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EXPERIMENTAL PRESSURE DISTRIBUTIONS FOR A FAMILY OF BLUNT BODIES AT MACH NUMBERS FROM 2.49 TO 4.63 AND ANGLES OF ATTACK FROM 0° TO 15°

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16. Abstract

The family of blunt bodies consisted of bodies of revolution having variable nose and shoulder radii and cylindrical afterbodies 7.5 inches (191 mm) in diameter. A total of 18 models were tested ranging in shape from a hemisphere cylinder to a flat-face cylinder. Included is a complete tabulation of the experimental data and a discussion of the more significant findings.

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EXPERIMENTAL PRESSURE DISTRIBUTIONS FOR A FAMILY OF BLUNT BODIES AT MACH NUMBERS FROM 2.49 TO 4.63 AND ANGLES OF ATTACK FROM 0° TO 15°

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SUMMARY

Pressure distributions were experimentally determined for a family of blunt bodies at Mach numbers from 2.49 to 4.63 and angles of attack from 0° to 15°. The family consisted of bodies of revolution having variable nose and shoulder radii and cylindrical afterbodies 7.5 inches (191 mm) in diameter. The model geometry ranged from a hemisphere cylinder to a flat-face cylinder.

For all angles of attack, the Mach number effect on the nondimensional pressure distributions decreased with increasing Mach number and nose bluntness. The pressure distributions of this investigation at Mach number 4.63 and an angle of attack of 0° were in good agreement with previously published results for a limited number of models at Mach number 10. Circumferential pressure distributions were in good agreement with an empirically derived equation for the test range of model geometry, Mach number, and angle of attack.

A comprehensive presentation of the data in tabular and figure form is included for sufficiently small intervals of nose and shoulder radii to enable pressure distributions to be determined – either directly or by interpolation – for any body of the general shape described.

INTRODUCTION

The use of blunt shapes for low ballistic coefficient reentry bodies and for reducing the convective aerodynamic heating has been common practice during the past decade. A blunt nose shape that has received considerable attention in the past and that has been used on numerous reentry configurations (for example, Mercury, Gemini, Apollo, and Fire) consists of a hemispherical segment nose with a shoulder region having a circular cross section. An extensive amount of experimental pressure data and approximate theories for predicting pressure distributions for bodies of this type at zero angle of attack exist in the literature. (For example, see refs. 1 to 9.) For the case of angles of

attack, however, complete experimental pressure distributions for such bodies are limited and generally have been restricted to specific configurations. (See refs. 10 to 14.) In order to provide this needed information, an experimental investigation has been conducted at the Langley Research Center in order to define detailed surface pressure distributions for such a family of blunt bodies. A discussion of the results from this investigation at zero angle of attack is reported in reference 1 and will therefore be omitted herein except where required to support the discussion of the data for angles of attack. A complete tabulation of the experimental data for zero angle of attack which was not presented in reference 1 is included herein together with the results obtained at angles of attack.

All the bodies, which were 7.5 inches (191 mm) in diameter, had cylindrical afterbodies 4 inches (102 mm) long. The shape of the bodies ranged from a hemisphere cylinder to a flat-face cylinder at intervals of nose and shoulder radii sufficiently small to enable the results from this investigation to be applied – either directly or by interpolation – to any shape of the general composite type. The tests were conducted through a range of Mach numbers from 2.49 to 4.63 and angles of attack from 0° to 15°.

SYMBOLS

d	afterbody diameter
M	Mach number
p	pressure
p_l	surface pressure
$p_{l,L}$	local pressure on leeward ray
$p_{l,W}$	local pressure on windward ray
p_{max}	local pressure at $s/d = 0$ at $\alpha = 0^{\circ}$
r_c	shoulder (corner) radius
r_n	nose radius
s	surface length measured from axis of symmetry on model face (see fig. 1)

s_1 surface length to point of tangency of nose and shoulder arcs (see fig. 1)

s_2 surface length to shoulder-afterbody juncture (see fig. 1)

T temperature

α angle of attack

ϕ meridian angle (see fig. 1)

Subscripts:

∞ free-stream conditions

t free-stream stagnation conditions

t,2 stagnation conditions behind normal shock of free-stream Mach number

APPARATUS AND TEST CONDITIONS

The investigation was conducted in the high Mach number test section of the Langley Unitary Plan wind tunnel described in reference 15. This variable-pressure continuous-flow tunnel has an asymmetric sliding-block nozzle that permits a continuous variation in the test-section Mach number from 2.30 to 4.63. The deviation in Mach number in the entire 4- by 4-foot (1.22- by 1.22-meter) test section for the test Mach numbers are as follows:

$M_\infty = 2.49$ . . . . . ± 0.018
$M_\infty = 4.06$ . . . . . ± 0.061
$M_\infty = 4.63$ . . . . . ± 0.045

The effects of nonuniform Mach number at $\alpha = 0^\circ$ were minimized in this investigation by testing all models at essentially the same location in the test section. The effect of flow angularity associated with this nonuniform Mach number was further minimized by an adjustment of the models for each test point relative to the free-stream velocity vector. This step was accomplished by monitoring pressure differentials from the stagnation point to orifice locations equidistant and diametrically opposite the stagnation point and adjusting the model in both angle of attack and angle of yaw until these pressure differences are equalized.

The pressure measurements were obtained for the model at nominal angles of attack of 0°, 5°, 10°, and 15°. The free-stream stagnation temperatures at the test Mach numbers were as follows:

M_∞	T_t	
	$^{\circ}R$	$^{\circ}K$
2.49	610	339
4.06	635	353
4.63	635	353

The test Reynolds number, based on afterbody diameter, was the same for all Mach numbers and equal to 1.88×10^6.

MODELS, INSTRUMENTATION, AND ACCURACY

The general shape of the axisymmetrical models (see fig. 1) consisted of a hemispherical segment nose (of radius r_n) faired into a circular-arc shoulder (of radius r_c) which faired into a cylindrical afterbody (of diameter d). A total of 18 models were tested and they had geometries ranging from a flat-face cylinder $\left(\frac{r_c}{d} = 0;\ \frac{r_n}{d} = \infty\right)$ to a hemisphere cylinder $\left(\frac{r_c}{d} = 0.5;\ \frac{r_n}{d} = 0.5\right)$. Values of r_c/d and r_n/d for each model are shown in the table presented in figure 1. Also included in this table are values of s_1/d and s_2/d, where s_1 is the value of s at the point of tangency of the nose and shoulder arcs and s_2 is the value of s at the shoulder-afterbody juncture. The afterbody for all models consisted of a cylindrical section 4 inches (102 mm) long and 7.5 inches (191 mm) in diameter. The model instrumentation consisted of approximately 80 pressure orifices of 0.050-inch (1.27-mm) inside diameter. Locations of these pressure orifices for a typical model are shown in the sketch in figure 1. Photographs of each model tested are shown in figure 2, and a typical model installation in the test section is shown in figure 3.

In the forward stagnation region of blunt bodies at $\alpha = 0^{\circ}$, the pressure magnitudes are generally very large; however, the pressure gradients can be very small. Such a combination makes it extremely difficult to measure the magnitude of the pressure decrease with surface length within this region with an absolute-pressure gage to the precision required for accurately determining local velocity gradients. This problem was minimized in this investigation by using a sensitive differential-pressure gage (full-scale deflection of 1 psi $(6895\ N/m^2)$) to measure the pressure differential from the forward stagnation point to a select number of locations. The magnitudes of the pressures at these locations were obtained by subtracting the pressure differentials from the

stagnation-point pressure which was measured with a precision mercury manometer. The pressures at all remaining locations were measured with an absolute transducer having a full-scale deflection of 10 psi $(68\ 950\ N/m^2)$. Both the 1- and 10-psi (6895- and $68\ 950\text{-}N/m^2$) transducers were used in conjunction with a multichannel scanning system so that only a total of four transducers were required. The output from each electrical transducer was recorded with a digital self-balancing potentiometer.

The tunnel free-stream static and total pressures were measured with precision mercury manometers. The accuracy of the precision mercury manometers is within 0.5 psf $(23.94\ N/m^2)$; therefore, the accuracy of the pressure measuring system is limited to that of the electrical transducers. The accuracy of the electrical transducers is within 1 percent of full-scale deflection, which corresponds to a pressure increment of 1.44 and 14.4 psf $(69$ and $690\ N/m^2)$ for the 1- and 10-psi (6895- and $68\ 950\text{-}N/m^2$) gages, respectively.

RESULTS AND DISCUSSION

Tabular listings of pressure measurements for all models at Mach numbers 2.49, 4.06, and 4.63 are presented in tables I, II, and III, respectively, for the test range of angle of attack.

Longitudinal Pressure Distributions

Pressure distributions in the vertical plane of symmetry are presented in figure 4 for all models at angles of attack from 0° to 15° and $M_\infty = 4.63$. The measured pressures have been nondimensionalized by the free-stream pitot pressure. For simplicity, only positive values of α are indicated in the key of figure 4; however, the pressures shown at $\phi = 180^\circ$ were actually obtained at $\phi = 0^\circ$ and negative angles of attack. The results for negative angles of attack are presented since only a limited number of pressure orifices were located along the ray at $\phi = 180^\circ$. Also, there are certain locations on each model that pressures are not presented for $\alpha > 0^\circ$. For these locations, the pressures were measured with a 1-psi transducer, and in order to protect these transducers from overpressurization, they were not used for $\alpha > 0^\circ$.

In general, the effect of angle of attack on the measured pressure distributions shown in figure 4 is as would be expected. This effect with increasing angle of attack consists of an increase in the magnitudes of the pressures on the windward side of the model ($\phi = 180^\circ$) and a corresponding decrease on the leeward side ($\phi = 0^\circ$).

The results shown in figure 4 at $\alpha = 15^\circ$ are replotted in figure 5 to show more clearly the effect of model geometry on the pressure distributions. These results are

presented with shoulder radius as the varying parameter for a constant value of nose radius. The model geometry symbol notation corresponds to the same values of r_c/d for all parts of figure 5. The dashed curves shown for these models with $r_c/d = 0$ are extrapolations extending from the subsonic pressure measurements at the last instrumentation station to a pressure corresponding to sonic velocity at $s/s_2 = 1$. For each value of r_n/d the pressure distributions for all values of r_c/d are bounded by the pressure distributions obtained on the hemispherical model $(r_c/d = 0.5)$ and the spherical cap model $(r_c/d = 0)$. With decreasing values of r_n/d, the pressure distribution of the spherical cap models approach those of the hemispherical model, and thus the overall extent of the corner-radius effect is reduced. This trend is more apparent on the leeward side of the models ($\phi = 0^o$) than on the windward side ($\phi = 180^o$).

The effect of Mach number on the pressure distributions of selected models representing the full range of geometrical variables is shown in figure 6 for an angle of attack of 0^o. The local measured pressures have been normalized by the measured value at $s/d = 0$ for two reasons: (1) to make them directly comparable with normalized pressure distributions for $M_\infty = 10$ from reference 2 and (2) to eliminate errors associated with using a computed value of $(p_{t,2})_\infty$ which is significantly affected by the possible Mach number variations discussed previously. A comparison of the pressure distributions for the Mach number range shown in figure 6 clearly indicates that the Mach number effect at $\alpha = 0^o$ rapidly diminishes with increasing nose bluntness (decreasing r_c/d) and Mach number. The pressure distributions of the present investigation at $M = 4.63$ are approximately the same as those shown for $M_\infty = 10$ from reference 2.

The effect of Mach number on pressure distributions for $\alpha = 15^o$ is shown in figure 7 for the Mach number range of this investigation. A pitot pressure was not measured on most models for $\alpha > 0^o$ because of the limited instrumentation at this condition. In order to minimize the errors associated with using a computed value of $p_{t,2}$ as discussed in the preceding paragraph, the ratio $p_l/p_{t,2}$ was multiplied by the ratio $(p_{t,2}/p_{max})_{\alpha=0^o}$; the latter ratio effectively accounts for longitudinal Mach number gradient in the tunnel. In general, increasing Mach number results in a decrease in the magnitude of the pressure distributions; this trend is the same as that shown for $\alpha = 0^o$. As would be expected, the Mach number effects on the pressure distributions of the hemispherical model relative to the respective stagnation points are very similar to the results shown at $\alpha = 0^o$ relative to $s/d = 0$. For the remaining models, the extent of the Mach number effect is different for the windward and leeward sides. On the windward side of the models, the Mach number effect decreases very rapidly with decreasing shoulder radius for all values of r_n/d. This same trend is shown on the leeward sides for $r_n/d = \infty$ and 1.933. For smaller values of r_n/d, the Mach number effect on the leeward surface is relatively insensitive to shoulder radius. The pressure distributions

shown for $M_\infty = 4.63$ of this investigation for $\alpha > 0^o$ are believed also to be applicable at higher Mach number flow for the following reasons: (1) the maximum Mach number effect as shown in figure 7 occurs for the hemispherical model and (2) the pressure distributions on the hemispherical model at $\alpha > 0^o$ are very similar to results obtained at $\alpha = 0^o$ as discussed previously. The pressure distributions at $\alpha = 0^o$ are essentially the same as the pressure distribution obtained at $M_\infty = 10$ (ref. 2).

Circumferential Pressure Distributions

Circumferential pressure distributions are shown in figure 8 for a selected number of models representing the range of geometrical variables at a location 3 inches (76.2 mm) from the geometric stagnation point and at an angle of attack of 15^o. Results were not obtained for model 1 at this location for $\alpha > 0^o$. Analytical distributions are also shown in figure 8 from the following empirical equation based on the experimental data:

$$\frac{p_l}{p_{t,2}} = \left(\frac{p_{l,W}}{p_{t,2}} - \frac{p_{l,L}}{p_{t,2}}\right)\left(0.072 \cos^2\phi - 0.5 \cos \phi + 0.428\right) + \frac{p_{l,L}}{p_{t,2}} \tag{1}$$

where $p_{l,W}$ and $p_{l,L}$ are the measured windward ($\phi = 180^o$) and leeward ($\phi = 0^o$) pressures, respectively, at a given value of s/d. The analytical distributions are in excellent agreement with the experimental data for the complete range of geometrical variables shown. The analytical distributions are also in excellent agreement with the measured distributions for the test range of angle of attack as shown in figure 9 and for the test range of Mach number as shown in figure 10.

SUMMARY OF RESULTS

Pressure distributions were experimentally determined for a family of blunt bodies at Mach numbers from 2.49 to 4.63 and angles of attack from 0^o to 15^o. The family consisted of bodies of revolution having variable nose and shoulder radii and cylindrical afterbodies 7.5 inches (191 mm) in diameter. The model geometry ranged from a hemisphere cylinder to a flat-face cylinder. The results are summarized as follows:

1. At an angle of attack of 0^o, the Mach number effect on the nondimensional measured pressure distributions decreased with increasing Mach number and nose bluntness. The nondimensional pressure distributions at a free-stream Mach number of 4.63 of this investigation were in good agreement with previously published results for a limited number of models at Mach numbers up to 10.

2. At an angle of attack of 15^o, the trend of the variation of the nondimensional pressure distributions with nose bluntness and Mach number was similar to that shown

at an angle of attack of 0^{o}. The results should therefore be applicable for Mach numbers greater than the maximum Mach number (4.63) of this investigation.

3. Circumferential pressure distributions were in good agreement with an empirically derived equation for the test range of model geometry, Mach number, and angle of attack.

4. A comprehensive presentation of the data in tabular and figure form is included for sufficiently small intervals of nose and shoulder radii to enable pressure distributions to be determined – either directly or by interpolation – for any body of the general shape described.

Langley Research Center,
National Aeronautics and Space Administration,
Langley Station, Hampton, Va., May 26, 1969,
124-07-17-02-23.

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TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT $M_\infty = 2.49$

(a) Model 1

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9714	.9850	.9906	.9570	.9952	.9843	.9692
2*	0	.0267				.9574			
3	0	.0533	.9779	.9894	.9942	.9964	.9895	.9757	.9579
4*	0	.0800				.9964			
5	0	.1067	.9868	.9944	.9942	.9951	.9832	.9682	.9465
6*	0	.1333				.9939			
7	0	.1600	.9880	.9932	.9916	.9875	.9743	.9554	.9313
8*	0	.1867				.9870			
9	0	.2133	.9944	.9957	.9903	.9812	.9668	.9453	.9186
10*	0	.2400				.9795			
11	0	.2667	.9969	.9932	.9853	.9736	.9528	.9289	.9009
12*	0	.2933				.9677			
13	0	.3200	.9956	.9881	.9752	.9598	.9339	.9086	.8781
14*	0	.3467				.9508			
15	0	.3733	.9880	.9754	.9562	.9370	.9073	.8795	.8464
16*	0	.4000				.9203			
17	0	.4267	.9690	.9450	.9194	.8941	.8630	.8326	.7995
18	0	.4533	.9424	.9147	.8853	.8574	.8238	.7933	.7628
19	0	.4800	.8829	.8475	.8143	.7855	.7517	.7236	.6969
20	0	.5600	.0570	.0506	.0368	.0329	.0392	.0519	.0481
21	0	.6133	.0532	.0418	.0266	.0227	.0291	.0443	.0418
22	0	.6667	.1380	.0456	.0266	.0227	.0291	.0431	.0406
23	0	.7200	.1723	.0786	.0355	.0227	.0291	.0431	.0406
24	0	.7733	.1913	.1178	.0506	.0240	.0278	.0418	.0406
25*	45	.0400				.9981			
26*	45	.0800				.9964			
27*	45	.1333				.9940			
28*	45	.1867				.9886			
29*	45	.2400				.9804			
30*	45	.2933				.9698			
31*	45	.3467				.9518			
32*	45	.4000				.9232			
33	45	.4533	.9070	.8957	.8776	.8612	.8339	.8110	.7830
34	45	.5600	.0583	.0519	.0368	.0329	.0367	.0481	.0469
35	45	.6133	.0506	.0418	.0266	.0227	.0253	.0393	.0380
36	45	.6667	.0545	.0418	.0278	.0227	.0253	.0393	.0380
37	45	.7200	.0988	.0506	.0291	.0227	.0240	.0380	.0368
38	45	.7733	.1432	.0684	.0380	.0240	.0240	.0368	.0368
39*	90	.0267				.9970			
40*	90	.0533				.9968			
41*	90	.0800				.9958			
42*	90	.1067				.9949			
43*	90	.1333				.9925			
44*	90	.1867				.9882			
45*	90	.2400				.9792			
46*	90	.2933				.9682			
47*	90	.3467				.9523			
48*	90	.4000				.9208			
49	90	.4400	.8373	.8488	.8548	.8587	.8554	.8491	.8375
50	90	.5600	.0532	.0456	.0368	.0329	.0367	.0469	.0481
51	90	.6133	.0443	.0368	.0266	.0227	.0278	.0380	.0393
52	90	.6667	.0431	.0368	.0253	.0227	.0266	.0380	.0393
53	90	.7200	.0431	.0355	.0253	.0227	.0266	.0368	.0393
54	90	.7733	.2014	.1875	.1836	.1857	.1860	.1863	.1812
55	90	.0267	.9678	.9818	.9903	.9964	.9946	.9872	.9718
56*	180	.0533				.9958			
57*	180	.0800				.9947			
58	180	.1067	.9525	.9691	.9840	.9538	.9958	.9935	.9820
59*	180	.1333				.9920			
60*	270	.0267				.9972			
61*	270	.0533				.9964			
62*	270	.0800				.9962			
63*	270	.1067				.9953			
64*	270	.1333				.9929			
65*	180	.1867				.9867			
66*	180	.2400				.9793			
67*	180	.2933				.9677			
68*	180	.3467				.9519			
69*	180	.4000				.9209			
70*	270	.1867				.9866			
71*	270	.2400				.9798			
72*	270	.2933				.9686			
73*	270	.3467				.9525			
74*	270	.4000				.9169			

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(b) Model 2

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9700	.9833	.9935	.9963	.9913	.9854	.9672
2	0	.0267	.9735	.9868	.9956	.9965	.9883	.9832	.9618
3	0	.0533	.9760	.9868	.9956	.9952	.9857	.9782	.9555
4*	0	.0800				.9942			
5	0	.1067	.9848	.9919	.9956	.9927	.9795	.9668	.9429
6*	0	.1333				.9899			
7*	0	.1600				.9875			
8*	0	.1867				.9818			
9	0	.2133	.9949	.9944	.9919	.9776	.9556	.9366	.9076
10*	0	.2400				.9710			
11	0	.2667	.9962	.9931	.9830	.9612	.9367	.9127	.8799
12*	0	.2933				.9514			
13	0	.3200	.9949	.9843	.9641	.9348	.9040	.8762	.8421
14	0	.3467	.9886	.9717	.9465	.9134	.8801	.8472	.8131
15	0	.3733	.9735	.9503	.9200	.8782	.8386	.8032	.7652
16	0	.4000	.9356	.9011	.8545	.7989	.7469	.7037	.6656
17	0	.4267	.8384	.7789	.7033	.6253	.5595	.4948	.4425
18	0	.4533	.6944	.6239	.5369	.4429	.3709	.3047	.2521
19	0	.4800	.5732	.5016	.3907	.3020	.2401	.1863	.1475
20	0	.5333	.2033	.1613	.1197	.0843	.0591	.0466	.0567
21	0	.6933	.1629	.1210	.0819	.0503	.0402	.0478	.0555
22	0	.8267	.1856	.1424	.0983	.0629	.0402	.0478	.0542
23*	45	.1333				.9857			
24*	45	.2667				.9623			
25	45	.4000	.8901	.8671	.8356	.8002	.7632	.7302	.6946
26	45	.5333	.1730	.1452	.1159	.0906	.0717	.0592	.0517
27	90	.0267	.9684	.9830	.9919	.9952	.9870	.9845	.9656
28	90	.0533	.9684	.9830	.9919	.9939	.9870	.9845	.9656
29*	90	.0800				.9938			
30	90	.1067	.9672	.9805	.9881	.9914	.9857	.9832	.9631
31*	90	.1333				.9887			
32*	90	.1867				.9805			
33*	90	.2400				.9697			
34*	90	.2933				.9505			
35	90	.3467	.8914	.9049	.9112	.9134	.9078	.9052	.8900
36	90	.4000	.7837	.7932	.8012	.8036	.7968	.7924	.7808
37	90	.5333	.0973	.0960	.0959	.0957	.0944	.0946	.0948
38	90	.6667	.0581	.0568	.0543	.0542	.0529	.0555	.0581
39	90	.8000	.0771	.0733	.0707	.0680	.0680	.0707	.0771
40	90	.9333	.1808	.1768	.1779	.1789	.1787	.1880	.2021
41*	135	.1333				.9882			
42*	135	.2667				.9610			
43	135	.4000	.6977	.7288	.7646	.8023	.8320	.8643	.8869
44	135	.5333	.0531	.0632	.0770	.0970	.1158	.1438	.1769
45	180	.0267	.9657	.9802	.9930	.9963	.9931	.9904	.9715
46	180	.0533	.9636	.9764	.9892	.9963	.9931	.9917	.9766
47*	180	.0800				.9934			
48	180	.1067	.9480	.9663	.9829	.9925	.9931	.9955	.9829
49*	180	.1333				.9890			
50*	180	.1867				.9817			
51*	180	.2400				.9698			
52*	180	.2933				.9509			
53	180	.3467	.8153	.8438	.8807	.9157	.9415	.9690	.9854
54	180	.4000	.6725	.7073	.7532	.8049	.8471	.8958	.9412
55*	225	.1333				.9897			
56*	225	.2667				.9611			
57	225	.4000	.6939	.7238	.7621	.8023	.8295	.8643	.8856
58	225	.5333	.0531	.0606	.0770	.0957	.1145	.1426	.1769
59	270	.0267	.9708	.9840	.9942	.9976	.9894	.9854	.9665
60	270	.0533	.9709	.9840	.9942	.9963	.9894	.9854	.9665
61*	270	.0800				.9946			
62	270	.1067	.9670	.9814	.9904	.9939	.9868	.9816	.9627
63*	270	.1333				.9897			
64*	270	.1867				.9818			
65*	270	.2400				.9702			
66*	270	.2933				.9496			
67	270	.3467	.8899	.9019	.9110	.9144	.9075	.9034	.8881
68	270	.4000	.7786	.7894	.7974	.7998	.7943	.7924	.7795
69*	315	.1333				.9894			
70*	315	.2667				.9609			
71	315	.4000	.8848	.8652	.8340	.7986	.7628	.7305	.6948
72	315	.5333	.1706	.1440	.1173	.0932	.0755	.0631	.0569

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(c) Model 3

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9685	.9808	.9925	.9957	.9925	.9803	.9688
2	0	.0267	.9691	.9848	.9937	.9965	.9901	.9775	.9575
3	0	.0533	.9729	.9873	.9937	.9952	.9863	.9725	.9500
4*	0	.0800				.9927			
5	0	.1067	.9830	.9911	.9937	.9902	.9775	.9586	.9323
6*	0	.1333				.9861			
7*	0	.1600				.9965			
8*	0	.1867				.9751			
9	0	.2133	.9943	.9923	.9849	.9663	.9421	.9120	.8781
10*	0	.2400				.9542			
11	0	.2667	.9943	.9873	.9672	.9348	.9017	.8629	.8240
12	0	.2933	.9918	.9747	.9458	.9034	.8638	.8163	.7685
13	0	.3200	.9729	.9482	.9054	.8480	.7956	.7357	.6778
14	0	.3467	.9426	.9028	.8474	.7738	.7047	.6374	.5720
15	0	.3733	.8959	.8448	.7730	.6932	.6226	.5467	.4725
16	0	.4000	.8315	.7616	.6923	.6064	.5329	.4522	.3780
17	0	.4267	.7546	.6897	.6103	.5184	.4395	.3603	.2961
18	0	.4533	.6700	.6052	.5221	.4328	.3587	.2885	.2293
19	0	.4800	.5729	.4993	.4161	.3272	.2753	.2154	.1676
20	0	.5333	.3760	.3140	.2472	.1900	.1478	.1109	.0819
21	0	.5867	.2132	.1702	.1286	.0931	.0669	.0479	.0592
22	0	.7467	.1779	.1387	.1009	.0692	.0530	.0441	.0592
23	0	.8800	.1893	.1488	.1084	.0755	.0568	.0441	.0580
24*	45	.1333				.9865			
25*	45	.2667				.9367			
26	45	.4000	.7634	.7238	.6772	.6152	.5607	.5026	.4422
27	45	.5333	.3180	.2799	.2358	.1938	.1617	.1335	.1109
28	90	.0267	.9640	.9785	.9912	.9552	.9914	.9826	.9638
29	90	.0533	.9628	.9785	.9912	.9939	.9914	.9826	.9638
30*	90	.0800				.9920			
31	90	.1067	.9602	.9747	.9886	.9889	.9876	.9788	.9600
32*	90	.1333				.9852			
33*	90	.1867				.9741			
34*	90	.2400				.9538			
35	90	.2933	.8807	.8940	.9054	.9059	.9042	.8956	.8807
36	90	.3467	.7606	.7719	.7802	.7820	.7793	.7711	.7594
37	90	.4000	.6068	.6158	.6218	.6227	.6208	.6141	.6059
38	90	.5333	.1987	.1986	.1986	.1581	.1987	.1972	.1972
39	90	.6667	.0733	.0721	.0709	.0708	.0710	.0709	.0732
40	90	.8000	.0816	.0792	.0768	.0767	.0769	.0779	.0803
41	90	.9333	.0911	.0887	.0863	.0837	.0851	.0862	.0898
42*	135	.1333				.9849			
43*	135	.2667				.9364			
44	135	.4000	.4459	.5000	.5591	.6216	.6717	.7215	.7653
45	135	.5333	.1124	.1336	.1631	.1993	.2341	.2763	.3201
46	180	.0267	.9593	.9752	.9883	.9943	.9945	.9872	.9697
47	180	.0533	.9522	.9704	.9871	.9943	.9957	.9908	.9744
48*	180	.0800				.9919			
49	180	.1067	.9345	.9574	.9764	.9895	.9957	.9955	.9838
50*	180	.1333				.9853			
51*	180	.1867				.9741			
52*	180	.2400				.9543			
53	180	.2933	.7724	.8132	.8606	.9058	.9449	.9742	.9897
54	180	.3467	.5737	.6347	.7057	.7808	.8432	.8998	.9472
55	180	.4000	.3856	.4504	.5331	.6157	.6894	.7652	.8386
56*	225	.1333				.9855			
57*	225	.2667				.9358			
58	225	.4000	.4459	.5047	.5651	.6239	.6764	.7239	.7677
59	225	.5333	.1076	.1277	.1560	.1922	.2271	.2704	.3153
60	270	.0267	.9652	.9811	.9906	.9954	.9922	.9825	.9649
61	270	.0533	.9652	.9787	.9918	.9943	.9922	.9813	.9626
62*	270	.0800				.9923			
63	270	.1067	.9593	.9752	.9871	.9907	.9874	.9778	.9578
64*	270	.1333				.9852			
65*	270	.1867				.9743			
66*	270	.2400				.9532			
67	270	.2933	.8777	.8901	.9020	.9058	.9023	.8939	.8775
68	270	.3467	.7476	.7565	.7684	.7714	.7663	.7605	.7476
69	270	.4000	.5950	.6040	.6100	.6133	.6090	.6058	.5964
70*	315	.1333				.9861			
71*	315	.2667				.9346			
72	315	.4000	.7570	.7175	.6679	.6109	.5617	.5019	.4441
73	315	.5333	.3111	.2742	.2329	.1922	.1632	.1346	.1098

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(d) Model 4

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9615	.9786	.9921	.9986	.9925	.9818	.9598
2	0	.0267	.9696	.9842	.9957	.9570	.9895	.9746	.9508
3*	0	.0533				.9956			
4	0	.0800	.9809	.9905	.9957	.9919	.9794	.9582	.9294
5*	0	.1067				.9891			
6*	0	.1333				.9813			
7*	0	.1600				.9914			
8*	0	.1867				.9575			
9	0	.2133	.9973	.9892	.9680	.9326	.8900	.8386	.7808
10	0	.2400	.9935	.9779	.9454	.9010	.8485	.7882	.7254
11	0	.2667	.9809	.9552	.9139	.8581	.7969	.7278	.6624
12	0	.2933	.9595	.9236	.8736	.8077	.7377	.6673	.5969
13	0	.3200	.9293	.8870	.8283	.7509	.6823	.6094	.5340
14	0	.3467	.8852	.8391	.7679	.6916	.6156	.5402	.4635
15	0	.3733	.8386	.7785	.7087	.6272	.5539	.4734	.4030
16	0	.4000	.7795	.7205	.6470	.5641	.4897	.4117	.3451
17	0	.4267	.7178	.6574	.5791	.4972	.4217	.3463	.2859
18	0	.4533	.6560	.5930	.5149	.4291	.3600	.2909	.2342
19	0	.4800	.5855	.5224	.4406	.3622	.2984	.2380	.1889
20	0	.5333	.4470	.3861	.3172	.2511	.2014	.1561	.1196
21	0	.5867	.3173	.2675	.2140	.1641	.1284	.0957	.0705
22	0	.6400	.2165	.1779	.1372	.1022	.0768	.0554	.0617
23	0	.8000	.1801	.1426	.1083	.0782	.0592	.0504	.0605
24	0	.9333	.1851	.1476	.1120	.0820	.0680	.0491	.0605
25*	45	.1333				.9824			
26	45	.2667	.9369	.9236	.8950	.8569	.8132	.7630	.7065
27	45	.4000	.7115	.6725	.6193	.5641	.5073	.4483	.3942
28	45	.5333	.3815	.3432	.2971	.2537	.2178	.1826	.1524
29	45	.6667	.1436	.1224	.1007	.0808	.0655	.0529	.0592
30	90	.0267	.9620	.9779	.9907	.9970	.9920	.9796	.9584
31*	90	.0533				.9956			
32	90	.0800	.9583	.9754	.9869	.9944	.9895	.9783	.9559
33*	90	.1067				.9885			
34*	90	.1333				.9823			
35*	90	.1867				.9579			
36	90	.2400	.8689	.8845	.8950	.9036	.8963	.8864	.8652
37	90	.2933	.7782	.7949	.8057	.8114	.8044	.7933	.7720
38	90	.3467	.6686	.6801	.5873	.6928	.6874	.6799	.6637
39	90	.4000	.5452	.5552	.5602	.5654	.5602	.5528	.5403
40	90	.5333	.2566	.2591	.2593	.2612	.2590	.2556	.2519
41	90	.6667	.0830	.0830	.0818	.0808	.0817	.0818	.0819
42	90	.8000	.0830	.0830	.0793	.0795	.0805	.0793	.0819
43	90	.9333	.0893	.0880	.0869	.0858	.0868	.0869	.0882
44*	135	.1333				.9821			
45	135	.2667	.7119	.7583	.8082	.8569	.8928	.9192	.9345
46	135	.4000	.3987	.4452	.5035	.5654	.6149	.6648	.7090
47	135	.5333	.1547	.1811	.2140	.2549	.2943	.3374	.3829
48	135	.6667	.0440	.0528	.0642	.0820	.0993	.1196	.1448
49	180	.0267	.9522	.9709	.9882	.9970	.9959	.9884	.9672
50*	180	.0533				.9955			
51	180	.0800	.9320	.9558	.9781	.9944	.9972	.9960	.9811
52*	180	.1067				.9885			
53*	180	.1333				.9823			
54*	180	.1867				.9573			
55	180	.2400	.7295	.7822	.8434	.9010	.9444	.9758	.9924
56	180	.2933	.6025	.6628	.7364	.8102	.8677	.9217	.9609
57	180	.3467	.4792	.5433	.5181	.6979	.7658	.8373	.8942
58	180	.4000	.3472	.4062	.4859	.5717	.6426	.7190	.7934
59*	225	.1333				.9835			
60	225	.2667	.7107	.7546	.8069	.8556	.8916	.9192	.9345
61	225	.4000	.3962	.4414	.5010	.5628	.6149	.6648	.7090
62	225	.5333	.1535	.1786	.2115	.2537	.2930	.3374	.3841
63	225	.6667	.0428	.0516	.0629	.0795	.0993	.1196	.1448
64	270	.0267	.9610	.9797	.9920	.9982	.9922	.9809	.9584
65*	270	.0533				.9962			
66	270	.0800	.9572	.9734	.9894	.9957	.9896	.9783	.9546
67*	270	.1067				.9891			
68*	270	.1333				.9829			
69*	270	.1867				.9583			
70	270	.2400	.8641	.8816	.8938	.9023	.8966	.8839	.8652
71	270	.2933	.7736	.7898	.8006	.8064	.8048	.7920	.7758
72	270	.3467	.5616	.6753	.6848	.6890	.6878	.6787	.6637
73	270	.4000	.5346	.5458	.5526	.5565	.5558	.5490	.5378
74*	315	.1333				.9827			
75	315	.2667	.9320	.9193	.8913	.8556	.8123	.7593	.7078
76	315	.4000	.7019	.6678	.6143	.5591	.5055	.4470	.3942
77	315	.5333	.3748	.3421	.2958	.2524	.2175	.1826	.1524
78	315	.6667	.1396	.1220	.0982	.0795	.0666	.0516	.0592

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(e) Model 5

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9517	.9759	.9920	.9588	.9933	.9799	.9539
2*	0	.0267				.9586			
3	0	.0533	.9727	.9899	.9989	.9948	.9817	.9591	.9253
4*	0	.0800				.9886			
5*	0	.1067				.9771			
6*	0	.1333				.9617			
7*	0	.1600				.9680			
8*	0	.1867				.9149			
9	0	.2133	.9890	.9672	.9309	.8814	.8214	.7549	.6858
10	0	.2400	.9789	.9471	.9019	.8424	.7798	.7083	.6404
11	0	.2667	.9601	.9181	.8641	.7996	.7255	.6541	.5837
12	0	.2933	.9324	.8828	.8226	.7492	.6776	.6012	.5295
13	0	.3200	.8997	.8438	.7785	.7014	.6258	.5457	.4715
14	0	.3467	.8619	.8010	.7306	.6548	.5792	.5054	.4337
15	0	.3733	.8166	.7481	.6752	.5981	.5224	.4487	.3807
16	0	.4000	.7713	.7002	.6248	.5465	.4669	.3970	.3328
17	0	.4267	.7147	.6448	.5694	.4873	.4164	.3453	.2836
18	0	.4533	.6681	.5919	.5177	.4395	.3697	.3025	.2446
19	0	.4800	.6140	.5428	.4636	.3904	.3243	.2621	.2093
20	0	.5333	.5008	.4295	.3590	.2921	.2347	.1878	.1475
21	0	.5867	.3964	.3325	.2708	.2166	.1716	.1323	.1021
22	0	.6400	.2982	.2443	.1940	.1511	.1173	.0895	.0668
23	0	.6933	.2189	.1763	.1373	.1045	.0795	.0580	.0643
24	0	.8667	.1862	.1461	.1109	.0844	.0618	.0529	.0643
25	0	1.0000	.1900	.1496	.1121	.0856	.0707	.0542	.0643
26*	45	.1333				.9621			
27	45	.2667	.8959	.8765	.8415	.7971	.7470	.6881	.6303
28	45	.4000	.6883	.6451	.5971	.5415	.4870	.4323	.3795
29	45	.5333	.4266	.3803	.3376	.2921	.2511	.2142	.1815
30	45	.6667	.2127	.1826	.1537	.1284	.1060	.0882	.0706
31*	90	.0267				.9572			
32	90	.0533	.9475	.9710	.9888	.9960	.9892	.9755	.9505
33*	90	.0800				.9896			
34*	90	.1067				.9782			
35*	90	.1333				.9629			
36*	90	.1867				.9141			
37	90	.2400	.7978	.8211	.8377	.8424	.8378	.8242	.8005
38	90	.2933	.7097	.7317	.7445	.7517	.7470	.7322	.7123
39	90	.3467	.6153	.6322	.6424	.6472	.6435	.6339	.6164
40	90	.4000	.5146	.5289	.5379	.0000	.5350	.5281	.5156
41	90	.5333	.2881	.2931	.2957	.2984	.2949	.2908	.2868
42	90	.6667	.1271	.1271	.1271	.1284	.1260	.1259	.1270
43	90	.8000	.0843	.0830	.0830	.0818	.0832	.0831	.0843
44	90	.9333	.0893	.0881	.0868	.0881	.0870	.0881	.0906
45*	135	.1333				.9639			
46	135	.2667	.6254	.6843	.7424	.7971	.8394	.8711	.8943
47	135	.4000	.3762	.4290	.4857	.5440	.5924	.6408	.6855
48	135	.5333	.1799	.2126	.2504	.2934	.3327	.3789	.4239
49	135	.6667	.0705	.0855	.1032	.1272	.1487	.1775	.2101
50*	180	.0267				.9588			
51	180	.0533	.9223	.9548	.9789	.9573	.9982	.9933	.9773
52*	180	.0800				.9687			
53*	180	.1067				.9778			
54*	180	.1333				.9621			
55*	180	.1867				.9149			
56	180	.2400	.6354	.7057	.7751	.8449	.8999	.9467	.9773
57	180	.2933	.5260	.6001	.6757	.7543	.8205	.8800	.9308
58	180	.3467	.4215	.4944	.5700	.6510	.7235	.7944	.8604
59	180	.4000	.3272	.3900	.4630	.5440	.6176	.6949	.7698
60*	225	.1333				.9624			
61	225	.2667	.6266	.6869	.7449	.7996	.8419	.8737	.8981
62	225	.4000	.3762	.4290	.4857	.5465	.5962	.6433	.6893
63	225	.5333	.1799	.2126	.2504	.2934	.3365	.3802	.4289
64	225	.6667	.0705	.0855	.1044	.1284	.1525	.1800	.2138
65*	270	.0267				.9575			
66	270	.0533	.9487	.9737	.9890	.9973	.9907	.9769	.9522
67*	270	.0800				.8804			
68*	270	.1067				.9786			
69*	270	.1333				.9621			
70*	270	.1867				.9145			
71	270	.2400	.8003	.8227	.8380	.8462	.8407	.8258	.8025
72	270	.2933	.7134	.7321	.7474	.7530	.7487	.7352	.7170
73	270	.3467	.6153	.6328	.6442	.6485	.6441	.6357	.6201
74	270	.4000	.5184	.5321	.5411	.5465	.5407	.5338	.5220
75*	315	.1333				.9624			
76	315	.2667	.8959	.8756	.8418	.7996	.7499	.6911	.6352
77	315	.4000	.6883	.6466	.5964	.5465	.4903	.4331	.3824
78	315	.5333	.4253	.3812	.3372	.2947	.2546	.2165	.1849
79	315	.6667	.2114	.1811	.1535	.1284	.1059	.0869	.0717

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(f) Model 6

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9610	.9798	.9938	.9990	.9937	.9782	.9597
2	0	.0267	.9678	.9859	.9979	.9994	.9913	.9725	.9495
3	0	.0533	.9716	.9884	.9979	.9969	.9876	.9662	.9419
4*	0	.0800				.9958			
5	0	.1067	.9829	.9947	.9991	.9918	.9788	.9524	.9230
6*	0	.1333				.9889			
7*	0	.1600				.9864			
8*	0	.1867				.9788			
9	0	.2133	.9955	.9972	.9916	.9716	.9485	.9133	.8764
10*	0	.2400				.9642			
11	0	.2667	.9967	.9934	.9803	.9540	.9284	.8906	.8500
12*	0	.2933				.9441			
13	0	.3200	.9930	.9834	.9626	.9312	.9007	.8617	.8185
14*	0	.3467				.9177			
15	0	.3733	.9791	.9607	.9350	.8984	.8654	.8251	.7795
16	0	.4000	.9640	.9443	.9148	.8770	.8427	.8012	.7593
17	0	.4267	.9451	.9229	.8897	.8518	.8163	.7722	.7354
18	0	.4533	.9124	.8877	.8532	.8126	.7747	.7382	.7001
19	0	.4800	.8545	.8260	.7902	.7508	.7180	.6828	.6510
20	0	.6400	.0717	.0529	.0378	.0366	.0365	.0642	.0592
21	0	.7733	.1699	.1184	.0654	.0278	.0265	.0567	.0504
22*	45	.1333				.9880			
23*	45	.2667				.9534			
24	45	.4000	.9237	.9179	.8997	.8745	.8477	.8163	.7770
25	90	.0267	.9577	.9783	.9916	.9969	.9901	.9763	.9545
26	90	.0533	.9577	.9783	.9903	.9969	.9901	.9763	.9558
27*	90	.0800				.9952			
28	90	.1067	.9563	.9742	.9902	.9942	.9885	.9747	.9543
29*	90	.1333				.9884			
30*	90	.1867				.9773			
31*	90	.2400				.9625			
32*	90	.2933				.9420			
33*	90	.3467				.9153			
34	90	.4000	.8467	.8606	.8730	.8780	.8711	.8611	.8459
35	90	.5333	.0580	.0568	.0441	.0442	.0429	.0593	.0630
36	90	.6667	.0441	.0429	.0265	.0265	.0252	.0442	.0479
37	90	.8000	.0441	.0429	.0353	.0316	.0341	.0429	.0479
38*	135	.1333				.9887			
39*	135	.2667				.9534			
40	135	.4000	.7837	.8114	.8453	.8754	.8951	.9166	.9256
41	180	.0267	.9537	.9742	.9927	.9992	.9961	.9835	.9669
42	180	.0533	.9474	.9691	.9889	.9992	.9973	.9898	.9745
43*	180	.0800				.9958			
44	180	.1067	.9298	.9553	.9788	.9954	.9973	.9949	.9846
45*	180	.1333				.9885			
46*	180	.1867				.9784			
47*	180	.2400				.9641			
48*	180	.2933				.9444			
49*	180	.3467				.9179			
50	180	.4000	.7660	.8001	.8390	.8792	.9115	.9431	.9682
51*	225	.1333				.9884			
52*	225	.2667				.9536			
53	225	.4000	.7837	.8139	.8466	.8780	.8976	.9179	.9256
54	270	.0267	.9613	.9805	.9952	1.0005	.9936	.9797	.9581
55	270	.0533	.9600	.9805	.9939	.9992	.9936	.9797	.9581
56*	270	.0800				.9954			
57	270	.1067	.9563	.9767	.9889	.9942	.9898	.9747	.9531
58*	270	.1333				.9881			
59*	270	.1867				.9770			
60*	270	.2400				.9622			
61*	270	.2933				.9419			
62*	270	.3467				.9157			
63	270	.4000	.8454	.8619	.8730	.8780	.8724	.8623	.8459
64*	315	.1333				.9887			
65*	315	.2667				.9536			
66	315	.4000	.9260	.9174	.8995	.8780	.8509	.8181	.7829

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(g) Model 7

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9578	.9794	.9945	.9994	.9940	.9779	.9578
2	0	.0267	.9668	.9867	.9975	.9999	.9899	.9718	.9473
3	0	.0533	.9706	.9879	.9988	.9973	.9861	.9642	.9385
4*	0	.0800				.9958			
5	0	.1067	.9844	.9955	.9988	.9923	.9760	.9466	.9171
6*	0	.1333				.9882			
7*	0	.1600				.9843			
8*	0	.1867				.9756			
9	0	.2133	.9996	.9980	.9874	.9670	.9394	.9025	.8642
10*	0	.2400				.9560			
11	0	.2667	.9983	.9904	.9723	.9468	.9130	.8735	.8314
12*	0	.2933				.9291			
13	0	.3200	.9895	.9728	.9471	.9127	.8764	.8332	.7899
14	0	.3467	.9807	.9577	.9270	.8900	.8512	.8067	.7622
15	0	.3733	.9655	.9363	.9018	.8610	.8209	.7752	.7319
16	0	.4000	.9391	.9036	.8615	.8155	.7743	.7298	.6929
17	0	.4267	.8823	.8306	.7721	.7234	.6797	.6353	.5971
18	0	.4533	.7437	.6708	.5983	.5264	.4666	.4122	.3678
19	0	.4800	.5710	.4858	.3993	.3181	.2635	.2181	.1827
20	0	.5333	.2294	.1762	.1310	.0934	.0681	.0517	.0517
21	0	.6933	.1626	.1183	.0793	.0492	.0404	.0479	.0529
22	0	.8267	.1891	.1410	.0995	.0619	.0404	.0466	.0529
23*	45	.1333				.9876			
24*	45	.2667				.9429			
25	45	.4000	.8849	.8671	.8401	.8143	.7818	.7474	.7105
26	45	.5333	.1828	.1510	.1222	.0972	.0794	.0643	.0542
27	90	.0267	.9580	.9779	.9937	.9986	.9911	.9768	.9552
28	90	.0533	.9567	.9766	.9937	.9986	.9899	.9768	.9549
29*	90	.0800				.9958			
30	90	.1067	.9504	.9715	.9874	.9923	.9848	.9705	.9499
31*	90	.1333				.9880			
32*	90	.1867				.9743			
33*	90	.2400				.9548			
34*	90	.2933				.9267			
35	90	.3467	.8546	.8721	.8829	.8888	.8827	.8710	.8557
36	90	.4000	.7853	.8017	.8136	.8168	.8121	.8016	.7890
37	90	.5333	.1046	.1045	.1045	.1035	.1034	.1046	.1057
38	90	.6667	.0567	.0541	.0516	.0518	.0517	.0555	.0591
39	90	.8000	.0744	.0592	.0668	.0644	.0656	.0681	.0755
40*	135	.1333				.9875			
41*	135	.2667				.9429			
42	135	.4000	.7147	.7450	.7796	.8155	.8398	.8672	.8871
43	135	.5333	.0605	.0705	.0844	.1048	.1261	.1550	.1888
44	180	.0267	.9504	.9728	.9912	1.0011	.9974	.9831	.9677
45	180	.0533	.9416	.9678	.9874	.9999	.9987	.9882	.9752
46*	180	.0800				.9957			
47	180	.1067	.9202	.9502	.9748	.9948	.9987	.9945	.9878
48*	180	.1333				.9878			
49*	180	.1867				.9745			
50*	180	.2400				.9560			
51*	180	.2933				.9287			
52	180	.3467	.7676	.8067	.8464	.8913	.9243	.9542	.9815
53	180	.4000	.6933	.7312	.7708	.8193	.8575	.8987	.9413
54*	225	.1333				.9870			
55*	225	.2667				.9434			
56	225	.4000	.7160	.7475	.7821	.8193	.8436	.8697	.8897
57	225	.5333	.0618	.0717	.0856	.1060	.1274	.1563	.1913
58	270	.0267	.9580	.9804	.9937	.9999	.9949	.9794	.9589
59	270	.0533	.9580	.9791	.9937	.9999	.9949	.9781	.9589
60*	270	.0800				.9954			
61	270	.1067	.9529	.9728	.9874	.9935	.9886	.9718	.9538
62*	270	.1333				.9872			
63*	270	.1867				.9739			
64*	270	.2400				.9542			
65*	270	.2933				.9263			
66	270	.3467	.8546	.8721	.8842	.8900	.8840	.8722	.8582
67	270	.4000	.7865	.8004	.8124	.8181	.8121	.8016	.7890
68*	315	.1333				.9870			
69*	315	.2667				.9422			
70	315	.4000	.8874	.8696	.8464	.8168	.7894	.7537	.7185
71	315	.5333	.1878	.1561	.1272	.1035	.0870	.0718	.0629

