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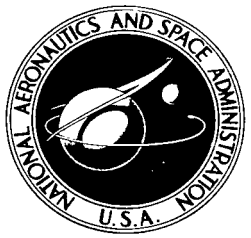
NASA TN D-2387



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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION • WASHINGTON, D. C. • AUGUST 1964

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SUMMARY

Heat-transfer and pressure measurements were determined on 70° swept hypersonic wings having a sharp or blunt nose and having dihedral angles of 0° and 24.3° in the Langley Unitary Plan wind tunnel. All models were tested at Mach numbers 3.51 and 4.65 at nominal Reynolds numbers per foot of 2.9×10^6 and 4.1×10^6. The models having a dihedral angle of 0° were tested through an angle-of-attack range from 0° to 45° and the models with 24.3° dihedral were tested at angles of attack from -45° to 45°.

Throughout the angle-of-attack range for which the stagnation line remained on the wing cylindrical leading edge, the pressure distributions on the leading edges of the models through 60° expansion leeward of the stagnation line were predicted by both Newtonian flow and a modified version of the compressible Bernoulli equation based on normal Mach number components. For expansion angles from 60° to 90°, the experimental data were in agreement with the compressible Bernoulli equation. For angles of attack for which the stagnation line shifts from the geometrical wing leading edges to the ridge line, the pressure distributions on the wing leading edges (now trailing edges) were approximated only by the Newtonian flow. The windward-panel center-line pressures for both sharp-nose models were correlated throughout the Mach number and angle-of-attack ranges of this investigation by the parameter $M \sin \alpha$, where M is the free-stream Mach number and α is the angle of attack. The pressures obtained off the center line on the windward panel of the body with 24.3° dihedral were correlated by the same parameter based on the effective angle of attack of the wing panel.

The heat-transfer-coefficient distributions on the leading edge of the wings with 0° dihedral and for which the boundary layer remained laminar were in good agreement with laminar swept-cylinder theory for angles of attack from 0° to 37.5°. Good agreement was also obtained with swept-cylinder theory for the portion of the leading edge of the 24.3° dihedral wing not affected by turbulence at angles of attack from -37.5° to 22.5°. At an angle of attack of 45°, the heating rates on both wings were overpredicted by the swept-cylinder theory. There was no apparent trend of nose effect on the heat transfer or pressure distribution downstream of 4.5 nose diameters throughout the range of this investigation.

INTRODUCTION

High heating rates on the wing leading edges of vehicles operating at hypersonic speeds produce very large temperatures and associated structural problems. One of the conventional methods of reducing these high heating rates is to add sweep and bluntness, thereby reducing the normal Mach number and increasing the volume and surface area. The panel heating rates for a constant lift coefficient can be decreased by adding dihedral to the lower wing surfaces. The hypersonic wing with a blunt leading edge and with dihedral has been the subject of many investigations. (See refs. 1 to 6.) In the majority of these investigations the size of the model prevents detailed instrumentation on the leading edges and permits only limited spanwise and chordwise instrumentation. It is the purpose of this investigation to determine detailed heat-transfer and pressure distribution and correlations with existing theories on wings with a planform sweep of 70° and with 0° and 24.3° dihedral. Both configurations were tested with pointed and blunted apexes to determine the magnitude and extent of nose blunting on local heat-transfer coefficients. The range of the angle of attack of the wing planform is from -45° to 45° at Mach numbers 3.51 and 4.65. The Reynolds number per foot is varied from 2.9×10^6 to 4.1×10^6, and the maximum Reynolds number based on center-line chord is 7×10^6.

SYMBOLS

$a_{x=o}$	speed of sound along stagnation line of infinite swept cylinder, ft/sec
C_p	pressure coefficient, $\frac{p - p_\infty}{q_\infty}$
c	specific heat of model skin, Btu/lb-$^\circ$R
D	diameter of cylindrical leading edge, in.
h	heat-transfer coefficient, Btu/(sec)(sq ft)($^\circ$R)
M	free-stream Mach number
M_n	normal Mach number component
N_{St}	Stanton number
p	pressure, lb/sq ft
$p_{t,nom}$	nominal free-stream stagnation pressure, lb/sq ft
$p_{t,2}$	stagnation pressure behind normal shock, lb/sq ft

$p_{x=o}$	pressure along stagnation line of cylindrical leading edge, lb/sq ft
q	dynamic pressure, lb/sq ft
R	free-stream Reynolds number per foot
r	wing leading-edge radius, in.
s'	length of wing leading edge of sharp-nose models, 21.28 in.
T_e	measured wall equilibrium temperature, ^oR
T_t	stagnation temperature, ^oR
T_w	wall temperature, ^oR
t	time, sec
v_l	local velocity, ft/sec
w	weight of model skin per unit area, lb/sq ft
x,s,z	coordinates of model relative to plane perpendicular to leading edge (fig. 1), in.
y',z'	coordinates of model measured in plane perpendicular to ridge line, in.
α	angle of attack of ridge line (fig. 19), deg
α'	angle of attack of wing planform, deg
α_{eff}	effective angle of attack of windward wing panel, deg
α_{ϵ_e}	angle of attack at which effective sweep of wing leading edge and ridge line are equal, deg
Γ	dihedral angle measured in plane perpendicular to ridge line, deg
γ	ratio of specific heats, 1.4
δ	angle between normal Mach number component and dihedral surface measured in plane perpendicular to wing leading edge, deg
ϵ_e	angle between wing leading edge and free-stream velocity vector, complement of Λ_e, deg
ϵ_n	angle between ridge line and plane containing axes of wing cylindrical leading edges, deg

ϵ_o	angle between leading edge and ridge line of wing, deg
ϵ_p	planform semiapex angle, deg
Λ_e	effective sweep of leading edge, complement of ϵ_e, deg
ξ	angle between ridge line and intersection line of lower wing panel with plane of effective angle of attack (fig. 19(a)), deg
Φ	local surface slope in plane perpendicular to wing leading edge, deg
Φ_{stag}	location of stagnation line on wing leading edge in terms of Φ, deg
ψ'	local surface slope in plane perpendicular to ridge line, deg

Subscripts:

l	local conditions
t	stagnation
∞	free stream
0,1,2,3,...,n	time sequence

DESCRIPTION OF MODEL AND INSTRUMENTATION

The models used in this investigation and shown in figure 1 have a planform semiapex angle of 20°, hemicylindrical leading edges, and dihedral angles of 0° and 24.3° (dihedral was added to the lower surface only). Each model was tested with two apex configurations to determine the effect of nose bluntness. In the planform view one configuration was pointed, and the other configuration had a nose radius of 0.5 inch (equal to the radius of the hemicylindrical leading edge). All models were constructed of 0.030-inch inconel with a minimum of internal structure and were supported by a sting at the model base. Relative to the vertical plane of symmetry, the models were instrumented with iron-constantan thermocouples on one-half of the model (see fig. 1 for detail of thermocouple installation) and with static-pressure orifices of 0.030-inch inside diameter on the other half. This instrumentation was located in planes normal to the leading edge, except the pressure orifices along the top and bottom center lines which are displaced to prevent conduction effects to the heat-transfer measurements. The panel sections were reinforced with balsa wood to prevent deflection of the flat surfaces from aerodynamic loads. In order that internal conduction and convection be minimized, the balsa was relieved a

distance of 0.5 inch from each thermocouple and the model interior was vented to base pressure. Photographs illustrating the model installation in the tunnel test section are shown in figure 2. A complete listing of the instrumentation locations is presented in table I.

The thermocouple output was recorded on a multichannel sequential analog digital converter discussed in reference 7. The pressures were measured by electrical transducers, and each electrical output was recorded on digital self-balancing potentiometers. The tunnel free-stream static and stagnation pressures were measured on precision mercury manometers. The test-section stagnation temperature was measured with probes mounted at the model base, as shown in figure 2.

APPARATUS AND TEST CONDITIONS

This investigation was conducted in the high Mach number test section of the Langley Unitary Plan wind tunnel described in reference 8. This variable-pressure continuous-flow tunnel has an asymmetrical sliding-block nozzle that permits a continuous variation in the test-section Mach number from 2.3 to 4.65. The deviation in Mach number in the entire 4- by 4-foot test section for Mach numbers of 3.51 and 4.65 is ±0.05. Heat-transfer and pressure measurements were obtained for the following test conditions:

Configuration	Test	Angle of attack, α', deg (a)	Mach number	Reynolds number (nominal)
1 and 2	Static pressure and heat transfer	0, 7.5, 15, 22.5, 30, 37.5, and 45	3.51	4.0×10^6 and 2.9×10^6
1 and 2	Static pressure and heat transfer	0, 7.5, 15, 22.5, 30, 37.5, and 45	4.65	4.1×10^6 and 2.9×10^6
3 and 4	Static pressure	0, ±7.5, ±15, ±22.5, ±30, ±37.5, and ±45	3.51	4.0×10^6 and 2.9×10^6
3 and 4	Static pressure	0, ±7.5, ±15, ±22.5, ±30, ±37.5, and ±45	4.65	4.1×10^6 and 2.9×10^6
3	Heat transfer	0, ±7.5, ±15, ±22.5, ±30, ±37.5, and ±45	3.51	4.0×10^6
3	Heat transfer	0, ±7.5, ±15, ±22.5, ±30, 37.5, and 45	3.51	2.9×10^6
3	Heat transfer	0, 7.5, 15, 22.5, ±30, 37.5, and 45	4.65	4.1×10^6
3	Heat transfer	0, 7.5, ±15, 22.5, 30, 37.5, and ±45	4.65	2.9×10^6
4	Heat transfer	0, ±7.5, ±15, ±22.5, ±30, ±37.5, and ±45	3.51	4.0×10^6 and 2.9×10^6
4	Heat transfer	0, ±7.5, ±15, ±22.5, ±30, ±37.5, and ±45	4.65	4.1×10^6 and 2.9×10^6

[a]The negative range of α' was obtained by rolling the models 180°.

METHOD OF HEAT-TRANSFER-DATA REDUCTION

The heat-transfer coefficients were obtained from transient skin-temperature measurements resulting from a stepwise increase in stagnation temperature. (See ref. 7.) The following relation, which assumes constant temperature through the skin, negligible lateral heat flow, negligible heat flow to the model interior, and no heat losses due to radiation, was used:

$$h = \frac{wc \dfrac{dT_w}{dt}}{T_e - T_w}$$

This equation can be integrated and written in the following form for complete machine calculation:

$$h = \frac{wc(T_{w,n} - T_{w,0})}{\dfrac{T_e}{T_t} \int T_t \, dt - \int T_w \, dt}$$

The integrals are evaluated over increments of 0.5 second, according to the trapezoidal rule

$$\int T \, dt = \Delta t\left(\tfrac{1}{2} T_0 + \tfrac{1}{2} T_n + T_1 + T_2 \ldots + T_{n-1}\right)$$

and the ratio T_e/T_t is experimentally determined.

The magnitude of the lateral heat flow for a thin-skin model as discussed in reference 9 is negligible. The heat flow by radiation is dependent on the term $(T_w^4 - T_a^4)$, where T_a is the tunnel-wall temperature, and this term is negligible.

ACCURACY

The accuracy of the temperature measurements, including recorder resolution, thermocouple-wire calibration, and cold junctions, is $\pm 2^\circ$ F; however, this error occurs in temperature level rather than in random temperature fluctuations. A temperature error of $\pm 2^\circ$ F could result in ratios of wall equilibrium temperature to stagnation temperature T_e/T_t greater than 1 in stagnation regions of the model. Also, as discussed in reference 9, in regions of low heat transfer ($h < 0.001$) the ratio T_e/T_t may be questionable because the wall temperature may not have reached equilibrium from the preceding test point.

An estimation of the accuracy of heat-transfer measurements in the Langley Unitary Plan wind tunnel has been determined by the repeatability of data in the tests discussed in reference 9. The accuracy is dependent on the magnitude of the heat-transfer coefficient. For $h > 0.0150$, the accuracy is within 10 percent; for $0.0010 < h < 0.0150$, within 15 percent; for $h < 0.0010$, within 20 percent. Although $h < 0.0010$ is within the accuracy of data reduction, no significance is attached to the magnitude of h, other than to indicate the regions of low heat transfer.

The accuracy of the precision manometers is within 0.5 pound per square foot. Therefore, the accuracy of the system is limited to that of the electrical transducer, which is 0.5 percent of the full-scale deflection. The error in the pressure coefficient resulting from the inaccuracy of the electrical transducer depends on M and R as the error varies from 0.0135 at $M = 3.51$ and $R = 4 \times 10^6$ to 0.0288 at $M = 4.65$ and $R = 2.9 \times 10^6$.

THEORY

The theoretical pressure distributions around the cylindrical wing leading edges were calculated by two methods. Both methods assume that the stagnation-line pressure corresponds to Newtonian flow, as defined in the following relation:

$$\frac{p_{x=o}}{p_{t,2}} = \cos^2\Lambda_e + \frac{p_\infty}{p_{t,2}} \sin^2\Lambda_e \tag{1}$$

which is analogous to the product $\left(\frac{p_{t,2}}{p_\infty}\right)_{M_n}\left(\frac{p_\infty}{p_{t,2}}\right)_{M_\infty}$, where $(p_\infty)_{M_n} = (p_\infty)_{M_\infty}$, as presented in reference 4.

One method of defining the local pressure distribution on the leading edge uses a modified Newtonian theory based on the normal Mach number component, and the second method uses Bernoulli's compressible equation based on the assumption that the surface velocity component is a linear function of the surface length. The expression for the modified Newtonian theory is simply

$$C_p = C_{p,max} \cos^2\Phi$$

where $C_{p,max}$ is the pressure coefficient along the leading edge and can be expressed as

$$C_{p,max} = \frac{\frac{p_{x=o}}{p_{t,2}} - \frac{p_\infty}{p_{t,2}}}{\frac{q_\infty}{p_{t,2}}} \tag{2}$$

The second theoretical approximation using the assumption that $v_l = 2.13\left(\frac{a_{x=o}}{D}\right)x$, as discussed in reference 10, can be written

$$C_p = \frac{\left(\frac{p}{p_{x=o}}\frac{p_{x=o}}{p_{t,2}}\right) - \frac{p_\infty}{p_{t,2}}}{\frac{q_\infty}{p_{t,2}}} \tag{3}$$

where

$$\frac{p}{p_{x=o}} = \left[1 - \frac{\gamma - 1}{2}\left(2.13\,\frac{x}{D}\right)^2\right]^{\gamma/\gamma-1}$$

Equations (1) to (3) are valid approximations only within the angle-of-attack range for which the wing geometrical leading edge acts aerodynamically as a leading edge. It has been shown in reference 11 that the stagnation line on wings incorporating dihedral shifts from the wing geometrical leading edge to the ridge line at angles of attack for which the effective angle of sweep of the ridge line is less than the effective angle of sweep for the geometric wing leading edge. The wing leading edge in the aerodynamic sense then becomes a trailing edge. This shift of stagnation line from wing leading edge to ridge line occurs at approximately the angle of attack α_{ϵ_e} at which the angle of sweep of the ridge line is equal to the effective angle of sweep of the wing leading edges. This angle is defined as follows:

$$\alpha_{\epsilon_e} = \tan^{-1}\frac{1 - \cos\epsilon_o}{\sin\epsilon_o \sin\Gamma} \tag{4}$$

At angles of attack less than α_{ϵ_e} for the dihedral wings and at all angles of attack for the 0° dihedral wings, the position of the stagnation line with angle of attack was determined from the following expression, as developed in appendix A:

$$\cos \Phi_{stag} = \frac{\tan \epsilon_p}{\tan \epsilon_e} \tag{5}$$

If Newtonian theory is to be applied to the wing leading edges at angles of attack greater than α_{ϵ_e}, the local surface inclination must be known in a plane perpendicular to the ridge line. A transformation for calculating this inclination from the corresponding inclination on the cylindrical leading edge in a plane perpendicular to the wing leading edge is developed in appendix B. The resulting equation is:

$$C_p = C_{p,max}' \cos^2 \psi' \tag{6}$$

where $C_{p,max}'$ is the pressure coefficient on the ridge line and

$$\psi' = \tan^{-1}\left(\frac{1}{\tan \Phi}\sqrt{\tan^2 \epsilon_n + \cos^2 \epsilon_p}\right) \tag{7}$$

Throughout the angle-of-attack range, the Newtonian theory can be used to predict pressures on the windward panels of bodies with dihedral by assuming that the plane surfaces are at an effective angle of attack so that

$$\sin \alpha_{eff} = \sin \alpha \cos \Gamma \tag{8}$$

as derived in appendix C.

It is to be noted that the definition and notation of the basic geometrical parameters used in the present analysis are in accordance with those presented in the symbols and in figure 1 of reference 11. The variations of the basic angles with angle of attack are presented in figure 3 of this report.

RESULTS AND DISCUSSION

Schlieren photographs of the sharp-nose flat wing and of both the sharp- and blunt-nose dihedral wings are presented in figures 4, 5, and 6. The visible shocks occurring on the surface of the models through the range of angle of attack apparently emanate from the regions of the model where the model skin is attached to the supporting bulkheads. It is believed that these localized shocks had no effect on either the pressure or heat-transfer data greater than the data accuracy, except for the possibility of promoting boundary-layer transition.

The schlieren photographs of configuration 1 (fig. 4) show the shape of the nose shock in the vertical plane of symmetry at zero α' to have some curvature in the nose region of the model, but it approaches a straight line with increasing s/s'. The straight portion of the shock moves toward the nose region of the model with increasing α'. It is interesting to note that the angle between the flat surface of the model and the shock wave decreases with increasing angle of attack for $\alpha' \leqq 15^\circ$. For greater angles of attack, this angle remains approximately constant and equal to 10° and 7° for $M = 3.51$ and 4.65, respectively. The corresponding angle between a two-dimensional oblique shock and a wedge for wedge angles less than or approximately equal to 15° also decreases with increasing angle of attack; however, for greater wedge angles this angle increases with wedge angle to the point of shock detachment.

The shock formations shown in the schlieren photographs obtained for configuration 3 (fig. 5) are very similar throughout the negative α' range to the results obtained for configuration 1. The trend of the variation of the angle between the shock wave and the model ridge line with positive angles of attack is also the same as was obtained for configuration 1. The magnitude of the limiting value of this angle for configuration 3 at Mach numbers of 3.51 and 4.65 is approximately 6° and 4°, respectively. Schlieren photographs showing the shock formation for the planform of configuration 3 are presented in figure 5(c) for a range of angle of attack from 0° to 20°. Throughout this range of α' the planform shock formation remains approximately constant.

The effect of nose bluntness on the shock formation in the vertical plane of symmetry of configuration 4 as shown in figure 6 is confined to the immediate nose region of the model throughout the positive range of angle of attack.

Complete lists of the pressure and heat-transfer data obtained for all models throughout the range of test variables are presented in tables II to IX.

Pressures

The effect of angle of attack on the pressure-coefficient distribution normal to the wing leading edge at three spanwise locations of configuration 1 is shown in figure 7. The selection of the parameter x/D as the ordinate renders geometric similarity at the three spanwise stations for a constant x/D to the instrumentation located on the cylindrical leading edge, that is, for $-0.785 \leqq x/D \leqq 0.785$. In order to clarify the discussion of data beyond these limits, the experimental data at the wing center line are identified by the solid symbols and at $\epsilon_p/2$ by the half-solid symbols. Theoretical pressure distributions presented in figure 7(a) consist of both the Newtonian equation (eq. (2)) and the compressible Bernoulli equation (eq. (3)). The location of the stagnation line on the cylindrical leading edge was determined from equation (5). The data presented in figure 7(a) are for a Mach number of 3.51, a Reynolds number of 4.00×10^6, and angles of attack α' from 0° to 45°.

Prior to any comparison of experimental results with theoretical predictions, the following general observations should be noted:

(1) Theory predicts that for a wing with 0° dihedral the stagnation line (for the angle-of-attack range of this investigation) will remain on the leading edge.

(2) For a constant x/D there is a variation of the experimental values of C_p with s/s'.

Comparison of the two theoretical curves with the experimental data shows that the maximum theoretical value of C_p is within the deviation of the experimental data with s/s' throughout the α' range. The pressure distribution about the leading edge from the aerodynamic stagnation line through an expansion angle of 60° is predicted by both theories. At larger expansion angles, C_p becomes negative and generally is only in agreement with the compressible Bernoulli equation. It is interesting to note that the compressible Bernoulli equation is in good agreement with the experimental data from the stagnation line through an expansion of 90° leeward throughout the angle-of-attack range at an s/s' of 0.442. For α' from 0° to 22.5° there is a good correlation between the experimentally measured and the theoretically predicted location of the stagnation line. The anticipated expansion on the windward side of the theoretical stagnation line does not occur for $\alpha' > 30°$; however, the agreement of theory with experimental data on the leeward side of the stagnation line indicates that the location of the stagnation line is in the vicinity of the theoretical location. Similar agreement of experimental data with Bernoulli's equation for $M = 4.65$ is shown in figure 7(b).

The effect of angle of attack on the pressure-coefficient distribution normal to the wing leading edge of configuration 3 is shown in figure 8 at three spanwise locations. The data presented in figure 8(a) are for $M = 3.51$, $R = 4.00 \times 10^6$, and $-45° \leq \alpha' \leq 45°$. For angles of attack α' from -45° to 15°, theory predicts that the stagnation line is located on the cylindrical leading edges. The stagnation-line location is also indicated by the experimental data as a result of the good agreement of the data with the predicted pressure distribution leeward of the theoretical stagnation line throughout the range of α' from -45° to 15°. For angles of attack greater than α_{ϵ_e} $\left(\alpha_{\epsilon_e} = 25.2°\right.$, which corresponds to $\alpha' = 15.7°$ for this configuration, as determined from eq. (4)$\left.\right)$, the angle of sweep of the ridge line is less than the angle of sweep of the wing leading edge; thus, the stagnation-line location should shift from the wing leading edge to the ridge line. This anticipated stagnation-line shift is indicated by the experimental data for α' greater than 15°. For α' greater than 15°, the wing leading edge becomes a trailing edge, and the assumption of a linear velocity in the compressible Bernoulli equation is no longer valid. Application of the theory at $\alpha' = 22.5°$ does not predict the maximum measured C_p but does predict the C_p distribution from the theoretical stagnation-line location through an expansion angle of 90°. Application of the Newtonian theory for $\alpha > \alpha_{\epsilon_e}$ to these trailing edges necessitates measuring the local flow deflection in a plane normal to the ridge line as outlined in appendix B. The maximum C_p in equation (6) is assumed to be the measured C_p at $s/s' = 0.113$ on the ridge line. The agreement of this

method of prediction with experimental data for $22.5^\circ \leqq \alpha' \leqq 45^\circ$ is illustrated in figure 8(a), the best agreement being obtained at the highest angles of attack. A more detailed comparison of the two theories with experiment is shown in the insert of figure 8(a). Similar distributions with approximately the same agreement between experiment and theory are shown in figure 8(b) for $M = 4.65$.

Pressure measurements obtained along the bottom center line (windward side at $\alpha > 0^\circ$) of configurations 1 and 3 at $s/s' = 0.276$ and 0.652 are presented in figure 9 at Mach numbers of 3.51 and 4.65 and angles of attack from 0° to 45°. The experimental data are expressed in terms of the ratio p_l/p_∞ as a function of the correlation parameter $M \sin \alpha$ suggested by both hypersonic oblique-shock theory and Newtonian theory, as discussed in reference 12. This parameter correlates data obtained at various free-stream Mach numbers. Both two-dimensional oblique-shock theory and Newtonian theories are presented in the figure for reference. For the wing with 0° dihedral (fig. 9(a)), good agreement was obtained between experimental data and the two-dimensional oblique-shock theory, except at the maximum α for which a large longitudinal pressure gradient occurred in the experimental data. For the wing incorporating dihedral (fig. 9(b)), good agreement was obtained with the Newtonian theory for angles of attack less than α_{ϵ_e}.

The experimental data obtained on the windward wing panel at $\epsilon_p/2$ of configuration 3 is shown in figure 10. Good correlation of the experimental data was obtained by using the parameter $M \sin \alpha_{eff}$, where α_{eff} is the effective angle of attack of the wing panel defined by equation (8). The experimental data are between the two-dimensional and Newtonian predicted values.

The effect of nose bluntness on the measured pressure-coefficient distributions obtained along the center line and wing leading edges of configurations 1 and 2 is presented in figure 11 at angles of attack from 0° to 45° and for Mach numbers 3.51 and 4.65. At both Mach numbers, the nose effect on the wing leading edge extends downstream to approximately $s/s' = 0.3$ (approximately 4.5 nose diameters) throughout the angle-of-attack range. Although the extent of this nose effect (a pressure relief for the blunt body) does not decrease with increasing α', it is believed that these low pressure coefficients within this range of s/s' resulted from the overexpansion occurring at the juncture of the nose and leading edge. There is no apparent effect of nose bluntness on the measured pressure distribution on the bottom center line for a Mach number of 3.51 at angles of attack from 0° and 7.5°. However, at angles of attack equal to and greater than 15° an adverse pressure gradient occurs on both configurations at $0.2 \lessapprox s/s' \lessapprox 0.4$.

The effect of nose bluntness on the configurations having dihedral is shown in figure 12 for a range of angle of attack from -45° to 45°. As would be expected, the measured distributions on the windward wing-panel center line are very similar throughout the negative α' range (flat surface windward) to the results obtained for configurations 1 and 2. On the wing leading edge, however, there is apparently a much larger effect of nose bluntness for α' approaching -45° at $s/s' < 0.4$ on the dihedral bodies as compared with the

flat bodies. This larger effect is attributed to the fact that as the angle of attack is increased, the geometric wing stagnation line ($\Phi = 0^\circ$) approaches the separation line which occurs on the leeward surfaces; therefore, the pressures in this region become more sensitive to the afterbody shape, in particular, at the nose region of the model. There is no apparent effect of bluntness on the pressure distributions for $s/s' > 0.4$ throughout the complete negative range of angle of attack; this trend is the same as that obtained for the flat wings. This trend can be explained by results obtained from oil-flow photographs of configuration 3 (which were not suitable for reproduction) in which the indicated separation line at an angle of attack of 45° was initially visible on the leeward wing panel at the nose region of the model and extended to the wing leading edge at larger values of s/s'. The exact location where this separation line initially intersected the leading edge could not be determined from these photographs. For angles of attack from 0° to 45°, the extent of the bluntness effect for the models with dihedral is also approximately the same as for the flat models; however, the trend of this effect is reversed for the wing leading edge for $\alpha' \geq 15^\circ$. This reversed effect of nose bluntness, consisting of a decrease in the C_p distribution, is apparently associated with the shift of the stagnation line from the wing leading edge to the ridge line of the models with dihedral.

Heat Transfer

The occurrence of natural boundary-layer transition on all configurations renders a complex distribution of the experimental heat-transfer coefficients and limits the application of theoretical predictions to these measured distributions. The extent of the wing surface affected by transitional and turbulent flow was determined from contour plots of the experimental heat-transfer coefficients, as illustrated in figure 13. In order that the complete heat-transfer distributions over the model be presented, the drawings in figure 13 were constructed by unfolding the model surface area from the vertical plane of symmetry about $\Phi = 0^\circ$. For configuration 1 at $M = 3.51$, $R \approx 4.1 \times 10^6$, and $\alpha' = 0^\circ$ (fig. 13(a)), the area affected by boundary-layer transition is confined to the upper and lower wing panels with no apparent effects on the wing leading edge. Although not presented in the figure, similar results were noted at angles of attack of 7.5° and 15°. At angles of attack of 22.5° and 37.5° the transition region extends to the leading edge, initially indicated by rapid increase in heating rates at $s/s' = 0.442$ for $\alpha' = 22.5^\circ$. The area of the leading edge affected by transition increases with increasing angle of attack through $\alpha' = 37.5^\circ$. At $\alpha' = 45^\circ$ no apparent regions of transition exist. For the same free-stream variables, similar results were noted for configuration 3, with one major exception: the experimental data (fig. 13(b)) indicate that the wing leading edges are influenced by turbulence at an angle of attack of 15°. Configuration 3 was also apparently free of turbulent flow at an angle of attack of 45°.

Because of the arbitrary location of transition, the major portion of the discussion pertaining to the heat-transfer data is concerned with the measured heating rates on the wing leading edges having a laminar boundary layer (as

determined from the contour plots). A complete listing of the measurements obtained from all four configurations are presented in tables VI to IX.

The effect of angle of attack on the distribution of heat-transfer coefficient normal to the leading edge of configuration 1 is shown in figure 14 at three spanwise stations for angles of attack from 0° to 45°. The laminar swept-cylinder theory of reference 10 is included in the figure for comparison with the leading-edge stations having a laminar boundary layer. For angles of attack from 0° to 15° at $M = 3.51$ and $R = 2.90 \times 10^6$ (fig. 14(a)), the experimental heat-transfer coefficients on the wing leading edge at all three spanwise stations are in fair agreement with the theoretical distribution. For angles of attack from 22.5° to 37.5°, only the experimental data at the most forward station ($s/s' = 0.113$) have a laminar boundary layer and are in agreement with the swept-cylinder theory. At an angle of attack of 45°, the experimental data at all three stations are overpredicted by the theoretical distributions.

The heat-transfer-coefficient distribution about the wing leading edge of configuration 1 for a Mach number of 3.51 and a Reynolds number of 4.00×10^6 is presented in figure 14(b). The data obtained at a Mach number of 4.65 and at Reynolds numbers of 2.90×10^6 and 4.10×10^6 are presented in figures 14(c) and 14(d). The heat-transfer distributions presented in these figures for this range of variable are similar to that presented for $M = 3.51$ in figure 14.

The experimental heat-transfer data obtained for configuration 3 at a Mach number of 3.51 and at Reynolds numbers 2.90×10^6 and 4.00×10^6 are presented in figures 15(a) and 15(b). Measurements were obtained at the high Reynolds number through an angle-of-attack range from -45° to 45°. The laminar swept-cylinder theory (ref. 7) is included in figure 15 for comparison with leading-edge data throughout the angle-of-attack range where the theoretical stagnation line as determined from equation (5) lies on the wing leading edge. At the high Reynolds number (fig. 15(b)) for angles of attack from -45° (flat surface windward) to 7.5°, the magnitude and distribution of the experimental heat-transfer data on the cylindrical leading edge are in fair agreement with theory and is very similar to the experimental data obtained for configuration 1 (fig. 14(b)). At angles of attack from 15° to 37.5°, the major portion of the data for the wing leading edge is affected by turbulence; however, at $\alpha' = 15°$ and 22.5°, the data at $s/s' = 0.113$ are in fair agreement with the swept cylinder theory, even though the theoretical stagnation-line location at the latter angle of attack is on the ridge line. Because of the similarity of data obtained at the negative angles of attack for configurations 1 and 3 and because of the incompleteness of the data for negative angles of attack for configuration 3, only the experimental data obtained at angles of attack from 0° to 45° are presented in figure form for $R = 2.90 \times 10^6$ at $M = 3.51$ and for $R = 2.90 \times 10^6$ and 4.10×10^6 at $M = 4.65$. (See figs. 15(a), 15(c), and 15(d), respectively.) As shown in figure 15, the effect of the range of free-stream variables on the heating rates for the area unaffected by the turbulent boundary layer was predominantly to the magnitude of the heat-transfer rates with negligible effects to the h distribution.

The effect of nose bluntness on the distribution of heat-transfer coefficient on the flat wing is shown in figure 16 for Mach numbers of 3.51 and 4.65,

Reynolds numbers of 4.00×10^6 and 4.10×10^6, and angles of attack from 0° to 45°. The circular data symbols correspond to the experimental data obtained at the wing leading-edge geometrical stagnation line and the square data symbols correspond to the data obtained at the windward wing-panel center line. At both Mach numbers, throughout the range of angle of attack, the data along the wing geometrical stagnation line indicate no apparent trend in nose effect greater than the accuracy of the experimental data. The increase in h with s/s' along the bottom center line for both configurations is attributed to boundary-layer transition and is apparently associated with the adverse pressure gradient located in the same region, as mentioned in the section entitled "Pressures." Similar results are shown in figure 17 for the models with dihedral.

The measured heat-transfer-coefficient distributions at three spanwise stations along the windward wing panel at $\epsilon_p/2$ of configuration 3 are presented in figure 18 for a Mach number of 3.51, Reynolds numbers 4.10×10^6 and 2.90×10^6, and angles of attack from 0° to 45°. An approximation of the measured h distribution is obtained with Van Driest turbulent flat-plate theory (ref. 13), using measured static pressures, a total pressure corresponding to that behind a two-dimensional oblique shock at the same angle as the shock inclination on the model (measured from schlieren photographs), and a Reynolds number based on the length from the mating line of the nose-body juncture. (See fig. 1.) The variation of h with angle of attack is generally approximated, but the magnitude of the measured and theoretical distributions indicates large discrepancies. These discrepancies are to be expected, however, since the selection of a location for the origin of the turbulent boundary layer was arbitrary and was assumed to remain constant throughout the angle-of-attack range.

CONCLUDING REMARKS

The results of pressure and heat-transfer measurements on 70° swept hypersonic wings with dihedral angles of 0° and 24.3° tested through an angle-of-attack range from -45° to 45° at Mach numbers of 3.51 and 4.65 lead to the following concluding remarks:

1. For angles of attack where the stagnation line is on the leading edge, the pressures on the hemicylindrical leading edge of the wings with 0° and 24.3° dihedral were predicted through 60° of expansion by both the Newtonian and modified Bernoulli equations and by using normal Mach numbers.

2. For expansion angles from 60° to 90° on the model with 0° dihedral, the experimental leading-edge pressure coefficients were in good agreement with the compressible Bernoulli equation.

3. For angles of attack for which the stagnation line shifted from the wing leading edge to the ridge line on the wing with 24.3° dihedral, the pressure distributions on the wing leading edges (now trailing edges) were predicted by Newtonian flow using a local surface slope in a plane perpendicular to the ridge line.

4. The windward-panel center-line pressures for all the models were correlated for the Mach numbers and angle-of-attack range of this investigation by the parameter M sin α, where M is the free-stream Mach number and α is the angle of attack of the ridge line. Pressures obtained off the center line of the windward panel of the body with 24.3° dihedral were correlated by the parameter M sin α_{eff}, where α_{eff} is the effective angle of attack of the windward wing panel.

5. The windward center-line pressure distribution on the wing with 0° dihedral was in good agreement with two-dimensional oblique-shock theory.

6. The windward center-line pressure distributions for the wing with 24.3° dihedral are in good agreement with Newtonian flow for all angles of attack where the stagnation line is located on the wing leading edge.

7. The distribution of the heat-transfer coefficient on the leading edge of the wing with 0° dihedral, where the boundary-layer remained laminar, was in good agreement with laminar swept-cylinder theory for angles of attack from 0° to 37.5°. Good agreement was also obtained with swept-cylinder theory on the wing with 24.3° dihedral at angles of attack from -45° to 22.5° on the portion of the wing where the boundary layer remained laminar. At an angle of attack of 45°, the heating rates on both wings were overpredicted by the swept-cylinder theory.

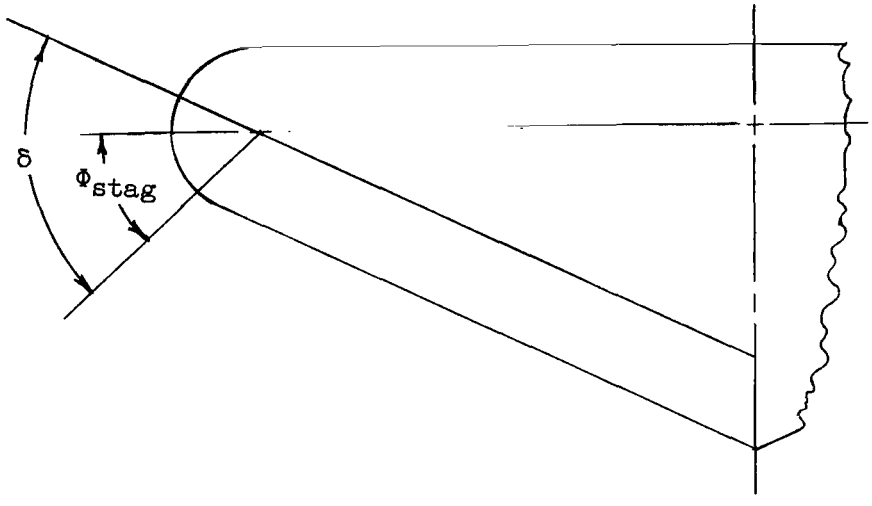
8. Throughout the range of variables of this investigation, there was no apparent trend in nose effect on the heat-transfer or pressure distribution at stations downstream of approximately 4.5 nose diameters.

Langley Research Center,
National Aeronautics and Space Administration,
Langley Station, Hampton, Va., March 25, 1964.

APPENDIX A

FLOW DEFLECTION ANGLE RELATIVE TO THE PLANE CONTAINING THE AXES OF THE WING LEADING EDGES

The angular stagnation-line shift Φ_{stag} is illustrated in sketch (a), which is a sectional view perpendicular to the wing leading edge of a typical blunt wing incorporating dihedral.



Sketch (a)

These angles are further illustrated by the geometrical model presented in figure 19.

From the construction of the model in figure 19(b), it is readily seen that the angle adD' is a right angle. Hence,

$$\cos \Phi_{stag} = \frac{(ad)}{(aD')} = \frac{(Oa)\tan \epsilon_p}{(Oa)\tan \epsilon_e} = \frac{\tan \epsilon_p}{\tan \epsilon_e}$$

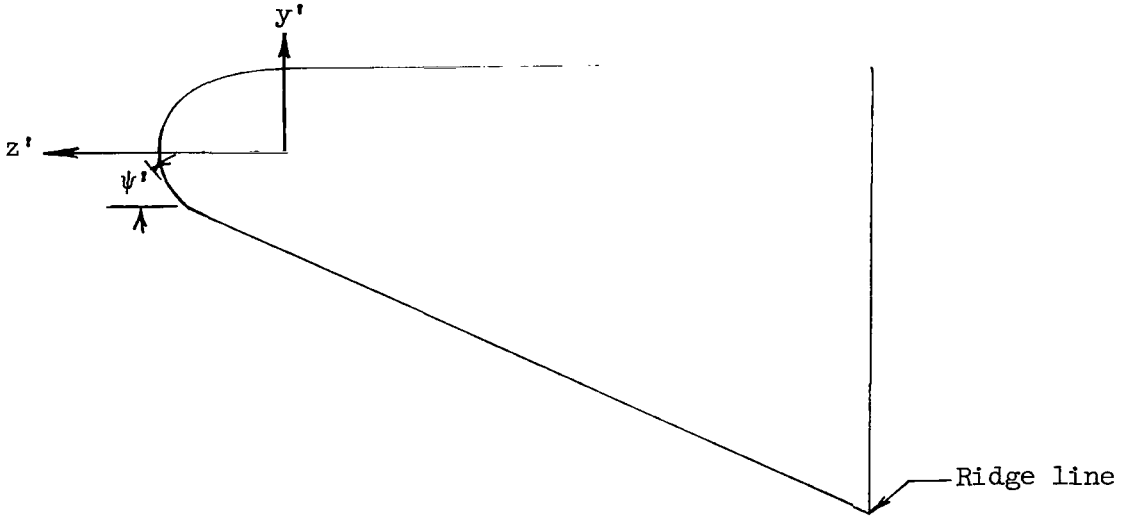
The stagnation-line shift in reference 11 is defined in terms of the angle δ, which is measured relative to the plane of the surface with dihedral.

APPENDIX B

TRANSFORMATION OF SLOPE OF CYLINDRICAL LEADING-EDGE SURFACE OF BODIES WITH DIHEDRAL IN A PLANE NORMAL TO THE LEADING EDGE TO THE CORRESPONDING SLOPE IN A PLANE NORMAL TO THE RIDGE LINE

Calculation of pressure distribution from Newtonian flow based on the free-stream Mach number component normal to the ridge line necessitates definition of the leading-edge geometry in a plane normal to the ridge line.

A sectional view in a plane normal to the ridge line of a sweptback wing with dihedral and with cylindrical leading edges is shown in sketch (b).



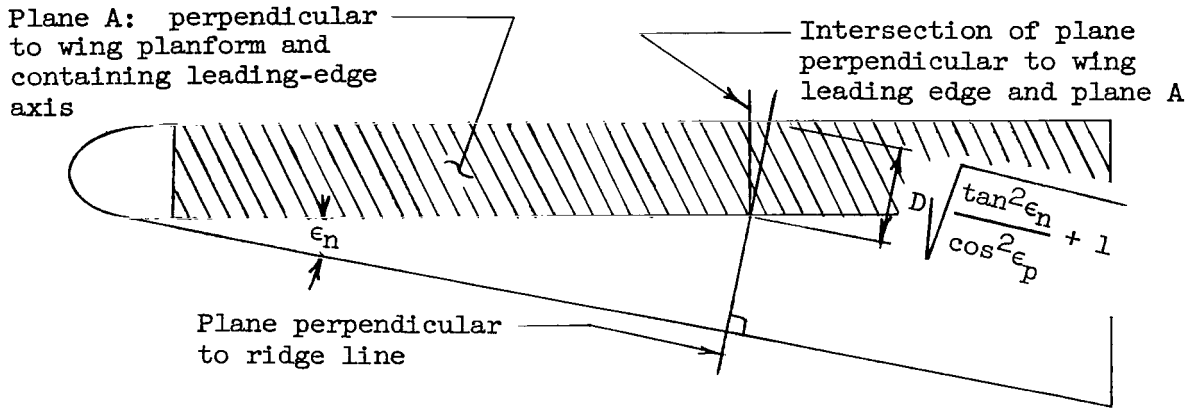
Sketch (b)

With the assumption that the stagnation line occurs at the ridge line and that the local flow governing the pressure distribution on the geometrical wing leading edge is in a plane perpendicular to the ridge line, the Newtonian theory can be expressed as:

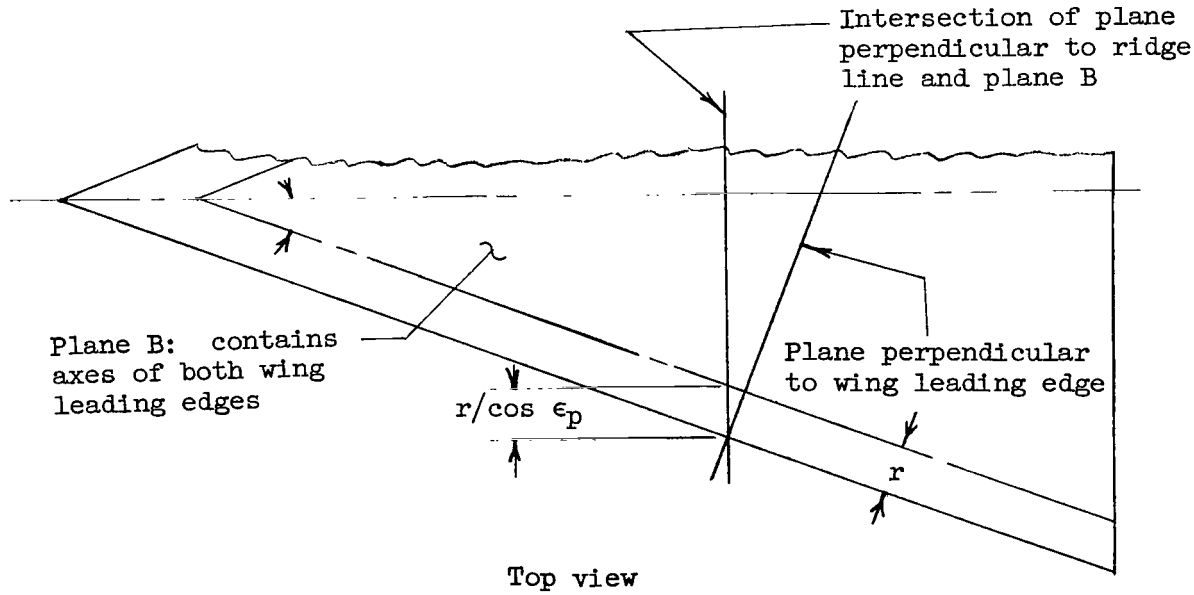
$$C_p = C_{p,max'} \cos^2\psi' \qquad (B1)$$

where $C_{p,max}'$ is the pressure coefficient at the ridge line and ψ' is the surface inclination in a plane perpendicular to the ridge line.

In a plane perpendicular to the wing leading edge, the leading-edge surface is cylindrical with radius r. In a plane perpendicular to the ridge line, the projection of the cylindrical leading edge is an ellipse, as is illustrated in sketch (b). The intercepts y' and z' of the elliptical leading edge can be readily determined from the geometry presented in sketch (c).



Side view



Top view

Sketch (c)

Thus, for the y',z' coordinate system, the equation of the ellipse is:

$$\frac{(z')^2}{a^2} + \frac{(y')^2}{b^2} = 1 \tag{B2}$$

where a and b, by utilization of sketch (c), can be written:

$$\left.\begin{aligned} a &= r \sec \epsilon_p \\ b &= r\sqrt{\frac{\tan^2\epsilon_n}{\cos^2\epsilon_p} + 1} \end{aligned}\right\} \tag{B3}$$

Solving equation (B2) for y', substituting the values of the constants a and b from equations (B3), and differentiating yield:

$$\frac{dy'}{dz'} = \left(\frac{z'}{\sqrt{r^2\sec^2\epsilon_p - (z')^2}}\right)\sqrt{\tan^2\epsilon_n + \cos^2\epsilon_p} \tag{B4}$$

The right-hand side of equation (B4) can be transformed to the unprimed system using the transformation $z' = z \sec \epsilon_p$. Thus, equation (B4) becomes:

$$\frac{dy'}{dz'} = \left(\frac{z}{\sqrt{r^2 - z^2}}\right)\sqrt{\tan^2\epsilon_n + \cos^2\epsilon_p} \tag{B5}$$

Substituting the expression $z = r \cos \Phi$ into equation (B5) simplifies the equation so that:

$$\tan \psi' = \frac{dy'}{dz'} = \frac{1}{\tan \Phi}\sqrt{\tan^2\epsilon_n + \cos^2\epsilon_p} \tag{B6}$$

APPENDIX C

EFFECTIVE ANGLE OF ATTACK

A geometrical model of a wing incorporating dihedral and illustrating the basic angles is shown in figure 19. It should be noted that this geometrical model differs from the experimental models in that the base of the experimental models is perpendicular to the axis of symmetry and to the plane of the leading edges, whereas the base of the geometrical model is in a plane perpendicular to the ridge line. The latter model simplifies the development for an expression of α_{eff}.

From the law of cosines and the aid of figure 19(a), the effective angle of attack can be expressed as follows:

$$\cos \alpha_{eff} = \frac{(OO')^2 + (OC)^2 - (O'C)^2}{2(OO')(OC)}$$

$$= \frac{(OB)^2\sec^2\alpha + (OB)^2\sec^2\xi - (O'B)^2\cos^2\Gamma}{2(OB)^2(\sec \alpha \sec \xi)} \tag{C1}$$

$$\cos \alpha_{eff} = \frac{\sec^2\alpha + \sec^2\xi - \tan^2\alpha \cos^2\Gamma}{2 \sec \alpha \sec \xi} \tag{C2}$$

where $\tan \alpha = \frac{O'B}{OB}$.

The angle ξ in equation (C2) can be expressed in terms of α and Γ from the following relation:

$$\sec \xi = \sqrt{1 + \tan^2\xi} = \sqrt{1 + \tan^2\alpha \sin^2\Gamma}$$

thus, equation (C2) becomes:

$$\cos \alpha_{eff} = \frac{\sec^2\alpha + (1 + \tan^2\alpha \sin^2\Gamma) - \tan^2\alpha \cos^2\Gamma}{2 \sec \alpha\sqrt{1 + \tan^2\alpha \sin^2\Gamma}} \tag{C3}$$

Substituting the following trigonometric identities,

$$\sec^2\alpha = 1 + \tan^2\alpha$$

and

$$\cos^2\Gamma = 1 - \sin^2\Gamma$$

into equation (C3) and simplifying yield:

$$\cos \alpha_{eff} = \cos \alpha\sqrt{1 + \tan^2\alpha \sin^2\Gamma} \tag{C4}$$

Equation (C4) can be further simplified by expressing $\cos \alpha_{eff}$ in terms of $\sin \alpha_{eff}$ as follows:

$$\sin \alpha_{eff} = \sqrt{1 - \cos^2\alpha_{eff}} = \sqrt{1 - \cos^2\alpha(1 + \tan^2\alpha \sin^2\Gamma)}$$

or

$$\sin \alpha_{eff} = \sin \alpha \cos \Gamma \tag{C5}$$

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TABLE I.- INSTRUMENTATION LOCATIONS

(a) Thermocouple locations

Thermocouple	Configuration 1			Thermocouple	Configuration 2			Thermocouple	Configuration 3			Thermocouple	Configuration 4		
	ϕ, deg	s/s'	x/D		ϕ, deg	s/s'	x/D		ϕ, deg	s/s'	x/D		ϕ, deg	s/s'	x/D
1	45	0.033	0.393	--	---	-----	-----	1	45	0.033	0.393	--	---	-----	-----
2	0	.033	.000	--	---	-----	-----	2	0	.033	.000	--	---	-----	-----
3	-45	.033	-.393	--	---	-----	-----	3	-45	.033	-.393	--	---	-----	-----
4	60	.066	.524	4	60	0.078	0.524	4	60	.066	.524	4	60	0.078	0.591
5	30	.066	.262	5	30	.078	.262	5	30	.066	.262	5	30	.078	.262
6	0	.066	.000	6	0	.078	.000	6	0	.066	.000	6	0	.078	.000
7	-30	.066	-.262	7	-30	.078	-.262	7	-30	.066	-.262	7	-30	.078	-.262
8	-60	.066	-.524	8	-60	.078	-.524	8	-60	.066	-.524	8	-60	.078	-.524
9	90	.113	1.159	9	90	.113	1.159	9	90	.113	1.159	9	90	.113	1.159
10	90	.113	.785	10	90	.113	.785	10	90	.113	.785	10	90	.113	.785
11	60	.113	.524	11	60	.113	.524	11	60	.113	.524	11	60	.113	.524
12	30	.113	.262	12	30	.113	.262	12	30	.113	.262	12	30	.113	.262
13	0	.113	.000	13	0	.113	.000	13	0	.113	.000	13	0	.113	.000
14	-30	.113	-.262	14	-30	.113	-.262	14	-30	.113	-.262	14	-30	.113	-.262
15	-60	.113	-.524	15	-60	.113	-.524	15	-60	.113	-.524	15	-60	.113	-.524
16	-90	.113	-.785	16	-90	.113	-.785	16	-64	.113	-.802	16	-64	.113	-.802
17	-90	.113	-1.159	17	-90	.113	-1.159	17	-90	.113	-1.218	17	-90	.113	-1.218
18	90	.160	1.522	18	90	.160	1.522	18	90	.160	1.522	18	90	.160	1.522
19	90	.160	.785	19	90	.160	.785	19	90	.160	.785	19	90	.160	.785
20	0	.160	.000	20	0	.160	.000	20	0	.160	.000	20	0	.160	.000
21	-90	.160	-.785	21	-90	.160	-.785	21	-64	.160	-.802	21	-64	.160	-.802
22	-90	.160	-1.522	22	-90	.160	-1.522	22	-90	.160	-1.628	22	-90	.160	-1.628
23	90	.207	1.886	23	90	.207	1.886	23	90	.207	1.886	23	90	.207	1.886
24	90	.207	1.335	24	90	.207	1.335	24	90	.207	1.335	24	90	.207	1.335
25	90	.207	.785	25	90	.207	.785	25	90	.207	.785	25	90	.207	.785
26	60	.207	.524	26	60	.207	.524	26	60	.207	.524	26	60	.207	.524
27	30	.207	.262	27	30	.207	.262	27	30	.207	.262	27	30	.207	.262
28	0	.207	.000	28	0	.207	.000	28	0	.207	.000	28	0	.207	.000
29	-30	.207	-.262	29	-30	.207	-.262	29	-30	.207	-.262	29	-30	.207	-.262
30	-60	.207	-.524	30	-60	.207	-.524	30	-60	.207	-.524	30	-60	.207	-.524
31	-90	.207	-.785	31	-90	.207	-.785	31	-64	.207	-.802	31	-64	.207	-.802
32	-90	.207	-1.335	32	-90	.207	-1.335	32	-64	.207	-1.424	32	-64	.207	-1.424
33	-90	.207	-1.886	33	-90	.207	-1.886	33	-90	.207	-2.028	33	-90	.207	-2.028
34	90	.254	2.250	34	90	.254	2.250	34	90	.254	2.250	34	90	.254	2.250
35	90	.254	1.518	35	90	.254	1.518	35	90	.254	1.518	35	90	.254	1.518
36	90	.254	.785	36	90	.254	.785	36	90	.254	.785	36	90	.254	.785
37	0	.254	.000	37	0	.254	.000	37	0	.254	.000	37	0	.254	.000
38	-90	.254	-.785	38	-90	.254	-.785	38	-64	.254	-.802	38	-64	.254	-.802
39	-90	.254	-1.518	39	-90	.254	-1.518	39	-64	.254	-1.626	39	-64	.254	-1.626
40	-90	.254	-2.250	40	-90	.254	-2.250	40	-90	.254	-2.440	40	-90	.254	-2.440
41	90	.301	.785	41	90	.301	.785	--	---	-----	-----	41	90	.301	.785
42	60	.301	.524	42	60	.301	.524	--	---	-----	-----	42	60	.301	.524
43	30	.301	.262	43	30	.301	.262	--	---	-----	-----	43	30	.301	.262
44	0	.301	.000	44	0	.301	.000	44	0	.301	.000	44	0	.301	.000
45	-30	.301	-.262	45	-30	.301	-.262	--	---	-----	-----	45	-30	.301	-.262
46	-60	.301	-.524	46	-60	.301	-.524	--	---	-----	-----	46	-60	.301	-.524
47	-90	.301	-.785	47	-90	.301	-.785	--	---	-----	-----	47	-64	.301	-.802
--	---	-----	-----	50	60		.524	--	---	-----	-----	50	60		.524
--	---	-----	-----	51	30		.262	--	---	-----	-----	51	30		.262
--	---	-----	-----	52	0		.000	--	---	-----	-----	52	0		.000
--	---	-----	-----	53	-30		-.262	--	---	-----	-----	53	-30		-.262
--	---	-----	-----	54	-60		-.524	--	---	-----	-----	54	-60		-.524
--	---	-----	-----	55	60		.524	--	---	-----	-----	55	60		.524
--	---	-----	-----	56	30		.262	--	---	-----	-----	56	30		.262
--	---	-----	-----	57	0		.000	--	---	-----	-----	57	0		.000
--	---	-----	-----	58	-30		-.262	--	---	-----	-----	58	-30		-.262
--	---	-----	-----	59	-60		-.524	--	---	-----	-----	59	-60		-.524
60	90	.442	3.706	60	90	.442	3.706	60	90	.442	3.706	60	90	.442	3.706
61	90	.442	2.246	61	90	.442	2.246	61	90	.442	2.246	61	90	.442	2.246
62	90	.442	.785	62	90	.442	.785	62	90	.442	.785	62	90	.442	.785
63	60	.442	.524	63	60	.442	.524	63	60	.442	.524	63	60	.442	.524
64	30	.442	.262	64	30	.442	.262	64	30	.442	.262	64	30	.442	.262
65	0	.442	.000	65	0	.442	.000	65	0	.442	.000	65	0	.442	.000
66	-30	.442	-.262	66	-30	.442	-.262	66	-30	.442	-.262	66	-30	.442	-.262
67	-60	.442	-.524	67	-60	.442	-.524	67	-60	.442	-.524	67	-60	.442	-.524
68	-90	.442	-.785	68	-90	.442	-.785	68	-64	.442	-.802	68	-64	.442	-.802
69	-90	.442	-2.246	69	-90	.442	-2.246	69	-64	.442	-2.436	69	-64	.442	-2.436
70	-90	.442	-3.706	70	-90	.442	-3.706	70	-90	.442	-4.053	70	-90	.442	-4.053
71	90	.630	5.162	71	90	.630	5.162	71	90	.630	5.162	71	90	.630	5.162
72	90	.630	2.974	72	90	.630	2.974	72	90	.630	2.974	72	90	.630	2.974
73	90	.630	.785	73	90	.630	.785	73	90	.630	.785	73	90	.630	.785
74	60	.630	.524	74	60	.630	.524	74	60	.630	.524	74	60	.630	.524
75	30	.630	.262	75	30	.630	.262	75	30	.630	.262	75	30	.630	.262
76	0	.630	.000	76	0	.630	.000	76	0	.630	.000	76	0	.630	.000
77	-30	.630	-.262	77	-30	.630	-.262	77	-30	.630	-.262	77	-30	.630	-.262
78	-60	.630	-.524	78	-60	.630	-.524	78	-60	.630	-.524	78	-60	.630	-.524
79	-90	.630	-.785	79	-90	.630	-.785	79	-64	.630	-.802	79	-64	.630	-.802
80	-90	.630	-2.974	80	-90	.630	-2.974	80	-64	.630	-3.246	80	-64	.630	-3.246
81	-90	.630	-5.162	81	-90	.630	-5.162	81	-90	.630	-5.673	81	-90	.630	-5.673
--	---	-----	-----	--	---	-----	-----	82	90	.818	6.618	82	90	.818	6.618
83	90	.818	3.702	83	90	.818	3.702	83	90	.818	3.702	83	90	.818	3.702
84	90	.818	.785	84	90	.818	.785	84	90	.818	.785	84	90	.818	.785
85	60	.818	.524	85	60	.818	.524	85	60	.818	.524	85	60	.818	.524
86	30	.818	.262	86	30	.818	.262	86	30	.818	.262	86	30	.818	.262
87	0	.818	.000	87	0	.818	.000	87	0	.818	.000	87	0	.818	.000
88	-30	.818	-.262	88	-30	.818	-.262	88	-30	.818	-.262	88	-30	.818	-.262
89	-60	.818	-.524	89	-60	.818	-.524	89	-60	.818	-.524	89	-60	.818	-.524
90	-90	.818	-.785	90	-90	.818	-.785	90	-64	.818	-.802	90	-64	.818	-.802
91	-90	.818	-3.702	91	-90	.818	-3.702	91	-64	.818	-4.056	91	-64	.818	-4.056
--	---	-----	-----	--	---	-----	-----	92	-90	.818	-7.292	92	-90	.818	-7.292
93	90	.958	.785	93	90	.958	.785	93	90	.958	.785	93	90	.958	.785
94	60	.958	.524	94	60	.958	.524	94	60	.958	.524	94	60	.958	.524
95	30	.958	.262	95	30	.958	.262	95	30	.958	.262	95	30	.958	.262
96	0	.958	.000	96	0	.958	.000	96	0	.958	.000	96	0	.958	.000
97	-30	.958	-.262	97	-30	.958	-.262	97	-30	.958	-.262	97	-30	.958	-.262
98	-60	.958	-.524	98	-60	.958	-.524	98	-60	.958	-.524	98	-60	.958	-.524
99	-90	.958	-.785	99	-90	.958	-.785	99	-64	.958	-.802	--	---	-----	-----

TABLE I.- INSTRUMENTATION LOCATIONS - Concluded

(b) Pressure orifice locations

Pressure orifice	Configuration 1			Pressure orifice	Configuration 2			Pressure orifice	Configuration 3			Pressure orifice	Configuration 4		
	Φ, deg	s/s'	x/D		Φ, deg	s/s'	x/D		Φ, deg	s/s'	x/D		Φ, deg	s/s'	x/D
1	45	0.033	0.393	--	---	-----	-----	1	45	0.033	0.393	--	---	-----	-----
2	0	.033	.000	--	---	-----	-----	2	0	.033	.000	--	---	-----	-----
3	-45	.033	-.393	--	---	-----	-----	3	-45	.033	-.393	--	---	-----	-----
4	60	.066	.524	4	60	0.078	0.524	4	60	.066	.524	4	60	0.078	0.524
5	30	.066	.262	5	30	.078	.262	5	30	.066	.262	5	30	.078	.262
6	0	.066	.000	6	0	.078	.000	6	0	.066	.000	6	0	.078	.000
7	-30	.066	-.262	7	-30	.078	-.262	7	-30	.066	-.262	7	-30	.078	-.262
8	-60	.066	-.524	8	-60	.078	-.524	8	-60	.066	-.524	8	-60	.078	-.524
9	90	.135	1.159	9	90	.135	1.159	9	90	.135	1.159	9	90	.135	1.159
10	90	.113	.785	10	90	.113	.785	10	90	.113	.785	10	90	.113	.785
11	60	.113	.524	11	60	.113	.524	11	60	.113	.524	11	60	.113	.524
12	30	.113	.262	12	30	.113	.262	12	30	.113	.262	12	30	.113	.262
13	0	.113	.000	13	0	.113	.000	13	0	.113	.000	13	0	.113	.000
14	-30	.113	-.262	14	-30	.113	-.262	14	-30	.113	-.262	14	-30	.113	-.262
15	-60	.113	-.524	15	-60	.113	-.524	15	-60	.113	-.524	15	-60	.113	-.524
16	-90	.113	-.785	16	-90	.113	-.785	16	-64	.113	-.802	16	-64	.113	-.802
17	-90	.135	-1.159	17	-90	.135	-1.159	17	-90	.135	-1.218	17	-90	.135	-1.218
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19	90	.160	.785	19	90	.160	.785	19	90	.160	.785	19	90	.160	.785
20	0	.160	.000	20	0	.160	.000	20	0	.160	.000	20	0	.160	.000
21	-90	.160	-.785	21	-90	.160	-.785	21	-64	.160	-.802	21	-64	.160	-.802
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23	90	.229	1.886	23	90	.229	1.886	23	90	.229	1.886	23	90	.229	1.886
24	90	.207	1.335	24	90	.207	1.335	24	90	.207	1.335	24	90	.207	1.335
25	90	.207	.785	25	90	.207	.785	25	90	.207	.785	25	90	.207	.785
26	60	.207	.524	26	60	.207	.524	26	60	.207	.524	26	60	.207	.524
27	30	.207	.262	27	30	.207	.262	27	30	.207	.262	27	30	.207	.262
28	0	.207	.000	28	0	.207	.000	28	0	.207	.000	28	0	.207	.000
29	-30	.207	-.262	29	-30	.207	-.262	29	-30	.207	-.262	29	-30	.207	-.262
30	-60	.207	-.524	30	-60	.207	-.524	30	-60	.207	-.524	30	-60	.207	-.524
31	-90	.207	-.785	31	-90	.207	-.785	31	-64	.207	-.802	31	-64	.207	-.802
32	-90	.207	-1.335	32	-90	.207	-1.335	32	-64	.207	-1.424	32	-64	.207	-1.424
33	-90	.229	-1.886	33	-90	.229	-1.886	33	-90	.229	-2.028	33	-90	.229	-2.028
34	90	.276	2.250	34	90	.276	2.250	34	90	.276	2.250	34	90	.276	2.250
35	90	.254	1.518	35	90	.254	1.518	--	---	-----	-----	--	---	-----	-----
36	90	.254	.785	36	90	.254	.785	36	90	.254	.785	36	90	.254	.785
37	0	.254	.000	37	0	.254	.000	37	0	.254	.000	37	0	.254	.000
38	-90	.254	-.785	38	-90	.254	-.785	38	-64	.254	-.802	38	-64	.254	-.802
39	-90	.254	-1.518	39	-90	.254	-1.518	39	-64	.254	-1.626	39	-64	.254	-1.626
40	-90	.276	-2.250	40	-90	.276	-2.250	40	-90	.276	-2.440	40	-90	.276	-2.440
41	90	.301	.785	41	90	.301	.785	--	---	-----	-----	41	90	.301	.785
42	60	.301	.524	42	60	.301	.524	--	---	-----	-----	42	60	.301	.524
43	30	.301	.262	43	30	.301	.262	--	---	-----	-----	43	30	.301	.262
44	0	.301	.000	44	0	.301	.000	--	---	-----	-----	44	0	.301	.000
45	-30	.301	-.262	45	-30	.301	-.262	--	---	-----	-----	45	-30	.301	-.262
46	-60	.301	-.524	46	-60	.301	-.524	--	---	-----	-----	46	-60	.301	-.524
47	-90	.301	-.785	47	-90	.301	-.785	--	---	-----	-----	47	-90	.301	-.802
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60	90	.464	3.706	60	90	.464	3.706	60	90	.464	3.706	60	90	.464	3.706
61	90	.442	2.246	61	90	.442	2.246	61	90	.442	2.246	61	90	.442	2.246
62	90	.442	.785	62	90	.442	.785	62	90	.442	.785	62	90	.442	.785
63	60	.442	.524	63	60	.442	.524	63	60	.442	.524	63	60	.442	.524
64	30	.442	.262	64	30	.442	.262	64	30	.442	.262	64	30	.442	.262
65	0	.442	.000	65	0	.442	.000	65	0	.442	.000	65	0	.442	.000
66	-30	.442	-.262	66	-30	.442	-.262	66	-30	.442	-.262	66	-30	.442	-.262
67	-60	.442	-.524	67	-60	.442	-.524	67	-60	.442	-.524	67	-60	.442	-.524
68	-90	.442	-.785	68	-90	.442	-.785	68	-64	.442	-.802	68	-64	.442	-.802
--	---	-----	-----	--	---	-----	-----	69	-64	.442	-2.436	69	-64	.442	-2.436
70	-90	.464	-3.706	70	-90	.464	-3.706	70	-90	.464	-4.053	70	-90	.464	-4.053
71	90	.652	5.162	71	90	.652	5.162	71	90	.652	5.162	71	90	.652	5.162
72	90	.630	2.974	72	90	.630	2.974	72	90	.630	2.974	72	90	.630	2.974
73	90	.630	.785	73	90	.630	.785	73	90	.630	.785	73	90	.630	.785
74	60	.630	.524	74	60	.630	.524	74	60	.630	.524	74	60	.630	.524
75	30	.630	.262	75	30	.630	.262	75	30	.630	.262	75	30	.630	.262
76	0	.630	.000	76	0	.630	.000	76	0	.630	.000	76	0	.630	.000
77	-30	.630	-.262	77	-30	.630	-.262	77	-30	.630	-.262	77	-30	.630	-.262
78	-60	.630	-.524	78	-60	.630	-.524	78	-60	.630	-.524	78	-60	.630	-.524
79	-90	.630	-.785	79	-90	.630	-.785	79	-64	.630	-.802	79	-64	.630	-.802
--	---	-----	-----	--	---	-----	-----	80	-64	.630	-3.246	80	-64	.630	-3.246
81	-90	.652	-5.162	81	-90	.652	-5.162	81	-90	.652	-5.673	81	-90	.652	-5.673
--	---	-----	-----	--	---	-----	-----	82	90	.840	6.618	82	90	.840	6.618
83	90	.818	3.702	83	90	.818	3.702	83	90	.818	3.702	83	90	.818	3.702
84	90	.818	.785	84	90	.818	.785	84	90	.818	.785	84	90	.818	.785
85	60	.818	.524	85	60	.818	.524	85	60	.818	.524	85	60	.818	.524
86	30	.818	.262	86	30	.818	.262	86	30	.818	.262	86	30	.818	.262
87	0	.818	.000	87	0	.818	.000	87	0	.818	.000	87	0	.818	.000
88	-30	.818	-.262	88	-30	.818	-.262	88	-30	.818	-.262	88	-30	.818	-.262
89	-60	.818	-.524	89	-60	.818	-.524	89	-60	.818	-.524	89	-60	.818	-.524
90	-90	.818	-.785	90	-90	.818	-.785	90	-64	.818	-.802	90	-64	.818	-.802
--	---	-----	-----	--	---	-----	-----	91	-64	.818	-4.056	91	-64	.818	-4.056
--	---	-----	-----	--	---	-----	-----	92	-90	.840	-7.292	92	-90	.840	-7.292
93	90	.958	.785	93	90	.958	.785	93	90	.958	.785	93	90	.958	.785
94	60	.958	.524	94	60	.958	.524	94	60	.958	.524	94	60	.958	.524
95	30	.958	.262	95	30	.958	.262	95	30	.958	.262	95	30	.958	.262
96	0	.958	.000	96	0	.958	.000	96	0	.958	.000	96	0	.958	.000
97	-30	.958	-.262	97	-30	.958	-.262	97	-30	.958	-.262	97	-30	.958	-.262
98	-60	.958	-.524	98	-60	.958	-.524	98	-60	.958	-.524	98	-60	.958	-.524
99	-90	.958	-.785	99	-90	.958	-.785	99	-64	.958	-.802	99	-64	.958	-.802

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 1

(a) $M = 3.51$; $p_{t,nom} = 5{,}040$ lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	$T_t = 575°$ R; $p_t = 5{,}041.0$[a]	$T_t = 581°$ R; $p_t = 5{,}050.0$[a]	$T_t = 585°$ R; $p_t = 5{,}037.0$[a]	$T_t = 583°$ R; $p_t = 5{,}052.0$[a]	$T_t = 584°$ R; $p_t = 5{,}044.0$[a]	$T_t = 584°$ R; $p_t = 5{,}055.0$[a]	$T_t = 585°$ R; $p_t = 5{,}042.0$[a]
1	0.2351	0.1644	0.1184	0.0943	0.0772	0.0652	0.0537
2	.2643	.2520	.2415	.2404	.2234	.2170	.1357
3	.1825	.2696	.3762	.5091	.6153	.7428	.6388
4	.1049	.0400	.0082	-.0083	-.0137	-.0083	-.0082
5	.1825	.1002	.0481	.0185	.0011	-.0108	-.0340
6	.2410	.2404	.2356	.2346	.2234	.2170	.1531
7	.1707	.2520	.3528	.4624	.5510	.6492	.5218
8	.0953	.1854	.3194	.5048	.7112	.9330	.9465
9	.0080	-.0353	-.0566	-.0783	-.0836	-.0783	-.0729
10	-.0190	-.0568	-.0891	-.0836	-.0944	-.0783	-.0729
11	.0457	-.0298	-.0728	-.0891	-.0944	-.0730	-.0729
12	.1707	.0943	.0422	.0185	-.0048	-.0108	-.0340
13	.2175	.2170	.2121	.2111	.1999	.1994	.1531
14	.1531	.2346	.3293	.4331	.5218	.6201	.5977
15	.0350	.1433	.2830	.4748	.6870	.9088	.9646
16	-.0133	.0709	.2045	.4084	.6568	.9449	1.1519
17	-.0012	.0709	.1924	.3844	.6326	.9209	1.1398
19	-.0244	-.0675	-.0944	-.0783	-.0891	-.0783	-.0674
20	.2116	.2053	.2004	.2053	.1940	.1936	.1590
21	-.0375	.0527	.1924	.3903	.6326	.9028	1.1035
23	.0080	-.0353	-.0673	-.0783	-.0944	-.0730	-.0674
24	-.0137	-.0730	-.0944	-.0783	-.0836	-.0730	-.0674
25	-.0405	-.0730	-.0997	-.0783	-.0836	-.0730	-.0674
26	.0240	-.0407	-.0835	-.0783	-.0891	-.0675	-.0674
27	.1531	.0826	.0248	.0009	-.0224	-.0341	-.0516
28	.2058	.2053	.2004	.2053	.1940	.1936	.1649
29	.1357	.2170	.3001	.3981	.4807	.5617	.5686
30	.0169	.1131	.2529	.4386	.6386	.8545	.9707
31	-.0436	.0588	.2045	.4145	.6447	.9209	1.1640
32	-.0254	.0588	.1803	.3724	.5965	.8786	1.1640
33	-.0133	.0588	.1742	.3603	.6025	.8967	1.2303
34	-.0028	-.0407	-.0673	-.0783	-.0944	-.0730	-.0674
35	-.0082	-.0730	-.0997	-.0783	-.0944	-.0675	-.0674
36	-.0514	-.0783	-.0997	-.0783	-.0836	-.0675	-.0674
37	.1999	.1994	.1945	.1936	.1883	.1762	.1473
38	-.0557	.0527	.2045	.4024	.6326	.8907	1.1459
39	-.0194	.0588	.1863	.3724	.6086	.9028	1.2122
40	-.0073	.0709	.1984	.3963	.6265	.9209	1.2424
41	-.0567	-.0836	-.0997	-.0783	-.0891	-.0675	-.0674
42	.0295	-.0353	-.0782	-.0836	-.0944	-.0675	-.0621
43	.1357	.0710	.0189	-.0050	-.0224	-.0400	-.0574
44	.1883	.1820	.1770	.1820	.1707	.1527	.1298
45	.1240	.2053	.2942	.3923	.4692	.5382	.5744
46	.0048	.1010	.2590	.4507	.6447	.8245	.9828
47	-.0557	.0588	.2166	.4205	.6628	.9269	1.1940
60	-.0082	-.0407	-.0673	-.0836	-.0836	-.0675	-.0674
61	-.0082	-.0783	-.0891	-.0783	-.0891	-.0622	-.0621
62	-.0621	-.0891	-.0891	-.0783	-.0836	-.0622	-.0621
63	.0240	-.0407	-.0728	-.0891	-.0891	-.0622	-.0621
64	.1531	.0943	.0540	.0243	.0011	-.0226	-.0398
65	.1825	.1879	.1888	.1879	.1766	.1586	.1240
66	.1240	.1994	.2825	.3747	.4398	.4739	.4866
67	-.0073	.0950	.2529	.4446	.6265	.7701	.8983
68	-.0615	.0648	.2287	.4446	.6689	.9088	1.1217
70	-.0133	.0648	.1924	.4084	.6447	.9149	1.2364
71	-.0082	-.0407	-.0728	-.0675	-.0729	-.0622	-.0621
72	-.0137	-.0730	-.0835	-.0730	-.0783	-.0622	-.0621
73	-.0674	-.0891	-.0944	-.0730	-.0729	-.0622	-.0621
74	.0133	-.0407	-.0782	-.0730	-.0783	-.0568	-.0621
75	.1240	.0710	.0248	-.0050	-.0283	-.0458	-.0574
76	.1825	.1820	.1770	.1644	.1357	.1002	.0596
77	.1240	.1994	.2766	.3397	.3754	.3747	.3580
78	.0169	.1192	.2770	.4326	.5723	.6677	.7413
79	-.0496	.1192	.2408	.4326	.6628	.7943	1.0612
81	-.0133	.0648	.1984	.3903	.6326	.9209	1.2122
83	-.0137	-.0675	-.0782	-.0675	-.0674	-.0568	-.0621
84	-.0674	-.0891	-.0673	-.0675	-.0674	-.0622	-.0567
85	.0133	-.0407	-.0728	-.0675	-.0729	-.0568	-.0567
86	.1181	.0593	.0130	-.0226	-.0457	-.0517	-.0516
87	.1707	.1762	.1653	.1410	.1005	.0652	.0302
88	.1181	.1936	.2766	.3338	.3521	.3514	.3228
89	.0108	.1131	.2770	.4265	.5542	.6314	.6870
90	-.0676	.0648	.2469	.4386	.6326	.8124	.9828
93	-.0674	-.0622	-.0458	-.0568	-.0674	-.0515	-.0567
94	.0133	-.0407	-.0513	-.0568	-.0621	-.0515	-.0567
95	.1181	.0652	.0189	-.0167	-.0457	-.0517	-.0516
96	.1649	.1644	.1477	.1119	.0713	.0417	.0069
97	.1240	.1936	.2707	.3104	.3169	.3047	.2701
98	.0108	.1192	.2770	.4145	.5179	.5833	.6326
99	-.0615	.0709	.2529	.4326	.6086	.7762	.9285

[a] p_t is in lb/sq ft.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 1 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 596° R; p_t = 7,186.0[a]	T_t = 593° R; p_t = 7,034.0[a]	T_t = 590° R; p_t = 7,201.0[a]	T_t = 588° R; p_t = 7,215.0[a]	T_t = 585° R; p_t = 7,200.0[a]	T_t = 585° R; p_t = 7,207.0[a]	T_t = 585° R; p_t = 7,182.0[a]
1	0.2043	0.1359	0.0807	0.0435	0.0274	0.0151	0.0115
2	.2413	.2491	.2446	.2315	.2160	.2156	.1512
3	.1550	.2618	.3758	.5013	.6174	.7476	.6650
4	.0920	.0154	-.0179	-.0406	-.0291	-.0331	-.0251
5	.1633	.0939	.0480	.0026	-.0095	-.0177	-.0337
6	.2167	.2365	.2364	.2274	.2200	.2196	.1512
7	.1427	.2491	.3552	.4605	.5519	.6575	.6075
8	.0831	.1654	.3111	.5000	.7043	.9483	.9869
9	.0087	-.0348	-.0594	-.0746	-.0745	-.0745	-.0592
10	-.0177	-.0696	-.0858	-.0859	-.0745	-.0745	-.0630
11	.0428	-.0387	-.0745	-.0933	-.0745	-.0745	-.0630
12	.1509	.0897	.0438	.0026	-.0136	-.0177	-.0337
13	.1961	.2156	.2160	.2071	.1995	.2033	.1594
14	.1304	.2323	.3307	.4278	.5232	.6207	.6280
15	.0366	.1309	.2815	.4746	.6874	.9273	1.0547
16	-.0142	.0573	.2054	.4071	.6577	.9694	1.2074
17	-.0015	.0616	.1927	.3861	.6323	.9400	1.1396
19	-.0252	-.0773	-.0896	-.0783	-.0782	-.0708	-.0592
20	.1920	.2030	.2036	.1947	.1913	.1869	.1594
21	-.0354	.0399	.1927	.3904	.6323	.9188	1.1226
23	.0087	-.0426	-.0631	-.0783	-.0820	-.0669	-.0592
24	-.0025	-.0811	-.0933	- 0783	-.0782	-.0669	-.0592
25	-.0366	-.0851	-.0971	-.0783	-.0820	-.0669	-.0592
26	.0240	-.0503	-.0782	-.0820	-.0820	-.0708	-.0554
27	.1387	.0770	.0274	-.0097	-.0258	-.0382	-.0502
28	.1878	.2030	.2036	.1988	.1913	.1869	.1677
29	.1181	.2114	.3019	.3910	.4781	.5553	.5787
30	.0154	.1005	.2561	.4409	.6450	.8638	1.0462
31	-.0397	.0443	.2054	.4114	.6535	.9357	1.1904
32	-.0185	.0529	.1842	.3735	.6070	.8934	1.1819
33	-.0100	.0486	.1757	.3735	.6028	.9146	1.2625
34	.0012	-.0464	-.0669	-.0783	-.0858	-.0669	-.0554
35	-.0025	-.0811	-.0933	-.0820	-.0820	-.0708	-.0554
36	-.0479	-.0927	-.0971	-.0783	-.0820	-.0708	-.0592
37	.1797	.1945	.1954	.1824	.1791	.1706	.1389
38	-.0482	.0399	.2011	.4029	.6366	.9061	1.1693
39	-.0142	.0443	.1842	.3777	.6281	.9146	1.2456
40	-.0015	.0573	.1969	.3945	.6577	.9400	1.2838
41	-.0479	-.0967	-.0971	-.0783	-.0820	-.0669	-.0554
42	.0315	-.0426	-.0745	-.0820	-.0820	-.0669	-.0554
43	.1222	.0645	.0193	-.0178	-.0340	-.0464	-.0544
44	.1674	.1862	.1791	.1785	.1627	.1500	.1266
45	.1016	.2030	.2938	.3910	.4658	.5347	.5828
46	.0069	.0918	.2603	.4494	.6408	.8343	.9996
47	-.0397	.0443	.2138	.4198	.6577	.9400	1.2159
60	-.0064	-.0464	-.0669	-.0746	-.0782	-.0669	-.0592
61	-.0064	-.0735	-.0933	-.0746	-.0782	-.0669	-.0592
62	-.0593	-.0927	-.0933	-.0746	-.0782	-.0632	-.0592
63	.0315	-.0387	-.0707	-.0783	-.0782	-.0632	-.0554
64	.1346	.0981	.0521	.0190	-.0095	-.0259	-.0420
65	.1633	.1903	.1872	.1865	.1709	.1500	.1225
66	.1016	.1987	.2856	.3747	.4413	.4734	.4883
67	-.0015	.0833	.2518	.4494	.6450	.7920	.9148
68	-.0524	.0399	.2350	.4494	.6874	.9188	1.1353
70	-.0354	.0573	.2350	.3987	.6874	.9568	1.2753
71	-.0064	-.0464	-.0669	-.0708	-.0707	-.0595	-.0554
72	-.0101	-.0696	-.0858	-.0708	-.0745	-.0632	-.0592
73	-.0630	-.0967	-.0896	-.0708	-.0745	-.0595	-.0554
74	.0164	-.0503	-.0745	-.0708	-.0707	-.0595	-.0592
75	.1098	.0686	.0233	-.0138	-.0381	-.0546	-.0544
76	.1633	.1820	.1791	.1621	.1340	.0928	.0567
77	.1057	.1945	.2774	.3378	.3758	.3752	.3567
78	.0238	.1135	.2772	.4452	.5689	.6781	.7451
79	.0069	.0529	.2772	.4494	.6620	.8892	1.0845
81	-.0057	.0616	.2011	.4029	.6408	.9400	1.2456
83	-.0101	-.0696	-.0707	-.0670	-.0631	-.0595	-.0592
84	-.0630	-.1005	-.0669	-.0595	-.0594	-.0556	-.0592
85	.0201	-.0464	-.0707	-.0633	-.0594	-.0556	-.0554
86	.0976	.0561	.0111	-.0301	-.0463	-.0546	-.0544
87	.1509	.1694	.1668	.1335	.1011	.0641	.0320
88	.0976	.1862	.2774	.3338	.3593	.3465	.3239
89	.0154	.1092	.2815	.4367	.5562	.6400	.6985
90	-.0227	.0616	.2815	.4409	.6281	.8259	.9996
93	-.0630	-.0735	-.0367	-.0595	-.0594	-.0595	-.0516
94	.0164	-.0464	-.0405	-.0595	-.0594	-.0595	-.0516
95	.1016	.0603	.0152	-.0301	-.0463	-.0546	-.0502
96	.1509	.1610	.1462	.1089	.0766	.0355	.0074
97	.1016	.1903	.2733	.3092	.3225	.3015	.2745
98	.0196	.1092	.2815	.4240	.5225	.5936	.6348
99	-.0524	.0529	.2518	.4367	.6198	.7878	.9403

[a] p_t is in lb/sq ft.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 1 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8,640$ lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 604° R; p_t = 8,645.0[a]	T_t = 600° R; p_t = 8,649.0[a]	T_t = 600° R; p_t = 8,640.0[a]	T_t = 602° R; p_t = 8,633.0[a]	T_t = 600° R; p_t = 8,646.0[a]	T_t = 602° R; p_t = 8,640.0[a]	T_t = 600° R; p_t = 8,641.0[a]
1	0.2933	0.2581	0.2232	0.2145	0.2057	0.1969	0.1969
2	.2669	.2581	.2494	.2318	.2145	.2057	.1268
3	.1793	.2845	.3897	.5123	.5912	.7052	.4774
4	.1598	.1196	.0954	.0954	.0871	.1034	.0954
5	.1881	.1180	.0741	.0567	.0392	.0392	.0128
6	.2494	.2494	.2406	.2406	.2145	.2145	.1268
7	.1793	.2757	.3722	.4774	.5387	.6263	.4422
8	.1511	.2414	.3588	.5488	.7025	.9196	.7659
9	.0147	-.0096	-.0338	-.0338	-.0338	-.0176	-.0176
10	-.0016	-.0338	-.0418	-.0338	-.0338	-.0176	-.0256
11	.0549	-.0016	-.0338	-.0338	-.0338	-.0176	-.0258
12	.1793	.1180	.0741	.0567	.0392	.0304	.0128
13	.2406	.2406	.2232	.2232	.2145	.2145	.1444
14	.1705	.2669	.3546	.4598	.5299	.6175	.4947
15	.0514	.1601	.2957	.5128	.6934	.9015	.8112
16	-.0027	.0786	.2051	.4313	.6484	.9287	.9196
17	.0064	.0786	.1961	.4132	.6394	.9015	.9740
19	-.0096	-.0338	-.0418	-.0338	-.0418	-.0176	-.0258
20	.2232	.2318	.2232	.2318	.2232	.2232	.1617
21	-.0117	.0695	.1961	.4223	.6484	.8834	.9559
23	.0067	-.0176	-.0338	-.0338	-.0338	-.0176	-.0258
24	-.0016	-.0338	-.0338	-.0338	-.0338	-.0176	-.0258
25	-.0096	-.0418	-.0418	-.0338	-.0338	-.0176	-.0176
26	.0469	-.0096	-.0338	-.0338	-.0338	-.0176	-.0176
27	.1705	.1092	.0653	.0392	.0216	.0128	.0040
28	.2318	.2318	.2232	.2232	.2232	.2057	.1705
29	.1705	.2494	.3282	.4334	.5123	.5650	.5211
30	.0424	.1420	.2776	.4857	.6665	.8474	.9106
31	-.0117	.0786	.2142	.4404	.6665	.9106	1.0462
32	-.0117	.0695	.1782	.3951	.6122	.8562	1.0733
33	-.0117	.0605	.1782	.3860	.6122	.8653	1.1549
34	.0067	-.0258	-.0338	-.0338	-.0338	-.0176	-.0176
35	-.0016	-.0338	-.0338	-.0338	-.0338	-.0176	-.0176
36	-.0176	-.0418	-.0338	-.0338	-.0338	-.0176	-.0176
37	.2232	.2318	.2232	.2232	.2145	.2057	.1705
38	-.0117	.0695	.2142	.4404	.6575	.8834	1.0824
39	-.0117	.0605	.1870	.4041	.6213	.8743	1.1458
40	.0064	.0786	.1961	.4223	.6394	.8925	1.1908
41	-.0096	-.0418	-.0338	-.0338	-.0338	-.0176	-.0176
42	.0549	-.0016	-.0338	-.0258	-.0338	-.0176	-.0176
43	.1617	.1004	.0567	.0392	.0216	.0128	.0040
44	.2145	.2145	.2057	.2057	.1969	.1793	.1529
45	.1529	.2406	.3282	.4334	.5035	.5475	.5736
46	.0424	.1420	.2867	.4947	.6665	.8293	.9740
47	-.0117	.0786	.2232	.4585	.6756	.9106	1.1730
60	.0067	-.0258	-.0338	-.0258	-.0338	-.0176	-.0176
61	.0067	-.0338	-.0338	-.0258	-.0258	-.0176	-.0176
62	-.0096	-.0418	-.0338	-.0258	-.0258	-.0176	-.0258
63	.0631	.0067	-.0258	-.0258	-.0338	-.0176	-.0258
64	.1793	.1268	.0916	.0653	.0480	.0304	.0216
65	.2057	.2232	.2232	.2232	.2057	.1881	.1705
66	.1529	.2406	.3194	.4071	.4686	.5123	.5211
67	.0333	.1239	.2685	.4766	.6484	.7931	.9196
68	-.0117	.0786	.2323	.4766	.6847	.9106	1.1186
70	-.0117	.0786	.1961	.4675	.6394	.9649	1.1908
71	.0067	-.0258	-.0258	-.0176	-.0258	-.0096	-.0258
72	.0067	-.0338	-.0338	-.0176	-.0258	-.0096	-.0258
73	-.0096	-.0418	-.0338	-.0176	-.0258	-.0096	-.0258
74	.0549	-.0016	-.0258	-.0176	-.0258	-.0096	-.0258
75	.1617	.1092	.0653	.0480	.0304	.0128	.0040
76	.2145	.2232	.2145	.2057	.1793	.1529	.1180
77	.1617	.2406	.3109	.3810	.4159	.4246	.3983
78	.0514	.1511	.2957	.4766	.6031	.7116	.7569
79	.0155	.1511	.2504	.4766	.6847	.8203	1.0552
81	-.0027	.0786	.1961	.4132	.6484	.9377	1.2361
83	.0067	-.0176	-.0258	-.0096	-.0176	-.0176	-.0258
84	-.0096	-.0176	-.0176	-.0016	-.0176	-.0176	-.0258
85	.0631	.0067	-.0258	-.0096	-.0176	-.0176	-.0258
86	.1529	.1004	.0567	.0392	.0216	.0040	-.0136
87	.2057	.2057	.1969	.1881	.1617	.1268	.0829
88	.1529	.2318	.3109	.3810	.4159	.4071	.3810
89	.0514	.1511	.2957	.4766	.5941	.6934	.7478
90	.0424	.0876	.2595	.4766	.6665	.8562	1.0281
93	-.0096	.0067	-.0176	-.0016	-.0176	-.0176	-.0258
94	.0631	.0067	-.0176	-.0016	-.0176	-.0176	-.0258
95	.1529	.1092	.0653	.0392	.0216	.0040	-.0136
96	.2057	.2057	.1881	.1617	.1356	.1004	.0653
97	.1617	.2406	.3109	.3654	.3810	.3722	.3282
98	.0514	.1511	.3048	.4766	.5669	.6484	.6847
99	.0064	.0876	.2776	.4766	.6484	.8384	.9830

[a] p_t is in lb/sq ft.

TABLE II.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 1 - Concluded

(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	$T_t = 604^\circ$ R; $p_t = 12{,}255.0$[a]	$T_t = 607^\circ$ R; $p_t = 12{,}211.0$[a]	$T_t = 603^\circ$ R; $p_t = 12{,}265.0$[a]	$T_t = 604^\circ$ R; $p_t = 12{,}235.0$[a]	$T_t = 604^\circ$ R; $p_t = 12{,}217.0$[a]	$T_t = 604^\circ$ R; $p_t = 12{,}233.0$[a]	$T_t = 604^\circ$ R; $p_t = 12{,}247.0$[a]
1	0.2427	0.1879	0.1562	0.1384	0.1259	0.1259	0.1130
2	.2611	.2560	.2489	.2249	.2063	.2003	.1130
3	.1809	.2807	.3970	.5035	.5903	.7017	.4773
4	.1102	.0651	.0533	.0480	.0480	.0651	.0589
5	.1809	.1135	.0698	.0392	.0267	.0267	.0081
6	.2427	.2436	.2489	.2311	.2125	.2125	.1254
7	.1747	.2682	.3786	.4726	.5408	.6274	.4463
8	.1186	.2087	.3480	.5282	.6944	.9244	.7431
9	.0021	-.0205	-.0319	-.0376	-.0318	-.0205	-.0148
10	-.0148	-.0376	-.0377	-.0376	-.0376	-.0205	-.0148
11	.0419	-.0147	-.0319	-.0433	-.0318	-.0205	-.0148
12	.1747	.1011	.0698	.0392	.0329	.0267	.0081
13	.2303	.2311	.2303	.2187	.2063	.2125	.1378
14	.1685	.2560	.3600	.4540	.5222	.6212	.4897
15	.0550	.1639	.3099	.5026	.6880	.9180	.8195
16	-.0024	.0809	.2143	.4260	.6432	.9372	.9280
17	.0039	.0809	.2016	.4068	.6304	.9116	.9661
19	-.0206	-.0433	-.0377	-.0376	-.0318	-.0205	-.0148
20	.2241	.2249	.2241	.2187	.2125	.2125	.1562
21	-.0150	.0745	.2080	.4132	.6432	.8988	.9724
23	.0021	-.0262	-.0319	-.0376	-.0318	-.0205	-.0148
24	-.0092	-.0433	-.0319	-.0376	-.0318	-.0205	-.0148
25	-.0206	-.0489	-.0319	-.0376	-.0318	-.0205	-.0148
26	.0362	-.0147	-.0319	-.0433	-.0318	-.0205	-.0148
27	.1685	.1011	.0636	.0329	.0145	.0083	-.0043
28	.2241	.2249	.2241	.2187	.2187	.2125	.1624
29	.1624	.2374	.3352	.4231	.5097	.5654	.5267
30	.0422	.1448	.2844	.4770	.6816	.8604	.9280
31	-.0150	.0809	.2271	.4324	.6816	.9244	1.0680
32	-.0086	.0681	.1952	.3940	.6304	.8732	1.0744
33	-.0024	.0681	.1952	.3876	.6304	.8796	1.1573
34	.0021	-.0318	-.0263	-.0433	-.0318	-.0205	-.0148
35	-.0092	-.0433	-.0319	-.0376	-.0318	-.0205	-.0148
36	-.0263	-.0546	-.0319	-.0376	-.0318	-.0147	-.0148
37	.2179	.2187	.2179	.2187	.2125	.2003	.1624
38	-.0150	.0745	.2271	.4324	.6688	.8988	1.0999
39	-.0086	.0745	.2016	.3940	.6368	.8860	1.1637
40	-.0024	.0809	.2143	.4196	.6688	.9116	1.2082
41	-.0263	-.0489	-.0319	-.0376	-.0262	-.0147	-.0148
42	.0477	-.0090	-.0263	-.0433	-.0318	-.0147	-.0148
43	.1562	.0887	.0574	.0267	.0145	.0083	-.0043
44	.2055	.2063	.2055	.2003	.1941	.1816	.1562
45	.1500	.2311	.3290	.4231	.5035	.5470	.5760
46	.0358	.1384	.2971	.4898	.6752	.8348	.9788
47	-.0150	.0809	.2397	.4516	.6880	.9308	1.1763
60	-.0036	-.0318	-.0263	-.0376	-.0262	-.0205	-.0148
61	-.0036	-.0489	-.0319	-.0376	-.0262	-.0205	-.0148
62	-.0263	-.0489	-.0319	-.0376	-.0262	-.0147	-.0148
63	.0477	-.0090	-.0263	-.0376	-.0262	-.0147	-.0148
64	.1747	.1135	.0882	.0578	.0392	.0267	.0205
65	.1995	.2063	.2179	.2125	.2003	.1879	.1624
66	.1438	.2249	.3228	.3983	.4664	.4975	.5081
67	.0295	.1320	.2844	.4706	.6624	.7966	.9216
68	-.0214	.0809	.2461	.4706	.6944	.9180	1.1318
70	-.0150	.0745	.2461	.4196	.6560	.9626	1.2082
71	-.0036	-.0318	-.0263	-.0262	-.0262	-.0090	-.0148
72	-.0036	-.0433	-.0263	-.0318	-.0262	-.0147	-.0092
73	-.0263	-.0489	-.0263	-.0318	-.0262	-.0147	-.0092
74	.0419	-.0090	-.0263	-.0376	-.0262	-.0147	-.0092
75	.1500	.0887	.0636	.0329	.0145	.0083	-.0043
76	.2055	.2003	.2055	.1941	.1692	.1444	.1068
77	.1500	.2187	.3044	.3736	.4107	.4294	.3970
78	.0486	.1512	.3035	.4644	.6112	.7262	.7622
79	.0486	.0937	.2907	.4706	.6496	.9308	.9980
81	-.0024	.0809	.2080	.4132	.6688	.9690	1.2018
83	-.0036	-.0376	-.0206	-.0262	-.0205	-.0205	-.0206
84	-.0263	-.0489	-.0148	-.0262	-.0205	-.0147	-.0148
85	.0477	-.0034	-.0206	-.0318	-.0205	-.0147	-.0148
86	.1438	.0826	.0512	.0267	.0083	-.0041	-.0229
87	.1995	.1941	.1995	.1754	.1444	.1197	.0822
88	.1500	.2187	.3106	.3736	.4045	.4045	.3786
89	.0422	.1448	.3035	.4706	.5984	.7070	.7431
90	.0422	.0809	.2652	.4706	.6688	.8668	1.0299
93	-.0206	-.0090	-.0092	-.0205	-.0205	-.0147	-.0206
94	.0477	-.0034	-.0148	-.0205	-.0205	-.0147	-.0148
95	.1500	.0887	.0574	.0267	.0083	-.0041	-.0167
96	.1933	.1879	.1871	.1506	.1259	.0949	.0574
97	.1500	.2125	.3106	.3550	.3674	.3674	.3228
98	.0486	.1512	.3099	.4706	.5666	.6560	.6731
99	-.0024	.0873	.2780	.4644	.6560	.8476	.9724

[a] p_t is in lb/sq ft.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 2

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 581° R; p_t = 5,045.0[a]	T_t = 580° R; p_t = 5,037.0[a]	T_t = 580° R; p_t = 5,028.0[a]	T_t = 582° R; p_t = 5,043.0[a]	T_t = 585° R; p_t = 5,045.0[a]	T_t = 585° R; p_t = 5,043.0[a]	T_t = 585° R; p_t = 5,045.0[a]
4	0.1049	0.0566	0.0300	0.0133	0.0025	0.0025	-0.0082
5	.1766	.1126	.0778	.0302	.0187	-.0107	-.0340
6	.2234	.2004	.2068	.1883	.1940	.1766	.1122
7	.1999	.2474	.3241	.3930	.4925	.5744	.5334
8	.1135	.1863	.3140	.4757	.6991	.9525	.9767
9	.0133	-.0242	-.0350	-.0567	-.0729	-.0729	-.0783
10	.0025	-.0404	-.0673	-.0836	-.0944	-.0783	-.0836
11	.0295	-.0242	-.0566	-.0891	-.0944	-.0783	-.0891
12	.1414	.0775	.0425	.0011	.0011	-.0165	-.0340
13	.1940	.1712	.1716	.1590	.1707	.1473	.1064
14	.1473	.1888	.2713	.3580	.4633	.5218	.4633
15	.0350	.1138	.2474	.4334	.6568	.8741	.9225
16	.0048	.0714	.1928	.3852	.6507	.9465	1.0553
17	.0108	.0654	.1807	.3671	.6265	.9104	1.1277
19	-.0137	-.0620	-.0835	-.0998	-.0944	-.0783	-.0836
20	.1825	.1594	.1657	.1590	.1649	.1473	.1122
21	-.0133	.0593	.1928	.3911	.6447	.9164	1.1579
23	.0025	-.0351	-.0512	-.0783	-.0836	-.0729	-.0836
24	.0025	-.0673	-.0890	-.0944	-.0891	-.0783	-.0836
25	-.0190	-.0673	-.0835	-.0944	-.0891	-.0729	-.0836
26	.0133	-.0458	-.0781	-.0944	-.0891	-.0729	-.0783
27	.1298	.0540	.0191	-.0165	-.0224	-.0457	-.0574
28	.1825	.1712	.1775	.1649	.1707	.1473	.1181
29	.1240	.1888	.2831	.3696	.4633	.5101	.5218
30	.0048	.0956	.2535	.4395	.6507	.8620	1.0130
31	-.0254	.0533	.1989	.3971	.6447	.9104	1.1640
32	-.0012	.0654	.1928	.3911	.6507	.9285	1.1940
33	-.0012	.0533	.1686	.3489	.5965	.8620	1.0975
34	-.0028	-.0404	-.0566	-.0836	-.0836	-.0729	-.0783
35	-.0028	-.0782	-.0890	-.0944	-.0891	-.0729	-.0783
36	-.0244	-.0728	-.0890	-.0944	-.0891	-.0729	-.0783
37	.1825	.1712	.1775	.1649	.1649	.1473	.1240
38	-.0315	.0593	.2353	.4395	.6991	.9525	1.1880
39	-.0073	.0533	.1868	.3610	.6145	.8922	1.1940
40	-.0073	.0474	.1686	.3368	.5844	.8681	1.1940
41	-.0352	-.0782	-.0944	-.0891	-.0891	-.0836	-.0783
42	.0240	-.0404	-.0728	-.0891	-.0891	-.0783	-.0783
43	.1357	.0598	.0191	-.0165	-.0283	-.0516	-.0574
44	.1825	.1712	.1775	.1649	.1590	.1357	.1122
45	.1240	.1888	.2831	.3637	.4339	.4807	.5101
46	.0048	.0896	.2535	.4274	.6145	.7836	.9285
47	-.0496	.0413	.1989	.3792	.6025	.8499	1.0914
60	-.0028	-.0404	-.0673	-.0783	-.0783	-.0783	-.0729
61	.0025	-.0782	-.0944	-.0891	-.0836	-.0783	-.0729
62	-.0567	-.0891	-.0890	-.0891	-.0836	-.0729	-.0729
63	.0349	-.0296	-.0619	-.0891	-.0891	-.0674	-.0729
64	.1649	.0949	.0601	.0187	.0069	-.0283	-.0398
65	.1940	.1888	.1950	.1825	.1766	.1531	.1240
66	.1357	.2063	.2949	.3696	.4457	.4807	.4866
67	.0048	.0956	.2656	.4395	.6447	.8017	.9164
68	-.0557	.0533	.2353	.4395	.6870	.9225	1.1398
70	-.0557	.0654	.2110	.3792	.6447	.9104	1.2364
71	.0025	-.0404	-.0673	-.0836	-.0729	-.0674	-.0674
72	-.0028	-.0728	-.0890	-.0891	-.0783	-.0674	-.0674
73	-.0567	-.0891	-.0835	-.0891	-.0729	-.0674	-.0674
74	.0240	-.0404	-.0728	-.0891	-.0783	-.0621	-.0674
75	.1414	.0716	.0307	-.0107	-.0283	-.0457	-.0574
76	.1940	.1829	.1834	.1590	.1357	.1005	.0654
77	.1357	.2004	.2831	.3345	.3754	.3754	.3521
78	.0290	.1199	.2836	.4334	.5723	.6689	.7352
79	.0290	.0593	.2776	.4515	.6568	.8741	.9949
81	-.0012	.0654	.2050	.3911	.6386	.9285	1.2122
83	.0025	-.0673	-.0835	-.0729	-.0729	-.0621	-.0674
84	-.0567	-.0891	-.0835	-.0674	-.0729	-.0567	-.0621
85	.0295	-.0351	-.0673	-.0674	-.0729	-.0567	-.0621
86	.1298	.0598	.0191	-.0224	-.0398	-.0574	-.0633
87	.1825	.1712	.1716	.1357	.1064	.0713	.0361
88	.1298	.1945	.2831	.3345	.3580	.3404	.3228
89	.0108	.1138	.2897	.4274	.5421	.6447	.6931
90	.0048	.0593	.2596	.4334	.6265	.8199	.9888
93	-.0567	-.0513	-.0566	-.0567	-.0729	-.0567	-.0621
94	.0295	-.0351	-.0619	-.0514	-.0729	-.0567	-.0674
95	.1357	.0657	.0250	-.0224	-.0398	-.0633	-.0574
96	.1766	.1653	.1481	.1064	.0772	.0361	.0069
97	.1357	.1945	.2772	.3110	.3169	.2995	.2701
98	.0169	.1199	.2897	.4092	.5179	.5904	.6205
99	-.0375	.0775	.2656	.4153	.6145	.7775	.9346

[a] p_t is in lb/sq ft.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 2 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 587° R; p_t = 7,203.0[a]	T_t = 584° R; p_t = 7,199.0[a]	T_t = 582° R; p_t = 7,212.0[a]	T_t = 585° R; p_t = 7,193.0[a]	T_t = 585° R; p_t = 7,208.0[a]	T_t = 583° R; p_t = 7,211.0[a]	T_t = 585° R; p_t = 7,209.0[a]
4	0.0915	0.0349	0.0009	-0.0178	-0.0331	-0.0368	-0.0331
5	.1668	.1135	.0641	.0234	-.0014	-.0218	-.0423
6	.2077	.2036	.1951	.1875	.1788	.1747	.1091
7	.1831	.2446	.3138	.3967	.4816	.5839	.5388
8	.0912	.1715	.2980	.4765	.6950	.9610	1.0285
9	.0161	-.0217	-.0406	-.0593	-.0820	-.0820	-.0820
10	.0047	-.0443	-.0708	-.0933	-.1046	-.0896	-.0858
11	.0349	-.0254	-.0632	-.0895	-.1046	-.0896	-.0820
12	.1340	.0766	.0272	-.0011	-.0177	-.0259	-.0423
13	.1831	.1750	.1624	.1588	.1542	.1500	.1132
14	.1340	.1913	.2646	.3598	.4489	.5308	.5184
15	.0278	.1123	.2472	.4343	.6527	.8765	.9779
16	.0024	.0744	.1923	.3878	.6485	.9483	1.1384
17	.0066	.0659	.1797	.3708	.6232	.9103	1.1342
19	-.0103	-.0631	-.0820	-.0971	-.1046	-.0858	-.0820
20	.1709	.1586	.1542	.1547	.1500	.1418	.1091
21	-.0187	.0574	.1923	.3961	.6400	.9188	1.1596
23	.0047	-.0330	-.0556	-.0819	-.0972	-.0858	-.0820
24	.0047	-.0555	-.0972	-.1009	-.1009	-.0896	-.0820
25	-.0179	-.0707	-.0896	-.0971	-.1009	-.0896	-.0820
26	.0161	-.0481	-.0820	-.0971	-.1009	-.0896	-.0783
27	.1217	.0562	.0068	-.0216	-.0382	-.0464	-.0627
28	.1709	.1709	.1665	.1671	.1583	.1459	.1173
29	.1094	.1872	.2769	.3722	.4489	.5184	.5184
30	.0024	.0954	.2472	.4427	.6485	.8555	1.0160
31	-.0314	.0532	.1966	.4004	.6400	.9146	1.1722
32	-.0017	.0659	.1966	.3920	.6442	.9357	1.2060
33	-.0102	.0489	.1670	.3496	.5936	.8680	1.1680
34	.0010	-.0405	-.0632	-.0858	-.0933	-.0858	-.0783
35	.0047	-.0820	-.0933	-.0933	-.1009	-.0896	-.0820
36	-.0291	-.0745	-.0933	-.0933	-.1009	-.0896	-.0783
37	.1709	.1750	.1706	.1630	.1542	.1459	.1173
38	-.0399	.0617	.2262	.4427	.6950	.9610	1.2060
39	-.0102	.0574	.1797	.3666	.6147	.9019	1.1975
40	-.0102	.0489	.1627	.3454	.6020	.8850	1.2186
41	-.0405	-.0820	-.0972	-.0933	-.0972	-.0896	-.0783
42	.0237	-.0443	-.0783	-.0933	-.1009	-.0896	-.0783
43	.1258	.0603	.0109	-.0175	-.0382	-.0505	-.0627
44	.1709	.1709	.1665	.1671	.1542	.1418	.1132
45	.1094	.1872	.2728	.3639	.4325	.4898	.5184
46	-.0017	.0912	.2472	.4258	.6105	.7878	.9273
47	-.0610	.0362	.1881	.3793	.6063	.8555	1.1088
60	-.0027	-.0443	-.0708	-.0858	-.0858	-.0858	-.0745
61	.0010	-.0820	-.0972	-.0933	-.0972	-.0858	-.0745
62	-.0555	-.0896	-.1009	-.0933	-.0933	-.0820	-.0745
63	.0349	-.0330	-.0708	-.0895	-.0972	-.0820	-.0745
64	.1544	.0971	.0519	.0195	-.0055	-.0259	-.0423
65	.1831	.1872	.1869	.1834	.1706	.1500	.1255
66	.1217	.2036	.2893	.3763	.4489	.4816	.4939
67	-.0017	.0954	.2599	.4555	.6569	.8005	.9146
68	-.0568	.0532	.2304	.4470	.7034	.9230	1.1384
70	-.0102	.0532	.1923	.4004	.6611	.9610	1.2608
71	.0010	-.0443	-.0669	-.0782	-.0820	-.0745	-.0708
72	-.0027	-.0745	-.0972	-.0933	-.0858	-.0783	-.0745
73	-.0555	-.0933	-.0933	-.0933	-.0820	-.0783	-.0708
74	.0237	-.0405	-.0745	-.0933	-.0820	-.0783	-.0708
75	.1258	.0684	.0192	-.0135	-.0341	-.0546	-.0627
76	.1831	.1872	.1747	.1588	.1296	.0928	.0601
77	.1258	.1995	.2769	.3393	.3711	.3752	.3547
78	.0235	.1208	.2768	.4385	.5767	.6738	.7329
79	-.0483	.1208	.2430	.4385	.6611	.8259	1.0751
81	-.0060	.0659	.2008	.4004	.6485	.9400	1.2271
83	-.0027	-.0631	-.0933	-.0744	-.0783	-.0708	-.0669
84	-.0555	-.0933	-.0933	-.0707	-.0783	-.0669	-.0669
85	.0274	-.0405	-.0745	-.0707	-.0783	-.0669	-.0669
86	.1176	.0603	.0068	-.0257	-.0505	-.0627	-.0627
87	.1709	.1750	.1624	.1343	.0969	.0601	.0314
88	.1176	.1913	.2769	.3353	.3547	.3465	.3220
89	.0151	.1166	.2811	.4343	.5513	.6315	.6865
90	-.0610	.0617	.2514	.4385	.6358	.8216	.9906
93	-.0555	-.0707	-.0595	-.0555	-.0783	-.0669	-.0669
94	.0274	-.0367	-.0669	-.0555	-.0783	-.0669	-.0669
95	.1217	.0643	.0109	-.0257	-.0505	-.0627	-.0627
96	.1668	.1627	.1418	.1055	.0723	.0355	.0027
97	.1217	.1954	.2687	.3065	.3179	.3015	.2687
98	.0108	.1166	.2811	.4173	.5176	.5809	.6147
99	-.0526	.0659	.2557	.4343	.6190	.7836	.9315

[a] p_t is in lb/sq ft.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 2 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 605° R; p_t = 8,644.0[a]	T_t = 605° R; p_t = 8,634.0[a]	T_t = 605° R; p_t = 8,633.0[a]	T_t = 605° R; p_t = 8,617.0[a]	T_t = 605° R; p_t = 8,611.0[a]	T_t = 603° R; p_t = 8,671.0[a]	T_t = 607° R; p_t = 8,651.0[a]
4	0.1609	0.1356	0.1111	0.1041	0.0877	0.0870	0.0879
5	.1732	.1375	.0914	.0655	.0391	.0295	.0037
6	.2177	.2171	.1963	.1971	.1883	.1688	.0908
7	.1998	.2526	.3189	.3988	.4601	.5511	.3961
8	.1694	.2328	.3415	.5066	.6791	.9327	.7851
9	.0232	.0067	-.0096	-.0174	-.0337	-.0337	-.0418
10	.0232	-.0096	-.0338	-.0417	-.0498	-.0337	-.0418
11	.0474	.0067	-.0258	-.0417	-.0498	-.0337	-.0418
12	.1468	.0932	.0565	.0391	.0305	.0210	.0037
13	.1822	.1817	.1614	.1707	.1707	.1512	.0996
14	.1468	.1995	.2664	.3638	.4424	.5163	.4137
15	.0426	.1332	.2510	.4521	.6610	.8608	.7398
16	.0155	.0879	.1966	.3975	.6519	.9146	.8666
17	.0155	.0789	.1875	.3796	.6339	.8785	.9300
19	.0069	-.0258	-.0418	-.0498	-.0498	-.0337	-.0418
20	.1822	.1729	.1702	.1795	.1795	.1772	.1257
21	-.0027	.0698	.1966	.4066	.6519	.8876	.9291
23	.0069	-.0096	-.0258	-.0417	-.0417	-.0419	-.0336
24	.0069	-.0258	-.0501	-.0498	-.0498	-.0419	-.0336
25	-.0013	-.0258	-.0501	-.0498	-.0498	-.0419	-.0336
26	.0312	-.0096	-.0418	-.0498	-.0498	-.0337	-.0336
27	.1377	.0754	.0389	.0217	.0128	.0034	-.0051
28	.1910	.1905	.1790	.1883	.1795	.1688	.1257
29	.1377	.2083	.3016	.3988	.4775	.5163	.4920
30	.0155	.1151	.2781	.4793	.6701	.8427	.8847
31	-.0208	.0698	.2057	.4248	.6610	.8876	1.0478
32	-.0027	.0698	.1966	.4066	.6610	.8966	1.0749
33	-.0027	.0607	.1785	.3705	.5976	.8427	1.0749
34	.0069	-.0096	-.0338	-.0498	-.0417	-.0337	-.0256
35	-.0013	-.0338	-.0501	-.0417	-.0580	-.0337	-.0256
36	-.0093	-.0338	-.0501	-.0498	-.0498	-.0337	-.0256
37	.1910	.1995	.1963	.1971	.1883	.1772	.1433
38	-.0208	.0698	.2419	.4702	.7064	.9417	1.1474
39	-.0117	.0607	.1875	.3796	.6067	.8608	1.1293
40	-.0117	.0517	.1694	.3614	.5885	.8337	1.1293
41	-.0173	-.0418	-.0581	-.0498	-.0498	-.0337	-.0256
42	.0474	-.0016	-.0338	-.0417	-.0498	-.0337	-.0256
43	.1468	.0932	.0477	.0217	.0040	.0034	-.0139
44	.1910	.1995	.1963	.1883	.1795	.1688	.1345
45	.1377	.2259	.3016	.3900	.4601	.4991	.5096
46	.0155	.1241	.2691	.4611	.6430	.7886	.9210
47	-.0298	.0517	.2057	.4066	.6248	.8337	1.0568
60	-.0013	-.0258	-.0418	-.0417	-.0498	-.0337	-.0256
61	-.0093	-.0338	-.0418	-.0417	-.0417	-.0337	-.0336
62	-.0256	-.0418	-.0501	-.0417	-.0417	-.0337	-.0336
63	.0637	.0067	-.0258	-.0417	-.0498	-.0337	-.0418
64	.1732	.1287	.0826	.0655	.0391	.0295	.0125
65	.2086	.2171	.2139	.2145	.1969	.1860	.1694
66	.1468	.2347	.3189	.4077	.4775	.5076	.5269
67	.0245	.1241	.2781	.4793	.6430	.8156	.9210
68	-.0298	.0698	.2419	.4611	.6973	.9236	1.1293
70	-.0117	.0607	.1875	.3975	.6430	.9417	1.1836
71	-.0013	-.0258	-.0338	-.0417	-.0417	-.0337	-.0336
72	-.0013	-.0338	-.0418	-.0417	-.0337	-.0337	-.0256
73	-.0256	-.0418	-.0418	-.0417	-.0417	-.0337	-.0336
74	.0394	-.0016	-.0338	-.0417	-.0417	-.0337	-.0336
75	.1556	.1020	.0565	.0391	.0217	.0122	.0037
76	.2086	.2083	.2051	.1883	.1707	.1512	.1084
77	.1556	.2259	.3016	.3723	.4074	.4208	.3961
78	.0426	.1423	.2872	.4702	.5976	.7167	.7489
79	.0336	.0789	.2872	.4702	.6158	.9056	.9481
81	-.0117	.0698	.1966	.3975	.6519	.9327	1.2199
83	-.0093	-.0338	-.0418	-.0337	-.0417	-.0337	-.0256
84	-.0256	-.0418	-.0418	-.0337	-.0417	-.0337	-.0256
85	.0474	.0067	-.0258	-.0417	-.0417	-.0337	-.0256
86	.1468	.0932	.0565	.0217	.0040	.0034	-.0139
87	.1998	.1995	.1878	.1707	.1530	.1165	.0908
88	.1468	.2259	.3016	.3723	.4074	.4033	.3788
89	.0426	.1423	.2962	.4611	.5976	.6896	.7398
90	-.0208	.0789	.2600	.4611	.6610	.8608	1.0297
93	-.0256	-.0176	-.0258	-.0337	-.0337	-.0257	-.0256
94	.0474	.0067	-.0258	-.0417	-.0337	-.0337	-.0176
95	.1468	.1020	.0565	.0217	.0128	-.0053	-.0139
96	.1910	.1905	.1790	.1533	.1268	.0990	.0647
97	.1556	.2259	.3016	.3550	.3723	.3598	.3263
98	.0426	.1513	.3053	.4611	.5612	.6538	.6673
99	-.0027	.0970	.2781	.4611	.6430	.8337	.9753

[a] p_t is in lb/sq ft.

TABLE III.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 2 - Concluded

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Orifice	C_p at α of -						
	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 605° R; p_t = 12,240.0[a]	T_t = 605° R; p_t = 12,231.0[a]	T_t = 605° R; p_t = 12,214.0[a]	T_t = 603° R; p_t = 12,234.0[a]	T_t = 603° R; p_t = 12,236.0[a]	T_t = 605° R; p_t = 12,237.0[a]	T_t = 605° R; p_t = 12,229.0[a]
4	0.1335	0.0936	0.0708	0.0593	0.0480	0.0536	0.0536
5	.1816	.1259	.0887	.0516	.0329	.0207	-.0041
6	.2187	.2125	.2003	.2003	.1816	.1692	.0949
7	.2003	.2498	.3179	.3983	.4602	.5592	.4107
8	.1512	.2087	.3238	.4962	.6816	.9308	.7902
9	.0309	-.0034	-.0090	-.0147	-.0318	-.0262	-.0318
10	.0252	-.0147	-.0318	-.0376	-.0489	-.0262	-.0318
11	.0480	.0023	-.0262	-.0376	-.0489	-.0262	-.0318
12	.1444	.0949	.0578	.0392	.0207	.0207	.0021
13	.1879	.1754	.1692	.1692	.1568	.1568	.0949
14	.1506	.2003	.2682	.3736	.4416	.5222	.4045
15	.0553	.1256	.2598	.4644	.6560	.8668	.7518
16	.0297	.0873	.2023	.4132	.6432	.9244	.8988
17	.0233	.0745	.1895	.3940	.6240	.8924	.9562
19	.0081	-.0262	-.0433	-.0433	-.0489	-.0262	-.0318
20	.1816	.1692	.1692	.1816	.1692	.1692	.1135
21	.0041	.0681	.2023	.4196	.6560	.9052	.9882
23	.0137	-.0147	-.0318	-.0376	-.0376	-.0318	-.0376
24	.0137	-.0376	-.0489	-.0489	-.0489	-.0318	-.0376
25	.0023	-.0318	-.0489	-.0433	-.0489	-.0318	-.0376
26	.0365	-.0147	-.0376	-.0433	-.0489	-.0318	-.0376
27	.1384	.0764	.0392	.0207	.0083	.0021	-.0104
28	.1941	.1879	.1879	.1941	.1816	.1692	.1259
29	.1384	.2063	.3055	.4045	.4789	.5222	.4851
30	.0361	.1128	.2790	.4834	.6944	.8604	.9180
31	-.0023	.0617	.2151	.4324	.6816	.9052	1.0584
32	.0105	.0681	.2023	.4196	.6752	.9180	1.0968
33	.0105	.0553	.1831	.3812	.6240	.8540	1.0776
34	.0137	-.0147	-.0318	-.0433	-.0376	-.0318	-.0318
35	.0081	-.0376	-.0489	-.0376	-.0489	-.0262	-.0262
36	-.0034	-.0376	-.0489	-.0376	-.0489	-.0262	-.0318
37	.2003	.1941	.1941	.1941	.1816	.1754	.1444
38	-.0085	.0681	.2470	.4834	.7262	.9562	1.1416
39	.0041	.0617	.1895	.3940	.6304	.8732	1.1288
40	.0041	.0553	.1703	.3748	.6112	.8476	1.1544
41	-.0147	-.0433	-.0489	-.0376	-.0433	-.0262	-.0318
42	.0480	-.0090	-.0318	-.0376	-.0489	-.0262	-.0318
43	.1506	.0826	.0392	.0267	.0083	.0021	-.0104
44	.2003	.1941	.1816	.1941	.1816	.1692	.1444
45	.1444	.2187	.2993	.3983	.4602	.5035	.5159
46	.0361	.1192	.2790	.4706	.6560	.7966	.9244
47	-.0149	.0553	.2151	.4196	.6368	.8476	1.0776
60	.0081	-.0262	-.0433	-.0376	-.0433	-.0262	-.0262
61	-.0034	-.0376	-.0546	-.0433	-.0433	-.0262	-.0262
62	-.0147	-.0433	-.0546	-.0376	-.0376	-.0262	-.0262
63	.0651	.0023	-.0262	-.0318	-.0376	-.0262	-.0262
64	.1879	.1259	.0764	.0578	.0392	.0267	.0207
65	.2125	.2125	.2125	.2249	.2003	.1879	.1754
66	.1630	.2311	.3179	.4107	.4602	.4975	.5284
67	.0425	.1256	.2662	.4898	.6752	.8158	.9434
68	-.0085	.0745	.2406	.4770	.7134	.9308	1.1416
70	-.0085	.0617	.2023	.4132	.6816	.9562	1.2054
71	.0081	-.0262	-.0376	-.0318	-.0376	-.0262	-.0262
72	.0081	-.0376	-.0433	-.0376	-.0376	-.0262	-.0262
73	-.0090	-.0433	-.0433	-.0376	-.0318	-.0262	-.0205
74	.0536	-.0034	-.0318	-.0376	-.0376	-.0262	-.0205
75	.1568	.0949	.0578	.0329	.0145	.0083	.0083
76	.2125	.2063	.2003	.1941	.1692	.1444	.1197
77	.1630	.2187	.2993	.3736	.4045	.4231	.4045
78	.0617	.1448	.2918	.4706	.6176	.7262	.7646
79	.0617	.0873	.2854	.4770	.7008	.9244	.9818
81	.0041	.0681	.2023	.4132	.6752	.9626	1.2054
83	.0081	-.0376	-.0433	-.0262	-.0318	-.0205	-.0205
84	-.0090	-.0433	-.0433	-.0262	-.0318	-.0205	-.0205
85	.0593	.0023	-.0262	-.0318	-.0318	-.0205	-.0205
86	.1568	.0887	.0516	.0267	.0083	-.0041	-.0041
87	.2063	.1941	.1941	.1754	.1444	.1197	.0949
88	.1568	.2187	.3055	.3736	.3983	.3983	.3859
89	.0425	.1384	.2982	.4706	.6048	.6944	.7582
90	.0425	.0809	.2598	.4770	.6816	.8668	1.0458
93	-.0090	-.0205	-.0262	-.0262	-.0318	-.0205	-.0205
94	.0593	.0023	-.0262	-.0262	-.0318	-.0205	-.0205
95	.1568	.0949	.0516	.0267	.0083	-.0041	-.0041
96	.2003	.1879	.1754	.1568	.1197	.0949	.0702
97	.1630	.2249	.3055	.3550	.3674	.3612	.3302
98	.0553	.1448	.3110	.4770	.5856	.6560	.6816
99	-.0085	.0809	.2662	.4770	.6624	.8476	.9882

[a] p_t is in lb/sq ft.

