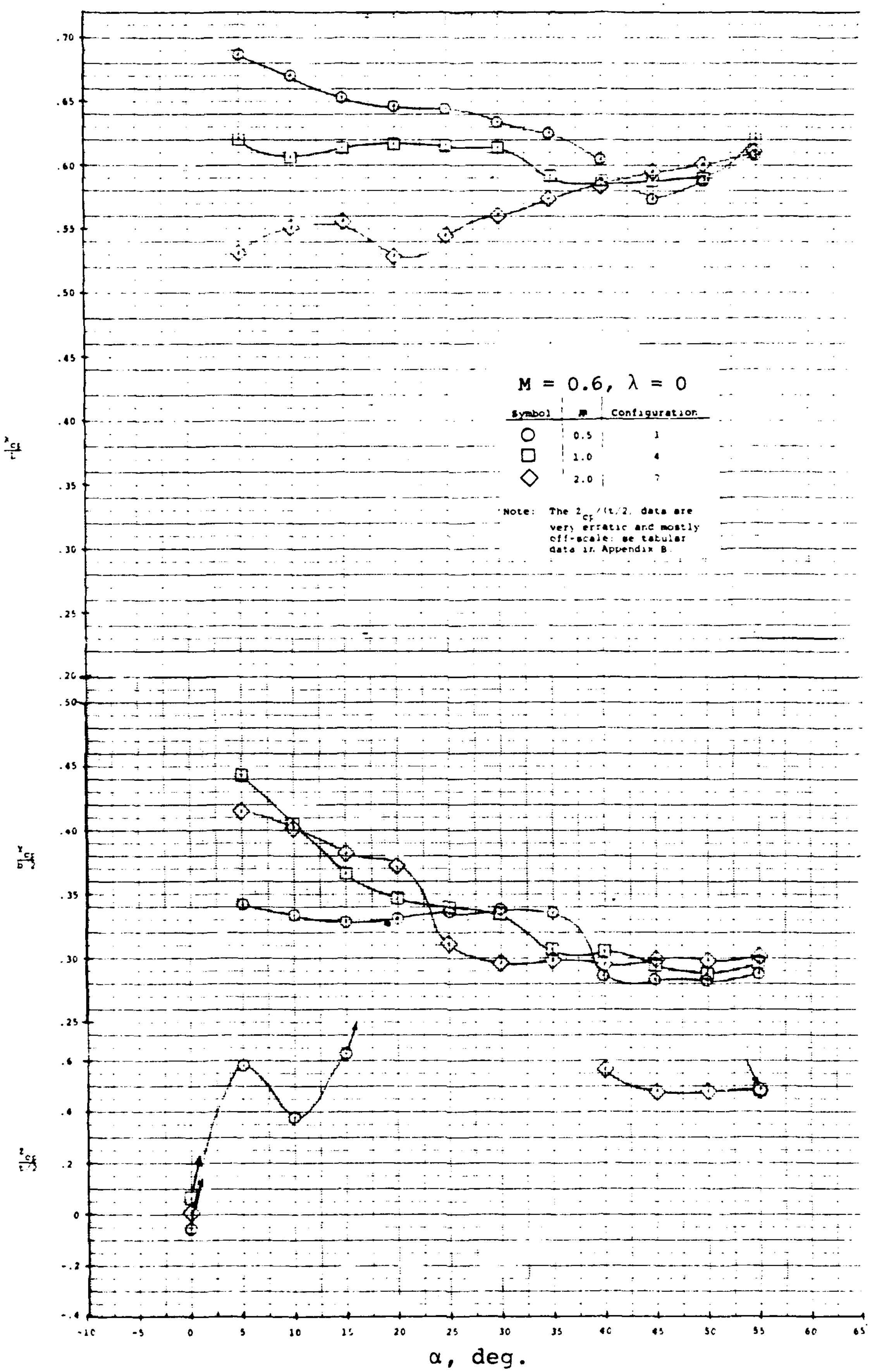


Figure C-3.- Triangular wings.

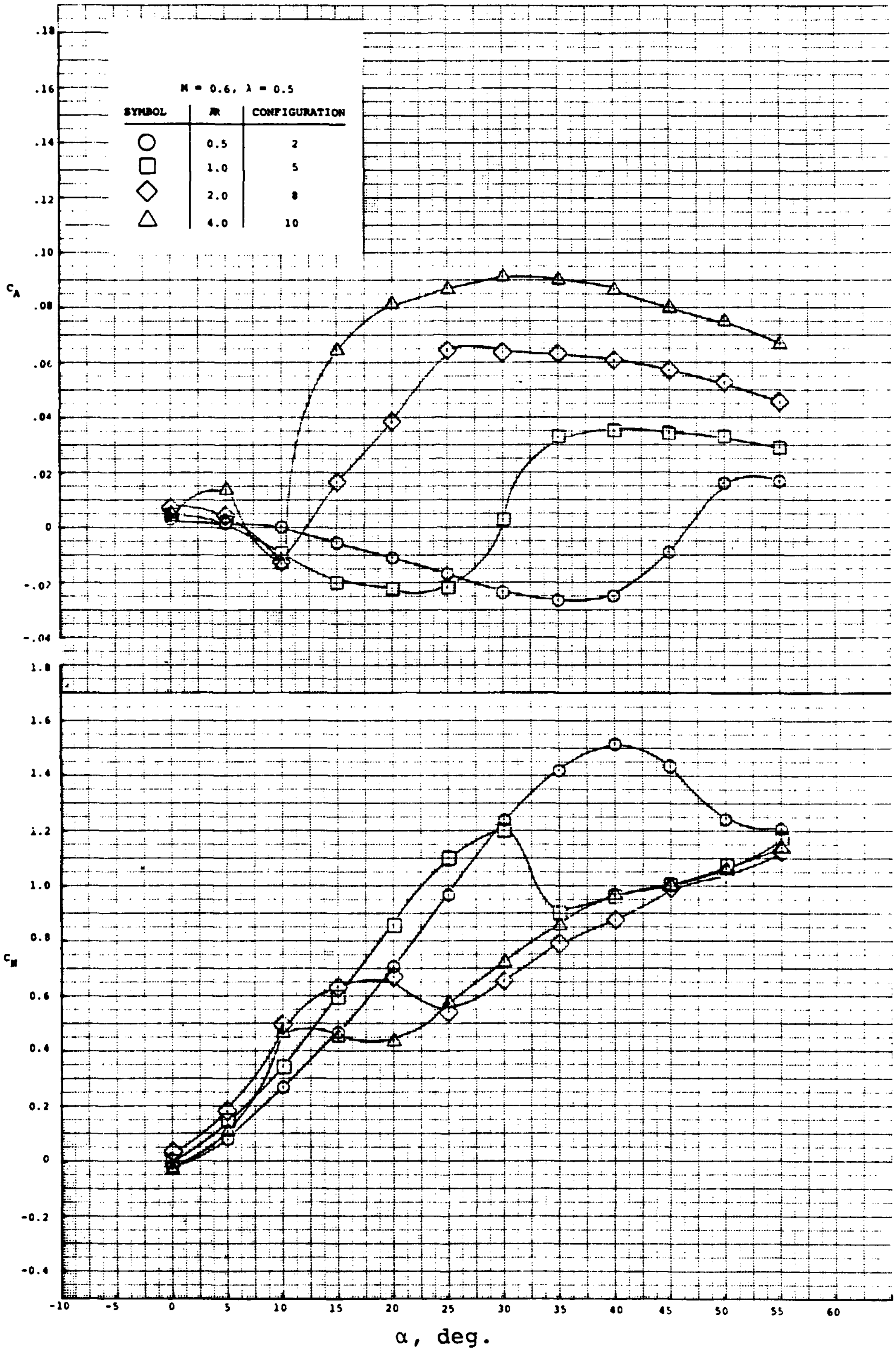


Figure C-4.- Tapered wings.

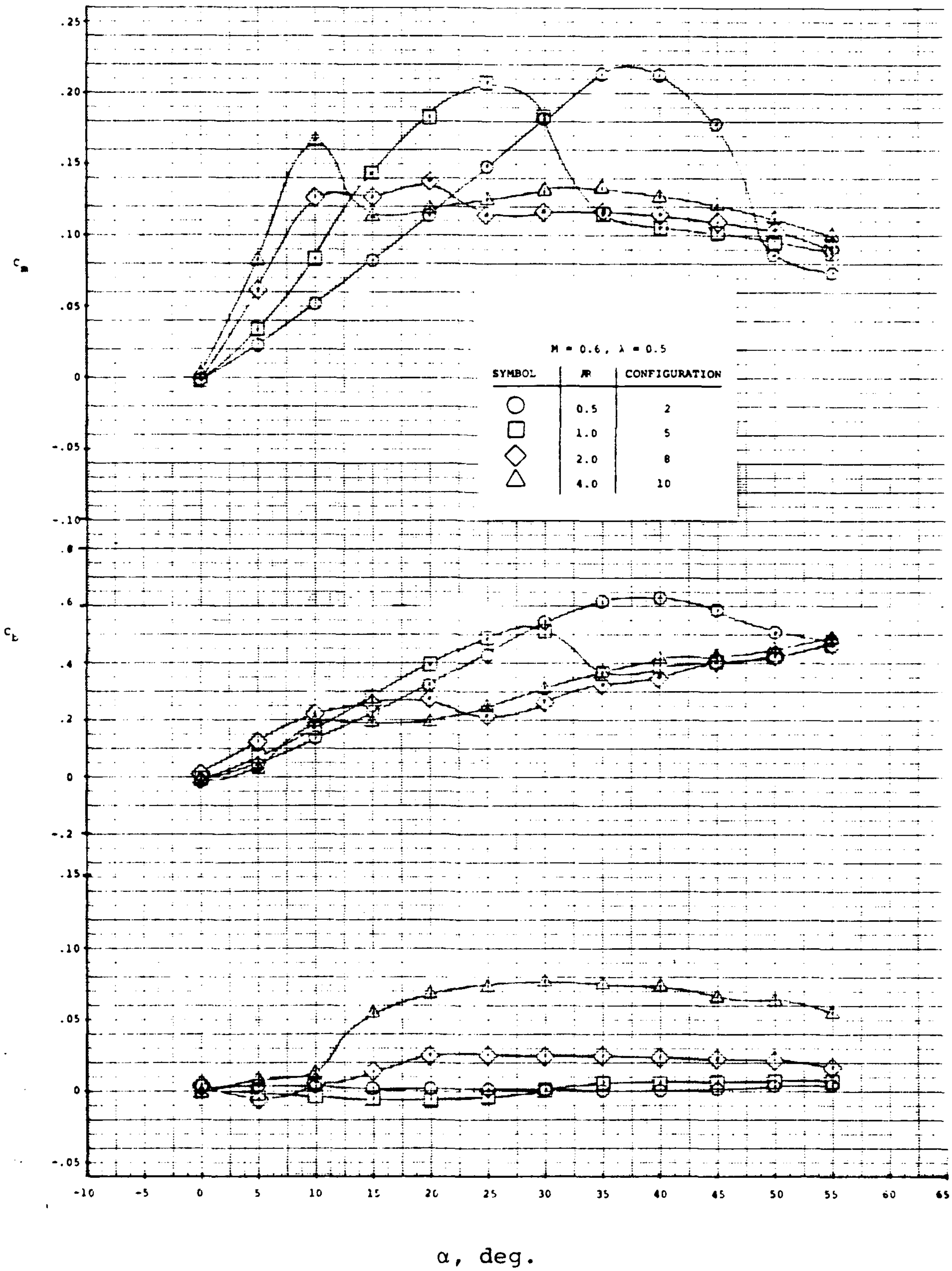


Figure C-5.- Tapered wings.

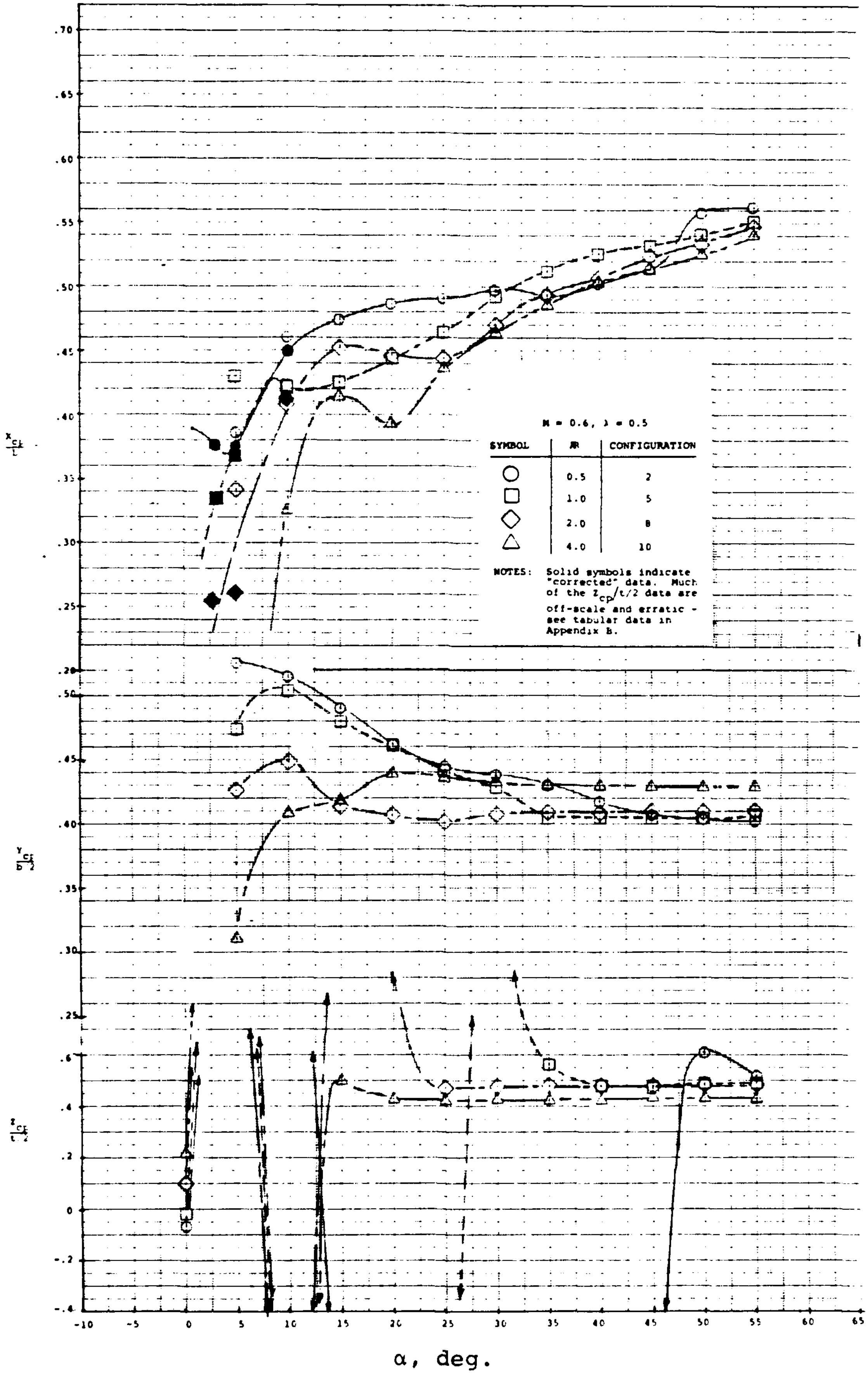


Figure C-6.- Tapered wings.

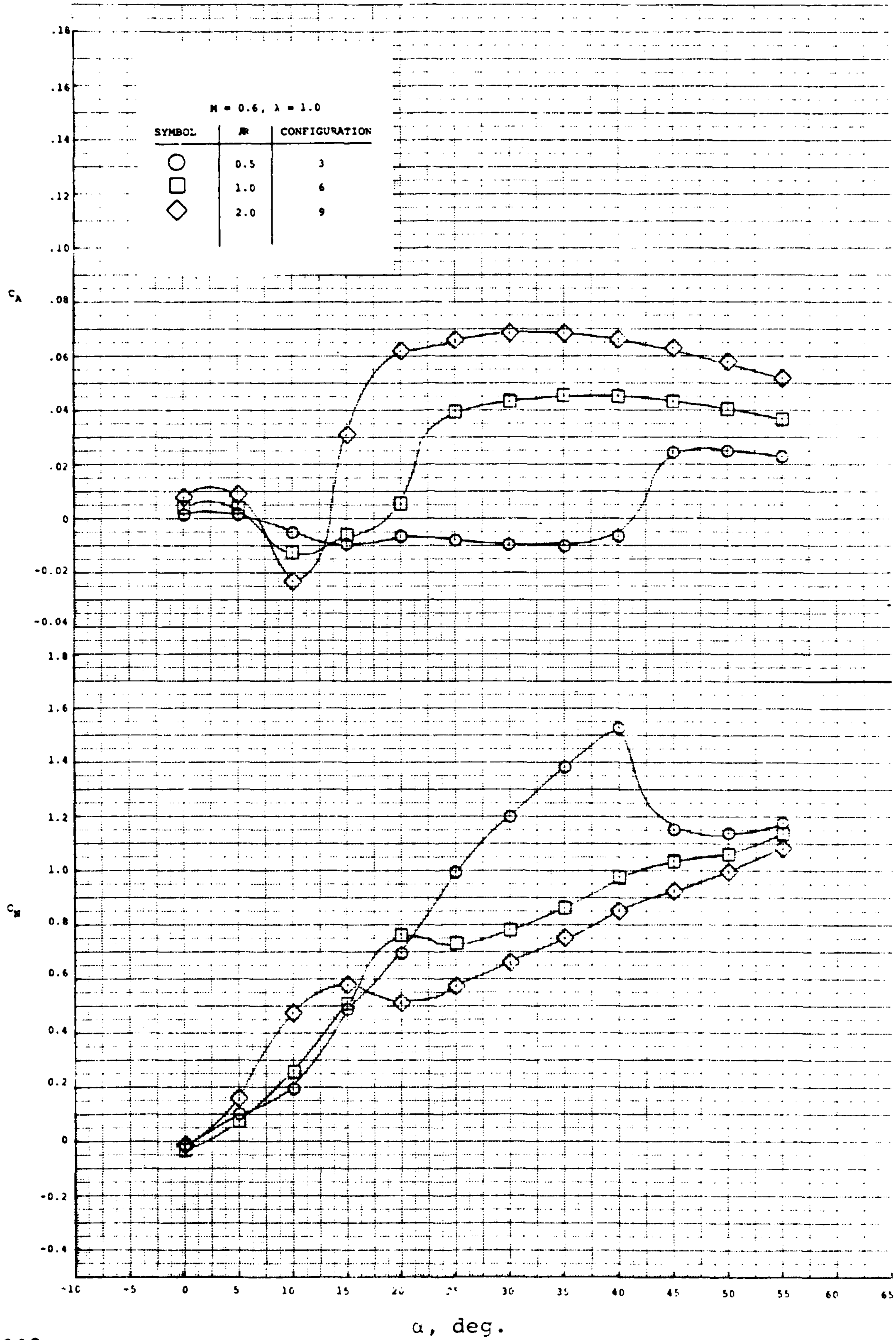


Figure C-7.- Rectangular wings.