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(h) Model 8

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9546	.9784	.9927	.9981	.9936	.9769	.9555
2	0	.0267	.9635	.9862	.9978	.9984	.9938	.9706	.9458
3	0	.0533	.9698	.9900	.9978	.9972	.9875	.9630	.9357
4*	0	.0800				.9923			
5	0	.1067	.9824	.9963	.9978	.9896	.9736	.9454	.9104
6*	0	.1333				.9832			
7*	0	.1600				.9798			
8*	0	.1867				.9672			
9	0	.2133	.9975	.9963	.9827	.9567	.9294	.8898	.8485
10*	0	.2400				.9424			
11	0	.2667	.9962	.9850	.9612	.9251	.8928	.8482	.8017
12	0	.2933	.9912	.9711	.9436	.9024	.8650	.8166	.7701
13	0	.3200	.9798	.9534	.9171	.8708	.8271	.7762	.7271
14	0	.3467	.9534	.9131	.8641	.8026	.7488	.6879	.6373
15	0	.3733	.9067	.8538	.7884	.7116	.6516	.5831	.5184
16	0	.4000	.8462	.7781	.7014	.6218	.5556	.4746	.4097
17	0	.4267	.7642	.6873	.6068	.5207	.4483	.3749	.3136
18	0	.4533	.6797	.6054	.5222	.4310	.3612	.2941	.2377
19	0	.4800	.5776	.4994	.4188	.3375	.2766	.2171	.1707
20	0	.5333	.3834	.3115	.2460	.1883	.1477	.1098	.0809
21	0	.5867	.2156	.1690	.1261	.0910	.0682	.0480	.0582
22	0	.7467	.1791	.1349	.0984	.0682	.0543	.0454	.0582
23	0	.8800	.1904	.1463	.1085	.0746	.0568	.0442	.0569
24*	45	.1333				.9834			
25*	45	.2667				.9241			
26	45	.4000	.7642	.7226	.6736	.6168	.5670	.5112	.4552
27	45	.5333	.3115	.2674	.2271	.1883	.1591	.1287	.1062
28	90	.0267	.9534	.9774	.9915	.9957	.9938	.9782	.9534
29	90	.0533	.9534	.9774	.9915	.9984	.9926	.9769	.9534
30*	90	.0800				.9927			
31	90	.1067	.9483	.9698	.9852	.9909	.9862	.9706	.9458
32*	90	.1333				.9830			
33*	90	.1867				.9665			
34*	90	.2400				.9418			
35	90	.2933	.8663	.8841	.8982	.9024	.8978	.8848	.8662
36	90	.3467	.7718	.7882	.7985	.8026	.7994	.7863	.7730
37	90	.4000	.6015	.6142	.6206	.6218	.6200	.6096	.6025
38	90	.5333	.1904	.1917	.1917	.1908	.1907	.1906	.1895
39	90	.6667	.0694	.0668	.0656	.0645	.0657	.0656	.0669
40	90	.8000	.0794	.0757	.0732	.0720	.0732	.0757	.0783
41	90	.9333	.0883	.0845	.0820	.0822	.0821	.0833	.0872
42*	135	.1333				.9832			
43*	135	.2667				.9244			
44	135	.4000	.4578	.5095	.5639	.6218	.6718	.7232	.7667
45	135	.5333	.1085	.1299	.1577	.1934	.2273	.2676	.3107
46	180	.0267	.9458	.9711	.9890	.9972	.9963	.9832	.9637
47	180	.0533	.9344	.9635	.9852	.9959	.9976	.9857	.9713
48*	180	.0800				.9924			
49	180	.1067	.9105	.9433	.9701	.9896	.9976	.9933	.9852
50*	180	.1333				.9830			
51*	180	.1867				.9671			
52*	180	.2400				.9431			
53	180	.2933	.7718	.8160	.8590	.9062	.9408	.9681	.9890
54	180	.3467	.5394	.6886	.7455	.8076	.8600	.9100	.9536
55	180	.4000	.4098	.4729	.5449	.6269	.6996	.7750	.8450
56*	225	.1333				.9832			
57*	225	.2667				.9258			
58	225	.4000	.4590	.5108	.5651	.6256	.6756	.7270	.7705
59	225	.5333	.1072	.1299	.1577	.1934	.2273	.2688	.3145
60	270	.0267	.9546	.9774	.9915	.9984	.9938	.9756	.9549
61	270	.0533	.9521	.9761	.9915	.9972	.9938	.9756	.9549
62*	270	.0800				.9528			
63	270	.1067	.9458	.9686	.9839	.9896	.9850	.9681	.9486
64*	270	.1333				.9823			
65*	270	.1867				.9660			
66*	270	.2400				.9412			
67	270	.2933	.8651	.8841	.8982	.9037	.8991	.8848	.8665
68	270	.3467	.7730	.7895	.8010	.8063	.8019	.7901	.7755
69	270	.4000	.6003	.6117	.6206	.6231	.6213	.6134	.6037
70*	315	.1333				.9828			
71*	315	.2667				.9236			
72	315	.4000	.7642	.7252	.6749	.6193	.5720	.5150	.4610
73	315	.5333	.3254	.2800	.2372	.1959	.1654	.1363	.1124

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(i) Model 9

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9514	.9776	.9942	.9990	.9944	.9769	.9529
2	0	.0267	.9589	.9861	.9963	.9990	.9895	.9690	.9414
3*	0	.0533				.9956			
4	0	.0800	.9752	.9936	.9963	.9927	.9757	.9477	.9126
5*	0	.1067				.9868			
6*	0	.1333				.9796			
7*	0	.1600				.9740			
8*	0	.1867				.9555			
9	0	.2133	.9965	.9911	.9701	.9377	.8995	.8513	.8012
10	0	.2400	.9940	.9823	.9513	.9101	.8646	.8088	.7511
11	0	.2667	.9865	.9610	.9188	.8663	.8108	.7437	.6785
12	0	.2933	.9652	.9310	.8776	.8137	.7496	.6798	.6071
13	0	.3200	.9377	.8934	.8313	.7574	.6934	.6197	.5433
14	0	.3467	.8989	.8445	.7713	.6948	.6259	.5484	.4744
15	0	.3733	.8525	.7894	.7138	.6322	.5597	.4782	.4068
16	0	.4000	.7987	.7280	.6513	.5696	.4922	.4194	.3442
17	0	.4267	.7349	.6628	.5838	.5020	.4310	.3593	.2892
18	0	.4533	.4569	.4235	.3938	.3743	.3811	.3768	.3668
19	0	.4800	.5984	.5212	.4400	.3630	.2998	.2404	.1903
20	0	.5333	.4569	.3834	.3163	.2491	.1999	.1565	.1189
21	0	.5867	.3205	.2619	.2100	.1602	.1249	.0939	.0688
22	0	.6400	.2128	.1679	.1313	.0964	.0737	.0526	.0601
23	0	.8000	.1828	.1416	.1075	.0776	.0575	.0488	.0588
24	0	.9333	.1830	.1479	.1113	.0814	.0675	.0488	.0576
25*	45	.1333				.9785			
26	45	.2667	.9364	.9260	.9013	.8625	.8233	.7750	.7173
27	45	.4000	.7173	.6754	.6250	.5658	.5122	.4520	.3956
28	45	.5333	.3831	.3396	.2950	.2504	.2149	.1803	.1502
29	45	.6667	.1427	.1203	.0988	.0776	.0637	.0513	.0588
30	90	.0267	.9489	.9761	.9938	.9990	.9932	.9753	.9489
31*	90	.0533				.9951			
32	90	.0800	.9464	.9711	.9876	.9927	.9857	.9703	.9464
33*	90	.1067				.9859			
34*	90	.1333				.9783			
35*	90	.1867				.9539			
36	90	.2400	.8663	.8884	.9026	.9076	.9020	.8901	.8675
37	90	.2933	.7737	.7956	.8088	.8137	.8071	.7962	.7761
38	90	.3467	.6648	.6779	.6888	.6935	.6884	.6798	.6647
39	90	.4000	.5408	.5526	.5613	.5658	.5597	.5546	.5433
40	90	.5333	.2520	.2558	.2557	.2568	.2556	.2546	.2533
41	90	.6667	.0819	.0794	.0794	.0793	.0781	.0794	.0819
42	90	.8000	.0819	.0794	.0781	.0793	.0781	.0794	.0819
43	90	.9333	.0882	.0857	.0857	.0856	.0844	.0857	.0869
44*	135	.1333				.9789			
45	135	.2667	.7209	.7686	.8189	.8636	.8964	.9225	.9388
46	135	.4000	.3982	.4485	.5064	.5677	.6195	.6717	.7158
47	135	.5333	.1512	.1802	.2129	.2530	.2934	.3378	.3806
48	135	.6667	.0403	.0504	.0630	.0793	.0969	.1185	.1424
49	180	.0267	.9427	.9689	.9902	.9982	.9984	.9830	.9640
50*	180	.0533				.9958			
51	180	.0800	.9149	.9487	.9763	.9932	.9984	.9931	.9804
52*	180	.1067				.9865			
53*	180	.1333				.9793			
54*	180	.1867				.9553			
55	180	.2400	.5860	.5838	.5757	.5577	.5615	.5671	.5708
56	180	.2933	.6074	.6741	.7433	.8132	.8713	.9238	.9678
57	180	.3467	.4751	.5443	.6198	.6999	.7718	.8406	.9035
58	180	.4000	.3466	.4120	.4888	.5740	.6484	.7259	.8002
59*	225	.1333				.9784			
60	225	.2667	.7221	.7698	.8189	.8636	.8964	.9238	.9363
61	225	.4000	.4008	.4523	.5115	.5715	.6232	.6768	.7195
62	225	.5333	.1525	.1802	.2142	.2555	.2946	.3403	.3856
63	225	.6667	.0403	.0504	.0642	.0806	.0982	.1197	.1449
64	270	.0267	.9515	.9777	.9952	.9982	.9934	.9780	.9514
65*	270	.0533				.9951			
66	270	.0800	.9464	.9714	.9889	.9932	.9884	.9717	.9464
67*	270	.1067				.9852			
68*	270	.1333				.9779			
69*	270	.1867				.9537			
70	270	.2400	.8683	.8895	.9058	.9101	.9040	.8910	.8682
71	270	.2933	.7801	.7975	.8113	.8157	.8108	.7990	.7800
72	270	.3467	.6679	.6829	.6954	.6999	.6950	.6856	.6717
73	270	.4000	.5444	.5569	.5569	.5690	.5641	.5570	.5482
74*	315	.1333				.9784			
75	315	.2667	.9389	.9261	.9020	.8648	.8247	.7763	.7221
76	315	.4000	.7183	.6766	.6261	.5677	.5137	.4537	.3982
77	315	.5333	.3956	.3414	.2973	.2530	.2166	.1827	.1525
78	315	.6667	.1449	.1210	.0983	.0793	.0642	.0517	.0592

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(j) Model 10

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9495	.9746	.9930	.9877	.9923	.9773	.9503
2*	0	.0267				.9871			
3	0	.0533	.9731	.9892	.9997	.9940	.9790	.9544	.9170
4*	0	.0800				.9879			
5*	0	.1067				.9789			
6*	0	.1333				.9649			
7*	0	.1600				.9528			
8	0	.1867	.9958	.9841	.9594	.9147	.8645	.8048	.7371
9	0	.2133	.9907	.9703	.9330	.8808	.8230	.7532	.6868
10	0	.2400	.9782	.9477	.9028	.8430	.7739	.7067	.6390
11	0	.2667	.9606	.9200	.8675	.8002	.7299	.6602	.5887
12	0	.2933	.9316	.8848	.8260	.7499	.6795	.6036	.5333
13	0	.3200	.9015	.8471	.7781	.7046	.6317	.5558	.4805
14	0	.3467	.8612	.7994	.7278	.6492	.5751	.4992	.4289
15	0	.3733	.8172	.7491	.6787	.5989	.5210	.4464	.3748
16	0	.4000	.7682	.7013	.6296	.5511	.4732	.3986	.3321
17	0	.4267	.7192	.6498	.5754	.4945	.4253	.3508	.2880
18	0	.4533	.4224	.3846	.3513	.3171	.3297	.3295	.3220
19	0	.4800	.6085	.5367	.4583	.3825	.3209	.2603	.2088
20	0	.5333	.5029	.4324	.3588	.2894	.2366	.1874	.1459
21	0	.5867	.3960	.3293	.2695	.2139	.1711	.1320	.0994
22	0	.6400	.2980	.2463	.1952	.1522	.1195	.0893	.0667
23	0	.6933	.2175	.1760	.1347	.1019	.0793	.0578	.0642
24	0	.8667	.1873	.1471	.1108	.0830	.0629	.0516	.0642
25	0	1.0000	.1911	.1496	.1133	.0843	.0705	.0528	.0629
26*	45	.1333				.9641			
27	45	.2667	.9002	.8798	.8474	.8015	.7462	.6916	.6327
28	45	.4000	.6940	.6523	.6044	.5486	.4883	.4338	.3799
29	45	.5333	.4275	.3846	.3374	.2907	.2504	.2138	.1824
30	45	.6667	.2137	.1822	.1536	.1271	.1057	.0868	.0704
31*	90	.0267				.9971			
32	90	.0533	.9442	.9703	.9884	.9927	.9815	.9720	.9446
33*	90	.0800				.9876			
34*	90	.1067				.9778			
35*	90	.1333				.9637			
36	90	.1867	.8700	.8962	.9103	.9160	.9060	.8941	.8704
37	90	.2400	.8021	.8233	.8398	.8443	.8343	.8237	.8038
38	90	.2933	.7141	.7340	.7467	.7499	.7424	.7331	.7132
39	90	.3467	.6198	.6372	.6472	.6492	.6405	.6325	.6176
40	90	.4000	.5255	.5379	.5484	.5498	.5474	.5376	.5239
41	90	.5333	.2854	.2903	.2930	.2932	.2919	.2876	.2840
42	90	.6667	.1282	.1282	.1283	.1283	.1284	.1269	.1256
43	90	.8000	.0842	.0842	.0843	.0830	.0831	.0829	.0829
44	90	.9333	.0880	.0867	.0868	.0856	.0856	.0854	.0880
45*	135	.1333				.9641			
46	135	.2667	.6286	.6888	.7483	.8015	.8419	.8742	.8984
47	135	.4000	.3784	.4311	.4905	.5511	.5977	.6469	.6898
48	135	.5333	.1798	.2124	.2515	.2932	.3322	.3781	.4234
49	135	.6667	.0717	.0855	.1056	.1283	.1510	.1784	.2111
50*	180	.0267				.9968			
51	180	.0533	.9166	.9515	.9785	.9940	.9929	.9923	.9750
52*	180	.0800				.9879			
53*	180	.1067				.9757			
54*	180	.1333				.9645			
55	180	.1867	.7368	.8019	.8641	.9173	.9513	.9860	.9964
56	180	.2400	.6349	.7051	.7773	.8455	.8947	.9458	.9763
57	180	.2933	.5281	.5995	.6779	.7562	.8154	.8793	.9298
58	180	.3467	.4224	.4914	.5723	.6518	.7185	.7926	.8594
59	180	.4000	.3269	.3896	.4691	.5536	.6179	.6971	.7702
60*	225	.1333				.9640			
61	225	.2667	.6274	.6875	.7458	.7990	.8368	.8755	.8959
62	225	.4000	.3772	.4299	.4880	.5486	.5940	.6456	.6885
63	225	.5333	.1798	.2124	.2503	.2907	.3310	.3793	.4247
64	225	.6667	.0692	.0842	.1031	.1271	.1497	.1784	.2111
65*	270	.0267				.9975			
66	270	.0533	.9442	.9716	.9898	.9940	.9815	.9710	.9461
67*	270	.0800				.9885			
68*	270	.1067				.9784			
69*	270	.1333				.9648			
70	270	.1867	.8675	.8924	.9118	.9160	.9048	.8943	.8707
71	270	.2400	.7984	.8233	.8376	.8430	.8330	.8227	.8016
72	270	.2933	.7104	.7315	.7458	.7499	.7412	.7336	.7137
73	270	.3467	.6136	.6310	.6440	.6467	.6393	.6331	.6169
74	270	.4000	.5180	.5317	.5421	.5448	.5386	.5338	.5202
75*	315	.1333				.9629			
76	315	.2667	.8964	.8773	.8439	.7977	.7450	.6909	.6345
77	315	.4000	.6902	.6486	.6024	.5473	.4883	.4334	.3807
78	315	.5333	.4237	.3808	.3371	.2907	.2504	.2148	.1822
79	315	.6667	.2112	.1822	.1534	.1271	.1057	.0867	.0704

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(k) Model 11

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9506	.9744	.9938	.9991	.9940	.9775	.9460
2	0	.0267	.9594	.9859	.9957	.9995	.9891	.9690	.9350
3	0	.0533	.9708	.9909	.9957	.9969	.9828	.9576	.9199
4*	0	.0800				.9922			
5	0	.1067	.9859	.9985	.9957	.9868	.9639	.9311	.8857
6*	0	.1333				.9793			
7*	0	.1600				.9710			
8*	0	.1867				.9605			
9	0	.2133	1.0036	.9934	.9729	.9490	.9108	.8654	.8087
10*	0	.2400				.9345			
11	0	.2667	.9973	.9795	.9514	.9212	.8754	.8237	.7644
12	0	.2933	.9922	.9707	.9388	.9061	.8565	.8035	.7430
13	0	.3200	.9847	.9594	.9262	.8897	.8375	.7858	.7240
14	0	.3467	.9733	.9455	.9085	.8682	.8173	.7643	.7025
15	0	.3733	.9594	.9279	.8908	.8468	.7933	.7391	.6785
16	0	.4000	.9405	.9052	.8655	.8215	.7680	.7150	.6545
17	0	.4267	.9178	.8787	.8403	.7938	.7415	.6898	.6292
18	0	.4533	.8851	.8447	.8023	.7584	.7087	.6595	.6015
19	0	.4800	.8397	.8018	.7594	.7181	.6720	.6279	.5774
20	0	.6400	.1248	.0845	.0632	.0467	.0430	.0455	.0632
21	0	.7733	.1790	.1235	.0796	.0530	.0341	.0354	.0543
22*	45	.1333				.9797			
23*	45	.2667				.9198			
24	45	.4000	.8926	.8737	.8491	.8203	.7782	.7353	.6836
25	90	.0267	.9494	.9783	.9931	.9982	.9929	.9766	.9451
26	90	.0533	.9494	.9770	.9919	.9982	.9916	.9740	.9426
27*	90	.0800				.9933			
28	90	.1067	.9393	.9682	.9830	.9906	.9815	.9665	.9350
29*	90	.1333				.9797			
30*	90	.1867				.9612			
31*	90	.2400				.9354			
32	90	.2933	.8598	.8863	.9009	.9048	.8982	.8843	.8554
33	90	.3467	.8709	.8948	.9057	.9114	.9070	.8916	.8678
34	90	.4000	.7800	.8052	.8159	.8219	.8173	.8006	.7780
35	90	.6400	.0530	.0467	.0481	.0479	.0480	.0468	.0569
36	90	.7733	.0530	.0543	.0519	.0542	.0531	.0519	.0506
37*	135	.1333				.9811			
38*	135	.2667				.9216			
39	135	.4000	.6879	.7408	.7817	.8194	.8502	.8701	.8880
40	180	.0267	.9365	.9718	.9892	.9984	.9992	.9865	.9576
41	180	.0533	.9239	.9617	.9841	.9971	1.0017	.9928	.9690
42*	180	.0800				.9938			
43	180	.1067	.8898	.9365	.9677	.9883	1.0017	1.0004	.9854
44*	180	.1333				.9807			
45*	180	.1867				.9617			
46*	180	.2400				.9365			
47	180	.2933	.7459	.8077	.8614	.9063	.9449	.9713	.9905
48	180	.3467	.7043	.7673	.8227	.8685	.9121	.9469	.9753
49	180	.4000	.6576	.7181	.7741	.8219	.8678	.9068	.9449
50*	225	.1333				.9800			
51*	225	.2667				.9210			
52	225	.4000	.6879	.7408	.7855	.8206	.8527	.8739	.8931
53	270	.0267	.9504	.9806	.9942	.9984	.9942	.9776	.9467
54	270	.0533	.9479	.9781	.9930	.9971	.9929	.9764	.9462
55*	270	.0800				.9919			
56	270	.1067	.9353	.9655	.9803	.9857	.9815	.9650	.9348
57*	270	.1333				.9798			
58*	270	.1867				.9609			
59*	270	.2400				.9361			
60	270	.2933	.8583	.8860	.9006	.9051	.9007	.8853	.8602
61	270	.3467	.8242	.8519	.8640	.8685	.8641	.8499	.8260
62	270	.4000	.7800	.8039	.8159	.8219	.8173	.8031	.7805
63*	315	.1333				.9795			
64*	315	.2667				.9202			
65	315	.4000	.8886	.8708	.8513	.8219	.7819	.7399	.6894

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(I) Model 12

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9523	.9770	.9933	.9577	.9924	.9782	.9483
2	0	.0267	.9640	.9834	.9965	.9579	.9879	.9697	.9386
3	0	.0533	.9728	.9871	.9977	.9954	.9791	.9571	.9172
4*	0	.0800				.9890			
5	0	.1067	.9892	.9934	.9965	.9828	.9590	.9269	.8845
6*	0	.1333				.9741			
7*	0	.1600				.9646			
8*	0	.1867				.9525			
9	0	.2133	.9992	.9859	.9687	.9400	.8998	.8564	.8052
10*	0	.2400				.9224			
11	0	.2667	.9929	.9657	.9398	.9034	.8570	.8098	.7536
12	0	.2933	.9841	.9518	.9209	.8820	.8306	.7808	.7247
13	0	.3200	.9715	.9342	.9007	.8543	.8029	.7518	.6983
14	0	.3467	.9514	.9077	.8680	.8190	.7627	.7115	.6580
15	0	.3733	.9211	.8699	.8226	.7711	.7111	.6586	.6052
16	0	.4000	.8720	.8132	.7571	.6981	.6368	.5831	.5322
17	0	.4267	.7976	.7287	.6626	.5947	.5248	.4634	.4127
18	0	.4533	.7157	.6430	.5707	.4990	.4203	.3564	.3070
19	0	.4800	.6212	.5459	.4774	.4045	.3322	.2708	.2240
20	0	.5333	.4234	.3467	.2847	.2306	.1800	.1385	.1095
21	0	.5867	.2470	.1967	.1512	.1159	.0856	.0630	.0516
22	0	.6400	.1600	.1223	.0907	.0668	.0466	.0365	.0579
23	0	.6933	.1651	.1236	.0907	.0655	.0453	.0416	.0579
24	0	.8267	.1865	.1412	.1046	.0743	.0579	.0428	.0579
25	0	.9600	.1928	.1488	.1121	.0832	.0629	.0441	.0554
26*	45	.1333				.9757			
27	45	.2667	.9514	.9430	.9272	.9022	.8671	.8287	.7813
28	45	.4000	.8153	.7804	.7445	.7044	.6582	.6146	.5687
29	45	.5333	.3629	.3152	.2746	.2356	.1988	.1675	.1397
30	90	.0267	.9488	.9745	.9914	.9967	.9917	.9760	.9449
31	90	.0533	.9488	.9745	.9902	.9954	.9904	.9760	.9449
32*	90	.0800				.9902			
33	90	.1067	.9388	.9644	.9813	.9841	.9791	.9647	.9348
34*	90	.1333				.9758			
35*	90	.1867				.9537			
36*	90	.2400				.9234			
37	90	.2933	.8430	.8636	.8780	.8820	.8759	.8639	.8392
38	90	.3467	.7838	.8043	.8163	.8190	.8143	.8035	.7801
39	90	.4000	.7300	.7413	.7520	.7535	.7492	.7421	.7246
40	90	.5333	.2286	.2302	.2326	.2314	.2308	.2284	.2247
41	90	.6667	.0682	.0658	.0657	.0645	.0656	.0656	.0656
42	90	.8000	.0808	.0759	.0746	.0733	.0744	.0757	.0783
43	90	.9333	.0897	.0848	.0834	.0822	.0832	.0858	.0884
44*	135	.1333				.9764			
45	135	.2667	.7868	.8311	.8734	.9039	.9283	.9454	.9493
46	135	.4000	.5683	.6097	.6560	.6991	.7416	.7762	.8079
47	135	.5333	.1389	.1619	.1934	.2250	.2636	.3017	.3459
48	180	.0267	.9396	.9664	.9884	.9588	.9952	.9870	.9594
49	180	.0533	.9232	.9550	.9821	.9962	.9990	.9921	.9695
50*	180	.0800				.9895			
51	180	.1067	.8891	.9272	.9631	.9861	.9977	.9996	.9872
52*	180	.1333				.9757			
53*	180	.1867				.9530			
54*	180	.2400				.9224			
55	180	.2933	.7300	.7805	.8355	.8824	.9233	.9580	.9821
56	180	.3467	.6605	.7122	.7672	.8192	.8690	.9138	.9506
57	180	.4000	.5317	.5781	.6345	.6928	.7580	.8166	.8748
58*	225	.1333				.9762			
59	225	.2667	.7843	.8285	.8709	.9039	.9283	.9454	.9506
60	225	.4000	.5607	.6034	.6522	.6928	.7366	.7750	.8092
61	225	.5333	.1364	.1594	.1896	.2238	.2624	.3042	.3509
62	270	.0267	.9522	.9753	.9947	.9975	.9926	.9769	.9468
63	270	.0533	.9484	.9727	.9897	.9962	.9889	.9756	.9455
64*	270	.0800				.9900			
65	270	.1067	.9371	.9614	.9796	.9848	.9800	.9643	.9367
66*	270	.1333				.9760			
67*	270	.1867				.9528			
68*	270	.2400				.9231			
69	270	.2933	.8386	.8614	.8759	.8799	.8753	.8633	.8395
70	270	.3467	.7805	.7994	.8140	.8180	.8148	.8027	.7801
71	270	.4000	.6655	.6805	.6926	.6966	.6950	.6866	.6691
72*	315	.1333				.9753			
73	315	.2667	.9497	.9424	.9265	.9014	.8678	.8292	.7827
74	315	.4000	.8032	.7716	.7369	.6953	.6508	.6084	.5618
75	315	.5333	.3486	.3036	.2654	.2288	.1942	.1641	.1363

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(m) Model 13

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9480	.9742	.9925	.9572	.9912	.9771	.9477
2	0	.0267	.9594	.9826	.9963	.9956	.9849	.9663	.9328
3*	0	.0533				.9930			
4	0	.0800	.9783	.9927	.9963	.9868	.9660	.9386	.8963
5*	0	.1067				.9803			
6*	0	.1333				.9702			
7*	0	.1600				.9580			
8*	0	.1867				.9432			
9	0	.2133	.9934	.9826	.9572	.9238	.8791	.8315	.7779
10	0	.2400	.9896	.9700	.9383	.8586	.8501	.8000	.7440
11	0	.2667	.9795	.9524	.9157	.8696	.8161	.7622	.7024
12	0	.2933	.9632	.9259	.8829	.8268	.7682	.7081	.6483
13	0	.3200	.9380	.8919	.8376	.7763	.7078	.6425	.5791
14	0	.3467	.9002	.8390	.7759	.7070	.6297	.5556	.4859
15	0	.3733	.8511	.7848	.7154	.6402	.5604	.4851	.4116
16	0	.4000	.7970	.7281	.6537	.5772	.4962	.4195	.3474
17	0	.4267	.7441	.6702	.5970	.5218	.4433	.3691	.3009
18	0	.4533	.6761	.6009	.5265	.4499	.3766	.3087	.2467
19	0	.4800	.6081	.5341	.4559	.3831	.3161	.2532	.2002
20	0	.5333	.4696	.3943	.3262	.2659	.2128	.1663	.1271
21	0	.5867	.3462	.2834	.2267	.1790	.1398	.1058	.0780
22	0	.6400	.2279	.1814	.1411	.1084	.0793	.0580	.0579
23	0	.6933	.1725	.1348	.1020	.0756	.0542	.0391	.0579
24	0	.8267	.1838	.1424	.1071	.0781	.0579	.0479	.0579
25	0	.9600	.1914	.1474	.1121	.0844	.0680	.0491	.0566
26*	45	.1333				.9704			
27	45	.2667	.9342	.9234	.9006	.8696	.8287	.7849	.7364
28	45	.4000	.7277	.6840	.6348	.5810	.5214	.4636	.4066
29	45	.5333	.4016	.3565	.3111	.2684	.2292	.1940	.1624
30	45	.6667	.1586	.1323	.1096	.0895	.0718	.0580	.0504
31	90	.0267	.9455	.9738	.9900	.9956	.9886	.9764	.9454
32*	90	.0533				.9930			
33	90	.0800	.9380	.9662	.9837	.9893	.9823	.9688	.9391
34*	90	.1067				.9802			
35*	90	.1333				.9707			
36*	90	.1867				.9434			
37	90	.2400	.8599	.8831	.8980	.9024	.8954	.8844	.8585
38	90	.2933	.7932	.8138	.8275	.8318	.8249	.8151	.7918
39	90	.3467	.6811	.6966	.7066	.7095	.7040	.6967	.6785
40	90	.4000	.6227	.6313	.6387	.6422	.6392	.6332	.6213
41	90	.5333	.2634	.2651	.2689	.2687	.2686	.2649	.2621
42	90	.6667	.0882	.0871	.0871	.0883	.0883	.0883	.0895
43	90	.8000	.0819	.0795	.0783	.0795	.0794	.0807	.0832
44	90	.9333	.0895	.0859	.0858	.0871	.0870	.0883	.0920
45*	135	.1333				.9712			
46	135	.2667	.7424	.7942	.8382	.8744	.9065	.9283	.9389
47	135	.4000	.4147	.4709	.5289	.5867	.6418	.6887	.7322
48	135	.5333	.1676	.1982	.2335	.2725	.3152	.3582	.4058
49	180	.0267	.9327	.9671	.9884	.9967	.9961	.9863	.9603
50*	180	.0533				.9935			
51	180	.0800	.8987	.9393	.9707	.9904	.9973	.9977	.9804
52*	180	.1053				.9809			
53*	180	.1307				.9715			
54*	180	.1867				.9438			
55	180	.2400	.7474	.8043	.8571	.9034	.9444	.9750	.9918
56	180	.2933	.6516	.7133	.7763	.8340	.8889	.9334	.9678
57	180	.3467	.5004	.5682	.6425	.7141	.7868	.8514	.9074
58	180	.4000	.3580	.4255	.5075	.5867	.6645	.7391	.8091
59*	225	.1333				.9711			
60	225	.2667	.7399	.7904	.8369	.8731	.9053	.9270	.9363
61	225	.4000	.4071	.4646	.5251	.5829	.6392	.6874	.7322
62	225	.5333	.1639	.1944	.2297	.2687	.3114	.3569	.4033
63	225	.6667	.0454	.0556	.0694	.0871	.1084	.1312	.1588
64	270	.0267	.9466	.9760	.9922	.9967	.9897	.9775	.9452
65*	270	.0533				.9934			
66	270	.0800	.9390	.9671	.9859	.9904	.9834	.9699	.9389
67*	270	.1053				.9813			
68*	270	.1333				.9709			
69*	270	.1867				.9439			
70	270	.2400	.8584	.8825	.8975	.9021	.8964	.8854	.8582
71	270	.2933	.7916	.8118	.8256	.8315	.8258	.8148	.7927
72	270	.3467	.6794	.6931	.7056	.7103	.7086	.6988	.6805
73	270	.4000	.5533	.5656	.5756	.5804	.5762	.5714	.5570
74*	315	.1333				.9699			
75	315	.2667	.9327	.9217	.8988	.8693	.8296	.7858	.7372
76	315	.4000	.7210	.6780	.6299	.5779	.5182	.4616	.4070
77	315	.5333	.3945	.3485	.3055	.2650	.2269	.1930	.1626
78	315	.6667	.1550	.1288	.1060	.0871	.0706	.0555	.0529

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(n) Model 14

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9488	.9751	.9941	.9969	.9905	.9757	.9468
2	0	.0267	.9627	.9852	.9995	.9962	.9842	.9647	.9312
3*	0	.0533				.9911			
4	0	.0800	.9842	.9941	.9995	.9849	.9603	.9306	.8871
5*	0	.1067				.9750			
6*	0	.1333				.9606			
7*	0	.1600				.9404			
8*	0	.1867				.9146			
9	0	.2133	.9879	.9650	.9311	.8815	.8204	.7566	.6902
10	0	.2400	.9753	.9436	.9007	.8436	.7763	.7087	.6397
11	0	.2667	.9539	.9146	.8640	.8008	.7271	.6570	.5867
12	0	.2933	.9274	.8780	.8197	.7503	.6742	.6015	.5287
13	0	.3200	.8946	.8389	.7753	.7024	.6225	.5473	.4707
14	0	.3467	.8529	.7922	.7272	.6532	.5721	.4956	.4164
15	0	.3733	.8126	.7455	.6790	.6040	.5230	.4451	.3697
16	0	.4000	.7634	.6938	.6258	.5536	.4738	.3960	.3255
17	0	.4267	.7104	.6371	.5675	.4943	.4197	.3480	.2814
18	0	.4533	.6599	.5866	.5156	.4388	.3655	.3001	.2397
19	0	.4800	.6094	.5361	.4624	.3897	.3214	.2598	.2069
20	0	.5333	.4997	.4289	.3611	.2976	.2382	.1892	.1476
21	0	.5867	.3911	.3280	.2698	.2182	.1714	.1337	.1009
22	0	.6400	.3053	.2510	.2014	.1602	.1235	.0933	.0694
23	0	.6933	.2195	.1766	.1381	.1072	.0807	.0605	.0593
24	0	.8267	.1817	.1425	.1089	.0832	.0618	.0454	.0606
25	0	.9600	.1880	.1463	.1115	.0858	.0655	.0542	.0606
26*	45	.1333				.9613			
27	45	.2667	.8996	.8742	.8437	.7995	.7460	.6885	.6322
28	45	.4000	.6940	.6497	.6043	.5523	.4940	.4350	.3798
29	45	.5333	.4315	.3873	.3420	.3001	.2571	.2182	.1842
30	45	.6667	.2233	.1930	.1634	.1375	.1134	.0933	.0757
31	90	.0267	.9476	.9726	.9932	.9950	.9893	.9735	.9464
32*	90	.0533				.9911			
33	90	.0800	.9375	.9625	.9831	.9861	.9804	.9659	.9375
34*	90	.1067				.9743			
35*	90	.1333				.9607			
36*	90	.1867				.9150			
37	90	.2400	.8063	.8275	.8437	.8462	.8406	.8272	.8050
38	90	.2933	.7179	.7355	.7500	.7516	.7460	.7352	.7142
39	90	.3467	.6195	.6358	.6474	.6494	.6452	.6368	.6196
40	90	.4000	.5261	.5387	.5485	.5536	.5457	.5359	.5199
41	90	.5333	.3962	.4020	.4049	.4048	.4033	.4018	.3975
42	90	.6667	.1337	.1361	.1367	.1362	.1361	.1373	.1363
43	90	.8000	.0820	.0832	.0823	.0820	.0819	.0831	.0833
44	90	.9333	.0858	.0869	.0860	.0870	.0857	.0882	.0896
45*	135	.1333				.9607			
46	135	.2667	.6410	.6994	.7580	.8045	.8494	.8817	.9022
47	135	.4000	.3848	.4410	.5011	.5523	.6062	.6525	.6965
48	135	.5333	.1880	.2218	.2607	.3001	.3466	.3917	.4391
49	135	.6667	.0757	.0945	.1152	.1375	.1638	.1952	.2284
50	180	.0267	.9324	.9640	.9908	.9987	.9943	.9863	.9615
51*	180	.0533				.9917			
52	180	.0800	.8921	.9325	.9693	.9887	.9968	.9989	.9855
53*	180	.1067				.9750			
54*	180	.1333				.9607			
55*	180	.1867				.9144			
56	180	.2400	.5460	.7145	.7871	.8462	.9023	.9497	.9817
57	180	.2933	.5350	.6048	.5833	.7541	.8242	.8855	.9350
58	180	.3467	.4214	.4940	.5770	.6532	.7284	.7999	.8643
59	180	.4000	.3331	.3995	.4783	.5523	.6288	.7041	.7760
60*	225	.1333				.9613			
61	225	.2667	.6359	.6956	.7555	.8020	.8456	.8792	.9009
62	225	.4000	.3810	.4347	.4948	.5486	.6024	.6512	.6940
63	225	.5333	.1842	.2180	.2569	.2963	.3428	.3905	.4353
64	225	.6667	.0744	.0920	.1126	.1349	.1626	.1943	.2246
65	270	.0267	.9501	.9753	.9946	.9975	.9905	.9762	.9451
66*	270	.0533				.9922			
67	270	.0800	.9387	.9640	.9858	.9874	.9817	.9649	.9375
68*	270	.1067				.9753			
69*	270	.1333				.9607			
70*	270	.1867				.9147			
71	270	.2400	.8025	.8254	.8415	.8449	.8393	.8250	.8013
72	270	.2933	.7129	.7334	.7491	.7503	.7460	.7356	.7142
73	270	.3467	.6170	.6338	.6466	.6482	.6440	.6361	.6196
74	270	.4000	.5211	.5343	.5441	.5486	.5444	.5366	.5224
75*	315	.1333				.9607			
76	315	.2667	.8933	.8707	.8415	.7970	.7460	.6903	.6322
77	315	.4000	.6851	.6452	.5973	.5498	.4902	.4358	.3785
78	315	.5333	.4239	.3818	.3379	.2963	.2533	.2167	.1804
79	315	.6667	.2158	.1878	.1594	.1337	.1109	.0920	.0732

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(o) Model 15

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9412	.9738	.9932	.9990	.9919	.9750	.9370
2	0	.0267	.9541	.9857	.9971	.9572	.9845	.9584	.9180
3*	0	.0533				.9936			
4	0	.0800	.9793	.9970	.9971	.9871	.9605	.9231	.8726
5*	0	.1067				.9781			
6*	0	.1333				.9666			
7*	0	.1600				.9535			
8*	0	.1867				.9352			
9	0	.2133	.9969	.9831	.9555	.9152	.8598	.7997	.7329
10	0	.2400	.9932	.9718	.9391	.8950	.8334	.7695	.6989
11	0	.2667	.9843	.9579	.9202	.8735	.8095	.7443	.6737
12	0	.2933	.9730	.9415	.9001	.8483	.7805	.7115	.6397
13	0	.3200	.9579	.9214	.8761	.8218	.7490	.6813	.6082
14	0	.3467	.9415	.9012	.8509	.7927	.7188	.6486	.5742
15	0	.3733	.2052	.2055	.2067	.2070	.2065	.2053	.2078
16	0	.4000	.8950	.8483	.7954	.7334	.6584	.5856	.5138
17	0	.4267	.8698	.8193	.7652	.7031	.6269	.5528	.4760
18	0	.4533	.8383	.7878	.7337	.6728	.5967	.5264	.4470
19	0	.4800	.8006	.7500	.6971	.6375	.5602	.4861	.4130
20	0	.5333	.6923	.6504	.6101	.5643	.4998	.4269	.3576
21	0	.6667	.1259	.0945	.0731	.0593	.0491	.0466	.0453
22	0	.8000	.1712	.1235	.0882	.0644	.0541	.0453	.0378
23*	45	.1333				.9657			
24	45	.2667	.9327	.9226	.9013	.8657	.8208	.7695	.7089
25	45	.4000	.8320	.8067	.7740	.7309	.6735	.6171	.5541
26	45	.5333	.6357	.6151	.5900	.5617	.5111	.4584	.4017
27	90	.0267	.9378	.9718	.9908	.9960	.9895	.9697	.9331
28*	90	.0533				.9940			
29	90	.0800	.9264	.9617	.9820	.9871	.9807	.9609	.9255
30*	90	.1067				.9782			
31*	90	.1333				.9661			
32*	90	.1867				.9352			
33	90	.2400	.8383	.8710	.8887	.8925	.8863	.8677	.8349
34	90	.2933	.7930	.8218	.8396	.8432	.8372	.8186	.7895
35	90	.3467	.7401	.7689	.7841	.7890	.7818	.7657	.7379
36	90	.4000	.6860	.7121	.7261	.7309	.7239	.7077	.6812
37	90	.5333	.5809	.6006	.6121	.6160	.6118	.5994	.5799
38	90	.6667	.0529	.0555	.0568	.0568	.0567	.0554	.0529
39	90	.8000	.0643	.0644	.0644	.0644	.0642	.0642	.0643
40*	135	.1333				.9670			
41	135	.2667	.7132	.7748	.8304	.8723	.9051	.9256	.9329
42	135	.4000	.5608	.6221	.6802	.7309	.7742	.8085	.8320
43	135	.5333	.4058	.4606	.5149	.5542	.5879	.6133	.6328
44	180	.0267	.9224	.9628	.9894	.9998	.9983	.9848	.9530
45*	180	.0533				.9938			
46	180	.0800	.8758	.9262	.9667	.9857	1.0008	.9987	.9795
47*	180	.1067				.9788			
48*	180	.1333				.9668			
49*	180	.1867				.9363			
50	180	.2400	.7032	.7735	.8405	.8950	.9404	.9735	.9934
51	180	.2933	.6427	.7155	.7862	.8458	.9014	.9445	.9757
52	180	.3467	.5771	.6498	.7231	.7890	.8523	.9029	.9467
53	180	.4000	.5167	.5880	.6613	.7296	.7981	.8526	.9026
54*	225	.1333				.9657			
55	225	.2667	.7158	.7748	.8317	.8723	.9051	.9256	.9341
56	225	.4000	.5620	.6233	.6815	.7334	.7767	.8098	.8358
57	225	.5333	.4095	.4618	.5149	.5580	.5917	.6171	.6379
58	270	.0267	.9376	.9729	.9945	.9998	.9908	.9722	.9341
59*	270	.0533				.9937			
60	270	.0800	.9287	.9640	.9831	.9884	.9807	.9621	.9253
61*	270	.1067				.9788			
62*	270	.1333				.9667			
63*	270	.1867				.9347			
64	270	.2400	.8405	.8707	.8884	.8950	.8875	.8702	.8383
65	270	.2933	.7952	.8227	.8418	.8458	.8397	.8198	.7904
66	270	.3467	.7422	.7685	.7875	.7915	.7843	.7682	.7412
67	270	.4000	.6855	.7117	.7269	.7322	.7276	.7115	.6858
68*	315	.1333				.9661			
69	315	.2667	.9325	.9249	.9049	.8710	.8233	.7707	.7085
70	315	.4000	.8304	.8063	.7749	.7334	.6773	.6171	.5559
71	315	.5333	.6351	.6170	.5919	.5605	.5124	.4584	.4009

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(p) Model 16

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9408	.9719	.9901	.9577	.9913	.9728	.9392
2	0	.0267	.9571	.9839	.9970	.9964	.9842	.9592	.9196
3*	0	.0533				.9929			
4	0	.0800	.9811	.9965	.9957	.9851	.9602	.9226	.8742
5*	0	.1067				.9767			
6*	0	.1333				.9649			
7*	0	.1600				.9498			
8*	0	.1867				.9321			
9	0	.2133	.9949	.9788	.9491	.9120	.8582	.7991	.7329
10	0	.2400	.9911	.9662	.9289	.8881	.8317	.7701	.7001
11	0	.2667	.9798	.9486	.9100	.8654	.8027	.7386	.6673
12	0	.2933	.9659	.9296	.8848	.8377	.7737	.7059	.6345
13	0	.3200	.9483	.9069	.8596	.8087	.7435	.6756	.6017
14	0	.3467	.9256	.8804	.8293	.7772	.7095	.6416	.5664
15	0	.3733	.9004	.8502	.7966	.7432	.6767	.6101	.5361
16	0	.4000	.8676	.8149	.7600	.7067	.6439	.5798	.5071
17	0	.4267	.8209	.7657	.7096	.6588	.5998	.5420	.4718
18	0	.4533	.7528	.6900	.6327	.5820	.5293	.4790	.4201
19	0	.4800	.6469	.5752	.5067	.4472	.3919	.3479	.3040
20	0	.5333	.4439	.3734	.3113	.2595	.2117	.1765	.1476
21	0	.5867	.2661	.2144	.1689	.1335	.1021	.0807	.0643
22	0	.6400	.1627	.1249	.0933	.0705	.0504	.0366	.0568
23	0	.7733	.1778	.1337	.0971	.0718	.0529	.0441	.0555
24	0	.9067	.1904	.1451	.1071	.0806	.0617	.0454	.0542
25*	45	.1333				.9652			
26	45	.2667	.9268	.9170	.8936	.8629	.8178	.7664	.7064
27	45	.4000	.8020	.7770	.7424	.7067	.6603	.6088	.5500
28	45	.5333	.3770	.3355	.2962	.2608	.2256	.1966	.1690
29	45	.6400	.1311	.1072	.0882	.0718	.0567	.0466	.0542
30	90	.0267	.9382	.9725	.9907	.9952	.9905	.9705	.9360
31*	90	.0533				.9933			
32	90	.0800	.9281	.9612	.9819	.9863	.9791	.9605	.9285
33*	90	.1067				.9764			
34*	90	.1333				.9647			
35*	90	.1867				.9328			
36	90	.2400	.8373	.8678	.8848	.8881	.8834	.8659	.8351
37	90	.2933	.7869	.8149	.8306	.8364	.8304	.8143	.7859
38	90	.3467	.7642	.7884	.8041	.8084	.8011	.7865	.7620
39	90	.4030	.6633	.6862	.6995	.7049	.6976	.6857	.6610
40*	135	.1333				.9640			
41	135	.2667	.7099	.7720	.8230	.8626	.8982	.9189	.9310
42	135	.4000	.5523	.6130	.6630	.7049	.7456	.7777	.8048
43	135	.5333	.1665	.1930	.2231	.2535	.2927	.3340	.3772
44	135	.6400	.0416	.0454	.0567	.0694	.0858	.1084	.1325
45	180	.0267	.9231	.9624	.9856	.9963	.9979	.9844	.9562
46*	180	.0533				.9924			
47	180	.0800	.8777	.9271	.9629	.9862	.9992	.9983	.9827
48*	180	.1067				.9758			
49*	180	.1333				.9639			
50*	180	.1867				.9317			
51	180	.2400	.7049	.7770	.8394	.8891	.9361	.9693	.9903
52	180	.2933	.6381	.7114	.7802	.8361	.8907	.9340	.9701
53	180	.3467	.5738	.6471	.7172	.7743	.8351	.8848	.9310
54	180	.4000	.5120	.5815	.6466	.7024	.7632	.8180	.8717
55*	225	.1333				.9639			
56	225	.2667	.7112	.7720	.8230	.8626	.8957	.9176	.9285
57	225	.4000	.5536	.6105	.6604	.7012	.7405	.7739	.7998
58	225	.5333	.1702	.1955	.2244	.2560	.2952	.3365	.3785
59	225	.6400	.0391	.0467	.0580	.0706	.0883	.1109	.1350
60	270	.0267	.9382	.9738	.9907	.9975	.9903	.9731	.9386
61*	270	.0533				.9929			
62	270	.0800	.9306	.9624	.9806	.9862	.9802	.9617	.9285
63*	270	.1067				.9767			
64*	270	.1333				.9645			
65*	270	.1867				.9319			
66	270	.2400	.8373	.8666	.8848	.8878	.8831	.8647	.8364
67	270	.2933	.7869	.8136	.8306	.8361	.8301	.8130	.7859
68	270	.3467	.7301	.7556	.7714	.7743	.7683	.7550	.7292
69	270	.4000	.6608	.6849	.6983	.7024	.6976	.6844	.6610
70*	315	.1333				.9649			
71	315	.2667	.9268	.9158	.8936	.8626	.8175	.7676	.7077
72	315	.4000	.7995	.7745	.7424	.7049	.6585	.6088	.5500
73	315	.5333	.3707	.3305	.2886	.2535	.2182	.1916	.1640
74	315	.6400	.1311	.1072	.0870	.0706	.0555	.0454	.0542

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Continued

(q) Model 17

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9389	.9748	.9935	1.0021	.9903	.9719	.9351
2*	0	.0267				1.0005			
3	0	.0533	.9728	.9949	.9981	.9944	.9665	.9328	.8813
4*	0	.0800				.9844			
5*	0	.1067				.9711			
6*	0	.1333				.9536			
7*	0	.1600				.9313			
8	0	.1867	.9955	.9773	.9440	.9037	.8406	.7792	.7075
9	0	.2133	.9892	.9634	.9226	.8760	.8092	.7414	.6685
10	0	.2400	.9766	.9445	.8974	.8471	.7752	.7049	.6320
11	0	.2667	.9602	.9193	.8685	.8131	.7387	.6671	.5930
12	0	.2933	.9439	.8967	.8383	.7779	.7022	.6281	.5552
13	0	.3200	.9174	.8677	.8055	.7401	.6619	.5878	.5124
14	0	.3467	.8910	.8337	.7678	.7023	.6229	.5476	.4708
15	0	.3733	.8621	.8010	.7325	.6646	.5827	.5098	.4356
16	0	.4000	.8281	.7632	.6922	.6205	.5386	.4657	.3953
17	0	.4267	.7954	.7279	.6532	.5829	.5021	.4292	.3601
18	0	.4533	.7601	.6901	.6142	.5450	.4631	.3927	.3273
19	0	.4800	.7236	.6524	.5752	.5022	.4241	.3562	.2946
20	0	.5333	.6506	.5793	.5022	.4330	.3587	.2971	.2417
21	0	.5867	.5625	.4987	.4267	.3638	.2970	.2417	.1939
22	0	.7200	.1548	.1234	.0969	.0768	.0579	.0491	.0478
23	0	.8533	.1762	.1348	.1032	.0793	.0604	.0491	.0441
24*	45	.1333				.9532			
25	45	.2667	.8998	.8816	.8496	.8131	.7576	.7024	.6395
26	45	.4000	.7538	.7166	.6709	.6243	.5625	.5048	.4457
27	45	.5333	.5739	.5302	.4783	.4317	.3775	.3285	.2807
28*	90	.0267				1.0006			
29	90	.0533	.9300	.9647	.9843	.9944	.9828	.9642	.9253
30*	90	.0800				.9853			
31*	90	.1067				.9708			
32*	90	.1333				.9532			
33	90	.1867	.8495	.8790	.8961	.9062	.8935	.8761	.8435
34	90	.2400	.7941	.8224	.8370	.8471	.8369	.8195	.7894
35	90	.2933	.7312	.7569	.7703	.7779	.7689	.7527	.7277
36	90	.3467	.6672	.6904	.7024	.7085	.7001	.6858	.6635
37	90	.4000	.5894	.6084	.6192	.6239	.6157	.6040	.5843
38	90	.5333	.4061	.4206	.4278	.4296	.4246	.4168	.4063
39	90	.6667	.0725	.0727	.0739	.0727	.0725	.0725	.0712
40	90	.8000	.0765	.0754	.0766	.0767	.0765	.0765	.0752
41*	135	.1333				.9551			
42	135	.2667	.6448	.7062	.7671	.8142	.8544	.8823	.8996
43	135	.4000	.4549	.5132	.5730	.6252	.6764	.7175	.7571
44	135	.5333	.2898	.3333	.3816	.4296	.4826	.5328	.5791
45*	180	.0267				1.0013			
46	180	.0533	.8874	.9364	.9717	.9953	1.0007	.9944	.9721
47*	180	.0800				.9856			
48*	180	.1067				.9715			
49*	180	.1333				.9551			
50	180	.1867	.7173	.7882	.8516	.9081	.9519	.9812	.9972
51	180	.2400	.6408	.7129	.7842	.8499	.9058	.9469	.9814
52	180	.2933	.5643	.6375	.7103	.7799	.8452	.9008	.9471
53	180	.3467	.4839	.5568	.6324	.7059	.7766	.8414	.9009
54	180	.4000	.4074	.4735	.5519	.6252	.7014	.7728	.8415
55*	225	.1333				.9545			
56	225	.2667	.6461	.7102	.7684	.8156	.8557	.8863	.9035
57	225	.4000	.4549	.5132	.5717	.6265	.6790	.7241	.7624
58	225	.5333	.2901	.3346	.3842	.4322	.4865	.5368	.5817
59*	270	.0267				1.0008			
60	270	.0533	.9283	.9668	.9849	.9953	.9836	.9641	.9273
61*	270	.0800				.9853			
62*	270	.1067				.9710			
63*	270	.1333				.9541			
64	270	.1867	.8465	.8795	.8964	.9068	.8953	.8784	.8481
65	270	.2400	.7951	.8240	.8423	.8499	.8412	.8230	.7954
66	270	.2933	.7305	.7578	.7737	.7825	.7740	.7583	.7334
67	270	.3467	.6606	.6851	.6984	.7045	.7001	.6845	.6635
68	270	.4000	.5854	.6044	.6166	.6226	.6184	.6054	.5883
69*	315	.1333				.9538			
70	315	.2667	.8979	.8795	.8502	.8156	.7581	.7016	.6397
71	315	.4000	.7502	.7155	.6720	.6239	.5643	.5051	.4458
72	315	.5333	.5709	.5303	.4779	.4296	.3771	.3297	.2836

*Measured by 1-psi (6895-N/m^2) gage.