TABLE IV.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 3

(a) $M = 3.51$; $p_{t,nom} = 5{,}040$ lb/sq ft

Orifice	C_p at α of -45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 582° R; p_t = 5,031.0[a]	T_t = 579° R; p_t = 5,043.0[a]	T_t = 578° R; p_t = 5,052.0[a]	T_t = 580° R; p_t = 5,057.0[a]	T_t = 582° R; p_t = 5,058.0[a]	T_t = 583° R; p_t = 5,047.0[a]	T_t = 582° R; p_t = 5,044.0[a]	T_t = 582° R; p_t = 5,050.0[a]	T_t = 582° R; p_t = 5,048.0[a]	T_t = 582° R; p_t = 5,042.0[a]	T_t = 585° R; p_t = 5,042.0[a]	T_t = 583° R; p_t = 5,042.0[a]	T_t = 585° R; p_t = 5,039.0[a]
1	0.7662	0.8280	0.6766	0.5542	0.4245	0.3096	0.2374	0.1621	0.1271	0.0870	0.0756	0.0582	0.0586
2	.2605	.3180	.2978	.2979	.2849	.2687	.2549	.2259	.2140	.1798	.1625	.1453	.0818
3	-.0277	-.0046	.0064	.0413	.0874	.1405	.2084	.2781	.3759	.4699	.5746	.6678	.5007
4	1.0582	.9851	.7218	.5016	.3025	.1638	.0836	.0236	.0076	-.0080	-.0137	-.0194	-.0137
5	.7369	.7459	.6066	.4901	.3605	.2454	.1679	.0810	.0344	-.0057	-.0173	-.0231	-.0461
6	.2428	.2886	.2743	.2803	.2734	.2513	.2433	.2143	.1966	.1682	.1569	.1394	.0643
7	-.0161	.0130	.0181	.0472	.0933	.1405	.2027	.2548	.3354	.4003	.4700	.5286	.3728
8	-.0071	-.0135	-.0135	-.0018	.0163	.0587	.1128	.2085	.3514	.5275	.7144	.9136	.7875
9	1.2259	.9476	.6465	.3943	.2005	.0777	.0135	-.0247	-.0462	-.0783	-.0944	-.0944	-.0837
10	1.1556	.9099	.6144	.3782	.1844	.0562	-.0135	-.0568	-.0783	-.0998	-.0998	-.0998	-.0891
11	1.0636	.9154	.6680	.4534	.2596	.1154	.0242	-.0462	-.0730	-.0998	-.0998	-.0998	-.0891
12	.6663	.6404	.5249	.4319	.3316	.2280	.1563	.0810	.0344	-.0057	-.0116	-.0231	-.0520
13	.2369	.2710	.2569	.2512	.2443	.2280	.2143	.1795	.1618	.1393	.1220	.1048	.0353
14	-.0335	-.0164	-.0053	.0181	.0525	.0998	.1622	.2374	.3239	.3945	.4644	.5168	.4075
15	-.0676	-.0859	-.0918	-.0798	-.0498	.0046	.0825	.1964	.3434	.5216	.7023	.8834	.8115
16	-.0737	-.0799	-.0918	-.0739	-.0498	.0046	.0706	.1724	.3335	.5335	.7685	1.0219	1.0525
17	-.0737	-.0738	-.0678	-.0438	-.0137	.0165	.0706	.1785	.3514	.5696	.8288	1.1062	1.1850
19	1.2043	.9476	.6680	.4211	.2112	.0617	-.0189	-.0677	-.0836	-.1051	-.0998	-.0944	-.0891
20	.2487	.2534	.2452	.2395	.2269	.2106	.1969	.1621	.1502	.1218	.0987	.0873	.0296
21	-.0676	-.0799	-.0918	-.0798	-.0559	-.0014	.0646	.1724	.3335	.5275	.7505	.9858	1.0945
23	1.1663	.8617	.5876	.3512	.1791	.0562	-.0082	-.0462	-.0677	-.0889	-.0891	-.0944	-.0837
24	1.1501	.8777	.6091	.3727	.1844	.0562	-.0189	-.0783	-.0891	-.1051	-.0944	-.0944	-.0837
25	1.1394	.8938	.6306	.3943	.1897	.0400	-.0405	-.0838	-.0945	-.1051	-.0944	-.0944	-.0891
26	.9717	.8293	.6412	.4534	.2755	.1316	.0404	-.0353	-.0677	-.0889	-.0944	-.0944	-.0891
27	.5721	.5406	.4608	.3853	.3025	.2106	.1505	.0753	.0344	-.0116	-.0347	-.0405	-.0695
28	.2369	.2476	.2395	.2337	.2211	.2047	.1910	.1621	.1387	.1044	.0813	.0640	.0121
29	-.0277	-.0046	.0005	.0239	.0525	.0939	.1563	.2143	.2834	.3191	.3482	.3891	.3436
30	-.0676	-.0799	-.0978	-.0858	-.0679	-.0135	.0646	.1845	.3274	.4734	.6301	.8051	.8555
31	-.0676	-.0859	-.0858	-.0858	-.0679	-.0135	.0585	.1724	.3274	.5095	.7204	.9556	.9561
32	-.0676	-.0859	-.0858	-.0858	-.0619	-.0014	.0585	.1603	.3154	.5095	.7445	.9858	1.1307
33	-.0676	-.0859	-.0678	-.0498	-.0317	.0105	.0646	.1664	.3335	.5456	.7987	1.0760	1.3295
34	1.2368	.9045	.6144	.3567	.1738	.0562	-.0082	-.0462	-.0677	-.0889	-.0891	-.0891	-.0891
36	1.1339	.8777	.6251	.3888	.1897	.0347	-.0459	-.0891	-.0945	-.1051	-.0998	-.0944	-.0891
37	.2369	.2534	.2452	.2454	.2269	.2106	.1969	.1680	.1502	.1103	.0813	.0640	.0296
38	-.0676	-.0919	-.0918	-.0918	-.0798	-.0256	.0525	.1543	.2974	.4555	.6543	.8533	.9380
39	-.0676	-.0859	-.0918	-.0918	-.0679	-.0014	.0525	.1543	.2914	.4795	.7084	.9497	1.1489
40	-.0676	-.0859	-.0739	-.0498	-.0317	.0105	.0646	.1724	.3393	.5456	.7927	1.0701	1.3396
60	1.0852	.8401	.5821	.3567	.1738	.0562	-.0082	-.0915	-.0677	-.0889	-.0891	-.0838	-.0837
61	1.1069	.8508	.5982	.3727	.1844	.0617	-.0082	-.0838	-.0945	-.0998	-.0944	-.0891	-.0837
62	1.1069	.9045	.6574	.4372	.2273	.0455	-.0459	-.0945	-.0998	-.0998	-.0944	-.0838	-.0837
63	.8256	.7219	.5982	.4479	.2810	.1369	.0404	-.0353	-.0677	-.0944	-.0944	-.0838	-.0784
64	.3604	.3706	.3502	.3211	.2734	.2106	.1563	.0927	.0462	-.0057	-.0231	-.0405	-.0636
65	.0664	.0893	.1113	.1346	.1629	.1755	.1853	.1854	.1850	.1567	.1394	.1163	.0818
66	-.0689	-.0573	-.0401	-.0227	.0119	.0589	.1273	.2259	.3124	.3596	.4121	.4355	.4367
67	-.0676	-.0859	-.0918	-.0858	-.0679	-.0196	.0646	.2024	.3393	.4734	.6121	.7329	.8115
68	-.0676	-.0799	-.0918	-.0979	-.0798	-.0196	.0767	.2145	.3694	.5275	.7084	.8834	1.0103
69	-.0676	-.0799	-.0858	-.0918	-.0559	.0105	.0706	.1664	.3154	.4974	.7324	.9677	1.2151
70	-.0676	-.0738	-.0618	-.0438	-.0257	.0226	.0767	.1904	.3633	.5878	.8467	1.1122	1.3777
71	1.0798	.8348	.5768	.3621	.1844	.0617	-.0027	-.0462	-.0622	-.0727	-.0891	-.0838	-.0730
72	1.0907	.8293	.5821	.3621	.1897	.0670	-.0027	-.0730	-.0945	-.0998	-.0944	-.0838	-.0730
73	1.0095	.8401	.6359	.4211	.2326	.0455	-.0512	-.0945	-.0891	-.0998	-.0891	-.0838	-.0730
74	.7282	.6790	.5821	.4425	.2863	.1316	.0350	-.0353	-.0677	-.0944	-.0944	-.0784	-.0730
75	.2958	.3239	.3269	.3094	.2675	.2047	.1622	.0927	.0519	.0000	-.0173	-.0347	-.0461
76	.0946	.0893	.1113	.1346	.1629	.1755	.1853	.1854	.1676	.1161	.0871	.0582	.0353
77	-.0689	-.0573	-.0401	-.0227	.0177	.0647	.1332	.2317	.2949	.3191	.3367	.3427	.3379
78	-.0615	-.0738	-.0858	-.0918	-.0739	-.0196	.0825	.2205	.3514	.4555	.5700	.6726	.7695
79	-.0615	-.0738	-.0858	-.0979	-.0798	-.0256	.0825	.2145	.3514	.4916	.6422	.7871	.9319
80	-.0615	-.0738	-.0858	-.0918	-.0438	-.0014	.0825	.1904	.3575	.5696	.7987	1.0881	1.3656
81	-.0676	-.0738	-.0618	-.0438	-.0257	.0165	.0767	.1904	.3633	.5757	.8288	1.0941	1.3656
82	1.0636	.8079	.5661	.3512	.1791	.0562	-.0027	-.0462	-.0568	-.0727	-.0783	-.0784	-.0675
83	1.0527	.7864	.5606	.3459	.1791	.0562	-.0082	-.0677	-.0891	-.0998	-.0891	-.0784	-.0675
84	.9668	.7971	.6197	.4264	.2326	.0400	-.0512	-.0891	-.0891	-.0998	-.0836	-.0731	-.0675
85	.7120	.6522	.5661	.4372	.2810	.1263	.0297	-.0462	-.0783	-.0998	-.0836	-.0731	-.0622
86	.3134	.3295	.3385	.3211	.2734	.1930	.1389	.0579	.0114	-.0347	-.0462	-.0580	-.0403
87	.0310	.0717	.0996	.1404	.1688	.1814	.1910	.1737	.1445	.0813	.0523	.0235	.0004
88	-.0689	-.0514	-.0344	-.0053	.0351	.0822	.1563	.2200	.2545	.2436	.2438	.2324	.2273
89	-.0676	-.0617	-.0739	-.0918	-.0739	-.0196	.0825	.2145	.3214	.3952	.4857	.5583	.6428
90	-.0676	-.0617	-.0799	-.0798	-.0858	-.0256	.0825	.2024	.3274	.4434	.5940	.7208	.8717
91	-.0676	-.0678	-.0858	-.0798	-.0498	.0165	.0767	.1785	.3335	.5156	.7384	.9616	1.1909
92	-.0555	-.0498	-.0739	-.0438	-.0257	.0165	.0767	.1845	.3575	.5636	.8046	1.0580	1.3115
93	.9392	.7864	.6036	.4211	.2326	.0455	-.0512	-.0838	-.0836	-.0944	-.0783	-.0731	-.0730
94	.6633	.6200	.5285	.4211	.2702	.1154	.0242	-.0515	-.0783	-.0944	-.0783	-.0731	-.0675
95	.3017	.3295	.3269	.3211	.2734	.1930	.1332	.0520	-.0002	-.0464	-.0580	-.0580	-.0577
96	.0134	.0541	.0822	.1230	.1571	.1755	.1910	.1680	.1328	.0754	.0465	.0176	.0004
97	-.0689	-.0514	-.0460	-.0110	.0293	.0765	.1505	.2143	.2486	.2321	.2264	.2207	.2098
98	-.0676	-.0498	-.0618	-.0739	-.0739	-.0256	.0886	.2145	.3154	.3833	.4677	.5522	.6489
99	-.0676	-.0498	-.0678	-.0679	-.0619	-.0256	.1007	.2085	.3274	.4373	.5639	.7028	.8598

[a] p_t is in lb/sq ft.

TABLE IV.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 3 - Continued

(b) $M = 3.51$; $P_{t,nom} = 7,200$ lb/sq ft

Orifice	C_p at α of -												
	-45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 587° R; P_t = 7,071.0[a]	T_t = 587° R; P_t = 7,217.0[a]	T_t = 586° R; P_t = 7,194.0[a]	T_t = 585° R; P_t = 7,070.0[a]	T_t = 585° R; P_t = 7,209.0[a]	T_t = 584° R; P_t = 7,168.0[a]	T_t = 582° R; P_t = 7,199.0[a]	T_t = 585° R; P_t = 7,206.0[a]	T_t = 586° R; P_t = 7,206.0[a]	T_t = 584° R; P_t = 7,205.0[a]	T_t = 578° R; P_t = 7,195.0[a]	T_t = 582° R; P_t = 7,207.0[a]	T_t = 584° R; P_t = 7,205.0[a]
1	0.7658	0.7984	0.6732	0.5507	0.4096	0.2996	0.2131	0.1355	0.0827	0.0466	0.0303	0.0216	0.0137
2	.2334	.2858	.2929	.2966	.2792	.2708	.2497	.2247	.2003	.1765	.1522	.1391	.0744
3	-.0369	-.0380	.0026	.0382	.0796	.1474	.1969	.2734	.3707	.4689	.5708	.6694	.4430
4	1.0677	.9854	.7805	.5002	.2920	.1457	.0641	.0041	-.0218	-.0409	-.0413	-.0407	-.0405
5	.7491	.7205	.6077	.4924	.3566	.2503	.1603	.0746	.0219	-.0144	-.0266	-.0310	-.0471
6	.2376	.2571	.2724	.2799	.2629	.2586	.2375	.2085	.1882	.1603	.1481	.1391	.0663
7	-.0203	-.0216	.0148	.0466	.0877	.1474	.1888	.2531	.3261	.3999	.4652	.5276	.3822
8	-.0384	-.0442	-.0399	-.0256	-.0065	.0324	.0983	.2031	.3381	.5201	.7071	.9125	.7702
9	1.1872	.9552	.6449	.3963	.1976	.0737	.0154	-.0222	-.0557	-.0821	-.1010	-.0896	-.0857
10	1.1796	.9138	.6146	.3770	.1787	.0509	-.0146	-.0597	-.0821	-.1009	-.1047	-.0972	-.0896
11	1.0985	.9213	.6713	.4540	.2580	.1153	.0267	-.0484	-.0782	-.1009	-.1047	-.0972	-.0896
12	.6951	.6220	.5300	.4341	.3240	.2297	.1481	.0706	.0219	-.0103	-.0224	-.0310	-.0471
13	.2417	.2448	.2520	.2507	.2385	.2338	.2050	.1801	.1557	.1359	.1157	.1026	.0420
14	-.0369	-.0421	-.0096	.0132	.0470	.1062	.1481	.2288	.3139	.3877	.4570	.5196	.3822
15	-.0773	-.0948	-.0949	-.0773	-.0486	-.0015	.0772	.1969	.3381	.5201	.6944	.8831	.7828
16	-.0816	-.0906	-.0949	-.0773	-.0402	.0028	.0689	.1695	.3298	.5371	.7662	1.0258	.9256
17	-.0816	-.0821	-.0694	-.0386	-.0107	.0113	.0689	.1780	.3466	.5749	.8253	1.1139	1.1860
18	1.2220	.9515	.6713	.4232	.2089	.0584	-.0222	-.0709	-.0896	-.1085	-.1010	-.0934	-.0857
19	.2376	.2325	.2439	.2383	.2222	.2133	.1888	.1598	.1354	.1156	.0954	.0824	.0339
20	-.0773	-.0906	-.0949	-.0816	-.0570	-.0143	.0646	.1737	.3298	.5328	.7492	1.0048	1.0852
21	1.1872	.8685	.5919	.3655	.1749	.0547	-.0034	-.0484	-.0707	-.0934	-.0935	-.0896	-.0820
23	1.1719	.8874	.6183	.3770	.1862	.0584	-.0183	-.0822	-.0933	-.1085	-.1010	-.0934	-.0857
24	1.1603	.8987	.6335	.3924	.1900	.0595	-.0446	-.0859	-.0971	-.1085	-.1010	-.0934	-.0857
25	.9752	.8308	.6410	.4540	.2694	.1305	.0417	-.0334	-.0707	-.0971	-.1010	-.0934	-.0820
26	.5662	.5113	.4647	.3882	.2955	.2174	.1400	.0746	.0259	-.0144	-.0307	-.0430	-.0633
27	.2292	.2202	.2398	.2341	.2140	.2091	.1806	.1598	.1314	.1034	.0790	.0622	.0096
28	-.0327	-.0380	-.0056	.0174	.0470	.0981	.1441	.2085	.2733	.3146	.3514	.3861	.3418
29	-.0729	-.0948	-.0990	-.0859	-.0697	-.0226	.0604	.1695	.3171	.5118	.7366	.9670	.9802
30	-.0729	-.0906	-.0949	-.0859	-.0697	-.0226	.0604	.1654	.3088	.5118	.7492	1.0005	1.1776
31	-.0729	-.0906	-.0949	-.0859	-.0528	.0028	.0646	.1695	.3298	.5454	.7998	1.0845	1.2952
32	-.0773	-.0906	-.0949	-.0859	-.0528	.0028	.0646	.1695	.3298	.5454	.7998	1.0845	1.2952
33	-.0773	-.0906	-.0694	-.0515	-.0275	.0070	.0646	.1695	.3298	.5454	.7998	1.0845	1.2952
34	1.2605	.9138	.6108	.3617	.1711	.0547	-.0071	-.0484	-.0707	-.0934	-.0935	-.0896	-.0820
36	1.1448	.8836	.6259	.3924	.1862	.0319	-.0484	-.0859	-.0971	-.1046	-.1010	-.0896	-.0820
37	.2292	.2243	.2439	.2424	.2262	.2174	.1888	.1639	.1395	.1034	.0790	.0622	.0218
38	-.0729	-.0906	-.0906	-.0902	-.0780	-.0354	.0478	.1569	.2877	.4654	.6522	.8621	1.0138
39	-.0773	-.0906	-.0906	-.0902	-.0486	-.0015	.0563	.1528	.2919	.4907	.7154	.9670	1.1440
40	-.0773	-.0906	-.0694	-.0472	-.0275	.0070	.0646	.1695	.3340	.5496	.7998	1.0762	1.3876
60	1.1063	.8497	.5880	.3617	.1711	.0547	-.0071	-.0447	-.0670	-.0897	-.0935	-.0858	-.0782
61	1.1178	.8534	.6032	.3732	.1824	.0623	-.0071	-.0747	-.1009	-.1009	-.0973	-.0858	-.0782
62	1.1178	.9025	.6789	.4485	.2239	.0358	-.0446	-.0897	-.1009	-.1046	-.0973	-.0821	-.0782
63	.8325	.7402	.6032	.4502	.2768	.1381	.0417	-.0296	-.0707	-.0971	-.1010	-.0821	-.0782
64	.3581	.3351	.3451	.3216	.2629	.2133	.1481	.0827	.0381	-.0103	-.0307	-.0430	-.0593
65	.0987	.0604	.1049	.1383	.1529	.1804	.1806	.1842	.1760	.1522	.1319	.1148	.0744
66	-.0743	-.0872	-.0505	-.0202	.0022	.0650	.1157	.2207	.3098	.3593	.4042	.4387	.4268
67	-.0729	-.0864	-.0906	-.0902	-.0654	-.0269	.0646	.2074	.3424	.4780	.6142	.7362	.8164
68	-.0729	-.0864	-.0906	-.0945	-.0739	-.0269	.0899	.2200	.3677	.5328	.7154	.8831	1.0179
69	-.0729	-.0864	-.0906	-.0902	-.0444	.0070	.0689	.1612	.3088	.4991	.7366	.9712	1.2322
70	-.0773	-.0864	-.0694	-.0429	-.0192	.0155	.0815	.1906	.3592	.5876	.8548	1.1265	1.3917
71	1.0909	.8421	.5767	.3617	.1787	.0623	-.0034	-.0447	-.0631	-.0785	-.0898	-.0821	-.0706
72	1.1102	.8345	.5805	.3655	.1824	.0623	-.0034	-.0671	-.0971	-.1009	-.0973	-.0821	-.0745
73	1.0215	.8459	.6373	.4348	.2239	.0358	-.0484	-.0934	-.0933	-.1009	-.0935	-.0784	-.0745
74	.7323	.6799	.5843	.4163	.2844	.1305	.0380	-.0371	-.0707	-.0971	-.0973	-.0784	-.0706
75	.2875	.2899	.3174	.3090	.2629	.2133	.1481	.0909	.0381	-.0062	-.0307	-.0430	-.0471
76	.0504	.0563	.1049	.1341	.1529	.1804	.1806	.1842	.1557	.1115	.0790	.0581	.0299
77	-.0661	-.0872	-.0505	-.0242	.0103	.0650	.1157	.2288	.2896	.3105	.3310	.3415	.3337
78	-.0686	-.0821	-.0864	-.0902	-.0654	-.0269	.0815	.2242	.3424	.4612	.5678	.6773	.7660
79	-.0686	-.0821	-.0864	-.0987	-.0739	-.0269	.0940	.2116	.3466	.4907	.6437	.7907	.9340
80	-.0686	-.0864	-.0864	-.0773	-.0697	.0155	.0857	.2116	.3550	.5707	.8168	1.0677	1.3791
81	-.0686	-.0780	-.0652	-.0429	-.0234	.0113	.0815	.1863	.3592	.5749	.8294	1.1056	1.3665
82	1.0832	.8195	.5692	.3540	.1749	.0584	-.0034	-.0447	-.0670	-.0785	-.0824	-.0745	-.0669
83	1.0523	.7893	.5540	.3462	.1711	.0584	-.0071	-.0785	-.0933	-.1009	-.0898	-.0784	-.0706
84	.9714	.8006	.6259	.4310	.2315	.0358	-.0484	-.0934	-.0933	-.1046	-.0898	-.0745	-.0669
85	.7207	.6573	.5729	.4502	.2768	.1230	.0304	-.0484	-.0821	-.1085	-.0898	-.0745	-.0631
86	.3083	.3023	.3338	.3258	.2711	.2009	.1278	.0544	.0016	-.0470	-.0550	-.0592	-.0431
87	.0296	.0358	.0966	.1383	.1651	.1844	.1806	.1720	.1354	.0750	.0466	.0216	.0056
88	-.0661	-.0831	-.0383	-.0034	.0307	.0898	.1441	.2207	.2490	.2334	.2375	.2322	.2283
89	-.0643	-.0696	-.0822	-.0816	-.0654	-.0269	.0857	.2157	.3171	.3938	.4834	.5641	.6401
90	-.0643	-.0738	-.0822	-.0773	-.0780	-.0311	.0940	.2031	.3171	.4444	.5889	.7277	.8794
91	-.0643	-.0780	-.0864	-.0600	-.0402	.0113	.0815	.1737	.3213	.5160	.7366	.9670	1.1902
92	-.0557	-.0654	-.0694	-.0472	-.0234	.0113	.0815	.1863	.3509	.5623	.8083	1.0635	1.3246
93	.9321	.7930	.6070	.4310	.2315	.0319	-.0522	-.0785	-.0821	-.0934	-.0824	-.0745	-.0669
94	.6744	.6195	.5313	.4272	.2655	.1116	.0229	-.0522	-.0858	-.0934	-.0824	-.0745	-.0669
95	.2999	.3023	.3297	.3216	.2670	.1968	.1238	.0422	-.0146	-.0551	-.0631	-.0592	-.0512
96	.0129	.0194	.0762	.1215	.1488	.1804	.1766	.1639	.1233	.0669	.0384	.0177	.0015
97	-.0661	-.0831	-.0465	-.0118	.0266	.0857	.1360	.2125	.2409	.2293	.2254	.2201	.2162
98	-.0686	-.0611	-.0652	-.0600	-.0697	-.0311	.0899	.2116	.3045	.3854	.4664	.5556	.6567
99	-.0686	-.0611	-.0694	-.0600	-.0612	-.0311	.1066	.2116	.3171	.4359	.5678	.7068	.8710

[a] P_t is in lb/sq ft.

TABLE IV.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 3 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Orifice	C_p at α of -45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 601° R; p_t = 8,668.0[a]	T_t = 600° R; p_t = 8,658.0[a]	T_t = 601° R; p_t = 8,661.0[a]	T_t = 602° R; p_t = 8,674.0[a]	T_t = 594° R; p_t = 8,653.0[a]	T_t = 596° R; p_t = 8,639.0[a]	T_t = 596° R; p_t = 8,669.0[a]	T_t = 600° R; p_t = 8,668.0[a]	T_t = 600° R; p_t = 8,648.0[a]	T_t = 600° R; p_t = 8,656.0[a]	T_t = 596° R; p_t = 8,672.0[a]	T_t = 600° R; p_t = 8,647.0[a]	T_t = 602° R; p_t = 8,652.0[a]
1	0.6310	0.7963	0.6875	0.5792	0.4769	0.3716	0.2980	0.2460	0.2211	0.2030	0.1855	0.1865	0.1862
2	.2040	.3086	.2932	.3001	.2930	.2752	.2460	.2287	.2123	.1857	.1507	.1428	.0645
3	-.0050	.0210	.0302	.0560	.0916	.1439	.2112	.2980	.3863	.4808	.5583	.6306	.3426
4	.8929	.9722	.7575	.5416	.3570	.2137	.1404	.1088	.0938	.0934	.0852	.0940	.0868
5	.5702	.7092	.6174	.5094	.3804	.2579	.1680	.0987	.0557	.0382	.0292	.0210	-.0053
6	.1953	.2736	.2757	.2913	.2843	.2664	.2460	.2287	.2035	.1770	.1595	.1428	.0645
7	.0125	.0385	.0478	.0735	.1090	.1526	.2027	.2807	.3602	.4200	.4627	.5086	.2904
8	.0870	.0783	.0783	.0780	.1055	.1151	.1680	.2669	.3948	.5551	.7082	.8909	.5930
9	1.0765	.9244	.6697	.4137	.2134	.0858	.0212	-.0024	-.0181	-.0422	-.0342	-.0261	-.0338
10	.9727	.8923	.6456	.3975	.2054	.0618	-.0024	-.0263	-.0421	-.0422	-.0422	-.0341	-.0418
11	.9088	.9003	.7095	.4856	.2930	.1417	.0451	-.0103	-.0341	-.0422	-.0422	-.0341	-.0418
12	.5615	.6307	.5561	.4572	.3543	.2491	.1680	.0987	.0557	.0382	.0292	.0210	-.0053
13	.2216	.2736	.2757	.2741	.2579	.2403	.2287	.2027	.1774	.1510	.1335	.1167	.0469
14	-.0050	.0210	.0302	.0472	.0741	.1178	.1852	.2547	.3429	.4135	.4627	.5174	.3165
15	-.0300	-.0210	-.0480	-.0390	-.0120	.0155	.0870	.2131	.3676	.5461	.6901	.8637	.6292
16	-.0300	-.0300	-.0480	-.0480	-.0120	.0064	.0690	.1860	.3495	.5641	.7443	.9902	.7827
17	-.0300	-.0300	-.0480	-.0480	-.0029	.0155	.0690	.1860	.3676	.5999	.8252	1.0984	.9543
19	1.1006	.9404	.7015	.4455	.2294	.0778	-.0024	-.0342	-.0501	-.0501	-.0342	-.0341	-.0418
20	.2216	.2651	.2669	.2566	.2491	.2315	.2112	.1852	.1689	.1510	.1335	.1167	.0645
21	-.0300	-.0300	-.0480	-.0480	-.0208	-.0027	.0600	.1860	.3495	.5551	.7533	.9721	.8639
23	1.1245	.8446	.6058	.3736	.1974	.0618	-.0024	-.0263	-.0421	-.0422	-.0342	-.0341	-.0338
24	1.1086	.8684	.6296	.3895	.2054	.0618	.0053	-.0342	-.0421	-.0422	-.0342	-.0341	-.0338
25	1.0844	.8844	.6615	.4137	.2134	.0618	-.0024	-.0422	-.0501	-.0501	-.0342	-.0341	-.0338
26	.9327	.8286	.6777	.4935	.3090	.1577	.0690	.0053	-.0261	-.0342	-.0342	-.0341	-.0338
27	.5439	.5349	.4949	.4222	.3279	.2403	.1680	.0899	.0645	.0295	.0207	.0035	-.0226
28	.2391	.2651	.2669	.2566	.2491	.2227	.2027	.1767	.1601	.1337	.1160	.0906	.0469
29	.0210	.0385	.0390	.0560	.0829	.1178	.1767	.2378	.2994	.3508	.3762	.3953	.2992
30	-.0300	-.0300	-.0480	-.0480	-.0120	.0064	.0780	.1950	.3405	.5100	.6633	.7915	.7105
31	-.0300	-.0300	-.0480	-.0480	-.0208	-.0027	.0690	.1860	.3405	.5461	.7533	.9449	.9090
32	-.0300	-.0300	-.0480	-.0480	-.0208	-.0027	.0600	.1680	.3314	.5461	.7713	.9721	.9993
33	-.0300	-.0300	-.0480	-.0300	-.0029	.0064	.0600	.1770	.3495	.5819	.8342	1.0624	1.1980
34	1.1884	.8764	.6296	.3736	.1894	.0618	.0133	-.0263	-.0341	-.0422	-.0342	-.0261	-.0338
36	1.1086	.8764	.6335	.4137	.2134	.0538	-.0103	-.0422	-.0501	-.0422	-.0342	-.0261	-.0338
37	.2476	.2651	.2669	.2653	.2579	.2315	.2200	.1940	.1689	.1422	.1247	.1082	.0645
38	-.0300	-.0300	-.0480	-.0570	-.0298	-.0117	.0690	.1680	.3135	.4919	.6992	.8546	.9002
39	-.0300	-.0300	-.0480	-.0480	-.0298	-.0117	.0690	.1589	.3042	.5100	.7443	.9359	1.0336
40	-.0300	-.0300	-.0480	-.0300	-.0029	.0064	.0780	.1860	.3586	.5909	.8342	1.0624	1.2885
60	1.0844	.8844	.6058	.3736	.1894	.0618	.0053	-.0263	-.0341	-.0422	-.0342	-.0261	-.0338
61	1.1086	.8923	.6296	.3895	.2054	.0698	.0053	-.0342	-.0421	-.0422	-.0263	-.0261	-.0338
62	1.1165	.9324	.6936	.4614	.2451	.0618	-.0024	-.0342	-.0501	-.0422	-.0263	-.0261	-.0338
63	.8528	.7727	.6456	.4856	.3170	.1657	.0769	.0053	-.0181	-.0342	-.0342	-.0261	-.0338
64	.3959	.4044	.3808	.3524	.3016	.2315	.1767	.1247	.0733	.0467	.0292	.0035	-.0053
65	.1170	.1343	.1443	.1693	.1878	.1966	.2112	.2112	.2035	.1857	.1767	.1428	.1164
66	-.0138	-.0138	.0040	.0212	.0477	.0826	.1592	.2460	.3341	.4028	.4367	.4563	.4643
67	-.0300	-.0300	-.0480	-.0390	-.0208	.0064	.0870	.2221	.3676	.5280	.6453	.7465	.8368
68	-.0300	-.0300	-.0390	-.0480	-.0298	-.0027	.0961	.2221	.3948	.5909	.7443	.8909	1.0265
69	-.0210	-.0300	-.0390	-.0480	-.0208	.0064	.0870	.1860	.3405	.5551	.7533	.9721	1.2071
70	-.0210	-.0300	-.0480	-.0300	-.0120	.0155	.0870	.2040	.3858	.6270	.8795	1.1615	1.3786
71	1.1404	.8605	.6137	.3816	.1974	.0618	.0133	-.0263	-.0341	-.0342	-.0263	-.0261	-.0338
72	1.0844	.8605	.6217	.3895	.2054	.0698	.0133	-.0421	-.0421	-.0422	-.0263	-.0261	-.0338
73	1.0125	.8764	.6697	.4535	.2451	.0618	-.0024	-.0342	-.0421	-.0422	-.0263	-.0261	-.0338
74	.7570	.7167	.6217	.4776	.3170	.1577	.0769	.0133	-.0261	-.0342	-.0342	-.0261	-.0338
75	.3261	.3696	.3632	.3436	.2930	.2315	.1852	.1247	.0818	.0555	.0379	.0210	.0123
76	.1083	.1255	.1531	.1693	.1878	.1966	.2200	.2112	.1950	.1597	.1335	.0994	.0818
77	-.0226	-.0138	.0040	.0212	.0477	.0914	.1592	.2547	.3168	.3593	.3762	.3868	.3775
78	-.0210	-.0300	-.0480	-.0390	-.0208	.0064	.0961	.2399	.3767	.5010	.6092	.7283	.7918
79	-.0300	-.0300	-.0480	-.0480	-.0208	-.0027	.0961	.2311	.3767	.5280	.6814	.8368	.9452
80	-.0300	-.0300	-.0390	-.0570	-.0208	.0064	.0870	.2040	.3676	.5909	.8342	1.1165	1.3424
81	-.0390	-.0390	-.0390	-.0300	-.0120	.0064	.0870	.2040	.3767	.6180	.8703	1.1256	1.4058
82	1.0927	.8525	.5973	.3736	.1894	.0618	.0133	-.0183	-.0261	-.0263	-.0263	-.0261	-.0258
83	1.0765	.8286	.5896	.3656	.1894	.0618	.0053	-.0342	-.0421	-.0422	-.0263	-.0261	-.0258
84	1.0046	.8525	.6697	.4614	.2531	.0618	-.0024	-.0342	-.0421	-.0342	-.0263	-.0261	-.0258
85	.7570	.7087	.6217	.4776	.3090	.1577	.0690	.0053	-.0261	-.0342	-.0263	-.0261	-.0258
86	.3609	.3781	.3808	.3611	.3016	.2227	.1592	.0987	.0645	.0207	.0119	-.0051	.0035
87	.0907	.1167	.1531	.1780	.1966	.2051	.2112	.2027	.1689	.1337	.0987	.0733	.0557
88	-.0226	-.0050	.0127	.0385	.0741	.1178	.1767	.2460	.2819	.2897	.2895	.2821	.2819
89	-.0300	-.0300	-.0390	-.0390	-.0120	.0064	.0961	.2399	.3495	.4471	.5283	.6199	.6833
90	-.0300	-.0300	-.0390	-.0390	-.0298	-.0027	.0961	.2221	.3495	.4829	.6273	.7824	.9180
91	-.0300	-.0300	-.0390	-.0390	-.0208	.0064	.0870	.1860	.3405	.5370	.7623	1.0081	1.2342
92	-.0300	-.0390	-.0300	-.0300	-.0120	.0064	.0870	.1950	.3676	.5909	.8252	1.1165	1.3605
93	.9886	.8286	.6535	.4535	.2531	.0618	-.0024	-.0342	-.0341	-.0342	-.0183	-.0261	-.0258
94	.7249	.6686	.5896	.4614	.3010	.1497	.0610	-.0024	-.0341	-.0342	-.0183	-.0261	-.0258
95	.3521	.3696	.3808	.3611	.3016	.2227	.1592	.0899	.0384	.0119	-.0053	-.0051	-.0053
96	.0732	.0907	.1356	.1693	.1878	.1966	.2027	.2027	.1601	.1162	.0899	.0645	.0557
97	-.0226	-.0050	.0127	.0385	.0653	.1090	.1592	.2460	.2733	.2897	.2722	.2648	.2643
98	-.0390	-.0480	-.0300	-.0390	-.0208	.0064	.0961	.2399	.3405	.4290	.5193	.6018	.6924
99	-.0390	-.0480	-.0300	-.0300	-.0208	-.0027	.1048	.2311	.3495	.4829	.6182	.7555	.9002

[a] p_t is in lb/sq ft.

TABLE IV.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 3 - Concluded

(d) $M = 4.65$; $p_{t,nom} = 12,240$ lb/sq ft

Orifice	C_p at α of -												
	-45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 603° R; p_t = 12,253.0[a]	T_t = 600° R; p_t = 12,256.0[a]	T_t = 600° R; p_t = 12,282.0[a]	T_t = 601° R; p_t = 12,247.0[a]	T_t = 608° R; p_t = 12,238.0[a]	T_t = 605° R; p_t = 12,252.0[a]	T_t = 603° R; p_t = 12,211.0[a]	T_t = 603° R; p_t = 12,238.0[a]	T_t = 600° R; p_t = 12,179.0[a]	T_t = 603° R; p_t = 12,220.0[a]	T_t = 602° R; p_t = 12,251.0[a]	T_t = 603° R; p_t = 12,228.0[a]	T_t = 602° R; p_t = 12,243.0[a]
1	0.6106	0.7776	0.6667	0.5820	0.4486	0.3350	0.2592	0.1860	0.1559	0.1306	0.1239	0.1122	0.1120
2	.2046	.2849	.2910	.3016	.2935	.2787	.2592	.2291	.1992	.1735	.1547	.1306	.0629
3	-.0045	.0141	.0324	.0586	.0951	.1470	.2223	.2904	.3843	.4747	.5468	.6223	.3452
4	.9051	.9670	.7329	.5346	.3367	.1824	.1103	.0642	.0423	.0420	.0415	.0478	.0480
5	.5984	.7099	.6113	.5197	.3864	.2662	.1794	.0937	.0449	.0262	.0135	.0077	-.0109
6	.1984	.2665	.2727	.2954	.2872	.2723	.2592	.2289	.1992	.1735	.1485	.1368	.0629
7	.0139	.0263	.0509	.0709	.1075	.1595	.2163	.2782	.3471	.4132	.4426	.5056	.2961
8	.0550	.0422	.0481	.0484	.0616	.0869	.1376	.2276	.3689	.5412	.6963	.8787	.5660
9	1.0982	.9274	.6880	.4212	.2176	.0807	.0250	-.0094	-.0262	-.0548	-.0434	-.0376	-.0318
10	.9790	.8936	.6541	.3985	.2065	.0638	.0079	-.0320	-.0489	-.0604	-.0492	-.0376	-.0318
11	.9592	.9105	.7105	.4835	.2970	.1572	.0478	-.0151	-.0432	-.0548	-.0492	-.0320	-.0318
12	.5798	.6299	.5559	.4656	.3556	.2474	.1734	.0937	.0512	.0262	.0135	.0137	-.0109
13	.2170	.2665	.2727	.2705	.2626	.2474	.2347	.1982	.1684	.1491	.1179	.1184	.0506
14	.0017	.0141	.0324	.0526	.0766	.1220	.1856	.2535	.3411	.4009	.4488	.5116	.3206
15	-.0216	-.0342	-.0406	-.0343	-.0151	.0169	.0930	.2022	.3560	.5348	.6902	.8595	.6488
16	-.0216	-.0342	-.0406	-.0405	-.0215	.0105	.0740	.1766	.3434	.5538	.7536	.9871	.7830
17	-.0216	-.0342	-.0406	-.0280	-.0023	.0105	.0740	.1830	.3624	.5922	.8108	1.0893	.9681
19	1.1040	.9445	.7105	.4495	.2345	.0751	.0023	-.0376	-.0547	-.0604	-.0434	-.0320	-.0318
20	.2230	.2603	.2665	.2643	.2502	.2284	.2163	.1798	.1559	.1367	.1117	.1122	.0567
21	-.0216	-.0342	-.0406	-.0469	-.0279	-.0023	.0740	.1830	.3434	.5475	.7219	.9743	.8787
23	1.1267	.8484	.6148	.3928	.2007	.0638	.0079	-.0320	-.0432	-.0548	-.0434	-.0320	-.0318
24	1.1153	.8711	.6373	.3985	.2007	.0638	.0023	-.0435	-.0547	-.0548	-.0434	-.0320	-.0318
25	1.0982	.8824	.6654	.4212	.2119	.0582	-.0092	-.0491	-.0604	-.0604	-.0434	-.0320	-.0318
26	.9336	.8315	.6880	.4950	.3083	.1597	.0648	-.0038	-.0376	-.0489	-.0434	-.0320	-.0262
27	.5368	.5374	.5003	.4263	.3307	.2410	.1734	.0937	.0574	.0262	.0075	.0015	-.0169
28	.2354	.2541	.2665	.2581	.2439	.2284	.2101	.1737	.1559	.1344	.0995	.0875	.0382
29	.0139	.0201	.0386	.0586	.0868	.1156	.1794	.2413	.3041	.3396	.3506	.3949	.2961
30	-.0216	-.0342	-.0406	-.0405	-.0215	.0105	.0804	.1958	.3370	.4964	.6865	.7893	.7254
31	-.0216	-.0342	-.0406	-.0469	-.0343	-.0023	.0676	.1766	.3370	.5284	.7219	.9551	.9107
32	-.0216	-.0342	-.0406	-.0469	-.0279	.0041	.0676	.1702	.3241	.5348	.7536	.9807	1.0129
33	-.0216	-.0342	-.0406	-.0280	-.0087	.0105	.0676	.1766	.3434	.5730	.8298	1.0701	1.2171
34	1.1949	.8880	.6204	.3816	.1948	.0638	.0079	-.0320	-.0376	-.0489	-.0434	-.0320	-.0262
36	1.1153	.8767	.6598	.4156	.2119	.0526	-.0092	-.0435	-.0547	-.0489	-.0434	-.0320	-.0318
37	.2416	.2541	.2727	.2767	.2564	.2410	.2223	.1922	.1684	.1367	.1117	.1000	.0567
38	-.0216	-.0342	-.0406	-.0533	-.0405	-.0086	.0548	.1574	.2984	.4900	.6902	.8531	.9043
39	-.0216	-.0342	-.0470	-.0469	-.0343	-.0023	.0548	.1574	.3049	.5156	.7536	.9425	1.0511
40	-.0216	-.0342	-.0406	-.0280	-.0151	.0105	.0612	.1830	.3496	.5794	.8362	1.0701	1.3001
60	1.0869	.8936	.6148	.3816	.1948	.0638	.0079	-.0264	-.0376	-.0489	-.0377	-.0320	-.0262
61	1.1097	.8824	.6317	.3985	.2063	.0694	.0079	-.0376	-.0432	-.0548	-.0434	-.0320	-.0262
62	1.1209	.9274	.6992	.4722	.2460	.0638	-.0036	-.0435	-.0489	-.0548	-.0377	-.0320	-.0262
63	.8540	.7694	.6429	.4893	.3196	.1655	.0704	.0075	-.0262	-.0433	-.0434	-.0320	-.0262
64	.3891	.3897	.3835	.3577	.2997	.2348	.1856	.1184	.0697	.0384	.0197	.0077	-.0109
65	.1062	.1186	.1495	.1708	.1880	.2035	.2040	.2106	.2116	.1898	.1607	.1439	.1180
66	-.0169	-.0229	.0017	.0212	.0496	.0843	.1427	.2413	.3349	.4009	.4366	.4565	.4679
67	-.0216	-.0342	-.0406	-.0405	-.0215	.0105	.0676	.2148	.3689	.5156	.6457	.7445	.8405
68	-.0216	-.0342	-.0344	-.0469	-.0343	.0041	.0804	.2340	.3945	.5794	.7408	.8849	1.0383
69	-.0216	-.0342	-.0344	-.0469	-.0279	.0105	.0676	.1830	.3241	.5412	.7536	.9615	1.2235
70	-.0278	-.0405	-.0344	-.0280	-.0151	.0169	.0740	.2022	.3753	.6178	.8870	1.1657	1.3895
71	1.1324	.8655	.6204	.3816	.2007	.0694	.0023	-.0264	-.0319	-.0433	-.0377	-.0320	-.0262
72	1.0813	.8655	.6261	.3872	.2063	.0694	.0023	-.0376	-.0432	-.0548	-.0377	-.0320	-.0262
73	1.0188	.8767	.6768	.4552	.2517	.0638	-.0092	-.0435	-.0432	-.0548	-.0377	-.0320	-.0262
74	.7575	.7243	.6317	.4779	.3196	.1597	.0704	.0019	-.0262	-.0433	-.0434	-.0262	-.0262
75	.3277	.3465	.3588	.3452	.2935	.2348	.1794	.1246	.0819	.0446	.0259	.0137	.0075
76	.1000	.1248	.1495	.1708	.1880	.2035	.2163	.2106	.1931	.1491	.1239	.1000	.0813
77	-.0169	-.0169	.0017	.0212	.0518	.0907	.1549	.2475	.3164	.3518	.3690	.3827	.3759
78	-.0216	-.0405	-.0406	-.0405	-.0279	.0041	.0804	.2340	.3624	.4900	.6012	.7254	.7894
79	-.0216	-.0342	-.0344	-.0469	-.0343	-.0023	.0804	.2212	.3624	.5250	.6774	.8403	.9489
80	-.0216	-.0342	-.0344	-.0469	-.0343	.0105	.0740	.1958	.3560	.5794	.8362	1.1211	1.3511
81	-.0278	-.0342	-.0344	-.0280	-.0151	.0105	.0740	.1958	.3689	.6050	.8743	1.1339	1.4277
82	1.1097	.8596	.6036	.3703	.1948	.0638	.0023	-.0264	-.0204	-.0433	-.0321	-.0320	-.0262
83	1.0869	.8259	.5868	.3645	.1892	.0638	.0023	-.0435	-.0489	-.0489	-.0321	-.0262	-.0262
84	1.0130	.8484	.6712	.4552	.2517	.0582	-.0092	-.0435	-.0489	-.0489	-.0321	-.0262	-.0262
85	.7688	.7072	.6204	.4779	.3140	.1541	.0535	-.0038	-.0376	-.0489	-.0321	-.0262	-.0205
86	.3583	.3713	.3835	.3639	.2997	.2284	.1609	.0937	.0449	.0137	.0013	-.0045	-.0109
87	.0877	.1124	.1495	.1770	.1943	.2035	.2101	.1982	.1622	.1244	.0871	.0691	.0567
88	-.0169	-.0107	.0140	.0336	.0704	.1156	.1734	.2475	.2731	.2842	.2832	.2842	.2776
89	-.0216	-.0342	-.0281	-.0405	-.0215	.0105	.0866	.2276	.3370	.4324	.5312	.6104	.6872
90	-.0278	-.0342	-.0281	-.0405	-.0343	-.0023	.0804	.2148	.3370	.4836	.6329	7701	.9235
91	-.0278	-.0342	-.0344	-.0469	-.0343	.0105	.0740	.1830	.3305	.5348	.7727	1.0127	1.2427
92	-.0216	-.0342	-.0217	-.0280	-.0151	.0105	.0612	.1894	.3624	.5922	.8426	1.1211	1.3703
93	.9903	.8371	.6541	.4495	.2517	.0582	-.0149	-.0435	-.0376	-.0376	-.0321	-.0262	-.0262
94	.7177	.6734	.5810	.4495	.3027	.1428	.0591	-.0094	-.0376	-.0376	-.0321	-.0262	-.0262
95	.3523	.3713	.3773	.3577	.3059	.2222	.1549	.0815	.0527	.0077	-.0047	-.0107	-.0109
96	.0693	.0940	.1310	.1646	.1880	.2035	.2101	.1922	.1559	.1182	.0871	.0691	.0506
97	-.0281	-.0169	.0017	.0336	.0642	.1094	.1671	.2351	.2671	.2780	.2710	.2658	.2592
98	-.0278	-.0405	-.0281	-.0343	-.0215	.0041	.0866	.2276	.3241	.4260	.5248	.6040	.6936
99	-.0342	-.0405	-.0281	-.0343	-.0343	.0041	.0994	.2212	.3370	.4772	.6265	.7509	.8979

[a] p_t is in lb/sq ft.

TABLE V.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 4

(a) $M = 3.51$; $p_{t,\infty} = 5,040$ lb/sq ft

Orifice	C_p at α of -											
	-45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 592° R; p_t = 5,015.0[a]	T_t = 586° R; p_t = 5,027.0[a]	T_t = 584° R; p_t = 5,042.0[a]	T_t = 593° R; p_t = 5,024.0[a]	T_t = 584° R; p_t = 5,102.0[a]	T_t = 583° R; p_t = 5,057.0[a]	T_t = 585° R; p_t = 5,051.0[a]	T_t = 581° R; p_t = 5,028.0[a]	T_t = 580° R; p_t = 5,041.0[a]	T_t = 581° R; p_t = 5,040.0[a]	T_t = 579° R; p_t = 5,058.0[a]	T_t = 581° R; p_t = 5,041.0[a]	T_t = 583° R; p_t = 5,049.0[a]
4	1.0003	0.8745	0.6504	0.4679	0.3106	0.1902	0.1073	0.0416	-0.0023	-0.0401	-0.0622	-0.0727	-0.0833
5	.5121	.5229	.4544	.3890	.3176	.2716	.2156	.1650	.1236	.0942	.0528	.0416	-.0048
6	.1404	.1830	.1956	.2069	.2252	.2363	.2388	.2353	.2403	.2460	.2333	.2518	.1650
7	-.0279	-.0162	.0075	.0366	.0748	.1248	.1690	.2237	.2988	.3920	.4837	.6020	.4867
8	-.0673	-.0917	-.0797	-.0613	-.0206	.0340	.0772	.1695	.2838	.4713	.6688	.9356	.8158
9	1.1418	.8962	.6018	.3543	.1772	.0722	.0147	-.0235	-.0347	-.0569	-.0729	-.0727	-.0780
10	1.0765	.9125	.6072	.3706	.1879	.0775	.0039	-.0400	-.0672	-.0834	-.0945	-.0781	-.0780
11	.9894	.8420	.6180	.4192	.2572	.1473	.0637	.0036	-.0347	-.0671	-.0837	-.0834	-.0780
12	.5298	.5172	.4368	.3479	.2713	.2189	.1573	.1006	.0651	.0417	.0121	.0066	-.0282
13	.1541	.1713	.1722	.1776	.1848	.1952	.1923	.1886	.1878	.1993	.1925	.1935	.1064
14	-.0397	-.0339	-.0160	.0073	.0459	.0954	.1341	.1943	.2753	.3862	.4778	.5846	.4810
15	-.0734	-.0917	-.0978	-.0856	-.0443	.0101	.0591	.1511	.2717	.4713	.6869	.9235	.7977
16	-.0734	-.0978	-.0918	-.0734	-.0266	.0222	.0591	.1450	.2717	.4955	.7351	1.0203	.9671
17	-.0673	-.0735	-.0375	-.0572	-.0146	.0161	.0531	.1390	.2838	.5377	.7956	1.1049	1.2212
18	1.1744	.9394	.6504	.3975	.1879	.0560	-.0179	-.0562	-.0781	-.0889	-.0998	-.0781	-.0833
19	.1365	.1420	.1545	.1999	.1673	.1777	.1747	.1768	.1819	.1993	.1867	.1935	.1298
20	-.0734	-.0917	-.0978	-.0856	-.0503	.0041	.0591	.1573	.3020	.5319	.7471	1.0022	.9852
21	-.0734	-.0917	-.0978	-.0856	-.0503	.0041	.0591	.1573	.3020	.5319	.7471	1.0022	.9852
23	1.1363	.8420	.5748	.3436	.1666	.0560	-.0071	-.0344	-.0510	-.0727	-.0890	-.0781	-.0833
24	1.1581	.8691	.5963	.3652	.1772	.0613	-.0071	-.0671	-.0889	-.0942	-.0998	-.0781	-.0780
25	1.1635	.9178	.6504	.4084	.1932	.0505	-.0288	-.0671	-.0889	-.0942	-.0945	-.0781	-.0780
26	.9838	.8420	.6504	.4624	.2733	.1365	.0419	-.0235	-.0619	-.0834	-.0945	-.0781	-.0780
27	.5533	.5172	.4544	.3772	.2887	.2129	.1458	.0772	.0418	.0125	-.0170	-.0226	-.0515
28	.1424	.1536	.1604	.1658	.1731	.1835	.1806	.1768	.1819	.1934	.1693	.1643	.1005
29	-.0397	-.0398	-.0219	-.0104	.0285	.0778	.1282	.2060	.3046	.4036	.4603	.5204	.4400
30	-.0673	-.0917	-.1039	-.0977	-.0683	-.0199	.0471	.1695	.3201	.5137	.6688	.8510	.8399
31	-.0673	-.0917	-.0978	-.0917	-.0563	-.0080	.0531	.1634	.3201	.5258	.7230	.9598	1.0578
32	-.0673	-.0917	-.1039	-.0977	-.0563	.0101	.0471	.1511	.3080	.5258	.7532	1.0142	1.2332
33	-.0734	-.0796	-.0615	-.0432	-.0206	.0161	.0531	.1573	.3383	.5741	.8197	1.1049	1.3179
34	1.1091	.8258	.5533	.3873	.1559	.0505	-.0124	-.0400	-.0619	-.0834	-.0945	-.0781	-.0780
36	1.1363	.8745	.6180	.3868	.1826	.0346	-.0451	-.0780	-.0889	-.0942	-.0945	-.0781	-.0780
37	.1306	.1361	.1545	.1658	.1789	.1952	.1865	.1827	.1878	.1876	.1635	.1526	.1005
38	-.0734	-.0917	-.0797	-.0856	-.0563	-.0138	.0531	.1634	.3141	.5076	.6869	.9115	1.0518
39	-.0673	-.0917	-.1039	-.0977	-.0623	.0161	.0531	.1573	.3201	.5258	.7471	.9961	1.1848
40	-.0673	-.0917	-.0676	-.0493	-.0206	.0161	.0531	.1634	.3262	.5620	.8076	1.0989	1.3906
41	1.0928	.8420	.6018	.3759	.1772	.0291	-.0451	-.0833	-.0943	-.0942	-.0945	-.0781	-.0780
42	.8967	.7300	.5836	.4084	.2360	.1044	.0147	-.0453	-.0727	-.0889	-.0998	-.0834	-.0780
43	.5708	.5229	.4661	.3831	.2887	.2129	.1341	.0655	.0183	-.0109	-.0402	-.0459	-.0632
44	.1369	.1479	.1663	.1776	.1848	.2011	.1865	.1827	.1819	.1701	.1344	.1234	.0714
45	-.0397	-.0398	-.0219	-.0045	.0285	.0778	.1341	.2178	.3046	.3685	.4080	.4503	.4400
46	-.0673	-.0796	-.0918	-.0917	-.0563	-.0199	.0531	.1937	.3262	.4895	.6266	.7846	.8703
47	-.0673	-.0917	-.0918	-.0917	-.0623	-.0080	.0591	.1816	.3201	.4955	.6808	.8933	1.0759
60	1.0928	.8475	.5856	.3543	.1719	.0560	-.0071	-.0400	-.0619	-.0780	-.0784	-.0727	-.0724
61	1.1254	.8638	.6018	.3759	.1879	.0667	-.0016	-.0833	-.0998	-.0942	-.0998	-.0834	-.0780
62	1.1200	.9016	.6610	.4408	.2252	.0452	-.0451	-.0888	-.0998	-.0942	-.0998	-.0781	-.0780
63	.8369	.7284	.5963	.4517	.2785	.1420	.0366	-.0344	-.0727	-.0889	-.0998	-.0781	-.0780
64	.3713	.3587	.3486	.3184	.2657	.2188	.1515	.0890	.0418	.0125	-.0170	-.0285	-.0574
65	.0719	.0833	.1074	.1365	.1615	.1835	.1806	.1827	.1761	.1583	.1285	.1117	.0655
66	-.0632	-.0632	-.0454	-.0279	.0113	.0661	.1225	.2178	.2988	.3628	.3904	.4270	.4166
67	-.0612	-.0796	-.0736	-.0856	-.0563	-.0138	.0712	.2059	.3322	.4713	.5963	.7242	.7916
68	-.0673	-.0856	-.0857	-.0977	-.0683	-.0199	.0712	.2059	.3383	.5258	.6929	.8691	.9912
69	-.0673	-.0856	-.0857	-.0917	-.0563	.0101	.0591	.1695	.3262	.5076	.7170	.9598	1.2091
70	-.0673	-.0796	-.0676	-.0552	-.0206	.0222	.0712	.1877	.3504	.5862	.8378	1.1170	1.3602
71	1.0765	.8313	.5748	.3597	.1772	.0613	-.0071	-.0453	-.0672	-.0834	-.0837	-.0727	-.0724
72	1.0873	.8313	.5748	.3652	.1879	.0667	-.0071	-.0780	-.0998	-.0889	-.0890	-.0781	-.0724
73	1.0110	.8420	.6287	.4247	.2305	.0505	-.0506	-.0888	-.0943	-.0942	-.0837	-.0727	-.0724
74	.7335	.6743	.5695	.4463	.2893	.1365	.0366	-.0344	-.0727	-.0889	-.0837	-.0727	-.0724
75	.3008	.3177	.3251	.3068	.2657	.2129	.1573	.0949	.0418	.0066	-.0287	-.0341	-.0574
76	.0660	.0833	.1074	.1306	.1557	.1835	.1865	.1827	.1528	.1176	.0761	.0592	.0186
77	-.0573	-.0632	-.0454	-.0220	.0113	.0720	.1282	.2237	.2870	.3219	.3206	.3393	.3289
78	-.0734	-.0796	-.0918	-.0552	-.0563	.0222	.0712	.2119	.3383	.4592	.5601	.6758	.7431
79	-.0673	-.0856	-.0918	-.0977	-.0683	-.0199	.0712	.2119	.3383	.4895	.6326	.7907	.9125
80	-.0734	-.0856	-.0918	-.0977	-.0384	-.0199	.0772	.1937	.3504	.5680	.8016	1.0929	1.3481
81	-.0673	-.0796	-.0736	-.0552	-.0206	.0222	.0772	.1877	.3504	.5741	.8136	1.0989	1.3481
82	1.0656	.8095	.5586	.3489	.1772	.0613	-.0071	-.0453	-.0672	-.0780	-.0784	-.0672	-.0669
83	1.0491	.7824	.5533	.3436	.1772	.0613	-.0071	-.0724	-.0943	-.0942	-.0837	-.0727	-.0669
84	.9675	.7933	.6180	.4247	.2305	.0452	-.0506	-.0888	-.0889	-.0942	-.0784	-.0672	-.0669
85	.7170	.6526	.5639	.4354	.2785	.1312	.0311	-.0453	-.0781	-.0942	-.0784	-.0672	-.0669
86	.3185	.3236	.3368	.3243	.2713	.2011	.1341	.0598	.0068	-.0226	-.0519	-.0518	-.0458
87	.0426	.0599	.1015	.1365	.1615	.1835	.1865	.1709	.1352	.0883	.0411	.0242	.0011
88	-.0514	-.0573	-.0336	-.0104	.0343	.0895	.1458	.2178	.2461	.2460	.2333	.2344	.2234
89	-.0551	-.0735	-.0736	-.0917	-.0623	.0041	.0772	.2119	.3080	.4047	.4755	.5549	.6343
90	-.0551	-.0735	-.0736	-.0856	-.0802	-.0199	.0772	.1998	.3141	.4471	.5782	.7242	.8703
91	-.0551	-.0735	-.0736	-.0795	-.0443	.0222	.0772	.1755	.3141	.5197	.7230	.9598	1.1787
92	-.0492	-.0553	-.0615	-.0493	-.0206	.0222	.0772	.1877	.3443	.5680	.7956	1.0626	1.2998
93	.9513	.7880	.6018	.4301	.2305	.0452	-.0561	-.0671	-.0781	-.0834	-.0784	-.0672	-.0669
94	.6735	.6147	.5316	.4192	.2733	.1204	.0256	-.0453	-.0834	-.0834	-.0784	-.0619	-.0669
95	.3126	.3236	.3310	.3184	.2657	.2011	.1341	.0480	-.0050	-.0342	-.0578	-.0459	-.0515
96	.0249	.0423	.0781	.1188	.1557	.1777	.1865	.1650	.1293	.0825	.0355	.0183	-.0048
97	-.0514	-.0573	-.0454	-.0161	.0285	.0837	.1458	.2119	.2403	.2344	.2216	.2168	.2118
98	-.0492	-.0614	-.0615	-.0734	-.0683	-.0199	.0772	.2180	.3080	.4047	.4695	.5670	.6584
99	-.0612	-.0614	-.0676	-.0674	-.0563	-.0199	.0954	.2180	.3201	.4592	.5782	.7242	.8763

[a] p_t is in lb/sq ft.

TABLE V.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 4 - Continued

(b) $M = 3.51$; $p_{t,nom} = 7,200$ lb/sq ft

Orifice	C_p at α of -												
	-45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 583° R; p_t = 7,209.0[a]	T_t = 582° R; p_t = 7,202.0[a]	T_t = 582° R; p_t = 7,201.0[a]	T_t = 582° R; p_t = 7,208.0[a]	T_t = 581° R; p_t = 7,189.0[a]	T_t = 583° R; p_t = 7,217.0[a]	T_t = 582° R; p_t = 7,207.0[a]	T_t = 582° R; p_t = 7,215.0[a]	T_t = 582° R; p_t = 7,213.0[a]	T_t = 582° R; p_t = 7,219.0[a]	T_t = 584° R; p_t = 7,205.0[a]	T_t = 584° R; p_t = 7,204.0[a]	T_t = 585° R; p_t = 7,203.0[a]
4	0.9635	0.8747	0.6582	0.4724	0.3078	0.1863	0.1046	0.0357	-0.0097	-0.0440	-0.0704	-0.0780	-0.0778
5	.4749	.5280	.4572	.3976	.3244	.2605	.2099	.1608	.1167	.0797	.0514	.0313	-.0095
6	.1407	.1832	.1914	.2113	.2205	.2274	.2262	.2299	.2309	.2345	.2351	.2439	.1583
7	-.0426	-.0204	.0087	.0373	.0751	.1198	.1610	.2218	.2880	.3813	.4842	.5995	.5063
8	-.0780	-.0948	-.0863	-.0611	-.0250	.0190	.0702	.1686	.2867	.4639	.6685	.9354	.8758
9	1.1144	.9048	.6092	.3630	.1754	.0692	.0096	-.0250	-.0439	-.0553	-.0780	-.0780	-.0778
10	1.1899	.9199	.6129	.3706	.1754	.0692	.0096	-.0250	-.0439	-.0553	-.0780	-.0780	-.0778
11	.9823	.8446	.6205	.4272	.2586	.1409	.0628	.0053	-.0401	-.0705	-.0893	-.0856	-.0778
12	.5279	.5239	.4407	.3645	.2746	.2026	.1488	.0998	.0595	.0267	.0065	-.0056	-.0341
13	.1285	.1665	.1749	.1823	.1832	.1860	.1814	.1852	.1860	.1898	.1903	.1866	.1092
14	-.0549	-.0370	-.0163	.0124	.0419	.0867	.1244	.1893	.2717	.3772	.4801	.5831	.4449
15	-.0780	-.0948	-.1033	-.0822	-.0525	-.0063	.0532	.1499	.2740	.4639	.6812	.9354	.8207
16	-.0822	-.0948	-.0948	-.0738	-.0315	.0106	.0532	.1457	.2740	.4851	.7406	1.0328	1.0455
17	-.0780	-.0780	-.0599	-.0315	-.0187	.0063	.0490	.1414	.2867	.5359	.7956	1.1091	1.2276
19	1.2012	.9463	.6582	.4007	.1867	.0503	-.0209	-.0629	-.0856	-.0971	-.1045	-.0896	-.0817
20	.1244	.1416	.1582	.1657	.1707	.1736	.1651	.1689	.1779	.1857	.1862	.1825	.1214
21	-.0780	-.0905	-.1033	-.0865	-.0568	-.0063	.0532	.1541	.2993	.5232	.7490	1.0073	1.0665
23	1.1446	.8483	.5865	.3480	.1640	.0503	-.0056	-.0401	-.0591	-.0780	-.0969	-.0856	-.0778
24	1.1635	.8710	.6054	.3706	.1754	.0578	-.0056	-.0743	-.0970	-.1008	-.1045	-.0856	-.0778
25	1.1673	.9162	.6621	.4159	.1981	.0428	-.0361	-.0743	-.0932	-.0971	-.1008	-.0856	-.0778
26	.9823	.8332	.6545	.4649	.2737	.1296	.0399	-.0288	-.0704	-.0895	-.1008	-.0817	-.0778
27	.5442	.5155	.4572	.3894	.2912	.2026	.1366	.0794	.0310	-.0019	-.0220	-.0343	-.0587
28	.1285	.1457	.1582	.1739	.1749	.1777	.1692	.1771	.1779	.1816	.1658	.1620	.1051
29	-.0549	-.0453	-.0288	-.0041	.0253	.0702	.1162	.2015	.2962	.3936	.4556	.5219	.4121
30	-.0780	-.0905	-.1075	-.0948	-.0736	-.0358	.0406	.1626	.3163	.5063	.6685	.8632	.8674
31	-.0780	-.0905	-.1075	-.0906	-.0653	-.0190	.0490	.1626	.3163	.5232	.7321	.9608	.9945
32	-.0780	-.0905	-.1075	-.0948	-.0398	-.0063	.0406	.1499	.3078	.5232	.7448	1.0158	1.2106
33	-.0822	-.0821	-.0653	-.0399	-.0230	.0021	.0490	.1583	.3375	.5698	.8211	1.1091	1.3801
34	1.1257	.8107	.5450	.3178	.1489	.0389	-.0170	-.0477	-.0667	-.0856	-.1008	-.0856	-.0778
36	1.1484	.8747	.6281	.3894	.1830	.0276	-.0475	-.0819	-.0970	-.1008	-.1008	-.0856	-.0778
37	.1122	.1416	.1541	.1739	.1832	.1860	.1773	.1812	.1819	.1775	.1617	.1416	.0928
38	-.0865	-.0863	-.0990	-.0653	-.0736	.0021	.0490	.1626	.3120	.5063	.6981	.9142	1.0623
39	-.0822	-.0905	-.1075	-.0990	-.0568	.0021	.0532	.1583	.3163	.5274	.7490	1.0031	1.1683
40	-.0780	-.0863	-.0737	-.0442	-.0272	.0021	.0490	.1583	.3333	.5528	.8083	1.1049	1.4055
41	1.0993	.8446	.6054	.3820	.1791	.0200	-.0513	-.0895	-.1008	-.1008	-.1008	-.0856	-.0778
42	.8880	.7467	.5828	.4083	.2359	.0994	.0133	-.0516	-.0819	-.0932	-.1045	-.0856	-.0778
43	.5605	.5280	.4656	.3935	.2953	.2067	.1244	.0631	.0106	-.0181	-.0425	-.0547	-.0709
44	.1204	.1457	.1582	.1823	.1873	.1901	.1773	.1812	.1738	.1571	.1331	.1171	.0641
45	-.0549	-.0453	-.0288	-.0041	.0253	.0702	.1203	.2138	.2962	.3650	.4067	.4483	.4408
46	-.0738	-.0780	-.1033	-.0948	-.0653	-.0358	.0490	.1879	.3291	.4851	.6346	.7911	.9182
47	-.0738	-.0905	-.0990	-.0906	-.0779	-.0275	.0532	.1752	.3248	.4935	.6812	.8887	1.0919
60	1.1031	.8596	.5978	.3630	.1754	.0578	-.0095	-.0440	-.0667	-.0819	-.0856	-.0780	-.0702
61	1.1257	.8634	.6129	.3781	.1867	.0654	-.0056	-.0895	-.1008	-.1008	-.1008	-.0856	-.0740
62	1.1220	.9162	.6885	.4460	.2245	.0428	-.0475	-.0932	-.1046	-.0971	-.1008	-.0856	-.0740
65	.8351	.7428	.6129	.4536	.2813	.1448	.0399	-.0364	-.0743	-.0932	-.1045	-.0856	-.0740
64	.3967	.3577	.3535	.3231	.2705	.2150	.1447	.0875	.0310	-.0019	-.0262	-.0423	-.0546
65	.0592	.0793	.1125	.1408	.1624	.1819	.1733	.1812	.1697	.1531	.1290	.1047	.0683
66	-.0712	-.0661	-.0453	-.0207	.0129	.0619	.1121	.2138	.2921	.3568	.3944	.4278	.4204
67	-.0611	-.0780	-.0863	-.0865	-.0610	-.0232	.0617	.1962	.3248	.4639	.6006	.7191	.7952
68	-.0695	-.0863	-.0905	-.1033	-.0736	-.0358	.0702	.2005	.3545	.5190	.6981	.8675	.9988
69	-.0738	-.0863	-.0948	-.0948	-.0525	.0021	.0532	.1686	.3120	.4979	.7150	.9650	1.2276
70	-.0738	-.0780	-.0737	-.0569	-.0230	.0106	.0659	.1879	.3545	.5783	.8423	1.1218	1.3844
71	1.0804	.8408	.5828	.3630	.1791	.0616	-.0056	-.0477	-.0704	-.0895	-.0893	-.0780	-.0702
72	1.0956	.8408	.5865	.3706	.1905	.0692	-.0056	-.0780	-.1008	-.0971	-.0932	-.0780	-.0702
73	1.0125	.8446	.6394	.4384	.2322	.0428	-.0513	-.0932	-.1008	-.0971	-.0893	-.0780	-.0702
74	.7257	.6788	.5865	.4498	.2888	.1372	.0362	-.0326	-.0743	-.0932	-.0893	-.0780	-.0702
75	.2874	.3161	.3286	.3148	.2705	.2109	.1488	.0916	.0391	-.0060	-.0303	-.0465	-.0546
76	.0511	.0751	.1042	.1367	.1583	.1777	.1773	.1812	.1493	.1082	.0760	.0517	.0233
77	-.0588	-.0702	-.0453	-.0207	.0129	.0661	.1162	.2259	.2799	.3121	.3249	.3338	.3221
78	-.0738	-.0780	-.0737	-.0906	-.0315	-.0190	.0659	.2174	.3375	.4555	.5625	.6726	.7529
79	-.0611	-.0863	-.0863	-.1033	-.0736	-.0275	.0786	.2131	.3375	.4893	.6388	.7911	.9266
80	-.0611	-.0905	-.0905	-.0780	-.0694	-.0106	.0744	.1920	.3502	.5695	.8126	1.0922	1.3589
81	-.0653	-.0780	-.0780	-.0569	-.0272	.0063	.0659	.1879	.3545	.5741	.8168	1.1049	1.3632
82	1.0730	.8182	.5752	.3593	.1754	.0616	-.0056	-.0477	-.0704	-.0819	-.0817	-.0704	-.0664
83	1.0427	.7843	.5562	.3480	.1754	.0616	-.0095	-.0705	-.1008	-.1008	-.0893	-.0741	-.0664
84	.9635	.7994	.6281	.4347	.2359	.0469	-.0513	-.0932	-.0970	-.0971	-.0817	-.0704	-.0664
85	.7144	.6525	.5714	.4498	.2813	.1259	.0286	-.0477	-.0856	-.1008	-.0817	-.0704	-.0664
86	.3078	.3244	.3368	.3272	.2746	.1985	.1244	.0590	-.0017	-.0385	-.0547	-.0587	-.0504
87	.0307	.0585	.0959	.1408	.1666	.1777	.1773	.1689	.1289	.0797	.0392	.0189	-.0014
88	-.0588	-.0619	-.0370	-.0041	.0336	.0826	.1407	.2177	.2391	.2386	.2310	.2274	.2197
89	-.0653	-.0695	-.0780	-.0906	-.0653	-.0232	.0744	.2131	.3120	.3962	.4819	.5623	.6384
90	-.0653	-.0737	-.0780	-.0865	-.0694	-.0317	.0829	.1962	.3120	.4386	.5836	.7234	.8716
91	-.0570	-.0780	-.0780	-.0865	-.0441	.0063	.0702	.1752	.3163	.5105	.7279	.9692	1.1810
92	-.0528	-.0568	-.0610	-.0569	-.0272	.0063	.0659	.1795	.3502	.5613	.7999	1.0668	1.3081
93	.9483	.7880	.6092	.4347	.2359	.0352	-.0551	-.0743	-.0856	-.0895	-.0856	-.0665	-.0664
94	.6691	.6185	.5337	.4234	.2737	.1145	.0210	-.0516	-.0895	-.0856	-.0817	-.0665	-.0664
95	.2997	.3244	.3368	.3272	.2705	.1944	.1244	.0510	-.0139	-.0466	-.0629	-.0547	-.0546
96	.0103	.0377	.0792	.1202	.1541	.1736	.1733	.1649	.1207	.0716	.0392	.0148	-.0055
97	-.0588	-.0578	-.0453	-.0124	.0295	.0785	.1325	.2097	.2350	.2305	.2188	.2152	.2075
98	-.0570	-.0568	-.0610	-.0569	-.0694	-.0275	.0829	.2131	.3078	.3920	.4776	.5666	.6698
99	-.0611	-.0568	-.0737	-.0653	-.0653	-.0317	.0998	.2131	.3248	.4513	.5794	.7234	.8801

[a] p_t is in lb/sq ft.

TABLE V.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 4 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Orifice	C_p at α of -45.0°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	37.5°	45.0°
	T_t = 600° R; p_t = 8,655.0[a]	T_t = 600° R; p_t = 8,653.0[a]	T_t = 602° R; p_t = 8,654.0[a]	T_t = 602° R; p_t = 8,656.0[a]	T_t = 604° R; p_t = 8,640.0[a]	T_t = 603° R; p_t = 8,655.0[a]	T_t = 608° R; p_t = 8,645.0[a]	T_t = 605° R; p_t = 8,658.0[a]	T_t = 604° R; p_t = 8,662.0[a]	T_t = 602° R; p_t = 8,615.0[a]	T_t = 602° R; p_t = 8,641.0[a]
4	0.7913	0.6955	0.5110	0.3569	0.2261	0.1353	0.0799	0.0385	-0.0019	-0.0337	-0.0258
5	.4178	.4806	.4100	.3560	.3013	.2323	.1883	.1433	.1173	.0572	.0216
6	.1402	.2210	.2304	.2575	.2564	.2499	.2584	.2568	.2481	.2335	.1183
7	.0148	.0596	.0687	.1138	.1579	.1971	.2584	.3179	.3964	.5684	.3463
8	-.0201	-.0293	-.0201	.0164	.0438	.1066	.2065	.3232	.4771	.9012	.6245
9	1.0362	.6469	.3891	.2025	.0881	.0306	.0152	-.0016	-.0178	-.0337	-.0258
10	.9793	.6549	.3974	.2186	.0964	.0386	.0069	-.0178	-.0340	-.0337	-.0258
11	.8241	.6630	.4460	.2919	.1611	.0871	.0394	.0064	-.0260	-.0337	-.0258
12	.4447	.4718	.3652	.2932	.2207	.1620	.1268	.0823	.0647	.0396	.0043
13	.1490	.2030	.1944	.1947	.2027	.1883	.1971	.1958	.1958	.1894	.0919
14	.0059	.0328	.0419	.0779	.1133	.1447	.2147	.2831	.3792	.5596	.3551
15	-.0201	-.0475	-.0384	-.0110	.0164	.0703	.1793	.2868	.4771	.9012	.6609
16	-.0201	-.0384	-.0384	-.0019	.0255	.0703	.1702	.2959	.4951	1.0015	.7427
17	-.0201	-.0110	-.0110	.0072	.0164	.0613	.1612	.3051	.5585	1.0836	.8972
19	1.0609	.7035	.4379	.2186	.0800	.0144	-.0093	-.0257	-.0419	-.0337	-.0258
20	.1402	.1850	.1767	.1855	.1939	.1796	.1883	.1958	.2133	.1982	.1183
21	-.0201	-.0384	-.0384	-.0110	.0164	.0613	.1702	.3232	.5495	.9924	.8426
23	1.0934	.6063	.3891	.1941	.0639	.0144	-.0011	-.0178	-.0419	-.0337	-.0258
24	1.0934	.6388	.4135	.1941	.0720	.0144	-.0173	-.0340	-.0499	-.0337	-.0258
25	1.1098	.6955	.4624	.2266	.0639	-.0016	-.0256	-.0340	-.0499	-.0337	-.0258
26	.9301	.7035	.5193	.3160	.1531	.0629	.0152	-.0178	-.0340	-.0337	-.0258
27	.5341	.4986	.4280	.3292	.2296	.1532	.1095	.0647	.0387	.0045	-.0133
28	.1670	.2119	.2124	.2035	.2027	.1883	.1971	.1958	.2046	.1717	.1007
29	.0059	.0239	.0330	.0599	.1042	.1359	.2323	.3354	.4227	.5154	.3815
30	-.0293	-.0384	-.0384	-.0201	-.0019	.0613	.1974	.3502	.5405	.8463	.7246
31	-.0201	-.0384	-.0475	-.0293	-.0019	.0613	.1793	.3502	.5495	.9560	.8882
32	-.0201	-.0384	-.0475	-.0293	-.0019	.0613	.1702	.3412	.5495	.9924	1.0153
33	-.0201	-.0293	-.0201	-.0019	.0072	.0519	.1793	.3683	.5946	1.0927	1.1879
34	1.0690	.5902	.3649	.1780	.0559	.0144	-.0093	-.0257	-.0419	-.0337	-.0258
36	1.1261	.6630	.4299	.2105	.0559	-.0096	-.0256	-.0419	-.0499	-.0337	-.0258
37	.1582	.1941	.2035	.2124	.2207	.1971	.2147	.2218	.2133	.1717	.1183
38	-.0201	-.0293	-.0475	-.0019	.0072	.0613	.1883	.3412	.5224	.9012	.9335
39	-.0201	-.0567	-.0475	-.0293	.0072	.0613	.1793	.3412	.5495	.9833	1.0789
40	-.0201	-.0384	-.0201	-.0110	.0072	.0519	.1883	.3593	.5856	1.0836	1.2787
41	1.0770	.6388	.4216	.2025	.0395	-.0178	-.0336	-.0419	-.0499	-.0257	-.0258
42	.9057	.6307	.4543	.2755	.1369	.0466	-.0011	-.0257	-.0419	-.0257	-.0258
43	.5969	.5075	.4369	.3383	.2476	.1532	.1007	.0560	.0300	-.0131	-.0221
44	.1759	.2119	.2215	.2215	.2296	.2059	.2147	.2046	.1871	.1279	.0919
45	.0148	.0328	.0510	.0690	.1133	.1532	.2411	.3354	.3964	.4539	.3991
46	-.0293	-.0475	-.0475	-.0201	-.0019	.0613	.2155	.3593	.5132	.7733	.8245
47	-.0293	-.0475	-.0475	-.0293	-.0110	.0613	.2065	.3502	.5224	.8921	.9971
60	1.1017	.6307	.3810	.2025	.0720	.0064	-.0093	-.0178	-.0260	-.0177	-.0178
61	1.1261	.6549	.3974	.2105	.0720	-.0096	-.0336	-.0419	-.0499	-.0257	-.0258
62	1.1261	.7116	.4704	.2591	.0800	-.0016	-.0336	-.0499	-.0499	-.0257	-.0258
63	.8568	.6549	.4868	.3324	.1855	.0789	.0152	-.0178	-.0419	-.0257	-.0258
64	.4178	.4001	.3560	.3203	.2564	.1796	.1183	.0735	.0475	.0131	.0043
65	.1222	.1582	.1767	.2035	.2207	.2059	.2059	.1958	.1871	.1367	.1095
66	-.0121	.0148	.0239	.0599	.1042	.1447	.2235	.3179	.3877	.4451	.4516
67	-.0201	-.0201	-.0293	-.0201	.0072	.0884	.2246	.3412	.5041	.7278	.8155
68	-.0201	-.0293	-.0475	-.0293	.0072	.0884	.2246	.3502	.5585	.8830	1.0153
69	-.0201	-.0293	-.0475	-.0293	.0072	.0613	.1793	.3322	.5315	.9651	1.2153
70	-.0201	-.0293	-.0384	-.0201	.0164	.0613	.1883	.3683	.6039	1.1566	1.3786
71	1.1425	.6388	.3891	.2025	.0720	.0064	-.0173	-.0419	-.0419	-.0257	-.0258
72	1.0934	.6307	.4055	.2186	.0800	-.0016	-.0336	-.0499	-.0499	-.0257	-.0258
73	1.0281	.6874	.4704	.2591	.0800	-.0096	-.0336	-.0499	-.0499	-.0257	-.0258
74	.7588	.6307	.4949	.3244	.1772	.0709	.0152	-.0257	-.0419	-.0257	-.0258
75	.3461	.3732	.3472	.3112	.2476	.1796	.1183	.0735	.0475	.0045	.0043
76	.1133	.1670	.1767	.2035	.2207	.2059	.1971	.1783	.1520	.0926	.0743
77	-.0032	.0148	.0239	.0599	.1133	.1532	.2411	.3091	.3441	.3745	.3727
78	-.0201	-.0384	-.0384	-.0110	.0164	.0794	.2246	.3593	.4861	.7187	.7880
79	-.0201	-.0384	-.0475	-.0201	-.0019	.0794	.2155	.3502	.5224	.8372	.9335
80	-.0293	-.0475	-.0475	-.0201	-.0019	.0703	.1974	.3683	.5766	1.1111	1.3424
81	-.0293	-.0384	-.0384	-.0110	.0072	.0703	.1883	.3773	.6039	1.1202	1.4061
82	1.1098	.6144	.3891	.1941	.0720	.0064	-.0173	-.0419	-.0419	-.0337	-.0258
83	1.0853	.5982	.3810	.2025	.0800	-.0016	-.0336	-.0499	-.0499	-.0417	-.0178
84	1.0118	.6793	.4785	.2591	.0720	-.0096	-.0336	-.0499	-.0419	-.0337	-.0178
85	.7669	.6307	.4868	.3244	.1692	.0629	.0069	-.0340	-.0419	-.0337	-.0178
86	.3730	.4001	.3740	.3112	.2384	.1532	.0919	.0475	.0212	-.0131	-.0045
87	.1045	.1670	.1855	.2124	.2116	.2059	.1971	.1608	.1260	.0661	.0480
88	-.0032	.0328	.0510	.0779	.1222	.1620	.2411	.2744	.2831	.2688	.2675
89	-.0293	-.0384	-.0567	-.0110	.0072	.0794	.2336	.3412	.4407	.6182	.6881
90	-.0293	-.0384	-.0384	-.0201	-.0019	.0794	.2246	.3502	.4771	.7642	.9154
91	-.0293	-.0384	-.0475	-.0201	.0072	.0703	.1883	.3412	.5315	1.0015	1.2244
92	-.0201	-.0293	-.0293	-.0110	.0072	.0703	.1974	.3683	.5856	1.1111	1.3515
93	1.0037	.6710	.4704	.2674	.0720	-.0096	-.0256	-.0340	-.0419	-.0337	-.0258
94	.7261	.5982	.4785	.3160	.1611	.0549	.0069	-.0257	-.0419	-.0337	-.0258
95	.3730	.3912	.3652	.3203	.2296	.1532	.0919	.0387	.0125	-.0219	-.0045
96	.0865	.1493	.1676	.2035	.2116	.1971	.1971	.1608	.1173	.0572	.0480
97	-.0121	.0148	.0330	.0867	.1042	.1532	.2411	.2656	.2744	.2600	.2499
98	-.0293	-.0293	-.0293	-.0110	-.0019	.0884	.2427	.3412	.4317	.6275	.7062
99	-.0293	-.0293	-.0293	-.0201	-.0019	.0884	.2336	.3593	.4861	.7733	.9154

[a] p_t is in lb/sq ft.

TABLE V.- TABULATION OF PRESSURE MEASUREMENTS FOR CONFIGURATION 4 - Concluded

(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Orifice	C_p at α of -												
	-45.0°	-37.5°	-30.0°	-22.5°	-15.0°	-7.5°	0°	7.5°	15.0°	22.5°	30.0°	37.5°	45.0°
	T_t = 604° R; p_t = 12,252.0[a]	T_t = 606° R; p_t = 12,233.0[a]	T_t = 603° R; p_t = 12,236.0[a]	T_t = 604° R; p_t = 12,221.0[a]	T_t = 604° R; p_t = 12,233.0[a]	T_t = 603° R; p_t = 12,221.0[a]	T_t = 607° R; p_t = 12,235.0[a]	T_t = 603° R; p_t = 12,249.0[a]	T_t = 601° R; p_t = 12,273.0[a]	T_t = 603° R; p_t = 12,257.0[a]	T_t = 600° R; p_t = 12,247.0[a]	T_t = 601° R; p_t = 12,256.0[a]	T_t = 600° R; p_t = 12,231.0[a]
4	0.7991	0.8626	0.6704	0.5028	0.3420	0.2161	0.1291	0.0649	0.0308	0.0024	-0.0319	-0.0375	-0.0262
5	.4167	.5160	.4594	.4086	.3466	.2904	.2313	.1871	.1503	.1006	.0698	.0574	.0145
6	.1411	.2032	.2190	.2315	.2341	.2529	.2498	.2551	.2555	.2425	.2245	.2363	.1259
7	.0032	.0218	.0417	.0671	.0967	.1467	.1879	.2551	.3234	.3908	.4593	.5695	.3612
8	-.0142	-.0271	-.0400	-.0207	.0116	.0501	.1071	.2021	.3302	.4846	.6455	.9053	.6509
9	1.0471	.8973	.6590	.3822	.1869	.0838	.0258	.0023	-.0034	-.0148	-.0377	-.0319	-.0262
10	1.0067	.9089	.6531	.3936	.2042	.0954	.0258	-.0090	-.0205	-.0375	-.0546	-.0319	-.0262
11	.8338	.8454	.6647	.4453	.2730	.1585	.0774	.0308	.0024	-.0205	-.0490	-.0319	-.0262
12	.4480	.5223	.4529	.3706	.2779	.3154	.1570	.1192	.0884	.0574	.0328	.0327	.0021
13	.1411	.1845	.1873	.1936	.1903	.1966	.1879	.1995	.1997	.1931	.1873	.1931	.0949
14	-.0032	.0093	.0228	.0417	.0592	.1092	.1384	.2057	.2864	.3784	.4655	.5633	.3612
15	-.0142	-.0271	-.0529	-.0400	-.0207	.0243	.0751	.1702	.2982	.4846	.6712	.9116	.6893
16	-.0142	-.0336	-.0464	-.0271	-.0078	.0307	.0751	.1639	.2982	.5038	.7224	1.0074	.7789
17	-.0207	-.0142	-.0142	-.0078	-.0013	.0243	.0623	.1511	.3174	.5614	.7802	1.0905	.9453
18	1.0875	.9377	.7049	.4881	.1985	.0722	.0028	-.0261	-.0319	-.0432	-.0604	-.0319	-.0262
19	.1346	.1720	.1746	.1809	.1778	.1841	.1754	.1871	.1997	.2055	.1935	.1993	.1135
20	-.0207	-.0271	-.0529	-.0400	-.0271	.0178	.0687	.1639	.3365	.5550	.7418	.9946	.8429
21	-.0207	-.0271	-.0529	-.0400	-.0207	.0114	.0687	.1639	.3365	.5550	.7418	.9946	.8429
23	1.1163	.8397	.6186	.3765	.1754	.0665	.0085	-.0148	-.0205	-.0375	-.0490	-.0319	-.0205
24	1.1220	.8685	.6359	.3995	.1869	.0722	.0028	-.0319	-.0375	-.0432	-.0546	-.0319	-.0205
25	1.1163	.9202	.6935	.4510	.2099	.0665	-.0087	-.0375	-.0375	-.0432	-.0546	-.0319	-.0262
26	.9375	.8454	.6992	.5143	.3075	.1528	.0514	.0023	-.0205	-.0375	-.0604	-.0319	-.0262
27	.5293	.5348	.4973	.4275	.3215	.2279	.1446	.1008	.0638	.0327	.0081	.0081	-.0166
28	.1598	.1845	.1936	.1998	.1966	.2029	.1879	.1933	.2059	.1993	.1749	.1746	.1011
29	.0032	.0093	.0165	.0290	.0466	.0967	.1321	.2243	.3358	.4216	.4593	.5139	.3797
30	-.0207	-.0271	-.0529	-.0464	-.0336	-.0013	.0557	.1894	.3686	.5423	.6712	.8540	.7213
31	-.0142	-.0271	-.0529	-.0464	-.0336	.0049	.0623	.1766	.3559	.5614	.7224	.9563	.8941
32	-.0207	-.0271	-.0593	-.0464	-.0336	.0049	.0557	.1639	.3495	.5614	.7545	1.0074	1.0413
33	-.0142	-.0271	-.0400	-.0142	-.0078	.0114	.0557	.1766	.3814	.6126	.8572	1.1033	1.2013
34	1.0990	.8050	.5612	.3420	.1640	.0609	.0028	-.0205	-.0261	-.0375	-.0490	-.0375	-.0205
35	1.1394	.8801	.6590	.4224	.1985	.0493	-.0201	-.0434	-.0432	-.0432	-.0546	-.0319	-.0205
37	.1536	.1720	.1873	.1998	.2029	.2154	.2003	.2119	.2183	.1993	.1811	.1684	.1135
38	-.0142	-.0207	-.0400	-.0142	-.0271	.0114	.0623	.1830	.3559	.5357	.7224	.9053	.9453
39	-.0142	-.0271	-.0593	-.0464	-.0336	.0114	.0623	.1766	.3559	.5614	.7866	1.0010	1.0861
40	-.0142	-.0207	-.0400	-.0207	-.0078	.0114	.0557	.1766	.3750	.5999	.8443	1.0969	1.3165
41	1.0931	.8510	.6417	.4108	.1985	.0493	-.0201	-.0490	-.0432	-.0432	-.0546	-.0319	-.0205
42	.9087	.7646	.6245	.4453	.2673	.1356	.0373	-.0148	-.0261	-.0432	-.0546	-.0319	-.0205
43	.5921	.5536	.5098	.4275	.3340	.2466	.1508	.0884	.0514	.0203	-.0043	-.0105	-.0166
44	.1723	.1845	.1998	.2125	.2154	.2279	.2003	.2119	.2059	.1809	.1625	.1438	.0949
45	.0032	.0093	.0228	.0355	.0529	.1029	.1446	.2429	.3296	.3908	.4345	.4585	.4107
46	-.0207	-.0207	-.0529	-.0271	-.0336	.0049	.0623	.2085	.3686	.5229	.6712	.7902	.8429
47	-.0207	-.0207	-.0529	-.0464	-.0400	-.0078	.0687	.1958	.3623	.5293	.7288	.8989	1.0093
60	1.1104	.9146	.6417	.3936	.1869	.0665	.0028	-.0205	-.0261	-.0261	-.0434	-.0263	-.0205
61	1.1394	.9089	.6647	.4108	.2099	.0722	-.0087	-.0434	-.0490	-.0432	-.0546	-.0319	-.0262
62	1.1394	.9261	.7164	.4742	.2501	.0722	-.0087	-.0490	-.0490	-.0432	-.0490	-.0319	-.0262
63	.8626	.7705	.6531	.4912	.3191	.1757	.0659	.0081	-.0205	-.0375	-.0546	-.0375	-.0262
64	.3977	.4034	.3896	.3517	.3028	.2466	.1694	.1130	.0762	.0450	.0143	.0081	-.0041
65	.1096	.1282	.1494	.1684	.1903	.2029	.2003	.2119	.1997	.1869	.1503	.1376	.1073
66	-.0157	-.0095	-.0025	.0165	.0404	.0904	.1384	.2429	.3234	.3970	.4161	.4462	.4340
67	-.0142	-.0207	-.0400	-.0336	-.0207	.0114	.0751	.2213	.3559	.5165	.6200	.7391	.8301
68	-.0271	-.0271	-.0464	-.0464	-.0336	-.0013	.0815	.2277	.3686	.5742	.7224	.8861	1.0221
69	-.0271	-.0271	-.0464	-.0464	-.0271	.0114	.0623	.1830	.3365	.5486	.7354	.9627	1.2269
70	-.0207	-.0271	-.0400	-.0336	-.0207	.0114	.0687	.1958	.3750	.6254	.8700	1.1800	1.3869
71	1.1508	.8742	.6359	.3936	.1906	.0665	-.0030	-.0319	-.0375	-.0375	-.0490	-.0319	-.0262
72	1.0990	.8801	.6359	.3936	.2099	.0722	-.0030	-.0434	-.0432	-.0432	-.0490	-.0319	-.0262
73	1.0355	.8857	.6876	.4626	.2844	.0665	-.0145	-.0490	-.0432	-.0432	-.0490	-.0319	-.0262
74	.7703	.7301	.6474	.4855	.3134	.1644	.0659	.0023	-.0205	-.0375	-.0490	-.0319	-.0262
75	.3414	.3659	.3706	.3517	.2904	.2404	.1754	.1254	.0762	.0450	.0143	.0081	.0021
76	.1096	.1344	.1494	.1684	.1841	.2029	.2065	.2119	.1813	.1500	.1070	.0944	.0702
77	-.0157	-.0095	-.0025	.0228	.0404	.0967	.1446	.2489	.3110	.3476	.3542	.3782	.3674
78	-.0271	-.0271	-.0464	-.0464	-.0207	.0114	.0815	.2341	.3686	.4974	.5942	.7328	.7853
79	-.0207	-.0207	-.0464	-.0529	-.0336	.0049	.0879	.2277	.3686	.5293	.6648	.8476	.9453
80	-.0207	-.0207	-.0464	-.0529	-.0336	.0049	.0815	.2021	.3686	.5933	.8315	1.1352	1.3485
81	-.0207	-.0271	-.0400	-.0336	-.0207	.0114	.0687	.2021	.3750	.6126	.8636	1.1816	1.4317
82	1.1278	.8685	.6129	.3765	.1869	.0665	-.0030	-.0319	-.0319	-.0319	-.0490	-.0319	-.0262
83	1.1047	.8338	.5900	.3706	.1869	.0665	-.0030	-.0434	-.0432	-.0432	-.0490	-.0319	-.0205
84	1.0298	.8569	.6647	.4626	.2501	.0665	-.0087	-.0434	-.0432	-.0432	-.0434	-.0319	-.0205
85	.7760	.7126	.6245	.4855	.3134	.1585	.0602	-.0034	-.0261	-.0432	-.0434	-.0319	-.0147
86	.3727	.3847	.3896	.3706	.3028	.2279	.1508	.0946	.0452	.0143	-.0105	-.0105	-.0041
87	.0971	.1219	.1494	.1809	.1966	.2091	.2003	.2057	.1627	.1254	.0822	.0634	.0516
88	-.0095	-.0032	.0165	.0355	.0717	.1155	.1632	.2489	.2740	.2859	.2677	.2733	.2682
89	-.0207	-.0207	-.0400	-.0400	-.0271	.0114	.0879	.2404	.3431	.4398	.5237	.6241	.6893
90	-.0207	-.0207	-.0400	-.0400	-.0336	.0049	.0879	.2213	.3431	.4846	.6200	.7774	.9197
91	-.0207	-.0207	-.0400	-.0464	-.0336	.0049	.0751	.1894	.3431	.5357	.7609	1.0137	1.2397
92	-.0142	-.0142	-.0207	-.0271	-.0207	.0049	.0687	.1958	.3686	.5933	.8315	1.1288	1.3677
93	1.0124	.8510	.6590	.4626	.2501	.0609	-.0145	-.0375	-.0319	-.0319	-.0490	-.0319	-.0205
94	.7358	.6781	.5957	.4626	.3018	.1528	.0514	-.0034	-.0319	-.0319	-.0490	-.0319	-.0205
95	.3665	.3847	.3833	.3644	.3090	.2279	.1508	.0884	.0390	.0081	-.0167	-.0167	-.0104
96	.0783	.1031	.1302	.1619	.1903	.2029	.1941	.1995	.1627	.1192	.0760	.0634	.0454
97	-.0157	-.0095	.0100	.0355	.0654	.1155	.1508	.2489	.2740	.2673	.2615	.2609	.2558
98	-.0142	-.0142	-.0336	-.0336	-.0271	.0049	.0879	.2404	.3495	.4398	.5302	.6241	.7085
99	-.0207	-.0207	-.0336	-.0271	-.0336	.0049	.1007	.2404	.3623	.4910	.6327	.7774	.9261

[a] p_t is in lb/sq ft.

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 0°; T_t = 690° R; p_t = 5,041.0 lb/sq ft				α' = 7.5°; T_t = 699° R; p_t = 5,050.0 lb/sq ft				α' = 15.0°; T_t = 696° R; p_t = 5,037.0 lb/sq ft			
1	.91903	571.1	.00924	.002530	.91822	572.8	.00782	.002154	.91168	573.5	.00847	.002334
2	.92544	579.1	.01001	.002741	.92737	586.1	.00954	.002628	.92430	595.1	.01155	.003182
3	.91845	570.1	.00907	.002484	.92394	586.1	.01013	.002791	.92544	604.5	.01391	.003833
4	.91320	551.1	.00516	.001413	.91022	550.8	.00401	.001105	.90365	547.5	.00410	.001130
5	.91437	560.5	.00666	.001824	.91193	561.8	.00563	.001551	.90422	560.1	.00590	.001626
6	.91670	565.8	.00743	.002035	.92280	576.1	.00708	.001950	.91799	582.1	.00835	.002301
7	.91437	560.5	.00665	.001821	.92051	576.1	.00734	.002022	.92086	590.5	.00980	.002700
8	.90913	548.5	.00511	.001399	.91708	567.8	.00624	.001719	.91971	586.8	.00952	.002623
9	.90913	534.1	.00233	.000638	.91536	550.8	.00259	.000713	.90652	548.5	.00249	.000686
10	.90621	533.8	.00291	.000797	.90850	541.1	.00236	.000650	.89964	539.5	.00228	.000628
11	.90796	545.8	.00449	.001229	.90679	551.1	.00343	.000945	.89677	543.5	.00319	.000879
12	.91728	559.8	.00625	.001711	.91536	561.5	.00504	.001388	.90594	557.5	.00502	.001383
13	.91495	561.5	.00699	.001914	.91765	570.8	.00647	.001782	.91225	575.5	.00738	.002033
14	.91262	556.5	.00581	.001591	.91822	571.8	.00652	.001796	.91799	584.1	.00839	.002312
15	.90854	544.1	.00417	.001142	.91536	563.8	.00532	.001466	.91856	580.5	.00755	.002080
16	.91087	535.8	.00270	.000739	.91536	553.5	.00381	.001050	.91856	569.5	.00601	.001656
17	.91379	538.1	.00246	.000674	.91479	561.5	.00283	.000780	.91627	556.8	.00443	.001221
18	.91612	540.5	.00228	.000624	.92394	557.8	.00298	.000821	.90881	548.8	.00258	.000711
19	.91379	536.5	.00242	.000663	.91651	543.1	.00173	.000477	.90652	539.5	.00219	.000603
20	.91553	560.8	.00626	.001714	.91708	569.5	.00620	.001708	.91168	574.1	.00712	.001962
21	.91029	533.8	.00256	.000701	.91422	552.5	.00371	.001022	.91684	568.5	.00591	.001628
22	.91845	544.1	.00264	.000723	.91879	549.8	.00223	.000614	.91741	552.1	.00299	.000824
23	.92835	557.8	.00414	.001134	.92852	558.8	.00300	.000826	.91283	549.1	.00240	.000661
24	.92311	546.1	.00233	.000638	.92566	550.1	.00201	.000554	.91111	538.8	.00156	.000430
25	.91262	535.5	.00246	.000674	.91479	541.8	.00161	.000444	.90136	532.1	.00161	.000444
26	.90738	543.8	.00400	.001095	.90736	545.5	.00305	.000840	.89390	535.5	.00280	.000771
27	.91087	554.5	.00587	.001607	.91136	558.1	.00475	.001309	.89849	552.1	.00471	.001298
28	.91437	560.1	.00605	.001657	.91651	568.5	.00607	.001672	.90881	571.5	.00677	.001865
29	.90913	553.1	.00587	.001607	.91593	568.8	.00615	.001694	.91340	579.8	.00782	.002155
30	.90621	541.8	.00388	.001062	.91536	561.5	.00490	.001350	.91569	576.5	.00716	.001973
31	.91029	539.5	.00234	.000641	.91651	552.5	.00345	.000950	.91684	566.5	.00552	.001521
32	.91845	543.1	.00259	.000709	.92566	557.5	.00269	.000741	.92143	558.5	.00332	.000915
33	.92544	554.5	.00377	.001032	.93309	571.8	.00441	.001215	.93290	565.8	.00298	.000821
34	.92718	560.5	.00492	.001347	.92737	557.1	.00271	.000747	.91340	548.1	.00225	.000620
35	.93126	555.5	.00343	.000939	.93195	555.1	.00208	.000573	.92086	544.8	.00140	.000386
36	.90854	533.1	.00240	.000657	.91079	538.8	.00167	.000460	.89734	529.8	.00163	.000449
37	.91903	560.8	.00624	.001709	.92223	570.1	.00608	.001675	.91283	572.1	.00674	.001857
38	.91087	533.1	.00216	.000591	.91994	553.8	.00337	.000928	.91741	567.1	.00566	.001560
39	.91845	548.1	.00347	.000950	.93481	571.8	.00426	.001174	.93003	565.1	.00346	.000953
40	.92718	560.5	.00492	.001347	.93366	579.5	.00615	.001694	.93175	589.8	.00762	.002100
41	.91320	536.1	.00240	.000657	.91708	542.8	.00160	.000441	.91053	538.5	.00160	.000441
42	.91087	545.1	.00388	.001062	.91536	549.5	.00294	.000810	.90594	543.1	.00281	.000774
43	.91262	555.1	.00569	.001558	.91365	558.8	.00449	.001237	.90250	554.5	.00462	.001273
44	.91670	560.5	.00620	.001698	.92108	570.1	.00560	.001543	.91168	572.8	.00661	.001821
45	.92194	559.5	.00517	.001416	.92909	575.1	.00563	.001551	.92430	584.8	.00784	.002160
46	.91553	546.1	.00371	.001016	.92737	567.5	.00445	.001226	.92487	581.5	.00682	.001879
47	.91670	535.8	.00205	.000561	.92508	556.1	.00308	.000848	.92143	569.1	.00535	.001474
60	.92893	555.8	.00394	.001079	.93481	562.8	.00301	.000829	.92774	551.1	.00157	.000433
61	.92194	556.5	.00472	.001292	.92508	550.1	.00187	.000515	.91627	538.8	.00083	.000229
62	.90738	534.8	.00273	.000748	.90736	536.1	.00144	.000397	.90193	529.8	.00112	.000309
63	.90913	545.1	.00400	.001095	.91193	547.5	.00280	.000771	.90308	540.5	.00246	.000678
64	.91495	555.1	.00531	.001454	.91708	558.8	.00420	.001157	.90767	555.1	.00408	.001124
65	.91495	558.1	.00535	.001465	.91879	566.1	.00520	.001432	.91111	568.5	.00616	.001697
66	.91379	553.8	.00489	.001339	.92280	569.5	.00541	.001490	.91856	579.5	.00707	.001948
67	.90913	542.5	.00355	.000972	.92280	564.5	.00448	.001234	.92143	578.5	.00683	.001882
68	.91087	534.8	.00242	.000663	.92737	558.8	.00338	.000931	.92487	574.1	.00611	.001684
69	.92369	555.8	.00439	.001202	.93538	577.8	.00580	.001598	.93462	599.8	.01005	.002769
70	.93068	556.1	.00372	.001019	.93595	575.1	.00501	.001380	.93347	593.5	.00832	.002292
71	.93068	555.5	.00360	.000986	.93824	563.5	.00274	.000755	.93405	554.8	.00150	.000413
72	.92369	553.5	.00403	.001104	.92566	554.8	.00237	.000653	.90652	536.5	.00103	.000284
73	.90971	535.1	.00253	.000693	.91022	537.5	.00143	.000394	.90709	532.5	.00111	.000306
74	.90971	543.8	.00379	.001038	.90793	543.8	.00262	.000722	.89964	536.8	.00229	.000631
75	.91262	553.1	.00499	.001366	.90164	555.1	.00447	.001231	.90193	554.8	.00403	.001110
76	.91903	559.5	.00543	.001487	.92280	566.8	.00507	.001397	.91340	568.1	.00569	.001568
77	.91728	555.8	.00497	.001361	.92852	571.5	.00531	.001463	.92430	580.5	.00691	.001904
78	.90854	542.5	.00368	.001008	.92108	561.8	.00436	.001201	.91971	574.8	.00630	.001736
79	.90971	534.8	.00244	.000668	.92566	556.8	.00330	.000909	.92487	571.1	.00538	.001482
80	.92252	552.8	.00396	.001084	.93137	573.1	.00534	.001471	.93175	593.1	.00897	.002472
81	.93301	553.8	.00321	.000879	.94110	573.1	.00420	.001157	.93749	589.5	.00719	.001981
83	.92660	552.8	.00361	.000989	.93309	556.5	.00207	.000570	.94093	553.5	.00088	.000242
84	.90738	533.8	.00261	.000715	.90964	537.5	.00143	.000394	.91512	538.8	.00103	.000284
85	.90971	543.8	.00393	.001076	.90736	543.5	.00273	.000752	.90537	543.1	.00228	.000628
86	.91204	552.5	.00511	.001399	.91193	554.1	.00410	.001129	.90594	551.8	.00384	.001058
87	.91495	557.5	.00580	.001588	.91937	564.5	.00522	.001438	.91455	566.8	.00543	.001496
88	.91146	552.5	.00522	.001429	.91937	566.1	.00547	.001507	.91741	575.1	.00683	.001882
89	.90854	543.5	.00391	.001071	.92051	562.8	.00467	.001286	.92200	576.5	.00628	.001730
90	.90738	533.1	.00247	.000676	.92451	555.8	.00339	.000934	.92430	570.5	.00535	.001474
91	.92660	554.1	.00374	.001024	.93595	573.5	.00486	.001339	.93347	591.1	.00805	.002218
93	.90680	533.5	.00265	.000726	.91479	540.1	.00125	.000344	.91397	538.1	.00123	.000339
94	.90971	543.5	.00394	.001079	.91136	545.8	.00271	.000747	.90709	540.8	.00227	.000625
95	.91029	551.5	.00530	.001451	.91022	553.5	.00421	.001160	.90308	549.8	.00391	.001077
96	.91320	555.5	.00571	.001564	.91536	561.8	.00516	.001421	.90939	562.8	.00529	.001458
97	.91146	551.8	.00525	.001438	.91879	565.8	.00547	.001507	.91799	574.8	.00676	.001863
98	.90738	542.1	.00398	.001090	.91937	561.5	.00466	.001284	.92143	575.5	.00622	.001714
99	.90854	533.8	.00255	.000698	.92394	561.1	.00340	.000937	.92544	571.1	.00546	.001504

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 22.5^\circ$; $T_t = 698^\circ$ R; $p_t = 5{,}052.0$ lb/sq ft				$\alpha' = 30.0^\circ$; $T_t = 700^\circ$ R; $p_t = 5{,}044.0$ lb/sq ft				$\alpha' = 37.5^\circ$; $T_t = 705^\circ$ R; $p_t = 5{,}055.0$ lb/sq ft			
1	.91116	571.5	.00812	.002233	.90876	572.1	.00805	.002221	.91675	564.5	.00658	.001820
2	.92549	598.5	.01179	.003242	.92483	603.5	.01202	.003317	.93282	596.8	.01147	.003173
3	.93122	616.5	.01674	.004604	.93515	634.1	.01735	.004788	.94660	628.5	.01902	.005262
4	.90543	546.1	.00367	.001009	.90417	550.5	.00338	.000933	.91904	546.1	.00227	.000628
5	.90428	563.8	.00552	.001518	.90245	563.1	.00547	.001509	.91273	559.5	.00450	.001245
6	.91918	584.8	.00859	.002362	.91909	588.8	.00875	.002414	.92823	584.5	.00822	.002274
7	.92663	601.1	.01130	.003108	.92999	612.5	.01252	.003455	.94316	612.5	.01343	.003715
8	.92892	604.1	.01204	.003311	.93745	621.8	.01412	.003896	.95349	626.8	.01616	.004470
9	.91001	540.5	.00148	.000407	.91048	544.5	.00194	.000535	.93397	550.8	.00120	.000332
10	.90371	536.5	.00175	.000481	.90532	542.1	.00216	.000596	.92995	546.8	.00117	.000324
11	.89969	538.1	.00270	.000743	.90130	539.5	.00282	.000778	.92249	544.5	.00164	.000454
12	.90657	555.8	.00461	.001268	.90589	555.8	.00466	.001286	.92019	554.5	.00374	.001035
13	.91460	578.1	.00754	.002074	.91507	582.5	.00786	.002169	.92651	579.1	.00719	.001989
14	.92434	593.8	.00937	.002577	.92827	604.5	.01021	.002817	.94143	604.8	.01068	.002954
15	.92835	596.1	.00936	.002574	.93630	612.5	.01087	.002999	.95349	617.5	.01247	.003450
16	.92892	587.5	.00802	.002206	.93860	606.5	.01011	.002790	.95693	613.8	.01103	.003051
17	.92663	573.8	.00622	.001711	.93688	593.1	.00832	.002296	.95521	601.8	.00909	.002515
18	.92434	546.1	.00108	.000297	.93286	553.5	.00138	.000381	.94545	558.1	.00141	.000390
19	.91230	538.5	.00143	.000393	.92138	547.5	.00197	.000544	.94316	553.8	.00105	.000290
20	.91402	577.1	.00720	.001980	.91622	582.1	.00737	.002034	.92708	578.8	.00703	.001945
21	.92721	585.1	.00758	.002085	.93688	602.8	.00907	.002503	.95521	609.1	.00975	.002697
22	.92434	564.1	.00439	.001207	.93401	581.5	.00593	.001636	.95349	591.1	.00662	.001831
23	.94956	561.5	.00124	.000341	.95753	567.5	.00101	.000279	.95981	569.5	.00167	.000462
24	.93236	551.8	.00139	.000382	.95122	562.8	.00094	.000259	.95579	564.5	.00141	.000390
25	.91345	541.1	.00149	.000410	.92942	552.5	.00175	.000483	.94430	556.8	.00162	.000448
26	.90141	541.8	.00252	.000693	.91565	550.8	.00261	.000720	.93110	550.8	.00205	.000567
27	.90084	551.1	.00432	.001188	.90761	554.8	.00418	.001153	.91962	559.1	.00379	.001048
28	.91173	574.5	.00683	.001878	.91507	579.8	.00680	.001876	.92536	576.1	.00664	.001837
29	.92033	589.1	.00910	.002503	.92483	598.5	.00941	.002597	.93741	598.1	.00936	.002589
30	.92491	591.1	.00854	.002349	.93286	605.1	.00905	.002497	.94890	608.5	.01058	.002927
31	.92721	582.8	.00706	.001942	.93630	598.8	.00819	.002260	.95464	605.1	.00893	.002470
32	.92663	567.8	.00438	.001205	.93458	582.5	.00578	.001595	.95464	592.1	.00641	.001773
33	.93064	564.8	.00339	.000932	.93688	578.1	.00474	.001308	.95636	589.1	.00549	.001519
34	.94669	563.5	.00170	.000468	.96212	568.8	.00114	.000315	.96325	570.1	.00159	.000440
35	.93924	560.1	.00202	.000556	.96385	570.5	.00131	.000361	.97301	575.5	.00143	.000396
36	.91058	538.8	.00156	.000429	.92712	550.1	.00161	.000444	.94947	561.5	.00164	.000454
37	.91574	574.8	.00656	.001804	.91966	580.1	.00643	.001774	.93167	578.1	.00624	.001726
38	.92606	582.5	.00718	.001975	.93573	598.1	.00805	.002221	.95292	603.8	.00880	.002434
39	.93351	570.5	.00377	.001037	.93802	582.1	.00511	.001410	.95693	590.8	.00565	.001563
40	.94096	568.5	.00256	.000704	.94147	575.8	.00379	.001046	.96095	586.1	.00437	.001209
41	.92377	546.5	.00148	.000407	.93860	557.5	.00170	.000469	.96095	570.8	.00189	.000523
42	.91632	550.1	.00245	.000674	.92942	555.8	.00237	.000654	.95406	567.5	.00219	.000606
43	.90714	554.5	.00412	.001133	.91392	559.1	.00387	.001068	.93340	563.5	.00348	.000963
44	.91574	575.8	.00649	.001785	.91909	580.8	.00627	.001730	.93397	579.5	.00615	.001701
45	.93007	593.5	.00858	.002360	.93458	601.8	.00813	.002243	.94890	601.1	.00805	.002227
46	.93351	594.5	.00824	.002266	.94089	607.5	.00844	.002329	.95693	609.5	.00914	.002528
47	.93064	583.5	.00657	.001807	.93860	598.5	.00744	.002053	.95579	603.1	.00828	.002291
60	.93064	556.1	.00184	.000506	.94950	565.1	.00143	.000395	.98277	576.8	.00102	.000282
61	.91803	539.5	.00086	.000237	.95811	564.1	.00085	.000235	.98047	574.1	.00081	.000224
62	.91345	536.5	.00088	.000242	.93515	550.5	.00097	.000268	.95406	559.8	.00095	.000263
63	.90944	544.1	.00196	.000539	.92597	549.8	.00182	.000502	.94717	559.5	.00187	.000517
64	.91001	553.8	.00370	.001018	.91851	557.5	.00334	.000922	.93512	568.8	.00374	.001035
65	.91345	569.5	.00575	.001581	.91794	582.8	.00541	.001493	.93110	582.1	.00750	.002075
66	.92491	617.8	.00789	.002170	.92999	595.5	.00753	.002078	.94488	623.1	.01266	.003502
67	.93236	632.8	.01166	.003207	.94032	607.8	.00871	.002403	.95579	643.8	.01375	.005187
68	.93981	614.5	.01304	.003586	.94893	636.8	.01100	.003035	.96325	642.8	.02000	.005533
69	.94268	626.8	.01392	.003828	.95122	617.1	.01267	.003496	.96612	615.1	.01061	.002935
70	.94153	622.1	.01242	.003416	.95180	632.1	.01515	.004180	.96899	639.1	.01708	.004725
71	.92434	554.8	.00210	.000578	.93688	559.8	.00183	.000505	.98335	580.1	.00131	.000362
72	.92892	546.1	.00084	.000231	.93745	550.5	.00077	.000212	.98047	575.8	.00099	.000274
73	.92434	544.8	.00109	.000300	.93171	549.1	.00128	.000353	.95751	563.5	.00122	.000337
74	.91345	543.5	.00213	.000586	.91909	552.5	.00192	.000530	.94491	561.5	.00174	.000481
76	.92205	580.5	.00780	.002145	.91966	586.8	.00493	.001360	.92942	585.1	.00709	.001961
77	.93809	606.1	.01240	.003410	.93745	616.5	.00893	.002464	.94491	613.1	.01284	.003552
78	.93752	619.5	.01531	.004211	.93860	612.8	.00890	.002456	.94835	628.5	.01747	.004833
79	.94268	626.1	.01659	.004563	.94548	627.1	.01318	.003637	.95808	640.1	.02056	.005688
80	.93924	611.8	.01232	.003388	.94663	632.1	.01601	.004418	.96382	637.5	.01786	.004941
81	.94555	608.8	.01053	.002896	.95466	632.8	.01167	.003220	.97244	631.1	.01307	.003616
83	.93122	548.5	.00101	.000278	.95007	563.5	.00116	.000320	.99023	586.1	.00167	.000462
84	.92606	544.1	.00099	.000272	.93917	559.5	.00128	.000353	.95693	565.1	.00144	.000398
85	.91460	544.8	.00212	.000583	.92770	555.8	.00217	.000599	.94488	560.1	.00197	.000545
86	.91116	557.8	.00463	.001273	.91507	559.1	.00414	.001142	.93052	557.5	.00335	.000927
87	.92033	581.8	.00831	.002285	.91737	582.1	.00724	.001998	.92478	577.8	.00622	.001721
88	.92721	604.1	.01430	.003933	.92483	610.8	.01244	.003433	.92995	599.1	.01144	.003165
89	.93466	616.5	.01729	.004755	.93515	629.1	.01665	.004594	.94316	623.1	.01594	.004410
90	.93752	618.8	.01591	.004376	.94032	640.1	.01843	.005086	.95234	641.8	.01863	.005154
91	.93924	608.1	.01127	.003099	.94720	626.1	.01326	.003659	.96497	637.8	.01332	.003685
93	.93408	558.5	.00186	.000512	.94720	583.8	.00226	.000624	.94603	558.5	.00141	.000390
94	.92721	554.8	.00277	.000762	.93860	563.1	.00248	.000684	.93971	556.5	.00183	.000506
95	.91402	566.1	.00492	.001353	.91909	561.8	.00441	.001217	.92306	556.5	.00302	.000835
96	.91803	581.5	.00806	.002217	.91622	585.8	.00725	.002001	.91675	570.5	.00577	.001596
97	.92835	608.8	.01404	.003861	.92655	611.1	.01282	.003538	.92765	596.8	.01151	.003184
98	.93408	619.1	.01626	.004472	.93458	627.1	.01614	.004454	.94028	619.5	.01537	.004252
99	.93752	627.8	.01572	.004323	.94147	638.8	.01751	.004832	.95119	631.8	.01877	.005192

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 1 - Continued

(a) $M = 3.51$; $p_{t,nom} = 5{,}040$ lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	$\alpha' = 45.0°$; $T_t = 705°$ R; $p_t = 5{,}042.0$ lb/sq ft			
1	.93359	565.1	.00336	.000941
2	.94962	583.5	.00591	.001638
3	.96565	612.1	.01016	.002816
4	.93473	550.5	.00120	.000333
5	.92672	551.1	.00254	.000704
6	.93874	572.5	.00492	.001364
7	.95477	597.5	.00810	.002245
8	.96851	613.8	.00989	.002741
9	.95305	560.1	.00089	.000247
10	.94962	557.5	.00088	.000244
11	.94275	554.5	.00125	.000346
12	.93473	555.5	.00230	.000637
13	.93301	569.5	.00490	.001358
14	.94847	593.8	.00804	.002228
15	.96507	612.1	.00985	.002730
16	.97366	617.8	.01005	.002785
17	.97423	617.5	.00984	.002727
18	.96908	568.8	.00089	.000247
19	.96450	566.5	.00088	.000244
20	.93359	572.5	.00543	.001505
21	.96965	623.1	.01231	.003412
22	.97080	622.1	.01189	.003295
23	.98454	577.8	.00090	.000249
24	.98053	576.1	.00099	.000274
25	.96794	569.5	.00108	.000299
26	.95420	562.8	.00147	.000407
27	.93817	564.8	.00263	.000729
28	.93759	575.8	.00574	.001591
29	.94904	601.5	.00996	.002760
30	.96221	620.1	.01265	.003506
31	.96965	626.1	.01312	.003636
32	.97080	624.1	.01260	.003492
33	.97252	624.1	.01211	.003356
34	.98969	581.1	.00090	.000249
35	.99542	585.8	.00111	.000308
36	.96851	574.1	.00142	.000394
37	.94217	579.8	.00601	.001666
38	.96908	627.8	.01379	.003822
39	.97309	627.1	.01287	.003567
40	.97652	626.8	.01200	.003326
41	.97538	579.5	.00188	.000521
42	.96965	577.5	.00205	.000568
43	.94790	569.5	.00343	.000951
44	.94389	582.5	.00611	.001693
45	.95992	609.1	.00988	.002738
46	.97080	626.1	.01244	.003448
47	.97137	629.1	.01347	.003733
60	1.00343	586.5	.00058	.000161
61	.99656	582.8	.00062	.000172
62	.96507	566.5	.00088	.000244
63	.95820	566.5	.00118	.000327
64	.94332	560.5	.00216	.000599
65	.93359	568.1	.00473	.001311
66	.94733	596.8	.00893	.002475
67	.96336	621.1	.01255	.003478
68	.97366	631.5	.01390	.003852
69	.97767	628.8	.01247	.003456
70	.97939	627.1	.01136	.003148
71	.99255	584.1	.00112	.000310
72	.98339	578.1	.00101	.000280
73	.96851	570.5	.00111	.000308
74	.95763	567.1	.00119	.000330
75	.89122	516.8	.00060	.000166
76	.93931	575.1	.00426	.001181
77	.95362	597.8	.00779	.002159
78	.96107	615.8	.01152	.003193
79	.97366	631.5	.01388	.003847
80	.97881	629.5	.01243	.003445
81	.98912	625.8	.00978	.002710
83	.98511	581.1	.00139	.000385
84	.96679	571.1	.00145	.000402
85	.95763	569.1	.00162	.000449
86	.94504	561.5	.00216	.000599
87	.93702	566.5	.00420	.001164
88	.94103	587.8	.00758	.002101
89	.95763	613.1	.01130	.003132
90	.97080	629.5	.01387	.003844
91	.98225	628.5	.01126	.003121
93	.95820	565.8	.00105	.000291
94	.95248	563.8	.00120	.000333
95	.93645	554.5	.00199	.000552
96	.92786	558.1	.00359	.000995
97	.93759	584.5	.00734	.002034
98	.95305	608.8	.01067	.002957
99	.96851	626.5	.01329	.003683

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 0^\circ$; $T_t = 699^\circ$ R; p_t = 7,186.0 lb/sq ft				$\alpha' = 7.5^\circ$; $T_t = 699^\circ$ R; p_t = 7,034.0 lb/sq ft				$\alpha' = 15.0^\circ$; $T_t = 703^\circ$ R; p_t = 7,201.0 lb/sq ft			
1	.92111	592.8	.01022	.001979	.91774	581.5	.00939	.001858	.91273	589.1	.01057	.002048
2	.92956	601.1	.01062	.002056	.92965	596.5	.01132	.002240	.92746	612.5	.01429	.002769
3	.91998	591.1	.00984	.001905	.92454	595.1	.01212	.002398	.92746	626.1	.01680	.003255
4	.91210	571.1	.00599	.001160	.90866	557.8	.00496	.000981	.90423	560.8	.00529	.001025
5	.91604	581.8	.00738	.001429	.91150	569.8	.00687	.001359	.90480	580.5	.00740	.001434
6	.91886	587.1	.00803	.001555	.91887	582.8	.00878	.001737	.91556	595.1	.01019	.001974
7	.91548	581.1	.00728	.001410	.92001	584.5	.00890	.001761	.92236	605.8	.01203	.002331
8	.91040	569.1	.00574	.001112	.91604	575.5	.00776	.001535	.92123	602.1	.01150	.002228
9	.91266	556.8	.00286	.000554	.91377	558.5	.00347	.000687	.90593	560.8	.00336	.000651
10	.90984	555.5	.00344	.000666	.90923	548.1	.00298	.000590	.89970	547.5	.00325	.000630
11	.91040	567.1	.00507	.000982	.90526	558.1	.00426	.000843	.89630	555.5	.00422	.000818
12	.91660	579.5	.00648	.001255	.91206	567.8	.00608	.001203	.90423	569.8	.00621	.001203
13	.91604	581.8	.00704	.001363	.91490	577.5	.00804	.001591	.91103	588.8	.00898	.001740
14	.91491	577.5	.00635	.001230	.91830	580.1	.00785	.001553	.91953	599.1	.01049	.002032
15	.90984	564.8	.00468	.000906	.91490	571.5	.00653	.001292	.91953	595.5	.00933	.001808
16	.91210	556.1	.00330	.000639	.91433	559.8	.00449	.000888	.91840	583.5	.00746	.001445
17	.91660	561.5	.00298	.000577	.91433	556.8	.00313	.000619	.91670	569.8	.00570	.001104
18	.92167	574.5	.00434	.000840	.90979	562.8	.00529	.001047	.90763	559.5	.00333	.000645
19	.91604	558.1	.00314	.000608	.91320	559.1	.00254	.000503	.90480	546.5	.00279	.000541
20	.91717	581.5	.00670	.001297	.91604	577.5	.00751	.001486	.91216	587.8	.00862	.001670
21	.90984	555.1	.00310	.000600	.91490	561.5	.00464	.000918	.91783	583.1	.00740	.001434
22	.91942	573.8	.00464	.000898	.92625	578.1	.00452	.000894	.92690	575.1	.00463	.000897
23	.92675	585.5	.00651	.001261	.91433	563.8	.00491	.000971	.91103	561.8	.00287	.000556
24	.92336	573.5	.00424	.000821	.90809	550.8	.00340	.000673	.90933	548.1	.00206	.000399
25	.91266	556.5	.00307	.000594	.90923	547.1	.00211	.000417	.89970	541.1	.00229	.000444
26	.90871	564.5	.00450	.000871	.90299	549.5	.00369	.000730	.89233	549.8	.00375	.000727
27	.91266	575.1	.00595	.001152	.90809	563.8	.00575	.001138	.89743	564.1	.00592	.001147
28	.91773	581.5	.00671	.001299	.91774	577.5	.00769	.001521	.91160	587.1	.00856	.001659
29	.91097	573.8	.00586	.001135	.91660	577.1	.00774	.001531	.91500	595.1	.00968	.001876
30	.90646	561.5	.00432	.000837	.91490	568.5	.00584	.001155	.91670	591.5	.00917	.001777
31	.90871	557.1	.00310	.000600	.91830	565.5	.00423	.000837	.91896	587.8	.00701	.001358
32	.91548	571.1	.00445	.000862	.92852	579.5	.00571	.001130	.93030	585.5	.00611	.001184
33	.92224	578.5	.00567	.001098	.92965	587.1	.00803	.001589	.93030	615.1	.01089	.002110
34	.92562	580.5	.00587	.001137	.91944	566.5	.00478	.000946	.91273	559.8	.00260	.000504
35	.91998	579.1	.00533	.001032	.91036	552.5	.00315	.000623	.91216	547.8	.00168	.000326
36	.90984	554.5	.00308	.000596	.90753	542.5	.00196	.000388	.89913	539.5	.00187	.000362
37	.92055	580.5	.00595	.001152	.92171	577.5	.00714	.001413	.91500	587.1	.00793	.001536
38	.91040	552.8	.00269	.000521	.92001	561.1	.00416	.000823	.92123	583.8	.00711	.001378
39	.92055	575.5	.00463	.000897	.93078	591.5	.00890	.001761	.93313	608.1	.00979	.001897
40	.92562	579.8	.00552	.001069	.93078	587.5	.00812	.001606	.93143	622.1	.01336	.002589
41	.91097	556.5	.00309	.000598	.91150	545.5	.00209	.000413	.90820	543.8	.00159	.000308
42	.90928	564.1	.00437	.000846	.90696	550.8	.00352	.000696	.89970	549.1	.00322	.000624
43	.91266	574.5	.00558	.001081	.91150	564.5	.00558	.001104	.90196	566.8	.00568	.001101
44	.91773	579.8	.00604	.001170	.92057	577.1	.00676	.001337	.91386	587.8	.00848	.001643
45	.92055	577.8	.00543	.001051	.92908	582.5	.00689	.001363	.92803	601.1	.00915	.001773
46	.91322	564.5	.00390	.000755	.92228	572.8	.00554	.001096	.92576	595.8	.00811	.001571
47	.91266	554.1	.00262	.000507	.92228	562.8	.00407	.000805	.92463	585.5	.00684	.001325
60	.92618	576.1	.00477	.000924	.93022	567.8	.00381	.000754	.92123	570.1	.00313	.000606
61	.92336	578.1	.00544	.001053	.92908	561.1	.00269	.000532	.91896	548.5	.00104	.000202
62	.90815	555.1	.00317	.000614	.90809	544.1	.00177	.000350	.89970	537.5	.00155	.000300
63	.90984	564.5	.00433	.000838	.90639	550.8	.00331	.000655	.89630	547.1	.00314	.000608
64	.91491	573.8	.00539	.001044	.91150	563.1	.00501	.000991	.90253	564.5	.00505	.000978
65	.91660	577.1	.00578	.001119	.91774	572.5	.00629	.001244	.91160	581.5	.00713	.001381
66	.91435	572.5	.00511	.000990	.92057	576.1	.00683	.001351	.91953	593.5	.00900	.001744
67	.90871	561.5	.00395	.000765	.92001	570.5	.00560	.001108	.92293	595.1	.00896	.001736
68	.90871	553.8	.00285	.000552	.92454	565.5	.00441	.000872	.92916	597.8	.00886	.001717
69	.92505	577.1	.00504	.000976	.93135	585.1	.00734	.001452	.93370	620.5	.01243	.002408
70	.92900	576.5	.00431	.000835	.93192	582.1	.00626	.001238	.93256	615.5	.01051	.002036
71	.93013	577.5	.00439	.000850	.93305	568.1	.00355	.000702	.92293	569.5	.00364	.000705
72	.92505	575.5	.00467	.000904	.93192	561.8	.00250	.000495	.92803	557.8	.00114	.000221
73	.91097	555.1	.00293	.000567	.90582	540.1	.00171	.000338	.91386	545.1	.00153	.000296
74	.91040	563.1	.00420	.000813	.90526	547.8	.00315	.000623	.90366	549.1	.00286	.000554
75	.91491	572.5	.00529	.001024	.91093	560.1	.00464	.000918	.90366	562.8	.00481	.000932
76	.92055	583.5	.00569	.001102	.92057	572.1	.00573	.001134	.91500	580.8	.00660	.001279
77	.91548	572.5	.00511	.000990	.92171	574.5	.00612	.001211	.92123	591.5	.00791	.001533
78	.90928	561.5	.00407	.000788	.92001	568.5	.00527	.001043	.92236	590.8	.00802	.001554
79	.90928	554.1	.00293	.000567	.92454	566.8	.00459	.000908	.92746	593.1	.00836	.001620
80	.92336	573.1	.00452	.000875	.92908	581.5	.00689	.001363	.93143	610.8	.01194	.002313
81	.93182	574.5	.00375	.000726	.93419	578.8	.00576	.001140	.93370	610.5	.00941	.001823
83	.92562	573.5	.00435	.000842	.93305	561.5	.00237	.000469	.93823	563.8	.00120	.000233
84	.90815	553.5	.00303	.000587	.89902	536.8	.00163	.000322	.90990	542.5	.00151	.000293
85	.90928	562.5	.00430	.000833	.90355	546.8	.00301	.000595	.90310	548.8	.00274	.000531
86	.91210	571.1	.00562	.001088	.90809	558.1	.00454	.000898	.90366	561.8	.00463	.000897
87	.91379	575.1	.00630	.001220	.91433	567.5	.00559	.001106	.91046	577.5	.00647	.001254
88	.91153	570.8	.00567	.001098	.91774	571.5	.00614	.001215	.91840	588.5	.00781	.001513
89	.90759	561.8	.00444	.000860	.91944	568.5	.00530	.001049	.92350	591.8	.00792	.001535
90	.90702	552.8	.00307	.000594	.92454	566.8	.00453	.000896	.92746	592.1	.00795	.001540
91	.92562	573.8	.00428	.000829	.93135	580.5	.00616	.001219	.93200	607.1	.01076	.002085
93	.90646	557.5	.00325	.000629	.91604	547.1	.00183	.000362	.91896	555.5	.00201	.000389
94	.90815	562.1	.00454	.000879	.91036	550.8	.00311	.000615	.90990	553.1	.00306	.000593
95	.90984	570.5	.00590	.001142	.90979	559.5	.00465	.000920	.90480	562.5	.00467	.000905
96	.91210	573.8	.00637	.001233	.91433	567.8	.00567	.001122	.91046	576.5	.00630	.001221
97	.91097	570.8	.00579	.001121	.91830	571.8	.00598	.001183	.91896	589.8	.00780	.001511
98	.90759	561.1	.00441	.000854	.91830	568.5	.00547	.001082	.92350	592.8	.00823	.001595
99	.91040	557.8	.00289	.000560	.92511	568.8	.00479	.000948	.93086	598.5	.00919	.001781