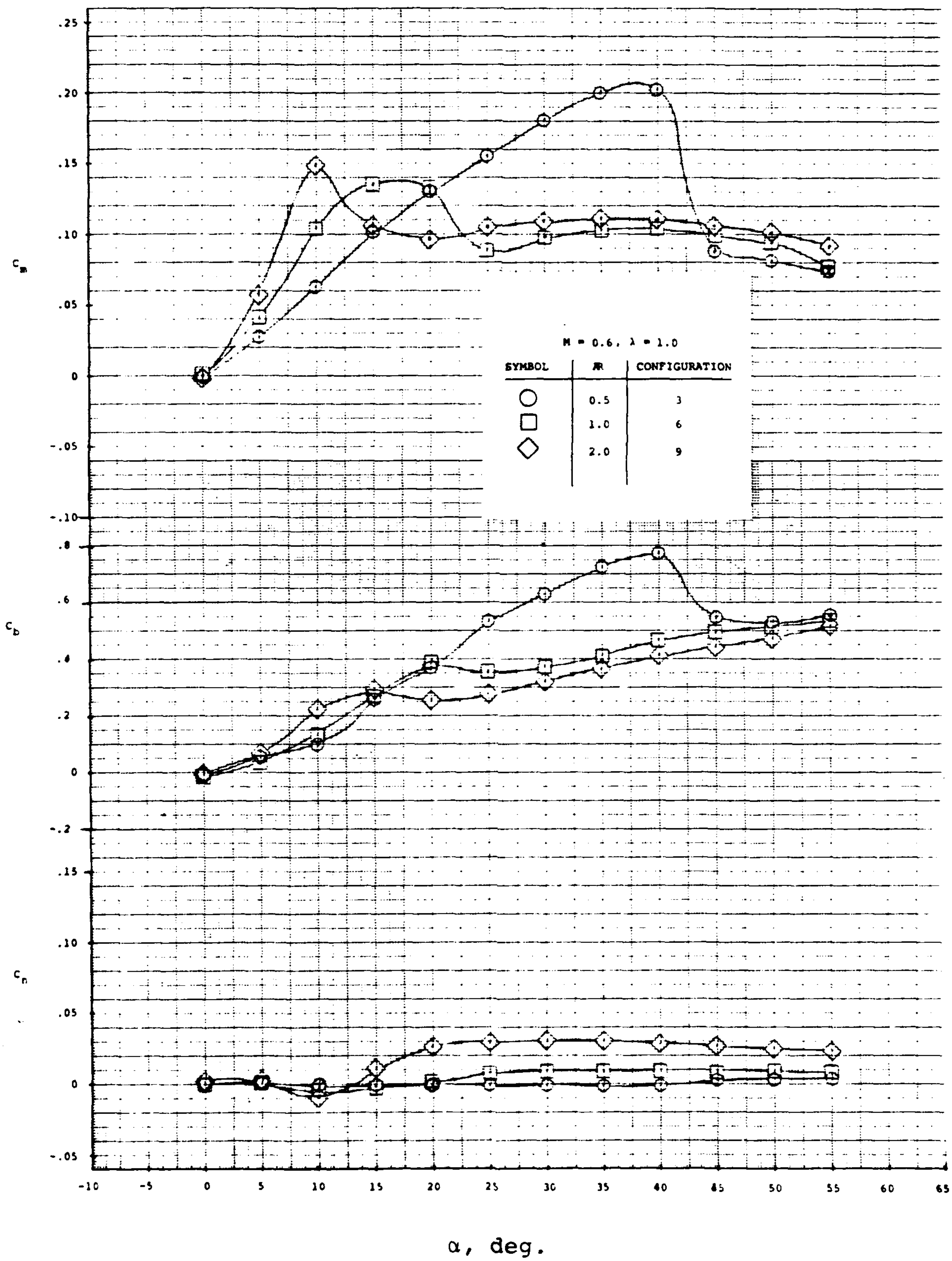


Figure C-8.- Rectangular wings.

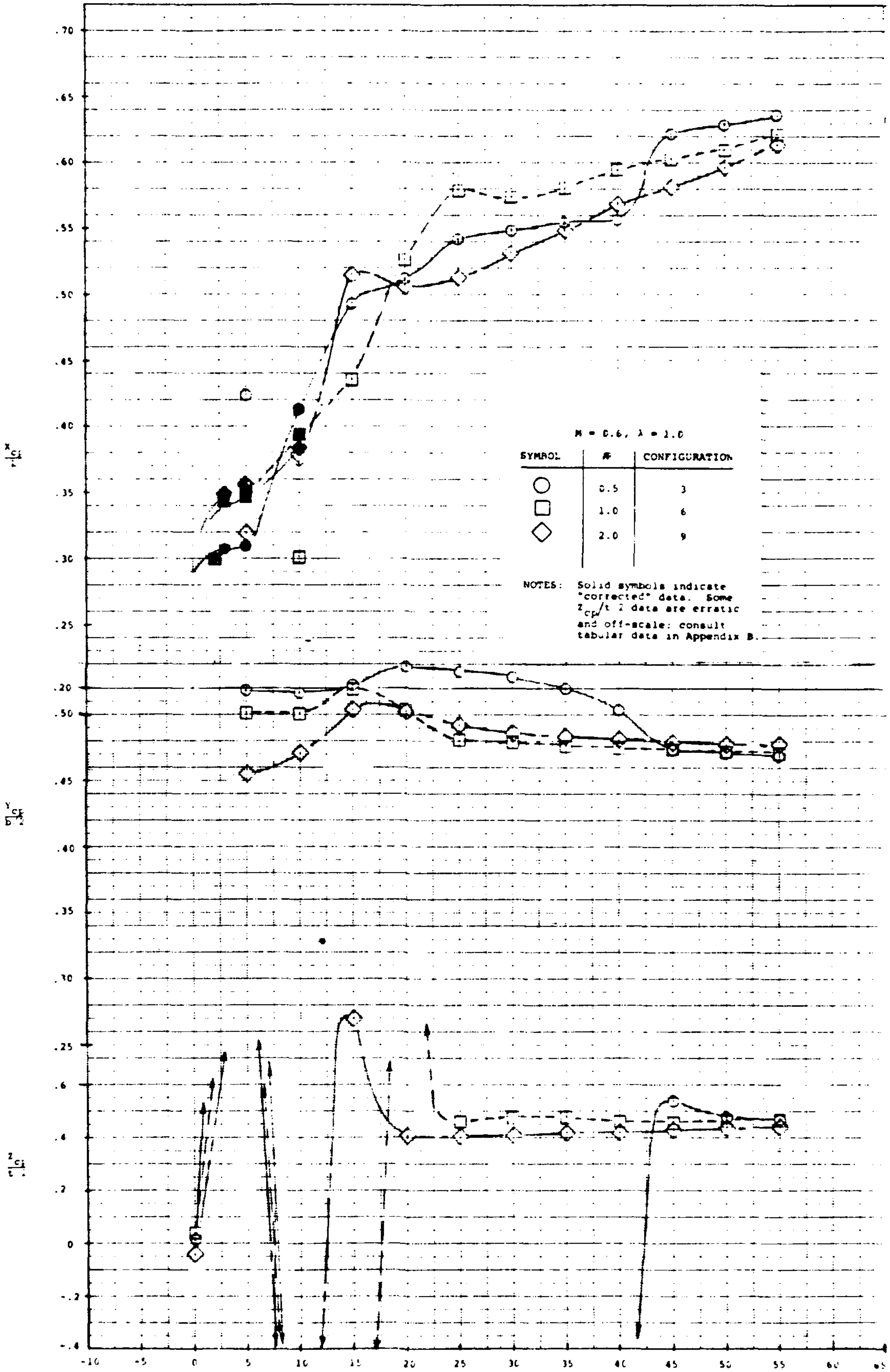


Figure C-9.- Rectangular wings.

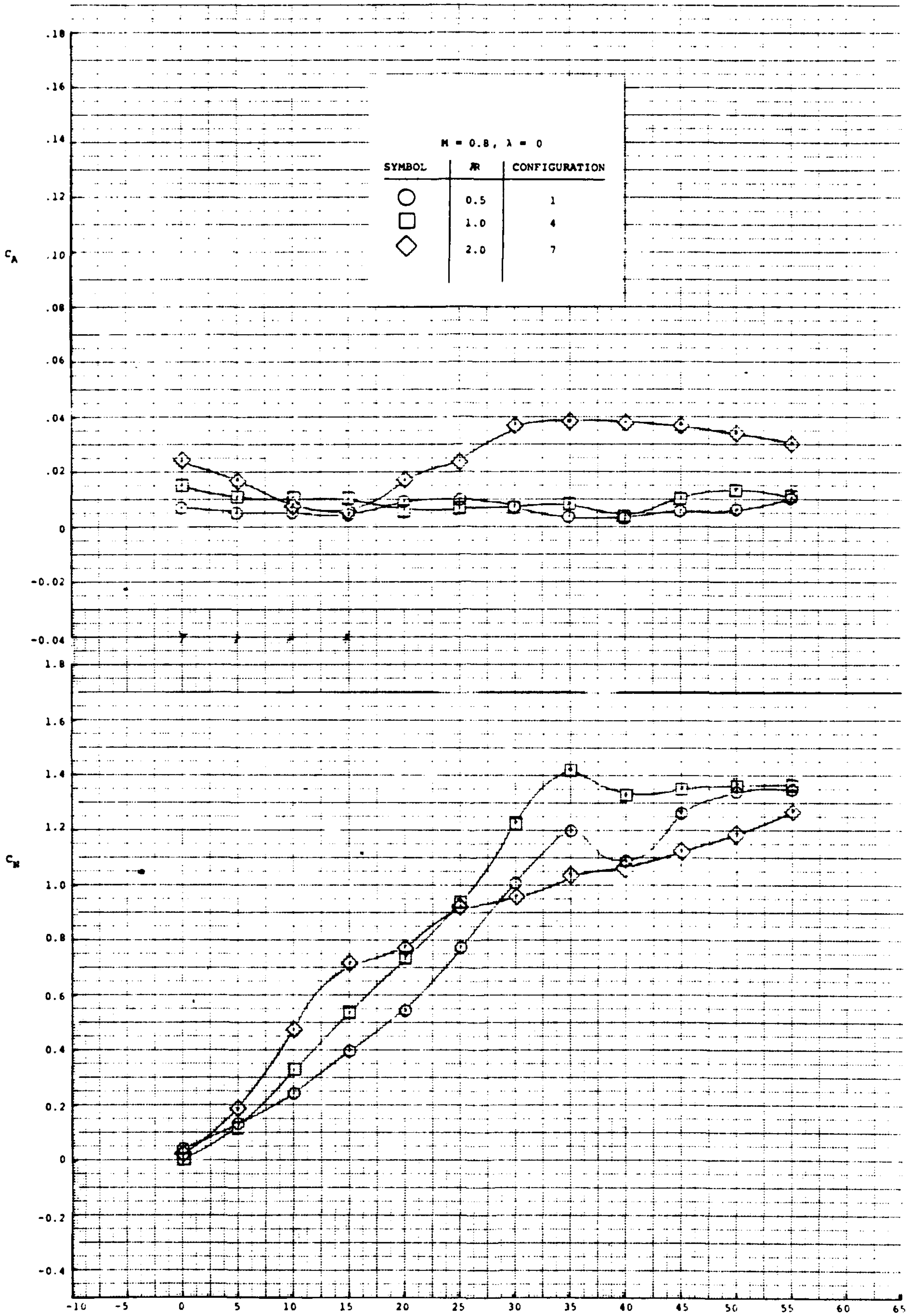


Figure C-10.- Triangular wings.

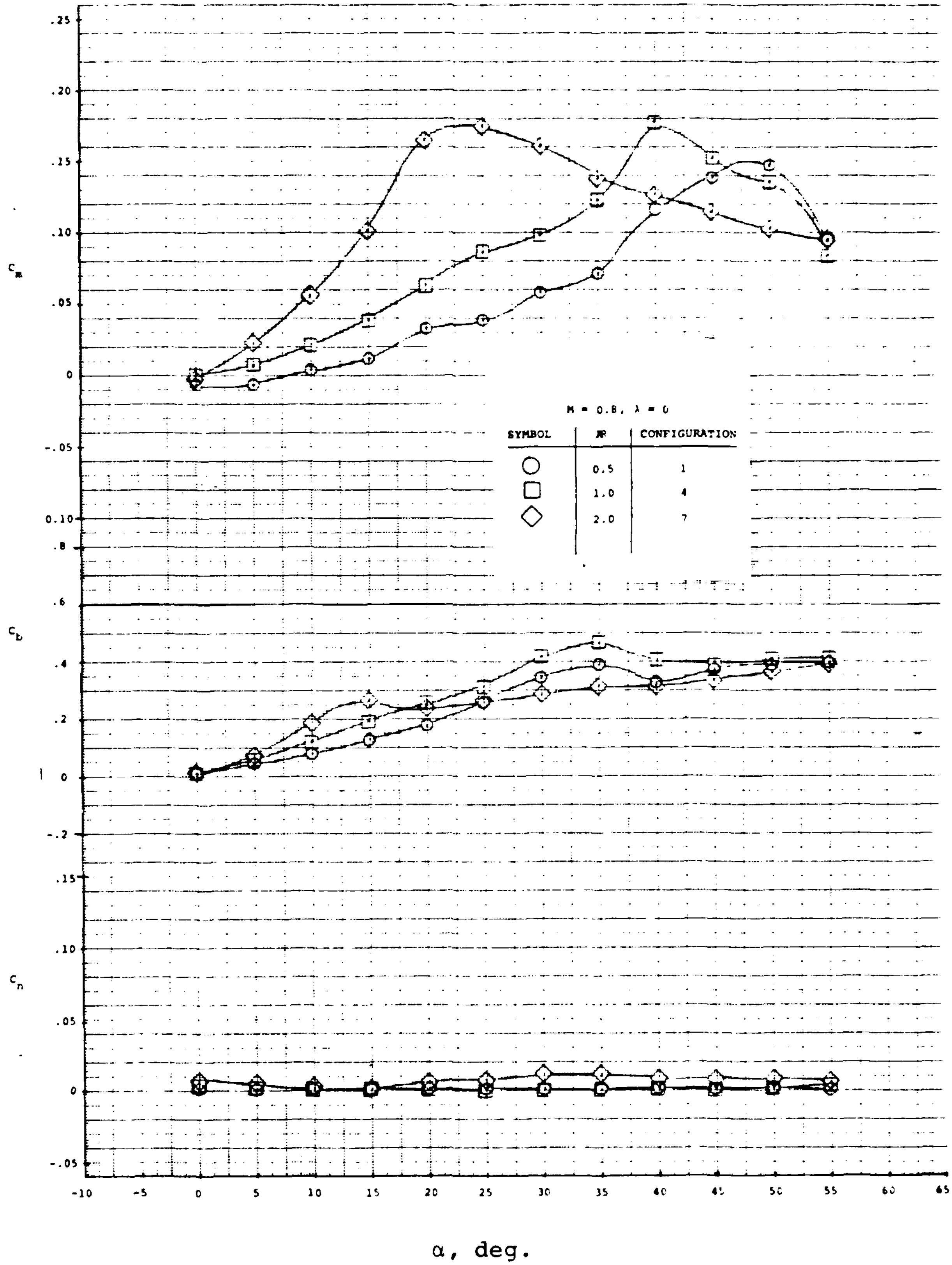
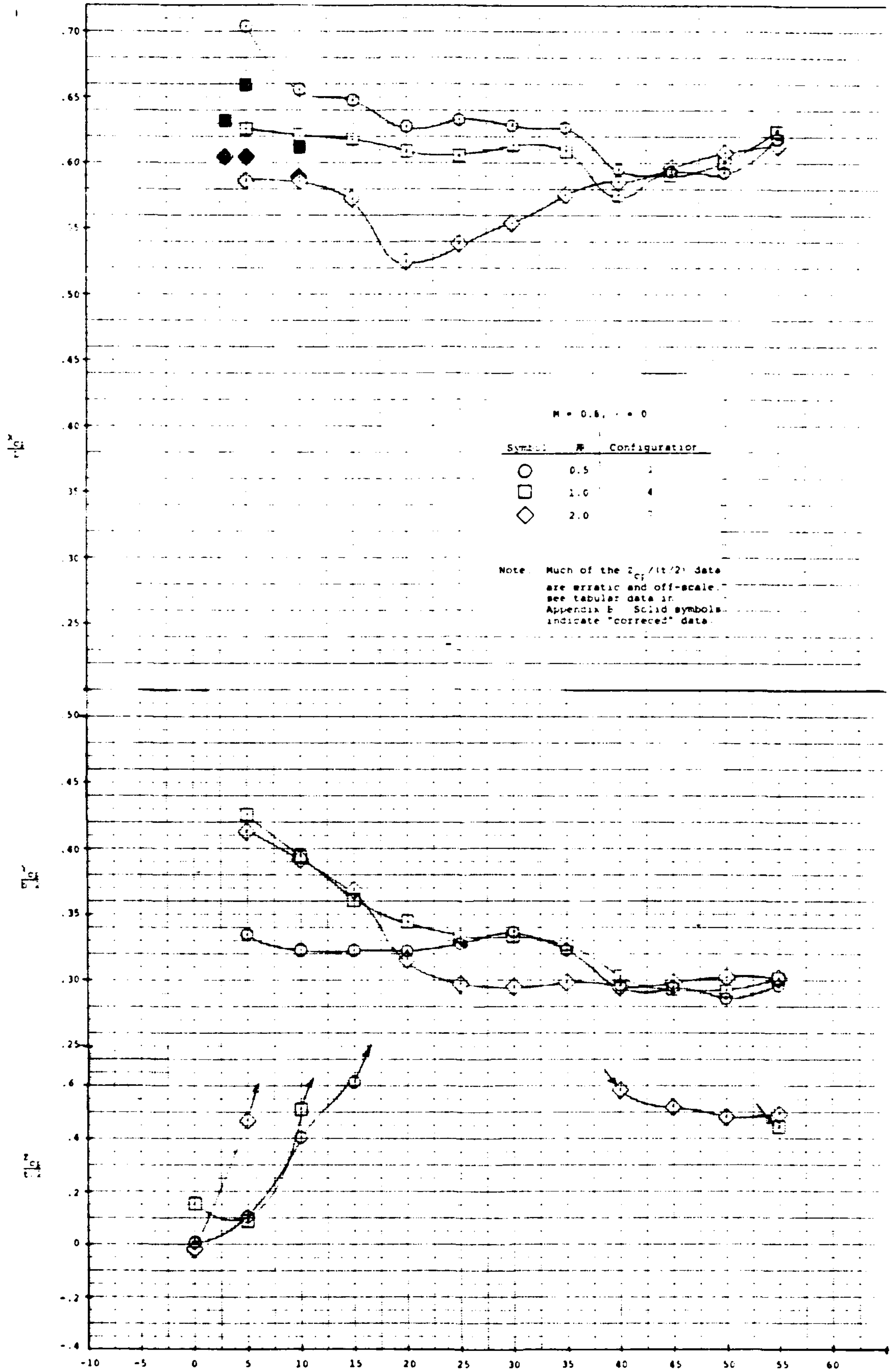
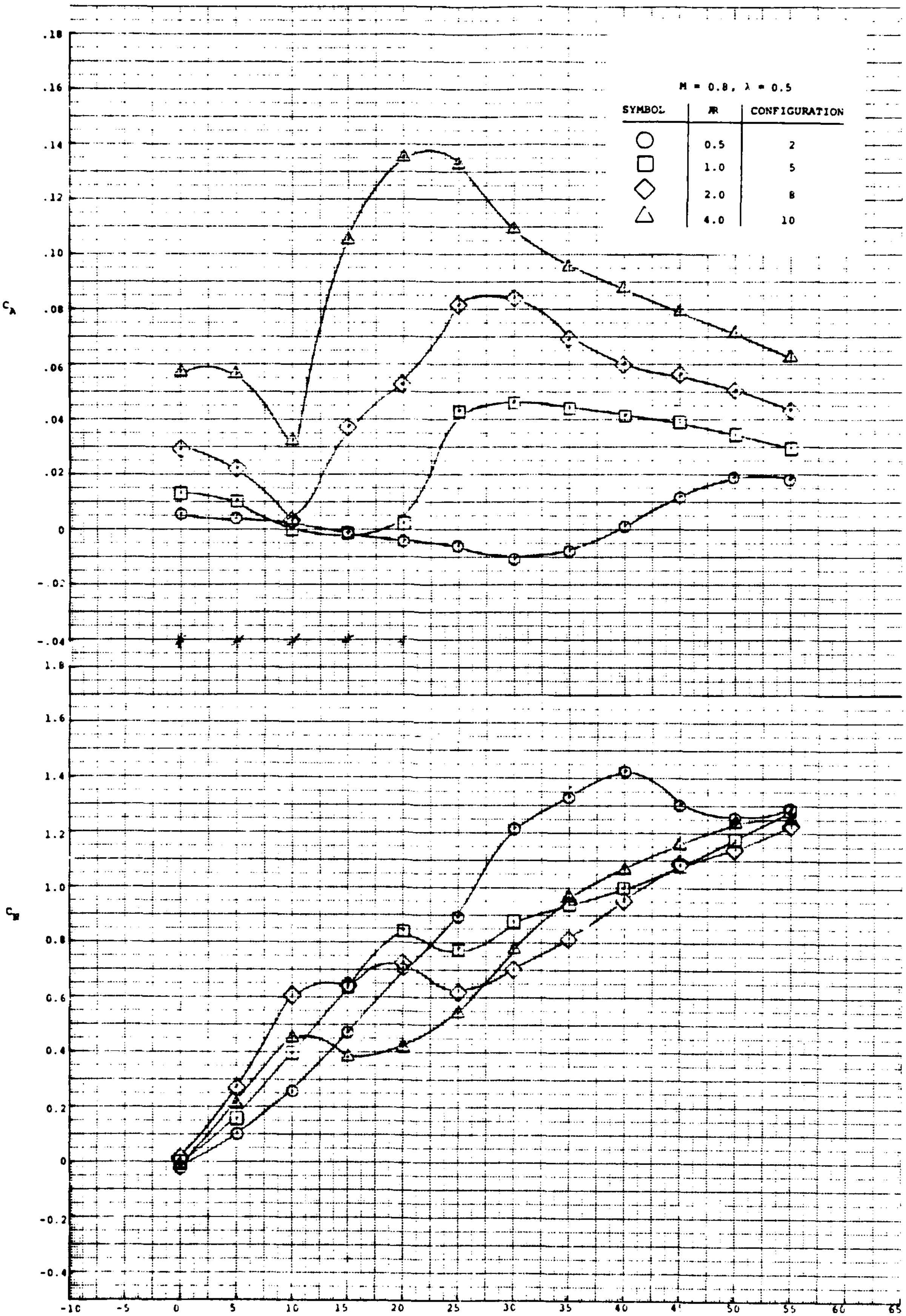


Figure C-11.- Triangular wings.