TABLE I.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 2.49 - Concluded

(r) Model 18

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9430	.9755	.9968	.9995	.9899	.9665	.9319
2	0	.0267	.9632	.9886	1.0033	.9969	.9783	.9458	.9020
3*	0	.0533				.9903			
4*	0	.0800				.9769			
5	0	.1067	1.0061	1.0063	.9895	.9566	.9127	.8576	.7948
6*	0	.1333				.9343			
7	0	.1600	1.0049	.9899	.9529	.9037	.8485	.7806	.7090
8	0	.1867	.9960	.9735	.9277	.8721	.8119	.7428	.6661
9	0	.2133	.9822	.9508	.8987	.8356	.7703	.6961	.6194
10	0	.2400	.9620	.9230	.8622	.7941	.7236	.6482	.5715
11	0	.2667	.9393	.8928	.8269	.7537	.6833	.6079	.5286
12	0	.2933	.9103	.8550	.7865	.7121	.6379	.5599	.4819
13	0	.3200	.8762	.8146	.7411	.6629	.5900	.5120	.4352
14	0	.3467	.8423	.7768	.6995	.6201	.5459	.4691	.3936
15	0	.3733	.8057	.7364	.6567	.5785	.5043	.4288	.3545
16	0	.4000	.7615	.6885	.6063	.5268	.4525	.3834	.3128
17	0	.4267	.7199	.6456	.5647	.4853	.4135	.3455	.2801
18	0	.4533	.6771	.6003	.5243	.4436	.3757	.3090	.2485
19	0	.4800	.6292	.5511	.4727	.3996	.3341	.2724	.2170
20	0	.5067	.5850	.5044	.4260	.3579	.2950	.2409	.1893
21	0	.5333	.5371	.4590	.3845	.3189	.2597	.2094	.1640
22	0	.5600	.4905	.4149	.3441	.2823	.2282	.1816	.1413
23	0	.5867	.4426	.3720	.3050	.2470	.1980	.1577	.1211
24	0	.6133	.4009	.3329	.2710	.2180	.1727	.1362	.1034
25	0	.6400	.3568	.2926	.2369	.1891	.1487	.1160	.0870
26	0	.6667	.3165	.2560	.2042	.1625	.1261	.0971	.0719
27	0	.6933	.2635	.2131	.1714	.1374	.1084	.0858	.0669
28	0	.7200	.2471	.1954	.1538	.1197	.0908	.0694	.0524
29	0	.7467	.2156	.1702	.1323	.1021	.0769	.0580	.0416
30	0	.7733	.1866	.1450	.1122	.0857	.0630	.0479	.0341
31	0	.8000	.1790	.1387	.1071	.0807	.0592	.0441	.0316
32	0	.8533	.1828	.1412	.1071	.0819	.0605	.0441	.0316
33	0	.9067	.1450	.1148	.0945	.0857	.0744	.0656	.0580
34	0	.9600	.1866	.1450	.1110	.0857	.0630	.0479	.0391
35	0	1.0133	.1841	.1551	.1323	.1147	.0983	.0895	.0833
36	0	1.0667	.1891	.1488	.1147	.0895	.0681	.0517	.0429
37*	45	.0267				.9975			
38*	45	.0800				.9755			
39*	45	.1333				.9330			
40	45	.1867	.9444	.9344	.9101	.8721	.8270	.7718	.7077
41	45	.2400	.8990	.8789	.8432	.7953	.7450	.6835	.6207
42	45	.2933	.7867	.7591	.7172	.6642	.6114	.5486	.4806
43	45	.3467	.7300	.6923	.6416	.5874	.5320	.4679	.4075
44	45	.4000	.6771	.6318	.5810	.5231	.4702	.4187	.3608
45	45	.4533	.5233	.4741	.4235	.3756	.3291	.2863	.2460
46	45	.5067	.5005	.4514	.4046	.3554	.3101	.2686	.2258
47	45	.5600	.4161	.3708	.3265	.2849	.2446	.2094	.1741
48	45	.6133	.3341	.2926	.2559	.2180	.1866	.1589	.1312
49	45	.6667	.2597	.2244	.1941	.1639	.1374	.1160	.0933
50	45	.7200	.2004	.1715	.1449	.1210	.0996	.0832	.0656
51	45	.7733	.1525	.1286	.1071	.0882	.0706	.0580	.0454
52	45	.8533	.1462	.1223	.1008	.0832	.0669	.0542	.0429
53	45	.9600	.1509	.1257	.1052	.0860	.0709	.0583	.0469
54	45	1.0667	.1534	.1282	.1077	.0873	.0722	.0596	.0469
55*	90	.0267				.9972			
56*	90	.0533				.9892			
57*	90	.0800				.9759			
58*	90	.1067				.9572			
59*	90	.1333				.9330			
60	90	.1867	.8279	.8582	.8758	.8764	.8699	.8488	.8174
61	90	.2400	.7582	.7846	.7998	.8005	.7940	.7765	.7476
62	90	.2933	.6783	.6995	.7124	.7145	.7092	.6916	.6691
63	90	.3467	.5934	.6132	.6237	.6285	.6205	.6068	.5892
64	90	.4000	.5135	.5281	.5387	.5400	.5332	.5219	.5069
65	90	.4533	.4273	.4406	.4474	.4489	.4432	.4345	.4245
66	90	.5067	.3461	.3567	.3625	.3629	.3584	.3522	.3447
67	90	.5600	.2777	.2818	.2877	.2883	.2849	.2812	.2762
68	90	.6133	.2181	.2209	.2243	.2239	.2229	.2191	.2167
69	90	.6667	.1635	.1650	.1661	.1657	.1646	.1622	.1609
70	90	.7200	.1217	.1219	.1230	.1226	.1216	.1204	.1204
71	90	.7733	.0900	.0902	.0913	.0898	.0899	.0887	.0887
72	90	.8533	.0850	.0850	.0849	.0847	.0836	.0836	.0837
73	90	.9600	.0887	.0876	.0887	.0873	.0861	.0862	.0862
74	90	1.0667	.0900	.0914	.0913	.0898	.0899	.0899	.0887
75	180	.0267	.9167	.9610	.9887	.9590	.9991	.9856	.9580
76*	180	.0533				.9886			
77*	180	.0800				.9748			
78	180	.1067	.8102	.8709	.9253	.9586	.9852	.9982	.9998
79*	180	.1333				.9327			
80*	270	.0267				.9969			
81*	270	.0533				.9885			
82*	270	.0800				.9753			
83*	270	.1067				.9563			
84*	270	.1333				.9332			

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT $M_\infty = 4.06$

(a) Model 1

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9587	.9751	.9867	.9967	.9878	.9730	.9618
2*	0	.0267				.9967			
3	0	.0533	.9615	.9749	.9829	.9928	.9797	.9671	.9409
4*	0	.0800				.9951			
5	0	.1067	.9656	.9791	.9829	.5968	.9716	.9570	.9306
6*	0	.1333				.9923			
7	0	.1600	.9656	.9729	.9768	.9827	.9594	.9407	.9125
8*	0	.1867				.9863			
9	0	.2133	.9716	.9771	.9789	.9786	.9534	.9306	.9003
10*	0	.2400				.5782			
11	0	.2667	.9736	.9771	.9748	.9685	.9392	.9164	.8840
12*	0	.2933				.5664			
13	0	.3200	.9736	.9729	.9667	.9542	.9209	.8961	.8617
14*	0	.3467				.9490			
15	0	.3733	.9716	.9628	.9485	.5319	.8966	.8678	.8313
16*	0	.4000				.9208			
17	0	.4267	.9513	.9364	.9140	.8934	.8520	.8231	.7867
18	0	.4533	.9290	.9060	.8796	.8568	.8155	.7847	.7503
19	0	.4800	.8700	.8409	.8087	.7837	.7424	.7137	.6834
20	0	.5600	.0447	.0346	.0304	.0304	.0283	.0284	.0263
21	0	.6133	.0692	.0243	.0183	.0183	.0162	.0183	.0163
22	0	.6667	.1179	.0549	.0203	.0163	.0162	.0163	.0163
23	0	.7200	.1362	.0812	.0365	.0183	.0142	.0163	.0153
24	0	.7733	.1402	.0935	.0527	.0203	.0142	.0163	.0163
25*	45	.0400				.9965			
26*	45	.0800				.5950			
27*	45	.1333				.9919			
28*	45	.1867				.5866			
29*	45	.2430				.5792			
30*	45	.2933				.9668			
31*	45	.3467				.5497			
32*	45	.4000				.9205			
33	45	.4533	.8944	.8795	.8653	.8547	.8215	.7968	.7644
34	45	.5600	.0366	.0305	.0304	.0324	.0283	.0304	.0284
35	45	.6133	.0264	.0163	.0163	.0183	.0142	.0163	.0163
36	45	.6667	.0670	.0284	.0183	.0183	.0162	.0183	.0183
37	45	.7200	.0935	.0569	.0243	.0183	.0142	.0163	.0163
38	45	.7733	.1056	.0711	.0405	.0183	.0142	.0163	.0163
39*	90	.0267				.9964			
40*	90	.0533				.5960			
41*	90	.0800				.9950			
42*	90	.1067				.5927			
43*	90	.1333				.9913			
44*	90	.1867				.9853			
45*	90	.2400				.5773			
46*	90	.2933				.9656			
47*	90	.3467				.5497			
48*	90	.4000				.9192			
49	90	.4400	.8253	.8389	.8472	.8527	.8478	.8394	.8233
50	90	.5600	.0305	.0284	.0304	.0324	.0283	.0304	.0284
51	90	.6133	.0163	.0143	.0163	.0183	.0142	.0163	.0153
52	90	.6667	.0163	.0143	.0163	.0183	.0142	.0142	.0142
53	90	.7200	.0163	.0143	.0163	.0183	.0122	.0142	.0142
54	90	.7733	.0793	.0772	.0791	.0791	.0751	.0770	.0812
55	90	.0267	.9513	.9689	.9809	.9928	.9837	.9773	.9550
56*	180	.0533				.5955			
57*	180	.0800				.9943			
58	180	.1067	.9370	.9588	.9768	.9909	.9899	.9853	.9712
59*	180	.1333				.9919			
60*	270	.0267				.9967			
61*	270	.0533				.9961			
62*	270	.0833				.9954			
63*	270	.1067				.9940			
64*	270	.1333				.9914			
65*	180	.1867				.5844			
66*	180	.2400				.9772			
67*	180	.2933				.9658			
68*	180	.3467				.9500			
69*	180	.4000				.9208			
70*	270	.1867				.9853			
71*	270	.2400				.9769			
72*	270	.2933				.9652			
73*	270	.3467				.9484			
74*	270	.4000				.9134			

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(b) Model 2

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9585	.9783	.9897	.9963	.9891	.9731	.9518
2	0	.0267	.9601	.9783	.9885	.9909	.9829	.9652	.9420
3	0	.0533	.9642	.9803	.9885	.9909	.9829	.9652	.9400
4*	0	.0800				.9935			
5	0	.1067	.9722	.9844	.9905	.9889	.9788	.9571	.9278
6*	0	.1333				.9894			
7*	0	.1600				.8078			
8*	0	.1867				.9819			
9	0	.2133	.9884	.9904	.9885	.9747	.9566	.9288	.8955
10*	0	.2400				.9699			
11	0	.2667	.9904	.9884	.9804	.9606	.9384	.9066	.8672
12*	0	.2933				.9506			
13	0	.3200	.9904	.9824	.9642	.9343	.9060	.8683	.8308
14	0	.3467	.9884	.9722	.9440	.9100	.8797	.8420	.8025
15	0	.3733	.9743	.9500	.9177	.8756	.8393	.7956	.7580
16	0	.4000	.9399	.9015	.8490	.7927	.7463	.6986	.6549
17	0	.4267	.8409	.7782	.6994	.6127	.5501	.4846	.4306
18	0	.4533	.6994	.6145	.5236	.4227	.3539	.2928	.2446
19	0	.4800	.5619	.4689	.3719	.2831	.2285	.1777	.1375
20	0	.5333	.1940	.1516	.1132	.0768	.0566	.0404	.0283
21	0	.6933	.1334	.0970	.0647	.0404	.0283	.0262	.0243
22	0	.8267	.1354	.1011	.0708	.0425	.0303	.0262	.0243
23*	45	.1333				.9894			
24*	45	.2667				.9616			
25	45	.4000	.8813	.8530	.8328	.7907	.7584	.7148	.6772
26	45	.5333	.1637	.1354	.1092	.0849	.0708	.0586	.0465
27	90	.0267	.9520	.9722	.9844	.9909	.9829	.9652	.9440
28	90	.0533	.9520	.9722	.9865	.9929	.9849	.9692	.9460
29*	90	.0800				.9941			
30	90	.1067	.9520	.9722	.9844	.9909	.9829	.9672	.9440
31*	90	.1333				.9903			
32*	90	.1867				.9821			
33*	90	.2400				.9699			
34*	90	.2933				.9491			
35	90	.3467	.8813	.8954	.9036	.9100	.9040	.8925	.8712
36	90	.4000	.7742	.7863	.7944	.7977	.7937	.7832	.7650
37	90	.5333	.0930	.0930	.0930	.0931	.0931	.0911	.0890
38	90	.6667	.0465	.0445	.0425	.0425	.0445	.0425	.0445
39	90	.8000	.0566	.0546	.0526	.0526	.0526	.0506	.0526
40	90	.9333	.0788	.0768	.0748	.0749	.0749	.0749	.0769
41*	135	.1333				.9898			
42*	135	.2667				.9605			
43	135	.4000	.6751	.7115	.7520	.7956	.8261	.8479	.8702
44	135	.5333	.0526	.0627	.0748	.0552	.1134	.1356	.1659
45	180	.0267	.9480	.9702	.9844	.9940	.9880	.9734	.9511
46	180	.0533	.9460	.9702	.9865	.9961	.9901	.9754	.9572
47*	180	.0800				.9935			
48	180	.1067	.9338	.9581	.9784	.9920	.9901	.9795	.9653
49*	180	.1333				.9888			
50*	180	.1867				.9808			
51*	180	.2400				.9686			
52*	180	.2933				.9487			
53	180	.3467	.8004	.8368	.8733	.9151	.9415	.9592	.9693
54	180	.4000	.6549	.6953	.7439	.8037	.8463	.8904	.9289
55*	225	.1333				.9875			
56*	225	.2667				.9579			
57	225	.4000	.6731	.7115	.7479	.7956	.8281	.8500	.8783
58	225	.5333	.0526	.0627	.0748	.0931	.1134	.1356	.1680
59	270	.0267	.9561	.9743	.9865	.9940	.9860	.9693	.9491
60	270	.0533	.9561	.9763	.9865	.9940	.9880	.9714	.9491
61*	270	.0800				.9928			
62	270	.1067	.9541	.9722	.9865	.9920	.9860	.9693	.9471
63*	270	.1333				.9879			
64*	270	.1867				.9804			
65*	270	.2400				.9684			
66*	270	.2933				.9487			
67	270	.3467	.8813	.8954	.9076	.9131	.9091	.8965	.8803
68	270	.4000	.7681	.7822	.7924	.7977	.7937	.7832	.7710
69*	315	.1333				.9875			
70*	315	.2667				.9592			
71	315	.4000	.8833	.8611	.8328	.7934	.7613	.7204	.6860
72	315	.5333	.1657	.1395	.1132	.0891	.0769	.0607	.0526

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(c) Model 3

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9572	.9790	.9925	.9575	.9893	.9744	.9556
2	0	.0267	.9593	.9795	.9917	.9937	.9837	.9674	.9430
3	0	.0533	.9614	.9816	.9917	.9937	.9816	.9634	.9389
4*	0	.0800				.9534			
5	0	.1067	.9735	.9897	.9917	.9896	.9756	.9532	.9207
6*	0	.1333				.9870			
7*	0	.1600				.8083			
8*	0	.1867				.9752			
9	0	.2133	.9918	.9917	.9877	.9653	.9431	.9086	.8700
10*	0	.2400				.9541			
11	0	.2667	.9938	.9877	.9674	.9328	.9005	.8559	.8132
12	0	.2933	.9918	.9755	.9471	.9004	.8559	.8092	.7584
13	0	.3200	.9796	.9471	.9045	.8416	.7890	.7241	.6631
14	0	.3467	.9472	.9025	.8396	.7605	.6957	.6166	.5455
15	0	.3733	.8985	.8396	.7666	.6733	.5983	.5172	.4441
16	0	.4000	.8295	.7605	.6774	.5759	.5030	.4219	.3508
17	0	.4267	.7484	.6713	.5800	.4806	.4056	.3347	.2717
18	0	.4533	.6551	.5780	.4948	.3934	.3265	.2596	.2048
19	0	.4800	.5436	.4685	.3853	.3042	.2474	.1906	.1460
20	0	.5333	.3448	.2839	.2231	.1643	.1298	.0953	.0689
21	0	.5867	.1866	.1501	.1115	.0771	.0568	.0385	.0284
22	0	.7467	.1379	.1055	.0771	.0507	.0365	.0243	.0284
23	0	.8800	.1379	.1034	.0771	.0507	.0365	.0243	.0284
24*	45	.1333				.9878			
25*	45	.2667				.9344			
26	45	.4000	.7464	.7058	.6530	.5861	.5294	.4645	.4056
27	45	.5333	.2860	.2515	.2109	.1724	.1440	.1176	.0933
28	90	.0267	.9492	.9735	.9877	.9916	.9837	.9695	.9470
29	90	.0533	.9492	.9735	.9877	.9937	.9837	.9695	.9470
30*	90	.0800				.9947			
31	90	.1067	.9472	.9714	.9856	.9916	.9837	.9674	.9450
32*	90	.1333				.9880			
33*	90	.1867				.9760			
34*	90	.2400				.9539			
35	90	.2933	.8681	.8883	.9005	.9024	.8965	.8843	.8639
36	90	.3467	.7453	.7605	.7681	.7718	.7662	.7567	.7395
37	90	.4000	.5799	.5913	.5951	.5588	.5951	.5856	.5703
38	90	.5333	.1730	.1730	.1749	.1730	.1730	.1711	.1692
39	90	.6667	.0589	.0570	.0570	.0570	.0570	.0570	.0570
40	90	.8000	.0570	.0551	.0532	.0532	.0532	.0532	.0551
41	90	.9333	.0570	.0570	.0551	.0551	.0551	.0551	.0570
42*	135	.1333				.9883			
43*	135	.2667				.9361			
44	135	.4000	.4088	.4658	.5304	.6007	.6483	.6978	.7414
45	135	.5333	.0951	.1160	.1426	.1787	.2091	.2472	.2890
46	180	.0267	.9449	.9696	.9867	.9942	.9887	.9754	.9543
47	180	.0533	.9411	.9658	.9867	.9942	.9906	.9792	.9600
48*	180	.0800				.9941			
49	180	.1067	.9240	.9525	.9772	.9923	.9906	.9849	.9695
50*	180	.1333				.9863			
51*	180	.1867				.9743			
52*	180	.2400				.9541			
53	180	.2933	.7567	.8042	.8555	.9068	.9411	.9640	.9790
54	180	.3467	.5476	.6141	.6920	.7756	.8347	.8917	.9372
55	180	.4000	.3555	.4202	.5038	.6007	.6731	.7529	.8269
56*	225	.1333				.9859			
57*	225	.2667				.9335			
58	225	.4000	.4088	.4734	.5418	.6083	.6597	.7092	.7547
59	225	.5333	.0951	.1141	.1388	.1749	.2053	.2434	.2871
60	270	.0267	.9525	.9753	.9886	.9942	.9868	.9716	.9505
61	270	.0533	.9544	.9753	.9886	.9942	.9868	.9735	.9505
62*	270	.0800				.9930			
63	270	.1067	.9506	.9734	.9867	.9923	.9849	.9716	.9486
64*	270	.1333				.9859			
65*	270	.1867				.9747			
66*	270	.2400				.9533			
67	270	.2933	.8689	.8878	.9012	.9068	.8993	.8879	.8688
68	270	.3467	.7339	.7510	.7605	.7661	.7605	.7510	.7357
69	270	.4000	.5761	.5855	.5932	.5950	.5932	.5856	.5741
70*	315	.1333				.9859			
71*	315	.2667				.9331			
72	315	.4000	.7472	.7053	.6521	.5912	.5381	.4753	.4182
73	315	.5333	.2871	.2510	.2110	.1711	.1445	.1179	.0970

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(d) Model 4

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9547	.9795	.9959	1.0016	.9947	.9772	.9520
2	0	.0267	.9605	.9828	.9949	.9969	.9888	.9685	.9391
3*	0	.0533				.9990			
4	0	.0800	.9727	.9909	.9949	.9949	.9827	.9543	.9208
5*	0	.1067				.9908			
6*	0	.1333				.9844			
7*	0	.1600				.8121			
8*	0	.1867				.9598			
9	0	.2133	.9950	.9909	.9706	.9320	.8832	.8305	.7663
10	0	.2400	.9950	.9808	.9442	.8975	.8406	.7756	.7074
11	0	.2667	.9848	.9564	.9117	.8487	.7817	.7107	.6362
12	0	.2933	.9625	.9199	.8650	.7939	.7208	.6416	.5590
13	0	.3200	.9300	.8772	.8162	.7391	.6599	.5787	.4980
14	0	.3467	.8833	.8285	.7533	.6700	.5848	.5015	.4248
15	0	.3733	.8305	.7676	.6883	.5990	.5178	.4345	.3598
16	0	.4000	.7676	.7006	.6193	.5279	.4447	.3695	.3008
17	0	.4267	.7006	.6295	.5442	.4568	.3817	.3086	.2480
18	0	.4533	.6275	.5564	.4711	.3878	.3188	.2558	.1992
19	0	.4800	.5462	.4772	.4000	.3228	.2599	.2030	.1565
20	0	.5333	.4021	.3452	.2782	.2193	.1706	.1299	.0955
21	0	.5867	.2782	.2315	.1787	.1360	.1036	.0772	.0529
22	0	.6400	.1807	.1462	.1096	.0812	.0609	.0426	.0285
23	0	.8000	.1360	.1056	.0792	.0569	.0406	.0284	.0285
24	0	.9333	.1340	.1036	.0772	.0569	.0406	.0284	.0285
25*	45	.1333				.9839			
26	45	.2667	.9259	.9117	.8853	.8426	.7918	.7371	.6810
27	45	.4000	.6863	.6437	.5949	.5320	.4690	.4122	.3557
28	45	.5333	.3411	.3046	.2599	.2193	.1848	.1503	.1220
29	45	.6667	.1137	.0975	.0792	.0629	.0528	.0406	.0305
30	90	.0267	.9463	.9727	.9888	.9949	.9909	.9726	.9432
31*	90	.0533				.9992			
32	90	.0800	.9483	.9727	.9888	.9949	.9888	.9706	.9432
33*	90	.1067				.9919			
34*	90	.1333				.9846			
35*	90	.1867				.9583			
36	90	.2400	.8549	.8752	.8893	.8954	.8873	.8731	.8476
37	90	.2933	.7594	.7737	.7898	.7919	.7858	.7716	.7501
38	90	.3467	.6396	.6538	.6640	.6680	.6619	.6497	.6301
39	90	.4000	.5056	.5178	.5279	.5279	.5239	.5157	.4960
40	90	.5333	.2295	.2335	.2335	.2335	.2335	.2294	.2254
41	90	.6667	.0650	.0629	.0629	.0629	.0629	.0629	.0629
42	90	.8000	.0569	.0548	.0548	.0548	.0528	.0548	.0548
43	90	.9333	.0589	.0569	.0569	.0569	.0569	.0569	.0569
44*	135	.1333				.9908			
45	135	.2667	.6823	.7351	.7919	.8447	.8792	.9056	.9178
46	135	.4000	.3614	.4081	.4690	.5320	.5848	.6355	.6822
47	135	.5333	.1279	.1523	.1848	.2213	.2579	.2964	.3391
48	135	.6667	.0325	.0406	.0508	.0629	.0772	.0954	.1157
49	180	.0267	.9402	.9686	.9888	.9990	.9929	.9766	.9523
50*	180	.0533				.9994			
51	180	.0800	.9239	.9523	.9807	.9969	.9949	.9868	.9685
52*	180	.1067				.9915			
53*	180	.1333				.9852			
54*	180	.1867				.9590			
55	180	.2400	.7087	.7696	.8386	.8995	.9401	.9685	.9827
56	180	.2933	.5486	.6396	.7208	.8023	.8629	.9137	.9502
57	180	.3467	.4366	.5076	.5929	.6782	.7533	.8223	.8832
58	180	.4000	.3107	.3696	.4508	.5381	.6152	.6985	.7736
59*	225	.1333				.9846			
60	225	.2667	.6823	.7351	.7959	.8467	.8832	.9096	.9239
61	225	.4000	.3594	.4081	.4670	.5320	.5868	.6396	.6863
62	225	.5333	.1279	.1523	.1848	.2213	.2579	.2985	.3431
63	225	.6667	.0325	.0406	.0508	.0629	.0772	.0975	.1178
64	270	.0267	.9503	.9747	.9909	.9969	.9909	.9726	.9462
65*	270	.0533				.9992			
66	270	.0800	.9503	.9727	.9909	.9949	.9909	.9726	.9462
67*	270	.1067				.9906			
68*	270	.1333				.9839			
69*	270	.1867				.9590			
70	270	.2400	.8549	.8752	.8914	.8975	.8914	.8772	.8568
71	270	.2933	.7574	.7757	.7898	.7980	.7919	.7817	.7614
72	270	.3467	.6396	.6538	.6660	.6700	.6660	.6558	.6396
73	270	.4000	.5056	.5178	.5259	.5299	.5279	.5198	.5076
74*	315	.1333				.9833			
75	315	.2667	.9280	.9138	.8873	.8467	.7980	.7431	.6863
76	315	.4000	.6823	.6437	.5909	.5299	.4711	.4122	.3594
77	315	.5333	.3391	.3026	.2599	.2193	.1848	.1543	.1259
78	315	.6667	.1137	.0975	.0792	.0629	.0508	.0406	.0325

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(e) Model 5

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9472	.9753	.9959	1.0006	.9941	.9748	.9458
2*	0	.0267				.9995			
3	0	.0533	.9643	.9868	.9970	.9930	.9787	.9483	.9126
4*	0	.0800				.9907			
5*	0	.1067				.9782			
6*	0	.1333				.9594			
7*	0	.1600				1.0064			
8*	0	.1867				.9082			
9	0	.2133	.9846	.9665	.9258	.8651	.8041	.7331	.6565
10	0	.2400	.9744	.9421	.8933	.8285	.7594	.6803	.6036
11	0	.2667	.9500	.9095	.8485	.7777	.7005	.6193	.5386
12	0	.2933	.9215	.8709	.8037	.7249	.6457	.5625	.4837
13	0	.3200	.8809	.8261	.7529	.6721	.5868	.4975	.4228
14	0	.3467	.8402	.7793	.7040	.6193	.5381	.4569	.3801
15	0	.3733	.7852	.7223	.6430	.5584	.4792	.3960	.3313
16	0	.4000	.7344	.6694	.5819	.5016	.4223	.3493	.2845
17	0	.4267	.6754	.6064	.5270	.4427	.3655	.2985	.2419
18	0	.4533	.6184	.5494	.4700	.3899	.3228	.2559	.2053
19	0	.4800	.5594	.4944	.4151	.3411	.2761	.2173	.1728
20	0	.5333	.4435	.3805	.3093	.2498	.1970	.1543	.1159
21	0	.5867	.3377	.2828	.2259	.1767	.1381	.1036	.0772
22	0	.6400	.2441	.1994	.1546	.1198	.0914	.0650	.0508
23	0	.6933	.1729	.1384	.1058	.0792	.0589	.0406	.0325
24	0	.8667	.1322	.1038	.0773	.0589	.0426	.0305	.0346
25	0	1.0000	.1282	.1017	.0753	.0569	.0406	.0305	.0346
26*	45	.1333				.9594			
27	45	.2667	.8748	.8587	.8220	.7716	.7147	.6539	.5894
28	45	.4000	.6489	.6104	.5596	.5036	.4447	.3858	.3333
29	45	.5333	.3682	.3357	.2910	.2498	.2112	.1767	.1463
30	45	.6667	.1668	.1445	.1180	.0965	.0812	.0650	.0528
31*	90	.0267				.9997			
32	90	.0533	.9358	.9645	.9868	.9910	.9848	.9646	.9370
33*	90	.0800				.9911			
34*	90	.1067				.9788			
35*	90	.1333				.9599			
36*	90	.1867				.9054			
37	90	.2400	.7812	.8037	.8220	.8265	.8183	.8021	.7764
38	90	.2933	.6876	.7081	.7223	.7249	.7208	.7026	.6829
39	90	.3467	.5798	.5982	.6084	.6133	.6092	.5970	.5691
40	90	.4000	.4740	.4863	.4965	.4995	.4975	.4853	.4695
41	90	.5333	.2540	.2581	.2622	.2622	.2602	.2561	.2500
42	90	.6667	.0955	.0976	.0996	.0976	.0976	.0955	.0955
43	90	.8000	.0549	.0569	.0569	.0549	.0549	.0549	.0549
44	90	.9333	.3312	.3008	.2724	.2013	.2155	.2399	.2500
45*	135	.1333				.9670			
46	135	.2667	.5954	.6545	.7175	.7745	.8192	.8538	.8740
47	135	.4000	.3373	.3862	.4451	.5042	.5570	.6058	.6504
48	135	.5333	.1483	.1748	.2114	.2503	.2887	.3293	.3719
49	135	.6667	.0528	.0630	.0793	.0976	.1179	.1403	.1667
50*	180	.0267				1.0001			
51	180	.0533	.9104	.9471	.9776	.9941	.9940	.9839	.9614
52*	180	.0800				.9911			
53*	180	.1067				.9784			
54*	180	.1333				.9594			
55*	180	.1867				.9071			
56	180	.2400	.6076	.6788	.7601	.8315	.8903	.9331	.9675
57	180	.2933	.4918	.5630	.6484	.7298	.8029	.8640	.9187
58	180	.3467	.3841	.4492	.5345	.6180	.6972	.7705	.8394
59	180	.4000	.2886	.3455	.4228	.5021	.5814	.6627	.7378
60*	225	.1333				.9597			
61	225	.2667	.5934	.6545	.7175	.7766	.8212	.8559	.8801
62	225	.4000	.3353	.3841	.4431	.5021	.5570	.6058	.6545
63	225	.5333	.1463	.1748	.2114	.2500	.2887	.3314	.3760
64	225	.6667	.0528	.0630	.0793	.0976	.1179	.1423	.1687
65*	270	.0267				.9995			
66	270	.0533	.9388	.9675	.9878	.9941	.9859	.9677	.9370
67*	270	.0800				.9905			
68*	270	.1067				.9784			
69*	270	.1333				.9601			
70*	270	.1867				.9073			
71	270	.2400	.7803	.8069	.8252	.8315	.8253	.8071	.7845
72	270	.2933	.6868	.7073	.7236	.7298	.7237	.7095	.6890
73	270	.3467	.5812	.5996	.6138	.6160	.6098	.5977	.5813
74	270	.4000	.4755	.4898	.5000	.5042	.5001	.4899	.4756
75*	315	.1333				.9597			
76	315	.2667	.8799	.8618	.8252	.7786	.7237	.6587	.5955
77	315	.4000	.6503	.6138	.5610	.5042	.4452	.3842	.3333
78	315	.5333	.3719	.3374	.2927	.2500	.2114	.1769	.1463
79	315	.6667	.1666	.1443	.1199	.0976	.0793	.0630	.0528

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(f) Model 6

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9464	.9684	.9859	.9906	.9814	.9647	.9476
2	0	.0267	.9485	.9688	.9850	.9872	.9749	.9567	.9303
3	0	.0533	.9525	.9728	.9871	.9872	.9749	.9526	.9242
4*	0	.0800				.9865			
5	0	.1067	.9667	.9810	.9891	.9852	.9668	.9384	.9059
6*	0	.1333				.9807			
7*	0	.1600				.9835			
8*	0	.1867				.9715			
9	0	.2133	.9850	.9891	.9871	.9648	.9384	.8998	.8592
10*	0	.2400				.9583			
11	0	.2667	.9850	.9891	.9810	.9486	.9201	.8754	.8348
12*	0	.2933				.9396			
13	0	.3200	.9850	.9850	.9647	.9263	.8957	.8510	.8043
14*	0	.3467				.9140			
15	0	.3733	.9789	.9647	.9363	.8958	.8632	.8124	.7657
16	0	.4000	.9667	.9505	.9200	.8734	.8389	.7921	.7454
17	0	.4267	.9505	.9302	.8957	.8470	.8124	.7657	.7231
18	0	.4533	.9221	.8936	.8571	.8064	.7718	.7292	.6885
19	0	.4800	.8632	.8327	.7921	.7455	.7129	.6743	.6398
20	0	.6400	.0812	.0528	.0427	.0366	.0366	.0366	.0366
21	0	.7733	.1320	.0914	.0508	.0244	.0223	.0223	.0223
22*	45	.1333				.9809			
23*	45	.2667				.9484			
24	45	.4000	.9180	.9119	.8977	.8653	.8368	.7962	.7576
25	90	.0267	.9383	.9627	.9810	.9852	.9770	.9607	.9363
26	90	.0533	.9403	.9627	.9810	.9852	.9770	.9607	.9343
27*	90	.0800				.9872			
28	90	.1067	.9455	.9658	.9841	.9883	.9801	.9638	.9394
29*	90	.1333				.9807			
30*	90	.1867				.9713			
31*	90	.2400				.9570			
32*	90	.2933				.9379			
33*	90	.3467				.9112			
34	90	.4000	.8397	.8580	.8723	.8744	.8683	.8520	.8316
35	90	.5333	.0386	.0386	.0386	.0427	.0386	.0407	.0407
36	90	.6667	.0224	.0224	.0224	.0224	.0224	.0224	.0224
37	90	.8000	.0366	.0325	.0305	.0285	.0305	.0325	.0346
38*	135	.1333				.9809			
39*	135	.2667				.9480			
40	135	.4000	.7645	.7991	.8357	.8683	.8866	.9008	.9049
41	180	.0267	.9353	.9597	.9821	.9903	.9821	.9720	.9496
42	180	.0533	.9292	.9556	.9800	.9903	.9842	.9760	.9557
43*	180	.0800				.9874			
44	180	.1067	.9129	.9414	.9699	.9863	.9862	.9821	.9699
45*	180	.1333				.9811			
46*	180	.1867				.9713			
47*	180	.2400				.9581			
48*	180	.2933				.9392			
49*	180	.3467				.9151			
50	180	.4000	.7503	.7889	.8316	.8805	.9069	.9374	.9577
51*	225	.1333				.9811			
52*	225	.2667				.9491			
53	225	.4000	.7686	.8031	.8397	.8764	.8967	.9150	.9211
54	270	.0267	.9434	.9678	.9861	.9903	.9801	.9659	.9415
55	270	.0533	.9455	.9678	.9861	.9903	.9801	.9659	.9415
56*	270	.0800				.9867			
57	270	.1067	.9414	.9658	.9821	.9863	.9781	.9618	.9394
58*	270	.1333				.9801			
59*	270	.1867				.9704			
60*	270	.2400				.9560			
61*	270	.2933				.9381			
62*	270	.3467				.9127			
63	270	.4000	.8418	.8601	.8743	.8785	.8703	.8561	.8398
64*	315	.1333				.9805			
65*	315	.2667				.9502			
66	315	.4000	.9251	.9231	.9089	.8785	.8500	.8113	.7727

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(g) Model 7

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9432	.9696	.9874	.9928	.9836	.9657	.9445
2	0	.0267	.9466	.9710	.9863	.9869	.9760	.9573	.9283
3	0	.0533	.9527	.9730	.9884	.9869	.9740	.9532	.9242
4*	0	.0800				.9883			
5	0	.1067	.9649	.9832	.9904	.9848	.9659	.9349	.8998
6*	0	.1333				.9812			
7*	0	.1600				.9844			
8*	0	.1867				.9693			
9	0	.2133	.9832	.9873	.9863	.9604	.9313	.8922	.8448
10*	0	.2400				.9521			
11	0	.2667	.9852	.9852	.9741	.9401	.9069	.8638	.8123
12*	0	.2933				.9271			
13	0	.3200	.9832	.9730	.9517	.9055	.8723	.8231	.7756
14	0	.3467	.9751	.9608	.9313	.8851	.8459	.7967	.7512
15	0	.3733	.9629	.9425	.9069	.8546	.8154	.7642	.7227
16	0	.4000	.9384	.9099	.8641	.8078	.7686	.7235	.6820
17	0	.4267	.8835	.8346	.7826	.7162	.6751	.6219	.5843
18	0	.4533	.7450	.6718	.5951	.5087	.4575	.4004	.3583
19	0	.4800	.5618	.4743	.3872	.3011	.2603	.2134	.1791
20	0	.5333	.2198	.1659	.1223	.0834	.0691	.0508	.0387
21	0	.6933	.1344	.0936	.0632	.0366	.0264	.0264	.0244
22	0	.8267	.1384	.1018	.0693	.0407	.0285	.0264	.0224
23*	45	.1333				.9810			
24*	45	.2667				.9389			
25	45	.4000	.8753	.8651	.8437	.8017	.7747	.7337	.6962
26	45	.5333	.1710	.1425	.1141	.0895	.0793	.0650	.0529
27	90	.0267	.9344	.9629	.9802	.9869	.9781	.9593	.9365
28	90	.0533	.9344	.9649	.9843	.9869	.9801	.9593	.9365
29*	90	.0800				.9885			
30	90	.1067	.9323	.9588	.9802	.9848	.9760	.9573	.9344
31*	90	.1333				.9812			
32*	90	.1867				.9687			
33*	90	.2400				.9508			
34*	90	.2933				.9254			
35	90	.3467	.9462	.8672	.8825	.8850	.8787	.8620	.8443
36	90	.4000	.7753	.7964	.8098	.8124	.8060	.7932	.7754
37	90	.5333	.0995	.0995	.0995	.0994	.0995	.0994	.0976
38	90	.6667	.0440	.0421	.0421	.0421	.0421	.0420	.0421
39	90	.8000	.0517	.0479	.0479	.0478	.0479	.0478	.0498
40*	135	.1333				.9812			
41*	135	.2667				.9398			
42	135	.4000	.6949	.7332	.7677	.8066	.8289	.8525	.8673
43	135	.5333	.0593	.0689	.0823	.1051	.1206	.1453	.1742
44	180	.0267	.9285	.9572	.9783	.9863	.9802	.9671	.9477
45	180	.0533	.9227	.9534	.9763	.9863	.9840	.9748	.9573
46*	180	.0800				.9885			
47	180	.1067	.9017	.9361	.9649	.9844	.9859	.9805	.9707
48*	180	.1333				.9812			
49*	180	.1867				.9691			
50*	180	.2400				.9521			
51*	180	.2933				.9271			
52	180	.3467	.7524	.7964	.8385	.8850	.9151	.9461	.9687
53	180	.4000	.6796	.7198	.7619	.8143	.8519	.8926	.9285
54*	225	.1333				.9799			
55*	225	.2667				.9398			
56	225	.4000	.6988	.7370	.7734	.8143	.8385	.8639	.8807
57	225	.5333	.0613	.0708	.0861	.1070	.1244	.1510	.1819
58	270	.0267	.9380	.9629	.9821	.9863	.9783	.9614	.9400
59	270	.0533	.9380	.9649	.9821	.9882	.9802	.9614	.9419
60*	270	.0800				.9876			
61	270	.1067	.9342	.9610	.9783	.9844	.9744	.9576	.9362
62*	270	.1333				.9797			
63*	270	.1867				.9672			
64*	270	.2400				.9502			
65*	270	.2933				.9252			
66	270	.3467	.8442	.8672	.8806	.8850	.8787	.8620	.8443
67	270	.4000	.7772	.7964	.8098	.8124	.8079	.7932	.7773
68*	315	.1333				.9803			
69*	315	.2667				.9411			
70	315	.4000	.8825	.8710	.8519	.8124	.7830	.7416	.7065
71	315	.5333	.1819	.1532	.1244	.0994	.0861	.0707	.0613

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(h) Model 8

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9411	.9676	.9859	.9906	.9821	.9650	.9421
2	0	.0267	.9462	.9706	.9869	.9870	.9768	.9564	.9279
3	0	.0533	.9523	.9747	.9869	.9870	.9727	.9482	.9197
4*	0	.0800				.9859			
5	0	.1067	.9666	.9829	.9890	.9809	.9625	.9299	.8973
6*	0	.1333				.9773			
7*	0	.1600				.9818			
8*	0	.1867				.9618			
9	0	.2133	.9829	.9849	.9788	.9523	.9176	.8707	.8341
10*	0	.2400				.9383			
11	0	.2667	.9829	.9808	.9604	.9197	.8809	.8299	.7872
12	0	.2933	.9808	.9686	.9400	.8973	.8564	.7993	.7586
13	0	.3200	.9706	.9523	.9135	.8606	.8157	.7626	.7158
14	0	.3467	.9462	.9115	.8605	.7892	.7382	.6729	.6240
15	0	.3733	.8993	.8483	.7810	.6974	.6362	.5608	.4996
16	0	.4000	.8360	.7688	.6933	.5975	.5302	.4527	.3854
17	0	.4267	.7484	.6709	.5852	.4874	.4201	.3487	.2937
18	0	.4533	.6627	.5832	.4955	.3956	.3365	.2712	.2182
19	0	.4800	.5526	.4710	.3895	.3059	.2529	.1978	.1529
20	0	.5333	.3467	.2814	.2223	.1631	.1285	.0958	.0693
21	0	.5867	.1876	.1448	.1101	.0755	.0571	.0408	.0306
22	0	.7467	.1366	.1040	.0754	.0489	.0367	.0224	.0286
23	0	.8800	.1366	.1040	.0754	.0510	.0367	.0245	.0286
24*	45	.1333				.9762			
25*	45	.2667				.9185			
26	45	.4000	.7463	.7076	.6546	.5894	.5404	.4812	.4262
27	45	.5333	.2794	.2406	.2039	.1652	.1407	.1142	.0938
28	90	.0267	.9360	.9604	.9808	.9850	.9768	.9584	.9360
29	90	.0533	.9339	.9625	.9808	.9850	.9768	.9604	.9360
30*	90	.0800				.9861			
31	90	.1067	.9299	.9584	.9768	.9829	.9747	.9564	.9320
32*	90	.1333				.9766			
33*	90	.1867				.9609			
34*	90	.2400				.9359			
35	90	.2933	.8524	.8748	.8911	.8973	.8870	.8707	.8524
36	90	.3467	.7594	.7798	.7912	.7965	.7871	.7728	.7566
37	90	.4000	.5777	.5900	.5995	.6030	.5954	.5852	.5730
38	90	.5333	.1674	.1674	.1692	.1711	.1672	.1672	.1652
39	90	.6667	.0531	.0510	.0510	.0530	.0510	.0510	.0510
40	90	.8000	.0531	.0510	.0510	.0530	.0510	.0510	.0510
41	90	.9333	.0551	.0531	.0510	.0530	.0530	.0530	.0551
42*	135	.1333				.9768			
43*	135	.2667				.9195			
44	135	.4000	.4287	.4818	.5363	.6050	.6484	.6974	.7382
45	135	.5333	.0939	.1164	.1407	.1772	.2039	.2406	.2773
46	180	.0267	.9288	.9554	.9768	.9880	.9808	.9686	.9483
47	180	.0533	.9227	.9533	.9768	.9900	.9849	.9747	.9564
48*	180	.0800				.9863			
49	180	.1067	.8962	.9329	.9625	.9839	.9849	.9829	.9707
50*	180	.1333				.9775			
51*	180	.1867				.9613			
52*	180	.2400				.9383			
53	180	.2933	.7594	.8043	.8503	.9024	.9299	.9604	.9768
54	180	.3467	.6226	.6757	.7321	.8067	.8503	.9033	.9422
55	180	.4000	.3879	.4491	.5241	.6193	.6831	.7626	.8341
56*	225	.1333				.9768			
57*	225	.2667				.9204			
58	225	.4000	.4389	.4899	.5485	.6172	.6627	.7178	.7586
59	225	.5333	.0980	.1184	.1448	.1833	.2100	.2488	.2896
60	270	.0267	.9370	.9636	.9808	.9880	.9788	.9604	.9381
61	270	.0533	.9370	.9656	.9829	.9880	.9788	.9604	.9401
62*	270	.0800				.9855			
63	270	.1067	.9329	.9595	.9768	.9839	.9747	.9564	.9340
64*	270	.1333				.9758			
65*	270	.1867				.9600			
66*	270	.2400				.9366			
67	270	.2933	.8574	.8799	.8931	.9004	.8931	.8768	.8606
68	270	.3467	.7635	.7819	.7953	.8005	.7932	.7810	.7668
69	270	.4000	.5859	.6002	.6077	.6152	.6077	.5975	.5894
70*	315	.1333				.9768			
71*	315	.2667				.9217			
72	315	.4000	.7553	.7186	.6688	.6070	.5567	.4955	.4425
73	315	.5333	.3001	.2593	.2182	.1772	.1529	.1244	.1020