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 704° R; p_t = 7,215.0 lb/sq ft				α' = 30.0°; T_t = 706° R; p_t = 7,200.0 lb/sq ft				α' = 37.5°; T_t = 709° R; p_t = 7,207.0 lb/sq ft			
1	.90979	578.1	.00990	.001916	.90721	574.1	.00913	.001773	.91270	568.5	.00769	.001499
2	.92681	607.5	.01498	.002899	.92543	616.1	.00569	.001105	.93210	603.8	.01356	.002642
3	.93249	632.8	.02170	.004200	.93624	641.1	.00775	.001505	.94808	637.5	.02260	.004404
4	.90242	552.1	.00444	.000859	.90778	552.8	.00090	.000175	.91784	550.8	.00267	.000520
5	.90129	564.1	.00683	.001322	.90209	568.1	.00211	.000410	.90985	558.1	.00527	.001027
6	.91377	590.1	.01107	.002142	.91461	598.5	.00385	.000748	.92183	588.1	.00978	.001906
7	.92625	609.5	.01497	.002897	.93055	625.1	.00538	.001045	.94180	620.5	.01636	.003188
8	.92852	619.8	.01572	.003042	.93681	634.1	.00556	.001080	.95207	634.8	.01935	.003771
9	.90753	551.1	.00251	.000486	.92543	555.5	.00043	.000084	.93324	558.1	.00196	.000382
10	.90015	542.5	.00263	.000509	.91176	553.5	.00062	.000120	.92868	553.8	.00204	.000398
11	.89448	546.5	.00344	.000666	.90607	549.1	.00076	.000148	.92012	554.8	.00272	.000530
12	.90072	560.1	.00582	.001126	.90550	560.1	.00136	.000264	.91670	559.5	.00464	.000904
13	.91036	583.8	.00956	.001850	.91290	592.8	.00327	.000635	.92183	584.5	.00867	.001690
14	.92341	602.1	.01251	.002421	.92884	616.5	.00422	.000820	.94009	612.1	.01264	.002463
15	.92795	604.5	.01273	.002464	.93624	624.8	.00426	.000827	.95207	625.1	.01496	.002915
16	.92738	594.8	.01025	.001984	.93795	618.5	.00362	.000703	.95549	620.8	.01273	.002481
17	.92511	580.5	.00769	.001488	.93510	604.8	.00290	.000563	.95264	608.1	.01061	.002068
18	.91830	563.5	.00251	.000486	.94307	559.8	.00035	.000068	.94522	567.1	.00218	.000425
19	.90412	541.8	.00195	.000377	.92713	557.8	.00047	.000091	.93952	562.8	.00231	.000450
20	.91093	583.1	.00931	.001802	.91461	593.1	.00316	.000614	.92297	584.5	.00863	.001682
21	.92568	592.5	.00973	.001883	.93624	614.8	.00340	.000660	.95264	616.5	.01202	.002342
22	.92511	572.1	.00529	.001024	.93226	591.8	.00207	.000402	.94979	596.8	.00793	.001545
23	.91830	558.5	.00292	.000565	.95275	567.1	.00037	.000072	.95835	572.8	.00178	.000347
24	.90582	546.1	.00250	.000484	.94478	562.8	.00040	.000078	.95606	571.8	.00199	.000388
25	.90015	540.1	.00207	.000401	.92770	555.8	.00059	.000115	.94408	565.5	.00226	.000440
26	.89107	543.1	.00314	.000608	.91404	550.1	.00055	.000107	.92925	558.5	.00283	.000551
27	.89334	554.8	.00570	.001103	.90436	557.5	.00154	.000299	.91442	566.1	.00488	.000951
28	.91036	582.5	.00938	.001815	.91518	591.5	.00298	.000579	.92126	583.5	.00840	.001637
29	.91887	597.1	.01229	.002378	.92429	610.8	.00396	.000769	.93381	605.8	.01136	.002214
30	.92341	599.1	.01205	.002332	.93169	617.5	.00391	.000759	.94522	616.1	.01276	.002487
31	.92568	590.8	.00917	.001775	.93510	611.1	.00322	.000625	.95093	620.5	.01147	.002235
32	.93362	578.8	.00508	.000983	.93339	593.8	.00219	.000425	.95036	598.1	.00785	.001530
33	.93759	579.8	.00456	.000882	.93567	582.8	.00143	.000278	.95207	594.5	.00673	.001311
34	.91944	558.1	.00247	.000478	.95047	568.5	.00048	.000093	.95892	571.8	.00158	.000308
35	.91036	548.1	.00179	.000346	.94763	566.1	.00041	.000080	.96747	577.5	.00153	.000298
36	.90299	541.1	.00180	.000348	.92656	555.5	.00136	.000264	.94751	566.5	.00197	.000384
37	.91490	582.5	.00899	.001740	.91973	591.5	.00271	.000526	.92982	585.5	.00751	.001463
38	.92738	591.5	.00914	.001769	.93624	611.1	.00317	.000616	.95150	611.5	.01043	.002032
39	.94043	606.5	.00593	.001148	.94421	595.5	.00193	.000375	.95606	598.1	.00682	.001329
40	.93873	596.1	.00768	.001486	.94478	587.8	.00166	.000322	.95778	592.1	.00535	.001043
41	.91660	550.1	.00136	.000263	.93852	559.1	.00089	.000173	.95778	574.1	.00123	.000240
42	.90582	546.1	.00253	.000490	.92713	555.1	.00060	.000117	.94865	569.1	.00181	.000353
43	.90299	559.1	.00518	.001002	.91404	561.5	.00099	.000192	.93096	567.1	.00368	.000717
44	.91433	583.1	.00871	.001686	.92030	591.1	.00255	.000495	.93267	592.1	.00698	.001360
45	.93078	602.5	.01101	.002131	.93681	615.1	.00352	.000684	.94922	609.5	.01038	.002023
46	.93135	602.1	.01134	.002195	.93966	619.5	.00356	.000691	.95321	615.8	.01111	.002165
47	.93022	592.5	.00868	.001680	.94023	611.8	.00295	.000573	.95435	610.8	.01006	.001960
60	.92341	560.8	.00275	.000532	.93909	584.5	.00064	.000124	.97033	575.1	.00116	.000226
61	.90753	540.1	.00113	.000219	.94136	563.1	.00052	.000101	.96805	572.1	.00099	.000193
62	.90696	542.5	.00182	.000352	.93510	558.1	.00056	.000109	.94579	560.8	.00125	.000244
63	.90015	548.1	.00284	.000550	.92429	557.8	.00061	.000118	.93724	560.1	.00216	.000421
64	.90242	557.5	.00497	.000962	.91632	576.8	.00174	.000338	.92697	566.8	.00473	.000922
65	.91320	578.5	.00817	.001581	.92258	606.8	.00308	.000598	.92811	591.1	.00968	.001886
66	.92852	602.1	.01160	.002245	.93681	635.5	.01813	.003521	.94408	628.5	.01793	.003494
67	.93873	625.1	.01051	.002034	.94649	649.1	.02345	.004554	.95492	655.5	.02271	.004425
68	.94270	638.5	.01785	.003454	.95047	651.8	.03006	.005838	.96291	656.8	.02693	.005248
69	.94100	627.8	.02010	.003890	.94990	650.1	.00711	.001381	.96519	631.8	.01883	.002890
70	.94043	625.1	.01831	.003543	.95161	650.1	.00548	.001064	.96690	651.8	.02207	.004301
71	.93476	566.5	.00246	.000476	.93510	564.5	.00058	.000113	.96976	578.5	.00172	.000335
72	.94383	565.1	.00160	.000310	.93909	562.8	.00063	.000122	.96348	572.5	.00142	.000277
73	.92681	556.1	.00158	.000306	.93795	559.5	.00055	.000107	.94694	562.5	.00151	.000294
74	.91660	559.1	.00322	.000623	.92713	558.1	.00061	.000118	.93724	559.8	.00218	.000425
75	.91093	576.1	.00652	.001262	.91461	566.5	.00186	.000361	.92411	562.1	.00424	.000826
76	.92284	609.5	.01021	.001976	.92144	602.8	.01065	.002068	.92526	585.1	.00812	.001582
77	.93249	633.5	.01890	.003658	.93396	635.1	.00664	.001290	.93952	621.8	.01529	.002980
78	.93476	641.1	.02128	.004118	.93852	645.8	.00785	.001525	.94751	639.8	.02065	.004024
79	.93816	634.5	.02700	.005225	.94421	652.8	.00870	.001690	.95606	657.5	.02429	.004733
80	.93816	630.1	.01755	.003396	.94592	647.1	.00641	.001245	.96177	648.8	.02318	.004517
81	.94213	617.5	.01483	.002870	.95161	638.8	.00456	.000886	.96690	638.8	.01636	.003188
83	.94100	564.1	.00166	.000321	.95332	572.1	.00060	.000117	.96862	581.5	.00237	.000462
84	.93022	566.5	.00160	.000310	.93966	561.8	.00058	.000113	.94066	561.1	.00188	.000366
85	.92284	557.5	.00306	.000592	.93112	564.5	.00081	.000157	.93495	568.1	.00248	.000483
86	.91263	575.8	.00644	.001246	.91518	570.5	.00178	.000346	.92297	560.8	.00425	.000828
87	.91774	608.5	.01164	.002253	.91461	594.8	.00388	.000754	.91841	577.5	.00782	.001524
88	.92625	620.1	.02117	.004097	.92543	626.1	.00714	.001387	.92925	611.1	.01455	.002835
89	.93419	631.5	.02281	.004414	.93567	643.5	.00873	.001696	.94351	636.1	.02212	.004310
90	.93703	631.5	.02500	.004838	.94023	648.8	.00871	.001692	.95207	646.5	.02522	.004915
91	.93816	618.5	.01581	.003060	.94649	640.8	.00510	.000991	.96120	642.1	.01933	.003767
93	.92852	563.1	.00307	.000594	.93624	562.8	.00054	.000105	.92126	553.5	.00198	.000386
94	.92398	563.1	.00392	.000759	.92941	562.1	.00071	.000138	.91898	550.5	.00256	.000499
95	.91263	569.5	.00667	.001291	.91404	570.5	.00188	.000365	.90928	551.1	.00405	.000789
96	.91774	600.1	.01148	.002222	.91347	593.1	.00382	.000742	.90985	569.5	.00734	.001430
97	.92795	620.5	.02093	.004050	.92599	626.5	.00716	.001391	.92583	608.1	.01503	.002929
98	.93362	636.8	.02375	.004596	.93453	641.8	.00874	.001698	.94009	632.1	.02028	.003952
99	.93873	631.8	.02431	.004705	.94136	648.1	.00844	.001639	.95207	652.1	.02260	.004404

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 45.0°$; $T_t = 708°$ R; $p_t = 7{,}182.0$ lb/sq ft			
1	.92591	568.1	.00415	.000809
2	.94358	588.8	.00692	.001350
3	.96238	626.5	.01015	.001980
4	.93161	561.5	.00201	.000392
5	.92135	559.5	.00304	.000593
6	.92933	575.5	.00591	.001153
7	.95099	605.1	.00908	.001771
8	.96523	622.1	.01077	.002101
9	.95383	566.1	.00130	.000254
10	.94928	565.8	.00142	.000277
11	.94073	559.5	.00179	.000349
12	.93104	560.5	.00326	.000636
13	.92819	576.8	.00617	.001203
14	.94757	604.8	.00935	.001824
15	.96409	624.8	.01136	.002216
16	.97207	631.1	.01179	.002300
17	.97207	638.8	.01131	.002206
18	.96865	574.1	.00131	.000256
19	.96295	571.1	.00147	.000287
20	.92933	581.1	.00694	.001354
21	.96808	643.1	.01300	.002536
22	.96751	632.8	.01317	.002569
23	.98005	581.1	.00133	.000259
24	.97663	579.5	.00141	.000275
25	.96466	573.8	.00171	.000334
26	.95099	567.8	.00209	.000408
27	.93332	565.8	.00395	.000770
28	.93446	585.5	.00711	.001387
29	.94757	613.1	.01137	.002218
30	.96124	631.5	.01383	.002698
31	.96808	637.5	.01449	.002826
32	.96808	634.8	.01412	.002754
33	.97036	634.8	.01347	.002627
34	.98062	581.5	.00120	.000234
35	.98575	586.1	.00144	.000281
36	.96409	575.5	.00189	.000369
37	.94073	589.5	.00704	.001373
38	.96865	638.5	.01465	.002857
39	.97264	638.5	.01394	.002719
40	.97435	636.5	.01269	.002475
41	.96922	584.5	.00192	.000374
42	.96181	579.8	.00258	.000503
43	.94415	576.1	.00428	.000835
44	.94244	592.1	.00769	.001500
45	.96124	620.5	.01065	.002077
46	.96751	634.5	.01294	.002524
47	.97093	639.1	.01395	.002721
60	.98290	580.1	.00085	.000166
61	.97891	577.5	.00090	.000176
62	.95725	566.5	.00118	.000230
63	.94814	563.5	.00152	.000296
64	.93503	562.1	.00304	.000593
65	.92990	575.5	.00579	.001129
66	.94586	608.1	.01046	.002040
67	.96295	631.8	.01331	.002596
68	.97321	642.5	.01498	.002922
69	.97606	639.8	.01385	.002701
70	.97777	636.8	.01185	.002311
71	.97891	582.5	.00154	.000300
72	.96979	575.8	.00137	.000267
73	.95839	569.1	.00145	.000283
74	.95042	565.8	.00165	.000322
75	.93731	562.5	.00288	.000562
76	.93332	574.8	.00536	.001045
77	.94700	606.5	.01010	.001970
78	.95896	627.5	.01350	.002633
79	.97093	642.1	.01577	.003076
80	.97663	640.8	.01428	.002785
81	.98290	634.1	.01133	.002210
83	.97549	584.5	.00221	.000431
84	.95782	570.8	.00178	.000347
85	.95440	569.8	.00202	.000394
86	.94187	565.8	.00300	.000585
87	.93161	572.1	.00531	.001036
88	.93845	598.8	.00983	.001917
89	.95554	625.8	.01407	.002744
90	.96808	641.1	.01645	.003209
91	.97720	638.8	.01329	.002592
93	.94814	561.8	.00127	.000248
94	.94415	560.8	.00150	.000293
95	.92933	563.8	.00246	.000480
96	.92192	569.5	.00473	.000923
97	.93446	595.1	.00922	.001798
98	.95156	621.1	.01348	.002629
99	.96694	638.8	.01566	.003054

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 0°; T_t = 670° R; p_t = 8,645.0 lb/sq ft				α' = 7.5°; T_t = 669° R; p_t = 8,649.0 lb/sq ft				α' = 15.0°; T_t = 672° R; p_t = 8,640.0 lb/sq ft			
1	.90204	563.8	.00803	.003381	.90662	561.1	.00609	.002563	.90498	558.1	.00623	.002628
2	.90872	570.5	.00928	.003908	.91562	571.5	.00762	.003207	.91735	573.5	.00914	.003855
3	.90260	564.1	.00803	.003381	.91281	571.1	.00828	.003484	.91848	583.8	.01201	.005066
4	.89647	551.8	.00447	.001882	.89931	545.1	.00303	.001275	.89824	542.5	.00273	.001151
5	.89759	557.5	.00605	.002547	.90043	552.5	.00419	.001763	.89880	549.5	.00422	.001780
6	.90371	566.5	.00664	.002706	.90999	563.1	.00549	.002310	.91004	564.5	.00691	.002915
7	.89870	557.8	.00585	.002463	.90831	563.5	.00578	.002432	.91342	570.5	.00845	.003564
8	.89425	550.5	.00433	.001823	.90606	558.1	.00494	.002079	.91342	572.5	.00791	.003336
9	.89258	540.8	.00165	.000695	.90212	540.8	.00132	.000555	.90161	538.8	.00117	.000493
10	.89035	542.8	.00222	.000935	.89593	536.5	.00138	.000581	.89655	535.8	.00121	.000510
11	.89202	547.5	.00366	.001541	.89481	540.5	.00246	.001035	.89374	537.8	.00216	.000911
12	.90093	557.8	.00528	.002223	.90381	552.5	.00377	.001587	.90161	549.5	.00377	.001590
13	.90037	559.1	.00592	.002493	.90606	559.1	.00487	.002049	.90667	560.5	.00603	.002543
14	.89647	554.5	.00513	.002160	.90662	559.8	.00498	.002096	.91117	566.5	.00714	.003012
15	.89314	547.1	.00342	.001440	.90493	556.8	.00405	.001704	.91229	565.5	.00641	.002704
16	.89425	542.8	.00193	.000813	.90493	548.8	.00291	.001225	.91229	559.8	.00494	.002084
17	.89592	542.8	.00165	.000695	.90493	544.1	.00184	.000774	.91117	552.8	.00341	.001438
18	.90093	545.5	.00149	.000627	.91224	547.5	.00144	.000606	.91061	543.8	.00100	.000422
20	.89981	558.1	.00534	.002249	.90606	558.5	.00468	.001969	.90667	560.1	.00564	.002379
21	.89369	542.5	.00199	.000838	.90324	547.8	.00278	.001170	.91061	558.8	.00487	.002054
22	.90148	545.8	.00147	.000619	.90549	543.1	.00154	.000648	.91004	549.5	.00241	.001017
23	.91150	552.5	.00157	.000661	.92406	555.5	.00157	.000661	.93197	557.8	.00128	.000540
24	.90705	546.1	.00100	.000421	.91787	545.8	.00082	.000345	.92185	547.1	.00059	.000249
25	.89759	545.1	.00210	.000884	.90156	539.5	.00113	.000476	.90442	539.1	.00093	.000392
26	.89536	548.8	.00345	.001453	.89706	540.8	.00209	.000880	.89711	538.5	.00181	.000763
27	.89814	555.1	.00499	.002101	.89931	548.8	.00353	.001486	.89768	546.1	.00343	.001447
28	.89647	556.1	.00575	.002421	.90324	555.5	.00450	.001894	.90274	556.8	.00571	.002408
29	.89592	553.1	.00487	.002051	.90381	557.5	.00481	.002024	.90892	564.1	.00679	.002864
30	.89314	546.5	.00319	.001343	.90268	552.5	.00385	.001620	.91004	562.8	.00628	.002649
31	.89592	543.1	.00193	.000813	.90381	547.5	.00269	.001132	.91173	558.5	.00486	.002050
32	.89536	541.8	.00102	.000429	.89818	539.8	.00164	.000690	.90555	549.8	.00292	.001232
33	.90928	550.8	.00166	.000699	.91731	553.5	.00174	.000732	.92522	563.1	.00264	.001114
34	.92096	560.5	.00210	.000884	.93193	558.1	.00136	.000572	.94940	564.1	.00061	.000257
35	.92430	556.8	.00082	.000345	.93587	556.5	.00074	.000311	.94209	557.8	.00054	.000228
36	.89703	544.1	.00201	.000846	.90156	538.1	.00119	.000501	.90498	538.5	.00088	.000371
37	.90594	560.8	.00524	.002206	.90943	559.5	.00449	.001890	.91061	560.8	.00523	.002206
38	.89870	547.8	.00197	.000830	.90606	551.1	.00285	.001199	.91342	559.5	.00460	.001940
39	.91595	552.1	.00089	.000375	.91562	552.1	.00173	.000728	.92579	564.1	.00326	.001375
40	.92486	565.1	.00210	.000884	.93418	567.5	.00288	.001212	.93422	582.5	.00642	.002708
41	.90705	550.1	.00209	.000880	.91337	545.1	.00119	.000501	.91848	548.1	.00092	.000388
42	.90594	554.5	.00320	.001347	.90887	549.1	.00206	.000867	.91117	546.5	.00176	.000742
43	.90371	558.1	.00478	.002013	.90437	552.1	.00339	.001427	.90442	552.5	.00338	.001426
44	.90427	560.5	.00538	.002265	.90831	559.5	.00441	.001856	.90836	563.1	.00550	.002320
45	.91150	562.1	.00450	.001895	.91731	564.8	.00454	.001911	.92016	570.5	.00641	.002704
46	.91317	557.8	.00304	.001280	.91899	562.1	.00360	.001515	.92354	570.5	.00591	.002493
47	.91095	551.5	.00163	.000686	.91506	553.8	.00261	.001098	.91904	562.1	.00429	.001809
60	.93154	566.1	.00238	.001002	.93868	561.1	.00124	.000522	.98931	587.8	.00090	.000380
61	.92709	564.1	.00240	.001011	.94037	556.1	.00040	.000168	.95052	563.1	.00053	.000224
62	.89647	544.5	.00216	.000910	.90268	537.8	.00095	.000400	.91398	543.5	.00081	.000342
63	.89981	551.5	.00337	.001419	.90268	547.8	.00210	.000884	.90836	545.1	.00189	.000797
64	.90649	559.1	.00434	.001827	.90999	554.1	.00314	.001321	.91173	553.8	.00322	.001358
65	.90260	558.5	.00510	.002147	.90831	557.8	.00406	.001709	.90948	561.5	.00490	.002067
66	.90204	556.1	.00429	.001806	.91112	560.8	.00439	.001847	.91510	566.1	.00607	.002560
67	.89870	549.5	.00310	.001305	.91112	557.1	.00373	.001570	.91679	566.1	.00575	.002425
68	.90093	546.1	.00195	.000821	.91393	553.8	.00273	.001149	.92016	564.5	.00469	.001978
69	.92931	564.1	.00186	.000783	.93193	571.1	.00420	.001767	.93085	586.5	.00762	.003214
70	.94044	570.8	.00202	.000851	.93249	567.8	.00320	.001347	.92916	582.5	.00645	.002721
71	.93655	568.5	.00200	.000842	.94768	566.8	.00126	.000530	.97582	581.8	.00107	.000451
72	.92375	562.8	.00256	.001078	.94712	559.5	.00036	.000151	.95446	564.8	.00035	.000148
73	.90204	547.8	.00210	.000884	.90493	539.5	.00116	.000488	.92241	547.8	.00078	.000329
74	.90037	555.5	.00320	.001347	.90099	542.5	.00205	.000863	.90892	549.1	.00168	.000709
75					.90324	550.1	.00324	.001363				
76	.90983	567.8	.00478	.002013	.91281	560.1	.00407	.001713	.91398	568.5	.00462	.001949
77	.91039	561.1	.00436	.001836	.91731	564.5	.00445	.001873	.92129	569.1	.00577	.002434
78	.89981	550.1	.00312	.001314	.90999	556.1	.00351	.001477	.91567	567.5	.00544	.002295
79	.90260	547.5	.00201	.000846	.91562	554.8	.00269	.001132	.92129	564.8	.00461	.001944
80	.92375	563.1	.00262	.001103	.92574	565.8	.00372	.001565	.92803	574.8	.00655	.002763
81	.95046	574.5	.00157	.000661	.94037	569.8	.00282	.001187	.93703	582.8	.00528	.002227
83	.93599	567.8	.00203	.000855	.98256	581.8	.00064	.000269	.97807	580.5	.00049	.000207
84	.90093	546.8	.00211	.000888	.91168	547.1	.00117	.000492	.93028	552.5	.00074	.000312
85	.90315	555.5	.00333	.001402	.91112	549.1	.00214	.000901	.92073	551.8	.00163	.000688
86	.90093	555.5	.00447	.001882	.90662	554.5	.00308	.001296	.90836	551.1	.00312	.001316
87	.90594	563.5	.00512	.002156	.91337	563.5	.00409	.001721	.91286	560.1	.00462	.001949
88	.89926	554.8	.00447	.001882	.91056	559.8	.00438	.001843	.91117	562.8	.00597	.002518
89	.89870	550.5	.00333	.001402	.91224	558.5	.00380	.001599	.91567	565.1	.00591	.002493
90	.89870	545.5	.00191	.000804	.91506	554.5	.00275	.001157	.91791	562.8	.00465	.001961
91	.94323	572.8	.00208	.000876	.93474	569.5	.00323	.001359	.93253	578.8	.00599	.002527
93	.89647	544.1	.00209	.000880	.91899	547.8	.00093	.000391	.93478	557.5	.00114	.000481
94	.89870	549.8	.00319	.001343	.91224	549.1	.00185	.000779	.92241	554.8	.00169	.000713
95	.89703	552.8	.00419	.001764	.90662	551.8	.00323	.001359	.91004	554.1	.00303	.001278
96	.89981	555.8	.00471	.001983	.90943	557.5	.00407	.001713	.91117	558.1	.00438	.001847
97	.89814	553.5	.00437	.001840	.91056	559.8	.00448	.001885	.91454	564.5	.00530	.002235
98	.89536	547.8	.00318	.001339	.91056	557.1	.00384	.001616	.91623	564.8	.00530	.002235
99	.89870	545.1	.00190	.000800	.91618	554.8	.00270	.001136	.92129	565.1	.00469	.001978

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 675° R; p_t = 8,633.0 lb/sq ft				α' = 30.0°; T_t = 684° R; p_t = 8,646.0 lb/sq ft				α' = 37.5°; T_t = 678° R; p_t = 8,640.0 lb/sq ft			
1	.90607	564.5	.00607	.002567	.91055	564.8	.00615	.002621	.92263	570.5	.00500	.002119
2	.92005	584.1	.00933	.003945	.92452	590.5	.01019	.004343	.93665	599.8	.00817	.003462
3	.92564	604.8	.01347	.005696	.93347	608.5	.01768	.007535	.94954	621.1	.01227	.005199
4	.90104	547.5	.00249	.001053	.91167	552.1	.00225	.000959	.93048	560.5	.00162	.000686
5	.89993	557.8	.00401	.001696	.90719	560.1	.00401	.001709	.92263	564.1	.00328	.001390
6	.91278	574.5	.00689	.002914	.91949	576.8	.00719	.003064	.93216	583.8	.00637	.002699
7	.92061	587.1	.00972	.004110	.92955	593.5	.01162	.004952	.94505	604.1	.01035	.004386
8	.92341	597.1	.01013	.004284	.93570	605.1	.01401	.005971	.95515	619.5	.01211	.005132
9	.91055	546.8	.00086	.000364	.93570	558.8	.00064	.000273	.94786	563.5	.00040	.000169
10	.90384	547.8	.00129	.000545	.92788	555.1	.00082	.000349	.94169	562.1	.00080	.000339
11	.89881	549.5	.00197	.000833	.91837	553.5	.00159	.000678	.93496	561.5	.00151	.000640
12	.90440	558.1	.00352	.001488	.91726	563.1	.00329	.001402	.93048	567.1	.00287	.001216
13	.91055	570.8	.00614	.002596	.91949	578.1	.00642	.002736	.93104	581.5	.00553	.002343
14	.91837	582.1	.00774	.003273	.92844	589.1	.01021	.004351	.94281	599.1	.00801	.003394
15	.92229	585.5	.00829	.003506	.93570	596.1	.01059	.004513	.95402	609.8	.01029	.004360
16	.92396	580.5	.00686	.002901	.93850	593.5	.00916	.003904	.95795	609.1	.00914	.003873
17	.92229	572.1	.00513	.002169	.93682	585.5	.00715	.003047	.95683	602.1	.00737	.003123
18	.92564	553.5	.00053	.000224	.95248	568.1	.00045	.000192	.96355	571.8	.00030	.000127
20	.90999	569.8	.00598	.002529	.92005	574.8	.00683	.002911	.93160	581.1	.00558	.002364
21	.92229	578.8	.00655	.002770	.93682	595.5	.00875	.003729	.95515	605.1	.00856	.003627
22	.92005	565.8	.00371	.001569	.93515	579.5	.00522	.002225	.95459	595.1	.00566	.002398
23	.94912	566.5	.00058	.000245	.97204	582.1	.00082	.000349	.98037	582.5	.00031	.000131
24	.93738	560.8	.00066	.000279	.96589	576.5	.00055	.000234	.97421	579.1	.00050	.000212
25	.91837	549.8	.00089	.000376	.94577	565.8	.00087	.000371	.95683	572.1	.00077	.000326
26	.90719	547.5	.00163	.000689	.93067	559.8	.00155	.000661	.94393	566.5	.00137	.000581
27	.90384	546.1	.00309	.001307	.91781	560.5	.00323	.001377	.92936	568.5	.00272	.001153
28	.90719	567.5	.00552	.002334	.91670	572.1	.00646	.002753	.92711	577.5	.00512	.002170
29	.91670	579.8	.00732	.003095	.92788	587.1	.00869	.003703	.94001	594.8	.00791	.003352
30	.92117	582.1	.00730	.003087	.93403	592.5	.00924	.003938	.94954	603.1	.00791	.003352
31	.92341	578.1	.00605	.002558	.93738	593.5	.00784	.003341	.95515	602.8	.00695	.002945
32	.91502	566.8	.00376	.001590	.92844	575.5	.00535	.002280	.94730	596.1	.00520	.002203
33	.92844	570.5	.00282	.001192	.93850	579.1	.00422	.001798	.95795	593.1	.00443	.001877
34	.96925	577.1	.00039	.000165	.98602	588.1	.00064	.000273	.99103	588.1	.00031	.000131
35	.96310	574.8	.00047	.000199	.98881	590.1	.00067	.000286	.99439	592.1	.00042	.000178
36	.92285	552.5	.00082	.000347	.94856	567.8	.00088	.000375	.96019	574.1	.00098	.000415
37	.91558	571.1	.00529	.002237	.92396	578.5	.00571	.002433	.93496	580.8	.00491	.002081
38	.92396	578.5	.00618	.002613	.93682	588.8	.00751	.003201	.95346	601.1	.00711	.003013
39	.93403	576.5	.00343	.001450	.94074	581.8	.00467	.001990	.95907	594.8	.00458	.001941
40	.94129	587.1	.00362	.001531	.94689	583.8	.00327	.001394	.96355	592.8	.00351	.001487
41	.93682	561.5	.00087	.000368	.95807	573.8	.00093	.000396	.96916	581.8	.00126	.000534
42	.92452	560.8	.00167	.000706	.94465	569.1	.00163	.000695	.96019	578.8	.00170	.000720
43	.91111	561.1	.00319	.001349	.92452	569.5	.00309	.001317	.93945	572.8	.00276	.001170
44	.91334	570.8	.00545	.002305	.92229	574.8	.00605	.002578	.93496	584.1	.00483	.002047
45	.92676	585.5	.00744	.003146	.93570	590.8	.00832	.003546	.94954	598.1	.00667	.002826
46	.93235	588.5	.00711	.003007	.94297	596.5	.00853	.003635	.95795	606.1	.00746	.003161
47	.92900	580.5	.00568	.002402	.94074	593.5	.00706	.003009	.95627	604.8	.00666	.002822
60	.97651	584.1	.00072	.000304	1.01006	600.5	.00033	.000141	1.00840	598.8	.00045	.000191
61	.98490	586.5	.00047	.000199	1.00614	597.5	.00029	.000124	1.00168	595.1	.00045	.000191
62	.94129	562.8	.00072	.000304	.95695	571.1	.00065	.000277	.96187	575.1	.00080	.000339
63	.92676	562.8	.00147	.000622	.94185	565.8	.00128	.000546	.94954	570.8	.00135	.000572
64	.92173	564.8	.00277	.001171	.93235	569.1	.00251	.001070	.93889	570.8	.00231	.000979
65	.91614	568.5	.00452	.001911	.92452	574.5	.00456	.001943	.92992	575.5	.00386	.001636
66	.92229	579.5	.00610	.002579	.93179	584.5	.00675	.002877	.94057	592.5	.00544	.002305
67	.92676	583.1	.00640	.002706	.93794	591.1	.00788	.003358	.95290	604.8	.00654	.002771
68	.93067	582.8	.00596	.002520	.94353	596.8	.00785	.003346	.96019	610.8	.00755	.003199
69	.94018	606.1	.01160	.004905	.95136	617.1	.01536	.006546	.96748	609.5	.00740	.003136
70	.93850	606.5	.00996	.004212	.95080	616.5	.01516	.006461	.96972	621.5	.00952	.004034
71	.99217	590.8	.00031	.000131	1.00223	597.5	.00050	.000213	.99439	597.5	.00119	.000504
72	.99273	589.8	.00021	.000089					.98710	590.8	.00097	.000411
73	.94409	564.1	.00067	.000283	.95974	573.5	.00064	.000273	.96804	580.1	.00101	.000428
74	.92508	558.1	.00147	.000622	.94018	564.5	.00128	.000546	.95290	573.1	.00139	.000589
76	.91893	571.8	.00433	.001831	.92452	569.8	.00427	.001820	.93552	580.8	.00531	.002250
77	.92844	582.1	.00594	.002512	.93403	584.5	.00669	.002851	.94786	604.1	.00943	.003996
78	.92620	588.8	.00664	.002808	.93403	587.1	.00736	.003137	.95066	618.8	.01443	.006115
79	.93570	590.1	.00729	.003083	.94465	593.5	.00765	.003260	.96019	632.5	.01752	.007424
80	.93626	596.1	.00958	.004051	.94689	613.1	.01483	.006320	.96355	631.1	.01373	.005818
81	.94465	604.5	.00799	.003379	.95639	614.1	.01145	.004880	.97477	624.1	.01115	.004725
83	.99105	591.8	.00058	.000245	1.00838	603.5	.00081	.000345	1.00224	595.1	.00035	.000148
84	.95359	572.5	.00103	.000436	.96813	580.5	.00088	.000375	.95963	572.1	.00066	.000280
85	.94185	568.1	.00152	.000643	.95863	576.8	.00136	.000580	.95346	571.5	.00103	.000436
86	.92061	561.8	.00257	.001087	.93403	568.1	.00257	.001095	.92936	563.5	.00239	.001013
87	.92173	570.8	.00410	.001734	.93235	576.5	.00448	.001909	.92711	576.8	.00481	.002038
88	.92117	583.8	.00584	.002470	.93235	594.1	.00732	.003120	.92936	597.5	.00880	.003729
89	.93011	590.5	.00716	.003028	.94129	600.5	.01163	.004956	.94337	608.5	.01277	.005411
90	.93459	596.1	.00946	.004000	.94409	615.1	.01459	.006218	.95178	621.5	.01608	.006814
91	.93850	602.5	.00849	.003590	.94912	611.5	.01250	.005327	.96524	620.1	.01228	.005204
93	.95527	575.5	.00122	.000516	.95583	573.8	.00114	.000486	.93665	560.8	.00084	.000356
94	.94353	570.8	.00166	.000702	.94409	569.1	.00175	.000746	.93048	558.8	.00139	.000589
95	.92508	566.1	.00259	.001095	.92341	563.5	.00330	.001406	.91534	555.5	.00247	.001047
96	.92452	573.8	.00425	.001797	.92005	572.5	.00642	.002736	.91478	565.1	.00468	.001983
97	.93011	587.5	.00710	.003002	.92732	591.8	.01152	.004910	.92655	588.1	.00919	.003894
98	.93291	596.5	.00999	.004224	.93459	603.1	.01612	.006870	.93889	604.8	.01243	.005267
99	.93626	606.5	.01262	.005336	.94129	617.5	.01807	.007701	.95066	623.5	.01476	.006254

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 45.0^o$; $T_t = 670^o$ R; p_t = 8,641.0 lb/sq ft			
1	.95609	572.8	.00222	.000935
2	.96920	589.8	.00309	.001301
3	.98289	611.1	.00412	.001735
4	.96236	567.8	.00102	.000429
5	.95153	566.5	.00170	.000716
6	.95723	581.8	.00263	.001107
7	.96977	596.8	.00395	.001663
8	.98232	609.5	.00471	.001983
9	.98517	576.1	.00031	.000131
10	.97662	572.5	.00047	.000198
11	.96635	568.8	.00087	.000366
12	.95495	567.8	.00153	.000644
13	.94811	576.8	.00266	.001120
14	.95837	590.1	.00377	.001587
15	.97263	604.8	.00449	.001891
16	.98118	610.5	.00485	.002042
17	.98289	614.1	.00481	.002025
18	1.00057	584.1	.00037	.000156
20	.94468	574.8	.00303	.001276
21	.97662	612.8	.00559	.002354
22	.97890	617.1	.00575	.002421
23	1.01482	592.5	.00033	.000139
24	1.00741	589.1	.00039	.000164
25	.98802	580.1	.00070	.000295
26	.97263	573.8	.00112	.000472
27	.95267	570.8	.00186	.000783
28	.94526	575.5	.00313	.001318
29	.95723	594.8	.00484	.002038
30	.96977	608.8	.00596	.002510
31	.97776	615.5	.00618	.002602
32	.97091	613.5	.00616	.002594
33	.98118	618.8	.00597	.002514
34	1.01938	596.1	.00044	.000185
35	1.02166	599.5	.00056	.000236
36	.98688	581.5	.00097	.000408
37	.95096	580.8	.00342	.001440
38	.97719	616.8	.00628	.002644
39	.98232	618.5	.00647	.002724
40	.98517	621.5	.00565	.002379
41	.99201	587.8	.00121	.000509
42	.98346	586.8	.00155	.000653
43	.96008	576.5	.00222	.000935
44	.95210	585.5	.00338	.001423
45	.96749	602.8	.00495	.002084
46	.97947	616.1	.00613	.002581
47	.97890	617.8	.00640	.002695
60	1.03649	605.5	.00038	.000160
61	1.02965	601.8	.00037	.000156
62	.98688	579.8	.00067	.000282
63	.97320	574.5	.00103	.000434
64	.95837	573.5	.00190	.000800
65	.94640	575.1	.00308	.001297
66	.95780	595.1	.00481	.002025
67	.97205	612.5	.00629	.002649
68	.98175	621.1	.00717	.003019
69	.98574	624.5	.00670	.002821
70	.98745	623.1	.00584	.002459
71	1.01995	598.5	.00056	.000236
72	1.01482	594.5	.00051	.000215
73	.99201	583.8	.00082	.000345
74	.97719	576.8	.00108	.000455
75	.88367	522.2	.00586	.002467
76	.95609	581.8	.00293	.001234
77	.96749	600.1	.00472	.001987
78	.97377	612.1	.00634	.002670
79	.98745	625.5	.00718	.003023
80	.98859	626.5	.00690	.002905
81	1.00228	628.1	.00512	.002156
83	1.02337	597.8	.00035	.000147
84	.98631	577.8	.00047	.000198
85	.98232	579.1	.00089	.000375
86	.95666	568.5	.00163	.000686
87	.95210	575.1	.00285	.001200
88	.95324	590.1	.00477	.002009
89	.97091	610.8	.00575	.002421
90	.98403	624.5	.00687	.002893
91	.99714	634.5	.00485	.002042
93	.96806	567.8	.00060	.000253
94	.96179	566.1	.00080	.000337
95	.94526	561.1	.00163	.000686
96	.94126	570.5	.00282	.001187
97	.95153	589.1	.00491	.002067
98	.96749	608.5	.00665	.002800
99	.98346	623.8	.00853	.003592

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 0^\circ$; $T_t = 668^\circ$ R; $p_t = 12{,}255.0$ lb/sq ft				$\alpha' = 7.5^\circ$; $T_t = 672^\circ$ R; $p_t = 12{,}211.0$ lb/sq ft				$\alpha' = 15.0^\circ$; $T_t = 673^\circ$ R; $p_t = 12{,}265.0$ lb/sq ft			
1	.90186	572.5	.00998	.002957	.90583	568.1	.00774	.002307	.90222	565.8	.00754	.002242
2	.90902	582.8	.01072	.003177	.91586	579.1	.00987	.002941	.91507	582.5	.01099	.003268
3	.90241	572.1	.00967	.002866	.91307	578.8	.01051	.003132	.91730	593.1	.01434	.004264
4	.89469	558.8	.00522	.001547	.89787	550.8	.00381	.001135	.89383	547.1	.00340	.001011
5	.89744	565.1	.00701	.002077	.89970	561.8	.00554	.001651	.89495	558.8	.00534	.001588
6	.90296	573.8	.00776	.002300	.91029	570.8	.00722	.002152	.90836	572.5	.00780	.002319
7	.89744	565.5	.00695	.002060	.90862	570.8	.00760	.002265	.91227	579.5	.00976	.002902
8	.89248	557.5	.00538	.001594	.90583	564.8	.00644	.001919	.91116	577.5	.00948	.002819
9	.89028	547.5	.00220	.000652	.90249	548.1	.00184	.000548	.89719	542.5	.00133	.000395
10	.88752	548.8	.00283	.000839	.89524	541.8	.00195	.000581	.89216	540.1	.00172	.000511
11	.88973	556.5	.00457	.001354	.89302	545.8	.00307	.000915	.88825	540.8	.00243	.000723
12	.89965	567.8	.00600	.001778	.90249	558.8	.00468	.001395	.89775	555.1	.00458	.001362
13	.89910	566.5	.00700	.002074	.90583	566.1	.00651	.001940	.90389	567.8	.00725	.002156
14	.89524	561.8	.00587	.001740	.90639	567.1	.00637	.001898	.90948	574.8	.00844	.002510
15	.89083	553.8	.00418	.001239	.90416	561.1	.00524	.001562	.91004	573.1	.00771	.002292
16	.89138	549.1	.00282	.000836	.90416	554.8	.00358	.001067	.91004	566.8	.00581	.001728
17	.89359	549.5	.00224	.000664	.90472	550.1	.00259	.000772	.90836	558.8	.00420	.001249
18	.89579	553.1	.00228	.000676	.91085	555.8	.00216	.000644	.90892	551.5	.00138	.000410
20	.89910	566.1	.00669	.001983	.90472	565.1	.00652	.001943	.90389	567.5	.00673	.002001
21	.89028	548.1	.00266	.000788	.90305	554.5	.00358	.001067	.90892	566.5	.00588	.001748
22	.89689	551.8	.00208	.000616	.90917	554.5	.00228	.000679	.91395	565.1	.00359	.001067
23	.90792	563.5	.00328	.000972	.91920	562.5	.00241	.000718	.93015	561.5	.00117	.000348
24	.90241	553.5	.00168	.000498	.91530	550.8	.00118	.000352	.91507	549.1	.00094	.000279
25	.89303	549.8	.00260	.000770	.90026	543.1	.00133	.000396	.89886	540.8	.00126	.000375
26	.89138	554.5	.00419	.001242	.89580	546.1	.00253	.000754	.89160	541.5	.00226	.000672
27	.89469	560.8	.00586	.001737	.89859	555.5	.00442	.001317	.89383	551.5	.00416	.001237
28	.89634	563.8	.00660	.001956	.90360	563.5	.00595	.001773	.90166	564.8	.00656	.001951
29	.89248	559.5	.00564	.001671	.90472	564.8	.00608	.001812	.90669	572.1	.00800	.002379
30	.88862	552.1	.00396	.001174	.90360	560.1	.00495	.001475	.90892	571.5	.00727	.002162
31	.88973	547.8	.00255	.000756	.90639	555.8	.00343	.001022	.91116	569.8	.00561	.001668
32	.89689	552.1	.00200	.000593	.91029	561.1	.00267	.000796	.91507	570.5	.00455	.001353
33	.90461	560.5	.00309	.000916	.92422	576.8	.00430	.001281	.92792	589.8	.00816	.002426
34	.91013	565.1	.00388	.001150	.91976	557.8	.00223	.000665	.95809	576.1	.00099	.000294
35	.91399	564.5	.00247	.000732	.92868	559.1	.00114	.000340				
36	.88917	547.8	.00280	.000830	.90026	543.1	.00132	.000393	.89886	544.1	.00131	.000390
37	.90241	566.8	.00616	.001825	.91085	567.1	.00567	.001690	.90724	567.8	.00622	.001849
38	.88973	547.8	.00239	.000708	.90862	557.5	.00350	.001043	.91227	567.8	.00572	.001701
39	.90296	557.8	.00249	.000738	.92756	572.8	.00383	.001141	.92959	586.5	.00740	.002200
40	.91013	565.1	.00376	.001114	.92812	577.1	.00572	.001705	.92568	592.8	.01076	.003199
41	.89469	550.8	.00238	.000705	.91085	549.1	.00142	.000423	.91171	550.8	.00134	.000398
42	.89689	557.1	.00401	.001188	.90750	552.5	.00245	.000730	.90501	549.5	.00229	.000681
43	.89689	562.1	.00559	.001657	.90416	560.8	.00427	.001272	.89886	557.1	.00420	.001249
44	.89965	565.1	.00598	.001772	.90917	566.8	.00544	.001621	.90501	567.1	.00638	.001897
45	.90351	565.5	.00523	.001550	.91809	572.1	.00538	.001603	.91730	577.8	.00747	.002221
46	.90241	559.5	.00363	.001076	.92032	569.1	.00444	.001323	.92065	578.1	.00676	.002010
47	.89689	552.5	.00221	.000655	.91642	561.1	.00325	.000969	.91674	570.5	.00559	.001662
60	.91509	565.5	.00296	.000877	.93146	564.5	.00195	.000581	.95977	577.1	.00108	.000321
61	.91399	567.1	.00368	.001091	.93536	559.1	.00065	.000194	.93071	556.8	.00068	.000202
62	.88973	548.8	.00285	.000845	.89859	541.1	.00136	.000405	.90501	543.5	.00096	.000285
63	.89414	556.5	.00410	.001215	.89970	548.5	.00262	.000781	.89998	548.8	.00231	.000687
64	.90130	564.1	.00534	.001582	.90750	559.5	.00393	.001171	.90501	557.8	.00380	.001130
65	.89855	564.1	.00580	.001719	.90750	564.1	.00519	.001547	.90557	568.1	.00566	.001683
66	.89744	561.5	.00519	.001538	.91085	567.5	.00539	.001606	.91227	573.8	.00713	.002120
67	.89359	554.1	.00355	.001052	.91029	564.5	.00480	.001430	.91507	578.1	.00718	.002135
68	.89359	549.8	.00236	.000699	.91363	562.5	.00388	.001156	.92010	576.5	.00682	.002028
69	.91399	565.5	.00316	.000936	.92868	576.1	.00534	.001591	.92680	587.5	.00956	.002843
70	.91950	566.5	.00266	.000788	.92979	573.8	.00425	.001267	.92457	587.8	.00859	.002554
71	.92005	567.1	.00268	.000794	.94205	569.5	.00161	.000480	.96535	582.5	.00136	.000404
72	.91509	566.1	.00319	.000945	.93926	562.5	.00072	.000215	.94412	565.1	.00062	.000184
73	.89524	551.5	.00259	.000768	.90305	544.1	.00134	.000399	.91283	547.5	.00088	.000262
74	.89469	558.1	.00393	.001165	.90026	548.1	.00247	.000736	.90110	547.8	.00189	.000562
75					.90360	559.1	.00388	.001156				
76	.90516	570.5	.00575	.001704	.91363	567.5	.00506	.001508	.90892	569.1	.00563	.001674
77	.90461	568.5	.00499	.001479	.91809	571.5	.00525	.001565	.91730	575.8	.00668	.001986
78	.89414	554.8	.00365	.001082	.91085	566.5	.00453	.001350	.91283	575.5	.00650	.001933
79	.89524	551.1	.00255	.000756	.91642	563.5	.00378	.001126	.92010	576.1	.00651	.001936
80	.91619	566.8	.00318	.000942	.92366	572.1	.00477	.001421	.92457	583.5	.00831	.002471
81	.92556	568.5	.00220	.000652	.93536	574.5	.00366	.001091	.93071	584.1	.00708	.002105
83	.92115	568.1	.00286	.000848	.94595	569.8	.00100	.000298	.98491	590.5	.00074	.000220
84	.89303	550.1	.00240	.000711	.90249	543.8	.00140	.000417	.93015	559.8	.00117	.000348
85	.89359	555.5	.00392	.001162	.90137	549.5	.00264	.000787	.91507	556.8	.00209	.000621
86	.89634	560.8	.00532	.001577	.90360	561.8	.00392	.001168	.90557	558.8	.00348	.001035
87	.90186	565.8	.00591	.001751	.91196	566.5	.00523	.001559	.91004	565.8	.00509	.001513
88	.89524	560.5	.00516	.001529	.91029	566.8	.00530	.001579	.90892	570.1	.00631	.001876
89	.89359	555.1	.00392	.001162	.91196	565.5	.00479	.001427	.91339	572.8	.00654	.001945
90	.89193	549.1	.00258	.000765	.91642	563.1	.00378	.001126	.91674	573.8	.00645	.001918
91	.92556	570.8	.00268	.000794	.92979	573.8	.00429	.001278	.92624	582.8	.00753	.002239
93	.88862	547.5	.00261	.000773	.91586	551.8	.00129	.000384	.93239	562.5	.00138	.000410
94	.89193	558.5	.00372	.001102	.90917	553.5	.00244	.000727	.91898	559.5	.00212	.000630
95	.89303	558.5	.00516	.001529	.90416	559.5	.00381	.001135	.90557	558.8	.00350	.001041
96	.89634	561.8	.00556	.001648	.90806	563.5	.00486	.001448	.90780	563.5	.00476	.001415
97	.89414	559.1	.00518	.001535	.90973	566.5	.00571	.001702	.91171	570.8	.00610	.001814
98	.89028	554.8	.00388	.001150	.91029	564.1	.00460	.001371	.91451	572.5	.00626	.001861
99	.89248	549.5	.00238	.000705	.91698	563.8	.00380	.001132	.92065	576.1	.00641	.001906

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 1 - Continued

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	α' = 22.5°; T_t = 675° R; p_t = 12,235.0 lb/sq ft				α' = 30.0°; T_t = 678° R; p_t = 12,217.0 lb/sq ft				α' = 37.5°; T_t = 682° R; p_t = 12,233.0 lb/sq ft			
1	.90312	561.1	.00739	.002208	.90877	565.1	.00624	.001869	.91902	573.5	.00590	.001774
2	.91824	581.5	.01212	.003621	.92388	588.5	.01085	.003249	.93354	601.8	.00997	.002998
3	.92496	595.1	.01859	.005554	.93451	612.1	.01846	.005528	.94806	624.8	.01596	.004798
4	.90032	546.8	.00298	.000890	.91213	555.1	.00230	.000689	.92740	562.5	.00228	.000685
5	.89808	552.8	.00497	.001485	.90597	557.8	.00427	.001279	.91846	566.8	.00409	.001230
6	.91152	572.1	.00889	.002656	.91884	579.1	.00795	.002381	.92907	588.8	.00738	.002219
7	.91936	584.8	.01282	.003830	.93004	596.8	.01263	.003782	.94304	610.5	.01271	.003821
8	.92216	587.5	.01362	.004069	.93619	608.8	.01499	.004489	.95365	622.5	.01627	.004892
9	.92160	554.1	.00091	.000272	.93563	561.1	.00065	.000195	.94471	565.1	.00053	.000159
10	.91040	548.8	.00171	.000511	.92836	557.1	.00074	.000222	.93969	564.1	.00082	.000247
11	.90144	545.5	.00237	.000708	.91716	557.1	.00174	.000521	.93131	563.1	.00173	.000520
12	.90424	557.8	.00440	.001315	.91380	563.1	.00358	.001072	.92628	569.5	.00350	.001052
13	.90928	568.8	.00797	.002381	.91716	575.8	.00708	.002120	.92740	585.5	.00702	.002111
14	.91768	580.5	.01134	.003388	.92780	591.8	.01058	.003168	.94080	605.1	.01050	.003157
15	.92160	583.1	.01090	.003257	.93507	598.8	.01184	.003545	.95197	616.1	.01192	.003584
16	.92216	578.1	.00876	.002617	.93787	595.5	.00990	.002965	.95644	615.8	.01087	.003268
17	.92048	569.5	.00625	.001867	.93619	587.1	.00781	.002339	.95476	608.5	.00937	.002817
18	.94288	564.1	.00075	.000224	.95074	571.1	.00081	.000243	.95755	572.5	.00063	.000189
20	.90984	568.1	.00768	.002295	.91828	575.8	.00744	.002228	.92740	585.1	.00668	.002008
21	.92104	577.1	.00852	.002546	.93675	593.8	.00930	.002785	.95365	611.8	.00992	.002982
22	.92160	567.1	.00446	.001333	.93451	580.5	.00560	.001677	.95253	600.1	.00683	.002053
23	.96080	573.1	.00052	.000155	.96641	580.8	.00113	.000338	.97431	583.5	.00060	.000180
24	.94904	567.5	.00077	.000230	.96082	575.5	.00090	.000270	.96816	580.5	.00071	.000213
25	.92384	555.8	.00127	.000379	.94235	565.1	.00111	.000332	.95253	573.8	.00099	.000298
26	.90984	551.1	.00212	.000633	.92724	559.1	.00168	.000503	.94024	568.1	.00187	.000562
27	.90200	552.5	.00405	.001210	.91436	560.1	.00342	.001024	.92461	570.8	.00343	.001031
28	.90704	565.8	.00716	.002139	.91996	577.8	.00639	.001913	.92405	581.8	.00618	.001858
29	.91488	577.5	.01005	.003003	.92668	589.5	.00996	.002982	.93689	600.1	.00943	.002835
30	.91992	580.5	.01016	.003036	.93395	595.5	.01031	.003087	.94750	609.1	.01012	.003043
31	.92328	577.1	.00781	.002333	.93787	593.1	.00860	.002575	.95309	608.5	.00879	.002643
32	.92440	574.5	.00571	.001706	.93227	580.5	.00565	.001692	.94694	599.8	.00653	.001963
33	.93560	590.5	.00714	.002133	.94011	583.8	.00462	.001383	.95476	598.1	.00553	.001663
34	.97032	577.8	.00051	.000152	.97313	582.1	.00077	.000231	.98268	587.5	.00050	.000150
35	.96472	576.1	.00073	.000218	.97817	585.1	.00097	.000290	.98771	593.8	.00071	.000213
36	.92216	554.1	.00114	.000341	.94291	566.1	.00120	.000359	.95644	576.8	.00122	.000367
37	.91264	568.5	.00733	.002190	.92220	580.1	.00652	.001952	.93131	584.8	.00565	.001699
38	.92272	577.1	.00796	.002378	.93731	592.5	.00874	.002617	.95085	607.1	.00846	.002544
39	.93672	592.8	.01049	.003134	.94962	593.8	.00469	.001404	.95700	600.5	.00583	.001753
40	.93504	617.5	.01481	.004425	.95018	600.5	.00480	.001437	.96091	597.5	.00422	.001269
41	.93000	558.5	.00118	.000353	.95018	572.1	.00144	.000431	.96537	585.1	.00158	.000475
42	.91992	555.5	.00209	.000624	.93955	568.5	.00205	.000614	.95700	582.1	.00214	.000643
43	.90648	558.5	.00403	.001204					.93578	576.1	.00351	.001055
44	.91152	568.5	.00747	.002232	.92052	576.1	.00663	.001985	.93187	585.5	.00582	.001750
45	.92496	582.8	.00930	.002779	.93563	592.8	.00910	.002725	.94694	603.5	.00802	.002411
46	.93056	586.1	.00922	.002755	.94347	599.1	.00955	.002860	.95532	611.5	.00894	.002688
47	.92720	578.8	.00758	.002265	.94067	597.1	.00819	.002452	.95309	606.5	.00783	.002354
60	.97424	583.1	.00093	.000278	1.00000	594.1	.00042	.000126	.99385	594.8	.00064	.000192
61	.97368	580.8	.00068	.000203	.99384	590.8	.00033	.000099	.99162	593.5	.00062	.000186
62	.93280	558.5	.00088	.000263	.94962	568.8	.00083	.000249	.95811	576.8	.00116	.000349
63	.91880	554.5	.00187	.000559	.93563	564.1	.00161	.000482	.94639	575.5	.00212	.000637
64	.91432	559.1	.00350	.001046	.92668	566.5	.00319	.000955	.93633	575.8	.00357	.001073
65	.91096	572.5	.00593	.001772	.92108	576.5	.00537	.001608	.93075	586.5	.00655	.001969
66	.91992	578.8	.00908	.002713	.93060	588.5	.00844	.002527	.94415	618.8	.01145	.003442
67	.92664	588.1	.01104	.003298	.93899	602.1	.00992	.002971	.95365	629.1	.02091	.006287
68	.93392	610.8	.01439	.004299	.94627	609.1	.00894	.002677	.95979	634.8	.02417	.007267
69	.93616	598.8	.01592	.004757	.94850	621.8	.01969	.005896	.96481	624.5	.01097	.003298
70	.93392	614.8	.01347	.004025	.94850	620.1	.01778	.005324	.96481	632.1	.01735	.005216
71	.96528	580.5	.00150	.000448	.98320	588.8	.00087	.000261	.98436	596.8	.00170	.000511
72	.96304	575.1	.00057	.000170	.98488	587.8	.00060	.000180	.97822	591.1	.00135	.000406
73	.93728	561.8	.00123	.000367	.95074	570.5	.00113	.000338	.96146	581.1	.00146	.000439
74	.91936	555.8	.00233	.000696	.93451	566.1	.00193	.000578	.94639	574.8	.00216	.000649
75					.85728	515.8	.00230	.000689	.92852	571.8	.00380	.001142
76	.91544	576.1	.00811	.002423	.92556	583.8	.00625	.001872	.92907	590.1	.00691	.002078
77	.92664	593.8	.01428	.004267	.93843	601.8	.01021	.003057	.94192	611.8	.01341	.004032
78	.92776	596.5	.01445	.004317	.93787	611.1	.01390	.004162	.94583	622.1	.01991	.005986
79	.93616	603.1	.01910	.005707	.94515	620.1	.01882	.005636	.95588	632.5	.02576	.007745
80	.93224	593.8	.01385	.004138	.94459	616.8	.01753	.005249	.96091	631.8	.02074	.006236
81	.93784	612.1	.01054	.003149	.95298	616.8	.01336	.004001	.97040	630.1	.01356	.004077
83	.97816	586.1	.00109	.000326	.98712	592.1	.00125	.000374	.98883	592.1	.00062	.000186
84	.94736	568.1	.00128	.000382	.95466	574.1	.00135	.000404	.95309	572.5	.00088	.000265
85	.93280	563.5	.00223	.000666	.94235	569.5	.00198	.000593	.94304	569.5	.00162	.000487
86	.91880	564.1	.00464	.001386					.92405	566.1	.00323	.000971
87	.92328	579.1	.00834	.002492	.92332	582.8	.00745	.002231	.92237	578.5	.00621	.001867
88	.92496	591.8	.01445	.004317	.92612	600.1	.01425	.004267	.92628	598.5	.01197	.003599
89	.93112	600.5	.01841	.005500	.93563	608.8	.02013	.006028	.94024	617.1	.01834	.005514
90	.93280	601.5	.01891	.005650	.94011	617.8	.02220	.006648	.94918	626.1	.02234	.006717
91	.93336	592.8	.01234	.003687	.94627	614.1	.01445	.004327	.96202	627.1	.01503	.004519
93	.93728	563.8	.00164	.000490	.85728	524.8	.00043	.000129	.93243	562.1	.00123	.000370
94	.92720	561.1	.00254	.000759	.93339	564.1	.00204	.000611	.92628	560.8	.00186	.000559
95	.91152	564.1	.00484	.001446	.91492	563.8	.00386	.001156	.91121	558.5	.00328	.000986
96	.91432	574.5	.00883	.002638	.91436	572.5	.00730	.002186	.91065	570.5	.00593	.001783
97	.92272	592.5	.01647	.004921	.92444	594.8	.01449	.004339	.92349	596.8	.01236	.003716
98	.92776	599.1	.01955	.005841	.93227	611.1	.02002	.005995	.93689	613.8	.01749	.005258
99	.93280	601.8	.01914	.005719	.94011	617.1	.02110	.006318	.94862	625.1	.02149	.006461

TABLE VI. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 1 - Concluded

(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 45.0^o$; $T_t = 675^o$ R; $p_t = 12{,}247.0$ lb/sq ft			
1	.95053	571.1	.00283	.000843
2	.96417	594.8	.00406	.001209
3	.97953	614.8	.00513	.001528
4	.96076	569.8	.00124	.000369
5	.94769	567.8	.00200	.000596
6	.95280	581.8	.00346	.001030
7	.96531	597.5	.00495	.001474
8	.97896	616.5	.00560	.001667
9	.98351	577.8	.00043	.000128
10	.97611	575.5	.00060	.000179
11	.96417	569.8	.00092	.000274
12	.95223	568.1	.00200	.000596
13	.94427	580.8	.00362	.001078
14	.95621	593.1	.00488	.001453
15	.97157	609.1	.00611	.001819
16	.98009	615.5	.00639	.001903
17	.98123	621.8	.00638	.001900
20	.94200	576.8	.00463	.001379
21	.97555	622.8	.00726	.002162
22	.97668	623.1	.00731	.002177
23	1.00909	592.8	.00048	.000143
24	1.00341	590.1	.00058	.000173
25	.98578	583.1	.00090	.000268
26	.97157	577.5	.00125	.000372
27	.95110	570.5	.00242	.000721
28	.94655	581.8	.00406	.001209
29	.95565	598.8	.00614	.001828
30	.96929	618.5	.00697	.002075
31	.97668	624.8	.00754	.002245
32	.96929	619.8	.00775	.002308
33	.97896	622.1	.00787	.002343
34	1.01194	595.8	.00058	.000173
35	1.01592	600.1	.00087	.000259
36	.98521	583.8	.00109	.000325
37	.94882	589.5	.00474	.001411
38	.97611	625.8	.00784	.002334
39	.98066	627.1	.00761	.002266
40	.98351	629.1	.00656	.001953
41	.98805	590.1	.00149	.000444
42	.98237	589.8	.00200	.000596
43	.95792	578.1	.00293	.000872
44	.95053	588.5	.00439	.001307
45	.96702	606.5	.00603	.001796
46	.97839	620.1	.00689	.002052
47	.97725	626.1	.00750	.002233
60	1.02615	601.8	.00046	.000137
61	1.02217	599.8	.00047	.000140
62	.98464	582.1	.00074	.000220
63	.97100	575.5	.00110	.000328
64	.95565	574.5	.00222	.000661
66	.95678	599.1	.00648	.001930
67	.97213	617.5	.00790	.002352
68	.98123	633.1	.00862	.002567
69	.98407	630.5	.00827	.002463
70	.98521	628.1	.00693	.002064
71	1.01137	595.1	.00055	.000164
72	1.00796	592.5	.00061	.000182
73	.98919	584.8	.00098	.000292
74	.97498	579.5	.00124	.000369
75	.95678	580.8	.00228	.000679
76	.95337	580.8	.00392	.001167
77	.96588	603.5	.00641	.001909
78	.97327	622.8	.00810	.002412
79	.98635	635.8	.00958	.002853
80	.98749	633.5	.00868	.002585
81	1.00000	632.1	.00584	.001739
83	1.00852	592.1	.00046	.000137
84	.98180	577.5	.00054	.000161
85	.97327	574.8	.00077	.000229
86	.95394	568.8	.00183	.000545
87	.94882	579.5	.00364	.001084
88	.95280	594.1	.00651	.001938
89	.97157	616.1	.00888	.002644
90	.98464	633.1	.01097	.003266
91	.99488	632.5	.00786	.002340
93	.96417	568.1	.00063	.000188
94	.95849	568.1	.00093	.000277
95	.94257	562.1	.00168	.000500
96	.93802	572.1	.00348	.001036
97	.95053	593.1	.00670	.001995
98	.96759	613.5	.00951	.002832
99	.98464	635.8	.01042	.003103

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 0^o$; $T_t = 698^o$ R; p_t = 5,045.0 lb/sq ft				$\alpha' = 7.5^o$; $T_t = 698^o$ R; p_t = 5,037.0 lb/sq ft				$\alpha' = 15.0^o$; $T_t = 695^o$ R; p_t = 5,028.0 lb/sq ft			
4	.92905	571.8	.00606	.001670	.92368	554.8	.00431	.001190	.91540	554.8	.00452	.001246
5	.93309	582.5	.00743	.002048	.93004	568.1	.00659	.001819	.92288	574.5	.00758	.002090
6	.93655	586.8	.00776	.002139	.93698	578.8	.00788	.002175	.93382	592.5	.01014	.002795
7	.93309	582.5	.00743	.002048	.93814	581.1	.00829	.002288	.93900	602.1	.01172	.003231
8	.92444	570.5	.00608	.001676	.93178	573.8	.00738	.002037	.93612	599.5	.01144	.003154
9	.92155	548.1	.00209	.000576	.91790	536.8	.00139	.000384	.91368	540.8	.00183	.000504
10	.92098	550.1	.00293	.000808	.91617	537.1	.00173	.000478	.90965	539.5	.00203	.000560
11	.92674	563.5	.00424	.001169	.92079	548.1	.00325	.000897	.91310	547.8	.00312	.000860
12	.93366	576.5	.00548	.001510	.93004	563.5	.00499	.001377	.92231	567.5	.00551	.001519
13	.93540	579.8	.00582	.001604	.93640	573.5	.00620	.001712	.93267	585.5	.00739	.002037
14	.93020	573.5	.00538	.001483	.93582	574.5	.00644	.001778	.93669	593.8	.00853	.002352
15	.92386	561.8	.00424	.001169	.93293	567.5	.00546	.001507	.93785	591.8	.00822	.002266
16	.92386	551.1	.00288	.000794	.93236	557.1	.00386	.001066	.93785	579.8	.00646	.001781
17	.92213	548.8	.00210	.000579	.93004	549.5	.00243	.000671	.93554	568.5	.00505	.001392
18	.92790	546.5	.00161	.000444	.93004	545.8	.00180	.000497	.92806	554.5	.00250	.000689
19	.92617	549.8	.00249	.000686	.92311	542.1	.00156	.000431	.91828	542.5	.00164	.000452
20	.93193	578.1	.00569	.001568	.93236	571.5	.00614	.001695	.92806	581.8	.00686	.001891
21	.92271	547.5	.00243	.000670	.93062	555.1	.00357	.000986	.93612	579.1	.00603	.001662
22	.92155	543.1	.00153	.000422	.92715	543.5	.00161	.000444	.93324	558.1	.00303	.000835
23	.93136	549.1	.00160	.000441	.93582	549.5	.00172	.000475	.92749	552.1	.00226	.000623
24	.93078	552.5	.00185	.000510	.93409	553.5	.00217	.000599	.92691	548.5	.00180	.000496
25	.92559	548.8	.00220	.000606	.92368	539.8	.00137	.000378	.92116	542.5	.00164	.000452
26	.92098	558.1	.00370	.001020	.91675	548.1	.00289	.000798	.91137	547.1	.00273	.000753
27	.92847	572.8	.00512	.001411	.92484	559.5	.00473	.001306	.91713	561.8	.00480	.001323
28	.92905	574.1	.00578	.001593	.92426	567.1	.00623	.001720	.92519	576.8	.00654	.001803
29	.92790	572.8	.00511	.001408	.93351	573.5	.00632	.001745	.93267	590.8	.00776	.002139
30	.92098	557.8	.00365	.001006	.92889	564.1	.00510	.001408	.93267	587.5	.00752	.002073
31	.92386	546.8	.00221	.000609	.93004	554.5	.00341	.000941	.93554	578.5	.00595	.001640
32	.91751	544.8	.00185	.000510	.91848	540.5	.00193	.000533	.92403	557.5	.00336	.000926
33	.92790	546.5	.00150	.000413	.92889	543.1	.00137	.000378	.93497	558.5	.00219	.000604
34	.93713	552.1	.00155	.000427	.93640	548.1	.00159	.000439	.92749	549.1	.00170	.000469
35	.94635	566.5	.00211	.000582	.94103	557.1	.00245	.000676	.93669	551.8	.00163	.000449
36	.92271	546.8	.00231	.000637	.91848	536.8	.00138	.000381	.91770	540.1	.00152	.000419
37	.93193	578.5	.00567	.001563	.93120	570.5	.00603	.001665	.92576	579.5	.00680	.001875
38	.92444	547.1	.00217	.000598	.92715	552.8	.00341	.000941	.93094	576.1	.00596	.001643
39	.93655	559.8	.00220	.000606	.93178	547.8	.00180	.000497	.93612	563.1	.00301	.000830
40	.93655	552.5	.00133	.000367	.93467	544.8	.00111	.000306	.93842	554.5	.00170	.000469
41	.92732	549.8	.00223	.000615	.92311	544.8	.00160	.000442	.92001	541.5	.00152	.000419
42	.92444	558.8	.00348	.000959	.91906	544.1	.00272	.000751	.91540	548.1	.00248	.000684
43	.92444	569.1	.00497	.001370	.91964	555.1	.00441	.001217	.91310	557.5	.00434	.001196
44	.92386	572.5	.00534	.001472	.92311	564.5	.00573	.001582	.91713	578.5	.00654	.001803
45	.93136	573.5	.00479	.001320	.93467	572.5	.00615	.001698	.93209	588.5	.00759	.002092
46	.92847	561.8	.00339	.000934	.93236	565.5	.00480	.001325	.93324	586.5	.00669	.001844
47	.92963	551.1	.00182	.000502	.92831	551.8	.00312	.000861	.92921	573.1	.00543	.001497
50	.94578	609.8	.01115	.003073	.93929	590.5	.01034	.002854	.92921	593.5	.01098	.003027
51	.97116	635.5	.01282	.003534	.96646	629.8	.01467	.004050	.95684	638.5	.01406	.003876
52	.97923	658.1	.01956	.005391	.97976	652.5	.02332	.006438	.97410	664.8	.03110	.008574
53	.97000	643.8	.01596	.004399	.97629	643.8	.02125	.005866	.97698	668.1	.02661	.007336
54	.94462	608.8	.01178	.003247	.95259	611.8	.01411	.003895	.95684	637.8	.01961	.005406
55	.94405	608.8	.01149	.003167	.93814	589.5	.01037	.002863	.92806	592.8	.01104	.003044
56	.96135	635.1	.01510	.004162	.95721	621.1	.01588	.004384	.94763	627.8	.01660	.004576
57	.97289	648.1	.01669	.004600	.97340	641.5	.02094	.005781	.96777	659.1	.02398	.006611
58	.96250	636.5	.01547	.004264	.96878	636.5	.02028	.005598	.97007	657.8	.02564	.007068
59	.94059	604.8	.01117	.003079	.94854	607.5	.01438	.003970	.95281	645.1	.01942	.005354
60	.94578	569.1	.00316	.000871	.94218	555.5	.00197	.000544	.93036	552.1	.00207	.000571
61	.92213	564.5	.00441	.001216	.92600	543.1	.00176	.000486	.91310	538.8	.00109	.000300
62	.90656	538.5	.00235	.000648	.90692	529.1	.00128	.000353	.90217	529.1	.00130	.000358
63	.91059	552.5	.00370	.001020	.90807	538.8	.00278	.000767	.90102	541.5	.00260	.000717
64	.91982	565.5	.00479	.001320	.91732	552.5	.00412	.001137	.91022	555.5	.00425	.001172
65	.91521	565.8	.00557	.001535	.91559	558.1	.00553	.001527	.91137	576.5	.00608	.001676
66	.91405	562.1	.00481	.001326	.92021	561.8	.00549	.001516	.91943	578.1	.00681	.001877
67	.91002	550.5	.00350	.000965	.91964	556.1	.00456	.001259	.92173	576.5	.00655	.001806
68	.91636	544.1	.00219	.000604	.92657	550.8	.00320	.000883	.92749	571.5	.00538	.001483
69	.92732	565.8	.00412	.001136	.94507	574.1	.00492	.001358	.94533	586.1	.00585	.001613
70	.95270	571.5	.00274	.000755	.95201	572.1	.00390	.001077	.95108	594.1	.00664	.001831
71	.94751	567.8	.00277	.000763	.94681	558.5	.00216	.000596	.93669	558.8	.00209	.000576
72	.91405	556.8	.00419	.001155	.90171	532.8	.00208	.000574	.90447	531.5	.00100	.000276
73	.90944	541.1	.00243	.000670	.91154	531.8	.00133	.000367	.91655	536.1	.00102	.000281
74	.90886	550.5	.00375	.001034	.90750	537.1	.00257	.000709	.90735	542.5	.00234	.000645
75	.91117	559.8	.00520	.001433	.90981	546.8	.00398	.001099	.90620	555.1	.00396	.001092
76	.91751	566.1	.00537	.001480	.91848	557.8	.00507	.001400	.91598	567.5	.00555	.001530
77	.92040	565.1	.00474	.001306	.92657	564.1	.00522	.001441	.92749	580.8	.00635	.001751
78	.90829	548.8	.00352	.000970	.91848	553.8	.00438	.001209	.92173	584.5	.00620	.001709
79	.91175	541.8	.00237	.000653	.92600	550.1	.00318	.000878	.92864	571.1	.00528	.001456
80	.91982	558.1	.00377	.001039	.92831	565.5	.00552	.001524	.93036	593.8	.00996	.002746
81	.95847	570.8	.00236	.000650	.95779	571.5	.00342	.000944	.95626	592.1	.00593	.001635
83	.92732	561.8	.00375	.001034	.92715	545.1	.00171	.000472	.94993	555.1	.00073	.000201
84	.90944	541.5	.00262	.000722	.91270	534.8	.00127	.000351	.92403	540.5	.00102	.000281
85	.93828	567.8	.00375	.001034	.93814	554.8	.00257	.000709	.94130	558.8	.00216	.000595
86	.91232	565.5	.00505	.001392	.91096	547.5	.00408	.001126	.90907	555.8	.00379	.001045
87	.91982	567.8	.00568	.001566	.92137	559.1	.00509	.001405	.91886	567.8	.00542	.001494
88	.91059	559.5	.00503	.001386	.91675	557.8	.00534	.001474	.91770	573.5	.00663	.001828
89	.90944	550.8	.00390	.001075	.92021	555.8	.00458	.001264	.92403	575.8	.00631	.001740
90	.90771	539.5	.00246	.000678	.92195	548.1	.00331	.000914	.92519	569.1	.00537	.001480
91	.93193	564.5	.00369	.001017	.93351	566.1	.00500	.001380	.93497	592.1	.00842	.002321
93	.90367	538.8	.00271	.000747	.91443	538.5	.00139	.000384	.91598	538.1	.00121	.000334
94	.90829	550.1	.00387	.001067	.91154	539.5	.00260	.000718	.90907	540.1	.00220	.000607
95	.90886	558.5	.00518	.001428	.90923	546.8	.00408	.001126	.90447	552.5	.00388	.001070
96	.91694	565.1	.00570	.001571	.91906	557.8	.00514	.001419	.91483	563.8	.00529	.001458
97	.91059	559.5	.00509	.001403	.91790	559.5	.00548	.001513	.91828	573.5	.00649	.001789
98	.90598	548.5	.00384	.001058	.91790	554.8	.00466	.001286	.92116	573.5	.00623	.001717
99	.90771	540.5	.00255	.000703	.92368	560.8	.00348	.000961	.92749	570.8	.00530	.001461

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 701° R; p_t = 5,043.0 lb/sq ft				α' = 30.0°; T_t = 704° R; p_t = 5,045.0 lb/sq ft				α' = 37.5°; T_t = 704° R; p_t = 5,043.0 lb/sq ft			
4	.90897	554.8	.00445	.001229	.90627	553.8	.00285	.000789	.91903	548.8	.00227	.000628
5	.91698	577.8	.00745	.002058	.91427	565.5	.00614	.001700	.91960	563.8	.00527	.001459
6	.93130	602.8	.01064	.002939	.93084	594.5	.00989	.002738	.93556	592.8	.00906	.002508
7	.94160	620.5	.01320	.003646	.94570	618.8	.01336	.003699	.95381	620.8	.01283	.003552
8	.94275	623.8	.01408	.003889	.95199	627.5	.01491	.004128	.96350	634.5	.01585	.004388
9	.91240	549.1	.00227	.000627	.91198	546.8	.00187	.000518	.93613	558.5	.00166	.000460
10	.90611	538.1	.00204	.000563	.90627	535.1	.00132	.000365	.92986	550.8	.00148	.000410
11	.90782	547.1	.00308	.000851	.90684	540.1	.00242	.000670	.92644	550.8	.00177	.000490
12	.91584	569.5	.00533	.001472	.91427	560.1	.00477	.001321	.92416	561.8	.00402	.001113
13	.93015	595.1	.00785	.002168	.92970	588.1	.00785	.002173	.93556	587.8	.00712	.001971
14	.93931	611.1	.00980	.002707	.94284	610.1	.01061	.002937	.94982	611.8	.01041	.002882
15	.94446	615.8	.01017	.002809	.95256	620.1	.01140	.003156	.96293	625.5	.01180	.003267
16	.94618	605.1	.00860	.002375	.95599	611.5	.00968	.002680	.96863	620.1	.01027	.002843
17	.94446	592.8	.00728	.002011	.95542	600.1	.00810	.002242	.96863	611.5	.00895	.002478
18	.92328	557.5	.00225	.000621	.92284	548.5	.00143	.000396	.95381	565.8	.00125	.000346
19	.91756	543.8	.00182	.000503	.91998	542.8	.00133	.000368	.94354	561.1	.00136	.000377
20	.92328	589.5	.00718	.001983	.92227	581.5	.00727	.002013	.92929	580.8	.00638	.001766
21	.94332	602.5	.00776	.002143	.95142	606.8	.00873	.002417	.96293	614.1	.00887	.002456
22	.94160	578.5	.00455	.001257	.95142	586.1	.00534	.001478	.96521	598.1	.00605	.001675
23	.92557	552.5	.00165	.000456	.92627	551.1	.00147	.000407	.96350	572.5	.00113	.000313
24	.92500	547.1	.00127	.000351	.92856	546.1	.00084	.000233	.96008	566.8	.00083	.000230
25	.92042	545.8	.00171	.000472	.92398	546.1	.00108	.000299	.94811	561.5	.00107	.000296
26	.90782	544.8	.00262	.000724	.91255	542.1	.00180	.000498	.93556	559.1	.00177	.000490
27	.91069	562.5	.00451	.001246	.91198	555.1	.00382	.001058	.92701	561.5	.00341	.000944
28	.91355	586.8	.00685	.001892	.91313	579.5	.00663	.001836	.92245	574.8	.00584	.001617
29	.93187	603.1	.00846	.002337	.93256	598.1	.00936	.002591	.94183	600.1	.00817	.002262
30	.93588	605.8	.00864	.002386	.93999	605.8	.00994	.002752	.95210	610.8	.00986	.002730
31	.94103	600.1	.00755	.002085	.94684	602.8	.00832	.002303	.96065	610.5	.00837	.002317
32	.93130	577.1	.00479	.001323	.93884	582.5	.00561	.001553	.95324	592.1	.00595	.001647
33	.94217	573.5	.00348	.000961	.95142	581.8	.00421	.001166	.96578	595.1	.00501	.001387
34	.92672	551.1	.00137	.000378	.93256	553.5	.00134	.000371	.96749	573.8	.00122	.000338
35	.93359	550.5	.00114	.000315	.94742	556.5	.00071	.000197	.97548	576.5	.00091	.000252
36	.91527	541.8	.00147	.000406	.92627	545.5	.00097	.000269	.95039	561.1	.00096	.000266
37	.91985	584.1	.00619	.001710	.92170	576.8	.00607	.001680	.93499	579.5	.00520	.001440
38	.93588	596.1	.00724	.002000	.94284	599.5	.00820	.002270	.95780	607.5	.00817	.002262
39	.94217	581.5	.00430	.001188	.95142	586.8	.00490	.001357	.96635	596.8	.00524	.001451
40	.94561	570.1	.00269	.000743	.95370	577.8	.00330	.000914	.96977	590.8	.00375	.001038
41	.92557	546.5	.00125	.000345	.93656	551.8	.00086	.000238	.95666	564.5	.00080	.000221
42	.91813	547.8	.00210	.000580	.92798	553.1	.00151	.000418	.95039	566.5	.00097	.000269
43	.91069	563.5	.00387	.001069	.91713	555.8	.00319	.000883	.93613	563.1	.00237	.000656
44	.91469	583.1	.00604	.001668	.91713	571.8	.00564	.001561	.93328	585.8	.00469	.001298
45	.93244	599.8	.00748	.002066	.93484	596.1	.00824	.002281	.94754	599.8	.00692	.001916
46	.93645	602.8	.00754	.002083	.94227	604.1	.00895	.002478	.95609	610.5	.00886	.002453
47	.93359	597.1	.00660	.001823	.94056	595.5	.00735	.002035	.95552	611.5	.00772	.002137
50	.92156	592.1	.00923	.002549	.91655	573.5	.00737	.002040	.92017	565.8	.00556	.001539
51	.94790	632.5	.01283	.003544	.94170	609.8	.01162	.003217	.94126	598.5	.00943	.002611
52	.96908	675.8	.02939	.008118	.96513	656.8	.02517	.006968	.96350	646.8	.02051	.005678
53	.97881	675.1	.02831	.007820	.98114	671.5	.02492	.006899	.98517	668.1	.02116	.005858
54	.96336	657.1	.02188	.006044	.97085	658.8	.02357	.006525	.98175	671.8	.01810	.005011
55	.92099	591.1	.00937	.002588	.91598	573.1	.00738	.002043	.92017	565.8	.00564	.001561
56	.93988	627.8	.01517	.004190	.93370	610.5	.01334	.003693	.93385	599.1	.01005	.002782
57	.96393	659.1	.02238	.006182	.96056	648.1	.02107	.005833	.96122	639.1	.01745	.004831
58	.97194	669.8	.02814	.007773	.97485	666.5	.02719	.007527	.98004	664.5	.02185	.006049
59	.95878	657.8	.02255	.006229	.96685	656.1	.02417	.006691	.97719	666.5	.02092	.005792
60	.93416	557.1	.00137	.000378	.91484	544.5	.00146	.000404	.95780	566.5	.00100	.000277
61	.93359	547.8	.00063	.000174	.92684	548.1	.00099	.000274	.95951	566.5	.00090	.000249
62	.91412	538.1	.00101	.000279	.91770	538.8	.00083	.000230	.94297	556.1	.00080	.000221
63	.90668	542.8	.00225	.000621	.90970	539.1	.00166	.000460	.93613	554.8	.00145	.000401
64	.91069	558.5	.00375	.001036	.91141	550.8	.00322	.000891	.93157	561.5	.00261	.000723
65	.91069	577.5	.00564	.001558	.91084	565.5	.00537	.001487	.92815	579.1	.00459	.001271
66	.92214	590.5	.00716	.001978	.92513	587.5	.00748	.002071	.94354	604.8	.00703	.001946
67	.92729	594.1	.00734	.002027	.93427	598.1	.00841	.002328	.95324	623.8	.00913	.002528
68	.93416	591.5	.00699	.001931	.94342	625.1	.00965	.002672	.96293	621.5	.01013	.002804
69	.95019	586.8	.00390	.001077	.95427	593.8	.00514	.001423	.96806	624.5	.00359	.000994
70	.95362	608.5	.00711	.001964	.95770	590.8	.00401	.001110	.97091	597.5	.00416	.001152
71	.93702	561.8	.00145	.000401	.92627	556.1	.00207	.000573	.96578	574.1	.00134	.000371
72	.93645	552.5	.00088	.000243	.92056	544.5	.00100	.000277	.95552	564.5	.00097	.000269
73	.92901	545.8	.00100	.000276	.92798	545.8	.00074	.000205	.94982	560.8	.00096	.000266
74	.91469	545.5	.00195	.000539	.91655	543.1	.00165	.000457	.94012	557.8	.00142	.000393
75	.90782	558.1	.00349	.000964	.90798	549.1	.00324	.000897	.92587	559.1	.00325	.000900
76	.91584	573.1	.00548	.001514	.91598	587.5	.00601	.001664	.92815	585.5	.00623	.001725
77	.93072	593.1	.00667	.001842	.93370	611.1	.00893	.002472	.94583	613.8	.01113	.003081
78	.92901	599.1	.00739	.002041	.93599	627.5	.01057	.002926	.94811	628.1	.01610	.004457
79	.93988	601.5	.00911	.002516	.94856	629.1	.01048	.002901	.96008	639.8	.01802	.004989
80	.93530	626.8	.01443	.003986	.94456	626.8	.01617	.004477	.96008	635.5	.01710	.004734
81	.95019	619.8	.00889	.002456	.95085	620.8	.01248	.003455	.96920	638.5	.01193	.003303
83	.95878	562.5	.00055	.000152	.94113	557.5	.00116	.000321	.97320	575.8	.00106	.000293
84	.92901	547.1	.00101	.000279	.93541	552.8	.00097	.000269	.94925	561.1	.00096	.000266
85	.94618	563.5	.00180	.000497	.95427	570.5	.00197	.000545	.96863	574.8	.00142	.000393
86	.91240	555.5	.00324	.000895	.91427	555.8	.00375	.001038	.92530	557.1	.00308	.000853
87	.92385	574.8	.00469	.001295	.92113	577.8	.00642	.001777	.92530	573.5	.00574	.001589
88	.92843	588.5	.00647	.001787	.92570	601.8	.01017	.002816	.92815	598.8	.01087	.003009
89	.93759	602.8	.00900	.002486	.93770	620.8	.01374	.003804	.94354	622.5	.01486	.004114
90	.93759	622.8	.01257	.003472	.94170	633.8	.01596	.004418	.95153	639.8	.01626	.004502
91	.93874	620.8	.01105	.003052	.94684	620.8	.01338	.003704	.96293	629.8	.01348	.003732
93	.92786	551.8	.00173	.000478	.95256	571.1	.00215	.000595	.94126	558.8	.00145	.000401
94	.91927	551.8	.00267	.000737	.94513	567.8	.00246	.000681	.93556	557.1	.00180	.000498
95	.90954	564.8	.00471	.001301	.92341	562.1	.00411	.001138	.91960	557.5	.00271	.000750
96	.91985	583.5	.00787	.002174	.92170	585.1	.00701	.001941	.91903	567.8	.00545	.001509
97	.92672	609.1	.01369	.003781	.92684	606.8	.01322	.003660	.92644	597.5	.01014	.002807
98	.93187	621.5	.01641	.004533	.93427	622.1	.01724	.004773	.93898	619.1	.01456	.004031
99	.93817	632.1	.01583	.004372	.94284	629.5	.01826	.005055	.95210	639.8	.01630	.004513

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 2 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 45.0°; T_t = 704° R; p_t = 5,045.0 lb/sq ft			
4	.93741	551.5	.00141	.000391
5	.92880	559.8	.00291	.000806
6	.94086	576.8	.00556	.001540
7	.96038	603.8	.00784	.002171
8	.97416	621.1	.00991	.002745
9	.96095	566.1	.00128	.000355
10	.95292	559.1	.00108	.000299
11	.94430	555.1	.00153	.000424
12	.93167	559.5	.00256	.000709
13	.93627	572.1	.00492	.001363
14	.95062	595.5	.00725	.002008
15	.96727	615.5	.00928	.002570
16	.97646	620.1	.00901	.002495
17	.97875	620.8	.00906	.002509
18	.97071	569.5	.00103	.000285
19	.96153	563.5	.00088	.000244
20	.93225	570.8	.00507	.001404
21	.97186	625.8	.01093	.003027
22	.97358	626.1	.01154	.003196
23	.96727	567.8	.00100	.000277
24	.97014	568.5	.00087	.000241
25	.96325	565.1	.00113	.000313
26	.95119	560.1	.00141	.000391
27	.93914	560.8	.00285	.000789
28	.93052	570.5	.00517	.001432
29	.95005	600.1	.00856	.002371
30	.96325	620.1	.00875	.002423
31	.97301	629.1	.01080	.002991
32	.96268	635.5	.01222	.003384
33	.97416	627.8	.01203	.003332
34	.96727	567.8	.00100	.000277
35	.98162	575.8	.00092	.000255
36	.96382	565.5	.00088	.000244
37	.94316	577.8	.00493	.001365
38	.97186	628.8	.01069	.002961
39	.97646	636.8	.01124	.003113
40	.97760	649.1	.00927	.002567
41	.96899	568.5	.00088	.000244
42	.96497	569.1	.00099	.000274
43	.95005	568.8	.00216	.000598
44	.94373	577.1	.00451	.001249
45	.95981	605.5	.00733	.002030
46	.97014	624.5	.00942	.002609
47	.97129	646.1	.00919	.002545
50	.93052	555.1	.00289	.000800
51	.94603	571.8	.00407	.001127
52	.96382	613.5	.00870	.002410
53	.99023	640.5	.00970	.002687
54	.99425	654.5	.00987	.002734
55	.93052	559.8	.00298	.000825
56	.93741	574.8	.00532	.001473
57	.96268	609.5	.00843	.002335
58	.98736	638.8	.00987	.002734
59	.99138	648.8	.01098	.003041
60	.97244	569.1	.00078	.000216
61	.97990	572.8	.00074	.000205
62	.95866	560.8	.00078	.000216
63	.95119	558.1	.00119	.000330
64	.94316	559.8	.00218	.000604
65	.93454	569.1	.00469	.001299
66	.94890	598.8	.00795	.002202
67	.96382	621.5	.01010	.002797
68	.97531	646.1	.01149	.003182
69	.98105	645.8	.01080	.002991
70	.97818	635.5	.01059	.002933
71	.98507	578.5	.00097	.000269
72	.97473	569.1	.00069	.000191
73	.96382	565.1	.00104	.000288
74	.95521	561.1	.00131	.000363
75	.94086	561.1	.00207	.000573
76	.93856	568.5	.00420	.001163
77	.95464	598.8	.00734	.002033
78	.96095	637.1	.00993	.002750
79	.97588	646.1	.01144	.003168
80	.97646	629.8	.01142	.003163
81	.98736	639.5	.00856	.002371
83	.98851	578.5	.00083	.000230
84	.96325	566.1	.00125	.000346
85	.98449	580.1	.00148	.000410
86	.94258	560.1	.00230	.000637
87	.94086	569.8	.00422	.001169
88	.94201	589.1	.00722	.002000
89	.95981	614.5	.00966	.002675
90	.97014	642.1	.01135	.003144
91	.98220	642.1	.00957	.002651
93	.95119	558.8	.00109	.000302
94	.94717	559.1	.00127	.000352
95	.93225	550.8	.00201	.000557
96	.93052	565.5	.00371	.001028
97	.93741	585.5	.00718	.001989
98	.95292	609.5	.00993	.002750
99	.96727	642.1	.01196	.003312

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 0°; T_t = 696° R; p_t = 7,203.0 lb/sq ft				α' = 7.5°; T_t = 695° R; p_t = 7,199.0 lb/sq ft				α' = 15.0°; T_t = 695° R; p_t = 7,212.0 lb/sq ft			
4	.92754	578.1	.00759	.001462	.92086	561.1	.00557	.001073	.91283	559.8	.00562	.001081
5	.93210	589.1	.00951	.001832	.92774	576.1	.00801	.001542	.92143	581.1	.00866	.001666
6	.93610	593.8	.01005	.001936	.93634	587.5	.00953	.001835	.93405	600.8	.01138	.002189
7	.93210	588.8	.00941	.001812	.93691	589.8	.00990	.001906	.93921	610.8	.01308	.002516
8	.92297	576.1	.00765	.001473	.93003	581.8	.00890	.001714	.93634	608.1	.01279	.002460
9	.91898	553.5	.00254	.000489	.91455	557.1	.00223	.000429	.91111	544.5	.00217	.000417
10	.91841	555.5	.00373	.000718	.91283	541.5	.00219	.000422	.90652	542.5	.00228	.000439
11	.92468	569.5	.00537	.001034	.91741	553.5	.00391	.000753	.90996	551.1	.00384	.000739
12	.93267	583.1	.00710	.001368	.92774	570.5	.00600	.001155	.92028	573.1	.00630	.001212
13	.93381	586.5	.00758	.001460	.93405	581.1	.00743	.001431	.93175	592.5	.00867	.001668
14	.92868	579.8	.00684	.001317	.93405	582.1	.00768	.001479	.93691	601.8	.00992	.001908
15	.92183	567.5	.00536	.001032	.93060	574.8	.00660	.001271	.93749	600.1	.00951	.001829
16	.92069	555.8	.00358	.000690	.92946	563.1	.00464	.000893	.93749	586.8	.00738	.001420
17	.91955	554.1	.00264	.000508	.92716	554.8	.00309	.000595	.93462	574.5	.00576	.001108
18	.92583	552.5	.00207	.000399	.92888	552.5	.00234	.000451	.92544	558.5	.00308	.000592
19	.92354	555.1	.00309	.000595	.91971	543.8	.00192	.000370	.91512	542.5	.00194	.000373
20	.93039	584.5	.00732	.001410	.93060	578.8	.00714	.001375	.92716	588.8	.00823	.001583
21	.92012	552.1	.00296	.000570	.92774	561.1	.00422	.000813	.93577	585.8	.00705	.001356
22	.92012	549.5	.00208	.000401	.92430	548.1	.00195	.000375	.93232	562.5	.00360	.000692
23	.93210	559.8	.00243	.000468	.93290	557.5	.00263	.000506	.92200	554.1	.00267	.000514
24	.93153	562.8	.00275	.000530	.93118	561.1	.00302	.000582	.92143	550.1	.00219	.000421
25	.92354	554.5	.00303	.000584	.91971	543.8	.00192	.000370	.91627	543.8	.00196	.000377
26	.91955	569.5	.00478	.000921	.91340	549.1	.00352	.000678	.90652	546.5	.00338	.000650
27	.92811	580.1	.00660	.001271	.92258	566.5	.00567	.001092	.91455	566.8	.00560	.001077
28	.92468	581.8	.00742	.001429	.92372	575.5	.00769	.001481	.91913	584.1	.00819	.001575
29	.92697	579.5	.00658	.001267	.93232	581.5	.00756	.001456	.93290	598.8	.00931	.001791
30	.91955	563.8	.00464	.000894	.92716	571.5	.00607	.001169	.93232	595.1	.00864	.001662
31	.92183	555.8	.00263	.000507	.92716	560.1	.00415	.000799	.93405	584.5	.00693	.001333
32	.92069	556.8	.00271	.000522	.91856	547.8	.00238	.000458	.92430	563.1	.00401	.000771
33	.92925	556.5	.00233	.000449	.92946	550.1	.00181	.000349	.93577	561.5	.00277	.000533
34	.93781	569.1	.00342	.000659	.93232	557.5	.00245	.000472	.92143	551.5	.00224	.000431
35	.94351	576.5	.00365	.000703	.93175	561.1	.00315	.000607	.92200	548.1	.00208	.000400
36	.91955	551.8	.00299	.000576	.91340	539.8	.00181	.000349	.90767	538.8	.00211	.000406
37	.93039	584.8	.00773	.001489	.92888	577.8	.00759	.001462	.92315	585.5	.00783	.001506
38	.92069	551.5	.00264	.000508	.92544	558.5	.00401	.000772	.93003	581.5	.00668	.001285
39	.93438	569.8	.00362	.000697	.93577	558.8	.00234	.000451	.93749	569.5	.00349	.000671
40	.93781	564.1	.00258	.000497	.93921	557.5	.00172	.000331	.94265	564.1	.00231	.000444
41	.92126	552.8	.00278	.000535	.91684	541.8	.00180	.000347	.90881	538.8	.00184	.000354
42	.91898	563.1	.00449	.000865	.91340	548.1	.00333	.000641	.90537	548.1	.00309	.000594
43	.92069	574.1	.00627	.001208	.91512	560.5	.00531	.001022	.90652	560.1	.00525	.001010
44	.92126	578.5	.00754	.001452	.92028	571.5	.00686	.001321	.91397	578.5	.00750	.001443
45	.92697	578.1	.00649	.001250	.93060	578.8	.00732	.001410	.92946	594.5	.00925	.001779
46	.92240	565.5	.00442	.000851	.92831	571.1	.00563	.001084	.93118	592.1	.00796	.001531
47	.92012	549.8	.00224	.000431	.92372	555.8	.00361	.000695	.92602	577.1	.00613	.001179
50	.94522	616.8	.01585	.003053	.93749	598.8	.01241	.002390	.92774	600.5	.01197	.002302
51	.97204	644.1	.01950	.003756	.96616	638.5	.01611	.003102	.95698	642.5	.01624	.003124
52	.98117	670.5	.03203	.006169	.98050	660.5	.02637	.005078	.97591	671.8	.03663	.007046
53	.97090	650.1	.02365	.004555	.97591	651.5	.02206	.004248	.97763	679.1	.02907	.005592
54	.94180	614.1	.01573	.003030	.95010	619.5	.01636	.003150	.95641	644.8	.02107	.004053
55	.94237	615.1	.01615	.003111	.93519	597.1	.01213	.002336	.92602	598.8	.01204	.002316
56	.96177	641.8	.02223	.004282	.95584	629.1	.01804	.003474	.94724	634.8	.01993	.003834
57	.97318	655.1	.02619	.005044	.97304	649.5	.02203	.004242	.96845	671.8	.02632	.005063
58	.96291	643.1	.02304	.004438	.96845	644.5	.02157	.004154	.97075	674.1	.02814	.005413
59	.93838	610.1	.01519	.002926	.94609	623.8	.01611	.003102	.95182	647.1	.02178	.004189
60	.93952	574.1	.00427	.000822	.93577	561.5	.00308	.000593	.92143	555.1	.00279	.000537
61	.91841	571.5	.00618	.001190	.91799	545.8	.00239	.000460	.90365	536.1	.00154	.000296
62	.90015	542.5	.00303	.000584	.90136	531.8	.00159	.000306	.89620	528.5	.00144	.000277
63	.90700	557.1	.00470	.000905	.90308	542.5	.00331	.000637	.89620	539.5	.00302	.000581
64	.91727	570.5	.00602	.001160	.91283	557.8	.00502	.000967	.90652	558.5	.00487	.000937
65	.91327	571.1	.00665	.001281	.91283	564.5	.00637	.001227	.90881	572.5	.00698	.001343
66	.91213	566.8	.00586	.001129	.91684	568.1	.00664	.001279	.91799	584.8	.00817	.001572
67	.90643	554.1	.00425	.000819	.91569	561.8	.00556	.001071	.92086	583.8	.00762	.001466
68	.90928	546.5	.00280	.000539	.92143	557.5	.00429	.000826	.92716	580.1	.00666	.001281
69	.92012	569.8	.00559	.001077	.93577	582.8	.00758	.001460	.93921	619.8	.01265	.002433
70	.94237	574.5	.00392	.000755	.94437	578.8	.00534	.001028	.94724	615.1	.00834	.001604
71	.94009	571.5	.00369	.000711	.93921	561.8	.00278	.000535	.92544	559.8	.00276	.000531
72	.91213	563.5	.00546	.001052	.90422	540.1	.00248	.000478	.90537	535.5	.00125	.000240
73	.90586	545.5	.00309	.000595	.89734	529.8	.00168	.000324	.90652	534.1	.00142	.000273
74	.90472	554.1	.00455	.000876	.89792	538.5	.00325	.000626	.89849	539.5	.00287	.000552
75	.90928	564.5	.00596	.001148	.90422	551.5	.00487	.000938	.90078	554.1	.00474	.000912
76	.91442	570.1	.00650	.001252	.91455	563.5	.00612	.001178	.91225	572.8	.00690	.001327
77	.91670	568.5	.00586	.001129	.92315	570.5	.00650	.001252	.92487	587.8	.00785	.001510
78	.90415	552.8	.00448	.000863	.91512	560.8	.00560	.001078	.92028	583.1	.00762	.001466
79	.90757	546.5	.00319	.000614	.92430	561.1	.00470	.000905	.93003	585.1	.00710	.001366
80	.91727	564.5	.00513	.000988	.92372	575.5	.00722	.001390	.92716	602.8	.01245	.002395
81	.94808	572.8	.00324	.000624	.95010	576.1	.00435	.000838	.95182	598.8	.00727	.001398
83	.92126	566.8	.00498	.000959	.92143	549.8	.00232	.000447	.93003	552.1	.00136	.000262
84	.90586	546.1	.00320	.000616	.89505	529.1	.00185	.000356	.91627	540.1	.00142	.000273
85	.93495	576.5	.00448	.000863	.92544	559.5	.00324	.000624	.93347	559.8	.00268	.000516
86	.91042	564.1	.00602	.001160	.90365	551.1	.00501	.000965	.90422	555.8	.00459	.000883
87	.91898	578.5	.00644	.001240	.91627	571.8	.00634	.001221	.91627	574.5	.00663	.001275
88	.90871	563.1	.00587	.001131	.91225	564.1	.00661	.001273	.91569	581.8	.00774	.001489
89	.90643	554.5	.00462	.000890	.91569	562.1	.00586	.001128	.92200	585.1	.00761	.001464
90	.90529	544.8	.00287	.000553	.92028	558.8	.00440	.000847	.92544	584.1	.00740	.001423
91	.92240	567.5	.00501	.000965	.92602	572.1	.00649	.001250	.92946	606.1	.01071	.002060
93	.90015	542.8	.00322	.000620	.90365	533.5	.00170	.000327	.91168	538.5	.00135	.000260
94	.90586	559.1	.00452	.000871	.90250	541.5	.00327	.000630	.90480	542.8	.00282	.000542
95	.90643	561.8	.00599	.001154	.90308	551.1	.00501	.000965	.90078	553.8	.00462	.000889
96	.91442	575.1	.00642	.001237	.91455	570.5	.00614	.001182	.91283	572.1	.00632	.001216
97	.90871	562.8	.00583	.001123	.91455	566.1	.00671	.001292	.91684	583.8	.00769	.001479
98	.90300	551.8	.00450	.000867	.91455	562.1	.00598	.001152	.92086	591.8	.00793	.001525
99	.90586	544.8	.00310	.000597	.92258	569.1	.00508	.000978	.92888	589.5	.00803	.001545

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(b) $M = 3.51$; $p_{t,nom} = 7{,}200$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 22.5^\circ$; $T_t = 703^\circ$ R; $p_t = 7{,}193.0$ lb/sq ft				$\alpha' = 30.0^\circ$; $T_t = 704^\circ$ R; $p_t = 7{,}208.0$ lb/sq ft				$\alpha' = 37.5^\circ$; $T_t = 704^\circ$ R; $p_t = 7{,}211.0$ lb/sq ft			
4	.90861	555.1	.00402	.000780	.90502	553.1	.00384	.000744	.91865	549.8	.00280	.000542
5	.91774	571.1	.00761	.001476	.91360	572.8	.00751	.001455	.91808	566.8	.00648	.001255
6	.93317	596.8	.01156	.002242	.93248	604.8	.01160	.002248	.93527	599.1	.01089	.002110
7	.94402	615.1	.01472	.002855	.94850	630.1	.01542	.002988	.95474	629.1	.01604	.003108
8	.94573	618.5	.01537	.002981	.95479	646.1	.01713	.003319	.96505	643.1	.01843	.003571
9	.91375	549.1	.00267	.000518	.91303	552.1	.00242	.000469	.93641	560.8	.00221	.000428
10	.90575	536.8	.00177	.000343	.90673	541.5	.00208	.000403	.93011	555.1	.00180	.000349
11	.90746	543.5	.00297	.000576	.90616	543.1	.00279	.000541	.92610	551.1	.00246	.000477
12	.91660	564.8	.00582	.001129	.91417	565.8	.00562	.001089	.92209	563.8	.00501	.000971
13	.93145	590.5	.00923	.001790	.93076	597.1	.00907	.001757	.93469	592.8	.00885	.001715
14	.94173	607.1	.01222	.002370	.94507	620.8	.01203	.002331	.95073	619.1	.01282	.002484
15	.94802	612.1	.01207	.002341	.95594	631.5	.01320	.002558	.96448	634.1	.01454	.002817
16	.94916	600.5	.00955	.001852	.95880	622.5	.01130	.002189	.96964	627.8	.01211	.002346
17	.94687	587.1	.00738	.001431	.95765	610.1	.00973	.001885	.96964	618.5	.01069	.002071
18	.92460	557.1	.00288	.000559	.92332	553.1	.00193	.000374	.95417	566.5	.00159	.000308
19	.91832	543.5	.00171	.000332	.92104	555.1	.00151	.000293	.94271	558.8	.00148	.000287
20	.92631	585.5	.00860	.001668	.92390	590.1	.00823	.001595	.92839	585.5	.00786	.001523
21	.94630	598.8	.00908	.001761	.95422	617.8	.01029	.001994	.96448	621.8	.01137	.002203
22	.94402	574.8	.00473	.000917	.95422	594.1	.00643	.001246	.96620	603.5	.00737	.001428
23	.92289	551.1	.00212	.000411	.92676	554.5	.00183	.000355	.96162	570.1	.00146	.000283
24	.92117	544.5	.00147	.000285	.92962	548.8	.00120	.000233	.95875	566.8	.00131	.000254
25	.91832	549.8	.00177	.000343	.92275	546.5	.00140	.000271	.94615	560.1	.00137	.000265
26	.90689	545.8	.00252	.000489	.91188	545.1	.00236	.000457	.93355	558.8	.00195	.000378
27	.91146	558.8	.00508	.000985	.91188	560.8	.00461	.000893	.92496	562.1	.00408	.000790
28	.92403	579.1	.00826	.001602	.91474	594.1	.00778	.001507	.92152	579.1	.00715	.001385
29	.93545	600.8	.01137	.002205	.93591	609.5	.01026	.001988	.94214	607.1	.01070	.002073
30	.93945	603.5	.01121	.002174	.94392	617.5	.01091	.002114	.95245	618.8	.01187	.002300
31	.94345	596.5	.00880	.001707	.95022	613.8	.00983	.001905	.96104	617.8	.01064	.002061
32	.93488	575.1	.00539	.001045	.94392	591.8	.00647	.001254	.95532	598.1	.00711	.001377
33	.94516	571.5	.00367	.000712	.95537	589.1	.00503	.000975	.96677	600.1	.00606	.001174
34	.91717	545.5	.00173	.000336	.93648	557.1	.00141	.000273	.95932	570.5	.00164	.000318
35	.92003	542.8	.00115	.000223	.95308	559.8	.00083	.000161	.97021	573.8	.00129	.000250
36	.90918	536.8	.00130	.000252	.92847	545.5	.00105	.000203	.94730	558.5	.00110	.000213
37	.92231	580.5	.00794	.001540	.92218	584.8	.00715	.001385	.93183	582.8	.00672	.001302
38	.93774	592.5	.00854	.001656	.94507	609.5	.00980	.001899	.95761	614.1	.01030	.001995
39	.94516	579.5	.00482	.000935	.95479	595.1	.00568	.001101	.96677	602.1	.00626	.001213
40	.94973	570.5	.00271	.000526	.95880	584.1	.00367	.000711	.96964	594.8	.00462	.000895
41	.92003	546.5	.00124	.000241	.94221	554.5	.00082	.000159	.95360	565.8	.00114	.000221
42	.91375	546.5	.00202	.000392	.93191	551.1	.00163	.000316	.94730	565.5	.00158	.000306
43	.90975	554.8	.00443	.000859	.91818	563.5	.00355	.000688	.93298	561.5	.00298	.000577
44	.91603	575.1	.00742	.001439	.91875	585.8	.00645	.001250	.93068	579.5	.00565	.001095
45	.93317	596.5	.00967	.001876	.93534	605.5	.00899	.001742	.94672	605.1	.00905	.001753
46	.93774	600.1	.00989	.001918	.94392	613.8	.01034	.002003	.95532	616.8	.01069	.002071
47	.95488	588.1	.00791	.001534	.94392	604.8	.00863	.001672	.95589	610.5	.00937	.001815
50	.92174	584.8	.01023	.001984	.91589	580.8	.00868	.001682	.91808	569.1	.00706	.001368
51	.95030	624.1	.01664	.003228	.94278	620.8	.01362	.002639	.93985	606.5	.01184	.002294
52	.97258	678.5	.03246	.006296	.96738	666.8	.02533	.004908	.96448	654.5	.02430	.004708
53	.98115	673.1	.03153	.006116	.98283	680.1	.02608	.005053	.98510	674.1	.02664	.005161
54	.96458	652.8	.02693	.005223	.97253	668.1	.02320	.004495	.98109	669.1	.02483	.004810
55	.92003	582.8	.00998	.001936	.91474	579.5	.00850	.001647	.91751	568.1	.00684	.001325
56	.94116	622.5	.01851	.003590	.93477	619.8	.01430	.002771	.93298	604.8	.01282	.002484
57	.96572	656.5	.02656	.005152	.96223	657.5	.02071	.004013	.96104	646.1	.02034	.003941
58	.97429	667.8	.03137	.006085	.97654	675.8	.02638	.005111	.98052	671.5	.02699	.005229
59	.96058	657.1	.02521	.004890	.96853	669.5	.02354	.004561	.97766	667.1	.02567	.004973
60	.93774	558.8	.00170	.000330	.92046	549.5	.00160	.000310	.95302	564.1	.00136	.000263
61	.93945	554.8	.00120	.000233	.92561	549.8	.00140	.000271	.95360	564.1	.00129	.000250
62	.92174	542.8	.00106	.000206	.91932	540.1	.00106	.000205	.94042	555.1	.00115	.000223
63	.91432	547.8	.00283	.000549	.91303	546.1	.00233	.000451	.93469	555.1	.00195	.000378
64	.91774	565.8	.00551	.001069	.91703	563.1	.00411	.000796	.92954	563.8	.00386	.000748
65	.92289	588.8	.00958	.001858	.92046	581.8	.00611	.001184	.92725	580.8	.00708	.001372
66	.93488	622.5	.01725	.003346	.93648	603.8	.00744	.001442	.94443	618.8	.00995	.001928
67	.93774	631.1	.02302	.004465	.94507	612.5	.00780	.001511	.95589	638.1	.01315	.002548
68	.94516	627.5	.01776	.003445	.95308	612.8	.00742	.001438	.96333	655.8	.01653	.003202
69	.94687	624.5	.01223	.002372	.95479	614.5	.00307	.000595				
70	.95430	618.1	.01288	.002498	.95422	642.8	.01313	.002544	.96563	647.1	.01846	.003576
71	.93716	560.8	.00195	.000378	.92447	560.1	.00254	.000492	.95245	569.1	.00203	.000393
72	.93774	555.5	.00095	.000184	.91989	545.1	.00129	.000250	.94271	558.5	.00147	.000285
73	.92745	546.5	.00107	.000208	.92676	546.5	.00113	.000219	.94500	557.8	.00131	.000254
74	.91375	547.8	.00301	.000584	.91531	545.1	.00196	.000380	.93469	555.1	.00209	.000405
75	.90975	564.1	.00646	.001253	.90845	557.8	.00345	.000668	.92037	559.5	.00425	.000823
76	.92231	594.8	.01223	.002372	.91989	576.1	.00548	.001062	.92438	584.1	.00844	.001635
77	.93716	624.1	.02010	.003899	.93992	602.5	.00687	.001331	.94443	624.1	.01524	.002953
78	.93431	626.8	.02123	.004118	.93992	612.8	.00779	.001509	.94730	639.1	.02081	.004032
79	.94116	638.8	.02170	.004209	.94850	615.8	.00946	.001833	.95875	651.5	.02406	.004661
80	.93545	618.1	.01837	.003563	.94507	647.1	.02120	.004108	.95932	647.1	.02259	.004376
81	.95030	619.1	.01126	.002184	.95251	637.5	.01295	.002509	.96792	639.5	.01531	.002966
83	.94059	557.8	.00095	.000184	.94163	559.8	.00148	.000287	.96734	574.5	.00161	.000312
84	.92403	548.5	.00144	.000279	.93420	554.8	.00160	.000310	.94615	559.8	.00153	.000296
85	.94173	563.5	.00289	.000561	.95193	569.8	.00242	.000469	.96505	574.1	.00214	.000415
86	.90861	562.1	.00619	.001201	.91188	561.1	.00490	.000949	.92209	559.8	.00426	.000825
87	.92174	591.8	.01155	.002240	.91989	588.1	.00868	.001682	.92266	580.5	.00771	.001494
88	.92517	621.1	.01769	.003431	.92504	616.5	.01490	.002887	.92667	609.5	.01450	.002809
89	.93374	625.5	.02207	.004281	.93648	635.8	.01907	.003695	.94271	633.8	.01944	.003766
90	.93545	624.8	.02170	.004209	.94106	646.1	.02091	.004051	.95073	643.8	.02269	.004396
91	.93774	612.8	.01501	.002911	.94736	633.8	.01619	.003137	.96047	639.1	.01663	.003222
93	.92803	557.1	.00212	.000411	.95365	578.1	.00309	.000599	.93813	557.1	.00172	.000333
94	.92117	553.5	.00303	.000588	.94678	575.1	.00366	.000709	.93412	556.5	.00219	.000424
95	.90975	568.5	.00615	.001193	.92390	569.8	.00548	.001062	.91808	554.5	.00381	.000738
96	.92060	588.8	.01118	.002169	.92218	596.1	.00873	.001691	.91808	573.5	.00710	.001376
97	.92688	615.5	.01954	.003790	.92733	620.1	.01642	.003181	.92667	608.5	.01419	.002749
98	.93260	632.8	.02164	.004197	.93534	640.1	.01953	.003784	.93985	637.8	.01975	.003826
99	.93774	627.1	.02251	.004366	.94335	647.5	.02117	.004102	.95245	644.1	.02230	.004320

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 2 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	α' = 45.0°; T_t = 705° R; p_t = 7,209.0 lb/sq ft			
4	.93749	553.8	.00170	.000330
5	.92544	562.8	.00390	.000756
6	.93691	581.8	.00740	.001435
7	.95756	611.8	.01174	.002276
8	.97247	637.8	.01256	.002435
9	.95985	568.1	.00171	.000332
10	.95240	561.5	.00147	.000285
11	.94322	557.8	.00180	.000349
12	.92716	557.1	.00373	.000723
13	.93175	585.1	.00690	.001338
14	.94838	605.8	.01136	.002203
15	.96673	635.1	.01269	.002461
16	.97534	641.1	.01312	.002544
17	.97648	641.8	.01330	.002579
18	.97075	571.8	.00132	.000256
19	.96157	567.8	.00132	.000256
20	.92831	585.8	.00737	.001429
21	.97017	645.8	.01533	.002972
22	.97132	645.5	.01532	.002971
23	.96903	570.1	.00118	.000229
24	.97189	571.1	.00106	.000206
25	.96387	567.1	.00116	.000225
26	.95068	562.5	.00195	.000378
27	.93634	569.5	.00388	.000752
28	.92774	585.1	.00740	.001435
29	.95010	619.1	.01157	.002243
30	.96272	638.5	.01415	.002744
31	.97132	647.1	.01543	.002992
32	.96272	640.5	.01565	.003035
33	.97247	646.8	.01562	.003029
34	.96903	570.8	.00120	.000233
35	.98279	578.5	.00119	.000231
36	.96444	567.8	.00108	.000209
37	.94035	584.1	.00732	.001419
38	.97017	646.5	.01523	.002953
39	.97476	647.1	.01510	.002928
40	.97591	646.5	.01442	.002796
41	.97017	571.5	.00107	.000207
42	.96559	570.5	.00109	.000211
43	.94838	573.1	.00290	.000562
44	.94150	589.8	.00630	.001222
45	.95813	621.8	.01031	.001999
46	.96845	640.5	.01308	.002536
47	.97017	644.1	.01418	.002749
50	.92716	556.1	.00363	.000704
51	.94093	581.5	.00525	.001018
52	.96100	619.8	.01151	.002232
53	.98853	652.1	.01224	.002373
54	.99311	656.1	.01229	.002383
55	.92716	556.5	.00354	.000686
56	.93347	578.1	.00679	.001317
57	.95928	622.8	.01081	.002096
58	.98451	657.8	.01333	.002585
59	.98853	655.1	.01331	.002581
60	.96731	567.8	.00096	.000186
61	.97534	571.8	.00094	.000182
62	.95297	557.8	.00096	.000186
63	.94666	557.8	.00138	.000268
64	.93749	560.5	.00303	.000588
65	.93003	573.5	.00620	.001202
66	.94724	608.8	.01227	.002379
67	.96272	639.5	.01448	.002808
68	.97362	651.1	.01657	.003174
69	.97763	642.5	.01710	.003316
70	.97591	638.5	.01566	.003017
71	.97419	574.5	.00128	.000248
72	.96559	566.1	.00087	.000169
73	.95698	563.5	.00132	.000256
74	.94781	559.1	.00148	.000287
75	.93405	560.8	.00274	.000531
76	.93232	571.1	.00564	.001094
77	.95182	607.5	.01049	.002034
78	.95928	635.1	.01436	.002784
79	.97476	651.5	.01632	.003164
80	.97476	649.1	.01587	.003077
81	.98336	641.1	.01165	.002259
83	.97648	574.5	.00131	.000254
84	.95756	566.5	.00172	.000334
85	.97992	584.1	.00205	.000397
86	.94035	561.8	.00282	.000568
87	.93921	573.8	.00538	.001043
88	.94035	597.5	.01044	.002024
89	.95813	638.1	.01377	.002670
90	.96845	639.1	.01755	.003403
91	.97820	643.8	.01273	.002468
93	.94609	557.8	.00147	.000285
94	.94265	556.8	.00160	.000310
95	.92831	551.1	.00251	.000487
96	.92659	562.8	.00493	.000956
97	.93577	593.8	.01024	.001986
98	.95240	628.5	.01383	.002682
99	.96845	638.5	.01729	.003352