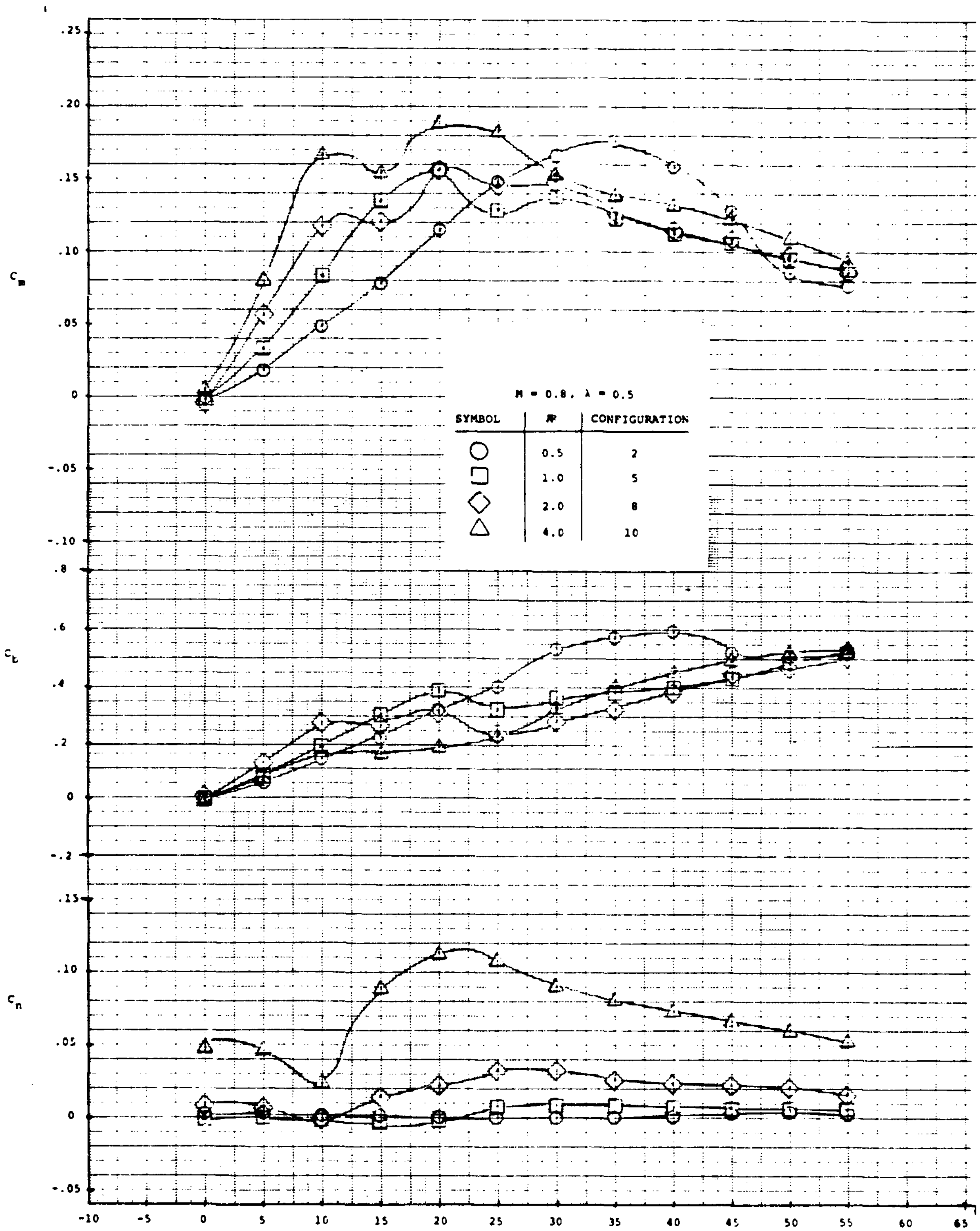
α, deg.

Figure C-12.- Triangular wings.



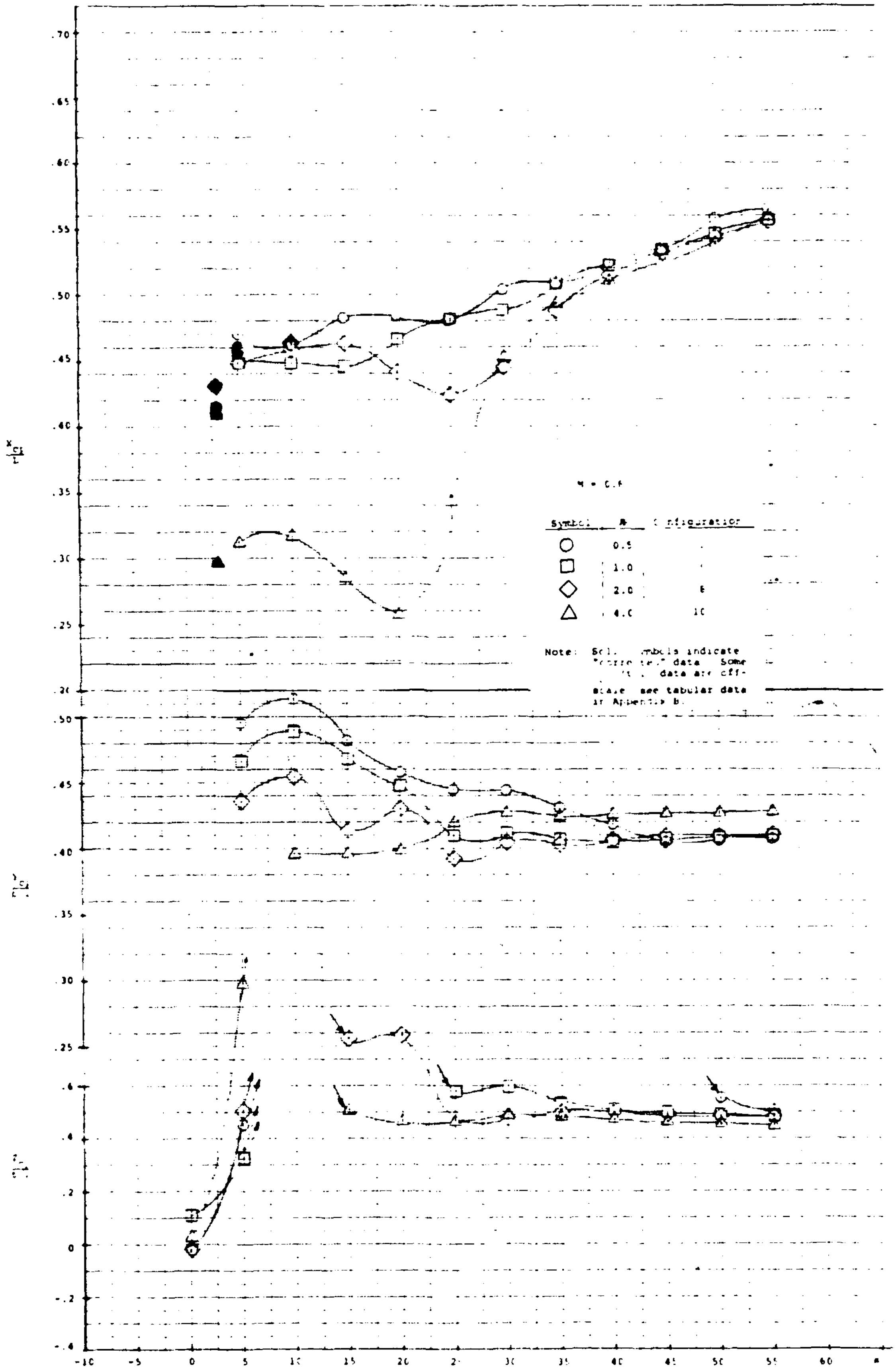
α, deg.

Figure C-13.- Tapered wings.



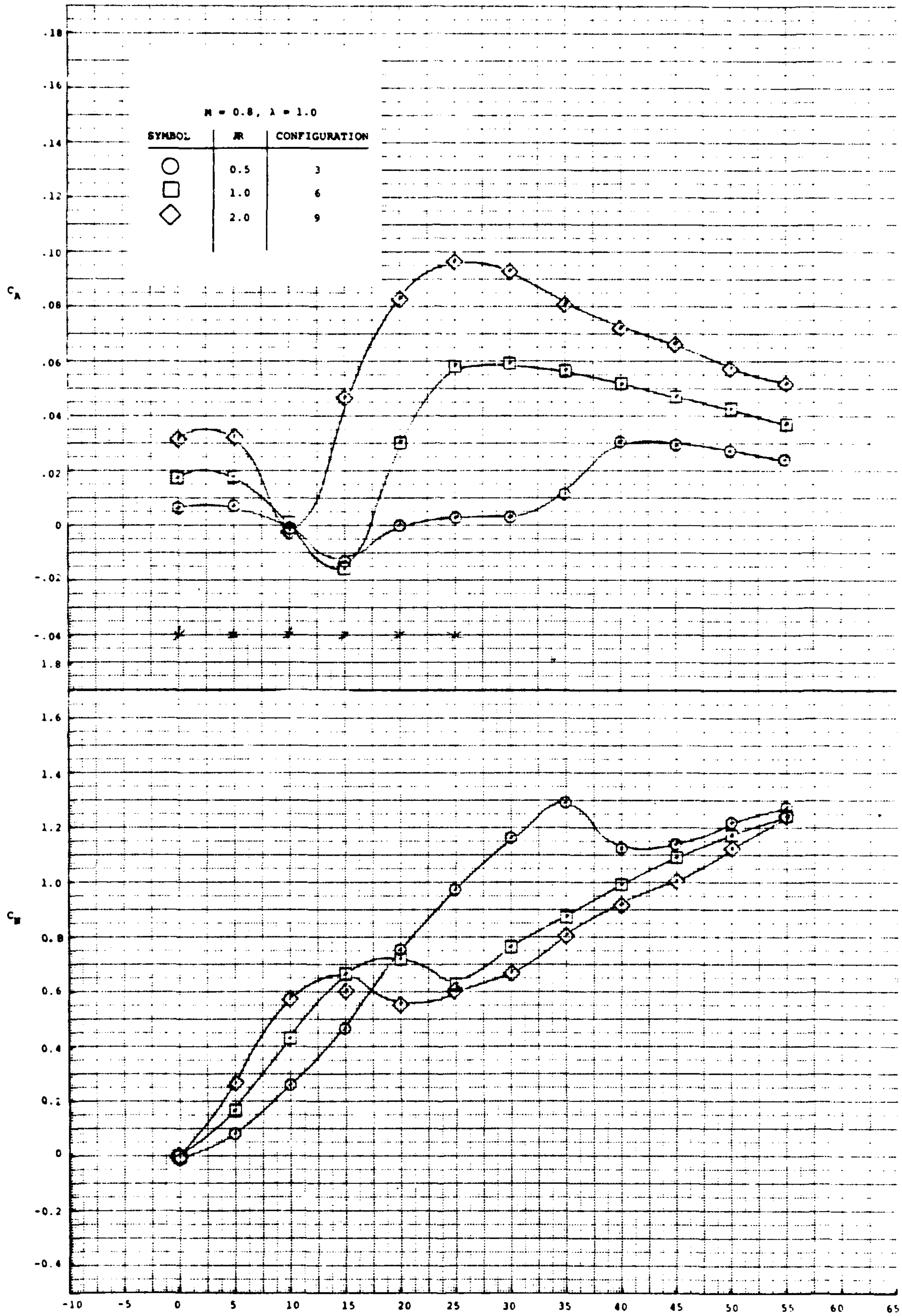
α, deg.

Figure C-14.- Tapered wings.



α, deg.

Figure C-15.- Tapered wings.



α, deg.

Figure C-16.- Rectangular wings.

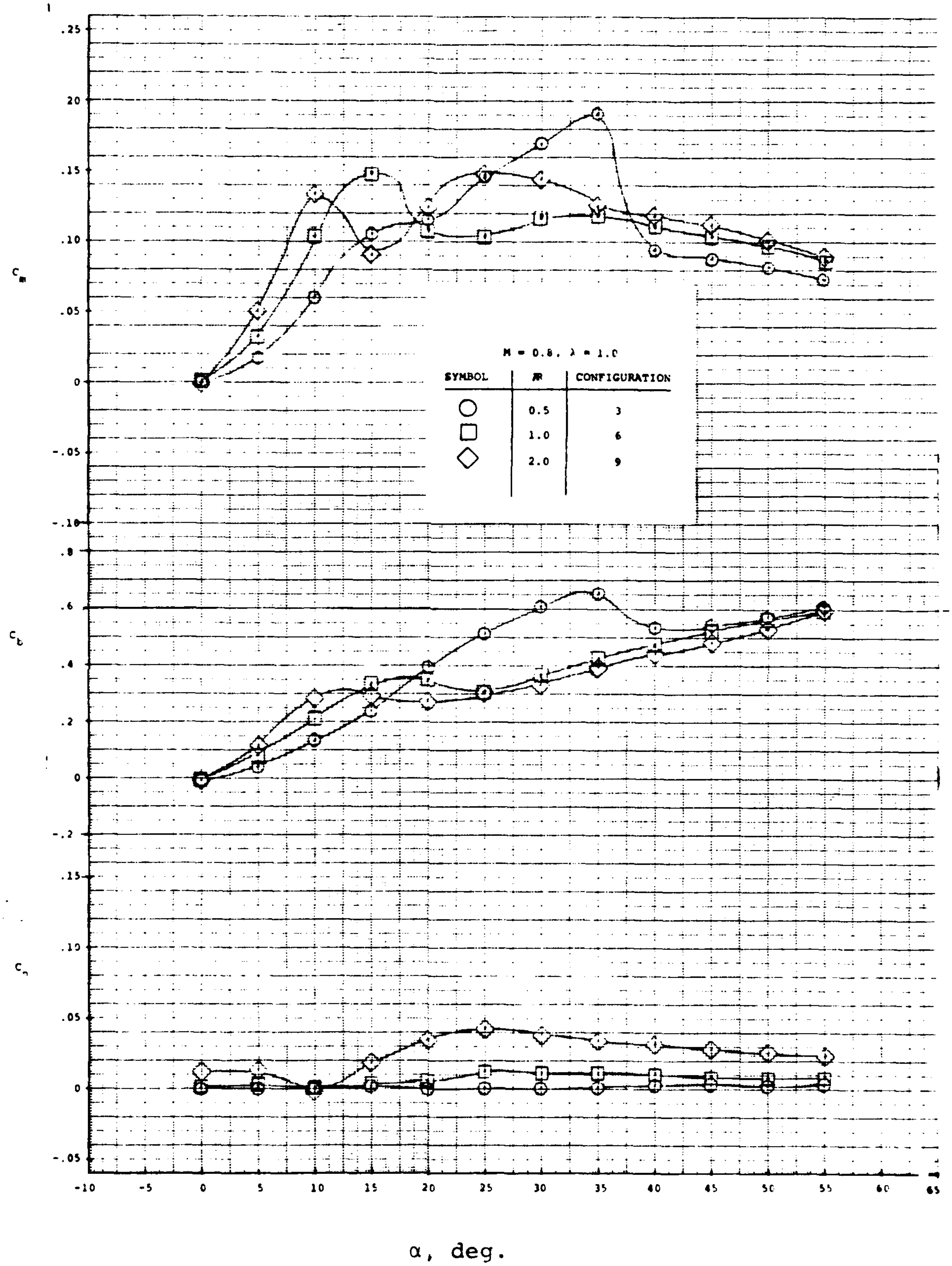


Figure C-17.- Rectangular wings.

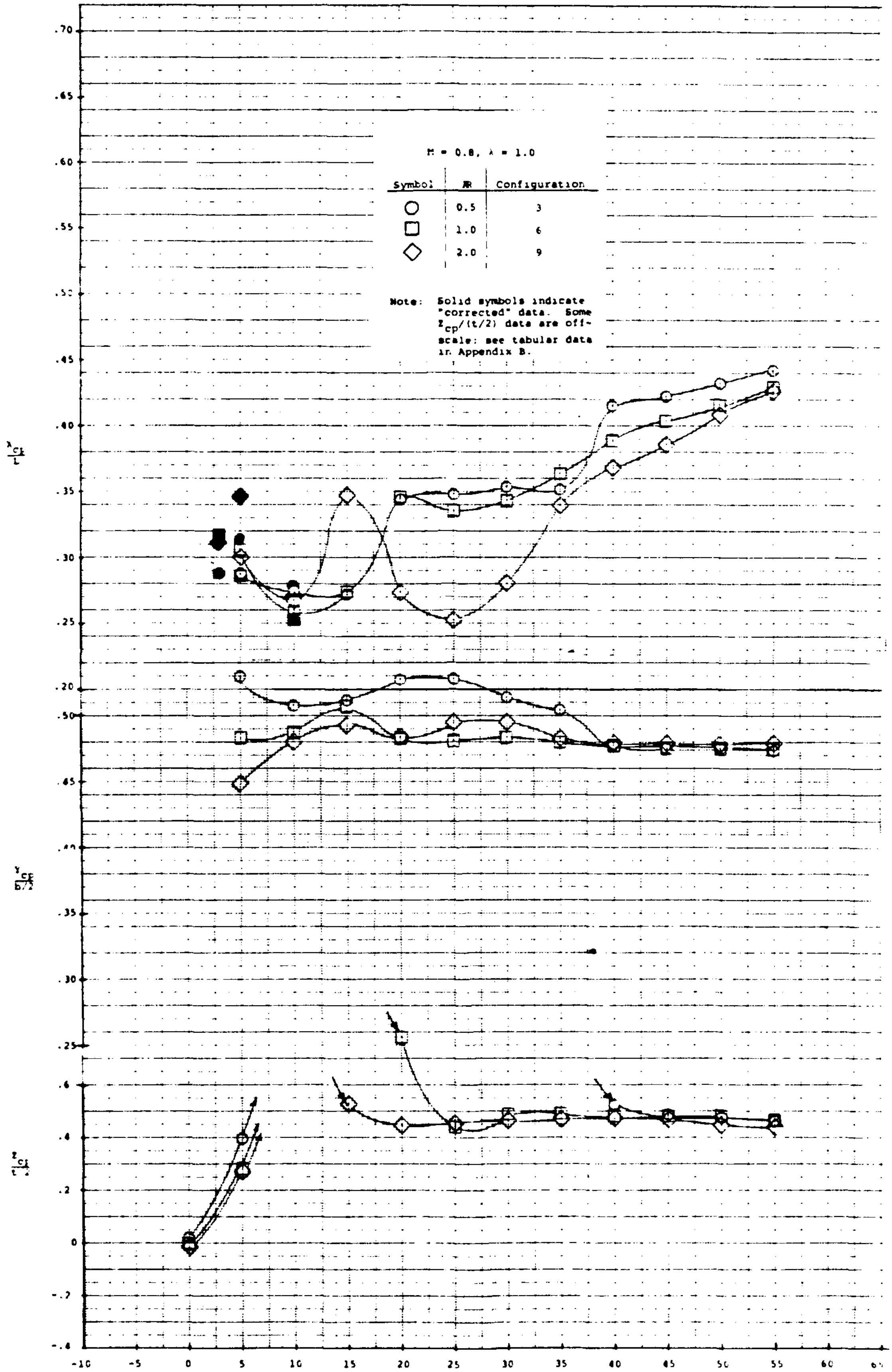


Figure C-18.- Rectangular wings.