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(i) Model 9

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9360	.9623	.9825	.9863	.9774	.9613	.9350
2	0	.0267	.9430	.9671	.9827	.9833	.9691	.9490	.9207
3*	0	.0533				.9830			
4	0	.0800	.9571	.9772	.9848	.9792	.9590	.9289	.8945
5*	0	.1067				.9742			
6*	0	.1333				.9669			
7*	0	.1600				.9721			
8*	0	.1867				.9437			
9	0	.2133	.9792	.9772	.9646	.9228	.8845	.8321	.7817
10	0	.2400	.9792	.9692	.9444	.8966	.8482	.7858	.7293
11	0	.2667	.9712	.9490	.9141	.8442	.7878	.7193	.6547
12	0	.2933	.9510	.9188	.8677	.7878	.7253	.6488	.5742
13	0	.3200	.9228	.8785	.8173	.7294	.6649	.5823	.5077
14	0	.3467	.8785	.8241	.7547	.6629	.5923	.5077	.4352
15	0	.3733	.8261	.7677	.6901	.5924	.5218	.4372	.3626
16	0	.4000	.7737	.7052	.6195	.5239	.4533	.3728	.3062
17	0	.4267	.7052	.6286	.5448	.4533	.3888	.3143	.2538
18	0	.4533	.5742	.5561	.5448	.5581	.6044	.5742	.5419
19	0	.4800	.5581	.4795	.4016	.3183	.2639	.2095	.1632
20	0	.5333	.4130	.3425	.2744	.2095	.1713	.1290	.0947
21	0	.5867	.2801	.2237	.1756	.1269	.1007	.0746	.0544
22	0	.6400	.1753	.1370	.1049	.0725	.0564	.0403	.0282
23	0	.8000	.1370	.1028	.0767	.0524	.0383	.0262	.0302
24	0	.9333	.1310	.1028	.0767	.0524	.0383	.0262	.0302
25*	45	.1333				.9667			
26	45	.2667	.9168	.9067	.8859	.8402	.7978	.7435	.6870
27	45	.4000	.6871	.6427	.5933	.5239	.4614	.4110	.3566
28	45	.5333	.3385	.2982	.2543	.2116	.1833	.1491	.1229
29	45	.6667	.1128	.0947	.0767	.0584	.0484	.0383	.0302
30	90	.0267	.9289	.9571	.9767	.9812	.9711	.9550	.9267
31*	90	.0533				.9835			
32	90	.0800	.9289	.9550	.9747	.9792	.9691	.9530	.9247
33*	90	.1067				.9747			
34*	90	.1333				.9669			
35*	90	.1867				.9430			
36	90	.2400	.8483	.8724	.8919	.8966	.8865	.8704	.8461
37	90	.2933	.7556	.7737	.7890	.7898	.7857	.7697	.7474
38	90	.3467	.6327	.6528	.6639	.6649	.6608	.6468	.6306
39	90	.4000	.5037	.5158	.5247	.5279	.5218	.5158	.5016
40	90	.5333	.2272	.2295	.2318	.2335	.2294	.2274	.2233
41	90	.6667	.0608	.0609	.0610	.0609	.0609	.0609	.0609
42	90	.8000	.0548	.0528	.0529	.0528	.0529	.0528	.0528
43	90	.9333	.0568	.0548	.0549	.0548	.0548	.0548	.0548
44*	135	.1333				.9678			
45	135	.2667	.6937	.7452	.7992	.8489	.8771	.9036	.9136
46	135	.4000	.3610	.4142	.4738	.5422	.5868	.6396	.6822
47	135	.5333	.1258	.1523	.1830	.2234	.2558	.2965	.3370
48	135	.6667	.0304	.0386	.0508	.0629	.0772	.0914	.1117
49	180	.0267	.9208	.9503	.9741	.9848	.9766	.9665	.9441
50*	180	.0533				.9843			
51	180	.0800	.8985	.9320	.9660	.9848	.9807	.9787	.9603
52*	180	.1067				.9753			
53*	180	.1333				.9680			
54*	180	.1867				.9452			
55	180	.2400	.8823	.8813	.8826	.8833	.8731	.8772	.8791
56	180	.2933	.5801	.6498	.7260	.8061	.8609	.9137	.9502
57	180	.3467	.4401	.5117	.5918	.6863	.7533	.8264	.8852
58	180	.4000	.3103	.3756	.4535	.5482	.6193	.7005	.7756
59*	225	.1333				.9673			
60	225	.2667	.6957	.7493	.8033	.8528	.8832	.9117	.9238
61	225	.4000	.3671	.4224	.4820	.5503	.5990	.6518	.6964
62	225	.5333	.1298	.1543	.1871	.2295	.2640	.3046	.3492
63	225	.6667	.0325	.0406	.0508	.0650	.0792	.0975	.1178
64	270	.0267	.9310	.9584	.9782	.9848	.9726	.9564	.9299
65*	270	.0533				.9835			
66	270	.0800	.9290	.9564	.9761	.9808	.9705	.9544	.9299
67*	270	.1067				.9740			
68*	270	.1333				.9660			
69*	270	.1867				.9430			
70	270	.2400	.8519	.8772	.8948	.8995	.8913	.8752	.8527
71	270	.2933	.7636	.7818	.7992	.8021	.7959	.7818	.7613
72	270	.3467	.6430	.6620	.6752	.6802	.6741	.6620	.6456
73	270	.4000	.5132	.5259	.5389	.5422	.5381	.5259	.5137
74*	315	.1333				.9665			
75	315	.2667	.9188	.9137	.8948	.8508	.8081	.7493	.6964
76	315	.4000	.6937	.6538	.6020	.5381	.4832	.4224	.3654
77	315	.5333	.3489	.3086	.2644	.2193	.1888	.1543	.1279
78	315	.6667	.1176	.0975	.0793	.0609	.0508	.0406	.0325

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(j) Model 10

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9995	.9979	.9979	.9979	.9979	.9979	.9979
2*	0	.0267				.9964			
3	0	.0533	.9603	.9821	.9922	.9883	.9720	.9416	.9053
4*	0	.0800				.9859			
5*	0	.1067				.9762			
6*	0	.1333				.9610			
7*	0	.1600				.9629			
8	0	.1867	.9866	.9821	.9497	.9032	.8465	.7817	.7108
9	0	.2133	.9846	.9639	.9213	.8668	.8019	.7290	.6501
10	0	.2400	.9724	.9375	.8910	.8242	.7513	.6743	.5954
11	0	.2667	.9522	.9072	.8444	.7756	.7027	.6217	.5387
12	0	.2933	.9218	.8667	.7958	.7230	.6460	.5589	.4840
13	0	.3200	.8894	.8241	.7553	.6744	.5913	.5063	.4273
14	0	.3467	.8407	.7735	.6986	.6015	.5285	.4496	.3747
15	0	.3733	.7921	.7188	.6419	.5508	.4718	.3929	.3281
16	0	.4000	.7435	.6682	.5872	.5002	.4192	.3463	.2815
17	0	.4267	.6888	.6075	.5285	.4496	.3746	.3038	.2450
18	0	.4533	.5693	.5528	.5447	.6379	.5447	.5650	.5974
19	0	.4800	.5652	.4880	.4090	.3382	.2754	.2187	.1742
20	0	.5333	.4477	.3766	.3098	.2450	.1944	.1519	.1154
21	0	.5867	.3424	.2835	.2248	.1762	.1357	.1013	.0749
22	0	.6400	.2512	.2005	.1559	.1175	.0891	.0648	.0486
23	0	.6933	.1742	.1357	.1033	.0770	.0587	.0405	.0304
24	0	.8667	.1357	.1033	.0769	.0547	.0405	.0284	.0324
25	0	1.0000	.1317	.1012	.0769	.0527	.0405	.0284	.0324
26*	45	.1333				.9597			
27	45	.2667	.8731	.8545	.8221	.7736	.7189	.6541	.5893
28	45	.4000	.6564	.6115	.5609	.5063	.4455	.3848	.3301
29	45	.5333	.3748	.3341	.2896	.2471	.2086	.1742	.1438
30	45	.6667	.1681	.1438	.1195	.0952	.0790	.0628	.0506
31*	90	.0267				.9968			
32	90	.0533	.9258	.9578	.9821	.9863	.9781	.9578	.9296
33*	90	.0800				.9861			
34*	90	.1067				.9764			
35*	90	.1333				.9603			
36	90	.1867	.8509	.8808	.8991	.9053	.8971	.8789	.8506
37	90	.2400	.7739	.7938	.8160	.8242	.8161	.7958	.7736
38	90	.2933	.6827	.7047	.7188	.7230	.7128	.7027	.6805
39	90	.3467	.5774	.5933	.6095	.6096	.6055	.5933	.5711
40	90	.4000	.4842	.4996	.5077	.5098	.5057	.4956	.4815
41	90	.5333	.2391	.2427	.2468	.2488	.2468	.2427	.2347
42	90	.6667	.0972	.0971	.0971	.0971	.0971	.0951	.0951
43	90	.8000	.0567	.0566	.0566	.0566	.0566	.0566	.0566
44	90	.9333	.0547	.0546	.0546	.0546	.0546	.0546	.0546
45*	135	.1333				.9608			
46	135	.2667	.5895	.6533	.7180	.7748	.8192	.8516	.8739
47	135	.4000	.3343	.3863	.4450	.5078	.5623	.6109	.6514
48	135	.5333	.1438	.1739	.2124	.2488	.2893	.3297	.3742
49	135	.6667	.0527	.0647	.0809	.0991	.1193	.1416	.1679
50*	180	.0267				.9568			
51	180	.0533	.8975	.9385	.9729	.9892	.9912	.9811	.9609
52*	180	.0800				.9874			
53*	180	.1067				1.0075			
54*	180	.1333				.9616			
55	180	.1867	.7091	.7807	.8515	.9103	.9467	.9750	.9852
56	180	.2400	.5956	.6735	.7544	.8294	.8880	.9325	.9649
57	180	.2933	.4822	.5623	.6472	.7303	.8030	.8637	.9144
58	180	.3467	.3768	.4490	.5320	.6170	.6938	.7707	.8375
59	180	.4000	.2836	.3479	.4248	.5078	.5866	.6635	.7384
60*	225	.1333				.9614			
61	225	.2667	.5895	.6553	.7201	.7788	.8253	.8577	.8800
62	225	.4000	.3343	.3863	.4470	.5098	.5644	.6129	.6595
63	225	.5333	.1459	.1760	.2124	.2529	.2933	.3338	.3783
64	225	.6667	.0506	.0627	.0809	.0991	.1193	.1436	.1719
65*	270	.0267				.9966			
66	270	.0533	.9299	.9608	.9830	.9892	.9811	.9649	.9326
67*	270	.0800				.9867			
68*	270	.1067				.9764			
69*	270	.1333				.9618			
70	270	.1867	.8529	.8799	.9021	.9103	.9022	.8860	.8577
71	270	.2400	.7779	.8050	.8232	.8294	.8233	.8071	.7829
72	270	.2933	.6847	.7079	.7241	.7303	.7242	.7100	.6878
73	270	.3467	.5814	.5987	.6129	.6170	.6129	.6008	.5846
74	270	.4000	.4761	.4915	.5016	.5057	.5017	.4936	.4794
75*	315	.1333				.9603			
76	315	.2667	.8813	.8596	.8252	.7788	.7221	.6594	.5968
77	315	.4000	.6584	.6169	.5663	.5078	.4470	.3904	.3358
78	315	.5333	.3788	.3358	.2933	.2508	.2124	.1760	.1457
79	315	.6667	.1722	.1456	.1214	.0991	.0809	.0647	.0526

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(k) Model 11

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9339	.9703	.9942	1.0000	.9928	.9708	.9308
2	0	.0267	.9482	.9847	.9990	1.0010	.9867	.9603	.9157
3	0	.0533	.9563	.9867	.9990	.9949	.9766	.9461	.8994
4*	0	.0800				.9518			
5	0	.1067	.9787	.9948	.9969	.9848	.9563	.9177	.8608
6*	0	.1333				.9785			
7*	0	.1600				.9698			
8*	0	.1867				.9588			
9	0	.2133	.9990	.9928	.9746	.9462	.8974	.8426	.7756
10*	0	.2400				.9324			
11	0	.2667	.9969	.9806	.9523	.9178	.8608	.7999	.7268
12	0	.2933	.9909	.9705	.9401	.9015	.8426	.7776	.7045
13	0	.3200	.9848	.9603	.9259	.8853	.8243	.7593	.6842
14	0	.3467	.9746	.9441	.9076	.8650	.8020	.7370	.6598
15	0	.3733	.9584	.9278	.8893	.8426	.7796	.7126	.6355
16	0	.4000	.9421	.9055	.8650	.8183	.7532	.6862	.6091
17	0	.4267	.9198	.8812	.8386	.7898	.7268	.6598	.5847
18	0	.4533	.8893	.8466	.8041	.7553	.6964	.6314	.5583
19	0	.4800	.8426	.8020	.7594	.7167	.6598	.6030	.5340
20	0	.6400	.1137	.0812	.0609	.0487	.0386	.0345	.0386
21	0	.7733	.1320	.0934	.0629	.0447	.0305	.0223	.0264
22*	45	.1333				.9792			
23*	45	.2667				.9164			
24	45	.4000	.8832	.8690	.8447	.8122	.7634	.7086	.6456
25	90	.0267	.9299	.9725	.9909	.9969	.9888	.9664	.9258
26	90	.0533	.9299	.9725	.9929	.9969	.9867	.9664	.9258
27*	90	.0800				.9929			
28	90	.1067	.9218	.9624	.9827	.9868	.9786	.9542	.9177
29*	90	.1333				.9794			
30*	90	.1867				.9592			
31*	90	.2400				.9313			
32	90	.2933	.8426	.8751	.8934	.8995	.8893	.8649	.8345
33	90	.3467	1.1192	1.1428	1.1551	1.1571	1.1510	1.1367	1.1163
34	90	.4000	.7631	.7904	.8088	.8129	.8026	.7843	.7537
35	90	.6400	.0468	.0428	.0448	.0428	.0428	.0428	.0428
36	90	.7733	.0468	.0428	.0428	.0428	.0428	.0428	.0407
37*	135	.1333				.9805			
38*	135	.2667				.9164			
39	135	.4000	.6532	.7171	.7701	.8108	.8413	.8617	.8719
40	180	.0267	.9198	.9635	.9901	1.0003	.9961	.9778	.9432
41	180	.0533	.9035	.9534	.9840	.9982	1.0002	.9839	.9554
42*	180	.0800				.9938			
43	180	.1067	.8669	.9228	.9636	.9901	1.0002	.9921	.9737
44*	180	.1333				.9810			
45*	180	.1867				.9599			
46*	180	.2400				.9327			
47	180	.2933	.7082	.7822	.8495	.9005	.9391	.9635	.9819
48	180	.3467	.6634	.7395	.8067	.8557	.9045	.9391	.9635
49	180	.4000	.6166	.6885	.7579	.8129	.8617	.9004	.9330
50*	225	.1333				.9801			
51*	225	.2667				.9159			
52	225	.4000	.6512	.7150	.7701	.8129	.8454	.8658	.8821
53	270	.0267	.9340	.9737	.9942	1.0003	.9921	.9697	.9310
54	270	.0533	.9300	.9717	.9921	.9982	.9900	.9676	.9289
55*	270	.0800				.9924			
56	270	.1067	.9198	.9615	.9799	.9860	.9778	.9554	.9167
57*	270	.1333				.9780			
58*	270	.1867				.9579			
59*	270	.2400				.9313			
60	270	.2933	.8404	.8739	.8923	.9005	.8922	.8719	.8393
61	270	.3467	.8058	.8372	.8556	.8617	.8535	.8352	.8047
62	270	.4000	.7611	.7904	.8088	.8149	.8067	.7884	.7598
63*	315	.1333				.9782			
64*	315	.2667				.9146			
65	315	.4000	.8832	.8678	.8455	.8149	.7680	.7150	.6539

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(l) Model 12

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9397	.9781	.9974	1.0021	.9888	.9757	.9378
2	0	.0267	.9502	.9867	1.0015	1.0034	.9892	.9644	.9235
3	0	.0533	.9604	.9908	.9994	.9573	.9791	.9501	.9031
4*	0	.0800				.9918			
5	0	.1067	.9808	1.0010	.9974	.9851	.9546	.9195	.8644
6*	0	.1333				.9769			
7*	0	.1600				.9675			
8*	0	.1867				.9546			
9	0	.2133	.9971	.9929	.9689	.9403	.8936	.8441	.7808
10*	0	.2400				.9232			
11	0	.2667	.9950	.9725	.9424	.9037	.8488	.7931	.7298
12	0	.2933	.9848	.9582	.9221	.8793	.8223	.7646	.7013
13	0	.3200	.9726	.9399	.8997	.8528	.7938	.7360	.6727
14	0	.3467	.9543	.9113	.8651	.8141	.7531	.6953	.6320
15	0	.3733	.9216	.8726	.8203	.7653	.7002	.6402	.5790
16	0	.4000	.8686	.8114	.7491	.6879	.6188	.5648	.5076
17	0	.4267	.7911	.7197	.6473	.5760	.5028	.4445	.3914
18	0	.4533	.7014	.6239	.5475	.4722	.3949	.3344	.2874
19	0	.4800	.5974	.5219	.4437	.3745	.3033	.2508	.2100
20	0	.5333	.3874	.3180	.2605	.2096	.1588	.1244	.0979
21	0	.5867	.2182	.1713	.1323	.1018	.0733	.0530	.0387
22	0	.6400	.1325	.1019	.0733	.0529	.0366	.0265	.0245
23	0	.6933	.1285	.0979	.0712	.0509	.0346	.0245	.0265
24	0	.8267	.1325	.1019	.0733	.0509	.0346	.0224	.0265
25	0	.9600	.1305	.0999	.0733	.0550	.0366	.0265	.0265
26*	45	.1333				.9771			
27	45	.2667	.9461	.9439	.9241	.8996	.8569	.8115	.7584
28	45	.4000	.8034	.7727	.7348	.6920	.6432	.5954	.5463
29	45	.5333	.3303	.2875	.2504	.2137	.1771	.1488	.1223
30	90	.0267	.9359	.9745	.9933	.9994	.9892	.9705	.9337
31	90	.0533	.9359	.9745	.9933	.9994	.9892	.9705	.9337
32*	90	.0800				.9932			
33	90	.1067	.9257	.9623	.9811	.9871	.9770	.9583	.9235
34*	90	.1333				.9771			
35*	90	.1867				.9530			
36*	90	.2400				.9197			
37	90	.2933	.8278	.8563	.8712	.8732	.8671	.8522	.8236
38	90	.3467	.7707	.7931	.8061	.8101	.8040	.7911	.7645
39	90	.4000	.7947	.8077	.8178	.8198	.8158	.8069	.7884
40	90	.5333	.2028	.2050	.2085	.2085	.2065	.2048	.2007
41	90	.6667	.0512	.0492	.0511	.0511	.0511	.0512	.0512
42	90	.8000	.0533	.0513	.0511	.0511	.0511	.0512	.0532
43	90	.9333	.0553	.0533	.0552	.0552	.0532	.0553	.0553
44*	135	.1333				.9796			
45	135	.2667	.7639	.8200	.8669	.9016	.9262	.9380	.9419
46	135	.4000	.5428	.5925	.6379	.6849	.7299	.7659	.7945
47	135	.5333	.1208	.1435	.1738	.2065	.2413	.2785	.3194
48	180	.0267	.9237	.9656	.9916	1.0018	.9978	.9851	.9501
49	180	.0533	.9073	.9533	.9855	1.0018	1.0018	.9912	.9624
50*	180	.0800				.9945			
51	180	.1067	.8705	.9226	.9650	.9895	1.0018	.9974	.9829
52*	180	.1333				.9794			
53*	180	.1867				.9551			
54*	180	.2400				.9225			
55	180	.2933	.7046	.7667	.8281	.8791	.9221	.9544	.9788
56	180	.3467	.6349	.6950	.7565	.8116	.8649	.9093	.9481
57	180	.4000	.5059	.5597	.6216	.6808	.7463	.8090	.8682
58*	225	.1333				.9785			
59	225	.2667	.7599	.8159	.8649	.9016	.9282	.9421	.9481
60	225	.4000	.5366	.5963	.6359	.6828	.7258	.7659	.8006
61	225	.5333	.1167	.1394	.1717	.2044	.2392	.2785	.3235
62	270	.0267	.9380	.9759	.9978	1.0018	.9937	.9728	.9358
63	270	.0533	.9360	.9759	.9957	.9957	.9916	.9728	.9358
64*	270	.0800				.9929			
65	270	.1067	.9257	.9636	.9814	.9875	.9814	.9625	.9256
66*	270	.1333				.9773			
67*	270	.1867				.9539			
68*	270	.2400				.9223			
69	270	.2933	.8254	.8549	.8730	.8791	.8710	.8581	.8293
70	270	.3467	.7660	.7913	.8076	.8137	.8056	.7946	.7699
71	270	.4000	.6472	.6683	.6808	.6849	.6808	.6717	.6532
72*	315	.1333				.9771			
73	315	.2667	.9483	.9431	.9262	.9016	.8608	.8171	.7617
74	315	.4000	.7947	.7626	.7258	.6849	.6359	.5898	.5426
75	315	.5333	.3175	.2768	.2413	.2085	.1738	.1434	.1208

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(m) Model 13

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9379	.9739	.9959	1.0008	.9936	.9743	.9386
2	0	.0267	.9511	.9835	.9997	1.0018	.9875	.9622	.9226
3*	0	.0533				.9965			
4	0	.0800	.9714	.9936	.9997	.9896	.9652	.9297	.8820
5*	0	.1067				.9825			
6*	0	.1333				.9725			
7*	0	.1600				.9595			
8*	0	.1867				.9457			
9	0	.2133	.9916	.9855	.9572	.9246	.8740	.8181	.7604
10	0	.2400	.9896	.9713	.9389	.9002	.8435	.7856	.7259
11	0	.2667	.9815	.9551	.9146	.8656	.8070	.7450	.6833
12	0	.2933	.9653	.9267	.8781	.8230	.7563	.6882	.6265
13	0	.3200	.9389	.8882	.8294	.7661	.6894	.6192	.5535
14	0	.3467	.8943	.8293	.7605	.6868	.6043	.5237	.4582
15	0	.3733	.8436	.7685	.6935	.6157	.5292	.4486	.3812
16	0	.4000	.7828	.7057	.6266	.5466	.4583	.3796	.3163
17	0	.4267	.7219	.6428	.5658	.4877	.4035	.3289	.2676
18	0	.4533	.6449	.5637	.4867	.4125	.3366	.2700	.2149
19	0	.4800	.5719	.4907	.4137	.3454	.2778	.2172	.1723
20	0	.5333	.4238	.3508	.2880	.2337	.1805	.1360	.1034
21	0	.5867	.3001	.2433	.1926	.1524	.1136	.0812	.0608
22	0	.6400	.1886	.1501	.1136	.0853	.0629	.0426	.0304
23	0	.6933	.1359	.1054	.0771	.0569	.0426	.0264	.0264
24	0	.8267	.1338	.1014	.0750	.0549	.0385	.0244	.0264
25	0	.9600	.1298	.1014	.0730	.0549	.0385	.0244	.0264
26*	45	.1333				.9727			
27	45	.2667	.9267	.9186	.8943	.8616	.8172	.7653	.7137
28	45	.4000	.7016	.6570	.6063	.5507	.4846	.4222	.3690
29	45	.5333	.3569	.3163	.2738	.2357	.1947	.1604	.1338
30	45	.6667	.1278	.1054	.0872	.0711	.0568	.0426	.0345
31	90	.0267	.9349	.9713	.9916	.9977	.9895	.9683	.9347
32*	90	.0533				.9974			
33	90	.0800	.9288	.9652	.9876	.9916	.9855	.9622	.9286
34*	90	.1067				.9837			
35*	90	.1333				.9727			
36*	90	.1867				.9453			
37	90	.2400	.8477	.8780	.8943	.8981	.8902	.8729	.8455
38	90	.2933	.7767	.8030	.8172	.8209	.8131	.7978	.7745
39	90	.3467	.6550	.6732	.6854	.6868	.6813	.6679	.6509
40	90	.4000	.6821	.6930	.6984	.7003	.6983	.6889	.6800
41	90	.5333	.2253	.2296	.2335	.2354	.2314	.2256	.2233
42	90	.6667	.0670	.0650	.0670	.0690	.0670	.0650	.0670
43	90	.8000	.0548	.0528	.0548	.0548	.0548	.0528	.0548
44	90	.9333	.0548	.0528	.0548	.0548	.0548	.0528	.0568
45*	135	.1333				.9745			
46	135	.2667	.7227	.7804	.8303	.8687	.9013	.9186	.9297
47	135	.4000	.3796	.4369	.4994	.5541	.6131	.6605	.7044
48	135	.5333	.1401	.1687	.2050	.2395	.2801	.3191	.3633
49	180	.0267	.9217	.9633	.9907	1.0007	.9988	.9836	.9520
50*	180	.0533				.9979			
51	180	.0800	.8851	.9348	.9724	.9946	1.0008	.9938	.9743
52*	180	.1053				.9844			
53*	180	.1307				.9743			
54*	180	.1867				.9439			
55	180	.2400	.7309	.7906	.8527	.9012	.9440	.9694	.9906
56	180	.2933	.6314	.6950	.7633	.8241	.8831	.9267	.9642
57	180	.3467	.4730	.5406	.6192	.6942	.7714	.8373	.8992
58	180	.4000	.3269	.3922	.4710	.5521	.6374	.7154	.7916
59*	225	.1333				.9734			
60	225	.2667	.7207	.7763	.8263	.8667	.9013	.9206	.9337
61	225	.4000	.3756	.4308	.4933	.5521	.6110	.6625	.7105
62	225	.5333	.1360	.1666	.2030	.2375	.2781	.3211	.3674
63	225	.6667	.0345	.0427	.0548	.0690	.0853	.1036	.1279
64	270	.0267	.9379	.9735	.9948	1.0007	.9927	.9735	.9378
65*	270	.0533				.9963			
66	270	.0800	.9298	.9653	.9866	.9925	.9846	.9653	.9317
67*	270	.1053				.9828			
68*	270	.1333				.9725			
69*	270	.1867				.9441			
70	270	.2400	.8466	.8779	.8953	.9012	.8932	.8779	.8505
71	270	.2933	.7755	.8027	.8181	.8241	.8181	.8027	.7815
72	270	.3467	.6557	.6747	.6882	.6942	.6902	.6767	.6597
73	270	.4000	.5217	.5365	.5481	.5521	.5481	.5385	.5278
74*	315	.1333				.9729			
75	315	.2667	.9278	.9186	.8973	.8667	.8201	.7702	.7186
76	315	.4000	.7004	.6544	.6050	.5501	.4852	.4247	.3735
77	315	.5333	.3573	.3130	.2741	.2354	.1969	.1605	.1340
78	315	.6667	.1238	.1016	.0832	.0690	.0548	.0406	.0325

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(n) Model 14

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9382	.9739	.9977	1.0026	.9940	.9749	.9398
2	0	.0267	.9533	.9840	1.0024	1.0028	.9880	.9615	.9225
3*	0	.0533				.9964			
4	0	.0800	.9758	.9943	1.0003	.9885	.9615	.9246	.8734
5*	0	.1067				.9780			
6*	0	.1333				.9625			
7*	0	.1600				.9416			
8*	0	.1867				.9124			
9	0	.2133	.9860	.9677	.9267	.8759	.8060	.7344	.6607
10	0	.2400	.9737	.9431	.8899	.8329	.7569	.6792	.6034
11	0	.2667	.9533	.9083	.8489	.7838	.7017	.6219	.5461
12	0	.2933	.9226	.8674	.7998	.7286	.6423	.5605	.4827
13	0	.3200	.8858	.8224	.7487	.6753	.5830	.4991	.4234
14	0	.3467	.8428	.7713	.6935	.6180	.5278	.4419	.3682
15	0	.3733	.7958	.7201	.6403	.5628	.4725	.3928	.3232
16	0	.4000	.7426	.6628	.5851	.5075	.4214	.3457	.2782
17	0	.4267	.6812	.5994	.5196	.4461	.3682	.2966	.2373
18	0	.4533	.6219	.5401	.4603	.3909	.3171	.2516	.1984
19	0	.4800	.5646	.4849	.4091	.3418	.2721	.2148	.1677
20	0	.5333	.4500	.3764	.3109	.2538	.1964	.1514	.1145
21	0	.5867	.3396	.2803	.2250	.1780	.1350	.1023	.0736
22	0	.6400	.2557	.2066	.1616	.1248	.0941	.0675	.0491
23	0	.6933	.1759	.1391	.1064	.0798	.0593	.0409	.0307
24	0	.8267	.1330	.1023	.0757	.0573	.0409	.0286	.0266
25	0	.9600	.1289	.0982	.0736	.0553	.0389	.0266	.0266
26*	45	.1333				.9632			
27	45	.2667	.8837	.8633	.8244	.7797	.7180	.6567	.5932
28	45	.4000	.6587	.6137	.5646	.5116	.4460	.3846	.3314
29	45	.5333	.3805	.3376	.2966	.2558	.2148	.1780	.1473
30	45	.6667	.1800	.1534	.1268	.1064	.0859	.0675	.0532
31	90	.0267	.9349	.9717	.9942	1.0007	.9921	.9717	.9368
32*	90	.0533				.9571			
33	90	.0800	.9287	.9636	.9880	.9926	.9840	.9615	.9287
34*	90	.1067				.9791			
35*	90	.1333				.9635			
36*	90	.1867				.9117			
37	90	.2400	.7835	.8122	.8305	.8329	.8264	.8080	.7814
38	90	.2933	.6873	.7119	.7242	.7265	.7221	.7057	.6812
39	90	.3467	.5789	.5994	.6116	.6139	.6096	.5973	.5789
40	90	.4000	.4787	.4971	.5053	.5075	.5032	.4910	.4746
41	90	.5333	.4925	.4966	.4986	.4988	.4986	.4980	.4960
42	90	.6667	.1022	.1022	.1042	.1043	.1042	.1041	.1041
43	90	.8000	.0531	.0531	.0531	.0531	.0531	.0551	.0571
44	90	.9333	.0531	.0531	.0531	.0531	.0531	.0551	.0551
45*	135	.1333				.9658			
46	135	.2667	.6048	.6723	.7336	.7850	.8317	.8654	.8899
47	135	.4000	.3372	.3944	.4557	.5111	.5701	.6185	.6613
48	135	.5333	.1492	.1819	.2207	.2555	.3024	.3449	.3878
49	135	.6667	.0531	.0674	.0858	.1043	.1287	.1551	.1837
50	180	.0267	.9195	.9605	.9890	1.0017	.9992	.9859	.9552
51*	180	.0533				.9577			
52	180	.0800	.8766	.9278	.9665	.9914	1.0013	1.0001	.9817
53*	180	.1067				.9796			
54*	180	.1333				.9637			
55*	180	.1867				.9117			
56	180	.2400	.6110	.6907	.7683	.8340	.8970	.9450	.9797
57	180	.2933	.4884	.5701	.6539	.7298	.8092	.8736	.9286
58	180	.3467	.3739	.4496	.5354	.6153	.7050	.7797	.8490
59	180	.4000	.2840	.3535	.4291	.5070	.5926	.6715	.7490
60*	225	.1333				.9630			
61	225	.2667	.5987	.6662	.7295	.7829	.8317	.8695	.8939
62	225	.4000	.3331	.3883	.4495	.5070	.5681	.6185	.6654
63	225	.5333	.1471	.1798	.2166	.2555	.2983	.3429	.3898
64	225	.6667	.0531	.0674	.0838	.1022	.1267	.1551	.1837
65	270	.0267	.9359	.9727	.9951	1.0017	.9931	.9736	.9388
66*	270	.0533				.9966			
67	270	.0800	.9277	.9625	.9849	.9894	.9829	.9634	.9286
68*	270	.1067				.9782			
69*	270	.1333				.9628			
70*	270	.1867				.9117			
71	270	.2400	.7806	.8092	.8296	.8340	.8276	.8103	.7837
72	270	.2933	.6845	.7071	.7254	.7277	.7234	.7083	.6878
73	270	.3467	.5803	.5987	.6130	.6174	.6110	.6001	.5837
74	270	.4000	.4781	.4945	.5047	.5070	.5027	.4939	.4817
75*	315	.1333				.9625			
76	315	.2667	.8827	.8603	.8255	.7809	.7213	.6613	.5980
77	315	.4000	.6539	.6110	.5619	.5111	.4455	.3878	.3327
78	315	.5333	.3780	.3331	.2922	.2535	.2125	.1776	.1469
79	315	.6667	.1757	.1471	.1226	.1022	.0817	.0674	.0531

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(o) Model 15

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9336	.9746	.9993	1.0055	.9924	.9703	.9258
2	0	.0267	.9489	.9865	1.0029	1.0029	.9865	.9557	.9045
3*	0	.0533				.9993			
4	0	.0800	.9839	1.0008	.9988	.9906	.9619	.9208	.8696
5*	0	.1067				.9815			
6*	0	.1333				.9679			
7*	0	.1600				.9538			
8*	0	.1867				.9330			
9	0	.2133	1.0024	.9844	.9537	.9106	.8430	.7711	.6953
10	0	.2400	.9982	.9721	.9332	.8881	.8142	.7383	.6604
11	0	.2667	.9880	.9577	.9147	.8635	.7855	.7096	.6297
12	0	.2933	.9757	.9393	.8901	.8348	.7527	.6727	.5927
13	0	.3200	.9592	.9167	.8635	.8060	.7199	.6378	.5579
14	0	.3467	.9407	.8921	.8368	.7732	.6850	.6009	.5189
15	0	.3733	.3060	.3056	.3056	.3056	.3056	.3056	.3056
16	0	.4000	.8914	.8367	.7753	.7055	.6153	.5332	.4533
17	0	.4267	.8647	.8080	.7445	.6748	.5804	.4963	.4184
18	0	.4533	.8339	.7773	.7117	.6420	.5497	.4655	.3897
19	0	.4800	.7970	.7404	.6748	.6030	.5107	.4286	.3569
20	0	.5333	.6860	.6419	.5927	.5333	.4471	.3692	.3015
21	0	.6667	.1089	.0861	.0697	.0574	.0451	.0349	.0328
22	0	.8000	.1273	.0943	.0697	.0533	.0390	.0287	.0308
23*	45	.1333				.9665			
24	45	.2667	.9264	.9147	.8901	.8573	.7978	.7363	.6686
25	45	.4000	.8175	.7896	.7507	.7055	.6379	.5722	.5045
26	45	.5333	.6203	.6009	.5702	.5292	.4635	.4040	.3466
27	90	.0267	.9284	.9701	.9968	1.0029	.9906	.9660	.9209
28*	90	.0533				.9991			
29	90	.0800	.9181	.9598	.9865	.9927	.9804	.9557	.9127
30*	90	.1067				.9799			
31*	90	.1333				.9658			
32*	90	.1867				.9298			
33	90	.2400	.8216	.8552	.8778	.8799	.8717	.8491	.8122
34	90	.2933	.7723	.8019	.8204	.8266	.8163	.7957	.7609
35	90	.3467	.7148	.7424	.7609	.7659	.7548	.7363	.7055
36	90	.4000	.6552	.6809	.6953	.6994	.6912	.6727	.6440
37	90	.5333	.6491	.6529	.6679	.6699	.6625	.6522	.6338
38	90	.6667	.0513	.0493	.0553	.0553	.0513	.0513	.0492
39	90	.8000	.0492	.0452	.0512	.0512	.0492	.0472	.0451
40*	135	.1333				.9674			
41	135	.2667	.6812	.7473	.8113	.8564	.8922	.9126	.9209
42	135	.4000	.5150	.5790	.6474	.7007	.7507	.7855	.8101
43	135	.5333	.3549	.4086	.4692	.5204	.5640	.5906	.6112
44	180	.0267	.9110	.9588	.9916	1.0039	1.0009	.9803	.9414
45*	180	.0533				.9998			
46	180	.0800	.8617	.9178	.9690	.9936	1.0050	.9967	.9742
47*	180	.1067				.9818			
48*	180	.1333				.9679			
49*	180	.1867				.9323			
50	180	.2400	.6709	.7453	.8256	.8830	.9353	.9680	.9886
51	180	.2933	.6032	.6796	.7621	.8277	.8922	.9352	.9681
52	180	.3467	.5293	.6057	.6925	.7642	.8368	.8901	.9353
53	180	.4000	.4657	.5400	.6249	.6566	.7773	.8388	.8901
54*	225	.1333				.9679			
55	225	.2667	.6832	.7473	.8113	.8584	.8983	.9147	.9250
56	225	.4000	.5150	.5790	.6433	.7007	.7548	.7896	.8163
57	225	.5333	.3549	.4086	.4712	.5204	.5661	.5947	.6174
58	270	.0267	.9294	.9732	.9977	1.0039	.9927	.9680	.9229
59*	270	.0533				.9993			
60	270	.0800	.9212	.9609	.9875	.9935	.9824	.9557	.9127
61*	270	.1067				.9808			
62*	270	.1333				.9667			
63*	270	.1867				.9305			
64	270	.2400	.8227	.8562	.8789	.8850	.8737	.8532	.8183
65	270	.2933	.7714	.8007	.8236	.8297	.8204	.7978	.7650
66	270	.3467	.7160	.7432	.7621	.7683	.7589	.7404	.7076
67	270	.4000	.6524	.6775	.6966	.7027	.6953	.6788	.6502
68*	315	.1333				.9663			
69	315	.2667	.9294	.9157	.8932	.8605	.8019	.7383	.6727
70	315	.4000	.8186	.7884	.7519	.7068	.6379	.5722	.5066
71	315	.5333	.6217	.5995	.5695	.5306	.4635	.4040	.3466

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(p) Model 16

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9276	.9687	.9952	1.0015	.9919	.9693	.9246
2	0	.0267				.9592			
3*	0	.0533	.9271	.9683	.9950	.9947	.9917	.9686	.9239
4	0	.0800	.9728	.9952	.9992	.9850	.9545	.9112	.8508
5*	0	.1067				.9750			
6*	0	.1333				.9590			
7*	0	.1600				.9464			
8*	0	.1867				.9256			
9	0	.2133	.9911	.9769	.9464	.9038	.8407	.7729	.6945
10	0	.2400	.9870	.9647	.9261	.8794	.8103	.7383	.6579
11	0	.2667	.9769	.9464	.9038	.8530	.7798	.7038	.6234
12	0	.2933	.9627	.9261	.8774	.8246	.7453	.6672	.5869
13	0	.3200	.9444	.9017	.8510	.7941	.7128	.6326	.5523
14	0	.3467	.9200	.8733	.8185	.7616	.6783	.5960	.5138
15	0	.3733	.8936	.8408	.7839	.7250	.6438	.5634	.4813
16	0	.4000	.8591	.8042	.7494	.6885	.6092	.5309	.4488
17	0	.4267	.8103	.7535	.6986	.6418	.5686	.4922	.4143
18	0	.4533	.7372	.6743	.6174	.5646	.5016	.4373	.3675
19	0	.4800	.6215	.5504	.4854	.4306	.3716	.3193	.2660
20	0	.5333	.4082	.3453	.2864	.2376	.1929	.1587	.1279
21	0	.5867	.2336	.1868	.1483	.1158	.0894	.0692	.0528
22	0	.6400	.1340	.1015	.0751	.0569	.0406	.0305	.0223
23	0	.7733	.1320	.0975	.0731	.0528	.0366	.0264	.0264
24	0	.9067	.1300	.0975	.0731	.0528	.0366	.0264	.0264
25*	45	.1333				.9611			
26	45	.2667	.9139	.9058	.8814	.8489	.7920	.7322	.6640
27	45	.4000	.7839	.7596	.7291	.6905	.6295	.5675	.4995
28	45	.5333	.3432	.3067	.2701	.2396	.2051	.1770	.1503
29	45	.6400	.1056	.0873	.0731	.0589	.0487	.0386	.0325
30	90	.0267	.9220	.9647	.9911	.9572	.9870	.9621	.9179
31*	90	.0533				.9951			
32	90	.0800	.9139	.9545	.9809	.9870	.9768	.9540	.9097
33*	90	.1067				.9743			
34*	90	.1333				.9599			
35*	90	.1867				.9256			
36	90	.2400	.8164	.8510	.8713	.8774	.8671	.8461	.8102
37	90	.2933	.7616	.7941	.8124	.8185	.8103	.7892	.7574
38	90	.3467	.7921	.8185	.8347	.8388	.8295	.8156	.7879
39	90	.4000	.6336	.6601	.6763	.6824	.6729	.6570	.6275
40*	135	.1333				.9629			
41	135	.2667	.5743	.7433	.8042	.8469	.8844	.9072	.9158
42	135	.4000	.5077	.5748	.6357	.6865	.7278	.7628	.7838
43	135	.5333	.1483	.1747	.2051	.2356	.2684	.3071	.3432
44	135	.6400	.0305	.0386	.0467	.0589	.0691	.0875	.1076
45	180	.0267	.9058	.9545	.9870	1.0012	.9962	.9804	.9402
46*	180	.0533				.9961			
47	180	.0800	.8571	.9159	.9627	.9911	.9982	.9967	.9727
48*	180	.1067				.9775			
49*	180	.1333				.9634			
50*	180	.1867				.9254			
51	180	.2400	.6682	.7474	.8225	.8794	.9291	.9621	.9849
52	180	.2933	.5971	.6763	.7555	.8225	.8823	.9255	.9605
53	180	.3467	.5240	.6072	.6885	.7575	.8234	.8767	.9199
54	180	.4000	.4570	.5382	.6174	.6824	.7482	.8055	.8590
55*	225	.1333				.9631			
56	225	.2667	.6743	.7433	.8042	.8510	.8884	.9092	.9199
57	225	.4000	.5077	.5748	.6357	.6844	.7258	.7587	.7859
58	225	.5333	.1483	.1767	.2072	.2356	.2704	.3092	.3493
59	225	.6400	.0305	.0386	.0487	.0589	.0712	.0915	.1117
60	270	.0267	.9241	.9667	.9931	1.0012	.9901	.9682	.9219
61*	270	.0533				.9949			
62	270	.0800	.9159	.9586	.9830	.9911	.9779	.9580	.9118
63*	270	.1067				.9766			
64*	270	.1333				.9624			
65*	270	.1867				.9270			
66	270	.2400	.8164	.8510	.8733	.8814	.8701	.8523	.8143
67	270	.2933	.7636	.7961	.8164	.8246	.8132	.7953	.7615
68	270	.3467	.7027	.7352	.7535	.7596	.7482	.7322	.7006
69	270	.4000	.6357	.6641	.6804	.6865	.6770	.6611	.6295
70*	315	.1333				.9613			
71	315	.2667	.9200	.9099	.8855	.8367	.7949	.7363	.6681
72	315	.4000	.7860	.7616	.7291	.6905	.6302	.5695	.5036
73	315	.5333	.3392	.3026	.2681	.2356	.1992	.1729	.1442
74	315	.6400	.1056	.0873	.0731	.0589	.0447	.0366	.0305

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Continued

(q) Model 17

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9265	.9714	.9970	1.0031	.9864	.9673	.9242
2*	0	.0267				1.0006			
3	0	.0533	.9642	.9946	1.0007	.9924	.9642	.9195	.8637
4*	0	.0800				.9820			
5*	0	.1067				.9642			
6*	0	.1333				.9468			
7*	0	.1600				.9223			
8	0	.1867	.9885	.9723	.9337	.8889	.8180	.7450	.6665
9	0	.2133	.9825	.9561	.9114	.8585	.7835	.7044	.6259
10	0	.2400	.9683	.9317	.8809	.8260	.7429	.6658	.5853
11	0	.2667	.9520	.9094	.8505	.7915	.7064	.6252	.5446
12	0	.2933	.9317	.8789	.8160	.7529	.6638	.5805	.5040
13	0	.3200	.9053	.8465	.7774	.7123	.6211	.5359	.4593
14	0	.3467	.8728	.8099	.7388	.6697	.5765	.4933	.4166
15	0	.3733	.8404	.7734	.6982	.6291	.5379	.4567	.3820
16	0	.4000	.8018	.7308	.6536	.5804	.4892	.4100	.3394
17	0	.4267	.7632	.6902	.6110	.5398	.4486	.3715	.3048
18	0	.4533	.7247	.6475	.5704	.4972	.4100	.3370	.2743
19	0	.4800	.6841	.6049	.5257	.4546	.3715	.3004	.2418
20	0	.5333	.6049	.5278	.4486	.3815	.3045	.2456	.1931
21	0	.5867	.5196	.4466	.3755	.3146	.2497	.1969	.1565
22	0	.7200	.1279	.0995	.0771	.0589	.0426	.0304	.0305
23	0	.8533	.1259	.0974	.0731	.0548	.0386	.0264	.0264
24*	45	.1333				.9440			
25	45	.2667	.8769	.8586	.8261	.7874	.7226	.6577	.5914
26	45	.4000	.7165	.6780	.6292	.5804	.5136	.4506	.3902
27	45	.5333	.5196	.4750	.4242	.3775	.3207	.2720	.2296
28*	90	.0267				1.0006			
29	90	.0533	.9114	.9561	.9824	.9883	.9764	.9520	.9084
30*	90	.0800				.9811			
31*	90	.1067				.9646			
32*	90	.1333				.9465			
33	90	.1867	.8241	.8607	.8829	.8889	.8769	.8525	.8189
34	90	.2400	.7632	.7977	.8180	.8219	.8120	.7896	.7580
35	90	.2933	.6962	.7247	.7409	.7468	.7368	.7165	.6869
36	90	.3467	.6380	.6601	.6749	.6783	.6707	.6537	.6281
37	90	.4000	.5423	.5621	.5727	.5762	.5685	.5536	.5323
38	90	.5333	.3530	.3641	.3705	.3742	.3662	.3598	.3471
39	90	.6667	.0574	.0575	.0575	.0595	.0575	.0575	.0554
40	90	.8000	.0532	.0511	.0511	.0553	.0511	.0532	.0532
41*	135	.1333				.9463			
42	135	.2667	.5997	.6686	.7345	.7846	.8304	.8602	.8794
43	135	.4000	.4020	.4620	.5259	.5805	.6345	.6792	.7176
44	135	.5333	.2382	.2789	.3300	.3742	.4280	.4748	.5217
45*	180	.0267				1.0015			
46	180	.0533	.8677	.9262	.9709	.9951	1.0007	.9922	.9645
47*	180	.0800				.9834			
48*	180	.1067				.9671			
49*	180	.1333				.9463			
50	180	.1867	.6806	.7601	.8346	.8909	.9433	.9752	.9944
51	180	.2400	.5955	.6750	.7580	.8250	.8900	.9347	.9709
52	180	.2933	.5168	.5941	.6792	.7506	.8240	.8836	.9347
53	180	.3467	.4296	.5068	.5919	.6655	.7474	.8176	.8772
54	180	.4000	.3530	.4237	.5025	.5784	.6622	.7410	.8091
55*	225	.1333				.9479			
56	225	.2667	.6319	.6707	.7388	.7889	.8368	.8687	.8900
57	225	.4000	.4020	.4620	.5259	.5826	.6409	.6877	.7282
58	225	.5333	.2382	.2811	.3300	.3785	.4322	.4812	.5323
59*	270	.0267				1.0013			
60	270	.0533	.9166	.9603	.9858	.9951	.9837	.9603	.9134
61*	270	.0800				.9839			
62*	270	.1067				.9667			
63*	270	.1333				.9470			
64	270	.1867	.8231	.8602	.8836	.8909	.8815	.8623	.8261
65	270	.2400	.7678	.8027	.8240	.8314	.8219	.8049	.7729
66	270	.2933	.6976	.7282	.7452	.7549	.7431	.7303	.7005
67	270	.3467	.6189	.6452	.6621	.6677	.6601	.6473	.6239
68	270	.4000	.5381	.5600	.5727	.5784	.5706	.5621	.5430
69*	315	.1333				.9465			
70	315	.2667	.8805	.8602	.8261	.7889	.7239	.6622	.5941
71	315	.4000	.7188	.6771	.6302	.5847	.5153	.4535	.3939
72	315	.5333	.5211	.4727	.4237	.3806	.3215	.2747	.2321