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 0^\circ$; $T_t = 671^\circ$ R; $p_t = 8{,}644.0$ lb/sq ft				$\alpha' = 7.5^\circ$; $T_t = 679^\circ$ R; $p_t = 8{,}634.0$ lb/sq ft				$\alpha' = 15.0^\circ$; $T_t = 676^\circ$ R; $p_t = 8{,}633.0$ lb/sq ft			
4	.91978	572.5	.00525	.002212	.92165	568.1	.00375	.001593	.91916	563.1	.00340	.001438
5	.92310	578.5	.00678	.002857	.92665	577.1	.00542	.002302	.92529	574.8	.00538	.002276
6	.92587	581.8	.00753	.003173	.93332	584.8	.00665	.002825	.93533	587.8	.00746	.003156
7	.92255	578.5	.00702	.002958	.93387	586.5	.00695	.002952	.94034	594.8	.00865	.003660
8	.91425	570.1	.00566	.002385	.92832	580.8	.00622	.002642	.93811	592.8	.00836	.003537
9	.90983	554.1	.00173	.000729	.91498	552.5	.00098	.000416	.91526	551.5	.00118	.000499
10	.90872	558.5	.00244	.001028	.91276	554.5	.00162	.000688	.91191	551.8	.00133	.000563
11	.91370	564.5	.00372	.001567	.91609	560.1	.00244	.001036	.91414	555.8	.00212	.000897
12	.92089	573.5	.00498	.002098	.92443	571.1	.00389	.001652	.92250	568.8	.00385	.001629
13	.92200	575.8	.00550	.002317	.92999	578.8	.00496	.002107	.93254	581.8	.00562	.002378
14	.91702	570.8	.00523	.002204	.92943	579.1	.00504	.002141	.93644	588.1	.00673	.002847
15	.91204	563.8	.00366	.001542	.92721	575.1	.00443	.001882	.93811	587.8	.00614	.002598
16	.91093	557.8	.00236	.000994	.92665	568.8	.00299	.001270	.93756	581.1	.00468	.001980
17	.91038	554.8	.00161	.000678	.92554	564.1	.00226	.000960	.93644	574.8	.00368	.001557
18	.91370	554.1	.00108	.000455	.92498	558.5	.00097	.000412	.92864	561.1	.00134	.000567
19	.91259	557.5	.00200	.000843	.91887	554.8	.00127	.000539	.91860	552.1	.00095	.000402
20	.91868	574.1	.00555	.002338	.92610	576.8	.00489	.002077	.92696	578.8	.00569	.002407
21	.90872	555.1	.00196	.000826	.92443	567.1	.00287	.001219	.93533	580.1	.00459	.001942
22	.90761	550.8	.00110	.000463	.92276	558.5	.00135	.000573	.93365	569.1	.00218	.000922
23	.91481	555.1	.00097	.000409	.93221	562.8	.00114	.000484	.93142	562.1	.00138	.000584
24	.91315	554.1	.00109	.000459	.92721	560.8	.00090	.000382	.92752	559.8	.00094	.000398
25	.90927	555.1	.00194	.000817	.91721	553.5	.00097	.000412	.91749	550.8	.00111	.000470
26	.90872	560.8	.00336	.001416	.91276	558.1	.00214	.000909	.91024	551.5	.00180	.000762
27	.91591	570.5	.00488	.002056	.91943	567.5	.00362	.001538	.91526	563.1	.00345	.001460
28	.90761	568.1	.00593	.002499	.91609	573.1	.00489	.002077	.91303	570.1	.00534	.002259
29	.91591	571.1	.00537	.002263	.92832	579.1	.00551	.002341	.93087	585.1	.00638	.002699
30	.90927	563.1	.00325	.001369	.92332	572.5	.00426	.001810	.93087	583.5	.00628	.002657
31	.91149	556.1	.00192	.000809	.92554	567.8	.00286	.001215	.93477	579.8	.00459	.001942
32	.90098	546.8	.00098	.000413	.91443	554.1	.00148	.000629	.92362	566.1	.00263	.001113
33	.91370	553.8	.00108	.000455	.92665	558.8	.00095	.000404	.93588	566.5	.00167	.000707
34	.92366	559.1	.00082	.000346	.94332	568.1	.00095	.000404	.93979	564.5	.00095	.000402
35	.93195	565.8	.00110	.000463	.94888	571.8	.00095	.000404	.94982	568.8	.00066	.000279
36	.90817	555.8	.00196	.000826	.91609	553.1	.00120	.000510	.91804	551.1	.00094	.000398
37	.91813	574.5	.00568	.002393	.92332	575.5	.00503	.002137	.92083	574.5	.00535	.002263
38	.91093	556.5	.00196	.000826	.91943	564.5	.00309	.001313	.92641	575.1	.00481	.002035
39	.92089	561.1	.00103	.000434	.92721	561.5	.00132	.000561	.93421	569.8	.00244	.001032
40	.92366	558.8	.00083	.000350	.93332	561.1	.00061	.000259	.93979	570.5	.00128	.000542
41	.91370	557.8	.00190	.000801	.92276	558.5	.00114	.000484	.92864	560.8	.00102	.000432
42	.90983	560.8	.00311	.001310	.91498	559.1	.00209	.000888	.91860	555.8	.00168	.000711
43	.91038	566.8	.00476	.002006	.91220	563.1	.00349	.001482	.91303	560.1	.00310	.001312
44	.91038	572.5	.00568	.002393	.91443	572.8	.00495	.002103	.91414	569.5	.00530	.002242
45	.91923	572.8	.00501	.002111	.92554	578.1	.00518	.002200	.92752	581.8	.00638	.002699
46	.91757	566.1	.00339	.001428	.92332	572.8	.00427	.001814	.92752	580.1	.00584	.002471
47	.91868	560.5	.00180	.000758	.92221	565.1	.00277	.001177	.92529	572.8	.00436	.001845
50	.93583	597.8	.01268	.005343	.93665	593.1	.00907	.003853	.93254	588.5	.00848	.003588
51	.96072	618.5	.01517	.006392	.96277	616.1	.01227	.005212	.95818	613.5	.01176	.004975
52	.97012	636.5	.03730	.015716	.97721	639.5	.02587	.010989	.97658	646.5	.02855	.012079
53	.96017	625.5	.02453	.010336	.97277	633.8	.02025	.008602	.97881	646.8	.02597	.010987
54	.93472	597.8	.01324	.005579	.94888	609.1	.01304	.005539	.95874	621.5	.01767	.007476
55	.93195	595.8	.01304	.005494	.93165	590.5	.00928	.003942	.92752	585.8	.00825	.003490
56	.94855	615.8	.02152	.009067	.95054	613.5	.01444	.006134	.94648	610.8	.01474	.006236
57	.96017	626.8	.02713	.011431	.96666	629.5	.01966	.008351	.96655	632.1	.02336	.009883
58	.95132	617.8	.02181	.009190	.96332	626.1	.01994	.008470	.96989	635.1	.02465	.010429
59	.92974	593.8	.01264	.005326	.94388	604.8	.01243	.005280	.95317	621.8	.01647	.006968
60	.93915	570.5	.00109	.000459	.94443	567.1	.00071	.000302	.95595	571.1	.00043	.000182
61	.92587	560.5	.00083	.000350	.93999	564.5	.00075	.000319	.95818	571.8	.00030	.000127
62	.89157	545.1	.00200	.000843	.90220	544.5	.00099	.000421	.92083	552.8	.00103	.000436
63	.89434	552.1	.00342	.001441	.90054	550.8	.00213	.000905	.91303	554.8	.00223	.000943
64	.90264	561.8	.00475	.002001	.90832	559.5	.00330	.001402	.91804	566.5	.00388	.001642
65	.89821	560.5	.00550	.002317	.90498	562.1	.00440	.001869	.91749	576.5	.00663	.002805
66	.89710	558.1	.00450	.001896	.90832	565.5	.00463	.001967	.92529	591.1	.00932	.003943
67	.89323	550.8	.00313	.001319	.90776	565.1	.00397	.001686	.92696	592.8	.01174	.004967
68	.89876	549.5	.00201	.000847	.91498	563.1	.00318	.001351	.93421	594.5	.00929	.003930
69	.92808	562.1	.00083	.000350	.93110	567.5	.00171	.000726	.94146	579.1	.00268	.001134
70	.94578	575.8	.00102	.000430	.95277	581.1	.00185	.000786	.95428	591.1	.00432	.001828
71	.93970	573.5	.00176	.000742	.94777	570.5	.00064	.000272	.96766	579.5	.00055	.000233
72	.91093	560.1	.00288	.001213	.93943	562.5	.00053	.000225				
73	.89157	545.5	.00202	.000851	.90054	544.5	.00117	.000497	.92641	556.1	.00093	.000393
74	.88991	549.5	.00350	.001475	.89609	547.8	.00210	.000892	.91247	555.5	.00248	.001049
75	.89213	555.1	.00447	.001883	.89720	552.8	.00341	.001448	.90968	564.5	.00460	.001946
76	.89600	558.8	.00492	.002073	.90331	560.8	.00427	.001814	.91581	579.1	.00782	.003308
77	.90042	559.8	.00465	.001959	.91220	567.1	.00443	.001882	.92752	593.5	.01093	.004624
78	.88936	548.5	.00308	.001298	.90498	559.5	.00368	.001563	.92306	597.5	.01077	.004557
79	.89379	546.5	.00192	.000809	.91220	559.5	.00271	.001151	.93142	592.5	.00997	.004218
80	.91591	561.5	.00213	.000897	.92221	571.1	.00401	.001703	.92585	582.5	.00712	.003012
81	.95463	580.5	.00135	.000569	.96110	587.8	.00216	.000918	.96097	592.5	.00377	.001595
83	.92089	564.8	.00244	.001028	.95777	574.5	.00059	.000251				
84	.89157	547.1	.00209	.000881	.90054	543.8	.00116	.000493	.92250	555.1	.00120	.000508
85	.92144	568.5	.00311	.001310	.92832	566.1	.00208	.000884	.94369	574.5	.00243	.001028
86	.89268	555.5	.00445	.001875	.89943	554.1	.00318	.001351	.91080	564.8	.00470	.001988
87	.90042	561.5	.00515	.002170	.90887	564.1	.00403	.001712	.92083	584.8	.00726	.003072
88	.89047	553.8	.00433	.001824	.90331	562.1	.00429	.001822	.91749	586.5	.01048	.004434
89	.89047	549.8	.00319	.001344	.90665	561.5	.00379	.001610	.92362	590.8	.01111	.004700
90	.88881	543.5	.00193	.000813	.90776	556.8	.00255	.001083	.92529	588.8	.00989	.004184
91	.93251	573.8	.00249	.001049	.93165	574.1	.00329	.001398	.93365	584.1	.00572	.002420
93	.88881	543.8	.00209	.000881	.89720	543.1	.00116	.000493	.91972	554.8	.00138	.000584
94	.89213	550.5	.00309	.001302	.89831	547.5	.00195	.000828	.91358	556.8	.00250	.001058
95	.89047	553.1	.00437	.001841	.89554	551.8	.00316	.001342	.90634	562.1	.00473	.002001
96	.89876	559.5	.00444	.001871	.90665	562.1	.00395	.001678	.91749	578.8	.00734	.003105
97	.89268	554.5	.00436	.001837	.90443	562.5	.00435	.001848	.91860	587.8	.01130	.004781
98	.88881	548.1	.00319	.001344	.90443	559.5	.00356	.001512	.92139	589.8	.01147	.004853
99	.89268	547.1	.00184	.000775	.91109	558.5	.00267	.001134	.92808	591.1	.01035	.004379

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Thermocouple	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 22.5^o$; $T_t = 678^o$ R; $p_t = 8{,}617.0$ lb/sq ft				$\alpha' = 30.0^o$; $T_t = 682^o$ R; $p_t = 8{,}611.0$ lb/sq ft				$\alpha' = 37.5^o$; $T_t = 681^o$ R; $p_t = 8{,}671.0$ lb/sq ft			
4	.91721	560.8	.00288	.001226	.91809	559.5	.00243	.001038	.92959	568.8	.00191	.000809
5	.92332	576.5	.00525	.002235	.92366	576.1	.00480	.002051	.93014	576.8	.00421	.001782
6	.93610	589.8	.00816	.003473	.93871	597.5	.00797	.003405	.94455	598.1	.00705	.002984
7	.94610	602.5	.01090	.004640	.95263	611.5	.01102	.004708	.96119	619.5	.00995	.004212
8	.94832	605.5	.01177	.005010	.95932	618.8	.01248	.005332	.97172	631.5	.01268	.005368
9	.91832	555.1	.00121	.000515	.92255	558.5	.00121	.000517	.94844	573.1	.00057	.000241
10	.91332	551.8	.00115	.000489	.91865	552.8	.00091	.000389	.93901	566.5	.00069	.000292
11	.91443	555.1	.00188	.000800	.91865	556.1	.00175	.000748	.93458	568.5	.00146	.000618
12	.92165	567.8	.00391	.001664	.92310	573.5	.00358	.001530	.93236	576.8	.00295	.001249
13	.93332	584.8	.00645	.002745	.93536	587.8	.00621	.002653	.94123	592.5	.00537	.002273
14	.94276	596.8	.00919	.003912	.94818	604.5	.00831	.003550	.95509	611.1	.00799	.003382
15	.94888	601.8	.00926	.003941	.95932	614.1	.01038	.004435	.96950	624.5	.00933	.003950
16	.95054	596.1	.00703	.002992	.96266	610.1	.00817	.003491	.97505	622.8	.00839	.003552
17	.94943	589.1	.00530	.002256	.96266	603.5	.00672	.002871	.97560	617.8	.00742	.003141
18	.93110	562.8	.00118	.000502	.93759	566.5	.00117	.000500				
19	.92165	554.5	.00087	.000370	.93202	560.5	.00089	.000380	.95897	578.5	.00054	.000229
20	.92665	580.1	.00633	.002694	.92756	581.5	.00605	.002585	.93347	586.1	.00507	.002146
21	.94610	593.8	.00714	.003039	.95598	605.8	.00746	.003187	.96618	615.8	.00752	.003183
22	.94610	581.1	.00342	.001456	.95821	593.5	.00449	.001918	.97117	607.1	.00494	.002091
23	.93665	562.8	.00078	.000332	.94706	570.5	.00091	.000389	.99057	593.5	.00023	.000097
24	.93332	559.5	.00049	.000209	.94483	566.5	.00067	.000286				
25	.92221	554.1	.00084	.000358	.93146	559.1	.00083	.000355	.96285	579.8	.00060	.000254
26	.91220	553.8	.00160	.000681	.92032	555.8	.00150	.000641	.94733	573.5	.00107	.000453
27	.91332	561.5	.00338	.001439	.91642	564.5	.00315	.001346	.93458	573.5	.00255	.001079
28	.91109	569.8	.00611	.002601	.91140	570.8	.00552	.002358	.92404	578.1	.00465	.001968
29	.93276	589.1	.00807	.003435	.93425	593.5	.00857	.003662	.94455	600.5	.00666	.002819
30	.93665	592.1	.00870	.003703	.94205	600.5	.00937	.004003	.95287	609.8	.00762	.003226
31	.94276	591.1	.00661	.002814	.95096	601.8	.00745	.003183	.96285	612.8	.00728	.003082
32	.93499	579.8	.00386	.001643	.94483	594.1	.00482	.002059	.95731	599.8	.00493	.002087
33	.94832	579.8	.00262	.001115	.95988	591.8	.00353	.001508	.97283	605.1	.00400	.001693
34	.94832	569.1	.00066	.000281	.96378	577.8	.00058	.000248				
35					.97158	580.5	.00035	.000150				
36	.92387	554.8	.00081	.000345	.93536	560.5	.00070	.000299	.96673	582.1	.00059	.000250
37	.91887	573.8	.00596	.002537	.92199	576.5	.00508	.002170	.93679	585.5	.00438	.001854
38	.93276	584.8	.00661	.002814	.94149	595.5	.00741	.003166	.95675	608.5	.00703	.002976
39	.94443	581.8	.00359	.001528	.95431	592.5	.00429	.001833	.96784	604.5	.00436	.001846
40	.95165	579.5	.00191	.000813	.96322	591.8	.00280	.001196	.97726	603.8	.00307	.001300
41	.93721	563.5	.00078	.000332	.94985	570.5	.00079	.000338	.97616	589.8	.00083	.000351
42	.92443	559.1	.00141	.000600	.93703	565.8	.00129	.000551	.96285	584.1	.00126	.000533
43	.91443	560.8	.00294	.001251	.92310	567.1	.00280	.001196	.94400	579.1	.00237	.001003
44	.91443	573.1	.00510	.002171	.92088	577.1	.00479	.002047	.93735	587.1	.00414	.001753
45	.92999	586.1	.00740	.003150	.93703	592.5	.00740	.003162	.95121	602.8	.00596	.002523
46	.93276	588.1	.00807	.003435	.94149	598.1	.00774	.003307	.95731	610.8	.00701	.002968
47	.93165	582.1	.00586	.002494	.94149	592.8	.00693	.002961	.95841	607.1	.00624	.002642
50	.92776	586.8	.00747	.003180	.92645	579.5	.00605	.002585	.93125	579.5	.00458	.001939
51	.95332	616.5	.01155	.004916	.94985	612.8	.00876	.003743	.95121	602.8	.00686	.002904
52	.97444	640.5	.03360	.014302	.97158	640.1	.02044	.008733	.97172	638.1	.01471	.006227
53	.98333	647.5	.03254	.013851	.98662	653.1	.02406	.010280	.99223	656.5	.01888	.007992
54	.96777	631.8	.02360	.010045	.97659	642.8	.02010	.008588	.98835	652.1	.01725	.007302
55	.92387	579.8	.00736	.003133	.92255	576.8	.00614	.002623	.92681	577.5	.00470	.001990
56	.94165	605.5	.01487	.006329	.93926	602.8	.01049	.004482	.94012	600.8	.00820	.003471
57	.96555	631.1	.02386	.010156	.96378	631.5	.01701	.007268	.96507	630.5	.01263	.005347
58	.97499	641.1	.03075	.013089	.97882	647.1	.02327	.009942	.98503	651.5	.01898	.008035
59	.96221	632.5	.02308	.009824	.97102	645.8	.02014	.008605	.98281	648.5	.01782	.007544
60	.95277	574.1	.00096	.000409	1.01448	605.5	.00024	.000103				
61	.96999	579.1	.00021	.000089	.99498	593.1	.00015	.000064				
62	.92943	558.8	.00086	.000366	.94149	565.1	.00082	.000350	.96340	579.5	.00045	.000190
63	.91887	558.8	.00217	.000924	.92868	562.5	.00173	.000739	.94788	574.8	.00105	.000444
64	.92110	570.1	.00442	.001881	.92700	570.8	.00342	.001461	.93957	574.8	.00219	.000927
65	.91998	585.1	.00822	.003499	.92366	584.5	.00584	.002495	.93014	578.1	.00376	.001592
66	.92943	598.1	.01403	.005972	.93480	598.8	.00771	.003294	.94067	594.8	.00600	.002540
67	.93443	608.5	.01729	.007359	.93926	605.1	.00815	.003482	.95065	605.5	.00751	.003179
68	.94221	609.5	.01317	.005606	.94428	600.1	.00727	.003106	.96119	611.5	.00735	.003111
69	.94443	582.8	.00315	.001341	.95041	593.1	.00362	.001547	.97006	602.8	.00384	.001626
70	.95499	599.8	.00696	.002962	.94929	614.8	.00857	.003662	.97726	614.1	.00515	.002180
71	.94499	568.8	.00073	.000311	.99665	596.5	.00049	.000209	1.01496	609.8	.00042	.000178
72	.94777	566.8	.00034	.000145	.98662	588.8	.00024	.000103				
73	.92999	558.5	.00065	.000277	.94316	566.1	.00060	.000256	.96230	578.8	.00054	.000229
74	.91554	555.5	.00181	.000770	.92589	559.8	.00127	.000543	.94566	571.8	.00106	.000449
75	.90998	562.1	.00410	.001745	.91530	562.5	.00253	.001081	.93014	569.1	.00224	.000948
76	.91665	582.1	.00802	.003414	.91809	574.8	.00422	.001803	.93014	582.5	.00406	.001719
77	.93165	599.1	.01347	.005733	.93425	591.8	.00582	.002487	.94622	603.1	.00660	.002794
78	.92887	604.5	.01576	.006708	.93480	597.1	.00625	.002670	.95010	616.8	.00927	.003924
79	.93721	609.1	.01575	.006704	.94651	604.8	.00532	.002273	.96230	627.1	.01216	.005148
80	.93332	600.8	.01197	.005095	.94595	618.8	.01188	.005076	.96340	625.1	.01072	.004538
81	.94276	593.5	.00748	.003184	.95096	609.1	.01091	.004661	.97338	627.8	.00989	.004187
83	.95777	574.5	.00046	.000196	.99052	592.8	.00037	.000158	1.01219	607.5	.00039	.000165
84	.93332	561.5	.00077	.000328	.95041	570.5	.00071	.000303	.96784	583.1	.00064	.000271
85	.95054	577.1	.00180	.000766	.96824	583.8	.00125	.000534	.98392	596.8	.00121	.000512
86	.91276	563.5	.00382	.001626	.92533	564.8	.00241	.001030	.93568	573.1	.00238	.001008
87	.92165	579.8	.00701	.002984	.93035	576.8	.00390	.001666	.93458	582.8	.00470	.001990
88	.92054	594.1	.01170	.004980	.92923	589.5	.00612	.002615	.93180	596.1	.00838	.003548
89	.92887	599.8	.01459	.006210	.93982	599.8	.00792	.003384	.94566	613.5	.01198	.005072
90	.93054	599.8	.01541	.006559	.94205	605.8	.01146	.004896	.95176	621.1	.01438	.006087
91	.93999	600.5	.00960	.004086	.95208	619.5	.01061	.004533	.96950	627.5	.01112	.004707
93	.93387	563.5	.00099	.000421	.93982	566.1	.00080	.000342	.94899	572.8	.00072	.000305
94	.92387	561.5	.00191	.000813	.93090	562.8	.00156	.000667	.94123	571.1	.00106	.000449
95	.90998	561.8	.00385	.001639	.91419	560.1	.00306	.001307	.92127	563.8	.00248	.001050
96	.91887	577.8	.00681	.002899	.91976	574.1	.00547	.002337	.92349	575.1	.00454	.001922
97	.92221	591.8	.01256	.005346	.92422	591.8	.01058	.004520	.92737	593.1	.00861	.003645
98	.92665	598.5	.01552	.006606	.93202	603.8	.01401	.005986	.93846	608.8	.01248	.005283
99	.93332	601.1	.01420	.006044	.94038	619.5	.01581	.006755	.94899	631.8	.01671	.007074

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	$\alpha' = 45.0°$; $T_t = 672°$ R; $p_t = 8{,}651.0$ lb/sq ft			
4	.95269	567.5	.00094	.000396
5	.94537	567.1	.00186	.000784
6	.95494	584.5	.00354	.001493
7	.97127	599.8	.00500	.002109
8	.98479	613.1	.00579	.002442
9	.97747	578.5	.00039	.000164
10	.96508	571.5	.00055	.000232
11	.95551	567.1	.00076	.000321
12	.94312	564.8	.00179	.000755
13	.94424	576.8	.00316	.001333
14	.95551	589.1	.00471	.001986
15	.97240	609.5	.00568	.002395
16	.98141	610.8	.00595	.002509
17	.98366	612.5	.00609	.002568
18	.99098	586.1	.00041	.000173
19	.97465	577.5	.00047	.000198
20	.93805	571.5	.00346	.001459
21	.97578	611.5	.00689	.002906
22	.97803	613.1	.00702	.002960
23	.99155	586.8	.00043	.000181
24	.98986	585.8	.00041	.000173
25	.97691	581.8	.00065	.000274
26	.96226	572.5	.00099	.000418
27	.94706	568.5	.00188	.000793
28	.92904	571.1	.00367	.001548
29	.95382	591.1	.00527	.002222
30	.96621	605.5	.00659	.002779
31	.97803	619.5	.00734	.003095
32	.96733	607.5	.00731	.003083
33	.97860	613.8	.00694	.002927
34	1.00112	592.5	.00040	.000169
35	1.01126	598.5	.00041	.000173
36	.98197	582.8	.00060	.000253
37	.94819	578.5	.00359	.001514
38	.97353	613.8	.00764	.003222
39	.97916	614.8	.00739	.003117
40	.98254	614.8	.00648	.002733
41	.99098	589.8	.00093	.000392
42	.97972	585.1	.00112	.000472
43	.96114	577.8	.00205	.000865
44	.94988	579.8	.00361	.001522
45	.96452	598.5	.00535	.002256
46	.97296	611.5	.00616	.002598
47	.97465	614.1	.00783	.003302
50	.94706	567.8	.00197	.000831
51	.96114	580.1	.00253	.001067
52	.97747	607.8	.00573	.002416
53	1.00337	634.1	.00568	.002395
54	1.00675	637.5	.00727	.003066
55	.94368	566.5	.00187	.000789
56	.95044	578.8	.00346	.001459
57	.97296	602.8	.00468	.001974
58	.99774	630.5	.00559	.002357
59	1.00168	640.8	.00731	.003083
62	.98423	581.8	.00038	.000160
63	.96677	573.8	.00089	.000375
64	.95438	571.5	.00176	.000742
65	.94199	573.1	.00330	.001392
66	.95438	592.5	.00554	.002336
67	.96902	613.8	.00710	.002994
68	.98141	619.1	.00794	.003348
69	.98085	616.8	.00777	.003277
70	.98366	616.1	.00661	.002788
71	1.03322	610.8	.00038	.000160
72	1.02365	603.8	.00028	.000118
73	.99211	587.1	.00052	.000219
74	.97522	579.1	.00078	.000329
75	.95663	576.1	.00174	.000734
76	.95044	577.1	.00312	.001316
77	.96395	601.1	.00534	.002252
78	.96959	608.5	.00706	.002977
79	.98423	621.8	.00828	.003492
80	.98366	618.5	.00787	.003319
81	.99887	622.5	.00611	.002577
83	1.03097	609.8	.00041	.000173
84	.99549	589.5	.00048	.000202
85	1.01182	601.8	.00085	.000358
86	.96170	574.8	.00145	.000611
87	.95663	579.1	.00303	.001278
88	.95269	588.8	.00527	.002222
89	.96902	608.1	.00717	.003024
90	.98085	619.8	.00855	.003606
91	.99718	625.5	.00711	.002998
93	.97634	578.1	.00042	.000177
94	.96790	575.5	.00073	.000308
95	.94706	569.1	.00150	.000633
96	.94650	572.5	.00286	.001206
97	.94875	587.1	.00544	.002294
98	.96395	604.8	.00752	.003171
99	.98085	628.8	.00893	.003766

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 0^\circ$; $T_t = 674^\circ$ R; $p_t = 12{,}240.0$ lb/sq ft				$\alpha' = 7.5^\circ$; $T_t = 673^\circ$ R; $p_t = 12{,}231.0$ lb/sq ft				$\alpha' = 15.0^\circ$; $T_t = 676^\circ$ R; $p_t = 12{,}214.0$ lb/sq ft			
4	.92165	573.8	.00582	.001738	.91972	566.1	.00437	.001303	.91684	563.5	.00401	.001199
5	.92554	580.8	.00790	.002359	.92473	575.8	.00622	.001854	.92353	576.5	.00625	.001869
6	.92887	584.5	.00838	.002502	.93310	584.5	.00735	.002191	.93470	590.8	.00854	.002554
7	.92554	580.8	.00791	.002362	.93365	585.8	.00785	.002340	.94028	598.1	.01008	.003014
8	.91721	571.8	.00637	.001902	.92752	580.1	.00704	.002099	.93804	596.5	.01002	.002997
9	.91220	557.8	.00202	.000603	.91135	552.5	.00136	.000405	.91293	551.5	.00138	.000413
10	.91165	557.1	.00287	.000857	.90968	550.5	.00160	.000477	.90902	548.8	.00138	.000413
11	.91665	566.1	.00432	.001290	.91414	558.5	.00288	.000859	.91181	557.8	.00261	.000781
12	.92498	576.1	.00577	.001723	.92362	570.8	.00452	.001348	.92186	570.8	.00435	.001301
13	.92610	578.5	.00627	.001872	.92975	582.1	.00555	.001655	.93246	584.8	.00630	.001884
14	.92054	573.1	.00558	.001666	.92919	579.1	.00585	.001744	.93693	591.8	.00748	.002237
15	.91554	565.5	.00433	.001293	.92696	574.8	.00504	.001503	.93916	591.8	.00717	.002144
16	.91387	558.5	.00287	.000857	.92585	567.8	.00350	.001044	.93804	584.1	.00560	.001675
17	.91276	554.8	.00210	.000627	.92362	564.8	.00251	.000748	.93637	576.8	.00427	.001277
18	.91609	553.8	.00134	.000400	.92083	556.1	.00133	.000397	.92688	561.8	.00167	.000499
19	.91554	557.8	.00237	.000708	.91581	552.5	.00138	.000411	.91739	552.1	.00125	.000374
20	.92276	576.8	.00622	.001857	.92641	576.8	.00568	.001693	.92744	582.1	.00628	.001878
21	.91220	555.5	.00235	.000702	.92362	565.8	.00326	.000972	.93637	583.1	.00544	.001627
22	.91165	551.5	.00148	.000442	.92083	556.5	.00139	.000414	.93414	569.1	.00251	.000751
23	.91832	555.1	.00123	.000367	.92919	561.1	.00137	.000408	.92856	561.5	.00156	.000467
24	.91721	555.8	.00141	.000421	.92529	558.8	.00125	.000373	.92632	557.8	.00113	.000338
25	.91276	557.8	.00244	.000729	.91414	551.5	.00118	.000352	.91628	551.1	.00121	.000362
26	.91109	561.8	.00395	.001179	.91024	556.5	.00260	.000775	.90846	551.8	.00218	.000652
27	.91998	573.5	.00578	.001726	.91804	569.8	.00417	.001243	.91460	564.8	.00400	.001196
28	.91498	572.5	.00658	.001965	.91860	572.1	.00573	.001708	.91684	578.1	.00624	.001866
29	.92054	577.1	.00558	.001666	.92808	579.1	.00599	.001786	.93246	589.5	.00744	.002225
30	.91220	562.5	.00402	.001200	.92250	571.8	.00479	.001428	.93246	587.5	.00695	.002078
31	.91443	556.5	.00224	.000669	.92306	565.8	.00316	.000942	.93470	582.8	.00560	.001675
32	.90554	548.5	.00149	.000445	.91303	556.1	.00174	.000519	.92577	569.5	.00308	.000921
33	.91832	554.8	.00124	.000370	.92306	556.5	.00119	.000355	.93637	568.5	.00202	.000604
34	.92776	559.8	.00118	.000352	.93700	564.5	.00124	.000370	.93470	562.8	.00117	.000350
35	.93610	568.5	.00154	.000460	.94257	568.8	.00129	.000385	.94363	566.5	.00090	.000269
36	.91054	558.1	.00235	.000702	.91191	550.1	.00138	.000411	.91516	551.5	.00112	.000335
37	.92221	577.5	.00666	.001988	.92250	574.8	.00562	.001676	.92074	577.1	.00588	.001758
38	.91387	560.8	.00231	.000690	.91749	563.1	.00345	.001029	.92744	578.1	.00546	.001633
39	.92610	561.5	.00147	.000439	.92306	559.1	.00165	.000492	.93525	573.1	.00290	.000867
40	.92776	561.5	.00097	.000290	.92864	558.1	.00083	.000247	.94363	571.8	.00157	.000470
41	.91609	557.8	.00221	.000660	.91749	555.8	.00156	.000465	.92130	554.5	.00121	.000362
42	.91220	561.8	.00367	.001096	.91135	557.5	.00259	.000772	.91125	553.5	.00206	.000616
43	.91220	568.5	.00573	.001711	.90912	561.5	.00425	.001267	.90623	561.5	.00384	.001148
44	.91443	572.1	.00623	.001860	.91470	569.8	.00571	.001702	.91181	570.8	.00582	.001741
45	.92221	574.8	.00570	.001702	.92529	580.8	.00577	.001720	.92632	583.8	.00676	.002022
46	.92054	567.8	.00382	.001141	.92362	572.1	.00476	.001419	.92744	583.1	.00653	.001953
47	.92276	561.5	.00216	.000645	.92083	563.1	.00310	.000924	.92465	574.8	.00487	.001456
50	.93832	600.8	.01388	.004144	.93533	591.8	.01003	.002990	.93079	590.1	.00936	.002799
51	.96499	622.8	.01731	.005168	.96320	616.5	.01265	.003772	.95925	617.5	.01246	.003726
52	.97555	656.1	.03916	.011692	.97825	645.5	.02586	.007710	.97823	646.5	.03139	.009387
53	.96499	629.5	.02640	.007882	.97324	639.1	.02232	.006655	.98046	646.5	.02798	.008368
54	.93721	605.5	.01451	.004332	.94926	614.5	.01436	.004281	.96037	625.8	.01872	.005598
55	.93499	599.1	.01476	.004407	.93198	590.1	.01014	.003023	.92744	588.5	.00958	.002865
56	.95388	625.5	.02342	.006992	.95372	614.8	.01588	.004735	.94921	616.1	.01606	.004803
57	.96666	647.5	.02985	.008912	.97045	636.8	.02051	.006115	.97041	637.8	.02337	.006989
58	.95666	627.1	.02381	.007109	.96376	631.8	.02058	.006136	.97153	639.8	.02656	.007943
59	.93276	596.5	.01395	.004165	.94480	605.1	.01375	.004099	.95535	622.1	.01826	.005461
60	.94165	574.8	.00247	.000737	.93756	564.5	.00096	.000286	.94697	567.1	.00070	.000209
61	.92832	564.5	.00180	.000537	.92752	557.5	.00085	.000253	.94195	563.1	.00051	.000153
62	.89220	548.5	.00251	.000749	.89407	539.1	.00136	.000405	.90567	543.5	.00093	.000278
63	.89665	553.5	.00402	.001200	.89519	549.5	.00239	.000713	.89953	548.5	.00213	.000637
64	.90609	563.8	.00564	.001684	.90466	560.5	.00375	.001118	.90512	558.1	.00369	.001104
65	.90109	562.8	.00621	.001854	.90411	561.5	.00506	.001509	.90512	565.1	.00529	.001582
66	.89998	560.1	.00523	.001562	.90745	564.5	.00526	.001568	.91181	573.8	.00648	.001938
67	.89554	554.1	.00366	.001093	.90522	560.1	.00455	.001357	.91349	573.5	.00635	.001899
68	.90054	549.1	.00237	.000708	.91080	558.1	.00331	.000987	.92018	574.1	.00572	.001711
69	.93610	568.1	.00161	.000481	.93811	578.1	.00350	.001044	.93749	596.1	.00925	.002766
70	.94832	577.1	.00214	.000639	.95038	582.1	.00301	.000897	.95256	595.5	.00579	.001732
71	.94332	574.1	.00215	.000642	.94480	569.5	.00116	.000346	.95702	573.8	.00079	.000236
72	.90998	559.8	.00367	.001096	.92083	556.1	.00096	.000286	.95535	570.1	.00053	.000158
73	.89498	546.5	.00263	.000785	.89240	540.5	.00136	.000405	.92074	551.8	.00086	.000257
74	.89331	553.8	.00393	.001173	.89017	542.1	.00253	.000754	.90567	549.5	.00190	.000568
75	.89665	558.1	.00534	.001594	.89407	550.8	.00390	.001163	.90177	557.1	.00355	.001062
76	.90109	562.8	.00619	.001848	.90355	560.8	.00503	.001500	.90902	566.5	.00513	.001534
77	.90498	562.8	.00516	.001541	.91024	569.8	.00525	.001565	.91851	577.1	.00614	.001836
78	.89276	550.1	.00379	.001132	.90466	565.1	.00439	.001309	.91516	576.8	.00617	.001845
79	.89554	546.8	.00259	.000773	.91191	560.5	.00356	.001061	.92298	577.8	.00601	.001797
80	.91554	562.5	.00321	.000958	.91916	569.8	.00491	.001464	.92465	585.8	.00861	.002575
81	.95832	581.1	.00172	.000514	.95651	583.5	.00265	.000790	.95869	594.8	.00486	.001453
83	.92221	565.5	.00330	.000985	.92975	560.1	.00110	.000328				
84	.89498	547.1	.00272	.000812	.89407	539.5	.00139	.000414	.91963	552.1	.00092	.000275
85	.92443	570.1	.00389	.001161	.92250	562.1	.00250	.000745	.93804	568.5	.00182	.000544
86	.89720	558.5	.00526	.001570	.89742	552.8	.00389	.001160	.90567	556.8	.00332	.000993
87	.90331	564.1	.00622	.001857	.90857	563.5	.00491	.001464	.91516	568.8	.00471	.001409
88	.89498	562.5	.00531	.001585	.90522	562.8	.00523	.001559	.91293	572.1	.00583	.001743
89	.89331	551.5	.00403	.001203	.90745	561.8	.00455	.001357	.91739	574.8	.00589	.001761
90	.89276	545.1	.00262	.000782	.91135	559.5	.00351	.001046	.92018	575.8	.00582	.001741
91	.93165	571.1	.00306	.000914	.92418	571.5	.00451	.001345	.92967	586.1	.00747	.002234
93	.89165	544.8	.00270	.000806	.89128	537.8	.00139	.000414	.91907	553.5	.00122	.000365
94	.89498	551.8	.00387	.001155	.89351	544.1	.00238	.000710	.91014	552.5	.00205	.000613
95	.89331	555.5	.00535	.001597	.89407	550.5	.00371	.001106	.90177	556.8	.00343	.001026
96	.90220	565.5	.00553	.001651	.90578	561.1	.00467	.001392	.91070	565.8	.00490	.001465
97	.89554	556.8	.00533	.001591	.90466	562.1	.00523	.001559	.91181	571.8	.00610	.001824
98	.89165	552.1	.00388	.001158	.90522	560.1	.00454	.001354	.91460	573.5	.00632	.001890
99	.89609	547.1	.00250	.000746	.91191	563.8	.00408	.001216	.92242	578.1	.00628	.001878

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Continued

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 677° R; p_t = 12,234.0 lb/sq ft				α' = 30.0°; T_t = 682° R; p_t = 12,236.0 lb/sq ft				α' = 37.5°; T_t = 687° R; p_t = 12,237.0 lb/sq ft			
4	.91257	562.1	.00370	.001107	.91059	558.5	.00284	.000854	.93525	570.8	.00242	.000731
5	.91925	577.8	.00649	.001942	.91614	572.8	.00585	.001759	.93023	579.1	.00468	.001413
6	.93373	597.5	.00977	.002923	.93225	595.1	.00987	.002967	.94307	604.8	.00793	.002394
7	.94431	611.5	.01369	.004096	.94724	614.5	.01483	.004458	.96037	623.8	.01162	.003508
8	.94654	614.8	.01496	.004476	.95390	622.5	.01786	.005369	.97153	639.5	.01368	.004129
9	.91368	556.8	.00161	.000482	.91947	559.5	.00160	.000481	.96037	580.1	.00105	.000317
10	.90811	549.5	.00153	.000458	.91559	554.1	.00128	.000385	.95032	576.8	.00137	.000414
11	.90923	557.1	.00242	.000724	.91392	556.5	.00204	.000613	.94195	573.8	.00196	.000592
12	.91813	571.8	.00456	.001364	.91836	569.5	.00425	.001278	.93525	577.8	.00353	.001066
13	.93150	591.1	.00742	.002220	.93002	589.8	.00765	.002300	.94195	596.1	.00612	.001847
14	.94152	605.1	.01067	.003193	.94391	607.8	.01130	.003397	.95479	615.8	.00915	.002762
15	.94876	610.8	.01090	.003262	.95501	623.1	.01319	.003965	.96986	630.1	.01073	.003239
16	.94932	603.8	.00828	.002478	.95779	613.1	.01026	.003084	.97544	627.8	.00979	.002955
17	.94821	595.8	.00653	.001954	.95779	606.1	.00841	.002528	.97544	622.1	.00861	.002599
18	.92482	562.8	.00155	.000464	.93502	568.8	.00150	.000451	.97823	588.1	.00074	.000223
19	.91758	553.5	.00116	.000347	.92891	561.5	.00107	.000322	.96204	581.8	.00119	.000359
20	.92482	586.5	.00756	.002262	.92280	583.5	.00705	.002119	.93470	589.5	.00550	.001660
21	.94542	601.5	.00837	.002505	.95279	608.8	.00965	.002901	.96651	620.5	.00878	.002650
22	.94542	585.5	.00425	.001272	.95501	595.1	.00530	.001593	.97209	610.8	.00577	.001742
23	.92872	560.8	.00104	.000311	.94280	573.1	.00121	.000364	.98437	589.1	.00043	.000130
24	.92649	557.1	.00076	.000227	.94113	569.8	.00080	.000240	.97767	586.8	.00064	.000193
25	.91646	552.8	.00105	.000314	.92780	559.8	.00081	.000243	.95925	578.5	.00106	.000320
26	.90644	551.5	.00206	.000616	.91559	559.5	.00169	.000508	.94418	572.5	.00157	.000474
27	.90867	563.8	.00399	.001194	.91059	562.8	.00366	.001100	.93023	572.5	.00303	.000915
28	.91201	577.5	.00687	.002056	.91059	574.5	.00669	.002011	.92298	584.1	.00531	.001603
29	.93094	597.1	.01005	.003007	.93002	596.1	.00982	.002952	.94251	603.8	.00752	.002270
30	.93595	600.5	.01004	.003004	.93835	604.5	.01128	.003391	.95200	613.8	.00883	.002665
31	.94152	598.5	.00829	.002481	.94724	605.5	.00962	.002892	.96204	616.8	.00816	.002463
32	.93484	582.8	.00474	.001418	.94335	592.5	.00603	.001813	.95814	604.1	.00592	.001787
33	.94765	583.8	.00313	.000937	.95779	596.8	.00425	.001278	.97265	608.5	.00489	.001476
34	.93818	565.1	.00086	.000257	.96112	580.5	.00075	.000225	.99441	594.1	.00033	.000100
35	.94375	565.8	.00063	.000189	.96501	580.1	.00053	.000159	.99553	596.1	.00043	.000130
36	.91312	550.1	.00110	.000329	.92947	559.8	.00082	.000247	.96037	577.8	.00082	.000248
37	.91479	578.8	.00684	.002047	.91559	577.5	.00651	.001957	.93358	586.5	.00493	.001488
38	.93206	592.1	.00802	.002400	.93835	599.5	.00956	.002874	.95702	612.8	.00801	.002418
39	.94319	586.8	.00435	.001302	.95168	596.8	.00565	.001698	.96762	608.5	.00535	.001615
40	.95266	585.8	.00253	.000757	.96112	605.5	.00492	.001479	.97488	606.1	.00368	.001111
41	.92315	555.8	.00112	.000335	.94113	567.1	.00085	.000256	.97432	585.5	.00103	.000311
42	.91145	555.1	.00190	.000569	.92780	562.5	.00145	.000436	.95869	581.5	.00153	.000462
43	.90366	558.8	.00367	.001098	.91336	564.8	.00322	.000968	.93916	579.8	.00282	.000851
44	.90867	573.5	.00635	.001900	.91392	574.5	.00585	.001759	.93358	588.5	.00479	.001446
45	.92593	591.8	.00887	.002654	.93058	594.1	.00878	.002639	.94865	605.1	.00682	.002059
46	.93039	595.5	.00935	.002798	.93669	600.8	.01008	.003030	.95646	614.1	.00795	.002400
47	.92927	588.1	.00707	.002116	.93613	595.8	.00864	.002597	.95702	613.8	.00718	.002167
50	.92370	588.1	.00858	.002567	.91836	579.1	.00728	.002188	.92911	580.8	.00528	.001594
51	.95155	617.1	.01373	.004108	.94391	607.5	.01173	.003526	.94921	609.8	.00757	.002285
52	.97327	654.5	.04340	.012987	.96723	648.8	.03549	.010669	.97097	642.1	.01594	.004812
53	.98273	661.5	.04562	.013651	.98334	668.5	.04470	.013438	.99218	662.5	.01912	.005772
54	.96770	641.8	.02833	.008477	.97334	659.5	.03498	.010516	.98883	656.8	.01864	.005627
55	.92148	586.5	.00857	.002564	.91614	577.8	.00734	.002207	.92800	580.1	.00532	.001606
56	.94208	615.5	.01647	.004928	.93558	606.5	.01393	.004188	.94083	608.5	.00895	.002702
57	.96658	646.5	.03034	.009079	.96168	649.1	.02772	.008333	.96707	635.8	.01363	.004114
58	.97438	655.5	.04413	.013205	.97556	663.1	.04681	.014072	.98604	657.8	.01825	.005509
59	.96268	638.5	.02876	.008606	.96890	643.8	.03479	.010458	.98437	656.5	.01941	.005859
60	.94097	567.8	.00100	.000299	1.00499	602.1	.00035	.000105				
61	.95767	571.8	.00032	.000096	.98833	591.5	.00028	.000084	.99944	596.1	.00029	.000088
62	.91702	550.8	.00080	.000239	.93169	561.1	.00061	.000183	.95590	573.8	.00079	.000238
63	.90588	550.8	.00181	.000542	.91836	560.8	.00167	.000502	.94363	570.8	.00148	.000447
64	.90755	561.1	.00343	.001026	.91448	563.5	.00331	.000995	.93414	574.5	.00303	.000915
65	.90644	570.1	.00546	.001634	.91059	572.5	.00643	.001933	.92688	583.8	.00576	.001739
66	.91646	583.8	.00817	.002445	.92225	592.8	.01217	.003659	.93916	606.5	.00975	.002943
67	.92148	588.8	.00883	.002642	.92947	611.1	.01501	.004512	.95088	620.5	.01256	.003791
68	.92927	593.8	.00863	.002582	.93780	612.5	.01246	.003746	.96093	626.5	.01231	.003716
69	.94319	602.5	.00751	.002247	.94891	604.1	.00694	.002086	.96651	625.8	.00369	.001114
70	.95155	611.5	.01050	.003142	.94058	614.8	.01695	.005095	.96595	631.5	.00967	.002919
71	.95043	573.1	.00086	.000257	.98389	591.8	.00063	.000189	.99609	598.5	.00074	.000223
72	.98162	586.8	.00030	.000090	.97501	584.5	.00035	.000105	.98158	587.5	.00046	.000139
73	.92760	556.8	.00079	.000236	.93669	565.8	.00092	.000277	.95200	574.1	.00081	.000245
74	.90978	552.1	.00166	.000497	.91947	559.1	.00199	.000598	.93749	567.1	.00156	.000471
75	.90310	559.1	.00331	.000990	.90781	561.8	.00393	.001181	.92298	568.1	.00342	.001032
76	.90978	570.8	.00563	.001685	.91225	578.1	.00738	.002219	.92465	588.5	.00659	.001989
77	.92315	587.8	.00807	.002415	.92891	602.5	.01147	.003448	.94363	614.5	.01207	.003643
78	.92370	591.5	.00918	.002747	.93225	612.1	.01507	.004530	.94809	628.8	.01737	.005243
79	.93540	606.1	.01214	.003633	.94557	617.8	.01715	.005156	.95981	639.5	.02055	.006203
80	.93039	605.8	.01521	.004551	.94058	617.1	.02147	.006454	.96149	637.1	.01776	.005361
81	.93930	602.1	.01018	.003046	.94613	614.5	.01438	.004323	.97209	635.8	.01124	.003393
83					.98111	590.1	.00059	.000177	.99107	593.8	.00060	.000181
84	.92983	559.5	.00088	.000263	.94335	569.5	.00088	.000265	.95702	576.5	.00104	.000314
85	.94765	575.5	.00162	.000485	.95890	583.1	.00191	.000574	.97488	590.1	.00152	.000459
86	.91368	564.1	.00321	.000961	.91725	567.1	.00383	.001151	.93023	571.1	.00305	.000921
87	.92426	580.1	.00500	.001496	.92225	583.1	.00743	.002234	.93023	587.5	.00555	.001675
88	.92704	592.8	.00818	.002448	.92447	599.8	.01424	.004281	.93135	605.1	.01007	.003040
89	.93373	605.5	.01266	.003788	.93391	613.1	.01951	.005865	.94418	619.1	.01415	.004271
90	.93373	610.1	.01630	.004877	.93780	616.8	.02136	.006421	.95200	631.1	.01708	.005156
91	.93484	604.5	.01235	.003695	.94446	615.1	.01625	.004885	.96483	634.1	.01285	.003879
93	.92816	562.1	.00155	.000464	.93391	567.5	.00133	.000400	.94195	569.8	.00112	.000338
94	.91925	561.5	.00248	.000742	.92558	563.8	.00204	.000613	.93637	567.5	.00158	.000477
95	.90755	565.8	.00474	.001418	.90892	562.1	.00390	.001172	.91851	563.8	.00315	.000951
96	.91702	584.8	.00857	.002564	.91392	578.5	.00762	.002291	.92018	577.1	.00545	.001645
97	.92203	601.5	.01530	.004578	.92114	599.5	.01528	.004593	.92688	599.8	.01065	.003215
98	.92704	608.5	.01902	.005691	.92891	611.1	.02218	.006668	.93916	616.5	.01510	.004558
99	.93206	611.8	.01877	.005617	.93613	617.8	.02564	.007708	.95200	626.5	.01827	.005515

TABLE VII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 2 - Concluded

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	$\alpha' = 45.0^0$; $T_t = 674^0$ R; $p_t = 12{,}229.0$ lb/sq ft			
4	.96046	576.1	.00145	.000433
5	.94691	570.1	.00278	.000830
6	.95369	588.5	.00448	.001338
7	.96950	609.1	.00667	.001992
8	.98305	623.8	.00824	.002461
9	.98475	583.1	.00080	.000239
10	.97402	577.1	.00077	.000230
11	.96272	572.5	.00116	.000346
12	.94635	568.8	.00230	.000687
13	.94465	582.1	.00420	.001255
14	.95538	600.1	.00672	.002007
15	.97232	617.8	.00832	.002485
16	.98079	623.8	.00875	.002614
17	.98305	621.5	.00969	.002894
18	.99830	591.1	.00068	.000203
19	.98249	582.5	.00083	.000248
20	.93844	580.8	.00479	.001431
21	.97684	624.8	.00934	.002790
22	.97797	622.1	.01115	.003330
23	1.00564	595.1	.00063	.000188
24	1.00282	593.1	.00065	.000194
25	.98701	585.5	.00087	.000260
26	.97119	579.8	.00136	.000406
27	.95143	573.1	.00247	.000738
28	.93562	575.8	.00446	.001332
29	.95595	603.5	.00798	.002384
30	.96837	615.1	.01041	.003109
31	.97910	623.8	.01089	.003253
32	.96893	621.1	.01053	.003145
33	.98023	623.5	.01118	.003339
34	1.01694	600.1	.00047	.000140
35	1.02428	604.8	.00055	.000164
36	.99209	588.5	.00083	.000248
37	.95143	584.8	.00490	.001464
38	.97628	623.1	.01129	.003372
39	.98136	628.5	.01023	.003056
40	.98418	623.8	.00967	.002888
41	.99943	595.1	.00120	.000358
42	.98927	590.8	.00149	.000445
43	.96668	583.1	.00276	.000824
45	.96837	610.5	.00686	.002049
46	.97684	623.8	.00887	.002649
47	.97854	627.1	.00986	.002945
50	.94747	570.1	.00258	.000771
51	.95990	582.8	.00316	.000944
52	.97628	613.5	.00686	.002049
53	1.00282	636.8	.00826	.002467
54	1.00734	643.1	.00841	.002512
55	.94691	570.1	.00260	.000777
56	.95143	583.5	.00416	.001243
57	.97345	609.1	.00663	.001980
58	.99717	636.5	.00836	.002497
59	1.00282	640.8	.00870	.002599
60	1.04517	614.1	.00026	.000078
61	1.03388	608.1	.00028	.000084
62	.98418	582.1	.00071	.000212
63	.96893	576.1	.00116	.000346
64	.95482	576.8	.00253	.000756
65	.94465	579.5	.00440	.001314
66	.95820	601.8	.00782	.002336
67	.97232	627.8	.01065	.003181
68	.98418	629.5	.01238	.003698
69	.98249	631.1	.01101	.003289
70	.98531	629.5	.00943	.002817
71	1.02371	606.1	.00081	.000242
72	1.00790	595.5	.00064	.000191
73	.98814	585.8	.00077	.000230
74	.97289	578.5	.00120	.000358
75	.95482	573.1	.00222	.000663
76	.94973	580.8	.00418	.001249
77	.96555	605.1	.00778	.002324
78	.97232	618.1	.01105	.003301
79	.98701	636.1	.01214	.003626
80	.98475	633.1	.01176	.003513
81	.99943	633.8	.00811	.002422
83	1.02541	605.8	.00061	.000182
84	.99322	587.8	.00073	.000218
85	1.00960	599.8	.00117	.000349
86	.96103	576.1	.00217	.000648
87	.95708	583.5	.00386	.001153
88	.95595	598.1	.00724	.002163
89	.97232	617.5	.01022	.003053
90	.98475	634.5	.01187	.003546
91	.99661	636.8	.00976	.002915
93	.97684	577.8	.00067	.000200
94	.97006	575.8	.00081	.000242
95	.94973	568.5	.00187	.000559
96	.94691	576.1	.00370	.001105
97	.95199	599.5	.00738	.002204
98	.96724	627.5	.01154	.003447
99	.98418	634.5	.01261	.003767

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}°R}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}°R}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}°R}$	N_{St}
	α' = -30.0°; T_t = 703° R; p_t = 5,052.0 lb/sq ft				α' = -22.5°; T_t = 703° R; p_t = 5,057.0 lb/sq ft				α' = -15°; T_t = 701° R; p_t = 5,058.0 lb/sq ft			
1	.94273	627.5	.01624	.004487	.93651	621.8	.01495	.004125	.92868	615.5	.01290	.003551
2	.93347	605.5	.01210	.003343	.93190	606.8	.01202	.003317	.92868	609.1	.01159	.003191
3	.91843	571.1	.00753	.002081	.91804	577.5	.00813	.002243	.91775	586.8	.00877	.002414
4	.94389	616.8	.01258	.003476	.93363	607.1	.01113	.003071	.92465	596.8	.00886	.002439
5	.93694	608.1	.01129	.003119	.93016	603.8	.01057	.002917	.92293	598.5	.00896	.002467
6	.93463	593.1	.00853	.002357	.92959	593.1	.00846	.002334	.92638	595.5	.00803	.002211
7	.91670	561.5	.00538	.001487	.91227	565.1	.00587	.001620	.91085	573.1	.00618	.001701
8	.90455	546.1	.00349	.000964	.90073	544.8	.00393	.001084	.89871	551.8	.00474	.001305
9	.94331	589.8	.00765	.002114	.93016	576.1	.00617	.001703	.91948	564.1	.00462	.001272
10	.94041	599.8	.00919	.002539	.92843	588.5	.00786	.002169	.91775	577.1	.00600	.001652
11	.94215	607.8	.01002	.002769	.93074	598.8	.00892	.002461	.92120	589.5	.00720	.001982
12	.93868	602.1	.00923	.002550	.93016	598.1	.00886	.002445	.92408	594.5	.00750	.002065
13	.92537	582.8	.00748	.002067	.92093	583.8	.00737	.002034	.91833	586.5	.00692	.001905
14	.91265	557.8	.00497	.001373	.90996	561.8	.00512	.001413	.90855	569.1	.00550	.001514
15	.91438	547.1	.00267	.000738	.91054	550.1	.00312	.000861	.90855	553.1	.00369	.001016
16	.92537	546.5	.00214	.000591	.92093	549.5	.00259	.000715	.92178	554.1	.00291	.000801
17	.92422	554.1	.00231	.000638	.91689	560.1	.00313	.000864	.92580	572.5	.00336	.000925
18	.94562	582.8	.00573	.001583	.93305	569.8	.00453	.001250	.92580	561.1	.00328	.000903
19	.94273	599.8	.00872	.002409	.92959	588.8	.00765	.002111	.92005	578.5	.00592	.001630
20	.91785	577.5	.00726	.002006	.91343	578.1	.00732	.002020	.91258	582.5	.00681	.001875
21	.91265	534.8	.00150	.000414	.90766	534.8	.00196	.000541	.91488	543.8	.00210	.000578
22	.92190	553.8	.00235	.000649	.90881	554.5	.00317	.000875	.92810	571.5	.00359	.000988
23	.93984	574.1	.00476	.001315	.93247	565.1	.00341	.000941	.93155	570.8	.00358	.000986
24	.94157	580.5	.00571	.001578	.92959	570.1	.00470	.001297	.92235	563.8	.00359	.000988
25	.94099	596.8	.00815	.002252	.92901	586.5	.00707	.001951	.91890	577.5	.00576	.001586
26	.93694	600.8	.00902	.002492	.92670	592.5	.00804	.002219	.91718	584.8	.00667	.001836
27	.93405	596.5	.00844	.002332	.92670	592.8	.00785	.002166	.92063	590.1	.00699	.001924
28	.91438	574.5	.00710	.001962	.91054	575.5	.00689	.001901	.90740	578.5	.00660	.001817
29	.91207	554.5	.00440	.001216	.90766	558.1	.00465	.001283	.90855	566.8	.00499	.001374
30	.90744	541.5	.00235	.000649	.90015	539.5	.00298	.000822	.90165	549.1	.00351	.000966
31	.92364	537.5	.00104	.000287	.91054	533.8	.00138	.000381	.91373	541.1	.00177	.000487
32	.91091	534.8	.00125	.000345	.89554	530.5	.00172	.000475	.90740	547.1	.00246	.000677
33	.92595	556.5	.00230	.000635	.90535	551.5	.00315	.000869	.91718	561.1	.00352	.000969
34	.94389	570.5	.00368	.001017	.93824	570.1	.00247	.000682	.92983	592.1	.00609	.001677
35	.95835	585.5	.00506	.001398	.95094	578.1	.00364	.001004	.94248	573.8	.00338	.000930
36	.93984	594.8	.00791	.002186	.92786	585.5	.00698	.001926	.91718	576.1	.00567	.001561
37	.92480	579.1	.00663	.001832	.92035	580.5	.00656	.001810	.91603	583.5	.00650	.001789
38	.93116	540.1	.00091	.000251	.91170	533.1	.00111	.000306	.91373	540.1	.00161	.000443
39	.93984	548.8	.00100	.000276	.91458	539.8	.00147	.000406	.92120	553.1	.00226	.000622
40	.93405	559.1	.00212	.000586	.91343	556.8	.00315	.000869	.92235	565.1	.00338	.000930
44	.92306	577.8	.00632	.001746	.91804	579.5	.00653	.001802	.91603	583.5	.00637	.001754
60	.95835	639.1	.01356	.003747	.94690	626.8	.01158	.003195	.93443	603.5	.00825	.002271
61	.95488	626.5	.01254	.003465	.94459	626.8	.01224	.003378	.93328	606.5	.00893	.002458
62	.95256	623.1	.01072	.002962	.93420	588.1	.00720	.001987	.92293	574.8	.00511	.001407
63	.94793	608.1	.00952	.002630	.93305	590.8	.00725	.002001	.92293	583.1	.00589	.001621
64	.93926	592.5	.00735	.002031	.92843	586.5	.00681	.001879	.92178	585.1	.00622	.001712
65	.92769	572.1	.00522	.001442	.91689	570.1	.00542	.001496	.91258	574.1	.00541	.001489
66	.92769	557.1	.00322	.000890	.91170	553.8	.00365	.001007	.90682	559.5	.00410	.001129
67	.94273	555.8	.00150	.000414	.91516	545.8	.00209	.000577	.90625	545.5	.00268	.000738
68	.95835	557.1	.00086	.000238	.92439	541.5	.00122	.000337	.91028	541.1	.00185	.000509
69	.97570	567.1	.00070	.000193	.93767	551.5	.00116	.000320	.92810	561.1	.00246	.000677
70	.93810	561.8	.00222	.000613	.91804	556.5	.00285	.000786	.92580	574.5	.00444	.001222
71	.95719	625.5	.01249	.003451	.94459	613.8	.01065	.002939	.93386	599.1	.00755	.002078
72	.94331	619.8	.01364	.003769	.93420	608.5	.01131	.003121	.92523	596.1	.00822	.002263
73	.94851	631.8	.01615	.004462	.93651	583.8	.00584	.001612	.92293	574.1	.00493	.001357
74	.94157	625.8	.01488	.004111	.92843	583.8	.00630	.001738	.91833	578.1	.00553	.001522
75	.93579	611.5	.01168	.003227	.92439	580.5	.00598	.001650	.91775	579.5	.00556	.001531
76	.91728	578.8	.00762	.002105	.90939	562.8	.00492	.001358	.90510	567.8	.00508	.001398
77	.92133	557.8	.00417	.001152	.91227	551.1	.00325	.000897	.90625	556.8	.00385	.001060
78	.92653	549.8	.00182	.000503	.91227	537.8	.00157	.000433	.89699	538.1	.00243	.000669
79	.94620	549.1	.00084	.000232	.93074	541.8	.00076	.000210	.90337	535.1	.00166	.000457
80	.98148	569.1	.00056	.000155	.92382	547.5	.00160	.000442	.93558	565.8	.00256	.000705
81	.93116	558.1	.00242	.000669	.92093	553.5	.00250	.000690	.92810	571.8	.00391	.001076
82	.95314	623.1	.01258	.003476	.94286	610.8	.01025	.002828	.93271	597.5	.00738	.002032
83	.95314	620.1	.01179	.003258	.94344	608.1	.00977	.002696	.93443	596.1	.00713	.001963
84	.94504	634.5	.01522	.004205	.94113	591.8	.00708	.001954	.92293	573.8	.00503	.001385
85	.96182	635.5	.01364	.003769	.95787	601.5	.00602	.001661	.94133	591.1	.00548	.001509
86	.93058	605.8	.01181	.003263	.92670	581.8	.00585	.001614	.91603	578.8	.00576	.001586
87	.92306	578.8	.00692	.001912	.92151	569.1	.00467	.001289	.91488	572.5	.00508	.001398
88	.91381	551.5	.00391	.001080	.91054	549.5	.00319	.000880	.90165	553.8	.00386	.001063
89	.92364	542.1	.00161	.000445	.91574	539.5	.00172	.000475	.89756	538.5	.00251	.000691
90	.93405	543.8	.00088	.000243	.92728	540.1	.00082	.000226	.89699	530.8	.00164	.000451
91	.96702	562.5	.00073	.000202	.95209	561.8	.00143	.000395	.94421	570.5	.00261	.000719
92	.94909	574.8	.00313	.000865	.95036	572.1	.00262	.000723	.95053	591.5	.00457	.001258
93	.94273	625.1	.01521	.004203	.93709	606.5	.01139	.003143	.92235	574.8	.00534	.001470
94	.94215	622.8	.01412	.003901	.93940	597.8	.00850	.002346	.92408	581.5	.00585	.001610
95	.93463	606.1	.01100	.003039	.93593	588.1	.00600	.001656	.92350	584.5	.00616	.001696
96	.92364	577.8	.00692	.001912	.92728	572.5	.00456	.001258	.91718	576.1	.00565	.001555
97	.92364	556.5	.00390	.001078	.92151	560.5	.00307	.000847	.91085	561.8	.00447	.001231
98	.94157	555.8	.00195	.000539	.93247	554.8	.00179	.000494	.91603	552.8	.00305	.000840
99	.95314	560.8	.00150	.000414	.94575	556.1	.00129	.000356	.92638	549.5	.00185	.000509

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(a) $M = 3.51$; $p_{t,nom} = 5{,}040$ lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	$\alpha' = -7.5°$; $T_t = 702°$ R; $p_t = 5{,}047.0$ lb/sq ft				$\alpha' = 0°$; $T_t = 696°$ R; $p_t = 5{,}044.0$ lb/sq ft				$\alpha' = 7.5°$; $T_t = 698°$ R; $p_t = 5{,}050.0$ lb/sq ft			
1	.92963	590.1	.00981	.002713	.92444	580.8	.00881	.002424	.91886	568.5	.00757	.002082
2	.93424	592.1	.00963	.002663	.93251	589.8	.00966	.002658	.92921	584.5	.00963	.002648
3	.92617	577.8	.00782	.002162	.92617	582.5	.00890	.002449	.92691	585.5	.01033	.002841
4	.92386	570.8	.00622	.001720	.91636	560.5	.00526	.001447	.91022	549.1	.00424	.001166
5	.92444	577.8	.00717	.001983	.91925	570.8	.00646	.001778	.91253	560.5	.00596	.001639
6	.93193	582.5	.00704	.001947	.92963	580.5	.00717	.001973	.92519	575.1	.00730	.002008
7	.91925	568.1	.00604	.001670	.92040	572.1	.00675	.001857	.92058	574.1	.00775	.002131
8	.90540	548.8	.00435	.001203	.90771	556.1	.00545	.001500	.91022	562.8	.00700	.001925
9	.92040	551.1	.00257	.000711	.91867	548.1	.00254	.000699	.91828	552.1	.00294	.000809
10	.91694	553.8	.00393	.001087	.91059	548.1	.00317	.000872	.90677	537.1	.00258	.000710
11	.91925	565.8	.00534	.001477	.91175	555.1	.00458	.001260	.90504	543.5	.00357	.000982
12	.92501	575.1	.00634	.001753	.92040	568.8	.00578	.001590	.91368	558.1	.00520	.001430
13	.92271	573.8	.00638	.001764	.92098	572.8	.00644	.001772	.91713	567.1	.00638	.001755
14	.91578	563.8	.00547	.001513	.91636	567.8	.00610	.001678	.91713	568.8	.00677	.001862
15	.91405	551.1	.00373	.001031	.91636	559.1	.00486	.001337	.91943	565.1	.00595	.001636
16	.92040	547.8	.00208	.000575	.91751	549.5	.00318	.000875	.92001	556.1	.00442	.001216
17	.92444	552.8	.00246	.000680	.91405	543.8	.00256	.000704	.91483	554.1	.00404	.001111
18	.93078	554.5	.00221	.000611	.93136	557.8	.00261	.000718	.93094	560.8	.00335	.000921
19	.91809	555.1	.00400	.001106	.91463	545.1	.00285	.000784	.91137	538.1	.00203	.000558
20	.91809	570.5	.00633	.001750	.91578	569.5	.00630	.001734	.91310	564.1	.00630	.001733
21	.91405	538.5	.00172	.000476	.91175	545.8	.00317	.000872	.91483	552.5	.00414	.001139
22	.93251	559.5	.00268	.000741	.92271	550.1	.00240	.000660	.92001	556.8	.00367	.001009
23	.93309	575.5	.00411	.001137	.92847	560.8	.00356	.000980	.92403	552.1	.00308	.000847
24	.92271	549.8	.00261	.000722	.92559	548.1	.00215	.000592	.92116	543.8	.00196	.000539
25	.91751	554.1	.00387	.001070	.91290	543.8	.00274	.000754	.90850	535.5	.00178	.000490
26	.91521	562.1	.00515	.001424	.90598	554.5	.00413	.001136	.89929	541.8	.00312	.000858
27	.92213	572.1	.00607	.001679	.91751	565.8	.00550	.001513	.91080	555.1	.00481	.001323
28	.91232	571.8	.00612	.001692	.90540	567.5	.00612	.001684	.90217	562.1	.00596	.001639
29	.91694	562.5	.00497	.001374	.91809	567.1	.00566	.001557	.91943	568.1	.00629	.001730
30	.90944	548.8	.00360	.000996	.91290	557.1	.00461	.001268	.91598	562.5	.00561	.001543
31	.91694	539.5	.00160	.000442	.91982	549.8	.00305	.000839	.92288	556.1	.00384	.001056
32	.91232	542.8	.00217	.000600	.90656	542.8	.00239	.000658	.90792	541.8	.00257	.000707
33	.92847	567.8	.00443	.001225	.92847	566.1	.00411	.001131	.92519	561.1	.00383	.001053
34	.93655	582.5	.00547	.001513	.93193	568.1	.00450	.001238	.92231	546.5	.00237	.000652
35	.94751	565.8	.00238	.000658	.94405	563.1	.00250	.000688	.93267	551.5	.00204	.000561
36	.91694	553.5	.00381	.001054	.91405	544.5	.00271	.000746	.90965	535.5	.00184	.000506
37	.92040	571.1	.00612	.001692	.92444	573.5	.00605	.001665	.92058	566.8	.00581	.001598
38	.91405	537.8	.00161	.000445	.91809	548.8	.00300	.000825	.92058	555.1	.00386	.001062
39	.93366	559.5	.00264	.000730	.93482	558.1	.00251	.000691	.93439	557.8	.00226	.000622
40	.93309	574.1	.00520	.001438	.93078	586.1	.00655	.001802	.93785	571.1	.00394	.001084
44	.92213	577.8	.00609	.001684	.92155	582.5	.00597	.001643	.91713	566.1	.00585	.001609
60	.93770	576.5	.00522	.001443	.93886	569.1	.00397	.001092	.93497	563.8	.00365	.001004
61	.93482	578.1	.00610	.001687	.92790	565.8	.00439	.001208	.92288	545.8	.00182	.000501
62	.92386	556.1	.00353	.000976	.91348	545.5	.00285	.000784	.91137	536.5	.00162	.000446
63	.92328	564.1	.00464	.001283	.91463	554.1	.00394	.001084	.90907	546.8	.00281	.000773
64	.92559	570.8	.00570	.001576	.92271	567.1	.00512	.001409	.91828	559.1	.00459	.001262
65	.92155	567.1	.00538	.001488	.92155	569.5	.00564	.001552	.92116	567.1	.00580	.001595
66	.91809	559.5	.00453	.001253	.92213	566.8	.00507	.001395	.92634	572.1	.00609	.001675
67	.91925	550.8	.00316	.000874	.92559	560.1	.00391	.001076	.93382	578.8	.00557	.001532
68	.92386	550.5	.00258	.000713	.93078	557.8	.00324	.000892	.94015	603.5	.00460	.001265
69	.93943	573.5	.00467	.001291	.94232	583.1	.00619	.001703	.94072	589.8	.00860	.002365
70	.93309	568.8	.00450	.001244	.92963	577.5	.00642	.001767	.93497	593.8	.01059	.002912
71	.93828	574.1	.00480	.001327	.93943	567.5	.00366	.001007	.93612	560.8	.00311	.000855
72	.92674	570.1	.00547	.001513	.92271	560.5	.00407	.001120	.91022	541.5	.00239	.000657
73	.92271	553.1	.00331	.000915	.91002	542.5	.00269	.000740	.90620	532.5	.00143	.000393
74	.91867	559.1	.00442	.001222	.90886	550.1	.00380	.001046	.90274	537.8	.00261	.000718
75	.92155	565.8	.00510	.001410	.91521	561.5	.00478	.001315	.90965	550.8	.00401	.001103
76	.91405	561.5	.00515	.001424	.91117	568.1	.00546	.001502	.91022	564.1	.00527	.001449
77	.91982	558.5	.00423	.001170	.92328	566.5	.00495	.001362	.92691	569.8	.00550	.001513
78	.91290	548.5	.00282	.000780	.91925	559.1	.00386	.001062	.92749	573.8	.00515	.001416
79	.92155	543.8	.00193	.000534	.92963	562.1	.00337	.000927	.93669	600.5	.00675	.001856
80	.93251	566.5	.00414	.001145	.93309	575.1	.00557	.001533	.93152	581.5	.00793	.002181
81	.93424	567.5	.00412	.001139	.93078	576.8	.00614	.001689	.93439	589.8	.00943	.002593
82	.93655	572.8	.00465	.001286	.93828	565.8	.00344	.000947	.93554	558.8	.00275	.000756
83	.93713	572.1	.00474	.001311	.93136	562.5	.00363	.000999	.92403	546.8	.00192	.000528
84	.92213	553.1	.00338	.000935	.90771	541.1	.00276	.000759	.91483	536.5	.00140	.000385
85	.94174	572.5	.00449	.001242	.93366	564.8	.00379	.001043	.93439	555.8	.00248	.000682
86	.91982	571.1	.00561	.001551	.91175	559.8	.00503	.001384	.91022	556.1	.00397	.001092
87	.92386	567.1	.00544	.001504	.92213	569.5	.00543	.001494	.92403	568.5	.00521	.001433
88	.91463	555.5	.00436	.001206	.91694	562.8	.00502	.001381	.92461	576.1	.00544	.001496
89	.91232	545.1	.00298	.000824	.91867	555.1	.00381	.001048	.93094	574.5	.00570	.001568
90	.91405	539.5	.00185	.000512	.92098	550.5	.00293	.000806	.93152	580.8	.00734	.002019
91	.94116	567.8	.00362	.001001	.94174	577.1	.00506	.001392	.94072	583.8	.00706	.001942
92	.94693	577.5	.00438	.001211	.94347	585.1	.00614	.001689	.94533	596.8	.00928	.002552
93	.92155	552.8	.00341	.000943	.90771	540.8	.00274	.000754	.93439	551.8	.00151	.000415
94	.92386	561.5	.00442	.001222	.91117	550.5	.00370	.001018	.92634	554.1	.00244	.000671
95	.92559	568.8	.00573	.001585	.91809	563.1	.00498	.001370	.92634	562.1	.00391	.001075
96	.92213	566.1	.00546	.001510	.91867	567.1	.00561	.001544	.92806	572.1	.00515	.001416
97	.91809	557.8	.00445	.001231	.91867	564.1	.00515	.001417	.93152	578.5	.00594	.001634
98	.91982	551.1	.00320	.000885	.92386	560.1	.00406	.001117	.93669	584.5	.00732	.002013
99	.92213	545.8	.00225	.000622	.92732	555.8	.00321	.000883	.93554	591.5	.00923	.002538

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(a) $M = 3.51$; $p_{t,nom} = 5{,}040$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 15.0°$; $T_t = 697°$ R; $p_t = 5{,}048.0$ lb/sq ft				$\alpha' = 22.5°$; $T_t = 699°$ R; $p_t = 5{,}042.0$ lb/sq ft				$\alpha' = 30.0°$; $T_t = 700°$ R; $p_t = 5{,}042.0$ lb/sq ft			
1	.91263	572.8	.00793	.002180	.90933	572.1	.00783	.002160	.90798	564.8	.00689	.001902
2	.92470	594.8	.01069	.002939	.92368	599.8	.01130	.003117	.92284	595.1	.01079	.002978
3	.92700	605.5	.01296	.003563	.93056	618.8	.01519	.004190	.93427	621.1	.01705	.004706
4	.90400	548.8	.00412	.001133	.90187	547.5	.00395	.001089	.90398	545.5	.00326	.000900
5	.90573	567.1	.00569	.001564	.90187	559.8	.00563	.001553	.90170	561.1	.00531	.001466
6	.92067	582.5	.00757	.002081	.91909	585.8	.00805	.002220	.91941	583.5	.00813	.002244
7	.92010	589.8	.00932	.002562	.92253	601.8	.01119	.003086	.92684	604.8	.01204	.003323
8	.91205	584.8	.00989	.002719	.91851	603.8	.01307	.003605	.92627	611.8	.01498	.004135
9	.91033	552.5	.00264	.000726	.90761	547.1	.00216	.000596	.91313	546.8	.00170	.000469
10	.90056	540.1	.00254	.000698	.89901	535.8	.00230	.000634	.90684	540.1	.00189	.000522
11	.89826	544.8	.00327	.000899	.89614	538.8	.00299	.000825	.90227	540.1	.00241	.000665
12	.90630	558.1	.00485	.001333	.90245	556.1	.00461	.001272	.90570	553.8	.00427	.001179
13	.91205	572.8	.00643	.001768	.90991	574.8	.00659	.001818	.91198	572.8	.00657	.001813
14	.91550	581.1	.00761	.002092	.91737	589.5	.00850	.002344	.92113	590.8	.00900	.002484
15	.92182	582.5	.00742	.002040	.92655	597.1	.00937	.002584	.93427	603.8	.01053	.002907
16	.92297	577.1	.00687	.001889	.93171	599.1	.00973	.002684	.94227	610.5	.01160	.003202
17	.91952	580.8	.00696	.001913	.92942	604.1	.01004	.002769	.94170	617.5	.01229	.003392
18	.91895	558.5	.00265	.000729	.91679	551.8	.00190	.000524	.92341	549.8	.00136	.000375
19	.90630	547.5	.00212	.000583	.90589	535.5	.00150	.000414	.91427	540.1	.00113	.000312
20	.90860	569.1	.00608	.001672	.90704	570.1	.00593	.001636	.90970	568.5	.00578	.001595
21	.91837	568.8	.00572	.001573	.92655	586.8	.00759	.002093	.93770	597.8	.00889	.002454
22	.92355	579.8	.00601	.001652	.93401	601.8	.00856	.002361	.94684	615.1	.01030	.002843
23	.91148	550.1	.00232	.000638	.91450	551.1	.00177	.000488	.91941	546.8	.00121	.000334
24	.91378	544.8	.00187	.000514	.91737	542.8	.00106	.000292	.92227	544.8	.00100	.000276
25	.90170	535.5	.00174	.000478	.90761	534.8	.00125	.000345	.91484	539.8	.00101	.000279
26	.89193	534.1	.00259	.000712	.89499	533.8	.00220	.000607	.90112	535.8	.00175	.000483
27	.90343	557.8	.00408	.001122	.90302	551.8	.00372	.001026	.90570	550.1	.00339	.000936
28					.89556	565.5	.00537	.001481	.89884	564.1	.00527	.001455
29					.91909	584.5	.00678	.001870	.92398	586.8	.00727	.002007
30					.92138	586.8	.00717	.001978	.93027	593.8	.00780	.002153
31					.93171	585.8	.00657	.001812	.94570	596.8	.00723	.001996
32					.91622	574.5	.00638	.001760	.93027	587.5	.00744	.002054
33					.93229	597.5	.00754	.002080	.94456	610.1	.00964	.002661
34					.92712	554.1	.00154	.000425	.92798	555.5	.00149	.000411
35					.94663	556.5	.00089	.000245	.94684	558.1	.00089	.000246
36					.91335	537.5	.00120	.000331	.91827	541.8	.00112	.000309
37					.91278	569.5	.00511	.001409	.91998	569.5	.00453	.001250
38					.92712	580.5	.00590	.001627	.95199	595.1	.00539	.001488
39	.92297	559.5	.00340	.000935	.93229	578.1	.00511	.001409	.95027	593.1	.00584	.001612
40	.92987	585.1	.00501	.001377	.94032	605.8	.00689	.001900	.95085	613.8	.00901	.002487
44	.91090	568.1	.00524	.001441	.91106	567.8	.00484	.001335	.92170	568.8	.00387	.001068
60	.92815	553.5	.00174	.000478	.93401	559.8	.00184	.000508	.91770	547.1	.00146	.000403
61	.91837	539.1	.00069	.000190	.94376	555.8	.00088	.000243	.93770	552.5	.00075	.000207
62	.92240	543.1	.00123	.000338	.93401	551.8	.00112	.000309	.93313	551.8	.00088	.000243
63	.91607	554.1	.00278	.000764	.92253	555.1	.00223	.000615	.92284	549.5	.00187	.000516
64	.92240	574.8	.00541	.001487	.92253	574.8	.00416	.001147	.91827	567.8	.00427	.001179
65	.92527	592.5	.00863	.002373	.92540	596.1	.00495	.001365	.91884	591.8	.00789	.002178
66	.93447	607.5	.01180	.003244	.93573	606.8	.00541	.001492	.93084	612.8	.01331	.003674
67	.93964	616.5	.01166	.003206	.94606	611.1	.00611	.001685	.94399	631.1	.01734	.004786
68	.94137	618.5	.01031	.002834	.94835	617.1	.00677	.001867	.95027	637.1	.01882	.005195
69	.94309	601.5	.00873	.002400	.95294	637.5	.01285	.003544	.96113	644.1	.01863	.005142
70	.94079	617.1	.00877	.002411	.95180	617.1	.00906	.002499	.96056	618.1	.00816	.002252
71	.93734	557.1	.00147	.000404	.92827	557.8	.00157	.000433	.92627	549.8	.00125	.000345
72	.92585	545.5	.00082	.000225	.92712	548.1	.00109	.000301	.93541	549.8	.00063	.000174
73	.92010	540.5	.00122	.000335	.92942	547.8	.00096	.000265	.92913	546.1	.00075	.000207
74	.90745	547.5	.00273	.000751	.91507	544.8	.00211	.000582	.91655	542.5	.00136	.000375
75	.90860	566.8	.00496	.001364	.90876	557.1	.00411	.001134	.90855	553.1	.00322	.000889
76	.91033	584.1	.00880	.002419	.90761	585.5	.00781	.002154	.90512	568.8	.00641	.001769
77	.92930	606.5	.01090	.002997	.92884	609.8	.01136	.003133	.92970	602.8	.00979	.002702
78	.92872	615.5	.01278	.003513	.93229	620.5	.01482	.004088	.93770	620.5	.01496	.004129
79	.93734	614.1	.01284	.003530	.94319	628.8	.01573	.004339	.95027	631.8	.01643	.004535
80	.93504	607.5	.01123	.003087	.94319	626.8	.01502	.004143	.95256	635.8	.01817	.005015
81	.93907	619.5	.01464	.004025	.95007	646.1	.01975	.005447	.95999	639.1	.00699	.001929
82	.92987	562.1	.00284	.000781	.93229	561.5	.00219	.000604	.92456	551.1	.00153	.000422
83	.93044	548.1	.00093	.000256	.96270	570.8	.00132	.000364	.94113	554.1	.00070	.000193
84	.91550	546.1	.00122	.000335	.93745	552.1	.00118	.000325	.92456	544.5	.00076	.000210
85	.93102	559.8	.00250	.000687	.95065	567.8	.00195	.000538	.94170	557.1	.00152	.000420
86	.90285	556.5	.00468	.001287	.91048	554.8	.00371	.001023	.90398	544.8	.00300	.000828
87	.91780	585.8	.00773	.002125	.91679	580.5	.00670	.001848	.91255	569.8	.00598	.001651
88	.91952	598.5	.01036	.002848	.91966	598.5	.01026	.002830	.91884	592.8	.00943	.002603
89	.92585	606.5	.01216	.003343	.92942	614.5	.01302	.003591	.93370	614.8	.01353	.003735
90	.92815	606.1	.01205	.003313	.93401	624.5	.01391	.003837	.94056	629.5	.01473	.004066
91	.94252	607.5	.00990	.002722	.95122	626.5	.01348	.003718	.95999	635.1	.01539	.004248
92	.94654	627.8	.01339	.003681	.95524	647.8	.01819	.005017	.96456	654.1	.02283	.006302
93	.93102	551.8	.00145	.000399	.94204	557.8	.00137	.000378	.93370	553.1	.00124	.000342
94	.92182	551.8	.00241	.000663	.93458	556.1	.00188	.000519	.92913	551.5	.00148	.000409
95	.91263	560.5	.00443	.001218	.91909	562.5	.00353	.000974	.91770	551.8	.00292	.000806
96	.91320	579.5	.00721	.001982	.91278	579.1	.00617	.001702	.91084	565.1	.00533	.001471
97	.91952	596.8	.00994	.002733	.91909	596.5	.00965	.002662	.91998	589.8	.00904	.002495
98	.92872	607.1	.01150	.003162	.93114	613.5	.01219	.003362	.93541	612.5	.01208	.003334
99	.93102	608.1	.01191	.003274	.93688	629.5	.01277	.003522	.94342	630.1	.01430	.003947

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 37.5^o$; $T_t = 702^o$ R; p_t = 5,042.0 lb/sq ft				$\alpha' = 45.0^o$; $T_t = 702^o$ R; p_t = 5,039.0 lb/sq ft			
1	.91464	562.1	.00580	.001604	.93134	558.5	.00307	.000850
2	.92897	591.5	.00932	.002577	.94278	577.8	.00497	.001376
3	.94443	623.5	.01565	.004328	.95765	610.1	.00782	.002165
4	.91522	555.1	.00286	.000791	.92790	551.5	.00157	.000435
5	.91064	554.5	.00453	.001253	.92161	554.1	.00253	.000701
6	.92725	582.1	.00732	.002024	.93534	569.5	.00428	.001185
7	.93698	607.5	.01147	.003172	.94450	589.8	.00694	.001922
8	.94042	618.8	.01520	.004203	.95079	609.5	.00881	.002439
9	.92897	551.5	.00151	.000418	.92790	550.8	.00128	.000354
10	.92381	546.5	.00138	.000382	.92561	546.5	.00104	.000288
11	.91751	543.8	.00194	.000536	.92447	544.8	.00114	.000316
12	.91751	554.8	.00367	.001015	.92332	550.1	.00228	.000631
13	.92209	572.8	.00598	.001654	.92504	562.1	.00396	.001096
14	.93240	594.1	.00875	.002420	.93534	588.5	.00628	.001739
15	.94959	611.8	.01058	.002926	.95537	605.8	.00839	.002323
16	.95990	620.8	.01181	.003266	.97024	619.5	.00976	.002702
17	.95990	629.5	.01334	.003689	.97196	632.1	.01045	.002893
18	.94099	556.5	.00116	.000321	.94335	557.8	.00114	.000316
19	.93527	549.5	.00084	.000232	.93935	554.1	.00108	.000299
20	.92209	570.1	.00530	.001466	.92390	563.5	.00432	.001196
21	.95589	608.1	.00905	.002503	.96795	629.5	.01062	.002941
22	.96505	626.8	.01141	.003155	.98054	643.1	.01163	.003220
23	.93813	555.8	.00125	.000346	.94736	559.5	.00108	.000299
24	.94558	555.8	.00080	.000221	.94850	559.5	.00107	.000296
25	.93527	551.5	.00085	.000235	.94278	555.8	.00108	.000299
26	.92209	544.8	.00131	.000362	.93076	549.8	.00136	.000377
27	.92266	554.8	.00279	.000772	.92676	556.8	.00245	.000678
28	.91407	561.8	.00445	.001231	.91245	555.5	.00434	.001202
29	.94214	597.1	.00623	.001723	.93820	587.8	.00722	.001999
30	.95131	601.5	.00711	.001966	.95079	613.5	.00926	.002564
31	.96734	608.1	.00708	.001958	.97368	628.1	.01095	.003032
32	.94787	599.5	.00805	.002226	.96166	631.1	.01204	.003334
33	.96219	633.5	.00954	.002638	.97825	646.8	.01284	.003555
34	.94615	560.5	.00123	.000340	.95880	566.5	.00103	.000285
35	.96677	567.8	.00073	.000202	.97139	571.8	.00094	.000260
36	.93756	550.8	.00091	.000252	.94507	556.1	.00096	.000266
37	.93240	571.1	.00416	.001150	.92619	562.8	.00425	.001177
38	.96563	608.8	.00698	.001930	.96795	633.1	.01156	.003201
39	.96563	604.8	.00661	.001828	.97825	642.1	.01218	.003372
40	.96792	626.1	.01010	.002793	.98512	655.1	.01363	.003774
44	.92438	571.5	.00540	.001493	.92046	560.5	.00448	.001240
60	.96792	570.8	.00100	.000277	.96567	567.1	.00079	.000219
61	.96333	565.8	.00074	.000205	.96223	564.1	.00068	.000188
62	.95245	562.1	.00114	.000315	.95651	565.5	.00089	.000246
63	.94271	559.1	.00171	.000473	.94907	559.1	.00127	.000352
64	.93298	564.1	.00333	.000921	.93877	559.1	.00215	.000595
65	.92897	580.8	.00632	.001748	.93134	573.8	.00452	.001252
66	.94099	607.8	.01054	.002915	.94335	598.5	.00732	.002027
67	.95703	631.5	.01262	.003490	.96280	618.8	.00995	.002755
68	.96448	639.8	.01640	.004535	.97253	635.1	.01108	.003068
69	.97594	650.1	.01798	.004972	.98855	649.8	.01264	.003500
70	.96964	619.8	.00836	.002312	.99141	664.5	.01652	.004574
71	.97823	575.5	.00093	.000257	.97425	571.8	.00075	.000208
72	.96162	564.5	.00074	.000205	.95765	561.1	.00059	.000163
73	.95016	558.8	.00091	.000252	.95079	558.1	.00084	.000233
74	.93756	553.5	.00129	.000357	.94278	554.1	.00102	.000282
75	.92553	553.5	.00264	.000730	.93477	553.5	.00178	.000493
76	.91579	566.5	.00538	.001488	.92447	560.8	.00405	.001121
77	.93928	600.5	.00907	.002508	.94793	592.1	.00671	.001858
78	.95016	622.1	.01297	.003587	.96166	615.8	.00963	.002666
79	.96448	636.1	.01490	.004120	.97768	638.1	.01106	.003062
80	.96734	642.5	.01728	.004778	.98512	649.8	.01351	.003741
81	.97536	627.1	.00722	.001997	.99427	668.1	.01722	.004768
82	.97422	577.5	.00135	.000373	.97539	577.5	.00141	.000390
83	.97193	571.8	.00086	.000238	.96738	568.8	.00086	.000238
84	.94672	557.8	.00095	.000263	.94964	559.1	.00101	.000280
85	.96448	569.1	.00128	.000354	.97024	571.8	.00111	.000307
86	.92381	551.1	.00246	.000680	.93420	553.1	.00167	.000462
87	.92438	568.5	.00494	.001366	.93534	565.5	.00389	.001077
88	.92954	590.8	.00865	.002392	.94106	585.8	.00664	.001839
89	.94558	616.5	.01235	.003415	.95994	613.1	.00967	.002677
90	.95360	627.1	.01425	.003941	.97024	632.8	.01097	.003037
91	.97479	643.1	.01551	.004289	.99256	643.8	.01303	.003608
92	.97880	638.8	.00866	.002395	.99427	665.8	.02032	.005626
93	.95016	561.8	.00118	.000326	.95308	563.1	.00129	.000357
94	.94615	559.8	.00150	.000415	.95193	562.1	.00142	.000393
95	.93469	560.5	.00236	.000653	.94507	559.5	.00183	.000507
96	.92266	564.1	.00439	.001214	.93362	567.1	.00341	.000944
97	.92897	587.5	.00749	.002071	.94106	582.8	.00609	.001686
98	.94615	612.8	.01115	.003083	.95994	609.1	.00874	.002420
99	.95646	627.5	.01364	.003772	.97253	633.1	.01074	.002974

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -45.0°; T_t = 710° R; p_t = 7,071.0 lb/sq ft				α' = -37.5°; T_t = 708° R; p_t = 7,217.0 lb/sq ft				α' = -30.0°; T_t = 707° R; p_t = 7,194.0 lb/sq ft			
1	.97152	646.8	.01310	.002600	.95378	647.1	.01962	.003807	.94348	648.8	.02170	.004222
2	.95386	617.8	.00940	.001866	.94009	619.8	.01340	.002600	.93435	620.5	.01529	.002975
3	.93393	576.8	.00537	.001066	.91955	579.8	.00814	.001579	.91608	583.5	.00954	.001856
4	.97607	646.5	.01222	.002425	.95778	648.5	.01558	.003023	.94405	652.8	.01687	.003282
5	.96127	621.5	.01099	.002181	.94694	628.1	.01339	.002598	.93720	623.8	.01481	.002882
6	.95101	600.1	.00750	.001489	.93952	607.5	.00988	.001917	.93263	607.1	.01091	.002123
7	.93108	568.8	.00448	.000889	.91784	571.1	.00607	.001178	.91151	579.8	.00698	.001358
8	.92254	552.8	.00242	.000480	.90757	550.5	.00359	.000697	.90067	551.1	.00437	.000850
9	.97949	640.1	.01249	.002479	.95721	617.8	.01049	.002035	.94120	603.8	.00999	.001944
10	.97550	638.8	.01265	.002511	.95549	626.8	.01196	.002321	.94063	615.5	.01198	.002331
11	.97095	635.5	.01219	.002419	.95435	630.5	.01286	.002495	.94120	622.1	.01294	.002518
12	.96070	620.5	.01037	.002058	.94751	620.5	.01129	.002191	.93777	616.5	.01178	.002292
13	.94304	594.5	.00717	.001423	.93153	597.5	.00852	.001653	.92464	596.5	.00917	.001784
14	.93051	568.8	.00447	.000887	.91556	568.1	.00548	.001063	.90980	568.5	.00613	.001193
15	.94183	561.8	.00206	.000409	.91613	555.5	.00269	.000522	.90809	549.8	.00354	.000689
16	.95443	567.5	.00145	.000288	.92697	554.5	.00199	.000386	.91722	553.1	.00275	.000535
17	.95158	569.8	.00192	.000381	.92468	559.8	.00243	.000471	.91551	563.5	.00316	.000615
18	.98234	649.8	.01466	.002910	.96177	611.1	.00806	.001564	.94519	596.8	.00741	.001442
19	.97550	664.1	.01498	.002973	.95663	624.8	.01131	.002194	.94120	614.1	.01118	.002175
20	.93734	595.1	.00812	.001612	.92526	592.5	.00843	.001636	.91779	591.5	.00922	.001794
21	.95899	569.1	.00133	.000264	.92297	550.8	.00145	.000281	.90923	541.1	.00164	.000319
22	.96525	578.1	.00194	.000385	.92126	557.5	.00235	.000456	.91265	561.8	.00328	.000638
23	.97607	657.5	.01536	.003049	.95606	601.5	.00668	.001296	.94063	588.1	.00598	.001164
24	.97778	649.8	.01591	.003158	.95721	605.1	.00750	.001455	.94120	594.1	.00716	.001393
25	.97550	651.8	.01611	.003197	.95721	621.5	.00990	.001921	.94063	611.5	.01032	.002008
26	.96867	646.1	.01550	.003076	.95207	622.8	.01075	.002086	.93720	615.8	.01070	.002082
27	.96013	637.8	.01228	.002437	.94522	615.1	.00980	.001901	.93435	611.1	.01120	.002179
28	.93677	598.1	.00874	.001735	.92297	589.8	.00789	.001531	.91551	588.8	.00860	.001673
29	.94019	577.5	.00502	.000996	.92126	568.8	.00497	.000964	.90866	565.8	.00551	.001072
30	.94817	569.1	.00260	.000516	.91898	553.1	.00259	.000503	.90295	546.5	.00331	.000644
31	.96981	575.8	.00133	.000264	.93552	556.1	.00121	.000235	.91950	544.8	.00138	.000269
32	.96240	571.5	.00144	.000286	.91841	547.8	.00163	.000316	.90466	541.5	.00193	.000376
33	.96753	578.5	.00186	.000369	.91784	555.8	.00242	.000470	.91208	564.8	.00311	.000605
34	.97664	650.1	.01602	.003180	.95778	595.1	.00528	.001024	.94462	584.8	.00468	.000911
35	.99430	669.1	.01469	.002916	.97318	610.5	.00615	.001193	.96232	599.8	.00540	.001051
36	.97493	661.1	.01593	.003162	.95435	618.1	.00934	.001812	.94120	610.5	.00979	.001905
37	.94247	602.5	.00898	.001782	.92640	591.5	.00805	.001562	.92578	593.8	.00820	.001595
38	.96639	572.5	.00113	.000224	.93838	554.5	.00098	.000190	.93092	550.1	.00115	.000224
39	.98234	583.1	.00134	.000266	.94465	562.5	.00144	.000279	.93378	556.8	.00156	.000304
40	.97778	583.1	.00158	.000314	.92925	562.1	.00234	.000454	.92293	568.5	.00340	.000662
44	.93905	600.8	.00897	.001780	.92640	588.8	.00715	.001387	.92350	597.8	.00791	.001539
60	.98348	653.8	.01570	.003116	.96976	664.1	.01778	.003450	.95661	656.1	.01979	.003851
61	.97949	652.8	.01648	.003271	.96519	656.5	.01961	.003805	.95204	655.1	.02149	.004181
62	.97436	661.5	.01655	.003285	.96120	663.8	.02032	.003943	.95033	650.5	.02283	.004442
63	.96810	645.8	.01585	.003146	.95721	653.8	.01807	.003506	.94919	640.1	.01791	.003485
64	.95500	622.1	.01176	.002334	.94751	633.5	.01359	.002637	.93834	612.5	.01174	.002284
65	.94190	593.1	.00700	.001389	.93438	601.8	.00917	.001779	.92407	586.8	.00761	.001481
66	.94873	584.8	.00404	.000802	.93324	577.5	.00487	.000945	.92179	573.5	.00460	.000895
67	.96981	579.8	.00186	.000369	.94922	568.5	.00197	.000382	.93663	560.8	.00222	.000432
68	.98006	580.1	.00102	.000202	.95949	569.1	.00099	.000192	.95147	563.8	.00127	.000247
69	.99145	585.5	.00085	.000169	.96462	569.1	.00079	.000153	.96003	570.1	.00125	.000243
70	.97493	580.8	.00141	.000280	.92868	560.5	.00221	.000429	.92807	571.5	.00296	.000576
71	.98291	651.1	.01512	.003001	.96519	652.8	.01860	.003609	.95204	649.8	.01857	.003613
72	.97095	645.1	.01587	.003150	.95378	653.1	.01869	.003626	.94005	636.1	.01935	.003765
73	.97323	659.8	.01622	.003219	.95835	655.1	.02119	.004111	.94691	648.5	.02453	.004773
74	.96070	646.5	.01440	.002858	.94865	645.1	.01879	.003646	.94005	647.5	.02222	.004323
75	.94817	624.1	.01093	.002169	.94009	626.5	.01417	.002749	.93378	628.5	.01697	.003302
76	.92766	579.1	.00640	.001270	.91841	588.1	.00840	.001630	.91437	594.5	.01078	.002097
77	.94133	568.1	.00310	.000615	.92354	566.1	.00437	.000848	.91551	568.8	.00544	.001058
78	.95329	569.8	.00145	.000288	.93210	555.5	.00174	.000338	.92007	550.8	.00221	.000430
79	.96867	573.8	.00104	.000206	.94808	561.1	.00098	.000190	.93891	553.1	.00103	.000200
80	.98576	583.5	.00106	.000210	.94808	561.5	.00095	.000184	.96289	571.5	.00117	.000228
81	.97892	585.8	.00184	.000365	.93153	565.5	.00277	.000537	.92407	569.1	.00298	.000580
82	.98234	650.1	.01499	.002975	.96462	651.1	.01805	.003502	.95033	641.1	.01912	.003720
83	.98120	656.8	.01407	.002793	.96291	646.8	.01688	.003275	.94976	636.8	.01740	.003386
84	.96753	647.5	.01667	.003309	.95264	650.1	.02084	.004043	.94348	644.8	.02378	.004627
85	.97835	647.8	.01420	.002818	.96519	653.8	.01660	.003221	.95946	652.1	.02027	.003944
86	.94019	608.5	.01079	.002142	.93153	619.1	.01394	.002705	.92864	623.5	.01660	.003230
87	.93450	580.1	.00588	.001167	.92354	587.5	.00767	.001488	.92007	594.1	.00994	.001934
88	.93905	565.1	.00294	.000584	.92126	562.5	.00417	.000809	.90923	562.8	.00522	.001016
89	.95557	571.8	.00158	.000314	.93895	563.1	.00187	.000363	.92007	550.5	.00243	.000473
90	.96411	572.1	.00131	.000260	.94922	562.8	.00109	.000211	.92978	551.1	.00117	.000228
91	.99658	591.5	.00129	.000256	.96519	575.1	.00152	.000295	.96403	574.5	.00136	.000265
92	1.00000	613.5	.00380	.000754	.96234	595.1	.00430	.000834	.94462	591.1	.00415	.000807
93	.96411	653.8	.01638	.003251	.94979	654.1	.02006	.003892	.94063	648.1	.02224	.004327
94	.95899	644.1	.01424	.002828	.94694	641.8	.01730	.003357	.94063	639.8	.02118	.004121
95	.94475	608.5	.00976	.001937	.93610	619.1	.01264	.002452	.93320	623.5	.01586	.003086
96	.93336	578.5	.00580	.001151	.92354	585.8	.00763	.001480	.92007	593.1	.00990	.001926
97	.94589	568.8	.00292	.000580	.93153	568.1	.00416	.000807	.91836	567.5	.00523	.001018
98	.96468	578.8	.00179	.000355	.95435	573.5	.00241	.000468	.93492	563.8	.00298	.000580
99	.97380	580.5	.00154	.000306	.96519	578.8	.00215	.000417	.94576	567.8	.00224	.000436

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(b) $M = 3.51$; $p_{t,nom} = 7{,}200$ lb/sq ft

Thermo-couple	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = -22.5^o$; $T_t = 704^o$ R; $p_t = 7{,}070.0$ lb/sq ft				$\alpha' = -15.0^o$; $T_t = 704^o$ R; $p_t = 7{,}209.0$ lb/sq ft				$\alpha' = -7.5^o$; $T_t = 700^o$ R; $p_t = 7{,}168.0$ lb/sq ft			
1	.93720	633.5	.01852	.003659	.93244	618.1	.01529	.002961	.92872	600.5	.01157	.002246
2	.93263	618.8	.01456	.002876	.93301	612.1	.01342	.002599	.93389	603.1	.01153	.002238
3	.91665	587.8	.00987	.001950	.92042	588.8	.00997	.001931	.92527	588.5	.00952	.001848
4	.93492	619.5	.01367	.002701	.92786	599.8	.01042	.002018	.92297	579.8	.00738	.001433
5	.93092	615.8	.01306	.002580	.92729	602.1	.01087	.002105	.92412	587.5	.00840	.001631
6	.92978	611.8	.01036	.002047	.93072	599.1	.00953	.001846	.93217	592.1	.00835	.001621
7	.91037	574.5	.00717	.001416	.91412	576.1	.00727	.001408	.91895	577.5	.00718	.001394
8	.89895	553.1	.00485	.000958	.90153	561.1	.00519	.001005	.90458	556.8	.00548	.001064
9	.92921	586.5	.00766	.001513	.92214	566.8	.00522	.001011	.92010	554.1	.00321	.000623
10	.92864	600.1	.00965	.001906	.92156	580.5	.00719	.001393	.91550	560.5	.00480	.000932
11	.93092	610.5	.01101	.002175	.92443	593.1	.00874	.001693	.91837	574.1	.00641	.001244
12	.93092	609.8	.01070	.002114	.92786	598.1	.00931	.001803	.92412	584.1	.00742	.001441
13	.92122	594.8	.00893	.001764	.92156	590.1	.00847	.001640	.92240	583.1	.00743	.001442
14	.90695	570.5	.00632	.001249	.91069	572.1	.00659	.001276	.91435	572.1	.00646	.001254
15	.90409	550.8	.00390	.000770	.90954	555.5	.00428	.000829	.91205	557.8	.00452	.000878
16	.91037	552.5	.00336	.000664	.92500	558.1	.00313	.000606	.92067	551.5	.00276	.000536
17	.90637	565.1	.00402	.000794	.92901	579.1	.00463	.000897	.92527	561.1	.00329	.000639
18	.93663	582.1	.00532	.001051	.93931	584.1	.00406	.000786	.93562	579.8	.00468	.000909
19	.93035	599.8	.00905	.001788	.92328	582.1	.00719	.001393	.91665	562.1	.00486	.000944
20	.91437	589.8	.00877	.001733	.91641	586.1	.00833	.001613	.91722	579.5	.00732	.001421
21	.90124	539.1	.00199	.000393	.91011	545.5	.00250	.000484	.91320	544.8	.00250	.000485
22	.90238	561.5	.00406	.000802	.91641	572.5	.00587	.001137	.92930	576.5	.00508	.000986
23	.93948	581.8	.00432	.000853	.93244	607.1	.01017	.001970	.93159	595.8	.00762	.001479
24	.93948	584.1	.00502	.000992	.93072	575.1	.00500	.000968	.92815	565.1	.00399	.000775
25	.93035	598.5	.00850	.001679	.92271	580.5	.00679	.001315	.91665	561.5	.00467	.000907
26	.92807	604.5	.00967	.001910	.92099	587.1	.00827	.001602	.91493	570.5	.00600	.001165
27	.92807	604.8	.00956	.001889	.92443	593.8	.00849	.001644	.92125	581.1	.00708	.001375
28	.91380	586.1	.00821	.001622	.91011	581.5	.00807	.001563	.90975	580.5	.00715	.001388
29	.90960	568.5	.00554	.001094	.90954	568.8	.00601	.001164	.91493	570.1	.00597	.001159
30	.90009	548.5	.00357	.000705	.89981	549.8	.00413	.000800	.90745	555.5	.00447	.000868
31	.91151	542.5	.00174	.000344	.90725	540.5	.00210	.000407	.91665	546.1	.00226	.000439
32	.89439	540.5	.00236	.000466	.89866	548.8	.00373	.000722	.91665	563.1	.00426	.000827
33	.90124	558.5	.00370	.000731	.91298	571.1	.00571	.001106	.92412	581.5	.00691	.001342
34	.93891	593.5	.00706	.001395	.93244	609.5	.01206	.002336	.93274	587.8	.00766	.001487
35	.95433	595.8	.00505	.000998	.94904	594.1	.00599	.001160	.94654	593.1	.00589	.001144
36	.92978	598.1	.00853	.001685	.92156	580.1	.00684	.001325	.91607	561.1	.00479	.000930
37	.92007	591.8	.00816	.001612	.91870	586.1	.00782	.001515	.91952	579.8	.00707	.001373
38	.91437	544.1	.00174	.000344	.90840	540.1	.00176	.000341	.91320	544.8	.00239	.000464
39	.91722	550.8	.00195	.000385	.91756	556.5	.00312	.000604	.92930	580.5	.00562	.001091
40	.90923	567.8	.00365	.000721	.92328	579.5	.00576	.001116	.93044	583.1	.00660	.001281
44	.91950	596.8	.00780	.001541	.91813	586.1	.00782	.001515	.92010	580.1	.00716	.001390
60	.94405	639.5	.01527	.003017	.93588	608.5	.01060	.002053	.93389	585.1	.00663	.001287
61	.94177	632.5	.01593	.003147	.93473	609.1	.01160	.002247	.93044	586.1	.00731	.001419
62	.93492	607.5	.01089	.002151	.92958	582.5	.00613	.001187	.92125	569.5	.00561	.001089
63	.93263	603.8	.00950	.001877	.92672	587.8	.00727	.001408	.92067	572.8	.00597	.001159
64	.92750	597.8	.00845	.001669	.92443	588.5	.00771	.001493	.92355	578.8	.00654	.001270
65	.91494	581.5	.00689	.001361	.91469	577.5	.00682	.001321	.91837	575.1	.00637	.001237
66	.90809	562.8	.00463	.000915	.90782	562.5	.00499	.000966	.91378	566.8	.00532	.001033
67	.91037	548.8	.00260	.000514	.90668	548.1	.00315	.000610	.91378	558.1	.00429	.000833
68	.91779	546.5	.00150	.000296	.91126	544.5	.00215	.000416	.91895	560.1	.00398	.000773
69	.93720	560.5	.00156	.000308	.93931	571.1	.00316	.000612	.93332	579.8	.00579	.001124
70	.91208	562.1	.00353	.000697	.92958	580.1	.00566	.001096	.92872	577.1	.00573	.001112
71	.94177	627.1	.01403	.002772	.93416	604.1	.00982	.001902	.93217	581.8	.00614	.001192
72	.93092	621.1	.01459	.002882	.92557	599.5	.01056	.002045	.92182	578.1	.00671	.001303
73	.93948	616.5	.01187	.002345	.92786	583.1	.00652	.001263	.92125	561.5	.00436	.000846
74	.92921	600.5	.00922	.001821	.92156	582.8	.00706	.001367	.91550	566.1	.00524	.001017
75	.92293	591.8	.00766	.001513	.92042	583.1	.00703	.001362	.91837	572.5	.00602	.001169
76	.90466	571.1	.00612	.001209	.90668	570.5	.00633	.001226	.91090	568.5	.00609	.001182
77	.90181	554.8	.00411	.000812	.90611	558.5	.00464	.000899	.91550	564.1	.00494	.000959
78	.89324	535.1	.00217	.000429	.89637	539.5	.00288	.000558	.90918	550.1	.00354	.000687
79	.90124	533.5	.00106	.000209	.90324	537.8	.00178	.000345	.91952	551.1	.00288	.000559
80	.92065	557.5	.00263	.000520	.93530	570.5	.00372	.000720	.92642	573.1	.00527	.001023
81	.91665	559.5	.00288	.000569	.93015	577.5	.00510	.000988	.92872	575.1	.00532	.001033
82	.94063	625.5	.01362	.002691	.93301	602.5	.00974	.001886	.93044	579.8	.00590	.001145
83	.94063	621.8	.01299	.002566	.93473	599.8	.00929	.001799	.93102	579.5	.00598	.001161
84	.93834	641.5	.01849	.003653	.92672	582.5	.00660	.001278	.92010	561.5	.00448	.000870
85	.95661	643.5	.01715	.003388	.94332	596.5	.00686	.001329	.93849	585.1	.00538	.001044
86	.92978	617.5	.01362	.002691	.91813	583.1	.00720	.001394	.91665	572.1	.00625	.001213
87	.92635	596.5	.00879	.001736	.91641	575.8	.00623	.001207	.92010	573.8	.00615	.001194
88	.91494	568.8	.00527	.001041	.90267	556.5	.00463	.000897	.91148	561.8	.00517	.001004
89	.92236	557.8	.00260	.000514	.89752	540.8	.00293	.000567	.90918	550.5	.00370	.000718
90	.93663	554.1	.00113	.000223	.89752	534.1	.00189	.000366	.91205	546.5	.00256	.000497
91	.96061	575.8	.00198	.000391	.94103	571.8	.00331	.000641	.93447	574.1	.00464	.000901
92	.95376	593.5	.00432	.000853	.95248	597.5	.00587	.001137	.94252	587.1	.00574	.001114
93	.93492	634.1	.02005	.003961	.92557	584.8	.00697	.001350	.91895	562.5	.00474	.000920
94	.93663	635.5	.01919	.003791	.92614	587.5	.00721	.001396	.91952	568.1	.00558	.001083
95	.93206	626.5	.01653	.003266	.92385	587.8	.00751	.001455	.92182	575.1	.00640	.001243
96	.92122	602.5	.01079	.002132	.91527	577.5	.00685	.001327	.91780	571.8	.00623	.001210
97	.91437	581.1	.00661	.001306	.90840	562.8	.00527	.001021	.91320	563.5	.00531	.001031
98	.92407	560.8	.00379	.000749	.91183	552.8	.00360	.000697	.91378	555.5	.00406	.000788
99	.93435	561.5	.00233	.000460	.92328	550.1	.00208	.000403	.91665	552.5	.00332	.000645

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 0°; T_t = 694° R; p_t = 7,199.0 lb/sq ft				α' = 7.5°; T_t = 701° R; p_t = 7,206.0 lb/sq ft				α' = 15.0°; T_t = 704° R; p_t = 7,206.0 lb/sq ft			
1	.92359	586.8	.01055	.002030	.91980	576.1	.00897	.001735	.91186	584.5	.01000	.001940
2	.93221	595.8	.01144	.002201	.93126	593.1	.01132	.002190	.92551	608.5	.01372	.002661
3	.92589	587.8	.01050	.002020	.92839	594.5	.01228	.002376	.92892	619.5	.01691	.003280
4	.91555	565.1	.00624	.001200	.91006	555.1	.00486	.000940	.90334	558.5	.00520	.001009
5	.91900	576.5	.00786	.001512	.91350	567.8	.00715	.001383	.90561	572.8	.00722	.001400
6	.92876	586.1	.00857	.001649	.92610	582.8	.00875	.001693	.92096	594.5	.00967	.001876
7	.92014	577.8	.00800	.001539	.92209	582.5	.00936	.001811	.92153	603.1	.01197	.002322
8	.90923	562.1	.00647	.001245	.91350	571.8	.00831	.001608	.91584	599.5	.01268	.002459
9	.91785	553.5	.00339	.000652	.92037	560.5	.00380	.000735	.91016	562.5	.00346	.000671
10	.90980	547.8	.00401	.000771	.90777	542.5	.00283	.000547	.90049	549.1	.00328	.000636
11	.91038	559.5	.00546	.001050	.90491	548.5	.00428	.000828	.89708	549.1	.00408	.000791
12	.91957	573.8	.00693	.001333	.91407	564.5	.00618	.001196	.90561	568.1	.00603	.001170
13	.92072	578.1	.00766	.001474	.91808	574.5	.00773	.001495	.91243	584.8	.00813	.001577
14	.91555	573.1	.00746	.001435	.91808	576.8	.00823	.001592	.91698	594.1	.00962	.001866
15	.91497	563.5	.00580	.001116	.92037	572.5	.00702	.001358	.92267	594.8	.00948	.001839
16	.91670	553.8	.00391	.000752	.92037	562.1	.00526	.001018	.92324	588.5	.00873	.001693
17	.91612	551.1	.00323	.000621	.91522	560.8	.00486	.000940	.92039	592.8	.00869	.001686
18	.92934	568.1	.00427	.000821	.92839	564.8	.00422	.000816	.91414	562.1	.00338	.000656
19	.91325	548.5	.00363	.000698	.91121	550.8	.00267	.000517	.90277	543.1	.00256	.000497
20	.91555	574.8	.00761	.001464	.91464	571.8	.00748	.001447	.90788	580.1	.00771	.001495
21	.91210	550.5	.00387	.000745	.91865	560.8	.00482	.000932	.91869	579.5	.00705	.001367
22	.92876	574.8	.00515	.000991	.92897	569.1	.00419	.000811	.92380	591.1	.00758	.001470
23	.92531	575.1	.00637	.001225	.91694	553.5	.00384	.000743	.90618	553.1	.00297	.000576
24	.92359	558.1	.00358	.000689	.91293	545.8	.00279	.000540	.90618	547.5	.00232	.000450
25	.90923	545.8	.00340	.000654	.90548	538.1	.00226	.000437	.89594	536.8	.00204	.000396
26	.90291	552.8	.00492	.000947	.89689	541.5	.00373	.000722	.88741	539.1	.00326	.000632
27	.91555	569.8	.00651	.001252	.91006	560.8	.00567	.001097	.90049	561.8	.00528	.001024
28	.90636	566.8	.00717	.001379	.90319	563.5	.00716	.001385	.89594	575.5	.00738	.001431
29	.91670	571.5	.00663	.001275	.92037	575.8	.00755	.001461	.91755	590.5	.00828	.001606
30	.91095	561.1	.00556	.001070	.91808	570.5	.00676	.001308	.91698	588.5	.00814	.001579
31	.91900	553.8	.00374	.000720	.92897	567.1	.00458	.000886	.92380	580.5	.00628	.001218
32	.91497	557.5	.00420	.000808	.91980	562.5	.00384	.000743	.90561	564.1	.00549	.001065
33	.92417	585.1	.00850	.001635	.93298	578.8	.00562	.001087	.92324	588.5	.00674	.001307
34	.92646	573.5	.00626	.001204	.92324	558.5	.00283	.000547	.91186	553.5	.00248	.000481
35	.93508	575.1	.00484	.000931	.92667	555.1	.00268	.000518	.92437	555.1	.00167	.000324
36	.90578	544.5	.00347	.000668	.90433	537.1	.00218	.000422	.89936	537.5	.00168	.000326
37	.92014	576.1	.00721	.001387	.91865	572.5	.00704	.001362	.91243	579.5	.00693	.001344
38	.91842	554.5	.00378	.000727	.92324	564.5	.00501	.000969	.92210	578.5	.00600	.001164
39	.93336	582.8	.00671	.001291	.93355	586.8	.00800	.001548	.92892	571.1	.00369	.000716
40	.92589	586.5	.00858	.001651	.93412	590.8	.00910	.001760	.93745	595.1	.00591	.001146
44	.91383	573.8	.00730	.001404	.91235	570.1	.00717	.001387	.90845	583.1	.00681	.001321
60	.93163	571.8	.00515	.000991	.93011	566.8	.00457	.000884	.92324	564.6	.00289	.000561
61	.92244	568.8	.00566	.001089	.91980	550.5	.00255	.000493	.92096	551.1	.00073	.000142
62	.90808	548.5	.00373	.000718	.90090	534.8	.00195	.000377	.91641	547.5	.00168	.000326
63	.91210	559.5	.00467	.000898	.90032	544.1	.00347	.000671	.90959	557.5	.00400	.000776
64	.92589	574.8	.00553	.001064	.91235	561.8	.00534	.001033	.92039	588.1	.00786	.001525
65	.92876	577.8	.00526	.001012	.91579	570.5	.00685	.001325	.92608	612.1	.01273	.002469
66	.92991	575.8	.00505	.000972	.92095	574.8	.00713	.001379	.93120	627.8	.01757	.003408
67	.92819	570.5	.00495	.000952	.92667	574.8	.00634	.001226	.93688	633.8	.02055	.003986
68	.93163	576.5	.00566	.001089	.93240	584.5	.00772	.001493	.93859	633.8	.02086	.004046
69	.93565	586.1	.00776	.001493	.93813	597.8	.01071	.002072	.94143	630.8	.01734	.003363
70	.92531	582.8	.00818	.001574	.93183	601.8	.01285	.002486	.93802	638.8	.02461	.004774
71	.93106	569.5	.00474	.000912	.92954	563.5	.00397	.000768	.92267	568.8	.00380	.000737
72	.91612	563.5	.00526	.001012	.90892	545.5	.00279	.000540	.92324	551.8	.00079	.000153
73	.91670	552.1	.00316	.000608	.89517	530.5	.00187	.000362	.91584	545.8	.00160	.000310
74	.91555	560.1	.00422	.000812	.89517	538.8	.00329	.000636	.90277	551.5	.00356	.000691
75	.92187	571.8	.00537	.001033	.90491	554.1	.00486	.000940	.90561	572.8	.00654	.001269
76	.91900	574.5	.00604	.001162	.90834	564.5	.00630	.001219	.90959	604.1	.01182	.002293
77	.92991	577.5	.00531	.001022	.92496	575.8	.00662	.001281	.92778	621.5	.01557	.003020
78	.92761	567.1	.00459	.000883	.92610	575.8	.00658	.001273	.92778	624.8	.01910	.003705
79	.93508	577.1	.00581	.001118	.93527	594.8	.00928	.001795	.93631	629.1	.01903	.003691
80	.92704	578.8	.00727	.001399	.92897	590.1	.01024	.001981	.93290	622.1	.01656	.003212
81	.92704	582.8	.00791	.001522	.93355	600.5	.01194	.002310	.93916	640.1	.01966	.003813
82	.93106	568.8	.00466	.000897	.92839	561.1	.00360	.000696	.91869	566.8	.00397	.000770
83	.92589	566.1	.00482	.000927	.91865	550.1	.00250	.000484	.93006	556.5	.00121	.000235
84	.91383	550.8	.00323	.000621	.89402	530.5	.00177	.000342	.91414	545.8	.00118	.000229
85	.93910	579.1	.00424	.000816	.92209	555.1	.00302	.000584	.92892	568.8	.00302	.000586
86	.91785	570.5	.00577	.001110	.90548	561.1	.00455	.000880	.89992	567.8	.00634	.001230
87	.92819	580.5	.00602	.001158	.92496	576.1	.00555	.001074	.91641	600.1	.01131	.002194
88	.92359	574.1	.00555	.001068	.92782	586.1	.00610	.001180	.91926	613.8	.01585	.003074
89	.92646	567.8	.00458	.000881	.93183	589.8	.00846	.001637	.92551	621.8	.01803	.003497
90	.92819	574.1	.00493	.000948	.93011	599.5	.01174	.002271	.92722	621.5	.01773	.003439
91	.93451	580.5	.00649	.001249	.93698	591.5	.00902	.001745	.94029	621.8	.01423	.002760
92	.93565	588.8	.00794	.001528	.94214	606.1	.01195	.002312	.94541	637.8	.01935	.003753
93	.91210	550.1	.00343	.000660	.92324	547.5	.00185	.000358	.93347	565.8	.00152	.000295
94	.91555	560.1	.00434	.000835	.91694	551.5	.00308	.000596	.92835	565.8	.00248	.000481
95	.92359	574.1	.00566	.001089	.92037	567.1	.00492	.000952	.91698	577.5	.00588	.001141
96	.92531	578.8	.00648	.001247	.92381	581.1	.00718	.001389	.91584	597.5	.01060	.002056
97	.92531	576.5	.00565	.001087	.92725	592.8	.01018	.001969	.92380	614.8	.01383	.002683
98	.93106	573.5	.00503	.000968	.93298	605.5	.01300	.002515	.93120	624.8	.01684	.003266
99	.93221	576.1	.00584	.001124	.93298	605.1	.01342	.002596	.93006	625.1	.01793	.003478

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 22.5^\circ$; $T_t = 704^\circ$ R; p_t = 7,205.0 lb/sq ft				$\alpha' = 30.0^\circ$; $T_t = 699^\circ$ R; p_t = 7,195.0 lb/sq ft				$\alpha' = 37.5^\circ$; $T_t = 704^\circ$ R; p_t = 7,207.0 lb/sq ft			
1	.90798	575.5	.00880	.001707	.90881	566.8	.00807	.001561	.91335	566.5	.00692	.001340
2	.92341	605.1	.01297	.002516	.92497	599.1	.01253	.002423	.92827	598.8	.01093	.002117
3	.93141	625.1	.01782	.003456	.93824	627.1	.01981	.003831	.94548	643.1	.01597	.003093
4	.90170	550.5	.00416	.000807	.90535	550.5	.00387	.000748	.91450	564.5	.00368	.000713
5	.90112	569.8	.00637	.001236	.90419	563.8	.00612	.001184	.90991	558.5	.00539	.001044
6	.91827	590.8	.00942	.001827	.92266	588.1	.00942	.001822	.92712	589.1	.00853	.001652
7	.92341	607.8	.01305	.002531	.93074	610.5	.01415	.002737	.93802	616.5	.01376	.002665
8	.92170	611.1	.01499	.002908	.93132	618.5	.01741	.003367	.94319	636.1	.01664	.003223
9	.90570	550.8	.00250	.000485	.91343	544.8	.00200	.000387	.92597	552.8	.00191	.000370
10	.89884	541.5	.00239	.000464	.90535	538.1	.00248	.000480	.92196	545.8	.00171	.000331
11	.89484	540.8	.00301	.000584	.90073	537.8	.00295	.000571	.91565	553.5	.00258	.000500
12	.90227	559.5	.00515	.000999	.90535	553.5	.00495	.000957	.91622	558.5	.00439	.000850
13	.91084	579.8	.00757	.001468	.91343	575.1	.00772	.001493	.92196	579.5	.00716	.001387
14	.91827	595.5	.00979	.001899	.92439	595.5	.01058	.002046	.93343	602.8	.01029	.001993
15	.92741	602.5	.01074	.002083	.93767	609.1	.01254	.002425	.95007	621.5	.01257	.002435
16	.93199	603.8	.01110	.002153	.94575	615.8	.01360	.002630	.96098	630.1	.01361	.002636
17	.93027	610.1	.01157	.002244	.94517	623.5	.01458	.002820	.96040	638.5	.01519	.002942
18	.91027	552.5	.00243	.000471	.92093	544.8	.00152	.000294	.94261	560.8	.00160	.000310
19	.89998	534.8	.00166	.000322	.91458	537.5	.00141	.000273	.93802	552.8	.00119	.000230
20	.90512	574.1	.00709	.001375	.91631	573.8	.00658	.001273	.93114	583.8	.00625	.001210
21	.92684	591.1	.00859	.001666	.95152	605.1	.00911	.001762	.96442	620.5	.01019	.001974
22	.93427	607.5	.00993	.001926	.95036	620.5	.01273	.002462	.96557	641.8	.01216	.002355
23	.90741	551.8	.00223	.000433	.91516	543.5	.00164	.000317	.94089	560.1	.00175	.000339
24	.90970	540.5	.00149	.000289	.92497	542.8	.00118	.000228	.94663	558.8	.00124	.000240
25	.90112	533.8	.00131	.000254	.91978	539.5	.00119	.000230	.93802	553.8	.00145	.000281
26	.88855	532.8	.00233	.000452	.90823	543.1	.00209	.000404	.92540	550.5	.00221	.000428
27	.89769	553.1	.00450	.000873	.91631	560.5	.00400	.000774	.92597	566.1	.00459	.000889
28	.89369	569.5	.00649	.001259	.91227	567.8	.00638	.001234	.91909	587.8	.00755	.001462
29	.91827	589.5	.00808	.001567	.94228	600.8	.01017	.001967	.94720	622.5	.01355	.002624
30	.92227	592.5	.00816	.001583	.94690	621.5	.01253	.002423	.95524	644.8	.01678	.003250
31	.93599	591.5	.00677	.001313	.95960	626.5	.01345	.002601	.97073	634.8	.01473	.002853
32	.92627	581.5	.00626	.001214	.94055	594.5	.00850	.001644	.95065	609.5	.00956	.001852
33	.93427	604.1	.00888	.001722	.94748	621.5	.01088	.002104	.96270	642.1	.01072	.002076
34	.91941	554.1	.00199	.000386	.91920	546.5	.00171	.000331	.94778	563.1	.00162	.000314
35	.93713	557.5	.00154	.000299	.94632	557.5	.00114	.000220	.96614	569.5	.00117	.000227
36	.90741	549.1	.00161	.000312	.91978	539.8	.00145	.000280	.93745	558.5	.00155	.000300
37	.90970	572.5	.00621	.001205	.92497	586.8	.00946	.001830	.92999	591.1	.00826	.001600
38	.93827	590.1	.00582	.001129	.95440	641.1	.02162	.004181	.96499	657.8	.01815	.003515
39	.94456	619.5	.00605	.001173	.95671	625.5	.01051	.002033	.96901	617.1	.00901	.001745
40	.94227	617.5	.00754	.001463	.95383	623.8	.00965	.001866	.96901	635.8	.01100	.002130
44	.90798	571.1	.00589	.001142	.91574	589.5	.01086	.002100	.92138	587.8	.00839	.001625
60	.92227	555.8	.00202	.000392	.90939	541.1	.00196	.000379	.96270	568.8	.00120	.000232
61	.93370	553.8	.00119	.000231	.92497	542.5	.00107	.000207	.95925	566.8	.00092	.000178
62	.92227	545.5	.00117	.000227	.92324	539.8	.00096	.000186	.95180	565.5	.00128	.000248
63	.91141	548.5	.00276	.000535	.91343	540.5	.00213	.000412	.94089	557.8	.00203	.000393
64	.91313	572.1	.00620	.001203	.91112	558.1	.00516	.000998	.92942	570.8	.00422	.000817
65	.91827	601.5	.01208	.002343	.91516	593.5	.00990	.001915	.92597	587.8	.00778	.001507
66	.92913	626.8	.01892	.003670	.92959	617.5	.01653	.003197	.94032	618.8	.01251	.002423
67	.93770	638.5	.02088	.004050	.94344	636.5	.02108	.004077	.95581	642.1	.01574	.003048
68	.94113	645.5	.02118	.004108	.94979	647.1	.02154	.004166	.96327	650.5	.01945	.003767
69	.94913	648.5	.01968	.003817	.96133	650.5	.02369	.004582	.97417	660.5	.02112	.004090
70	.94684	647.8	.02236	.004337	.95960	638.8	.01648	.003187	.97303	641.1	.01292	.002502
71	.92170	560.8	.00283	.000549	.90996	540.5	.00175	.000338	.96270	568.5	.00134	.000260
72	.91770	552.1	.00220	.000427	.91920	538.5	.00091	.000176	.94835	558.1	.00093	.000180
73	.92913	555.8	.00184	.000357	.92035	540.5	.00128	.000248	.94778	557.8	.00092	.000178
74	.91427	549.5	.00290	.000563	.90881	535.8	.00199	.000385	.93515	552.5	.00178	.000345
75	.90570	560.8	.00526	.001020	.90188	545.1	.00419	.000810	.92138	563.5	.00332	.000643
76	.90455	585.8	.00945	.001833	.90188	571.1	.00823	.001592	.91163	571.8	.00682	.001321
77	.92570	616.5	.01484	.002878	.92843	609.1	.01385	.002679	.93630	609.1	.01121	.002171
78	.92970	637.1	.01745	.003385	.93824	628.1	.01920	.003713	.94778	639.8	.01557	.003016
79	.94056	635.8	.01925	.003734	.95094	645.1	.02030	.003926	.96212	660.8	.01857	.003597
80	.93941	634.1	.01919	.003722	.95267	643.5	.02253	.004357	.96499	654.1	.02187	.004236
81	.94856	653.1	.02269	.004401	.96075	661.5	.02820	.005454	.97245	669.5	.02878	.005574
82	.92513	563.5	.00299	.000580	.91285	543.5	.00207	.000400	.96098	572.5	.00179	.000347
83	.96342	575.5	.00162	.000314	.93016	545.8	.00107	.000207	.96098	566.8	.00112	.000217
84	.93599	562.8	.00129	.000250	.91920	538.1	.00108	.000209	.94319	560.8	.00132	.000256
85	.94856	570.5	.00226	.000438	.93709	552.1	.00173	.000335	.95983	571.5	.00169	.000327
86	.90741	558.1	.00444	.000861	.90131	542.8	.00380	.000735	.92081	562.1	.00334	.000647
87	.91370	586.8	.00881	.001709	.91227	573.1	.00744	.001439	.92196	574.8	.00637	.001234
88	.91713	617.1	.01230	.002386	.92093	600.1	.01208	.002336	.92884	602.1	.01052	.002037
89	.92741	622.8	.01641	.003183	.93536	623.1	.01748	.003381	.94491	628.8	.01570	.003041
90	.93199	633.1	.01770	.003433	.94171	630.8	.01964	.003798	.95237	638.8	.01804	.003494
91	.94799	633.5	.01582	.003069	.96017	648.5	.01866	.003609	.97245	654.5	.01912	.003703
92	.95199	655.1	.02242	.004349	.96479	663.8	.02723	.005266	.97704	673.8	.03086	.005977
93	.93541	563.8	.00164	.000318	.92670	546.8	.00164	.000317	.94606	561.5	.00160	.000310
94	.92913	555.8	.00213	.000413	.92324	546.1	.00211	.000408	.94261	559.8	.00183	.000354
95	.91427	565.1	.00431	.000836	.91400	549.1	.00366	.000708	.93229	563.1	.00309	.000598
96	.90855	579.1	.00777	.001507	.90939	567.1	.00670	.001296	.91966	569.5	.00564	.001092
97	.91655	604.1	.01284	.002491	.92035	596.8	.01157	.002238	.92827	598.1	.00957	.001853
98	.92913	621.8	.01618	.003138	.93651	620.8	.01537	.002973	.94606	625.1	.01372	.002657
99	.93427	628.5	.01707	.003311	.94517	637.5	.01782	.003446	.95639	639.8	.01712	.003316