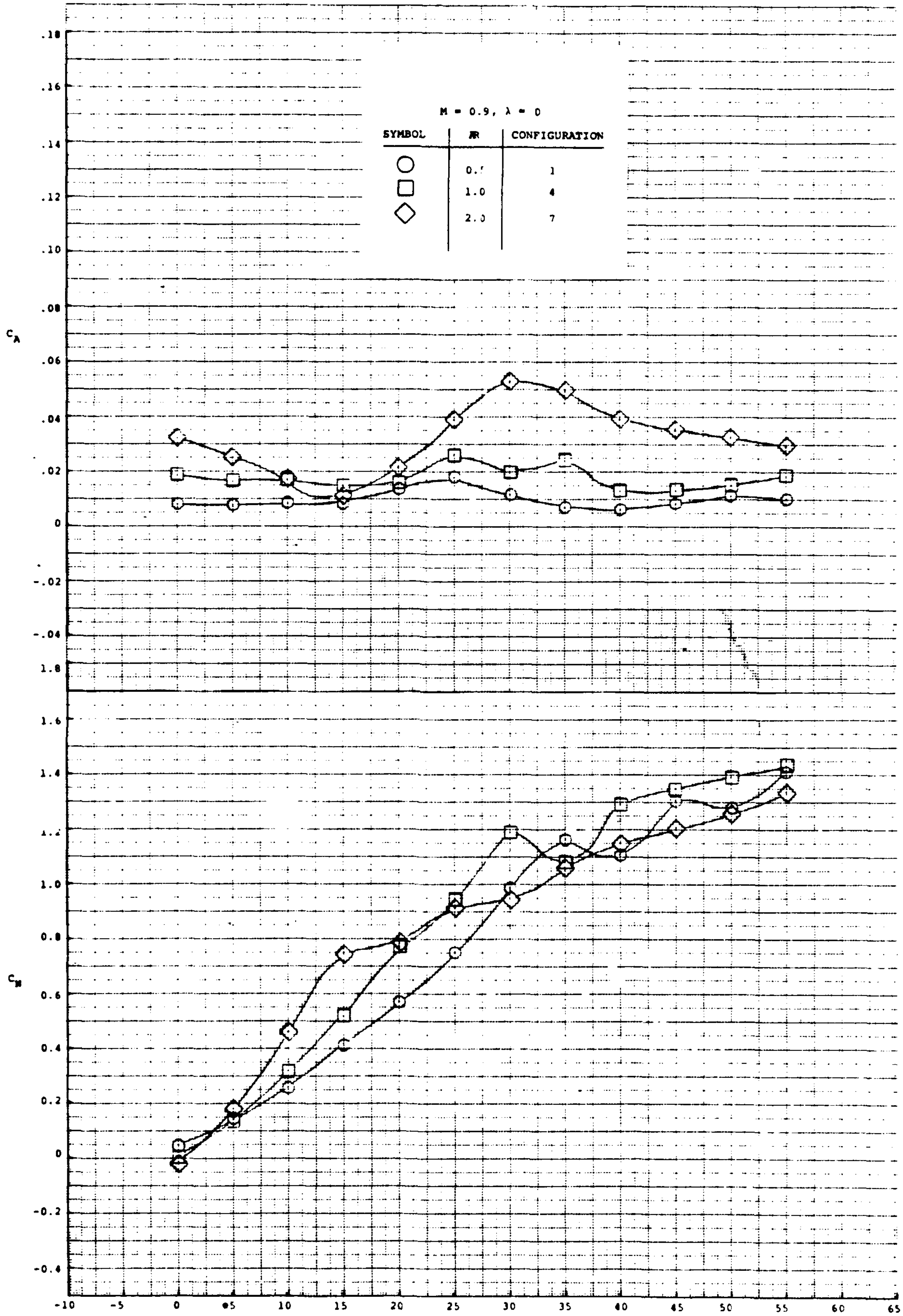
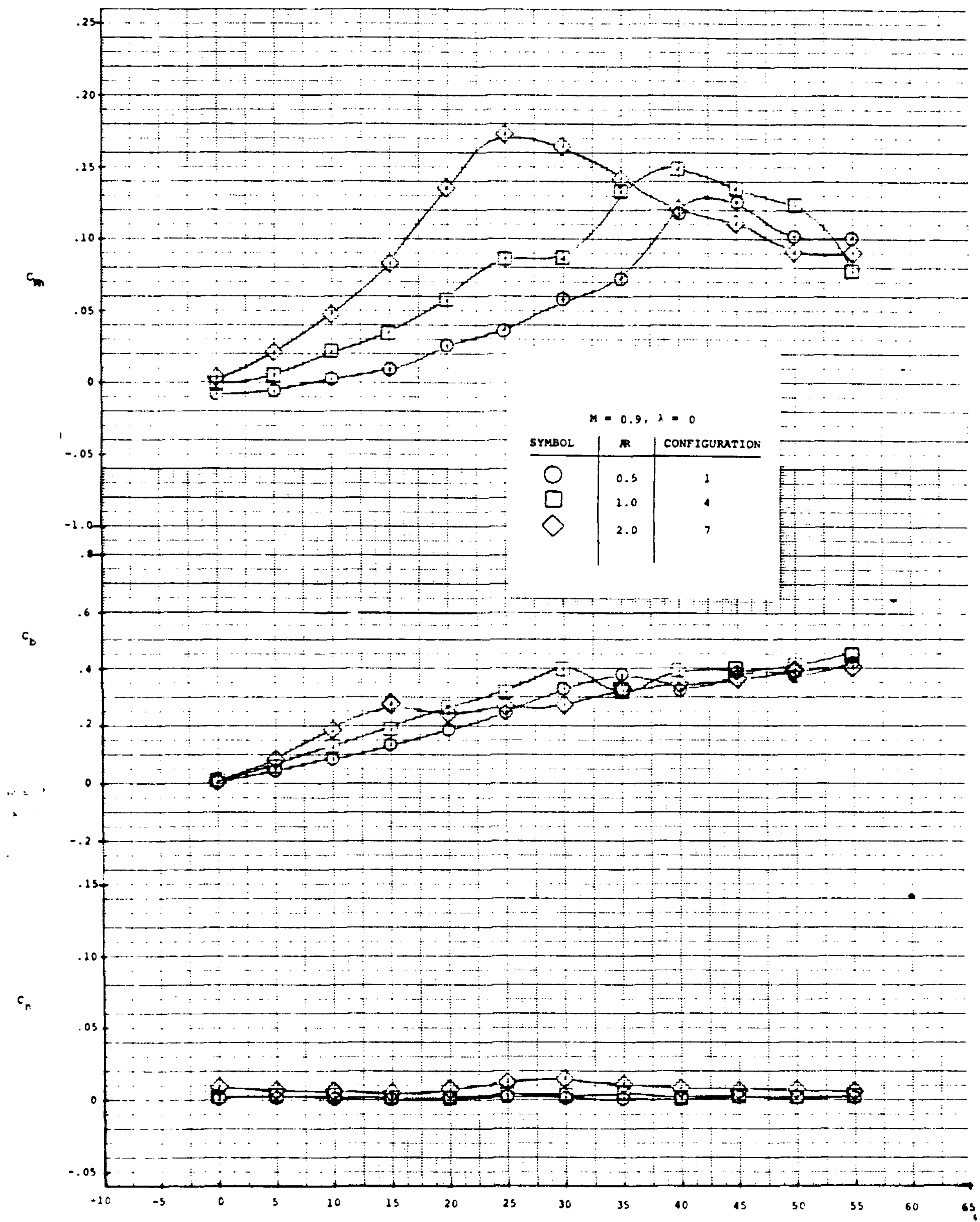


Figure C-19.- Triangular wings.



α, deg.

Figure C-20.- Triangular wings.

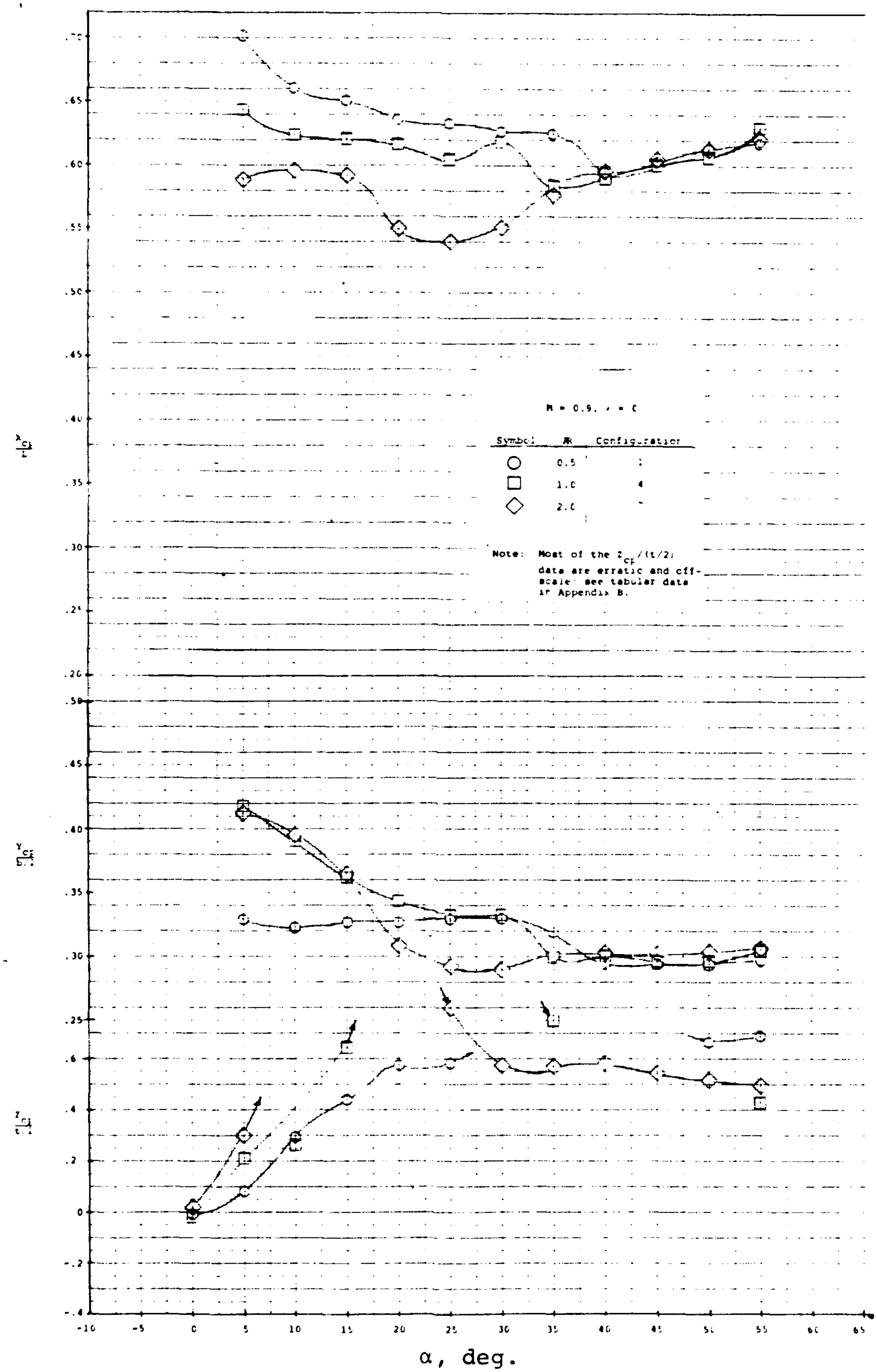


Figure C-21.- Triangular wings.

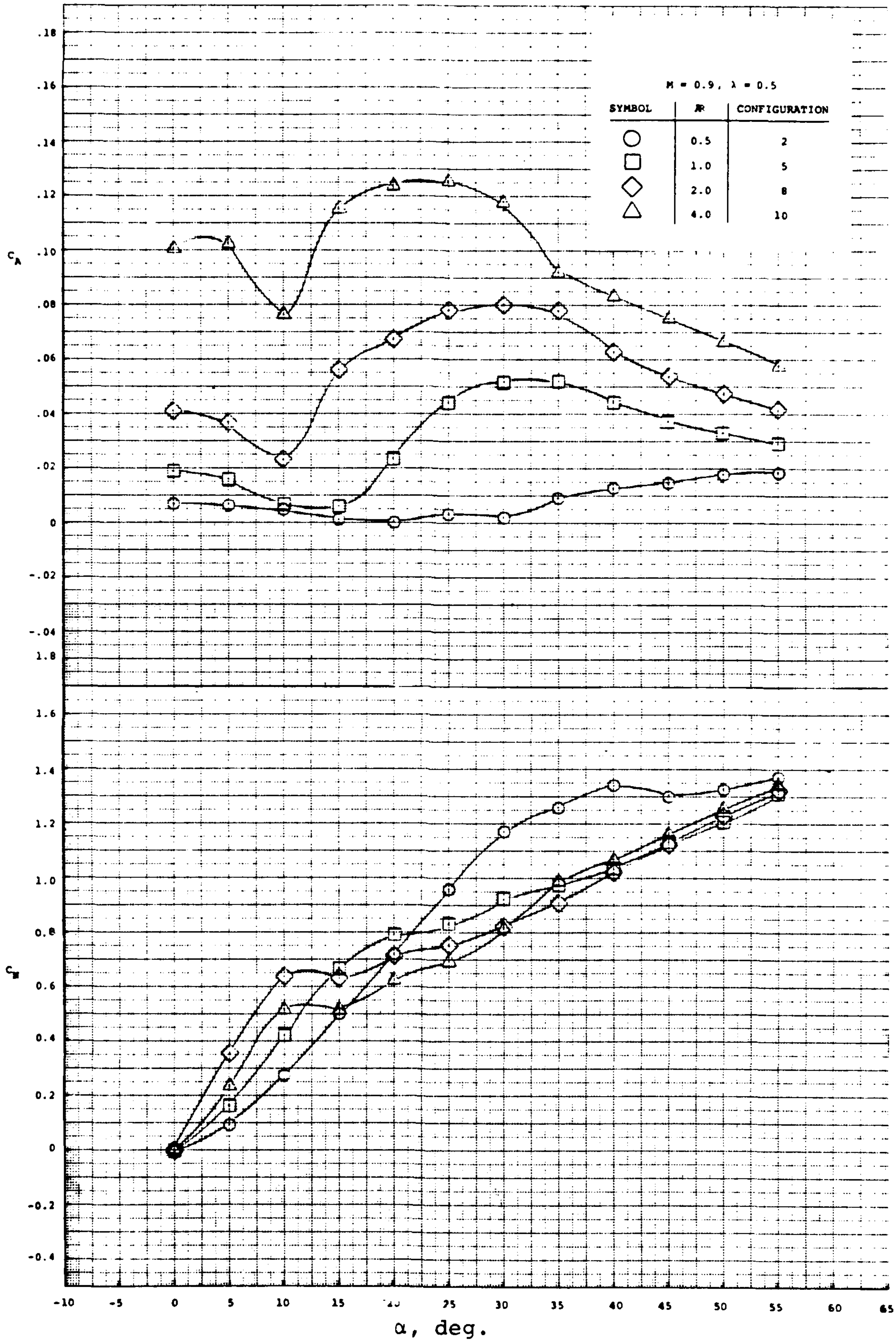
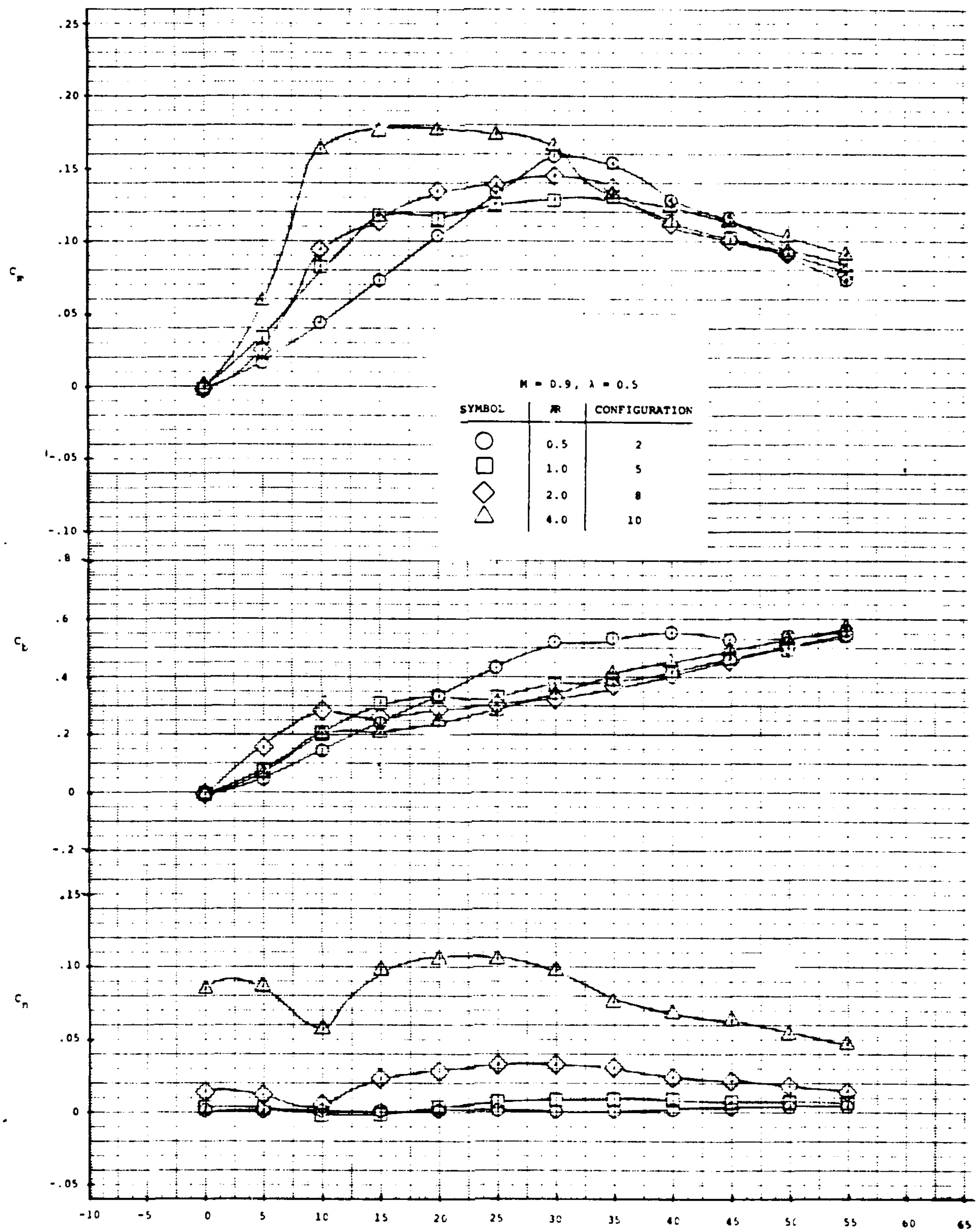


Figure C-22.- Tapered wings.



α, deg.

Figure C-23.- Tapered wings.

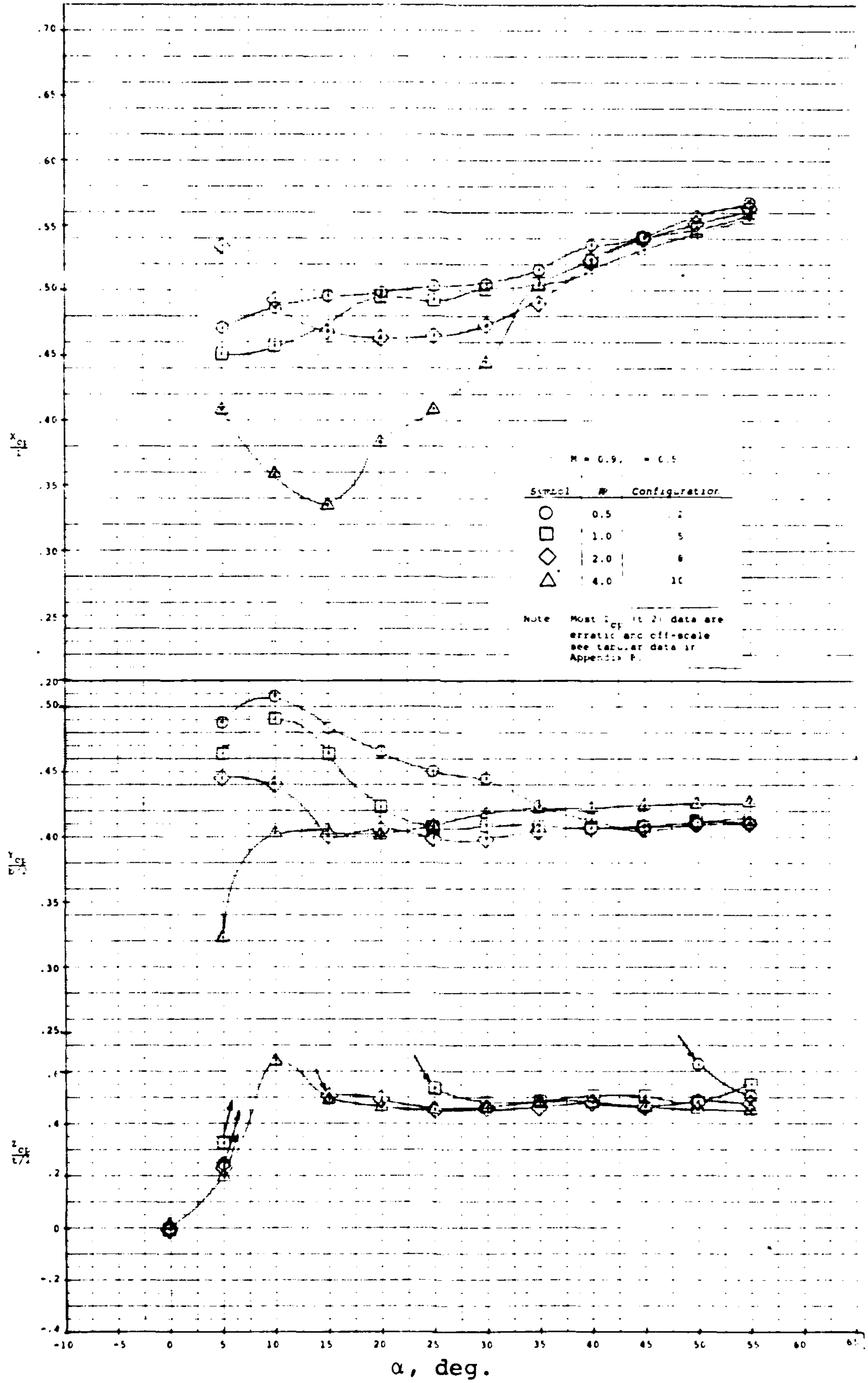


Figure C-24.- Tapered wings.