*Measured by 1-psi (6895-N/m^2) gage.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.06 - Concluded

(r) Model 18

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9746	1.0002	1.0123	1.0011	.9691	.9214	.8686
2	0	.0267	.9968	1.0130	1.0170	.9947	.9548	.8974	.8362
3*	0	.0533				.9893			
4*	0	.0800				.9743			
5	0	.1067	1.0478	1.0313	1.0068	.9478	.8899	.8065	.7254
6*	0	.1333				.9268			
7	0	.1600	1.0478	1.0109	.9659	.8906	.8190	.7274	.6339
8	0	.1867	1.0396	.9924	.9373	.8559	.7805	.6839	.5932
9	0	.2133	1.0233	.9679	.9024	.8171	.7359	.6364	.5445
10	0	.2400	1.0009	.9352	.8615	.7700	.6873	.5871	.4959
11	0	.2667	.9743	.9004	.8206	.7272	.6406	.5436	.4512
12	0	.2933	.9416	.8615	.7756	.6782	.5920	.4941	.4083
13	0	.3200	.9008	.8145	.7244	.6271	.5413	.4448	.3637
14	0	.3467	.8599	.7715	.6773	.5781	.4926	.4012	.3228
15	0	.3733	.8149	.7224	.6282	.5310	.4481	.3597	.2878
16	0	.4000	.7660	.6712	.5751	.4800	.3993	.3183	.2509
17	0	.4267	.7170	.6220	.5259	.4351	.3568	.2806	.2198
18	0	.4533	.6658	.5730	.4809	.3922	.3183	.2471	.1925
19	0	.4800	.6107	.5178	.4277	.3473	.2797	.2155	.1653
20	0	.5067	.5616	.4686	.3826	.3085	.2453	.1878	.1401
21	0	.5333	.5086	.4215	.3397	.2696	.2129	.1601	.1186
22	0	.5600	.4576	.3744	.2988	.2349	.1825	.1364	.0992
23	0	.5867	.4085	.3316	.2619	.2043	.1561	.1146	.0837
24	0	.6133	.3636	.2926	.2292	.1756	.1338	.0969	.0700
25	0	.6400	.3186	.2537	.1964	.1491	.1115	.0791	.0564
26	0	.6667	.2778	.2190	.1678	.1266	.0913	.0653	.0467
27	0	.6933	.2370	.1882	.1452	.1124	.0892	.0692	.0583
28	0	.7200	.2104	.1597	.1207	.0879	.0629	.0454	.0312
29	0	.7467	.1817	.1371	.1024	.0736	.0527	.0355	.0252
30	0	.7733	.1532	.1146	.0838	.0613	.0425	.0296	.0194
31	0	.8000	.1430	.1064	.0777	.0551	.0385	.0257	.0175
32	0	.8533	.1409	.1044	.0757	.0531	.0365	.0257	.0175
33	0	.9067	.1164	.1003	.0900	.0797	.0730	.0653	.0603
34	0	.9600	.1368	.1024	.0736	.0531	.0385	.0257	.0194
35	0	1.0133	.1777	.1556	.1412	.1328	.1257	.1186	.1147
36	0	1.0667	.1348	.1003	.0736	.0531	.0385	.0276	.0213
37*	45	.0267				.9983			
38*	45	.0800				.9723			
39*	45	.1333				.9251			
40	45	.1867	.9743	.9495	.9147	.8538	.7927	.7096	.6339
41	45	.2400	.9232	.8861	.8390	.7721	.7055	.6226	.5426
42	45	.2933	.8006	.7531	.6999	.6312	.5636	.4843	.4122
43	45	.3467	.7313	.6753	.6159	.5455	.4784	.4052	.3461
44	45	.4000	.6699	.6098	.5464	.4780	.4155	.3499	.2956
45	45	.4533	.5025	.4440	.3908	.3371	.2878	.2392	.2004
46	45	.5067	.4698	.4134	.3581	.3044	.2574	.2096	.1731
47	45	.5600	.3799	.3294	.2824	.2370	.1967	.1561	.1264
48	45	.6133	.2961	.2537	.2129	.1756	.1419	.1127	.0895
49	45	.6667	.2247	.1882	.1535	.1246	.1014	.0771	.0622
50	45	.7200	.1654	.1350	.1105	.0879	.0690	.0533	.0409
51	45	.7733	.1205	.0962	.0777	.0613	.0466	.0355	.0272
52	45	.8533	.1083	.0859	.0696	.0531	.0405	.0315	.0233
53	45	.9600	.1010	.0784	.0619	.0494	.0328	.0279	.0216
54	45	1.0667	.0990	.0763	.0619	.0494	.0328	.0279	.0196
55*	90	.0267				.9988			
56*	90	.0533				.9902			
57*	90	.0800				.9755			
58*	90	.1067				.9539			
59*	90	.1333				.9282			
60	90	.1867	.8347	.8580	.8682	.8606	.8323	.7879	.7428
61	90	.2400	.7543	.7754	.7837	.7782	.7524	.7120	.6723
62	90	.2933	.6657	.6827	.6888	.6834	.6582	.6242	.5920
63	90	.3467	.5729	.5836	.5899	.5847	.5637	.5345	.5077
64	90	.4000	.4802	.4888	.4929	.4900	.4716	.4487	.4253
65	90	.4533	.3895	.3960	.3981	.3952	.3772	.3610	.3430
66	90	.5067	.3071	.3094	.3114	.3088	.2953	.2832	.2705
67	90	.5600	.2370	.2393	.2393	.2367	.2255	.2194	.2097
68	90	.6133	.1773	.1774	.1774	.1770	.1681	.1635	.1568
69	90	.6667	.1278	.1258	.1258	.1256	.1188	.1156	.1136
70	90	.7200	.0907	.0887	.0907	.0885	.0840	.0838	.0804
71	90	.7733	.0639	.0619	.0619	.0617	.0575	.0579	.0569
72	90	.8533	.0576	.0536	.0536	.0536	.0492	.0499	.0490
73	90	.9600	.0556	.0536	.0536	.0536	.0492	.0499	.0490
74	90	1.0667	.0536	.0536	.0536	.0536	.0492	.0499	.0490
75	180	.0267	.9418	.9756	1.0003	1.0005	.9738	.9394	.8937
76*	180	.0533				.9896			
77*	180	.0800				.9746			
78	180	.1067	.8182	.8765	.9281	.9573	.9574	.9534	.9349
79*	180	.1333				.9261			
80*	270	.0267				.9986			
81*	270	.0533				.9896			
82*	270	.0800				.9749			
83*	270	.1067				.9550			
84*	270	.1333				.9300			

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT $M_\infty = 4.63$

(a) Model 1

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9451	.9647	.9799	.9843	.9799	.9713	.9537
2*	0	.0267				.9843			
3	0	.0533	.9498	.9657	.9791	.9812	.9731	.9622	.9409
4*	0	.0800				.9839			
5	0	.1067	.9573	.9682	.9791	.9812	.9682	.9548	.9285
6*	0	.1333				.9809			
7	0	.1600	.9548	.9633	.9742	.9687	.9559	.9400	.9111
8*	0	.1867				.9765			
9	0	.2133	.9647	.9707	.9766	.9687	.9509	.9324	.9012
10*	0	.2400				.9690			
11*	0	.2667				.9589			
12*	0	.2933				.9579			
13	0	.3200	.9696	.9657	.9641	.9465	.9236	.8977	.8640
14*	0	.3467				.9417			
15	0	.3733	.9671	.9583	.9493	.9266	.8988	.8705	.8367
16*	0	.4000				.9149			
17	0	.4267	.9523	.9335	.9146	.8867	.8540	.8233	.7895
18	0	.4533	.9324	.9062	.8824	.8520	.8168	.7861	.7523
19	0	.4800	.8755	.8392	.8130	.7776	.7423	.7167	.6852
20	0	.5600	.0495	.0347	.0322	.0323	.0273	.0298	.0248
21	0	.6133	.0769	.0273	.0199	.0174	.0123	.0148	.0123
22	0	.6667	.1190	.0571	.0224	.0174	.0123	.0148	.0123
23	0	.7200	.1340	.0795	.0372	.0174	.0123	.0148	.0123
24	0	.7733	.1389	.0918	.0546	.0174	.0123	.0148	.0123
25*	45	.0400				.9853			
26*	45	.0800				.9840			
27*	45	.1333				.9822			
28*	45	.1867				.9778			
29*	45	.2400				.9707			
30*	45	.2933				.9593			
31*	45	.3467				.9433			
32*	45	.4000				.9156			
33	45	.4533	.8878	.8764	.8676	.8495	.8242	.8011	.7696
34	45	.5600	.0397	.0323	.0322	.0323	.0273	.0298	.0273
35	45	.6133	.0323	.0174	.0173	.0174	.0123	.0148	.0123
36	45	.6667	.0694	.0298	.0199	.0199	.0150	.0173	.0150
37	45	.7200	.0943	.0546	.0248	.0174	.0123	.0148	.0123
38	45	.7733	.1042	.0694	.0396	.0174	.0123	.0148	.0123
39*	90	.0267				.9840			
40*	90	.0533				.9843			
41*	90	.0800				.9836			
42*	90	.1067				.9828			
43*	90	.1333				.9814			
44*	90	.1867				.9766			
45*	90	.2400				.9700			
46*	90	.2933				.9589			
47*	90	.3467				.9420			
48*	90	.4000				.9133			
49	90	.4400	.8159	.8316	.8427	.8471	.8417	.8383	.8218
50	90	.5600	.0298	.0273	.0298	.0323	.0273	.0298	.0273
51	90	.6133	.0148	.0123	.0148	.0174	.0123	.0148	.0099
52	90	.6667	.0148	.0123	.0148	.0174	.0123	.0123	.0099
53	90	.7200	.0148	.0123	.0148	.0174	.0123	.0148	.0123
54	90	.7733	.0744	.0694	.0694	.0670	.0645	.0670	.0670
55	90	.0267	.9349	.9534	.9742	.9788	.9758	.9671	.9509
56*	180	.0533				.9828			
57*	180	.0800				.9822			
58	180	.1067	.9225	.9460	.9666	.9788	.9782	.9772	.9633
59*	180	.1333				.9786			
60*	270	.0267				.9839			
61*	270	.0533				.9831			
62*	270	.0800				.9826			
63*	270	.1067				.9814			
64*	270	.1333				.9794			
65*	180	.1867				.9737			
66*	180	.2400				.9680			
67*	180	.2933				.9581			
68*	180	.3467				.9423			
69*	180	.4000				.9141			
70*	270	.1867				.9748			
71*	270	.2400				.9683			
72*	270	.2933				.9584			
73*	270	.3467				.9437			
74*	270	.4000				.9104			

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(b) Model 2

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9528	.9704	.9790	.9830	.9793	.9650	.9418
2	0	.0267	.9566	.9702	.9765	.9814	.9740	.9566	.9318
3	0	.0533	.9566	.9702	.9765	.9789	.9715	.9542	.9294
4*	0	.0800				.9799			
5	0	.1067	.9616	.9727	.9789	.9765	.9665	.9442	.9170
6*	0	.1333				.9767			
7*	0	.1600				.7518			
8*	0	.1867				.9712			
9	0	.2133	.9740	.9776	.9740	.9665	.9418	.9145	.8823
10*	0	.2400				.9607			
11	0	.2667	.9789	.9776	.9715	.9517	.9219	.8922	.8575
12*	0	.2933				.9423			
13	0	.3200	.9789	.9702	.9517	.9294	.8897	.8550	.8178
14	0	.3467	.9715	.9628	.9368	.9071	.8649	.8253	.7881
15	0	.3733	.9591	.9404	.9071	.8699	.8228	.7832	.7410
16	0	.4000	.9219	.8908	.8402	.7881	.7311	.6741	.6394
17	0	.4267	.8253	.7643	.6865	.6121	.5353	.4634	.4164
18	0	.4533	.6766	.6005	.5105	.4263	.3445	.2825	.2354
19	0	.4800	.5477	.4665	.3618	.2875	.2206	.1685	.1338
20	0	.5333	.1884	.1464	.1066	.0768	.0570	.0397	.0297
21	0	.6933	.1239	.0918	.0595	.0421	.0248	.0198	.0248
22	0	.8267	.1239	.0943	.0620	.0421	.0248	.0198	.0223
23*	45	.1333				.9759			
24*	45	.2667				.9510			
25	45	.4000	.8699	.8486	.8178	.7832	.7385	.7038	.6617
26	45	.5333	.1586	.1315	.1066	.0892	.0719	.0570	.0496
27	90	.0267	.9442	.9628	.9715	.9765	.9715	.9591	.9343
28	90	.0533	.9467	.9628	.9740	.9789	.9740	.9591	.9343
29*	90	.0800				.9804			
30	90	.1067	.9467	.9628	.9740	.9789	.9740	.9591	.9343
31*	90	.1333				.9764			
32*	90	.1867				.9701			
33*	90	.2400				.9591			
34*	90	.2933				.9397			
35	90	.3467	.8823	.8958	.8996	.9046	.9021	.8872	.8649
36	90	.4000	.7774	.7892	.7899	.7939	.7923	.7799	.7625
37	90	.5333	.0919	.0921	.0919	.0943	.0919	.0919	.0894
38	90	.6667	.0422	.0398	.0397	.0422	.0397	.0422	.0422
39	90	.8000	.0522	.0498	.0472	.0496	.0472	.0497	.0522
40	90	.9333	.0671	.0647	.0621	.0645	.0646	.0646	.0695
41*	135	.1333				.9788			
42*	135	.2667				.9547			
43	135	.4000	.6756	.7145	.7526	.7890	.8246	.8495	.8669
44	135	.5333	.0546	.0622	.0770	.0943	.1143	.1391	.1689
45	180	.0267	.9414	.9635	.9737	.9800	.9761	.9637	.9414
46	180	.0533	.9414	.9635	.9737	.9825	.9811	.9687	.9488
47*	180	.0800				.9822			
48	180	.1067	.9290	.9535	.9687	.9825	.9811	.9737	.9588
49*	180	.1333				.9796			
50*	180	.1867				.9733			
51*	180	.2400				.9612			
52*	180	.2933				.9415			
53	180	.3467	.8023	.8365	.8718	.9081	.9389	.9588	.9712
54	180	.4000	.6582	.6946	.7427	.7939	.8470	.8967	.9364
55*	225	.1333				.9788			
56*	225	.2667				.9533			
57	225	.4000	.6731	.7095	.7501	.7915	.8271	.8544	.8768
58	225	.5333	.0546	.0622	.0770	.0943	.1143	.1416	.1714
59	270	.0267	.9463	.9660	.9737	.9775	.9737	.9612	.9364
60	270	.0533	.9488	.9660	.9761	.9825	.9761	.9612	.9389
61*	270	.0800				.9809			
62	270	.1067	.9488	.9660	.9761	.9825	.9737	.9612	.9364
63*	270	.1333				.9770			
64*	270	.1867				.9701			
65*	270	.2400				.9599			
66*	270	.2933				.9407			
67	270	.3467	.8768	.8938	.9016	.9081	.9016	.8892	.8693
68	270	.4000	.7700	.7842	.7874	.7939	.7899	.7799	.7625
69*	315	.1333				.9767			
70*	315	.2667				.9523			
71	315	.4000	.8718	.8539	.8246	.7915	.7501	.7079	.6706
72	315	.5333	.1614	.1369	.1093	.0943	.0745	.0621	.0522

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(c) Model 3

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9505	.9697	.9800	.9828	.9775	.9595	.9428
2	0	.0267	.9522	.9696	.9795	.9811	.9746	.9549	.9279
3	0	.0533	.9547	.9696	.9795	.9786	.9721	.9499	.9205
4*	0	.0800				.9797			
5	0	.1067	.9646	.9746	.9795	.9761	.9622	.9375	.9031
6*	0	.1333				.9744			
7*	0	.1600				.7509			
8*	0	.1867				.9639			
9	0	.2133	.9795	.9770	.9746	.9538	.9224	.8902	.8510
10*	0	.2400				.9447			
11	0	.2667	.9795	.9721	.9547	.9264	.8826	.8405	.7939
12	0	.2933	.9746	.9596	.9323	.8942	.8404	.7907	.7393
13	0	.3200	.9596	.9323	.8925	.8370	.7683	.6987	.6426
14	0	.3467	.9273	.8875	.8254	.7576	.6763	.5968	.5235
15	0	.3733	.8776	.8229	.7508	.6706	.5793	.4973	.4218
16	0	.4000	.8080	.7433	.6588	.5762	.4848	.4028	.3325
17	0	.4267	.7235	.6563	.5668	.4794	.3953	.3183	.2555
18	0	.4533	.6340	.5619	.4724	.3924	.3158	.2487	.1935
19	0	.4800	.5221	.4500	.3704	.3005	.2362	.1815	.1365
20	0	.5333	.3307	.2735	.2113	.1639	.1218	.0895	.0645
21	0	.5867	.1765	.1392	.1019	.0745	.0522	.0398	.0273
22	0	.7467	.1268	.0970	.0696	.0497	.0323	.0224	.0248
23	0	.8800	.1218	.0945	.0696	.0472	.0323	.0224	.0248
24*	45	.1333				.9739			
25*	45	.2667				.9245			
26	45	.4000	.7284	.6862	.6340	.5787	.5122	.4451	.3846
27	45	.5333	.2760	.2412	.2014	.1689	.1367	.1094	.0918
28	90	.0267	.9422	.9596	.9746	.9786	.9721	.9574	.9304
29	90	.0533	.9447	.9621	.9746	.9786	.9721	.9574	.9304
30*	90	.0800				.9802			
31	90	.1067	.9422	.9621	.9721	.9761	.9721	.9574	.9304
32*	90	.1333				.9739			
33*	90	.1867				.9631			
34*	90	.2400				.9418			
35	90	.2933	.8677	.8826	.8925	.8942	.8926	.8753	.8535
36	90	.3467	.7435	.7574	.7644	.7637	.7645	.7506	.7334
37	90	.4000	.5733	.5826	.5873	.5868	.5873	.5781	.5635
38	90	.5333	.1678	.1678	.1701	.1676	.1678	.1678	.1653
39	90	.6667	.0583	.0583	.0583	.0582	.0559	.0583	.0582
40	90	.8000	.0513	.0513	.0513	.0512	.0513	.0513	.0536
41	90	.9333	.0513	.0513	.0513	.0512	.0513	.0513	.0536
42*	135	.1333				.9755			
43*	135	.2667				.9284			
44	135	.4000	.4102	.4638	.5290	.5868	.6456	.6947	.7358
45	135	.5333	.0979	.1165	.1422	.1700	.2074	.2448	.2864
46	180	.0267	.9392	.9602	.9742	.9802	.9766	.9651	.9383
47	180	.0533	.9369	.9602	.9765	.9826	.9812	.9720	.9500
48*	180	.0930				.9810			
49	180	.1067	.9206	.9462	.9695	.9802	.9836	.9767	.9593
50*	180	.1333				.9768			
51*	180	.1867				.9657			
52*	180	.2400				.9447			
53	180	.2933	.7574	.8017	.8530	.8964	.9370	.9651	.9733
54	180	.3467	.5523	.6106	.6898	.7637	.8344	.8975	.9383
55	180	.4000	.3612	.4242	.5057	.5844	.6736	.7576	.8312
56*	225	.1333				.9752			
57*	225	.2667				.9260			
58	225	.4000	.4125	.4731	.5407	.5984	.6596	.7110	.7521
59	225	.5333	.0956	.1142	.1398	.1700	.2051	.2448	.2864
60	270	.0267	.9439	.9625	.9765	.9779	.9742	.9604	.9337
61	270	.0533	.9485	.9672	.9788	.9826	.9789	.9604	.9360
62*	270	.0800				.9757			
63	270	.1067	.9462	.9649	.9765	.9802	.9766	.9604	.9337
64*	270	.1333				.9736			
65*	270	.1867				.9631			
66*	270	.2400				.9426			
67	270	.2933	.8670	.8856	.8949	.8964	.8950	.8811	.8568
68	270	.3467	.7341	.7481	.7574	.7591	.7575	.7436	.7265
69	270	.4000	.5733	.5826	.5896	.5891	.5897	.5828	.5705
70*	315	.1333				.9734			
71*	315	.2667				.9260			
72	315	.4000	.7341	.6945	.6409	.5891	.5244	.4615	.4028
73	315	.5333	.2750	.2424	.2028	.1700	.1398	.1142	.0931

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(d) Model 4

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9507	.9708	.9826	.9859	.9814	.9655	.9375
2	0	.0267	.9570	.9709	.9819	.9807	.9718	.9558	.9249
3*	0	.0533				.9838			
4	0	.0800	.9645	.9758	.9819	.9782	.9643	.9408	.9050
5*	0	.1067				.9775			
6*	0	.1333				.9717			
7*	0	.1600				.7534			
8*	0	.1867				.9485			
9	0	.2133	.9819	.9734	.9570	.9210	.8646	.8089	.7509
10	0	.2400	.9819	.9609	.9321	.8861	.8198	.7566	.6837
11	0	.2667	.9670	.9385	.8972	.8413	.7625	.6845	.6116
12	0	.2933	.9445	.9061	.8498	.7891	.6977	.6173	.5420
13	0	.3200	.9096	.8638	.7975	.7318	.6354	.5550	.4799
14	0	.3467	.8623	.8066	.7352	.6571	.5656	.4804	.4078
15	0	.3733	.8100	.7493	.6679	.5924	.4959	.4157	.3431
16	0	.4000	.7452	.6771	.5981	.5202	.4286	.3534	.2859
17	0	.4267	.6729	.6099	.5258	.4431	.3613	.2937	.2337
18	0	.4533	.6031	.5377	.4511	.3833	.3040	.2414	.1865
19	0	.4800	.5258	.4580	.3813	.3161	.2442	.1916	.1492
20	0	.5333	.3863	.3286	.2642	.2116	.1595	.1195	.0895
21	0	.5867	.2617	.2166	.1695	.1319	.0947	.0697	.0522
22	0	.6400	.1695	.1344	.1022	.0772	.0548	.0398	.0298
23	0	.8000	.1221	.0971	.0698	.0523	.0349	.0274	.0273
24	0	.9333	.1171	.0946	.0698	.0498	.0349	.0274	.0273
25*	45	.1333				.9706			
26	45	.2667	.9196	.8987	.8698	.8314	.7724	.7193	.6564
27	45	.4000	.6679	.6248	.5732	.5202	.4510	.3933	.3381
28	45	.5333	.3240	.2888	.2492	.2116	.1719	.1444	.1169
29	45	.6667	.1072	.0921	.0748	.0622	.0449	.0398	.0323
30	90	.0267	.9420	.9634	.9769	.9807	.9718	.9558	.9299
31*	90	.0533				.9838			
32	90	.0800	.9420	.9634	.9769	.9782	.9718	.9558	.9299
33*	90	.1067				.9775			
34*	90	.1333				.9714			
35*	90	.1867				.9474			
36	90	.2400	.8548	.8713	.8847	.8861	.8821	.8637	.8329
37	90	.2933	.7576	.7717	.7825	.7841	.7774	.7616	.7360
38	90	.3467	.6330	.6423	.6529	.6571	.6503	.6397	.6166
39	90	.4000	.4984	.5029	.5184	.5177	.5058	.5028	.4848
40	90	.5333	.2293	.2318	.2343	.2340	.2315	.2290	.2265
41	90	.6667	.0623	.0623	.0623	.0622	.0622	.0622	.0622
42	90	.8000	.0498	.0498	.0498	.0498	.0498	.0498	.0523
43	90	.9333	.0548	.0523	.0523	.0523	.0523	.0523	.0548
44*	135	.1333				.9730			
45	135	.2667	.6829	.7352	.7925	.8363	.8786	.8985	.9085
46	135	.4000	.3614	.4062	.4685	.5177	.5799	.6297	.6721
47	135	.5333	.1271	.1495	.1819	.2116	.2514	.2937	.3360
48	135	.6667	.0324	.0399	.0498	.0622	.0747	.0921	.1145
49	180	.0267	.9346	.9595	.9744	.9807	.9782	.9657	.9409
50*	180	.0533				.9849			
51	180	.0800	.9196	.9470	.9694	.9832	.9856	.9782	.9583
52*	180	.1067				.9793			
53*	180	.1333				.9727			
54*	180	.1867				.9490			
55	180	.2400	.7128	.7676	.8349	.8861	.9358	.9682	.9782
56	180	.2933	.5732	.6380	.7177	.7866	.8587	.9159	.9533
57	180	.3467	.4411	.5084	.5906	.6646	.7517	.8238	.8836
58	180	.4000	.3115	.3648	.4511	.5252	.6148	.6994	.7741
59*	225	.1333				.9738			
60	225	.2667	.6829	.7352	.7900	.8363	.8786	.9035	.9160
61	225	.4000	.3614	.4062	.4685	.5227	.5849	.6372	.6820
62	225	.5333	.1271	.1495	.1819	.2141	.2539	.2962	.3410
63	225	.6667	.0324	.0399	.0498	.0622	.0772	.0946	.1170
64	270	.0267	.9420	.9645	.9769	.9807	.9757	.9607	.9334
65*	270	.0533				.9846			
66	270	.0800	.9445	.9645	.9794	.9832	.9782	.9607	.9334
67*	270	.1067				.9783			
68*	270	.1333				.9727			
69*	270	.1867				.9490			
70	270	.2400	.8498	.8698	.8847	.8886	.8836	.8662	.8413
71	270	.2933	.7551	.7726	.7850	.7866	.7840	.7691	.7492
72	270	.3467	.6355	.6480	.6604	.6596	.6571	.6471	.6273
73	270	.4000	.5009	.5134	.5209	.5227	.5227	.5127	.4978
74*	315	.1333				.9727			
75	315	.2667	.9171	.9047	.8772	.8388	.7840	.7243	.6646
76	315	.4000	.6704	.6305	.5782	.5277	.4580	.3957	.3435
77	315	.5333	.3265	.2916	.2517	.2166	.1792	.1468	.1195
78	315	.6667	.1072	.0922	.0748	.0622	.0498	.0398	.0324

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(e) Model 5

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9439	.9672	.9818	.9871	.9817	.9621	.9305
2*	0	.0267				.9861			
3	0	.0533	.9603	.9776	.9837	.9816	.9614	.9316	.8966
4*	0	.0800				.9779			
5*	0	.1067				.9668			
6*	0	.1333				.9489			
7*	0	.1600				.7544			
8*	0	.1867				.8986			
9	0	.2133	.9678	.9477	.9090	.8596	.7846	.7099	.6351
10	0	.2400	.9553	.9229	.8766	.8197	.7373	.6576	.5778
11	0	.2667	.9305	.8880	.8342	.7699	.6775	.5953	.5180
12	0	.2933	.8981	.8507	.7869	.7126	.6227	.5380	.4633
13	0	.3200	.8583	.8060	.7346	.6602	.5604	.4757	.4010
14	0	.3467	.8135	.7587	.6823	.6104	.5156	.4359	.3586
15	0	.3733	.7613	.6990	.6201	.5481	.4583	.3786	.3113
16	0	.4000	.7065	.6468	.5653	.4858	.4010	.3288	.2665
17	0	.4267	.6468	.5871	.5080	.4285	.3487	.2815	.2242
18	0	.4533	.5946	.5274	.4482	.3787	.3014	.2391	.1893
19	0	.4800	.5374	.4701	.3960	.3289	.2590	.2018	.1594
20	0	.5333	.4180	.3607	.2939	.2392	.1843	.1395	.1071
21	0	.5867	.3135	.2637	.2117	.1669	.1245	.0947	.0697
22	0	.6400	.2239	.1866	.1444	.1121	.0822	.0598	.0423
23	0	.6933	.1592	.1269	.0971	.0747	.0523	.0374	.0274
24	0	.8667	.1194	.0945	.0672	.0523	.0349	.0274	.0274
25	0	1.0000	.1144	.0896	.0647	.0498	.0349	.0274	.0274
26*	45	.1333				.9492			
27	45	.2667	.8658	.8433	.8068	.7599	.6949	.6327	.5629
28	45	.4000	.6319	.5895	.5429	.4883	.4234	.3661	.3138
29	45	.5333	.3508	.3184	.2764	.2392	.1968	.1619	.1345
30	45	.6667	.1567	.1343	.1121	.0947	.0722	.0598	.0473
31*	90	.0267				.9866			
32	90	.0533	.9305	.9552	.9712	.9767	.9714	.9515	.9215
33*	90	.0800				.9771			
34*	90	.1067				.9658			
35*	90	.1333				.9489			
36*	90	.1867				.8572			
37	90	.2400	.7787	.7985	.8143	.8172	.8120	.7921	.7596
38	90	.2933	.6817	.6990	.7122	.7126	.7074	.6924	.6650
39	90	.3467	.5747	.5871	.5977	.6004	.5953	.5828	.5579
40	90	.4000	.4627	.4726	.4806	.4833	.4807	.4658	.4558
41	90	.5333	.2513	.2562	.2587	.2588	.2563	.2538	.2488
42	90	.6667	.0921	.0920	.0965	.0921	.0921	.0921	.0921
43	90	.8000	.0522	.0522	.0522	.0523	.0522	.0522	.0522
44	90	.9333	.3682	.3632	.3557	.3957	.3832	.3707	.3558
45*	135	.1333				.9613			
46	135	.2667	.5971	.6492	.7139	.7665	.8161	.8459	.8658
47	135	.4000	.3359	.3806	.4403	.4928	.5523	.5996	.6419
48	135	.5333	.1468	.1716	.2065	.2389	.2836	.3234	.3657
49	135	.6667	.0522	.0597	.0771	.0921	.1144	.1393	.1642
50*	180	.0267				.9871			
51	180	.0533	.9081	.9378	.9652	.9781	.9828	.9728	.9479
52*	180	.0800				.9795			
53*	180	.1067				.9681			
54*	180	.1333				.9518			
55*	180	.1867				.8996			
56	180	.2400	.5120	.6741	.7537	.8188	.8857	.9330	.9628
57	180	.2933	.4951	.5622	.6443	.7167	.7987	.8633	.9155
58	180	.3467	.3831	.4453	.5298	.6048	.6942	.7688	.8359
59	180	.4000	.2886	.3433	.4179	.4928	.5772	.6618	.7364
60*	225	.1333				.9523			
61	225	.2667	.5946	.6492	.7139	.7665	.8161	.8484	.8683
62	225	.4000	.3383	.3806	.4378	.4903	.5523	.6021	.6468
63	225	.5333	.1443	.1716	.2065	.2414	.2836	.3259	.3707
64	225	.6667	.0522	.0647	.0771	.0921	.1144	.1393	.1642
65*	270	.0267				.9866			
66	270	.0533	.9354	.9602	.9726	.9781	.9728	.9529	.9180
67*	270	.0800				.9790			
68*	270	.1067				.9679			
69*	270	.1333				.9505			
70*	270	.1867				.8986			
71	270	.2400	.7787	.7985	.8159	.8213	.8136	.7937	.7638
72	270	.2933	.6817	.7015	.7139	.7152	.7141	.6966	.6717
73	270	.3467	.5747	.5920	.6020	.6072	.6021	.5897	.5672
74	270	.4000	.4702	.4826	.4925	.4928	.4901	.4802	.4652
75*	315	.1333				.9505			
76	315	.2667	.8683	.8458	.8109	.7690	.7041	.6394	.5747
77	315	.4000	.6369	.5945	.5473	.4953	.4279	.3707	.3184
78	315	.5333	.3558	.3209	.2786	.2439	.2015	.1667	.1368
79	315	.6667	.1542	.1343	.1119	.0921	.0722	.0597	.0473

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(f) Model 6

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9490	.9706	.9887	.9926	.9805	.9592	.9363
2	0	.0267	.9520	.9719	.9854	.9869	.9743	.9520	.9186
3	0	.0533	.9570	.9744	.9854	.9869	.9718	.9471	.9111
4*	0	.0800				.9908			
5	0	.1067	.9669	.9819	.9879	.9844	.9669	.9321	.8913
6*	0	.1333				.9850			
7*	0	.1600				.9910			
8*	0	.1867				.9750			
9	0	.2133	.9843	.9868	.9829	.9670	.9370	.8924	.8441
10*	0	.2400				.9600			
11	0	.2667	.9868	.9868	.9705	.9796	.9147	.8700	.8193
12*	0	.2933				.9397			
13	0	.3200	.9843	.9794	.9531	.9247	.8898	.8402	.7895
14*	0	.3467				.9133			
15	0	.3733	.9744	.9570	.9257	.8924	.8550	.8054	.7547
16	0	.4000	.9645	.9421	.9058	.8701	.8327	.7830	.7324
17	0	.4267	.9471	.9197	.8809	.8452	.8078	.7581	.7100
18	0	.4533	.9147	.8849	.8411	.8054	.7655	.7209	.6753
19	0	.4800	.8576	.8203	.7789	.7408	.7059	.6687	.6281
20	0	.6400	.0771	.0547	.0448	.0373	.0373	.0373	.0348
21	0	.7733	.1168	.0820	.0448	.0273	.0224	.0224	.0223
22*	45	.1333				.9839			
23*	45	.2667				.9531			
24	45	.4000	.9172	.9123	.8934	.8676	.8351	.7929	.7498
25	90	.0267	.9321	.9620	.9805	.9819	.9743	.9545	.9211
26	90	.0533	.9421	.9645	.9705	.9695	.9718	.9570	.9236
27*	90	.0800				.9876			
28	90	.1067	.9481	.9705	.9890	.9930	.9815	.9641	.9331
29*	90	.1333				.9816			
30*	90	.1867				.9726			
31*	90	.2400				.9586			
32*	90	.2933				.9392			
33*	90	.3467				.9133			
34	90	.4000	.8436	.8610	.8744	.8785	.8669	.8545	.8311
35	90	.5333	.0423	.0398	.0374	.0423	.0374	.0374	.0373
36	90	.6667	.0249	.0249	.0224	.0249	.0224	.0224	.0224
37	90	.8000	.0373	.0348	.0299	.0324	.0299	.0324	.0348
38*	135	.1333				.9805			
39*	135	.2667				.9481			
40	135	.4000	.7714	.8038	.8371	.8685	.8918	.9143	.9157
41	180	.0267	.9382	.9630	.9815	.9905	.9815	.9641	.9356
42	180	.0533	.9332	.9581	.9815	.9905	.9840	.9716	.9455
43*	180	.0800				.9879			
44	180	.1067	.9182	.9431	.9716	.9905	.9865	.9791	.9604
45*	180	.1333				.9821			
46*	180	.1867				.9721			
47*	180	.2400				.9589			
48*	180	.2933				.9407			
49*	180	.3467				.9162			
50	180	.4000	.7590	.7963	.8371	.8835	.9167	.9417	.9604
51*	225	.1333				.9834			
52*	225	.2667				.9507			
53	225	.4000	.7789	.8088	.8420	.8785	.9018	.9218	.9231
54	270	.0267	.9431	.9680	.9890	.9905	.9815	.9591	.9306
55	270	.0533	.9456	.9705	.9890	.9930	.9815	.9591	.9306
56*	270	.0800				.9857			
57	270	.1067	.9431	.9680	.9865	.9905	.9765	.9566	.9281
58*	270	.1333				.9850			
59*	270	.1867				.9755			
60*	270	.2400				.9608			
61*	270	.2933				.9402			
62*	270	.3467				.9131			
63	270	.4000	.8386	.8585	.8719	.8760	.8669	.8520	.8311
64*	315	.1333				.9855			
65*	315	.2667				.9534			
66	315	.4000	.9232	.9182	.8968	.8760	.8445	.8047	.7589

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(g) Model 7

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9451	.9722	.9901	.9932	.9831	.9598	.9414
2	0	.0267	.9462	.9723	.9872	.9886	.9761	.9562	.9210
3	0	.0533	.9512	.9773	.9897	.9861	.9736	.9488	.9135
4*	0	.0800				.9903			
5	0	.1067	.9661	.9823	.9897	.9836	.9637	.9314	.8911
6*	0	.1333				.9829			
7*	0	.1600				.9898			
8*	0	.1867				.9708			
9	0	.2133	.9810	.9848	.9822	.9612	.9314	.8867	.8388
10*	0	.2400				.9510			
11	0	.2667	.9835	.9848	.9648	.9364	.9065	.8569	.8065
12*	0	.2933				.9249			
13	0	.3200	.9810	.9673	.9399	.9066	.8668	.8171	.7642
14	0	.3467	.9760	.9549	.9200	.8818	.8420	.7923	.7393
15	0	.3733	.9562	.9325	.8927	.8519	.8097	.7600	.7119
16	0	.4000	.9388	.8977	.8529	.8072	.7625	.7153	.6696
17	0	.4267	.8792	.8231	.7609	.7104	.6631	.6159	.5750
18	0	.4533	.7326	.6565	.5744	.5067	.4446	.3949	.3510
19	0	.4800	.5489	.4576	.3680	.3005	.2533	.2111	.1742
20	0	.5333	.2136	.1592	.1194	.0869	.0646	.0497	.0373
21	0	.6933	.1242	.0895	.0597	.0422	.0273	.0199	.0224
22	0	.8267	.1242	.0920	.0622	.0422	.0273	.0199	.0224
23*	45	.1333				.9821			
24*	45	.2667				.9442			
25	45	.4000	.8742	.8654	.8380	.8072	.7699	.7277	.6870
26	45	.5333	.1689	.1417	.1169	.0969	.0820	.0671	.0548
27	90	.0267	.9338	.9599	.9797	.9811	.9736	.9587	.9260
28	90	.0533	.9338	.9649	.9772	.9712	.9736	.9587	.9285
29*	90	.0800				.9882			
30	90	.1067	.9338	.9599	.9772	.9811	.9661	.9562	.9260
31*	90	.1333				.9811			
32*	90	.1867				.9695			
33*	90	.2400				.9524			
34*	90	.2933				.9278			
35	90	.3467	.8525	.8746	.8886	.8910	.8839	.8675	.8441
36	90	.4000	.7824	.7998	.8138	.8138	.8091	.7950	.7740
37	90	.5333	.1051	.1029	.1029	.1029	.1029	.1029	.1005
38	90	.6667	.0467	.0444	.0421	.0421	.0421	.0444	.0468
39	90	.8000	.0490	.0458	.0468	.0468	.0468	.0468	.0491
40*	135	.1333				.9792			
41*	135	.2667				.9402			
42	135	.4000	.7007	.7367	.7740	.8068	.8371	.8652	.8792
43	135	.5333	.0631	.0748	.0889	.1052	.1296	.1543	.1847
44	180	.0267	.9296	.9588	.9798	.9868	.9798	.9634	.9377
45	180	.0533	.9249	.9565	.9798	.9868	.9844	.9727	.9470
46*	180	.0800				.9885			
47	180	.1067	.9062	.9401	.9705	.9845	.9844	.9821	.9634
48*	180	.1333				.9800			
49*	180	.1867				.9682			
50*	180	.2400				.9513			
51*	180	.2933				.9270			
52	180	.3467	.7591	.8022	.8465	.8863	.9260	.9564	.9727
53	180	.4000	.6843	.7250	.7694	.8161	.8628	.9026	.9377
54*	225	.1333				.9827			
55*	225	.2667				.9421			
56	225	.4000	.7054	.7437	.7787	.8138	.8465	.8722	.8839
57	225	.5333	.0631	.0725	.0865	.1052	.1239	.1520	.1824
58	270	.0267	.9366	.9659	.9845	.9868	.9774	.9564	.9283
59	270	.0533	.9389	.9682	.9868	.9892	.9798	.9610	.9283
60*	270	.0800				.9508			
61	270	.1067	.9366	.9635	.9845	.9868	.9774	.9564	.9260
62*	270	.1333				.9840			
63*	270	.1867				.9716			
64*	270	.2400				.9542			
65*	270	.2933				.9276			
66	270	.3467	.8455	.8676	.8839	.8839	.8769	.8628	.8371
67	270	.4000	.7754	.7928	.8091	.8114	.8020	.7903	.7716
68*	315	.1333				.9850			
69*	315	.2667				.9442			
70	315	.4000	.8805	.8676	.8395	.8114	.7787	.7366	.6968
71	315	.5333	.1752	.1450	.1193	.0982	.0842	.0701	.0608

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(h) Model 8

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9453	.9710	.9895	.9933	.9832	.9616	.9331
2	0	.0267	.9492	.9741	.9877	.9891	.9766	.9517	.9193
3	0	.0533	.9542	.9741	.9877	.9891	.9741	.9467	.9094
4*	0	.0800				.9894			
5	0	.1067	.9667	.9841	.9877	.9817	.9617	.9243	.8844
6*	0	.1333				.9802			
7*	0	.1600				.9894			
8*	0	.1867				.9636			
9	0	.2133	.9841	.9891	.9777	.9518	.9168	.8720	.8222
10*	0	.2400				.9370			
11	0	.2667	.9841	.9766	.9528	.9119	.8795	.8296	.7748
12	0	.2933	.9816	.9667	.9328	.8920	.8521	.7948	.7424
13	0	.3200	.9716	.9467	.9054	.8596	.8122	.7574	.7026
14	0	.3467	.9442	.9044	.8480	.7823	.7300	.6652	.6104
15	0	.3733	.8994	.8396	.7657	.6877	.6228	.5531	.4858
16	0	.4000	.8346	.7599	.6734	.5905	.5182	.4410	.3762
17	0	.4267	.7424	.6602	.5637	.4784	.4086	.3413	.2815
18	0	.4533	.6552	.5680	.4714	.3912	.3214	.2616	.2093
19	0	.4800	.5431	.4534	.3741	.3015	.2417	.1893	.1445
20	0	.5333	.3388	.2716	.2095	.1595	.1246	.0922	.0648
21	0	.5867	.1819	.1395	.0998	.0723	.0548	.0399	.0299
22	0	.7467	.1296	.0972	.0673	.0473	.0324	.0224	.0249
23	0	.8800	.1271	.0972	.0673	.0473	.0324	.0224	.0249
24*	45	.1333				.9794			
25*	45	.2667				.9243			
26	45	.4000	.7474	.7076	.6510	.5955	.5381	.4759	.4161
27	45	.5333	.2790	.2392	.1995	.1669	.1395	.1121	.0922
28	90	.0267	.9368	.9617	.9802	.9842	.9766	.9567	.9243
29	90	.0533	.9393	.9642	.9727	.9842	.9766	.9592	.9243
30*	90	.0800				.9875			
31	90	.1067	.9343	.9617	.9752	.9817	.9741	.9542	.9243
32*	90	.1333				.9781			
33*	90	.1867				.9638			
34*	90	.2400				.9399			
35	90	.2933	.8595	.8819	.8954	.8995	.8919	.8745	.8496
36	90	.3467	.7732	.7882	.7997	.8032	.7981	.7832	.7607
37	90	.4000	.5861	.5961	.6054	.6061	.6036	.5936	.5762
38	90	.5333	.1696	.1721	.1719	.1696	.1696	.1696	.1671
39	90	.6667	.0549	.0524	.0523	.0524	.0524	.0524	.0524
40	90	.8000	.0524	.0499	.0498	.0499	.0499	.0524	.0524
41	90	.9333	.0524	.0524	.0498	.0499	.0499	.0524	.0524
42*	135	.1333				.9773			
43*	135	.2667				.9220			
44	135	.4000	.4390	.4889	.5456	.6036	.6610	.7158	.7532
45	135	.5333	.0998	.1197	.1445	.1771	.2120	.2494	.2868
46	180	.0267	.9303	.9603	.9791	.9903	.9827	.9652	.9378
47	180	.0533	.9278	.9553	.9791	.9903	.9852	.9727	.9478
48*	180	.0800				.9881			
49	180	.1067	.9029	.9353	.9667	.9853	.9877	.9827	.9627
50*	180	.1333				.9789			
51*	180	.1867				.9636			
52*	180	.2400				.9399			
53	180	.2933	.7657	.8106	.8570	.9005	.9428	.9677	.9802
54	180	.3467	.6285	.6809	.7399	.8032	.8655	.9129	.9503
55	180	.4000	.3941	.4564	.5332	.6161	.6959	.7707	.8430
56*	225	.1333				.9802			
57*	225	.2667				.9233			
58	225	.4000	.4365	.4889	.5431	.6061	.6634	.7183	.7557
59	225	.5333	.0948	.1147	.1420	.1696	.2045	.2419	.2818
60	270	.0267	.9403	.9652	.9841	.9903	.9802	.9603	.9278
61	270	.0533	.9403	.9677	.9866	.9903	.9802	.9603	.9278
62*	270	.0800				.9904			
63	270	.1067	.9378	.9652	.9841	.9878	.9777	.9553	.9253
64*	270	.1333				.9823			
65*	270	.1867				.9662			
66*	270	.2400				.9399			
67	270	.2933	.8555	.8804	.8944	.8980	.8904	.8755	.8480
68	270	.3467	.7607	.7757	.7898	.7932	.7882	.7757	.7532
69	270	.4000	.5737	.5861	.5954	.5961	.5936	.5861	.5762
70*	315	.1333				.9823			
71*	315	.2667				.9236			
72	315	.4000	.7433	.7034	.6478	.5937	.5437	.4839	.4290
73	315	.5333	.2818	.2419	.2043	.1671	.1397	.1147	.0948