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	α' = 45.0°; T_t = 704° R; p_t = 7,205.0 lb/sq ft			
1	.92835	557.8	.00367	.000712
2	.93867	577.5	.00582	.001129
3	.95472	605.1	.00960	.001862
4	.92606	555.1	.00196	.000380
5	.91918	550.1	.00310	.000601
6	.93236	570.1	.00504	.000978
7	.94211	591.1	.00812	.001575
8	.94956	606.1	.01084	.002103
9	.93064	555.1	.00174	.000338
10	.92950	548.8	.00140	.000272
11	.92950	549.5	.00162	.000314
12	.92721	554.5	.00264	.000512
13	.92663	567.1	.00480	.000931
14	.93638	588.5	.00824	.001598
15	.95644	633.8	.01113	.002159
16	.97019	627.5	.01316	.002553
17	.97134	633.1	.01425	.002764
18	.94727	560.8	.00155	.000301
19	.94268	558.1	.00162	.000314
20	.92377	567.5	.00553	.001073
21	.96790	630.1	.01444	.002801
22	.97936	645.1	.01664	.003228
23	.94898	561.5	.00148	.000287
24	.94956	561.8	.00148	.000287
25	.94440	558.8	.00162	.000314
26	.93236	555.5	.00195	.000378
27	.92721	569.5	.00329	.000638
28	.91116	557.5	.00525	.001018
29	.93867	612.5	.00839	.001627
30	.95128	612.8	.01199	.002326
31	.97306	653.8	.01445	.002803
32	.96159	630.5	.01589	.003082
33	.97764	648.8	.01829	.003548
34	.95644	567.1	.00134	.000260
35	.96962	572.5	.00133	.000258
36	.94440	557.5	.00149	.000289
37	.92491	564.5	.00514	.000997
38	.96733	632.1	.01527	.002962
39	.97707	640.5	.01607	.003117
40	.98337	657.5	.02038	.003953
44	.92033	562.5	.00523	.001014
60	.95816	563.1	.00099	.000192
61	.95300	559.5	.00093	.000180
62	.95529	562.5	.00107	.000208
63	.94956	560.8	.00141	.000273
64	.93921	560.8	.00294	.000570
65	.93060	570.8	.00542	.001051
66	.94322	596.8	.00951	.001845
67	.96215	624.1	.01360	.002638
68	.97189	634.1	.01488	.002886
69	.98739	649.1	.01701	.003299
70	.98911	664.5	.02323	.004506
71	.96503	566.8	.00092	.000178
72	.94956	557.1	.00080	.000155
73	.94784	558.8	.00098	.000190
74	.93981	558.1	.00132	.000256
75	.93179	552.8	.00215	.000417
76	.92205	562.5	.00503	.000976
77	.94727	597.1	.00898	.001742
78	.96102	621.8	.01312	.002545
79	.97650	637.1	.01498	.002906
80	.98223	657.8	.01757	.003408
81	.99197	669.1	.02478	.004806
82	.96790	573.5	.00163	.000316
83	.95987	565.1	.00112	.000217
84	.94555	559.5	.00134	.000260
85	.96561	569.8	.00145	.000281
86	.93122	552.5	.00204	.000396
87	.93351	567.5	.00454	.000881
88	.94039	591.1	.00852	.001653
89	.95873	619.8	.01298	.002518
90	.96847	632.8	.01533	.002973
91	.98968	651.1	.01717	.003330
92	.99254	673.8	.02728	.005291
93	.94898	561.5	.00161	.000312
94	.94841	561.1	.00170	.000330
95	.94268	559.5	.00203	.000394
96	.93122	563.8	.00437	.000848
97	.93981	588.1	.00794	.001540
98	.95930	616.5	.01203	.002333
99	.97191	633.1	.01458	.002828

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = -45.0^o$; $T_t = 668^o$ R; p_t = 8,668.0 lb/sq ft				$\alpha' = -15.0^o$; $T_t = 665^o$ R; p_t = 8,653.0 lb/sq ft				$\alpha' = 0^o$; $T_t = 665^o$ R; p_t = 8,669.0 lb/sq ft			
1	.98743	617.5	.00553	.002313	.91042	569.8	.01120	.004695	.90637	564.1	.00874	.003650
2	.97315	598.1	.00436	.001824	.91156	566.1	.00924	.003874	.91478	570.8	.00946	.003950
3	.95773	576.5	.00277	.001159	.90061	550.5	.00630	.002641	.90918	565.5	.00851	.003554
4	.98800	617.1	.00568	.002376	.90643	559.5	.00747	.003132	.89903	550.5	.00461	.001925
5	.97429	606.8	.00483	.002020	.90415	559.5	.00771	.003232	.90133	556.5	.00623	.002601
6	.96687	590.8	.00373	.001560	.90472	556.5	.00676	.002834	.91254	565.5	.00692	.002890
7	.95487	572.8	.00238	.000996	.89318	541.5	.00464	.001945	.90189	557.8	.00660	.002756
8	.95202	564.1	.00139	.000581	.88290	528.5	.00276	.001157	.88949	545.5	.00490	.002046
9	.98914	618.5	.00600	.002510	.90015	540.5	.00305	.001279	.89847	541.8	.00203	.000848
10	.98400	615.1	.00599	.002505	.89947	547.1	.00491	.002058	.89230	539.5	.00262	.001094
11	.97886	611.1	.00545	.002280	.90300	554.8	.00602	.002524	.89684	548.1	.00393	.001641
12	.97029	600.5	.00470	.001966	.90586	558.1	.00685	.002872	.90133	555.1	.00548	.002288
13	.95716	583.8	.00350	.001464	.90061	551.5	.00594	.002490	.90245	557.8	.00636	.002656
14	.95373	571.5	.00231	.000966	.88976	538.8	.00424	.001777	.89847	554.1	.00592	.002472
15	.97144	574.1	.00133	.000556	.88919	530.1	.00232	.000973	.89847	549.5	.00443	.001850
16	.99428	584.8	.00072	.000301	.90004	533.5	.00137	.000574	.89959	544.8	.00271	.001132
17	1.00228	587.8	.00058	.000243	.90300	538.5	.00176	.000738	.89622	539.8	.00203	.000848
18	.99028	625.1	.00713	.002982	.90586	541.8	.00231	.000968	.91086	549.8	.00216	.000902
19	.98229	619.8	.00661	.002765	.90129	548.5	.00494	.002071	.89566	541.1	.00252	.001052
20	.94859	581.5	.00410	.001715	.89433	547.1	.00580	.002431	.89847	554.8	.00607	.002535
21	.99314	582.1	.00063	.000264	.89318	527.1	.00097	.000407	.89454	541.5	.00282	.001178
22	1.02627	599.8	.00035	.000146	.91042	546.5	.00183	.000767	.89959	541.5	.00177	.000739
23	.98400	622.8	.00744	.003112	.91099	550.8	.00292	.001224	.91198	550.1	.00183	.000764
24	.98572	624.5	.00780	.003263	.90243	541.8	.00285	.001195	.90581	542.1	.00111	.000464
25	.98343	622.8	.00699	.002924	.90004	546.8	.00453	.001899	.89454	540.1	.00221	.000923
26	.97772	617.8	.00675	.002823	.89375	547.8	.00597	.002503	.89005	544.5	.00364	.001520
27	.96572	603.5	.00556	.002326	.90186	558.5	.00618	.002591	.89959	552.8	.00507	.002117
28	.94573	581.5	.00377	.001577	.88804	543.1	.00537	.002251	.89061	549.1	.00557	.002326
29	.95373	573.5	.00257	.001075	.89147	538.5	.00365	.001530	.90015	556.8	.00527	.002201
30	.96572	571.8	.00152	.000636	.88404	527.1	.00234	.000981	.89510	549.8	.00431	.001800
31	.99942	586.1	.00060	.000251	.89661	527.5	.00090	.000377	.90015	544.5	.00258	.001077
32	1.01485	592.8	.00031	.000130	.89490	526.1	.00084	.000352	.88613	535.1	.00196	.000818
33	1.03998	606.8	.00027	.000113	.90928	543.1	.00186	.000780	.90637	550.5	.00234	.000977
34	.98743	624.5	.00734	.003070	.91670	562.5	.00560	.002348	.92095	556.1	.00187	.000781
35	1.00114	633.8	.00768	.003212	.92240	553.8	.00259	.001086	.92543	552.8	.00080	.000334
36	.98343	624.8	.00770	.003221	.89947	546.5	.00455	.001907	.89510	540.5	.00221	.000923
37	.95430	588.1	.00471	.001970	.90004	550.5	.00534	.002239	.90469	558.1	.00580	.002422
38	.99657	584.1	.00064	.000268	.89718	527.8	.00090	.000377	.89959	543.8	.00257	.001073
39	1.03598	604.8	.00031	.000130	.92012	540.1	.00057	.000239	.90693	546.8	.00166	.000693
40	1.05197	614.1	.00030	.000125	.91841	548.5	.00212	.000889	.92095	567.1	.00460	.001921
44	.95144	587.1	.00481	.002012	.89775	549.5	.00539	.002260	.90413	558.1	.00594	.002480
60	.99543	629.1	.00749	.003133	.92925	571.1	.00637	.002670	.92711	561.5	.00273	.001140
61	.99200	627.5	.00758	.003171	.93267	574.1	.00708	.002968	.92319	557.8	.00230	.000960
62	.98629	626.5	.00792	.003313	.91955	556.5	.00412	.001727	.89791	543.5	.00234	.000977
63	.98514	619.8	.00633	.002648	.92012	561.1	.00506	.002121	.89959	547.5	.00333	.001391
64	.96858	603.1	.00530	.002217	.91841	560.5	.00500	.002096	.90632	555.8	.00478	.001996
65	.95773	584.5	.00370	.001548	.90985	555.8	.00439	.001840	.90520	556.8	.00535	.002234
66	.96458	578.1	.00230	.000962	.90472	546.5	.00293	.001228	.90520	555.5	.00473	.001975
67	.98686	584.8	.00120	.000502	.90529	536.8	.00154	.000646	.90800	554.8	.00358	.001495
68	1.00228	588.8	.00064	.000268	.91042	536.5	.00108	.000453	.91249	552.8	.00279	.001165
69	1.04740	612.8	.00026	.000109	.94694	554.1	.00032	.000134	.92599	569.1	.00537	.002242
70	1.05026	613.8	.00030	.000125	.92183	550.8	.00185	.000776	.91030	559.8	.00520	.002171
71	.99771	630.1	.00740	.003095	.92982	573.1	.00584	.002448	.93160	562.1	.00211	.000881
72	.98572	623.1	.00755	.003158	.92297	564.8	.00575	.002410	.91534	555.1	.00286	.001194
73	.98629	627.1	.00804	.003363	.91841	555.8	.00396	.001660	.89678	540.8	.00226	.000944
74	.97315	615.1	.00709	.002966	.91499	556.8	.00454	.001903	.89566	546.5	.00332	.001386
75	.96001	598.5	.00566	.002367	.91442	557.1	.00478	.002004	.90015	551.1	.00431	.001800
76	.94059	573.1	.00361	.001510	.90300	551.1	.00439	.001840	.89734	551.5	.00505	.002109
77	.95658	571.1	.00208	.000870	.90472	545.8	.00290	.001216	.90413	554.5	.00466	.001946
78	.97029	572.1	.00103	.000431	.89775	533.5	.00166	.000696	.90245	549.1	.00342	.001428
79	.99028	581.1	.00074	.000310	.90415	533.8	.00098	.000411	.91193	553.1	.00302	.001261
80	1.02684	600.8	.00043	.000180	.93438	555.5	.00129	.000541	.91978	562.5	.00436	.001821
81	1.02456	601.8	.00056	.000234	.93610	557.5	.00193	.000809	.91417	560.5	.00466	.001946
82	.99714	630.5	.00780	.003263	.92925	567.5	.00532	.002230	.93044	560.8	.00198	.000827
83	.99657	628.5	.00723	.003024	.93267	568.1	.00522	.002188	.92820	560.5	.00224	.000935
84	.98229	625.8	.00862	.003606	.91784	555.1	.00393	.001648	.89510	539.8	.00217	.000906
85	.99428	631.8	.00726	.003037	.93610	572.8	.00442	.001853	.91646	557.5	.00330	.001378
86	.95544	595.5	.00584	.002443	.91270	556.5	.00464	.001945	.89678	549.5	.00438	.001829
87	.95144	578.1	.00337	.001410	.91156	556.5	.00394	.001652	.90525	556.8	.00498	.002080
88	.95373	568.5	.00197	.000824	.90072	543.5	.00291	.001220	.90077	552.1	.00447	.001867
89	.97144	572.8	.00114	.000477	.89890	532.8	.00168	.000704	.90189	548.8	.00329	.001374
90	.98172	577.5	.00074	.000310	.89947	529.5	.00109	.000457	.90413	547.1	.00256	.001069
91	1.02170	599.8	.00063	.000264	.95093	561.8	.00113	.000474	.92655	565.1	.00372	.001553
92	1.01713	606.8	.00151	.000632	.95264	570.8	.00212	.000889	.92599	568.1	.00467	.001950
93	.97829	623.8	.00906	.003790	.91670	554.8	.00396	.001660	.89622	540.5	.00208	.000869
94	.97144	615.5	.00786	.003288	.91784	558.1	.00446	.001870	.89847	545.5	.00307	.001282
95	.95773	595.8	.00571	.002388	.91670	559.1	.00485	.002033	.90189	552.5	.00429	.001791
96	.94687	574.8	.00345	.001443	.91042	552.1	.00420	.001761	.90301	555.1	.00495	.002067
97	.95316	571.5	.00194	.000811	.90472	546.1	.00306	.001283	.90245	553.5	.00442	.001846
98	.97201	572.5	.00103	.000431	.90757	543.1	.00195	.000817	.90637	552.5	.00357	.001491

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 7.5°; T_t = 674° R; p_t = 8,668.0 lb/sq ft				α' = 15.0°; T_t = 674° R; p_t = 8,648.0 lb/sq ft				α' = 22.5°; T_t = 674° R; p_t = 8,656.0 lb/sq ft			
1	.91224	563.1	.00619	.002602	.90744	562.8	.00620	.002621	.90688	562.8	.00553	.002325
2	.92181	574.8	.00800	.003363	.91922	578.5	.00878	.003712	.91978	582.8	.00875	.003678
3	.92012	575.5	.00861	.003619	.92146	586.1	.01155	.004883	.92651	596.8	.01257	.005284
4	.90437	548.8	.00305	.001282	.90009	546.8	.00293	.001239	.90071	546.5	.00246	.001034
5	.90606	558.8	.00457	.001921	.90071	554.1	.00445	.001881	.90015	556.1	.00403	.001694
6	.91899	568.5	.00583	.002451	.91473	570.1	.00636	.002689	.91529	573.1	.00623	.002619
7	.91337	566.5	.00625	.002627	.91361	574.5	.00794	.003357	.91866	584.1	.00885	.003720
8	.90212	557.1	.00579	.002434	.90520	569.8	.00871	.003682	.91417	584.8	.01089	.004578
9	.90943	546.5	.00159	.000668	.90464	543.8	.00129	.000545	.90969	547.1	.00099	.000416
10	.90156	539.8	.00170	.000715	.89841	540.8	.00165	.000698	.90127	541.1	.00132	.000555
11	.90043	543.8	.00250	.001051	.89616	543.8	.00233	.000985	.89891	542.5	.00168	.000706
12	.90718	553.8	.00392	.001648	.90183	552.5	.00362	.001530	.90239	552.8	.00312	.001312
13	.90999	560.5	.00502	.002110	.90632	562.1	.00525	.002220	.90744	564.8	.00487	.002047
14	.90943	561.8	.00542	.002278	.90912	568.1	.00630	.002664	.91305	575.1	.00662	.002783
15	.91168	560.5	.00486	.002043	.91473	570.5	.00635	.002685	.92203	582.5	.00765	.003216
16	.91281	555.5	.00355	.001492	.91586	567.8	.00592	.002503	.92707	585.5	.00811	.003409
17	.90831	553.1	.00333	.001400	.91305	569.8	.00615	.002600	.92651	591.8	.00839	.003527
18	.92406	557.1	.00172	.000723	.91810	552.5	.00122	.000516	.92427	553.8	.00084	.000353
19	.90549	542.8	.00157	.000660	.90408	541.1	.00129	.000545	.90856	543.8	.00095	.000399
20	.90662	557.8	.00496	.002085	.90295	559.1	.00493	.002084	.90464	561.5	.00438	.001841
21	.90831	552.1	.00329	.001383	.91137	561.8	.00475	.002008	.92146	577.1	.00638	.002682
22	.91281	555.5	.00313	.001316	.91698	569.8	.00542	.002292	.93100	588.8	.00723	.003039
23	.93024	560.1	.00181	.000761	.92595	556.5	.00133	.000562	.93493	557.8	.00068	.000286
24	.92349	550.1	.00084	.000353	.92539	551.8	.00075	.000317	.92932	553.1	.00045	.000189
25	.90549	540.8	.00132	.000555	.90856	543.1	.00106	.000448	.91081	543.5	.00078	.000328
26	.89818	540.8	.00230	.000967	.89841	540.8	.00176	.000744	.90004	541.8	.00150	.000631
27	.90606	552.1	.00363	.001526	.90239	551.5	.00321	.001357	.90239	550.8	.00281	.001181
28	.89818	557.5	.00460	.001934	.89616	555.8	.00450	.001903	.89723	554.8	.00413	.001736
29	.91168	561.8	.00498	.002093	.91193	567.5	.00546	.002308	.91529	573.1	.00528	.002220
30	.90887	557.8	.00450	.001892	.91137	566.5	.00549	.002321	.91698	578.1	.00585	.002459
31	.91449	555.1	.00303	.001274	.91642	563.8	.00437	.001848	.92539	576.8	.00547	.002299
32	.90099	546.5	.00231	.000971	.90127	554.1	.00377	.001594	.91361	571.5	.00539	.002266
33	.91674	559.8	.00322	.001354	.91529	567.8	.00490	.002072	.92820	587.8	.00645	.002711
34	.94037	563.1	.00170	.000715	.94166	564.5	.00108	.000457	.94951	565.1	.00057	.000240
35	.94656	562.1	.00072	.000303	.95288	568.5	.00054	.000228	.95793	568.8	.00030	.000126
36	.90718	541.5	.00130	.000546	.91810	550.1	.00095	.000402	.91698	546.5	.00073	.000307
37	.91337	560.8	.00463	.001946	.91305	563.1	.00433	.001831	.91137	563.1	.00385	.001618
38	.91337	554.5	.00311	.001307	.91473	562.5	.00409	.001729	.92259	573.5	.00491	.002064
39	.92518	561.1	.00232	.000975	.91754	560.1	.00283	.001196	.92876	574.8	.00422	.001774
40	.93249	570.8	.00364	.001530	.92539	573.8	.00441	.001864	.93549	591.5	.00570	.002396
44	.91281	560.8	.00459	.001929	.91081	564.8	.00437	.001848	.91081	562.5	.00363	.001526
60	.93756	560.1	.00115	.000483	.93885	562.5	.00107	.000452	.95007	566.5	.00054	.000227
61	.94487	558.1	.00039	.000164	.97139	576.8	.00034	.000144	.96073	570.1	.00039	.000164
62	.91224	543.5	.00117	.000492	.93717	558.5	.00078	.000330	.93381	556.8	.00064	.000269
63	.90943	548.5	.00204	.000858	.92315	555.1	.00162	.000685	.92203	555.5	.00124	.000521
64	.91506	556.8	.00323	.001358	.92034	561.1	.00298	.001260	.91866	562.8	.00219	.000921
65	.91562	561.5	.00431	.001812	.91810	566.8	.00429	.001814	.91754	573.1	.00335	.001408
66	.91843	564.1	.00456	.001917	.92315	572.5	.00505	.002135	.92427	578.1	.00387	.001627
67	.92349	563.8	.00374	.001572	.93212	577.5	.00517	.002186	.93437	584.1	.00437	.001837
68	.92912	564.8	.00331	.001391	.93829	584.1	.00614	.002596	.94166	589.8	.00425	.001787
69	.93193	578.1	.00647	.002720	.93661	594.5	.01062	.004490	.94895	615.1	.01211	.005091
70	.92743	579.5	.00807	.003392	.93605	594.8	.01166	.004930	.94839	604.5	.00977	.004107
71	.94993	568.1	.00147	.000618	.95512	570.5	.00077	.000326	.94615	566.5	.00081	.000340
72	.95499	564.5	.00036	.000151	.99775	591.8	.00022	.000093				
73	.90831	540.5	.00108	.000454	.94446	563.1	.00074	.000313	.94222	560.8	.00050	.000210
74	.90381	544.1	.00192	.000807	.92763	557.1	.00131	.000554	.92595	555.1	.00116	.000488
75	.90718	550.5	.00293	.001232	.92146	560.5	.00234	.000989	.91866	561.8	.00237	.000996
76	.90662	554.8	.00382	.001606	.91754	569.1	.00419	.001771	.91473	569.8	.00433	.001820
77	.91787	562.5	.00414	.001740	.92876	580.8	.00675	.002854	.92988	586.1	.00642	.002699
78	.91899	564.8	.00412	.001732	.92763	587.1	.00954	.004033	.93268	595.8	.00942	.003960
79	.92968	571.1	.00472	.001984	.93381	593.1	.01076	.004549	.94166	604.8	.01103	.004637
80	.92574	572.5	.00599	.002518	.92932	586.8	.00917	.003877	.94110	607.5	.01156	.004859
81	.92574	576.5	.00722	.003035	.93268	594.5	.01210	.005116	.94558	617.5	.01624	.006827
82	.94768	567.5	.00134	.000563	.95793	572.8	.00089	.000376	.96017	572.8	.00062	.000261
83	.97243	574.8	.00052	.000219	1.00168	597.1	.00063	.000266	.99158	588.1	.00039	.000164
84	.91056	542.1	.00111	.000467	.94278	563.5	.00087	.000368	.93941	560.1	.00076	.000319
85	.92912	558.8	.00183	.000769	.94839	572.8	.00192	.000812	.94671	568.1	.00141	.000593
86	.90662	549.8	.00286	.001202	.91361	559.5	.00363	.001535	.91137	555.1	.00274	.001152
87	.91674	560.8	.00375	.001576	.91922	574.5	.00640	.002706	.91642	571.1	.00493	.002072
88	.91618	564.1	.00415	.001744	.91754	583.5	.00916	.003873	.91754	584.5	.00762	.003203
89	.92068	564.1	.00411	.001728	.92146	585.5	.01053	.004452	.92651	593.5	.01004	.004220
90	.92349	569.5	.00503	.002114	.92315	585.1	.01039	.004393	.93044	600.1	.01069	.004494
91	.93362	574.8	.00518	.002177	.93549	587.8	.00790	.003340	.94783	608.1	.00946	.003977
92	.93699	582.5	.00674	.002833	.93941	597.5	.01128	.004769	.95063	618.8	.01462	.006146
93	.92574	550.8	.00090	.000378	.94278	564.5	.00097	.000410	.94054	561.1	.00080	.000336
94	.91899	551.8	.00158	.000664	.93100	561.8	.00181	.000765	.93044	557.8	.00119	.000500
95	.91674	555.1	.00272	.001143	.91698	564.8	.00341	.001442	.91586	558.5	.00243	.001021
96	.91731	560.5	.00360	.001513	.91249	571.1	.00612	.002587	.91081	567.5	.00443	.001862
97	.92012	564.1	.00403	.001694	.91529	580.8	.00860	.003636	.91586	581.8	.00703	.002955
98	.92799	570.1	.00441	.001854	.92259	585.1	.01021	.004317	.92707	592.1	.00924	.003884
99	.92856	576.5	.01023	.004300	.92483	592.8	.00914	.003864	.93212	597.8	.01088	.004574

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 30.0°; T_t = 675° R; p_t = 8,672.0 lb/sq ft				α' = 37.5°; T_t = 679° R; p_t = 8,647.0 lb/sq ft				α' = 45.0°; T_t = 674° R; p_t = 8,652.0 lb/sq ft			
1	.90667	558.1	.00542	.002281	.92250	567.1	.00418	.001773	.94993	563.8	.00149	.000630
2	.92016	578.8	.00921	.003877	.93542	591.5	.00672	.002850	.96074	577.8	.00290	.001225
3	.93085	609.1	.01540	.006482	.95002	614.5	.01047	.004441	.97496	601.5	.00429	.001813
4	.90217	548.5	.00250	.001052	.92812	559.5	.00203	.000861	.95164	560.1	.00079	.000334
5	.90161	553.5	.00398	.001675	.92194	563.5	.00321	.001362	.94424	559.1	.00137	.000579
6	.91679	570.8	.00670	.002820	.93485	582.8	.00535	.002269	.95448	571.5	.00236	.000997
7	.92354	585.8	.01099	.004626	.94328	600.5	.00825	.003499	.96131	583.8	.00350	.001479
8	.92297	590.5	.01440	.006061	.94609	611.8	.01062	.004505	.96586	600.8	.00454	.001918
9	.91679	550.5	.00105	.000442	.95170	565.5	.00051	.000216	.97269	570.5	.00048	.000203
10	.90780	541.8	.00096	.000404	.94103	561.8	.00087	.000369	.96472	565.8	.00041	.000173
11	.90386	542.5	.00173	.000728	.93542	563.5	.00150	.000636	.95733	562.8	.00068	.000287
12	.90611	550.8	.00305	.001284	.93092	566.5	.00274	.001162	.94822	561.1	.00129	.000545
13	.91061	563.1	.00527	.002218	.93148	579.5	.00433	.001837	.94310	564.1	.00230	.000972
14	.91848	576.5	.00805	.003389	.93935	594.5	.00646	.002740	.94822	574.8	.00355	.001500
15	.93085	587.8	.00992	.004176	.95507	606.5	.00768	.003258	.96529	591.5	.00497	.002100
16	.93928	594.1	.01102	.004639	.96462	615.1	.00930	.003945	.98008	603.5	.00512	.002164
17	.93928	598.8	.01247	.005249	.96518	623.1	.00996	.004225	.98293	617.5	.00545	.002303
18	.93647	558.1	.00077	.000324	.97304	576.8	.00045	.000191	.99829	584.1	.00031	.000131
19	.92016	548.8	.00102	.000429	.95339	567.8	.00081	.000344	.98179	576.1	.00054	.000228
20	.90892	560.8	.00483	.002033	.93036	576.8	.00405	.001718	.94083	566.1	.00255	.001078
21	.93478	585.5	.00816	.003435	.96069	606.5	.00738	.003130	.97667	613.5	.00553	.002337
22	.94490	599.1	.01046	.004403	.96967	622.5	.00845	.003584	.98975	625.8	.00623	.002633
23	.94884	564.8	.00064	.000269	.98315	581.8	.00039	.000165	1.01137	591.5	.00027	.000114
24	.94434	561.1	.00045	.000189	.97529	578.5	.00043	.000182	1.00682	589.1	.00030	.000127
25	.92635	552.8	.00090	.000379					.98463	577.5	.00044	.000186
26	.91229	549.1	.00144	.000606					.96586	567.8	.00072	.000304
27	.91117	552.1	.00271	.001141					.95107	563.5	.00146	.000617
28	.90217	554.8	.00447	.001882					.93173	558.1	.00248	.001048
29	.92241	574.8	.00646	.002719					.94709	576.8	.00407	.001720
30	.92691	580.5	.00745	.003136					.95676	598.5	.00496	.002096
31	.93984	585.5	.00688	.002896					.97951	607.8	.00707	.002988
32	.92972	583.1	.00725	.003052					.97326	616.8	.00637	.002692
33	.94265	599.8	.00979	.004121					.98805	622.8	.00808	.003414
34	.96683	574.8	.00048	.000202								
35	.97245	577.5	.00044	.000185					1.03297	604.1	.00025	.000106
36	.93141	554.5	.00084	.000354					.98520	577.5	.00042	.000177
37	.91735	563.1	.00421	.001772	.93654	575.1	.00344	.001459	.94140	564.1	.00261	.001103
38	.93928	583.8	.00587	.002471					.97383	606.1	.00646	.002730
39	.94490	585.8	.00577	.002429	.96799	608.1	.00551	.002337	.98805	629.1	.00659	.002785
40	.94884	602.1	.00891	.003751	.97248	621.1	.00711	.003016	.99487	626.1	.00913	.003858
44	.91960	566.5	.00369	.001553	.93542	574.5	.00321	.001362	.93571	561.8	.00280	.001183
60	.98594	585.8	.00047	.000198								
61	.97807	580.1	.00037	.000156	1.00617	596.1	.00028	.000119				
62	.94434	562.8	.00084	.000354	.96630	576.5	.00077	.000327	.98463	577.5	.00051	.000216
63	.93253	560.8	.00156	.000657	.95451	572.1	.00130	.000551	.96984	570.1	.00072	.000304
64	.92522	571.5	.00342	.001440	.94328	575.8	.00268	.001137	.95221	564.1	.00142	.000600
65	.92241	578.8	.00722	.003039	.93654	582.1	.00484	.002053	.93969	565.8	.00291	.001230
66	.93141	593.1	.01219	.005131	.94609	603.1	.00717	.003041	.94766	580.8	.00457	.001931
67	.94321	607.8	.01773	.007463	.96237	618.5	.00954	.004047	.96700	600.5	.00698	.002950
68	.94996	616.8	.01909	.008036	.97079	629.5	.01082	.004590	.97781	619.5	.00664	.002806
69	.96008	623.5	.01950	.008208	.98034	636.5	.01142	.004844	.99772	636.1	.00789	.003334
70	.95671	608.8	.01140	.004799	.97360	619.5	.00939	.003983	1.00739	650.8	.01053	.004450
71	.99044	588.1	.00047	.000198	1.01458	603.1	.00040	.000170	1.03297	605.1	.00028	.000118
73	.94096	560.1	.00078	.000328	.96125	571.5	.00069	.000293	.97724	572.8	.00051	.000216
74	.92522	556.1	.00142	.000598	.94609	565.5	.00102	.000433	.96358	566.1	.00074	.000313
75	.91454	555.5	.00271	.001141	.93261	563.1	.00192	.000814	.95050	561.8	.00133	.000562
76	.90780	564.8	.00556	.002340	.92250	572.1	.00421	.001786	.93798	563.1	.00276	.001166
77	.92579	584.5	.00948	.003990	.93991	592.8	.00641	.002719	.95562	583.8	.00483	.002041
78	.93478	597.8	.01503	.006327	.95226	609.8	.00918	.003894	.96984	601.1	.00657	.002776
79	.94771	608.1	.01604	.006752	.96630	625.5	.01070	.004539	.98577	625.1	.00696	.002941
80	.95165	611.8	.01716	.007223	.97136	632.5	.01349	.005722	1.00000	640.1	.00882	.003727
81	.95727	622.5	.02596	.010928	.97697	631.5	.01342	.005692	1.01080	656.5	.01254	.005299
82	.99100	592.1	.00095	.000400	1.00841	599.1	.00042	.000178	1.00796	593.5	.00070	.000296
83	.98257	583.5	.00058	.000244	1.00000	594.1	.00048	.000204	1.00398	589.1	.00057	.000241
84	.94209	561.8	.00099	.000417	.95788	570.5	.00073	.000310	.97781	574.1	.00070	.000296
85	.95108	570.1	.00139	.000585	.96855	578.8	.00101	.000428	.99089	584.1	.00079	.000334
86	.91342	551.8	.00235	.000989	.93148	561.5	.00187	.000793	.95562	566.1	.00138	.000583
87	.91623	564.8	.00494	.002079	.93092	575.1	.00372	.001578	.95391	571.8	.00273	.001154
88	.91904	580.8	.00834	.003511	.93317	586.1	.00627	.002660	.95676	583.5	.00447	.001889
89	.93085	593.5	.01271	.005350	.94777	604.8	.00888	.003767	.97326	603.1	.00612	.002586
90	.93759	603.8	.01450	.006104	.95619	617.5	.01017	.004314	.98350	629.1	.00725	.003064
91	.95783	612.5	.01451	.006108	.97697	632.8	.01141	.004840	1.01137	634.1	.00863	.003647
92	.96177	628.1	.02426	.010212	.98090	644.5	.01775	.007529	1.01023	645.5	.01572	.006643
93	.94265	564.1	.00099	.000417	.95732	571.1	.00082	.000348	.97838	574.8	.00062	.000262
94	.93478	559.8	.00114	.000480	.95058	568.5	.00104	.000441	.97383	573.5	.00072	.000304
95	.91960	556.5	.00231	.000972	.93654	564.5	.00181	.000768	.96245	568.5	.00129	.000545
96	.91229	563.1	.00451	.001898	.92643	567.8	.00332	.001408	.95278	569.5	.00241	.001018
97	.91791	578.8	.00805	.003389	.93148	586.1	.00565	.002397	.95790	591.8	.00419	.001771
98	.93197	592.1	.01177	.004954	.94721	602.5	.00814	.003453	.97610	606.5	.00591	.002497
99	.93647	611.8	.01396	.005876	.94328	614.5	.01639	.006952	.98919	611.1	.00727	.003072

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -30.0°; T_t = 676° R; p_t = 12,282.0 lb/sq ft				α' = 0°; T_t = 673° R; p_t = 12,211.0 lb/sq ft				α' = 7.5°; T_t = 675° R; p_t = 12,238.0 lb/sq ft			
1	.92812	601.8	.02125	.006320	.90776	574.8	.00942	.002809	.91071	571.1	.00734	.002192
2	.91913	586.1	.01336	.003973	.91721	586.8	.01040	.003101	.92194	584.5	.00937	.002798
3	.90116	560.5	.00733	.002180	.91109	576.8	.00936	.002791	.91913	585.1	.01030	.003076
4	.92755	596.1	.01588	.004723	.90048	559.8	.00523	.001559	.90116	553.8	.00397	.001185
5	.91969	588.5	.01376	.004092	.90276	566.8	.00685	.002042	.90341	565.8	.00550	.001642
6	.91745	578.1	.00907	.002697	.91332	575.8	.00776	.002314	.91688	575.8	.00671	.002004
7	.89611	552.5	.00505	.001502	.90387	568.1	.00698	.002081	.91183	574.5	.00750	.002240
8	.88151	534.8	.00278	.000827	.88998	554.8	.00551	.001643	.90060	564.8	.00701	.002093
9	.92531	579.8	.00879	.002614	.90054	551.5	.00247	.000736	.90509	549.8	.00209	.000624
10	.92362	585.5	.01093	.003251	.89220	547.5	.00308	.000918	.89554	542.5	.00232	.000693
11	.92475	589.8	.01233	.003667	.89442	554.5	.00457	.001363	.89498	547.5	.00336	.001003
12	.92138	585.1	.01080	.003212	.90276	571.5	.00596	.001777	.90397	559.8	.00454	.001356
13	.90902	569.8	.00780	.002320	.90387	567.8	.00670	.001998	.90790	567.5	.00582	.001738
14	.89498	550.1	.00477	.001419	.89887	563.8	.00655	.001953	.90790	569.1	.00645	.001926
15	.89442	539.1	.00243	.000723	.89831	558.5	.00494	.001473	.91071	567.8	.00555	.001657
16	.90284	539.5	.00122	.000363	.89943	552.8	.00321	.000957	.91015	561.5	.00443	.001323
17	.90004	540.8	.00160	.000476	.89665	548.1	.00243	.000724	.90565	559.1	.00409	.001221
18	.92868	577.5	.00676	.002010	.91332	559.8	.00235	.000701	.92025	560.5	.00210	.000627
19	.92531	586.1	.01086	.003230	.89554	548.8	.00285	.000850	.90004	543.8	.00200	.000597
20	.90116	565.5	.00815	.002424	.89887	564.5	.00668	.001992	.90453	564.8	.00569	.001699
21	.89442	533.8	.00084	.000250	.89442	549.8	.00321	.000957	.90734	559.1	.00416	.001242
22	.90060	539.1	.00101	.000300	.90554	556.1	.00217	.000647	.91520	566.1	.00384	.001147
23	.92475	575.1	.00560	.001665	.91220	559.8	.00248	.000739	.92081	560.1	.00236	.000705
24	.92587	576.1	.00647	.001924	.90665	549.8	.00149	.000444	.91632	550.8	.00143	.000427
25	.92587	584.5	.00971	.002888	.89387	547.5	.00258	.000769	.89891	547.1	.00182	.000543
26	.92362	586.8	.01095	.003257	.88831	549.8	.00413	.001231	.89105	542.8	.00272	.000812
27	.91969	582.5	.00986	.002932	.89943	562.1	.00560	.001670	.90172	557.1	.00422	.001260
28	.89835	562.8	.00777	.002311	.88998	558.5	.00641	.001911	.89779	561.1	.00518	.001547
29	.89723	550.5	.00446	.001326	.89998	563.5	.00581	.001732	.90958	572.1	.00567	.001693
30	.89049	537.8	.00247	.000735	.89554	556.5	.00480	.001431	.90734	565.1	.00532	.001589
31	.90509	540.1	.00087	.000259	.90109	553.1	.00304	.000906	.91464	564.1	.00424	.001266
32	.90004	533.8	.00042	.000125	.88776	545.8	.00251	.000748	.90902	565.5	.00391	.001168
33	.90172	537.8	.00108	.000321	.91054	568.1	.00497	.001482	.92643	582.5	.00565	.001687
34	.93485	590.5	.00561	.001668	.91721	564.5	.00307	.000915	.92418	559.8	.00198	.000591
35	.94945	589.5	.00528	.001570	.92610	560.8	.00144	.000429	.93429	559.8	.00118	.000352
36	.92418	583.1	.00940	.002796	.89387	547.5	.00277	.000826	.89948	543.5	.00175	.000523
37	.90734	568.1	.00778	.002314	.90665	568.8	.00622	.001854	.91183	567.8	.00519	.001550
38	.91183	542.5	.00078	.000232	.90054	552.8	.00303	.000903	.91464	565.1	.00444	.001326
39	.93598	555.1	.00038	.000113	.91721	564.1	.00267	.000796	.93036	584.8	.00629	.001878
40	.92306	551.1	.00139	.000413	.91609	574.8	.00639	.001905	.92924	591.1	.00923	.002756
44	.90509	565.5	.00704	.002094	.90387	567.1	.00626	.001866	.90902	566.1	.00509	.001520
60	.94889	613.8	.01929	.005737	.92498	568.5	.00318	.000948	.92980	563.8	.00204	.000609
61	.94665	611.8	.01925	.005725	.92054	566.8	.00323	.000963	.93036	554.8	.00069	.000206
62	.94384	605.8	.01369	.004072	.89665	549.8	.00279	.000832	.90284	547.8	.00159	.000475
63	.93822	595.5	.01098	.003266	.89943	556.5	.00400	.001193	.90172	549.5	.00260	.000776
64	.93036	584.1	.00815	.002424	.90776	566.1	.00529	.001577	.91071	562.5	.00396	.001182
65	.91801	568.8	.00572	.001701	.90720	567.5	.00584	.001741	.91464	569.5	.00514	.001535
66	.91632	561.1	.00343	.001020	.90665	566.1	.00541	.001613	.91913	573.1	.00520	.001553
67	.92812	557.5	.00162	.000482	.90998	564.5	.00445	.001327	.92868	575.1	.00446	.001332
68	.94384	563.5	.00083	.000247	.91554	567.1	.00389	.001160	.93542	579.8	.00485	.001448
69	.98034	581.1	.00050	.000149	.92443	577.5	.00582	.001735	.92924	586.1	.00785	.002344
70	.94609	568.1	.00146	.000434	.91165	570.8	.00612	.001825	.92418	587.5	.00971	.002900
71	.94496	608.8	.01743	.005184	.92776	568.1	.00267	.000796	.93878	567.8	.00196	.000585
72	.93542	602.8	.01743	.005184	.91554	563.5	.00315	.000939	.93991	560.8	.00072	.000215
73	.94159	611.8	.02283	.006790	.89665	549.1	.00257	.000766	.89723	539.1	.00135	.000403
74	.93542	607.1	.02072	.006162	.89665	553.8	.00363	.001082	.89667	544.5	.00241	.000720
75	.92924	601.8	.01527	.004541	.90165	561.1	.00482	.001437	.90341	555.1	.00348	.001039
76	.91071	572.5	.00887	.002638	.89720	563.8	.00560	.001670	.90341	560.8	.00460	.001374
77	.91408	560.1	.00442	.001315	.90776	565.5	.00507	.001512	.91857	571.8	.00518	.001547
78	.91745	553.1	.00191	.000568	.90387	559.1	.00404	.001204	.91857	577.1	.00598	.001786
79	.93598	558.8	.00082	.000244	.91443	566.1	.00398	.001187	.92755	586.5	.00736	.002198
80	.98539	584.8	.00034	.000101	.91998	572.8	.00506	.001509	.92475	581.5	.00737	.002201
81	.95002	570.8	.00138	.000410	.91332	570.8	.00577	.001720	.92418	586.5	.00918	.002741
82	.94440	607.1	.01625	.004833	.92665	567.1	.00250	.000745	.93878	567.1	.00175	.000523
83	.94552	605.1	.01449	.004309	.92721	568.1	.00268	.000799	.94047	563.8	.00110	.000328
84	.93822	608.5	.02170	.006454	.89387	547.1	.00270	.000805	.89667	540.5	.00153	.000457
85	.95563	622.5	.01829	.005440	.91998	567.8	.00374	.001115	.92194	559.5	.00232	.000693
86	.92418	596.8	.01439	.004280	.89831	559.5	.00490	.001461	.90228	554.8	.00339	.001012
87	.91745	574.1	.00794	.002361	.90665	566.8	.00532	.001586	.91576	568.5	.00443	.001323
88	.90846	558.1	.00406	.001207	.90220	562.1	.00515	.001535	.91745	572.1	.00496	.001481
89	.91857	551.5	.00186	.000553	.90387	559.1	.00410	.001222	.92475	580.8	.00619	.001848
90	.93036	555.8	.00083	.000247	.90720	559.5	.00328	.000978	.92418	585.5	.00792	.002365
91	.97809	581.1	.00050	.000149	.92554	574.1	.00437	.001303	.93148	583.1	.00648	.001935
92	.96518	587.8	.00285	.000848	.92665	579.1	.00574	.001711	.93710	593.8	.00858	.002562
93	.93485	605.8	.02099	.006243	.89554	548.1	.00271	.000808	.92306	555.5	.00124	.000370
94	.93373	604.5	.01973	.005868	.89831	554.1	.00360	.001073	.91801	556.5	.00187	.000558
95	.92699	593.1	.01377	.004095	.90387	562.5	.00478	.001425	.91969	564.5	.00302	.000902
96	.91576	573.1	.00796	.002367	.90498	565.5	.00541	.001613	.92362	573.5	.00424	.001266
97	.91239	558.1	.00418	.001243	.90498	564.1	.00509	.001518	.92587	581.5	.00609	.001819
98	.92924	559.8	.00222	.000660	.90998	563.8	.00430	.001282	.93036	591.1	.00876	.002616
99	.94496	567.1	.00150	.000446	.91332	567.8	.00387	.001154	.92924	590.1	.00933	.002786

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Continued

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 15.0^o$; $T_t = 673^o$ R; p_t = 12,179.0 lb/sq ft				$\alpha' = 22.5^o$; $T_t = 676^o$ R; p_t = 12,220.0 lb/sq ft				$\alpha' = 30.0^o$; $T_t = 683^o$ R; p_t = 12,251.0 lb/sq ft			
1	.90250	566.1	.00790	.002362	.90071	562.8	.00685	.002049	.90243	566.1	.00660	.001980
2	.91595	584.1	.01160	.003468	.91521	583.8	.01131	.003382	.91693	589.1	.01038	.003114
3	.91875	592.5	.01565	.004679	.92302	599.1	.01763	.005272	.92919	613.5	.01833	.005499
4	.89354	547.5	.00379	.001133	.89457	546.5	.00273	.000816	.89909	550.1	.00295	.000885
5	.89522	556.5	.00565	.001689	.89401	557.1	.00492	.001471	.89742	561.1	.00478	.001434
6	.91035	574.1	.00800	.002392	.91019	574.8	.00804	.002404	.91414	580.8	.00769	.002307
7	.91035	579.8	.01056	.003157	.91409	586.5	.01238	.003702	.92139	597.5	.01284	.003852
8	.90194	575.1	.01149	.003435	.90963	587.1	.01513	.004525	.92195	606.8	.01668	.005004
9	.89578	542.1	.00166	.000496	.90350	548.8	.00133	.000398	.91860	556.1	.00116	.000348
10	.88906	537.5	.00183	.000547	.89513	540.8	.00153	.000458	.90857	549.5	.00123	.000369
11	.88793	541.1	.00287	.000858	.89122	542.1	.00222	.000664	.90188	549.8	.00223	.000669
12	.89578	554.1	.00462	.001381	.89624	553.5	.00414	.001238	.90188	561.5	.00403	.001209
13	.90194	565.8	.00675	.002018	.90238	566.5	.00658	.001968	.90689	572.5	.00641	.001923
14	.90530	572.8	.00870	.002601	.90852	577.5	.00930	.002781	.91526	586.8	.00937	.002811
15	.91091	575.5	.00851	.002544	.91744	584.5	.01042	.003116	.92808	598.8	.01134	.003402
16	.91203	572.1	.00754	.002254	.92246	587.1	.01052	.003146	.93756	606.1	.01267	.003801
17	.90867	574.1	.00814	.002434	.92134	591.1	.01206	.003607	.93644	610.1	.01414	.004242
18	.90923	553.5	.00190	.000568	.92023	554.5	.00103	.000308	.93979	567.1	.00081	.000243
19	.89522	539.8	.00159	.000475	.90294	543.8	.00131	.000392	.92306	556.5	.00096	.000288
20	.89746	562.5	.00651	.001946	.89847	562.8	.00610	.001824	.90634	573.1	.00565	.001695
21	.90698	565.5	.00619	.001851	.91744	578.5	.00801	.002395	.93310	596.8	.00934	.002802
22	.91203	574.1	.00697	.002084	.92637	591.1	.01005	.003006	.94202	613.5	.01166	.003498
23	.91483	555.8	.00176	.000526	.92692	556.8	.00081	.000242	.94982	571.8	.00073	.000219
24	.91707	550.8	.00094	.000281	.92413	554.8	.00070	.000209	.94871	569.8	.00059	.000177
25	.90250	542.5	.00126	.000377	.90684	544.8	.00096	.000287	.92919	562.5	.00104	.000312
26	.88962	539.8	.00224	.000670	.89234	540.5	.00187	.000559	.91470	555.1	.00167	.000501
27	.89690	552.8	.00408	.001220	.89680	554.1	.00353	.001056	.91080	561.5	.00303	.000909
28	.89018	556.1	.00588	.001758	.88955	558.8	.00553	.001654	.90299	568.8	.00488	.001464
29	.90811	574.8	.00692	.002069	.90963	575.1	.00765	.002288	.92473	588.1	.00664	.001992
30	.90755	570.8	.00705	.002108	.91242	577.8	.00823	.002461	.93198	595.1	.00706	.002118
31	.91371	568.5	.00544	.001627	.92302	579.5	.00689	.002060	.94759	600.8	.00641	.001923
32	.89746	559.1	.00462	.001381	.91186	575.5	.00611	.001827	.93310	596.1	.00757	.002271
33	.91651	578.5	.00624	.001866	.92692	593.5	.00925	.002766	.94202	607.8	.01066	.003198
34	.92828	560.5	.00151	.000451	.94087	563.8	.00074	.000221	.96320	579.1	.00068	.000204
35	.94845	570.5	.00110	.000329	.95370	571.8	.00057	.000170	.97212	583.5	.00050	.000150
36	.91315	549.1	.00127	.000380	.91242	548.1	.00089	.000266	.93421	562.8	.00103	.000309
37	.90923	566.8	.00531	.001588	.90573	564.8	.00524	.001567	.92362	578.5	.00456	.001368
38	.91427	568.8	.00525	.001570	.92023	578.5	.00655	.001959	.94926	617.1	.01321	.003963
39	.92491	576.1	.00344	.001029	.93808	590.5	.00429	.001283	.95149	609.1	.00870	.002610
40	.93164	586.5	.00674	.002015	.93585	596.1	.00979	.002928	.94815	614.8	.00965	.002895
44	.90530	570.8	.00549	.001641	.90461	563.5	.00532	.001591	.92083	586.8	.00708	.002124
60	.93052	562.1	.00150	.000448	.93417	563.5	.00089	.000266	.97547	586.5	.00065	.000195
61	.96470	576.8	.00063	.000188	.94868	568.1	.00063	.000188	.97212	583.1	.00045	.000135
62	.93500	562.1	.00125	.000374	.93417	560.1	.00070	.000209	.94090	568.5	.00118	.000354
63	.92155	560.5	.00267	.000798	.92190	560.1	.00211	.000631	.92864	567.1	.00210	.000630
64	.92099	572.5	.00599	.001791	.91967	570.8	.00472	.001412	.91860	570.8	.00434	.001302
65	.91987	582.8	.01072	.003205	.92190	586.5	.00993	.002970	.91749	585.1	.00830	.002490
66	.92604	591.8	.01367	.004087	.93027	600.8	.01374	.004109	.92752	607.8	.01357	.004071
67	.93332	602.5	.01583	.004733	.93975	606.1	.01064	.003182	.93979	618.8	.01874	.005622
68	.93444	615.1	.01584	.004736	.94254	612.1	.01465	.004381	.94648	627.8	.02120	.006360
69	.93276	601.1	.01591	.004757	.94198	614.8	.02082	.006226	.95484	634.1	.02299	.006896
70	.92940	606.1	.02265	.006772	.94087	619.8	.03143	.009399	.95261	625.5	.01806	.005418
71	.94172	568.8	.00148	.000443	.94923	571.1	.00071	.000212	.97770	587.5	.00065	.000195
72	.98319	587.1	.00046	.000138					.96599	578.5	.00035	.000105
73	.93556	562.5	.00141	.000422	.93362	561.5	.00078	.000233	.93700	564.5	.00090	.000270
74	.91707	560.1	.00269	.000804	.91632	554.8	.00194	.000580	.92139	558.5	.00165	.000495
75	.91091	564.8	.00487	.001456	.90796	562.1	.00391	.001169	.90968	562.1	.00332	.000996
76	.90698	576.1	.00966	.002888	.90740	574.1	.00942	.002817	.90578	572.5	.00667	.002001
77	.92155	592.8	.01232	.003684	.91967	592.8	.01263	.003777	.92195	595.8	.01102	.003306
78	.92043	604.8	.01555	.004649	.92748	603.1	.01842	.005509	.93365	611.1	.01582	.004746
79	.92828	598.8	.01573	.004703	.93585	609.8	.02011	.006014	.94536	624.8	.01874	.005622
80	.92828	594.5	.01276	.003815	.93864	609.8	.01883	.005631	.94926	629.5	.02242	.006726
81	.92940	602.5	.01805	.005397	.94198	618.8	.02758	.008248	.95484	638.8	.03428	.010283
82	.96245	581.5	.00166	.000496	.96485	579.8	.00087	.000260	.98271	594.5	.00115	.000345
83	.98543	592.5	.00095	.000284	.98215	586.5	.00049	.000147	.97435	585.8	.00066	.000198
84	.93500	562.1	.00125	.000374	.93362	560.8	.00087	.000260	.93867	566.8	.00116	.000348
85	.94340	572.5	.00229	.000685	.93975	569.5	.00159	.000475	.94815	574.8	.00166	.000498
86	.90755	561.5	.00452	.001351	.90573	556.1	.00349	.001044	.90968	558.1	.00302	.000906
87	.91315	578.5	.00861	.002574	.90963	573.1	.00725	.002168	.91135	573.1	.00618	.001854
88	.91315	585.8	.01145	.003423	.91409	586.5	.01223	.003657	.91637	592.8	.01003	.003009
89	.91763	591.5	.01430	.004276	.92358	598.5	.01612	.004821	.92975	606.8	.01488	.004464
90	.91987	592.1	.01438	.004300	.92860	602.8	.01750	.005233	.93588	617.5	.01802	.005406
91	.93220	595.5	.01155	.003453	.94310	609.5	.01572	.004701	.95540	629.8	.01770	.005310
92	.93892	617.5	.01537	.004596	.94589	620.1	.02532	.007572	.95986	640.5	.02931	.008792
93	.93724	565.1	.00126	.000377	.93585	563.1	.00082	.000245	.94034	567.8	.00116	.000348
94	.92604	562.5	.00209	.000625	.92469	561.1	.00157	.000470	.93198	564.5	.00157	.000471
95	.91203	562.8	.00421	.001259	.90907	559.5	.00331	.000990	.91637	561.5	.00287	.000861
96	.90867	573.1	.00797	.002383	.90573	567.8	.00681	.002037	.90912	572.5	.00533	.001599
97	.91203	584.1	.01116	.003337	.91242	584.1	.01156	.003457	.91581	590.5	.00913	.002739
98	.92043	592.5	.01312	.003923	.92302	597.1	.01527	.004567	.92975	604.8	.01357	.004071
99	.92267	608.8	.01262	.003773	.92915	602.8	.01703	.005093	.93867	618.1	.01691	.005073

TABLE VIII. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 3 - Concluded

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 37.5°; T_t = 680° R; p_t = 12,228.0 lb/sq ft				α' = 45.0°; T_t = 675° R; p_t = 12,243.0 lb/sq ft			
1	.91600	572.1	.00498	.001495	.94440	565.5	.00246	.000735
2	.92879	594.8	.00802	.002408	.95461	579.5	.00363	.001085
3	.94548	623.5	.01184	.003556	.96936	602.5	.00531	.001587
4	.92268	565.8	.00221	.000664	.95007	564.8	.00117	.000350
5	.91544	568.1	.00388	.001165	.94043	561.8	.00207	.000619
6	.92991	590.1	.00634	.001904	.95007	575.1	.00330	.000986
7	.93825	608.8	.00979	.002940	.95518	588.1	.00497	.001486
8	.94270	621.8	.01240	.003724	.96142	604.5	.00611	.001826
9	.94659	570.1	.00079	.000237	.97447	575.8	.00064	.000191
10	.93547	566.5	.00119	.000357	.96709	571.1	.00070	.000209
11	.92991	567.1	.00191	.000574	.95802	567.5	.00114	.000341
12	.92490	571.8	.00334	.001003	.94553	564.5	.00194	.000580
13	.92546	586.8	.00537	.001613	.93873	570.8	.00332	.000992
14	.93491	599.8	.00764	.002294	.94383	580.5	.00508	.001519
15	.95049	615.8	.00968	.002907	.96142	602.5	.00656	.001961
16	.96161	624.8	.01087	.003264	.97730	615.8	.00768	.002296
17	.96106	635.8	.01110	.003333	.97957	620.1	.00807	.002412
18	.96551	580.1	.00054	.000162	.99773	588.1	.00047	.000140
19	.94882	572.5	.00076	.000228	.98127	579.8	.00063	.000188
20	.92601	582.5	.00467	.001402	.93703	570.8	.00336	.001004
21	.95828	616.8	.00872	.002619	.97503	616.8	.00818	.002445
22	.96551	632.5	.01033	.003102	.98695	628.8	.00898	.002684
23	.97274	583.5	.00034	.000102	1.00850	593.5	.00048	.000143
24	.96829	581.8	.00047	.000141	1.00397	591.5	.00043	.000129
25	.95160	574.5	.00083	.000249	.98184	580.1	.00078	.000233
26	.93881	569.8	.00144	.000432	.96312	571.1	.00114	.000341
27	.93269	574.1	.00259	.000778	.94724	566.1	.00204	.000610
28	.92323	578.1	.00406	.001219	.92681	561.5	.00337	.001007
29	.94715	602.8	.00600	.001802	.94383	583.1	.00551	.001647
30	.95661	613.1	.00696	.002090	.95518	601.1	.00715	.002137
31	.97051	620.5	.00722	.002168	.97730	619.8	.00870	.002601
32	.95271	614.8	.00805	.002417	.97106	618.8	.00962	.002876
33	.96273	628.8	.00957	.002874	.98525	631.5	.01012	.003025
34	.98776	591.5	.00028	.000084	1.02269	600.8	.00033	.000099
35	.99165	594.8	.00044	.000132	1.02779	604.5	.00045	.000135
36	.95327	575.5	.00098	.000294	.98071	578.8	.00069	.000206
37	.93547	589.5	.00506	.001520	.93589	566.8	.00341	.001019
38	.96606	631.5	.01166	.003501	.97163	618.1	.00914	.002732
39	.96884	620.5	.00790	.002372	.98468	628.5	.01001	.002992
40	.96829	631.5	.00893	.002682	.99149	638.1	.01064	.003181
44	.92824	593.1	.00613	.001841	.92965	564.8	.00382	.001142
60					1.04822	615.1	.00021	.000063
61	.99777	597.1	.00021	.000063	1.03630	608.1	.00025	.000075
62	.95939	579.8	.00095	.000285	.98184	579.8	.00076	.000227
63	.94826	576.5	.00149	.000447	.96709	573.1	.00105	.000314
64	.93547	578.5	.00321	.000964	.94837	567.1	.00208	.000622
65	.93046	593.1	.00573	.001721	.93646	573.8	.00391	.001169
66	.94048	613.1	.00916	.002751	.94553	591.5	.00644	.001925
67	.95661	628.8	.01231	.003697	.96482	609.8	.00862	.002577
68	.96551	639.8	.01383	.004153	.97617	622.5	.00953	.002849
69	.97329	650.5	.01541	.004628	.99432	638.1	.01162	.003474
70	.96829	628.8	.01016	.003051	1.00453	652.8	.01531	.004577
71	1.00277	602.5	.00041	.000123	1.01872	599.8	.00052	.000155
72	.98442	589.5	.00033	.000099	1.00397	589.5	.00031	.000093
73	.95049	573.1	.00084	.000252	.96823	571.8	.00070	.000209
74	.93658	567.5	.00143	.000429	.95575	566.1	.00108	.000323
75	.92379	566.5	.00256	.000769	.94383	562.8	.00186	.000556
76	.91600	580.1	.00527	.001583	.93362	567.5	.00385	.001151
77	.93380	602.1	.00806	.002420	.95177	590.8	.00643	.001922
78	.94826	621.5	.01209	.003631	.96823	611.1	.00859	.002568
79	.96161	637.1	.01421	.004267	.98411	628.5	.01024	.003061
80	.96662	644.5	.01790	.005375	.99886	643.1	.01294	.003868
81	.97051	646.1	.02206	.006625	1.00964	658.8	.01856	.005548
82	.98943	597.1	.00083	.000249	.99602	591.5	.00103	.000308
83	.98386	591.5	.00055	.000165	.99205	586.1	.00082	.000245
84	.94882	572.8	.00103	.000309	.96823	574.8	.00104	.000311
85	.96050	582.5	.00130	.000390	.98354	583.8	.00129	.000386
86	.92323	567.5	.00237	.000712	.94837	565.5	.00186	.000556
87	.92268	578.1	.00482	.001447	.94724	574.8	.00369	.001103
88	.92768	602.8	.00792	.002378	.95291	594.5	.00623	.001862
89	.94381	616.5	.01189	.003571	.97163	612.8	.00909	.002717
90	.95216	629.5	.01353	.004063	.98241	627.8	.01034	.003091
91	.97218	644.5	.01530	.004595	1.01021	648.8	.01217	.003638
92	.97608	657.1	.02731	.008201	1.00964	661.1	.02186	.006535
93	.95049	575.5	.00121	.000363	.97050	575.5	.00084	.000251
94	.94437	572.8	.00141	.000423	.96709	573.1	.00112	.000335
95	.93046	569.1	.00242	.000727	.95688	570.1	.00167	.000499
96	.92045	577.5	.00436	.001309	.94780	572.8	.00324	.000969
97	.92657	596.5	.00729	.002189	.95518	593.5	.00586	.001752
98	.94326	613.8	.01093	.003282	.97447	612.1	.00813	.002430
99	.95104	630.1	.01732	.005201	.98411	627.1	.01125	.003357

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermo-couple	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	α' = -45.0°; T_t = 711° R; p_t = 5,015.0 lb/sq ft				α' = -37.5°; T_t = 707° R; p_t = 5,027.0 lb/sq ft				α' = -30.0°; T_t = 707° R; p_t = 5,042.0 lb/sq ft			
4	.98699	633.1	.01002	.002806	.97043	638.8	.01429	.003978	.96070	634.1	.01445	.004010
5	.96890	613.8	.00828	.002319	.95565	622.1	.01180	.003285	.94987	622.1	.01313	.003644
6	.96155	594.1	.00556	.001557	.94825	600.5	.00841	.002341	.94418	603.8	.00953	.002645
7	.94628	571.1	.00315	.000882	.92722	569.1	.00513	.001428	.92424	573.5	.00621	.001723
8	.94628	563.8	.00129	.000361	.91698	555.5	.00283	.000788	.91342	553.1	.00354	.000982
9	.99038	627.1	.00827	.002316	.97384	614.5	.00807	.002247	.96127	604.5	.00762	.002115
10	.98530	625.8	.00849	.002378	.97043	621.8	.00937	.002609	.95842	613.1	.00912	.002531
11	.97399	619.1	.00835	.002339	.96133	621.5	.01006	.002801	.95101	615.1	.01016	.002820
12	.96664	606.8	.00678	.001899	.95621	611.8	.00861	.002397	.94987	609.5	.00885	.002456
13	.95081	584.1	.00453	.001269	.93745	586.1	.00617	.001718	.93279	586.1	.00659	.001829
14	.94798	570.8	.00254	.000711	.92722	564.5	.00373	.001038	.92197	564.5	.00428	.001188
15	.96212	571.8	.00118	.000331	.93006	553.8	.00203	.000565	.92026	550.1	.00224	.000622
16	.97342	578.5	.00080	.000224	.93574	552.8	.00121	.000337	.92367	546.8	.00127	.000352
17	.97908	581.8	.00099	.000277	.93347	559.8	.00169	.000470	.92538	553.8	.00183	.000508
18	.98756	633.5	.00982	.002750	.97611	604.5	.00556	.001548	.96468	593.5	.00506	.001404
19	.98134	629.8	.00956	.002678	.96986	620.8	.00931	.002592	.96013	614.5	.00874	.002426
20	.94120	580.8	.00499	.001398	.93404	583.5	.00599	.001668	.92709	583.1	.00675	.001873
21	.96551	572.5	.00084	.000235	.93916	554.5	.00070	.000195	.91684	540.1	.00110	.000305
22	.98021	584.5	.00122	.000342	.94257	565.8	.00182	.000507	.92994	564.1	.00264	.000733
23	.97964	632.1	.01129	.003162	.96929	597.1	.00464	.001292	.95956	586.1	.00394	.001093
24	.98021	633.8	.01175	.003291	.96929	600.8	.00537	.001495	.95842	592.5	.00516	.001432
25	.97568	634.5	.01131	.003168	.96304	614.1	.00828	.002305	.95215	608.1	.00844	.002342
26	.96551	625.1	.00929	.002602	.95394	613.1	.00924	.002572	.94418	609.1	.00933	.002589
27	.96155	611.5	.00822	.002302	.95167	605.8	.00758	.002110	.94304	604.8	.00879	.002440
28	.92763	580.1	.00585	.001639	.92437	577.5	.00583	.001623	.91684	576.5	.00647	.001796
29	.94798	572.5	.00279	.000781	.93290	566.1	.00335	.000933	.92083	561.5	.00370	.001027
30	.95477	568.8	.00128	.000359	.93631	556.8	.00145	.000404	.91627	546.1	.00185	.000513
31	.97173	577.8	.00086	.000241	.95394	562.8	.00082	.000228	.92880	546.8	.00071	.000197
32	.96212	570.1	.00082	.000230	.94484	558.5	.00089	.000248	.91513	540.1	.00095	.000264
33	.96551	575.8	.00129	.000361	.94200	567.1	.00190	.000529	.92310	559.1	.00251	.000697
34	.97908	633.5	.01193	.003341	.96929	592.5	.00393	.001094	.95956	581.8	.00323	.000896
35	.98699	638.8	.01084	.003036	.97441	601.8	.00491	.001367	.96297	593.1	.00465	.001291
36	.97795	636.8	.01135	.003179	.96076	610.5	.00773	.002152	.95044	604.1	.00794	.002204
37	.94459	585.1	.00545	.001526	.93176	579.8	.00559	.001556	.92652	580.5	.00617	.001712
38	.96664	572.8	.00084	.000235	.95110	560.8	.00080	.000223	.92766	546.8	.00104	.000289
39	.97568	578.5	.00082	.000230	.96645	570.5	.00077	.000214	.93677	553.1	.00091	.000253
40	.97003	578.5	.00133	.000373	.94825	571.5	.00203	.000565	.93165	568.5	.00251	.000697
41	.98134	658.1	.01093	.003061	.96361	609.1	.00679	.001890	.95272	602.5	.00697	.001934
42	.96890	629.8	.00968	.002711	.95110	607.5	.00824	.002294	.94190	603.5	.00827	.002295
43	.95646	608.8	.00840	.002353	.94086	596.5	.00704	.001960	.93450	595.8	.00784	.002176
44	.93950	588.8	.00555	.001554	.92608	575.1	.00524	.001459	.91969	575.5	.00593	.001646
45	.95194	573.8	.00260	.000728	.93631	565.5	.00301	.000836	.92481	562.8	.00360	.000999
46	.96325	572.1	.00097	.000272	.94370	562.5	.00143	.000398	.92595	550.1	.00181	.000502
47	.97908	579.1	.00067	.000188	.96247	566.5	.00065	.000181	.94133	557.8	.00097	.000269
50	.99604	651.1	.01362	.003815	.98009	660.1	.01823	.005075	.97152	657.1	.02066	.005734
51	.99265	651.5	.01401	.003924	.98464	670.1	.02055	.005721	.98120	674.8	.02451	.006802
52	.97173	626.8	.00973	.002725	.96929	651.5	.01794	.004994	.97038	662.5	.02179	.006048
53	.95081	593.5	.00628	.001759	.94484	613.5	.01080	.003007	.94703	626.5	.01417	.003933
54	.94628	572.8	.00336	.000941	.93120	585.8	.00617	.001718	.92994	588.5	.00809	.002245
55	.99095	666.5	.01146	.003210	.97668	656.8	.01846	.005139	.96810	660.5	.01944	.005395
56	.98134	639.1	.01071	.003000	.97043	667.8	.01874	.005217	.96696	658.1	.02093	.005809
57	.96551	618.1	.00980	.002745	.96019	639.5	.01573	.004379	.96070	648.1	.01808	.005018
58	.94685	587.5	.00569	.001594	.93745	602.8	.01036	.002884	.95905	614.5	.01239	.003439
59	.94515	570.1	.00273	.000765	.92551	571.1	.00569	.001584	.92538	579.8	.00731	.002029
60	.98077	636.8	.01184	.003316	.96190	640.8	.01627	.004529	.95557	636.1	.01238	.003436
61	.97851	636.8	.01228	.003439	.95849	639.8	.01663	.004630	.95158	634.1	.01619	.004493
62	.97342	647.1	.01353	.003790	.95849	640.8	.01487	.004140	.94703	606.8	.00872	.002420
63	.96664	629.8	.01221	.003420	.95451	632.8	.01475	.004106	.94532	605.1	.00777	.002156
64	.95250	605.8	.00839	.002350	.94200	608.1	.01199	.003338	.93507	595.8	.00752	.002087
65	.93893	579.1	.00498	.001395	.93006	578.8	.00651	.001812	.92254	581.8	.00521	.001446
66	.94628	568.5	.00223	.000625	.93176	562.5	.00297	.000827	.92197	565.1	.00321	.000891
67	.96777	574.1	.00077	.000216	.95053	562.5	.00125	.000348	.93791	556.5	.00137	.000380
68	.98247	581.5	.00061	.000171	.96702	569.5	.00056	.000156	.95557	561.8	.00070	.000194
69	.99434	587.8	.00067	.000188	.96986	573.8	.00076	.000212	.94873	563.5	.00124	.000344
70	.98134	583.8	.00103	.000288	.93802	563.1	.00183	.000509	.93051	566.8	.00234	.000649
71	.98360	636.8	.01139	.003190	.96247	637.1	.01466	.004081	.94873	627.8	.01440	.003997
72	.97625	633.1	.01178	.003299	.95621	633.5	.01509	.004201	.94361	625.5	.01519	.004216
73	.97003	635.1	.01354	.003792	.95223	638.1	.01711	.004763	.94361	631.1	.01670	.004635
74	.95646	620.8	.01129	.003162	.94200	627.5	.01586	.004415	.93620	618.5	.01339	.003716
75	.94346	598.8	.00825	.002311	.93347	608.5	.01075	.002993	.93051	599.5	.00893	.002478
76	.92593	575.8	.00472	.001322	.91414	574.1	.00672	.001871	.91285	578.8	.00607	.001685
77	.94120	564.5	.00195	.000546	.92210	558.1	.00338	.000941	.91741	557.5	.00339	.000941
78	.95420	566.5	.00078	.000218	.93233	551.8	.00112	.000312	.92424	549.5	.00135	.000375
79	.97003	575.1	.00068	.000190	.95053	560.1	.00065	.000181	.94475	554.5	.00057	.000158
80	.99265	587.5	.00069	.000193	.96361	568.5	.00065	.000181	.96867	572.1	.00092	.000255
81	.98530	590.1	.00125	.000350	.93972	565.1	.00203	.000565	.94222	567.8	.00294	.000816
82	.98134	635.1	.01142	.003199	.96076	634.1	.01415	.003939	.94475	624.5	.01428	.003963
83	.98077	633.5	.01103	.003089	.96076	630.5	.01306	.003636	.94817	622.1	.01305	.003622
84	.96551	631.5	.01281	.003588	.94882	633.5	.01621	.004513	.94076	631.1	.01794	.004979
85	.97003	628.5	.01127	.003157	.95678	633.8	.01412	.003931	.95158	635.8	.01614	.004479
86	.93554	593.1	.00806	.002257	.92494	601.1	.01073	.002987	.92424	615.1	.01285	.003566
87	.93441	572.5	.00436	.001221	.92153	575.1	.00611	.001701	.91969	583.5	.00766	.002126
88	.94120	563.5	.00200	.000560	.91926	555.1	.00321	.000894	.91171	557.1	.00413	.001146
89	.95703	568.8	.00105	.000294	.93518	554.8	.00124	.000345	.92197	548.5	.00173	.000480
90	.96607	573.5	.00088	.000246	.94541	558.8	.00095	.000264	.93336	550.8	.00083	.000230
91	1.00226	594.8	.00088	.000246	.95621	567.8	.00113	.000315	.97721	577.1	.00089	.000247
92	.99038	603.1	.00316	.000885	.95280	583.8	.00364	.001013	.95215	576.8	.00263	.000730
93	.96042	628.8	.01299	.003638	.94427	630.1	.01624	.004521	.93677	627.1	.01754	.004868
94	.95646	620.5	.01119	.003134	.94314	624.8	.01500	.004176	.93791	625.8	.01629	.004521
95	.94233	595.8	.00772	.002162	.93120	602.1	.01010	.002812	.92937	608.8	.01224	.003397
96	.93385	571.5	.00426	.001193	.91982	573.1	.00607	.001690	.91684	586.8	.00752	.002087
97	.94742	567.5	.00183	.000513	.93006	560.8	.00298	.000830	.91570	558.8	.00411	.001141
98	.96777	577.1	.00129	.000361	.95280	568.5	.00167	.000465	.93393	558.1	.00208	.000577

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -22.5°; T_t = 706° R; p_t = 5,024.0 lb/sq ft				α' = -15.0°; T_t = 701° R; p_t = 5,102.0 lb/sq ft				α' = -7.5°; T_t = 705° R; p_t = 5,057.0 lb/sq ft			
4	.95210	625.1	.01297	.003614	.94576	609.8	.01078	.002947	.94357	591.1	.00765	.002113
5	.94534	618.8	.01237	.003447	.94291	610.1	.01098	.003002	.94414	596.1	.00846	.002337
6	.94196	606.1	.00965	.002689	.94348	603.5	.00948	.002591	.94875	596.1	.00794	.002193
7	.92336	580.1	.00678	.001889	.92750	582.1	.00743	.002031	.93608	581.5	.00684	.001889
8	.91097	565.8	.00434	.001209	.91494	563.1	.00543	.001484	.92514	566.1	.00550	.001519
9	.94985	593.8	.00607	.001691	.94005	575.5	.00461	.001260	.93781	568.1	.00285	.000787
10	.94759	602.1	.00749	.002087	.93891	583.5	.00576	.001575	.93608	565.1	.00370	.001022
11	.94252	605.5	.00833	.002321	.93492	589.1	.00689	.001883	.93320	571.8	.00471	.001301
12	.94478	605.8	.00801	.002232	.94120	595.1	.00701	.001916	.94299	582.8	.00541	.001494
13	.93125	588.5	.00635	.001769	.93206	584.5	.00628	.001717	.93781	578.8	.00533	.001472
14	.92055	570.5	.00455	.001268	.92407	570.5	.00485	.001326	.93378	570.8	.00452	.001248
15	.91773	556.8	.00276	.000769	.92122	557.8	.00333	.000910	.93205	561.5	.00346	.000956
16	.91942	557.8	.00177	.000493	.92179	551.5	.00218	.000596	.93205	554.8	.00255	.000704
17	.91829	553.8	.00147	.000410	.92065	549.8	.00158	.000432	.92975	555.8	.00185	.000511
18	.95266	584.5	.00362	.001009	.94291	567.5	.00284	.000776	.94011	560.5	.00171	.000472
19	.95097	604.8	.00710	.001978	.94234	586.1	.00521	.001424	.93896	566.8	.00341	.000942
20	.92675	586.5	.00638	.001778	.92921	583.1	.00599	.001637	.93551	577.5	.00508	.001403
21	.91379	545.8	.00145	.000404	.91665	544.5	.00177	.000484	.92745	549.8	.00209	.000577
22	.93182	569.1	.00251	.000699	.92807	552.5	.00161	.000440	.93436	551.1	.00130	.000359
23	.94759	577.8	.00305	.000850	.93948	561.8	.00217	.000593	.93666	550.5	.00136	.000376
24	.94759	585.5	.00409	.001140	.93948	568.5	.00298	.000815	.93608	553.1	.00179	.000494
25	.94365	600.5	.00715	.001992	.93720	583.5	.00542	.001482	.93378	563.8	.00342	.000945
26	.93745	603.5	.00832	.002318	.93320	589.8	.00665	.001818	.93148	571.5	.00457	.001262
27	.93858	609.5	.00800	.002229	.93834	594.8	.00691	.001889	.94011	582.1	.00531	.001467
28	.91379	579.1	.00642	.001789	.91779	577.1	.00618	.001689	.92457	571.8	.00507	.001400
29	.91660	566.1	.00409	.001140	.92293	568.1	.00433	.001184	.93378	569.8	.00409	.001130
30	.90984	550.1	.00229	.000638	.91551	551.5	.00272	.000744	.92687	556.1	.00289	.000798
31	.92111	551.5	.00112	.000312	.92521	547.8	.00131	.000358	.93378	560.8	.00184	.000508
32	.91379	552.8	.00146	.000407	.91665	547.8	.00156	.000426	.92054	541.5	.00133	.000367
33	.92956	568.8	.00300	.000836	.93206	556.5	.00181	.000495	.93378	548.8	.00132	.000365
34	.94816	574.8	.00244	.000680	.94291	561.1	.00168	.000459	.94299	555.1	.00109	.000301
35	.95097	586.5	.00377	.001050	.94405	570.5	.00273	.000746	.94299	559.5	.00155	.000428
36	.94083	597.1	.00691	.001925	.93549	581.8	.00539	.001473	.93378	562.8	.00338	.000934
37	.92505	584.8	.00620	.001727	.92921	583.8	.00603	.001648	.93781	579.8	.00513	.001417
38	.92167	549.1	.00107	.000298	.92407	546.5	.00131	.000358	.93205	553.8	.00159	.000439
39	.93351	557.8	.00115	.000320	.94063	564.5	.00187	.000511	.94126	554.1	.00125	.000345
40	.93632	571.8	.00271	.000755	.94976	567.1	.00180	.000492	.94990	560.8	.00142	.000392
41	.94365	596.1	.00618	.001722	.94005	582.1	.00491	.001342	.94357	566.8	.00307	.000848
42	.93463	599.1	.00757	.002109	.93206	587.5	.00632	.001728	.93436	571.8	.00437	.001207
43	.93069	596.1	.00737	.002053	.93149	589.8	.00706	.001930	.93608	579.8	.00526	.001453
44	.91773	585.1	.00599	.001669	.92236	578.5	.00579	.001583	.93032	574.8	.00507	.001400
45	.92224	568.5	.00384	.001070	.92750	569.8	.00407	.001113	.93896	571.5	.00395	.001091
46	.91942	555.1	.00199	.000554	.92464	555.1	.00247	.000675	.93608	558.8	.00256	.000707
47	.93238	555.8	.00088	.000245	.93663	553.1	.00107	.000292	.94587	559.5	.00139	.000384
50	.96337	652.1	.01936	.005394	.95832	639.1	.01618	.004423	.95508	619.8	.01207	.003334
51	.98027	675.5	.02528	.007044	.98001	669.8	.02219	.006066	.97984	663.5	.01709	.004720
52	.97408	669.1	.02414	.006726	.97944	670.1	.02227	.006088	.98560	663.1	.01805	.004986
53	.95041	637.5	.01685	.004695	.96003	645.1	.01659	.004535	.97063	652.1	.01513	.004179
54	.92956	598.8	.00938	.002613	.93720	607.5	.01126	.003078	.94817	618.5	.01063	.002936
55	.96055	654.1	.01819	.005068	.95490	641.1	.01537	.004202	.95163	615.1	.01144	.003160
56	.96393	656.8	.02085	.005809	.96175	654.8	.01842	.005035	.96142	634.8	.01432	.003955
57	.96168	667.5	.01939	.005403	.96631	654.5	.01872	.005117	.97178	647.8	.01585	.004378
58	.93970	623.5	.01380	.003845	.94748	630.1	.01464	.004002	.95739	629.1	.01338	.003696
59	.92280	589.1	.00858	.002391	.92978	603.5	.00980	.002679	.94069	599.5	.00946	.002613
60	.95323	617.8	.00936	.002608	.95204	600.1	.00659	.001801	.95566	581.8	.00399	.001102
61	.94534	603.8	.00790	.002201	.94291	591.1	.00592	.001618	.94530	581.5	.00473	.001306
62	.92844	589.8	.00634	.001766	.92350	572.8	.00506	.001383	.92514	556.8	.00322	.000889
63	.92787	596.1	.00683	.001903	.92407	580.8	.00599	.001637	.92514	565.8	.00429	.001185
64	.92280	592.1	.00674	.001878	.92179	581.8	.00676	.001848	.92629	572.1	.00515	.001422
65	.91040	575.1	.00543	.001513	.91208	570.5	.00565	.001545	.92111	567.8	.00500	.001381
66	.90364	558.5	.00357	.000995	.90637	556.5	.00407	.001113	.91823	559.8	.00415	.001146
67	.90590	547.1	.00178	.000496	.90637	544.1	.00236	.000645	.91996	551.1	.00289	.000798
68	.91717	549.8	.00098	.000273	.91494	542.8	.00142	.000388	.92917	555.1	.00205	.000566
69	.92449	556.8	.00139	.000387	.93035	560.8	.00242	.000662	.94587	598.5	.00440	.001215
70	.93069	570.1	.00300	.000836	.94691	576.5	.00328	.000897	.95624	579.5	.00356	.000983
71	.94759	615.5	.00999	.002783	.95376	599.1	.00633	.001730	.95854	582.1	.00380	.001050
72	.93689	615.8	.01235	.003441	.93378	598.1	.00880	.002406	.93436	576.5	.00533	.001472
73	.93463	592.5	.00612	.001705	.92293	570.8	.00502	.001372	.92226	553.8	.00313	.000865
74	.92562	592.5	.00627	.001747	.91836	574.8	.00571	.001561	.91708	559.8	.00409	.001130
75	.92055	588.5	.00621	.001730	.91779	576.5	.00589	.001610	.92054	566.1	.00471	.001301
76	.90533	571.5	.00502	.001399	.90580	565.1	.00534	.001460	.91651	562.5	.00472	.001304
77	.90702	559.5	.00340	.000947	.90580	555.1	.00386	.001055	.91881	559.1	.00395	.001091
78	.90477	545.5	.00180	.000502	.89610	537.8	.00244	.000667	.91190	545.1	.00267	.000737
79	.92224	549.1	.00080	.000223	.90295	536.1	.00146	.000399	.92111	547.5	.00179	.000494
80	.93970	565.8	.00137	.000382	.93320	564.1	.00272	.000744	.93205	567.1	.00389	.001074
81	.92280	565.1	.00281	.000783	.94519	574.1	.00313	.000856	.95451	575.5	.00310	.000856
82	.93970	611.1	.00891	.002483	.94862	594.8	.00610	.001668	.95566	578.5	.00349	.000964
83	.93914	611.1	.01054	.002937	.93606	593.8	.00754	.002058	.93781	574.5	.00458	.001265
84	.93858	599.8	.00816	.002274	.92407	571.8	.00502	.001372	.92169	554.8	.00337	.000931
85	.95154	605.1	.00623	.001736	.93720	585.5	.00558	.001525	.93666	576.1	.00418	.001155
86	.92562	592.8	.00578	.001610	.91551	575.1	.00638	.001744	.91823	565.5	.00494	.001364
87	.92224	578.1	.00456	.001271	.91608	570.8	.00534	.001460	.92457	568.8	.00495	.001367
88	.91097	563.5	.00323	.000900	.90352	553.5	.00394	.001077	.91651	557.5	.00404	.001116
89	.91379	550.1	.00163	.000454	.89724	538.8	.00246	.000672	.91248	546.1	.00283	.000782
90	.92449	551.1	.00077	.000215	.89724	532.5	.00144	.000394	.91478	543.8	.00187	.000517
91	.96168	577.8	.00128	.000357	.94234	570.1	.00276	.000754	.93954	569.1	.00359	.000992
92	.93801	580.5	.00376	.001048	.96003	589.5	.00400	.001093	.97005	586.8	.00333	.000920
93	.93238	612.1	.01265	.003525	.92179	571.5	.00538	.001471	.92169	554.1	.00335	.000925
94	.93576	604.5	.00977	.002722	.92521	578.8	.00599	.001637	.92514	563.5	.00422	.001166
95	.93069	593.1	.00673	.001875	.92350	580.8	.00639	.001747	.92629	570.5	.00511	.001411
96	.91942	576.8	.00494	.001376	.91494	571.8	.00585	.001599	.92111	567.1	.00501	.001384
97	.91379	562.1	.00338	.000942	.90980	558.8	.00435	.001189	.91766	558.8	.00423	.001168
98	.92505	559.5	.00221	.000616	.91665	551.8	.00287	.000785	.91938	552.5	.00309	.000853

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, °R	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = 0^o$; $T_t = 706^o$ R; $p_t = 5{,}051.0$ lb/sq ft				$\alpha' = 7.5^o$; $T_t = 705^o$ R; $p_t = 5{,}028.0$ lb/sq ft				$\alpha' = 15.0^o$; $T_t = 702^o$ R; $p_t = 5{,}041.0$ lb/sq ft			
4	.93512	584.8	.00731	.002024	.93078	569.8	.00590	.001640	.92293	568.1	.00570	.001576
5	.93856	595.8	.00877	.002429	.93597	583.8	.00789	.002194	.92925	586.8	.00822	.002273
6	.94488	599.8	.00889	.002462	.94578	594.1	.00882	.002452	.94248	603.1	.01005	.002779
7	.93741	591.1	.00824	.002282	.94232	592.1	.00903	.002511	.94248	608.8	.01144	.003164
8	.93225	580.8	.00700	.001939	.93886	586.1	.00830	.002308	.94191	607.1	.01144	.003164
9	.93052	557.1	.00225	.000623	.92559	546.8	.00157	.000436	.92235	547.8	.00158	.000437
10	.92938	559.1	.00316	.000875	.92444	546.8	.00238	.000662	.92005	548.1	.00208	.000575
11	.93052	568.8	.00433	.001199	.92501	555.1	.00342	.000951	.92005	553.1	.00311	.000860
12	.93914	582.1	.00546	.001512	.93597	571.5	.00486	.001351	.93040	572.5	.00484	.001338
13	.93914	584.1	.00571	.001581	.93943	579.1	.00574	.001596	.93673	586.5	.00639	.001767
14	.93741	580.1	.00533	.001476	.94116	581.1	.00592	.001646	.94191	594.5	.00722	.001997
15	.93684	572.5	.00439	.001216	.94347	577.5	.00527	.001465	.94708	595.8	.00715	.001977
16	.93799	565.5	.00341	.000944	.94462	571.8	.00448	.001246	.94938	591.5	.00671	.001856
17	.93340	559.8	.00276	.000764	.94059	570.1	.00399	.001109	.94651	593.8	.00639	.001767
18	.93454	552.8	.00157	.000435	.93482	551.1	.00175	.000487	.93846	560.1	.00218	.000603
19	.93167	559.1	.00280	.000775	.92847	547.1	.00196	.000545	.92753	549.8	.00162	.000448
20	.93627	583.1	.00554	.001534	.93655	578.1	.00563	.001565	.93328	583.8	.00618	.001709
21	.93454	562.8	.00306	.000847	.94116	568.5	.00391	.001087	.94708	585.5	.00540	.001493
22	.93684	555.5	.00175	.000485	.94347	566.5	.00297	.000826	.95053	592.5	.00536	.001482
23	.93914	554.5	.00145	.000402	.94116	554.5	.00180	.000500	.93903	560.5	.00230	.000636
24	.93627	553.8	.00136	.000377	.93828	555.5	.00187	.000520	.93788	555.5	.00168	.000465
25	.93110	556.5	.00254	.000703	.92674	545.1	.00195	.000542	.92810	546.1	.00154	.000426
26	.92823	576.1	.00420	.001163	.91867	556.5	.00313	.000870	.91948	553.5	.00255	.000705
27	.93741	581.8	.00514	.001423	.93309	569.1	.00450	.001251	.92810	568.5	.00415	.001148
28	.92536	583.1	.00569	.001576	.92444	577.5	.00573	.001593	.92120	576.1	.00580	.001604
29	.93971	582.1	.00507	.001404	.94347	583.5	.00564	.001568	.94306	594.1	.00631	.001745
30	.93397	570.5	.00405	.001122	.94059	576.1	.00500	.001390	.94421	590.8	.00588	.001626
31	.94086	565.8	.00296	.000820	.94693	571.5	.00378	.001051	.95283	586.8	.00480	.001327
32	.92191	550.5	.00190	.000526	.92732	551.5	.00249	.000692	.93386	568.1	.00398	.001101
33	.93856	554.8	.00138	.000382	.94405	567.8	.00288	.000801	.94996	598.8	.00546	.001510
34	.94660	557.8	.00142	.000393	.94578	562.8	.00160	.000445	.93903	556.5	.00181	.000501
35	.95005	566.5	.00180	.000498	.94981	563.1	.00201	.000559	.94823	559.5	.00157	.000434
36	.92995	555.1	.00241	.000667	.92732	545.5	.00163	.000453	.92810	547.1	.00158	.000437
37	.93799	586.5	.00578	.001601	.93943	581.1	.00578	.001607	.93501	585.1	.00581	.001607
38	.93512	562.1	.00288	.000798	.94232	568.8	.00381	.001059	.94766	582.5	.00459	.001269
39	.94373	559.1	.00164	.000454	.94866	561.5	.00206	.000573	.95456	575.1	.00310	.000857
40	.95349	564.1	.00138	.000382	.95443	577.8	.00288	.000801	.95571	601.5	.00530	.001466
41	.94717	563.8	.00218	.000604	.94289	552.8	.00139	.000386	.94076	552.8	.00134	.000371
42	.93225	572.5	.00378	.001047	.92847	557.8	.00271	.000753	.92408	554.5	.00235	.000650
43	.93397	580.5	.00528	.001462	.93136	568.5	.00447	.001243	.92580	566.8	.00406	.001123
44	.93110	586.5	.00565	.001565	.93136	581.1	.00557	.001549	.92753	578.1	.00564	.001560
45	.94316	583.8	.00492	.001363	.94751	584.5	.00546	.001518	.94708	593.1	.00577	.001596
46	.94143	573.1	.00373	.001033	.94578	577.5	.00461	.001282	.94823	589.1	.00508	.001405
47	.94717	566.8	.00250	.000692	.94981	571.1	.00341	.000948	.95341	582.5	.00396	.001095
50	.94603	615.1	.01178	.003262	.93943	598.1	.01042	.002897	.92983	596.1	.01001	.002768
51	.97416	657.8	.01811	.005015	.96885	647.5	.01835	.005102	.95859	647.8	.01975	.005461
52	.98335	670.1	.02047	.005669	.98385	667.8	.02269	.006308	.97699	673.8	.02912	.008053
53	.97358	657.5	.01747	.004838	.97981	661.5	.02034	.005655	.97929	674.8	.02816	.007787
54	.95234	625.5	.01270	.003517	.96020	632.8	.01545	.004295	.96319	652.8	.02085	.005766
55	.94430	619.1	.01136	.003146	.93828	595.1	.00998	.002775	.92868	593.1	.00951	.002630
56	.95406	641.1	.01518	.004204	.95039	631.8	.01504	.004181	.94133	624.8	.01596	.004413
57	.97186	655.8	.01735	.004805	.97173	652.1	.01902	.005288	.96606	659.5	.02256	.006239
58	.95981	641.8	.01584	.004387	.96539	644.8	.01796	.004993	.96549	659.1	.02327	.006435
59	.94316	620.5	.01190	.003296	.95039	627.8	.01424	.003959	.95398	647.1	.01859	.005141
60	.95579	579.5	.00336	.000931	.95155	564.5	.00200	.000556	.94478	562.1	.00187	.000517
61	.92823	577.5	.00460	.001274	.92847	548.1	.00183	.000509	.93328	547.1	.00091	.000252
62	.91904	551.1	.00267	.000739	.91867	539.1	.00143	.000398	.92523	541.1	.00108	.000299
63	.91962	561.5	.00392	.001086	.91463	545.8	.00271	.000753	.91603	544.5	.00198	.000548
64	.92421	573.1	.00545	.001509	.91867	560.1	.00431	.001198	.91660	558.8	.00373	.001031
65	.92249	575.8	.00563	.001559	.92155	568.5	.00574	.001596	.91890	572.1	.00526	.001455
66	.92306	572.5	.00533	.001476	.92559	572.1	.00561	.001560	.92638	580.8	.00579	.001601
67	.92708	564.8	.00384	.001063	.93193	567.8	.00457	.001271	.93616	587.8	.00552	.001526
68	.93397	561.5	.00289	.000800	.93715	564.1	.00365	.001015	.94421	582.5	.00470	.001300
69	.95406	585.1	.00422	.001169	.95904	581.5	.00369	.001026	.95744	626.1	.01021	.002823
70	.95005	589.1	.00510	.001412	.95155	573.8	.00329	.000915	.94248	589.8	.00611	.001690
71	.96038	579.1	.00299	.000828	.95847	569.5	.00225	.000626	.94421	565.1	.00219	.000606
72	.92823	568.1	.00413	.001144	.93366	551.5	.00170	.000473	.92580	543.8	.00099	.000274
73	.90986	545.8	.00276	.000764	.91348	535.5	.00143	.000398	.92293	538.8	.00098	.000271
74	.90699	558.5	.00392	.001086	.90598	539.8	.00269	.000748	.90855	541.1	.00185	.000512
75	.91387	565.8	.00490	.001357	.91117	552.8	.00393	.001093	.90797	549.8	.00308	.000852
76	.91158	568.5	.00560	.001551	.91175	561.8	.00503	.001398	.90797	562.5	.00441	.001219
77	.92076	570.1	.00506	.001401	.92559	570.1	.00509	.001415	.92580	577.5	.00500	.001383
78	.91675	557.1	.00373	.001033	.92386	568.5	.00447	.001243	.92868	576.8	.00446	.001233
79	.92765	558.8	.00320	.000886	.93713	567.1	.00381	.001059	.93961	585.1	.00468	.001294
80	.93569	584.5	.00608	.001684	.94520	592.5	.00775	.002155	.93903	609.8	.01088	.003009
81	.94775	587.1	.00515	.001426	.94693	596.5	.00704	.001957	.94018	618.1	.01424	.003938
82	.95636	574.8	.00272	.000753	.95558	566.8	.00214	.000595	.94076	564.1	.00237	.000655
83	.93225	569.1	.00395	.001094	.95212	562.5	.00170	.000473	.96031	563.5	.00102	.000282
84	.90871	545.5	.00278	.000770	.92732	542.8	.00141	.000392	.92810	543.5	.00102	.000282
85	.92823	565.8	.00388	.001075	.93540	555.8	.00239	.000664	.93501	555.8	.00207	.000572
86	.91100	564.5	.00502	.001390	.91290	557.5	.00384	.001068	.90913	555.5	.00376	.001040
87	.92191	574.1	.00575	.001592	.92444	567.5	.00494	.001373	.92293	580.5	.00608	.001681
88	.91962	569.1	.00508	.001407	.92559	569.1	.00503	.001398	.92580	595.5	.00798	.002207
89	.91732	558.8	.00393	.001088	.92732	566.1	.00462	.001284	.92753	605.1	.01072	.002964
90	.92019	553.8	.00314	.000870	.92963	569.1	.00497	.001382	.92810	609.1	.01241	.003432
91	.94201	584.5	.00541	.001498	.94866	591.8	.00714	.001985	.94191	608.8	.01027	.002840
92	.95521	593.1	.00539	.001493	.95270	609.5	.01026	.002853	.94766	628.5	.01473	.004073
93	.90813	543.8	.00274	.000759	.94635	558.1	.00183	.000509	.92868	559.1	.00201	.000556
94	.91502	556.5	.00374	.001036	.93943	558.5	.00270	.000751	.92580	552.1	.00280	.000774
95	.91789	567.8	.00508	.001407	.92847	562.5	.00396	.001101	.91373	562.5	.00503	.001391
96	.91732	570.8	.00553	.001531	.92617	568.8	.00502	.001396	.91258	582.1	.00820	.002268
97	.91789	568.5	.00518	.001435	.92963	573.1	.00531	.001476	.91833	601.1	.01194	.003302
98	.92249	563.5	.00413	.001144	.93713	576.5	.00525	.001460	.92695	611.8	.01383	.003824

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(a) M = 3.51; $p_{t,nom}$ = 5,040 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 707° R; p_t = 5,040.0 lb/sq ft				α' = 30.0°; T_t = 707° R; p_t = 5,058.0 lb/sq ft				α' = 37.5°; T_t = 709° R; p_t = 5,041.0 lb/sq ft			
4	.92568	560.5	.00430	.001195	.92514	557.1	.00362	.001002	.93677	561.8	.00253	.000704
5	.93086	580.5	.00697	.001937	.92917	578.1	.00642	.001777	.93677	574.8	.00519	.001443
6	.94584	602.5	.00921	.002560	.94530	603.8	.00918	.002540	.95171	601.8	.00798	.002219
7	.94987	615.1	.01160	.003224	.95220	622.8	.01247	.003451	.96148	625.1	.01204	.003348
8	.95218	619.1	.01241	.003449	.95796	632.1	.01429	.003954	.97068	638.8	.01445	.004018
9	.93028	548.8	.00131	.000364	.93608	555.8	.00131	.000362	.95976	563.8	.00095	.000264
10	.92625	543.8	.00139	.000386	.93205	546.5	.00134	.000371	.95574	558.8	.00081	.000225
11	.92395	552.5	.00219	.000609	.92687	548.8	.00209	.000578	.94711	557.1	.00136	.000378
12	.93259	568.1	.00416	.001156	.93320	567.5	.00385	.001065	.94424	569.5	.00327	.000909
13	.94008	586.5	.00609	.001693	.94011	588.1	.00609	.001685	.94826	588.8	.00556	.001546
14	.94814	600.5	.00743	.002065	.95105	606.8	.00796	.002203	.96033	610.1	.00772	.002147
15	.95736	606.8	.00798	.002218	.96257	618.8	.00941	.002604	.97528	626.5	.00932	.002592
16	.96139	605.8	.00801	.002226	.96833	621.8	.00998	.002762	.98218	632.1	.01027	.002856
17	.95909	613.1	.00833	.002315	.96602	630.8	.01075	.002975	.97988	641.8	.01191	.003312
18	.94065	560.5	.00198	.000550	.94357	560.1	.00172	.000476	.97298	574.1	.00127	.000353
19	.93317	547.5	.00127	.000353	.94011	551.1	.00112	.000310	.96263	563.5	.00084	.000234
20	.93489	582.1	.00556	.001545	.93436	582.5	.00551	.001525	.94424	583.1	.00507	.001410
21	.95736	596.5	.00637	.001771	.96257	609.5	.00782	.002164	.97528	619.1	.00822	.002286
22	.96255	612.1	.00733	.002037	.96602	626.5	.00930	.002573	.97930	635.8	.01037	.002884
23	.94526	561.8	.00178	.000495	.94587	562.5	.00162	.000448	.98160	581.5	.00143	.000398
24	.94411	554.5	.00121	.000336	.94760	555.5	.00099	.000274	.97585	573.1	.00106	.000295
25	.93489	548.1	.00124	.000345	.94126	551.5	.00104	.000288	.96321	566.5	.00123	.000342
26	.92395	547.5	.00208	.000578	.92917	549.1	.00187	.000517	.94999	565.1	.00167	.000464
27	.92971	563.5	.00354	.000984	.93148	563.1	.00327	.000905	.94654	569.1	.00293	.000815
28	.92337	572.8	.00516	.001434	.92342	572.5	.00501	.001386	.93447	575.1	.00462	.001285
29	.94930	595.5	.00589	.001637	.95105	598.8	.00610	.001688	.96091	602.8	.00611	.001699
30	.95218	595.5	.00594	.001651	.95566	603.5	.00679	.001879	.96608	610.8	.00695	.001933
31	.96197	594.5	.00537	.001493	.96660	607.1	.00659	.001824	.97758	616.5	.00706	.001963
32	.94411	584.1	.00558	.001551	.94702	597.5	.00740	.002048	.95861	606.1	.00772	.002147
33	.95794	614.8	.00712	.001979	.95969	626.8	.00882	.002441	.97470	630.8	.00948	.002636
34	.94411	557.5	.00151	.000420	.95048	561.8	.00132	.000365	.98907	584.5	.00114	.000317
35	.95333	557.5	.00105	.000292	.96314	561.8	.00072	.000199	.99195	582.1	.00110	.000306
36	.93547	547.5	.00106	.000295	.94414	552.5	.00101	.000279	.96551	566.8	.00104	.000289
37	.93835	581.1	.00494	.001373	.93723	580.1	.00480	.001328	.94596	581.5	.00454	.001262
38	.95736	588.5	.00478	.001329	.96142	600.1	.00595	.001646	.97126	608.5	.00630	.001752
39	.96428	591.1	.00445	.001237	.96545	602.5	.00595	.001646	.97815	611.1	.00614	.001707
40	.95909	613.5	.00666	.001851	.96142	619.8	.00854	.002363	.97815	638.5	.00843	.002344
41	.95391	556.1	.00083	.000231	.96084	560.8	.00080	.000221	.97758	572.8	.00095	.000264
42	.93489	550.1	.00158	.000439	.94011	552.8	.00142	.000393	.95861	563.5	.00123	.000342
43	.93144	561.5	.00298	.000828	.93378	560.8	.00267	.000739	.94654	565.5	.00250	.000695
44	.93259	578.5	.00426	.001184	.93263	573.1	.00408	.001129	.94079	574.8	.00389	.001082
45	.95391	591.8	.00486	.001351	.95624	595.8	.00486	.001345	.96263	598.5	.00504	.001401
46	.95736	591.1	.00456	.001267	.96199	600.5	.00508	.001406	.96896	606.1	.00587	.001632
47	.96255	586.8	.00384	.001067	.96660	598.8	.00470	.001301	.97470	606.5	.00552	.001535
50	.92856	584.5	.00785	.002182	.92457	576.8	.00662	.001832	.93102	569.5	.00504	.001401
51	.95448	637.8	.01535	.004267	.94817	635.5	.01400	.003874	.94884	623.8	.01114	.003098
52	.97695	670.5	.02199	.006112	.97178	665.5	.02210	.006115	.97355	656.5	.01728	.004805
53	.98502	678.8	.02286	.006354	.98502	680.8	.02609	.007220	.99137	678.5	.02062	.005734
54	.97349	662.8	.01978	.005498	.97812	670.8	.02285	.006323	.98965	674.5	.02006	.005578
55	.92856	582.1	.00751	.002087	.92514	575.5	.00641	.001774	.93274	569.1	.00475	.001321
56	.93895	622.8	.01232	.003424	.93493	609.1	.01158	.003204	.93792	599.1	.00820	.002280
57	.96658	656.5	.01836	.005103	.96314	653.5	.01887	.005222	.96608	645.8	.01515	.004213
58	.97119	663.8	.02053	.005706	.97121	666.5	.02324	.006431	.98045	666.1	.01881	.005231
59	.96312	650.1	.01953	.005428	.96718	659.1	.02192	.006066	.98045	664.1	.01929	.005364
60	.95275	564.8	.00147	.000409	.93205	553.5	.00155	.000429	.98907	579.1	.00084	.000234
61	.96831	563.1	.00053	.000147	.94069	550.8	.00082	.000227	.98045	573.5	.00082	.000228
62	.94699	551.1	.00070	.000195	.94184	548.8	.00062	.000172	.96666	567.1	.00086	.000239
63	.93432	548.1	.00124	.000345	.93090	548.5	.00156	.000432	.95861	564.5	.00124	.000345
64	.92683	556.8	.00279	.000775	.92169	561.1	.00406	.001123	.94424	567.1	.00301	.000837
65	.92798	571.8	.00476	.001323	.92111	588.1	.00841	.002327	.93677	585.1	.00593	.001649
66	.93893	589.1	.00657	.001826	.93263	617.8	.01342	.003714	.94769	621.1	.00980	.002725
67	.95218	611.1	.00928	.002579	.94587	636.5	.01733	.004795	.96321	638.5	.01274	.003545
68	.95621	635.8	.01147	.003188	.95336	641.8	.01790	.004953	.97126	654.8	.01455	.004046
69	.95563	633.8	.01421	.003950	.96027	646.8	.01810	.005009	.97528	666.8	.01581	.004396
70	.95160	631.5	.01187	.003299	.96142	651.8	.01931	.005343	.97585	658.5	.01875	.005214
71	.96946	569.5	.00116	.000322	.92514	550.1	.00165	.000457	.98333	578.1	.00109	.000303
72	.97868	569.5	.00056	.000156	.94126	551.8	.00093	.000257	.97470	570.5	.00071	.000197
73	.93605	544.8	.00082	.000228	.93320	543.8	.00076	.000210	.95861	570.5	.00117	.000325
74	.91703	541.1	.00182	.000506	.91708	538.8	.00142	.000393	.94424	555.1	.00174	.000484
75	.91012	557.1	.00379	.001053	.90844	546.8	.00318	.000880	.93159	558.8	.00260	.000723
76	.90782	575.1	.00731	.002032	.90499	569.1	.00649	.001796	.92010	568.5	.00517	.001438
77	.92683	604.8	.01147	.003188	.92802	604.5	.01040	.002878	.94079	602.5	.00843	.002344
78	.92971	615.5	.01436	.003991	.93436	622.5	.01440	.003985	.94999	625.1	.01266	.003520
79	.94123	623.8	.01483	.004122	.94817	635.1	.01616	.004472	.96493	640.1	.01462	.004065
80	.94296	623.8	.01396	.003880	.95048	638.5	.01771	.004901	.96781	646.8	.01635	.004547
81	.95275	639.8	.01692	.004703	.96027	661.8	.02185	.006046	.97470	665.1	.02245	.006243
82	.95448	563.5	.00145	.000403	.94817	563.8	.00178	.000493	.98103	580.1	.00143	.000398
83	.95563	555.5	.00059	.000164	.95451	560.8	.00098	.000271	.98045	575.5	.00102	.000284
84	.92452	539.1	.00086	.000239	.93320	545.8	.00088	.000244	.95516	559.8	.00101	.000281
85	.93144	548.1	.00158	.000439	.94126	553.1	.00128	.000354	.96436	567.1	.00123	.000342
86	.90263	544.8	.00346	.000962	.90787	544.1	.00289	.000800	.93044	553.1	.00223	.000620
87	.91473	574.1	.00638	.001773	.91535	570.1	.00572	.001583	.92987	570.5	.00480	.001335
88	.92164	596.1	.00959	.002666	.92399	596.1	.00915	.002532	.93619	595.5	.00789	.002194
89	.92856	610.5	.01193	.003316	.93378	617.5	.01348	.003730	.94826	619.5	.01177	.003273
90	.93259	614.5	.01301	.003616	.94069	625.8	.01508	.004173	.95631	630.5	.01338	.003721
91	.95102	623.1	.01230	.003419	.96027	637.5	.01493	.004131	.97700	653.5	.01360	.003782
92	.95736	650.5	.01722	.004786	.96602	660.1	.02336	.006464	.97930	678.1	.02313	.006432
93	.93547	549.1	.00117	.000325	.94587	558.8	.00161	.000446	.95746	566.5	.00166	.000462
94	.93201	549.1	.00179	.000498	.94357	558.1	.00174	.000481	.95746	566.1	.00167	.000464
95	.91646	551.1	.00329	.000914	.92629	554.5	.00300	.000830	.94309	561.1	.00222	.000617
96	.91070	567.8	.00595	.001654	.91478	572.1	.00532	.001472	.92757	566.1	.00437	.001215
97	.91819	592.1	.00926	.002574	.92111	591.8	.00877	.002427	.93217	589.8	.00739	.002055
98	.93028	609.5	.01157	.003216	.93551	614.8	.01235	.003417	.94826	615.8	.01038	.002886

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 4 - Continued

(a) $M = 3.51$; $p_{t,nom} = 5{,}040$ lb/sq ft

Thermo-couple	T_e/T_t	T_w, ^oR	h, Btu/sec-ft^2-^oR	N_{St}
	$\alpha' = 45.0^o$; $T_t = 711^o$ R; $p_t = 5{,}049.0$ lb/sq ft			
4	.95237	570.8	.00170	.000472
5	.94376	564.5	.00292	.000812
6	.95639	584.1	.00469	.001303
7	.96671	605.1	.00701	.001948
8	.97819	620.5	.00899	.002499
9	.97934	577.5	.00135	.000375
10	.97130	570.8	.00112	.000311
11	.95983	564.5	.00113	.000314
12	.94835	568.1	.00228	.000634
13	.94663	575.5	.00401	.001114
14	.95753	594.8	.00612	.001701
15	.97417	615.5	.00747	.002076
16	.98450	632.5	.00839	.002332
17	.98335	637.8	.00905	.002515
18	.98795	583.1	.00136	.000378
19	.97130	573.1	.00142	.000395
20	.93860	573.8	.00481	.001337
21	.97647	649.8	.00759	.002109
22	.98795	642.1	.01184	.003291
23	.98737	588.5	.00174	.000484
24	.98163	579.8	.00139	.000386
25	.97475	575.5	.00145	.000403
26	.96385	570.1	.00164	.000456
27	.95524	571.5	.00270	.000750
28	.93573	572.5	.00465	.001292
29	.96040	602.8	.00750	.002084
30	.96557	625.8	.00913	.002537
31	.98049	639.5	.01014	.002818
32	.96671	635.5	.01131	.003143
33	.98795	654.5	.01185	.003293
34	.98508	580.5	.00131	.000364
35	.99024	583.5	.00139	.000386
36	.97532	574.5	.00125	.000347
37	.94491	578.5	.00483	.001342
38	.97647	637.8	.01022	.002840
39	.98909	649.8	.01101	.003060
40	.99368	663.1	.01294	.003596
41	.98565	578.1	.00100	.000278
42	.96786	569.1	.00121	.000336
43	.95122	566.5	.00261	.000725
44	.94032	573.8	.00459	.001276
45	.96155	603.1	.00705	.001959
46	.97073	629.1	.00903	.002510
47	.97934	637.8	.00951	.002643
50	.94261	569.5	.00238	.000661
51	.94950	585.5	.00533	.001481
52	.96786	623.5	.00803	.002232
53	.99196	644.8	.00925	.002571
54	.99713	649.1	.00953	.002649
55	.94434	561.1	.00228	.000634
56	.94147	574.5	.00446	.001240
57	.96499	611.8	.00817	.002271
58	.98335	641.5	.00910	.002529
59	.98967	646.8	.00980	.002724
60	.98795	577.8	.00075	.000208
61	.97934	572.5	.00073	.000203
62	.97360	570.5	.00083	.000231
63	.96614	567.5	.00109	.000303
64	.95007	564.5	.00219	.000609
65	.93975	573.1	.00442	.001228
66	.94950	604.1	.00723	.002009
67	.96901	624.1	.00964	.002679
68	.97991	643.1	.01104	.003068
69	.99081	655.8	.01277	.003549
70	.99483	672.1	.01657	.004605
71	1.00344	586.5	.00072	.000200
72	.98680	576.1	.00068	.000189
73	.96614	575.8	.00152	.000422
74	.95409	565.8	.00138	.000384
75	.94376	557.1	.00182	.000506
76	.92999	563.5	.00413	.001148
77	.95007	594.5	.00710	.001973
78	.96385	619.5	.01044	.002902
79	.98163	645.5	.01171	.003255
80	.98737	656.5	.01362	.003785
81	.99483	676.5	.01794	.004986
82	.99311	586.1	.00141	.000392
83	.98737	580.1	.00111	.000309
84	.96040	562.5	.00084	.000233
85	.97188	570.5	.00093	.000258
86	.94147	559.5	.00182	.000506
87	.94204	569.5	.00386	.001073
88	.94893	591.8	.00662	.001840
89	.96270	616.8	.00957	.002660
90	.97360	638.5	.01098	.003052
91	.99770	658.1	.01206	.003352
92	1.00057	685.5	.02019	.005611
93	.95696	562.8	.00122	.000339
94	.95925	566.1	.00113	.000314
95	.95007	561.1	.00174	.000484
96	.93917	565.1	.00343	.000953
97	.94491	586.1	.00616	.001712
98	.96327	612.8	.00864	.002401

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -45.0°; T_t = 706° R; p_t = 7,209.0 lb/sq ft				α' = -37.5°; T_t = 708° R; p_t = 7,202.0 lb/sq ft				α' = -30.0°; T_t = 705° R; p_t = 7,201.0 lb/sq ft			
4	.98283	642.8	.01371	.002659	.97017	641.1	.01691	.003289	.96206	636.8	.01656	.003214
5	.96395	621.5	.01134	.002200	.95526	623.1	.01403	.002729	.95114	623.8	.01445	.002804
6	.95422	597.5	.00737	.001430	.94666	599.1	.00968	.001883	.94424	603.1	.01047	.002032
7	.93935	569.1	.00429	.000832	.92544	565.8	.00574	.001116	.92412	570.8	.00665	.001291
8	.94163	559.5	.00187	.000363	.91799	552.8	.00304	.000591	.91493	550.5	.00374	.000726
9	.98626	640.1	.01211	.002349	.97419	614.8	.00958	.001863	.96378	605.5	.00872	.001692
10	.98169	638.1	.01236	.002397	.97075	623.1	.01114	.002167	.96091	614.8	.01021	.001982
11	.97024	630.1	.01195	.002318	.96272	623.1	.01183	.002301	.95401	617.1	.01114	.002162
12	.96280	615.1	.00967	.001876	.95756	612.8	.01014	.001972	.95229	611.5	.00990	.001921
13	.94450	587.5	.00628	.001218	.93921	585.8	.00714	.001389	.93504	586.5	.00735	.001426
14	.94106	568.5	.00379	.000735	.92888	562.5	.00424	.000825	.92297	562.8	.00475	.000922
15	.95537	566.1	.00164	.000318	.93175	557.8	.00179	.000348	.92067	547.1	.00230	.000446
16	.96681	573.1	.00135	.000262	.93806	549.8	.00122	.000237	.92470	541.5	.00139	.000270
17	.97081	576.5	.00164	.000318	.93634	559.1	.00217	.000422	.92815	554.5	.00231	.000448
18	.98455	647.8	.01421	.002756	.97648	603.5	.00646	.001256	.96608	593.1	.00572	.001110
19	.97768	646.5	.01500	.002909	.97075	620.1	.01078	.002097	.96263	607.1	.00550	.001067
20	.93591	587.1	.00716	.001389	.93347	582.8	.00729	.001418	.92930	583.8	.00754	.001463
21	.95880	566.8	.00143	.000277	.94035	549.8	.00096	.000187	.91837	537.5	.00088	.000171
22	.96853	577.5	.00187	.000363	.94379	564.1	.00230	.000447	.92872	561.1	.00292	.000567
23	.97654	644.8	.01438	.002789	.97132	596.5	.00529	.001029	.96033	585.5	.00447	.000868
24	.97768	647.8	.01562	.003030	.97075	600.1	.00628	.001221	.96033	592.8	.00580	.001126
25	.97310	649.8	.01691	.003280	.96501	615.5	.00979	.001904	.95516	610.8	.00957	.001857
26	.96338	640.5	.01576	.003057	.95526	614.8	.01079	.002099	.94711	612.1	.01064	.002065
27	.95880	625.1	.01232	.002390	.95240	607.1	.00926	.001801	.94539	606.8	.00960	.001863
28	.93019	588.1	.00849	.001647	.92544	576.8	.00692	.001346	.91837	584.8	.00728	.001413
29	.94278	573.8	.00430	.000834	.93347	563.5	.00384	.000747	.92125	559.8	.00422	.000819
30	.95022	565.8	.00209	.000405	.93577	552.8	.00181	.000352	.91493	542.5	.00197	.000382
31	.96624	574.1	.00149	.000289	.95354	558.8	.00086	.000167	.92757	542.5	.00088	.000171
32	.95251	564.1	.00141	.000273	.94551	555.5	.00097	.000189	.91090	534.8	.00111	.000215
33	.95136	568.1	.00198	.000384	.94150	565.5	.00240	.000467	.90975	553.5	.00346	.000672
34	.97539	646.5	.01564	.003034	.97132	594.1	.00428	.000832	.96321	584.8	.00331	.000642
35	.98340	651.8	.01542	.002991	.97534	600.8	.00575	.001118	.96378	593.1	.00539	.001046
36	.97539	651.1	.01664	.003228	.96329	611.5	.00904	.001758	.95229	606.1	.00874	.001696
37	.94221	593.8	.00812	.001575	.93118	578.8	.00665	.001293	.92642	580.5	.00707	.001372
38	.95994	569.5	.00136	.000264	.94666	554.5	.00085	.000165	.92125	540.1	.00109	.000212
39	.96280	569.5	.00137	.000266	.96215	564.5	.00099	.000193	.92125	541.5	.00110	.000213
40	.95537	570.5	.00200	.000388	.94494	567.5	.00240	.000467	.91780	556.8	.00316	.000613
41	.97825	652.1	.01607	.003117	.96444	609.5	.00808	.001572	.95286	602.8	.00786	.001525
42	.96738	644.8	.01614	.003131	.95240	608.8	.00960	.001867	.94367	605.5	.00975	.001892
43	.95422	622.1	.01247	.002419	.94035	596.5	.00845	.001643	.93504	596.8	.00909	.001764
44	.93534	589.5	.00812	.001575	.92372	573.1	.00635	.001235	.91895	575.1	.00680	.001320
45	.94392	572.5	.00416	.000807	.93060	560.1	.00362	.000704	.92067	558.1	.00405	.000786
46	.95365	565.5	.00175	.000339	.93921	559.1	.00169	.000329	.91780	543.5	.00225	.000437
47	.96738	569.5	.00094	.000182	.95698	558.8	.00077	.000150	.92930	547.5	.00119	.000231
50	.99198	659.8	.01574	.003053	.98050	664.5	.02411	.004689	.97298	662.1	.02448	.004751
51	.98912	659.8	.01569	.003043	.98508	673.8	.02677	.005207	.98448	679.1	.02776	.005388
52	.96853	635.5	.01354	.002626	.96903	654.1	.02244	.004364	.97413	666.5	.02398	.004654
53	.94507	597.5	.00839	.001627	.94207	612.1	.01360	.002645	.94596	627.5	.01652	.003206
54	.93992	577.8	.00437	.000848	.92716	573.8	.00681	.001325	.92700	585.5	.00872	.001692
55	.98798	656.8	.01562	.003030	.97706	660.8	.02339	.004549	.97068	658.8	.02355	.004571
56	.97711	647.8	.01477	.002865	.97132	657.8	.02302	.004477	.96838	661.8	.02407	.004672
57	.96109	625.5	.01195	.002318	.95985	640.8	.01903	.003701	.96033	650.5	.01994	.003870
58	.94049	590.1	.00750	.001455	.93462	600.8	.01117	.002173	.93619	613.8	.01342	.002605
59	.93877	567.8	.00414	.000803	.92315	566.5	.00607	.001181	.92125	576.5	.00792	.001537
60	.97711	650.8	.01676	.003251	.96100	646.8	.02171	.004223	.95574	639.1	.01762	.003420
61	.97482	651.1	.01783	.003458	.95870	646.1	.02138	.004158	.95171	640.1	.01997	.003876
62	.97081	652.1	.01855	.003598	.95756	649.1	.02425	.004717	.94884	641.1	.01944	.003773
63	.96395	644.1	.01686	.003270	.95584	645.5	.02211	.004300	.94826	635.8	.01391	.002700
64	.95022	618.8	.01215	.002357	.94666	623.5	.01567	.003048	.94252	620.1	.01132	.002197
65	.93534	586.1	.00691	.001340	.93290	589.8	.00861	.001675	.92872	591.5	.00855	.001659
66	.94049	573.5	.00348	.000675	.93290	565.1	.00408	.000794	.92412	570.5	.00456	.000885
67	.95994	568.1	.00135	.000262	.94953	558.8	.00144	.000280	.93562	549.8	.00161	.000312
68	.97196	572.1	.00097	.000188	.96329	563.5	.00067	.000130	.94999	555.1	.00079	.000153
69	.97482	574.8	.00105	.000204	.96329	565.5	.00096	.000187	.93792	559.8	.00176	.000342
70	.96223	572.1	.00163	.000316	.93060	558.8	.00252	.000490	.92240	558.1	.00279	.000541
71	.97940	650.1	.01626	.003154	.96157	643.8	.01937	.003767	.94941	633.8	.01745	.003387
72	.97253	647.1	.01685	.003268	.95641	640.1	.01969	.003830	.94367	632.1	.01882	.003653
73	.96795	649.5	.01844	.003577	.95412	645.5	.02426	.004718	.94481	641.5	.02295	.004454
74	.95479	635.5	.01610	.003123	.94437	635.1	.02142	.004166	.93734	635.5	.02133	.004140
75	.92676	611.5	.01319	.002558	.93519	615.5	.01450	.002820	.93159	621.1	.01636	.003175
76	.92275	575.1	.00660	.001280	.91455	585.5	.00864	.001680	.91263	594.1	.01024	.001987
77	.93706	563.1	.00301	.000584	.91971	555.8	.00398	.000774	.91263	560.1	.00535	.001038
78	.94850	561.1	.00144	.000279	.92831	546.8	.00129	.000251	.91550	544.8	.00202	.000392
79	.96338	570.1	.00103	.000200	.94551	553.8	.00084	.000163	.93217	545.1	.00078	.000151
80	.98054	578.5	.00104	.000202	.94551	554.8	.00099	.000193	.94194	552.8	.00110	.000213
81	.97596	582.1	.00187	.000363	.93175	560.1	.00281	.000547	.92355	559.5	.00323	.000627
82	.97768	648.8	.01618	.003138	.96100	641.1	.01868	.003633	.94539	631.5	.01775	.003445
83	.97711	646.8	.01563	.003032	.96157	637.1	.01696	.003299	.94826	628.8	.01635	.003173
84	.96338	646.1	.01829	.003548	.95010	640.8	.02167	.004215	.94194	644.8	.02158	.004188
85	.96795	642.5	.01550	.003006	.95756	641.1	.02026	.003940	.95171	642.1	.02075	.004027
86	.93305	604.5	.01141	.002213	.92659	607.5	.01522	.002960	.92470	621.8	.01572	.003051
87	.92905	576.1	.00630	.001222	.92143	576.8	.00791	.001538	.91895	586.5	.00929	.001803
88	.93420	565.5	.00290	.000563	.91913	553.5	.00385	.000749	.90860	555.5	.00502	.000974
89	.94850	561.8	.00137	.000267	.93519	552.1	.00173	.000336	.91780	543.1	.00185	.000359
90	.95651	564.8	.00122	.000237	.94379	555.1	.00107	.000208	.92700	543.8	.00098	.000190
91	.98626	583.8	.00135	.000262	.95297	565.5	.00182	.000354	.95918	564.8	.00123	.000239
92	.97997	600.5	.00417	.000809	.94724	581.5	.00477	.000928	.94309	572.8	.00335	.000650
93	.96166	643.5	.01779	.003451	.94666	637.5	.02138	.004158	.93792	634.1	.02224	.004316
94	.95479	634.5	.01596	.003096	.94494	632.5	.01927	.003748	.93964	633.1	.01968	.003820
95	.93992	606.5	.01098	.002130	.93290	608.5	.01362	.002649	.92987	615.5	.01494	.002900
96	.92905	575.1	.00609	.001181	.92028	575.1	.00769	.001496	.91550	583.8	.00928	.001801
97	.94163	570.1	.00304	.000590	.92888	558.5	.00373	.000725	.91148	563.1	.00498	.000967
98	.96166	575.5	.00200	.000388	.95068	564.8	.00202	.000393	.92757	556.2	.00248	.000481