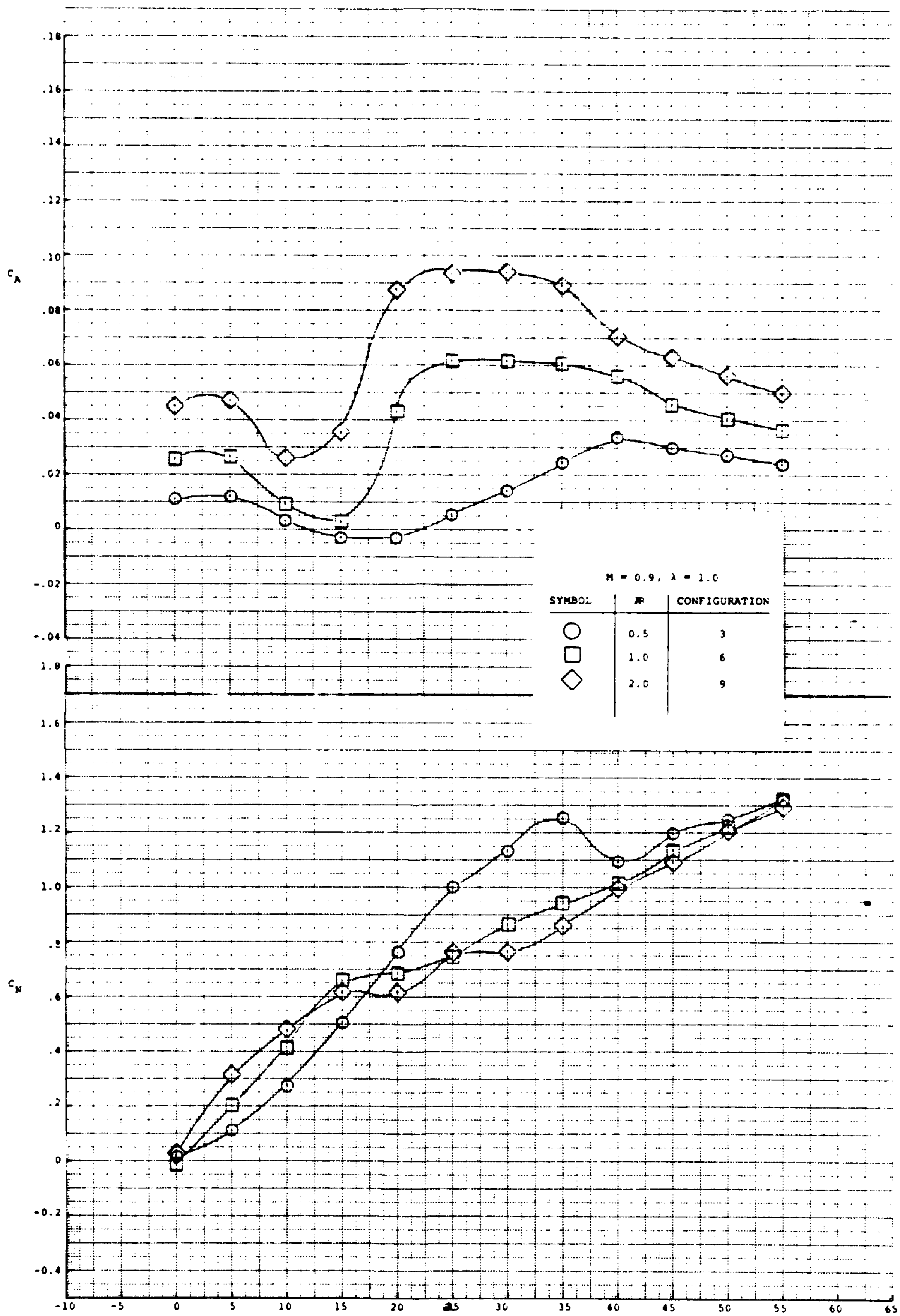


Figure C-25.- Rectangular wings.

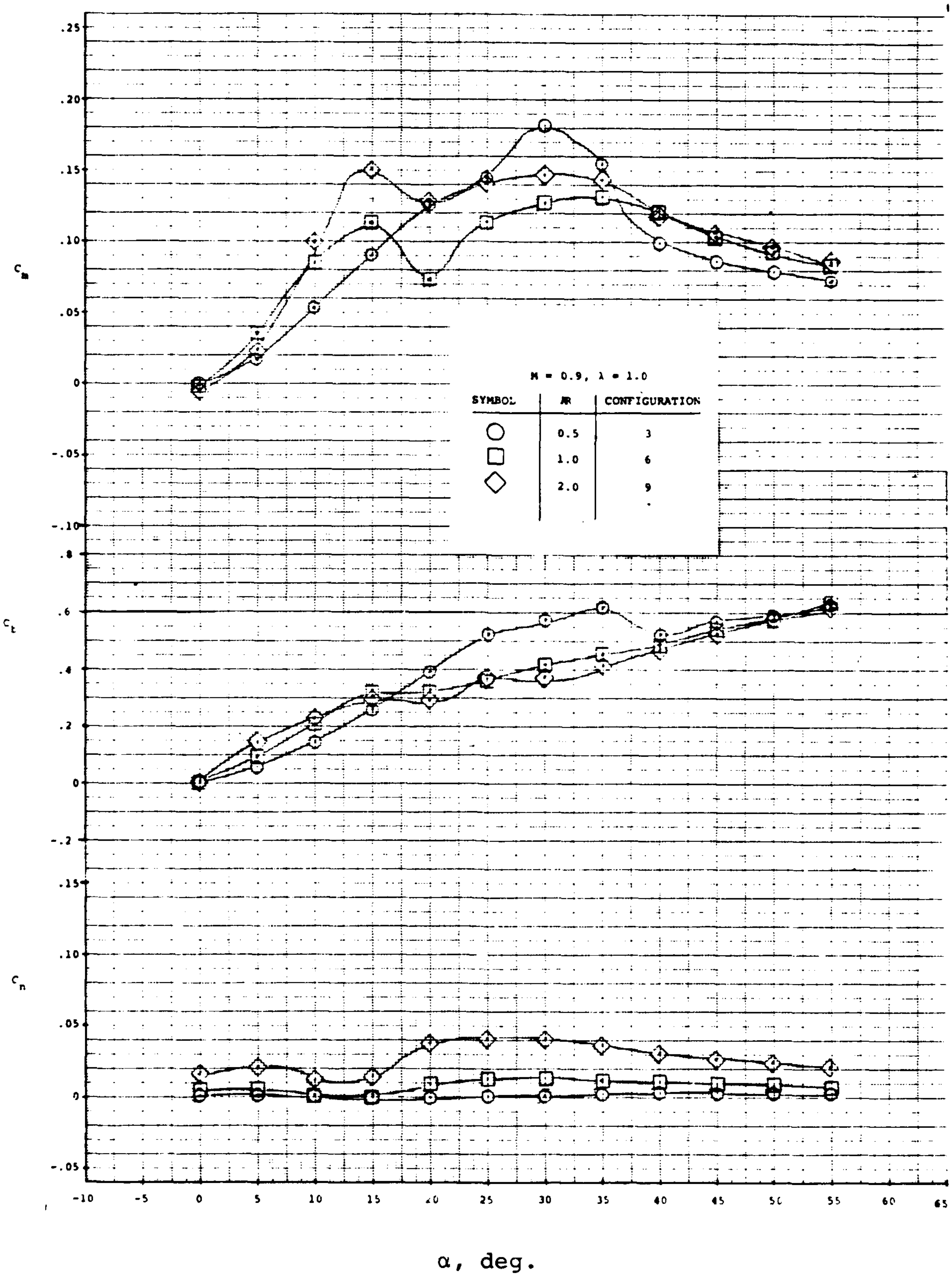


Figure C-26.- Rectangular wings.

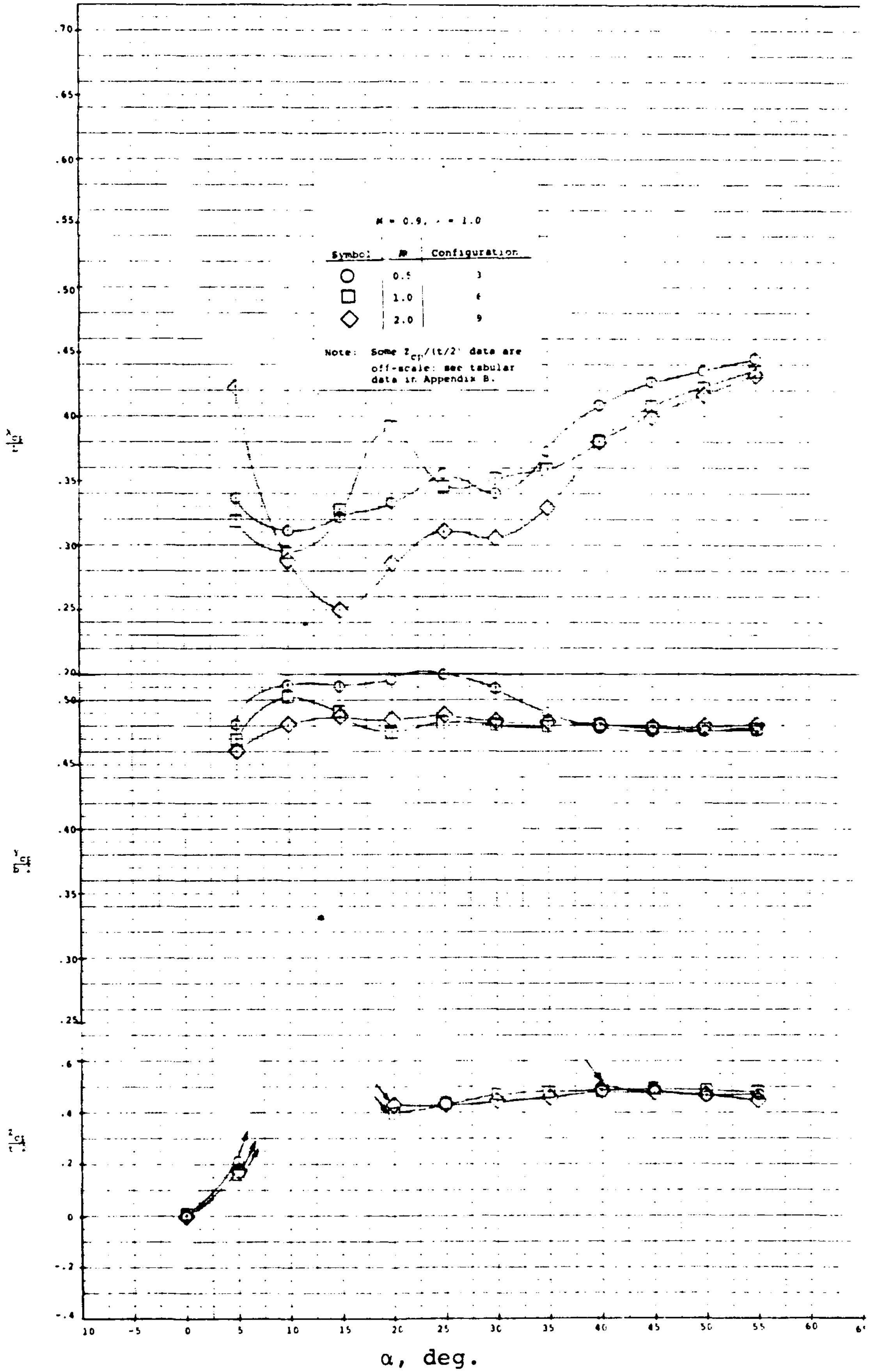


Figure C-27.- Rectangular wings.

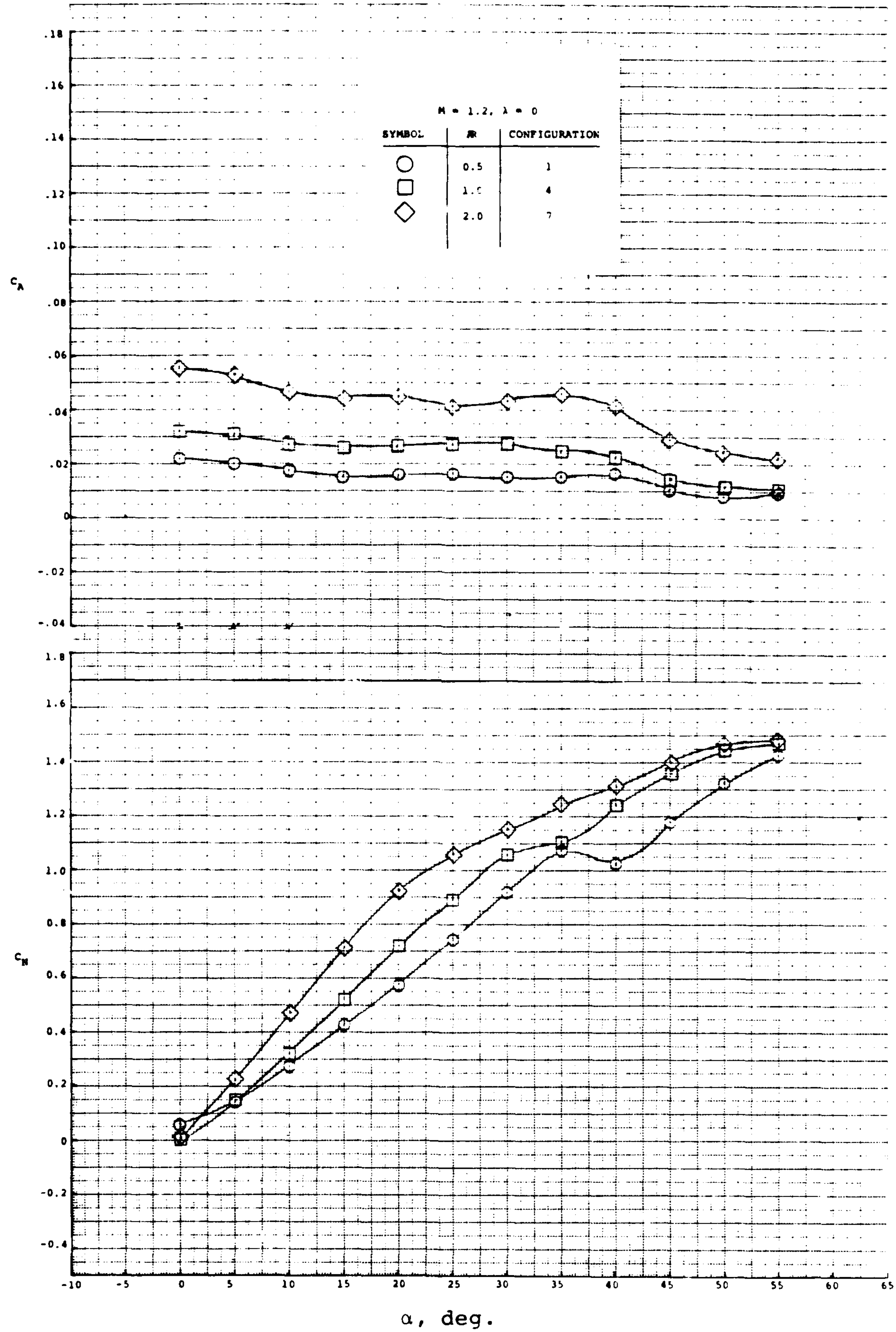
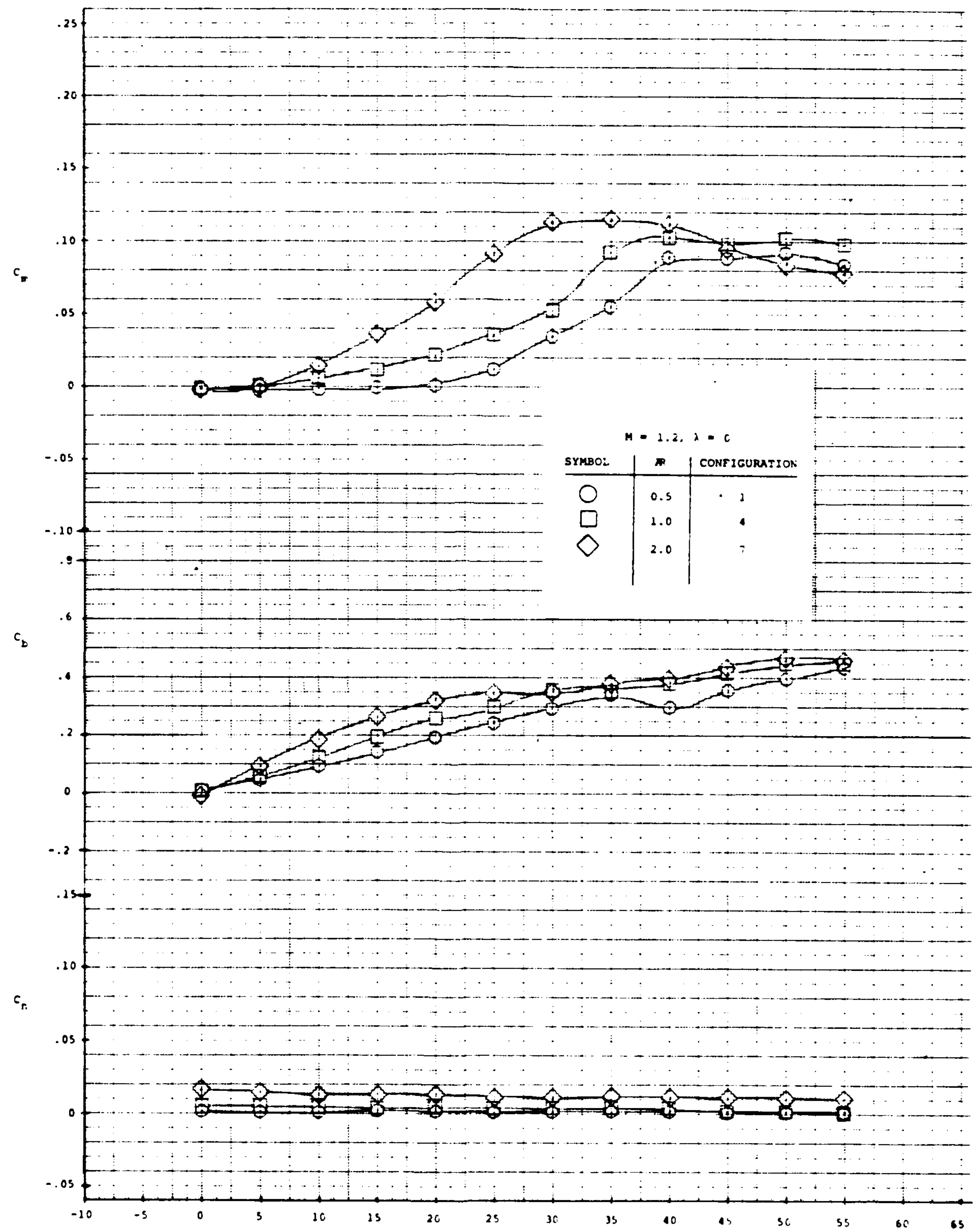


Figure C-28.- Triangular wings.



α, deg.

Figure C-29.- Triangular wings.