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(i) Model 9

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9394	.9652	.9824	.9836	.9781	.9584	.9286
2	0	.0267	.9461	.9674	.9775	.9809	.9674	.9462	.9140
3*	0	.0533				.9810			
4	0	.0800	.9585	.9748	.9824	.9759	.9550	.9263	.8842
5*	0	.1067				.9726			
6*	0	.1333				.9655			
7*	0	.1600				.9847			
8*	0	.1867				.9429			
9	0	.2133	.9808	.9773	.9576	.9238	.8731	.8245	.7699
10	0	.2400	.9783	.9699	.9353	.8940	.8334	.7798	.7178
11	0	.2667	.9709	.9475	.9005	.8493	.7764	.7078	.6383
12	0	.2933	.9485	.9153	.8559	.7946	.7119	.6333	.5588
13	0	.3200	.9212	.8731	.8063	.7350	.6449	.5687	.4868
14	0	.3467	.8790	.8161	.7393	.6655	.5755	.4942	.4172
15	0	.3733	.8269	.7590	.6723	.5960	.5035	.4222	.3502
16	0	.4000	.7648	.6871	.6078	.5240	.4316	.3601	.2906
17	0	.4267	.6928	.6127	.5309	.4470	.3721	.3005	.2384
18	0	.4533	.9113	.9376	.9799	1.3236	1.2204	1.1225	1.0208
19	0	.4800	.5512	.4663	.3870	.3203	.2530	.2012	.1540
20	0	.5333	.3973	.3299	.2630	.2111	.1612	.1217	.0894
21	0	.5867	.2682	.2133	.1662	.1291	.0943	.0695	.0472
22	0	.6400	.1664	.1290	.0968	.0720	.0521	.0373	.0273
23	0	.8000	.1266	.0967	.0695	.0497	.0372	.0248	.0248
24	0	.9333	.1217	.0918	.0695	.0497	.0347	.0248	.0248
25*	45	.1333				.9644			
26	45	.2667	.9138	.9054	.8782	.8393	.7863	.7351	.6805
27	45	.4000	.6828	.6400	.5830	.5264	.4589	.4023	.3477
28	45	.5333	.3278	.2877	.2481	.2136	.1736	.1440	.1167
29	45	.6667	.1093	.0918	.0719	.0596	.0471	.0373	.0298
30	90	.0267	.9336	.9550	.9750	.9734	.9674	.9487	.9189
31*	90	.0533				.9810			
32	90	.0800	.9312	.9550	.9700	.9759	.9674	.9487	.9164
33*	90	.1067				.9721			
34*	90	.1333				.9647			
35*	90	.1867				.9413			
36	90	.2400	.8567	.8756	.8906	.8940	.8880	.8717	.8444
37	90	.2933	.7598	.7739	.7889	.7922	.7863	.7723	.7500
38	90	.3467	.6382	.6524	.6599	.6581	.6573	.6457	.6259
39	90	.4000	.5065	.5135	.5235	.5240	.5209	.5116	.4942
40	90	.5333	.2307	.2356	.2357	.2356	.2332	.2307	.2305
41	90	.6667	.0620	.0620	.0620	.0620	.0620	.0620	.0644
42	90	.8000	.0521	.0496	.0496	.0496	.0496	.0496	.0520
43	90	.9333	.0521	.0521	.0496	.0496	.0496	.0496	.0545
44*	135	.1333				.9663			
45	135	.2667	.6995	.7491	.7988	.8434	.8806	.9030	.9169
46	135	.4000	.3646	.4167	.4763	.5308	.5904	.6400	.6914
47	135	.5333	.1265	.1538	.1861	.2158	.2555	.2977	.3445
48	135	.6667	.0322	.0397	.0496	.0620	.0744	.0918	.1140
49	180	.0267	.9227	.9525	.9750	.9773	.9748	.9600	.9367
50*	180	.0533				.9821			
51	180	.0800	.9028	.9376	.9626	.9773	.9798	.9724	.9565
52*	180	.1067				.9739			
53*	180	.1333				.9666			
54*	180	.1867				.9431			
55*	180	.2400				1.0666			
56*	180	.2933				.7938			
57	180	.3467	.4415	.5159	.5929	.6673	.7516	.8236	.8896
58	180	.4000	.3100	.3770	.4540	.5283	.6176	.6995	.7831
59*	225	.1333				.9660			
60	225	.2667	.6995	.7516	.8038	.8458	.8806	.9054	.9169
61	225	.4000	.3671	.4192	.4788	.5333	.5904	.6425	.6939
62	225	.5333	.1265	.1513	.1861	.2158	.2555	.2977	.3445
63	225	.6667	.0322	.0397	.0496	.0620	.0744	.0943	.1140
64	270	.0267	.9326	.9600	.9775	.9773	.9724	.9551	.9243
65*	270	.0533				.9810			
66	270	.0800	.9326	.9575	.9750	.9773	.9724	.9526	.9243
67*	270	.1067				.9723			
68*	270	.1333				.9644			
69*	270	.1867				.9410			
70	270	.2400	.8582	.8806	.8956	.8930	.8880	.8707	.8475
71	270	.2933	.7615	.7814	.7939	.7938	.7888	.7715	.7533
72	270	.3467	.6399	.6573	.6673	.6673	.6648	.6524	.6369
73	270	.4000	.5035	.5159	.5259	.5283	.5259	.5160	.5055
74*	315	.1333				.9647			
75	315	.2667	.9202	.9103	.8832	.8458	.7913	.7368	.6840
76	315	.4000	.6846	.6400	.5855	.5308	.4639	.4043	.3519
77	315	.5333	.3348	.2927	.2506	.2158	.1761	.1464	.1214
78	315	.6667	.1091	.0893	.0744	.0595	.0496	.0372	.0322

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(j) Model 10

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9833	.9833	.9833	.9833	.9833	.9833	.9833
2*	0	.0267				.9817			
3	0	.0533	.9520	.9744	.9818	.9759	.9570	.9273	.8852
4*	0	.0800				.9733			
5*	0	.1067				.9638			
6*	0	.1333				.9496			
7*	0	.1600				.9625			
8	0	.1867	.9743	.9645	.9347	.8942	.8306	.7587	.6844
9	0	.2133	.9694	.9446	.9075	.8595	.7835	.7017	.6273
10	0	.2400	.9570	.9198	.8727	.8149	.7240	.6496	.5703
11	0	.2667	.9347	.8901	.8331	.7703	.6818	.6000	.5182
12	0	.2933	.9024	.8504	.7860	.7134	.6223	.5381	.4587
13	0	.3200	.8677	.8083	.7364	.6613	.5727	.4835	.4116
14	0	.3467	.8231	.7537	.6793	.6069	.5108	.4265	.3571
15	0	.3733	.7735	.6992	.6198	.5449	.4537	.3769	.3075
16	0	.4000	.7190	.6471	.5678	.4904	.4041	.3273	.2653
17	0	.4267	.6619	.5901	.5083	.4359	.3570	.2851	.2256
18	0	.4533	.5677	.5579	.5504	.6564	.5529	.5753	.6100
19	0	.4800	.5429	.4686	.3917	.3270	.2603	.2058	.1612
20	0	.5333	.4239	.3620	.2901	.2378	.1835	.1389	.1041
21	0	.5867	.3248	.2653	.2107	.1684	.1264	.0917	.0669
22	0	.6400	.2355	.1860	.1438	.1115	.0818	.0570	.0422
23	0	.6933	.1611	.1264	.0942	.0718	.0521	.0372	.0273
24	0	.8667	.1240	.0942	.0694	.0520	.0372	.0248	.0273
25	0	1.0000	.1165	.0917	.0669	.0495	.0347	.0248	.0273
26*	45	.1333				.9473			
27	45	.2667	.8677	.8405	.8033	.7604	.6967	.6348	.5678
28	45	.4000	.6421	.5950	.5455	.4880	.4240	.3670	.3149
29	45	.5333	.3595	.3174	.2752	.2378	.1959	.1636	.1339
30	45	.6667	.1552	.1339	.1091	.0916	.0719	.0595	.0471
31*	90	.0267				.9820			
32	90	.0533	.9198	.9496	.9570	.9710	.9670	.9422	.9100
33*	90	.0800				.9730			
34*	90	.1067				.9625			
35*	90	.1333				.9470			
36	90	.1867	.8479	.8752	.8926	.8917	.8876	.8678	.8356
37	90	.2400	.7710	.7959	.8108	.8100	.8083	.7885	.7563
38	90	.2933	.6719	.6917	.7091	.7084	.7066	.6868	.6596
39	90	.3467	.5677	.5827	.5926	.5994	.5950	.5852	.5579
40	90	.4000	.4780	.4928	.5003	.5028	.4978	.4879	.4706
41	90	.5333	.2303	.2353	.2378	.2378	.2353	.2328	.2279
42	90	.6667	.0916	.0916	.0916	.0916	.0916	.0916	.0892
43	90	.8000	.0545	.0545	.0545	.0545	.0520	.0545	.0545
44	90	.9333	.0495	.0495	.0495	.0495	.0495	.0495	.0495
45*	135	.1333				.9496			
46	135	.2667	.5844	.6489	.7133	.7654	.8123	.8446	.8619
47	135	.4000	.3294	.3839	.4408	.4954	.5548	.6043	.6440
48	135	.5333	.1436	.1709	.2056	.2403	.2848	.3245	.3666
49	135	.6667	.0545	.0644	.0793	.0541	.1164	.1387	.1635
50*	180	.0267				.9827			
51	180	.0533	.8940	.9337	.9609	.9784	.9807	.9659	.9437
52*	180	.0800				.9756			
53*	180	.1067				.7511			
54*	180	.1333				.9509			
55	180	.1867	.7083	.7777	.8470	.8991	.9436	.9684	.9759
56	180	.2400	.5968	.6736	.7554	.8174	.8842	.9288	.9610
57	180	.2933	.4829	.5597	.6439	.7183	.7975	.8619	.9139
58	180	.3467	.3739	.4458	.5300	.6044	.6910	.7678	.8347
59	180	.4000	.2798	.3443	.4185	.4929	.5820	.6638	.7381
60*	225	.1333				.9507			
61	225	.2667	.5844	.6489	.7133	.7654	.8173	.8495	.8694
62	225	.4000	.3294	.3839	.4408	.4979	.5572	.6068	.6514
63	225	.5333	.1436	.1734	.2056	.2403	.2848	.3269	.3715
64	225	.6667	.0495	.0619	.0768	.0941	.1164	.1387	.1659
65*	270	.0267				.9822			
66	270	.0533	.9237	.9535	.9708	.9759	.9708	.9461	.9139
67*	270	.0800				.9743			
68*	270	.1067				.9643			
69*	270	.1333				.9486			
70	270	.1867	.8469	.8742	.8916	.8991	.8916	.8718	.8396
71	270	.2400	.7702	.7975	.8123	.8174	.8123	.7926	.7653
72	270	.2933	.6761	.7009	.7133	.7183	.7133	.6960	.6712
73	270	.3467	.5696	.5894	.6018	.6069	.6018	.5895	.5697
74	270	.4000	.4680	.4829	.4904	.4954	.4904	.4805	.4656
75*	315	.1333				.9486			
76	315	.2667	.8668	.8470	.8099	.7679	.7058	.6415	.5746
77	315	.4000	.6439	.6018	.5498	.4979	.4334	.3715	.3195
78	315	.5333	.3616	.3220	.2799	.2427	.2006	.1659	.1362
79	315	.6667	.1610	.1352	.1114	.0941	.0743	.0619	.0495

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(k) Model 11

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9307	.9638	.9816	.9885	.9768	.9526	.9120
2	0	.0267	.9432	.9730	.9868	.9868	.9704	.9429	.8994
3	0	.0533	.9507	.9755	.9844	.9818	.9579	.9255	.8795
4*	0	.0800				.9798			
5	0	.1067	.9707	.9830	.9794	.9718	.9380	.8931	.8372
6*	0	.1333				.9666			
7*	0	.1600				.9584			
8*	0	.1867				.9478			
9	0	.2133	.9831	.9805	.9594	.9344	.8806	.8187	.7499
10*	0	.2400				.9223			
11	0	.2667	.9657	.9655	.9370	.9045	.8432	.7758	.7001
12	0	.2933	.9756	.9555	.9245	.8896	.8232	.7534	.6752
13	0	.3200	.9682	.9431	.9096	.8722	.8057	.7334	.6578
14	0	.3467	.9607	.9306	.8897	.8522	.7808	.7109	.6328
15	0	.3733	.9457	.9131	.8697	.8298	.7583	.6885	.6079
16	0	.4000	.9282	.8882	.8473	.8049	.7334	.6636	.5830
17	0	.4267	.9058	.8657	.8199	.7775	.7060	.6361	.5581
18	0	.4533	.8733	.8308	.7850	.7426	.6760	.6087	.5307
19	0	.4800	.8309	.7859	.7426	.7027	.6411	.5812	.5058
20	0	.6400	.1073	.0773	.0573	.0449	.0374	.0324	.0349
21	0	.7733	.1223	.0823	.0573	.0399	.0274	.0200	.0224
22*	45	.1333				.9660			
23*	45	.2667				.9063			
24	45	.4000	.8758	.8558	.8298	.8024	.7459	.6885	.6274
25	90	.0267	.9282	.9605	.9794	.9843	.9704	.9479	.9069
26	90	.0533	.9282	.9605	.9794	.9843	.9704	.9479	.9069
27*	90	.0800				.9809			
28	90	.1067	.9207	.9531	.9694	.9743	.9629	.9404	.8994
29*	90	.1333				.9677			
30*	90	.1867				.9495			
31*	90	.2400				.9223			
32	90	.2933	.8409	.8732	.8872	.8921	.8806	.8556	.8172
33	90	.3467	.9792	1.0016	1.0129	1.0178	1.0089	.9914	.9578
34	90	.4000	.7594	.7868	.8008	.8033	.7942	.7742	.7383
35	90	.6400	.0450	.0450	.0449	.0449	.0450	.0450	.0449
36	90	.7733	.0425	.0425	.0424	.0424	.0400	.0425	.0424
37*	135	.1333				.9697			
38*	135	.2667				.9108			
39	135	.4000	.6520	.7168	.7684	.8058	.8391	.8566	.8655
40	180	.0267	.9143	.9541	.9755	.9854	.9815	.9590	.9229
41	180	.0533	.9018	.9441	.9705	.9854	.9840	.9690	.9354
42*	180	.0800				.9820			
43	180	.1067	.8593	.9166	.9530	.9779	.9864	.9790	.9553
44*	180	.1333				.9697			
45*	180	.1867				.9489			
46*	180	.2400				.9231			
47	180	.2933	.7069	.7793	.8432	.8906	.9365	.9615	.9753
48	180	.3467	.6620	.7368	.8033	.8532	.9040	.9365	.9603
49	180	.4000	.6145	.6869	.7534	.8058	.8591	.9015	.9329
50*	225	.1333				.9702			
51*	225	.2667				.9077			
52	225	.4000	.6470	.7118	.7634	.8033	.8391	.8591	.8730
53	270	.0267	.9293	.9616	.9805	.9879	.9740	.9490	.9104
54	270	.0533	.9268	.9616	.9805	.9879	.9740	.9490	.9079
55*	270	.0800				.9826			
56	270	.1067	.9118	.9491	.9680	.9754	.9615	.9365	.8955
57*	270	.1333				.9699			
58*	270	.1867				.9500			
59*	270	.2400				.9228			
60	270	.2933	.8343	.8667	.8832	.8906	.8791	.8566	.8181
61	270	.3467	.7994	.8292	.8457	.8532	.8416	.8191	.7857
62	270	.4000	.7544	.7843	.7983	.8058	.7942	.7742	.7408
63*	315	.1333				.9680			
64*	315	.2667				.9065			
65	315	.4000	.8693	.8567	.8333	.8058	.7517	.6943	.6286

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(I) Model 12

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9356	.9660	.9842	.9872	.9688	.9550	.9182
2	0	.0267	.9440	.9751	.9876	.9851	.9726	.9427	.9053
3	0	.0533	.9515	.9751	.9851	.9801	.9601	.9252	.8803
4*	0	.0800				.9779			
5	0	.1067	.9689	.9826	.9826	.9676	.9377	.8953	.8404
6*	0	.1333				.9633			
7*	0	.1600				.9552			
8*	0	.1867				.9431			
9	0	.2133	.9814	.9751	.9527	.9277	.8753	.8180	.7556
10*	0	.2400				.9127			
11	0	.2667	.9714	.9551	.9252	.8903	.8280	.7706	.7058
12	0	.2933	.9615	.9377	.9053	.8679	.8030	.7432	.6758
13	0	.3200	.9515	.9202	.8803	.8429	.7731	.7132	.6484
14	0	.3467	.9291	.8928	.8479	.8055	.7332	.6733	.6085
15	0	.3733	.9017	.8529	.8005	.7556	.6808	.6210	.5586
16	0	.4000	.8494	.7906	.7307	.6783	.6060	.5462	.4863
17	0	.4267	.7697	.7008	.6285	.5686	.4888	.4289	.3741
18	0	.4533	.6825	.6060	.5287	.4639	.3816	.3242	.2768
19	0	.4800	.5804	.5038	.4265	.3666	.2943	.2394	.1995
20	0	.5333	.3736	.3067	.2469	.2020	.1521	.1172	.0923
21	0	.5867	.2067	.1621	.1222	.0973	.0673	.0524	.0374
22	0	.6400	.1245	.0948	.0673	.0524	.0374	.0249	.0200
23	0	.6933	.1221	.0898	.0623	.0474	.0324	.0224	.0200
24	0	.8267	.1196	.0898	.0648	.0474	.0324	.0224	.0224
25	0	.9600	.1171	.0898	.0648	.0499	.0324	.0224	.0224
26*	45	.1333				.9639			
27	45	.2667	.9365	.9277	.9103	.8878	.8404	.7930	.7332
28	45	.4000	.7946	.7606	.7232	.6858	.6309	.5811	.5287
29	45	.5333	.3213	.2793	.2394	.2120	.1721	.1446	.1197
30	90	.0267	.9266	.9601	.9776	.9801	.9726	.9477	.9128
31	90	.0533	.9266	.9601	.9801	.9826	.9726	.9502	.9128
32*	90	.0800				.9785			
33	90	.1067	.9191	.9502	.9676	.9701	.9626	.9427	.9028
34*	90	.1333				.9636			
35*	90	.1867				.9425			
36	90	.2400	.9356	.9658	.9842	.9110	.9683	.9544	.9182
37	90	.2933	.8220	.8529	.8654	.8679	.8629	.8429	.8055
38	90	.3467	.7647	.7906	.8030	.8030	.7980	.7781	.7482
39	90	.4000	.8507	.8642	.8717	.8717	.8692	.8567	.8392
40	90	.5333	.2027	.2054	.2054	.2054	.2054	.2004	.1979
41	90	.6667	.0500	.0501	.0501	.0501	.0501	.0501	.0501
42	90	.8000	.0500	.0501	.0501	.0476	.0476	.0501	.0501
43	90	.9333	.0525	.0501	.0501	.0501	.0501	.0501	.0526
44*	135	.1333				.9667			
45	135	.2667	.7606	.8166	.8617	.8918	.9218	.9319	.9294
46	135	.4000	.5429	.5937	.6413	.6789	.7290	.7615	.7866
47	135	.5333	.1226	.1453	.1728	.2004	.2430	.2781	.3181
48	180	.0267	.9132	.9519	.9769	.9845	.9820	.9619	.9268
49	180	.0533	.9007	.9444	.9719	.9845	.9845	.9719	.9394
50*	180	.0800				.9807			
51	180	.1067	.8632	.9118	.9519	.9719	.9845	.9820	.9619
52*	180	.1333				.9658			
53*	180	.1867				.9425			
54*	180	.2400				.9116			
55	180	.2933	.7005	.7640	.8216	.8642	.9168	.9469	.9694
56	180	.3467	.6330	.6939	.7540	.8016	.8617	.9068	.9444
57	180	.4000	.5054	.5611	.6187	.6713	.7465	.8066	.8667
58*	225	.1333				.9656			
59	225	.2667	.7531	.8091	.8567	.8868	.9168	.9294	.9294
60	225	.4000	.5354	.5812	.6313	.6713	.7214	.7565	.7866
61	225	.5333	.1176	.1378	.1678	.1954	.2380	.2755	.3181
62	270	.0267	.9282	.9619	.9820	.9845	.9744	.9494	.9143
63	270	.0533	.9257	.9594	.9795	.9845	.9744	.9494	.9118
64*	270	.0800				.9793			
65	270	.1067	.9132	.9469	.9694	.9719	.9644	.9394	.9018
66*	270	.1333				.9647			
67*	270	.1867				.9419			
68*	270	.2400				.9107			
69	270	.2933				.8642			
70	270	.3467	.7531	.7816	.7966	.7991	.7966	.7765	.7465
71	270	.4000	.6380	.6613	.6713	.6738	.6713	.6563	.6363
72*	315	.1333				.9641			
73	315	.2667	.9307	.9268	.9118	.8893	.8442	.7941	.7365
74	315	.4000	.7756	.7465	.7114	.6763	.6212	.5736	.5210
75	315	.5333	.3052	.2680	.2305	.2004	.1628	.1353	.1127

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(m) Model 13

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9355	.9651	.9817	.9848	.9772	.9539	.9257
2	0	.0267	.9488	.9762	.9874	.9848	.9699	.9427	.9014
3*	0	.0533				.9806			
4	0	.0800	.9661	.9812	.9824	.9724	.9451	.9105	.8567
5*	0	.1067				.9675			
6*	0	.1333				.9583			
7*	0	.1600				.9471			
8*	0	.1867				.9325			
9	0	.2133	.9810	.9688	.9402	.9104	.8533	.7988	.7350
10	0	.2400	.9761	.9539	.9204	.8856	.8236	.7641	.7003
11	0	.2667	.9637	.9340	.8956	.8533	.7864	.7244	.6605
12	0	.2933	.9463	.9091	.8584	.8112	.7343	.6698	.6034
13	0	.3200	.9165	.8669	.8087	.7541	.6698	.6004	.5314
14	0	.3467	.8742	.8098	.7393	.6772	.5829	.5061	.4395
15	0	.3733	.8221	.7502	.6723	.6053	.5085	.4292	.3626
16	0	.4000	.7600	.6856	.6053	.5358	.4366	.3647	.2980
17	0	.4267	.7004	.6235	.5433	.4788	.3845	.3126	.2508
18	0	.4533	.6234	.5440	.4664	.4019	.3200	.2555	.2011
19	0	.4800	.5489	.4695	.3944	.3349	.2629	.2059	.1589
20	0	.5333	.4024	.3378	.2729	.2257	.1687	.1290	.0944
21	0	.5867	.2856	.2310	.1811	.1439	.1042	.0769	.0546
22	0	.6400	.1788	.1391	.1042	.0819	.0571	.0397	.0273
23	0	.6933	.1267	.0969	.0719	.0546	.0372	.0273	.0174
24	0	.8267	.1217	.0919	.0670	.0521	.0347	.0248	.0199
25	0	.9600	.1142	.0894	.0645	.0496	.0322	.0223	.0199
26*	45	.1333				.9583			
27	45	.2667	.9189	.9042	.8782	.8509	.7988	.7467	.6903
28	45	.4000	.6929	.6434	.5904	.5408	.4688	.4093	.3526
29	45	.5333	.3452	.3030	.2605	.2282	.1860	.1538	.1242
30	45	.6667	.1192	.0994	.0819	.0670	.0521	.0422	.0298
31	90	.0267	.9289	.9588	.9750	.9799	.9699	.9477	.9089
32*	90	.0533				.9809			
33	90	.0800	.9264	.9563	.9725	.9749	.9674	.9427	.9064
34*	90	.1067				.9683			
35*	90	.1333				.9583			
36*	90	.1867				.9317			
37	90	.2400	.8469	.8744	.8856	.8881	.8806	.8608	.8244
38	90	.2933	.7749	.7998	.8087	.8087	.8037	.7864	.7549
39	90	.3467	.6507	.6682	.6773	.6772	.6723	.6599	.6332
40	90	.4000	.7418	.7518	.7534	.7574	.7525	.7476	.7334
41	90	.5333	.2215	.2241	.2263	.2285	.2260	.2235	.2188
42	90	.6667	.0622	.0622	.0622	.0646	.0646	.0646	.0621
43	90	.8000	.0498	.0498	.0497	.0522	.0522	.0522	.0522
44	90	.9333	.0498	.0498	.0497	.0522	.0522	.0522	.0522
45*	135	.1333				.9608			
46	135	.2667	.7244	.7767	.8255	.8593	.8940	.9115	.9173
47	135	.4000	.3808	.4357	.4948	.5463	.6109	.6606	.6986
48	135	.5333	.1369	.1643	.1989	.2310	.2757	.3179	.3580
49	180	.0267	.9160	.9510	.9746	.9834	.9809	.9611	.9273
50*	180	.0533				.9826			
51	180	.0800	.8812	.9261	.9597	.9785	.9859	.9785	.9521
52*	180	.1053				.9708			
53*	180	.1307				.9602			
54*	180	.1867				.9320			
55	180	.2400	.7293	.7892	.8429	.8891	.9362	.9636	.9745
56	180	.2933	.6323	.6946	.7583	.8121	.8766	.9239	.9546
57	180	.3467	.4705	.5402	.6141	.6804	.7674	.8370	.8925
58	180	.4000	.3261	.3933	.4674	.5389	.6357	.7153	.7881
59*	225	.1333				.9611			
60	225	.2667	.7169	.7693	.8180	.8568	.8915	.9115	.9173
61	225	.4000	.3734	.4257	.4848	.5389	.6035	.6557	.6986
62	225	.5333	.1319	.1618	.1939	.2285	.2732	.3154	.3580
63	225	.6667	.0324	.0398	.0522	.0646	.0820	.1018	.1218
64	270	.0267	.9310	.9610	.9796	.9834	.9760	.9512	.9124
65*	270	.0533				.9820			
66	270	.0800	.9235	.9560	.9722	.9785	.9685	.9438	.9074
67*	270	.1053				.9700			
68*	270	.1333				.9557			
69*	270	.1867				.9317			
70	270	.2400	.8364	.8664	.8826	.8866	.8791	.8618	.8278
71	270	.2933	.7667	.7917	.8056	.8096	.8046	.7873	.7582
72	270	.3467	.6447	.6647	.6738	.6780	.6755	.6606	.6389
73	270	.4000	.5103	.5253	.5321	.5364	.5339	.5240	.5096
74*	315	.1333				.9591			
75	315	.2667	.9160	.9062	.8802	.8543	.8046	.7525	.6936
76	315	.4000	.6820	.6348	.5843	.5389	.4669	.4098	.3530
77	315	.5333	.3385	.2963	.2561	.2260	.1838	.1515	.1243
78	315	.6667	.1145	.0946	.0746	.0646	.0497	.0397	.0298

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(n) Model 14

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9341	.9654	.9845	.9870	.9761	.9547	.9203
2	0	.0267	.9488	.9763	.9888	.9863	.9725	.9438	.9014
3*	0	.0533				.9814			
4	0	.0800	.9688	.9838	.9838	.9738	.9425	.9014	.8514
5*	0	.1067				.9648			
6*	0	.1333				.9505			
7*	0	.1600				.9300			
8*	0	.1867				.9008			
9	0	.2133	.9713	.9463	.9064	.8614	.7850	.7116	.6367
10	0	.2400	.9588	.9213	.8689	.8190	.7350	.6567	.5793
11	0	.2667	.9363	.8864	.8290	.7715	.6825	.5992	.5218
12	0	.2933	.9039	.8464	.7790	.7166	.6225	.5393	.4594
13	0	.3200	.8664	.8015	.7291	.6617	.5650	.4794	.4020
14	0	.3467	.8215	.7491	.6741	.6042	.5075	.4220	.3496
15	0	.3733	.7740	.6991	.6192	.5493	.4525	.3745	.3046
16	0	.4000	.7191	.6392	.5618	.4944	.4000	.3271	.2622
17	0	.4267	.6592	.5793	.4994	.4345	.3500	.2821	.2222
18	0	.4533	.5992	.5218	.4394	.3795	.3000	.2372	.1848
19	0	.4800	.5393	.4644	.3895	.3296	.2575	.1997	.1548
20	0	.5333	.4295	.3595	.2921	.2447	.1850	.1398	.1049
21	0	.5867	.3221	.2647	.2097	.1698	.1250	.0949	.0699
22	0	.6400	.2397	.1923	.1473	.1198	.0875	.0624	.0449
23	0	.6933	.1648	.1273	.0974	.0749	.0550	.0399	.0275
24	0	.8267	.1223	.0924	.0674	.0524	.0375	.0275	.0200
25	0	.9600	.1149	.0874	.0649	.0474	.0350	.0250	.0200
26*	45	.1333				.9513			
27	45	.2667	.8739	.8464	.8065	.7665	.7000	.6342	.5693
28	45	.4000	.6442	.5967	.5443	.4969	.4275	.3695	.3146
29	45	.5333	.3670	.3221	.2796	.2472	.2025	.1673	.1373
30	45	.6667	.1698	.1423	.1174	.0999	.0800	.0624	.0499
31	90	.0267	.9288	.9588	.9788	.9813	.9750	.9488	.9138
32*	90	.0533				.9823			
33	90	.0800	.9238	.9538	.9738	.9763	.9675	.9438	.9089
34*	90	.1067				.9654			
35*	90	.1333				.9508			
36*	90	.1867				.8999			
37	90	.2400	.7790	.8065	.8190	.8190	.8150	.7965	.7615
38	90	.2933	.6816	.7041	.7141	.7141	.7075	.6916	.6642
39	90	.3467	.5718	.5893	.5967	.5992	.5950	.5818	.5618
40	90	.4000	.4719	.4844	.4919	.4944	.4900	.4769	.4594
41	90	.5333	.5718	.5768	.5768	.5786	.5775	.5743	.5718
42	90	.6667	.0974	.0999	.0999	.1023	.1000	.0999	.0999
43	90	.8000	.0499	.0499	.0499	.0524	.0500	.0499	.0524
44	90	.9333	.0474	.0474	.0474	.0499	.0500	.0499	.0499
45*	135	.1333				.9536			
46	135	.2667	.6042	.6667	.7291	.7757	.8275	.8589	.8739
47	135	.4000	.3346	.3895	.4469	.4988	.5625	.6117	.6517
48	135	.5333	.1473	.1773	.2147	.2469	.2950	.3371	.3820
49	135	.6667	.0524	.0649	.0799	.0998	.1250	.1473	.1773
50	180	.0267	.9138	.9513	.9763	.9852	.9850	.9638	.9313
51*	180	.0533				.9828			
52	180	.0800	.8739	.9213	.9563	.9802	.9900	.9813	.9613
53*	180	.1067				.9671			
54*	180	.1333				.9516			
55*	180	.1867				.9019			
56	180	.2400	.6117	.6866	.7615	.8230	.8925	.9363	.9663
57	180	.2933	.4894	.5668	.6467	.7158	.8050	.8689	.9188
58	180	.3467	.3720	.4469	.5293	.6011	.6975	.7715	.8439
59	180	.4000	.2821	.3471	.4220	.4913	.5875	.6692	.7441
60*	225	.1333				.9530			
61	225	.2667	.5967	.6592	.7216	.7707	.8250	.8564	.8764
62	225	.4000	.3296	.3820	.4419	.4913	.5600	.6067	.6542
63	225	.5333	.1423	.1723	.2122	.2444	.2925	.3346	.3795
64	225	.6667	.0524	.0649	.0799	.0973	.1225	.1473	.1748
65	270	.0267	.9288	.9613	.9813	.9852	.9775	.9513	.9138
66*	270	.0533				.9825			
67	270	.0800	.9213	.9538	.9713	.9752	.9700	.9438	.9064
68*	270	.1067				.9657			
69*	270	.1333				.9505			
70*	270	.1867				.8999			
71	270	.2400	.7715	.7990	.8140	.8205	.8150	.7940	.7640
72	270	.2933	.6717	.6966	.7116	.7158	.7125	.6941	.6692
73	270	.3467	.5693	.5893	.5967	.6036	.5975	.5843	.5618
74	270	.4000	.4669	.4819	.4894	.4538	.4900	.4794	.4619
75*	315	.1333				.9513			
76	315	.2667	.8689	.8464	.8090	.7707	.7050	.6392	.5743
77	315	.4000	.6367	.5918	.5443	.4988	.4275	.3695	.3146
78	315	.5333	.3620	.3196	.2771	.2444	.1975	.1648	.1348
79	315	.6667	.1623	.1373	.1124	.0973	.0750	.0599	.0474

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(o) Model 15

Orifice	Φ, deg	s/d	$p_t/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9285	.9613	.9841	.9886	.9686	.9489	.9091
2	0	.0267	.9423	.9723	.9888	.9874	.9674	.9348	.8858
3*	0	.0533				.9816			
4	0	.0800	.9648	.9823	.9838	.9724	.9373	.8872	.8306
5*	0	.1067				.9643			
6*	0	.1333				.9485			
7*	0	.1600				.9378			
8*	0	.1867				.9175			
9	0	.2133	.9799	.9648	.9287	.8947	.8195	.7469	.6700
10	0	.2400	.9749	.9522	.9112	.8721	.7895	.7143	.6349
11	0	.2667	.9648	.9347	.8912	.8471	.7619	.6842	.6047
12	0	.2933	.9523	.9172	.8661	.8170	.7268	.6491	.5671
13	0	.3200	.9373	.8946	.8411	.7869	.6942	.6115	.5320
14	0	.3467	.9172	.8721	.8111	.7543	.6591	.5764	.4943
15	0	.3733	.3684	.3684	.3705	.3709	.3684	.3684	.3689
16	0	.4000	.8696	.8144	.7485	.6867	.5915	.5088	.4291
17	0	.4267	.8420	.7869	.7184	.6566	.5539	.4712	.3940
18	0	.4533	.8120	.7568	.6859	.6215	.5238	.4411	.3639
19	0	.4800	.7744	.7192	.6484	.5839	.4837	.4060	.3337
20	0	.5333	.6691	.6265	.5682	.5112	.4210	.3459	.2810
21	0	.6667	.1053	.0827	.0651	.0576	.0426	.0351	.0251
22	0	.8000	.1153	.0852	.0626	.0501	.0351	.0251	.0226
23*	45	.1333				.9502			
24	45	.2667	.9147	.8996	.8711	.8420	.7769	.7143	.6449
25	45	.4000	.8070	.7743	.7335	.6917	.6165	.5514	.4843
26	45	.5333	.6115	.5864	.5532	.5137	.4461	.3860	.3287
27	90	.0267	.9197	.9573	.9788	.9849	.9724	.9423	.8983
28*	90	.0533				.9818			
29	90	.0800	.9122	.9497	.9713	.9749	.9624	.9373	.8933
30*	90	.1067				.9638			
31*	90	.1333				.9514			
32*	90	.1867				.9175			
33	90	.2400	.8170	.8495	.8661	.8721	.8621	.8346	.7955
34	90	.2933	.7644	.7969	.8111	.8145	.8070	.7819	.7428
35	90	.3467	.7067	.7367	.7510	.7543	.7444	.7218	.6876
36	90	.4000	.6491	.6741	.6859	.6892	.6792	.6591	.6298
37	90	.5333	.6950	.7092	.7192	.7217	.7143	.7043	.6918
38	90	.6667	.0477	.0526	.0551	.0551	.0526	.0526	.0526
39	90	.8000	.0427	.0451	.0476	.0476	.0451	.0451	.0476
40*	135	.1333				.9525			
41	135	.2667	.6724	.7417	.8019	.8420	.8847	.9048	.9124
42	135	.4000	.5093	.5764	.6416	.6892	.7469	.7794	.8071
43	135	.5333	.3462	.4060	.4636	.5062	.5589	.5890	.6091
44	180	.0267	.8982	.9447	.9749	.9849	.9799	.9574	.9249
45*	180	.0533				.9832			
46	180	.0800	.8505	.9096	.9523	.9749	.9850	.9774	.9550
47*	180	.1067				.9649			
48*	180	.1333				.9514			
49*	180	.1867				.9172			
50	180	.2400	.6623	.7417	.8145	.8671	.9248	.9574	.9775
51	180	.2933	.5921	.6741	.7518	.8120	.8822	.9273	.9625
52	180	.3467	.5193	.6014	.6842	.7468	.8296	.8847	.9324
53	180	.4000	.4541	.5363	.6165	.6817	.7694	.8346	.8873
54*	225	.1333				.9516			
55	225	.2667	.6699	.7367	.7969	.8395	.8822	.8997	.9099
56	225	.4000	.5318	.5688	.6340	.6817	.7418	.7744	.8046
57	225	.5333	.3437	.3984	.4586	.5037	.5564	.5865	.6091
58	270	.0267	.9182	.9573	.9799	.9849	.9724	.9423	.9024
59*	270	.0533				.9830			
60	270	.0800	.9057	.9472	.9698	.9749	.9624	.9348	.8898
61*	270	.1067				.9646			
62*	270	.1333				.9508			
63*	270	.1867				.9138			
64	270	.2400	.8053	.8420	.8621	.8671	.8546	.8321	.7946
65	270	.2933	.7527	.7869	.8044	.8095	.7995	.7744	.7419
66	270	.3467	.6975	.7292	.7443	.7493	.7393	.7168	.6868
67	270	.4000	.6373	.6641	.6791	.6842	.6742	.6566	.6291
68*	315	.1333				.9500			
69	315	.2667	.9082	.8996	.8721	.8420	.7769	.7143	.6467
70	315	.4000	.7953	.7668	.7293	.6867	.6140	.5489	.4838
71	315	.5333	.6046	.5814	.5463	.5062	.4386	.3809	.3258

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(p) Model 16

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9287	.9542	.9808	.9865	.9767	.9491	.9071
2	0	.0267	.9426	.9736	.9873	.9849	.9674	.9326	.8853
3*	0	.0533				.9804			
4	0	.0800	.9650	.9836	.9823	.9725	.9326	.8878	.8281
5*	0	.1067				.9630			
6*	0	.1333				.9484			
7*	0	.1600				.9350			
8*	0	.1867				.9162			
9	0	.2133	.9774	.9612	.9276	.8929	.8182	.7461	.6690
10	0	.2400	.9700	.9463	.9077	.8680	.7884	.7138	.6342
11	0	.2667	.9600	.9288	.8829	.8382	.7560	.6789	.5994
12	0	.2933	.9451	.9089	.8580	.8108	.7237	.6441	.5596
13	0	.3200	.9252	.8840	.8306	.7810	.6889	.6093	.5272
14	0	.3467	.9028	.8566	.8008	.7461	.6566	.5720	.4899
15	0	.3733	.8755	.8242	.7660	.7138	.6217	.5372	.4576
16	0	.4000	.8406	.7869	.7287	.6765	.5869	.5048	.4253
17	0	.4267	.7934	.7371	.6814	.6317	.5471	.4675	.3904
18	0	.4533	.7188	.6599	.6018	.5546	.4825	.4153	.3457
19	0	.4800	.6044	.5354	.4700	.4228	.3581	.3034	.2512
20	0	.5333	.3955	.3312	.2736	.2338	.1840	.1492	.1169
21	0	.5867	.2238	.1793	.1393	.1119	.0821	.0647	.0497
22	0	.6400	.1268	.0971	.0696	.0547	.0398	.0298	.0224
23	0	.7733	.1219	.0896	.0647	.0497	.0348	.0249	.0224
24	0	.9067	.1169	.0896	.0647	.0497	.0323	.0249	.0224
25*	45	.1333				.9501			
26	45	.2667	.9078	.8940	.8655	.8357	.7734	.7113	.6391
27	45	.4000	.7785	.7495	.7138	.6790	.6118	.5471	.4825
28	45	.5333	.3358	.2988	.2636	.2363	.1990	.1691	.1418
29	45	.6400	.0995	.0847	.0671	.0557	.0473	.0373	.0298
30	90	.0267	.9177	.9562	.9749	.9799	.9699	.9425	.9003
31*	90	.0533				.9801			
32	90	.0800	.9103	.9487	.9674	.9725	.9624	.9351	.8928
33*	90	.1067				.9630			
34*	90	.1333				.9498			
35*	90	.1867				.9162			
36	90	.2400	.8133	.8491	.8655	.8680	.8580	.8331	.7933
37	90	.2933	.7586	.7894	.8058	.8108	.8008	.7784	.7386
38	90	.3467	.8282	.8526	.8664	.8680	.8614	.8440	.8157
39	90	.4000	.6292	.6556	.6697	.6740	.6648	.6448	.6143
40*	135	.1333				.9507			
41	135	.2667	.6740	.7404	.8017	.8406	.8838	.9013	.9077
42	135	.4000	.5049	.5709	.6349	.6790	.7295	.7569	.7809
43	135	.5333	.1467	.1720	.2042	.2313	.2689	.3062	.3432
44	135	.6400	.0323	.0349	.0473	.0572	.0722	.0871	.1069
45	180	.0267	.9003	.9448	.9735	.9849	.9809	.9585	.9227
46*	180	.0533				.9818			
47	180	.0800	.8531	.9074	.9536	.9749	.9859	.9809	.9575
48*	180	.1067				.9638			
49*	180	.1333				.9504			
50*	180	.1867				.9137			
51	180	.2400	.6665	.7429	.8166	.8680	.9262	.9585	.9774
52	180	.2933	.5919	.6731	.7519	.8083	.8789	.9237	.9575
53	180	.3467	.5198	.6008	.6847	.7436	.8216	.8739	.9177
54	180	.4000	.4551	.5335	.6125	.6715	.7469	.8042	.8580
55*	225	.1333				.9504			
56	225	.2667	.6690	.7354	.7967	.8382	.8789	.8988	.9052
57	225	.4000	.5024	.5659	.6299	.6715	.7195	.7494	.7759
58	225	.5333	.1467	.1720	.2042	.2313	.2689	.3037	.3432
59	225	.6400	.0323	.0349	.0473	.0572	.0722	.0871	.1069
60	270	.0267	.9177	.9573	.9809	.9849	.9710	.9436	.9028
61*	270	.0533				.9809			
62	270	.0800	.9103	.9473	.9710	.9749	.9635	.9336	.8903
63*	270	.1067				.9633			
64*	270	.1333				.9501			
65*	270	.1867				.9148			
66	270	.2400	.8083	.8426	.8614	.8655	.8565	.8316	.7908
67	270	.2933	.7536	.7853	.8042	.8083	.7992	.7743	.7386
68	270	.3467	.6939	.7229	.7419	.7436	.7370	.7145	.6789
69	270	.4000	.6268	.6531	.6697	.6740	.6672	.6448	.6143
70*	315	.1333				.9487			
71	315	.2667	.9078	.8950	.8689	.8406	.7793	.7145	.6441
72	315	.4000	.7735	.7454	.7121	.6790	.6125	.5477	.4800
73	315	.5333	.3283	.2892	.2564	.2288	.1917	.1643	.1368
74	315	.6400	.0995	.0798	.0672	.0572	.0448	.0349	.0274

*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Continued

(q) Model 17

Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9227	.9606	.9823	.9859	.9671	.9497	.9018
2*	0	.0267				.9834			
3	0	.0533	.9591	.9792	.9841	.9751	.9444	.9019	.8413
4*	0	.0800				.9655			
5*	0	.1067				.9492			
6*	0	.1333				.9316			
7*	0	.1600				.9076			
8	0	.1867	.9740	.9519	.9122	.8734	.7957	.7205	.6403
9	0	.2133	.9665	.9321	.8874	.8436	.7585	.6808	.5981
10	0	.2400	.9491	.9073	.8577	.8089	.7214	.6410	.5584
11	0	.2667	.9317	.8850	.8279	.7766	.6817	.6038	.5187
12	0	.2933	.9094	.8552	.7932	.7345	.6395	.5590	.4765
13	0	.3200	.8796	.8205	.7536	.6948	.5949	.5118	.4318
14	0	.3467	.8497	.7833	.7139	.6526	.5528	.4696	.3921
15	0	.3733	.8174	.7486	.6767	.6129	.5156	.4348	.3623
16	0	.4000	.7777	.7040	.6272	.5633	.4660	.3876	.3176
17	0	.4267	.7379	.6643	.5875	.5211	.4264	.3528	.2854
18	0	.4533	.7007	.6222	.5454	.4789	.3867	.3180	.2531
19	0	.4800	.6584	.5801	.5007	.4367	.3495	.2808	.2233
20	0	.5333	.5814	.5032	.4239	.3647	.2851	.2286	.1787
21	0	.5867	.4969	.4239	.3545	.3027	.2355	.1863	.1464
22	0	.7200	.1168	.0917	.0694	.0546	.0397	.0273	.0199
23	0	.8533	.1118	.0868	.0645	.0471	.0322	.0248	.0199
24*	45	.1333				.9297			
25	45	.2667	.8622	.8403	.8032	.7692	.6990	.6361	.5633
26	45	.4000	.7007	.6569	.6073	.5657	.4908	.4298	.3698
27	45	.5333	.4994	.4536	.4041	.3623	.3049	.2584	.2134
28*	90	.0267				.9834			
29	90	.0533	.9044	.9444	.9668	.9702	.9568	.9317	.8835
30*	90	.0800				.9649			
31*	90	.1067				.9492			
32*	90	.1333				.9305			
33	90	.1867	.8150	.8527	.8701	.8734	.8626	.8373	.7941
34	90	.2400	.7528	.7883	.8032	.8064	.7982	.7727	.7321
35	90	.2933	.6833	.7139	.7288	.7295	.7214	.7007	.6651
36	90	.3467	.6371	.6605	.6701	.6708	.6649	.6482	.6189
37	90	.4000	.5305	.5486	.5610	.5616	.5532	.5389	.5148
38	90	.5333	.3432	.3536	.3584	.3588	.3532	.3462	.3354
39	90	.6667	.0572	.0572	.0571	.0572	.0571	.0547	.0546
40	90	.8000	.0494	.0494	.0493	.0494	.0493	.0495	.0494
41*	135	.1333				.9313			
42	135	.2667	.5955	.6657	.7272	.7722	.8233	.8513	.8659
43	135	.4000	.3979	.4576	.5194	.5668	.6285	.6717	.7073
44	135	.5333	.2314	.2756	.3246	.3614	.4207	.4686	.5148
45*	180	.0267				.9845			
46	180	.0533	.8633	.9179	.9558	.9749	.9817	.9737	.9439
47*	180	.0800				.9669			
48*	180	.1067				.9503			
49*	180	.1333				.9313			
50	180	.1867	.6761	.7567	.8259	.8787	.9324	.9659	.9777
51	180	.2400	.5903	.6709	.7506	.8086	.8804	.9268	.9595
52	180	.2933	.5123	.5928	.6727	.7358	.8207	.8799	.9257
53	180	.3467	.4239	.5044	.5844	.6500	.7428	.8123	.8711
54	180	.4000	.3458	.4212	.4987	.5616	.6597	.7368	.8035
55*	225	.1333				.9322			
56	225	.2667	.5929	.6657	.7272	.7748	.8259	.8565	.8737
57	225	.4000	.3953	.4576	.5194	.5668	.6311	.6795	.7177
58	225	.5333	.2314	.2782	.3246	.3666	.4259	.4764	.5226
59*	270	.0267				.9839			
60	270	.0533	.9075	.9491	.9687	.9749	.9636	.9346	.8919
61*	270	.0800				.9669			
62*	270	.1067				.9512			
63*	270	.1333				.9316			
64	270	.1867	.8113	.8477	.8701	.8761	.8649	.8461	.8035
65	270	.2400	.7619	.7931	.8129	.8164	.8077	.7888	.7515
66	270	.2933	.6891	.7177	.7350	.7384	.7324	.7159	.6813
67	270	.3467	.6111	.6371	.6519	.6552	.6493	.6326	.6032
68	270	.4000	.5279	.5512	.5610	.5668	.5610	.5467	.5226
69*	315	.1333				.9308			
70	315	.2667	.8659	.8451	.8077	.7748	.7038	.6404	.5694
71	315	.4000	.6995	.6605	.6103	.5694	.4961	.4348	.3744
72	315	.5333	.5045	.4550	.4052	.3666	.3065	.2603	.2158

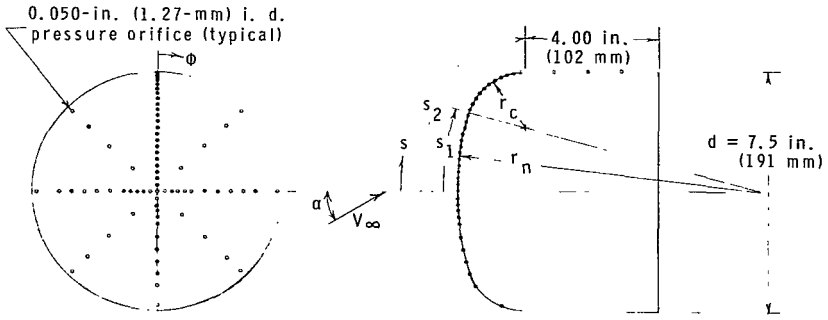
*Measured by 1-psi (6895-N/m^2) gage.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS AT M_∞ = 4.63 - Concluded

(r) Model 18

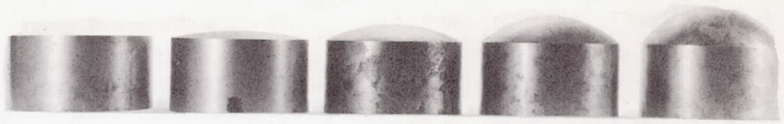
Orifice	Φ, deg	s/d	$p_l/p_{t,2}$ at α of —						
			-15°	-10°	-5°	0°	5°	10°	15°
1	0	.0000	.9270	.9668	.9938	1.0004	.9915	.9522	.8904
2	0	.0267	.9447	.9821	.9972	.9929	.9752	.9287	.8503
3*	0	.0533				.9874			
4*	0	.0800				.9707			
5	0	.1067	.9896	1.0046	.9846	.9453	.8977	.8289	.7353
6*	0	.1333				.9214			
7	0	.1600	.9896	.9846	.9447	.8854	.8228	.7414	.6378
8	0	.1867	.9796	.9646	.9147	.8478	.7777	.6940	.5877
9	0	.2133	.9621	.9397	.8798	.8078	.7326	.6441	.5376
10	0	.2400	.9397	.9072	.8397	.7603	.6802	.5917	.4877
11	0	.2667	.9122	.8696	.7997	.7153	.6351	.5467	.4426
12	0	.2933	.8771	.8297	.7548	.6652	.5827	.4968	.4002
13	0	.3200	.8397	.7848	.7047	.6152	.5301	.4444	.3551
14	0	.3467	.7972	.7397	.6573	.5652	.4802	.3970	.3151
15	0	.3733	.7546	.6922	.6074	.5177	.4351	.3571	.2775
16	0	.4000	.7047	.6398	.5573	.4652	.3875	.3145	.2426
17	0	.4267	.6598	.5897	.5074	.4201	.3451	.2771	.2101
18	0	.4533	.6122	.5448	.4624	.3777	.3052	.2446	.1800
19	0	.4800	.5598	.4899	.4123	.3326	.2676	.2097	.1551
20	0	.5067	.5123	.4423	.3649	.2952	.2326	.1798	.1301
21	0	.5333	.4648	.3949	.3248	.2576	.2000	.1548	.1100
22	0	.5600	.4173	.3499	.2849	.2226	.1701	.1299	.0925
23	0	.5867	.3749	.3098	.2474	.1900	.1451	.1098	.0750
24	0	.6133	.3348	.2724	.2150	.1651	.1225	.0923	.0626
25	0	.6400	.2949	.2350	.1824	.1376	.1025	.0748	.0501
26	0	.6667	.2574	.1999	.1549	.1150	.0850	.0624	.0399
27	0	.6933	.2225	.1749	.1399	.1100	.0875	.0748	.0651
28	0	.7200	.1924	.1449	.1100	.0800	.0576	.0399	.0275
29	0	.7467	.1649	.1250	.0925	.0651	.0476	.0324	.0225
30	0	.7733	.1399	.1025	.0750	.0551	.0374	.0249	.0175
31	0	.8000	.1300	.0950	.0701	.0501	.0349	.0225	.0150
32	0	.8533	.1275	.0925	.0676	.0476	.0325	.0225	.0150
33	0	.9067	.1125	.1050	.0950	.0875	.0800	.0773	.0725
34	0	.9600	.1225	.0900	.0649	.0476	.0325	.0249	.0175
35	0	1.0133	.1874	.1699	.1599	.1551	.1501	.1474	.1476
36	0	1.0667	.1200	.0875	.0649	.0476	.0349	.0249	.0200
37*	45	.0267				.9969			
38*	45	.0800				.9712			
39*	45	.1333				.9225			
40	45	.1867	.9197	.9222	.8947	.8478	.7952	.7240	.6378
41	45	.2400	.8696	.8571	.8197	.7628	.7027	.6317	.5478
42	45	.2933	.7446	.7222	.6773	.6152	.5551	.4868	.4127
43	45	.3467	.6773	.6473	.5949	.5301	.4701	.4095	.3451
44	45	.4000	.6147	.5797	.5273	.4627	.4077	.3496	.2900
45	45	.4533	.4623	.4223	.3774	.3276	.2825	.2422	.1975
46	45	.5067	.4273	.3899	.3425	.2927	.2501	.2072	.1651
47	45	.5600	.3448	.3073	.2674	.2226	.1875	.1523	.1200
48	45	.6133	.2674	.2350	.1975	.1651	.1351	.1098	.0850
49	45	.6667	.1999	.1699	.1424	.1150	.0925	.0748	.0576
50	45	.7200	.1474	.1225	.1000	.0800	.0651	.0499	.0374
51	45	.7733	.1050	.0875	.0701	.0551	.0424	.0324	.0250
52	45	.8533	.0975	.0775	.0624	.0476	.0374	.0274	.0225
53	45	.9600	.0883	.0680	.0554	.0429	.0328	.0228	.0176
54	45	1.0667	.0858	.0680	.0529	.0404	.0328	.0228	.0151
55*	90	.0267				.9982			
56*	90	.0533				.9902			
57*	90	.0800				.9743			
58*	90	.1067				.9525			
59*	90	.1333				.9250			
60	90	.1867	.7918	.8236	.8464	.8520	.8418	.8121	.7663
61	90	.2400	.7136	.7429	.7607	.7663	.7587	.7339	.6907
62	90	.2933	.6253	.6523	.6624	.6706	.6629	.6405	.6075
63	90	.3467	.5320	.5567	.5641	.5696	.5646	.5473	.5192
64	90	.4000	.4439	.4609	.4710	.4740	.4713	.4564	.4336
65	90	.4533	.3605	.3727	.3779	.3807	.3780	.3656	.3504
66	90	.5067	.2799	.2897	.2922	.2949	.2949	.2850	.2747
67	90	.5600	.2144	.2217	.2217	.2243	.2243	.2194	.2092
68	90	.6133	.1588	.1637	.1663	.1663	.1663	.1614	.1563
69	90	.6667	.1134	.1159	.1159	.1159	.1159	.1135	.1109
70	90	.7200	.0807	.0807	.0807	.0807	.0807	.0808	.0782
71	90	.7733	.0555	.0554	.0554	.0554	.0554	.0555	.0529
72	90	.8533	.0479	.0479	.0479	.0479	.0479	.0479	.0479
73	90	.9600	.0479	.0454	.0454	.0479	.0479	.0454	.0454
74	90	1.0667	.0454	.0454	.0454	.0454	.0454	.0454	.0454
75	180	.0267	.8952	.9344	.9773	.9982	1.0007	.9710	.9175
76*	180	.0533				.9894			
77*	180	.0800				.9740			
78	180	.1067	.7816	.8312	.9043	.9554	.9855	.9911	.9704
79*	180	.1333				.9250			
80*	270	.0267				.9968			
81*	270	.0533				.9874			
82*	270	.0800				.9712			
83*	270	.1067				.9506			
84*	270	.1333				.9242			

*Measured by 1-psi (6895-N/m^2) gage.