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -22.5°; T_t = 702° R; p_t = 7,208.0 lb/sq ft				α' = -15.0°; T_t = 701° R; p_t = 7,189.0 lb/sq ft				α' = -7.5°; T_t = 702° R; p_t = 7,217.0 lb/sq ft			
4	.95466	628.8	.01500	.002901	.94548	617.8	.01281	.002484	.94191	592.1	.00909	.001756
5	.94778	622.1	.01391	.002690	.94319	617.8	.01312	.002544	.94306	598.1	.01029	.001988
6	.94376	607.5	.01105	.002137	.94319	610.5	.01124	.002180	.94766	597.5	.00951	.001837
7	.92483	579.5	.00786	.001520	.92597	587.5	.00892	.001730	.93443	582.1	.00817	.001578
8	.91450	557.8	.00516	.000998	.91507	567.8	.00660	.001280	.92465	567.1	.00647	.001250
9	.95237	594.1	.00736	.001423	.94032	579.8	.00564	.001094	.93501	559.1	.00308	.000595
10	.95065	603.5	.00860	.001663	.93917	588.8	.00685	.001328	.93443	565.8	.00425	.000821
11	.94548	607.8	.00974	.001884	.93630	595.8	.00806	.001563	.93155	572.8	.00568	.001097
12	.94778	607.5	.00905	.001750	.94204	601.8	.00824	.001598	.94191	584.5	.00650	.001256
13	.93343	588.5	.00738	.001427	.93286	590.5	.00740	.001435	.93731	580.5	.00640	.001236
14	.92253	568.1	.00518	.001002	.92425	574.8	.00575	.001115	.93213	571.8	.00547	.001057
15	.91966	556.8	.00307	.000594	.92024	559.8	.00398	.000772	.92983	561.8	.00405	.000782
16	.92196	544.1	.00193	.000373	.92081	552.5	.00266	.000516	.92925	554.5	.00273	.000527
17	.92196	547.5	.00173	.000335	.91966	550.5	.00203	.000394	.92695	549.1	.00209	.000404
18	.95524	582.1	.00430	.000832	.94376	569.5	.00342	.000663	.93788	557.8	.00195	.000377
19	.95237	605.8	.00845	.001634	.94204	591.1	.00652	.001264	.93673	567.1	.00409	.000790
20	.92827	586.8	.00761	.001472	.92942	588.8	.00704	.001365	.93501	579.5	.00623	.001204
21	.91622	539.8	.00135	.000261	.91679	544.8	.00219	.000425	.92523	549.5	.00223	.000431
22	.93630	570.1	.00348	.000673	.92999	555.5	.00212	.000411	.93271	549.1	.00150	.000290
23	.95065	574.8	.00335	.000648	.94261	566.1	.00264	.000512	.93846	554.1	.00140	.000270
24	.95007	584.1	.00498	.000963	.94032	571.8	.00368	.000714	.93616	554.8	.00186	.000359
25	.94663	602.1	.00839	.001623	.93802	588.8	.00652	.001264	.93271	564.5	.00398	.000769
26	.94032	606.5	.00963	.001862	.93401	596.1	.00782	.001516	.93040	573.5	.00554	.001070
27	.94147	605.5	.00921	.001781	.93917	601.5	.00802	.001555	.93961	584.1	.00621	.001200
28	.91679	580.5	.00757	.001464	.91851	588.8	.00725	.001406	.92523	574.1	.00632	.001221
29	.91851	563.8	.00468	.000905	.92138	571.1	.00513	.000995	.93271	571.1	.00489	.000945
30	.91106	544.8	.00267	.000516	.91392	552.5	.00323	.000626	.92465	560.8	.00343	.000663
31	.92196	542.5	.00124	.000240	.92425	547.1	.00196	.000380	.93155	550.5	.00185	.000357
32	.91507	543.1	.00192	.000371	.92024	553.5	.00214	.000415	.92120	544.8	.00170	.000328
33	.92942	566.1	.00377	.000729	.93515	563.8	.00267	.000518	.93501	553.1	.00185	.000357
34	.95409	578.5	.00275	.000532	.94950	570.1	.00219	.000425	.94881	564.5	.00219	.000423
35	.95352	584.5	.00453	.000876	.94491	573.5	.00338	.000655	.94363	560.1	.00197	.000381
36	.94376	598.5	.00797	.001541	.93515	586.8	.00647	.001255	.93213	563.1	.00389	.000752
37	.92655	585.1	.00718	.001389	.92884	588.8	.00715	.001387	.93673	581.8	.00618	.001194
38	.92081	541.5	.00131	.000253	.92138	550.5	.00150	.000291	.93040	548.1	.00171	.000330
39	.92999	548.1	.00145	.000280	.93688	567.8	.00272	.000527	.94478	564.1	.00234	.000452
40	.93573	571.1	.00364	.000704	.94606	577.5	.00341	.000661	.95168	571.8	.00293	.000566
41	.94606	596.5	.00724	.001400	.93802	586.1	.00592	.001148	.93961	565.8	.00361	.000697
42	.93802	601.1	.00922	.001783	.93171	593.1	.00739	.001433	.93213	572.8	.00515	.000995
43	.93286	597.8	.00907	.001754	.93114	595.5	.00792	.001536	.93443	581.5	.00624	.001206
44	.91851	579.5	.00696	.001346	.92081	583.1	.00690	.001338	.92868	576.1	.00606	.001171
45	.92024	563.8	.00450	.000870	.92310	571.1	.00493	.000956	.93443	571.5	.00478	.000923
46	.91737	547.5	.00231	.000447	.91966	553.8	.00293	.000568	.93098	557.5	.00304	.000587
47	.92942	546.5	.00123	.000238	.93114	549.5	.00138	.000268	.94018	552.1	.00136	.000263
50	.96786	656.5	.02103	.004067	.95925	646.5	.01812	.003514	.95398	622.1	.01575	.003043
51	.98450	680.1	.02755	.005328	.98163	677.1	.02591	.005024	.98102	659.8	.01984	.003833
52	.97934	674.1	.02524	.004881	.98163	677.8	.02602	.005046	.98677	667.5	.02124	.004103
53	.95352	641.5	.01772	.003427	.96040	652.5	.01887	.003659	.97066	648.1	.01782	.003443
54	.93171	599.8	.01043	.002017	.93630	613.8	.01304	.002529	.94766	612.8	.01367	.002641
55	.96442	659.1	.02069	.004002	.95581	648.5	.01788	.003467	.95168	625.1	.01350	.002608
56	.96729	666.1	.02286	.004421	.96270	660.5	.02081	.004035	.96204	644.1	.01705	.003294
57	.96499	657.8	.02081	.004025	.96729	661.5	.02052	.003979	.97181	650.5	.01829	.003534
58	.94147	626.1	.01528	.002955	.94663	636.8	.01694	.003285	.95629	637.8	.01585	.003062
59	.92483	589.5	.00962	.001861	.92827	602.5	.01141	.002213	.93903	600.8	.01220	.002357
60	.95524	626.8	.01289	.002493	.95180	610.1	.00878	.001703	.95226	584.5	.00525	.001014
61	.94548	629.5	.01654	.003199	.93975	615.1	.01179	.002286	.93788	586.5	.00746	.001441
62	.93229	595.5	.00741	.001433	.92655	580.1	.00595	.001154	.93673	586.8	.00758	.001464
63	.93286	595.5	.00813	.001572	.92540	587.1	.00709	.001375	.93616	595.1	.00999	.001930
64	.92712	591.8	.00800	.001547	.92196	587.5	.00752	.001458	.93731	604.1	.01206	.002330
65	.91679	575.8	.00625	.001209	.91163	575.1	.00666	.001292	.93155	597.8	.01096	.002117
66	.90991	557.5	.00416	.000805	.90302	558.8	.00490	.000950	.92580	579.1	.00703	.001358
67	.90933	541.8	.00218	.000422	.90073	543.1	.00301	.000584	.92120	559.8	.00450	.000869
68	.91909	540.5	.00103	.000199	.90819	540.1	.00205	.000398	.92695	557.5	.00351	.000678
69	.92138	551.8	.00197	.000381	.92540	564.5	.00360	.000698	.94018	579.8	.00576	.001113
70	.93114	568.8	.00386	.000747	.94319	580.1	.00453	.000878	.94996	578.8	.00450	.000869
71	.94893	621.1	.01264	.002445	.95180	606.1	.00804	.001559	.95456	582.8	.00467	.000902
72	.93688	621.1	.01542	.002982	.93171	606.5	.01110	.002153	.93155	578.8	.00671	.001296
73	.93917	606.5	.01132	.002189	.92483	580.1	.00669	.001297	.93213	586.1	.00900	.001739
74	.92942	600.5	.00860	.001663	.91851	581.1	.00695	.001348	.92580	589.1	.01036	.002001
75	.92253	586.5	.00753	.001456	.91737	581.8	.00677	.001313	.92753	596.1	.01142	.002206
76	.90474	566.8	.00616	.001191	.90532	570.1	.00634	.001229	.92178	592.5	.01210	.002338
77	.90130	550.1	.00408	.000789	.90360	557.5	.00465	.000902	.92523	583.1	.00870	.001681
78	.89155	530.5	.00200	.000387	.89269	537.8	.00298	.000578	.91890	563.5	.00576	.001113
79	.90130	530.1	.00105	.000203	.89958	535.5	.00191	.000370	.92925	564.1	.00469	.000906
80	.92024	551.8	.00224	.000433	.93056	567.8	.00363	.000704	.92925	569.5	.00510	.000985
81	.92425	563.8	.00374	.000723	.94204	577.1	.00415	.000805	.95053	576.8	.00394	.000761
82	.94319	617.8	.01273	.002462	.94663	602.1	.00789	.001530	.95053	578.5	.00452	.000873
83	.93975	617.5	.01343	.002597	.93343	602.1	.00978	.001897	.93443	588.5	.00587	.001134
84	.93802	635.5	.01751	.003386	.92540	582.1	.00693	.001344	.93213	586.1	.00954	.001843
85	.95065	629.8	.01587	.003069	.93688	592.5	.00696	.001350	.94306	600.1	.01088	.002102
86	.92712	600.8	.01202	.002325	.91507	581.1	.00713	.001383	.92465	595.8	.01345	.002598
87	.92597	602.8	.00730	.001412	.91450	575.1	.00618	.001198	.93040	597.8	.01274	.002461
88	.91622	559.8	.00429	.000830	.90130	555.8	.00469	.000909	.92178	581.5	.00939	.001814
89	.92483	548.8	.00195	.000377	.89441	539.1	.00301	.000584	.91890	571.8	.00629	.001215
90	.93917	551.5	.00091	.000176	.89556	532.1	.00179	.000347	.92235	558.5	.00459	.000887
91	.96729	575.1	.00179	.000346	.93802	570.8	.00338	.000655	.93558	571.1	.00472	.000912
92	.93515	579.5	.00495	.000957	.95696	594.1	.00514	.000997	.96376	585.8	.00421	.000813
93	.93343	635.1	.01941	.003754	.92310	583.8	.00743	.001441	.92925	594.8	.00997	.001926
94	.93745	631.8	.01899	.003673	.92540	587.1	.00744	.001443	.93213	593.5	.01136	.002195
95	.93171	621.5	.01699	.003286	.92253	586.8	.00762	.001478	.93213	609.8	.01355	.002618
96	.92024	597.8	.01195	.002311	.91335	576.8	.00691	.001340	.92753	605.8	.01318	.002546
97	.91278	570.1	.00691	.001336	.90646	562.1	.00550	.001067	.92350	585.1	.01009	.001949
98	.92483	563.8	.00385	.000745	.91048	552.5	.00379	.000735	.92580	572.5	.00697	.001347

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 0^\circ$; $T_t = 700^\circ$ R; p_t = 7,207.0 lb/sq ft				$\alpha' = 7.5^\circ$; $T_t = 707^\circ$ R; p_t = 7,215.0 lb/sq ft				$\alpha' = 15.0^\circ$; $T_t = 706^\circ$ R; p_t = 7,213.0 lb/sq ft			
4	.93098	588.5	.00863	.001666	.92634	572.8	.00716	.001388	.92253	573.8	.00668	.001296
5	.93501	599.8	.01036	.002000	.93267	589.1	.00974	.001888	.92942	594.5	.00986	.001913
6	.94018	603.1	.01042	.002011	.94187	598.8	.01072	.002078	.94147	611.5	.01204	.002336
7	.93501	595.5	.00962	.001857	.93957	597.8	.01090	.002113	.94376	617.8	.01368	.002654
8	.92810	583.8	.00830	.001602	.93669	591.1	.01000	.001939	.94319	616.5	.01363	.002645
9	.92350	552.5	.00262	.000506	.92173	544.8	.00182	.000353	.92253	549.5	.00194	.000376
10	.92293	559.5	.00391	.000755	.92058	547.8	.00250	.000485	.92024	548.5	.00249	.000483
11	.92350	569.8	.00519	.001002	.92001	556.8	.00417	.000809	.91909	556.8	.00361	.000700
12	.93443	584.8	.00643	.001241	.93267	575.1	.00593	.001150	.93114	579.1	.00567	.001100
13	.93443	587.1	.00683	.001318	.93669	583.8	.00707	.001371	.93802	594.5	.00751	.001457
14	.93215	582.5	.00635	.001222	.93842	585.8	.00719	.001394	.94376	602.8	.00849	.001647
15	.93098	573.5	.00527	.001017	.94015	581.1	.00637	.001235	.94835	603.5	.00848	.001645
16	.93155	566.1	.00420	.000811	.94130	574.8	.00539	.001045	.95122	599.1	.00788	.001529
17	.92638	559.5	.00323	.000624	.93727	573.1	.00489	.000948	.94720	601.5	.00762	.001479
18	.92810	551.5	.00187	.000361	.93382	553.8	.00211	.000409	.93688	564.5	.00283	.000549
19	.92523	562.1	.00339	.000654	.92576	548.8	.00223	.000432	.92597	550.1	.00200	.000388
20	.93213	585.5	.00653	.001261	.93497	585.1	.00682	.001322	.93401	591.5	.00711	.001380
21	.92868	562.5	.00370	.000714	.93957	571.8	.00468	.000907	.94835	592.5	.00641	.001244
22	.92983	553.8	.00212	.000409	.94015	568.8	.00355	.000688	.95122	599.5	.00625	.001213
23	.93155	555.1	.00213	.000411	.93727	556.8	.00225	.000436	.93401	561.8	.00282	.000547
24	.92983	554.5	.00202	.000390	.93554	560.1	.00246	.000477	.93343	557.1	.00212	.000411
25	.92408	555.5	.00303	.000585	.92403	546.8	.00203	.000394	.92540	548.1	.00196	.000380
26	.92293	568.5	.00469	.000905	.92058	560.5	.00370	.000717	.91794	557.5	.00316	.000613
27	.93271	583.8	.00599	.001156	.93094	573.5	.00552	.001070	.92655	573.1	.00494	.000959
28	.92178	580.5	.00664	.001282	.92346	577.1	.00693	.001344	.92138	583.1	.00688	.001335
29	.93386	583.5	.00590	.001139	.94130	588.1	.00698	.001353	.94434	601.8	.00784	.001521
30	.92753	571.1	.00490	.000946	.93785	580.8	.00610	.001183	.94491	598.5	.00708	.001374
31	.93386	565.1	.00353	.000681	.94533	574.8	.00455	.000882	.95294	593.5	.00587	.001139
32	.91545	546.8	.00225	.000434	.92634	554.5	.00299	.000580	.93458	573.5	.00478	.000928
33	.93213	553.8	.00192	.000371	.94015	569.5	.00340	.000659	.95007	600.5	.00662	.001285
34	.93846	562.1	.00248	.000479	.93900	558.5	.00185	.000359	.92999	555.5	.00232	.000450
35	.94766	571.5	.00258	.000498	.94245	565.1	.00279	.000541	.94032	558.8	.00198	.000384
36	.92293	554.5	.00301	.000581	.92231	545.1	.00192	.000372	.92310	547.8	.00201	.000390
37	.93443	589.1	.00674	.001301	.93785	586.5	.00696	.001349	.93573	592.1	.00676	.001312
38	.92925	562.1	.00350	.000676	.94072	571.8	.00451	.000874	.94778	588.5	.00548	.001063
39	.94133	561.1	.00200	.000386	.94648	563.8	.00243	.000471	.95409	579.5	.00370	.000718
40	.94708	566.8	.00205	.000396	.94993	580.5	.00357	.000692	.95466	608.1	.00617	.001197
41	.93443	559.1	.00276	.000533	.93727	555.5	.00181	.000351	.93056	553.1	.00168	.000326
42	.92178	566.5	.00447	.000863	.92231	559.5	.00337	.000653	.91622	554.1	.00277	.000537
43	.92810	581.8	.00613	.001183	.92864	572.5	.00543	.001053	.92253	570.5	.00471	.000914
44	.92523	583.1	.00666	.001286	.92921	580.5	.00678	.001315	.92655	584.5	.00661	.001283
45	.93558	583.8	.00586	.001131	.94302	588.5	.00676	.001311	.94606	599.5	.00705	.001368
46	.93098	571.1	.00457	.000882	.94130	580.5	.00571	.001107	.94663	594.8	.00601	.001166
47	.93501	563.5	.00320	.000618	.94533	573.1	.00415	.000805	.95180	586.8	.00455	.000883
50	.94363	619.1	.01388	.002679	.93727	603.8	.01259	.002441	.92942	603.8	.01173	.002276
51	.97411	660.8	.02055	.003967	.96892	655.5	.02326	.004510	.95983	662.5	.02436	.004727
52	.98619	674.1	.02311	.004461	.98561	676.8	.03154	.006115	.98049	686.5	.03556	.006900
53	.97354	664.5	.01994	.003849	.97985	669.1	.02799	.005427	.98221	687.1	.03416	.006628
54	.94938	628.5	.01511	.002917	.95914	647.8	.01923	.003728	.96557	666.8	.02474	.004801
55	.94133	615.8	.01360	.002625	.93612	600.5	.01178	.002284	.92942	600.8	.01102	.002138
56	.95341	647.5	.01555	.003002	.94935	630.8	.01898	.003680	.94204	634.1	.01869	.003627
57	.97124	658.1	.01950	.003764	.97122	660.1	.02430	.004712	.96844	672.5	.02776	.005387
58	.95801	644.5	.01836	.003544	.96489	659.5	.02271	.004403	.96729	668.1	.02852	.005534
59	.94018	616.5	.01417	.002735	.94820	649.1	.01694	.003284	.95524	649.5	.02285	.004434
60	.94708	580.5	.00430	.000830	.94590	570.1	.00348	.000675	.93229	564.1	.00298	.000578
61	.92005	574.8	.00606	.001170	.92058	547.5	.00243	.000471	.91966	546.1	.00133	.000258
62	.90797	549.1	.00354	.000683	.91425	540.5	.00193	.000374	.91737	539.5	.00125	.000243
63	.91028	560.8	.00489	.000944	.91368	552.1	.00393	.000762	.91106	545.1	.00244	.000473
64	.91545	573.5	.00632	.001220	.92231	577.1	.00733	.001421	.91278	562.5	.00440	.000854
65	.91603	577.1	.00692	.001336	.92921	603.5	.01158	.002245	.91679	577.5	.00623	.001209
66	.91718	574.1	.00639	.001234	.93267	609.8	.01250	.002424	.92597	588.1	.00726	.001409
67	.92063	568.5	.00547	.001056	.93612	589.8	.00864	.001675	.93458	592.1	.00787	.001527
68	.93098	574.8	.00537	.001037	.93900	574.5	.00564	.001094	.94376	603.5	.00925	.001795
69	.94306	596.1	.00741	.001430	.95338	606.5	.00972	.001885	.95524	631.5	.01422	.002759
70	.94363	592.8	.00654	.001262	.94935	582.8	.00427	.000828	.94261	635.8	.01757	.003409
71	.94938	578.1	.00363	.000701	.95223	570.1	.00301	.000584	.93458	566.1	.00305	.000592
72	.92120	570.8	.00542	.001046	.92864	555.5	.00266	.000516	.92655	547.5	.00125	.000243
73	.90395	546.1	.00343	.000662	.90792	540.5	.00273	.000529	.91966	540.5	.00131	.000254
74	.90280	555.1	.00478	.000923	.90447	554.1	.00511	.000991	.90761	544.1	.00275	.000534
75	.90970	568.5	.00600	.001158	.91425	579.1	.00860	.001667	.91106	563.5	.00508	.000986
76	.90797	571.8	.00662	.001278	.91598	598.5	.01272	.002466	.91565	587.8	.00875	.001698
77	.91660	573.1	.00605	.001168	.92979	610.8	.01522	.002951	.93343	614.8	.01301	.002524
78	.91315	566.8	.00505	.000975	.92634	606.8	.01434	.002780	.93229	624.1	.01604	.003112
79	.92638	570.1	.00529	.001021	.93497	607.8	.01362	.002641	.93917	631.1	.01802	.003497
80	.92753	587.1	.00767	.001481	.94015	598.5	.00970	.001881	.93860	620.8	.01413	.002742
81	.94191	590.5	.00642	.001239	.94015	605.8	.01147	.002224	.93745	634.1	.01980	.003842
82	.94421	573.5	.00354	.000683	.94763	566.8	.00278	.000539	.93229	565.8	.00307	.000596
83	.92350	570.5	.00514	.000992	.93209	559.8	.00286	.000555	.93343	554.8	.00170	.000330
84	.90280	545.8	.00353	.000681	.92864	550.5	.00214	.000415	.91565	543.1	.00161	.000312
85	.92293	572.5	.00477	.000921	.93439	569.1	.00465	.000902	.92425	556.8	.00330	.000640
86	.90625	566.8	.00614	.001185	.91253	576.8	.00823	.001596	.90187	564.5	.00623	.001209
87	.91775	577.1	.00672	.001297	.92519	602.5	.01240	.002404	.91794	599.8	.01079	.002094
88	.91545	572.1	.00622	.001201	.92749	608.8	.01412	.002738	.92310	615.8	.01515	.002940
89	.91315	568.8	.00540	.001042	.92634	606.8	.01441	.002794	.92540	621.8	.01766	.003427
90	.91775	564.8	.00493	.000952	.92634	602.1	.01348	.002614	.92655	621.1	.01708	.003314
91	.93443	587.1	.00693	.001338	.94360	598.1	.00893	.001731	.94089	620.5	.01318	.002557
92	.94708	595.8	.00665	.001284	.94648	617.5	.01331	.002581	.94491	638.8	.01900	.003687
93	.90165	545.8	.00382	.000737	.94302	564.8	.00327	.000634	.92024	554.8	.00263	.000510
94	.90970	558.8	.00484	.000934	.93497	571.1	.00522	.001012	.91851	554.8	.00386	.000749
95	.91315	571.1	.00628	.001212	.92519	585.1	.00870	.001687	.90876	568.1	.00660	.001281
96	.91258	574.5	.00687	.001326	.92288	601.1	.01266	.002455	.90991	591.1	.01069	.002074
97	.91373	572.1	.00659	.001272	.92634	610.8	.01502	.002912	.91737	611.8	.01511	.002932
98	.91775	568.8	.00587	.001133	.93152	612.8	.01493	.002895	.92597	621.8	.01753	.003402

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 708° R; p_t = 7,219.0 lb/sq ft				α' = 30.0°; T_t = 711° R; p_t = 7,205.0 lb/sq ft				α' = 37.5°; T_t = 714° R; p_t = 7,204.0 lb/sq ft			
4	.92381	567.1	.00527	.003023	.92403	571.1	.00428	.000835	.94456	565.8	.00264	.000516
5	.92954	589.5	.00871	.001690	.92803	588.1	.00756	.001474	.94056	582.5	.00604	.001180
6	.94386	611.8	.01161	.002253	.94288	614.8	.01069	.002085	.95313	608.8	.00947	.001850
7	.94901	625.8	.01472	.002857	.95144	635.1	.01456	.002840	.96228	633.1	.01462	.002856
8	.95188	629.8	.01580	.003066	.95773	644.8	.01655	.003228	.97199	646.8	.01738	.003395
9	.93011	555.5	.00188	.000365	.93659	563.1	.00166	.000324	.96685	574.1	.00113	.000221
10	.92553	552.1	.00174	.000338	.93317	554.8	.00130	.000254	.96399	576.1	.00089	.000174
11	.92152	553.8	.00290	.000563	.92631	560.5	.00223	.000435	.95313	566.8	.00173	.000338
12	.93068	575.8	.00526	.001021	.93202	576.8	.00463	.000903	.94799	577.5	.00392	.000766
13	.93870	595.5	.00763	.001481	.93945	599.1	.00718	.001400	.94970	597.1	.00680	.001328
14	.94787	610.1	.00950	.001844	.95030	618.8	.00942	.001837	.96170	618.8	.00996	.001946
15	.95646	616.5	.01015	.001970	.96173	631.1	.01115	.002175	.97542	634.8	.01204	.002352
16	.96104	615.8	.01013	.001966	.96858	635.1	.01198	.002336	.98342	640.5	.01239	.002420
17	.95761	623.1	.01090	.002115	.96572	644.1	.01279	.002494	.97885	650.1	.01513	.002956
18	.93756	567.5	.00275	.000534	.94345	568.8	.00224	.000437	.97942	586.1	.00210	.000410
19	.93126	554.5	.00172	.000334	.94002	559.1	.00131	.000255	.96628	573.8	.00116	.000227
20	.93355	590.1	.00691	.001341	.93431	593.1	.00635	.001238	.94342	590.1	.00596	.001164
21	.95646	605.1	.00800	.001553	.96287	621.8	.00948	.001849	.97656	627.5	.00981	.001916
22	.96104	621.5	.00923	.001791	.96572	638.8	.01066	.002079	.97828	644.5	.01295	.002530
23	.93813	564.5	.00232	.000450	.94459	569.5	.00193	.000376	.97828	588.5	.00214	.000418
24	.93813	557.1	.00176	.000342	.94630	561.8	.00143	.000279	.97542	580.5	.00159	.000311
25	.93068	553.8	.00165	.000320	.94002	557.1	.00108	.000211	.96228	570.5	.00126	.000246
26	.91923	549.8	.00254	.000493	.92688	554.8	.00206	.000402	.94856	564.5	.00168	.000328
27	.92438	567.1	.00425	.000825	.92745	568.8	.00364	.000710	.94284	571.5	.00349	.000682
28	.92037	579.1	.00627	.001217	.92060	580.8	.00581	.001133	.93141	580.5	.00574	.001121
29	.94730	603.1	.00762	.001479	.94973	609.1	.00719	.001402	.95999	610.5	.00764	.001492
30	.95131	603.8	.00736	.001428	.95487	614.8	.00786	.001533	.96742	619.5	.00880	.001719
31	.96162	602.5	.00653	.001267	.96744	618.8	.00771	.001504	.97828	624.8	.00851	.001662
32	.94329	592.5	.00694	.001347	.94745	609.5	.00855	.001667	.95885	614.1	.00924	.001805
33	.95589	617.5	.00938	.001820	.95887	638.5	.00994	.001939	.97256	639.5	.01213	.002370
34	.93298	558.1	.00202	.000392	.94630	566.1	.00155	.000302	.97656	583.1	.00183	.000357
35	.93584	554.1	.00144	.000279					.98228	583.5	.00144	.000281
36	.92496	546.8	.00165	.000320	.94116	557.1	.00126	.000246	.96170	569.8	.00125	.000244
37	.93469	587.8	.00656	.001273	.93545	590.1	.00579	.001129	.94627	589.8	.00544	.001063
38	.95589	595.5	.00593	.001151	.96230	611.8	.00689	.001344	.97256	617.8	.00769	.001502
39	.96104	597.5	.00568	.001102	.96401	612.8	.00698	.001361	.97599	620.8	.00832	.001625
40	.95646	615.8	.00866	.001681	.95944	631.8	.00963	.001878	.97485	642.1	.01188	.002321
41	.94443	555.5	.00109	.000212	.95601	564.5	.00087	.000170	.97085	575.1	.00137	.000268
42	.92553	557.1	.00200	.000388	.93602	560.8	.00165	.000322	.95427	571.1	.00187	.000365
43	.92553	564.8	.00379	.000736	.93145	568.8	.00320	.000624	.94399	571.5	.00320	.000625
44	.92839	579.5	.00559	.001085	.93431	584.1	.00461	.000899	.94227	589.8	.00488	.000953
45	.95073	598.1	.00627	.001217	.95887	608.5	.00563	.001098	.96570	609.5	.00625	.001221
46	.95417	597.1	.00577	.001120	.96230	614.1	.00611	.001192	.97028	619.1	.00742	.001449
47	.95932	592.5	.00470	.000912	.96572	612.8	.00604	.001178	.97485	625.5	.00904	.001766
50	.92667	592.8	.00960	.001863	.92346	586.1	.00761	.001484	.93599	576.8	.00562	.001098
51	.95417	647.1	.02085	.004047	.94745	639.8	.01478	.002883	.95027	623.5	.01351	.002639
52	.97880	688.5	.03344	.006490	.97258	676.5	.02361	.004605	.97485	665.1	.02198	.004294
53	.98510	694.1	.03598	.006983	.98514	696.8	.02460	.004798	.99142	686.1	.02313	.004518
54	.97365	671.8	.02591	.005029	.97772	681.1	.02442	.004763	.98914	681.5	.02483	.004850
55	.92610	590.1	.00912	.001770	.92403	584.5	.00734	.001432	.93770	576.1	.00540	.001055
56	.93756	631.8	.01528	.002966	.93374	619.5	.01227	.002393	.94056	606.1	.01074	.002098
57	.96620	665.5	.02651	.005145	.96287	663.8	.01981	.003864	.96628	653.5	.01728	.003376
58	.97021	672.5	.03037	.005894	.97144	677.1	.02230	.004349	.98056	673.5	.02370	.004630
59	.96276	659.8	.02437	.004730	.96744	674.8	.02236	.004361	.98056	677.5	.02166	.004231
60	.94099	561.1	.00180	.000349	.92745	557.5	.00178	.000347	.97428	577.1	.00128	.000250
61	.96333	565.5	.00076	.000148	.93488	557.1	.00115	.000224	.96913	573.1	.00121	.000236
62	.94042	550.8	.00100	.000194	.93831	553.5	.00079	.000154	.96342	571.8	.00135	.000264
63	.92839	552.1	.00194	.000377	.92803	554.5	.00204	.000398	.95599	569.1	.00168	.000328
64	.92324	565.1	.00417	.000809	.91889	569.8	.00473	.000922	.93884	572.1	.00394	.000770
65	.92610	587.8	.00787	.001527	.91889	599.8	.00998	.001946	.93370	593.5	.00810	.001582
66	.93469	616.8	.01358	.002636	.93145	630.8	.01581	.003083	.94513	631.8	.01292	.002524
67	.94386	641.5	.01848	.003587	.94345	650.5	.02004	.003908	.95999	648.1	.01854	.003622
68	.94959	645.1	.02101	.004078	.95030	660.5	.02127	.004148	.96685	656.1	.02053	.004010
69	.95131	645.5	.02166	.004204	.95658	662.1	.02393	.004667	.97142	664.5	.02451	.004788
70	.94787	652.1	.02773	.005382	.95830	674.1	.02882	.005621	.97371	675.8	.03068	.005993
71	.94672	562.1	.00156	.000303	.92231	561.5	.00234	.000456	.97085	578.1	.00168	.000328
72	.94672	556.8	.00093	.000180	.93088	553.5	.00123	.000240	.96570	571.5	.00117	.000229
73	.92266	545.8	.00111	.000215	.92688	552.1	.00121	.000236	.95542	571.8	.00152	.000297
74	.90491	540.1	.00217	.000421	.91260	543.8	.00184	.000359	.94170	565.8	.00181	.000354
75	.90090	556.1	.00513	.000996	.90461	559.5	.00411	.000802	.92913	563.8	.00292	.000570
76	.90433	597.8	.00964	.001871	.90346	581.5	.00827	.001613	.91655	575.8	.00701	.001369
77	.92381	616.8	.01584	.003074	.92688	619.5	.01265	.002467	.93884	613.1	.01210	.002364
78	.92725	628.1	.02036	.003951	.93374	637.8	.01892	.003690	.94913	637.5	.01795	.003506
79	.93928	636.8	.02111	.004097	.94745	650.5	.02088	.004072	.96285	651.8	.02042	.003989
80	.93985	636.8	.02092	.004060	.94973	655.5	.02418	.004716	.96570	658.5	.02338	.004567
81	.95016	651.1	.02580	.005007	.96001	673.8	.02725	.005315	.97428	677.5	.03188	.006228
82	.94271	564.1	.00169	.000328	.94231	569.5	.00225	.000439	.97599	584.1	.00200	.000391
83	.93527	551.5	.00086	.000167	.94459	563.5	.00148	.000289	.97256	579.8	.00131	.000256
84	.91407	542.1	.00111	.000215	.93088	552.8	.00118	.000230	.95027	565.1	.00124	.000242
85	.92266	553.1	.00234	.000454	.94002	563.1	.00184	.000359	.96170	573.8	.00169	.000330
86	.89460	549.5	.00470	.000912	.90518	552.5	.00371	.000724	.92684	566.5	.00305	.000596
87	.91006	584.5	.00926	.001797	.91260	582.1	.00741	.001445	.92627	577.1	.00627	.001225
88	.91923	608.8	.01437	.002789	.92174	612.1	.01208	.002356	.93427	606.1	.01082	.002114
89	.92553	623.8	.01872	.003633	.93317	633.8	.01636	.003191	.94627	631.8	.01644	.003212
90	.93068	627.8	.01939	.003763	.93888	641.5	.01842	.003592	.95427	650.5	.01782	.003481
91	.94787	635.8	.01772	.003439	.95944	659.1	.01784	.003479	.97428	657.1	.01904	.003719
92	.95474	654.8	.02613	.005071	.96458	677.8	.02794	.005449	.97771	682.5	.03439	.006718
93	.92782	558.5	.00194	.000377	.94002	563.5	.00211	.000412	.95370	570.8	.00215	.000420
94	.92610	552.8	.00259	.000503	.93888	563.5	.00218	.000425	.95485	570.5	.00210	.000410
95	.91006	556.5	.00458	.000889	.92174	567.1	.00386	.000753	.94113	566.1	.00316	.000617
96	.90605	584.1	.00808	.001568	.91146	583.5	.00671	.001309	.92513	573.8	.00586	.001145
97	.91579	604.5	.01347	.002614	.92003	607.1	.01111	.002167	.93141	601.5	.01000	.001953
98	.92839	622.5	.01724	.003346	.93545	651.1	.01552	.003027	.94799	629.1	.01444	.002821

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 4 - Continued

(b) M = 3.51; $p_{t,nom}$ = 7,200 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	$\alpha' = 45.0^o$; $T_t = 714^o$ R; p_t = 7,203.0 lb/sq ft			
4	.95427	570.5	.00182	.000356
5	.94227	570.8	.00373	.000729
6	.95256	591.1	.00584	.001141
7	.96285	614.1	.00898	.001754
8	.97485	630.8	.01085	.002120
9	.97999	585.1	.00141	.000275
10	.97313	574.1	.00114	.000223
11	.96170	570.8	.00152	.000297
12	.94742	570.1	.00295	.000576
13	.94399	583.8	.00511	.000998
14	.95370	605.1	.00786	.001535
15	.97085	627.5	.00982	.001918
16	.98171	638.1	.01111	.002170
17	.98056	643.8	.01220	.002383
18	.98799	591.5	.00198	.000387
19	.97256	578.5	.00182	.000356
20	.93313	579.8	.00596	.001164
21	.97371	639.8	.01234	.002411
22	.98514	656.1	.01418	.002770
23	.98514	591.5	.00221	.000432
24	.97942	587.8	.00235	.000459
25	.97256	580.8	.00211	.000412
26	.96170	584.5	.00187	.000365
27	.95085	576.8	.00374	.000731
28	.93141	580.5	.00608	.001188
29	.95656	613.1	.00912	.001782
30	.96342	630.1	.01141	.002229
31	.97771	643.8	.01273	.002487
32	.96513	640.5	.01432	.002797
33	.98456	661.1	.01509	.002948
34	.98114	583.8	.00172	.000336
35	.98628	587.1	.00183	.000357
36	.97199	578.1	.00174	.000340
37	.94056	586.1	.00620	.001211
38	.97428	641.8	.01264	.002469
39	.98514	653.5	.01401	.002737
40	.99028	669.1	.01586	.003098
41	.97942	580.5	.00155	.000303
42	.96456	573.8	.00194	.000379
43	.94856	572.1	.00335	.000654
44	.93770	582.1	.00587	.001147
45	.95942	613.5	.00905	.001768
46	.96799	632.5	.01116	.002180
47	.97656	641.8	.01159	.002264
50	.94227	565.8	.00306	.000598
51	.94513	591.8	.00674	.001317
52	.96570	626.1	.00904	.001766
53	.98799	652.8	.01124	.002196
54	.99314	656.8	.01132	.002211
55	.94342	576.5	.00307	.000600
56	.93770	580.1	.00562	.001098
57	.96113	618.8	.00907	.001772
58	.97999	642.5	.01058	.002067
59	.98628	648.1	.01127	.002202
60	.97942	577.5	.00105	.000205
61	.96970	572.1	.00106	.000207
62	.96913	574.5	.00132	.000258
63	.96399	572.8	.00143	.000279
64	.94742	570.5	.00294	.000574
65	.93656	582.1	.00572	.001117
66	.94742	608.8	.00944	.001844
67	.96628	636.8	.01288	.002516
68	.97713	647.8	.01395	.002725
69	.98742	659.5	.01622	.003169
70	.99199	676.8	.02144	.004188
71	.99085	585.1	.00111	.000217
72	.97485	575.1	.00107	.000209
73	.95999	570.5	.00133	.000260
74	.94913	565.1	.00148	.000289
75	.93941	564.8	.00234	.000457
76	.92627	570.5	.00528	.001031
77	.94799	605.5	.00913	.001784
78	.96170	632.5	.01305	.002549
79	.97885	649.8	.01504	.002938
80	.98399	660.8	.01811	.003538
81	.99085	680.8	.02382	.004653
82	.98514	587.5	.00186	.000363
83	.97656	579.8	.00145	.000283
84	.95427	564.5	.00141	.000275
85	.96742	574.1	.00161	.000315
86	.93599	564.1	.00257	.000502
87	.93656	576.5	.00534	.001043
88	.94513	602.8	.00877	.001713
89	.96056	630.1	.01274	.002489
90	.97085	651.5	.01375	.002686
91	.99314	663.1	.01671	.003264
92	.99771	690.8	.02666	.005208
93	.95142	564.5	.00157	.000307
94	.95485	566.1	.00155	.000303
95	.94684	564.8	.00226	.000441
96	.93599	572.5	.00463	.000904
97	.94342	597.5	.00804	.001571
98	.96170	635.1	.01140	.002227

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -45.0°; T_t = 676° R; p_t = 8,655.0 lb/sq ft				α' = -37.5°; T_t = 682° R; p_t = 8,649.0 lb/sq ft				α' = -30.0°; T_t = 680° R; p_t = 8,653.0 lb/sq ft			
4	.99548	626.1	.01487	.006372								
5	.97742	605.5	.01122	.004808								
6	.97347	597.5	.00673	.002884					.94565	609.1	.03425	.014728
7	.95879	576.8	.00399	.001710	.93822	577.1	.02789	.012011	.92323	573.5	.01164	.005005
8	.95879	571.5	.00196	.000840	.92755	561.5	.00866	.003729	.90979	556.1	.00569	.002447
9	.99322	618.5	.01436	.006153					.96189	615.8	.02259	.009714
10	.98758	619.8	.01367	.005857					.96021	620.5	.04276	.018388
11	.97573	607.8	.01413	.006054					.95237	621.5	.11157	.047977
12	.96782	597.1	.00968	.004148					.94901	612.1	.03897	.016758
13	.95541	581.1	.00621	.002661					.93220	580.1	.01403	.006033
14	.95484	572.8	.00327	.001401	.94047	574.1	.01540	.006632	.92099	566.1	.00697	.002997
15	.97234	577.8	.00164	.000703	.94721	567.2	.00555	.002390	.91931	558.2	.00336	.001445
16	.98532	618.8	.02410	.010326								
17	.99322	588.5	.00071	.000304	.95002	565.8	.00202	.000870	.91987	552.5	.00157	.000675
18	.98306	618.8	.02296	.009838					.96245	605.8	.01089	.004683
19	.97629	614.5	.02145	.009191					.95685	599.8	.03045	.013094
20	.94130	575.1	.00667	.002858					.92660	577.1	.01420	.006106
21	.97968	580.5	.00092	.000394	.95788	569.8	.00197	.000848	.91539	548.1	.00139	.000598
22	1.01353	599.1	.00050	.000214	.97192	579.1	.00203	.000874	.92716	560.1	.00251	.001079
23	.97798	621.1	.02238	.009589					.95741	586.8	.00713	.003066
24	.97968	618.1	.02586	.011081					.95629	591.1	.00971	.004175
25	.97629	621.5	.02471	.010588					.94901	611.1	.03373	.014505
26	.96444	608.1	.02204	.009444					.94004	608.8	.06097	.026218
27	.95992	597.8	.01420	.006084					.93836	604.5	.03509	.015089
28	.93509	575.8	.00726	.003111					.91203	571.5	.01458	.006270
29	.95202	578.5	.00344	.001474	.94384	573.8	.01173	.005051	.91651	559.8	.00601	.002584
30	.96387	573.1	.00159	.000681	.95114	569.8	.00420	.001809	.91147	549.1	.00295	.001269
31	.98701	584.5	.00095	.000407	.97079	576.1	.00161	.000693	.92211	551.1	.00141	.000606
32	.99887	589.5	.00046	.000197	.97304	576.5	.00119	.000512	.91427	546.1	.00095	.000409
33	1.02369	604.8	.00052	.000223	.99269	590.5	.00191	.000823	.92716	559.5	.00237	.001019
34	.97968	621.5	.02134	.009144	.97585	598.5	.02017	.008686	.95685	583.8	.00557	.002395
35	.98588	626.1	.02242	.009607					.95741	590.1	.00899	.003866
36	.97855	618.8	.02978	.012760					.94396	606.1	.02694	.011585
37	.94920	580.8	.00739	.003166					.91987	571.8	.01305	.005612
38	.98645	584.1	.00093	.000398	.97079	575.8	.00159	.000685	.92211	550.8	.00139	.000598
39	1.02199	603.8	.00044	.000189	.99943	593.8	.00096	.000413	.94004	562.1	.00095	.000409
40	1.03948	614.5	.00046	.000197	1.01739	604.8	.00168	.000723	.94060	567.1	.00230	.000989
41	.98419	621.8	.02795	.011976					.94565	592.1	.01812	.007792
42	.97177	613.5	.02548	.010918					.93556	602.1	.03299	.014186
43	.96049	601.8	.01266	.005425					.92828	583.8	.02462	.010587
44	.94581	582.1	.00717	.003072					.91539	571.1	.01187	.005104
45	.95936	578.5	.00321	.001375	.94552	573.8	.01003	.004319	.92043	561.1	.00553	.002378
46	.97629	581.5	.00154	.000660	.95900	572.5	.00328	.001413	.92379	555.5	.00223	.000959
47	.99266	587.5	.00072	.000309	.97585	579.8	.00127	.000547	.93668	558.8	.00118	.000507
50	1.00507	637.8	.02374	.010172								
51	1.00112	635.8	.01998	.008561								
52	.98137	612.8	.01430	.006127								
53	.96274	590.1	.00726	.003111								
54	.96105	578.5	.00365	.001564					.92828	579.8	.02016	.008669
55	.99943	630.5	.02417	.010356								
56	.98927	625.8	.01726	.007396								
57	.97573	607.1	.01266	.005425								
58	.95992	586.5	.00704	.003017								
59	.95992	578.8	.00340	.001457	.93598	577.8	.03880	.016709	.92323	573.8	.01625	.006988
60	.98701	622.5	.02627	.011256								
61	.98419	621.5	.02895	.012405					.95293	612.1	.03005	.012922
62	.97968	621.5	.03795	.016261					.93500	602.1	.03289	.014143
63	.97403	619.8	.02873	.012310					.93332	601.1	.03343	.014376
64	.95936	597.5	.01463	.006269					.92604	592.5	.02149	.009241
65	.94525	577.1	.00704	.003017					.91427	567.8	.00971	.004175
66	.94976	570.1	.00332	.001423	.93542	566.5	.00889	.003828	.91315	557.5	.00490	.002107
67	.97177	579.1	.00130	.000557	.95563	571.5	.00288	.001240	.92604	555.1	.00199	.000856
68	.98927	585.8	.00067	.000287	.97472	578.5	.00126	.000543	.94340	563.1	.00077	.000331
69	1.03610	612.5	.00042	.000180	1.02132	605.8	.00090	.000388	.97870	584.1	.00072	.000310
70	1.04005	615.1	.00048	.000206	1.01290	602.5	.00129	.000556	.96358	581.1	.00155	.000667
71	.99209	630.1	.02289	.009808								
72	.98532	626.1	.02391	.010245								
73	.97911	621.1	.03983	.017067					.93836	606.8	.04945	.021264
74	.96557	609.1	.02655	.011376					.92828	597.1	.03050	.013116
75	.95258	593.1	.01509	.006466					.92155	588.1	.01626	.006992
76	.93452	570.1	.00701	.003004					.90586	561.8	.00932	.004008
77	.94807	568.5	.00327	.001401	.93261	567.1	.01243	.005353	.91203	554.1	.00426	.001832
78	.95992	571.1	.00146	.000626	.94384	562.8	.00370	.001593	.91539	548.5	.00152	.000654
79	.97685	578.8	.00080	.000343	.96462	573.1	.00160	.000689	.93500	557.1	.00068	.000292
80	1.01353	599.8	.00074	.000317	1.00897	598.5	.00091	.000392	.99159	590.1	.00040	.000172
81	1.01297	601.5	.00094	.000403	1.00673	599.1	.00102	.000439	.95349	576.1	.00254	.001092
82	.99096	629.1	.02290	.009812								
83	.99096	623.5	.02443	.010468								
84	.97460	583.5	.00086	.000368	.95451	566.5	.00233	.001003	.94228	552.5	.00132	.000568
85	.97968	617.8	.02744	.011758								
86	.94468	588.1	.01404	.006016					.92716	588.1	.07125	.030639
87	.94355	577.5	.00647	.002772					.92491	586.5	.01316	.005659
88	.94412	565.8	.00299	.001281	.93429	567.5	.01126	.004849	.91651	558.8	.00579	.002490
89	.95823	571.8	.00148	.000634	.95282	569.1	.00393	.001692	.92323	554.5	.00219	.000942
90	.96782	574.1	.00101	.000433	.96630	576.1	.00207	.000891	.93388	557.8	.00087	.000374
91	1.00394	596.1	.00103	.000441	1.01010	600.5	.00168	.000723	.98431	586.5	.00048	.000206
92	.99717	601.1	.00345	.001478	.99213	603.8	.01158	.004987	.95293	575.8	.00273	.001174
93	.96952	615.8	.04479	.019192								
94	.96444	614.5	.03190	.013669								
95	.94920	589.8	.01469	.006294								
96	.93735	570.1	.00619	.002652					.91539	571.8	.01940	.008342
97	.94355	564.5	.00292	.001251	.93373	566.5	.01067	.004595	.91483	559.1	.00678	.002916
98	.96218	571.8	.00156	.000668	.95732	572.1	.00400	.001723	.93108	561.2	.00295	.001269

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -22.5°; T_t = 679° R; p_t = 8,654.0 lb/sq ft				α' = -15.0°; T_t = 677° R; p_t = 8,656.0 lb/sq ft				α' = -7.5°; T_t = 662° R; p_t = 8,640.0 lb/sq ft			
4	.95469	607.5	.01864	.008000	.94533	595.8	.01091	.004676	.95889	583.5	.00600	.002541
5	.94630	600.8	.01726	.007407	.94143	594.1	.01119	.004796	.95832	585.8	.00673	.002850
6	.94518	601.8	.01167	.005008	.94421	591.5	.00915	.003921	.96517	596.5	.00612	.002592
7	.92504	571.8	.00719	.003086	.92692	574.1	.00658	.002820	.95033	575.5	.00514	.002177
8	.91106	562.1	.00451	.001936	.91354	566.5	.00424	.001817	.93777	567.1	.00398	.001685
9	.95077	587.5	.00706	.003030	.93864	574.5	.00429	.001839	.95090	566.1	.00223	.000944
10	.94853	592.1	.00939	.004030	.93752	581.8	.00527	.002259	.94919	569.5	.00291	.001232
11	.94350	592.8	.01112	.004772	.93362	580.5	.00648	.002777	.94633	568.8	.00370	.001567
12	.94406	591.8	.01020	.004377	.93864	584.5	.00673	.002884	.95547	580.5	.00425	.001800
13	.93007	577.5	.00766	.003287	.92915	575.8	.00576	.002468	.95033	573.1	.00416	.001762
14	.92001	563.8	.00481	.002064	.92190	565.8	.00404	.001731	.94576	570.5	.00348	.001474
15	.91833	555.5	.00266	.001142	.92079	558.8	.00246	.001054	.94519	562.8	.00251	.001063
16	.91945	586.8	.01648	.007073	.92079	565.8	.00439	.001881	.94462	560.8	.00166	.000703
17	.91833	550.8	.00134	.000575	.91967	552.1	.00130	.000557	.94177	556.5	.00130	.000551
18	.95245	581.1	.00404	.001734	.94031	569.5	.00216	.000926	.95147	560.5	.00123	.000521
19	.95735	599.5	.01129	.004845	.93975	589.5	.00354	.001517	.95090	571.8	.00274	.001160
20	.92560	575.5	.00758	.003253	.92581	573.8	.00565	.002421	.94748	571.5	.00408	.001728
21	.91385	546.8	.00106	.000455	.91521	549.1	.00135	.000579	.93834	553.8	.00145	.000614
22	.92896	560.8	.00189	.000811	.92581	554.8	.00080	.000343	.94519	554.5	.00086	.000364
23	.94853	576.5	.00336	.001442	.93696	565.1	.00176	.000754	.94862	556.5	.00087	.000368
24	.94741	581.8	.00510	.002189	.93641	569.8	.00274	.001174	.94805	560.1	.00130	.000551
25	.94238	589.1	.00957	.004107	.93362	577.1	.00534	.002289	.94576	564.5	.00276	.001169
26	.93567	589.1	.01157	.004965	.92915	584.5	.00598	.002563	.94291	567.5	.00383	.001622
27	.93679	588.8	.01073	.004605	.93417	583.5	.00703	.003013	.95261	576.1	.00431	.001825
28	.91329	571.5	.00782	.003356	.91577	570.8	.00570	.002443	.93720	574.8	.00423	.001791
29	.91721	560.8	.00431	.001850	.92023	563.5	.00380	.001629	.94576	569.8	.00317	.001342
30	.91106	549.8	.00232	.000996	.91354	552.5	.00196	.000840	.93834	561.5	.00230	.000974
31	.92168	551.1	.00105	.000451	.92246	553.8	.00098	.000420	.94519	556.8	.00124	.000525
32	.91441	549.8	.00105	.000451	.91186	545.8	.00084	.000360	.92978	545.5	.00086	.000364
33	.93287	564.8	.00247	.001060	.92915	559.8	.00118	.000506	.94348	552.8	.00077	.000326
34	.94909	574.8	.00260	.001116	.94031	565.5	.00102	.000437	.95604	560.1	.00076	.000322
35	.94797	581.1	.00348	.001493	.93808	570.1	.00255	.001093	.95204	560.8	.00123	.000521
36	.93679	584.8	.00910	.003905	.92971	574.5	.00536	.002297	.94405	563.5	.00276	.001169
37	.92168	572.5	.00742	.003184	.92246	572.5	.00577	.002473	.94633	572.1	.00427	.001808
38	.92057	550.5	.00105	.000451	.92023	551.1	.00105	.000450	.94177	554.1	.00129	.000546
39	.93958	561.1	.00083	.000356	.93696	560.1	.00080	.000343	.95033	556.5	.00074	.000313
40	.94350	570.8	.00212	.000910	.94756	569.1	.00100	.000429	.95775	561.1	.00075	.000318
41	.93958	584.1	.00775	.003326	.93417	575.5	.00455	.001950	.95376	567.8	.00249	.001054
42	.93119	583.8	.01007	.004322	.92581	576.1	.00635	.002721	.94462	568.1	.00360	.001525
43	.92672	580.8	.00987	.004236	.92525	577.1	.00669	.002867	.94633	572.8	.00446	.001889
44	.91609	568.1	.00716	.003073	.91632	568.1	.00545	.002336	.94005	574.1	.00445	.001885
45	.92112	562.5	.00396	.001699	.92246	567.1	.00356	.001526	.94805	571.1	.00317	.001342
46	.92168	555.1	.00207	.000888	.92190	557.1	.00213	.000913	.94576	565.1	.00218	.000923
47	.93287	557.5	.00125	.000536	.93139	558.1	.00080	.000343	.95376	561.1	.00122	.000517
50	.96643	643.1	.07795	.033453	.95760	616.8	.02107	.009030	.97031	608.5	.01016	.004303
51					.97880	657.5	.06945	.029763	.99600	631.5	.01660	.007030
52					.97768	656.5	.06971	.029875	1.00114	642.5	.01801	.007627
53	.95189	628.8	.03096	.013287	.95704	618.8	.02163	.009270	.98572	621.5	.01413	.005984
54	.93175	585.1	.01149	.004931	.93641	591.5	.01110	.004757	.96403	600.8	.00878	.003718
55	.96252	639.8	.06058	.025999	.95314	612.5	.01930	.008271	.96631	599.1	.00976	.004133
56	.96420	644.1	.25364	.108854	.96039	641.1	.03147	.013487	.97773	613.5	.01278	.005412
57	.96364	641.8	.10573	.045376	.96430	627.5	.05610	.015471	.98801	629.5	.01464	.006200
58	.94238	603.1	.02210	.009485	.94645	607.5	.01767	.007573	.97316	614.5	.01180	.004997
59	.92616	578.1	.00975	.004184	.93027	583.5	.00941	.004033	.95604	587.1	.00770	.003261
60	.95245	600.1	.01214	.005210	.95481	590.5	.00525	.002241	.97431	579.5	.00225	.000953
61	.94797	585.5	.00437	.001875	.94254	578.5	.00304	.001303	.95376	565.5	.00158	.000669
62	.92336	574.5	.00788	.003382	.91521	563.8	.00458	.001963	.93035	554.8	.00256	.001084
63	.92336	578.5	.00952	.004086	.91632	568.8	.00582	.002494	.93206	560.8	.00366	.001550
64	.91889	574.5	.00901	.003867	.91465	569.1	.00610	.002614	.93435	564.8	.00425	.001800
65	.90714	564.5	.00665	.002854	.90573	560.1	.00490	.002100	.92864	560.5	.00410	.001736
66	.90211	553.1	.00392	.001682	.90126	551.8	.00344	.001474	.92635	555.5	.00326	.001381
67	.90658	545.8	.00181	.000777	.90461	546.5	.00195	.000836	.92864	553.1	.00219	.000927
68	.91721	548.5	.00105	.000451	.91298	547.8	.00080	.000343	.93549	552.1	.00144	.000610
69	.95860	570.8	.00060	.000257	.95314	569.5	.00061	.000261	.97374	575.1	.00123	.000521
70	.94238	567.5	.00160	.000687	.94366	566.8	.00131	.000561	.97887	577.8	.00139	.000589
71	.94014	594.1	.01387	.005953	.95537	590.1	.00514	.002203	.97887	582.8	.00239	.001012
72	.93343	595.1	.01980	.008497	.92748	580.8	.00836	.003583	.94748	570.8	.00387	.001639
73	.93007	580.1	.00867	.003721	.91632	565.1	.00484	.002074	.93035	554.5	.00257	.001088
74	.92168	576.8	.00932	.004000	.91130	565.5	.00549	.002353	.92635	556.8	.00340	.001440
75	.91777	572.8	.00875	.003755	.91075	569.1	.00551	.002361	.92864	560.5	.00404	.001711
76	.90323	561.5	.00640	.002747	.89959	556.5	.00500	.002143	.92122	556.1	.00398	.001685
77	.90658	552.8	.00371	.001592	.90350	554.8	.00342	.001466	.92750	556.1	.00319	.001351
78	.90323	543.1	.00183	.000785	.89680	543.1	.00188	.000806	.92122	547.1	.00213	.000902
79	.91721	551.5	.00105	.000451	.90461	545.1	.00110	.000471	.92978	548.8	.00145	.000614
80	.98377	586.1	.00050	.000215	.93417	560.8	.00081	.000347	.95033	566.8	.00257	.001088
81	.94574	570.8	.00179	.000768	.94198	568.1	.00141	.000604	.97488	578.5	.00168	.000711
82	.92840	587.8	.01472	.006317	.94589	583.8	.00505	.002164	.97431	579.5	.00233	.000987
83	.93623	592.1	.01422	.006103	.92915	578.5	.00654	.002803	.94919	571.5	.00329	.001393
84	.93287	553.1	.00137	.000588	.91688	556.5	.00177	.000759	.93035	554.8	.00256	.001084
85	.94182	590.2	.01001	.004296	.92971	576.1	.00519	.002224	.94405	567.1	.00357	.001512
86	.91665	576.1	.00892	.003828	.90852	564.8	.00579	.002481	.92578	559.1	.00410	.001736
87	.91721	566.8	.00612	.002626	.91186	563.5	.00468	.002006	.93320	563.1	.00398	.001685
88	.90826	555.8	.00372	.001596	.90182	551.5	.00345	.001479	.92578	555.1	.00318	.001347
89	.91106	548.1	.00179	.000768	.89792	544.1	.00198	.000849	.92293	548.1	.00214	.000906
90	.92224	550.5	.00090	.000386	.90015	539.8	.00110	.000471	.92464	545.8	.00146	.000618
91	1.01510	604.5	.00049	.000210	.95202	574.1	.00121	.000519	.95946	570.1	.00217	.000919
92	.95133	577.5	.00235	.001009					.98972	586.1	.00180	.000762
93	.93175	592.8	.01602	.006875	.91465	564.1	.00483	.002070	.92978	554.1	.00260	.001101
94	.93455	588.1	.01079	.004631	.91800	568.8	.00512	.002194	.93320	560.1	.00327	.001385
95	.92784	579.8	.00847	.003635	.91577	568.8	.00570	.002443	.93320	563.5	.00409	.001732
96	.91665	567.1	.00586	.002515	.90796	561.1	.00482	.002066	.92864	560.5	.00419	.001774
97	.91329	557.1	.00367	.001575	.90350	552.8	.00329	.001410	.92521	555.1	.00328	.001389
98	.92392	557.2	.00201	.000863	.90907	551.5	.00190	.000814	.92807	552.5	.00246	.001042

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(c) M = 4.65; $p_{t,nom}$ = 8,640 lb/sq ft

Thermo-couple	T_e/T_t	T_w, ^oR	h, Btu/sec-ft^2-^oR	N_{St}	T_e/T_t	T_w, ^oR	h, Btu/sec-ft^2-^oR	N_{St}	T_e/T_t	T_w, ^oR	h, Btu/sec-ft^2-^oR	N_{St}
	$\alpha' = 0^o$; $T_t = 671^o$ R; p_t = 8,655.0 lb/sq ft				$\alpha' = 7.5^o$; $T_t = 674^o$ R; p_t = 8,645.0 lb/sq ft				$\alpha' = 15.0^o$; $T_t = 661^o$ R; p_t = 8,658.0 lb/sq ft			
4	.92340	576.8	.00658	.002772	.92665	574.1	.00473	.001999	.92370	568.5	.00428	.001782
5	.92673	582.8	.00823	.003467	.93110	583.1	.00636	.002688	.92983	579.1	.00631	.002628
6	.93450	596.5	.00829	.003492	.94276	592.8	.00713	.003013	.94486	593.1	.00785	.003269
7	.92562	580.8	.00758	.003193	.93776	589.8	.00742	.003135	.94319	595.1	.00920	.003831
8	.92285	575.1	.00634	.002671	.93776	587.8	.00681	.002878	.94598	596.8	.00940	.003914
9	.91563	557.8	.00211	.000889	.91998	558.8	.00135	.000570	.91869	554.1	.00101	.000421
10	.91508	559.5	.00253	.001066	.91887	558.1	.00161	.000680	.91758	554.1	.00149	.000620
11	.91452	563.5	.00363	.001529	.91776	561.5	.00262	.001107	.91535	556.8	.00225	.000937
12	.92396	573.5	.00485	.002043	.92887	573.8	.00373	.001576	.92816	573.1	.00353	.001470
13	.92285	574.1	.00512	.002157	.93165	578.8	.00452	.001910	.93317	579.1	.00490	.002040
14	.92174	571.8	.00463	.001951	.93387	580.5	.00459	.001940	.93985	585.8	.00564	.002349
15	.92229	568.5	.00378	.001592	.93721	580.1	.00407	.001720	.94654	589.1	.00576	.002398
16	.92174	566.8	.00277	.001167	.93776	577.5	.00362	.001530	.94765	587.8	.00533	.002219
17	.91785	560.5	.00237	.000998	.93387	575.1	.00324	.001369	.94542	588.1	.00529	.002203
18	.91785	554.8	.00102	.000430	.92832	561.5	.00101	.000427	.93150	563.1	.00127	.000529
19	.91563	558.5	.00226	.000952	.92110	557.8	.00143	.000604	.92148	555.5	.00124	.000516
20	.92063	572.8	.00497	.002094	.92887	577.5	.00440	.001859	.93094	577.5	.00490	.002040
21	.91841	561.5	.00255	.001074	.93499	574.5	.00315	.001331	.94598	584.1	.00438	.001824
22	.92007	557.8	.00136	.000573	.93776	573.5	.00230	.000972	.94932	588.8	.00450	.001874
23	.91896	554.5	.00091	.000383	.93387	564.1	.00114	.000482	.93818	567.1	.00147	.000612
24	.91619	553.1	.00107	.000451	.92832	560.5	.00093	.000393	.93428	563.1	.00095	.000396
25	.91286	556.1	.00213	.000897	.92054	557.8	.00135	.000570	.92315	555.8	.00099	.000412
26	.91119	560.8	.00338	.001424	.91498	558.8	.00227	.000959	.91535	554.8	.00182	.000758
27	.92118	575.1	.00465	.001959	.92610	571.5	.00353	.001492	.92426	567.1	.00321	.001337
28	.91008	567.1	.00514	.002165	.91776	573.5	.00450	.001902	.91869	572.1	.00464	.001932
29	.92340	576.5	.00454	.001913	.93610	583.1	.00455	.001923	.94152	586.1	.00538	.002240
30	.91730	565.5	.00356	.001500	.93276	580.8	.00426	.001800	.94152	588.1	.00561	.002336
31	.92396	567.1	.00252	.001062	.94110	578.5	.00308	.001302	.95099	586.1	.00397	.001653
32	.90564	549.5	.00147	.000619	.92276	563.1	.00200	.000845	.93261	571.1	.00320	.001332
33	.91952	555.8	.00108	.000455	.93665	572.8	.00211	.000892	.94542	587.5	.00473	.001970
34	.93006	560.5	.00081	.000341	.94665	571.1	.00106	.000448	.94319	567.5	.00098	.000408
35	.93173	563.1	.00092	.000388	.94721	570.8	.00092	.000389	.94932	569.8	.00076	.000316
36	.91286	556.1	.00202	.000851	.92221	557.1	.00124	.000524	.92537	557.1	.00089	.000371
37	.92285	575.8	.00532	.002241	.93110	580.1	.00467	.001973	.93094	577.5	.00468	.001949
38	.91896	562.1	.00255	.001074	.93499	575.1	.00305	.001289	.94431	581.5	.00382	.001591
39	.92729	562.5	.00122	.000514	.94221	572.5	.00162	.000685	.95155	579.8	.00251	.001045
40	.93339	563.1	.00090	.000379	.94665	579.5	.00233	.000985	.94988	592.5	.00466	.001940
41	.92729	563.8	.00184	.000775	.93721	565.8	.00094	.000397	.93930	564.1	.00083	.000346
42	.91619	563.5	.00316	.001331	.92332	562.8	.00207	.000875	.92315	558.5	.00168	.000700
43	.91896	570.8	.00472	.001988	.92387	570.8	.00345	.001458	.92259	565.5	.00312	.001299
44	.91452	570.1	.00539	.002271	.92276	576.5	.00448	.001893	.92259	571.1	.00439	.001828
45	.92562	577.5	.00462	.001946	.93776	583.5	.00445	.001880	.94097	584.5	.00473	.001970
46	.92285	575.1	.00344	.001449	.93665	579.8	.00384	.001623	.94319	583.5	.00421	.001753
47	.92729	565.8	.00233	.000982	.94110	577.5	.00288	.001217	.94821	581.8	.00328	.001366
50	.93506	596.8	.01228	.005173	.93665	596.8	.00848	.003583	.93150	585.5	.00818	.003406
51	.96281	628.5	.02734	.011518	.96499	627.8	.01688	.007133	.96046	621.5	.01696	.007062
52	.97224	653.8	.03941	.016603	.98055	643.8	.02226	.009406	.97995	656.1	.02716	.011310
53	.96170	633.5	.02603	.010966	.97444	638.5	.02041	.008625	.98162	657.5	.02517	.010481
54	.94172	604.5	.01462	.006159	.95777	618.5	.01348	.005696	.96770	627.1	.01769	.007366
55	.93062	592.5	.01174	.004946	.93221	588.8	.00800	.003381	.92816	585.5	.00774	.003223
56	.94338	610.1	.01845	.007773	.94610	612.5	.01271	.005371	.94264	603.8	.01291	.005376
57	.96003	626.5	.02638	.011114	.96721	631.1	.01819	.007687	.96881	630.5	.01961	.008166
58	.94949	621.5	.02058	.008670	.96221	625.8	.01655	.006994	.96881	630.8	.02125	.008849
59	.93339	595.1	.01232	.005190	.94721	611.5	.01203	.005084	.95712	621.1	.01565	.006517
60	.94949	576.8	.00135	.000569	.95221	572.5	.00066	.000279	.95767	573.8	.00050	.000208
61	.93728	566.1	.00091	.000383	.94888	570.8	.00079	.000334				
62	.90120	550.8	.00208	.000876	.91220	550.5	.00114	.000482	.91813	550.8	.00062	.000258
63	.90342	555.8	.00319	.001344	.91054	554.5	.00193	.000816	.91257	551.5	.00146	.000608
64	.90564	565.1	.00446	.001879	.91220	562.1	.00342	.001445	.91201	557.8	.00280	.001166
65	.90398	563.1	.00509	.002144	.91276	567.1	.00439	.001855	.91368	564.5	.00432	.001799
66	.90453	561.5	.00457	.001925	.91609	569.8	.00452	.001910	.92036	571.5	.00477	.001986
67	.90731	558.5	.00343	.001445	.92054	568.8	.00370	.001564	.92927	574.5	.00441	.001836
68	.91452	558.1	.00240	.001011	.92721	569.1	.00302	.001276	.93707	576.5	.00373	.001553
69	.94283	575.8	.00173	.000729	.95777	588.8	.00215	.000909	.95545	586.5	.00227	.000945
70	.95282	582.1	.00196	.000826	.94554	579.8	.00244	.001031	.93428	578.1	.00414	.001724
71	.95226	580.5	.00181	.000763	.96443	580.5	.00056	.000237	.96603	579.5	.00060	.000250
72	.91896	562.5	.00249	.001049	.95388	572.1	.00049	.000207	.95099	567.5	.00041	.000171
73	.89621	546.1	.00203	.000855	.90665	547.1	.00095	.000401	.92259	552.8	.00053	.000221
74	.89343	549.5	.00323	.001361	.90054	548.5	.00201	.000849	.90811	547.5	.00129	.000537
75	.89843	559.5	.00399	.001681	.90498	556.5	.00283	.001196	.90644	551.8	.00222	.000924
76	.89343	556.1	.00492	.002073	.90165	561.5	.00406	.001716	.90087	554.5	.00355	.001478
77	.90453	563.5	.00406	.001710	.91721	568.8	.00377	.001593	.91702	569.1	.00368	.001532
78	.90009	553.5	.00320	.001348	.91609	568.1	.00367	.001551	.91758	566.8	.00349	.001453
79	.91008	556.8	.00254	.001070	.92943	572.8	.00333	.001407	.92760	568.5	.00307	.001278
80	.92507	574.8	.00515	.002170	.94221	588.8	.00515	.002176	.93651	591.1	.00886	.003689
81	.93728	578.1	.00362	.001525	.93888	577.1	.00288	.001217	.94041	590.1	.00592	.002465
82	.94893	576.1	.00167	.000704	.96555	582.5	.00087	.000368	.96937	581.8	.00061	.000254
83	.92673	566.5	.00250	.001053	.98444	590.1	.00066	.000279	.97883	582.1	.00020	.000083
84	.89565	546.5	.00224	.000944	.91554	552.5	.00113	.000478	.92649	554.5	.00071	.000296
85	.91674	563.5	.00316	.001331	.92999	566.8	.00171	.000723	.93540	563.1	.00113	.000471
86	.89565	555.5	.00433	.001824	.90554	556.5	.00316	.001335	.90588	550.8	.00217	.000904
87	.90564	569.1	.00482	.002031	.91609	567.1	.00377	.001593	.91479	561.8	.00344	.001432
88	.90342	560.8	.00449	.001892	.91665	569.1	.00406	.001716	.91758	566.1	.00382	.001591
89	.90176	554.8	.00326	.001373	.91776	578.1	.00399	.001686	.91925	566.8	.00351	.001462
90	.90453	553.1	.00233	.000982	.92165	572.5	.00426	.001800	.92315	567.5	.00281	.001170
91	.92840	573.5	.00405	.001706	.94276	588.1	.00527	.002227	.93428	588.8	.00807	.003360
92	.94782	585.1	.00382	.001609	.95277	595.5	.00488	.002062	.94431	602.5	.01222	.005088
93	.89676	546.8	.00204	.000859	.92999	561.8	.00099	.000418	.93373	559.1	.00059	.000246
94	.90176	553.8	.00298	.001255	.92387	561.1	.00160	.000676	.92649	557.5	.00098	.000408
95	.90342	559.8	.00423	.001782	.91721	563.1	.00276	.001166	.91591	557.1	.00199	.000829
96	.90176	560.8	.00481	.002026	.91498	566.1	.00367	.001551	.91368	561.5	.00288	.001199
97	.90176	559.8	.00454	.001913	.91721	571.5	.00416	.001758	.91869	567.5	.00366	.001524
98	.90620	558.5	.00354	.001491	.92443	574.2	.00418	.001766	.92816	573.8	.00324	.001349

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 22.5°$; $T_t = 680°$ R; $p_t = 8{,}662.0$ lb/sq ft				$\alpha' = 30.0°$; $T_t = 674°$ R; $p_t = 8{,}652.0$ lb/sq ft				$\alpha' = 37.5°$; $T_t = 683°$ R; $p_t = 8{,}615.0$ lb/sq ft			
4	.92246	566.5	.00459	.001943	.92707	567.8	.00306	.001293	.97173	573.8	.00178	.000761
5	.92860	583.5	.00781	.003306	.93156	582.1	.00559	.002362	.97173	584.5	.00290	.001240
6	.94533	597.5	.01101	.004661	.94951	613.8	.00813	.003436	.98961	605.8	.00367	.001569
7	.94756	605.1	.01557	.006591	.95512	616.5	.01166	.004927	.99711	633.5	.00444	.001899
8	.95370	610.8	.01744	.007383	.96466	626.1	.01381	.005836	1.00286	633.8	.00725	.003100
9	.92246	555.1	.00139	.000588	.93324	561.8	.00121	.000511	.99250	576.8	.00052	.000222
10	.92023	556.8	.00151	.000639	.93268	558.8	.00084	.000355	.98500	573.8	.00063	.000269
11	.91688	555.5	.00244	.001033	.92651	559.8	.00164	.000693	.97519	571.1	.00111	.000475
12	.92804	571.1	.00441	.001867	.93381	581.8	.00325	.001373	.97635	580.1	.00200	.000855
13	.93473	583.1	.00677	.002866	.93941	588.8	.00525	.002219	.98038	593.1	.00308	.001317
14	.94421	594.1	.00888	.003759	.95063	603.8	.00716	.003026	.99307	609.5	.00401	.001715
15	.95426	601.8	.00996	.004216	.96410	626.1	.00892	.003769	1.00171	624.5	.00547	.002339
16	.95872	603.1	.00989	.004187	.97027	631.1	.00941	.003976	1.00858	630.5	.00576	.002463
17	.95649	611.5	.01134	.004800	.96802	624.8	.01051	.004441	1.00572	634.1	.00628	.002685
18	.93139	565.5	.00201	.000851	.94895	571.1	.00111	.000469	1.00744	591.1	.00055	.000235
19	.92413	557.1	.00165	.000698	.93998	562.8	.00108	.000456	.99711	580.5	.00070	.000299
20	.92971	578.8	.00628	.002658	.93437	583.1	.00450	.001902	.97519	587.8	.00270	.001155
21	.95370	595.8	.00778	.003293	.96353	610.1	.00736	.003110	.99942	619.8	.00492	.002104
22	.95704	605.8	.00999	.004229	.96466	619.1	.00895	.003782	1.00057	631.1	.00562	.002403
23	.93752	564.5	.00125	.000529	.95736	573.8	.00079	.000334	1.01774	595.1	.00044	.000188
24	.93585	561.5	.00093	.000394	.95736	571.5	.00056	.000237	1.01373	593.5	.00059	.000252
25	.92581	559.5	.00123	.000521	.94558	565.8	.00086	.000363	.99942	589.8	.00089	.000381
26	.91465	555.1	.00217	.000919	.93156	561.1	.00154	.000651	.98788	580.1	.00132	.000564
27	.92190	565.1	.00364	.001541	.93156	571.8	.00258	.001090	.97923	580.1	.00191	.000817
28	.91577	569.5	.00581	.002459	.92203	573.1	.00314	.001327	.96308	581.8	.00283	.001210
29	.94198	589.8	.00710	.003006	.94895	596.1	.00499	.002109	.98788	602.1	.00352	.001505
30	.94533	595.5	.00740	.003133	.95456	600.8	.00591	.002497	.99480	609.8	.00424	.001813
31	.95704	595.1	.00654	.002768	.96746	617.8	.00591	.002497	1.00114	617.8	.00424	.001813
32	.93975	588.5	.00666	.002819	.94727	598.8	.00692	.002924	.98846	607.5	.00436	.001864
33	.94756	603.1	.00985	.004170	.95456	612.1	.00870	.003676	.99370	628.1	.00510	.002181
34	.94812	568.1	.00103	.000436	.97363	581.8	.00051	.000216	1.03034	600.8	.00033	.000141
35	.95481	570.8	.00065	.000275	.97756	582.8	.00045	.000190	1.03034	601.1	.00037	.000158
36	.93027	557.5	.00103	.000436	.94951	568.1	.00096	.000406	.99828	585.8	.00084	.000359
37	.93027	577.8	.00544	.002303	.93717	582.1	.00395	.001669	.97635	590.1	.00262	.001120
38	.95035	589.1	.00559	.002366	.96073	602.5	.00557	.002354	.99942	610.8	.00381	.001629
39	.95649	592.1	.00545	.002307	.96297	604.5	.00558	.002358	.99885	613.5	.00386	.001651
40	.94868	601.5	.00871	.003687	.95793	610.8	.00732	.003093	.99942	631.5	.00440	.001882
41	.94477	567.8	.00104	.000440	.96129	574.8	.00071	.000300	1.00400	588.1	.00054	.000231
42	.92692	558.8	.00176	.000745	.94334	569.8	.00122	.000516	.99250	578.8	.00088	.000376
43	.92413	564.8	.00328	.001388	.93437	569.5	.00229	.000968	.97750	576.8	.00158	.000676
44	.92358	574.1	.00483	.002045	.93100	575.8	.00337	.001424	.96943	581.1	.00232	.000992
45	.94477	590.5	.00572	.002421	.95288	594.8	.00427	.001804	.98846	602.5	.00306	.001309
46	.94868	588.5	.00553	.002341								
47	.95426	590.5	.00432	.001829	.96241	600.1	.00435	.001838	.99427	608.5	.00315	.001347
50	.92637	582.1	.00918	.003886	.92763	581.8	.00581	.002455	.96712	584.5	.00295	.001261
51	.95258	619.8	.02717	.011501	.95063	618.1	.01205	.005092	.98442	614.8	.00422	.001805
52					.97419	651.8	.03076	.012998	1.00057	640.1	.00731	.003126
53					.98878	664.8	.08758	.037009	1.01946	660.1	.00816	.003489
54	.97378	646.5	.06385	.027029	.98317	659.5	.04447	.018792	1.02003	659.1	.00781	.003340
55	.92413	578.8	.00860	.003641	.92595	579.8	.00571	.002413	.96596	579.5	.00293	.001253
56	.93808	607.5	.01745	.007387	.93773	606.1	.00991	.004188	.97289	607.1	.00401	.001715
57	.96597	639.5	.04925	.020848	.96746	644.8	.01916	.008096	.99484	632.8	.00666	.002848
58	.97099	645.8	.08078	.034195	.97644	653.8	.03461	.014625	1.00915	648.5	.00712	.003045
59	.96318	636.1	.04086	.017297	.97195	642.8	.02915	.012318	1.00973	648.1	.00835	.003571
60	.96430	580.5	.00118	.000500	1.02186	607.5	.00022	.000093				
61	.97043	578.1	.00049	.000207					1.03148	599.5	.00024	.000103
62	.93250	557.8	.00078	.000330	.95344	568.1	.00064	.000270	.99884	578.8	.00048	.000205
63	.92190	556.5	.00151	.000639	.94278	566.5	.00119	.000503	.99019	576.8	.00088	.000376
64	.91577	558.8	.00296	.001253	.92988	568.8	.00262	.001107	.97462	576.8	.00184	.000787
65	.91688	570.1	.00490	.002074	.92876	584.5	.00480	.002028	.96943	590.5	.00336	.001437
66	.92748	582.1	.00634	.002684	.94054	601.8	.00737	.003114	.97865	606.5	.00479	.002048
67	.94143	589.1	.00677	.002866	.95175	628.5	.01293	.005464	.99423	624.8	.00554	.002369
68	.95202	601.5	.00702	.002972	.95624	626.1	.01527	.006453	.99656	632.8	.00701	.002998
69	.94868	620.8	.01937	.008200	.95905	639.8	.02435	.010290	1.00171	659.1	.00805	.003442
70	.94254	598.8	.01248	.005283	.95961	618.8	.01126	.004758	.99942	628.1	.00619	.002647
71	.94923	570.5	.00127	.000538	1.01065	601.5	.00031	.000131	1.04293	608.1	.00031	.000133
72	.94812	566.5	.00068	.000288	.99607	591.8	.00039	.000165	1.02576	596.5	.00023	.000098
73	.92860	555.5	.00090	.000381	.94502	564.1	.00068	.000287	.98904	573.5	.00051	.000218
74	.91465	553.1	.00209	.000885	.92820	560.8	.00141	.000596	.97404	571.8	.00099	.000423
75	.91186	560.8	.00403	.001706	.91698	560.1	.00275	.001162	.96193	571.1	.00168	.000718
76	.90796	573.1	.00841	.003560	.90744	569.1	.00508	.002147	.94924	572.5	.00300	.001283
77	.92692	592.1	.01482	.006274	.92932	598.8	.00872	.003685	.97116	598.5	.00435	.001860
78	.92804	603.5	.02035	.008614	.93549	608.5	.01286	.005434	.98211	615.1	.00584	.002497
79	.93696	605.8	.02242	.009491	.94951	629.1	.01438	.006077	.99769	628.5	.00569	.002433
80	.93641	609.5	.02154	.009118	.95232	627.5	.01672	.007065	.99542	641.1	.00773	.003305
81	.94533	621.8	.03304	.013986	.96129	646.5	.04111	.017372	1.00114	638.1	.00746	.003190
82	.94310	568.5	.00097	.000411	.98709	590.5	.00073	.000308	1.02919	605.1	.00079	.000338
83	.96262	574.5	.00065	.000275	.99158	589.8	.00042	.000177	1.02461	598.5	.00046	.000197
84	.92637	555.5	.00116	.000491	.94334	563.8	.00080	.000338	.98615	572.1	.00051	.000218
85	.93473	563.5	.00183	.000775	.95344	574.1	.00125	.000528	.99711	580.8	.00084	.000359
86	.90238	552.1	.00367	.001554	.91586	557.8	.00260	.001099	.95904	564.1	.00150	.000641
87	.91130	570.1	.00763	.003230	.91978	573.8	.00467	.001973	.96020	576.8	.00279	.001193
88	.91744	587.8	.01236	.005232	.92539	589.8	.00781	.003300	.96712	592.8	.00381	.001629
89	.92302	593.5	.01745	.007387	.93493	614.1	.01175	.004965	.97808	610.1	.00524	.002241
90	.92748	602.1	.01893	.008013	.94166	612.1	.01429	.006039	.98846	619.8	.00613	.002621
91	.94421	610.8	.01694	.007171	.96185	624.8	.01411	.005962	1.00171	634.1	.00718	.003070
92	.95147	624.1	.02826	.011963	.96578	638.1	.02477	.010467	1.00515	648.5	.00955	.004084
93	.93362	560.1	.00103	.000436	.94671	568.8	.00101	.000427	.98211	571.1	.00065	.000278
94	.92748	561.8	.00182	.000770	.94222	568.1	.00140	.000592	.97981	571.1	.00085	.000363
95	.91186	559.1	.00352	.001490	.92539	564.8	.00246	.001040	.96481	567.1	.00145	.000620
96	.90684	568.1	.00660	.002794	.91586	568.8	.00433	.001830	.95385	571.1	.00261	.001116
97	.91298	579.8	.01167	.004940	.92146	585.8	.00747	.003157	.96020	587.5	.00376	.001608
98	.92358	596.8	.01589	.006726	.93493	602.8	.01071	.004526	.97692	607.1	.00535	.002288

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(c) $M = 4.65$; $p_{t,nom} = 8{,}640$ lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 45.0^o$; $T_t = 671^o$ R; $p_t = 8{,}641.0$ lb/sq ft			
4	.96527	568.5	.00076	.000320
5	.95559	567.5	.00162	.000682
6	.96755	580.5	.00282	.001188
7	.97210	590.8	.00426	.001795
8	.98690	604.1	.00511	.002153
9	.98918	580.8	.00051	.000215
10	.98235	576.8	.00039	.000164
11	.96926	569.8	.00061	.000257
12	.95901	567.5	.00127	.000535
13	.95161	569.5	.00224	.000944
14	.95844	579.8	.00357	.001504
15	.97495	595.1	.00461	.001942
16	.98463	603.1	.00502	.002115
17	.98576	606.8	.00584	.002460
18	1.00683	591.1	.00046	.000194
19	.98747	580.1	.00069	.000291
20	.94193	564.5	.00265	.001116
21	.97495	600.1	.00589	.002481
22	.98918	613.1	.00698	.002941
23	1.01366	596.1	.00067	.000282
24	1.00683	593.5	.00073	.000308
25	.99032	583.8	.00064	.000270
26	.97153	572.8	.00083	.000350
27	.95958	568.8	.00139	.000586
28	.93681	561.1	.00248	.001045
29	.95730	581.5	.00427	.001799
30	.96470	592.1	.00441	.001858
31	.98235	605.8	.00617	.002599
32	.97039	601.1	.00699	.002945
33	.98918	616.1	.00763	.003214
34	1.02447	601.1	.00045	.000190
35	1.02447	601.1	.00045	.000190
36	.99203	583.1	.00069	.000291
37	.94933	570.8	.00299	.001260
38	.97723	603.8	.00553	.002330
39	.99316	615.8	.00698	.002941
40	.99829	624.5	.00828	.003488
41	1.00170	588.5	.00059	.000249
42	.98178	578.1	.00085	.000358
43	.96015	569.1	.00160	.000674
44	.94478	567.1	.00284	.001196
45	.96129	585.1	.00416	.001753
46	.97096	597.1	.00587	.002473
47	.98064	605.5	.00606	.002553
50	.95616	568.1	.00146	.000615
51	.96015	581.5	.00298	.001255
52	.97609	604.1	.00454	.001913
53	.99772	618.5	.00632	.002663
54	1.00598	626.8	.00664	.002797
55	.95503	567.5	.00149	.000628
56	.95389	571.8	.00271	.001142
57	.97438	595.1	.00416	.001753
58	.99032	611.5	.00583	.002456
59	.99658	615.8	.00630	.002654
60	1.05009	614.5	.00027	.000114
61	1.03415	605.1	.00040	.000169
62	.98861	581.1	.00062	.000261
63	.97723	576.5	.00072	.000303
64	.95446	565.5	.00143	.000602
65	.94136	565.5	.00294	.001239
66	.94819	583.1	.00467	.001967
67	.96641	597.8	.00651	.002743
68	.97893	608.8	.00772	.003252
69	.99715	630.5	.00808	.003404
70	1.01081	638.5	.01055	.004445
71	1.03073	604.8	.00059	.000249
72	1.01252	594.1	.00054	.000227
73	.98007	581.5	.00165	.000695
74	.96584	571.1	.00155	.000653
75	.95332	565.1	.00190	.000800
76	.93624	561.1	.00315	.001327
77	.95673	583.8	.00465	.001959
78	.96926	599.8	.00683	.002877
79	.98690	613.1	.00788	.003320
80	1.00056	626.8	.00889	.003745
81	1.01195	644.1	.01365	.005751
82	1.01764	596.5	.00054	.000227
83	1.00740	591.5	.00062	.000261
84	.97723	575.5	.00081	.000341
85	.99146	585.5	.00097	.000409
86	.95446	566.5	.00148	.000624
87	.95446	571.8	.00273	.001150
88	.96015	584.8	.00430	.001812
89	.97324	600.8	.00637	.002684
90	.98406	611.8	.00742	.003126
91	1.01366	632.1	.00814	.003429
92	1.01536	649.5	.01562	.006581
93	.97552	573.1	.00061	.000257
94	.97495	573.8	.00087	.000367
95	.96243	569.8	.00149	.000628
96	.95104	570.5	.00239	.001007
97	.95673	581.1	.00437	.001841
98	.97438	600.1	.00597	.002515

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Thermo-couple	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}	T_e/T_t	T_w, ^oR	h, $\frac{Btu}{sec\text{-}ft^2\text{-}^oR}$	N_{St}
	$\alpha' = -45.0^o$; $T_t = 681^o$ R; $p_t = 12{,}252.0$ lb/sq ft				$\alpha' = -37.5^o$; $T_t = 680^o$ R; $p_t = 12{,}233.0$ lb/sq ft				$\alpha' = -30.0^o$; $T_t = 687^o$ R; $p_t = 12{,}236.0$ lb/sq ft			
4	.99661	633.1	.01442	.004381					.95948	631.1	.01527	.004663
5	.97798	615.1	.01092	.003318					.94727	619.8	.01307	.003991
6	.97234	597.5	.00699	.002124					.94172	602.8	.00918	.002803
7	.95936	579.5	.00414	.001258	.93536	583.5	.02246	.006816	.92007	581.1	.00556	.001698
8	.96218	575.1	.00235	.000714	.92589	567.5	.00867	.002631	.90620	560.1	.00369	.001127
9	.99492	632.1	.01420	.004314					.96003	609.1	.00771	.002355
10	.98984	628.8	.01418	.004308					.95781	614.8	.00947	.002892
11	.97742	619.5	.01272	.003864					.95060	613.8	.01040	.003176
12	.96952	607.5	.00931	.002828					.94671	607.8	.00874	.002669
13	.95541	585.1	.00599	.001820					.92951	591.1	.00631	.001927
14	.95766	576.5	.00341	.001036	.93648	576.1	.01456	.004418	.91674	572.8	.00409	.001249
15	.97685	583.1	.00165	.000501	.94372	571.5	.00490	.001487	.91452	561.1	.00208	.000635
16	.99040	630.1	.02010	.006107					.91674	556.1	.00137	.000418
17	.99943	593.1	.00090	.000273	.94762	571.5	.00300	.000910	.91730	558.5	.00140	.000428
18	.98758	632.8	.01901	.005775	.98161	613.8	.05262	.015968	.96225	603.1	.00545	.001664
19	.97911	628.8	.01935	.005879					.95615	615.8	.00912	.002785
20	.94355	584.1	.00707	.002148					.92174	584.5	.00660	.002016
21	.98306	583.8	.00092	.000280	.95208	571.8	.00226	.000686	.91008	550.8	.00116	.000354
22	1.01693	601.8	.00073	.000222	.96322	581.8	.00305	.000926	.92340	565.5	.00172	.000525
23	.98080	629.5	.01990	.006046	.97604	606.5	.02834	.008600	.95781	601.8	.00464	.001417
24	.98193	631.5	.02181	.006626					.95393	600.8	.00583	.001780
25	.97968	631.5	.02349	.007137					.94616	607.8	.00903	.002758
26	.97008	617.5	.00915	.002780					.93728	608.8	.00996	.003042
27	.96613	612.1	.01270	.003858					.93506	601.1	.00874	.002669
28	.94130	585.1	.00778	.002364					.90897	579.5	.00629	.001921
29	.95710	580.8	.00373	.001133	.93759	574.8	.01148	.003484	.91008	565.1	.00369	.001127
30	.96952	578.5	.00183	.000556	.94483	570.8	.00406	.001232	.90544	553.1	.00197	.000602
31	.99266	588.8	.00103	.000313	.96434	578.8	.00185	.000561	.91841	556.8	.00103	.000315
32	1.00169	592.1	.00070	.000213	.96434	578.5	.00154	.000467	.91064	549.5	.00072	.000220
33	1.02709	606.8	.00063	.000191	.98217	592.8	.00280	.000850	.92174	564.1	.00191	.000583
34	.98306	631.1	.02031	.006170	.97548	607.5	.01837	.005575	.95781	610.5	.00630	.001924
35	.98758	634.5	.02080	.006319	.97548	608.1	.03827	.011613	.95337	599.1	.00527	.001609
36	.98363	633.8	.02320	.007048					.94172	602.8	.00832	.002541
37	.95202	591.5	.00802	.002437					.91730	582.5	.00593	.001811
38	.98984	588.5	.00121	.000368	.96434	578.8	.00155	.000470	.92063	556.5	.00075	.000229
39	1.02539	605.5	.00052	.000158	.99164	593.5	.00161	.000489	.93561	565.5	.00071	.000217
40	1.04289	616.5	.00058	.000176	1.01169	608.5	.00225	.000683	.93561	572.8	.00149	.000455
41	.98758	634.8	.02008	.006101					.94172	603.1	.00716	.002187
42	.97573	627.1	.02003	.006085					.93117	598.5	.00874	.002669
43	.96387	610.8	.01297	.003940					.92396	591.5	.00761	.002324
44	.94863	588.8	.00757	.002300					.91008	577.8	.00578	.001765
45	.96274	581.1	.00375	.001139	.94038	578.1	.00931	.002825	.91730	567.8	.00341	.001041
46	.97798	582.8	.00198	.000602	.95208	574.5	.00391	.001187	.91730	559.1	.00181	.000553
47	.99661	590.8	.00089	.000270	.97046	582.5	.00179	.000543	.93117	563.1	.00090	.000275
50	1.00733	645.8	.01791	.005441					.97113	660.8	.02397	.007320
51	1.00451	644.5	.01816	.005517					.98223	658.5	.03327	.010160
52	.98306	623.5	.01254	.003810					.96891	646.5	.02549	.007784
53	.96500	598.5	.00725	.002203					.94283	616.8	.01382	.004220
54	.96444	582.8	.00388	.001179	.93759	589.1	.04502	.013662	.92451	587.8	.00726	.002217
55	1.00282	642.1	.01738	.005280					.96669	644.8	.02338	.007140
56	.99209	633.8	.01563	.004749					.96447	645.1	.02549	.007784
57	.97798	616.8	.01072	.003257					.95726	635.1	.02059	.006288
58	.96105	593.8	.00646	.001963					.93506	610.8	.01180	.003604
59	.96331	580.5	.00362	.001100	.93480	580.8	.03009	.009131	.92007	581.5	.00649	.001982
60	.98927	636.8	.02261	.006869					.94283	623.5	.01719	.005250
61	.98645	635.5	.02398	.007285					.94394	625.8	.01916	.005851
62	.98250	635.8	.02834	.008610					.93339	600.8	.01010	.003084
63	.97685	629.1	.02255	.006851					.93228	599.8	.00871	.002660
64	.96331	610.8	.01354	.004114					.92895	593.5	.00650	.001985
65	.94863	587.5	.00726	.002206	.93146	580.5	.02830	.008588	.91674	581.1	.00451	.001377
66	.95371	574.8	.00360	.001094	.93425	570.8	.00831	.002522	.91341	568.8	.00307	.000938
67	.97685	580.8	.00129	.000392	.95375	574.1	.00285	.000865	.92618	563.8	.00163	.000498
68	.99435	589.1	.00083	.000252	.97269	582.5	.00124	.000376	.94449	569.5	.00072	.000220
69	1.03668	613.1	.00056	.000170	1.01281	606.8	.00085	.000258	.97224	585.1	.00043	.000131
70	1.03781	613.5	.00066	.000201	1.00000	601.1	.00183	.000555	.95559	581.1	.00106	.000324
71	.99379	638.8	.02195	.006669					.93728	620.1	.01734	.005295
72	.98645	635.1	.02337	.007100					.93617	619.5	.01771	.005408
73	.98306	636.1	.02893	.008789					.94005	618.1	.01614	.004929
74	.96952	624.1	.02242	.006811					.93173	609.5	.01164	.003555
75	.95541	606.5	.01203	.003655					.92229	592.8	.00829	.002532
76	.93622	579.8	.00728	.002212					.90398	573.8	.00558	.001704
77	.94920	571.8	.00336	.001021	.92645	571.5	.01190	.003611	.90842	561.8	.00304	.000928
78	.96161	572.5	.00155	.000471	.93759	565.1	.00341	.001035	.91230	553.8	.00136	.000415
79	.97798	580.5	.00106	.000322	.95709	574.8	.00158	.000479	.93284	561.8	.00052	.000159
80	1.01128	598.5	.00078	.000237	.99944	599.1	.00085	.000258	.98889	595.1	.00039	.000119
81	1.00790	598.1	.00099	.000301	.99331	596.5	.00155	.000470	.94782	582.1	.00164	.000501
82	.99379	639.5	.02284	.006939					.93672	618.8	.01656	.005057
83	.99322	637.8	.02100	.006380					.94116	618.5	.01454	.004440
84	.97855	587.1	.00119	.000362	.95263	574.1	.00226	.000686	.93506	621.5	.02030	.006199
85	.98250	636.1	.02366	.007188					.94560	623.5	.01721	.005256
86	.94750	601.1	.01408	.004278					.91952	603.8	.01323	.004040
87	.94355	582.8	.00680	.002066					.91563	583.8	.00758	.002315
88	.94525	570.8	.00332	.001009	.92812	568.1	.01143	.003469	.90675	564.1	.00417	.001273
89	.95936	571.5	.00153	.000465	.94651	571.5	.00400	.001214	.91563	557.8	.00187	.000571
90	.96895	575.5	.00126	.000383	.95932	578.1	.00251	.000762	.92784	561.8	.00091	.000278
91	1.00282	596.8	.00132	.000401	1.00222	603.1	.00163	.000495	.98723	593.8	.00048	.000147
92	.99774	606.5	.00359	.001091	.98328	607.1	.01139	.003456	.94005	580.1	.00256	.000782
93	.97347	631.8	.03429	.010418					.92951	614.5	.02135	.006520
94	.96895	624.8	.02516	.007644					.93173	614.1	.01760	.005375
95	.95315	603.5	.01377	.004183					.92340	601.8	.01275	.003894
96	.93904	579.5	.00688	.002090	.92199	577.1	.05789	.017567	.91008	580.1	.00777	.002373
97	.94581	567.8	.00331	.001006	.92868	570.8	.00999	.003032	.90897	568.1	.00410	.001252
98	.96500	574.5	.00176	.000535	.95319	576.1	.00450	.001366	.92673	566.5	.00221	.000675

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermo-couple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = -22.5°; T_t = 682° R; p_t = 12,221.0 lb/sq ft				α' = -15.0°; T_t = 678° R; p_t = 12,233.0 lb/sq ft				α' = -7.5°; T_t = 662° R; p_t = 12,221.0 lb/sq ft			
4	.95327	617.1	.01319	.004010	.94323	598.8	.01045	.003167	.96052	582.8	.00712	.002127
5	.94493	610.5	.01231	.003742	.93933	597.5	.01101	.003336	.96052	585.5	.00829	.002476
6	.94214	601.1	.00912	.002772	.94100	603.5	.00904	.002739	.96624	587.1	.00754	.002252
7	.92156	578.5	.00638	.001939	.92319	576.5	.00669	.002027	.95193	574.8	.00618	.001846
8	.90766	561.1	.00419	.001274	.90928	561.8	.00476	.001442	.93877	562.8	.00446	.001332
9	.94938	595.1	.00620	.001885	.93599	576.8	.00425	.001288	.95193	565.5	.00237	.000708
10	.94771	600.5	.00743	.002259	.93488	581.1	.00538	.001630	.95079	566.1	.00313	.000935
11	.94270	601.8	.00878	.002669	.93098	583.5	.00667	.002021	.94850	568.8	.00439	.001311
12	.94381	600.8	.00795	.002417	.93655	587.8	.00700	.002121	.95823	577.1	.00520	.001553
13	.92935	585.1	.00597	.001815	.92709	578.5	.00578	.001752	.95308	573.5	.00510	.001523
14	.91878	570.1	.00418	.001271	.91874	568.1	.00438	.001327	.94793	567.5	.00417	.001245
15	.91544	562.1	.00269	.000818	.91595	559.8	.00280	.000848	.94621	562.1	.00287	.000857
16	.91656	555.8	.00162	.000492	.91595	556.1	.00188	.000570	.94564	558.5	.00194	.000579
17	.91600	554.5	.00143	.000435	.91484	555.8	.00143	.000433	.94278	556.1	.00151	.000451
18	.95327	589.1	.00394	.001198	.93877	572.5	.00232	.000703	.95365	560.5	.00130	.000388
19	.94882	607.8	.00791	.002404	.93822	583.1	.00572	.001733	.95251	567.1	.00312	.000932
20	.92546	583.5	.00612	.001860	.92375	577.1	.00593	.001797	.95079	572.1	.00503	.001502
21	.91155	550.5	.00123	.000374	.90983	549.8	.00143	.000433	.93935	553.1	.00165	.000493
22	.92768	566.8	.00194	.000590	.92041	555.8	.00123	.000373	.94507	553.5	.00097	.000290
23	.94826	583.5	.00306	.000930	.93432	567.5	.00201	.000609	.94907	556.1	.00112	.000335
24	.94381	589.1	.00453	.001377	.93432	572.5	.00294	.000891	.94907	558.5	.00156	.000466
25	.94159	597.8	.00747	.002271	.93154	580.5	.00560	.001697	.94793	564.1	.00312	.000932
26	.93491	597.8	.00856	.002602	.92764	583.1	.00693	.002100	.94564	567.8	.00459	.001371
27	.93547	601.8	.00829	.002520	.93265	586.8	.00711	.002155	.95537	576.5	.00532	.001589
28	.91211	576.1	.00661	.002009	.91762	570.8	.00556	.001685	.94049	569.8	.00520	.001553
29	.91378	566.1	.00379	.001152	.91595	565.5	.00410	.001242	.94736	566.8	.00397	.001186
30	.90710	553.1	.00211	.000641	.90816	553.5	.00227	.000688	.93935	558.8	.00262	.000783
31	.91823	553.8	.00121	.000368	.91651	553.5	.00126	.000382	.94564	555.8	.00131	.000391
32	.91266	550.1	.00103	.000313	.90761	547.8	.00098	.000297	.93019	545.1	.00108	.000323
33	.92935	569.1	.00252	.000766	.92486	559.8	.00135	.000409	.94392	552.1	.00088	.000263
34	.95104	585.8	.00254	.000772	.93766	569.8	.00163	.000494	.95422	558.5	.00087	.000260
35	.94771	588.5	.00404	.001228	.93599	573.1	.00276	.000836	.95365	561.8	.00130	.000388
36	.93658	593.5	.00726	.002207	.92820	577.8	.00536	.001624	.94621	563.1	.00322	.000962
37	.91989	579.8	.00605	.001839	.92096	575.8	.00594	.001800	.95079	573.5	.00529	.001580
38	.91656	552.5	.00103	.000313	.91428	551.8	.00120	.000364	.94221	556.1	.00138	.000412
39	.93658	564.1	.00081	.000246	.93209	562.1	.00095	.000288	.94964	556.1	.00088	.000263
40	.93992	574.5	.00184	.000559	.94267	571.5	.00164	.000497	.95880	561.5	.00089	.000266
41	.93769	591.5	.00629	.001912	.93042	577.5	.00477	.001445	.95251	565.8	.00292	.000872
42	.92879	591.5	.00771	.002344	.92263	578.5	.00653	.001979	.94450	566.8	.00432	.001290
43	.92490	588.5	.00750	.002280	.92263	579.8	.00689	.002088	.94793	572.5	.00555	.001658
44	.91211	577.8	.00576	.001751	.91261	570.1	.00584	.001770	.94221	567.8	.00512	.001529
45	.91711	567.1	.00360	.001094	.91874	566.5	.00380	.001152	.95022	567.8	.00385	.001150
46	.91489	556.8	.00204	.000620	.91428	556.5	.00216	.000655	.94507	561.1	.00237	.000708
47	.92657	558.5	.00102	.000310	.92375	557.1	.00095	.000288	.95193	558.5	.00110	.000329
50	.96662	637.8	.02156	.006554	.95603	630.5	.01858	.005630	.97368	602.5	.01280	.003823
51	.98386	656.8	.03381	.010278	.97885	644.1	.03182	.009642	1.00171	632.1	.02160	.006451
52	.97552	649.5	.02959	.008995	.97718	643.5	.03263	.009888	1.00686	637.8	.02381	.007111
53	.95049	622.8	.01643	.004994	.95603	622.5	.02042	.006188	.99027	621.8	.01835	.005481
54	.92879	592.5	.00875	.002660	.93376	593.8	.01072	.003249	.96681	595.5	.01086	.003244
55	.96217	634.1	.02070	.006292	.95213	615.8	.01736	.005261	.96967	598.8	.01194	.003566
56	.96551	640.1	.02447	.007438	.95992	627.1	.02282	.006915	.98111	613.8	.01662	.004964
57	.96328	637.1	.02197	.006678	.96382	630.8	.02456	.007442	.99256	624.8	.01934	.005776
58	.94048	611.8	.01360	.004134	.94434	610.5	.01620	.004909	.97711	609.1	.01486	.004438
59	.92323	585.1	.00795	.002417	.92653	585.5	.00920	.002788	.95823	586.1	.00930	.002778
60	.94993	610.8	.01060	.003222	.94935	594.1	.00642	.001945	.97482	580.5	.00333	.000995
61	.94159	612.1	.01404	.004268	.93599	592.8	.00904	.002739	.96280	575.5	.00330	.000986
62	.92323	584.5	.00693	.002107	.91373	568.8	.00522	.001582	.93305	555.1	.00293	.000875
63	.92268	587.1	.00747	.002271	.91373	572.1	.00620	.001879	.93362	560.5	.00430	.001284
64	.91823	583.5	.00707	.002149	.91150	571.8	.00657	.001991	.93591	564.1	.00516	.001541
65	.90543	569.8	.00562	.001708	.90148	562.1	.00544	.001648	.93019	560.1	.00488	.001458
66	.89876	556.5	.00358	.001088	.89692	552.5	.00375	.001136	.92676	554.5	.00393	.001174
67	.90043	548.1	.00189	.000575	.89692	545.1	.00205	.000621	.92733	549.8	.00244	.000729
68	.90988	551.1	.00112	.000340	.90315	545.8	.00125	.000379	.93362	551.1	.00176	.000526
69	.93547	562.8	.00073	.000222	.93877	567.8	.00091	.000276	.97139	577.1	.00304	.000908
70	.92434	563.1	.00169	.000514	.93376	567.5	.00167	.000506	.97539	577.8	.00242	.000723
71	.93714	603.5	.01099	.003341	.95046	592.8	.00575	.001742	.97768	581.1	.00300	.000896
72	.92991	603.1	.01349	.004101	.92263	583.5	.00890	.002697	.94564	568.5	.00483	.001443
73	.93380	598.8	.00885	.002690	.91484	570.5	.00573	.001736	.93191	554.8	.00295	.000881
74	.92713	596.5	.00705	.002143	.90928	568.8	.00621	.001882	.92790	556.1	.00412	.001231
75	.92101	583.5	.00618	.001879	.90816	568.8	.00609	.001845	.93019	560.1	.00487	.001455
76	.90488	570.5	.00460	.001398	.89692	561.8	.00522	.001582	.92332	555.8	.00476	.001422
77	.90432	559.1	.00305	.000927	.89859	553.5	.00365	.001106	.92905	555.5	.00387	.001156
78	.89653	546.1	.00160	.000486	.88967	540.8	.00214	.000648	.92161	548.1	.00255	.000762
79	.90710	548.5	.00089	.000271	.89692	541.5	.00131	.000397	.93076	549.1	.00176	.000526
80	.97441	586.1	.00053	.000161	.92597	563.1	.00190	.000576	.94907	564.8	.00310	.000926
81	.93380	567.1	.00145	.000441	.93989	573.1	.00219	.000664	.97425	575.5	.00209	.000624
82	.92601	597.8	.01134	.003447	.94156	586.8	.00555	.001682	.97253	577.1	.00283	.000845
83	.93269	601.1	.01123	.003414	.92486	581.5	.00728	.002206	.94736	567.5	.00407	.001216
84	.93269	608.5	.01403	.004265	.91484	571.5	.00581	.001761	.93305	555.8	.00323	.000965
85	.94548	609.5	.00953	.002897	.92709	580.1	.00612	.001855	.94621	567.1	.00410	.001225
86	.92212	591.1	.00674	.002049	.90538	570.8	.00632	.001915	.92733	561.8	.00483	.001443
87	.92101	581.8	.00464	.001410	.90761	565.1	.00506	.001533	.93420	562.5	.00484	.001446
88	.90988	565.1	.00309	.000939	.89636	552.1	.00366	.001109	.92619	554.1	.00379	.001132
89	.91155	554.8	.00174	.000529	.89079	541.8	.00208	.000630	.92275	549.1	.00257	.000768
90	.92268	555.8	.00086	.000261	.89134	538.1	.00134	.000406	.92447	545.5	.00177	.000529
91	1.02058	612.5	.00048	.000146	.94378	572.5	.00159	.000482	.95651	567.8	.00274	.000818
92	.94548	581.8	.00200	.000608	.95547	584.8	.00266	.000806	.98912	585.1	.00232	.000693
93	.92713	607.8	.01811	.005505	.91317	570.8	.00603	.001827	.93248	555.8	.00330	.000986
94	.93046	615.5	.01745	.005304	.91540	572.8	.00612	.001855	.93477	560.1	.00407	.001216
95	.92546	602.5	.01365	.004149	.91317	571.8	.00585	.001773	.93534	563.5	.00487	.001455
96	.91433	584.1	.00865	.002629	.90427	563.5	.00511	.001548	.93019	559.8	.00473	.001413
97	.90877	567.5	.00508	.001544	.89970	556.5	.00355	.001076	.92619	554.5	.00399	.001192
98	.91823	562.2	.00277	.000842	.90371	550.8	.00225	.000682	.92962	552.2	.00278	.000830

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	$\alpha' = 0^o$; $T_t = 677^o$ R; p_t = 12,235.0 lb/sq ft				$\alpha' = 7.5^o$; $T_t = 675^o$ R; p_t = 12,249.0 lb/sq ft				$\alpha' = 15.0^o$; $T_t = 674^o$ R; p_t = 12,273.0 lb/sq ft			
4	.92319	580.5	.00741	.002217	.92547	572.5	.00587	.001749	.92155	567.8	.00489	.001456
5	.92595	586.8	.00933	.002792	.93052	582.5	.00758	.002258	.92772	580.1	.00730	.002173
6	.93258	591.1	.00938	.002807	.94060	591.5	.00878	.002615	.94116	593.5	.00927	.002760
7	.92540	584.5	.00861	.002576	.93724	589.8	.00898	.002675	.94172	597.5	.01094	.003257
8	.91932	577.1	.00718	.002148	.93388	585.5	.00828	.002466	.94116	597.1	.01093	.003254
9	.91435	561.1	.00214	.000640	.91819	557.1	.00165	.000491	.91819	553.1	.00125	.000372
10	.91380	562.5	.00306	.000916	.91707	554.5	.00211	.000629	.91651	552.1	.00165	.000491
11	.91490	567.8	.00428	.001281	.91763	559.5	.00307	.000914	.91539	556.1	.00265	.000789
12	.92374	577.5	.00534	.001598	.92828	572.5	.00447	.001331	.92604	570.5	.00439	.001307
13	.92374	578.8	.00584	.001747	.93164	578.1	.00533	.001588	.93220	580.8	.00607	.001807
14	.92264	576.5	.00540	.001616	.93444	580.5	.00568	.001692	.93948	588.1	.00696	.002072
15	.92208	572.1	.00429	.001284	.93724	579.5	.00508	.001513	.94509	590.8	.00683	.002033
16	.92153	568.1	.00341	.001020	.93780	576.1	.00425	.001266	.94789	589.5	.00632	.001882
17	.91711	563.5	.00273	.000817	.93388	573.8	.00395	.001177	.94453	590.1	.00638	.001899
18	.91822	558.5	.00132	.000395	.92772	557.8	.00138	.000411	.93164	563.1	.00169	.000503
19	.91490	561.5	.00253	.000757	.91931	554.1	.00172	.000512	.91987	552.8	.00133	.000396
20	.92098	577.1	.00565	.001691	.92884	576.5	.00526	.001567	.92828	578.1	.00565	.001682
21	.91822	564.8	.00291	.000871	.93500	573.1	.00378	.001126	.94509	585.1	.00525	.001563
22	.91987	560.8	.00169	.000506	.93668	571.5	.00282	.000840	.94845	590.8	.00549	.001634
23	.91766	557.1	.00100	.000299	.93332	561.1	.00140	.000417	.93332	563.1	.00175	.000521
24	.91580	555.8	.00102	.000305	.92828	557.8	.00124	.000369	.93052	558.8	.00115	.000342
25	.91214	559.1	.00241	.000721	.91875	554.1	.00157	.000468	.92043	552.5	.00129	.000384
26	.91214	565.5	.00376	.001125	.91539	557.1	.00259	.000771	.91483	554.1	.00220	.000655
27	.92264	580.1	.00522	.001562	.92547	570.1	.00413	.001230	.92211	566.5	.00381	.001134
28	.91048	571.5	.00606	.001813	.91707	570.1	.00539	.001606	.91595	573.1	.00554	.001649
29	.92374	580.8	.00527	.001577	.93668	582.8	.00602	.001793	.94004	588.1	.00633	.001885
30	.91711	569.1	.00408	.001221	.93332	580.8	.00495	.001474	.94004	590.1	.00677	.002016
31	.92374	570.5	.00289	.000865	.94060	576.8	.00377	.001123	.94957	587.1	.00492	.001465
32	.90385	553.1	.00174	.000521	.92099	560.5	.00222	.000661	.93052	570.5	.00380	.001131
33	.91987	559.1	.00128	.000383	.93668	571.5	.00272	.000810	.94565	596.5	.00580	.001727
34	.92706	563.1	.00104	.000311	.94116	564.8	.00127	.000378	.93556	561.8	.00130	.000387
35	.92927	564.8	.00103	.000308	.94228	565.8	.00118	.000351	.94284	564.8	.00098	.000292
36	.91158	562.1	.00229	.000685	.91875	552.5	.00149	.000444	.92211	553.1	.00121	.000360
37	.92264	580.1	.00622	.001861	.93108	579.5	.00578	.001722	.92940	578.8	.00562	.001673
38	.91822	564.8	.00288	.000862	.93444	573.5	.00373	.001111	.94284	582.5	.00460	.001369
39	.92540	563.8	.00145	.000434	.94116	571.1	.00194	.000578	.95013	579.1	.00304	.000905
40	.93092	565.5	.00102	.000305	.94453	576.8	.00273	.000813	.94789	594.1	.00577	.001718
41	.92485	565.8	.00219	.000655	.93220	559.8	.00129	.000384	.93444	559.5	.00113	.000336
42	.91324	565.5	.00368	.001101	.91763	557.5	.00249	.000742	.91819	554.8	.00201	.000598
43	.91711	577.5	.00553	.001655	.92155	568.1	.00416	.001239	.91931	564.5	.00358	.001066
44	.91380	574.1	.00592	.001771	.92155	572.8	.00551	.001641	.92099	575.1	.00525	.001563
45	.92429	577.8	.00510	.001526	.93668	587.8	.00568	.001692	.93892	588.8	.00575	.001712
46	.91103	571.1	.00441	.001320								
47	.92485	568.1	.00271	.000811	.93892	574.8	.00338	.001007	.94509	581.5	.00390	.001161
50	.93535	601.1	.01339	.004007	.93556	592.8	.01024	.003050	.92884	586.5	.00947	.002819
51	.96574	634.5	.02698	.008073	.96638	629.1	.02172	.006470	.95853	625.1	.02203	.006559
52	.97568	644.8	.03629	.010859	.98207	657.5	.03029	.009023	.97870	647.1	.03880	.011551
53	.96463	634.1	.02766	.008276	.97758	641.1	.02775	.008266	.98151	649.5	.03988	.011873
54	.94253	609.1	.01552	.004644	.95797	619.5	.01668	.004969	.96582	631.5	.02314	.006889
55	.93313	598.1	.01289	.003857	.93388	590.5	.00957	.002851	.92772	584.5	.00882	.002626
56	.94529	615.1	.01889	.005652	.94733	610.8	.01613	.004805	.94060	611.1	.01575	.004689
57	.96242	632.1	.02685	.008034	.96974	633.5	.02179	.006491	.96750	635.5	.02725	.008113
58	.95082	621.5	.02172	.006499	.96358	628.1	.01914	.005701	.96694	635.8	.02960	.008812
59	.93258	599.5	.01373	.004108	.94789	616.8	.01398	.004164	.95461	628.5	.02001	.005957
60	.94363	578.8	.00233	.000697	.93948	569.5	.00108	.000322	.94621	566.1	.00075	.000223
61	.93258	571.8	.00230	.000688	.92940	556.5	.00089	.000265	.94116	559.8	.00038	.000113
62	.89827	550.8	.00247	.000739	.90474	547.8	.00146	.000435	.91147	545.5	.00092	.000274
63	.89943	557.5	.00395	.001182	.90306	548.8	.00261	.000777	.90418	546.1	.00197	.000586
64	.90330	565.1	.00522	.001562	.90755	558.8	.00390	.001162	.90586	555.5	.00346	.001030
65	.90274	566.5	.00599	.001792	.90979	564.5	.00515	.001534	.90923	564.8	.00517	.001539
66	.90330	565.1	.00544	.001628	.91427	567.8	.00521	.001552	.91707	572.1	.00594	.001768
67	.90716	561.8	.00378	.001131	.91875	566.8	.00452	.001346	.92716	575.5	.00543	.001617
68	.91380	562.5	.00279	.000835	.92435	566.5	.00377	.001123	.93500	577.5	.00458	.001364
69	.94308	586.1	.00388	.001161	.95293	594.5	.00614	.001829	.95293	605.5	.00984	.002930
70	.93921	585.1	.00476	.001424	.94228	578.1	.00342	.001019	.93388	587.1	.00766	.002280
71	.94916	581.1	.00222	.000664	.95517	574.5	.00119	.000354	.95237	569.8	.00077	.000229
72	.91766	566.8	.00318	.000952	.94060	562.8	.00076	.000226	.92660	554.1	.00080	.000238
73	.89274	549.5	.00256	.000766	.89746	541.5	.00130	.000387	.91259	544.5	.00076	.000226
74	.89114	556.5	.00356	.001065	.89354	545.5	.00221	.000658	.89858	541.1	.00156	.000464
75	.89716	559.8	.00474	.001418	.89970	554.8	.00342	.001019	.89858	549.8	.00272	.000810
76	.89384	560.5	.00544	.001628	.90026	561.1	.00486	.001448	.89802	554.1	.00432	.001286
77	.90330	564.5	.00503	.001505	.91483	567.5	.00522	.001555	.91371	566.8	.00522	.001554
78	.89993	559.1	.00381	.001140	.91427	567.5	.00538	.001603	.91427	568.1	.00447	.001331
79	.91048	561.8	.00324	.000969	.92660	581.5	.00688	.002049	.92660	571.8	.00372	.001107
80	.91932	575.5	.00574	.001717	.93668	586.5	.00721	.002148	.92884	592.1	.01135	.003379
81	.93479	584.1	.00425	.001272	.93780	585.5	.00560	.001668	.93052	602.8	.01902	.005663
82	.94419	577.1	.00204	.000610	.95573	574.5	.00110	.000328	.95965	576.8	.00087	.000259
83	.92319	568.5	.00299	.000895	.94509	568.8	.00098	.000292	.94957	565.5	.00045	.000134
84	.89329	548.5	.00270	.000808	.90138	541.1	.00113	.000337	.91651	547.5	.00071	.000211
85	.91048	563.5	.00349	.001044	.91595	554.8	.00218	.000649	.92379	556.5	.00138	.000411
86	.89440	561.1	.00487	.001457	.89914	551.5	.00350	.001043	.90194	549.8	.00254	.000756
87	.90440	566.8	.00533	.001595	.91315	568.1	.00448	.001334	.91539	565.1	.00356	.001060
88	.90219	563.8	.00477	.001427	.91651	568.5	.00522	.001555	.92043	572.8	.00434	.001292
89	.90053	558.8	.00391	.001170	.91875	572.8	.00574	.001710	.92379	579.8	.00460	.001369
90	.90440	559.5	.00342	.001023	.91931	580.5	.00783	.002332	.92547	586.1	.00610	.001816
91	.92429	576.1	.00481	.001439	.93780	586.1	.00678	.002020	.92940	591.8	.01090	.003245
92	.94474	588.1	.00470	.001406	.94228	598.8	.01054	.003140	.93948	605.5	.01485	.004421
93	.89335	548.5	.00268	.000802	.92435	556.8	.00134	.000399	.92660	555.5	.00096	.000286
94	.89993	556.8	.00360	.001077	.92043	557.5	.00215	.000640	.92211	557.5	.00169	.000503
95	.90219	563.5	.00488	.001460	.91595	561.8	.00350	.001043	.91427	560.5	.00326	.000971
96	.90164	565.5	.00546	.001634	.91651	567.5	.00443	.001320	.91371	570.5	.00569	.001694
97	.90109	563.8	.00521	.001559	.92099	573.8	.00552	.001644	.91819	582.5	.00804	.002394
98	.90606	563.5	.00435	.001302	.92660	585.1	.00809	.002410	.92435	592.5	.01166	.003471

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS FOR CONFIGURATION 4 - Continued

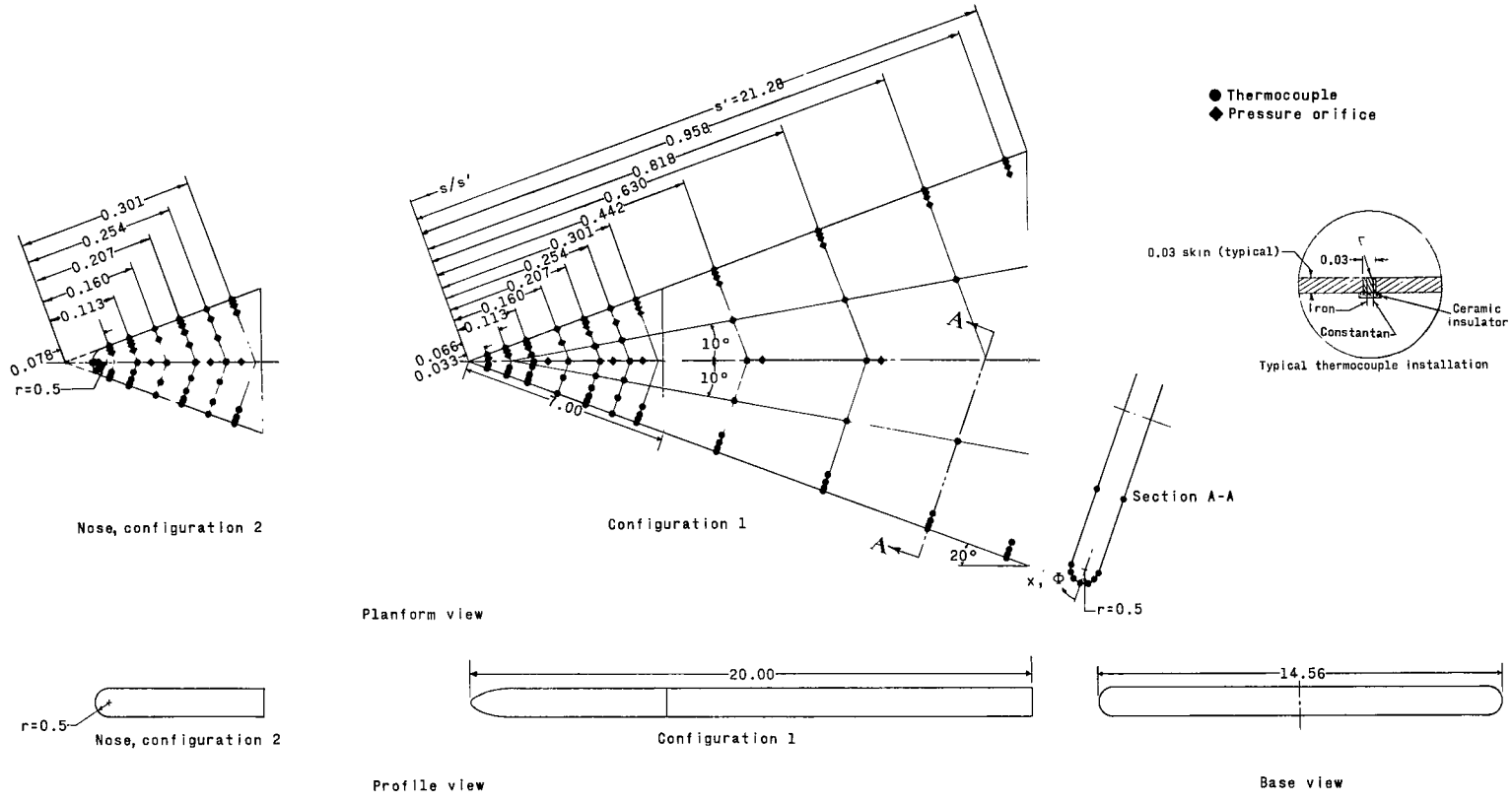
(d) M = 4.65; $p_{t,nom}$ = 12,240 lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}	T_e/T_t	T_w, °R	h, Btu/sec-ft²-°R	N_{St}
	α' = 22.5°; T_t = 682° R; p_t = 12,257.0 lb/sq ft				α' = 30.0°; T_t = 682° R; p_t = 12,247.0 lb/sq ft				α' = 37.5°; T_t = 684° R; p_t = 12,256.0 lb/sq ft			
4	.92117	566.1	.00403	.001207	.92504	566.1	.00337	.001010	.94621	576.5	.00281	.000843
5	.92620	579.8	.00651	.001951	.92896	580.5	.00596	.001787	.94284	586.5	.00496	.001489
6	.94185	597.8	.00890	.002667	.94462	600.8	.00956	.002866	.95741	607.1	.00792	.002377
7	.94633	607.5	.01179	.003533	.95245	615.5	.01217	.003648	.96694	624.5	.01183	.003550
8	.94912	611.1	.01295	.003880	.96140	633.1	.01555	.004661	.97870	636.8	.01448	.004346
9	.92285	555.8	.00129	.000387	.93455	562.8	.00090	.000270	.97030	583.1	.00081	.000243
10	.92005	553.8	.00120	.000360	.93343	561.1	.00086	.000258	.96414	580.5	.00081	.000243
11	.91670	556.5	.00225	.000674	.92784	561.5	.00180	.000540	.95293	576.1	.00152	.000456
12	.92620	576.8	.00378	.001133	.93231	573.8	.00361	.001082	.94957	585.5	.00325	.000975
13	.93403	584.8	.00592	.001774	.93847	588.5	.00592	.001775	.95125	596.1	.00542	.001627
14	.94465	597.1	.00737	.002208	.95021	604.1	.00795	.002383	.96414	613.5	.00798	.002395
15	.95415	604.5	.00819	.002454	.96308	615.8	.00996	.002986	.97926	628.8	.01038	.003115
16	.95863	605.8	.00816	.002445	.96867	619.5	.01082	.003243	.98655	634.8	.01150	.003451
17	.95639	610.1	.00882	.002643	.96643	624.8	.01352	.004053	.98319	638.5	.01288	.003865
18	.93403	567.8	.00143	.000428	.94965	574.1	.00138	.000414	.98823	597.5	.00119	.000357
19	.92396	555.1	.00083	.000249	.94406	566.5	.00086	.000258	.97142	584.8	.00120	.000360
20	.92900	580.8	.00511	.001531	.93399	587.1	.00528	.001583	.94733	591.1	.00481	.001444
21	.95415	597.8	.00625	.001873	.96252	609.8	.00835	.002503	.97814	624.5	.00935	.002806
22	.95751	608.8	.00762	.002283	.96252	622.8	.01082	.003243	.97870	632.5	.01122	.003367
23	.93906	568.1	.00119	.000357	.96084	578.1	.00099	.000297	.99719	600.5	.00082	.000246
24	.93850	564.1	.00082	.000246	.96028	576.5	.00082	.000246	.99159	595.8	.00116	.000348
25	.92676	557.8	.00099	.000297	.94686	569.1	.00104	.000312	.97646	590.5	.00177	.000531
26	.91781	555.1	.00159	.000476	.93399	564.1	.00163	.000489	.96133	585.5	.00230	.000690
27	.92229	565.8	.00308	.000923	.93231	570.8	.00294	.000881	.95125	583.1	.00325	.000975
28	.91558	570.8	.00494	.001480	.92392	574.8	.00475	.001424	.93612	583.5	.00476	.001429
29	.94353	592.8	.00566	.001696	.94909	597.8	.00667	.001999	.96133	611.1	.00658	.001975
30	.94353	594.8	.00622	.001864	.95469	606.5	.00734	.002200	.96189	622.1	.00915	.002746
31	.95807	597.1	.00505	.001513	.96643	608.1	.00683	.002047	.97926	623.5	.00823	.002470
32	.93906	586.5	.00573	.001717	.94630	602.1	.00767	.002299	.96021	612.5	.00909	.002728
33	.94912	602.8	.00766	.002295	.95301	611.5	.01070	.003207	.97254	627.1	.01047	.003142
34	.94353	566.1	.00084	.000252	.97650	588.5	.00082	.000246	1.00783	602.5	.00056	.000168
35	.95303	569.5	.00051	.000153	.97762	585.8	.00067	.000201	1.00615	602.8	.00086	.000258
36	.93067	557.1	.00080	.000240	.94965	570.1	.00105	.000315	.97366	585.8	.00127	.000381
37	.93011	579.1	.00461	.001381	.93567	582.8	.00501	.001502	.94677	591.1	.00507	.001522
38	.95192	590.8	.00463	.001387	.96084	602.5	.00607	.001820	.97086	617.1	.00777	.002332
39	.95751	594.1	.00471	.001411	.96196	603.8	.00620	.001859	.97646	618.8	.00748	.002245
40	.94744	599.8	.00665	.001992	.95581	615.8	.00937	.002809	.97758	629.1	.00950	.002851
41	.94465	565.5	.00081	.000243	.96028	577.1	.00089	.000267	.98094	589.8	.00101	.000303
42	.92508	558.1	.00145	.000434	.94406	569.1	.00138	.000414	.96358	580.8	.00140	.000420
43	.92229	564.5	.00279	.000836	.93343	570.5	.00257	.000770	.94789	578.8	.00280	.000840
44	.92285	574.8	.00404	.001210	.93063	580.1	.00393	.001178	.93948	587.1	.00452	.001356
45	.94409	588.8	.00448	.001342	.95301	597.5	.00528	.001583	.96077	605.5	.00617	.001852
46					.96028	603.1	.00537	.001610	.96638	613.5	.00743	.002230
47	.95415	588.8	.00367	.001100	.96420	603.8	.00469	.001406	.97254	615.8	.00684	.002053
50	.92452	582.5	.00756	.002265	.92504	579.5	.00655	.001963	.93892	586.5	.00497	.001492
51	.95192	622.1	.01568	.004698	.94797	617.5	.01442	.004323	.95461	617.8	.00964	.002893
52	.97540	648.8	.02582	.007736	.97259	647.1	.02911	.008726	.97814	646.8	.01706	.005120
53	.98490	656.8	.02790	.008360	.98657	660.8	.04507	.013510	.99663	666.5	.02840	.008523
54	.97316	644.1	.02216	.006640	.98098	653.5	.03266	.009790	.99719	663.8	.02179	.006539
55	.92396	580.5	.00726	.002175	.92224	576.8	.00623	.001868	.93780	581.1	.00461	.001383
56	.93570	607.8	.01195	.003581	.93679	606.1	.01146	.003435	.94396	605.1	.00809	.002428
57	.96533	637.5	.01970	.005903	.96531	638.1	.02416	.007242	.97198	639.5	.01433	.004301
58	.97092	646.5	.02359	.007068	.97426	651.8	.03526	.010570	.98543	656.8	.01917	.005753
59	.96198	636.5	.01972	.005909	.96923	646.5	.03036	.009101	.98711	657.5	.02083	.006251
60	.95248	574.8	.00123	.000369					1.01679	605.1	.00032	.000096
61	.96366	573.8	.00032	.000096					1.00167	595.8	.00021	.000063
62	.93235	556.8	.00053	.000159	.94965	569.1	.00077	.000231	.96862	580.5	.00076	.000228
63	.92005	555.5	.00114	.000342	.93902	566.8	.00168	.000504	.96077	581.8	.00140	.000420
64	.91446	569.1	.00238	.000713	.92392	572.8	.00385	.001154	.94453	578.8	.00308	.000924
65	.91781	574.8	.00432	.001294	.92112	585.1	.00917	.002749	.93836	597.1	.00608	.001825
66	.92900	589.5	.00579	.001735	.93007	610.1	.01576	.004724	.94789	611.1	.01014	.003043
67	.94297	605.5	.00735	.002202	.94070	624.1	.02285	.006850	.96302	635.8	.01436	.004310
68	.94912	615.1	.01080	.003236	.94853	630.5	.02621	.007857	.97198	637.8	.01741	.005225
69	.94633	631.1	.01574	.004716	.95692	630.5	.02714	.008136	.97590	643.5	.02237	.006713
70	.94689	619.1	.01619	.004851	.95972	637.5	.02517	.007545	.97814	657.1	.02490	.007473
71	.94129	566.8	.00091	.000273					1.00727	601.8	.00057	.000171
72	.94129	562.5	.00048	.000144	.98937	589.8	.00033	.000099	.99327	591.8	.00041	.000123
73	.92229	551.5	.00078	.000234	.94238	564.1	.00073	.000219	.95741	574.1	.00080	.000240
74	.90552	547.1	.00181	.000542	.92448	558.8	.00141	.000423	.94284	567.1	.00121	.000363
75	.90160	560.5	.00365	.001094	.91329	561.5	.00325	.000974	.93052	566.8	.00276	.000828
76	.90048	572.8	.00721	.002160	.90602	574.1	.00660	.001978	.91875	575.1	.00548	.001645
77	.92005	593.1	.01114	.003338	.92560	596.8	.01128	.003381	.94004	612.8	.00959	.002878
78	.92285	600.8	.01439	.004312	.93287	614.1	.01759	.005273	.95125	624.1	.01460	.004382
79	.93347	608.5	.01583	.004743	.94686	628.8	.01917	.005746	.96526	633.8	.01888	.005666
80	.93291	608.1	.01620	.004854	.94909	629.1	.02373	.007113	.97086	652.8	.02652	.007959
81	.94297	619.8	.02048	.006136	.95860	639.8	.03149	.009439	.97478	659.8	.05035	.015110
82	.93626	562.5	.00100	.000300	.97930	588.1	.00100	.000300	.99831	606.5	.00145	.000435
83	.95080	566.8	.00045	.000135	.98321	587.1	.00057	.000171	.99159	595.1	.00086	.000258
84	.92005	550.1	.00064	.000192	.93902	563.1	.00089	.000267	.95181	570.1	.00089	.000267
85	.92452	557.5	.00154	.000461	.94909	571.1	.00121	.000363	.96189	580.5	.00127	.000381
86	.89707	549.8	.00300	.000899	.90994	555.8	.00298	.000893	.92604	563.1	.00254	.000762
87	.90719	571.5	.00633	.001897	.91385	572.5	.00589	.001766	.92772	577.8	.00493	.001480
88	.91502	586.8	.00964	.002888	.92224	591.1	.01055	.003162	.93612	597.1	.00851	.002554
89	.92061	596.8	.01294	.003877	.93175	606.8	.01508	.004520	.94845	619.8	.01323	.003970
90	.92508	601.1	.01409	.004222	.93847	621.8	.01784	.005348	.95741	625.1	.01652	.004958
91	.94185	609.8	.01323	.003964	.95804	633.8	.01657	.004967	.97646	649.5	.01804	.005414
92	.94912	630.5	.01874	.005615	.96252	642.8	.03233	.009691	.97870	655.8	.04432	.013301
93	.92955	559.1	.00110	.000330	.94238	567.5	.00136	.000408	.94957	571.1	.00120	.000360
94	.92452	557.5	.00138	.000413	.93902	566.5	.00161	.000483	.94789	572.8	.00155	.000465
95	.90831	555.8	.00304	.000911	.92112	564.1	.00289	.000866	.93444	567.8	.00246	.000738
96	.90384	569.1	.00573	.001717	.91050	567.8	.00548	.001643	.92211	572.5	.00472	.001417
97	.91055	582.8	.00947	.002837	.91833	587.1	.00990	.002968	.93052	591.5	.00819	.002458
98	.92173	599.8	.01249	.003742	.93231	612.8	.01371	.004110	.94733	612.5	.01235	.003706

TABLE IX. - TABULATION OF HEAT-TRANSFER MEASUREMENTS
FOR CONFIGURATION 4 - Concluded

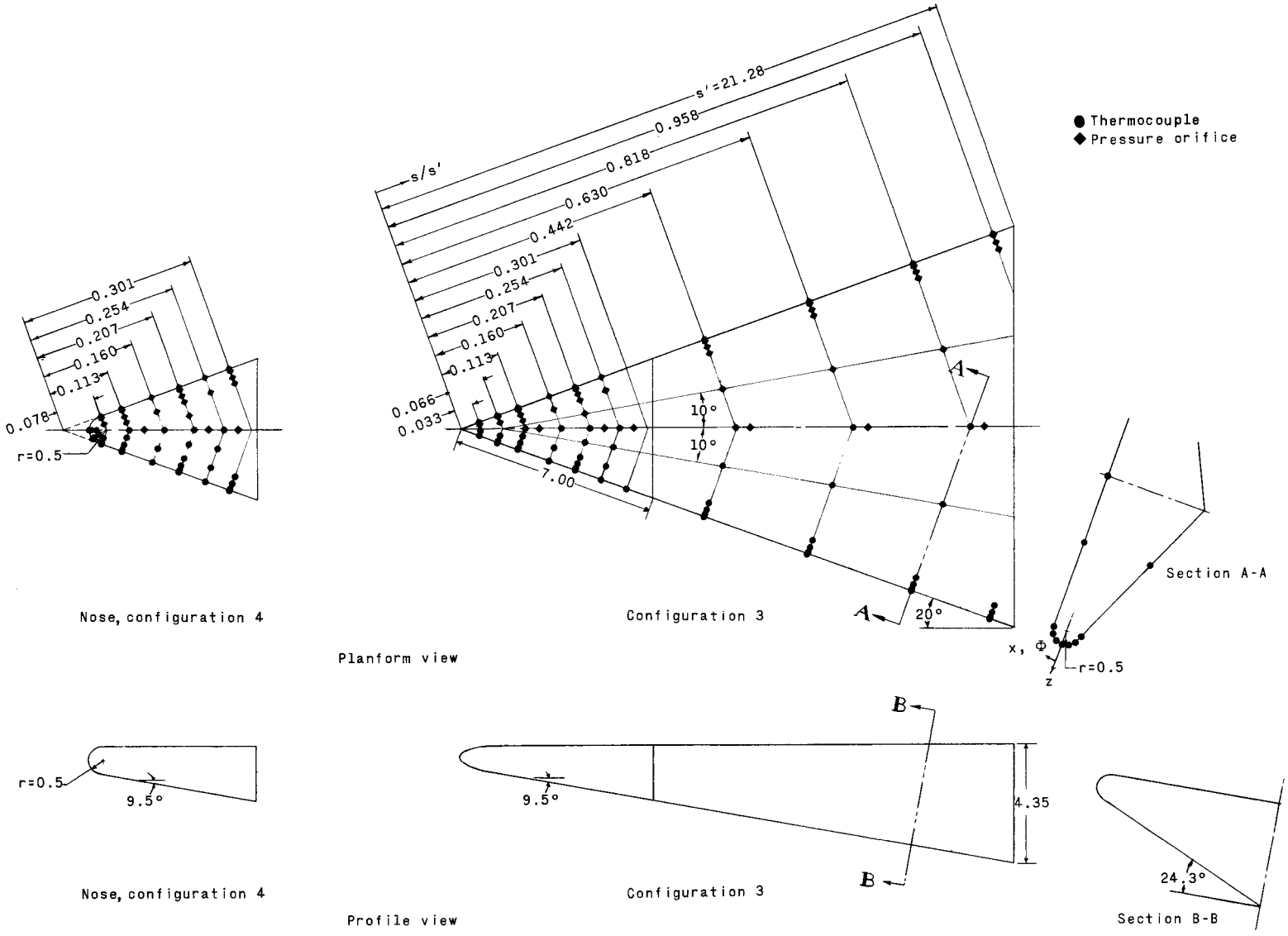
(d) $M = 4.65$; $p_{t,nom} = 12{,}240$ lb/sq ft

Thermocouple	T_e/T_t	T_w, °R	h, Btu/sec-ft^2-°R	N_{St}
	$\alpha' = 45.0°$; $T_t = 675°$ R; $p_t = 12{,}231.0$ lb/sq ft			
4	.97137	571.1	.00103	.000308
5	.95820	570.1	.00217	.000648
6	.96794	583.8	.00334	.000997
7	.97481	597.8	.00523	.001562
8	.98797	611.5	.00619	.001848
9	.99771	583.8	.00059	.000176
10	.99026	579.8	.00066	.000197
11	.97767	573.5	.00073	.000218
12	.96278	570.1	.00164	.000490
13	.95477	574.1	.00276	.000824
14	.96107	586.8	.00426	.001272
15	.97767	603.8	.00567	.001693
16	.98797	612.8	.00637	.001902
17	.98855	616.8	.00711	.002123
18	1.01200	593.8	.00077	.000230
19	.99427	583.8	.00107	.000320
20	.94504	570.5	.00351	.001048
21	.97996	611.5	.00692	.002066
22	.99313	624.8	.00799	.002386
23	1.01771	599.8	.00103	.000308
24	1.01200	595.8	.00101	.000302
25	.99656	586.5	.00115	.000343
26	.97939	578.1	.00144	.000430
27	.96565	574.5	.00212	.000633
28	.94160	568.5	.00349	.001042
29	.96336	591.5	.00493	.001472
30	.96965	603.1	.00639	.001908
31	.98568	616.5	.00737	.002201
32	.97423	612.8	.00853	.002547
33	.99313	628.5	.00880	.002628
34	1.02628	601.8	.00068	.000203
35	1.02800	603.1	.00068	.000203
36	.99771	585.5	.00095	.000284
37	.95191	576.5	.00385	.001150
38	.98168	614.5	.00720	.002150
39	.99599	626.5	.00820	.002449
40	1.00000	636.5	.00970	.002897
41	1.00285	589.1	.00088	.000263
42	.98626	579.8	.00103	.000308
43	.96336	574.5	.00222	.000663
44	.94733	572.1	.00347	.001036
45	.96565	593.8	.00520	.001553
46	.97481	607.5	.00658	.001965
47	.98454	615.8	.00691	.002063
50	.96049	568.8	.00194	.000579
51	.96164	583.1	.00353	.001054
52	.97767	604.8	.00537	.001604
53	.99828	626.1	.00641	.001914
54	1.00514	634.5	.00707	.002111
55	.95992	568.8	.00190	.000567
56	.95420	577.8	.00312	.000932
57	.97595	601.1	.00488	.001457
58	.99198	621.1	.00571	.001705
59	.99828	623.8	.00678	.002025
60	1.04629	610.8	.00043	.000128
62	.99255	582.1	.00078	.000233
63	.98168	577.8	.00104	.000311
64	.95763	569.1	.00202	.000603
65	.94332	574.1	.00380	.001135
66	.95246	588.5	.00597	.001783
67	.97023	608.8	.00728	.002174
68	.98359	620.5	.00920	.002747
69	.99942	634.5	.01038	.003100
70	1.01200	652.1	.01433	.004279
71	1.02286	600.1	.00081	.000242
72	1.00628	590.1	.00060	.000179
73	.98053	578.5	.00179	.000535
74	.96679	571.1	.00183	.000546
75	.95420	565.8	.00248	.000741
76	.93817	567.1	.00420	.001254
77	.95935	593.1	.00648	.001935
78	.97252	611.8	.00903	.002696
79	.99084	626.5	.00995	.002971
80	1.00285	639.8	.01198	.003577
81	1.01428	656.8	.01665	.004972
82	1.01028	593.5	.00085	.000254
83	1.00114	586.8	.00081	.000242
84	.97652	574.8	.00101	.000302
85	.99141	584.5	.00119	.000355
86	.95534	566.1	.00205	.000612
87	.95591	576.5	.00374	.001117
88	.96393	593.5	.00590	.001762
89	.97767	613.1	.00815	.002434
90	.98912	624.5	.00949	.002834
91	1.01428	644.8	.01084	.003237
92	1.01771	662.8	.01965	.005868
93	.97595	572.5	.00085	.000254
94	.97595	573.1	.00112	.000334
95	.96393	573.8	.00170	.000508
96	.95248	572.1	.00325	.000970
97	.95992	589.8	.00560	.001672



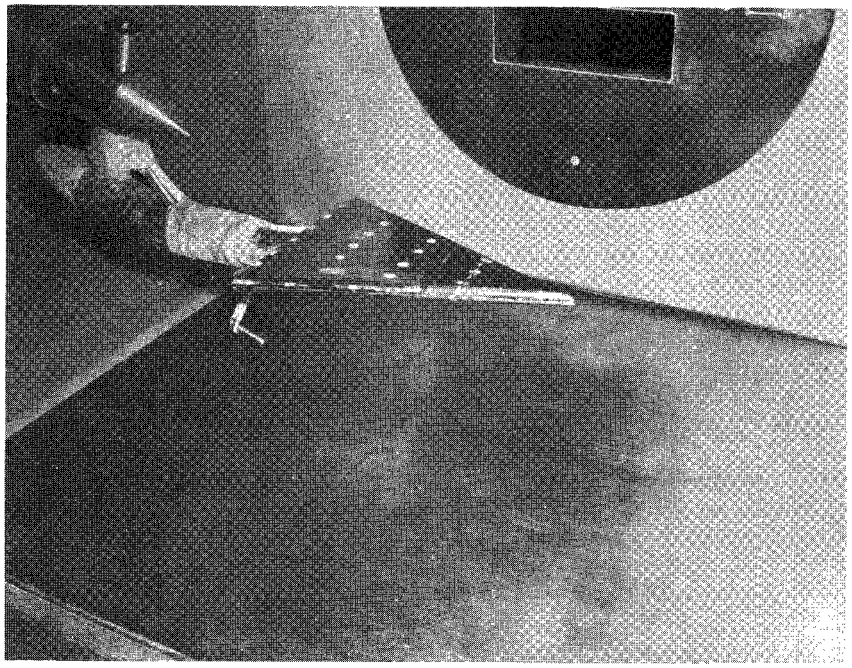
(a) 0° dihedral.