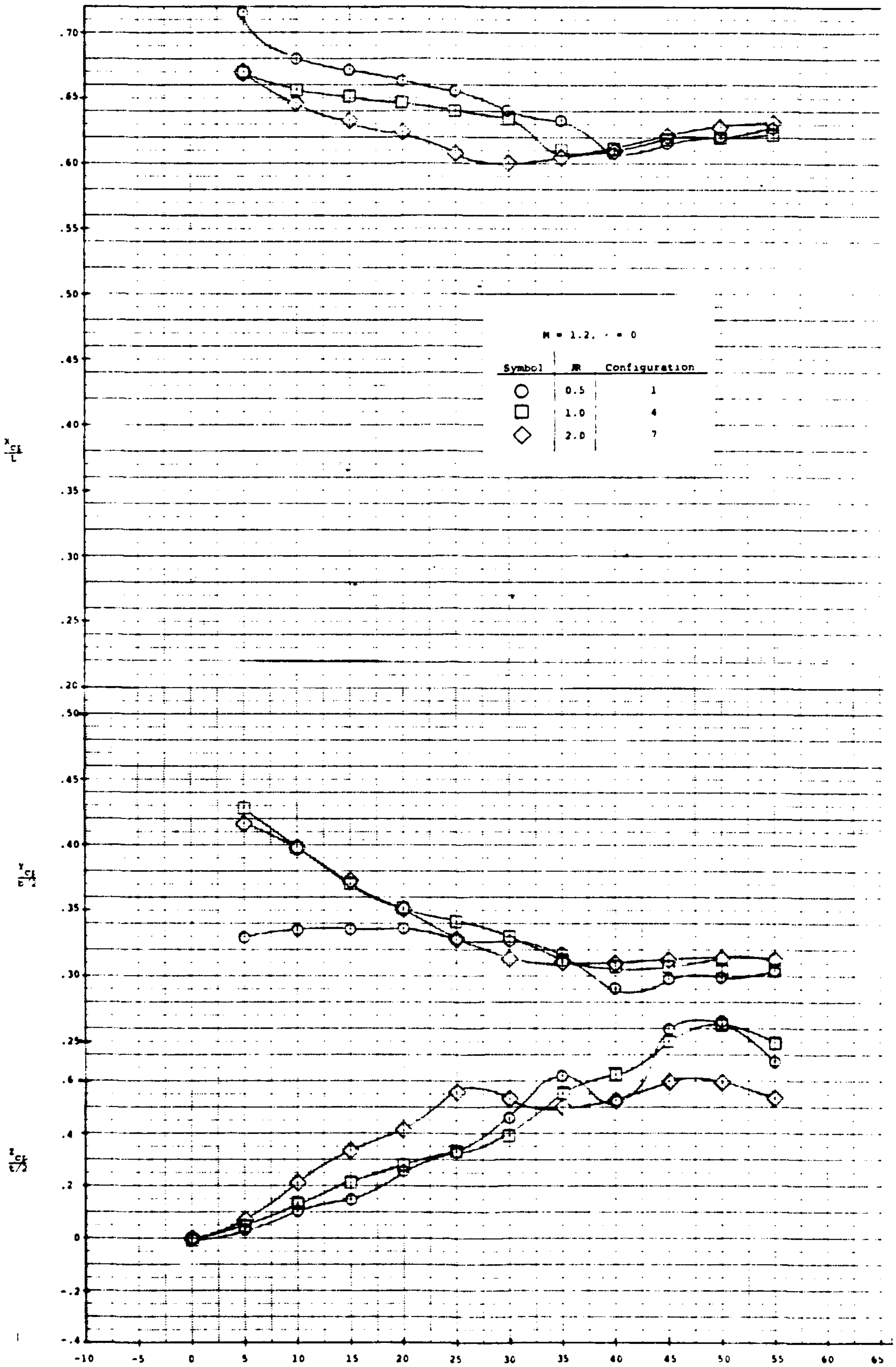


Figure C-30.- Triangular wings.

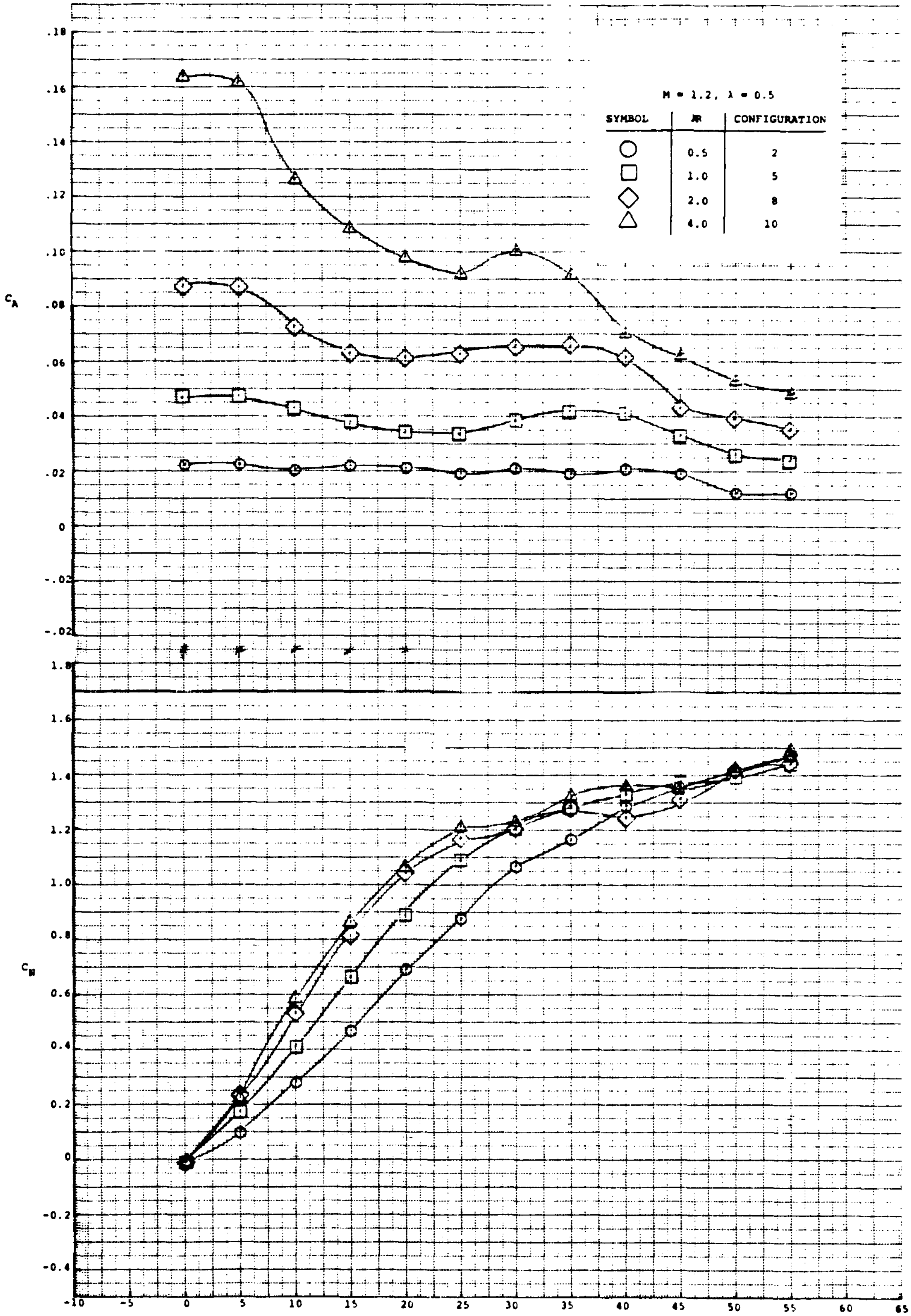


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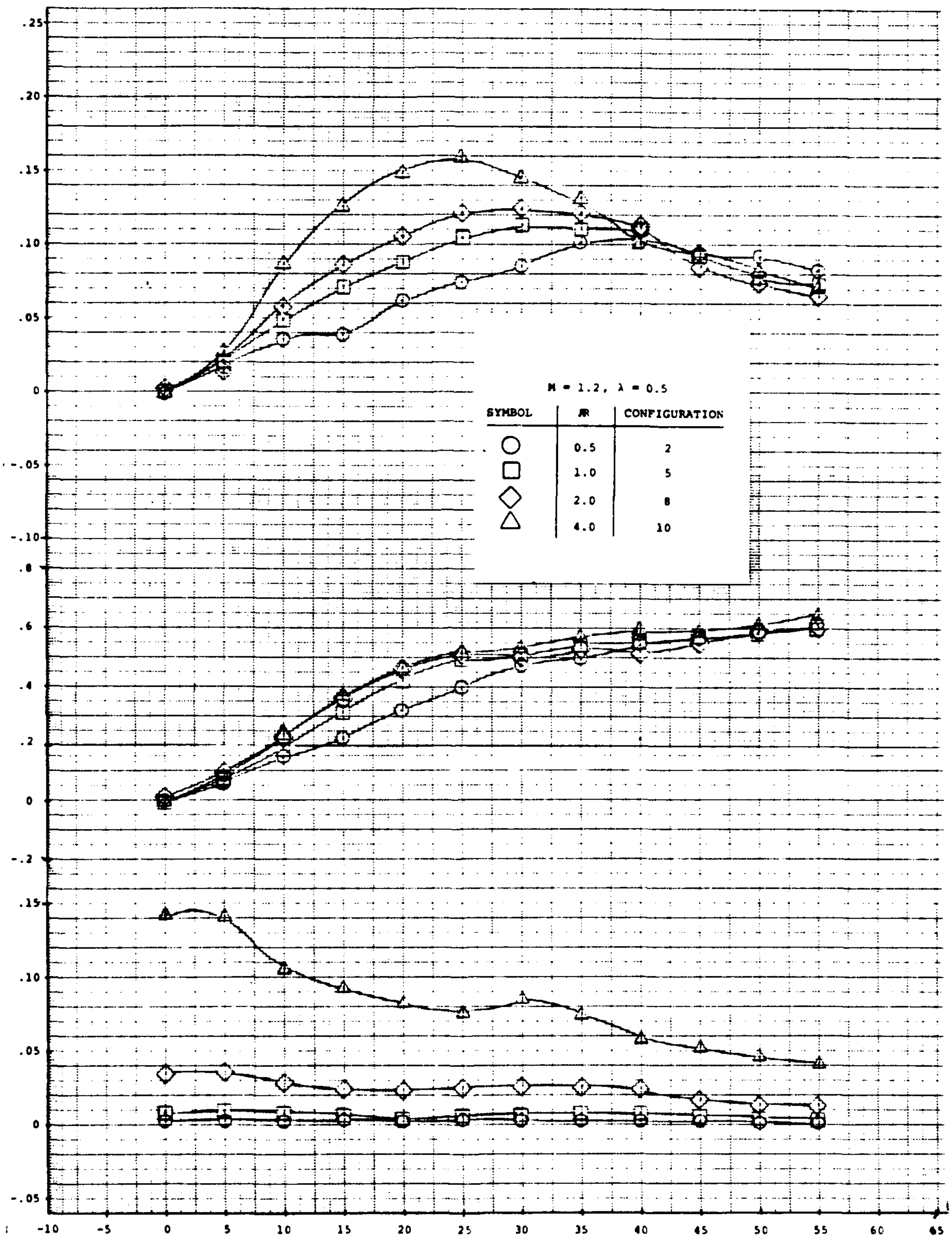
Figure C-31.- Tapered wings.



α, deg.

Figure C-32.- Tapered wings.

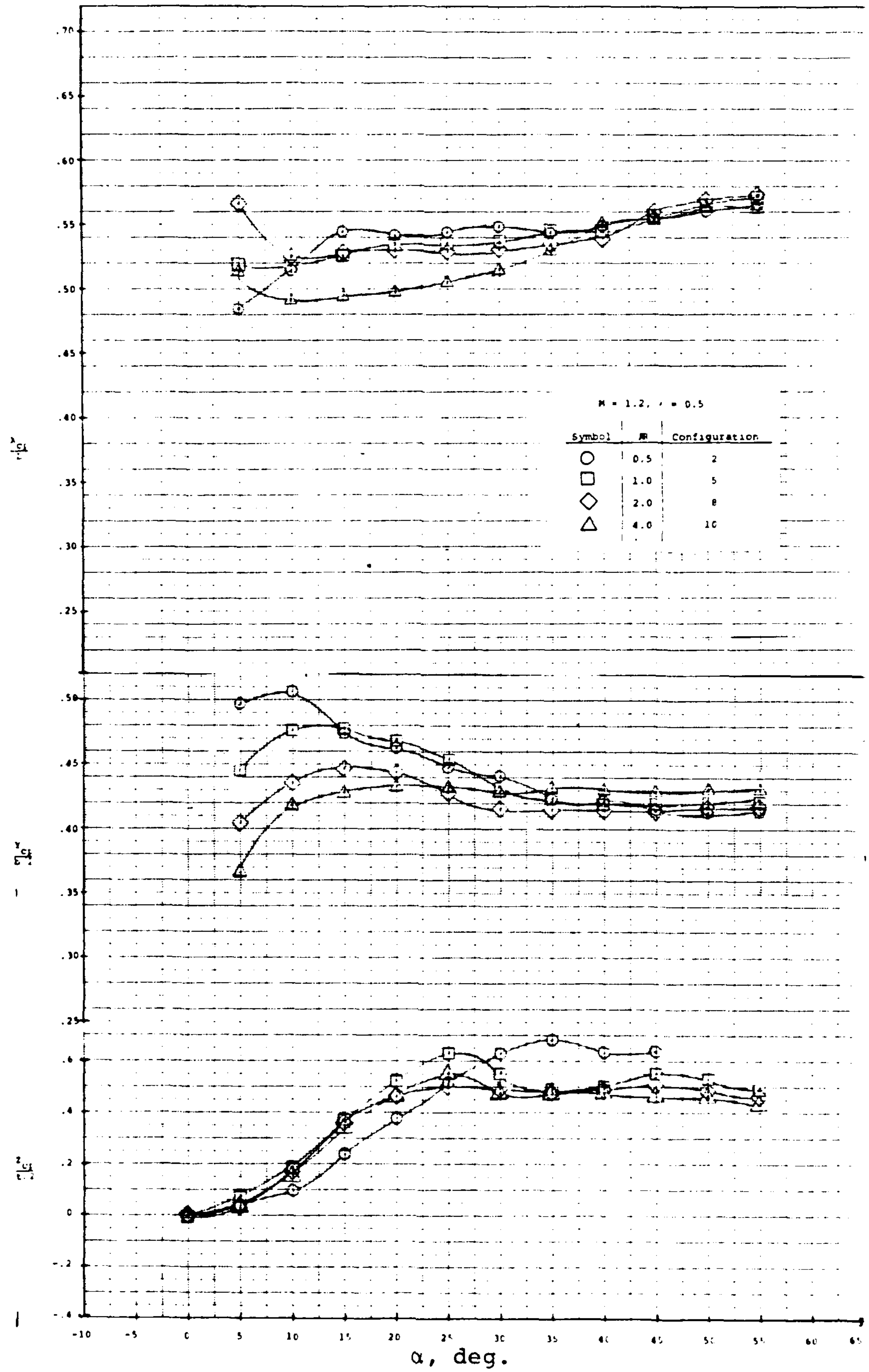
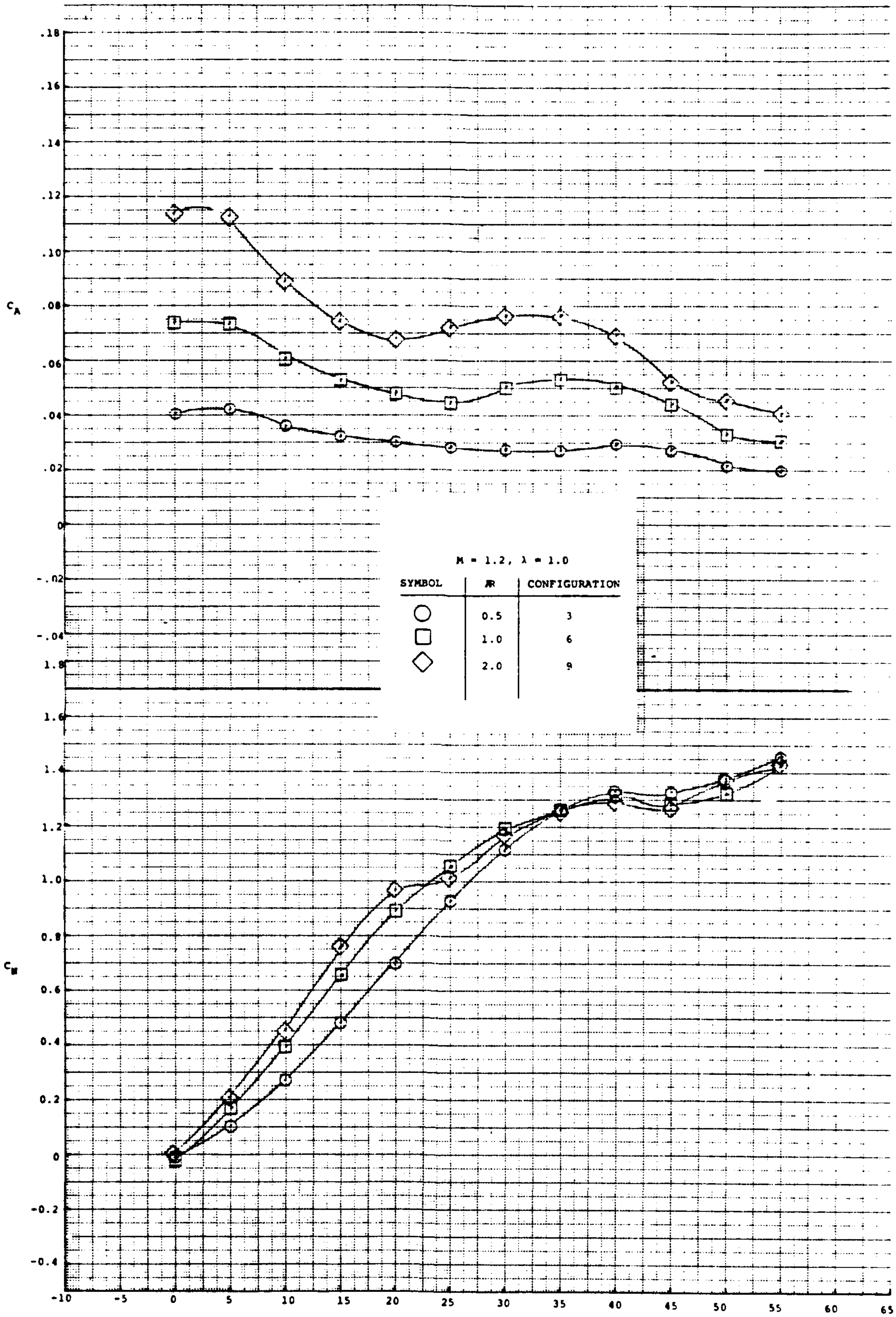
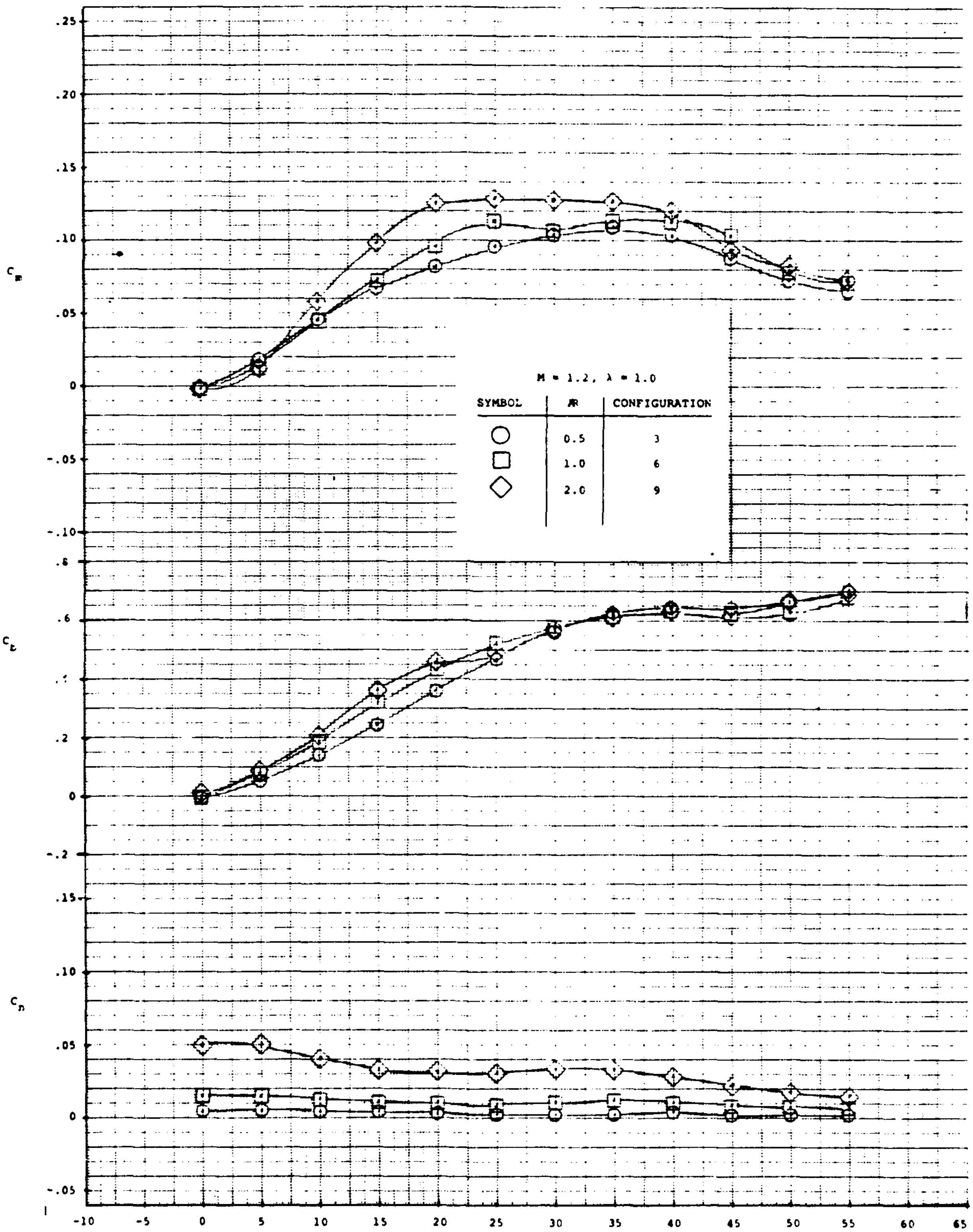


Figure C-33.- Tapered wings.