Model shape	Model	$\frac{r_n}{d}$	$\frac{r_c}{d}$	$\frac{s_1}{d}$	$\frac{s_2}{d}$	Model shape	Model	$\frac{r_n}{d}$	$\frac{r_c}{d}$	$\frac{s_1}{d}$	$\frac{s_2}{d}$
	1	∞	0	0.500	0.500		10	1.933	0.400	0.126	0.728
	2		.100	.400	.557		11	1.000	0	.524	.524
	3		.200	0.300	.614		12		.200	.384	.622
	4		.300	0.200	.672		13		.300	.290	.674
	5		.400	0.100	.728		14		.400	.167	.729
	6	1.933	0	0.506	.506		15	.707	0	.555	.555
	7		.100	0.425	.560		16		.200	.448	.635
	8		.200	0.336	.616		17	.577	0	.605	.605
	9		.300	0.237	.672		18	0.500 to ∞ 0.500	.500 0	.785	.785

Figure 1.- Model geometry.



$r_n/d = \infty$ Model 1 | $r_n/d = 1.933$ Model 6 | $r_n/d = 1.000$ Model 11 | $r_n/d = 0.707$ Model 15 | $r_n/d = 0.577$ Model 17

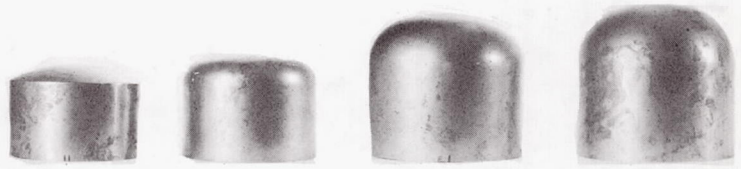
(a) $r_c/d = 0.$

$r_c/d = 0$ Model 1 | $r_c/d = 0.100$ Model 2 | $r_c/d = 0.200$ Model 3 | $r_c/d = 0.300$ Model 4 | $r_c/d = 0.400$ Model 5 | $r_c/d = 0.500$ Model 18

(b) $r_n/d = \infty.$

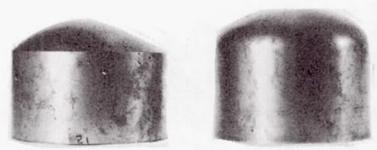
$r_c/d = 0$ Model 6 | $r_c/d = 0.100$ Model 7 | $r_c/d = 0.200$ Model 8 | $r_c/d = 0.300$ Model 9 | $r_c/d = 0.400$ Model 10

(c) $r_n/d = 1.933.$



$r_c/d = 0$ Model 11 | $r_c/d = 0.200$ Model 12 | $r_c/d = 0.300$ Model 13 | $r_c/d = 0.400$ Model 14

(d) $r_n/d = 1.000.$



$r_c/d = 0$ Model 15 | $r_c/d = 0.200$ Model 16

(e) $r_n/d = 0.707.$

L-67-1073

Figure 2.- Model photographs.

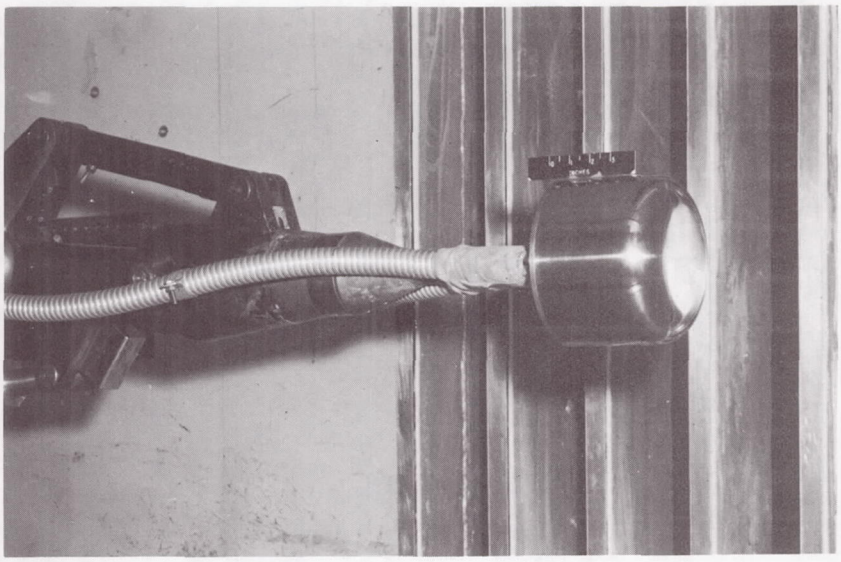
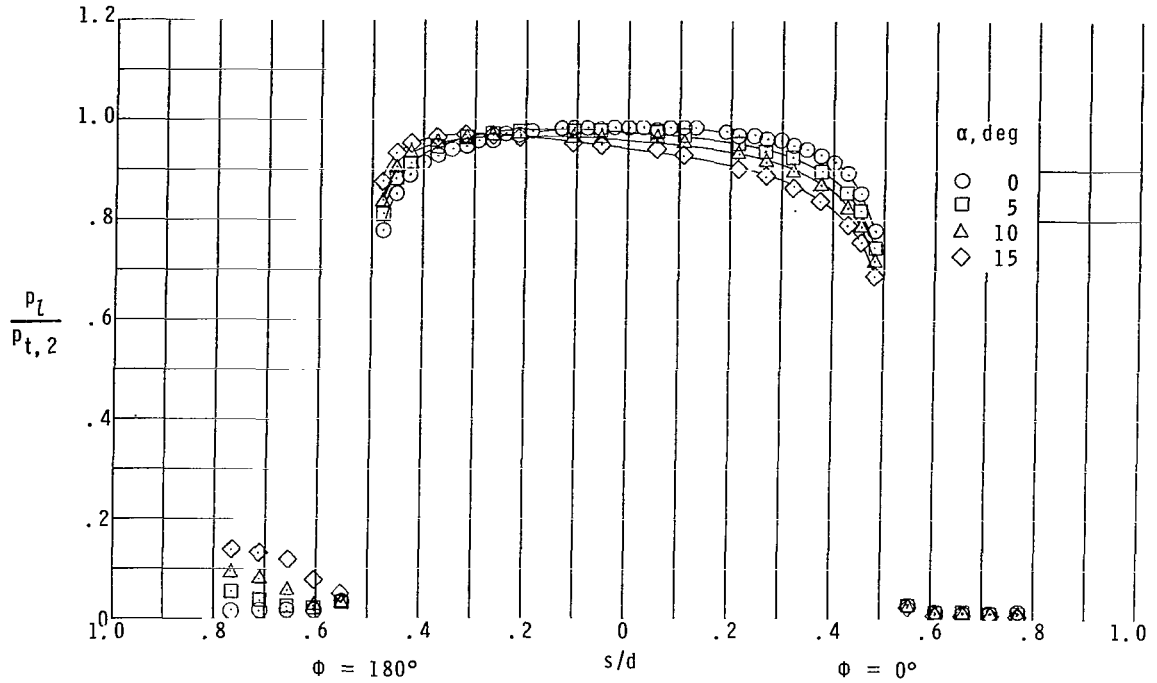
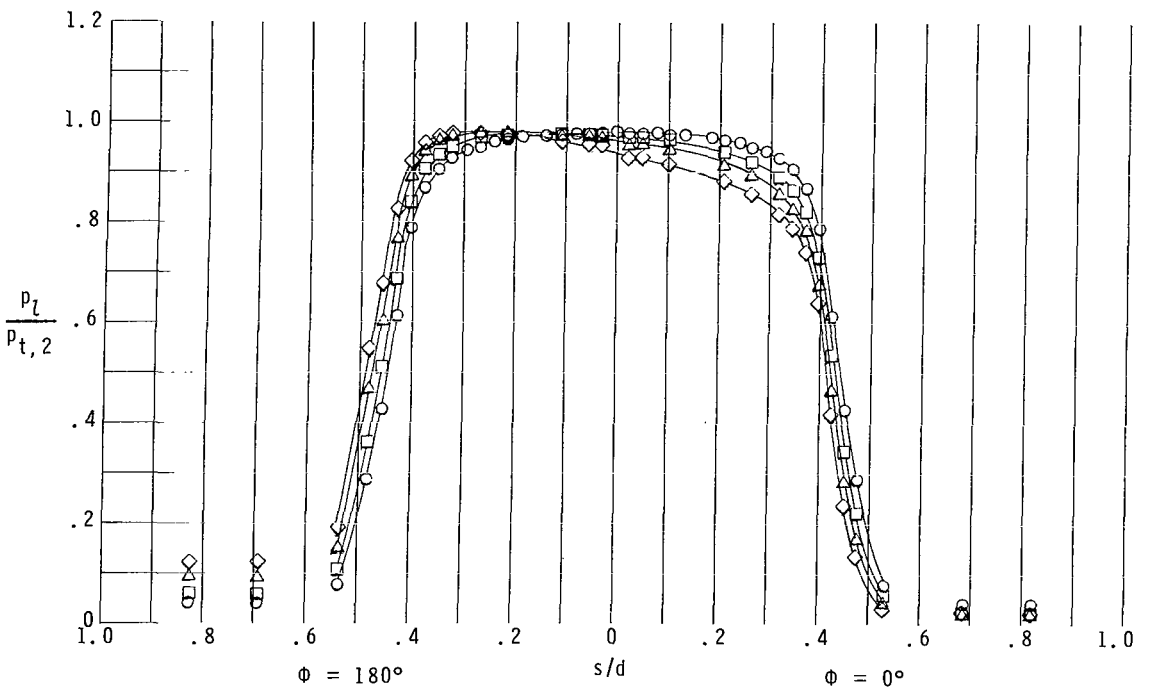


Figure 3.- Typical model installation in test section. L-65-7350

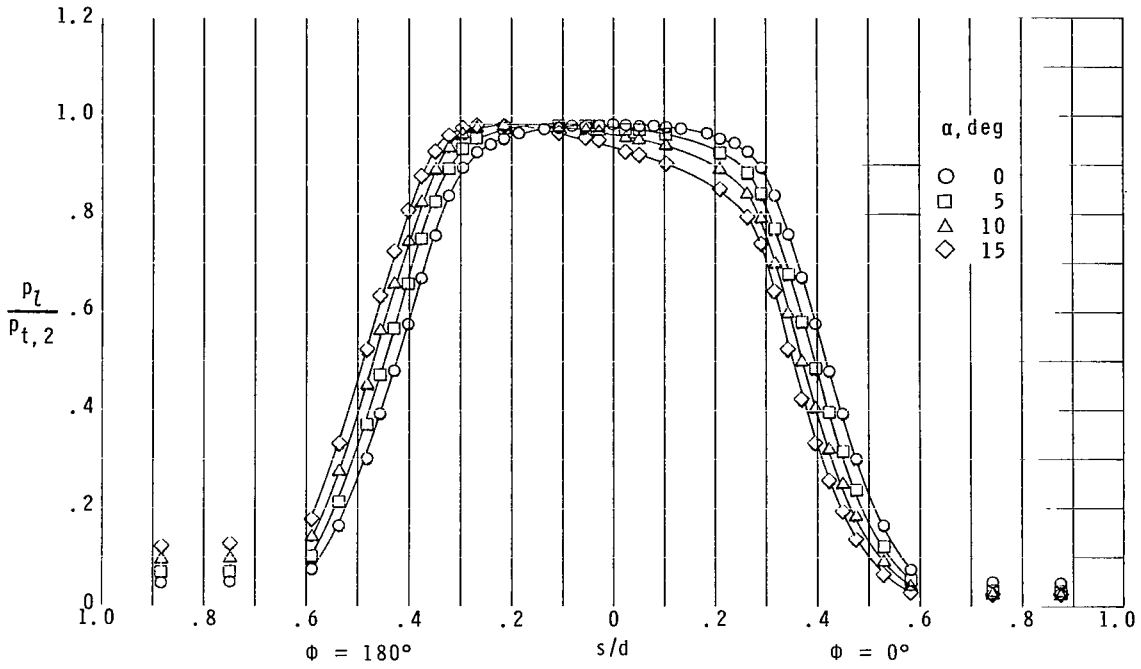


(a) Model 1.

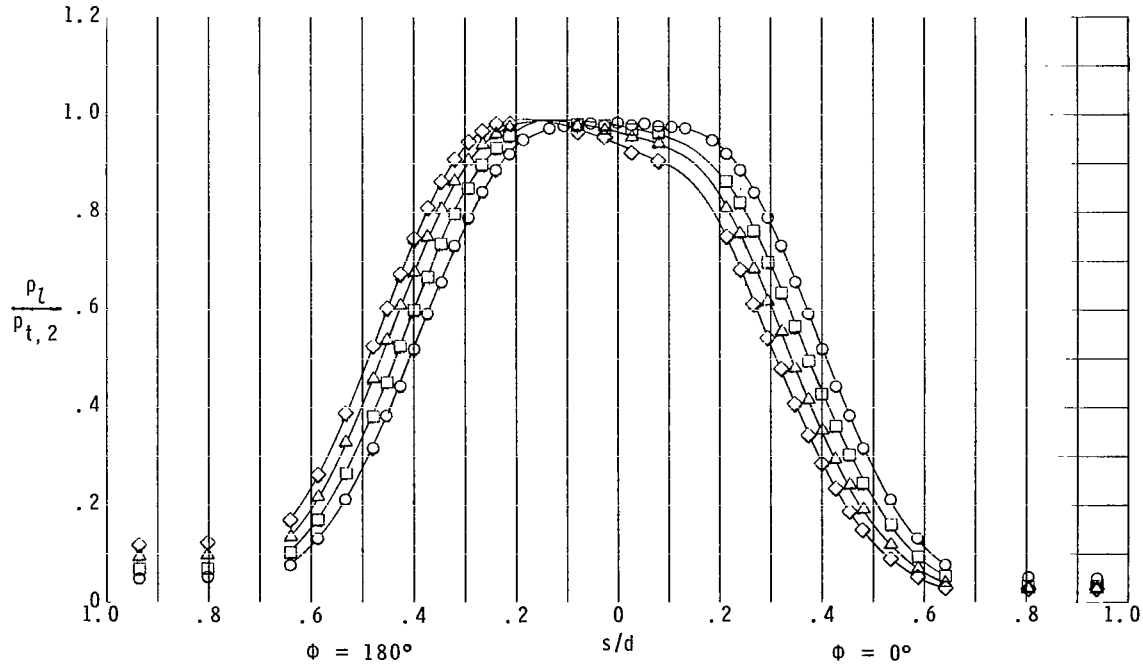


(b) Model 2.

Figure 4.- Effect of angle of attack on pressure distributions. $M_\infty = 4.63$.

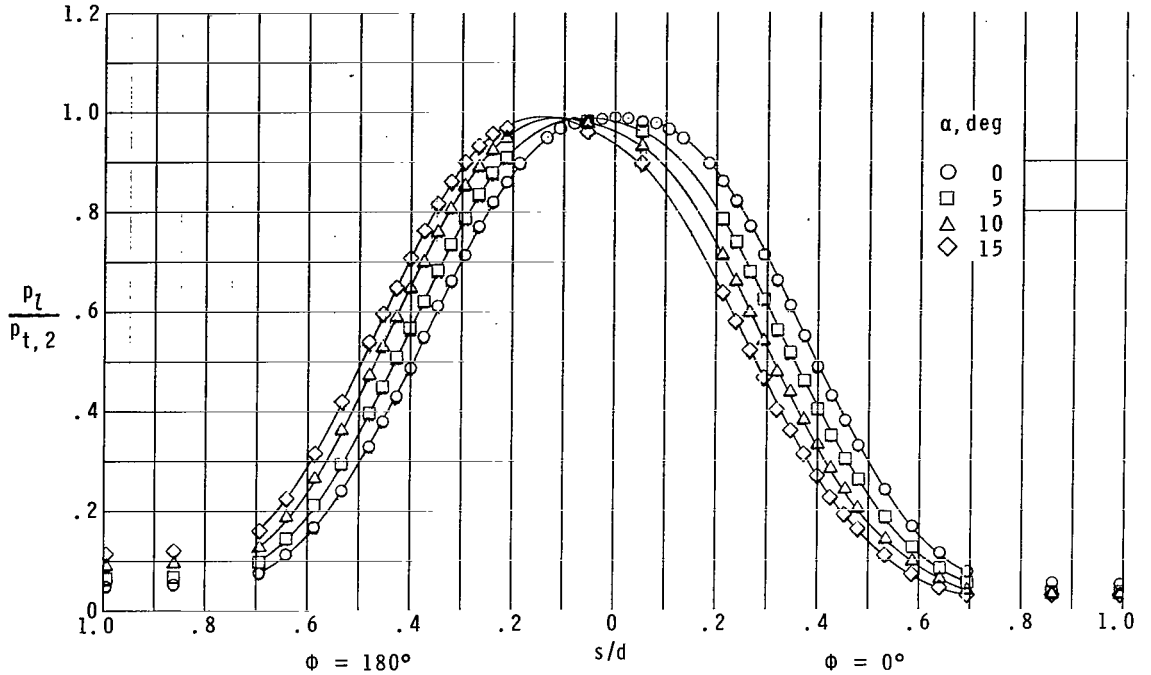


(c) Model 3.

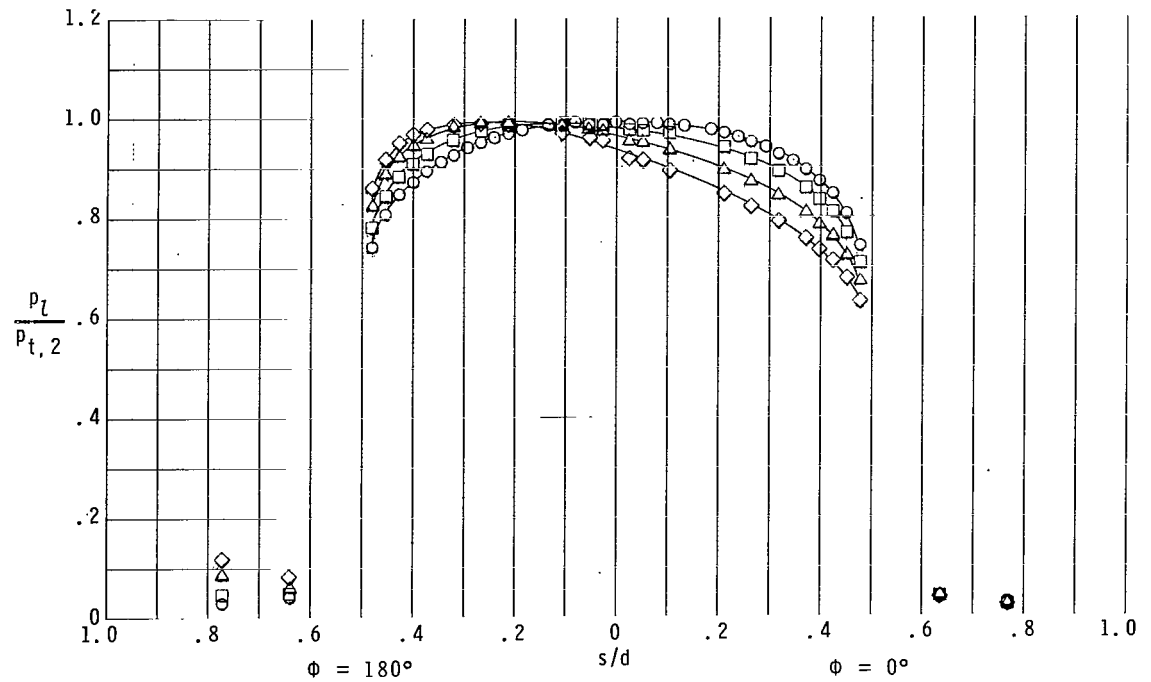


(d) Model 4.

Figure 4.- Continued.

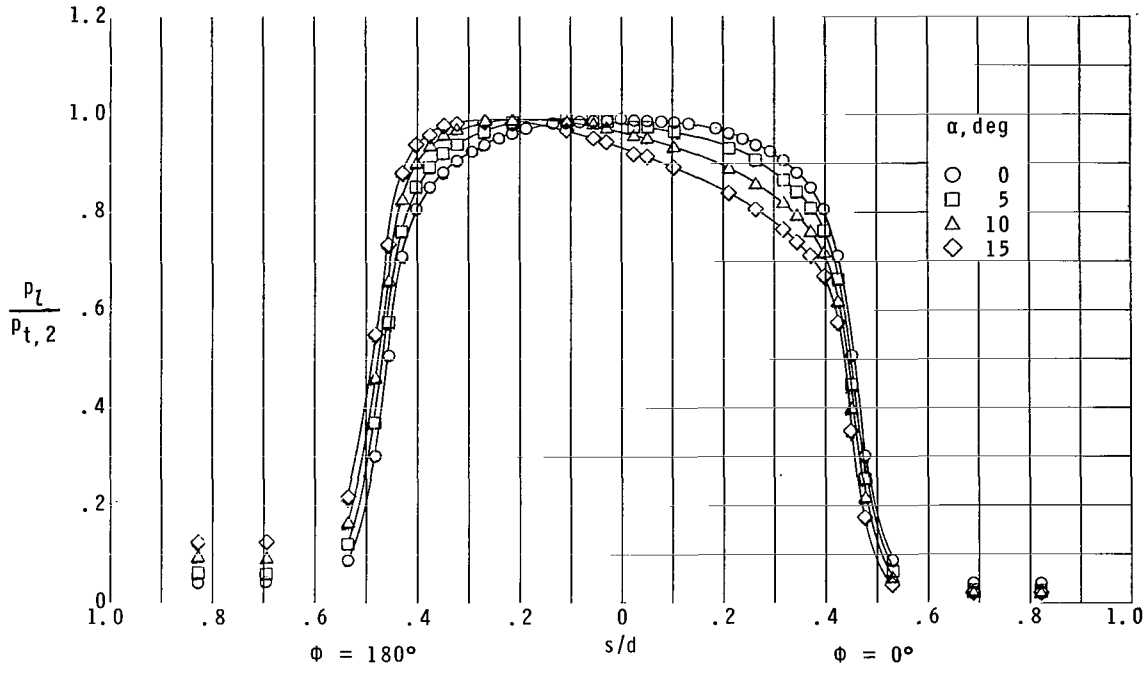


(e) Model 5.

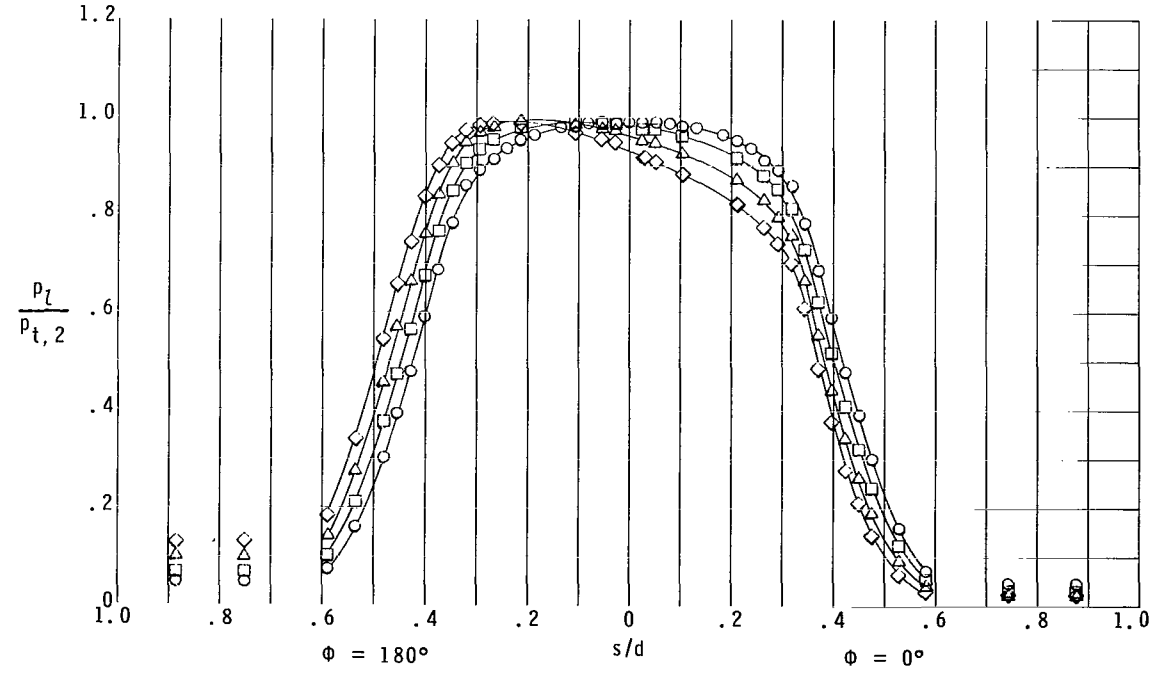


(f) Model 6.

Figure 4.- Continued.

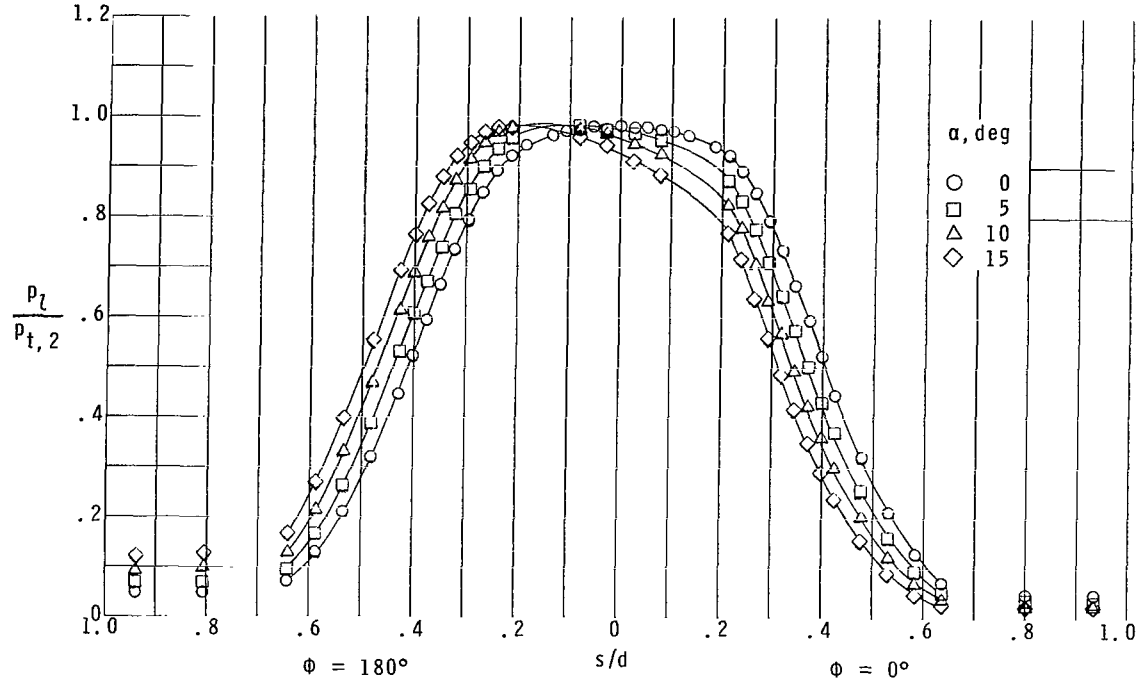


(g) Model 7.

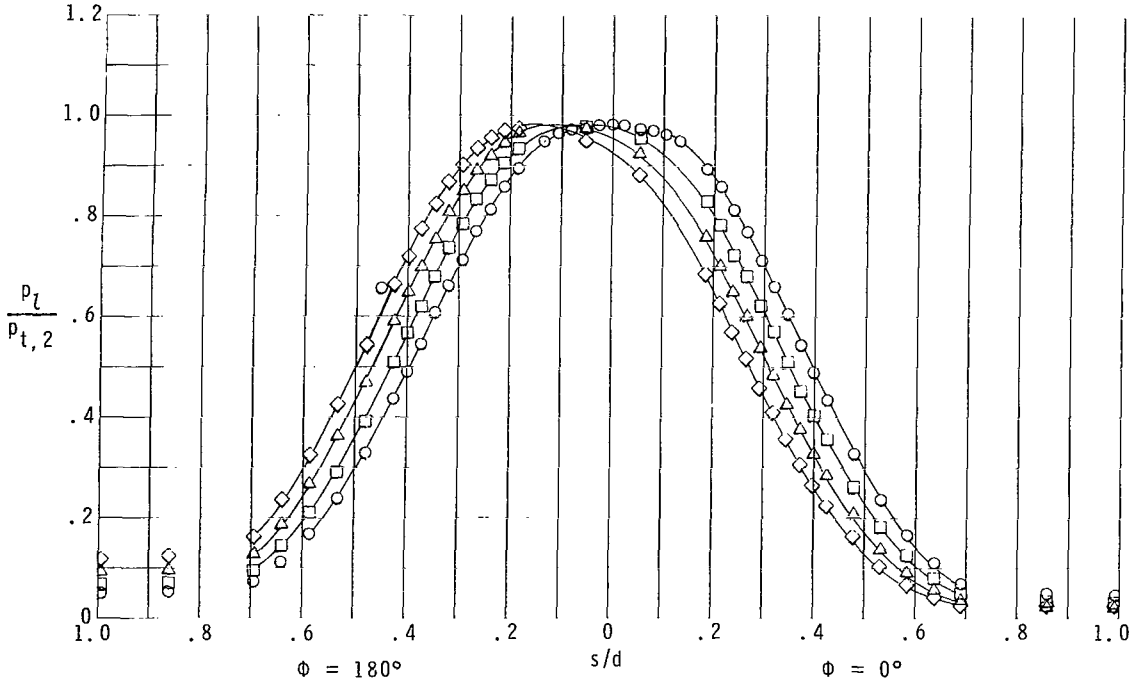


(h) Model 8.

Figure 4.- Continued.

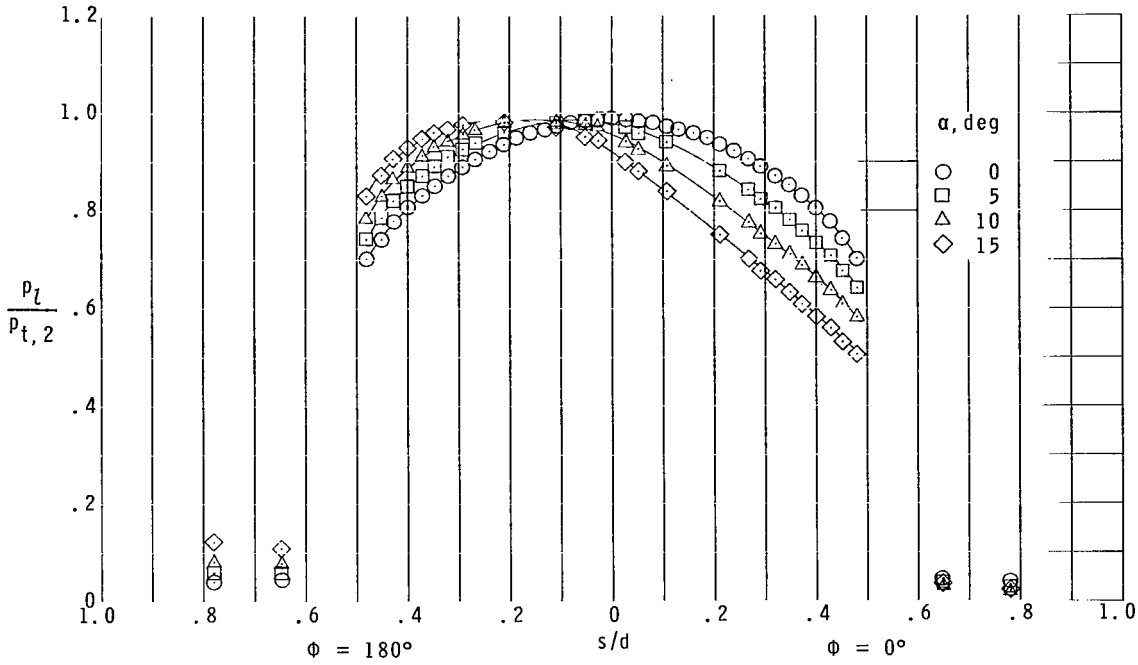


(i) Model 9.

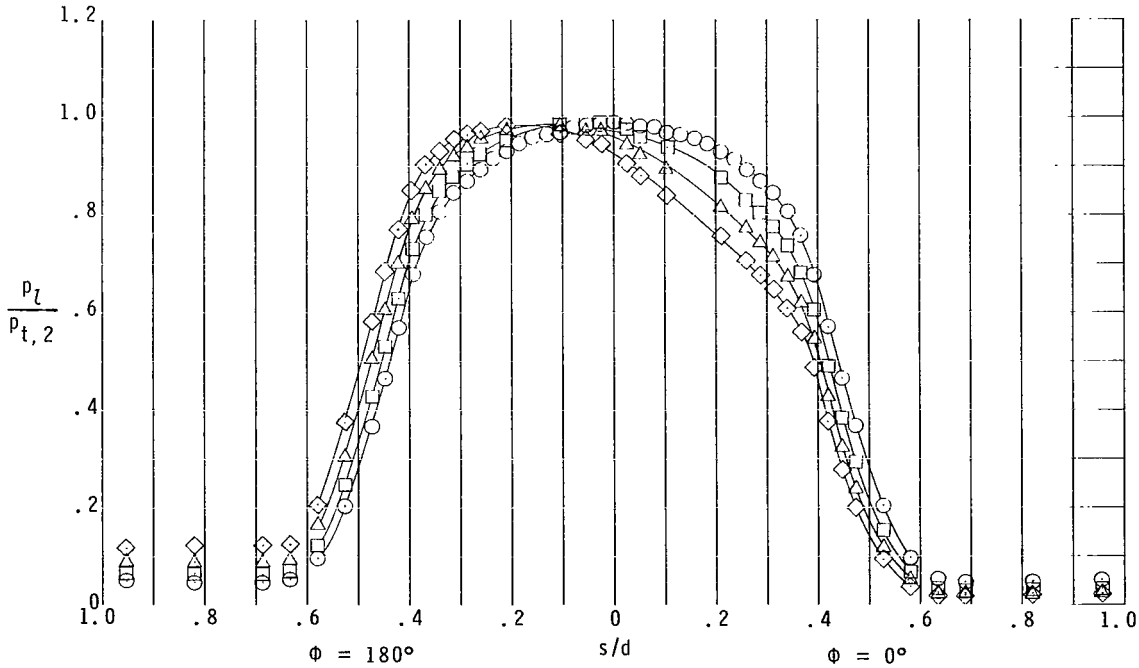


(j) Model 10.

Figure 4.- Continued.

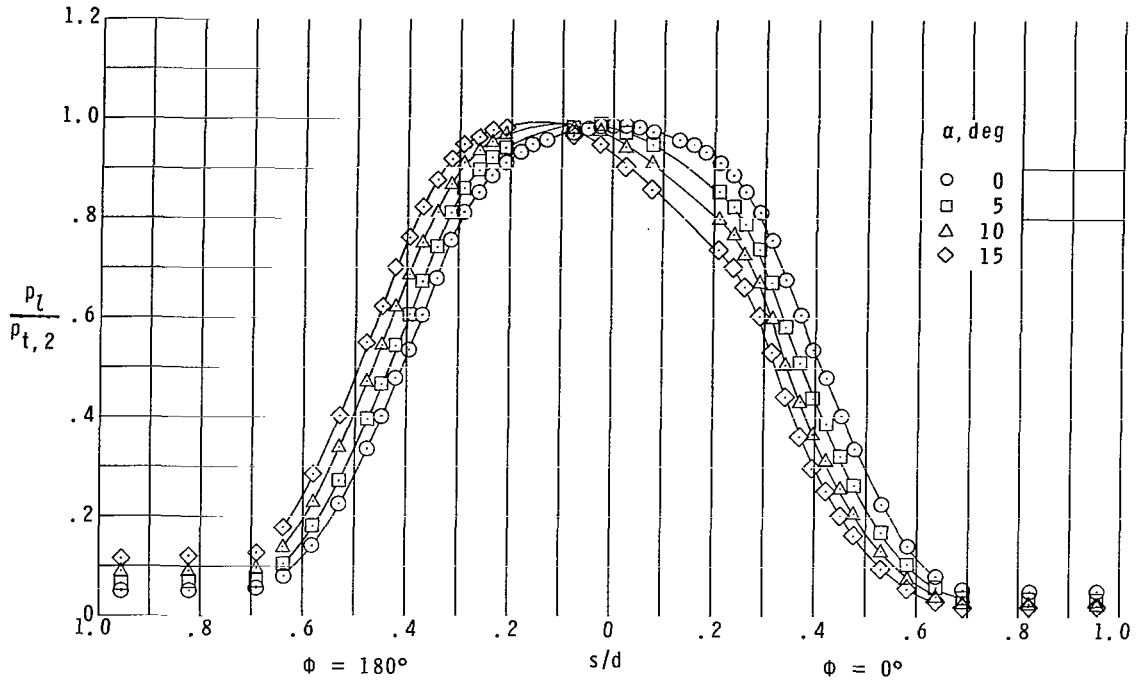


(k) Model 11.

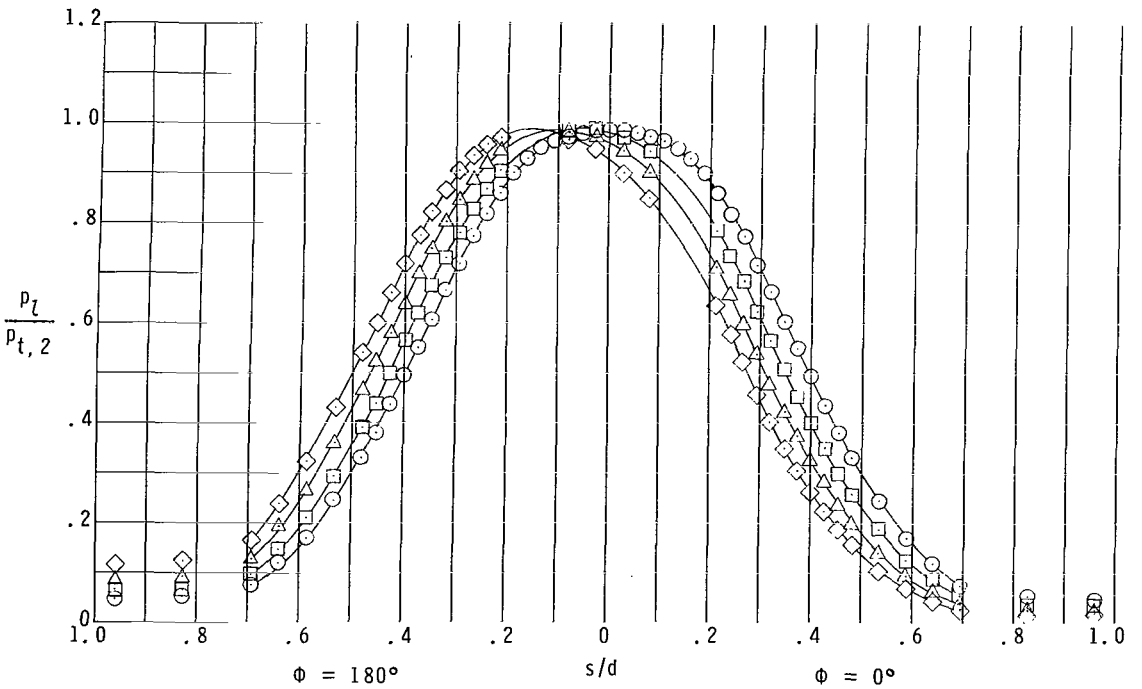


(l) Model 12.

Figure 4.- Continued.

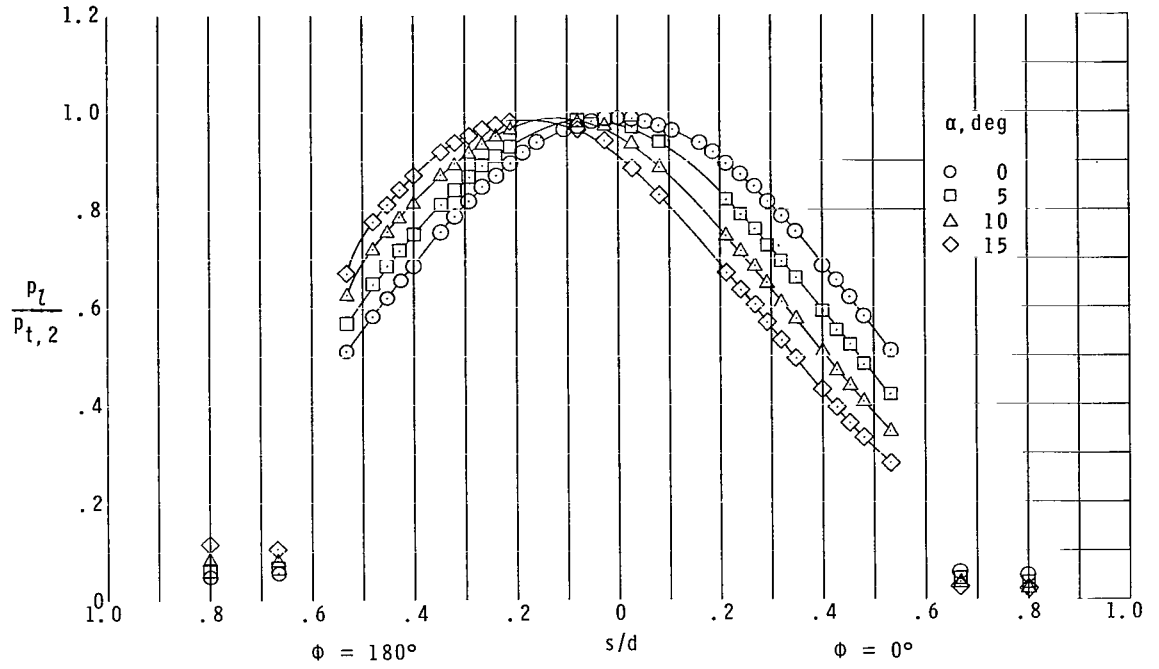


(m) Model 13.