Figure 1.- Thermocouple and pressure-orifice locations on models. (All dimensions are in inches unless otherwise indicated.)

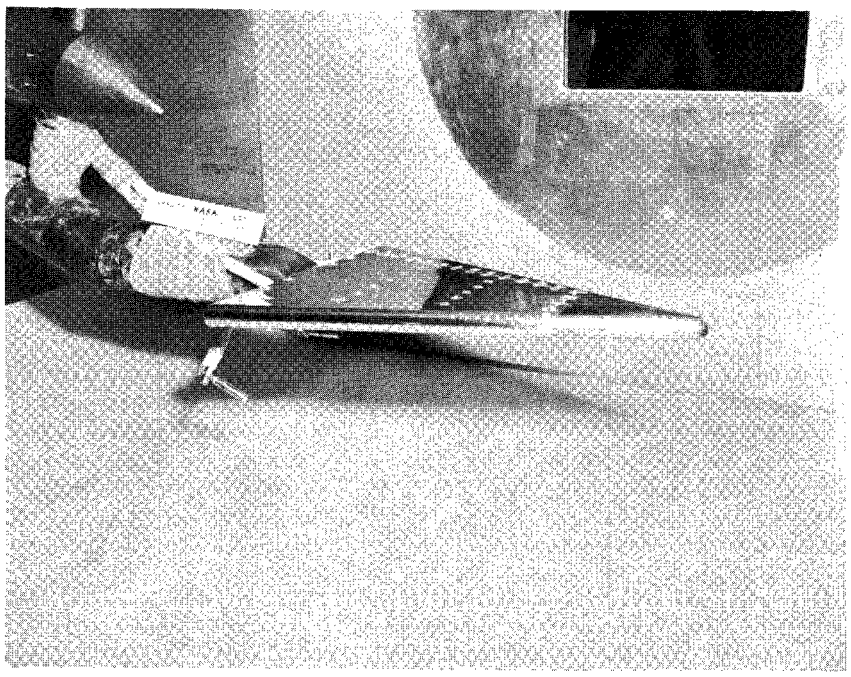


(b) 24.3° dihedral.

Figure 1.- Concluded.

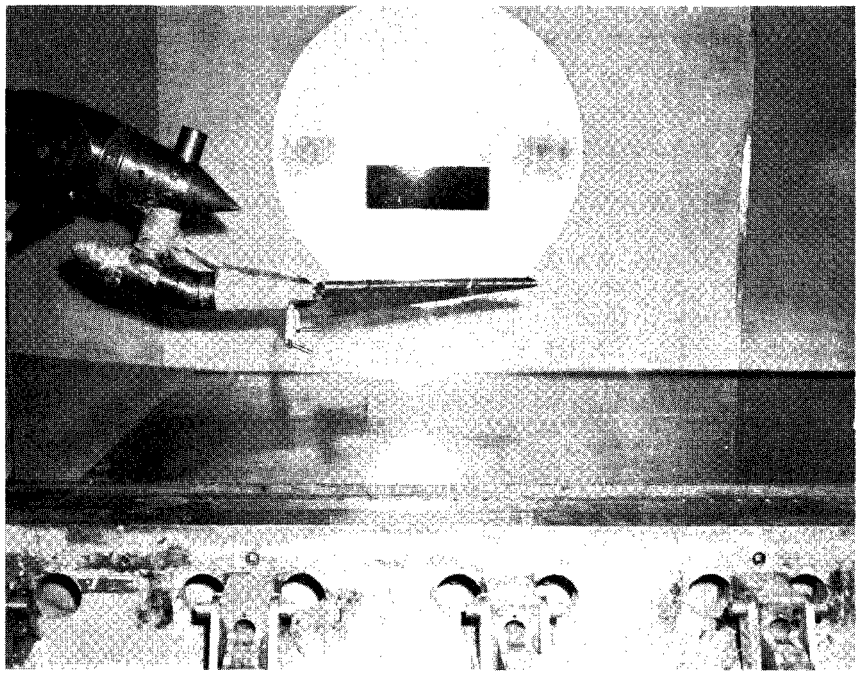


(a) Configuration 1. L-59-1674

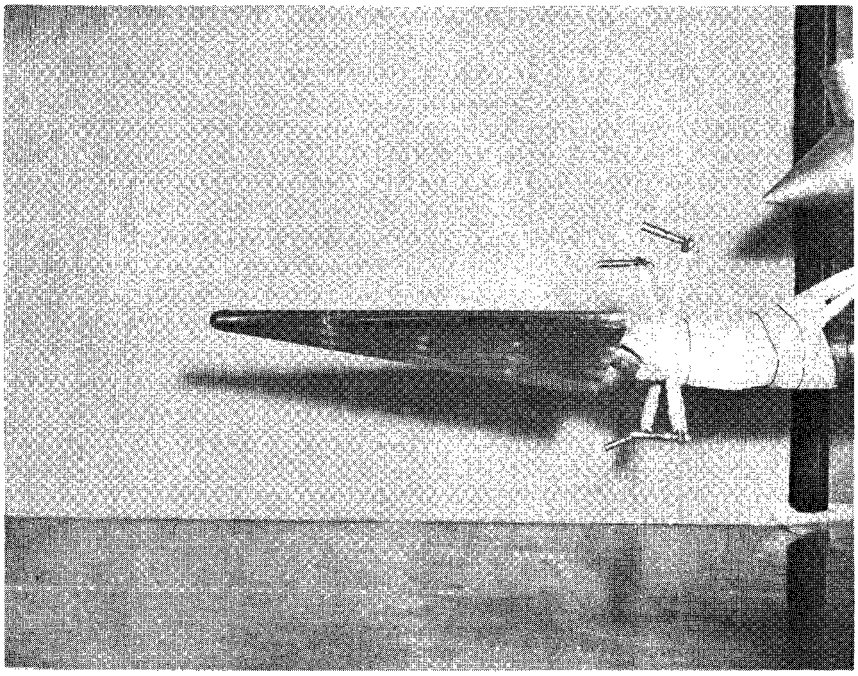


(b) Configuration 2. L-59-1683

Figure 2.- Installation of models in wind tunnel.



(c) Configuration 3. L-59-1684



(d) Configuration 4. L-59-1679

Figure 2.- Concluded.

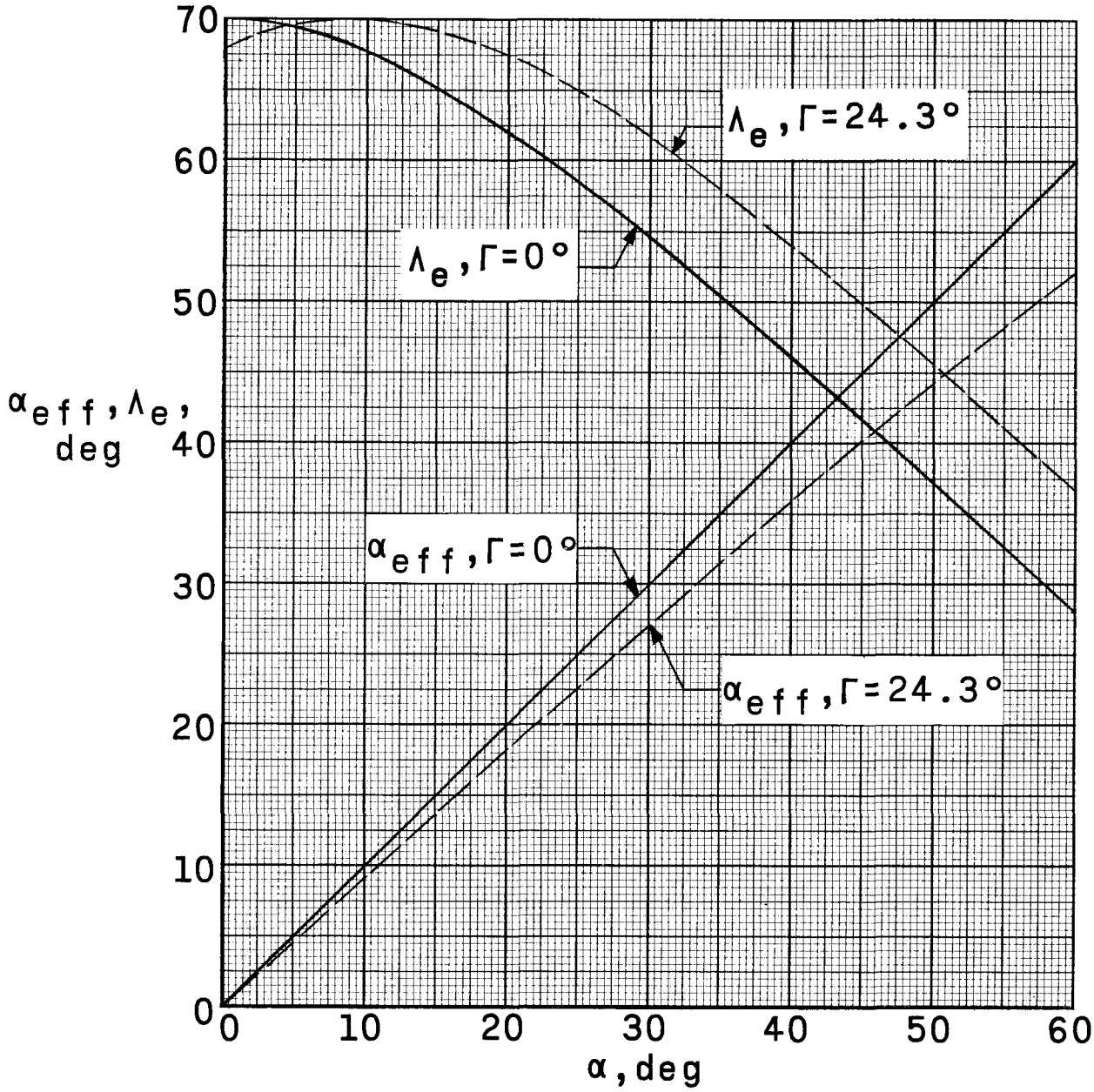
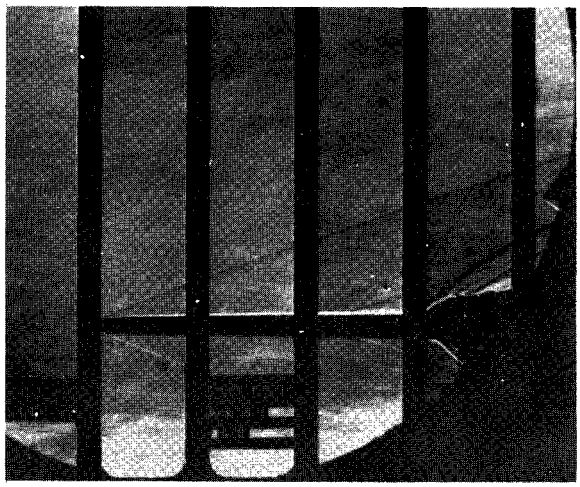


Figure 3.- Variation of wing effective geometry with angle of attack.



$\alpha' = 0°$

$\alpha' = 7.5°$

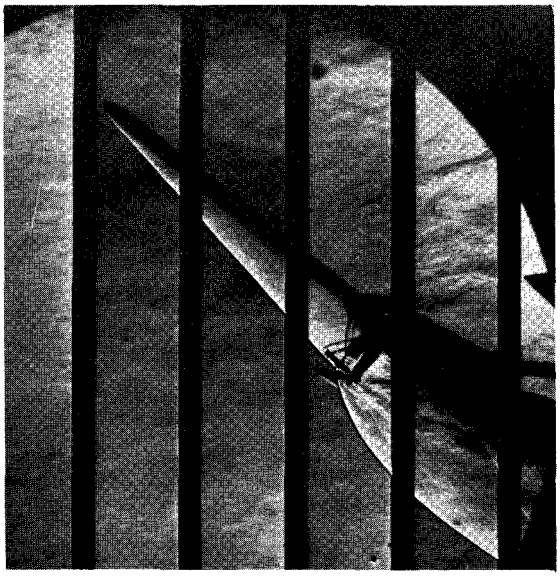
$\alpha' = 15.0°$

$\alpha' = 22.5°$

(a) $M = 3.51$; $R \approx 2.90 \times 10^6$. L-64-3040

Figure 4.- Typical schlieren photographs of configuration 1.

$\alpha' = 30.0°$



$\alpha' = 37.5°$

$\alpha' = 45.0°$

(a) Concluded. L-64-3041

Figure 4.- Continued.

$\alpha' = 0°$

$\alpha' = 7.5°$

$\alpha' = 15.0°$

$\alpha' = 22.5°$

(b) $M = 4.65$; $R \approx 2.90 \times 10^6$. L-64-3042

Figure 4.- Continued.

$\alpha' = 30.0°$

$\alpha' = 37.5°$

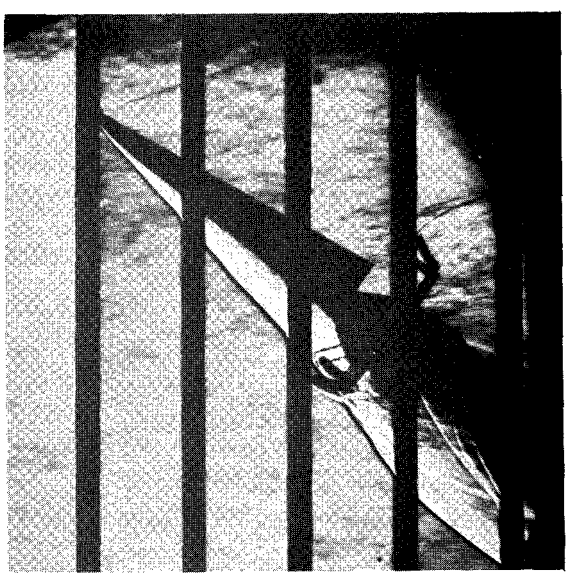
$\alpha' = 45.0°$

(b) Concluded.

L-64-3043

Figure 4.- Concluded.

$\alpha' = -45.0°$

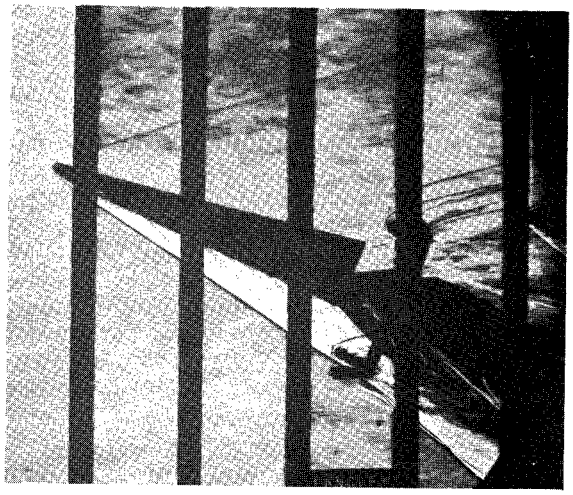


$\alpha' = -37.5°$

$\alpha' = -30.0°$

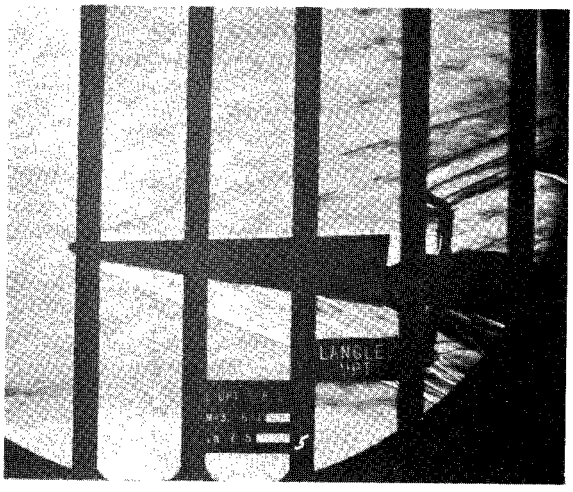
(a) $M = 3.51$; $R \approx 2.90 \times 10^6$. L-64-3044

Figure 5.- Typical schlieren photographs of configuration 3.



$\alpha' = -22.5°$

$\alpha' = -15.0°$

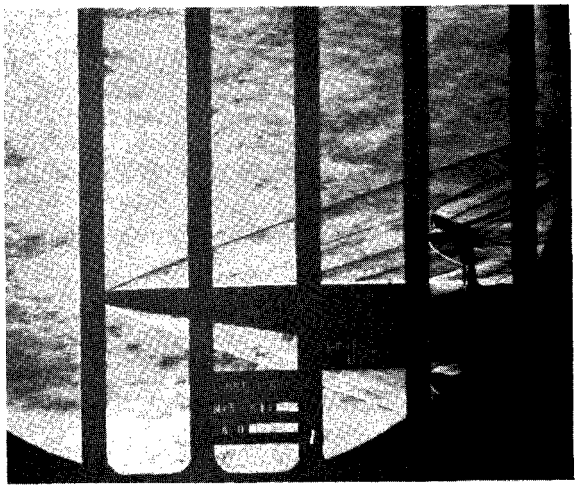


$\alpha' = -7.5°$

(a) Continued.

L-64-3045

Figure 5.- Continued.



$\alpha' = 0°$

$\alpha' = 7.5°$

$\alpha' = 15.0°$

$\alpha' = 22.5°$

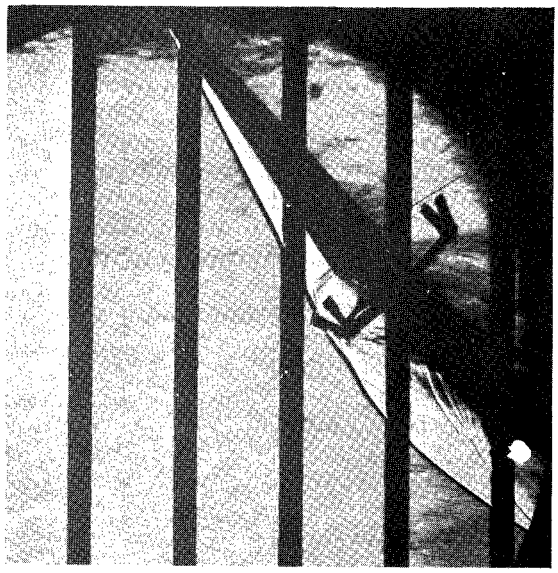
(a) Continued.

L-64-3046

Figure 5.- Continued.

$\alpha' = 30.0°$

$\alpha' = 37.5°$



$\alpha' = 45.0°$

(a) Concluded.

L-64-3047

Figure 5.- Continued.

$\alpha' = -45.0°$

$\alpha' = -37.5°$

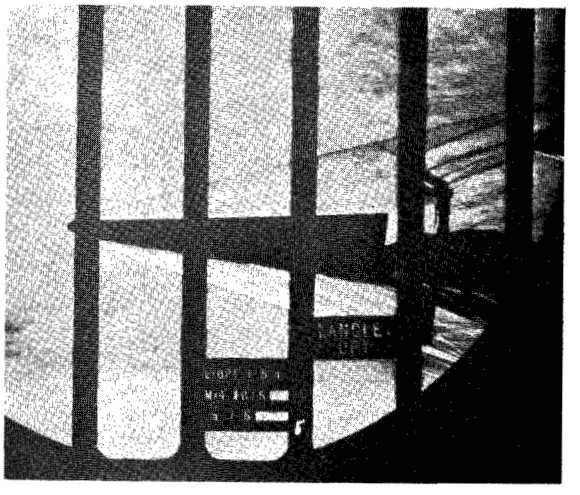
$\alpha' = -30.0°$

(b) $M = 4.65$; $R \approx 2.90 \times 10^6$. L-64-3048

Figure 5.- Continued.

$\alpha' = -22.5°$

$\alpha' = -15.0°$



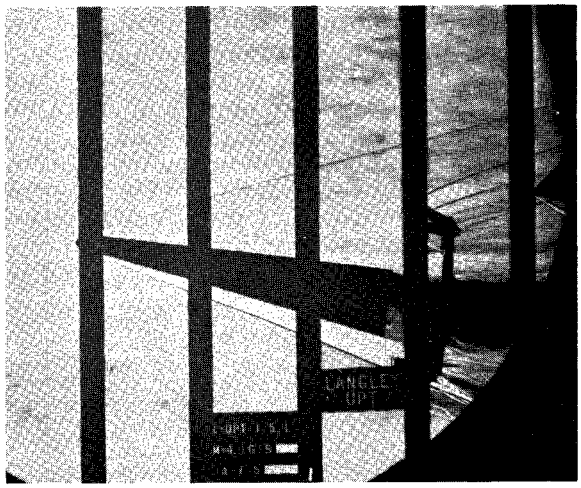
$\alpha' = -7.5°$

(b) Continued.

L-64-3049

Figure 5.- Continued.

$\alpha' = 0°$



$\alpha' = 7.5°$

$\alpha' = 15.0°$

$\alpha' = 22.5°$

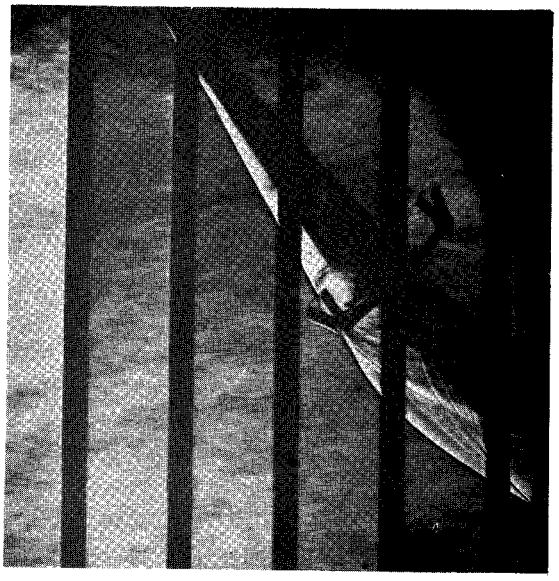
(b) Continued.

L-64-3050

Figure 5.- Continued.

$\alpha' = 30.0°$

$\alpha' = 37.5°$

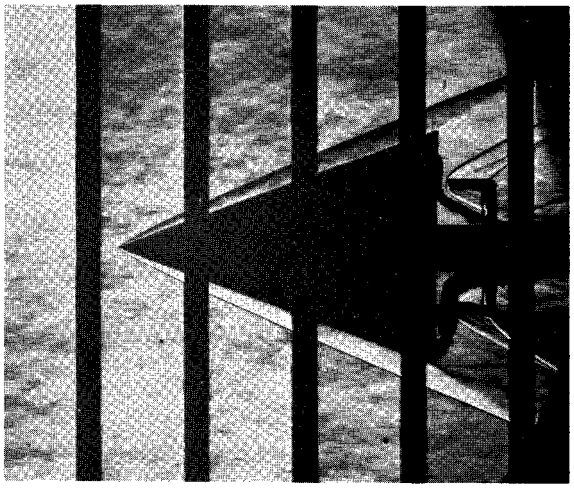


$\alpha' = 45.0°$

(b) Concluded.

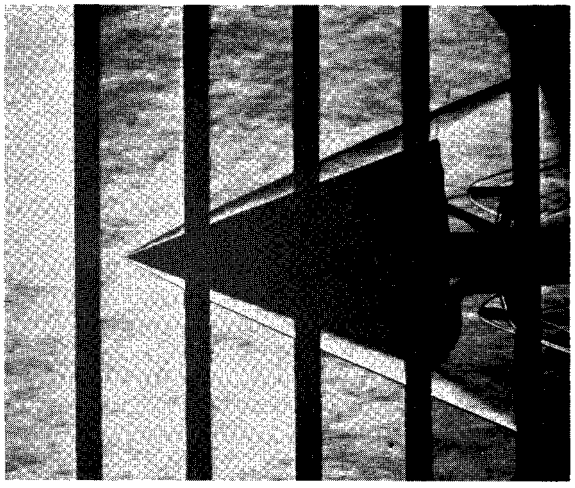
L-64-3051

Figure 5.- Continued.

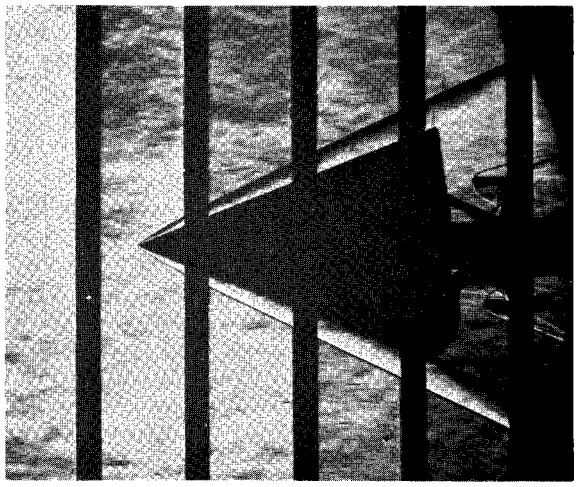


$\alpha' = 0°$

$\alpha' = 7.5°$



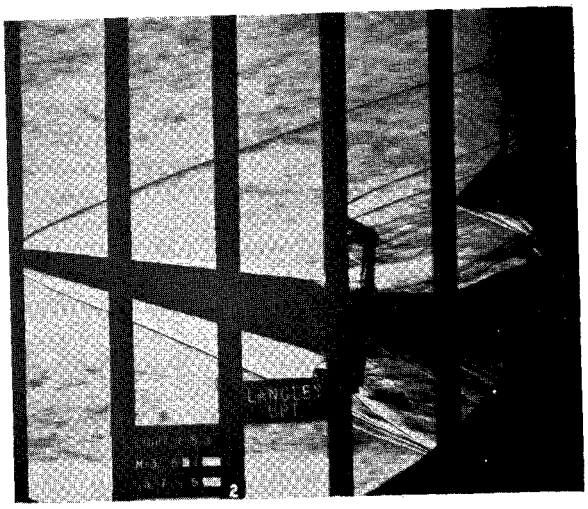
$\alpha' = 15.0°$



$\alpha' = 20.0°$

(c) Planform view; M = 3.51; $R \approx 2.90 \times 10^6$. L-64-3052

Figure 5.- Concluded.



$\alpha' = 7.5°$

$\alpha' = 15.0°$

$\alpha' = 22.5°$

L-64-3053

Figure 6.- Typical schlieren photographs of configuration 4. $M = 3.51$; $R \approx 2.90 \times 10^6$.

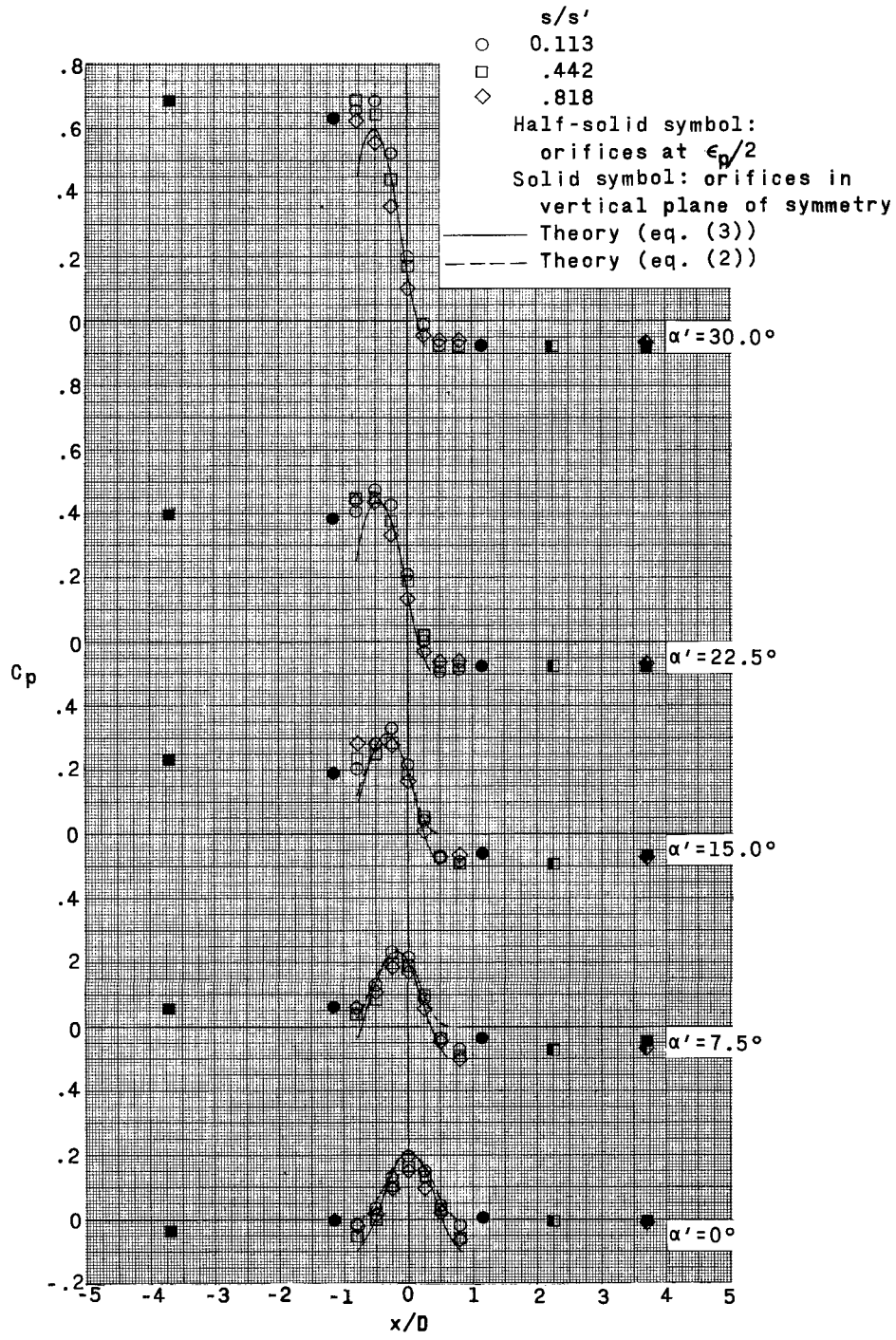
$\alpha' = 30.0°$

$\alpha' = 37.5°$

$\alpha' = 45.0°$

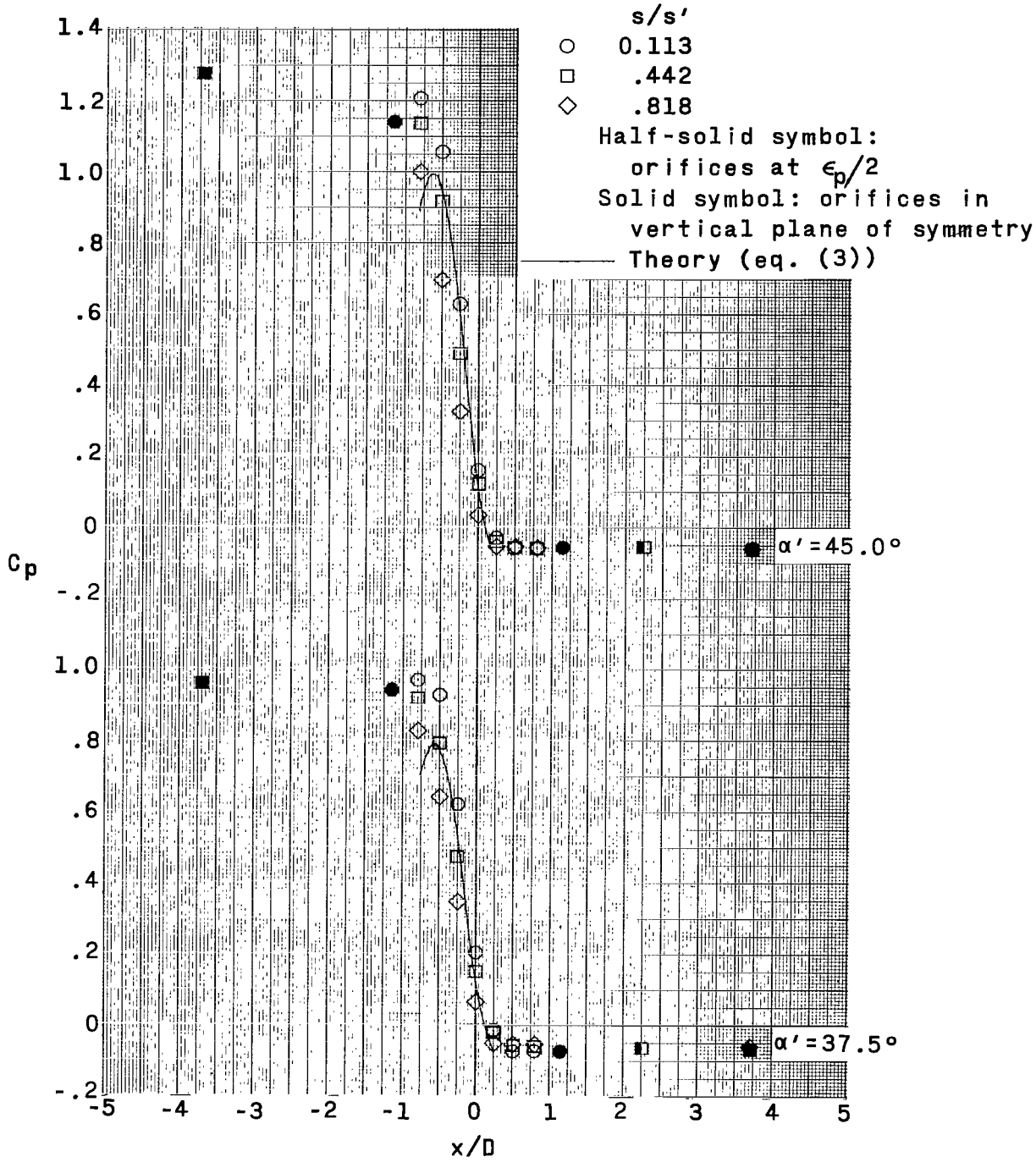
Figure 6.- Concluded.

L-64-3054



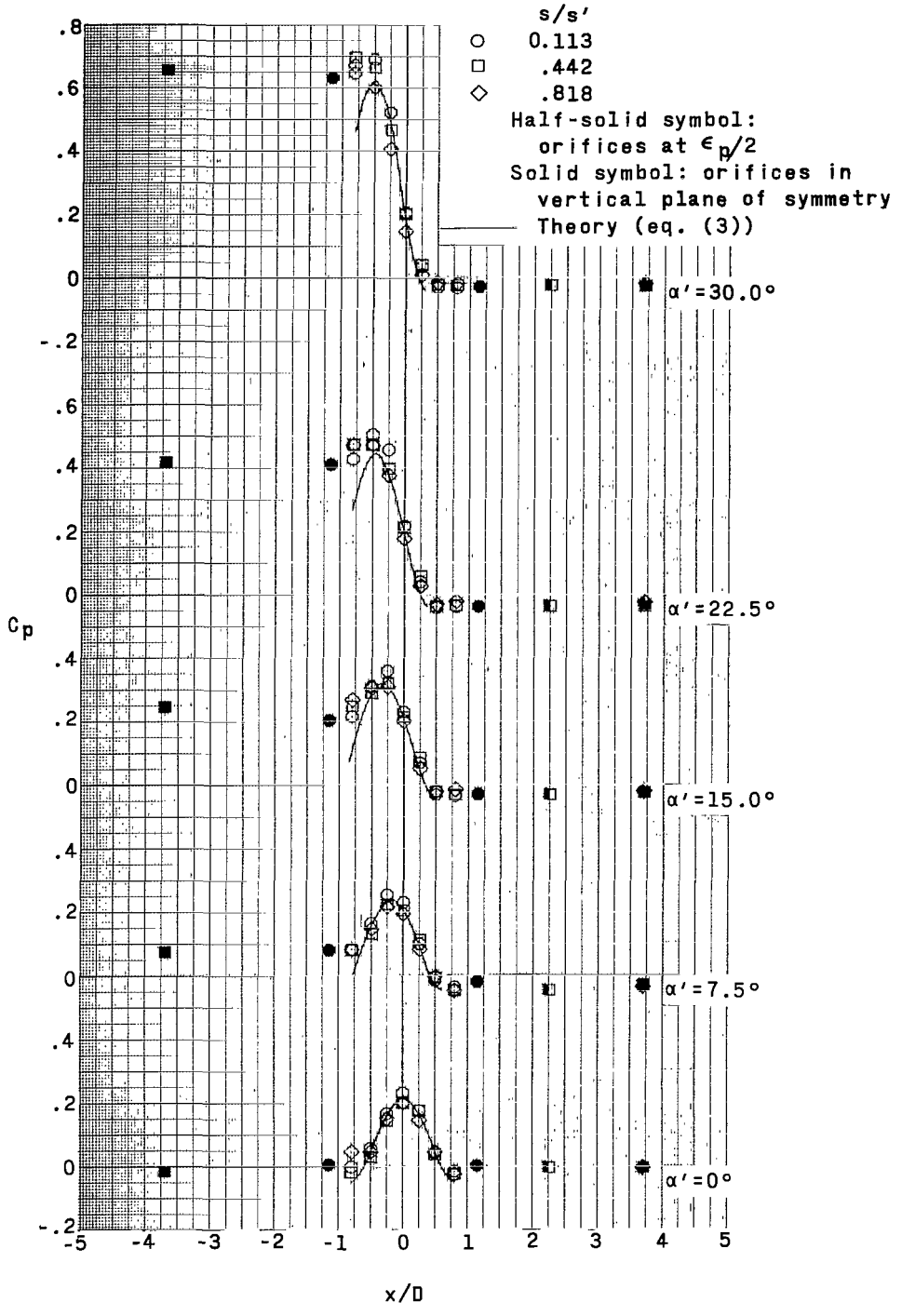
(a) M = 3.51.

Figure 7.- Effect of angle of attack on pressure-coefficient distribution normal to wing leading edge of configuration 1. $R \approx 4.00 \times 10^6$.



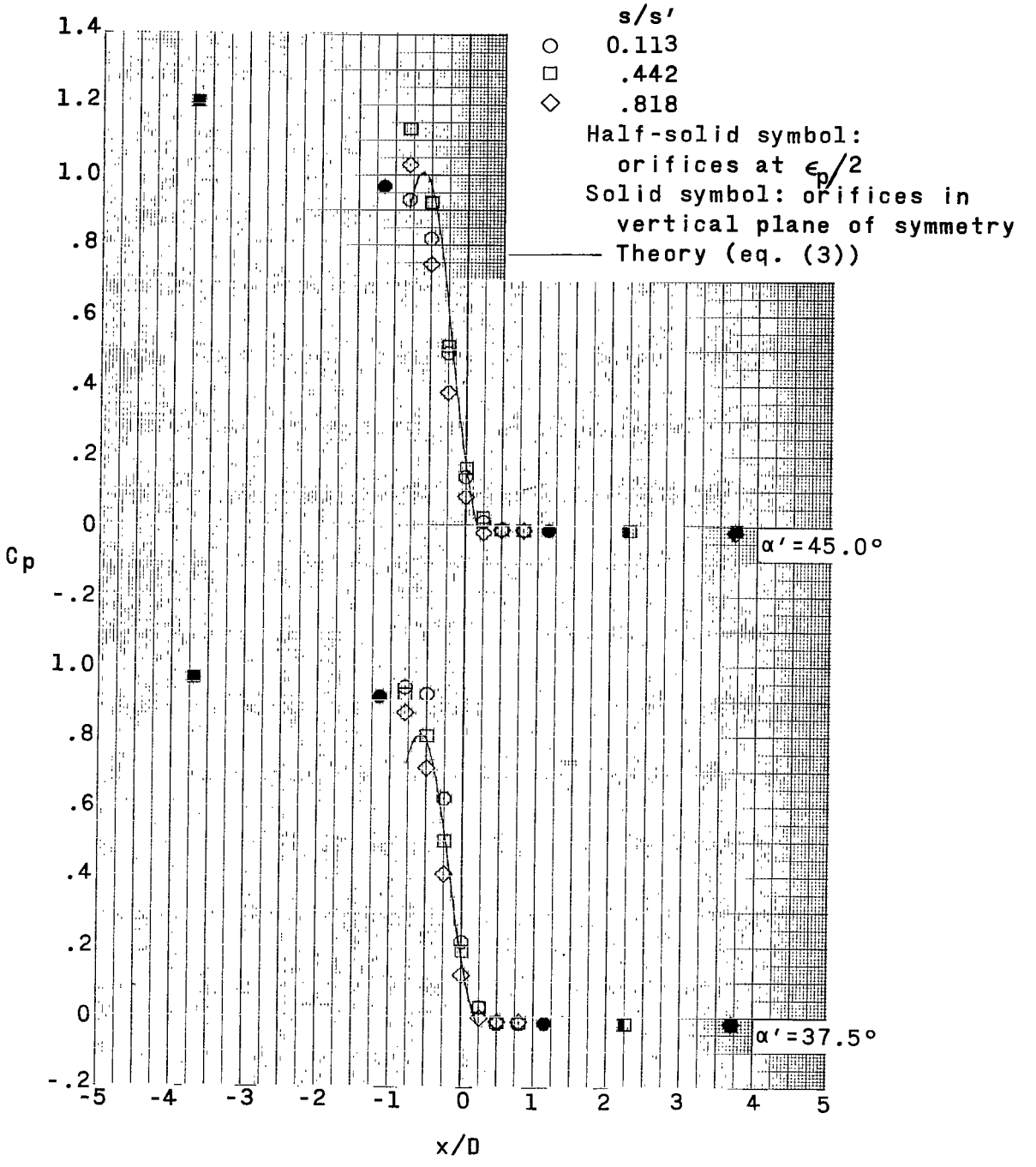
(a) Concluded.

Figure 7.- Continued.



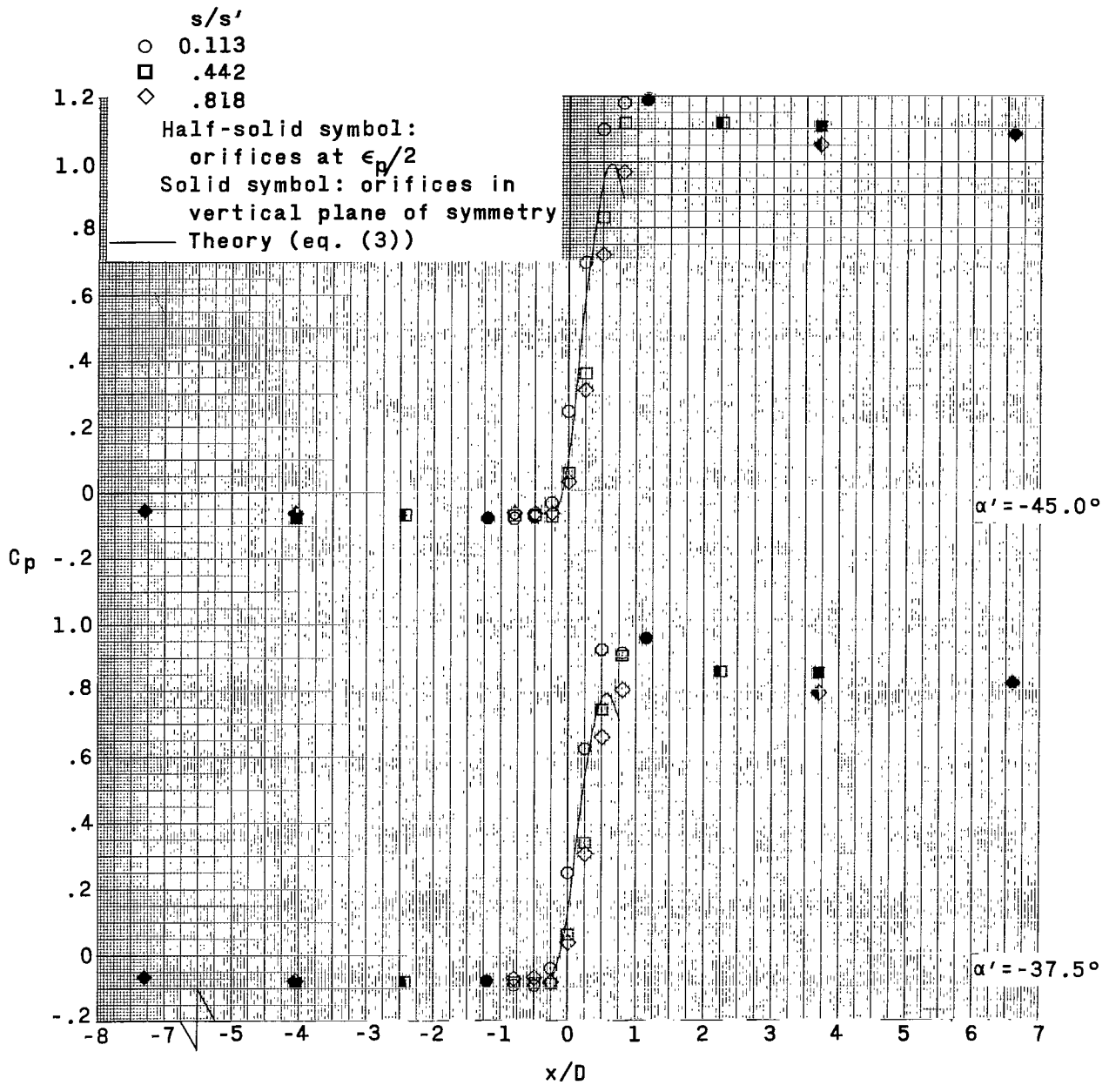
(b) M = 4.65.

Figure 7.- Continued.



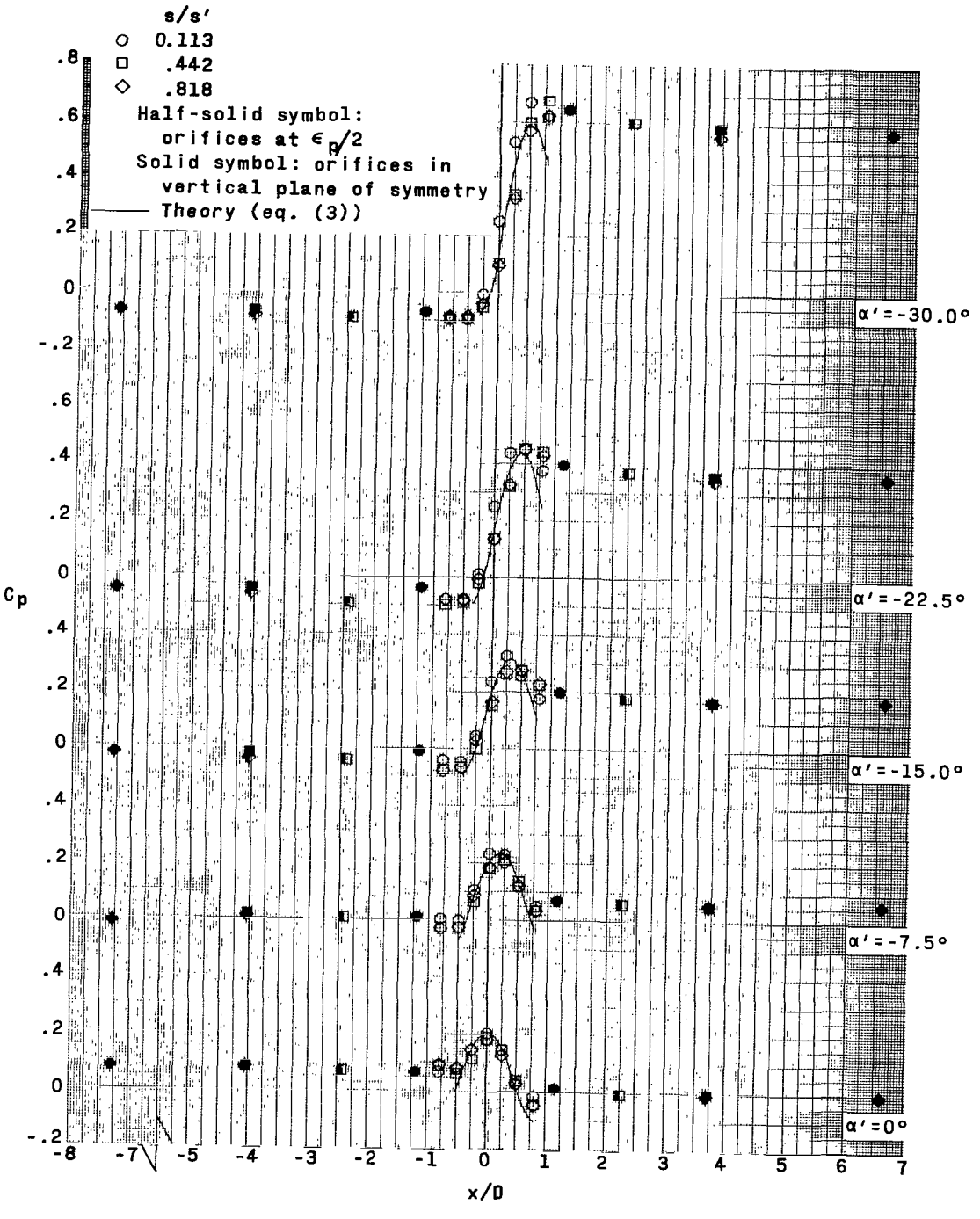
(b) Concluded.

Figure 7.- Concluded.



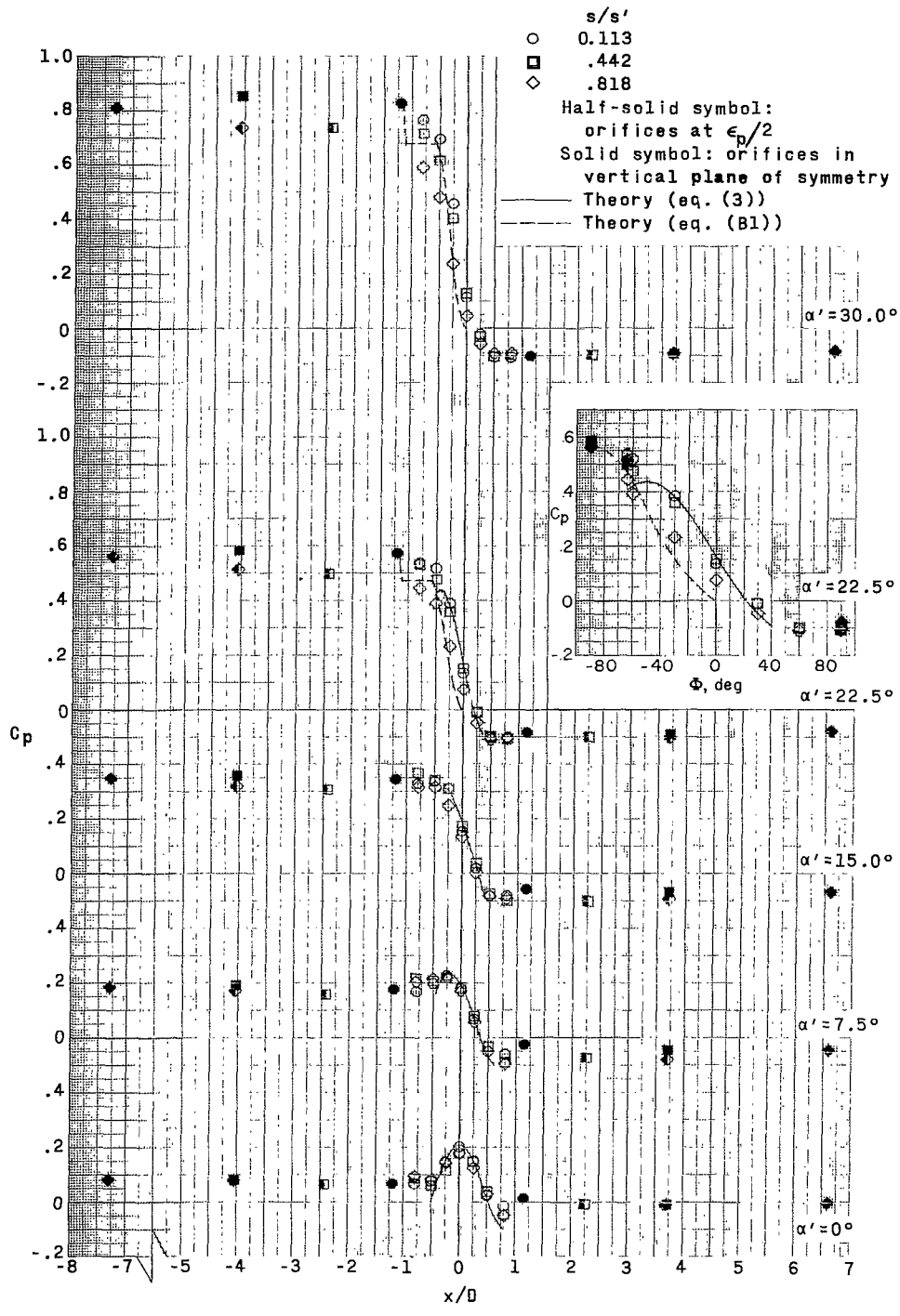
(a) M = 3.51.

Figure 8.- Effect of angle of attack on pressure-coefficient distribution normal to wing leading edge of configuration 3. $R \approx 4.00 \times 10^6$.



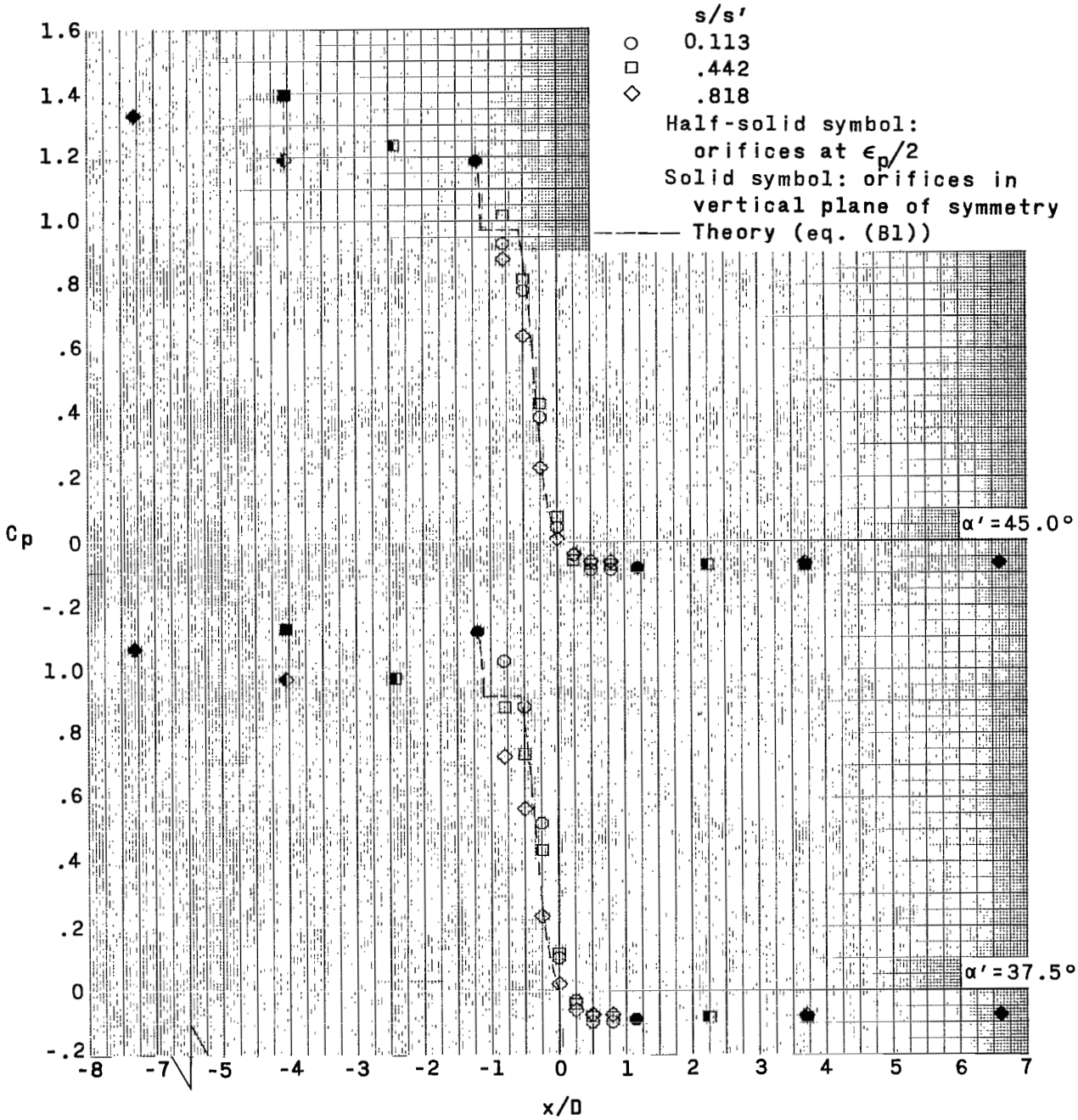
(a) Continued.

Figure 8.- Continued.



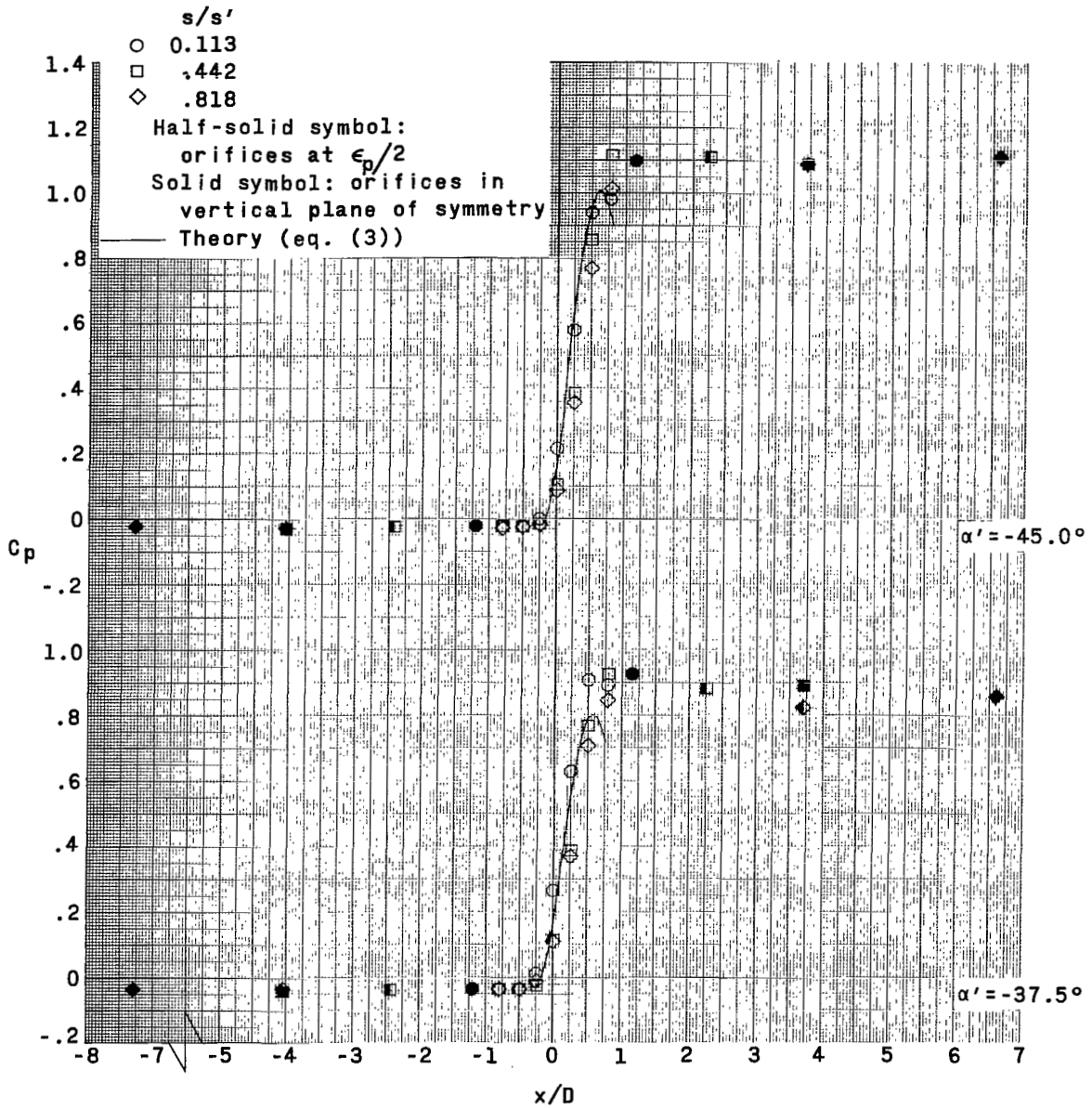
(a) Continued.

Figure 8.- Continued.



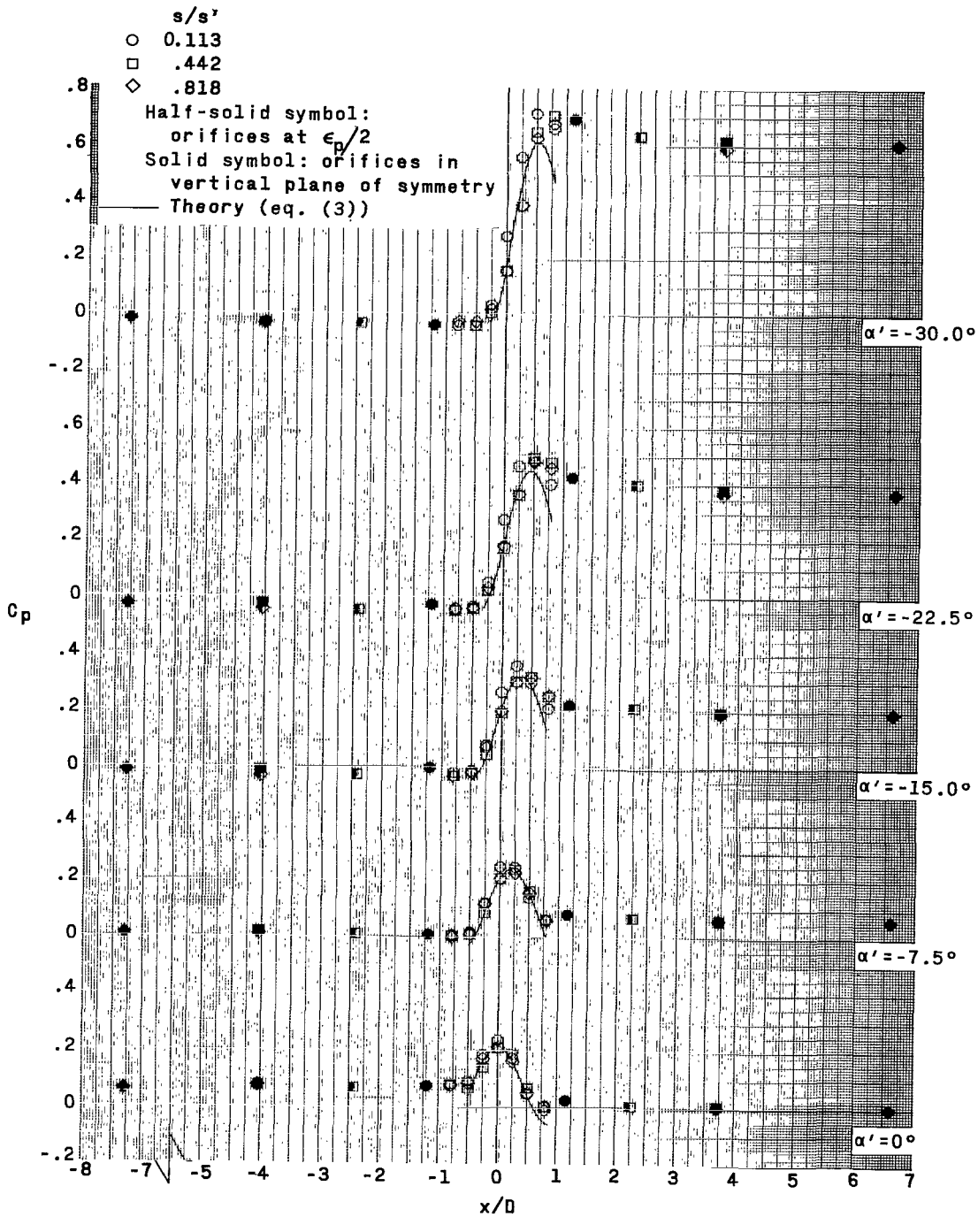
(a) Concluded.

Figure 8.- Continued.



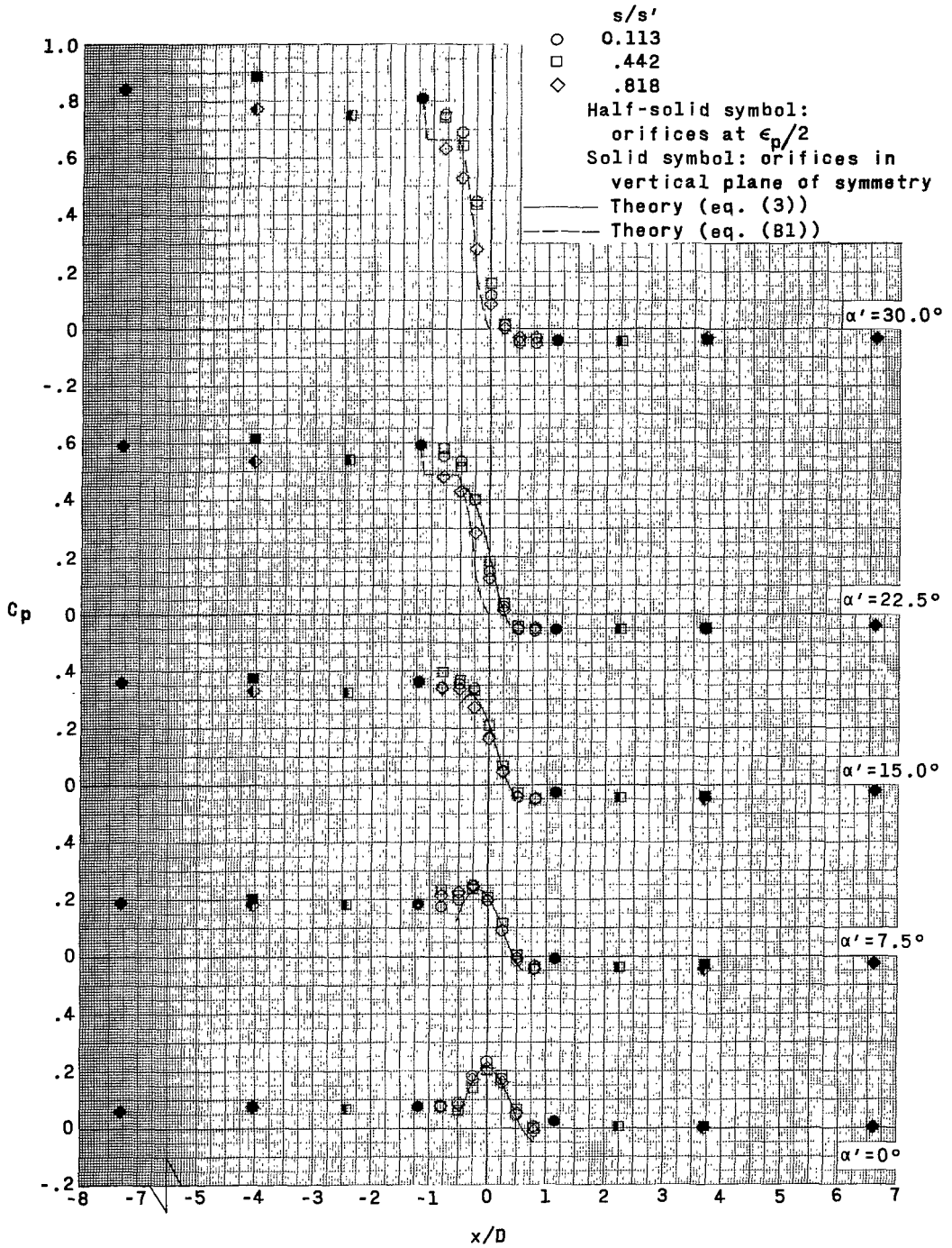
(b) M = 4.65.

Figure 8.- Continued.



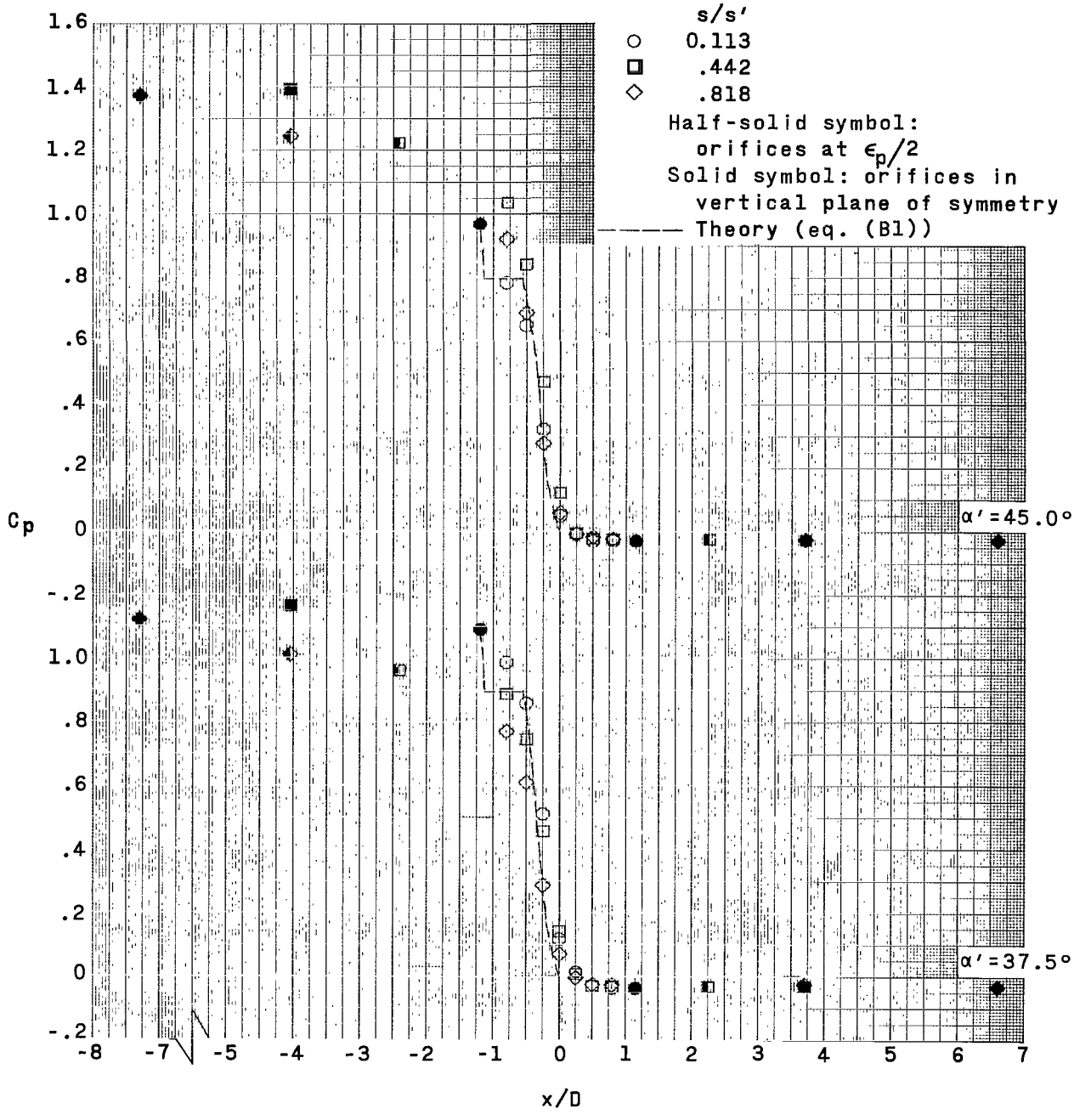
(b) Continued.

Figure 8.- Continued.



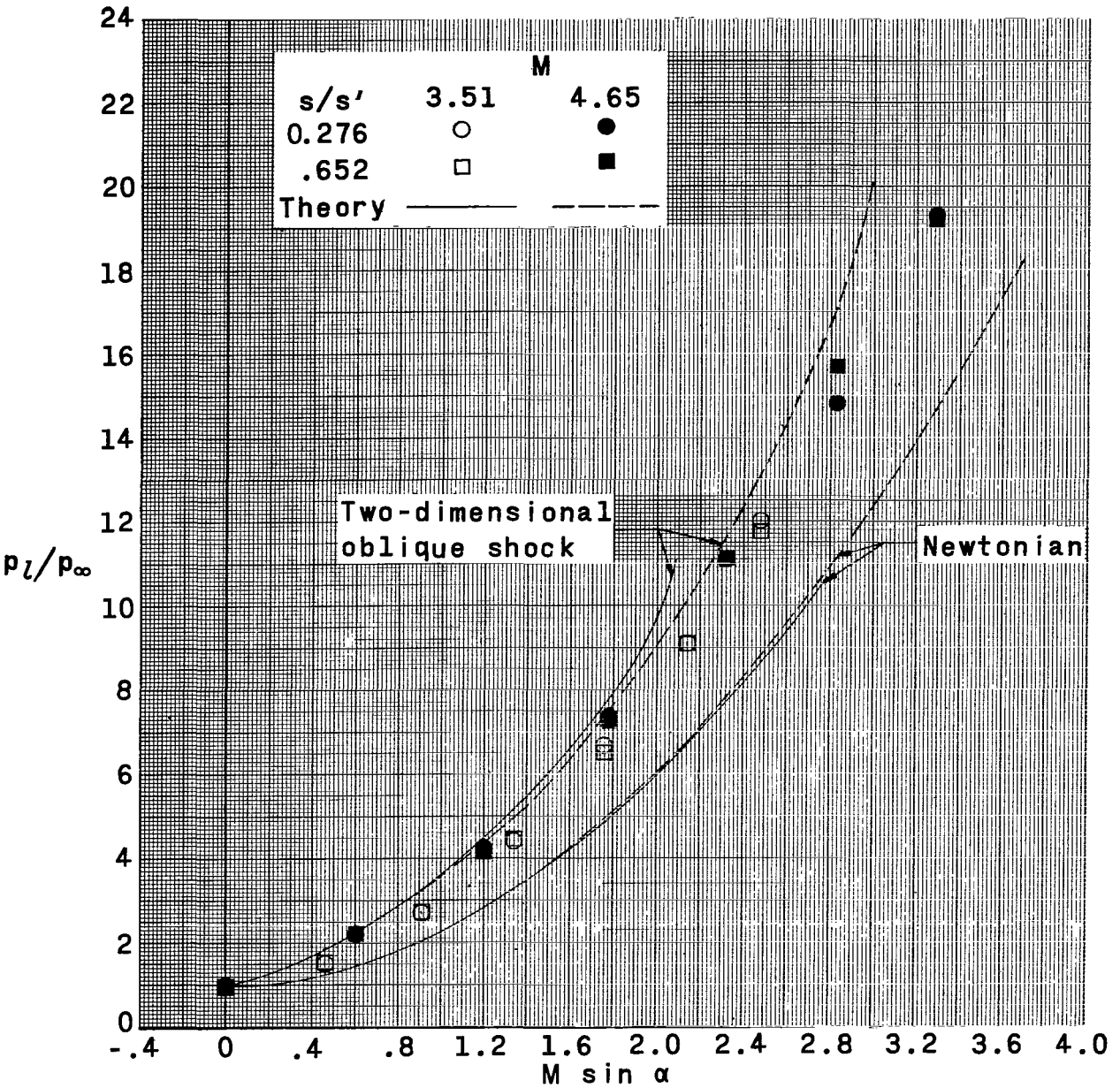
(b) Continued.

Figure 8.- Continued.



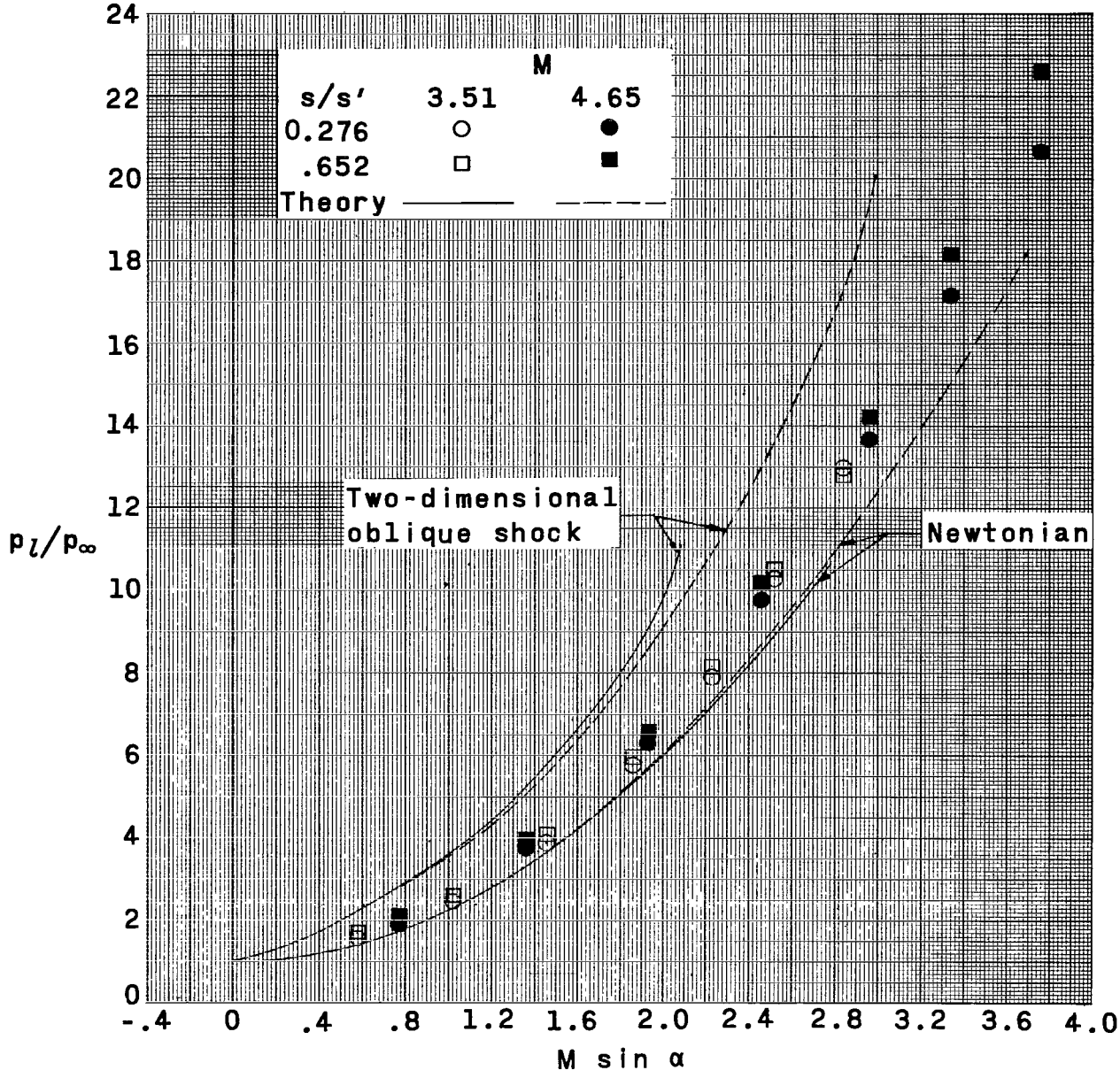
(b) Concluded.

Figure 8.- Concluded.



(a) Configuration 1.

Figure 9.- Correlation of experimental data along windward center line of configurations 1 and 3 at Mach numbers 3.51 and 4.65 through an angle-of-attack range from 0° to 45°.



(b) Configuration 3.

Figure 9.- Concluded.

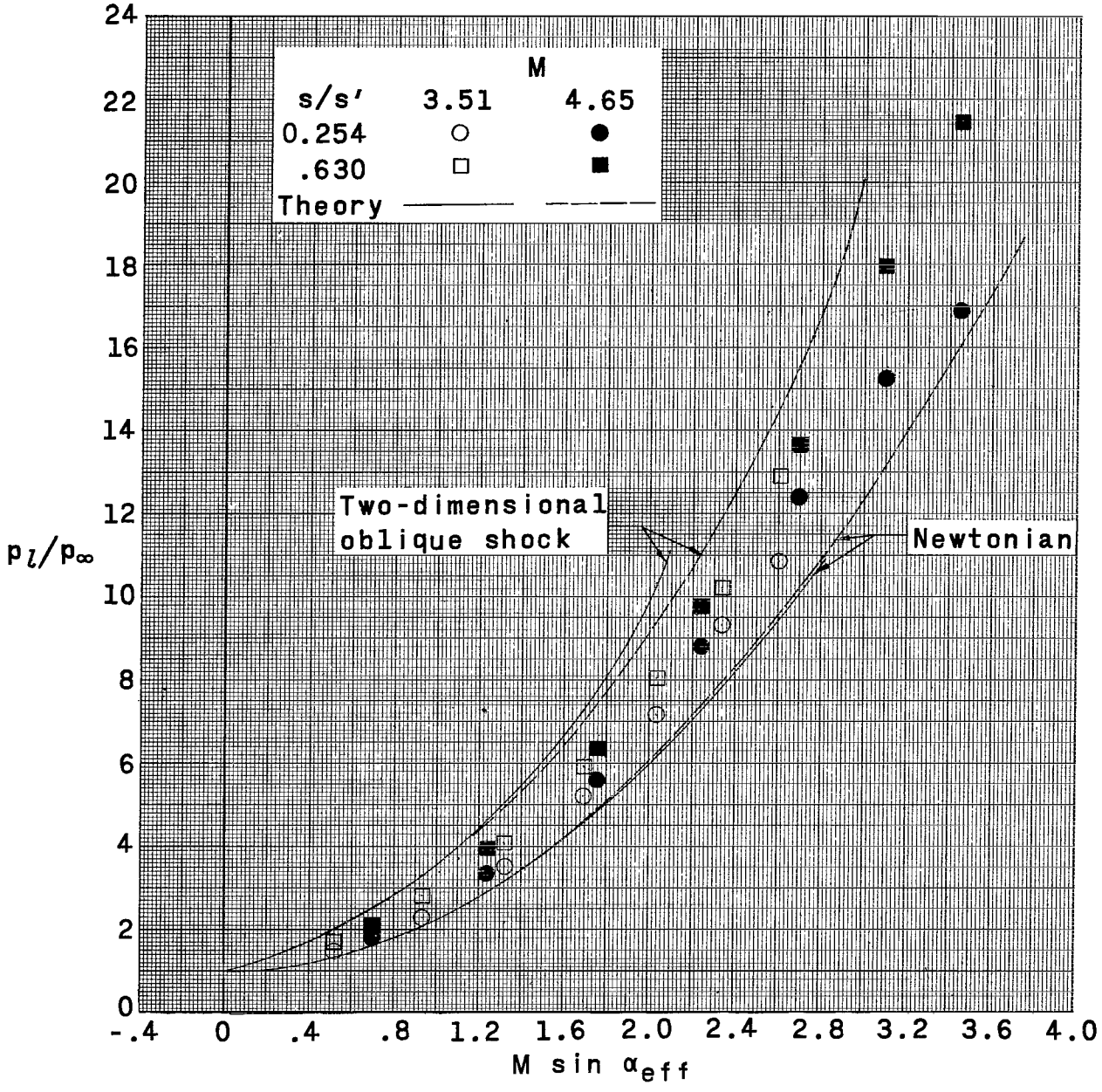
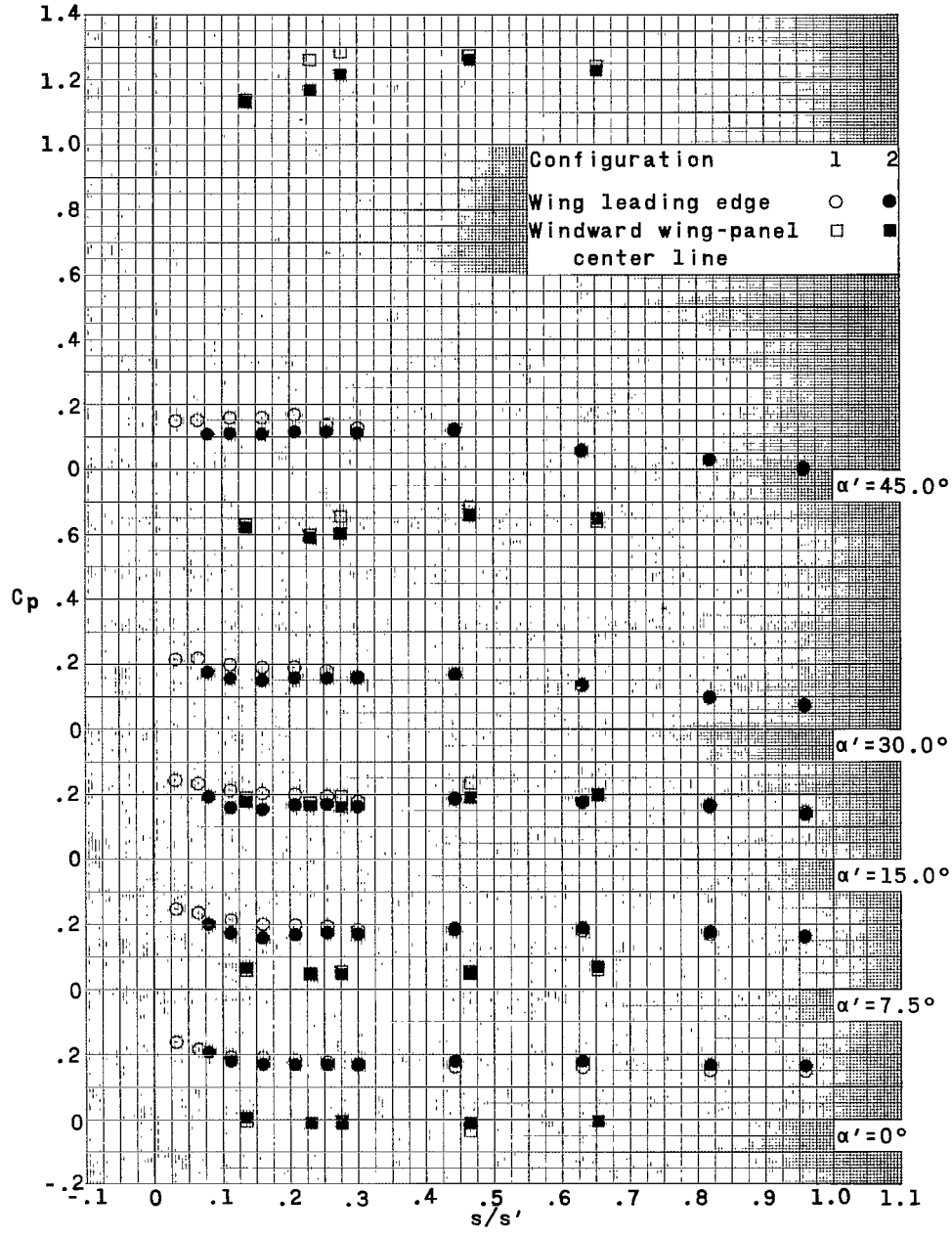
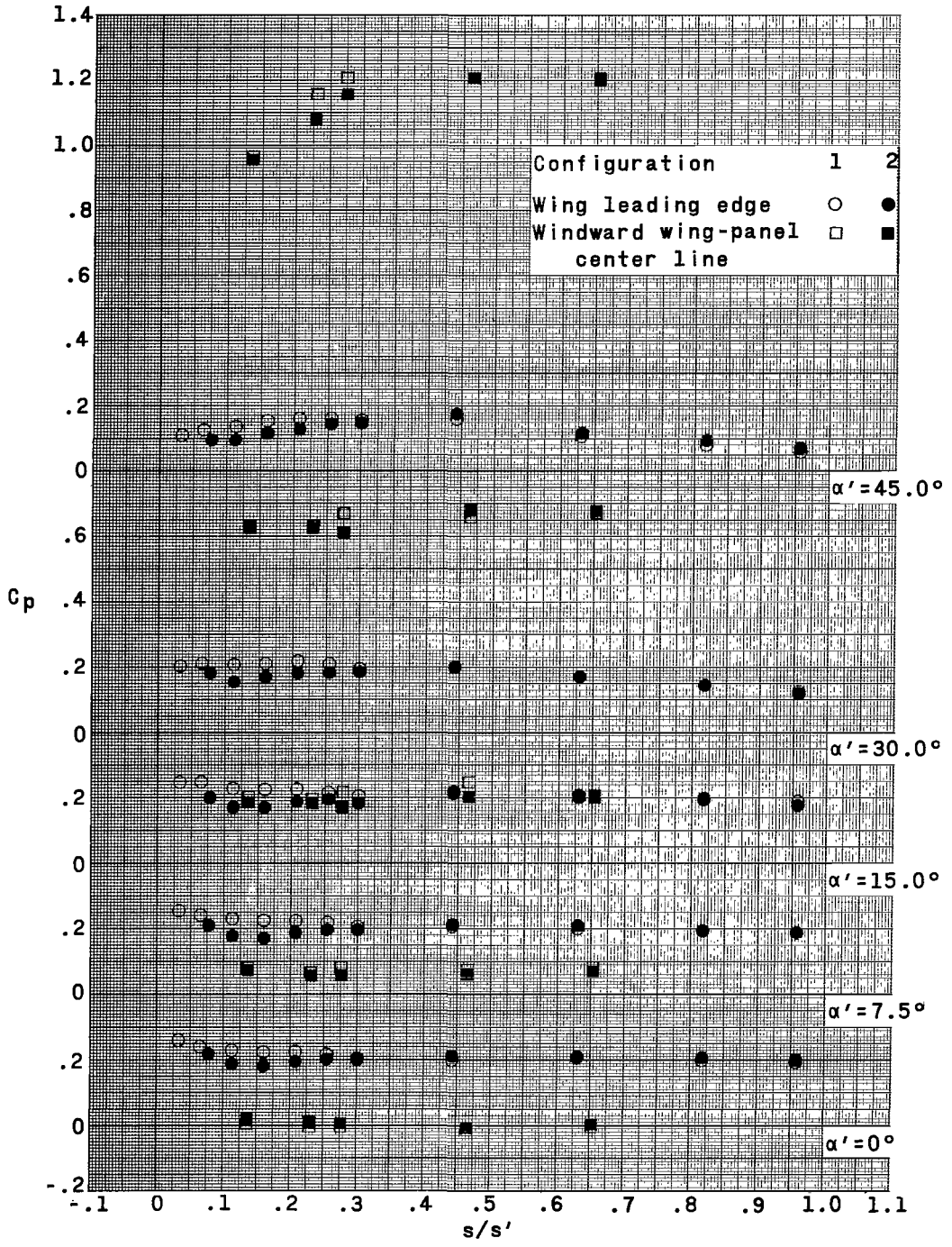


Figure 10.- Correlation of experimental data on windward surface at $\epsilon_p/2$ of configuration 3 at Mach numbers 3.51 and 4.65 through an angle-of-attack range from 0° to 45°.



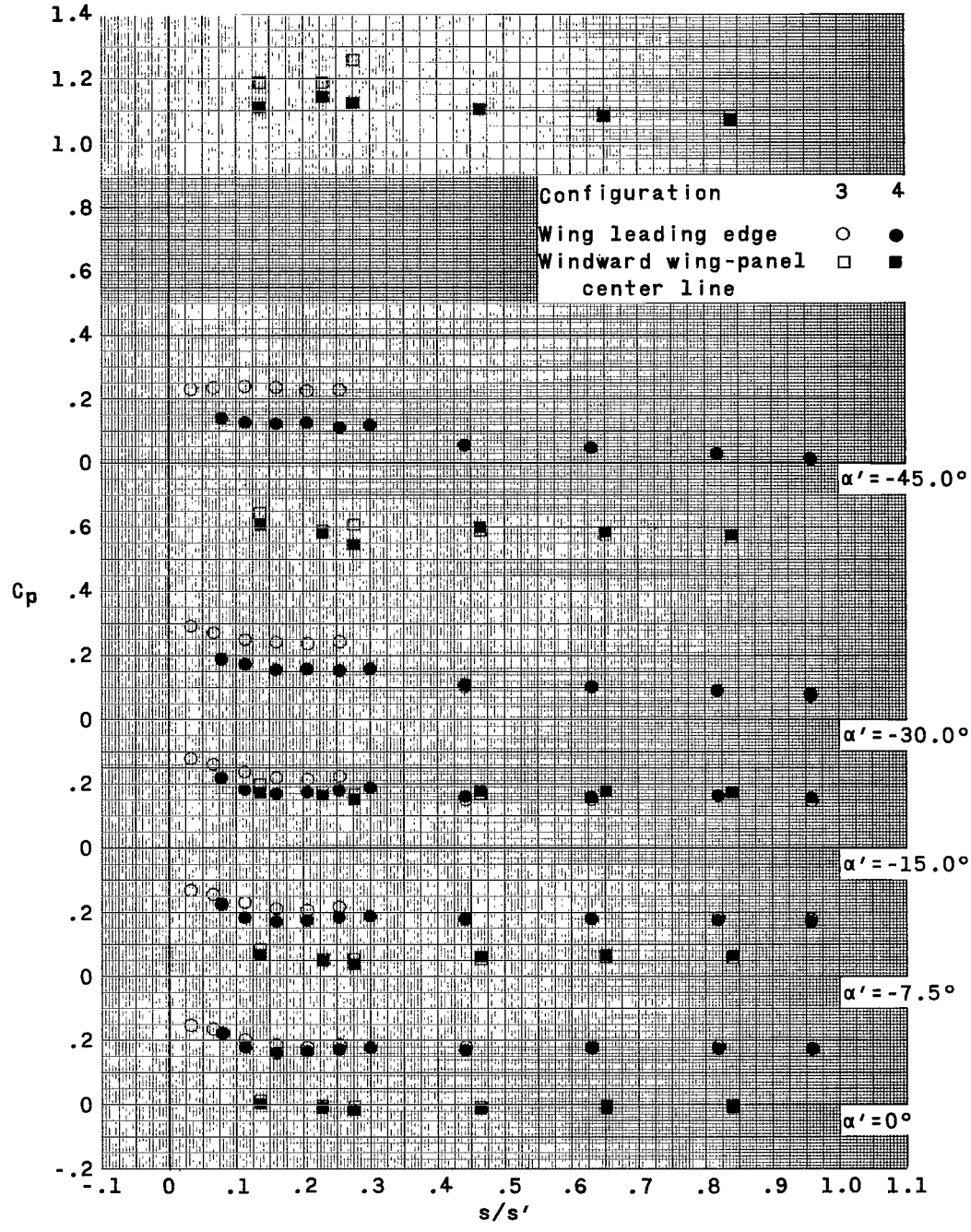
(a) M = 3.51; R ≈ 4.00 × 10^6.

Figure 11.- Effect of nose bluntness on C_p distribution along windward center line and wing leading edge of models with 0° dihedral.



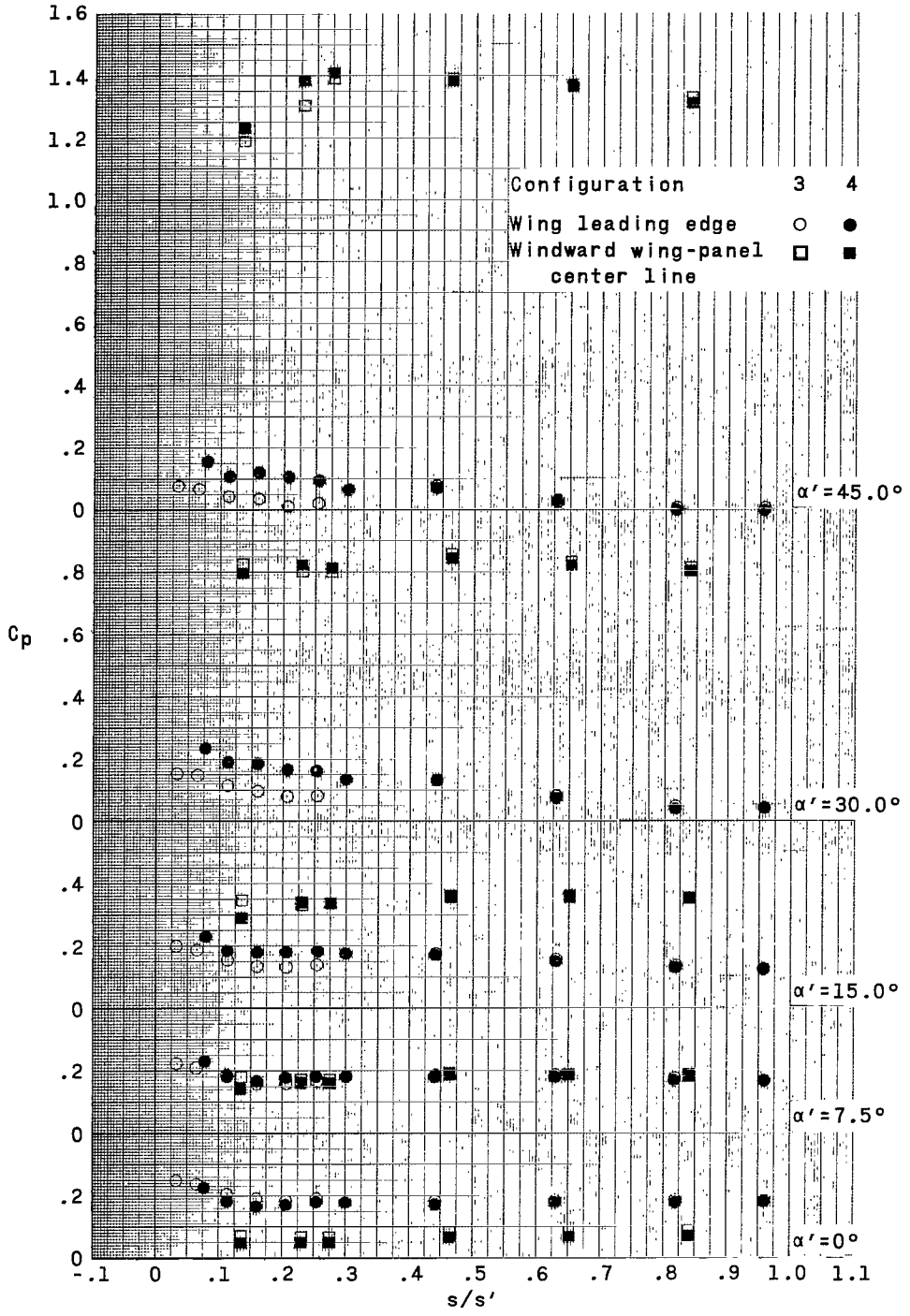
(b) M = 4.65; R ≈ 4.00 × 10^6.

Figure 11.- Concluded.



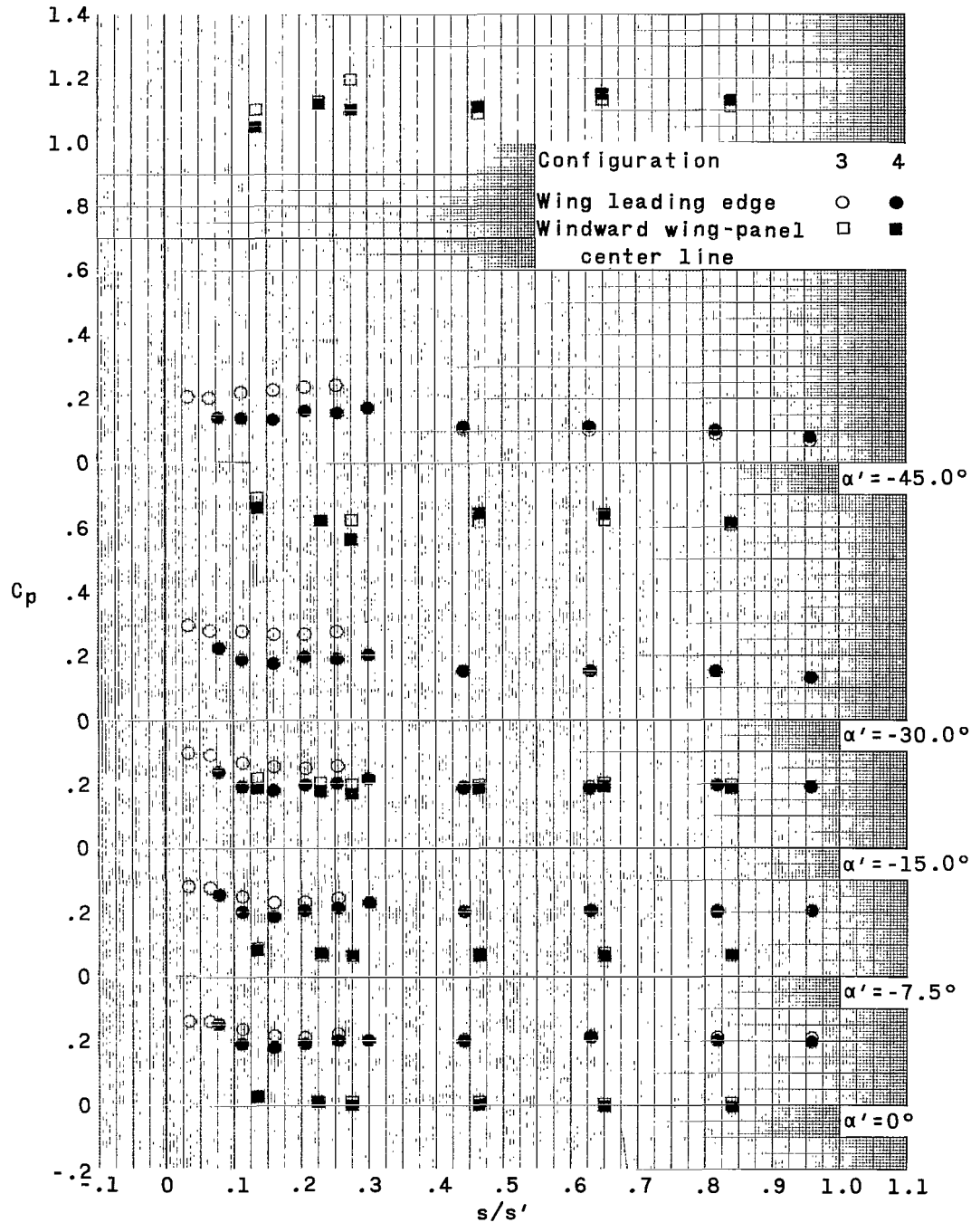
(a) M = 3.51; R ≈ 4.00 × 10^6.

Figure 12.- Effect of nose bluntness on C_p distribution along windward center line and wing leading edge of models with 24.3° dihedral.



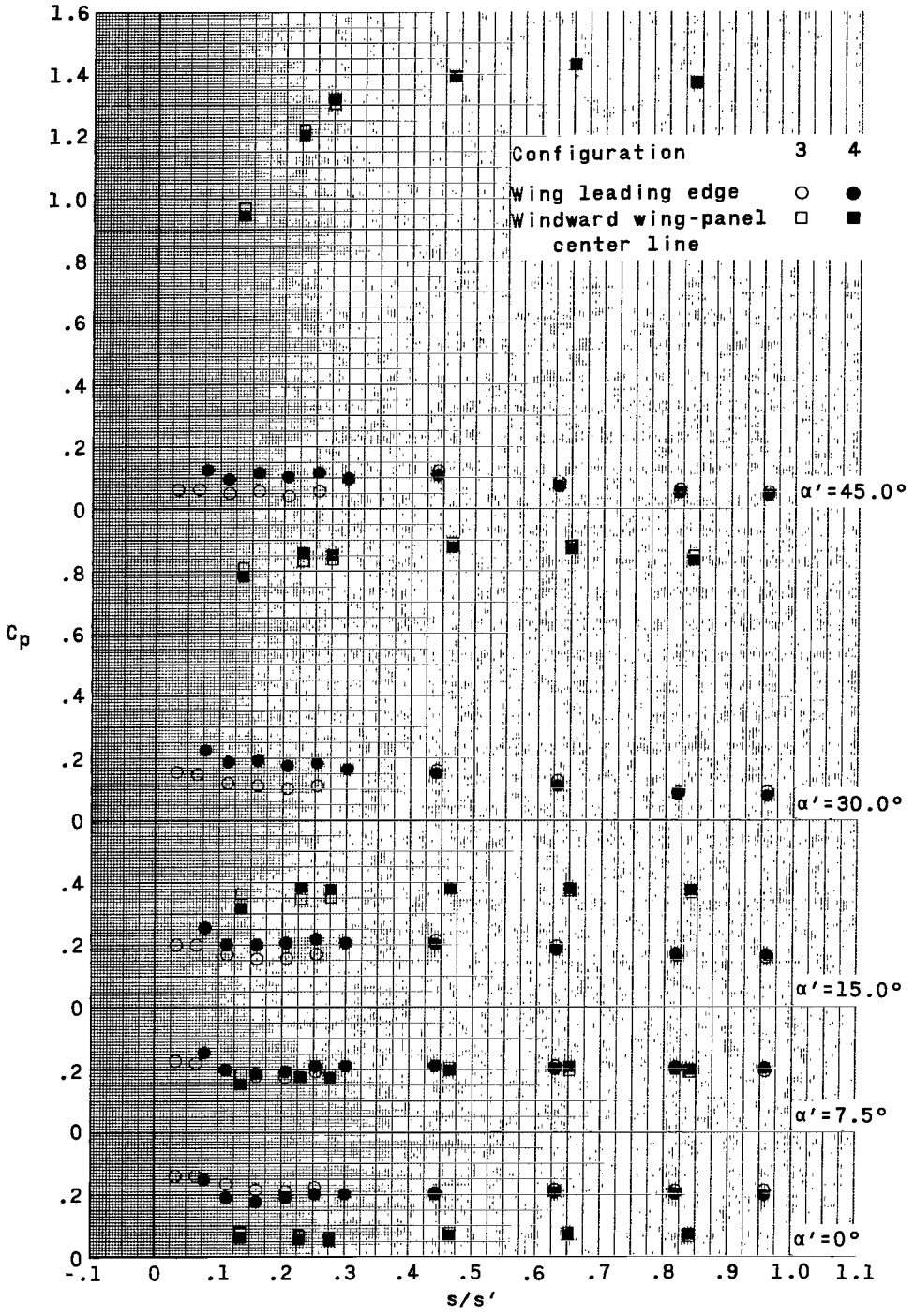
(a) Concluded.

Figure 12.- Continued.



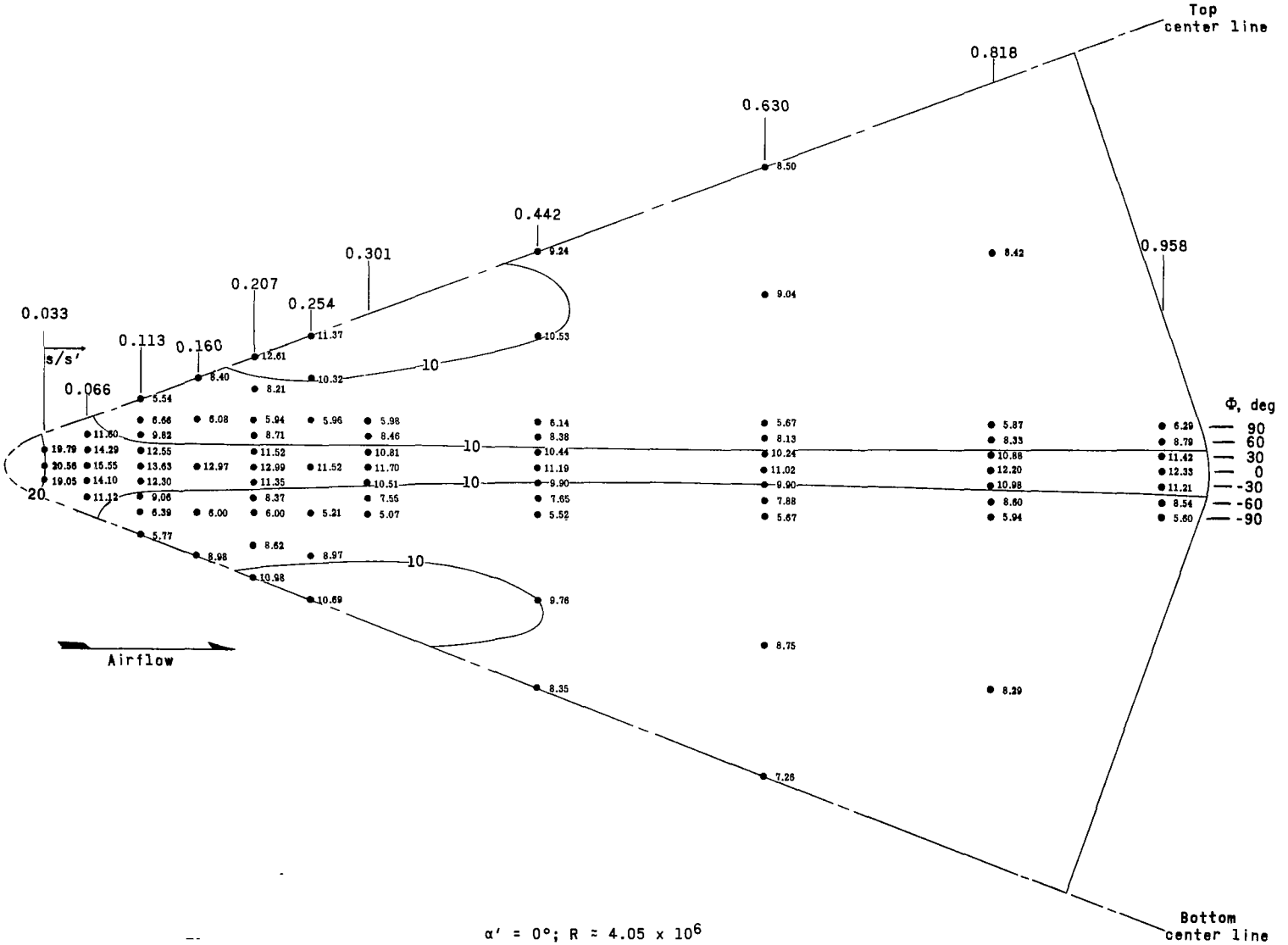
(b) M = 4.65; R ≈ 4.00 × 10^6.