α, deg.

Figure C-34.- Rectangular wings.



α, deg.

Figure C-35.- Rectangular wings.

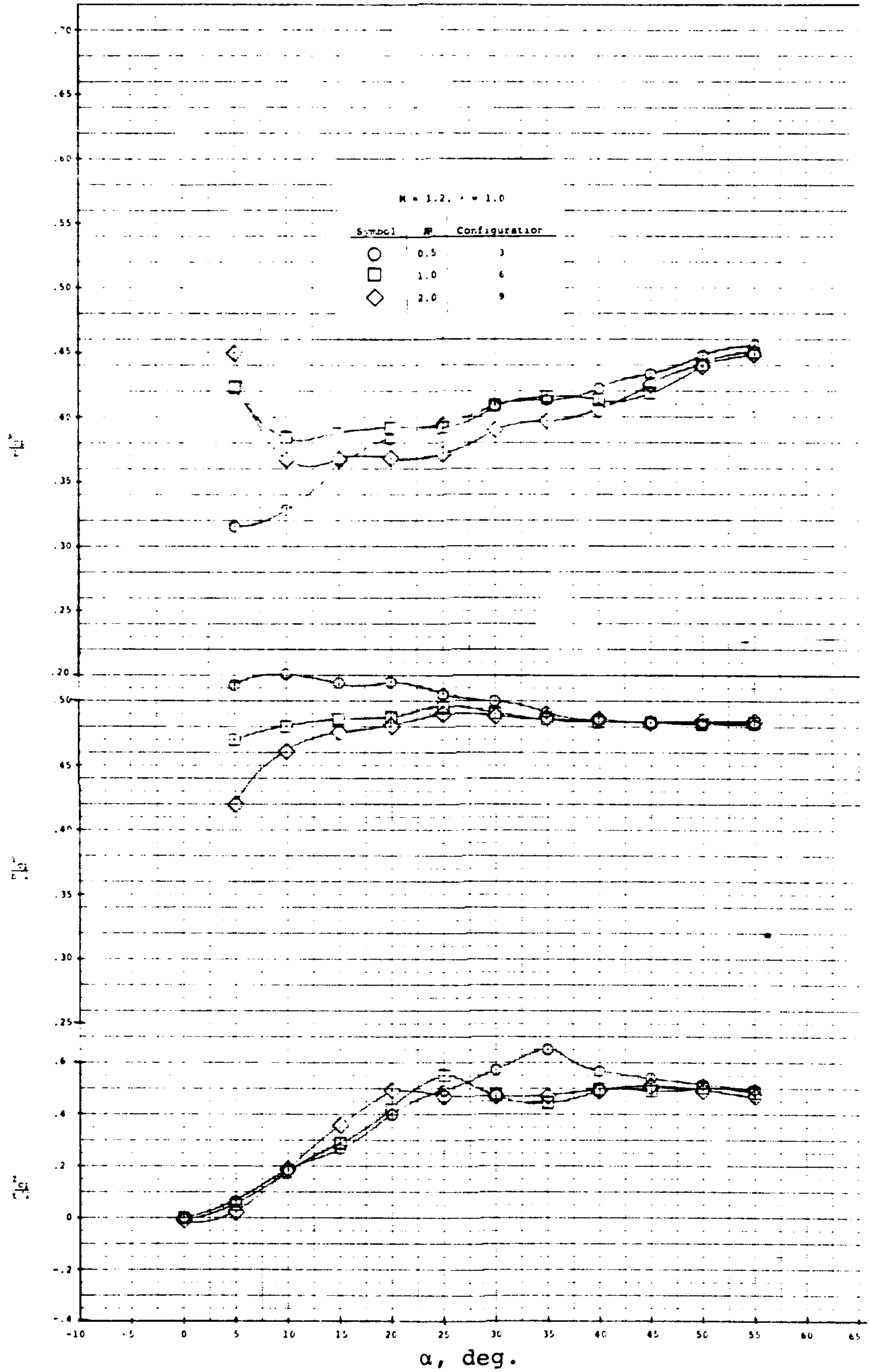


Figure C-36.- Rectangular wings.

APPENDIX D

AEORDYNAMIC DATA FROM THE FORCE-BALANCE MODELS IN TABULAR FORM

NOMENCLATURE

Symbol	Definition	Units
RUN	Run number	-
TST, TN	Test ID numbers	-
First "P" in header	Not meaningful	-
CONF	Configuration number	-
RN/L	Unit Reynolds number	ft^{-1}
PT	Total pressure	lb/ft^2
P	Test section static pressure	lb/ft^2
MACH (in header)	Mach number at beginning of an ALPHA-series	-
TTF	Total temperature	deg F
TF	Test section static temperature	deg F
PHI	Model roll position ϕ = 0 means sting protrusion up ϕ = 180 means sting protrusion down	deg
SEQ	Data sequence number	-
MACH (in matrix)	Mach number at each data point	-
Q	Dynamic pressure	lb/ft^2
ALPHA	Angle of attack	deg
CFN	Force model normal force coefficient	FN/QS
F_N	Normal force	lbs
S	Wing plan-view area	ft^2
CFA	Force model axial force coefficient	FA/qs

Symbol	Definition	Units
F_A	Axial force	lbs
CMNBF	Pitching-moment coefficient about trailing edge, $M_{yB}/q_{s_{\bar{c}}}$	-
M_{y_B}	Moment about trailing edge	ft-lb
$\bar{c}$	Mean aerodynamic chord	-
CMNCF	Pitching-moment coefficient about the force model area centroid, $M_{yc}/q_{s_{\bar{c}}}$	-
M_{yc}	Moment about the spanwise axis through the model area centroid	ft-lb
XCP	Force model longitudinal aerodynamic center as fraction of the mean aerodynamic chord from the wing trailing edge	-
YCP	Force model lateral aerodynamic center, CMR/CFN, as fraction of wing span, measured from the wing centerline	-
CMR	Wing rolling moment coefficient, M_R/QSB	-
b	Wing span	ft
M_R	Rolling moment	ft/lbs

The data are organized according to increasing run number. Consult the run schedule in Section 4 to locate the run numbers associated with particular configuration, Mach number, and angle of attack - range combinations.

1TST-401 PH-1 TN-66 183:26 10-FORCEDUTO 08 DEC 81015:00 PAGE 0

OF 133 TRANSMIT FOUTO 1PLY

1TST-401 PH-1 TN-66 183:26 10-FORCEDUTO 08 DEC 81015:00 PAGE 1

0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	183	401	1	66	1	2.012	909	373	378.5	1.204	75.9	-44.5	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	26	1.204	378.5	49.528	1.6536	0.0097	0.6519	-0.1750	0.0076	0.0039	0.0002	0.3942	0.0023
	27	1.203	380.3	27.919	1.2507	-0.0023	0.5123	-0.1131	-0.0164	0.0006	-0.0026	0.4096	0.0005
	28	1.202	382.4	26.988	1.2547	-0.0002	0.5063	-0.1206	-0.0164	0.0008	-0.0043	0.4040	0.0006
	29	1.204	382.6	29.843	1.3050	-0.0038	0.5372	-0.1155	-0.0128	-0.0000	-0.0049	0.4116	-0.0000
	30	1.201	382.2	34.760	1.4088	0.0028	0.5824	-0.1221	-0.0154	0.0000	-0.0013	0.4134	0.0000
	31	1.201	382.2	39.643	1.4926	0.0041	0.6161	-0.1303	-0.0173	0.0015	0.0017	0.4128	0.0010
	32	1.202	384.1	44.492	1.5386	0.0081	0.6282	-0.1412	-0.0088	-0.0014	-0.0015	0.4083	-0.0009
	33	1.204	334.6	49.405	1.6447	0.0101	0.6644	-0.1581	0.0079	0.0040	-0.0003	0.4040	0.0024
	34	1.202	385.9	54.316	1.7061	0.0120	0.6826	-0.1706	0.0117	0.0015	-0.0011	0.4001	0.0009
	35	1.200	385.3	56.297	1.7243	0.0116	0.6842	-0.1781	0.0117	0.0013	-0.0013	0.3968	0.0007

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AMES RESEARCH CENTER: MOFFETT FIELD, CALIF. PRELIMINARY DATA

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0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	184	401	1	66	12	1.981	967	571	324.5	0.902	82.2	6.4	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.902	324.8	26.996	1.2497	-0.0150	0.5333	-0.0917	-0.0136	0.0036	-0.0050	0.4267	0.0029
	2	0.902	325.4	29.648	1.2855	-0.0065	0.5641	-0.0789	-0.0227	0.0173	-0.0168	0.4387	0.0135
	3	0.903	325.8	34.905	1.3702	-0.0001	0.5760	-0.1092	-0.0228	0.0011	-0.0028	0.4204	0.0008
	4	0.902	325.4	39.587	1.4894	0.0010	0.6212	-0.1237	-0.0174	0.0012	-0.0038	0.4170	0.0008
	5	0.902	325.4	44.502	1.5630	0.0035	0.6706	-0.1210	-0.0159	0.0014	-0.0046	0.4237	0.0009
	6	0.901	325.0	49.353	1.6635	0.0047	0.6745	-0.1576	0.0153	0.0014	-0.0070	0.4054	0.0008
	7	0.902	325.4	54.239	1.7007	0.0078	0.6679	-0.1826	0.0151	0.0014	-0.0063	0.3927	0.0008
	8	0.902	325.4	56.268	1.7342	0.0067	0.6678	-0.1994	0.0113	0.0012	0.0009	0.3851	0.0007

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER: MOFFETT FIELD, CALIF. PRELIMINARY DATA

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	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
0	185	401	1	66	12	2.029	1044	684	307.4	0.301	32.5	20.8	180

	SEQ	MACH	Q	ALPHA	CFN	CFA	CMBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.301	307.4	27.115	1.2975	-0.0263	0.5752	-0.0736	-0.0047	0.0026	-0.0086	0.4433	0.0020
	2	0.303	303.5	29.994	1.3256	-0.0171	0.5663	-0.0767	-0.0039	0.0085	-0.0106	0.4423	0.0064
	3	0.302	307.9	34.827	1.3532	-0.0052	0.5687	-0.1080	-0.0154	0.0009	-0.0068	0.4202	0.0007
	4	0.302	307.9	39.734	1.4004	-0.0023	0.5719	-0.1284	-0.0197	0.0011	-0.0020	0.4084	0.0008
	5	0.303	303.4	44.638	1.4833	-0.0006	0.5928	-0.1489	-0.0159	0.0011	-0.0049	0.3997	0.0008
	6	0.300	307.0	49.516	1.5467	0.0011	0.6172	-0.1563	0.0157	0.0011	-0.0085	0.3950	0.0007
	7	0.300	306.9	54.350	1.6129	0.0041	0.6007	-0.2059	0.0135	0.0009	-0.0033	0.3724	0.0006
	8	0.302	307.9	56.343	1.6002	0.0014	0.6351	-0.1651	0.0147	0.0009	-0.0042	0.3969	0.0006

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER: MOFFETT FIELD, CALIF. PRELIMINARY DATA

TIST-401 PH-1 TN-66 180:1 ID-FORCEDATO 08 DEC 81@15:00 PAGE 4

	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
0	186	401	1	66	12	2.020	1235	967	244.4	0.601	81.2	44.8	180

	SEQ	MACH	Q	ALPHA	CFN	CFA	CMBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.601	244.4	27.252	1.3433	-0.0552	0.6110	-0.0607	0.0120	0.0015	-0.0090	0.4549	0.0011
	2	0.603	246.2	30.162	1.4931	-0.0469	0.6961	-0.0606	0.0016	0.0008	-0.0046	0.4662	0.0005
	3	0.602	245.6	35.015	1.2145	-0.0317	0.5984	-0.0590	0.0101	0.0009	-0.0049	0.4611	0.0006
	4	0.604	246.8	39.900	1.3298	-0.0137	0.5642	-0.1008	0.0167	0.0007	-0.0105	0.4243	0.0005
	5	0.603	245.2	44.745	1.3370	-0.0130	0.5424	-0.1262	0.0151	0.0007	-0.0091	0.4057	0.0005
	6	0.602	245.0	49.574	1.3592	-0.0077	0.5497	-0.1301	0.0168	0.0006	-0.0106	0.4044	0.0005
	7	0.603	246.2	54.372	1.3662	-0.0084	0.5113	-0.1719	0.0168	0.0006	-0.0079	0.3742	0.0004
	8	0.604	246.8	56.387	1.3313	-0.0096	0.5196	-0.1461	0.0164	0.0003	-0.0091	0.3903	0.0003

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
187	401	1	66	13	2.002	922	379	383.5	1.202	85.5	-38.3	180

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
15	1.202	383.5	49.560	1.5960	0.0265	1.0134	0.2152	0.0176	0.0026	-0.0009	0.6350	0.0016
16	1.204	386.5	27.902	1.1484	0.0319	0.7758	0.2015	-0.0178	0.0004	0.0033	0.6756	0.0003
17	1.202	383.0	26.971	1.1241	0.0299	0.7613	0.1991	-0.0162	-0.0003	0.0035	0.6772	-0.0003
18	1.204	388.0	29.620	1.2033	0.0307	0.8251	0.2233	-0.0185	0.0002	0.0051	0.6857	0.0002
19	1.203	387.6	34.749	1.3513	0.0320	0.9028	0.2270	-0.0136	0.0006	0.0015	0.6681	0.0005
20	1.203	389.8	39.612	1.4465	0.0306	0.9536	0.2302	-0.0126	0.0024	0.0039	0.6593	0.0016
21	1.202	389.5	44.473	1.4731	0.0274	0.9554	0.2187	-0.0105	0.0031	0.0042	0.6486	0.0021
22	1.201	391.7	49.390	1.5914	0.0290	1.0267	0.2328	0.0166	0.0032	0.0001	0.6464	0.0020
23	1.203	391.9	54.255	1.6483	0.0256	1.0437	0.2193	0.0175	0.0034	-0.0001	0.6332	0.0020
24	1.202	391.5	56.290	1.6698	0.0248	1.0630	0.2278	0.0174	0.0033	0.0002	0.6366	0.0020

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
188	401	1	66	13	1.981	983	580	330.0	0.902	88.7	12.0	180

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
1	0.902	330.0	26.935	0.9539	0.0360	0.6481	0.1711	-0.0219	0.0012	0.0008	0.6794	0.0013
2	0.901	329.5	29.892	1.0411	0.0355	0.7568	0.2361	-0.0211	0.0011	0.0006	0.7269	0.0011
3	0.902	330.0	34.639	1.2140	0.0335	0.8100	0.2029	-0.0190	0.0015	0.0011	0.6673	0.0012
4	0.902	330.5	39.573	1.3452	0.0343	0.9126	0.2399	-0.0163	0.0025	0.0021	0.6784	0.0018
5	0.900	329.2	44.489	1.4664	0.0323	0.9508	0.2174	-0.0153	0.0027	0.0049	0.6484	0.0018
6	0.902	330.5	49.349	1.5613	0.0304	1.0081	0.2273	0.0170	0.0028	-0.0007	0.6457	0.0018
7	0.902	330.0	54.217	1.6297	0.0273	1.0512	0.2362	0.0205	0.0029	-0.0033	0.6451	0.0018
8	0.903	330.4	56.264	1.6582	0.0242	1.0066	0.1795	0.0211	0.0030	-0.0036	0.6082	0.0018

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
199	401	1	66	13	2.033	1059	693	312.7	0.803	86.1	25.6	180

SEQ	MACH	Q	ALPHA	CFN	CFA	CMFBF	CMNBF	CFY	CMR	CMY	XCP	YCP
1	0.803	312.7	27.046	0.8520	0.0363	0.5760	0.1705	-0.0239	0.0001	0.0028	0.7002	0.0001
2	0.802	311.3	30.000	0.9432	0.0375	0.6034	0.1917	-0.0236	0.0001	0.0035	0.7034	0.0001
3	0.802	311.0	34.834	1.0768	0.0369	0.7643	0.2458	-0.0223	0.0002	0.0036	0.7284	0.0002
4	0.803	311.5	39.731	1.2168	0.0342	0.8629	0.2543	-0.0226	0.0011	0.0082	0.7091	0.0009
5	0.802	311.0	44.569	1.3159	0.0304	0.8750	0.2175	-0.0175	0.0012	0.0042	0.6654	0.0009
6	0.803	311.5	49.502	1.3998	0.0290	0.9456	0.2455	0.0161	0.0027	-0.0015	0.6755	0.0019
7	0.804	312.0	54.315	1.4800	0.0242	0.9271	0.1869	0.0192	0.0028	-0.0036	0.6264	0.0019
8	0.804	312.0	56.327	1.4691	0.0214	0.9556	0.2008	0.0206	0.0029	-0.0051	0.6368	0.0020
9	0.803	311.5	56.325	1.4740	0.0208	0.9413	0.2041	0.0193	0.0029	-0.0038	0.6366	0.0020

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
190	401	1	66	13	2.030	1253	981	248.9	0.602	86.0	49.1	180

SEQ	MACH	Q	ALPHA	CFN	CFA	CMFBF	CMNBF	CFY	CMR	CMY	XCP	YCP
1	0.602	248.9	27.211	0.7758	0.0294	0.5612	0.1932	0.0596	0.0021	-0.0263	0.7492	0.0027
2	0.603	243.2	30.096	0.8472	0.0327	0.6334	0.2097	0.0595	0.0022	-0.0253	0.7476	0.0026
3	0.602	247.6	34.979	0.9670	0.0342	0.7196	0.2360	0.0575	0.0026	-0.0243	0.7441	0.0027
4	0.601	247.0	39.824	1.0830	0.0364	0.7626	0.2410	0.0211	0.0017	-0.0061	0.7226	0.0016
5	0.601	247.0	44.687	1.1577	0.0329	0.8188	0.2398	0.0149	0.0015	-0.0028	0.7073	0.0013
6	0.601	247.0	49.642	1.2252	0.0291	0.7860	0.1733	0.0165	0.0029	-0.0039	0.6416	0.0024
7	0.602	247.6	54.472	1.2027	0.0226	0.7023	0.1808	0.0190	0.0030	-0.0063	0.6505	0.0025
8	0.603	248.2	56.379	1.2146	0.0204	0.7446	0.1372	0.0190	0.0028	-0.0063	0.6130	0.0025

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0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	191	401	1	66	13	2.010	909	374	378.3	1.203	76.1	-44.1	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	13	1.203	373.3	24.317	1.0530	0.0474	0.7150	0.1884	-0.0151	-0.0019	0.0005	0.6790	-0.0018
	14	1.201	383.1	-3.236	-0.1287	0.0739	-0.0265	0.0359	0.0082	-0.0012	-0.0101	0.2214	0.0090
	15	1.203	383.3	-0.236	-0.0163	0.0835	0.0441	0.0523	0.0103	-0.0012	-0.0097	-2.7085	0.0744
	16	1.204	383.5	4.746	0.1934	0.0800	0.2160	0.1192	0.0123	-0.0000	-0.0084	1.1167	-0.0001
	17	1.203	380.3	9.651	0.5134	0.0555	0.4190	0.1628	-0.0212	-0.0010	0.0013	0.8173	-0.0019
	18	1.202	383.5	14.416	0.7699	0.0317	0.5770	0.1925	-0.0194	-0.0028	0.0027	0.7502	-0.0036
	19	1.203	380.2	19.425	0.9326	0.0329	0.7048	0.2384	-0.0180	-0.0036	0.0026	0.7557	-0.0039
	20	1.202	380.5	24.230	1.0423	0.0450	0.7373	0.2161	-0.0222	-0.0031	0.0080	0.7074	-0.0030
	21	1.203	380.2	26.087	1.1020	0.0473	0.7690	0.2184	-0.0197	-0.0032	0.0061	0.6963	-0.0029

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1TST-401 PH-1 TN-66 192:1 10-FORCEOUTO 08 DEC 81@15:00 PAGE 10