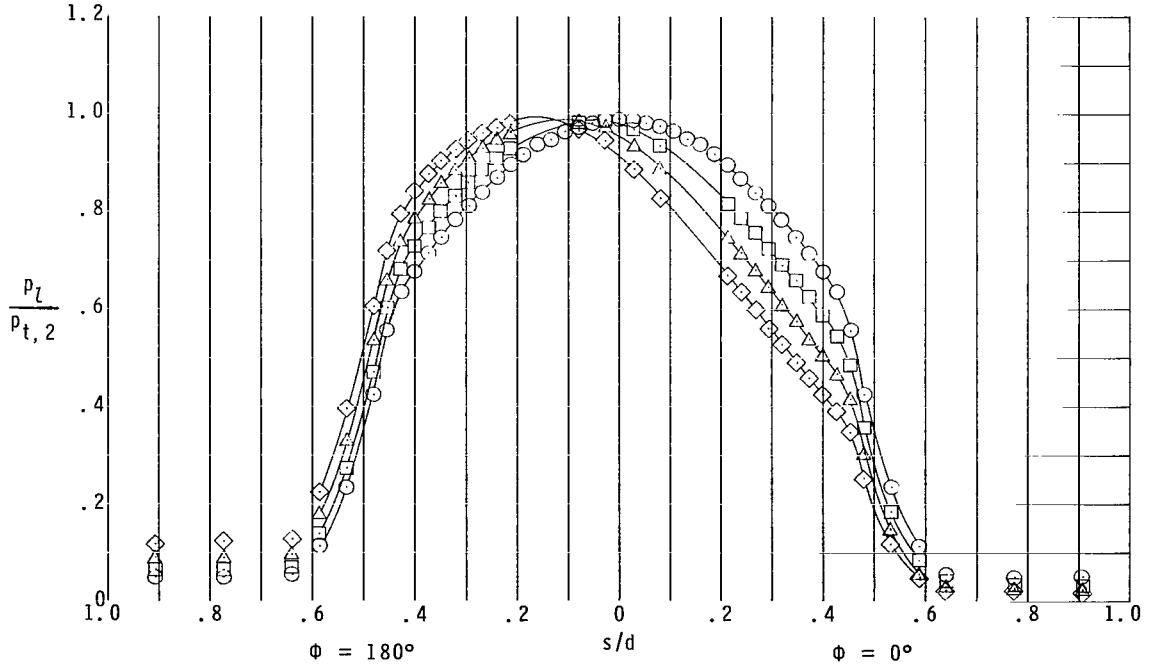


(n) Model 14.

Figure 4.- Continued.

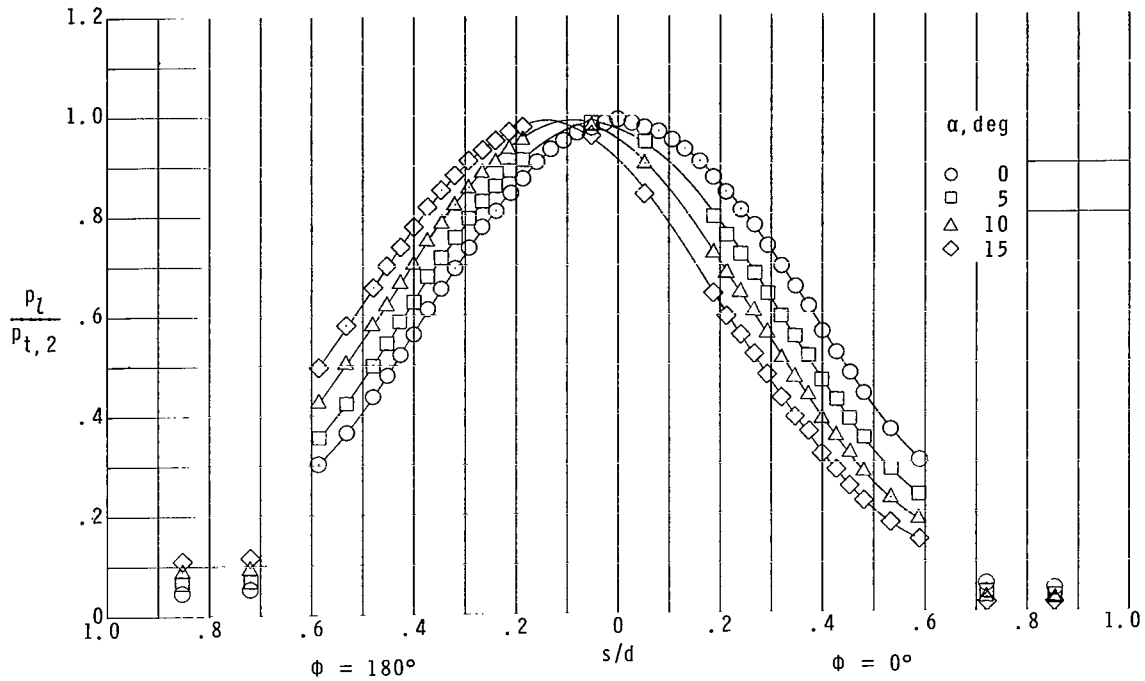


(o) Model 15.

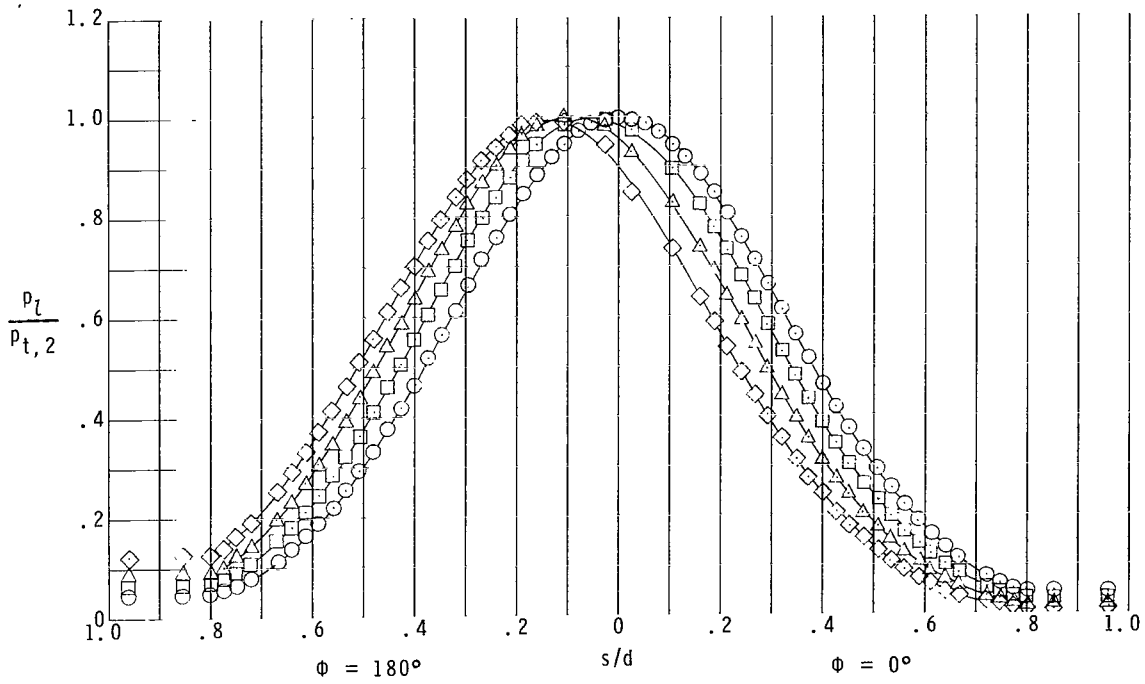


(p) Model 16.

Figure 4.- Continued.

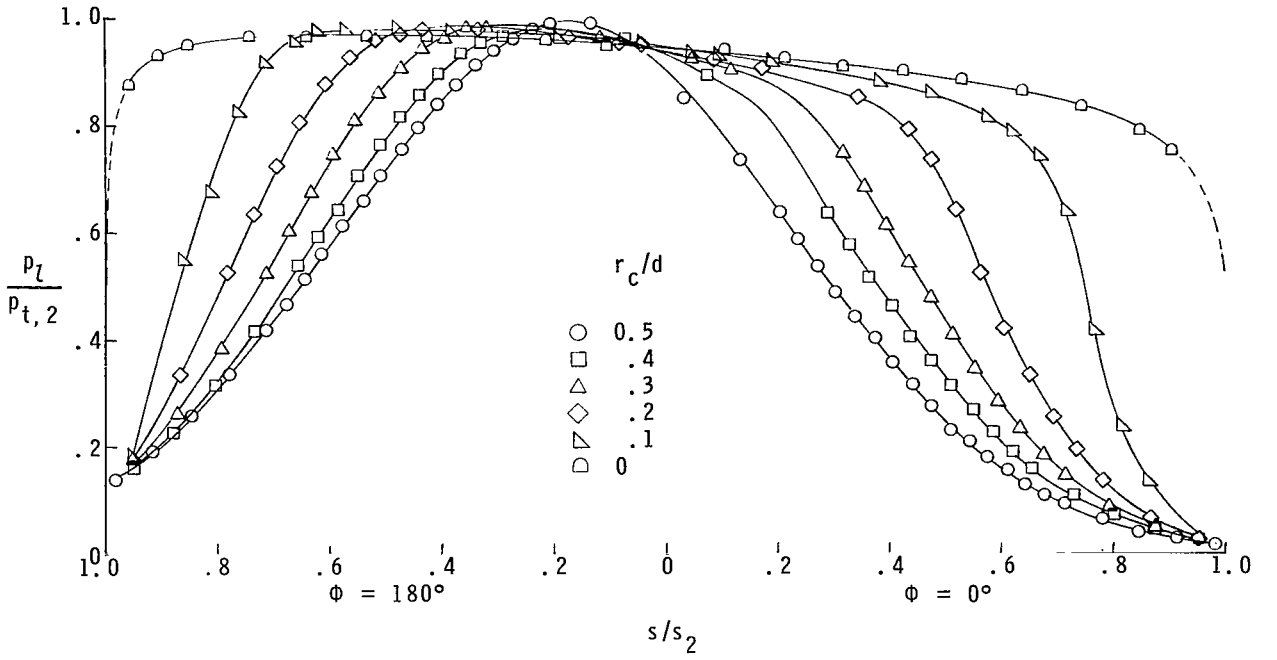


(q) Model 17.

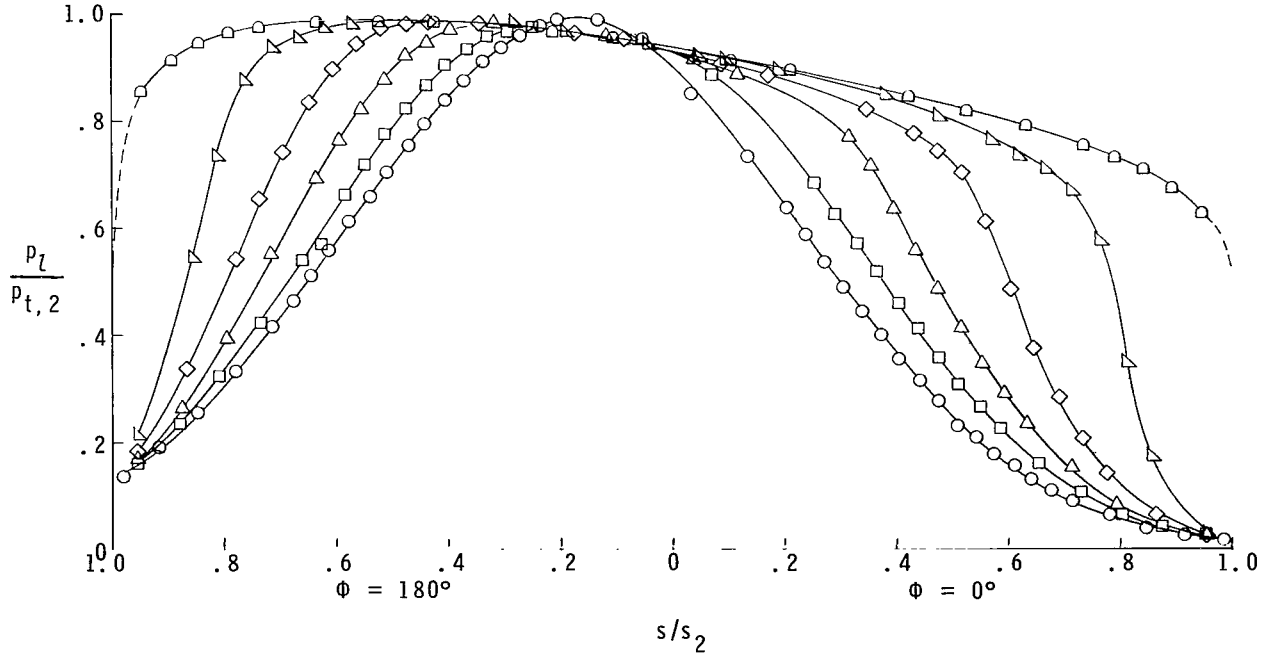


(r) Model 18.

Figure 4.- Concluded.

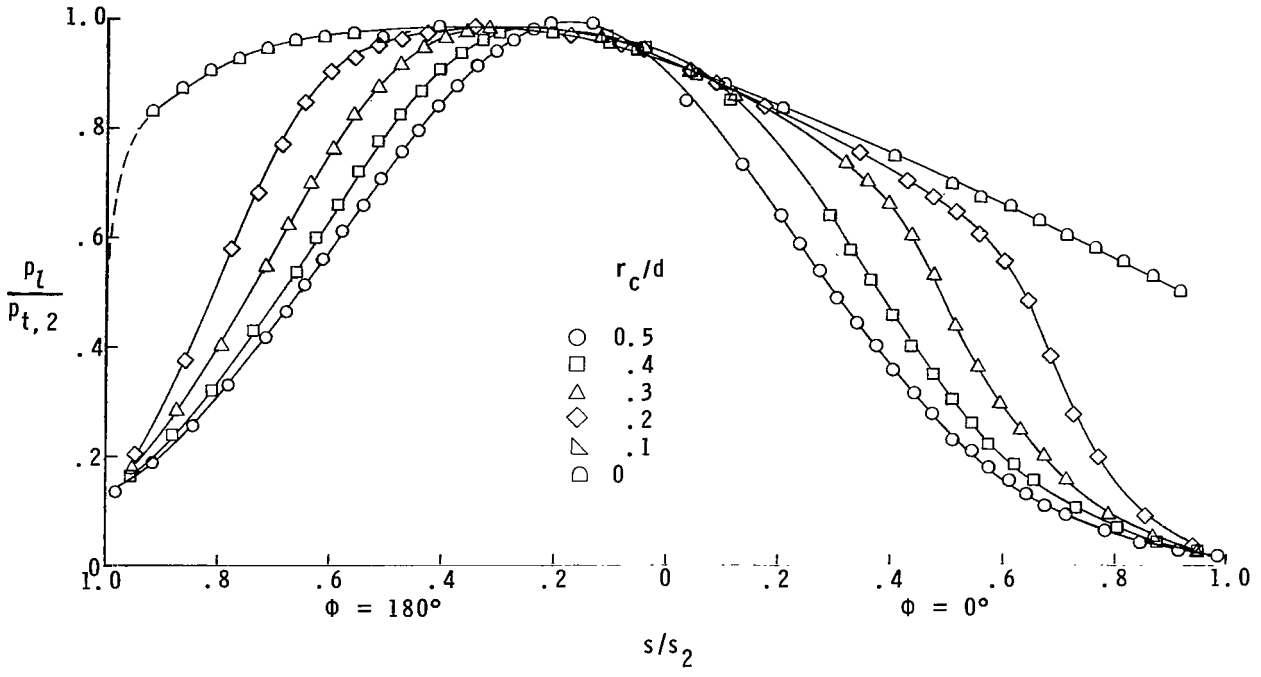


(a) $r_n/d = \infty$.

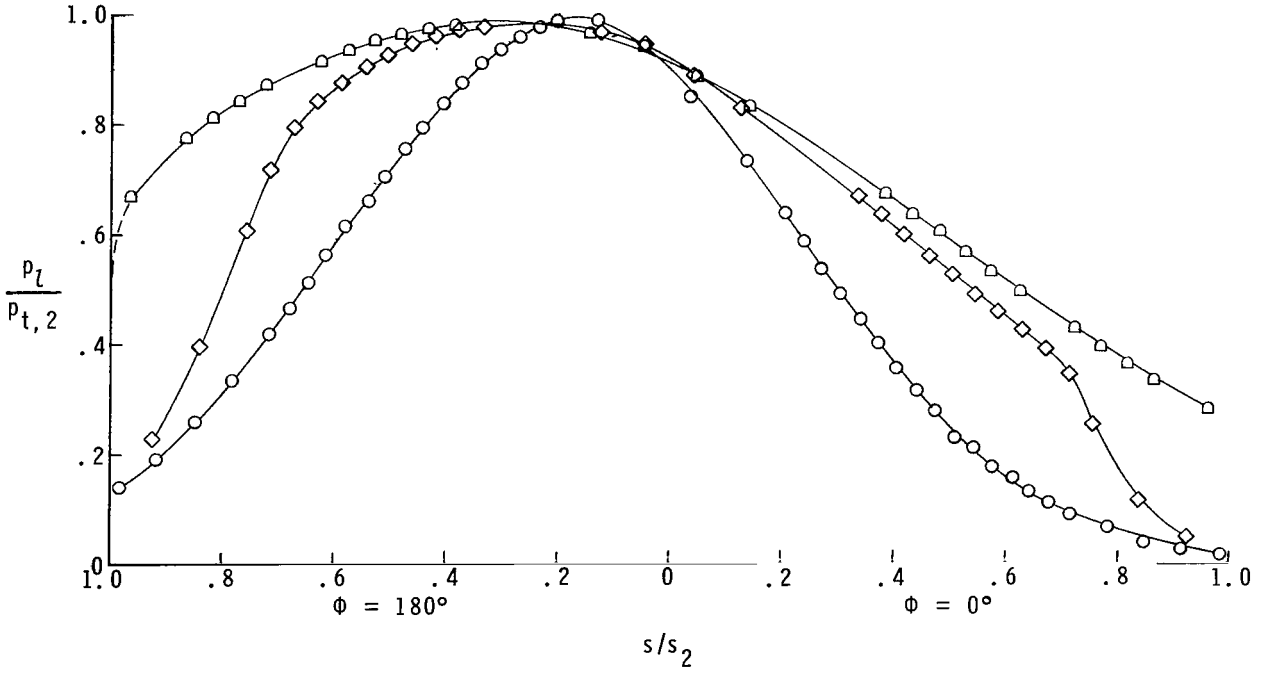


(b) $r_n/d = 1.933$.

Figure 5.- Effect of model geometry on pressure distributions. M = 4.63; $\alpha = 15^0$.

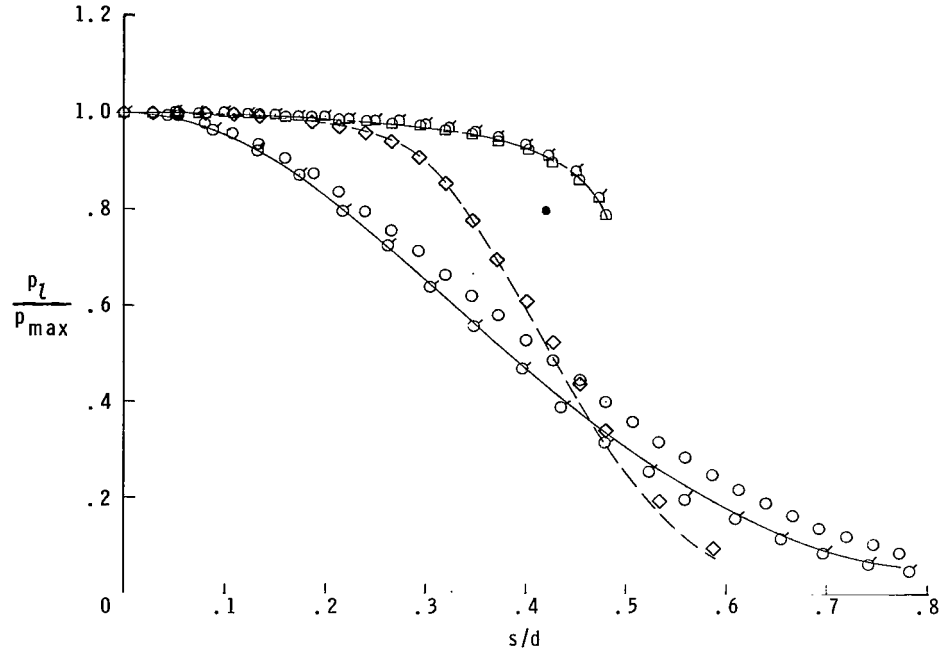


(c) $r_n/d = 1.000$.

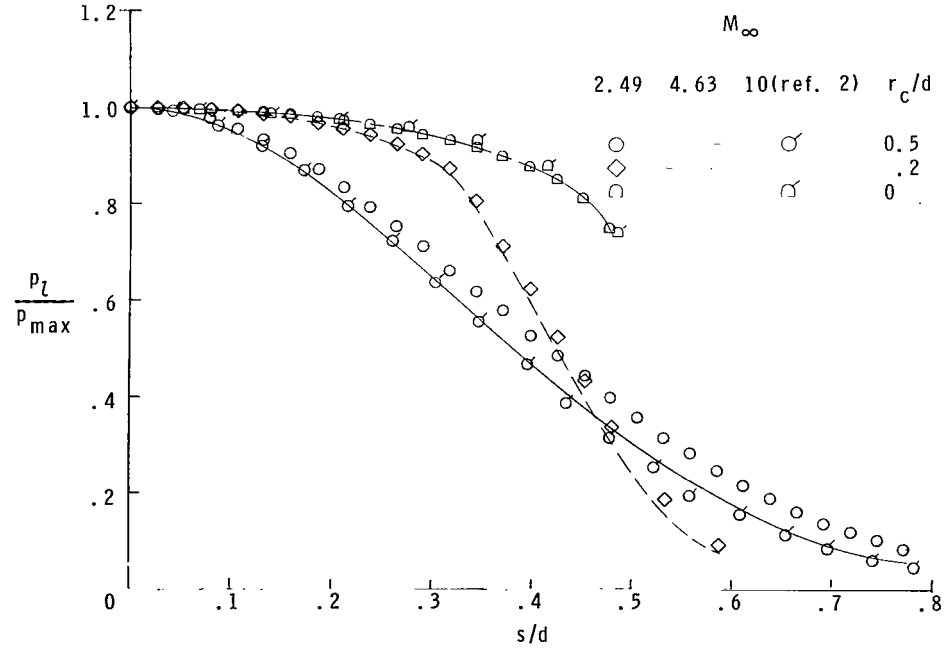


(d) $r_n/d = 0.707$.

Figure 5.- Concluded.

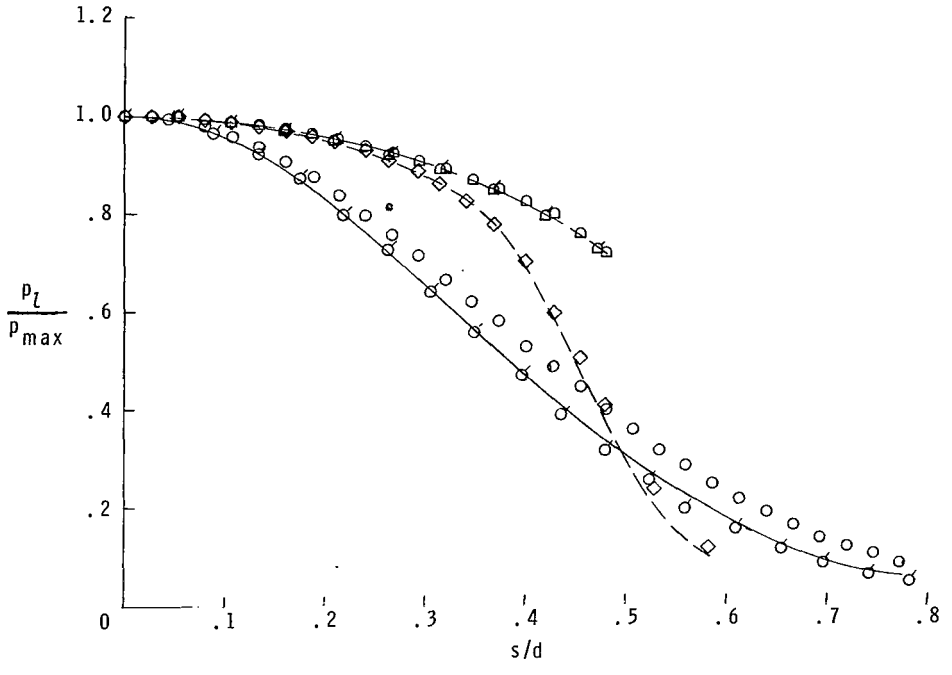


(a) $r_n/d = \infty$.

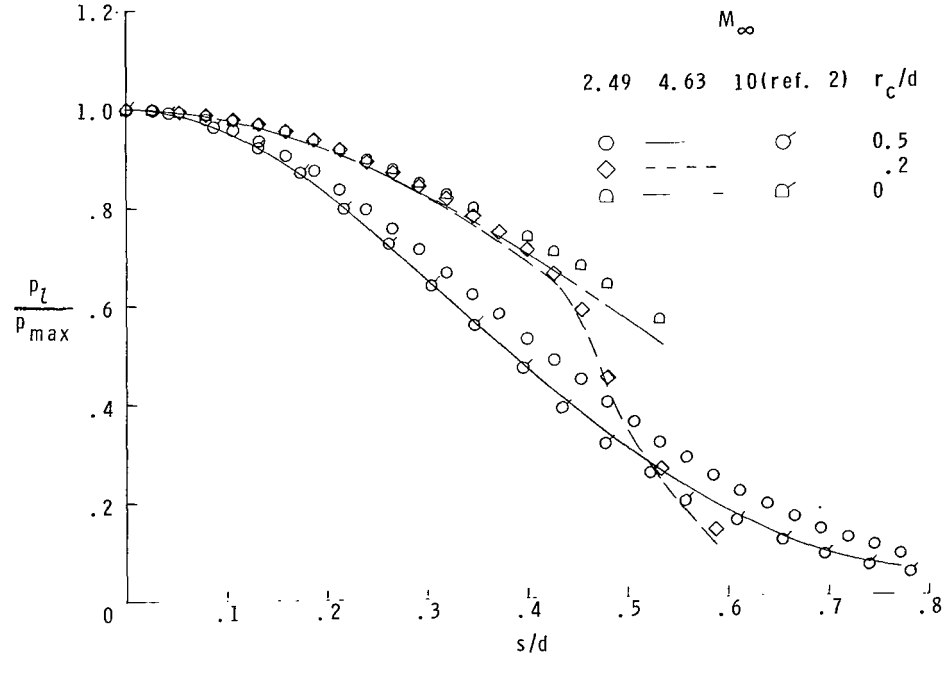


(b) $r_n/d = 1.933$.

Figure 6.- Effect of Mach number on pressure distributions. $\alpha = 0^0$.

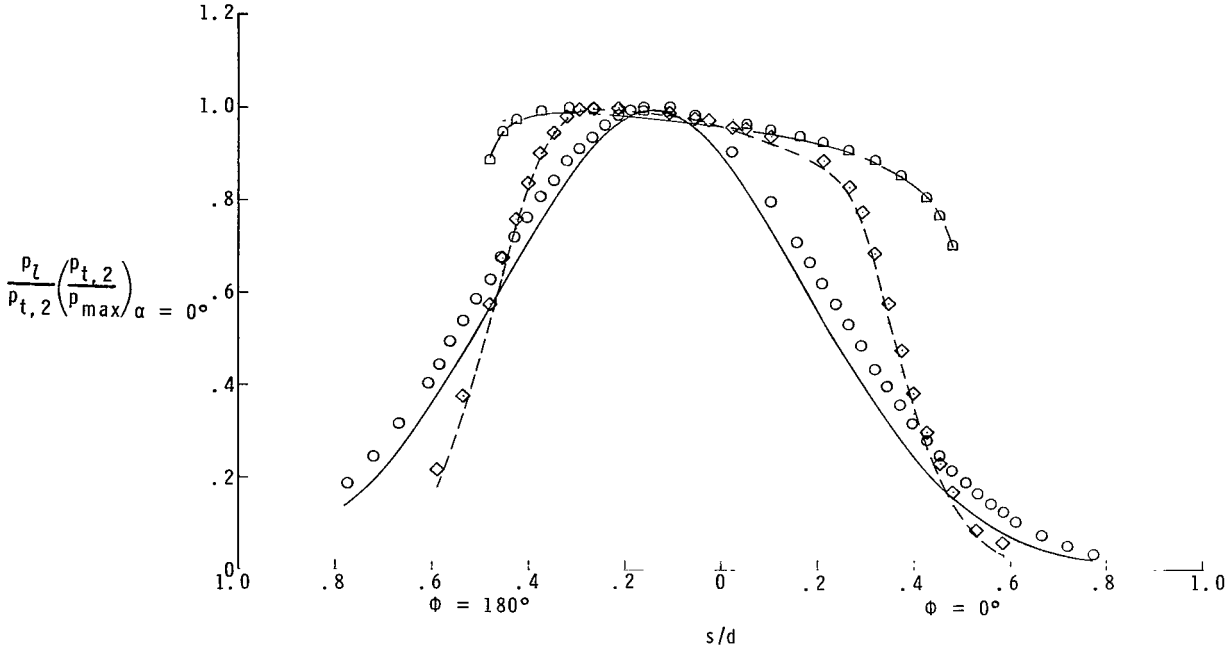


(c) $r_n/d = 1.000$.

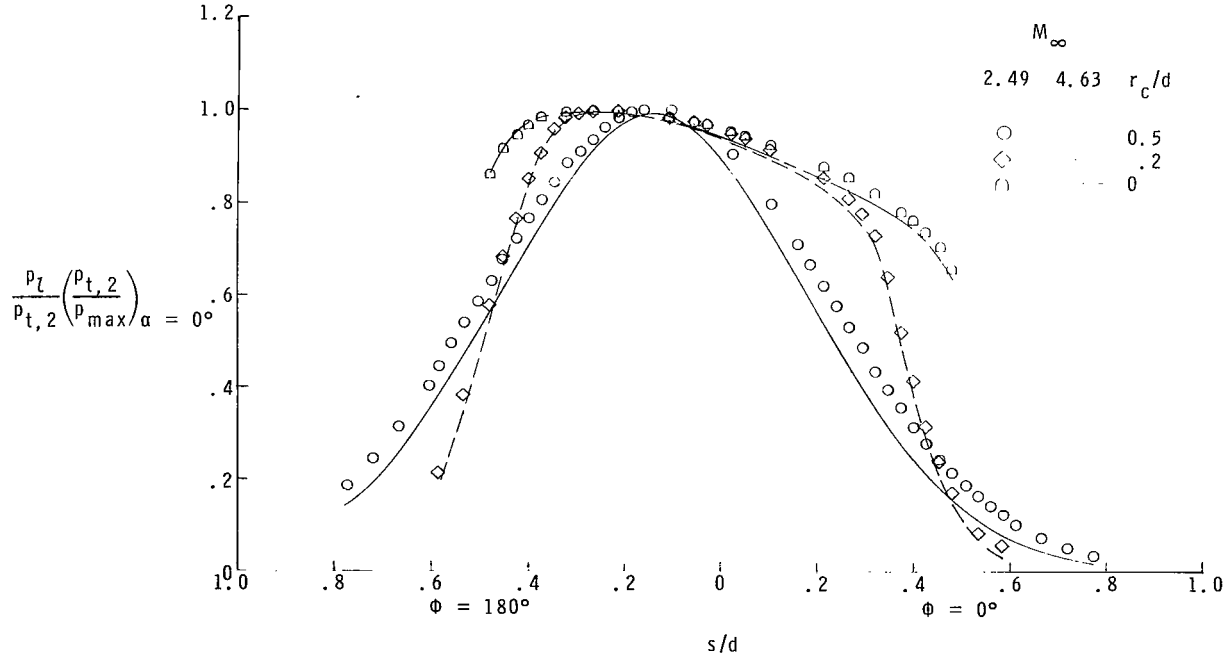


(d) $r_n/d = 0.707$.

Figure 6.- Concluded.

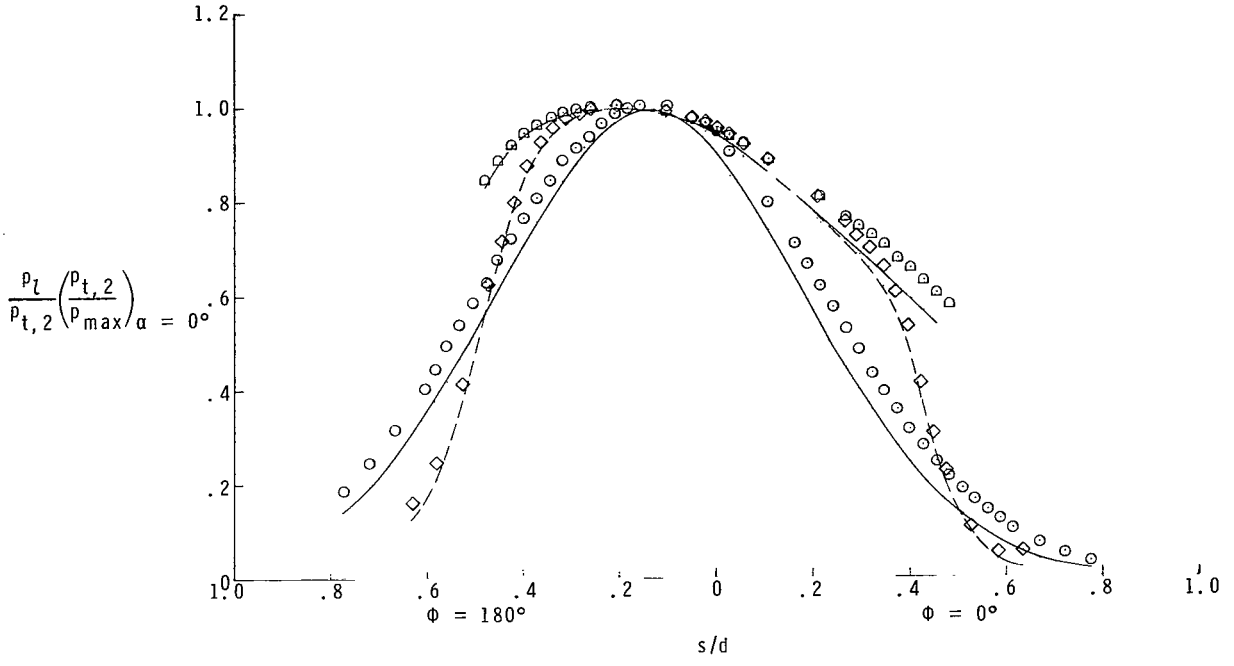


(a) $r_n/d = \infty$.

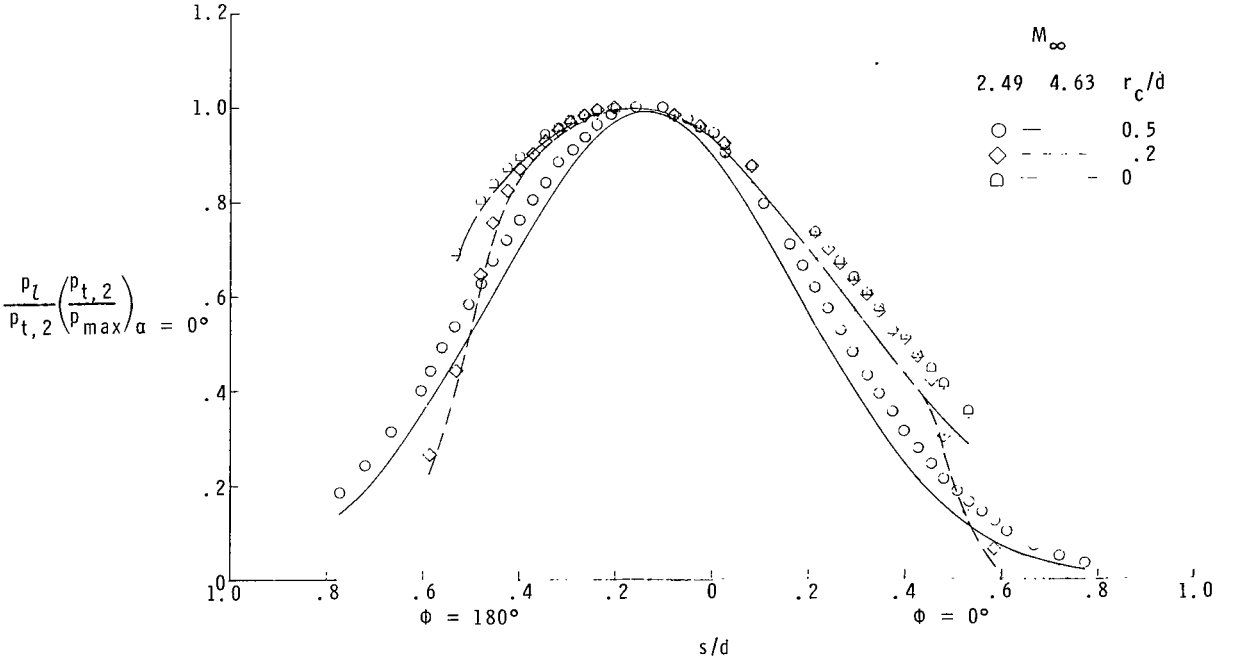


(b) $r_n/d = 1.933$.

Figure 7.- Effect of Mach number on pressure distributions. $\alpha = 15^0$.



(c) $r_n/d = 1.000$.



(d) $r_n/d = 0.707$.

Figure 7.- Concluded.

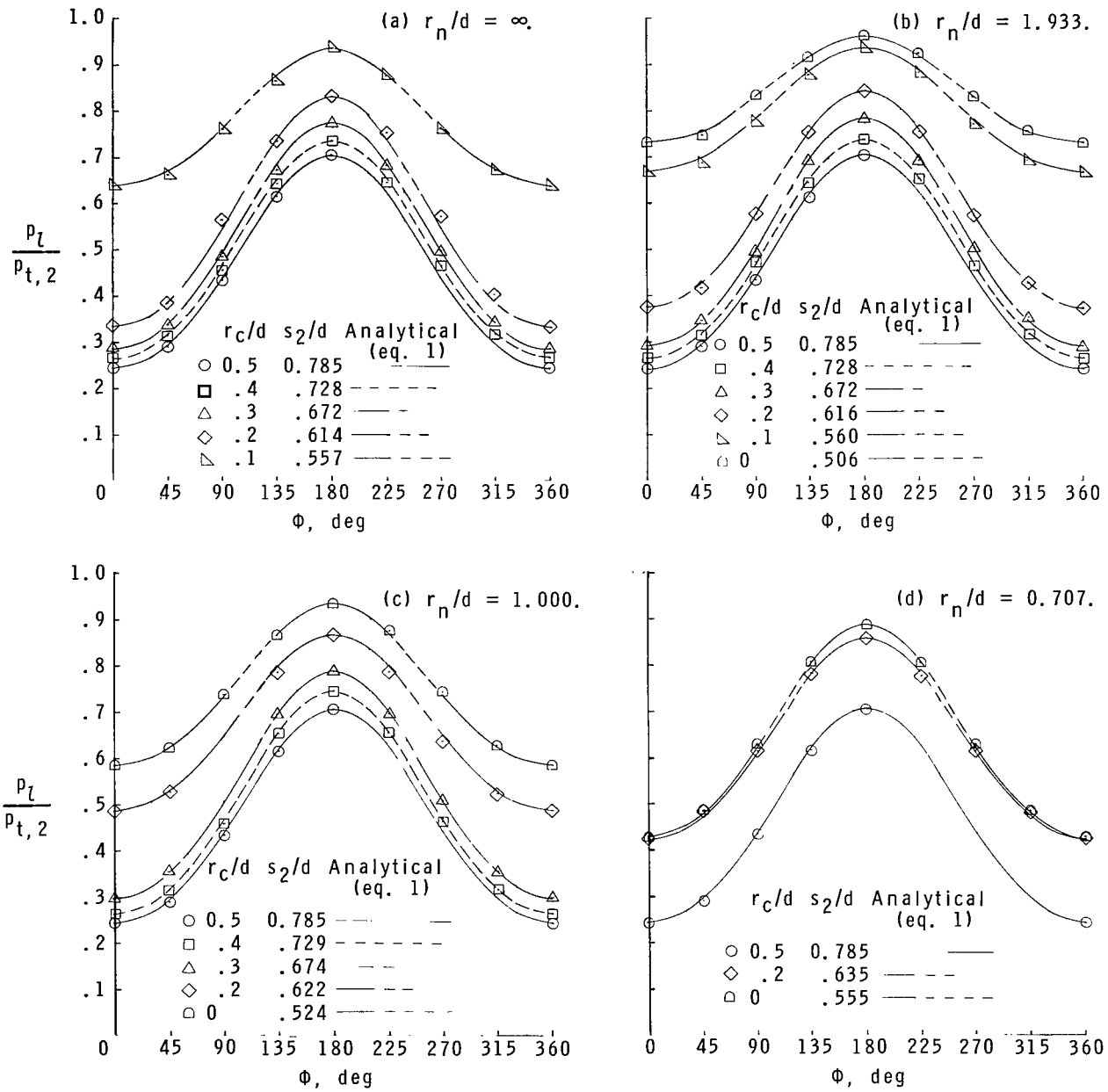


Figure 8.- Effect of model shape on circumferential pressure distributions. $M_\infty = 4.63$; $\alpha = 15^0$; $s/d = 0.4$.

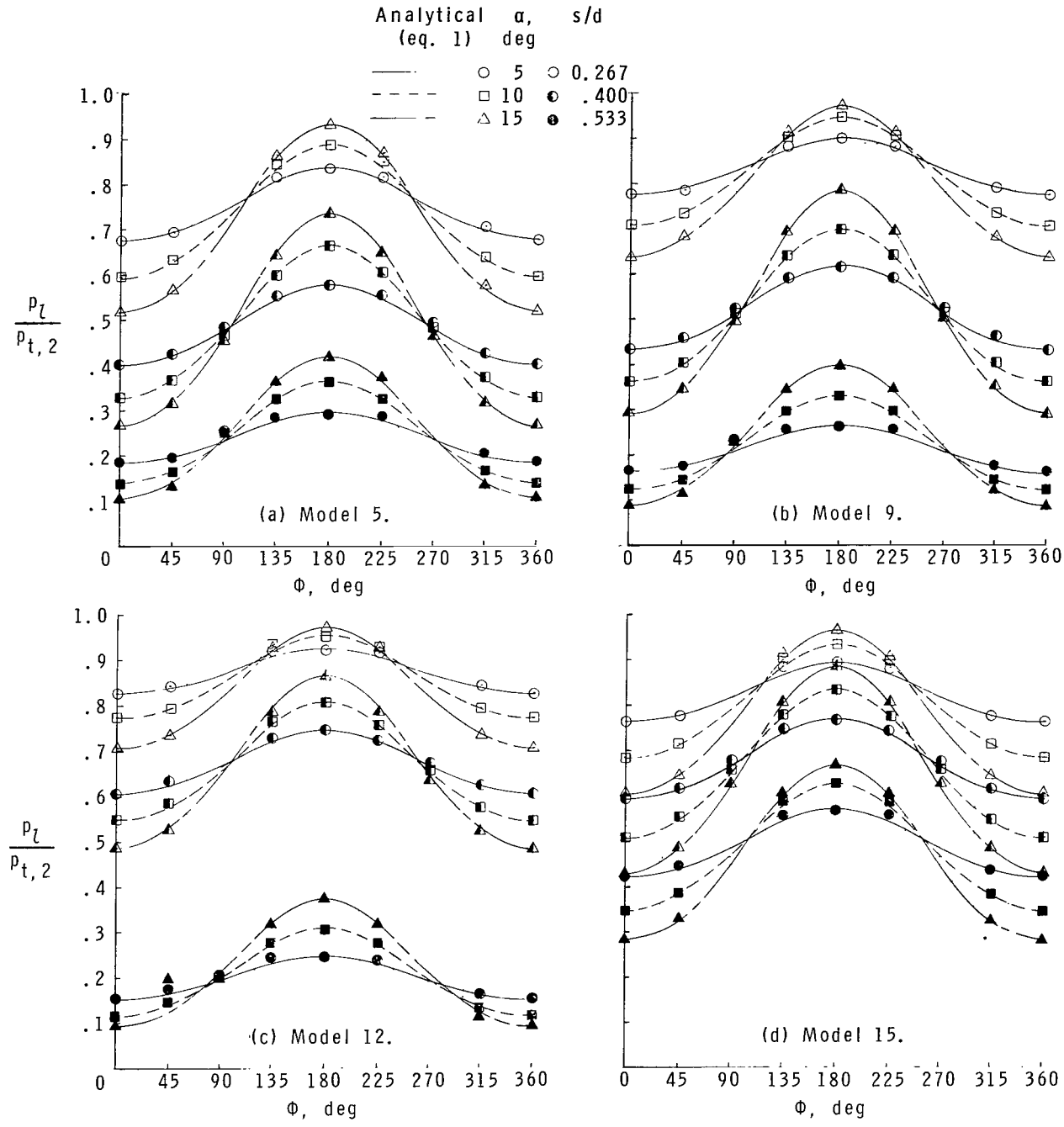


Figure 9.- Effect of angle of attack on circumferential pressure distributions. $M_\infty = 4.63$.

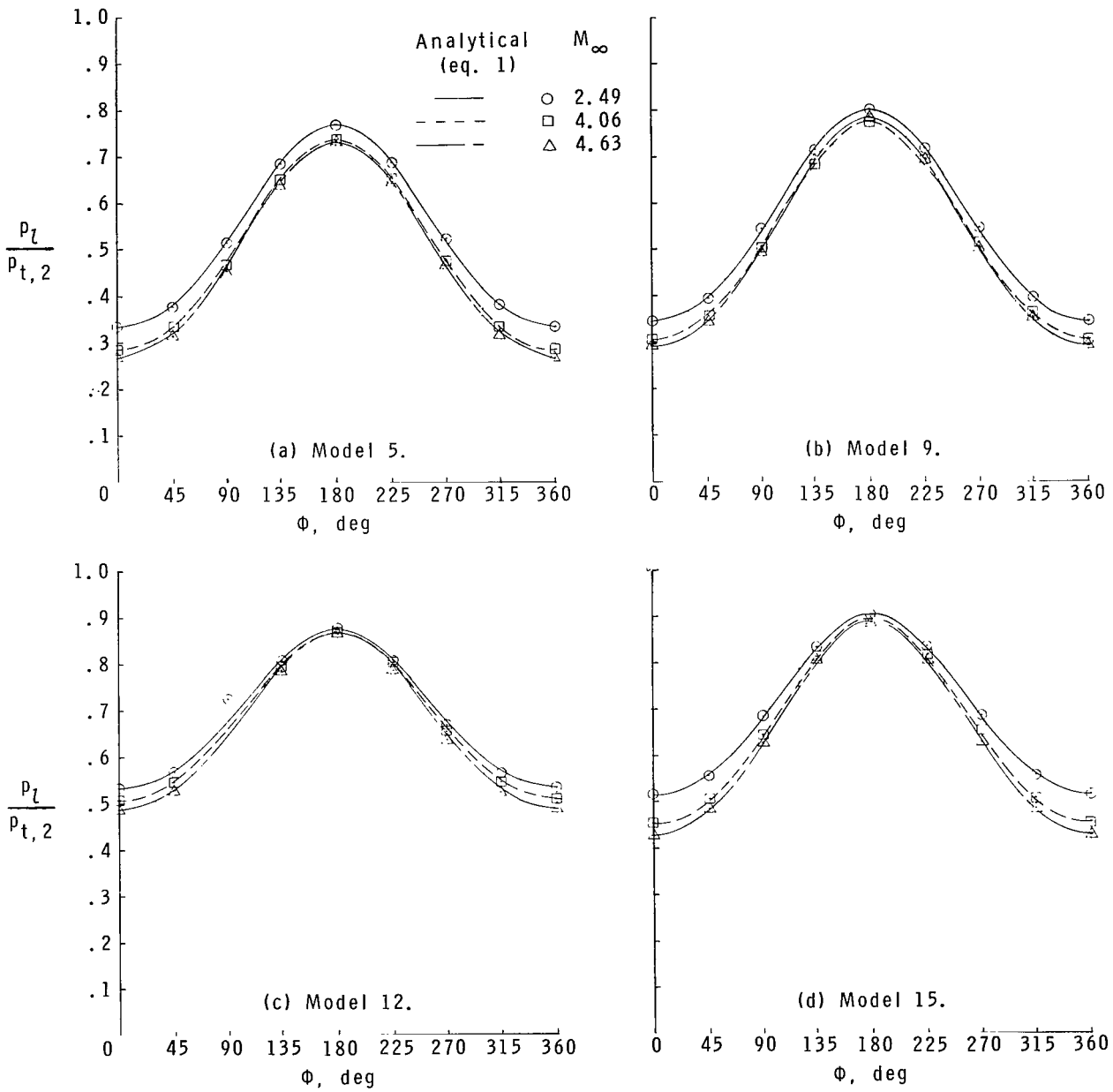


Figure 10.- Effect of Mach number on circumferential pressure distributions. $\alpha = 15^0$; s/d = 0.4.

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