Figure 12.- Continued.



(b) Concluded.

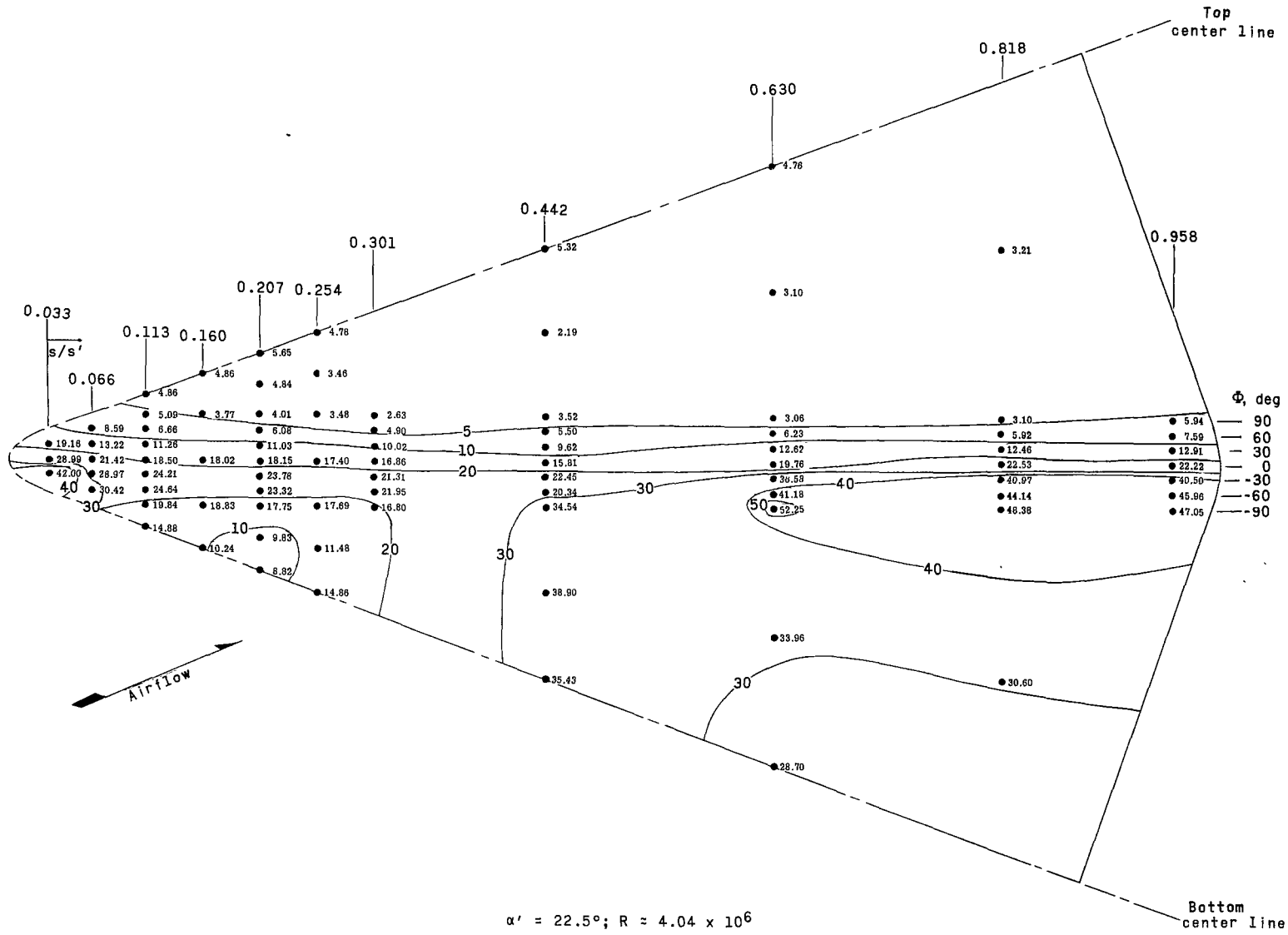
Figure 12.- Concluded.



α' = 0°; R ≈ 4.05 x 10^6

(a) Configuration 1; M = 3.51.

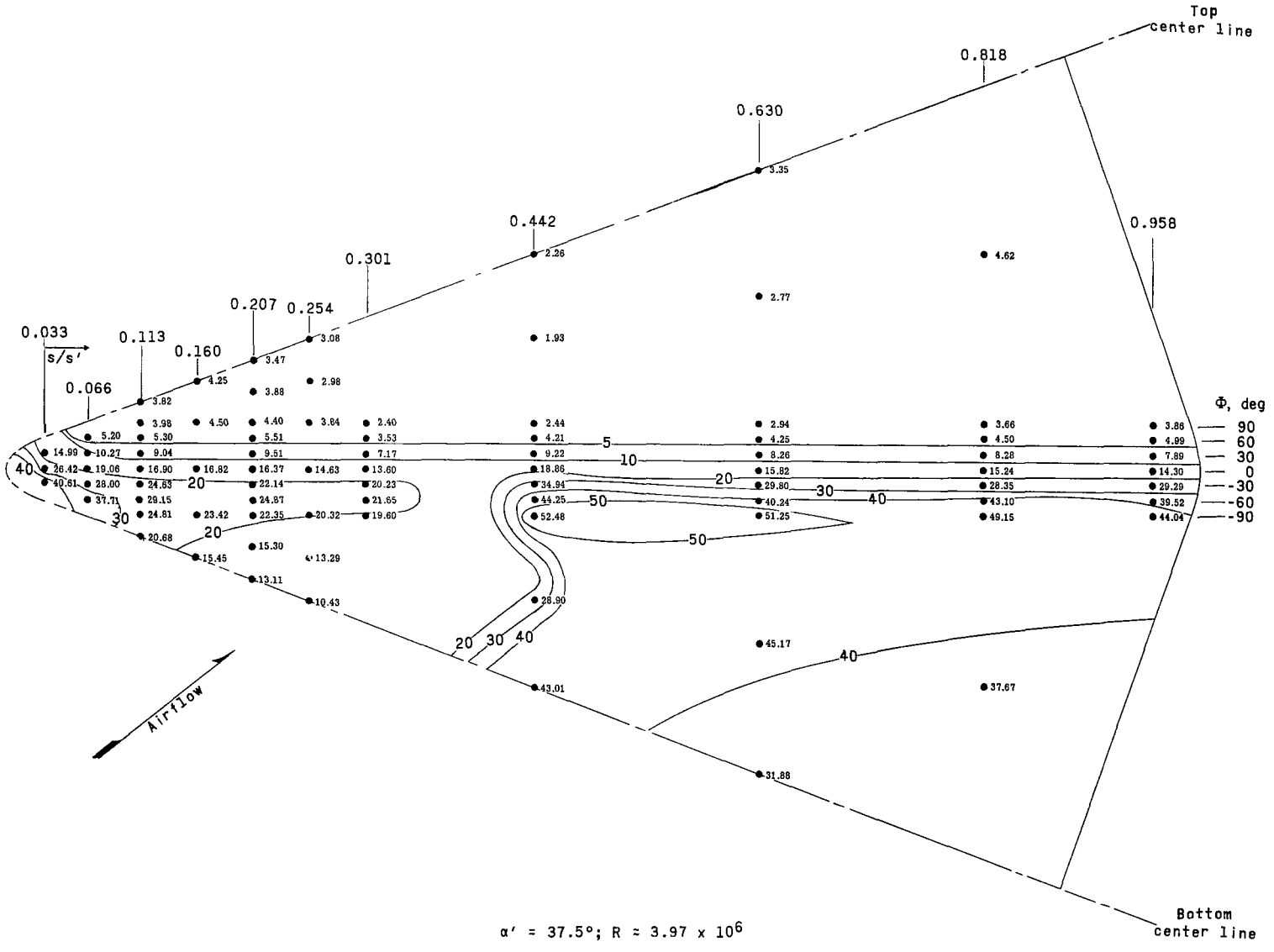
Figure 13.- Effect of angle of attack on Stanton number distribution $\left(N_{St} \times 10^{-4}\right)$.



$\alpha' = 22.5°$; $R \approx 4.04 \times 10^6$

(a) Continued.

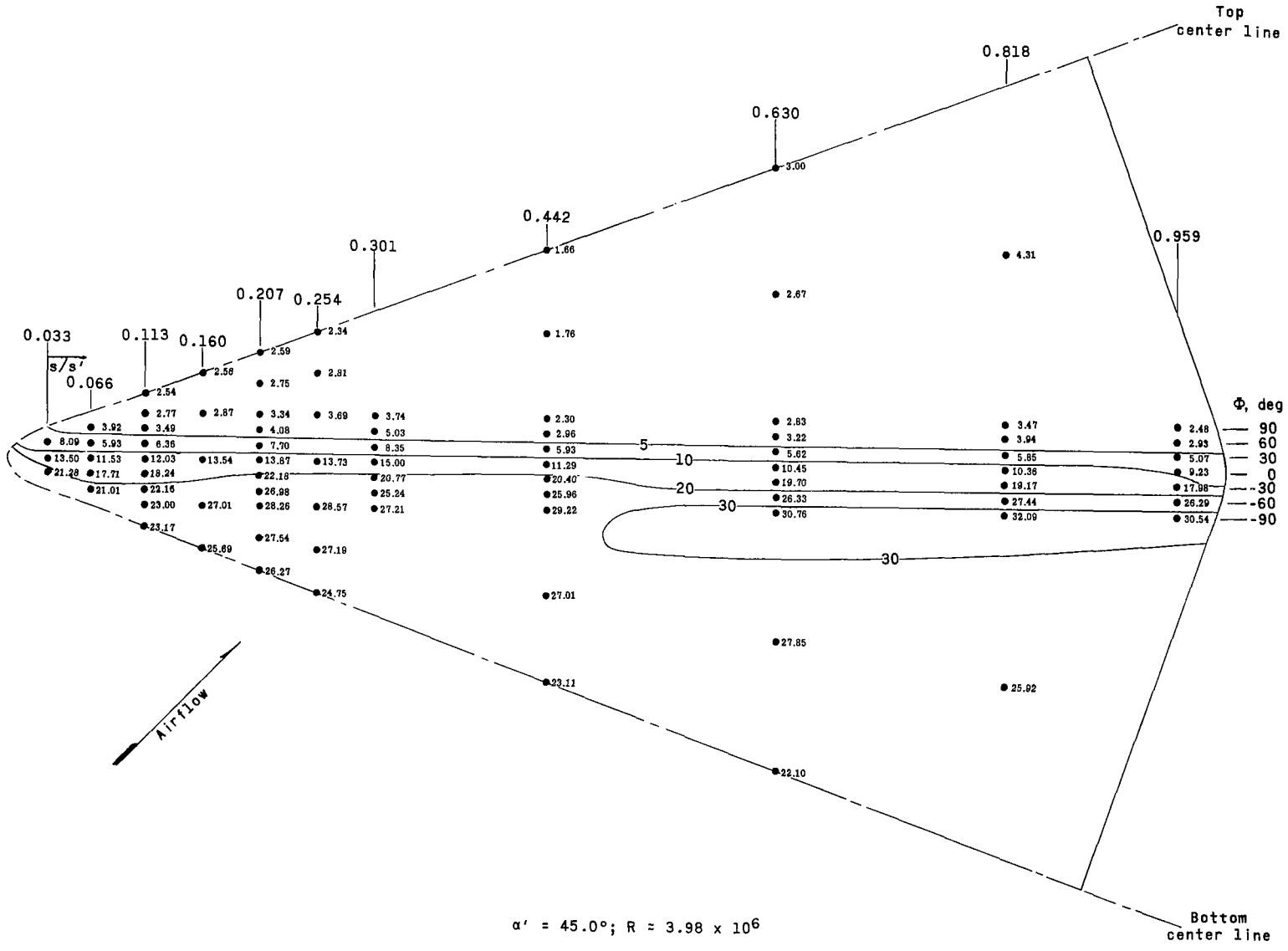
Figure 13.- Continued.



$\alpha' = 37.5°$; $R \approx 3.97 \times 10^6$

(a) Continued.

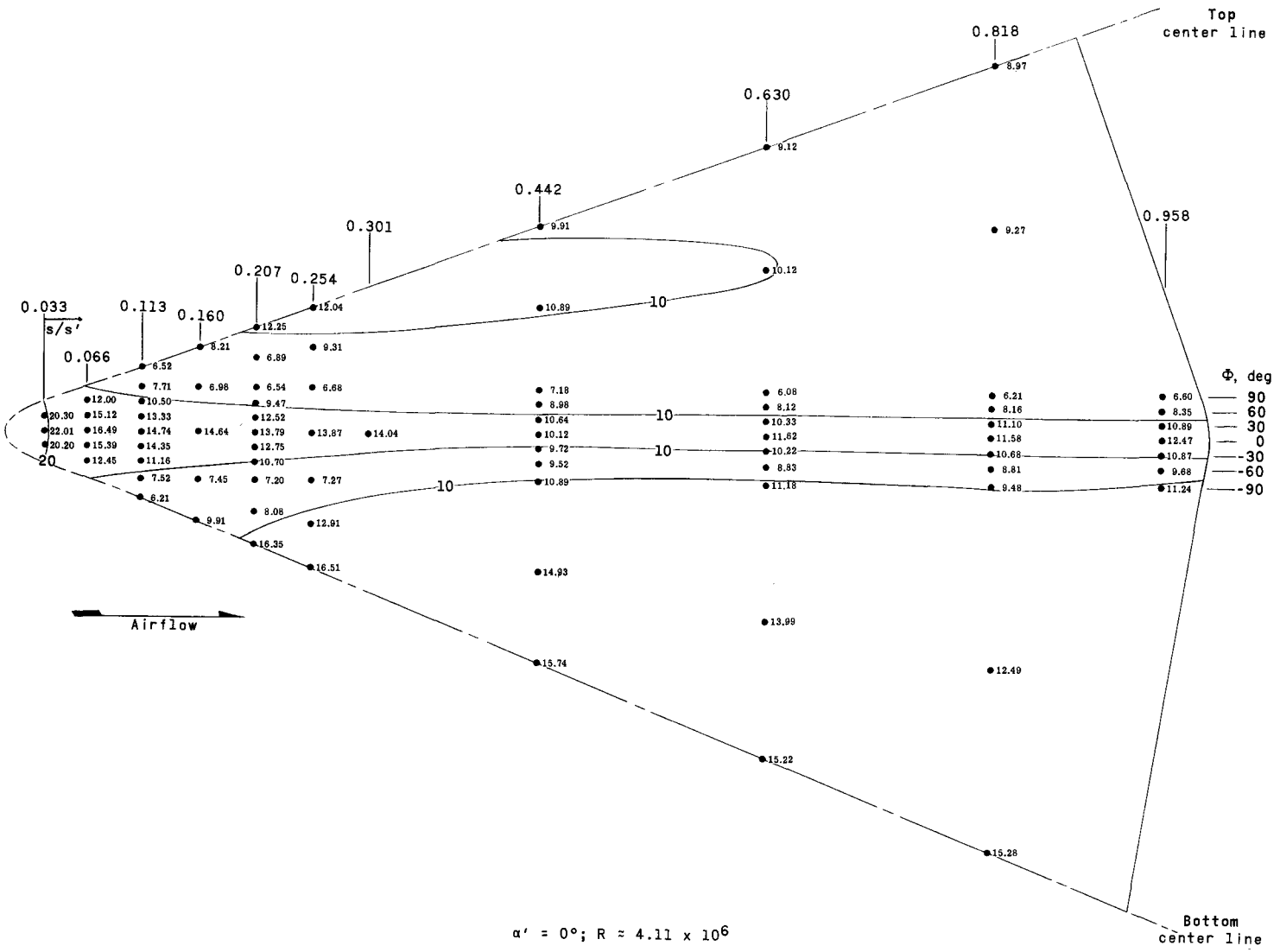
Figure 13.- Continued.



α' = 45.0°; R ≈ 3.98 x 10^6

(a) Concluded.

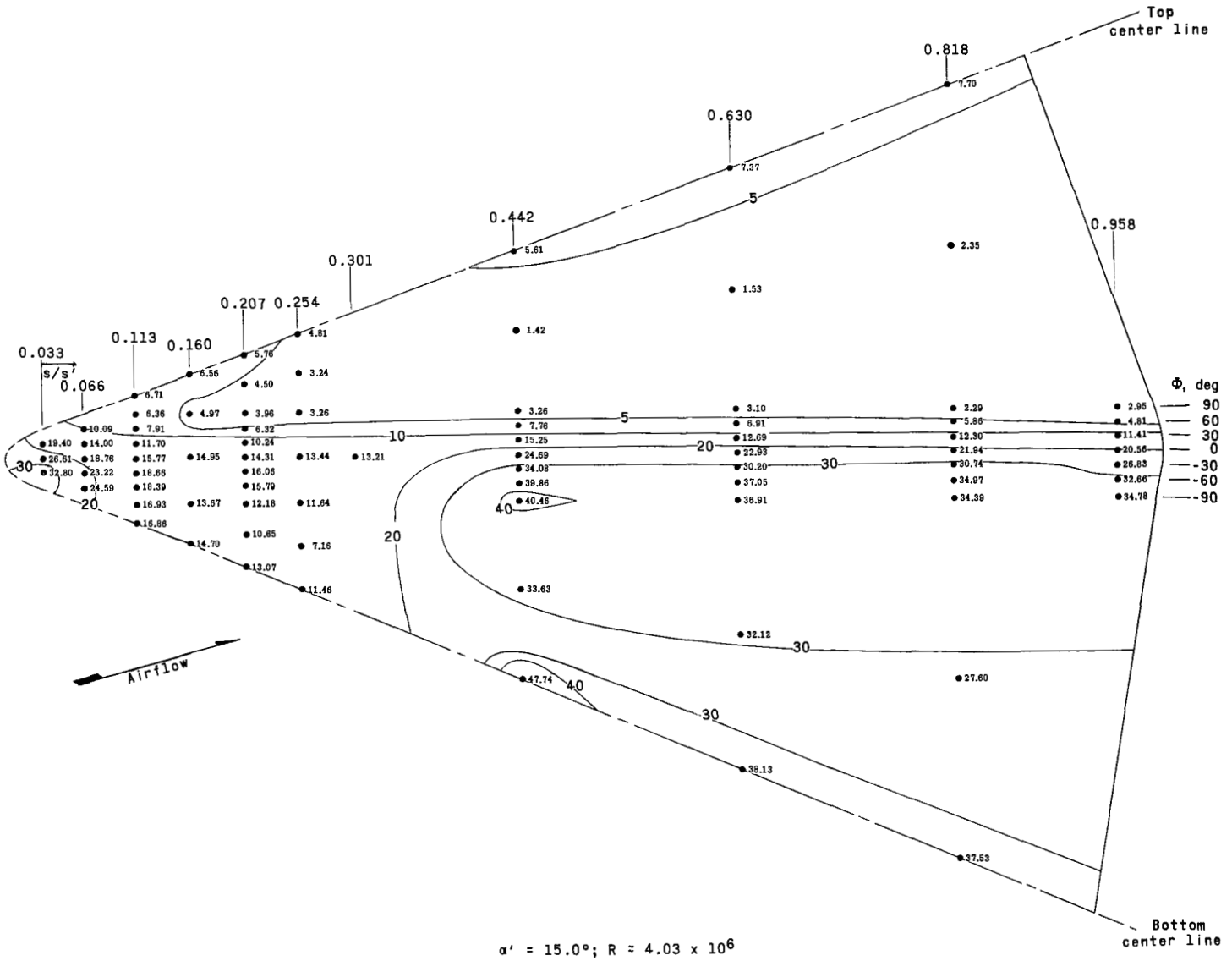
Figure 13.- Continued.



α' = 0°; R ≈ 4.11 x 10^6

(b) Configuration 3; M = 3.51.

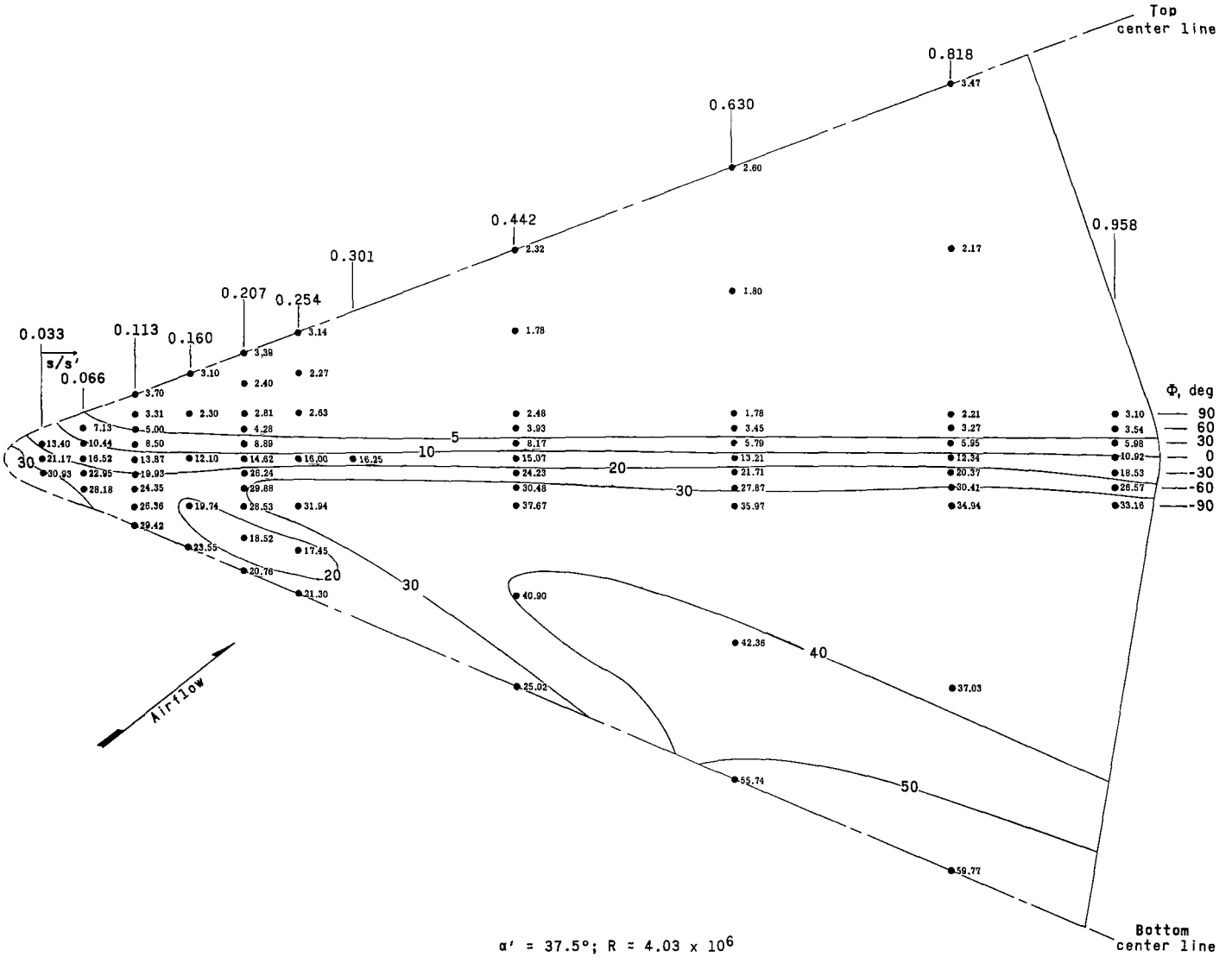
Figure 13.- Continued.



$\alpha' = 15.0°$; $R = 4.03 \times 10^6$

(b) Continued.

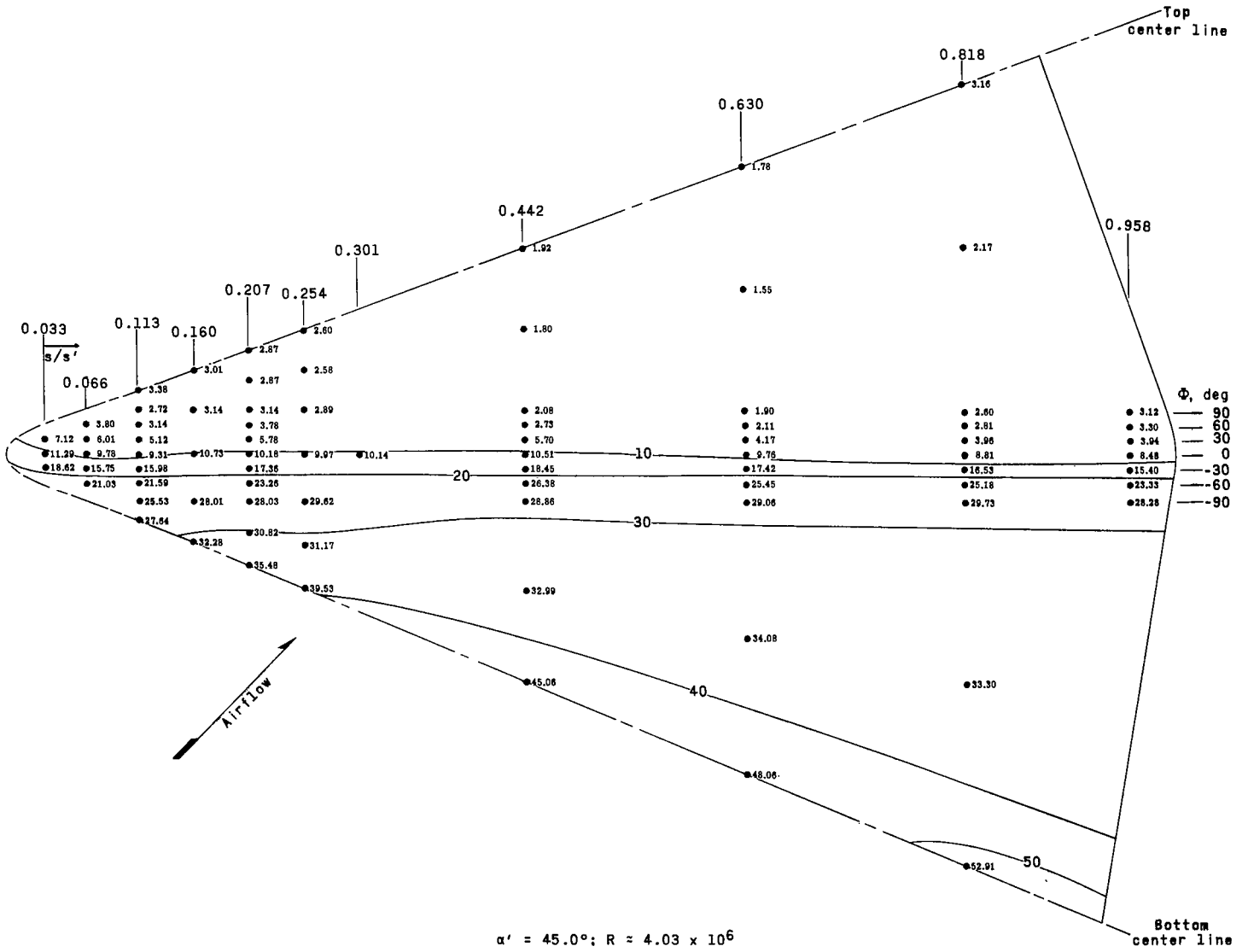
Figure 13.- Continued.



α' = 37.5°; R = 4.03 x 10^6

(b) Continued.

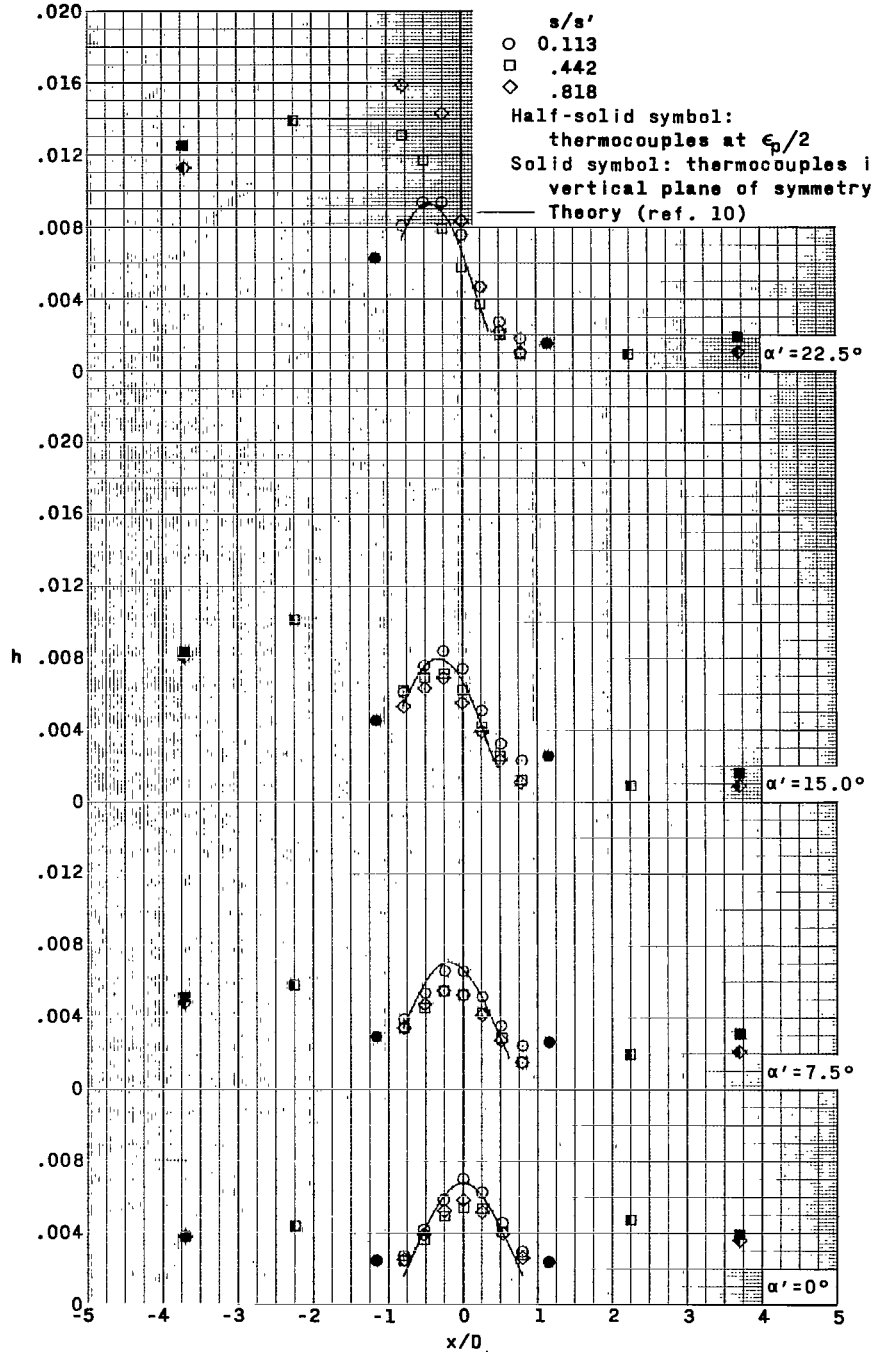
Figure 13.- Continued.



$\alpha' = 45.0°$; $R \approx 4.03 \times 10^6$

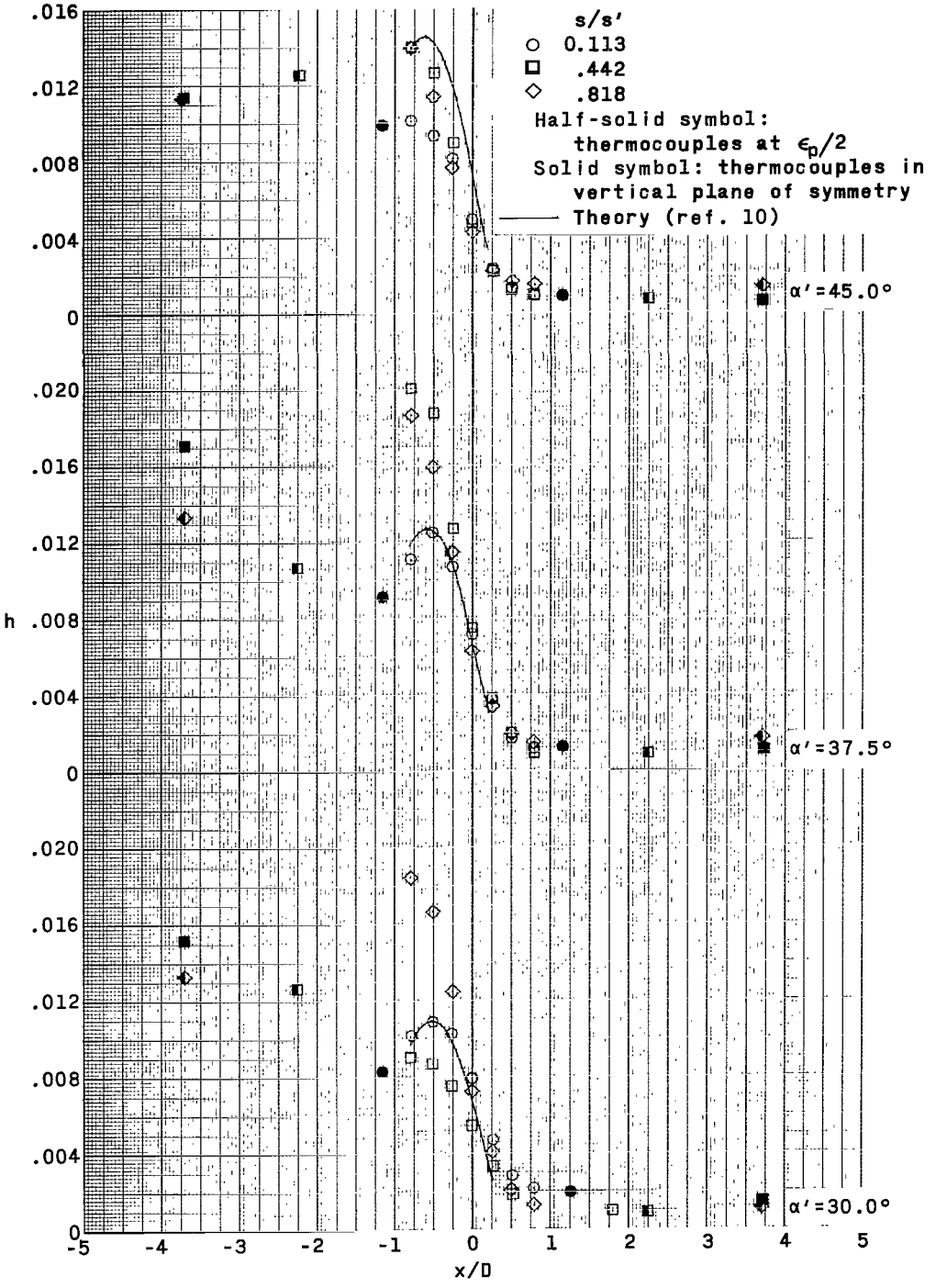
(b) Concluded.

Figure 13.- Concluded.



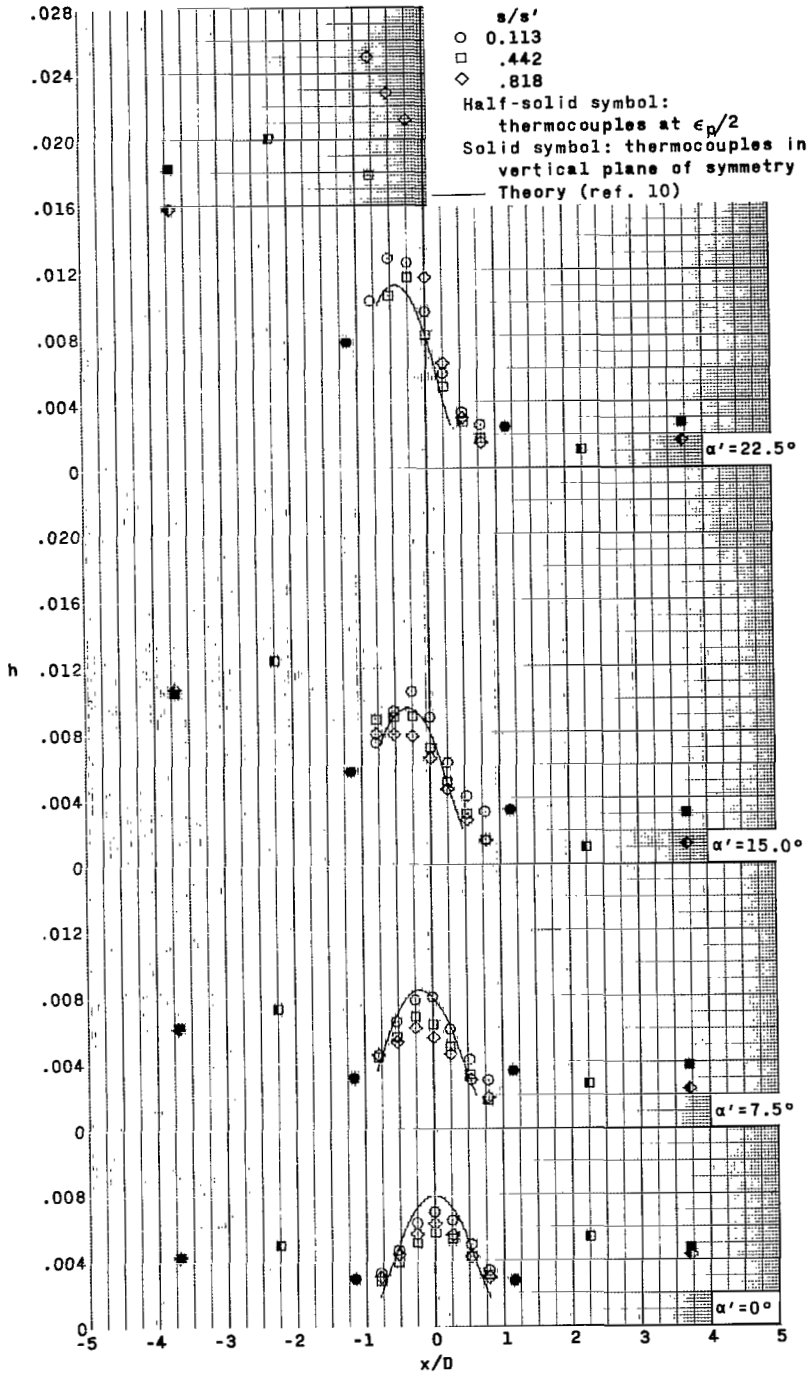
(a) M = 3.51; R ≈ 2.90 × 10^6.

Figure 14.- Effect of angle of attack, Mach number, and Reynolds number on heat-transfer-coefficient distribution normal to wing leading edge of configuration 1.



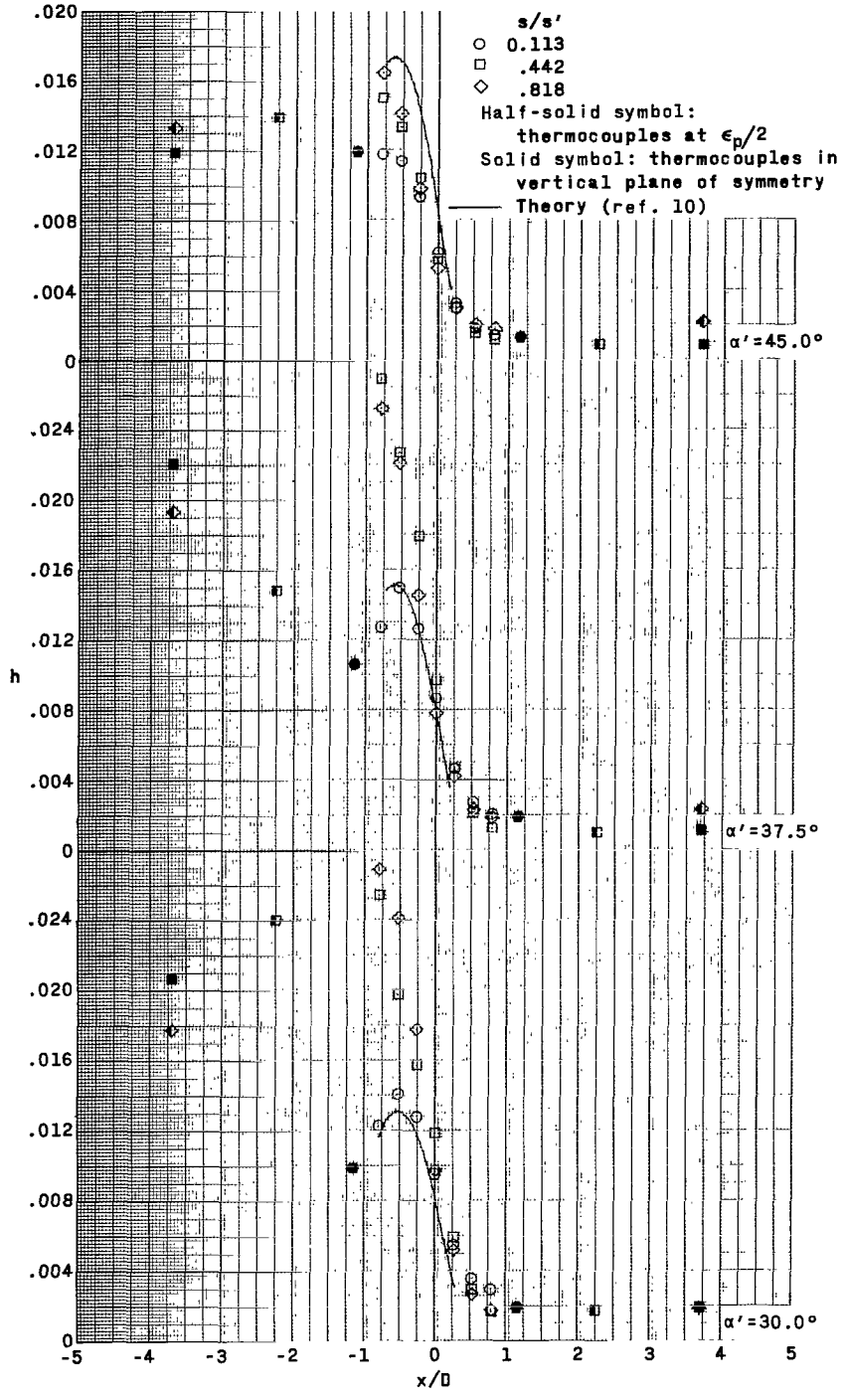
(a) Concluded.

Figure 14.- Continued.



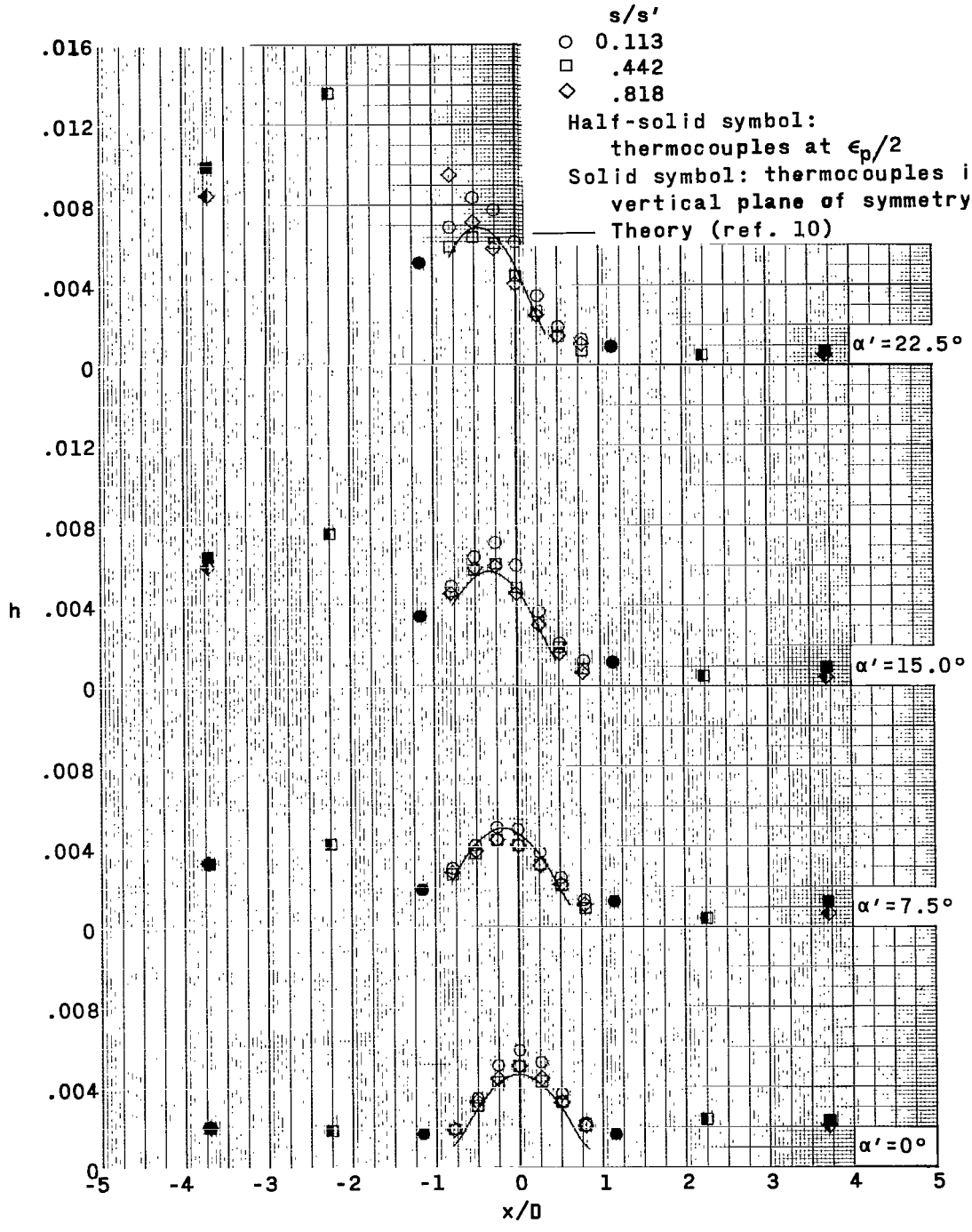
(b) M = 3.51; R ≈ 4.00 × 10^6.

Figure 14.- Continued.



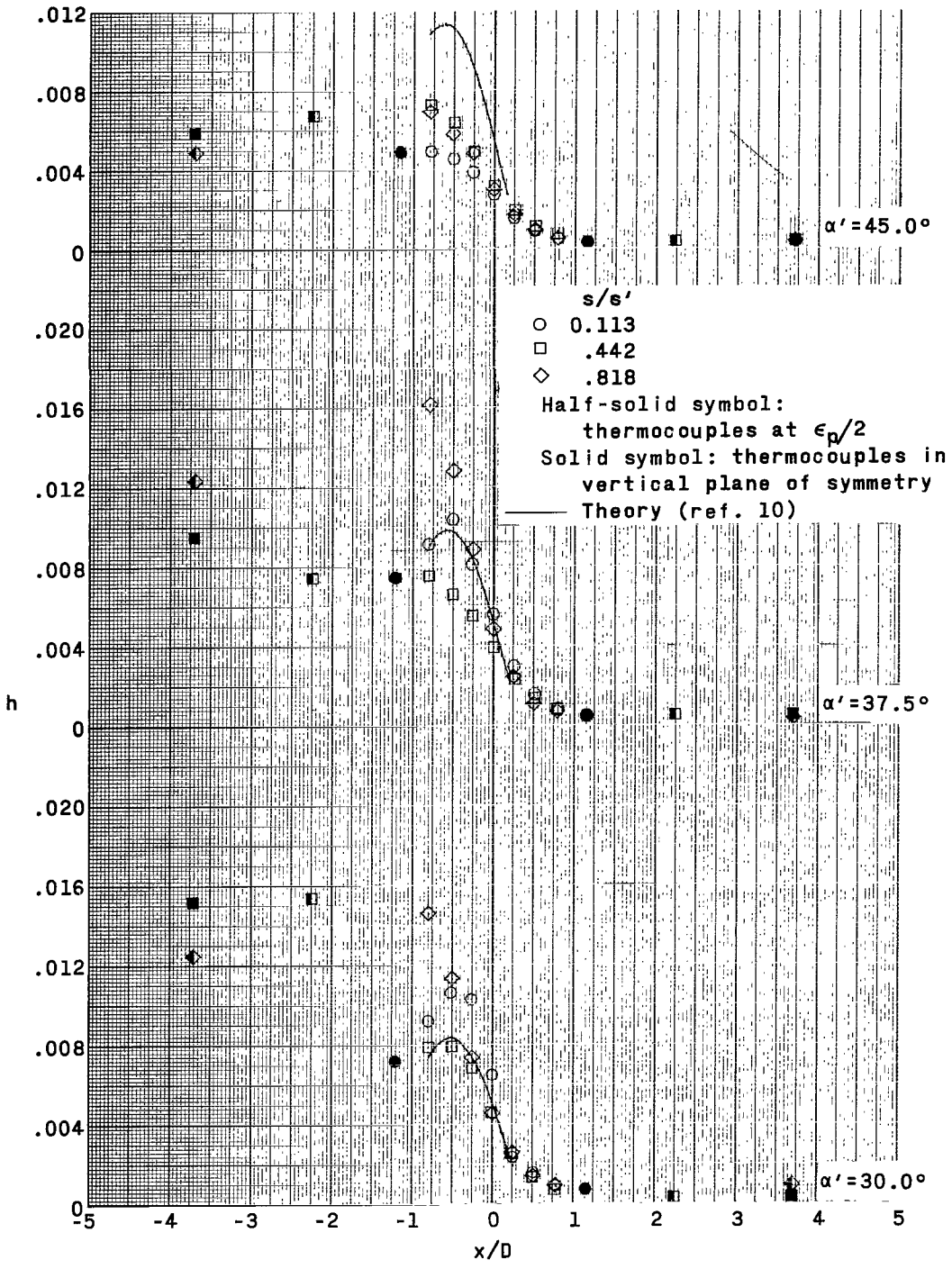
(b) Concluded.

Figure 14.- Continued.



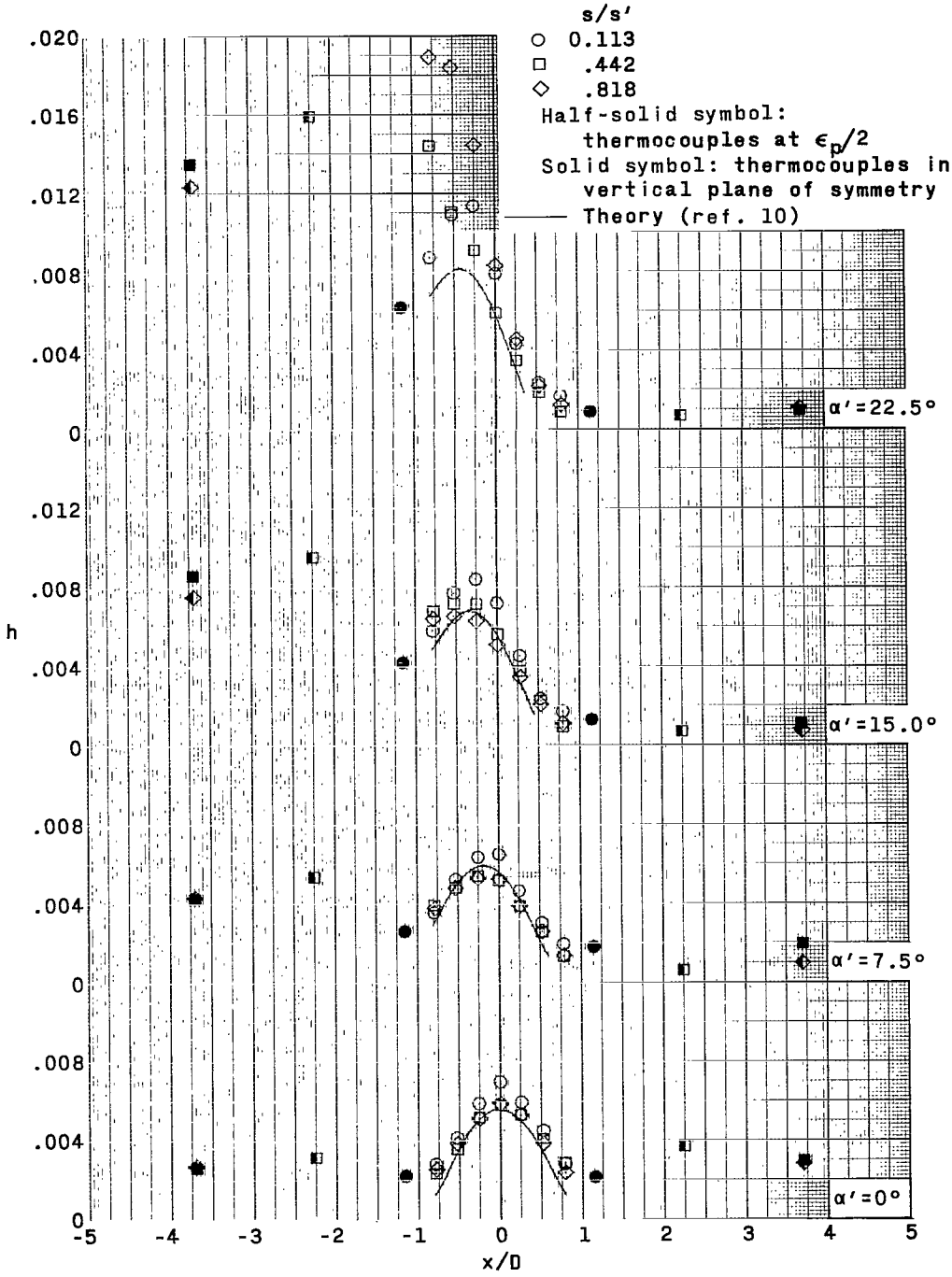
(c) M = 4.65; R ≈ 2.90 × 10^6.

Figure 14.- Continued.



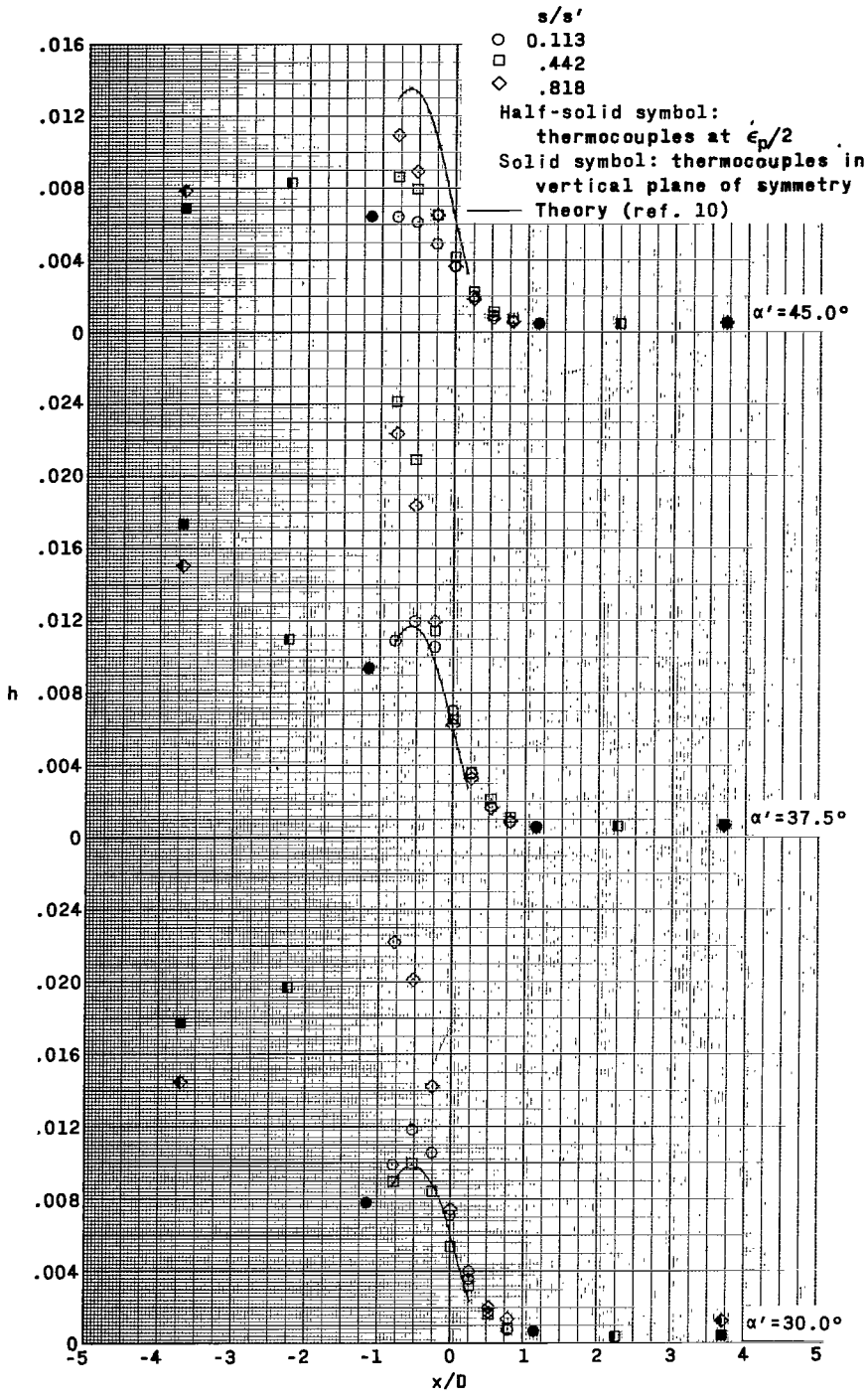
(c) Concluded.

Figure 14.- Continued.



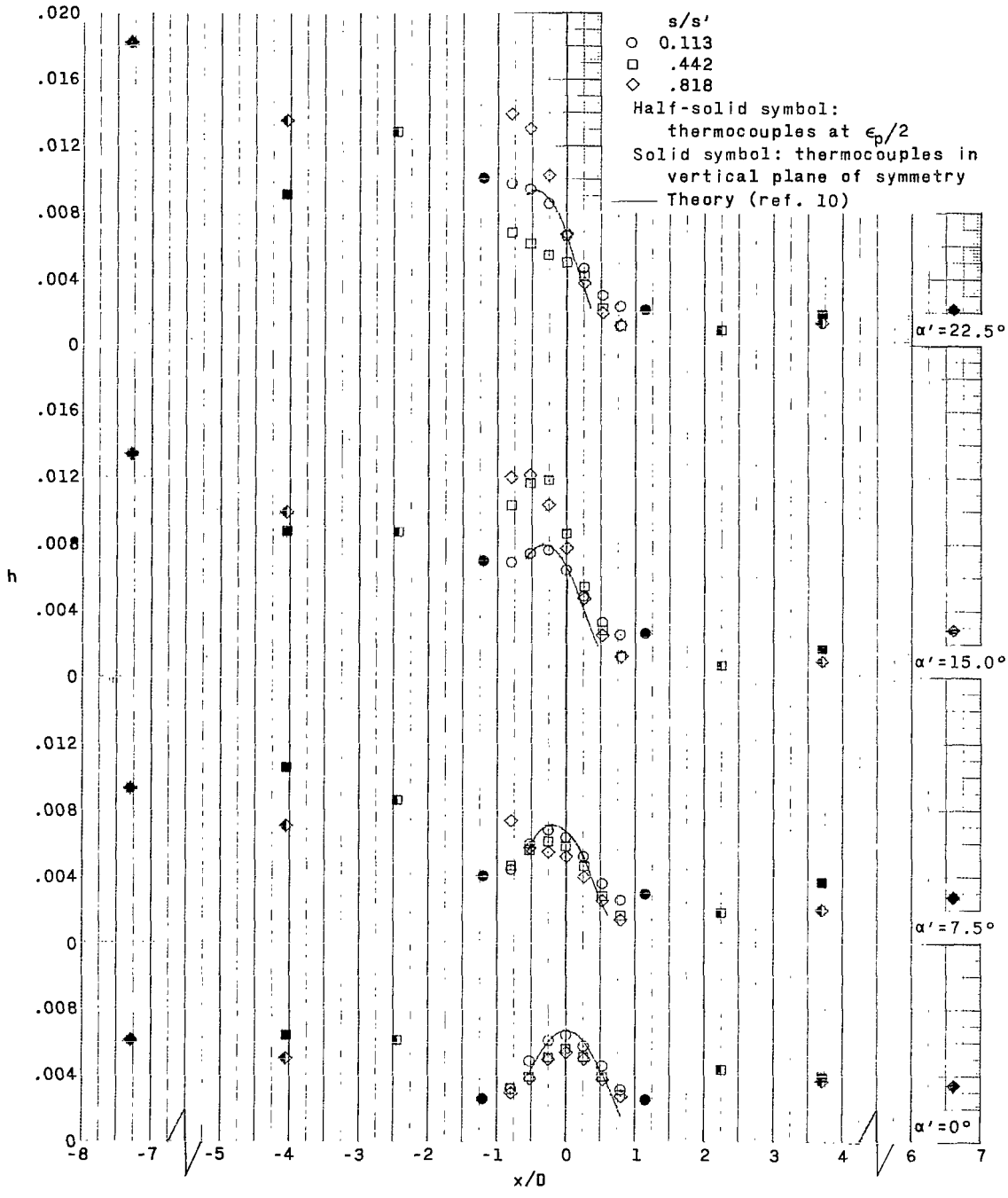
(d) M = 4.65; R ≈ 4.10 × 10^6.

Figure 14.- Continued.



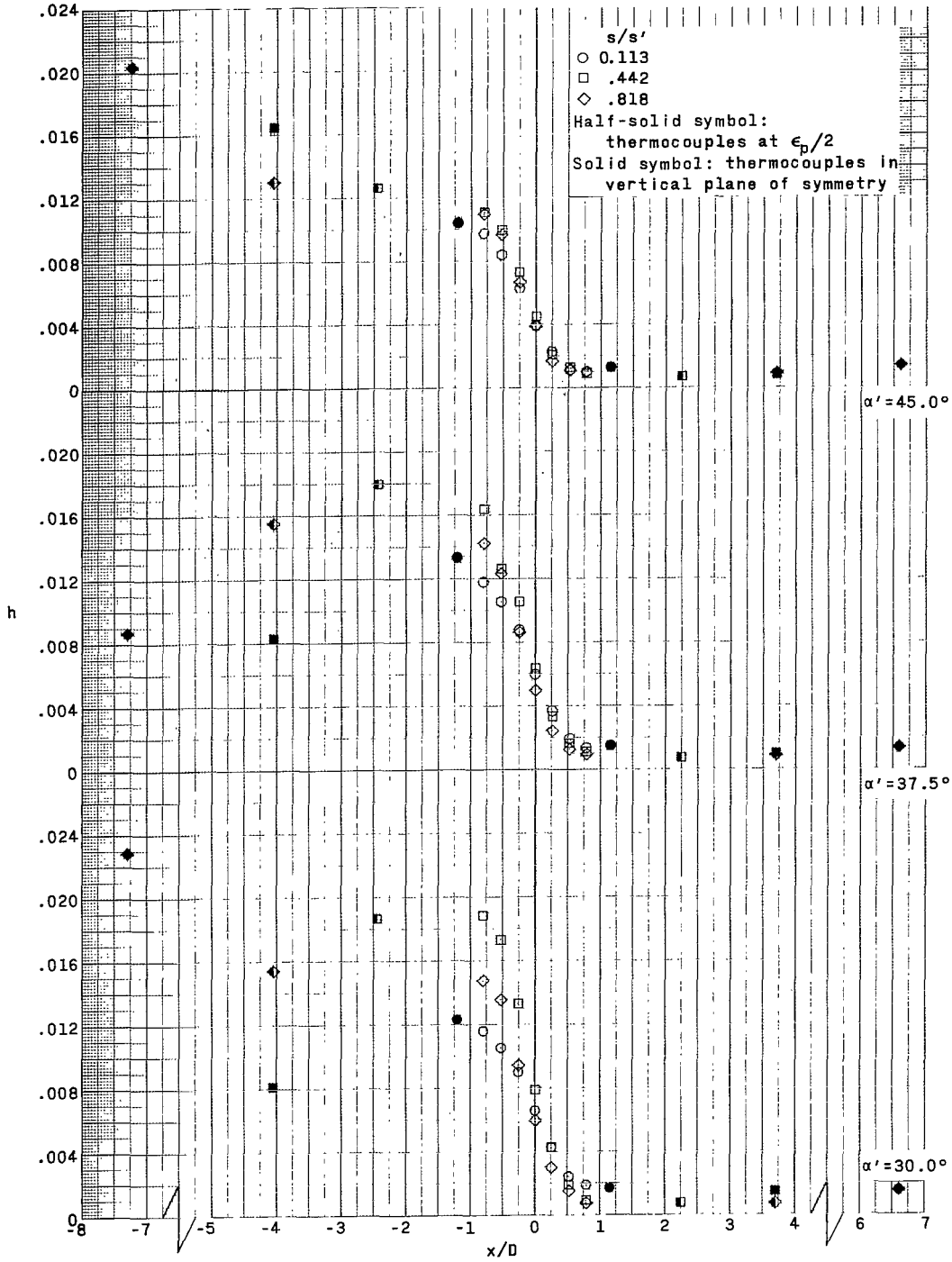
(d) Concluded.

Figure 14.- Concluded.



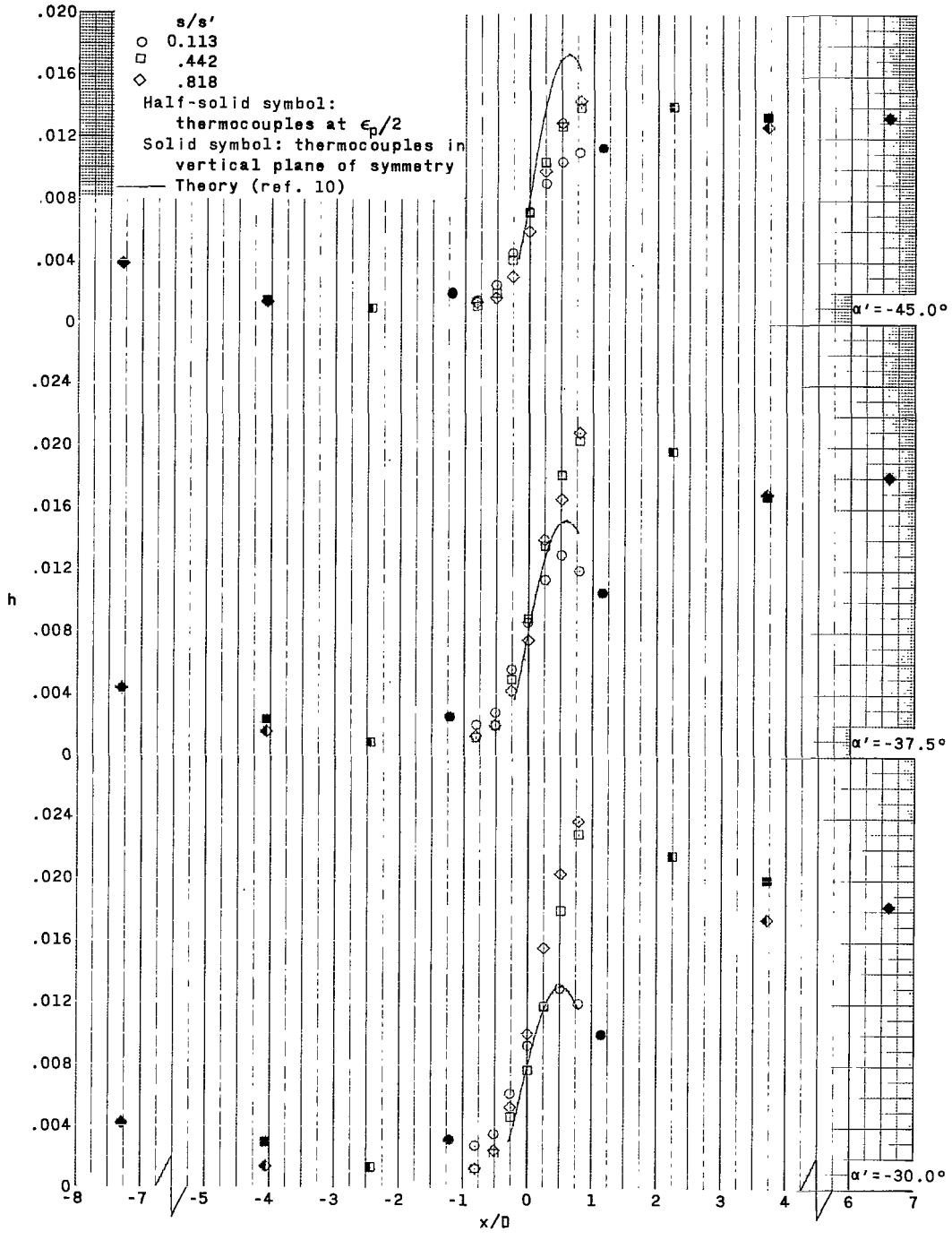
(a) M = 3.51; R ≈ 2.90 × 10^6.

Figure 15.- Effect of angle of attack, Mach number, and Reynolds number on heat-transfer-coefficient distribution normal to wing leading edge of configuration 3.



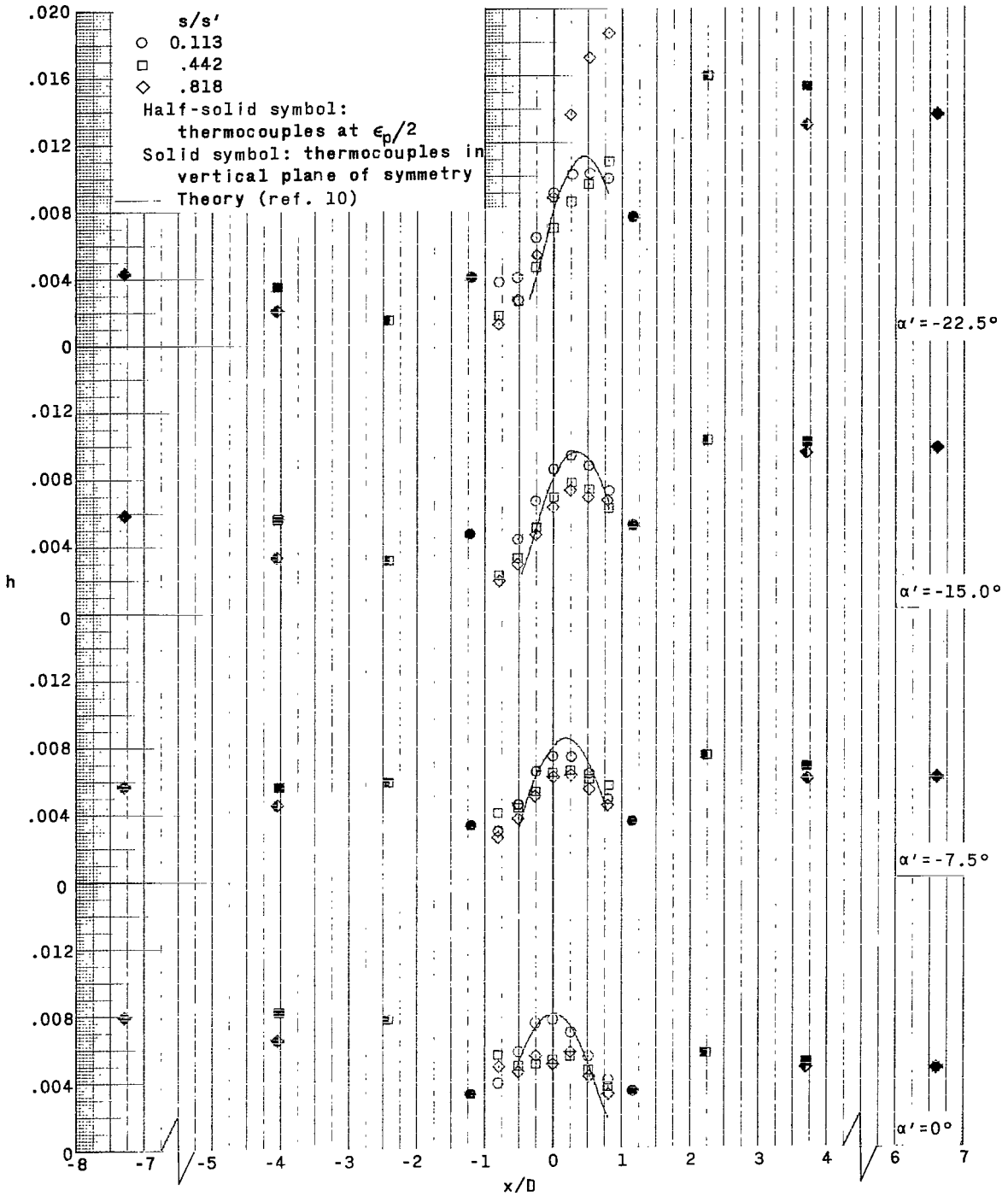
(a) Concluded.

Figure 15.- Continued.



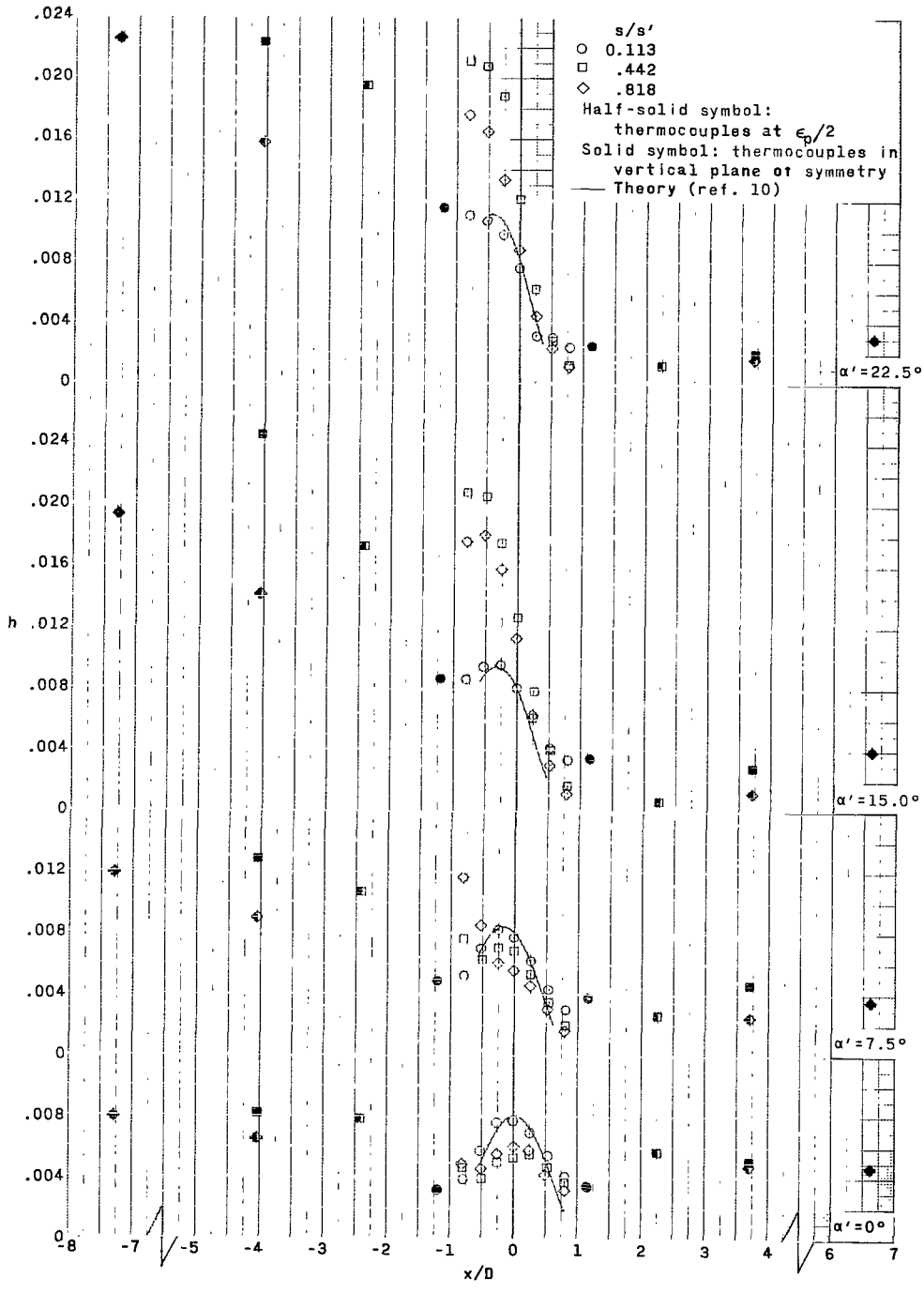
(b) M = 3.51; R ≈ 4.00×10^6.

Figure 15.- Continued.



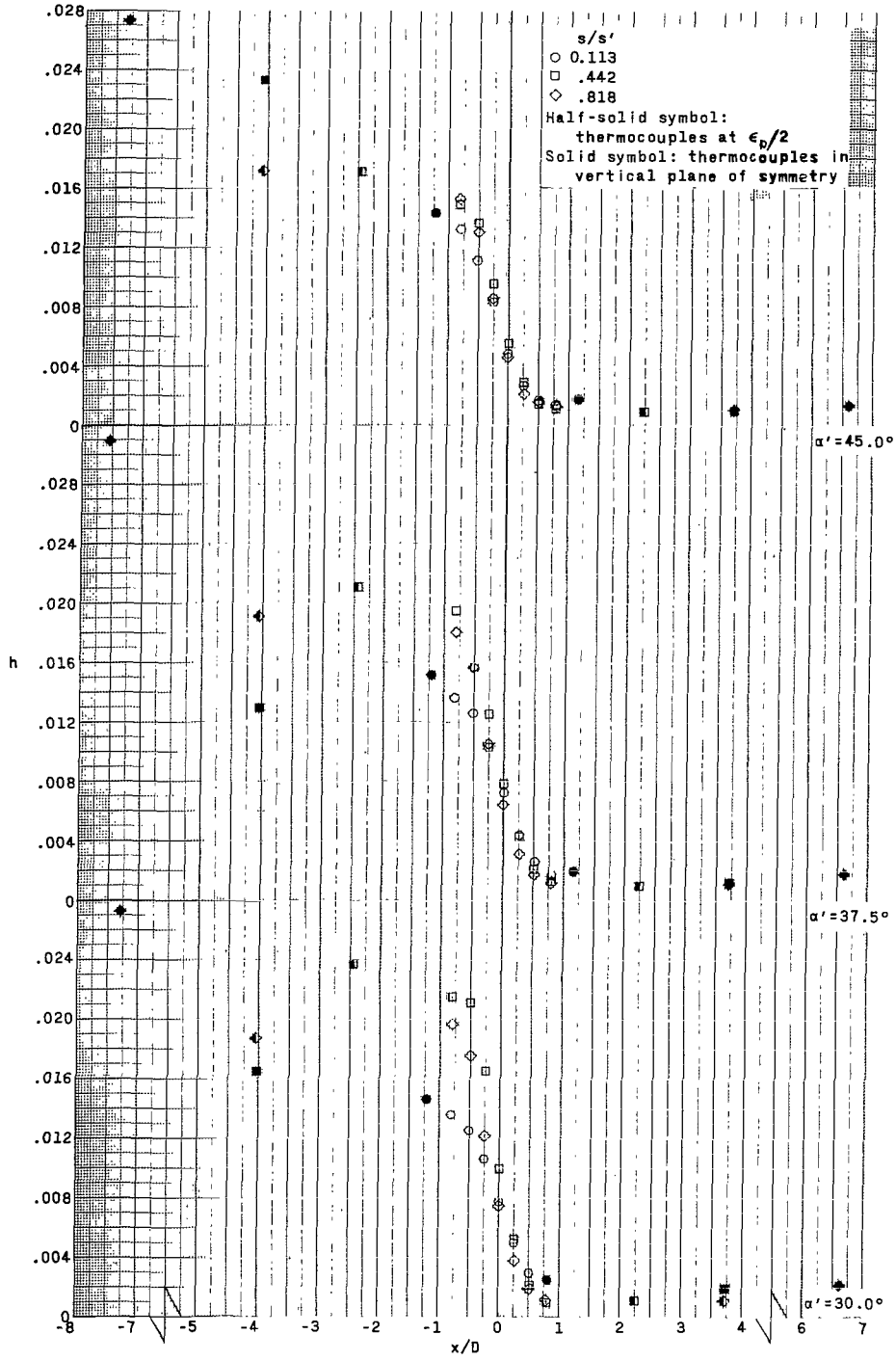
(b) Continued.

Figure 15.- Continued.



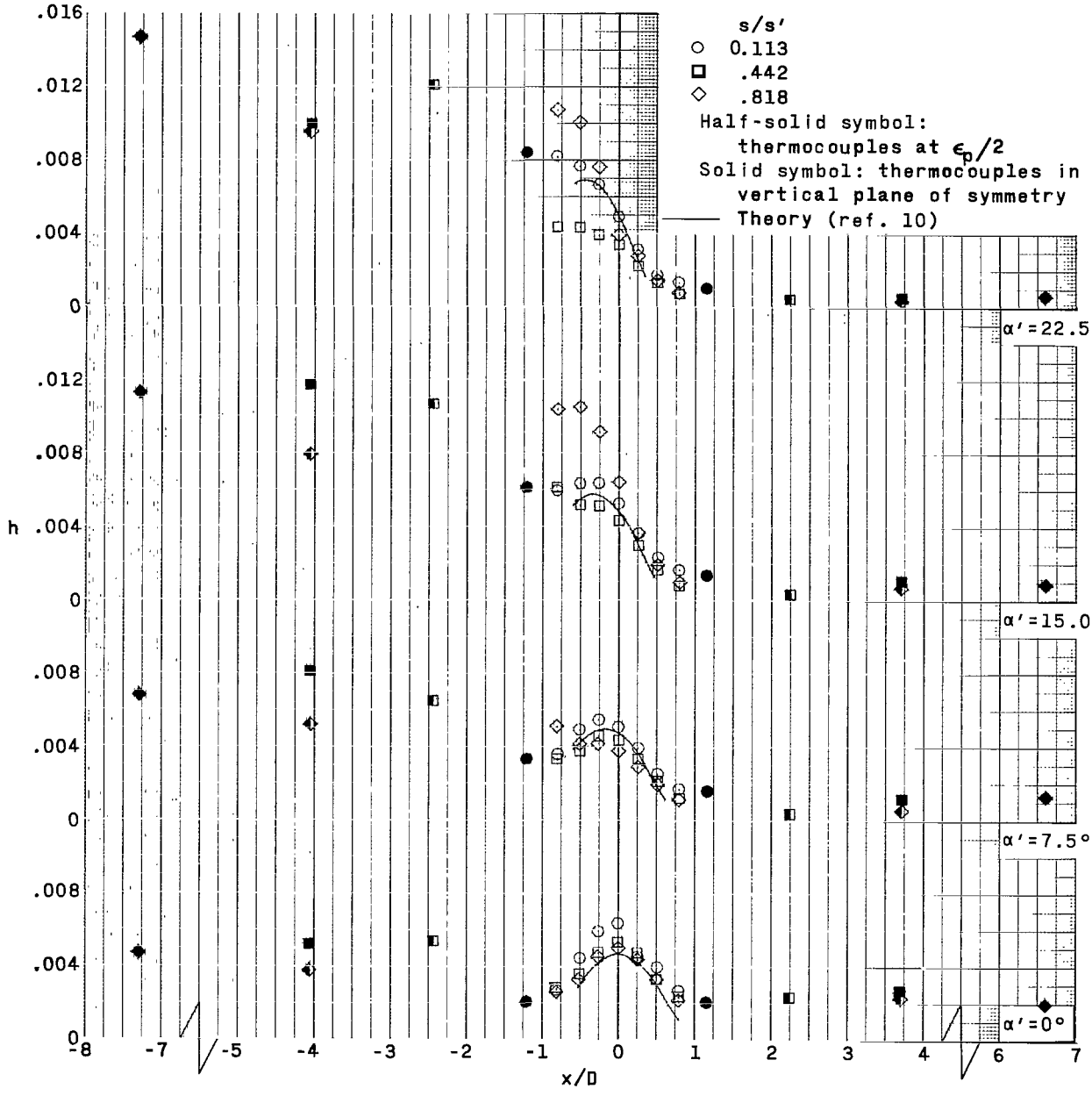
(b) Continued.

Figure 15.- Continued.



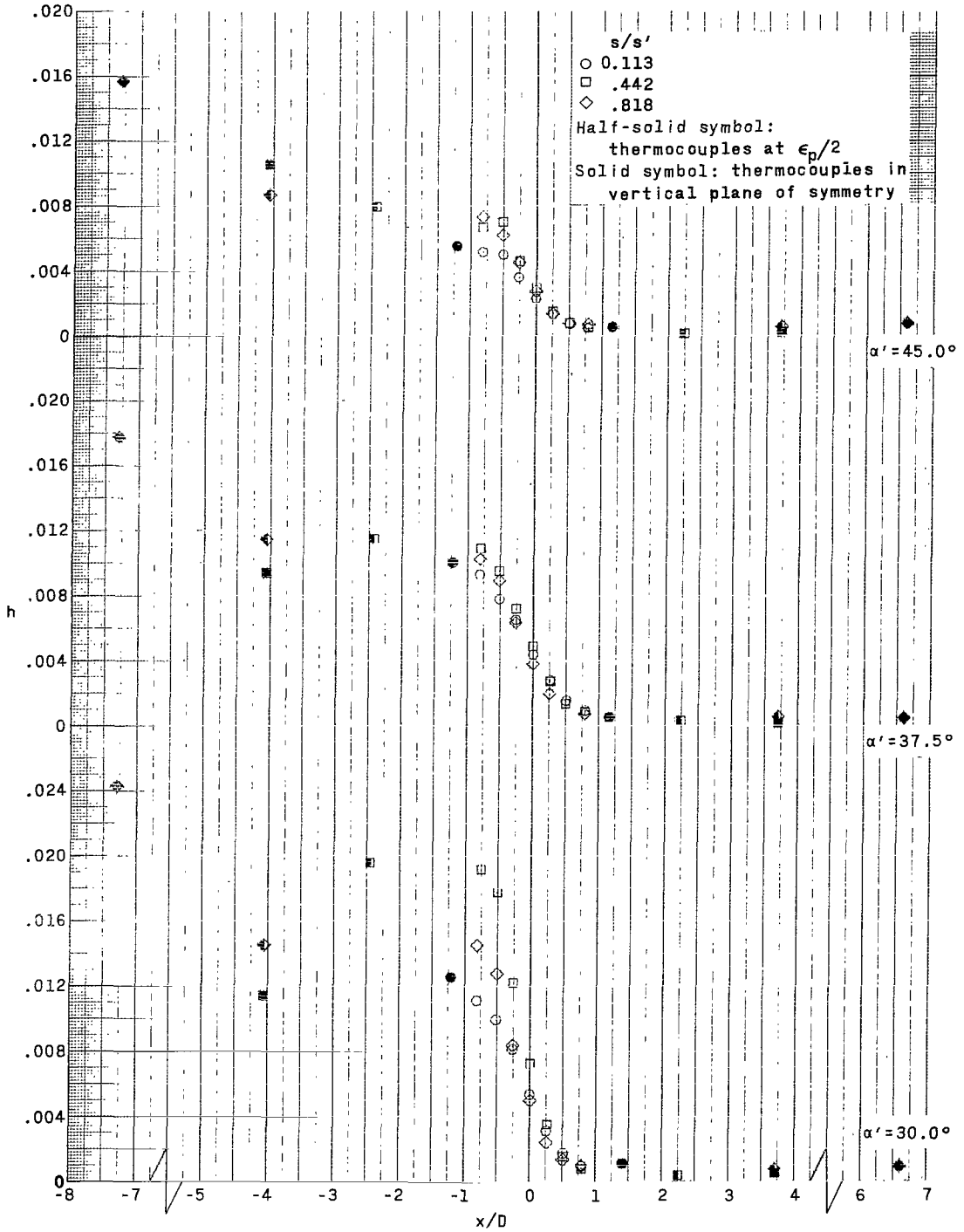
(b) Concluded.

Figure 15.- Continued.



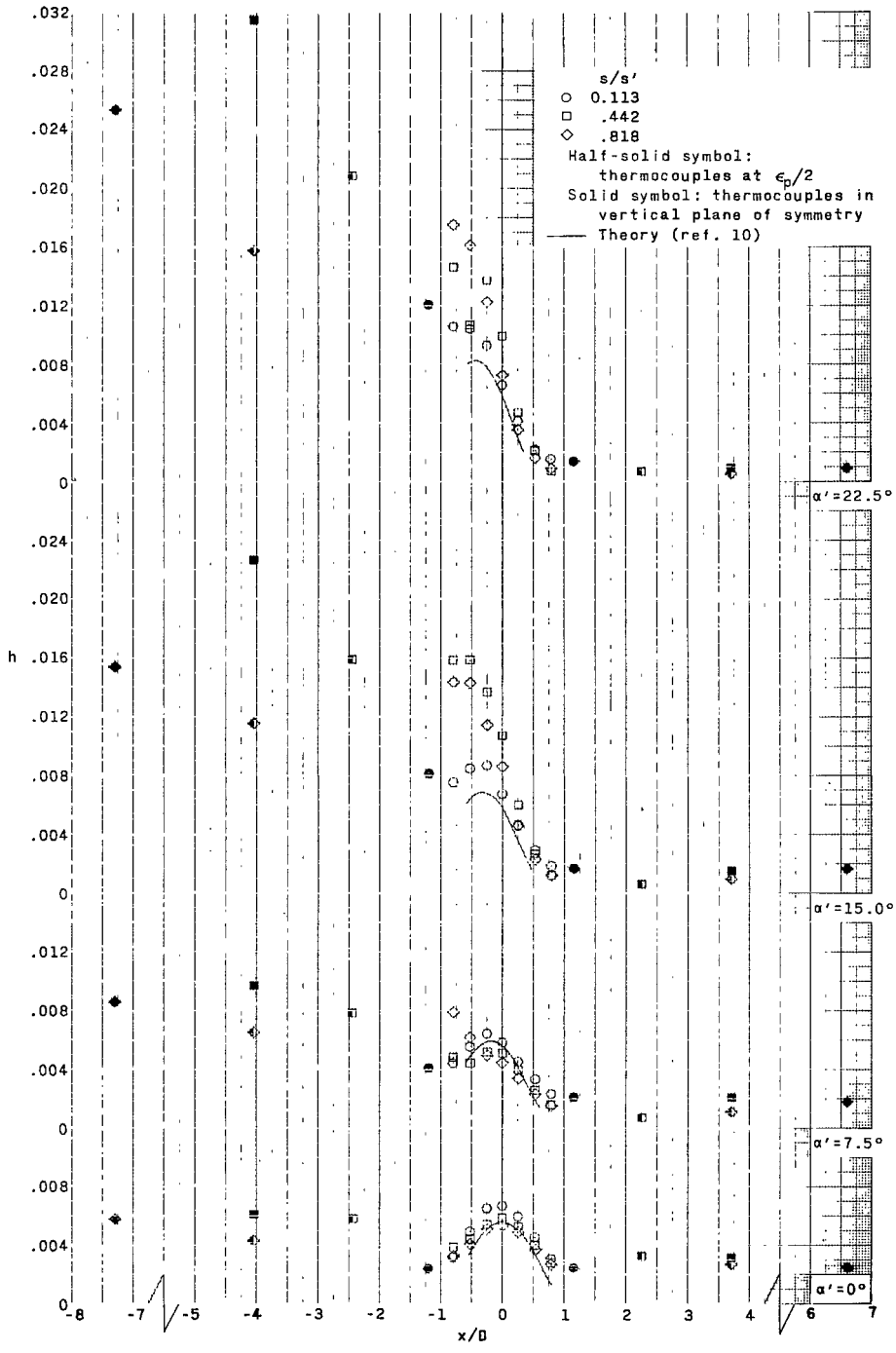
(c) M = 4.65; R ≈ 2.90 × 10^6.

Figure 15.- Continued.



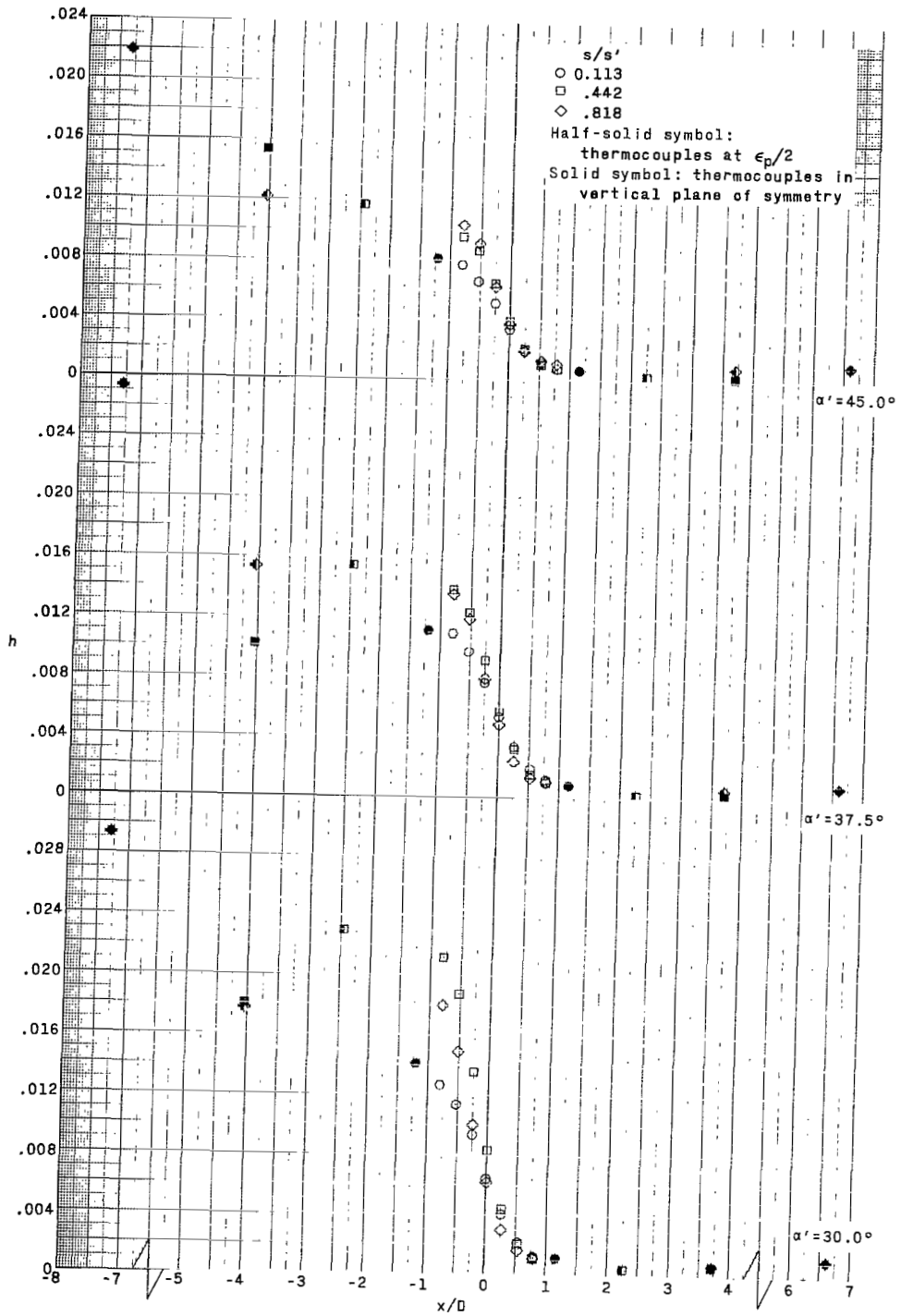
(c) Concluded.

Figure 15.- Continued.



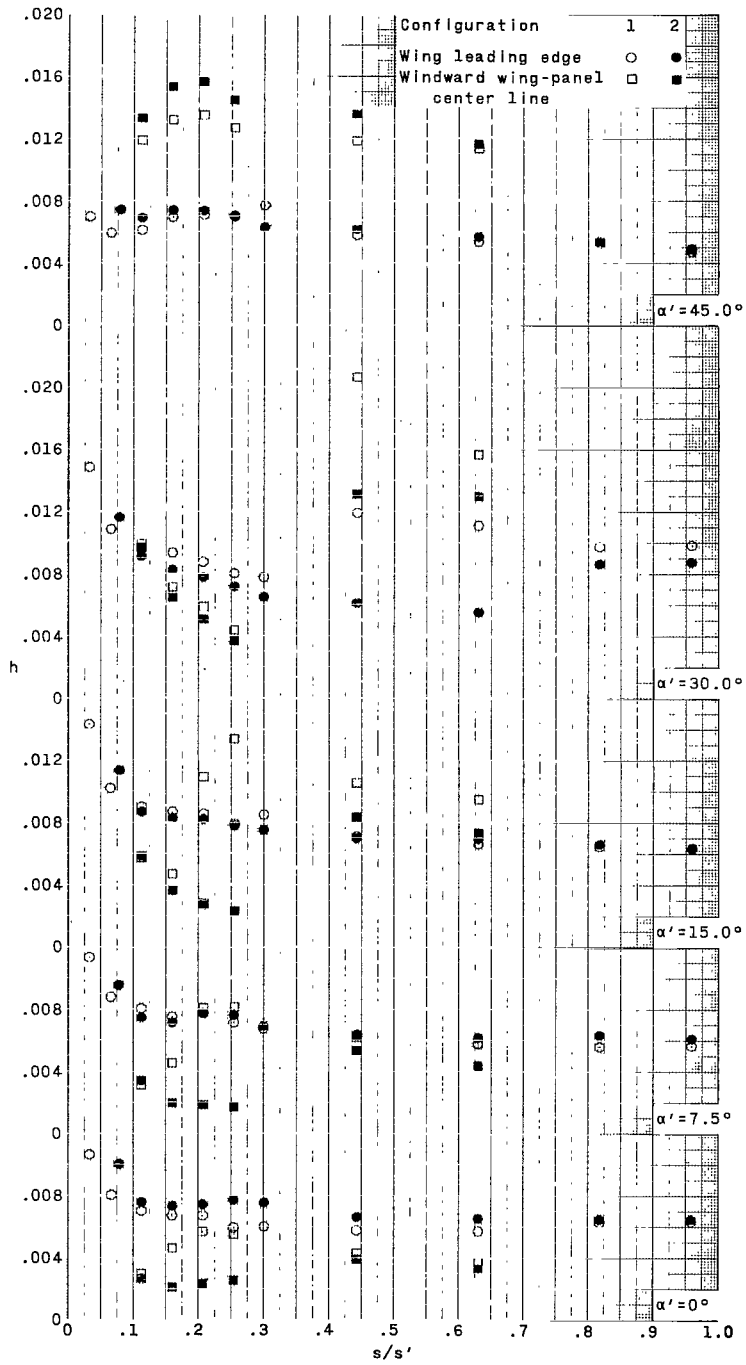
(d) M = 4.65; R ≈ 4.10 × 10^6.

Figure 15.- Continued.



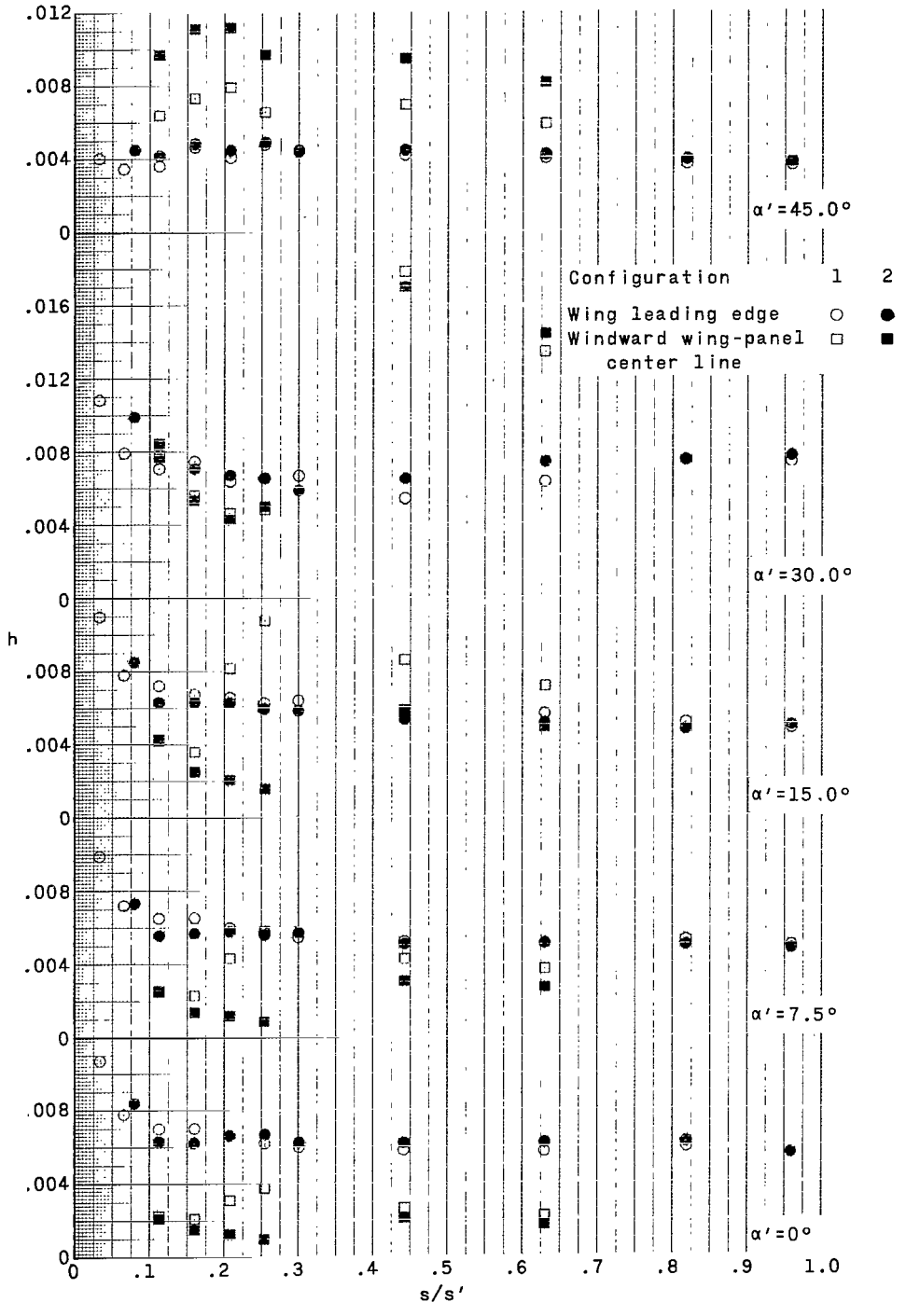
(d) Concluded.

Figure 15.- Concluded.



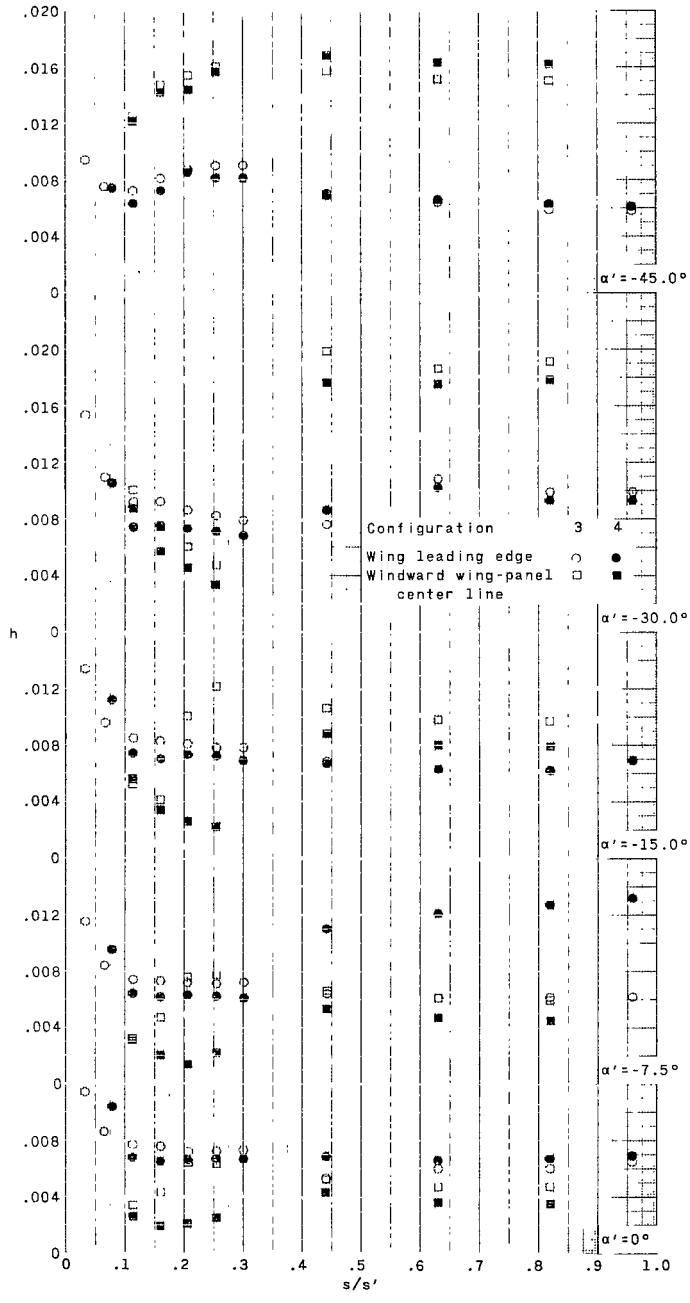
(a) M = 3.51; R ≈ 4.00×10^6.

Figure 16.- Effect of nose bluntness on heat-transfer-coefficient distribution along windward center line and wing leading edge of models with 0° dihedral.



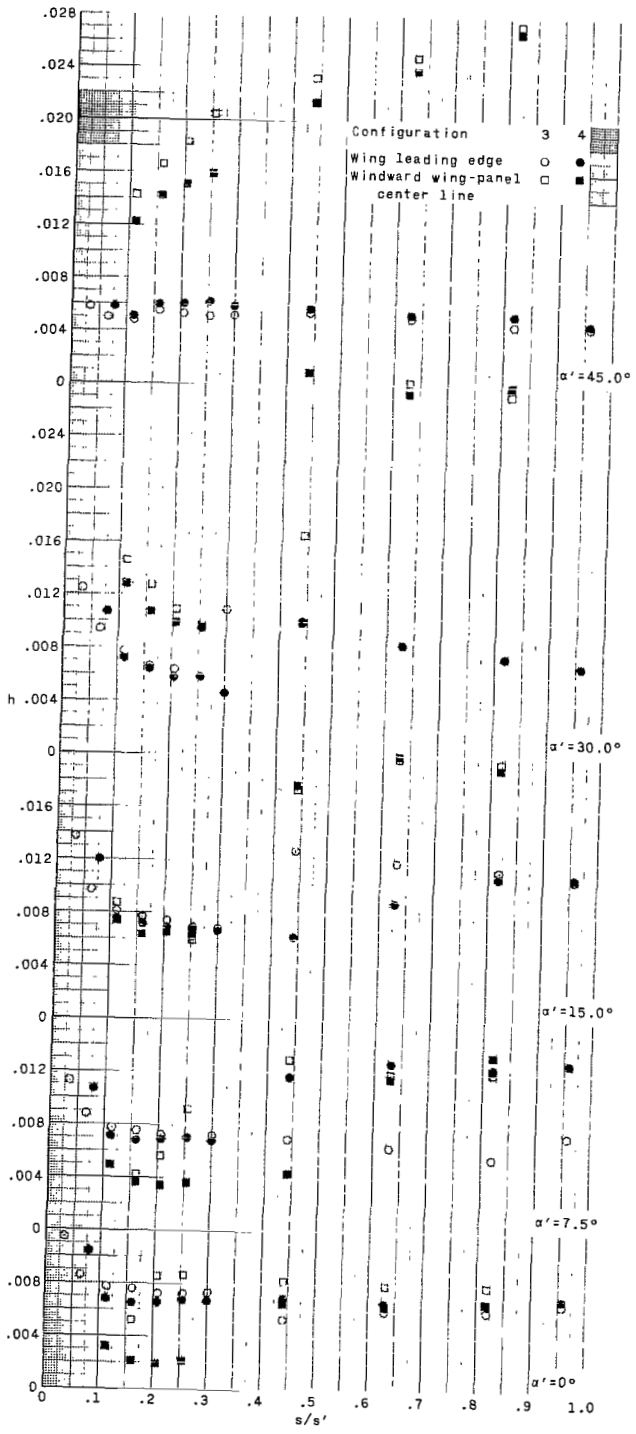
(b) M = 4.65; R ≈ 4.10 × 10^6.

Figure 16.- Concluded.



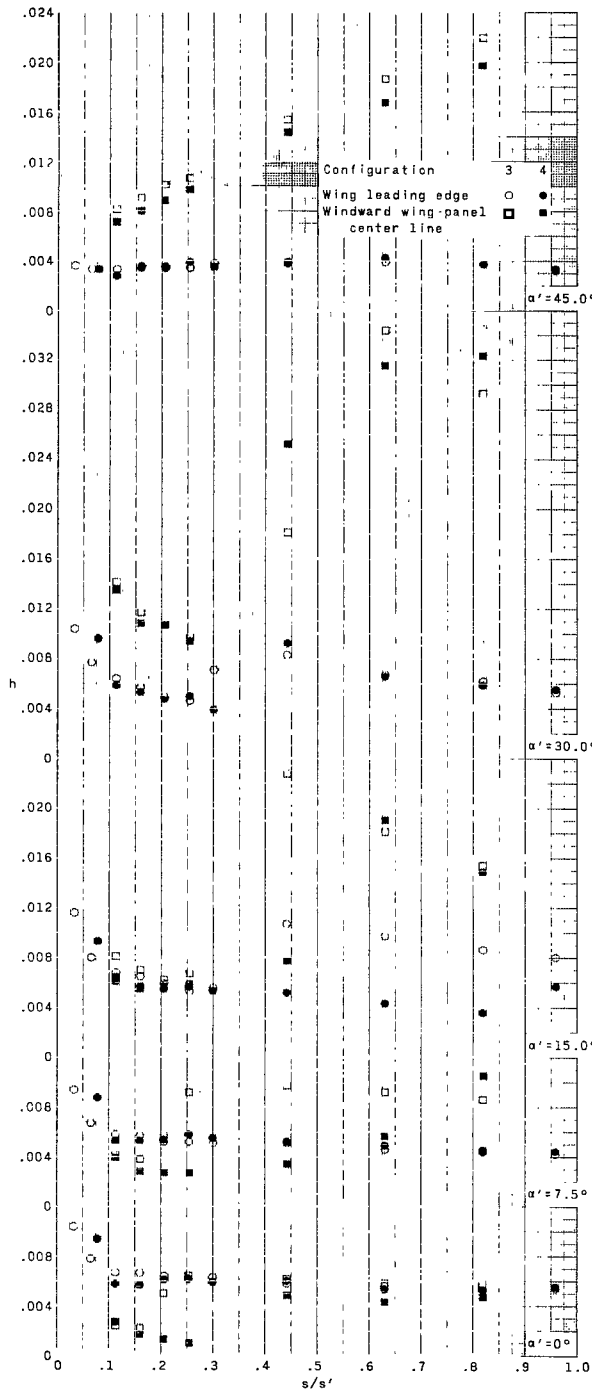
(a) $M = 3.51$; $R \approx 4.00 \times 10^6$.

Figure 17.- Effect of nose bluntness on heat-transfer-coefficient distribution along windward center line and wing leading edge of models with 24.3° dihedral.



(a) Concluded.

Figure 17.- Continued.



(b) M = 4.65; R ≈ 4.10 × 10^6.

Figure 17.- Concluded.

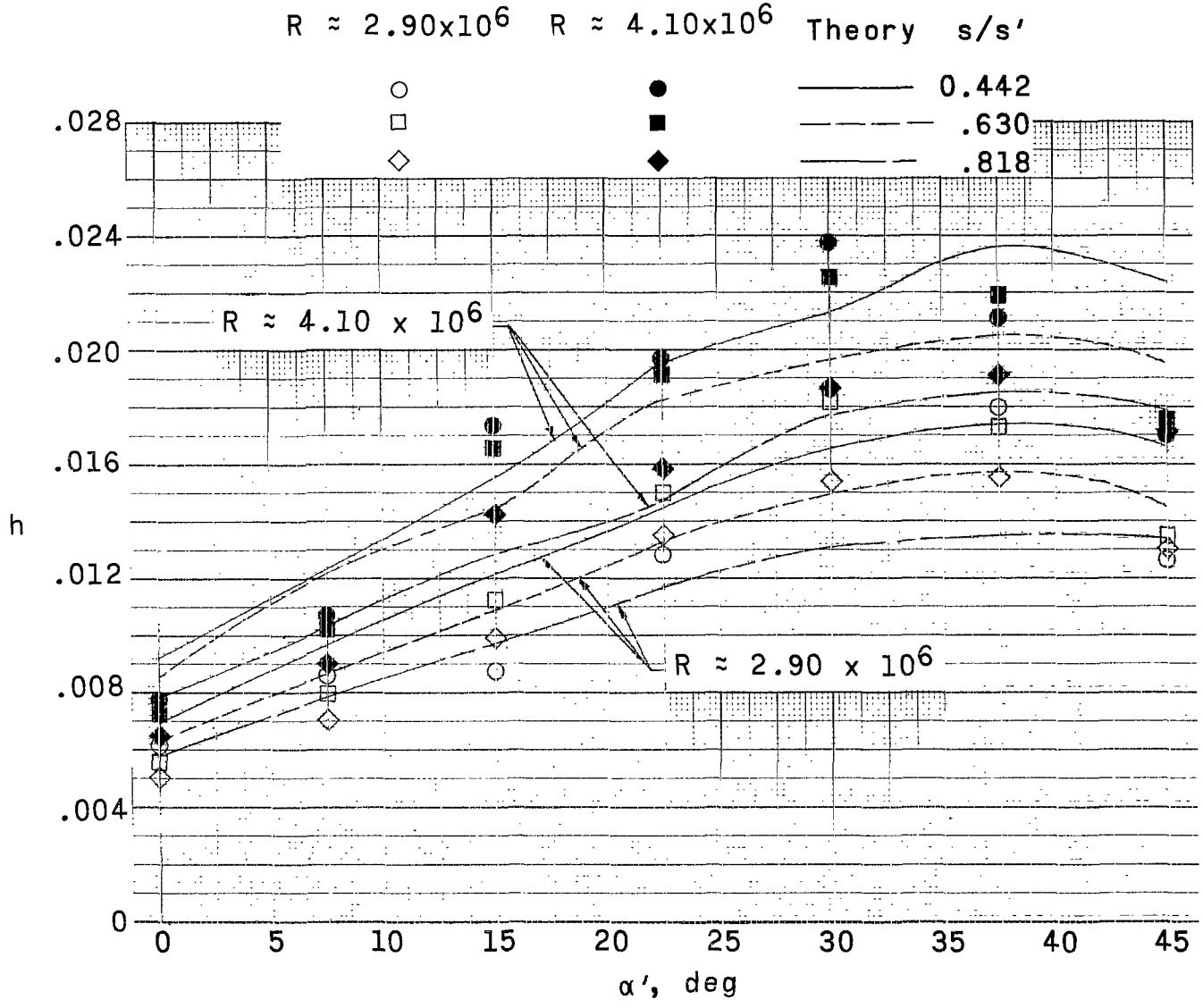
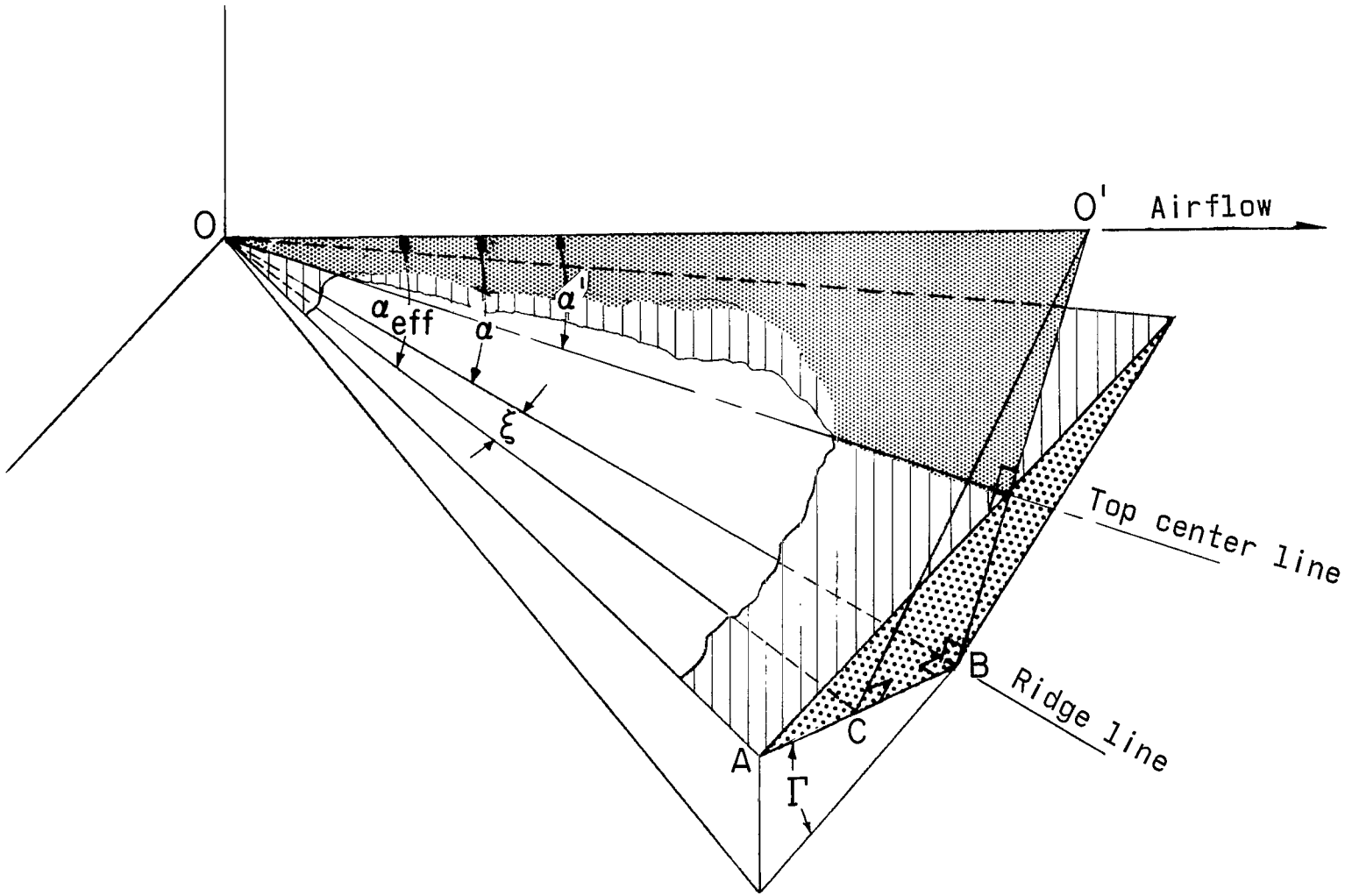
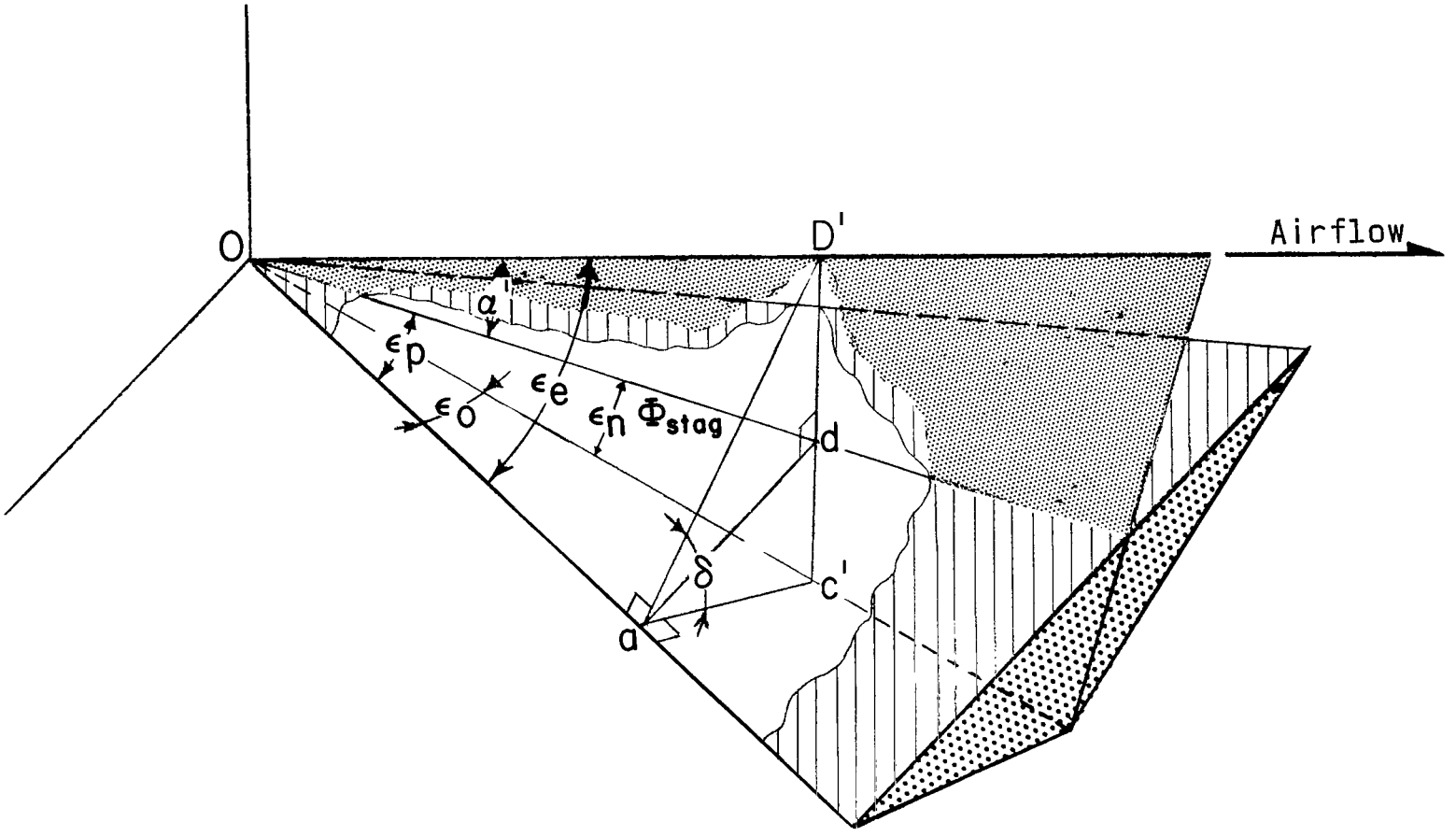


Figure 18.- Effect of angle of attack on heat-transfer-coefficient distribution along windward wing panel at $\epsilon_p/2$ of configuration 3. M = 3.51.



(a) In plane perpendicular to ridge line.

Figure 19.- Wing geometry.



(b) In plane perpendicular to wing leading edge.

Figure 19.- Concluded.

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"The aeronautical and space activities of the United States shall be conducted so as to contribute . . . to the expansion of human knowledge of phenomena in the atmosphere and space. The Administration shall provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof."

—NATIONAL AERONAUTICS AND SPACE ACT OF 1958

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