0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	192	401	1	66	13	1.988	960	565	322.9	0.903	77.8	2.4	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.903	322.9	-3.191	-0.1048	0.0160	-0.0079	0.0445	0.0088	-0.0004	-0.0105	0.0758	0.0036
	2	0.904	322.3	-0.161	0.0908	0.0167	0.0951	0.0497	0.0111	-0.0007	-0.0089	1.0471	-0.0078
	3	0.899	321.2	4.698	0.2846	0.0253	0.3147	0.1724	0.0032	-0.0001	0.0018	1.1057	-0.0002
	4	0.903	322.9	9.566	0.4432	0.0147	0.4338	0.2121	-0.0154	-0.0032	0.0070	0.9787	-0.0073
	5	0.904	323.3	14.467	0.6278	0.0124	0.5011	0.2671	-0.0204	-0.0017	0.0010	0.9257	-0.0027
	6	0.904	323.3	19.464	0.7181	0.0470	0.5721	0.2133	-0.0216	-0.0080	0.0026	0.7967	-0.0112
	7	0.905	322.4	24.227	0.8692	0.0566	0.5984	0.1638	-0.0235	-0.0016	0.0029	0.6885	-0.0019
	8	0.902	322.5	26.065	0.9430	0.0489	0.6517	0.1901	-0.0256	-0.0012	0.0056	0.7060	-0.0013

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0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	193	401	1	00	12	2.035	1024	677	304.9	0.802	77.5	16.3	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.802	304.9	-3.074	-0.0931	0.0094	0.0078	0.0545	0.0097	-0.0012	-0.0089	-0.0833	0.0131
	2	0.804	305.9	-0.104	0.0545	0.0158	0.1037	0.0765	0.0085	-0.0013	-0.0061	1.9041	-0.0239
	3	0.804	305.9	4.877	0.2988	0.0163	0.3597	0.1903	0.0114	-0.0039	-0.0058	1.1371	-0.0031
	4	0.803	305.4	9.712	0.5224	-0.0015	0.5612	0.3000	-0.0066	-0.0010	0.0068	1.0744	-0.0019
	5	0.803	305.4	14.570	0.5579	0.0360	0.6003	0.1790	-0.0245	-0.0064	0.0064	0.8329	-0.0119
	6	0.802	304.9	19.574	0.6406	0.0574	0.5884	0.2080	-0.0278	-0.0001	0.0096	0.8247	-0.0126
	7	0.803	305.4	24.335	0.7832	0.0711	0.6056	0.2140	-0.0298	-0.0023	0.0101	0.7733	-0.0030
	8	0.804	305.9	26.172	0.8317	0.0611	0.6159	0.1999	-0.0210	-0.0014	0.0015	0.7405	-0.0017

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0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	194	401	1	00	13	2.033	1223	950	244.2	0.604	76.1	39.6	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.604	244.2	-2.875	-0.0749	0.0006	0.0072	0.1047	0.0173	-0.0027	-0.0166	-0.8975	0.0362
	2	0.603	243.6	0.115	0.0652	0.0029	0.1046	0.0720	0.0158	-0.0023	-0.0136	1.6039	-0.0348
	3	0.603	243.6	4.983	0.2502	-0.0004	0.3033	0.1882	0.0167	-0.0017	-0.0116	1.3177	-0.0074
	4	0.601	242.4	9.875	0.4390	-0.0223	0.5592	0.3197	0.0201	-0.0012	-0.0112	1.2282	-0.0028
	5	0.603	243.6	14.720	0.6206	0.0234	0.5375	0.2272	0.0385	-0.0025	-0.0281	0.8662	-0.0041
	6	0.604	244.2	19.637	0.6288	0.0502	0.5287	0.2142	0.0652	-0.0070	-0.0331	0.8408	-0.0111
	7	0.604	244.2	24.491	0.7106	0.0562	0.5590	0.2044	0.0576	0.0008	-0.0217	0.7877	0.0011
	8	0.602	243.0	26.291	0.7616	0.0698	0.5360	0.2057	0.0424	0.0009	-0.0064	0.7702	0.0012

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0	RUN	TST	P IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	195	431	1	65	12 2.010	901	373	374.3	1.198	72.6	-46.0	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	12	1.198	374.3	24.471	1.1649	-0.0088	0.4652	-0.2913	0.0428	0.0012	-0.0077	0.4165	0.0010
	13	1.205	377.2	-3.127	-0.1122	0.0010	-0.0361	0.0387	0.0049	-0.0005	-0.0062	0.3218	0.0047
	14	1.203	376.6	-0.127	0.0134	0.0047	0.0093	0.0004	0.0035	-0.0007	-0.0032	0.6975	-0.0504
	15	1.203	377.2	4.818	0.2384	-0.0000	0.1093	-0.0496	-0.0004	-0.0006	0.0032	0.4584	-0.0026
	16	1.203	376.8	9.685	0.5058	-0.0104	0.2123	-0.1243	-0.0266	-0.0007	0.0097	0.4208	-0.0014
	17	1.204	377.0	14.553	0.7509	-0.0150	0.3097	-0.1908	-0.0282	-0.0013	0.0119	0.4125	-0.0017
	18	1.205	377.4	19.472	0.9642	-0.0128	0.4119	-0.2308	-0.0265	-0.0015	0.0105	0.4272	-0.0014
	19	1.202	377.0	24.332	1.1547	-0.0096	0.4946	-0.2752	-0.0269	-0.0022	0.0106	0.4283	-0.0019
	20	1.203	376.8	26.195	1.2082	-0.0097	0.5261	-0.2794	-0.0288	-0.0021	0.0136	0.4354	-0.0018

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0	RUN	TST	P IN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	196	401	1	66	12 1.980	950	560	319.5	0.903	75.4	0.4	180

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.903	319.5	-3.105	-0.0838	-0.0069	-0.0162	0.0397	-0.0001	-0.0000	-0.0009	0.1930	0.0001
	2	0.898	317.4	-0.039	0.0542	-0.0067	0.0124	-0.0238	0.0020	-0.0006	-0.0022	0.2281	-0.0103
	3	0.904	319.9	4.838	0.2415	-0.0090	0.1236	-0.0374	0.0003	0.0004	0.0009	0.5118	0.0016
	4	0.902	319.1	9.731	0.4755	-0.0234	0.2406	-0.0764	0.0044	-0.0016	0.0012	0.5059	-0.0034
	5	0.902	319.1	14.576	0.7710	-0.0319	0.3574	-0.1565	-0.0233	-0.0005	0.0163	0.4636	-0.0007
	6	0.904	320.4	19.529	0.9980	-0.0372	0.4662	-0.1990	-0.0255	0.0070	0.0113	0.4672	0.0070
	7	0.904	320.4	24.355	1.1325	-0.0263	0.5199	-0.2357	-0.0240	0.0005	0.0085	0.4583	0.0004
	8	0.903	319.5	26.165	1.2016	-0.0267	0.5691	-0.2320	-0.0263	0.0004	0.0148	0.4730	0.0003

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
197	401	1	66	12	2.022	1025	671	301.8	0.802	76.0	15.0	180

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
1	0.802	301.8	-2.958	-0.0527	-0.0113	-0.0137	0.0165	-0.0025	0.0001	0.0017	0.3538	-0.0014
2	0.804	302.6	0.024	0.0610	-0.0111	0.0136	-0.0270	-0.0013	0.0001	0.0020	0.2234	0.0020
3	0.804	302.8	4.906	0.2458	-0.0139	0.1250	-0.0403	-0.0016	0.0006	0.0046	0.5005	0.0024
4	0.804	302.6	9.756	0.4798	-0.0300	0.2397	-0.0802	0.0034	-0.0007	0.0027	0.4995	-0.0015
5	0.802	301.6	14.693	0.7438	-0.0444	0.3602	-0.1356	0.0119	-0.0006	-0.0019	0.4843	-0.0009
6	0.803	302.3	19.666	0.9797	-0.0504	0.4770	-0.1761	0.0127	-0.0010	-0.0078	0.4869	-0.0010
7	0.803	302.3	24.564	1.1339	-0.0379	0.5529	-0.2030	0.0015	0.0006	-0.0049	0.4876	0.0005
8	0.803	302.5	26.348	1.2585	-0.0348	0.5717	-0.2672	-0.0213	0.0008	0.0104	0.4543	0.0006

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AMES RESEARCH CENTER: MOFFETT FIELD, CALIF. PRELIMINARY DATA

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
198	401	1	66	12	2.033	1218	952	243.5	0.605	74.7	38.3	180

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
1	0.603	243.5	-2.812	-0.0542	-0.0185	0.0081	0.0309	0.0013	-0.0003	-0.0022	-0.2375	0.0078
2	0.603	242.3	0.216	0.0847	-0.0146	0.0278	-0.0287	-0.0026	-0.0007	0.0036	0.3261	-0.0084
3	0.603	242.3	5.063	0.2756	-0.0236	0.1282	-0.0555	0.0033	0.0005	-0.0004	0.4651	0.0018
4	0.603	242.3	9.946	0.4810	-0.0388	0.2487	-0.0719	-0.0012	-0.0005	0.0068	0.5171	-0.0011
5	0.602	241.7	14.657	0.7418	-0.0525	0.3661	-0.1283	0.0046	0.0006	0.0038	0.4936	0.0008
6	0.601	241.1	19.734	1.0002	-0.0660	0.4663	-0.2005	-0.0008	0.0005	0.0102	0.4661	0.0005
7	0.600	240.5	24.607	1.1602	-0.0621	0.6234	-0.1501	-0.0003	-0.0023	0.0101	0.5373	-0.0020
8	0.602	241.7	26.417	1.2736	-0.0650	0.6357	-0.2133	0.0003	0.0002	0.0117	0.4992	0.0002

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
199	401	1	66	12	2.008	896	369	372.3	1.200	70.6	-48.0	0

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNF	CNNCF	CFY	CMR	CMY	XCP	YCP
14	1.200	372.3	24.336	0.9964	-0.0067	0.4769	-0.1873	-0.0020	0.0031	0.0112	0.4786	0.0031
15	1.204	377.0	-3.061	-0.1800	-0.0028	-0.0400	0.0800	-0.0253	-0.0014	0.0025	0.2223	0.0060
16	1.205	377.2	-0.219	-0.0592	0.0001	0.0128	0.0523	-0.0261	-0.0009	0.0037	-0.2166	0.0154
17	1.204	377.0	4.688	0.1671	0.0007	0.0645	-0.0268	-0.0283	-0.0006	0.0102	0.5063	-0.0037
18	1.201	376.6	9.604	0.3854	-0.0057	0.1994	-0.0575	-0.0221	0.0001	0.0096	0.5174	0.0003
19	1.202	376.5	14.475	0.6255	-0.0113	0.2919	-0.1251	-0.0010	0.0011	0.0061	0.4667	0.0018
20	1.203	378.7	19.404	0.8291	-0.0111	0.4014	-0.1506	0.0041	0.0026	0.0050	0.4847	0.0032
21	1.205	378.9	24.253	0.9897	-0.0061	0.4826	-0.1773	0.0012	0.0036	0.0059	0.4878	0.0036
22	1.205	378.9	26.259	1.0053	-0.0075	0.5046	-0.1656	-0.0027	0.0027	0.0127	0.5019	0.0027

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
200	401	1	66	12	1.984	955	563	320.8	0.902	76.2	1.2	0

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNF	CNNCF	CFY	CMR	CMY	XCP	YCP
1	0.902	320.6	-3.041	-0.1790	-0.0063	-0.0433	0.0763	-0.0266	-0.0013	0.0074	0.2404	0.0073
2	0.902	320.8	-0.202	-0.0815	-0.0007	0.0166	0.0730	-0.0264	-0.0011	0.0082	-0.2286	0.0135
3	0.901	320.3	4.727	0.1482	-0.0050	0.0877	-0.0111	-0.0232	-0.0011	0.0076	0.5917	-0.0075
4	0.903	321.2	9.621	0.3769	-0.0198	0.2171	-0.0341	-0.0121	0.0000	0.0120	0.5760	0.0001
5	0.903	321.2	14.462	0.6169	-0.0288	0.3261	-0.0852	0.0088	0.0002	-0.0017	0.5285	0.0003
6	0.900	319.9	19.457	0.8108	-0.0294	0.4398	-0.1007	-0.0049	0.0026	0.0094	0.5424	0.0033
7	0.904	321.6	24.294	0.9366	-0.0146	0.5115	-0.1143	-0.0023	0.0028	0.0115	0.5449	0.0030
8	0.902	320.8	26.264	1.0077	-0.0122	0.5388	-0.1330	-0.0026	0.0031	0.0125	0.5347	0.0030

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0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	201	401	1	66	12	2.029	1020	668	300.6	0.802	72.6	11.9	0

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.802	300.6	-2.696	-0.1618	-0.0070	-0.0379	0.0700	-0.0219	-0.0022	0.0015	0.2337	0.0137
	2	0.803	301.0	-0.054	-0.0661	-0.0013	0.0144	0.0584	-0.0226	-0.0020	0.0037	-0.2172	0.0304
	3	0.801	301.1	4.811	0.1363	-0.0078	0.0904	-0.0905	-0.0254	-0.0023	0.0113	0.6633	-0.0166
	4	0.801	300.0	9.713	0.3603	-0.0226	0.2036	-0.0366	-0.0085	-0.0010	0.0104	0.5650	-0.0029
	5	0.802	300.6	14.608	0.5835	-0.0321	0.3297	-0.0593	0.0035	-0.0009	0.0033	0.5650	-0.0015
	6	0.800	299.5	19.565	0.7333	-0.0319	0.4304	-0.0585	-0.0061	0.0029	0.0096	0.5869	0.0039
	7	0.802	300.6	24.374	0.9737	-0.0309	0.5254	-0.1237	-0.0016	0.0032	0.0106	0.5395	0.0033
	8	0.801	300.1	26.393	1.0527	-0.0259	0.5809	-0.1209	-0.0027	0.0033	0.0132	0.5518	0.0031

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0	RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
	202	401	1	66	12	2.029	1212	947	242.2	0.605	73.3	37.0	0

0	SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0	1	0.605	242.2	-2.739	-0.1764	-0.0136	-0.0189	0.0987	-0.0275	-0.0029	0.0108	0.1071	0.0165
	2	0.604	241.6	0.095	-0.0791	-0.0117	0.0247	0.0775	-0.0307	-0.0029	0.0212	-0.3130	0.0369
	3	0.604	241.6	4.992	0.1169	-0.0166	0.0800	0.0021	0.0037	-0.0025	-0.0071	0.6845	-0.0210
	4	0.604	241.6	9.963	0.3281	-0.0255	0.2010	-0.0177	-0.0101	-0.0012	0.0123	0.6126	-0.0036
	5	0.603	241.0	14.811	0.5563	-0.0324	0.3373	-0.0336	-0.0009	0.0000	0.0073	0.6063	0.0001
	6	0.603	241.0	19.689	0.7763	-0.0376	0.4481	-0.0693	-0.0111	0.0050	0.0172	0.5773	0.0064
	7	0.603	241.0	24.534	1.0240	-0.0429	0.5538	-0.1288	0.0074	0.0019	0.0038	0.5409	0.0018
	8	0.603	241.6	26.524	1.1042	-0.0419	0.6295	-0.1066	0.0052	0.0034	0.0070	0.5701	0.0031

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
203	401	1	66	13	2.005	903	374	374.9	1.197	74.4	-44.6	0

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
14	1.197	374.9	24.410	0.9729	0.0333	0.6472	0.1606	-0.0009	0.0059	0.0082	0.6652	0.0061
15	1.205	379.2	14.552	0.6866	0.0271	0.5025	0.1591	0.0108	0.0019	-0.0036	0.7318	0.0028
16	1.204	380.5	-2.977	-0.1717	0.0630	-0.0754	0.0105	-0.0261	-0.0004	-0.0006	0.4390	0.0022
17	1.203	380.3	-0.054	-0.0500	0.0663	0.0183	0.0433	-0.0307	0.0002	0.0050	-0.3650	-0.0032
18	1.202	380.0	4.759	0.1449	0.0587	0.1357	0.0632	-0.0231	0.0001	0.0099	0.9363	0.0010
19	1.204	382.6	9.663	0.3966	0.0375	0.3423	0.1440	-0.0039	0.0006	0.0064	0.8631	0.0020
20	1.202	382.6	14.582	0.6782	0.0339	0.5315	0.1923	0.0073	0.0008	-0.0002	0.7837	0.0012
21	1.203	382.8	19.556	0.8635	0.0292	0.6773	0.2455	-0.0097	0.0020	0.0116	0.7845	0.0023
22	1.201	382.2	24.335	0.9550	0.0325	0.6791	0.2015	-0.0010	0.0065	0.0079	0.7111	0.0068
23	1.202	382.0	26.340	1.0265	0.0354	0.6964	0.1830	0.0009	0.0065	0.0051	0.6784	0.0063

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RUN	TST	P	TN	CONF	RN/L	PT	P	Q	MACH	TTF	TF	PHI
204	401	1	66	13	1.979	959	566	321.6	0.901	78.7	3.6	0

SEQ	MACH	Q	ALPHA	CFN	CFA	CMNBF	CMNCF	CFY	CMR	CMY	XCP	YCP
1	0.901	321.6	-2.964	-0.1611	0.0137	-0.1197	0.0109	-0.0224	-0.0026	0.0024	0.4584	0.0101
2	0.903	322.4	-0.110	-0.1180	0.0171	-0.0001	0.0589	-0.0219	-0.0025	0.0064	0.0008	0.0212
3	0.903	322.9	4.795	0.1967	0.0136	0.2150	0.1167	-0.0226	-0.0020	0.0110	1.0932	-0.0104
4	0.902	322.5	9.704	0.3478	-0.0012	0.3549	0.1810	-0.0015	0.0017	0.0049	1.0206	0.0048
5	0.902	322.5	14.566	0.5272	0.0122	0.4733	0.2101	-0.0121	0.0017	0.0095	0.8987	0.0032
6	0.903	322.9	19.468	0.5688	0.0586	0.4760	0.1916	-0.0036	0.0097	0.0042	0.8369	0.0170
7	0.903	322.9	24.319	0.7404	0.0557	0.5116	0.1414	-0.0019	0.0031	0.0046	0.6911	0.0042
8	0.904	323.3	26.327	0.8221	0.0511	0.5645	0.1534	-0.0142	0.0034	0.0055	0.6867	0.0041

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0	RUN	TST	P	T4	CONF	KN/2	PT	P	Q	MACH	TTF	TF	PHI
	205	401	1	66	13	2.031	1035	678	304.9	0.302	78.3	17.1	0

0 SEQ	MACH	Q	ALPHA	CFN	CFA	CMBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0 1	0.302	304.9	-2.845	-0.2436	0.0070	-0.1176	0.0040	-0.0220	-0.0027	-0.0015	0.4837	0.0111
2	0.304	305.9	0.026	-0.0954	0.0069	0.0176	0.0653	-0.0255	-0.0026	0.0068	-0.1840	0.0268
3	0.303	305.4	4.928	0.1650	0.0032	0.1766	0.0940	0.0169	0.0002	-0.0145	1.0698	0.0010
4	0.302	304.5	9.806	0.3996	-0.0195	0.4234	0.2269	-0.0024	0.0006	0.0066	1.0729	0.0015
5	0.303	305.4	14.651	0.3919	0.0362	0.3310	0.1350	-0.0154	0.0054	0.0105	0.8445	0.0138
6	0.303	305.4	19.527	0.5232	0.0521	0.4278	0.1662	-0.0201	0.0104	0.0101	0.8178	0.0198
7	0.303	305.4	24.454	0.6883	0.0494	0.4995	0.1553	-0.0184	0.0019	0.0103	0.7257	0.0027
8	0.303	305.4	26.431	0.7614	0.0443	0.5287	0.1479	-0.0187	0.0020	0.0112	0.6943	0.0026

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0	RUN	TST	P	TH	CONF	KN/2	PT	P	Q	MACH	TTF	TF	PHI
	206	401	1	66	13	2.030	1223	956	244.2	0.604	76.7	40.2	0

0 SEQ	MACH	Q	ALPHA	CFN	CFA	CMBF	CMNCF	CFY	CMR	CMY	XCP	YCP
0 1	0.604	244.2	-2.670	-0.2026	-0.0069	-0.0612	0.0201	-0.0252	-0.0029	0.0048	0.4010	0.0145
2	0.602	243.0	0.156	-0.1099	-0.0037	0.0567	0.1117	-0.0027	-0.0019	-0.0075	-0.5155	0.0175
3	0.603	243.6	5.076	0.1095	-0.0079	0.1686	0.1138	-0.0031	-0.0001	-0.0024	1.5367	-0.0005
4	0.603	243.6	9.951	0.3465	-0.0320	0.3903	0.2170	-0.0023	-0.0000	0.0042	1.1262	-0.0000
5	0.603	243.6	14.693	0.4895	0.0157	0.4298	0.1850	-0.0152	0.0019	0.0094	0.8781	0.0058
6	0.602	243.0	19.829	0.5943	0.0320	0.4335	0.1363	-0.0223	0.0094	0.0133	0.7294	0.0157
7	0.603	243.6	24.546	0.6781	0.0430	0.4225	0.0834	-0.0229	0.0024	0.0153	0.6231	0.0035
8	0.601	242.4	26.551	0.7231	0.0453	0.4675	0.1059	-0.0208	0.0021	0.0108	0.6466	0.0029

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